



C261 ARCHAEOLOGY EARLY EAST
Fieldwork Report
Archaeological Excavation and
Watching Briefs
Stepney Green Shaft (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 worksite at the Stepney Green shaft site consists of the proposed shaft area and surrounding worksite.

The excavation took place within the area of the proposed shafts. This is also the site of part of a large medieval and post-medieval manor house known variously as King John's Court or Palace, later Worcester House and, possibly, as Fenne's Great Place, conveyed to John Fenne in 1466.

The principal remains excavated were those of a substantial moated manor house made with bricks dated 1450/1470–1550. Outside of this were the potentially older remains of a substantial ditch, the Common sewer or 'Black Ditch' that flowed from Bethnal Green to Limehouse. This ditch contained residual 12th-century and 15th-century pottery and a typically late-medieval narrow horseshoe. It was backfilled in the second half of the 16th century.

Within the 'island' of the moat were the remains of the foundations of the west wing of a courtyard house, the gable of which may have stood on the moat wall.

Set into the moat sediments was a cess pit or drain trap that contained 16th-century fine glassware. It may represent a 'house clearance' around the time of the acquisition of the house by the 1st Marquis of Worcester.

A series of drains crossed the 'island', the backfilled moat and the late-medieval ditch. These features may be associated with the transformation of the site into two religious institutions.

The 17th-century Stepney Meeting House, known to have been built in the southern part of the site, was not found during the fieldwork. The main house was converted to a Baptist college in the early 19th century. A watching brief was maintained on works around the remains of the 19th-century 'New Meeting House' Congregational Church and attached school. Another watching brief was maintained on works around the standing remains of the Baptist Chapel, the construction of which marked the beginnings of Garden Street. A 19th-century cess pit from the Baptist College was excavated, as were 19th- and early 20th-century houses and small factories to the west of Garden Street. These had been totally destroyed by bombing during the Second World War.

The site documents the development of the 16th to 17th-century Manor House and its association with the non-conformist movement. The archaeological evidence can be tied in with cartographic and documentary sources, including a number of prominent occupants and owners. Remains of this period and those of the later evolution of the site have the potential to contribute to the historical identity of Stepney.

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1 Introduction

This Fieldwork Report describes the archaeological excavation and targeted watching briefs carried out at Stepney Green Shaft site by the C261 Museum of London Archaeology (MOLA).

Crossrail will be a new railway under central London linking Maidenhead in the west with Shenfield and Abbey Wood in the east. From Stratford to Paddington it will be carried in underground tunnels. There are archaeological investigations in the areas where this requires excavation from the surface, or where historic structures are affected, and where the archaeological potential has been demonstrated by earlier investigations of old records and trial investigations.

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.

The Stepney Green Shaft is located in a narrow corridor of Stepney Green parkland between Stepney Way and Stepney Green at OS Grid Reference 535780 181640. The site falls within the London Borough of Tower Hamlets (LBTH), between the all weather sports ground to the west and Garden Street and Stepping Stones Farm to the east (Fig 1).

All fieldwork was conducted, as instructed by Crossrail by Framework Design Consultant (FDC) Notifications, between 22nd June and 7th August 2011. It was supervised by David Sankey (MOLA Supervisor), and included the following:

Table 1 Tasks

Task	FDC Notification	Principal Contractor	Date
<ul style="list-style-type: none"> • Archaeological Excavation of a trench over the area of the main shafts excavation 	C305	Dragados Sisk	22nd June 2011 – 18th August 2011

<ul style="list-style-type: none"> • Targeted watching brief during the protection of the standing remains of the Baptist Chapel and Congregational Church with hoardings 	C305	Dragados Sisk	11th July 2011 – 7th August 2011
<ul style="list-style-type: none"> • Targeted watching brief monitoring ground reduction to create the working area (this includes foundations for plant, grout tanks) 	C305	Dragados Sisk	5th July 2011 – 30th July 2011

The following works set out in the WSI were not required: temporary accommodation was built without buried foundations or footings, and dewatering wells were drilled with starter pits only in surface modern deposits (see also 7.1).

The event code (sitecode) is XRV10.

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

2 Planning background

The legislative and planning framework in which all archaeological work took place was summarised in the Site Specific Written Scheme of Investigation and addendum – Document Number: C123-JUL-T1-RGN-CR094 SH005 Z 00001. 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/therailway/getting-approval/parliamentary-bill/environmental-minimum-requirements-includingcrossrail-construction-code>). The requirements being progressed follow the principles of Planning Policy Guidance Note 16 on archaeology and planning (1990). 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 (2005) 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 dis-applications, 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. It fulfils the requirements, where relevant, of Section 8.6 of the Written Scheme of Investigation (Site Specific Written Scheme of Investigation – Document Number: C123-JUL-T1-RGN-CR094-SH005_Z-00001 Rev 4). It conforms to the following standards and guidelines:

- Institute for Archaeologists - Standard and Guidance for archaeological field evaluation, 2008 (revised);
- Institute for Archaeologists - Standard and Guidance for archaeological excavation, 2008 (revised);
- Institute for Archaeologists - Standard and Guidance for an archaeological watching brief, 2008 (revised);
- Museum of London collections and archive policies and guidance;
- English Heritage - Geoarchaeology, 2007;
- English Heritage - Archaeological Science at PPG16 interventions: Best Practice Guidance for Curators and Commissioning Archaeologists, 2003;

- GLAAS Archaeological Guidance Papers 1999;
- Corporation of London archaeology guidance - Planning Advice Note 3, 2004;
- Museum of London site recording manual 3rd edn (MOL 1994);

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 (XRW10), Document Number: C261-MLA-X-RGN-CR140-50003, March 2011.

Subsequently a targeted watching brief on the diversion of a 22kv cable around the site only exposed modern fills (description added to this report).

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

- Site Specific Written Scheme of Investigation – Document Number: C123-JUL-T1-RGN-CR094-SH005_Z-00001 Rev 4
- 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 1 was developed between MOLA and the principal contractors and approved by Crossrail.

5 Geology and topography of site

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 overlie 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.

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. This may be as a result of raising the ground level rather than removing the foundations. Information from geotechnical boreholes (SG9, 10, 15R, 12A, 12, 17, 13, 11A) within the site and in the immediate vicinity demonstrated that Made Ground was present across the whole site at an average depth of 2.00m. SG10 showed an increase of 0.5m in the depth of the Made Ground, which may result from the construction of Mowlem House, a former secondary school. The Made Ground was found to be overlying discrete areas of alluvial deposits and a layer of River Terrace Deposits, suggesting that the natural geology of the area had not been significantly truncated by human activity.

The area is generally flat with the exception of the farm, parts of which are raised c 0.5 to 1m above the level of the surrounding streets. In particular, the ground where the Congregational Church originally stood is c 1m higher than that to the north and east. This indicates that the floor of the church was raised above its contemporary ground level and indeed a basement is documented, probably infilled with demolition debris after the church was damaged by bombing in WWII. Crossrail borehole SG11R encountered probable brick foundations from the church c 0.7m thick at c 1.2m bGL (below ground level) (Crossrail 2005).

5.1 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), it has been revised in the light of the results of an archaeological evaluation of the site. It is summarised briefly below.

Stepney was a wealthy and powerful village in late-medieval times. It functioned as a centre for the considerable manor held by the Bishop of London (managed from his palace on today's Bonner Lane) and for a parish that extended from the City to the Lea river and Hackney to the Thames. Despite the proximity to the site of St Dunstan's church and Stepney High Street, there is only limited potential for medieval activity. Later maps suggest that the site lay outside the settlement. However, the known building of Worcester House (see below) may well have had an origin in the 15th century, or earlier.

The below-ground remains of the **16th-century** and later building known variously as **King John's Court or Palace, and later Worcester House** (hereafter Worcester House except where specific references are required) were left *in situ* after the 1985

evaluations in the northern part of the site (site code WOR85). Evaluation trenches and a watching brief on works in Garden Street exposed the brick remains of a considerable courtyard building, with polygonal brick foundations in Stepney Green Park, more foundations beneath Garden Street, building ranges in two trial trenches and the remains of a sturdy brick defensive tower, which had survived standing to the 1840s (King John's Tower). These remains are of a prestigious late-medieval; or Tudor courtyard building. There are, also, **standing remains of two ruined 19th-century buildings**: parts of the **Baptist College** and the **Congregational Church**, both demonstrating the continued use of the lands of Worcester House by non-conformist organisations.

In addition, there is **high potential for further below-ground remains of 16th-century and later post-medieval buildings and occupation** across the area of the site. In particular, remains of Worcester House and associated gardens, yards and related structures including the non-conformist chapel, the Baptist Chapel, the Congregation Church, the early 19th-century Sunday school, and other Post-medieval occupation including terraced housing.

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 that 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 archaeological excavation and recording during the evaluation was carried out in accordance with the Crossrail WSI, the MOLA *Method Statement* and the *Archaeological Site Manual* (MoL 1994).

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.

7.1 Targeted Watching Brief Methodology

A targeted watching brief comprises the observation and recording of the Principal Contractor's or their sub-contractor's works with specific operations carried out under the supervision of either a MOLA Senior or Experienced Archaeologist.

Excavation was by machine, operated by the Principal Contractor 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).

A watching brief on the installation of dewatering/monitoring systems was terminated when it was shown to provide no archaeological information.

7.2 Excavation Methodology

Under archaeological supervision, the Principal Contractor (C305) excavated the trench (Fig 1) down to the first significant archaeological horizon using a mechanical excavator fitted with a toothless ditching bucket. The trench was benched to a safe standard (1.8m wide to 1.2m deep benches), and access was by way of machine-cut steps or ramps.

At the first significant horizon, MOLA archaeologists entered the trench to access, clean, investigate and record archaeological deposits and features. Low grade dumped deposits, less significant layers, 19th-century building foundations and modern intrusive features were then selectively removed to expose archaeological deposits below, in order to more firmly establish the character of the archaeological sequence and the nature of the underlying drift geological deposits. The trench was stepped-in (benched) after a depth of 1.2m.

The trench was fully excavated down to natural geology. Soft deposits were hand excavated and recorded as described below. After recording, masonry was sampled and the remainder cleared by mechanical excavator. The moat was sectioned and sampled. Remaining moat deposits were then probed and metal detected for further finds.

The trench position was set out by the Principal Contractor and the trench outline recorded by MOLA Geomatics by optical survey and 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). The optical survey utilised Crossrail London Survey Grid control stations, which were then transformed to OSGB36.

A Survey Report was subsequently produced by MOLA Geomatics. Historic walls in the area of excavation were removed under archaeological supervision.

Site recording included:

- The written record of individual context descriptions on appropriate pro-forma sheets.
- The drawn record: including, plans and section drawings of appropriate features, structures and individual contexts (1:10 1:20 1:50 and 1:100). Masonry structures exposed during site surveys were also planned by optical and digital survey (as outlined above).
- A stratigraphic matrix of the sequence of deposits and structures encountered in the excavation trench was produced.
- The photographic record: photographs taken with a digital camera with a resolution of 12 megapixels; providing similar resolution to a conventional 35mm SLR. The photographic record will include photographs of archaeological features, appropriate groups of features, structures, and Quaternary deposits. Each photograph was recorded on site using a proforma photographic record sheet, showing image number, area, context number(s), subject/description, direction of view, and date. In addition, appropriate record photographs were undertaken to illustrate work in progress. Specialist oblique-aerial photographs were taken of the Excavation Trench to form a photomosaic of the main 'Tudor' phase of remains on site.
- Levels on plans, sections and other fieldwork records were related to OS datum, via Crossrail control network stations and by the 3D digital survey outlined above.
- Other appropriate drawn and written records were produced (for environmental sampling and watching brief observations).

7.3 Archaeological Science Strategy

As stated in the excavation Phase 2 Method Statement (Crossrail Doc. No. CS61-MLA-GML-CRG03-50002), the strategy for sampling archaeological and environmental deposits and structures was developed by MOLA in accordance with English Heritage and IFA guidelines. Advice was sought from appropriate MOLA specialists and if additionally required from English Heritage.

The resulting strategy was set out in the following 6-page document, and is not repeated here:

- MOLA 2011c, *C261 Early East Section, Addendum to Method Statement for Archaeological Excavation at Stepney Green Shaft (Phase 2) – Geoarchaeological and Brick Sampling Strategy*, Doc. No. C261-MLA-X-GMS-CRG02-500002, 11.08.11

8 Results and observations including stratigraphic report and quantitative report

For trench locations see Fig 1

8.1 Excavation Trench



Photo 1: Excavation trench looking north, 16th August 2011. A late-medieval or early-Tudor ditch can be seen at the bottom of the picture, Worcester House at the top. Earlier, remains were excavated in the area below the crushed concrete, to the left (see photos 2 and 3 below)

Individual accessioned finds photographs in section 17.5 below

Excavation Trench	
Location	Stepney Green Shaft, shaft location, either side of and including Garden Street
Dimensions	52m north to south and 25.2m east to west x 3.2 – 3.0m deep
London Survey grid coordinates	86125 36279
OS National grid coordinates	535775 181663
Modern Ground Level/top of the slab	104.96m ATD
Modern subsurface deposits	2.40m deep modern levelling deposits

Level of base of archaeological deposits observed and/or base of trench	Base of trench at bottom of moat: 106.4m ATD (southern arm of moat) x 106.2m ATD (western arm of moat)
Natural observed (truncated/not truncated?)	Brickearth at 107.9m ATD (1.5m bGL) Truncated
Extent of modern truncation	500mm–1.0m
Archaeological remains	Dating Evidence, Finds, and Samples
A brick wall [196], to the south west of the trench	Late 15th- or 16th-century (I. Betts field identification)
L-shaped ditch [220] / [284] 1.2m deep x <4m wide	N/A (cut)
The south end of ditch [220] and all of [284] were backfilled relatively quickly with homogenous brown-grey brickearth [283] [229].	Pot [284] 1550–1600 + residual medieval [229] 1480–1600 Samples <4> to <12> (Monoliths and bulk)
Cut into ditch fill [229] was a brick structure [210] founded on two stone blocks set into natural terrace gravels either side of the ditch. The south wall had a shallow – and not altogether successful – relieving arch with infilled brick course below. At either end of the structure the top of the walls had been carved into another semi-circle and an arch of brick set upon them. Over the top of this arch was laid the north wall across the backfilled ditch. The brick structure formed a narrow rectangle in plan with redeposited ditch deposits used to backfill the centre of it [209].	Brick 1480–1600
North of brick structure [210] ditch fills were of a different character with natural gravel detached from the west side and slumped [219]. A cessy-silty base deposit with frequent brick and tile fragments and large animal bones ('bottom load' or 'bed load' of a natural sediment) [218], followed by dark grey-brown silt [217] and covered by a deliberate backfill of redeposited gravels and brickearth [216]. It is possible that these were later than the construction of structure [210] and that [210] was a latrine emptying into the ditch.	Pot [219] 1480–1600, [217] 1550–1575 + residual late-medieval, [216] 1600–1610 + residual medieval Bulk samples ,<2><3>
To the north and east of the above remains were those of a more enclosed	Bricks 1450/1470–1550

<p>moated house including an outer brick wall [233], 700mm wide (stepped out to 1 meter at base) with a ‘chamfered’ south-east corner mirrored by the internal ‘island’ and possible house wall (0.63m wide) [270] (removed under archaeological supervision). Between the two was an 8m-wide, 1.7m-deep moat divided into a southern [279] and western arm [249] by a causeway of natural gravel left in place. Across the west edge of the causeway was a timber baseplate [287] (originally part of a parallel pair, the eastern one removed by a modern sewer). Central mortices were cut into the upper surface of the baseplate. Dump [296] partially covered it.</p>	<p>Baseplate [287] was identified as elm Therefore samples <28> and <29> are not suitable for dendrochronology, as elm growth patterns are too variable to sequence. However, they may be suitable for radiocarbon dating.</p>
<p>A series of walls in the north-east corner of the trench – founded onto natural brickearth – were the physical remains of the rooms within Worcester House [235], [237], [238], [269].</p>	<p>Brick 1450/1470–1550</p>
<p>The bottom fill of the moat – on the outside edge – consisted of a dump of brick and mortar demolition rubble [290] overlain by a series of waterlain sediments [257], [275], [276], [277], [288], [294], [295] and covered with a backfill dump [258], [259]. (Fig 7)</p>	<p>Pot [258] 1600–1610 Tile 1480–1600 [258] bowling ball, 14th- or 15th-century iron rowel spur, early to mid 16th-century leather shoe Monolith and bulk samples <13> to <25></p>
<p>Into the moat fills a brick cess pit or drain trap was cut [254]. It was set on a series of mortise, tenoned and pegged baseplates [297], [298], [299], [300]. The lower fill [251] had several complete, or near complete, cooking pots.</p>	<p>Brick 1500–1666 Pot 1570–1600 16th-century glass, both English-made potash (Wald) and Venetian (or façon de Venise) fine soda crystal. 16th-or early 17th-century bone-metal knife handle. Dendro samples <28> and <29> Bulk Samples <30> and <31></p>

<p>A series of drains made of re-used building material crossed the site. Drains [252], [265], [267], [271] cut through the area of the Tudor mansion and the silted-up moat. If they ever had a relationship to the trap or cess pit [254] (see above), it had been removed by modern truncation. A further drain [286] lay parallel to, and 5m north (inside) of ditch [284]. It aligns with brick drain [206], which crossed the western arm of L-shaped ditch (fill [216]). It was covered by wall [212] that ran along the edge of the ditch north of structure [210], which might have been a modification of it (see above).</p>	<p>Clay tobacco pipe 1850–80 [266] (fill = disuse of drain)</p> <p>Sample no <4></p>
<p>A group of walls built with darker red brick and light-grey lime mortar with added coal-ash, cut through the earlier rooms of Worcester House [241].</p>	<p>Brick 1700–1900</p>
<p>The remains of a cess pit [261], [262] (one of three exposed in the evaluation) cut through the brick walls [270] and [235].</p>	<p>Clay tobacco pipe 1820–40 [262] Glass 19th-century [262] Pot 1825–30 [262]</p>
<p>A series of cess pits and wells and/or possible soakaways were located west of Garden Street [182], [183], [185], [186], [187], [190], [191], [192], [193], [194], [195], [197], [198], [204], [203], [199], [200], [201], [202], [183] and [184] were associated with a brick wall [185], part of which had been exposed in the evaluation. Part of a series of houses and/or light industrial buildings.</p>	<p>Pot 1807–1900 [187], 1807–40 [199], 1807–1900 [203]</p> <p>Clay tobacco pipe 1840–1880 [187], 1820–40 [200], 1780–1820 [204]</p> <p>Bulk Sample <1></p>
<p>A north–south aligned yellow-stock brick wall [188] set on concrete was exposed in the southern part of the trench.</p>	<p>Bricks: 19th-century to early 20th-century</p>
<p>Interpretation and summary</p>	
<p>Brick wall [196] might have been the ‘estate’ wall of the property that became known variously as King John’s Court or Palace, and later Worcester House, or that of a neighbouring property. It is possible that the L-shaped ditch [220] / [284] was part of an earlier moat that enclosed a larger ‘island’ and that it was retained as a decorative garden feature.</p> <p>It is possible that structure [210] is a form of latrine – or else it is some garden feature over part of the ditch that was retained when the southern part was backfilled. Whatever its function, it seems probable that the structure was retained when ditch [220] was filled, as drain [206] was dug through the ditch fills and a brick</p>	

wall [212]. Both covered [206] and joined onto [210].

