THE GARDENS AND INNER GATEHOUSE OF THE ABBEY OF ST MARY STRATFORD LANGTHORNE AND POST-DISSOLUTION SETTLEMENT: EXCAVATIONS AT BAKERS ROW AND ABBEY ROAD STATION, WEST HAM

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SUMMARY

Archaeological investigations at two adjoining sites in West Ham provided evidence for the abbey of St Mary Stratford Langthorne (1135–1538) and the development of settlement in the area after the Dissolution. The sites at Abbey Gardens, Bakers Row, and Abbey Road Docklands Light Railway Station were investigated in stages between 2007 and 2010. Prehistoric and Roman activity was indicated by residual artefacts and a possible Roman pit. The earliest medieval features comprised interconnecting ditches probably dating from the 11th century to the first half of the 12th century, some of which may have been part of a drainage scheme in advance of the construction of the abbey. New evidence for the abbey church itself was limited to the identification of a further pier base within the south arcade of the presbytery and a nearby, undated grave of a young adult male, of which only the west end lay within the excavation area. Further east, within the abbey precinct, remains included those of the north range of the gatehouse, which initially comprised two rooms, but was later extended to the north. A wall to the east of the gatehouse was probably medieval and may have been either part of the gatehouse or the precinct wall. Other monastic structures included the remains of the great drain, and a wall that may have been part of the infirmary. Another wall, crossing the line of the great drain, may have been either part of a cellar or a small fishpond. Planting pits provided evidence for monastic gardens on the eastern edge of the precinct. There was evidence for a ditch or moat along the eastern precinct boundary.

After the Dissolution the gatehouse was further extended and modified for use as a secular dwelling, served by two phases of brick cesspit. A stretch of the great drain was rebuilt on a smaller scale, possibly in the late 16th or 17th century, and continued in use into the 19th century. Other post-medieval features included several 16th- to 18th-century pits, the remains of a 17th-century brick building, garden walls, a possible well, the fills of the moat or ditch and a late 18th-century/early 19th-century brick cesspit possibly associated with the converted gatehouse. The latest features were the remains of Victorian terraced houses fronting onto Bakers Row.

INTRODUCTION

This report summarises the results of a series of archaeological investigations undertaken at two adjoining sites in West Ham, London E15 (Fig 1). One site lay on the north side of Bakers Row (site code SFY07; hereafter Site A), while the other was on the site now occupied by Abbey Road Station of the Docklands Light Railway (AYF08; hereafter Site B). Both lay within an Archaeological Priority Area, which encompasses the former precinct of the Cistercian abbey of St Mary Stratford Langthorne, sometimes known as West Ham Abbey, and the adjacent stretch of the Lea Valley. The western half of Site A and all of Site B were within the area once occupied by the abbey.

Circumstances of the fieldwork

Previous excavations of Stratford Langthorn Abbey and its precinct

A number of sites were excavated in the area between 1973 and 1994. These are shown in Table 1. Taken together these sites covered a large part of the east end of the church and the eastern precinct of the abbey of St Mary Stratford Langthorne. These sites are published in Barber *et al* 2004. Those sites, or parts of sites, closest to Sites A and B are shown in Fig 2.

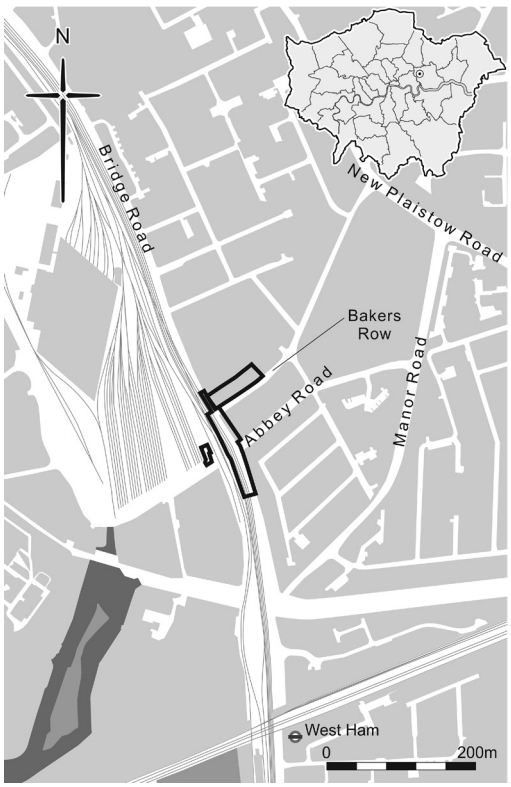


Fig 1. Location of the sites

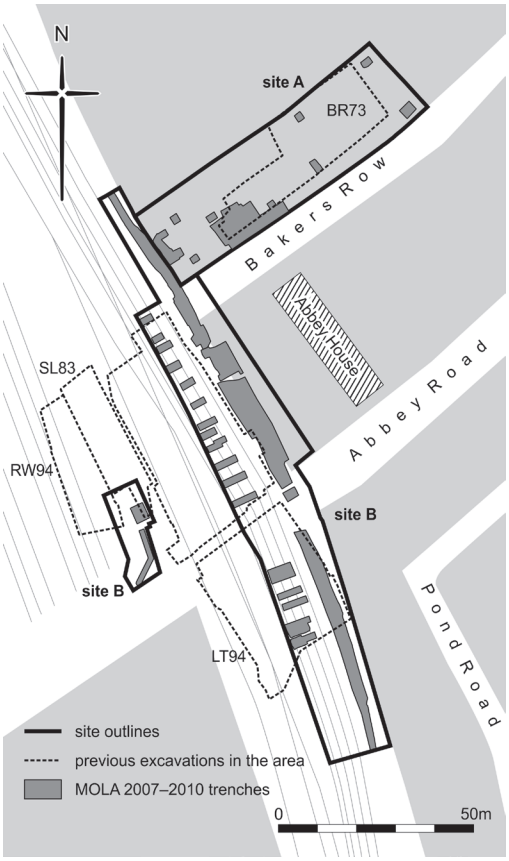


Fig 2. Location plan of the areas investigated during archaeological fieldwork at Bakers Row (Site A) and Abbey Road Station (Site B) in relation to Stratford Langthorne Abbey and other excavations in the vicinity

Excavations covered by this report

Site A consisted of an enclosed area of waste ground bounded to the west by a footpath (with the railway beyond) and to the north by a depot (NGR 539097 183472; Fig 1). Site BR73 lay completely within the site boundary and some of the trenches at Site A overlapped those of the previous excavation.

Table 1. Previous excavations in the vicinity of the sites

Site code	Address	Year	Supervisor/Unit
BR73	Baker's Row	1973–4	P Wilkinson / Passmore Edwards Museum, Newham
SL83	Stratford Langthorne electricity substation	1983	P Wilkinson / Passmore Edwards Museum, Newham
RW94	JLEP Stratford Market Depot Retaining Wall, Stratford E15	1994	S Chew / Newham Museum Archaeology Service
LT94	JLEP Stratford Langthorne Trackway, Stratford E15	1994	S Farid & D Lawrence / Newham Museum Archaeology Service

Of particular importance amongst the BR73 findings were the remains of a 'two-room' stone building dated to the 12th or 13th century. Following the excavation this building was reburied, and in October 1979 the site was designated a Scheduled Ancient Monument (county no. GL148).

Site A, which had remained unused since the BR73 excavation, was investigated again during successive evaluations by Museum of London Archaeology (MOLA) between May 2007 and January 2008 (Cowie 2007a; 2008a; 2008b; 2008c) as a condition of Scheduled Monument Consent in advance of its being landscaped as a community garden and a public footpath built across it to the new Docklands Light Railway (DLR) station to its west. Twelve test pits were excavated to investigate areas most likely to be affected by the proposed schemes, including some that specifically targeted the medieval building to assess its condition and the feasibility of exposing it for permanent display (Fig 2).

A community excavation, organised by MOLA in conjunction with Newham Council, was undertaken in February 2008. Local volunteers, most with no previous excavation experience, worked on exposing and cleaning the walls of the BR73 medieval building and recording them further (Fig 3). It was soon found that the walls were not robust enough for permanent display and so after they had been consolidated they were reburied (Holden 2008). Their position is, however, marked at a higher level by a capping of mortar and flint designed to simulate the appearance of the medieval masonry.

Site B encompassed part of the railway track bed, part of the public footpath that extended north from the Abbey Road bridge, and a strip of the garden next to Abbey House (NGR 539080 183410; Fig 1). The western side of the main part of the site overlapped the eastern parts of Sites LT94 and RW94. The northern end of the detached western trench of Site B marginally encroached onto Site SL83. An evaluation of the site undertaken in July and August 2008 (Mackinder 2008) was followed by watching-briefs and limited excavations during the construction of the new DLR station. The fieldwork was undertaken from February to April 2009 (Cowie 2010) and in September/October 2010 (Knight 2011), and recovered further evidence for the abbey and post-Dissolution activity.

Conventions

The basic unit of cross-reference throughout the archive that supports this report is the context number, always shown bracketed and prefixed by a site letter code; so, for example, B[144] represents pit [144] from Site AYF08 (Site B). The archaeological sequence has been interpreted in terms of site-specific land uses — buildings, structures and open areas (B, S, OA) — and periods showing development of the site over time and these are used in this report with accompanying drawings. Illustrated pottery, tile and stone are listed in angled brackets thus: <P1> *etc* (pottery), <T1> *etc* (tile) and <A1> (stone). The provenance of these items is listed at Table 4 and Table 5. The sites included a number of trenches and test pits. Test pits are referred to, both in the text and in the figures, as TP followed by the appropriate number.

Fig 3. General view of the Scheduled Monument at Bakers Row during the community excavation, showing the remains of the abbey gatehouse, looking south-east

Sources and the research archive

The historical background to the foundation and development of the abbey and the archaeology of those areas of the abbey church and precinct excavated in 1973–94 are comprehensively covered by Barber *et al* 2004, which remains the first point of reference for this monastic site and provides the most recent interpretation of the extent and disposition of the precinct (72, fig 51). Supplementary sources are the county histories by Morant (1768, 18–22) and *VCH* (1973, 112–14), the local history by Fry (published posthumously in 1888), and reports by Watson (1989), Munby (1991) and Sinclair (1993).

All parts of the paper and artefactual archive from the sites will be deposited at the Museum of London's London Archaeological Archive and Resource Centre under the site codes SFY07 and AYF08. This material consists of both primary material, the artefacts and site records, and secondary material, the grey literature reports produced as part of the process of assessment and analysis. These reports are also to be found listed in the bibliography. Pottery fabric and form codes can be consulted on the Museum of London Archaeology website (www.museumoflondonarchaeology.co.uk). Clay tobacco pipes are dated and classified according to systems devised by Atkinson and Oswald (1969, 171–227) and Oswald (1975, 37–41), respectively identified by the prefixes AO and OS.

NATURAL TOPOGRAPHY AND THE PREHISTORIC AND ROMAN LANDSCAPE (PERIOD 1)

The natural landscape (OA1)

The study area lies on the Kempton Park terrace of the Thames River Terrace Gravels, on the eastern edge of the alluvial floodplain of the River Lea (British Geological Survey 1994). These underlying gravels were generally found at *c.*1.9–2.3m OD on the east side of the railway line in Site B rising to 2.27–2.7m OD along the north side of Bakers Row in Site A: further west their

upper surface had been truncated. The intact gravel to the east of the railway was thinly covered by a layer of brown silty clay, which was either Flandrian 'brickearth' or more recently deposited alluvium (Barber *et al* 2004, 10).

Prehistoric and Roman (OA2)

There was no evidence for prehistoric or Roman buildings from either Site A or Site B and the area appeared to be open ground — Open Area 2. One truncated pit (not illus) towards the north end of Site B might have been of Roman date and produced a single fragment of a combed box-flue tile, probably of early to mid-2nd-century date.

Otherwise, as at the previous excavations in the vicinity (Table 1; Barber *et al* 2004, 10–11), evidence for prehistoric or Roman use of the study area was limited to a relatively sparse distribution of residual artefacts, mostly found in medieval features on Site B. Twelve worked flints, mainly debitage and including secondary and tertiary flakes and bladelets, are mostly neither diagnostic nor datable, but a small side scraper and a steeply-retouched and denticulated piece are possibly Bronze Age in date. A small sherd of late Iron Age quartz- and flint-tempered ware (QUFL), probably dating to between *c.*100 BC and AD 43, was also recovered; three other possible fragments of late Iron Age pottery may have been pieces of daub and mortar.

Roman material was limited to eight small abraded potsherds and 33 fragments of ceramic building material. The pottery includes part of a jar in Alice Holt-Surrey ware (AHSU), two sherds of grog-tempered ware (GROG), dated to *c.*AD 50–160, two sherds of samian ware, one of which is of Central Gaulish origin (SAMCG), and one sherd in colour-coated ware (CC), probably part of a beaker, which is dated to *c.*AD 120–250. Most of the building material was probably made at tileries in London or along Watling Street between London and St Albans, which were in operation *c.*AD 50–160. In addition, there is early 2nd- to mid-3rd-century roofing tile from north-east London or south Essex and brick of similar date from the Reigate area. Another brick is characterised by angular silty clay pellets, possibly from a source in Hampshire (Betts 2010).

At Stratford Market Depot, less than 200m to the north-west, Mesolithic, Neolithic and early Bronze Age activity was indicated by residual flint debitage and tools (Hiller & Wilkinson 2005). This site also provided limited evidence for settlement from the Late Bronze Age/Early Iron Age to the Roman period.

THE SITES IN THE 11th AND EARLY 12th CENTURY (PERIOD 2)

Postholes, drainage ditches and field boundaries pre-dating the foundation of the abbey (OA3)

By the 12th century, the River Lea south of Stratford almost certainly split into a number of braided streams, which remained tidal into the 18th century. These channels have been subject to so much management in subsequent centuries that their origins are difficult to ascertain (Corcoran *et al* 2011, 8–21). The nearest Lea channel to the sites is the Channelsea River, *c.*200m to the west. The low-lying land was probably prone to flooding and the marginal nature of the land may have inhibited settlement — there is little evidence from sites previously excavated in the vicinity for medieval occupation pre-dating the construction of the abbey (Barber *et al* 2004, 12–14). Several pits found at SL83 and LT94 are likely to date to the 11th to early 12th century and apparently random posthole and stakehole scatters of 10th- to 12th-century date were found on BR73 (DoE 1976, 9) and on SL83 (Fig 4), though the latter may be related to the construction of the south transept of the abbey church (Barber *et al* 2004, S3).

