

C261 ARCHAEOLOGY EARLY EAST

Fieldwork Report

Archaeological Watching Briefs at Stepney Green Shaft and Stepney City Farm (XRV10)

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Non technical summary

This report presents the results of an archaeological excavation and a series of watching briefs carried out by the Museum of London Archaeology (MOLA) on the site of Stepney Green, London E1, in the London Borough of Tower Hamlets. This report was commissioned from MOLA by Crossrail Ltd. The area monitored included all of the worksite of the Stepney Green Shafts site, and a new area taken into the worksite west of Garden Street, as well as Stepney City Farm and part of Stepney Green road which was trenched for a new fire main.

The activities monitored included: Geotechnical trial pits, new soakaway trenches and a handwash water connection at Stepney City Farm; Thames Water Utilities connection at Stepney City Farm and the King John Street entrance to the worksite; a new fire/emergency water main in Stepney Green (road) and Level monitoring points and boreholes.

The remains observed included walls made with 2-inch thick Tudor-style bricks. They may include remnants of the surrounding moat and perimeter wall of Worcester House (a late-medieval and Tudor moated mansion, also known as King John's Court, or Palace, with walled gardens or park. They also include a partial exposure of a brick culvert of similar date, which aligned with culvert remains found in the 1970s, near to Stepney High Street. Further water management structures included a whole-tree trunk pipe and a later Brick Culvert in Stepney Green Road.

These remains add valuable insights into the interpretation of the remains investigated earlier during the main shaft archaeological excavations.



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1 Introduction

Crossrail is a new Cross-London Rail Link project which will provide transport routes across the south-east of England and London. The route will link Maidenhead and Heathrow in the west with Shenfield in the north-east and Abbey Wood in the south-east. In central London, from Royal Oak in the west to Pudding Mill Lane and Royal Victoria Dock in the east, Crossrail will consist of a tunnelled section with seven new stations linked to the existing transport network.

The Crossrail route diverges at Stepney Green and a ventilation and emergency intervention point (EIP) shaft will be constructed at this location.

The Crossrail mitigation response to archaeology is described in the Crossrail Generic WSI (Crossrail 2009) and the detailed desk based assessment (DDBA; Crossrail 2008), and can be summarised as follows:

- In the event that intact and important archaeological remains are identified at Crossrail worksites through this process, it may be preferable, where practicable, to preserve these where they are found (ie preservation in situ).
- However, because of the nature of major works projects such as Crossrail, experience of other similar projects suggests that preservation by record is usually the most appropriate method of dealing with archaeological finds.
- Following an extensive Environmental Impact Assessment (EIA) supporting the Crossrail Bill, and the production of site-specific DDBAs, appropriate mitigation measures were scoped and specified in detail in individual project designs (site-specific WSIs – Written Schemes of Investigation) which were prepared in accordance with the principles set out in the Generic WSI, and developed in consultation with the relevant statutory authorities.
- Archaeological information that is gained from fieldwork will be followed by analysis and publication of the results and will be transferred to an approved public receiving body.

This fieldwork report describes the results of an archaeological general and targeted watching brief carried out during the construction of the above-mentioned shaft, temporary works in the surrounding worksite, and ancillary works nearby, in Stepney City Farm. The latter include archaeological trial pits and a watching brief on new farm buildings, as well as monitoring service diversions, a borehole and monitoring points by Museum of London Archaeology (MOLA) under Crossrail contract C261 Archaeology Early East.

Stepney Green is in the London Borough of Tower Hamlets, and the watching brief area includes both the Stepney Green Shaft worksite and adjacent Stepney City Farm. It is bounded by Stepney Green (road), Stepney High Street, Stepney Way and Stepney Green Park. The centre of the site is at Ordnance Survey Grid Reference 535780 181640.

All levels in this document are quoted in metres Above Tunnel Datum (m ATD). To convert Tunnel Datum to Ordnance Datum subtract 100m, ie 1m OD = 101m ATD.

All fieldwork was conducted between 01/02/2012 and 03/09/13, and supervised by David Sankey (MOLA Supervisor).



Table 1 Site Details

Task	Principal Contractor	Programme
<ul style="list-style-type: none"> Bulk excavation of Shafts at Stepney Green (Mitigation) – General Watching Brief 	C305 Dragados Sisk jv (DSJV)	27-02-2012 to 09-03-2012
<ul style="list-style-type: none"> Four trial pits in advance of Two new facility buildings footings and drainage at Stepney City Farm – General Watching Brief 	C305 Dragados Sisk jv (DSJV)	01-02-2012 to 10-02-2013
<ul style="list-style-type: none"> Two soakaways for two new facility buildings footings, utilities water main and drainage at Stepney City Farm – Targeted+General Watching Brief 	C305 Dragados Sisk jv (DSJV)	06-02-2012 to 10-08-2012
<ul style="list-style-type: none"> New worksite area – General Watching Brief 	C305 Dragados Sisk jv (DSJV)	20-06-2012 to 25-06-2012
<ul style="list-style-type: none"> Levelling (monitoring) points and Boreholes – General Watching Brief 	C305 Dragados Sisk jv (DSJV)	25-06-2012 to 14-09-2012
<ul style="list-style-type: none"> Fire water main – General Watching Brief 	C305 Dragados Sisk jv (DSJV)	29-08-2013 to 03-09-2013

The event code (sitecode) is XRV10.

2 Planning background

The overall framework within which archaeological work will be undertaken is set out in the Environmental Minimum Requirements (EMR) for Crossrail (<http://www.crossrail.co.uk/railway/getting-approval/environmental-minimum-requirements-including-crossrail-construction-code>) The requirements being progressed follow the principles of Planning Policy Guidance Note 16 (PPG16)(DoE, 1990), and its replacements Planning Policy Statement 5 (PPS5)(DCLG, 2010) and the National Policy Planning Framework (NPPF)(DCLG, 2012), on archaeology and planning. Accordingly the nominated undertaker or any contractors will be required to implement certain control measures in relation to archaeology before construction work begins.

Schedules 9, 10 and 15 of the Crossrail Bill (2008) concern matters relating to archaeology and the built heritage and allows the dis-application by Crossrail of various planning and legislative provisions including those related to listed building status, conservation areas and scheduled ancient monuments (Schedule 9). Schedule 10 allows certain rights of entry to English Heritage given that Schedule 9 effectively dis-applied their existing rights to the Crossrail project, and Schedule 15



allows Crossrail to bypass any ecclesiastical or other existing legislation relating to burial grounds.

Notwithstanding these disapplications, it is intended that agreements setting out the detail of the works and requiring relevant consultations and approvals of detail and of mitigation arrangements will be entered into by the nominated undertaker with the relevant local planning authorities and English Heritage in relation to listed buildings and with the Department of Culture, Media and Sport (DCMS) and English Heritage in relation to Scheduled Ancient Monuments (SAMs).

3 Origin and scope of the report

This report has been commissioned from Museum of London Archaeology (MOLA) by Crossrail Ltd. The report has been prepared within the terms of the relevant standard specified by the Institute for Archaeologists (IFA, 2001). It considers the significance of the fieldwork results (in local, regional or national terms) and makes appropriate recommendations for any further action, commensurate with the results.

