

ALONG THE EASTERN DEFENCES: EXCAVATIONS AT 8–14 COOPER’S ROW AND 1 AMERICA SQUARE IN THE CITY OF LONDON, EC3

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SUMMARY

This paper presents the results of four excavations, located along the eastern section of London’s city wall to the south of Aldgate, as well as drawing together findings from other archaeological excavations and observations in a surrounding study area. The project has provided the opportunity to synthesise this material and consider the development and use of the area over the past 2000 years. Analysis of the findings has identified a possible early boundary to the settlement, located to the west of the late 2nd-century city wall. The study area includes two preserved and displayed sections of the city wall and detailed elevation drawings of these are published here for the first time.

INTRODUCTION

The study area is centred on excavations for the Grange City Hotel development at 8–14 Cooper’s Row (site codes CPW99, CPQ03 and CRZ06), complemented by findings from an earlier investigation at 1 America Square (site code ASQ87). The four archaeological excavations covered a total area of 1175m², bordered by Cooper’s Row to the west, Crosswall to the north, and America Square, Vine Street and The Crescent to the east, with Tower Hill Station located to the south (Figs 1–2). The area is crossed by the railway viaduct leading into Fenchurch Street Station. The modern ground surface in the vicinity of the sites varies between c.13m and 14m OD, sloping down to the south, towards

the north bank of the Thames, which is located approximately 360m away.

The site archives have been deposited with the London Archaeological Archive and Research Centre (LAARC), organised according to their individual site codes, and may be consulted by prior arrangement with the Archive Manager. Archives relating to earlier excavations and antiquarian observations can also be found at the LAARC. Analysis of the stratigraphic sequence and the finds and environmental material from the Grange City Hotel excavations has involved the creation of further research reports which cannot be published in full in this article. These reports form part of the site archives, organised as subsets of the relevant site codes.

CIRCUMSTANCES OF THE EXCAVATIONS

This paper is based primarily on the archaeological findings from the three excavations undertaken in advance of construction of the Grange City Hotel. During 1999 and 2000 archaeological works were undertaken at 8–10 Cooper’s Row (site code CPW99, referred to here as Site A) in advance of Phase I of the project. This excavation revisited the site of earlier archaeological observations by Peter Marsden during construction of an office building (Guildhall Museum code GM44). The Phase I development involved

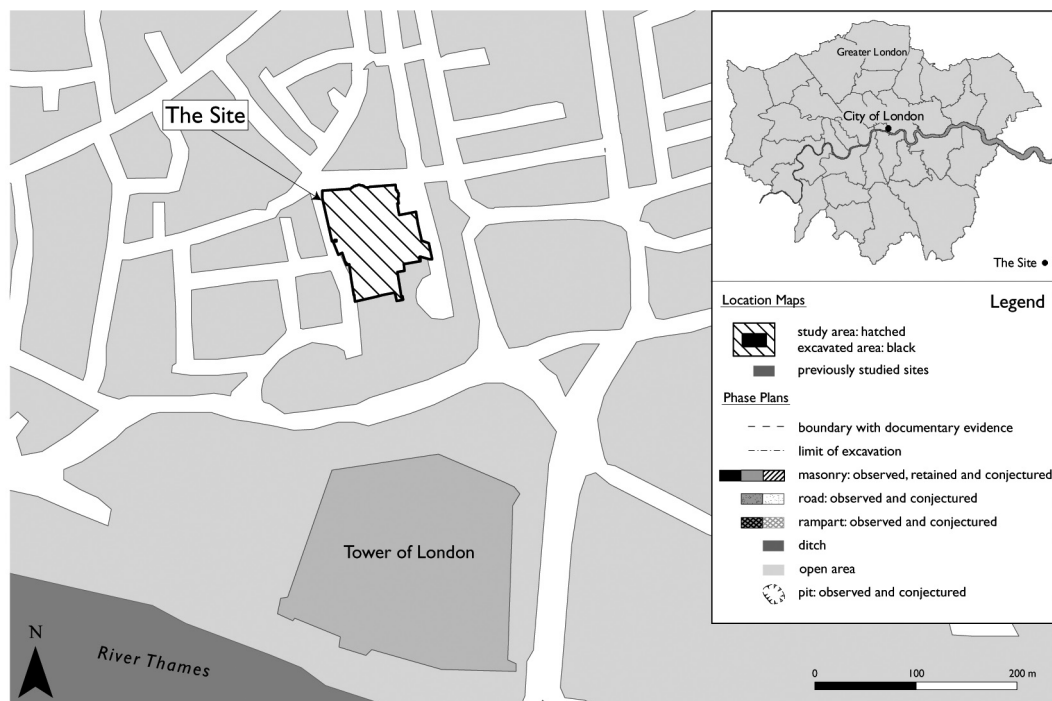


Fig 1. The area of the 8–14 Cooper's Row and 1 America Square sites shown in relation to the modern topography and an inset showing the site location in the Greater London area (scale 1:7500)

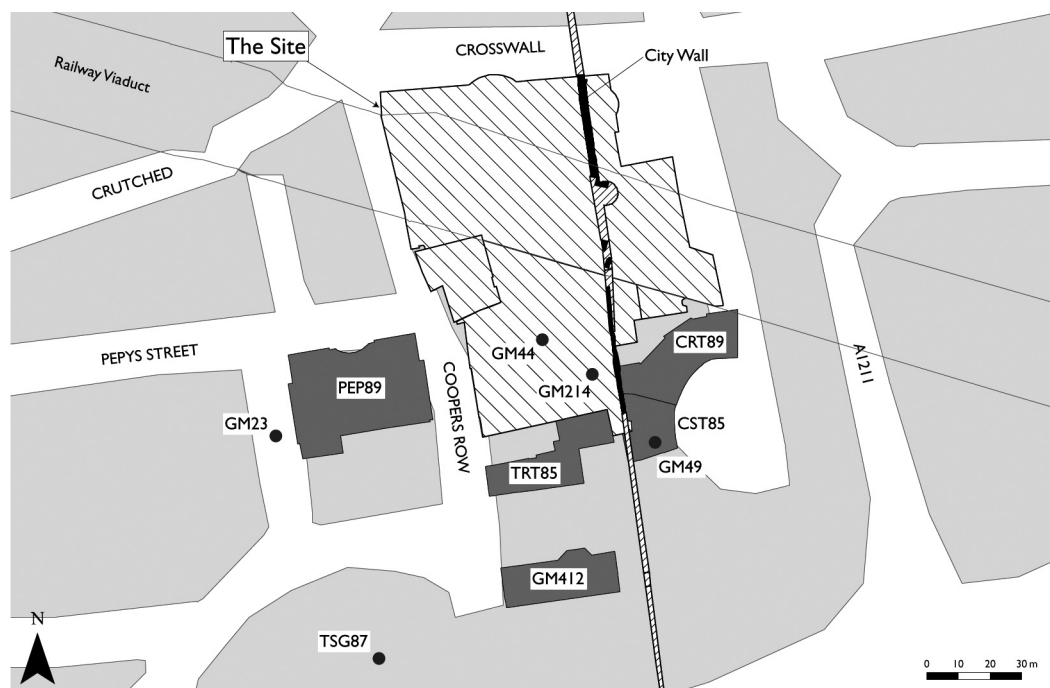


Fig 2. The excavation area shown in relation to surrounding streets and nearby archaeological observations referred to in the text (scale 1:2400)

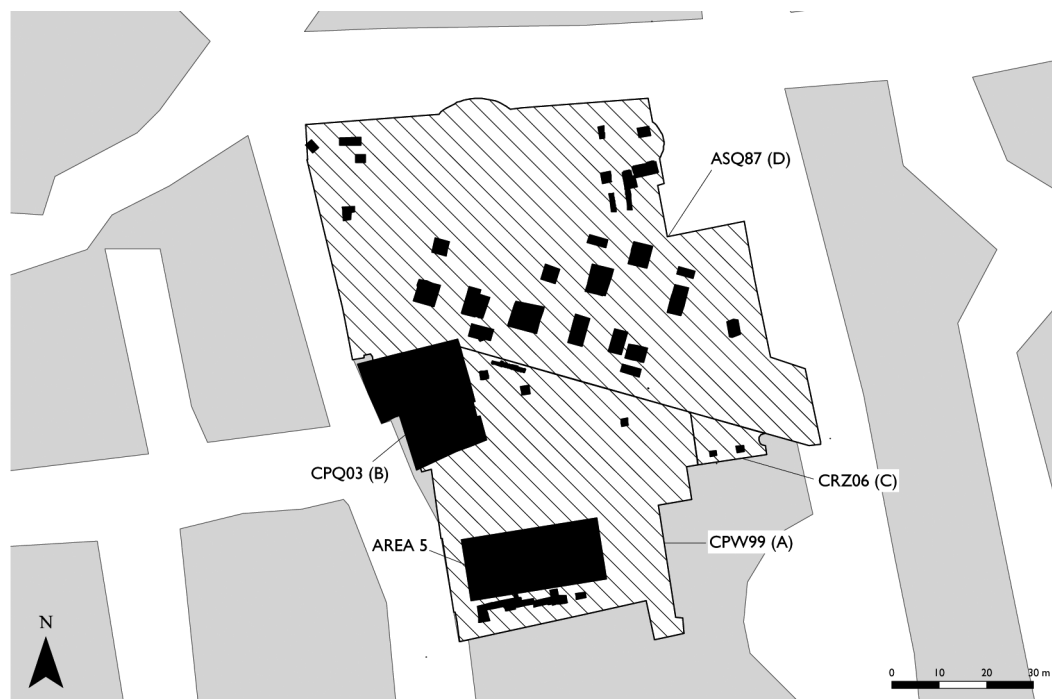


Fig 3. The extent of the four main excavations, identified by their site codes, and the location of individual archaeological excavation trenches (scale 1:1600)

the partial demolition and refurbishment of this building. Groundworks with an archaeological impact included the construction of a basement swimming pool as well as a series of lift bases and new foundations. An extant section of the city defensive wall, which divides the courtyard of the hotel, was also recorded and conserved during construction and is on public display. The CPW99 excavation was undertaken by AOC Archaeology with L-P: Archaeology acting as consultants. The principal area of excavation was the 'swimming pool area' (Area 5) which was reduced to a formation level of 9.20m OD, but further trenches were excavated under the main building, along the northern side of the site and immediately to the south of Area 5 under the new car park ramp (Fig 3).

During 2003 and 2004 archaeological evaluation and excavation was undertaken immediately to the north-west of the first phase of construction work, at the site of 10-14 Cooper's Row (site code CPQ03; Site B). Phase II of the Grange City Hotel construction work involved the demolition of the three existing 19th- and 20th-century

buildings and new foundation and basement work that required excavation of surviving archaeological deposits within the area. Archaeological work took place in four zones, sequenced in relation to temporary works and shoring requirements. All of the archaeological deposits, which survived in physically isolated areas between the foundations of the demolished buildings, were excavated.

Phase III of fieldwork on the Grange City Hotel site concentrated on a small area of land at the rear of the building (site code CRZ06; Site C), to the east and located on the external side of the city defensive wall. Groundworks with an archaeological impact were limited, consisting of six boreholes at the locations of foundation piles and two small test pits.

In addition to the Grange City Hotel excavations, it was decided to include evidence from earlier excavations undertaken by the Department of Urban Archaeology (DUA) immediately to the north in 1987 and 1988 (site code ASQ87; Site D). A series of trenches were excavated archaeologically within

the footprint of a development known as 1 America Square (Fig 3). The proposed new building straddled the existing railway viaduct and British Rail allowed archaeological work to take place beneath the viaduct area where trenches were excavated between the structural piers. Archaeological work also took place in the area to the north of the viaduct, which was cleared of 19th- and early 20th-century buildings. A series of test pits and trenches was dug at the site in order to record and conserve the city wall itself, which is now displayed within the office space.

Post-excavation analysis of the 1 America Square findings took place between 1988 and 1990. Funding limitations meant that this work could not be completed at the time and the results were not published beyond summary form, but the stratigraphic context sequence was sub-grouped and compared to spot-dating information, allowing development of a provisional phasing structure. Copies of the annotated stratigraphic matrices, complete with spot dates, can be found in the ASQ87 archive. During the recent post-excavation work this information has been re-examined and some of it has been transferred onto digital media, while the stratigraphic analysis of the sequence has been extended to include land-use and period definitions that can be equated with those developed for the three Grange City Hotel sites.

HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

Several antiquarian observations and earlier archaeological excavations have taken place in the vicinity of the Grange City Hotel and America Square sites. Archaeological work within the immediate study area is identified by site code on Fig 2.

The eastern part of the city wall is first mentioned in 1707, when a Dr Woodward refers to a section of it at The Vineyard, near the Minories. The earliest known antiquarian observations took place at the Cooper's Row site in 1841 when a gentleman named Mr Crack recorded a section of the city wall during construction of the railway viaduct (Tite 1866, 296). However, as Merrifield points out, the line of the city wall had probably never truly been forgotten, forming

administrative and property boundaries around the City of London (Merrifield 1965, 101). From the 18th century onwards there was an awakening of interest in the city wall as a monument, though during the 19th and 20th centuries the wall suffered its greatest losses of fabric as property redevelopment increased and it became increasingly irrelevant as a property marker or convenient section of an existing structure which could be incorporated into new wall lines.

The first substantial record of the stretch of city wall in the study area was undertaken by Sir William Tite in 1864, when a c.35m length of the wall was observed and recorded during the expansion of Joseph Barber & Company's warehouses, located on the site of 8–10 Cooper's Row. Tite's elevation drawing and written account of the wall were published in *Archaeologia* (Tite 1866, 299). An early photograph of the wall, taken in 1864 and held in the collection of the Society of Antiquaries, was published in 1908 (Norman & Reader 1912, 260). The section of wall recorded in 1864 overlaps with the extant wall at Cooper's Row and indicates that there has been a subsequent loss of the wall's historic fabric, partly as a result of the cutting of a new pedestrian access route.

Another section of the city wall was recorded in 1881 by Henry Hodge, when the railway viaduct was widened, requiring the demolition of more of the fabric. Hodge's elevation drawing, held at the Guildhall Library, was published by Maloney (Maloney 1983, fig 97). In 1908 Reader and Norman recorded another part of the wall on the America Square site, then known as Kroll's Hotel. They conducted further work on the site in 1911, with the results of both interventions published in their 1912 summary of fieldwork relating to the city defences (Norman & Reader 1912).

In addition to the city wall itself, a series of Roman bastions (projecting towers) has been recorded over the years, most of them along the eastern side of the city. The bastion numbers used in this report were originally assigned by the Royal Commission survey of Roman London (RCHME 1928, 99–106), updated when necessitated by new discoveries.

In 1935, Frank Cottrill observed and described the inner face of the city wall



Fig 4. The visit of Queen Elizabeth (the Queen Mother) to the site of Cottrill's excavations at 6, The Crescent in 1938 (site code GM49)

during work inside Barber's Warehouse at 10-12 Cooper's Row (site code GM214). In 1938 Cottrill undertook excavations outside the city wall on the site of No. 6 The Crescent, just east of Sites A, B and C. These excavations (site code GM49) revealed the external face of the city wall, now visible at the Grange City Hotel. Interest in the discovery led to Queen Elizabeth (The Queen Mother) visiting the site (Schofield with Maloney 1998, 47), as shown in Fig 4.

Construction work for Tower Hill tube station in Trinity Place resulted in the destruction

of one section of the city wall and the 1935 recording and preservation of another length of the wall just to the south of the railway line, along with part of the defensive bank and Bastion 2 (site code GM412). The surviving section remains on display to the public, just outside the entrance to the tube station.

The most significant of the Guildhall Museum era excavations were those undertaken by Marsden in 1962 (Marsden 1965; site code GM44) at 8-10 Cooper's Row; the site was being redeveloped to become Midland

House, office accommodation for the Midland Bank designed by Richard Siefert & Partners. During this development, the wine warehouses and other post-medieval buildings on the site were cleared, exposing the city wall as a free-standing structure for the first time in several hundred years. Until this time, the city wall had been the rear wall of warehouses on the site. The construction of the new concrete frame building and its basements led to the excavation and removal of most of the medieval and post-medieval archaeology within the building footprint. During development, Marsden maintained a watching-brief which produced several key finds relating to the city wall, including the internal turret described below and the rampart banks. Furthermore, the work produced important dating evidence for the wall itself in the form of fragments of Castor ware of Antonine date from a layer beneath the rampart bank. Apart from a barrel well in the centre of the site, no medieval or post-medieval remains were recorded (Marsden 1965). The now visible city wall was restored by the Ministry of Works; all brickwork and modern interventions were removed and much of the stone refacing was remortared in a concrete mortar; a capping layer of concrete was added to the top of the wall. Phases of construction in the core of the wall were recorded by Marsden (Schofield with Maloney 1998).

The Crescent site was investigated again as part of the redevelopment of 6–7 The Crescent in 1985 (site code CST85), when a section of the outer face of the Roman defensive wall and the early and late Roman defensive ditches were recorded, as well as post-Roman features (Schofield with Maloney 1998).

Excavations on the 41–42 Trinity Square site (site code TRT85), lying on the inner side of the city wall, recovered a few prehistoric artefacts and revealed more of the city wall, the associated internal earth rampart, and a late Roman gravel quarry. North–south-aligned late Roman ditches may be related to a series of similar ditches recorded at 8–10 Cooper’s Row. Medieval and later features were also recorded (Thompson *et al* 1998).

Excavations at 8–11 The Crescent in 1989 (site code CRT89) recorded the foundations of the Roman city wall cut into natural

gravels and timber piles, ragstone and chalk associated with the foundations of Bastion 2A, added to the wall in the late Roman period, as well as medieval defensive ditches and later features further to the east (Schofield with Maloney 1998).