The principal Period 2 features from the recent sites were the ditches excavated on Site B (OA3). Their original depths were difficult to reconstruct: varying degrees of truncation meant that they survived to 0.13–1.25m deep. However, the alignment of these features (Fig 4), and the fact that where stratigraphic relationships existed, it was clear that they were filled in either before or soon after interments had begun in the north-east cemetery of the abbey (see Fig 6), suggests that they are further parts of the pre-monastic field-system found at LT94

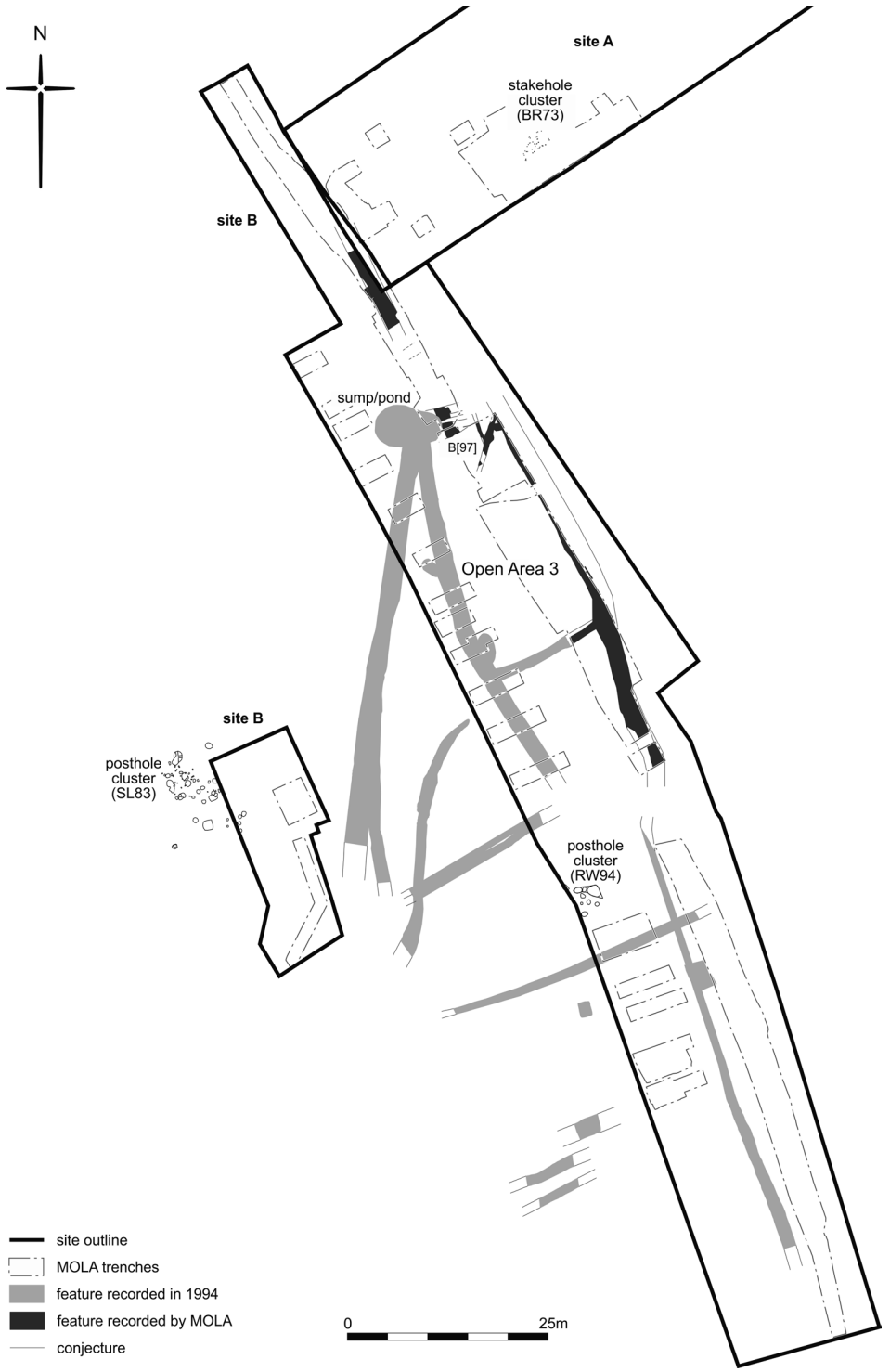


Fig 4. Plan of field/ drainage system in Open Area 3, probably dating to the first half of the 12th century (Period 2)

Table 2. The composition of the entire medieval pottery assemblage by ware

Category	Sherd count	%	ENV	%	Weight (g)	%
Early medieval handmade wares	26	9.7	17	20.5	157	6
Essex glazed wares	12	4.5	11	13.3	114	4.4
London-type wares	4	1.5	4	4.8	43	1.7
Shell-tempered wares	219	81.7	46	55.4	2187	84
Surrey whitewares	2	0.7	2	2.4	46	1.8
Wheelthrown unglazed coarse-wares	5	1.9	3	3.6	56	2.2
Total	**268**	**100**	**83**	**100**	**2603**	**100**

(Barber *et al* 2004, 13, fig 7). However, it remains quite possible that some may have continued in use, or only been gradually filled in, during the construction of the monastery. In general the ditch system was broadly orthogonal to the course of the Channelsea and probably helped to drain the land towards it (Barber *et al* 2004, 12, OA2). A ditch in the northern part of Site B contained fills dated to 1100–1225 on the presence of South Essex medieval ware with greensand quartz (SEMGS), but it is unlikely to have been filled in later than the mid-12th century as it crosses the line of the abbey access road, which was a primary feature of the monastic layout (Barber *et al* 2004, 18, R1).

Other ditches did not conform to a regular pattern and are unlikely to have been pre-monastic field boundaries. Instead they appear to have been part of a more intensive drainage scheme, possibly undertaken as preparatory work for the construction of the abbey (Barber *et al* 2004, 17–19). For example, ditch B[97] and two of the LT94 ditches converged on a pond or sump.

It is clear from the above that the infilling of the ditches could have continued into Period 3 and that some overlap in dates between the two periods is possible. It is also the case that the date for the onset of Period 3 — the foundation of the abbey in 1135 — is somewhat nominal, as the construction of the complex is likely to have occupied decades rather than years. That being said, the overwhelming majority of the Period 2 pottery came from the ditch fills and is consistent with an 11th- to early 12th-century date. As they do in general for Sites A and B (Table 2), local shell-tempered wares of *c*.1000–1220/5 dominate, such as a sand- and shell-tempered (EMSSX) cooking pot (<P 1>; Fig 5), which in itself accounted for 38 sherds, and sherds of early medieval shell-tempered ware (EMSHX; <P 2><P 3>; Fig 5). However, the incidence of sherds was low and many fills contained only single examples. It is rather the presence of ceramic roof tile — splash glazed peg roofing tiles, a greenish brown glazed ridge tile and what may be the knife trimmed edge of a nib tile, all probably discards from the construction of monastic buildings — in some of the ditches that indicate that these fills belong to the second half of the 12th century (Betts 2010). Layer B[38] (not illus) in OA3 certainly post-dates 1170 on the presence within it of Hertfordshire-type greywares (SHER).

The only pottery from Site A is from a medieval soil horizon in test pit 9, which yielded 64 sherds from a 12th-century cooking pot in the local equivalent of early medieval shell-tempered ware (EMSHX; <P 3>; Fig 5).

THE ABBEY PRECINCT UP TO THE EARLY 13th CENTURY (PERIOD 3)

The abbey of St Mary Stratford Langthorne was founded in 1135 by William de Montfichet as a house of Savignac monks. In 1147, the Order of Savigny merged with the Cistercians, whose rule the abbey followed until the Dissolution. Parts of Sites

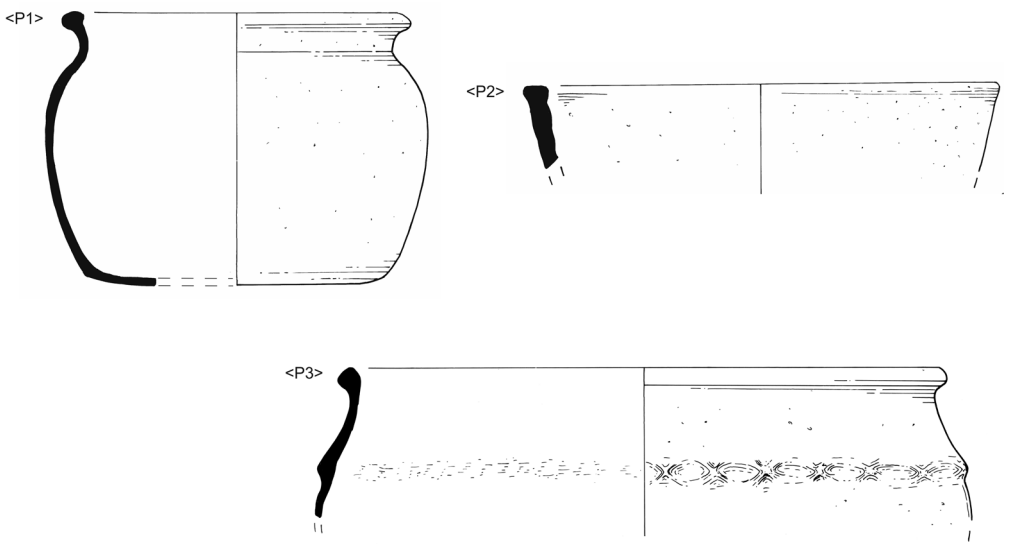


Fig 5. Selected 11th-/12th-century pottery from OA3, Period 2: shell-tempered cooking pot <P1>, early medieval shell-tempered bowl <P2> and cooking pot <P3> (scale 1:4)

A and B overlapped with areas previously investigated but both sites also provided the first opportunity to investigate completely new parts of the precinct. In the main, the principal abbey buildings lay to the west of the sites, though the western trench of Site B overlay the east end of the church. Westwards beyond the church, the precinct extended to the Channelsea river.

The earliest church had a rectangular, unaisled presbytery flanked by two transepts, each with two chapels on their eastern sides (Barber *et al* 2004, 17–33). The original layout of the nave is unknown, but it acquired a north aisle after *c.*1180, when the crossing was also remodelled and the north transept extended. Cemeteries lay to the north-west (*ibid*, OA4), north-east and east (*ibid*, OA3) of the church: northwards, the cemeteries gave on to the road that entered the precinct from the north-east (Fig 6). A gatehouse would have been a required feature of the early abbey, although none of the excavated walls could be securely dated to Period 3 (below, Conclusions). Whatever conventual buildings stood to the south of the church during this period were not defined. Evidence from this period from Sites A and B consisted of horticultural activity in the eastern precinct.

Monastic gardens on the east side of the precinct (OA4)

Towards the north of Site B, an east–west-aligned ditch (Fig 6) appeared to continue the line of that previously recorded further west along the southern side of the access road to the precinct (Barber *et al* 2004, 19, fig 9 R1). The ditch produced several peg roofing tiles, including splash glazed examples, and a single potsherd dated to 1100–1225 which does not contradict the presumption that the road was a primary feature of the precinct.

To the south of the road, once the drainage and boundary ditches of Period 2 had been filled in, the narrow strip of land between the north-east cemetery and eastern boundary of the abbey precinct apparently became a garden, for it yielded little evidence of activity other than the digging of planting pits and bedding trenches (Fig 6). Most were shallow with flat bases, and survived to depths of between 0.11 and 0.37m. Amongst the sparse finds were fragments of a possible nib tile and partly glazed peg tiles; one peg tile is unusual in having numerous small spiral-like lines, possibly just doodles or graffiti, marked into the top surface prior to the tile being firing (<T1>; Fig 7).

Five pits contained pottery dated to after

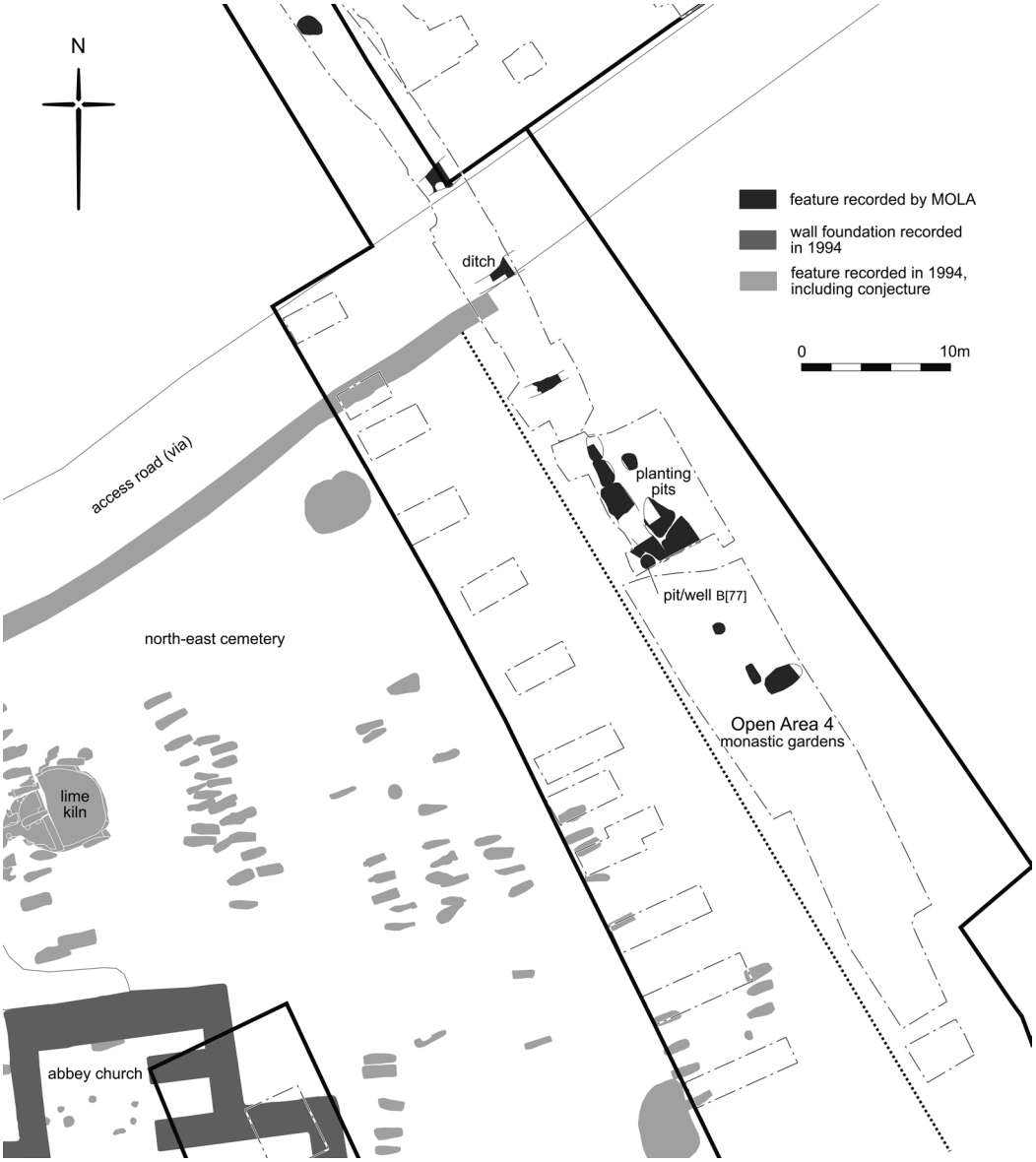


Fig 6. Plan of 12th- to early 13th-century (Period 3) garden features on the east side of the abbey precinct (OA4)

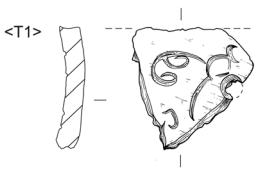


Fig 7. Peg roofing tile with graffiti from OA4 <T1> (scale 1:4)

1100 (as did the roadside ditch). However, the various shell-tempered wares, which include part of a dish (<P4>; Fig 8) and a cooking pot (<P5>; Fig 8), have long date ranges (1000–1220/5). Consequently, the dating of these features is slightly problematic in that most were isolated and had no direct relationship with the Period 2 ditches. With the pottery much the same in character as that from the ditches, it is impossible to tell

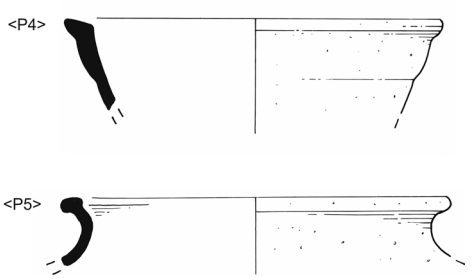


Fig 8. Selected medieval pottery from OA4 (Period 3): a medieval dish <P4> and a cooking pot <P5> (scale 1:4)

how much later the Period 3 features might be, and if any of the pottery is residual or not. Nevertheless, as the planting pits in this area and the early graves in the adjacent cemetery (Barber *et al* 2004, 19, fig 9 OA3) occupy discrete areas it seems quite likely that they are broadly contemporary and that a boundary may have run between the two areas of different use.

