Southampton French Quarter 1382 Specialist Report Download F5: Ceramic building material

By Cynthia Poole

Introduction

The assemblage of ceramic building materials amounts to 3635 fragments, weighing nearly 485 kg. The ceramic assemblage has been fully recorded on an Excel spreadsheet, which forms part of the archive. During recording material was selected for discard according to the OA discard policy, resulting in approximately a third by count or 40% by weight being discarded. Preservation was average with an overall mean fragment weight (MFW) of 133 g, but unsurprisingly material from the earlier levels (late Saxon – Anglo-Norman) have the lowest MFW of 112 g, whilst there is an increase to the latest of 225 g from the early modern levels. Few complete or near complete examples were recovered allowing full size measurements to be obtained. Brick and floor tile were more often complete than other forms, with most roofing poorly preserved apart from some of the more unusual roof furniture, which included two chimney pots, and substantial parts of a louver and finial. Only one crested ridge tile was sufficiently well preserved to recover full dimensions and relatively few peg tiles produced complete lengths or widths. For a high proportion of the assemblage the only measurable dimension was thickness.

Building material was recovered from 656 contexts, the majority (462) of which were pit fills from 348 pits. A small quantity of material was related to actual structures, including walls, floors and ovens, whilst the remainder came from a range of layers and features including post holes, wells and stone lined pits, ditches, gullies, foundation, robber and service trenches. The assemblage is dominated by medieval material, which is also frequent as residual material in post-medieval contexts alongside definite post-medieval forms. A small but significant amount of Roman tile was encountered, mainly found in deposits of the earlier phases.

The Fabrics

Fabric characteristics were established using a microscope at x25 - x40 magnification. All the fabrics are sandy to some degree and distinctions between some fabrics is not invariably clear cut, possibly reflecting degrees of preparation of the clay rather than inherent differences in the constituents. They can be broadly divided by period though there are similarities between some types across periods and where tile form is not apparent it can be difficult to distinguish. The fabrics are described in detail in CBM: appendix 1 and summarised here.

Roman

The Roman tile was allocated to the fabric series established for material from Winchester Staple Gardens and Cultural Centre assemblage (prefixed Winc) (Poole and Shaffrey ibid) or to Winchester city fabric series (prefixed Wincm) held by Winchester Museum services and based on that from the Brooks Centre (Foot 1994). Winchester fabrics 26, 39 and 46 were identified. Those fabrics base on the Staple Gardens fabrics are summarised here:

Winc A: calcareous with shell grit
Winc B: sandy clay with low-moderate density of ferruginous grits
Winc C: clay containing moderate density of medium quartz sand.
Winc D: fine sandy micaceous clay
Winc E1: sandy fabric containing frequent coarse cream clay pellets and unwedged clay fragments up to 15 mm.
Winc E2: sandy fabric containing frequent small – medium cream clay pellets and red ferruginous grits 1-6 mm.
Winc E3: laminated clay with fine cream streaks containing low-moderate density of quartz sand <0.2 mm.
Winc G: sandy clay fabric containing low density of chalk grits <3mm

Medieval - Modern

The medieval and later tile was assigned to a fabric series established for this assemblage. These have been compared to those in the Southampton type series and equivalents are shown as a table in the appendix.

A: pale pink/cream or light reddish yellow/buff in colour, fine-medium sandy silty micaceous clay with rounded red and cream sandy clay pellets, used mainly for brick. Sub-type A1 was distinctly laminated often with paler colours more dominant and few clay pellets. Subcategory A2 more reddish in colour contained distinct red and buff clay pellets and angular unwedged clay fragments up to c. 8 mm. This was less sandy and may be a quite separate fabric. It was commonly used to make crude early peg tiles

B: red, reddish brown sandy clay containing frequent medium-coarse poorly sorted quartz sand and dark red iron oxide grains 0.5-2mm. Used predominantly for floor tiles, malting kiln floor and bricks.

C: red, orange brown, micaceous clay containing medium-coarse quartz sand generally in moderate density. Used for roofing.

D: red, orange, light brown, fine sandy uniform clay. Used for roofing, drain pipes and rarely floor and brick, especially in the post-medieval phase.

E: dark red, brown, or grey sandy clay contains a high density of coarse quartz sand and burnt flint grit temper. Used for flanged and curved roof tiles and floor tiles; probably exclusively of Anglo-Norman date.

F: red, orange sandy clay containing frequent fine-coarse quartz sand and occasional iron oxide grains or iron rich clay pellets. Used for bricks. Some examples are similar to fabric A and this may be a better mixed and produced variant from the same basic clay source.

G: Four samples with frequent coarse grits were assigned to this, but they do not form a single coherent fabric and may be individual representatives of different fabrics or variants on some of the other sandy fabrics.

A group of sandy fabrics prefixed Med appear to be of Medieval date.
Med1: yellowish red, orange, red exterior, pale grey core or sometimes grey through out. Moderate – high density of medium quartz sand.
Med1a: high density of well sorted rounded-subrounded quartz sand c. 0.5 mm.
Med1b: distinguished by occasional coarser grits
Med1c: distinguished by presence of rounded red clay/iron oxide pellets/inclusions *c*. 1-2 mm.

Med2: Red, orange, pale grey core; frequent quartz sand <0.3 mm interspersed with coarser sand and red clay pellets up to 1.5 mm.

Med3: red, orange; mid or dark grey core; high density of medium – coarse quartz sand and grits up to 3 mm and scattered white platy shell fragments up to 5 mm.

Med 4: red, orange, reddish brown micaceous clay containing a high density of fine sand and little coarse sand and red clay pellets 0.5-1 mm.

This group was used for roofing and roof furniture including peg tiles, crested ridge tiles, chimneys and louvers. Chimney pots were produced exclusively in Med3. Med1 and Med2 were used additionally for floor and kiln tiles. These fabrics may have come into production late in the Anglo-Norman phase, but the main periods of use are High and Late Medieval with some possibly continuing in use into the post-medieval phase, though production probably ceases before or during the early post-medieval period.

A small group of modern fabrics were identified. Some or all of these may derive from large-scale production centres well outside the local area.
Mod1: a fine cream clay matrix with no visible inclusions.
Mod1a: highly fired cream clay matrix contains red and black iron grains 0.1-1 mm. Stoneware type.
Mod1b: highly fired ream clay matrix contains coarse maroon- black iron grains 0.2-3 mm. Stoneware type.
Mod2: highly fired light brown clay matrix containing moderate sand inclusions of quartz, black iron and white calcareous/chalk, all of similar size 0.2-0.5 mm. Stoneware type.
Mod1 was used for decorative wall tiles and the others for drain/sewer pipes.

The Roman Tile

Roman tile accounted for 5% of the assemblage (175 fragments, 26603 g) with a few further fragments that could not be assigned to either Roman or later periods with any degree of certainty. The assemblage though small comprises at least one example of each of the main forms generally found in the Roman period. Quantities of the individual forms are summarised in Table 1. References to particular types in relation to flanges, cutaways, combing patterns etc are those used in recording of OA CBM assemblages. It is intended that the recording methodology will be made available online (Poole forthcoming).

Table 1: Quantification of Roman tile forms

Form	Nos	% Nos	Wt (g)	% Wt
Tegula	13	7	1518	5.6
Imbrex	1	0.55	172	0.6
Brick	87	48	18545	68
T. mammata	3	1.65	667	2.5
Wall tile	1	0.55	189	0.7
Plain	49	27	4065	15
Flue	9	5	1037	4
Voussoir	1	0.55	160	0.6
Unidentified	11	6	270	1
Uncertain: RB/Med	5	3	531	2
Total	**180**		**27154**	

Roofing

Tegula: three standard flange types were present comprising rectangular type A (1 example) and rounded types E (1) and F (4) measuring 17-24 mm wide by 34-50 mm high and a single lower cutaway (Type C1). There was evidence that the flanges tapered and one tile had a double finger groove alongside the base of the flange, which is also found on tile from Winchester (Foot 1994). They were of standard thickness measuring 16-26 mm, with one thin example of only 10 mm. They were made mainly in fabric Winc: E group and included one very gritty example plus a couple in more sandy fabrics Wincm: 26 and 46 of Winc: C group.

Imbrex: A single imbrex with curved profile, measuring 18 mm thick was found. It was made in fabric Wincm: 46. A second curved tile may have been an imbrex, but was not typical and may be an unglazed Anglo-Norman curved tile or an unglazed medieval ridge tile.

Bricks, wall tile and plain tile

Brick and plain tile accounted for three-quarters of the Roman tile. The only complete measurement was of thickness and a comparison of known forms with the plain tile (Table 2) suggested this derived predominantly from both bricks and tegulae and possibly the plain faces of flue tile.

The majority of the bricks fell into the 30-39 mm size range suggesting much of the brick derived from smaller forms such as bessalis or pedalis, though the thicker examples imply some larger forms such as lydions were also present. In character the brick is typical of Roman material with some knife trimming of sides and base. Several examples have evidence of burning or sooting on the surface and some are heavily worn. The majority were made in fabric Winc: E group, though several examples of fabrics Winc: B, C and D were present, together with single examples of Winc: A and Wincm: 46.

A small number of Tegula mammata were identified of Brodribb's type A (1987, 60-62), two with the roughly moulded mamma present and one with the scar left by its removal. They were circular/oval or subrectangular in shape measuring 27 mm, 35 mm and 42x70mm by 8-10 mm high. Three different fabrics were identified Winc: E3, C, Wincm: 46.

A possible wall tile 40-44 mm thick was identified by possible scoring for keying on its underside. It was made in fabric Winc: E2.

Table 2: Comparison of Roman tile thickness

Tile thickness	Brick types	Plain	Tegula	Flue
<15			1	
15-19 mm		3	1	4
20-24 mm	1	6	7	4
25-29 mm	4	5	2	1
30-39 mm	45	7		
40-49 mm	16			
50-59 mm	6			
>60 mm	1			

Flue and Voussoir

Flue tile was identified on the basis of combing on the surface, whilst one piece was identified as voussoir on account of combing on adjacent sides, though insufficient of the tile survived to observe any taper that would typify a voussoir. These were made mainly in the Winc: E group fabrics and with examples of Winc: C and Wincm: 39.