Excavations by the DGLA in 1987 in Trinity Square Gardens (site code TSG87) revealed evidence for Roman quarrying and rubbish pits, undated ragstone foundations, and post-Roman features (Thompson *et al* 1998).

Other significant archaeological investigations in the immediate area include work just to the west of Cooper’s Row at Colchester House in Pepys Street (site code PEP89), where excavations by the DUA recorded early Roman buildings and a possible road, a large late Roman masonry building represented by square pier bases and part of an *opus signinum* floor, late Roman dark earth, and a few post-medieval features (Schofield with Maloney 1998; Sankey 1998). Road-widening at the same site in 1951 resulted in the recovery of some Roman pots from Savage Gardens (site code GM23).

PERIOD OVERVIEW AND INTERPRETIVE TERMS USED

Analysis of the Cooper’s Row sequence identified natural deposits and five broad periods of human activity (Periods 1–5). Modern features have not been assigned a period number. Periods have been defined in relation to land use and dating evidence, primarily represented by pottery. Major changes in site use mark the divisions between periods, such as the change from an external area used for quarrying to the construction of the city defences. Periods are subdivided into shorter phases, also based on land use and dating evidence. Evidence of activity, including structures, is described in terms of land use — Buildings (B), External Areas (OA), Structures (S), Roads (R), and significant Ditches (D). Land uses are identified by unique numbers (B1 and so on) across the four main sites. Archaeological contexts were assigned to subgroups during the post-excavation assessment and to groups at the analysis stage, before the formal identification of land uses.

The Roman activity on the Cooper’s Row sites is represented by two periods, whose

division is marked by the construction of the city wall. Period 1 Phases R1 and R2 predate the wall and Period 2 Phases R3 and R4 post-date it. There was no evidence of datable sub-Roman or Saxon activity at the site.

Medieval evidence is divided into two periods (Periods 3 and 4), made up of five phases (M1–M5), with Phases M1–M2 relating to the early medieval period and Phases M3–M5 the later medieval period. Post-medieval activity (Period 5) is divided into three phases. Phase PM1 covers the years c.1500–1700, PM2 relates to 18th-century activity, and PM3 covers the 19th century.

The basic unit of cross reference throughout the archive is the context, used to identify individual archaeological deposits, features and layers, identified by a unique number in square brackets, prefixed by the site identifier A–D, thus: A[100]. Individual context numbers are cited in the text only where a specific reference is required.

Individual small finds are also uniquely numbered in the research archive and organised in a finds catalogue. Small finds accession numbers are shown in angled brackets, with a site prefix, thus: A<100>. Environmental sample numbers are shown in curly brackets, thus: A{100}.

The detailed extent of truncation and areas of surviving evidence are generally not shown on the period/phase plan illustrations. A key to the graphical conventions used on the plans forms an inset on Fig 1. Scales of reproduction are given in the figure captions where required.

NATURAL GEOLOGY AND TOPOGRAPHY

Evidence of the natural geology of the area was identified at all four of the sites investigated and consisted of truncated river terrace gravels (Open Area 1; not illus). At 8–10 Cooper's Row (Site A) natural deposits consisted of coarse gravels and sand, recorded at maximum levels of 9.47m OD in the south-west and 9.78m OD in the north-east, beneath the bank of the Roman city wall. The latter level may be close to the original untruncated surface of the natural gravel, though there was no evidence of the overlying natural brickearth that might be expected in the area.

At 10–14 Cooper's Row (Site B) the surface of the natural terrace gravel was recorded at a maximum level of 9.73m OD. Most of the gravel surface was truncated, though some small areas of reworked truncated brickearth were found, such as B[165] and B[317]. The natural brickearth capping can be up to half a metre thick, suggesting that the original untruncated surface of natural gravel probably lay above 10m OD prior to early Roman landscaping. On the eastern part of the area (Site C) natural gravel was more severely truncated by modern basemending and survived to a general level of only 8.2m OD. To the north at 1 America Square (Site D) natural gravel was recorded at a little over 10m OD in the vicinity of the intramural road.

The natural topography in the vicinity of Cooper's Row would have been relatively level in the pre-Roman period, as the area is located on the eastern flank of Cornhill and near the top of the Tower Hill slope, which drops off towards the Thames to the south.

EARLY ROMAN ACTIVITY, AD 50–180 (PERIOD 1)

The early Roman period covers activity occurring before the construction of the city wall in c.AD 180. The evidence is subdivided into two phases. The first of these phases roughly corresponds to the 1st century AD and consists of dispersed activity, whilst the second phase indicates a more structured land use.

Phase R1: 1st-century external activity

Roman Phase 1 (AD 43–100) is characterised by scattered pits and quarries with no clear evidence for land division or property boundaries (not illus). There is limited dating evidence for the pits, which seem to have been excavated on an *ad hoc* basis across a large external space, designated as Open Area 2 on Site A and as Open Area 3 on Sites B–D. In the 1st century AD the Cooper's Row area lay on the north-eastern periphery of the new settlement on Cornhill and may have been casually exploited for rubbish dumping and gravel extraction — activities which did not yet require formal sanction or the definition of property boundaries.

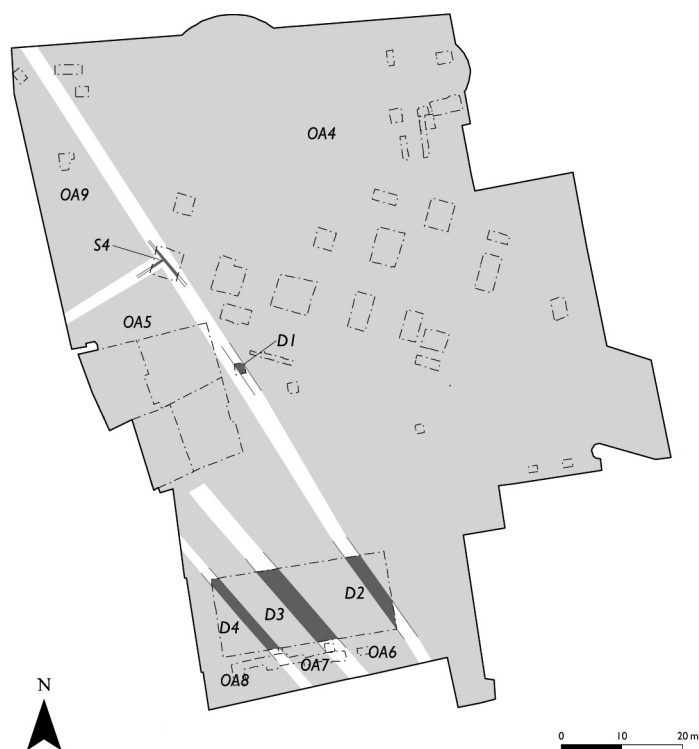


Fig 5. Plan of principal archaeological features, Period 1 Phase R2 (c.AD 100–180) (scale 1:1250)

At 1 America Square (Site D) up to 0.3m of dumping sealed the natural surface at some locations and contained early Roman pottery.

Phase R2: 2nd-century ditches and boundaries

At the end of the 1st century AD the area was subdivided by a series of ditches and fences set on a north-west–south-east alignment, running diagonally across the site (Fig 5). Open Area 5, located to the west of flat-bottomed Ditch 1, contained a distinctive soil horizon dated by ceramics to AD 100–160, which sealed much of the Phase R1 activity.

To the south, on Site A, three parallel, north-west–south-east-aligned, V-profile, flat-bottomed ditches were excavated (D2–4). Although heavily truncated, the ditches appear originally to have been quite wide, deep structures. Ditch 2, for example, survived to a depth of 0.95m and the flat

bases of Ditches 2 and 4 were both c.0.5m wide. The conjectured line of Ditch 2, the easternmost of the three, suggests that it may have joined Ditch 1 to the north-west. Further to the north, within the America Square excavation area (Site D), two fence lines, one on the same alignment as Ditch 1, were recorded as meeting at a T-junction (Structure 4).

Although these ditches and boundaries were only established in Phase R2, use of the external areas remained broadly similar in character to that recorded for Phase R1. Dumping may represent a deliberate attempt to level the new open areas created by the ditches, perhaps making use of the upcast material. Open Area 4 lay to the east of Ditch 1, with Open Areas 6, 7 and 8 partially defined by Ditches 2–4, and Open Areas 5 and 9 lying to the north and west of Ditch 1. The cut features which survived within these open areas were pits and small gravel quarries, all backfilled with rubbish.

Ditches 1–4 are difficult to date. Their later fills accumulated over a long period of time, only filling up completely during the later 3rd century. The primary fills of the ditches could not be excavated at Site A due to a requirement to preserve features *in situ* below a particular OD level. As a result, no accurate dates can be established for either the initial cutting of the ditches or their silting up. Truncation of horizontal surfaces meant that many of the key stratigraphic relationships between the ditches and other deposits had been destroyed in antiquity. The limitations of the evidence mean that it is not possible to prove that all of the Phase R2 features were contemporary, though their parallel alignments and similar OD levels make this the most plausible explanation.

Early Roman finds assemblage

The Roman pottery from Sites A and B was analysed together. The combined assemblage amounted to 2,847 sherds, with roughly a quarter deriving from Site B and the remainder from Site A. Despite this difference in quantity the nature of the assemblages is very similar. A consistent late Roman emphasis is clear in the overall assemblage, with the vast majority of the groups falling into the later period (see below). The Period 1 pottery assemblage contains a noticeable intrusive component, and in the case of Phase R1 a lack of distinctive 1st-century AD types. This may have been caused by truncation and associated contamination of early levels, but may also indicate that early Roman activity in the area was short-lived and ephemeral.

The building material assemblage is typical of that found on many City of London sites. In the 1st century tiles made in the London-area predominate, with smaller quantities of tiles coming from Kent and possibly West Sussex. By the mid-2nd century tiles were arriving from north-east of London, the Epping area, Reigate in Surrey (Pringle 2002, 157–8), and an unknown location (Betts & Foot 1994, 21).

There is very limited artefactual evidence for early Roman occupation at the Cooper's Row sites. A fragmentary mid-1st-century Hod Hill brooch (B<165>) is the earliest object recorded from the assemblage, although

it was found redeposited in a medieval context. The small group of artefacts from Open Area 5, on the western side of the area, contains domestic vessel and bottle glass dating from the 1st and 2nd centuries and miscellaneous unidentifiable fragments of iron and copper alloy. The glass assemblage as a whole contains early Roman fragments, of which a small rim sherd from a dish or bowl in cast colourless glass (B<161>) and a dark blue body fragment (B<122>) are of 1st-century date. A further 11 fragments, all small, which include parts of a jug and three jars, have a general late 1st/2nd-century date, but all were found in later contexts.

Period 1 discussion

The stratigraphic and artefactual evidence corroborates a picture of a very low level of activity in the early Roman period. Despite a general lack of activity, the series of north-west–south-east-aligned ditches found at Cooper's Row may be highly significant in understanding the early layout of the eastern part of the Roman settlement to the north and east of the forum. The ditch alignment forms a near right-angle to the projected alignment of the Colchester road, located to the north of the Cooper's Row investigations and running north-east through Aldgate. The conjectured street layout of the Roman city east of the forum has recently been revised by Bluer, Brigham & Nielsen (2006, 64–6), based on findings at the Lloyd's Registry site, confirming that the Colchester road could not have continued on the same north-east–south-west alignment for more than 150m south-west of Aldgate, and that it must have changed direction at an offset junction at about that point (Fig 6).

Other possible boundary ditches in the Aldgate area have been assessed to see if their alignments indicate any association with the Cooper's Row ditches or the alignment of roads between the forum and Aldgate, which could provide evidence for a general laying out of boundaries along the north-eastern flank of the settlement. A WNW–ESE-aligned boundary ditch was recorded to the north-west of Aldgate at the Baltic Exchange site (Howe 2002; site code BAX95), while part of a smaller north-west–south-east-aligned ditch was found at

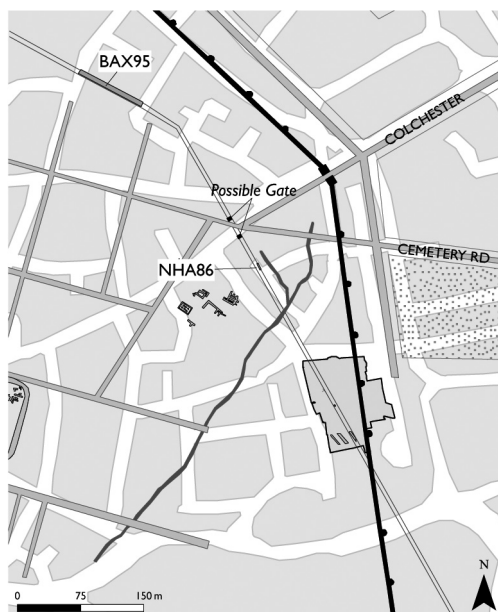


Fig 6. The layout of Roman roads and other major features in the north-eastern part of Londinium, showing how the ditch alignments recorded at Cooper's Row and other sites may converge with the conjectured location of an offset road junction inside the late Roman Aldgate (scale 1:9000)

Northumberland Alley, just to the south of Aldgate (Schofield with Maloney 1998; site code NHA86). The Northumberland Alley ditch alignment corresponds very closely with the easternmost of the parallel ditches recorded at Cooper's Row (D1 and D2).

At Northumberland Alley the possible boundary ditch is described as a V-shaped ditch with a linear post alignment on its eastern side. To the south at America Square (Site D) a fence line follows the same alignment, while further south at Sites A and B there is not a single ditch but a series of parallel ditches. This variety of forms may to some extent be due to varying degrees of truncation and survival, but could also indicate that the proposed boundary may not have been built as a single structure or as a single project. Perhaps the boundary was marked out by a variety of property owners but following the instructions of a higher authority.

Taken together, the alignment evidence from Cooper's Row and Northumberland Alley does appear to make a good case for the

existence of a boundary marking the eastern edge of the early Roman city south of the Colchester road. This boundary may have then continued on a different alignment to the north of the road. Together this might be evidence for part of the *pomerium* — the sacred and legal boundary of a Roman city. An early settlement boundary might date from the late 1st century AD and would have been superseded by the decision to build the city defensive wall in the late 2nd century.

The position at which the conjectured boundary meets the Colchester road also coincides with the line of the eastern cemetery road if it is conjectured to run westwards. This appears to be good circumstantial evidence to support a hypothesis that there was not only a well defined boundary in this area but a focal point for the control of the movement of people and goods at the conjectured junction of these two roads — perhaps an early Roman gate located some 150m south-west of the later Roman Aldgate.

The road layout and boundaries proposed above contribute to two key debates on the development of the eastern cemetery. The cemetery road has been something of an enigma until now. It was clearly a key topographic feature of the cemetery, but its eastern and western extents were the subject of speculation (Barber & Bowsher 2000, 51–2). It would seem sensible for its western end to originate at an early settlement boundary and entrance-way and for it to also converge with the Colchester road. The presence of early Roman burials at Fenchurch Street, lying inside the line of the city walls, is at odds with the tradition that burial should not take place within a Roman city under the *Leges Duodecim Tabularum*. The early Roman boundary shown in Fig 6 would mean that the Fenchurch Street burials lay outside the early city, in an area of the cemetery that was subsequently cut off by construction of the city wall in the late 2nd century.

LATER ROMAN ACTIVITY, AD 180–410 (PERIOD 2)

Phase R3: construction of the city defences

A significant change in land use came with the construction of the city defensive wall in

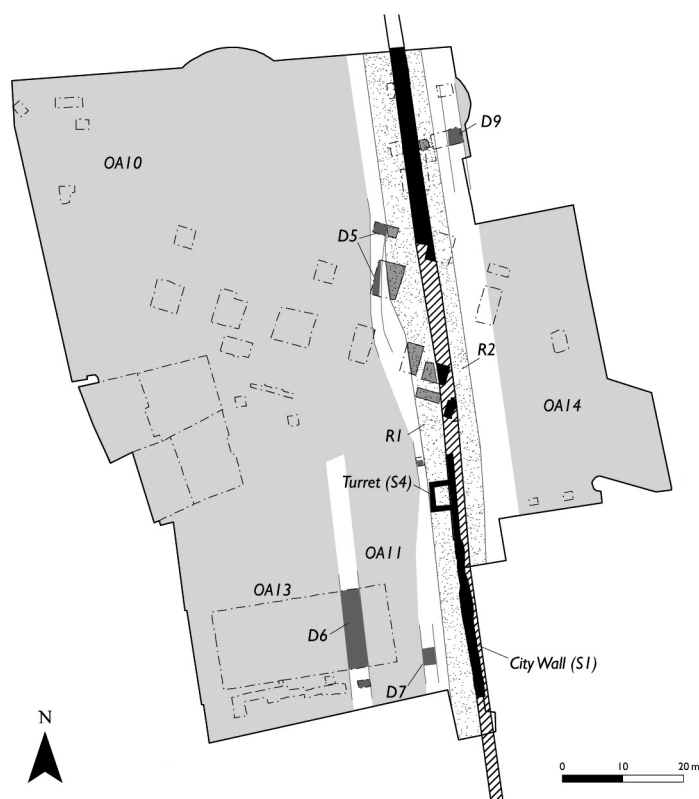


Fig 7. Plan of principal archaeological features, Period 2 Phase R3 (c.AD 180–230) (scale 1:1250)

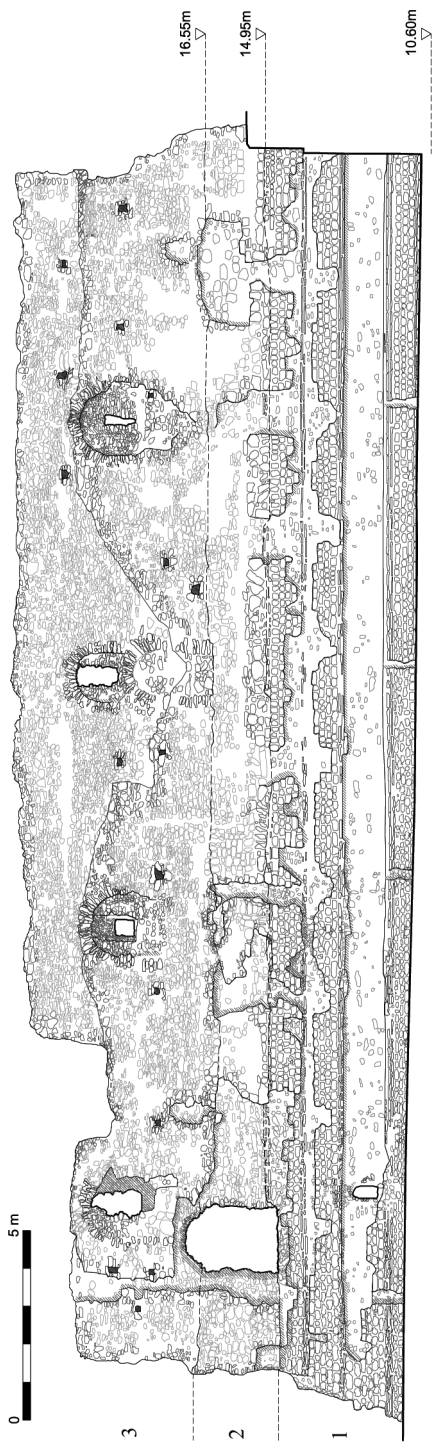
the late 2nd century. Phase R3 is identified here as covering the period AD 180–230, though evidence from other sites suggests that the city wall was probably built between c.AD 190 and AD 220. The wall was built on a near north–south alignment south of Aldgate, quite different from the Phase R2 ditch alignments described above, and probably rendered the earlier boundaries obsolete (Fig 7).