One pit (B[77]), 0.75m deep and with near vertical sides (Fig 6), may initially have been a small well, but at the end of its life was backfilled with waste. One of its fills yielded a rich assemblage of charred cereal (Table 3). Rye (*Secale cereale*) was the most common cereal identified, though the preservation of the charred grain was such that many more were unidentifiable. Also present were low numbers of barley (*Hordeum vulgare*), oats (*Avena* spp.) and wheat (*Triticum* spp.), as well as charred seeds of stinking mayweed (*Anthemis cotula*), a common arable weed. All four cereals in the sample were grown in the London region in the medieval period but as wheat was the most important and widely grown (Campbell *et al* 1993, 24, 38), the dominance of rye is noteworthy. Wheat and rye were sometimes grown together as a maslin, though the dominance of rye and relative scarcity of wheat make this unlikely in this case.

THE EAST SIDE OF THE ABBEY PRECINCT, *c.*1220–1538 (PERIOD 4)

The low-lying Lea valley remained prone to flooding well into this period. For example, during the reign of Richard II (1377–99) flooding was sufficiently severe to cause the abbey financial difficulties (*VCH* 1973, 113). By the Dissolution, moats, such as that attested on the eastern side of the precinct, surrounded all three sides of the precinct not bordering the Channelsea (Barber *et al* 2004, 72–3, fig 51) and these protective features would almost certainly have been present from the abbey's foundation.

Table 3. Charred plant remains from pit or well B[77] in the monastic gardens (OA4) in Period 3

Latin name	Common name	Plant part	No.
Triticum aestivum/turgidum/durum	free-threshing wheat	-	4
Triticum spp	wheat	-	6
Secale cereale L	rye	-	26
Hordeum vulgare L	6-row barley (hulled)	-	2
Avena sp	oat/brome grasses	-	5
Cerealia	cereal indeterminate	-	45
Atriplex sp	orache	-	1
Vicia sp	vetch	-	1
Prunus domestica L	plum/bullace	-	2
Anthemis cotula L	stinking mayweed	-	3
Carex sp	sedge	-	1
Poaceae	grasses	-	3
Avena/Bromus spp	oat/brome grasses	-	4

During Period 4 the abbey underwent considerable development and growth. There is archaeological evidence for the enlargement of the east end of church in the 13th or 14th century to create an aisled five-bay presbytery. North of the church, burials continued in the north-west cemetery (Barber *et al* 2004, OA4), though a timber building (*ibid*, B13) encroached upon it after *c.*1350, whilst the north-east/east cemetery expanded considerably, especially in the 13th century and first half of the 14th century, with rows of graves extending east up to the western edge of Site B (*ibid*, OA3). The gatehouse to the north-east of the church is considered separately below.

To the south of the church, the first extant evidence for the west and south claustral ranges (Barber *et al* 2004, B12 and B11) belongs to this period. Expansion was also particularly marked in the south-eastern part of the precinct where an infirmary complex (*ibid*, B5–10) was constructed around a re-fashioned great drain (*ibid*, 33–69; 35, fig 22; 59, fig 43).

Sites A and B provided further, slight evidence for the church, and demonstrated the continued use of the monastic garden as a separate area to the east of the north-east cemetery. In the south-east of the precinct the great drain and infirmary area was re-investigated.

The abbey church

Any evidence for the church floor or its make-ups had been truncated, but in the western part of Site B excavation defined a foundation of chalk blocks, which would have formed part of a pier base in the south arcade of the expanded presbytery (Fig 9; Knight 2011). Although only its north-western part had survived robbing, enough survived to demonstrate that the foundation aligned with pier bases found at LT94 (Barber *et al* 2004, 35, fig 22).

The extreme west end of a grave found to the south-east of the chalk foundation (Fig 9; *ibid*) survived to a depth of only 0.16m. Previous excavations showed that most graves within the church were at least 0.5m deep (Barber *et al* 2004, 95). A skull dislodged from the grave indicated that the burial conformed to standard Christian head-to-the-west practice and that the individual was a man: wear patterns to his molar teeth could indicate that he was aged 25–35 (Brothwell 1981, fig 3.9) but the accuracy of this ageing method is debatable, as it is designed for use on the mandibular teeth and may be affected by population differences and individual variations in diet and tooth structure (Bass 1987, 286). Were the burial to date to Period 3 it would have lain outside the church to its south, an area otherwise devoid of early monastic burials. Consequently, it seems much more likely to have been a burial in the southern aisle of the extended Period 4 presbytery, in the third bay from the east wall.

The great gate (B1)

The great (or inner) gatehouse, arguably the best preserved of the abbey buildings to be excavated, was first discovered in BR73 and tentatively identified as the abbey guesthouse lying north of the abbey road (Barber *et al* 2004, 20, fig 10; 29–30, B3). The re-excavation of the building found additional rooms and walls to the south of the BR73 walls indicating that it straddled the road. Cross-referencing to historic maps such as that of Chapman and André (Fig 18) and the Ordnance Survey 1st edition 1:2500 map of 1869 (Fig 22) indicates that this building was the abbey gatehouse (see also Period 6 below).

The internal features of the BR73 building, all removed in the course of that excavation, indicated that it had undergone a number of phases of use. The external walls were left *in situ*, which allowed their re-examination during the community excavation of February 2008. This building is now interpreted as representing Phase 2 of the great gate, an addition to a Phase 1 building to its south and defined by walls recorded in 2008.

The pottery from the building suggests that it may have been built in either the 12th or 13th century (Barber *et al* 2004, 29–31) but from the style of the arch over the road, as shown in 18th-century engravings (Fig 19), the later date seems more likely. However, the date of a single feature of the superstructure should not be taken as dating the entire structure, let alone its initial construction,

Fig 9. Principal features of Period 4 on Site B (scale 1:500)

as standing gatehouse remains are usually the end result of a complex sequence of construction and rebuilding (Coppack 1990, 120–2). The excavated medieval gatehouse (B1) is discussed here in Period 4, although in reality the first three phases of its construction are poorly dated, with no new dating evidence found during this phase of work. The first historical reference to the gatehouse was in 1334 (Barber *et al* 2004, 53).

Gatehouse (B1): Phase 1

Although referred to as Building 3 by Barber *et al* (2004), for the purposes of this report the gatehouse is considered as Building 1. This nomenclature is retained throughout all its phases of use.

The earliest part of the gatehouse consisted of a building of at least two rooms (A and B; Fig 10) found in 2008 and extending south from those recorded at BR73. The results of a ground probing radar survey suggested that its west wall continued south under the modern Bakers Row for a distance of at least 5m implying that the building straddled the access road to the abbey. Consequently the function of the building can be reinterpreted.

Its north and west walls were made of randomly coursed, roughly squared pale grey stone (probably Hassock) and ragstone, rough hewn chalk and pudding stone (conglomerate of flint pebbles in iron pan), flint nodules and occasional small pieces of Reigate stone, bonded with buff sandy/pebbly mortar. The pudding stone, a hard but unattractive building material, was mainly used in the lower courses, while chalk was principally used in the wall cores. An internal wall between the rooms was of similar construction. Excavations against the north wall were deep enough to show that it was built on chalk foundations and survived to a full height of *c.*1m.

There were at least four successive floors in room A. The final floor surface, which may have dated to a later phase, lay at 3.14–3.21m OD, and was pierced by three stakeholes. A 0.9m-wide doorway in the north wall of the room was dressed with quoins of Reigate stone.

A wall (S1) to the east of the gatehouse,

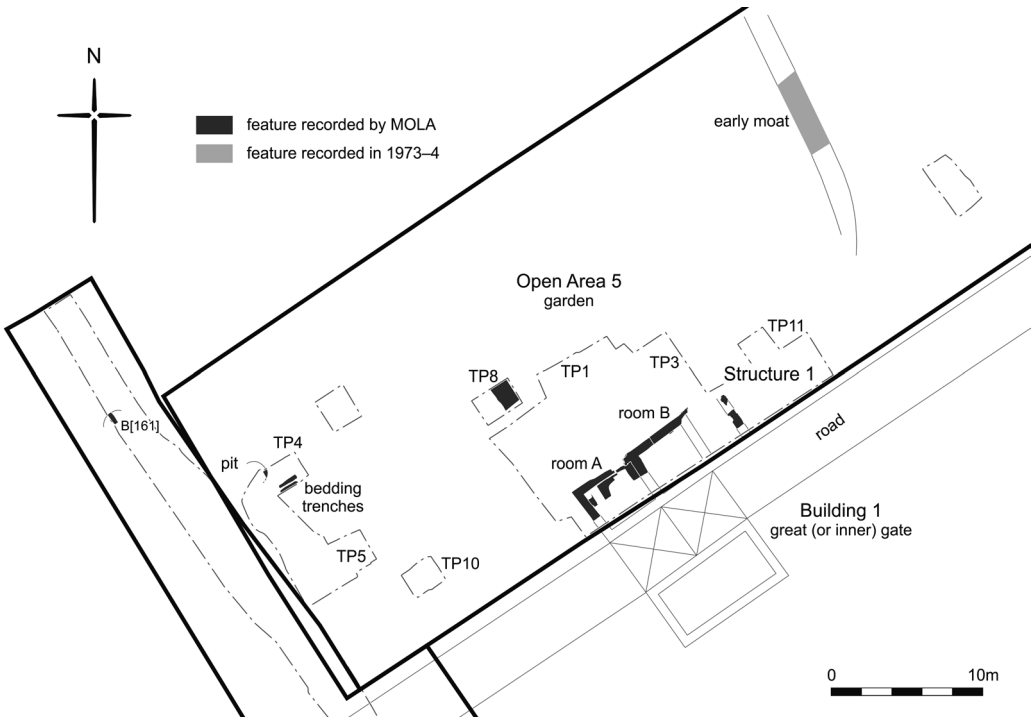


Fig 10. Plan of the gatehouse and the surrounding area at Site B in Period 4, Phase 1 (scale 1:500)

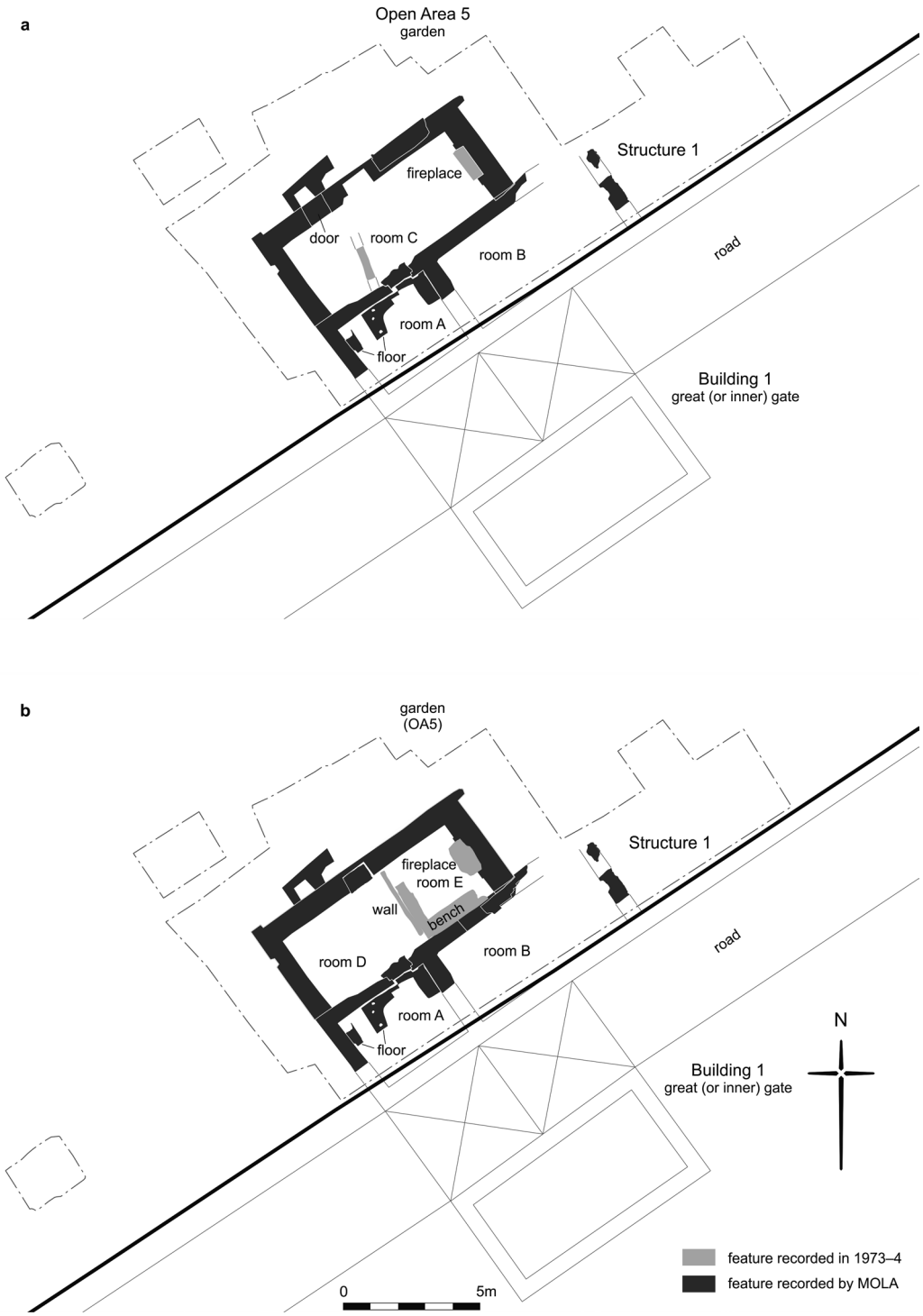


Fig 11. Plans of (a) the gatehouse and the surrounding area at Site B in Period 4, Phase 2; (b) the gatehouse showing internal alterations in Period 4, Phase 3 (scale 1:250)

and similar in build and alignment to it, was also of probable medieval date — it certainly antedated a 17th-century roadside building (B4, Period 5 below). It is likely to have been closely related of the gatehouse, but it is uncertain whether it was integral to its fabric (Fig 10; Fig 11; not shown in the reconstruction, Fig 25). If Structure 1 was integral, it would imply a three- rather than two-bay gatehouse (below, Conclusions).

