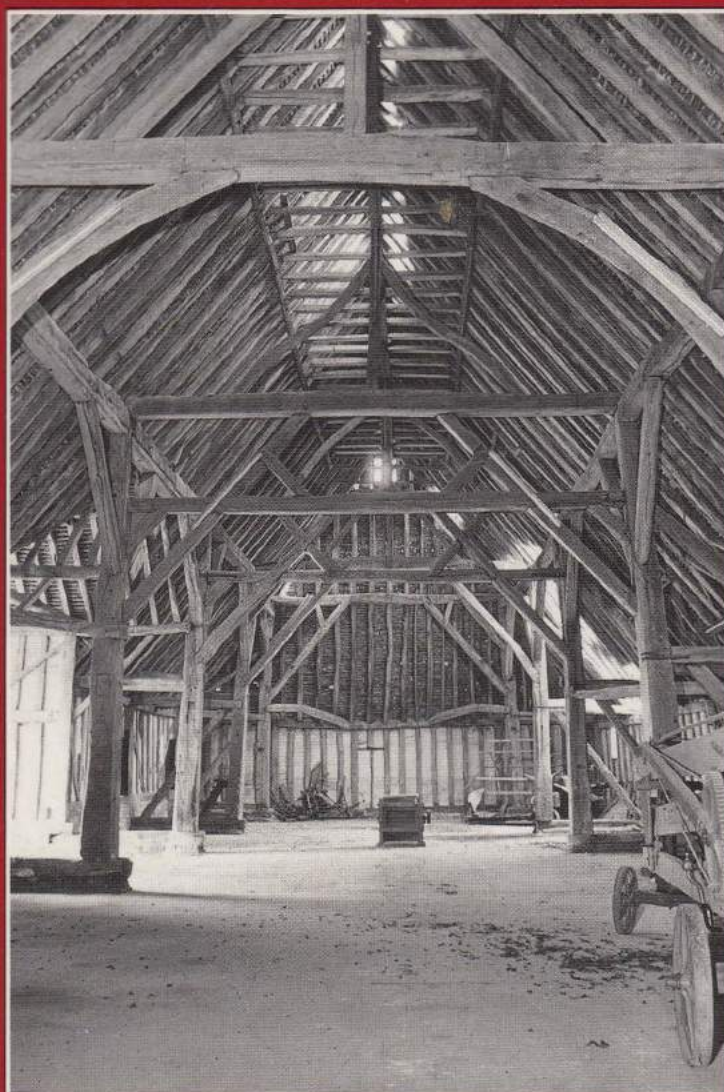


ESSEX



ARCHAEOLOGY AND HISTORY



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Excavations at Angel Yard, High Street, Colchester, 1986 and 1989

by D. Shimmin and G. Carter

with contributions by N. Crummy, J.A. Davies, C.J. Going, M. Heyworth, J. Hind, and P. Murphy

Rescue excavation north of 133-6 High Street revealed parts of two substantial Roman houses which shared a party wall and dated from the mid 2nd century. A probable late 3rd-century dispersed coin hoard was recovered from post-Roman topsoil or 'dark earth' immediately above demolition levels from the more northerly house. The dark earth was subsequently cut by pits of mainly 11th- to 14th-century date.

Evidence indicated a rapid expansion of building back-wards from both the High Street and West Stockwell Street frontages in the 14th century. This included foundations, ovens and hearths from several wings, which faced onto narrow alleyways and enclosed gravel yards. By c 1500 the western part of the site had largely been cleared and the area cobbled over, while the eastern ranges continued in use and were in part rebuilt, and the yard was regravelled. In the first half of the 17th century the frontage of 133-4 High Street was rebuilt as a three-storey timber-framed structure divided into two shops.

Introduction (Figs 1-2)

A rescue excavation was carried out in 1986 at Angel Yard (TL99622525; Fig 1) to the rear of the High Street and West Stockwell Street frontages, in advance of the redevelopment of the site for Council offices. Further excavation was possible in 1989 following the demolition of 133-4 High Street.

The site is located in the western half of Insula 20, where previous archaeological discoveries were sparse, although subsequently the remains of a large Roman public building, possibly a baths, have been uncovered in the eastern part of the insula (Benfield & Garrod 1992, 25-33, esp figs 1-2). A series of foundations observed in service trenches towards the southern end of the insula (Hull 1958, 159; CAR 1, 48-9; CAR 6, 3/75b, 810) are now considered to be medieval or post-medieval rather than Roman in date (below). The site lies on a north-facing slope with the natural sand level

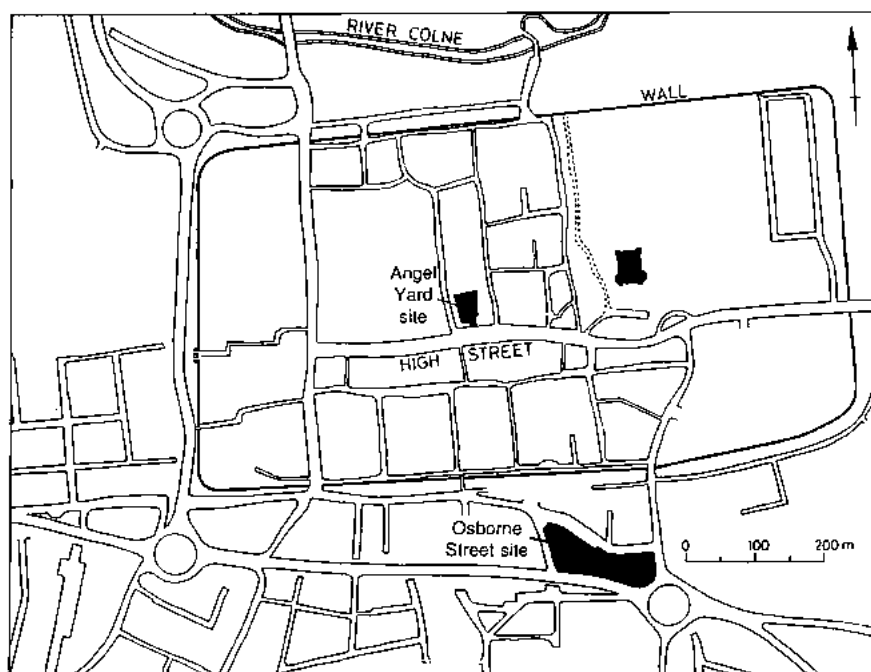


Fig. 1 Colchester, showing the Angel Yard site.

of approximately 26.25 metres OD at the High Street frontage, where it was sealed by three metres of deposit, shelving to 25.35 metres OD at the northern end of the site, at which point it dropped away more steeply.

The first phase of excavation (Fig 2, Site A; CM 40.86) took place from June to November 1986, with limited constraints on area excavation imposed by live services and by safety considerations. Modern deposits only were stripped by machine. Recording of standing timber-framed remains and of medieval and later cellars was possible at the rear of 136 High Street. Following a structural survey and the subsequent demolition of 133-4 High Street, there was a second phase of excavation (Fig 2, Site B; CM 37.89) in June 1989. A limited programme of environmental sampling was carried out.

The sequence of periods for Sites A and B is as follows:

1	Roman
1a	c 44-c 49 (military)
1b	c 49-60/1
1c	60/1-c 125/50
1d	c 125/50-c 200
1e	c 200-c 300/50
1f	c 300/50-400+
2	Anglo-Saxon-c 1300/50
2a	Anglo-Saxon
2b	c 1100-c 1300/50
3	c 1300/50-c 1750/1800
3a	c 1300/50-c 1500
3b	c 1500-c 1600/50
3c	c 1600/50-c 1750/1800
4a	c 1750/1800-c 1850
4b	c 1850-c 1986/9.

The primary site records, including the building surveys, together with the pottery spot-dates and other

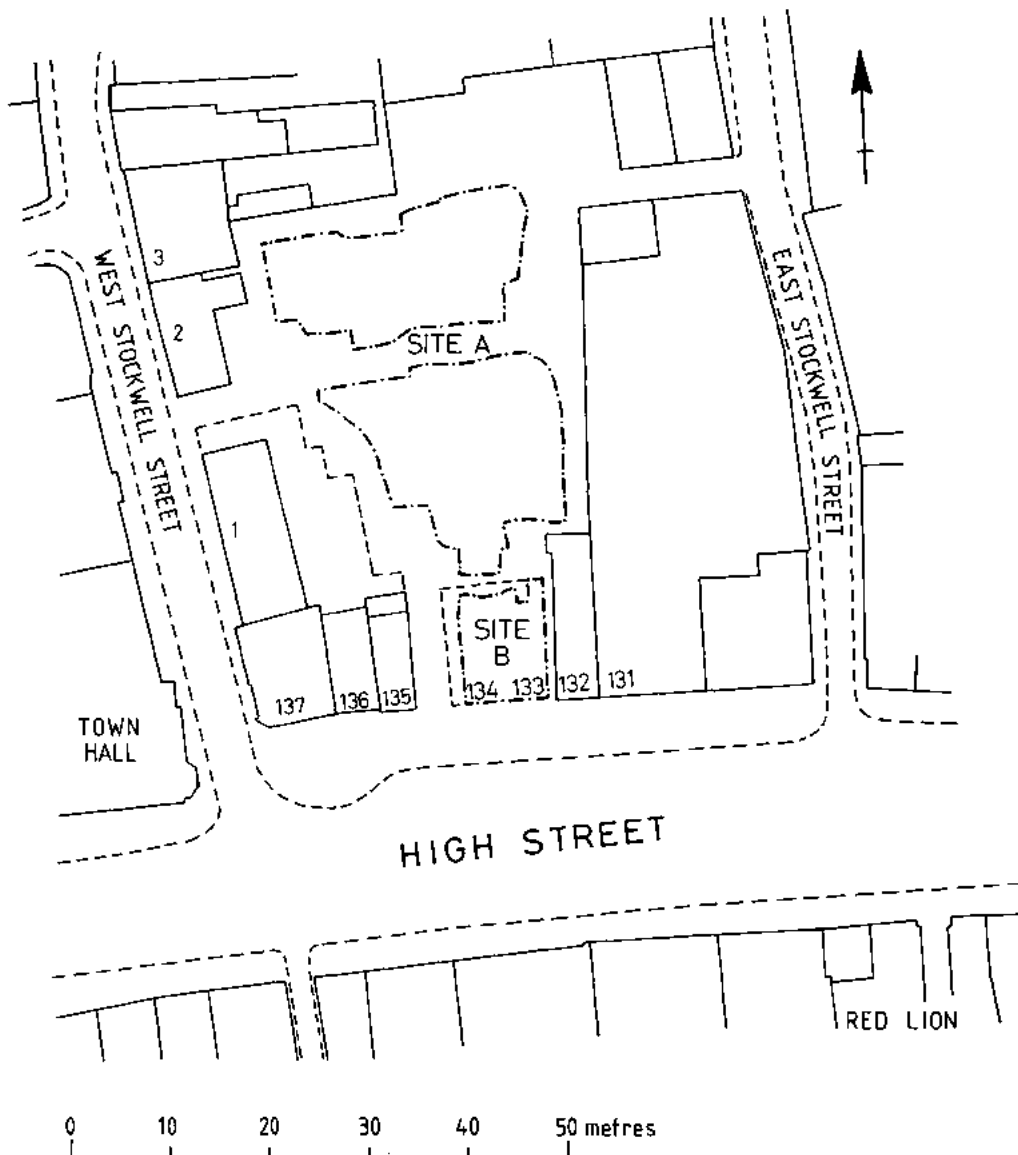


Fig. 2 Excavated areas at Angel Yard, Colchester.

dating evidence not given here, can be consulted in the site archive in Colchester Museums where all retained finds are also kept. Detailed work on the pottery, glass, and animal bone may form part of future projects. The building numbers continue the series for the town summarised in CAR 6, 394-5.

North-south Roman street (Period 1; Fig 3)

It was not possible to excavate below the latest Roman levels over most of the site, as a depth restriction relating to the level of the basement car park was imposed by the developers. In the north-west corner of the site, however, limited excavation did reveal a short stretch of street metalling (Fig 3; AL105), 0.3 metres thick, which was probably of pre-Boudican date and perhaps belonged to a north-south military street. Evidence for the eastern footway of the colonial street had apparently been terraced away.

Building 171 (Period 1, c 150-c 300; Figs 4-5)

A range of rooms from a substantial building was excavated in the south-eastern part of Site A. Building 171 (Fig 4) probably fronted onto the north-south street along the western side of Insula 20 and perhaps formed a courtyard house. However, the limited extent of excavation, which usually stopped at the latest well-defined floors, and the proximity to the newly-discovered ?baths buildings to the east all suggest that caution is required in the interpretation of the building plan.

The wall foundations, although partially robbed, were constructed largely of mortared gravel. The well-preserved northern foundation (AF348) had an unusual facing formed of neatly-laid tegulae fragments with the flanges outermost (Fig 5). The northern face of AF348 was also rendered in such a way as to suggest that it initially formed an external wall, predating the construction of Building 172.

In Room 1 were the remains of an oven (AF300), constructed of tile fragments set in daub, with a sunken central area (AF295), and this perhaps indicates use of the room as a kitchen. A layer of make-up, up to 0.6 metres thick, which was necessary as elsewhere in Building 171 in order to counteract the effects of the natural slope, was sealed by a daub floor (AL254), which was subsequently replaced (AL253/AL248). Room 2 was badly disturbed by later pits, but, from the quantity of tesserae present in the fill, may have had a tessellated floor. A coarse grey ware jar (AF357; p71) with a tile lid, probably a votive deposit, was recovered from the south-west corner of the room.

Rooms 3 and 4 were separated by a slot (AF362), presumably for a timber-framed partition wall. There was a mortar floor (AL243/AL244) in Room 3, and two phases of daub floor (AL274/AL273 & AL272/AL271) in Room 4, which also contained two coarse grey ware jars set in small pits (AF210, AF398; p70-1). One, AF398, appears to have been covered by

part(s) of a BB2 dish (p71). Observed in the small part of Room 5 available for excavation was a sunken area or cellar (AF370), backfilled with demolition debris (AL218) which included a quantity of painted wall-plaster fragments (p82).

In the ?yard area to the east of Room 5 there was a north-south gully (AF363) leading into a small pit (AF377), possibly forming a drain, perhaps originally timber-lined. Nearby was a series of post-holes (AF376, AF378/9). A coarse grey ware jar (AF279; p71) had been buried in the north-east corner of the area. The location of a foundation (AF467) in a trench to the south of Room 5 suggests that Building 171 extended further south, although all traces of Roman remains in a trench near the frontage had been destroyed by later disturbance. However, the depth of the Roman deposits encountered on the site suggest that it is unlikely that the foundations observed only a foot or so below the modern surface in service trenches below the High Street and its northern pavement are of Roman date (Hull 1958, 159; CAR 1, 48-9; CAR 6, 3/75b; also below).

Building 172 (Period 1, c 150/175-c 300; Fig 4)

A further range of rooms (Building 172; Fig 4) butted up against, but was secondary to, the north wall of Building 171 (and may thus represent an extension of the latter). The surviving foundations were again constructed of mortared gravel, with an upper course of septaria sealed by a tile course, visible in the well-preserved example AF319. To the east of AF319 internal partitions were apparently housed in shallow slots (AF382, AF395, AF396). Whole pots, presumably intended as offerings, were again numerous, with eight examples being buried within the rooms of Building 172.

Room 1 had a mortar floor (AL250) with a quarter-round moulding (AF385) along the southern side of the room placed against a layer of daub which lay against the party-wall foundation (AF348). A group of tiles (AF383), probably a hearth, had been set into the floor and sealed a whole coarse grey ware pot (AF390, p71). Further pots had been set along the south side of the room: a micaceous grey ware jar capped by a large fragment of the base of a BB2 dish (AF308; p70-1); a coarse grey ware jar covered by a tile lid (AF387; p71); and fragments of two other jars (AF360, AF366; p71). A grey ware folded beaker covered by the inverted base of a Colchester colour-coated ware rouletted beaker (AF391; p70-1) had been inserted into the floor and may post-date the use of the building. The mortar floor was much worn and on at least one occasion had been repaired or replaced in daub (AL249/AL236), associated with which was a patch of burning (AF359), perhaps from a hearth.

Room 2 also had a mortar floor (AL263) with traces of a quarter-round moulding (AF404) along the southern side. The floor was subsequently replaced

twice in daub (AL261/AL242, AL241/AL240). Two whole pots had been set into the mortar floor: AF310, a grey ware jar with a stamped lid in a coarse oxidised fabric (p70-2); and AF361, a coarse grey ware jar (p72). Room 3 had two phases of daub floor (AL265/AL264 and AL258/AL257), while Rooms 4 and 5 each had a mortar floor (AL260 and AL268 respectively).

Over two hundred late Roman coins were recovered from a small area of dark earth/topsoil (AF313/AF317/AL160/AL205) in the south-east corner of Room 3. Many almost certainly belong to a dispersed late 3rd-century hoard (p64-70) dating approximately to the period of demolition of Building 172, but the number of 4th-century coins mixed with them, even at the base of the dark earth, indicates the extent to which the soil was turned over from the late Roman period onwards.

No unequivocal Roman structural features were revealed further north, although in an area to the north-west of Building 172 some Roman features survived later terracing. Here a layer of Boudican destruction debris (AL93/163), cut by pits (AF171, AF196) and stakeholes (AF176), was sealed by a late 1st-century midden deposit (AL107) also cut by pits (AF162, AF165, AF167), a gravel-filled trench (AF207), and a hearth (AF98). The pit AF167 contained a whole Colchester colour-coated ware beaker (p70-2).

Post-Roman robber trenches and pits (Period 2; Figs 6-8)
There was no definite evidence for Anglo-Saxon occu-

pation on the site (Figs 6-7), with the possible exception of a shallow pit (AF311) which contained only Anglo-Saxon grass-tempered sherds. Later contexts produced a scatter of residual grass-tempered Anglo-Saxon pottery and also one or two sherds of probable Ipswich-type ware. Sherds of Thetford-type ware were more common, again mostly residual but also in possible late Saxon pits (AF358, AF364). There was, however, rather less Thetford-type ware than from the nearby Cups Hotel site (CAR 1, 33-40), probably because the main area of excavation was further away from the High Street frontage.

The Roman foundations were largely robbed for their stone between the 11th and 13th centuries. A layer of topsoil or dark earth up to 2 m thick accumulated on the site during the post-Roman period. A quantity of tap slag, ?forging slag and furnace lining, together with fragments of charcoal and burnt daub was recovered from a trench through the dark earth near the High Street frontage (Fig 8), especially from upper dump levels, suggesting that metal working took place near the street frontage probably during the 12th or 13th centuries. The trench may cut one or more medieval pits.

Away from the frontage the dark earth was cut by a large number of pits, most of which were of late 12th or 13th century date. They represent activity at the rear of buildings which have not survived, but fronted onto the High Street and West Stockwell Street. The larger pits (AF166, AF186, AF199, AF219, AF228, AF252, AF285, AF288, AF289, AF310, AF318, AF327, AF364 with recut AF304, AF374, and AF380), some

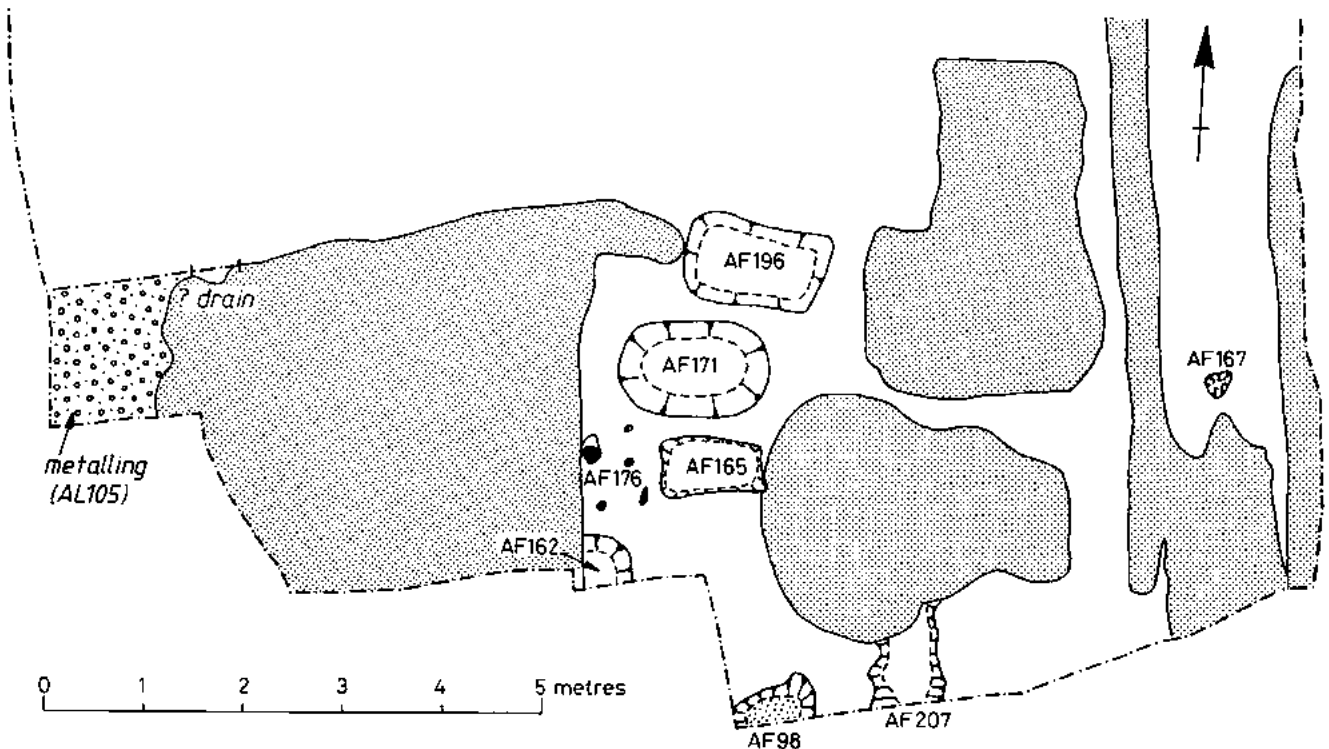


Fig. 3 North-west corner of Site A, Period 1.

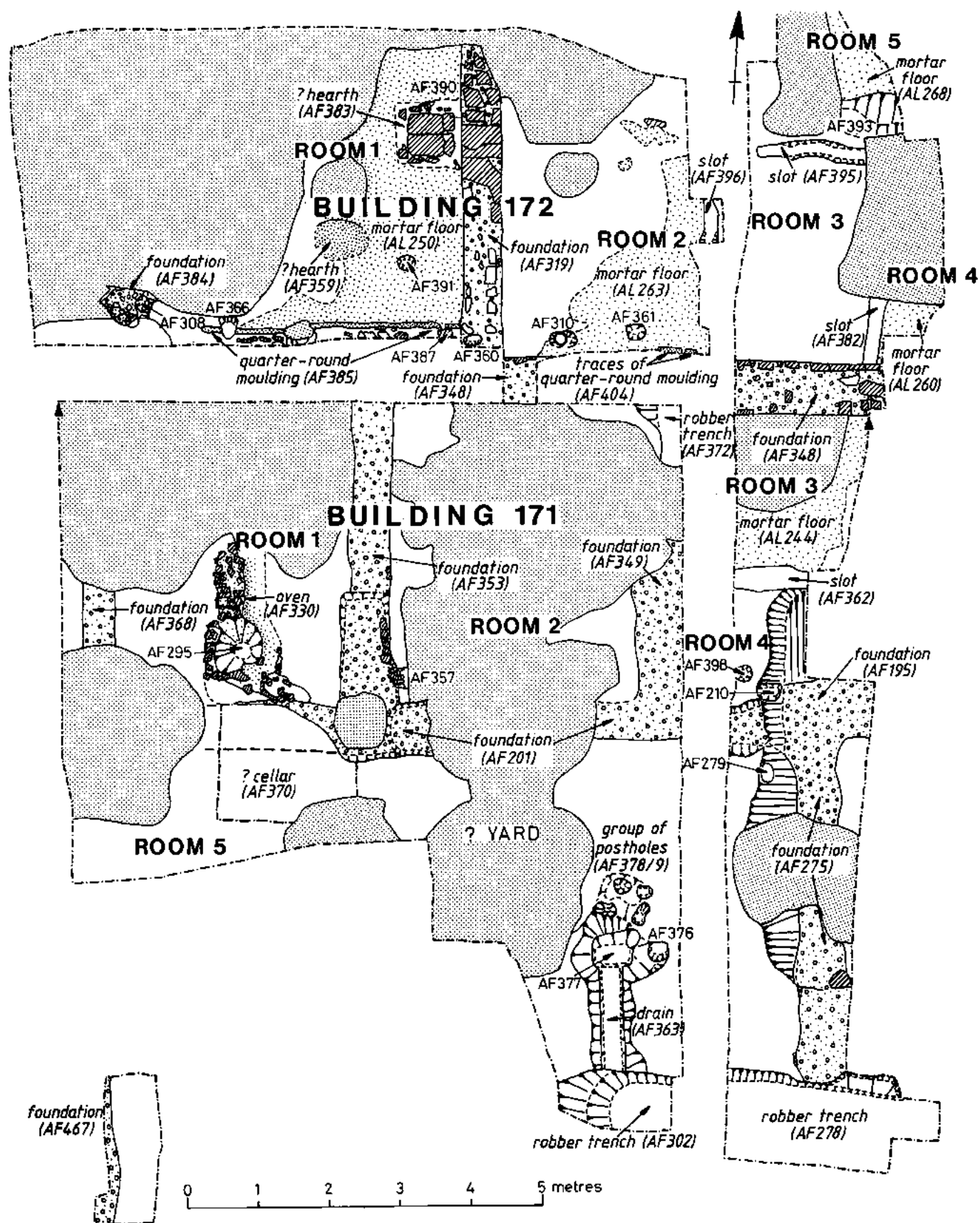
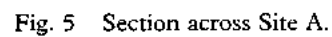


Fig. 4 Buildings 171 and 172, Period 1.



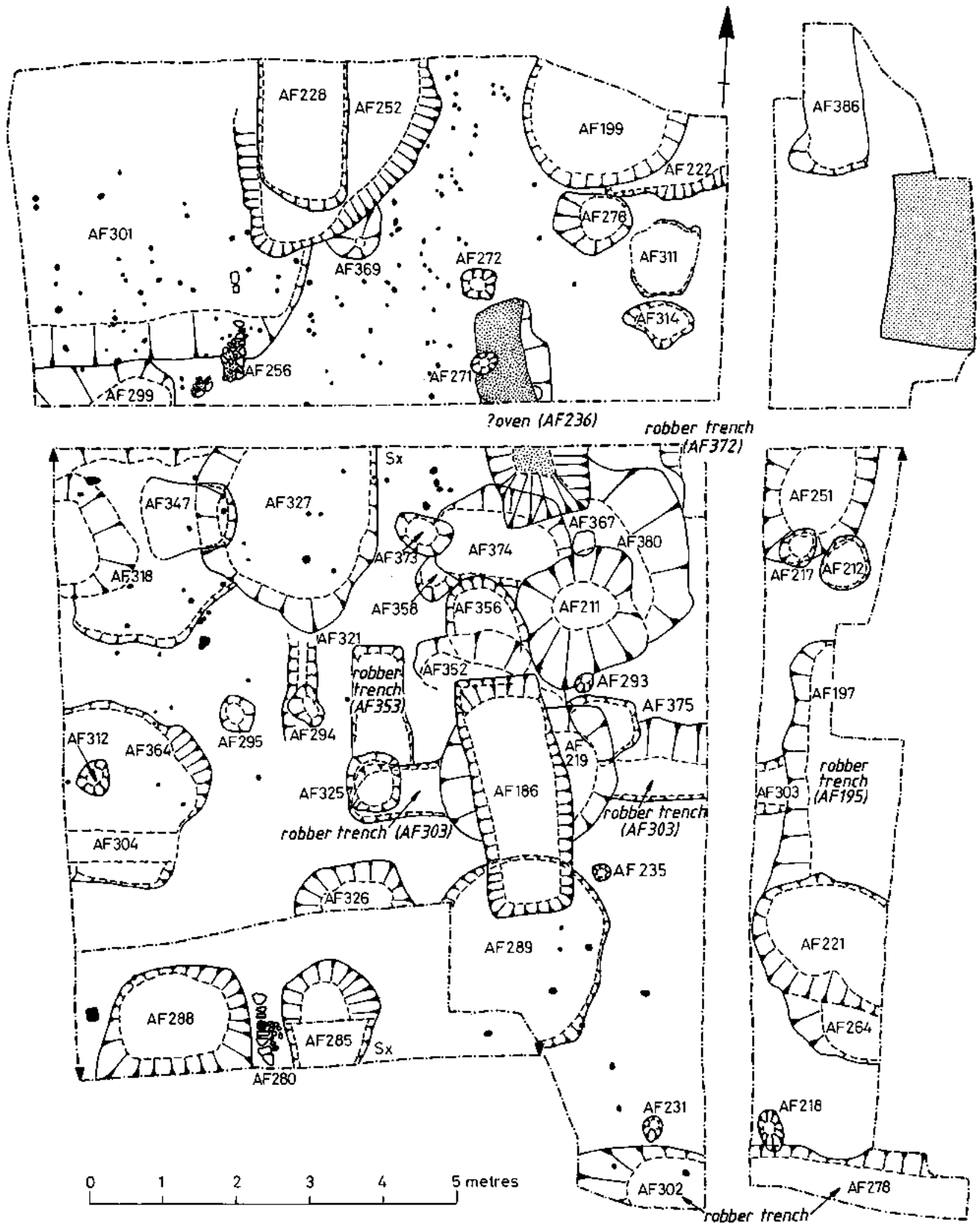


Fig. 6 Period 2, Site A.

