

Excavations at Potters Fields/One Tower Bridge, Southwark

PAUL THRALE

with contributions by

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Archaeological excavation by MOLA (Museum of London Archaeology), in advance of redevelopment at Potters Fields/One Tower Bridge, Southwark, has revealed evidence from the Late Iron Age/early Roman period and the post-medieval period. The findings on the site are set in context by geoarchaeological discussion of the changing landscape of Horsleydown Egot in the Holocene. A number of erosional features and at least three possibly anthropogenic cut features of Late Iron Age to Roman date were found on the surface of the eyot. The site was evidently inundated, perhaps from the late Roman period onwards, and no archaeological features of medieval date were identified. A large stone ball, possibly shot from a bombard or large cannon, may be evidence of later medieval military activity. The most significant complex of features on the site was an arrangement of large timber-revetted ditches in the south-east, dated by finds to the 17th century. A large collection of artefacts, including imported pottery, was recovered from these ditches, providing evidence for activities in the local area.

Introduction

Between 2004 and 2012, MOLA carried out a programme of archaeological investigations in Southwark, to the east of the street named Potters Fields, for the One Tower Bridge redevelopment project (fig 1; TQ 33530 80050). This paper, sponsored by the developers, The Berkeley Group, presents the results of the fieldwork and the subsequent analysis of finds and samples in the form of a chronological narrative, with detailed discussion of the key archaeological features and the finds they contained, particularly the datable ceramics.¹

The site is located to the west of Tower Bridge Road and to the north of Queen Elizabeth Street, approximately 40m to the south of the river Thames. Work was administered as two separate projects and the site archive is divided accordingly. The first project, carried out under the archaeological site code POE04, commenced with the recording of ten trial pits (TP1–9 and TP10W) dug in 2004 as a preliminary evaluation of the redevelopment site (fig 2). Subsequent work under this site code was concentrated on the southern half, where four evaluation trenches (Tr1–4) were dug in 2006, followed by a final large excavation trench in 2007. The focus of fieldwork then shifted to the northern half of the site, where eight evaluation trenches were excavated (shown in fig 2 as TrB1/2, TrB3, TrB4, TrB6/5, TrB7, TrB8, TrB9, TrB10, with the prefix 'B' added for clarity). This last phase of evaluation work was organised separately under the site code PFE10. The paper and digital records of the investigations, and the finds will accordingly be archived by the Museum of London under these two site codes. The archives will be accessible by prior arrangement at the Museum of London's Archaeological Archive (LAA), Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED.

The following report presents the findings from all phases of investigation. The basic unit of cross-reference between this paper and the site archives is the stratigraphic context number, shown here in square brackets [n], with a letter prefix designating the site code: A for site code POE04 and B for PFE10. Thus context [75] of POE04 is referred to as A[75]. Where applicable in the text and figures, particular artefacts that have been assigned identifying serial numbers (accession numbers) are referred to by those numbers shown in



Fig 1 One Tower Bridge, Southwark. Site location, with location of adjacent site TYT98.

angled brackets $\langle n \rangle$, with the same system of letter prefixes (A or B) to link these numbers to their site codes. Certain key land-use elements have been assigned 'Structure' numbers prefixed by an S (ie ditch Structure 1: S1).

Pottery sherd counts are, where possible, accompanied by the estimated number of vessels (ENV). The illustrated pottery is summarised in a table at the end of this article, including the codes for form and fabric. Expansions of the pottery codes are given at their first mention in the text, but details of pottery codes, building material fabrics etc are also available from the Museum of London Archaeological Archive and are posted on Museum of London and MOLA webpages (www.museumoflondon.org.uk and www.mola.org.uk).

The superscript numbers refer to notes that can be found at the end of the report, before the acknowledgements and bibliography. The legend for the phase plan figures is presented below as figure 5.

Natural topography (period 1) and overall deposit model

The Thames flood plain in the vicinity of Southwark once featured a series of islands – or 'eyots' – that comprised upstanding remnants of Thames terrace gravels (the Kempton Park Gravels and Shepperton/Floodplain Gravels) deposited by the river during the Pleistocene epoch (ie the ice ages), with sands that have been dated (by optically stimulated luminescence, OSL: 18,510 BP \pm 3600, at Butlers Wharf, BTW98) to the height of the last

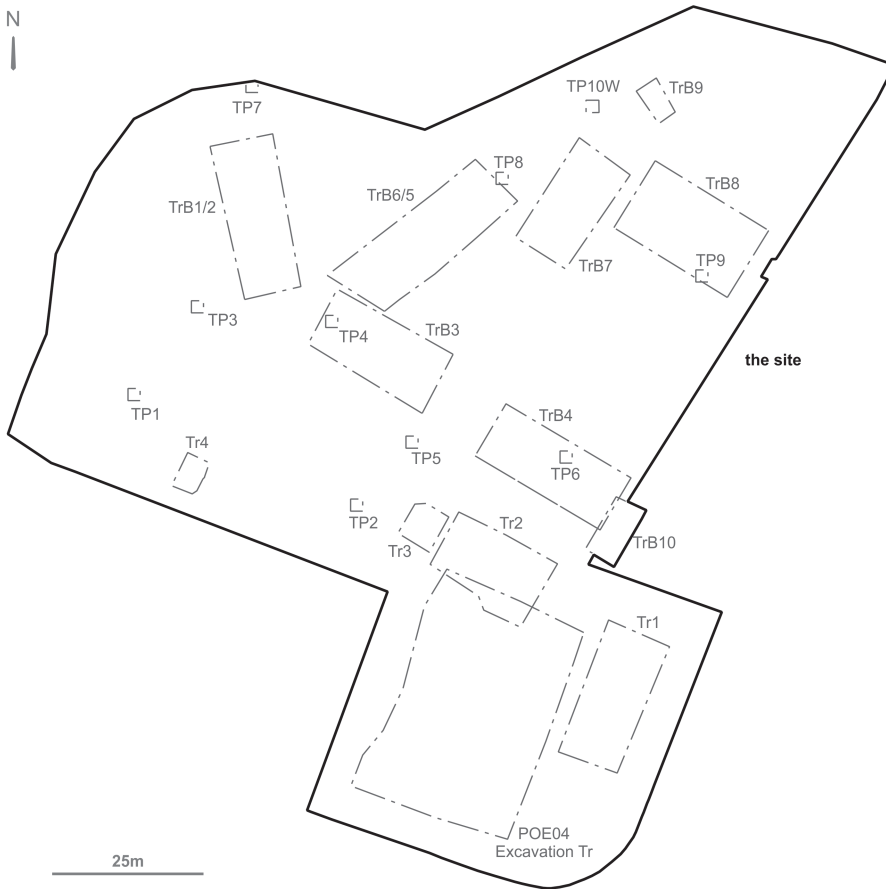


Fig 2 One Tower Bridge, Southwark. Evaluation/excavation trenches.

cold stage: the Devensian (Ridgeway & Meddens 2001). The site lies on the northern edge of the Horsleydown Eyot and the underlying geological strata consist of the gravels of the first river terrace, recorded at 0.9m below Ordnance Datum (-0.9m OD) to the north, rising southwards to 0.68m above OD (0.68m OD) (fig 3).

GEOARCHAEOLOGICAL DEPOSIT MODEL (ALL PERIODS), by Craig Halsey and Mary Nicholls

Five geoarchaeological groups of deposits have been identified across the site spanning the period from the Late Devensian (the close of the last ice age) to the post-medieval period (fig 4). These are labelled Deposit 1 through 7 on figure 4. Deposits 1 and 2 represent Devensian flood plain gravels and sands. The sands were oxidised, showing evidence of stabilisation and probably soil formation before mudflat deposition. Deposits 3 and 4 at low levels to the north are Mesolithic to Bronze Age mudflats and peats. These, and much of the highest ground on the site, were buried below Deposit 5, which represents Iron Age and Roman-period inundation and the accumulation of silty clays. Deposits 6 and 7 in the southern part show the build-up of backswamp or palaeochannel clays where the sand surface lies at a slightly lower level. These deposits are thought to be broadly contemporary with the upper part of Deposit 5.

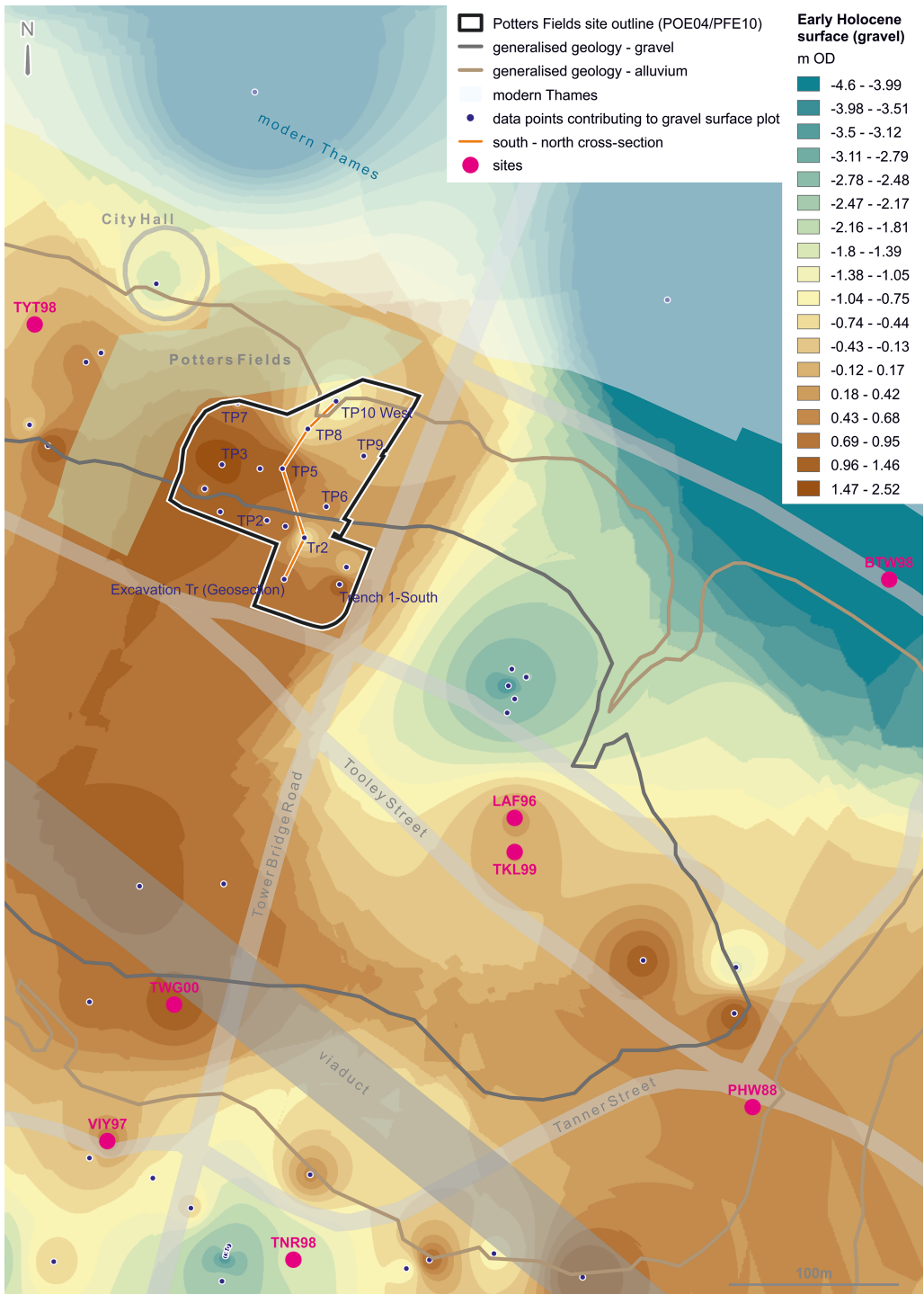


Fig 3 One Tower Bridge, Southwark. Map of geoarchaeological cross-section and height plot of gravel surface, in comparison to gravels and alluvium as mapped by the British Geological Survey. Key archaeological sites for geoarchaeological data are marked and labelled by site code.

This deposit model for the site has been developed with reference to the surrounding landscape and broader region. Late Glacial sands and sandy clays that form the mass of the Horsleydown Eyot are represented by Deposit 2. At this time (Late Palaeolithic/Mesolithic) the river level at the mouth of the Thames Estuary was around 30m lower than the present day (cf Shennan 1989; Waller & Long 2003). Over the Holocene, river levels rose, and this rise was broken up by several short-lived phases when the rise slowed or sea level fell. The first stratigraphic framework for viewing the Thames flood plain sediments in terms of former landscapes and sea level change, with supporting radiocarbon dates, was presented by Devoy (1979), who identified a pattern of five phases of rising sea level (transgressions: Thames I–V) and five phases of fall (regressions: Tilbury I–V). However, this does not apply to the City of London and a three-part model has since been put forward (Wilkinson *et al* 2000; Sidell *et al* 2000; Sidell 2003), which proposes an initial rapid relative sea level (RSL) rise in the early Holocene (the Mesolithic), followed by a slowing of the rate of rise during the Neolithic and Bronze Ages, resulting in peat expansion (wood peat and then alder carr) *c* 4800–2800 cal BC. By this time, tidal conditions had moved upriver to what is now central London (Sidell *et al* 2000). Subsequently, a second marine transgression starting *c* 1500 cal BC (ie in the Bronze Age) has been recorded and is still in progress today. This pattern is seen in London (Sidell *et al* 2000; Corcoran *et al* 2011; Stafford *et al* 2012) but also more widely in south-east England (Long *et al* 2000).

