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# Excavations at St Mary Magdalen's Hospital, Brook Street, Colchester

by Carl Crossan
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*Rescue excavations in St Mary Magdalen's churchyard and adjacent almshouse land revealed the remains of a small medieval hospital and recorded the stages in its transition to a post-medieval almshouse. A religious institution which was founded as a refuge for lepers in the early 1100s, the hospital's original accommodation included an infirmary hall and a timber outbuilding in grounds situated half-a-mile from the walled town. Some of the excavated skeletons showed abnormalities consistent with leprosy. In the c. mid 13th century, the hospital's main quarters were relocated to a new site in the northern area of its grounds when St Mary Magdalen's church was built on part of the hospital's original infirmary hall. Next to the church, the eastern part of the 12th-century hall was altered and retained for a time. Foundations projecting from the south side of the church are believed to belong to a chapel for hospital inmates used from the 13th century onward. The main hospital building to the north was later joined by a second block which remained in use as an almshouse until it was demolished in 1832.*

## Introduction

The early Norman period saw the introduction of the hospital as an independent institution in England. Estimates vary, but, among the more cautious surveys, at least 68 hospitals were found to have been established between 1080 and 1150, with over 800 which are thought to have been brought into existence in the period from 1150 to 1530 (Orme and Webster 1995, 11). Some were short-lived, closing within a century or so of their foundation. Others, of which St Mary Magdalen's is an example, were maintained in differing forms until the present day.

Founded as a refuge for lepers in the early 12th century, later housing the poor and infirm, St Mary Magdalen's is of value to the social historian for its documented links with its neighbouring parish, a relationship which is materially reflected in aspects of the archaeological record. For this reason the report brings together an archaeological account of the site with a history gathered from the Victoria County History archives and including additional previously unpublished material researched by Janet Cooper.

## History of St Mary Magdalen's hospital
by Janet Cooper

St. Mary Magdalen's hospital was apparently founded by Eudo Dapifer at the request of Henry I between that king's accession in 1100 and Eudo's death in 1120.[1] The first half of the 12th century was the peak period of hospital foundation in medieval England, and the Colchester hospital was one of several in whose foundation Henry I and his queens, Maud and Adeliza, played an active part. Two of these other semi-royal foundations, at Chichester and Newcastle, were dedicated to St. Mary Magdalen. Medieval hospitals were essentially places of refuge, where lepers and the other sick could be given food and shelter, although some of them did provide basic medical treatment. They were also religious foundations, whose occupants were expected to follow a semi-monastic rule, attending frequent church services and saying private prayers. As medical knowledge advanced and it was realized that leprosy might be infectious, hospitals also served to segregate lepers from the community. The popularity of St. Mary Magdalen as the patron of leper hospitals arose from a confusion between the name of her supposed brother Lazarus and the word 'lazar' meaning leper.[2]

St. Mary Magdalen's may have been under the direction of Eudo's other foundation, St. John's abbey, from the first, and the arrangement seems to have been confirmed at Eudo's death,[3] although the early records in the abbey's cartulary may have been altered to strengthen the abbey's case in later disputes. It is clear, however, that Henry II, at a council in Colchester in 1157, gave or confirmed the hospital to the abbey.[4] The sick or lepers were under the rule of a prior or master, occasionally called the chaplain, a priest appointed by St. John's.[5] He conducted services for the inmates in the hospital chapel. By 1237 that chapel had come to serve the inhabitants of neighbouring houses as well, and was called a parish church [ecclesia]. In 1254 the master of the hospital was rector of the church.[6]

In 1301 the lepers disputed the abbot's authority, rejecting their recently-elected master Roger of Crepping and electing a leper, Simon of Nayland, in his place. The new election was made at least partly to avoid payment of the lay subsidy, from which houses governed by a leper were exempt, but it was also a clear challenge to the abbot's authority. The abbot responded by taking away the hospital's charters, and apparently going to the lengths of dragging Simon and another brother out of their church and keeping them out of the hospital.[7] Further violence in 1391 seems to have been caused by another disputed election. William Fleet, who

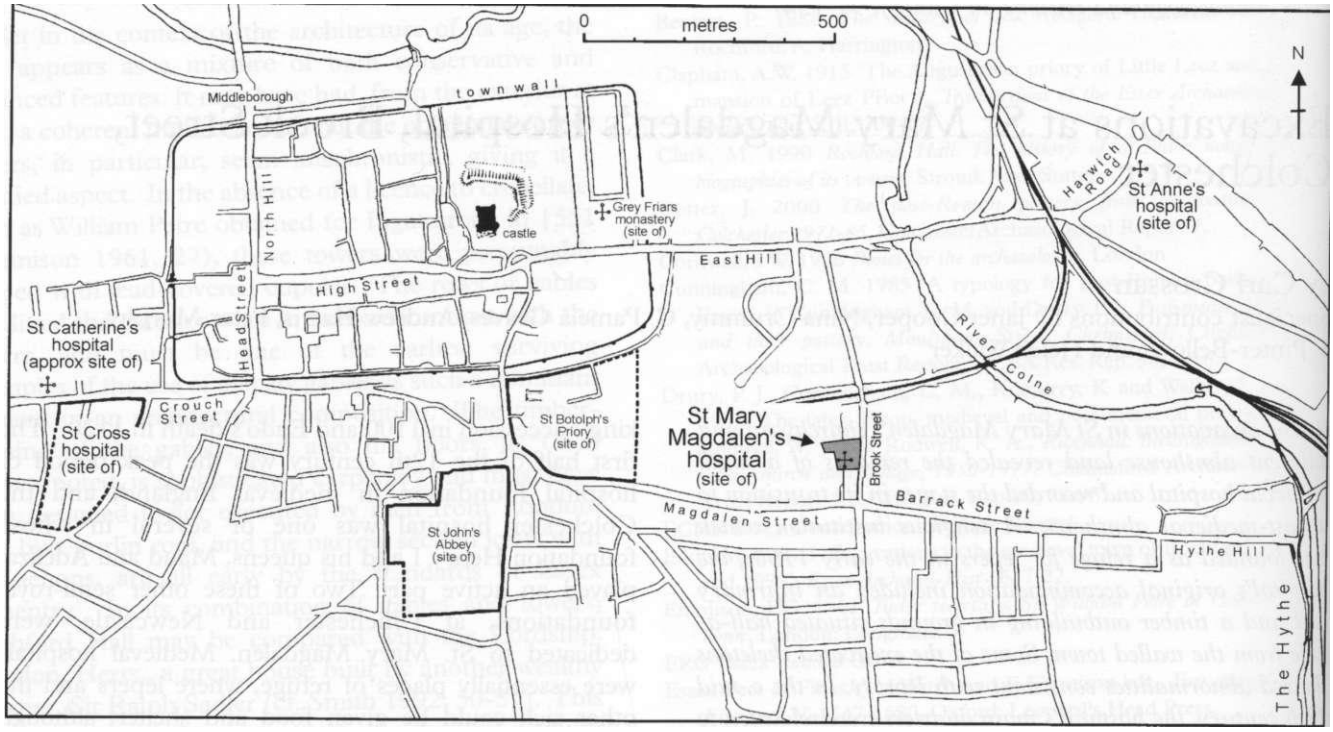



Fig. 1 The sites of Colchester's medieval hospitals and religious institutions. St Mary Magdalen's was the earliest of at least four endowed hospitals in medieval Colchester, all located outside the town walls. 

had been confirmed as warden earlier in the year, broke into the lodgings of the 'prior', John Newland, and into another chamber from which he stole the hospital's muniments as well as other goods. On the same day, and presumably as part of the same dispute, the warden of St. Mary's chapel on St. John's green, which belonged to St. John's abbey, locked the parishioners out of the hospital church.[8] There was another theft from the hospital, again by its own chaplain, in 1399.[9]

These disturbances were probably symptomatic of the difficulties which St. Mary Magdalen's, like many other hospitals, suffered in the late 14th and the early 15th centuries, as inflation rendered their small endowments increasingly inadequate, and public generosity was directed more and more towards parish churches or friaries. At the same time, the monastic atmosphere of the hospital was disturbed by the admission of women. The inmates had been referred to simply as brothers throughout the 13th century and as late as 1302, but in 1323, 1327 and 1394 sisters as well as brothers were recorded.[10] Presumably all were infirm or lepers, although it is possible that the women were employed to look after the men. The accommodation of both sexes in a single institution may have appeared improper, and women seem to have been excluded by 1413 when a townsman was ordered to keep his leprous wife from selling in Colchester market.[11] The removal of the women may have been the beginning of a reform of the house, but serious complaints about its condition apparently continued, and in 1423 Humphrey duke of Gloucester made new orders for the hospital and its inmates.[12] His ordinances, claiming to repeat the lost rules of the original foundation, laid down that the master was to be a healthy secular priest, and the inmates to be five poor, sick or leprous men. The brothers were to spend much of their time in prayer, attending mass, keeping the monastic hours, and saying the lord's prayer 300 times a day.[13] It is unlikely that these rules were followed to the letter, and indeed in 1437 the chaplain was alleged to be a common night vagrant who frequented taverns in dubious company.[14] The continuing exclusion of women, however, is suggested by complaints made in 1438 and 1439 about leprous women selling in Colchester market.[15] Leprosy was dying out in the 15th century. By 1502 there seem to have been only 4 brothers at St. Mary Magdalen's, and they were poor rather than ill.[16]

Compared with the small chapel and hospital of St. Anne on the Harwich road (Fig 1), which with its associated guild received at least 8 bequests in the late 15th century and the early 16th,[17] St. Mary Magdalen's received comparatively few recorded bequests, and most were from parishioners of the church. The merchant John Baker left the brothers and sisters 6s. 8d. in 1394,[18] and Edmund Harmanson, a wealthy merchant of the New Hythe, in 1502 left 20d. to the church, and 4d. each to the almsmen.[19] A parishioner, John Polstead, in 1411 left 6s. 8d. for the repair of the church, and a similar sum to the lights of the Virgin and the Holy Cross there.[20] Another parishioner, Walter Ramyssen, in 1457 directed that the church clerk have the use of his house for a year, and another, Rose Debenham, in 1511 left the church 12d. and a towell. Rose Semer, of Magdalen Street in St. Giles' parish, in 1504 left the church 2s. to pray for her soul.[21]

The hospital, on the road from the south gate of Colchester to its port at the Hythe, was presumably outside the built-up area of Colchester at the time of its

foundation, but if the 'hospital garden' recorded in the late 12th century was its garden, there were by that date houses near it.[22] The hospital building or buildings were probably simple at first, perhaps a dormitory and chapel under one roof. Once the church became parochial, probably in the early 13th century, there would have been a division between it and the hospital chapel. When in 1391 the warden of St. Mary's chapel on St. John's green locked the door of the hospital church and carried off the key, his action appears to have affected only the parishioners;[23] there is no reference to the inmates of the hospital who may by then have had a separate chapel. Five old men giving evidence in a lawsuit of 1580 said that the hospital, whose buildings were then in ruins or demolished, had adjoined the churchyard, and a sixth stated that the chapel for the inmates of the hospital had adjoined the side of the parish church, but was then 'clean down'.[24] If his statement was correct, it implies that the chapel was built against one of the church walls, like an aisle only with a blank wall instead of an arcade between it and the nave. There appears to be no other evidence for such an arrangement, unless the porch recorded in 1601[25] was originally a small chapel.

The admission of women in the early 14th century implies that separate accommodation was available for them, and the description of William Fleet's thefts in 1391 suggests that the main hospital building was then a hall with chambers. Presumably it was either a hall with a chamber block at one end, or a hall which had been subdivided to provide private rooms. The prior seems to have had a separate house [domum mansionis], and the outbuildings included a barn and a brewhouse.[26]

St. Mary Magdalen's, like other medieval hospitals, was poorly endowed. Its main income was probably the £6 a year from the manor of Brightlingsea which Henry I confirmed to it in 1 120,[27] and which had perhaps been given to it at its foundation. Richard I granted the lepers an annual fair on St. Mary Magdalen's day and its eve (21 and 22 July);[28] by 1777, and probably from its foundation, the fair was held on Magdalen Green.[29] By the mid 13th century the hospital held land in and around Colchester. In 1254 the master, already said to be 'poor', tried unsuccessfully to recover 14 a. of land outside the walls of Colchester which he claimed his predecessor had held in King John's reign.[30] His successor in 1272 was more successful when he recovered a house in the suburbs.[31] In the same year three men, Brother John Beaufiz, Richard the clerk, and John the chaplain, all apparently from the hospital, were accused of taking a house and 3 a. of land in the suburbs, probably near the hospital, from Richer son of William de Baudeswell;[32] presumably the hospital claimed the house and land as its own. In 1285/6 the hospital held a house in East Street.[33] In 1297 the master and brethren sold a house and land in Hythe Street for 20s., retaining only a 'peppercorn' rent of one ginger root a year;[34] presumably the hospital was in urgent need of cash. In 1405 the prior of the hospital held land near Old Heath,[35] probably the 11a. north of the village there which was still part of St. Mary Magdalen's parish in 1881.[36] In 1301 the hospital was farming its land, producing rye and oats, perhaps in saleable quantities, and keeping 2 or more cows and 30 or more sheep.[37] By the Reformation the hospital held a total of approximately 94 a. within the liberty of Colchester, 20 a. and a heath in Layer de la Haye, and approximately 3½ a. in Ardleigh.[38] Its income was £11 a year, making it one of the poorest of the religious houses in Essex and poorer than the two other surviving hospitals, at Newport and Ilford, worth £23 10s. 87½d. and £16 13s. 4d. respectively.

At the Reformation, the position of St. Mary Magdalen's, like that of other similar institutions, was uncertain. Because of its parochial functions it was not dissolved with the monasteries in the later 1530s. As a hospital could be considered a religious house, however, it was later claimed that St. Mary Magdalen's had been dissolved, and in 1565 two speculators, NicaseYetsweirt and William Tunstall, obtained from the Crown a grant of its lands.[39] From them the lands rapidly passed to the wealthy Colchester burgess Benjamin Clere, who sold them on to other local men. The hospital recovered some of them in the early 1580s.[40]

Meanwhile, the hospital continued to function after a fashion. The master was recorded in 1548, when the town chamberlain paid him rent for a field.[41] Another master, Thomas Gale, made his will in 1557, bequeathing money and furnishings to family and friends, but making John Gates, a brother of the hospital, his residuary legatee and executor.[42] Gale's successor Robert Mortlake, appointed later that year,[43] apparently died *c.* 1562, when the mastership, with the rectorship of the church, was granted to Benjamin Clere's son, Benjamim Clere the younger, for life. Although he was described as a clerk on his appointment, parishioners alleged in 1580 that he was neither minister nor priest.[44] Whether he was ordained or not, Clere does not seem to have served either the hospital or the church. Hugh Allen was rector in 1563,[45] and in the same year the borough admitted John Somer as governor and keeper of the hospital and spital house in St. Mary Magdalen's parish. Somer was to provide for the poor in his charge and to ensure that they did not beg around the town; he was not to keep an alehouse or to lodge sturdy beggars or vagabonds. Later that year a beggar was ordered to remove from the hospital a woman from Maldon suffering from the falling sickness, whom he had introduced.[46] It is not clear whether the objection to the woman was her illness, or her relationship to the beggar. In 1570 the 'procurator' of the poor-house or hospital of Colchester, perhaps St. Mary Magdalen's, entered into a bond with the town to distribute well and honestly the money given to the poor people living in the house.[47] In 1586 the master of St. Mary Magdalen's was assessed for subsidy at the low rate of 6d.[48] The hospital was still occupied in 1606 when Henry Thorgo, 'one of the poor of the hospital of St. Mary Magdalen in Colchester' made his will. He was

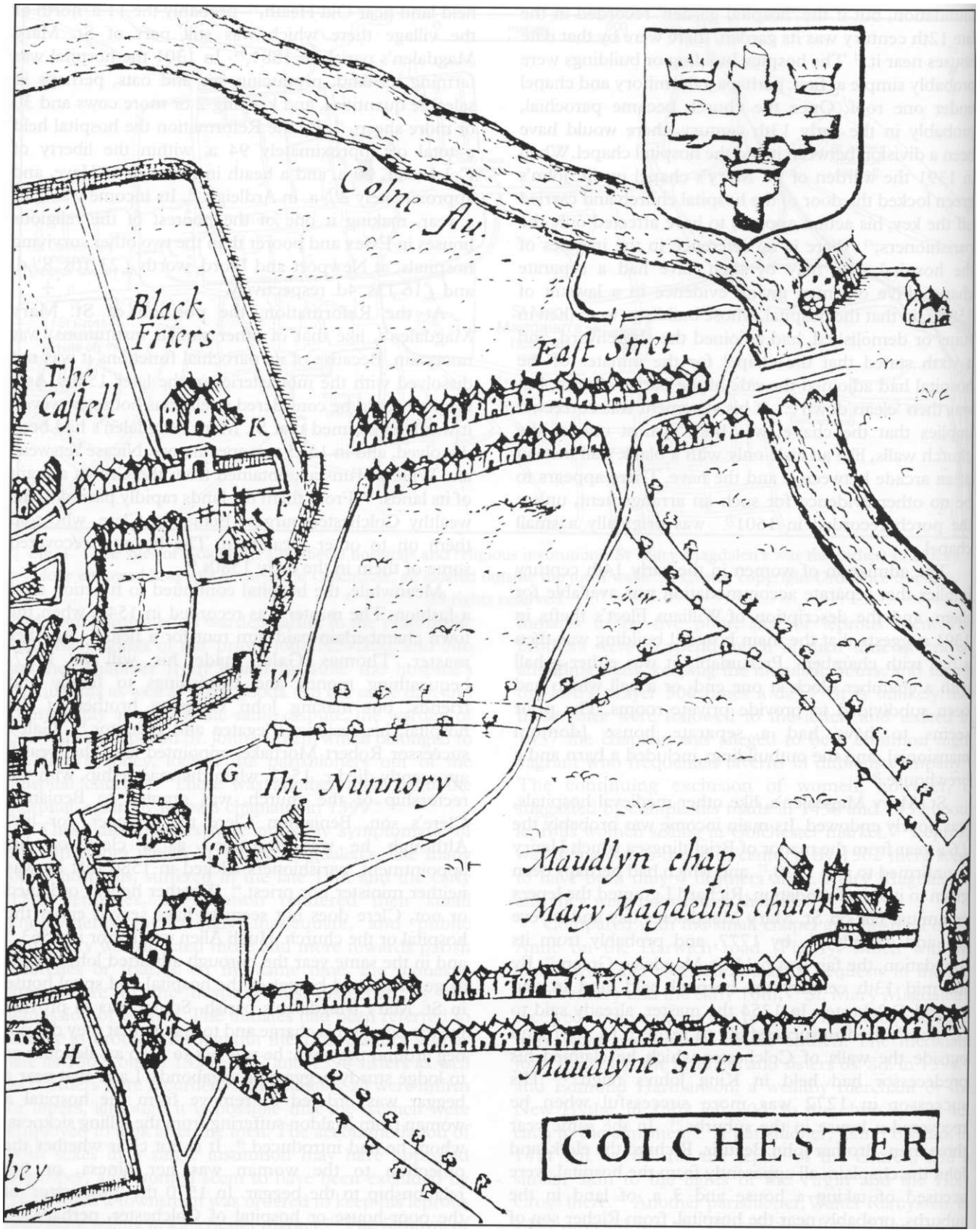



Fig. 2 Detail from John Speed's map of Colchester, published 1610.

by no means penniless, as he held the lease of land in Ardleigh, and could bequeath 10s. to his married daughter and the residue of his goods to his wife.[49]

The hospital was refounded by James I in 1610 for a master, who was also to serve the parish church, and five poor men or women. Each inmate was to have a stipend of 52s. a year. The foundation charter stated that the hospital was then almost decayed and its chapel totally destroyed.[50] The single rectangular building at right angles to the church, shown on Speed's Colchester map

of 1610 (Fig 2), was replaced before 1748 by new buildings, perhaps slightly further north.[51] They may have dated from the mid 17th century and been built after the siege of 1648, which severely damaged the church. The 17th-century buildings were demolished in 1832.[52]

The church, effectively separated from the hospital although the masters continued to be rectors, was poorly served by Benjamin Clere and his successors. In 1584 there were apparently no services, and in 1585 sermons were so infrequent that some parishioners, probably Puritans, said contemptuously that they did not even know whether or not their minister preached sound doctrine.[53] In 1594 Thomas Low, the pluralist rector, failed to perambulate the parish bounds, perhaps because the way had been ploughed up at one place.[54] There was no curate in December 1597, and the churchwardens were ordered to find a minister to say service on the next holy days, which would have been Christmas. By mid 1599 there was a curate, perhaps only a temporary one, for in May 1600 the churchwardens reported that there had been no services on several Sundays during the previous year.[55]

In 1633 the steeple, which could only have been a bellcote, and the 'church', probably the nave, needed repair; a grave in the chancel was uncovered.[56] The church was damaged in the siege of 1648, and in 1650 repaired only as housing for the poor.[57] By 1705 only the walls were standing, and no services had been held there since the Restoration.[58] Stukeley on his visit to Colchester in 1718 drew 'St. Magdalen's church' complete with roof and doors (Fig. 17b),[59] but his drawing is probably a reconstruction rather than an accurate record of the state of the church when he saw it. It apparently remained ruined and unusable until 1721 when the Lord Chancellor, who was patron of church and hospital, repaired and fitted up the chancel at a cost of £52 6s. llV$_2$d.[60] By 1852 the church was again ruinous and dilapidated; it was also said to be damp and unhealthy, and too small for the parish. It was demolished and replaced by a new church on a new site, at the corner of Magdalen Street and Brook Street.[61]

## The excavations

### Location (Figs 1 & 3)

The site lies at TM 0058 2482 on the 23m OS contour, approximately half-a-mile beyond the south-east corner of the walled town and set back a short distance from the medieval road route between the town and Hythe Quay (today known as Magdalen Street, Barrack Street and Hythe Hill). The leper hospital would have occupied a conspicuous location at the time of its foundation, within view of travellers along the Hythe road and also visible from the south-east corner of the town wall from where it would have been among the more prominent features high on the opposite side of a small valley containing the St Botolph's stream.

### Background to the excavations (Fig. 3)

The archaeological investigation was prompted by a scheme involving redevelopment of the site for social housing. Excavations took place in two stages. Site A, in St. Mary Magdalen's churchyard, was examined in 1989 with the kind co-operation and financial support of the Diocese of Chelmsford. Site B, to the north of the churchyard, became available for an excavation which was generously funded by English Heritage in 1995 following demolition of 19th-century almshouses and the developer's acquisition of a plot of British Rail land to the west of the almshouse gardens.

### Extent of excavations (Fig. 3)

Excavations focused on the northern half of the churchyard and the almshouse property beyond. The southern part of the churchyard and Magdalen Street frontage was subject to a watching brief in the course of the redevelopment. This confirmed previous indications from cartographic research and observation of engineers' trial-trenches that the ground occupied by the Victorian church and southern part of the churchyard was of little archaeological value, since it appears to have been open land from the medieval period until encroached on in the mid 19th century for the construction of the new church and southern extension to the churchyard. Morant identifies this area south of the medieval churchyard as Magdalen Green (Morant 1748, Book II/ 22) and its extent can be estimated from Speed's Colchester map of 1610 (Fig. 2).

With the exception of a small extension at the north-west corner of Building 186, the northern limit of the excavations on Site B corresponded to the housing redevelopment boundary. The open land beyond that point was at the time of excavation earmarked for a future stretch of the proposed phase 2 Colchester Eastern Approaches Road. The western extremity of the Site B excavations stopped short of the full housing development area as the region immediately beyond was found to have been destroyed archaeologically by a World War II bomb.

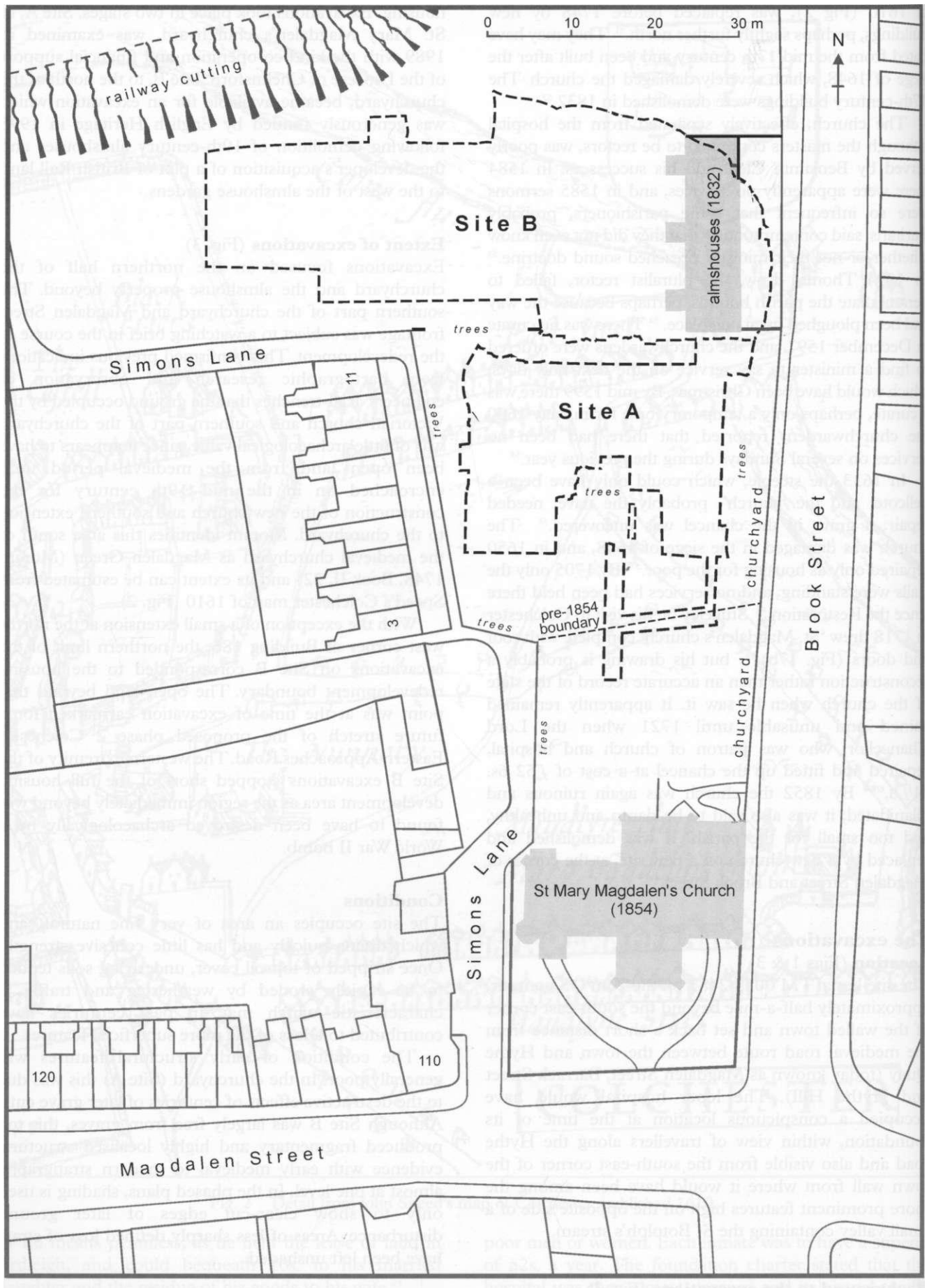
### Conditions

The site occupies an area of very fine natural sand which drains quickly and has little cohesive strength. Once stripped of topsoil cover, underlying soils tended to be rapidly eroded by weathering and traffic, a characteristic which may in past centuries have contributed to a loss of the more superficial features.

The condition of early structural features was generally poor. In the churchyard (Site A) this was due to the destructive effects of centuries of later grave cuts. Although Site B was largely free from graves, this too produced fragmentary and highly localised structural evidence with early medieval to modern stratigraphy almost at one level. In the phased plans, shading is used only to show clear-cut edges of later ground disturbance. Areas of less sharply defined loss of strata have been left unshaded.

### Summary of phases

Figure 4 gives a simplified view of the structural


0 10 20 30 m
N
railway cutting
Site B
almshouses (1832)
Simons Lane
trees
Site A
trees
trees
trees
churchyard
Brook Street
pre-1854 boundary
trees
churchyard
trees
Simons Lane
St Mary Magdalen's Church (1854)
11
3
120
110
Magdalen Street

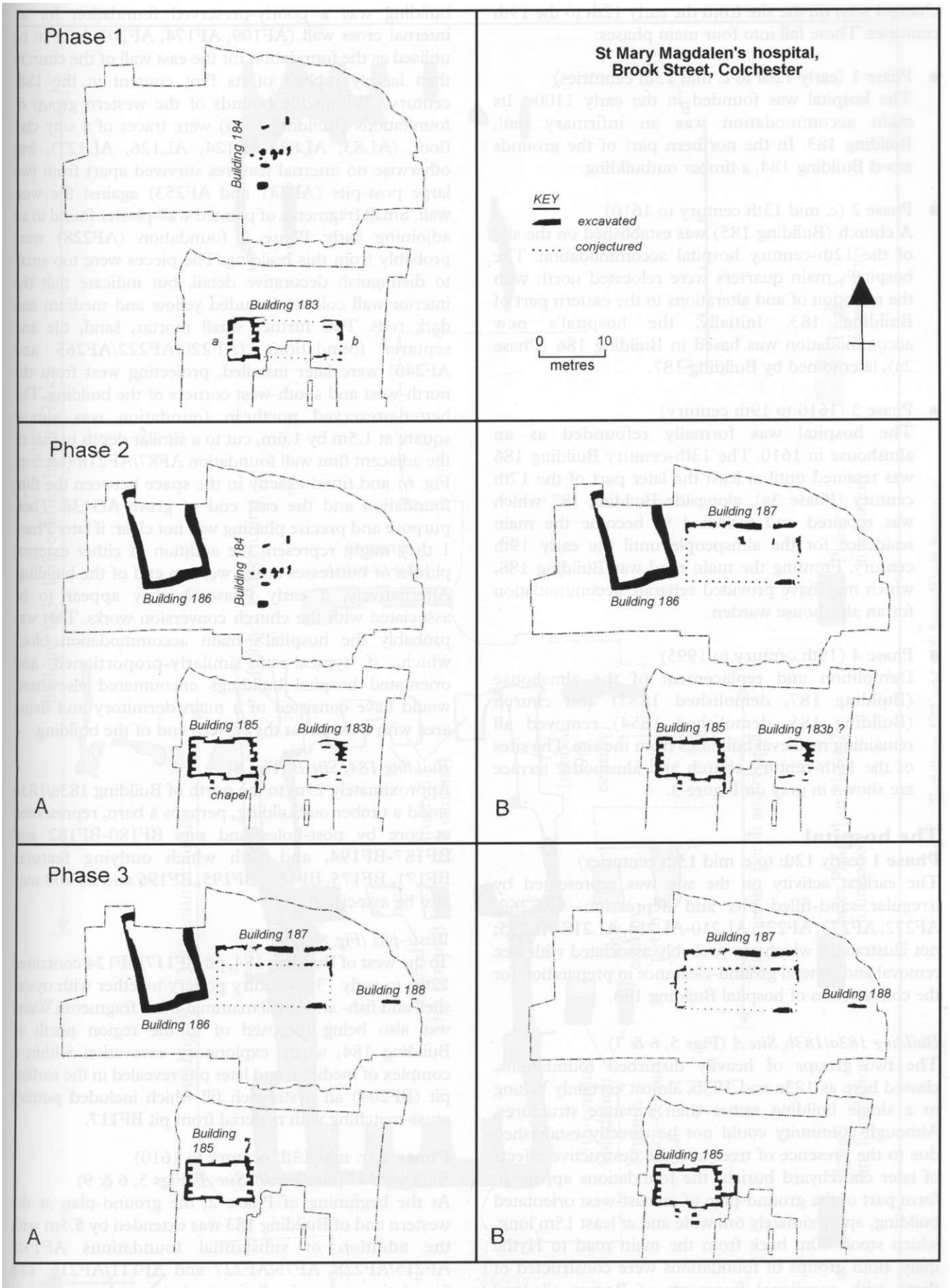



Fig. 4 The building sequence: Phases 1-3.

changes seen on the site from the early 12th to the 19th centuries. These fall into four main phases:

- Phase 1 (early 12th to ***c.*** mid 13th centuries)
  The hospital was founded in the early 1100s. Its main accommodation was an infirmary hall, Building 183. In the northern part of the grounds stood Building 184, a timber outbuilding.

- Phase 2 *(c.* mid 13th century to 1610)
  A church (Building 185) was established on the site of the 12th-century hospital accommodation. The hospital's main quarters were relocated north with the retention of and alterations to the eastern part of Building 183. Initially, the hospital's new accommodation was based in Building 186 (Phase 2a), later joined by Building 187.

- Phase 3 (1610 to 19th century)
  The hospital was formally refounded as an almshouse in 1610. The 13th-century Building 186 was retained until at least the later part of the 17th century (Phase 3a), alongside Building 187 which was repaired and modified to become the main residence for the almspeople until the early 19th century. Fronting the main road was Building 188, which may have provided separate accommodation for an almshouse warden.

- Phase 4 (19th century to 1995)
  Demolition and replacement of the almshouse (Building 187, demolished 1832) and church (Building 185, demolished 1854) removed all remaining medieval buildings from the site. The sites of the 19th-century church and almshouse terrace are shown in grey on Figure 3.

## The hospital

**Phase 1** (early 12th to *c.* mid 13th centuries)
The earliest activity on the site was represented by irregular sand-filled pits and depressions (AF268, AF272, AF273, AF275, AL210-AL214, AL218-AL225; not illustrated), which are probably associated with tree removal and general ground-clearance in preparation for the construction of hospital Building 183.

*Building 183a/183b, Site A* (Figs 5, 6 & 7)
The two groups of heavily disturbed foundations, classed here as 183a and 183b, almost certainly belong to a single building rather than separate structures. Although continuity could not be directly established due to the presence of trees and the destructive effects of later churchyard burials, the foundations appear to form part of the ground-plan of an east-west orientated building, approximately 6m wide and at least 15m long, which stood 80m back from the main road to Hythe quay. Both groups of foundations were constructed of flints, with occasional fragments of Roman tile and chalk lumps, packed in sand bound with a low mortar and silt content. At 3.5m from the western end of the building was a poorly-preserved foundation for an internal cross wall (AF109, AF174, AF207, later to be utilised as the foundation for the east wall of the church, then largely robbed of its flint content in the 18th century). Within the bounds of the western group of foundations (Building 183a) were traces of a silty clay floor (AL83, AL85, AL124, AL126, AL127), but otherwise no internal features survived apart from two large post-pits (AF231 and AF253) against the west wall. Small fragments of painted wall-plaster found in an adjoining early Phase 2 foundation (AF228) were probably from this building. The pieces were too small to distinguish decorative detail, but indicate that the interior wall colours included yellow and medium and dark reds. Two further small mortar, sand, tile and septaria foundations (AF220/AF222/AF265 and AF240) were later installed, projecting west from the north-west and south-west corners of the building. The better-preserved northern foundation was almost square at 1.5m by 1.6m, cut to a similar depth to that of the adjacent flint wall foundation AF87/AF218 (section, Fig. 6) and fitted exactly in the space between the flint foundation and the east end of grave AG138. Their purpose and precise phasing was not clear: if later Phase 1 they might represent the addition of either external plinths or buttresses at the western end of the building. Alternatively, if early Phase 2, they appear to be associated with the church conversion works. This was probably the hospital's main accommodation block which, if typical of similarly-proportioned and orientated hospital buildings encountered elsewhere, would have consisted of a main dormitory and living area with a chapel at the eastern end of the building.

*Building 184, Site B* (Fig. 8)
Approximately 25m to the north of Building 183a/183b stood a timber outbuilding, perhaps a barn, represented at core by post-holes and pits BF180-BF182 and BF187-BF194, and with which outlying features BF171, BF175, BF183, BF195, BF196 and BF200 may also be associated.

*Waste-pits (Fig. 8)*
To the west of Building 184, pit BF117/BF124 contained 12th- to early 13th-century pottery together with oyster shell and fish- and small mammal-bone fragments. Waste was also being disposed of in the region north of Building 184, where exploratory excavation within a complex of medieval and later pits revealed in the earliest pit (BF204) an oyster-rich fill which included pottery cross-matching with material from pit BF117.

**Phase 2** *(c.* mid 13th century to 1610)
*Building 185 (the church), Site A* (Figs 5, 6 & 9)
At the beginning of Phase 2, the ground-plan at the western end of Building 183 was extended by 5.5m with the addition of substantial foundations AF190/AF215/AF228, AF75/AF227 and AF111/AF216. The foundations were of a distinctive laminated construction made up of alternating layers of crushed mortar and firm silt loam.

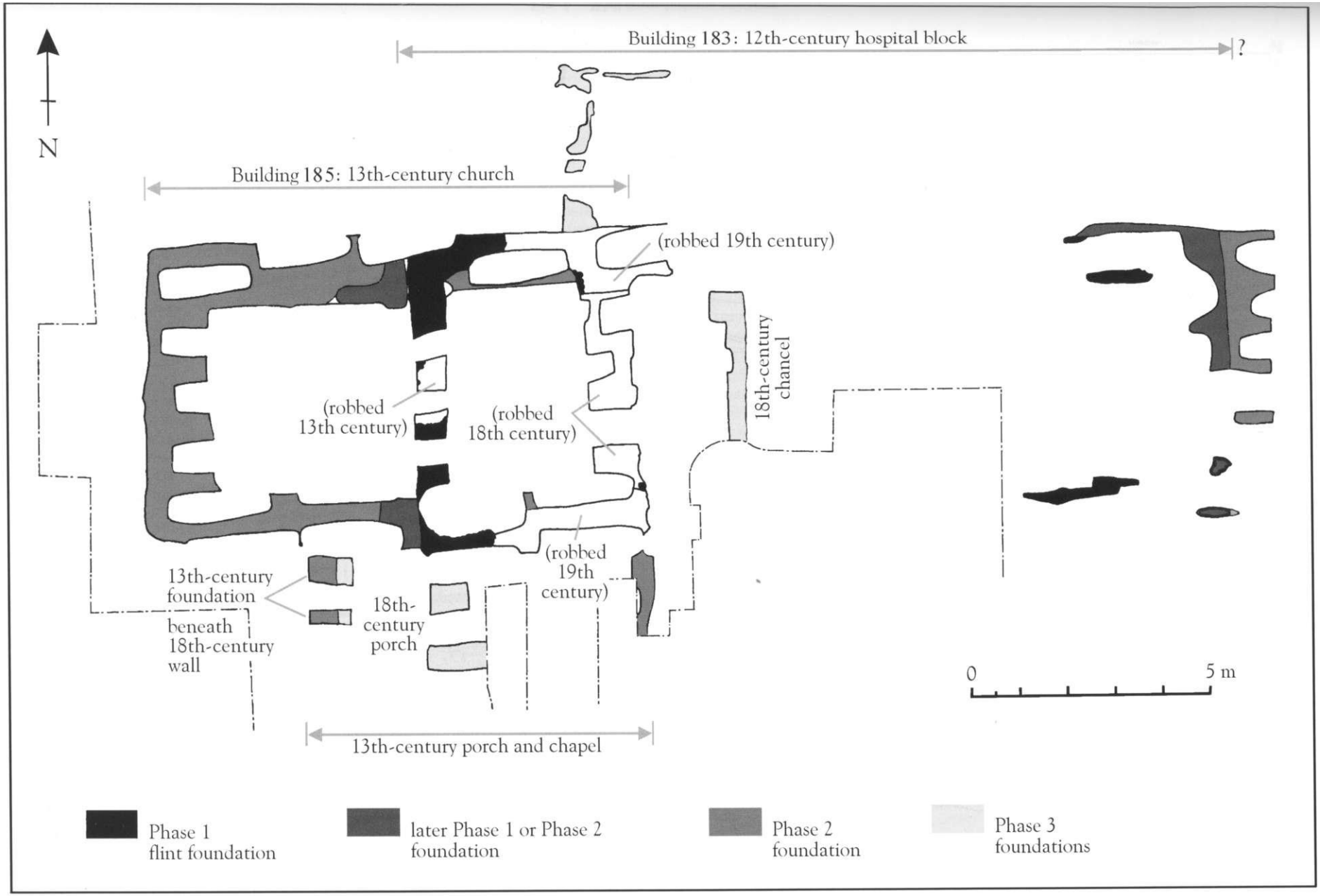



Fig. 5 Buildings 183 and 185: foundation sequence.

