

EXCAVATIONS AT CROMWELL GREEN AND WESTMINSTER HALL 2005–6: FURTHER EVIDENCE FOR THE DEVELOPMENT OF THE MEDIEVAL AND POST-MEDIEVAL PALACE OF WESTMINSTER

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SUMMARY

Two archaeological excavations were carried out in the Palace of Westminster in response to proposed construction in Cromwell Green and to engineering works required to stabilise the floor and steps at the south end of Westminster Hall. The excavations offer further insight into the development of the royal palace from its 11th-century origin to the 19th century.

Of particular importance is evidence for a natural watercourse (the cause of the observed settlement), evidence for the floors within Westminster Hall from the 11th century, the discovery of fragments of the medieval king's table, and the identification and reconstruction of a lost part of the palace—the Tudor Court of General Surveyors. Additionally, the assemblages from a closely-dated 18th-century cesspit are discussed in detail.

INTRODUCTION

This report concerns work by Museum of London Archaeology (MOLA) on two archaeological sites in the Palace of Westminster (Fig 1; NGR 530197 179533). Excavation at Cromwell Green (site code: CGW05) took place in advance of construction of the new Visitor Reception Building, with associated access ramp. Two phases of evaluation in July and October 2005 were followed by an

excavation of pile cap positions in February 2006 and a watching-brief on services between June and October 2007 (Fig 2). Crom-

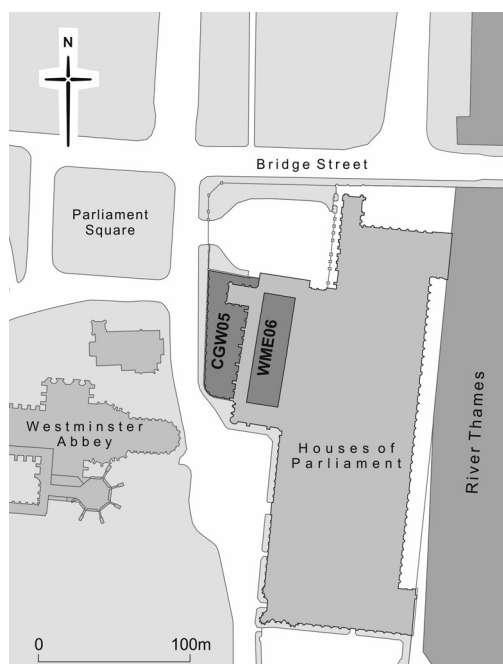


Fig 1. Cromwell Green and Westminster Hall: site location (1:5000)

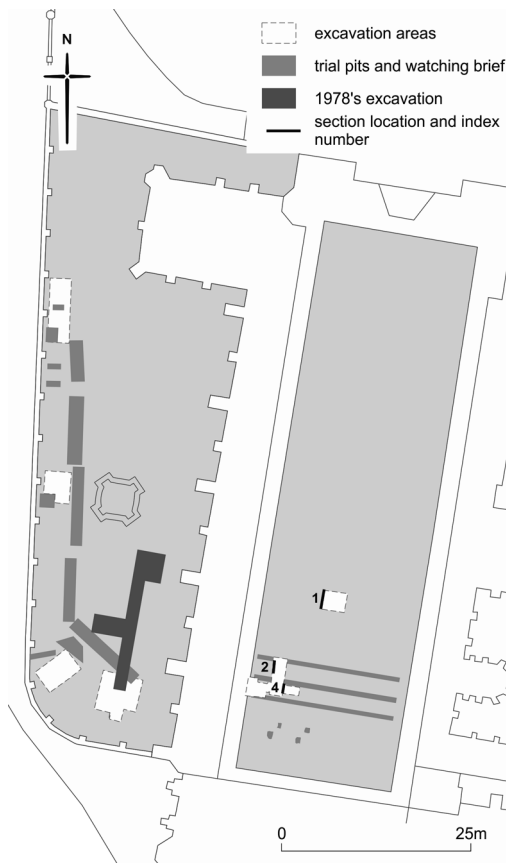


Fig 2. Cromwell Green and Westminster Hall: trench and section locations, also showing the south trench from the WCG78 investigations (1:1000)

well Green is a sunken open area (Fig 3) lying on the west side of Westminster Hall, a monument of late 11th-century origin, part of the core of the Norman palace complex. The ramp and Visitor Reception Building are visible in Fig 3.

Excavation in Westminster Hall (site code: WME06) was carried out in association with a large scale engineering exercise intended to find a solution to long-term gradual settlement of the floor and steps at the south end of the Hall (see *eg* Nash 2007; Emery & Heath 2008). Fieldwork took place from 15 March 2006 to 4 May 2006 (Fig 2). Controlled excavation took place in two areas; one beneath the lantern, intended to inform on the position of a conjectured hearth, and one beneath the south steps where fragments of the medieval king's table had been found during 1960s engineering work. The remaining work consisted of core sampling deposits beneath limits of excavation, and recording the 1830s flag floor and 1850s south steps prior to and during removal, and maintaining a watching-brief on other engineering groundworks.



Fig 3. View across Cromwell Green in 2005, showing its depth in relation to modern St Margaret Street, looking north

A chronological account of the integrated sequence from both sites is followed by a section discussing the closely-dated assemblages from an 18th-century cesspit. Land-use terminology (Building 1–3, Structure 1–4, Open Area 1–3) is used, as in other MOLA reports, to facilitate discussion and reference back to the archive. Detailed reporting of the finding, reconstruction and setting of the king's table, and its significance as a symbol of royal power, are the subject of a separate paper (Collins *et al* 2012).

CHRONOLOGICAL NARRATIVE

The pre-medieval landscape (Period 1)

Natural topography, a Roman/Saxon channel, pre-Norman flood deposits (Open Area 1)

By *c.*12000 BC the area of the site lay on an island, later known as Thorney Island, within the floodplain of the River Thames (Thomas *et al* 2006, 10–11). Buried ground surfaces of this island were observed in several locations at Cromwell Green, characterised by a 'clean' sand horizon at 0.86m OD (above Ordnance Datum) overlain by a 'dirty' sand horizon to 1.02m OD. No artefacts were recovered during the current phase of work, but excavation on the site in 1978 (see Fig 2) found the same sequence and indicated Mesolithic activity in the area (site code WCG78; Mills 1980, 27–8). The earlier excavation found postholes, depressions and a gully cutting the 'clean' sand horizon in the Late Neolithic and Early Bronze Age (Mills 1980, 18–21, phase I; dating as revised in the light of more recent work by Thomas *et al* 2006, 23–5). The 'dirty' sand horizon has been interpreted as late Iron Age or early Roman (Mills 1980, 21, phase II) and this dating remains plausible. The present excavations found no evidence of the phase of Roman features reported by Mills (1980, 21–2, phase III); just a few abraded fragments of Roman ceramic building material and a sherd of 2nd- or 3rd-century pottery were residual in later contexts.

A stream channel was observed at Cromwell Green, cutting the 'dirty' sand horizon. This feature was also recorded in the south trench of the 1978 excavation (Mills 1980, 22, phase IV). The evidence suggests that

it was a meandering stream running off the eastern side of Thorney Island into the River Thames. Its course and profile can be reconstructed (Fig 4) from the data from Cromwell Green and projected beneath Westminster Hall on the basis of borehole and window sample observations. No dating evidence was recovered from the 2005–6 excavations, but in 1978 fragments of Roman brick were found in the lower fill of the stream, while two pieces of oak plank



Fig 4. Cromwell Green: plan (1:1000) and reconstructed profile (1:150) of the excavated Period 1 channel, with a projection of its course beneath Westminster Hall, based on window sample and borehole evidence

from the upper fill produced uncalibrated radiocarbon dates of 1350 \pm 80 BP (sample HAR-2692) and 1230 \pm 80 BP (sample HAR-2696) in 1979. Recalibration of these dates (using OxCal v3.10; Bronk Ramsey 1995) produces results (expressed at two standard deviations, *ie* 95.4% probability) of AD 550–880 and AD 650–980 respectively.

The stream was probably a landscape feature during the Roman period. It had become largely filled by natural silting by the 8th or 9th centuries AD. It may only have become completely silted up during severe flooding and alluvial deposition in the 11th century (below). A scatter of stray finds from Thorney Island has been tentatively taken as evidence that a Middle Saxon minster, perhaps of late 8th-century foundation, may have preceded the late 10th-century abbey (Thomas *et al* 2006, 45–6); the discarded planks could hint at construction work taking place on Thorney Island in the late 7th or 8th century AD.

A thick clay-silt layer (alluvium) was recorded in all of the Cromwell Green trenches, sealing the already choked stream and the ‘dirty’ sand horizon. Although this layer contained just a few small fragments of abraded Roman tile, the evidence from nearby sites suggests that this layer is in fact the result of severe 11th-century flooding (Thomas *et al* 2006, 22). Sealed beneath Period 2 deposits associated with the construction of Westminster Hall, the surface of this layer lay at *c.*1.6m OD (see Fig 6) and (from core samples) was up to 1.2m thick.

Norman construction (Period 2)

Westminster Hall (Building 1)

Documentary evidence

Westminster Hall was begun by William II by 1097 and completed in time for the Pentecost crown-wearing feast on 29 May 1099 (Greenway 1996, 444–5; Mason 2005, 186–9, 202–6; Swanton 1996, 234). At 239ft 6in long and 67ft 6in wide (73.00 by 20.57m), it was probably the largest secular building in Western Europe at the time and a considerable statement of William’s political power and majesty (RCHME 1929, 121; *HKW*, i, 45, 491). When some courtiers remarked that it was perhaps too big, William

famously remarked that it was only half big enough (Greenway 1996, 446–7).

The main door to the Hall was in the middle of the north gable wall, where there was a triple-arched entrance (Lethaby 1906, fig 3). Near the north end of the Hall there were doorways through both the west and east side walls, which later led into the Exchequer and the Receipt of the Exchequer respectively. At the south end of the Hall, there were doorways at the south end of the west wall, and the east end of the south wall (leading to the Lesser or White Hall), and probably also at the west end. The Hall was not arranged as in later domestic halls with a screens passage at the north end covering the entrances to the kitchen, buttery and pantry; by the 13th century the kitchen was probably reached by the south-west doorway (Smirke 1836a, 410–12; Lethaby 1906, 136; Cooper 1937, 171–2, 180–1; *HKW*, i, 46 & n 1, 503; Wilson 1997, 36 n 15). However, excavations further to the north on the west side of the Hall in 1975 found a pit of the late 11th and 12th century filled with kitchen waste, especially oyster shells and cooked bone, and sherds from cooking vessels (Whipp & Platts 1976, 354). This suggests that the original kitchen may have stood farther north on the west side of the Hall (Wilson 1997, 43).

It is uncertain if the roof was supported by two rows of timber posts or stone columns, or only by the side walls with a scissor-brace arrangement of roof-beams. This solution is suggested by Smirke’s claim that the stratigraphy throughout the Hall was reduced by 5ft in the 1830s without discovering the bases of any piers, although he considered it probable that there had been such supports (Smirke 1836b, 416–17). However, his workmen may well have failed to recognise robber pits left by the removal of column foundations in the 1390s.

Archaeological evidence

There is no archaeological evidence for an earlier building on the site of the Hall, and the supposed bowing of the side walls (in the fashion of Saxon palace halls) has been shown to be an illusion created by earlier inaccurate surveying (Thomas *et al* 2006, 51). Previous archaeological work indicates that the wall footings of the Hall consisted of rubble foundations bonded with mortar,



Fig 5. Cromwell Green and Westminster Hall: plan of Periods 2 and 3 (scale 1:300)

built in construction trenches lined with crushed chalk (Whipp & Platts 1976, 353). The original floor was composed of a layer of clay 4 or 5in thick, laid over a levelling dump of stone rubble, clay and sand. Construction debris of lime mortar, crushed chalk and Reigate stone from the building operations of 1097–9 has also been found (Smirke 1836b, 416; Emery & Heath 2008, 8–10). This floor had to cope with repeated episodes of flooding from the Thames, the waters flowing into the Hall in 1236 and 1242 (Stow 1603, ii, 114–15; Brayley & Britton 1836, 43; Cooper 1937, 192).

Archaeological evidence from the current phase of excavation for the Westminster Hall construction programme of the 1090s consists of undated layers of redeposited clay, lime mortar and of crushed chalk and Reigate stone ([68–70], [94], [108]) directly overlying the Period 1 flood deposits, although a phase of ground clearance may be assumed. The upper surface of the construction deposits, which probably formed the bedding for a stone floor, lay at 2.26m OD (Figs 5–6).

West of the Hall (Open Area 2 and Structure 1)

Archaeological evidence

To the west of the Hall (Cromwell Green), the upper surface of the Period 1 flood horizon is assumed to have been the late 11th-century ground surface, although there is no dating evidence to confirm this (see Period 3).

There is some evidence for the sub-division of Open Area 2, tentatively dated to this period. Two features — a ditch and a probable robber trench — cut the Period 1 flood horizon (Fig 5). The silting of north–south ditch [44], 0.6m wide and at least 0.3m deep, contained sherds of coarse London-type ware dated to 1080–1200. East–west-aligned trench [40], 0.95m wide and surviving 0.77m deep, was probably dug to rob out a wall (conjectured as Structure 1), perhaps more likely a boundary than part of a building. Pottery from the backfill [39] was surprisingly early. Sixteen sherds from the same Late Saxon shelly ware (LSS) bowl dated from AD 900–1050, which might suggest that the structure dated to the 11th century.