Sites A, B, C and D contain two substantial, visible stretches of the city wall as well as several recorded and reburied sections of the wall between these extant sections, extending over a total length of 110m. Many of the details of the city wall's construction can be seen in the scale elevation drawings of the eastern and western sides of the wall (Fig 8). From north to south, the remains can be summarised as follows.

At 1 America Square (Site D) the visible

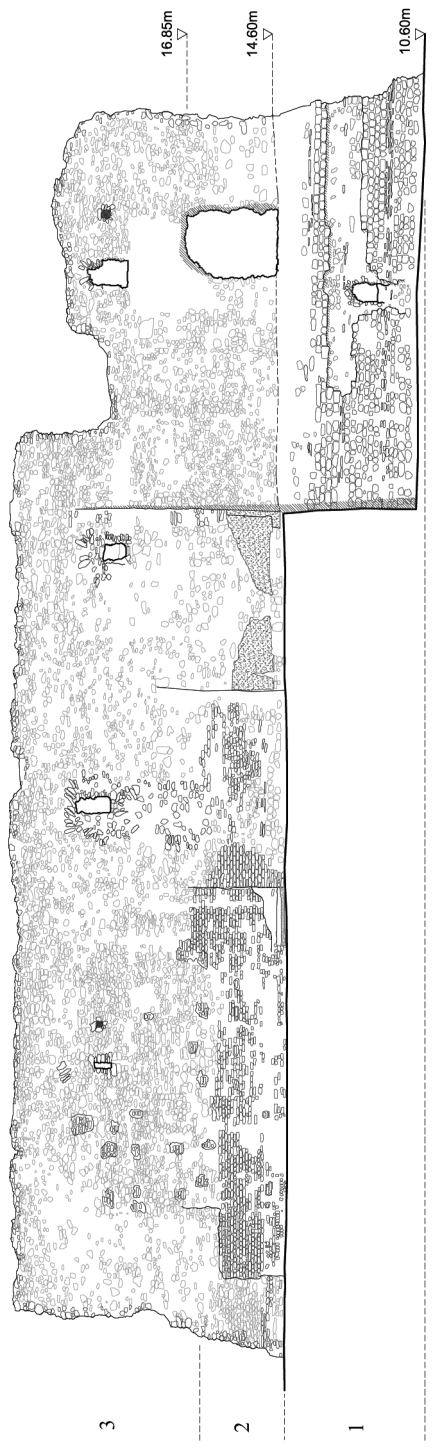
wall consists of two main sections of masonry standing to a height of between 1.7 and 3m above the plinth, with a length of a little over 28m. Moving south from this, a section of wall was recorded in Site D Trench B. This section is around 3m long and stands 2m above the plinth height. In this section, Bastion 3 (S3) was recorded (see below). Moving south from the bastion the wall was recorded in two further small trenches on Site D and then in pit 6A on Site A. These three smaller observations found no substantial masonry surviving above the plinth.

The final section of wall stands on the 8–10 Cooper's Row site (Site A) and is visible to the public. This section is 33.5m long and stands to a maximum height of 10.70m including the medieval and later repairs. At the southern end of this section, the Roman facing and core survives up to 4.3m above the plinth, up to the fourth tile course. The late



b

B



b

B

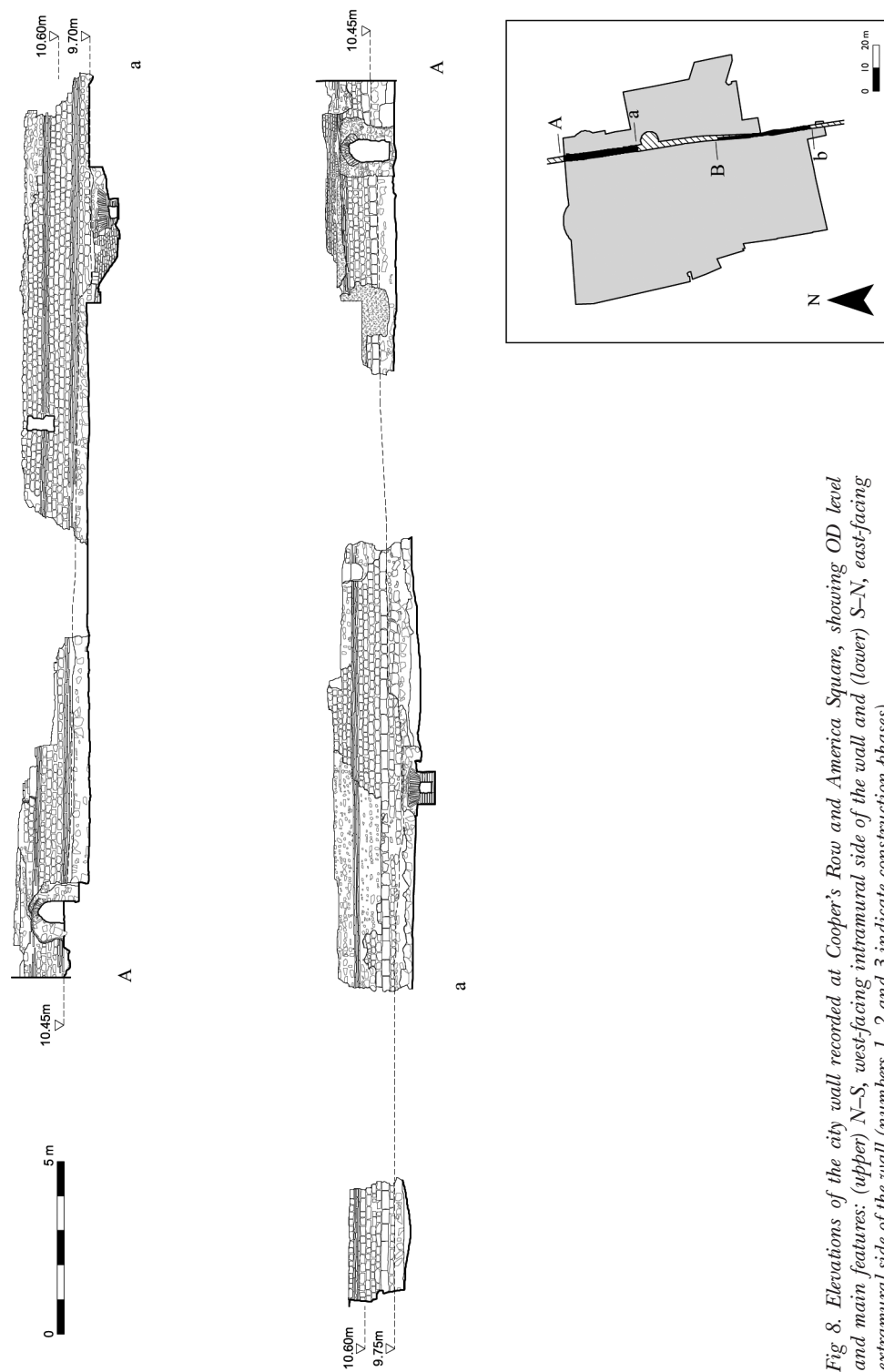


Fig 8. Elevations of the city wall recorded at Cooper's Row and America Square, showing OD level and main features: (upper) N-S, west-facing intramural side of the wall and (lower) S-N, east-facing extramural side of the wall (numbers 1, 2 and 3 indicate construction phases)

Roman Bastion 2A recorded on site CRT89 is located in this section of the wall.

The structural details substantially accord with those seen at many other locations along the defensive circuit (Maloney 1983, 98–101). The sections of wall observed on site consist of a foundation set within a construction cut; this foundation has been variously described as a chalk, flint and mortar foundation and as a clay, flint and *opus signinum* foundation. The foundation was topped by a plinth of ferruginous sandstone ashlar blocks, marking the base of the wall's superstructure on its external side. This plinth corresponds to a tile bonding course on the internal side. Above the base course, regular courses of roughly-squared ragstone blocks and tile bonding courses form a facing for a core composed of chalk, flint, mortar and other building debris in a matrix of mortar.

The plinth level varies slightly along this stretch of the wall. At the northernmost end (Site D), the top of the plinth is at 10.45m OD dropping down slightly to 10m OD close to the culvert. To the south on Site A, the plinth was recorded at a fairly even 10.60m OD. In addition to this slight variation in height, the wall does not run in a perfectly straight line. Whilst both sections are on the same parallel alignment, the northern section is slightly to the east of the southern section. This would have required a small deviation in alignment somewhere between the two sections of wall.

There are two known culverts within the study sites. The first of these occurs in the wall on Site D; this tile-built structure set below the plinth seems most likely to be a drain and is Roman in date. A slight drop in level of the base of the drain, from 8.90m OD on the inner face to 8.70m OD at the outer face may indicate that this drained outwards. The second culvert, in the Site A section of wall, 'has a Roman look about it' (Strickland 1999) but is possibly a later addition to the wall and is set at around 0.8m above the plinth level between bonding courses 1 and 2. At this level it is too high to have been a general use drain. Therefore this aperture must have either been used to drain water off the top of the ramparts in some way or it may have carried a piped water supply.

The square turret observed at Site A during earlier work by the Guildhall Museum

(site code GM44) was an integral build to the internal face of the wall and must also date from its primary phase of construction (Merrifield 1965, 301). The internal turret had clay and flint foundations, 1.09m (3ft 7in) thick, overlain by walls of ragstone and tile, 0.86m (2ft 10in) thick. A small portion of the cement floor within the turret remained. To the north of this turret, the rampart bank, to the west of the city wall, was recorded as being composed of two layers of gravel separated by a soil horizon. Fragments of Castor ware of Antonine date came from a layer of soil beneath the bank.

The land immediately to the west of the wall, within the city, was divided by two ditches running parallel to the wall, one c.20m away from the wall (D6) and the other much closer to it (D7; D5 to the north). The westernmost ditch may have delimited a military or construction zone along the inside of the wall (OA11) which would have been used for access during building work. The area to the west of boundary D6 (OA13; OA10 to the north) appears to have remained unoccupied and largely empty during this period. The remnants of the Phase R2 ditches were apparently left open, but continued to silt up during this time.

Evidence was found for both intramural and extramural roads, possibly associated with the construction of the defences. At America Square (Site D) the metalised surface of the north–south-aligned intramural road (R1) was recorded, complete with wheel ruts (Fig 9). This road was situated to the east of the line of Ditch D7/D5 and sealed it, occupying a c.5m-wide strip of ground. It was described by the excavators as a hard-rammed gravel surface up to 0.2m thick and with a distinct camber down towards the city wall. The surface contained ragstone chippings, further evidence that it may have been associated with construction of the city wall.

A similar arrangement of land uses was recorded to the east of the wall in what would become the extramural area. A short length of the north–south-aligned, V-shaped defensive ditch (D9) was recorded c.5m east of the line of the city wall on Site D. A large external area (OA14) lay to the east of the ditch while a temporary north–south roadway (R2) was established on the berm to the west of the



Fig 9. The north-facing section of Site D trench 'E north' showing the intramural road surface (568) as well as the roadside ditch [585] and the rampart dumps overlying the whole structure (557) to (568) (scale 0.5m)

ditch and alongside the wall, presumably for use during the latter's construction. The gravel metalled surface on the berm survived intact 0.6m below the plinth.

Phase R4: modifications to the city defences and other activity

Phase R4 activity (AD 230–410) includes evidence for the reinforcement of the city wall and reorganisation of adjacent land within the settlement (Fig 10). Refurbishment of the defensive wall involved the disuse and burial of the intramural road and the construction of an earthen 'rampart' bank (S2) against the internal face of the wall. The rampart was formed from three separate layers of soil dumped at different times. At America Square (Site D) the excavators described the metalled surface to the west of the wall as being sealed by dumps of sand, gravel and brickearth which were banked up against the inside of the wall, forming a 1.5m deep rampart which contained 2nd-century pottery.

Further evidence for the modification of the city's defences comes from 1 America Square (Site D) where a semi-circular bastion (S3; Bastion 3) was added to the external face of the wall. The bastion foundations were cut into a dump of material containing Roman tile, chalk and ragstone fragments, possibly debris from the earlier construction of the city wall. The curving foundations were composed of a gravel base overlain by rough courses of undressed stone rubble, above which up to 1m of neat masonry superstructure survived. The core of the bastion, which was not dismantled, contained a coping stone and another partially moulded stone. Dating evidence for this phase of work on the defences is slight but the external bastion had clearly been built some years after the original construction of the city wall.

The rampart construction to the west of the wall may have triggered changes to the layout of adjacent external areas; a new north-south boundary ditch D10 replaced the Phase R3 boundary D6 which ran a few

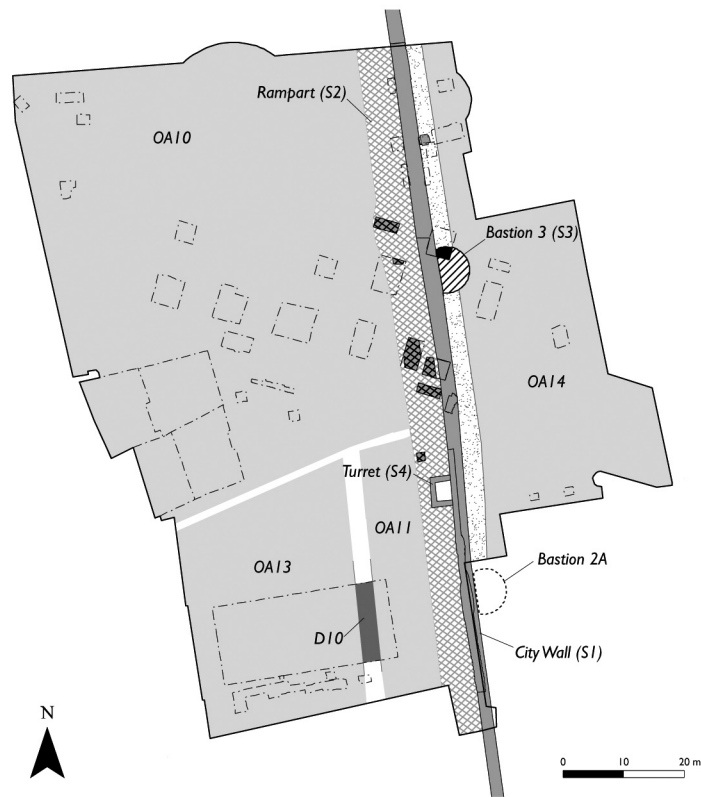


Fig 10. Plan of principal archaeological features, Period 2 Phase R4 (c.AD 230–410) (scale 1:1250)

metres to the west. This rearrangement was accompanied by more intensive use of the areas to the west of the city wall (OA10 *etc* retained). Remnants of the Phase R2 ditches were finally infilled and the ground surface raised, with areas of external metalling established in OA13. Although much of this area had suffered from truncation, two postholes hint at the presence of buildings or structures. To the east of the city wall the extensive external area (OA14) was retained.

There was little evidence for the end of the Roman period at the Cooper's Row sites, and nothing that could be closely dated. The post-Roman soils at America Square (Site D) were not re-examined in detail for this paper, but a thick and extensive deposit of dark earth has been reported from this site (Schofield with Maloney 1998, 239). Soil accumulation may have continued until the

medieval period; this horizon was cut into by pits, wells and lines of stakeholes for fencing, none of which were dated earlier than the 11th century.

A second undated phase of construction on the Cooper's Row stretch of the city wall (see Fig 8) could date to either the late Roman period or the early medieval period. Between 4.3 and 6m above the plinth, this build is distinguished by a slightly different orange sandy matrix to the rubble core that is otherwise similar to the Roman core seen below; in addition, the facing is neither regular like the initial build of Roman masonry nor particularly similar to the medieval additions above (Strickland 1999). A blocked doorway at the centre of the exterior elevation at this level may have led out into an upper level of Bastion 2A. This build would fit with a late Roman refurbishment of the city wall at the

time the bastions were added or with a later, possibly Alfredian, addition to the structure.

