

EXCAVATIONS AT ST BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE, CHARTERHOUSE BUILDINGS, CLERKENWELL ROAD, LONDON

David Saxby

With contributions by Ian M Betts (building material), †Geoff Egan (registered finds), Tony Grey (clay tobacco pipes), Jacqui Pearce (medieval and later pottery), Alan Pipe (animal bones), Kate Roberts (botanical remains), and Terence Paul Smith (building material)

SUMMARY

Archaeological investigations in the northern part of the St Bartholomew's Hospital precinct in 2005–6 revealed evidence for the medieval Carthusian monastery – the London Charterhouse – and for its rebuilding and conversion, after the Dissolution, first into an aristocratic townhouse and then, after 1611, into Sutton's hospital and Charterhouse school.

The remains of the walls and latrines of two of the monastic cells were recorded together with artefacts and food remains from the religious house and garden features. In the later 16th and 17th centuries, the area was occupied by both high-status residences and small-scale industrial premises, attested by a wide range of domestic and pharmaceutical items and by material derived from pin-making and metalworking.

Ceramic items, including 20 candlesticks, 15 monyboxes, a warming pan and four fuming pots, probably derive from Sutton's hospital and school founded in 1611. In addition the site yielded a sizeable assemblage of pottery ceramics, with a particular emphasis on good quality table wares, and a large number of clay tobacco pipes, with several different makers' marks, both groups dating to the early and mid-17th century.

INTRODUCTION

In 2005–6, MOLA (Museum of London Archaeology) undertook an archaeological investigation on land to the north of St Bartholomew's Hospital Medical College (NGR 532000 182130). The site was located to the south of Clerkenwell Road and to the west of Goswell Road, in the London borough of Islington, EC1 (Fig 1). Six evaluation trenches (Trenches 2–7) were dug in 2005, followed in the same year by an archaeological watching brief and by the cutting of a single large excavation trench located along the southern boundary of the site (incorporating evaluation Trenches 4 and 5) (Fig 2). A second phase of evaluation was carried out in 2006, to the north of evaluation Trench 7, on a small plot of land to the rear of 23 Goswell Road, just to the north of Glasshouse Yard. This second phase involved the digging of three Test Pits (TP A, B and C; Fig 2). Between 2001 and 2006, MOLA carried out a separate investigation (GLY01 in Fig 1 and Fig 2) on land immediately to the south, at 29–30 Glasshouse Yard. The results of this investigation have been published separately (Daykin 2017).

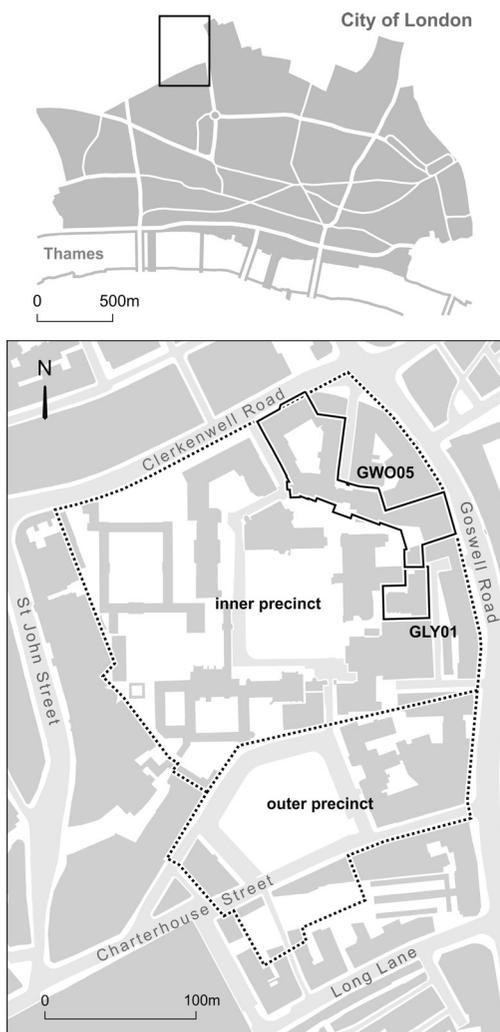


Fig 1. Site location, also showing adjacent site GLY01. Approximate limit of London Charterhouse precincts after Temple (2010, 20) (scale 1:5000; inset 1:50,000)

This article focusses on the evidence for the monastic buildings of the London Charterhouse and the post-Dissolution use of the site up to the end of the 17th century and the narrative is therefore organised in three parts: the London Charterhouse (c.1371–1537), the mid to late 16th century after the dissolution of the Charterhouse, and the 17th century. The narrative is followed by a section concentrating on the 17th-century pottery from the site and a note on the numerous clay tobacco pipe makers' marks that were recovered.

The site archive is deposited in the Museum of London Archaeological Archive under the site code GWO05 (Saxby 2007). It includes full specialist reports and data covering the pottery and clay tobacco pipes, the building materials, registered finds, plant remains, animal bones and mollusc shells.

The basic unit of cross-reference between this report and the site archive is the stratigraphic context number, always shown here in square brackets (eg [1]). Where applicable in the text and figures, particular artefacts that have been assigned identifying serial numbers (accession numbers) are referred to by those numbers (in angled brackets <1>). The illustrated pottery is referred to by a series of <P> numbers. Context and other details concerning the illustrated pottery are listed in Table 1. Expansions of pottery codes are cited at their first mention in the text. All details concerning the illustrated ceramic building material, glassware, metalwork, tiles and clay tobacco pipes are listed in the relevant figure caption. Details of building material fabrics and pottery codes are available from the Museum of London Archaeological Archive and are also posted on Museum of London and MOLA webpages: www.museumoflondon.org.uk and www.mola.org.uk.

DRIFT GEOLOGY

The site lies on the Pleistocene Hackney terrace gravel, which is overlain by brickearth. The gravel is at its highest near the centre of the site, where it was reached between 16.53m and 16.66m OD. It falls away both to north and to south. At the northern edge of the site (north of Trench 6, Fig 2), the gravel was recorded at 15.78m OD during the 2005 watching brief. During the same watching brief, it was recorded at 15.92m OD in the south (to the north-east of TP A, Fig 2). Where truncated brickearth was recorded in section, its thickness ranged between about 0.4m and 0.6m. Like the underlying gravel, the (truncated) brickearth surface was seen to be highest near the centre of the site, at 17.23m OD (to the north-east of Trench 3, Fig 2) and it also fell both to north and to south: to 16.38m OD at the northern edge of the site (north of Trench 6) and to 16.80m OD in the south (in TP C, Fig 2).

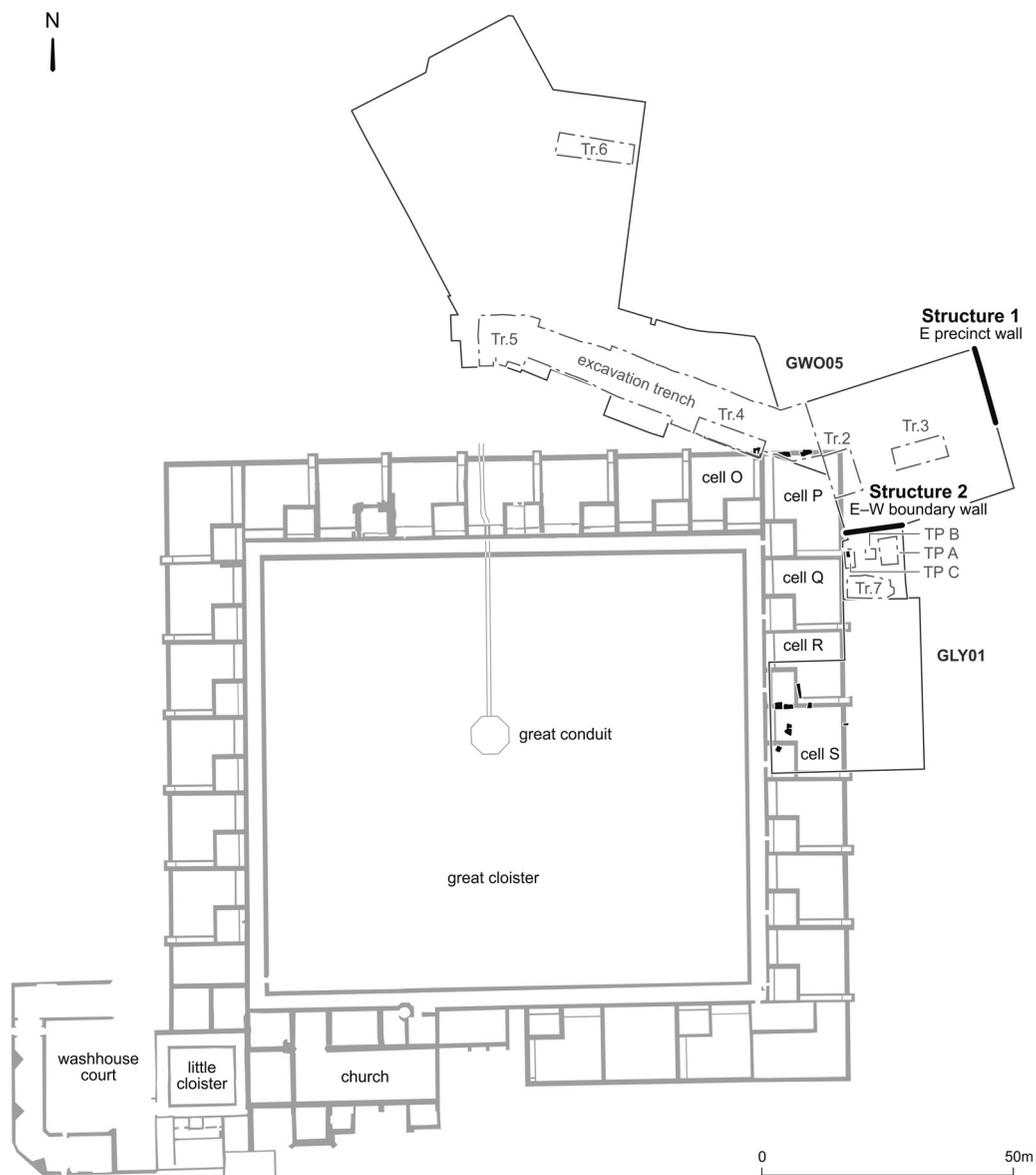


Fig 2. Conjectured plan of the London Charterhouse, c.1532 (after Barber & Thomas 2002, 38–9, fig 39), with the GWO05 trenches, test pits and excavation area, the outline of GLY01, the walls and latrines of cells O and P and the walls of cells R and S (scale 1:1500)

THE LONDON CHARTERHOUSE c.1371–1537: NEW ARCHAEOLOGICAL EVIDENCE

Introduction

Lying to the north-west of the Roman and medieval city walls, the area of the site lies

immediately west of Goswell Road, which originated (as Aldersgate Street) as a route – dating to the 12th century if not earlier – from the City to Islington (Barber & Thomas 2002, 9; Knight & Phillpotts 2008, 172–3).

The background and development of the London Charterhouse and of Sutton's hospital and school have been discussed in

detail elsewhere, including volumes of the Survey of London (Temple 2008; 2010). Previous archaeological work to 2000 within the Charterhouse precinct is summarised in Barber and Thomas (2002). In brief, in response to the Black Death of 1348–9, Sir Walter de Manny, a prominent courtier and soldier, gave a parcel of land that he had bought from St Bartholomew's Smithfield, an enclosed area known as 'Spitalcroft' (after its previous owner) as a new burial ground (Barber & Thomas 2002, 12–13, fig 15; Temple 2010, 18). The area actually used as a burial ground roughly approximated to that of modern Charterhouse Square. However, de Manny's Spitalcroft land extended as far north as modern Clerkenwell Road and it was on this vacant ground that he founded in 1371 'the House of the Salutation of the Mother of God' as a monastery for 24 Carthusian monks and a prior (Temple 2010, 21). Construction of the first permanent buildings started sometime after Ascension Day 1371 (Knowles & Grimes 1954, 7). Sir Walter died the following year and was buried within his new foundation.

The first modern archaeological investigation of the Charterhouse was that undertaken on the area of bomb damage in 1948–9 by Professor Grimes, which found evidence of the church and chapels, part of the great cloister and the little cloister (Knowles & Grimes 1954).