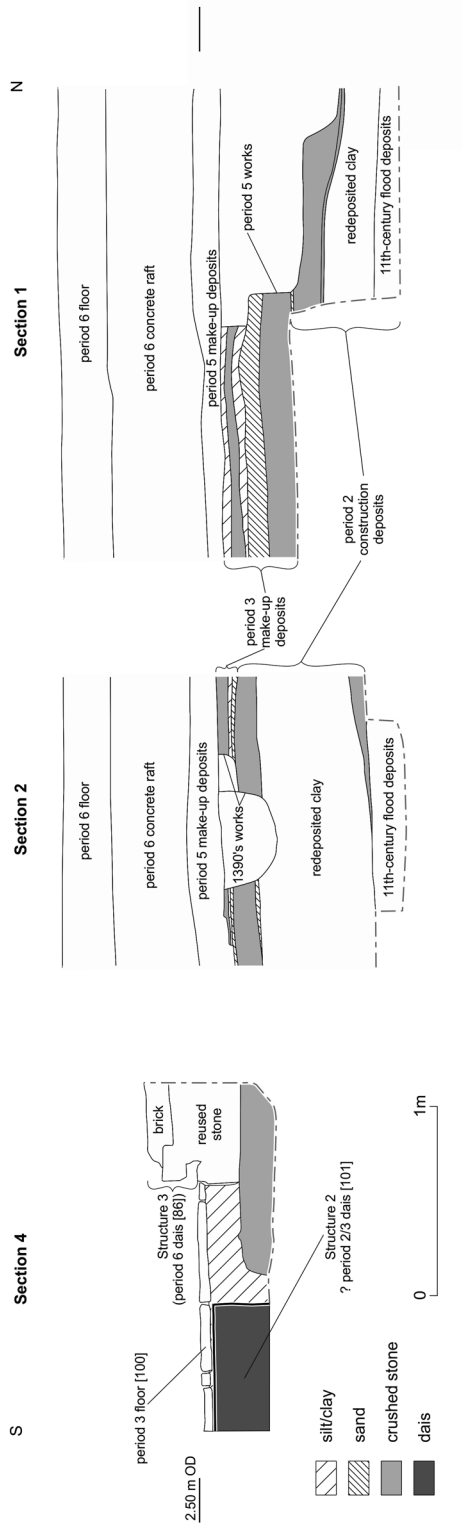


Fig. 6. East-facing section showing floor levels within Westminster Hall (scale 1:40)

Associated with the robbing of Structure 1 were several pieces of residual Roman tile and brick, showing signs of having been cut and reused as a floor tile, and a brown-glazed wall tile. Similar tiles can still be found *in situ* in Cheyneygates and in the Little Cloister at Westminster Abbey, having been installed sometime between the late 1060s and the 1080s. As the Palace of Westminster was the primary residence of the Norman kings, it is possible that similar glazed walling was present in the Palace (Bradley & Pevsner 2003, 212).

Medieval (Period 3)

Westminster Hall (Building 1)

Documentary evidence

Works at Westminster Palace in the 1180s appear to have included the making of a dais at the south end of the Hall in 1183/4: *'Et pro exaltanda area dominice aule Regis apud Westmonasterium'* (PR, 30 Henry II, 137). The 12th-century kings are likely to have had a wooden precedent for the later marble table (below) here. When Henry III had the marble throne built at the south end of the Hall in 1245, he ordered steps of cut stone to be made in front of it (*Cal Close R*, 1242–7, 293). It was probably raised on a dais approached by six steps in imitation of the description of King Solomon's throne in the Bible. This did not extend across the entire width of the Hall, as there were doorways towards the east end of the south wall, perhaps also towards the west end, and near the south end of the west wall. It is likely therefore to have occupied the south end of the central aisle of the Hall. The king's table of marble is thought to have been placed on the dais by 1253, when the wall behind it was painted. Subsequent alterations were made to the table in 1308 and 1399, in advance of the coronations of Edward II and Henry IV.

The Palace probably had a piped water supply installed in 1233 (Salzman 1952, 275). The original arrangements within the Hall appear to have been somewhat insanitary. In 1259 Henry III had the open gutter carrying kitchen waste through the Hall closed off and replaced by an underground drain 330ft (100.58m) long taking the dirty water directly from the kitchens to the Thames, to

avoid infecting (*corrumpere*) those spending time in the Hall. The new gutter was made with ragstone and chalk bonded with lime and sand, and covered with boards in the king's kitchen (*HKW*, i, 503; Devon 1837, 43, 44, 47, 50–4, 56, 58, 65–6, from TNA: PRO, E 101/467/2; Colvin 1971, 288, 308, 342–4, 348, 354, 372, from TNA: PRO, E 101/467/2 & 3; *Cal Close R*, 1256–9, 377–8, 380; *Cal Lib R*, 1251–60, 507). There is no evidence to suggest that the new drain passed through the Hall.

In 1273/4 new stone seats with steps were made in front of the king's seat (TNA: PRO, E 372/118, m 20d). In September 1307 marblers carved 213ft (64.92m) of marble for steps and treads (*gradibus et passibus*) in front of the king's great seat; further marble steps (*passus*) were carved and laid in front of the great table in December. In February and March 1308 up to eleven marblers were making steps (*passibus*) in the Hall before the high table (BL, Add MS 30263, fol 7v; TNA: PRO, E 101/468/21, fols 20, 53, 57, 73, 80, 81v). In the Hall in May 1357, Edward III received King Jean of France, who had been captured at the Battle of Poitiers, descending from the throne to embrace him (Brayley & Britton 1836, 224).

In the mid-1380s a paviour was employed to mend holes in the Hall floor made by inserting scaffold poles to support a gallery for watching a duel. The floor was covered with sand from Tothill Fields and the lists for the duel were set up on it. A step for burning a fire was newly made within the Hall from tiles and timber. A screen was made to shield the king from the fire in 1388 (TNA: PRO, E 101/473/2, ms 3, 4, 5, 19). As part of Richard II's remodelling of the Hall in the 1390s a new floor was laid. This may have been an attempt to counteract the effects of flooding, and presumably abutted the stone steps of Henry III's dais. Smirke believed this floor to be of Purbeck marble (Smirke 1836a, 416), but in fact this was a 17th-century floor (see below). Richard's works may also have included piercing a new doorway through the west end of the south wall, but it seems more likely that this had existed from the time of construction (Cooper 1937, 181). The remodelling works may have involved the removal of the late 11th-century columns or posts holding up the original roof, before

its replacement with the present hammer-beam roof. Some accounts assume that they were removed, although there is no specific mention of this in the documentation (HKW, i, 529; Wood 1965, 51; Steane 1993, 76).

Archaeological evidence

Between the 12th and the 14th century the floor of the hall must have been repaired, patched up or relaid on a number of occasions: the archaeological evidence (not precisely datable) consists of alternating layers of loose soil, brickearth or clay ([91, 93, 104, 105]), crushed stone ([57, 67, 90]), and sand ([56, 64, 92]) (Fig 6), some of which were probably laid down to make good settlement of the floor, which appears to have been an issue from Period 3 onwards.

Evidence for the major rebuilding campaign of the 1390s was seen in both areas of excavation within the hall. More than 25 post- and stakeholes were recorded (Fig 7), presumably traces of the mass of scaffolding which would have been required to raise the walls and build the new roof. This activity is dated by products (all jugs) of the Surrey whiteware and London-type ware industries (Pearce & Vince 1988; Pearce *et al* 1985) to 1270–1350/1400, reasonable confirmation that the features are traces of the late 14th-century rebuilding. In the southern trench, a small area of limestone (*ie* not the Purbeck marble expected by Smirke, above) flag floor [100] survived *in situ* (at a level of 2.51m OD) in a stratigraphic position and level likely to be associated with the late 14th-century hall (Figs 6–7). The largest slabs were 700 by 500mm (2ft 4in by 1ft 8in) and 50mm (2in) thick. The surviving floor slabs were left *in situ* by the current consolidation works, with a reinforced concrete ground beam being redesigned to span over them.

Further evidence for the layout of the late 14th-century hall was found in the northern trench. Sealing the post- and stakeholes, layer [15] was interpreted as make-up for the stone floor, which did not survive here. The layer was very hard and red-brown, suggesting it had been subject to heat, perhaps from the documented large, open central hearth, situated in approximately this location under the lantern. No trace of any hearth structure survived. The final piece of evidence which may relate to the

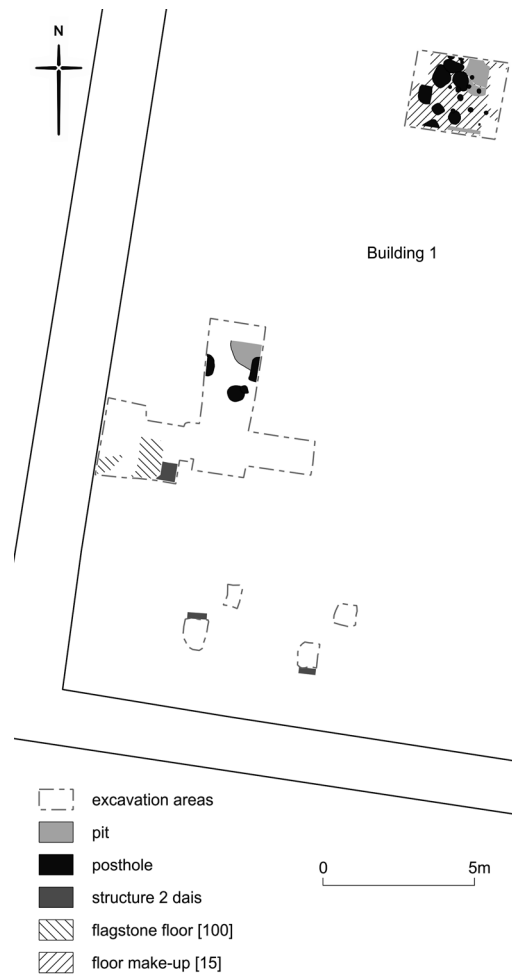


Fig 7. Detailed plan showing the postholes associated with the 1390s remodelling of Westminster Hall and an area of *in situ* floor [100] (Period 3) (scale 1:250)

rebuilt medieval hall consists of a mass of chalk rubble seen in three locations under the modern south steps ([101], [106], [109]): the rubble could well be make-up for a raised medieval dais (Structure 2) at the south end of the hall (Figs 5–7). The dais would have stood substantially above this construction deposit, which survived to a level of 2.42m OD.

A number of peg roofing tiles were found associated with the maintenance and rebuilding work. These were of typical London type (two round nail hole type, made by tilemakers in or close to London) with splash or a more uniform covering

of glaze covering the lower third of the tile. Similar roofing tile was found in 14th- to 15th-century floor make-up deposits, which included an example made from a slight silty fabric (MOL fabric 3062) which probably originated from a tiliary situated outside the London area, possibly Penn in Buckinghamshire. Documentary sources, however, indicate that Westminster Hall had a shingle roof up to the 1390s, when it was replaced in lead. It seems probable that these tiles derive from internal features (such as hearths and masonry structures) or imported dumped material rather than from the roof of the hall. Medieval London-type peg and ridge tiles were also reused and residual in Period 5 contexts in Westminster Hall, along with another possible Penn product, a peg tile with a clay fabric characterised by very small white calcium carbonate inclusions (MOL fabric 3097) from a tiliary in North Kent (Betts 2008), two plain-glazed floor tiles of 'Westminster' type (Betts 2002, 10–11), and a plain glazed Low Countries floor

tile of probable 14th- or 15th-century date, which may have derived from the medieval building.

Substantial fragments of the king's table (Fig 8) date from this period. They were found reused in a Period 5 structure (Structure 3, below), but are discussed in detail elsewhere (Collins *et al* 2012).

West of the hall (Open Area 2)

Archaeological evidence

Land to the west of the hall (Cromwell Green) remained an open area (Open Area 2) for some or all of the medieval period. The subsoil which formed over the Period 1 flood horizon incorporated 12th-century pottery, but is dated to 1240–1350/1400 by London-type ware (LOND) and Kingston-type ware (KING) from [9] and [14]. Pits were dug for refuse disposal (Fig 5), one ([23]) is undated, while the other ([42], [48]) is dated to 1240–1400 by the rim and strap handle of a baluster jug, in LOND, with white slip coating and a clear glaze.



Fig 8. View of a trestle of the mid-13th-century king's table under excavation, showing its reuse within Westminster Hall in the Period 5 foundation (S3)

Tudor (Period 4)

Westminster Hall (Building 1)

Documentary evidence

At the coronation of Queen Elizabeth in 1559, the 'steps of the mount' of the 'Seige Royall' were decorated with red ribbon (TNA: PRO, LC 2/4/3). In 1564 bricklayers were paid for paving the way at the top of the great stairs in the Hall (BL, Add MS 38091, fol 92). It is not clear what this entry relates to.

