

**ROYAL OPERA HOUSE (OPEN UP),
CITY OF WESTMINSTER,
WC2E 7AU.**

**ARCHAEOLOGICAL EVALUATION &
WATCHING BRIEF**

REPORT NO.: R11914

NOVEMBER 2014



PRE-CONSTRUCT ARCHAEOLOGY

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THE ROYAL OPERA HOUSE (OPENING UP),
CITY OF WESTMINSTER

EVALUATION AND WATCHING BRIEF

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**ARCHAEOLOGICAL EVALUATION AND WATCHING BRIEF AT THE ROYAL OPERA
HOUSE (OPEN UP), CITY OF WESTMINSTER, WC2E 7AU**

Site Code: ROH14

Local Planning Authority: City of Westminster

Central NGR: TQ 3040 8099

Commissioning Client: Royal Opera House

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1 ABSTRACT

- 1.1 This report details the results and working methods of an archaeological evaluation and watching brief undertaken by Pre-Construct Archaeology Ltd. prior to the proposed Open Up Works for the Royal Opera House, City of Westminster, London, WC2E 7AU.
- 1.2 The fieldwork was carried out between 15th and 29th October 2014. The fieldwork comprised the excavation of four trial pits, one of which was extended into an evaluation trench.
- 1.3 The evaluation and watching brief observed natural horizons of London Clay overlain by terrace gravels and brickearth. The latter was partially truncated by cut features relating to the 18th century occupation and development of the site. These related to former terraces known to have fronted onto Bow Street until their demolition prior to the early 19th century. Demolition horizons reflecting this process were identified, and in turn truncated by 19th century constructions. The latter can be related to modifications to the Royal Opera House/Floral Hall frontage documented from the early to mid 19th century.
- 1.4 All areas were overlain by modern overburden and concrete. Impacts from modern services were most apparent within the eastern limits of the site. Modern made ground extended within all areas to depths of between 2.20m and 3.80m below ground level.

2 INTRODUCTION

- 2.1 An archaeological evaluation and watching brief was undertaken by Pre-Construct Archaeology Ltd. (PCA) during a geotechnical investigation undertaken prior to the proposed Open Up Works for the Royal Opera House, City of Westminster, London WC2E 7AU.
- 2.2 The site was centred at National Grid Reference TQ 3040 8099 and occupies a 6m wide strip of land by 24m in length along Bow Street in front of the Floral Hall part of the Royal Opera House. The main Royal Opera House Building is bound by Covent Garden Market to the south, James Street to the southwest, Floral Street to the northwest, Bow Street to the northeast and Russell Street to the southeast, within the City of Westminster. The works were in an area where it is proposed to extend the existing basement up to the same street frontage as the rest of the Bow Street basement.
- 2.3 PCA was commissioned to undertake the evaluation by Royal Opera House. No Scheduled Ancient Monuments are adjacent to or are contained within the bounds of the site.
- 2.4 The project was undertaken in accordance with an approved Written Scheme of Investigation (Moore, P 2014b).
- 2.5 Following the completion of the project the site archive will be deposited in its entirety with the London Archaeological Archive and Research Centre (LAARC) identified by the unique code ROH 14.
- 2.6 The evaluation was conducted between 15th and 29th October 2014. The project was monitored by Diane Abrams, English Heritage (GLAAS), on behalf of the City of Westminster and project managed for PCA by Peter Moore. The evaluation was supervised by Amelia Fairman and Deborah Kousianellous of PCA.

3 PLANNING BACKGROUND

3.1 National Planning Policy Framework (NPPF)

- 3.1.1 In March 2012 the Department for Communities and Local Government issued the National Planning Policy Framework (NPPF), replacing Planning Policy Statement 5 (PPS5) 'Planning for the Historic Environment' which itself replaced Planning Policy Guidance Note 16 (PPG16) 'Archaeology and Planning'. It provides guidance for planning authorities, property owners, developers and others on the investigation and preservation of heritage assets.
- 3.1.2 In considering any planning application for development, the local planning authority will be guided by the policy framework set by government guidance, in this instance the NPPF, by current Unitary Development Plan policy and by other material considerations.

3.2 Local Guidance: Archaeology and the City of Westminster

- 3.2.1 The relevant Development Plan framework is provided by the City of Westminster Core Strategy, adopted January 2011, which contains the following relevant policies:

POLICY CS24 HERITAGE

Recognising Westminster's wider historic environment, its extensive heritage assets will be conserved, including its listed buildings, conservation areas, Westminster's World Heritage Site, its historic parks including five Royal Parks, squares, gardens and other open spaces, their settings, and its archaeological heritage. Historic and other important buildings should be upgraded sensitively, to improve their environmental performance and make them easily accessible.

Reasoned Justification

The intrinsic value of Westminster's high quality and significant historic environment is one of its greatest assets. To compete effectively with other major, world-class cities the built environment must be respected and refurbished sensitively as appropriate. Any change should not detract from the existing qualities of the environment, which makes the city such an attractive and valued location for residents, businesses and visitors.

Detailed policies for each type of heritage asset will be set out in the City Management Plan. Area-based characteristics and detailed measures required to protect and enhance heritage assets have been set out in Conservation Area Audit Supplementary Planning Documents and the Westminster World Heritage Site Management Plan.

- 3.2.2 The subject site also lies within an Area of Special Archaeological Priority and within conservation area 15 as defined by the City of Westminster Unitary Development Plan and is therefore subject to the following additional policy:

DES 11: SCHEDULED ANCIENT MONUMENTS, AREAS AND SITES OF ARCHAEOLOGICAL PRIORITY AND POTENTIAL

Aim

10.147 To identify archaeological remains of national and local importance, conserve them in their settings, and provide public access to them. Where new development is proposed on sites of archaeological potential, to ensure adequate archaeological impact assessment, followed by appropriate provision for preservation or investigation, recording, and publication.

POLICY DES 11: SCHEDULED ANCIENT MONUMENTS, AREAS AND SITES OF ARCHAEOLOGICAL PRIORITY AND POTENTIAL

(A) Scheduled Ancient Monuments

Permission for proposals affecting the following Scheduled Ancient Monuments, or their settings, will be granted providing that their archaeological value and interest is preserved:

- 1) the Chapter House and Pyx Chamber in the Cloisters, Westminster Abbey
- 2) the Jewel Tower.

(B) Areas and Sites of Special Archaeological Priority and Potential

Permission will be granted for developments where, in order of priority:

- 1) all archaeological remains of national importance are preserved in situ
- 2) remains of local archaeological value are properly , evaluated and, where practicable, preserved in situ
- 3) if the preservation of archaeological remains in situ is inappropriate, provision is made for full investigation, recording and an appropriate level of publication by a reputable investigating body.

POLICY DES 9: CONSERVATION AREAS

Aim

10.108 To preserve or enhance the character or appearance of conservation areas and their settings.

POLICY DES 9: CONSERVATION AREAS

(A) Applications for outline planning permission in conservation areas

In the case of outline planning applications within designated conservation areas it may be necessary to require additional details to be produced in order that the physical impact of the proposed development may be fully assessed.

(B) Planning applications involving demolition in conservation areas

- 1) Buildings identified as of local architectural, historical or topographical interest in adopted conservation area audits will enjoy a general presumption against demolition
- 2) Development proposals within conservation areas, involving the demolition of unlisted buildings, may be permitted
 - a) If the building makes either a negative or insignificant contribution to the character or appearance of the area, and/or
 - b) If the design quality of the proposed development is considered to result in an enhancement of the conservation area's overall character or appearance, having regard to issues of economic viability, including the viability of retaining and repairing the existing building
- 3) In any such case, there should also be firm and appropriately detailed proposals for the future viable redevelopment of the application site that have been approved and their implementation assured by planning condition or agreement.

(C) Planning application for alteration or extension of unlisted buildings

Planning permission will be granted for proposals which

- 1) Serve to reinstate missing traditional features, such as doors, windows, shopfronts, front porches and other decorative features
- 2) Use traditional and, where appropriate, reclaimed or recycled building materials
- 3) Use prevalent facing, roofing and paving materials, having regard to the content of relevant conservation area audits or other adopted supplementary guidance
- 4) In locally appropriate situations, use modern or other atypical facing materials or detailing or innovative forms of building design and construction

(D) Conservation area audits

The existence, character and contribution to the local scene of buildings or features of architectural, historical or topographical interest, recognised as such in supplementary planning guidance, such as conservation area audits, will be of relevance to the application of policies DES 4 to DES 7, and DES 10.

(E) Changes of use within conservation areas

Permission will only be granted for development, involving a material change of use, which would serve either to preserve or enhance the character and appearance of the conservation area, bearing in mind the detailed viability of the development.

(F) Setting of conservation areas

Development will not be permitted which, although not wholly or partly located within a designated conservation area, might nevertheless have a visibly adverse effect upon the area's recognised special character or appearance, including intrusiveness with respect to any recognised and recorded familiar local views into, out of, within or across the area.

(G) Restrictions on permitted development in conservation areas

1) In order to give additional protection to the character and appearance of conservation areas, directions may be made under article 4(2) of the Town and Country Planning (General Permitted Development) Order 1995. Types of generally permitted development to which such directions may apply will include:

- a) painting, cladding or rendering of building facades
- b) insertion or replacement of doors and windows
- c) removal or replacement of boundary walls and fences
- d) alteration of roof profiles and replacement of roofing materials.

2) Such added powers of planning control may be applied to designated conservation areas the subject of adopted conservation area audits or to buildings or groups of buildings therein identified as being of architectural, historical or topographical interest.

3) The existence of such directions will be taken into account in the authorisation of development that may itself be made subject to the removal of permitted development rights, in appropriate individual cases.