The most significant remains are those of the main phase of Worcester House. Unfortunately the floor levels of this building have been truncated by later activity, but some details of the superstructure may be gleaned from bricks and tile reused in later drains and moulded-stone fragments found elsewhere.

Outer wall [233] was substantial and probably implies that the moat [279], [249] not only lapped at its edge (and thereby it functioned as a retaining wall) but also that it stood to a considerable height forming a significant 'security' feature (cf Lullingstone and Herstmonceaux castle). The timber baseplate [287] is thought to have originally been paired with another on the east side of the natural gravel 'causeway'. It is likely that they lay just below the water level of the moat and that mortices held tenoned uprights of a bridge crossing the moat. There is no door opposite the end of the baseplate, lending support to the idea that it supported a bridge at a higher level. If this interpretation is correct, the location of such a bridge is still curious. It would have exited or arrived at the south-west corner of the 'island' and/or possible building. Samples were taken from the baseplate and radiocarbon dating may give a construction date for the complex.

The moat fills [257], [258], [276], [277], [288], [294], [295] have been systematically sampled (as was ditch fill [283], Fig 5), producing a significant assemblage of finds including leather, a bowling ball and 17th-century pottery (Fig 7, Fig 8).

At this juncture, it has not been decided whether the outer wall [270] of the 'island' within the moat stood as a retaining wall and a precinct-perimeter wall, or whether the building was constructed above it. Similar moated houses should be examined to determine this.

We know that the house evolved from being the secure London residence of aristocrats with other main residences elsewhere, and that it became divided into separate dwellings following its sequestration by Parliament during the Civil War. It is in this context that the moat silted up and was finally backfilled. The cess pit or drain trap [264] probably dates from the middle of the 17th century. A date may be obtained by dendrochronology, as a sample from its baseplate [297] has been taken.

The area of Worcester House in the 17th century (the name may have been used to support the claims of the Somerset family, marquises of Worcester, to regain the house through legal action in the later 17th century) became by default a religious complex as a Nonconformist meeting house was built facing onto Stepney Way (south of the excavated area and probably west of the southern Targeted Watching Brief) with Worcester House becoming a Baptist College. Brick drains crossed the area of the site and relate to this period [252], [265], [267], [271].

The north end of Garden Street was beginning to be constructed in the early 19th-century and is represented in the 1819 Horwood map. This included building a road over the drains and a chapel, part of which is still standing. The rooms of the college south of the chapel included the brick walls [241], which cut into the 17th-century rooms in the north-east corner of the excavation trench.

The Baptist college was short-lived and the site was remodelled following their removal to Regents Park in the middle of the 19th century. King John's Tower, the late-medieval or early-Tudor gatehouse (see evaluation report) was demolished and the walls of the college were reused to form very small houses facing Garden street. Cess pits in those houses included [260], [261], [262].

Remains west of Garden Street from the late 19th century include cess-pits and wells or soakaways [182], [183], [185], [186], [187], [190], [191], [192], [193], [194], [195], [197], [198], [204], [203], [199], [200], [201], [202].



Photo 2: Possible latrine structure [210] (after north side removed), and wall [212] dug into late-medieval or early-Tudor ditch fills [229][219][218][217] and [216].



Photo 3: Late 15th- or 16th-century wall [196]



Photo 4: Remains of Worcester House



Photo 5: Internal walls of Worcester House [235][237][238][269], and inserted early 19th-century (lighter) walls [241]



Photo 6: Detail of causeway across the moat with timber baseplate [287], cess pit or trap [254] and drains [265][267][271]

8.2 Targeted Watching Brief on site ground reduction

For trench locations see Fig 1



Photo 7: Ground reduction exposing the top of Congregational Church wall foundations, south of the freestanding section of Congregational Church



Photo 8: Ground reduction north of the freestanding Congregational Church wall (first metre removed, looking south)

Targeted Watching Brief site ground reduction	
Location	Stepney Green Shaft, north and south of the Congregational Church wall
Dimensions	42.6m north – south and 19.5m east – west
London Survey grid coordinates	86152 36216
OS National grid coordinates	535803 181601
Modern Ground Level/top of the slab	Unknown
Modern subsurface deposits	2.2m deep modern levelling deposits
Level of base of archaeological deposits observed and/or base of trench	Base of trench: 2.2m bGL
Natural observed	None observed
Extent of modern truncation	<2.2m
Archaeological remains	Dating Evidence, Finds, and Samples
Ex-situ moulded limestone block found in modern fill	20th-century cement-based mortar adhering
Foundations of Congregational school	19th to early 20th-century bricks
Foundations of Congregational church	19th to early 20th-century bricks
Interpretation and summary	
Remains of the Congregational church and school were investigated in the evaluation. Ground reduction of <2.2m north of the Congregational and <750mm south of it exposed the top of these remains but did not dig into them.	



Photo 9: Ground reduction north of the freestanding Congregational Church wall (second metre removed, looking south)

8.3 Targeted Watching Brief protection of the standing remains of the Baptist Chapel and Congregational Church with hoardings

For trench locations see Fig 1



Targeted Watching Brief – Baptist College protection	
Location	South and east of the former Baptist chapel
Dimensions	A series of holes 0.8m x 0.8m and 0.9m deep, were dug in prepared ground 1.3m wide and 20m long
London Survey grid coordinates	86140 36316
OS National grid coordinates	535789 181700
Modern Ground Level/top of the slab	Unknown (higher than the ground level surrounding the excavation trench)
Modern subsurface deposits	>0.9m modern coal-ashy dump with frequent yellow-stock brick fragments
Level of base of archaeological deposits observed and/or base of trench	Unknown
Natural observed	Not Observed

Extent of modern truncation	>0.9m
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Modern made ground was exposed that raised the ground level of the city farm above that of surrounding roads. Hoarding fence post-holes did not disturb archaeological deposits.	



Photo 12: Fence post holes south of Church Wall, looking north-east

Targeted Watching Brief – Congregational Church wall protection	
Location	North, west and south of the former Congregational Church wall
Dimensions	A series of holes 0.8m x 0.8m and 0.9m deep, were dug around the church wall (not illustrated)
London Survey grid coordinates	86154 36223
OS National grid coordinates	535806 181608
Modern Ground Level/top of the slab	Unknown (higher than the ground level)

	surrounding the excavation trench)
Modern subsurface deposits	>0.9m modern coal-ashy dump with frequent yellow-stock brick fragments
Level of base of archaeological deposits observed and/or base of trench	Unknown
Natural observed	Not Observed
Extent of modern truncation	>0.9m
Archaeological remains	Dating Evidence, Finds, and Samples
None	None
Interpretation and summary	
Modern made ground was exposed that raised the ground level of the city farm above that of the post-medieval dumps exposed during ground reduction (see above). Hoarding fence post-holes did not disturb archaeological deposits.	



Photo 13: Fence post holes around west edge of church wall, looking south-east

8.4 General Watching Brief on the 22kve-cable diversion trench

For trench locations see Fig 1



Photo 14: Cable trench looking east along Stepney Green Road

General Watching Brief – 22kve-cable trench	
Location	Stepney Green (road) and Stepney High Street
Dimensions	A 500mm-wide, 1.2m-deep trench, 116m long
London Survey grid coordinates	86240 36286
OS National grid coordinates	535890 181673
Modern Ground Level/top of the slab	Spot heights in the roads indicate ground level rises from 109.0m ATD in Stepney Green to 109.4m ATD in Stepney High Street
Modern subsurface deposits	Below modern road construction and services was coal-ashy dump deposits with frequent yellow-stock brick fragments
Level of base of archaeological deposits observed and/or base of trench	Unknown
Natural observed	Not Observed
Extent of modern truncation	>0.6m
Archaeological remains	Dating Evidence, Finds, and Samples
None	
Interpretation and summary	
Below modern services and road construction was 19th-century landfill deposits, disturbed by works in the 19th and 20th centuries	

9 Assessment of results against original expectations and potential of the data

The results of the excavation and watching briefs clarified and expanded upon those of archaeological evaluation. Many of the late-medieval or Tudor walls found in individual evaluation trenches could be joined to form a coherent pattern. Evidence for a moat was not found during evaluation work, which clipped walls either side but did not expose moat sediments. Excavation of the waterlogged deeper sections of the moat allowed an opportunity to retrieve organic finds, such as a Tudor-period shoe and an early bowling ball that were not present in dry deposits. The methodology for the excavation (see 7), is therefore considered successful, having produced records, artefacts, and samples with potential for post-excavation analysis and publication describing a nationally important monument, Worcester House, and associated later development on the site, as well as the hitherto unsuspected medieval ditch (see 11).

Department of the Environment guidelines for assessing the importance of individual monuments (for possible Scheduling but by extension all remains in London, EH 1998) include the following criteria: *Period; Rarity; Documentation; Survival/Condition; Fragility/Vulnerability; Diversity; and Potential*. (DCMS 2010). The determination of the significance of these assets is based on Conservation Principles (EH 2008) :

Evidential value: the potential of the physical remains to yield evidence of past human activity. This might take into account date; rarity; state of preservation; diversity/complexity; contribution to published priorities; supporting documentation; collective value and comparative potential.

Aesthetic value: this derives from the ways in which people draw sensory and intellectual stimulation from the heritage asset, taking into account what other people have said or written;

Historical value: the ways in which past people, events and aspects of life can be connected through heritage asset to the present, such a connection often being illustrative or associative;

Communal value: this derives from the meanings of a heritage asset for the people who know about it, or for whom it figures in their collective experience or memory; communal values are closely bound up with historical, particularly associative, and aesthetic values, along with and educational, social or economic values.

9.1 Research aims

The original research objectives were met as follows;

- There were no archaeological remains of prehistoric or Roman date, or of medieval date relating to the expansion of Stepney Green. Medieval remains **were** found in post-medieval contexts and probably relate to the origins of Worcester House as a late medieval merchant house.
- Substantial *archaeological remains of late-medieval, Tudor and 17th-century of Worcester House* were recovered. A large ditch appears to have been a section of the Common sewer (or 'Black Ditch') that flowed through Bethnal Green and divided Whitechapel from Mile End (represented in the Gascoigne/Gascoyne map of 1703, see 11.2). Structural remains potentially date from the late 15th century. They

continue throughout the 16th and 17th centuries and are widespread. They include remains of the moated Worcester House and domestic ranges of buildings.

- Remains observed during the trial trenching were preserved during the setting up of the work site by means of site monitoring, and a targeted watching brief.

9.2 Assessment criteria

Criterion 1: period

The remains fall into the following groups,

- 15th- to 18th-century remains of Worcester House and contemporary structures, mostly without small finds or occupation debris, but with possible garden structures.
- 19th-century structural remains associated with the religious and social functions of the site, including walls of the Baptist College built in 1810 and the Congregational Church.
- 19th-century secular housing remains, including cess pits of slum houses that succeeded the Baptist College and some deposits relating to the last use of these buildings during WW2.

Criterion 2: rarity

Whilst brick building remains from late medieval and Tudor London are far from unique, (eg brick extensions to the City Wall and Lincoln's Inn Old Hall 1590), they have not been commonly excavated in the modern era and the comparative rarity of this type of excavation adds to its evidential value, as measured by Conservation Principles (EH 2008). The fragmentary remains of the Symonds Inn, exposed in 2006-8 (Sankey 2008) was a notable exception, before which the 1980s investigations of the city wall (St Alphage Gardens and a bastion at Tower Hill) are the principle London examples.

Criterion 3: documentation

Stepney Green Shafts archaeological remains significance may be enhanced by the existence of records of previous investigation or, in the case of more recent monuments, by the supporting evidence of contemporary written or drawn records. The combination of previous records with the archaeological remains greatly enhances the interpretation of the latter, for instance in the identification of the footings for King John's Tower (a late medieval or Tudor defended gatehouse) during the evaluation.

The site was previously investigated in the 1970s and 80s, the records of which are held by the Museum of London (WOR85 and SHS79)

Documentation survives from the 17th-century and later. It is possible that documentation exists from the 15th-century depending on whether this site can be identified as Fenne's Great Place, let in 1513 'with orchard, garden and waters, to Thomas, Lord Darcy'. If so it is also the same property that in '...1466 Hugh Kingston conveyed a freehold *messuage*, garden, and which had formerly belonged to Robert Sutton, citizen and draper, to John Fenne (d. 1474), merchant of the Staple of Calais' (Baker 1988, 19–52). The origins of Worcester House potentially pre-date the currently-accepted foundation date by a hundred years or more. Much of the documentation refers to individual structures such as the ownership of King John's Court or the construction of the Congregational Church. Contemporary drawings can be scaled and compared with excavated remains. This is particularly useful in locating the 19th-century and 20th-

century remains on Ordnance Survey maps, and thereby linking the results to old census data.

Criterion 4: group value

Individual archaeological remains may have greater significance if they are understood within a particular setting or similarly-aged group. Two types of group value may be considered; the group within the excavated area that comprises Worcester House and gardens, and later Non-conformist institutions, (together with elements of potentially neighbouring properties), and the wider group of Stepney village, a wealthy and nationally significant extra-mural suburb of late medieval and Tudor London. The general development of the site is only intelligible within the context of the first – and by illuminating the historic core of the wider plot of Stepney City farm and Stepney Green Park, it enhances the understanding and importance of standing masonry remains visible throughout the area. Within the wider context of Stepney village, there is a singular history which has given rise to a particular Historic Landscape Character. This includes major landmarks of orientation, such as St Dunstan's, valued historic open space (the Stepney Green), and large private houses such as the 17th-century 32 Stepney Green, and listed 62 and 63 Stepney Green, or the former Rectory on White Horse Lane, as well as historic public housing. Within this wider group the archaeological remains on Stepney Green Shafts excavations have a vital role in explaining how that character was formed.

Criterion 5: survival/condition

Survival differs by period:

- 15/16th- to 18th-century remains include structural remains, moat and cess pit fills, the remains of the large ditch (possibly the Common Sewer or 'Black Ditch'), and garden structures. Remains are divided between major foundations (Worcester House), including the 'island' and moat walls, and the moat and cess pit features. A network of drains, mark the transformation of the site perhaps in the later 17th or 18th centuries.
- Structural remains of the 19th-century Congregational Church, the associated school and the Baptist chapel did survive. No occupational debris associated with these structures was identified.
- 19th-century cess pits and unstratified deposits above buildings constructed in the later 19th century. These deposits represent the domestic remains of slum housing and – by way of contrast – those of the Baptist College, as well as the remains of light industry.

Subsurface remains of the late-medieval and Tudor period are coherent and cut through by later features in only limited places. Although, associated floor levels have been removed by truncation, the survival of subsurface remains in plan is nearly complete and adds greatly to their importance. Later remains are more fragmentary but they have the potential to illuminate particular aspects of site development, particularly in being able to compare between those of the 19th-century Baptist College and the surrounding domestic and light industrial context. They are important in understanding the history of the site but arguably of less national significance.

Criterion 6: Fragility/vulnerability

Archaeological remains within the area of the shaft excavations have – by necessity – been removed. Limited further impacts will be recorded by watching briefs. However, the evaluation of the site established extensive subsurface remains survive throughout the

Stepney Crossrail work site area. These remains include that of the historic King John's Tower, that was a local historic feature through to the middle of the 19th century. For the duration of the Crossrail tenure they are protected by measures put in place following the evaluation, and those remains that were exposed during the evaluation have been protected by geotextile membrane and salt-free sand. The worksite will return to Tower Hamlets tenure after Crossrail construction has finished and it is proposed that the site of Worcester House is divided between the occupancy of Stepney City Farm and Stepney Green Park (Stepney Green Gardens). The former Garden Street is proposed to become hard standing but not adopted road. No formal protection measures, management plans or statutory protection are in place to ensure preservation during the transfer, nor are there long-term guarantees that the site will be protected thereafter. Even without major construction, piecemeal measures such as utility trenches, larger fence post-holes, play equipment foundations, duck ponds, etc. have the potential to seriously compromise the integrity of the buried remains. Long-term preservation should be considered as part of the wider community legacy of the Crossrail project.

Criterion 7: diversity

The social diversity of the remains is large, representing individual private wealth, religious and institutional use, to the creation of slum neighbourhoods following the advent of rail travel in the middle of the 19th century. The remains of a large aristocratic residence have a particular resonance given the history of poverty in Stepney during the 19th and 20th centuries. This diversity enhances the significance of the remains for their *Aesthetic and Historic Value*. The site narrative combines power and privilege with that of later religious and educational institutions. It includes contrasting secular, domestic and industrial aspects.

Criterion 8: potential

The results of the fieldwork and the wealth of documentary evidence available demonstrate the potential to document an important mansion of the 16th- to the 17th centuries and its subsequent development, in particular its contribution to the non-conformist movement. It can illustrate the development of one major household throughout this period, and its subsequent division into multiple dwellings. This can be tied in to cartographic and documentary sources, including a number of prominent occupants and owners of Worcester House. For example, the dispossessed 2nd Marquis of Worcester – inventor of a steam engine – father of the 1st Duke of Beaufort, or the reverend Matthew Mead, whose doctor son Richard promulgated a rationalist interpretation of 'demons' as medical conditions.

Remains of this period and those of the later evolution of the site, (eg the remains of houses bombed in WW2) have the potential to contribute to the historical identity of Stepney, which was compromised by a combination of bomb damage and post-war slum clearance.

The realisation of this potential would make Stepney green one of the most significant east London excavations of the last few years, in an area that has suffered from a lack of archaeological research when compared with the City, or Southwark (for instance).

9.3 Assessment of importance

After discussion and advice from the English Heritage Inspector of Ancient Monuments, it was agreed that the aspects of the archaeological remains that pertain to King John's Court/Palace, later Worcester House and King John's Tower are of **national significance** (high importance). They compare with above-ground remains of a similar



moated house at Scadbury Manor, proposed for addition to the Schedule of Ancient Monuments, and comply with the criteria set out for scheduling described in 9.2 above.