The northern extension to the gatehouse (B1): Phase 2

A rectangular extension (room C) was later built onto the north side of the gatehouse (Fig 11a). It is this later extension that represents the entirety of Building 3 in Barber *et al* 2004 (29–30). It was a discrete, rectangular, two-room building measuring *c.*9m by 4.6m. Patches of a buff, fine sandy lime mortar render survived on the external face of the east wall, just above the chalk footings. Straight joints were clearly visible where the east and west walls of the extension abutted the original building. The remains of a probable buttress projected from the north-east corner of the building. Internal features were recorded in the extension, including a possible timber partition line, a sequence of four earthen and mortar floors and a pitched tile hearth against the east wall.

A doorway in the north wall, dressed with Reigate stone, was later blocked with masonry, which included part of a window splay in Reigate stone. A footing of chalk and Kentish ragstone outside this door may have supported a porch or possibly an external stair (Barber *et al* 2004, 29). Thin patches of lime mortar render on the south wall of room C may have been the remnant of external surfacing of the north side of the Phase 1 building. It is not clear whether the Phase 1 rooms A and B remained in use when the building was extended, or were converted to provide a pedestrian passage through the gatehouse alongside the wider vehicle passage to the south.

Internal alterations in the northern extension (Building 1): Phase 3

The excavation of 2008 provided no clear evidence for either the rebuilding of the west wall of the Phase 2 extension or for the insertion of a door through it (*contra* Barber *et al* 2004, 65). However, modifications to the interior did occur: room C was partitioned into two rooms of unequal size (Fig 11b). The western room (D) was larger and un-heated, while the eastern room (E) contained the original fireplace and an L-shaped footing against the walls of its south-west corner which may have formed the base for tables, benches or beds. Subsequently a larger pitched tile hearth that extended out into room D was built over the original fireplace (*ibid*). Most of the hearth was removed during the BR73 excavation. The few tiles that remained were found to be peg tiles dating to *c.*1180–1300 and *c.*1180–1480 (Betts 2010).

The area around the gatehouse (OA5)

Garden soil and dumps

Evidence for the contemporary use of the area around the gatehouse was found in several locations (Fig 10). For example, an early soil horizon near the north-west corner of the gatehouse (test pit 8) produced a sherd in Mill Green ware (MG) dated to *c.*1270–1400, combined nib and peg tile (<T2>; Fig 12) and peg tile dated to *c.*1200–1250 and *c.*1180–1480 respectively. Although the soil was at least 0.85m thick, the finds were concentrated in its top 0.3m. To the east, in test pit 11, early dump layers produced fragments of peg tile dated to *c.*1140–1480 (Betts 2010).

Dump layers in test pit 4 containing fragments of peg tile dated to 1180–1480 and 1200–1480, chalk and mortar had either overflowed from or slumped into a pit (Fig 10). Similarly, an early cut feature (not illus), in test pit 10, contained fragments of combined nib and peg tile and possible nib tile, respectively dated to *c.*1200–1250 and *c.*1200–1350/1400 (Betts 2010).

Monastic gardens south of the abbey access road (OA4)

Pits and dumps

The strip of land on the east side of the abbey precinct and to the south of the abbey access road apparently continued to be used as gardens throughout this period. Shallow pits

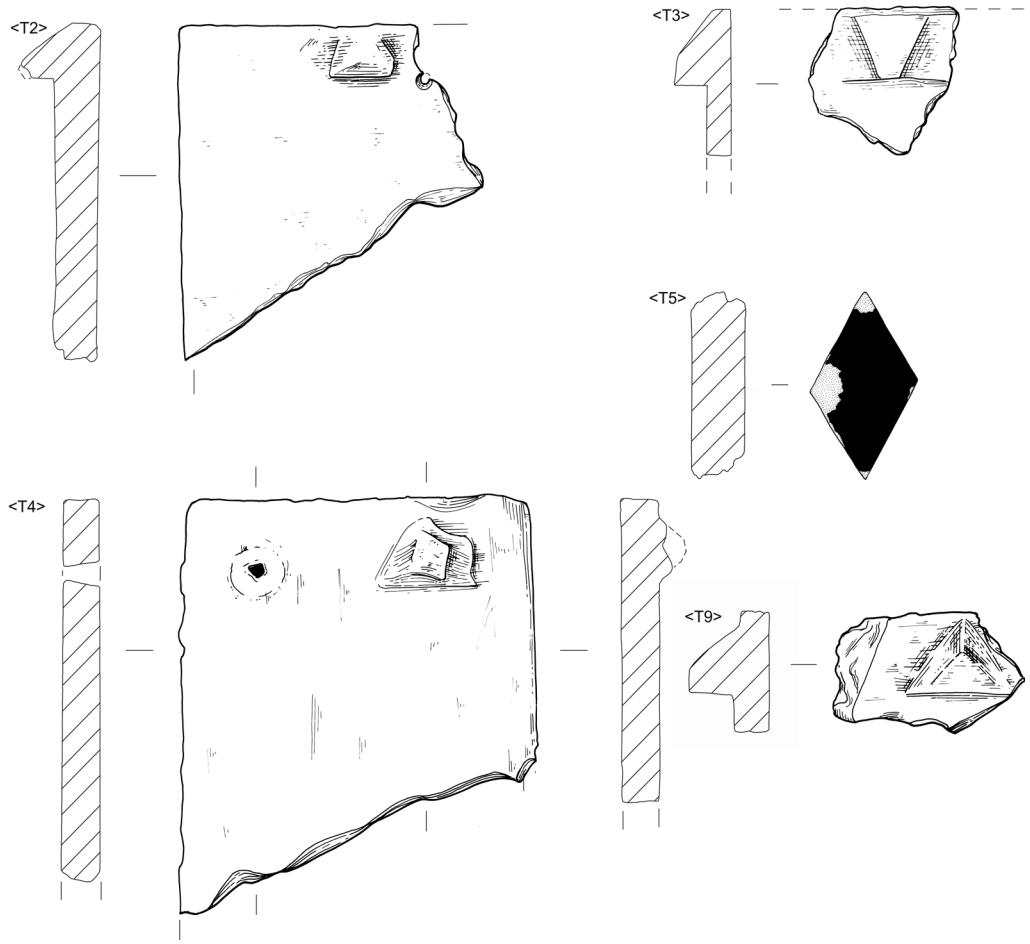


Fig 12. Tiles from monastic gardens (OA4 and OA5): nib roofing tiles <T3> and <T9>; combined nib and peg roofing tiles <T 2> and <T4>; and a diamond-shaped mosaic tile <T5> (scale 1:4)

(Fig 9), probably for planting, produced few finds, though the base of one, to the south of Structure 3 (see below), was covered with a layer of tile fragments, probably to improve drainage. Two pits contained single sherds of medieval Harlow ware (HARM; *c.*1200–1500), while another is dated by sherds of London-type ware (LOND) and Mill Green ware (MG) with white slip decoration dated to *c.*1270–1350 or later. A sherd of Cheam whiteware (CHEA) was found in a cut feature on the southern edge of the abbey access road.

A larger, deeper pit, possibly a gravel quarry, was partially exposed near the south end of Site B (not illus). It was cut by a monastic wall foundation (B2; see below) and produced peg tiles and nib tiles. The latter include two with a triangular nib on the smoothed underside (<T3>; Fig 12) and another with what appears to be the remains of a triangular nib of a sanded underside. These nib tiles have the characteristic knife-trimmed edges. The pit also produced a floor tile belonging to the Eltham Palace/Lesnes Abbey group. The tile probably dates to either the end of the 13th or the early 14th century, although its condition suggests long use, so that deposition is unlikely to have occurred before the late 14th century. Indeed, its top surface is so worn that it is not certain if the tile was decorated or plain

glazed. Two tiles from this group are already known from Stratford Langthorne (Smith with Betts 2004, 140), which suggests there was at least one floor with these tiles located somewhere in the abbey.

Most of the building material recovered from the area came from the pits. It mainly comprises splash glazed peg roofing tile, although there are also a few pieces of nib tile. More unusual is a combined peg and nib tile (<T4>; Fig 12). This very rare roofing tile type has a round nail hole in the left underside (when viewed from below) and a broken rectangular shaped nib on the right side. Unlike normal nib tiles, the nib has been set back from the top edge so it is more in line with the nail hole.

Two particularly interesting medieval floor tiles were recovered from later features. The earliest is the diamond-shaped mosaic tile with a plain black glaze (<T5>; Fig 12). This is probably part of the mosaic floor tile group already known from the abbey. Such tiles have not been found elsewhere so it would appear that they were made by the abbey itself. Their use is believed to relate to the rebuilding of the church after *c.*1220 (Barber *et al* 2004, 41, fig 30; Smith with Betts 2004, 138–9). The other tile (not illus) appears to be decorated but the pattern is so badly smudged it is difficult to be certain. It has fine sanding, suggesting it belongs to the Eltham Palace/Lesnes Abbey group, but would appear to be a waster or second.

Three other residual floor tiles from mid-18th-century dumps in this area, may be assigned with varying degrees of confidence to the abbey. Two are of medieval type and comprise a plain yellow example in a 'Westminster' fabric (type 2199) of probable 1250–1310 date, and a decorated tile belonging to the Eltham Palace/Lesnes Abbey group (<T6>; Fig 13). The latter has a fleur-de-lis design found at Eltham Palace itself (Eames 1982, design 4) as well as previously at Stratford Langthorne Abbey (Smith with Betts 2004, 140–1). At Eltham Palace floor tiles belonging to this group were installed *c.*1300–1305 and those at Stratford Langthorne are likely to be contemporary. The tile from Open Area 7 has the fine moulding sand which is often a distinguishing feature of the Eltham Palace/ Lesnes Abbey group.

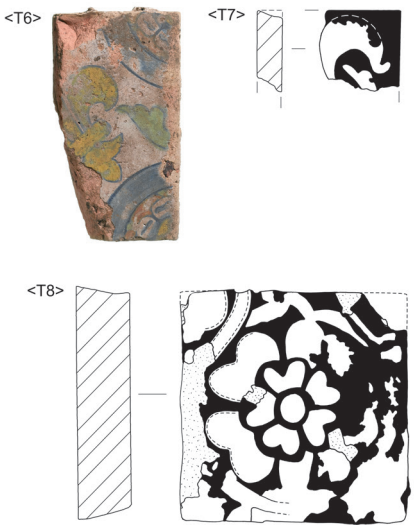


Fig 13. Residual tiles recovered from Period 6 (1700–c.1840) deposits but dating to Period 4 (c.1220–1538): decorated floor tile belonging to the Eltham Palace/ Lesnes Abbey Group <T6>and Antwerp tin-glazed floor tile <T7>from OA7; decorated Penn floor tile <T8>from S14 OA6 (scale 1:4)

The third is a 16th-century decorated tin-glazed floor tile. It has an identical fleur-de-lis design (<T7>; Fig 13) to that found on tiles dated *c.*1520–50 from the site of a manor house at Place Farm, Bletchingley, Surrey. The same design is also known on a tile that may have paved Warwick Inn in the City of London (Betts & Weinstein 2010, 94–5, no. 26). Analysis of the Warwick Inn tile has confirmed that tiles of this design were made in Antwerp, Belgium (Hughes 2010, 47).

The tile could have been from a pre- or post-Dissolution floor. An Antwerp tin-glazed floor may have been installed in Charterhouse in Smithfields and a small worn tin-glazed tile has been found on the site of Lesnes Abbey, Bexley. Single early Antwerp tiles have also been found on monastic sites at Sopwell, Hertfordshire, and Titchfield Abbey, Hampshire (Betts & Weinstein 2010, 23). If the tile is post-Dissolution then it probably derives from the former abbey gatehouse. This certainly had a floor made from probable London-made tin-glazed tiles dating to the first half of the 17th century (Barber *et al* 2004, 127, fig 86; Betts 2004; Betts & Weinstein 2010, 24).

Another notable residual find was a mid to late 14th-century Penn floor tile decorated with Hohler (1942) design P57 (<T8>; Fig 13), which was found in a late 18th-century cesspit (S14). A number of Penn tiles have been found previously at Stratford Langthorne Abbey (Smith with Betts 2004, 140), although this is the first occurrence of this particular design.

Great drain (S2) and infirmary building (B2)

South of the gardens lay the great drain (S2), originally recorded at LT94, when its base and parts of its walls still survived (Fig 9). The sides of the channel were roughly faced and its base surfaced with re-used 'great bricks' of probable late 12th- or 13th-century date (Barber *et al* 2004, 50–1; Smith with Betts 2004, 143–4). Pottery from B[38], cut by this feature, includes three sherds in Hertfordshire-type greywares (SHER) dated to after *c.*1170. It seems likely that the great drain was constructed after 1200. Reinvestigation of the drain footings in 2008 found that they included a number of nib tiles, along with smaller quantities of peg and ridge tiles and a small fragment of brick, whilst the fill of its construction trench produced a sherd from a residual 12th-century jug in calcareous coarse London-type ware (LCOAR CALC).

