

**THAMES WATER MAINS REHABILITATION
WORKS – CROUCH HILL 57, HUGGIN HILL,
LONDON EC4V 4AY**

An Archaeological Watching Brief



May 2018

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Site code: HGN18
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SMC ref: S00188849

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Abstract

Between the 29th March and 30th April 2018 Compass Archaeology conducted an Archaeological Watching Brief located at Huggin Hill, City of London EC4V 4AY, during groundworks associated with the connection of 4 water mains installed in 2008 as part of the Crouch Hill 57 Victorian Mains Replacement Scheme. The watching brief was commissioned by SMB JV following recommendations from Historic England, due to the site being located within the Scheduled Ancient Monument of Huggin Hill Roman Bath House 120m WNW of St James's Church (LO160).

The groundworks comprised a single trench located within the cycle way of Upper Thames Street, at the southern end of Huggin Hill. The trench measured 6m in length (E-W) x 2m in width x 0.5-1.0m in depth (c6.5 – 6mOD).

The stratigraphy comprised the modern road surface and bedding layer overlying a homogenous deposit of post-medieval made ground. The material consisted of a dark brown soil abundant with fragments of stone, gravel and lesser quantities of ceramic building material. The deposit had been truncated on at least nine occasions by post-medieval and modern services running north-south and east-west through the trench.

A small section on the northern side of the trench was re-excavated to accommodate a fourth connection, and a similar stratigraphy was recorded.

No finds or features of archaeological interest, particularly associated with the Scheduled Ancient Monument or later development of the area, were observed.

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1 INTRODUCTION

- 1.1 This document forms a summary of the results of an archaeological watching brief conducted at Huggin Hill, City of London EC4V 4AY by Compass Archaeology between the 29th March and 30th April 2018 (fig.1).



Figure 1: Site location, marked in red.

- 1.2 The watching brief was commissioned by Lyndsey Curtis, Skanska on behalf of Thames Water / Eight20 ahead of mains connection works associated with the Thames Water AMP4 Victorian Mains Replacement Programme.
- 1.3 The programme of archaeological works entailed the monitoring of the completion of a single trench located at the southern end of Huggin Hill undertaken to connect 4 water mains installed in 2008 to finalise the network.
- 1.4 The site was located within the Scheduled Ancient Monument of *Huggin Hill Roman Bath House, 120m WNW of St James's Church (LO160)* and the *City of London Archaeological Priority Area* (figs 2-3).

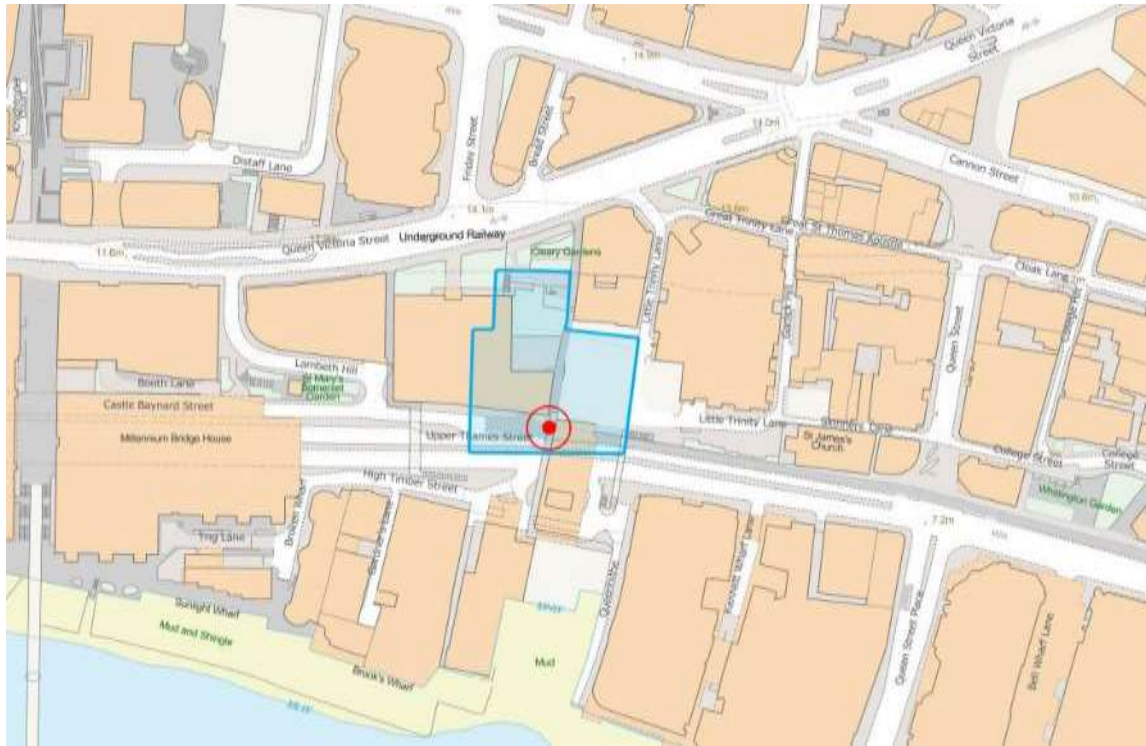


Figure 2: Scheduled Monument of Huggin Hill Roman bath house, 120m WNW of St James's Church (LO 160) (blue) in relation to the site location (red).