4 Previous work relevant to archaeology of site

The principal previous Crossrail studies are as follows:

- Crossrail, Environmental Statement, February 2005;
- Crossrail, Assessment of Archaeology Impacts, Technical Report. Part 2 of 6, South-East Route Section, 1E0318-E2E00-00001, February 2005 [Specialist Technical Report (STR);
- Crossrail, Amendment of Provisions 1, January 2006;
- Crossrail, Amendment of Provisions 3, November 2006;
- Crossrail, Archaeology Programming Assessment, November 2006;
- Crossrail, MDC3 Archaeology Updated Baseline Assessment, January 2008; and
- Crossrail, Archaeological Monitoring of Ground Investigations, Borehole Package 12, September 2008.
- Crossrail, Archaeology Detailed Desk Based Assessment Stepney Green Shafts (Document number CR-SD-STG-EN-SR-00001) Version 1.0, April 2008

The previous investigations across the site consisted of monitoring further boreholes, a trial trench evaluation, general watching brief on ground works, a targeted watching brief on utilities diversions, and a Community Archaeology event. These works were reported on in:

- C121 – SCL Tunnels. Archaeological Monitoring of Ground Investigations GI Packages 13VO2, 29 and 29VO1 Liverpool Street, Farringdon, Stepney Green & Eleanor Street CRL Document Number: C121-MMD-G-RGN-CRG03-50002



- C261 Archaeology Early East, Fieldwork Report, Archaeological Evaluation and Watching Briefs, Stepney Green Shaft (XRV10), Document Number: C261-MLA-X-RGN-CR140-50003, March 2011.
- C261 Archaeology Early East, Fieldwork Report, Archaeological Excavation and Watching Briefs, Stepney Green Shaft (XRV10), Document Number C261-MLA-X-RGN-CR140-50047, September 2012.

5 Geology and topography of site

The site sits within the ancient flood plain of the River Thames; consequently the geological and topographical setting was covered in detail in the Crossrail WSI (Crossrail, 2010a). A summary is given below.

The drift geology consists of Pleistocene river terrace gravels (Taplow Gravel Formation) deposited and shaped by erosion caused by glacial meltwater following the last ice age. The archaeological potential of the terrace gravel deposits is considered to be very low. These overly London Clay, a marine deposit found across London dating to around 50 million years before present. In the northern and western parts of the site these are overlain by brickearth. In the archaeological excavation of the shaft archaeologically sterile natural brickearth was encountered at 107.9m ATD.

The ground level rises gradually from north to south (109.58–110.27m ATD). There is a significant increase in the south-east corner, in the vicinity of the former congregational church, where the level rises to 111.34m ATD.

5.1 The Archaeological and Historical Background

The archaeological and historical background of the site is described in sections 2.5 to 2.7 of the WSI (Crossrail 2010a) and section 5 of the DDBA (2008), it has been revised in the light of the results of an archaeological excavation of the site. It is summarised briefly below.

Truncated natural brickearth was cut by a later medieval ditch, which was surrounded by a probable boundary wall dated to the late 15th- or 16th-century. Inside this lay a walled moat built c. 1450–1550 around the medieval and later manor house of King John's Court (later Worcester House), of which some internal walls also survived, possibly the remains of John Fenne's Great Place of the 1470s. A timber baseplate lay on a natural gravel causeway across the moat, and appears to have supported a bridge leading to the SW corner of the house. The moat was filled-in and a cess pit (containing 16th-century fine glassware) dug into the fills at the beginning of the 17th-century. It may represent clearance around the time of the acquisition of the house by the 1st Marquis of Worcester. Finds from the moat included leather footwear, a wooden bowling ball, and a medieval rowel spur.

A series of drains may mark the remodelling of the site as it evolved into two religious institutions, elements of which were excavated: a 19th-century Congregational church and attached school, and a 19th-century Baptist college. Standing remains from the church and college will be preserved in situ. The latest remains were walls, cesspits, and wells or soakaways from 19th- and early 20th-century houses which had been destroyed during World War II. These were sealed by modern deposits associated with either Stepney City Farm or adjacent parkland.

6 Research objectives and aims

6.1 Objectives of the fieldwork

The overall objectives of the investigation were to establish the nature, extent and state of preservation of any surviving archaeological remains (and to preserve by record) that which will be affected by the development. Specifically, archaeological investigations had the potential to:

- Recover archaeological remains of prehistoric date relating to occupation of the area;
- Recover archaeological remains of medieval date relating to the expansion of Stepney Green;
- Recover archaeological remains of post-medieval, or earlier date relating to Worcester House or its predecessor;
- To establish the presence or absence of archaeological remains surviving below the foundations of buildings shown on the 19th-century Ordnance Survey map;
- Record the character and extent of archaeological remains identified during trial trenching. [Outside the area of the shaft excavations] preserve *in situ* significant archaeological remains identified by evaluation.

6.2 Research Aims

Selected research themes derived from *A Research Framework for London Archaeology 2002* (Nixon et al, 2003) are included in the *WSI* (Crossrail 2010a) and are set out below.

Evidence relating to the religious buildings and history of the site may contribute to the following research themes:

- To examine the changing roles and diversity of religions in London society at different times; and
- To identify the extent to which religious minorities and non-conformists had a distinct material culture in London, and developing archaeological models for future analysis.



7 Methodology of site-based and off-site work

All on-site archaeological work was carried out in accordance with the following documents:

- Stepney Green Shaft Site-Specific Written Scheme of Investigation Doc. No.C123-JUL-T1-TPL-CR094_SH005_Z-00001 Rev 8.0
- Addendum to SSWSI: Trial Trench Evaluation and Detailed Excavation –Stepney Green Shaft Doc No. C123-JUL-T1-RGN-CR094_SH005_Z-00001 Revision 3.0
- Amendment to SS-WSI: C123-JUL-T1-TPL-CR094_SH005_Z-00001– Stepney Green Shaft – Document Number: C123-XRL-T1-RGN-CR094-50001
- The Method Statement for an Archaeological Evaluation and Watching Briefs at Stepney Green Shaft R.2 – Document Number: C261-MAL-X-GMS-CRG03-50002.
- Addendum to Method Statement Stepney Green Shafts and City Farm, General Watching Briefs and Targeted Watching Brief (XRV10) Document Number: Supplier Document Number: LIM_MS_TWB_Access_Shaft_v1_15-12-11.doc
- Archaeology Specification for Evaluation & Mitigation (including Watching Brief) Document Number:CR-PN-LWS-EN-SP-00001
- Archaeology Generic Written Scheme of Investigation, Document Number: CR-PN-LWS-EN-SY-00001, 2009
- Museum of London *Archaeological Site Manual* (MoL 1994)
- English Heritage Greater London Archaeology Advisory Service, June 1998 *Archaeological Guidance Papers 1–5*
- English Heritage Greater London Archaeology Advisory Service, May 1999 *Archaeological Guidance Papers 6*
- English Heritage Greater London Archaeology Advisory Service, 2009 *Archaeological Guidance Papers 1–5* (consultation draft) [1. Desk-Based Assessments, 2. Written Schemes of Investigation, 3. Fieldwork, 4. Reporting, dissemination and publication, 5. Popular dissemination and communication of archaeology]
- English Heritage, GLAAS, February 2014 *Standards for Archaeological Work, London Region*
- Historic England, GLAAS, April 2015 *Guidelines for Archaeological Projects in Greater London*

The above cited reports are all available from the London Archaeological Archive and research Centre (LAARC).