In Carthusian monasteries, each monk was allocated an individual cell, consisting of a two-storey dwelling, a private garden and a latrine. These cells were arranged around a great cloister (Fig 2; Fig 3). Each cell was identified by a letter of the alphabet in a consecutive pattern, though some letters were absent or duplicated (Temple 2010, 22). Cell A was located at the south-western corner of the great cloister, cell B to the north (on the western side of the cloister), and so on in a clockwise direction around the cloister's west, north and east sides, with cell Z located at the south-eastern corner. The 2005–6 St Bartholomew's excavations revealed parts of cells O, P and Q at the north-eastern corner of the great cloister (Fig 2): Grimes had previously noted the walls to a number of cells on the east side. Part of the arched doorway to cell S is preserved *in situ* today. Cells R and S were also partially

excavated in 2005–6 (GLY01 in Fig 2; Daykin 2017). Excavations at St Bartholomew's Medical School in 1990, to the west of cell O, revealed elements of cells H to M (Barber & Thomas 2002, 20–4).

The great cloister of the London Charterhouse was built in stages as funding from revenues or benefactions became available and individual cells might be paid for by donations from wealthy individuals. The cells of the western range together with all of the north range, apart from the north-easternmost cell (cell P) and part of the southern range, had been built by the end of the 14th century (Barber & Thomas 2002, 18–19, incl. fig 18). Cell P was funded by Sir Robert Knolles and his wife and was constructed at some point after 1389 (Cockburn *et al* 1969, 159–69). Cells R and S were donated by Thomas Hatfield, Bishop of Durham, possibly before 1381, but were probably not built until the early 15th century (Knowles & Grimes 1954, 25) and it is likely that the great cloister was not complete until c.1420 (Temple 2010, 21; Barber & Thomas 2002, 30–1, fig 36). The conjectured layout of the London Charterhouse is shown in Fig 2 (*ibid*, 30–1, fig 36, 38–9, fig 39).

A typical Carthusian cell occupied a roughly square plot, most of which was given over to the garden (Fig 3). The two-storey dwelling occupied a corner of the plot with two covered passages running from it: one ran along the front of the cell, and gave access to the garden, and a second led to a latrine set against the cell's rear wall. The ground floor of the dwelling was divided into two rooms behind a narrow lobby, which separated the rooms from the cloister door and its adjacent serving hatch (through which food was passed to the monk) (Fig 3; Barber & Thomas 2002, 19, fig 19, 20).

Archaeological Evidence for Cell P and the Latrine of Cell O

Archaeological excavations during 2005–6 revealed structural elements of cells O and P. The 0.75m-wide north wall of cell P ([177], [180]; Fig 3) consisted of mortared foundations constructed of chalk and ragstone rubble, containing occasional pieces of peg tile. At the east end of the extant portion of wall [180] it widened to

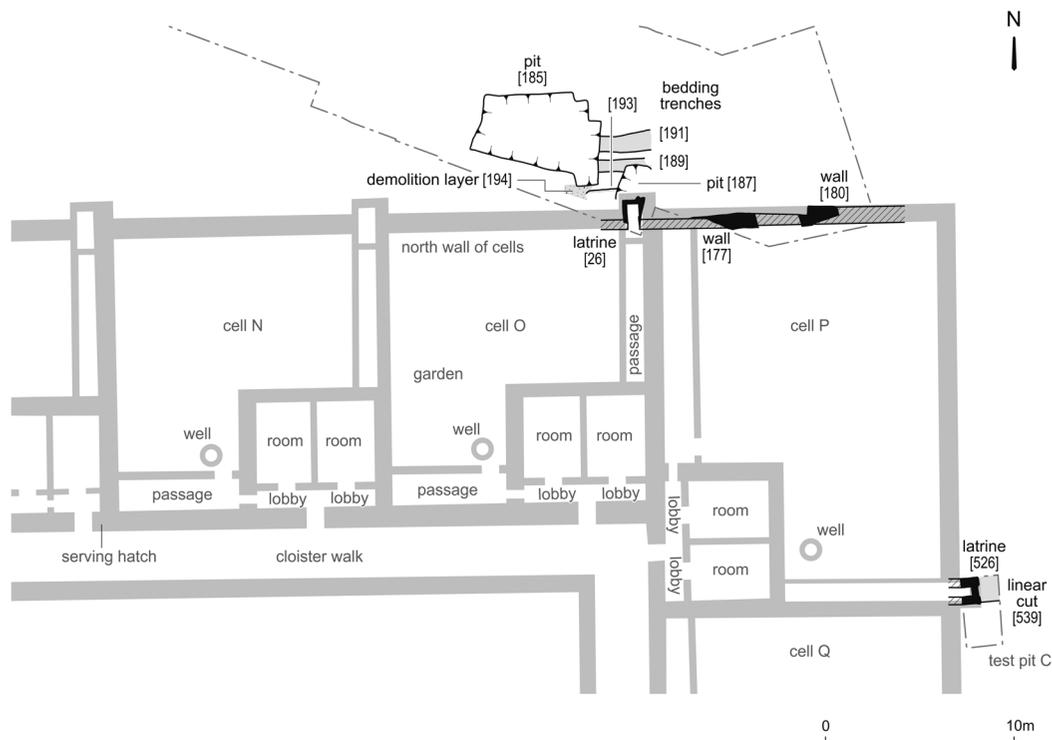


Fig 3. Walls and latrines of cells O and P, with features in the gardens to the north (scale 1:400)

a breadth of 1m, which may represent a buttress, but beyond this point the masonry had been robbed out. To the west of wall [177], at the north-eastern corner of cell O, the remains of a stone-built latrine [26] protruded beyond the external wall of the cell (Fig 3). It measured 1.1m north–south by 0.6m east–west (internally) and was 1.5m deep. The sandstone blocks of the 0.3m-wide latrine walls sat on a layer of stone rubble and mortar, possibly suggesting that it was a rebuild of an earlier structure.

A second latrine ([526]; Fig 3), that of cell P, was built of randomly coursed blocks of rubble and was at least 1.6m deep (Fig 4). Its eastern wall did not rise as high as the north and south walls: its extant upper surface, capped with horizontally laid peg tiles, is likely to be the base of an opening to permit the emptying of the latrine. Indeed, the very fact that the latrines extended beyond the outer walls of the cells (below ground level) makes it likely that they could be emptied from outside the walls of

the cloister complex. A linear cut ([539]) leading to the latrine opening from the east of cell P could have provided the necessary access to do this. The disuse fill ([538]) of this linear cut [539] included both coarse Surrey-Hampshire border wares (CBW; *c.*1270–1500) and London-area early post-medieval red ware (PMRE; *c.*1480–1600) which together suggest a date of *c.*1480–1500. This fill ([538]) also contained seeds of poppy, *Rosaceae* (Rose family) fruit stones and weed seeds, including fumitory, fool's parsley, dyer's rocket, dead nettle and black nightshade. Fumitory flowers and dyer's rocket can both be used to make a yellow dye for wool. The pottery from disuse fill [530] in a similar cut feature immediately to the east ([531]; not illustrated) included a London-type ware (LOND) jug (*c.*1080–1350), a Mill Green ware (MG) jug (*c.*1270–1350) and a South Hertfordshire grey ware (SHER) cooking pot (*c.*1170–1350). The earlier date suggests that [531] could represent an earlier version of [539].



Fig 4. Masonry latrine [526] of cell P, view looking west, 0.5m scale

Some indication of the monastic diet is suggested by environmental evidence from the fills ([530], [538]) of the features associated with the cell P latrine. Cereal grains such as bread wheat and oats and the seeds of other edible plants including goosefoot, fig, elder, poppy and *Rosaceae* fruit stones were present. Hazelnut shell was also found. Fish bones included those of plaice/flounder, cod, herring and haddock, along with oyster and mussel shell. Mammal bones included fragments of ox teeth, mandible, humerus and metacarpal, and two fragments of sheep/goat humerus. Dental evidence from the ox mandible indicated an animal in the fourth year of life. There were also three fragments of ox lower limb – a shin bone, heel and forefoot – that were each fully fused and which may have derived from one adult animal.

It is also noticeable that a cut [187] (Fig 3) was present immediately north of the cell O latrine. Although initially interpreted as a tree pit, it would have provided access to empty the latrine from beyond the cell's northern wall.

To the North of the Great Cloister

To the north of cell O, outside the external wall of the north range of the great cloister, a series of narrow, shallow (40–70mm depth), parallel linear horticultural bedding trenches ([189], [191] and [193]) were aligned east–west (Fig 3). These trenches were dug as a means of either increasing the depth of the topsoil or enriching it by mixing it with manure or organic rubbish. Sherds of coarse Surrey-Hampshire border ware (CBW) provide a general date of c.1270–1500 for the fills of these features. Fragments of splash-glazed medieval peg tile appeared to have been deliberately placed on the base of the trench [191], probably to help drainage. The fills of this particular feature contained coarse Surrey-Hampshire border ware and late medieval Hertfordshire glazed ware (LMHG) and dated more closely to c.1340–1450. The same fill yielded a copper-alloy pin <66>, perhaps once used to hold a woman's headdress, and a mass of small pieces of copper-alloy wire <64>. Fragments of ox teeth, mandible, humerus



Fig 5. The eastern precinct wall view looking east, 0.5m scale

and metacarpal and two fragments of sheep/goat humerus were also present. Produce from the garden to the north of the great cloister would presumably have played an important role in monastic life.

A total of 310 sherds (3279g; representing 211 ENV, *ie* Estimated Number of Vessels) of medieval pottery date to the time of the occupation of the London Charterhouse, but were recovered as residual sherds in the later garden features dated to after *c.*1480. These features included both coarse Surrey-Hampshire border ware, the main source of London's pottery from *c.*1350 to 1500 (Pearce & Vince 1988, 84), and 16th-century wares. There were also sherds of 15th-century late London-type ware (LLON) and Siegburg stoneware (SIEG) from the Rhineland, one of the commonest imported wares in late medieval London (Blackmore 1994, 35). Kitchen and serving vessels include jars or cooking pots, bowls and dishes, as well as jugs and cisterns. Drinking jugs in stoneware and Cheam white ware (CHEA) and a lobed cup in 'Tudor green' ware (TUDG) would have been used at table.

Small quantities of 16th-century pottery

were found in three contexts dated to *c.*1480–1600 and were also residual in later features. It is therefore difficult to date the pottery closely or to determine whether any pre-dates the Dissolution. London-area early post-medieval red wares became increasingly important as a source of everyday household pottery from *c.*1480 onwards. Sherds from cauldrons and tripod pipkins were found, together with bowls, including large, Dutch-inspired, two-handled forms with a white slip coating inside and clear glaze, a type that may have been used for settling milk amongst other functions. By the first half of the 16th century, fine early Surrey-Hampshire border wares had displaced the late medieval coarse wares produced in the Blackwater Valley, centred on Farnborough (Pearce 2007a, 182–4). Sherds from 14 drinking jugs and cups were identified in 16th- and 17th-century contexts on the site, most of them residual. These high quality table wares continued to supply the specialised market for late medieval 'Tudor green' ware, which the Surrey-Hampshire border potteries exploited by securing important contracts with large institutions in London, such as

the Inns of Court (Pearce 2007a, 184; 1997, 55–6).

At the eastern end of the site an eastern precinct wall ('Structure 1' in Fig 2; see also Fig 5) was located along the line of present day Goswell Road. The wall contained evidence for a number of builds, some dating to monastic phases of activity. The earliest part of this wall [211], measuring 1.2m north-south and 1m in height, was constructed from roughly hewn chalk blocks (avg. size: 150 x 250 x 200mm) and may represent a post base for an entrance gate. To the north of this, another section of the wall [207] constructed of roughly cut limestone and sandstone, and also red brick, possibly represents the second gate post foundation.

Evidence for the Superstructure of the Great Cloister North Range

Finds of building material to the north of cell O may be demolition debris from the great cloister structures. Cut [187] was sealed by layers of demolition rubble ([22], [25], [163], [159], [174]). These dumps post-date the Dissolution, but contain 52–7mm-thick bricks in off-white or yellow fabric 3031, which date to the 14th–15th centuries and were almost certainly imported from the Low Countries. They could have been used within the Charterhouse, although such bricks were also reused in post-Dissolution structures on the Charterhouse site (Barber & Thomas 2002, 79).

Possible evidence of glazing comes from a piece of medieval painted pale green window glass <283> (Fig 6) found in a possibly 17th-century bedding trench to the north of the great cloister (within the main archaeological

excavation trench). This fragment was a sub-rectangular quarry, 53 x 48mm, with one originally rounded and one straight grozed edge; a pair of parallel painted lines run close to the latter and there are a few sparse brush strokes from the main design. The painted glass fragment comes from a stained glass window, but cannot be assigned to a particular building within the Charterhouse.

Evidence for flooring included plain glazed tiles dating to 1350–90 and three examples of decorated Penn floor tiles (<222>, <28>) from Buckinghamshire. The Penn tiles are Eames (1980) design 2230 or 2231, 2262 and possibly 2535 (or one of three similar patterns: 2536–2538). Certain monastic cells of the Charterhouse were covered by plain Low Countries floor tiles laid in a chequerboard pattern of dark and light tiles (Barber & Thomas 2002, 22, fig 22). A number of similar tiles with plain green and yellow glaze, dating from c.1300–1600 were recovered as finds residual in later contexts. Any of these tiles could have been installed when the Charterhouse was first founded in 1371.