Floods continued to invade the Hall and disrupt its business, despite the progressive raising of the floor level. John Stow noted floods in September 1555 and February 1579 (Cooper 1937, 192). Between July 1584 and February 1585 a new levelling floor of loam, sand, clay and soapmaker's waste was laid in the Hall by the warden of the Fleet Prison, as *ex officio* keeper of the Palace, at a total cost of £24 15s 10d for labour and materials. First 30 loads of loam were brought, perhaps to fill depressions. These were followed by 13 loads of sand, 240 loads of clay and 7 loads of *sope ashes* (HKW, iv, 296; TNA: PRO, LR 12/2/43). Soapmakers' waste was similarly

used to make up the yard floor surface of the second phase of the Rose Theatre in Southwark in 1592 (Bowsher & Miller 2009, 61). No archaeological deposits within the Hall could be dated to Period 4.

The Court of General Surveyors (Building 2)

Documentary evidence

The area to the west of Westminster Hall was characterised from the 16th century onwards by an irregular tangle of court offices and residences, occupied both by officers of the royal household and private householders. These were the Tudor buildings thought to have been erected in the reign of Henry VIII (Smith 1837, 261). The excavations to the west of the Hall in 1978 and 2005–6 uncovered the remains of a substantial masonry building (below; Mills 1980, 25) which can be identified as the Court of General Surveyors, built in 1542–3, on the basis of documentary evidence collated by Howard Colvin (*HKW*, iv, 288–9).

The Court of Augmentations and its sister body the Court of General Surveyors were the administrative and judicial courts that carried out the Dissolution in the 1530s and 1540s. The Court of Augmentations is the better known court, founded specifically for the task in 1536, and situated on the north-west side of the Hall. However, it was based on the existing department known as the general surveyors which had, since the reign of Henry VII, been an integral revenue-raising part of the royal chamber. The general surveyors were a central royal agency who administered newly-acquired revenues, usually obtained by escheat (in the case of death without a legal heir) or attainder (confiscation for treason). In 1542/3 the existing department was ‘upgraded’ to a formal Court by means of an Act of Parliament, a result of the huge volume of new work that had come under its remit with the confiscation of property belonging to attainted monastic houses such as Jervaulx, Glastonbury and Reading (Richardson 1952, 192–214, 248–82, 362–75; 1961, 22–4, 53, 127–9, 275).

A building to house the new Court of General Surveyors was therefore begun in July 1542 and there is a surviving set of building accounts prepared by James Nedeham, the

Surveyor of the King’s Works, and his clerk of works James Baldwen (BL, Add MS 10109, fols 1–49). Construction was completed in late January 1543 (a separate contract of ‘fitting out’ work continued into February): a total of 8,066 ‘man-days’ were spent on the project, with up to 100 workers on site at any one time. The building cost £482 3s 10½d to build, with brickwork and carpentry the main expenses (Table 1; Fig 9).

The accounts offer a wealth of fascinating detail of the construction process and the appearance of the building. The accounts refer to a ‘grete frame’ (BL, Add MS 10109, fol 2) but the large expense on brickwork makes clear that the frame was completely encased in thick brick walls (rather than brick nogging infilling a timber-frame). Work began in July with the digging of the foundations and the trenches were filled with mortar and 136 tons of chalk, most of it newly quarried in Dartford, with another 45 tons of recycled ragstone from the demolished buildings of Barking Abbey (*ibid*, fols 5v–8). The bricklayers and carpenters also began work that month, with the bricks bought from Westminster and London brickmakers, and the timber bought from dealers in ‘Waybredge’ (Weybridge) and Croydon (*ibid*, fols 14–17). A total of 209,000 bricks were purchased for the building, at an average price of 5 shillings per 1,000

Court of General Surveyors: construction costs 1542–3

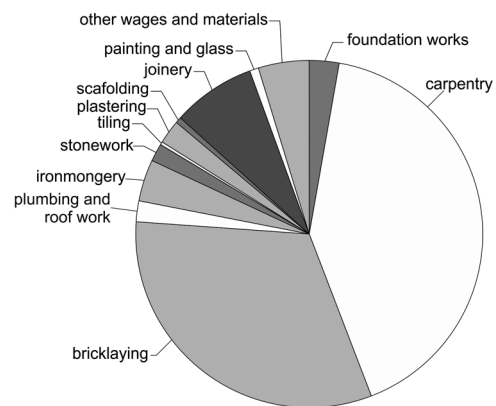


Fig 9. Chart summarising the construction costs of the Court of General Surveyors building

Table 1. Construction costs of the Court of General Surveyors building (rounded to nearest £)

| | 1542 | | | | | | 1543 | | |
|------------------------------------|------------|-------------|------------|------------|------------|------------|------------|------------|-------------|
| | July | August | September | October | November | December | January | February | Total |
| Foundation works | £13 | | | | | | | | £13 |
| Carpentry | £31 | £62 | £40 | £26 | £21 | £11 | £9 | | £200 |
| Bricklaying | £21 | £40 | £38 | £40 | £13 | £1 | £1 | | £154 |
| Plumbing and roof work | <£1 | £1 | | £3 | £3 | £1 | £1 | | £9 |
| Ironmongery | | £3 | £6 | £5 | £3 | | £3 | | £19 |
| Stonework | | | £2 | £3 | £1 | | | | £7 |
| Scaffolding | | | £1 | £1 | | | | | £2 |
| Plastering | | | | | £7 | £2 | £2 | | £11 |
| Tiling | | | | | £1 | £2 | | | £3 |
| Joinery | | | | | | £4 | £14 | £20 | £38 |
| Painting and glass | | | | | | £4 | | | £4 |
| Other wages & materials | £7 | £3 | £2 | £1 | £1 | <£1 | £9 | | £23 |
| Monthly total | £72 | £109 | £89 | £80 | £50 | £25 | £37 | £20 | £482 |
| of which wages | £33 | £49 | £52 | £41 | £31 | £20 | £19 | £10 | £256 |
| of which materials | £39 | £60 | £37 | £39 | £19 | £5 | £18 | £10 | £226 |

bricks. Scaffolders are first mentioned in September (so the walls must have been at least 4 or 5ft high by then) and a special 'gyn' — presumably a timber winching crane — was brought from the dock at Scotland Yard (*ibid*, fols 20v & 23v). By October some of the ground-floor windows were ready and were fitted with iron security bars. Plumbers began work on the roof using free lead from the adjacent royal store, presumably recycled ex-monastic lead (*ibid*, fols 27v, 32v & 39). In November the bricklayers and carpenters were working on the 'Jakes', a brick-built

garderobe at first-floor level, complete with ventilation holes. The windows on the upper floor were also fitted that month, with plasterers covering the walls, ceilings and floors (the latter presumably a lime-ash floor surface; *ibid*, fols 34v–35). The following month joiners began work on the wainscot panelling and doors, with tilers covering the adjacent King's salt-fish house with 4,000 tiles mainly bought from Kilburn tilemakers (at an average price of 5s 4d per 1,000; *ibid*, fol 42). In January 1543 the works were drawing to a close: the joiners were making a 'grete

table' (covered with 23 yards of green cloth) for the first-floor office and bricklayers were back on site doing the fireplaces (*ibid*, fols 45v–47v). The main account ends that month but an additional contract was issued for joiners to finish the door 'porttalls' and make additional benches, stools and tables, probably in February (*ibid*, fol 49).

In addition to the construction accounts, there are a series of surveys by Christopher Wren's assistant William Dickinson in the second decade of the 18th century (Oxford, All Souls MS III 17; *Wren Society* 1934, 46, 119–20, pls 33–6). The most useful is the annotated site survey done in 1711, showing an external staircase at the south end of the building, an internal corridor on its east side and large windows with mullions at either end of the ground-floor chamber. A slightly later plan of 1712 shows the former King's salt-fish house, immediately east of the Surveyors building, with details of the chimney stack that the two buildings shared (*ibid*, pl 36) (Fig 10).

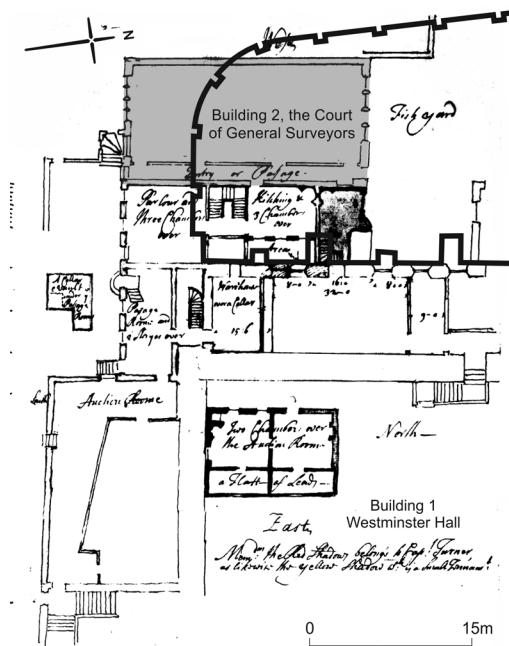


Fig 10. William Dickinson's plan of the west side of Westminster Hall in 1712 (*Wren Society* 1934, pl 36), with the Court of Surveyors building at the top left. Note that the plan is orientated with west at the top of the page (scale c.1:700)

The new building had a short history as an 'independent' Court of Surveyors: this Court and its larger sister-body the Court of Augmentations were amalgamated in 1547 (Richardson 1961, 37). The former Surveyors building almost certainly continued in use by the amalgamated Court of Augmentations, although it may have had other uses after the eventual disbanding of the Court in 1554, when it became a department within the Exchequer.

Archaeological evidence and reconstruction

Substantial chalk wall foundations were recorded at Cromwell Green in several of the 2005–6 trenches, as well as in the 1978 excavation (Mills 1980), all dug through the Period 3 medieval subsoil (Fig 11). The foundations were of typical late medieval or early post-medieval construction, formed by 'pouring' chalk, Kentish ragstone and mortar into a flat-bottomed trench that was up to 1.6m (5ft) wide and at least 1.0m deep, probably 2.0–2.5m (6–8ft) deep relative to the original 16th-century ground surface (which had been truncated by Victorian landscape works). Two small brick fragments found at the base of the foundation date from 1450–1666 and, in the 1978 excavation, the foundation was seen to post-date a feature containing late 15th- or early 16th-century pottery (WCG78 archive, feature F73). The archaeological evidence points to a substantial masonry building constructed on the west side of Westminster Hall in the 16th century: the form and location of the foundations match the Court of Surveyors building described in the 16th-century accounts and depicted in the early 18th-century survey.

Combining the archaeological information with the accounts and survey (see Fig 10), we can reconstruct a detailed ground-floor plan of this Tudor office block, showing the 'counsell chamber' (probably used for judicial sittings of the Court), the through-passage, the staircase and the shared chimney stack (Fig 12a; BL, Add MS 10109, fol 27). Using this plan as a starting point, with further reference to the construction accounts as well as contemporary parallels such as Wash-house Court (London Charterhouse), Fulham Palace and the Court of Augmentations, we can attempt a reconstruction of the plan (Fig

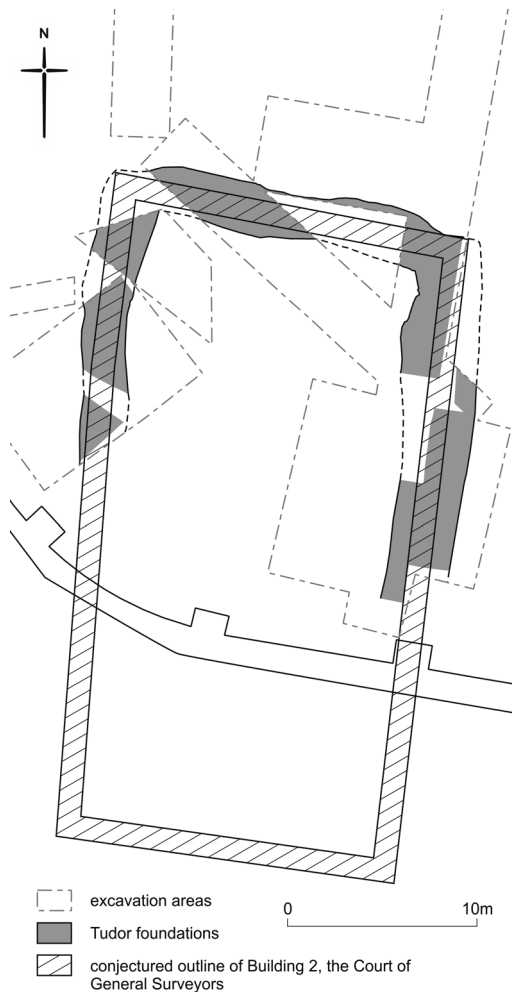


Fig 11. Cromwell Green: the 16th-century foundations interpreted as part of the Court of General Surveyors of 1542–3 (scale 1:400)

12a) and north elevation of the building (Fig 12b). The height of the building is estimated as 170 courses, or just under 12m (38ft), based on the number of bricks purchased, typical course height (as measured at Fulham Palace), and the thickness of the walls, making allowance for windows and wastage. This reconstruction shows the 24-light ground-floor window with its central stone mullion and red-painted iron bars, the heated upper chamber ('studdye howse') with its 12-light window, and a ground-floor door painted white (BL, Add MS 10109, fols 41 & 44).

Other buildings

The King's salt-fish house was partly rebuilt in the process of erecting the Court of General Surveyors building (HKW, iv, 289; BL, Add MS 10109). Lying on the east side of the Court, it was the residence of the King's Fishmonger. No archaeological evidence for this structure was found.