Markings

Keying: Keying was observed on ten tiles. Combing was the most common form and though all are incomplete some indication of the overall form can be discerned. Most combing patterns consisted of straight diagonal bands, generally two bands crossing, which probably formed a X pattern (type 4). One additionally had horizontal and vertical straight bands forming a frame enclosing the cross (type 4 and 18 combined). One example occurred of a vertical straight band at the edge with central wavy band (type 3a). Comb sizes ranged from 26-57 mm wide with 5-9 or more teeth. The individual teeth were mostly 2-3 mm wide set from 2 to 8 mm apart. These fall into medium and coarse size combs.

One example of an incised diagonal line on the back of a brick or wall tile is probably some sort of scored keying made with a stick rather than a blade.

One plain tile possibly a wall tile or brick had part of a tightly curved arc of combing starting from the tile edge, which may represent a combed signature rather than keying. Similar combing has been found on bricks or tegulae from Winchester (Foot 1994, Poole and Shaffrey ibid), the Isle of Wight (Tomalin 1987, 99) and rural sites in Hampshire (Durham 2008). The combing normally occurs at one end of the tile only, mimicking a type 1 hoop signature mark. Foot (ibid) found these were confined to the late Group 2 fabrics from the Brooks site in Winchester.

Signatures: Fourteen partial signatures were observed on brick or thinner plain tile fragments (probably tegulae). Most signatures survived only as fragmentary arcs of one or two finger grooves. Four more complete examples were all type 1, a simple semi-circular hoop, usually made with two finger grooves. A few tiles had just a length of single straight finger groove and one example of a type 14 signature: two grooves forming a cross with one starting from the corner of the brick.

Imprints: Fingerprints from handling were observed on one brick. On a brick and a tile were incomplete deep oval depressions that may have been the pads of a dog paw print, or possibly finger tip depressions.

Discussion of the Roman tile assemblage

The Roman tile assemblage is characterised by a high proportion of brick together with tegula and other flat tile, which could all have been readily re-used as brick. Similar assemblages are commonly found on lower status rural Roman settlements, where brick and tile was obtained from neighbouring higher status settlements such as villas with buildings utilising tile, which could be reused in minor structures such as ovens, hearths and corndriers. The assemblage could indicate the presence of such a settlement in the area of the excavations and there is some evidence for a scatter of minor Roman settlements underlying the modern city of Southampton.

However Roman tile has commonly been found in medieval deposits in Southampton and a pattern indicative of re-use of Roman tile in the earlier Medieval period has been recognised on previous excavations. In this assemblage the high proportion of the Roman tile that had suffered no or little abrasion may be indicative that it was robbed directly from Roman building remains, rather than

representing a scatter of tile associated with a minor rural settlement, where higher levels of abrasion are normal. One piece of tile, which had been very heavily abraded gaining the rounded appearance that brick acquires when rolled on the foreshore by the sea, may indicate Roman buildings somewhere on the inlet, very probably the Bitterne Manor site, were being eroded.

Further evidence that the Roman tile was being re-used in the medieval period is that it reflects the proportions of the medieval tile found on the individual tenements. Overall Roman tile forms 5% of the whole assemblage, but the distribution is not even either spatially across all tenements or temporally by phase. The quantities on tenements 170, 172, 173, 174, 237 and 241 are greater than the other tenements mirroring the greater quantity of Medieval and later tile on these tenements. A more even spread might be expected if the tile was merely residual, a background scatter from earlier Roman occupation in the area. The distribution of the Roman tile in relation to the tenements is discussed below in relation to the development of the individual plots.

A consideration of the Roman tile *per se* suggests the source was ultimately buildings of some status, which included a vaulted heated bathhouse. This could be from a domestic site such as a villa, however the presence of *tegula mammata* and scored wall or flue tile, which are early forms may indicate the small town at Bitterne Manor (Clausentum) as a more likely source. Scatters of Roman material, some associated with features has been found at a number of sites underlying the centre of Southampton. Some of these appear to be nothing more than scatters associated with agricultural activity, whilst others are minor settlements of domestic habitation, such as the Magistrates Court site (McDermott 1999) or industrial in character such as the site at St Denys (Smith 2002). None of these minor sites are likely to have had masonry buildings that could be robbed of tile. In the absence of any trace of appropriate structures such as a villa on the west side of the Itchen, the conclusion must be that the Roman tile was being robbed from the Bitterne Manor site with the express purpose of re-use in construction of buildings of Late Saxon or early Medieval date.

The Medieval and later ceramic building material

Medieval and late medieval brick and tile forms the bulk of the assemblage. Medieval forms occur residually in the postmedieval and early modern deposits and in all phases it is noticeable that earlier forms may remain common into succeeding periods reflecting the longer periods of use for building material compared to more transient items such as pottery. Though buildings were no doubt subject to fashion, it is likely that changes were made more often when repairs or rebuilding dictated rather than merely in response to new varieties of tile. There may therefore be a considerable difference in date or the period of production of certain forms and when they finally fell into disuse or were replaced on a property. This time lag between production, use and disuse is apparent for virtually all forms throughout all phases. Though some material will inevitably be broken and discarded at the time of construction, there was little evidence for this and most of the material results from repairs, refurbishment or demolition. The quantities of individual forms are summarised in table 3.

Table 3: Quantification of medieval and later ceramic building material forms.

Forms	Nos	% Nos	Wt (g)	% Wt
Brick	746	22%	143181	31%
Wall tile	8	<0.5%	335	<0.5%
Floor: plain	274	8%	85966	19%
Floor: decorated	4	<0.5%	981	<0.5%
Paviour	3	<0.5%	1306	<0.5%
Hearth tile	71	2%	11036	2.4%
Kiln floor tile	80	2.3%	15815	3.5%
Plain/misc	411	12%	10915	2.4%
Roof: misc	25	0.75%	1174	<0.5%

Roof: curved (A-N imbrex type)	39	1%	4885	1%
Roof: flanged (A-N)	34	1%	4724	1%
Roof: curved/flanged (A-N)	13	<0.5%	605	<0.5%
Roof: peg	383	11%	41980	9%
Roof: flat	646	19%	48365	10.5%
Roof: ridge	341	10%	22298	5%
Roof: ridge crested	241	7%	24348	5%
Roof: ridge/louver	4	<0.5%	262	<0.5%
Roof: louver	30	1%	3708	0.8%
Roof: finial	2	<0.5%	1419	<0.5%
Roof: chimney	8	<0.5%	7739	1.7%
Roof: pantile	51	1.5%	9289	2%
Discs (from curved/flanged)	10	<0.5%	711	<0.5%
Drain pipe	23	0.65%	15291	3.4%
Total	**3447**		**456333**	

Roofing

Flanged and curved tiles

A small number of flanged and curved tiles were found. These are similar in basic design to Roman tegulae and imbrices and all were made in the coarse sandy flint gritted fabric E, though there is one curving tile in fabric D, which could be imbrex, curved tile or an unglazed ridge tile. No complete dimensions were obtained apart from thickness. In general these tiles were well finished, with even surfaces and edges.

The flanged tiles (fig.1) ranged from 15 to 24 mm thick and one with a nail hole was estimated to have a total width of c 270 mm at the top end (assuming the nail hole was equidistant to either side). The maximum surviving width and length was 135 mm. The flanged tiles are known to taper but none was of sufficient size to observe this, though some corners do not appear to be a right angle. Two flange tiles had a nail hole: one 11-12 mm diameter centred 30 mm from the top and 135 mm from the LH edge; the second measured 11 mm diameter tapering to 8 mm at the base and centred 28 mm from the top edge. However some tiles had patches of mortar on or alongside the flanges.

The flanges were noticeably narrower than Roman varieties though a similar range of profiles were observed including rectangular (type A), angled inner edge (type B), and rounded profiles (type D, F). Flanges measured 13-28 mm wide, by 28-45 mm high. They appear to divide into a dominant group of 13-17 mm wide (or up to 19 mm if broken flanges are included) by 35-45 mm high and a secondary group (or groups) 25-28 mm wide by 28-31 mm and 45 mm high. These tiles do not have cut-aways in the manner of Roman tegulae, instead having a taper to allow them to interlock. However it was noted that some flange ends were moulded to a diagonal chamfer 20-45 mm long by 10-20 mm deep.

The flanged tiles were glazed across the centre often stopping 150-30 mm short of the flange in an abrupt line, though sometimes extending right up to flange and usually to the edges top and bottom, though on occasions stopping short by 60 mm, suggesting this was the width of overlap of tiles. It is clear that often only the area, that would be visible and no more was glazed, suggesting glaze was an expensive commodity or at least one not to be wasted unnecessarily. The colours were always variants of amber, brown and green frequently slightly mottled.

The curved tiles (fig.2) measured 14-26 mm thick, with an estimated width of 140-150 mm and height of 62 – c 120 mm. The maximum surviving length was only 110 mm. They had an inverted U-profile with the lowest 40-50 mm alongside the edge exhibiting no perceptible curve and thus on occasion making it

difficult to separate small fragments from floor tiles in the same fabric. One curved tile had a nail hole 10 mm diameter centred 36 mm from the top edge. Mortar was observed on the underside of only one tile. All curved tiles had a glazed exterior surface in shades of brown and mottled greenish brown and occasionally amber. Frequently only the curved apex of the tile was glazed leaving a bare margin of 20-45 mm along the lower sides, though there were examples where the whole surface was glazed up to the edges.

The curved and flanged tiles are an early form that was replaced by the more common peg tile. They have been found at York, Scarborough, London and Reading Abbey. At York they have been dated to 11th to 13th century (Lewis 1987, 6; Betts 1985, 384) and they are increasingly being recognised as an indicator of the presence of high status buildings of Anglo-Norman date. At Battle Abbey (Streeten 1985) they were found in the foundations of the Chapter House suggesting they were in use here as early as c. AD1100. In Southampton examples from Quilter's Vault (Platt and R. Coleman-Smith 1975) have been dated to the early 13th century. In the current excavations these have been found in the Anglo-Norman phase (AD1066-1250) and in some contexts associated with material dated as early as AD1070-1150.