Immediately to its south, the severely truncated remains of a substantial masonry wall foundation (B2; Fig 9) lay roughly in the north-east corner of the putative infirmary cloister (see Barber *et al* 2004, fig 43). Its depth is surprising, but probably necessary to compensate for the soft ground filling in the earlier gravel quarrying (see above). The latest quarry fills date to the late 14th century and thus this wall is more clearly dated than those discussed in Barber *et al.*

Cellar or fishpond? (S3)

To the east of Building 2, a north–south-aligned wall, also previously recorded in 1994, ran across the projected line of the great drain (Fig 9). Two phases of build were evident: the earlier, bedded into the surface of the natural gravel, was built from large ashlar masonry blocks. Later a wall of roughly hewn Kentish ragstone founded on a single course of chalk, was built onto the north end of the earlier wall. The wall enclosed a rubble-filled area to the east, previously interpreted as part of a possible cellar (Barber *et al* 2004, 52; Building 9), though this would have blocked the line of the drain. It is more probable that Structure 3 forms the west side of a *servatorium* (a small storage pond for fish) fed, and drained, by the great drain.

THE EAST SIDE OF THE ABBEY PRECINCT AFTER THE DISSOLUTION, 1538–1700 (PERIOD 5)

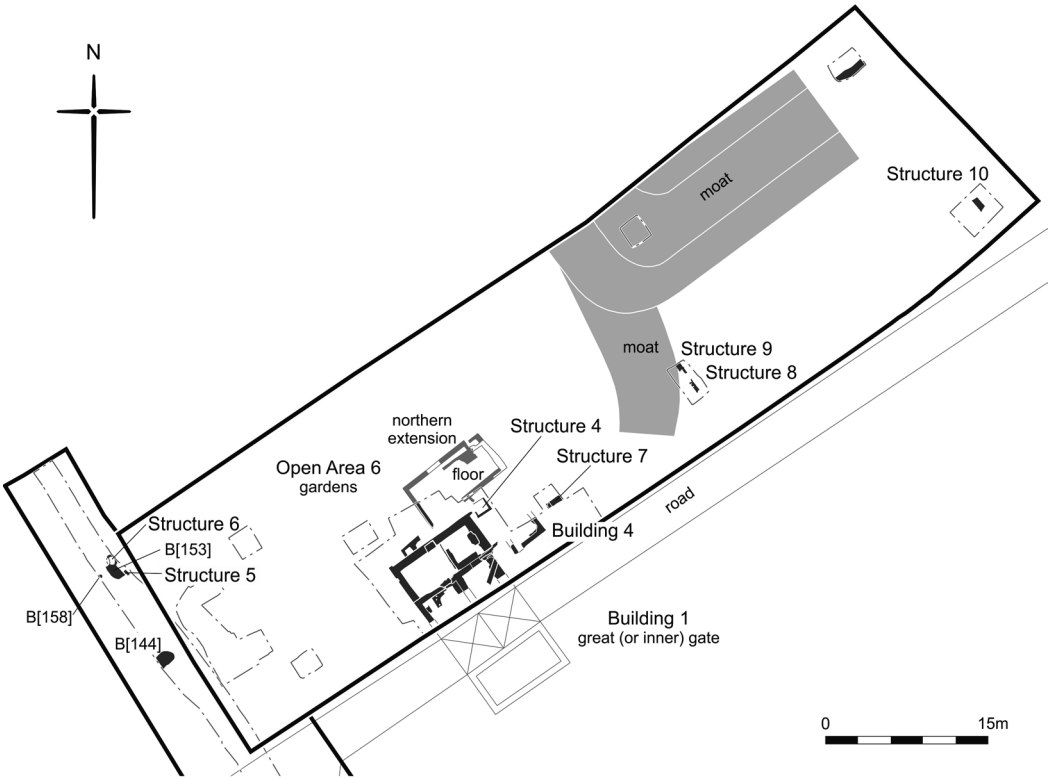
The abbey was dissolved in March 1538 and in the following year its site was granted to Sir Peter Meautis (Mewtas) (*VCH* 1973, 112–13). It is not known exactly when the abbey was pulled down, although it is thought that parts of the church and other monastic buildings survived, at least as ruins, for more than a century after the Dissolution. The former gatehouse was modified and enlarged after the Dissolution (below). A few other features dated to this period were recorded during previous excavations, mainly pits, containing demolition debris and postholes, but there was also evidence from the infirmary area of domestic occupation. Here a pit dated to *c.*1550–1650 produced kitchen waste and the final fill of a brick-lined cesspit yielded pottery of *c.*1550–1700 (Barber *et al* 2004, 121–7).

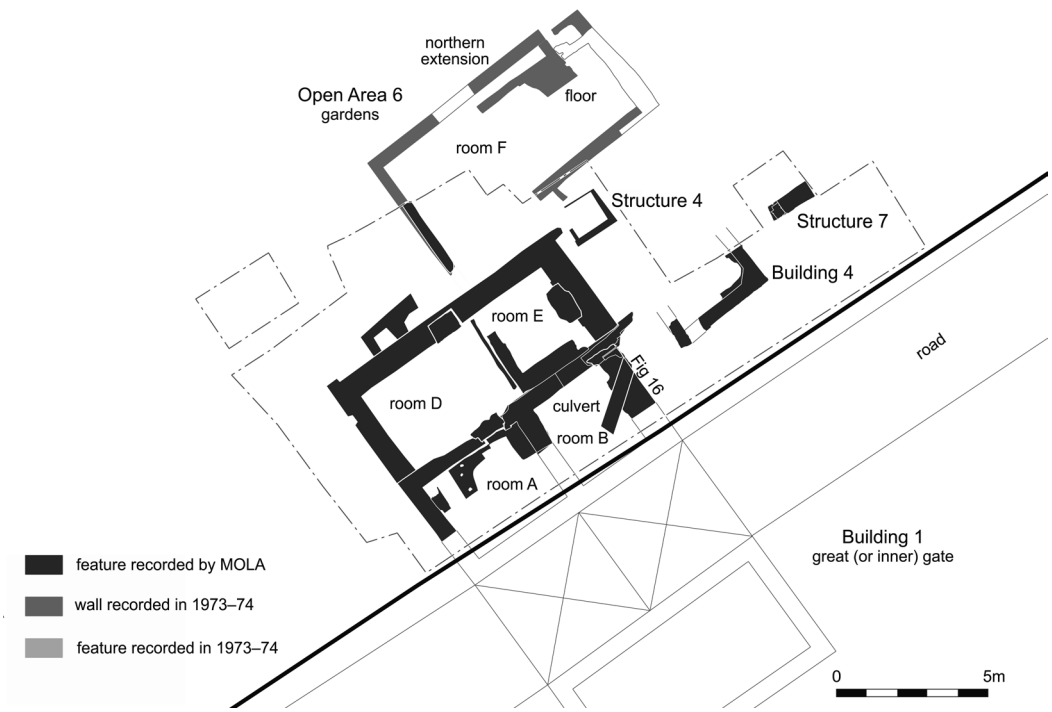
Converted abbey gatehouse

Modifications defined in 1974: northern extension and a cesspit

Some evidence for the uses of the Great Gate (B1) after the Dissolution was apparent at BR73 (Barber *et al* 2004, 124, fig 83; 125–6). A brick wall extending out from the north side of the former gatehouse formed part of substantial 16th-century extension to the medieval building (room F). The wing was

Fig 14 (opposite). Plan of the principal archaeological features in gardens and fields north of Abbey Road (OA6) 1538–1700 (Period 5) (scale 1:700), with detail of the converted gatehouse, the roadside building (B4) and adjacent structures (scale 1:250)


N
moat
Structure 10
moat
Structure 9
Structure 8
northern extension
Structure 4
Structure 7
Open Area 6
gardens
floor
road
Structure 6
B[153]
Structure 5
Building 4
B[158]
B[144]
Building 1
great (or inner) gate
0
15m


northern extension
Open Area 6
gardens
floor
room F
Structure 4
Structure 7
Building 4
room E
Fig 16
road
room D
culvert
room B
room A
Building 1
great (or inner) gate
feature recorded by MOLA
wall recorded in 1973–74
feature recorded in 1973–74
0
5m

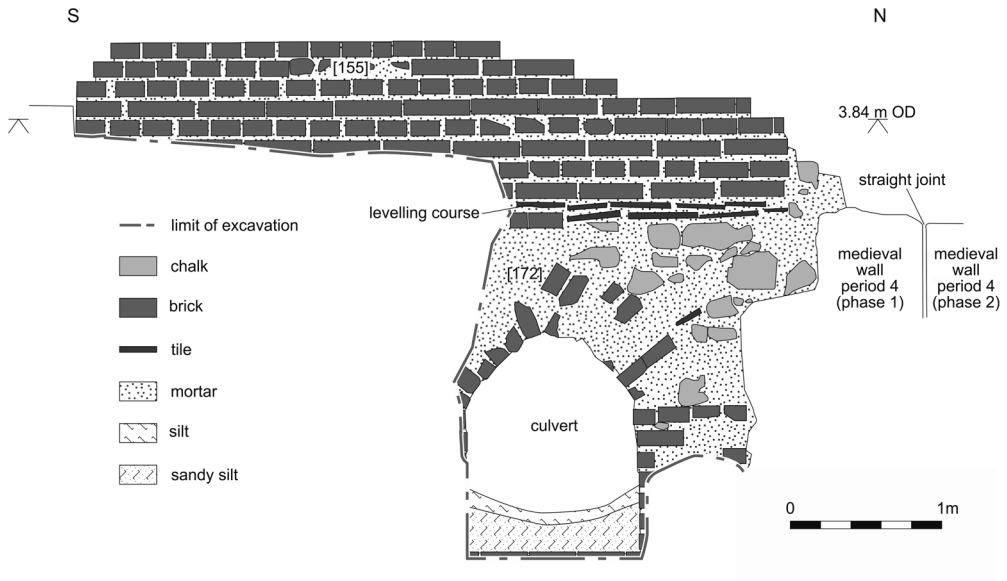


Fig 15. Elevation of the modified east side of the gatehouse (scale 1:50)

probably added shortly after the suppression of the abbey, in order to convert it to a more spacious residence. A new tile hearth was inserted into the east side of room E, and a cesspit (re-excavated in 2008 as S4) put in outside the building (Fig 14). The bricks of the cesspit suggest that a 17th-century date is likely.

Artefacts recovered at BR73 from the extension and the surrounding area suggest that its late 16th- and 17th-century occupants were prosperous. They include several sherds of Iznik ware from Turkey which is rarely found in London, glass from drinking vessels (mostly from Italy and others possibly from northern Europe), the base of a small tankard and 15 fragments of polychrome tin-glazed floor tiles dated to *c.*1618–50 (Barber *et al* 2004, 126).

Modified east side

The 2008 excavation found that part of the east wall of Building 1 Phase 1 was also rebuilt (Fig 15). A new masonry and brick foundation ([172]) incorporated a brick culvert, 0.71m high and 0.5m wide internally, of which a 2.2m length was recorded. The bricks are compatible with a later 16th- to early 17th-century date (Betts 2008). The culvert ran diagonally through the wall foundation and beneath part of room B. A linear cut continued the alignment north-eastwards, and was probably a drain running into the moats bounding the former precinct.

Brick wall [155] was set above the foundation on levelling courses of reused peg tile, its bricks datable to the mid-16th to mid-17th century on the basis of their size and the presence of sunken margins.

Roadside brick building (B4)

A new brick building was built *c.*2m east of the former gatehouse (Fig 14). Parts of its southern end lay within the 2008 excavation and survived to a height of three courses (0.28m). The red bricks, including two with sunken margins, are probably of 16th- to mid-17th-century date and were mortared in either English or English Cross bond, although too little survived to be certain. Traces of an apparently contemporary brick floor, made from whole and half-bats, lay against the north (internal) side of the wall. The building had probably gone by the mid-18th century for it does not appear in a 1758 engraving of the Great Gate (Fig 19).

Gardens and fields north of Abbey Road (OA6)

Backfills in the moat around the abbey precinct

With the abbey now abandoned and the precinct sold off, the perimeter moat became redundant. Part of the moat to the north-east of the former gatehouse was identified in 1973–4 (Barber *et al* 2004, 28–9, 65) and this was re-sampled in 2008. The successive dumps of backfill excavated in TP7 (Fig 14) produced ten sherds with a central date of *c.*1670–1740, and appear to represent at least the partial filling of the moat in the early to mid-18th century.

A little further east, the continuation of the moat was confirmed in TP6. Here, excavation of a slot to a depth of *c.*0.5m (TP6; Fig 14) identified part of the steep (45º) northern side of the moat (which aligned with that part identified in 1973–4) and two backfills. Only the upper backfills, that is the culmination of the filling process, were sampled: the earlier of these produced two potsherds dated to *c.*1580–1650: the later fill was gravel, probably levelling over the backfilled moat, and produced pottery dated to *c.*1580–1700 (Blackmore with Pearce 2010).

The TP7 material is catalogued as Period 7 because of the spread of the pottery date. However, it is quite unlikely that the dates of the infilling of the moat would differ dramatically between two such close observations and it remains entirely possible that the moat had been more or less completely filled in by *c.*1700.

Garden walls and path (S5 and S7–10)

As old boundaries such as the moat ceased to function, there is evidence, in the form of at least three garden walls (S5, 7–9), for the new subdivision of the land around the former gatehouse in the years following the Dissolution (Fig 14). At the extreme west of the site, wall S5 was made of broken red bricks, of mid-16th- to 17th-century date but very likely reused. East of Building 4, and possibly associated with it, was a second brick wall (S7) running parallel to Bakers Row. Two phases of brickwork were evident indicating reconstruction or repair. The bricks were again mid-16th- to 17th-century in date and probably reused. Further east, Structures 8 and 9 define a single wall aligned roughly at right angles to the road and crudely built in uncoursed brick and stone rubble but faced with unfrogged orange-red bricks on its east side. It survived to a height of 0.42m. An alignment of broken bricks, some overfired and distorted and possibly dating to 1500/1550–1666, may represent a path (S10). Overfired bricks would have been ideal for paving as they are harder than normal.

Garden soil, pits and a soakaway (S6) to the west of the former gatehouse

Near the western limit of Open Area 6 two pits, B[144] and B[153] (Fig 14), contained fills including demolition debris from the monastery, such as part of a large medieval window mullion cut from Reigate stone and a plain yellow glazed 'Westminster' floor tile dated to *c.*1250–1310. These pits may be presumed to post-date the Dissolution though only B[153] can be demonstrated to be later than *c.*1550 (Betts 2010). The pottery from B[144] indicates a date of *c.*1480–1550 (Blackmore with Pearce 2010). A nearby posthole B[158] can be dated to *c.*1580–1600 on the presence of London-area early post-medieval redware (PMRE) and Midlands purple ware butterpot (MPUR). A little closer to the former gatehouse, a patchy layer of soil overlying the natural gravel in test pit 5 produced a sherd from a small bowl of green-glazed Surrey Hampshire border whiteware (BORDG), dated to *c.*1550–1700. A circular brick soakaway or well (S6), 1.12m in diameter, lay close to rubble filled pit B[153] (Fig 14). It was made of dry-laid, incomplete (and reused) red bricks dated to the 16th or 17th century.