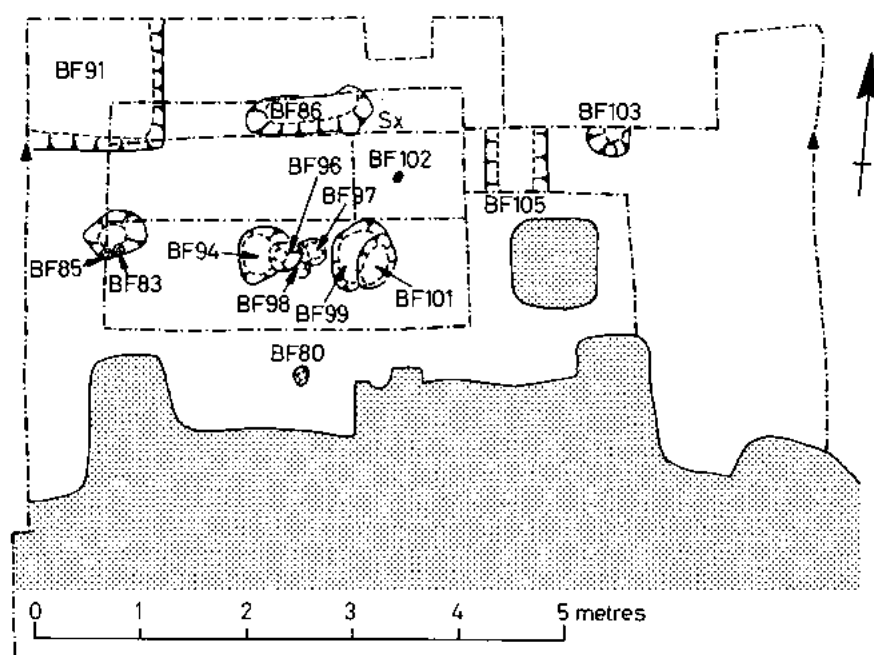


Fig. 7 Period 2, Site B.

of which it was not possible to excavate fully, included latrine pits (eg AF364/AF304, p82) and more mixed refuse pits (eg AF289, AF318, p82). A hearth (AF236), gullies (AF 321, BF105) and numerous small pits were also excavated. Two stretches of ?foundation (AF256, AF280) were uncovered, and a large number of stakeholes cut the top of the dark earth, particularly in the north-west corner of the area. These features may indicate ephemeral structures of probable 13th- to 14th-century date predating Building 174. Several of the pits which occur late in the sequence, notably AF186 and AF199, were possibly contemporary with the earliest excavated phase of Building 174.

Building 173 (Period 3a; Figs 9-10)

In the south-west corner of Site A (Fig 9) parts of two rooms were uncovered (Fig 10). They probably lay at the northern end of a wing which extended back from a building fronting onto the High Street (later No 135).

The foundations of both the external (AF225, AF343, ?AF344) and internal (AF320) walls were of septaria, with some flint and tile fragments, set in mortar, and presumably supported a timber-framed structure. There were two phases of daub floor (AL224, AL216/AL221) in Room 1, the later of which was associated with a ?hearth (AF323). Room 2 was probably a service room or kitchen as it housed a series of hearths and ovens, characterised by floors of closely-packed peg-tiles set on edge. At the north end of the room were large rectangular (AF329) and circular (AF330) ovens with sides of peg-tile fragments set in daub, next to which lay a peg-tile floor area (AF350). Further south, two much disturbed hearths or ovens (AF322,

AF355) were associated with patches of burnt cobbles and tile. The room also had two phases of daub floor (AL227, AL225/6).

Between Buildings 173 and 174 was a narrow passage, under 1.5 m wide, with a gravel surface (AL214). This allowed access from the High Street to the rear of the properties, and was probably a characteristic feature of High Street plots at this time. However, unlike the long-lived Building 174, the rear wing of Building 173 was demolished by the early 16th century. Following clearance and some pit digging (AF227, AF263, AF270; p82), the area was gravelled over (AL198).

Building 174 (Periods 3-4; Figs 9, 11-22)

It was possible to excavate Building 174 nearly totally (Fig 9). It consisted of a north-south wing extending some 35 m back from a structure fronting onto the High Street, although the early phases of the latter had been largely destroyed by a later cellar. Four main building phases (Periods 3a-c, 4) were identified, with the later phases of timber-framed construction surviving until demolition during redevelopment. The timber frames rested on foundations or plinths, initially of stone and mortar with increasing use of peg-tile and brick, and finally wholly of brick. The extensive wing of Building 174 backed onto the alleyway to the west and also faced eastwards onto a yard area.

Several shallow foundations (Fig 9) were observed to the south of the site, both beneath the High Street pavement in service trenches (Hull 1958, 159) and more recently under the High Street itself (CAR 6, 3/75b, 810). They were of stone-and-mortar construction and showed a marked coincidence with modern property boundaries. Although previously interpreted

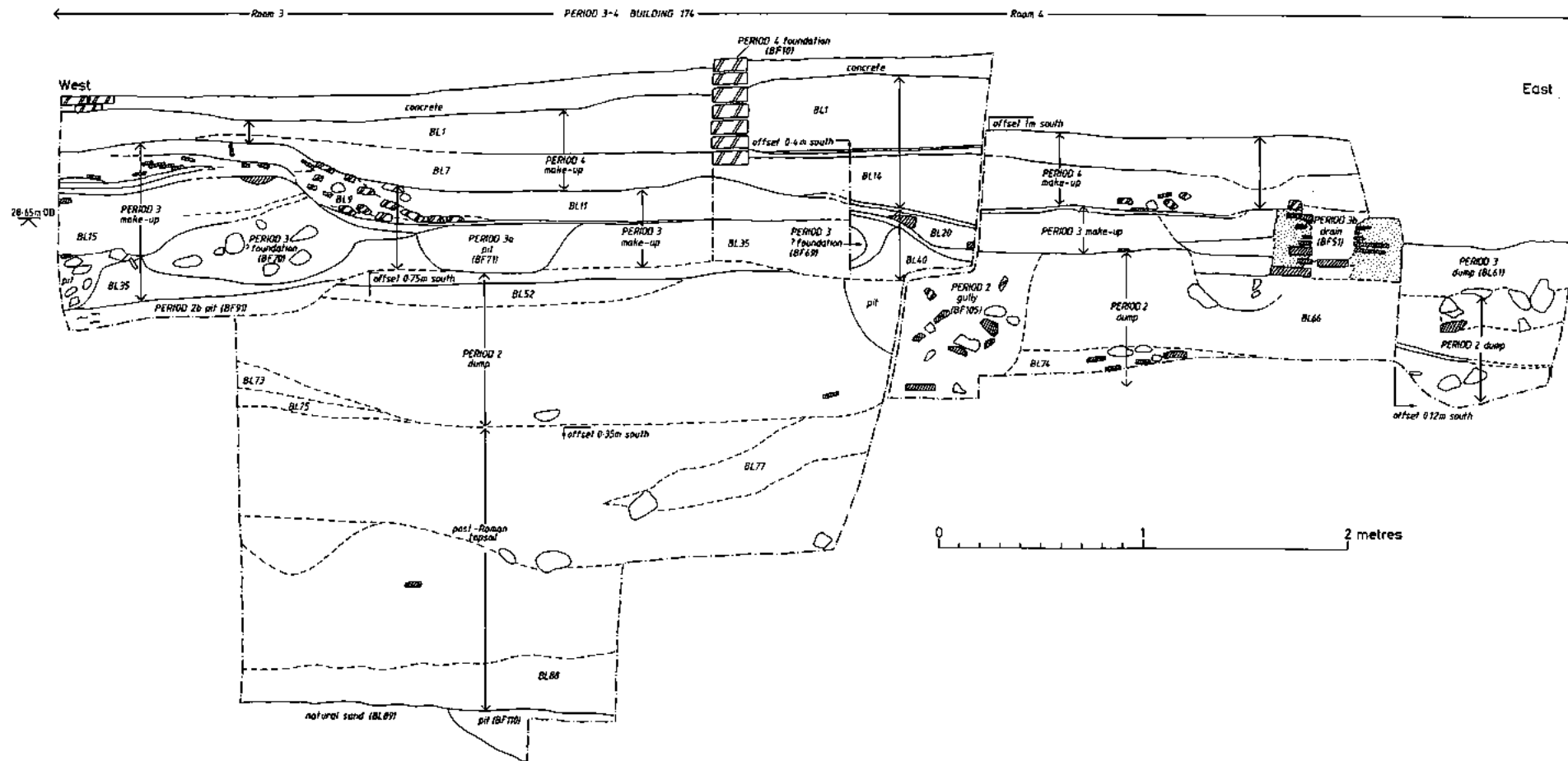


Fig. 8 Section across Site B.

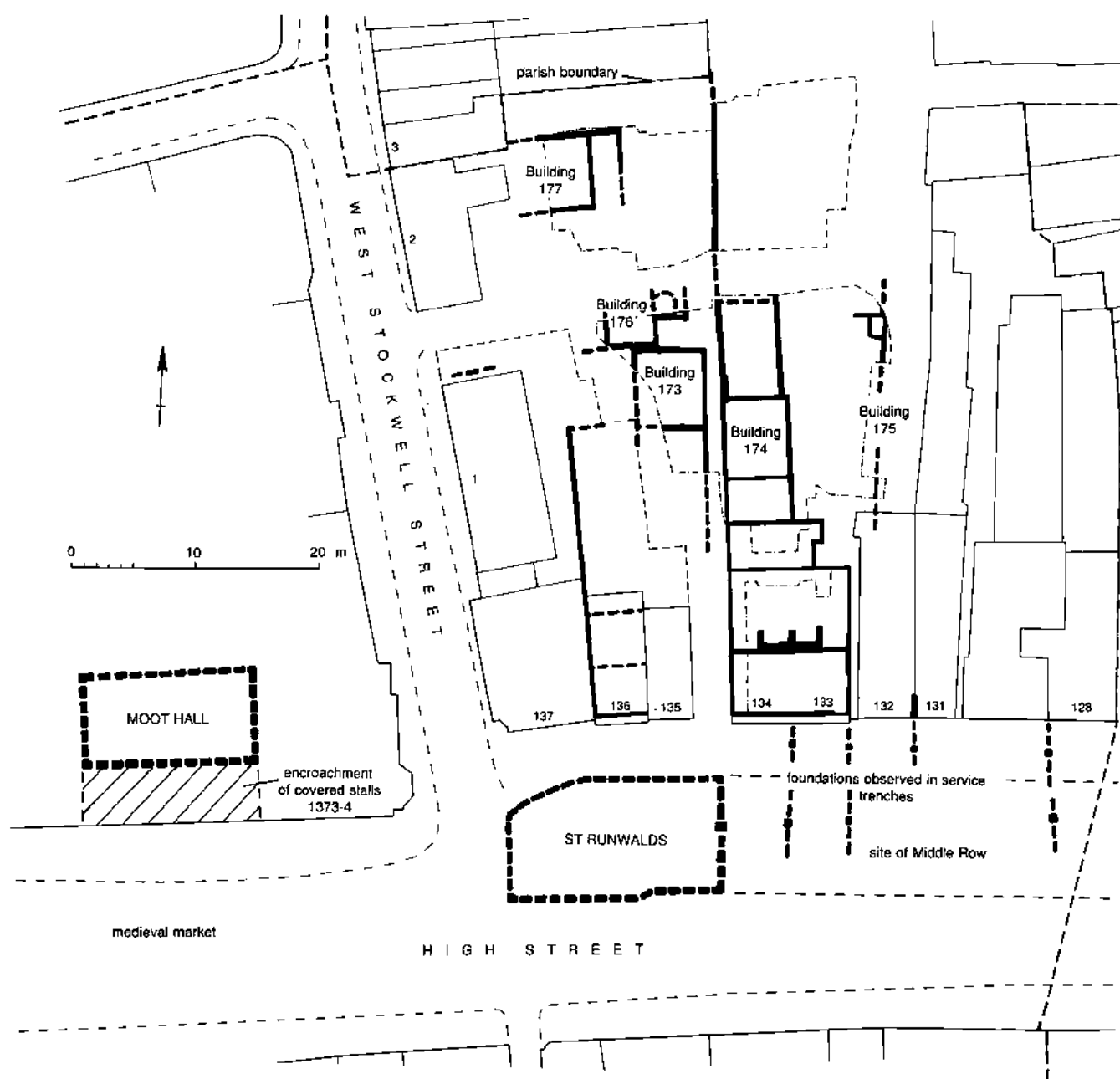


Fig. 9 Period 3 outline plan.

as Roman, they must now be viewed on stratigraphical grounds as medieval or later (p63-4).

Period 3a (Figs 11-13). There was little structural evidence for the early phase of Building 174 near the street frontage (Fig 11), although it presumably consisted of a hall-block set lengthways to the street, perhaps with a passage to the east leading back to the yard. Two lines of rubble (BF69, BF70) at the northern end of Site B may have been the remains of plinths from the southern room (Room 3) of the rear wing. This was associated in Period 3a with a patchy daub floor (BL32) sealed by an occupation layer (BL30) containing a penny of Edward I (1272-1307). A pit (BF71)

was sealed by the floor, which was cut by pits (BF63, BF64). The burnt remains of an oven floor (BF72), constructed of peg-tile fragments set on edge in daub, were associated with a ?daub floor (BL54/51) and some pits (BF77, BF82, BF92, BF93) in a room or possible outbuilding (Room 4) to the east.

Further north (Fig 12), two stone-and-mortar foundations (AF457, AF466) probably indicated the northern end of Room 5. The much disturbed external foundations of Room 6 included the stone-and-mortar foundations AF39, which had in places an upper course of slate, the first phase of AF40, which stood 0.5 m high and contained some peg-tile fragments, and probably AF462.

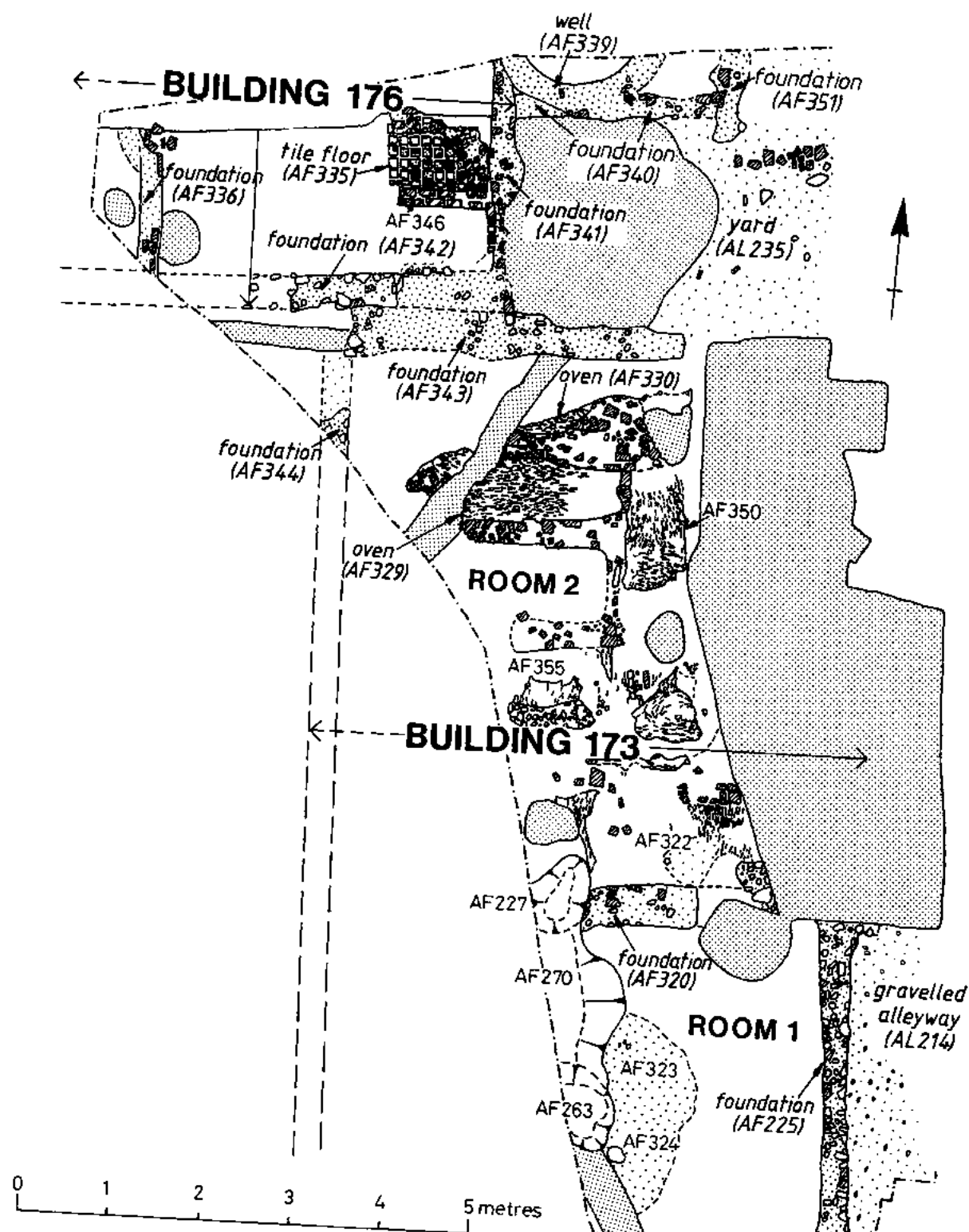


Fig. 10 Buildings 173 and 176, Period 3a.

There was no evidence for an internal partition within Room 6, although it was not possible to excavate fully the early levels in the southern half of the room. A large, south-facing, circular oven (AF203) had a floor of peg-tiles set on edge and part of its superstructure, consisting of peg-tile set in daub, survived on the eastern side (Fig 13). All the remains were intensely burnt. The oven was associated with an extensive area of peg-tile floor (AF188), lined with a narrow kerb (AF208/209) of septaria fragments set in mortar. To the east of AF203 lay the remains of a tile and daub superstructure, and both this and the adjacent area of floor were again intensely burnt, possibly indicating the presence of a small subsidiary oven.

Traces of a further peg-tile floor or oven (AF463), also probably from Period 3a, were observed in a trench further south in Room 6. Elsewhere a substantial layer of make-up (AL176/AL193) was sealed by a daub floor (AL124/AL174). The oven (AF203) was the first of a series in Room 6 and conforms to a type known elsewhere in Colchester (eg CAR 3, 194), which were probably used for baking (p82). The extent of the remains in Room 6 perhaps suggests use on a commercial scale. Although it seems likely that the wing was two-storeyed nearer the frontage, the number of large ovens in Room 6, and also in the excavated parts of Buildings 173 and 177, suggests that these rooms were open to the roof.

The north-south foundation (AF42) along the

western side of Building 174 north of Room 6 perhaps originally supported a free-standing boundary wall extending further north (AF150, Fig 25), which formed part of a long-standing property division (p63). The northern side of foundation AF39 had been neatly faced, but the southern side left rough, which, together with the fact that the eastern foundation (AF140) of Room 7 was of different construction, including brick, to AF42, suggests that Room 7 was a secondary addition later in Period 3a. In Room 7 a series of post-holes (AF137, AF159, AF160, AF170, AF172, AF259, AF261, AF262, AF267), up to 0.45 m deep, also indicated a different type of construction involving earth-fast posts. The north wall of Room 7 lay beyond the section, although toward the north end of the room there was a short east-west plinth (AF145), consisting of peg-tile fragments set in daub, and a secondary north-south brick pier, surviving up to six courses high, with traces of another possible brick pier 2 m to the east, features which may indicate a doorway in this area. Room 7 had a daub floor (AL119), sealing an extensive gravel make-up layer (AL131/AL175), with no internal features apart from some small pits (AF153, AF157, AF177, AF185, AF189, AF190), suggesting that the room was perhaps used primarily for storage and also may have been single-storeyed. There were two shallow peaves-drip gullies (AF198, AF205) immediately east of AF140.

The yard area to the east of Building 174 was grav-

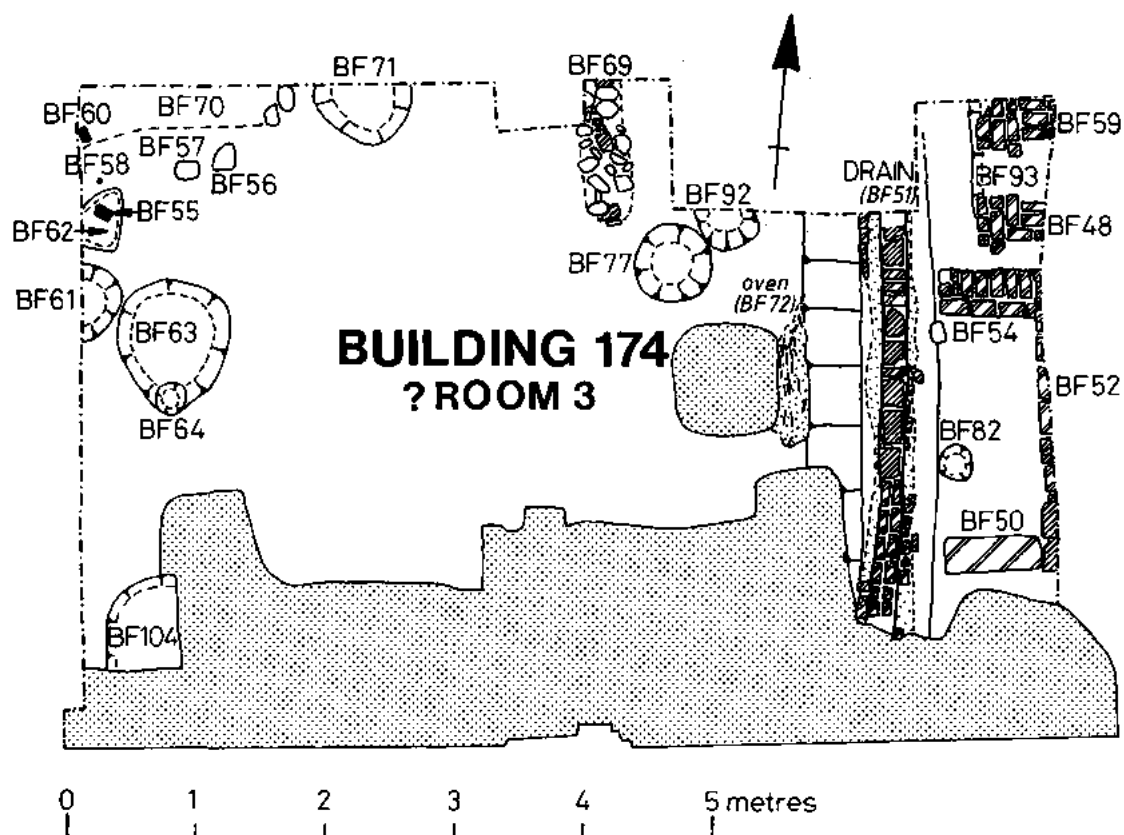


Fig. 11 Building 174, Period 3a-b, Site B.

EXCAVATIONS AT ANGEL YARD, COLCHESTER

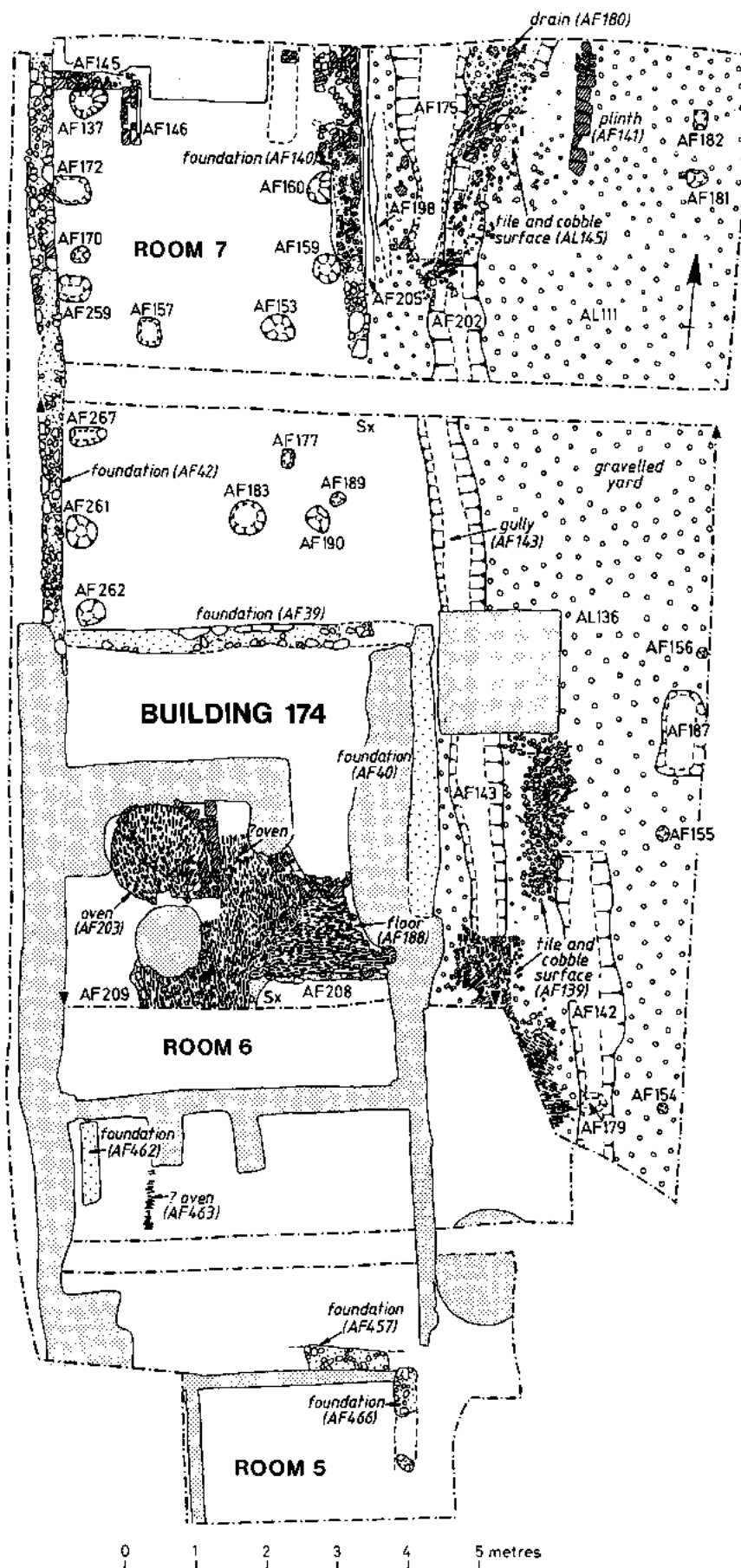


Fig. 12 Building 174, Period 3a, Site A.



Fig. 13 The Period 3a oven, AF203, Building 174, Room 6.

elled over in Period 3a (AL111, AL113, AL136). The yard was cut by a drainage gully (AF143/AF202) and several small pits (AF179, AF181, AF182, AF187). The yard surface was subsequently raised with make-up (AL86, AL112, AL115, AL121), in places sealed by layers of cobbles interspersed with bands of peg-tile fragments set on edge (AF139, AL145), as well as some regravelling (AL85, AL87, AL122). These later levels were associated with further drainage gullies (AF142, AF175) a brick-lined drain (AF180) and some post-holes (AF154, AF155 & AF156). Later in Period 3a a thick make-up layer of daub and peg-tile fragments (AL81) was dumped to the east of AF140. It was associated with a tile 'plinth' (AF141), which perhaps supported a small wooden outbuilding.

Period 3b (Figs 8, 11, 14-15). Evidence from the area of the street frontage was again sparse (Fig 11). In Room 3 a daub reflooring layer (BL29/BL26) was cut by some pits (BF61, BF62) and post-holes (BF55/BF58, BF60). A north-south drain (BF51; Fig 8) of brick and tile extended across the eastern part of Site B, perhaps through a passage from the High Street frontage. By the east section the remains of two east-west brick piers (BF50 & BF54) were apparently associated with a north-south brick foundation (BF52), presumably from an adjacent property. There was a fragmentary

brick floor (BF48/BF59) to the north of BF54.

Part of a hearth or oven floor (AF451) of peg-tiles set on edge was observed at the northern end of Room 5 (Fig 14). A replacement foundation (AF465) immediately north of AF451 and AF457 was constructed of up to seven courses of peg-tile fragments set in daub, and was associated with a small oven (AF464) also constructed of peg-tile. The eastern foundation (AF40) of Room 6 was raised by 0.45 m, with a rebuild including peg-tiles laid in a herring-bone pattern and the inner face had mortar rendering. In addition to AF464, further ovens built of peg-tile in Room 6 included: in the centre of the room AF125, which replaced AF203; immediately to the east a rectangular hearth or oven (AF126) associated with an ash-filled scoop (AF127); in the southern part of the room a large oven (AF455) with sides surviving up to twelve courses high; and a well-preserved oven (AF50) surviving up to seventeen courses or 0.35 m high in the north-east corner of the room, with an elongated secondary peg-tile wall (AF53/AF133) extending to the south (Fig 15). Elsewhere Room 6 had a daub floor (AL52/AL157).