Many of the Charterhouse buildings would have been roofed with London-made peg tiles (of the common type with two round peg holes) and ridge tile. The presence of brown glaze suggests these are of medieval date. Various glazed medieval roofing tiles were found residually in the area excavated to the north of the great cloister in deposits ranging in date from c.1371 up to c.1700. Other evidence for roofing material was recovered in the form of shouldered peg roofing tile with green/brown glaze and tapered peg roofing tiles (c. late 12th–13th century) which predate the foundation of the London Charterhouse and may indicate that second-hand tile from a nearby establishment was re-used in some part of the monastery. A small piece of slate, found in the bedding trenches dating to late monastic or early post-Dissolution times (c.1480–1600), may have been used as roofing material although it is too small to be certain. Slate was used as a roofing material in London from the second half of the 12th century but it was never common in comparison to ceramic roofing tile: it was being exported from quarries in Devon and Cornwall by the late 12th century (Betts 1990, 221).

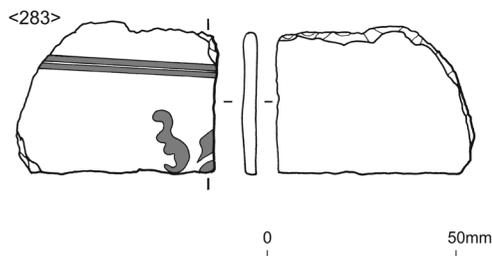


Fig 6. A fragment of painted medieval window glass <283> from [53] fill of 17th-century bedding trench [54] (Scale 1:2)

THE DISSOLUTION OF CHARTERHOUSE c.1537–1600

Historical Background

By the early 16th century, the London Charterhouse may have accommodated a prior, 30 monks and 18 lay brothers (Barber & Thomas 2002, 2; Knowles & Grimes 1954, 80). In 1538 as part of the Dissolution of the Monasteries the Charterhouse was suppressed (Barber & Thomas 2002, 3). Even before the Dissolution some of the London Charterhouse properties were in the hands of laymen. For example, in 1532 Sir John Neville, Lord Latimer, took over the lease of a mansion on the east end of the Churchyard which was formally held by the Abbot of Pershore (TNA; PRO, SC6/H. VIII/2396; after Temple 2008, 244). From 1542, many buildings functioned as storage for royal tents, nets, armour, masks and masquing costumes (Thompson 1930, 494), while others were leased out to the king's servants and other tenants (Knowles & Grimes 1954, 36–7).

In 1545 the Charterhouse was sold to Edward North, Chancellor of the Court of Augmentations, who converted the buildings around the little cloister and some of the west and south great cloister ranges into a substantial mansion. The sale of the entire precinct of the medieval Charterhouse to North was the principal factor which influenced its preservation as a single unit and its eventual transformation into Sutton's hospital and Charterhouse school. The church was demolished (Knowles & Grimes 1954, 38–9) and most of the great cloister cells pulled down or left to decay. As the present-day buildings of St Bartholomew's Hospital Medical College preserve parts of the cell doorways from the eastern cloister walk within its fabric, some at least of the cell walls on the eastern side of the great cloister evidently survived the building works of North and later owners (Fig 10).

North's building works, though subsequently modified and adapted, essentially created the fabric of Charterhouse as it survives today (Barber & Thomas 2002, 73; Temple 2010, 39). Immediately before his death in 1564, North sold most of his Charterhouse property to Thomas Howard,

fourth Duke of Norfolk, for £2200. His son and heir Roger sold further portions to Howard later that year (Temple 2010, 43). Apart from periods of forfeiture to the Crown, Howard House as it was now known remained in the Howard family until 1611.

Archaeological Evidence for Demolition and Reconstruction

As noted above, the former cells around the great cloister were largely demolished 1545–65 (Temple 2010, 41). Various demolition layers ([523], [529]) and fills of pits ([185], [187], [173]) found overlying the northern walls for cell O and within the garden area to its north contain structural debris from this initial phase of demolition.

Similar demolition debris ([523], [529]) backfilled and overlay the latrine of cell P and adjacent features. Items of pottery from the later of these deposits ([523]) include residual pieces such as a coarse Surrey-Hampshire border ware bowl and jug (c.1270–1500) and a Cheam white ware jug (c.1350–1500). There were also three undated copper-alloy objects: a mount <292> engraved with a rose, a possibly late medieval or post-medieval multifoil pendant <293> with bearded head (probably that of Christ) and a piece of waste <294>. Among the structural debris was a semi-circular shaped moulding cut from an imported fine-grained white marble, a fragment of a Reigate stone block, a Flemish floor tile and a number of peg roofing tiles.

The debris sealing cut [187] (see Fig 3), noted above in relation to the 14th–15th-century bricks within it, contained a finds assemblage deposited between c.1580 and c.1600 on the basis of the latest items. However, residual artefacts were common: glass fragments from the corroded base of a urinal <289> (see Tyson 2000, fig 31, g486/488) and the rim of a moulded blue glass vessel with horizontal ribbing <262> (Fig 7) are both expensive items and presumably relate to the religious house. Also within this pit was a silver groat <57>, possibly of Richard III (1483–5). A large pit [185], further to the north of former cell O (Fig 3), contained an additional considerable quantity of demolition material. The pottery suggests a deposition date between c.1550–1600.

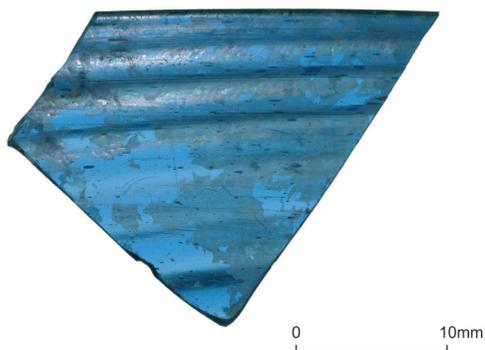


Fig 7. The rim of a moulded blue glass vessel with horizontal ribbing <262> from [186] fill of pit [187] (scale 2:1)

Evidence for rebuilding after *c.*1550 is provided by a substantial east–west garden or boundary wall (Structure 2 in Fig 2; see also Fig 8) built from reused medieval stonework, tile and Tudor brick. The wall, previously identified during the 1990 excavations at St Bartholomew’s Hospital Medical College (MED89 & MED90) (Barber & Thomas 2002, 74), is evident on the Faithorne and

Newcourt map of 1658 (Fig 10) dividing a yard or garden to the south from other gardens to the north. It ran east of the former great cloister but reflected the alignment of the front wall of the north range of cells. The remnant recorded during the 2005–6 investigations survived to a height of 2.55m (Fig 8). Gravel surfaces to the south of the wall recorded in TP A ([525], [528], [509]) sealed demolition deposits ([523], [534]) and are therefore post-Dissolution in date. They most likely represent a courtyard or a path giving access to the north garden via the doorway in the wall.

Silty deposits, dated by pottery to *c.*1580–1610, subsequently accumulated over the gravels south of the wall. Accessioned finds from these layers include a blue glass vessel <298> with a vertical rim and horizontal ribbing, a copper-alloy stud mount <299> with a domed roundel, a bone cutlery handle <300> and a tiny bone bead <297>. Environmental sampling of the silts yielded bones of ox, sheep/goat, rabbit, chicken, goose, and fish (smelt, mackerel, cod, eel, conger eel, mackerel, herring, plaice, plaice/flounder and gurnard), as well as oyster shell



Fig 8. The north face of the large east–west boundary wall

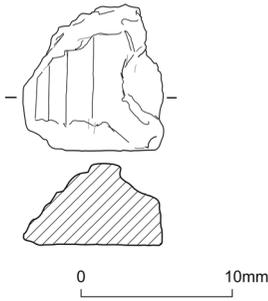


Fig 9. The more complete example of the decorated cut bricks, from debris/rubble deposit [34] (scale 1:4)

and terrestrial snail shells. Seeds were from food plants, such as cereal grains including oats, barley, rye and free-threshing wheat, and also from bedstraw, sedges, sun spurge, fig, rose, dock, grape, elder, dyer's rocket, dead nettle and knotgrass.

Other evidence for rebuilding in this period is provided by two examples of cut red bricks with a wavy profile cut along one stretcher face (Fig 9). These are probably plinth bricks although they could have been used to form a decorative string-course. Their thickness (51–4mm) would suggest a mid-15th- to mid-16th-century date. Similar bricks are already known from the Charterhouse (Barber & Thomas 2002, 81, fig 73) and were also found during a watching brief undertaken in 2007 (Saxby 2007) to the south of evaluation Trench 4. This particular dump of Tudor bricks was interpreted as the demolition debris from a nearby building, probably from one of those constructed by North or Howard. Such bricks are not commonly found in London, where brick building did not become at all standard until after the Great Fire of 1666, and are therefore an indication of the status of buildings erected on the site after 1537.

At the eastern end of the site, the Charterhouse precinct wall (see Fig 5) appears to have been subject to several episodes of rebuilding, including the blocking up of a doorway, in red unfrosted brick (220–30mm x 100–10mm x 50mm).

THE 17th-CENTURY MATERIAL CULTURE

Historical Background

In 1611, wealthy merchant Thomas Sutton purchased the Charterhouse estate from Lord Thomas Howard, Earl of Suffolk, for £13,000 and obtained letters patent to allow him to found a secular hospital and school on the site (Temple 2010, 59). However, he died on 12 December 1611 at the age of 79. He was interred in a vault in Christchurch, Smithfield, but in 1614 his remains were translated to a tomb in the chapel of the new foundation (on the site of the monastic chapter house). Before his death, Sutton had nominated Rev John Hutton as the first Master, but the Governors of the new institution did not convene to define the

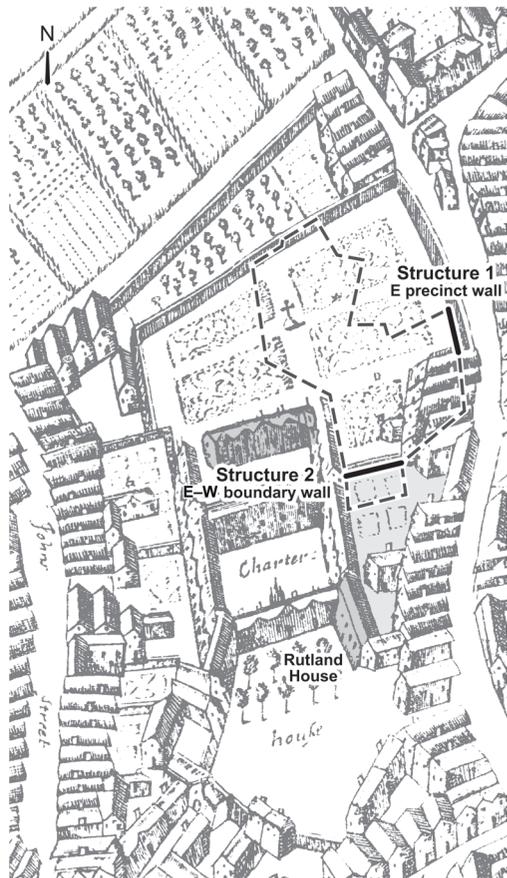


Fig 10. The site superimposed on a detail of Faithorne and Newcourt's map of c. 1658

role of the hospital and school until 1613. Building took place 1613–16 and involved the conversion of the main ranges of Howard House to their new purpose.

As with most late medieval and post-medieval hospitals (Rawcliffe 1999), careful steps were taken to ensure that only the deserving poor were admitted: the hospital would provide accommodation and support for 80 male ‘pensioners’ – former royal servants, sailors, soldiers, merchants or victims of accidents. Essential qualifications were that they be of proven good character, with soundness of religion, and ‘decrepit or old ... maimed or impotent, [or] decayed’ (Taylor 1912, 242). The school would provide an education for 40 boys without independent means (Temple 2010, 61–2).

Most of the area of the former great cloister and the land to its north remained open ground. Faithorne and Newcourt’s map of c.1658 (Fig 10) shows it as walled gardens,

and the Ogilby and Morgan map of c.1676 as a plantation of trees (Fig 11). However, from c.1660, the area to the east of the former great cloister became increasingly built-up, as shown on the 1676 map (Fig 11). A short-lived glass works, sponsored by the second Duke of Buckingham who at this time was leasing Rutland House (Fig 10), operated in c.1660–4 from a building south of the Structure 2 boundary wall, and this area became known as ‘Glasshouse Yard’ (Temple 2008, 244).