The site finds and records can be found under the site code XRV10 in the MOLA archive. They will be stored there pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail scheme.



8 General/Targeted watching briefs and sampling Methodology

Excavation was by machine, operated by the Principal Contractor or their Sub-Contractors down to the first significant archaeological horizon under supervision of a MOLA Senior Archaeologist. Further manual cleaning, investigation and recording were then undertaken by the MOLA Senior Archaeologist. A written and drawn record of all archaeological deposits encountered was made in accordance with the principles set out in the Museum of London site recording manual (MoL 1994). Photographs were taken by a MOLA Senior Archaeologist with a digital camera of resolution of 12 megapixel or greater, providing similar resolution to a conventional 35mm SLR. The photographic record included photographs of trenches, pits, etc that were monitored, as well as archaeological features, appropriate groups of features and structures

Observations of archaeological walls in the area of the shaft and the worksite south of it were surveyed by MOLA geomaticians by Leica SmartRover ATX 1230+GNSS Antenna with an RX 1250XC controller. The latter produced a 3D survey tied in to the Ordnance Survey National Grid (OSGB36) and transformed to Crossrail plane grid. As were the location of trenches and remains in the construction of Stepney City farm new buildings. Geotechnical boreholes and monitoring points were surveyed by subcontractors.

9 Results and observations including stratigraphic report and quantitative report

9.1 Stepney City Farm Geotechnical Trial Pit 1



Photo 1 Coal-ash fills in TP1 looking north

Geotechnical Trial Pit 1	
Location	West end of New Barn
Dimensions	3.3m x 0.6m
• OS National grid coordinates	535870.77 181634.99
• LSG grid coordinates	86219.878 36248.100
Modern Ground Level/top of the slab	107.3m ATD
Modern subsurface deposits	Reworked coal-ashy fills with concrete
Level of base of archaeological deposits observed and/or base of trench	NA
Natural observed	Not Seen

Extent of modern truncation	Early 20th century intrusion to deeper than 2.6m below ground level
Archaeological remains	Dating Evidence, Finds, and Samples
No Archaeological remains	
Interpretation and summary	
A deep modern intrusion had been dug deeper than the 2.6m limit of excavations. The intrusion was backfilled with coal-ashy fills with modern concrete. Possibly this marked the removal of something in Post-war site clearance	

9.2 Stepney City Farm Geotechnical Trial Pit 2



Photo 2 Natural terrace gravel exposed below reworked gravels (looking west)



Geotechnical Trial Pit 2	
Location	South side of New Barn.
Dimensions	3.7m x 0.7m
OS National grid coordinates	
LSG grid coordinates	
Modern Ground Level/top of the slab	109.60m ATD
Modern subsurface deposits	20th-century reworked coal-ashy fills 1.4m deep, to 108.2m ATD. Reworked gravel to 107.3m ATD (2.3m deep)
Level of base of archaeological deposits observed and/or base of trench	107.3m ATD
Natural observed (truncated/not truncated ?)	Terrace gravels at 107.3m ATD Truncated
Extent of modern truncation	107.3m ATD
Archaeological remains	Dating Evidence, Finds, and Samples
No archaeological remains	
Interpretation and summary	
Post-WW2 modern intrusion 2.3m deep has removed archaeology from this trial pit, to 107.3m ATD. Lower backfill is reworked Terrace gravel [311], above which was reworked coal-ashy fills.	

9.3 Stepney City Farm Geotechnical Trial Pit 3



Photo 3 Trial Pit 3 looking south, on the east side of the craft building. A nineteenth-century brick coal cellar dug through landfill deposits of similar age, at 109.1m ATD

Geotechnical Trial Pit 3	
Location	<ul style="list-style-type: none"> North side of City Farm Community Building
Dimensions	<ul style="list-style-type: none"> 4.8m x 0.7m
OS National grid coordinates	
LSG grid coordinates	86246 36237
Modern Ground Level/top of the slab	109.7m ATD
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	108.6m ATD base of trench
Natural observed (truncated/not truncated ?)	Not Observed

Extent of modern truncation	None
Archaeological remains	Dating Evidence, Finds, and Samples
Dark grey coal-ashy silt and sand [310] filled a coal cellar, parts of the east and south walls exposed, made of dark red brick 220mm x 100mm x 60mm, wall 1 brick-length thick [309]. It cut [308] mid-grey lime mortar with frequent red brick fragments [307].	Bricks identified on site and discarded 18th – or early 19th-century
Interpretation and summary	
North-eastern pit (TP3) was aligned N-S inside the north east corner of the proposed block. This pit was moved to avoid a cat-scanned electricity cable and roots from a tree which is to be kept. The north half of this pit clipped the west edge of an 18 th - or early 19 th -century coal cellar. This was dated on the size of bricks, added coal ash in the clay they were made from and the lack of “frogs” (a post-1840 feature). It was dug through landfill dumps of a similar age.	

9.4 Stepney City Farm Geotechnical Trial Pit 4



Photo 4 Trial Pit Looking South

Geotechnical Trial Pit 4	
Location	South-east side of City Farm Community Building
Dimensions	3.5m x <0.8m
OS National grid coordinates	
LSG grid coordinates	86249 36220
Modern Ground Level/top of the slab	110m ATD
Modern subsurface deposits	Lean-mix bed to concrete slab at 109.8m ATD
Level of base of archaeological deposits observed and/or base of trench	108.8m ATD base of trench
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	109.65m ATD
Archaeological remains	Dating Evidence, Finds, and Samples
<p>Loose grey coal-ashy silt [306] filled a coal cellar [305], the south wall of which divided the trial pit. It was made of dark red unfrogged bricks 220mm x 100mm x 60mm, with a rough-hewn chalk block to 300mm diameter, which cut [304] loose mid grey crushed lime mortar [303].</p> <p>Below the mortar – exposed at the bottom of the trial pit – was dirty brown reworked brickearth, with charcoal flecks [302], at 108.8m ATD.</p>	Bricks identified on site and discarded 18 th – or early 19 th -century
Interpretation and summary	
<p>Southern pit (TP4) aligned N-S on the east edge of site – was moved south to avoid a sewer connection. It had “dirty” reworked Brickearth at 108.8m ATD, cut through by a coal cellar or cess pit with a reused chalk block used in its construction . The chalk is potentially, originally from medieval building, but was combined with typically 18th-c (type) dark-red bricks. The north half of the pit was occupied by the backfill of this cellar or cess pit.</p>	

9.5 Stepney City Farm South of two Soakaways



Photo 5 Southern Soakaway looking west

The area of the proposed soakaway, later cess pits are dark grey, culvert exposed in central sondage. The white patch near the 0.5m scale is a permeability test

Southern Soakaway Stepney City Farm new buildings	
Location	Courtyard west of City Farm Community Building
Dimensions	5m x 5m (benched step to 3.45 m x 3.6m)
OS National grid coordinates	535900.584,181607.638
LSG grid coordinates	86249 36220
Modern Ground Level/top of the slab	110m ATD
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	107.2m ATD base of trench in sondage to culvert
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	9.4m ATD