Room 7 was rebuilt in Period 3b with the western foundation being reinforced (AF42b) and the eastern foundation replaced (AF80). The brick pier (AF146) and possibly the plinth AF145 were apparently re-

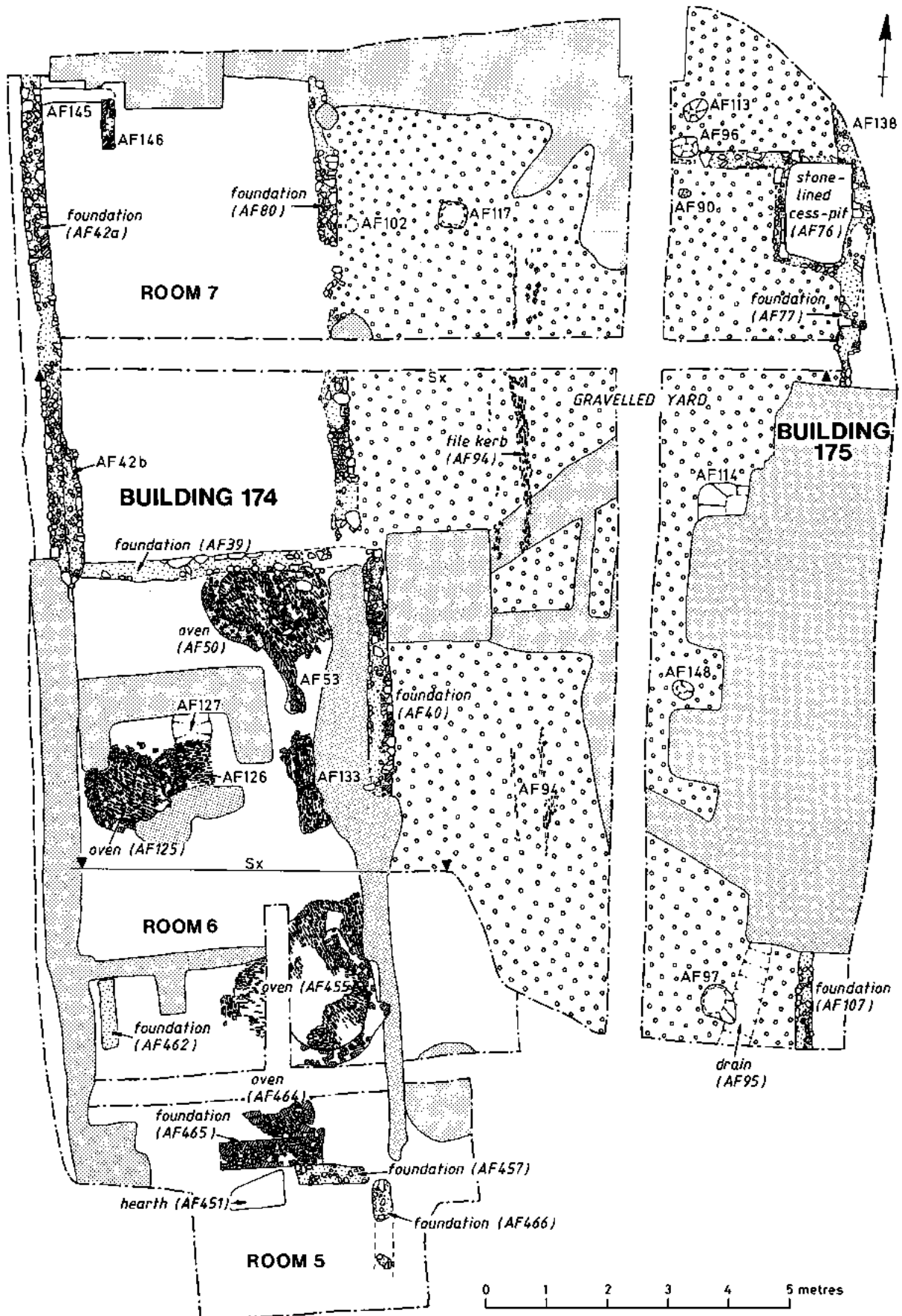


Fig. 14 Buildings 174 and 175, Period 3b, Site A.



Fig. 15 The Period 3b oven, AF203, Building 174, Room 6.

used, and the room refloored (AL90/AL100) in daub.

A large quantity of peg-tile fragments (AL44/AL74) were spread over the western part of the adjacent yard, while the eastern part was regravelled (AL51/AL58) and subsequently patched, mainly with peg-tile fragments, in an area of sinkage by the north section (AL55, AL62/AL64, AL80). Later in Period 3b, the yard was subdivided by two narrow lines of peg-tile set on edge (AF94), which perhaps delineated a drain or path, but possibly defined separate properties (Buildings 174 and 175). The area to the west had a patchy gravelled resurfacing (AL43/6), while a substantial gravel layer (AL32/8) was applied to the eastern part. Associated features included pits (AF90, AF96, AF97, AF113, AF114, AF117, AF148) and a shallow drainage gully (AF95).

Period 3c (Figs 16-20). A large rectangular block, 9.5 m x 12 m, was built on the High Street frontage in Period 3c, and this survived largely intact until 1989 when as much as possible of it was surveyed as the demolition of the building proceeded (Figs 16-17; site archive). Not only were original elements of the frame recorded but so too was the wide range of joints used to construct it. Though some timbers were missing, it proved possible to reconstruct most on paper by using

the information provided by empty mortices in adjacent timbers. The types of joints present, the plan, the type of roof and various other details point to the building having been constructed between 1600-50.

It was built as two separate three-storeyed dwellings each with a shop at ground-floor level on the street frontage and a brick cellar for storage directly below. The front of each shop contained three wide, round-headed windows and a doorway. Unlike the other windows in the building, those in the shops would not have been glazed (with either glass or a substitute material). However, when the shops were closed they would have been covered by shutters hinged to the wall just below them.

The two dwellings shared a common chimney-stack which probably provided each unit with three fireplaces, one on each floor. The roof was of the side-purlin type, the purlins being morticed into the principal rafters; the roof was tiled. The first floor was jettied over the ground-floor on the street frontage. The east wall of the east unit at first- and second-floor level was provided by the adjacent building, the bridging joists of its floors being lodged on north-south members of the wall next door. A passage at ground-floor level within the plot of the east dwelling separated it from the adjacent building and provided access to the rear.

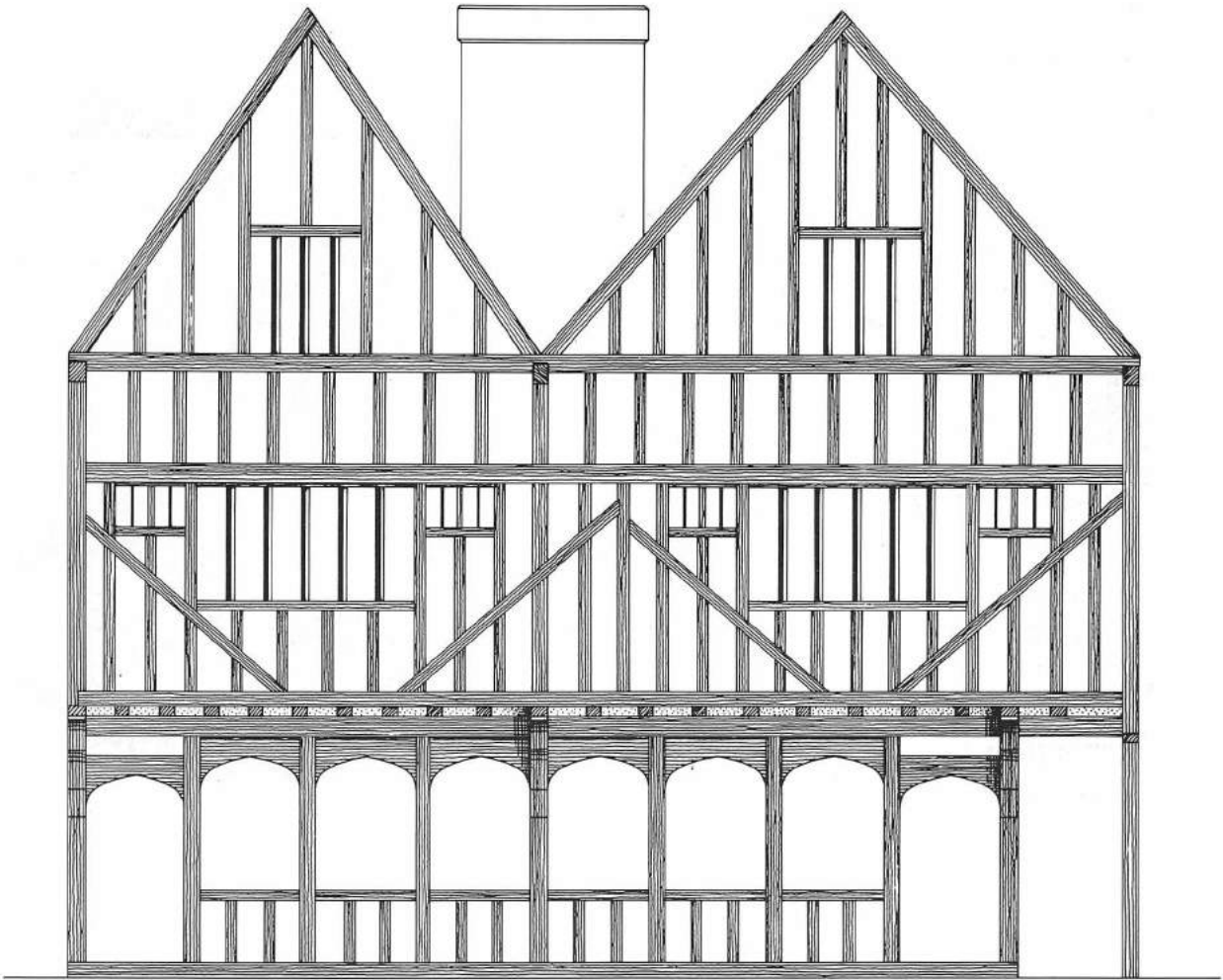


Fig. 16 Front elevation of Building 174, Period 3c.

Substantial brick foundations, 0.7-0.75 m deep, set in construction trenches, supported the timber-frame (Fig 18). A penny of Charles I (1625-49) was recovered from one of the trenches. The base for the double chimney-stack (BF2, BF11, BF44) was incorporated into the east-west foundation across the centre of the block, with a ladder staircase to either side of the stack. A stairwell (BF1), possibly a secondary feature, perhaps formed an entrance via a wooden staircase into the north-east corner of the cellar under Room 2.

A series of shallow beam-slots (BF35-BF41) in Room 3 contained decayed wood probably from joists for a wooden floor.

The rear wing continued in use into Period 3c. A large Purbeck marble mortar (Fig 19; AF456) was set in daub (AL303) in the southern end of Room 6. An area of brick floor (AF430) lay in the south-east corner of the room, perhaps by a doorway. The ovens in Room 6 went out of use, and a chimney-stack (AF56), 0.7 m deep, was inserted towards the northern end of the room. This was subsequently robbed, although the

remains of the base of a fireplace survived immediately to the south. It consisted of two L-shaped plinths (AF57/AF60, AF58/AF59) constructed of peg-tile fragments set in daub up to six courses high. The floor of an earlier hearth (AF126) was re-utilised to form the floor of the fireplace, the area of which was subsequently shortened with the refacing of AF59. There was a shallow raking-out pit (AF82) immediately to the south. The floor was of daub (AL29) associated with a thick occupation layer (AL27/AL28), and was subsequently replaced (Fig 20; AL6/AL7).

Initially Room 7 continued in use, and was refloored in daub (AL49/AL56). An east-west brick and tile plinth (AF79) to the east of AF146 suggests that the position of the north wall was moved southwards. An area of cobbles (AL69) to the west of the brick pier AF146 may indicate a doorway. Other internal features included small pits (AF135, AF136) and a drainage gully (AF134) leading out through the foundation AF80. Room 7 was subsequently demolished, probably in the late 17th century, and the area sealed

by demolition debris (AL35), including a sheet of white wall-plaster (AL26), measuring 0.8 sq m, collapsed close to the foundation AF42.

The western part of the yard had a resurfacing of well-laid cobbles (AL10, AL11), from which were recovered a threepence of Elizabeth I (1561), a token of Hans Krauwinkel (1580-1610), a Royal farthing token of and James I/Charles I (1614-36), and three illegible local trade tokens of the mid 17th century. A line of three post-holes (AF61, AF62, AF63) cut AL10, while further east, beyond a stone-lined drain (AF64), there was a less substantial gravelled surface (AL14/AL15). To the south this had been much patched, mainly with tile fragments (AL22), associated with which were a Royal farthing token of Charles I (1634-6) and a local trade token of William Ferris (1665), and further north (AL17) it was associated with a narrow timber drain (AF55).

Period 4 (Figs 21-22). A brick facade was added to the frontage in Period 4a, incorporating four sash windows at first-floor level and two replacement attic windows. Otherwise there were only minor alterations to the block on the street frontage during Period 4 (Fig 21). Access was gained from the High Street pavement into the front of the cellar (BF13/BF14, BF16, BF17), the more easterly entrance of which was subsequently blocked (BF18). The stairwell (BF1) went out of use and was blocked, and several brick partition walls were added to the western part of the cellar. A north-south brick foundation (BF10) between Rooms 3 and 4 was subsequently replaced by a large concrete foundation (BF8), and the floor level was raised (BL7, BL9, BL10).

The wing to the north was demolished during Period 4, probably in the late 18th century (Fig 22). The chimney-stack base (AF56) in Room 6 was robbed and the room sealed with demolition debris (AL8/AL9). A small, two-storey rectangular brick structure was subsequently added to the frontage block, and survived until demolition in 1986. Excavated remains from this structure included partition walls (AF425, AF440), the entrance to a small cellar, and the remains of a brick chimney-stack (AF420, AF426, AF432, AF445) against the north wall (AF423), with a cobbled surface (AF428) being replaced by a daub floor (AL285). The west wall of the property continued in use as a boundary wall and was rebuilt in brick (AF70/AF83), as was AF150 further north. Dump layers (AL4/AL12) accumulated north of Room 6, and were associated with a brick oven (AF34), a brick tank (AF45), a brick setting (AF32) and some pits. This area was covered by brick out-buildings in the late 19th century until demolition in the 1960s. To the east of Room 6 a brick well-cap (AF427) was uncovered, with a cobbled surface (AL306) immediately to the south. Although the later surfaces had been destroyed, the yard area continued in use and was cut by numerous service trenches.

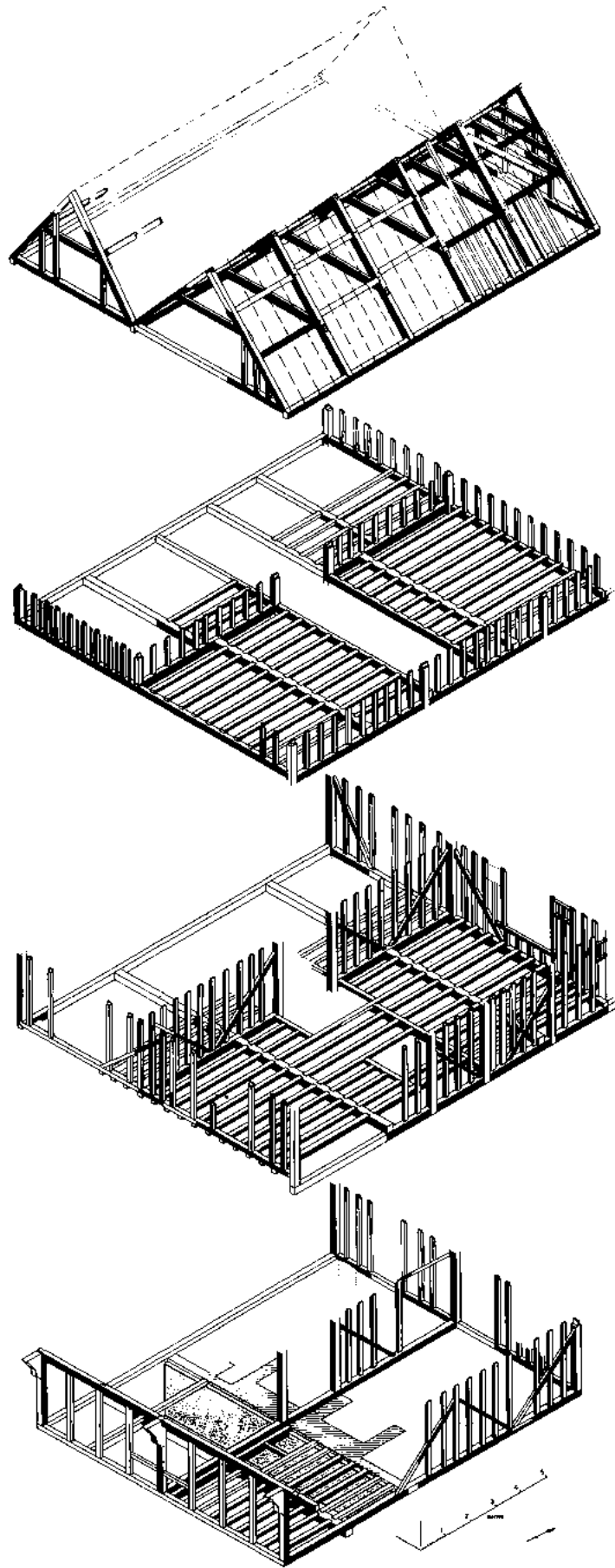


Fig. 17 Isometric plan of Building 174, Site B.

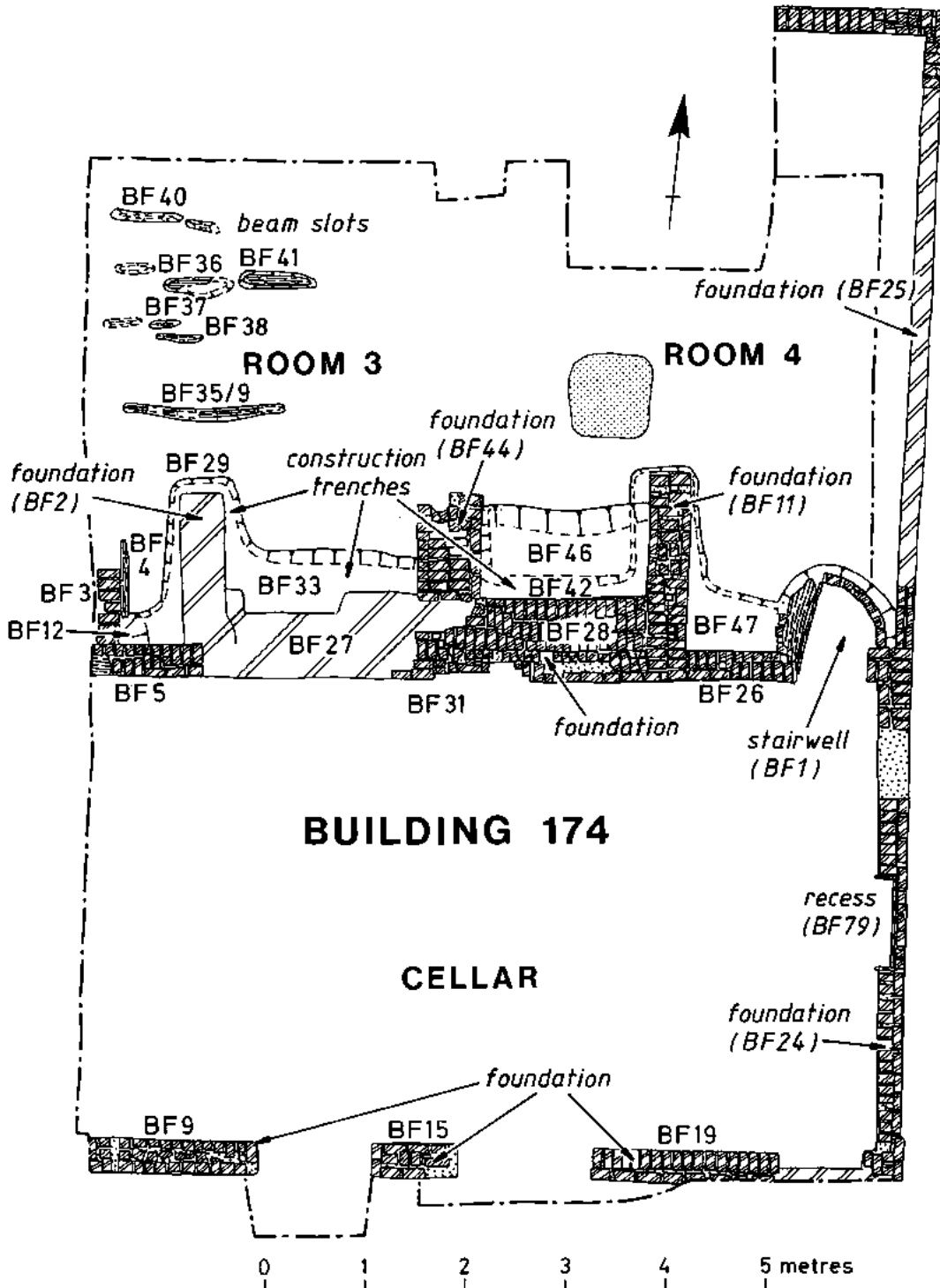


Fig. 18 Building 174, Period 3c, Site B.

Building 175 (Periods 3-4; Figs 9, 14, 23)

The edge of a building extending from the east section of the site was excavated (Fig 9). It probably formed the much disturbed remains of a wing extending from the High Street frontage at the rear of 132 High Street, and included lengths of stone-and-mortar foundation

(AF77, AF107, AF138), which presumably supported a timber-framed superstructure. The foundations were in use at least by early Period 3b (Fig 14).

Immediately west of and contemporary with AF77 was a stone-lined pit (AF76) 1.5 m deep, constructed of irregular courses of septaria, peg-tile and some brick

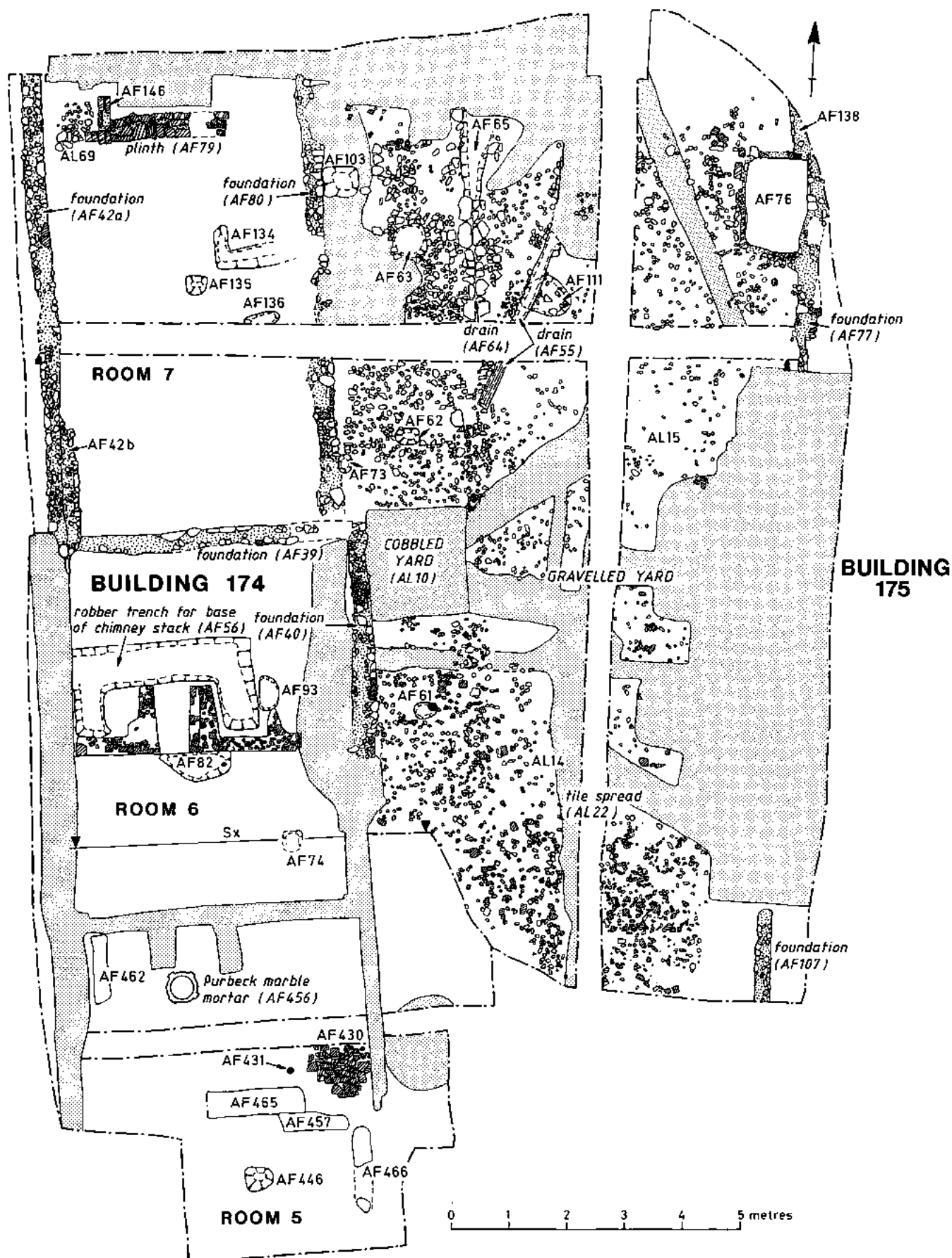


Fig. 19 Buildings 174 and 175, Period 3c, Site A.

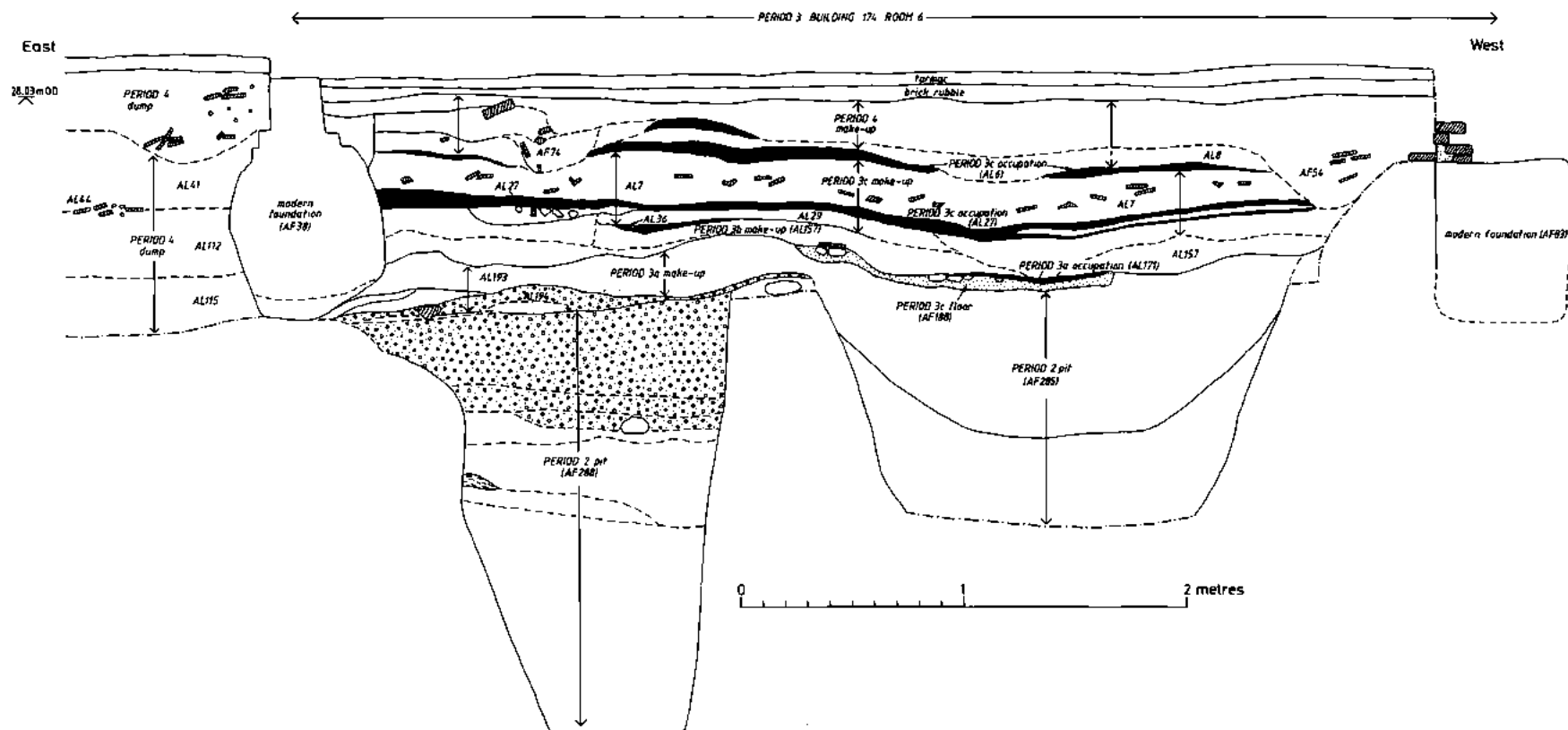


Fig. 20 Section across Room 6, Building 174, Site A.

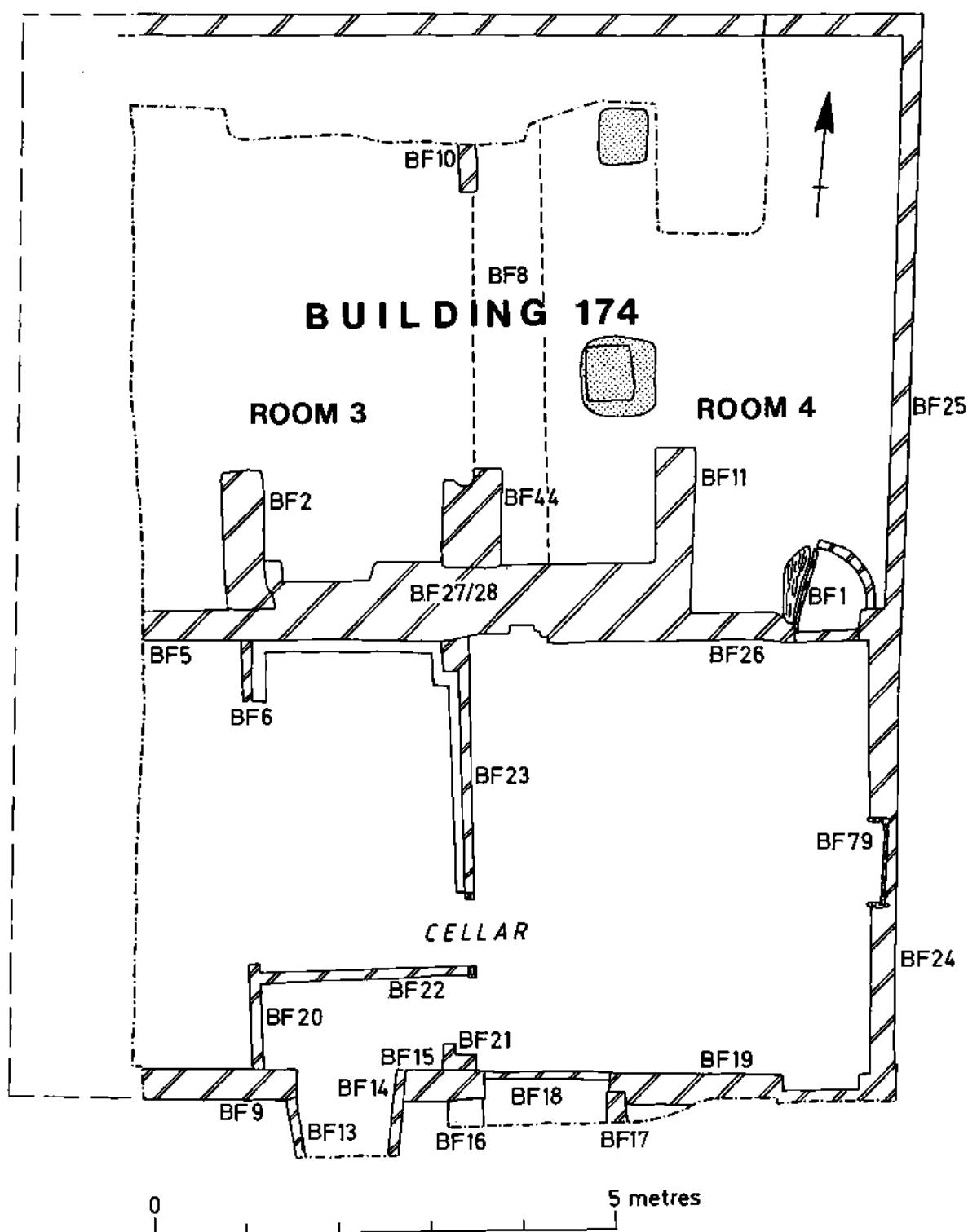


Fig. 21 Building 174, Period 4, Site B.

with a rough mortar rendering, and a floor of compacted daub. This probably functioned as a cess-pit, periodically cleaned out. The backfill contained a fine collection of late 16th century pottery and glass (p73), indicating that AF76 had gone out of use before the end of Period 3b. A short stretch of foundation

(AF104), extending westwards from AF138 and the northern edge of AF76, survived to a height of 0.3 m. It was constructed of septaria fragments in a hard whitish mortar faced with large peg-tile fragments set vertically.