The late Roman finds and environmental assemblage

An interesting aspect of the late Roman pottery assemblage from Cooper's Row is the occurrence of Camulodunum form 306 bowls. These simple vessels are bell-shaped, with a thickened D-shaped bead rim and knife-trimmed bases (often poorly finished). The form has an unusual distribution pattern and is thought to have ritual associations. One of the largest concentrations is from a later use of the Temple of Mithras (near the Walbrook) by a new cult, possibly associated with Bacchus (Groves 1998, 103). Deliberate breakage of the bowls appears to be a common factor in their deposition, suggesting a ritual act (Blair & Sankey 2007, 16).

The Cooper's Row assemblage produced a total of 38 Camulodunum form 306 bowls in Roman deposits from Site A contexts. A mixture of unsourced reduced and oxidised fabrics is evident, alongside three in Alice Holt/Farnham ware. The number of oxidised examples (8) is interesting, as reduced fabrics are more usual for the form. At Colchester sites considered by Symonds & Wade (1999, 482) examples in reduced fabrics are about seven times more common than oxidised wares. A further seven vessels were found at Site B but these were all residual.

Most of the Site A examples were found in Phase R4 external areas OA11 and OA13, though there was no apparent pattern to the deposition of the bowls, with individual sherds scattered across the area and found in single contexts and ditch fills. Under Symonds's categories (Blair & Sankey 2007, 63–5), Cooper's Row would be classified as a site where the form occurs in small numbers, in contrast to sites where the vessel type is dominant, such as the Temple of Mithras (Groves 1998), 107–115 Borough High Street (Cowan *et al* 2009), and Billingsgate Buildings (Green 1980, 72–3). The function of the bowls at Cooper's Row is consequently unclear, though the assemblage is still significant when analysing the presence of the form across the settlement. The Cooper's Row results reinforce the evidence that the form is associated with 3rd-century AD

groups. Most contexts containing the bowls show a lack of classic 4th-century AD fabrics such as Oxfordshire red/brown colour-coated ware, though this fabric has a high presence in the Site A assemblage overall.

Late Roman building material from Cooper's Row is represented by distinctive shelly tiles from Harrold, Bedfordshire, dated AD 270–350 (Brown 1994, 79) and fine-grained sandstone roofing and paving which was probably used in the second half of the 4th century. All the stone roofing and paving was recovered from Phase R4 or later contexts. The relative absence of daub and wall plaster suggests that there were few Roman buildings near by and that the area was not used for the dumping of building debris.

Several late Roman small finds were recovered, though these were residual in post-Roman contexts. The accessioned Roman small finds described below are illustrated in Fig 19. A short catalogue of the illustrated Roman registered finds can also be found at the end of this report.

Two beads, one of jet (B<54>) and the other of glass (B<55>), are typical of those used for necklaces of 4th-century date as seen in the eastern cemetery (Barber & Bowsher 2000, 226). A shale bracelet (A<52>) is of similar date. Two bone pins (A<25>; A<41>) recovered from OA13 are datable to the 3rd and 4th centuries, representing a typical later Roman hairpin form, while B<241> is particularly small and slender and was perhaps used as a dress pin. An enamelled copper-alloy lid (A<10>) probably comes from a seal box — the enamel technique suggesting a 2nd-century date.

The only contemporary domestic material from Phase R4 is vessel glass. Most of the glass was residual but one fragment from deposit A[628] is part of the rim of a colourless cylindrical cup dating from the late 2nd to the mid-3rd century, one of the most popular drinking vessels of the time.

Much of the Roman animal bone from the site was recovered from dumps and ditch fills contemporary with and post-dating the late 2nd-century construction of the city wall. The character of the Cooper's Row assemblage is typical of Roman London, with a wealth of cattle bone present and a bias towards spent dairy and/or traction animals.

There is also a large proportion of pig bones. A relatively complete chicken skeleton in a pot, located within the 3rd-century fill of one of the Phase R2 ditches, may represent some kind of offering. An inhumation from the eastern cemetery had a pot placed near the feet containing a few chicken bones (Barber & Bowsher 2000, 225).

Period 2 discussion

The Period 2 sequence is dominated by the late 2nd-century establishment (Phase R3) and late Roman maintenance (Phase R4) of the city defensive wall. There was no direct evidence for its construction date, which is thought to be *c.*AD 200, based on evidence from other London sites.

In the intramural area to the west of the wall (Site A) the Period 1 Phase R2 ditches apparently remained open into the 3rd century and continued to slowly silt up. Perhaps the area immediately inside the new city wall, being peripheral to the main settlement, was largely neglected, used only for occasional rubbish dumping. If the Phase R2 ditches had marked the early Roman settlement boundary, then they were rendered redundant by the new city wall.

Whilst the structural details relating to the city wall as recorded at Cooper's Row substantially accord with those seen at many other locations along the defensive circuit (Maloney 1983), several aspects of the defences raise important questions. The first of these is the actual siting of the wall, as it seems that it did not follow the line of the earlier city boundary but was relocated further east and on a different alignment. It is possible that the route of the wall was influenced by a desire to follow an optimum line in terms of the topography and drainage, though issues such as civic status might also have encouraged officials to enclose a larger area than necessary. Most of the existing built-up area of *Londinium* north of the Thames was enclosed by the wall, which was over 3km long and 6m tall with gateways at the main roads. The area enclosed by these defences occupied 135 hectares, which was greater than many continental provincial capitals. Although Roman Britain did come under occasional attack from Picts, Scots and Saxons from the late 2nd century onwards,

the decision to build the city wall as well as the choice of size and position may have had more to do with civic status than defence against external threat.

Whatever the reasons for the siting of the city wall, its route required it to cross the line of the existing road across the eastern cemetery (see Fig 6). The western end of that road presumably fell out of use, while the eastern part of the road and the cemetery were probably accessed along a new extramural spur road running south from Aldgate. It is possible that the extramural road recorded at 1 America Square fulfilled this purpose.

The existence of the intramural road at Cooper's Row raises a question over the city wall's construction sequence. This road was probably in use during the construction of the wall, as suggested by the presence of mortar, ragstone chippings and wheel ruts, and it may either have been built as a temporary construction service-road or perhaps remained in use until the rampart was built. The earth rampart dumped against the inside of the wall is normally described as part of the primary phase of defensive works (Maloney 1983, 101). The evidence from Cooper's Row suggests that the rampart could have been a later addition, though the lack of precise dating evidence means that it is not possible to be certain.

Bastion 3, recorded at 1 America Square, and Bastion 2A, recorded at CRT89 on the external face of the wall at 8–10 Cooper's Row, both clearly post-dated the wall. These can be identified as part of the series of bastions added to the eastern side of the city wall in the 4th century. The presence of Roman bastions on the city wall has been well documented, but the chronology of these structures remains unclear. In general the eastern group are D-shaped, have solid bases, and contain reused Roman monumental stone, whereas the western group are hollow and not known to contain reused Roman stone (Maloney 1983, 105–10). There is a gap of 230m along the northern stretch of the wall where no bastions are known, but apart from this gap, the bastions appear to have been regularly spaced *c.*53m apart. The eastern bastions are widely regarded as late Roman, while the western ones are thought to be medieval (*ibid*), though recent work

suggests that not all the bastions fit neatly into this classification system (Lyon 2007).

Many of the eastern group of bastions were investigated by Norman and Reader, and later by Grimes. Dating evidence from Duke's Place shows that Bastion 6 was constructed in AD 341–75, a date range which is normally applied to all of the eastern bastions (Maloney 1983, 108). The second and undated phase of city wall construction (see above) may possibly fit in with this bastion construction activity.

Little is known about the end of *Londinium* but its total abandonment cannot have been long delayed after AD 410, when the emperor Honorius refused to help British cities to defend themselves against attackers. Much of the city infrastructure, including roads and buildings, would have fallen into ruin in the early 5th century and quickly decayed. There is little evidence for the end of the Roman period within our study area, and nothing that can be accurately dated. The robust city defences, though abandoned, continued to form a substantial barrier until the reoccupation of the Roman city by Alfred in the late 9th century and the subsequent repair of the defences.

ABANDONMENT AND EARLY MEDIEVAL REOCCUPATION AD 410–1200 (PERIOD 3)

Following the general abandonment of the Roman city, it is unclear whether any occupation continued within the walled city, though some religious institutions are thought to have existed from the Saxon period. The church of All Hallows Barking may have been established as early as the 7th century by Barking Abbey and it has been suggested that this church was at the centre of a large *parochia* covering much of the eastern part of the walled city (Haslam 1988, 40 and fig 8). Alfred reoccupied the walled city in the 9th century and divided the *parochia* into wards which would form the basis of the communal defence of the burgh. Some artefacts dating to this period have been found as residual items in later contexts, notably the 10th-century strap-end discussed below. No *in-situ* evidence of the sub-Roman or Saxon periods was found at Sites A–C. It should be noted that the early medieval evidence from

America Square (Site D) was not examined in detail for the purposes of this publication and is not reported on here. As mentioned above, the undated second phase of wall construction could date to this period.

Phase M1: early medieval reoccupation

The first phase of medieval activity at Cooper's Row dates to c.1050–1150. Evidence for renewed occupation begins with the division of the intramural portion of the site by a small east–west-aligned ditch (D11) containing pot dated 1050–1150. This ditch defined two large external areas, OA16 to the north and OA17 to the south (not illus).

This is the earliest archaeological evidence for a land division that later becomes a parish boundary and appears in all subsequent periods, persisting in one form or another until the present day. It is unclear whether this boundary pre- or post-dated the Norman Conquest, but the construction of the Tower of London just 160m to the south may have prompted the increase in activity found at Cooper's Row at this time.

This boundary helps to define the parish of All Hallows Barking, referred to below as the All Hallows plot. It is unclear which parish would have been located to the north of this boundary and this area is referred to below simply as the northern plot. In the northern plot, several contexts from Sites B and D were dated to Phase M1; these consist of a series of pits and dump deposits (OA16) indicative of low level activity. A single posthole was also recorded. There were no pits within the All Hallows plot to the south (OA17), but dump deposits containing a mix of material may represent rubbish dumping. To the east of the extant remains of the city wall, in the extramural area, the land continued to form an external area and there was very little evidence of any activity (OA15).

Phase M2: increasing activity

The second medieval phase, M2, dates roughly to the second half of the 12th century (Fig 11). In the northern plot, activity is markedly similar to the earlier phase, consisting of dumps and sporadic pitting (OA16 retained). By contrast, the All Hallows plot saw a considerable increase in

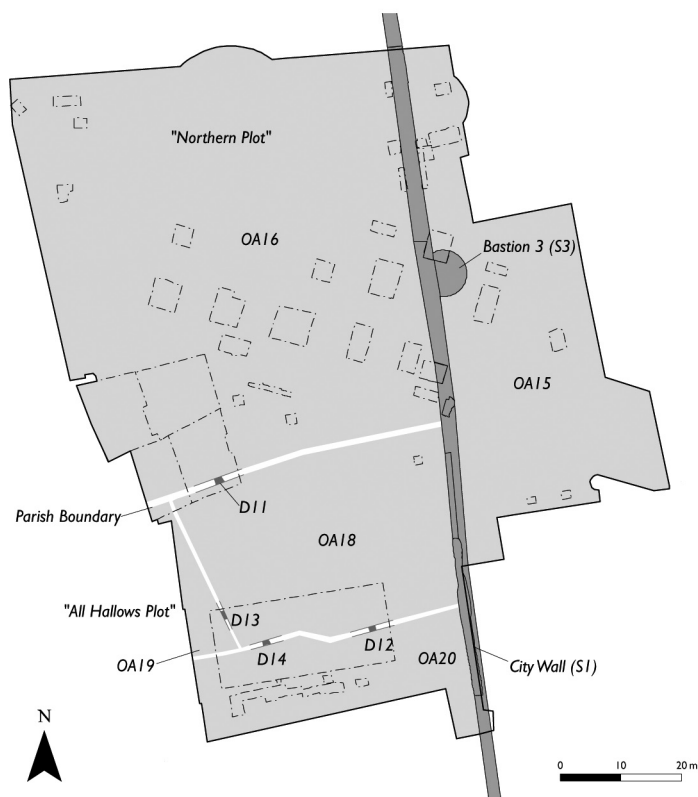


Fig 11. Plan of principal archaeological features, Period 3 Phase M2 (c.1150–1200) (scale 1:1250)

activity, with clear divisions of the area on both an east–west alignment (D12, D14) and a north–south alignment (D13). The east–west boundary D12/D14 is perhaps the more significant, dividing the All Hallows plot approximately in half and forming a division that is represented in the property ownership documents of later periods. The north–south boundary D13 follows the alignment of the street to the west, for which we have no other evidence until the middle of the 13th century. These ditches define three external areas: OA20 to the south, OA18 to the east, and OA19 to the west. These areas contained a familiar selection of pits and dumps, indicating that whatever the division of the land, its use remained largely unchanged. In the extramural area to the east there is a similar picture of continuity from the earlier period (OA15 retained).

MEDIEVAL GROWTH, 1200–1500 (PERIOD 4)

Following a slight hiatus in activity in the early 13th century, there was a period of sustained growth and increased activity. The archaeological evidence from the Cooper's Row sites ties in well with the wealth of documentary evidence available for this period. It should be noted that medieval evidence from America Square (Site D) was not examined for the purposes of this publication and is not included here, though it is worth noting that work at that site recorded significant post-Roman activity, which included modifications to the city wall and, to the east in the extramural area, a medieval defensive ditch which was not backfilled until the 17th century.

The city wall saw several additions and modifications during this period that cannot

be accurately dated to a specific phase (Strickland 1999). This work is thought to date to the 13th, 14th or 15th centuries. In the Cooper's Row section, starting at 6m above the Roman plinth, there is a distinct third phase of construction (see Fig 8). The fabric at this level is a distinctive white mortar matrix in the core and an irregular facing in 'slivers' of stone. A series of arched window apertures are set into the wall at intervals of approximately 6.6m (centre to centre). These apertures were subsequently reduced in size. There is also evidence at this level for wooden structures attached to the interior face of the wall in the form of a series of socket holes. A V-shaped scar in the wall appears to indicate the location of a former wooden stairway that might have led up to a rampart walk. In the America Square section, a large culvert was inserted through the wall.

Phase M3: continued external activity

During medieval phase M3 (1170–1270) the study area seems to have largely consisted of external areas, although the main east–west parish boundary continued in existence in some form (not illus). The first documentary evidence for the existence of Cooper's Row dates to 1258 and is a record of a rent of 18d per annum from land and houses on the west side of the street, granted by Nicholas de Gipeswich. The road was known as Woderovelane, deriving either from a common surname Woderone or Woderove or from the woodruff (*Galium odoratum*), a plant used for medicinal, culinary and ornamental purposes (Ekwall 1954, 145–6).

The archaeological evidence from this phase is made up entirely of pits of various types and dumps, with no evidence of plot divisions beyond the parish boundary (D11 retained). There is some variation between the areas to the north and south. To the north is an extensive series of rubbish and cesspits, perhaps indicating that people were living close by, capped by a series of dumps (OA23). In the All Hallows area to the south there is evidence for much larger pits used to quarry gravel and having a secondary use as domestic rubbish pits (OA22). The city wall remained in use, dividing the western external areas from those to the east (OA21).

Phase M4: establishment of documented properties

In medieval phase M4 (c.1270–1380) the excavated evidence indicates that the whole of the study area was subdivided and reorganised (Fig 12). The plot divisions shown for this period are based on a combination of documentary records and excavated evidence. The area north of retained boundary D11 probably now lay in the parish of St Olave's Hart Street, which had been founded during the 13th century, while the southern area continued to form part of the parish of All Hallows, now detached from the main body of that parish.

The archaeological evidence indicates that the St Olave's area of the excavations was divided into three main plots, and documentary sources seem to support this broad division of the site while also suggesting some boundaries for these plots (Fig 12). The northernmost of the three plots fell entirely within the Site D excavation area and has not been analysed in detail, but seems to correspond with the documentary reference to a tenement with a rent of 8s 6½d per annum payable to Holy Trinity Priory. Richard Shaketon, a barber, sold this, along with a neighbouring tenement with a rent of 2s 1d per annum, to William Bernard in 1298/90 (OA31).

To the south of the 'Bernard' holding was a building called 'le Stufhouse' (presumably a warehouse) which was held by a series of owners. It seems likely that the 'Stufhouse' plot lay within Site B, and it can be partly defined from the excavated evidence. The street-front plot to the west was divided from a plot to the east adjacent to the city wall by a north–south ditch (D16). This ditch boundary was observed to persist, being regularly recut over the succeeding phases. To the east of the 'Stufhouse' boundary documents refer to a plot of land as 'formerly belonging to Beronger, where Hereunte had lived on the wall of London'. Little excavation took place within this 'Beronger' area (OA27), as it is at the rear of the Site B excavations, but small pits at the eastern limit of Site B may lie within the property's boundaries.