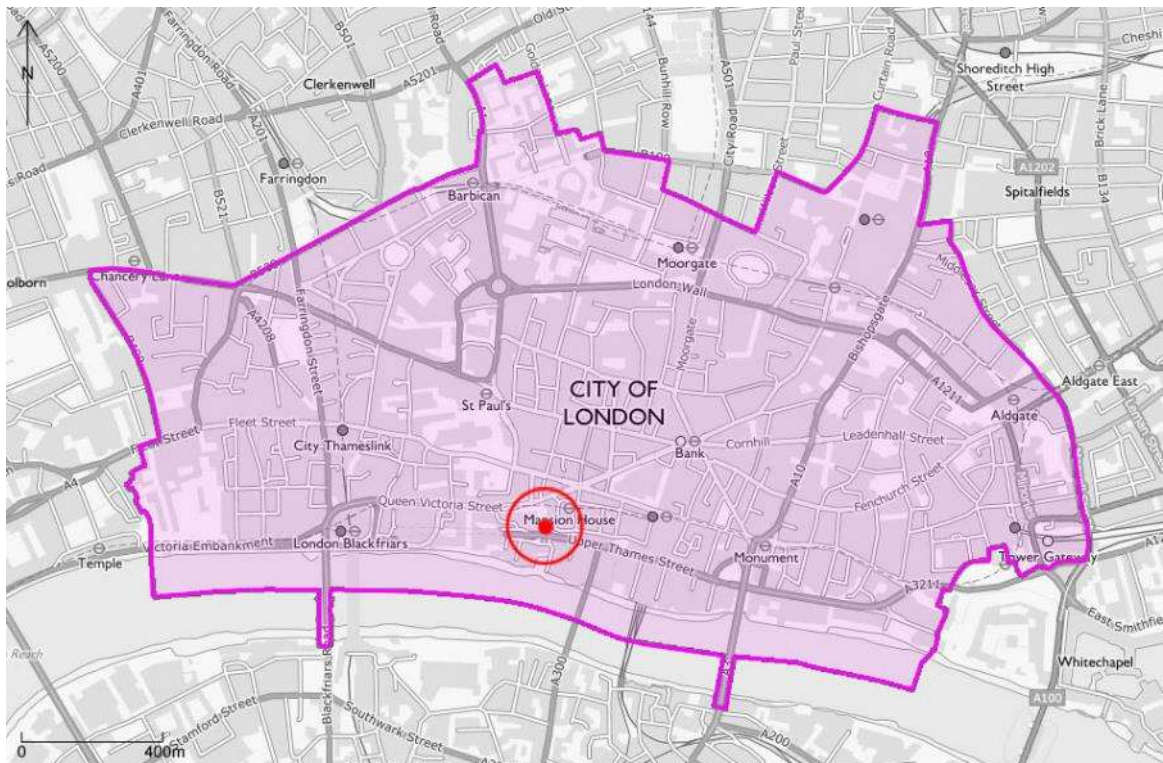


Figure 3: City of London Archaeological Priority Area (pink), with site location marked in red.

2 ACKNOWLEDGEMENTS

- 2.1 Compass Archaeology would like to thank Lyndsey Curtis, Skanska for commissioning Compass to undertake the archaeological watching brief and also to Nicky Hassell for ensuring accessibility and support on site during their groundworks.

3 SITE LOCATION, GEOLOGY AND TOPOGRAPHY

- 3.1 The groundworks were situated within the carriageway at the southern end of Huggin Hill, at the junction of Huggin Hill / Upper Thames Street. The site was bounded by Senator House to the west, Cleary Gardens to the north and Painters Hall Chambers to the north-east. The plot directly to the east is currently under redevelopment.
- 3.2 According to the British Geological Survey, (Sheet 256: *North London*) the site sits within a small pocket of London Clay, situated between a large deposit of Taplow Gravel to the north and a band of Alluvium which follows the course of the River Thames to the south (fig.4).
- 3.3 The site lies on a pronounced hill, as the name suggests, from approximately 14mOD at the northern end of Huggin Hill, to 7mOD at the southern end, reflective of the general north-south slope down towards the river.

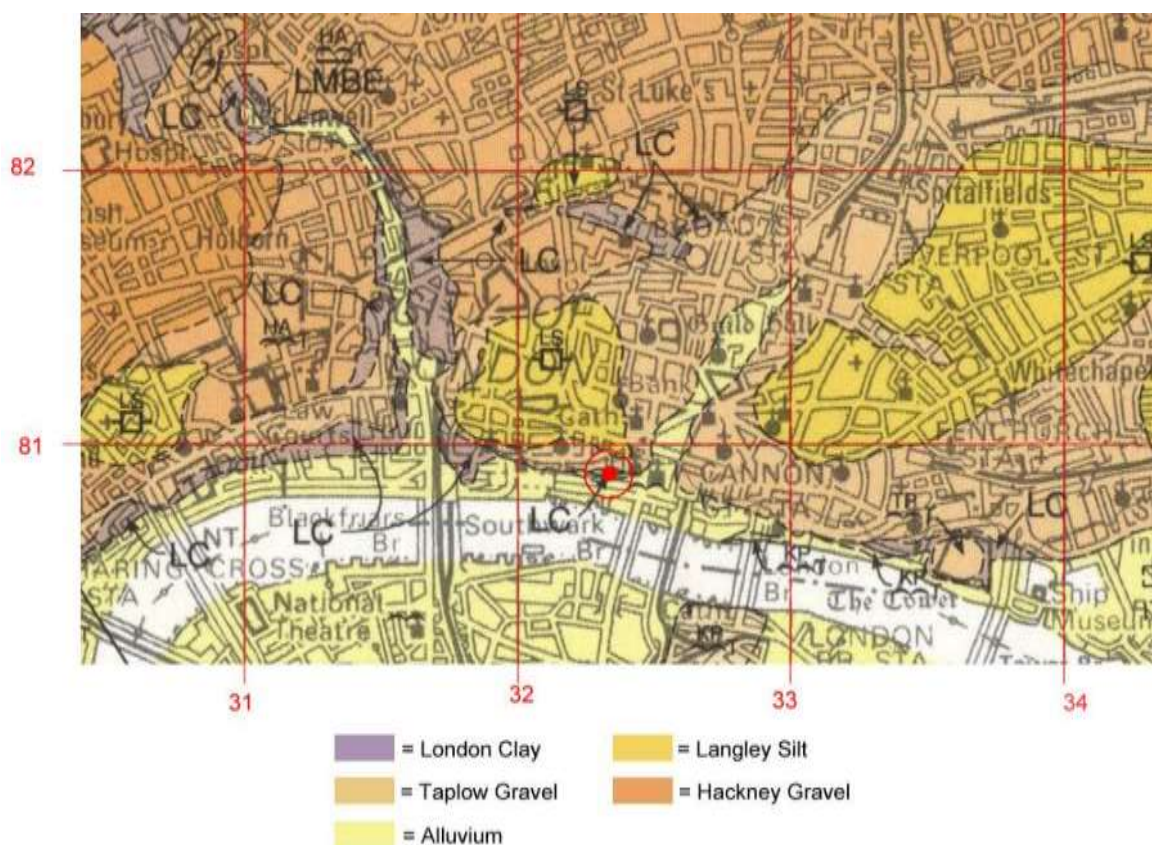


Figure 4: Extract from the BGS Sheet 256: North London, with site location marked in red.