The wing was probably demolished in Period 4

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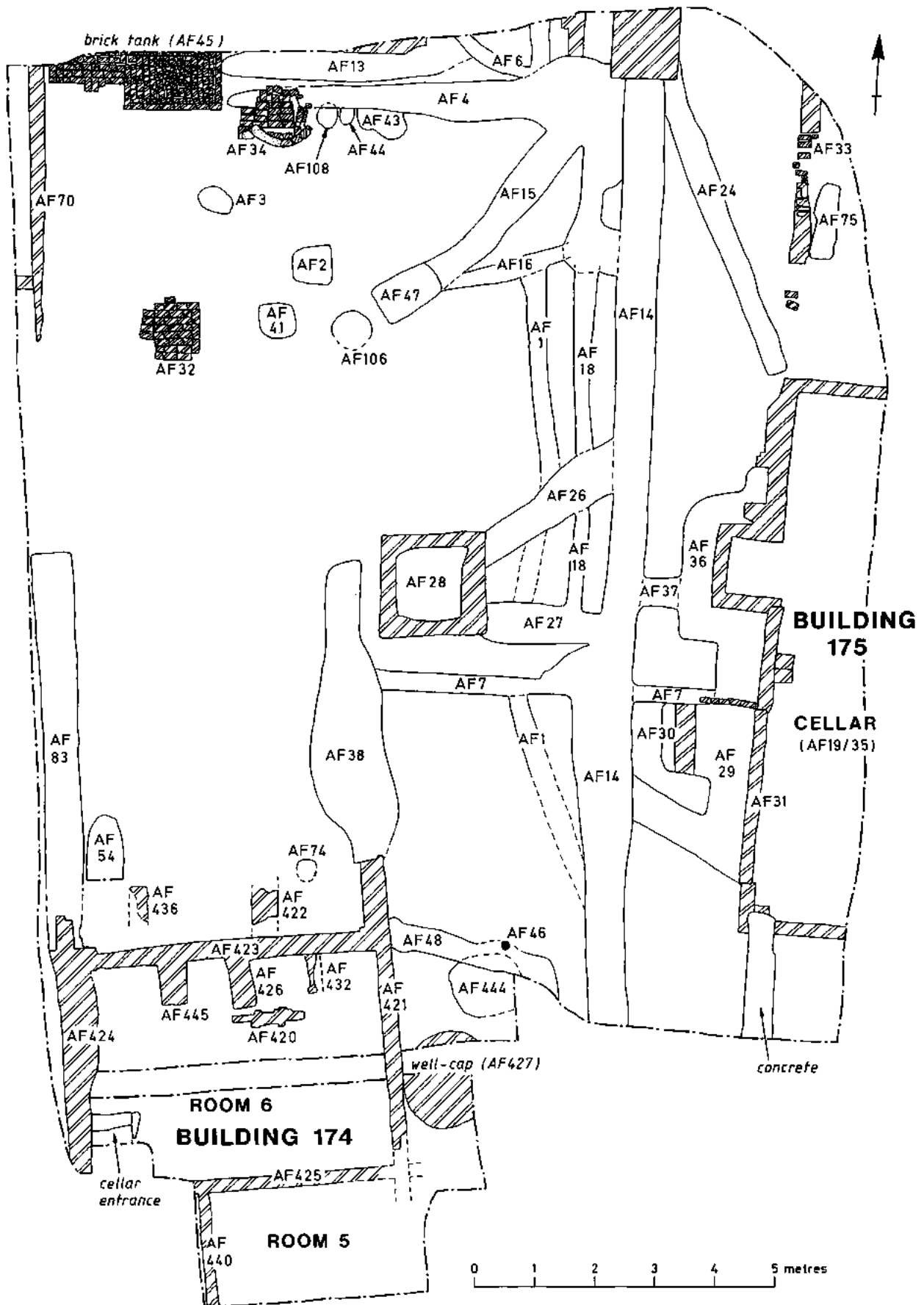


Fig. 22 Building 174, Period 4, Site A.

and rebuilt in the late 19th century with the construction of a range of cellars (AF19/AF35) and a brick foundation (AF33).

In the north-east corner of the site, limited excavation revealed a brick-lined drain and tank (AF10, AF12) and traces of foundations probably from the

northern end of Building 175 (Fig 23). Further west were some pits (including AF9, AF11, AF17, AF22, AF23), one of which contained a pig skeleton, probably associated with a slaughter-house on the site in the early years of this century. The animal had been coated in lime on burial and may have been a victim of disease.

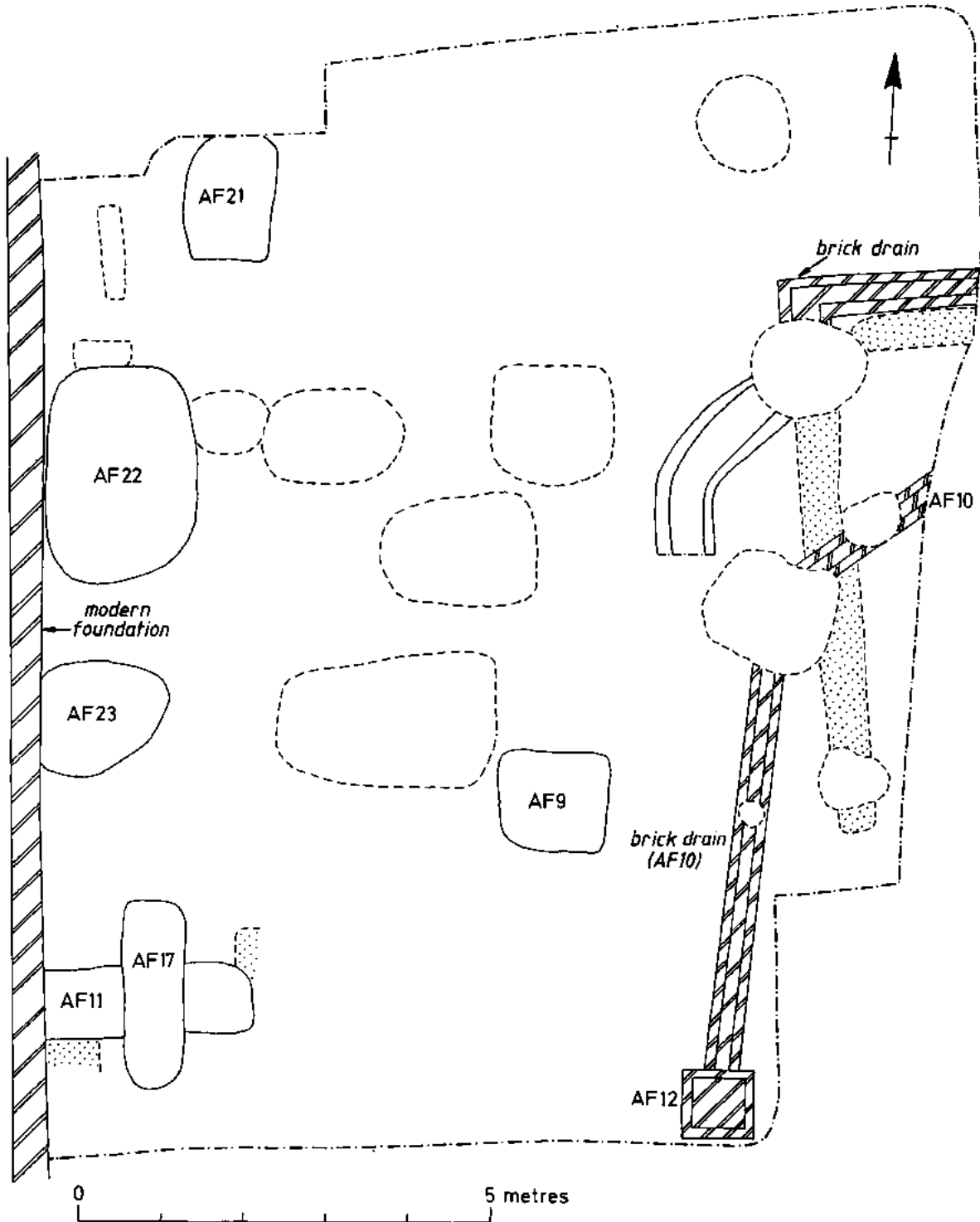


Fig. 23 North-east corner of Site A, Period 4.

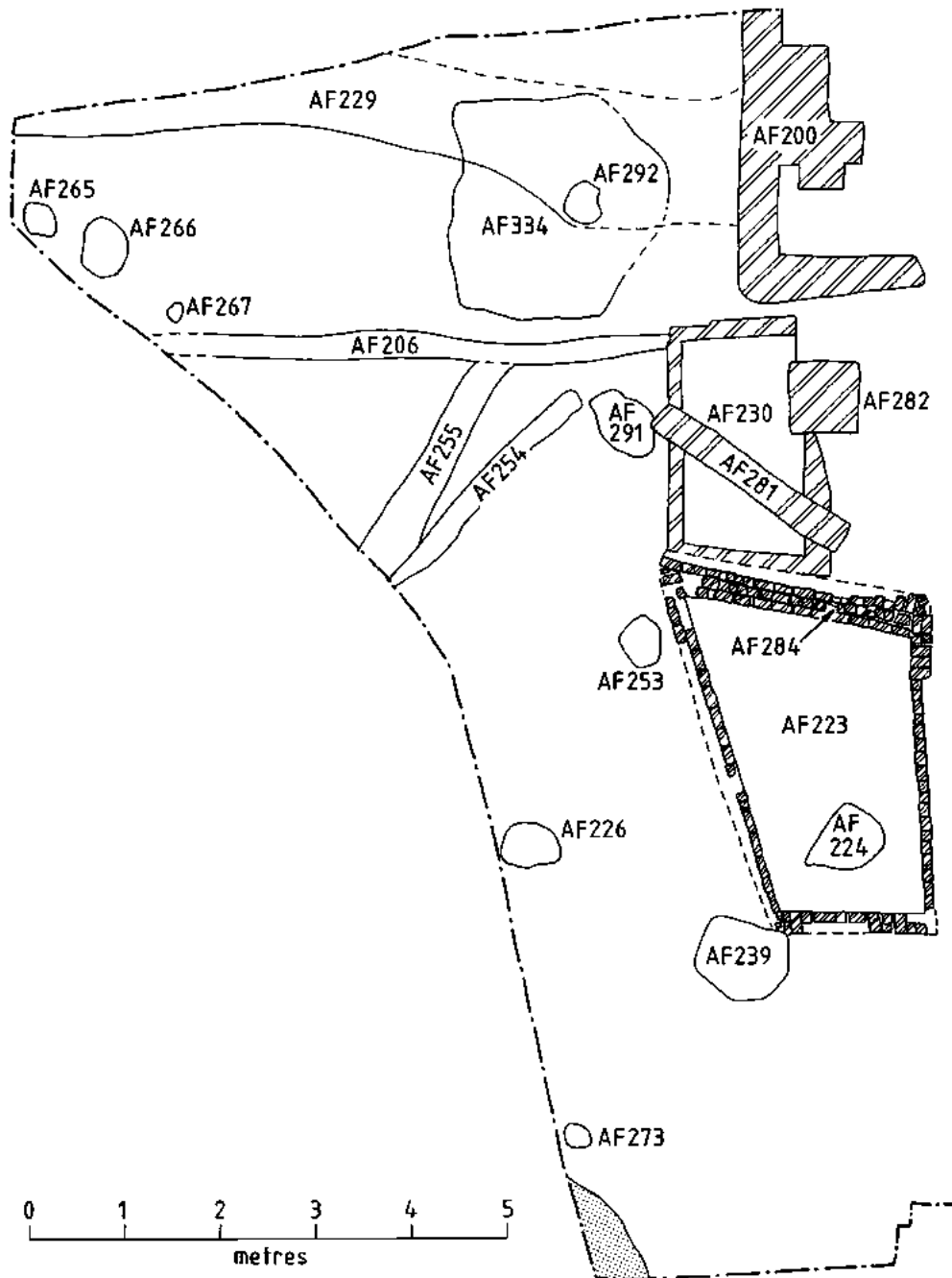


Fig. 24 Yard area, Period 4, Site A.

Building 176 (Period 3a; Figs 9-10, 24)

The edge of a further building was excavated immediately north of Building 173 (Figs 9-10) and probably formed part of an east-west wing extending back from the West Stockwell Street frontage. The external foundations (AF341, AF342) were of stone-and-mortar construction, with a narrow internal foundation (AF336) built largely of peg-tile fragments set in mortar. All presumably supported a timber-framed, probably two-storeyed, superstructure.

A short length of a secondary east-west brick foun-

dation (AF346), surviving two courses high, extended into the room from AF341. An area of tile floor (AF335), consisting of glazed dark green/black, brown, and yellow Flemish tiles set on a mortar base (p82), lay to the north of AF346, sealing an earlier daub floor (AL232/AL233). Several further glazed tiles were noted to the south of AF346 against AF341. The tile floor was sealed by a curving brick foundation (AF338), which also survived two courses high in the north-east corner of the room.

Further structural remains were observed east of

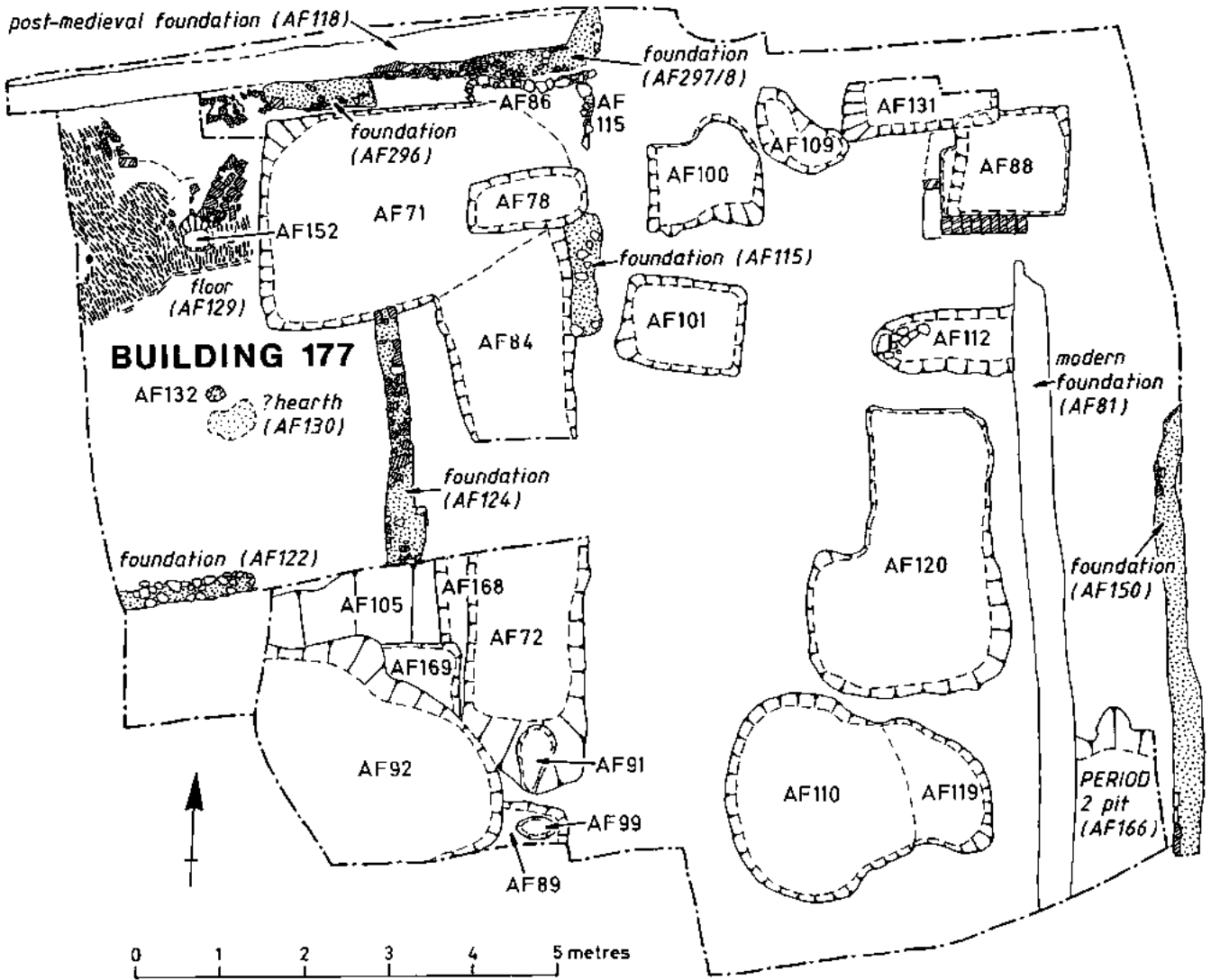


Fig. 25 Building 177, Period 3a.

AF341, including foundations (AF340, AF351) and part of a well (AF339) associated with a gravelled surface (AL235). An east-west foundation (AF400) was observed in a trench 10 m west of Building 176 (Fig 9) and may be associated with it.

Following the demolition of Buildings 173 and 176 the area to the rear of the High Street frontage in the western part of the site was gravelled over (AL198), and reverted to a yard area at the rear of the Angel Inn. The yard was resurfaced with large cobbles (AL184) during Period 4. The brick foundations of several small structures (AF200, AF230, AF223/AF284), probably outbuildings, were subsequently built along the eastern side of the yard (Fig 24).

Building 177 (Period 3a) (Figs 9, 25)

Limited excavation was possible of part of a building

in the north-west corner of the site (Fig 9), consisting of the remains of a rectangular block or wing to the rear of the street frontage of what is now 2 West Stockwell Street. The external foundations (Fig 25; AF122, AF124, AF296) were constructed of septaria and tile set in mortar. The northern foundation (AF296) had apparently been demolished and sealed by a later daub floor (AL212). A replacement wall may have been destroyed by a later foundation (AF118), although a foundation (AF297/AF298), which perhaps belonged to a building to the north, may have been utilised.

There was an extensive area (AF129) of peg-tiles set on edge in the northern part of the room. It had a tile kerb to the south and had been much burnt. Clearly of more than one phase, it incorporated the floor of at least one demolished oven. The peg-tiles were set into an extensive daub floor (AL212) associat-

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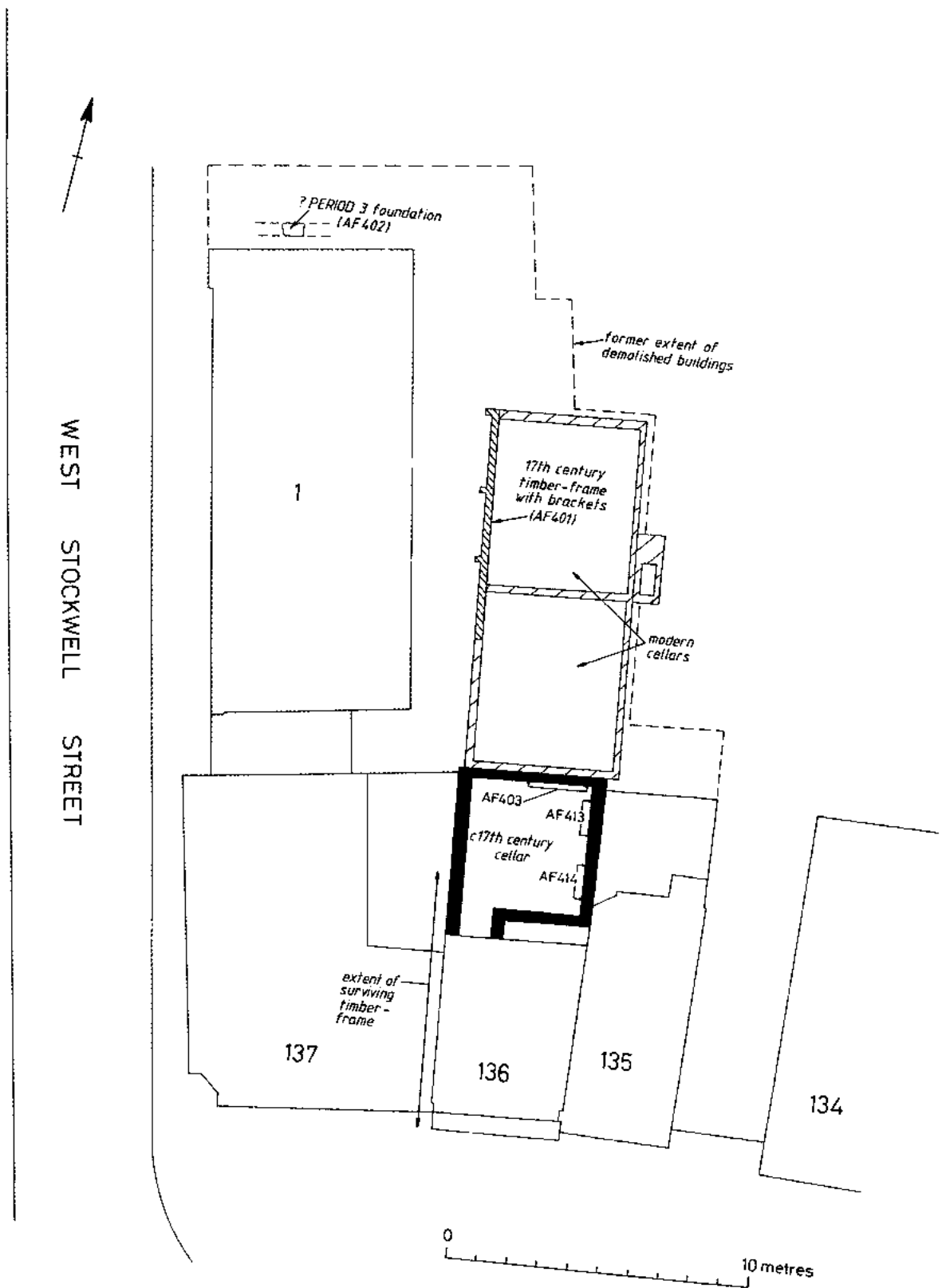


Fig. 26 The rear of 136 High Street, Angel Yard, Colchester.

ed with a small pit (AF132) and a ?hearth (AF130). Finds from the demolition debris (AL54/AL66) sealing the floor suggested that Building 177, like Buildings 173 and 176, was relatively short-lived and had been demolished by c 1500.

Immediately to the east of Building 177 were frag-

mentary rubble foundations (AF86, AF115), perhaps forming an outbuilding to the rear or possibly the remains of an earlier structure. Pit-digging took place to the east both before (AF72, AF84, AF100, AF101, AF109, AF168, AF169) and after (AF71, AF78, AF88, AF110, AF119, AF120, AF131) the demolition

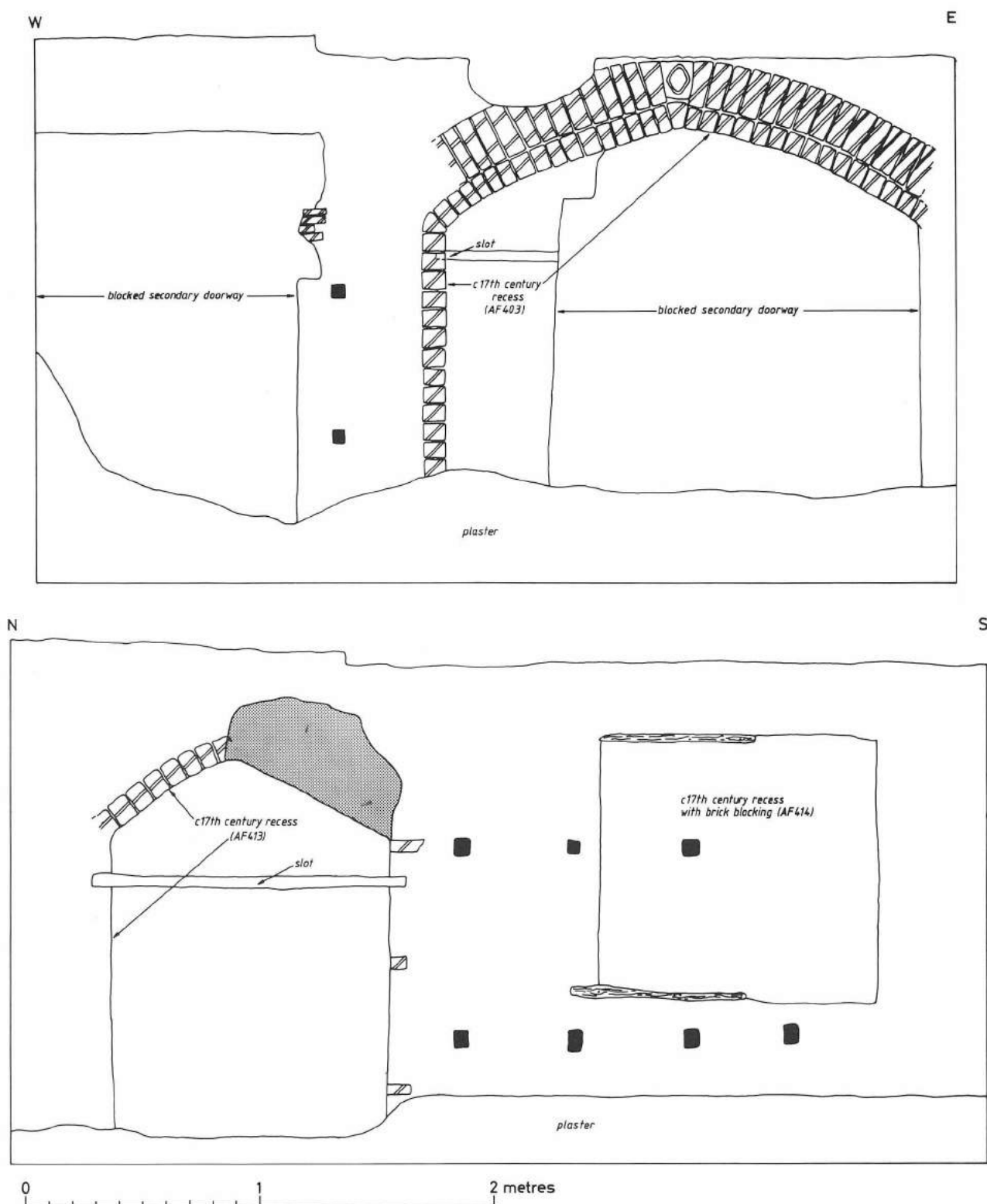


Fig. 27 Cellar elevations at the rear of 136 High Street, Angel Yard, Colchester.

of Building 177. The pits AF110, AF119 and AF120 were sealed by a series of dump layers (AL20, AL23, AL24, AL25, AL50) of probable late 17th-century date.

Rear of 136 High Street (Figs 9, 26-7)

Demolition in the south-west corner of the redevelopment area revealed further post-medieval remains, including cellars and part of a timber-framed jettied wing (Figs 9, 26). The surviving timber-frame nearer the frontage was incorporated into the redevelopment (Shackle 1988, 27-30; site archive).

Under the southern end of the wing lay a cellar constructed largely of septaria, with several brick features including recesses with four-centred arches (Fig 27; AF403, AF413), and a wood-lined recess (AF414) which suggest a 17th-century date. The cellar was entered from the south through cellars of earlier date, and two entrances had been knocked through the north wall to give access to later wholly brick-built cellars, which had subsequently been backfilled and the entrances blocked.

At the northern end of the range, after the removal of later brickwork, a section of timber-framed wall (AF401; site archive) was exposed. The southern half of the wall included a window-frame 2.23 m long, partially replaced and enlarged, but still with one diamond and three ovolo mullions surviving at the south end. The northern half of the timber frame had a wind-brace which broke the studs and had been cut through by a secondary doorway at the north end.

Three brackets projected from the west side of the frame and would have supported a first-floor jetty. The carved decoration on the most northerly bracket and other constructional features suggest a mid 17th-century date for this section of the wing, which probably belonged to an early phase of the Angel Inn.

A note on the development of the High Street area between West and East Stockwell Streets (Fig 28) by D Shimmin

The foundations observed in service trenches on the north side of the High Street (Fig 28; Hull 1958, 159; CAR 1, 48-50; CAR 6, 3/75b, 810), although no longer considered to be Roman in date and thus discounted as evidence for continuity between Roman and medieval building alignments, still raise interesting questions of interpretation. They could, for instance, lend credence to the suggestion that the medieval High Street frontage originally extended in line with the south side of the nave of St Runwald's Church but was subsequently cut back to form a market place (CAR 1, 53). Such an hypothesis cannot be proved or disproved solely on the basis of limited field observations, and it is therefore necessary to consider supplementary sources, not only to tackle this problem, but also to provide insight into the development of a wider area, including the excavated sites described in this report.

