1 PALACE STREET

Westminster SW1E

City of Westminster

Archaeological Evaluation Report

February 2016

MOLA

REGISTERED ORGANISATION CIfA

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1 PALACE STREET
London
SW1E 6JP

Site Code PCE16
NGR 529060 179446
OASIS reference molas1-243925

Planning reference 14/07730/FULL
Condition Number 24

Report on archaeological evaluation

Sign-off History:

Issue No.	Date:	Prepared by:	Checked/ Approved by:	Reason for Issue:
1	25.02.16	Tim Braybrooke and Michael Smith (Evaluation trenches) Graham Spurr (Geoarchaeological summary)	Michael Smith	Draft for client
2				

Graphics: Sote Angeleski

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Summary

This report presents the results of an archaeological evaluation carried out by MOLA at 1 Palace Street, London SW1E 6JP. The report was commissioned from MOLA by CgMs on behalf of the client Northacre PLC.

In accordance with the Written Scheme of Investigation (MOLA 2015) three evaluation trenches were excavated and two borehole samples collected on the site between 15th and 18th February 2016.

Alluvial deposits, almost certainly associated with the Tyburn/Tachbrook/Kingschoole Sluice system were investigated and sampled. The existing building on the site had removed any layers or features associated with human activity that may once have existed on the site. There was therefore no evidence for the post-medieval development of the area.

The report concludes that archaeological remains in the form of, as yet, undated alluviums may be impacted by the redevelopment. The impact of the development will be to completely remove these deposits. However, they have been sampled in the boreholes.

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List of Illustrations

1 Introduction

1.1 Site background

1.1.1 An archaeological evaluation was carried out by MOLA at 1 Palace Street, London SW1E 6JP ('the site') between 15th and 18th February 2016 (see *Fig 1*). This document is the report on that work.

1.1.2 A written Archaeological *Assessment* was previously prepared, which covered the whole area of the site (CgMs 2013). This document should be referred to for information on the natural geology, archaeological and historical background of the site, and the initial interpretation of its archaeological potential.

1.2 Planning background

1.2.1 The legislative and planning framework in which the evaluation took place was fully set out in the *Archaeological Desk-based Assessment* which formed the project design for the evaluation (see Section 2, CgMs 2013). To summarise here:

1.2.2 The evaluation was carried out to fulfil a condition attached to the Planning Consent given by Westminster City Council Local Authority (Consent reference 14/07730/FULL; Condition number 24).

1.3 Scope of the evaluation

1.3.1 Evaluation is defined by Historic England as intended to provide information about the archaeological resource in order to contribute to the:

1.3.2 - formulation of an appropriate response or mitigation strategy to planning applications or other proposals which may adversely affect such archaeological remains, or enhance them; and/or

1.3.3 - formulation of a proposal for further archaeological investigations within a programme of research

1.3.4 An archaeological evaluation is a limited fieldwork exercise designed to test the conclusions of preliminary desk based work. It is not the same as full excavation.

1.3.5 The evaluation was carried out within the terms of the relevant Standard for evaluation specified by the Chartered Institute for Archaeologists (CIFA, 2014).

1.3.6 All work has been undertaken within the research priorities established in the Museum of London's A research framework for London Archaeology, 2002.

1.3.7 All work was undertaken within research aims and objectives established in the Written Scheme of Investigation for the evaluation (MOLA 2015)

2 Topographical and historical background

2.1 Topography

2.1.1 The site, along with the rest of the City of Westminster, is underlain by deposits of London Clay (IGS 1979). Overlying the London Clay is a series of gravel terraces deposited during periods of glacial and inter-glacial conditions.

2.2 Archaeology

2.2.1 Alluvial deposits laid down in a marshy environment in the Tyburn valley have been exposed on a number of sites in the immediate vicinity. Investigations at the Westminster Theatre site to the south produced a sequence datable from the Middle Neolithic to the Late Bronze Age periods (*c* 2800 to *c* 900 BC) showing a sequence of development with mixed woodland on the edge of a grass-sedge poor fen with alder carr, being progressively cleared by anthropogenic disturbances.

2.2.2 There is low potential for remains datable from the Roman to early-post-medieval periods.

2.2.3 Documentary sources record the Tyburn as a stream continuing south from Buckingham Palace, past Victoria, and down the line of Tachbrook Street (Barton 1992). This watercourse was called the Tachbrook, although contemporary sources also referred to the water course as a sewer called the Kingschoole Sluice (later known as the King's Scholars' Pond Sewer). This artificial channel may have been dug in the 17th century, although it is possible that this channel was on the line of a much older ditch, described as 'old' in a 10th-century Anglo-Saxon charter demarcating the lands of Westminster Abbey (Edgar's Charter of AD 951). The sewer is believed to follow the parish boundary within the vicinity of the study site (Barton 1992).