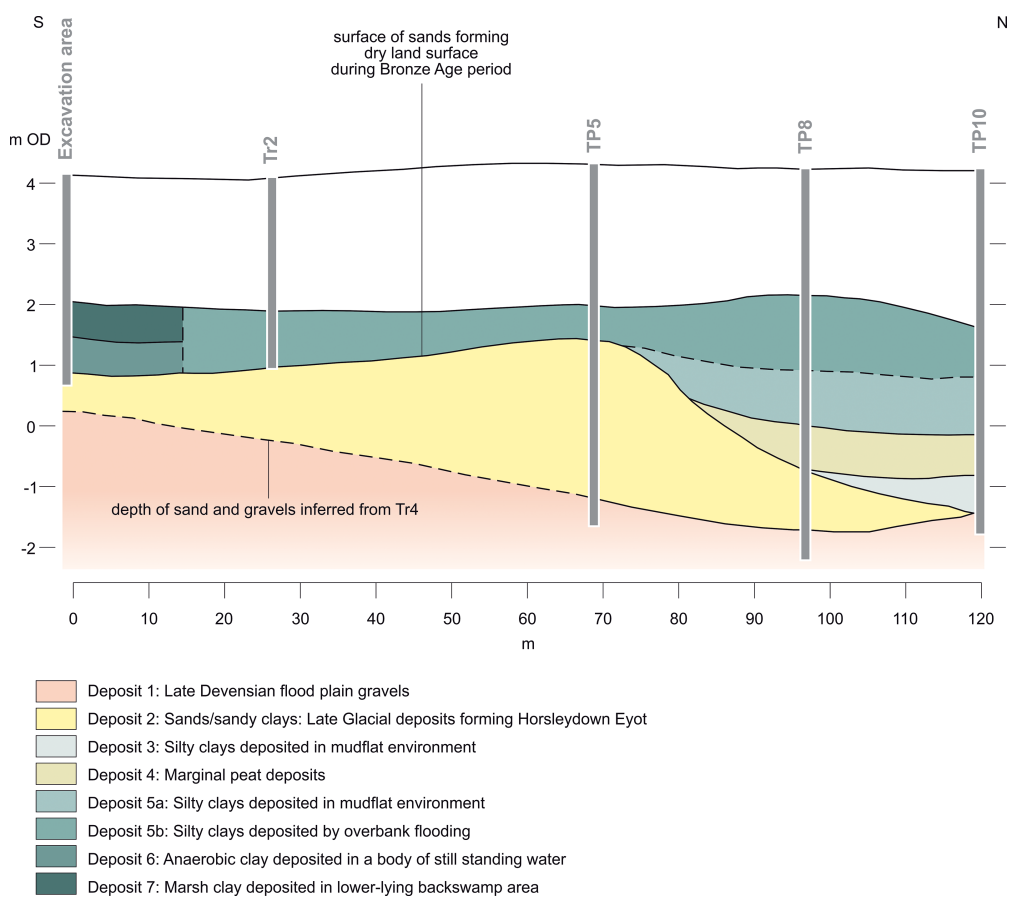


Fig 4 One Tower Bridge, Southwark. Schematic cross-section across the site (south–north) showing geoarchaeological deposit groups.

The evidence from the One Tower Bridge site fits into the three-part London model, with silty clays of Deposit 3 representing a Neolithic mudflat environment just below the level of OD, below Bronze Age peats of Deposit 4 found from about OD upwards to 0.5m OD. These two deposit groups represent the slower rate of RSL rise in the London area during the Neolithic and the Bronze Age as predicted by the model. The peat was then buried by silt clays of Deposit 5, representing overbank flooding or an increasingly tidal mudflat environment from the Iron Age. These silt clays were present on the site from *c* 0.5m OD to 2m OD and accord with the ongoing marine transgression that is the latest phase of the London model.

In the 2007 excavation area (in the southern part), the deposits were examined more closely. Deposit 2 in that part of the site consisted of mid-orangey/brown, medium-grain sand that was heavily iron stained and showed evidence of bioturbation. These sands are probably of a Late Glacial/Early Holocene date and represent the formation of a sand bank or levee on the margins of an active channel. The heavily iron-stained nature of the sands, with evidence of root action, suggests that the sand bank probably developed a dry soil horizon that seems to have lasted into the Roman period (see period 2, below). These sands were encountered at *c* 0.8m OD near the southern edge of the site, sloping gently upwards towards the north to a maximum height of about 1.2m OD near the centre.

The anaerobic/marsh clays of Deposits 6 and 7, above the sands of Deposit 2 at the south of the site, are likely to represent a palaeochannel or area of ponding that developed behind the highest sandy ground as the rising Thames deposited alluvial clays (Deposit 5) on the opposite side (ie to the north). Thus, the central sandy ground acted as a levee for a time and was eventually submerged (during period 3, as described below).

Iron Age to early Roman dry land horizon on the Horsleydown Eyot (period 2)

A series of shallow features were recorded across the site on the surface of the Horsleydown Eyot (ie the surface of sands assigned to geoarchaeological Deposit 2 as shown in fig 4). Although the majority of these features were erosional, there were at least three possibly anthropogenic cut features – B[2], A[49], A[56] – that are thought to represent prehistoric riverside activities on dry land (fig 6). Pottery retrieved from these features and from deposits representing the dry soil horizon dates mainly to the Roman period, but a few Iron Age sherds are also present.

POSSIBLE DITCH OR EROSIONAL FEATURE B[2]

The west end of TrB4 was cut through by a shallow V-shaped gully B[2], recorded at 0.83m OD, that was 0.50m deep and 1.26m wide (fig 7). The gully extended for 3.50m inside the excavated area and its fill, a grey clay (B[1]), included the undated fragmentary remains of a horse skull.

CUT FEATURE A[49]

At the western end of Tr2, and continuing north and west beyond the trench limits, was the eastern edge of a 0.32m-deep cut feature A[49] recorded at a height of 1.17m OD. The fill (A[48]) of this feature consisted of sand and clay and included one flint flake and a single piece of burnt flint.

LINEAR CUT A[56]

At the eastern extent of the same trench (Tr2), and continuing north, south and east beyond the trench limits, was a linear feature A[56] that was 0.12m deep and was encountered at a

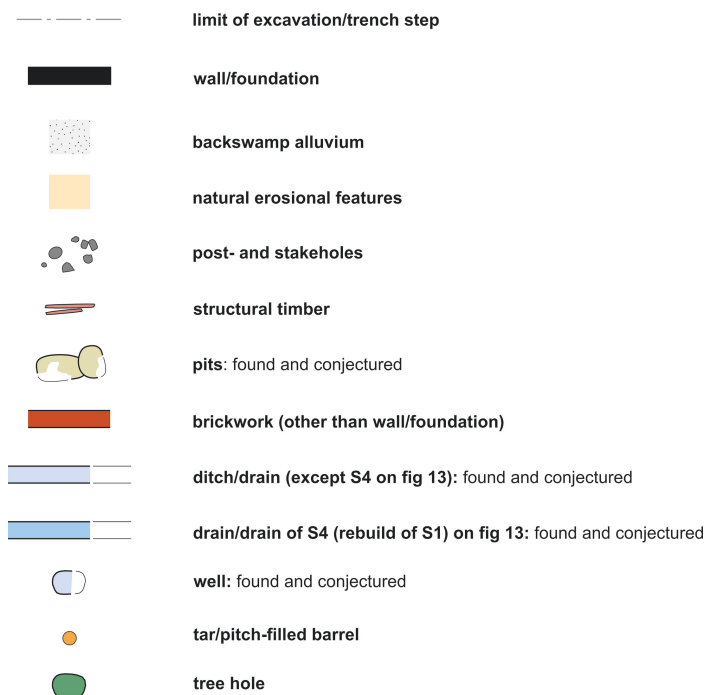


Fig 5 One Tower Bridge, Southwark. Legend for the phase plan figures.

height of 0.95m OD. The fill (A[55]) of this feature consisted of sandy clay silt and included fragments of bone and a single sherd of unsourced oxidised ware (OXID) of the Roman period (ie dating broadly to *c* AD 50–400).

A SET OF NATURAL CHANNELS A[117], A[137] AND A[157]

A set of channels A[117], A[137] and A[157] that were probably formed by flood run-off were recorded in the southern part of the site (fig 8). A small assemblage of nine sherds of Roman pottery and a few fragments of Roman tile was found in the fill (A[118]) of channel A[117]. This group is dated AD 70–160 by a single sherd of Highgate Wood ware C (HWC).

FINDS FROM DEPOSITS ON THE EYOT SURFACE

A small assemblage of eleven sherds of Roman pottery retrieved from fine sand levee deposit A[47] (not illustrated; found as high as 1.39m OD) in evaluation trench Tr1 (south-eastern area of the site) has been dated to *c* AD 150–200, based on the presence of sherds from two Nene Valley colour-coated ware beakers (NVCC3) and three Gaulish samian (SAMEG) vessels, including a Dragendorff form 33 cup (6DR33). An abraded 1st century Roman brick was also retrieved from this deposit. A post-medieval belt (in two fragments) assigned to this context surely represents an intrusion into the deposit (fig 9). The belt is decorated with double rows of small punched triangular awl impressions bordered by tooled lines along both long edges. Its plain buckle is oval with a central bar and iron pin and the folded sheet-metal strap-end is present, although broken. The style of border-decoration is typical of the early post-medieval period and the plain oval buckle is similar to types in use in the 16th and 17th centuries.

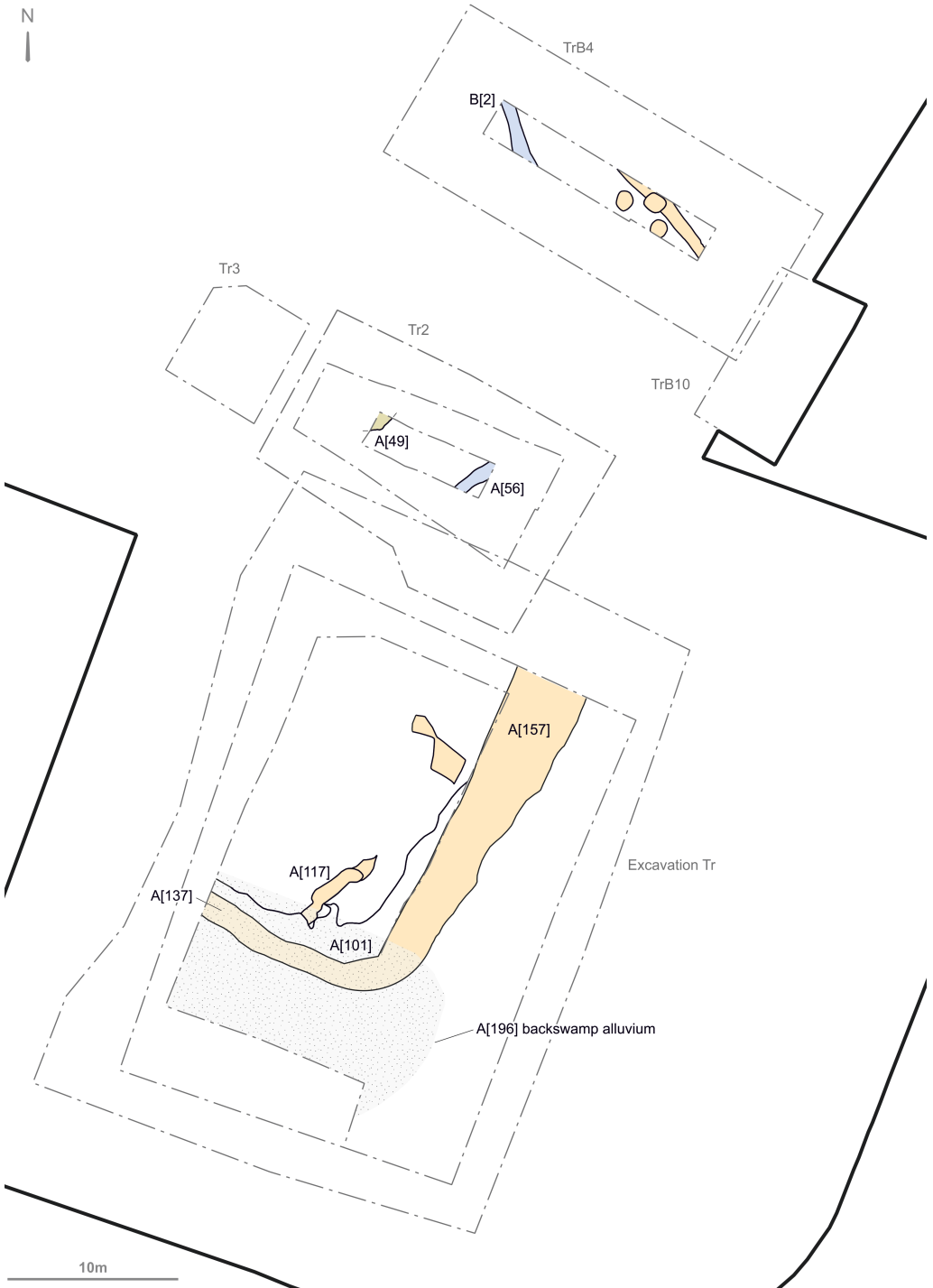


Fig 6 One Tower Bridge, Southwark. Natural features and possible cut features of Iron Age and Roman date.



Fig 7 One Tower Bridge, Southwark. TtB4, looking south-east, showing possible prehistoric cut feature B[2] below 0.5m scale bar.



Fig 8 One Tower Bridge, Southwark. The 2007 POE04 excavation trench in the southern part of the site, looking east, showing natural channel A[137] (1m scale bar).

Four small sherds of pottery retrieved from clayey, fine sand deposit A[57] (not illustrated; recorded at a maximum height of 0.97m OD in the central area in evaluation trench Tr2) appear to indicate a transition between the Late Iron Age and early Roman periods. The prehistoric sherds (all of which are abraded) comprise three sherds of flint-tempered ware (FLIN) found adjacent to a single Roman sherd from a Gallo-Belgic whiteware beaker (GBWW 3), dating to *c* AD 40–70.

A total of 35 sherds of pottery were retrieved from silty, clay sand deposit A[101]. These sherds are very mixed in date and most are noticeably worn, indicating they have been redeposited. A single flint-tempered sherd (FLIN) is the only prehistoric type present. The remaining 34 Roman sherds include types from across the whole Roman period, from unsourced grog-tempered wares (GROG) of an early appearance to part of a Camulodunum form 306 bowl (4C306) that dates to *c* AD 200–400. A single sherd of intrusive post-Roman pottery was also found in the same context.

Further north, five sherds of prehistoric flint-tempered pottery (FLIN), probably from the same vessel, were retrieved from alluvial deposits B[3] (recorded at 0.79m OD) and B[9] (recorded at 0.82m OD) and from sandy, clay and silt deposit B[5] (recorded at 0.81m OD). These three deposits were recorded within TrB4 and probably represent the same alluvial sequence, infilling natural undulations or features. Three sherds from a section of Gaulish samian Dragendorff form 45 mortarium (SAMCG 7DR45) dating to *c* AD 150–250, were found in fine sand deposit B[39]. An abraded mid-1st century AD brick was also retrieved from this deposit.