Archaeological Evidence

No archaeological evidence for structures or buildings relating to Sutton’s hospital or school were identified, but large assemblages of pottery and accessioned finds of domestic, pharmaceutical and industrial character define the adjacent area as becoming increasingly built-up and of relat-



Fig 11. The site superimposed on a detail of Ogilby and Morgan’s map, 1676

ively high status; they also indicate that it accommodated some industrial premises and trades. The 17th-century pottery is summarised here and discussed in more detail in the next section of this report, following the discussion of the other finds from this period.

Over a relatively short period of time (the pottery dates suggest *c.*1610–30), up to 2m depth of material ([506] and [507]; not illustrated) was laid down over the gardens south of the Structure 2 boundary wall (Fig 2; Fig 8). At this date, this part of the former Charterhouse lay at the rear of the garden belonging to Rutland House (Fig 10). It is possible that from this point onwards the area was used for rubbish disposal and that some of the dumped rubbish may be directly associated with the house. Environmental sampling of these dumps ([506], [514]–[521], [523]) recovered evidence for food including bones of sheep, sheep/goat, ox, deer (antler), rabbit, chicken, goose, mackerel, smelt, gurnard, plaice, plaice/flounder, cod, eel, conger eel and herring, with occasional oyster shell. Seeds from plants included free-threshing wheat (the

preferred grain for bread and possibly used in the production of ale), oats, barley, rye, bedstraw, elder, fig, dock, grape, rose, spurge, dyer's rocket, dead nettle, charred poppy, brambles and knotgrass.

Other archaeological features from this period included demolition layers (over the northern wall of the former cell O), pits, and a series of linear horticultural bedding trenches in the northern part of the site. Two principal phases of use could be defined. The earlier is characterised by pottery of *c.*1580–1650 and more tightly dated by clay tobacco pipes of *c.*1610–40; the later phase contains pottery of *c.*1630–80 and clay tobacco pipes of *c.*1640–60. Nearly all of these features also contained residual material.

As the earlier of these phases of deposition in the northern part of the site dates to *c.*1610–40, and its early date broadly coincides with Thomas Sutton's purchase of the Charterhouse estate in 1611, some of the numerous household objects recovered from this part of the site may have been discarded from Sutton's hospital and school. For example, the large pottery assemblages recovered from the bedding trenches (Fig



Fig 12. Bedding trenches in the northern garden (looking northward)

12) included sherds from at least 20 green-glazed Surrey-Hampshire border white-ware candlesticks, in both upright and saucer forms, and of at least 14 money boxes in the same fabric, all dating to c.1610–50. The money-boxes are a direct continuation of medieval types, used for collecting coins through a narrow slit in the body, with Surrey-Hampshire border ware one of the few industries still making them in the 17th century (see Pearce below). The large number of examples of these items suggests that it is possible that the candlesticks and the moneyboxes were used within Sutton's hospital or the boys' school (see Sewell 1849, 39, 73).

During this period, the former latrine [26] from cell O seems to have been cleared out and reused in some way for a short time, ending with the deposition of clay tobacco pipes dated c.1610–40.

The Early 17th-Century Non-Ceramic Finds and Industry (c.1610–40)

With †Geoff Egan

The finds from the garden area to the north of the site fall into two broad categories: those reflecting domestic occupation and those suggesting local manufacturing and industry. The significant non-ceramic finds from the earlier 17th-century groups are dominated by the glassware, which includes prestigious vessels and specialised distilling wares. There is also the suggestion of more mundane handcraft manufacturing, presumably somewhere nearby, perhaps of pins, and later more certainly of ivory and bone items. Structural fragments from nearby properties were found in the form of a short twisted length of lead window came <9> and English tin-glazed floor tiles.

Personal items include a copper-alloy finger ring with a recessed shield having a white metal 'L'-like motif in relief <51> and a residual medieval copper-alloy signet finger ring with a crown over an 'I' flanked by foliate motifs <58> (Fig 13). Other copper-alloy personal items include a fixing ring <35>. There were also two (possibly residual) sheet copper-alloy decorated book clasps <74> and <8> with a scrap of leather, a domed mount <172> and a double-sided

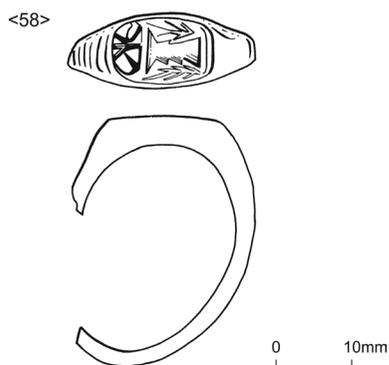


Fig 13. Copper-alloy signet finger ring <58> from [164] fill of pit [165] (scale 1:1)

bone comb <287>. Several jettons were found, including one residual example of a mis-stamped copper alloy Tournai jetton <62> with the reverse showing a cross with fleur-de-lis in each corner, which dates from the late 15th to early 16th century and a worn jetton <93> of one of the Krauwinkle Masters dating to the 16th or 17th century. There are also at least 14 examples of early post-medieval lace chapes, including <76>, <79>, <87> and <187>.

Glass domestic vessels are represented by fragments from beakers, cups, jugs and posset pots, several of which are worthy of note (see Fig 14). These include fragments of a piece of optic-blown colourless glass with thread trails from a beaker <282>, an applied foot from a cylindrical pedestal or fluted beaker <248>, an elongated inverted baluster stem from a glass goblet <260>, two distinctive hollow-blown lion-mask stems from goblets <59> dating to c.1540–1650, two small glass posset-pot spouts <251> and <253>, and the rim of a pale green glass jar <250>.

Several industrial practices within the local area are represented: for example, ceramic crucibles <30>, <32>, <213> point to metalworking. Evidence of a localised pin-making industry is represented in the form of copper-alloy pins with wire-wound heads (such as accessioned items <7>, <77>, <94>, <270>), present in quantities that suggest local manufacture, and fragments of copper-alloy wire (<178>, <183>); a pinner's bone tool <208> (pinners' bones are cattle long

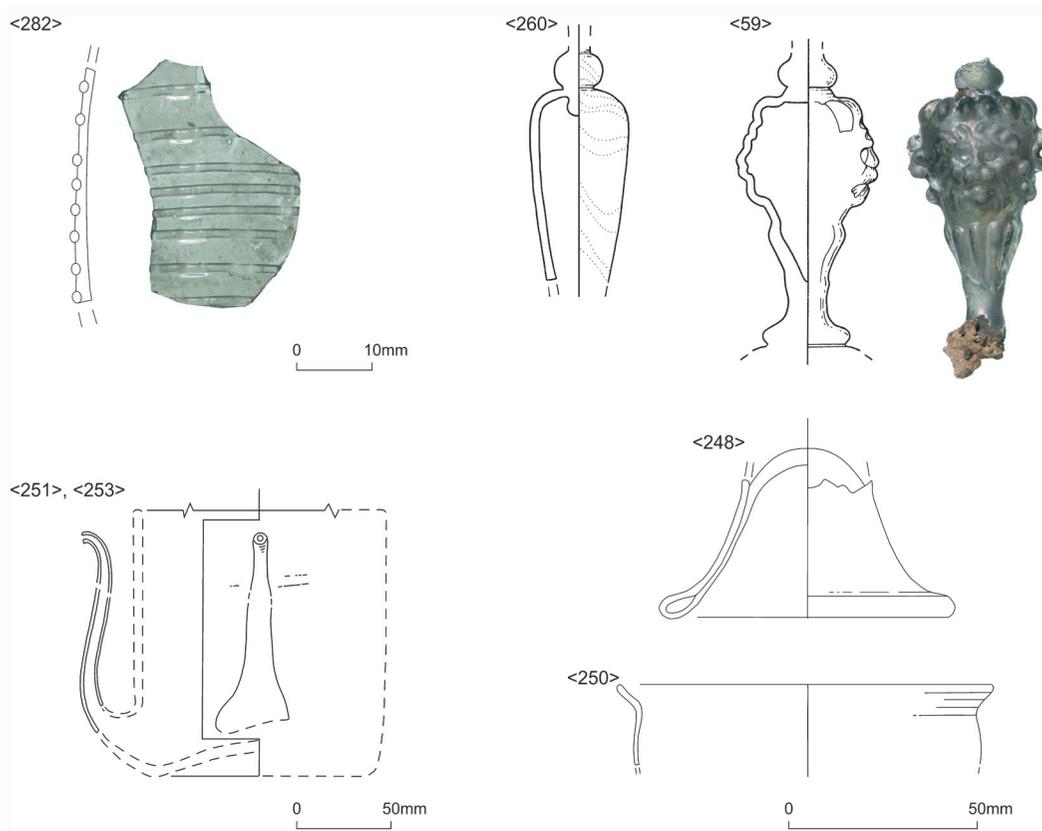


Fig 14. Domestic glass vessels of 17th-century date: beakers <282> (scale 1:1) from [73] fill of bedding trench [74] and <248> (scale 1:2) from [76] deposit over/in 17th-century bedding trenches; cups <260> (scale 1:2) from fill [170] of pit [171] and <59> (scale 1:2) from [62] fill of bedding trench [63]; posset pots <251> and <253> (scale 1:4) from [76]; and a jar <250> (scale 1:2) also from [76]

bones with grooves cut into the ends, used to hold pin shafts during the crafting of the pinhead) came from the same feature as <178> but may be residual and two further examples of pinners' bones (<108>, <109>) were found in a post-medieval deposit ([45]).

The dark green curving basal fragment of a glass collecting vessel (cucurbit or flask) and dark green glass alembic head <19> and <234> provide evidence for distillation. These specialised distillation vessels may have been associated with the production of medicinal herbal remedies or essential oils from flowers and fruits and could originally have been derived from either the Charterhouse monastery or Sutton's hospital.

Other evidence for processes involving

distillation included an overfired brick fragment thought to be derived from a kiln structure and remains of two red ware (PMR) cucurbits or distilling flasks recovered from the area to the north of the former cells O and P (see Fig 2). A number of distillation vessel fragments were also found on the adjacent St Bartholomew's Hospital Medical College excavation in 1989/90 (data from MOLA Oracle database under site codes MED89, MED90; pottery form code CUCU). These flasks were used as part of a distillation unit for, amongst other things the preparation of strong acids used in assaying precious metals. This usage is suggested by the presence of red haematite deposits inside the vessels, a by-product of the distillation process.

Mid-Late 17th-Century Features and Non-Ceramic Finds*With Ian M Betts and †Geoff Egan*

The early 17th-century bedding trenches soon went out of use and were superseded by a number of large pits [46], [57], [65] and [162] (probably refuse pits; not illustrated), and smaller tree pits [21] and [109], all dated by pottery such as later tin-glazed wares (TGW B and D; *c.*1630–80) and clay tobacco pipes of *c.*1640–60 to the mid to later 17th century. The final infill of the cell latrine contained pottery dated to *c.*1630–1700 and fragments of a rare German, print-decorated, pale green glass barrel beaker <20>.

Again the significant non-ceramic finds from the pits in the garden area are dominated by items of domestic glassware. These include beakers, cups, bowls, jugs and bottles. Examples of beakers include the base of a fine Venetian-style cylindrical beaker

with an applied spiral trail decoration, <233> (Fig 15), the complete base from a pedestal beaker <242> and part of the base of a cylindrical beaker <245> with applied rigaree trail. Jugs are represented by a pale green glass jug handle with B-shaped section, recurved at the base where a stylised foliate prunt has been applied <56> (Fig 15). Cups/wine glasses are represented by fragments of an inverted baluster stem and bulbous knop of a wine glass <244> (Fig 15), the base of a glass cup <236> and the base of a colourless cup foot with folded edge <241>. Two glass bowls are represented by fragments of rim <243> and <246>. There were also three fragments from bottles and flasks of different sizes: a pale green base <170> (Fig 15), a small vessel with horizontal rim [76a] (Fig 15) and the elongated neck of a medium-sized vessel, possibly a plain flask [76b] (Fig 15).