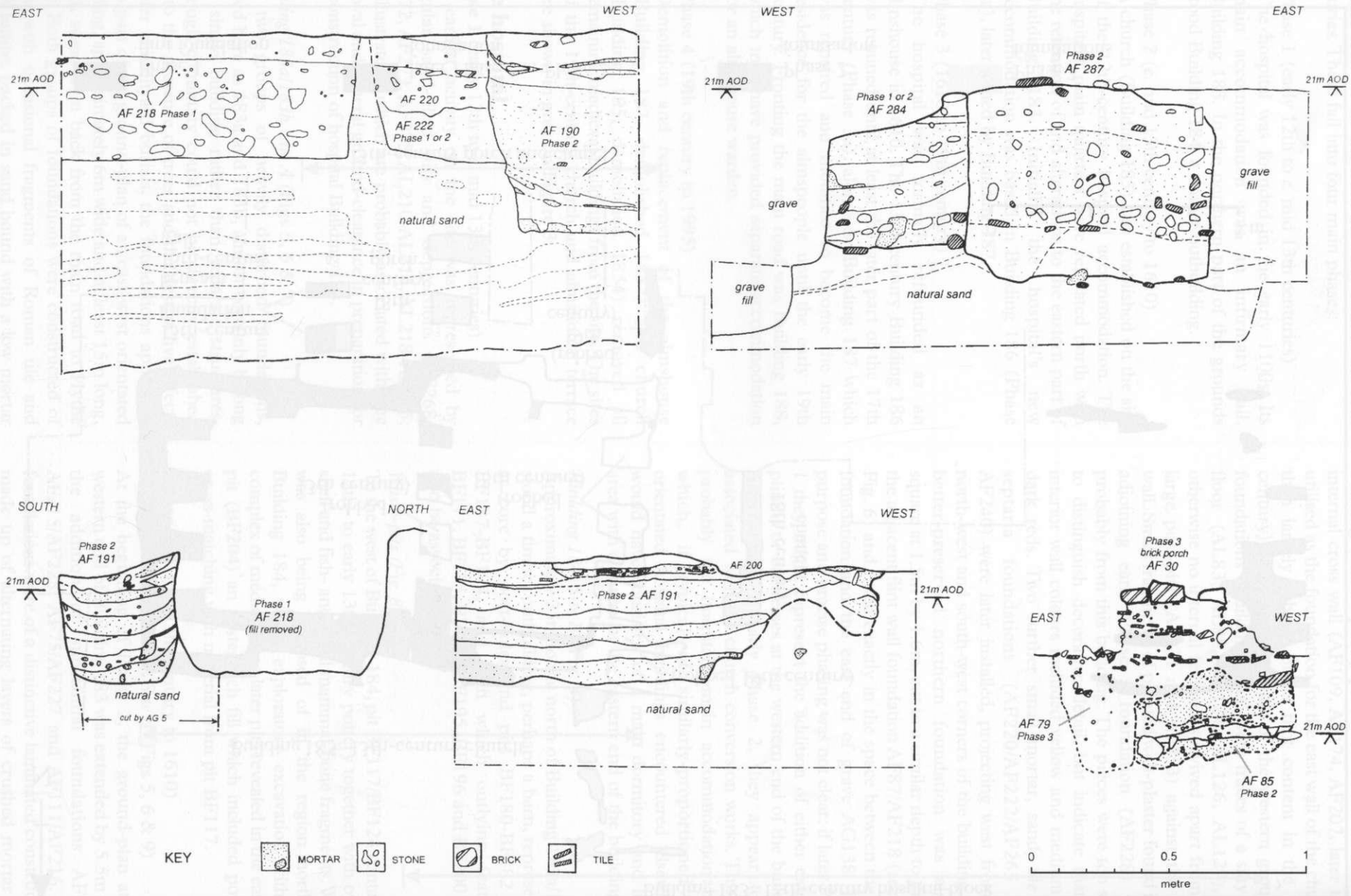



**Fig. 6 Wall foundations: sections.**

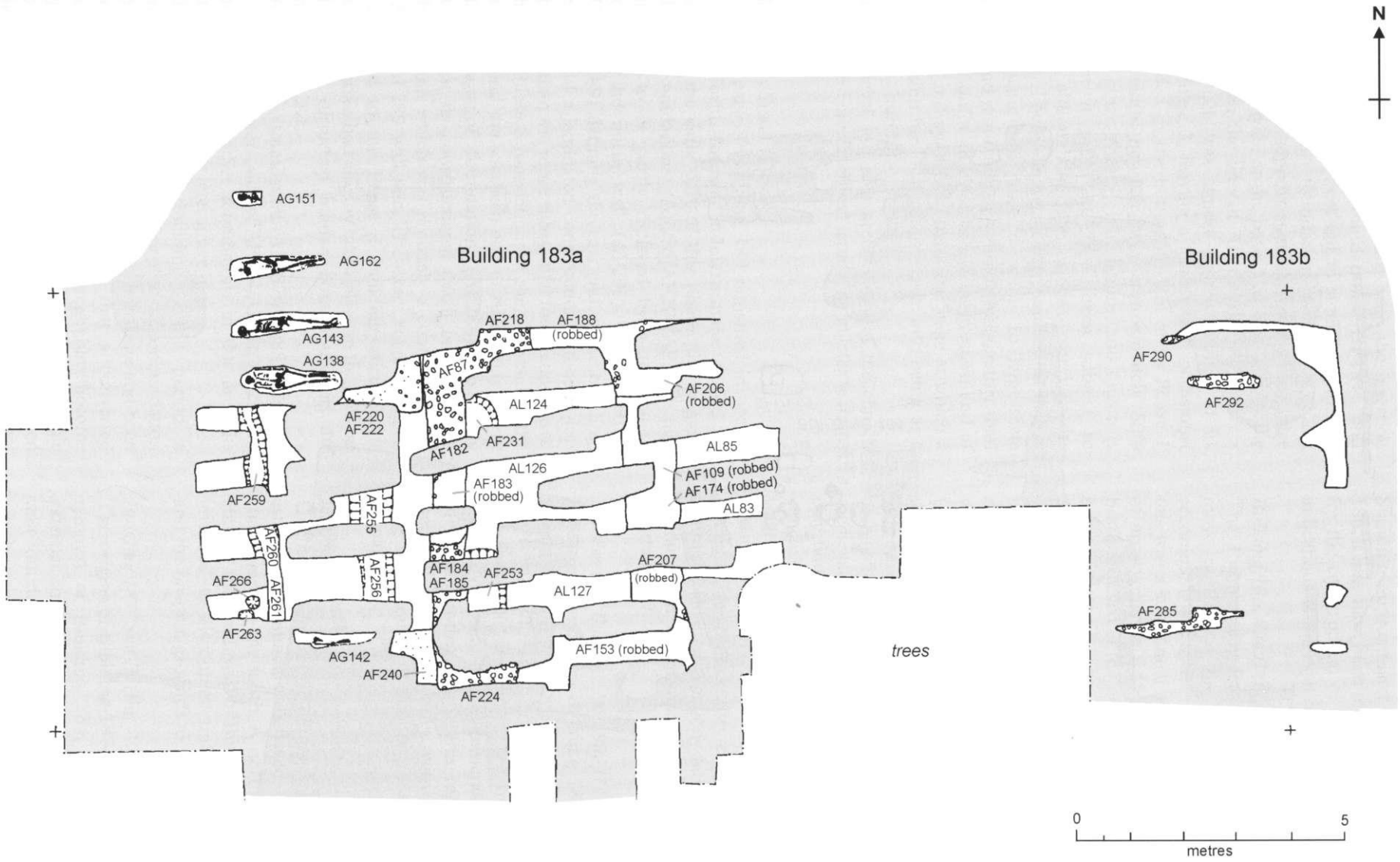
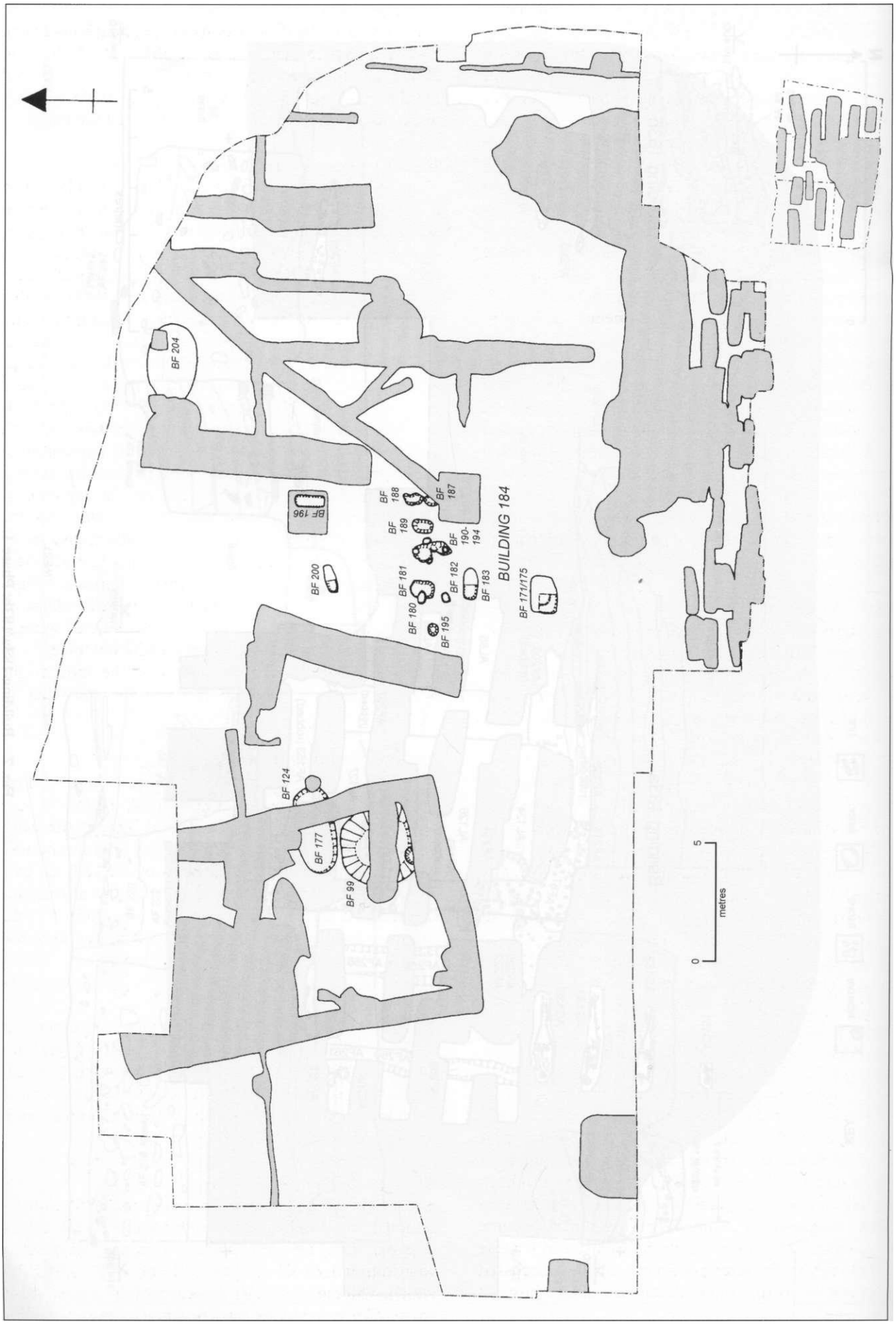



Fig. 7 Building 183a/183b: Phase 1.


BF 204
BF 196
BF 188
BF 187
BF 189
BF 190-194
BUILDING 184
BF 200
BF 181
BF 182
BF 183
BF 180
BF 195
BF 171/175
BF 124
BF 177
BF 99
0
5
metres

At the same time, the existing north and south flint foundations AF218/AF188 and AF224 (Fig. 7) were enlarged on their inner flanks with the insertion of narrow laminated foundations AF191 and AF216 (Fig. 5). These were cut to similar depth, but brought the overall foundation width to 1.2m (section, Fig. 6) to support standing walls which were found to be lm wide at the base. The east wall of the church stood on the line of AF109/AF174/AF207, a foundation which was almost entirely robbed of its contents in Phase 3, leaving a trench with occasional flints embedded in the bottom to hint at its Phase 1 origins. Its width, however, was approximately 50% greater than other Phase 1 foundations, and thus it is possible that it may also have been subject to enlargement, although no firm evidence survived the later robbing. The widening of the foundations in this manner is significant since it points to large-scale demolition and rebuilding of standing walls, rather than just the addition of an extension at the western end of the building, and appears to mark the stage at which a place of worship for local people came into being as a free-standing church.

The medieval and later archaeology of the church and churchyard are described separately in later sections (pp. 110-4).

*Building 183b, Site A* (Fig. 9)
The eastern part of Building 183 remained in use in an altered form for an indeterminate period in Phase 2. By the early part of this phase, the original weak flint foundations (AF285/AF290/AF292) had been added to or partly replaced by a foundation attached to the north wall (AF283) with a return (AF284/AF289) defining the east end of the building. These were of a laminated construction, although less distinctly so than the more substantial foundations used in the early Phase 2 foundations at the west end of the church. Beyond the southern end of AF289 lay a very small remnant of foundation (AF286), so badly disturbed that its constructional detail could not be established, but which was probably a continuation of the AF284/AF289 wall line. The exact stage at which the alteration to the Phase 1 building occurred is uncertain. Burials had already taken place in the area, as evidenced by disturbed human bone found in the foundation AF284.

A rubble-filled foundation (AF287/AF288) was later laid against the eastern side of AF284/AF286/AF289. In common with the other foundations in this area, its limits were obscured by later grave cuts.

The function of the building in this period is unknown. Since the main hospital accommodation seems in effect to have vacated its original site and been relocated north, one possibility is that a converted building standing next to the church might have become a separate residence for the hospital's master in his role as parish rector. Another possibility, further discussed below (p. 114), is that the building housed the hospital chapel.

*Building 184, Site B*
The life span of the Phase 1 post-hole building is uncertain. Standing approximately 10m to the east of Building 186, it may have been retained until its site was required for the construction of Building 187 as there were no indications of intervening activity between the two.

*Building 186, Site B (Fig. 10)*
The 13th-century loss of Building 183 resulted in a move north and the construction of new hospital accommodation in the form of Building 186. Externally, this was a substantial structure covering a ground area of approximately 145 sq m. The standing walls were best preserved at the north-west corner (BF110) with a base of reused Roman materials including septaria and a brick quoin, built on 1.2m-deep foundations (BF70/BF71/BF88) which employed a similar laminated technique to that used in the early Phase 2 extensions for the church (Building 185). The walls were destroyed to below the level of a threshold: Speed's Colchester map of 1610 includes a sketch impression of the building with a doorway in the west wall (Fig. 2), but little reliance can be placed on this since his depiction of architectural detail is questionable. Very little of the medieval interior survived. At the southern end was a clay floor (BL48), but no other internal features were conclusively medieval, although further deposits of clay, walls and a hearth associated with early Phase 3 occupation are possibly of Phase 2 origin. One fragment of mid to late 13th-century cusped window tracery was found in later destruction debris to the east of the building, but its location might equally well relate to Building 187.

*Land west of Building 186, Site B* (Fig. 11)
Extending west from Building 186 was a line of three stone-packed post-pits (BF66, BF67, BF68) spaced apart at 3m to 4m intervals. These shared the same orientation as Building 186 and probably housed boundary posts. The alignments of BF145, BF150, BF155 and other pits in this region may also define medieval land boundaries with implications for the origin and course of Simons Lane which are discussed on page 117.

*Ditches* (Fig. 11)
Ditches BF176 and BF177 appear have been laid out to establish a boundary between the hospital and the churchyard to the south. A north-south ditch (BF163) abutted the south wall of Building 186 and was perhaps intended to discourage traffic between Simons Lane and the hospital grounds to the east.

*Building 187 (Site B)* (Fig. 12)
The origins of Building 187 are obscure. Built after the removal of Building 184, the earliest parts of the external structure were preserved in the fragmentary wall foundations BF26, BF43, BF44, BF57 and BF58 which, with the robbed BF80, enclose a floor area of 140 sq m. Constructed of reused septaria, ragstone, flint,

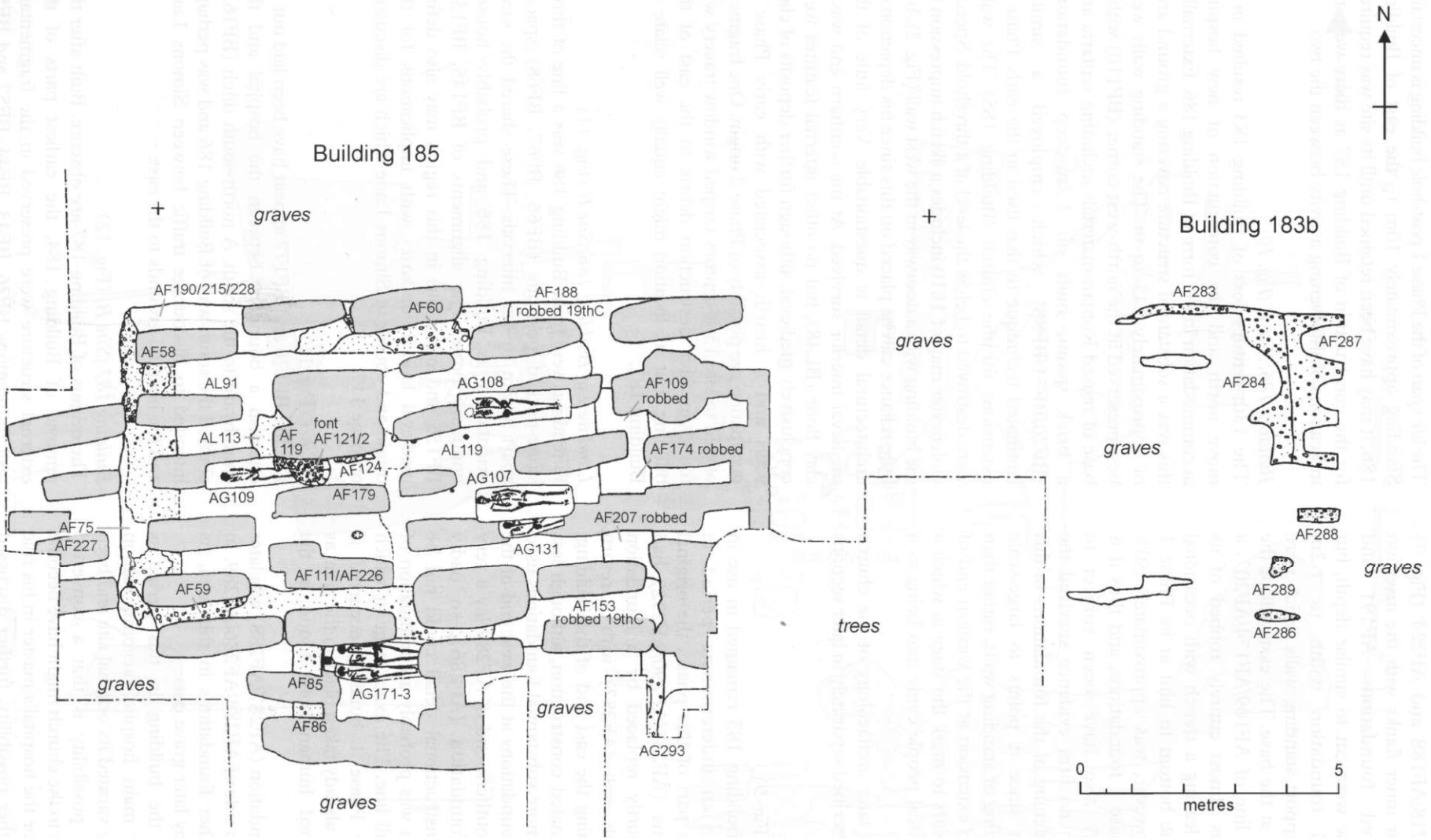



**Fig. 9 Buildings 183b and 185: Phase 2.**

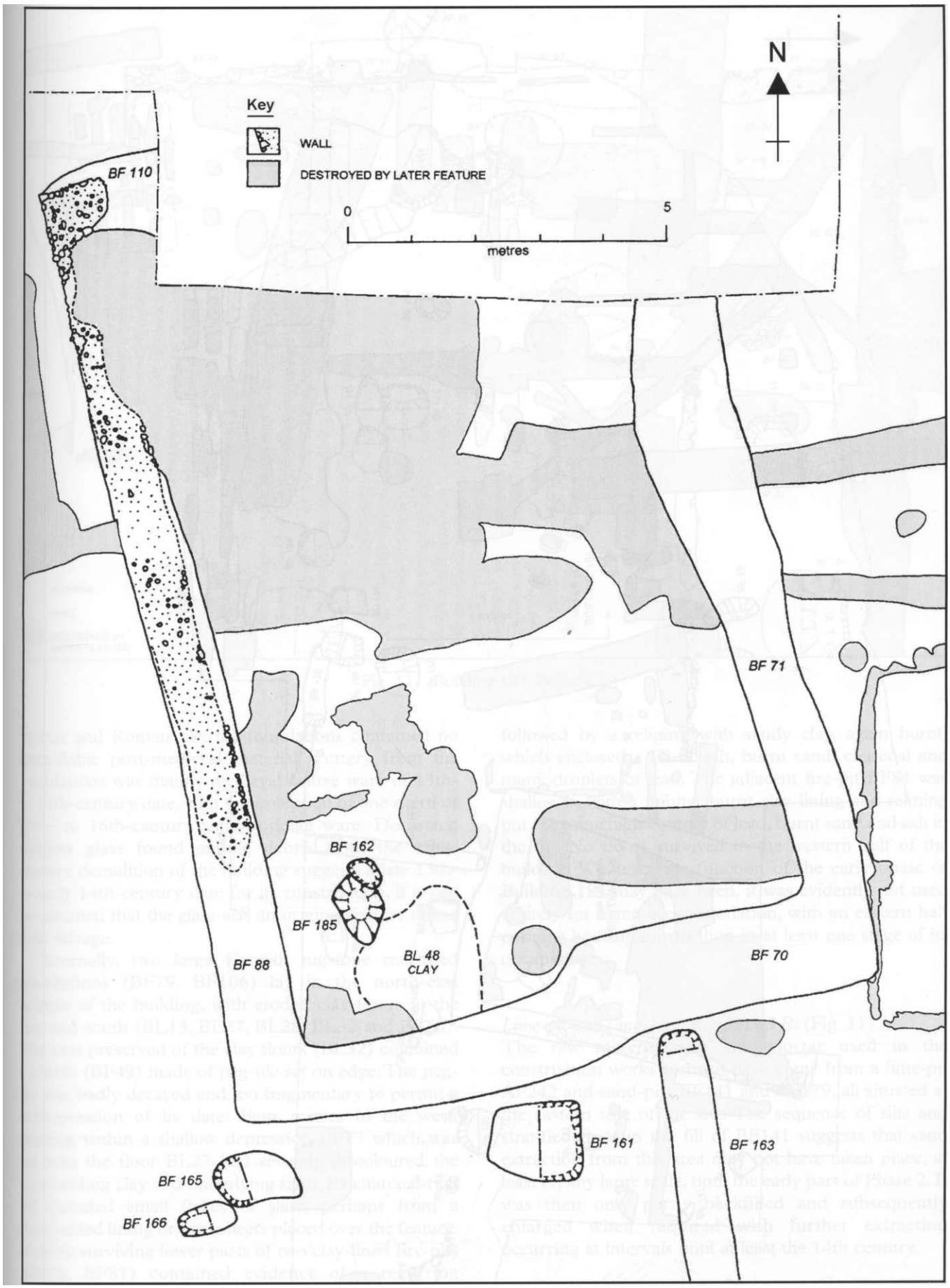



Fig. 10 Building 186: Phase 2.

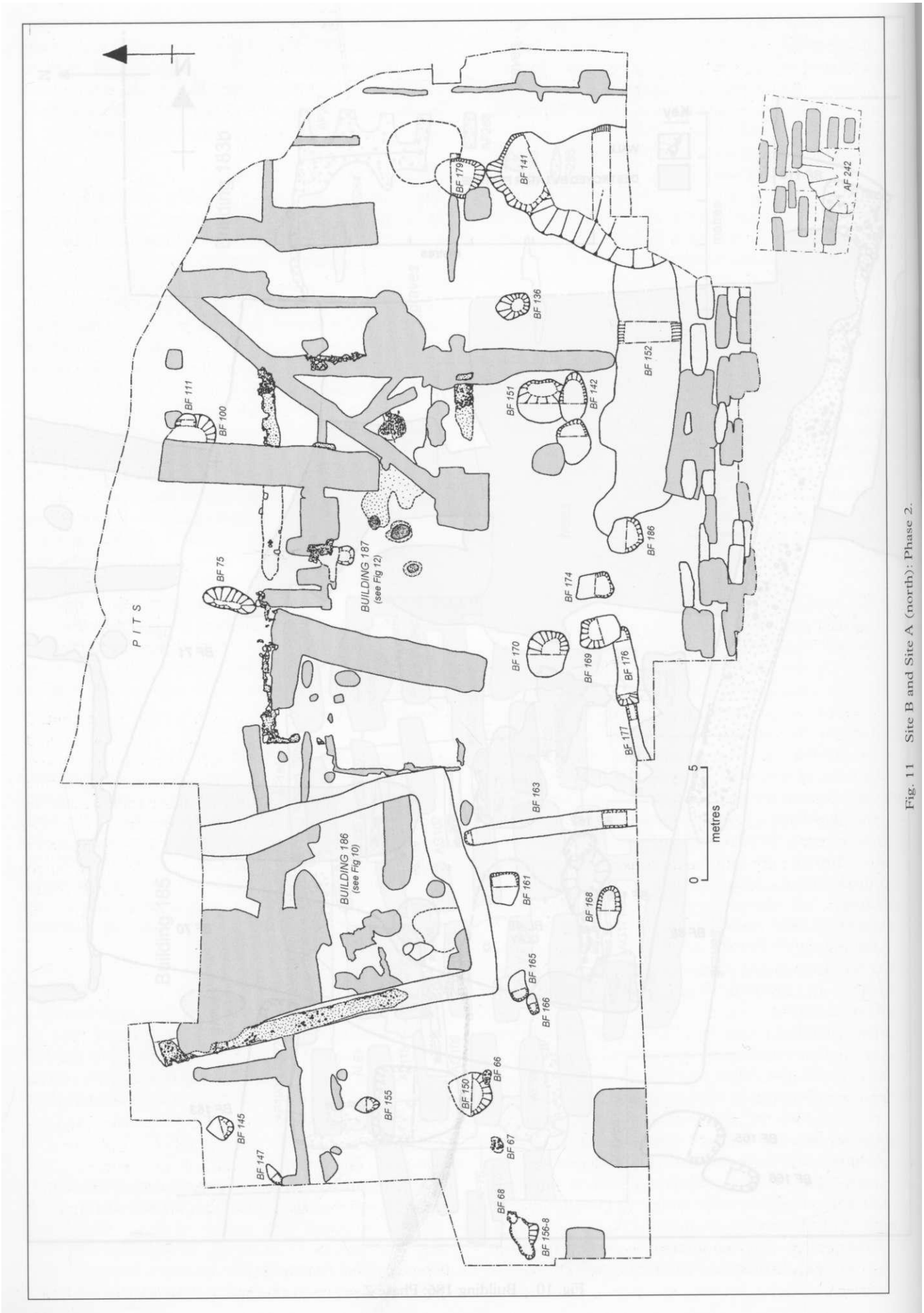



Fig. 11 Site B and Site A (north): Phase 2.

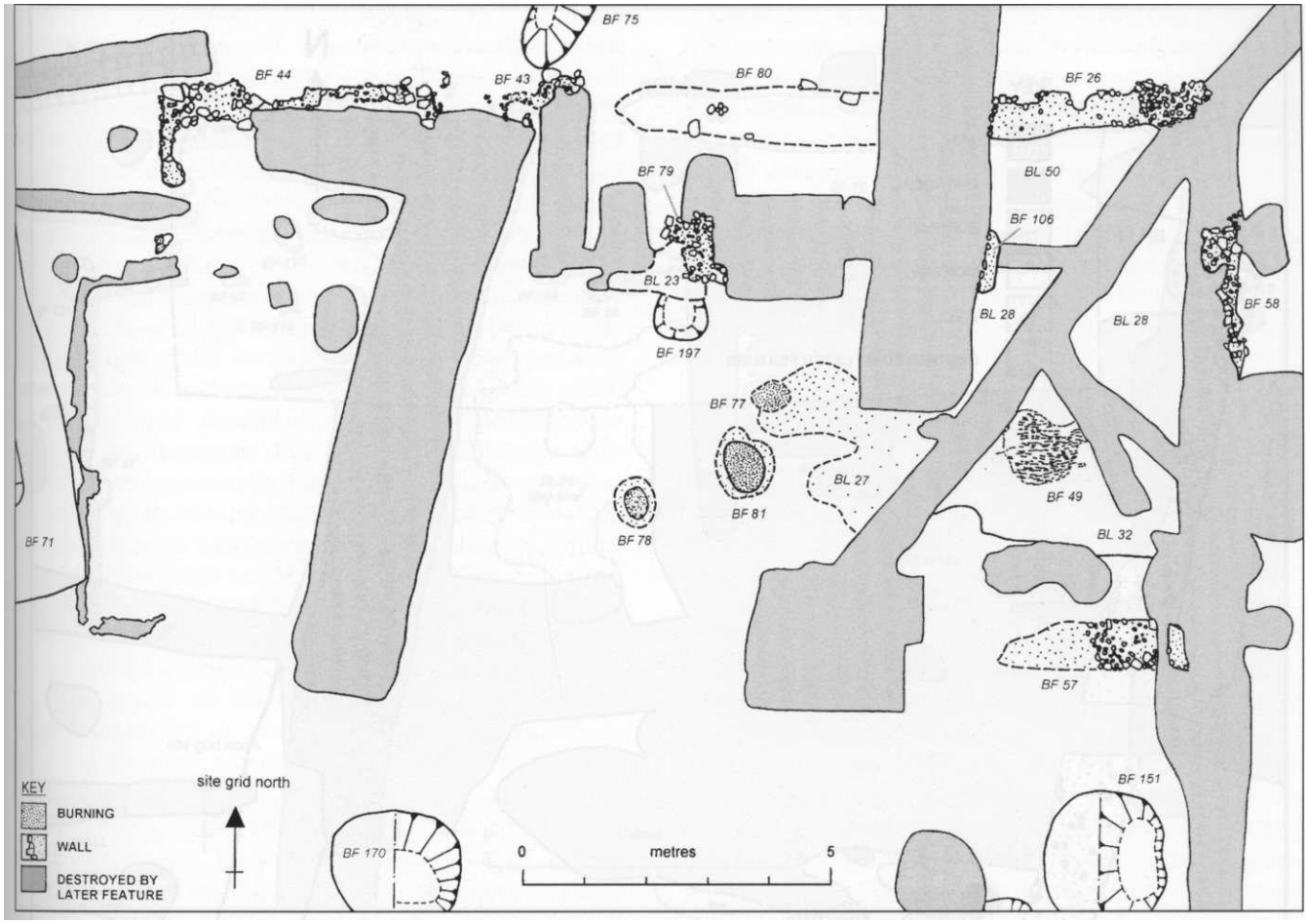



Fig. 12 Building 187: Phase 2.

mortar and Roman tile, the foundations contained no identifiable post-medieval material. Pottery from the foundations was mainly medieval coarse ware of 13th- to 14th-century date, with the exception of one sherd of 13th- to 16th-century sandy orange ware. Decorated window glass found among debris from the 19th-century demolition of the building suggests a late 13th- to early 14th-century date for its construction, if it can be assumed that the glass was an original feature rather than salvage.

Internally, two large Kentish ragstone mortared foundations (BF79, BF106) lay in the north-east quarter of the building, with eroded clay floors to the east and south (BL13, BL27, BL28, BL32 and BL50). The best preserved of the clay floors (BL32) contained a hearth (BF49) made of peg-tile set on edge. The peg-tile was badly decayed and too fragmentary to permit a determination of its date. Four metres to the west, burning within a shallow depression BF77 which was cut into the floor BL27 had severely discoloured the surrounding clay and underlying sand. Its charcoal-rich fill included small flakes of slate, perhaps from a fragmented lining or slate sheets placed over the feature. Nearby, surviving lower parts of two clay-lined fire-pits (BF78, BF81) contained evidence of a recurring industrial activity involving molten lead. In the larger of the two fire-pits (BF78), the primary heavy clay lining was of a greenish hue, burnt red on its upper surface, followed by a relining with sandy clay, again burnt, which enclosed a fill of ash, burnt sand, charcoal and many droplets of lead. The adjacent fire-pit BF81 was shallower, with a thinner burnt clay lining and relining but the same high content of lead, burnt sand and ash in the fill. No floors survived in the western half of the building. Whatever the function of the early phase of Building 187 may have been, it was evidently not used entirely for living accommodation, with an eastern half perhaps housing a workshop in at least one stage of its occupation.

*Lime-pit and sand-pits (Sites A and B)* (Fig. 11)

The raw materials for the mortar used in the construction works seem to have come from a lime-pit AF242 and sand-pits BF141 and BF179, all situated at the eastern side of the site. The sequence of silts and stratified finds in the fill of BF141 suggests that sand extraction from this area may not have taken place, at least on any large scale, until the early part of Phase 2. It was then only partly backfilled and subsequently enlarged when required with further extraction occurring at intervals until at least the 14th century.

*Waste-pits (Site B)* (Fig. 11)

Other smaller pits in this area (BF142, BF151, BF169,


Fig. 13 Building 186: Phase 3.

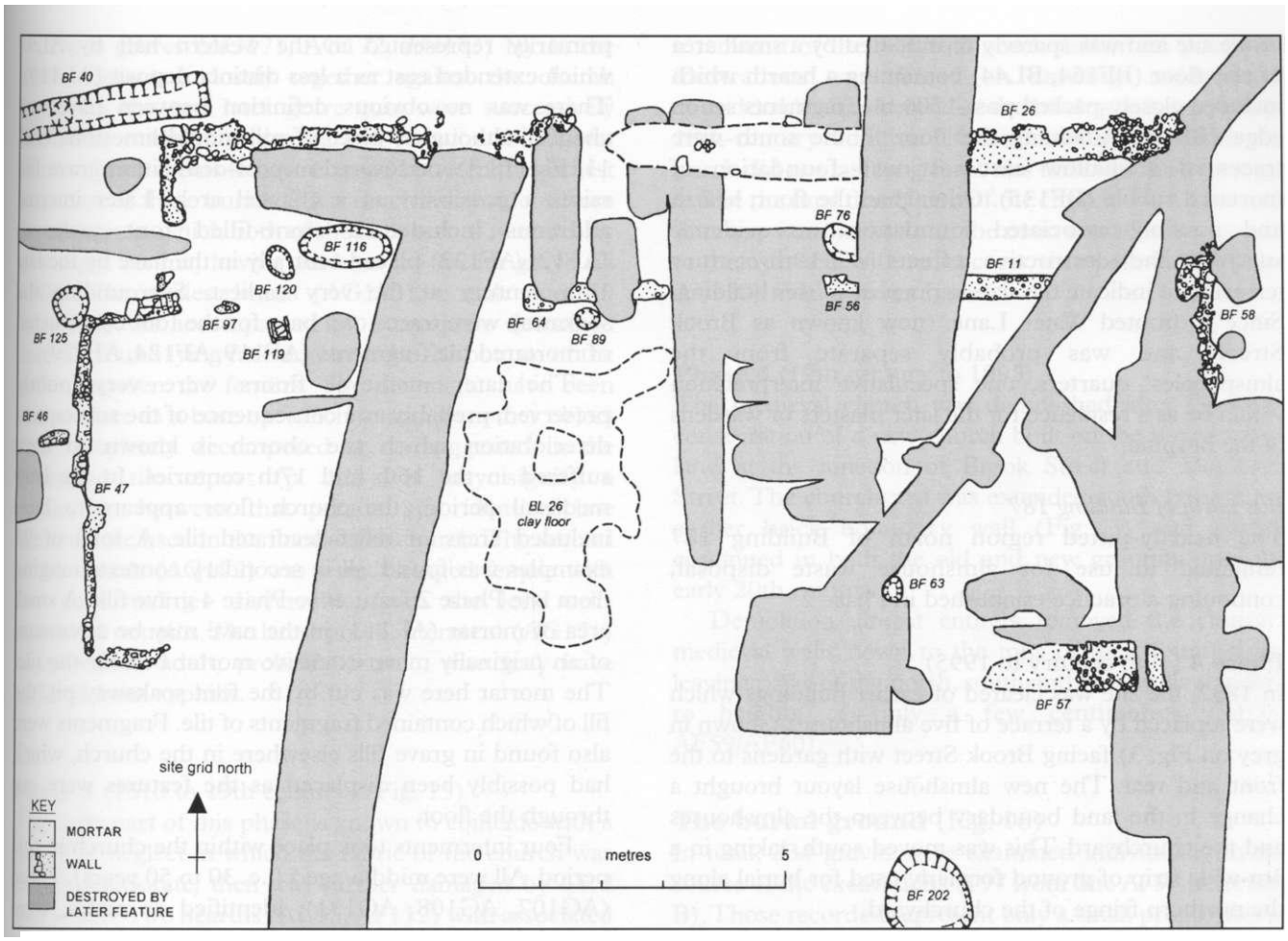



Fig. 14 Building 187: Phase 3.

BF170, BF174 and BF186) contained domestic waste including animal bone and large quantities of oyster shell. However, the main region for waste disposal seems to have been at the northern fringe of Site B, to the east of Building 186 and north of Building 187, where stripping revealed the upper fills of many intercutting pits. These were selectively excavated and produced material which suggests that this was the main area for waste disposal until well into the post-medieval period.

**Phase 3** (1610 to 19th century)

*Phase 3a use of Building 186 (Site B)* (Fig. 13)

Occupation within Building 186 appears to have continued until at least the latter part of the 17th century. Adjoining a hearth of small peg-tile fragments set on edge (BF84) was a wall (BF85) which incorporated brick dated to the early 1600s. Surrounding the hearth and internal walls were clay floor deposits (BL36), possibly belonging to the Phase 2 occupation of the building. These were patched in places with mortar and repaired in the area between walls BF85 and BF86 with clay (BL38) which contained 15th- or 16th-century pottery and clay pipe of *c.* 1670-1700 date. Less securely provenanced finds included 17th-century pottery and a clay-pipe stem apparently from a peg-tile repair to the inner face of the wall BF39.

*Building 187 (Site B)* (Fig. 14)

Refurbishments probably associated with the formal re-establishment of the hospital in 1610 included the removal of the walls above BF79 and BF106, and the insertion of a partition wall which stood on a shallow mortared rubble foundation (BF11/BF56/BF64/BF97) running the length of the building. A new clay floor (BL26) was laid in the central area of the building. Too little survived to permit a detailed record of the internal layout, but the extant remains give the impression of a central communal area with a row of 2.5m-wide rooms along the northern side.

The latest structural alterations followed the ***c.*** late 17th-century demolition of the neighbouring Building 186, and comprised a short extension (BF47) which was added to the western end of Building 187. The extended footings were built of roughly coursed septaria, ragstone, peg-tile and brick fragments with a more substantial late 17th- or early 18th-century brick base at its junction point with the line of the main west wall (BF44). Internally, the extension was faced with white plaster carried down to below the exterior ground-level. A small soakaway lined with late 17th- or early 18th-century brick (BF119) was also added during this phase of alterations.

*Building 188 (Site B)* (Fig. 4)

Building 188 stood close to the Brook Street boundary

of the site and was sparsely represented by a small area of clay floor (BF164, BL44) containing a hearth which included closely-packed post-1500 tile fragments set on edge (BF12). Adjoining the floor to the south were traces of a shallow east-west wall foundation of mortared rubble (BF135). Other than the floor, hearth and possibly associated foundation, no evidence survived the destructive effects of 19th-century terracing to indicate the size or purpose of this building. Since it fronted Water Lane (now known as Brook Street) and was probably separate from the almspeoples' quarters, one speculative interpretation would be as a residence for the later masters or wardens of the hospital.

*Pits north of Building 187*

The heavily-pitted region north of Building 187 remained in use for almshouse waste disposal, continuing a practice established in Phase 2.