4 ARCHAEOLOGICAL AND HISTORIC BACKGROUND

Due to the site's location within the Roman City and a Scheduled Ancient Monument, the historical and archaeological background has been well documented and shall not be reproduced at length here (see Compass Archaeology WSI 2018). Instead, a summary of the major historical periods is given, with particular reference to the Scheduled Ancient Monument.

4.1 *Prehistoric*

During the prehistoric period much of the archaeological evidence for activity / occupation is concentrated close to the River Thames, often on gravel islands, or eyots, which afforded higher and dryer ground, space and a regular subsistence supply favoured by a hunter-gatherer lifestyle.

A number of polished stone axes were found at Little Trinity Hall and 46 Upper Thames Street during construction work in the 1920s, suggesting activity was taking place in the area. There is limited evidence of substantial buildings or structures in the area, which could indicate a settlement or significant activity / occupation. It is likely that this is a result of the extensive subsequent habitation and alterations made in the area, and the close proximity to the River, resulting in a flood-prone site.

4.2 *Roman*

A Roman settlement was established shortly after the successful Claudian invasion of AD43. *Londinium* comprise a playing card shaped fortress, centred on the present day London Wall / Wood Street, with the walled civilian settlement extending from Ludgate in the west to Tower Hill / Aldgate in the east. Due to its location close to the River Thames and easy access to the east coast, settlement in the vicinity of the site was quickly established.

Numerous archaeological excavations in the vicinity of the site have revealed the extensive remains of a Roman bath house (see Heritage Gateway MLO11776 for a full breakdown of the features summarised below). The complex is believed to have been terraced into the slope leading to the river and existed between c80AD and the late 3rd century. The bath house extends to the east and west of the lower end of Huggin Hill, immediately north of Upper Thames Street, and on the west side of Little Trinity Lane. A small section of the north retaining wall can still be seen in Cleary Gardens, to the north of the site.

The complex is on two levels with a lower terrace containing the heated bathing rooms and an upper terrace containing water tanks / reservoirs and a small number of rooms. The baths utilised natural spring water from the hill and a series of culverts and drains are set into the retaining walls, where water was collected into storage tanks below. It was distributed around the bath house in pipes, some of which are evident on the site, and the waste water was emptied into the Thames. The walls of the surviving rooms of the bath house are largely of Kentish ragstone with tile courses and are in places over 1m high. They preserve fragments of white-painted plaster rendering and evidence for wooden door frames, sills, and box-flue tiles. The floors of the bath house are largely

of pink-mortar, opus signinum, tiles or brick. The pilae of the hypocaust survive in several of the heated rooms.

Along the southern end of the site is a sequence of seven rooms; which are thought to probably have functioned, from west to east, as a *caldarium* (hot room), *tepidarium* (warm room), *frigidarium* (cold room), *apodyterium* (changing room), vestibule, *tepidarium* and *caldarium*. There is a corridor and open space between the two rooms at the eastern end (the *tepidarium* and *caldarium*) and the rest of the complex. The *caldarium* on the western side contains a well-preserved hypocaust with over 100 pilae. A small area of marble mosaic floor survives *in-situ*. The room was heated from a *praefurnium* (furnace) to the north. The *caldarium* on the eastern side of the bath house is one of the largest recorded in Roman Britain, measuring 16m x 9m.

Between the long sequence of bathing rooms to the south and the retaining wall to the north, are several further rooms, including a possible *apodyterium* and another *caldarium*. The *caldarium* is about 8m wide x 11m long, heated by another *praefurnium* to the east. Attached to the southern end of the main bath complex may also have been a latrine.

Further buried remains of the bath house are considered to extend under the current site, which are largely unexcavated, but are included in the scheduling. In 1845, Roman remains were discovered on the site when sewer excavations revealed walls surviving beneath Huggin Hill. It was partially excavated in 1929-30, 1964, 1969 and 1988-89, which recorded the ground plan and layout of the bath house. The finds from the site included Roman coarse ware and samian ware pottery, fragments of Purbeck and Italian marble, painted wall plaster and glass, a tile stamp, bronze coin and metal spoon. In 1998, geophysical survey recorded possible further below-ground remains in the vicinity of the site.

The bath house was constructed in the late first century AD and at some point in the second century appears to have been enlarged and altered. It is thought to have originally extended about 75m along the former river frontage. The site is likely to have been a public bath house, although it has been suggested that it may have been part of a palace or other large building with a bath complex attached. In the third century AD, the building was abandoned, part-demolished and much of the material robbed for other uses.

A second similar bath house complex, Billingsgate, lies further east, below 101 Lower Thames Street and is open to the public.

4.3 *Saxon*

After the Roman withdrawal in the 5th century AD the commercial centre was moved further west, with the Saxon settlement of *Lundenwic* being established in the area of Covent Garden – more specifically the Royal Opera House and Bow Street Magistrates Court. The defensive Roman wall however continued to be maintained as a defensive feature; documentary evidence indicates the utilisation of Cripplegate, to the north-west, into the 10th and 11 centuries. The establishment of a more defensive settlement, or *burh* in Southwark, and a second settlement north of Cripplegate, with easy access

to the village of Islington, resulted in somewhat of a resurgence for the wall, and a programme of rebuilding was undertaken in the 1490s.

A land grant from AD889 to the bishop and church of Worcester from King Alfred and Aethelred, ealdorman (Alderman) of Mercia records the awarding of the use of a courtyard or enclosure for a market, describing a stone building called Hwaetmundes stan by the local citizens. The area is thought to cover the Huggin Hill area, bounded to the south by Thames Street, west and east by Bread Street and Little Trinity Lane, and Trinity Lane to the north. The land grant shows that the area was being used during the Saxon period, and was probably fairly busy due its close proximity to the crossing at London Bridge. The area was known as Ethelred's Hythe and a dock has existed here since King Alfred re-established the city of London in c886. Thames Street to the south was first mentioned in 1013 when a Custom house was founded there – reflecting the commercial nature of the area even during this period and is also mentioned in the diaries of Samuel Pepys.