Three 17th-century glass cylinders <65>, <98>, <239> could possibly have been pend-

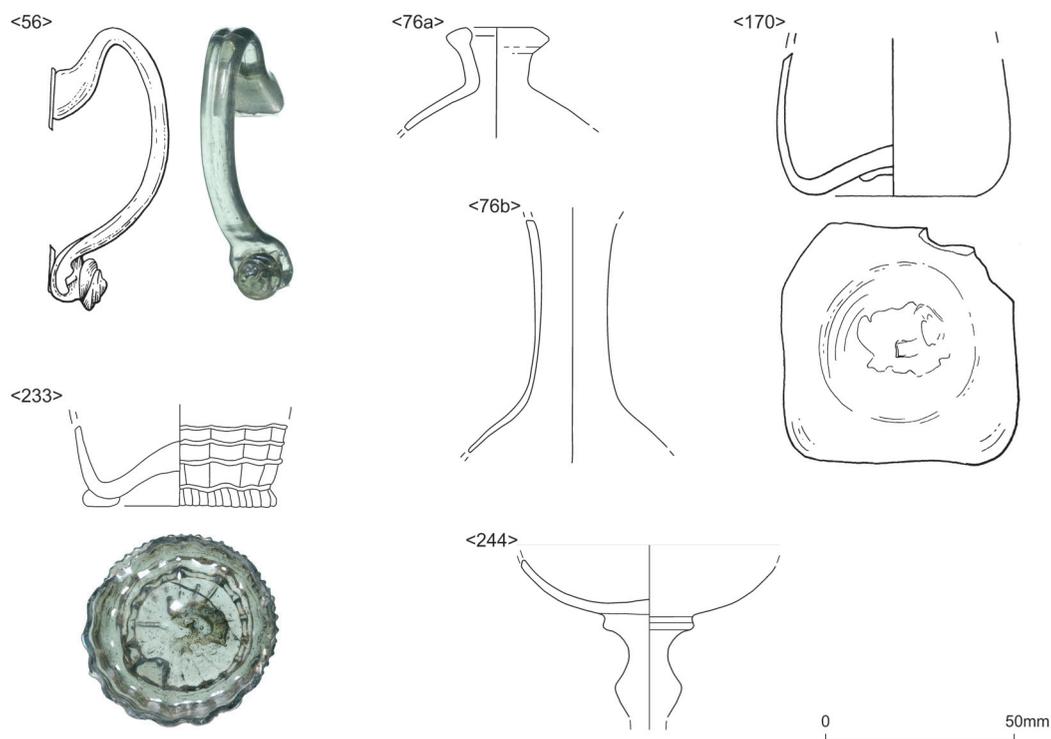


Fig 15. Mid to late 17th-century domestic glass vessels: jug <56> from [20] fill of rubbish pit [21]; bottles/flasks <76a>, <76b> from [76] deposit over/ in 17th-century bedding trenches and <170> from [170] fill of pit [171]; beaker <233> and cup/wine glass <244> both from [56] fill of pit [57] (scale 1:2)

ant dress ornaments. These are: a black or perhaps purple glass tube with near vertical, oblique grooving, tapering from 6mm to 4.5mm over 41mm <98>; a colourless tube <65> of 8mm diameter and 55mm long, narrowed and partly fire-rounded at each end; and a second colourless tube <239> of 6mm diameter and 65mm long, fire-rounded at one end but broken off at the other end. The two larger cylinders <65> and <98> are arguably similar to an item that is apparently older by about half a century and which was found at the manor house of Acton Court just outside Bristol (Courtney 2004, 384, 387 fig 9.50 no. 127, there described as a tube or phial). It is suggested here that the 'tube or phial' from Acton Court could be reinterpreted as a dress ornament.

A cylindrical piece of purple glass waste <232> (Fig 16), with a surviving length of 49mm and a diameter of 2mm, tapered and blocked by very irregular fire-rounding at one end, is probably from bead making (cylindrical beads appear to have been sewn onto women's clothing as opposed to being worn on strings around the neck). This is a most unexpected item to be found in this area of London. Similar but earlier wasters together with usable lengths have been found in earlier contexts at the site of the Rose Theatre in Southwark (Egan & Bowsher 2009, <S133-4> fig 145). It is possible that long cylinders, actually made elsewhere, were passed on to others to break into appropriate lengths for use, but this would presumably mean that the receivers had the equipment and skill to fire-round the ends.

A further piece of glass waste <238> (Fig 16) is in the form of a blue, slightly curving D-section tube tapering from 6 x 4mm at the broader end, but with the narrower, broken-off end splaying to 5 x 3.5mm. The surviving length of the piece is 52mm. It is difficult to interpret this delicate fragment, which does not seem convincing as a spout or (in its present state) as an incomplete ornament of any known form. And yet it may indeed have been an applied ornament, for example a large pendant on a collar (perhaps the tube once terminated in an integral sphere).

Personal items recovered from the pits include lace chapes <72>, <80>, <174>, <269>, a copper-alloy ring <84> and fragments from a possible copper-alloy vessel



Fig 16. Dress ornaments: glass cylinders <98> and <65> from [43] fill of pit [46], and <239> from [64] fill of pit [65]; possible waste from purple glass bead making <232> (also from [43]); and possibly ornamental tubular blue glass fragment <238> (also from [64]) (scale 1:1)

<86>, two copper-alloy decorated book clasps <173>, lengths of copper alloy wire <169>, a bone comb <302>, bone waste <209>, and a James I farthing <164> (Lennox type, with crescent mintmark) issued 1617–18. An incomplete jetton <95> of Hans Lauser, which depicts Louis XIII on horseback, dating to 1610–43, and a possible Royal farthing of Charles I <96> dating to 1625–49, were found in a layer [8] which sealed one of these pits.

Bone, antler and ivory, including waste recovered from 17th-century garden features and deposits, indicate that all three materials were being worked locally. A fragment of deer antler shows clear tool marks, indicating that it is a waste product of the bone working industry. A worked bone <212> may have served as a brush handle or an implement. A cattle metatarsus (hind cannon bone) had been sawn through at about the mid-shaft, representing craft waste. The size of the waste fragments of ivory tusk edges <273-6> suggest these may be from the specialised

craft of comb-making and that these are the only definable product of a small-scale industry somewhere in the locality. At this date ivory combs are not an exotic find but more of a routine material.

There are 11 decorated tin-glazed floor tiles with five design types. These tiles are either Dutch or English and may have been installed either when Charterhouse was used as a town house or later when the property became Thomas Sutton's hospital and school. If they are English, then they are more likely to be from Aldgate, London (1571–c.1615), rather than Pickleherring, Southwark, which commenced seven years after the founding of Sutton's hospital in 1611. Their thickness (17–20mm) is also greater than that of biscuit-fired tiles from Pickleherring which measure 12–16mm (Tyler *et al* 2008, 71). The tile designs suggest a late 16th- or early 17th-century date of manufacture.

The decoration of the tiles comprises: a 'medallion' design with Dutch-style corner motifs (Pluis 521, B.02.00.02), but perhaps made at Aldgate (<218> Fig 17); a geometric pattern known on Dutch tiles (Pluis 1997, A.01.03.54) but maybe from Aldgate (<220>

Fig 17); an interweaving strapwork pattern, probably English as similar tiles were made at Pickleherring (Tyler *et al* 2008, 53, D2), although its thickness suggests it may be from Aldgate (<221> Fig 17); a stylised floral and strapwork pattern, similar to that found on Dutch tiles (Pluis 203, A.01.02.35) (<215> Fig 17); and two versions of a decorative pattern with fruit and flowers (<217>, <27> Fig 17), also a Pickleherring design (Tyler *et al* 2008, 53, D7), but again possibly from Aldgate. A Dutch illustration (not reproduced here: see van Dam 1991, 27, no. 12) shows how these tiles would have appeared when new.

In addition to frequent fragments of oyster shells, the faunal material recovered from these later garden deposits includes the remains of cattle (there was a good representation of veal calves), sheep/goat, pig, rabbit, chicken, goose, woodcock, turkey, and fish (herring family, cod family). With regard to the scant remains (two fragments) of turkeys, it is interesting to note that although these exotic birds were not as expensive as when the species first arrived in this country in the first half of the



Fig 17. Tin-glazed floor tiles <27> from deposit [18], <215> from [20] fill of pit [21], <221> from [123] fill of pit [82], <217> and <218> from [56] fill of pit [57], and <220> from [77] fill of bedding trench [78] (scale 1:3)

16th century, they were still regarded as a luxury during the 17th and 18th centuries, intended specifically for feasts (Wilson 1976, 129–30).

Plant remains from the garden deposits included fragments of charred oat grain, charred hulled barley, a single wheat grain and single culm node, and elder and poppy seeds. A moderate amount of waterlogged fruit remains were recovered including apple/pear, fig, blackberry/raspberry and elder, and mineralised grape pips.

THE 17th-CENTURY POTTERY

Jacqui Pearce

There are 3075 pottery sherds from a minimum of 1869 vessels (weight 102,304g) in the GWO05 site archive from contexts dated to between *c.*1580 and 1700. There are high ratios of joining sherds (2:1) and

complete vessel profiles, with relatively little obvious contamination, suggesting that overall the deposition of this material was the concentrated dumping of domestic waste over short periods of time. Five large contexts of similar date, each including between 100 and 200 sherds, were excavated from bedding trenches (contexts [47], [51], [62], [76], and [77]). Contexts dated to *c.*1630–80 yielded 1807 sherds (63823g; representing 1110 ENV, *ie* Estimated Number of Vessels), or 59% of all pottery from the site dated to the 17th century, although the overall proportion could well be higher. A number of vessels were selected for illustration (Table 1; Figs 18–21).

Surrey-Hampshire Border Wares

Surrey-Hampshire border wares are twice as common as wares from any other source in the early and mid-17th-century contexts

Table 1 Details of illustrated pottery

<P> no.	Context	Fabric	Form	Decoration	Figure
<P1>	[64]	BORDG	SKIL	GLI	Fig 18
<P2>	[20]	BORDG	DISH FLNG	PIE	Fig 18
<P3>	[47]	BORDY	CHAF	–	Fig 18
<P4>	[77]	BORDG	FUM	GLIE	Fig 18
<P5>	[51]	BORDY	CNDST UPRT	–	Fig 18
<P6>	[56]	PMR	CAUL	GLIE	Fig 19
<P7>	[73]	PMR	CHAF	GLI	Fig 19
<P8>	[22]	MISC	CNDST?	–	Fig 19
<P9>	[76]	PRM	INDV	–	Fig 19
<P10>	[64]	PMFR	BOWL 2HFL	INCH	Fig 19
<P11>	[56]	PMFR	MUG FLAR	–	Fig 19
<P12>	[19]	METS	DISH FLNG	–	Fig 19
<P13>	[51]	TGW A	DISH	PINW	Fig 20
<P14>	[64]	TGW A	DISH	POLY	Fig 20
<P15>	[64]	TGW A	DISH	STAR	Fig 20
<P16>	[64]	TGW A	ALB	POLY	Fig 20
<P17>	[170]	TGW A	JAR CYL	POLY	Fig 20
<P18>	[56]	TWG	JAR CYL	INSC	Fig 20
<P19>	unstratified [0]	RAER	COST	MEDL	Fig 21
<P20>	[51]	WERR	DISH FLNG	DATE	Fig 21
<P21>	[64]	WERR	DISH	DATE	Fig 21
<P22>	[10]	DUTSD	DISH FLNG	ARC	Fig 21

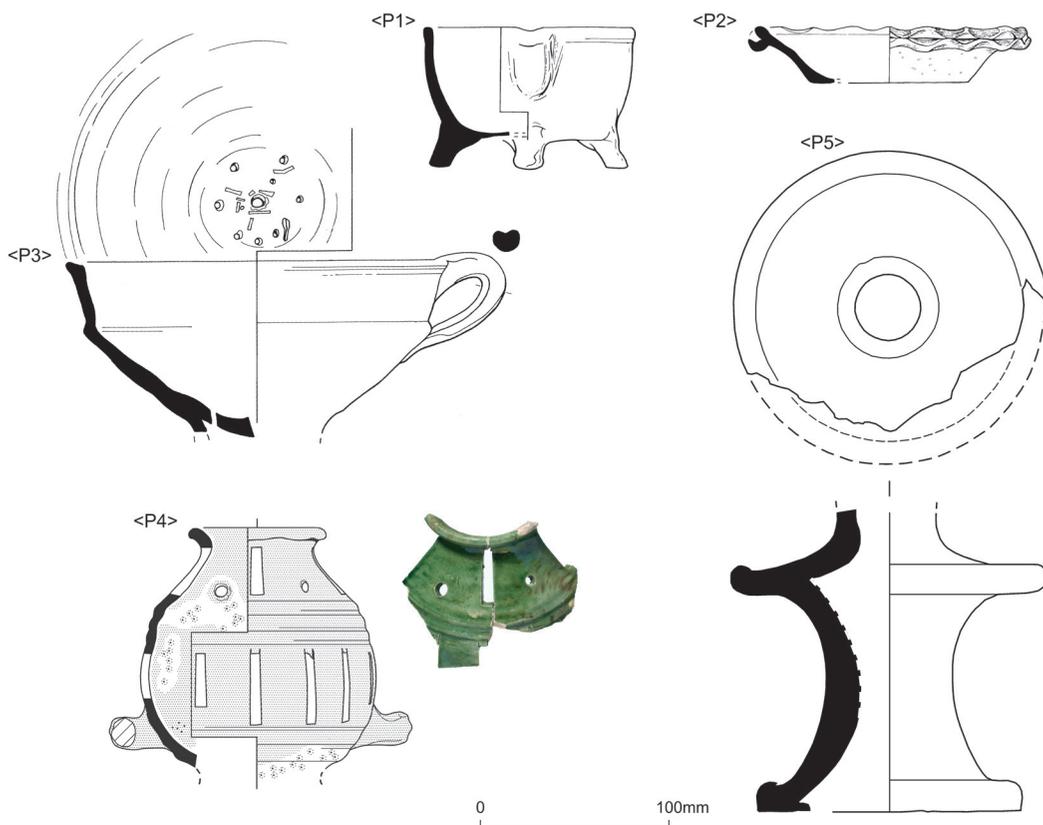


Fig 18. Surrey-Hampshire border ware (BORDG/ BORDY) vessels: tripod pipkin <P1>, dish with piecrust rim <P2>, chafing dish <P3>, fuming pot (green glazed) <P4> and candlestick <P5> (scale 1:4)