Archaeological remains	Dating Evidence, Finds, and Samples
<p>A N-S aligned brick culvert [320] made of red brick stretchers 220mm x 100mm x 55mm set in two walls 220mm-thick, separated by 260mm-wide gap, filled with Dark grey silt [319].</p> <p>It was covered by a disuse – or later robbing – backfill [318] which had a 17th-c Bartmann jug and Tobacco pipe.</p> <p>It was covered by a general levelling dump of gravel with brickearth and charcoal [317], cut through by two square cess pits [314] and [316], filled with dark grey coal-ashy fills [315] and [317].</p>	<p>“Tudor”-style bricks</p> <p>17th-c pottery and tobacco pipe</p> <p>19th-c clay tobacco pipe</p>
Interpretation and summary	
<p>A red-brick culvert [320] aligned N-S and aligns with a drain found in the 1970s and considered (then) to be 16th-century in date. In the soak-away, it was observed in a 1.2m-square <i>sondage</i>, and the 1970s exposure was considerably larger. The dark silt [319], that was contemporary with the use of the culvert, included no finds or dateable material within the <i>sondage</i> area.</p> <p>With the limited area required for construction purposes, it was impossible to determine whether the top of the culvert had been “robbed” or whether the overlying deposit [318] slumped into the void when a wooden top to the culvert rotted. Either way it marks the disuse of the culvert in the 17th century.</p> <p>19th-c square coal-ashy cess pits were probably within an open area fronting the southern end of King John Street, depicted on the 1875 OS1:2500 map.</p>	

9.6 Stepney City Farm North of two Soakaways

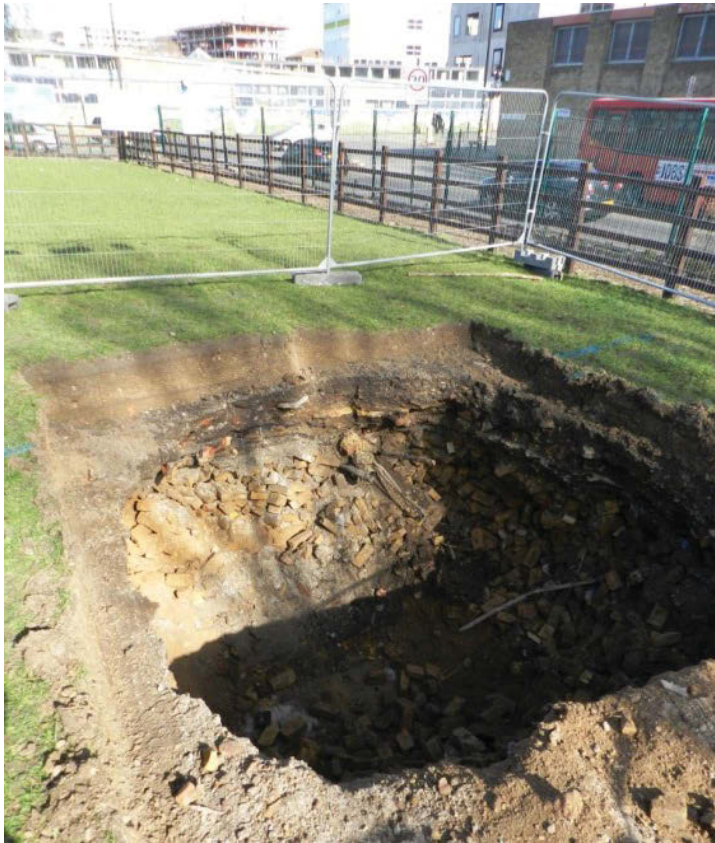


Photo 6 Northern soakaway, looking north to Stepney Green Boys School

Northern Soakaway Stepney City Farm new buildings	
Location	Field north of new barn Stepney City Farm
Dimensions	3.6m x 3.6m, reduced to 2.76m after close-sheet shoring
OS National grid coordinates	535893.61 181645.63
LSG grid coordinates	86242.91 36258.18
Modern Ground Level/top of the slab	110.06m ATD
Modern subsurface deposits	0.4m of topsoil above a further 0.4 of coal-ashy fill, over demolition rubble filled
Level of base of archaeological deposits observed and/or base of trench	2.5m deep. With a further sondage to 3.0m below ground level
Natural observed (truncated/not truncated ?)	Mixed terrace gravels at 2.8m below ground level 107.26m ATD
Extent of modern truncation	2.8m below ground level

Archaeological remains	Dating Evidence, Finds, and Samples
No archaeological remains	
Interpretation and summary	
Late 19th- or 20th-century cellar or basement, possibly to a pub or similar large building	

9.7 Stepney City Farm New Buildings handwash-station pipe trench



Photo 7 Wall made of Tudor-style bricks [331] beneath the raised bed west of City Farm offices

Stepney City Farm new buildings handwash-station pipe trench	
Location	East edge of former King John Street
Dimensions	22m x 0.4m
OS National grid coordinates	535879.360,181590.986
LSG grid coordinates	86227.359 36203.885
Modern Ground Level/top of the slab	110.265m ATD

Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	109.55m ATD base of trench
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	None
Archaeological remains	Dating Evidence, Finds, and Samples
<p>Two lengths of wall (originally the same wall) were recorded. The northern length [331] of was observed in elevation 1m long 0.7m deep (to limit of excavation at this point)</p> <p>The southern length [332] was 4.5m long and 0.38m wide and was observed partly in elevation and part in plan (where the trench diverted eastwards). In elevation it was observed 0.6m deep</p> <p>Both lengths were made of "Tudor"-Style , 2-inch thick bricks 230mm x 100-110mm x 55mm. They were laid in English bond (alternate courses of header and stretchers). Four courses = 280mm.</p>	"Tudor"-style bricks
Interpretation and summary	
Remnants of a former estate or garden wall, that defined the location of King John's Street	



Photo 8 Southern length of wall [332] observed in plan

9.8 Thames Water Temporary Drainage Manhole, Gullies, and Water Main diversion



Photo 9 Wall made from Tudor-style 2-inch thick bricks east side of new manhole

Stepney City Farm Thames Water Temporary Drainage manhole and Water Main	
Location	East -- West aligned section of former King John Street, west of City Farm New Barn
Dimensions	<p>A manhole at the west end measured 3m x 3m, with connecting trenches 0.4m wide, 4m long from west side, 6m long from the north-west corner and 5m long from the north-east corner. The water main trench was 43m long from the east side of the manhole , eastwards, to where it turned north for 3.2m and terminated in a 4m x <0.9m connection pit</p> <p>All trenches and the watermain connection pit were to a maximum depth of 1.2m. The Manhole was 3.5m deep.</p>
OS National grid coordinates	West end 535814.05 181628.46 East end 535867.00 181630.80
LSG grid coordinates	West end 86163 36243 East end 86216 36244