Peg tile

The majority of the tiles were medieval but a small number of post-medieval examples were also present. A range of characteristics was observed in relation to the peg tiles, which were used in conjunction with the phasing to assign them to a broad date range. It is likely that the majority of the unglazed flat roof tile is peg tile, rather than any other form. Three broad groups were observed. The earliest types are the rougher and more crudely made with rough irregular or undulating surfaces, with finger depressions and grooves from smoothing and handling and sometimes with impressions of straw or grass stems across the surfaces. Most of the tile made in fabric A2 falls into this category. A small number of this type were found in the Anglo-Norman phase suggesting production of peg tiles began in the late 12th century or early 13th century.

The most common variety of peg tile was thick but fairly well finished with even, slightly cambered surfaces and sharp arrises and corners. Undersides were usually even and sanded with slight creasing. These were prolific during the High and Late Medieval phases (mid 13th to early 16th century) and were clearly being manufactured and used throughout this time and certainly continuing in use into the post-medieval period. The third type are thinner and very neatly finished with smooth even surfaces, angular arrises and corners and sometimes with a shallow margin 5-17 mm wide pressed into the upper surface along the side. These appear in the post-medieval and early modern phases and their manufacture probably begins in the late 16th or early 17th century. They are most commonly made in fabric D.

Only one near-complete tile (fig 00.3) survived with all three dimensions surviving and two that had probably been deliberately trimmed down to a smaller size. No other complete lengths survived, but several widths did. However for the majority thickness was the only dimension. The complete tile was probably of earlier medieval manufacture though found in a post medieval context; it measured 265 mm long, 170 mm wide and 13-17 mm thick. It was pierced by two circular tapering peg holes 16 mm wide centred 70 mm apart. The two that appeared to be trimmed to a smaller size were from unstratified or early modern contexts. One was medieval and measured 192 mm long x 184 mm wide by 14 mm thick and had two circular peg holes c 11 mm diameter and 98 mm apart. The second of post-medieval date measured 145 mm long by 80 mm wide by 12 mm thick and had one square tapering peg hole 12x10 mm.

Of the remaining tiles widths ranged from 140 to 176 mm. The range of sizes occurs across all periods though the earlier medieval tiles concentrate around 170 mm and the high to late medieval tiles have a larger number c 160-165 mm wide.

Table 4: Peg tile width in relation to date of tile

Tile width	Early Med	H-L Med	L Med-E Pmed	Pmed-EMod
140-144 mm			2	
145-149 mm		2		
150-154 mm	1	1		1
155-159 mm		1	3	
160-164 mm		7		
165-169 mm	1	2	2	1
170-174 mm	1	2		
175-179 mm	1			
180-184 mm		1		
Total	4	16	7	2

Thickness ranged from 9 to 22 mm and it is clear that there is a diminution of thickness from the earlier medieval peg tiles through to the later types.

Table 5: Peg tile thickness in relation to date of tile

Peg tile thickness	E Med	H Med	L Med	Med	P Med	E Mod
9 mm					1	1
10 mm					2	
11 mm	1			2	4	1
12 mm	1	1	5	4	5	1
13 mm		4	4	7	2	
14 mm	1	5	7	14	1	
15 mm	3	10	14	11	1	
16 mm		2	4	10		
17 mm	2	7	1	3		
18 mm	1			2		
19 mm	1	2	1			
20 mm	1					
21 mm						
22 mm		1				
Total	11	32	39	53	16	3

Peg holes were circular, square or diamond shaped (square set diagonally to the edges), frequently tapering to the base; the different shapes occur at all periods. Most were made with a blunt-ended stick or implement, which frequent did not completely pierce the base. Occasionally the peg hole was cut. Sizes ranged from 8 to 21 mm wide, with the greatest range for the earlier tiles and a narrower range for the later tiles. The majority of the medieval tiles had pegholes measuring 12-15 mm wide, but this was less apparent with the late medieval and later tiles in which there appears to be a tendency to smaller peg holes. This might reflect a change from the use of wooden pegs to nails for attaching the tiles.

Table 6: Size and shape (O circular; [ ] square; <> diamond) of peg holes in relation to date of tile.

Peg hole size (mm)	Peg hole shape	E Med	Med	H Med	L Med	L med / E Pmed	P med	E Mod
8	**O**		1					
9								
10	**O**	4	5					2
10	**[ ]**						1	
10	**<>**						1	
11	**O**	2	6		2	4	3	
11	**<>**				2	1		
12	**O**	4	14			1	1	
12	**[ ]**		1	2				

12	<>		4			4	1	
13	**O**	3	10	3	3	1	2	1
13	**[ ]**				2			
14	**O**	3	11	2	2		1	
14	**[ ]**			1		1		
14	<>	1	1	1	1	2		
15	**O**	4	19	6		1	1	
15	**[ ]**		2		2	1		
15	<>					1		
16	**O**	2	6	2	1	1		
16	**[ ]**			1				
17	**O**		3			1		
18	**O**		2	1				
18	**[ ]**		1	1				
18	/\				1			
19	**O**			1	1			
20	**O**		1					
20	**[ ]**	1						
21	**O**	1						

All the peg tiles were unglazed, except one which had a small patch of amber glaze, which may have resulted from accidental splashing or dripping from another object.

Pantile

A small number of pantiles were found in post-medieval and early modern phases. None were complete, but two complete width measurements of 235 mm and 246 mm survived. No complete length occurred, the maximum surviving being 215 mm. Thickness ranged from 11 to 19 mm, though most concentrated at 12-14 mm. Five tiles retained the projecting nib from the top edge at the back of the tile. These were rectangular, sometimes tapering to the top. They measured 55-70 mm long tapering to 40-50 mm , 15-22 mm wide and 1-15 mm high. Fabric D was the most frequently used to produce this form with just one or two examples each in fabrics C, B and A2. One produced in Med 1 fabric may have been a particularly example. All occurred in post-medieval or early deposits on tenements 167, 170-173,176 and 180, the majority occurring on tenement 170. This form generally appears in the late 17th century though it was being imported into London from the low countries earlier than this

Ridge Tiles

Ridge tile consisted almost entirely of glazed or more rarely unglazed crested ridge tile. There were only a few fragments that may have derived from plain semi-circular unglazed ridge tile. Initially plain flat glazed fragments were recorded as flat tile, but as recording progressed it became apparent that the glazed flat tile was certainly from ridge tiles and was recorded as ridge tile. It is likely that all the fragments recorded as glazed flat tile are fragments of ridge in view of the absence of any deliberately glazed peg tile. The majority of the crested ridge had a triangular profile, with straight sides converging to an angular apex surmounted by the crest. A smaller proportion of tiles had a more curved or semi-circular profile, though often it was only the tile apex that was rounded with the sides splaying out straight.

Only one near complete tile was found with all dimensions complete: it measured 400 mm long, 240 mm wide, 128 mm high (to the base of crest or 170 mm to top of crest) and the walls measured 10 mm thick. One other incomplete tile measured >394 mm long suggesting its full length was in excess of 400 mm. All other surviving lengths were less than 300 mm and give no clue as to actual length. Other complete widths and heights are shown in Table 7, including estimated diameters of some with a curved or semi-circular profile.

Table 7: Complete width and heights of crested ridge tile (heights to base of crest)

Width (mm)	Height (mm)
170	100
200	110
300	92
270-320	90-95
340	120
c 130 diam	
c 150 diam	
c 180-200 diam	c 80
c 240 diam	

The glazes were in mottled shades of green, amber or brown, varying from light to dark, sometimes merging from one colour to another and sometimes with flecks of dark green or brown. Application of the glaze could vary from thin to thick and from consistently covering the surface or patchy. In all examples it would seem glaze only partially covered the tile and was very limited in extent on some examples. Commonly the glaze was only brushed along the upper surface of the tile close to the crest often leaving wide bare margins around the sides and corners. Treatment of the crests was also variable with some almost entirely left bare, others partially glazed on one side only or with only a very patchy glaze on the second side. However certain crest forms had glaze thickly and consistently applied over both sides and edges. This was particularly apparent with crest types 5 and 9.

A range of different crest forms were identified and were divided into twelve types (figs.4-16). These can be broadly grouped into hand made (Group D: types 4 moulded and 12 thumb-pressed), cut triangular (Group A: types 1, 2, 3 truncated triangle, 8 asymmetric triangle), pyramidal (Group C: type 11) and applied strip with knife stabbing (Group B: types 5 scalloped with aperture, 6 triangular with aperture, 7 individual triangles, 9 solid strip).

Some of the forms have identical or close parallels from previous excavations in Southampton: triangular varieties equivalent to type 1 are common (Platt and Coleman-Smith 1975 fig 216. 1416 fig. 217 nos 1429, 1432, 1433). There was one example comparable to type 1b with the base of the crest pierced by a small perforation from High Street, Southampton (Platt and Coleman-Smith 1975 fig. 216 no. 1422) and examples have also been found in Winchester (Poole and Shaffrey, *ibid*). The most conspicuous are those equivalent to type 5, 6 and 9 (Platt and Coleman-Smith 1975 fig. 214 no. 1407, 1408, 1409).

Ridge tiles with knife cut triangular crests are the more usual form and they exhibit considerable variation in size. They have been found at Winchester (Poole and Shaffrey *ibid*) and were in use at Portchester Castle from the early 13th century through to the post-medieval period. Tiles of this sort were being produced at the Laverstock kilns, though only one of exactly the same height was identified. However there was limited evidence at Laverstock of 'loop-handled' crest probably equivalent to the type 5 crests. However since this type is not common outside of Southampton it is more likely to reflect influence from Southampton reaching Laverstock through merchants trading between Southampton and the West country via Salisbury (VCH Wilts vi, 126).