Late Roman/medieval flooding ... and possible bombardment? (period 3)

Overbank flooding, perhaps in the later Roman period and almost certainly in the early medieval period, led to the deposition of slowly accumulating alluvial clays. The slight dip towards the southern part of the site, behind the highest sandy ground, would have allowed floodwater to pool and form a small body of standing water represented by black anaerobic clay. Eventually, the entire site was buried below alluvial clay deposits that were recorded as high as 3.0m OD and were altogether between 1.5 and 2.0m thick.



Fig 9 One Tower Bridge, Southwark. Post-medieval leather belt A<78> with copper-alloy buckle and strap-end, found as intrusion in a Late Iron Age/Roman sand deposit A[47] (scale 1:4).

By the high medieval period it seems that the name of Horsleydown was associated with the area. In the form of *Horsheiedon*, it is attested in the historical record as early as the late 12th century (Carlin 1996, 25 fn 17).² In 1327, the Knights Hospitaller were said to have owned three tide mills in Horsleydown ‘of old’ (although by 1515 they had only one) (*ibid*, 55–6). Richard II’s poll tax of 1381 shows that most of the residents of Horsleydown were engaged in typical riverside occupations such as boatman and miller, although there were also a higher than average number of gardeners (*ibid*, 53–4, 181). This probably reflects the use of the ‘down’ for market gardening as well as grazing. By the late medieval period, there was a certain amount of industry in the area. To the west of the development area, there was a brewery by 1418, which by 1471 was owned by Magdalen College Oxford, and known as the High Beer House.

One sherd of medieval pottery from a jar in coarse Surrey/Hampshire Border ware (CBW) dating to *c* 1270–1500 was recovered from alluvial flood deposit A[116]. An unusual iron shear blade, A<106> (fig 10), and copper-alloy wire, A<25>, were also found in this deposit. Neither of these metal items can currently be closely dated and it is not possible to say anything specific about how they came to be incorporated in the alluvium. It is quite possible for contemporary objects that may have originated elsewhere along the Thames foreshore to be lost in flood events and later redeposited by the river. Alternatively, they could represent post-medieval intrusive material that had sunk into the mud.

In 2012, during redevelopment groundworks, a contractor uncovered a large stone ball, A<137> (fig 11). The exact location and circumstances of the find were not recorded, but it was reportedly found buried within alluvial clay deposits in the southern half of the site. The ball was passed to MOLA and incorporated into the site archive as an unstratified find. Of roughly chiselled Kentish ragstone with signs of damage, it measures 0.43m (17 inches) in diameter and weighs 99.2kg. Although it may be an architectural object there is a distinct possibility of it being a projectile, possibly one shot out of a bombard or very large cannon.

A possible source is the Tower of London, as a note appeared in the 1844 volume of *Archaeologia* (Porrett 1844) on stone shot found in the ditch of the Tower of London during

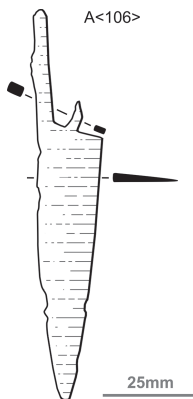


Fig 10 One Tower Bridge, Southwark. Iron shear blade A<106> (late medieval or post-medieval, from probably late medieval or early post-medieval alluvial deposit A[116]; scale 1:2).



Fig 11 One Tower Bridge, Southwark. Possible stone shot A<137> (diam. 0.43m; unstratified) discovered in alluvial deposits during redevelopment groundworks on site after completion of archaeological investigations.

building works. The author suggests that the shot was fired at the Tower in 1460, during the War of the Roses, when Lancastrian forces in the Tower were besieged. Yorkist artillery was set up on the opposite side of the river and shots were exchanged. Another such ball has been found on the 'More London' site to the immediate west (TYT98, <816>), where it was deeply embedded in clay deposits. Carved from Portland stone (Mark Samuels, pers comm), this example is larger and more irregular, measuring 0.51 x 0.45m (20 x 17½ inches) and weighing 130.8kg.

16th–18th century drainage and occupation (period 4)

The site appears to have continued to be mainly open ground during the early post-medieval period, as levelling deposits dating to between the late 16th and early 17th centuries were recorded across most of the site. This levelling consisted of extensive dumps of coal-rich, ashy deposits, probably at least partially derived from urban household middens and nightsoil and, from the mid-17th century, perhaps also from nearby industries. In the southern half more silty deposits were also recorded and these may represent agricultural/horticultural soils.

The 1658 Faithorne and Newcourt map (not illustrated) shows the vicinity of the site as open ground partitioned into a number of plots embellished with trees and other shapes suggestive of orchards and possibly gardens. The label 'Horsy Downe' appears nearby to the south or south-west. The southern bank of the Thames, to the north, is depicted as intensively developed as the site of a continuous row of buildings. The 1682 Morgan map (fig 12) shows a much more developed road network, including 'Freemans Lane' within the eastern side of the site and a stretch of road named 'Horsly Down' running east to west at the south-eastern corner of the site (not to be confused with 'Horsly Down Fair Street' further to the south, nor with the north–south 'Horsly-Down Lane' shown to the east of 'Freemans Lane').³ Buildings are depicted fronting onto both of these roads, although most of the site is shown as open ground labelled 'Potts Felde'. This field is shown to have been almost completely surrounded by ditches that appear to have separated it from the yards that were arrayed behind the street-front buildings.

Archaeological excavation in the south-eastern part of the site revealed the remains of substantial timber-revetted channels or ditches (figs 13 and 14). Their arrangement is strikingly reminiscent of the pattern shown on the Morgan map – a roughly rectilinear pattern parallel to the surrounding streets – but the match is not exact. The north–south arm of the excavated arrangement was further to the east and the east–west arm was found further to the south. Also, a third arm was exposed extending eastwards from the meeting of the two main ditches, yet the map shows nothing analogous to this. Nevertheless, the revealed ditches could be those shown on the 1682 map, or they could be predecessors of the mapped ditches. The excavated ditches – labelled Structures 1 and 3, with Structure 4 being the rebuild of Structure 1 – appear to have been initially constructed in the first half of the 17th century (based on the dating of pottery and a tin-glazed tile in the ditch fills). The smaller ditch (Structure 3), which has no match on the 1682 map, was probably backfilled in the middle of the 17th century, before Morgan's map was published. The latest fills in the north–south and east–west arms of Structure 4 have been dated to *c* 1660–80, so it may be that they were filled in and replaced (by ditches set further from the roads) prior to the survey for Morgan's map.

The evaluation trenches in the northern part of the site revealed other ditches of the same period, some of them timber-revetted, and a wood-lined tank cut through the made-ground deposits. Truncated timbers recorded in the last PFE10 evaluation trench, TrB10, at the eastern edge of the site probably represent the northwards continuation of one of the timber-lined channels or ditches found in the POE04 excavation trench to the south (see fig 36).

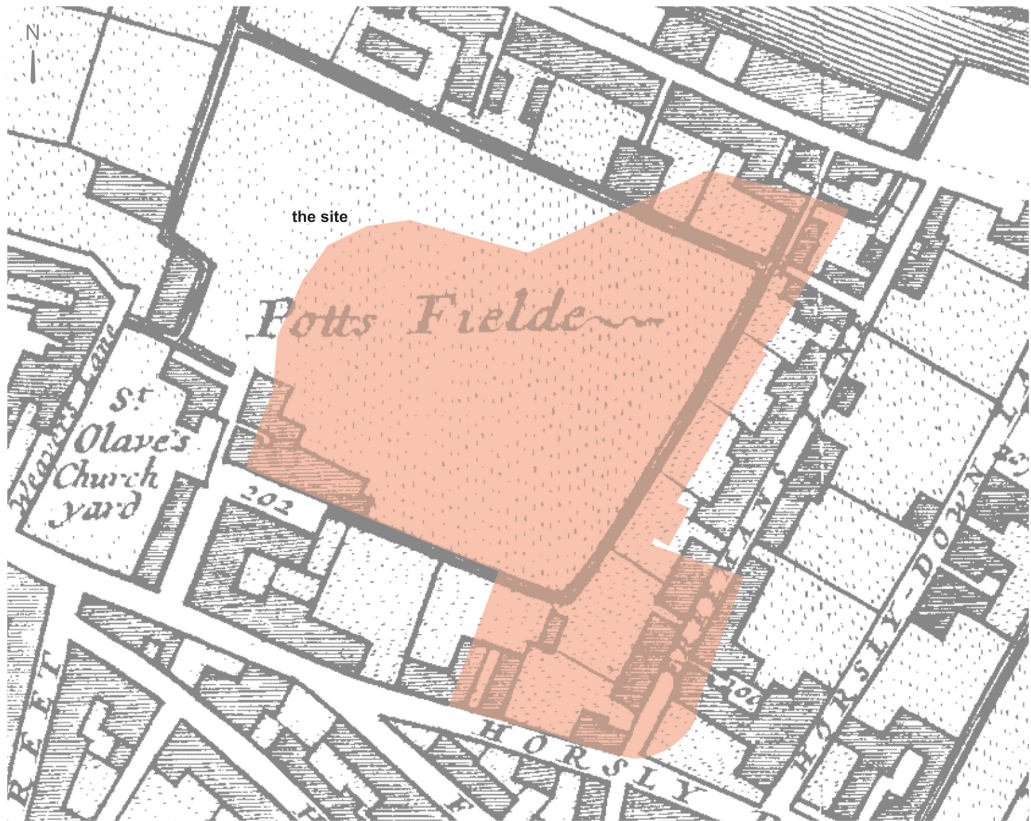


Fig 12 One Tower Bridge, Southwark. The site superimposed on a detail of William Morgan's map of 1682.

LARGE TIMBER-RETTED DITCHES (S1, S3 AND S4)

The excavation area in the southern part of the site was dominated by a right-angled arrangement of timber-revetted channels or drains (S1) encountered at upper heights between *c* 2.2 and 2.8m OD (about 2.50m below the modern ground level), with a surviving depth of between 0.7 and 1.5m, and with a maximum channel breadth (between the revetments) of 2.54m (fig 13). The interior base level of the timber lining of these ditches (taken as a proxy for the interior base of the ditches) varied between 1.49 and 1.69m OD. The understanding of historical Thames tide levels is evolving, but it may be supposed that the highest spring tides of the mid-17th century would perhaps have reached somewhere between 3 and 3.5m OD (cf Milne 2003, 146 fig 72; Blatherwick & Bluer 2009, 57, table 4; Heard 2003, 48), with reclaimed waterside occupation in the vicinity of the site perhaps at about or just below 3.5m OD (if not higher). It is worth recalling that the highest level of post-Roman alluvial clay recorded on site (see above) was *c* 3m OD. Accordingly, these ditches may once have been about 1.7m deep. This must remain hypothetical, however, given that the tops of the ditches had not survived.

The east–west arm of the channel ran parallel to modern Queen Elizabeth Street and extended westwards beyond the limit of the excavation trench. The north-west arm ran parallel to modern Tower Bridge Road and extended northwards beyond the excavation area. This ditch was joined at its south-eastern corner by another timber-revetted channel or drain (S3) – measuring 1.60–2.0m in breadth (between its revetments) – that extended to the south-east (fig 15).

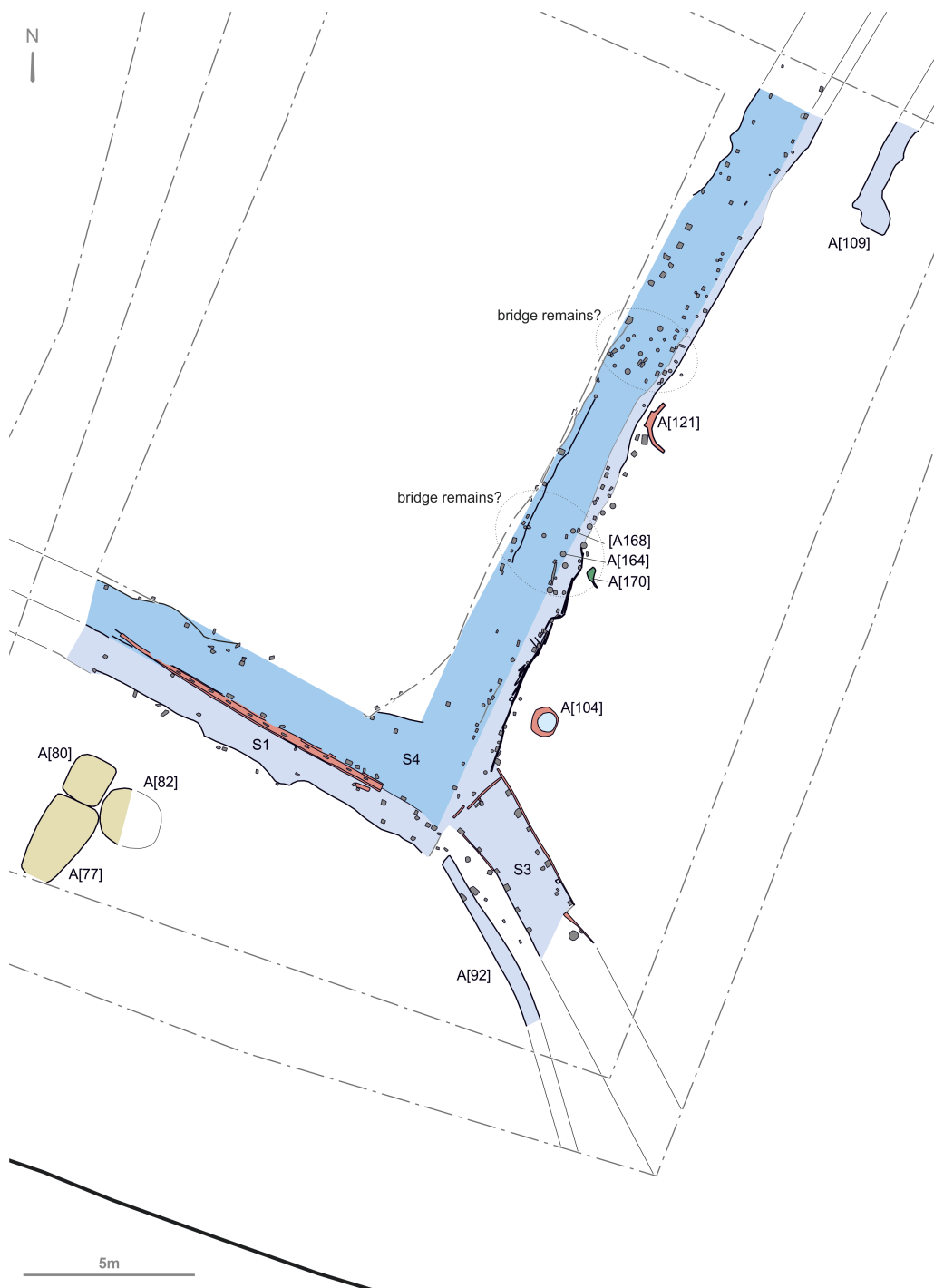


Fig 13 One Tower Bridge, Southwark. 16th–18th century (post-medieval) features including timber-revetted ditches in the south-eastern part of the site.