from the site. White wares greatly outnumber red wares, accounting for 87% of all border wares by each quantitative measure, with clear (yellow) and green glaze more or less evenly distributed. Although the border potters produced an astonishingly wide range of household vessels, cooking was the chief function for which they catered. The large number of tripod pipkins recorded on the site is also reflected in the assemblage of production waste found at Farnborough Hill, Hampshire (Pearce 2007a, 168). The main type has an everted rim with internal lid-seating and a ribbed body (eg Pearce 1992, fig 27). Sherds from nine skillets were found in pit fill [64], which is in keeping with the large number of kitchen and cooking vessels in this group (including sherds from 11 tripod pipkins in border ware alone). One unusual green-glazed vessel has a simple,

unthickened rim and rounded profile with an elongated pouring lip <P1> (Fig 18). Large numbers of tripod pipkins were recorded in several other contexts as well, with sherds from at least 23 in pit fill [56].

Bowls and dishes in a wide variety of forms and sizes would have been used mainly in the kitchen, as well as for serving food. Sherds from at least 146 white-ware flanged dishes or platters were recorded, including a few with brown glaze (eg Pearce 1992, figs 19–20). Three dishes have simple combed decoration, and part of an unusually small dish <P2> (Fig 18) with a pinched, piecrust rim was found in context [20]. There is also one flanged dish in red border ware with white slip decoration, in context [76]. Sherds from at least 82 porringers were also found, the small handled bowl form used for spoon foods remaining popular throughout

the 17th century. By *c.*1580, mugs were increasingly favoured for drinking alcoholic beverages; sherds from at least 33 were recorded, mostly in brown-glazed white ware, apart from one with green glaze and encrusted decoration and two in red ware. The finished product closely resembles rounded mugs in contemporaneous fine red wares from the Harlow area of Essex, probably purchased as much for their general 'look' as through preference for a particular source or ware.

Sherds from seven border ware chafing dishes were recorded, with four more in London-area red ware. Used to hold burning charcoal to heat food gently or keep dishes warm at table, they were relatively common in the late 16th and early 17th century. One example, from context [47] <P3> (Fig 18) has numerous fragments of clay stuck in the glaze, resulting from the explosion of a nearby pot during firing (*cf* Pearce 2007a, fig 91).

Sherds from at least 57 chamber pots, always a mainstay of the border ware industry, were recorded in both white and red wares.

There are also several more unusual forms, including at least four fuming pots or heating stands. The most complete example, in green-glazed white ware, comes from the large context [77] <P4> (Fig 18). It has an everted rim above a slightly rounded body with two opposed, horizontal loop handles, and would originally have had a pedestal base. Closely spaced, vertical knife-cut slits and round holes around the body and shoulder would have provided ventilation. Part of a perfume or beverage warmer was found in context [76], a form designed to sit inside the rim of a fuming pot and hold the ingredients for making perfumes, while gently heating them over charcoal burning in the body of the vessel (Pearce 2007a, 135). Vessels of this kind played an important part in masking unsavoury odours, and were thought to combat disease-carrying miasmas. Another unusual form is part of a probable warming pan in red border ware from context [56].

As noted earlier, at least 20 candlesticks are represented, mostly in white ware, with two in red ware. Sixteen of these are of the upright form <P5> (Fig 18), two of them decorated with rouletting around the edge of the drip-tray (*cf* Pearce 1992, fig 42, nos 355–7). The

remainder are saucer candlesticks (*cf* Pearce 1992, fig 42, nos 358–65). They mostly come from contexts that post-date *c.*1630, with five examples found in context [20].

Also mentioned earlier in this report were the sherds from at least 14 moneyboxes mostly in green-glazed white ware and found in 17th-century contexts on the site.

London-Area Red Wares

London-area red earthenwares are the next most common type of pottery in 17th-century contexts (21.4% of SC, *ie* Sherd Count; 21.1% ENV; 30.8% weight). Made in Woolwich and Deptford amongst other centres (Pryor & Blockley 1978; Divers 2004), their robust fabric was ideally suited to heavy-duty domestic and industrial forms. The Charterhouse red wares include some slip-coated vessels with green or clear glaze (appearing yellow). These utilitarian wares were used in households across the social spectrum, mostly for cooking, food preparation and storage. Cauldrons and tripod pipkins account for 40.9% of all red ware sherds (34% ENV, 31.5% weight). Sherds from at least 86 cauldrons were recorded, made in the typical early 17th-century form, with carinated profile and ribbed upper body, internally lid-seated rim and two vertical loop handles <P6> (Fig 19). Some were slipped inside the base, but most are clear-glazed only. Tripod pipkins have an evenly rounded profile and internally lid-seated rim, with a pouring lip at 90° to the single, solid, curved handle. The remains of at least 18 cooking vessels were found in pit fill [56], with 11 each in the very large contexts [64] and [73]. There are also sherds from four chafing dishes, similar to examples in Surrey-Hampshire border ware but more sturdy in appearance <P7> (Fig 19).

Bowls and dishes of various kinds would have been used mostly in the kitchen and are found both with and without slip-coating. There are a number of very large, carinated bowls and dishes with two opposed horizontal loop handles and a broad pouring lip. Vessels of this kind could be used for settling milk and were usually white-slipped inside, one especially large green-glazed example from context [73] having combed wavy lines around and just inside the rim.



Fig 19. London-area post-medieval red ware vessels: cauldron <P6>, chafing dish <P7>, a possible candlestick <P8>, an industrial vessel <P9>, a two-handed bowl <P10>, a plain glazed mug <P11>, a Metropolitan slipware dish <P12> (scale 1:4)

Jugs were the main serving vessels made by the London red ware industry, with sherds from at least 44 recorded, some with a bib of white slip and clear or green glaze to enhance their otherwise plain appearance. In this area, the local potteries complemented the

wider range of vessels made by the border ware potters who focused more on individual drinking jugs than serving vessels. The same applies to large storage jars, often handled, which were another speciality of the London-area potters; sherds from at least 45 vessels

were found (*cf.* Pryor & Blockley 1978, fig 15; fig 16, no. 82). Other forms, such as mugs and chamber pots, are less common than in border ware, illustrating the way in which the two major industries complemented each other by concentrating on those vessels for which their wares were best suited. There is one oddity: a crude, hand-formed lump of clay with a flattened base and a deep central hole at the 'top' <P8> (Fig 19). It was found in context [22], dated to c.1630–80, and could have been used as a simple form of candlestick.

Sherds from two cucurbits or distilling flasks were identified. Both have the powdery red haematite residue inside that is associated with the distillation of strong acids for use in parting precious metals. From mid-17th-century contexts there are also three sherds of probable industrial vessels of uncertain form, including the base of a large, heavy, thick-walled example, which originally had two opposed handles and was pierced with several small, circular holes through the pronounced, grooved carination (<P9> Fig 19). There are superficial analogies with chafing dishes or with the possible 'furnace' found in a group of industrial vessels from Lambeth Hill (Moorhouse 1972, 120, fig 33, no. 13) and late 16th- to early 17th-century red ware wasters with organic tempering found on the site of Moor House, Moorgate, including two-handled, perforated forms (Sudds 2006, 95). The pedestal base, however, is closed and there is no inner base, although an industrial function of some kind is suggested by the vessel's robust construction and size. There were too few fragments recovered from the site for them to be taken as evidence of industrial activity on any great scale in the vicinity.

Fine Red Earthenwares

Fine red wares of the kind made in and around Harlow in Essex were the third most common source of pottery on the site in 17th-century contexts (17.4% SC; 16.2% ENV; 18.9% weight). Plain forms with a clear glaze are the main type, although there are also black-glazed wares and a few sherds of the decorative Metropolitan slipware. The Harlow industry did overlap with Surrey-Hampshire border ware and

London red ware producers in making a range of everyday, household vessels, most of which are represented in the Charterhouse material, with the kitchen wares mostly clear-glazed and undecorated. The quality of the glaze is generally better than that of London red wares and the area covered is greater. Vessels found include tripod pipkins with a solid, curved handle, flanged dishes, porringers, rounded jugs, chamber pots and various forms of bowl, with the deep, two-handled form well represented (<P10> Fig 19).

Mugs were also made with plain glaze although black-glazed red wares were generally favoured for drinking vessels of different types. There were sherds from at least 107 mugs including rounded, cylindrical and flared forms <P11> (Fig 19). Black-glazed vessels of this kind were among the most popular wares used for drinking during the early to mid-17th century, and are often found in large numbers in excavated contexts from taverns and alehouses. They were also favoured for institutional use, as shown by a large mid-17th-century group of black-glazed mugs and Bartmann jugs found inside a brick storage vault in Guildhall Yard (Bowsher *et al* 2007, 234–6, fig 225). The numerous drinking vessels recorded in the vicinity of Sutton's Hospital may well have had a similar purpose, probably used with good quality, well-glazed jugs in clear-glazed fine red ware for communal dining. More decorative table wares were made at the Harlow kilns in Metropolitan slipware, which was entering London from c.1630 onwards. Sherds from only 10 vessels were recorded, with large flanged dishes the main form identified <P12> (Fig 19), in addition to mugs and a jug. Slipware was eminently displayable and would have been used alongside delftware to enhance the appearance of the dining table and living areas.

Tin-Glazed Earthenwares

English tin-glazed ware or 'delftware' (with a lower-case 'd' to distinguish these from wares produced in the Netherlands) constitutes 6% of all sherds from 17th-century contexts (5.7% ENV, 3.9% weight). Their decoration is typical of the early to mid-17th century, with no examples of styles introduced



Fig 20. Tin-glazed earthenware vessels: dishes <P13>, <P14>, <P15>, drug jars <P16>, <P17> and <P18> (scale 1:4)

after c.1670. The growth of the London tin-glazed industry during the late 16th and early 17th centuries made it possible for increasing numbers of Londoners to grace their homes with these colourful and fashionable ceramics. Between 1571 and 1613, when the original delftware pothouse in Holy Trinity, Aldgate (established by potters from Antwerp) was the only one operating in London (Britton 1987, 27–9; Blackmore 2005, 236–41), its products were closely comparable to contemporaneous Low Countries *maiolica*. The same Anglo-Netherlandish styles were continued by the early Southwark pothouses at Montague

Close and Pickleherring Wharf (Britton 1987, 35–6, 43–5; Tyler *et al* 2008, 20–59), underlining the difficulty in making positive attribution of source at this date. Geometric patterns in dark blue, green, yellow and orange/brown (ochre) prevail on open forms that are tin-glazed inside and lead-glazed outside (Orton 1988, Type A, 321). The style persisted through much of the first half of the 17th century, although an expanded and less intense palette developed from the 1630s onwards (*ibid.*, Type D, 327).

The delftware from the site consists chiefly of highly decorative polychrome dishes and drug jars in this Anglo-Netherlandish style.

Common designs include a central rosette or 'pinwheel' motif, stepped or stacked pyriform patterns, divided diamonds, arcs, leaves and tendrils <P13> (Fig 20). These were all popular designs that continued into the mid-17th century (Hurst *et al* 1986, fig 55, no. 169; Korf 1981, nos 201–36; Noël Hume 1977, 48, pl 49, no. 4). There are also examples of a central star motif <P15> (Fig 20), popular in both London and the Netherlands at this date (Korf 1981, nos 452–7), and a blue and white chequerboard design (*ibid*, nos 283–98). Overall, vessels with polychrome decoration greatly outnumber blue-and-white forms on the site. Only one sherd has 'Wanli' decoration, inspired by late Ming Chinese porcelain and made at the Pickleherring pothouse in the 1620s and 30s (Tyler *et al* 2008, figs 44–5).