10 Statement of potential archaeology

The excavation has confirmed a greater degree of survival of Worcester House than was observed in the evaluation. In particular, it demonstrated that the remains of the moat and external and internal retaining walls remain largely intact. The moat fills have considerable potential for the survival of remains rarely found elsewhere because they have remained waterlogged. Thus, leather and wooden items have been found, as well as metal objects in good condition. Some of these are: a late medieval or 16th-century copper-alloy or brass dress-pin (<93>) with a large hollow domed head, formed from two dished sheet discs soldered together and a short thick shaft; a 14th- or 15th-century iron rowel spur (with one tapering curved side and a rowel-box with circular terminals and a rivet for the missing rowel (<85> cf Clark 1995, Fig 97327, 328); a wooden bowling ball, bulk leather shoe soles, and a toe with slashed decoration from the vamp of an adult low shoe. This latter piece is probably early to mid 16th-century, and forms a nice example of a type that is seen in contemporary pictures but rarely found in excavations (<124>). A short length of copper-alloy wire was also recovered from a 16th-century context (<91>, [258]), and could be part of a woman's headdress frame.

The sediments of the large L-shaped ditch, also produced a varied selection of finds. These included a copper-alloy twisted loop (<23>), almost certainly part of a late medieval or early post-medieval purse (eg Egan 1998, 64, fig 52), and a small and narrow horseshoe with rectangular nail-holes (<64>), also probably late medieval (eg Clark 1995, Type 3, Fig 84). The bulk and monolith environmental samples will complement these finds, providing details of food plants processed and/or consumed on the site, industrial craft production of comestibles of all sorts, and the nature of the local environment (eg presence or absence of fruit trees).

Comparison with historical records may also provide a detailed picture on the transformation and development of the site, from its initial use as an aristocratic household through to the development of the religious institutions.

And finally, following the construction of the railways, the results allow for an examination of an inverse of fortunes for the once-privileged inner sanctum house/college area, which, along with areas of Garden Street descended into slum housing.

11 Conclusions

11.1 Geology and topography

The underlying natural deposits are associated with the Taplow Terrace Gravels, overlain with a thin sandy clay layer of brickearth. In this locality these deposits are thought to be archaeologically sterile (earlier terraces and silt pockets have the potential for Palaeolithic remains). They conform to expectations from observations of nearby sites (for instance Sir John Cass School, Sankey 2009).

11.2 Late-medieval ditch and associated structures

A substantial late-medieval L-shaped ditch was exposed at the southern end of the Excavation Trench. The south end of ditch [220] and all of [284] were backfilled relatively quickly with homogenous brown-grey brickearth [283] [229]. Cut into ditch fill [229] was a late 15th- or 16th-century brick structure [210] (possibly a latrine) north of which were a series of ditch fills [217], [218] and [219]. The ditch [220][284] could correspond to the Common Sewer (or 'Black Ditch') which flowed from Bethnal Green and divided Mile End from Whitechapel, which is represented on the 1703 Joel Gascoyne map. A wall [196] on the west of the ditch may have been the boundary wall for the estate-park or orchards of Worcester House. A later wall [212], attached to the apparently structurally stable possible latrine [210] is thought to have been built after the removal of Worcester House in the 18th or 19th centuries.



Historic map 1 Gascoyne's 1703 map of Mile End

Worcester House is the courtyard building left of the church. The Common Sewer is labelled near the fleur-de-lys north arrow. Its course through Stepney is unclear, and may have run through culverts by then, but it flows from west of the site, to the top left of the image

11.3 Worcester House

Substantial remains were exposed of a large courtyard house, potentially dating from the end of the 15th or 16th centuries, through to the end of the 17th century (variously known as King John's Tower, King John's Palace or Court, and Worcester House). It took the form of a moated courtyard 'manor' house with an 'island' formed of a brick revetment wall [270], 0.63m thick, which also acted as the foundation for the house wall at one point along its length. The revetment/house wall [270] exposed in the excavation trench continues on the same line as the wall exposed in a new sewer trench in Garden Street during an earlier watching brief [166]. It is considered to have been part of the same construction and group of buildings that included the brick defended gatehouse of King John's Tower, the foundations of which were exposed in Evaluation Trench 1

Outside of the island wall was another revetment wall [233]. It is considered to originally have risen to some height above the ground surface given the thickness of the foundation. Both walls had the south-west corner chamfered to form two 45-degree angles rather than a single 90-degree corner. Between the walls was an 8m wide, 1.7m deep moat. It was divided into a southern [279] and western arm [249] by a causeway of natural gravel. The line of the moat and associated walls, when projected eastwards, lies just to the south of Evaluation Trench 2, but it is thought to have continued eastwards to King John Street, and possibly beyond, before returning north to Stepney Green Road. The moat would have filled naturally with groundwater (groundwater at today's depleted levels still flowed in during the excavation), but may have been topped up with water diverted from the Common Sewer. The Victoria County History suggests that the moated houses of Stepney were joined by a "common stream in front of them" (Great Place, Worcester House and Lord Morley's house, Baker, ed. 1998, 19-52)

The causeway is unlikely to have ever broken the surface of the water, but rather supported a timber bridge, one baseplate of which survived [287] (originally part of a parallel pair, the eastern one removed by a modern sewer). Central mortises were cut into the upper surface of the baseplate and dumped earth [296] partially covered it. The location of the bridge is quite curious, as it led to the corner of the island, and was positioned away from the main thoroughfare from Stepney to Whitechapel. It would only have been a footbridge to provide access to the rest of the walled park or orchard.

The moat fills included brick demolition debris at the outer edge [290], possibly from the reduction of the outer moat wall at an early stage in its use. This may have occurred as a response to a more peaceful and secure neighbourhood. It was followed by a series of water-lain sediments [257], [258], [275], [276], [277], [288], [294], [295], which preserved a bowling ball (perhaps a jack or a ball for skittles from [288]) as well as a 14th- or 15th-century rowel spur (<85>, [276]) and a characteristic 16th-century shoe (<124>, [288], see Richardson, section 17.5 below).

A series of walls in the north-east corner of the trench, inside the moated 'island', were founded onto natural brickearth. These were the remains of the rooms within Worcester House [235], [237], [238], [269] and would have supported the western and southern range of buildings. At the southern edge they appeared to have been incorporated into the island revetment [270] to form the foundations of a potential gable end, or at least a narrow width building fronting onto the moat.

Little can be gleaned by examining the few rooms exposed in the main excavation, outlined by these four walls. However, a more extensive comparison with remains found in the evaluation may be more fruitful, as would specific historical research. These should be undertaken at Post-excavation Assessment, and at analysis for publication, as appropriate.

Set into the moat fills was a cess pit or trap made of 16th- or early 17th-century brick (Betts, section 17.2 below). It marks a development of the moated manor house and implies the moat had by this date either ceased to function or was a much-reduced remnant (it is arguable whether it is represented on maps of the early 18th-century). The cess pit or drain trap took the form of a square box [254], set on a timber frame of mortised, tenoned and pegged sawn-oak base-plates [297], [298], [299], [300]. Unfortunately, the top had been truncated and so any relationship there may have been between it and a series of drains (discussed below) had been removed. The backfill included complete, but broken, large cooking and storage vessels (Blackmore Section 17.8 below), as well as expensive colour decorated (hot-worked *façon de Venise*, or Venetian import) clear soda-crystal glass fine table ware (<106>) [250], [251] see Richardson, section 17.5 below). They date from the 16th century or first 10 years of the 17th century, but some may be residual and date from a clearance of the house at a time of substantial remodelling.

The name 'King John's Palace' was applied locally to masonry buildings of some antiquity, another King John's Palace was to be found at Old Ford, near Bow.(cf. Lyson 1796, 489–506 and illustration of a brick gatehouse tower, very similar to Stepney, on page 492). No actual association with King John should be assumed (he pre-dates the building by some three centuries). Equally, the main period when the name Worcester House was applied appears to relate to the restoration in the later 17th-century, when the Marquises of Worcester were returned their titles and made Dukes of Beaufort, and were contesting for the return of their Stepney properties through Parliament (cf Journ. House of Lords 20th August 1660). It is conceivable that the name was applied when Henry Somerset was made 1st Marquis of Worcester in 1642 (he became Earl in 1628). There is a degree of confusion with Henry Somerset's father, Edward Somerset, 4th Earl of Worcester, who lived at Worcester House in Worcester Park, Surrey (Worcester Park was where Nonsuch Palace was built, see *Nonsuch* in Malden 1911, 266–271) and the family's Worcester House, in the Strand (Gater and Wheeler 1937).

11.4 18th-century remains

18th-century maps of Stepney (Gascoignes's 1703 survey of Mile End Hamlet and John Rocque's 1746 London, Westminster and Southwark map) show Worcester House as a Courtyard House, part of a built-up frontage onto Stepney Green Road, with Gardens behind, and Stepney Meeting House facing onto Bull Lane (Stepney Way). Whilst the 1703 map depicts a moat none is shown on the mid-century map.

The excavated remains of Worcester House, the moat and the earlier L-shaped ditch were crossed by a series of brick drains. Drains [252], [265], [267], [271] cut through the area of the Tudor mansion and the silted-up moat. If they ever had a relationship to the trap or cess pit [254] above, it had been removed by modern truncation. A further drain [286] lay parallel to, and 5m north (inside) of ditch [284]. It aligns with brick drain [206], which is made of re-used late-medieval and/or Tudor building material. So precise dating for the construction is difficult. Indeed, they might have evolved as a drainage system over a period of time and not have been a single construction. The only dating evidence for the drains comes from a fill, [266], with clay tobacco pipes dated 1850–80. This clearly marks the end of the use of the drains in the period following the abandonment of the site by a Baptist college in the 19th century. It does not date the construction or use of the drains.

11.5 19th-century remains

The main area of excavation was remodelled in the early 19th century as a result of the house being acquired by a Baptist college or seminary. To the north of the excavation a chapel was built that aligned with and re-used the foundations of Worcester House. A series of red-brick walls with lighter-cream lime mortar were set into the earlier Worcester House remains and it clear that they were constructed to fit within the earlier foundations [241]. The brick type is 18th- or 19th-century (Betts, below). The line of the walls indicates that the main building reused much of the earlier foundations and the projected line of the Baptist Chapel is continued with both Worcester House and this later brickwork, where it corresponds with a red-brick wall [51] recorded during the evaluation. A substantial change in layout was the construction of Garden Street, which begins to be laid out, starting from the north, at the same time as the Baptist Chapel was built (during the Napoleonic Wars).

To the west of the projected line of the Baptist Chapel wall, there were the remains of one of three cess pits [261], [262], which had been dug through the walls of Worcester House, [270] and [235]. It contained tumbler and wine glass fragments (<127>, <131> [262]) and Clay tobacco pipe dated 1820–40. The date suggests that they date to the tenure of the college (on site until 1855), unless they all contained residual material. The other cess pits were fully examined during the evaluation of the site. They were only 4m-apart, and might imply some form of institutional accommodation. Comparison with Ordnance Survey maps indicate that the building footprint was adopted by domestic terrace accommodation following the removal of the Baptist College to Regent's Park.

The remains of the Congregational School were recorded adjacent to and north of those of the Congregational church, as were the foundations of the Church itself.

A series of cess pits and wells and/or possible soakaways were located west of Garden Street [182], [183], [185], [186], [187], [190], [191], [192], [193], [194], [195], [197], [198], [204], [203], [199], [200], [201], [202]. [183] and [184] were associated with a brick wall [185]. Part of the wall had been exposed in the evaluation, where a number of such walls and associated yards formed part of a series of houses and/or light industrial buildings. The sunken features may be related to individual properties by comparison with old Ordnance Survey maps. By a combination of old census data and trade directories it may be possible to relate the finds of individual households and firms, allowing a direct comparison of material culture and individual histories.

12 Post excavation assessment, analysis, publication and dissemination proposals

The excavation and targeted 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. Summaries of the findings will appear on the OASIS online index of archaeological excavations, the London Archaeological Archive and Resource Centre catalogue of archaeological investigations, in London Archaeologist annual round-up, and in *Medieval Archaeology*, the journal of the Society for Medieval Archaeology and in *Post-medieval Archaeology*, the journal of the Society for Post-medieval Archaeology.

Further examination of excavated material in post-excavation assessment will also allow excavation biases to be addressed by comparison with material from other sites.

13 Archive deposition

The evaluation results will initially be disseminated via this report; the supporting site archive of finds and records (including digital data) and by incorporation into the wider predictive deposit modelling for the Crossrail scheme. Any publication proposals will be considered by the Project Archaeologist in relation to later fieldwork on this site, and also the wider context of archaeological potential and results within the Crossrail scheme.

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16 NMR OASIS archaeological report form

OASIS ID: molas1-111939

Project details

Project name Stepney Green Shafts

Short description of the project Excavation and targeted watching briefs on Late-medieval and Tudor Common Sewer, Canalised round moated aristocratic manor house, converted to a Baptist college in the early 19th century. Watching brief on the remains of the Congregational Church and attached school, 19th- and early 20th century houses and small factories. Significant finds include fine Tudor glassware, leather footwear and bowling ball and a medieval rowel spur

Project dates Start: 22-06-2011 End: 18-08-2011

Previous/future work Yes / Yes

Any associated project reference codes xrv10 - Sitecode

Type of project Recording project

Site status Area of Archaeological Importance (AAI)

Current Land use Cultivated Land 1 - Minimal cultivation

Current Land use Other 14 - Recreational usage

Current Land use Other 11 - Thoroughfare

Current Land use Other 14 - Recreational usage

Monument type COURTYARD HOUSE Medieval

Monument type COURTYARD HOUSE Post Medieval

Monument type MOAT Medieval



OASIS ID: molas1-111939 cont'd

Monument type MOAT Post Medieval

Monument type COLLEGE Post Medieval

Monument type TERRACED HOUSE Post Medieval

Significant Finds POT Medieval

Significant Finds POT Post Medieval

Significant Finds GLASS Post Medieval

Significant Finds SPUR Medieval

Significant Finds BOWLING BALL Post Medieval

Investigation type 'Full excavation','Open-area excavation','Watching Brief'

Prompt Crossrail Act

Project location

Country England

Site location GREATER LONDON TOWER HAMLETS STEPNEY Stepney Green Shafts

Postcode E1

Study area 2081.00 Square metres

Site coordinates TQ 3578 8164 51.5168423431 -0.04287886090280 51 31 00 N
000 02 34 W Point

Height OD / Depth Min: 6.80m Max: 7.90m



OASIS ID: molas1-111939 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
Project archives	
Physical Archive recipient	To be designated
Physical Contents	'Animal Bones', 'Ceramics', 'Environmental', 'Glass', 'Industrial', 'Leather', 'Metal', 'Wood'
Digital Archive recipient	To be designated
Digital Contents	'Animal Bones', 'Ceramics', 'Environmental', 'Glass', 'Industrial', 'Leather', 'Metal', 'Stratigraphic', 'Survey', 'Wood'
Digital Media available	'Database', 'Images raster / digital photography', 'Survey', 'Text'



OASIS ID: molas1-111939 cont'd

Paper Archive recipient	To be designated
Paper Contents	'Animal Bones','Environmental','Glass','Industrial','Leather','Metal','Survey','Wood'
Paper Media available	'Aerial Photograph','Context sheet','Correspondence','Drawing','Matrices','Notebook - Excavation',' Research',' General Notes','Photograph','Plan','Report','Section','Survey ','Unpublished Text'
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	C261 ARCHAEOLOGY EARLY EAST Fieldwork Report Archaeological Excavation and Targeted Watching Briefs C123 Stepney Green Shaft - XRV10
Author(s)/Editor (s)	Sankey, D
Date	2011
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17 Appendices:

17.1 Geoarchaeology

Mary Ruddy

Two composite sequences through the moat of the manor house at Stepney Green were sampled by monolith and bulk sample, and one profile through an older ditch surrounding the perimeter wall. Sections were sketched and annotated with sample locations and photos taken with the field camera (Figs 5, 7 and 8, and Photos 14, 15 and 16).

Table 2 South facing section through moat (upper fills)

See Fig 7: South-facing section through Tudor moat [249] and Photo 15: South facing section through moat (upper fills) with monolith samples <15>, <16> and <19>(Section 3)

Approximate elevation	Description	Samples
>107.80m ATD to 106.90m ATD	Context 259 ; firm mid to dark brownish grey slightly silty sandy clay with green and reddish orange mottling. Frequent charcoal flecks to medium-sized clasts. Rare shell and frequent red CBM flecks. Occasional sub-rounded to sub angular flint pebbles. <i>Post medieval deliberate (final) moat backfill</i>	Mono <15> and <16> Bulks <20> - <24>
>107.80m ATD to 7.10m ATD	Context 258 ; loose/moderate friable mid black grey sand silt with red mottling and greyish green bands. Frequent small inclusions of charcoal wood fragments and sub-angular to rounded flint pebbles. CBM flecks and rare large –medium bone fragments <i>Post medieval deliberate (final) moat backfill</i>	Mono <16>
107.10m ATD to 6.80m ATD	Context 257 ; soft-plastic light mid grey clayey silt with blue and green mottling. Occasional charcoal flecks and sub-angular to rounded flint pebbles. CBM flecks to small clasts. <i>Post medieval (c 1600) silting up of moat.</i>	Mono <19>



Photo 15: South facing section through moat (upper fills) with monolith samples <15>, <16> and <19>(Section 3)

The upper most fills (259 and 258) relate to deliberate and probably final backfilling of the moat that may have taken place long after the feature fell out of use. The sediments are characterised by a generally weathered appearance (green and reddish mottling indicate oxidation of the iron minerals within the fills) and contain fragments of building debris and gravel. Soils in the surroundings were probably used to fill the remains of the ditch and so the wood, charcoal, bone and shell within the deposits will have been picked up and dumped with this material. The underlying context (257) is finer-grained and appears to be the remnants of a partly waterlain deposit. It is visible in the photo (above) as a greenish grey, perhaps gleyed (waterlogged soil or sediment) layer where water may have ponded on the surface, influenced by the vestiges of the moat drainage pattern. The moat may have been fed by the Common Sewer, or 'Black Ditch', a perhaps artificial stream shown on the maps of Horwood (1790s) and Cruchley and Veitch (1840s) (Barton 1992).

Table 3 South facing section through moat (lower fills)

See Fig 7: South-facing section through Tudor moat [249] and Photo 16: South facing section through moat fills, monolith <13>, (Section 2)

Approximate elevation	Description	Samples
106.67m ATD to	Context 288 ; moderate- soft and wet dark brown humic silt clay with fine roots and CBM	Mono <13> and base of <19>

106.37m ATD	visible <i>Post medieval waterlogged stagnant moat fill</i>	Bulk <14>
106.37m ATD to 106.17m ATD	Context 289 ; soft loose brown matrix-supported gravel. Matrix is sandy with some clay. Gravel is medium sub-angular to sub-rounded. Some bedding in this context e.g. clast-supported bands and clay-rich bands <i>Post-medieval demolition fill derived from outer wall</i>	Mono <13>

The lower fills of the moat were seen in a south facing section on the west side of the manor house. As seen in other moat sections, dark organic-rich silt clays (288) stratigraphically overlie a rubble-rich layer (not seen in photo below). This debris derives from the demolition of the manor house perimeter wall, dumped at the outer edge of the moat. The subsequent build up of stagnant water-derived boggy deposits suggests either the rubble impeded the moat’s drainage or there was a period of general poor maintenance or disuse. No plant remains were retrieved from the floated 40ltr bulk sample <14>. Any plant matter had decomposed, leaving only fine-grained humic silt.