The largest number of crested ridge tiles occur in the high medieval phase reflecting their predominance in the 13th to 14th century. A small number (with crest types 1, 5 and 6) found in Anglo-Norman contexts suggests production commenced in the early 13th century. There is a decrease in the late and post-medieval periods, indicating crested ridge tiles continued in use, but it is unclear whether this form of tile was still being produced. An unglazed example with small pyramidal spurs (type11) and a type 1 with incised lines radiating from the spur crest, both from the post-medieval phase of tenement 237 may be late forms. The numbers of any particular crest type are too few to ascertain whether certain varieties were produced at a particular period. Although the hand moulded crest forms have been shown to precede cut

forms in some centres such as Oxford (Jope 1951, 86) there is nothing in the current assemblage to substantiate such a claim for Southampton.

The majority of the ridge tiles were made in fabrics Med1 group, Med 2, Med 3 and Med 4 with just a few in each of fabrics A, B, C and D. Very similar fabrics were utilised for ridge tiles from Winchester (Poole and Shaffrey *ibid*).

Table 8: Quantities of crest types by phase and range of measurements in mm for individual crest spurs

Crest type	L	W	Ht	AN	HMED	LMED	PMED	EMOD	UNPH	Total
1	40-80	6-18	16-35	1	8	4	2			16
1a	60-80	6-15	20-38	1	1	0	0	1		3
1b	80	10-12	40		2	0	0			2
1c	37-40	4-16	12-15		0	0	1			1
1d	80	15	33		1	0	0			1
1e	65	11-25	32		1	0	0			1
1 incised	~	~	~		0	0	1			1
2	60-91	8-22	26- >37		2	2	1	1		6
3	45b; 15t				0	0	1			1
4	45-50	9-27	27-28		1	1	0	1		3
5	100?	15-25	65-80	1	4	1	1			7
6	80-110	7-21	60-65	1	3	1	0			5
6b	>75	13-21	>75		3	0	0			3
7	85-90	7-20	50-70		4	1	0			5
8	62-70 & 108	6-28	28-52		7	0	0			7
9	~	9-25	50		2	0	1			3
10	70-995	7-20			3	1	0		1	5
11	20-35	25-30	10-20		1	2	1			4
12	15-30	20-25	15-17		1	2	1		1	5
Group B					8	0	3		1	12
Total				**4**	**52**	**15**	**13**	**4**	**3**	**91**

Finials

A complete bottle shaped finial and the upper half of an anthropomorphic finial were found both from tenement 237 in high medieval deposits dated between AD1280 and 1320. In addition smaller fragments of both types were also recovered together with a ridge tile with an opening of 35 mm diameter for an attached finial. All came from 13th – 14th century contexts.

The anthropomorphic finial (fig.20) portrays a man playing a trumpet or horn held to his lips in his right hand. The left arm is broken, but appears to have run diagonally across his chest possibly to hold reins as this is appears to be part of a horse and rider type finial. The hair is stylised as a short bob (or tonsure) ending above the nape of the neck. The man is bearded shown in stylised manner as a series of short incised lines down his right cheek to the chin; the trumpet obscures the left side of the face. The eyes are almond shaped outlined by incised lines with the pupils made by circular impressed depressions. A lentoidal incision in the right hand side of his head may be intended to portray his ear. A similar but larger incision in the right hand side under his arm may have been intended to portray some detail of clothing. A ridge across the lower back appears represent part of the saddle. The figure was covered in a green glaze with brown mottling and was heavily weathered in places.

Zoomorphic and anthropomorphic finials are known throughout the country from Exeter (Allan 1984, 227) to Edinburgh (Haggarty and Murray 1992) though more densely concentrated in the Midlands and East Anglia (Dunning 1979) and more commonly occurring in large towns and ports. Zoomorphic finials have been previously found at Southampton (Dunning 1975, 186, fig 214, 1404; fig 215, 1425), which have been dated t o 13th – 14th century. These were made in the same or a very similar fabric and the eyes on the stag finial are treated in a very similar manner to those of horseman from the present

excavation. Horse and rider finials have been found at Winchester and parts of six were found at the 14th century manor house at Faccombe, Netherton Hampshire (Webster and Cherry 1974). The head of a horse from Bath (Dunning 1979) was dated on the basis of the decorative horse gear around the head and ears to the late 13th or early 14th century. The body of a horse from such a finial from Bedford (Dunning 1974) has been dated to the mid 15th century. A recent find of part of a horse and rider finial in a London ware pottery kiln at Woolwich (Cotter 2008) has been dated to c AD1350-1400. The horse and rider from Edinburgh is one of the latest examples having been dated to the later 16th century. This Southampton example dated to AD1280-1320 within phase 3 is one of the earlier examples of this type of finial and the second fragment though found in a late medieval context dating between AD1350-1510, is in the same fabric and very similar in character to the earlier example and is likely to be broadly of the same date.

The bottle shaped finial was complete together with the end of the crested ridge tile to which it joined, though the whole ridge tile did not survive. The finial itself (fig.21) was partly wheel thrown with the lower part hand moulded. It had a globular body narrowing to a closed top and to the base. The top has been knife-trimmed/shaved on the wheel. It was glazed on top and sides with a variegated amber-brown glaze with olive-green patches. It was associated with Saintonge polychrome jugs, green glazed and local wares of AD1250-1350. It is similar to one previously found in Southampton (Dunning 1975, fig 214, 1405) dated to AD1300 and this type also has affinities with examples from London (Pearce et al 1985, 48).

A small number of ridge tiles had evidence of an opening in the tile apex suggesting these formed the base for either a finial or a type 2 louver. Two had an openings c 120 mm long by 100-110 mm wide, one of which was found to join with the bottle finial (fig.21) and another 65 mm wide was probably also the base of a finial. Though this size of opening is too small for louvers from previous excavations in Southampton (eg Dunning 1975, 186 fig 215, 1413), one fragment from the body of a louver with sooting on the interior measured c 100 mm diameter suggesting that at least some of the larger sized openings could be the base of a louver, not only the base of a finial.

Louvers

A small quantity of louver (36 fragments) was identified the majority of which were small fragments. Dunning (1975) identified two types of louver: type 1 a separate structure and type 2 attached to a ridge tile amongst the examples previously found in Southampton. It is uncertain which type are represented and equally whether any of the ridge tiles with openings supported louvers or only finials. In addition to the two main examples there were a small number of body sherds of louvers with applied cordons between 12 and 25 mm wide running horizontally around the circumference. One additionally had a line of stabbed dots inlaid with white calcareous material between two cordons (fig.19). Applied cordons frequently subdivide sections of louvers often running just above or below the apertures and are present on the more complete louvers from this site as well as others from Southampton (Dunning 1975) and Portchester (Dunning 1977), where deep slash marks were also present.

Substantial sections of two louvers both from a late medieval pit (6856) on tenement 172. The more complete example (SF257) (fig.17) forms the top of a green glazed louver consisting of the circular cap, open at the top and four hoods, which vary in size – 130, 135, 140 and 157 mm long over the oval ventilation apertures c. 50 mm high. It measures134 mm at the top, 200 mm around the cordon widening to 290 mm across the hoods. Its surviving height is 160 mm. Two small perforations 9mm in diameter centred 25 and 34 mm from top rim, made pre-firing are set asymmetrically in the cap. There is an applied cordon 10 mm wide set 80 mm from the top rim and just above the hoods. The green glaze is thickest and most consistently applied along the cordon and over the hoods below. Most of the upper section is bare apart from a few drips. Similarly there are a number of large drips on the interior surface of the hoods with dribbles down to the rim on one side, indicating it had been set upside down to glaze the

missing lower section. Some weathering has occurred on both the unglazed and glazed sections. The lower part of the louver is missing and the other pieces from this context appear to form a separate louver of similar type.

The fragments of the second louver (fig.18) come from the base of the object which measures c.340 mm around the cordon below vents and has a height >190 mm. The lower edge is hand moulded with a rounded thickened rim, which joins with the edge of a lower aperture of semicircular form. There is evidence that more than one of these was present and they extended to just below an applied cordon, which encircled the louver at a height of 150 mm from the base edge. The cordon measured 20-24 mm wide and runs c. 25-30 mm below the oval hooded vents c. 80-90 mm long of which the base of two survive. Neither of these vents joins with any on SF257, suggesting these are two separate louvers. It is coated with the same bottle green glaze as SF257 and is most consistently applied along the cordon and up to the hooded vents. It is more variable below the cordon with some thin patchy areas. The surface is also weathered in places.

These louvers are from a late medieval phase (AD1350-1510) context associated with material dated to 1450-1520. However this type is more usually dated to AD1250-1350 and the amount of weathering on the surfaces indicates they had been in use for some time before falling into disuse. Both louvers are similar in size and form but not identical in design to one previously found in excavations on the High Street (Dunning 1975, 186, fig 216, 1419), which has been dated c AD1300. This louver in common with the ones from the current assemblage have sub-rectangular apertures, which are only known from Easton, Essex (Dunning 1966), also dated c AD1300 and London Trig Lane (Pearce *et al*), the latter being dated to c AD 1430. Circular or triangular apertures are generally more common as found in louvers from Winchester (Dunning 1964) and Laverstock (Musty and E 1969, 142-3). This type from Southampton is smaller than average and less elaborate in design suggesting it may be a locally developed product. No louvers had evidence of the distinctive slash marks found on the hoods of louvers from Winchester (Dunning 1964), suggesting these products were too fragile to be traded any distance and accounting for the considerable variation found in designs of louvers.