In the All Hallows area, to the south, the division of the plot into northern and southern halves persisted with the establishment of the

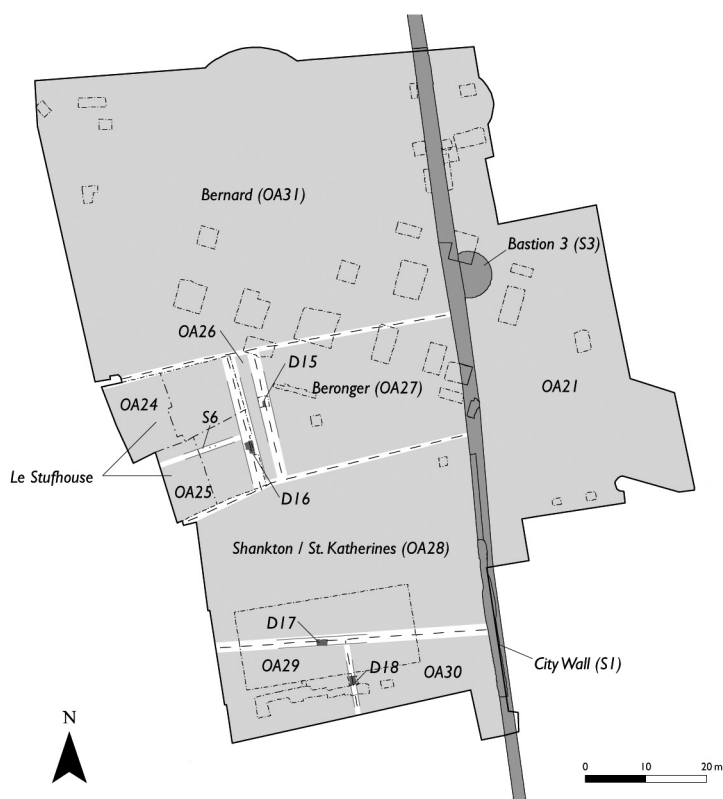


Fig 12. Plan of principal archaeological features, Period 4 Phase M4 (c.1270–1380) (scale 1:1250)

east–west-oriented ditch D17. The northern plot was owned by Geoffrey de Shankton, who granted it to St Katherine’s Hospital (OA28). The ownership of the southern plot is unclear from the documentary sources. The southern plot was further subdivided by a north–south-oriented ditch D18. This boundary may be similar to the boundary at the rear of the ‘Stufhouse’ plot, dividing the rear of the plot adjacent to the city wall (OA30) from the street frontage plot to the west (OA29).

At the beginning of the 14th century, properties in the area were being acquired by a mercer called John Colewell, who was buying plots and developing them. In 1325 he bought the northern tenement (formerly the ‘Bernard’ plot) and in October 1325 he purchased the ‘Stufhouse’ from its owners Reginald and Isabel Hauteyn. Colewell already held the next tenement to the north. In 1347 he is recorded as buying

out the claims of John Moriz of Stepney to tenements within houses that he had built, indicating that he had developed the plots. Records indicate that Colewell built 42 cottages, 24 on the northern plot and 18 on the central plot. The two plots were split by a holding belonging to Laurence Sely. Within the central plot, the northern six houses had gardens that ran up to the city wall, while the southern houses backed onto a garden owned by the Chamber of London Guildhall, which is probably the former ‘Beronger’ land. Shortlived ditch D15 divides off a 2.5m wide strip of land (OA26) which may have been an access pathway for this plot.

Sadly no stratigraphic evidence of Colewell’s buildings survived in the study area. The structures would typically have been built from wood in this period, possibly with shallow foundations. There is, however, good evidence of this phase in the form of a plethora of pits at the back or east side of

the 'Stufhouse' property. There were no less than 28 pits dating to this phase, including 15 rubbish pits and 2 timber-lined cesspits. An east-west row of stakeholes ran across the centre of the area, providing evidence for a fence (S6) dividing the gardens or yards of two of the Colewell houses, with OA24 lying to the north and OA25 to the south. Indirect evidence for the associated buildings comes from the large quantity of building materials recovered from these yard areas, including a large assemblage of peg and nib tile from rubbish pits in OA24. It seems likely that the houses which used these gardens were located to the west, with the original street frontage lying beneath the modern street.

The lands that had been owned by John Colewell passed to his widow Amicia on his death and then were sold to William Bristow, a leather dresser, in 1356. Bristow sold the properties to a vintner, Robert Salesbury, in September of 1358. This seems to be the earliest recorded association of the site with the wine trade. Salesbury left the properties to his widow Idonea.

To the east of the city wall, OA21 was retained in use, though there was little evidence of activity there.

Phase M5: use and replacement of properties

Phase M5 roughly corresponds with the 15th century, covering a date range of 1380–1500 (not illu). Idonea Salesbury appears to have owned the former Colewell properties for some time and they were not recorded as being sold again until 1425–7, when they went to William Cowmer, who then passed them to the parish of St Martin Orgar, which held them until the 19th century. The Laurence Sely property also changed hands at around this time, the houses and gardens being purchased by William Bachiler, whose widow Phillipa is recorded as remarrying in 1435. This change of ownership seems to have manifested itself through renewal of two of the key boundaries of the site in this phase, with both the north–south boundary at the rear of the 'Stufhouse' plot and the boundary dividing the All Hallows area being renewed.

Early in this phase dumping took place across the footprint of the former 'Stufhouse'

property, marking the disuse of plots OA24 and OA25 and the creation of a new external area OA33, defined by ditch D19 to the east. These dumps are rich in peg and nib tile, while pits cut into the dumps contain building material and demolition debris. To the south, external areas OA29 and OA30 were also covered by a single horizon of dumping to form OA32. This is activity that can perhaps be associated with attempts to renovate or rebuild the Colewell buildings during this phase.

Medieval pottery

The two main medieval assemblages (CPW99/ Site A and CPQ03/ Site B) are similar in size and indicate continuous use of the area from the 11th century onwards. Both mainly comprise domestic wares used for food preparation, dining and other daily activities, with some finds which can probably be taken to be primary rubbish from nearby properties. The two groups are in many ways quite homogeneous, but there are some clear differences between them.

Generally, late Saxon wares are rare at both sites. 'Early medieval' pottery (c.1080–1150) and London-type wares are by far the most common at Site A, where they are twice as common as at Site B. At Site A, London Area Grey Ware (LOGR) comprises c.15% of the medieval sherd count (c.13% by weight), while Coarse London-type Ware (LCOAR) and its variants comprise c.57% of the medieval sherds (c.55% by weight); at Site B the amounts of LOGR and LCOAR are, respectively, only c.1.5% and c.16% of the medieval sherd count (c.1% and c.10% by weight). The largest groups of this date are from Site A Phase M2, D13 and OA22 and Phase M3, OA22, and, although the latter finds may be residual, they include some substantially complete vessels (see Fig 13: <P1> to <P10> inclusive). At Site B a large amount of residual 12th-century pottery was found in Phase M3, OA23. The main forms in use at this time were jars and spouted pitchers, of which several are represented. The most significant characteristic of these early finds is the presence of a few blistered, cracked and overfired sherds and a kiln bar in LCOAR CALC (see below).

The reverse pattern applies to the finer

London-type wares (from *c.*1140–1200 to *c.*1350). At Site A they comprise only *c.*7% of the medieval sherds (*c.*12% by weight), whereas at Site B the equivalent amounts are *c.*12% and *c.*17%. Finds of note include two largely complete early-style jugs, Rouen-style jugs, and a near complete baluster-shaped drinking jug.

Surrey whitewares (EARL, KING, CBW, CHEA) are the dominant category at Site B, and these in turn are dominated by coarse Surrey/Hampshire Border Ware (CBW) (*c.*1270–1350) which comprises *c.*27% of the medieval assemblage by both sherd count and weight (the amounts of Kingston-type Ware (KING) are *c.*7% and *c.*6%). At Site A by contrast, these whitewares are the fourth most common group, with KING and CBW comprising only *c.*2% and *c.*7% of the total sherds (*c.*1% and *c.*6% by weight). Similarly, non-local glazed wares such as Mill Green Wares and Hertfordshire Ware (MG, MG COAR, LMHG) are roughly four times more common at Site B than they are at Site A.

Evidence for a local ceramic industry

Most wares dating to Phase M1 (before 1150) are handmade. At some point around 1140–1150, however, the wheel was reintroduced — a change in technology that marks the transition to more organised industries in response to growing population and consumer demand (McCarthy & Brooks 1988, 68–70; Vince 1985; Blackmore 1999). One of the most interesting features of the Site A collection is the presence of a possible kiln bar <P8> (Fig 13) and a few blistered, cracked and overfired sherds from unglazed handmade jars and pitchers that are either seconds or wasters, all in LCOAR and LCOAR CALC. At Site A the earliest finds are from Phase M2, OA18; the Phase M3 finds are from pits in OA22. At Site B similar sherds were residual in Phase M3, OA23 and Phase M5, OA33. A few jug sherds from Site B may also be seconds; they include sherds of LCOAR CALC with a poor, thin glaze from Phase M2, OA16 and Phase M3, OA23, including one with glaze over the broken edge. A few sherds of LOND from Site B could also be seconds (Phase M3). It is of some interest that similar sherds have been found on other sites in the eastern part of the city, notably at Plantation

Place (site code FER99) and Lion Plaza (site code TEA98).

Given the dispersed nature of the evidence, these finds cannot be taken as more than indicative of pottery production in the general area, but they are of considerable interest as a tantalising glimpse into the local industries of this part of 12th-century London. They also offer the first hint of the location of the early London Ware industry, which by the late 13th/14th century seems to have been based well outside the City at Woolwich (J Cotter pers comm). It is possible, but difficult to prove, that the development of a local London pottery industry was a consequence of the Norman Conquest (McCarthy & Brooks 1988, 68–9). If such an industry were to be within the city walls, it would have to be in a peripheral location. Already by the 11th century the areas to the west of St Paul's and to the north of Cheapside were probably too densely populated, but the eastern side of the City was more open. A further impetus might be the contemporaneous construction of the Tower of London, only a short distance to the south of Cooper's Row — an enterprise that might have necessitated the supply of suitable equipment for those working on the Tower and other Norman building projects in London.

There is little evidence for other forms of medieval industry. The earliest possible finds are two vessels with thick red residues internally. The first is the base of a London jug in the Rouen style, found in Phase M3, OA22 at Site A, while the second is part of a Kingston jug from Phase M4, OA24 at Site B. Other sherds indicative of industry, both from Phase M5, OA33 at Site B, are part of a medieval crucible from pit B[571] and two large sherds from a CBW jug/cistern found in pit B[121] with a thick deposit of pitch that had accumulated inside the angle of the shoulder after the pot had broken. It is not clear whether this was accidental or not, but sherds of CBW with lead-rich residues inside them found at St John's Clerkenwell were thought to represent the use of one or more broken vessels as crucibles or hearth lining (Blackmore 2004, 343, 353–4, fig 136). Part of a ceramic mould, possibly used for bell-casting, was found in Phase M5, OA27 at Site A and may be derived from a predecessor

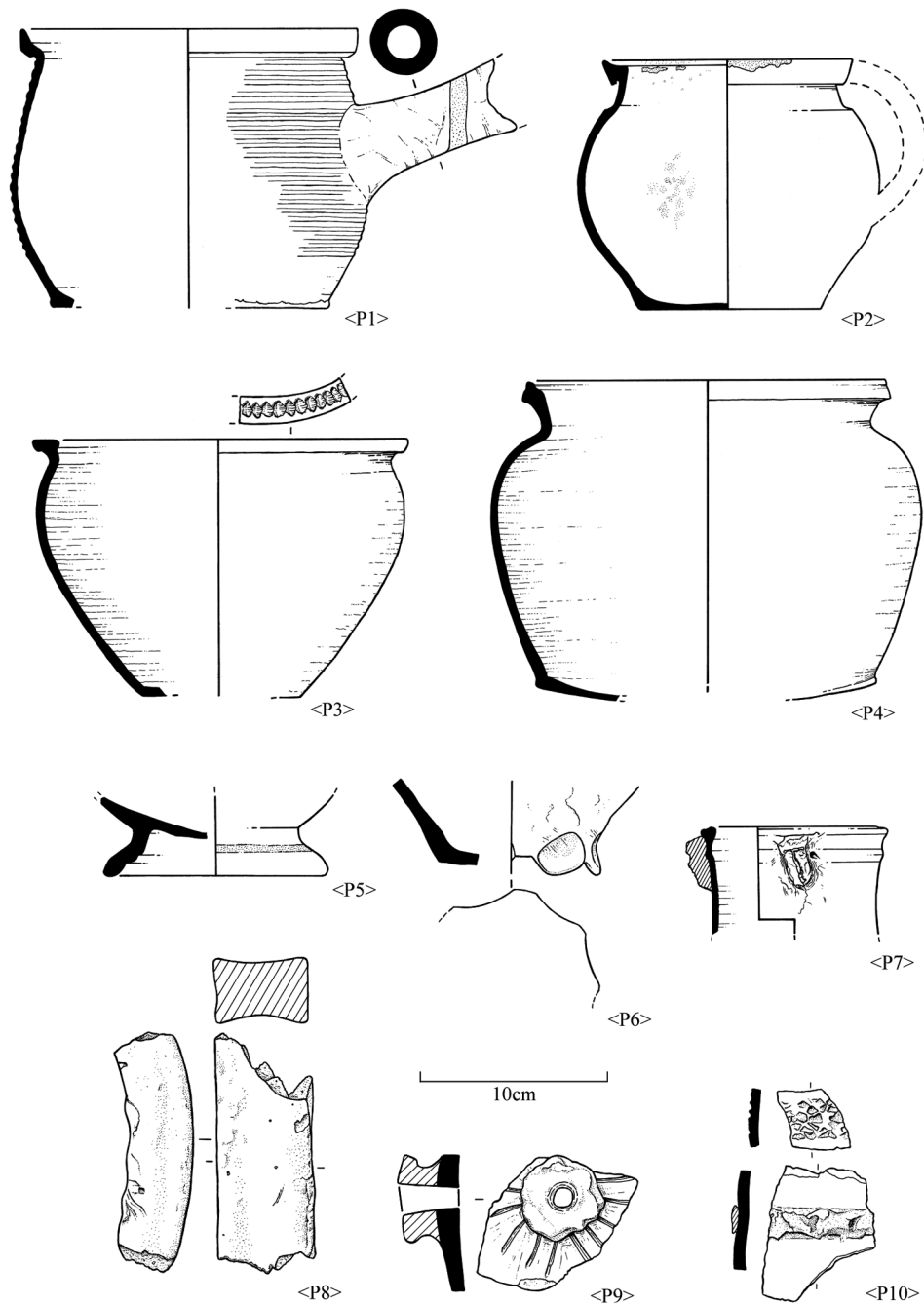


Fig 13. Post-Roman pottery: pipkin in German white ware <P1> B[259]; pipkin in late Rouen ware with green glaze decoration <P2> B[477]; cooking pot in coarse London-type ware with impressed decoration <P3> A[846]; cooking pot in coarse London-type ware <P4> A[832]; pedestal jug in Andalusian lusterware <P5> B[212]; jug in Dutch red earthenware <P6> B[157]; jug in unglazed Saintonge ware with an applied face mask decoration <P7>; kiln bar in coarse London-type ware with calcareous inclusions <P8> A[830]; coarse Surrey/Hampshire Border ware bunghole jug with incised decoration <P9> B[595]; spouted pitcher in London-area grey ware with rouletted decoration <P10> A[812] (scale 1:4)

of the Whitechapel Foundry, established in 1570, where casting is known to date back to at least 1420.

Medieval building material

A few fragments of mid-12th- to early 13th-century shouldered peg and curved tile were recovered from the Cooper's Row sites, but the majority of the medieval assemblage comprises peg roofing tile which was made in vast quantities from the late 12th century onwards. The majority were made by London tilemakers, but there are a few peg tiles from north Kent.

More unusual are the 38 fragments of nib tile found at Site B, a roofing type that does not seem to have persisted in south-eastern England beyond the end of the 14th century. The Cooper's Row tiles are probably late 12th or 13th century in date, as the earliest examples were found in Phase M2 OA16, whilst another was associated with pottery dated 1140–1220 in Phase M4 OA24. The majority, however, came from later contexts such as the Phase M4 dumps and rubbish pits. Nib tiles are more common in Essex, including parts now within Greater London, such as Stratford Langthorne (Smith with Betts 2004, 144–5), and it is likely that the Cooper's Row nib tiles were brought in from somewhere in Essex. Both nib and peg tile roofs were covered with ridge tiles, a small number of which were recovered. Also present is part of a louver which would have been set on a roof.

Higher status material is represented by a number of floor tiles, which probably came from a church or monastic building. Three are of 'Westminster' type dating to 1250–1310 and five are Penn tiles dating to c.1350–1380. One of the tiles of 'Westminster' type, which were made by London tilemakers, shows an unpublished design (Fig 14), whilst the Penn tiles, made in Buckinghamshire, show Eames (1980) designs 2200, 2231, 2864 and an unpublished design B<114> (Fig 14) showing similarities to Eames types 2200 and 2237. There are also two thin, plain medieval Low Countries floor tiles.

A small number of cream and yellow bricks imported from the Low Countries were found at Site B, one of which was used as paving. The earliest example of these bricks,

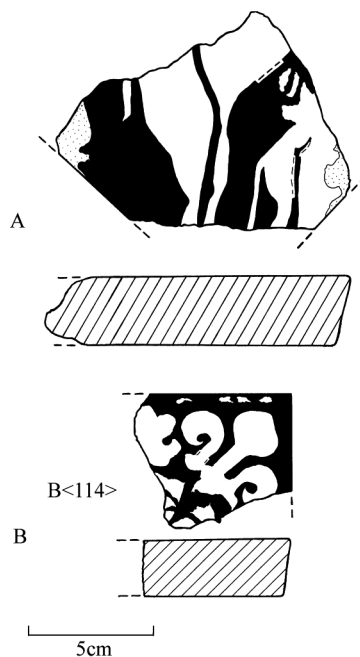


Fig 14. Medieval tiles from the Cooper's Row sites: (a) 'Westminster' type; (b) Penn tile <114> (scale 1:3)

which are probably 14th- or 15th-century, was found in Phase M4 OA24.