Drug jars of *albarello* or cylindrical form were found in various sizes, including several small vessels with Anglo-Netherlandish polychrome decoration <P16> (Fig 20). Vessels of this kind have been found in contexts as early as *c.*1610 at Jamestown, Virginia, having been made at Aldgate or in the Low Countries (Bly Straube, pers comm). Comparable examples were also made at Pickleherring from *c.*1618 (*eg* Noël Hume 1977, fig V) and at Rotherhithe from *c.*1638 (Tyler *et al* 2008, fig 114). Larger jars found on the site carry similar polychrome decoration <P17> (Fig 20). Part of a plain white drug jar from context [56] <P18> (Fig 20) is labelled with the contents, a practice that started in the 1650s (Drey 1978, 130). This makes it one of the latest identifiable pieces of delftware found on the site in 17th-century contexts. The jar has a cylindrical body with distinct cordons at the shoulder and base (*cf ibid*, pl 67A, dated 1652). The label is incomplete and reads 'P: ARIÆ:' painted in blue between bands of loose scrollwork and leaf motifs. The letter P at the start of an inscription stands for various forms of medication (*ibid*, 220), in this case probably *pulpa* or *pulvis* (powder). The second word could read something like *Fumariae* (*ie*, the herb, common Fumitory; *ibid*, 203), although it is impossible to be certain.

Plain white delftware, which first appeared in London in the 1630s (Orton 1988, 327), is relatively uncommon in the site assemblage,

compared with decorated wares. Six sherds from mugs and porringers were found in 17th-century contexts. There are also two sherds from mugs with overall manganese-speckled decoration, which became popular during the second quarter of the 17th century. The predominant types represented, however, are early polychrome styles, which may reflect a degree of prosperity on the part of the original owners, and date much of the assemblage to the earlier 17th century, before plainer styles became common.

Imports

Imported pottery, mostly from continental sources, accounts for 10.4% of all sherds (11.5% ENV, 12% weight). Rhenish wares are by far the most common, with 55.8% of all imported sherds coming from jugs, mostly Bartmänner, in Frechen stoneware (54.8% ENV, 63.5% weight), which dominated London's imported pottery from *c.*1550 until the late 17th century. A few sherds of earlier, residual Rhenish stonewares from Siegburg, Langerwehe, Raeren and Cologne were also identified. These include an unstratified medallion from a costrel in Raeren stoneware, a form hardly ever recorded in London <P19> (Fig 21). The central figure of a cavalier holds a pike in his left hand and a money-bag in his right. An inscription around the frame, although not entirely legible, compares closely with recorded examples that read GELDERLOS : BEN : ICH : ALTOS : ALSO: MOETEN : SEI : WEISSEN : ALDEI : DIT : LEISSEN, continued inside the frame as ICH BEN EIN HELT ICH HAF DEN BUIDEL SOLT. This translates as 'I am always without money as you must know who read this. I am a hero. I have sold the bag'. Recorded examples also have the date inscribed at the top (usually in the 1580s: *eg* Kohneman 1982, 138), although a flaw in the London vessel makes the date illegible. Sherds from jugs in Westerwald stoneware, with its distinctive grey body and cobalt decoration, were also found in 17th-century contexts. Part of a crucible in Hessian stoneware in context [81] hints at the possibility of fine metalworking nearby, especially when viewed alongside other industrial vessels in London-area red ware.

Rhenish slip-decorated earthenwares



Fig 21. Imported pottery vessels: a Raeren stoneware medallion <P19>, a Werra ware dish showing the head of a woman, with a ruff, and part of the date (16)06 to her right <P20>, a Werra ware dish with the figure of a woman holding what may be a torch, <P21>, a slip-decorated red ware bowl <P22> (scale drawings 1:4; photos 1:3)

were also imported from c.1580, and four sherds of Weser ware were recorded, with its red and green-tinted slip decoration, as well as sherds from nine dishes in the more elaborately decorated Werra ware. Part of a large dish [51] <P20> (Fig 21) has the head of a woman with her hair in a caul, wearing a large ruff. This costume is typical of the later 16th century in Hessen and Westphalia

(Hoffman-Klerkx 1992, 179). The last two numbers of the date '[16]06' appear beside the head. A second large dish <P21> (Fig 21) also bears the figure of a woman, holding what appears to be a torch in her right hand. Only the first part of the date '16[...]' survives and the costume is simpler, without the ruff. Part of a second dish from [51] has the arm and hand of a pikeman. These strikingly

decorated imported slipwares would have made a fine display alongside the colourful delftware and Metropolitan slipwares found in the same contexts.

Low Countries wares are the second most common source of imports on the site (12.1% sherd count, 14.3% ENV, 9.4% weight). Of these, red earthenwares are the main type recorded, some of them with a partial white slip coating. Kitchen wares predominate, including cauldrons or pipkins, a colander and a frying pan or skillet, all well glazed inside and out. There are also sherds from five bowls and dishes in slip-decorated red ware, typically with decoration based on intersecting arcs <P22> (Fig 21). Comparable examples in the Netherlands are dated to c.1580–1610 (*cf* Bartels 1999, nos 436–7). More unusual is the rim of a dish in Dutch tin-glazed ware [22]. It has dimples or bosses at intervals around the flange, and tendril decoration painted in dark blue and orange/ochre. Comparable examples were made in the Netherlands in the late 16th up to the mid-17th century (Korf 1981, 21, no. 11; fig 97, nos 23–4; nos 645–7). Seventeenth-century Dutch tin-glazed ware is not common in London, mostly occurring as dishes, plates and jars. The highest concentration of recorded finds is in the Spitalfields area, and then the City, with more finds made on inland domestic sites than on the waterfront (Pearce 2007b, 95–6). They appear to represent the purchasing of better quality decorated ceramics by relatively prosperous households, and would have fitted in well with the other decorative, more expensive wares recovered from the site. It is noteworthy that two other finds of Dutch tin-glazed ware were made on sites nearby, in Chiswell Street (sitecode CSU96) and City Road (CIO01).

Iberian wares are the next most common source of imports (8.1% sherd count, 5.5% ENV, 8.7% weight). These consist mostly of Spanish olive jars of the kind made in the Seville area, used principally as containers for olive oil, wine or honey (Hurst *et al* 1986, 66–7). There are also sherds from four Seville starred costrels, datable to the first half of the 17th century (Hurst *et al* 1986, 63). French imports are limited entirely to sherds from ten globular flasks in Martincamp-type ware, from Normandy

(Hurst *et al* 1986, 102–3). Italian wares are represented by sherds from four vessels only, in Ligurian and Montelupo maiolicas and in north Italian marbled slipware. Finally, there are three sherds of Chinese blue and white export porcelain, decorated in styles typical of the late Ming-Transitional period in the early to mid-17th century. Chinese porcelain is not at all common in excavated contexts from London at this date, and would have been regarded as something of an exotic and expensive rarity.

The only non-local regional imports are sherds from a minimum of 29 tall, cylindrical butter pots in Midlands purple ware. Made in Staffordshire and elsewhere in the Midlands to contain and transport dairy produce, they are relatively common in London between c.1580 and 1700.

Discussion of the Pottery

The pottery compares closely with finds from other contemporary deposits on sites excavated in the vicinity of Sutton's Hospital, especially MED89 (site L, Barber & Thomas 2002, 4, 83), and particularly with regard to the delftware decorated in the Anglo-Netherlandish style typical of production at Aldgate, Southwark and the Low Countries (*ibid*, fig 75). Similar finds were also made at nearby St John Street (SJO95; site N, *ibid*, 4), including part of a dish in Werra ware depicting Adam and Eve (*ibid*, fig 76). At all these sites there is a notable emphasis on good quality decorative ceramics intended for serving at table and for display. These wares suggest a degree of prosperity and a relatively high standard of living, with both locally made and imported finewares used side by side to create an impression of fashionable comfort and good taste.

Whether or not the finds were discarded by Sutton's Hospital, they amplify and confirm the picture already derived from earlier excavations in the vicinity. The large quantities of kitchen and everyday household vessels found in Surrey-Hampshire border wares, London-area and fine Essex-type red wares would be consistent with both institutional use and individual households. Certain forms found in relatively large numbers, such as candlesticks and moneyboxes, tend to favour use in an institutional setting, while

the large numbers of vessels in various fabrics associated with serving and drinking alcohol suggests either dining on a reasonable scale or possibly the presence nearby of a tavern. Unfortunately, the nature of the dumped deposits on the site makes it impossible to relate them directly to any identifiable properties, and the level of chronological mixing and residuality complicates attempts to detect a sequence within the early to mid-17th century. It does appear, however, that much of the excavated material comes from a period early in the life of the hospital, following its foundation in 1613, and it seems likely that the newly established institution was the direct source of most of the pottery thrown into the bedding trenches, pits and other garden features.

MAKERS' MARKS AND A GRAFFITO ON THE CLAY TOBACCO PIPES

Tony Grey

In the following discussion, the clay tobacco pipes are assigned a bowl type in accordance with Atkinson and Oswald's (1969) London typology. The bowl types are represented by numbers with the prefix AO. Although several accession numbers in angled brackets are given below, only those immediately followed by a cross-reference to Fig 22 are illustrated in this report.

Some 78 clay tobacco pipe fragments bearing makers' marks were recovered from the site. The majority of the marks are moulded in relief on the underside of the pipe heel, which is characteristic of earlier 17th-century pipes. Marks that are moulded in relief on each side of the heel are characteristic of late 17th- to 19th-century pipes and include <138> [73] (not illustrated) with possible 'GS' initials on the sides of the spur and <131> [37] with possible 'GO' initials. There are also 8 examples of a stamped incuse mark on the heel base or on the stem.

The most prevalent initials are 'II' and 'NL'. Twelve pipes bear the 'II' mark moulded in relief on the underside of the heel. These pipes (<31>, <105>, <106> (Fig 22), <108>, <114>, <115>, <118>–<120>, <123>, <136>, <141>) range from type AO4 (c.1610–40) to AO10 (c.1640–60) and were from 17th-century open-area contexts.

The relief-moulded initials are set within a sunburst roundel with spiked rays or with dots between the rays. Three different dies are represented. The maker (or one of the makers) may be John Johnson, a signatory of the first tobacco-pipe makers' charter of 1619 (Oswald 1975, 139). These pipes may be compared to a pipe found in Broad Street, EC2, on which the 'II' initials are present within a sun-with-a-face. The initials 'NL' are present, moulded in relief on the underside of the heel, on 11 pipes (<11>, <12> (Fig 22), <89>, <113>, <116>, <137>, <140>, <141>, <145>, <277>, <278>) dated c.1610–40 and limited to types AO4 and AO5 found in 17th- and 18th-century open-area contexts. The initials are surmounted and underlain by tobacco plants within a dotted roundel. The maker is probably Nicholas Launde or Laud, known to be working from 1619–34 (Oswald 1975, 139).

Other makers' initials and symbols present on the recovered clay pipes include 'EH', 'GR', 'I'-mullet-'S', 'IW', possible 'JO', 'PC', 'PW', 'RR', 'SA', 'S' or 'ID', 'WB', 'WI', 'WK', 'WP', crown, flower, star, sun, tobacco plants, wheel, diamond and dot/circle. Several of these patterns may be identifiable by maker:

'IP' – <99> (Fig 22) [8], bowl type AO4, dated c.1610–40 – may have been made by John Palmer of Whitechapel (attested in 1632), John Parsons in Stepney (1644), or John Preston in Finsbury (1667) (Oswald 1975, 143). There are parallels from a site at London Bridge SE1 (sitecode TYT98) and from Upper Thames Street/Bull Wharf Lane EC4 (UPT90).

'PC' – <102> [8], bowl type AO4 and <15> (Fig 22) [14] type AO5, dated c.1610–40 – can be ascribed to Peter Cornish (attested in 1634) (Oswald 1975, 134), with parallels from the Honourable Artillery Company site in Bunhill Row EC1 (BRV98), 105–115 Borough High Street SE1 (BHS81), and Spitalfields Bishopsgate E1 (SRP98).

'WB' – <121> (Fig 22) [56], bowl type AO10, dated c.1640–60 – may possibly have been made by William Batchelor in Stepney (attested in 1619–35), or more probably by William Brooker in Ratcliffe (1633) (Oswald 1975, 140), with parallels from the Old and New Broad Street site (BRO90) and from a site in the Fleet Valley (VAL88).