3.2.3 In terms of designated heritage assets, as defined above, no Scheduled Ancient monuments, Historic Wreck sites or Historic Battlefields lie within the study site or its immediate vicinity.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

4.1.1 The Geological Survey of Great Britain (Geology Viewer online) shows that the site lies upon the Langley Silt Member, which overlies London Clay.

4.2 Topography

4.2.1 The current ground level slopes from c.22.70m OD from the north of the proposed area to 22m OD to the south.

4.2.2 The site is located approximately 450m north of the River Thames.

4.2.3 A single bench mark was established adjacent to TP04 with the value 22.43m OD.

5 ARCHAEOLOGICAL AND HISTORIC BACKGROUND

5.1 Much archaeological research has been undertaken on the archaeological resource of the area of Lundenwic and its hinterlands. This includes Desk-Based Assessments and major excavation reports including:

- 1999 “Royal Opera House, 45-47 Floral Street/51-54 Long Acre, City of Westminster, London WC2: An Archaeological Assessment”, AOC unpublished report.
- 2002 “Tatberht’s Lundenwic; Archaeological Excavations in Middle Saxon London”, Pre-Construct Archaeology Monograph 2.
- 2003 “Middle Saxon London: Excavations At The Royal Opera House 1989-99”, MoLAS Monograph 15. Much of the archaeological summary below comes from this report and the excavation was immediately adjacent (southwards) to the proposed basement extension. In that adjacent excavation the area nearest the basement extension showed that archaeological deposits, and indeed natural brickearth, had been heavily truncated by later activity, but that island of features and stratigraphy did survive.
- 2012 “Lundenwic: Excavations in Middle Saxon London, 1987-2000”, MoLA Monograph 63.

5.2 Prehistoric

5.2.1 Evidence in the GLHER and excavations indicates that lithics, animal remains, pottery and coins from the prehistoric period have been recovered from within the vicinity, but in very low quantities and often as residual finds in later contexts. There is therefore a low potential that similar material may be present upon this site.

5.3 Roman

5.3.1 The location of the site is removed from the main city of Londinium during the Roman period, and this is reflected in the limited entries in the GLHER from within the study area, and again the low quantities and residual nature of the finds means that there is a low potential for evidence of Roman date to be encountered upon the study site.

5.4 Saxon

5.4.1 The Covent Garden area became the focus of the Middle Saxon port of Lundenwic in the 7th century. The excavations at the adjacent ROH site have set up a Middle Saxon phasing structure which sets the starting point for considering the archaeology at this site. Period 3 (c. AD 600-75); prior to the urbanisation of this area it was used as one of the two known Saxon cemeteries. There is evidence in the form of a number of graves and ring ditches at the ROH, and graves at Floral Street and James Street for the cemetery to be widespread and therefore potentially present at the subject site.

5.4.2 The contemporary settlement spread into the area of the ROH with little regard to the cemetery there and as little as 50 years after some of the internments. A road was established on a NW-SE alignment to the southwest of the site and with 5 buildings on its eastern side, but 4 on an E-W and 1 on a N-S alignment. There was no activity surviving adjacent to the subject site.

5.4.3 The expansion and growth of the settlement is illustrated by Period 4 (c. AD 675-730). Phase 1 of this period began with new, bigger buildings extending closer to the subject site but again on the same alignments. The spaces between the buildings had a greater spread of wells and rubbish pits. By Phase 2 of this period those new buildings closest to the road were parallel or perpendicular to it, while those furthest from it, and closes to the subject site, were retained and on the previous E-W alignments. A concentration of tanning pits in the north corner of the site suggests tanning activity may extend into the subject site.

5.4.4 Period 5 (c. AD 730-70) had three phases of activity. In Phase 1 all the buildings to the east of the road were new and in a denser concentration than before. By Phase 2 many of those buildings had been replaced towards the road, but not towards the subject site, and it is not until Phase 3 that this area is again constructed on.

5.4.5 Period 6 (c. AD 770-850) represents a period of decline for Lundenwic and the vicinity. Only a few buildings and a few pits remain on the site at the beginning of the period and by Phase 2 only a single building remains. The clue to this decline lies with the defensive ditch which follows the alignment of Floral Hall's southern wall. Pottery dates the ditch to after AD 750, and the orientation northwards of the defensive stakes in it show it was defending the area to the south. The subject site is therefore literally beyond the pale of the settlement boundary, but this does not mean that contemporary activities may not have taken place there.

5.5 Medieval and Post-Medieval

5.5.1 The area reverted to fields and low level farming in the medieval period. It was not until the 16th century that the area, and the 17th century that the vicinity, were developed. Away from the Indigo Jones Arcade around the piazza of Covent Garden on the southwest side of the ROH there was smaller scale development with crowded blocks of houses, theatres and other entertainments. The presence of cellars in these buildings to a great degree determines the level to which earlier archaeological remains may survive. The construction of a sequence of every bigger opera house buildings on the site also has significant implications for any archaeological survival. The foundations of the portico of the 1807 built opera house may extend into the northern end of the subject site.

6 ARCHAEOLOGICAL METHODOLOGY

6.1 In accordance with the approved Written Scheme of Investigation (Moore, P 2014b), an archaeological evaluation and watching brief was undertaken. A total of 4 trial pits (TP) and 2 window samples (WS) were excavated. Two (TP02 and TP03) were excavated on east-west alignments to try to locate and identify the numerous services known to exist. The window samples were taken from each of these and recorded. A third trial pit (TP04) was excavated adjacent to the existing ROH external wall to locate and identify shoring supports from previous construction works. The latter was extended into an evaluation trench, and was supplemented by an additional trial pit (TP01) between TP04 and the external ROH wall.

6.2 The dimensions of the trial pits were as follows:

Trial pit	Dimensions E-W (m)	Dimensions N-S (m)	Depth (m)	Ground Level (m OD)
1	1.00	1.54	2.10	22.43
2	4.20	0.60	1.20	22.41
3	3.65	0.60	4.00	22.15
4	2.50	2.00	4.00	22.43

6.3 All trial pits were excavated by hand, other than the upper c.1.5m of the evaluation trench (TP04) which was excavated by machine. All excavation was monitored by the attendant archaeologist until archaeological deposits or features, or natural stratigraphy was encountered.

6.4 The trenches and exposed sections were cleaned by hand, recorded and photographed. Recording of the deposits was accomplished using the Single Context Recording Method on proforma context and planning sheets, as presented in PCA's Operations Manual 1 (Taylor 2009), which is fully compatible with other archaeological archives produced in Greater London. Contexts were numbered and are shown in this report within squared brackets. Plans were drawn at a scale of 1:50 or 1:20 as appropriate and sections at a scale of 1:20.

6.5 The trial pits were located by means of surveyed baselines.

6.6 The completed archive, comprising all written, drawn and photographic records, will be deposited with the LAARC under the unique Site Code ROH 14.

7 ARCHAEOLOGICAL SEQUENCE

7.1 Phase 1: Natural

- 7.1.1 London Clay [20] was identified within window sample 1 in TP02 at 15.18m OD. This was overlain by a loose, reddish yellow sandy gravel [15]. This was identified within TP04 at an uppermost elevation of 18.78m OD and extended over 0.44m in thickness. This horizon was identified within adjacent WS01 and WS02 at approximate elevations of 18.58m OD and 17.55m OD from north to south, with a maximum thickness of 3.40m. The drop in elevation observed within WS02 is both likely a result of an underlying southern declination, towards the river, and compaction of material within the sampling process. The red gravel was overlain by a 0.24m thick horizon of compacted grey gravel [14] from 19.03m OD. The latter was identified only within the evaluation trench/TP04, however, due to the nature of recovery of the window samples this may still extend across the entirety of the excavation area.
- 7.1.2 A brickearth horizon was identified in both TP04 and within the window samples. Within the evaluation trench this was identified from 19.21m OD as deposit [13] and extended between 0.10m and 0.36m in thickness. The lower boundary exhibited a noticeable slope down towards the south and may suggest this is infilling a natural depression or palaeochannel. A comparable brickearth horizon was identified to the east as [19] from 18.78m OD and south of the evaluation trench as [17] from 18.31m OD, and extended up to 0.86m in thickness. The drop in elevation of over 1m from [13] may again represent the underlying topography, sloping towards the river. The horizon identified to the east of the trench extended only 0.20m in thickness and reflects the observations within the evaluation trench, of the layer increasing in thickness towards the south.

7.2 Phase 2: 18th Century

- 7.2.1 Sub-squared pit [9] was identified in the south-eastern corner of the evaluation trench from 19.15m OD. The 0.26m by 0.39m feature extended with steep sides to a concave base, to a maximum depth of 0.19m. The pit had been initially lined with a 40mm thick mortar deposit [8] and subsequently backfilled with dark grey-black fine sandy silt and ash [7]. The latter contained frequent fragments of animal bone, occasional pot sherds dated to the late 18th century and a single large cast iron ballast weight (SF1). The latter appeared to have been placed deliberately at the base of the feature and may have been utilised as support for a later structure, such as within a post-pit. The presence of the weight however, might suggest the date range for this horizon is more of an early 19th century rather than late 18th century, but more work and a wider exposure of features is needed to confirm this.
- 7.2.2 Samples taken from pit fill [7] yielded a wide variety of animal bone with some large fish species, a dermal skate of a thornback ray, in addition to cattle, sheep, domestic bird and game (small thrush and hare). The variety and size of the bones suggested the pit to have been filled with food refuse from a household tending towards some affluence. Also within the samples were numerous small copper alloy pins (SF4, SF5, SF6). These are likely to have been used to pin back or fasten clothing. A small ring of fine copper alloy wire was also recovered (SF7) and is also likely a dress accessory.
- 7.2.3 Cut from the same horizon was a tile lined gully [5] at the northern limit of excavation. The construction cut [6] extended 1.50m in length along an east-west alignment by 0.40m width and 0.25m in depth with concave sides, the base of which was recorded at 18.97m OD. The cut had subsequently been lined with a series of deliberately placed curved pan tiles, each measuring c.370mm by 200mm by 15mm. A few bricks to the north of the feature, along the limit of excavation, suggested this to have been part of a structure which extended to the north of the trench. The tiles were dated between 1630 and 1850, and were subsequently interpreted as a gully at the basement level of one of the former terraced properties known to have existed along Bow Street.