**Phase 4** (19th century to 1995)

In 1832, the site was cleared of earlier buildings which were replaced by a terrace of five almshouses (shown in grey on Fig. 3) facing Brook Street with gardens to the front and rear. The new almshouse layout brought a change in the land boundary between the almshouses and the churchyard. This was moved south, taking in a 3m-wide strip of ground formerly used for burial along the northern fringe of the churchyard.

## St. Mary Magdalen's church

(Building 185)

**Phase 2** (c. mid 13th century to 1610) (Fig. 9)

The 13th-century structural origins of St. Mary Magdalen's church are described in the preceding section (p. 103). Built partly on 12th-century foundations for the original hospital living quarters, the parish church contained a floor area of only 38 sq m. Two small and very badly disturbed foundations projected from the south wall. At a point one-third of the way (3.5m) in from the south-west corner, a laminated foundation (AF85/AF86) survived for a distance of 1.5m, beyond which it was removed by later graves and foundations for a post-medieval porch AF79 (section, Fig. 6). Lying parallel to AF85/AF86 at the south-east corner of the building was an even more disturbed feature (AF293), barely recognisable as a foundation, which contained alternating layers of loamy sand and crushed mortar-rich sand. This extended at least 1.8m from the south side of the church, but its full length could not be established due to the presence of trees. Although slight, these foundations are believed to represent the medieval porch and adjoining hospital chapel. Some indication of the church's 13th-century and later architectural detail was derived from fragments of demolished stonework found in later contexts in the vicinity of the building; these are discussed in the architectural stone report.

Internally, the earliest floors were of silty clay, primarily represented in the western half by AL91 which extended east as a less distinct deposit (AL119). There was no obvious definition between nave and chancel, although a piece of roll mould limestone (AR 11, Fig. 18.3), discovered in post-demolition grave fill, raises a possibility of a chancel arch. Later internal additions included a stone-filled font soakaway (AF121/AF122) placed centrally in the nave by the late 14th century at the very earliest. Surrounding the soakaway were traces of a base for the font constructed of mortared tile fragments (AF119, AF124, AF179).

The later medieval floors were very poorly preserved, probably as a consequence of the subsequent deterioration which the church is known to have suffered in the 16th and 17th centuries. In the later medieval period, the church floor appears to have included areas of relief-decorated tile. A total of 93 examples was found, all in secondary contexts ranging from late Phase 2 features to Phase 4 grave fills. A small area of mortar (AL113) in the nave may be a remnant of an originally more extensive mortar bed for the tile. The mortar here was cut by the font soakaway pit, the fill of which contained fragments of tile. Fragments were also found in grave fills elsewhere in the church, which had possibly been displaced as the features were cut through the floor.

Four interments took place within the church in this period. All were middle-aged (i.e. 30 to 50 years).Three (AG107, AG108, AG131), identified as males, were buried in the chancel area. The fourth (AG109), a probable female, lay at the centre rear of the nave. Nails and wood stains survived to varying degrees, confirming the presence of coffins in at least three of the graves (AG108, AG109 and AG131). From their location, the three chancel burials seem likely to be priests, although only one (AG107) produced evidence of status in the form of a pewter chalice placed upright on the chest. The chalice was crushed and too badly decomposed to permit further identification, but it may belong to a period between *c.* 1280 and *c.* 1350 when a medieval custom of placing communion vessels in priests' graves appears to have been most commonly practised (British Museum 1924, 36-9). Coarse ware pottery from the fill lies somewhere in the 12th- to 14th-century range and is thus consistent with a *c.* late 13th- to mid 14th-century date for this grave, which is evidently that of a cleric.

The significance of the lone female (AG109) in the nave is less apparent; perhaps she earned her prominent resting place as a benefactor to the church or hospital.

The earliest of the graves was AG131. This held no datable finds but was cut by the *c.* late 13th- to mid 14th-century burial AG107, severing the left arm and leg bones which were found in a disarticulated state in the lower fill of the later grave. The other two graves, AG108 and AG109, contained fragments of decorated tile which point to late 14th-century or later dates of burial. The interment of AG109 occurred between installation of the mortar floor (AL119) and the font soakaway (AF121/AF122).

Three graves (AG171, AG172, AG173) lay in the porch. Grouped closely together against the church threshold, the two later grave cuts were successively shallower, respecting the earlier remains. No great length of time seems to have elapsed between the earliest and latest of these burials. That much was evident from the manner in which both of the later sets of remains lay at a slight incline, having sunk as the earlier grave fill settled. The earliest burial (AG173), a male over 50 years old, was accompanied by a complete decorated floor tile found lying face down on the flat bottom of the coffin between the femurs. The tile might have been placed there as a base on which to stand another object now completely decomposed or, as suggested in the decorated tile report (p. 123), it may signify a connection between that person and identical late medieval tile used in the floor of the church. The second of the burials (AG172) was a middle-aged female with few abnormalities discernible from the less well-preserved remains. The latest porch interment (AG171) contained an adult, probably female, who may have suffered from syphilis.

**Phase 3** (1610 to 19th century) (Fig. 15)
The early part of this phase is known to coincide with a period of neglect in which the fabric of the church was left to deteriorate, then was further damaged by Civil War action.Two hearths (AL95, AF112) with associated deposits of ash (AL38, AL94) and various pits and stakeholes all relate to a period from 1650 when the building was repaired and used as a poor-house. At about this time, the font was removed and its base patched with mortar (AL98). The poor-house conversion included a short-lived extension to the north where traces of a rubble wall foundation (AF5, AF6, AF9) survived between grave cuts dating to the 18th century and later, when the ground formerly occupied by the extension reverted to use for burial.

The church remained semi-derelict until 1721 when repairs included a brick extension to form a new chancel (AF7, AF14). Initially, the floor of the new chancel seems to have been at the same level as that of the nave, and only later, after the interment of AG110, was it elevated with a small step (AF89, AF90, AF91) and floored with brick laid at a diagonal to the walls (AF110). The enlarged nave was also floored in brick, most of which was later salvaged when the church was demolished, leaving a mortar bed covered with an overall scatter of discarded brick fragments (AL21, not illustrated). Among the brick scatter were pieces of plain glazed floor tile, many with clear signs of reuse. These were limited to the western part of the nave. A 17th- to 18th-century costrel (AF130/AF154) was buried in an upright position beneath this floor. A porch (AF30-AF33), with brick flooring and side walls, may have been introduced at the same time as the chancel, but curiously this does not appear on the later 18th-century illustrations (Fig. 17a and 17c). These show only a stump to the south of the doorway, which appears to be a remnant of the medieval porch. Either the published illustrations were based on drawings made some considerable time before or the brick porch was a later 18th-century addition. If the latter is true, then the porch did not last long for it was removed at some stage before the final demolition of the church when the south doorway was blocked and the main entrance was moved to the west wall with new access via a pathway (AL316, AL228) from Simons Lane.

**Phase 4** (19th century to 1995)
The medieval church was demolished after the 1854 consecration of a new church built on the former open land at the junction of Brook Street and Magdalen Street. The churchyard was extended south beyond the earlier brick boundary wall (Fig. 3) and burials continued in both the old and new grounds until the early 20th century.

Demolition almost entirely removed the church's medieval walls down to the tops of their foundations, leaving parts of the north, south and west walls standing to heights of only a few centimetres (AF58/AF59/AF60).

## The burial ground (Fig. 16)

In total, 234 graves were examined individually in the course of the excavations (197 from Site A, 37 from Site B). Those recorded represent only a small proportion of the total population of a graveyard which, with its 800-year history of interment activity and high incidence of residual skeletal material in grave backfill, must be counted in thousands. Due to the sheer concentration of burials and the disturbance suffered by the earliest, the excavation of graves was of necessity treated as secondary to the location and investigation of structural evidence for the hospital and church and was to an extent dictated by the need to remove archaeologically intrusive features.

The majority of the graves could not be closely dated. Of those that could be assessed with reasonable certainty, five graves belonged to Phase 1; seven graves to Phase 2; 48 graves to Phase 3; and 46 graves to Phase 4. Others could only be bracketed within paired phases with 34 graves in the broad range of combined Phases 2-3 and 94 graves in Phases 3-4. These figures only indicate the low level of securely datable graves and do not represent the relative intensity of burial from one phase to the next.

Those burials clearly belonging to Phase 1 are AG138 and AG142 which were cut by the church foundations AF190/AF215/AF228 and AF111/AF226. The lower parts of these two graves were roughly contoured to the shape of the body and contained no coffin. To the north, a further three of the stratigraphically earliest graves (AG143, AG151 and AG162) shared these characteristics, forming a regularly spaced north-south aligned row to the north-west of Building 183. Residual human bone which was found in an early Phase 2 wall foundation fill (AG201 in

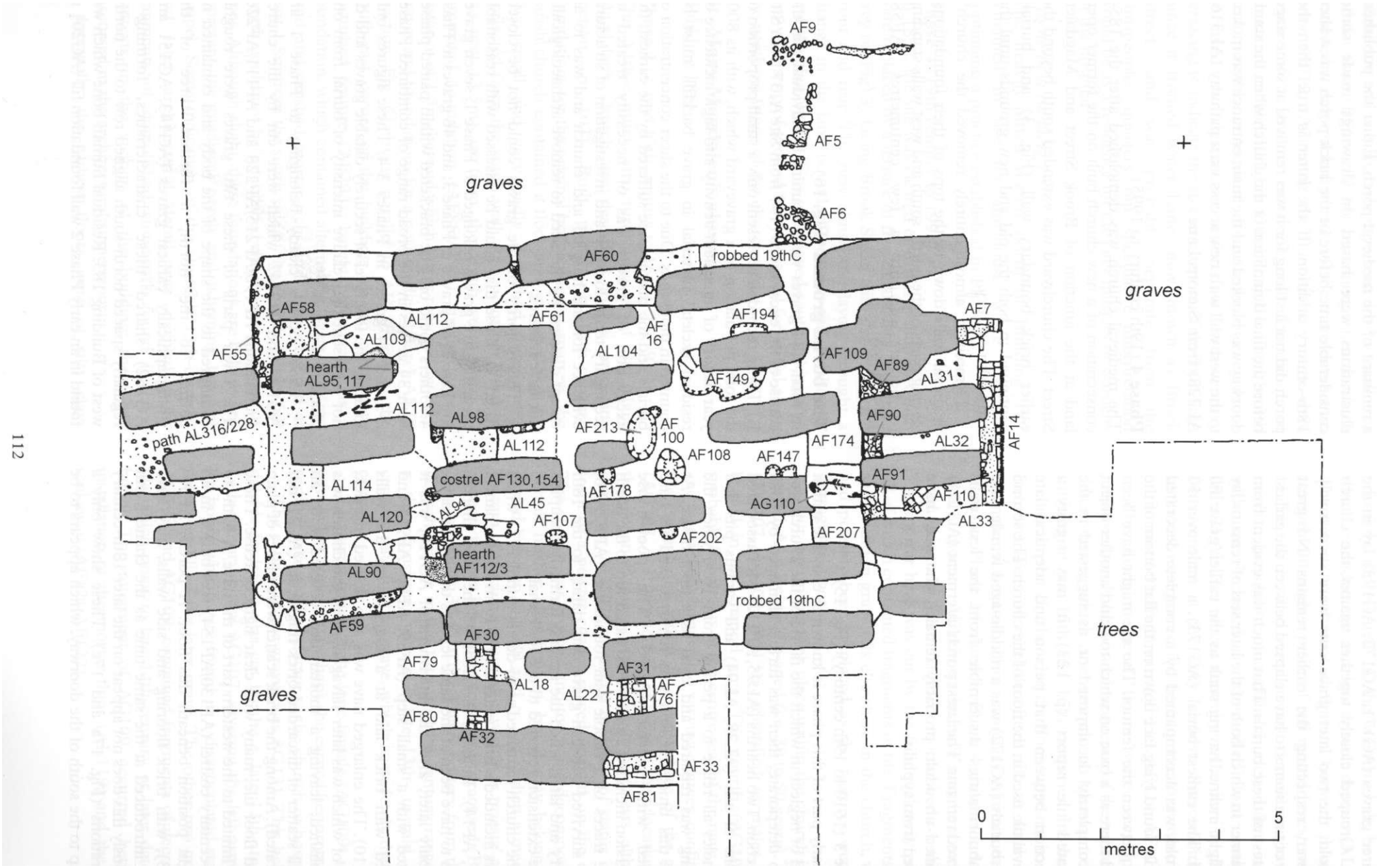



**Fig. 15 Building 185: Phase 3.**


Key:
G108 Phase 2 grave
G168 Phase 2 or 3 grave
Phases 3 and 4 graves (individually excavated)
graves, limited excavation
graves
graves, limited excavation
graves
0
5
metres
BG4
BG20
BG21
BG30
BG29
BG22
BG34
BG11
BG37
BG36
BG24
BG28
BG23
AG174
AG167
AG155
AG159
AG158
AG157
AG153
AG179
AG178
AG168
AG169
AG177
AG101
AG100
AG1023
AG140
AG108
AG107
AG131
AG109
AG187
AG197
AG196
AG191
AG171
AG172
AG173

AF284) suggests that burial also took place in the region close to the east end of the building, although no intact graves of the period were located in that part of the site. The presence of a child's skull in this early context raises the question of whether the disturbed graves here belonged to local people or hospital inmates. Officially at least, leper hospitals were not permitted to take in children: either Lateran Council rule in this matter was ignored, or the hospital's grounds were being used from a very early stage for the burial of the dead from the outside community. If the latter is true, then it is possible that facilities for worship would also have existed at the hospital.

The body-contoured graves without coffins appear to be limited to Phase 1. Thereafter, the graves were more or less rectangular with common evidence of coffins in the form of nails and soil stains left by decomposed timber.

The pattern of post-Phase 1 medieval churchyard burial could not be determined due to the small number of securely datable Phase 2 graves. Graves of possible Phase 2 date (i.e. in the Phases 2-3 range) occurred in most churchyard areas where the sequence of burial was explored to any extent, and they were relatively well-represented in a small strip of systematically excavated graves at the southern edge of Site B. Exceptions were the sites of the Phase 2 lime-pit (AF242) where no graves pre-dated Phase 3, and the adapted Building 183b which was retained for a time in Phase 2.

From the post-medieval period to the late 19th century, burial appears to have taken place in all parts of the churchyard, which from 1854 extended south as far as the new church (Fig. 3). In some instances it was possible to establish the identities and exact burial dates of excavated 18th- and 19th-century graves by association with overlying gravestones or inscribed plates on coffin lids.

The medieval boundary between the churchyard and hospital grounds marked by ditches BF176/BF177 seems to have to have remained unchanged until 1832, when it was moved a short distance south when new almshouses were constructed at the beginning of Phase 4.

## Interpretation and phasing

Aspects of the site interpretation and phasing as described below are open to alternative analysis.

*Building 183b*

The beginning of Phase 2 has been assumed to mark the point at which the church (Building 185) was established as a separate small structure of the length indicated in 18th-century and later illustrations (Fig. 17). Given the very fragmentary condition of the Building 183b foundations and the lack of stratigraphic continuity between them and the Building 183a/Building 185 foundations to the west, there remains a possibility that the two stood for a period as an integrated structure, which was only later reduced to the 9m length confirmed by excavation of post-medieval features at the east end of the church. While this cannot be dismissed, an early Phase 2 date is preferred, both for the reasons explained on page 103 and on the basis that it is a known point at which major structural alterations took place, and is thus the simplest interpretation consistent with the available evidence.

*The hospital chapel in Phase 2*

There are three possible sites for the hospital chapel in this period. The cartographic evidence, in the form of the map of Colchester published by John Speed in 1610 (Fig. 2), shows the church with, a large intact building labelled 'Maudlyn chap' to the north. There is little doubt that Building 186 is that structure since it is of the correct size, orientation and location in relation to the church. Documentary evidence is at odds with this interpretation, with a witness in a 1580 lawsuit stating that the hospital chapel *had adjoined the side of the parish church* and further describing the chapel's condition at the time as 'clean down'. The charter which was prepared when the hospital was refounded in 1610 also describes the chapel as totally destroyed (history section, p. 94). While anomalies between the 1610 illustration and references to the building's condition may be explained by the likelihood that Speed's published map was based on an earlier survey, it does not resolve the incongruity in location, if the 1580 description of the chapel's juxtaposition to the church is to be interpreted literally. The archaeological evidence also suggests that Building 186 could not have been demolished totally by the late 16th century, since brick incorporated into a hearth wall (BF85) and finds from an adjacent clay floor (BL38) indicate continued use of the building until at least the later 17th century. Speed's reference to the Maudlyn chapel perhaps reflects an inclination to identify the establishment by its dedication rather than a specific building by its function.

More consistent with the documentary and archaeological evidence is the possibility that part of the heavily disturbed group of foundations classed as Building 183b might represent retention of the original site of a Phase 1 chapel. The 12th-century foundations were augmented by further building activity in the form of foundations AF283, AF284 and AF289. These displayed a similar laminated technique to that which was used for the wall foundations underlying the nave of the church and may well be part of the same phase of building activity, although the layering was less marked. While it is less likely to have been physically joined to the church (as implied by the 1580 description), it is possible that, in Phase 2, Building 183b might have undergone conversion to become a free-standing hospital chapel located immediately east of the church.

The third possibility is that the church had an attached chapel for hospital inmates, in accordance with the 1580 statement. The archaeological evidence for this is thin, but nevertheless present in the form of the foundation AF293 (Fig. 9) which projects from the south-east corner of the building. Paired with the west wall foundation for the medieval porch (AF85/AF86), this is the most likely location for the hospital chapel.

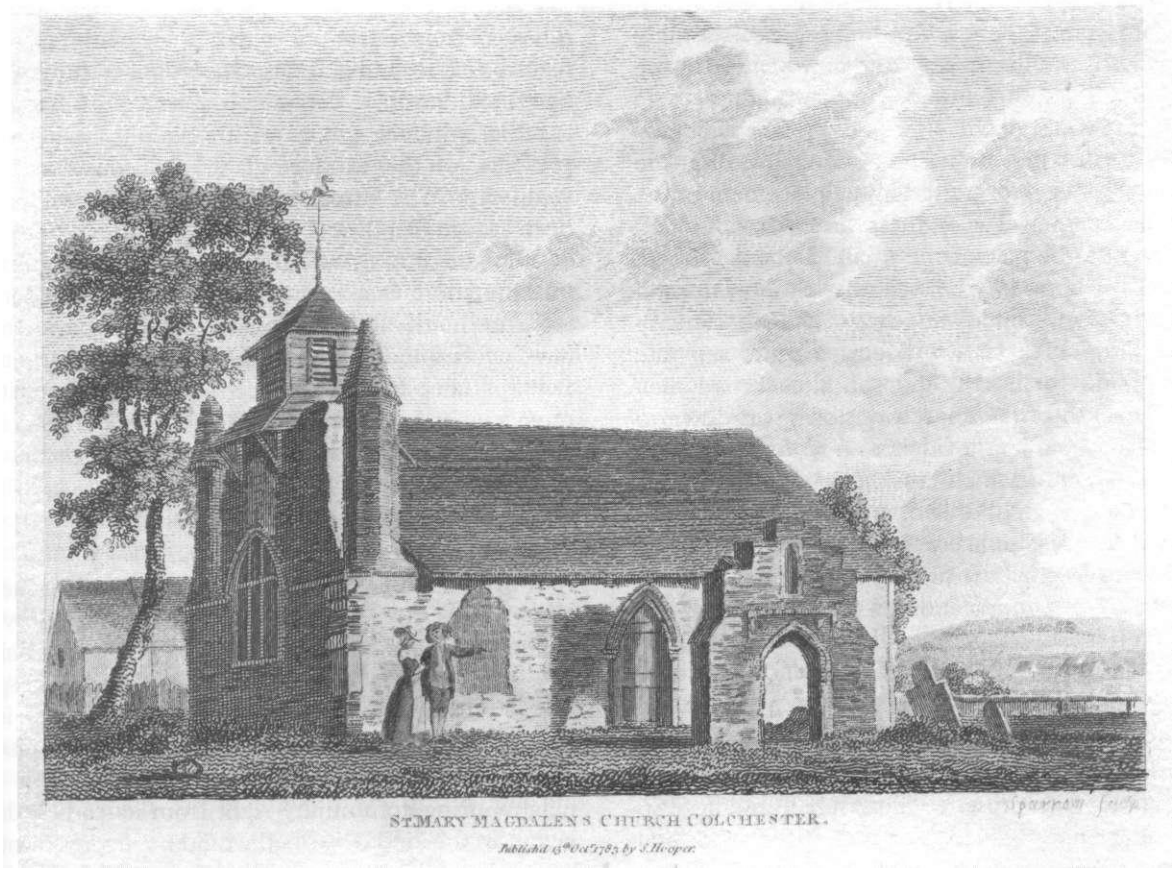



Fig. 17 Three 18th-century illustrations of St Mary Magdalen's church:
a Sparrow, published 1783;
b Stukeley, 1718 (reproduced with the kind permission of The Bodleian Library, Oxford. MS Top. Gen. e.61. folio 43);
c 18th century (from Essex Churches album, ESAH library).

Most 18th-century church illustrations (of which Fig. 17a is an example) show a prominent free-standing arch, stylistically similar to the west end of the church and very like a porch entrance, but located at some distance to the south of the church door. The accuracy of the location of the arch is questionable as artistic licence may have been exercised in the placement of the arch to balance the view of the church. It does not, however, seem to be part of the small gatehouse shown by Speed at the boundary between the churchyard and Magdalen Green, since another *c.* 18th-century illustration (Fig. 17c) shows that as a quite separate feature standing further to the south. A broad area immediately south of the church was stripped down to natural subsoil, but no evidence for the arch was recovered in ground which was heavily disturbed by graves. The elusive arch, drawn with some attention to architectural detail, is unlikely to be sheer invention on the part of the original artist and, if accurately scaled, the drawing offers an indication of the potential size of an adjoining hospital chapel.

*Origins of Building 187*

In some respects it would be simpler to see Building 187 as no earlier than 17th century in origin, for in a medieval context its presence alongside Building 186 seems to offer spacious accommodation for a hospital which after 1423 probably had no more than five inmates. It also stands uncomfortably close to Building 186 with a gap of only lm at the narrowest point between the two.

The structural sequence of the building falls into three stages, starting with the main walls and clay floors attributed to Phase 2 (p. 103), followed in Phase 3 by internal alterations and then finally by an extension added to the west. The datable material associated with the earliest phase variously falls within a 12th- to 16th-century range, with 13th- or 14th-century finds being commonest in the wall foundations and floor. This contrasts with the later stages of the building where post-medieval materials and finds were fairly plentiful together with residual medieval material. From a secondary context, all but two pieces of medieval painted window glass from the site were found among a localised spread of 19th-century demolition debris (BL7, BL15) over the centre of the site of Building 187 (the other two pieces from elsewhere, PG27 and PG28, are stylistically unrelated to the main group). The glass is of late 13th- or early 14th-century date and evidently came from one or more windows of the building as there was no other source for the glass in this late context. A further factor is the materials used in the earliest foundations. These were characterised by an abundance of re-used Roman building stone and tile, consistent with an early medieval practice of making extensive re-use of then freely available Roman building materials. In itself, the presence of Roman material is not diagnostic here since it is probable that the late 17th-century demolition of Building 186 would have released quantities of septaria and Kentish ragstone for a second phase of re-use. The window glass too might have been salvaged from elsewhere rather than being an original feature of Building 187. On balance, however, the combination of a consistent absence of later finds, together with the nature of the building materials and presence of the window glass, was considered to be significant. The origin of Building 187 has therefore been placed in Phase 2, but with the reservations noted at the beginning of this section. An alternative interpretation, based on a Phase 3 origin, would involve the introduction of Building 187 either around 1610 as new accommodation for the refounded hospital, or perhaps later in the 17th century if it was built as a replacement for Building 186.

## Discussion

*Phase 1, Building 183 interior layout*

A conventional layout for an infirmary hall of the time would have an entrance into a main dormitory area which led on to a chapel at the east end of the building (Prescott 1992, 7-22). The 12th-century hospital's initial relationship with any nearby residents is not known. However, if it was the case that the hospital was expected to provide worship facilities for a small neighbouring community right from its earliest days, a layout of the kind described would be inconvenient, and probably highly objectionable to outside worshippers who would need to pass through the lepers' dormitory to reach a shared chapel. A more acceptable layout would require at least a separate access if one chapel was common to both locals and inmates, or an additional chapel with its own approach. Various layouts are possible, but if a community chapel were incorporated into the original main building, then structurally it would be simplest to place it at one end with its own entrance. This might explain the cross-wall (AF109/AF174/AF207) division in the western part of Building 183: if that were the location of a community chapel separated internally from the rest of the building, then it would justify the retention of established sacred ground at the west end of the Phase 1 building as the location for the chancel when the free-standing church was constructed. This is highly speculative, but the choice of location for the church seems unlikely to have been dictated merely by the existence of a few inadequate foundations left from the Phase 1 building.

*Segregation and a fluctuating inmate population*

If Building 187 was added to the hospital in the medieval period then it must have been for a sound practical purpose, as the hospital seems never to have been sufficiently wealthy to significantly enlarge its accommodation as a matter of prestige or merely to provide some minor amenity. One factor that may have encouraged further building was a need to separate different classes of inmate. Following a late 11th-century tradition established by archbishop Lanfranc, segregation in hospitals took two forms: a division between leprous and non-leprous infirm, and separation

of the sexes in mixed institutions. By the 14th century, many English leper houses were also accommodating non-lepers (Orme and Webster 1995, 29, 90-91). It is not known if St. Mary Magdalen's followed this trend, but equally there is no reason to think otherwise. More is known about St. Mary Magdalen's admission of women. The hospital seems originally to have been an all-male establishment, then it took in both sexes before reverting to a men-only regime after 1423. Pressures for separate male and female quarters and perhaps also a further division between leper and non-leper may have led to the introduction of Building 187, if it is assumed that the hospital fully observed the established requirements for segregation.

Another reason may lie in a fluctuating inmate population. It is uncertain whether the relatively low incidence of later medieval pottery signifies a fall in the hospital's population, an increased level of poverty, or some other factor. If this dearth of pottery should in any way relate to the numbers accommodated at about that time (i.e. known to have been set at five after 1423), then it is conceivable that the hospital's population may have been higher in earlier centuries, perhaps necessitating the introduction of further buildings. A fluctuating population would have implications on the purpose to which the buildings were put at any one time: Building 187, for example, might have served as living quarters at one stage, then later housed a workshop as the number of inmates fell, but this is approaching the extremes of conjecture when the surviving material evidence is limited.

*The medieval land boundary with Simons Lane*

The orientation of Building 186 did not correspond to that of the other medieval buildings on the site. Instead, it follows the inclination still seen today in a 35m length of the modern Simons Lane (Fig. 3; fronting the Victorian terrace, nos 3-11), which suggests that that part of the lane was established by the 13th century or at least follows a boundary set in the early medieval period. To the south, ditches BF176, BF177 and possibly BF163 also observed this orientation, as did an assortment of pits (BF145, BF150, BF155 and possibly BF156-BF158) and a line of stone-packed post-pits to the west (BF66, BF67 and BF68). Various interpretations may be placed on these features. The pits may be haphazard, but if related they establish a line roughly parallel to and 3.5m to 4m west of Building 186, perhaps turning west at BF150 to form an east-west line which is emphasised by the stratigraphically later stone post-pits. Given that the north-south pit line BF145/BF155/BF150 may have defined an open strip between the side of Building 186 and fenced land to the west, it remains uncertain whether the strip was within the hospital grounds or was occupied by a direct northern continuation of Simons Lane. If the latter, then the later introduction of the east-west stone post-pits could indicate a medieval diversion in the northern course of the lane which, again, is today reflected in its sharp turn to the west.

*The graves*

The small sample of Phase 1 burials consisted of four males and one of indeterminate sex, which within its limitations substantiates the suggestion (see history, p. 72) that the early hospital was an exclusively male institution. Of the three instances of possible leprosy, two belong to the Phase 1 group buried close to the 12th-century infirmary hall. The third (BG30) was found at the boundary between the churchyard and hospital grounds, an area which also contained three of the four possible cases of syphilis. Segregation between diseased hospital inmate and parish burials would almost certainly have occurred, as to do otherwise would not only disregard Lateran Council rule insisting that lepers have their own burial ground (Tanner 1990, 222-3), but also entail a remarkable level of tolerance on the part of parishioners. Although the excavated sample of graves was unbalanced in terms of distribution, condition and date (p. 111), the relatively high incidence of serious disease among the interments in the area closest to the hospital probably points to its use for inmate burial. The duration of such use is difficult to estimate, especially since the latest of the three possible syphilitics (BG26) was a post-17th-century grave. The other burials (BG34, BG37 and possible leper BG30) were stratigraphically earlier and are probably medieval, although in the absence of dating evidence these have been broadly placed in the range Phases 2-3. The post-17th-century burial, a middle-aged female, suggests that some caution is needed in assuming that all instances of major disease indicate hospital inmates. If she was a parishioner rather than almshouse occupant, it is possible that her interment here might indicate continuity of a tradition of burial of the diseased in this region of the churchyard.

*The Dissolution*

A secondary aim of the excavation and documentary research was to establish whether the hospital, as a religious establishment, operated continuously during the difficult years of the Dissolution. The pottery evidence is indeterminate (p. 140), but the succession of documentary references to various 16th-century masters and business affairs (p. 93) seems to suggest administrative continuity and probably at least a modest level of inmate occupation in spite of confiscation of hospital assets.

## Conclusions

St. Mary Magdalen's in many respects conforms to current perceptions of a small medieval leper hospital. In terms of its extra-mural location, original infirmary hall and gradual conversion to care of the long-term infirm and poor, it has many parallels. Among the finds from the site there is a lack of solid evidence for medical treatment, an absence which is consistent with the view that many of England's small medieval hospitals made scant attempt to administer cures for the body (Carlin 1990, 24).

For a leper hospital, St. Mary Magdalen's is

noteworthy for the manner in which the 13th-century church was established on the site of the hospital's original principal building with the resultant move of the infirmary hall to the northern part of its grounds and successive masters' combined responsibilities for hospital and parish. Occasionally, leper hospitals developed relationships with the outside community, some with shared use of chapels. One example from this period is St Leonard's, Northampton which in 1281 was said to have a chapel long used by local people. The conversion of a hospital building to a parish church also occurs elsewhere in this period. The infirmary hall at the Hospital of St Thomas of Canterbury at Ramsey, built on a larger scale than St. Mary Magdalen's, became a parish church in the mid 13th century (Prescott 1992, 8). However, the Ramsey hospital differs from St. Mary Magdalen's in that it is believed to have been an almshouse, accommodating the poor rather than sufferers from disfiguring disease, and it may have closed down altogether at the time of conversion as there seems to be no further record of the establishment (Knowles and Hadcock 1971, 330, 386).

A somewhat closer equivalent to St. Mary Magdalen's may be the hospital of St. Mary and St. Thomas Martyr, Ilford which was founded for lepers in the early 12th century and survives today as a much-altered chapel and six 20th-century almshouses. Standing in an outlying part of Barking parish, the hospital chapel was confirmed as a place for local worship in 1572, probably continuing a tradition of public use established in the medieval period (VCH Essex, v, 228). Structurally, little is known about the 12th-century hospital. The chapel was largely rebuilt in the early 14th century (RCHM Essex, ii, 97), but the circumstances of its reconstruction are obscure and may be unconnected with the development of public access to the building. More exact parallels to the situation at St. Mary Magdalen's may have occurred, but while knowledge of the individual histories and physical layout of most hospitals remains fragmentary, to pursue these distinctions would involve detailed research on a scale outside the scope of this project.

## Further excavation

Of the modern property adjoining the site, the only one with identifiable archaeological potential in relation to the hospital is a small wooded plot immediately to the north of Site B. Any future excavation there would offer an opportunity to uncover the northern end of Building 186, establish the extent of the hospital's medieval and later waste-pits and verify the current assumption that the pits mark the northern limit of the hospital's grounds.

## Specialists' reports

In addition to the materials covered by the following published reports and summaries, the research archive contains catalogues and assessments of the following: post-Roman brick and tile by Pat Ryan, glass by Hilary Cool, clay tobacco pipe by Mandy Marshall, Roman keyed tile by Ernest Black, flints by John Wymer, and lead samples by Justine Bayley.

## Architectural material (Fig. 18)

by Andrew Harris

### Introduction

A total of 70 architectural fragments (65 stones, 5 others) were recovered from the excavated areas; 56 derive from Site A and 14 from Site B. Most of the pieces were small and fragmentary, and a number were unworked. A full catalogue and analysis is contained within each site archive; the material is identified first by its site specific finds number, and second by a unique and consecutive cross-site architectural fragment number (AR no) assigned during post-excavation. Only material of an intrinsic and illustrative value is published here.

### Materials

The most common material was limestone (40 examples), with greensand the next most common (12 examples). Carstone, chalk, alabaster, granite and flints are represented to varying degrees. An assemblage comprising flint, chalk greensand and carstone, with additional greensand and limestone ashlar material, is typical of medieval architecture in Essex.

The single fragments of alabaster (AR 29) and granite (AR 6) are each derived from Phase 4 deposits and are likely to be 'intrusive' elements to the assemblage and probably introduced during the 19th century.

### Sources and uses

*Limestone*

In addition to a range of lithogies derived from the Lincolnshire and Northamptonshire series, material from Caen and 'marbles' from the Isle of Purbeck are identified within the assemblage.

Caen, a medium hard, white and creamy fine-grained limestone, is the largest single group in the assemblage (thirteen examples from Site A and two from Site B). The stone weathers well and, if correctly bedded, is suitable for most exterior work. Being a true freestone it allows of crisp carving.

Caen was first imported into the country soon after the Norman conquest and quickly established itself as a highly suitable and popular building material. Political upheavals in the 13th century ensured that supply was interrupted, resulting in a decline of its usage. However, in some regions, notably the eastern coastal areas such as Essex, Caen still continued to be imported well into the medieval period. Examples of Caen used in a 13th- and 14th-century context can be found at Chelmsford Dominican Friary (Harris in Harris and Isserlin forthcoming), whilst documentary sources of *c.* 1500 record harbour dues paid to the port of Maldon, Essex from a ship carrying 'carne stonys' (Clarke 1905, 117). At Canterbury (Tatton-Brown 1990, 78-9), the material has been identified from 15th-century contexts.

Within the current assemblage, only a single fragment from Site A (AR 48) can be reliably assigned a 12th-century date, as compared to eight where a date in the 13th or 14th centuries is likely (e.g. AR 26, AR 55, AR 69).

The Lincolnshire and Northamptonshire limestone belt comprises a number of lithogies each with distinctive properties, from the shelly ragstones to the fine-grained freestones. The assemblage from St. Mary Magdalen's consists of a number of categories indicating quarrying from a number of sources. The most common group (12 examples) consists of hard and medium hard, dense, pale yellow or cream oolitic, slightly micaceous rocks. Much of this appears closely related to material from the Ancaster beds, whereas a few comprising of more densely grouped ooliths would relate better to material from Ketton.

Other categories are comprised of hard, slightly oolitic, coarse shelly rocks most of which relate to material of Barnack type (five examples). Finer-grained shelly limestones resembling material derived from Clipsham account for just two examples.

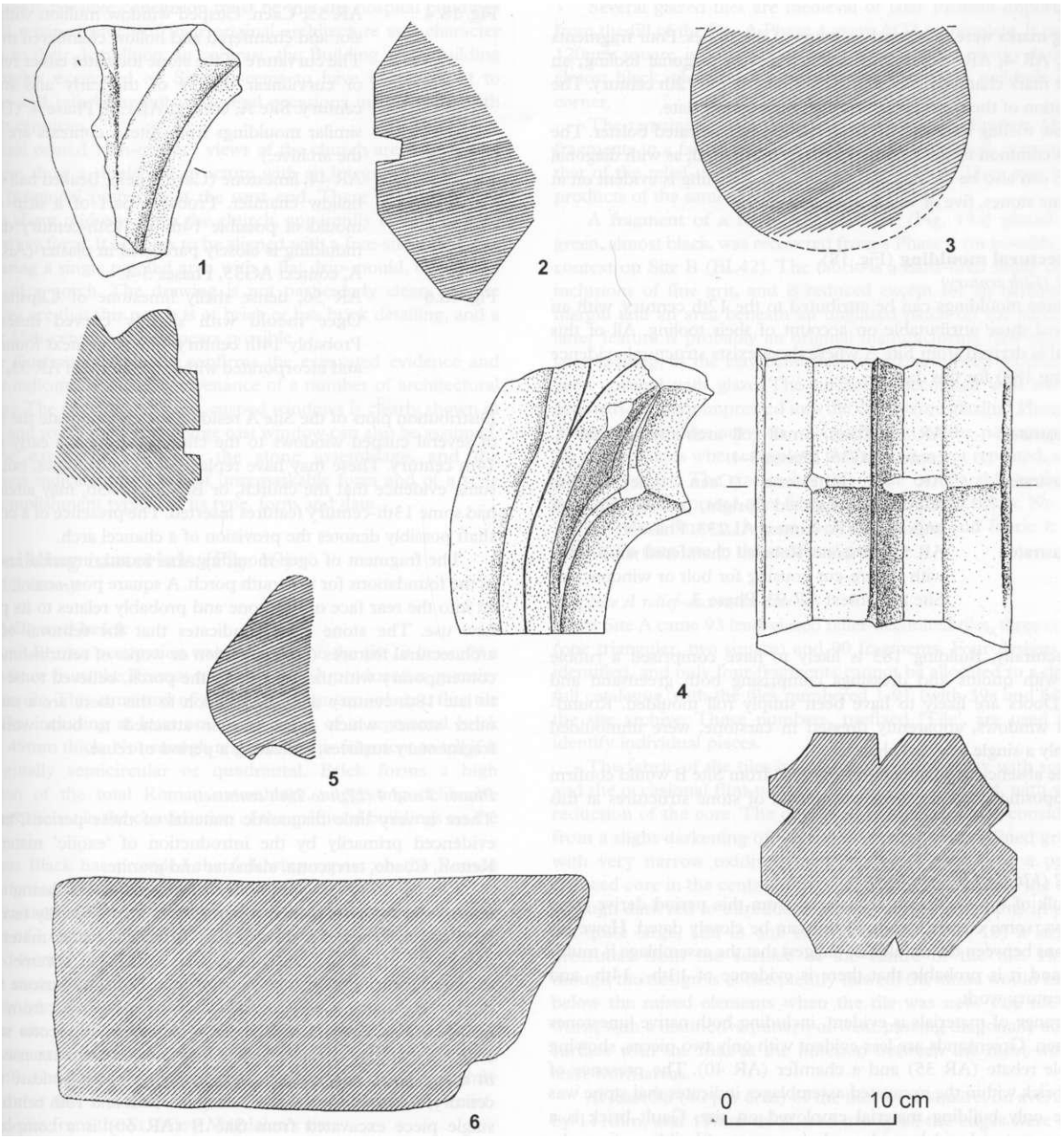



Fig. 18 Architectural material: nos 1-6

The limestones enjoyed a particularly long period of usage and are common in all periods and manner of medieval and later architecture; of the current assemblage, most derive from window mullions or jambs, but only two (AR 3, AR 57) would appear likely to be of 12th- or 13th-century origin.

Purbeck marble, a hard dense shelly limestone able to take a polish, is not a true marble, but was nevertheless favoured in architecture for its marble-like qualities. Of the four architectural pieces (one other is a fragment of a mortar, AR 43), three are from the hospital Site B, and comprise a single polished and worn surface which may therefore represent either flooring or tomb lids. A further example from Site A (AR 18) has been burnt and is very fragmentary. As examples of burnt Purbeck stones are to be found built into the walls of both St Botolph's priory and the castle at Colchester, it is possible that it represents material reused from the Roman town.

*Sandstone*

Greensand, a medium hard to soft, grey green stone with small black inclusions, is derived from deposits in the London basin. The stone does not weather well and is not generally suited to external use; on interior surfaces the stone was frequently carved and moulded and employed as architectural decoration. However, its availability to the Essex region, from at least the 11th century, has ensured its common use on a wide range of structures as an external walling material, including quoins and window and doorway facing. Virtually all twelve examples from St. Mary Magdalen's are unworked rough walling nodules; only two show vestigial use as architectural moulding of medieval date (AR 35, AR 40), whilst a single fragmentary ashlar (AR 4) is likely to be of 12th-century date.