17th and 18th century (Period 5)

Westminster Hall (Building 1)

Documentary evidence

The Hall was repaved with Purbeck marble in advance of Charles II's coronation in 1661 at a cost of more than £400. Rubbish totalling 79 cartloads was removed from the Hall and dumped in Tothill Fields. Labourers brought a total of 175 cartloads of earth and 78 loads of sand into the Hall, which was spread and levelled by *mazercourers* in advance of the masons' work. Joshua Marshall laid 12,895½ sq ft of new paving and 50 sq ft of old flagstones were reused, in both the Hall and the passage to the south-east of the dais leading to the two chambers of Parliament (TNA: PRO, E 351/3274; WORK 5/2, fols 354–5, 357, 358, 360v). The reused flags were presumably from either the 1390s floor or the 1584 floor. This accounts for about 80% of the area of the Hall.

The marble table and the medieval dais were dismantled for the same occasion. Hugh May, the surveyor of works at Westminster (and Paymaster to the King's Works 1660–68), was paid for 'taking up the old stone and stepps with the Stone table in Westminster Hall'. This demolition was connected with cutting a new doorway through the 8ft (2.44m) thickness of the stone wall at the end of the Hall and setting it with 126ft (38.4m) of freestone. The doorway was 11ft (3.35m) wide and 13ft (3.96m) high, its sill laid with 7ft (2.13m) of 'Kentish step'; 36ft of Reigate stone were also provided for the doorway. Gaps in the wall were made good with brickwork. William Beard carved a Beerstone cartouche over the doorway to set a bust of the king upon, held in place by an iron cramp (TNA: PRO, E351/3274; WORK 5/2, fols 347, 348v, 355, 355v, 357). The new doorway was cut through the central part of the south wall.

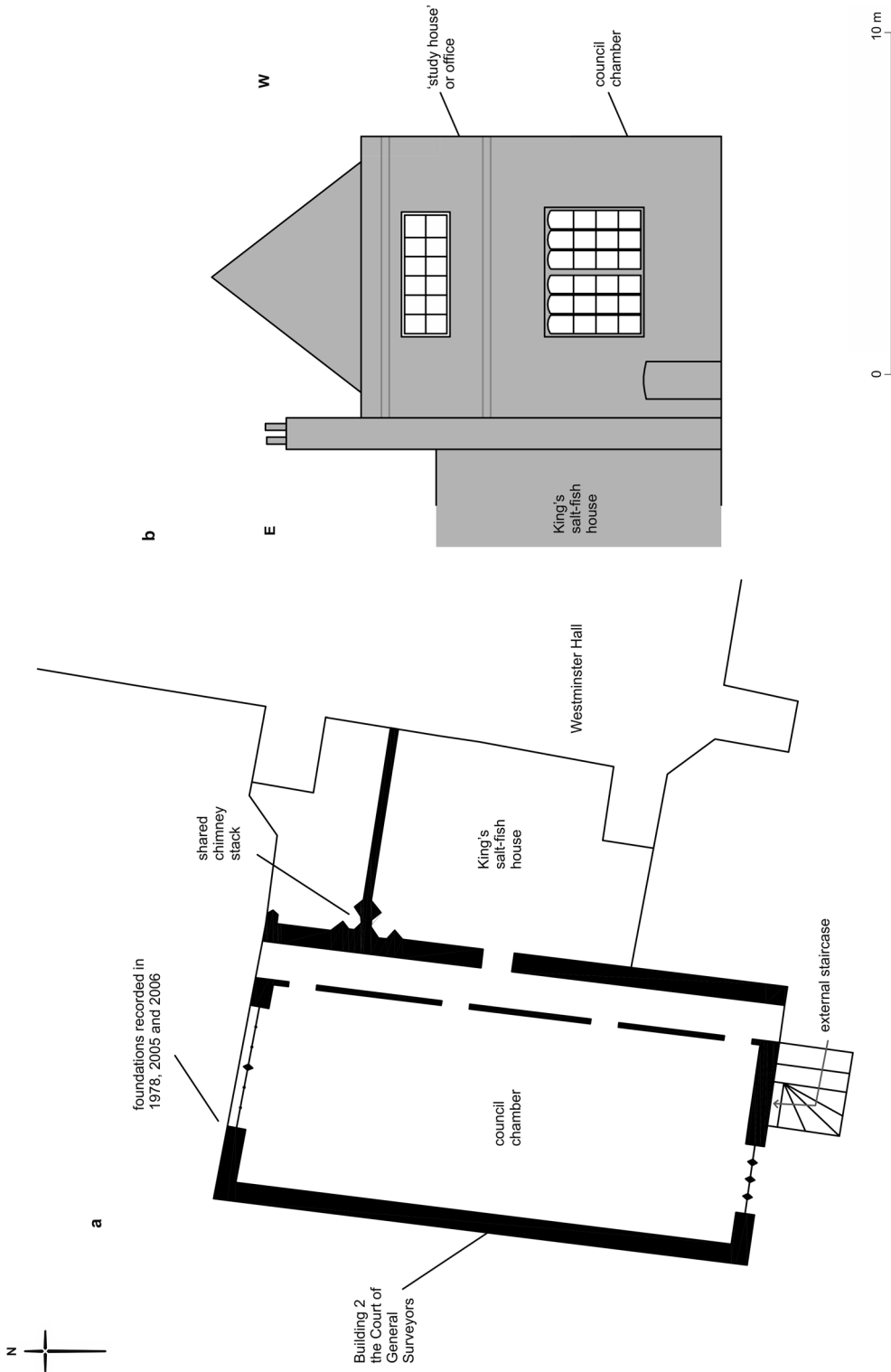


Fig 12. Reconstruction of: (a) the plan and (b) the north elevation of the Court of General Surveyors (scale 1:200)

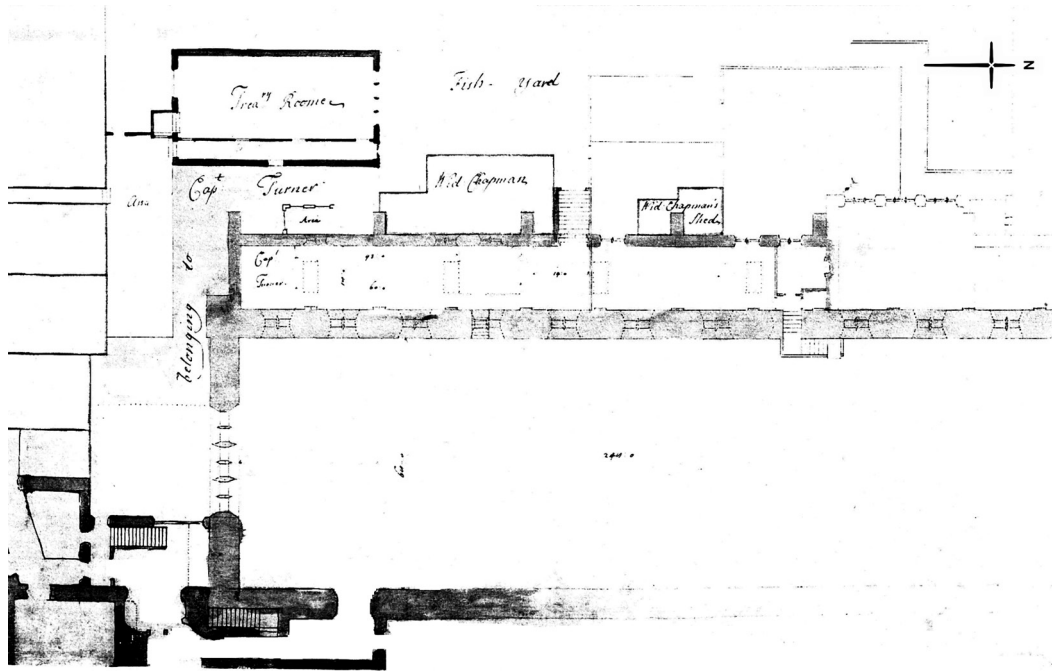


Fig 13. Christopher Wren's plan of the south end of Westminster Hall in 1712 (Wren Society 1934, pl 34)

A new dais (*halfe pace*) was made in front of the two courts of Chancery and King's Bench, with 308ft (93.88m) of marble steps on three sides, incorporating 30 iron cramps, and its surface laid with 66 sq ft of Purbeck marble paving. The steps had brickwork foundations. This dais appears on Wren's plan of the Hall in 1712 (see Fig 13). Another *halfe pace* was made for the king to dine upon, measuring 34ft by 18ft (10.36m by 5.48m), and laid with mats (TNA: PRO, E351/3274; WORK 5/2, fols 347–348v, 353). The dais was described as 'a place made most desently, a desent by three or four staires higher than the other places' at the coronation in 1661 (Sachse 1961, 178); or as having 'five or six steps of ascent' in the mid-17th century (Dugdale 1671, 37).

Amongst the work of the bricklayers was 'working up the residue of the brickworke for the foundations of the two Courts of Judicature in Westminster Hall, videlicet the Chancery and the King's bench' (TNA: PRO, WORK 5/2, fol 348v). This phrase probably covers the construction of the low balustraded brick wall built across the south end of the Hall, the foundations of

which incorporated several fragments of the dismantled marble table, used as hardcore (Emery & Heath 2008, 11). The wall is visible in a depiction of the coronation of James II (Colvin 1966, fig 45) and appears in Wren's plan of the Hall in 1712, but only as a faint line (see Fig 13).

At James II's coronation in 1685 the king and queen sat behind a table on a platform raised three steps above the dais, which was seven steps high and fronted by a low balustraded wall (Colvin 1966, fig 45; TNA: PRO, WORK 5/39, fols 281–282v). No reference was made to the presence of the marble throne. The table was said to be at the top of the 'stone steps' (Sandford 1687, 60). This arrangement was perhaps high enough to rise over the sites of the original marble seat and table. The Office of Works estimate for the preparations for the coronation included making the wooden scaffold for the king's table between the two courts at the upper end of the Hall. Other scaffolds along the side of the Hall supported galleries for spectators and boxes for drummers and trumpeters. The walls were whitewashed and covered with hangings (TNA: PRO,

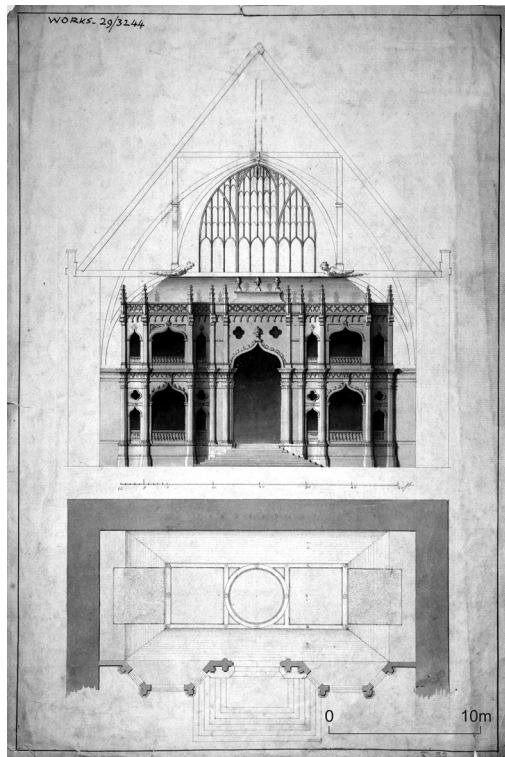


Fig 14. Plan and elevation of the new law courts in Westminster Hall in 1746 (TNA: PRO, WORK 29/3244)

WORK 3/1, fol 1; WORK 5/39, fol 288v). The alterations at the south end of the Hall included removing two staircases and cutting a way through the balusters, which were therefore already in existence (TNA: PRO, WORK 5/39, fols 282v).

Similar arrangements were projected for the coronation of William and Mary in 1689. They included making floors over the courts of King's Bench and Chancery for the king and queen to dine upon, with steps and a table (TNA: PRO, WORK 3/1, fol 8; WORK 5/43, fols 278–93).

In 1739 the courts of Chancery and King's Bench were enclosed by an elaborate screen wall designed by William Kent (Fig 14). This wall probably shared its alignment with the balustraded wall of 1661. The court structures were finally removed from the south end of the Hall in the 1820s (HKW, vi, 497). At this time there was a flight of steps between them, leading up through a central doorway in the south wall of the Hall to a

landing which connected to the House of Commons (Brayley & Britton 1836, 462).

There were further episodes of flooding in the Hall as late as February and December 1736 (*Gentleman's Magazine* 1736, 109, 747). In 1780–82 a new floor of Yorkshire flagstones was laid on brick arches, a foot (0.3m) higher than the old paved floor, in order to avoid damp and the periodic flooding by high tides (HKW, v, 388).