7.3 Phase 3: 19th Century

- 7.3.1 Sealing all earlier features within the evaluation trench were two distinct levelling deposits of demolition rubble. Layers [4] and [3] respectively sealed the trench from 20.23m OD with the combined thickness of c.0.92m. These comprised loose deposits of brown grey silty sand with clay lenses and brick rubble, including large blocks of articulated brickwork, and brown-yellow coarse sand with smaller brick and tile fragments. Pottery sherds recovered from the layers dated between 1580 and 1830, and the bricks were dated between 1690 and 1800. The slightly earlier date range of the bricks supports the interpretation of these deposits representing the demolition of earlier properties. This is likely to indicate the demolition of the earlier terraces lining Bow Street prior to redevelopments associated with the Royal Opera House.
- 7.3.2 A roughly north-south aligned red brick wall [10] was observed within the western limits of TP04 and extended into TP01. This was first observed from 20.73m OD with a founding level of 18.25m OD. The 0.86m wide wall extended to a height of 1.71m (or 23 courses) before corbelling out a further 0.77m in depth. The types of brick and mortar utilised in the construction of [10] inferred a 1750 to 1850 date range. The wall had been laid within construction cut [12] which was first observed at 19.97m OD and extended with vertical sides to a flat base. The cut extended the full length of the trench by 0.70m in width from the eastern face of [10]. The latter had been backfilled with compacted grey-brown, sandy silt and gravel [11] containing brick rubble (dated between 1600 and 1900) and 18th century pottery sherds.
- 7.3.3 A second brick wall [16] was identified to the south of the subject site within TP02. The wall comprised only the corbelled footings measuring c.1.10m in width by 0.60m length and up to 0.30m in height. The brickwork appeared to have been founded at c.22.48m OD, and had been damaged by services to the east and west. The wall was tentatively interpreted as being founded over levelling material [18]. However, the latter was identified within WS02 only and no dating evidence was recovered with which to confirm this interpretation. The bricks from this wall dated the feature to the second half of the 19th century.
- 7.4 Phase 4: Modern**
- 7.4.1 The evaluation trench was overlain by 1.80m of made ground. Layers [1] and [2] were identified from 21.53m OD and contained inclusions of brick rubble, pottery, glass, clay tobacco pipe and shell. A number of finds of note were recovered from uppermost deposit [1]. These included a number of clay tobacco pipe stems with deliberately rounded ends (SF2) and the body and plunger of a bone syringe (SF3) with a decorative finial. The function of the worn clay tobacco pipe (SF2) is uncertain, and it is possible that they were used as a type of gaming piece or modified for use as hair curlers. The discovery of these in the same context as the bone syringe (SF3) might imply these had a medical use. Syringes were used to draw or inject fluids, with applications including cleaning wounds, enemas or the treatment of syphilis.
- 7.4.2 All trial pits were sealed by variable depths of modern overburden containing numerous services (TP01, TP02 and TP03), and concrete. All pits were also sealed by modern paving slabs.

Plate 1: North facing shot of tile gully [5]



Plate 2: East facing shot of brickearth and gravel horizons with pit [9] to south (seen in section)



Plate 3: View to west of brickearth horizon [13] with wall [10], Test pit 04



Plate 4: West facing shot of TP02



Plate 5: View to east of TP03 with WS2



8 INTERPRETATIONS AND CONCLUSIONS

- 8.1 London Clay was identified within window sampling only, overlain by terraced gravels. The gravels exhibited a slight declination from north to south, presumably reflecting the underlying topography and slope down towards the river Thames to the south. A natural brickearth horizon was observed to seal the gravels from an uppermost elevation of 19.21m OD and increased in thickness towards the south of the study site, as identified within window samples. The level is comparable to that observed within adjacent excavations (19.59m OD), though the immediately adjacent brickearth had been heavily truncated). The levels also correspond well to those recorded within earlier trial pitting. Former trial pitting identified brickearth at c.3.60m below ground level, compared to this being identified at between 3.20m and 3.80m below ground level during current investigations.
- 8.2 Truncating the brickearth was a number of 18th century features. These comprised an east-west aligned tile gully and mortar lined pit. The depth of these might suggest they would have lain at basement level within one of the former properties known to have existed along Bow Street. Horwood's map of 1799 (not reproduced) clearly shows a series of terraced properties to the east of the Royal Opera House. It is possible that the pit and the gully represent different phases of use, and a larger exposure/further work in the future may help to refine this phasing further as well as shed more light on the function of each feature. Pottery within later contexts testify to Covent Garden being a centre for leisure in London during this period, with the recovery of tea and dining wares, including a rare stoneware teapot.
- 8.3 Evidence pertaining to 19th century activity comprised an initial deposit of demolition material, presumably related to the destruction of the earlier terrace, known to have been demolished by 1808. This was truncated by a substantial brick wall running roughly parallel to Bow Street. The brickwork dated between the early to mid 19th century, which places it within the time frame for the construction of an earlier Portico for the Royal Opera House. The Portico is illustrated on plans from 1842 and was believed to extend to a depth of 4.5m below ground level. However, the trial pit also lies within the footprint of the first theatre layout (cartographically depicted in 1808), and could relate to an internal feature as part of this. The size and extent of the wall may suggest it to have been load bearing and therefore may argue for the former interpretation rather than the latter.
- 8.4 A second 19th century wall was identified in the south of the study site within TP03. This was located at a much higher level and had been badly damaged by multiple modern services. The only remnants of the wall therefore comprised the corbelled footings, which also ran roughly parallel to Bow Street. Estate plans of 1866 depict an external wall running parallel to Bow Street, adjacent to the Floral Hall. It is possible that the masonry encountered within the trial pit corresponds to this feature, with the higher elevation being due to its construction at ground level, as opposed to a lower basement level.
- 8.5 All trial pits were overlain by modern overburden, concrete and paving slabs. Within TP02 and TP03 these deposits contained multiple modern services and illustrated variable truncation by service trenches.
- 8.6 No evidence relating to the known Middle Saxon settlement was encountered during the course of the investigations. However, the survival of the brickearth would suggest that this is the most likely horizon at which to encounter archaeological features. Evidence pertaining to the Middle Saxon settlement may still preserve in the form of deeper cut features beyond the immediate footprint of the investigations areas observed so far.
- 8.7 It should be noted that the proposed excavation depths (for the Open Up Works) of 17.90m OD and 16.10m OD from north to south can be shown to impact upon this brickearth horizon by over 2m in places, and thus have a considerable impact upon any surviving archaeological features.

9 ACKNOWLEDGEMENTS

- 9.1 Pre-Construct Archaeology would like to thank Royal Opera House for commissioning the archaeological investigations. We would also like to thank Equals Consulting, especially Tony Wilson and Sean Dillon, for their project management. All of the team from Concept Consultants need to be thanked for their excellent work on site, but especially Wilton Bennet and Justyna Edgar. Thanks also go to Diane Abrams for monitoring the work on behalf of the City of Westminster.
- 9.2 The author would like to thank Peter Moore for project management and editing, Deborah Koussiounelos for her work on site, and Mark Roughley for the illustrations.

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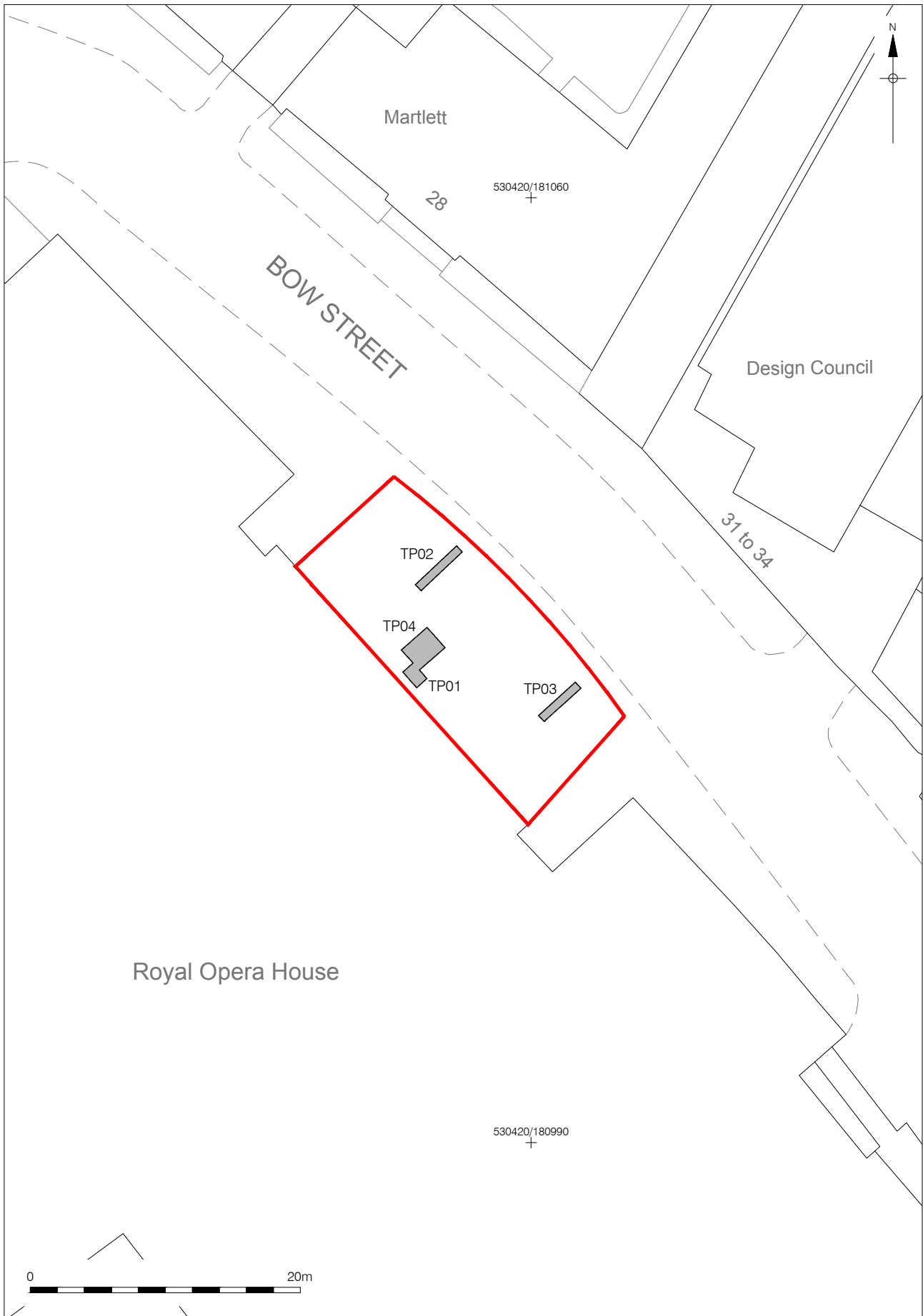