A single carstone moulding (AR 53) occurs within the assemblage. The rock is common to the Essex region and obtained locally in the superficial strata, where the sand particles have been cemented together by iron solutions. The material is hard, coarse and varies in hue from a dark red brown to a pale blue grey. Carstone is common to most periods of architecture, where it is usually employed as rubble and sometimes for quoins. In the 12th century it was also frequently employed as facing for doorways and windows, though its properties ensured that it was seldom carved.

*Tooling*

Tooling marks were preserved on many of the stones. Four fragments (AR 3, AR 4, AR 48, AR 53) retain traces of diagonal tooling, an oblique mark characteristic of, and confined to, the 12th century. The recognition of the mark is therefore an indicator of date.

Claw tooling marks result from the use of a serrated bolster. The mark is common to the 13th and 14th centuries and, as with diagonal tooling, can also be an indicator of date. Claw tooling is evident on at least nine stones, five of which are Caen stone.

**Architectural moulding** (Fig. 18)

*Phase 1 (12th century)*

Only three mouldings can be attributed to the 12th century, with an additional three attributable on account of their tooling. All of this material is derived from Site A where there exists structural evidence (Building 183) for this date.

Not illustrated — AR 30, Caen. Small roll arch mould. Site A, context AG35, Phases 3-4.

Not illustrated — AR 49, limestone (Caen type?). One fragmentary quirked upright, possibly from an impost. Site A, context AL233, Phase 4.

Not illustrated — AR 53, carstone. Rebated chamfered jamb stone with square-cut housing for bolt or window bar. Site A, context AR 93, Phase 3.

Architecturally, Building 183 is likely to have comprised a rubble fabric with quoins and dressings comprising both greensand and Caen. Doors are likely to have been simply roll moulded. Round-headed windows, apparently dressed in carstone, were unmoulded with only a single external chamfer.

The absence of 12th-century material from Site B would confirm the supposition that this area was devoid of stone structures at this time.

*Phase 2 (13th to 16th centuries)*

The bulk of the architectural material from this period derive from windows, some cusped. None of this can be closely dated. However, variations between the moulds do suggest that the assemblage is multi-phase and it is probable that there is evidence of 13th-, 14th- and 15th-century work.

A range of materials is evident, including both native limestones and Caen. Greensands are less evident with only two pieces, showing a simple rebate (AR 35) and a chamfer (AR 40). The presence of Gault brick within the excavated assemblages indicates that stone was not the only building material employed on site. Gault brick is a common material widely evidenced on a range of buildings from the 13th to 14th centuries. In many instances the bricks were moulded, but in other cases mouldings were 'cast' in plaster fixed to the surface of the brick. A single fragment of plaster with evidence of fixing to brick (AR 1) comprising a simple hollow chamfer mould can be directly paralleled with a moulded stone (AR 44) in Caen. The mould is of an undiagnostic type, but a 14th-century date is likely.

Not illustrated — AR 57, Barnack rag. Window sill chamfered on both internal and external faces and without glazing slots. Probably 13th century. Site B, context BF2, Phase 4.

Fig. 18.1 — AR 69, Caen. Cusped window tracery with glazing slot and keeled roll. Mid to later 13th century. Site B, context BL9, Phase 4.

Fig. 18.2 — AR 23, Barnack. Window mullion with glazing slot and chamfered faces. 13th/14th century. Site A, context AL233, Phase 4. (Details of similar mouldings from Site A contexts are given in the archive.)

Fig. 18.3 — AR 11, limestone (Caen type?). Roll mould (diameter 165mm) showing sharp arris to rear at union with further rolls. Possibly part of a composite shaft to a major feature of 13th- or early 14th-century date. Site A, context AG2, Phase 4.

Fig. 18.4 — AR 55, Caen. Cusped window mullion with glazing slot and chamfered and hollow chamfered moulding. The curvature of the stone indicates either reticulated or curvilinear tracery of the early and mid 14th century. Site A, context AL136, Phase 4. (Details of similar mouldings from Site A contexts are given in the archive.)

Fig. 18.5 — AR 44, limestone (Caen type?). Beaked half-roll with hollow chamfer. Probably part of a drip of hood mould of possible 14th- or 15th-century date. The moulding is closely paralleled in plaster (AR 1). Site A, context AG35, Phases 3-4.

Fig. 18.6 — AR 56, dense shelly limestone of Clipsham type. Ogee mould with slightly curved inner order. Probably 14th century. Site A, context found reused and incorporated within the fabric of AR 33, Phase 3.

Distribution plots of the Site A residual material indicate the insertion of several cusped windows to the church during the early and mid 14th century. These may have replaced earlier windows, but there is some evidence that the church, or Building 183b, may already have had some 13th-century features inserted. The presence of a composite shaft possibly denotes the provision of a chancel arch.

The fragment of ogee moulding was found, inverted and reused in the foundations for the south porch. A square post-setting had been let into the rear face of the stone and probably relates to its period of new use. The stone clearly indicates that the removal of certain architectural features (i.e. demolition or works of refurbishment) was contemporary with the erection of the porch, believed to be of 17th- to late 18th-century date. In addition to this there are a number of other stones which show mortar attached to both worked and fragmentary surfaces, indicating a period of reuse.

*Phases 3 and 4 (17th to 20th centuries)*

There is very little diagnostic material of these periods; activity is evidenced primarily by the introduction of 'exotic' materials, i.e. Ketton, Coade, terracotta, alabaster and granite.

Ketton stone is commonly employed as a facing material throughout the post-medieval period and was especially favoured by 19th-century masons. Coade, an artificial stone material, was developed in the 18th century, after which it became popular, favoured for its ability to be 'cast' or moulded into intricate forms. A single fragmentary piece (AR 41) was recovered from Site A, insufficient to determine its form or function. Terracotta is also an artificial material capable of moulding and has been extensively used in many great and not so great buildings since at least the 16th century, undergoing a revival during the 18th and 19th centuries. The single piece excavated from Site B (AR 60) is a composite 'tile' showing fleur de lys in relief and is probably of 19th-century date. Alabaster was Commonly used in the medieval and post-medieval periods for a range of monuments or similar ancillary structures. The single piece from Site A (AR 29) shows a roll and fillet and is not otherwise capable of being assigned a date. However, as it was found within a Phase 4 grave infill (AG40), it is possible that it is debris derived from the demolition of the church.

**Discussion**

There is an obvious distinction in not only the quantity but also the quality of material excavated from the two areas. Material from Site A far outnumbers that from Site B, and in addition is of a more diverse range. The assemblage from Site A would be typical of any similar multi-phase church excavations; it comprises ashlar material, moulded jambs and mullions derived from a number of identifiable chronological periods. Its range accords with the site's known history as a 12th-century building, enlarged and extended in the medieval periods and retained in use until its demolition in the mid 19th century.

Site B, on the other hand, produced a very limited range of materials. Although the structures would appear to have been in use almost as long as those on Site A, in any other circumstances the restrictive nature of the material would suggest & single-phase occupancy.

The only possible conclusion must be that the hospital buildings in Site B retained much of their original architecture and character right up to their demolition. In contrast, the Building 183a/Building 185 complex excavated on Site A seems to have been subject to additions and refurbishment on several occasions in the 13th, 14th and 15th centuries.

Several related 18th-century views of the church are known (Fig 17). These show a single cell structure with an integral bellcote and curious polygonal pinnacles at the west end. There is a prominent doorway about midway down the church, apparently of mid to later 13th-century form. It appears to be aligned with a free-standing gable wall housing a single pointed arch with a flat drip-mould, the ruined remains of a porch. The drawing is not particularly clear, but the indications are that this porch is of brick or has brick detailing, and a 14th- or 15th-century date appears possible.

The illustration generally confirms the excavated evidence and certainly indicates the likely provenance of a number of architectural fragments. The presence of large, cusped windows is clearly shown in the west and south walls and a large east window can also be assumed. Both the excavated evidence, the stone assemblage, and the illustrations indicate a building of unremarkable form and of a style and accomplishment typical of its type, form and date.

## The building materials (Fig. 19)

by Nina Crummy

### Roman tile and brick

Though no Roman occupation was observed on the site, it lies only a short distance from the Roman town and Site A produced a quantity of Roman tile. This consisted of *fragments of tegulae, imbrices,* flue tile and bricks, including at least one small piece of a segmental brick which is 49mm thick. Not enough remains of this fragment to tell if it was originally semicircular or quadrantal. Brick forms a high proportion of the total Roman assemblage, suggesting deliberate selection for reuse in the construction of the medieval buildings on the site.

Ernest Black has provided the following report on the Roman relief-patterned tiles and bricks:

Roller-stamped flue tile is represented by a small, very abraded, fragment of Lowther's 'florid' Die 9 (Lowther 1948, 27), which was recovered from a Site A Phase 3 ?floor surface (AL112).Though Die 9 has an extensive distribution from Kent to Lincolnshire, it has not previously been recorded from Colchester, and is known from only one other site in Essex, the rural site at Rayne (Black 1989, 20-21), where it was associated with Dies 13, 16 *(ibid.,* 29), and 5aA (Rudling 1986,210).The Rayne assemblage is dated to *c.* AD 120-30 or slightly later, and this date is similar to that of the collection of other relief-patterned tiles from the St. Mary Magdalen's site.

This consists of thirteen fragments of combed flue tile and four of scored tile. Many of the combed tiles show evidence of reuse, and have combing similar to assemblages excavated elsewhere in Colchester *(CAR* 6, 261-72). One of the scored fragments is from a flue tile, two are from *pila* bricks, as may also be the fourth, which has a surviving thickness of approximately 30mm.

### Medieval and later floor tiles

Forty plain floor tiles were examined, 34 of which are glazed, the others, at least one of which is Flemish, are worn and bear no trace of glaze. Four, though externally oxidised, show some patchy reduction on the upper face which suggests that they may originally have been glazed.

Three of the unglazed pieces are similar in size and fabric. Two are about 105mm square and the third is triangular, cut from a similarly-sized square tile. The upper surface was scored before firing and the tile snapped in two later. The fabric is a hard-fired sandy clay with some grit and the occasional flint pebble. The tiles are oxidised, with variable reduction of the core and upper face. They are similar to locally-made relief-decorated tiles described below, though slightly smaller, and are also probably of local manufacture. They can be ascribed a general later medieval or early post-medieval date, but all are residual in grave fill, two from Phase 3/4 contexts and one from Phase 4.

Several glazed tiles are medieval or later Flemish imports. One, from the fill of the Site A Phase 4 grave AG3 is complete. It measures 120mm square, is 25mm thick, and retains patches of very dark green, almost black, glaze on the upper face. There is a nail-hole in each corner.

The remaining plain tiles are almost certainly English. Many are fragments in a fabric and of a thickness that is closely comparable to that of the relief-decorated tiles described below. They may be plain products of the same kiln.

A fragment of a relief-decorated tile (Fig. 19.i) glazed a deep green, almost black, was recovered from a Phase 4 (or possibly earlier) context on Site B (BL42). The fabric is a hard-fired sandy clay with inclusions of fine grit, and is reduced except for an oxidised lower margin and an area beneath an unglazed patch on the surface. The latter feature is probably an original manufacturing flaw rather than later spalling, as the clay beneath it would have been reduced had it been covered with glaze. The surface is decorated with a complex geometric pattern impressed into the clay before glazing. Though only 25mm of one edge survives, reconstruction of the pattern gives the tile's dimensions when complete, assuming it is not repeated, as about 110mm square. The size makes this piece comparable to the major collection of decorated tiles from Site A described below. No parallel for this tile is known, but on the basis of size and fabric it can be assigned a date late in the medieval period.

*The Site A relief-decorated tiles*

From Site A came 93 lead-glazed relief-decorated tiles, three complete (one triangular, two square) and 90 fragments. Four designs can be identified, and only four fragments cannot be allocated to a design. A full catalogue, with the tiles numbered 1-91 (with 59a and 61a) is in the site archive. Those numbers, prefixed 'Tile', are used here to identify individual pieces.

The fabric of the tiles is a hard-fired sandy clay with some grit and the occasional flint pebble. The tiles are oxidised, with variable reduction of the core. The degree of reduction varies considerably, from a slight darkening of the red fabric to a well-defined grey core with very narrow oxidised margins. Most tiles show a patchily-reduced core in the centre of the tile, fading outwards to the corners through dark red to unreduced fabric. Some of the flints in the tiles are quite large, and in one case (Design A, Tile 10) a large flint protrudes from the surface in the centre of the tile. However, though the design is consequently flawed, the stone would have lain below the raised elements when the tile was new. The tile is well worn, with a distinctive pattern of wear passing diagonally across its surface with the flint at the junction between the most worn and least worn areas.

At least 38 (40 per cent) of the tiles were square, on average 111 by 111mm, and 19mm thick, and nearly all the edges were at least slightly bevelled. One of the complete square tiles (Design A, Tile 1) is scored diagonally on the underside into two triangles, and at least two of the tiles (Design A, Tile 35, fragment; Design D, Tile 73, complete) are triangular, of a size commensurate with a square example cut diagonally in half. The triangular pieces can be assumed to have been made to provide a straight edge to a rectangular pavement in which square tiles were set diagonally.

Tile 35, a fragment of a triangular tile, was cut to shape before the original square tile was glazed, probably when it was leather-hard. Its diagonal edge is cleanly and fully cut, and bears dribbles of glaze. In contrast, the diagonal edge of the complete triangular tile (Tile 73) shows that the original square was only partially cut, and was then snapped in two after glazing and firing, presumably when a triangular tile was required as the pavement was being laid. These two tiles and the scored line on the underside of the square tile show that a certain number of triangular tiles were made before glazing and firing, and this number, should it prove inadequate, could be supplemented on site from scored square tiles.

Both scoring tiles on the underside and cutting triangles before firing contrasts with the method used to produce subdivisions of basic square tiles at the late 13th- to early 14th-century tile factory at Danbury in Essex. There, plain glazed floor tiles were scored on the upper surface before being fired, and only later snapped along the scored lines (Drury and Pratt 1975, 112). If plain tiles are to be

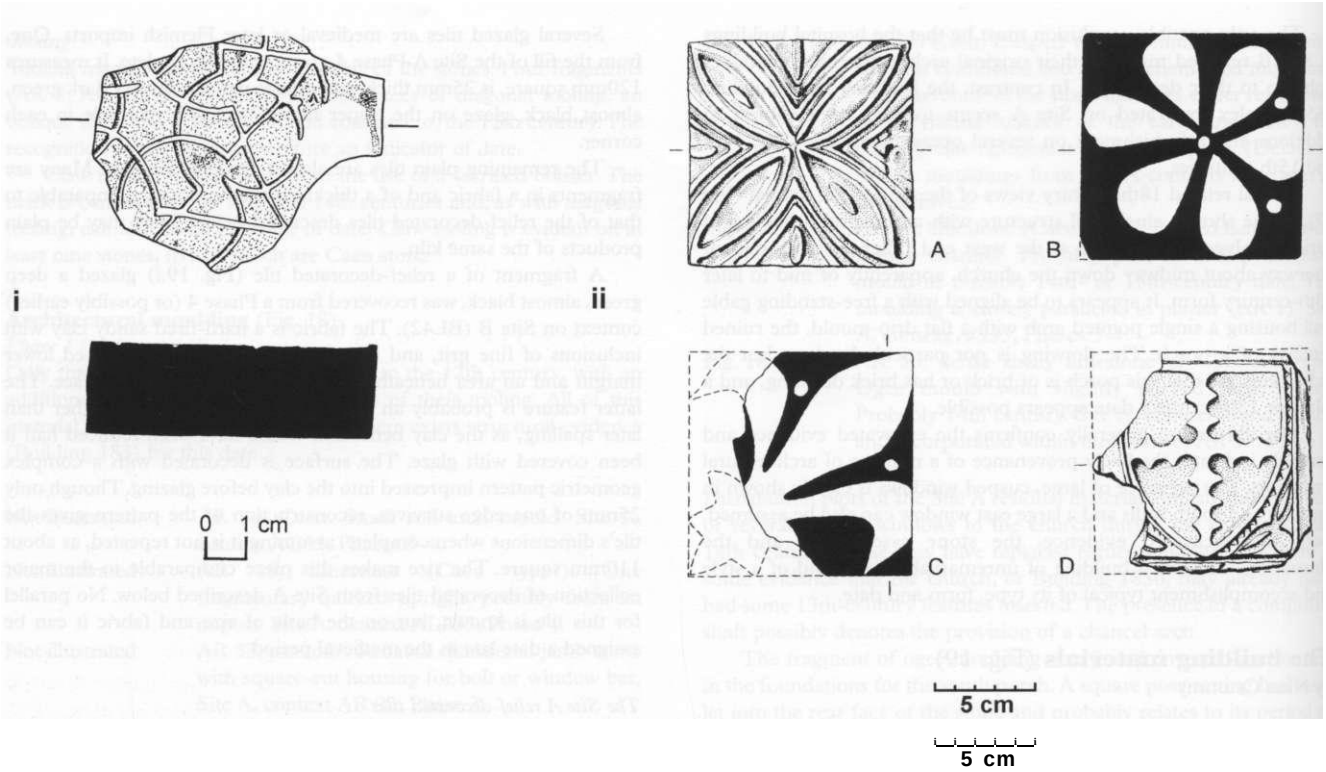



Fig. 19 Building materials: i and ii, scale 1:2
i Relief-decorated tile SF 1 from Site B. ii Patterns A-D on relief-decorated tiles from Site A.

snapped after firing, then it is clearly best to have the scored line on the upper surface to minimise damage to the glaze. However, if relief-stamped tiles are scored on the upper surface, the design will be blurred by clay being pushed ahead of the knife and dragged along the scored line after it. Scoring the upper surface before it was decorated would not be a reasonable alternative, as the scored line would be at least partially eradicated by the application of the stamp.

The four designs on the tiles are: A, a four-petalled floret, the petals pointing into the corners and the spaces between filled with tracery; B, a six-petalled rosette, with a central dot of white slip and other dots in the field; C, a fleur-de-lys, also with dots of slip in the field; and D, a shield, accentuated on the curved edges by a toothed line, and bearing a cross engrailed in relief, with a triangular frame filled by a counter-relief mouchette in the spandrels. All four designs are paralleled at St Giles' church, Colchester *(CAR* 9, fig. 5.25, A, B, CI, D: reproduced here in Fig. 19.ii), where the assemblage also included a second fleur-de-lys design *(ibid.,* C2).

On most of the tiles a basic lead glaze was used, which, where it overlay the fabric produced a dark to mid brown surface colour, speckled with green from iron impurities in the glaze, the speckles being more obvious on the lighter browns. In a few cases copper had been deliberately added to the glaze in sufficient quantity to produce a greenish-brown surface colour, still green-speckled, referred to here as khaki.

Many of the tiles were also partially painted with a white slip to produce two colours. Combined with both the basic lead and copper-enriched glazes the slip has produced a yellow surface colour, though on many tiles the slip has been unevenly applied and the result is a yellow-mottled brown or khaki. On only one example (Tile 52) does slip appear to have been used across the while surface and this identification, being unique and from a very worn fragment, should be regarded as suspect.

The colours used on the tiles are summarised, by design, in Table 1. Some tiles are so worn that only faint traces of glaze, slip, or relief-pattern remain, and the numbers given here represent the maximum possible. Given that many of the pieces are small fragments, many are very worn, and that the slip, where used, was often applied skimpily, it is likely that some of the pieces catalogued as monochrome were in reality two-coloured.

*Table 1: Colours on relief-decorated tiles from Site A.*

| Design | Brown | | Brown/ yellow | | Khaki | | Khaki/ yellow | | ?Yellow | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | no | % | no | % | no | % | no | % | no | % | |
| A | 30 | 50 | 22 | 35 | 3 | 5 | 5 | 8 | 1 | 2 | 61 |
| B | 4 | 80 | 1 | 20 | | | | | | | 5 |
| C | 6 | 100 | | | | | | | | | 6 |
| D | 2 | 12 | 11 | 65 | 1 | 6 | 3 | 18 | | | 17 |
| uncertain | 3 | | 1 | | | | | | | | 4 |
| **Total** | **35** | | **44** | | **5** | | **8** | | **1** | | **93** |

The four designs can be split into two groups: A and D, which make use of outline and counter-relief, and B and C, where the motifs are solid figures, raised above a dark background. The first group are more numerous; there are 61 examples of Design A and 17 of D, compared to only 5 of B and 6 of C. Designs B and C were moulded (Keen 1972, 140), while Designs A and D were stamped onto a blank *(ibid.,* 141). On one Design D tile (Tile 71), the stamp has been applied both off-centre, leaving an unstamped flange on one side, and with unequal pressure, so that surface on the opposite side is scarcely marked. A Design D tile in Colchester Museums (unprovenanced, but probably from St Botolph's Priory) was stamped twice, the second impression being about 1mm off the first. This tile may also be a waster *(CAR* 9, 232, 234).

On Designs B and C slip was painted onto the raised elements so that they showed yellow against a brown field. On most of the tiles the slip has been worn off, it survives on the raised parts of only two tiles (Tiles 63 and 66), but on all but a very worn khaki-coloured tile (Tile 64) the slip ran down onto the field and is now evident beneath the glaze right up against the edges of the raised elements.

On Design A slip was also painted onto specific areas, but not in this case the raised ridges of the petals and tracery, only the hollow within the four petals and the 'V in the centre of each side. Thus the floret was enhanced by the contrast between relief in one colour with counter-relief in another. However, on Tile 59a the slip has been splashed or run onto one ridge of a petal.

Design D makes use of slip both as on Design A (counter-relief), and as on Designs B and C (raised elements). The inside of the mouchette in the spandrels was slip-painted. But so also was the relief

engrailed cross on the shield, which thus stood out in emphatic relief as yellow against a brown or khaki field.

The technique used on the St. Mary Magdalen's tiles, applying the slip as toning to the relief design, is unusual. On Designs B and C the colour seems essential to the design; without it the raised parts of the floret and fleur-de-lys would not stand out sharply against the background. The inclusion of freehand dots in the field links these two designs to Keen's painted ('slip-decorated') tiles (Keen 1972, 147). However, examples from St Giles' church are monochrome (CAR 9, 232), suggesting that the use of two colours was either a later improvement on an originally monochromatic design or an indication of a more costly product. The latter is perhaps most likely, as on tiles of Designs A and D the tone appears to be used as an optional enhancement. It is definitely absent on some tiles, most notably the complete example of Design A (Tile 1), and has been confirmed as absent on other pieces by semi-quantitative analysis using energy-dispersive X-ray fluorescence (XRF).

If the toning of the St. Mary Magdalen's tiles is unusual, so the individual designs are paralleled only by tiles from Colchester and one of its neighbouring villages, though they make use of patterns common enough in the repertoire of medieval tilers *(ibid.,* 232-4). The tiles must therefore be of local manufacture *(ibid.).*

All the tiles show at least some wear, most are very worn, and one is so worn that the surface is smooth. Designs A, C, and D were found scattered over a wide area, while Design B was concentrated at the east end of the church. The deliberate deposition of a complete tile of Design A (Tile 1) in grave AG173, placed face down between the femurs and with the diagonal aligned on the body, suggests that this individual was directly associated with the tiles. The precise association is unclear, but possibilities include tile-maker, donor, or paviour (or any combination of the three).

Given this direct association, the date of grave AG173 should provide the best evidence for the date of the tiles. Unfortunately, only a date range of Phase 2 *(c.* mid 1200s to 1610) has been allocated to this burial. Table 2 shows four Design A tiles deriving from Phase 2 (Tiles 1, 8-9, 37), and five of Design D (Tiles 73-77). All but Tile 1 are residual in their contexts. Seven of the nine are from levelling (AF127) over a Phase 2 grave (AG109) within the church, and three of those seven have been reused. The other tile from Phase 2 comes from the fill of grave AG108, also within the church and likely to be similar to AG109 in date (Tile 37).

*Table 2: Date of relief-decorated tiles (unstratified tiles and those of uncertain design have been omitted). Phase 2:c. mid 1200s to 1610; Phase 3:1610-1852; Phase 4, 1852 and later.*

| Design | Phase 2 | Phases 2-3 | Phase 3 | Phases 3-4 | Phase 4 | Total |
|---|---|---|---|---|---|---|
| A | 4 | 1 | 23 | 2 | 25 | 55 |
| B | | | 3 | | 2 | 5 |
| C | | | 2 | | 2 | 4 |
| D | 5 | 1 | 2 | 3 | 5 | 16 |
| Total | 9 | 2 | 30 | 5 | 34 | 80 |

That no Design B or C tiles were recovered from contexts earlier than Phase 3 may suggest that they are later in date than Designs A and D. However, fewer were recovered in total, so their absence from earlier contexts may not be a valid indicator of date. All four designs were found in association at St Giles' church *(CAR* 9, 234), pointing to their being contemporary. They also show great similarity in fabric and size.

Dating evidence from other Colchester sites is as unspecific as that from St. Mary Magdalen's. At St Giles' the earliest stratified, though residual, fragment came from a post-pit dated from the early 16th century to 1648, and most were residual in contexts dated 1648-1819. From excavations at St Botolph's priory (unpublished site archive, Colchester Archaeological Trust), two examples came from post-medieval contexts, destruction debris and topsoil, though a fragment from a tile that may match the St. Mary Magdalen's series came from a pre-Dissolution floor in the south transept, giving a *terminus ante quern* there of 1535 (CAR 9, 234). Major improvements to most religious houses were unlikely from then on, and the latest possible *terminus ante quern* at St. Mary Magdalen's is provided by the confiscation of the hospital under Edward VTs Act of 1547 suppressing gilds and chantries (Martin 1959, 45-7).

Relief-decorated tiles are often assigned a general 14th-century date (e.g. Keen and Sherlock 1972, 200). The lack of strong stylistic links between these tiles and others from England *(CAR* 9, 232-4), together with their unusual use of toning, suggests that they may be rather later in date, and a range from the late 14th to the 15th century is therefore probably most appropriate, though an early 16th-century date cannot be completely discounted *(ibid.,* 234).

**Medieval and later roof tiles and bricks**

Five fragments of 12th- or early 13th-century roof tiles were recovered from Site A, four of them reused in the foundations for the Phase 2 church, AF75, AF227, AF228, and AL166. All are about 15mm thick and made from a distinctive gritty fabric, with only very narrow oxidised margins. The largest fragment measures 86 by 130mm, neither dimension being complete. Four of the five are coated on the upper face with a very dark brown lead glaze, the glaze on the fifth is a lighter brown with a greenish tinge, probably from iron impurities rather than from the deliberate addition of copper. The glaze is unworn, and the surface of the tiles uneven. Three fragments of similar roof tiles came from Site B BF141 and BF142.

The earliest brick fragment from Site A is part of a 13th- or 14th-century cut brick (Harley 1974, 64), probably an import from the Netherlands. From the Phase 2 robbed foundation AF183, it is 104mm (about 4 in.) wide, 122mm long (at least half the length is missing), and 40mm (1.5 in.) thick along one long edge tapering to about 30mm (1.25 in.) along the other.

Of 14th-century date are bricks from Site A Phase 3 dump/make-up, AF90 (214 x 108 x 40mm; 8.5 x 4.25 x 1.5 in.), from ?backfill in the Site A Phase 4 robber trench, AF152 (moulded; 207 x 102 x 52mm; about 8 x 4 x 2 in.), and from Site B Phase 3 make-up BL47 (fragment, more than 100mm wide and 50mm thick).

The remaining bricks are all post-medieval. From a Phase 3 pit on Site B (BF138) and a Phase 3 wall (BF47) in Building 187 on Site B came fragments of Tudor bricks, 110mm wide and 55 to 60mm (9.25 by 4.25-4.5 in. thick). Also from Building 187, though from a brick base BF119, dated to late in Phase 3, came two late 17th- or early 18th-century bricks, both measuring about 230 x 110 x 55mm (9 x 4.25 x 2.25 in.).

Moulded bricks sampled from the walls of the south porch (Site A, features AF30, AF31, AF32, AF33) are all clearly from one supplier. They measure about 234 x 110 x 50mm (about 9.25 x 4.25 x 2 in.). A fragment from a similar brick derives from the Site A Phase 3 foundation AF80.The porch was built between 1730 and 1832, but the size of the bricks and the absence of a frog suggests that they are 17th century in date and either came from an old stock-pile or were reused.

*Slates*

The largest collection of early roofing slate from the town and suburbs was recovered from Site B, scattered throughout both Phase 1 and Phase 2 contexts. All are of 'blue' slate, appearing here as a dark grey weathered to silvery greenish-grey, with iron-rich deposits between the laminae. One fragment is a dull purple, but is likely to be only a colour variant within the slate beds, rather than indicative of a different provenance. None of the fragments is anywhere near complete, and only one retains a nail-hole, but the larger pieces suggest that they were of subrectangular form with a single nail-hole near the centre at the upper end *(cf.* Allan 1984, e.g. fig. 168, 137).

In medieval Exeter, roofing slates were first used in the early 12th century, though a robber trench in the Cathedral Close contained a number of fragments that may have come from a late Saxon building (ibid., 300). While Exeter is close to several sources of slate *(ibid.,* fig. 169), some of which were also exploited in the Roman period, it seems unlikely that the St. Mary Magdalen's hospital was sufficiently well-endowed at its foundation to set a local lead in importing slate. The paucity of this material in Colchester is matched at King's Lynn, Norfolk, where only a single medieval slate, probably from the Cotswolds, was recovered from excavations in the town (Geddes and Dunning 1977, 320). However, by the early 13th century the use of

slates was becoming more widespread in England Qope and Dunning 1954), their increased use possibly stimulated by regulations imposed on roofing materials aimed to prevent the spread of fire (e.g. Schofield 1984, 76). The scatter on the St. Mary Magdalen's site presumably indicates that at least some of the Phase 1 hospital buildings were roofed with slate, either originally or as part of maintenance or upgrading.

**Acknowledgements**

I am indebted to Justine Bayley of the Ancient Monuments Laboratory of HBMC for carrying out X-ray fluorescence analysis of some of the relief-decorated floor tiles. Geoff Egan, Ian Betts and Sue Pringle of the Museum of London Archaeology Service kindly gave their advice on some of the small finds and building materials, and John Clark of the Museum of London generously loaned relevant publications. To all of them I am extremely grateful. Comments on the Site B bricks and tiles are taken from the archived assessment by Pat Ryan.

## Medieval decorated window glass (Fig. 20)

by C. Pamela Graves

*Summary*

Approximately 225 sq cm of medieval potash window glass are included in this report. The majority of fragments are undiagnostic, but the occurrence of small birds and some naturalistic foliage suggests a composition of grisaille with a border of birds and foliage, possibly highlighted with yellow stain, and dating to between the late 13th century and the early 14th century. Site distribution plots indicate Building 187 to be the source of the late 13th- to early 14th-century material. One fragment of early to mid 13th-century glass appears to be associated with Building 186. It has not been possible to discern the quality of painting or glazing, although grisaille glass was the cheapest form of painted glass available.

*Methodology*

The window glass was quantified by area since this can be related to function. It is misleading to give merely the number of fragments, since six fragments may represent less than 6 sq cm, whereas a different six fragments may represent greater than 60 sq cm of a window. The fragments were measured to the nearest half of a square cm using a 1 sq cm grid. Assessments of the date of fragments, where possible, have been made on the basis of analogy with art-historically-dated glass *in situ.* The *Corpus Vitrearum Medii Aevi* (Newton 1979) numbering system for windows has been used for reference where appropriate.

*Composition and decay*

The glass displays a fairly consistent progress of decay. In this report, 'opaque' denotes the dark grey-brown corrosion product of potash glass; there was no soda-lime glass present. The corrosion patterns in the assemblage are consistent with a potassium composition. Pitting of the external (unpainted) surface, a result of exposure while part of a window, is evident on many examples. Only on one piece had the corrosion progressed to the inner face (PG 27 *344,* BF144), and this was no doubt due to post-depositional leaching of the potassium in the soil. Most of the glass was originally 'white', that is, essentially colourless.

*Manufacture*

The presence of fire-rounded edges is evidence of the cylinder method of flat glass manufacture, the edges being those cut in opening out the cylinder and subsequently melted down when the cylinder was placed in an oven for flattening out (e.g. PG 6 *115,* BL15; PG 9 *127,* BL15).

Painted decoration is red-brown, typical of medieval iron-oxide based paint. The most identifiable of the fragments of painted design can be described by the term grisaille: that is, predominantly white glass painted with stylised or repeated designs of foliage, and set in largely geometric patterns or used as a background to coloured panels.

There is no discernible evidence for coloured glass (pot metals), but deposits on the external face of PG 9 127, BL15 suggest that silver sulphide was applied to give a yellow stain on this piece at least. The technique is known to have been used in England from *c.* 1307-12, in the Heraldic Window, York Minster *(CVMA* nXXIII; Marks 1993,38). Since the piece is no longer transparent on any of the area to which this deposit has been applied, it is not possible to verify the colouring. Washes of a dilute form of the red-brown iron-oxide based paint which was normally used on glass were often applied on the reverse of panes to emphasize certain points in the design, or to add depth and contrast. This technique was used widely from at least the 12th century. Such washes often precipitate corrosion, especially in the soil, and when the glass is in this condition it is not possible to distinguish the two techniques satisfactorily.

A number of fragments are marked with a narrow white stain around the edges where the lead cames overlapped the glass. Only one context produced a rectangular pane of a type often found in proliferation from excavated window glass debris, that is the plain border or glaziers' side strip, used to frame the decorated panels (PG 17 *137,* BL15). Such pieces provided sacrificial panes which could be broken to remove the decorated glass intact if repairs or releading were necessary.

Most of the glass is of a consistent thickness, but three small pieces are very fine, approximately 2.00mm thick or less (PG 16 *137,* BL15). Glass of the 12th-late 13th centuries, as a rule, is thick, usually varying between 2.50 and 6.00mm. It is a phenomenon observed in the west windows of York Minster (David O'Connor pers. comm.) and excavated window glass from the Gilbertine Priory of St Andrew, York (Kemp and Graves 1996, 285-8) that some consistently thin window glass was available in the second quarter of the 14th century. Several hundred pieces of glass in good condition and measuring between 1.00 and 2.00mm thick were recovered from pit F8 at Colchester Castle in 1964, and have been assigned to the late medieval period. Painted glass datable to the mid 14th century found in the same pit measured 1.00mm thick (O'Connor 1982, 354-5). It is clear that such thin glass was available in Colchester in the 14th century. By the mid 16th century, the glassmakers of the English Weald had achieved a more consistent product, but this was dark green, shiny, uncorroded and relatively clear, thus distinguishable from the pieces found here (Kenyon 1967, 104).

Whilst there is both documented and archaeological evidence for the manufacture of white window glass in the Weald from the 14th to 17th centuries, by far the majority of medieval window glass in the British Isles is unprovenanced in terms of origin (Kenyon 1967 passim).

*Dating and stylistic affinities*

Only one fragment suggests the presence of early to mid 13th-century trefoil grisaille on a cross-hatched ground (PG 27 *344,* BF144).

A few pieces may have been contemporary components of a larger composition. Two birds of similar size and execution may well have come from a border such as that excavated at Bradwell Abbey, Buckinghamshire, and dated to *c.* 1270 (Croft and Mynard 1986, fig. 8). Birds, along with other zoomorphic motifs, and hybrid mythological beasts, appeared in the marginalia of illuminated manuscripts from the late 13th century (cf. Alexander and Binski 1987, 354-7). They appear increasingly in glass windows throughout the first half of the 14th century, usually amidst foliage (e.g. York Minster south aisle, sXXXI and sXXXII; north aisle nXXV; for a fuller discussion see Marks 1993, 153-4). The Bradwell border accompanies a grisaille panel consisting of tight trefoils on a plain ground. Sometime between the third and final quarters of the 13th century, more naturalistic foliage started to be introduced into grisaille painting, similar to the example from Colchester (PG 13 *127,* BL15). Naturalistic leaves appear in grisaille in the chapter house of York Minster, *c.* 1285-90; the chapter house vestibule of Wells Cathedral, Somerset, *c.* 1286; the parish church of Stanton St John, Oxfordshire (nIV), *c.* 1285-1300; Chartham, Kent (sIV, sV, nIV, nV), *c.* 1293/4-1300; Merton College Chapel, Oxford, *c.* 1294 (O'Connor and Haselock 1977, 334-41; pi. 9; Marks 1993, 147, fig. 118; Newton 1979, 188-9; Winston 1867, 99, pi. 18; Marks 1993, 148, fig. 119; 152, fig. 123). Naturalistic grisaille continued to be used into the mid 14th century, increasingly within diamond-shaped quarries. The Colchester example suggests a quarry shape. It is therefore possible that the

Colchester fragments formed part of a grisaille field which was bounded by a bird and foliage border.

Alternatively, the birds could have featured in heraldry, again set on a grisaille field, and within the same date bracket of the late 13th/first half of the 14th century.

The above could provide a context for many of the pieces of glass which have small details of painted design, too fragmented to be diagnostic but which have all been executed on a plain or a solid ground (e.g. PG 7 *127*, BL15). Similarly, the fragment which was putatively yellow stained may have been part of the inhabited foliage border (PG 9 *127*, BL15); as may PG 4 *86*, BL7; PG 15 *127*, BL15. The only piece to have come from a medieval context, PG 28 *373*, BF84, probably formed an edge piece from a diamond quarry lattice. It is plain, and is likely to have come from a largely undecorated window, but it cannot be ruled out that it too may have come from a grisaille panel of the kind described above.

Grisaille panels, from the late 13th century to the mid 14th century, were used either as grounds on which to set coloured panels, featuring heraldic shields or figures; or to separate larger coloured and historiated panels in what are known as 'band windows' (cf. York Minster chapter house and nave aisles). It is not surprising, therefore, to find fragments of what may have been chain mail (PG 18 *137*, BL15) or ermine trim (PG 26 *137*, BL15).

*General conclusions*

The majority of fragments (PG 1 to PG 26) were recovered from deposits associated with the 19th-century demolition of Building 187, indicating that at the time of its destruction the building retained elements of at least one late 13th- to early 14th-century window. The only anomaly seems to be that the fenestration represented by this glass took place at a time when the institution was relatively poor financially. Grisaille, however, was the cheapest of the forms of painted glass available at this time (Knowles 1936, 49, n.2 citing Cotton MS Galba, E.W. fol. 28b; and *cf.* Marks 1993, 134-7).

Only one small fragment shows stylistic traits earlier than the late 13th century (PG 27 *344*, BF144). It came from the fill of a Phase 3 gully located 2m to the west of Building 186, which appears to be the structural source of this piece.

A small quantity of painted window glass was recovered from Colchester Castle in 1964, but no stylistic or dating comparisons can be made with this sample (see O'Connor 1982).

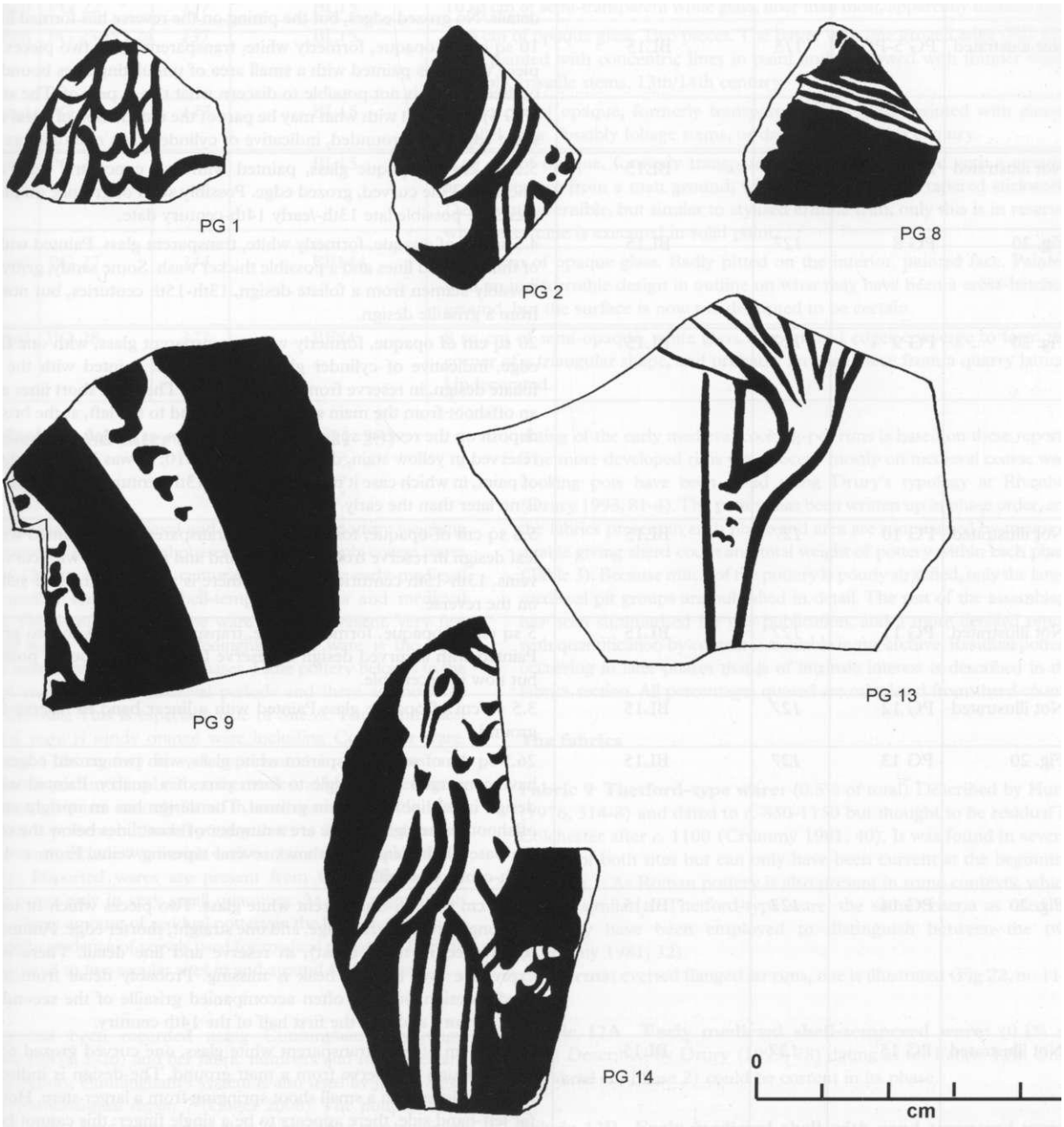



Fig. 20 Medieval decorated window glass: PG 1-PG 2, PG 8-PG 9, PG 13-PG 14.