Chimney Pot

A pair of complete chimney pots (figs.22, 23) were found in pit 7418 assigned to the high medieval phase (AD1250-1350) on tenement 241. Both were near complete and made in the same fabric Med3 (or possibly E), which is closely equivalent of STCW. SF 288 measured 260 mm high by 200 mm diameter at the base narrowing to 180 mm at the top, whilst SF287 measured 264 mm high by c 210 mm diameter at the base narrowing to 173 x 182 mm at the top. The walls measured 13-20 mm thick. They are both coil built, with distinct corrugations visible running round the circumference in the interior. On both the base is flared and accentuated by a single deep finger groove encircling it on SF287 and two grooves on SF288. The top on both is encircled by a flange 10-15 mm thick projecting 8-10 mm and the top is partly covered with a sub-oval vent 60x68 mm and 63x70 mm respectively. Sooting or burning turning the surface dark grey occurs on the top of the chimney pots but not on the interior. The exterior surface is decorated by vertical lines of skewer perforations, which are circular/sub-oval c. 7 mm - 9 mm diam tapering to a point, where they do not fully pierce the wall or with the ends blocked by the surplus clay pushed out as bulbous lumps on the interior surface. SF287 had six lines of 4 perforations each centred at intervals of 50-75 mm. SF288 had seven lines comprising 4 or 5 perforations set at intervals of 25-60 mm.

Two small fragments both in fabric E are thought to be parts of chimneys. One (4365) is pierced by a small perforation 5 mm diameter similar to those on the SF 287 and SF288. The piece from (8251) had a thickened out-turned rounded rim. However the patchy olive green glaze on this piece may indicate that it is the base of a free-standing louver of beehive form rather than a chimney. If so it may be quite an early

form as this fabric appears to relate to Anglo-Norman manufacture and has gone out of production by the High Medieval phase.

These chimneys are very similar to one previously found in Southampton (Dunning 1975, 186, fig 212, 1385) from an early 13th century context. All are typical in fabric, form, size and stab marks of the Sussex type (Dunning 1961) well represented at Chichester and Lewes. Examples have been found at Portchester (Dunning 1977) and Wickham Common. Kilns at Orchard street Chichester are known to have been producing chimneys during the 13th century and at Binstead, Sussex maximum production occurred during the 14th century.

Flooring (figs.24-27)

Floor tiles were common and occur in a range of types, which divide into plain unglazed, plain glazed in a number of colours, encaustic, quarry tile and brick paviours. Fabric B was most commonly used followed by Med1 and Med1a. A few examples each in most of the other fabrics in use during the medieval and post-medieval periods were also present. A range of sizes was clearly represented by the variation on thickness, though only a small number had a complete width/length surviving.

Plain glazed and unglazed floor tiles were found in all phases and in a range of sizes and finishes, measuring between 17 and 48 mm in thickness. Sizes of tiles found are shown in Table 9. There appeared to be no significant difference between plain glazed and unglazed tiles and these are not distinguished in the table. Two tiles measuring 250 and 257 mm wide may be Roman pedales reused in a floor surface or levelling layer (3106) and some other fragments, including one in the Late Saxon phase, could not be readily distinguished as certainly Roman or post-Roman.

Table 9: Size groups of plain glazed and unglazed medieval-postmedieval floor tile

Thickness	**Width**	**Length**
1in (23-27 mm)	4 in (102 mm)	
	4 ½ in (112-117 mm)	4 ½ in (112-118 mm)
	>5 ½ ins (>135 mm)	
1 ¼ ins (28-32 mm)	4 ½ in (112-116 mm)	4 ½ in (112-116 mm)
	5 in (125-130 mm)	
	5 ½ in (140 mm)	
	over 6 in (>150 mm)	
1 ½ ins (35-40 mm)	> 8 ins (>200 mm)	
	9 – 9 ½ ins (230-240 mm)	9 - 9 ¾ ins (230-246 mm)
2 ins (47-48 mm)	> 8 ins (>200 mm)	

Table 10: Dimensions of plain glazed and unglazed floor tiles; number of tile examples quantified by phase

Thickness	2: AN	Width/ Length	3:HMed	Width/ Length	4: LMed	Width/ Length	5: PMed	Width/ Length	6: Mod	Width/ Length	Total
20 mm	1		1								2
21 mm	0		0								0
22 mm	1	>80 mm W	2								3
23 mm	1		2								3
24 mm	0		3	112W	1		0		1	117x118 mm W	5
25 mm	1		2		5	102 mm W	3	116 mm W	1	112 mm W	12
26 mm	0		4	>115W; >135W	1		2		1	>100 mm W	8
27 mm	0		6		1		1		2		10
28 mm	0		8	>112W	6	114x117 mm W	1		0		15

Thickness	2: AN	Width/ Length	3:HMed	Width/ Length	4: LMed	Width/ Length	5: PMed	Width/ Length	6: Mod	Width/ Length	Total
29 mm	0		4	130W; >160 W.	3	>130 mm W	2		0		9
30 mm	4	>74 mm W	12	124W; >135W	6	>150 mm W	10	>126 mm W	1	>148 mmW	33
31 mm	0		1	116 x116 mm	1		1		0		3
32 mm	1		5		8	>166 mm W	12	140 mm W	1	116 mm sq	27
33 mm	1		2	>140W	3		4	>133 mm W	1	>147 mm W	11
34 mm	1		3		3		5	>140 mm W	0		12
35 mm			4		6	230 mm W; >150 mm W	3	230 mm sq; 240 mm sq	2		15
36 mm			1		2	233x236 mm W	2		1		6
37 mm			1		5	233x240 mm W; 242mmW	1		1		8
38 mm			0		1		0		1		2
39 mm			1	>200W	0		0				1
40 mm			3		2	227x246 mm	0				5
41 mm			1		1		0				2
42 mm							1	>135 mm W			1
43 mm							1				1
44 mm											0
45 mm											0
46 mm											0
47 mm			1	>178W							1
48 mm									1		1

The earliest type were a small number of fragmentary plain floor tiles, sometimes with evidence of a dark brown, green or greenish brown glaze, made in fabric E, which is probably produced during the Anglo-Norman phase, though possibly continuing in use into later phases. These measure between 20 and 33 mm thick and one example was 124 mm wide. They have smooth flat surfaces, with rounded corners and arrises. These were found in Anglo-Norman pit fills on tenements 170, 174 and 237 and subsequently in pits of high medieval and post-medieval phase on tenements 168, 174, 175, 178, 237 and 239.

Plain unglazed floor tiles in fabrics B and Med1a also appear in the Anglo-Norman phase measuring 27-34 mm thick. In the high and late medieval phases the range of fabrics and tile sizes in use increase. During the high and late medieval phases the most common variety of tiles had plain glazed surfaces either an opaque yellow (amber over a white slip) or dark shades including green, greenish brown, brown and yellowish brown glaze directly on the tile surface. These are thought to have been used in combination to form a chequer board pattern on floors. Surfaces are generally smooth and even, though a few have the imprint from other tiles stacked on edge during the drying or firing process. One of the largest type had been diagonally scored pre-firing, but had not been snapped prior to use. The tiles may have both perpendicular or bevelled edges undercut by 1-5 mm. One of the largest type had two opposite edges bevelled and the other two vertical. All had plain flat undersides.

Several size groups are represented and in general tile thickness increases with the overall size of the tile. Few tiles had both width/length dimensions surviving, but where they do, were square or roughly so. The sizes can be grouped most logically in imperial measurements as shown in table 11. The smaller examples (4-5 ½ ins by 1-1 ¼ ins thick) were predominant in the high medieval phase though it is clear larger examples (over 6 ins – 8 ins) existed at this time including one of the thickest (2 in). The smaller types

continued in use in the late medieval phase, whilst the largest size (9 ins) becomes more frequent. Examples of all the size groups were found in the post-medieval and modern deposits but it has not been possible to establish whether all were residual medieval tiles or whether some were produced in the post-medieval period. Similar types have been previously found in Southampton (Platt and Coleman-Smith 1975, 199-200, fig. 219) dated to the 13th -16th centuries.

Four examples of encaustic decorated tiles of 13th-14th century date were found in pit fills assigned to high and late medieval phases on tenements 167, 179, 180 and 237. These tiles were decorated in a bi-chrome pattern formed by white clay inset in a stamped design and covered by a lead glaze resulting in a yellow colour over the pattern and brown over the background area of the tile. One complete heavily worn example (ctx 7635) (fig.24) measured 115 mm sq (4 ½ ins) by 19 mm thick and had a pattern of a central fleur-de-lys and quarter circles enclosing rosettes in the corners, which is very similar to a Penn type floor tile found in London at Old Swan Lane, Upper Thames Street and dated to 1326-1375 (URL: http://www.museumoflondon.org.uk/ceramics/pages/object.asp?obj_id=37831) and one from Oxford (http://tileweb.ashmolean.museum/parker-hore/enlargements/o070.html). A partial tile (ctx 5155) (fig.25), measuring 23 mm thick by 105 mm (4 ins) wide was heavily worn with only the pipe clay inlay surviving. It probably formed part of a four-tile pattern having a dotted quarter circle enclosing a small quatrefoil but the pattern outside of the dotted circle is unclear. Similar designs have been found in Oxfordshire at Rewley Abbey http://tileweb.ashmolean.museum/parker-hore/enlargements/o169.html and Eynsham Abbey http://tileweb.ashmolean.museum/parker-hore/enlargements/o115.html. A small fragment (ctx 5305) (fig.00.26) measuring 23 mm thick may preserve part of a fleur-de-lys design. A larger tile (ctx 9028) (fig.00.27) measuring 25 mm thick by over 95 mm wide was decorated with a fleur-de-lys set diagonally across the tile. This was the only encaustic tile with a conchoidal scoop cut in the base for the keying: if this was symmetrically placed it would indicate the tile width was c 180 mm (7 ins) in total. This type of large diagonal fleur-de-lys design is commonly found on floor tiles and similar, though not identical, examples occur at Southampton High Street (Platt and Coleman-Smith 1975, 197-8, no. 1437) dated to the 13th century, at Winchester (Cunliffe 1964, 158-9), in Winchester cathedral and at Exeter (Allen and Keen 1084 fig. 140, nos 49, 52).

Quarry tile was found in post-medieval and early modern contexts. These had both vertical and chamfered edges and ranged in thickness from 39 to 50 mm. The maximum width was over 200 mm, and another appeared to have been cut down to form a long thin tile measuring 228 mm long by 75-80 mm wide.

Brick paviours were found in post-medieval and early modern contexts. The earlier example made in fabric A1 measured 39 mm thick by 82 mm wide and over 135 mm long. The later example, probably of 18th-19th century date, was made in fabric A2 and measured 48-50 mm thick by over 93 mm wide by over 130 mm long.