2.2.4 17th and early-18th century maps show the site as open fields at that time. Harwood's map of 1799-1819 show the area developed as terraced house on all four street frontages. The area was progressively re-developed from the mid-19th century.

3 Evaluation methodology

3.1 Field methodology

3.1.1 Three stepped evaluation trenches c 10m by 2m at the base were excavated.

3.1.2 The slab/ground was broken out and cleared by contractors under MOLA supervision. Trenches were excavated by machine by the contractors, and monitored by a MOLA supervisor.

3.1.3 Two boreholes were taken to recover sleeved cores for geoarchaeological analysis. A preliminary summary of the results are included in this report, though a fuller report on the results will be submitted separately.

3.1.4 Archaeological excavation was carried out in accordance with the Written Scheme of Investigation (MOLA 2015)

3.1.5 Trench locations were surveyed on site by MOLA surveyors and subsequently tied to the OS grid by MOLA Geomatics. Levels were calculated from datums established by the Keltbray surveyor.

3.2 Recording methodology

3.2.1 A written and drawn record of all archaeological deposits encountered was carried out in accordance with the Written Scheme of Investigation (MOLA 2015).

3.3 Site archive

Number of trench record sheets	3
Number of overall location plans	1
Number of Context (SU) sheets	0
Number of photographs	35
Number of Plan sheets	2 x A5 permatrace
Number of Sections	2 x A5 permatrace

4 Results of the evaluation

For trench locations see *[Placeholder page]*

Fig 2. For trench sections see *Fig 3*, *Fig 4*,*Fig 5* and *Fig 6*.

4.1 Trench 1

Location	To the rear of 1 Buckingham Palace gate, roughly in the centre of the site
Dimensions	12m by 4m by 2m depth
Modern top of slab	3.47m OD
Base of modern slab	*c* 3.02m OD
Depth of archaeological stratigraphy above natural (if any)	N/A
Level of base of lowest features or deposits observed	N/A
Top of surviving natural observed at	N/A
Level of base of trench	1.48m OD

4.1.1 Trench 1 was moved slightly south of its originally intended location to avoid a scaffold exclusion zone and no sondage was attempted due to the highly unstable nature of the material uncovered. See Geoarchaeological BH1 for results and description of the natural strata in this area of the site

4.1.2 No natural deposits were observed in this trench

4.1.3 From the base of the trench to *c* 1.25m BGL/2.23m OD was a layer of made ground consisting of modern CBM and concrete rubble mixed with grey demolition “crush” and sandy gravel ballast.

4.1.4 Sealing this was a further made ground layer/levelling layer of clean, greyish red/brown sandy gravel ballast onto which was poured a 0.20m thick slab of concrete which was itself the base for 0.25m of heavily steel reinforced concrete.

4.1.5 There were also substantial modern concrete intrusions including ground beams, piles and service ducts.

4.1.6 No archaeological finds or features were observed.

4.2 Trench 2

Location	Towards to south-east corner of the site
Dimensions	Up to 10m by 4m by up to 2.19m depth
Modern top of slab	2.19m OD
Base of modern slab	*c* 2.06m OD
Depth of archaeological stratigraphy above natural (if any)	N/A
Level of base of lowest features or deposits observed	N/A
Top of surviving natural observed at	N/A
Level of base of trench	0.00m OD

4.2.1 Large modern intrusions (concrete pile caps, ground beams, slabs and brick wall foundations) effectively foreshortened Trench 2, to 7m and the length of the 2m deep stepped slot to 4m (*Fig 2*). The least disturbed portion of the east facing section was recorded as Section 2 (*Fig 3*, *Fig 4*)

4.2.2 From the base of the trench to *c* 0.81m BGL/1.37m OD was a firm, mid grey (with occasional blackish mottling) silty clay, alluvial layer.

4.2.3 The mid grey alluvium was sealed by an up to 0.40m thick layer of moderately firm, slightly sandy, clayey silt alluvium with orangey brown FE staining throughout.

4.2.4 Sealing the alluvium from *c* 0.62m BGL/1.56m OD there is a thin trample layer and a

series of layers of redeposited alluvium containing CBM fragments representing possibly 19th and certainly 20th century make-up and levelling layers.

4.2.5 The slab is typically 0.20m thick and the concrete is mixed with furnace waste and sealed in part by a thin smear of tar like material, possibly for waterproofing and/or to bond another material to the floor.