Grisaille window glass and border designs tend to be found amongst the debris of a religious site since they formed the peripheral zones of most windows, and would be less valued than the coloured panels which occupied the central areas of the lights. Indeed, the grisaille may have been broken in an attempt to retrieve the coloured panels, either for reuse in windows elsewhere or for cullet. Since the lead was amongst the most valuable of the fittings from the point of view of reuse, the broken, unvalued, peripheral glass would be neglected, and either trampled into the ground close to the destruction, found in piles where the lead cames were extracted from them, or in dumps and pits where general debris from these asset-stripping operations was swept away.

*Catalogue of window glass*

Please note: the entries are prefaced by a catalogue number (PG) for identification. Then follows the find number (in italics), and then the feature or layer number.

| | | | | |
|---|---|---|---|---|
| Fig. 20 | PG 1-PG 2 | *86* | BL7 | 12 sq cm of opaque, formerly white, transparent glass. Two fragments from a bird; one painted with a folded wing and the upper portion of a tail, grozed to a curved edge following the design; the other painted with breast feathers and possibly the top of the wing, two grozed edges. Cf. PG 14 127, BL15. Second half of the 13th century into first half of the 14th century. |
| Not illustrated | PG 3 | *86* | BL7 | 3.5 sq cm of opaque, formerly white, transparent glass, painted with thick band parallel to the single, straight grozed edge. A second, thinner line parallel to this, but covered with encrusted sand. Overall design indiscernible, possibly grisaille. |
| Not illustrated | PG 4 | *86* | BL7 | 10 sq cm of opaque, formerly white, transparent glass, painted with two tapered in-curving lines, and a background wash of matt paint from which a series of small curves have been picked. Probably a foliate design in reserve with stickwork details. No grozed edges, but the pitting on the reverse has formed lines. |
| Not illustrated | PG 5-PG 6 | *115* | BL15 | 10 sq cm of opaque, formerly white, transparent glass, two pieces. The larger piece (PG 5) is painted with a small area of undulating lines bounded by thick outlines, but it is not possible to discern what this is part of. The smaller piece (PG 6) is painted with what may be part of the indentation of a leaf design. One short edge is fire-rounded, indicative of cylinder glass manufacture. |
| Not illustrated | PG 7 | *127* | BL15 | 5.5 sq cm of opaque glass, painted with two concentric lines of different thickness. One curved, grozed edge. Possibly stem of grisaille on plain ground, therefore possible late 13th-/early 14th-century date. |
| Fig. 20 | PG 8 | *127* | BL15 | 4.5 sq cm of opaque, formerly white, transparent glass. Painted with a number of thin, tapered lines and a possible thicker wash. Some sandy, gritty accretions. Possibly stamen from a foliate design, 13th-15th centuries, but not necessarily from a grisaille design. |
| Fig. 20 | PG 9 | *127* | BL15 | 20 sq cm of opaque, formerly white, transparent glass, with one fire-rounded edge, indicative of cylinder glass manufacture. Painted with the stems of a foliate design, in reserve from a matt ground. There are short lines emphasising an offshoot from the main stem, centrally, and to the left, at the broken edge. A deposit on the reverse suggests that this design, at the left-hand side, was either reserved in yellow stain, dating to after *c.* 1310; or was highlighted with a wash of paint, in which case it might date to the 13th century. In either case, this piece is no later than the early 15th century. |
| Not illustrated | PG 10 | *127* | BL15 | 5.5 sq cm of opaque, formerly white, transparent glass painted with part of a leaf design in reserve from a matt ground and articulated with curved, tapering veins. 13th-15th centuries, although there is no visible trace of yellow staining on the reverse. |
| Not illustrated | PG 11 | *127* | BL15 | 5 sq cm of opaque, formerly white, transparent glass, with two grozed edges. Painted with a curved design in reserve from a matt ground, possibly foliage, but now indiscernible. |
| Not illustrated | PG 12 | *127* | BL15 | 3.5 sq cm of opaque glass.Painted with a linear band in reserve from a matt ground. |
| Fig. 20 | PG 13 | *127* | BL15 | 26.5 sq cm of semi-transparent white glass, with two grozed edges which may have converged at an angle to form part of a quarry. Painted with a foliage design in outline on a plain ground. The design has an upright stem, with an offshoot to the right. There are a number of short lines below the offshoot, and the base of the leaf itself shows several tapering veins. From *c.* 1285 to mid 14th-century grisaille. |
| Fig. 20 | PG 14 | *127* | BL15 | 13 sq cm of semi-transparent white glass. Two pieces which fit together, with one long curved grozed edge, and one straight, shorter edge. Painted with a bird (or winged mythical beast), in reserve and line detail. There is one large, expressive eye, but the beak is missing. Probably detail from an inhabited border design, such as often accompanied grisaille of the second half of the 13th century and into the first half of the 14th century. |
| Not illustrated | PG 15 | *127* | BL15 | 10.5 sq cm of semi transparent white glass, one curved grozed edge. Painted with a design in reserve from a matt ground. The design is indiscernible, but may be foliate, with a small shoot springing from a larger stem. However, at the far left-hand side, there appears to be a single finger; this cannot be reconciled with the remains of the piece, in its present state. |

| | | | | |
|---|---|---|---|---|
| Not illustrated | PG 16 | *137* | BL15 | 4 sq cm of opaque, formerly transparent white glass, two pieces slightly curved, one flat, very thin. Possibly medieval vessel glass rather than window glass. Undecorated. |
| Not illustrated | PG 17 | *137* | BL15 | 17.5 sq cm of opaque, formerly transparent white glass, two long grozed edges creating a shape c. 27mm wide. An undecorated glaziers' side strip. |
| Not illustrated | PG 18 | *137* | BL15 | 10 sq cm of opaque glass, two grozed edges at right angles. Painted with a wash from which a number of semi-circular shapes have been picked with a stick. The surface of the paint has been eroded in part, and this confuses recognition of the design, but it may have been a stylised depiction of chain mail. 13th/14th century. |
| Not illustrated | PG 19 | *137* | BL15 | 10 sq cm of opaque, formerly transparent white glass. Two grozed edges meet at right angles, possibly from a quarry shape. On the reverse, the edges which were covered by the lead cames have been protected from the fine pitting which has affected the exposed glass. Painted with what appears to be a foliage stem, with offshoot, and small curves of paint beneath the joint. |
| Not illustrated | PG 20 | *137* | BL15 | 5.5 sq cm of opaque glass.Painted with a number of curved and tapering lines, as if the base of a leaf. Possibly related to PG 13 127, LI 5, late 13th to mid 14th centuries. |
| Not illustrated | PG 21 | *137* | BL15 | 13.5 sq cm of opaque, formerly transparent white glass, two pieces, one with a grozed edge. Painted with thin and thick lines, possibly foliage, but now indiscernible. |
| Not illustrated | PG 22 | *137* | BL15 | 10 sq cm of semi-transparent white glass, finer than most, apparently undecorated. |
| Not illustrated | PG 23-PG 2^ | *137* | BL15 | 9 sq cm of opaque glass. Two pieces. The larger with one grozed edge (PG 23). Both painted with concentric lines in paint and shadowed with thinner wash. Possibly grisaille stems. 13th/14th century. |
| Not illustrated | PG 25 | *137* | BL15 | 5.5 sq cm of opaque, formerly transparent white glass, painted with almost parallel lines. Possibly foliage stems, or drapery. 13th/14th century. |
| Not illustrated | PG 26 | *137* | BL15 | 4 sq cm of opaque, formerly transparent white glass. Painted with a circular area in reserve from a matt ground, with tapered lines and tapered stickwork. Design indiscernible, but similar to stylised ermine trim, only this is in reserve, whereas ermine is executed in solid paint. |
| Not illustrated | PG 27 | *344* | BF144 | 8.5 sq cm of opaque glass. Badly pitted on the interior, painted face. Painted with an indiscernible design in outline on what may have been a cross-hatched ground, but the surface is now too disrupted to be certain. |
| Not illustrated | PG 28 | *373* | BF84 | 8 sq cm of semi-opaque, white glass. Two grozed edges converge to form the corner of a triangular shape, and probably an edge piece from a quarry lattice. Undecorated. |

## The medieval and later pottery (Figs 21-23)

by Helen Walker

**Summary**

A total of 4381 sherds of medieval and post-medieval pottery weighing 78kg was excavated. The medieval phases produced mainly coarse wares dating to the 12th to earlier 13th centuries, comprising early medieval wares with smaller amounts of shell-tempered fabrics and medieval coarse ware. Sherds of Thetford-type ware are also present. Very few medieval fine wares were found; Hedingham fine ware is the most frequent but most is residual in later phases. Little pottery belongs to the late medieval and early post-medieval periods and there are no large Dissolution deposits. This is especially true of Site A. The commonest later medieval ware is sandy orange ware including Colchester ware. Pottery of the 17th century is well represented in both sites and comprises mainly post-medieval red earthenware and black-glazed ware. Other 17th-century wares are only found in small quantities. Little 18th-century pottery is present, but much pottery dates to the modern period and finds of interest include two burials each containing a complete 19th-century plate. Imported wares are present from the ?12th century onwards but occur only in very small quantities. As with many urban sites, there is a large amount of residual pottery in the later phases. There is only very slight evidence of vessels used for medical purposes. The site is briefly compared to two secular sites in and around Colchester.

**Method**

The pottery has been recorded using Cunningham's typology (Cunningham 1985a, 1-16) and her fabric numbers and rim codes are quoted in this report. Cunningham's system is also used by John Cotter for *Colchester Archaeological Report* 7 (Cotter 2000). The pottery at St. Mary Magdalen's has been compared to already published material from the town (mainly Crummy 1981 and Cunningham 1982a), and the dating of the early medieval cooking-pot rims is based on these reports. The more developed rims which occur mostly on medieval coarse ware cooking pots have been dated using Drury's typology at Rivenhall (Drury 1993,81-4).The pottery has been written up in phase order, and the fabrics present in each phase and area are summarised by means of a table giving sherd count and total weight of pottery within each phase (Table 3). Because much of the pottery is poorly stratified, only the larger medieval pit groups are published in detail. The rest of the assemblage has been summarised for this publication, and a more detailed report with quantification by context is available in the archive. Residual pottery occurring in later phases that is of intrinsic interest is described in the fabrics section. All percentages quoted are calculated from sherd count.

**The fabrics**

**Fabric 9 Thetford-type ware:** (0.5% of total) Described by Hurst (1976, 314-8) and dated to *c.* 850-1150 but thought to be residual in Colchester after *c.* 1100 (Crummy 1981, 40). It was found in several phases of both sites but can only have been current at the beginning of Phase 1. As Roman pottery is also present in some contexts, which can be similar to Thetford-type ware, the same criteria as used by Crummy have been employed to distinguish between the two (Crummy 1981, 32).

**Forms:** everted flanged jar rims, one is illustrated (Fig 22, no 11).

**Fabric 12A Early medieval shell-tempered ware:** (0.1% of total) Described by Drury (1993, 78) dating as for Fabric 12B. Only one sherd (in Phase 2) could be current in its phase.

**Fabric 12B Early medieval shell-with-sand-tempered ware:** (0.7% of total) Described by Drury (1993, 78-80) at Rivenhall, Drury

dates this ware to the Pearly 11th century to the second half of the 12th century. However, in other areas, shelly wares continue well into the 13th century, for example at King John's Hunting Lodge, Writtle (Rahtz 1969, 106).This ware is much less common than Fabric 12C and early medieval ware. It is present from Phase 1.

**Forms:** one thumbed, beaded cooking-pot rim.

**Fabric 12C Early medieval sand-with-shell-tempered ware:** (2% of total) Described by Drury (1993, 78), dating as for Fabric 12B. Here, sand is the dominant tempering agent with only sparse, usually superficial shell. It is possible that some of this material is from kilns at Middleborough, Colchester, which although classified as an early medieval ware did produce sherds with limited and superficial shell inclusions (Cunningham 1984, 186-7). However, there are no parallels in rim form. Present from Phase 1.

**Forms:** thumbed, beaded cooking-pot rims (Fig 22, no 14).

**Fabric 13 Early medieval ware:** (12% of total) This coarse sandy fabric is described by Hurst (1976, 342-3) and Drury (1993, 80). It is generally dated to *c.* 1000-c. 1200, although elsewhere in Essex, at Saffron Walden and Stansted, it appears to be current into the first half of the 13th century (Cunningham 1982b, 83; Walker forthcoming). This category also encompasses Hurst's 'developed early medieval ware' (Hurst 1962, 261-3).This is the second most common medieval fabric at St. Mary Magdalen's; only medieval coarse ware is slightly more frequent. It is present from Phase 1. Again this material could be from the Middleborough kilns, but most sherds found have a red-brown fabric, whereas the Middleborough material is usually grey.

**Forms:** *Jugs;* Fig. 22, nos 8-10

*Bowls;* one large bowl with a B2 rim (not illustrated)

*Cooking pots;* no complete profiles were found; cooking-pot rims can be: simple or thickened everted (Fig. 23, no 23); beaded, the most common form (Fig. 21, no 6 and Fig. 22, no 12), and these are often thumbed (Fig. 22, no 13); beaded rims with internal thickening are also present (Fig. 23, no 25); other rim forms comprise B4 rims (Fig. 22, no 15) and a B2 rim

*Other forms;* the leg of a tripod base and a possible chimney-pot fragment were found in Site A Phases 1 and 2 respectively. A sherd from a possible storage jar with a thumbed, applied strip was residual in a post-medieval phase.

**Decoration:** Decoration is common; see examples in Phase 1 of Site B.

**Fabric 17 Andenne ware:** (<0.1% of total) This is described by Vince and Jenner (1991, 104-6) who date it to the late 11th to early 13th centuries. Only one sherd was found, residual in Phase 3. It shows roller-stamped decoration under a yellow-orange glaze.

**Fabric 20 Medieval coarse ware:** (13% of total) This is a general category of grey-firing, sand-tempered coarse wares dating from the 12th to 14th centuries, and manufactured at several production centres in Essex. The nearest to Colchester are at Great Horkesley and Mile End (Drury and Petchey 1975, 33-60). This is the commonest medieval ware at St. Mary Magdalen's and is present in both sites and

*Table 3: Quantification of pottery from Site A and Site B by feature, fabric and sherd count.*
(U = unidentified, Ph = Phases)

Table 3a: Fabrics 9-40A.

| | | | Fabrics | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Site** | **Phase** | **u** | **9** | **12A** | **12B** | **12C** | **13** | **17** | **20** | **21** | **21A** | **22** | **23** | **24B** | **27** | **29A** | **31** | **31A** | **34** | **35** | **36** | **39** | **40** | **40bl** | **40A** |
| A | Phase 1 | | 6 | | 1 | 1 | 11 | | 6 | | | | | | | | | | | | | | | | |
| A | Ph 1-2 | 1 | 1 | | | | 6 | | 4 | | | | | | | | | | | | | | | | |
| A | Phase 2 | | 3 | | | 3 | 17 | | 15 | 2 | | | | | | | | | 1 | | | | | | |
| A | Ph 2-3 | | | | | | 1 | | 3 | | | 2 | | | | | | | | | | | | | |
| A | Phase 3 | | 3 | 2 | | | 6 | 1 | 29 | 13 | 6 | 1 | | | | | | | | 2 | | | 186 | 30 | 2 |
| A | Ph 3-4 | | | | | | 6 | | 11 | 8 | 2 | | | 1 | | | | 2 | | | 2 | | 114 | 41 | 3 |
| A | Phase 4 | | 1 | 1 | 1 | 1 | 11 | | 67 | 33 | 4 | 5 | 3 | | | 2 | | | 2 | | 1 | 1 | 538 | 72 | 11 |
| A | U/S | | | | | | 1 | | 2 | | | | | | | | | | | | | | 20 | 5 | 1 |
| B | Phase 1 | | 1 | | 3 | 30 | 233 | | 49 | 1 | 1 | | | | | | | | 1 | | | | | | |
| B | Ph 1-2 | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| B | Phase 2 | | 7 | 1 | 10 | 46 | 167 | | 154 | 59 | 10 | 2 | | | 1 | | | | 1 | | | | | | |
| B | Ph 2-3 | | | | | | 2 | | 8 | 9 | 2 | 2 | | | | | 1 | | | | | | | | |
| B | Phase 3 | | | | 1 | | 26 | | 74 | 45 | 70 | 12 | 1 | | | | 9 | 1 | 2 | 1 | | | 175 | 5 | |
| B | Phase 4 | | | | 16 | | 42 | | 127 | 39 | 9 | 7 | | | 6 | 1 | 2 | 1 | | | | | 146 | 6 | 3 |
| B | U/S | | | | 1 | | 5 | | 23 | 2 | | | | | | | 10 | | | | | 15 | 1 | | |
| | | **1** | **22** | **4** | **33** | **81** | **536** | **1** | **572** | **211** | **103** | **32** | **4** | **1** | **7** | **3** | **22** | **4** | **7** | **3** | **3** | **1** | **1194** | **160** | **20** |

Table 3b: Fabrics 41 to 5IB.

| **Site** | **Phase** | **Fabrics** | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **41** | **42** | **45** | **45A** | **45C** | **45D** | **45F** | **45M** | **46** | **46A** | **46A/C** | **47** | **48** | **48A** | **48B** | **48C** | **48D** | **48E** | **48P** | **50** | **51A** | **51B** |
| A | Phase 1 | | | | | | | | | | | | | | | | | | | | | | |
| A | Ph 1-2 | | | | | | | | | | | | | | | | | | | | | | |
| A | Phase 2 | | | | | | | | | | | 1 | | | | | | | | | | | |
| A | Ph 2-3 | | | | | | | | | | | | | | | | | | | | | | |
| A | Phase 3 | | 1 | | | | 1 | 4 | 9 | 3 | 7 | | | 1 | 8 | | 3 | 5 | 2 | | | | |
| A | Ph 3-4 | 1 | 5 | | 1 | 2 | 6 | 5 | 7 | 3 | 10 | | 7 | | 1 | | 26 | 8 | 7 | 15 | 4 | 6 | |
| A | Phase 4 | 2 | 23 | 2 | | 4 | 30 | 26 | 91 | 2 | 22 | 5 | 40 | 37 | 2 | 14 | 106 | 246 | 41 | 82 | 19 | 99 | 6 |
| A | U/S | | | | | | | 1 | 3 | | | | 1 | 2 | | | 1 | 3 | | | 1 | | |
| B | Phase 1 | | | 1 | | | | | | | | | | | | | | | | | | | |
| B | Ph 1-2 | | | | | | | | | | | | | | | | | | | | | | |
| B | Phase 2 | | | | 2 | | | | | | | | | | | | | | | | | | |
| B | Ph 2-3 | | | | | | | | | | | | | | | | | | | | | | |
| B | Phase 3 | 1 | 11 | | 4 | 4 | 6 | 1 | | | 4 | 2 | 1 | 1 | 1 | | 2 | | 1 | | 4 | 3 | |
| B | Phase 4 | | 18 | | | 2 | 12 | 5 | 32 | 1 | 12 | 3 | 8 | 13 | 6 | 5 | 33 | 17 | 3 | 30 | 7 | 17 | 5 |
| B | U/S | 1 | | 1 | | 1 | 5 | | | | | | | | | | | | | | | | |
| | | **5** | **58** | **3** | **8** | **13** | **60** | **42** | **142** | **6** | **48** | **13** | **64** | **54** | **10** | **20** | **176** | **274** | **55** | **132** | **35** | **127** | **11** |

Table 3c: Weight of pottery in each area and phase.

| Site | Phase | Wt (g) |
|---|---|---|
| A | Phase 1 | 133 |
| A | Phases 1-2 | 83 |
| A | Phase 2 | 333 |
| A | Phases 2-3 | 114 |
| A | Phase 3 | 3907 |
| A | Phases 3-4 | 4114 |
| A | Phase 4 | 29759 |
| A | U/S | 922 |
| B | Phase 1 | 6326 |
| B | Phases 1-2 | 12 |
| B | Phases 2 | 5214 |
| B | Phases 2-3 | 211 |
| B | Phase 3 | 9843 |
| B | Phase 4 | 14175 |
| B | U/S | 2765 |
| | | **77911** |

all phases. It is more common in Phase 2 than in Phase 1.

**Forms:** fragments from *jugs, dishes* and *bowls* (none are illustrated) *Cooking pots; As* ever these are the commonest form. No complete profiles were found but the following rim forms are present, nearly all are described in the Site B Phase 1 and Phase 2 pit groups: thumbed beaded rims, one example only (Fig. 23, no 24); beaded rims with internal thickening, one example only; B2 rims; B4 rims, one of the commonest types (Fig. 22, nos 16, 17); H2 rims, also common (Fig. 22, no 18); D2 rims (Fig. 23, no 26); HI rims; E5A rims, a late 13th- to 14th-century type, are present in the assemblage but do not occur in the pit groups

*Other forms;* a perforated base in Phase 3 of Site A, and the base of a Psmall bottle and a jug rim (Fig. 23, no 28) in Phase 2 of Site B.

**Decoration:** Decoration is fairly rare; a couple of the B4 cooking-pot rims show wavy line combing on the rim and body, and there are a few instances of incised horizontal line decoration and thumbed, applied strips.

**Fabric 21 Sandy orange wares:** (5% of total) Described by Cunningham (1982a, 359 and 1985a, 1), sandy orange ware comprises any locally made sand-tempered, oxidised ware with a date range of the 13th to 16th centuries. Both medieval and late medieval sandy orange ware is present here. Only one sherd was present in Phase 1 and it is entirely absent in Phases 1-2, reflecting the fact that this ware dates from the 13th century. It is relatively common in later phases, but much of the sherd total in Phase 2 is accounted for by sherds from a single semi-complete vessel.

**Forms:** *Jugs;* as is typical of this ware, most sherds are from jugs (Fig. 21, no 1 and Fig. 22, no 7).

*Bowls;* fragments from three Plate medieval bowls

*Jar forms;* a semi complete cooking pot with an H2 rim (Fig. 23, no 22); a 15th-century-type lid-seated jar rim; a late medieval bifid handle from a Pone-handled jar.

*Other forms;* a bunghole from a cistern, part of a costrel and a possible chafing-dish sherd. These are all late medieval.

**Decoration:** comprises mainly slip-painting under a clear glaze and slip-coating with a green glaze, probably from medieval jugs; slip-painted sherds without an accompanying glaze are also present and are most likely to be late medieval. There is one instance of sgraffito decoration (Fig. 23, no 27).

**Fabric 21A Colchester ware:** (2.5% of total) This is a variant of sandy orange ware produced in the Colchester area between the late 13th and mid 16th centuries, and is described by Cunningham (1982a, 365-7), Drury (1993, 89-90), and Cotter (2000, 107-180). It is distinguishable from other sandy orange ware by its tempering of white quartz sands. Because sandy orange fabrics are all very similar, only those sherds which are very typical of Colchester ware are classified thus, while all others have been placed in the general category of Fabric 21. Therefore Colchester ware may be more common at St. Mary Magdalen's than is apparent from the quantification. It first appears in Phase 2 and is most frequent in Phase 3 of Site B where it should be residual. All the examples are similar to those found at Colchester Castle (Cunningham 1982a).

**Forms:** *Jugs;* jugs often slip-painted and sometimes glazed are the most common form. Two examples show slip-painted dashes on the rim, a Colchester ware characteristic. Jug bases are usually thumbed.

*Bowls;* a large unglazed flanged bowl rim has been identified as Colchester ware.

*Chafing dishes;* several fragments are present including an example with two angular Pventilation holes just below the rim, cut out during manufacture; chafing dishes are a well-known Colchester ware product, probably manufactured by the mid 14th century (Cotter 2000, 150).

*Other forms;* a possible jar rim and a skillet-type handle.

**Decoration:** As well as slip-painting, there are examples of slip-coating under a green glaze.

**Fabric 22 Hedingham fine ware:** (1% of total) This is described by Drury (1993, 86-9) and Cotter (2000, 75-91). It has the extreme date range of second half of the 12th to first half of the 14th centuries but seems to be commonest from the later 12th to 13th centuries. It first appears in Phase 1 but most is residual in post-medieval phases.

**Forms and decoration:** *Jugs;* most sherds are from jugs but only two rims were present, both with the familiar triangular rims as found at Rivenhall (cf. Drury 1993, fig. 43.127-30). One rim is decorated with ring-and-dot stamps. Strap handles, sometimes with stabbed decoration, were found, and there is one rod-handle showing a partial greenish glaze and ribbing along its length which may be a copy of Scarborough ware or even London-type ware. Body sherds with applied strip decoration are frequent. Again this is a typical Hedingham ware style often found on jugs with ring-and-dot stamps. The sherd from Phase 1 shows red-slip-painted decoration, and one sherd shows traces of white slip.

*Other forms;* The most unusual find is a wheel-thrown bottle with a perforated base (Fig. 23, no 29), which was unfortunately residual in Phase 4. A fire-blackened sherd with internal splashes of glaze was also found.

**Fabric 23 Medieval white ware:** (0.1‰ of total) A general category for unidentified white wares, this includes possible imported North French and Rouen sherds residual in Phase 4.

**Fabric 24B Scarborough ware Phase 2:** (<0.1% of the total) One sherd of Scarborough ware Phase 2 was residual in Phases 3-4. This ware is described by Farmer (1979) and was traded down the North Sea coast from *c.* 1225 until the end of the industry shortly after 1350.

**Fabric 27 Saintonge ware - green glazed:** (0.2‰ of the total) Described by Dunning (1968), and imported from south-west France from the mid 13th to mid 14th centuries reaching a peak around 1300. Found in Site B, one sherd was excavated from a cleaning context in Phase 2 and further body sherds and a jug base were residual in Phase 4.

**Fabric 29A Spanish olive jars:** (0.1% of the total) These are described by Hurst *(et al.* 1986, 65-7) and were imported from Seville from the late 16th to 18th centuries. Three fragments from olive jars were residual in Phase 4 of Site B.

**Fabric 31 Low Countries red wares:** (0.5% of the total) Described by (Hurst *et al.* 1986, 130-45), and imported from the late medieval to early post-medieval periods. Some may actually have been made locally by Dutch immigrants (see Jennings 1981, 134-6). None was identified in Site A, but in Site B it is the most frequent import apart from German stonewares. It first appears in Phases 2-3 but is commoner in later phases.

**Forms:** a sherd of undecorated slip ware dish or bowl; sherds from tripod cauldrons, and part of a small bowl or porringer residual in Phase 4 which is carinated with rilled sides as is comparable to an example from Norwich Qennings 1981, fig. 57.974).

**Fabric 31A North Holland slipware:** (0.1% of the total) This is described by Hurst *{et al.* 1986, 154-68), and was traded to Britain throughout the 17th and into the 18th centuries. It is decorated with yellow slip-trailed patterns often over-painted in green under a rich, glossy light brown lead glaze. Small amounts of this ware appear from Phase 3 and include the familiar loop-handled bowl, although none was complete enough to show the interior design.

**Fabric 34 Unclassified buff ware:** (0.2% of total) This is a catch-all category for any buff-coloured fabric. Of interest is an early medieval red slip-painted buff sherd in Phase 1 (Fig. 21, no 5).

**Fabric 35 Mill Green ware:** (0.1% of total) Described by Pearce *{et al.* 1982), and made at kilns near Ingatestone in central Essex and probably elsewhere. In Essex, it is dated to the mid 13th to mid 14th centuries. Three body sherds are residual in Phase 3; none show any surface treatment. Colchester is outside the main area of Mill Green ware distribution in south and central Essex.

**Fabric 36 London-type ware:** (0.1% of total) Described by Pearce *et al.* (1985), two sherds of this were found residually in Phases 3-4 grave fills in Site A. One shows applied strip decoration, while another is slip-coated and glazed, and both probably belong to the early to mid 13th century.

**Fabric 39 North Italian marbled slipware:** (<0.1% of total) This is described by Hurst (et al. 1986, 33-7), and was most common between 1600 and 1650. A lug from a costrel was residual in Phase 4.

**Fabric 40 Post-medieval red earthenware:** (27% of total) Described by Cunningham (1982a, 373 and 1985a, 1-2). It does not appear at Colchester Castle until the later 16th century (Cunningham 1982a, 373), presumably because this niche in the local market was filled by Colchester ware, but continued until the 19th century. Production centres in Essex include Harlow, Loughton, and Stock near Chelmsford (Newton *et al.* 1960, 358-77; Cunningham 1985c, 83-8). As always on a site with a post-medieval phase, post-medieval red earthenware is by far the commonest fabric, occurring in quantity from Phase 3. Like nearly all the post-medieval and modern wares, it is far more common in Site A than in Site B.

**Forms:** Dishes; especially flanged rim dishes; bowls; *Jar forms;* including one-handled jars or chamber pots (Fig. 21, nos 2 and 4); Jugs; drinking vessels; a small, virtually complete costrel (Fig. 21, no 3); fragments from dripping dishes, chafing dishes, a possible porringer, lids and pierced colander fragments.

**Fabric 40bl Black-glazed ware:** (3.5% of total) This is a type of post-medieval red earthenware covered with a black glaze (production centres as for Fabric 40). It dates from the beginning of the 17th century (or possibly the end of the 16th) and was current into the 18th century (Cunningham 1985b, 71). Drinking vessels are the main form produced in this ware and were probably an attempt to copy pewter table wares. Black-glazed ware first appears in Phase 3 and is the second most frequent post-medieval ware.

**Forms:** no complete or near complete vessels were found but most sherds come from tygs or cylindrical mugs - their thick bases survive particularly well. Sherds from jugs were found unstratified and in a Phases 3-4 grave fill.

**Fabric 40A Metropolitan slipware:** (0.5% of total) A type of post-medieval red earthenware decorated with trailed white pipe clay designs and covered in a clear lead glaze giving a bright ginger-brown surface and yellow slip decoration (production centres as for Fabric 40; the best known is Harlow). It dates from the 17th to early 18th centuries (Cunningham 1985b, 64), but finds in London and America suggest that it reached its peak around the mid 17th century (Orton 1988, 298; Noll Hume 1970, 102). At St. Mary Magdalen's, it has a similar distribution to the largely contemporary black-glazed ware but is far less common.

**Forms:** fragments from at least two dishes one showing an 'oak leaf design. There is also a cup or jug base in Phase 4. That found in Site B (all from Phase 4) is not typical; one example is from a small thin-walled dish with a flanged rim showing leaf decoration but does not look like a Harlow product - it may be an example of Low Countries slipware but no parallel could be found.

**Fabric 41 'Tudor Green' ware:** (0.1% of the total) This is described by Pearce and Vince (1988, 79-81) and Pearce (1992, 1-2). It first appears in Phase 3 where it must be residual. Forms comprise the rim from a wide, or lobed, cup dating from the late 15th to early 16th centuries (Pearce 1992, 23, 89; Brears 1971, 23-4).

**Fabric 42 Surrey-Hampshire white ware:** (1.5% of total) This ware is described by Holling (1971) and Pearce (1992) and was manufactured from the second half of the 16th and throughout the 17th century. It first appears in Phase 3 (a phase dating from the 17th century); however, because residuality is high, it is possible that this ware was reaching the site in the 16th century. Both yellow and green glazed examples are found.

**Forms:** flanged dish rims; one thickened everted bowl rim; a beaded jar rim; a hollow handle and feet from tripod pipkins and cauldrons; a horizontal flanged jar rim perhaps from a chamber pot is also present.

**Fabric 45 Stoneware:** (0.1% of total) Any stoneware fabric, not subdivided.

**Fabric 45A Langerwehe stoneware:** (0.2% of total) Described by Hurst *{et al.* 1986, 184-90), imported from the later 14th to 15th centuries. One sherd is intrusive in Phase 1 and a couple of sherds are present in Phase 2.

**Forms:** a frilled ?jug base and two upright rims probably also from jugs.

**Fabric 45C Raeren stoneware:** (0.3% of total) Described by Hurst *{et al.* 1986, 194-208), it first appears in Phase 3, where fragments of late 15th- to mid 16th-century squat bulbous drinking jugs were found.

**Fabric 45D Frechen stoneware:** (1.5% of total) Described by Hurst *{et al.* 1986, 214-21) and imported from the mid 16th to late 17th centuries, with trade expanding at the beginning of the 17th century. This is the commonest German stoneware on site. It first appears in Phase 3 (dating from the 17th century), but 16th-century types occur residually.

**Forms:** fragments from jugs including examples of a 16th-century and a 17th-century- type face mask from bellarmine/Bartmann jugs, and a 'rats tail' jug handle base dating from the third quarter of the 16th century (Hurst *et al.* 1986, 216). Sherds from large storage jugs were residual in Phase 4.

**Fabric 45F Westerwald stoneware:** (1% of total) Described by Hurst *{et al.* 1986, 221-5), and imported from the early 17th to 18th centuries.

**Forms and decoration:** fragments from jugs or mugs showing the typical Westerwald decorative techniques of incised lines and applied stamped pads. Also found was a possible 18th-century type horizontal flanged rim chamber pot, and a sherd with manganese purple decoration.

**Fabric 45M English stoneware:** (3% of total) This was first manufactured in the late 17th century. This category also includes Nottingham/Derby stoneware produced from the 18th century onwards (Hildyard 1985, 12) and modern stonewares, so that anything identified as Fabric 45M can date from the late 17th to early 20th centuries. It first appears in Phase 3.

**Forms:** a few sherds from late 17th- and 18th-century salt-glazed globular mugs and cylindrical tavern mugs were found, but most is modern, consisting mainly of cylindrical bottles. These comprise, in order of frequency, ginger-beer bottles, blacking bottles and an ink bottle. Stoneware marmalade jars are also present. Other forms include part of a mixing bowl and a sherd of purple stoneware which may be from a Staffordshire butter pot or

an example of Normandy stoneware. Several Nottingham/ Derbyshire sherds show rouletted decoration, but the only form identified was a jar rim.

**Fabric 46 Tin-glazed earthenware:** (0.2% of total) Any tin-glazed earthenware not identified as English or Netherlands. This includes a sherd of PSpanish tin-glazed earthenware which was residual in Phase 4.

**Fabric 46A English tin-glazed earthenware:** (1% of total) This is described by Noll Hume (1969, 12-13) and Draper (1984, 25-32), and dates principally to the 17th to mid 18th centuries. It first appears in Phase 3 of Site B.

**Forms:** plate rims, the base of an albarello and a tile fragment. Decoration comprises blue-painting and speckled manganese-purple. Plain sherds are also present. None of the material was complete enough to identify place of manufacture or date.

**Fabric 46 A/C Anglo/Netherlands tin-glazed earthenware:** (0.3% of total) This is present from Phase 3 of both sites. Dishes with squared footring bases dating to the 17th century are relatively common and there is one example of a blue-painted albarello rim.

**Fabric 47 White salt-glazed stoneware:** (1.5% of total) Described by Draper (1984, 36-9) and Noll Hume (1969, 14-19). This was produced from the 1720s to the 1770s and can be distinguished from other post-medieval white wares by its orange peel texture which was produced by the salt glaze. This ware first appears in Phase 3 where forms comprise: a recessed base perhaps from a mug, and plate rims, some with moulded decoration. Phase 4 produced further plate rims, fragments from a mug, and sherds with scratch blue decoration, popular during the third quarter of the 18th century (Noll Hume 1969, 19).

**Fabric 48 Late post-medieval factory wares:** (1.2% of total) This category comprises all Fabric 48 that is not subdivided below, consisting of a *Jackfield ware* teapot lid; *red stoneware* sherds from ?teapots and sherds of glazed red stoneware, some exhibiting engine-turned decoration introduced in 1760s; a *Whieldon ware* or colour-glazed ware plate rim, and sherds of *basalt ware* including a handle, a lid-seated rim and a base again showing engine-turned decoration. The above wares were made in the Staffordshire area from the mid 18th century and are described by Draper (1984, 41-6). Sherds of lustre ware dating from the first half of the 19th century are also present (Gibson 1993).

**Fabric 48A Chinese porcelain:** (0.2% of total) This was imported in quantity from the late 17th century until the end of the 18th. This is very much a minor ware, and the only forms are a footring base and a rim fragment probably from tea wares.

**Fabric 48B English porcelain:** (0.5% of total) Described by Draper (1984, 53, 55) and produced from *c.* 1745. Apart from a sherd in Phase 3, most English porcelain is modern and finds include a plate, cup and saucer from Phase 4. A couple of examples showed mauve sprigged decoration.

**Fabric 48C Creamware:** (4% of total) Described by Noll Hume (1969, 25), it was first produced in the 1750s. This is one of the commonest of the late post-medieval wares. Undecorated plates are the most common form; one plate shows moulded decoration around the rim. There are also fragments from cylindrical mugs, a teapot spout, and a painted cup rim.

**Fabric 48D Staffordshire type ironstone:** (6% of total) This is a robust, chunky fabric first manufactured in 1805. There are sherds from plates, bowls/dishes, jugs and a chamber pot. This ware was also used for containers, and a night-light container and a pot lid were found. As is typical of this ware, transfer-printed decoration is almost universal; there are examples of blue and white willow pattern along with non-oriental designs such as countryside scenes, dendritic patterns and floral decoration (including flow-blue). Other colours are also common and examples of purple, green, brown and red transfer print are present. As well as transfer-printing there is one example of an under glaze blue mottled pattern.

**Fabric 48E Yellow ware:** (1% of total) A thick-walled, yellow-glazed ware decorated with bands of blue, and sometimes with a dendritic pattern known as Mocha, produced from an infusion of tobacco in stale urine and turpentine. Much of this is sherd material but fragments from bowls, jugs and a jar rim were found.

**Fabric 48P Pearlware:** (3% of total) Similar to creamware but made whiter by the addition of cobalt to the glaze in order to neutralise the yellow of the lead glaze. It was made from *c.* 1779 to *c.* 1830 (Noll Hume 1969, 25). Fragments from plates, jugs, mugs and footring bowls were found. Several styles of decoration were employed comprising Chinese-style painting, moulded shell edging, annular decoration and transfer-printing.

**Fabric 50 Staffordshire-type slipware:** (1% of total) This is described by Barker (1993, 14-18). It was first produced during the 1640s and production lasted well into the second half of the 18th century. The familiar press-moulded dishes with scalloped edges and combed slip decoration are common. There are also sherds from cups and sherds showing ?joggled slip decoration.

**Fabric 51A Late kitchen earthenwares:** (3% of total) This is a thick-walled red fabric usually with an internal white slip-coating and covered in an all over glossy plain lead glaze. It is probably from the north of England and belongs to the 19th/20th centuries. It is a relatively common find. Dish and bowl fragments are the most common find. One example shows slip-trailed decoration.