Fig 14 One Tower Bridge, Southwark. POE04 excavation trench, looking north-west, showing timber-lined ditches S1/S4 and S3.

The south-eastward-running ditch (S3) appears to have eventually been blocked off and the right-angled S1 was repaired and strengthened with additional timber-revetting structures – A[95] and A[195] – grouped together as parts of S4 (fig 16). This rebuilt ditch was narrower than the original, measuring between 1.80 and 2.0m in breadth (between its revetments) and was also shallower, with the east–west timber baseplate of one of its revetments being found at 2.08m OD.

In general, the edges of the channels were reinforced with simple pile-and-plank revetments, although there was an example of timber-framed revetment, A[95], as part of the S4 rebuild on the southern side of the east–west arm of the right-angled ditch. This portion of rebuild S4 had been systematically demolished in the post-medieval period, but survived as a mortised east–west base plate (A[96]) of elm (which proved to be a reused ship’s keel), with a fragment of a conifer-timber revetment shuttering plank remaining *in situ* along its southern edge. A small number of oak locating piles were also found. The mortises in the base plate indicate that posts were originally set between 0.4 and 0.6m apart and their tenons were not locked with pegs, thus allowing them to be removed easily. While this was not an elaborate structure, it none the less required a carpenter’s skill and so represents the most substantial and comparatively ‘expensive’ of the revetments found on the site.

Small clumps of fibres were recovered from the timber linings of both ditch S3 and S4; these have been identified as sheep’s wool. These fibres are unlikely to have come from recycled fabrics as they show no evidence of textile manufacture. Despite the relative coarseness of the fibres, which suggests the sheep were probably bred for meat rather than the quality of fleece, the absence of hair roots indicates the wool was sheared rather than collected from tanneries as ‘fell wool’. Archaeological evidence from London shows that



Fig 15 One Tower Bridge, Southwark. POE4 excavation trench, looking north, showing northern revetment of north-west to south-east timber-lined ditch S3 (0.5m scale bar).

sheep wool was commonly used for caulking ships from the 16th century onwards (Marsden 1996, 200–7), which probably accounts for the presence of these clumps of fibre among the timbers found within the ditches.

Presumably these ditches had the dual function of drainage and boundary. Eventually they became filled with rubbish, either because they no longer served a drainage function and so were deliberately backfilled, or because they were subject to unregulated dumping. As well as pottery, ceramic building material and the remnant of a wooden shovel or scoop blade, the ditch fills from Structures 1, 3 and 4 yielded a range of small finds – shoes, dress accessories, small domestic items, children’s playthings and items that may be industrial waste – that provide some indication of life and activity in the local area.

Pottery and ceramic building material (CBM) in the ditch fills, by Lyn Blackmore and Ian Betts

Pottery and CBM from fills of S1

The lower fill (A[129]) of the east–west arm of the right-angled ditch S1 contained a single sherd of residual Roman pottery dating from between AD 120 and 250. The upper fill (A[123]) contained six sherds (four ENV, 448g) of pottery dating from 1580 to 1650; the fabrics present comprise London-area post-medieval redware (PMR) and the slipped equivalents (PMSRG/Y) and Surrey/Hampshire Border redware (RBOR).

The fill (A[148]) of the north–south arm of the ditch (S1) contained 25 sherds (23 ENV, 864g) of pottery dating from 1580 to 1630. London-area post-medieval redwares are the most common, with nine sherds of PMR and PMSRG/Y, followed by Surrey/Hampshire



Fig 16 One Tower Bridge, Southwark. POE04 excavation trench, looking north, showing timber-lined ditch S1 with remains of rebuild S4.

Border wares (BORDO/G) and imports, each of which are represented by six sherds; the imports (DUTR, FREC, OLIV, WERR, WESE)⁴ include a large part of the lower body of a globular olive jar. Also present are three sherds from Essex, comprising post-medieval black-glazed ware (PMBL) and post-medieval fine redware (PMFR), and the complete base of a tin-glazed ware (TGW) dish with blackened glaze.

This same fill (A[148]) also contained post-medieval peg roofing tile and a partly blackened tin-glazed floor tile A<126> (fig 17). The slightly blurred pattern on the floor tile appears to show a central design with blue grapes next to green vine leaves. The central corner decoration in yellow and blue, while not identical, is similar to that used on tiles from the Pickleherring pothouse (Tyler *et al* 2008, 55, fig 75, design 8), which is probably where the tile was made. It is very unlikely the tile was ever set into a floor: there are no signs of wear. Instead the tile was probably discarded after firing; it is of *c* 1618–50 date. Three complete London tiles with similar designs are illustrated in Betts and Weinstein (2010, 113, nos 120–122).

Pottery and CBM from fills of S3

The backfills (A[86] and A[99]) of the north-west to south-east ditch contained 114 sherds (90 ENV, 5.629kg) of domestic pottery, mainly dating to 1630–50, but with a few earlier sherds. London-area redwares are the most common, with 49 sherds (48 ENV; fabrics PMR, PMR CALC, PMRE, PMSRG/Y); Essex redwares, by contrast, are limited to nine sherds (4 ENV). Imports are the second most common group, with 30 sherds (22 ENV), mainly German stoneware and slipware (FREC, RAER, SIEG TRIC, WERR) but including wares from the Netherlands (DUTR, DUTSL), Italy (LIGU), France (MART1, SAIU) and Spain SPGR.⁵ Of note is the modified base of a broken Werra slipware (WERR) dish, A<152> (fig 18), with portrait decoration of a female showing the head and shoulders, with details of costume that include a stiff out-turned collar. Portrait dishes are not uncommon in this fabric (Hurst *et al* 1986, 245–6), but are very rare in London and this example, A<152>, is

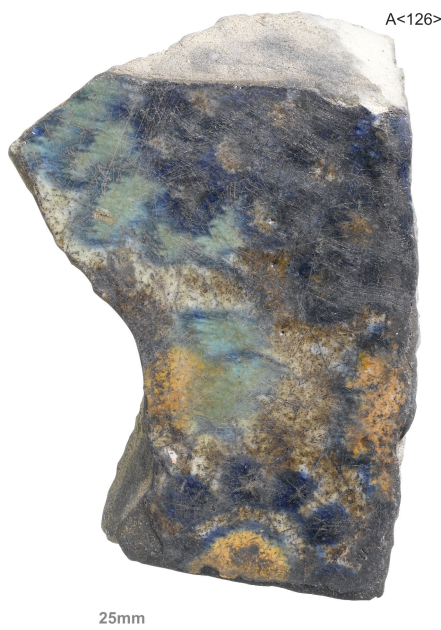


Fig 17 One Tower Bridge, Southwark. Tin-glazed floor tile A<126> from 17th century fill (A[148]) of ditch S1 (scale 1:1).



Fig 18 One Tower Bridge, Southwark. Werra slipware dish A<152> with portrait decoration, cut to roundel shape, and Surrey/Hampshire Border redware pipkin A<140> with applied handle of white clay, from 17th century fill (A[86]) of ditch S3 (scale 1:2).

is of special interest as it has been trimmed around the edges to make a roundel (diameter 107mm), perhaps intended for framing. Werra slipware was imported *c* 1580–1630.

With the exception of a redware (RBOR) pipkin, A<140> (fig 18), all the Surrey/Hampshire Border wares (22 sherds, 16 ENV) are in the whiteware fabric (BORDG/Y); the pipkin is of special interest as its applied handle is made of white clay. In addition, there are a few sherds of tin-glazed ware (TGW, TGW D), Cistercian ware (CSTN) and Midlands purple ware (MPUR).

The backfill (A[86]) of this ditch also contained a single fragment of a paving brick (MOLA fabric 3043) that is almost certainly imported from the Low Countries in the 14th or 15th century. Also of medieval date is a plain brown London-made ‘Westminster’ floor tile probably dating to the second half of the 13th century, although production of such tiles may have continued into the early years of the 14th century.

Two floor tiles from the backfill are plain brown and yellow-glazed Low Countries imports dating to *c* 1480–1600. These may derive from Fastolf Place (to the west), the site of which has produced numerous similar examples (Betts 2009, 170). Floors of Low Countries tiles were normally laid in a chequerboard pattern with alternating yellow and dark green/brown glazed examples. Another fragment of plain brown Flemish floor tile was recovered from another fill deposit (A[99]) of the same ditch structure.

Pottery from fills of east–west arm of S4 (rebuild of S1)

In total 22 sherds (sixteen ENV, 1.507kg) of pottery, with an intrinsic date range of *c* 1580–1630, were associated with fill (A[103]) deposited during the construction of the east–west arm of this feature (ie during the S4 rebuild of what was formerly the east–west arm of S1). London-area post-medieval redwares (PMR, PMSRG/Y) are the most common with twelve sherds (ten ENV), followed by Surrey/Hampshire Border whitewares (BORDG/O; six sherds, three ENV) and imports (three sherds) comprising FREC and part of a WESE dish with a large patch that is not covered by glaze and shows the oxides painted onto the fabric beneath, A<153> (fig 19). Also present is part of a biscuit tin-glazed ware mug.

Fifteen sherds (nine ENV, 1.168kg) of pottery dating to *c* 1630–50 were found in fill A[111], the silting-up of the east–west running arm of ditch S4, of which ten sherds are London-area post-medieval redwares (PMR, PMSR, PMSRG). The others comprise three sherds of PMFR and Metropolitan slipware (METS), both from Harlow, Essex, and single sherds of BORDO and Weser slipware.

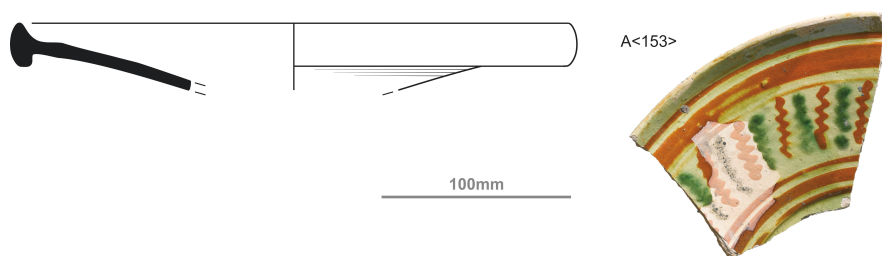


Fig 19 One Tower Bridge, Southwark. Weser slipware dish A<153>, from construction-related fill (A[103]) of ditch S4 (scale 1:4).

Another fill deposit (A[100]) within the same arm of the ditch contained a large amount of pottery, totalling 191 sherds from up to 119 vessels (13.028kg). Again, the group dates to *c* 1630–50, but here Essex redwares (METS, PMBL, PMFR) are the dominant category, with 81 sherds (43 ENV). In second place are Surrey/Hampshire Border wares (32 sherds, 21 ENV), mainly whitewares (BORDB/G/O/Y) but including two of RBOR; among these is the complete stem of an upright BORDO candlestick with four milled bands (A<143>; fig 20). London-area post-medieval redwares (PMR, PMSRG/Y), imports (FREC, MART3, MLTG, POTG, SAIU, WERR, WESE) and tin-glazed wares are fairly equally represented, with 27 sherds (19 ENV), 28 sherds (19 ENV) and 23 sherds (seventeen ENV) respectively. The tin-glazed wares include nine sherds from six biscuit ware wasters (TGW BISC; dish, jar, mug) as well as sherds from vessels with a plain white glaze (TGW C) and Orton (1988, 321–8) type D decoration (TGW D). The imports include part of a Montelupo tin-glazed ware (MLTG) dish, the base and body of a Saintonge ware (SAIN) jug, and a lid in Portuguese tin-glazed ware or faience (POTG), A<155> (see fig 20) with decoration in blue. The lid is of pyramidal form with projections at each corner and a central knob and is thought to be from Lisbon (T Casimiro, pers comm 2016).

Yet another fill deposit (A[110]) within the east–west arm of S4 contained a smaller group of 81 sherds (34 ENV, 4.208kg) dating to *c* 1650–80. Here, London-area post-medieval redwares (PMR, PMSRY) are again the most common by sherd count (37 sherds) but equal to tin-glazed wares in terms of vessel count (nine ENV). Imports (FREC, RAER, STAR, WERR, WESE) amount to seven vessels (twelve sherds). Essex redwares (PMFR) total seventeen sherds (five ENV), while Surrey/Hampshire Border whitewares (BORDG/O) are limited to four sherds (four ENV). The tin-glazed wares include part of a biscuit ware dish and a mug with manganese speckled glaze (TGW B) as well as sherds of TGW D.

The three upper fills of the east–west arm of timber-lined ditch S4 – fills A[84], A[85] and A[94] – can be more confidently taken to represent the backfill and disuse of the ditch. These three fills together produced one sherd of medieval pottery and 383 sherds (173 ENV, 19.186kg) of post-medieval date. The one medieval sherd was found in fill A[94], which also produced 319 post-medieval sherds (130 ENV, 15.809kg), while fills A[84] and A[85] together yielded only 64 sherds (43 ENV, 3.377kg). The pottery of fill A[94] dates to *c* 1650–80. There were also 18th century clay pipes in this context but they are thought to have come from the very top of the deposit. The pottery from fills A[84] and A[85] dates to *c* 1630–50, but A[85] also contains clay pipes dated to *c* 1660–80, which suggests that these three fills are contemporary.

Taking the three backfill/disuse fills (A[84], A[85] and A[94]) together, Essex redwares (METS, PMBL, PMFR) are the most common by ENV (51), and the second most common by sherd count (94). London-area post-medieval redwares (PMR, PMRE, PMSRG/Y) are in second place with 43 ENV (84 sherds), including a substantial part of an alembic from fill A[85] in PMRO, A<138> (fig 21). These are followed by Surrey/Hampshire Border wares (34 ENV, 70 sherds), mainly whitewares (BORDG/O/Y), but with a few sherds of



Fig 20 One Tower Bridge, Southwark, Surrey/Hampshire Border whiteware candlestick A<143> and Portuguese tin-glazed ware or faience pot lid A<155>, from fill (A[100]) of ditch S4 (scale 1:2).