Photo 16: South facing section through moat fills, monolith <13>, (Section 2)



Photo 17: West facing section (Section 4) through moat with monolith samples <17> and <18> (and associated bulk samples <20> to <24>)

17.2 Building materials

Ian M. Betts

A total of 272 fragments of building material were recovered from XRV10. These mainly comprise brick samples, but there are also a number of plain glazed Flemish floor tiles, and various varieties of roofing tile. Found unstratified was a piece of curved chimney pot or garden furniture. Most of the building material is of post-medieval date, although a few pieces of medieval building material were present on the site.

The building material from XRV10 has been fully recorded and the information added to the Oracle database.

Table 4 a summary of the building material in each context

Context	Fabric	Type	Context date
[+]	3101	Chimney pot/ garden furniture	1830–1950
[14]	2586	Peg tile	c 1180–1480
[22]	2271	Peg tile	c 1180–1480
[47]	3046	Brick	1500–1666
[50]	3033, 3046	Brick	1500–1666

Context	Fabric	Type	Context date
[51]	3032, 3046	Brick	1750–1900
[52]	3033, 3046	Brick	1500–1666
[53]	3032, 3036	Brick	1666–1800/1900
[73]	3033	Brick	1500–1666
[78]	3046	Brick	1450–1600
[108]	2275	Pantile	1630–1800/1900
[146]	3036	Paving brick	1630–1800
[146]	2320?	Floor tile / Brick	1600–1800
[153]	3046	Brick	1500–1666
[162]	3033	Brick	1500–1666
[165]	3046	Brick	1500–1666
[166]	3046	Brick	1500–1666
[184]	3032	Brick	1800–1900
[190]	2275, 3090, 3202, 3259	Pantile	1630–1900
[194]	3032, 3035	Brick	1800–1900
[197]	3032, 3033, 3046	Brick	1800–1900
	3120	Stone cobble	
[199]	2276	Peg tile	1630–1800
	2850	Floor tile	
	3090, 3259	Pantile	
[203]	3090	Pantile	1630–1900
	3100	Wall plaster	
[204]	3032, 3035	Brick	1750–1900
	2276	Peg tile	
	2275, 3259	Pantile	
	3100	Wall plaster	
	3115	Slate roofing	
	3119?	Paving?/ monument?	
[206]	3042	Brick	1550–1666
[210]	3206	Brick	1450/1470–1550
[216]	2271	Hip tile	1480–1600
	2586	Ridge tile	
	2586	Peg tile	

Context	Fabric	Type	Context date
	1977, 2850, 3246	Floor tile	
	3065	Brick	
[217]	2191	Floor tile	1300/1480–1600
[218]	2271, 2276, 2586, 2816	Peg tile	1480–1800
	2816	Nib tile	
[219]	2309	Stove tile	1550–1700
[229]	3046, 3260	Brick	1480–1600
	2194, 3063	Floor tile	
[233]	3046	Brick	1450/1470–1550
[235]	3033	Brick	1450/1470–1550
[238]	3046	Brick	1450/1470–1600
[241]	3032, 3046	Brick	1700–1900
[251]	2504	Floor tile	1300/1480–1600
[252]	3033, 3042	Brick	1500–1600
[254]	3033, 3039, 3042	Brick	1500–1666
[256]	3039?	Brick	1500–1600
[258]	2271, 2276, 2816, 2587	Peg tile	1480–1600
	3063, 3246	Floor tile	
[262]	2271, 2816	Peg tile	1480–1900
[264]	3498	Brick	1500–1700
[265]	3032, 3033	Brick	1666–1900
	2276	Peg tile	
[267]	3032?, 3035	Brick	1800–1900
[269]	3033, 3046	Brick	1550–1666
[270]	3046	Brick	1500–1600
[271]	3033, 3046	Brick	1500–1600
[276]	2271, 2587	Peg tile	
	1678, 2850, 3063, 3080, 3246	Floor tile	
[282]	2276	Peg tile	1480–1800
[283]	2271, 2276, 2586, 3216	Peg tile	1480–1800
	2586	Ridge tile	
[286]	3033, 3042	Brick	1500–1666
[288]	3101	Mortar	?

Context	Fabric	Type	Context date
[293]	3032	Brick	1700–1900

Medieval building material

Peg tile

A few small fragments of what appears to be medieval peg roofing tile were recovered from contexts [14], [22], [258] and [276]. One tile from [258] has splash glaze, whilst another has a round nail hole (one of two) measuring 13mm in diameter. There is also what could be either a paw or finger print.

Ridge tile

The top of peg tiles roofs were normally covered by a line of curved ridge tiles. Two example were found in the site (contexts [216] and [283]), but it is uncertain if these are medieval or later in date.

Nib tile

A solitary nib tile was recovered from context [218]. This has knife trimmed sides, a distinguishing feature of many nib tiles used in London, and part of the nib surviving. Nib tiles, which are relatively rare in London, were probably used in the 13th and 14th centuries.

Post-medieval building material

Floor tile

Plain glazed Flemish floor tile of probable 1480–1660 date were recovered from contexts [216], [229], [258] and [276]. These are all in various silty fabrics (types 1977, 2850, 3063, 3080, 3246) typical of Flemish imports of this period. The tiles have brown, green and yellow glaze and would have been laid in a chequerboard pattern with the darker green and brown tiles alternating with the yellow glazed examples.

There are a few Flemish floor tiles characterized by very small white calcium carbonate inclusions (context [217], [251], [276]) (fabrics 1678, 2191, 2504). These tiles, which all measure 28–30mm in thickness, are probably also 1480–1600, but an earlier 14th–15th-century date cannot be entirely excluded. They have brown, yellow and green glaze.

From context [229] (<133>) is a very unusual plain glazed Flemish floor tile. This has been cut down after firing to produce a tile measuring 79 x 87mm. Presumably this was needed for a specific area of floor.

One silty fabric (type 2850) Flemish tile has had its top surface completely removed by wear. It is not certain, but this appears to be unglazed, if so then it is probably of 1580–1800 date.

Stove tile

Two small pieces of green glazed stove tile were recovered from context [219] (<39>, <40>). These are made with a distinctive hard white clay which is a characteristic of the Surrey/Hampshire border ware potters (pot fabric BORDG) working around 1550–1700. The use of tiled stoves was restricted to the wealthiest members of society, so it must have come from a building of high social status.

Brick

Brick samples make up the majority of the post-medieval building material collected. Many are very similar in fabric (3033, 3046), colour (red or orange) and size (218–236 x 99–113 x 49–63mm), suggesting they may be of similar date. These bricks were found in contexts [47], [50], [52], [78], [153], [162], [165], [166], [210], [216], [229], [233], [235], [238], [252], [254], [256], [264], [269], [270], [271], [286] and [293]. Although dating brick on size needs to be treated with caution, many would appear to be dated to around 1500–1666 which would suggest they formed part of Worcester House. Many bricks have sunken margins, a feature more commonly associated with pre-1666 London-made bricks.

A small number of bricks of pre-1666 date (contexts [210] and [229]) have fabrics characterised by a scatter of white calcium carbonate or crushed shell inclusions (fabrics 3206, 3260). It is not certain if these are London-made or were obtained from brickyards situated elsewhere. One (context [210]) has the impression of the full thickness of the wooden mould used to make the brick. The mould impression is 16mm wide, although this may be a slight under-estimate as the impression may have shrunk slightly when the brick was fired.

Of particular importance are a number of shaped brick, which would have formed some kind of decorative architectural feature. Three bricks (context [271]) are semi-circular in shape, whilst another has the header end cut to a point (context [216]). Other bricks of interest include a grey 'glazed header (context [286]) which may have been used in decorative brick diaper work, and a waster (context [264]) and overfired example (context [256]) which may represent evidence of brickmaking somewhere in the vicinity.

Sharp edged London-made dark red bricks (fabric 3032) measuring 212–223 x 93–104 x 59–69mm were recovered from contexts [51], [194], [197], [204], [241], [265], [265] and [267]. Many are frogged suggesting a 18th or 19th-century date.

Later dark red brick (fabric 3032) was also found in context [53], although these have more rounded edges and so could be slightly earlier (1666–1800/1900). They were found reused with earlier red brick (fabric 3046) of probable 1550–1666 date. Evidence of reuse comes in the form of two different mortar types attached to the brick sides. The earliest mortar is cream in colour; this is overlain by a light grey mortar layer.

Yellow stock brick of probable Victorian date was recovered from contexts [194], [204] and [267]. One (context [194]) has been crudely cut to a wedge shape suggesting it comes from a brick arch. Another has a diagonal pressure mark on the stretcher face showing the stacking arrangement when the brick was laid out to dry prior to firing. A dark red brick (context [241]) has a similar feature.

Dutch paving brick

A small, hard, yellow Dutch paving brick measuring 153 x c 64 x 34mm was recovered from context [146]. These first arrived in London around 1630 and were in widespread use during the 17th–18th centuries. They were set in a herringbone pattern in the floor to provide a tough hard wearing surface. The XRV10 example was clearly used in such a floor as there are wear marks on one stretcher face.

Floor tile / brick

Found with the Dutch paving brick was a flat red tile measuring 29mm in thickness. The fabric (a possible finer variant of 2320) is undiagnostic, so the function of this tile is uncertain. It may be an unglazed floor tile or a thin brick.

Peg tile

A few fragments of post-medieval peg tile were found in contexts [199], [204], [218], [258], [262], [265] and [282]. Both two square nail hole and two diamond nail hole types are represented. One tile has an unusual top cutaway (context [258]) whilst another (context 262) has a burnt edge suggesting possible use in a hearth or oven structure.

Hip tile

Hip tiles were used where two roof lines set at different angles joined. These tiles are relatively rare in London, although it can be difficult to distinguish small fragments from ridge tile. One definite hip tile was recovered from context [216].

Pantile

Around the time that Dutch paving brick started arriving in London, pantiles began to appear in increasing numbers, although they were used spasmodically before 1630. The earliest London pantiles were from the Netherlands, until production started at Tilbury around in c 1694. It is not certain whether the examples from XRV10 (contexts [108], [190], [199], [203] and [204]), which occur in a variety of fabrics, are of Dutch or English origin.

Pantiles rarely survive intact but one complete and three virtually complete tiles were found in a cess pit, context [190]. These measure 341–363mm in length, 222–237mm in breadth by 13–16mm in thickness.

Chimney pot / garden furniture

Found unstratified was a large piece of a decorated circular object with an internal diameter of approximately 230mm. This could be either a chimney pot or a piece of garden furniture. It would appear to be made of some kind of mortar. There are in fact two mortar layers. The initial object was made from a circular pinkish-white mortar layer 14mm thick. On to this was attached a second pinkish mortar layer (up to 45mm thick) applied as decoration.

Wall plaster

Fragments of pale creamish-white wall plaster were recovered from contexts [203] and [204]).

Mortar

From context [288] was a piece of mortar with a flattish surface.

Stone

Large cobble stone from context [197] (stone type still to identify), dark grey roofing slate (context [204]) and a cut slab of what may be a variant of French Caen stone 52–56mm in thickness (context [204]). The latter has a smooth upper surface suggests it may have been used as paving, or as part of some kind of monument or inscription.

17.3 Note on worked stone

Mark Samuel

Seven worked stones were examined. Two were discarded (from [197] and [188]). The rest – from a single secondary context [281] – displayed late-medieval characteristics and seems to have derived from a high-status building or church. They include quoins and a jamb of greensand, parts of windows and/or doorways.

17.4 Clay tobacco pipe

Jacqui Pearce

Introduction/methodology

The clay tobacco pipe assemblage from XRV10 was recorded in accordance with current Museum of London Archaeology practice and entered onto the Oracle database. The English pipe bowls have been classified and dated according to the Chronology of London Bowl Types (Atkinson and Oswald 1969), with the dating of some of the 18th-century pipes refined where appropriate by reference to the Simplified General Typology (Oswald 1975, 37–41). The prefixes AO and OS are used to indicate which typology has been applied. Quantification and recording follow guidelines set out by Higgins and Davey (1994; Davey 1997).

Quantification

Table 5 Clay tobacco pipe quantification

Total no. of fragments	197
No. of bowl fragments	58
No. of stem fragments	131
No. of mouthpieces	8
Accessioned pipes	43
Marked pipes	39
Decorated pipes	22
Imported pipes	
Complete pipes	
Wasters	
Kiln material fragments	
Boxes (bulk\accessioned)	1.5 boxes

Character and dating of the clay pipes

Fragments of clay tobacco pipes were recovered from 21 contexts, the greatest number coming from context [190] (14 bowls, 95 stem fragments and eight mouthpieces). Apart from two contexts that yielded only single undatable stem fragments (contexts [247] and [256]), most are dated after c 1780 and throughout the 19th century, with only context [248] recorded as c 1640–60 on the basis of a single pipe bowl of type AO9. There are no other 17th-century pipes apart from one bowl of type AO22 (c 1680–1710) in context

[1], which was found together with four type OS12 pipes dating to c 1730–80. The only other 18th-century pipe were a single type OS10 bowl found in context [4], which is dated to c 1700–40, and a type OS12 in context [5] (c 1730–80).

Table 6 Clay tobacco pipe dates, by context (B – bowl; M – mouthpiece; S – stem)

Ctxt	TQP	TAQ	B	S	M
1	1730	1780	5		
4	1700	1740	1		
5	1730	1780	1		
16	1840	1880	1		
20	1800	1900		2	
26	1820	1840	1		
54	1840	1880	1		
57	1820	1840	2	1	
60	1820	1840	1		
108	1800	1820	5		
112	1820	1840	1		
156	1840	1880	2		
187	1840	1880	2		
190	1850	1880	14	95	8
200	1820	1840	2		
204	1780	1820	9	5	
247	1580	1910		1	
248	1640	1660	1		
256	1580	1910		1	
262	1820	1840	7	24	
266	1850	1880	2	2	
Total			58	131	8

All remaining contexts date to the late 18th to 19th century, with most probably made and used after c 1800, despite the broad date range of c 1780–1820 given to types AO27 and AO27A, the most numerous forms recorded on the site (15 and 12 examples respectively). With their brittle bowls and long, thin, curved stems these pipes were easily broken, both before and after burial, hence the large number of stem fragments, all from this type, recorded in context [190]. This context, however, has been dated to c 1850–80 by the presence of two type AO29 and one AO30 pipe bowls; it also yielded two type AO28 pipes, dated to c 1820–60, so a date of deposition in the 1850s seems most likely. Late 19th-century pipes were also found in contexts [266], [16], [54], [156] and [187], all dating after c 1840. In most of these, earlier pipes are mixed in with later types, as in context [190].

In the medium-sized context [190] six pipe bowls have simple, common types of decoration in the form of moulded leaf or wheatsheaf seams on the bowl. Nine of the bowls from the same context have moulded maker's initials in relief on the sides of the heel or spur. Other decorative types include ribbed bowls of type AO27 with moulded leaf seams. The most elaborately decorated pipes are three examples all from the same maker and of the same style recovered from context [204]. They are all of type AO27, which is dated to c 1780–1820 by nine examples of this form. The decoration consists of the three ostrich feathers of the Heir Apparent (Prince of Wales) moulded on the back of the bowl, facing the smoker, with a moulded leaf seam on the front of the bowl and delicately moulded foliate decoration along the seams and sides of the stem. The initials SS are moulded in relief on the sides of the heel and the maker's name and address along the sides of the stem. Unfortunately, none of the stems are sufficiently complete to allow the name to be read clearly. The closest reading based on all three examples, appears to be S STOLTIE (?) / THE CHURCH....STREET STEPNEY. No pipe makers of this name are recorded in available records consulted for this assessment. The only other pipe marked with a full surname is a type AO28 bowl from context [200]. This has the name KEEN stamped upside down in a circle on the back of the bowl, with the initials MK moulded in relief on the sides of the spur. These stand for Michael Keens, who is recorded in Limehouse Fields in 1836 (Oswald 1975, 140). Five pipe bowls of types AO27 and AO27A are marked with the initials IF, which stands for John Ford of Stepney, known to have been working between 1805 and 1865 (ibid, 136). It is likely that some of the other marked pipes recorded on the site were also made locally; further work on the identification of makers' marks is recommended.

Marked pipes

Table 7 Marked and decorated clay pipes

Ctxt	Acc	Form	ED	LD	Dec	Mark	I/R	M/S	Pos
108	6	AO27	1780	1820	WB	??	R	M	SH
112	10	AO28	1820	1840	LB	?SC	R	M	SS
190	44	AO27	1780	1820		CI	R	M	SH
1	4	OS12	1730	1780		CS	R	M	SH
1	5	OS12	1730	1780		CS	R	M	SH
262	108	AO28	1820	1840		DB	R	M	SS
1	6	OS12	1730	1780		DOTS	R	M	SH
204	54	AO27	1780	1820	RIBV2 / LB	FC	R	M	SH
5	8	OS12	1730	1780		FLEUR-DE-LIS	R	M	SH
190	46	AO29	1840	1880	LB	HG	R	M	SH
60	4	AO28	1820	1840	LB	HS	R	M	SS
156	11	AO29	1840	1880	OAKS	HS	R	M	SH
108	9	AO27A	1800	1840	WB	I?	R	M	SH
204	57	AO27	1780	1820		IE	R	M	SH
262	111	AO27	1780	1820		IE?	R	M	SH
108	7	AO27	1780	1820	WB	IF	R	M	SH
108	8	AO27	1780	1820	WB	IF	R	M	SH

190	43	AO27A	1800	1840		IF	R	M	SS
204	53	AO27	1780	1820	RIBV2 / LB	IF	R	M	SH
57	107	AO27A	1800	1840		IF	R	M	SS
190	50	AO27A	1800	1840	WB	IT	R	M	SS
16	1	AO29	1840	1880		J?	R	M	SH
200	82	AO28	1820	1840		KEEN (inverted) / MK	I/R	S/M	BF/SS
262	109	AO27A	1800	1840	WB	OO	R	M	SS
190	134	AO28	1820	1840		OO	R	M	SS
204	51	AO27	1780	1820	POW / LBB	SS / SID...THE CHURCH	R	M	SH/SL
204	55	AO27	1780	1820	POW / LBB	SS / S STO..STEPNEY	R	M	SH/SL
204	56	AO27	1780	1820	POW / LBB	SS / S STOLTIE.. / STREET STEPNEY	R	M	SH/SL
204	58	AO27	1780	1820		SS	R	M	SH
262	110	AO28	1820	1840		STARS?	R	M	SS
204	52	AO27	1780	1820		TC	R	M	SH
190	49	AO27A	1800	1840	LB	WC	R	M	SS
200	81	AO27	1780	1820		WG	R	M	SH
190	47	AO27A	1800	1840	WB	WI	R	M	SS
190	45	AO27A	1800	1840	LB	WM	R	M	SS
108	5	AO27A	1800	1840		WS	R	M	SH
57	3	AO28	1820	1840		WS?	R	M	SS
4	7	OS10	1700	1740		WW	R	M	SH
190	42	AO27A	1800	1840		WW	R	M	SS
187	41	AO29	1840	1880	LB				
190	48	AO30	1850	1910	FTH				
266	112	AO30	1850	1910	LB / FOL				
266	113	AO29	1840	1880	LB				

Analysis of potential

The clay pipe assemblage from XRV10 yielded a large number of marked examples that have good potential for further work aimed at identifying their makers and thereby further refining the dating of the contexts in which they were found. Given the size and variety of the pipe assemblage, further work should aim to compare the finds from XRV10 with those of similar date from other sites in this area of London, with a view to examining local production and distribution networks. There is also potential for examining the clay pipes in relation to other finds, in order to understand their place within the wider context of development and use of the site. The clay pipes have an important role in clarifying

the site sequence and in understanding the social context in the 19th century in particular. Their significance is not limited to the local sphere alone and they have a wider regional importance in relation to clay pipe manufacture, distribution and use at a regional level.