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03/11/14 MR

Figure 1
Site Location
1:12,500 at A4



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03/11/14 MR

Figure 2
Detailed Site plan and Test Pit Locations
1:400 at A4

Based on Malcolm et al, MoLAS Monograph 15, 2003

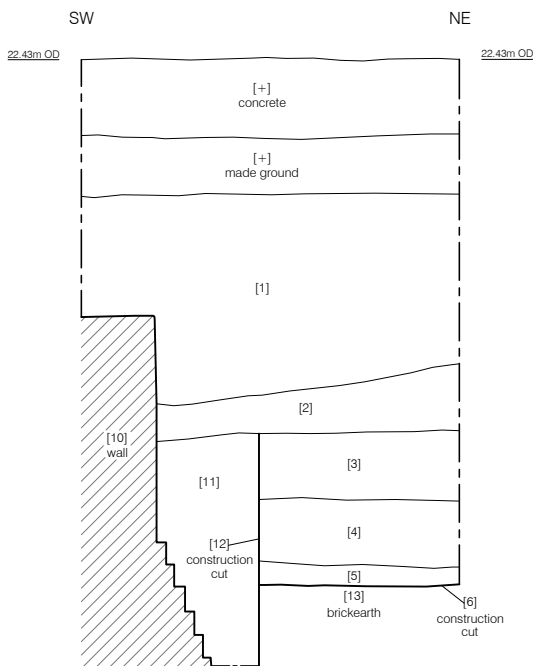
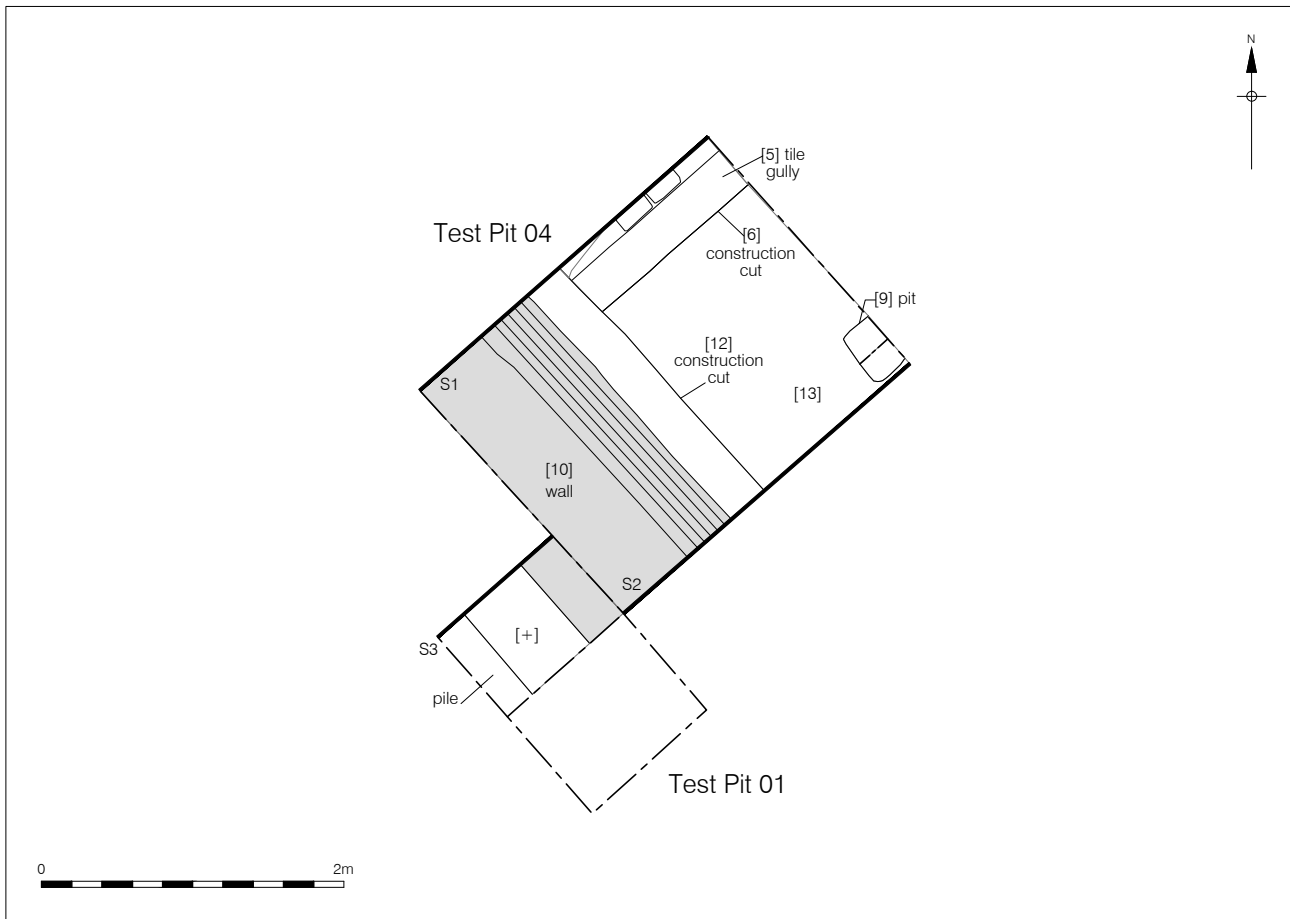


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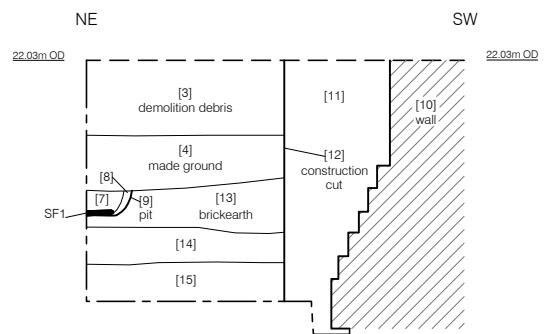
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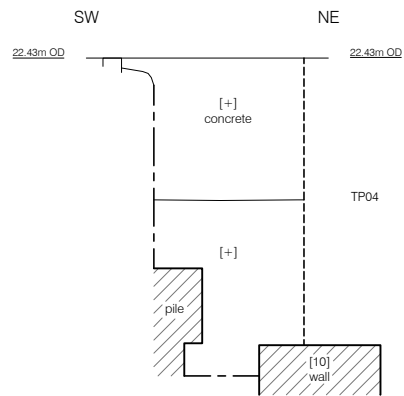
Figure 3
Detailed site location showing previous interventions at the Royal Opera House
1:800 at A4