4.2.6 No archaeological finds or features were observed.

4.3 Trench 3

Location	Towards the north-east corner of the site
Dimensions	Up to 11.30m by 4m by 2m depth
Modern top of slab	2.26m OD
Base of modern fill/slab	*c* 1.92m OD
Depth of archaeological stratigraphy above natural (if any)	N/A
Level of base of lowest features or deposits observed	N/A
Top of surviving natural observed at	N/A
Level of base of trench	0.25m OD

4.3.1 Modern intrusions (concrete pile caps and ground beams) foreshortened Trench 3 to *c*11.30m and required it to be rotated 90º clockwise. Due to the disturbed nature of the deposits at 1m, it was decided to proceed with a 2m deep stepped slot but, again, due to the modern intrusions this was limited to 7.5m in length (*Fig 2*). The least disturbed portion of the east facing section was recorded as section 3 (*Fig 5*, *Fig 6*).

4.3.2 From the base of the trench to 1.65m BGL/0.64m OD was a layer of firm, dark grey alluvial clay.

4.3.3 Sealing this was a further alluvial layer, up to 0.80m thick, similar in make-up to that below but mid brownish grey in colour.

4.3.4 This was in turn sealed by a further alluvial layer of mid brownish grey, slightly sandy, clayey silt, up to 0.40m thick with FE staining.

4.3.5 The alluvial sequence was cut to the south by a modern trench up to 0.60m deep filled with a rough concrete and CBM rubble mix.

4.3.6 To the north, the sequence was cut by a modern construction cut filled with redeposited alluvium, CBM and concrete rubble, small fragments of crushed chalk, lengths of rubber air compressor hose, flints, and small pieces of steel reinforcement rod.

4.3.7 A 0.25m thick steel reinforced concrete slab was bedded on a sandy gravel make-up layer up to 0.12m thick.

4.3.8 No archaeological finds or features were observed.

4.4 Geoarchaeological boreholes

Introduction

4.4.1 On the 15th February 2016, as part of a site evaluation, geoarchaeological boreholes were undertaken by a MOLA geoarchaeologist at the site of 1 Palace St, Westminster (National Grid reference 529060 179446).

4.4.2 The boreholes were designed to complement the archaeological trench investigation by examining, recording and sampling the sequence of sediments below the base of the made ground at two predetermined locations across an open area of the site.

Methodology

4.4.3 The boreholes (BH1 & 2) were cored using a terrier rig at two locations: BH1 at approximately the centre of the site and BH2 toward the north-east corner of the site. The aim of the boreholes was to investigate the nature of the natural sediments at depth with particular attention to any alluvial sediment associated with the Tyburn/Tachbrook/Kingschoole Sluice river system. Coring ceased at the level of river terrace gravels.

4.4.4 The sediments were sampled by terrier rig cores (1m by 100mm perspex tubes) and preliminary logs of the sediments recorded on site, with a view to detailed description later off site.

4.4.5 The borehole locations and Ordnance Datum (OD) heights were recorded by MOLA survey teams and the depths of the contacts between each sedimentary unit encountered were converted to OD levels.

4.4.6 The core samples were sealed and labelled and transported back to the MOLA geoarchaeological laboratory store.

Results: the natural stratigraphy

4.4.7 Borehole 1 (BH1) was situated near the centre of the site slightly NW of Trench 1. It was drilled to a depth of –2m OD, from a ground-level of 3.38m OD. The borehole log is listed in the table below:

BH1	OD height (m):	Eastings	Northings	Thickness (m)	Description	Interpretation
	3.38	529057.049	179456.49			
from (m BGL)	to (m BGL)	**from (mOD)**	**to (mOD)**			
0	1.9	**3.38**	**1.48**	**1.9**	Concrete, rebar and ballast	Made ground
1.9	2.9	**1.48**	**0.48**	**1**	Soft brownish silt mixed with yellow brick and sand	
2.9	4.4	**0.48**	**-1.02**	**1.5**	Blue grey silts	Alluvium
4.4	5	**-1.02**	unknown depth	**N/A**	Orange coarse sand with laminations of clay and occasional rounded to subangular medium to fine flints	River terrace

Table 1: Sediments sampled in BH1

4.4.8 Borehole 2 (BH2) was situated to the north-east corner of the site. It was drilled to a depth of –1.94m OD, from a ground-level of 2.26m OD. The borehole log is listed in the table below:

BH2	OD height (m):	Eastings	Northings	Thickness (m)	Description	Interpretation
	2.26	529075.068	179461.59			
from (m BGL)	to (m BGL)	**from (mOD)**	**to (mOD)**			
0	1.15	**2.26**	**1.11**	**1.15**	Concrete and rebar and ballast	Made ground
1.15	1.8	**1.11**	**0.46**	**0.65**	Soft brownish silt	Oxidised upper alluvium
1.8	3.2	**0.46**	**-0.94**	**1.4**	Blue grey silts	Alluvium
3.2	4	**-0.94**	unknown depth	**N/A**	Orange coarse sand with laminations of clay and occasional rounded to subangular	River terrace

					medium to fine flints	

Table 2: Sediments sampled in AH2

Interpretation

4.4.9 Both the boreholes encountered alluvial deposits thought to relate to the Tyburn/Tachbrook/Kingschoole Sluice river system, conjectured to have flowed across the site area (MOLA 2015).

4.4.10 The alluvial deposits recovered in BH1 and BH2 were between 1.5m and 2m thick, respectively, with the river terrace gravels lying almost flat between the two boreholes at approximately -1m OD.

Discussion of potential

4.4.11 The sediments sampled in the boreholes recovered good sedimentary sequences. Given their similarity, one borehole should be subjected to palaeo-environmental assessment through proxy indicators such as pollen and diatom/ostracods to assess the nature of the environment of deposition. Furthermore, should organic material be encountered, these deposits should be assessed for plant macrofossils and/ or C14 material.

Recommendations

4.4.12 Questions necessary for the understanding the Tyburn/Tachbrook/Kingschoole Sluice alluvial sediments sampled at 1 Palace St relate to how the sediments accumulated, the environments they represent and when they accumulated.

4.4.13 To that end, it is recommended that assessment for pollen and diatom/ostracods be undertaken on the alluvial sediments on one borehole sequence and, should suitable organic sediments survive, plant macrofossil assessment and radiocarbon dating should complement the microfossil work.

4.5 The finds

4.5.1 No finds were recovered from the three evaluation trenches.

4.6 The site as a whole

4.6.1 The site was shown to have been quite severely truncated by modern disturbances.

4.6.2 The borehole logs show that an approximately 1.5m to 2m thickness of alluvial deposits survive on site in areas that have not been disturbed. The presence and nature of these deposits were confirmed in two of the evaluation trenches (2 and 3 towards the east side of the site) whilst trench 1 near the centre of the site showed intense modern disturbance in this area.

4.6.3 The alluviums are thought to relate to the Tyburn/Tachbrook/Kingschoole Sluice river system, conjectured to have flowed across the site area.

4.6.4 No layers or features relating to human activity on the site were identified in the evaluation.

5 Archaeological potential

5.1 Answering original research aims

5.1.1 *What is the nature and level of natural topography*?

The natural deposits consisted of River Terrace Gravels at between -0.94m OD and -1.02m OD.

5.1.2 *What are the earliest deposits identified?*

Alluvial deposits associated with the Tyburn/Tachbrook/Kingschoole Sluice.

5.1.3 *What are the latest deposits identified?*

Modern disturbances associated with the present structures on site.

5.1.4 *What is the extent of modern disturbance?*

There was significant modern disturbance in trenches 2 and 3, presumably associated with the present structures. All of the archaeologically significant deposits had been removed in trench 1.

5.1.5 *Is there any potential for geoarchaeological analysis?*

The sediments sampled in the boreholes recovered good sedimentary sequences. Given their similarity, one borehole should be subjected to palaeo-environmental assessment through proxy indicators such as pollen and diatom/ostracods to assess the nature of the environment of deposition. Furthermore, should organic material be encountered, these deposits should be assessed for plant macrofossils and/ or C14 material.

5.1.6 *Is there any evidence for the Tyburn/Tachbrook/Kingschoole Sluice?*

The alluvial deposits were almost certainly associated with the Tyburn/Tachbrook/Kingschoole Sluice.

5.1.7 *Is there any evidence for the Westminster Abbey boundary ditch?*

No such evidence was found.

5.1.8 Are there any remains associated with the post-medieval development of the site?

No remains associated with the post-medieval development of the area were found in the evaluation.

5.2 General discussion of potential

5.2.1 The evaluation has shown that the potential for survival of ancient ground surfaces (horizontal archaeological stratification above natural ground) on the site has been limited by 20th century disturbances.

5.2.2 The existing basement has probably removed any pre-modern ground surfaces, and no cut features were found in the evaluation trenches.

5.2.3 There is potential for survival of alluvial deposits associated with the Tyburn/Tachbrook/Kingschoole Sluice system. However, these have been successfully sampled in the two boreholes.