RBOR; of note is a substantially complete, very neatly made, squat BORDG chamber pot (height 108mm) with everted rim and cordoned shoulder (A<144> (fig 21) from fill A[94]. Although the most common category by sherd count (106), tin-glazed wares are in fourth place with 30 ENV, of which thirteen are biscuit wares; the others are of TGW, TGW C and TGW D, the latter including part of a mug, A<145> (fig 21) from A[94]. Imports are much less common in this group, with twenty sherds (twelve ENV). These include sherds from a Spanish amphora (SPOA) and a North African burnished redware (SPAM) costrel, A<158> (fig 21) from A[94]. Although similar to those made in Merida-type ware (SPAM) and found on numerous sites in London and around the English coast (Gutiérrez 2007), these have a finer and less micaceous fabric. They are probably from North Africa rather than the Iberian peninsula (T Casimiro, pers comm 2016) and are thus much rarer finds. The group also includes sherds of FREC, MART and MART3. Some of the Frechen wares feature medallions. One shows a particularly large, fine portrait medallion, A<148> (75mm across; fig 22), possibly of Christ; the lettering around the edge on the left side is unclear but that on the right reads 'MUNDI'. This was found with an unusual armorial medallion with a trident motif, A<149> (fig 22), possibly with part of the date, and part of another jug with a much cruder medallion showing a lion passant, A<150> (fig 22).

Pottery and CBM from fills of north–south arm of S4 (rebuild of S1)

A large amount of pottery with an overall date range of *c* 1630–80 was recovered from the fills of this feature's rebuilt north–south arm. In total, there are 720 sherds (468 ENV, 25.036kg) from fills A[83], A[87], A[88], A[89], A[90], A[97] and A[133]. London-area post-medieval redwares (PMBR, PMR, PMRE, PMSL, PMSRG/Y) are the most common by ENV and weight (200 sherds, 140 ENV, 7.202kg), closely followed by Surrey/Hampshire Border wares



Fig 21 One Tower Bridge, Southwark. London-area post-medieval redware alembic A<138>, Surrey/Hampshire Border whiteware chamber pot A<144>, tin-glazed ware mug fragment A<145> and North African burnished redware costrel sherd A<158>, from backfill/disuse fill (A[85]) of ditch S4 (scale 1:4).

(BORDB/G/O/Y, RBOR: 202 sherds, 107 ENV, 6.255kg). Essex redwares (METS, PMBL, PMFR) total 113 sherds (74 ENV), while tin-glazed/biscuit tin-glazed wares amount to 101 sherds (65 ENV). In addition, there are 95 sherds (74 ENV) of imported pottery, and six sherds of Midlands purple ware and Staffordshire slipware. This last, found only in [97], is the latest diagnostic ware type, dating to after *c* 1660. The same deposit also contained a near-complete tall cylindrical jar or butter pot in RBOR, A<141> (fig 23; height 228mm, base 150mm, rim *c* 168mm) with lid-seated rim and bubbled clear glaze inside (Holling type H; Pearce 2007, 82–3, 86, fig 47, nos 167–175). Other finds of note include a miniature jug, A<139> (extant height 74mm; from fill A[90]) in PMBL, which is complete except for the rim and handle, a biscuit tin-glazed ware vase base, A<146> (TGW BISC; from fill A[90]) (fig 24), part of a possible lantern, A<142> in BORDO (from fill A[83]) (fig 24), a portrait dish in WERR, A<151> (fig 25), showing a male in profile, facing left and part of a starred costrel, A<156> (STAR, from fill A[87]) (fig 24), possibly from Italy. Represented by the



Fig 22 One Tower Bridge, Southwark. Medallions on Frechen ware fragments from fill (A[94]) of ditch S4: A<148> portrait medallion, A<149> armorial medallion with trident motif, A<150> lion passant (scale 1:2).

whole base and lower body, with a star painted in manganese on the flattened side, this is the most complete of four examples recovered from the site.

Ditch fill A[87] also contained the corner of a red earthenware glazed stove tile A<117>, the green glaze resting on a thin layer of white slip (fig 26). The complete tile would almost certainly have been rectangular in shape. The reverse has part of a heat-retaining box-cavity with the deep sides set at an inverted angle of 30°, a type that became increasingly common from the beginning of the 16th century (Gaimster 1988, 317–18). The use of tiled stoves had begun to fall out of favour towards the close of the 16th century; although some are known to have the arms of James I (r 1603–25) showing that their use continued into the 17th century (*ibid*, 335–6). By the mid-17th century, free-standing stoves seem to have been replaced by domestic hearths situated in fireplaces (Gaimster *et al* 1990, 16).



Fig 23 One Tower Bridge, Southwark. Surrey/Hampshire Border redware jar/butter pot A<141> from fill (A[97]) of ditch S4 (scale 1:4).



Fig 24 One Tower Bridge, Southwark. Part of a possible lantern A<142> in Surrey/Hampshire Border whiteware, from ditch fill A[83], starred costrel A<156> from ditch fill A[87] and, from ditch fill A[90], biscuit tinned-glazed ware vase base A<146> and black-glazed miniature jug A<139> – all from ditch S4 (scale 1:4).

Other artefacts from the fills of Structures 1, 3 and 4

The hollowed blade of a wooden shovel or large scoop A<128> was discovered in one of the fills (A[133]) of the north–south arm of ditch rebuild S4 (fig 27). It had been carved from a radially faced section of beech. The blade was damaged and the handle missing, which may have been the reason it was abandoned in the waterlogged ditch. The surviving portion

was 0.46m long x 285mm wide x *c* 20mm thick. The blade was originally wider – perhaps 320mm wide. The form of the blade resembles that of recent malting shovels, which were also often made of beech. Perhaps the tool was originally made for shovelling loose materials such as malt. It could possibly have been reused as a scoop for lifting silt out of the ditch.

A small number of other wooden spades and shovel-type implements have been excavated in London, but these were generally from much earlier periods and made of oak, though one example each of ash and beech have been recorded.

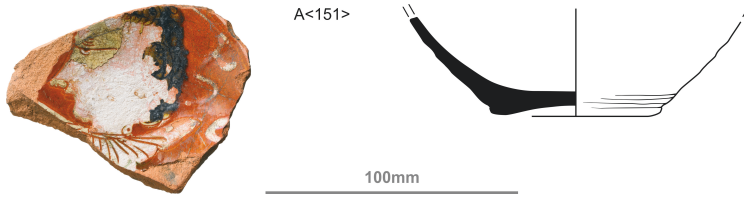


Fig 25 One Tower Bridge, Southwark. Werra slipware dish A<151> with portrait decoration, from fill (A[89]) of ditch S4 (scale 1:3).

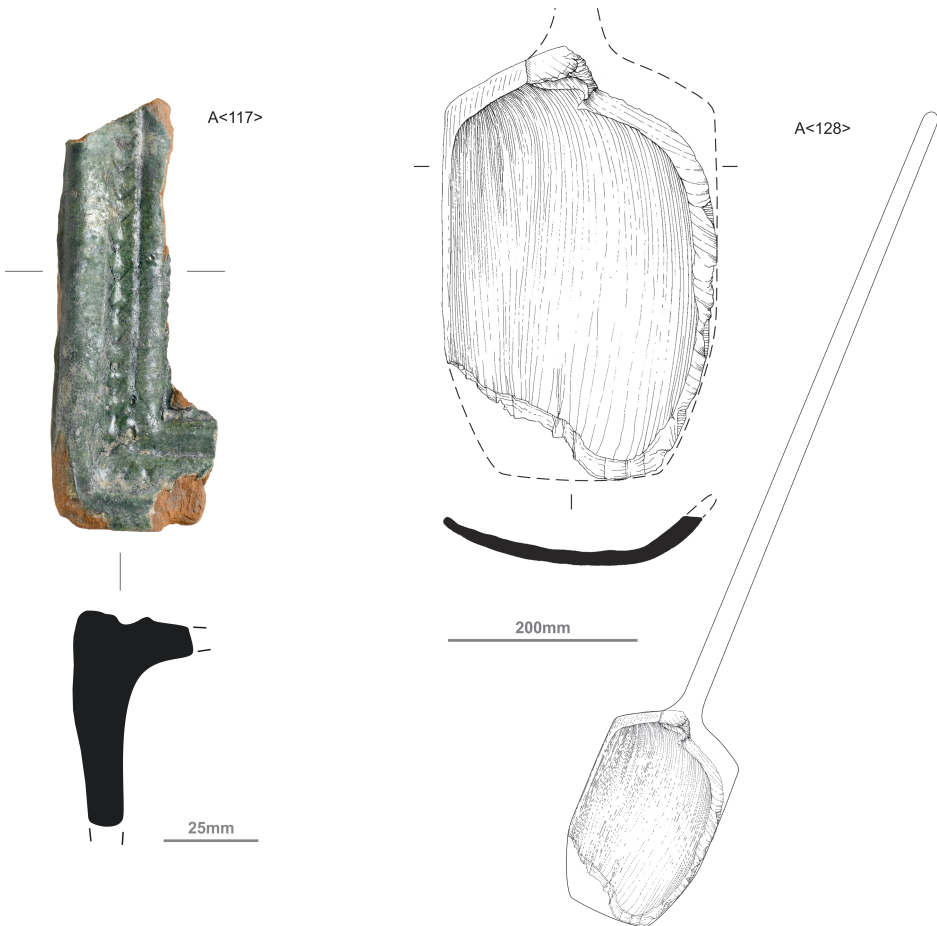


Fig 26 One Tower Bridge, Southwark. Red earthenware glazed stove tile A<117> from fill (A[87]) of ditch S4 (scale 1:2).

Fig 27 One Tower Bridge, Southwark. Blade of wooden (beech) shovel or large scoop A<128> from fill (A[133]) of ditch S4 (scale 1:8 for blade detail and cross-section).

Other finds include a group of *c* 150 17th century shoe parts from the typical open-sided latchet-fastening heeled shoes of the period (fig 28). The pottery dates from most contexts in which they occur (*c* 1630/40–60) and the style of the vamps with relatively large open sides suggests an early to mid-17th century date for these shoes. A smaller quantity of *c* 50 late 16th century shoe parts from slip-on or latchet-fastening shoes decorated with bands of slashes and angled awl cuts were present as residual finds within the fills of the north-west to south-east ditch (S3; fig 29). Among the leather finds there was also a boat-shaped item, A<66>, made from thick, stiff leather with two lines of large stitch-holes below its cut edge (fig 30). Two slightly worn and enlarged holes at the narrower end suggest it may have been suspended when not in use.

There are numerous dress accessories, dominated by small copper-alloy pins, reflecting the huge quantities that were required for female costume in the early post-medieval period (Picard 2003, 149–50). They are described as ubiquitous finds on neighbouring sites (Egan 2005, 51). Other dress accessories include lace chapes (also often found in quantity: *ibid*, 52), and fragments from at least two copper-alloy chains. The side arm of an iron patten (A<44>, not illustrated) is a particularly interesting find given the leather shoe assemblage that was also recovered from the site. Pattens were a form of protective overshoe supported on an iron ring (Thompson *et al* 1984, 106). This example is of the crinkled edge style, known to have been fashionable in the 17th and early 18th centuries (Margeson 1993, 60 and 63 no 392). Personal grooming is represented by a single ivory comb.

A range of domestic finds include utensils (knives and spoons), a lead pan weight (A<35>; fig 31) and a wooden lid or stopper. A pewter spoon with a fig-shaped bowl and a slip-topped hexagonal stem, A<109>, from a fill deposit (A[100]) in ditch S4, is illustrated here together with a similar but unstratified find from the same site (fig 32). There is an iron key of a versatile form that could be used from both sides of a lock and so is perhaps more likely to have been used in a door than as part of some item of furniture. The only definitive structural evidence recovered was a fragment of lead-alloy window came that may have been collected for recycling.

Children and childhood pastimes are represented by a fragment of a marble and two lead-alloy toys. Marbles are common finds, but the lead-alloy toys less so as lead is highly recyclable, in the first instance, but also does not survive well except in damp deposits. Neither of the toys is closely paralleled by published examples and so they form an important addition to the known corpus from London. One of the fills (A[89]) of the north–south arm of ditch S4 (the rebuild of ditch S1) produced the distorted fragment of a child's toy chest, A<48> (fig 33), cast in lead alloy. It comprises an openwork lid and a solid end panel. The lid is made up of alternating transverse bands of interlocking plain circular tracery and solid bands with beading. The end panel is decorated with plain and crossed squares. Chests are one of a number of lead-alloy toy miniatures known to have been manufactured in this period. It conforms to Forsyth and Egan's Type 1 (2005, 230) and probably dates to the 16th–17th centuries. The other lead-alloy plaything is now a smashed fragment, A<34> (fig 33), the original form of which remains a mystery. It is a solid oval panel with raised lattice decoration on one face. Each lozenge of the lattice contains a ring and dot. The opposing face is undecorated. Projecting from one end of the oval is a decorated strip with a scalloped openwork fringe. This is now bent backwards such that it lies alongside the main oval shape.

A musical item that is of great interest is the ceramic bird whistle A<59> (fig 34) found in one of the fills of ditch S1. The sounds made by this whistle may have been enjoyed by both adults and children. Although the head of the bird is slightly broken the form, perhaps an owl, is clearly recognisable and emphasised by the polychrome glaze, darker on the wings than on the breast. The whistle spout projects from the back and the object has a pedestal base. Made in Germany, this object dates to *c* 1575–1625 (Hurst *et al*, 1986, 235–7, fig 112 nos 354 and 355).