Within the layout of the street system of the post-Roman walled town there are marked indications of replanning based on modules of 4 poles, with 12-pole units in particular being detectable north of the High Street (Crummy 1979, 149-51). Further study of the High Street area, based on the 1875-6 1:500 OS maps, reveals not only a

12-pole unit along the frontage, but also similar units extending back from it: notably northwards from both the south-west corner of St Runwald's Church and the frontage line immediately to the east of the church (Fig 28). These measurements are reflected in significant property and parish boundaries as well as the street system, and are in some cases reinforced by results from excavation.

Boundaries can, of course, change, even those of an ancient parish like St Runwald's, and the assumption that all are necessarily medieval or earlier in origin, like the streets, is open to question. However, consideration of the 12-pole units raises the possibility that the area was conceived as a 12-pole block, offset to accommodate St Runwald's Church. This implies that the foundations mentioned above do not belong to the block, but are secondary.

Further elements in the regular layout of this area can also be put forward. For example, the 'primary' property boundary (CAR 1, 48-9) along the west side of Building 174 appears to subdivide the frontage into two lengths of 4 and 8 poles. This boundary has been shown by excavation to date back at least to c 1300. Although the 4-pole unit to the west is slightly short (by 3 ft), this seems likely to be the result of distortion caused by St Runwald's Church, or from the widening of a 'pinched end' (ibid, 50) at the south end of West Stockwell Street.

The 8-pole unit can be convincingly subdivided into one 2-pole and two 3-pole sections (although sections based on 2 and 4 poles cannot be ruled out). The 2-pole section is a strip along the west side of East Stockwell Street, defined by a parish boundary. The unit incorporating 132-4 High Street forms part of an L-shaped block, 3-poles wide, which extends round onto East Stockwell Street, where it is demarcated by the meandering parish boundary. The adjacent unit (128-31 High Street) forms a rectangular block and is admittedly slightly too large (by 3 ft).

The use of 3-pole units has historical parallels, notably in 1219 for the new town of Salisbury, where it was stipulated that the standard plots were to measure 3 by 7 poles (Crummy 1979, 150).

Of particular interest in this part of Colchester is the way the characteristic settlement pattern of crowded frontages, off which ran long straggling buildings reached by narrow alleyways and enclosing gravelled yards, developed largely within the framework laid down when the area was divided up. This pattern has been shown above by excavation to date from at least the 14th century, possibly earlier, and persisted into the 19th century and beyond.

There are of course problems inherent in this subjective approach to detecting planned dimensions (ibid, 151-3), especially in view of the dearth of comparative studies elsewhere. This is clearly evident in any attempt to work out the individual plot sizes, given the wide variation likely and the subsequent amalgamation and fragmentation of plots. In addition, much of the significant archaeological information has been destroyed by later activity, particularly the digging of cellars, while the occasional detailed documentary references to plot size do not appear to relate to the High Street area.

More informative are the references relating to property transactions in this area, particularly in providing an historical context for the foundations mentioned earlier, even if the references sometimes lack topographical precision: for example, 'Wm. de Brome surrendered a shop in the market, by the shop of Philip Chapman, under the wall of St Runwald's Church, to the use of Wm. Cole, merchant' (Court Rolls, 1339-40). This surely implies encroachments in this area, and such developments may stem from the charter of 1321, whereby the burgesses acquired the right from Edward II to develop and raise rents for the commonalty from 'waste spaces' or vacant areas in the town (Britnell 1986, 116); infilling could however have begun earlier (VCHE, 41).

Included in Colchester's medieval Oath Book is a list of rentals, some of which clearly relate to the area in question: for example, '... shop (selda) under the wall at the south corner of the church of St Runwald's ...', '... shop under the north wall of the said church ...', and '... for his stall in front of his tenement in the market ...' (Oath Book, 1387-8). By the late 14th century there were at least five shops in this area (VCHE, 44). These descriptions suggest not simply temporary stalls or booths, but permanent covered stalls or shops, simi-

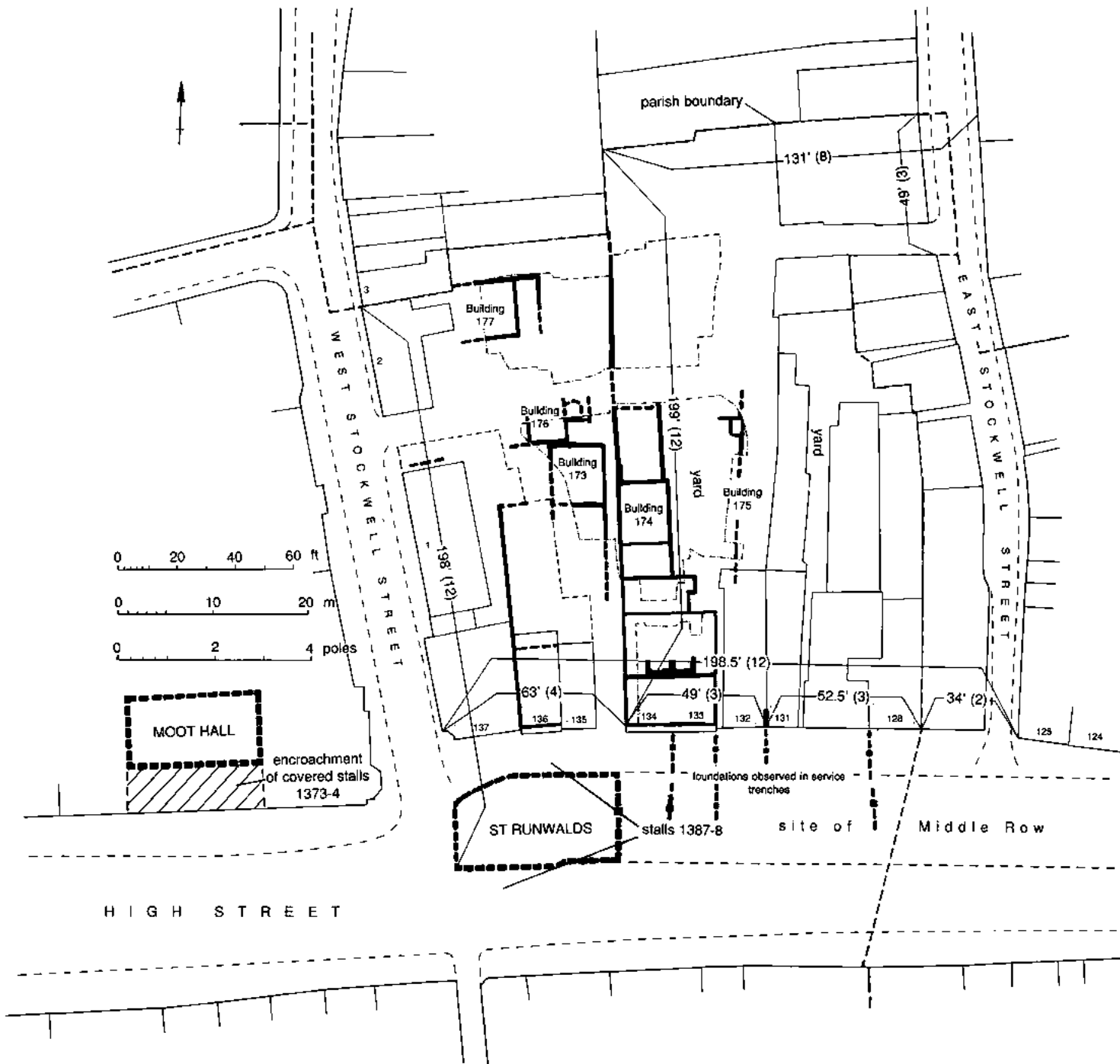


Fig. 28 The High Street area between West and East Stockwell Streets.

lar to the covered stalls constructed nearby at the entrance to the Moot Hall in 1373-4 (CAR 1, 53; Britnell 1986, 120-1). Such structures, presumably of wattle-and-daub, could well require footings or foundations such as those observed in the High Street.

The vacant ground around St Runwald's Church thus became cluttered with shops and stalls, although the infilling of this lucrative High Street area was, in effect, grafted on to an earlier, long-lasting settlement pattern, whose development is well illustrated by the Angel Yard excavations. The encroachments appear to have been largely cleared away by the time of Speed's/Norton's map of 1610; the development of Middle Row (VCHE, 44, 104) however carried on the medieval tradition.

The coins (Table 1) by John A Davies

A total of 529 coins and tokens were recovered from both phases of the Angel Yard excavations, which is a large site assemblage and comparable in size with previous Colchester collections from Butt Road and Lion Walk. Four hundred and thirty-six of the coins are Roman, with the remainder dating from the 11th century and later. Just six coins belong to the years from the 11th to the 14th century, while 80 items date from the 16th to the 19th century. The most stratigraphically significant coins are listed on p70-1.

EXCAVATIONS AT ANGEL YARD, COLCHESTER

Table 1 Chronological summary of the coins, Angel Yard, Colchester.

Period	No	% (of well-dated Roman)
I to 43	—	—
IIa 43-54	—	—
IIb 54-69	2	0.6
III 69-96	4	1.2
IV 96-117	1	0.3
V 117-38	3	0.9
VI 138-61	6	1.8
VIIa 161-80	3	0.9
VIIb 180-93	3	0.9
VIII 193-222	9	2.7
IXa 222-38	5	1.5
IXb 238-59	2	0.6
X 259-75	61	18.3
XI 275-94	151	45.3
XII 294-317	1	0.3
XIIIa 317-30	6	1.8
XIIIb 330-48	50	15.0
XIV 348-64	18	5.4
XVa 364-78	3	0.9
XVb 378-88	1	0.3
XVI 388-402	5	1.5
Total	333	
1st-2nd century	4	
3rd-4th century	98	
illegible Roman	1	
11th-14th century	6	
16th century-modern	80	
completely illegible	7	
Grand total	529	

The Roman coins range in date from two Claudian imitations of the immediate post-invasion years, through to the final years of the 4th century, without any break. A very high proportion of the coins are badly worn and illegible, defying close identification. In contrast there are also well-preserved denarii and silvered antoniniani of the 2nd and 3rd centuries, noticeable because they include types and emperors rarely found as site finds in Britain. The presence of a number of these more unusual types within a single collection is a strong indication that a hoard, of indeterminate size, has become mixed in with ordinary site finds.

The precise composition of such a dispersed hoard is impossible to reconstruct, but the chronological range and approximate size of such a deposit can be determined and a nucleus of hoard coins can be identified. The chronological distribution of all of the Angel Yard coins indicates, even when the lack of excavation of 1st-century levels is taken into account, an over-representation of issues from the mid 2nd century onwards, with a particular predominance from the start of the 3rd century and a highly pronounced peak between 260-96 (Table 2; compare with CAR 4, Table 7). Thus, the hoard would appear to embrace coinage of the years from the Antonine period to the end of the 3rd century. The number of different contexts involved shows that the hoard has been well dispersed.

The composition of the hoard can be said to include a number of specific coins. First, of the 38 coins which date from 69-260 (including otherwise illegible pieces), 23 are denarii (61 per cent). This is a very high percentage of silver coins. At Canterbury, just 30 per cent of the coins of the same period were denarii, with just 20 per cent from Cirencester excavations and 28 per cent from Verulamium excavations (source Reece 1972, table 1). Nine denarii date just from the years 193-222; a period of low coin loss on sites.

Table 2 Number of barbarous coins analysed, divided by empire and emperor, Angel Yard and Culver Street, Colchester.

Gaulic Empire	Central Empire	Unidentified
Victorinus 19	Gallienus 7	
Tetricus I 54	Claudius II 4	
Tetricus I/II 2	Divo Claudio 17	
Tetricus II 17		
Probus 1		
Totals 93	28	51

These early denarii are too numerous all to be site finds and it is likely that most, if not all, originated in the hoard. This is supported by their good condition. The earliest hoard coin may be the denarius of Vespasian, struck 69-79. The two silvered antoniniani of Valerian I may be hoard coins, while the three of Aurelian and one of Postumus also in fine condition and silvered, must certainly be so. It would be unusual to find so many antoniniani of either emperor within a site collection of this size; just one of Aurelian and thirteen of Postumus came from the entire 1971-9 Colchester excavations (CAR 4, 84, 86, 90). Other hoard coins must include the five antoniniani of Tacitus, five of Probus and one of Carinus. Issues of these emperors are very rare as site finds, with just six examples in total coming from the 1971-9 excavations (ibid, 84, 87, 89, 91). A further unusual site find from Angel Yard is a Greek Imperial bronze issue of the 3rd century. This coin is unfortunately too worn for close identification but it is possible that this exotic type came from the hoard.

The exact size of the hoard is impossible to determine. Many of the more common antoniniani of the years 260-94 would have belonged to the deposit, judging from their over-representation on the site. The coins most likely to belong to the hoard, which have been discussed above, are well-preserved issues, of silver or silver in appearance and of good module. It is therefore probable that other issues present which are of good size, shape and appearance are also hoard coins. For example, those which retain some surface silvering, such as SF 40.86 974 (Victorinus, Elmer 682) and 1106 (Claudius II, as RIC 5, 44).

The 132 barbarous radiates are far too numerous to represent site finds alone. Those of larger module, in keeping with regular antoniniani, and closest in appearance to the official coins would be expected to have come from the hoard. Well over half of the barbarous radiates are of 17 mm or above, which is a much higher percentage of large types than would be found within a typical site assemblage. It is also noticeable that an unusually high proportion, reaching nearly one quarter of the copies, imitate Central Empire types. The proportion among site finds is more commonly about 10 per cent and confirms that at Angel Yard some selection of types has been made and that the barbarous radiates are not merely the result of casual loss. The better-engraved copies include SF 40.86 1432 (obverse Victorinus), 874, 1383 and 1513 (obverse Tetricus I), and 645 (obverse Gallienus). SF 40.86 1442 (illegible) and 1428 (obverse Tetricus I) have remnants of silvering.

The association of coins identified as hoard coins with others from the same context suggests that some forty to fifty others could belong to the hoard. The over-representation of specific issues, determined by comparison with other British sites, can also give an approximation of the size of the hoard (see the typical British site range in Reece 1972, 272). It is possible that the hoard could have numbered from about 80 coins, with perhaps as many as 170 in total. The latest coin which can be associated with the hoard is either the single antoninianus of Carinus (AD 283-5; SF 40.86 743), from a Period 2b pit (AF166) or the issue of Maximian I (AD 286-305; SF 40.86 1023), from the same context (Period 2 dark earth A1556 L205) as a Proban coin.

The remaining Angel Yard site finds show an underlying pattern of coin loss covering the duration of Roman Britain. There is a typical peak of Constantinian bronzes of the period 330-48, followed by appreciable coin loss until 364, with Fel Temp Reparatio fallen horseman imitations prominent at this time. Valentinianic coinage of 364-78 is surprisingly scarce, in comparison with the preceding Constantinian issues, but coin loss is represented through to the end of the 4th century.

Following the Roman period, there were no Anglo-Saxon coins present. Anglo-Saxon coins are scarce in Colchester generally and none were discovered from the 1971-9 excavations (CAR 4, 68). The earliest post-Roman coin is a silver quatrefoil of Cnut, dating from 1018-24. There are four other coins and an Anglo-Gallic jetton which cover the 13th-14th centuries. These include an Anglo-Gallic hardi d'argent issued during the 15th century (identification by M A S Blackburn; site archive).

Coins representing the 16th to 19th centuries are more profuse. Their number reflects their copper/copper-alloy metal, in contrast to the more precious silver coins of preceding years (CAR 4, 68). They do include two silver issues of Elizabeth I. Tokens are prominent among these later types and include four Nuremberg tokens of Hans Krauwinkel, of the late 16th to early 17th century. Royal and Rose farthing tokens of James I and Charles I number 26. There are also nineteen trade tokens of the mid 17th century, of which most are local Colchester types, along with two from Suffolk. Later coins, of the 17th to 19th centuries, are less common and include issues of William III, George III, William IV and Victoria.

Analysis of 3rd-century coins

by M Heyworth

Introduction

Barbarous radiates are irregular antoniniani which are dated to the 270s and early 280s AD and are copies of the regular radiates of both the Central Empire and the breakaway Gallic Empire of this period (CAR 4, 44-9). A large group of such irregular coins were found at Angel Yard. Some were part of a dispersed hoard (p65), though there were few stratigraphical pointers to assist in identifying which coins belonged to the hoard and which did not. It was hoped that compositional analysis might identify groups within the collection which would allow the hoard to be reassembled. Consequently almost all the coins (128) were analysed, together with a comparative group of 44 similar coins from the Culver Street site, Colchester. Several regular radiate coins from Angel Yard were also analysed to check the compositional differences between coins from the two empires suggested in the analysis of the barbarous radiates.

Analytical method

All the coins were analysed qualitatively by energy-dispersive X-ray fluorescence (EDXRF) using a Link Systems Meca 10-42 machine. The primary radiation source was an X-ray tube with a rhodium target run at 35 kv and the fluorescent X-rays were detected by a Si (Li) detector. The elements recorded were copper (Cu), zinc (Zn), lead (Pb), silver (Ag), and tin (Sn).

The method of analysis used looks only at the surface of the coin and, as no surface preparation was carried out on the objects, the results will have been affected by surface contamination, corrosion and the depletion of elements from the surface this can produce, as well as any variations in surface topography. However, the area analysed is an average across the whole coin surface and should give a reasonable indication of the alloys used in the production of the objects.

A number of coins from Angel Yard were analysed on both sides to assess the variations in results. However, no major compositional differences were noted between the two sides of any single coin and it was assumed that the analysis of a single side of each coin could be taken as representative of the surface of the coin as a whole.

It is particularly difficult with this type of analysis to identify surface platings unless they are obvious visually. The plating of coins is undertaken using noble metals such as gold or silver in order to

enhance the value of the coin. The majority of coins from Colchester had no visible surface platings. Only one barbarous coin (SF 40.86 1344) and one regular coin (SF 40.86 1186) were obviously plated and this was confirmed by analysis. It is possible that other techniques such as pickling were carried out on these coins which would have altered the composition of the coin surfaces, but there is no definite evidence of this from the analyses.

There were a number of methods of surface treatments which could have been applied to the coins, though it is often difficult to be certain whether any analytically distinct surface was originally intended or whether it is the result of 'selective chemical corrosive and surface enrichment processes' which have taken place since the object was buried (Cope 1972, 261). The coin surface treatments known to have been used in the Roman period include plating, where a copper-alloy core was surrounded with sheet-metal silver, silver washing, where, after striking, the coins were covered with a thin applied wash of silver, and blanching, where low-purity silver coins were boiled in a citrus fruit acid or vinegar which caused the leaching of copper from the alloy on the surface giving a whiter (more silvery) appearance (*ibid*).

Three of the Angel Yard barbarous radiates (SF 40.86 1188, 1344, 1372) were analysed, after cleaning the edge of the coin down to bright metal, using a Link Systems AN10000 energy-dispersive X-ray analyser attached to a scanning electron microscope (this work was carried out by Dr J G McDonnell in the AML). It was hoped that this would show any differences in composition between the coin surface and core which might indicate the presence of surface platings or other surface treatments.

Results

Interpretation of Tables 4 and 7. The results of the X-ray fluorescence analysis of the barbarous radiates from Colchester are given in Table 4, and of the regular radiates in Table 7. XRF peak heights were recorded for the following lines in the spectrum: Cu K_α, Cu K_β, Zn K_α, Pb L_α, Ag K_α, and Sn K_α. It was assumed that the copper contents of the coins were approximately constant and the figures given in the table are therefore ratios to copper which were calculated as follows:

$$\begin{aligned}\text{zinc} &= (\text{Zn K}_{\alpha} / \text{Cu K}_{\beta}) \times 100 \\ \text{lead} &= (\text{Pb L}_{\alpha} / \text{Cu K}_{\beta}) \times 100 \\ \text{silver} &= (\text{Ag K}_{\alpha} / \text{Cu K}_{\alpha}) \times 1000 \\ \text{tin} &= (\text{Sn K}_{\alpha} / \text{Cu K}_{\alpha}) \times 1000\end{aligned}$$

The peak heights for each element cannot be directly compared between elements as the height bears little relation to the proportion of that element present. Different elements are excited with varying efficiencies by the primary X-rays, eg tin is excited far less than zinc so the peak height will be a lot lower even when the amounts involved are similar. The use of ratios is an attempt to make the data more meaningfully comparable so that it is possible to roughly compare the proportion of each element present. This is achieved by using copper, which is assumed to be present at about the same level in each analysis, as an internal standard and by using a different multiplication factor for the lower energy elements (zinc and lead) to that for the higher energy elements (silver and tin).

Barbarous radiates (Tables 2-4)

Table 3 Average element ratios for each empire group for Angel Yard and Culver Street barbarous radiates, Colchester. Ag, silver; Pb, lead; Sn, tin; Zn, zinc.

	Zn	Pb	Ag	Sn
Angel Yard				
Central Empire	16	115	4	13
Gallic Empire	18	48	2	6
Culver Street				
Central Empire	6	91	4	10
Gallic Empire	21	43	1	4

EXCAVATIONS AT ANGEL YARD, COLCHESTER

Table 4 Analytical results for barbarous radiates from Angel Yard and Culver Street, Colchester. Where both sides of the coins were analysed but obverse and reverse not noted the two readings are referred to as 'a' and 'b'. Ag, silver; g, gramme; Pb, lead; SF, small find number; Sn, tin; Zn, zinc.

Emperor	SF no	Zn	Pb	Ag	Sn	Weight (g)
<i>Angel Yard</i>						
<i>Central Empire</i>						
Gallienus	645	5	33	8	8	2.14
Gallienus	1045	49	65	6	11	2.07
Gallienus	1165	5	12	-	-	0.42
Gallienus	1188	4	8	29	4	3.63
Gallienus	1225	4	83	2	11	2.65
Gallienus	1264	6	56	6	11	2.64
Claudius II	1052	5	139	5	9	2.39
Claudius II	1224	obverse	6	94	6	20
		reverse	5	94	4	16
Claudius II	1239	103	97	-	12	1.71
Divo Claudio	1109	18	271	-	21	2.15
Divo Claudio	1137	8	83	-	17	1.34
Divo Claudio	1141	a	20	7	4	12
		b	7	3	-	2
Divo Claudio	1189	39	366	2	32	2.72
Divo Claudio	1191	16	158	-	20	1.74
Divo Claudio	1211	12	135	-	10	1.85
Divo Claudio	1243	3	97	11	8	2.53
Divo Claudio	1246	49	53	-	8	2.11
Divo Claudio	1254	30	101	-	16	1.30
Divo Claudio	1279	3	24	-	14	2.65
Divo Claudio	1330	5	88	-	13	1.89
Divo Claudio	1416	a	6	355	-	23
		b	9	315	5	25
Divo Claudio	1420	4	114	-	15	2.39
Divo Claudio	1425	5	29	8	7	1.78
<i>Gallic Empire</i>						
Victorinus	667	7	34	8	4	0.69
Victorinus	672	3	4	3	-	1.54
Victorinus	843	obverse	7	12	6	4
		reverse	8	15	7	6
Victorinus	920	obverse	7	124	-	5
		reverse	7	192	-	8
Victorinus	1021	obverse	4	13	4	-
		reverse	4	16	7	-
Victorinus	1187	11	22	4	6	3.62
Victorinus	1210	48	28	-	14	1.09
Victorinus	1212	79	339	2	45	1.69
Victorinus	1340	obverse	65	81	-	13
		reverse	71	84	-	15
Victorinus	1342	obverse	4	25	5	-
		reverse	3	27	5	-
Victorinus	1372	3	7	10	-	0.57
Victorinus	1380	4	43	2	3	2.48
Victorinus	1432	3	3	-	-	1.70
Victorinus	1443	a	6	26	2	5
		b	6	23	-	6
Victorinus	1468	obverse	3	2	-	-
		reverse	3	2	-	-
Tetricus I	35	8	41	2	6	.93
Tetricus I	522	4	4	6	-	1.02
Tetricus I	669	5	21	3	-	1.60
Tetricus I	771	103	34	-	6	2.32
Tetricus I	797	obverse	4	37	-	2
		reverse	3	46	-	2
Tetricus I	852	15	529	2	43	0.26
Tetricus I	874	3	30	2	-	2.50
Tetricus I	905	29	38	-	3	1.58

Emperor	SF no	Zn	Pb	Ag	Sn	Weight (g)
Tetricus I	1018	4	18	-	-	2.15
Tetricus I	1024	52	34	-	3	1.59
Tetricus I	1030	4	26	-	-	1.47
Tetricus I	1046	13	92	-	13	1.52
Tetricus I	1144	13	10	-	-	1.41
Tetricus I	1171	32	88	-	20	1.25
Tetricus I	1214	obverse	6	47	-	9
		reverse	5	75	-	9
Tetricus I	1215	obverse	31	22	-	4
		reverse	27	22	-	4
Tetricus I	1219	obverse	5	14	-	7
		reverse	3	14	-	6
Tetricus I	1221	5	77	-	11	2.72
Tetricus I	1232	4	12	3	-	2.10
Tetricus I	1234	4	56	4	-	2.59
Tetricus I	1244	4	7	2	-	3.18
Tetricus I	1247	obverse	89	60	-	16
		reverse	93	63	-	15
Tetricus I	1253	4	6	2	-	2.81
Tetricus I	1262	3	4	-	-	0.91
Tetricus I	1272	8	142	4	6	2.24
Tetricus I	1345	5	-	-	6	0.69
Tetricus I	1364	obverse	12	40	-	7
		reverse	13	38	-	8
Tetricus I	1383	4	5	-	-	2.68
Tetricus I	1407	9	23	-	3	2.43
Tetricus I	1428	37	150	-	27	1.21
Tetricus I	1434	4	2	-	-	1.83
Tetricus I	1435	63	-	-	-	1.48
Tetricus I	1438	4	8	4	2	0.64
Tetricus I	1454	48	312	14	25	1.50
Tetricus I	1500	27	12	-	3	1.58
Tetricus I	1513	3	6	3	2	2.35
		obverse	4	24	-	9
Tetricus I	1621	obverse	4	24	-	9
		reverse	3	17	-	9
Tetricus I/II	729	4	7	2	-	1.94
Tetricus I/II	1204	3	12	4	-	0.45
Tetricus II	175	4	5	2	-	2.60
Tetricus II	665	4	8	2	-	1.68
Tetricus II	1025	27	191	9	9	0.43
Tetricus II	1048	70	5	-	-	0.71
Tetricus II	128	3	18	-	-	1.41
Tetricus II	1129	4	29	-	-	2.44
Tetricus II	1145	6	3	-	4	1.92
Tetricus II	1148	5	22	-	14	1.82
		obverse	93	5	-	-
Tetricus II	1213	obverse	23	4	-	-
		reverse	27	5	-	-
Tetricus II	1223	21	50	-	4	3.02
Tetricus II	1317	5	26	3	-	1.79
Tetricus II	1411	3	18	2	-	1.84
Tetricus II	1418	16	115	5	8	2.83
<i>Empire/emperor unidentified</i>						
-	169	4	68	-	5	1.69
-	228	46	116	5	15	0.58
-	370	4	-	-	20	2.52
-	575	a	32	22	-	22
		b	40	21	-	21
-	748	5	7	-	11	1.59
-	767	8	114	-	15	1.02
-	795	37	4	-	-	1.11
-	798	a	37	-	-	8
		b	30	3	-	7
-	840	a	57	163	2	28
		b	71	163	-	33
-	925	21	48	-	7	0.97
-	926	59	-	-	-	1.54

Emperor	SF no	Zn	Pb	Ag	Sn	Weight (g)	
-	929	4	7	-	-	0.43	
-	1005	5	146	-	34	0.65	
-	1009	23	15	-	2	2.50	
-	1019	4	-	-	-	1.85	
-	1034	9	202	-	55	0.72	
-	1113	7	496	4	38	1.19	
-	1114	obverse	9	64	4	2	1.06
		reverse	11	74	5	4	
-	1115	a	4	33	4	-	0.58
		b	4	27	4	-	
-	1125	a	9	3	-	13	0.63
		b	10	3	-	10	
-	1126	a	30	91	10	13	0.29
		b	39	114	8	14	
-	1152		3	28	3	-	1.75
-	1174	a	5	5	3	-	0.52
		b	4	4	6	-	
-	1195		14	11	-	-	0.23
-	1199		6	4	2	2	0.40
-	1222		4	16	-	9	0.71
-	1281		6	13	-	-	0.57
-	1299		10	44	-	17	1.01
-	1332	a	4	3	11	-	0.65
		b		4	11	21	-
-	1341	obverse	7	112	-	12	1.75
		reverse	5	110	-	2	
-	1344		5	18	10	5	1.02
-	1358		9	234	3	11	0.54
-	1386		19	241	-	39	1.34
-	1440		10	15	-	12	0.55
-	1442	a	4	-	15	4	0.49
		b	4	-	23	4	
-	1444	a	16	49	5	9	0.39
		b	13	36	2	4	
-	1502		72	-	-	-	1.16

Culver Street

Central Empire

Gallienus	3021	3	3	17	5	1.91
Claudius II	2746	4	14	-	6	2.23
Divo Claudio	3029	4	8	-	4	1.97
Divo Claudio	3079	13	299	4	19	0.49
Divo Claudio	4140	5	129	-	15	2.77

Gallic Empire

Victorinus	2738	6	36	3	2	0.53
Victorinus	3214	60	113	-	7	2.81
Victorinus	3605	42	33	-	4	1.31
Victorinus	3751	82	151	3	16	2.66
Tetricus I	2734	5	3	-	-	1.37
Tetricus I	2747	4	6	3	-	0.98
Tetricus I	2751	5	139	-	6	2.62
Tetricus I	2816	3	13	3	-	2.24
Tetricus I	2867	9	25	-	2	1.78
Tetricus I	2926	26	11	-	2	2.43
Tetricus I	2968	36	57	-	6	1.55
Tetricus I	3002	19	13	-	3	2.17
Tetricus I	3022	3	13	-	-	2.28
Tetricus I	3048	27	2	-	7	1.00
Tetricus I	3059	3	9	2	-	1.62
Tetricus I	3104	4	10	2	-	1.57
Tetricus I	3106	12	19	-	4	1.04
Tetricus I	3129	107	12	-	5	1.50
Tetricus I	3142	4	36	-	5	1.47
Tetricus I	3206	4	287	-	9	2.36
Tetricus I	3270	8	13	-	6	3.59

Emperor	SF no	Zn	Pb	Ag	Sn	Weight (g)
Tetricus II	2880	37	48	-	3	0.97
Tetricus II	3278	18	8	-	6	1.67
Tetricus II	3279	5	13	4	-	2.05
Probus	3014	4	8	2	-	0.67

Empire/emperor unidentified

-	2754	4	4	-	2	2.35
-	2755	4	64	10	6	0.65
-	2760	4	3	2	-	1.41
-	2856	4	20	-	14	0.85
-	2874	5	62	-	11	2.04
-	2965	4	-	18	-	0.73
-	2984	15	37	-	4	0.51
-	3030	11	32	-	5	1.76
-	3126	9	15	-	6	1.22
-	3156	4	2	-	14	1.71
-	3191	12	8	-	2	2.13
-	3213	33	33	-	7	2.29
-	4143	4	17	-	8	0.53
-	4308	40	3	-	-	.56

A number of different groups could be identified within the coin compositions. However, there was no compositional distinction between the coins from the two Colchester sites, with both sites producing coins which fitted into each of the identified compositional groups. Some of the coins from Angel Yard were part of a dispersed hoard but again there was a wide variety of compositions within these coins which meant they could not be distinguished compositionally from the other coins from the site.