Section 1
Southeast facing
Test Pit 04



Section 2
Northwest facing
Test Pit 04



Section 3
Southeast facing
Test Pit 01



Figure 4
Test Pits 01 and 04 and Sections 1-3
1:50 at A4

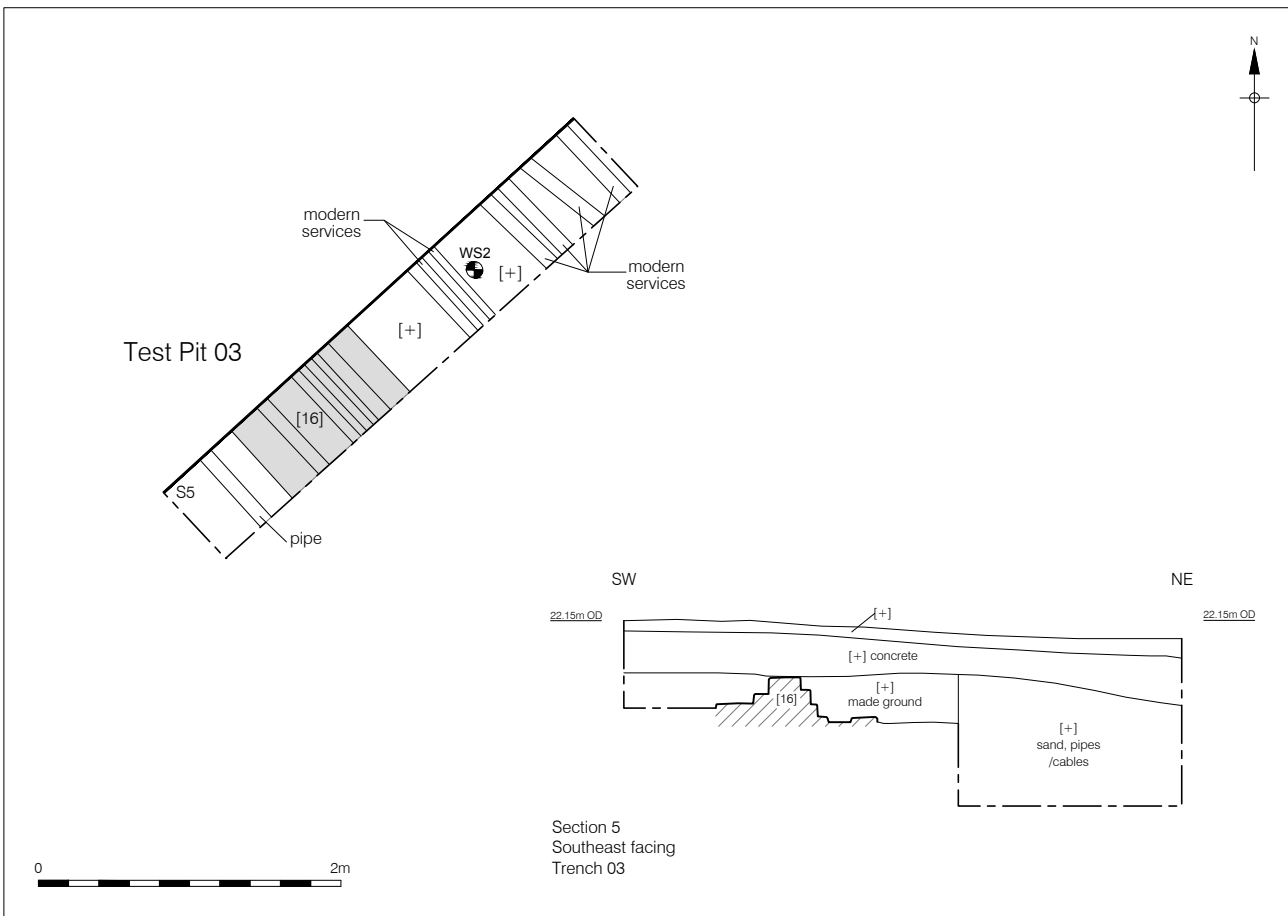
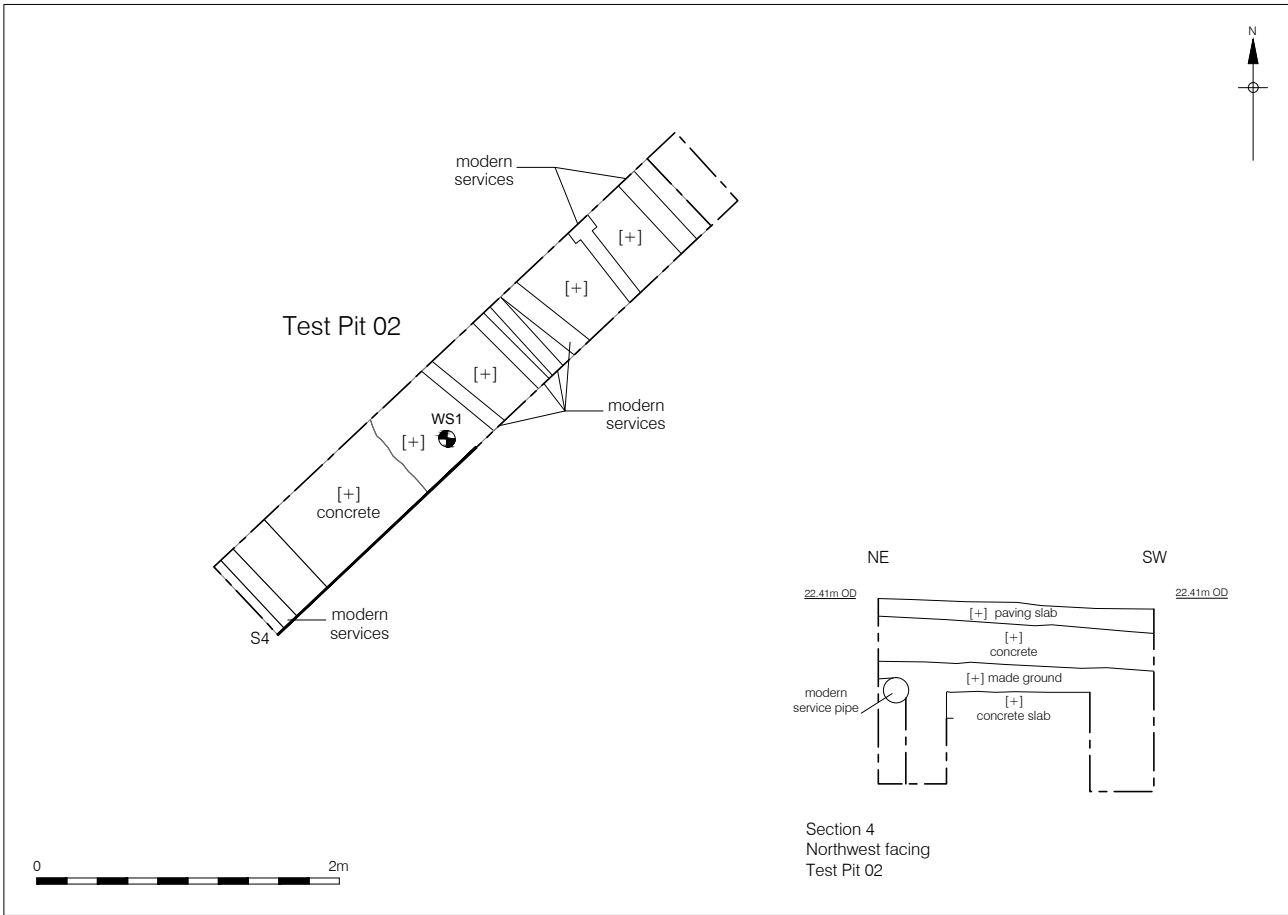
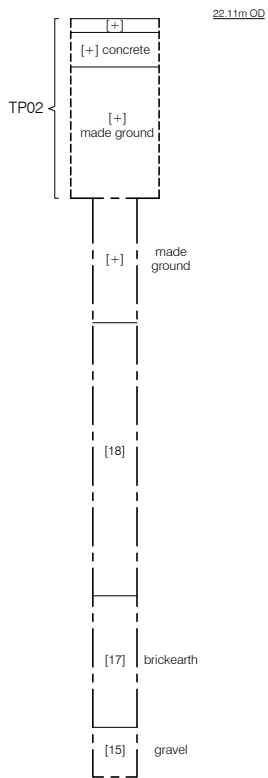
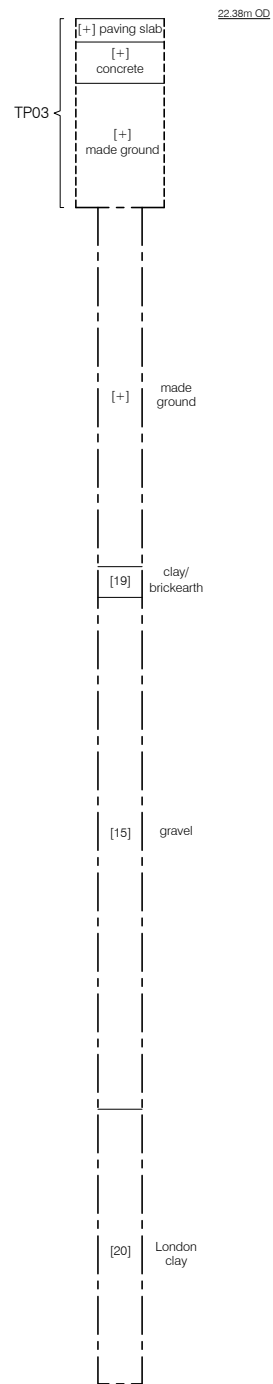