Evidence of occupation, settlement and culture is well reflected in the archaeological record. Excavations at 62-63 Queen Victoria Street (ORM88) recorded a series of intercutting rubbish pits, cutting into earlier Roman stratigraphy, highlighting the longevity of activity in the area. Similarly, sections of wattle surfacing uncovered at Vintry House by the Department of Urban Archaeology (CRY89) and clay embankments recorded in the vicinity of Queenhithe suggest that considerable attempts were made to consolidate the area for prolonged settlement and / or use.

The most compelling evidence of Saxon London in this area was uncovered during excavations at Queenhithe by the DUA between January and May 1991. A number of Roman deposits were sealed by consolidation layers, on top of which lay an early medieval burial, arranged in a style akin to Viking burials recorded in Scandinavia. The skeletal remains of a female were uncovered, laid out on a bed of bark and covered in moss. Two wooden stakes, arranged at the head and knees were taken to be associated with the burial and possibly used to stop the remains floating away.

A series of structural remains were also recorded, dendrochronologically dated to the late 9th or early 10th century, including a number of groynes or jetties and wood and wattle revetments, taken to be an attempt at river reclamation. Several buildings were also identified, running parallel to the shore, built in several phases. The buildings were constructed with either timber posts on rubble foundation platforms or of earth-fast posts and sill beams. The central building was more complex and appeared to represent at least five separate stages of building. A large number of hearths were recorded from within this structure, suggesting it may have been used more for industry rather than habitation.

Additionally, a further empty casket was found at Senator House (formerly known as Dominant House), associated with a sunken building, suggesting that the burial described above was not an isolated occurrence.

4.4 *Medieval*

Huggin Hill appears from the c1260s, known as Hoggene Lane – a lane where hogs were kept, although the name goes through a number of permutations before ‘Huggyn’ appeared in the 16th century.

Immediately adjacent to the site lay the church of St Michael Queenhithe, first recorded in the 12th century as *St Michael Aedredeshuda* (a variation of Aethelredhyth / Ethelred Hythe). The church was destroyed during the Great Fire, as observed by Charles II and the future James II who ‘came down from Whitehall by boat to Queenhithe and, from a high rooftop, saw dwellings, Company halls and churches blazing’.

The surrounding area, Queenhithe, takes its name from the Saxon *Hythe*, or small harbour, and has historically been a principal location for the loading and unloading of barges. The name Queenhithe came into use when Queen Matilda, wife of King Henry I, was granted duties on goods landed there. The ward is well documented in the Subsidy Roll of 1292, under the jurisdiction of Alderman William de Betoyn. Land use appears to remain much the same, with archaeological evidence suggesting a lot of effort was taken torevet and maintain the foreshore.

A series of watching briefs carried out by MoLAS between 1990 and 1995 ahead of the redevelopment of the Bull Wharf area revealed elements of the medieval revetments, whilst at 48 Upper Thames Street MoLAS also recorded chalk foundations cutting into land reclamation and levelling dumps (BHD90). An excavation undertaken by the Department of Greater London Archaeology at Sinkmarket Place (SIP88) recorded a number of early medieval ditches cutting and sealed by flood clay deposits. This demonstrates that although the area was well used and inhabited, it was still vulnerable and prone to flooding due to the tidal nature of the river.

Much of the evidence of archaeological activity is characterised by a sequence of intercutting pits, levelling layers and consolidation dumps including those recorded during excavations at 62-63 Queen Victoria Street (DUA ORM88), Mansion House Station (DUA MHS89) and High Timber Street (MoLAS HST97). Firmer evidence of occupation includes chalk and ragstone foundations fronting Garlick Hill, identified during excavation by the DUA in 1989 (ORM88), floors and hearths at Bull Wharf, and a surviving section of a medieval chalk undercroft extending under Sugar Loaf Court, revealed during excavations by the Guildhall Museum in 1959 (GM147).

Due to the presence of the Queenhithe docks the site and surrounding area appears to have been a busy and industrious centre, trying to remain successful whilst controlling the tidal river.

4.5 *Post-medieval*

Throughout the post-medieval period the dock remained in use, and primarily traded corn, although toward the 20th century was also utilised by the fur and tanning trades. Huggin Hill appears on the Agas map of 1561 as Huggyng Lane, comprising a number of two storey buildings, bounded by St Mary Somerset Church and Bread Street to the west, Trinite (Trinity) Lane to the east and Thames Street and dock to the south.

In general, the character of the area remains relatively unchanged throughout the post-medieval period – with Huggin Hill lying just north of the busy dock, occupied by a number of dwellings and offices. Cartographic sources from the 18th century show Queenhithe Ward as being crowded and well established, populated by a large number of churches and halls. By the 19th century the churchyard of St Michael Queenhithe still survived, however the surrounding area was a mix of factories and warehouses with some shops and occasional restaurants.

Painters' Hall, to the north-east was established by Alderman Sir John Browne, Sergeant-Painter to Henry VIII in 1532, but was destroyed during the Great Fire in 1666. It was subsequently rebuilt and remained in use by the Worshipful Company of Painter-Stainers. The church of St Michael Queenhithe was also rebuilt after the fire, but was closed in 1875 due to a small congregations caused by a move of population from the city to the suburbs. The building was demolished in 1876.

4.6 *Modern*

During the Second World War the area was extensively destroyed, with many of the buildings along Huggin Hill being damaged beyond repair. Two V2 rockets were dropped further east along Upper Thames Street, by Southwark Bridge, resulting in a large amount of blast damage. Approximately three quarters of the buildings in Queenhithe ward were destroyed, including Painter's Hall, for the second time. The current building was completed in 1961 and occupies a slightly larger site.

Little evidence of the medieval and post-medieval Thames Street remains due to an extensive rebuilding programme in the 1960s which altered its course, including the reclaiming of the Thames foreshore at Puddle Dock and truncating of the site of St Michael Queenhithe, which is presently under development.

5 PLANNING AND OBJECTIVES

- 5.1 The groundworks entailed the completion of a single trench located at the southern end of Huggin Hill. The trench measured c6m in length x 2m in width x 0.5-1.0m in depth (c6mOD), aligned east-west. The majority of the trench was located within the cycle path, with a small section extending northwards into the existing footpath. This latter section was re-excavated in April 2018 to enable the fourth connection to be made (fig.5).