Medieval registered finds

The medieval registered finds include a small range of late medieval buckles in three different metals (including A<44>, shown on Fig 21), three sheet copper-alloy mounts, and part of a copper-alloy finger-ring with a glass stone. The accessioned medieval small finds described below are illustrated in Figs 20–21. A short catalogue of the illustrated medieval registered finds can be found at the end of this report.

An extremely unusual item is a Saxon strap-end (B<57>, Fig 20) competently carved with lions and probably of walrus ivory. A single, simple bone bead (B<246>, Fig 21), perhaps from a child's rosary, may be a product of the only medieval industry attested among the non-ceramic finds from the site — the turning of beads attested by two waste panels (B<149>, not illus).

Ironwork fixtures from buildings are confined to three pintles of routine form.

A small leg fragment is probably from a cast copper-alloy cauldron, the most frequently encountered form of non-ceramic cooking vessel.

The limited assemblage of late medieval/possibly early post-medieval glassware comprises fragments of a couple of beakers, in pale green (B<177>) and, most unusually, opaque white (B<120>) (both shown on Fig 21) which is probably an import from Italy. There is also the base from a urinal (not illus), used for pseudo-medical health diagnosis. Together these items suggest an affluent, possibly institutional, background.

Two thimbles of different forms indicate sewing or possibly embroidery, probably in a domestic context. Two bladed weapon chapes, of sheet copper alloy (B<143>, Fig 21) and (a less common survivor) iron, were common men's accessories in the late medieval period. A distinctly unusual object is part of an openwork Romanesque staff head (B<71>, Fig 20) — only the second of these prestigious objects to have been found in London during post-War excavations and possibly of ceremonial use. A horse-shoe is of conventional form, but an enamelled copper-alloy mount (B<146>, Fig 21) with a version of the arms of the de Bohun earls was a smart accessory, presumably for a retainer. The sole medieval coin recovered is a tiny late 13th/early 14th-century farthing, found in good condition, but apparently residual by up to half a millennium in a post-medieval context.

Medieval animal bone

The medieval animal bone assemblage is made up of a majority of cattle and sheep bones, the good representation of the latter undoubtedly related to the importance of the woollen industry. As with several urban centres, there was an obvious preference for beef despite the availability of mutton (Grant 1988, 151). There is again a plethora of adult cattle, with some slight indication of a shift towards dairy animals during the later medieval period, a change reflecting the historical evidence for an increase in dairy production by at least the 14th/15th centuries (Albarella 1997, 22). There are similarly high levels of adult sheep, as perhaps would be expected given their major economic use

during this period. There was also a large proportion of adult pigs, which is unusual from medieval city sites (comparing for example the Guildhall in Reilly 2007, 332). This must represent a particular preference for adult baconers with perhaps a majority of these stalled locally (Hammond 1993, 40). Other food species, in comparison to the Roman period, are poorly represented, with the exception of fish. There is a notable abundance of marine fish, with an apparent decline and corresponding increase in consumption of herring and codfishes respectively. The latter fish are all rather small and clearly represent, as with the herring, the exploitation of seasonal fisheries in the Lower Thames estuary (Wheeler 1979, 70–83).

POST-MEDIEVAL LIFE, 1500–1900 (PERIOD 5)

Post-medieval remains were only recorded in detail at Site B. To the south, at Site A, most of the equivalent strata had been truncated by construction work in the 1960s. Truncation had also had an impact to the north at America Square (Site D) but detailed analysis of the post-medieval evidence from that site was not undertaken for this project in any case and is not reported on here. The Phase PM1 and PM2 findings from Site B are illustrated (see Figs 15 and 17 below) but the land-uses from the broader area of Sites A, C and D are not.

Phase PM1: 16th- and 17th-century properties and buildings

The first post-medieval phase, PM1 (c.1500–1700), continues the medieval land-use pattern of street-front dwellings with yards to the rear. This phase contains the earliest buildings with extant remains at the site which could be recorded archaeologically. Documentary and archaeological evidence combines well and provides a detailed picture of site development (Fig 15). The study area is also clearly shown on the 'Agas' map, dating from c.1560–1570 (Fig 16), with the city wall and its bastions depicted as being relatively free of obstruction or lean-to structures, confirming that the areas closest to the wall may have been used for gardens

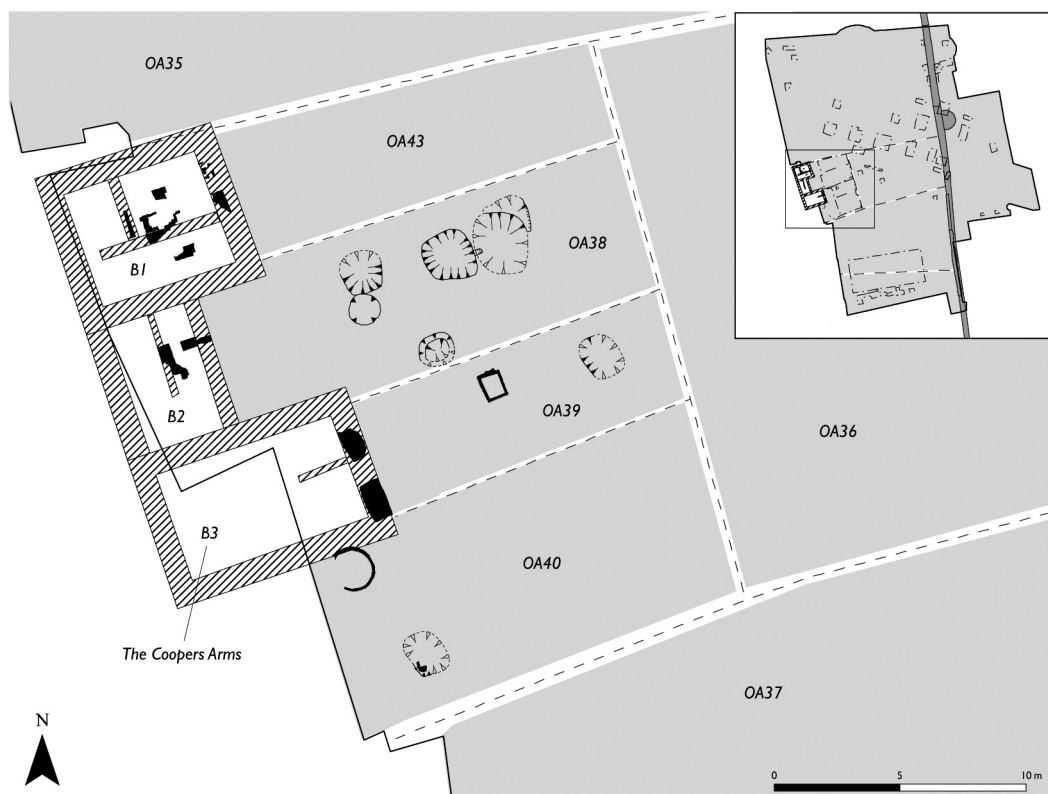


Fig 15. Plan of principal archaeological features, Period 5 Phase PM1 at Site B (c.1500–1700) (scale 1:300)

or yards. The nearby street frontage is shown as being solidly built up.

In the St Olave's parish area, the church of St Martin Orgar continued to be a major landowner during this period, holding both the northern plot (OA35) and the central plot (OA36) to the west of the city wall. In the southern part of the central plot there is documentary evidence for a public house called the Cooper's Arms, held by Thomas Nore. The excavated evidence indicated that four discrete house plots may have lain within the St Martin Orgar property. Of these, Building 3 can be tentatively identified as the Cooper's Arms (Fig 15). Large brick-lined soakaways and rubbish pits were located in the external areas to the rear (OA39) and south-east (OA40) of the building and correspond well with a yard shown on the 'Agas' map (Fig 16).

The buildings to the north of B3 (Building 1 and Building 2) seem to have been mixed use in character, with a variety of trade and

domestic waste being found within rubbish pits in the yard (OA38) to the east of B2. The buildings themselves were brick structures.

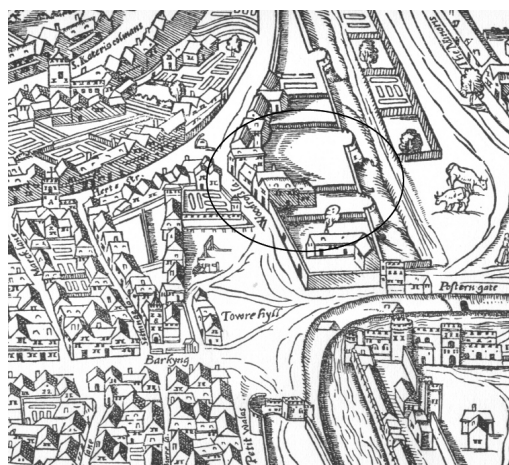


Fig 16. Detail from the 'Agas' map of c.1560–1570, showing the Cooper's Row study area

In the All Hallows parish to the south the archaeological evidence had been largely truncated apart from a couple of rubbish pits in an external area (OA37). The documentary evidence indicates that the east-west division of this space into northern and southern parts continued from the medieval period into this phase. The northern (St Katharine's Hospital) plot was let early on in this phase to Robert Child, a vintner, in the form of three messuages and then, later on in the period, as six messuages. The southern plot was the 'house' of Thomas Crathorne, which the Ogilby and Morgan survey of 1676 shows as a substantial house with carriageway and yard as well as buildings at the rear. The house was later let to Mortimer, who probably gave his name to the yard which appears as 'Mortimers Yard' in later maps.

To the east of the city wall, in the extramural part of the study area, there was heavy truncation and little surviving evidence, but it is assumed that external land-uses seen in the

medieval period largely continued there (OA34).

Phase PM2: 18th-century development

The second post-medieval phase, PM2, corresponds roughly with 18th-century development, with the evidence from Site B particularly well-preserved (Fig 17). By the middle of the 18th century the street to the west had been renamed Cooper's Row. Most of the buildings on Site B were redeveloped in the 18th century, probably in a series of minor rebuilds over time. Within the northern St Martin Orgar plot to the west of the city wall there is little documentary evidence of activities, but we can assume that the area was occupied by a variety of buildings and yards housing a range of trades and professions. Along the northern boundary of the site, a new street was established to run east-west and cut through the city wall. Initially named John Street but later known

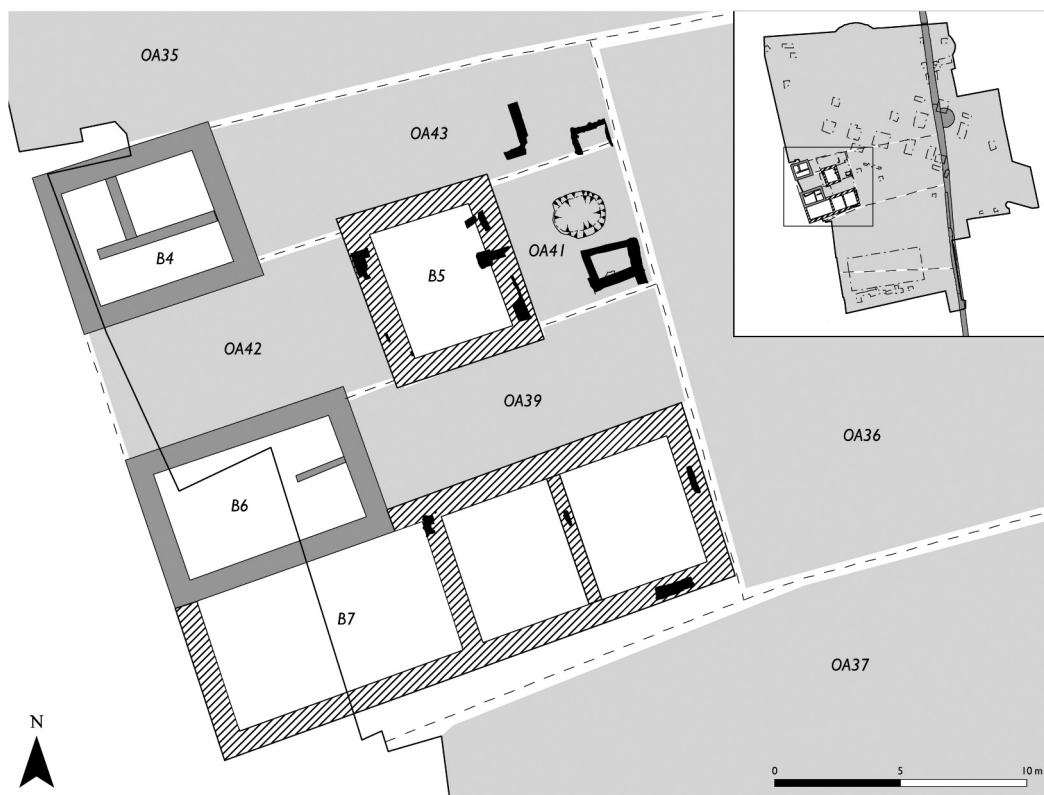


Fig 17. Plan of principal archaeological features, Period 5 Phase PM2 at Site B (c. 1700–1800) (scale 1:300)



Fig 18. Photograph of cesspit 438 in open area 41 at the rear of Building 5

as Crosswall, it either cut through or passed along the boundary of the northern St Martin Orgar property.

The central plot to the west of the city wall remained in the ownership of the parish of St Martin Orgar, which continued to rent the area out as small units. On the western part of this area, where archaeological survival was much better than elsewhere, the Phase PM1 buildings were rebuilt or renovated and the yards to their rear modified (Fig 17). From north to south, this involved: the retention of B1, now identified as Building 4, and new activity in the backyard to its east that included cesspits (OA43); the replacement of B2 with an open area containing pits (OA42); construction of Building 5 to the rear of this yard within the earlier area OA38 — this left a small yard at the back of B5 which was used for cesspits (OA41) (Fig 18); the retention of B3 as Building 6, with continued use of yard OA39; and construction of a new building, B7, covering the entire area of the earlier yard OA40.

In the All Hallows Barking plot, on the southern part of Site A, the St Katharine's

Hospital property features in a series of lease documents from 1703 onwards. The site was initially let out to a cooper, Francis Browne and Anne Holbeach. At the time of the second lease in 1718, the name of Charles Beaver appears as the tenant of the house to the south. New leases of 1730, to Abraham Crop, and 1752, to his widow Susannah, provide the first documentary connection of the site to the East India Company, which had sublet the premises as a warehouse. The next lease of 1788 indicates that the property was let directly to the East India Company.

A mix of buildings and yards continued to occupy the area east of the city wall at this time but the physical evidence was heavily truncated.

Phase PM3: 19th-century development

The 19th century saw a series of significant changes in the layout and use of properties at Cooper's Row, summarised here as Phase PM3 (not illus). The 1841 construction of the Fenchurch Street railway viaduct, which crossed the site on a north-west–south-east

diagonal alignment, may have had the greatest impact on the area. The viaduct was widened in 1881. The viaduct cut off the northern part of Site D from properties to the south, with the new plot to the north of the viaduct redeveloped as Kroll's Hotel. The hotel operated until 1908, when its demolition prompted Norman and Reader's excavations. On the central plot, the Cooper's Arms features in a series of records, as do the lessees of the adjacent houses identified during the excavations at Site B, where B5, B6 and B7 continued in use and B4 was replaced by Building 8.

To the south, the All Hallows parish area maintained its division into two parts. The St Katharine's plot remained leased to the East India Company, probably until its demise in 1858. The warehouses had become Joseph Barber and Company's Warehouses by 1864, when expansion or rebuilding of the warehouses allowed Sir William Tite to record a substantial section of the city wall (see historical and archaeological background, above).

Comparison of Tite's records with those from just before restoration of the city wall in 1962 indicates that the wall was significantly modified during its time as the rear wall of Barber's warehouse. The extant pedestrian access through the wall (Fig 8) was cut at this time, probably to provide a rear door from the warehouse into Vine Street. This hole was secured with a brick-arched lintel which was itself removed in 1962 during the restoration. The horizontal band of missing Roman facing between bonding courses 1 and 2 was removed at this time to provide a springer for arched brick vaults of the warehouse. All evidence of the brick was removed during the 1962 renovation of the wall but it can be seen on photographs prior to the refurbishment.

The southern plot in the All Hallows area was recorded in 1803 as being occupied by the workhouse of the parish of All Hallows Barking. This appears to have been a relatively small institution and would have closed down on the formation of the City of London Poor Law Union in 1837.

Post-medieval pottery

Post-medieval ceramics form the minority of

the assemblage recovered at Site A and Site B, but are present in *c.*105 contexts at Site D. Most of the pottery dates to *c.*1550–1700, but later groups are also present, with several near complete vessels. This mix is probably due to the varying survival of archaeological deposits and features, with the later horizontal deposits largely truncated by 20th-century activity.

Post-medieval building materials

Most of the post-medieval assemblage comprises peg and pantile roofing tile as well as brick. A few bricks were cut to shape, including three from Building 1 in Phase PM1 which have one angle cut off at about 45° to form so-called *squinchons*, the modern *single splays*. These bricks are highly unusual in having red paint over a white undercoat. The use of red 'ruddle' to colour bricks in the medieval and Tudor periods is known from documentary evidence, but rarely survives intact.

Site B contexts included a few plain-glazed Low Countries floor tiles dating to 1480–1600, with a small number of unglazed examples of probable 17th–18th-century date from the same location. Two decorated blue-on-white tin-glazed 'delft' floor tiles were also found which probably date to *c.*1620–50. One carries the so-called 'Tudor rose' design, the most common floor tile design produced by the tile painters working at the Pickleherring and Rotherhithe pothouses (Tyler *et al* 2008, 57–8, 90–1). The second tile shows an attractive fruit bowl design. Van Sabben and Hollem show Dutch tiles with fruit bowls (1987, 46, nos 122–7, 48, nos 131–6) and there is a similar Dutch tile in Plus dated 1620–60 (1997, 430, A.06.01.06). The quality of painting on the Cooper's Row tile is less accomplished than on the Dutch examples, suggesting manufacture at Pickleherring or Rotherhithe.