17.5 A note on the bulk and accessioned glass, other accessioned finds, leather, kiln waste and slag

Beth Richardson

Introduction

The two boxes of bulk and accessioned glass were identified and quantified and the data recorded on the Oracle data base. The bulk and accessioned leather was examined while wet (before conservation). The accessioned finds (two boxes) were examined with x-rays of the iron and copper-alloy items. The slag and kiln waste was identified where possible and weighed. The finds are medieval and post-medieval, ranging from in date from the 14th/15th to the 19th centuries. They include an interesting group of 16th-century glass from contexts [250] and [251] and a few late medieval or early post-medieval finds, such as a complete copper-alloy pin with a domed head and part of an iron spur from context [276].

The glass

The most significant accessioned glass is a small group of mid to late 16th-century beaker stems and bases (<99>, <100>, <101>, <102>, <105>, <136>), pieces from a flask and fragments from a *façon de Venise* vessel, all from contexts [250] and [251]. Four of the beaker bases are from a distinctive type of tall pedestal beaker with decorative optic-blown vertical ribs (Willmott 200, 47, Type 4.2), made from a very thin-walled natural green 'forest' or 'potash' glass. These are 16th-century English products, probably used for beer (Willmott *ibid*, 45). The other two bases <100>, <105>, also made from green potash glass, have a wider diameter and are undecorated. The rim and neck from a small globular flask is also made from green potash glass. It may be possible to date these beakers and the flask more closely from ceramics and/or stratigraphy, and to associate them with a building on the site.

The three small fragments from a *façon de Venise* vessel (<106>) are made from colourless soda glass decorated with slightly raised twisted bands of opaque white and blue glass trails (*vetro a fili* decoration). It is a high status vessel, possibly a pedestal beaker with coloured trails or a goblet and almost certainly Venetian rather than an imitation. It dates to the first half of the 16th century (Willmott *ibid*, 16–17).

The rest of the accessioned glass and most of the bulk glass is 19th-century, consisting of pieces from items like a small container (possibly a salt) and a candlestick, both with decorative cut glass stars on their bases (<126>, [57]; <25>, [190]) and tumbler and wine glass fragments (<127>, <131> [262]). The bulk glass consists of pieces from cylindrical wine bottles, an octagonal ink bottle and fragments of window glass.

Metal

There are 19 copper-alloy finds, 12 iron finds (most of which are corroded) and 2 lead finds. The earliest are late medieval or early post-medieval. A late medieval or 16th-century copper-alloy or brass dress-pin (<93>) from [276] has a large hollow domed head, formed from two dished sheet discs soldered together and a short thick shaft. There is also a large part of a medieval 14th- or 15th-century iron rowel spur (with one tapering curved side and a rowel-box with circular terminals and a rivet for the missing rowel (<85>, [276]), (cf Clark 1995, Fig 97327, 328) and a piece from an unidentified

lead object (<86>) from the same context .All these items are in good condition. A copper-alloy twisted loop (<23>, [217]) is almost certainly part of a late medieval or early post-medieval purse (eg Egan1998, 64, fig 52) and a short length of copper-alloy wire from a 16th-century context (<91>, [258]) could be part of a woman's headdress frame. A small and narrow horseshoe with rectangular nail-holes (<64>, [217]) is probably late medieval (eg Clark1995, Type 3, Fig 84). A composite iron and bone rectangular-sectioned knife handle (<94>) from [251] may be 16th-or early 17th-century.

The other metal finds are much more modern. They include several small fragments of copper-alloy (possibly waste) from context [204] (<17>, <21>, <68>, <69>, <70>) found with 19th- or early 20th-century mechanical or industrial items (a small cog <67>, a rivet <66>, part of a piece of machinery <18>, a corroded tool, possibly a punch (<61>)and a large corroded ring <19>). There is also a piece of 18th- or 19th-century jewellery (part of a locket or brooch) from [204]: an amber-coloured oval cut glass cameo (the head of a helmeted warrior or god facing right) in a corroded but plain oval surround (<22>).

There are nine nails in good condition from late medieval or early post-medieval contexts [258], [262] and [276].

Bone and ivory

There are 11 bone and ivory finds. Seven of these are late post-medieval from contexts [203] and [204], consisting of four bone buttons, all of which have one central hole and would have been originally cloth-covered (<30>, <31>, <34>, <71>), a small bone domino (<36>, a piece of rectangular inlay (<35>) and a piece from an ivory ring, possibly from the neck a bag.

Four bone finds from contexts [200] and [262] are difficult to identify date. A small disc in poor condition may be the end cap from a knife (<96>, [262]). A small incomplete domed object may be part of a mount or something else, eg a gaming piece (<95>, [262]). A deeply grooved (?) object with three small holes around the edge and a hole in the middle with a screw fitting may be a lid or a mount (<29>, [200]). There is a bone ring (<95>) from the same context.

Ceramic

A ceramic (pipe clay) alley has traces of red coating on the outside (<37>). It is 18th- or 19th-century, and more likely to be 19th-century.

Leather and wood

Notable leather finds include a toe with slashed decoration from the vamp of an adult low shoe is early to mid 16th-century, and a nice example of a type which is seen in contemporary pictures but rarely found in excavations (<124>, [288]). There is also 16th-century bulk leather (shoe soles with a natural shape and broad toes) from contexts [276] and [258].

A damaged bowling bowl from [288] is presumably also 16th-century. It should be re-examined and measured when conserved.

Kiln waste, glass waste and slag

There are fragments (500g) of mainly oxidised ceramic kiln structure or mould for large objects (eg a bell-mould), a small piece of crucible (<38>) a piece of metal slag (52g) and a small rounded piece of amber-coloured glass waste (<139>)]. These may be medieval or early post-medieval and residual in what appears to be a late post-medieval context [204].



*Photo 18 Late-medieval and Tudor/Stuart finds
Top: 14th-/15th-century spur<85>, dress-pin (<93>)
Middle: High-status stove tile 1550–1700 from [219], shoe early – mid 16th-c <124>
Bottom: Bowling ball or jack and façon de Venise glass vessel*



Photo 19 19th-century or later
Top: brush,; Ivory ring (bag?)
Bottom: Chamber pot

17.6 Conservation note

Liz Goodman

Table 8 Summary of conservation work

	Material	No. registered	No. conserved	No. to be treated (see below)
Inorganics	Ceramics	47	0	0
	Glass	28	0	0
	Stone	5	0	0
Metals	Copper alloy	24 (5 coins)	5 (5 coins)	0
	Iron	11	0	1
	Lead	2	0	0
Organics	Bone	12	0	0
	Fibre	1	1	0
	Leather	1	1	0
	Wood	2	2	0

Introduction/methodology

The following assessment of conservation needs for the registered and bulk finds from the excavations at Stepney Green phase 2, encompasses the requirements for finds analysis, illustration, analytical conservation and long term curation. Work outlined in this document is needed to produce a stable archive in accordance with MAP2 (English Heritage 1992) and the Museum of London's Standards for archive preparation (Museum of London 2009).

Conservation support at the time of the excavation was provided by conservators working for the Museum of London Archaeology. Records of conservation carried out at the fieldwork stage are held in the conservation department of the Museum of London. All conserved objects are packed in archive quality materials and stored in suitable environmental conditions. Records of all conservation work are prepared on paper and on the Museum of London collections management system (mimsy XG) and stored at the Museum of London.

The accessioned finds were assessed by visual examination of the objects. The accessioned finds were reviewed with reference to the finds assessments by Beth Richardson, Jacqui Pearce, Lyn Blackmore and Nigel Jefferies.

17.7 Hand-Collected and Wet-Sieved Animal Bone

Alan Pipe

Introduction and methodology

This report quantifies, identifies and interprets the animal bone recovered from hand-collected context groups [199], [203], [204], [205], [216], [217], [218], [247], [250], [251],

[258], [262], [276] and [283]; and wet-sieved bulk samples [204] {1}, [217] {3}, [2218] {2}, [250] {30}, [251] {31}, [275] {21}, [280] {4} and [283] {5}, {10} and {12} at XRV10. All recovered animal bones were washed, air-dried and then bagged and labelled as context and sample groups.

Animal bone from each context was then described and recorded directly onto the Excel tables in terms of species, skeletal element, age, epiphysial fusion, sex, modification and fragment count. Species and skeletal element were determined using the MOLA animal bone reference collection together with Cannon 1987; Hillson 1986; Lawrence & Brown 1973; Schmid 1972; and Wheeler 1978. Interpretation of age at death was derived from epiphysial fusion (Schmid 1972) and dental eruption and wear (Amorosi 1989). As far as possible, each bone fragment was assigned to species and skeletal element and recorded individually. Unidentifiable long bone fragments were assigned to the approximate category 'cattle-sized' or 'sheep-sized' as appropriate. The complete sitecode assemblage is recorded as Excel Tables (Table 9 and Bone table 2 for future reference, not illustrated) and analysis with respect to available stratigraphic data.

Table 9 records the overall assemblage summary in terms of quantification, fragmentation, preservation and general faunal group representation in terms of large mammals, small mammals, fish, birds and amphibians. All data are available for consultation on request on the Museum of London Archaeology Oracle animal bone post-assessment database. Bone Table 10 compiles the faunal composition of each context and sample group in terms of identifiable species, skeletal element, age-group, fragment counts, sex and evidence for modification; butchery, working, burning, gnawing and pathological changes.

Preservation and quantification (Table 9)

A total of 18.840 kg/1324 fragments, ten standard archive boxes, of well-preserved animal bone were recorded from hand-collected and wet-sieved contexts. Maximum hand-collected fragment size generally exceeded 75mm, with most bone in very good surface condition, and all tool marks, gnawing evidence, tooth wear and fusion lines easily visible.

The fauna (Table 10)

The identifiable faunal assemblage derived mainly from the major domesticates; particularly ox (cattle) *Bos taurus* and sheep/goat including sheep *Ovis aries*, with a smaller component of pig *Sus scrofa*. There was a considerable component of poultry, particularly chicken *Gallus gallus* and mallard/domestic duck *Anas platyrhynchos*, with occasional recovery of goose *Anser anser*. Non-consumed domesticates were represented by occasional recovery of horse *Equus caballus* and dog *Canis lupus familiaris* only. Wild 'game' species were represented by single humerus and tibia (leg and wing) fragments of adult woodpigeon *Columba palumbus*, one metatarsal (hind foot) of adult fallow deer *Dama dama* with small groups of rabbit *Oryctolagus cuniculus*. Smaller wild vertebrates included frog or toad, probably common frog *Rana temporaria* and common toad *Bufo bufo*, hedgehog *Erinaceus europaeus* and field or short-tailed vole *Microtus agrestis* with occasional recovery of unidentifiable mouse or vole bones but no definite recovery of house mouse or rat.

Wet-sieved samples also produced a small assemblage of fish including freshwater, migratory and marine/estuarine species. Freshwater species comprised carp (family) Cyprinidae including dace *Leuciscus leuciscus*; migratory species comprised salmon (family) Salmonidae, eel *Anguilla anguilla*; marine/estuarine species included roker or thornback ray *Raja clavata*, herring (family) Clupeidae, mackerel *Scomber scombrus*,

gurnard Triglididae, cod family Gadidae including cod *Gadus morhua* and whiting *Merlangius merlangus*; and plaice/flounder Pleuronectidae.

The remainder of the assemblage largely comprised fragments of unidentifiable 'cattle-sized' and 'sheep-sized' long bone and rib from the majority of hand-collected and wet-sieved context and sample groups.

There was no recovery of scavengers or commensal species. There were no human bones.

Although the majority of the major domesticated assemblage derived from animals in at least young adulthood, there was also minor recovery of sub-adult cattle, sheep/goat and pig with occasional very young, but not foetal or neonate, infant calves. In general, non-consumed domesticated, poultry and wild 'game' birds and mammals were represented by adults. Recovery of juvenile calves was confined to [250], [251], [258], [276] [283]; infant calves were recovered from [217], [250], [251] and [276]. Single examples of infant sheep/goat and pig were recovered from [276] only.

Clear evidence of butchery was noted on cattle bones from the majority of contexts. Chop marks were predominant, with knife cuts on an infant calf innominate (pelvis) [251] and an adult metacarpal (fore-foot) [258]. Occasional chop marks were also seen on sheep/goat, pig, poultry and rabbit. An adult sheep/goat femur in [204] had been sawn twice transversely through the mid-shaft which would have produced a leg steak or 'gigot chop'. There was no evidence for burning, working of bone or horn; or of pathological change.

There was no evidence for canine gnawing and only one fragment of sheep-sized long bone from [199] had been gnawed by a small rodent.

Hand-collected context groups ranged between 0.010 kg–4.650 kg/fragment counts 1–155; wet-sieved sample groups between 0.005–0.920 kg/fragment counts 1–370. Hand-collected contexts [217], [218], [250], [251], [258] and [276] and wet-sieved samples [217] {3} and [250] {30} produced the largest assemblages.

The groups (Table 9 and Table 10)

Context [199] produced 0.125 kg/15 fragments derived from a calf tibia (shin) and fragments of sheep-sized rib and long bone with single fragments of adult sheep/goat radius (lower fore-leg) and pig femur (thigh); and fragments of mallard/domestic duck skull, wing and leg, all possibly from the same bird. One fragment of sheep-sized long bone had been gnawed by rodents, the only evidence of this from the whole site assemblage.

Context [203] produced 0.050 kg/25 fragments derived largely from poultry with single examples of sheep/goat adult first phalange (basal toe joint), infant piglet skull and rabbit lumbar (lower back) vertebra. The poultry group included an adult hen metatarsal (foot) with elements of head and wing from at least two adult mallards/domestic ducks.

Context [204] and sample [204] {1} produced 0.340 kg/170 fragments derived largely from poultry and rabbit with single examples of adult sheep/goat hyoid, rib, sacrum and femur; and juvenile pig skull. The poultry group included adult chicken skull, lower jaw, wing and foot, all possibly from the same hen; mallard/domestic duck included elements of skull, wing, and leg probably from at least two adult birds. Rabbit produced elements of skull, fore-leg and hind-leg probably from one adult animal.

A very small group of fish bones included marine/estuarine and migratory species; cod (family) and eel.

Context [205] produced 0.400 kg/five fragments including single fragments of horse and calf innominate (pelvis).

Context [216] produced 1.100 kg/nine fragments) derived from adult cattle mandible (lower jaw), atlas vertebra and tibia (shin); and sheep/goat scapula (shoulder blade) with single fragments of adult cockerel foot; sheep/goat metacarpal (fore foot) and pig innominate (pelvis). Wild game species were represented by a metatarsal (hind foot) of adult fallow deer.

Context [217] and sample [217] {3} produced a substantial group derived mainly from adult cattle and sheep/goat mandible (lower jaw), vertebra, and upper fore- and hind-leg and feet; with a partially-complete adult dog skeleton. The cattle group also included single examples of infant calf humerus, femur and metatarsal; upper fore- and hind-leg and hind-foot. Poultry comprised only a goose scapula (shoulder blade).

Wild game comprised only single examples of juvenile rabbit femur (thigh bone) metacarpal (fore-foot) and adult sacrum (lower back). A small group of fish bones derived entirely from marine/estuarine species; cod (family), gurnard and plaice/flounder.

Context [218] and sample {2} produced 1.360 kg/30 fragments derived from adult cattle skull, mandible (lower jaw), vertebra and radius (lower fore-leg); sheep-sized sterbebra and rib; and pig femur (thigh bone). The group included a small assemblage of ground-living vertebrates; frog or toad, field or short-tailed vole and hedgehog suggesting that the feature was steep-sided and acting effectively as a 'pit-fall' trap for small species.

Context [247] produced 0.005 kg/one fragment of chopped sheep-sized rib.

Context [250] and sample [250] {30} produced 2.07 kg/420 fragments; a substantial group derived mainly from cattle and sheep/goat with smaller components of poultry and rabbit and a single phalange (toe joint) of juvenile pig. Cattle produce a mixed group of infant, juvenile and adult vertebra and upper and lower fore-and hind-leg; sheep/goat predominantly juvenile and adult upper and lower hind-leg. Poultry included a single goose tibia ('drumstick') and phalange (toe joint) with a larger group of adult chicken upper and lower wing and leg and foot. Rabbit included adult elements of the head and upper and lower fore-and hind-legs, all probably from an adult animal. No fish were recovered.

Context [251] and sample [251] {31} produced 3.475 kg/120 fragments derived mainly from infant, juvenile and adult cattle and sheep/goat vertebra and upper and lower fore-and hind-leg with single examples of herring (family) vertebra, adult chicken femur (thigh bone) and rabbit innominate and femur (upper hind-leg). Associated ground fauna derived from fragments of frog or toad and mouse or vole including an adult field or short-tailed vole.

Context [258] produced 4.650 kg/155 fragments; a substantial group derived mainly from juvenile and adult cattle and adult sheep/goat head, vertebra and upper and lower fore-and hind-leg with smaller fragment counts of poultry and rabbit and single examples of a marine/estuarine fish, thornback ray, dermal spine, adult dog skull and a juvenile pig femur. The poultry group comprised a goose skull fragment with fragments of adult and juvenile wing and 'drumstick'.

Context [262] produced 0.010 kg/one adult sheep/goat mandible (lower jaw).

Sample [275] {21} produced 0.005 kg/one fragment of goose tibia ('drumstick').

Context [276] produced 1.95 kg/125 fragments derived largely from adult sheep/goat upper and lower fore- and hind-leg with a smaller group of cattle upper and lower fore-and hind-leg. Cattle and sheep/goat each produced occasional infant limb bones. In

addition, there were single examples of adult chicken upper and lower wing and foot, pig adult scapula (shoulder blade), infant innominate (pelvis) and juvenile femur (thigh bone); cod skull and upper jaw, goose tibia ('drumstick') and rabbit tibia (shin) and metacarpal (fore-foot).