5.3 Significance

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

5.4 Assessment of the evaluation

5.4.1 The three evaluation trenches have successfully evaluated the central courtyard and eastern areas of the proposed development. These are the areas of greatest potential impact of the present development.

5.4.2 The trenches have successfully shown that the existing basement levels have removed any pre-modern ground surfaces, and that there was no evidence in the evaluation trenches for cut features.

5.4.3 The trenches and boreholes show that alluvial deposits, probably associated with the Tyburn/Tachbrook/Kingschoole Sluice system, survive on site to a depth of between 1.5m and 2m. These have been successfully sampled in the boreholes.

6 Proposed development impact and conclusions

6.1.1 Taking into account the results in all the trenches it appears that archaeological deposits, consisting of alluviums, survive at least across the eastern side of the site.

6.1.2 The proposed redevelopment at the site involves the excavation of a lower basement level in the area of the evaluation. This will completely remove the alluvial deposits.

6.1.3 The cores collected from the two boreholes have successfully collected samples from the alluvium. The commissioned report on these samples will adequately characterise the alluvium.

6.1.4 The level of disturbance noted on the site means that there is diminished potential for defining the spatial limits of the alluviums.

6.1.5 The decision on the appropriate archaeological mitigation to the deposits revealed rests with the Local Planning Authority.

7 Acknowledgements

7.1.1 The author would like to thank Sally Dicks of CgMs for facilitating the works, and Northacre PLC for commissioning it. Thanks are also due to Keltbray Ltd, especially William Miller and Patricia Morrison, for their assistance in carrying out the work.

8 Bibliography

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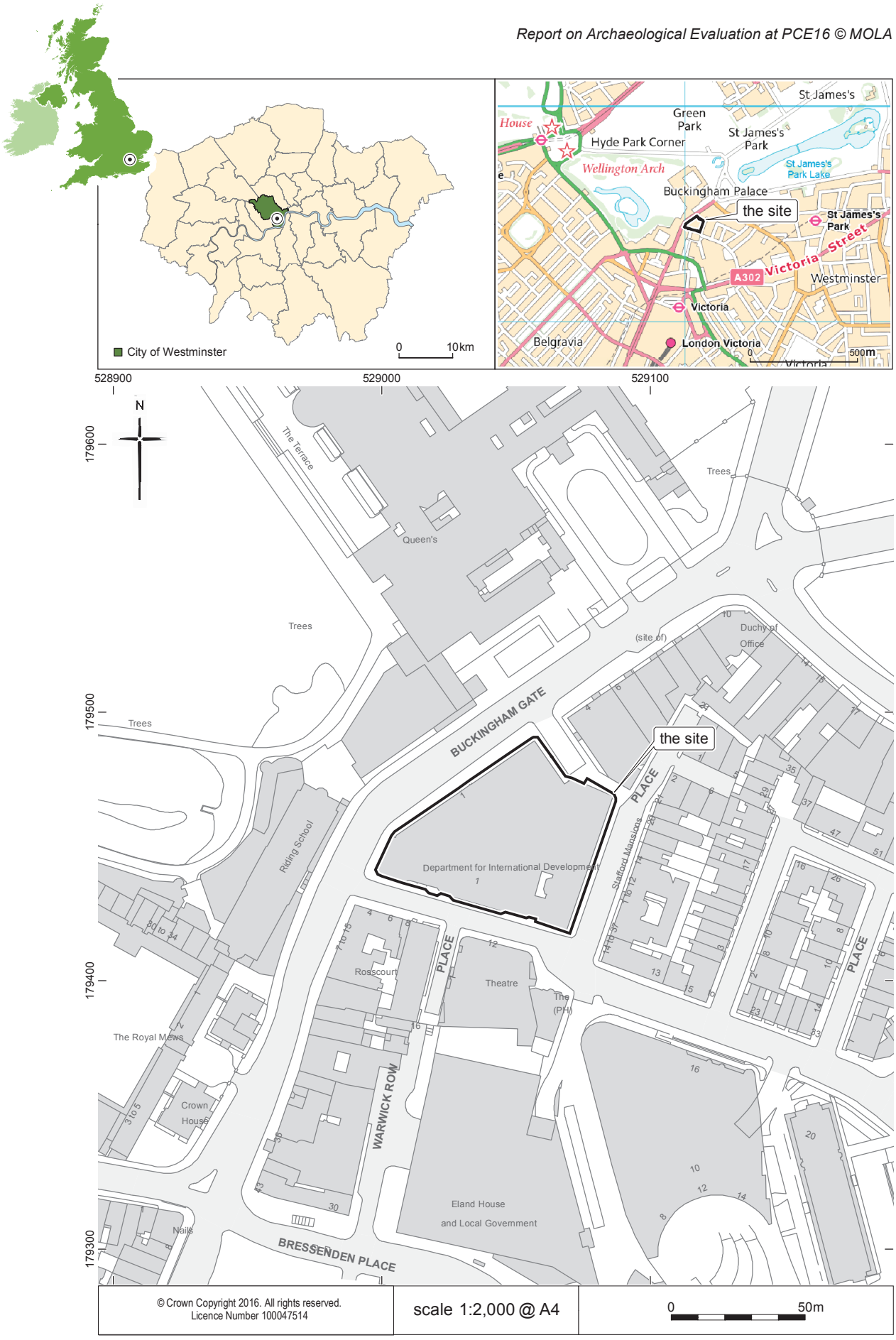