Archaeological evidence

A brick wall was built across the south end of the hall (Structure 3, Fig 15). This wall was 0.6m (2ft) wide and may have supported a raised dais or screen at the south end of the

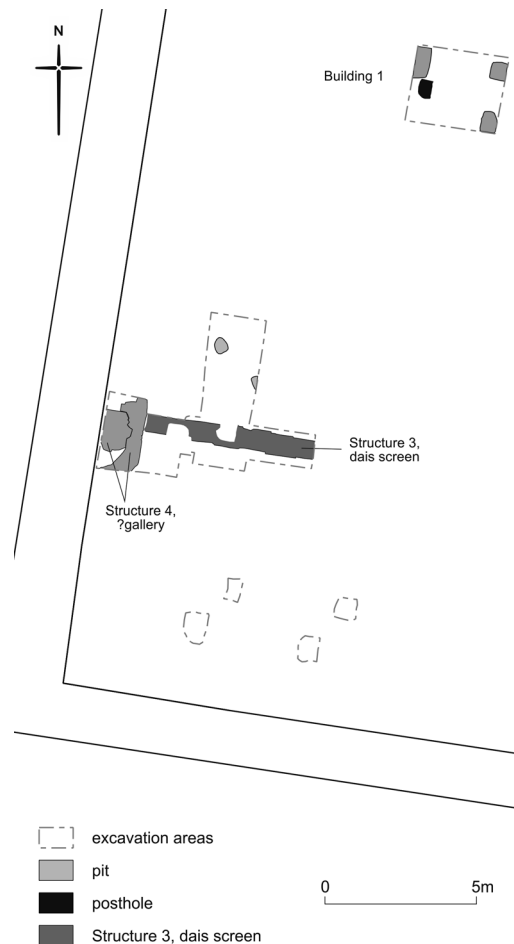


Fig 15. Westminster Hall: plan of Period 5 features (scale 1:250)

hall. The foundation produced a number of very battered incomplete bricks (111mm in breadth by 60–61mm in thickness). These are probably of mid-16th- to mid-17th-century date, although all show evidence of having been reused from an earlier brick structure. This is almost certainly part of the works carried out for the coronation of Charles II in 1661, although minor works in this area are also recorded in association with the coronation of James II in 1685, William and Mary in 1689, or the erection of the courts of Chancery and King's Bench screen wall in 1739 (for details see above, Documentary evidence). The foundation course consisted of recycled stone, including several fragments of the medieval king's table (above, Fig 8). It should be noted that more of this foundation is likely to survive *in situ* under the eastern half of the south steps.

Other archaeological features are perhaps remains of minor works of the 17th and 18th centuries. These include a few postholes which might be evidence of roof repairs, and some irregular stone foundations for a gallery along the west wall (Structure 4) (Fig 15). The highest apparently pre-1830s floor make-up ([4]) was recorded to a maximum height of 2.65m OD.

*The former Court of General Surveyors
(Building 2)*

The former Court of General Surveyors building was used by the King's Fishmonger as a store for fish and salt until 1662, when it was replaced by a store for the legal records of the Courts of Wards and King's Bench (*HKW*, v, 425 n3), and known as the Upper Treasury. However, in 1709 and 1711, around the time of Dickinson's survey (above), the Fishmonger was still making use of the building and abusing the records stored there, treading them underfoot and removing them as he pleased (*Cal Treas B*, 444). By 1732 the records of the Courts of Requests and Wards had been moved to some rooms adjoining the House of Lords, where they still lay in great confusion and disorder (Anon 1732, 6), and the old building was known as the King's Bench Treasury. By 1739 the Chief Justice of the King's Bench regarded it as old and ruinous, and recommended that it should be rebuilt (*HKW*, v, 425). The building was demolished

in the early 1750s (below). No archaeological remains from Building 2 can be dated to Period 5.

Other properties, including a cesspit in John Wells' house (Building 3)

Documentary evidence

The King's salt-fish house was still the residence of the King's Fishmonger in 1732, at the south-east corner of Fish Yard (Smith 1837, 31). In 1739 it was occupied by Captain Broom, a print seller who restored the medieval painting of Richard II in Westminster Abbey (Smith 1837, 251n; Cooper 1937, 225, pl 3).

Between the King's Bench Treasury building to the east and the frontage of St Margaret's Lane to the west lay several small houses in the early 18th century. These were purchased in 1743 by the commissioners for building Westminster Bridge and its approach roads, in order to widen the lane as St Margaret's Street. Four of the houses belonged to Israel Wilkes, who also had much property in Spitalfields, and the other one to William Rowse. The excavated cesspit lay in the house (Building 3) of one of Wilkes' tenants, John Wells (Fig 16) (TNA: PRO, WORK 6/60). He may have been related to Peter Wells, the proprietor in the 1760s of Alice's Coffee House, which lay in the north-east corner of Old Palace Yard (TNA: PRO, WORK 6/61).

To the south of these five houses and the King's Bench Treasury, on the corner of St Margaret's Lane and Old Palace Yard, lay a house and garden occupied by General Oglethorpe, the founder of the state of Georgia, and later by Colonel Cecil. It was acquired by the Westminster Bridge Commissioners in 1745. Shorn of its garden and two timber sheds by the road widening, it became the house of the sculptor Henry Cheere, later a knight and baronet. Captain Broom also appears to have had a leasehold interest in this house, as did several other parties (Smith 1837, 251n; *HKW*, v, 428, 430; TNA: PRO, WORK 6/60 & 6/62).

In the mid-18th century these buildings were swept away in order both to widen the lane, and to construct the New Stone Building as offices for the Houses of Commons and record stores for the law courts.



Fig 16. Reconstructed map of St Margaret's Lane in the early 18th century showing the tenement rented by John Wells, including the excavated privy, and the surrounding buildings (source: TNA, MPE 1/489 and MPE 1/491) (scale 1:500)

St Margaret's Lane was very narrow and muddy, and until the early 18th century closed by gates into New Palace Yard at the north end and Old Palace Yard at the south end. A 4ft paling fence protected those using the footpath from the coachway (Smith 1837, 31, 261–2; Cooper 1937, 225, pl 3). The widening had been effected by c.1745, complete with new footpaths on both sides of the street (TNA: PRO, MPE 1/491). This left some plots in the possession of Westminster Bridge Commissioners, including the plot

containing the excavated cesspit, which they still held in 1753 (TNA: PRO, MPE 1/489).

The New Stone Building was constructed in several sections between 1755 and 1770. The central portion was built first by 1760, to house the records of the Court of King's Bench. The section in which the excavation trench lay was a five-bay building built by the Board of Works on behalf of the Board of Ordnance as its Ordnance Office in 1766–9, as a replacement for its previous office on the east side of Old Palace Yard. Its ground

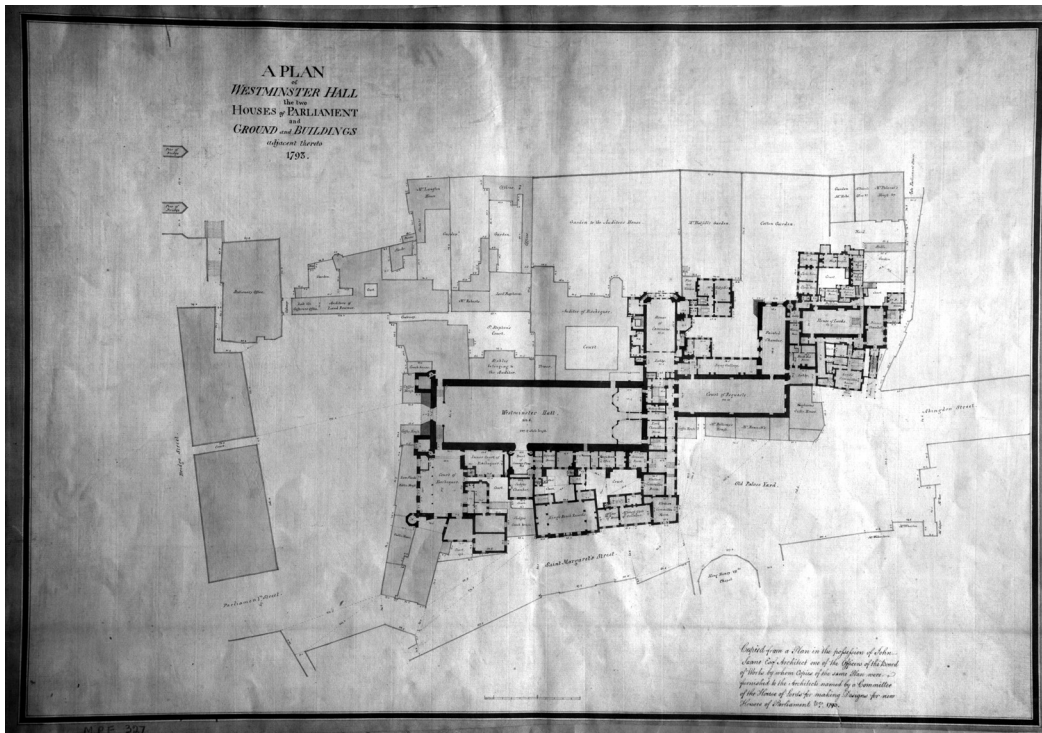


Fig 17. Westminster Hall and the New Stone Building in 1793 (TNA: PRO, MPE 1/327)

floor was later occupied as the residence of John Ley, Assistant Clerk of the House of Commons, from 1780 onwards. The southern part of the new building, up to the corner with Old Palace Yard, was built in 1768–70, necessitating the removal of Cheere's house, Alice's Coffee House, and the public house called Heaven with adjoining shops, an east-west row facing southwards into Old Palace Yard. The new structure was occupied by an entrance arcade to the House of Commons on the ground floor, with committee rooms above. The north part of the new façade was not completed until 1793 (Fig 17; *HKW*, v, 425–31 & vi, 499; Smith 1837, 69, 251n, 262; Williams 1953; Williams 1954, 121, 281).

Archaeological evidence

Due to truncation caused by the Period 6 landscaping (below), the only structural remains to survive at Cromwell Green from Period 5 was a brick-lined cesspit [21] (see Fig 16), surviving up to 0.79m deep, interpreted as evidence for John Wells' house (Building

3). The lining, in English bond, was made of red brick, typically 216–219mm in length by 97–101mm in breadth by 56–62mm in thickness, suggesting they were reused from an earlier (17th-century) brick structure.

The primary (surviving) organic silt fill [19] was only 0.2m thick, suggesting regular cleaning. It can be dated to after 1680 by a few sherds of tin-glazed ware. The disuse backfill [18] contained large quantities of pottery and glassware, indicating it went out of use between 1740 and 1760, broadly in line with the 1743–53 suggested by the documentary evidence (above), and was perhaps the result of a single house clearance, presumably as the house occupied by John Wells (Building 3) was vacated prior to demolition. The range of finds includes a few 'high status' items, but it is the faunal and botanical remains in particular that suggest a tenant of well above average wealth. The cesspit assemblages are discussed in detail below ('A closely-dated 18th-century cesspit assemblage'): the stoneware mug inscribed 'John Wells' is noteworthy (below, <P17>, Fig 20).



Fig 18. Westminster Hall: view looking south-east, showing Smirke's sleeper walls and floor slabs and the arched support walls for the 1850s south steps

19th century (Period 6)

Westminster Hall (Building 1)

During the 1834–7 refurbishment the ground level of the Hall was reduced by up to 4 or 5ft (1.22–1.52m); at 1ft 4in (0.41) below the 18th-century surface. A new concrete slab and York stone pavement were laid at approximately this level (Smirke 1836b, 415–16; *HKW*, vi, 503 n 5). It was thought to be 3ft 9in (1.14m) above the Norman floor level (RCHME 1929, 121). A flight of 24 steps carried on brick walls (Fig 18) covered the sites of the law courts, the dais and the king's table in the 1850s as part of the alterations to the Hall by Sir Charles Barry. Details of these later works are available in the project archive.

Creation of Cromwell Green (Open Area 3)

The creation of the sunken area of Cromwell Green in the 1880s entailed the removal of virtually all post-medieval stratigraphy to the

west of Westminster Hall (see Fig 3). A layer of Kentish ragstone fragments and sandy lime mortar immediately below the modern ground surface is interpreted as rubble from the demolition of the 18th-century Remembrancer's office, and the foundation of the New Stone Building (*HKW*, v, 428).

A CLOSELY-DATED 18TH-CENTURY CESSPIT ASSEMBLAGE

Period 5 cesspit [21] at Cromwell Green is of interest as its disuse fill [18] produced a closed and closely-dated finds assemblage. Documentary sources indicate that the property in which the cesspit lay was demolished c.1743–1753 (above, Period 5, Building 3). Archaeologically, a single tobacco pipe bowl (Atkinson & Oswald 1969, type AO23) dates its final disuse to after 1740, supported by dates of 1730–60 from the glass assemblage and confirmed by a considered date of 1740–1760 for the deposition of the ceramic assemblage.

The property is documented as occupied by John Wells, about whom the current phase of research established little. Pleasing confirmation is the freehand inscription 'John Wells' on stoneware mug <P17> (below). The absence of obviously residual or intrusive material and the close dating of the assemblage suggest disposal over a short period or even as a single event (*ie* a house-hold clearance). The finds undoubtedly represent the final fill of the privy, which would have been regularly cleaned out while in use.

Pottery

Jacqui Pearce

A total of 422 sherds from a minimum of 80 vessels (21,632g) were recovered (full details in the project archive). There is a high proportion of reconstructable vessels, including 47 profiles. Two main sources are represented: Surrey-Hampshire border wares and London delftware or tin-glazed ware, with delftware by far the most common fabric type. Selected pottery is illustrated in Figs 19–21.