Context [280] {4} produced 0.050 kg/one fragment of infant calf skull.

Context [283] and samples [283] {5}, {10} and {12} produced 0.500 kg/16 fragments, a small group of cattle cervical (neck) vertebra, rib, humerus (upper fore-leg) and calf radius (lower fore-leg); sheep/goat rib and tibia (shin) and a small but very diverse group of fish, poultry and game. Fish derived from freshwater, migratory and marine/estuarine species; carp (family) including dace, salmon (family), herring (family), mackerel, gurnard, whiting and plaice or flounder. Poultry comprised single fragments of adult chicken femur and tibia (upper and lower leg); and goose tibia ('drumstick'). Game comprised single fragments of adult woodpigeon wing and leg; and rabbit metacarpal (fore-foot).

Interpretation

This small but very well-preserved assemblage indicates waste from four sources; each of these components of the assemblage has some potential for further analysis and interpretation.

1. A small group of head, foot and toe elements derived from primary processing of cattle, sheep/goat and pork carcasses. Complete absence of cattle and sheep/goat horn cores suggests that these elements were removed for primary horn-processing elsewhere; similarly, the complete absence of bone-working waste and tool marks associated with bone or horn preparation appears to confirm that there was no industrial activity in the immediate area.

2. Butchery and post-consumption waste provide the bulk of the hand-collected and wet-sieved assemblage. Cattle and sheep/goat head, vertebrae and limb long-bones provide the bulk of the assemblage indicating a meat diet biased heavily towards beef and, probably, mutton from carcass areas of prime meat-bearing quality; vertebrae; upper and lower fore- and hind-leg probably suggesting some degree of consistent affluence and economic status, although not necessarily aristocratic social rank. Evidence from epiphyseal fusion indicates significant selection of infant and juvenile cattle suggesting some consumption of veal. This was less commonly noted from sheep/goat suggesting that lamb was a less important dietary component. By comparison, the very sparse recovery of juvenile and adult pig bones suggest only occasional consumption of pork. Poultry, particularly chicken and mallard or domestic duck, provided a significant component of the diet although goose was only occasionally recovered. Rabbit also provided a considerable component of the diet with the only other 'game' species, woodpigeon and fallow deer, represented respectively by two fragments of humerus and tibia, upper wing and 'drumstick'; and a single complete metatarsal (hind-foot). The wet-sieved bulk samples indicated consumption of a diverse but not abundant fish diet exploiting freshwater, migratory and marine/estuarine species, all available from the Thames catchment, estuary and associated coastal waters.

3. Sparse recovery of horse and dog bones indicates very limited disposal of non-consumed domesticates. Again, neither of these species showed knife-cuts linked to hide removal and there is no evidence that they represent anything other than occasional carcass disposal.

4. Occasional recovery of small ground-living vertebrate fauna including frog and/or toad, field or short-tailed vole and hedgehog. Each of these species is common and

widespread throughout London and SE England and recovery probably represents chance casualties in steep-sided open cut features.

Table 9 Quantities

CONTEXT	SAMPLE	WT (kg)	FRAG (mm)	PRES	NOS	LMAM	SMAM	FISH	BIRD	AMPH
199	0	0.125	>75	good	15	11	0	0	4	0
203	0	0.05	>75	good	25	5	0	0	20	0
204	0	0.3	>75	good	90	25	0	0	65	0
204	1	0.04	25-75	good	80	59	1	5	15	0
205	0	0.4	>75	good	5	5	0	0	0	0
216	0	1.1	>75	good	9	8	0	0	1	0
217	0	2.4	>75	good	75	75	0	0	0	0
217	3	0.25	25-75	good	150	138	1	10	0	1
218	0	1.35	>75	good	10	10	0	0	0	0
218	2	0.01	25-75	good	20	16	3	0	0	1
247	0	0.005	<25	good	1	1	0	0	0	0
250	0	1.15	>75	good	50	45	0	0	5	0
250	30	0.92	>75	good	370	280	0	60	30	0
251	0	3.4	>75	good	65	64	0	0	1	0
251	31	0.075	25-75	good	55	10	20	5	0	20
258	0	4.65	>75	good	155	149	0	1	5	0
262	0	0.01	25-75	good	1	1	0	0	0	0
275	21	0.005	25-75	good	1	0	0	0	1	0
276	0	1.95	>75	good	125	120	0	1	4	0
280	4	0.05	>75	good	1	1	0	0	0	0
283	0	0.45	>75	good	13	13	0	0	0	0
283	5	0.05	25-75	good	3	3	0	0	0	0
283	10	0.05	25-75	good	3	2	0	0	1	0
283	12	0.05	25-75	good	2	2	0	0	0	0
		18.84			1324	1043	25	82	152	22

Table 10 Animal bone by context, species, part and age

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
199	0	mallard/domestic duck	femur	juvenile	1	
199	0	mallard/domestic duck	metacarpal	adult	1	
199	0	mallard/domestic duck	skull	adult	1	
199	0	mallard/domestic duck	ulna	adult	1	chopped
199	0	ox	tibia	juvenile	1	
199	0	pig	femur		1	
199	0	sheep/goat	radius	adult	1	
199	0	sheep-sized	long bone		2	gnawed/rodent
199	0	sheep-sized	rib		3	
203	0	chicken	metatarsal	adult	1	female
203	0	mallard/domestic duck	mandible	adult	4	
203	0	mallard/domestic duck	metacarpal	adult	2	
203	0	mallard/domestic duck	radius	adult	4	
203	0	mallard/domestic duck	skull	adult	3	
203	0	mallard/domestic duck	ulna	adult	2	
203	0	pig	skull	infant	1	

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
203	0	rabbit	vertebra, lumbar	adult	1	
203	0	sheep/goat	phalange 1	adult	1	
204	0	chicken	fibula	adult	1	
204	0	chicken	mandible	adult	1	
204	0	chicken	metatarsal	adult	2	female
204	0	chicken	skull	adult	1	
204	0	chicken	ulna	adult	1	
204	0	mallard/domestic duck	femur	adult	1	
204	0	mallard/domestic duck	metacarpal	adult	3	
204	0	mallard/domestic duck	radius	adult	2	
204	0	mallard/domestic duck	skull	adult	3	
204	0	mallard/domestic duck	ulna	adult	2	
204	0	pig	skull	juvenile	1	
204	0	rabbit	femur	adult	2	
204	0	rabbit	humerus	adult	2	
204	0	rabbit	innominate	adult	2	
204	0	rabbit	mandible	adult	1	
204	0	rabbit	sacrum	adult	1	
204	0	rabbit	scapula	adult	2	
204	0	rabbit	skull	adult	1	
204	0	rabbit	tibia	adult	2	chopped
204	0	rabbit	vertebra, lumbar	adult	2	
204	0	sheep/goat	femur	adult	1	sawn
204	0	sheep/goat	hyoid		1	
204	0	sheep/goat	sacrum	adult	1	chopped
204	0	sheep-sized	rib		1	chopped
204	1	cod (family)	vertebra		1	
204	1	eel	cleithrum		2	
204	1	mallard/domestic duck	metatarsal	adult	1	
204	1	mallard/domestic duck	ulna	adult	1	
204	1	mallard/domestic duck	phalange, wing	adult	1	
204	1	mouse/vole	tibia	adult	1	
204	1	sheep/goat	phalange 1	adult	1	
205	0	horse	innominate		1	
205	0	ox	innominate	juvenile	1	
216	0	chicken	metatarsal	adult	1	male
216	0	deer, fallow	metatarsal	adult	1	
216	0	ox	mandible	adult	1	
216	0	ox	tibia	adult	1	
216	0	ox	vertebra, atlas	adult	1	chopped
216	0	pig	innominate		1	

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
216	0	sheep/goat	metacarpal		1	
216	0	sheep/goat	scapula	adult	2	
217	0	dog	humerus	adult	1	
217	0	dog	innominate	adult	2	
217	0	dog	radius	adult	2	
217	0	dog	tibia	adult	1	
217	0	dog	ulna	adult	1	
217	0	dog	vertebra, lumbar	adult	1	
217	0	ox	femur	adult	2	chopped
217	0	ox	femur	infant	1	
217	0	ox	humerus	infant	1	
217	0	ox	innominate	adult	3	chopped
217	0	ox	mandible	adult	1	
217	0	ox	metacarpal		2	chopped
217	0	ox	metatarsal	infant	1	
217	0	ox	scapula		2	
217	0	ox	skull	adult	1	
217	0	ox-sized	rib		6	chopped
217	0	ox-sized	vertebra, lumbar		1	chopped
217	0	sheep/goat	humerus		3	
217	0	sheep/goat	innominate	adult	1	
217	0	sheep/goat	mandible	adult	2	chopped
217	0	sheep/goat	radius		1	chopped
217	0	sheep/goat	tibia		2	
217	0	sheep-sized	rib		8	chopped
217	3	cod (family)	vertebra		2	
217	3	frog/toad	innominate	adult	1	
217	3	goose	scapula		1	
217	3	gurnard	vertebra		1	
217	3	mouse/vole	femur	juvenile	1	
217	3	ox	patella		1	chopped
217	3	ox	skull	juvenile	1	chopped
217	3	ox-sized	rib		1	chopped
217	3	plaice/flounder	head		5	
217	3	plaice/flounder	vertebra		2	
217	3	rabbit	femur	juvenile	1	
217	3	rabbit	metacarpal	juvenile	1	
217	3	rabbit	sacrum	adult	1	
217	3	sheep	skull		1	
217	3	sheep/goat	femur	adult	1	chopped
217	3	sheep/goat	radius	adult	2	

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
217	3	sheep/goat	tibia	adult	1	chopped
218	0	horse	innominate	adult	1	
218	0	ox	skull	adult	2	chopped
218	0	ox	mandible	adult	1	
218	0	ox	radius	adult	1	chopped
218	0	ox	vertebra, lumbar		1	chopped
218	0	pig	femur		1	
218	2	frog/toad	humerus	juvenile	1	
218	2	hedgehog	mandible	juvenile	1	
218	2	hedgehog	tooth	subadult	2	
218	2	sheep-sized	sternebra		1	chopped
218	2	sheep-sized	skull		3	
218	2	vole, field	tooth	adult	1	
247	0	sheep-sized	rib		1	chopped
250	0	chicken	metatarsal	adult	1	female
250	0	chicken	tibia	adult	2	chopped
250	0	chicken	ulna	adult	2	
250	0	chicken	humerus		1	
250	0	chicken	metatarsal	adult	1	
250	0	chicken	tibia		1	
250	0	goose	phalange 1	adult	1	
250	0	goose	tibia		1	
250	0	ox	astragalus	juvenile	1	
250	0	ox	calcaneum	juvenile	1	
250	0	ox	innominate	infant	1	
250	0	ox	radius	juvenile	1	
250	0	ox	tibia	infant	1	
250	0	ox	vertebra, atlas	adult	1	chopped
250	0	ox	vertebra, cervical	juvenile	4	chopped
250	0	ox	carpal		1	chopped
250	0	ox	central tarsal	infant	1	
250	0	ox	femur	infant	1	
250	0	ox	head		1	
250	0	ox	humerus		1	
250	0	ox	humerus	infant	1	
250	0	ox	radius	infant	1	
250	0	ox	tibia	juvenile	1	
250	0	ox	vertebra, cervical	juvenile	1	chopped
250	0	ox-sized	rib		21	chopped
250	0	pig	phalange 1	juvenile	1	
250	0	rabbit	femur	adult	1	

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
250	0	rabbit	humerus	adult	1	
250	0	rabbit	femur	adult	1	
250	0	rabbit	mandible	adult	2	
250	0	rabbit	metacarpal	adult	3	
250	0	rabbit	radius	adult	1	
250	0	rabbit	ulna	adult	1	
250	0	sheep/goat	femur	adult	1	
250	0	sheep/goat	femur	juvenile	1	
250	0	sheep/goat	innominate	adult	1	chopped
250	0	sheep/goat	tibia	adult	2	
250	0	sheep/goat	calcaneum	adult	1	
250	0	sheep/goat	femur		1	
250	0	sheep/goat	humerus		3	
250	0	sheep/goat	metatarsal		2	
250	0	sheep/goat	skull		1	
250	0	sheep/goat	tibia	adult	1	
250	0	sheep/goat	tibia	juvenile	2	
250	0	sheep/goat	ulna	adult	1	
250	0	sheep/goat	ulna	juvenile	1	
250	0	sheep-sized	rib		40	
251	0	chicken	femur	adult	1	
251	0	ox	femur	juvenile	2	chopped
251	0	ox	femur	infant	4	
251	0	ox	femur	adult	2	chopped
251	0	ox	humerus	infant	2	
251	0	ox	humerus	juvenile	1	chopped
251	0	ox	humerus	adult	1	chopped
251	0	ox	innominate	infant		knife cut
251	0	ox	innominate		1	chopped
251	0	ox	maxilla	infant	2	
251	0	ox	metatarsal	juvenile	1	
251	0	ox	radius	adult	1	
251	0	ox	sacrum	juvenile	1	chopped
251	0	ox	sacrum	adult	1	chopped
251	0	ox	sternbra		1	chopped
251	0	ox	tibia	infant	2	
251	0	ox	tibia	juvenile	4	
251	0	ox	tibia	adult	1	
251	0	ox	vertebra, axis	adult	1	chopped
251	0	ox	vertebra, cervical	adult	1	chopped
251	0	ox	vertebra, cervical	juvenile	1	chopped

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
251	0	ox	vertebra, lumbar		1	chopped
251	0	ox-sized	rib		5	chopped
251	0	rabbit	femur	adult	1	
251	0	rabbit	innominate	adult	1	
251	0	sheep/goat	femur	adult	1	
251	0	sheep/goat	humerus	juvenile	1	chopped
251	0	sheep/goat	innominate	adult	3	chopped
251	0	sheep/goat	metacarpal	infant	1	
251	0	sheep-sized	rib	juvenile	4	
251	31	frog/toad	innominate	juvenile	1	
251	31	frog/toad	radius/ulna	juvenile	2	
251	31	frog/toad	tibia/fibula	juvenile	2	
251	31	herring (family)	vertebra		1	
251	31	mouse/vole	femur	adult	1	
251	31	mouse/vole	scapula	adult	1	
251	31	mouse/vole	tibia	adult	1	
251	31	ox	femur	infant	1	
251	31	ox-sized	rib		1	chopped
251	31	sheep/goat	phalange 1	adult	1	
251	31	vole, field	mandible	adult	2	
258	0	chicken	tibia	adult	2	
258	0	chicken	ulna	juvenile	1	
258	0	chicken	ulna	adult	1	
258	0	dog	head	adult	1	
258	0	goose	skull		1	
258	0	ox	femur	juvenile	1	chopped
258	0	ox	humerus	juvenile	1	chopped
258	0	ox	humerus	adult	1	chopped
258	0	ox	innominate	adult	3	chopped
258	0	ox	mandible	adult	1	
258	0	ox	metacarpal	adult	1	chopped/knife cuts
258	0	ox	phalange 3	adult	1	
258	0	ox	radius	adult	1	chopped
258	0	ox	skull		2	
258	0	ox	tibia		1	chopped
258	0	ox	ulna		1	chopped
258	0	ox	vertebra		5	chopped
258	0	ox	vertebra	adult	1	chopped
258	0	ox-sized	rib		20	chopped
258	0	pig	femur	juvenile	1	chopped
258	0	rabbit	femur	adult	1	

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
258	0	rabbit	femur	juvenile	1	
258	0	rabbit	humerus	juvenile	2	
258	0	rabbit	radius	adult	1	
258	0	ray, thornback	dermal spine		1	
258	0	sheep/goat	innominate	adult	2	chopped
258	0	sheep/goat	maxilla	adult	1	
258	0	sheep/goat	metatarsal		1	
258	0	sheep/goat	radius	adult	4	chopped
258	0	sheep/goat	scapula	adult	3	
258	0	sheep/goat	tibia		1	
258	0	sheep/goat	ulna		1	chopped
258	0	sheep-sized	rib		30	chopped
262	0	sheep/goat	mandible	adult	1	
275	21	goose	tibia		1	
276	0	chicken	humerus		1	
276	0	chicken	metatarsal	adult	1	female
276	0	chicken	ulna	adult	1	
276	0	cod	postcleithrum	adult	1	
276	0	dog	mandible	adult	1	
276	0	goose	tibia		1	
276	0	ox	humerus	infant	1	
276	0	ox	innominate		1	chopped
276	0	ox	tibia		1	chopped
276	0	ox	vertebra, thoracic		1	chopped
276	0	ox-sized	calcaneum	infant	1	
276	0	ox-sized	rib		20	chopped
276	0	ox-sized	vertebra	adult	1	chopped
276	0	pig	innominate	infant	1	
276	0	pig	scapula	adult	1	
276	0	pig	femur	juvenile	1	
276	0	rabbit	tibia		1	
276	0	sheep/goat	humerus	adult	1	
276	0	sheep/goat	hyoid		1	
276	0	sheep/goat	innominate	adult	2	male
276	0	sheep/goat	radius	adult	2	chopped
276	0	sheep/goat	tibia		1	
276	0	sheep/goat	tibia	infant	1	
276	0	sheep/goat	ulna	adult	1	
276	0	sheep/goat	tibia		1	chopped
276	0	sheep/goat	vertebra, lumbar	adult	1	chopped
276	0	sheep-sized	rib		30	chopped

CONTEXT	SAMPLE	TAXON	PART	AGE	NOS.	COMMENT
276	22	cod	premaxilla		1	
276	22	rabbit	metacarpal	adult	1	
276	22	sheep-sized	rib	infant	1	
276	23	sheep-sized	long bone		1	
280	4	ox	skull	infant	1	
283	0	ox	humerus		2	
283	0	ox	radius	juvenile	1	chopped
283	0	ox	vertebra, cervical		1	
283	0	ox-sized	rib		1	
283	0	sheep/goat	tibia		2	chopped
283	0	sheep-sized	rib		1	
283	5	bird, passerine	coracoid	adult	2	
283	5	bird, passerine	metacarpal	adult	1	
283	5	carp (family)	vertebra		10	
283	5	chicken	femur	adult	1	
283	5	chicken	tibia	adult	1	
283	5	dace	pharyngeal	adult	1	
283	5	gurnard	premaxilla	adult	1	
283	5	gurnard	vertebra		10	
283	5	herring (family)	skull		1	
283	5	herring (family)	vertebra		30	
283	5	mackerel	vertebra		2	
283	5	ox-sized	long bone		3	
283	5	plaice/flounder	cleithrum		1	
283	5	rabbit	metacarpal		1	
283	5	ray, thornback	dermal spine		1	
283	5	salmon (family)	vertebra		1	
283	5	whiting	premaxilla		1	
283	5	woodpigeon	humerus		1	
283	5	woodpigeon	tibia	adult	1	
283	10	goose	tibia		1	
283	10	ox-sized	long bone		2	
283	12	ox-sized	rib		1	chopped
283	12	sheep-sized	long bone		1	

17.8 Pottery

Lyn Blackmore

Introduction

A large assemblage of pottery was recovered from the evaluation and excavation phases of work on this site. The former was recorded by Jacqui Pearce, the latter by the writer. The pottery was spot-dated in accordance with current MOLA procedure, and recorded by fabric, form and decoration using standard accepted codes. Quantification was carried out using sherd count (SC), estimated number of vessels (ENV) and weight in grams. The data were entered onto the Oracle database. In all 1039 sherds from up to 451 vessels (105.872kg) were recovered from 37 contexts, of which 1000 were hand-collected, the others recovered by sieving. A small amount of medieval pottery was found, but the bulk of the assemblage is of post-medieval date.