Fig 1 Site location

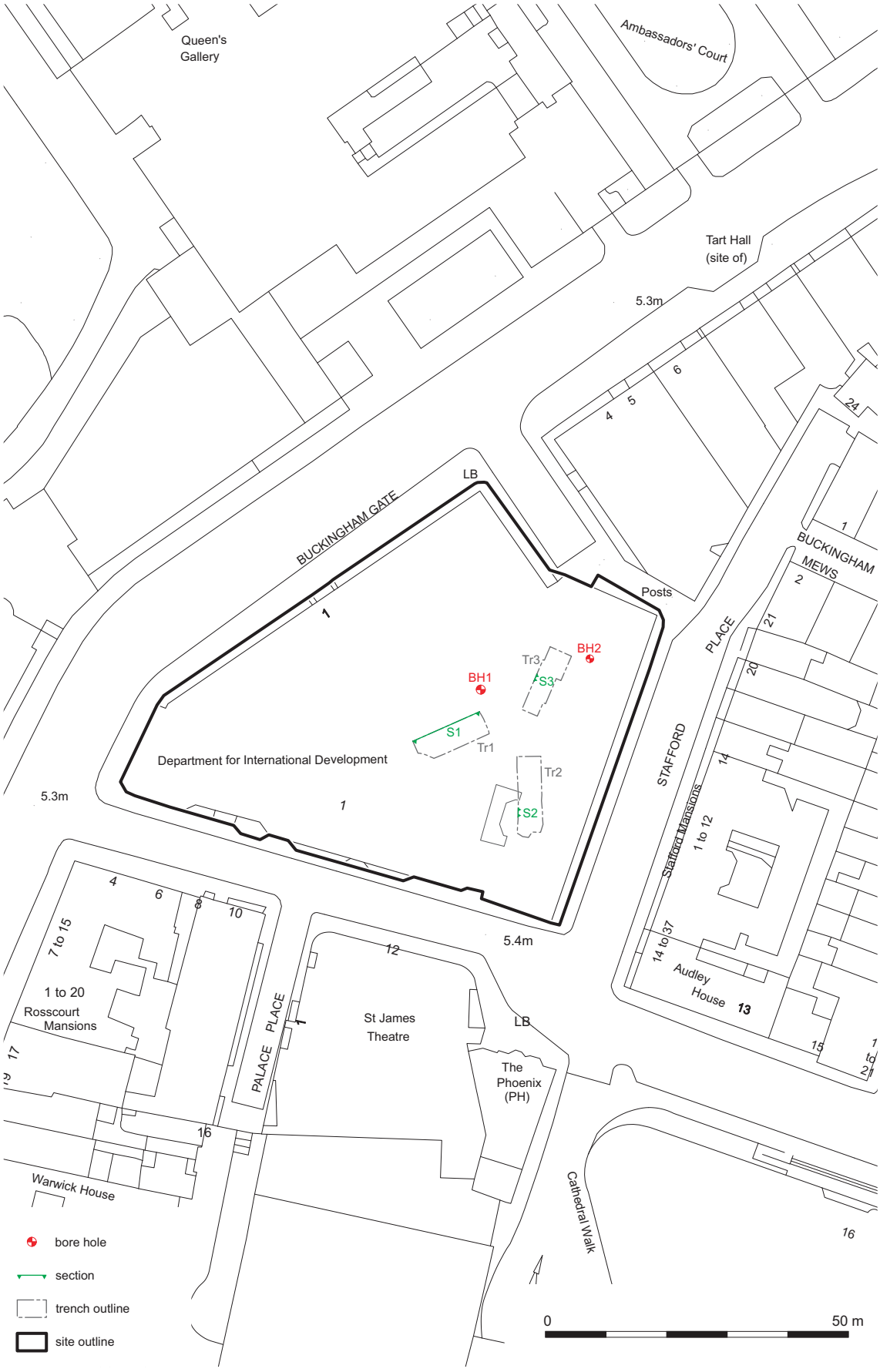