Gardens/fields south of Abbey Road (OA7)

Evidence for post-Dissolution activity to the south of the gatehouse mainly comprised cut features containing monastic demolition debris including B[246] (not illus), seen in section on the line of the great drain, which contained pottery post-dating *c.*1550 (Blackmore with Pearce 2010) and fragments of roughly hewn chalk and ragstone and occasional pieces of tile. Further south, there were two large pits: B[209], containing

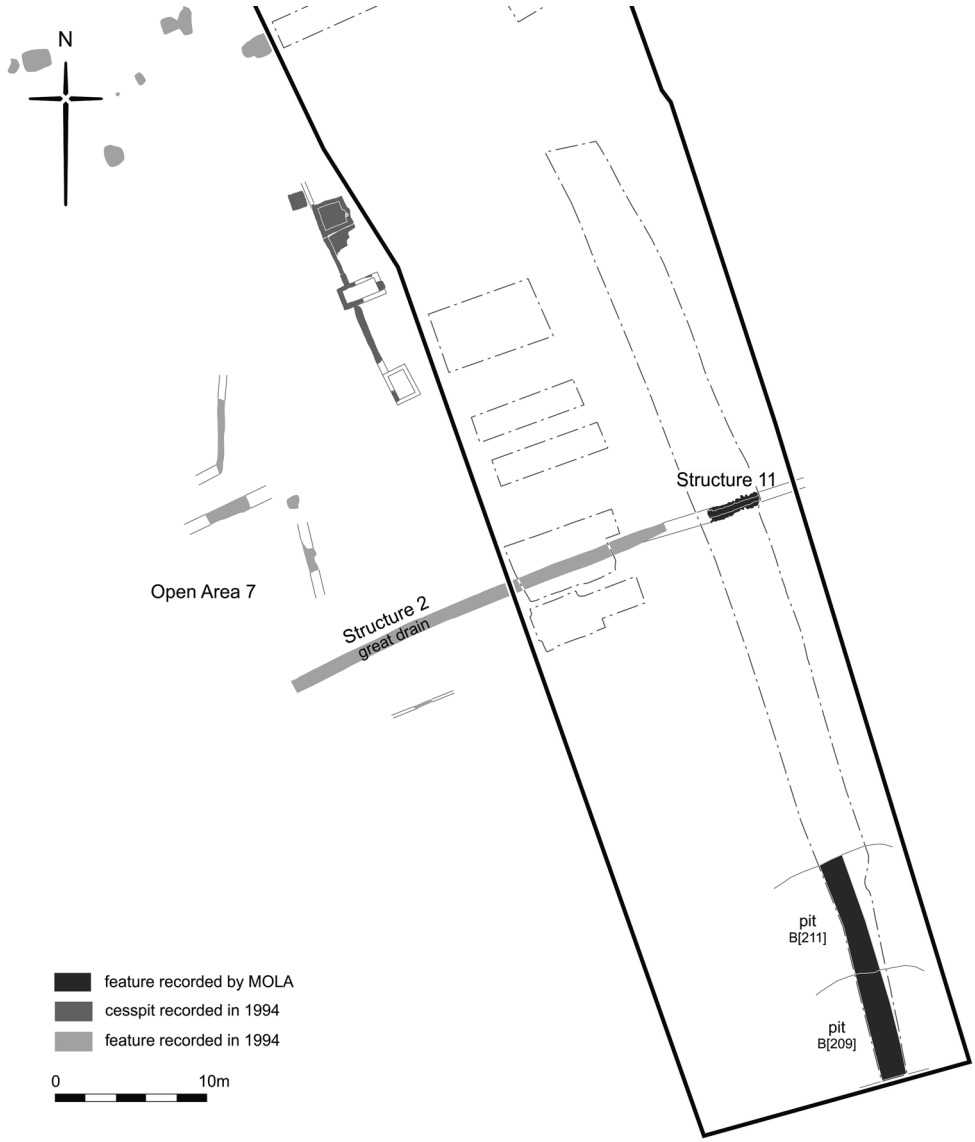


Fig 16. Plan of principal features in gardens and fields south of Abbey Road (OA7), Period 5 (scale 1:500)

mortar, rubble and occasional bricks dated to 1450–1550, was cut by B[211], whose fills included occasional fragments of roof and floor tile (Fig 16).

The features yielded a small Reigate stone moulding of uncertain type with traces of red paint on one face (<A1>; Fig 17) and an unusual floor tile that has a creamy-white slip

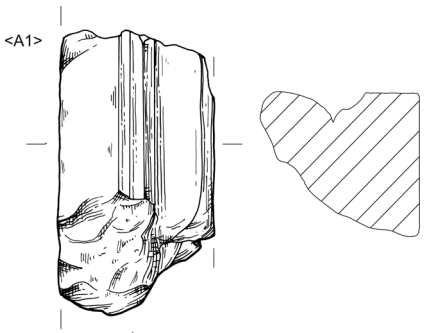


Fig 17. A residual red-painted stone moulding from the abbey <A1> (scale 1:4)

covering the top surface but no glaze. The tile is 30–31mm thick and is in a 'Westminster' fabric (2892), although it is uncertain if it belongs to the 'Westminster' tile group.

Drain (S11)

During this period a smaller, narrower (0.38m wide) drain was built on the line of the great drain (Fig 16). It was constructed over a shallow trench, B[245], which had been filled with clayey silt — possibly to provide a smooth level base over rubble filled features. This rebuild may correspond to the brick relining noted previously (Barber *et al* 2004, 125).

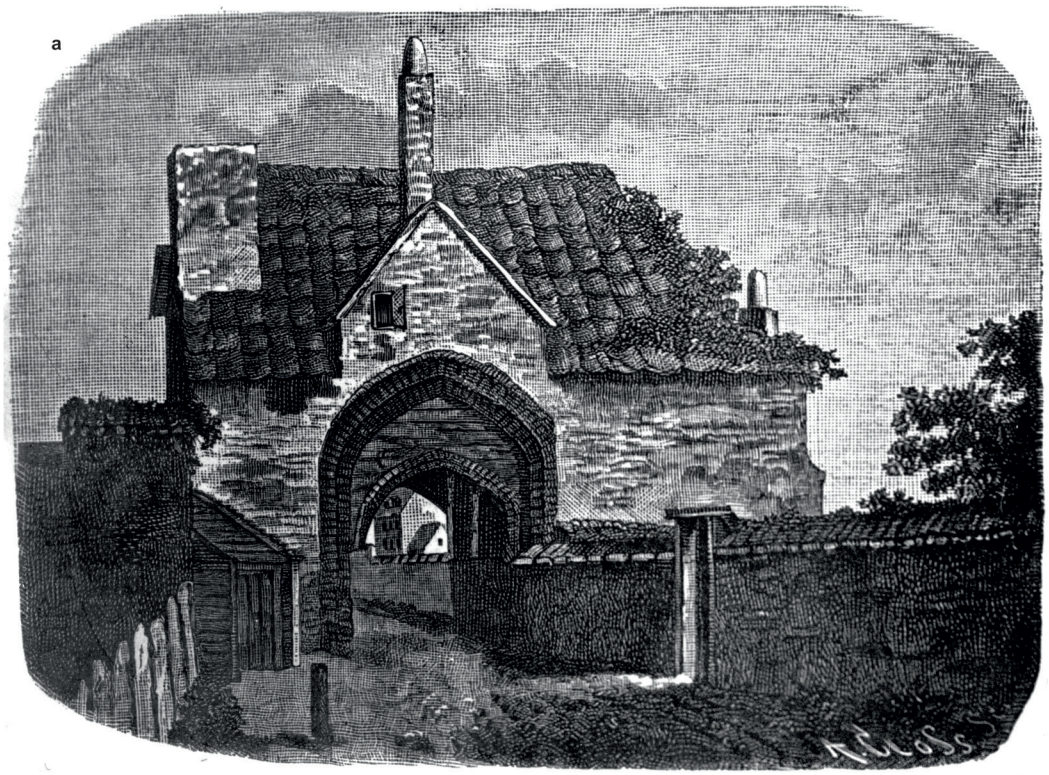
The drain base was of unusually small red and brownish orange bricks (fabric 3041), measuring 176 by 79–81 by 38–43mm. Bricks such as these were often used as paving in London during the 17th and 18th centuries, although these were normally yellow (fabric 3036) and imported from the Netherlands. The red and brownish orange colour of the bricks used in the drain suggests they may be English copies made around the same period. The drain sides and roof were built from a mix of ragstone and chalk cobbles, with some brick. Changes in mortar indicate at least one phase of repair and pottery and glass from sediments within the drain show that it was still active in the 19th century, when a length of ceramic pipe was inserted.

LATER DEVELOPMENTS AT 'WEST HAM ABBY' 1700–*c.*1840 (PERIOD 6)

By the mid-18th century the hamlet of 'West Ham Abby' (*sic*) was well established, at least partly due to its flourishing calico printing industry. The settlement consisted of a few buildings and houses scattered along the western part of the aptly named Abby Lane (formerly the access road to the abbey) about 400m south-west of the village of West Ham and maps by Rocque in 1746 and Chapman and André in 1777 (Fig 18) clearly show

Fig 18. Detail of John Chapman and Peter André's map of the County of Essex, 1777, showing the great gate

a



b

the former gatehouse flanking and partly encroaching upon the road. The building is also shown less distinctly, but more accurately, on an Ordnance Surveyors drawing of 1799. Crucially all three maps place the gatehouse immediately west of a north–south field boundary south of the road; a boundary that coincides precisely with the remains of a moat indicated in Gothic lettering on the Ordnance Survey 1st edition 1:2500 map of 1869 (Fig 22). This last map provides the vital link between its 18th-century precursors and its modern successors allowing the site of the gatehouse to be pinpointed, although paradoxically it incorrectly places the 'site of gateway' *c.*20m too far east.

At least five illustrations of the east side of the former gatehouse were produced during this period. The earliest is an engraving dated 1758 (Fig 19a) that appears to have been copied by the engraver Samuel Sparrow, who produced two similar versions, published by Samuel Hooper in 1774 and 1784 respectively (Grose 1773–87). The engraving shows the top of an arch extending above the line of the wall plate, indicating that the building had once been taller and more imposing. There is no sign of the 16th-century (Period 5) brick extension and the available maps also suggest that this part of the building was relatively short-lived and had gone by the mid-18th century.

A watercolour of the building was painted by the antiquarian Francis Grose (1731–91), possibly during the 1770s or 1780s (when Grose was at his most prolific) (Fig 19b). The dormer has been removed and the entrance passage altered. A similar view of the gatehouse by T Prattent was published in 1793 (*The Gentleman's Magazine* October 1793, P1, 881; Essex Record Office I/Mp 164/1/26).

Former abbey gatehouse: the Great Gate (B1)

Modifications to the former gatehouse (B1) room A: an internal sleeper wall and rebuilt hearth

During this period the former gatehouse underwent various modifications, including the construction of a brick north–south wall, A[157], on top of the floor in room A (Fig 20). It was close and parallel to the west wall of the room and, rather than being structural, was probably a sleeper wall to support joists for a raised floor. The bricks (fabric 3032) were probably late 17th- or 18th-century in date and laid in English bond. The sleeper wall was 0.38m high and also incorporated occasional pieces of Reigate stone ashlar.

The date of a makeshift hearth in the north-west corner of room A is uncertain (Fig 20). It was of extremely *ad hoc* construction, comprising a loose, single layer of reused nib and peg tiles on the floor. The adjacent face of the west wall of the room was scorched and its flint components fire-cracked. It is very possible that the hearth was used only briefly, possibly shortly before, or even during, the demolition of the building.

Adjoining mid-17th-/ 18th-century cesspit (S12)

A brick-lined cesspit, dated to the mid-17th to 18th century, abutted the north side of the former abbey gatehouse (Fig 20) and was recorded in 1973–74 (Barber *et al* 2004, 125).

Demolition of former abbey gatehouse, *c.*1825

When the gatehouse was demolished, the interior spaces whose floors were by then below contemporary ground level were filled in with loose, mortary rubble up to *c.*0.6m thick. The latest pottery from this debris is an English stoneware jar and a Sunderland slipware dish dated to 1800–40, which would accord with historical accounts of the gatehouse being pulled down in about 1825 (Barber *et al* 2004, 74; *VCH* 1973, 114).

Gardens/fields north of Abbey Road (OA6)

There is little evidence for anything other than the horticultural use of the area around the post-Dissolution gatehouse. Cultivated soil dated to this period survived particularly well to the west of the former gatehouse and

Fig 19 (opposite). (a) Engraving of the great gate of Stratford Langthorne Abbey in 1758, looking west; (b) Watercolour of the east side of the great gate of Stratford Langthorne Abbey after 1758 by Francis Grose (reproduced by kind permission of Newham Heritage Service)

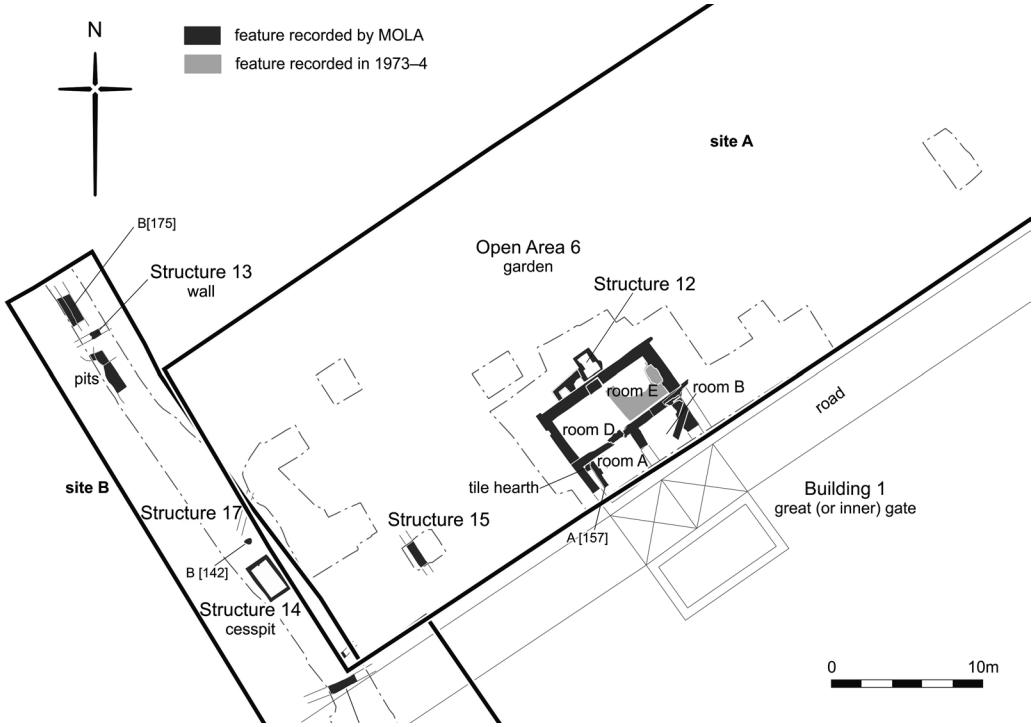


Fig 20. Plan of former gatehouse and the principal archaeological features in Open Area 6, Period 6 (scale 1:500)

was thickest in TP5 (Fig 20), where it was up to 0.55m deep. Here the soil produced four clay tobacco pipe bowls, dated at the latest to *c.*1700–40 by the presence of a type OS10, with the moulded maker's mark WM (William Manby) in relief on the sides of the heel (see Oswald 1975, 142). One other pipe (a type AO20 dated to *c.*1680–1710) in the same group has the maker's initials moulded on the heel, but only the second letter, a B (for the surname) is legible. The soil also yielded four sherds of fine post-medieval redware (PMFR) dated to 1580–1700, and was covered by another soil horizon containing sherds of creamware and transfer-printed ware dated to 1807–30. Soil in TP10 produced sherds of a tin-glazed ware plate dated to 1670–1750.