**Fabric 51B Modern flowerpot fabric:** (0.3% of total)

**The pottery from Site A**

*Pottery from Phase 1 of Site A* (12th to early 13th centuries)
A very small amount of pottery was excavated from Phase 1, a total of 25 sherds weighing 133g, from 17 contexts. Fabrics comprise Thetford-type ware, early medieval ware and medieval coarse ware, along with a couple of examples of shell-tempered wares. As might be expected at Colchester, some contexts also contained residual Roman pottery. The identification of Thetford-type ware is fairly tentative because of possible confusion with Roman grey wares (see fabrics section). Forms present comprise a small fragment from a Fabric 12C thumbed, beaded rim, perhaps from a cooking pot, in ditch/trench AF260. At Colchester such cooking-pot rims are found in groups datable to the late 11th to 12th centuries (Crummy 1981: the Cups Hotel, F46, fig. 32.27-29). While at Colchester Castle, thumbed, beaded rims belong to period VIIB dating from *c.* 1101 (Cunningham 1982a, fig. 26.20-21 and fig. 27.22).Therefore they would seem to be principally a 12th-century type. Also found is what appears to be the leg from an early medieval ware tripod base in pit AF253 for which no parallel could be found. A couple of sherds identified as medieval coarse ware are rilled and could be products of the Middleborough kiln. All the pottery could be contemporary with the founding of the hospital in the early 1100s. Assuming that the Thetford-type ware is current, there is no evidence of activity on site before the hospital was established. As the accommodation block stood here, more pottery would be expected. It seems likely that all discarded pottery was removed to the pits in Site B.

*Pottery from Phases 1-2 of Site A*
Even less pottery was excavated from Phases 1-2; a total of twelve sherds weighing 83g was recovered from seven contexts. Examples of Thetford-type ware, early medieval ware and medieval coarse ware are again present but there are no examples of shell-tempered fabrics. An unidentified base sherd was found in foundation AF287. It is thick-walled with a creamy orange fabric and buff core and has an uneven, fingered surface showing vesicles where inclusions have dropped out. Remaining inclusions comprise abundant red oxides, clay pellets, carbonised material and angular quartz grains perhaps deliberately crushed for tempering. It is unglazed apart from two spots of clear glaze on the underside of the base. This sherd has been examined by

John Cotter (previously of Colchester Archaeological Trust) who suggests it may be from Normandy or north-west France, perhaps dating from the 12th or early 13th centuries. No other featured or diagnostic sherds are present in this phase.

*Pottery from Phase 2 of Site A* (early 13th century to 1610)
Slightly more pottery was excavated from Phase 2, a total of 42 sherds weighing 333g, from fourteen contexts. Much of this material probably derives from Phase 1, from the demolished infirmary hall. All fabrics found in Phase 1 are still present and indeed many of these sherds may belong to the same vessels, although no actual cross-fits between phases were noted. However, the ratio of medieval coarse ware to early medieval ware has now increased.

Towards the bottom of the sequence, foundation AF227 produced a fragment from a thick-walled out-flaring vessel in an early medieval ware fabric, which may be part of a chimney pot, although the sherd is far too fragmented for identification to be positive. It may have come from the infirmary hall.

Other featured sherds in Phase 2 comprise an early medieval ware flanged everted ?bowl rim in grave AG 109 and an early medieval ware thumbed, beaded cooking-pot rim showing a dusting of shell on the inside of the rim (similar to Fig. 22, no 14), from wall foundation AF284. As already discussed in Phase 1, this rim type dates from the late 11th to 12th centuries and a date of *c.l* 100-1175 has been suggested for this sherd. Other wares comprise an unattributed unglazed buff ware sherd in AF189 and a small sandy orange ware sherd with a mottled green glaze from floor surface AL91. The latter sherd almost certainly dates from the 13th century and is the latest pottery found in Phase 2. No pottery belonging to the later part of this phase was found.

*Pottery from Phases 2-3 of Site A*
Only six sherds of pottery weighing 114g belong to this phase. Hedingham ware occurs here for the first time in this sequence and includes part of an undecorated jug rim and handle, unglazed apart from a patch of decayed glaze beneath the upper handle attachment. Its rim-form and strap handle are typical of Hedingham ware and it is paralleled at Rivenhall (Drury 1993, fig. 43.136). Coarse ware forms in this phase comprise a medieval coarse ware cooking-pot rim, of sub-form HI rim, a type current throughout the 13th century, from font soakaway AF121. A date in the 13th century is most likely for this material. Again this would be current with the earlier part of Phase 2 and no pottery from the later part of this phase was found. This fits in with the historical evidence of 16th-century neglect of St. Mary Magdalen's, but does not account for the lack of later 13th-, 14th- and 15th-century pottery. Neither is there any evidence of mid 16th-century Dissolution deposits.

*Pottery from Phase 3 of Site A* (1610 to early 19th century)
Rather more pottery was recovered from Phase 3, a total of 325 sherds weighing 3.9kg from 65 contexts. The vertical stratification is quite confused and tells us little about the pottery present, and therefore this section is greatly summarised. Most contexts produced residual medieval pottery indicating contamination from earlier phases. A Plate medieval sandy orange ware jug rim merits illustration:

Fig. 21.1 Jug rim: sandy orange ware; reduced except for brown-orange margins; unglazed, abraded surfaces; stabbed decoration on handle; uneven rim. The jug is difficult to date but the shape and angle of the handle are similar to that found on jugs and cisterns of the 14th to 16th centuries. It therefore most likely post-dates the pottery in earlier phases. Fills 1050, 1077, 1097 (pitAF208).

Also found amongst the residual pottery are further sherds of sandy orange ware, including Colchester ware, which was not found in earlier phases and which may indicate activity in the later 13th to 15th centuries. A sherd of residual 16th-century type slip-painted post-medieval red earthenware is also present, perhaps indicating activity in the early post-medieval period.

As would be expected in a 17th-century phase, post-medieval red earthenware is by far the commonest ware, followed by black-glazed ware, with much smaller amounts of other post-medieval wares dating up to the 19th century (see Table 3). Post-medieval red earthenware forms comprise fragments from three one-handled jars or chamber pots (Fig. 21, nos 2, 4), and a costrel (Fig. 21, no 3). Other finds in this ware comprise a horizontal handle from a storage jar, a small internally glazed flanged rim bowl, a beaded jar rim, and a flanged dish rim. Also present is part of a small loop-handled bowl with an all over glaze, perhaps a porringer; these were used for serving hot semi-solid foods such as porridge or broth.

Fig. 21.2 Part of a one-handled jar or chamber pot: post-medieval red earthenware; typical fabric but with reduced external surfaces; internal plain lead glaze; incised horizontal lines on upper surface; comparable chamber pots with thickened rims were produced in Surrey-Hampshire white ware and corresponding with Pearce's type 1 chamber pot produced in London during the second half of the 17th century (Pearce 1992, 32, 99, fig. 39. 318-19). Removal 1055 (layer AL125).

Fig. 21.3 Standing costrel: post-medieval red earthenware; complete except for a missing lug; typical post-medieval red earthenware fabric but with reduced external surface; apparent greeny glaze on top half of vessel; not particularly well finished with extraneous pieces of clay adhering to surfaces. It is of a squat bottle shape with pierced lugs set transversely across the shoulders, and therefore shares characteristics with Cunningham's costrel forms F6 and F7. Both types occur at Moulsham Street in Chelmsford, and Cunningham considers the transverse lugs to be sufficiently distinctive to be described as characteristic of 17th-century central Essex (Cunningham 1985b, 71, table 5). Costrels were portable drinks containers and the pierced lugs were for suspension. When filled to the neck, this vessel has the capacity of exactly three-quarters of a pint. Buried in an upright position beneath the nave floor, this costrel may be a ritual deposit of the kind that sometimes occurs at medieval and late medieval ecclesiastical sites (Merrifield 1987, 121). Finds no 942 (pit AF130).

Fig. 21.4 One-handled jar or chamber pot with pulled spout (a feature not normally found on a chamber pot): internally glazed; generally similar to no 2 but the rim is everted and there is a small external bead; whitish residue on underside of rim which effervesces on the application of dilute hydrochloric acid demonstrating deposit is limescale not urine, i.e. the vessel contained water; lower part of vessel very abraded externally with much of surface missing, either the result of use or post-depositional. Fill 739 (demolition debris/make-up AF095).

The black-glazed ware comprises fragments from tygs. Only two sherds of Metropolitan slipware were found including a sherd showing an oak-leaf motif, perhaps from a dish. It may be a Harlow product, although the fabric is much darker than usual.

Only one sherd of Surrey-Hampshire white ware is present, i.e. a hollow handle attachment probably from a tripod pipkin, showing an internal yellow glaze and dating from the late 16th to the end of the 17th centuries (Pearce 1992, 92). German stonewares comprise a sherd of Frechen stoneware, the neck of a Westerwald stoneware mug or jug with moulded decoration and a cobalt blue background, and a second sherd of Westerwald stoneware showing incised looped decoration also with a cobalt blue background. Unfeatured sherds of English stoneware are also present.

Two sherds of blue-painted tin-glazed earthenware, perhaps dating to the 17th century, are present. But of rather more interest is the base of an Anglo/Netherlands tin-glazed earthenware dish showing

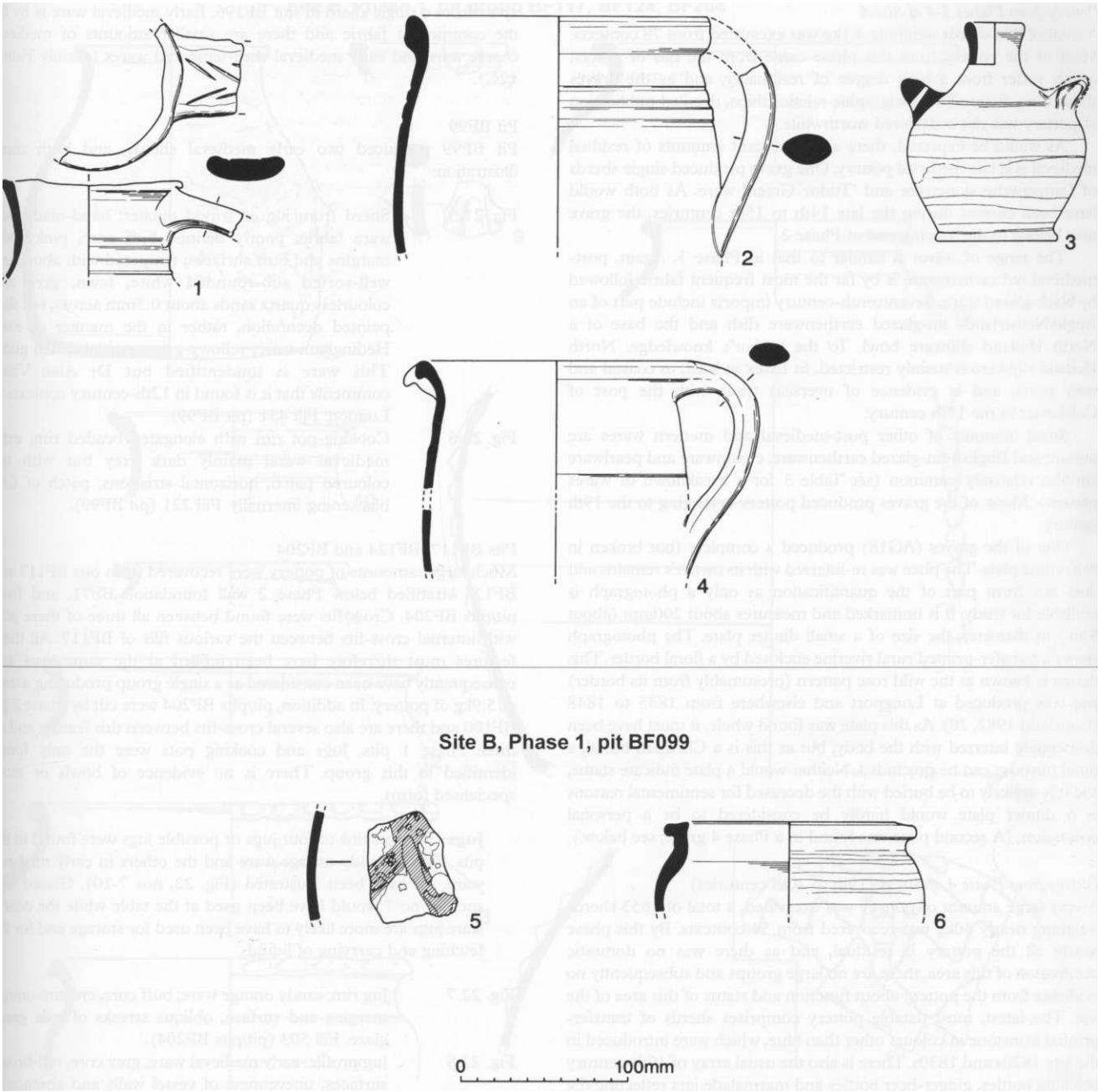



Fig. 21 Medieval pottery: nos 1-6

a blue-painted design of concentric circles with lines radiating outwards. Lines of ochre brush strokes are painted over, at right angles to the radiating lines. The external surface has a plain lead glaze. It is comparable with but not identical to dishes found at Norwich, which share the same decorative elements, and are dated to the mid 17th century (Jennings 1981, fig. 86.1394, 1395 and fig. 87.1402). Similar vessels have also been found inside the town walls of Colchester, at Stockwell Street (Blake *et al* 1961, fig. 32.33-4).

18th- to 19th-century wares comprise:

§ White salt-glazed stoneware including a plain flanged rim from a plate and a moulded plate rim showing dot, diaper and basket pattern dating from the mid 18th century

t A sherd of PEnglish porcelain

• Creamware including sherds from a flanged rim plate

t Willow-pattern transfer-printed pearlware manufactured *c.* 1800, which dates to the end of Phase 3

• A sherd of yellow ware with 'worm' decoration, a type of Mocha ware (see fabrics section) datable to the 19th century (Curtis 1991,276)

• Two sherds of slipped kitchen earthenware which could easily be Victorian.

*Discussion of pottery from Phase 3*

The sherds of 14th- to 16th-century pottery may derive from the latter part of Phase 2, indicating that there was some activity on the site at this time. The bulk of the pottery dates to the 17th century, although the small quantities of Metropolitan slipware, Surrey-Hampshire white ware and Frechen and Westerwald stonewares, usually making up a significant proportion of 17th-century groups, is surprising. This dearth may be accounted for by the historical evidence, which shows that the church was occupied by the poor at some time during the second half of the 17th century. The only common table wares are fragments from black-glazed ware tygs. The presence of the Pporringer and possible chamber pots may indicate that the occupants were also elderly or infirm. However, both types are not uncommon at ordinary domestic sites. The late 18th- to 19th-century pottery comprising sherds of stoneware (both white and brown), creamware and pearlware would be typical on any site of this date.

*Pottery from Phases 3-4 of Site A*

A total of 304 sherds weighing 4.1kg was excavated from 78 contexts. Most of the pottery from this phase came from the fills of graves, which suffer from a high degree of residuality, and as the graves showed no discernible stratigraphic relationships, detailed publication of pottery was not considered worthwhile.

As would be expected, there are significant amounts of residual medieval and late medieval pottery. One grave produced single sherds of Langerwehe stoneware and 'Tudor Green' ware. As both would have been current during the late 14th to 15th centuries, the grave may belong to the missing end of Phase 2.

The range of wares is similar to that in Phase 3. Again, post-medieval red earthenware is by far the most frequent fabric followed by black-glazed ware. Seventeenth-century imports include part of an Anglo/Netherlands tin-glazed earthenware dish and the base of a North Holland slipware bowl. To the author's knowledge, North Holland slipware is mainly restricted, in Essex at least, to coastal and river ports, and is evidence of overseas trade with the port of Colchester in the 17th century.

Small amounts of other post-medieval and modern wares are present and English tin-glazed earthenware, creamware and pearlware are also relatively common (see Table 3 for a breakdown of wares present). Many of the graves produced pottery belonging to the 19th century.

One of the graves (AG18) produced a complete (but broken in two) china plate. The plate was re-interred with its owner's remains and does not form part of the quantification as only a photograph is available for study. It is unmarked and measures about 200mm (about 8 in.) in diameter, the size of a small dinner plate. The photograph shows a transfer-printed rural riverine enclosed by a floral border. This design is known as the wild rose pattern (presumably from its border) and was produced at Longport and elsewhere from 1835 to 1848 (Copeland 1982, 20). As this plate was found whole, it must have been deliberately interred with the body, but as this is a Christian burial, a ritual purpose can be precluded. Neither would a plate indicate status, and it is unlikely to be buried with the deceased for sentimental reasons as a dinner plate would hardly be considered to be a personal possession. (A second plate was found in a Phase 4 grave; see below.)

*Pottery from Phase 4 of Site A* (19th to 20th centuries)

A very large amount of pottery was excavated, a total of 1653 sherds weighing nearly 30kg was recovered from 54 contexts. By this phase nearly all the pottery is residual, and as there was no domestic occupation of this area, there are no large groups and subsequently no evidence from the pottery about function and status of this area of the site. The latest, most datable pottery comprises sherds of transfer-printed ironstone in colours other than blue, which were introduced in the late 1820s and 1830s. There is also the usual array of 19th-century blacking bottles, ginger-beer bottles and marmalade jars reflecting the Victorian revolution in packaging. The above would be contemporary with the almshouses on Site B and probably derive from their demolition.

Of note from grave AG183 is another complete china plate, but again only a photograph was available for study. The plate measures about 250mm or 10 inches in diameter and shows the familiar transfer-printed willow pattern design. On the reverse there is part of a printed mark with a crown and scroll with the words 'IMPROVED STONE.....', probably 'stone china', another name for ironstone. The maker's name is not present and the crown and scroll motif was used by several manufactures including Masons who first patented ironstone china in 1813. The word 'improved' was added *c.* 1840 (Fisher 1970, 53), so the vessel would have been made around this date or later. As with the plate found in Phases 3-4, it must have been deliberately interred with the body for some reason. The coffin plate shows that the occupant was female, so the plate may have reflected her domestic status.

**Pottery from Site B**

*Pottery from Phase 1 of Site B* (12th to early 13th centuries)

A total of 320 sherds weighing 6.3kg was excavated from 17 contexts, much more than in Phase 1 of Site A. All the material came from pits, apart from a single sherd in slot BF196. Early medieval ware is by far the commonest fabric and there are smaller amounts of medieval coarse ware and early medieval shell-tempered wares (mainly Fabric 12C).

Pit BF99

Pit BF99 produced two early medieval sherds, and both merit illustration:

Fig. 21.5 Sherd from jug or tripod pitcher: hand-made buff ware fabric; poorly defined buff core, pinky buff margins and buff surfaces; tempered with abundant, well-sorted sub-rounded white, fawn, grey and colourless quartz sands about 0.5mm across; red slip-painted decoration, rather in the manner of early Hedingham ware; yellowy-green partial splash glaze. This ware is unidentified but Dr Alan Vince comments that it is found in 12th-century contexts in London. Fill 431 (pit BF99).

Fig. 21.6 Cooking-pot rim with elongated beaded rim: early medieval ware; mainly dark grey but with tan coloured patch; horizontal striations; patch of fire-blackening internally. Fill 221 (pit BF99).

Pits BF117, BF124 and BF204

Much larger amounts of pottery were recovered from pits BF117 and BF124 stratified below Phase 2 wall foundation BF71, and from pit/pits BF204. Cross-fits were found between all three of these pits, with internal cross-fits between the various fills of BF117. All these features must therefore have been infilled at the same time and consequently have been considered as a single group producing a total of 5.9kg of pottery. In addition, pit/pits BF204 were cut by Phase 2 pit BF100 and there are also several cross-fits between this feature and all three Phase 1 pits. Jugs and cooking pots were the only forms identified in this group. There is no evidence of bowls or more specialised forms.

**Jugs:** The remains of four jugs or possible jugs were found in the pits. One in sandy orange ware and the others in early medieval ware. All have been illustrated (Fig. 22, nos 7-10). Glazed jugs such as no 7 would have been used at the table while the coarse ware jugs are more likely to have been used for storage and for the fetching and carrying of liquids.

Fig. 22.7 Jug rim: sandy orange ware; buff core, creamy-orange margins and surface, oblique streaks of pale green glaze. Fill 503 (pit/pits BF204).

Fig. 22.8 Jug profile: early medieval ware; grey core, red-brown surfaces; unevenness of vessel walls and absence of throwing lines indicate it was coil-built; shape of body similar to that of a cooking pot; handle attachment scar showing beginnings of a strap handle. Fill 288 (pit BF124).

Fig. 22.9 Lower handle attachment of jug (or tripod pitcher): early medieval ware; grey core, red-brown surfaces. Fill 265 (pit BF117).

Fig. 22.10 ?Jug rim: early medieval ware; buff-brown surfaces and margins; borderline medieval coarse ware. Cleaning 268 (pit BF117) and fill 503 (pit/pits BF204).

**Cooking pots:** As is typical of medieval assemblages, the cooking pot is by far the commonest form. Fragments from at least fifteen vessels are present and a representative collection is illustrated (Fig. 22, nos 11-21). The cooking pot was a general-purpose vessel used for preparation and storage of food stuffs as well as for cooking. However, fire-blackening on the shoulder and around the rim of several cooking pots (Fig. 22, nos 11, 15-17, 20) is consistent with being placed in or at the edge of a wood-burning fire, which would indicate that at least some of these vessels were used for cooking. Cooking pots occur in Fabric 12C, early medieval ware and medieval coarse ware, with a flanged, everted

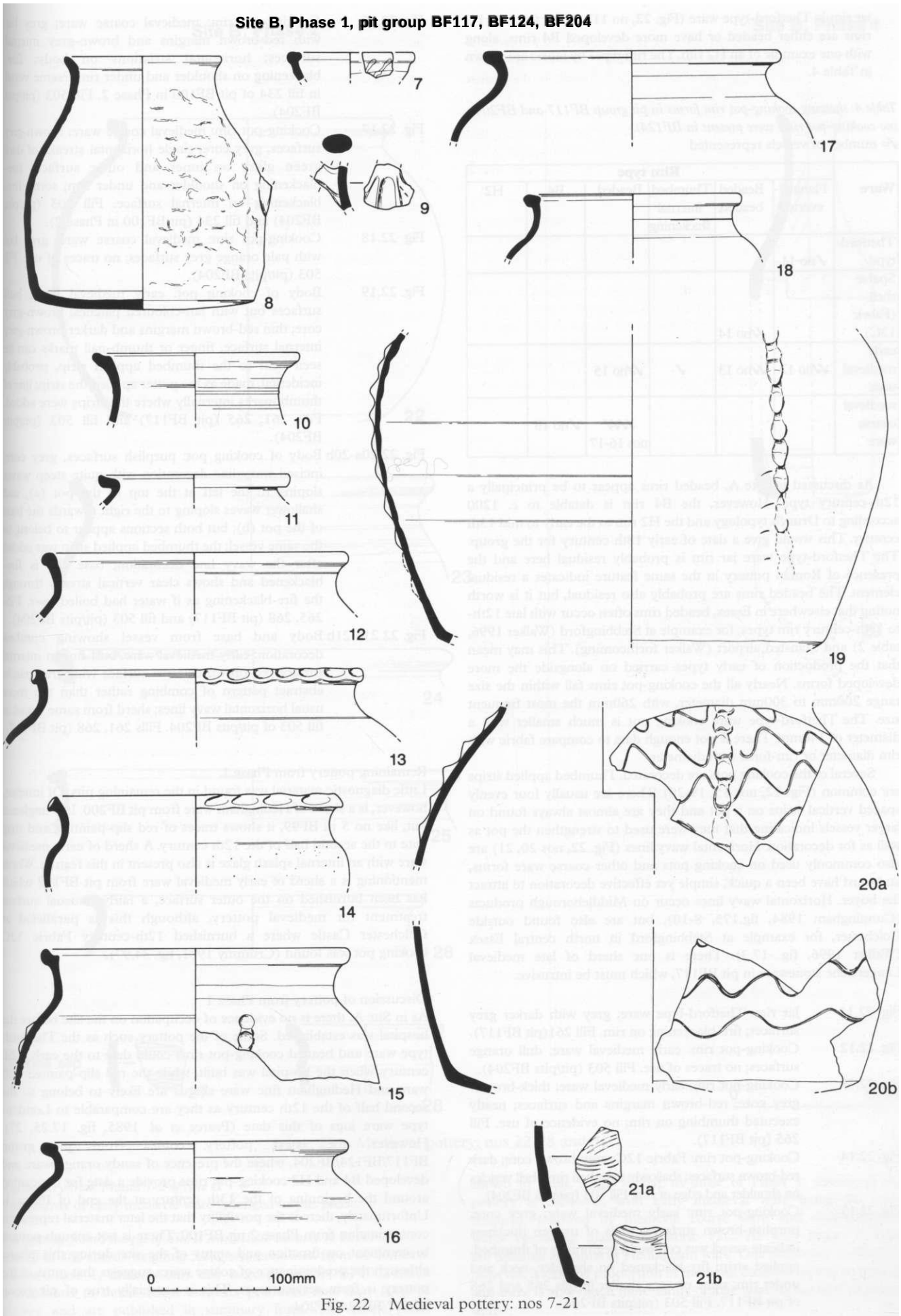



Fig. 22 Medieval pottery: nos 7-21

jar rim in Thetford-type ware (Fig. 22, no 11). Apart from no 11, rims are either beaded or have more developed B4 rims, along with one example of an H2 rim. The rim types by fabric are shown in Table 4.

*Table 4: showing cooking-pot rim forms in pit group BF117 and BF204 (no cooking-pot rims were present in BF124).*
/- number of vessels represented

| Ware | Rim type | | | | | |
|---|---|---|---|---|---|---|
| | Flanged everted | Beaded beaded | Thumbed internal truckening | Beaded, | B4 | H2 |
| Thetford-type | /no 11 | | | | | |
| Sparse shell (Fabric 12C) | | *SSno* 14 | | | | |
| early medieval ware | //no 12 | //no 13 | / | //no 15 | | |
| medieval coarse ware | | | | //// nos 16-17 | /no 18 | |

As discussed in Site A, beaded rims appear to be principally a 12th-century type. However, the B4 rim is datable to *c.* 1200 according to Drury's typology and the H2 rim to the early to mid 13th century. This would give a date of early 13th century for the group. The Thetford-type ware jar rim is probably residual here and the presence of Roman pottery in the same feature indicates a residual element. The beaded rims are probably also residual, but it is worth noting that elsewhere in Essex, beaded rims often occur with late 12th- to 13th-century rim types, for example at Stebbingford (Walker 1996, table 2) and Stansted airport (Walker forthcoming). This may mean that the production of early types carried on alongside the more developed forms. Nearly all the cooking-pot rims fall within the size range 200mm to 300mm diameter, with 260mm the most frequent size. The Thetford-type ware cooking pot is much smaller with a diameter of 140mm. There is not enough data to compare fabric with rim diameter or rim-form with diameter.

Several of the cooking pots are decorated. Thumbed applied strips are common (Fig. 22, nos 15, 19-20). There are usually four evenly spaced vertical strips on a pot and they are almost always found on larger vessels indicating that they were used to strengthen the pot as well as for decoration. Horizontal wavy lines (Fig. 22, nos 20, 21) are also commonly used on cooking pots and other coarse ware forms, and must have been a quick, simple yet effective decoration to attract the buyer. Horizontal wavy lines occur on Middleborough products (Cunningham 1984, fig. 175, 8-10), but are also found outside Colchester, for example at Stebbingford in north central Essex (Walker 1996, fig. 17.3). There is one sherd of late medieval Langerwehe stoneware in pit BF117, which must be intrusive.

Fig. 22.11 Jar rim: Thetford-type ware; grey with darker grey surfaces; fire-blackening on rim. Fill 261 (pit BF117).

Fig. 22.12 Cooking-pot rim: early medieval ware; dull orange surfaces; no traces of use. Fill 503 (pit/pits BF204).

Fig. 22.13 Cooking-pot rim: early medieval ware; thick-brown-grey core; red-brown margins and surfaces; neatly executed thumbing on rim; no evidence of use. Fill 265 (pit BF117).

Fig. 22.14 Cooking-pot rim: Fabric 12C; grey-brown core; dark red-brown surfaces; shallowly thumbed rim; shell vesicles on shoulder and edge of rim. Fill 503 (pit/pits BF204).

Fig. 22.15 Cooking-pot rim: early medieval ware; grey core; purplish-brown surfaces; walls of uneven thickness indicate vessel was coil-built; beginnings of thumbed, applied strip; fire-blackened on shoulder, neck and under rim; same or very similar in fills 265 and 268 of pit BF117. Fill 503 (pit/pits BF204).

Fig. 22.16 Cooking-pot rim: medieval coarse ware; grey but with red-brown margins and brown-grey internal surfaces; horizontal striations on body; fire-blackening on shoulder and under rim; ?same vessel in fill 234 of pit BF100 in Phase 2. Fill 503 (pit/pits BF204).

Fig. 22.17 Cooking-pot rim: medieval coarse ware; brown-grey surfaces, grey core; single horizontal streaks of dark green glaze on inner and outer surface; fire-blackening on shoulder and under rim; some fire-blackening on internal surface. Fill 503 (pit/pits BF204) and fill 234 (pit BF100 in Phase 2).

Fig. 22.18 Cooking-pot rim: medieval coarse ware; grey but with pale orange grey surfaces; no traces of use. Fill 503 (pit/pits BF204).

Fig. 22.19 Body of cooking pot: early medieval ware; buff surfaces but with tan-coloured patches; brown-grey core; thin red-brown margins and darker brown-grey internal surface; finger or thumb-nail marks can be seen next to the thumbed applied strip, probably incidental, made as the potter applied the strip; line of thumb marks internally where the strips were added. Fills 261, 265 (pit BF117) and fill 503 (pit/pits BF204).

Fig. 22.20a-20b Body of cooking pot: purplish surfaces, grey core; incised wavy line decoration with quite steep waves sloping to the left at the top of the pot (a), and shallower waves sloping to the right towards the base of the pot (b); but both sections appear to belong to the same vessel; the thumbed applied strip was added after the wavy line decoration; base (b) is fire-blackened and shows clear vertical streaks through the fire-blackening as if water had boiled over. Fills 265, 268 (pit BF117) and fill 503 (pit/pits BF204).

Fig. 22.21a-21b Body and base from vessel showing combed decoration: early medieval ware; buff-brown internal surface red-brown external surface with grey patch; abstract pattern of combing rather than the more usual horizontal wavy lines; sherd from same vessel in fill 503 of pit/pits BF204. Fills 261, 268 (pit BF117).

Remaining pottery from Phase 1

Little diagnostic material was found in the remaining pits. Of interest, however, is a sherd of Hedingham ware from pit BF200. It is unglazed but, like no 5 in BF99, it shows traces of red slip-painting and may date to the second half of the 12th century. A sherd of early medieval ware with an internal splash glaze is also present in this feature. Worth mentioning is a sherd of early medieval ware from pit BF192 which has been burnished on the outer surface, a fairly unusual surface treatment for medieval pottery, although this is paralleled at Colchester Castle where a burnished 12th-century Fabric 12C cooking pot was found (Crummy 1981, fig. 34.97).

Discussion of pottery from Phase 1

As in Site A, there is no evidence of occupation on the site before the hospital was established. Some of the pottery such as the Thetford-type ware and beaded cooking-pot rims could date to the early 12th century when the hospital was built, while the red slip-painted buff ware and Hedingham fine ware sherds are likely to belong to the second half of the 12th century as they are comparable to London-type ware jugs of this date (Pearce *et al.* 1985, fig. 17.25, 27). However, the latest pottery comes from pit group BF117/BF124/BF204, where the presence of sandy orange ware and developed B4 and H2 cooking-pot rims provide a date for deposition around the beginning of the 13th century at the end of Phase 1. Unfortunately, there is the possibility that the later material represents contamination from Phase 2 pit BF100. There is not enough pottery to comment on function and status of the site during this phase, although the predominance of coarse wares suggests that most of the pottery is from service areas. This is especially true of pit group BF117/BF124/BF204.

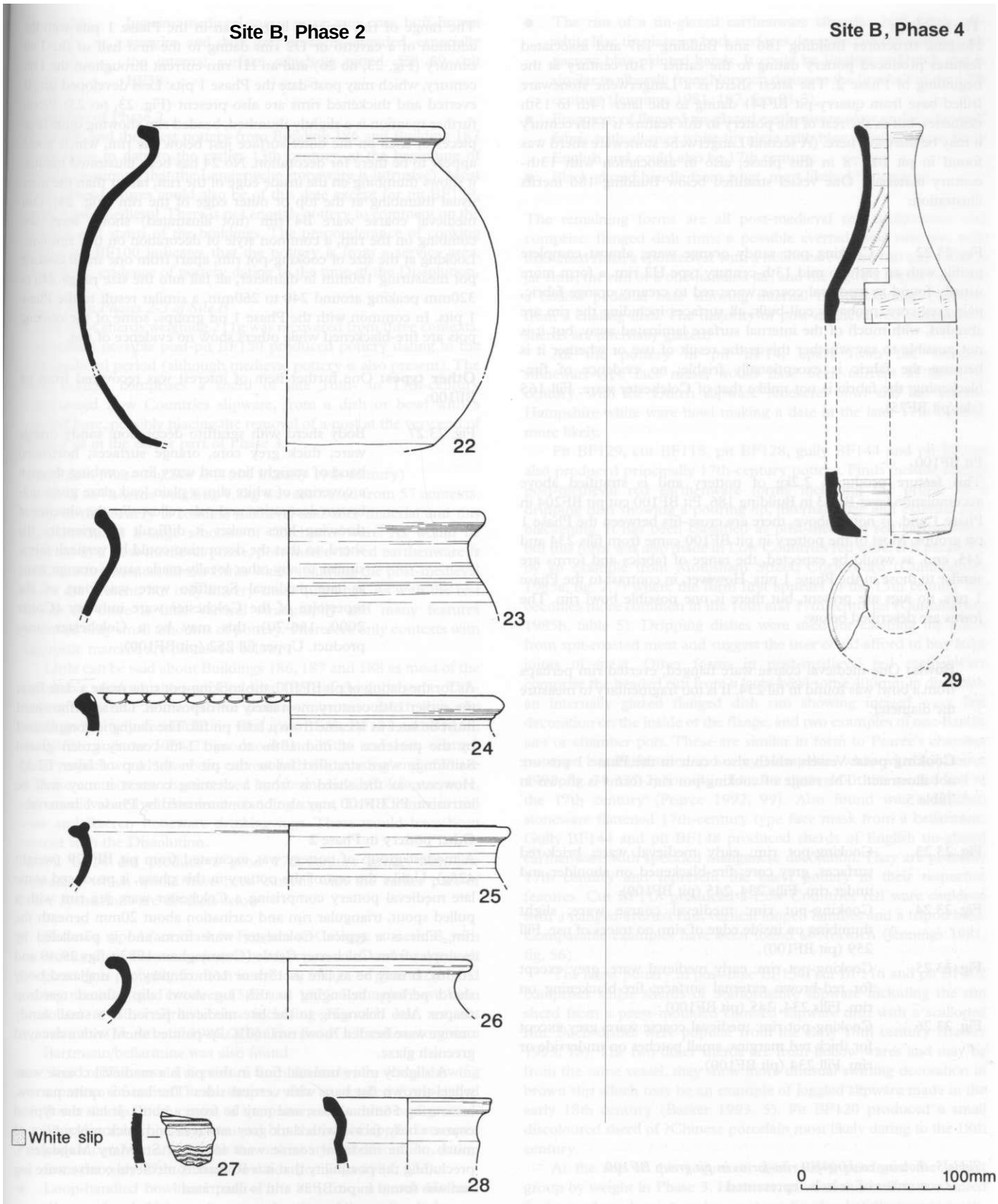



Fig. 23 Medieval pottery: nos 22-28 and 31.

*The pottery from Phases 1-2 of Site B*
Two sherds of early medieval ware belonged to this phase.

*The pottery from Phase 2 of Site B (early 13th century to 1610)*
A total of 460 sherds weighing 5.2kg was excavated from 60 contexts. Unlike Phase 1, there is only one large pit group, BF100, which is published in detail. Most contexts produced less than lOOg of pottery and are published in summary form. The fabric totals shown in Table 3 are similar to those of Phase 1; almost all the pottery is medieval, with early medieval ware being the most frequent, followed by medieval coarse ware and shell-tempered wares consisting mainly of Fabric 12C. As with Phase 1, there are minimal amounts of Hedingham ware. One difference in Phase 2, however, is that the proportion of medieval coarse ware has increased, and there is now much more sandy orange ware including Colchester ware.

The buildings

Hospital structures Building 186 and Building 187 and associated features produced pottery dating to the earlier 13th century at the beginning of Phase 2. The latest sherd is a Langerwehe stoneware frilled base from quarry-pit BF141 dating to the later 14th to 15th centuries, but as the rest of the pottery in this feature is 13th century it may be intrusive here. (A second Langerwehe stoneware sherd was found in pit BF178 in this phase, also in association with 13th-century material.) One vessel stratified below Building 186 merits illustration:

Fig. 23.22 Cooking pot: sandy orange ware; almost complete profile with an early to mid 13th-century type H2 rim, a form more usually found in medieval coarse ware; red to creamy orange fabric, pale grey core; probably coil-built; all surfaces including the rim are abraded, with much of the internal surface laminated away, but it is not possible to say whether this is the result of use or whether it is because the fabric is exceptionally friable; no evidence of fire-blackening; the fabric is not unlike that of Colchester ware. Fill 165 (slot/pit BF75).

Pit BF100

This feature produced 2.2kg of pottery and is stratified above accumulation layer BL33 in Building 186. Pit BF100 cut pit BF204 in Phase 1 and, as noted above, there are cross-fits between the Phase 1 pit groups. Most of the pottery in pit BF100 came from fills 234 and 245, and, as would be expected, the range of fabrics and forms are similar to those in the Phase 1 pits. However, in contrast to the Phase 1 pits, no jugs are present, but there is one possible bowl rim. The forms are described below:

**Bowls:** One medieval coarse ware flanged, everted rim perhaps from a bowl was found in fill 234. It is too fragmentary to measure the diameter.

**Cooking pots:** Vessels which also occur in the Phase 1 pits are not illustrated. The range of cooking-pot rim forms is shown in Table 5.

Fig. 23.23 Cooking-pot rim: early medieval ware; brick-red surfaces, grey core; fire-blackened on shoulder and under rim. Fills 234, 245 (pit BF100).

Fig. 23.24 Cooking-pot rim: medieval coarse ware; slight thumbing on inside edge of rim; no traces of use. Fill 259 (pit BF100).

Fig. 23.25 Cooking-pot rim: early medieval ware; grey except for red-brown external surface; fire-blackening on rim. Fills 234, 245 (pit BF100).

Fig. 23.26 Cooking-pot rim: medieval coarse ware; grey except for thick red margins; small patches on underside or rim. Fill 234 (pit BF100).

*Table 5: showing cooking-pot rim-forms in pit group BF100.*
/ = number of vessels represented

| Ware | Rim type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Everted | Thickened everted | Thumbed beaded | Beaded internal thickening | B2 | B4 | D2 | H2 | HI |
| Sparse shell fabric (12C) | | | / | | | | | | |
| Early medieval ware | / / | /no 23 | / / | / / no 25 | | / | | | |
| Medieval coarse ware | | | /no 24 | | / | / | / no 26 | / | / |

The range of rim types is larger than in the Phase 1 pits with the addition of a cavetto or D2 rim dating to the first half of the 13th century (Fig. 23, no 26) and an HI rim current throughout the 13th century, which may post-date the Phase 1 pits. Less developed simple everted and thickened rims are also present (Fig. 23, no 23). Worth further mention is a slightly thumbed, beaded rim showing quite large pieces of shell on the outer surface just below the rim, which would appear to be there for decoration. No 24 has been illustrated because it shows thumbing on the inside edge of the rim, rather than the more usual thumbing at the top or outer edge of the rim (Fig. 23). One medieval coarse ware B4 rim (not illustrated) shows wavy line combing on the rim, a common style of decoration on this rim type. Looking at the size of cooking-pot rim, apart from one small cooking pot measuring 160mm in diameter, all fall into the size range 240 to 320mm peaking around 240 to 260mm, a similar result to the Phase 1 pits. In common with the Phase 1 pit groups, some of the cooking pots are fire-blackened while others show no evidence of use.