The medieval pottery

Twenty sherds of medieval pottery were recovered from six contexts (see Table 11). The earlier fabrics comprise south Herts-type greyware (SHER; four sherds) and Mill Green ware (MG; one sherd), while the later wares comprise late London slipware (LLSL), and Langerwehe stoneware (LANG); coarse Surrey-Hampshire border ware (CBW; four sherds) spans the whole period from 1270–1500. On balance it is likely that the finds represent sporadic activity in the area during the later 14th and 15th centuries.

The post-medieval pottery

The post-medieval pottery falls into two main groups, 16th to early 17th-century, and late 18th to 19th-century.

16th to early 17th-century

This group comprises 590 sherds (263 ENV, 86.349kg) from 17 contexts (see Table 11). The dating below is based on the pottery alone; some groups also have bottle glass and so probably date to after 1650. By far the most common ware category is London area redware (386 sherds), of which early post-medieval redware and the slipped equivalent (PMSR/G/Y) comprise 203 sherds (167 ENV) and 128 sherds (54 ENV) respectively. These include a near complete large cauldron, mostly found in [251] but also present in [250] (PMSRY; rim diameter 245mm, height c 275mm), and two substantially complete vessels: a pipkin with ladle handle and a large, externally sooted PMRE jar with neatly faceted base and rather cruder internal knife trimming, both from [251]. Also of note is a rim sherd from a colander with incised decoration (PMSRG). A few sherds from [250] and [251] have glaze over the broken edge or cracks in the surface and seem to be from seconds or sub-standard vessels. Also within this group are 51 sherds (10 ENV) from cauldrons/pipkins with bichrome glaze (PMBR), one sherd with metallic glaze (PMREM), two sherds of calcareous early post-medieval redware (PMREC) and one of post-medieval redware (PMR). Redwares from Essex, which were introduced around 1580, are limited to one sherd of fine post-medieval redware (PMFR) and two of post-medieval black-glazed ware (PMBL).

Surrey-Hampshire borders wares are the second most common group, with 102 sherds (50 ENV), all but one of the whiteware fabric (BORD/G/O/Y); most sherds are from standard tripod pipkins, bowls and dishes, but two are unusual – a large straight-sided dish from [250] and the complete base of a brazier from [251].

Imports are in third place with 97 sherds (37 ENV). Of these 43 sherds are from a large Dutch slipware (DUTSL) cauldron with pinched arched handles, one with a kiln scar on the top from [251]; five other sherds are also of DUTSL or the plain equivalent (DUTR).

German stonewares from Raeren (RAER) and Frechen (FREC) total 27 sherds, including one from a RAER anthropomorphic jug with incised and stabbed decoration. Other finds include the complete rim of a Spanish olive jar (OLIV), Martincamp stoneware (MART), north Italian marbled slipware (NIMS) and south Netherlands maiolica (SNTG).

Also present are five sherds of tin-glazed ware, including the complete base of a small albarello that is either from Antwerp or the Aldgate pottery (Blackmore 2005), two sherds from Cistercian ware mugs and one of Midlands purple ware butterpot.

Late 18th to mid 19th-century

This group amounts to 429 sherds (175 ENV) from 20 contexts. The dating of the clay tobacco pipes may afford some refinement of the dating given below. Although contexts [110] and [146] have been dated to c 1760–1830, they are most likely to have been deposited in the 19th century, as the date range given covers the period of production of developed creamware, with no other finds to offer refinement. Most groups are quite small but larger amounts of pottery (but not necessarily vessels) were found in [204] and [262].

Table 11 Chronological distribution of pottery (excluding sieved material)

Context	Pot type	Edate	Ldate	Size	Sherd count	ENVs	Weight
283	MPOT	1170	1350	S	2	1	7
259	MPOT	1270	1500	S	1	1	10
276	MPOT	1270	1350	S	6	5	22
205	MPOT	1350	1500	S	1	1	83
216	MPOT	1400	1500	S	1	1	64
217	MPOT	1400	1500	S	8	4	197
209	PMPOT	1480	1600	S	17	2	882
219	PMPOT	1480	1600	S	3	4	70
229	PMPOT	1480	1600	S	3	2	112
294	PMPOT	1480	1650	S	5	1	268
205	PMPOT	1550	1600	S	7	4	303
217	PMPOT	1550	1575	M	68	32	1140
259	PMPOT	1550	1600	S	3	3	71
276	PMPOT	1550	1600	M	31	28	484
281	PMPOT	1550	1600	S	4	4	21
283	PMPOT	1550	1600	S	28	9	671
285	PMPOT	1550	1650	S	2	2	18
251	PMPOT	1570	1600	L	195	43	11513
264	PMPOT	1580	1700	S	2	2	79
216	PMPOT	1600	1610	S	17	12	794
250	PMPOT	1600	1610	L	112	70	68453
258	PMPOT	1600	1610	M	52	42	1392
256	PMPOT	1630	1680	S	3	3	17
110	PMPOT	1760	1830	S	1	1	9
146	PMPOT	1760	1830	S	3	2	272
148	PMPOT	1794	1900	S	5	3	224

151	PMPOT	1805	1900	S	4	3	106
16	PMPOT	1807	1830	S	7	6	36
108	PMPOT	1807	1900	S	2	2	152
114	PMPOT	1807	1900	S	3	3	38
187	PMPOT	1807	1900	S	10	7	760
199	PMPOT	1807	1840	S	20	12	480
203	PMPOT	1807	1900	S	3	2	11
204	PMPOT	1807	1810	L	113	27	2818
221	PMPOT	1807	1820	S	9	4	61
112	PMPOT	1820	1900	S	4	4	153
190	PMPOT	1820	1830	M	42	8	7481
57	PMPOT	1825	1830	M	45	26	1569
156	PMPOT	1825	1900	S	4	4	34
262	PMPOT	1825	1830	L	135	44	3887
26	PMPOT	1830	1900	S	2	2	21
54	PMPOT	1830	1900	S	14	12	1004
60	PMPOT	1830	1900	S	3	3	85

The bulk of the assemblage consists of tablewares and industrial finewares that would have been used in the kitchen or bedroom, with only a few coarsewares. Those from the London area mainly comprise post-medieval redware (PMR), with a few residual sherds of PMRE; the former include a substantially complete large deep flared bowl from [190]. The 22 sherds (8 ENV) of Surrey-Hampshire border redware include one near complete paint pot and another half complete from [204]. Also present are sherds from a pipkin and a small flared dish for use with flowerpots, and a few sherds of Sunderland-type redware (SUND).

Creamwares (40 sherds, 12 ENV) and pearl wares (81 sherds, 19 ENV) span the later 18th to mid 19th centuries, although pearl wares with transfer printed decoration are contemporary with other transfer-printed wares. The former include a near complete large rounded bowl, probably used in a kitchen and plates, including a soup plate, two of them with moulded royal pattern rims. This was a very popular and widely available pattern for tablewares made from the mid 18th century onwards. The pearlwares include a near complete straight-sided jar from [262] and two substantially complete vessels from [204]: a saucer with Chinese landscape and a bowl with a landscape scene near Delhi with temples and girl with a buffalo in foreground; known as Monopteros pattern (after the round temple with roof; Coysh and Henrywood 1982, 250–2), this was probably made by John Rogers and sons between 1784 and 1815). Other transfer-printed wares amount to 115 sherds (57 ENV), mainly with blue and white decoration (TPW1, TPW2). The most notable finds are a near complete large bowl/punch bowl from [190] which has an alpine landscape known as ‘Zurich’ inside the base with alternating panels of figures in landscape and roses around upper body and exterior, a bowl c 80% complete from [262] and a very unusual two-handled chamber pot with lustre painting and transfer prints in black (TPW3). That inside the base shows a shocked male face with the motto ‘Oh what I see / I will not tell’. Outside, two panels between the handles also have text in them; the more complete reads ‘..ame you’d no.. / .. Safe and oft it use; .. / ..when you in it want to p-s / Remember they who gave you this’. A small TPW2 jar from [262] has part of an inscription reading ‘nly by/ a(?)rnicott/o the L/t.’.

A few sherds have decoration in brown (TPW3), while two cups ([57] and [262]) have a floral pattern in green (TPW4). Also of TPW4 is a plate marked on the back with the pattern name 'Windsor star' ([156]). A cup and saucer with the label 'Kaolin ware, Tripod' on the back have polychrome decoration of lilies with underglaze prints and overglaze painting (TPW6). Table wares of bone china (BONE, BONE LUST), include a near complete cream jug with overglaze painting in the Chinese famille rose style ([57]), an eggcup base, cups and two saucers, some with Chelsea sprig pattern, with applied blue details. The refined white earthenwares (REFW, 25 sherds), which date to after 1800, include a saucer from [112] with part of a motto or verse written in cursive script that is probably derived from a nursery set and the bases of two marmalade jars.

Among the latest finds are 33 sherds (14 ENV) of yellow ware, mostly with slip decoration (YELL, YELL SLIP) which date to after 1820, and sherds from two vessels decorated in 'flow blue' ([54], [60]), a distinctive form of transfer-printed ware introduced c 1830, initially with the American market in view. Other English wares comprise a few sherds of Rockingham ware and English stoneware, the latter including a near complete jar from [262].

With the exception of one sherd of Frechen stoneware, all imports are of Chinese porcelain (CHPO), amounting to 23 sherds. The most complete of the eight vessels is a famille rose saucer (CHPO ROSE) painted with a harbour scene, found mainly in [304], but also in [199].

Significance and potential

The sample of post-medieval pottery recovered from XRV10 is typical of everyday domestic usage in the Tudor/Stuart period and early to mid 19th century. The former must be associated with the manor house and they can be compared with finds from Stepney Green (Blackmore 1983). The largest groups are from [250] and [251], which together yielded over 300 sherds including some substantially complete pots. Despite the status of the site, this is not immediately apparent from the pottery, and several redware sherds are from vessels that may have been sold as seconds. It is not possible to comment on the stratigraphic distribution of the finds, but a few sherd links were noted between [216]/[217] and [259]/[251], and also between [199]/[204] which may help with the interpretation of the site sequence.

The range of late 18th-/19th-century fabrics and forms is relatively limited, dominated by tea and table wares in factory-made refined earthenwares from a variety of sources. This utilitarian household 'china' would have been widely available to households across the social spectrum, although there is little of particularly high quality in the sample collected (Pearce 2011). The largest group are from [204] and [262] which together contained c 250 sherds, again with some complete or near complete pots. There is scope for comparison with other sites of the same date in east London, such as Stratford Langthorne Abbey (Blackmore 2010; Blackmore et al in prep) and in Whitechapel (Sygrave 2005).

Recommendations

The early post-medieval finds should be discussed in the context of the manor house and both these and the 19th-century groups can be compared with other assemblages of the same date in east London; both groups include some near complete vessels that merit reconstruction and illustration.

Table 12 List of suggested finds for illustration and reconstruction

Cxt	Fabric	Form	Dec	SC	Ill	Disp	Rec	Comments
57	BONE	JUG	FLOR	1	Y	Y		WHOLE APART FROM HANDLE;

Cxt	Fabric	Form	Dec	SC	Ill	Disp	Rec	Comments
		CRM						HEAVY; OVERGLAZE PAINTING IN FAMILLE ROSE STYLE ?REFW
190	PMR	BOWL 2HFL	-	11	Y	Y	Y	75% WHOLE; LARGE, DEEP
190	TPW2	BOWL PNCH	LAND	8	Y	Y	Y	95% WHOLE; ZURICH PATTERN IN BASE AND IN CARTOUCHES INT/EXT (ALTERNATING W ROSES); ALL JOIN
190	TPW3	CHP	LUST	14	Y	Y	Y	WHOLE BASE, PART LOWER BODY; LUSTRE ARCS, FACE INSIDE 'OH WHAT I SEE I WILL NOT TELL'; ALSO 2 PANELS EXT TEXT
199	CHPO ROSE	SAUC	-	2	Y	Y	Y	AS [204]; 2 RIMS
204	CHPO ROSE	SAUC	LAND	9	Y	Y	Y	NEAR WHOLE; HARBOUR SCENE; JOINS [199]
204	PEAR TR1	SAUC	CHIN	11	Y	Y	Y	85-90% WHOLE, CHINESE LANDSCAPE
204	PEAR TR2	BOWL	LAND	13	Y	Y	Y	MONOPTEROS PATTERN; DEHLI LANDSCAPE WITH GIRL+BUFFALO
250	BORDY	DISH STR	-	3	Y			PORRINGER-TYPE RIM, LARGE DIAM, FLAT BASE
251	BORDY	BRAZ	-	1	Y			WHOLE BASE
251	DUTSL	CAUL	-	43	Y	Y	Y	PROFILE; MOST JOIN
251	PMRE	JAR	FACT	15	Y	Y	Y	WHOLE BASE, NEATLY FACETTED, CRUDELY KNIFE-TRIMMED INT
250 251	PMSRY	CAUL	-	32	Y	Y	Y	PROFILE; C 95% WHOLE
283	PMSRY	COL	INCD	1	Y			RIM, INCISED+STABBED DEC

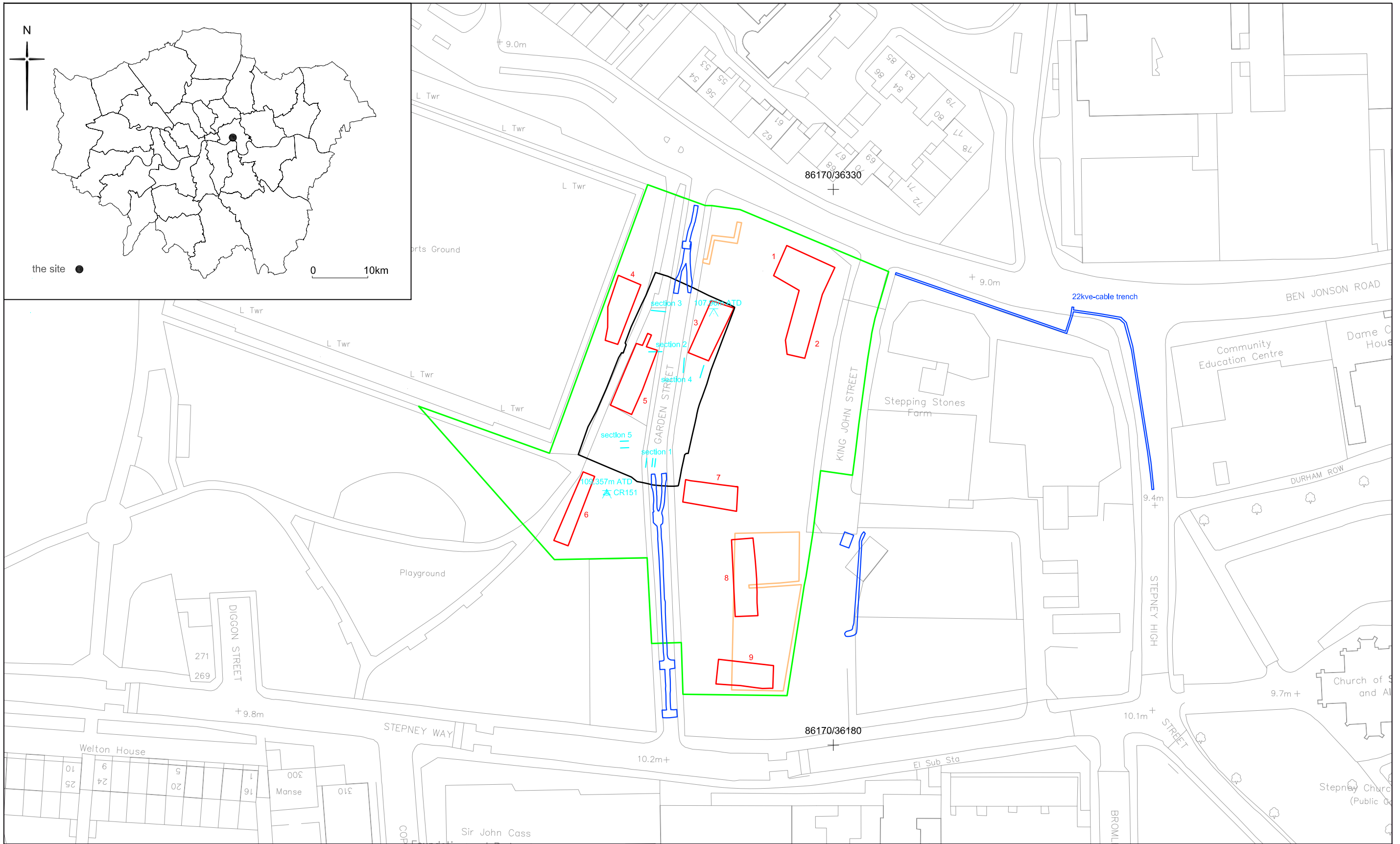










Fig 1 Site location and areas of investigation

- | | | | |
|---|---------------------------------|---|---------------------------|
|  | Crossrail worksite outline |  | TBMs |
|  | Area of excavation |  | Crossrail derived control |
|  | Area of targeted watching brief |  | Section locations |
|  | Area of general watching brief | | |
|  | Evaluation trench locations | | |

1:1000 @ A3



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Fig 2 Late medieval and Tudor features