Kiln Floor and Hearth tiles: A small number of tiles have been identified as hearth or kiln tiles. Several of the plain unglazed floor tiles had been burnt grey on the surface and so possibly were used as a hearth surface. One group of tiles was found forming the surface (3348) of hearth 3335 and aided the identification of a small number of other tiles with similar characteristics as hearth tiles. Some of these were clearly trapezoidal tapered in form with corners greater than 90 o. Corners and edges were often rounded though some edges had been knife trimmed flat or bevelled. These tiles measured 20-22 mm, 28-33 mm, 40-41 mm and 46 mm thick. Of the thinnest tiles one measured 130 –142 mm wide and another 147 mm wide. One of medium thickness measured 115 - >132 mm wide. The thickest tiles measured 117 and 167 mm wide. All lengths were incomplete ranging from a minimum of c 100 mm up to 185 mm.

No hearths constructed of flat roof tiles set on edge were found in the excavation, though a number of burnt roof tiles were found discarded in pits. Some with sooting on the underside could merely be the

effect of smoke filtering through the roof, but a few with burning along the edges suggesting hearths of such construction had existed. Others had distinct burning noted on the upper or lower surfaces, but it is uncertain whether this resulted from use in a hearth or as a result of house fires.

A significant number of malting kiln floor tiles or bricks were found in high and late medieval pit fills on tenements 166, 170, 173, 174, 175, 178 and 237. The few fragments found in post-medieval or modern deposits are certainly residual medieval examples comparable with the earlier examples. A few pieces made in fabric E may indicate this type of tile started to be made in the Anglo-Norman period. The greatest quantity occurs in the late medieval phase suggesting malting activity was most intensive in this period.

These distinctive rectangular or trapezoidal tiles are characterised by rows of perforations piercing their surface. They ranged in thickness from 20 to 37 mm though most are less than 30 mm. None were complete, but the best preserved measured 150 mm wide tapering to less 120 mm by over 185 mm long. No other tile had a complete length or width but surviving sizes range>73 x >114 mm to >145mm x >165 mm. The upper surface is usually even and smooth and the lower more undulating and irregular. Edges may be flat, vertical or bevelled, and sometimes cut. Some tiles thicken to the edge.

The perforations pierced the lower surface and occasionally protrude through the upper surface or leave a small protruding bulge of surplus clay. The perforations were made with different implements, nearly all at an oblique angle to a lesser or greater extent. The skewer stabbed perforations were made with a tapering pointed implement to form narrow conical perforations creating circular or oval holes measuring 5 – 12 mm diameter narrowing to1-3 mm diameter, often forming an elongated oval at the surface from 7 to 16 mm long. Square or rectangular perforations measuring 5 x 6-7 mm tapering to a point of 1-3 mm were made with a nail. A few with more wedge shaped perforations may have been made with a knife blade, but it was noted on both skewer and nail stabbed that a trilobate form occurred at the surface where the implement had been pulled out more vertically than the initial oblique piercing. The perforations were spaced at intervals of 10-35 mm on average, though occasionally closer or more distant up to 75 mm apart. They appeared to be laid out broadly in rough parallel rows, often at a diagonal to one of the edges.

Similar bricks have been found previously in Southampton (Platt and Coleman-Smith 1975, 201-2, fig 220) where they have been described as hearth tiles and most are dated to the late 13th - early 14th centuries. One in a fabric very similar to fabric E with thin vertical skewer marks was dated to the second half of the 12th century. This type of tile is not very well represented in medieval tile assemblages though tiles from the Valiant Sold kiln in Exeter (Allan and Keen 1984, fig. 142 nos 83, 84) have vertical circular and triangular skewer stab marks, though it is unclear whether these are floor or kiln tiles. Some examples of skewer and knife stabbed kiln tiles come from phases 7 (14th-15th century) and 8 (16th century) at Carisbrooke Castle (Cleal 2000, 165-7). This type of perforated tile has commonly been associated with corn drying or malting ovens in the post-medieval period such as at Standish Hall corn mill dating from the 16th century and later (URL: http://www.wiganarchsoc.co.uk/content/Projects/standish_hall_corn_mill.htm#Tiles). The character of the stab marks indicates that the intention was to allow the bricks to warm through and provide a heated surface on which the grain could be placed. The absence of burning or sooting supports the use of gentle heat and such a function.

Brick

A range of medieval and post-medieval bricks in a variety of sizes was found. They are made predominantly in fabrics A, A1, A2 and F, with a small quantity in fabrics B D and Med1b. The dimensions of the bricks are quantified according to fabric and phase in tables 11-15. A small number of overfired fragments could not be assigned to a fabric, though most appeared similar to fabric A and have

been included in the table of fabric A. The majority of bricks found appear to be medieval in character including a high proportion found in post-medieval and modern contexts.

Those made in fabric A were found in deposits of all phases from Anglo-Norman onwards and range in thickness from 32 to 64 mm, in width from 95 to 130 mm and in length from 160 to 240 mm. The unusually short brick found in modern deposits, but probably of late medieval or early postmedieval date, measuring 50 x 100 x 160 mm was overfired and distorted and may be a special kiln brick. Fabric A1 bricks measured 44-64 mm thick, 95-126 mm wide and one complete length was 225 mm. Fabric A2 bricks measured 38 – 67 mm thick, 101-120 mm wide and one complete length of 240 mm survived. Fabrics A1 and A2 were found in all phases from high medieval to modern.

Bricks made in fabric F measured from 38 to 66 mm thick, 98-130 mm wide and two complete lengths of 228 and 240 mm survived. They were found in all phases from Anglo-Norman to modern.

The medieval brick from both high and late medieval phases was similar in character regardless of fabric. These were crudely made with rough undulating surfaces, frequent irregularities, including finger grooves and depressions and on the bases impressions of pebbles. Vegetal impressions, usually cereal straw or grass was present, most commonly on the base surface, though it was relatively infrequent and where present not very dense. Curiously a larger number of vegetal impressions were noted on medieval brick found residually in the postmedieval phase. The bases more often retain the imprint of a rough gritty ground surface. There was some creasing of the sides and corners and arrises were usually rounded. A number of bricks were overfired, bloated or vitrified with a thick ash glaze and were more common in the late medieval period possibly reflecting a larger number of ovens or kilns in use at this stage.

By the postmedieval phase the bricks were neater and more regularly finished with more even surfaces, creasing of the sides and more angular arrises and corners, though some irregularities and occasional vegetal impressions still occurred. Diagonal skintling marks were noted on one brick of this phase and some had a shallow depressed margin along the edge. Several overfired and vitrified examples were present.

The early modern brick was distinctly neater with smooth regular flat surfaces, sharp angular arrises and corners and some creasing of the sides. No frogged bricks were present. Several bricks has skintling or pressure marks on the sides, the majority diagonal to the edges, but one straight example parallel to the edges. On one it was clear that the bricks stacked above and below were differently aligned. In some cases the marks were defined by an ash glaze on the adjacent exposed areas of the brick indicating that these particular examples represent stacking in the kiln preparatory to firing. These may represent changes in kiln technology introduced during the 19th century.

Table 11: Dimensions in metric (imperial in brackets) of Medieval and Post medieval bricks by phase made in fabric A (including A/F) and overfired fabrics (in bold) (Th = thickness; W = width; L= length. AN = Anglo-Norman; HM = high medieval; LM = late medieval; PM = postmedieval; Mod = modern)

Th mm	**Th (ins)**	**AN**	**HM**	**LM**	**PM**	**Mod**	**W: HM**	**W: LM**	**W: PM**	**W: Mod**	**L: HM**	**L: LM**	**L: PM**	**L: Mod**
32	1" ¼)		1				111 (4" 3/8)							
36	1" 7/16		1											
40	1" 5/16		2	1			95 (3" ¾)				>220 (>8" ¾)			
40-45	1" 5/16 -1" ¾			1										
43	1" 11/16			1	1									
44	1" ¾			1										
45	1" ¾			2	1			95 (3" ¾)						

Th mm	Th (ins)	AN	HM	LM	PM	Mod	W: HM	W: LM	W: PM	W: Mod	L: HM	L: LM	L: PM	L: Mod
47	1" 7/8				1									
47-51	1"7/8 -2"		1											
48	1" 7/8			1	3			126 (5")	110 (4" 5/16)					
49	1" 15/16				1				115					
49-50	2"				1				100 (4")				205-210 (8" 1/16 – 8" ¼)	
50	2"		3	5	4	2 & **1**	95 (3" ¾); 100 (4"); 115 (4" ½)	80 (3" 1/8); 100 (4")	100 (4"); 105 (4" 1/8); 115 (4" ½); 120 (4" ¾)	100 (4");				
50	2"			1				107 mm (4" ¼)				233 mm (9" ¼)		
50-53	2"- 2"1/8		1	1	2		>120 (>4" ¾)	105 (4" 1/8)	109 (3" 7/8)					
51														
52	2" 1/16		1		1				110 (4" 5/16)					
53	2" 1/16			1	1	1		120 (>4" ¾)	115 (4" ½)					
53-58	2" 1/8 – 2" ¼				1	1			110 (4" 5/16)	108 (4" ¼)				
54	2" 1/8		2	1	1	1	106 (4" 3/16)			103 (4")				
55	2" 3/16	1	1	1	4									
55	2" 3/16					**1**				**100 (4")**				**160 (6" ¼)**
56	2" ¼		1				125 (4" 15/16))							
57	2" ¼			1	1	2			103					
58	2" ¼		1		2		125 (4" 15/16))							
58-62	2" ¼ - 2" 7/16				1				130					
59	2" 3/8				1				117 (4" 5/8)				240 (9" ½)	
60	2" 3/8			1	**2**	1			104 (4" 1/8); **105 (4" 1/8)**					
61	2" 3/8				1									
50-62	2"- 2" 7/16				1				126 ( )					
64	2" ½					1				107 (4" ¼)				
~	~									110 (4" 5/16)				