**Other types:** One further item of interest was recovered from pit BF100:

Fig. 23.27 Body sherd with sgraffito decoration: sandy orange ware; thick grey core, orange surfaces; horizontal band of straight line and wavy line combing through a covering of white slip; a plain lead glaze gives red-brown decoration and pale yellow slip; the absence of throwing lines makes it difficult to orientate the sherd, so that the decoration could be vertical; fabric similar to any other locally made sandy orange ware; as late medieval Sgraffito ware was part of the repertoire of the Colchester ware industry (Cotter 2000, 166-70), this may be a Colchester ware product. Upper fill 252 (pit BF100).

As for the dating of pit BF100, the cooking-pot rims make a date from the earlier 13th century most likely for deposition. The sgraffito sherd must be later as it came from a later pit fill. The dating is complicated by the presence of mid 13th- to mid 14th-century green glazed Saintonge ware stratified below the pit in the top of layer BL33. However, as the sherd is from a cleaning context it may well be intrusive. Pit BF100 may also be contaminated by Phase 1 material.

Other pottery in Phase 2

A modest group of pottery was excavated from pit BF179 (weight 425g). Unlike the rest of the pottery in this phase, it produced some late medieval pottery comprising a Colchester ware jug rim with a pulled spout, triangular rim and carination about 20mm beneath the rim. This is a typical Colchester ware form and is paralleled by examples from Colchester Castle (Cunningham 1982a, figs 29.49 and 30.56). It may be as late as 15th or 16th century. An unglazed body sherd perhaps belonging to this jug shows slip-painted teardrop shapes. Also belonging to the late medieval period is a small sandy orange ware beaded ?bowl rim and a slip-painted sherd with a decayed greenish glaze.

A slightly more unusual find in this pit is a medieval coarse ware wheel-thrown flat base with vertical sides. The base is quite narrow, measuring 56mm across, and may be from a bottle. It has the typical coarse sandy fabric with dark grey surfaces and thick pinky core of much of the medieval coarse ware found at St. Mary Magdalen's, precluding the possibility that it is Roman. A medieval coarse ware jug rim was found in pit BF38 and is illustrated:

Fig. 23.28 Jug rim: medieval coarse ware; grey core, buff-brown margins and dark grey surfaces; abraded, especially the internal surface which is pitted. Fill 69 (pit BF38).

Discussion of Phase 2

Pit BF100 and the latest pottery from Building 186 and Building 187 would seem to date to the earlier 13th century, at the beginning of Phase 2 (assuming that the Langerwehe stoneware is intrusive). Most of the other features could also be of this date except for pit BF179, which is late medieval. There is not enough pottery to comment on the function and status of the buildings. The preponderance of cooking pots in pit BF100 indicates that the pottery is from a service area. There is no evidence of pottery dating to the time of the Dissolution.

*Pottery from Phases 2-3 of Site B*

A total of 24 sherds weighing 21 lg was recovered from three contexts. A disturbed possible post-pit BF150 produced pottery dating to the post-medieval period (although medieval pottery is also present). The latest pottery comprises a sherd of late 16th- to 17th-century undecorated Low Countries slipware, from a dish or bowl with a pinched base, possibly placing the removal of a post at the very end of Phase 2 or in the earlier part of Phase 3.

*Pottery from Phase 3 of Site B* (1610 to early 19th century)

A total of 467 sherds weighing 9.8kg was recovered from 57 contexts. Much of the pottery is residual medieval and later material and this phase produced a large amount of Colchester ware. As would be expected in a post-medieval phase, post-medieval red earthenware is by far the commonest fabric. Other wares spanning the post-medieval period are present, but only in very small quantities. As with the rest of Site B, there is little vertical stratigraphy and many features produced only small amounts of pottery. Therefore only contexts with diagnostic material are discussed below.

Little can be said about Buildings 186, 187 and 188 as most of the material is residual, although Building 186 did produce some 17th-century material. Some of the features not associated with the buildings (namely accumulation BL3, pits BF30, BF132 and BF160, slot BF21, and cut BF122) produced late 15th- and 16th-century pottery which would have been current with the 'missing' end of Phase 2. These contexts are characterised by late medieval Colchester ware, post-medieval red earthenware standing cups, Low Countries red ware and Raeren stoneware drinking jugs. These would have been current with the Dissolution.

Pit BF14 did produce a good 17th-century group with low residuality which would have been current with the earlier part of Phase 3; the finds are detailed below:

t Part of a type I face mask in Frechen or Cologne stoneware, with a naturalistic face and squared bead, brown wash and external salt glaze. It is probably from an inscribed, foliage or geometric band jug manufactured between 1525 and 1575. Examples have been found at other British sites including Norwich but are not common (Hurst *et al.* 1986, 210). The rim of a Frechen stoneware Bartmann/bellarmine was also found.

• Sherd of Westerwald stoneware from the body of a vessel showing a pattern of incised heart shapes, with an applied five-petalled flower stamp in the centre of the pattern and a blue background. This decoration is fairly unusual but the use of applied stamped pads is common and may be the earliest style of decoration, dating from the early 17th century onwards (Jennings 1981, 123).

t Loop-handled bowl and part of the rim from a north Holland slipware bowl, 200mm diameter showing oblique slip dashes on both surfaces under an all over orange glaze and is perhaps from a cockerel bowl *(cf.* Hurst *et al.* 1986, fig. 77, 238). These were produced throughout the 17th century although most date to the later 17th (Hurst et al. 1986, 163).

• All the Surrey-Hampshire white ware has an internal yellow glaze. Forms comprise a slightly thickened everted bowl rim (cf. Pearce 1992, fig. 23.67) classified by Pearce as a wide bowl. This form is not closely datable but the majority of wide bowls found in London belong to the mid to late 17th century (Pearce 1992, 13). A beaded jar rim of around 160mm diameter is also present in this ware.

• The rim of a tin-glazed earthenware albarello, buff fabric off-white lilac tin glaze on both surfaces decorated on the outside with narrow blue-painted bands. It could be English or Dutch and is similar to albarelli from Norwich dating to the first half of the 17th century (Jennings 1981, 187, figs 91-3).

• Fragment of flanged tin-glazed earthenware plate or dish rim; buff fabric with all over white tin glaze with blue painting, most likely English and could also be 17th century.

• Black-glazed handle from a tyg, most likely 17th century.

The remaining forms are all post-medieval red earthenware and comprise: flanged dish rims; a possible everted bowl rim; jars with thickened rims; a spouted jar with a hollowed everted rim and collared jar rims; the rim of a one-handled jar; and the leg of a tripod base and a hollow pedestal base showing internal fire-blackening, probably from a chafing dish. The majority of post-medieval red earthenware sherds are internally glazed.

All the pottery in pit BF14, apart from the German stoneware-type face mask, would have been current in the 17th century, with the Dutch slipware ?cockerel bowl and the Surrey-Hampshire white ware bowl making a date in the later 17th century more likely.

Pit BF129, cut BF118, pit BF128, gully BF144 and pit BF148 also produced principally 17th-century pottery. Finds include several post-medieval red earthenware forms including the profile of a dripping dish showing a pouring lip, internal glaze and external fire-blackening. It has been classified as post-medieval red earthenware, but this form was also made in Low Countries red ware. It is paralleled by an example from Moulsham Street, Chelmsford (Cunningham 1985a, fig. 2.7) where the form first appears in the 15th century but becomes more common in the 16th and 17th centuries (Cunningham 1985b, table 5). Dripping dishes were used for catching the juices from spit-roasted meat and suggest the user could afford to buy large joints of meat. Other forms in post-medieval red earthenware comprise the beaded rim from a large bowl some 400mm in diameter, an internally glazed flanged dish rim showing incised wavy line decoration on the inside of the flange, and two examples of one-handle jars or chamber pots. These are similar in form to Pearce's chamber pot type 1 manufactured in Surrey-Hampshire white ware *(cf.* Pearce 1992, fig. 39.321-2) found in London throughout the second half of the 17th century (Pearce 1992, 99). Also found was a Frechen stoneware flattened 17th-century type face mask from a bellarmine. Gully BF144 and pit BF148 produced sherds of English tin-glazed earthenware with speckled manganese decoration. They are probably 17th century and represent the latest pottery in their respective features. Cut BF118 produced a Low Countries red ware cauldron with a flanged everted rim, vertical looped handles and a tripod base. Comparable examples have been found at Norwich (Jennings 1981, % 56).

The latest pottery in post-hole BF134, cut BF116 and pit BF202 comprises single sherds of Staffordshire slipware including the rim sherd from a press-moulded combed slipware dish with a scalloped rim. Such dishes were popular from the early 18th century (Barker 1993, 18). The two other sherds are from hollow wares and may be from the same vessel, they show more unusual swirling decoration in brown slip which may be an example of joggled slipware made in the early 18th century (Barker 1993, 5). Pit BF120 produced a small discoloured sherd of ?Chinese porcelain most likely dating to the 18th century.

At the top of this sequence, ditch BF40 produced the largest group by weight in Phase 3. However, most of this bulk is accounted for by two large semi-complete post-medieval red earthenware vessels, comprising a bucket-shaped jar with an abraded horizontal flanged rim, and a wide dish with convex sides and a hollowed everted flanged rim (Cunningham's sub-form E2). The latter shows the remains of slip-trailed squiggles dotted around the inside surface with one in the centre, and wavy line slip-trailing around the inside of the flange. This is the same technique used in Metropolitan slipware but not in the same style and may be later. This vessel appears to have undergone some kind of secondary use as the top of the rim is encrusted with a black flaky deposit extending down the outside of the vessel. The deposit has adhered to the slip-trailing on the inside of the flange.

Parts of the external surface are abraded and the internal surface is quite pock-marked.

Ditch BF40 is dated by the presence of slipped kitchen earthenware including a sherd from a hollow ware showing vertical slip-trailed patterns, a 19th-century revival of a 17th-century technique as found at Wetheriggs in Cumbria (Brears 1971, 64-5). Also present is a sherd of white salt-glazed stoneware, a plain creamware flanged plate or dish rim and a very abraded sherd of yellow ware dating from the late 18th to 20th centuries.

Discussion of pottery from Phase 3 (1610 to 19th century)
As with Site A, post-medieval red earthenware one-handled jars or chamber pots are relatively common. Very little 18th-century pottery is present and only ditch BF40 produced pottery datable to the 19th century at the end of this phase. The dish with the black deposit in ditch BF40 may represent very small-scale industrial activity.

*Pottery from Phase 4 of Site B* (19th to 20th centuries)
In this phase, Building 187 and Building 188 were demolished and a terrace of almshouses was built in 1832. A total of 634 sherds weighing 14kg was excavated from 92 contexts. No pottery was excavated from features belonging to the almshouses. Residual sherds of intrinsic interest are described in the fabrics section but of special interest is a very unusual Hedingham ware bottle (no 29).

Fig. 23.29 Part of a bottle with a perforated base: Hedingham ware; wheel-thrown showing internal throwing lines and oblique creases in the fabric where the neck has been formed; extraneous lumps of clay stuck to the inside of the base; creamy-orange fabric with buff internal margins; patchy orange glaze with green flecks; sides of vessel have been knife-trimmed giving a faceted appearance; the hole in the base was made during manufacture; it is rather like a drainage hole in a flowerpot, but is not in the centre and is too large for a sprinkler; it could be for a stopper rather like a present day salad oil container which is filled from the base and has a cork in the top. Finds no 98 (make-up BL7).

A wide range of post-medieval and modern wares are present. The most frequent of these are creamware, pearlware, and English stoneware (including Nottingham/Derby stoneware and modern stoneware). A number of small 19th-century groups are present and some would have been current with the occupation of the almshouses. None merit publication, but they are detailed in the archive. Of the pottery that is contemporary with this phase, most consists of low-quality kitchen, table, garden and other household wares that would be expected from almshouses where the residents were not well-off.

**Discussion of the pottery from Sites A and B**
Very little pottery came from Phase 1 of Site A, comprising small amounts of coarse wares. Very similar but larger quantities of pottery, with the addition of a couple of fine ware sherds, were excavated from the pit groups from Site B. This indicates that the pits were indeed associated with the hospital occupation in Buildings 183 and 184, although there is the complication of contamination from a Phase 2 pit.

Another small quantity of pottery was excavated from Phase 2 of Site A, which is very similar to that from Phase 1. Much more pottery belongs Phase 2 of Site B, but little of this came from Building 186 which produced a few coarse wares belonging to the earlier part of this phase. This is therefore similar to the assemblage from Building 183 in Site A. However, it is difficult to compare assemblages from buildings as most of the pottery used in them would have been discarded in outside rubbish-pits rather than deposited *in situ.* More pottery came from Building 187 and includes a few fine ware sherds, although again most belongs to the earlier part of this phase, as does that from pit BF100. However, unlike Site A, some features did contain late medieval Colchester ware, 'Tudor Green' ware and Low Countries red ware, some of which may have been current during the Dissolution, although there are no significant Dissolution deposits.

This lack of late medieval pottery could indicate contraction of occupation at this time, before the Dissolution took place. However, sites with a dearth of late medieval pottery are quite common and could indicate a decline in the pottery industry at this time.

The bulk of the pottery from Phase 3 of Site A dates to the 17th century and, apart from a couple of late medieval sherds, there is no evidence of occupation in Site A from the second half of the 13th century until the 17th century. Again much more pottery was found in Site B of this phase, although a much higher proportion consists of residual medieval material. Mainly residual pottery was found in Buildings 186 and 187, but the presence of 17th-century sherds in Building 186 indicates that it remained in use in this phase. Other features in Site B produced pottery that could have been current with the Dissolution. None of this pottery has very tight dating; for example late medieval sandy orange wares carried on well into the 16th century, so it is impossible to say what happened in the later 16th century immediately after the Dissolution. Much 17th-century pottery was found in Site B, and the range and proportions of wares are similar to that of Site A. In both sites there is little evidence of 18th-century activity.

In Phase 4, far more pottery was found in Site A than Site B with a much lower proportion of residual medieval pottery. It is difficult to compare assemblages between the two sites as most of the pottery from Site A is from grave fills and topsoils and no actual groups are present.

In the medieval period, very few vessels for a specialised function were made, and there is no definite evidence of vessels used for medicine or care of the sick, although such evidence has been recovered at other hospital sites (Gilchrist 1992, fig. 8.3). The pit groups found in Phases 1 and 2 would be typical of any 12th- to 13th-century site. However, it is tempting to suggest that the Hedingham ware bottle with the hole in the bottom, found residually in Phase 4 (Fig. 23, no 29), has something to do with ministering to the sick (as it is wheel thrown it would have been current with Phase 2). In the late medieval and post-medieval period, the relative proliferation of one-handled jars or chamber pots and the two Pporringers may indicate the presence of the infirm, but such vessels are also found on ordinary domestic sites.

Imported wares are present but occur only in very small quantities, making up 1.4% of the total (excluding imports commonly found at inland sites in Essex, namely Raeren, Frechen and Westerwald stonewares and Chinese porcelain). The earliest wares comprise the unidentified but possibly north French sherd in Phases 1-2 and the sherd of Andenne ware residual in Phase 3. Other medieval imports comprise a possible Rouen sherd, and sherds of Saintonge green-glazed ware, the commonest medieval import totalling seven sherds; unfortunately all but one is residual in Phase 4. Post-medieval imports comprise a couple of sherds of Spanish olive jar and one sherd of North Italian slipware again residual in Phase 4. Low Countries red wares including North Holland slipware are relatively common and are more or less current in their phases, as were sherds of Anglo/Netherlands tin-glazed earthenware and German stonewares, although all but Langerwehe stoneware are common on inland sites. Evidence of medieval wares traded along the coast comprise sherds of London-type ware and a single sherd of Scarborough ware. Even though many of these imports are residual, there is no reason to suspect that they did not come from St. Mary Magdalen's.

Imported wares at inland sites may reflect high status, but at a port they are more likely to reflect their ready availability, coming straight off the docks with virtually no transport costs. Given the proximity of St. Mary Magdalen's to the port area of the Hythe, the amount of imports seems remarkably low. But few imports were found at Colchester Castle (Cunningham 1982a); for example, the only import in the early medieval period was a sherd of blue-grey ware, and the later medieval imports comprised (as at St. Mary Magdalen's) mostly Low Countries red wares and a few sherds of early German stonewares. In the post-medieval period, the variety of wares at Colchester Castle is greater than at St. Mary Magdalen's although again they only occur in small quantities.

Another comparable site is at Hythe Hill, outside the town wall and only 250 yards from the Hythe (Walker 2000, 116-19). Here, as

at Colchester Castle, the range of imports is similar to that of St. Mary Magdalen's but there is slightly more variety, although surprisingly imports only account for a small part of the total assemblage. In common with St. Mary Magdalen's, Saintonge is the most frequent medieval import and Low Countries red ware is the most frequent late medieval/post-medieval ware. A recently published synthesis of post-Roman pottery from Colchester (Cotter 2000), confirms that there were very few imports in the town until the late 14th century. However, during the mid 15th to late 16th centuries, imports are common, and as at the sites mentioned above comprise mainly German stonewares and Low Countries red wares (Cotter 2000, 355).

It would seem therefore that the pottery assemblage, at least in the respect of imports, may not be significantly different from other sites, and there is no real evidence to suggest that St. Mary Magdalen's was isolated from the pottery supply available to the rest of the town and its environs.

It is difficult to gauge status. In the medieval phase, the preponderance of coarse wares indicates most of the pottery is from service areas and there are few table wares. In the post-medieval period there are more table wares, especially drinking vessels, but then these forms are a common feature of most post-medieval sites.

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1 would like to thank John Cotter for his comments on some of the Site A sherds and Alan Vince for his comments on sherd no 5. The drawings are by Iain Bell.

## The small finds (Fig. 24)

by Nina Crummy

The majority of the finds from both the Site A (64.1989) and Site B (1995.10) excavations are Victorian, from Phase 4 contexts. Except for the coins, they were not examined in detail and are not discussed here.

The Roman period is represented by three tile counters (Site A, SFs 46, 66, 163) and a large convex disc cut from a brick (Site A, SF 178). One of the counters was reused as building material in the Phase 2 foundation AF75. Probably also Roman are two fragments of weathered Purbeck marble wall veneer, one (Site A, SF 176) used in the Phases 1-2 foundation AF287 and the other (Site A, SF 177) deriving from the fill of a 19th-century grave (AG 186). While Purbeck marble was used both for fonts and architectural features in the medieval period, it is mainly found in cathedrals and the wealthier parish churches. The fragment used here in an early foundation is most likely to have reached the site among building material robbed from Roman remains in the town or suburbs.

Two fragments of hones of Norwegian ragstone were found in Site B Phase 1 pits, SF 52 (Fig. 24, A. 1) from BF187 and SF 53 from BF188 (Fig. 24, A.2). Norwegian rag is a fine-grained mica-schist quarried chiefly at Eidsborg, nearTelemark, and hones made from this stone were imported from the 9th century onwards (Mann 1982, 30). Hones in the cargo of a wrecked Viking ship show that they were imported as finished items (Graham-Campbell and Kidd 1980, 134), but medieval deposits in London show that blocks of the stone were also imported to be made into hones at the port of entry. A block of Norwegian phyllite (also used for hones) was found in an 11th-century context at Watling Court (Pritchard 1991, 155), and waste and semi-finished ragstone hones were found associated with pottery dated 1300-1320 at Ludgate (Museum of London Archaeological Archive, LUD82 [1062]).The Late Saxon and early medieval markets of the eastern and southern coasts of England were dominated by Norwegian ragstone hones, though on the west and in the Midlands the use of local stones prevailed (Crummy forthcoming), as it did on the east coast of Scotland (Trewin 1982, 184).This distinction cannot simply be attributed to a lack of suitable local stone in the south and east, for it also applies in York, which imported both Norwegian schist hones and Millstone Grit hones from the Pennines, the former considerably outnumbering the latter (e.g. MacGregor 1982, 77-80). The import costs may have been balanced against the quality of the product, or, most likely, were kept low by the hones or blocks of stone serving as ballast. Both of the St. Mary Magdalen's hospital examples are fragments from large hones used to sharpen the blades of tools rather than of small knives, and may be associated with tools used in the construction of the hospital buildings, or with horticultural/ agricultural activity preceding or contemporary with its early occupation. Both are spalled, SF 52 quite severely, but have continued in use after the surfaces were damaged. SF 52 shows some signs of being used to sharpen points as well as edges.

A small U-shaped staple from a Site B Phase 2 clay floor (SF 24 from BL13) may be from furniture used in the hospital. Small staples were often used to fix on box fittings such as handles, hinges or hasps,

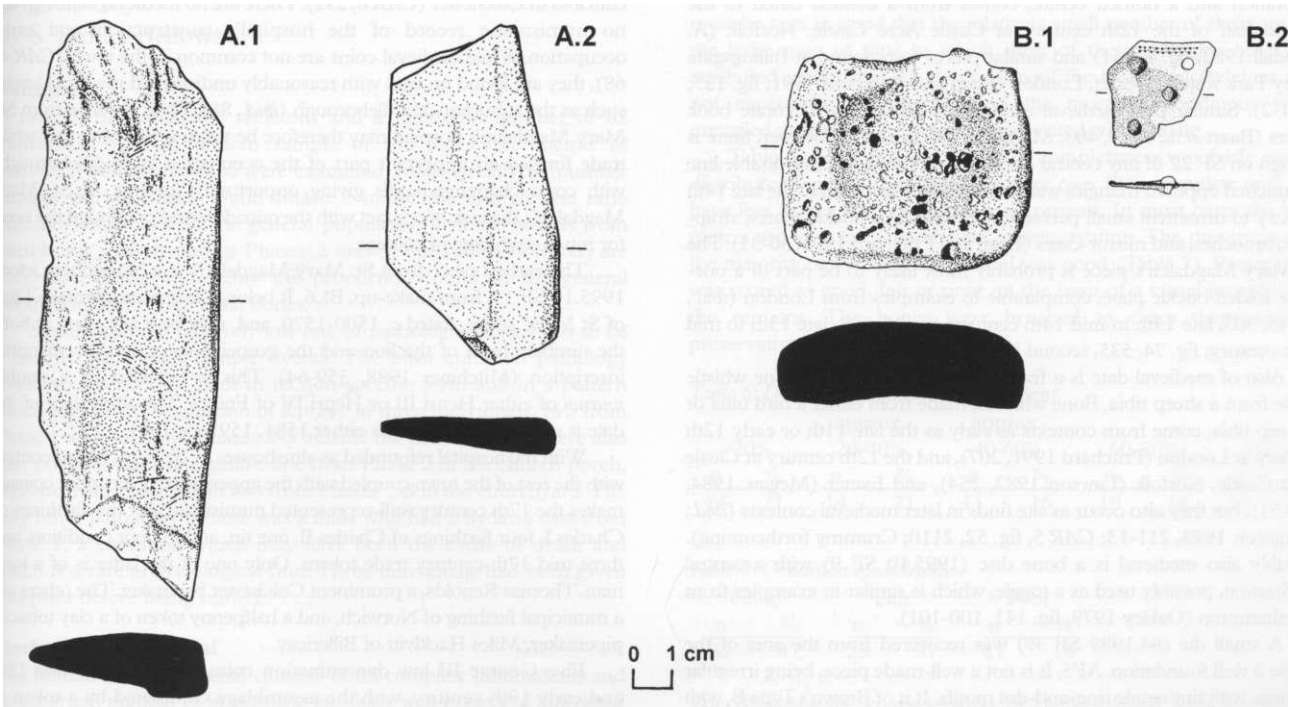



Fig. 24 Small finds.
A Hones from Site B: 1 SF 52; 2 SF 53 B Finds from Site B: 1 SF 54 stone; 2 SF 22 copper alloy

but could also be used to join pieces of wood together in the construction of furniture. The form occurs both in pre- and post-conquest contexts (e.g. Ottaway 1992, 619-23; I. Goodall 1982, 228).

From a Site B Phase 2 pit (BF197) came a neatly-shaped rectangular tool of worked lava, SF 54, shaped to the hand, with a flattened convex top and slightly dished underside (Fig. 24, B.l). The smoother lower surface was almost certainly the working face. Its surface is too vesicular to use for grinding powders or pastes, and too smooth for harsh scouring. The most likely interpretation of this object is that it was used for smoothing or polishing bone, wood or leather items. Similar smoothing stones have been identified in Late Saxon contexts at Southampton (Addyman and Hill 1969, 74), and the use of pumice to smooth wooden or bone scroll-ends is attested in the late 1st century AD by Martial *(Epigrams I,* 117). The choice of stone for this tool probably demonstrates reuse of a broken quernstone of German Niedermendig lava, the trade in which flourished during both the Roman and medieval periods *(CAR* 2, 73-6; *CAR* 5, 36-9).

Also from a Site B Phase 2 pit (BF170) is a small bone point. This has been made from a splinter broken from a hollow long bone, probably from a mammal of sheep/goat size, with all the edges being fractures apart from the very tip of the object. Originally longer, it has broken off at a point where the shaft narrowed. While the point may have been sufficiently strong to pierce thin leather, the form of the object is very close to a roughly-made point from a context dated 1280-1380 at King's Lynn identified as a pin beater (Geddes and Clarke 1977, fig. 143, 5), used to adjust the warp threads on a warp-weighted loom. By the time of the construction of St. Mary Magdalen's hospital the warp-weighted loom was well in decline in England, pushed out by the much faster horizontal loom (Walton 1989, 423) but it is possible that the economically-restricted inhabitants of the hospital were dependent on the earlier, cheaper, technology if they wove their own cloth.

The most important item in the assemblage is undoubtedly the pewter chalice deposited in the Site A Phase 2 grave AG 107 (SF 165). This was, unfortunately, corroded and fragmented to the point at which its original form could no longer be determined. Found resting on the chest of the skeleton, it belongs to a tradition of burying priests with a white-metal chalice.

Also from Phase 2 is a fragment of a square mount (SF 22) from Site B make-up, BL30 (Fig. 24, B.2). Two corners are missing. Two retain iron rivets, and there is a third rivet in the centre. The best preserved edge is slightly incurving and is decorated with a fine double line of punched opposed triangles. A square mount of similar size, but with linear edge decoration and a domed centre, comes from a context dated to the second half of the 12th century at Castle Acre Castle, Norfolk (A. Goodall 1982, fig. 44, 41) and similar pieces were found at Billingsgate Lorry Park watching brief, London (Egan and Pritchard 1991, fig. 125, 1061-2). Similar post-medieval examples were used to decorate book covers (Baart *et al,* 1977, 403; Margeson 1993, 74-5). However, there is no sign on SF 22 of any central doming, and the distinctive double line of punched opposed triangles was used from the late 12th to the late 14th century to ornament small personal items, such as buckle-plates, strap-ends, brooches, and mirror-cases (Egan and Pritchard 1991,30-31).The St. Mary Magdalen's piece is probably most likely to be part of a one-piece folded buckle plate, comparable to examples from London *(ibid.,* fig. 45, 303, late 13th to mid 14th century; fig. 72, 508, late 13th to mid 14th century; fig. 74, 535, second half of the 14th century).

Also of medieval date is a fragment of an unstratified bone whistle made from a sheep tibia. Bone whistles, made from either a bird ulna or a sheep tibia, come from contexts as early as the late 11th or early 12th century at London (Pritchard 1991,207), and the 12th century at Castle Acre Castle, Norfolk (Lawson 1982, 254), and Exeter (Megaw 1984, 349-51), but they also occur as site finds in later medieval contexts *(ibid.;* Margeson 1993, 211-13; *CAR* 5, fig. 52, 2110; Crummy formcorning). Possibly also medieval is a bone disc (1995.10 SF 9) with a central perforation, possibly used as a toggle, which is similar to examples from Northampton (Oakley 1979, fig. 141, 100-101).

A small die (64.1989 SF 39) was recovered from the area of the Phase 3 wall foundation, AF5. It is not a well-made piece, being irregular in form, with tiny single ring-and-dot motifs. It is of Brown's Type B, with faces placed so that 1 opposes 2, 3/4, 5/6, dated from the 13th to 16th centuries (1990).

A neatly-made rectangle of lead (SF 32) from a Phase 4 pit, BF69, may have been intended for use as a weight. The underside shows that it was sand-cast. One side is original, the others have been neatly bevel-cut. Similar objects are used in the medieval period as weights (G Egan pers. comm.), but are usually very worn, while this piece appears to be unused.

The small copper-alloy pins and lace-ends common as site finds in the medieval and early post-medieval periods were present in some numbers from Site A, but rather less so from Site B. Two lace-ends were of the riveted form, Colchester Type 1, dated from *c.* 1375 to 1550/75. Each was residual in its context. None of the pins was of a type which could be closely dated.

A few small fragments of painted glass and lead window cames from Site A probably derived from the medieval church, while lead cames and nails from Site B are more likely to have come from the hospital buildings. All are residual, though two fragments of cames were found in a Phase 3 hearth, 64.1989 AF112.

Three objects are probably of 17th-century date. From Site A Phase 3 dump/make-up AL19 came a bone knife (SF 139) with decorative notching on the sides of the handle, which is pierced for suspension. A similar knife came from a pit dated c. 1625-50 on the Long Wyre Street site in the town *(CAR* 5, fig. 77, 3105). A 17th-century date may also be assigned to a iron scale-tang knife with two-piece bone handle (SF 42), from a Site B Phase 3 pit (BF30), and to a fragment of an H-shaped one-piece double-sided bone comb from Site B Phase 4 make-up BL6. Five other bone comb fragments came from Site B, but all are likely to be of 18th- or 19th-century date.

The coffins in two of the 18th-century graves on Site A were fitted with white-metal repoussE plaques. In AG89 one plaque is in the form of an angel, the other a vase of flowers. Both were attached to the wooden coffin by small iron dome-headed rivets. Those from the adjacent AG88 are fragmented, but were certainly products of the same workshop. The coffin in AG88 was also fitted with white-metal plated iron drop-handles.

## Coins, jetons, and tokens

by Nina Crummy

The collection of coins reflects quite clearly the lack of Roman occupation on the site and the isolation of the medieval hospital from the rest of the town. While some of the post-medieval coins from Site A are stratified in Phase 3 and Phase 4 contexts, all the coins from Site B are from Phase 4 contexts, making all residual.

An *antoninianus* of Postumus (AD 259-68) is the sole representative of the Roman period (64.1989 SF 150). It belongs to a period of high coin loss in Colchester *(CAR* 6,292).There are no medieval coins, giving no numismatic record of the hospital's construction and early occupation. While medieval coins are not common in the town *(CAR* 4, 68), they are found on sites with reasonably undisturbed medieval levels, such as the suburban Middleborough *(ibid.,* 88).Their absence from St. Mary Magdalen's hospital may therefore be taken as showing that while trade formed an important part of the occupation at Middleborough, with coins changing hands giving opportunity for loss, at St. Mary Magdalen's the lack of contact with the outside world precluded the need for much exchange of coinage.

The earliest piece from St. Mary Magdalen's is a Nuremberg jeton, 1995.10 SF 15, from make-up, BL6. It belongs to the anonymous Lion of St Mark' series, dated *c.* 1500-1570, and, may be a late issue as both the nimbate head of the lion and the gospel project into the marginal inscription (Mitchiner 1988, 359-64). This is followed by a double *tournoi* of either Henri III or Henri IV of France. The third digit of the date is obscured, but it reads either 1581, 1591, or 1601.

With the hospital refounded as almshouses in 1610, increased contact with the rest of the town coupled with the appearance of a copper coinage makes the 17th century well-represented numismatically: two farthings of Charles I, four farthings of Charles II, one tin, and in poor condition, and three mid 17th-century trade tokens. Only one of the latter is of a local man, Thomas Renolds, a prominent Colchester baymaker.The others are a municipal farthing of Norwich, and a halfpenny token of a clay tobacco pipemaker, Miles Hacklvitt of Billericay.

Five George III low denomination coins represent the late 18th and early 19th century, with the assemblage completed by a token of 1840 commemorating Victoria's visit to Hanover in 1837, and a centime (one, two, five, or ten) piece of Napoleon III, 1852-70. The precise denomination cannot be given as the piece is now missing.

*Site A Phase 3*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SF81 | 744 | AL57 | demolition/ make-up | Thomas Renolds | trade token | mid 17th century | Williamson 1967, 143 |
| SF 107 | 800 | AL62 | make-up | Charles I | Rose farthing | 1635-44 | ?Type 3 |
| SF 100 | 829 | AF112 | hearth | illegible | post-medieval | c. 17th century | |
| SF137 | 900 | AL112 | ?floor surface | Henri III or IV | double *tournoi* | 1581/1591/1601 | |

*Site A Phase 4*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SF36 | 74 | AL1 | modern topsoil | George III | halfpenny | 1806 | 4th issue Soho |
| SF33 | 52 | AL4 | topsoil & grave fill | Victoria | commemorative token (farthing) | 1840 | To Hanover 1837 |
| SF51 | 578 | AL5 | topsoil & grave fill | George III | halfpenny | 1799 | |
| SF 150 | 1276 | AL170 | turf & grave fill | Postumus | *antoninianus* | 259-68 | *RIC 76* |
| SF 153 | 1514 | AL229 | grave fill & topsoil | Charles II | tin farthing | 16..(?85) | |
| SF 170 | 1639 | AL233 | turf & grave fill | Napoleon III | 1/2/5/10 centime (s) | 1852-70 | |

*Site B Phase 4*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SF 23 | 80 | BL2 | accumulation | George III | farthing | 1775 | |
| SF15 | 94 | BL6 | make-up | Nuremberg | jeton | *c.* 1500-70 | Mitchiner 1988, 359-64 |
| SF 25 | 155 | BL6 | make-up | Charles II | farthing | 167- | |
| SF 13 | 88 | BL7 | make-up (demolition material) | George III | halfpenny | 177- | |
| SF 30 | 125 | BL7 | make-up (demolition material) | blank | | | |
| SF 18 | 140 | BL17 | accumulation | Norwich | farthing token | 1667 | Williamson 1967, 93 (Norfolk) |
| SF 29 | 14 | BF4 | trial trench | George III | halfpenny | 177- | 1st issue |
| SF 38 | 194 | BF90 | pit | Charles I | royal farthing | | |
| SF 19 | 200 | BF96 | pit | Charles II | copper farthing | 1672 | |
| SF 3 | 219 | BF96 | pit | Charles II | copper farthing | 167- | |

*Unstratified*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Site A SF 174 | 1645 | | jeton | medieval/ post-medieval | | | |
| Site B SF 36 | 4 | Miles HacMvitt | trade token | 1666 | Williamson 1967, 11 (Essex) | | |

# The human skeletons from St. Mary Magdalen's

(Figs 25-26)

by S. Pinter-Bellows

**Summary**

A total of 68 articulated skeletons and a minimum number of 62 individuals from a random sample of the 3.5 cubic metres of individual bones excavated were examined. Males greatly outnumber females during Phase 1 and Phase 2 inside the church; the ratio becomes that found in the general population in those burials from outside the church during Phases 2 and 3. Subadults, however, are only represented in roughly the proportion found in the general population in the individual bones.

Stature and the relatively low rate of pathologies shows this to be a healthy population sample overall. The most common pathology found was periostitis, both in its non-specific form and in a pattern which lead to the suggestion of leprosy in three individuals; two from Phase 1 and one from Phases 2-3 outside the church. There were also four possible cases of syphilis: one from Phase 2 in the church porch, and one from Phase 3 and two from Phases 2-3 in the churchyard. The only other pathology of note was a male who had a hydatid cyst from Phase 1, a condition which may have been the cause of death and which is a rare archaeological find. Three individuals had been given autopsies before being buried.

**Methods and material**

The human skeletal material consists of 68 complete inhumations and an uncertain number of incomplete but fairly well-preserved individual bones. The circumstances of the burials have resulted in the disturbance and fragmentation of some. Inhumations were inserted successively, cutting into and disturbing earlier graves. A random sample of approximately 17% of the estimated 3.5 cubic metres of individual bones were examined; giving a minimum number of 56 individuals. It must be kept in mind that the relatively small number of skeletons and the large span of time to which most of these skeletons have been attributed means that the description of the individual skeletons does not necessarily accurately reflect the mortality conditions which prevailed generally for the people associated with the site.

Table 6 shows that the degree of completeness was fairly equally distributed across the range, 28% were over 80% complete and 21% have less than a fifth of the skeleton present. In most cases the bone matrix was in a fairly good state of preservation. The preservation of the majority of the skeletal material was good (Table 7). Preservation was scored as good, fair or poor on the basis of a visual inspection of the remains. The bones were brushed to clean them and no preservative was applied.

*Table 6: Degree of completeness of skeletons.*

| <20% | | approx. 20-40% | | approx. 40-60% | | 60-80% | | >80% | |
|---|---|---|---|---|---|---|---|---|---|
| n | % | n | % | n | % | n | % | n | % |
| 14 | 21 | 14 | 21 | 11 | 16 | 10 | 14 | 19 | 28 |

*Table 7: Condition of skeletons.*

| Good | | Fair | | Poor | |
|---|---|---|---|---|---|
| n | % | n | % | | % |
| 32 | 47 | 25 | 37 | 11 | 16 |

The demographic characteristics of each skeleton were established following the criteria and procedures presented in Bass 1971, Brothwell 1981, Phenice 1969, and Stewart 1979. Priority for gender determination was given to innominate morphology. Cranium

morphology was also used, and, whenever possible, supplemented by univariate measurements of the femur and humerus head, the glenoid fossa of the scapula, the maximum length of the talus and other robusticity indicators. In assessing the sex of the fragmentary individuals, it is necessary to remember that many of the structural features being evaluated are being correlated with robusticity and size. The physical characteristics have ranges that overlap for the two sexes. Therefore, the sex assessment of individual bones cannot be assessed with 100% certainty. Morphological traits of the pelvis and cranium, while subjective, are reported generally to be around 95% accurate from skeletal series of known sex (Krogman 1962); univariate measurements range from 80% to 90% accuracy (Buikstra and Mielke 1985; Dittrick and Suchey 1986; Steele 1976). Sexing was only attempted for adult skeletons (a term used here to indicate those above the age of approximately 20 years).

Univariate standards were generated from a total of 38 skeletons. These were skeletons which were fairly securely sexed on morphological grounds. The variables were checked to see that they had bimodal distributions, and that the measurements were similar from phase to phase, allowing all the skeletons from the different phases to be combined. Means for each sex were then calculated for each measurement, and the male mean value added to the male mean value and divided by two to produce the sectioning point. The sectioning points used are shown in Table 8, together with the percentage of morphologically sexed skeletons used to generate the original values which would have been misclassified had they been sexed using the metric standards only. Two of the female standards show a greater inaccuracy than those based on skeletal series of known sex mentioned above. This is because of the low numbers of individuals used to generate the standards and several female skeletons which were larger than average for these measurements; these females were not consistently large in all the measurements, however.

*Table 8: Metric sexing standards.*

| **Bone** | **Sectioning point (mm)** | **% misclassified** | |
|---|---|---|---|
| | | **F** | **M** |
| *Scapula* | | | |
| vertical diameter of the glenoid fossa | 36.6 | 7 | 40 |
| *Humerus* | | | |
| maximum head diameter | 43.5 | 12 | 11 |
| *Femur* | | | |
| maximum head diameter | 46.2 | 6 | 20 |
| *Talus* | | | |
| maximum length | 62.1 | 12 | 25 |

Using the range of technique described above, it was possible to assign a sex to all but 5 (8%) of the adult skeletons. Of those 61 adult skeletons, 50 (75% of the total number of adults) were recorded as reliably sexed and 11 (17% of the total number of adults) were recorded as possibly male or female (M?, F?). Those recorded as possibly male or female were either sexed on the basis of metric standards alone or were assessed as slightly ambiguous; they have, however, been included with the more confidently assigned males and females for the purposes of analysis.

The regularity of adult osteological maturation processes is under debate at the moment, as is the precision and accuracy to which adult skeletal age can be estimated. Acs-di and NemeskEri (1970), whose complex method is advocated in the recommendations of the Workshop of European Anthropologists (1980), claims an accuracy of 80-85% with a margin of error of two to five years. However, when Molleson (1993, 167-72) used this method on the Spitalfields sample of known age, only 30-35%) were accurate to within 5 years and 75% were assessed within fifteen years. Molleson (1993, 171) does caution that there might be a specific environmental or genetic component to the moderate performance of the method on the Spitalfields sample. Therefore, the large age intervals were used in this report for the adults in an attempt to prevent the over-ageing of younger individuals and the under-ageing of old individuals distorting too much the demography of the adult sample. The age profile of a skeletal population sample should only be considered in the most general manner. The age at death of the adults should be viewed as a vehicle to the analysis of the overall age structure of the sample, not as an accurate representation of chronological age for any individual.