A significant proportion of the coins could be linked with a specific emperor associated either with the Central Empire or the break-away Gallic Empire (Table 2). The majority of the identifiable coins were copied from the Gallic Empire types, particularly those of the Tetrici.

There seem to be some differences in composition between the coins of the two empires, though there is not a distinct pattern (Tables 3-4). The coins from the Central Empire in general contain higher levels of lead and tin, the two elements being highly correlated, which would suggest that they were added to the metal melt together. However, there is a great deal of variation in the composition of coins in each empire group (and also within each emperor group) which makes any more patterns in the data hard to detect.

There is also a group of coins which has a much higher zinc content, and these coins rarely have a detectable level of silver. However, they are not distinguishable by empire or emperor type. These compositions may be due to the use of 1st- and 2nd-century dupondii coins which were usually made of brass (a copper-zinc alloy) and which could have been remelted and used in the production of barbarous radiates (J A Davies pers comm).

Some of the coins had significant levels of silver detectable and three of these coins were examined by the X-ray analyser attached to the scanning electron microscope in an attempt to identify whether the silver was a surface plating or whether it was contained in the bulk metal. In the case of two coins (SF 40.86 1188, 1372) there was definite evidence that the silver was contained in the bulk metal, and there was no evidence of any surface plating. The other coin (SF 40.86 1344) was more problematic in that the analysis showed a lead/tin rich surface layer but no silver in the surface layer or in the core. It is possible that the silver was very localised and therefore not included in the small area analysed by the SEM, and this would be likely in cases where a coin was worn and a surface layer of silver would only remain in depressions in the coin surface and not necessarily the edges. There appeared to be no pattern of the coins containing significant silver levels relating to a specific empire or emperor(s).

Very few comparable analyses of barbarous radiates are known and it is obvious that a greater number of analyses from a wider group of sites will be needed before any clear patterns are likely to

EXCAVATIONS AT ANGEL YARD, COLCHESTER

emerge, though the large number of coins analysed here may indicate that there is no clear pattern to find. An attempt to link the analysis of the coins with the coin weight was also unsuccessful.

Regular radiates (Tables 5-7)

A selection of radiates from Angel Yard were chosen for analysis from both the Central and Gallic Empires. The coins chosen could all be identified with specific emperors (Table 5).

Table 5 Number of regular coins analysed divided by empire and emperor, Angel Yard, Colchester.

Gallic Empire		Central Empire	
Postumus	3	Gallienus	8
Victorinus	9	Claudius II	10
Tetricus I	9	Divo Claudio	3
Tetricus II	4		
Totals	25		21

Table 6 Average element ratios for each empire and emperor group of regular radiates, Angel Yard, Colchester. Ag..silver; Pb..lead; Sn..tin; Zn..zinc.

	Zn	Pb	Ag	Sn
<i>Central Empire</i>				
Gallienus	5.5	56.9	17.1	10.6
Claudius II	6.7	69.8	8.1	13.7
Divo Claudio	6.0	79.3	8.7	12.0
Average	6.1	68.7	11.3	12.1
<i>Gallic Empire</i>				
Postumus	3.3	3.0	61.3	2.3
Victorinus	3.8	19.6	5.1	0.0
Tetricus I	3.8	14.0	3.3	0.0
Tetricus II	3.8	14.0	2.0	0.3
Average (excluding Postumus)	3.8	16.3	3.8	0.0

Table 7 Analytical results for regular radiates, Angel Yard, Colchester. Ag..silver; Pb..lead; SF..small find number; Sn..tin; Zn..zinc.

Emperor	SF no	Zn	Pb	Ag	Sn
<i>Central Empire</i>					
Gallienus	983	5	152	9	8
Gallienus	1051	3	6	12	4
Gallienus	1086	8	5	80	8
Gallienus	1139	11	61	6	15
Gallienus	1167	4	107	12	14
Gallienus	1352	4	50	5	10
Gallienus	1417	4	21	9	8
Gallienus	1437	5	53	4	18
Claudius II	1227	4	30	11	7
Claudius II	736	6	116	18	24
Claudius II	1008	6	20	5	6
Claudius II	1044	8	193	-	35
Claudius II	1050	11	79	-	13
Claudius II	1106	5	39	9	8
Claudius II	1140	10	80	3	12
Claudius II	1363	9	70	14	17
Claudius II	1379	4	33	15	4
Claudius II	1408	4	38	6	11
Divo Claudio	903	5	46	1	4
Divo Claudio	1235	8	111	13	19
Divo Claudio	1424	5	81	12	13

Emperor	SF no	Zn	Pb	Ag	Sn
<i>Gallic Empire</i>					
Postumus	567	3	4	66	3
Postumus	1228	4	1	64	2
Postumus	1360	3	4	54	2
Victorinus	974	5	24	9	-
Victorinus	1032	4	20	8	-
Victorinus	1107	5	12	3	-
Victorinus	1147	4	5	3	-
Victorinus	1186 obverse	6	26	3	-
	reverse	8	39	104	4
Victorinus	1200	4	13	3	-
Victorinus	1242	3	55	7	-
Victorinus	1414	3	18	6	-
Victorinus	1508	-	3	4	-
Tetricus I	745	6	21	4	-
Tetricus I	1150	4	8	1	-
Tetricus I	1185	4	16	4	-
Tetricus I	1226	4	19	2	-
Tetricus I	1233	3	9	3	-
Tetricus I	1238	3	24	5	-
Tetricus I	1240	3	7	3	-
Tetricus I	1241	4	15	5	-
Tetricus I	1413	3	7	3	-
Tetricus II	1110	4	3	1	-
Tetricus II	1143	4	22	2	-
Tetricus II	1201	3	6	3	-
Tetricus II	1252	4	25	2	1

There are clear differences in composition between the coins of the two empires (Tables 6-7), particularly in the tin content which is not detectable in most of the Gallic Empire coins. The exception are the coins of Postumus which have a high silver content and also some tin which is probably an impurity in the silver. The coins from the Central Empire in general contain much higher levels of lead and tin, the two elements being highly correlated, which would suggest that they were added to the metal melt together. The analyses suggest that both tin and lead are present in the Central Empire coins at levels above 5 per cent. However, there is some variation in the composition of coins in each empire group (and also within each emperor group) which makes any further interpretation of the data difficult.

The three coins of Postumus contained higher levels of silver than the other coins of both empires. It is known from earlier analyses that the coins of Postumus contained over 15 per cent silver until about AD 268 when there was a debasement to about 7-8 per cent silver (Besley & Bland 1983, 58). Imitations of the radiates of Postumus contain much lower silver levels. The three Postumus radiates analysed here contain high silver levels, which indicates that they date from before the debasement of 268. This is supported by their numismatic identifications.

Comparison of barbarous and regular radiate analyses

Comparison of the analyses of the regular radiates with those of irregular copies from the same site (p66-9) shows a similar but not identical pattern. The barbarous radiates of the Central Empire contain similarly high levels of lead and tin in comparison to those of the Gallic Empire, but the barbarous radiates have generally higher lead levels than the regular coins. The barbarous radiates of the Gallic Empire have lower lead and tin levels, but these metals are present in the majority of coins, whereas tin is absent in nearly all the regular radiates.

All the regular radiates have very low zinc levels, in contrast to the barbarous versions which generally had higher levels and some of which seemed to have been made from brass.

Conclusions

The analyses of the regular radiates found at Angel Yard suggest that the two empire groups can be distinguished compositionally. The radiates seem to be made from fairly pure alloys with high levels of

lead and tin in the Central Empire coins distinguishing them from the Gallic Empire coins. The barbarous copies show the same broad pattern but had much higher 'background' levels of other metals, such as zinc. This may suggest that the regular radiates were produced using fresh metal sources, whereas the irregular copies were made with a less pure alloy which may have contained scrap metal deliberately added to the alloy.

There was no evidence for the coins of specific emperors having different compositions except for the pre-268 radiates of Postumus which had much higher silver levels. Previous analyses of coins of Postumus have found similar high silver levels.

The most stratigraphically significant coins

by J A Davies & N Crummy

Building 171, Period 1

Occupation?, Room 3: Period 1e. AL243: Vitellius 69, Hadrian 119-21, Commodus 185.

?Demolition: Period 1f. AL238: illegible 275-402. AL239: barbarous radiate 270-84, illegible 275-402. AL245: illegible denarius 200-50.

Robber trench for Building 171: Period 2b. AF302: barbarous radiate 270-84.

Building 172, Period 1

Clay floor/make-up, Room 3: Period 1d or e. AL265: Diva Faustina 141-61.

Occupation, Room 1: Period 1e.

AL236: Marcus Aurelius 140-4, Caracalla 201-6.

Make-up, Room 2: Period 1e. AL261: barbarous radiate, 270-84.

?Demolition, Room 2: Period 1e. AL237: illegible irregular 275-364, illegible 1st-2nd century.

Destruction debris/dump: Period 1e or f. AL213: Faustina II 145-61, barbarous radiate 270-84.

?Votive pot, Room 1: Period 1e or f. AF308: Septimius Severus 198-210.

?Demolition, Room 3: Period 1f. AL256: Gallienus 260-8.

?Coin hoard/dark earth: Period 1f. AF313: Marcus Aurelius 173-4, Commodus 180-92, Gallienus 260-8 x 2, Salonina 260-8, Postumus 260, barbarous radiate x 23 270-84, Carausius 287-93 x 2, Urbs Roma 340-7, Constantinopolis 340-7, Helena 340-7, Constantine II 330-1, Constans 347-8, Constantius II 354-64 x 2, House of Constantine 347-8 x 2, 354-64, Magnentius 350-3, House of Theodosius 387-94, 388-402 x 2. AF317: Hadrian 117-38, Antoninus Pius 148-9, Caracalla 201-6, Severus Alexander 231-5, Gallienus 260-8, Postumus 259-68, Victorinus 268-70 x 4, Tetricus I 270-4 x 6, Claudius II 268-70 x 3, c 270 x 2, Aurelian 270-5, Severina 270-5, Tacitus 275-6, Probus 276-82 x 3, barbarous radiate 270-84 x 19, Carausius 287-93, Constans 340-7, House of Constantine 335-48.

Building 174, Periods 3-4

Occupation/dump, Room 3: Period 3a. BL30: Edward I 1272-1307.

Make-up, Room 3: Period 3c. BL15: John Milbank 1655.

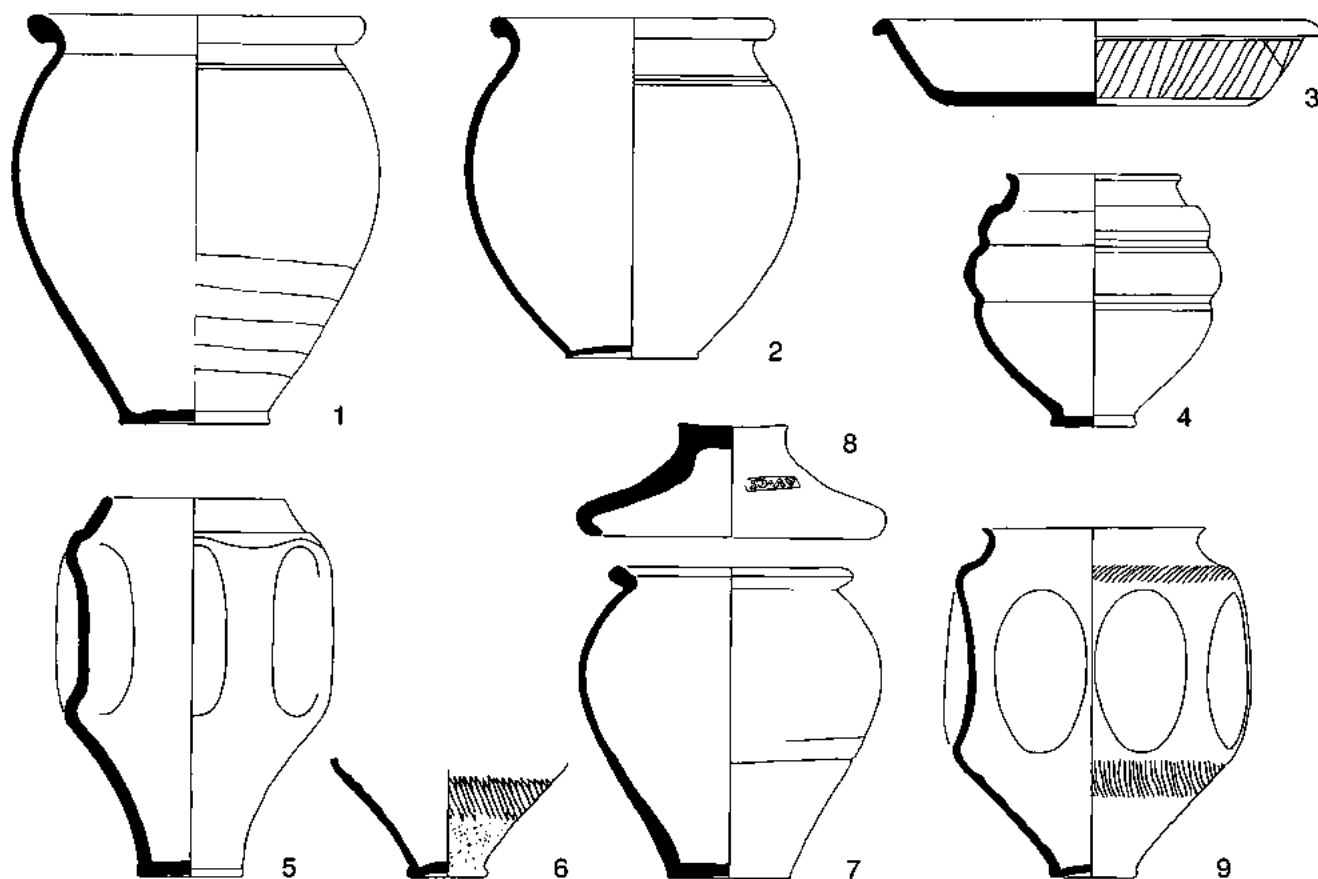


Fig. 29 Votive pots from Buildings 171 and 172, Period 1.

Rubble spread - demolition debris, Room 3: Period 4. BL9: Charles I 1634-6.

Construction trench, Room 4: Period 3c. BF43: Charles I 1625-49.

?Dump, Room 4: Period 3c. BL17: Charles I 1625-34, 1625-44, Charles II 1672-84.

Dump, Room 5: Period 3 or 4. AL282: Edward I 1272-1307, Charles I 1636-44.

Occupation, Room 6: Period 3. AL286: William III 1695-8.

Floor make-up, Room 6: Period 3. AL296: Elizabeth I 1561-82.

Make-up, Room 6: Period 3c or 4. AL8: illegible penny post-medieval.

Occupation build-up: Period 4. AL12: Abraham Voll c 1668.

Brick tank: Period 4. AF45: illegible halfpenny post 1860 x 2.

Dump: Period 4. AL275: Will Anger 1654, Thomas Renolds mid 17th century. AL284: Nathaniell Lawrence 1671-83.

Dump: Period 4a. AL18 Charles I 1636-44 x 3. AL19: impression 1614-44.

Building 175, Periods 3-4

Brick cellar: Period 4. AF19: William IV 1834.

Yard area

Cobbled yard surface: Period 3c. AL10: Elizabeth I 1561, Hans Krauwinkel 1580-1610, illegible mid 17th century x 2.

Title spread: Period 3c. AL22: Charles I 1634-6, William Ferris 1665.

Dump: Period 3c. AL45: medieval German jetton, Hans Krauwinkel 1580-1610, James I 1613-14.

Trample/occupation: Period 3c-4. AL11: James I/Charles I 1614-36, illegible mid 17th century.

Gravel surface: Period 4. AL198 illegible 1860 +.

Other contexts

?Votive pot: Period 1e or 1f. AF167: Marcus Aurelius 161-80.

Pit: Period 2b. AF364: Cnut 1018-24.

Pit: Period 3. AF119: Henry IV-VI 1399-1453.

The Roman pottery

from notes by R P Symonds

Some preliminary work on the Angel Yard Roman pottery (49 x 0.017 cu m boxes) has already been completed. It has been spot-dated by find number, and the material from the first phase of excavation (40.86) has been separated into the 37 fabrics defined in CAR 10 (typescript in CM), and quantified by weight, estimated vessel equivalents, and rough vessel count (site archive).

A little 1st-century pottery is present, but most post-dates the Flavian period, and it is the late Roman material which may prove to be of particular interest. The most important pieces are the votive pots from Buildings 171 and 172, discussed below by C J Going.

The votive pots from Buildings 171 and 172 (Fig 29) by C J Going

Inside the Angel Yard buildings were a number of features which contained pottery vessels, some intact, others crushed but almost certainly intact when deposited. While most of the vessels are not thought to have been foundation offerings, it is nevertheless probable that they contained (or accompanied) votive deposits, and are in general datable to the time when the buildings were in use. There are two exceptions, both in Room 1 in Building 172: the jar in AF390 was sealed by a hearth (AF383) which may be a primary feature and thus date to the construction phase; and the two vessels in AF391 which were inserted into the floor and may thus post-date the building.

The assemblage of seventeen vessels is composed for the most part of locally-made jars of the CAM 268 form (Hull 1958, fig 119)

and closely allied types, and there were also three beakers, probably also manufactured locally. Open forms consisted of a lid and two bead-rimmed dishes in BB2. Considered overall, none of the vessels need predate the Hadrianic-Antonine period, the two high-shouldered jars (AF310 and AF387) being perfectly unexceptional in strata of the Hadrianic-early Antonine period. The date of the latest deposit is harder to estimate. The folded beaker from AF391 (Fig 29, 5) is probably the latest vessel, datable to the mid-late 3rd century. However, the possibility of at least some of these vessels being antique when deposited should be borne in mind (cf grave deposits in the Butt Road cemeteries (CAR 9, 47-9)).

In the following catalogue the site find number, and, where appropriate, fabric, form, and individual vessel number (P) listed in the pottery archive prepared by R P Symonds are given in brackets at the end of each entry.

Building 171

Room 2

AF357 Necked reduced ware jar of CAM 268 type. (A1855; GX)

Room 4

AF210 Fig 29, 1. Reduced ware jar with an out-turned, slightly squared rim, standard for CAM 268A, but an inverted piriform body more characteristic of CAM 268B. Probably later 2nd to 3rd century. (A1176; GX 156; P4436)

AF398 Fig 29, 2. Oval bodied reduced ware CAM 268A jar with an undercut, rounded rim and two grooves on the upper body. Probably Antonine to 3rd century. Covered by the BB2 dish below. (A2218; GX 156; P4433)

Fig 29, 3. Dish in BB2 with a triangular rim, oblique burnish line decoration, and slight basal chamfer. Probably c. 130-70. Used to cover the jar above. (A2219; GB)

?Yard

AF279 Necked reduced ware jar of CAM 266 type. (A1425; GX)

Building 172

Room 1

AF390 Oval bodied reduced ware jar, of form CAM 268A. (A2120; GX)

AF308 Fig 29, 4. Jar with a short everted rim in a pale slightly micaceous grey ware. Burnished overall, including the base exterior. The body has two girth constrictions. Vessels with multiple cordons of this kind are uncommon, cf the similarly-decorated beakers forms CAM 397, 398 (Hull 1958, fig 123). The general shape of the vessel is reminiscent of form CAM 406, but the relationship is not close and the fabric suggests that the pot is not a local product. Probably 2nd century or later. Covered by the fragment of BB2 dish below. (A1605; WA 99; P4437)

Fragment of a large BB2 dish used to cover the jar above. (A1605; GB)

AF360 Wire-trimmed jar base in reduced ware. (A2063; GX)

AF366 Wire-trimmed jar base in reduced ware. (A1997; GX)

AF387 Undecorated high-shouldered jar with an undercut, slightly squared-off rim in a fine Romanising grey ware. (A2104; GX)

AF391 Fig 29, 5. Classic folded beaker of form CAM 411 (ibid) in reduced ware, with a large inturned plain rim, burnished to the top of the folds. Described as common in colour-coated and 'various' wares by Hull (ibid, 290). Probably mid-late 3rd century, and probably the latest of the vessels from the votive features. Covered by the beaker base below. (A2106; GB 156; P4432)

Fig 29, 6. Base and lower wall of a colour-coat roulette-decorated beaker, used to cover the beaker above. (A2106; CZ; P4434).

Room 2

AF310 Fig 29, 7. Undecorated high-shouldered jar in fine Romanising grey ware, with an everted, slightly cupped rim. Probably mid 2nd to mid 3rd century. Covered by the lid below. (A1633; GX 220; P4431)

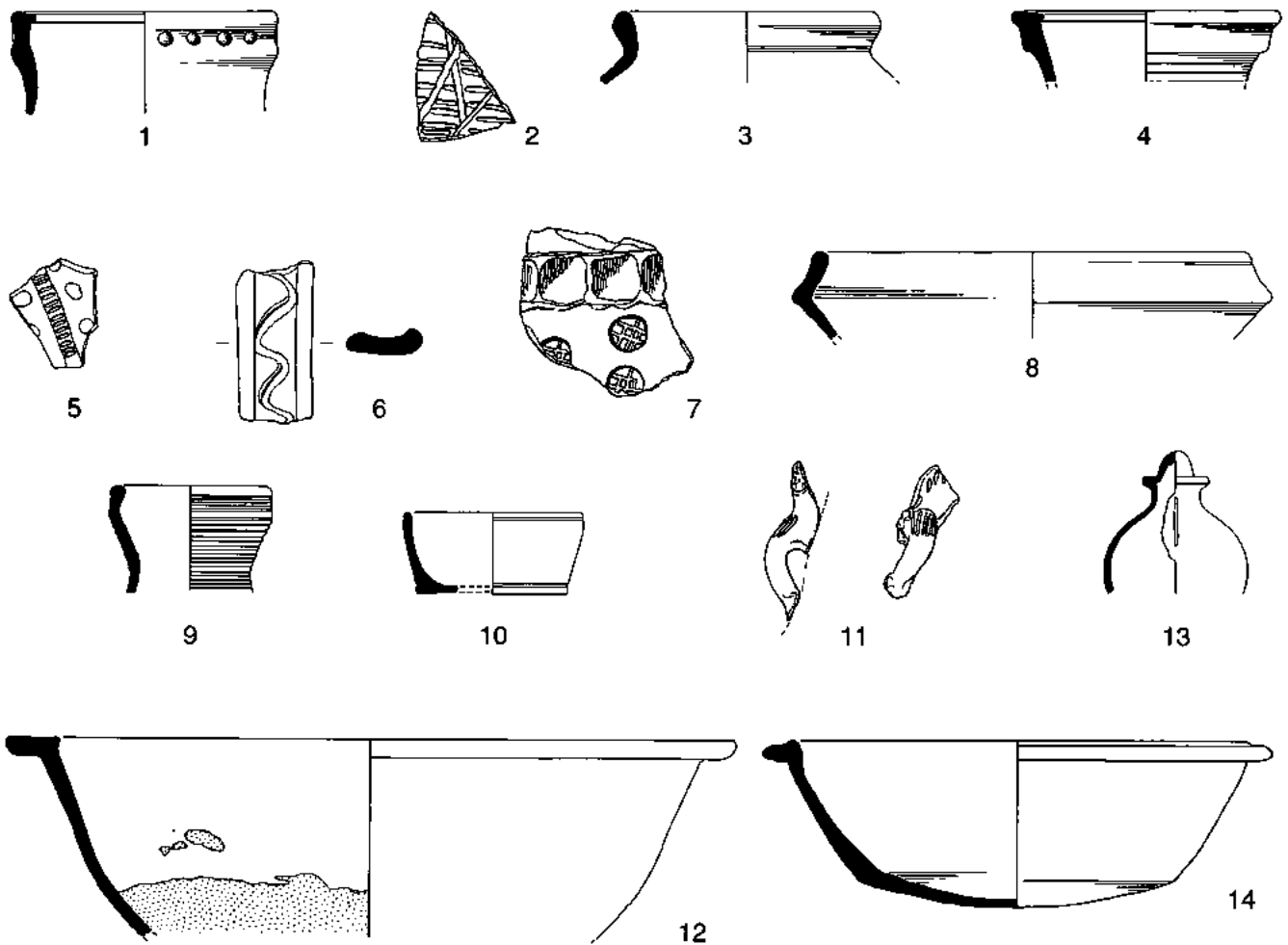


Fig. 30 Medieval and later pottery.

Fig 29, 8. Lid with a terminal grip, campanulate profile, and inturned plain rim in a coarse oxidised fabric, stamped AV.CE. Probably a local product, the form is a characteristic if rare one in Colchester, and the fabric sounds similar to the 'sandy ... red' ware of several found in Kiln 32 (Hull 1963, 172, fig 98, 15). For similar examples, see COLEMC 4012.20 (May 1930, pl 59, 285) and COLEMC 38.38, stamped AV.CF (Hull 1963, 172, footnote 1). Probably later 2nd century or possibly later. Used to cover the jar above. (A1625; CH 91; P4430)

AF361 Large fragments of a CAM 268 with a slightly hollowed rim. (A1879; GX).

North-west of Building 172

AF167 Fig 29, 9. Colour-coated beaker of form CAM 406 (id 1958, fig 123), where it is in grey ware, though many colour-coated examples are also known, eg the numerous examples from Kiln 24 (id 1963, 105). Probably late 2nd to early 3rd century. (A841/936; CZ)

The post-Roman pottery (Fig 30) from notes by John Cotter

The pottery from Site A is stored by features and layers in 30 wooden crates, that from Site B by find number in five cardboard boxes

(each 220 x 415 x 175 mm). The Site A material has been spot-dated by feature or layer, but not quantified in any way. The fabric numbers are those of the Essex typology (Cunningham & Drury 1985, 1-4) used in CAR 7. The Site B material has been spot-dated by find number.

Several good groups are present in the Site A assemblage, chiefly from pits. They range in date from the 12th or 13th century (Period 2b pits) to the 19th century (Period 4 brick ?cellar fill AF230). The groups not only express the different phases of occupation on the site, but in some cases illumine the ceramic chronology for the town for periods not adequately represented in CAR 7.

The most significant pit groups fall into three date ranges: from the 12th or the late 12th/early 13th century (c 1200), pits AF166, AF289, AF318, and AF327 (together with several interesting pieces from other Period 2b pits); AF72 and AF270 from the late 15th or early 16th century; and AF76 and AF88 from the late 16th century or c 1600.

Closer study of the material from AF76, a stone-lined pit in Building 175 (p53-6) would be particularly useful. Though most of the pottery falls within a date range of c 1575-1600, a closing date in the 1590s or c 1600 seems likely given the presence of a stoneware medallion dated 1585. Noteworthy sherds include fragments of three Martincamp flasks, one of which is the only example in white known from excavations in the town. Of particular importance is the pres-

ence of a number of Colchester ware (sandy orange ware; Fabric 21/21A) plain vessels, eg a handled pipkin and small jar, and, though there is a slight possibility that they may be residual, they are almost complete, suggesting that the fabric continued in production (in smaller numbers) until perhaps c 1575, if not later. This group may then be important in refining the end date of Colchester ware (*ibid*).

Some individual sherds, both stratified and unstratified, may also express the range of pottery present on the site, and may be important viewed against the background of the whole assemblage from the town.

The following examples illustrate the potential of individual pieces from the Angel Yard material. To complement the late Colchester ware from AF76, a Period 2b pit, AF276, contained a rare sherd of Fabric 21A in early 13th-century London-Rouen style. A flat base in a very coarse white fabric, probably Middle Saxon, only previously noted in the town as body sherds from Lion Walk Site A (*ibid*), came from the Period 4b construction trench for Building 175, AF29. The Period 2 dark earth contained a single rim sherd of Andennes (Fabric 17), the first rim in this fabric yet found in the town (from AL160); part of a large early medieval sandy ware (Fabric 13) jar with thumbled strips, the best profile yet of this particular type (from AL160); and several Fabric 13 wasters (from AL161). Two small Raeren stoneware (Fabric 45c) oil jars (cf Hurst et al 1986), rare in Britain and the only examples from Colchester, came from the Period 3b pit AF71. From AF285 came part of a unique Fabric 20 curfew, sooted internally, in a rare form, the rim probably wheel-made, the body handmade. About 80 fragments of a Fabric 21A louver were recovered from AL20, AL24, and AF119. Of 'waisted' form, it probably had three tiers, with a lower frieze and Gothic apertures similar to those on a louver from East Stockwell Street (CAR 7).

A very limited number of pieces from the Angel Yard have been drawn. Sherds from the pit groups given above, or those of particular interest, are illustrated in Fig 30 and listed below:

Fig 30, 1 AF211 Period 2b pit. Hedingham ware rim with red pellets (Fabric 22).