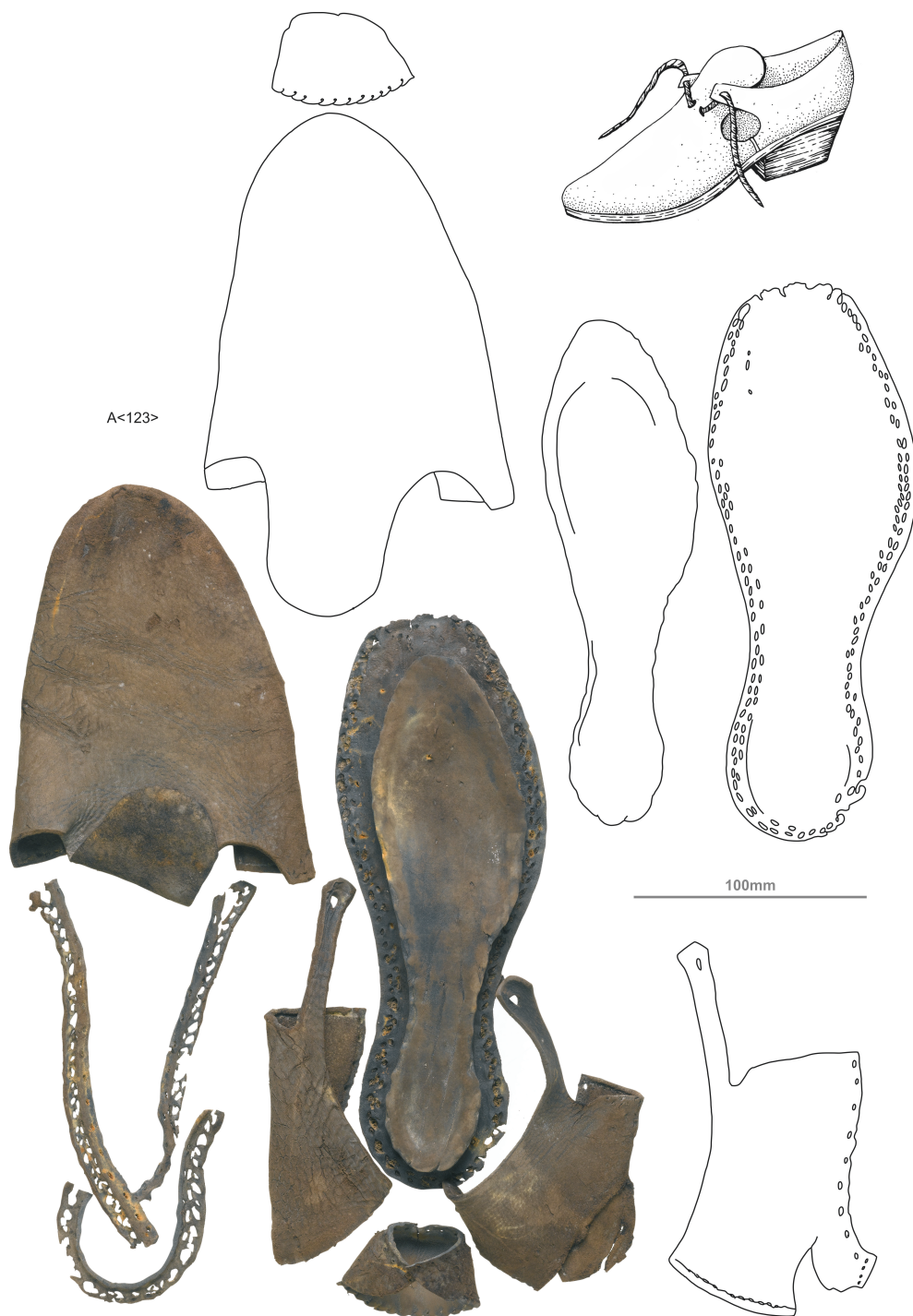


Fig 28 One Tower Bridge, Southwark. 17th century latchet-fastening shoe with high tongue and open sides, A<123>, from fill A[97] of ditch S4 (scale 1:3 excluding reconstruction drawing).



Fig 29 One Tower Bridge, Southwark. Late 16th century leather shoe parts A<63> (incomplete high vamp from adult shoe or mule) and A<65> (incomplete high vamp from adult shoe), residual within fill (A[86]) of ditch S3 (scale 1:3).



Fig 30 One Tower Bridge, Southwark. Boat-shaped item A<66> of uncertain function, made of stiff leather with two lines of stitch-holes below its cut edge, from fill A[89] of ditch S4 (scale 1:3).



Fig 31 One Tower Bridge, Southwark. Lead weight A<35>, a pan weight with raised border on upper side; area within border features a series of incised lines made up with fine rocker arm ornament – from fill (A[100]) of ditch S4 (scale 1:1).

Manufacturing is suggested by the recovery of lengths of copper-alloy wire and other fragments of waste from wrought metalworking. One copper-alloy item (A<24>, not illustrated) – uncertainly identified as a very crude drop handle fragment – has a prominent casting flash. It is unclear whether this item would have been considered finished or had been discarded while still in the process of construction or modification. Accordingly, it is not clear whether it indicates casting activity taking place nearby. The distinctive blade shape of an iron knife, A<2> (not illustrated), means that it was used for leatherworking, possibly shoemaking. Sewing is represented by a copper-alloy thimble, A<85> (not illustrated).

Plant remains from ditches S1 and S4, by Karen Stewart

Two bulk samples from the period 4 ditch structures – one each from S1 and S4 – contained a rich and diverse waterlogged plant assemblage, with both wild and cultivated plants represented. The plant remains from the two ditches are broadly similar. As an example, in sample {11} (fill A[97]) from S4, the most common remains of cultivated plants were those of hops (*Humulus lupulus*) and fig (*Ficus carica*). Cherries (*Prunus avium* type), plums (*Prunus domestica*), sloes (*Prunus spinosa*), blackberry/raspberry (*Rubus fruticosus/idaeus*) and grape

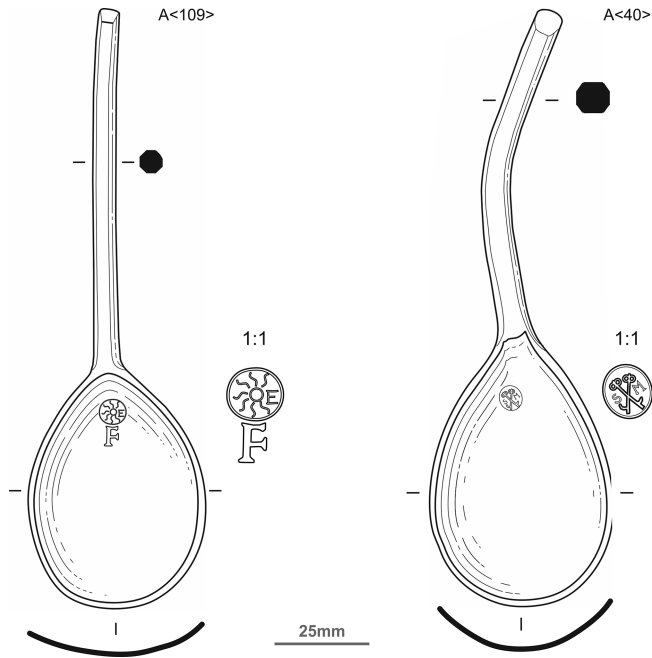


Fig 32 One Tower Bridge, Southwark. Pewter spoons with makers marks: A<109> from fill (A[100]) of ditch S4 and unstratified find A<40> (scale 1:2; with 1:1 details of makers' marks).

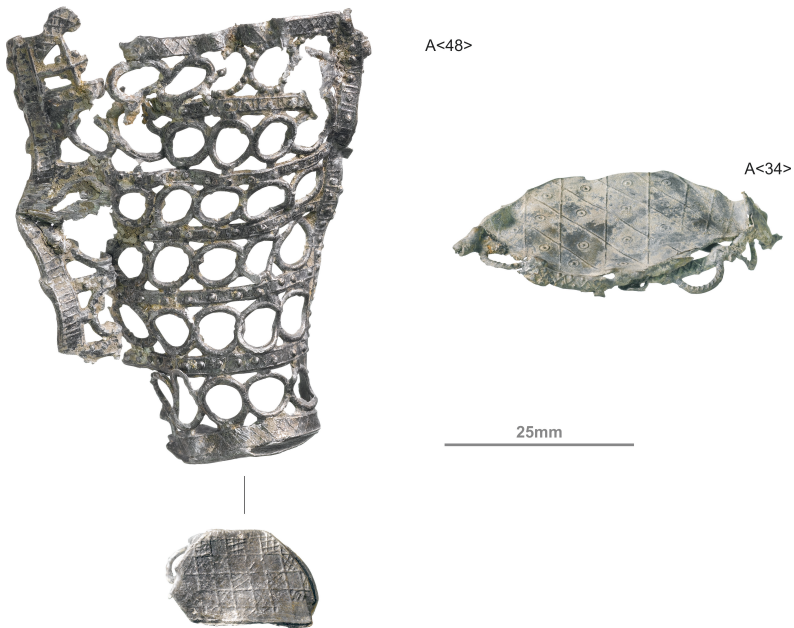


Fig 33 One Tower Bridge, Southwark. Cast lead alloy from ditch S4: distorted fragment of a lid from a miniature (toy) chest, A<48>, from fill A[89], and fragment of a lead-alloy miniature, almost certainly a toy, A<34> (for which no parallel has been found), from fill A[97] (scale 1:1).

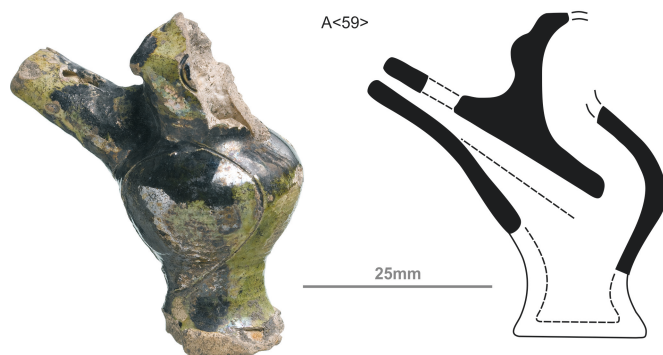


Fig 34 One Tower Bridge, Southwark. Ceramic bird whistle A<59> from fill (A[90]) of ditch S1 (scale 1:1).

(*Vitis vinifera*) were all recorded in low numbers. A single charred wheat grain was also recorded. The wild plant assemblage was dominated by dyer's rocket (*Reseda luteola*), water-pepper (*Persicaria hydropiper*), small nettles (*Urtica urens*), stinging nettle (*Urtica dioica*) and black nightshade (*Solanum nigrum*). Common chickweed (*Stellaria media*) and elder (*Sambucus nigra*) were both also common. The food plant remains may have been dumped directly into the ditches, but it may also be that they were washed in from nearby deposits. The grapes and figs recorded in the fills are likely to represent the consumption of imported dried fruits, while plums, cherries and sloes may represent more locally grown fruits. The abundant hop seeds recorded might indicate that they were being cultivated locally, for use in brewing, though hops are also a native climbing plant, growing in scrub and hedgerows (Stace 1991, 142).

TENTATIVE EVIDENCE FOR SIMPLE PILED-TRESTLE FOOT BRIDGES CROSSING THE NORTH-SOUTH DITCH (S1/S4)

At several locations, piles appear to have been driven into the centre of the north-south ditch S1 and its rebuild S4, and others were driven in clusters at the sides. Some of these clusters include conifer timbers that stood out on the site and may have been the lower parts of simple piled-trestles for foot bridges. An even clearer case was a distinct pair of log-form piles of yellow conifer timber *c* 200mm in diameter (timbers A[164] and A[168]), found about one-third of the way north on the eastern side of the north-south arm of the ditch. Samples taken of both identified them as *Larix/Picea* (larch/spruce). These were set *c* 0.7m apart centre to centre, an appropriate distance for a simple foot bridge.

LAND TO THE EAST OF DITCH S1/S4 AND TO THE NORTH OF DITCH S3

The area to the east of ditch S1/S4 and to the north of ditch S3 would probably have comprised the yards behind buildings fronting onto Freemans Lane (to the east). Here, within the POE04 excavation trench, the remains of a tree, A[170], were recorded along the eastern edge of the north-south ditch (S1/S4). The lower parts of a stump and attached roots were found *in situ*. A sample was taken and identified as *Salix/Populus* (willow/poplar). Such trees were common along English waterways, as they helped to stabilise the banks and provided fuel, materials for basketry and wattle work, and some shade.

In the north of the POE04 excavation trench, a shallow unlined ditch, perhaps a drainage feature, was found running north-east to south-west. Its fill (A[108]) contained seven sherds (five ENV, 118g) of pottery dating to *c* 1630–80, although the associated clay pipes point to a date after 1660. The pottery comprises single sherds of PMR, FREC, TGW D and four of biscuit-fired tin-glazed ware (TGW BISC). A sample of cordage A<75> was taken from the

fill of this ditch and has been identified as coir, having the rough fibres of the coconut palm *Cocos nucifera* (fig 35).

A barrel-lined well A[104] was found near (to the north-east of) the junction of ditch S1/S4 and ditch S3, and probably post-dates the backfilling of the open timber-lined channel. A small amount (twelve sherds, six ENV, 80g) of pottery was recovered from the fill (A[102]) of this well, suggesting a date of *c* 1630–1700, but generally it seems most likely that the well post-dates the infilling of the large drainage channels.

A remnant of the brick lining of a well or soakaway, A[121], was also found in the area to the east of ditch S1/S4, to the north of the barrel-lined well. There are no finds associated with this feature and it almost certainly dates to after the large ditches were infilled.

LAND TO THE SOUTH OF DITCH S1/S4 AND TO THE WEST OF DITCH S3

Three irregular pits A[77], A[80] and A[82], were recorded to the south of the open timber-lined channel (S1/S4) in the south-western part of the POE04 excavation trench. These may represent post-medieval refuse pits or cesspits, although pottery is limited to four sherds from fill (A[76]) of the southernmost pit, A[77], comprising part of a PMSRY dish, a BORDG drinking jug, a Raeren stoneware (RAER) drinking jug and a small sherd of tin-glazed ware with decoration in blue and ochre, probably from a mug or vase, recorded as English (TGW A), but possibly an import from the Netherlands. Although small, the group appears to be slightly earlier in character than the dumps in the large channels, possibly dating to the second half of the 16th century.

A linear cut, perhaps a small drainage ditch, A[92], was recorded running parallel and immediately south of large ditch S3. A small group of seventeen sherds (seventeen ENV,



Fig 35 One Tower Bridge, Southwark. Cordage A<75>, identified as coir (coconut palm fibres) from fill (A[108]) of small ditch A[109] (scale 1:2).

454g) was recovered from its backfill (A[91]). Of these, Surrey/Hampshire Border wares (BORDG/Y) are the most common, with eight sherds (eight ENV), followed by London-area redwares (PMRE, PMR, PMSRG/Y; six sherds, six ENV); the other finds are imports: RAER, WERR and part of a starred costrel (STAR). Together these suggest a date of *c* 1600–20 for the disuse of the feature. The only other finds from this cut were an adult horse phalange (part of a hoof joint) and four horn cores of adult goat *Capra hircus*. Each of the horn cores had been chopped through at the base, probably as preparation for removal of the horn sheath for further working.