Measurements were taken following descriptions in Bass (1971) and Brothwell (1981). The formulae for stature used individual bone lengths (Trotter 1970). However, it should be noted that the limb proportions for this population could differ from the modern Americans of north European ancestry used as a reference population, so the formula is not necessarily entirely appropriate. Of the 61 adult skeletons which could be sexed, 46 (75%; 26 males and 20 females) had long bones from which stature could be calculated. Table 9 shows the bones that were available for the calculations and an assessment of the standard errors for each bone.

*Table 9: Bones used for stature estimation, listed in decreasing value of accuracy (standard errors from Trotter 1970, 77).*

| error (cm) | n | | (+/-) standard (cm) | |
|---|---|---|---|---|
| | Females | Males | Females | Males |
| Femur and tibia | 14 | 14 | 3.55 | 2.99 |
| Tibia | 1 | 4 | 3.66 | 3.37 |
| Femur | 5 | 5 | 3.72 | 3.27 |
| Radius | 0 | 3 | 4.24 | 4.32 |

Pathological conditions were evaluated through gross anatomical observation and radiographic examination. Criteria for probable diagnosis stemmed from Steinbock (1976), Ortner and Putschar (1981) and Rogers *et al.* (1987).

As the excavation and analysis took place in two stages with a number of years in between, changes took place in the observations carried out on the skeletons, with additions especially in metric analysis in the later analysis. Therefore, not all observations have been made for each skeleton even when they were available.

**The skeletal material according to phase**

*Phase 1*

Five skeletons (AG138, AG142, AG143, AG151, AG162) were recovered which could be firmly associated with Phase 1 (early 1100 to *C.* mid 1200s) on the site. All of the firmly associated skeletons are adults, though only one, a middle-aged adult, could be aged with any more precision. The four for which sex could be determined were male. It was possible to calculate stature for three, i.e. 171cm, 172cm and 186cm (5ft. 7in. and 6ft. 2in.); these figures are consistent with mean statures for English medieval populations (White 1988).These are well-grown individuals, though one (AG138) exhibits enamel hypoplasia, which represents acute stress during development.

The most frequent pathological change in the adult skeletons from this phase is gross tibio-fibular periosteal inflammation. Three of the individuals have periostitis: one (AG162, unsexed adult) has a quite localised periostitis on the medial side of a distal fibula; the other two have more generalised periostitis, one (AG138, middle-aged male) has periostitis on the distal, medial sides of both tibiae and fibulae and the other (AG143, adult male) has periostitis on the medial and posterior sites of both tibiae and the left fibula. Periostitis is a non-specific infection, inflammatory in nature, for which the pathogenic agent is unknown. Periostitis is recognised as a deposition of irregular new bone upon the outer surface of bone.

This type of periostitis, although not pathognomonic, is highly indicative of leprosy, a diagnosis which must be foremost in differential diagnosis. In leprosy, the tibio-fibular inflammatory changes is usually a toxic manifestation resulting from gross ulceration and chronic sepsis of the foot rather than a bacterial infection *per se* (Manchester 1989). Only one of these three skeletons have foot bones which could be examined for changes associated with leprosy and that particular skeleton did not have any (the periostitis on this specimen is located on the middle third of the tibia). In none of the skeletons was the rhinomaxillary area well enough preserved to examine it for changes associated with lepromatous leprosy. Periostitis is often found on the tibia in the absence of general pathology; in these cases it probably resulted from repeated and minor trauma to the lower legs or ulcers from varicose veins (Brothwell 1961; Manchester 1984). However, in these cases it is the middle third of the tibia which is the most likely area to be affected by such an injury, as opposed to the

distal third. Therefore, there is the suggestion that two of the individuals (AG 138, AG 143) might have been affected by leprosy, but a definite diagnosis cannot be made.

During excavation of burial AG 143 (adult male) an object was discovered, ellipsoid in shape, approximately 25mm lateral of the 11th and 12th thoracic vertebrae, lying on the 11th and 12th ribs, measuring 60 x 30mm in its maximum length-breadth axes, and not attached to any bone (Fig. 25d). It is less than a millimetre thick and has a slightly lobulated or knobbly exterior surface and a finely granular interior surface. The most likely diagnosis is that it is a calcified hydatid cyst caused by the tapeworm *Echinococcus granulosus.* Other calcareous capsules, cysts produced by the pork tapeworm, *Taenia solium,* healed tuberculous cavity, calcification around caseous tubercular glands, bronchiectatic cavitation and a neoplasm of the cystadenematous type, are all discounted because of position, shape or general appearance.

This organism, which measures from 2.5mm to 9.2mm in length, is primarily an intestinal parasite of dogs, foxes and wolves. Human infections derive from the chance ingestion of eggs on vegetables or by the fondling of an infected dog leading to the transference of eggs from the animal's hair to the mouth by the fingers. Once ingested they develop into embryos, or oncospheres, which pass through the intestinal wall into the blood stream; many settle are the liver (70%) (Berkow 1977) while others migrate into the pulmonary, abdominal and pelvic cavities. In the affected organ the oncosphere develops into a hydatid cyst. The cyst grows slowly, taking six to twelve months to reach a diameter of about 1cm, sometimes growing for 20-30 years (Seaton 1979). While infection is a common occurrence even today in England and Wales (Palmer and Biffin 1987), this is only the third published discovery of one in an archaeological context in England (Price 1975; Wells and Dallas 1976).

Whether this individual's death was directly due to the hydatid cyst is indeterminable. It is not unusual for a hydatid cyst to die and become calcified without causing the least disturbance to health; however, they may suppurate or rupture. The cyst 'shell' in this instance is broken, and this could have occurred post-deposition or it may have burst antemortem into the lung or pleural cavity causing a fatal allergic shock.

Another pathology of note is Schmorl's nodes on two thoracic and one lumbar vertebrae of burial AG 138 (middle-aged male). While the aetiology of Schmorl's nodes are not completely understood, it is believed that if the disk located between the vertebrae is subject to too much strain it may rupture. The bubble of escaped material then presses against the body of the adjacent vertebra, which gradually yields to the pressure and a small cavity is formed in its body.

*Phase 2 burials within the church*

Four skeletons were excavated from inside the church (AG 107, AG108, AG 109, AG131). These individuals date from any time between the c. mid 1200s and the early 17th century. All four of the skeletons are middle-aged adult. Three of them are males or probable males and one is a probable female (AG 109). It was possible to calculate statures for all of them; those of the males were 171cm, 174cm and 179cm (5ft.7in.-5ft.10in.) and the possible female has a stature of 152cm (5ft. lin.). These figures again are consistent with mean statures for English medieval populations. While no chronic developmental stresses could be detected, two individuals (AG 107, AG 109) exhibit enamel hypoplasia, showing that these individuals experienced some periods of acute stress during development.

Two individuals have periostitis on lower leg bones; there is one case of healed periostitis on the distal tibia (AG 107, middle-aged male) and one case of unhealed periostitis on the distal fibulae (AG131, middle-aged male). These cases probably resulted from repeated and minor trauma to the lower legs. There is also a bony osteoma, a benign bony tumour, mid-shaft on a right femur (AG 107, middle-aged male).

*Phase 2 burials in the church porch*

Three burials belonging to Phase 2 were recovered from the porch of the church: AG171 (old adult, possibly female); AG 172 (middle-aged adult, female), and AG 173 (old-aged adult, male). It is possible to calculate statures for all of them; the male was 171cm (5ft.7in.) and the females 156cm and 160cm (5ft.2in.-5ft.3in.). These figures are again consistent with mean statures for English medieval populations.

There is one case of healed cribra orbitalia (AG 173); the most likely cause of this was iron anaemia in early childhood cause by nutritional problems and/or illness affecting the uptake of nutrients.

One individual, AG171, has a possible case of treponemal infection of syphilis. The skeleton exhibits the lower half of the right radius swollen and covered with a fine-grained porous bone and shows the imprint of blood vessels over and in it. The left femur is swollen on the medial side of the shaft. The excess bone is of a fine-grained porous nature, with the imprint of blood vessels running over it and through it. The fovea capitis is filled with ossified ligament. Both tibiae are also affected, the left more than the right. The distal two-thirds of the shaft is swollen (the distal articulation is not affected) on the left tibia. The right tibia is less swollen and has a rough irregular area of additional bone medially on the lower third of the shaft. The latter two are not classic examples of a treponemal disease; there is no involvement of the nasal cavity or cranial vault, and in AG171 the changes are not bilateral. However, the bones do not exhibit the microscopically visible mosaic pattern found in Paget's disease, nor the more localised node formation, often encroaching on the meduallary cavity, found in non-suppurative sclerosing osteomyelitis of Garre.

Two of the individuals have osteoarthrosis; none of the cases seem to originate from trauma. AG171 has osteoarthrosis in the cervical and lumbar vertebrae, with cervical vertebrae 6 and 7 almost fused together by osteophytes around the centre and eburnation between the articular facets of lumbar vertebrae 2 and 3. AG173 also has osteoarthrosis in the cervical and lumbar vertebrae, with cervical vertebrae 3-5 fused on the dorsal side on the centres and eburnation between the articular facets of cervical vertebrae 2-7, and lumbar vertebrae 2 and 3 fused on the left side of the centres.

Osteoarthrosis has an association with accumulated daily wear and tear and can be used to give some idea of how strenuous were the activities that various individual were involved in, taking into account the fact that some individuals have a greater propensity for exhibiting these changes. Burial AG173, besides exhibiting arthrosis, gives another indication of having been involved in physical activity from an early age in displaying the non-metric trait of the os acromion not fused. The os acromion is a part of the scapula which has an separate growth centre and normally fuses onto the rest of the scapula between the ages of 16 and 22. Research suggests that arduous work involving the muscles of the shoulder which begins before the age of acromial fusion may lead to the os acromion not fusing (Stirland 1985a).

AG171 has a benign neoplasm, an osteoma. An osteoma is bone cells in a circumscribed area, normally in the periosteum, which grow more than the surrounding tissue; it is not progressive. This osteoma is a small hemispherical hard projection on the left femur, about the size of a pea.

*Phase 2-early Phase 3 burials outside the church*

Twenty-eight skeletons were excavated from outside the church from Phases 2-3. These individuals date from any time between the c. mid 1200s and the early 1700s. Twenty-seven of the inhumations had characteristics allowing a sex to be determined. Eleven skeletons were diagnosed as female and one as possibly female, twelve skeletons were diagnosed as male and two as possibly male (see Table 10). This gives a gender ratio of 1:1.17, that expected from a normal biological population. It is generally assumed that cemeteries with an even sex distribution are likely to be those where a representative selection of the whole adult population was buried, probably in family groups. However, turning to the age profile (Table 10), not one of the skeletons is from a subadult (those individuals approximately under the age of 20 years). This differs dramatically from what should be represented if a sample of an entire population had been excavated. A rough test of a skeletal sample's completeness is that a minimum of 30%) of the skeletons should be under 15 years of age (Weiss 1973, 49). The adult age distribution for Phases 2-3 shows that the greatest percentage of aged adults were in the middle-aged category. This is a quite common distribution.

*Table 10: Demography for St. Mary Magdalen's, Phases 2-3 outside the church.*

| Age | Unknown sex | Males | Females | Total |
|---|---|---|---|---|
| Foetal-birth | | | | |
| Birth- .9 | | | | |
| 1-4.9 | | | | |
| 5-9.9 | | | | |
| 10-14.9 | | | | |
| 15-19.9 | | | | |
| Young adults (20-29.9) | | 3 | 2 | 5 |
| Middle-aged adults (30-49.9) | 4 | 3 | 7 | |
| Old adults (50+) | 2 | | 2 | |
| Adults: age unknown | 2 | 5 | 7 | 14 |
| **Total** | **2** | **14** | **12** | **28** |

While an absence of subadults might have been expected during Phase 2, when a more select group may have been buried here, a more complete age distribution would have been anticipated for Phase 3. Interestingly, 27% of the minimum number of individuals estimated from the individual bones from all three periods (see below) were from subadults. There is no explanation for why the individual bones appear to represent an entire population sample while the inhumations do not, unless it could be proved that the individual bones came from dirt brought from elsewhere on the site during the period that the cemetery was in use.

It was possible to calculate statures for 16 of the 26 skeletons which could be sexed; the males had a mean of 173cm (5ft.8in.) and the females of 162cm (5ft.4in.). The distribution of statures can be seen in Figure 26. Growth and stature have been shown to be important factors in evaluating overall stress in a population (Hummert and Van Gerven 1983). Chronic stress during development can affect adult stature. Developmental stress does not seem to have been a problem for this community, with the mean statures for both males and females again consistent with mean statures for English medieval populations.

No enamel hypoplasia or cribra orbitalia was evident in this sample, again showing a lack of acute and chronic stress.

Two individuals (adult, female, BG34; young adult, male, BG37) have possible cases of the treponemal infection of syphilis. Skeleton BG34 has grossly swollen right and left fibulae with long-term periostitis, florid with gunnas deposits; tibiae were less involved, mostly on lateral sides. The skull was not present; however, the legs show classic signs of the disease. Skeleton BG37 has left tibia and fibula swollen with long-term periostitis and plaque-like formations, and the right tibia and fibula also show signs of this but in a milder form.

One individual (middle-aged, male, BG30) has a possible case of leprosy. The left first metatarsal distal articulation is half eroded, the associated proximal and distal phalanges are fused together (Fig. 25.c).The right first metatarsal distal articulation is fused to proximal phalanx at a 45° angle. Other metatarsals and phalanges are seemingly normal. The tarsals show slight periostitis. Tibia and fibula, left and right, show florid long-term periostitis starting with the distal articulation and going all the way up the shaft. The classic bone absorption at the metatarsal-phalangeal joint is not seen, and unfortunately the rest of the skeleton is not present. Therefore a differential diagnosis of various infections cannot be ruled out.

Non-specific infections were seen on four individuals. One (young adult, female, BG11) has osteomyelitis, an infection of the compact bone and medullary cavity. In osteomyelitis, the pathological process is one of bone destruction and pus formation, and simultaneous bone repair involving the deeper layers of the bone. The osteomyelitis with sinus is on the lower third medial shaft of the right tibia. Long-term incorporated florid periostitis is seen on all sides of both tibiae and fibulae shafts. The other three have the more superficial periostitis. One (middle-aged, female, BG21) had a chronic disease, on-going at the time of death, with long-term, florid periostitis medial and lateral on both tibia shafts and the left fibula (only one present), and medially on the proximal left ulna shaft (only one present), but it has not affected the left radius. Two (middle-aged, male, BG20; middle-aged, female, BG28) have periostitis which was fine-grained in appearance and well incorporated into the outer layer of the bone; this is often interpreted as being healed, though the clinical evidence for this is incomplete Quliet Rogers pers. comm.). Skeleton BG20 has healed periostitis on the lateral side of tibia shafts, and the medial side of fibula shafts, in both cases left and right. Skeleton BG28 has healed periostitis along the entire shaft of the left fibula.

One individual (AG197) has a Schmorl's node on the 4th lumbar vertebra.

A non-metric trait which studies are beginning to link more with physical activity than a genetic source is transitional vertebra; these are vertebra which take on some of the characteristics of the neighboring type of vertebra. It has been suggested that transitional vertebra may have to do with the amount of rotation of the spine (Stirland 1985b). Skeleton BG100, an adult female, has a 5th lumbar vertebra which is sacralised and fused to the sacrum; and BG24, a middle/old age male, has the opposite, i.e. the left half of the first sacral segment is lumbarised.

One congenital abnormality was also noted, a fused cervical vertebrae 2-3 (middle-aged, female, BG23).

One individual (adult, possible male, BG145) shows the evidence of an autopsy performed. The cranial vault has been sawn off, but above the classic plane; the cut was above the brow ridges and at the top of the occipital. There is no abnormality to explain the autopsy.

*Phase 3 burial within the church*

The church in Phase 3 contained one inhumation, AG110, an adult male which exhibited unhealed periostitis on the distal fibulae.

*Phase 3 burials outside the church*

Twenty-six skeletons were excavated from outside the church from Phase 3. Of the 25 adult inhumations, 24 had characteristics allowing a sex to be determined. Seven skeletons were diagnosed as female and four as possibly female; nine skeletons were diagnosed as male and three as possibly male (Table 11).This gives a gender ratio of 1.09:1, relatively close to the 1:1 expected from a normal biological population. Looking at the age profile (Table 11), only one of the skeletons is again from a subadult, a late adolescent of between 14 and 20 years. The adult age distribution shows that the greatest percentage of aged adults were in the middle-aged category. There are, however, almost an equal number of young adults and as they are not disproportionately female (which might suggest child-birth as the cause) or have other obvious causes of death, it is probably an artifact of the small number of skeletons being studied.

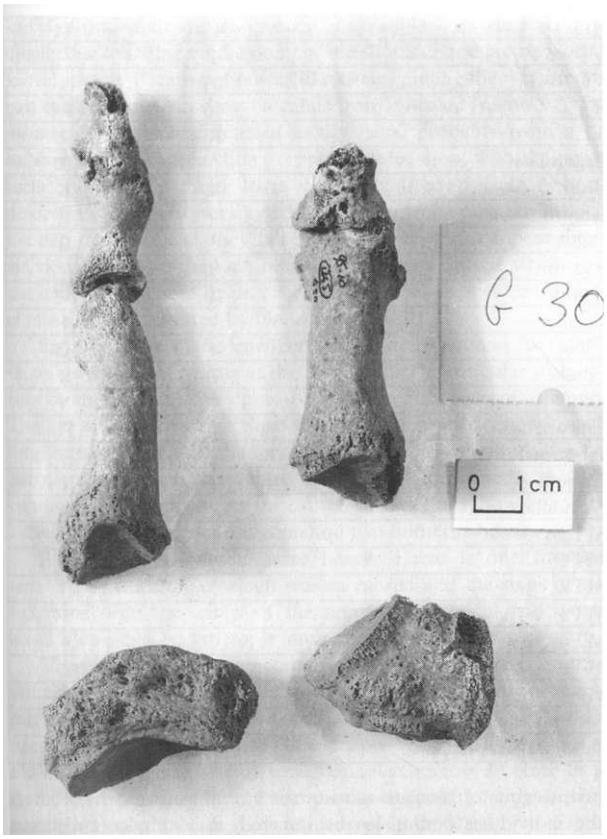
*Table 11: Demography for St. Mary Magdalen's, Phase 3.*

| Age | Unknown sex | Males | Females | Total |
|---|---|---|---|---|
| Foetal-birth | | | | |
| Birth- .9 | | | | |
| 1-4.9 | | | | |
| 5-9.9 | | | | |
| 10-14.9 | | | | |
| 15-19.9 | 1 | | | 1 |
| Young adults (20-29.9) | 1 | 4 | 3 | 8 |
| Middle-aged adults (30-49.9) | | 4 | 6 | 10 |
| Old adults (50+) | | 1 | | 1 |
| Adults: age unknown | 1 | 3 | 2 | 6 |
| **Total** | **3** | **12** | **11** | **26** |

It was possible to calculate statures for 19 of the 23 skeletons which could be sexed; the males had a range of 162-189cm (5ft.4in.-6ft.3in.) with a mean of 176cm (5ft.9in.) and the females had a range of 160-180cm (5ft.3in.-6ft.0in.) with a mean of 169cm (5ft.6in.).The distribution of statures is not bimodal and the male range completely overlaps the female range, perhaps because of the small numbers involved.


A


B




C


D

Fig. 25

| Photograph no. | | Caption |
|---|---|---|
| 422-8 | a | Grave BG26. Tibia showing 'sabre shins' with florid periostitis. |
| 422-5 | b | Grave BG26. Skull with stellate scarring on the frontal bone. |
| 422-9 | c | Grave BG30. Left and right metatarsals showing erosion and fusion. |
| 766 | d | Grave AG 143. Showing location of hydatid cyst |

One individual (middle-aged, female, BG26) has 'classic' indications of syphilis (Fig. 25.b). This is stellate scarring on the frontal, resorption of the alveolar around the maxillary incisors, 'sabre shins' with florid periostitis. Swelling and periostitis of the proximal right ulna, periostitis on the fibulae, periostitis and erosion on medial sides of the patellae, and the distal right humerus shows signs of slight erosion.

Periostitis in the form of a non-specific infection is the most common pathology seen. One individual (middle-aged, male, BG6) has a systemic infection which probably started just weeks before his death as seen by the grey, porotic, unincorporated nature of the periostitis. It is found on the lateral tibia shafts, left and right; the medial and lateral fibula shafts along the full length, left and right; the proximal femur shafts, left and right; the distal radius and ulna shafts, left; and the middle segments of the visceral surface of the ribs. Hypoplasia is present. An old-age male (BG25) has long-term, florid periostitis on tibia shafts, left and right. Four individuals (young adult, probable male, BG10; adult, probable male, BG12; middle-aged, probable female, BG18; middle-aged, female, BG27) have 'healed' periostitis on the tibiae.

Osteoarthritis can be seen in two individuals. A middle-aged female (BG17) has osteophytes and porosity on the vertebrae. An old age male (BG25) has eburnation on the right distal femur, the right acromion, the lateral clavicle, the dens area on cervical vertebrae 1-2, the right first metatarsal and associated first phalanx, the right first metacarpal, right lesser multangular, cuboid and first cuneiform. Erosion, porosity and osteophytes are seen on vertebral centres and some vertebral and rib facets. Lumbar vertebrae 2-3 are fused together by osteophytes of the left side. Cervical vertebrae 5-7 are fused together by the left facets.

Several individuals have developmental or congenital problems. In an unsexed adult (BG14a), the proximal fibular articulations have 'slid' down and fused to the sides of the shafts; as the tibiae are not present it is impossible to ascertain whether the cause is trauma or developmental. Two young adult males (BG2; BG15), very probably related, show identical hip malformations. In both cases the pubic portion of the acetabular articulation comes to a point, and the head of the femur is not round but faintly wedge-shaped, with the point downwards. There is no signs of osteoarthrosis in the area and the malformation may have caused much discomfort. These same individuals also have spina bifida occulta of the first cervical vertebra and sacral segments 1-4, though there is no relation between this and the aforementioned malformation. Spina bifida occulta is a failure in the bony spinal canal of the vertebrae, and it is most common at the sacral, lower lumbar and first cervical vertebrae (Schmorl and Junghanns 1971, 83); in life the defect is bridged by fibrous tissue and causes no symptoms. There is strong evidence that spina bifida are inherited; however, recent evidence suggests that what is inherited is the propensity for this defect and the trigger is a deficiency in folic acid during the early formation of the foetus (MRC Vitamin Study Research Group 1991; Milunsky *et al.* 1989).

There is also one individual who has had an autopsy. The cranial vault has been sawn off, along the classic plane. There were no abnormalities observed to explain the autopsy.

*Unstratified individual bones* (Phases 1-3)

A random sample of approximately 17% of the estimated 3.5 cubic metres of individual bones excavated from outside the church was examined (881 bones). These individuals date from any time between the early 1100s and the mid 1800s. The bones were in poor to good condition; approximately 30% were complete and 70% were fragmentary or incomplete.

The 881 individual bones represent a minimum of 62 individuals, ranging in age from newborn to old adults (Tables 12 and 13). This sample includes 15 subadults, 17 males or probable males, 11 females or probable females, 13 adults of unknown sex, and 6 individuals of unknown sex or age. The proportion of subadults to adults is consistent with the bones representing an entire sample of the population. While there is a larger proportion of males than females, the circumstances do not allow much to be read into it; there is a large number of adults whose sex is unknown and which might easily equal the proportions.

*Table 12: Anatomical distribution of individual bones.*

| Bone | Side | | |
|---|---|---|---|
| | R | - | L |
| Skull | | 10 | |
| Frontal | 7 | 10 | 3 |
| Zygomatic | 2 | 1 | 1 |
| Vomer | | | 1 |
| Parietal | 4 | 18 | 7 |
| Temporal | 13 | 1 | 3 |
| Occipital | 1 | 22 | |
| Maxilla | 3 | | 4 |
| Mandible | 3 | 5 | 2 |
| Tooth | 1 | 2 | |
| Clavicle | 6 | 4 | 9 |
| Scapula | 8 | 3 | 14 |
| Sternum | | 1 | |
| Humerus | 25 | 10 | 32 |
| Radius | 7 | 8. | 17 |
| Ulna | 13 | 8 | 20 |
| Capitate | | | 1 |
| MC | | 2 | |
| MCI | 6 | 2 | 1 |
| MC2 | 3 | | 1 |
| MC3 | 8 | | 5 |
| MC4 | 1 | 1 | 2 |
| MC5 | 6 | | 3 |
| Hand phalanx | | 21 | |
| Rib | 11 | 45 | 11 |
| V | | 1 | |
| VC | | 23 | 1 |
| VT | | 46 | |
| VL | | 20 | 1 |
| Innomiate | 17 | | 10 |
| Ilium | 1 | 4 | 6 |
| Ishium | 1 | | 2 |
| Pubis | 2 | | 2 |
| Sacrum | | 9 | |
| Femur | 37 | 10 | 52 |
| Patella | 5 | | 1 |
| Tibia | 30 | 4 | 35 |
| Fibula | 11 | 7 | 8 |
| Talus | 5 | | 5 |
| Calcaneus | 2 | 4 | 11 |
| 1st cuneiform | 1 | | 3 |
| Cuboid | 2 | | 2 |
| Navicular | | 1 | |
| MT | | 6 | |
| MT1 | 4 | | 4 |
| MT2 | 3 | | 3 |
| MT3 | 2 | | 5 |
| MT4 | 2 | | 5 |
| MT5 | 4 | | 2 |
| MP | | 5 | |
| Foot phalanx | | 12 | |
| Unidentified phalanx | | 3 | |

It was possible to calculate statures for 11 bones from which the sex of the individuals could also be inferred; the 9 males range from 169cm to 185cm (5ft.6in.-6ft.2in.) with a mean of 176cm (5ft.9in.) and the 6 females from 152cm to 173cm (5ft.lin.-5ft.7in.) with a mean of 166cm (5ft.6in.). There was one case of cribra orbitalia and two cases of enamel hypoplasia.

Periostitis was observed on 24 bones. Sixteen per cent (11) of the tibiae and 35% (9) of the fibulae exhibit periostitis. On both these bones, two-thirds of the cases were on the distal portions of the bones and one-third on the mid-shaft. One of the fibulae is thickened and completely covered by thick granulated new bone growth. One of the tibiae has a large unhealed periosteal swelling midshaft on the medial side; it is the bony reaction to an overlying skin ulcer. There is also a subadult humerus with periostitis on the proximal shaft, an infant temporal with a layer over the outer surface of the bone, a subadult occipital with a layer on the inner table, and an adult frontal with a

*Table 13: Demography of individual bones.*

| Age | Unknown sex | Males | Females | Total |
|---|---|---|---|---|
| Birth- .9 | 3 | | | 3 |
| 1-4.9 | 1 | | 1 | 2 |
| 2-4.9 | 1 | | | 1 |
| 5-9.9 | 2 | | | 2 |
| 10-14.9 | 1 | | | 1 |
| 15-19.9 | 2 | | | 2 |
| Young adults (20-29.9) | | 1 | 2 | 3 |
| Middle-aged adults (30-49.9) | | 5 | 1 | 6 |
| Old adults (50+) | | 3 | 2 | 5 |
| Infants | 2 | | | 2 |
| Children | 1 | | | 1 |
| Adolescents | 2 | | | 2 |
| Adults: age unknown | 13 | 8 | 6 | 27 |
| Individuals: age unknown | 6 | | | 6 |
| **Total** | **34** | **17** | **12** | **64** |

layer on the inner table. Aside from the lesion from the skin ulcer, none of the other cases of periostitis can be related to particular disease processes, but can only be termed non-specific infections.

Four bones show signs of trauma. Three bones have healed fractures, and one a dislocation. A clavicle had been fractured just lateral of mid-shaft and had healed at an angle. Clavicle fractures are usually due to falling on the point of the shoulder and are very difficult to heal straight because of powerful muscles pulling the fractured ends past each other. A rib shows a callus from a healed fracture. A fourth metatarsal had been fractured at the neck, probably from a badly stubbed toe. A scapula shows a partial dislocation, with the articular surface on the glenoid fossa having shifted dorsally. Shoulder dislocations most frequently occur when someone puts out their arms to catch themselves as they fall backwards. It would appear that this individual also tore the long head of the triceps muscle which inserts just under the glenoid fossa, probably in the same accident. This area of muscle was infiltrated by blood and ossified.

Eight bones exhibit degenerative disease. A second foot phalanx shows severe osteoarthritis at the distal end. The articular surface has been destroyed and is very porous; there is a thick layer of osteophytes. There is an osteoarthritic third foot phalanx and a cervical vertebra with osteoarthritis on the centre. A thoracic vertebra has heavy osteophytes around the centre and a Schmorl's node. A lumbar vertebra has osteophytes are the centre. Three bones show osteophytes, a clavicle at the lateral articulation and two humerus heads.

Four non-metric traits were noted. There is one transitional vertebra, a fifth lumbar which was sacralised and the sides of which had fused onto the wings of the sacrum. One skull had wormian bones. Two skulls had metopic sutures present.

There are two miscellaneous pathologies. There is one occipital which has been sawn at the bottom of the occipital crest, probably as part of an autopsy. There has also been a roundel cut out of the upper right quadrant of the occipital. There is no sign of healing in this area, and no way of telling whether the bone was removed before or after death. There was no fracture line on the occipital to suggest that the roundel was trephined to remove pressure in the skull.

There is also a femur, patella and tibia which have fused together. The knee has fused in the extended position; however, there is a 90°curve in the femur above the condyles. The tibia has a narrow sabre-like shape. Both the femur head and the distal articulation of the tibia are normal. The trauma happened a long time before death and the area is completely remodelled and healed. The bony ankylosis of the knee joint has most likely resulted from septic arthritis, resulting from an oblique or spiralling fracture to the distal femur above the condyles. If the fracture had not been splinted, the contracting muscles might have drawn the femur into that position, the accompanying trauma leading to the ankylosing of the joint. It is also possible that trauma or infection directly affecting the knee or tubercular arthritis lead to the ankylosing when the individual was a subadult and biomechanical forces resulting from the way the individual walked led to the bending of the distal femur. The individual may have used a knee crutch, a T-shaped crutch with the horizontal member curved to cradle the skin and the vertical element providing support.

## Animal bone

by S. Pinter-Bellows

The excavation at St. Mary Magdalen's, Colchester produced a total of 663 animal bones and fragments in the burial fill: 13 from Phase 1, 235 from Phase 2, 213 from Phases 2-3, and 202 from Phase 3. The following species were identified: horse *(Equus caballus)*, cow *(Bos taurus)*, pig *(Sus scrofa)*, sheep *(Ovis aries)*, hare *(Lepus* sp.), and chicken *(Gallus* sp.). Bones which could not be identified to species were assigned to higher order categories: sheep/goat, small artiodactyl (sheep- or pig-size), small mammal (cat- or dog-size), and large mammal (cow- or horse-size). No bones were identified as goat, while elements were identified as sheep. It is therefore likely that most of the indeterminate sheep/goat fragments are sheep rather than goat.

A selective detailed record was made for the assemblage, with further work done only where it appeared to add substantially to the results. For a full description of the methods used see Davis (1992). In brief, all mandibular teeth and a restricted suite of articular ends/epiphyses and metaphyses of the girdle, limb and foot bones were always recorded and used in counts. Other parts of the skeleton were only noted selectively, e.g. when a scarcer species could be identified, or when the bone was of particular interest. In order to be able to calculate the proportion of the bones which were unidentified fragments, a count was kept on the number of unrecorded identifiable skeletal elements. Measurements follow von den Driesch (1976) with additions as described in Davis (1992).

The bones are in good condition. There are very few bones which were gnawed by either dogs or rodents, suggesting that the deposits may have been rapidly covered up. A simple fragment count of the parts of the skeleton always counted (POSAC, following Davis 1992, 1-2), was used to estimate the relative importance of the major animal species. The species and the number of fragments are listed in Table 14. All of the identified bones belong to the domestic species. Cattle bones are seen in the largest number, followed by sheep, then pig; with chicken also included in the diet. There is no reason by anatomic part or butchery to believe that the horse bones were food bones. The single hare could either have been part of the diet or the bone of an animal which died in this dirt. Measurements from the parts of the skeleton always counted can be found in Table 15.

The distribution of anatomical elements from Phases 2 and 3 can be seen in Table 16. While the most numerous elements are those with more cortical bone or which fuse earliest, the elements come from all portions of the carcase. Elements from the foot and head are present as well as the scapula and femur, areas where more meat is found. This can be interpreted as butchery taking place at the site or the refuse being a mixture of domestic and non-domestic. Butchery marks are seen on bones associated with prime meat, i.e. a cattle ilium sawn just below the acetabulum (the area of the rump roast); those which could be interpreted as butchery waste, a chopped distal cattle tibia; and those from the horn-working industry, cattle horn cores with saw marks on the base. The nature of the faunal assemblage necessitates serious consideration that the refuse is not related to the site, but brought in from elsewhere.

*Table 14: List of animal species.*

| Animal species | Phase 1 | Phase 2 | Phases 2-3 | Phase 3 |
|---|---|---|---|---|
| Horse *(Equus caballus)* | - | 1 | - | 1 |
| Cow *(Bos taurus)* | 2 | 14 | 17 | 17 |
| Pig *(Sus scrofa)* | 1 | 1 | 5 | 5 |
| Sheep *(Ovis aries)* | - | 1 | 4 | 3 |
| Sheep/Goat | - | 8 | 8 | 10 |
| Hare *(Lepus* sp.) | - | - | - | 1 |
| Chicken *(Gallus* sp.) | - | 5 | - | 4 |
| Identifiable mammal | 5 | 96 | 87 | 118 |
| Unidentified mammal | 4 | 100 | 92 | 41 |
| Unidentified bird | 1 | 6 | - | 2 |
| Unidentified fish | - | 3 | - | - |
| **Total** | **13** | **235** | **213** | **202** |

*Table 15: Measurement.*

| | | |
|---|---|---|
| **Phase 1** | | |
| Cow | Radius | Bd - 66.2 |
| Cow | Astragalus | GL1 - 54.8, GLm - 51.8, Dl - 32.0, Dm - 28.3, Bd - 26.1 |
| **Phase 2** | | |
| Cow | Astragalus | Bd-45.0 |
| Sheep | Humerus | Bd - 28.5 |
| Sheep/goat | Radius | Bd - 26.6, BFd - 22.9 |
| Sheep/goat | Radius | GL - 115.1, Bp - 26.7, Bfp - 23.4, Bd - 24.8, BFd - 19.9 |
| Sheep/goat | Tibia | Bd - 33.8 |
| Sheep/goat | Femur | Bd-33.6 |
| Sheep/goat | Radius | GL - 142.2, Bp - 29.2, BFp - 26.3, Bd - 26.8, BFd - 22.2 |
| **Phase 3** | | |
| Cow | Horn core | 44 - 168.0, 45 - 54.7, 46 - 46.4 |
| Sheep | Humerus | Bd-31.4 |
| Sheep | Metacarpal | Bd at F - 24.2, Bd - 24.8 |
| Sheep | Humerus | Bd-30.1 |
| Sheep/goat | Tibia | Bd - 25.9 |

*Table 16: Species/anatomy distribution for main food animals for Phases 2-3 combined.*

| **Anatomy** | **Species** | | |
|---|---|---|---|
| | Cattle | Pig | Sheep |
| Horn core | 2 | NA | 0 |
| Mandible | 2 | 2 | 5 |
| Scapula | 2 | 0 | 0 |
| Humerus | 3 | 0 | 5 |
| Radius | 2 | 1 | 4 |
| Innominate | 3 | 0 | 2 |
| Femur | 2 | 1 | 3 |
| Tibia | 2 | 2 | 5 |
| Astragalus | 2 | 1 | 0 |
| Calcaneus | 3 | 0 | 2 |
| Metacarpals | 1 | 1 | 2 |
| Metatarsals | 1 | 0 | 0 |
| Metapodia | 2 | 0 | 1 |
| First phalanx | 5 | 0 | 1 |
| Loose teeth | 7 | 3 | 4 |

## Environmental assessment of soil samples

by Peter Murphy

*Summary*

Samples from hearths and ovens produced no charred assemblages which might indicate their functions, though occasional charred cereal grains and burnt bone fragments were noted. It seems likely that this resulted from the use of coal as part of the fuel and resultant high combustion temperatures.

Pits and other feature fills included low densities of food refuse: charred cereals, mollusc shells and occasional fragments of fish and mammals. Such material is typical of medieval urban sites, but the quantities present here were too small to justify further study.

## 1989 churchyard survey

by Carl Crossan

*Summary*

By 1989, a total of 76 memorial stones remained in the churchyard, of which 59 including one family tomb stood *in situ*. The locations of all standing stones were plotted and details from all except four completely illegible memorials were recorded individually and incorporated into the coded site record. Indexes by family name and date are included in the research archive.

In all, 82 individuals were noted, including six church officials and fourteen members of their families; also four militia men and one wife associated with the town's 19th-century garrison. Inscriptions ranged in date from 1725 to 1919. The majority were 19th century except for six 18th- and four 20th-century memorials.

## Archive

The St. Mary Magdalen's research archive is lodged with Colchester Museums under accession references 64.1989 (Site A) and 1995.10 (Site B). In addition to the excavation record, finds, catalogues and related documentation, the archive includes a photographic survey of the abandoned 19th-century almshouses and church. The human remains were reinterred at the Colchester Borough Cemetery, Mersea Road, Colchester.

## Colchester Buildings Series

The building numbers 183-188 quoted in this report belong to the Colchester Buildings Series, a cumulative record of structures examined by excavation since 1971.

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*CAR* **4,** 1987 *The coins from excavations in Colchester 1971-9,* ed by N. Crummy, Colchester Archaeological Report 4

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*CAR* **6,** 1992 *Excavations at Culver Street, the Gilberd School, and other sites in Colchester 1971-85,* by P. Crummy, Colchester Archaeological Report **6**

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*CVMA The County of Oxford, Corpus Vitrearum Medii Aevi, Great Britain, vol. I*

RCHM Essex Royal Commission on Historical Monuments (England), *An inventory of the historical monuments in Essex, vol. ii, 1921*

RIC *Roman Imperial Coinage*

VCH Essex Victoria History of the Counties of England, *A History of the County of Essex,* vol. v, 1966

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**Endnotes**

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2 See E. J. Kealey, *Medieval Medicus,* 83—99; P. Richards, *The Medieval Leper and his Northern Heirs,* 8, 56—9.

3 *Cartularium Monasterii Sancti Johannis Baptiste de Colecestria,* ed S. A. Moore (hereafter *Colch. Cart.)* i. 21; *Regesta Regum Anglo-Normanorum,* ed H. W. C. Davies and others, ii, no. 1230.

4 *Colch. Cart.* i. 57.

5 *Calendar of Inquisitions Miscellaneous preserved in the Public Record Office* (H.M.S.O.) (hereafter *Cal. Inq. Misc.)* i, no. 1920; Essex Record Office (hereafter E.R.O.), Ledger Bk. of St. John's abbey, ff. 298, 300, 303v, 304; *ibid.* D/B 5 Cr55, rot. 2d.

6 *Colch. Cart.* i. 96; Public Record Office (hereafter P.R.O.), JUST 1/233, rot. 36; *ibid.* E 301/20/56.

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28 *Calendar of the Charter Rolls preserved in the Public Record Office* (H.M.S.O.) 1257—1300,99.

29 J. Chapman and P. Andre, *Essex Map* (1777).

30 P.R.O., JUST 1/233, rot. 36.

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32 P.R.O., JUST 1/238, rot. 20. In 1422/3 Bawdiscroft was near Magdalen Green: E.R.O., D/B 5 Cr43, rot. 2. records an unscoured ditch there.

33 B.L. Arundel MS. 145, ff. 14 and v.

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38 P. Morant, *History and Antiquities of Colchester* (1768 edn.), App. 7—8.

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50 *VC.H. Essex,* ii. 185.
51 P. Morant, *History and Antiquities of Colchester,* map.
52 *VC.H. Essex,* ix. 367.
53 E.R.O., D/ACA 11, f. 74; D/ACA 14, f. 19.
54 E.R.O., D/ACA 21, f. 252 and v.
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57 Lambeth Palace Library, COMM MS XIIa/9/415, printed in H. Smith, *Ecclesiastical History of Essex under the Long Parliament and Commonwealth,* 319.
58 E.R.O., D/ACV 9a, f. 64.
59 Bodleian Library, MS. Top. Gen. e 61, f. 43.
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61 E.R.O., D/CC 5/1; *VC.H. Essex,* ix. 328.