Fig 30, 2 AF221 Period 2b pit. Early medieval sandy ware sherd with heavily grooved decoration (Fabric 13).

Fig 30, 3 AF301 Period 2b pit. Early medieval sandy ware jar rim (Fabric 13).

Fig 30, 4-6 AF327 Period 2b pit. Hedingham Ware sherds (Fabric 22).

Fig 30, 7 AF364 Period 2b pit. Stamped Thetford-type ware sherd, probably from a Norfolk-Thetford storage jar, rather than Ipswich-Thetford (Fabric 9).

Fig 30, 8 AF278 Period 2b robber trench for Building 171. St Neots ware bowl (Fabric 10).

Fig 30, 9 AL121 Period 3a dump. Medieval sandy grey ware rilled jug (Fabric 20).

Fig 30, 10 AL178 Period 3a dump (subsidence) in Rooms 6/7 of Building 174. Colchester ware ?condiment bowl (Fabric 21).

Fig 30, 11 AL194 Period 3a gravel surface, ?Building 174. Part of a Scarborough ware knight jug (Fabric 24).

Fig 30, 12 AF50 Period 3b oven in Room 6 of Building 174. Late 14th-/ early 15th-century style Colchester ware pancheon (Fabric 21a).

Fig 30, 13 AF88 Period 3 brick-lined pit. Border ware money-box (Fabric 42).

Fig 30, 14 AF270 Period 3? pit. Colchester ware 'hammer-headed' bowl (Fabric 21a).

The Roman and post-Roman glass

by Nina Crummy

The glass is stored in five boxes (four x 0.017 cu m (Site A), one x 0.004 cu m (Site B), and one wooden crate, 0.04 cu m (Site A). The Site A assemblage is separated into general post-Roman material, ordered by find number apart from outside pieces (the crate), sherds from Roman contexts, and sherds from Period 2 dark earth/topsoil. No quantification has been attempted.

The majority of the pieces from Site A Roman and Period 2 dark earth/topsoil contexts are vessel glass, and pieces which would extend the Roman glass typology from Colchester (CAR 8) are present, eg the base of a prismatic bottle with swastika and ?palm branch decoration from AL161, Period 2 dark earth. Roman window glass was noted from Period 1e occupation in Room 3 of Building 172 (AL264), and Period 2 dark earth/topsoil (AL207).

Some of the post-Roman pits producing well-dated groups of pottery also contained vessel glass likely to be of similar value. For example, AF76, the Period 3b/c stone-lined pit in Building 175, the pottery in the lower fill of which dates to c 1575-1600, contained some exceptional pieces. Of particular note is a Venetian handled jug or beaker with bulbous body and flared mouth in colourless glass with applied lattice.

The small finds (Figs 31-36)

by Nina Crummy

The illustrated finds are catalogued below. (C) following a small find number indicates that the object has been conserved, (X) that it has been X-rayed. A catalogue of the unillustrated pieces from Site A is in the site archive. Roman pieces are ordered in the same way as CAR 2 and chapters 5 and 6 in CAR 6, and post-Roman in the same way as CAR 5, that is, for both periods the primary groupings are by function rather than material. The small quantity of material from Site B has been listed but not catalogued in detail.

Roman (Figs 31-32)

About 110 small finds either derived from a Roman context or could be attributed to the Roman period though found residual in later levels, particularly the dark earth/topsoil of Period 2. The functions represented by the assemblage are chiefly domestic in character, such as personal adornment and toilet, sewing, and household furniture and fittings. The absence of pieces of military equipment reflects the limited exploration of the early Roman levels on the site (p37), as does the paucity of items from the pre-Flavian and Flavian periods. Only a Nauheim derivative brooch (SF 40.86 1013), a Colchester BB brooch (SF 40.86 787), a sherd from a picture lamp of Lyon ware (SF 40.86 1703), and a fragment of a plain one-piece bone handle with a waisted end (SF 40.86 1080) are of positive 1st-century date.

The most noteworthy find is the enamelled copper-alloy stand (Fig 31, 5) discussed below, and the decorative wall veneers, though deriving from post-Roman levels, are surprisingly varied for such a small assemblage. Green porphyry, Cipollino marble, and other coloured marbles are present, as well as native Purbeck marble (eg Fig 32, 1).

Catalogue

Fig 31, 1 SF 40.86 445(C), A589 L50. Dump. Period 3. A (leaded) gunmetal plate brooch of M R Hull's Type 231 (typescript in the CM). One corner lug has broken off, as has most of the pin. All that remains of the pin projects forward from the moulded and pierced terminal. The catchplate terminal is also moulded. The central enamelled panel contains three dots set in a row. The enamel is decayed and the original colours cannot be identified, but a similar brooch has three dots of red set in a green field (Harratt 1985, fig 64, 554A). Length 35 mm.

Fig 31, 2 SF 40.86 1027(C), A1521 L205. Dark earth/topsoil. Period 2. A bell-shaped copper-alloy stud of Allason-Jones's Type 1 (1985, fig 2), but with curved rather than straight sides to the head. Only a short length of the iron shaft of the stud survives. The concave head is partly filled with iron corrosion products. The central dimpled cone projects slightly above the rim. Diameter 36 mm, length 24 mm.

Fig 31, 3 SF 40.86 93(C), A105 L2. Dump/make-up. Period 4. A copper-alloy stud also similar to bell-shaped studs of Allason-Jones's Type 1, though short for the type. The shaft has a rounded pierced end. The head lacks the 'waist' and 'skirt' of bell-shaped studs, and the countersunk head, though obscured by corrosion, seems to lack the obvious central cone. Instead, it appears to be have

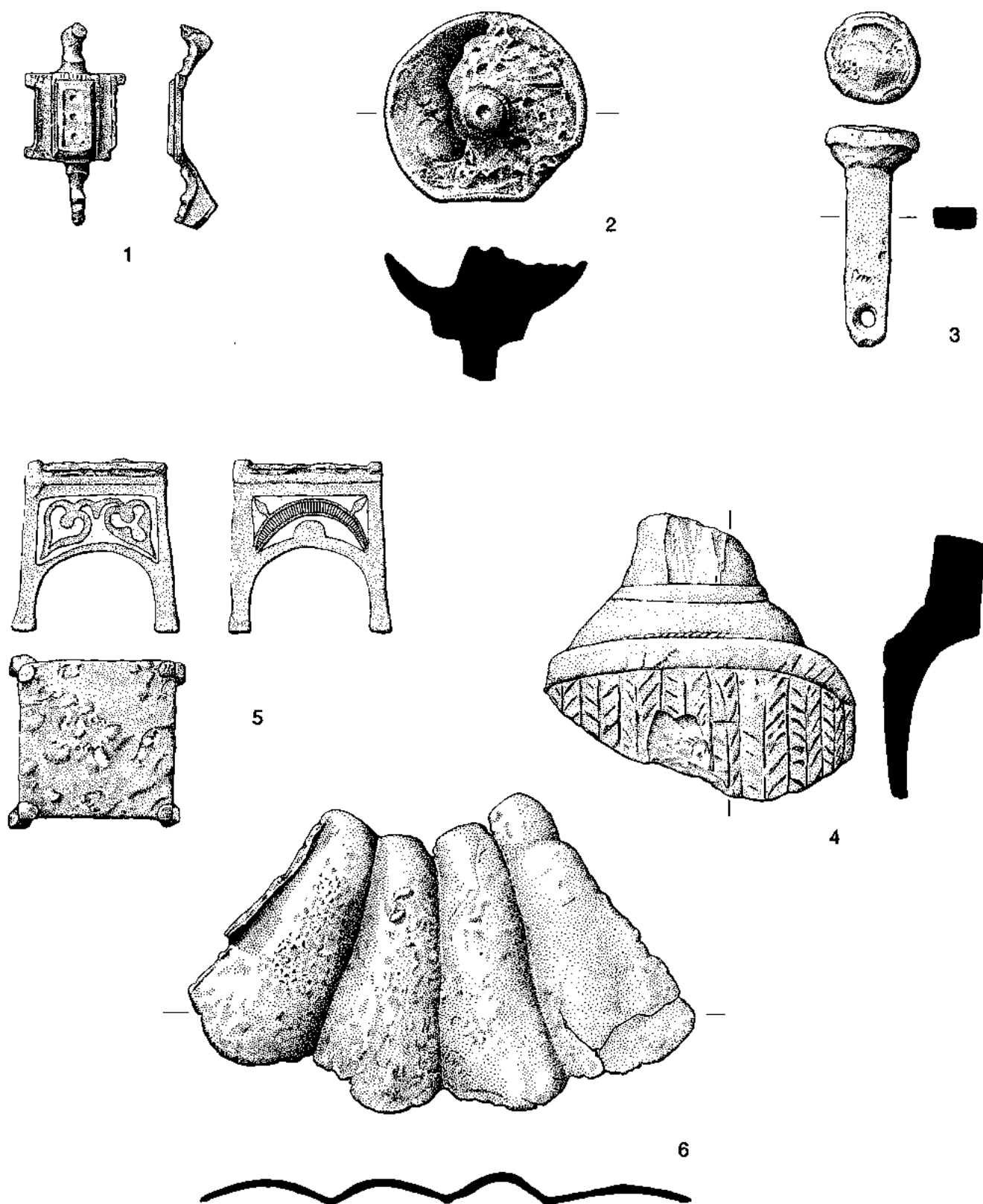


Fig. 31 Roman small finds, Angel Yard, Colchester.
1-3, 5-6...copper-alloy; 4...pipeclay.

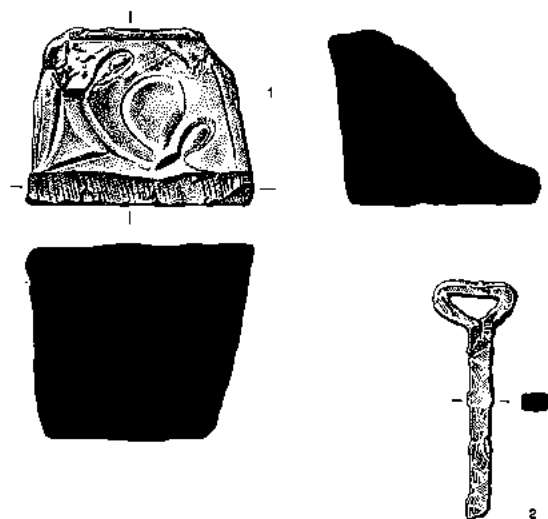


Fig. 32 Roman small finds, Angel Yard, Colchester.
1...Purbeck marble; 2...iron.

a large central raised area. Diameter 17 mm, length 39mm.

Fig 32, 1 SF 40.86 971, A1156 L160. Dark earth. Period 2. Purbeck marble. Plinth or cornice. The face of the piece is carved with a foliate design, partly obscured by iron pan. Maximum length 119 mm, height 94 mm, width 104 mm.

Fig 32, 2 SF 40.86 1613(X), A1570 L205. Dark earth/topsoil. Period 2. An iron loop-headed bar, similar to examples from Culver Street and the Gilbert School which have perforated shafts (CAR 6, fig 5.45, 1606, fig 6.29, 331). Length approximately 122mm.

Fig 31, 4 SF 40.86 1521, A2224 L205. Dark earth/topsoil. Period 2. A fragment of a pipeclay figurine showing a goddess seated in a basket chair. Only the back of the shoulders and neck of the seated figure survive. A moulded line shows the neck edge of a garment. The chair is well made, with parallel rows of herringbone marking the basket-work, and a line of angled cuts showing the bound frame. The identification of the goddess is uncertain, both Minerva and the Mother goddess are shown seated in a basket chair (*ibid*, fig 5.60; Green 1976, pl 15, a). Height 49mm, width 55mm.

Fig 31, 5 SF 40.86 1183(C), A1601 F307. Sloop. Period 2b. A copper-alloy miniature stand with solid top and splayed legs. Each of the four sides carries a panel with a design executed in champlevé enamel, the panels on opposing sides being the same. Two show a pair of heart-shaped leaves linked at the stems, and two show a crescent motif placed with the points down. The original colour(s) of the enamel are now lost. The main part of the stand was cast in one piece, leaving a rectangular hole in the top. Each corner of the main piece rises to a knobbed projection. A rectangle of sheet metal was trimmed at the corners to fit tightly within the knobs and cover the hole. In some places the action of corrosion has forced the top up and away from its resting place on the sides of the stand. Height 31mm, top 27 by 26 mm, maximum dimensions at the feet 29 by 31mm.

From the northern frontier Green lists six stands (1978, 33, pl 126-31) and from the south twelve, many of them associated with shrines (1976, 43, 260). No close dating is offered, though those from Brigstock (Northamptonshire) and Caerwent (Gwent) are from religious sites dated from the mid 3rd to the 4th century.

Miniature stands usually have a large circular hole in the centre of the top, and are often of two tiers, with a hole in the top piece of each tier. The purpose of the hole(s) is uncertain. One of the Silchester stands may have been found with a model pot resting in the hole (*ibid*, 43). That a central hole was not essential to the use of the object is demonstrated by the deliberate covering of the rectan-

gular hole on the Angel Yard example.

Fig 31, 6 SF 40.86 898(C), 1300 L167. Rubble spread. Period 2. A fragment of a copper-alloy object with four convex flutes, or petal-like elements, rising from a hollow centre. Maximum width 92mm.

Post-Roman (Figs 33-36)

The post-Roman small finds are more numerous than the Roman, but are also personal and domestic in character, the exception being a large Purbeck marble mortar (Fig 34, 2) from Room 6 in Building 174, which suggests food preparation on a commercial rather than domestic scale.

None of the finds were typical of the late Saxon or very early medieval period, but some may date to the 13th century, and the late medieval or post-medieval periods are well represented.

Of the 81 Type 1 small copper-alloy pins (CAR 5, 7-8) catalogued, only one comes from a Period 2 context, robber trench AF303 of Building 171, and seven from Period 3a contexts, and of the 180 Type 2 pins one is from AL205, Period 2 dark earth/topsoil, one from Period 2b pit AF211, and none from definite Period 3a contexts. The pin from AL205 may be intrusive, as the layer also contained a mother-of-pearl button of 19th- or 20th-century date. Lace-ends were also numerous at Angel Yard. Twenty-one Type 1 lace-ends, dated c 1375-c 1550/75 (*ibid*, 13), are catalogued, though none derive from a context positively pre-dating c 1500, and 35 of Type 2, dated c 1550/75-c 1700+ (*ibid*). A further ten cannot be assigned to a type.

A range of buckles and other belt- or strap-fittings from the site is illustrated in Fig 33, 5-16. Some date to late in Period 2b, or to Period 3a. The low domed thimble (Fig 33, 17) is probably late 14th- or early 15th-century, while the ring thimble (Fig 33, 19) is unlikely to predate c 1450 (Holmes 1988, 1). The other six thimbles are post-medieval. Though ring thimbles were used for heavy sewing, and in particular by tailors, the fairly high proportion of thimbles from the site as a whole cannot be taken to indicate commercial activity, as they cover a wide date range.

A number of pieces from broken lava quernstones and Purbeck marble mortars were recovered from post-Roman contexts. Some, especially those from Period 2 levels, may be Roman. However, a sandstone bowl fragment and eight quernstone fragments from Room 6 in Building 174 can almost certainly be associated with the Period 3 ovens in Room 6.

Catalogue

Fig 33, 1 SF 40.86 696, A1184 F199. Pit. Period 3a. A small copper-alloy pin of Type 1 (CAR 5, 7-8). Length 80 mm. The small head of this pin, formed by one twist of narrow wire around the top of the long wire shaft, is clearly no more than a rudimentary 'stop-ridge', and as such illustrates the very functional nature of these small copper-alloy pins.

Fig 33, 2 SF 40.86 270, A314. Unstratified. ?Period 3b. A small copper-alloy pin of miscellaneous type. Length 48 mm. It has a polygonal head, formed in similar fashion to those of Type 4 (*ibid*, 8) which has a globular head made of D-sectioned wire with the ends butted together. On this pin a butt joint is clearly visible on the flat underside of the head, on the side, and on the outer part of the top, but cannot be distinguished right up to the apex. The multifaceted nature of the sides and top of the head suggest that it was trimmed to this shape after it was fixed to the shaft. Type 4 pins are dated by Caple to the second half of the 16th century (1985, 48, Type K), and a similar date may be appropriate here.

Fig 33, 3 SF 40.86 799(C), A861 F30. Brick arch: Building 175. Period 4. A bent copper-alloy strip set with beads of black glass, some of which are missing. The beads are globular, with a hemispherical lower half and a faceted upper half. They have been only partly perforated. The metal strip is formed of a series of circles with tiny perforations at the centre. The beads have been fixed to the strip by tiny lengths of wire set in these perforations. The wires have not been cut off flush with the underside of the strip, but still project beyond it. This piece must have been attached to another object, per-

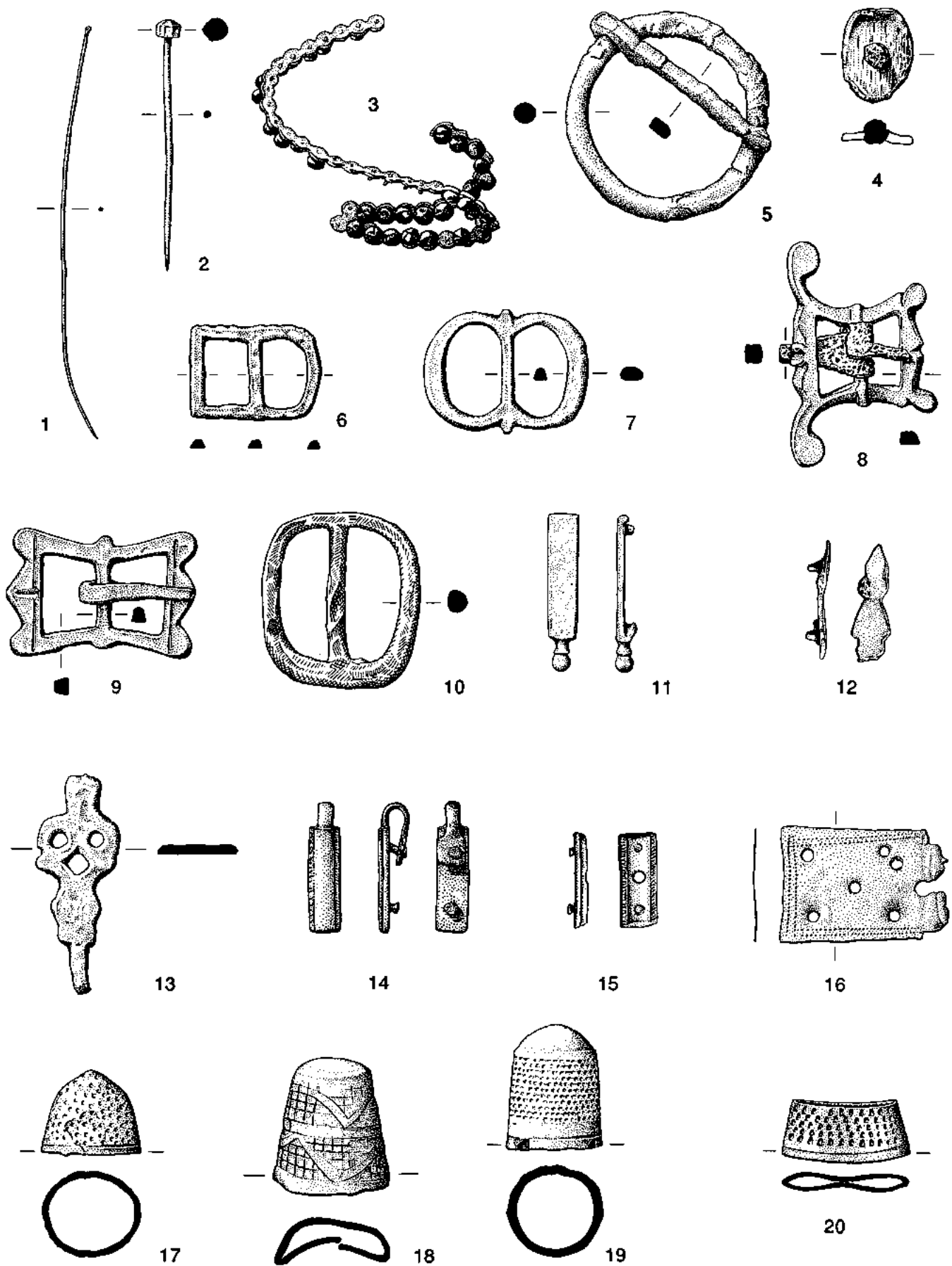


Fig. 33 Post-Roman small finds, Angel Yard, Colchester.
1-3, 5-9, 11-20...copper-alloy; 4...leather and copper-alloy; 10...iron.

haps sewn onto an item of clothing. Length (unfolded) approximately 140 mm.

Fig 33, 4 SF 40.86 239(C), A149 L11. Trample/occupation. Period 3c-4. An oval leather button with a copper-alloy shaft. Maximum diameter 18 mm.

Fig 33, 5 SF 40.86 172(C), A240 F72. Pit. Period 3a or b. A copper-alloy annular buckle of more or less circular section. The pin has a slight projection on its upper side close to the hinged end. Diameter 39 mm.

Fig 33, 6 SF 40.86 1573(C), A2299 L279. Mortar spread: Building 174, Room 6. ?Period 3. A small copper-alloy double buckle with worn mouldings at the junction of the bar and the frame. The tongue is missing. Length 25 mm, width 18 mm.

Fig 33, 7 SF 40.86 1306(C), A1799 L198. Gravel surface. Period 4. A copper-alloy buckle with pronounced points above the bar at the junction of the two rounded elements. The tongue is missing. Length 32 mm, width 24 mm. Possibly 14th century.

Fig 33, 8 SF 40.86 1274(C), A420 L24. Dump. Period 3. A copper-alloy buckle with an iron tongue and narrow iron belt-plate. The corners of the buckle develop into prominent knobs, with the two on the side of the belt-plate particularly prominent. There are decorative mouldings at the centre of the short sides, again more elaborate on the side of the belt-plate. Length 28 mm, maximum width 43 mm.

Fig 33, 9 SF 40.86 507(C), A509 L20. Dump. Period 3. A copper-alloy buckle with part of the leather strap. The tongue is loosely curled round the bar. The frame of the buckle has moulded projections on the short sides and at the junction with the bar. Those on the sides are emphasised by grooves. Length 36 mm, width 24 mm.

Fig 33, 10 SF 40.86 611(X), A508 L20. Dump. Period 3. An oval iron buckle with (part of) a belt-plate and the tongue (frame only illustrated). The frame is flattened slightly where it joins the bar, which probably indicates that the bar is a separate piece slotted into perforations in the frame. Length 30 mm, width 33 mm.

Fig 33, 11 SF 40.86 1274(C), A1748 F304. Pit. Period 2b. A narrow tag with a knobbed end and a projection for attachment near the other end, which is slightly turned under. Length 30 mm, width 6 mm. Possibly residual Roman.

Fig 33, 12 SF 40.86 536(C), A592 F88. Brick-lined pit. Period 3. A mount of debased zoomorphic form, similar to one from Northampton (Oakley 1979, fig 108, 30) and a pair from the Culver Street site, Colchester (CAR 5, fig 20, 1792-3). Length 23 mm, maximum width 8 mm.

Fig 33, 13 SF 40.86 266(C), A138 L10. Cobbled yard surface. Period 3c. A hooked openwork tag with a rivet hole (now filled by corrosion products) at the end opposite the hook providing a means of attachment to a strap. The hook is broken. Length 42 mm, maximum width 16 mm.

Fig 33, 14 SF 40.86 749(C), A1070 F186. Pit. Period 3a. A narrow mount with two riveted projections on the underside for attachment. At one end the plate develops into a loop which widens out again at the back to form a plate into which one of the two rear projections is fixed. The upper surface of the fitting has a low convex centre and sides which have been lightly scored on the edge. Length 25 mm, width 7 mm. Similar mounts came from the Thames Exchange site, London (Egan & Pritchard 1991, fig 138, 1190).

Fig 33, 15 SF 40.86 785(C), A1213 F218. Posthole. Period 2b. A mount similar to SF 40.86 749 above, but lacking the looped end, and with a perforation through the centre. Length 18 mm, width 7 mm.

Fig 33, 16 SF 40.86 1617(C), A3056. Unstratified. A fragment of a belt-plate, probably of folded double-leaf form. Length 31 mm, width 21 mm. The piece is more or less rectangular and broken at one end, apparently where it was folded. There are two parallel lines of fine punched triangles around the other three sides. There are seven perforations in the object. Five are set in a cross, with a sixth close to one of the corners of the cross, presumably representing a repair. The seventh appears to form part of a key-hole-shaped cut-out to accommodate a buckle tongue, as on a similar plate in *ibid*, fig

72, 508, which probably dates to the late 13th or early 14th century.

Fig 33, 17 SF 40.86 721(C), A1022 L124. Dump: Building 174, Room 6. Period 3a. A small brass thimble of domed medieval form (Holmes 1988, 1) covered by small circular indentations apart from a narrow plain band around the base. Height 16 mm, diameter 14-16 mm.

Fig 33, 18 SF 40.86 1484(C), A1500. Unstratified. A large crushed brass thimble, with two bands of incised grid pattern providing an alternative to the usual indentations. There are also curved diagonal grooves crossing both the upper and lower grids. The top appears to be plain. The condition of the thimble does not allow a positive interpretation of the diagonal grooves. They may be an integral part of the thimble's design, but this would mean that not every part of the wall was available as a working surface. Height 25 mm, diameter approximately 19 mm.

Fig 33, 19 SF 40.86 205(C), A248 L18. Dump: Building 174. Period 4a. A crushed brass ring-type thimble with a plain band around the base and five spiralled rows of rectangular indentations. The indentations were made by a knurled wheel. Height 11 mm.

Fig 33, 20 SF 40.86 481, A553 F119. Large pit. Period 3. A large silver-washed brass thimble with a plain band around the base and circular indentations probably applied in concentric circles. The top is plain. Height 24 mm, diameter 15 mm.

Fig 34, 1 SF 40.86 615, A329 F72. Pit. Period 3a or b. Part of a shallow mortar of weathered Purbeck marble with three lugs. The rim is flat. The ribs beneath the lugs are chisel-dressed and chamfered. The walls are also chisel-dressed. The base of the mortar is externally almost rectangular. Height 100 mm, external diameter approximately 200 mm, wall thickness at rim 34 mm.

Fig 34, 2 SF 40.86 1608, A2396 F456. Set in floor, Building 174, Room 6. Period 3c. A complete large Purbeck marble mortar, with four lugs. The rim is flat. The ribs beneath the lugs are chisel-dressed and chamfered. Externally the walls are for the most part pecked, but there is one band of chisel-dressing, 30-35 mm deep, round the top, and another, 40 mm deep, round the bottom. Some chisel-dressing, very worn, is also visible in patches at the maximum girth line. The internal surfaces have nearly been worn smooth, but traces of chisel-dressing remain at the junction of wall and base, in patches on the wall, and at the rim. Height 265 mm, external diameter at rim 622 mm, wall thickness at rim 63 mm.

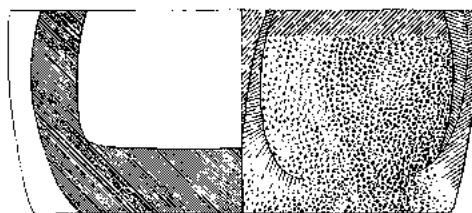


Fig. 34 Post-Roman Purbeck marble mortars, Angel Yard, Colchester.

Though not excessively worn, the mortar was found to have split along the horizontal bedding plane at the top of the base. Similar fractures are common in Purbeck marble mortars as the surfaces at the junction of base and wall are worn down (eg Dunning 1977, 321; CAR 5, fig 43, 1979), but whether in this case the break occurred during its period of use, or after its burial, is uncertain. As

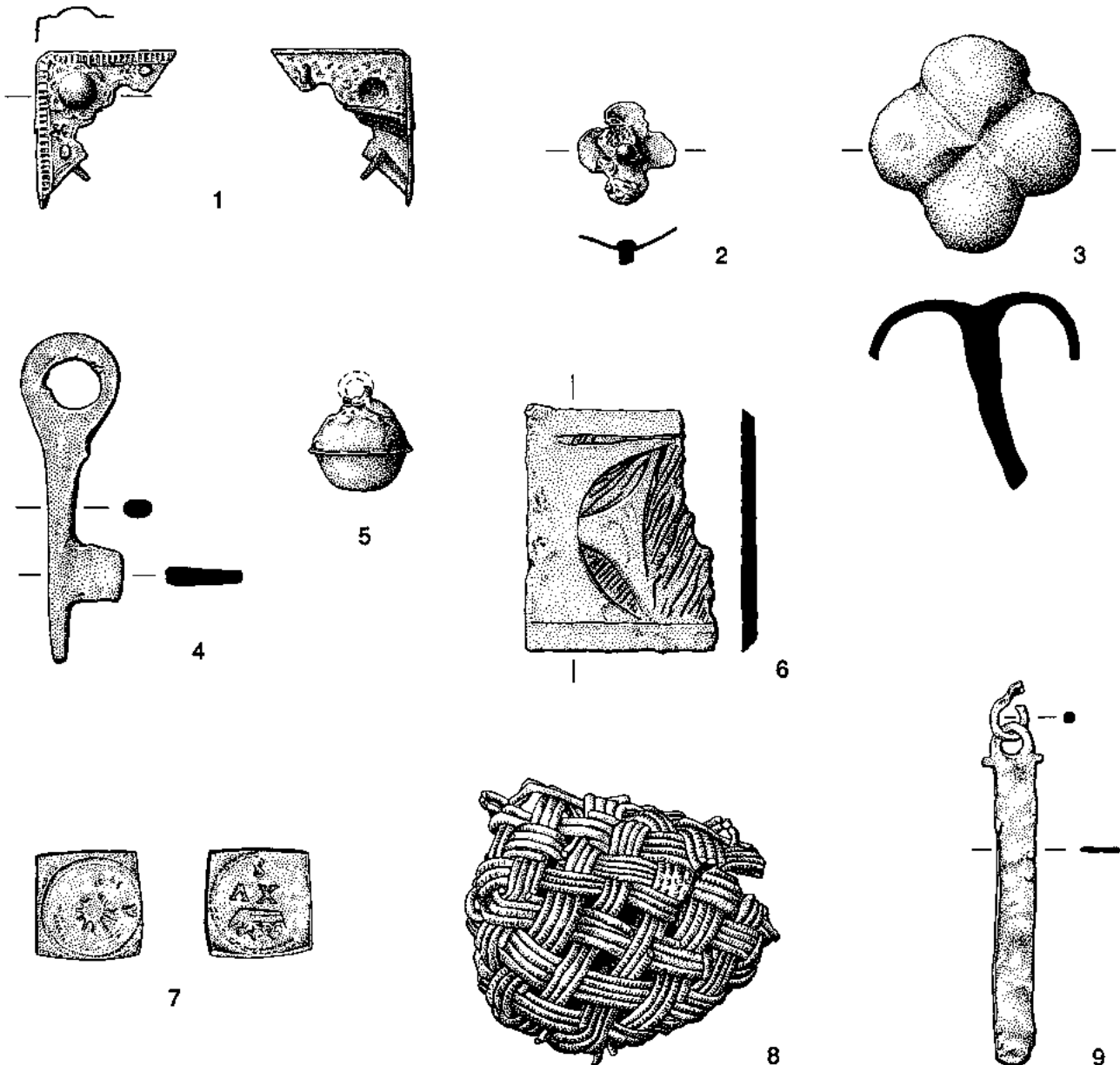


Fig. 35 Post-Roman copper alloy small finds, Angel Yard, Colchester.

the mortar was abandoned *in situ* (Fig 19), rather than lifted for use elsewhere, the former is most likely.