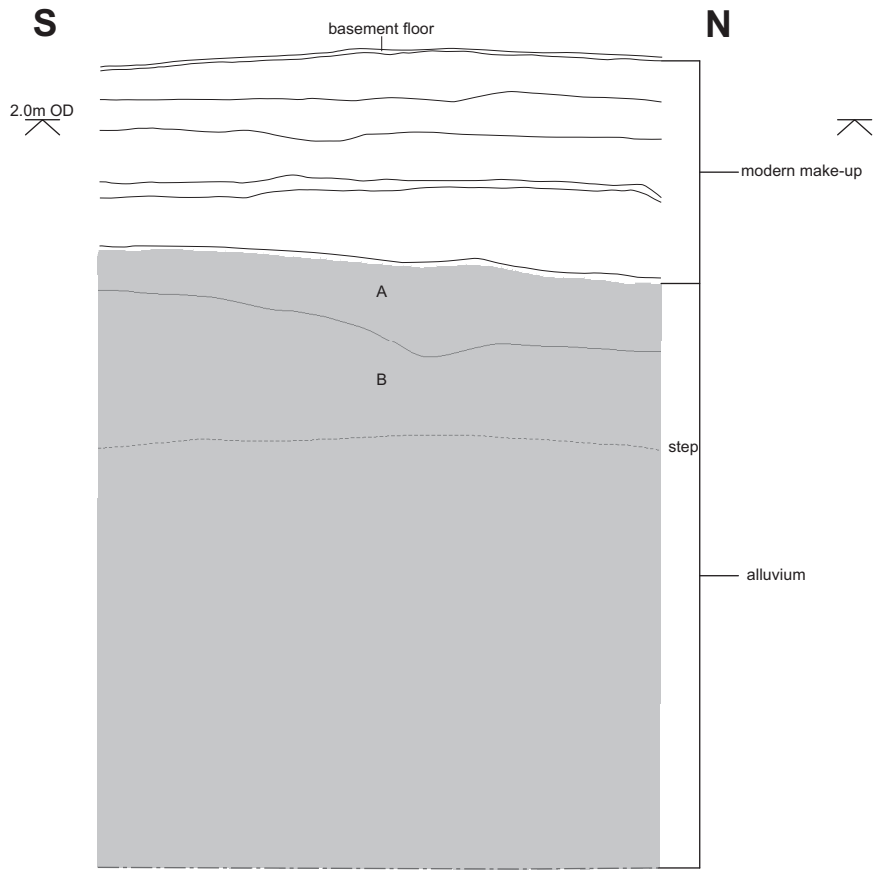