Modern Ground Level/top of the slab	109.5m ATD West 110.0m ATD East
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	106.0m ATD base of Manhole trench 108.3m ATD or higher, trenches and connection pit
Natural observed (truncated/not truncated ?)	Terrace gravel 108m ATD Approx Truncated
Extent of modern truncation	109.1m ATD
Archaeological remains	Dating Evidence, Finds, and Samples
<p>A length of wall was recorded on the east side of the manhole [327] it had been truncated at 109.1m ATD and the base was at 108.4m – 108.5m ATD. It was red bricks 230mm x 110mm x 55mm, set in English bond with a layer of edge-lain soldiers at the base of the construction cut [328].</p> <p>The wall was cut through 1.2m south of the northern edge of the manhole by a large feature, dug deeper than the base of the manhole trench 106m ATD [326]. It was filled with dark grey coal ashy fill [325] to 108.5m ATD, where there was 100mm of sand [324], a substantial dump of brick demolition rubble [323] and topped to the surface with redeposited coal-ashy fill [322].</p> <p>Throughout the rest of the trenches and the water main connection pit, only dark grey reworked coal-ashy fills were exposed.</p>	<p>“Tudor”-style bricks</p>
Interpretation and summary	
Potentially a high surviving fragment of Tudor wall, cut through by a large quarry.	



Photo 10 Full depth of temporary drainage manhole. Coal-ashy fills [322] continuing



Photo 11 Water main, initial trench to connect to existing pipe, subsequently enlarged

9.9 Thames Water Water Main diversion trenches Stepney Green Shaft site entrance



Photo 12 Trench on east side of king John Street (site entrance) in the pavement

Three trenches for water connection At site entrance	
Location	On the east side and in the pavement on the east side of King John Street
Dimensions	Main trench 8m x 1m east edge of pavement, 2 trenches 4m x 1m and 1m x 1m from edge of pavement towards centre of road
OS National grid coordinates	535832.53 181688.32
LSG grid coordinates	86182.98 36302.38
Modern Ground Level/top of the slab	109.1m ATD (approx.)
Modern subsurface deposits	0.4m of concrete above modern fills
Level of base of archaeological deposits observed and/or base of trench	108.1m ATD (approx.)
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	
Archaeological remains	Dating Evidence, Finds, and Samples
Fragmentary remains of a brick wall made of 2-inch thick brick [343]	No whole bricks recovered

Interpretation and summary

Brick Wall [343] may relate to the perimeter wall of Worcester House



Photo 13 Fragmentary remains of Brick Wall [343]



LP072401 Levelling Point	
When monitored	Wednesday 5 th September 2012
Location	Stepney City Farm south of Stepney Green Shafts worksite
Dimensions	400mm x 400mm x 800mm
Crossrail co-ordinates	86150.540 36188.669
OS National grid coordinates	535802.963, 181573.845
Modern Ground Level/top of the slab	111.548m ATD
Modern subsurface deposits	200mm topsoil over coal-ashy fill
Level of base of archaeological deposits observed and/or base of trench	800mm bGL , probed to 1.2m bGL
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level
Archaeological remains	
None	Dating Evidence, Finds, and Samples
Interpretation and summary	
18 th - or 19 th -century coal-ashy fill deposits are likely to have been reworked near the surface in the 20 th century. No archaeological remains	

LP072402 Levelling Point	
When monitored	Wednesday 5 th September 2012
Location	Stepney City Farm south of Stepney Green Shafts worksite
Dimensions	400mm x 400mm x 800mm
Crossrail co-ordinates	86151.844 36191.855
OS National grid coordinates	535804.186, 181577.062
Modern Ground Level/top of the slab	111.435m ATD
Modern subsurface deposits	200mm topsoil over coal-ashy fill
Level of base of archaeological deposits observed and/or base of trench	800mm bGL , probed to 1.2m bGL
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level



Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
18 th - or 19 th -century coal-ashy fill deposits are likely to have been reworked near the surface in the 20 th century. No archaeological remains	

LP072412 Levelling Point	
When monitored	Thursday 30 th August
Location	Stepney City Farm south of (inside of) Stepney New Meeting House Congregational Church wall
Dimensions	400mm x 400mm x 600mm probed to 1.2m
Crossrail co-ordinates	86167.631 36222.557
OS National grid coordinates	535819.193, 181608.145
Modern Ground Level/top of the slab	111.2950m ATD
Modern subsurface deposits	100mm topsoil over demolition rubble
Level of base of archaeological deposits observed and/or base of trench	600mm bGL , probed to 1.2m bGL
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Demolition rubble of church demolished following WW2 bomb damage	

LP072202 Levelling Point	
When monitored	Wednesday 5 th September 2012
Location	Stepney City Farm west of woodland garden
Dimensions	400mm x 400mm x 800mm
Crossrail co-ordinates	86174.461 36204.259
OS National grid coordinates	535826.480, 181590.029
Modern Ground Level/top of the slab	110.801m ATD



Modern subsurface deposits	100mm topsoil over demolition rubble
Level of base of archaeological deposits observed and/or base of trench	800mm bGL , probed to 1.2m bGL
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Demolition rubble of buildings demolished following WW2 bomb damage	

LP072415 Levelling Point	
Location	Stepney City Farm west of woodland garden
Dimensions	400mm x 400mm x 800mm
Crossrail co-ordinates	86175.957 36232.018
OS National grid coordinates	,535827.276 181617.811
Modern Ground Level/top of the slab	109.767m ATD
Modern subsurface deposits	100mm topsoil over demolition rubble
Level of base of archaeological deposits observed and/or base of trench	800mm bGL , probed to 1.2m bGL
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Demolition rubble of buildings demolished following WW2 bomb damage	



Levelling Points LP072405 – LP072411	
Location	Stepney City Farm south of (inside of) Stepney New Meeting House Congregational Church wall
Dimensions	7 holes = 400mm x 400mm x 800mm
Crossrail co-ordinates	7 holes equal-spaced in line 86162.874 36205.879 to 86163.218 36221.2230
OS National grid coordinates	LP072405,535814.858,181591.356 to LP072411,535814.815,181606.701
Modern Ground Level/top of the slab	111.432m to 111.384m ATD
Modern subsurface deposits	100mm topsoil over demolition rubble
Level of base of archaeological deposits observed and/or base of trench	800mm bGL , probed to 1.2m bGL
Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Demolition rubble of church demolished following WW2 bomb damage	

Levelling Points LP072201 LP072202 LP072203	
Location	Stepney City Farm bull/cow pasture east of poultry area
Dimensions	3 holes = 400mm x 400mm x 800mm
Crossrail co-ordinates	LP072201 86183.657 36204.259, LP072202 86183.657 36206.935, LP072203 86175.265 36206.935
OS National grid coordinates	LP072201 535835.736 181587.658, LP072202 535835.671 181590.260, LP072203 535827.216 181592.724
Modern Ground Level/top of the slab	110.762m to 110.905m ATD
Modern subsurface deposits	100mm topsoil over demolition rubble
Level of base of archaeological deposits observed and/or base of trench	800mm bGL , probed to 1.2m bGL

Natural observed (truncated/not truncated ?)	Not observed
Extent of modern truncation	Below excavated level
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Demolition rubble of buildings demolished following WW2 bomb damage	

9.10 Excavation of shaft



Photo 14 bulk excavation of south area of shaft

Stepney Green Shaft bulk excavation of southern area of shaft	
Location	Southern area of shaft
Dimensions	18m x 14m
OS National grid coordinates	535761.006,181635.840
LSG grid coordinates	86110.149 36251.713
Modern Ground Level/top of the slab	110m ATD approx..
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	107m ATD approx. base of trench
Natural observed	Terrace gravel
Truncated	
Extent of modern truncation	109.5m ATD approx.
Archaeological remains	Dating Evidence, Finds, and Samples

Two walls made of 2-inch thick bricks were observed [333] and [334], roughly “in-line” and broadly aligned east-west. They were truncated on all sides and in a poor condition

“Tudor”-style bricks

Interpretation and summary

These lengths of wall are broadly at 90 degrees with the earliest wall in the main shaft excavation [196] and thought to be an estate or park wall, from the Late medieval or Tudor period.