Figure 5: Trench location, marked in red.

- 5.2 The works were undertaken via a mechanical excavator fitting with a toothless grading bucket to clear the bulk of the existing tarmac and concrete road surface, followed by hand excavation and cleaning to expose the existing services.

Upon completion of excavation 4 connections were made to tie the pipework into the existing network. Trenches were subsequently backfilled and reinstated.

- 5.3 The work followed the standards set out in the London Plan (*Chapter Seven: London's Living Spaces and Places*) which states that new developments are expected to align with the following procedures:

Historic Environment and Landscapes

Policy 7.8 *Heritage assets and archaeology*

Strategic

- A *London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic*

landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.

- B** *Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.*

Planning decisions

- C** *Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.*

- D** *Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural design.*

- E** *New development should make provision for the protection of archaeological resources, landscapes, and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.*

LDF Preparation

- F** *Boroughs should, in LDF policies, seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.*

- G** *Boroughs, in consultation with English Heritage, Natural England and other relevant statutory organisations, should include appropriate policies in their LDFs for identifying, protecting, enhancing and improving access to the historic environment and heritage assets and their settings where appropriate, and to archaeological assets, memorials and historic and natural landscape character within their area.*

- 5.4** In addition to the policy outlined above, the City of London has its own, additional policies concerning archaeological remains and other heritage assets, laid out within the *Local Plan* (adopted 2015), including Core Strategic Policy CS12: Historic Environment and Development Management Policies DM12.1 to 12.5. Of particular significance here is policy DM12.4, set out thus:

Policy DM12.4 Ancient monuments and archaeology

- To require planning applications which involve excavation or ground works on sites of archaeological potential to be accompanied by an archaeological assessment and evaluation of the site, including the impact of the proposed development.*

2. *To preserve, protect, safeguard and enhance archaeological monuments, remains and their settings in development, and to seek a public display and interpretation, where appropriate.*
3. *To require proper investigation and recording of archaeological remains as an integral part of a development programme, and publication and archiving of results to advance understanding.*

5.5 As the site was located within a Scheduled Area the groundworks adhered to the conditions of the Scheduled Monument Consent, laid out below (also see Appendix II):

- (a) *The works to which this consent relates shall be carried out to the satisfaction of the Secretary of State, who will be advised by Historic England. At least 1 weeks' notice (or such shorter period as may be mutually agreed) in writing of the commencement of work shall be given to Iain Bright (Assistant Inspector of Ancient Monuments), Historic England, 4th Floor, Cannon Bridge House, 25 Dowgate Hill, London, EC4R 2YA; iain.bright@HistoricEngland.org.uk, in order that an Historic England representative can inspect and advise on the works and their effect in compliance with this consent.*
- (b) *No ground works shall take place until the applicant has confirmed in writing the commissioning of a programme of archaeological work before during the development in accordance with a Written Scheme of Investigation (WSI) which has been submitted to and approved by the Secretary of State advised by Historic England.*
- (c) *A full RAMS document is to be provided to Historic England by any contractor/sub-contractor involved in these works, for approval prior to the commencement of works.*
- (d) *The use of vacuum excavators or air lances is strictly prohibited. All excavation will be undertaken in an archaeologically controlled manner with a toothless bucket to lessen the risk of damage to potential archaeological deposits or remains.*
- (e) *Power hand-held breaking tools are only to be used on modern/concrete remains, or remains deemed not to be of archaeological significance and already recorded by the attendant archaeologist. No breaking tools of any kind are to be employed on masonry associated with the scheduled monument of the bath house or related significant structures.*
- (f) *Any significant remains observed during the course of excavation works will be fully recorded by the attendant archaeologist. Remains associated with the scheduled monument are to be left undisturbed and undamaged. The attendant archaeologist is to be given adequate time to clean and fully record the remains before the trench is backfilled. In the event of such a discovery, Historic England is to be notified to allow for an inspection of the remains, if required. A methodology for*

preservation in situ of any such remains will be agreed in consultation with Historic England.

- (g) *All those involved in the implementation of the works granted by this consent must be informed by the owner, occupier and/or developer that the land is designated as a scheduled monument under the Ancient Monuments and Archaeological Areas Act 1979 (as amended); the extent of the scheduled monument as set out in both the scheduled monument description and map; and that the implications of this designation include the requirement to obtain Scheduled Monument Consent for any works to a scheduled monument from the Secretary of State prior to them being undertaken.*
- (h) *Equipment and machinery shall not be used or operated in the scheduled area in conditions or in a manner likely to result in damage to the monument/ ground disturbance other than that which is expressly authorised in this consent.*
- (i) *A report on the archaeological recording shall be sent to the Greater London Historic Environment Record and to Iain Bright at Historic England within 3 months of the completion of the works (or such other period as may be mutually agreed).*
- (j) *The contractor shall complete and submit an entry on OASIS (On-line Access to the Index of Archaeological Investigations - <http://oasis.ac.uk/england/>) prior to project completion, and shall deposit any digital project report with the Archaeology Data Service, via the OASIS form, upon completion.*

5.6 The fieldwork presented the opportunity to answer the following general and more specific research questions:

- Is there any surviving evidence of prehistoric activity? If so what form does this take?
- Are there any finds, features or stratigraphy dating to the Roman period? Can these be attributed to the bath house complex?
- Are there any remains of the post-Roman redevelopment / occupation of the area? What form do these take and at what level were they encountered?
- At what level does archaeology survive across the site as a whole?
- If encountered, what is the natural geology and at what level does it exist across the site?

6 METHODOLOGY

6.1 Standards

6.1.1 The field and post-excavation work was carried out in accordance with Historic England guidelines (*Greater London Archaeology Advisory Service: Standards for Archaeological Work, 2015*). Works also conformed to the standards of the Chartered Institute for Archaeologists (*Standard and guidance for an archaeological watching brief 2015*). Overall management of the project was undertaken by a full member of the Chartered Institute.

6.1.2 Fieldwork was carried out in accordance with the Construction (Health, Safety & Welfare) Regulations. All members of the fieldwork team held valid CSCS (Construction Skills Certificate Scheme) cards, and wore hi-vis jackets, hard-hats, steel-toe-capped boots, etc., as required. All members of the fieldwork team also followed the contractors' health and safety guidelines.