Figure 5
Test Pits 02 and 03 and Sections 4-5
1:50 at A4



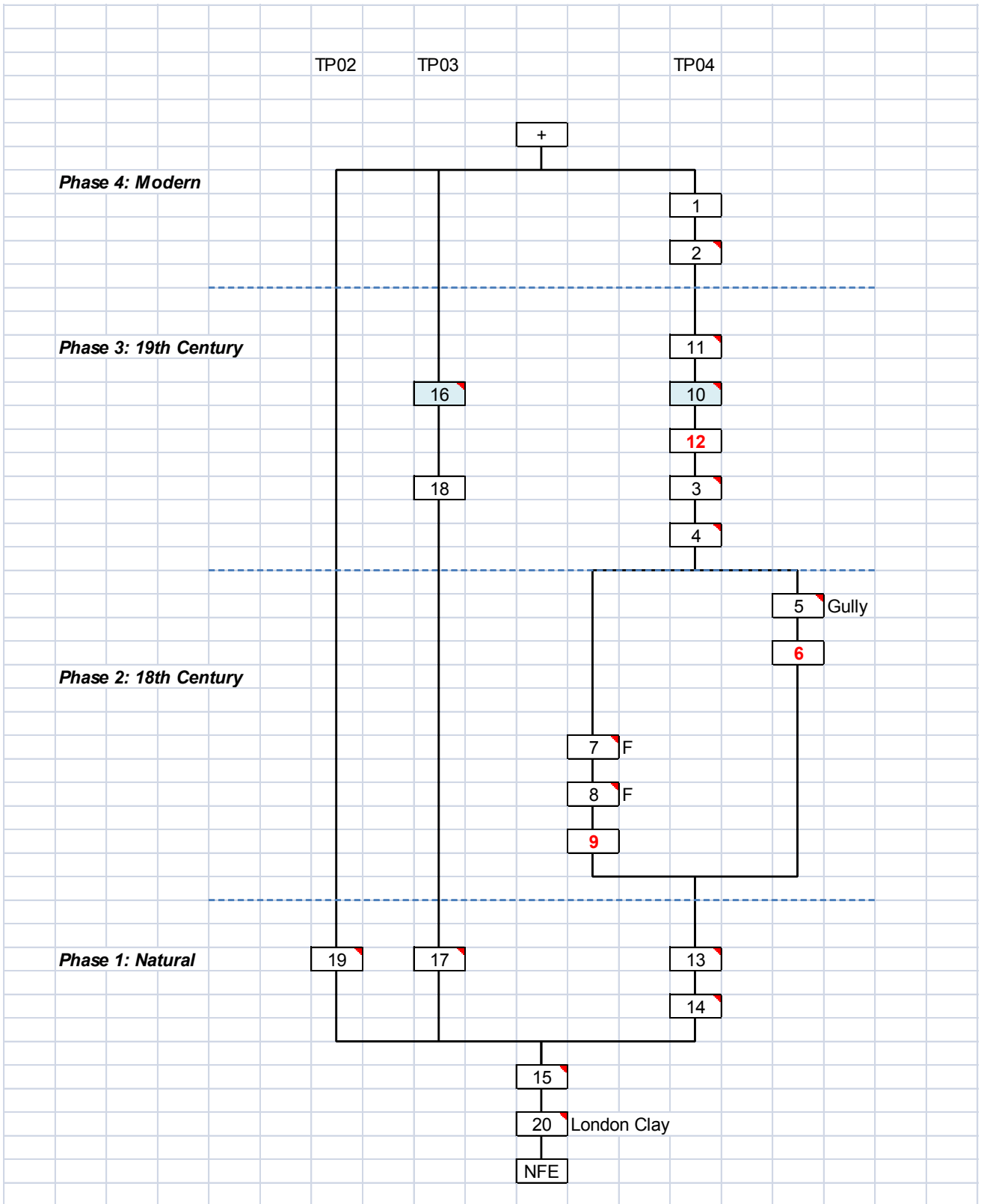
Window sample 1
Test Pit 02



Window sample 2
Test Pit 03



APPENDIX 1: PHASED MATRIX



APPENDIX 2: CONTEXT INDEX

Site Code	Context No.	Plan	Section / Elevation	Type	Description	Date	Phase
ROH-14	1	n/a	1	Layer	Yellow grey coarse sandy with shells/charcoal; Made Ground	Modern	4
ROH-14	2	n/a	1	Layer	Grey brown clay sand with CBM/bone; Made Ground	Modern	4
ROH-14	3	n/a	1; 2	Layer	Brown yellow coarse sand with CBM/pot; Brick rubble levelling	19th Century	3
ROH-14	4	n/a	1; 2	Layer	Brown grey coarse silty sand with CBM rubble; Demolition rubble	19th Century	3
ROH-14	5	5	1	Masonry	Red tile gully extending east-west	18th Century	2
ROH-14	6	6	n/a	Cut	Construction cut for gully [5]	18th Century	2
ROH-14	7	9	2	Fill	Grey black sandy silt with bone/pot; Fill of pit [9]	18th Century	2
ROH-14	8	9	2	Fill	Mid grey sandy mortar with chalk flecks; Fill of pit [9]	18th Century	2
ROH-14	9	9	2	Cut	Sub-squared pit with concave sides	18th Century	2
ROH-14	10	10	1; 2	Masonry	Red brick wall, aligned north-south	19th Century	3
ROH-14	11	n/a	1; 2	Fill	Grey brown sandy silt and gravel with CBM rubble; Fill of construction cut [12]	19th Century	3
ROH-14	12	10	1; 2	Cut	Construction cut for wall [10]	19th Century	3
ROH-14	13	13	1; 2	Layer	Brown yellow silty clay; Brickearth	Natural	1
ROH-14	14	14	2	Natural	Compact yellow grey gravel	Natural	1
ROH-14	15	Post-ex	2	Natural	Loose, red orange gravel	Natural	1
ROH-14	16	TP03	5	Masonry	Red brick wall, aligned north-south	19th Century	3
ROH-14	17	n/a	n/a	Layer	Brickearth, same as [13]	Natural	1
ROH-14	18	n/a	n/a	Layer	CBM rubble levelling	19th Century	3
ROH-14	19	n/a	n/a	Layer	Brickearth, same as [13]	Natural	1
ROH-14	20	n/a	n/a	Natural	London Clay	Natural	1

APPENDIX 3: OASIS REPORT FORM

OASIS ID: preconst1-194001

Project details

Project name Royal Opera House, City of Westminster, WC2E 7AU: An Archaeological Evaluation and Watching Brief

Short description of the project A total of four trial pits were excavated prior to proposed Open Up Works along the Bow Street frontage of the Royal Opera House, City of Westminster. Three of these were to investigate structural elements or extant services, and fourth extended into an evaluation trench. An additional two window samples were also excavated. These investigations identified natural London Clay overlain by gravels and brickearth. The latter had been truncated by a number of features relating to the 18th century development of the site, corresponding to a former line of terraced properties. These features were overlain by 19th century demolition rubble and masonry believed to represent modifications to the Royal Opera House. All excavation areas were subsequently overlain by variable depths of modern made ground.

Project dates Start: 15-10-2014 End: 29-10-2014

Previous/future work Yes / Yes

Any associated project reference codes ROH14 - Sitecode

Type of project Recording project

Site status Conservation Area

Site status Area of Archaeological Importance (AAI)

Current Land use Other 11 - Thoroughfare

Monument type PIT Post Medieval

Monument type WALL Post Medieval

Monument type GULLY Post Medieval

Significant Finds	WEIGHT Post Medieval
Significant Finds	SYRINGE Post Medieval
Significant Finds	POT Post Medieval
Significant Finds	BRICK Post Medieval
Significant Finds	TILE Post Medieval
Significant Finds	PIN Post Medieval
Investigation type	"Part Excavation","Watching Brief"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	GREATER LONDON CITY OF WESTMINSTER CITY OF WESTMINSTER Royal Opera House, City of Westminster, WC2E 7AU
Postcode	WC2E 7AU
Study area	144.00 Square metres
Site coordinates	TQ 3040 8099 51.5122707691 -0.120620456605 51 30 44 N 000 07 14 W Point
Height OD / Depth	Min: 18.31m Max: 19.21m

Project creators

Name of Organisation		Pre-Construct Archaeology Limited
Project originator	brief	Pre-Construct Archaeology Limited

Project originator	design	Peter Moore
Project director/manager		Peter Moore
Project supervisor		Amelia Fairman
Type of sponsor/funding body		Private Client
Name of sponsor/funding body		Royal Opera House

Project archives

Physical recipient	Archive	LAARC
Physical Archive ID		ROH14
Physical Contents		"Animal Bones","Ceramics","Environmental","Glass","Metal"
Digital recipient	Archive	LAARC
Digital Archive ID		ROH14
Digital available	Media	"Images raster / digital photography","Spreadsheets","Survey","Text"
Paper recipient	Archive	LAARC
Paper Archive ID		ROH14
Paper available	Media	"Context sheet","Correspondence","Diary","Drawing","Map","Matrices","Report","Section","Unspecified Archive"

Project

bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Royal Opera House (Open Up), City of Westminster, WC2E 7AU: An Archaeological Evaluation and Watching Brief
Author(s)/Editor(s)	Fairman, A
Date	2014
Issuer or publisher	Pre-Construct Archaeology Ltd
Place of issue or publication	London
Description	A4 folio

Entered by Amelia Fairman (afairman@googlemail.com)

Entered on 7 November 2014

APPENDIX 4: POST-ROMAN POTTERY

Post-Roman pottery assessment (ROH14), Chris Jarrett

Introduction

A small sized assemblage of pottery was recovered from the site (1 box). The pottery dates only from the post-medieval period. The material is in a fragmentary state consisting of sherd material although vessel types could be identified, while the ceramics are not abraded and therefore likely to have been discarded soon after breakage. The pottery was quantified using sherd counts (SC), estimated number of vessels (ENV) and weight, measured in grams. Post-Roman pottery was recovered from five contexts and individual deposits produced only small (fewer than 30 sherds) sized groups.

All of the pottery (33 sherds, 25 ENV and weighing 866g, of which none was unstratified) was examined macroscopically and microscopically using a binocular microscope (x20), and recorded in an ACCESS database, by fabric, form and decoration. The classification of the pottery types is according to the Museum of London Archaeology. The pottery dates to the 17th and 18th centuries and it is discussed by its types and distribution.

The Pottery Types and their forms

The forms present in the assemblage cover a diverse range of functions and were recovered from context [1] unless otherwise stated. The only obvious kitchen forms are two pipkins, identified as the distinctive tubular handles made in Surrey-Hampshire border redware (RBOR) and probably of a 17th century date. Table wares are noted as a medium rounded bowl made in tin-glazed ware (TGW H), while sherds of bowls or dishes are noted in Creamware and Surrey-Hampshire border redware (both found in context [3]), while a charger is recorded in TGW D. Plates only occurred as two items and both were made in tin-glazed ware (TGW; H). Jugs were found in Creamware, besides a basal sherd in biscuit-fired tin-glazed ware with a large leaf shape applied on the basal sherd. The occurrence of the latter is unusual in the Covent Garden area is unexpected as it is not located away from the main area of the pot houses making this pottery type: Aldgate and the Hermitage basin to the east (and north of the Thames) and notably so along the Southwark waterfront. Tea wares were only present in stoneware fabrics and occurred as a tea bowl and teapot lid made in White salt-glazed stoneware, in addition to the very rare occurrence of a teapot made in London stoneware. The only pharmaceutical form is noted as an ointment pot made in plain blue tin-glazed ware.