Photo 15 Fragment of wall [333]

9.11 Stepney Green Shaft worksite extended area in Stepney Green Park



Photo 16 Walls made of “Tudor-style” 2-inch thick bricks in area south of previous site boundary

Stepney Green Shaft New Worksite Area	
Location	West of Garden Street south of former worksite area
Dimensions	46.1m x 34.5m
OS National grid coordinates	535760.28 181591.02
LSG grid coordinates	86108.30 36206.91
Modern Ground Level/top of the slab	110.26m ATD
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	109.55m ATD base of trench
Natural observed	Not observed
Truncated	
Extent of modern truncation	110m ATD
Archaeological remains	Dating Evidence, Finds, and Samples
Two parallel walls made of 2-inch thick bricks, were exposed in two separate	“Tudor”-style bricks

lengths (originally the same wall). The northern length [330] (left) and [344] (right, pictured above) was 6m long, each wall was one brick-length thick and they were slightly less (200mm) apart. The southern length [329] was one wall 10.5m long. They were observed in plan only at 110m ATD

Interpretation and summary

These lengths of wall align with the earliest wall (by brick type) in the main shaft excavation [196] and thought to be an estate or park wall, from the Late medieval or Tudor period.

9.12 Fire water main connection



Photo 17 Wooden pipe [337] looking east

Fire water main connection East Trench	
Location	Stepney green Road near Junction with White Horse Road
Dimensions	A 1.2m deep (1.5m in parts) trench, 0.7m wide 21m long, with wider connections at the ends
OS National grid coordinates	535865.068, 181689.854

LSG grid coordinates	86215.558 36303.100
Modern Ground Level/top of the slab	19m ATD (approx.)
Modern subsurface deposits	Road 0.5m thick
Level of base of archaeological deposits observed and/or base of trench	107.55m ATD base of trench
Natural observed	Not observed
Truncated	
Extent of modern truncation	varies
Archaeological remains	Dating Evidence, Finds, and Samples
At 8.1m OD (approx.. 0.9m below ground level) 300mm-diameter wooden pipe [337] made from a whole tree trunk with the centre bored out, crossed the trench in a NE-SW direction, near the junction with White Horse Lane. Five metres west of it was a more N-S aligned brick culvert [336] made from late 17th- to early 19th-c bricks	3 bricks
Interpretation and summary	
Pipe [337] and culvert [336] Water management measures, probably for the neighbouring (easterly) properties of Worcester House.	



Photo 18 Wooden pipe [337] looking south



Photo 19 Culvert [336] (north is top) East trench



Photo 20 Wall [341] looking north

Fire water main connection West Trench	
Location	Stepney green Road and north end of former Garden Street
Dimensions	A 1.2m deep (1.5m in parts) trench, 0.7m comprising a 15.7m length in Garden Street and aligned with it, with a 1m-long offset near the southern end, a 7.2m length in Stepney Green and aligned with it, joined to Garden street by a 6.9m angled trench, widened to a triangle where these trenches merged.
OS National grid coordinates	535865.068, 181689.854
LSG grid coordinates	86136.539 36324.858
Modern Ground Level/top of the slab	19m ATD (approx.)
Modern subsurface deposits	Road 0.5m thick
Level of base of archaeological deposits observed and/or base of trench	107.55m ATD base of trench

Natural observed Truncated	Not observed
Extent of modern truncation	varies
Archaeological remains	Dating Evidence, Finds, and Samples
<p>Fragmentary remains of a brick wall with yellow mortar [339] were observed over 3.7m across the north end of Garden Street, at 8.18m OD (approx.. 0.78m below ground). They were set into a bank of brown sandy pebbly silt [338], and on the south side a brick “re-facing” [340] continued below the level of [339] and [338]</p> <p>9.4m south of [340] was a 0.38m-wide fragment of wall, truncated on the east side by modern activity, at 0.77m below ground level</p> <p>Between the two was a third wall [342] 0.5m-wide, truncated at 0.88m below ground level (18.12m OD approx..)</p>	3 bricks
Interpretation and summary	
<p>It is possible that walls [339] and [340] (north) and [341] (south), at 9.4m apart, are the outside walls of the moat that surrounded Worcester House. If so, wall [342] would have been an internal structure after the moat had been filled, or possibly a later perimeter wall</p>	



Photo 21 Walls [339] and [340] looking east



Photo 22 Walls [339] and [340] looking south



Photo 23 Wall fragment [342] looking west

10 Assessment of results against original research aims

The revised GLAAS guidelines (Historic England 2015, 4.2.2) require an Assessment of results against original expectations (these no longer mention the criteria for assessing national importance).

10.1 Original research aims

The original research objectives were met as follows, information was recovered on:

- *Recover archaeological remains of medieval date relating to the expansion of Stepney Green;*
The walls exposed in the new area of the worksite, west of Garden Street, align with a wall found in the main excavation, the bricks of which dated to the last phase of the medieval period.
- *Recover archaeological remains of post-medieval, or earlier date relating to Worcester House or its predecessor;*
Substantial remains were found, either part of the Worcester House complex, or contemporary with it. They include the remains of a brick culvert in the courtyard area of the new farm buildings, during construction of a soakaway. This aligns with remains of a culvert (presumably the same) found in the 1970s. West of this a Tudor wall survived almost to ground level, on the east side of the southern (eastern) section of the former King John Street – farm entrance. It is possible that this is also a boundary wall and that it marked the division of the original village plots (facing Stepney High Street) from the more substantial properties that surrounded it. Walls observed in other places (eg. New water connection manhole) indicate that there are substantial remains throughout the area contemporary with, or part of Worcester House. It is possible that wall fragments found during the excavation of an emergency fire water main mark the extents of the Worcester House moat on the north side of the main house.
- *To establish the presence or absence of archaeological remains surviving below the foundations of buildings shown on the 19th-century Ordnance Survey map;*
Archaeological remains were found throughout the area of the site, beneath 19th-century building foundations, except for areas of deep basement (principally a cellar exposed in excavations for the northern of two soakaways for Stepney City Farm new buildings).
- *Record the character and extent of archaeological remains identified during trial trenching outside the area of the shaft excavations: preserve in situ significant archaeological remains identified by evaluation.*
Remains were found across the broad area of investigations. They were mapped and the level below ground recorded. Damage to remains was minimised within operational and design constraints. Information on the remains was circulated amongst contractors and Stepney City Farm, in order to ensure preservation into the future.