Fig 2 Trench, section and borehole locations



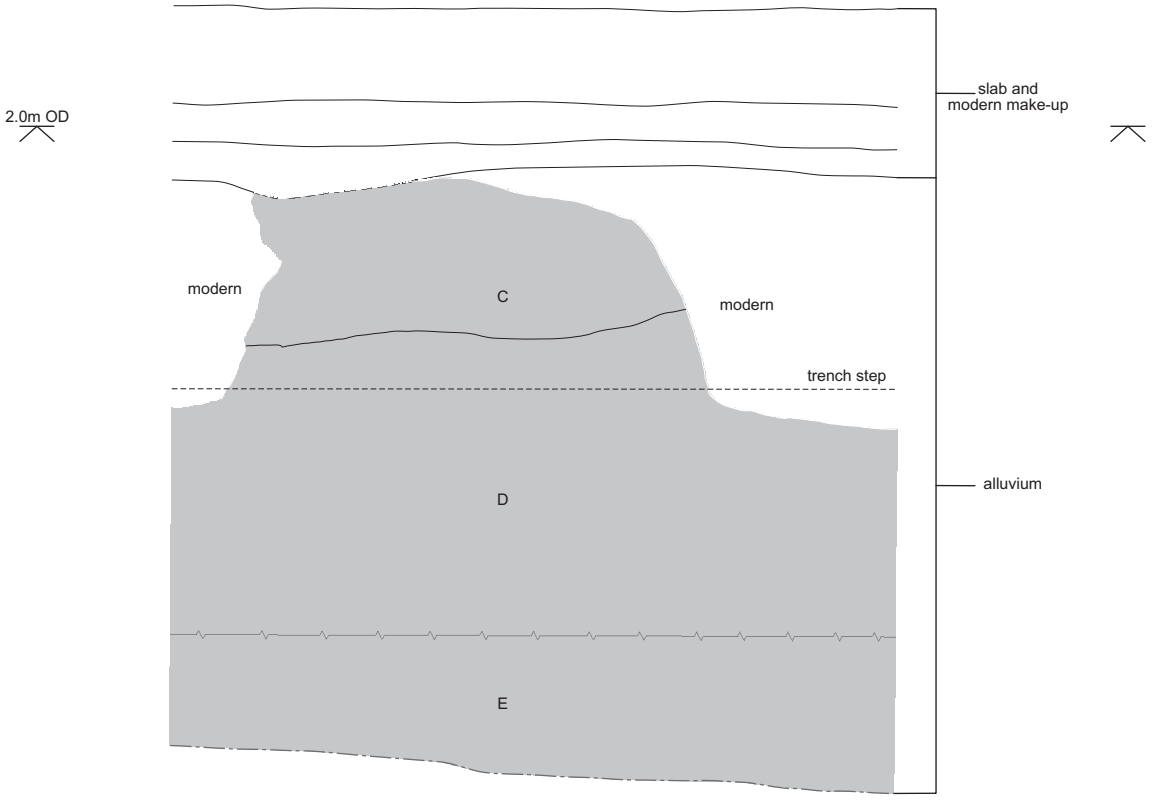
A. Firm, greyish brown alluvium

B. Firm, grey with blackish mottle, clayish alluvium

0 1:20 scale @ A4 1m

Fig 3 Trench 2, Section 2

Fig 4 Section 2



0 1:20 scale @ A4 1m

C. Moderately firm, brownish grey sandy/clayey silt alluvium with reddish brown FE staining

D. Firm brownish grey silty clay alluvium

E. Firm mid to dark blackish grey silty clay alluvium containing occasional preserved organics (twigs) at c 2.00m BGL

Fig 5 Trench 3, Section 3

Fig 6 Section 3

9 OASIS archaeological report form

9.1 OASIS ID: molas1-243925

Project details

Project name	1 Palace Street, London SW1E 6JP
Short description of the project	Tree evaluation trenches were excavated and two borehole samples collected on the site. Alluvial deposits, almost certainly associated with the Tyburn/Tachbrook/Kingschoole Sluice system were investigated and sampled. The existing building on the site had removed any layers or features associated with human activity that may once have existed on the site. There was therefore no evidence for the post-medieval development of the area.
Project dates	Start: 15-02-2016 End: 18-02-2016
Previous/future work	No / Not known
Any associated project reference codes	PCE16 – Site code
Type of project	Field evaluation
Site status	Area of Archaeological Importance (AAI)
Current Land use	Industry and Commerce 2 - Offices
Current Land use	Residential 1 - General Residential
Monument type	ALLUVIUM Neolithic
Monument type	ALLUVIUM Bronze Age
Methods & techniques	"Environmental Sampling","Targeted Trenches"
Development type	Urban commercial (e.g. offices, shops, banks, etc.)
Development type	Urban residential (e.g. flats, houses, etc.)
Prompt	Planning condition
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	GREATER LONDON CITY OF WESTMINSTER CITY OF WESTMINSTER 1 Palace Street, London SW1E 6JP
Postcode	SW1E 6JP
Study area	3600 Kilometres

Site coordinates	TQ 29 79 51.494707218137 -0.141514318162 51 29 40 N 000 08 29 W Point
Height OD / Depth	Min: -1.02m Max: -0.94m

Project creators

Name of Organisation	MOLA
Project brief originator	CGMS
Project design originator	MOLA
Project director/manager	Mike Smith
Project supervisor	Tim Braybrooke
Type of sponsor/funding body	Northacre PLC
Name of sponsor/funding body	Northacre PLC

Project archives

Physical Archive recipient	LAARC
Physical Archive ID	PCE16
Physical Contents	"Environmental"
Digital Archive recipient	LAARC
Digital Archive ID	PCE16
Digital Contents	"Environmental"
Digital Media available	"GIS","Survey","Text"
Paper Archive recipient	LAARC
Paper Archive ID	PCE16
Paper Contents	"Environmental"
Paper Media available	"Context sheet","Drawing","Photograph","Report","Section","Unpublished Text"

Project bibliography 1

Grey literature (unpublished document/manuscript)

Publication type	
Title	1 Palace Street, London SW1E 6JP - A report on an archaeological evaluation
Author(s)/Editor(s)	Braybrooke, T
Date	2016
Issuer or publisher	MOLA
Place of issue or publication	MOLA
Description	A4 size client unpublished client report
Entered by	Portia Askew (paskew@mola.org.uk)
Entered on	25 February 2016