Chamber pots are the only sanitary form recorded and these occur in only two fabrics: firstly as two examples in Surrey-Hampshire border whiteware with clear (yellow) glaze (BORDY) and secondly as the only imported ware in the assemblage: Westerwald stoneware (WEST). Post-medieval redware occurred as only two forms, firstly as a horticultural flower pot, with family sherds of the same vessel found in contexts [3] and [4] and secondly as a rounded jar used for storage and found in context [7]. A sherd of a probable drinking form was recorded in Westerwald stoneware (context [3]), although this was in a heavily heat altered or burnt state.

Pottery type	Fabric code	ED approx	LD approx	SC	ENV	Weight (g)
London						
London stoneware	LONS	1670	1926	1	1	53
London-area post-medieval redware	PMR	1580	1900	12	4	364
English tin-glazed ware	TGW	1570	1846	1	1	7
London biscuit-fired tin-glazed ware	TGW	1570	1846	1	1	49
	BISC					
London tin-glazed ware with plain pale blue glaze	TGW	1630	1846	1	1	10
	BLUE					
London tin-glazed ware with blue- or polychrome-painted decoration and external lead glaze (Orton style D)	TGW D	1630	1680	1	1	7
London tin-glazed ware with pale blue glaze and dark blue decoration (Orton and Pearce style H)	TGW H	1680	1800	2	2	26
Britain						
Creamware	CREA	1740	1830	3	3	36
White salt-glazed stoneware	SWSG	1720	1780	3	3	26
Surrey-Hampshire border						
Surrey-Hampshire border whiteware with clear (yellow) glaze	BORDY	1550	1700	2	2	68
Surrey-Hampshire border redware	RBOR	1550	1900	4	4	175
Germany						
Westerwald stoneware	WEST	1590	1900	2	2	45

Table 1. ROH14. Post-medieval pottery types, their sources and quantification by sherd count (SC), estimated number vessels (ENV) and weight.

Distribution

The pottery was recovered from Phases 2-4 and its distribution is shown in Table 2. The pottery is further discussed briefly by phase.

Phase 2

The only context to produce pottery in this phase was fill [7] of pit [9] which has recorded only sherds of a PMR jar, broadly dated 1580-1900, although the good, oxidised firing of the vessel suggests an 18th or 19th century date.

Phase 3

Pottery was found in layers [3] and [4] and fill [11] of the construction cut [12]. Only a sherd of a PMR flower pot was noted in context [4] and part of the same vessel was noted in layer [3]. The latter additionally contained a sherd of a 17th or 18th-century burnt Westerwald stoneware drinking form and a sherd of a Creamware bowl or dish, the latter fabric dating the context to c. 1760-1830.

Context	Phase	Assemblage size	Assemblage		Weight (g)	Context		Pottery (and forms)	Context considered date
			SC	ENV		ED	LD		
1	4	S	18	18	518	1740	1830	BORDY (chamber pot), CREA (jug), LONS (tea pot), PMR, SWSG (tea bowl, teapot lid), TGW (plate), TGW BISC (jug), TGW BLUE (ointment pot), TGW D (charger), TGW H (bowl, plate), WEST (chamber pot)	1740-1780
3	3	S	4	4	163	1760	1830	CREA (bowl or dish), PMR (flower pot), WEST (drinking form)	1760-1830
4	3	S	1	1	58	1580	1900	PMR (flower pot)	1580-1900
7	2	S	9	1	67	1580	1900	PMR (jar)	18th-19th century
11	3	S	1	1	60	1550	1900	RBOR	18th century

Table 2. ROH14: Distribution of the pottery showing for each context which produced pottery, the phase, the assemblage size, the number of sherds (SC), estimated number of vessels (ENV) and weight, the date range of the latest pottery type (context ED/LD), the pottery-types and their forms and a considered date for deposition.

Phase 4

Only a single context containing pottery was found in this phase: layer [1]. The pottery types found in this deposit dated to the 17th and 18th century, although the latest fabrics (Creamware and white salt-glazed stoneware) indicated a c. 1740-80 deposition date.

Significance and potential for the assemblage and recommendations for further work

The pottery has some significance at a local level and occurs as pottery types found in the City of London. It is surprising that no Middle Saxon pottery was recovered from the site considering that the study area lay at or near to the core of Lundenwic (Middle Saxon London) and adjacent to a major excavation of this settlement (Malcolm and Bowsher 2003). However, the post-medieval pottery does possibly reflect something of late 17th and 18th-century Covent Garden for being a centre for leisure in London for the occurrence of tea and dining wares, the London stoneware teapot being a rare find. Very little of post-medieval Covent Garden and its role in London's leisure infrastructure has been published archaeologically in any depth (see Haslam et al 2012) and the pottery recovered from future archaeological work on the site may provide further important information relating to activities.

The main potential of the pottery is to date the contexts it was recovered from and relate it to activities on the study area. There are no recommendations for further work at this stage, although the importance of the pottery from the evaluation should be reviewed in the light of new material recovered from future archaeological work undertaken on the site.

References

Malcolm G. and Bowsher, D. 2003 Middle Saxon London: Excavations at the Royal Opera House 1989-1999. MoLAS Monograph 15, 225-41.

Haslam, A. Riddler, I and Trzaska-Nartowski N. 2012 'Middle Saxon comb manufacture in Lundenwic and post-medieval Covent Garden: excavations at 15-16 Bedford Street and 27 James Street, Westminster', Transactions of the London and Middlesex Archaeological Society 63, 97-204.

APPENDIX 5: CLAY TOBACCO PIPE

Clay Tobacco Pipe Assessment (ROH14), Chris Jarrett

Three fragments of clay tobacco pipe were recovered from the archaeological evaluation and recovered from two contexts, both found in Phase 4. The earliest deposit to produce clay tobacco pipes was layer [2] which contained a single heeled OS12 bowl (Oswald 1975) dated 1730-80. Sealing the latter, layer [1] contained two stems (SF2), both with fine bores; although one is of medium thickness and the other is of thin/medium thickness and both are broadly dated c.1730-1910. Of interest is the fact that these two items have been modified with both ends of each stem being rounded and the surfaces are worn and have a soapy feel. It is uncertain what use these stems were used for, although one possibility is that they were used as a type of gaming piece or even possibly modified for use as hair curlers. The occurrence of the stems with a bone syringe (see Gaimster, Appendix 9) might imply that they had a medical use.

The clay tobacco pipe bowl has little significance and its main potential is to date the deposit it was recovered from. The clay tobacco pipe stems are of interest and these modified items require further research into their possible uses. At this stage, there are no recommendations for further work on the material, although its importance should be reviewed if new material results from further archaeological work on the site.

Bibliography

Oswald, A. 1975, Clay pipes for the Archaeologist, British Archaeological Reports, British series, No.14.

APPENDIX 6: GLASS

Glass assessment (ROH 14), Chris Jarrett

A small sized assemblage of glass was recovered from the site (one box). The glass dates solely to the post-medieval period and more so the 18th and possibly the 19th century. None of the fragments show evidence for abrasion and were probably deposited rapidly after breakage or being discarded. Natural weathering was noted upon a small number of vessels and this reflects burial conditions and the composition of the glass. The material is in a fragmentary state although some of the assemblage could be assigned to a vessel shape. The glass was quantified by the number of fragments, minimum number of vessels (MNV) and weight, measured in grams. The assemblage was recovered from five contexts as small (fewer than 30 fragments) sized groups. All of the glass (six fragments/6 MNV/173g, of which none are unstratified) was recorded in an ACCESS database, by type, colour, form and manufacturing technique. The assemblage is domestic in nature and it is discussed by vessel shapes and its distribution.

The forms

The composition of the glass assemblage forms are as follows:

English wine bottle: three fragments, 3 MNV, 135g

Vessel glass: two fragments, 2 MNV, 37g

Window glass: one fragment, 1 MNV, 1g

English wine bottle

Pale olive green soda glass, iridescent, free-blown. Rim: everted with a rounded string finish immediately below the simple rim. One fragment, 1 ENV, 52g. c. 1680-90. Context [1].

Pale olive green high-lime low-alkali (HLLA) glass, free-blown. Base fragment with a wide rounded 'foot ring' and a rounded kick, possible onion-type wine bottle. One fragment, 1 ENV, 32g. Late 17th-early 18th century. Context [2].

Dark olive green high-lime low-alkali (HLLA) glass, free-blown. Base fragment with a rounded 'foot ring' and a rounded kick. One fragment, 1 ENV, 32g. 18th-early 19th century. Context [4].

Vessel glass

Clear soda glass, iridescent, free-blown, weathered. Flaring wall fragment from a drinking form, such as an ale glass. One fragment, 1 ENV, 5g. 18th century. Context [3].

Clear lead glass, slightly iridescent, free-blown. Base, rounded with a slight kick and pontil scar, globular profiled wall fragment. One fragment, 1 ENV, 32g. Late 17th-early 19th century. Context [11].

Window glass

Clear soda glass, iridescent, weathered. Thin walled. Post-medieval. Context [1]

Distribution

The glass was recovered from Phases 3 and 4 and its distribution is shown in Table 1.

Context	Phase	No. of frags	MNV	Weight (g)	Forms	Context considered date
1	4	2	2	53	English wine bottle, window glass	Late 17th-early18th century
2	4	1	1	32	English wine bottle	Late 17th-early18th century
3	3	1	1	5	Vessel glass	18th-19th century
4	3	1	1	51	English wine bottle	18th-19th century
11	3	1	1	32	Vessel	Late 17th-early18th century

Table 1. ROH13. Distribution of the glass showing for each context the glass was recovered from the phase, the fragment count, minimum number of vessels (MNV), weight, the forms present and a context considered date (spot date).

Phase 3

Layer [4] produced a base of a wine bottle probably dated to the 18th-19th century and sealing the latter, layer [3] produced a fragment of clear soda vessel glass, probably from a drinking form and it was broadly dated to the 18th-19th century. Fill [11] of the construction cut [12] contained a basal fragment of a globular vessel made in clear lead glass, possibly dated to the late 17th-early 18th century.