Surrey-Hampshire border wares

The Surrey-Hampshire border ware industry was one of the chief suppliers of London's ceramic needs for several centuries, from the later medieval period onwards. Overall, 124 sherds from at least 16 vessels were recovered, with 46 sherds from a minimum of six vessels in whiteware with green, clear (appearing yellow) or brown glaze. Sherds from a rounded drinking jug and a brown-glazed caudle cup (*cf* Pearce 1992, fig 35, nos 265–6) may date to the mid-17th century; they are either residual or curated. The industry increasingly favoured redwares from the beginning of the 18th century.

The remaining Surrey-Hampshire white-wares are all typical of later 17th- to early 18th-century whiteware production (Pearce 1992, fig 64). These include a clear-glazed tripod pipkin (type 4: *ibid*, fig 29, nos 165–8). The vessel is sooted from use and is a late example of a type of ceramic cooking vessel that had all but disappeared by the early 18th century. A deep flared bowl with single horizontal handle is not a closely dateable form, while a porringer with brown glaze

internally, thickened, flat-topped rim and horizontal loop handle (<P1>) is a typical late 17th-century product (*cf* *ibid*, fig 26, nos 129–30). There is also part of a chamber pot with flat-topped rim and squat profile, glazed inside and out, a development of the form typical of the mid- to late 17th century (*ibid*, fig 41, nos 333–6).

A similar range of forms was made in red border ware, associated chiefly with food preparation and hygiene. Several vessels have brown glaze, coloured by the addition of manganese. A small rounded bowl with a single horizontal loop handle pressed close in to the body is glazed inside and out and was probably used as a porringer. Two chamber pots with brown glaze are similar in form to whiteware examples (above), and the shape persisted well into the 18th century (<P2>). A deep flared bowl with flat-topped rim (<P3>) may also be associated with sanitary functions. Such vessels were commonly used inside close stools or commodes, although a kitchen function is equally likely as this example is glazed inside only.

London-area redwares

London-area redwares are poorly represented in the privy fill (sherds from two storage jars, a tripod pipkin and a chamber pot). In the early 18th century the Surrey-Hampshire border ware and delftware industries supplied most of London's sanitary requirements, while the local redware industry supplied mainly bowls, dishes and storage jars.

Tin-glazed ware

There are 206 sherds from at least 48 vessels in tin-glazed ware or delftware. A limited range of forms is represented, with simple blue-painted decoration, or with perfectly plain glaze, typical of Lambeth pothouses in the 18th century. The plain wares include sherds from two porringers of rounded form (Orton's type C: Orton 1988, fig 132, nos 1285–6). Comparable examples are dated to c.1680–1710, including a close parallel for a vessel with a five-lobed handle in which there are one round and two heart-shaped cut-outs (Noël Hume 1977, fig 14, no. 3). A second porringer has a similar handle, but with a central, double-triangular cut-out (<P4>).



Fig 19. Pottery <P1>—<P12> from John Wells' cesspit (scale 1:4)

There is also part of a plain white plate with a flat base, a shallow flared dish, together with sherds from two bowls. One rounded bowl form can be compared with excavated finds from Southwark and Lambeth (Orton 1988, fig 132, no. 1288; Bloice 1971, 125, nos 45–50). Drinking vessels include part of a caudle cup and two cylindrical mugs (*eg* <P5>), a type dated to *c.*1650–75 (Noël Hume 1977, fig 6, nos 5–6).

In addition to all these undecorated vessels associated with eating and drinking, there are 79 sherds from a minimum of 12 chamber pots, all similar in form (*eg* <P6>). The shape is typical of the period *c.*1675–1725 (Noël Hume 1977, fig 18, nos 2–3). Such vessels were commonly irretrievably lost in privies. Plain pharmaceutical wares are also well represented, with three medium cylindrical jars surviving intact (<P7>–<P9>), as well as sherds from two pedestal ointment pots. Far more unusual are the remains of five small, shallow dishes with a double-beaded rim, glazed inside only (<P10>). Their purpose is uncertain but they may have been designed to sit inside a specially made opening in a larger item, such as a desk set or ink stand (*eg* Britton 1987, fig 9, no. 9.1).

Decorated tin-glazed wares were mostly used for serving food, although there are also sherds from two cylindrical drug jars, one with a cable pattern, and part of a bowl. The remaining vessels are mostly plates, all with the same flat-based profile with a change of angle at the flat rim, both inside and out. They come from three distinct sets and all date to the early to mid-18th century. The first set (two examples: <P11>) has simple foliate and geometric decoration interspersed with groups of four dots and arranged around a central radial design in a circular reserve. The second set, represented by two profiles and a rim, has stylised floral and scroll decoration around a central flower head, again with groups of quadruple dots (<P12>). This example belongs stylistically to the period *c.*1730–50 (*cf* Noël Hume 1977, fig 17, no. 6). A similar date is suggested for the third set, decorated in Chinese style with a stylised fence and flowering branches, rather crudely executed (<P13>).

The only other forms are a saucer-dish (<P14>) and a teabowl (<P15>). Both have floral decoration typical of the early to mid-

18th century (*cf* Noël Hume 1977, fig 16, nos 2–3, dated to *c.*1690–1725).

Finally, there are five sherds from a plate in biscuit tin-glazed ware (<P16>). This is an unusual find away from the Southwark and Lambeth pothouses, as it is an unfinished product, without glaze or decoration. Since so much of the vessel has survived, it must be inferred that it originally belonged as an intact piece in the household with which the privy was associated.

Stonewares

A more-or-less complete cylindrical mug in brown salt-glazed stoneware (<P17>) missing only its handle, is one of the most impressive finds from the privy fill. It is typical of Fulham production, with a single groove below the rim and a foot moulding with two beads separated by a single combed line and two above (*cf* Green 1999, 153–7; fig 126, nos 329–31). This type of moulding remained in production until the 1740s. There is a ‘WR’ and crown ale-measure or excise mark stamped below the rim, to one side of the handle, as required by law from 1700 to 1824. Applied armorial decoration in the form of a tavern sign is positioned opposite the handle, with a freehand inscription bearing the name John Wells. The mug is 169mm in height, with a rim diameter of 105mm and a probable capacity of one quart (for comparative examples, see *ibid.*, 290). Although mugs of this kind were made for taverns, personal use by individuals meant that many ended up in private households.

There are sherds from two vessels in white salt-glazed stoneware, which was first made *c.*1720. One is the base of a plain teabowl (<P18>), while the other is part of a bowl with a wide band of incised cross-hatching around the body. Similar decoration can be seen on various forms made *c.*1725–40 (*eg* Edwards & Hampson 2005, fig 57). There is also part of a cylindrical mug in the slightly earlier white-dipped salt-glazed stoneware, probably datable to *c.*1710 or shortly after (<P19>).

Chinese porcelain

Three vessels in Chinese blue and white export porcelain were recorded. A bowl with crudely painted trees and ornamental



Fig 20. Pottery <P13>–<P21> from John Wells' cesspit (scale 1:4)

goldfish outside (<P20>) has a base marked with paired fish, one of the eight Buddhist emblems. The second vessel is a teabowl with lotus decoration typical of the Kangxi period (1662–1722) (P<21>). Finally, a complete teabowl has a painted lakeside scene with mountain, pine tree and hut, with a Batavian brown glaze externally (<P22>).

Continental imports

Two continental imports were recovered. The first is a chamber pot in Westerwald stoneware, with lion and rosette medallions (cf Hurst *et al* 1986, fig 108, no. 340), typical of the period c.1740–60 (<P23>). The other piece, the only non-domestic find from the privy, is part of a triangular-rimmed crucible



Fig 21. Pottery <P22>–<P25> from John Wells' cesspit (scale 1:4)

in Hessian stoneware, of the kind favoured for working in precious metals or alchemical experiments.

Other wares

A deep straight-sided bowl in Midlands purple ware (<P24>) is a relatively unusual find; in London this fabric is usually represented by tall, cylindrical, 17th- to early 18th-century butter pots and other forms are rare outside the source area, focused on north Staffordshire. From the same area is a near-complete dish in Staffordshire-type slipware, with feathered decoration and a piecrust rim (<P25>). Slipwares were popular in the period c.1660–1730, after which time they began to fall out of favour as white salt-glazed stoneware increased its hold on the market.

Glass and registered finds

Beth Richardson

Glass

A large glass assemblage includes several complete and near-complete English and European green glass wine bottles, and a smaller quantity of other bottles, phials, fine vessel glass and window glass. Like the ceramics, the wine bottles date to c.1730–60. The small amount of vessel glass, which is also mainly early 18th-century, includes a piece from a high quality imported 17th-century perfume bottle. Selected vessels are illustrated in Figs 22–3.

Among the fine glass, two goblets (<G1>, <G2>) are early 18th-century forms with short plain stems, made from colourless soda and lead glass. One (<G1>) is similar to a wine glass with a hollow stem in a sealed pit group from Tunsgate, Guildford dated c.1714–20 (Fryer & Selley 1997, figs 34–5), and the other which has a solid stem probably dates to the second quarter of the 18th century or later (cf Noël Hume 1970, 192). A colourless glass tumbler has a twisted wrythen pattern on its base and on the extra layer of glass which extends unevenly up part of the lower body (<G3>). A small rectangular or square bottle (<G4>) is made in white opaque glass, decorated on its outer surface with irregular red, blue and gold (copper) spots added by rolling the body parison on red and blue

glass chips and copper salts; it is comparable to 17th-century Venetian bowls made in this technique, and would have been an unusual and expensive import (cf Tyson in Killock & Meddens 2005, 56, fig 30, 2–5).

Pharmaceutical glass is represented by two complete phials and large pieces from six others. They are made from thin-walled light bluish-green glass, and are cylindrical with short necks, everted rims and angular or gently sloping shoulders (<G5>–<G7>). One is made in clear glass (<G7>). The bases have pontil marks and (with the exception of <G5>) a high domed or pointed kick. The phials with angular shoulders are similar to late 17th- to early 18th-century examples from Aldgate (Thompson *et al* 1984, 86–7) and early to mid-18th-century examples from Broad Arrow Tower, London (c.1725–50) (Shepherd *nd*, appendix 1, form 1). Phials with sloping shoulders tend to be 17th-century but do occur in early 18th-century contexts (eg Thompson *et al* 1984, fig 45, 5). Clear glass phials were introduced in the second half of the 18th century and the clear glass phial from this site is therefore an early example (*ibid*, 86). A small light blue glass bottle <G8> may also have had a medicinal or pharmaceutical use.

There are an estimated 22 wine bottles in dark green glass. Most are English ‘Onion’ form dated c.1680–1730 (<G11>). The three complete wine bottles are classic examples of the developed form (c.1700–1730), with a squat globular shape, short necks and string or bevelled rims (Dumbrell 1983, 62–3). There are also at least two bases from the more straight-sided ‘Mallet’ bottle-form (c.1725–60), and bases and body pieces from three mould-blown octagonal wine bottles with long sides and chamfered corners (c.1730–90) (*ibid*, 87–90), dating the wine bottles, like the ceramics, to c.1730–60. Of the 18 rims in the assemblage, 78% are rounded string rims with quite large discs, more characteristic of the late 17th century, but they also occur on later English bottles and on French wine bottles dating to the second quarter of the 18th century, a date more in keeping with the overall assemblage date. Two bottles with long necks and string rims, broader at the shoulder than the base and made in a less dense and unweathered glass probably are French (<G12>) (Noël