Garden walls

A crudely built, brick and stone garden wall (S13; Fig 20) was aligned parallel to the road. A second wall, A[154] (not illus), was perpendicular to the road. It cut through the demolition rubble over the former gatehouse and so must date to the second quarter of the 19th century or later.

Pits

Pits were again more prevalent in the western part of Open Area 6 (Fig 20). The fill of pit B[175] included a slightly unusual pantile with two notches in the base of the nib (<T10>; Fig 21). It also produced four clay pipe bowls, two of which are of type OS10,

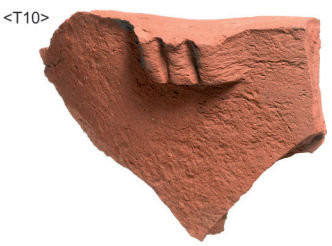


Fig 21. Pantile with notched nib from gardens and fields north of Abbey Road (OA6) <T10> (scale 1:4)

dated to *c.*1700–40, while the others date back to *c.*1660–80. One of the OS10 bowls is marked with the maker's initials, the second of which is illegible. Fragments of another clay pipe bowl probably dating to the late 17th or early 18th century were recovered from a rubbish pit in test pit 5. The latest features were pit B[142], which contained six sherds from a creamware plate dated to 1760–1830, and a possible planting pit A[40], which contained part of a creamware cup (1740–1830).

Mid-18th-/ mid-19th-century drains (S15–17)

The provision of three drains, all with tile bases and brick sides and all, on the basis of brick typology and stratigraphy, constructed between the mid-18th and mid-19th centuries, suggests that drainage continued to be a problem. The upper part of S16 had been truncated, but the other drains had slightly arched brick roofs. They were of modest size, with channels between 0.17 and 0.26m wide and 0.25m high. Similar drains had been recorded at BR73.

A late 18th-century cesspit and its early 19th-century household clearance assemblage (S14)

A rectangular, late 18th-century cesspit in a garden north of Abbey Road (OA6) may have been used by the occupants of the converted gatehouse, which lay only 20m to the east (Fig 20). There is little doubt about the pit's function as its primary fill contained moderate amounts of food waste, with some mineralization probably due to phosphates present in faecal matter. The cesspit was especially interesting because it had been used for the disposal of a large quantity of household objects mainly dated to between 1810 and 1820/30, probably during the final clearance of a house. Indeed, the bulk of the material may have been deposited in the 1820s, at about the time the nearby gatehouse was pulled down. This may be coincidental, but it seems likely that the contents of the cesspit came from either the gatehouse or a neighbouring building. The cesspit and the assemblage within it, which included pottery representative of vessels in everyday use between the 1780s and the early years of the 19th century, late 18th-century glass pharmaceutical vials, part of a spirit or medicine bottle, fragments of window glass and wine glasses, three bone and ivory knife-handles, a button, a lace-chape, a pin and six clay tobacco pipe bowls, are described in detail elsewhere (Blackmore *et al* 2013).

However, the cesspit also produced a number of residual items including a mid- to late 14th-century Penn floor tile (see Period 4, <T8>; Fig 13). Other possibly residual items include a Norwegian grey schist hone and a rim from a large lead/tin vessel, both of which could date to either the medieval or early post-medieval period.

Gardens/fields south of Abbey Road (OA7)

Features dated to this period in the gardens or fields to the south of Abbey Road (OA7) included a pit and a drain (not illus). The pit fill included a clay pipe bowl of type AO26, dated to *c.*1740–1800, decorated with the royal arms of the House of Hanover. Other strata, such as earthen dumps and the fills of bedding trenches, were notable only for containing occasional pieces of medieval building material (see Period 5). The small drain (S18) had a base of peg tiles and walls and roof of red brick, though occasional yellow stocks were also present, which indicates a 19th-century date.

INDUSTRIALISATION AND URBAN DEVELOPMENT, *c.*1840–1970 (PERIOD 7)

In the mid-19th century the area witnessed increasing industrialisation, especially of the floodplain next to the Channelsea River, and patchy suburban growth. These developments were given impetus by the construction of the Eastern Counties and Thames Junction Railway in 1846, which crossed the site of the abbey church and cemetery.

Terraced houses

Mid-19th-century maps indicate that two blocks of terraced houses called 'Bakers Row' were built on the north side of the road (formerly Abbey Road) sometime between 1853 and 1862. The two terraces were separated by a narrow passage. Successive Ordnance survey maps show the terraced houses had identical ground plans and remained unaltered throughout their

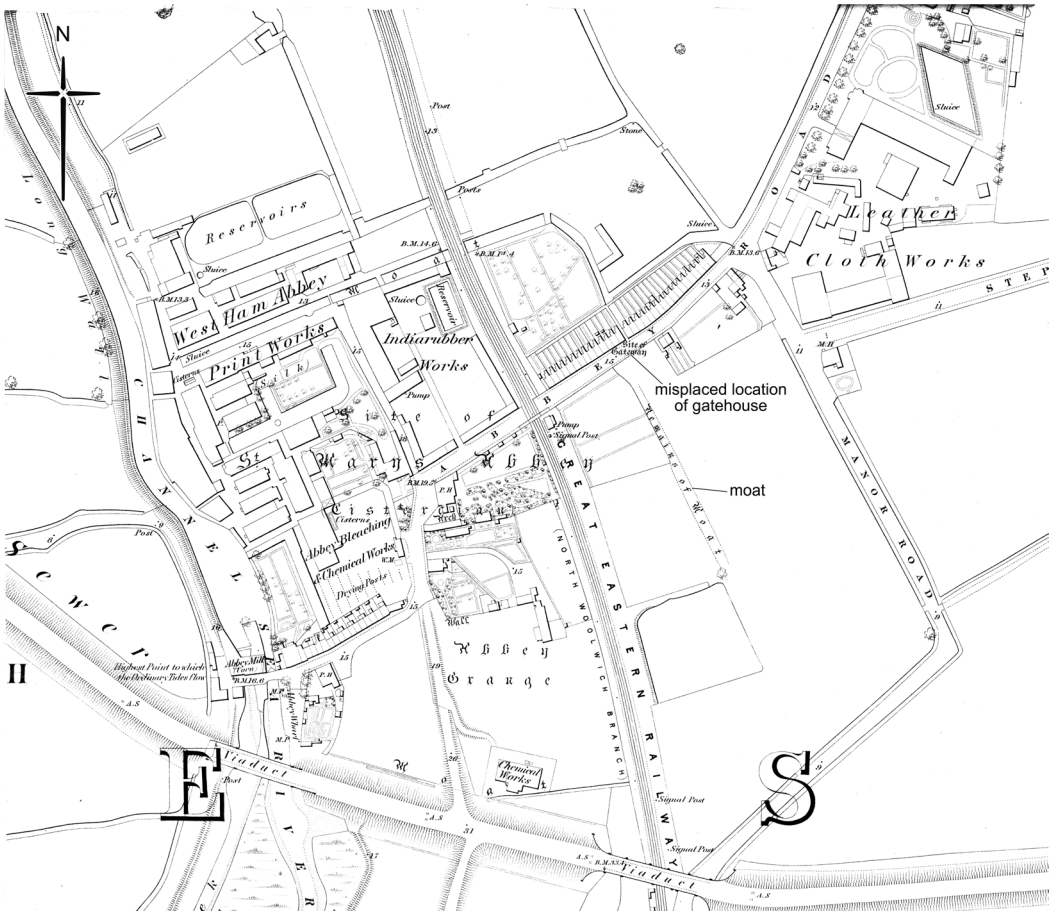


Fig 22. Detail from Ordnance Survey, 1st edition, 1:2500 map of 1869 (not to scale), showing the misplaced location of the gatehouse

existence (Fig 22). A photograph of the street in 1953 shows narrow two-storey houses (Fig 23). They were demolished in the late 1960s.

The remains of Nos 22 and 24 Bakers Row in the eastern terrace were recorded in test pit 12, while those of Nos 46–54 (even nos) and 60/62 Bakers Row in the western terrace were recorded in the main excavation trench of Site A (Fig 24). The walls were made of London stock brick and founded on poor quality concrete footings.

The houses followed a standard layout. At ground level the main part of each house was a single room 3.5m wide and 6.24m deep, with a small fireplace against the west party wall and a step down through the rear (north) wall to a small scullery/kitchen extension, within which a boiler was housed in the north-east corner. The footings recorded on the site of No. 64 indicate that the standard kitchen was about 1.7m wide and 2.1m long. A window in the west wall of the kitchen looked out into a narrow yard with a concrete surface. There were single sash windows in the external walls (front and back) and an enclosed staircase (with a coal cupboard below) against the east party wall of the main room.

The back door, immediately to the left (west) on entering the kitchen, opened into the yard, which led to the garden and the outside privy built against the north wall of the kitchen. The outside toilet had a wide wooden plank with a hole as a seat, and the cistern above was flushed with a long chain. Two cesspits were recorded (S19 and S20) behind Nos 52 and 56 Bakers Row. They would

Fig 23. Egg and spoon race in Bakers Row on Coronation Day (2 June 1953); the participants (from left to right) are Lily McDonald, Rene Feltness and Ethel Manning, with James Andrews (far right). A girl (far left) is leaning against No. 46

have been used by the respective households before the installation of municipal sewerage. They were oval in plan and made of dry-laid bricks. On their disuse, the cesspits were filled with a mixture of clinker, ash and coal, presumably from household fireplaces. Pottery from the bottom of the cesspit behind No. 56 (S20) included a fragment from a large transfer-printed dish and the bases of two ginger beer bottles. The latter are stamped 'Vitreous stone bottles; warranted not to absorb, J Bourne; Patentee; Denby & Codnor Park Potteries; Near Derby' and broadly dated to 1832/33–1841. During the BR73 excavation similar cesspits were found behind the sites of Nos 40 and 50.

The author is grateful to Mrs Doreen Tier (née Andrews) for information about life in Bakers Row following the War. She was born in 1943 and lived with her parents, five sisters and five brothers at No. 28 — they were the largest household in the street. Her father, James (Jock) Andrews, a Labour councillor, kept pigeons in a coop at the end of the garden. Mr Andrews inserted stud walls to divide the main room into two (front and back) with a narrow side passage running back from the front door (Doreen Tier pers comm). The downstairs front room became a bedroom with the living room behind. Later, her older brother Jim, who worked at the nearby leather cloth factory, lived at No. 48 and one of her sisters at No. 34. She also recalls that gas lighting continued to be used in the houses for some years after the War and that the buildings were infested with 'bugs'.

CONCLUSIONS

Prehistoric and Roman activity

The small assemblage of mostly residual prehistoric and Roman artefacts from the study area is consistent with previous discoveries, which generally indicated limited activity on the edge of the floodplain at this time. The presence of Roman building material suggests that there may have been buildings and permanent settlement nearby, perhaps on higher drier ground to east.

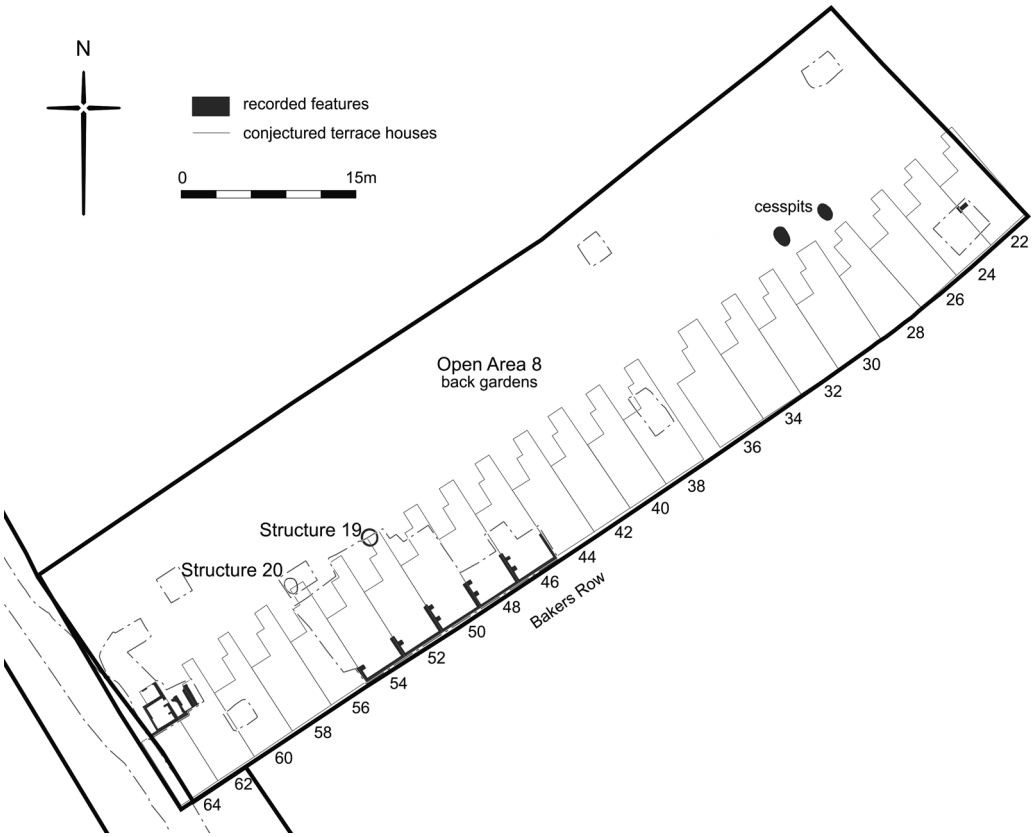


Fig 24. Plan of archaeological remains of the Victorian terrace and associated features (scale 1:650)

Pre-monastic fields and a possible early monastic drainage scheme

The earliest medieval features were ditches, some of which were clearly related to those previously recorded immediately to the west of the study area. Some may have formed part of a field-system possibly dating to the 11th century, but others were on a quite different alignment and were probably dug specifically for land drainage either just before the construction of the abbey or at an early stage in its development (Barber *et al* 2004, 17). Two of the drainage ditches recorded in 1994 converged on a sump or pond, as did at least one ditch in Site B (OA3).