TIMBER-LINED TANK B[34] IN TRB3

The base of what may have been a timber-lined tank, B[34], was recorded truncating post-medieval levelling deposits in evaluation trench TrB3 in the northern half of the development site (fig 36). The construction cut of the tank as found measured 1.3m deep x 5.08m wide x at least 10.4m long, continuing both north and south beyond the trench edges. The presence of three boards lying flat in the bottom of the cut, perpendicular to the long axis of the feature and thought to represent a basal lining, suggests that this was a tank rather than a ditch or drain. It may have been a tanning tank or perhaps a pit for slaking lime. It was backfilled with coal ash and silt, with a deposit of lime at the top.

TIMBER-LINED DITCHES AND AN ARRAY OF TAR/PITCH-FILLED BARRELS IN TRENCH TRB6/5

Three north-west to south-east ditches (channels or drains), B[57], B[60] and B[69], were recorded in TrB6/5, to the north of the centre of the site (fig 36). Two of these were recorded in plan while the third, B[69], was only encountered in section. The northernmost of these ditches, B[57], was seen to continue to the east in TrB7 (see below). This ditch exceeded 2.2m in width (its north side was outside the limit of excavation); it had been truncated horizontally but was at least 1.5m deep. Vertical timbers retained the sides of the channel and a tar-filled barrel was found to have been set upright in the black coal-ash-rich channel backfill (B[56]).

The southernmost of the three ditches, B[69], was exposed only in south-east-facing section (ie in the north-western side of the evaluation trench) where it measured 2.5m in width and *c* 1.2m deep. A line of three vertical whole-round timber posts (B[66]) were found in the middle of the trench, arrayed north-west to south-east and aligned with the sloping concave cut of ditch B[69] as seen in section. These posts are thought to have once retained a timber lining. The infill of the ditch consisted of a coal ash and organic nightsoil deposit (B[62]) and clay (B[61]).

Just to the north of this ditch, and stratigraphically post-dating it, was another north-west to south-east ditch, B[60], crossing the evaluation trench. The construction cut of this ditch was 3.5m wide x 2.1m deep with straight vertical sides and a flat bottom. It was exposed for 6.5m and continued beyond the trench in both directions. The fills of greyish-black (B[59]) and black coal ash and sandy silt (B[58]) contained the remains of four upright barrels filled with tar or pitch.

Fills B[56] and B[58] of ditches B[57] and B[60] both produced three sherds of pottery dating to *c* 1580–1700 and B[56] also contained a residual sherd of medieval Kingston-type ware (KING). The precise dating of these ditches is uncertain, as is the dating of the barrels, but it seems likely that the infilling of the latest two ditches (B[57] and B[60]) was near the end of this period and possibly even later (ie in the 18th century). It is not clear whether the barrels are related to the ditches by more than coincidence, and it is possible that they more properly belong to the next period (18th/19th century), as another such barrel, B[52], filled with tar residue and sandy silt and set vertically within the fill of a rectangular pit that may once have been lined with timber, was found to the south of channel B[60], post-dating the backfill of ditch B[69].

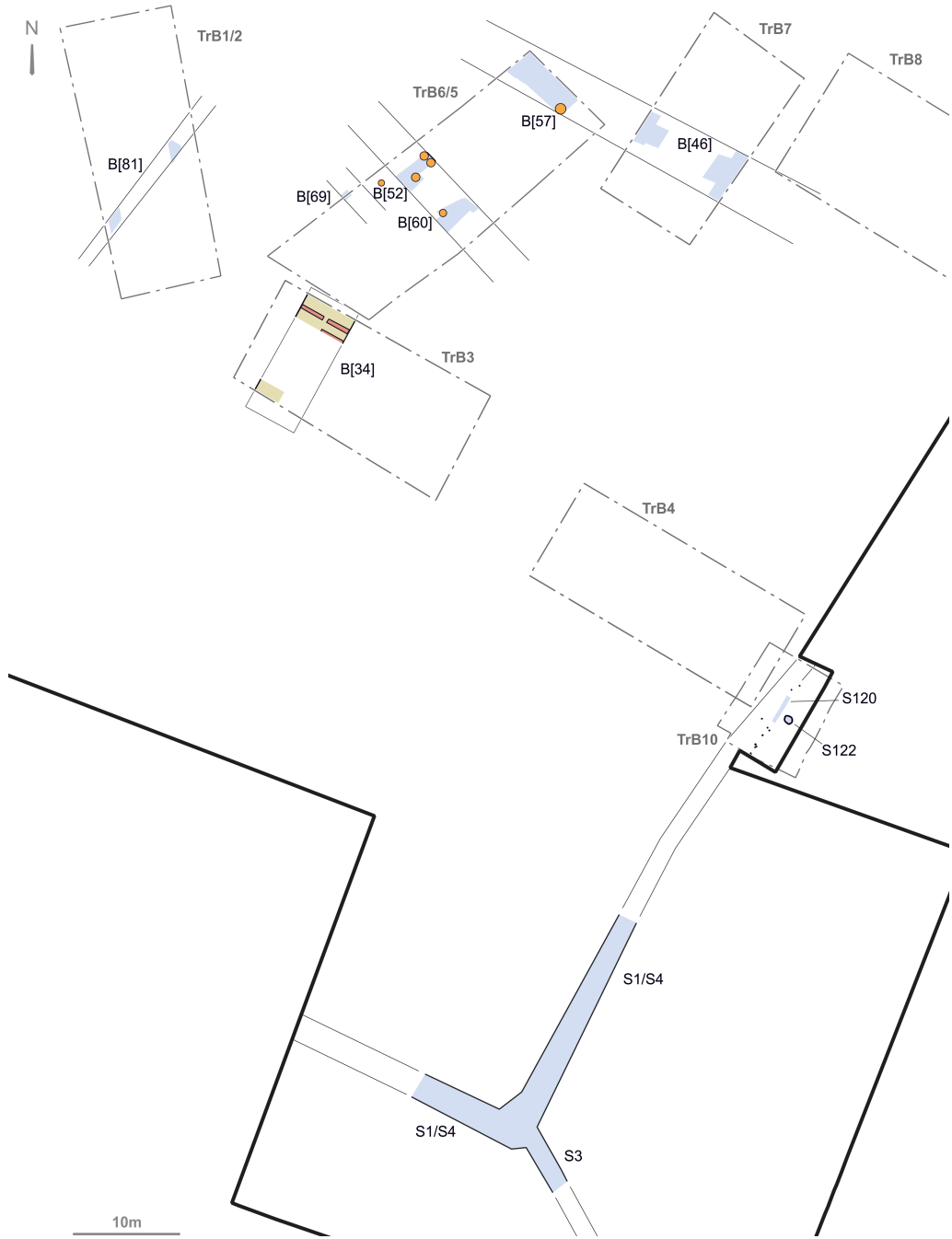


Fig 36 One Tower Bridge, Southwark. 16th–18th century (post-medieval) features revealed in evaluation trenches in the northern part of the site.

TIMBER-LINED DITCH B[46] IN TRB7

An east–west timber-lined ditch, B[46], that measured 4.7m wide x 1.7m deep (truncated at the top by modern activity) was recorded in evaluation trench TrB7 to the east of TrB6/5 (fig 36). It is probably the continuation of the northernmost ditch, B[57], recorded in TrB6/5 (see above). It was infilled with coal-ashy nightsoil dumps.

A BARREL-LINED RUBBISH PIT (S122) AND THE SUGGESTION OF A TIMBER-LINED DITCH (S120) IN TRB10

Several contexts recorded at the eastern edge of the site in evaluation trench TrB10 may represent the northward continuation of the large ditch S1 (or its rebuild, S4) excavated to the south (in the POE04 excavation trench; fig 13). The truncated remains of a series of timber posts and stakes, S120, including a fragment of a timber plank, were encountered at varying heights between 1.73m OD and 2.21m OD. These may be remains of the timber lining of a ditch. A *c* 0.80m-thick sandy silt deposit (B[504]) recorded in the south central part of TrB10 at 1.72m OD may be a remnant of the backfill of that ditch. The deposit contained pottery and ceramic clay pipes of late 17th century date.

A timber barrel, S122, was found set vertically into the weathered clay to the east of the possible channel (ie the conjectured continuation of S1/S4). The pottery assemblage from the backfill (B[502]) within the barrel (S122) differs from that of other contexts on the site as, although limited to just fifteen vessels (37 sherds, 4.947kg), it includes material that must have been complete or near complete when discarded. The most notable finds are a large Metropolitan slipware (METS) dish, B<16> (fig 37), and a tin-glazed plate with rather crudely painted Chinaman in grasses decoration (TGW F; B<18>; fig 37), both of which were either broken *in situ* or very close by as they are missing only a few small pieces. The other tin-glazed plate, B<17> (fig 37), is more fragmented but over 75% is present. This has a more elegant carinated form but a simple geometric design and was probably made at Rotherhithe. The glaze on both plates has blackened to some extent, probably due to the damp burial conditions. Other forms used at the table or for serving are represented by sherds from a third tin-glazed plate (TGW D), the base of a Westerwald jug with rosette decoration (B<19>; fig 37), a dish in BORDG, two bowls in PMFR and a large handled dish and two jugs in PMR. Forms associated with cooking, by contrast, are limited to part of a skillet (BORDY) and a cauldron/pipkin in PMR. Storage is indicated by part of a tin-glazed ware (TGW D) jar and sherds from a large deep handled jar in RBOR, the abraded outer surfaces of which show that it had been well used before being discarded.

As a whole, the pottery dates to *c* 1670–80 and supports the conclusion that this barrel-lined pit was last used for rubbish disposal. The position of the pit on the site indicates that it was probably in one of the yards or gardens behind the buildings fronting on Freemans Lane.

Also found within this barrel-lined pit was a bowling ball, B<14> (fig 38). It was made from *lignum vitae*, a dense heavy wood from the West Indies, first imported into Britain at the end of the 16th century. It is a standard size and shape for a bowling ball of this period (a slightly flattened sphere with a diameter of 75mm or *c* 3 inches) and has characteristic decorative turned grooves on the top and bottom faces and sides. A circular piece of corroded iron on the base would have added weight and determined the ‘bias’ of the ball.

Spherical or slightly flattened ‘oblate’ bowling balls were described by Randall Holme in his work *The Academy of Armory* (Holme 1688) as ‘Round Byassed bowles for open grounds of advantage’ and ‘Bowles as round as a ball for green swarths that are plain and “Levell”’. A much more flattened shape of ball was used in bowling alleys. Because wood does not always survive well in archaeological contexts bowling balls are not particularly common finds. This example is particularly closely dated, to the reign of ‘The Merry Monarch’, Charles II (r 1660–85), and also to the period in which Randall Holme produced *The Academy of Armory*.



Fig 37 One Tower Bridge, Southwark. Metropolitan slipware dish B<16>, tin-glazed plates B<17> and B<18>, and Westerwald jug base B<19> from fill (B[502]) of barrel-lined pit S122 (dated 1670–80) (scale 1:4).



Fig 38 One Tower Bridge, Southwark. Wooden bowling ball (of *lignum vitae*) B<14>, with iron-corroded iron inset (a weight to give 'bias' to the ball), from fill (B[502]) of barrel-lined pit S122 (dated 1670–80; scale 1:2).

Bowling was one of the leisure attractions for which Southwark was renowned from the 16th century onwards (Egan 2000, 28). Similar waterlogged conditions on a nearby site at Battle Bridge Lane permitted the preservation of three wooden gaming bowls (Egan 2000, 35), one of which was of similar diameter and also with paired concentric grooves. A further three bowling balls were found a little further away at London Bridge House (site code LBN08; Michael Marshall, pers comm).

DISCUSSION: THE POTTERY FROM PERIOD 4 COMPARED TO SIMILAR CONTEMPORARY ASSEMBLAGES FROM NEARBY SITES

The post-medieval pottery assemblage from period 4 features and deposits on the site totals 1747 sherds (1070 ENV, 81.614kg) and forms an important addition to a series of other assemblages from dumping associated with reclamation and drainage activities along the south bank of the Thames. The finds from Guy's Hospital, near London Bridge, and from Fastolf Place and the waterfront near Abbots Lane, just to the north-west of One Tower Bridge, are rather earlier, the former mainly date to the late 15th and 16th centuries (Dawson 1979); the latter are from the infilled moat (dated to after 1550), and from an infilled inlet (dated to *c* 1575–1600; Blatherwick & Bluer 2009, 140–50). Although the London-area redwares from these two sites include a number of the same ware and form types as seen in the 16th century material from the One Tower Bridge site, the range of imports differs in having a higher proportion, and wider range, of French wares, and a variety of other wares, notably from Italy and Spain, which are comparatively rare at One Tower Bridge (Dawson 1979; Whittingham 2009, 180–95).

However, a short distance to the south-west, the finds from the infilled channel at Magdalen Street (Chew & Pearce 1999) are contemporary with those from One Tower Bridge, with 1947 sherds dated to the 17th century, mainly 1630–80, and only 37 sherds of 16th century pottery. On both sites, London-area redwares are the most common, amounting to 29.4% of the period 4 assemblage at One Tower Bridge and 30.4% at Magdalen Street (by ENV), while Surrey/Hampshire Border wares amount to 20% and 25.7% respectively. Essex fine redwares are in third place at One Tower Bridge (17.9%) but fourth at Magdalen Street (14.6%), while the reverse applies to tin-glazed and biscuit wares (16.2% and 15.5% respectively). Imports are slightly more common at One Tower Bridge (161 ENV, 15%) than at Magdalen Street (ENV not stated; 13.2%). In both cases Rhenish wares are the most common (*c* 8.1%) but the Magdalen Street assemblage includes a number of high-quality Mediterranean wares that do not figure in the present assemblage (*ibid*, figs 4–6), possibly deriving from local merchant seaman or upper-class households (*ibid*, 26). Household wares, mainly used for cooking and serving, form the main component of both assemblages, but the amount of waste from tin-glazed pottery production is noticeably higher at One Tower Bridge (*c* 7% by ENV), possibly from the Still Stairs factory (*c* 1663–85; Britton 1987, 41).

Another comparable assemblage is from the period 5 deposits at Tanner Street (CEH12) to the south-east of the Horsleydown Eyot (on the east side of Tower Bridge Road), which yielded 1450 sherds (723 ENV, 73.22kg) of pottery recovered from deposits dated to the late

17th to mid-18th century, and mainly to after 1670 (J Pearce, pers comm). Here, however, the composition of the assemblage differs from most others in that Surrey/Hampshire Border wares are by far the most common, amounting to 32–33% by sherd count and weight (29% by ENV). Also atypically, these are followed by Essex redwares (19% by sherd count, 15% by ENV, 21% by weight) and then tin-glazed wares (18% by sherd count, 23% by ENV but only 10% by weight). London-area redwares are in third place by weight (17%) but in fourth place by sherd count (14%) and ENV (17%). Imports amount to *c* 11% of the assemblage by all measures of quantification, which is much the same as on the present site but have a slightly longer date range. The pattern is, however, much the same as at One Tower Bridge, with the emphasis on Frechen stoneware and German slipwares, few Dutch redwares but a range of wares from Portugal, Spain and Italy.