Post-medieval registered finds

A short catalogue of the illustrated post-medieval registered finds can be found at the end of this report.

Ten copper-alloy pins and a sheet lace-chape, all of common forms, probably date to the 16th century. Some of the pins may have been manufactured on the site or

nearby, and a 16th-century pinner's bone tool from the site would have been used to hold the shafts while sharpening the points (not illu). Corroded, incomplete knives from Cooper's Row would originally have had wooden handles with copper-alloy rivets and mounts in a fashion distinctive of the early 1500s; examples include B<83> (Fig 22) and B<87> (not illu). Other finds included scissors (B<154>) and a bead waste panel (B<149>) (both shown on Fig 22). These objects illustrate the small trades and domestic life conducted in buildings along Cooper's Row during this period.

Post-medieval animal bone

The animal bone assemblage is similar to those of the Roman and medieval periods. Cattle and sheep dominate and there is a large collection of fish bones with similar attributes to the earlier periods. The age distribution of the cattle and sheep suggests a far greater representation of young adults — higher quality meats which may be indicative of higher status or a general shift towards animals providing good quality meat as well as secondary products. There was some evidence of furrier activity, shown by notable collections of squirrel foot and tail bones. Small mammal pelts were highly fashionable throughout much of the medieval and early post-medieval periods, with those made from squirrel often including the paws or 'pootes' as part of the garment (Serjeantson 1989, 130). The foot bones of young lambs and a fallow deer fawn were found in the same deposits and these may also have come from a local furrier. A large quantity of squirrel foot and tail bones has been found in 14th/15th-century levels at 71 Fenchurch Street (Reilly 2006, 168) and there may have been some continuity of furrier activity within this part of the City of London.

Clay tobacco pipes

Forty clay tobacco pipe fragments were recovered during excavation of the later post-medieval phases at Cooper's Row. These include 10 pipe bowls, 24 stems and 2 mouthpieces, mostly in a fragmentary condition and all showing signs of smoking use. Six of the pipe bowls bear makers'

marks. The clay pipe forms, all London types, date from c.1640–1880. The pipe bowls are all datable by form but the stems and mouthpieces are not diagnostic and so are only very broadly dated to c.1580–1900.

The Building 2 demolition horizon yielded a London pipe bowl type dated c.1730–80. A datable assemblage is provided by the pipes from a soakaway back-fill located in the pub yard to the south of Building 3 (OA40). The assemblage includes eight pipe bowls all of the same London type, dated c.1730–80, six of them marked.

The most readily identifiable pipe mark was found on four joining fragments of a type dated c.1840–80, recovered from a dump associated with Building 4. The pipe bears an incuse stamp (B)ALME/MILE END within a shield and a union flag below along with BB in relief on the side of the heel. The Balme family of pipemakers worked at Mile End Road, Whitechapel, from 1805 to 1876. This pipe might fall within the working life of either William (1856–61) or George (1867–76).

CONCLUSIONS

Evidence of a series of north-west–south-east-aligned ditches that may have formed an early eastern boundary in this part of the Roman city is significant to our understanding of the development of the settlement (see Period 1 Phase R2). The ditch alignments recorded at the Cooper's Row sites fit well with evidence for ditches at several other sites to the south and west of Aldgate (Howe 2002), helping to provide a better picture of the 1st- and 2nd-century street plan (Bluer *et al* 2006) and overall layout of the area to the north-east of the forum (see Fig 6). The found and conjectured ditch alignments may have been part of a *pomerium* or official settlement boundary. The early ditches post-dated ephemeral 1st-century external activity in what was a peripheral and marginal area at the north-eastern edge of the settlement. The ditches lay on a different alignment to the late 2nd-century city wall, which was located further to the east. Future work in the area may be able to test the early settlement boundary hypothesis and confirm whether similar ditches lie along the conjectured route outlined here.

The evidence from the Cooper's Row sites for construction of the city wall in *c.*AD 200 is broadly consistent with that seen at many other sites along *Londinium's* landward defensive circuit (Maloney 1983; Merrifield 1965; Lyon 2007), though it has been possible to provide much new detail here (Period 2 Phase R3). Findings from the study area also raise some interesting questions. The mortar splashed and wheel-rutted intramural road, which was recorded at 1 America Square (Site D), ran just inside the line of the wall and is a feature not found at other London defensive sites. This road may have provided construction access, though it is not clear when it was buried beneath the rampart bank. The bank is normally thought to be associated with the primary construction phase of the city wall, but it is possible that it dates from a later phase of reinforcement of the defences (see Period 2 Phase R4). A much later campaign of modifications to the eastern defences involved the addition of a series of external bastions along the city wall in the mid-4th century (RCHME 1928; Maloney 1983), and the base of one these bastions was recorded at the America Square site.

The intramural area to the west of the city wall remained largely open for the entire Roman period, crossed by boundary and drainage ditches and used for quarrying, pitting and dumping. A similar sequence was recorded to the east of the city wall, where the truncated remains of Roman and medieval defensive ditches were also located. Roman activity in the area probably ended in the late 4th or early 5th century, as indicated by the development of a dark earth soil horizon at America Square (Site D), though these deposits cannot be closely dated.

There was no evidence for human activity in the immediate area between the 5th and 10th centuries. The earliest extant evidence for renewed occupation dates to *c.*1050–1150 (Period 3 Phase M1) increasing in the late 12th century (Period 3 Phase M2), though it remained external in nature and no buildings were identified. The early medieval evidence for a local pottery industry remains inconclusive. An early boundary ditch to the west of the city wall is notable for the fact that it lies on the line of a later and long-established parish boundary.

Although the archaeological evidence for the later medieval period consisted largely of pitting and dumping in external areas (Period 4 Phases M3–M5), documentary records indicate that there was an increasing amount of roadside building during this time. Back yards and gardens were located alongside the city wall, whose north–south line continued to divide the study area. The recovery of a few high status finds and imported ceramics may indicate the growing wealth of some residents. Given the relatively high level of truncation of medieval and later levels, documentary records are of particular value in gaining an insight into the area's use. Archaeological finds from the later part of the period included finds and environmental evidence associated with craftsmen such as furriers. Many of the property boundaries were long-lived, persisting from *c.*1200 up to the 19th century.

The post-medieval sequence (Period 5 Phases PM1–3) at Cooper's Row and America Square was heavily truncated, with the exception of a row of buildings on the west side of the area (Site B) which fronted onto Cooper's Row to the west. These were the only buildings to survive modern truncation and be available for archaeological recording. The buildings were small and were associated with small yards to their rear. The documented presence of furriers, bead makers and pinners, amongst others, suggests a bustling area which was densely populated. Overcrowding was an increasing problem in the 18th and 19th centuries, exacerbated by poor building conditions. The Cooper's Arms pub, the East India Company's warehouses, Barber's warehouses and Kroll's Hotel on America Square are indicative of this area's connections with the wine trade, coopering, hoteliery and hospitality that can be traced back to the late medieval period.

ROMAN REGISTERED FINDS

This archive catalogue includes only the small selection of Roman accessioned finds which have been illustrated. It is arranged by the broad function of the object. Vessel glass, which is likely to have been used in a domestic context, is placed after the small section on domestic items. The illustrations can be found in Fig 19.

Personal ornament

There is a limited range of personal ornament, chiefly comprising fragments from the later Roman period. An exception is the mid-1st-century Hod Hill brooch CPQ03<165>, found in a medieval context.

Jet bead

CPQ03 B<54> [169]; Period R2, OA5

Complete; L 17mm; Diam 4.5mm. Cylindrical bead, slightly tapering, with a series of parallel grooves around the external surface. This is typical of beads from necklaces dating from the 4th century, when jet was fashionable. Single beads are often found in urban contexts but complete necklaces have been found in contemporary cemeteries, notably those outside the eastern wall, close to the present site (Hooper Street, Mansell Street; Wardle in Barber & Bowsher 2000) and at America Square, Southwark (Wardle in prep). Intrusive in this period (possibly from later pit cutting soil horizon).

Glass bead

CPQ03 B<55> [169]; Period R2

Complete; L 5mm. Cube-shaped bead in opaque blue glass, typical of those found in 4th-century burials. Intrusive in this context.

Shale armlet

CPW99 A<52> [43/010]; Period M3

Incomplete; L 60mm; Diam c.70mm; W 10mm; Th 8mm. Fragment of shale armlet with pronounced decorative central ridge on outer surface. 3rd/4th century. Residual in medieval context.

Bone hairpins

CPW99 A<41> [590]; Period R4, OA13

Incomplete; L 52mm; W of head 6mm. Spherical head on swelling shaft, Crummy Type 3, c.AD 200–400 (Crummy 1983).

CPW99 A<25> [604]; Period R4, OA13

Almost complete; L 45mm; W of head 2mm. Very fine pin with small spherical head and swelling shank, broken at point. 3rd/4th century.

CPQ03, B<241> [381]; Period M2, OA16

Incomplete; L 28mm. Two grooves and cordons below conical head; roughly faceted shaft, swelling slightly just above the break. Closest in form to Crummy Type 5 (Crummy 1983, 23) which has a *floruit* in the 4th century.

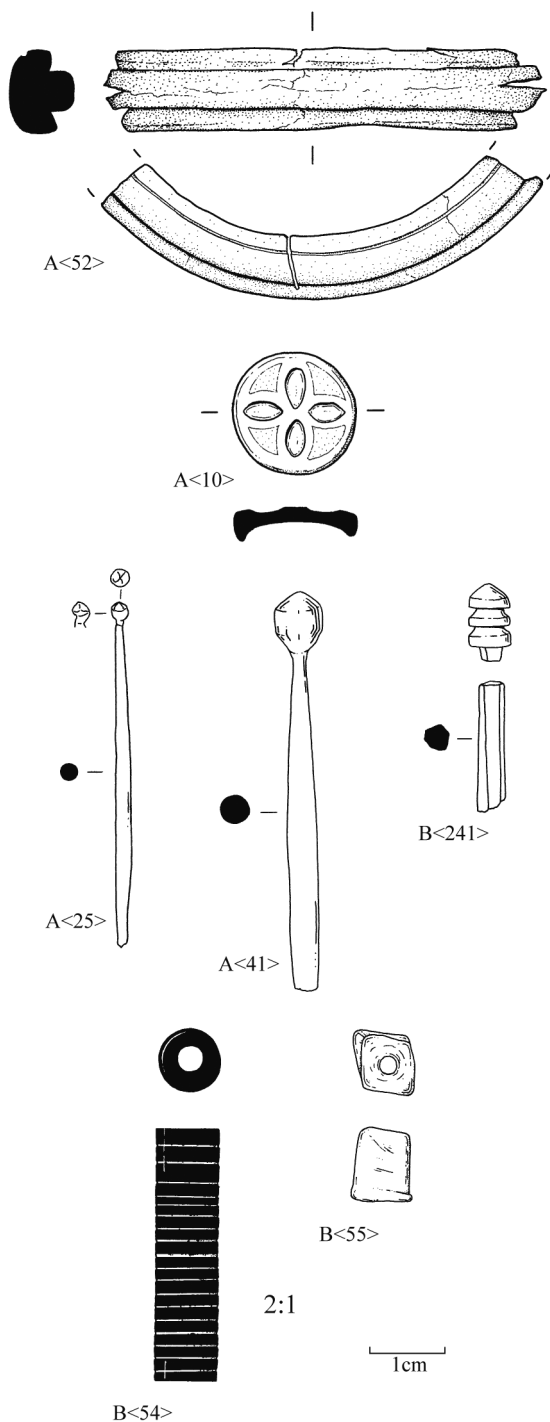


Fig 19. Late Roman accessioned finds: jet bead B<54>; glass bead B<55>; shale bracelet A<52>; bone pins A<41>, A<25> and B<241>; seal box lid A<10> (scale 1:1, except B<54> and B<55> at 2:1)

Objects associated with writing

Copper-alloy seal box

CPW99 A<10> [590]; Period R4, OA13
Incomplete; Diam 16mm. Lid with quatrefoil design in cloisonné enamel, the petals in a contrasting colour to the triangular cells between them, which may have been red. This is of typical size for a seal box, but there is no obvious sign of a hinge mechanism, which may be lost. Alternatively it may be the head of a stud, but in either case the dating is likely to be 2nd century.

MEDIEVAL REGISTERED FINDS

This archive catalogue includes only the small selection of medieval accessioned finds which have been illustrated. It is arranged by the broad function of the object. The associated illustrations can be found in Figs 20–21.

Dress accessories

Buckles: copper-alloy

CPW99 A<44> [010] Unstratified
Corroded: sub-rectangular frame with curved sides, 15 by 13mm; four transverse grooves in thick outside edge; pairs of ridges externally on sides; folded sheet plate 28 by 10mm. Cf Egan & Pritchard 1991, 96–7, fig 61 nos 437–8, assigned to the late 14th century.

Mount: copper-alloy

CPQ03 B<77> [339] residual with late 16th-century ceramics *etc*; Period PM1, OA40
Circular, domed sheet, Diam 19mm, with (?) separate surrounding corded ring and single rivet. Cf Egan & Pritchard 1991, 181, pl 4D, dated from iron parallel no. 932 to the early 15th century; presuming the present item was similar to the uncorroded former, it would have had a relatively pure copper centre with a yellower, (?) brass surround.

Strap-end

CPQ03 B<57> [665] residual with ceramics *etc* c.1050–1150; Period M3, OA23
(?) Walrus ivory: single piece, 70 by 19mm, Th 5mm, with round lower end; the recessed main field is defined by a plain border, with three stylised lions vertically, detailed in relief, their heads looking backwards (upwards in the uppermost) and with gaping jaws, the central one being upside down relative to the others

and sharing one or both lower legs with the uppermost beast; the top border and a further raised band above that have alternate, opposed plain triangles and triangles cross-hatched in the manner of oblique basket-weave; at the top is an incomplete, recessed rectangle with one corner broken off and three survivors from an original four holes for attachment. MacGregor 1985, 104–5, fig 60k–m, assigned to the 9th/10th centuries; k, with opposed animals and ?birds, and also with four holes, is from London. The skilful rendering of the tumbling, animated lions in this exotic, fine-grained material makes it a most attractive piece.

Bead

CPQ03 B<246> [670] ceramics *etc* c.1150–1350; Period M4, OA24

Turned bone: oval with flattish ends, L 4mm, greatest Diam 3.5mm. (?) Late medieval; presumably turned from panels like the example on Fig 22 below; probably from a cheap rosary.

Glassware

Beakers

CPQ03 B<177> [762] residual with 18th-century ceramics *etc*; Period PM2, OA42

Corroded pale green; fragment of pushed-in base, Diam c.55mm, with rigaree trail around perimeter. Cf Keys 1998, 232 fig 182 no. 674 for the form, assigned to the early 15th century (the present item could date from the early post-medieval period).

CPQ03 B<120> [445] (no dating for context)
Slightly greenish opaque white; walling fragment, Diam c.50mm, with applied, pinched zigzag trail. A fragment of a most unusual category of glass, which parallels suggest is of late medieval date (Egan 1998b; *idem* 1998a, pl 7, all assigned to the late 14th/early 15th centuries); this fabric is known in the UK only from London in the medieval period, including high status sites (there are also pieces from single vessels from the Noverine Abbey at Ninove in Belgium — Peter van den Hove pers comm — and Stralsund in Germany).

Martial/display items

Scabbard chapes

Both are presumably late medieval, though they could have been used into the early 16th century.

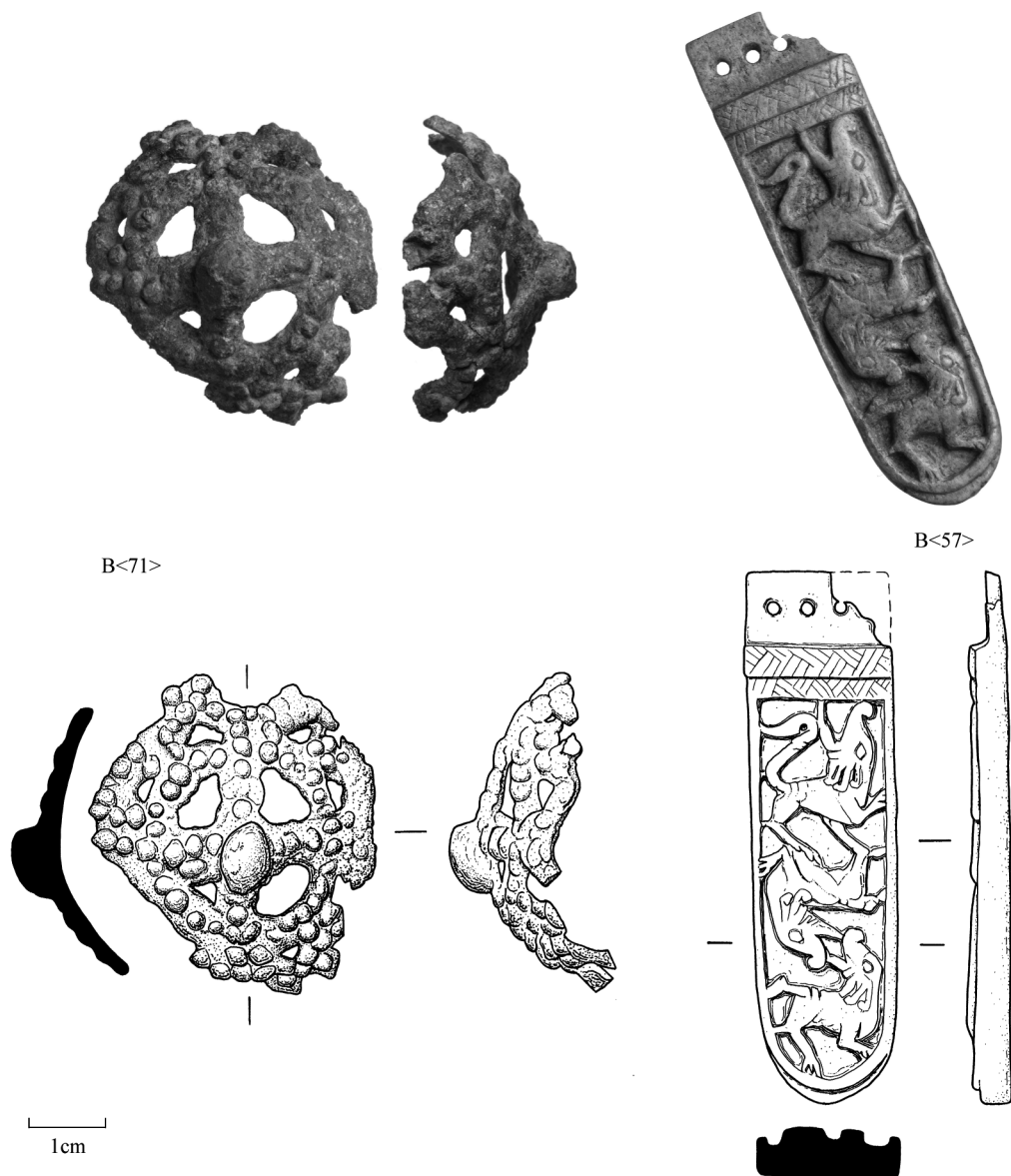


Fig 20. Medieval accessioned finds: strap-end B<57> and ceremonial staff B<71> (scale 1:1)

CPQ03 B<143> [523] (no dating for context)
[from X4]
Corroded sheet iron: L 58mm, W at top 23mm;
separate collar at top and trefoil terminal at
base.