- Site outline
- Trench edge
- Archaeological features
- Section line

1:300 @ A3

0 15m

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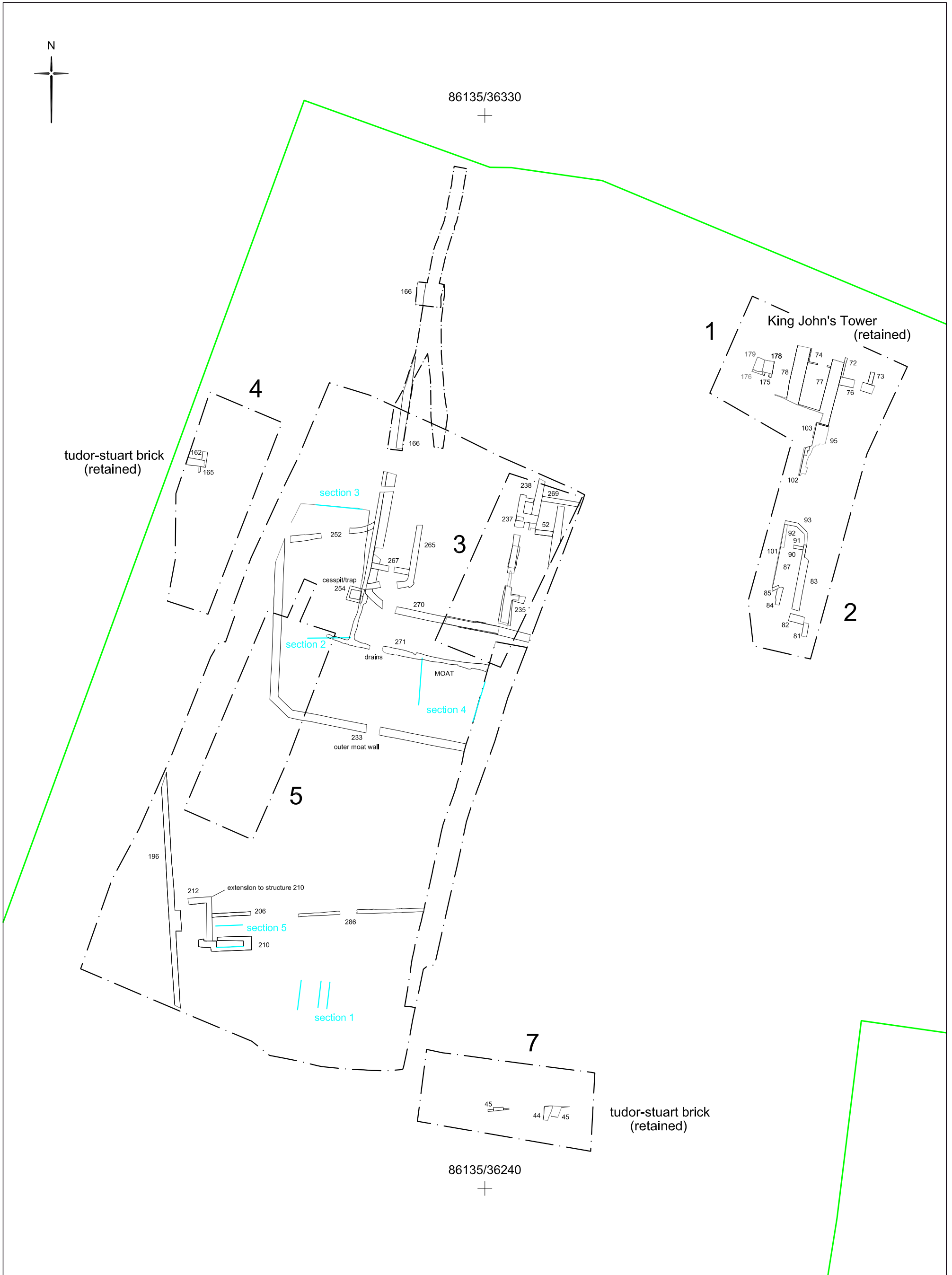


Fig 3 Eighteenth century features

- Site outline
- Trench edge
- 45 Archaeological features
- Section line

1:300 @ A3
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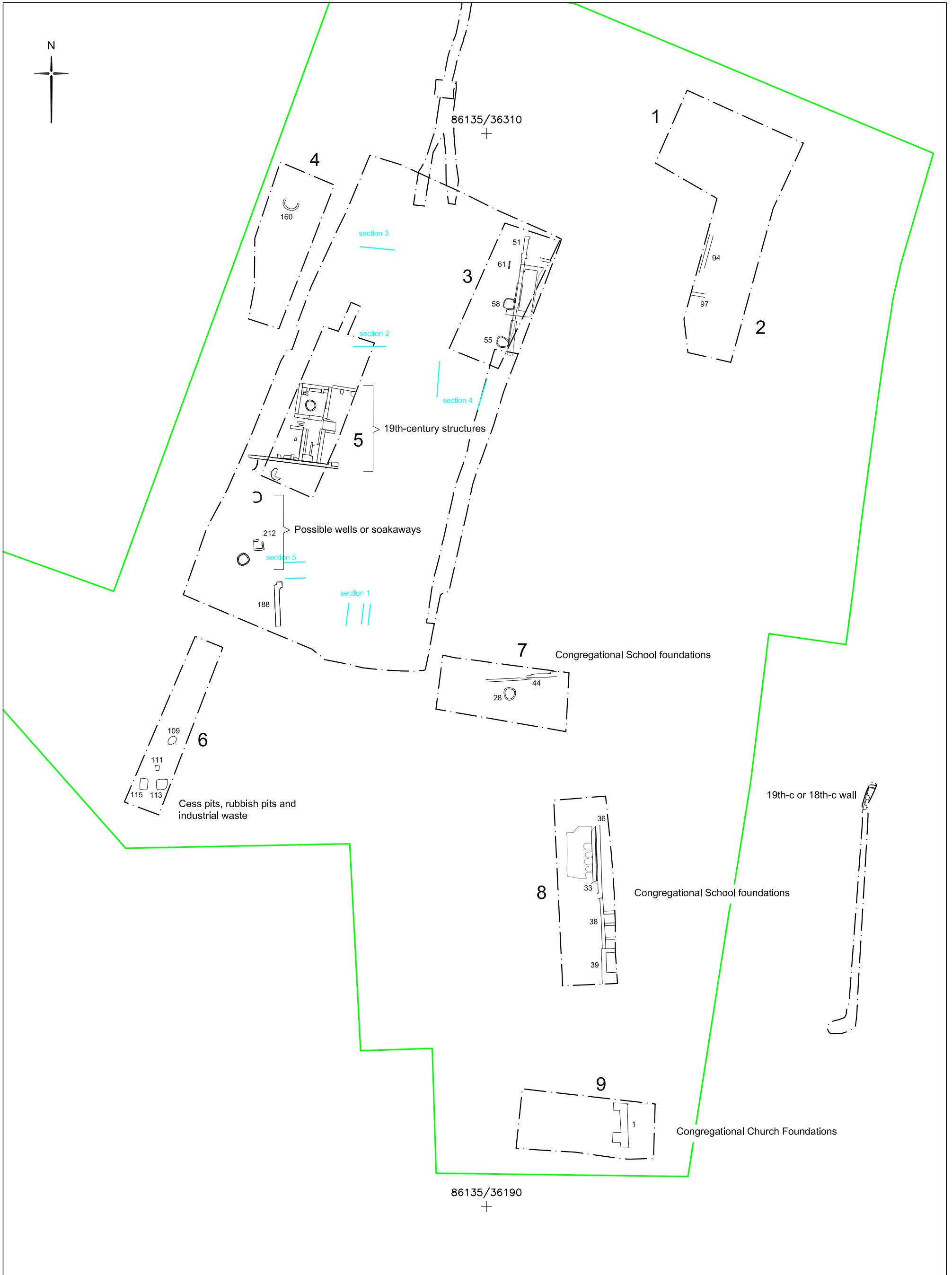


Fig 4 Nineteenth century structures

- Site outline
- Trench edge
- 38 Archaeological features
- Section line

1:400 @ A3
 0 20m

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S
86119.28/36254.98

N
86119.60/36257.96

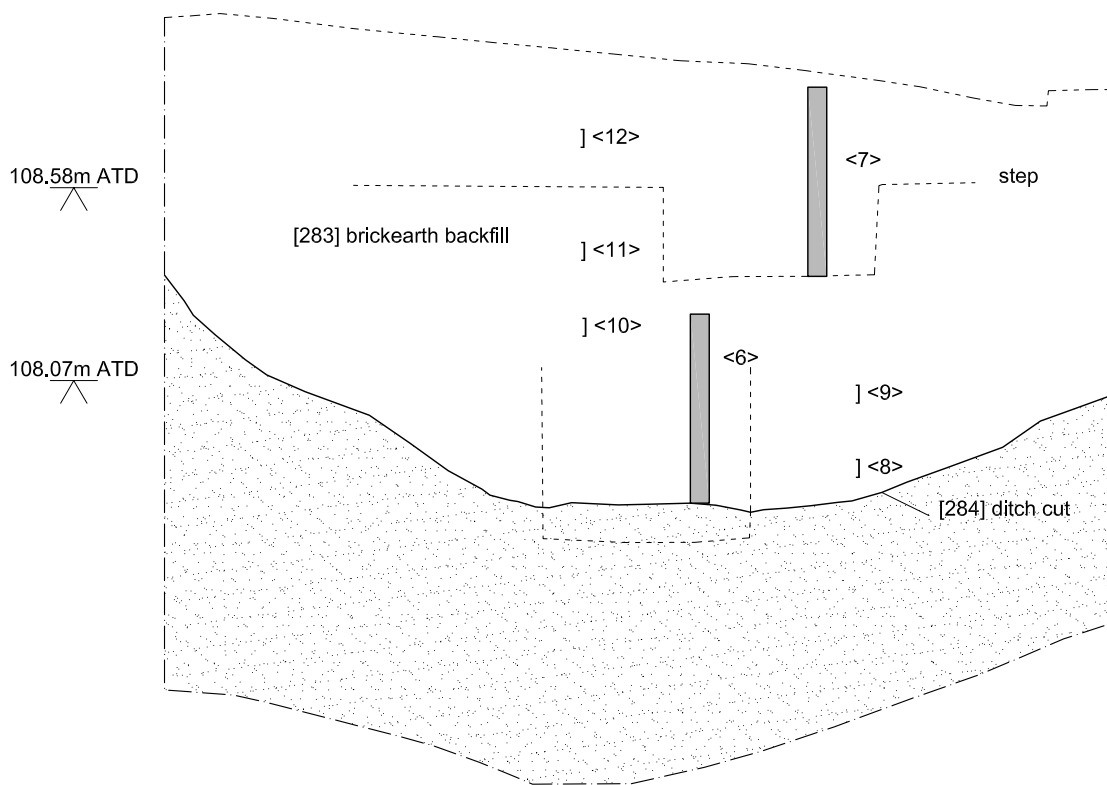







Fig 5 East-facing Section 1 through late medieval/Tudor ditch [284]

-  Visible extent of section
-  Natural sand and gravel
-  Location of sample tins <1>
-  [14] Archaeological deposit
-  <5> Location of bulk sample

0 1:20 @ A4 1m

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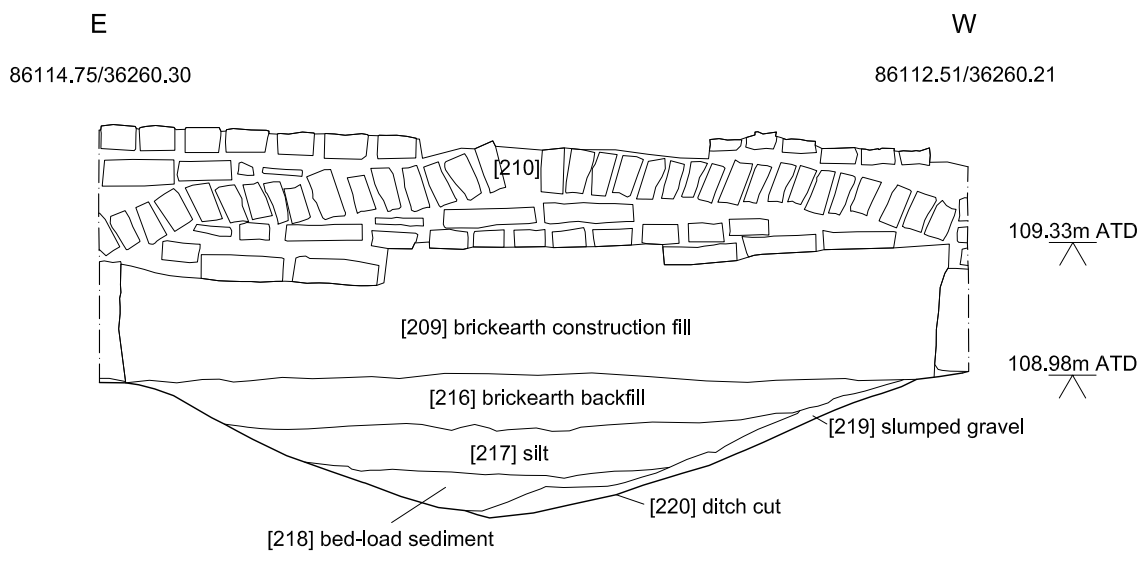





Fig 6 North-facing Section 5 through late medieval/Tudor ditch [220] and brick structure [210]

-  Visible extent of section
-  [14] Archaeological deposit

0 1:20 @ A4 1m



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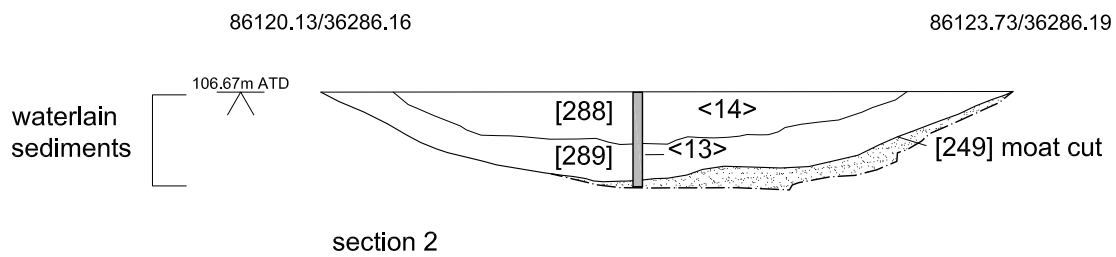
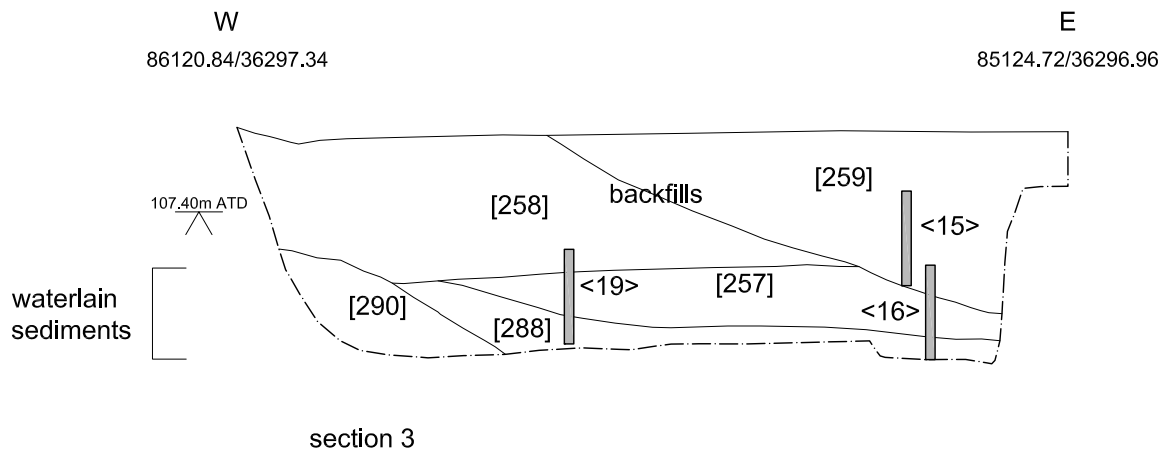







Fig 7 South-facing Sections 2 and 3 through Tudor moat [249]

-  Visible extent of section
-  Natural sand and gravel
-  Location of sample tins <1>
-  [14] Archaeological deposit
-  <5> Location of bulk sample

0 1:40 @ A4 2m

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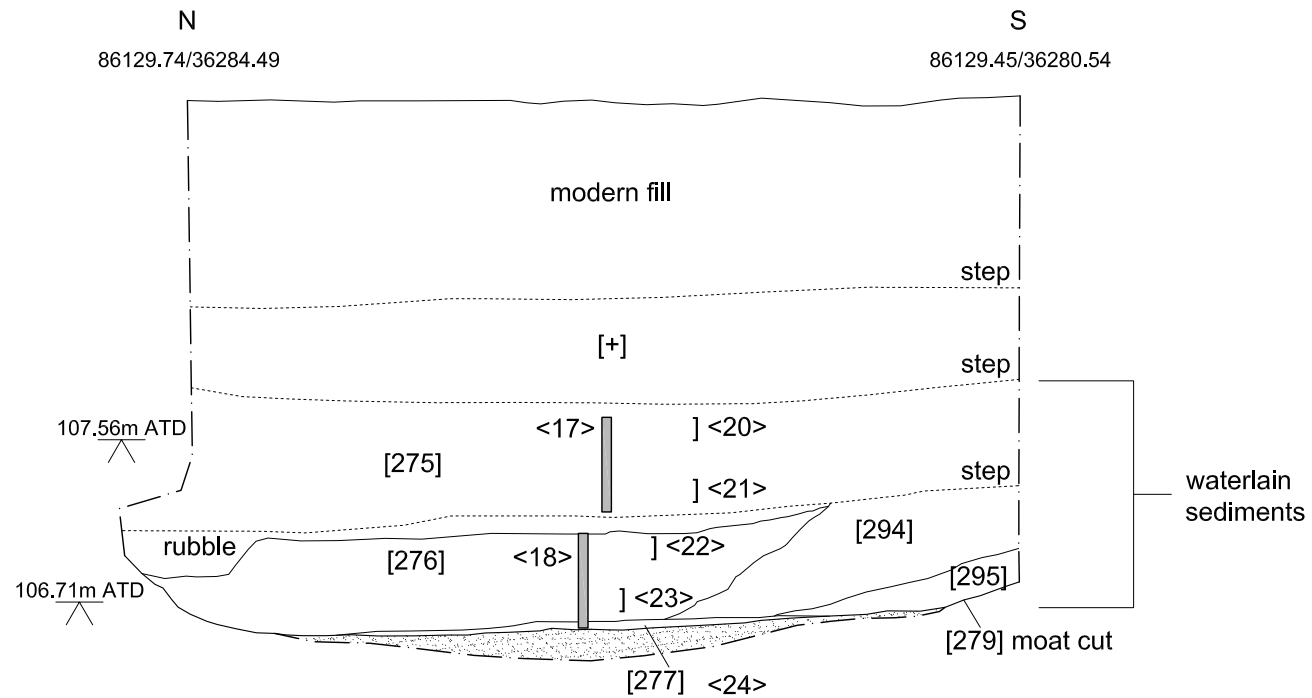
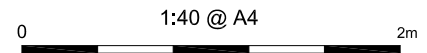


Fig 8 West-facing Section 4 through Tudor moat [279]

- Visible extent of section
- Natural sand and gravel
- Location of sample tins <1>
- [14] Archaeological deposit
- <5> Location of bulk sample



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