6.1.3 The Client and Historic England were kept informed of the progress of fieldwork and any finds recovered.

6.2 Fieldwork

6.2.1 The archaeological watching brief took place during groundworks to expose four separate sections of mains water network, installed in 2008, which were being connected to finalise the new system.

6.2.2 The trench was undertaken in March 2018, under archaeological supervision. The trench was suspended at a maximum depth of 1.0m and an appropriate record of the work was completed. A smaller section was re-excavated in April 2018 to allow for the connection of the fourth to the rest of the network (not completed in March 2018). This section measured approximately 1.2m in length x 0.6 – 0.7m in width x 0.75m in depth.

6.2.3 Archaeological contexts were recorded as appropriate on *pro-forma* sheets by written and measured description, and drawn in plan or section, generally at scales of 1:10 or 1:20. The investigations were recorded on a general site plan and related to the Ordnance Survey grid. Levels were taken on archaeological features or deposits, transferred from the nearest Ordnance Datum Benchmark, a spot height noted on Ordnance Survey Plans *Upper Thames Street*, at 7mOD. The fieldwork record was supplemented by digital photography, in.jpeg and RAW formats.

6.2.4 The recording system followed the procedures set out in the Museum of London recording manual. By agreement the recording and drawing sheets used are directly compatible with those developed by the Museum.

6.3 Post-excavation

The fieldwork was followed by off-site assessment and compilation of a report, and by ordering and deposition of the site archive.

6.3.1 Finds and samples

No finds or samples were recovered from the archaeological watching brief.

6.4 Report procedure

6.4.1 This report contains a description of the fieldwork plus details of any archaeological remains or finds, and an interpretation of the associated deposits. Illustrations have been included as appropriate, including a site plan located to the OS grid. A short summary of the project has been appended using the OASIS Data Collection Form.

6.4.2 Copies of this report will be supplied to the Client and Historic England.

6.4.3 There is no provision for further analysis or publication of significant findings. Should these be made the requirements would need to be discussed and agreed with the Client.

6.5 The site archive

Assuming that no further work is required, an ordered indexed and internally consistent archive of the evaluation will be compiled in line with MoL Guidelines for the Preparation of Archaeological Archives, and will be deposited in the Museum of London Archaeological Archive under site code HGN18. The integrity of the site archive should be maintained, and the landowner will be urged to donate any archaeological finds to the Museum.

7 RESULTS

- 7.1 The following forms a written description of observations made during the watching brief. The works are discussed in chronological order, covering the main trench and subsequent re-cut. Deposits are shown as (x), cuts and structures as [x]. The text is supplemented with illustrative photographs. For a full context list refer to Appendix I.
- 7.2 The trench was located on the northern side of Upper Thames Street, within the cycle way adjacent to Huggin Hill. The trench was rectangular in plan with an additional spur on the northern side, in total measuring approximately 6m in length x 2m in width x 0.5-1.0m in depth (c6.5-6mOD) (figs.6-7).



Figure 6: View of the completed trench, showing multiple services cutting made ground. Facing E. Scale 1m.



Figure 7: Additional spur on the northern side of the main trench, showing east-west water main and services [14] / (15). Facing approximately NE. Scale 1m.

- 7.3** The stratigraphy comprised 60mm of black tarmac (1) above c350mm of coarse mix compact concrete (2). This existing surface and bedding layer overlay a homogenous deposit of post-medieval made ground (3), measuring up to 600mm in thickness. The context consisted of a mix of dark brown soil, hardcore, stones, MOT Type 1 and fragments of modern building rubble (fig.8).



Figure 8: South facing section of trench, showing existing cycle way surface and bedding above made ground. The large gas main [4] / (5) can be seen to the right of frame. Facing NW. Scale 1m.

- 7.4** The made ground observed across the trench entirety had been disturbed and partially truncated on 9 observable occasions by the installation of post-medieval and modern services.
- 7.5** In the main part of the trench a large post-medieval cast iron gas main was observed running east-west along the northern section, [4], surrounded by a fill, (5), similar in composition to (3). This was overlain on the western side of the trench by a north-south running service, [16] / (17), and again on the eastern side, [18] / (19). The highest service observed, two electricity cables, ran east-west through the centre of the trench surrounded by an orange sharp sand fill, [20] / (21). Three of the four Thames Water mains to be connected together were located in this main part.
- 7.6** The fourth main was situated within a small spur on the northern side of the trench, overlying a group of services, [14] / (15), aligned east-west.
- 7.7** This spur was re-excavated on the 30th April to allow for the fourth connection to be made. No features of archaeological interest were observed (fig.9).



Figure 9: Re-excavated spur, showing TW main and valve and orange coloured services [14] / (15). Facing W. Scale 0.5m.

- 7.8** No further finds or features of archaeological significance were observed during the watching brief. Once the connections had been made the trench was appropriately recorded, backfilled and reinstated.

8 DISCUSSION

- 8.1 The stratigraphy observed across the site is consistent with the post-medieval / modern made ground typically encountered in many parts of the City, comprising rubbly material, used here to level Upper Thames Street. The made ground had been disturbed on numerous occasions by post-medieval and modern services, truncating large sections of the material.

9 CONCLUSION

The following section provides a summary of the work undertaken with reference to the original research questions set out above.

9.1 *Is there any surviving evidence of prehistoric activity? If so what form does this take?*

No prehistoric finds or features were observed during the watching brief. It is likely that if such features did survive at this level, they were wholly truncated by the numerous post-medieval and modern services.

9.2 *Are there any finds, features or stratigraphy dating to the Roman period? Can these be attributed to the bath house complex?*

No finds or features dating from the Roman period were observed during the watching brief. The main homogenous layer of post-medieval made ground (3) did not contain any residual finds, in part due to the limited depth of excavation. Similarly to the prehistoric period it is likely that the extensive terracing and levelling of the area to create Upper Thames Street has removed any earlier features, resulting in the *in-situ* bath house remains towards the north end of Huggin Hill sitting in isolation.