Generally, the ditches recorded in 1994 appeared to antedate graves in the north-east cemetery, although one burial, interred before the first stone church was built, was evidently aligned on the ditches (Barber *et al* 2004, 25). This suggests that some may have been open after 1135, if only briefly. Indeed, the filling and/or levelling up of ditches early in the construction of the abbey might explain the presence of a possible mason's or tile-maker's tool in the upper fill of a ditch recorded in 1994 (*ibid*, 12, 17). It may also account for the presence of several splash-glazed peg tiles in ditches in Site B (OA3), which might represent waste material from roofing some of the earliest abbey buildings. Taken together, the evidence suggests that the latest ditches on the site were filled shortly after the founding of the abbey, perhaps by *c.*1140, which would significantly narrow the date range of *c.*1000–1220/25 provided by pottery.

Monastic gardens

The archaeological evidence suggests that

most of the area on the eastern fringe of the precinct was open ground and probably contained the monastic gardens and orchards, providing the monks with fruit, vegetables, herbs and medicinal plants and a place for contemplation and study (Landsberg 1998, 34–44). This strip of land was *c.*30–40m wide and sandwiched between a cemetery and the precinct boundary. The absence of graves in the north-eastern trenches on Site B (where the eastern DLR platform now stands) clearly indicates that the boundary between the cemetery and gardens lay roughly between areas excavated in 1994 and 2008 (Fig 6; Fig 9) and that the earlier excavations had revealed nearly the entire extent of the cemetery (see Barber *et al* 2004, figs 77–80).

The garden may have been subdivided into plots for different forms of specialist cultivation — the concentration of pits on the south side of the road suggests that planting may have been more intensive, or of a dist-inct type, in this area. Further away from the abbey road pits were fewer and much more widely scattered.

One intriguing feature is Structure 3, previously interpreted as a possible cellar (Barber *et al* 2004, 52), which might have been part of a small stone-lined storage pond for fish. The pond appears to have been fed by the great drain. From about the middle of the 13th century the Cistercians were actively involved in developing elaborate systems of fishponds and leats (Aston & Bond 1988, 423; Bond 1988, 93). Generally, monastic fishponds are represented in the archaeological record as earthworks and vary enormously in type and scale, ranging from modest ponds such as the possible example in the study area to complex groups of large ponds that could sometimes cover several hectares. Although the form of the boundary between the inner and outer courts of the abbey is not certain, the gardens and fishpond would have been part of the outer court.

The abbey gatehouse

One surprising result is the reinterpretation of the medieval stone building on Site A, first excavated in the 1970s. It had been suggested that this building may have been the abbey guesthouse, but it now appears that it was actually the great gate of the abbey. Initially the reinterpretation was based on detailed map regression analysis, which strongly suggested that the site of the gatehouse was further west than previously thought, and probably coincided with that of the medieval building (Cowie 2007b). This was later confirmed by re-exposing the remains of the building and opening a previously unexcavated strip to the south. The excavation showed that the building formed just part of the north range of the gatehouse, and that it clearly extended south across the projected line of the access road to the abbey.

It was also evident that there were at least two major phases of medieval construction. The first phase building consisted of a rectangular range of two rooms (A and B) aligned parallel to the entrance passage to the south. This was a fairly common arrangement in medieval gatehouses, which quite often had rectangular ranges divided into either two bays or two separate rooms. It may have served as the porter's lodge, although other functions of ground-floor rooms within the gatehouse might include the gaol or accommodation for corrodians (Robinson 2006, 167), or the almonry (Coppack 1990, 120), where food and alms might be given out to those denied access through the gate.

The thickness of its foundations and the engraving of 1758 both suggest that the gatehouse was more than one storey high (Fig 25). Indeed, if typical of most medieval monastic gatehouses, it would have been two-storeys high (see Morant 1995, 59–61). The upper floor may have been reached by an internal spiral stair. It is thought that the stone footing abutting the north side of the northern (Phase 2) extension of the gatehouse may have been for an external stair (Barber *et al* 2004, 29), although it does not seem long enough to have served this purpose. In any case the stair in the original (Phase 1) building must have been located elsewhere, quite possibly at the side of the entrance passage. The upper storey of Cistercian gatehouses, like those of other orders, usually held the abbey's court and exchequer, or in a few cases, a chapel (Coppack 1998, 108).

Although the excavated gate structure (B1) is likely to be of late 12th-century and later date, a gatehouse would have been present from an early date, as a gatekeeper's cell was a requirement for the establishment

Fig 25. Reconstruction of abbey gatehouse looking west (Faith Vardy)

of a Cistercian community (Fergusson 1990, 51). The inner gatehouse was both a symbolic and a practical barrier between the monastic community and the outside secular world (Robinson 2006, 163–5), usually approached down a walled lane from an outer gate at the precinct boundary (Fergusson 1990, 53). Only a tentative reconstruction of the inner gatehouse of Stratford Langthorne has been offered here (Figs 10–11, 25–6) due to the limited area excavated, particularly on the south side of the presumed road. What is known suggests a two-bay gatehouse, broadly similar to surviving examples at Roche (Yorks), Furness (Lancs) and Cleeve (Somerset) (Fergusson 1990, 53–8), although one poorly-understood medieval wall (S1; see Fig 10) might indicate a larger structure.

Approaching the inner gatehouse down the predecessor of Abbey Road from the east, a visitor would have passed under the outer arch into a lobby in the first bay, where alms might be dispensed to the deserving poor. Access to the church, cloister and the rest of the inner court would have been straight ahead though a second arched gateway into a gate hall in the second bay, provided the gatekeeper was prepared to grant it. A typical Cistercian gatehouse was of 'triple portal' design (Fergusson 1990, 59; Coppack 1998, 108), with a second gate hall, often at right angles to the main routeway giving (and controlling) access to the service, agricultural, horticultural and industrial areas of the outer court. Whether this was the case at Stratford Langthorne, given the unusual layout and features of its precinct (Barber *et al* 2004, 75–6), is uncertain, but such a structure could lie on the unexcavated south side of the gatehouse, or to the north (perhaps incorporating Structure 1).

Revising the plan of the abbey

Most early attempts to reconstruct the abbey relied heavily on old leases and the few topographical features that survived long enough to be mapped. The first conjectural plan of the abbey was hopelessly inaccurate, and placed the church and churchyard too far north (Clutterbuck 1863, map facing 117; Fry 1888, 136). Later plans corrected

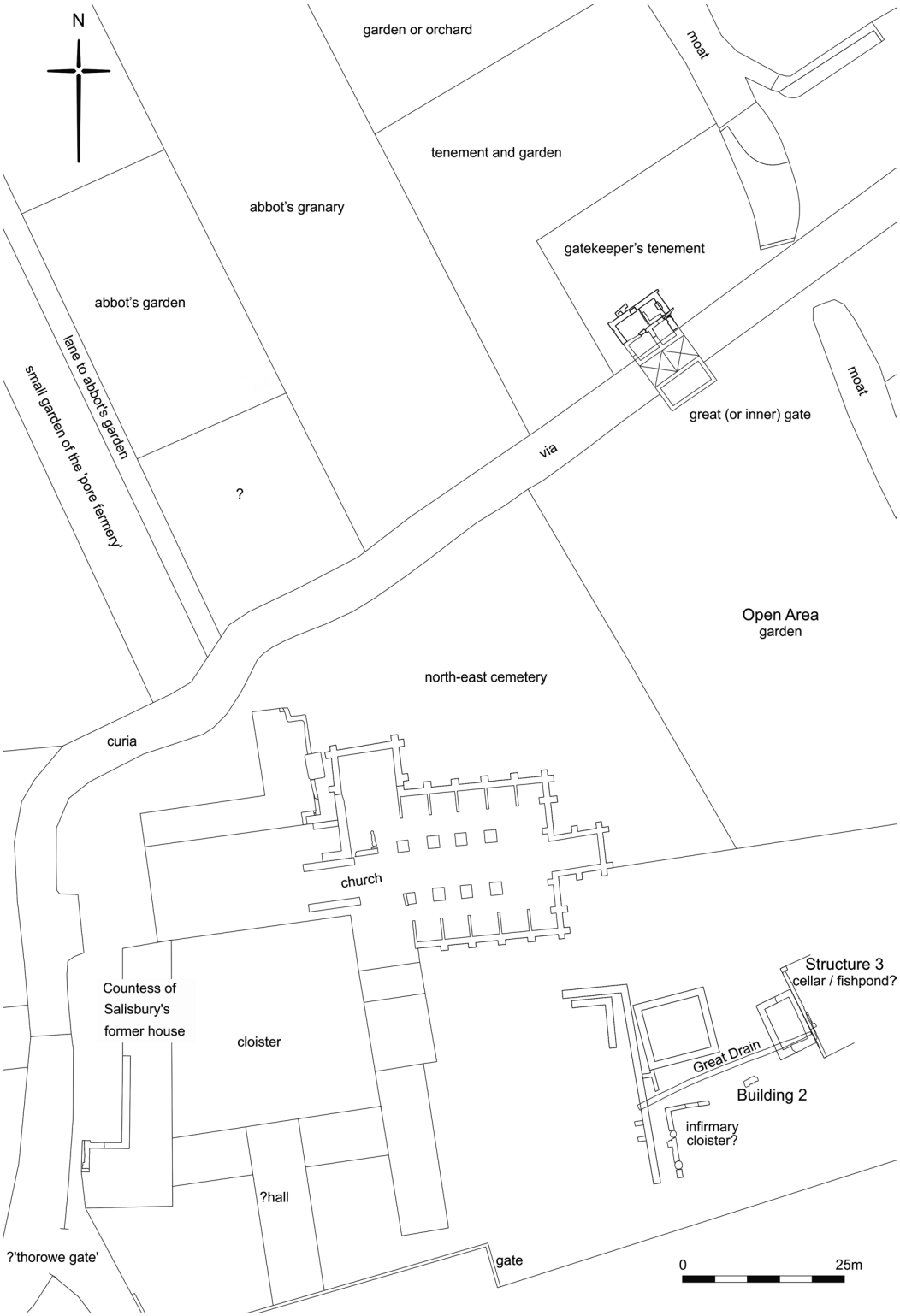


Fig 26. The great gate in relation to the abbey precinct at the Dissolution (after Barber et al 2004, 72–3, fig 51) (scale 1:1000)

this, but with little or no archaeological data to work with they were still frustratingly vague (*VCH* 1973, 113; Watson 1989, fig 4). The breakthrough came in 2004 with the publication of a series of plans that for the first time accurately showed the location of abbey buildings, including successive phases of the church, as indicated by archaeological fieldwork undertaken between 1973 and 1994 (Barber *et al* 2004, 72–3, fig 51).

Results of the recent excavations described in this report provide new information about the layout of the eastern part of the abbey precinct, and suggest that three specific changes should be made to the 2004 plans (Fig 26). First, the site of the gatehouse should be moved slightly east, so that it coincides with what had been tentatively identified as the guesthouse and, with some prescience, the gatekeeper's tenement. Secondly, the boundary between the north-east cemetery and the adjacent monastic gardens can be defined archaeologically by the mutually exclusive distribution of graves to the west and planting pits to the east as running south from the projected line of the abbey road between the two types of features. Thirdly, further structural evidence may be plotted in the area adjacent to the great drain.

Post-Dissolution settlement

The archaeological evidence for the hamlet that grew up in the study area was scattered and fragmentary. Major structures included walls associated with the modification and continued use of the former abbey gatehouse until the early 19th century, a neighbouring 17th-century building and Victorian terraced houses in Bakers Row. Other remains included pits, drains, garden walls and brick cesspits. The latter included a cesspit that was probably in use from the late 18th century to the early 19th century and associated with the nearby gatehouse. It produced a large quantity of domestic refuse, a substantial part of which is thought to be a house clearance assemblage and is discussed in detail elsewhere (Blackmore *et al* 2013). The features and associated finds were entirely consistent with domestic occupation, and there was almost no evidence for industrial activity despite the proximity of works on the banks of the Channelsea.

The site today

Until recently there were no visible reminders that a great Cistercian monastery once stood on the site of the new station or that Bakers Row faithfully follows the line of the old road that ran through the Great Gate. However, the outline of the excavated part of the gatehouse is now clearly marked with a capping layer of flint and mortar and accompanied by information boards, which may encourage the local community and travellers using the station to view the place with a fresh eye and renewed interest. It seems particularly fitting that the site in Bakers Row has once again become a garden.

SPECIALIST TABLES

Table 4. The illustrated pottery

Illustration no.	Fig	Context	Fabric	Form	Decoration	Sherd count
<P1>	Fig 5	B[120]	EMSSX	CP	-	38
<P2>	Fig 5	B[203]	EMSHX	BOWL	-	1
<P3>	Fig 5	A[87]	EMSHX	CP	APTH	64
<P4>	Fig 8	B[115]	EMSHX	DISH		6
<P5>	Fig 8	B[136]	SSWX	CP	-	1

Table 5. The illustrated ceramic and stone building material

Illustration no.	Fig	Context/ Accession	Type
<T1>	Fig 7	B[100]	Peg roofing tile with graffiti from Open Area 4
<T2>	Fig 12	A[71]	Combined nib and peg roofing tile from and Open Area 5
<T3>	Fig 12	B[48]	Nib roofing tile from Open Area 4
<T4>	Fig 12	B[228]	Combined nib and peg roofing tile from Open Area 4
<T5>	Fig 12	B[235]/<32>	Diamond-shaped floor mosaic tile from Open Area 4
<T6>	Fig 13	B[222]/<31>	Decorated floor tile belonging to the Eltham Palace/ Lesnes Abbey Group from Open Area 7
<T7>	Fig 13	B[215]/<30>	Antwerp tin-glazed floor tile from Open Area 7
<T8>	Fig 13	B[171]/<7>	Decorated Penn floor tile from Structure 14
<T9>	Fig 12	B[30]	Nib roofing tile from Structure 2
<T10>	Fig 21	B[174]	Pantile with notched nib from Open Area 6
< A1>	Fig 18	B[241]/<234>	Reigate stone moulding with red paint from Open Area 7

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