In addition to these sites, noteworthy assemblages have been recovered from 283 Tooley Street (TOS93) and others on the Horsleydown Eyot (Drummond-Murray *et al* 1994), and Horseshoe Wharf, Greenwich (HOF04), where a significant collection of imports (21% by sherd count, 14% by weight), including up to 30 Portuguese vessels, was found on a site connected to the East India Company (Blackmore 2005; Casimiro 2006, 117).

Despite varying slightly in date and with varying levels and details of quantification, all the published sites have produced large assemblages of pottery and other finds, usually with a high proportion of imports, and collectively suggest a chronological progression downstream from London Bridge to Tower Bridge in the east. One Tower Bridge lies towards the eastern end of this expansion and at the later end of the sequence of reclamation. As such the pottery and other finds form a significant addition to the wider corpus and add to our understanding of the development of this riverside area and its maritime connections.

18th/19th century urban development (period 5) and later redevelopment (period 6)

The remains of up to six terraced properties including cellars, foundations, yard and garden areas and associated out-buildings were recorded in the south-eastern part of the site (fig 39). The cellar floors were recorded at heights of between 2.54 and 2.97m OD and the cellar walls survived to heights of between 2.94 and 3.90m OD. The buildings were constructed of bricks of various sizes and fabric, some reused and some new, which suggests the buildings were altered to various degrees during their lifetimes. These structures and alterations appear to date to between the 18th and 19th centuries. The terraced buildings probably fronted onto the west side of Freemans Lane as depicted on John Rocque's map of 1746 (fig 40).

A series of shallow tanks with lime residue was recorded truncating earlier post-medieval levelling deposits in the northern half of the site. Where timber was preserved it appeared to have been machine cut. These tanks are thought to be late 18th or early 19th century pits for slaking lime or for use in tanning.

Late 19th and 20th century redevelopment (period 6) was represented by warehouse basements and foundations, associated yards and the demolition of terraced houses. By the late 19th century the terraced houses of Freemans Lane had been demolished and replaced by a brick yard surface (A[61], not illustrated), which was associated with the construction of warehouses on the site and was recorded with a surface height of 4.42m OD. This yard surface had been buried beneath a ground-raising layer that was in turn capped by tarmac.

The brick yard, A[61], had in places been truncated by 20th century drainage and by the construction of a balloon base in 1999. This comprised a large concrete anchor recorded at a height of 1.58m OD, surrounded by sixteen guy rope anchorage points, 1.5m deep.

The archaeological work on the site has been carried out as part of another phase of redevelopment, adding a new chapter to the story of a site that has been repeatedly remodelled both by the Thames and by the people attracted to this riverside location.

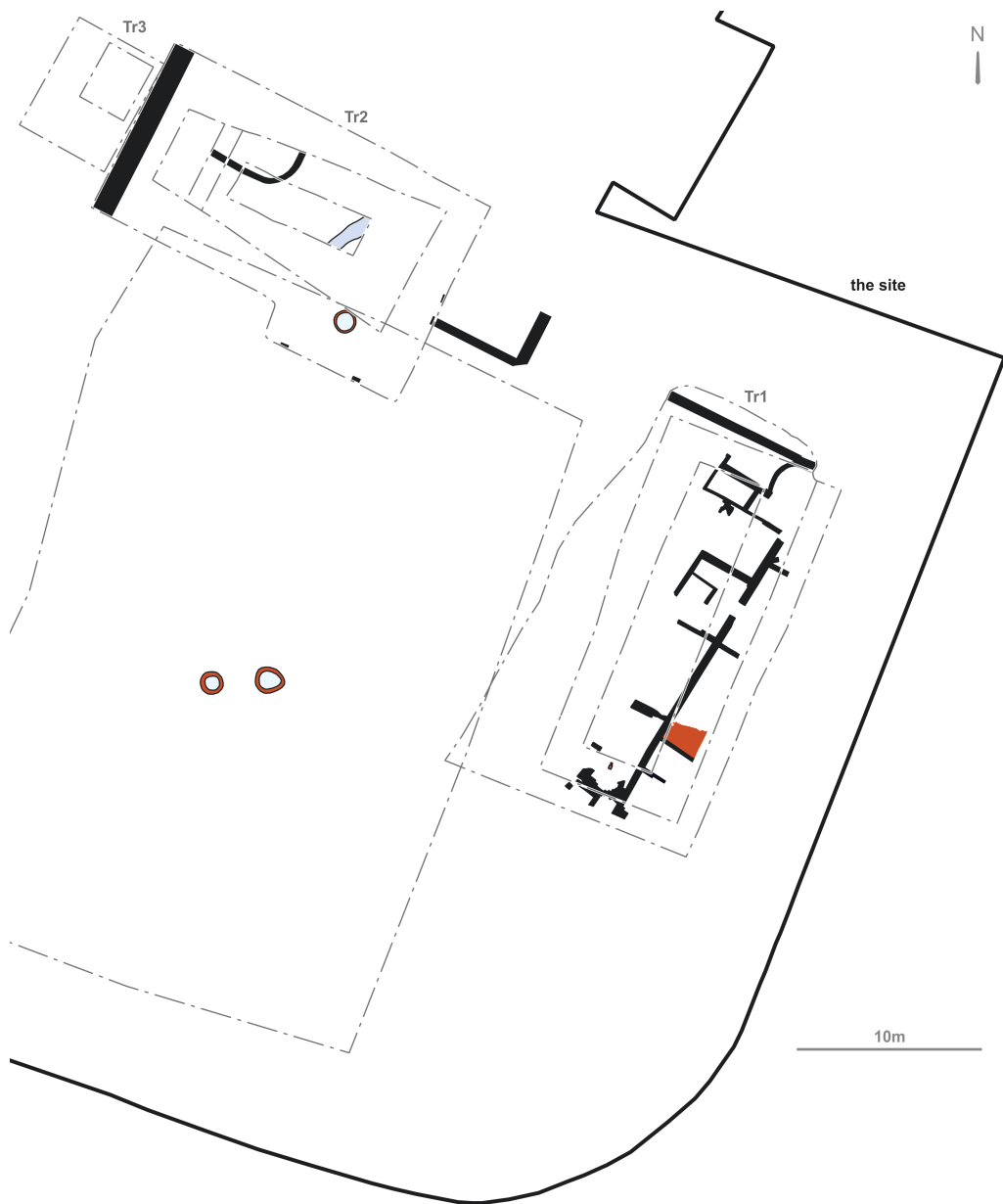


Fig 39 One Tower Bridge, Southwark. Later post-medieval features.

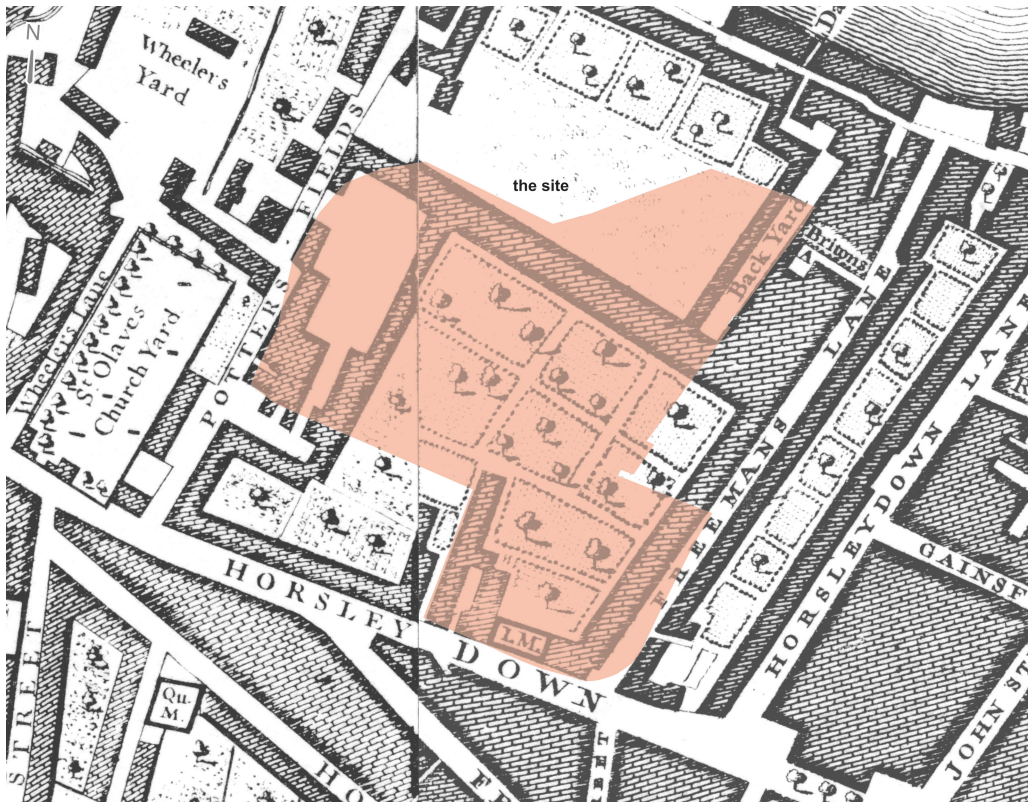


Fig 40 One Tower Bridge, Southwark. The site superimposed on a detail of John Rocque's map of 1746.

NOTES

- 1 The programme of archaeological fieldwork, analysis and publication was required to fulfil conditions attached to planning consent for redevelopment of the site. The technical reports or 'grey literature' produced during the project refer to the site as Potters Fields, but One Tower Bridge is used in this paper.
- 2 The name Horsleydown also frequently appears in historical and archaeological literature as 'Horselydown'. Except in quotations, the spelling used in this paper follows that used in the modern name of Horsleydown Lane (east of the site, on the far side of Tower Bridge Road).
- 3 *Surrey Archaeological Collections* volume 1, 1858 (available online: see bibliography, below), includes a paper titled 'On the history of Horselydown', read by G R Corner at a meeting of the Surrey Archaeological Society held at Horsleydown on 30 October 1855. This paper (Corner 1858) includes a reproduction of a probably late 16th century plan showing a vast open space labelled 'Horseye Downe' to the south and east (or south-east) of a 'Churche yarde' that must be the 'St Olave's Church yard' shown on the 1682 Morgan map to the west of the site (fig 12). Corner (1858, 173) describes the open space as now occupied by Queen Elizabeth Street, 'Free-school Street' (now part of Tooley Street) and Fair Street, and he identifies (*ibid*, 172) an unlabelled lane as Horsleydown Lane (ie the north-south street of that name today, which was also similarly labelled on maps as far back as Morgan's of 1682). This should not be confused with the (historical) use of 'Horselydown Lane' for part of Tooley Street east of Bermondsey Street (eg Carlin 1983, fig 9; Corner 1858, 159, 177, cf 173).

- 4 DUTR: Dutch red earthenware; FREC: Frechen stoneware; OLIV: Spanish olive jar; WERR: Werra slipware; WESE: Weser slipware.
- 5 RAER: Raeren stoneware; SIEG TRIC: Siegburg stoneware *Trichterhalsbecher/Trichterhalskrug*; DUTSL: Dutch slipped red earthenware; LIGU: Ligurian maiolica; MART1: Martincamp-type ware type 1 flask (buff earthenware); SAIU: unglazed Saintonge ware; SPGR: Spanish green-glazed ware.

Table 1 The illustrated pottery

Site code	Accession no	Context	Land-use designation	Period no	Description	Descriptive code: <i>Fabric</i>	Descriptive code: <i>Form</i>	Fig no
PFE10	16	502	Structure: S122	4	Metropolitan slipware dish	METS	DISH FLAR	37
PFE10	17	502	Structure: S122	4	Tin-glazed dish	TGW D	DISH CARN	37
PFE10	18	502	Structure: S122	4	Tin-glazed plate	TGW F	PLATE	37
PFE10	19	502	Structure: S122	4	Westerwald jug base	WEST COB	JUG	37
POE04	59	90	Structure: S1	4	Bird whistle	GERW	WSTL	34
POE04	138	85	Structure: S4	4	London-area post-medieval redware alembic	PMRO	ALEM	21
POE04	139	90	Structure: S4	4	Post-medieval black-glazed ware miniature jug	PMBL	MINI	24
POE04	140	86	Structure: S3	4	Redware pipkin	RBOR	TPIP	18
POE04	141	97	Structure: S4	4	Surrey/Hampshire Border redware jar/butter pot	RBOR	JAR ST	23
POE04	142	83	Structure: S4	4	Surrey/Hampshire Border ware ?lantern fragment	BORDO	LANT	24
POE04	143	100	Structure: S4	4	Surrey/Hampshire Border ware candlestick	BORDO	CNDST UPRT	20
POE04	144	94	Structure: S4	4	Surrey/Hampshire Border ware chamber pot	BORDG	CHP2	21
POE04	145	94	Structure: S4	4	Tin-glazed ware mug fragment	TGW D	MUG RND	21
POE04	146	90	Structure: S4	4	Biscuit ware vase base	TGW BISC	VASE	24
POE04	148	94	Structure: S4	4	Frechen ware with medallion decoration	FREC	JUG	22

Table 1 (contd)

Site code	Accession no	Context	Land-use designation	Period no	Description	Descriptive code: <i>Fabric</i>	Descriptive code: <i>Form</i>	Fig no
POE04	149	94	Structure: S4	4	Frechen ware with medallion decoration	FREC	JUG BART	22
POE04	150	94	Structure: S4	4	Frechen ware with medallion decoration	FREC	JUG BART	22
POE04	151	89	Structure: S4	4	Werra slipware dish, portrait decoration	WERR	DISH	25
POE04	152	86	Structure: S3	4	Werra slipware dish with portrait decoration, cut to roundel shape	WERR	DISH	18
POE04	153	103	Structure: S4	4	Weser slipware dish	WESE	DISH	19
POE04	155	100	Structure: S4	4	Portuguese tin-glazed ware/faience pot lid	POTG	LID	20
POE04	156	87	Structure: S4	4	Starred costrel	STAR	COST	24
POE04	158	94	Structure: S4	4	North African burnished redware costrel	MISC	COST	21

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