Table 12: Dimensions in metric (imperial in brackets) of Medieval and Post medieval bricks by phase made in fabric A1

(Th = thickness; W = width; L= length. AN = Anglo-Norman; HM = high medieval; LM = late medieval; PM = postmedieval; Mod = modern)

Th mm	Th (ins)	HM	LM	PM	Mod	W: HM	W: PM	W: Mod	L: PM	L: Mod
44	1" ¾			1						
45	1" ¾	1				95 (3" ¾)				
45-50	1" ¾ - 2"		2			95 (3" ¾)-100 (4");				
46	1" ¾		1	1						
47	1"7/8	1								
45-54	1" ¾ - 2" 1/8			1						
49-51	2"			1			114 (4" 1/8)			
50	2"	1								
50-54	2"- 2"1/8			1			110 (4" 5/16)		225 (8" 7/8)	

51	2”			1			103 (4” 1/16)			
52	2” 1/16			1	2			111 (4” 3/8); 125 (4” 15/16))		
53	2" 1/16			1						
55	2” 3/16	3				126 (5”)				
56	2” ¼			1						
57	2” ¼	1				115 (4” ½)				
60	2" 3/8	1								
64	2” ½				1			107 (4” ¼)		>175

Table 13: Dimensions in metric (imperial in brackets) of Medieval and Post medieval bricks by phase made in fabric A2

(Th = thickness; W = width; L= length. AN = Anglo-Norman; HM = high medieval; LM = late medieval; PM = postmedieval; Mod = modern)

Th mm	Th (ins)	HM	LM	PM	Mod	W: HM	W: PM	W: Mod	L: PM
38	1” ½	1							
42	1” 5/8				1				
45	1” ¾	1							
44-48	1” ¾ - 1" 7/8			1			120 (4” 5/8)		
48	1" 7/8			1					
48-50	1" 7/8 - 2”	1				120 (4” ¾)			
50	2”	1		1			105 (4” 1/8)		
55	2” 3/16		1	1					
57	2” ¼			1					
58	2” ¼				1				
59	2" 3/8			1					
60	2" 3/8	1	1	1	2	108 (4” ½)		106 (4” 3/16)	
61	2" 3/8			1	1				
62	2" 7/16				4			101 (3” 7/8); 109 (4” ¼); 110 (4” 5/16)	
63	2” ½				5			109 (4” ¼) x2; 110 (4” 5/16)	
65	2” 9/16			1			111 (4” 3/8)		
67	2” 5/8			1			113 (4” 7/16)		240 (9” ½)
~								110 (4” 5/16)	

Table 14: Dimensions in metric (imperial in brackets) of Medieval and Post medieval bricks by phase made in fabric B, D (in bold) and Med1b (in bold italic)

(Th = thickness; W = width; L= length. AN = Anglo-Norman; HM = high medieval; LM = late medieval; PM = postmedieval; Mod = modern)

Th mm	Th (ins)	AN	HM	LM	PM	Mod	W: PM
27	1” 1/16)					1	
40	1” 9/16		***1***				
41	1” 5/8	1					
43	1” 11/16		1				
45-55	1” ¾ - 2” 3/16				**1**		
47	1”7/8				**1**		
50	2”		1		1		110 (4” 5/16)
50-52	2”- 2”1/16			1			
57	2” ¼				1		110 (4” 5/16)
58	2” ¼		1				
65	2” 9/16				1		125 (4” 15/16)

Table 15: Dimensions in metric (imperial in brackets) of Medieval and Post medieval bricks by phase made in fabric F

(Th = thickness; W = width; L= length. AN = Anglo-Norman; HM = high medieval; LM = late medieval; PM = postmedieval; Mod = modern)

Th mm	Th (ins)	AN	HM	LM	PM	Mod	W: AN	W: HM	W: PM	W: Mod	L: HM	L: PM	L: Mod
38-47	1" ½ - 1" 7/8		1										
39	1" ½		1										
42				1									
44	1" ¾			1									
45	1" ¾			1		1							
47	1"7/8			1	1								
47-52	1" 7/8 - 2" 1/16				1				106 (4" 3/16)				
50	2"	1	5	1	3	2	120 (4" ¾)	98 (3" 7/8); 105 (4" 1/8)					
50	2"				1				110 (4" 5/16) – 114 (4" ½)			240 (9" ½)	
50-55	2"- 2" 3/16		1		1			130 (5" 1/8)	106-112 (4" 1/8 - 4" 3/8)			228 (9")	
50-57	2"- 2" ¼				1				110 (4" 5/16)				
52	2" 1/16		1		2	2			99 (3" 7/8); 118 (4" 5/8)	110 (4" 5/16)			
53	2" 1/16					1				105 (4" 1/8)			>165
55	2" 3/16		1		1	3		120 (4" ¾)		105 (4" 1/8) x2			
57	2" ¼				1	1				104 (4" 1/8)			
58	2" ¼				3				115 (4" ½) x2				
59	2" 3/8					1							
60	2" 3/8		1		1	2		130 (5" 1/8)		102 (4"); 112 (4" 3/8)	>174		
61	2" 3/8					1							
62	2" 7/16				1	1			119 (4" ¾)				
63	2" ½					1				103 (4")			
64	2" ½					1							
65	2" 9/16					1							
66	2" 5/8		1										
68	2" 11/16				1				114 (4" 1/8)				

Drain/Sewer Pipes

These were found in the early modern phase only in pits, service trenches or make-up layers. The earliest type possibly of 18th century date made in fabric D, unglazed, was found on tenements 171, 172, 179 and 180. There appeared to be several different sizes present with external diameters of 200, 260, 280 and 320 mm. One complete example from drain 240 measured 335 mm long and had an external diameter of 298 mm narrowing to 260 mm with a recessed end of 238 mm diameter to slot into the next pipe. This type was replaced by glazed stoneware pipes during the19th century. These were glazed in various shades of cream, orange and brown and sizes were mostly in the range of 130-185 mm diameter, but a small number measured 200-210 mm and 400-410 mm diameter.

Markings

Deliberate or accidental markings are uncommon on medieval and Post-Medieval tile, though manufacturing stamps appear in the 19th century. The only deliberate markings observed was a possible tally mark, which occurred on the flat edge surface and the arris of a probable flat roof tile. There are three vertical short incised lines across the arris and two vertical across the tile edge, cut by one diagonal across the tile edge.

Imprints are mainly fingertip depressions from handling. Animal imprints are rare: part of a dog paw print occurred on a flanged roof tile of Anglo-Norman date and a paw print possibly of fox on a late medieval

brick. Vegetal impressions, mainly straw or hay, occur commonly on the earlier Medieval brick and peg tile. The most interesting is a textile mark from potter's arm on inner surface of a chimney pot (SF287) of 13th century date. The cloth appears to be quite a fine weave of c 19 threads in c 20 mm width.

Discussion

The Late Saxon Period AD900-1066

The ceramic building material assemblage consisted of Roman brick and flat tile indicative of material brought in for reuse and suggesting that the benefits of ceramic building material was being recognised, though there is no evidence for local production. The Roman tile occurred in greatest concentration on those plots which in subsequent periods produced the more impressive and larger collections in particular tenements 170 and 172 and to a lesser extent 237 and 241, suggesting that the status of the buildings and properties was established in this early phase and maintained in the post-conquest period. That does not imply that all the tenements had been established at this stage and the evidence may be viewed better as three main foci centred on tenements 237, 241 and 170-173, which represent the core buildings of more extensive properties, which were subsequently subdivided but with these three maintaining their dominant status and wealth in later phases.

The Anglo-Norman Period AD 1066-1250

The largest quantity of ceramic building material comes from tenement 237, with a substantial proportion from 170, 173 and 241 and smaller groups of material on tenements 172 and 174. Much of the tile is made in fabric E and comprised flanged and curved roof tile and plain glazed floor tile in dark brown or green. The main concentrations of these are on tenement 237 and tenements 170-174. However some smaller concentrations are found on tenements 175, 177, 180 and 240 in later phases suggesting that the roofs on theses properties remained in use for longer and were only replaced when necessary, where as the properties at 237 and 170-174 may have been reroofed more as a means of displaying wealth, than of necessity. The curved and flanged roof tiles are typical of the 12th century and their production appears to be confined to the Anglo-Norman period. They are made exclusively in fabric E and it is therefore assumed that the floor tile in this fabric was also confined in its production to this period. Circular discs chipped from these tiles suggest that they were already falling into disuse during this period and this can only have accelerated in the succeeding high medieval phase, when larger quantities of this distinctive Anglo-Norman form are found discarded. Fabric E is similar to fabrics Med1b and Med3, which may represent the continuation of this industry in a slightly finer form into the high medieval period.

Glazed ridge tile and peg made its appearance during this phase on tenements 170, 237 and 241 and represent the introduction of these forms probably in the early 13th. On property 241 the ridge tile was possibly being used in conjunction with slate as this was the only property to produce any quantity of slate in this phase. The earliest bricks also appear in this period, once again concentrated on properties 237 and 170-173. On most other properties Roman brick was still being recycle and accounted for most of the tile found on tenement 241 in this period.

The High Medieval Period AD1250-1350

This period accounts for about a third of the ceramic building material assemblage and represent a period of considerable building activity. All tenements produced some building material though in some cases it was in small quantities or only of one type. The largest groups came from tenements 237, followed by 172, 173 and 241, with more moderate amounts from 170, 174, 175, 180, 238 and 239-240.

A high proportion of the tenements produced assemblages comprising roofing material, typically peg and crested ridge tile, floor tiles, and brick. Medieval brick becomes more common appearing on all the properties, alongside Roman brick, which decreases in quantity from this phase onwards. The floor tiles were usually of plain dark brown or green glazed type, though one bichrome tile was found on tenement 180. Such tiles are usually associated with religious establishments, but they were also used in the houses of wealthy merchants and this one may have come from Polymond Hall as tenement 180 formed part of the grounds of that building. The more unusual items of roof furniture – louvers, finials and chimneys were found on tenements 172, 175, 237 and 241 suggesting the buildings on these plots were of more elaborate construction. It is probable that the wealthier owners used such items not only to make their homes more comfortable but as imposing displays of their status and wealth. The small quantity of decorated floor tile of 13th-14th century date suggests they were used on a very limited scale possibly only in one main reception room and perhaps in conjunction with the plain tiles.