11 Statement of potential archaeology

The following potentials will be assessed in greater detail during post-excavation assessment (see 13).

The results from the watching brief have potential for study of the following:

- The extents and nature of Worcester House and its neighbours
- The division of properties and creation of designed landscapes with walled gardens in the Late Medieval and Tudor period
- Water management, as it relates to Worcester House moat and the Common Sewer or Black Ditch

11.1 Importance of Resources

The importance of the excavated remains has been assessed using professional judgement, informed, where applicable, by the criteria for assessing the national importance of monuments (DCMS 2010, Annex 1).

The remains of Worcester House (King John's Palace/Court) are of greater significance than they would otherwise be because of the associated historical documents. The remains, as a group, are those of buildings and structures that were central to the transition from medieval to modern forms of faith and political power. Those remains that were exposed during the watching briefs in this report are significant in that they add detail to the remains found during the excavation. For instance, the remains of estate walls may be tied in to references to the size of the property, providing strong evidence that it was the property of John Fenne in the 1470s, and evidence of a culvert to the east of the estate, through the area of the village of Stepney, may be evidenced of a significant water supply to Mercer's Great Place, leased by Thomas Cromwell during the reign of Henry VIII.

They are therefore assessed as being of **moderate importance**.

12 Conclusions

12.1 Medieval remains

Walls [329] [330] appear to continue the line of wall [196] recorded during the main excavation. If they are considered the same wall, they may describe the limits of a walled estate, walled garden, or park. It is possible that wall [331] [332] in Stepney City Farm is the other side of the enclosed area. If we take the area between the east and west estate walls and between Stepney Way and the outer medieval ditch found in the main excavation (Section 5.1, above) we find an area of 1.969 acres, thought to be the same 2-acre piece that was subject of a legal dispute between John Fenne and Agnes Kingeston, in 1466-7 (Calendar of the Feet of Fines, anno 6). This is considered to be a strong indication that these are the remains of this particular estate at the end of the medieval period. Also, John Fennes Great Place was leased to Thomas Lord Darcy in the subsequent Tudor period (*VCH* 1998, 19–52), who was implicated in the northern rebellion against Henry VIII called the Pilgrimage of Grace. Finds found in the main excavation of the moat (Crossrail 2012, Section 8.1) appear to date from the period of his occupation of Worcester House / John Fennes Great Place. If so the location of the estate walls during watching briefs has made a considerable contribution to the understanding of the site as a whole and has increased the historic value of those finds as a resource for study.

12.2 Post-medieval remains

The remains of significance found throughout the site may relate to the further mapping of the Worcester House moat [339], [340], [341] or water management of the late 15th- to the 19th-centuries, including culvert [320] which may be the same as a similar culvert excavated in the 1970s in Stepney High Street (Mills 1982, 327), as well as later water pipe [337] and culvert [336] to the north of this. These measures have wider topographic significance as they relate to the use of the Common Sewer, or Black Ditch, a channelled former natural stream that arose in Spitalfields and flowed into the Thames at Limehouse dock. At various periods part or all of the flow of the Common Sewer was diverted through a variety of channels and culverts. Culvert [320] may not have been a water supply for the village of Stepney, though which it passed, but rather directed waters to the Mercer's Great Place (formerly Henry Collet's Great Place) which was leased by Thomas Cromwell at the relevant period (*VCH* 1998, 19–52) and may have had moat/s and/or pond/s befitting its status. Some of the later culverts are more likely to have diverted waters in the opposite direction and acted as storm drains for properties on site.

Whilst one wall [344] may simply be a strengthening of the original perimeter wall [330] (or may relate to later property issues), a brick wall found near the centre of the site, at a bend in King John Street [327] may relate to wall observations from earlier watching briefs. This area is outside of the main area of Worcester House and its elucidation may be accomplished by amalgamation of watching brief records and historical records.



13 Post-excavation assessment, analysis, publication and dissemination proposals

The watching brief results will initially be disseminated via this report. The supporting site archive of finds and records (including digital data), post-excavation assessment, analysis and publication proposals will be considered in relation to later fieldwork in the wider context of archaeological potential and results across the Crossrail scheme.

A summary report will be published in the London Archaeologist excavation round up and also deposited with the LAARC.

14 Archive deposition

The site archive containing original records and finds will be stored temporarily with MOLA pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail project.



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17 NMR OASIS archaeological report form

OASIS ID: molas1-158943

Project details

Project name	Stepney Green shafts + Stepney City Farm watching briefs
Short description of the project	A number of watching briefs on Stepney City Farm, and on an enlarged worksite area of the crossrail shaft, exposed a series of walls and a culvert (in line with one found in 1970s) made from 2-inch thick bricks
Project dates	Start: 01-02-2012 End: 03-09-2012
Previous/future work	Yes / Not known
Any associated project reference codes	XRV10 - Sitecode
Type of project	Recording project
Site status	Local Authority Designated Archaeological Area
Current Land use	Other 1 - Allotment
Current Land use	Community Service 2 - Leisure and recreational buildings
Current Land use	Cultivated Land 4 - Character Undetermined
Current Land use	Transport and Utilities 2 - Other transport infrastructure
Monument type	CULVERT Post Medieval
Monument type	WALL Post Medieval
Monument type	MOAT Post Medieval
Investigation type	"Watching Brief"
Prompt	Crossrail Act

Project location

Country	England
Site location	GREATER LONDON TOWER HAMLETS STEPNEY Stepney Green Shafts + Stepney City Farm Watching Briefs
Postcode	E1
Study area	20495.00 Square metres
Site coordinates	TQ 3578 8164 51 0 51 31 00 N 000 02 34 W Point



OASIS ID: molas1-158943 cont'd

Project creators

Name of Organisation	MOLA
Project brief originator	Crossrail
Project design originator	Crossrail
Project director/manager	Elaine Eastbury
Project supervisor	David Sankey
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Crossrail Ltd