Phase 4

Layer [2] and sealing it, layer [3], both contained fragments of wine bottles dated to the late 17th-early18th century.

Significance, potential and recommendations for further work

The glass assemblage has little significance at a local level, being on the whole frequent forms found in post-medieval London. However, the globular shaped vessel recovered from context [11] is unusual and merits further research. The main potential of the glass is to broadly date the contexts it was recovered from. There are no recommendations for further work on the assemblage, although the importance of this material should be reviewed in the light of more glass being excavated if further archaeological work is under taken on the site.

APPENDIX 7: CERAMIC BUILDING MATERIAL

Building Materials Spot Dates, Kevin Hayward

Royal Opera House ROH14

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
2	2276; 2586; Stoneware glazed pipe	Post medieval peg tile some of it burnt	7	118 0	1950	1800	1950	1800- 1950	No mortar
3	2586	Post medieval burnt peg tile	1	118 0	1800	1180	1800	1500- 1800	No mortar
4	3065; 3046nr306 5	Early post medieval complete brick and floor tile sandy local fabric	2	145 0	1900	1690	1900	1690- 1800	No mortar
5	2279	Large group of pan tile possibly associated with a drain	9	163 0	1850	1630	1850	1700- 1850	No mortar
8	3101	Dump of loose sandy lime mortar with large chalk lumps	1						1500-1800
10	3032; 3101	Narrow small post great fire brick thick coating of a hard concrete like woody mortar	1	166 4	1900	1664	1900	1780- 1850	1800-1900
11	2276	Burnt post medieval peg tile	3	148 0	1900	1480	1900	1600- 1900	No mortar
16	3032; 3101	Narrow post great fire brick hard Portland cement	1	166 4	1900	1780	1900	1850- 1900	1840-1900+

Review

This small assemblage (25 fragments 16kg) contains only later post medieval peg tile, floor tile and brick.

A poorly made shallow un-frogged red brick with a sunken margin from demolition rubble [4] is probably the earliest item of building material from the site dating to 1550-1700. Although red bricks continue to be produced into the 18th and 19th century outside the confines of the City of London, (K.Sabel pers. comm.), the form (sunken margin) and size (<58mm depth) is typical of an earlier post medieval date. Also of interest from this feature is a rare locally produced floor tile possibly even a drain tile.

Masonry feature [5] is constructed out of curved pan tile which dates it between 1630 and 1850. With the other two masonry features, the red-brick wall [10] is constructed out of a post great fire brick with a hard concrete mortar that is typical of 19th century production. Furthermore the narrow brick dimensions conform to the brick tax regulations brought in after 1780 (see below).

Brick size regulation Act: took effect July 1777, first blanket national legislation. Min. size of bricks at 8 ½ x 4 x 2 ½ ". Last legislation on sizes until the 20th century, remained in force until the 19th century	216 x 101.5 x 63.5	Parliament (Act)
--	--------------------	------------------

The brick from [16] is wider and a dark Portland type cement and dates to the second half of the 19th century.

Significance and potential for assemblage and recommendations for further work

Most of the ceramic building material assemblage represents only the later 18th and 19th century activity of the site. Walls [10] [16] and the pan tile drain [5] are 19th and 18th century respectively and consequently as little intrinsic value other than to date the later phases of occupation of the site. The only items of interest are a Tudor-Stuart red brick and a rare locally produced unglazed floor tile from a 19th century demolition layer [4] which attest to earlier occupation in and around the general area of the Royal Opera House.

No further work recommended.

APPENDIX 8: ANIMAL BONE

Assessment of animal bone recovered from An Archaeological Evaluation at the Royal Opera House, City of Westminster, WC2E 7AU (ROH14), Kevin Rielly, November 2014

Introduction

The evaluation consisted of four trial pits, one of which was extended into a trial trench. These provided evidence for the 18th century development of this locality as shown by a number of features cutting into the underlying natural gravel river terraces. These features were overlain with demolition deposits, which were truncated by 19th century construction works, probably related to early 19th century modifications of the Royal Opera House/Floral Hall frontage. Animal bones were limited to two samples taken from the fill [7] of pit [9], representing one of the 18th century cut features.

Description of faunal assemblage

The site assemblage amounted to 64 fragments, all from pitfill [7], incorporating 35 from Sample 1 and 29 from Sample 2. Each provided a diverse range of food species, as shown in Table 1.

Sample:	1	2	Total
Species			
Cattle-size	2	3	5
Sheep/Goat	3	1	4
Sheep-size	4	4	8
Hare		1	1
Mallard	2		2
Small thrush	4		4
Fish	20	20	40
Grand Total	35	29	64

Table 2. Distribution of animal bones within each sample taken from pitfill [7]

A large proportion of the bones were identified as fish vertebrae and head parts, clearly representing one or more notably large fish. In addition there was a dermal skate of a thornback ray in the second sample. Further information concerning the fish (species identification) will be carried out following the next incursion. As well as the fish, there were bones representing the usual mammalian domesticates – cattle (the cattle-size portion) and sheep, plus a probable domestic bird (mallard) and game (small thrush and hare). The thrush bones comprised a small number of leg and wing parts, possibly part of the same adult specimen.

Conclusions and recommendations for further work

These few bones undoubtedly represent food waste, probably dumped from one or more of the residences formerly fronting onto Bow Street (these demolished in the 19th century). The wide range of species and perhaps the size of the fish may suggest a household tending towards some affluence. This tentative conclusion could be enhanced following further excavation and the recovery of a larger quantity of bone dating to this period. The importance of these and further post-medieval collections from this site cannot be too forcefully stated, especially in the light of previous prioritization of Saxon levels from other excavations in this general area.

APPENDIX 9: SMALL FINDS

The Metal and Small Finds, Märit Gaimster

Around 60 individual metal objects or small finds were retrieved from the excavations; they are listed in the table below.

The majority of objects came from a Phase 2 context, dating from the 18th century, and included numerous copper-alloy pins retrieved from samples. All pins have wound-wire heads, cramped into a neat globular shape in a manner characteristic of the period (Caple 1991, 246). One of the pins is larger and sturdier (sf 4); it is slightly bent from use, and would have been used to pin back or fasten clothing. The remainder of the pins are small and made of very fine wire and would have been used for a variety of purposes, including dress making and to pin and fasten clothes (sf 5–6). Some of the pins have a white-metal coating, while others retain some of the original copper-alloy surface. Interestingly, references to pins in the early modern period mentions a range of different types, including white, red and black pins. It is possible that the white pins in documentary sources refer to tinned examples, while the red pins may be those of plain copper alloy; in addition, we know that iron pins were also manufactured and, while they rarely survive in the archaeological record, they may have been referred to as black pins (Egan and Forsyth 1997, 222–24). At the Royal Opera House, the pins were associated with small corroded lumps of iron, some of which may be remnants of iron pins. There was also the fragment of a small ring of fine copper-alloy wire, also likely a dress accessory (sf 7).

A substantial cast-iron ballast weight, with a slot for sliding onto a bar, was also retrieved from the same context as the pins (sf 1). The function and date of this weight is not clear, and it may be intrusive here.

Two finds came from the modern context [1], where they are likely residual. One is the body and plunger of a bone syringe with a decorative finial (sf 3), but the syringe would also originally have had a nozzle. Syringes were used to draw or inject fluids, with applications including cleaning wounds, enemas or the treatment of syphilis. The same context also produced two tobacco clay-pipe stems, adapted for secondary use (sf 2). Both ends of the stems have been filed and smoothed, while the body surface appears polished from handling. The secondary function of the pipe stems is not known, but they may have been used, not unlike the syringe, either to blow or draw fluid or to stir or grind powder and liquid. Whether they too had some form of medical use is not clear.

Recommendations for further work

The metal and small finds form an integral component of the site archive and should, where relevant, be included in any further publication of the site. For this purpose, further research into the use and function of bone syringes should be undertaken, and the possible use of the adapted tobacco clay-pipe stems should be investigated. The possible fragments of iron dress pins require x-ray for further identification. The large cast-iron weight should be identified and dated.

References

- Caple, C. 1991. "The Detection and Definition of an Industry: The English Medieval and Post Medieval Pin Industry", *Archaeological Journal* **148**, 241-55
- Egan, G. and Forsyth, H. 1997. 'Wound Wire and Silver Gilt: changing fashions in dress accessories c.1400– c.1600', 215–38 in D. Gaimster and P. Stamper (eds), *The Age of Transition. The Archaeology of English Culture 1400-1600*. The Society for Medieval Archaeology Monograph 15, Oxbow Monograph 98. Exeter.

context	sf	description	pot date	recommendations
1	2	two reworked stems of clay tobacco pipe; both ends filed smooth and bodies smooth and polished from handling; L 55 and 110mm	1740-1780	further ident
	3	bone syringe; delicate cylindrical body threaded at both ends; incomplete threaded disc for plunger which is complete with double-conical finial and threaded tip for a plug; L 63mm; diam. 43mm	1740-1780	further ident
7	1	cast-iron weight, to slide onto a bar and hook for suspension; diam. 200mm; slot 40 x 120mm; wt. 450g	n/a	further ident

	4	sturdy copper-alloy pin with globular head, Caple Type C; L 63mm	n/a	
	5	at least seven fine copper-alloy pins, Caple Type C; some tinned examples; L 22–25mm; from sample <1>	n/a	
		?iron pins; seven small corroded lumps; from sample <1>	n/a	x-ray
	6	fine copper-alloy pins; at least 30 Caple Type C, both plain and tinned examples present; L 22–35mm; from sample <2>	n/a	
	7	ring of fine copper-alloy wire; incomplete; diam. c. 11mm; from sample <2>	n/a	
		?iron pins; ten small corroded lumps; from sample <2>	n/a	x-ray

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