Head of ceremonial staff

CPQ03 B<71> [283] ceramics *etc* c.1050–1150;
Period M2, OA16

Upper fragment of copper-alloy openwork,
spheroid mount with central pointed knob on
cross, pelleted ring around, then eight smaller
rings (all incomplete at lower break); greatest
surviving Diam 48mm (the part recovered is
very slightly distorted; the sphere projected
from it and that of the parallel cited below are
both of about this dimension). Cf Ward Perkins
1940, 23 fig 2 no. 1 (British Museum collection;
described by Ward Perkins as a sword pommel;

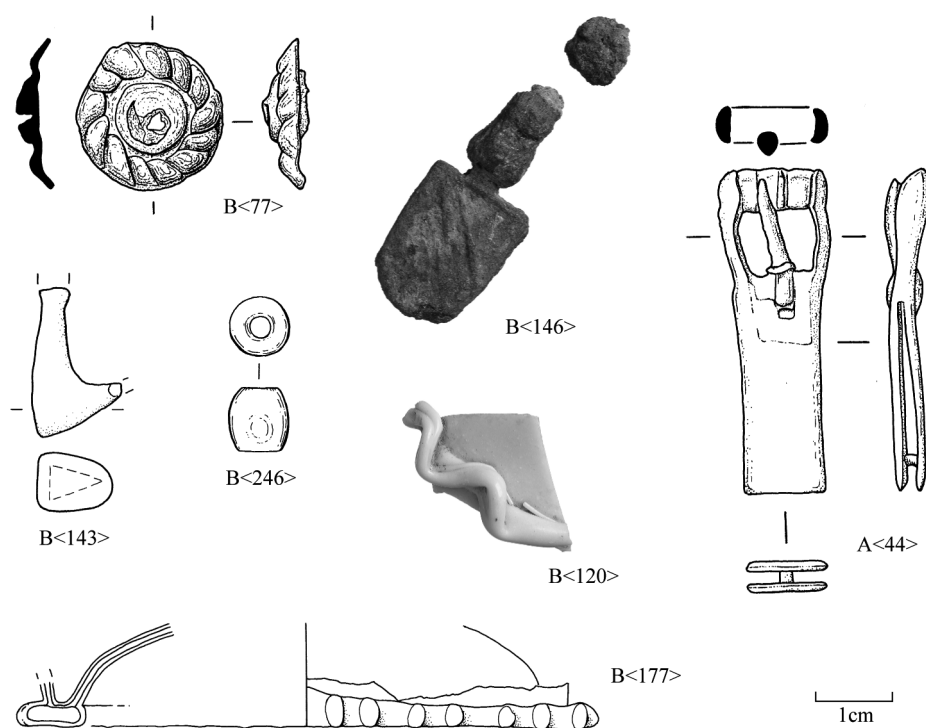


Fig 21. Late medieval accessioned finds: buckle A<44>; mount B<77>; bead B<246>; beakers B<177> and B<120>; chape B<143>; mount B<146> (scale 1:1, except B<246> at 2:1)

details of the pelleting and openwork beyond the main surviving ring differ slightly); another, similar item was recently found at the BBB05 site in London (from a context assigned to c.1050–1100, found in association with an ornate copper-alloy buckle, Richardson forthcoming). Similar items are included in a study of weaponry and ceremonial mace-heads (Daubney forthcoming).

Horse equipment

Mount

CPQ03 B<146> [586] ceramics *etc* c.1150–1350; Period M4, S6

Shield-shaped enamelled mount, 20 by 14mm, with arms: a bend cotised, two lions rampant; set on an angled, double-pivoted swivel arm. Presumably a form of heraldic shorthand (two lions instead of the usual six) for the family of de Bohun, Earls of Hereford and Essex. Similar arms are known on three finds from Norfolk (each with the tinctures azure and/or blue and gold) and a single rivet on the back — Ashley

2002, 32 note 8, 39 & 15 fig 15, nos 122–4; the full family arms appear on 11 & 39–40 nos 68–9 & 80 (thanks to Steven Ashley for advice on the heraldry). Presumably early 14th century.

POST-MEDIEVAL REGISTERED FINDS

This archive catalogue includes only the small selection of post-medieval accessioned finds which have been illustrated. It is arranged by broad function, with associated illustrations found in Fig 22.

Everyday tools

Knife

Described from X-ray plate.

CPQ03 B<83> [379] (no dating for context) [X4]

Fragment of slightly tapering blade and scale tang: total surviving L 80mm, L of blade 52mm, W 18mm; two rivets survive; five-pointed asterisk-like inlaid maker's stamp. The distinctive form represented here would be appropriate for the

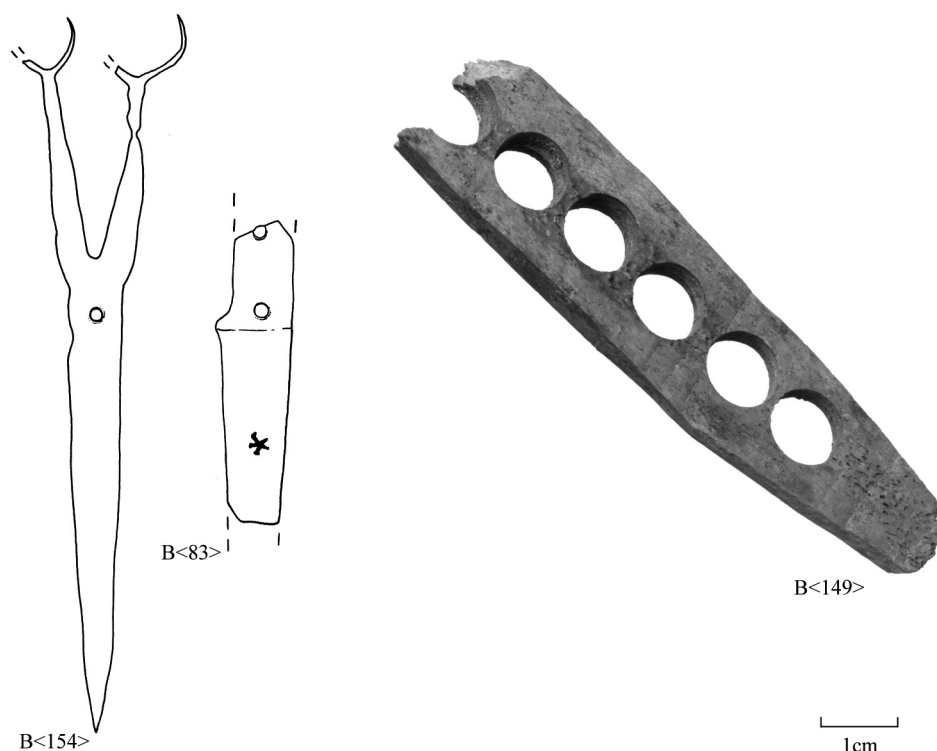


Fig 22. Post-medieval accessioned finds: knife B<83>; scissors B<154>; waste panel B<149> (scale: 1:2, except B<149> at 1:1)

early/mid-16th century; cf Egan 2005, 85–6 nos 348–50, assigned to the early 1500s.

Scissors

CPQ03 B<154> [614] (no dating for context) [from X7]

Corroded iron: L 198mm, W at circular loops c.50mm; U-shaped handles are attached to loops centrally; tapering, narrow blades L 122mm. An elegant version of a tool that was not in common usage until the 16th century. Cf Ward Perkins 1940, 140–3 for examples assigned to the late medieval period.

Production

Bead waste panel

Made from cattle/horse metapodials. Resulting from the manufacture of bone beads.

CPQ03 B<149> [549] with ceramics *etc* c.1350–1480; Period M5, OA33

Incomplete: 88 by 22mm; for at least six beads, each Diam <11mm.

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BIBLIOGRAPHY

- ALBARELLA (1997), U Albarella 'Size, power, wool and veal: zooarchaeological evidence for late medieval innovations' in G De Boe & F Verhaeghe (eds) *Environment and Subsistence in Medieval Europe, Papers of the 'Medieval Europe Brugge 1997' Conference* Vol 9, 19–30
- ASHLEY (2002), S Ashley *Medieval Armorial Horse Furniture in Norfolk* East Anglian Archaeology 101
- BARBER & BOWSHER (2000), B Barber & D Bowsher *The Eastern Cemetery of Roman London; Excavations 1983–90* MoLAS Monograph Series 4
- BETTS & FOOT (1994), I M Betts & R Foot 'A newly identified late Roman tile group from southern England' *Britannia* 25, 21–34
- BLACKMORE (1999), L Blackmore 'Aspects of trade and exchange evidenced by recent work on Saxon and medieval pottery from London' *Trans London Middlesex Archaeol Soc* 50, 38–54
- BLACKMORE (2004), L Blackmore 'The pottery' in B Sloane & G Malcolm *Excavations at the Priory of the Order of the Hospital of St John of Jerusalem, Clerkenwell, London* MoLAS Monograph Series 20, 331–55
- BLAIR & SANKEY (2007), I Blair & D Sankey *A Roman Drainage Culvert, Great Fire Destruction Debris and Other Evidence from Hillside Sites North-East of London Bridge: Excavations at Monument House and 13–21 Eastcheap, City of London* MoLAS Archaeology Studies Series 17
- BLUER *et al* (2006), R Bluer, P Brigham & R Nielsen *Roman and Later Development East of the Forum and Cornhill: Excavations at Lloyd's Register, 71 Fenchurch Street, City of London* MoLAS Monograph Series 30
- BROWN (1994), A Brown 'A Romano-British shelly-gritted pottery and tile manufacturing site at Harrold, Bedfordshire' *Bedfordshire Archaeology* 21, 19–107
- COWAN *et al* (2009), C Cowan, F Seeley, A Wardle, A Westman & L Wheeler *Roman Southwark Settlement and Economy: Excavations in Southwark 1973–91* MoLAS Monograph Series 42
- CRUMMY (1983), N Crummy *The Roman Small Finds from Excavations in Colchester 1971–9* Colchester Archaeological Reports 2
- EAMES (1980), E S Eames *Catalogue of Medieval Lead-glazed Earthenware Tiles in the Department of Medieval and Later Antiquities, British Museum, London*
- EGAN (1998a), G Egan *The Medieval Household (Medieval Finds from Excavations in London 6)*
- EGAN (1998b), G Egan 'Medieval opaque white glass from London' *Journal Glass Studies* 40, 182–5
- EGAN (2005), G Egan *Material Culture in an Age of Transition: Tudor and Stuart Period Finds c.1450–c.1700 from Excavations at Riverside Sites in Southwark* MoLAS Monograph Series 19
- EGAN & PRITCHARD (1991), G Egan & F Pritchard *Dress Accessories (Medieval Finds from Excavations in London 3)*
- EKWALL (1954), E Ekwall *Street Names of the City of London*
- GRANT (1988), A Grant 'Animal resources', in G Astill & A Grant (eds) *The Countryside of Medieval England*, 149–87
- GREEN (1980), C M Green 'The Roman pottery' in D M Jones *Excavations at Billingsgate Buildings 'Triangle', Lower Thames Street, 1974* LAMAS Special Paper 4, 39–79
- GROVES (1998), J Groves 'The pottery: general discussion' in J D Shepherd *The Temple of Mithras, London: Excavations by WF Grimes and A Williams at the Walbrook* English Heritage Archaeological Report 12
- HAMMOND (1993), P W Hammond *Food and Feast in Medieval England*
- HASLAM (1988), J Haslam 'Parishes, churches, wards and gates in eastern London' in J Blair (ed) *Minsters and Parish Churches. The Local Church in Transition 950–1200* Oxford University Committee for Archaeology Monograph 17
- HOWE (2002), E Howe *Roman Defences and Medieval Industry: Excavations at Baltic House, City of London* MoLAS Monograph Series 7
- KEYS (1998), L Keys 'Glass vessels' in Egan 1998a, 217–38 & 252–4
- LYON (2007), J Lyon *Within These Walls: Roman and Medieval Defences North of Newgate at the Merrill Lynch Financial Centre, City of London* MoLAS Monograph Series 33
- MACGREGOR (1985), A MacGregor *Bone, Antler, Ivory and Horn; The Technology of Skeletal Materials since the Roman Period*
- MALONEY (1983), J Maloney 'Recent work on London's defences' in B Hobley & J Maloney *Roman Urban Defences in the West* CBA Research Report 51, 96–117
- MARSDEN (1965), P Marsden 'Archaeological finds in the City of London, 1962' *Trans London Middlesex Archaeol Soc* 21.2, 135
- MCCARTHY & BROOKES (1988), M R McCarthy & C M Brookes *Medieval Pottery in Britain AD 900–1600*
- MERRIFIELD (1965), R Merrifield *The Roman City of London*
- NORMAN & READER (1912), P Norman & F W Reader 'Further discoveries relating to Roman London, 1906–12' *Archaeologia* 63, 257–344
- PLUIS (1997), J Pluis *The Dutch Tile: Designs and Names, 1570–1930*

- PRINGLE (2002), S Pringle 'The building material' in J Drummond-Murray & P Thompson, with C Cowan (eds) *Settlement in Roman Southwark: Archaeological Excavations (1991–98) for the London Underground Limited Jubilee Line Extension Project* MoLAS Monograph Series 12, 151–61
- RCHME (1928), Royal Commission on Historic Monuments (England) *An Inventory of the Historical Monuments in London: Vol 3, Roman London*
- REILLY (2006), K Reilly 'The animal bone' in Bluer *et al* (2006) 163–9
- REILLY (2007), K Reilly 'The meat diet' in D Bowsher, N Holder, I Howell & T Dyson *The London Guildhall: The Archaeology and History of the Guildhall Precinct from the Medieval Period to the 20th Century* MoLAS Monograph Series 36, 331–5
- SANKEY (1998), D Sankey 'Cathedrals, granaries and urban vitality in late Roman London' in B Watson (ed) *Roman London, Recent Archaeological Work* Journal of Roman Archaeology Supplementary Series 24, 78–82
- SCHOFIELD with MALONEY (1998), J Schofield with C Maloney (eds) *Archaeology in the City of London 1907–1991: A Guide to Records of Excavations by the Museum of London and its Predecessors* The Archaeological Gazetteer Series 1
- SERJEANTSON (1989), D Serjeantson 'Animal remains and the tanning trade' in D Serjeantson & T Waldron (eds) *Diet and Craft in Towns* BAR British series 199, 129–46
- SMITH with BETTS (2004), T P Smith with I M Betts 'Ceramic building materials' in B Barber, S Chew, T Dyson & B White (eds) *The Cistercian Abbey of St Mary Stratford Langthorne, Essex: Archaeological Excavations for the London Underground Limited Jubilee Line Extension Project* MoLAS Monograph Series 18, 138–46
- STRICKLAND (1999), T Strickland *Archaeological Survey and Condition Assessment of the Roman Wall, 8–10 Coopers Row, London* unpub archive report, Gifford and Partners, London
- SYMONDS & WADE (1999), R P Symonds & S M Wade *Roman Pottery from Excavations in Colchester, 1971–86* Colchester Archaeological Reports 10
- THOMPSON *et al* (1998), A Thompson, A Westman & T Dyson (eds) *Archaeology in Greater London 1965–1990: A Guide to Records of Excavations by the Museum of London* The Archaeological Gazetteer Series 2
- TITE (1866), W Tite 'A letter to Frederick Overly' *Archeologia* 40, 295–306
- TYLER *et al* (2008), K Tyler, I M Betts & R Stephenson *London's Delftware Industry* MoLAS Monograph Series 40
- VAN SABBEN & HOLLEM (1987), C van Sabben & J Hollem *Antieke Tegels*
- VINCE (1985), A G Vince 'The Saxon and medieval pottery of London: a review' *Medieval Archaeology* 29, 25–93
- WARD PERKINS (1940), B W Ward Perkins *London Museum Medieval Catalogue*
- WHEELER (1979), A Wheeler *The Tidal Thames*