Dunning specifies two types of wear on medieval mortars, a hollowing of the base from vertical pounding, and undercutting the wall from grinding. As chisel-dressing is still visible at the junction of wall and base on this example, the former usage appears most likely. The size of the mortar also implies vertical pounding, probably done by a person standing upright and using a long straight pestle.

This is a very large mortar, similar to one in the Colchester Museums, though not the largest from the county (it is overtopped by an example from Little Baddow; P Ryan pers comm). Its size suggests food preparation on a commercial rather than domestic scale, but it appears to post-date the Period 3a and 3b ovens in Room 6 and cannot be directly associated with them.

Fig 35, 1 SF 40.86 329(C), A340 F76. Stone-lined pit: Building 175. Period 3b/c. A copper-alloy triangular corner fitting probably from a leather-bound book or small box. The face measures

21 by 21 by 30 mm. Its upper edges are knurled and it bears a decorative repousse floret. Two tacks are set in the inner corners. Their clenched ends give a depth of 3 mm for the object to which the fitting was attached. One of the returned edges of the fitting has broken off. In the other, just under 3mm from the junction with the face, is set a tack with a sharp pointed end which projects up towards the underside of the face. This reinforces the thickness of 3 mm implied by the other two tacks.

Fig 36, 1 SF 40.86 492/499(X), A458/A485 L24. Dump. Period 3. A fragmentary iron snaffle-bit with a cheek-piece. Length of cheek-piece (top to bottom) approximately 95 mm, length of complete bit (side to side; not including the ring of the cheek-piece) approximately 170 mm. A similar bit was found at Sandal Castle, West Yorkshire (Goodall 1983, fig 10, 234), and dated to the Civil War occupation of the castle in 1645.

Fig 36, 2 SF 40.86 935(X), A1270 F211. Pit. Period 2b. An iron prick spur with a long narrow neck beneath the point. The detail

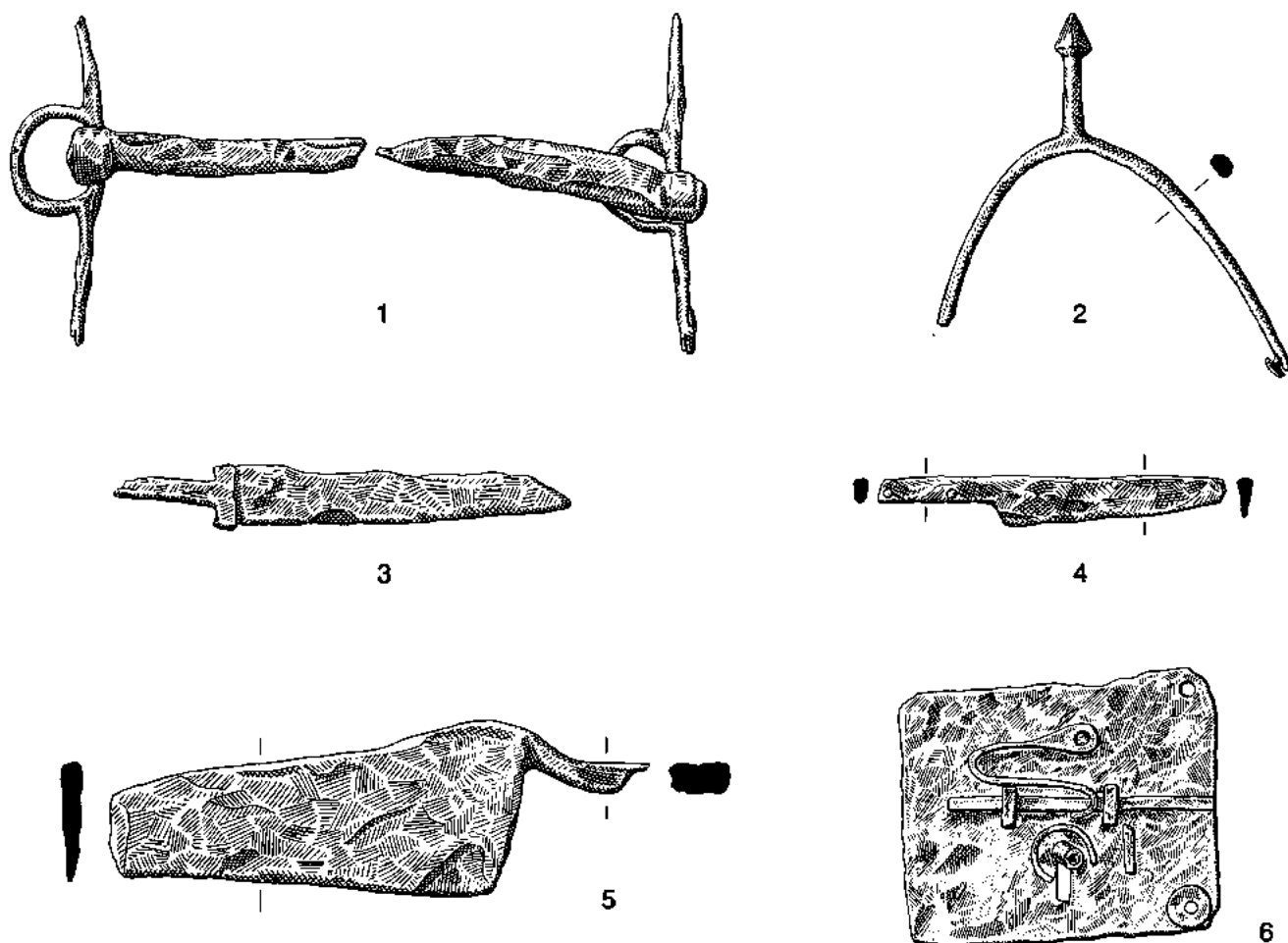


Fig. 36 Post-Roman iron small finds, Angel Yard, Colchester.

of the one surviving terminal is obscure. It appears to be of flattened circular form, with a single perforation in which is set a small fixing stud. It may originally have been of figure-of-eight form, the second, outer part of which is now missing. Length 105 mm, maximum width approximately 104 mm.

Fig 36, 3 SF 40.86 598(X), A482 F103. Small pit. Period 3. An iron blade with part of a whittle tang surviving. The back and edge of the blade are straight and parallel. The tip is gently curved. There appears to be a copper-alloy mount on the stop-ridge at the upper end of the blade. Length including tang approximately 119mm.

Fig 36, 4 SF 40.86 607(X), A515 L32. Gravelled surface. Period 3b. A small iron blade with a scale tang. The back of the blade is straight. The edge is also straight and rises in a continuous line to the tip. The tang continues the line of the back and has two copper-alloy rivets set into it. These would have fixed on a handle, probably of bone, and probably of two-piece form. Length including tang 90mm.

Fig 36, 5 SF 40.86 503(X), A426 L35. Demolition debris: Building 174, Room 7. Period 3c. A large cleaver-like iron blade with part of the tang surviving. The tip of the blade is separate. The back of the blade is straight. The edge is also straight and rises in a continuous line to the tip. The tang is of circular section and dips in a shallow U close to the blade. Length including tang approximately 190 mm.

Fig 35, 2 SF 1036(C), 1528 L207. Dark earth/topsoil. Period

2. A copper-alloy stud with a flat quatrefoil-shaped head (now bent). The short riveted shaft is dome-headed and placed in the centre of the quatrefoil. Approximately 14 by 14 mm. Probably a mount from a belt or strap.

Fig 35, 3 SF 1068(C), 1492 F285. Clay-lined pit. Period 2b. A large copper-alloy stud with a quatrefoil-shaped head where each of the four elements is convex. 28 by 28 mm. The shaft is rectangular in section and 25 mm long. Probably a mount from a belt or strap.

Fig 35, 4 SF 40.86 1092(C), A1491 F285. Clay-lined pit. Period 2b. A simple copper-alloy rotary key with a pierced rounded handle, plain bit and solid stem which projects well beyond the bit. Length 50 mm.

Fig 36, 6 SF 40.86 602(X), A659 F76. Stone-lined pit: Building 175. Period 3b/c. An iron lock-plate with part of the mechanism intact. There is a rivet hole in each of the surviving corners. Part of the key is fixed in the key-hole. Similar to CAR 5, fig 89, 3245.

Fig 35, 5 SF 40.86 621(C), A708 F76. Stone-lined pit: Building 175. Period 3b/c. A small copper-alloy rumbler bell with an iron pea. The bell was made in two halves, and there is a pronounced flange around the bell where the two pieces fit together. There are the remains of a suspension loop on the top of the bell. Diameter 16 mm. In all three rumbler bells, almost certainly of common origin, were recovered from AF76. Such bells were used both on horse trappings (Griffiths 1986, fig 20) and clothing.

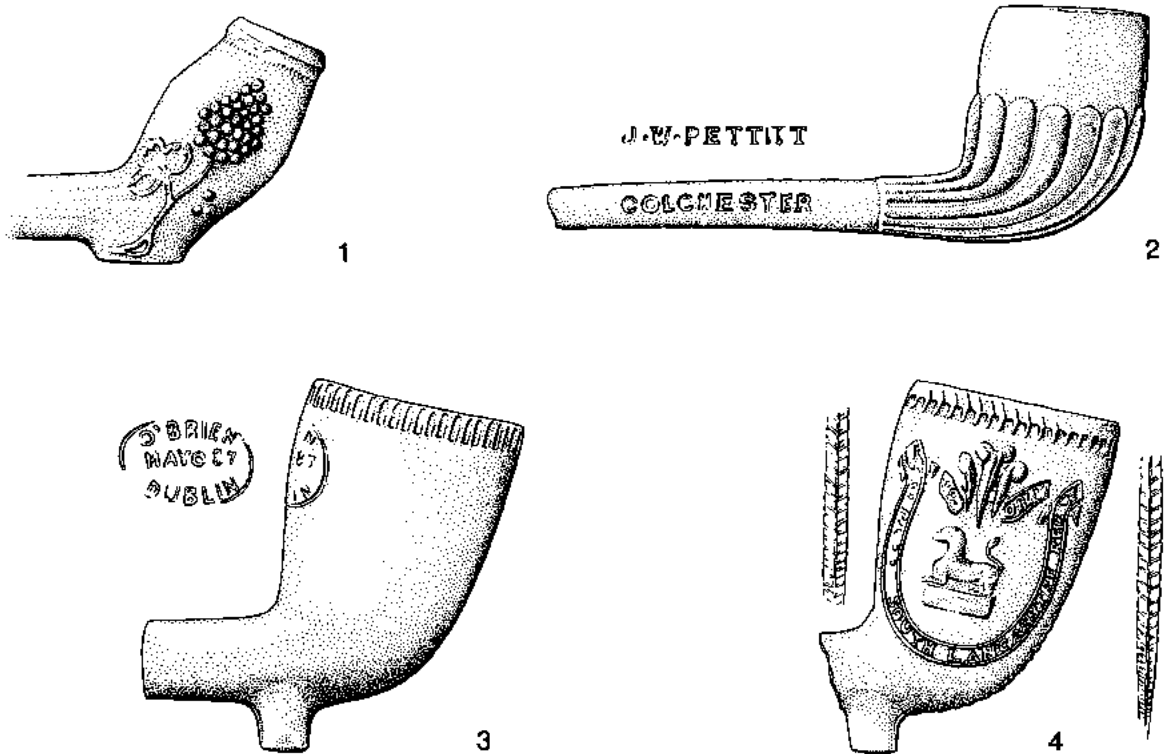


Fig. 37 Clay tobacco pipes, Angel Yard, Colchester.

Fig 35, 6 SF 40.86 848(C), A1461 F270. Pit. Period 3. A fragment of a rectangular copper-alloy plaque with a central circular motif and grooves along two of the sides. The central motif is roughly scored into the metal. The plaque has broken across a perforation, which, if central, would give a length for the object of approximately 54 mm. Width 38 mm.

Fig 35, 7 SF 40.86 146(C), A117 L3. Dump. Period 4. A roughly square copper-alloy object with a stamped design on each face. On one side is a crown above XV (presumably representing the number 15) with below a small X or possibly an angular 8. On the other side is a worn floret or sun motif. 17 mm square, 3 mm thick. Fig 35, 8 SF 40.86 116(C), A118 L3. Dump. Period 4. A crushed hollow sphere woven from threads of coiled copper-alloy wire. The threads have been worked in groups of four to produce the sphere. There is no apparent original break in the surface. Similar to the braid of 17th-century date from the Lion Walk site, Colchester (CAR 5, 20-1). This object from the Angel Yard may, like the braid, have been used for trimming clothing. Maximum width 44 mm.

Fig 35, 9 SF 40.86 982(C), A1526. Unstratified. Post-Roman. A strip with a pierced circular terminal within which is fitted a penannular ring, possibly a chain link. Length 52 mm.

The clay tobacco pipes (Fig 37) by Joy Hind and Nina Crummy

A dated and illustrated typology of clay tobacco pipes for Colchester can be found in CAR 5, 47-66. The types are not all represented among the assemblage from Angel Yard, 18th-century pipes in particular are scarce, but it includes by far the largest sample of 17th-century pipes from a single town-centre excavation. The bowls are fully described in the small find report in the site archive.

It is unfortunate that, given the large number recovered, many of the datable bowls were residual in their contexts, though a notable exception is a group from late 17th-century occupation.

Type 2, dated c 1600-40 (*ibid*, 47) is the earliest form present, with 44 examples listed, each probably residual. Four Type 3 pipes (c 1610-40; *ibid*) were recovered, one more than from all the excavations of 1971-85 together, a reflection of the very high number of 17th-century pipes from the site as a whole. The pottery from the pit AF72 forms a good group dating to the late 15th and early 16th century (p72; site archive), and thus the Type 3 bowl from AF72 must be within its horizon.

Type 4 bowls are usually plain, but one example from this assemblage is decorated with a well-executed grape and vine leaf design (Fig 37, 1). The majority (62 per cent) of the 332 pipes of this type derived from Period 3 dump levels, AL20, AL23, AL24, and AL25. Four Type 5 bowls (c 1640-70; *ibid*) were recovered, like Type 3 a high number of this minor form.

Type 6 (c 1660-80; *ibid*) is the most numerous in the assemblage, 495 bowls being catalogued. Over half (51 per cent) are from Period 3c or 4 occupation (AL12) in Building 174 and are probably not residual, and fifteen bowls associated with the Period 3c demolition (AL35) of Room 7 of Building 174 may also be primary deposits within their context. Most of the remainder are residual.

Most, if not all, of the Type 7 (c 1670-1700), Type 8 (c 1680-1710), and Type 9 (c 1700-40) bowls are residual. Only seven of the latter type have been recovered, and few other later types are represented. The fifteen Type 12 pipes (c 1780-1820; *ibid*, 52) from the brick cellars AF223 and AF230 are an exception, and are probably primary deposits. All seven of the pipe bowls from AF223 are marked SC in relief on the sides of the foot, as is one bowl and three foot fragments from AF230. The remaining seven bowls, and four more feet, from AF230 are marked EL. Also from AF230 is a foot

fragment marked JP. These initials represent well-documented local pipemakers, Stephen Chamberlain (1728-1808), Elizabeth Lowthrop (aged 65 in the 1841 Census), and James Pettitt. There were probably three makers called James Pettitt, the earliest working by 1791, the latest still in operation in 1870 (*ibid*, 64).

The Pettitts are also represented by three other pipes, a unstratified fragment of a fluted bowl with plant-decorated seams, marked JP in relief on the sides of the foot, and two stem fragments with the incuse stamp of James William Pettitt, the youngest of the three (Fig 37, 2).

Marks from other local pipemakers were noted: IA, unidentified, operating in the first half of the 18th century; EB, Elizabeth Bland or her husband Edward, early to mid 18th century; W-crowned and WB, both probably William Battly, late 17th to early 18th century; and JJ, Joseph Jennings senior or junior, mid to late 19th century (*ibid*, 63-4).

A spurred narrow-fluted bowl with plant-decorated seams (c 1820-60; *ibid* 56) bears a previously unrecorded forename initial, O. The surname initial is unfortunately illegible. This maker cannot be identified as local or otherwise.

Not all the pipes were locally made. One bowl of the mid to late 19th century bears on the back an oval stamp of O'Brien of Dublin (Fig 37, 3), and a fluted bowl is marked on the stem GOODWIN/-; -/C/-, almost certainly Goodwin of Ipswich (*ibid*, fig 64, 2978).

One other pipe is illustrated. From the early 20th-century fill of the late 19th-century brick cellar AF19 in Building 175, it bears the arms of the 2nd Battalion of the South Lancashire Regiment (Fig 37, 4). This forms an interesting link to the pottery, for from the same context came a lustre-ware dish with the legend 'The Manchester Regiment 2/10th Bn Egypt' below a sphinx (site archive).

Catalogue

Fig 37, 1 40.86 187. Unstratified. Clearance. Type 4. Stem bore 7/64ths of an inch. Rim rouletted. Grape and vine leaf design on either side of the bowl.

Fig 37, 2 40.86 17. Unstratified. Clearance. 3/64. Marked on the stem J.W.PETTITT; COLCHESTER. There is a band around the stem below the flutes.

Fig 37, 3 40.86 35 F19. Brick cellar: Building 175. Period 4. A large plain bowl with rouletting on the very rim. On the back of the bowl is an oval-shaped stamp reading O'BRIEN MAYO ST DUBLIN. 4/64.

Fig 37, 4 40.86 35 F19. Brick cellar: Building 175. Period 4. A bowl bearing the arms of the 2nd Battalion of the South Lancashire Regiment.

Summary of the Roman and post-Roman tile and brick

by Nina Crummy

Roman

A few fragments of the distinctive buff-coloured tile imported from the area of the Eccles villa, Kent (CAR 6, 259-60) were recovered from both Roman and post-Roman levels on Site A. Apart from a single *tessera* from the dark earth, AL160, all the identifiable pieces were roof tiles, both *tegulae* and *imbrices* being present. Only an *imbrex* fragment from redeposited Boudican destruction debris, AL93, appeared to be in a context contemporary with the importation of Eccles tile in Roman Colchester, the rest being either residual or reused.

Possibly the earliest fragments of tile in Building 171 derived from demolition material in the 2nd century ?cellar, AF370, Room 5, a context which produced an unidentifiable fragment of buff-coloured tile. Pieces of red roof tiles, both *tegulae* and *imbrices*, were also present in Room 5, as were brick fragments, *tesserae*, and one piece of keyed tile. Also 2nd century in date was the oven, AF300, in Room 1. The make-up for the oven floor contained several flat tile and *tegulae* fragments and a single *tessera*.

The majority of tile fragments from Building 171 came from the late Roman demolition of the structure, and from the robbing of

its foundations in Period 2b. This material included fragments of box tiles, *voussiors*, roof tiles, bricks and *tesserae*, and more early Roman buff-coloured tile fragments, here identifiable as roof tiles. Of interest was the use of numerous courses of broken *tegula* flanges laid face outwards in the northern foundation (AF348, p37, fig 5).

In Building 172, Room 3 produced two early Roman buff-coloured *imbrex* fragments, one from 2nd- or 3rd-century occupation, AL267, the other from late Roman ?demolition, AL256. A votive pot, AF387, buried in the building in the 3rd or 4th century was capped by a complete roughly-made *bessalis* (190 x 195 x 36mm).

The most noteworthy tile feature in Building 172 was the hearth AF383. It was constructed sometime in the 2nd century from two complete oblong bricks (420 x 277 x 37 mm, 430 x 276 x 34 mm), one signed, and a few broken tile fragments, the latter probably recycled from an earlier building and including a piece of buff-coloured tile. As the bricks were complete they may have been new when the hearth was laid.

Two other complete pieces were recovered: a small brick (112 x 52 x 35 mm) of the type used to lay herringbone floors, *opus spicatum*, derived from the dark earth, AL156, and a complete *bessalis* (206 x 198 x 35 mm) came from Period 1 dump, AL107. Like that used to cap the votive pot, the latter was roughly made. (Brick and tile sizes can be compared with examples from Culver Street, Colchester, listed in CAR 6, table 7.1.)

Two keyed tile fragments differ from those described by Black in CAR 6, 261-72. One is a piece of *voussior*, 17 mm thick, from Period 2 dark earth/topsoil AL205, the pattern applied using a three-toothed comb. The other fragment, 19 mm thick, from Period 2b pit AF364 may also be from a *voussior*, but is more likely to be part of a flat keyed tile. Its surface is decorated with random squiggles. Both are illustrated in archive.

Twenty-six finger-made signatures or signature fragments were noted, eleven on *tegulae*, six on fragments of unidentified flat tiles, also probably *tegulae*, and nine on bricks. Many are illustrated in archive.

Three tile fragments bear marks other than signatures. From the Period 1f demolition of Room 5 in Building 171 is a piece of *tegula* bearing on the flange an inscribed tally mark 'X'. The piece is broken close to the X, so the mark may original have included more numerals (illustrated in archive). Another 'X' lies close to the edge of a piece of brick from AL160, Period 2 dark earth. The first stroke is short and runs at an angle towards the edge, the second is much longer (one end of it is missing) and lies more or less parallel to the edge (illustrated in archive). The mark is narrower than finger-made signatures, and is similar to those made by smoothing of a wet clay surface with a damp cloth. It may be just random scoring of the surface.

There is a graffito on a corner fragment of a flat tile from a Period 2b pit, AF304. A nail hole, square (8 x 8 mm) on the upper surface and round (4 mm diameter) on the bottom, has been punched through the tile near the corner. The way the letters were cut from top to bottom is clear and gives the reading IXI[-], perhaps the beginning of a personal name (illustrated in archive).

Post-Roman

Many of the hearths or ovens in Buildings 173 and 174 contained tiles in their structure, and many were associated with tile working areas or floors. The majority were fragments of Roman tiles or *peg-tiles* (eg Room 2 in Building 173, Room 6 in Building 174, p42-50), but some pieces of Flemish glazed floor tiles were also used. For example, the Period 3a ?oven AF322 in Building 173 included pieces of both yellow and black tiles, originally in excess of 157 mm square.

Several fragments of Flemish glazed floor tiles came from contexts in Building 174 (eg Period 3b daub floor/make-up in Room 6; Period 3c BL15 make-up in Room 3; Period 4a dump AL19). A small Period 3a pit in Room 7 (AF183) contained two complete tiles, 115 mm square and 25 mm thick. Both were coated with a green-flecked brown glaze, which in some places was worn away before

deposition. They may have derived from the Period 3a tile floor AF335 in Building 176.

Forty-six complete tiles and 34 fragments were recovered from AF335, all about 115-120 mm square and 25 mm thick. One fragment was scored on the upper surface into two triangles. Most are coloured either yellow and green, but a few are dark greeny-brown to black, and the glaze on some has been completely worn away. If the two tiles in the pit AF183 originally come from the floor in Building 176, which from their appearance seems likely, then the latter may be as early as the later 14th century (Eames 1975, 6-8).

Some bricks or brick fragments from Period 3 and 4 contexts were retained for further study but are not described here.

The painted wall plaster (Table 8)

Table 8 Areas of painted wall plaster from Building 171, Room 5 (cellar), Angel Yard, Colchester.

	Area (sq cm)	% of Area
white	5511.75	58.96
white with black line	271.50	2.90
white with black band	48.00	0.51
white with two black lines	172.00	1.84
white with orange blotches & black line	4.00	0.04
white with yellow line	7.50	0.08
white & pink with black line(s)	57.75	0.62
white with red line	7.50	0.08
white & red	139.00	1.49
red	190.00	2.03
red & yellow	43.75	0.47
red with white line	28.00	0.30
red with black & white lines	28.00	0.30
red & orange with white line	3.00	0.30
orange	404.25	4.32
orange with dark red line	406.00	4.34
orange with white line	11.25	0.12
orange & grey with dark red, white & black lines	301.00	3.22
orange & red with white & red lines, & some yellow 'shoots'	96.00	1.03
miscellaneous orange	35.75	0.38
orange & pink with white lines	65.00	0.70
orange & white	12.25	0.13
green (some painted over red, some bevelled corner pieces)	328.50	3.51
green & white	42.00	0.45
green & white with dark line	124.00	1.33
green & black	7.50	0.08
grey	352.50	3.77
grey & white	63.00	0.67
grey & white with black band(s)	136.00	1.46
pink	4.50	0.05
pink with black line	5.00	0.05
yellow	319.50	3.42
yellow with dark lines	22.50	0.24
yellow & white with dark red line	34.50	0.37
miscellaneous	65.00	0.70
Total	9347.75	100.00

Almost a square metre of Roman painted wall plaster fragments was recovered from demolition debris in the partially-excavated back-filled cellar (AF370) in Room 5 of Building 171. Although white predominated and there was some red, also present were significant amounts of orange, grey, green, and yellow (Table 8), suggesting that the decorative scheme included panels. Samples of the material have been retained in the site archive.

Assessment of environmental remains

by P Murphy

Sampling at this excavation was on a very limited scale. Samples were collected from a single Roman pit (AF171), seven medieval pits (AF219, AF270, AF285, AF289, AF318, AF327, AF364) and six contexts associated with Period 3 ovens and hearths (AL16, AF50, AL317, AF323, AF329, AF464) in an attempt to gain information on the functions of these contexts or the sources of material which they contained. Initially sub-samples, usually about 5 kg in weight, were extracted for assessment. Carbonised and mineralised plant material were then separated by water flotation/washover using a 0.5 mm collecting mesh and the residue was wet-sieved over a 1 mm mesh. Portions of the dried flots and residues were then examined to assess the contents of the samples and to see whether further study would be profitable. Notes on sample contents are given in archive. It should be emphasised that these notes are not intended to be exhaustive, but merely refer to the main components of the samples.

The sample from the Roman pit (AF171) contained an abundance of burnt bone fragments, which appear to have been intentionally crushed. The quantity involved implies some industrial process using bone as a raw material. Fragments from the sample have been given to Dr Rosemary Luff for more detailed examination.

Samples from the medieval pits were rather diverse in composition. Some samples (eg A1949 and A1950 from AF364) contained a high proportion of mineralised plant material and arthropods (fly puparia etc.) with much fragmentary fishbone, clearly indicating that this feature was a latrine pit. Other contexts also included mineralised macrofossils with fishbones, indicating a faecal component, (eg AF327, AF289) but generally the pits contained a mixture of food refuse, presumably kitchen and table waste. The sample from AF270 seems to represent debris from a bonfire on which building demolition and construction debris had been burnt (roundwood, timber and wood chips, with window glass) together with cereal waste, waste hay, bone and shell. This deposit might be related to an episode of site clearance probably following the demolition of Building 173 (p42).

The samples from the Period 3 ovens and hearths mostly included large amounts of charcoal. Besides tree charcoals this included gorse/broom and heather indicating use of heathland plants either as kindling or as a main component of the fuel, perhaps originally in the form of charcoal. Occasional cereal grains are present but there is no clear evidence for the use of these features for drying malt. Some of the food debris from the samples could be secondary dumped refuse unrelated to the original functions of the ovens, but burnt mollusc shell and bone fragments imply use of these ovens for roasting and baking.

On the basis of this assessment it seemed unlikely that detailed quantitative study of this small collection of samples would add much further information. However, the flots and residues were retained and are available for incorporation into any future study.

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Bibliography

Abbreviations

AML	Ancient Monuments Laboratory of English Heritage
B	F Barnard, <i>The casting-counter and the counting board</i> (1916 reprinted 1981)
BAR	British Archaeological Report
BMC	British Museum Catalogue
CAR	Colchester Archaeological Report
CAR 1	P Crummy, <i>Aspects of Anglo-Saxon and Norman Colchester</i> , CBA Research Report, 39 (1981)
CAR 2	N Crummy, <i>The Roman small finds from excavations in Colchester 1971-9</i> (1983)
CAR 4	N Crummy (editor), <i>The coins from excavations in Colchester 1971-9</i> (1987)
CAR 5	N Crummy, <i>The post-Roman small finds from excavations in Colchester 1971-85</i> (1988)
CAR 6	P Crummy, <i>Excavations at Culver Street, the Gylberd School, and other sites in Colchester 1971-85</i> (1992)
CAR 7	J Cotter & C Cunningham, <i>Post-Roman pottery from excavations in Colchester 1971-85</i> (forthcoming)
CAR 8	H E M Cool & J Price, <i>Roman glass from excavations in Colchester 1971-85</i> (1995)
CAR 9	N Crummy, P Crummy, & C Crossan, <i>Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971-88</i> (1993)
CAR 10	R Symonds & S Wade, <i>The Roman pottery from excavations in Colchester 1971-85</i> (forthcoming)
CBA	Council for British Archaeology
RIC	Roman Imperial Coinage
SF	small find
VCHE	<i>A History of the County of Essex</i> , IX, 1994
W	G C Williamson, <i>Boyne's trade tokens issued in the 17th century 1</i> (1967)

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