9.3 *Are there any remains of the post-Roman redevelopment / occupation of the area? What form do these take and at what level were they encountered?*

No finds or features consistent with the immediate post-Roman redevelopment of the area was observed, covering the Saxon to early post-medieval periods. This is taken to be a result of the extensive building programmes and alteration of Upper Thames Street undertaken in the 1960s, which has truncated earlier activity.

9.4 *At what level does archaeology survive across the site as a whole?*

Post-medieval made ground was observed beneath the existing cycle way and concrete bedding layer, at a depth of 0.1-0.41m below ground, and is taken to continue below the level of excavation at c6mOD.

9.5 *If encountered, what is the natural geology and at what level does it exist across the site?*

Natural geology, London Clay, was not observed during the watching brief.

10 SOURCES

10.1 Digital Sources

Bombsight Online (2017). <http://bombsight.org/#15/51.5050/-0.0900>

Greater London Historic Environment Record. glher@HistoricEngland.org.uk

London Archaeological Archive & Resource Centre (LAARC) database. <http://archive.museumoflondon.org.uk/laarc/caralogue/>

10.2 Bibliography

Chartered Institute for Archaeologists. (2014a). *Standard and guidance for the collection, documentation, conservation and research of archaeological materials.*

Chartered Institute for Archaeologists (2014b). *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives.*

Chartered Institute for Archaeologists. (2015). *Standard and guidance for an archaeological watching brief.*

Communities and Local Government. (2012). *National Planning Policy Framework.*

Compass Archaeology (2018). *Thames Water Mains Rehabilitation Works – Crouch Hill 57, Huggin Hill, London EC5V 4AY. Written Scheme of Investigation for an Archaeological Watching Brief.*

Hibbert, B. & Weinreb, C. (1983). *The London Encyclopaedia.*

Historic England. (2015). *Greater London Archaeology Advisory Service: Guidelines for Archaeological Projects in Greater London.*

Historic England. (2015). *Greater London Archaeology Advisory Service: Standards for Archaeological Work.*

Mayor of London. (2015). *The London Plan.*

APPENDIX I: LIST OF CONTEXTS

Number	Description
(1)	Tarmac cycle way surface
(2)	Bedding concrete below (1)
(3)	Post-medieval backfill / made ground
[4]	Cut for gas main observed in south facing section
(5)	Fill of gas main
[6]	Cut for modern Thames Water main (1 of 4)
(7)	Shingle fill of [6]
[8]	Cut for modern Thames Water main (2 of 4)
(9)	Shingle fill of [8]
[10]	Cut for modern Thames Water main (3 of 4)
(11)	Shingle fill of [10]
[12]	Cut for modern Thames Water main (4 of 4)
(13)	Shingle fill of [12]
[14]	Cut for east-west services below [12] / (13)
(15)	Fill of service cut [14]
[16]	Cut for N-S service on W side of trench
(17)	Fill of cut [16]
[18]	Cut for N-S services of E side of trench
(19)	Fill of cut [18]
[20]	Cut for E-W services through centre of trench
(21)	Sand fill of [20]

APPENDIX II: SCHEDULED MONUMENT CONSENT



LONDON OFFICE

Ms Claire Hallybone
Thames Water
Maple Lodge STW
Rickmansworth
Hertfordshire
WD3 9SQ

Direct Dial: 020 7973 3739

Our ref: S00188849

29 March 2018

Dear Ms Hallybone

**Ancient Monuments and Archaeological Areas Act 1979 (as amended); Section 2
control of works
Application for Scheduled Monument Consent**

**HUGGIN HILL ROMAN BATH HOUSE, 120M WNW OF ST JAME'S CHURCH,
UPPER THAMES STREET, LONDON
Scheduled Monument No: SM LO 160, HA 1001981
Our ref: S00188849
Application on behalf of Thames Water**

1. I am directed by the Secretary of State for Digital, Culture, Media & Sport to advise you of the decision regarding your application for Scheduled Monument Consent received 1 March 2018 in respect of proposed works at the above scheduled monument concerning the excavation of the roadway in order to connect four water mains and complete the new water main network. The works were detailed in the following documentation submitted by you:

Location plan of Upper Thames Street works
Upper Thames Street - Water Main Connection Works - Scheduled Monument and Listed Building map
Upper Thames Street - Method Statement

2. In accordance with paragraph 3(2) of Schedule 1 to the 1979 Act, the Secretary of State is obliged to afford you, and any other person to whom it appears to the Secretary of State expedient to afford it, an opportunity of appearing before and being heard by a person appointed for that purpose. This opportunity was offered to you by Historic England and you have declined it.

3. The Secretary of State is also required by the Act to consult with the Historic Buildings and Monuments Commission for England (Historic England) before deciding whether or not to grant Scheduled Monument Consent. Historic England considers the



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Historic England is subject to the Freedom of Information Act 2000 (FOIA) and Environmental Information Regulations 2004 (EIR). All information held by the organisation will be accessible in response to an information request, unless one of the exemptions in the FOIA or EIR applies.

Historic England will use the information provided by you to evaluate your application for Scheduled Monument Consent. Information contained in this application and any information obtained from other sources will be retained in all cases in hard copy form and/or on computer for administration purposes and future consideration where applicable.



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effect of the proposed works upon the monument to be works that could cause significant damage to the monument's historic fabric, and archaeological deposits or evidence, which can be acceptably mitigated by conditions to ensure archaeological supervision and recording.

I can confirm that the Secretary of State is agreeable for the works to proceed providing the conditions set out below are adhered to, and that accordingly Scheduled Monument Consent is hereby granted under section 2 of the 1979 Act for the works described in paragraph 1 above, subject to the following conditions:

- (a) The works to which this consent relates shall be carried out to the satisfaction of the Secretary of State, who will be advised by Historic England. At least 1 weeks' notice (or such shorter period as may be mutually agreed) in writing of the commencement of work shall be given to Iain Bright (Assistant Inspector of Ancient Monuments), Historic England, 4th Floor, Cannon Bridge House, 25 Dowgate Hill, London, EC4R 2YA; iain.bright@HistoricEngland.org.uk, in order that an Historic England representative can inspect and advise on the works and their effect in compliance with this consent.
- (b) No ground works shall take place until the applicant has confirmed in writing the commissioning of a programme of archaeological work before during the development in accordance with a Written Scheme of Investigation (WSI) which has been submitted to and approved by the Secretary of State advised by Historic England.
- (c) A full RAMS document is to be provided to Historic England by any contractor/sub-contractor involved in these works, for approval prior to the commencement of works.
- (d) The use of vacuum excavators or air lances is strictly prohibited. All excavation will be undertaken in an archaeologically controlled manner with a toothless bucket to lessen the risk of damage to potential archaeological deposits or remains.
- (e) Power hand-held breaking tools are only to be used on modern/concrete remains, or remains deemed not to be of archaeological significance and already recorded by the attendant archaeologist. No breaking tools of any kind are to be employed on masonry associated with the scheduled monument of the bath house or related significant structures.
- (f) Any significant remains observed during the course of excavation works will be fully recorded by the attendant archaeologist. Remains associated with the



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scheduled monument are to be left undisturbed and undamaged. The attendant archaeologist is to be given adequate time to clean and fully record the remains before the trench is backfilled. In the event of such a discovery, Historic England is to be notified to allow for an inspection of the remains, if required. A methodology for preservation *in situ* of any such remains will be agreed in consultation with Historic England.

- (g) All those involved in the implementation of the works granted by this consent must be informed by the owner, occupier and/or developer that the land is designated as a scheduled monument under the Ancient Monuments and Archaeological Areas Act 1979 (as amended); the extent of the scheduled monument as set out in both the scheduled monument description and map; and that the implications of this designation include the requirement to obtain Scheduled Monument Consent for any works to a scheduled monument from the Secretary of State prior to them being undertaken.
- (h) Equipment and machinery shall not be used or operated in the scheduled area in conditions or in a manner likely to result in damage to the monument/ ground disturbance other than that which is expressly authorised in this consent.
- (i) A report on the archaeological recording shall be sent to the Greater London Historic Environment Record and to Iain Bright at Historic England within 3 months of the completion of the works (or such other period as may be mutually agreed).
- (j) The contractor shall complete and submit an entry on OASIS (On-line Access to the Index of Archaeological Investigations - <http://oasis.ac.uk/england/>) prior to project completion, and shall deposit any digital project report with the Archaeology Data Service, via the OASIS form, upon completion.

4. By virtue of section 4 of the 1979 Act, if no works to which this consent relates are executed or started within the period of five years beginning with the date on which this consent was granted (being the date of this letter), this consent shall cease to have effect at the end of that period (unless a shorter time period is set by a specific condition above).

5. This letter does not convey any approval or consent required under any enactment, bye law, order or regulation other than section 2 of the Ancient Monuments and Archaeological Areas Act 1979.

6. Your attention is drawn to the provisions of section 55 of the 1979 Act under which any person who is aggrieved by the decision given in this letter may challenge its



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validity by an application made to the High Court within six weeks from the date when the decision is given. The grounds upon which an application may be made to the Court are (1) that the decision is not within the powers of the Act (that is, the Secretary of State has exceeded the relevant powers) or (2) that any of the relevant requirements have not been complied with and the applicant's interests have been substantially prejudiced by the failure to comply. The "relevant requirements" are defined in section 55 of the 1979 Act: they are the requirements of that Act and the Tribunals and Inquiries Act 1971 and the requirements of any regulations or rules made under those Acts.

Yours sincerely

Iain Bright

Assistant Inspector of Ancient Monuments

E-mail: iaibright@HistoricEngland.org.uk

For and on behalf of the Secretary of State for Digital, Culture, Media and Sport

cc Kathryn Stubbs



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APPENDIX III: OASIS RECORDING FORM

OASIS ID: compassa1-316650

Project details

Project name	Archaeological Watching Brief on Thames Water Mains Works at Huggin Hill EC4V 4AY
Short description of the project	Archaeological Watching Brief carried out between the 29th March and 30th April 2018 on Thames Water works at Huggin Hill, City of London EC4V 4AY. The works were undertaken as part of the Crouch Hill Victorian Mains Replacement Scheme, and involved connecting 4 new water mains, installed in 2008, together to finalise the network. The trench was located within the cycle way of Upper Thames Street and measured 6m in length x 2m in width x 0.5 - 1.0m in depth (c6.5-6mOD). The stratigraphy comprised post-medieval made ground truncated on numerous occasions by services. No archaeological finds or features, particularly associated with the known Scheduled Monument of Huggin Hill Roman Bath House (LO160) were observed. Natural geology was not reached.
Project dates	Start: 29-03-2018 End: 30-04-2018
Previous/future work	Yes / Not known
Any associated project reference codes	HGN18 - Sitecode
Any associated project reference codes	LO160 - SM No.
Type of project	Recording project
Site status	Scheduled Monument (SM)
Site status	Local Authority Designated Archaeological Area
Current Land use	Transport and Utilities 1 - Highways and road transport
Monument type	NONE None
Significant Finds	NONE None
Investigation type	"Watching Brief"
Prompt	Scheduled Monument Consent

Project location

Country	England
Site location	GREATER LONDON CITY OF LONDON CITY OF LONDON Huggin Hill
Postcode	EC4V 4AY
Study area	13 Square metres
Site coordinates	TQ 532271 180864 50.941256602393 0.181234419284 50 56 28 N 000 10 52 E Point

Project creators

Name of Organisation	Compass Archaeology
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Project brief originator	Historic England
Project design originator	Compass Archaeology
Project director/manager	Geoff Potter
Project supervisor	Heidi Archer
Type of sponsor/funding body	Thames Water Utilities

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Museum of London Archaeological Archive
Digital Contents	"Stratigraphic"
Digital Media available	"Text","Images raster / digital photography"
Paper Archive recipient	Museum of London Archaeological Archive
Paper Contents	"Stratigraphic"
Paper Media available	"Context sheet", "Map", "Unpublished Text"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Thames Water Mains Rehabilitation Works - Crouch Hill 57, Huggin Hill, London EC4V 4AY. An Archaeological Watching Brief.
Author(s)/Editor(s)	Archer, H.
Date	2018
Issuer or publisher	Compass Archaeology
Place of issue or publication	250 York Road, London SW11 3SJ
Description	A summary report of the findings of the archaeological watching brief. Includes historic background, planning background, site location, geology, topography, research questions, and the methodology used. It includes a written description of observations made as well as accompanying photographs and conclusions drawn.