'WI' – <14> (Fig 22) [14], bowl type

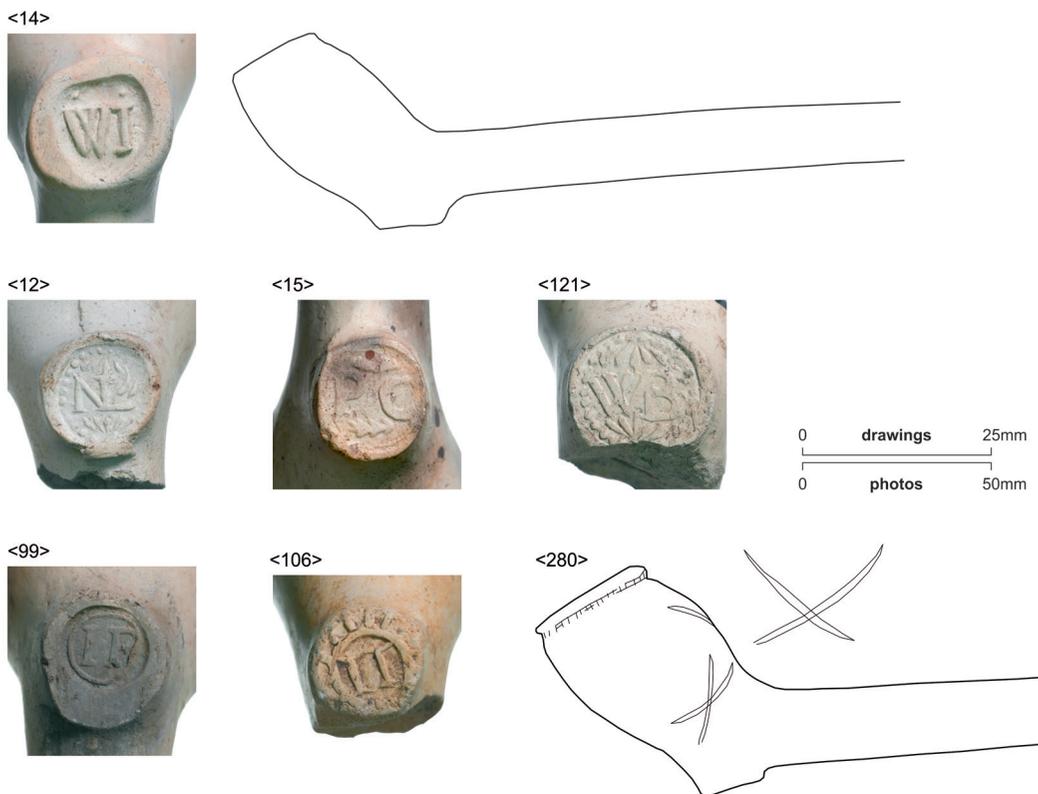


Fig 22. A selection of clay tobacco pipes from GWO05 – one examples of type AO5 dated 1610–40: <14> from [14] fill of pit [15]; four examples of type AO4 dated 1610–40: <12> from garden soil horizon [8], <15> from fill [14] of pit [15], <99> also from [8], and <106> from [12] fill of ditch [13]; and two examples of type AO10 dated 1640–60: <121> from [56] fill of pit [57] and <280> from [64] fill of pit [65] (scale drawings 1:1; photos 2:1)

AO5 and <18> [19], bowl type AO7, dated c.1610–40 – can be ascribed to William Jeffes (attested in 1619) (Oswald 1975, 140), with parallel examples on bowl type AO4 from Spital Square E1 (SRP98), the Fleet Valley site (VAL88) and the Old Bailey (GM31).

The sun symbol, which may be associated with the 'II' maker, is present as an incuse stamp mark on the base of the heel of a type AO5 pipe <142> [77] dated c.1610–40 and as a relief-moulded mark on the bases of heels <107> [12] (bowl type AO4) and <271> [56] (bowl type AO5) dated c.1610–40.

Of the makers listed above, those said to be working in 1619 were already established in business when they joined the Company of Tobacco Pipe Makers created in that year by charter of King James I. As noted earlier,

one of those makers, John Johnson, was a signatory of the charter.

A type AO13 pipe <282> (an unstratified find), dated c.1660–80, bears the stamped incuse letters 'SV' on the stem just behind the bowl. This mark is known on pipes from other London sites: BRO90 (Boston House, Old and New Broad Street EC2), VAL88 (Fleet Valley Project) and BUF90 (Bull Wharf, 66–67 Upper Thames Street). It has been suggested that these letters may stand for 'Smoke Virginia' (Oswald 1984; Le Cheminant 2008). Pipe bowl <280> (Fig 22) [64] (bowl type AO10), dated c.1640–60, has a graffito in the form of a double cross slashed into the back of the pipe bowl facing the smoker.

ACKNOWLEDGEMENTS

MOLA would like to thank Thornsett Properties for funding the excavation and allowing access to the site. The site supervisor David Saxby would like to thank the site staff – Aaron Birchenough, Harriett Buxton, Lindy Casson, Neville Constantine, Helen Dawson, Sophie Hunter, Jo Mansi, Victoria Markham, Kirk Roberts and Louise Wood – for their help during the excavation. Thanks are also due to Diane Walls of English Heritage (now Historic England) for monitoring the excavation and to Ardmore for on-site assistance. The illustrations were prepared by Carlos Lemos and Judit Peresztegi (plans), and Sandra Rowntree and Hannah Faux (finds). Finds photography was undertaken by Edwin Baker. The excavation and the post-excavation assessment were managed by Derek Seeley. The post-excavation analysis and publication was managed by Lucy Whittingham.

mtetreau@mola.org.uk

BIBLIOGRAPHY

- Atkinson, D R, & Oswald, A, 1969 'London clay tobacco pipes' *J British Archaeol Assoc* 32, 171–227
- Barber, B, & Thomas, C, 2002 *The London Charterhouse* MoLAS Monograph Series 10, London
- Bartels, M, 1999 *Steden in scherven: vondsten uit beerputten in Deventer, Dordrecht, Nijmegen en Tiel (1250–1900)*, Zwolle
- Betts, IM, 1990 'Building materials' in J Schofield, P Allen, & C Taylor 'Medieval buildings in the vicinity of Cheapside, London' *Trans London Middlesex Archaeol Soc* 41, 220–9
- Blackmore, L, 1994 'Pottery, the port and the populace: the imported pottery of London 1300–1600' (part I) *Medieval Ceramics* 18, 29–44
- Blackmore, L, 2005 'The pottery' in J Schofield & R Lea *Holy Trinity Priory, Aldgate, City of London: an archaeological reconstruction and history* MoLAS Monograph Series 24, London, 227–47
- Bowsher, D, Dyson, T, Holder, N, & Howell, I, 2007 *The London Guildhall: an archaeological history of a neighbourhood from early medieval to modern times* MoLAS Monograph Series 36 (2 vols), London
- Britton, F, 1987 *London Delftware*, London
- Cockburn, J S, King, H P F, & McDonnell, K G T (eds), 1969 'Religious Houses: House of Carthusian monks' in *A History of the County of Middlesex: Vol 1*, London, 159–69, <http://www.british-history.ac.uk/vch/middx/vol1> (accessed 21 March 2016)
- Courtney, P, 2004 'Small finds' in K Rodwell & R Bell (eds) *Acton Court: the evolution of an early Tudor courtier's House*, London, 365–97
- Daykin, A, 2017 'The London Charterhouse and the Glasshouse Yard General Baptist burial ground: excavations at Therese House, EC1A' *London Archaeol* 14, 311–16
- Divers, D, 2004 'Excavations in Deptford at the site of the East India Company dockyards and the Trinity House almshouses, London' *Post-Medieval Archaeol* 38, 17–132
- Drey, R E A, 1978 *Apothecary Jars: pharmaceutical pottery and porcelain in Europe and the east 1150–1850*, London
- Eames, E S, 1980 *Catalogue of medieval lead-glazed earthenware tiles in the Department of Medieval and Later Antiquities, British Museum*, London
- Egan, G, & Bowsher, J, 2009 'Accessioned finds' in J Bowsher & P Miller *The Rose and the Globe: Playhouses of Shakespeare's Bankside, Southwark: Excavations 1988–90* MoLA Monograph Series 48, London, 190–214
- Faithorne & Newcourt, 1658 'An Exact Delineation of the Cities of London and Westminster and the suburbs thereof together with the Borough of Southwark' reproduced in H Margary, 1981 *A collection of early maps of London*, Margary in assoc with Guildhall Library, Kent
- Hoffman-Klerkx, E, 1992 'The costumes on the Enkhuizen pottery, in Bruijn, A' *Speigelbeelden: Werra-keramik uit Enkhuizen 1605*, Den Haag, 178–81
- Hurst, J G, Neal, D S, & van Beuningen, H E S, 1986 *Pottery Produced and Traded in North-West Europe 1350–1650* Rotterdam Papers 6
- Knight, H, & Phillpotts, C, 2008 'Excavation of a 15th-century windmill mound in Seward Street, London, EC1' *Trans London Middlesex Archaeol Soc* 59, 171–89
- Knowles, D, & Grimes, W F, 1954 *Charterhouse: the medieval foundation in the light of new discoveries*, London
- Kohneman, M, 1982 *Auflagen auf Raerener Steinzeug, Töpferemuseums, Raeren*
- Korf, D, 1981 *Nederlandse Majolica, Haarlem*
- Le Cheminant, R, 2008 'The SV and MV Marks – a Mystery Solved?' *Soc for Clay Pipe Res Newsletter* 73, 30–2
- Moorhouse, S, 1972 'Medieval distilling-apparatus of glass and pottery' *Medieval Archaeol* 16, 79–121
- Noël Hume, I, 1977 *Early English Delftware from London and Virginia* Colonial Williamsburg Occasional Papers in Archaeology 2, Williamsburg

- Ogilby, J., & Morgan, W, 1676 'Large and Accurate Map of the City of London' reproduced in H Margary, 1976, 'Large and Accurate Map of the City of London' by John Ogilby and William Morgan, 1676, Margary in assoc with Guildhall Library, Kent
- Orton, C, 1988 'Post-Roman pottery' in P Hinton (ed) *Excavations in Southwark 1973-76, Lambeth 1973-79* London and Middlesex Archaeological Society/Surrey Archaeological Society Joint Publication 3, 295-362
- Oswald, A, 1975 *Clay Pipes for the Archaeologist* British Archaeological Report (British Series) 14, Oxford
- Oswald, A, 1984 'The Mystery of the SV Maker' *Soc for Clay Pipe Res Newsletter* 4, 37-8
- Pearce, J, 1992 *Post-Medieval Pottery in London, 1500-1700; Vol 1: Border Wares*, London
- Pearce, J, 1997 'Evidence for the early 16th-century Surrey-Hampshire border ware industry from the City of London' *Medieval Ceramics* 21, 43-60
- Pearce, J, 2007a *Pots and Potters in Tudor Hampshire: Excavations at Farnborough Hill Convent 1968-72*, Guildford Borough Council
- Pearce, J, 2007b 'An assemblage of 17th-century pottery from Bombay Wharf, Rotherhithe, London SE16' *Post-Medieval Archaeol* 41, 80-99
- Pearce, J, & Vince, A, 1988 *A Dated Type-Series of London Medieval Pottery part 4: Surrey Whitewares* London and Middlesex Archaeological Society Special Paper 10
- Pluis, J, 1997 *De Nederlandse Tegels: Decors en Benamingen 1570-1930*, Leiden
- Pryor, S, & Blockley, K, 1978 'A 17th-century kiln site at Woolwich' *Post-Medieval Archaeol* 12, 30-85
- Rawcliffe, C, 1999 *Medicine for the Soul: the Life, Death and Resurrection of an English Medieval Hospital: St Giles Norwich c. 1249-1550*, Stroud
- Saxby, D, 2007 *St Bartholomew's Hospital Medical College, Charterhouse Buildings, Clerkenwell Road and Goswell Road, London EC1: a post-excavation assessment and updated project design (GW005)* MOLA unpub report
- Sewell, M, (pub) 1849 *Charter-House, its Foundation and History*, London
- Sudds, B, 2006 'Post-medieval red ware production' in J Butler *Reclaiming the marsh: excavations at Moor House, City of London 1998-2004* PCA Monograph 6, London, 83-99
- Taylor, W F, 1912 *The Charterhouse of London*, London
- Temple, P, 2008 *Survey of London Vol 46: South and East Clerkenwell*, Yale University Press, New Haven and London
- Temple, P, 2010 *Survey of London: The Charterhouse*, Yale University Press, New Haven and London
- Thompson, E M, 1930 *The Carthusian Order in England*, London
- Tyler, K, Betts, I, & Stephenson, R, 2008 *London's Delftware Industry: the Tin-glazed Pottery Industries of Southwark and Lambeth* MoLAS Monograph Series 40
- Tyson, R, 2000 *Medieval Glass Vessels Found in England c. 1200-1500* Council for British Archaeology Research Report 121, York
- van Dam, J D, 1991 *Nederlandse Tegels*, Utrecht/Amsterdam
- Wilson, C A, 1976 *Food and Drink in Britain: from the Stone Age to Recent Times*, Harmondsworth, 129-30