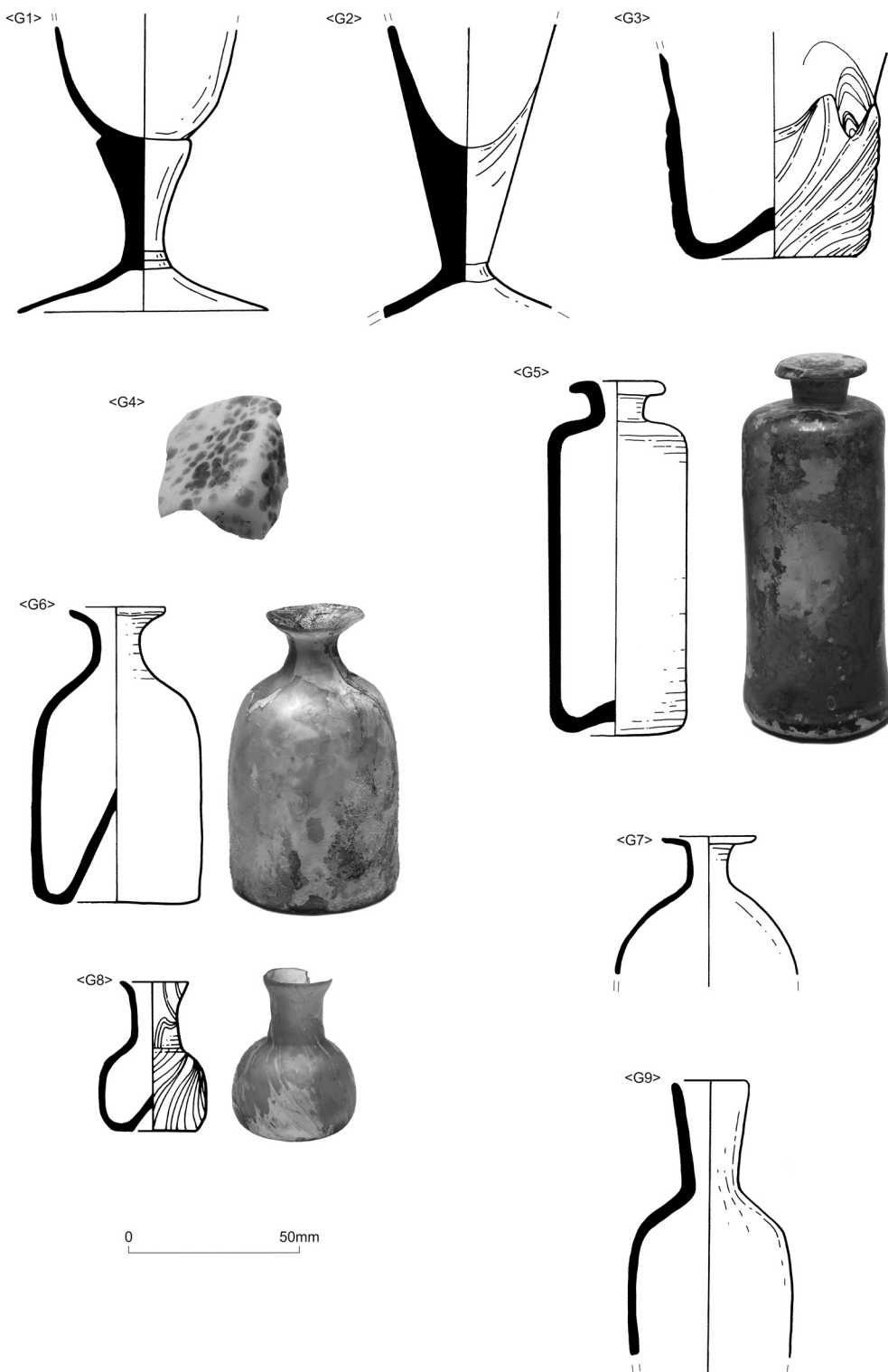


Fig 22 Glass <G1>–<G9> from John Wells' cesspit (scale 1:2)

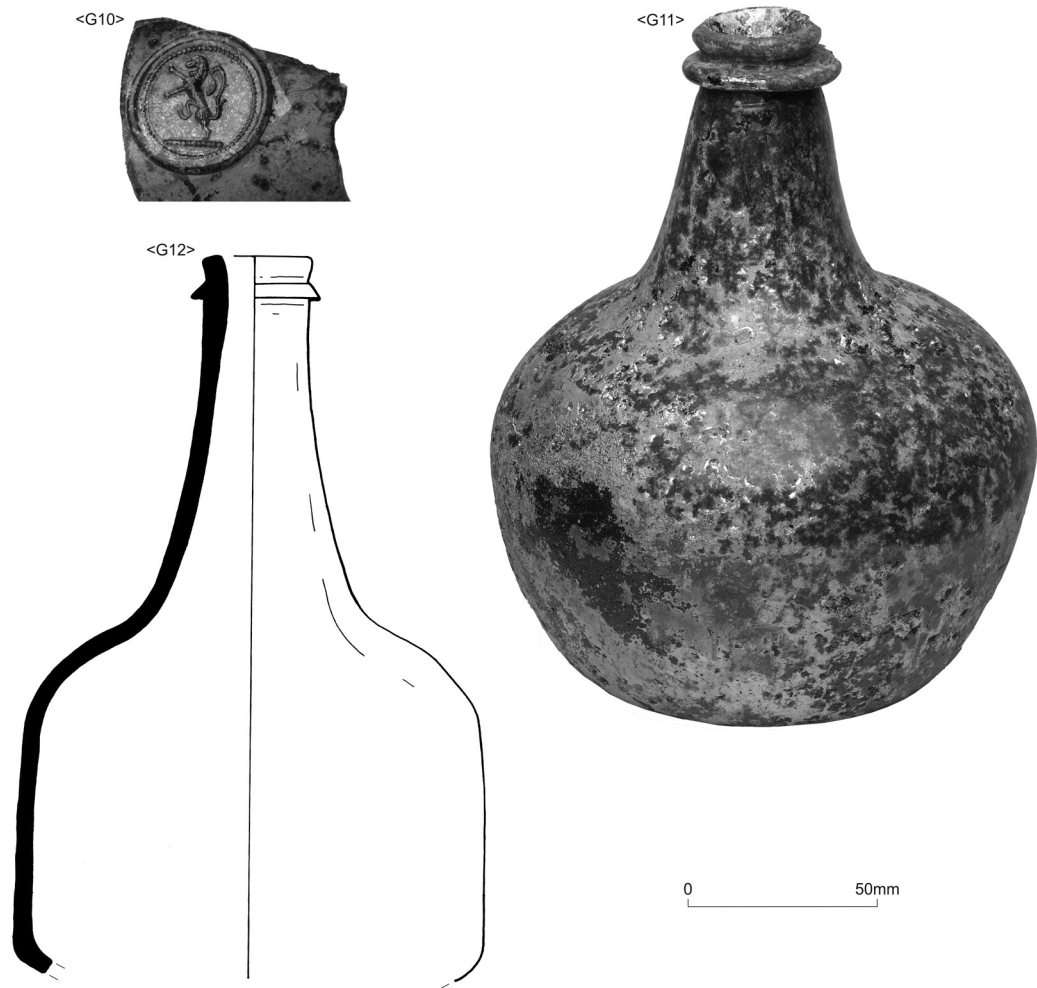


Fig 23. Glass <G10>–<G12> from John Wells' cesspit (scale 1:2)

Hume 1970, 69). There is one seal <G10>, a lion rampant on a torse.

There are rims from two other bottles. A small light blue glass bottle (or possibly a large phial) has a tall flaring neck and sloping shoulders (<G9>). The rim and neck from a small light green glass bottle with a string rim (not illus) may be a half measure wine bottle or an oil or vinegar bottle (*cf* early to mid-18th-century examples from London, Shepherd *nd*).

The small amount of window glass includes pieces from at least one lozenge-shaped pane and one circular pane, both made from light green, weathered crown glass. There

are also pieces of light blue window glass and colourless plate glass from a rectangular or square mirror or window. Colourless plate glass would have been expensive, and was being produced in London by the end of the 17th century (Egan in MacKinder & Blatherwick 2000, 44).

Illustrated glass (CGW05)

<G1> <27> [18] Goblet: plain wide foot, hollow stem. Colourless glass with a few small bubbles on foot.

<G2> <19> [18] Goblet: drawn solid stem. Colourless lead glass.

<G3> <21> [18] Tumbler or jar: twisted wrythen

- pattern on base and extra layer of glass which extends unevenly up part of the lower body. Colourless glass.
- <G4> <20> [18] Bottle: square- or rectangular-sided; opaque white glass with decoration of copper and blue and red glass dots applied and marvered.
- <G5> [18] Phial: flattened irregular fire-rounded lip and flat pushed-in base. Light green glass. Height 98mm, base diam *c.*40mm.
- <G6> [18] Phial: slightly flared fire-rounded lip, high pointed base. Light green glass. Height 78mm, base diam *c.*45mm.
- <G7> [18] Phial: rim and upper body; flattened fire-rounded lip. Clear glass.
- <G8> <24> [18] Bottle: slightly everted fire-rounded rim, flattened (marvered) sides. Light blue glass. Height 40mm, base diam *c.*30mm.
- <G9> [18] Bottle: rim and upper body; tall slightly flaring neck and gently sloping shoulders. Light blue glass.
- <G10> [18] Wine bottle seal: circular with lion rampant on torse.
- <G11> [18] Wine bottle: complete, English 'onion' form with string rim and domed base. Green glass.
- <G12> [18] Wine bottle: (?) French; small string rim, domed base. Dark green glass.

Registered finds

The registered finds include two short lengths of lead window-came, shafts and a wound wire head from three copper-alloy pins, part of a copper-alloy spoon, a fragment of turned oak vessel or cask-bung, a bone knife- or tool-handle, two tortoiseshell fan-sticks and the lower half of a continental pipe-clay figurine of a woman with long flowing skirts, set on a two-tier pedestal base.

The fan-sticks, made in a simple way serpentine form from light and dark tortoiseshell, may come from the same fan (Fig 24). Part of an identical serpentine fan-stick was recovered from a context dated *c.*1700–20 at Aldgate; both the form and the use of tortoiseshell are characteristic of late 17th- and early 18th-century fans (Marschener in Thompson *et al* 1984, 111). The knife-handle is plain, slightly faceted and open at the top-end; it probably originally had a conical bone plug (*cf* Thompson *et al* 1984, fig 52, 46–7). The spoon is plain, tinned late 17th- or early 18th-century form with an oval-shaped bowl and flat stem; the upper part of the stem is missing (Fig 24).



Fig 24. Selected registered finds from John Wells' cesspit: tortoiseshell fan-sticks <S1>–<S2>; copper-alloy spoon <S3> (scale 1:2)

Illustrated registered finds (CGW05)

- <S1> <17> [18]: piece from light tortoiseshell fan-stick of serpentine form with large rivet-hole; surviving L 65mm.
- <S2> <18> [18]: piece from dark tortoiseshell fan-stick of serpentine form with large rivet-hole; surviving L 95mm.
- <S3> <1> [18]: spoon. Oval bowl (L 72mm) and flat stem; no maker's mark.

Discussion

Most of the pottery recovered from the privy was made during the last quarter of the 17th and first quarter of the 18th centuries. The latest pieces present date to *c.*1740–50, which would correspond well with the absence of creamware, a ceramic phenomenon that increasingly dominated the market from the 1750s onwards. Some of the vessels represented in the fill would have seen

lengthy service by the time they were thrown away (for example, the plain white tin-glazed mug and caudle cup). Others were doubtless subject to fairly heavy use and survived for a much shorter time (such as the tin-glazed plates). Nevertheless, all the finds appear to come from a homogeneous deposit, discarded over a short period, or even as part of a single clearance of household goods, for whatever reason (although quite possibly this was the impending demolition of the building (above, Period 5, Building 3)).

Delftware is by far the most common fabric type in the fill, with vessels used for serving and dining amongst the most common functional groups. Plates in delftware and a large dish in Staffordshire-type slipware would have provided attractive, decorative tablewares. Unsurprisingly, however, chamber pots are also common, with at least 18 examples found in delftware, Surrey-Hampshire border ware, London-area redware and Westerwald stoneware. Teawares in Chinese blue and white porcelain and white salt-glazed stoneware (four vessels in all) are among the higher quality household ceramics discarded in the privy. Utilitarian forms made in Surrey-Hampshire border ware and London-area redware include cooking vessels, bowls and dishes of various forms and sizes, while pharmaceutical vessels in the form of drug jars and ointment pots were all made in delftware.

The three pieces of Chinese porcelain <P20>–<P22> probably date to a time when imports from the Orient were increasing rapidly. While such wares were undoubtedly fashionable and desirable, especially for the enjoyment of the still relatively new hot beverages, tea and coffee, the quality of these pieces is not of the best and their presence in the assemblage does not necessarily denote a higher status.

Most of the vessels recorded would have been typical of pottery used across London during the early to mid-18th century, and the range of fabrics and forms typical of domestic usage. The interest lies in the context of the finds and the balance of types present. Comparison with a somewhat later cesspit assemblage (c.1770) from Crosswall in the City shows a similar range of fabrics and forms (Vince 1981), although the City pit displayed a far greater emphasis on high-

quality wares, principally, Chinese enamelled porcelain from different sets of tea and coffee wares, delftware dinner plates and elaborate white salt-glazed stoneware tablewares. It is doubtless futile to conclude from this that the Crosswall assemblage comes from a higher-status household, since each assemblage is representative only of what was discarded, whether through accidental breakage or loss, or through the deliberate discard of outmoded or unwanted china. The decorated opaque glass bottle (<G4>), the tortoiseshell fan-sticks (<S1>–<S2>) and the figurine may suggest that the contents of the pit belonged to a wealthy household.

Although not reported in detail here, it is noteworthy that sieved samples from disuse fill [18] and primary (surviving) fill [19] produced faunal and botanical evidence more directly suggestive of status (*ie* access to a relatively rich and varied diet) than the bulk of the finds assemblage: a small group of five fragments of the exoskeleton of at least one common or European lobster (*Homarus gammarus*), the scute (dermal plate) of a sturgeon (*Acipenser sturio*), and evidence for the consumption of good quality beef, lamb, mutton and pork, supplemented by limited poultry (chicken, goose and duck), game (fallow deer, rabbit and unidentified sparrow-sized bird), and fish (including marine/estuarine, migratory and freshwater species) (Pipe 2009). Plant remains were dominated by a wide variety of fruit and nuts (a preservation bias) but indicate a degree of status and wealth, as they contain exotic imports far beyond the reach of the general populace, including olives (*Olea europaea*), chilli peppers (*Capsicum* sp.) and cucumber/melon (*Cucumis sativus/melo*). Fruits such as mulberry (*Morus nigra*) and nuts such as walnuts (*Juglans regia*) were also still generally the preserve of the upper classes in the mid-18th century (Stewart 2009).

CONCLUSIONS

These excavations were particularly noteworthy for the nationally important discovery of fragments of the king's table, reported elsewhere (Collins *et al* 2012). Significant information was recovered relating to the development of parts of the palace complex, albeit of more local importance.