Project archives

Physical Archive recipient	To be designated
Physical Contents	"other"
Digital Archive recipient	To be designated
Digital Media available	"Images raster / digital photography", "Text"
Paper Archive recipient	To be designated
Paper Media available	"Notebook - Excavation', ' Research', ' General Notes"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Archaeological watching Briefs at Stepney Green Shaft and Stepney City farm
Author(s)/Editor(s)	Sankey, D.
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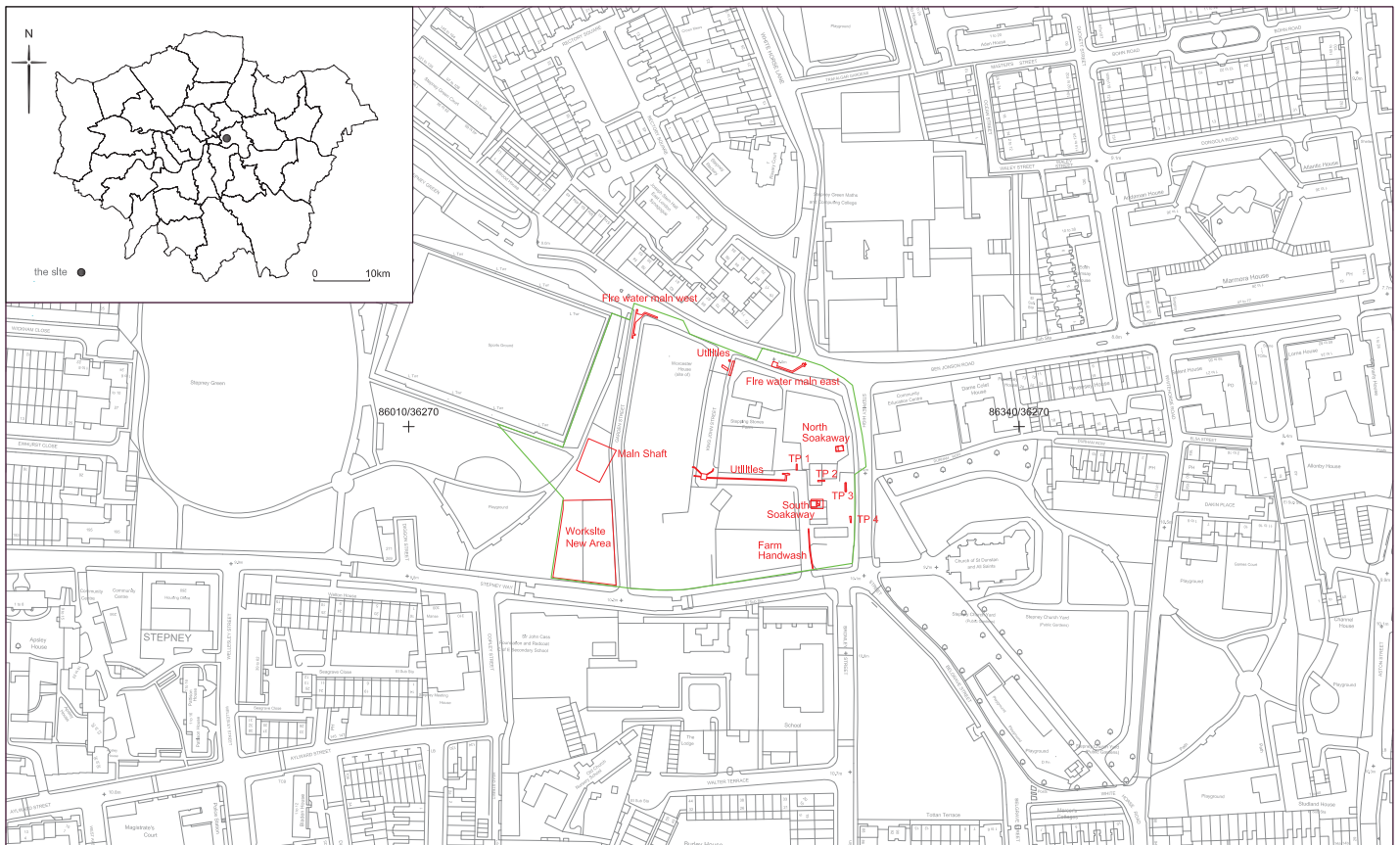


Fig.1 Site location and archaeological trenches

- ▭ Site outline
- ▭ Trench edge

1:2000 @ A3
 0 100m

Site Code: XRV10

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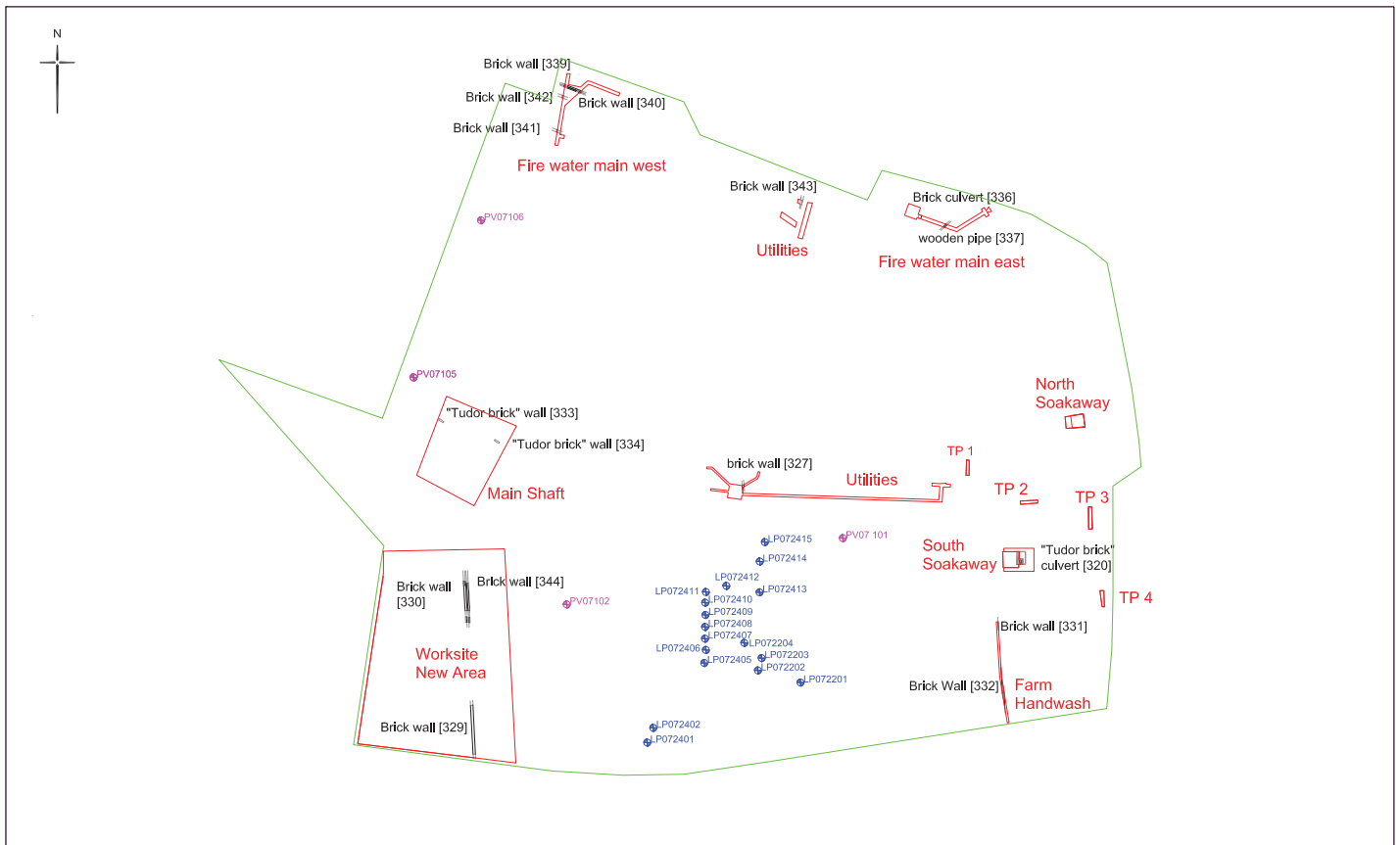


Fig.2 Archaeological features and structures.

- Site outline
- Trench edge
- Archaeological feature
- Borehole
- Levelling point

1:800 @ A3
 0 50m

Site Code: XRV10