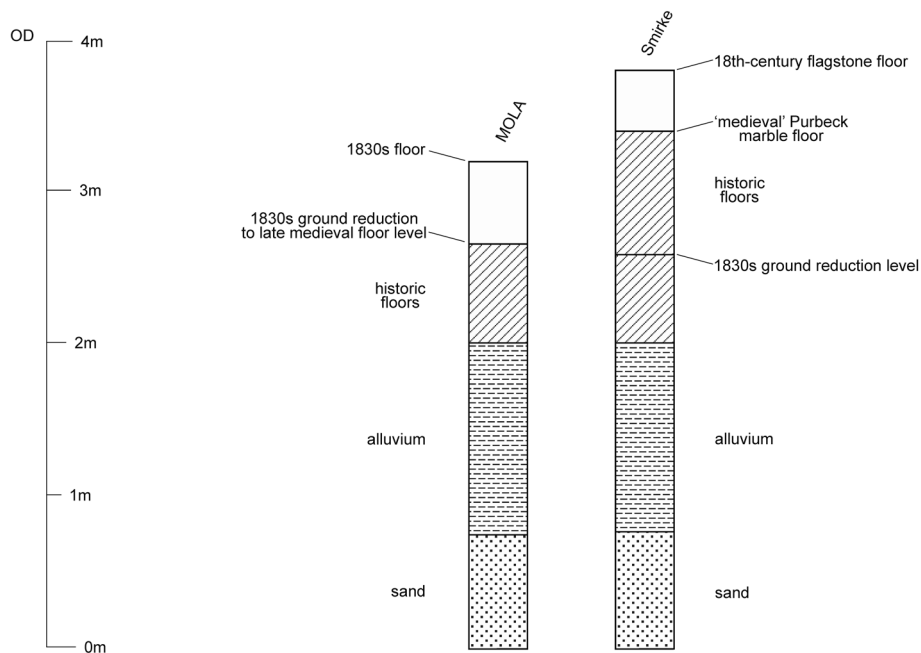


Fig 25. Comparison of the deposit sequence in Westminster Hall, as recorded by MOLA and by Smirke (vertical scale 1:50)

Confirmation of the course of a stream channel beneath the south end of Westminster Hall (Period 1) has improved understanding of the post-Roman topography of Thorney Island. Additionally, it provided an explanation for the settlement affecting the floor and steps of the Hall in terms of the contrasting load-bearing characteristics of the channel fills and natural sands, and contributed to the development of an effective design solution.

Archaeological works within the Hall were small in scale, but provided useful insights into the layout and floor levels of the medieval and post-medieval building. Of particular interest is the clarification regarding the actual heights of historic floor levels surviving after Smirke's works in the 1830s and the evidence that the Purbeck marble floor he recorded as medieval was in fact of post-medieval date. The deposit sequence as recorded by MOLA is summarised against that recorded by Smirke in Fig 25.

The creation of a formal new Court of General Surveyors (Building 2) in 1542/3

allowed the construction of a new purpose-built office building, on a site which physically brought together for the first time the main revenue-raising Courts of Henry's administration. The Court of Augmentations and the Exchequer were situated just a little to the north at the other end of Westminster Hall. Such centralisation was a direct consequence of the scale of the task of administering the Dissolution.

The assemblage from John Well's cesspit, although of marginal relevance to the Palace of Westminster, is of great interest to finds specialists as a closely-dated mid-18th-century assemblage, probably resulting from a house clearance.

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Field and assessment work was managed for MOLA by Gordon Malcolm and Chris Thomas, while post-excavation work was managed by Julian Hill. Nick Holder supervised the various stages of fieldwork and contributed much of the section on the Court of Surveyors, including the reconstruction drawing. Reconstruction of the course of the Period I channel beneath Westminster Hall is derived from geoarchaeological work by Graham Spurr (MOLA) and geotechnical interpretation by Stephen West (Gifford).

Not all assemblages could be fully reported here. Extracts from assessment and analysis reports by the following MOLA specialists have been incorporated: Ian Betts (ceramic building material), Tony Grey (clay pipe), Nigel Jeffries (post-Roman pottery, WME06), Alan Pipe (animal bone), and Kate Roberts (plant remains). These reports, along with the full project archive, are available for consultation by prior arrangement with the Archive Manager at the London Archaeological Archive and Resource Centre (LAARC).

The report graphics were prepared by Juan José Fuldain (plans), Hannah Faux (pottery, glass and accessioned finds) and Andy Chopping (photographs).

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MANUSCRIPT SOURCES

- BL British Library.
Cal Close R Calendar of Close Rolls (62 vols, 1227–1509), 1892–1963, London
Cal Lib R Calendar of the Liberate Rolls (6 vols), 1916–64, London
Cal Treas B Calendar of Treasury Books: Vol 25 (1711), 1952–61, London
PR Pipe Rolls:
31 Henry I, 2–4 Henry II, 1 Richard I
published by Record Commission, London

- 5–34 Henry II, 2–10 Richard I, 1–17 John,
2–6, 8, 14 Henry III published by the Pipe
Roll Society, London
26 Henry III (ed H L Cannon), 1918,
London

TNA: PRO National Archives

BIBLIOGRAPHY

- Anon 1732 *A Report from the Committee Appointed to View the Cottonian Library*, London
Atkinson, D R, & Oswald, A, 1969 'London clay tobacco pipes' *J British Archaeol Assoc* 32, 171–227
Betts, I M, 2002 *Medieval 'Westminster' Floor Tiles* MoLAS Monograph 11, London
Betts, I M, 2008 'Whitefriars, Canterbury, Kent: building material' unpub Canterbury Archaeological Trust report
Bloice, B J, 1971 'Norfolk House, Lambeth. Excavations at a Delftware kiln site, 1968' *Post-Medieval Archaeol* 5, 99–159
Bowsher, J, & Miller, P, 2009 *The Rose and the Globe – Playhouses of Shakespeare's Bankside, Southwark. Excavations 1988–90* MOLA Monograph 48, London
Bradley, S, & Pevsner, N, 2003 *London: Vol 6, Westminster*, Buildings of England Series, London
Brayley, E W, & Britton, J, 1836 *The History of the Ancient Palace and Late Houses of Parliament at Westminster*, London
Britton, F, 1987 *London Delftware*, London
Bronk Ramsey, C, 1995 'Radiocarbon calibration and analysis of stratigraphy: the OxCal program' *Radiocarbon* 37, 425–30
Collins, M, Emery, P, Thomas, C, Phillpotts, C, & Samuel, M, 2012 'The king's high table at the Palace of Westminster' *Antiq J* 92, 197–243
Colvin, H M, 1966 'Views of the Old Palace of Westminster' *Architectural History* 9, 21–184
Colvin, H M, 1971 *Building Accounts of Henry III*, Oxford
Cooper, I M, 1937 'Westminster Hall' *J British Archaeol Assoc* 3 ser 1, 168–228
Devon, F, (ed) 1837 *Issues of the Exchequer, Henry III to Henry VI, from the Pell Records*, London
Dugdale, W, 1671 *Origines Juridiciales*, London
Dumbrell, R, 1983 *Understanding Antique Wine Bottles*, Woodbridge
Edwards, D, & Hampson, R, 2005 *White Salt-Glazed Stoneware of the British Isles*, Woodbridge
Emery, P A, & Heath, J A, 2008 'Making a grand entrance: conservation and archaeology in Westminster Hall, the Palace of Westminster, London' *Trans Assoc Stud Conservation Historic Buildings* 31, 3–16
Fryer, K, & Shelley, A, 1997 'Excavation of a pit at 16 Tunsgate, Guildford Surrey, 1991' *Post-Medieval Archaeol* 31, 139–230

- Gentleman's Magazine 1736
- Green, C, 1999 *John Dwight's Fulham Pottery: Excavations 1971–79*, London
- Greenway, D, (ed & trans) 1996 *Henry of Huntingdon: Historia Anglorum*, Oxford
- HKW1963–82, *The History of the King's Works: Vols 1–6* (general ed H M Colvin), London
- Hurst, J G, Neal, D S, & van Beuningen, H J E, 1986 *Pottery Produced and Traded in North-West Europe 1350–1650* Rotterdam Paper 6, Rotterdam
- Killock, D, & Meddens, F, 2005 'Pottery as plunder: a 17th century maritime site in Limehouse, London' *Post-Medieval Archaeol* 39, 1–91
- Lethaby, W R, 1906 'The Palace of Westminster in the 11th and 12th centuries' *Archaeologia* 60, 131–48
- MacKinder, A, & Blatherwick, S, 2000 *Excavations at Benbow House Southwark, London SE1*, MoLAS Archaeol Stud Ser 3, London
- Mason, E, 2005 *William II Rufus, the Red King*, Stroud
- Mills, P, 1980 'Excavations at Cromwell Green in the Palace of Westminster' *Trans London and Middlesex Archaeol Soc* 31, 18–28
- Nash, G, 2007 'Stopping the rot: subsidence and structural damage at Westminster Hall' *London Archaeol* 11, No. 11, 290–7
- Noël Hume, I, 1970 *A Guide to Artifacts of Colonial America*, New York
- Noël Hume, I, 1977 *Early English Delftware from London and Virginia* Colonial Williamsburg Occas Pap Archaeol 2, Williamsburg
- Orton, C, 1988 'Post-Roman pottery' in P Hinton (ed) *Excavations in Southwark 1973–6, Lambeth 1973–9*, Joint Publication London Middlesex Archaeol Soc & Surrey Archaeol Soc 3, London, 295–364
- Pearce, J, 1992 *Post-medieval Pottery in London, 1500–1700: Vol 1, Border Wares*, London
- Pearce, J, 1998 'A rare delftware Hebrew plate and associated assemblage from an excavation in Mitre Street, City of London' *Post-Medieval Archaeol* 32, 95–112
- Pearce, J, & Vince, A G, 1988 *A Dated Type-series of London Medieval Pottery: Part 4, Surrey Whitewares*, London Middlesex Archaeol Soc Spec Pap 10, London
- Pearce, J, Vince, A G, & Jenner, M A, 1985 *A Dated Type-series of London Medieval Pottery: Part 2, London-type Ware* London Middlesex Archaeol Soc Spec Pap 6, London
- Pipe, A, 2009 'Hand-collected and wet-sieved faunal remains from Westminster Hall and Cromwell Green, Palace of Westminster, London SW1... (CGW05 and WME06), BON/REP/11/2009' unpub MOLA report
- Royal Commission on Historical Monuments (England) 1929 *An Inventory of the Historical Monuments in London Volume 1: Westminster Abbey*, London
- Richardson, W C, 1952 *Tudor Chamber Administration, 1485–1547*, Baton Rouge, Louisiana
- Richardson, W C, 1961 *History of the Court of Augmentations*, Baton Rouge, Louisiana
- Sachse, W L, (ed) 1961 *The Diurnal of Thomas Rugg 1659–61*, Camden Society 3rd Ser, xci
- Salzman, L F, 1952 *Building in England Down to 1540: a Documentary History*, Oxford
- Sandford, F, 1687 *The History of the Coronation of James II*, London
- Shepherd, J, nd 'The glass from Broad Arrow Tower, Tower of London' MOL unpub report
- Smirke, S, 1836a 'Remarks on the architectural history of Westminster Hall' *Archaeologia* 26, 406–14
- Smirke, S, 1836b 'Second letter on the architectural history of Westminster Hall' *Archaeologia* 26, 415–21
- Smith, J, 1837 *Antiquities of Westminster* (2 edn), London
- Steane, J T, 1993 *The Archaeology of the Medieval English Monarchy*, London
- Stewart, K, 2009 'Plant remains from Cromwell Green, Westminster (CGW05), ENV/BOT/RPT/11/2009' unpub MOLA report
- Stow, J, 1603 *A Survey of London* (ed C L Kingsford), 2 vols (1908, reprinted 1971), Oxford
- Swanton, M, (ed & trans) 1996 *The Anglo-Saxon Chronicle*, London
- Thomas, C, Cowie, R, & Siddell, J, 2006 *The Royal Palace, Abbey and Town of Westminster on Thorney Island*, MoLAS Monograph 22, London
- Thompson, A, Grew, F, & Schofield, J, 1984 'Excavations at Aldgate 1974' *Post-Medieval Archaeol* 18, 1–148
- Vince, A, 1981 'The coarse pottery', in A Vince & G Egan 'The contents of a late eighteenth-century pit at Crosswall, City of London' *Trans London Middlesex Archaeol Soc* 32, 162–8
- Whipp, D, & Platts, E, 1976 'Excavations at Westminster Hall' *London Archaeologist* 2 No. 14, 351–5
- Williams, O C, 1953 *The Topography of the House of Commons* unpub typescript
- Williams, O C, 1954 *Clerical Organisation of the House of Commons 1661–1850*, Oxford
- Wilson, C, 1997 'Rulers, artificers and shoppers: Richard II's remodelling of Westminster Hall 1393–9' in D Gordon, L Monnas & C Elam (eds) *The Regal Image of Richard II and the Wilton Dyptych*, London, 33–59
- Wood, M, 1965 *The English Mediaeval House*, London
- Wren Society 1934 *Designs by Sir Christopher Wren for Westminster Abbey, the New Dormitory Westminster School, Works at Westminster Palace for the Houses of Parliament ...*, Wren Society xi