Hearth and kiln floor tiles were found for the first time on tenements 166, 173, 175 and 237, though ovens and a bread oven were found only on tenement 237. The hearth tiles found on 237 formed part of an in situ hearth. The specialised kiln floor tiles were normally used in malting ovens and indicates some households were undertaking their own malting and presumably production of ale. Support is given to this from the carbonised plant remains as samples from property 237 contained a significant quantity of detached sprouts (Specialist Download E4 -Germinated grain and detached sprouts).

The Late Medieval Period AD1350-1510

In this phase there is continued evidence of development on tenements 237 and 170-174, but a slight shift in emphasis on some of the other tenements with an increase in material from 167, 178-180 and 242. On other tenements in this phase tile is sparse or absent suggesting few structural changes or repairs were being undertaken.

The pattern and range of material is similar to the preceding phase with roofing, bricks, floor tiles and kiln bricks in evidence. Fragments of louver were found on tenements 172 and 242. By this phase Flemish type floor tiles in light yellow and dark green or brown to create a checkerboard pattern were becoming increasingly common. A fragment of bichrome decorated tile was found on tenement 167, another on tenement 179 and one from 237. The latter is unsurprising in view of the previous evidence of wealth lavished on Polymond Hall, but prior to this period of refurbishment on the other two properties there had been little evidence to suggest this type of flooring would have been in use.

The Post-medieval Period AD1510-1750

Bricks became increasingly common in this phase suggesting rebuilding or perhaps more probably refacing of the buildings in brick. Plain peg tiles are the most common roofing materials represented, but pantiles start to appear towards the end of the period, all on properties along the High Street frontage. All the floor tiles are yellow or dark green/brown Flemish type floor tiles, which now include the larger variety. A brick paviour also appears late in the phase.

The Early Modern Period AD1750-1900

The greatest changes in this phase took place on properties 170, 172 and 173. Substantial quantities of brick on these properties are indicative of major structural change. The medieval roofing is replaced by peg tile and pantile and the glazed medieval floor tiles by quarry tiles and brick paviours, though other materials such as timber were possibly more prevalent though not present in the archaeological record. Internal fixtures are represented by glazed wall tiles with Delft ware introduced at the start of this phase

and other decorative styles appearing later in the 19th century. The earliest evidence for provision of services came in the form of sewer and drainpipes.

Conclusions

The building materials exhibit continual developments and changes from the late Saxon through to the early modern period, documenting the changes in construction techniques and materials which reflect the status and aspirations of the owners or tenants. In the earliest phases the re-use of Roman brick reflects the very limited use of ceramic material in what were predominantly timber framed, wattle and daub and thatched buildings. The first changes came in respect of roofing and flooring with the introduction of curved and flanged tiles copying Roman forms and floor tile in the Anglo-Norman period to be replaced with the highly decorative roofing and flooring of the high medieval period. These reflect improvements that were desirable both for comfort and safety as well as displays of wealth. The increasing use of roof tile or slate was encouraged by the authorities to prevent the spread of fires, whilst variety of glazed and crested ridge tiles and highly decorative roof furniture must have provide ample opportunity to impress and display ones wealth and status. The introduction of new roofing materials in the form of pantiles continues the pattern of change in the post-medieval period.

In the high medieval phase the quantities and types of material reflect a period of rapid development with much evidence for rebuilding and refurbishment of properties and many opportunities for displays of wealth and status. Polymond Hall stood on tenement 237 and was a substantial and wealthy property, which is reflected in the quality and range of the building materials and the apparently constant improvements reflected in the evidence for constructional changes, repairs and refurbishment to which it was subject. Similarly on tenement 173 a stone building is recorded and the ceramic building material supports this as being a prestigious property. By contrast there is little documentary evidence for the buildings on tenements 241 and 172 but the quantity and quality of building material is comparable and indicates that these buildings were in the same class. In between there appear to have been buildings constructed on a more modest scale, but where possible taking advantage of the latest materials and fashions in building materials.

However building activity did vary in intensity and the late medieval period appears to have been a time when fewer changes were made. Perhaps after the flurry of activity in the high medieval period many buildings were in good order and only minor repairs and alterations were required on most properties. The post-medieval saw renewed change with major building work utilising brick either in rebuilding or refacing structures, the internal subdivision of medieval halls or the introduction of brickwork for fireplaces and chimneys. Newly introduced pantiles gradually became common along the high street frontage, whilst decorative wall tiles hint at internal changes, possibly reflecting changes in fireplace design.

As a port Southampton must have been constantly subject to a barrage of new ideas and goods and the building material reflects nearly a thousand years of change and development in this area.. The ceramic building material found in the archaeological deposits almost always represents the moment of its disuse and it is not easy to establish when some forms were first introduced as with building material there may be a considerable time lag between construction and demolition or replacement. It is clear that on some properties there was little change for long periods and large proportions of items were found in much later contexts than their period of production.

There is considerable variation in the quantity of tile found on the individual tenement plots which is briefly illustrated in Table 16. This succinctly shows that three quarters of the assemblage came from just four tenements and nearly half from just one (237), the remaining tenements producing less than 5% each

of the assemblage. The distribution on each tenement is shown in more detail by phase in Table 17. The assemblages from each tenement are summarised individually by phase.

Table 16: Quantities of tile per tenement

Tenement	Number of fragments	Weight	% per tenement
237	c. 1500	181 kg	c 40%
170, 172	350-400	57-58 kg	c 12 %
173	390	48 kg	c 11%
174, 241	100-150	17-20 kg	c 4%
179, 180, 238, 240	50-100	5-10 kg	c 2%
167, 175, 176, 178, 239	<50	5-10 kg	c 1-2%
166, 168-9, 171, 177, 242-3	<50	< 5 kg	<1%

Table 17: Quantities of tile by phase and tenement

Tenement	Phase	U	1: LSAX	2: AN	3: HMED	4: LMED	5: PMED	6: EMOD	% Total	Grand Total
166	Count			8	25				0.9%	33
	Wt (g)			245	2762				0.6%	3007
167	Count		2	2	3	26	4	4	1.1%	41
	Wt (g)		174	160	370	6594	703	832	1.8%	8833
168	Count		4		13	2	13	2	0.9%	34
	Wt (g)		307		895	445	880	326	0.6%	2853
169	Count				12	1	3	3	0.5%	19
	Wt (g)				794	19	258	1987	0.6%	3058
170	Count		7	19	29	44	131	109	9.3%	339
	Wt (g)		1767	2655	2454	6003	17218	26787	11.7%	56884
171	Count			1			13	1	0.4%	15
	Wt (g)			58			1609	33	0.4%	1700
172	Count		13	19	146	44	48	62	9.1%	332
	Wt (g)		1135	1831	14710	17377	6781	16454	12.0%	58288
173	Count		9	15	212	6	95	66	11.1%	403
	Wt (g)		930	3172	14564	1318	13637	14619	9.9%	48240
174	Count			10	15	82	40	1	4.1%	148
	Wt (g)			1215	2005	7074	9584	127	4.1%	20005
175	Count		3		51				1.5%	54
	Wt (g)		609		6990				1.6%	7599
176	Count		5		7		11		0.6%	23
	Wt (g)		128		1365		4120		1.2%	5613
177	Count			29	11			8	1.3%	48
	Wt (g)			179	882			708	0.4%	1769
178	Count			5	2	53	9	2	2.0%	71
	Wt (g)			410	229	2448	1098	432	1.0%	4617
179	Count				16	65		22	2.8%	103
	Wt (g)				1004	6889		1165	1.9%	9058
180	Count		1	1	37	21	25	1	2.4%	86
	Wt (g)		113	7	3529	1837	2771	1178	1.9%	9435
237	Count	30	6	67	399	488	492	30	41.6%	1512
	Wt (g)	6152	342	8812	55899	47100	56429	6470	37.4%	181204
238	Count			2	34	1	10	3	1.4%	50
	Wt (g)			144	2032	205	6157	438	1.9%	8976
239	Count				40		4		1.2%	44

Tenement	Phase	U	1: LSAX	2: AN	3: HMED	4: LMED	5: PMED	6: EMOD	% Total	Grand Total
	Wt (g)				5714		101		1.2%	5815
240	Count			3	25	5	28	5	1.8%	66
	Wt (g)			13	4031	1007	3316	883	1.9%	9250
241	Count		2	13	83	17	1	1	3.2%	117
	Wt (g)		321	2354	13516	840	244	21	3.6%	17296
242	Count		1	2	8	30		5	1.3%	46
	Wt (g)		466	509	499	2983		518	1.0%	4975
243	Count		5	5	2			1	0.4%	13
	Wt (g)		150	537	121			581	0.35	1389
General	Count	63				1		33	2.7%	97
	Wt (g)	12988				30		3180	3.3%	16198
WB High St	Count				1				0.0%	1
	Wt (g)				245				0.1%	245
Total Sum of Nos.		93	58	201	1171	886	927	359		3695
Total Sum of Wt (g)		19140	6442	22301	134610	102169	124906	76739		486307

Tenement 166

This tenement produced 34 fragments (3 kg) from Anglo-Norman and High Medieval contexts. From the earlier period the material was mainly small miscellaneous fragments including Roman tile. Diagnostic material included a plain flat roof tile and glazed crested ridge tile of type 5. Most of the material from the later phase came from pit 7619 and included a mix of bricks, plain dark green glazed floor tile and roofing, both peg tile and green glazed crested ridge tile also of type 5, and kiln floor with diagonal skewer stab holes.

Tenement 167

This tenement produced 39 fragments (8658 g) distributed through all periods. From the Late Saxon and Anglo-Norman phases came some small pieces of Roman brick and tile, together with a single piece of brick that appears to be Medieval rather than Roman from the Anglo-Norman phase. A small quantity of flat unglazed roof tile and one piece of glazed crested ridge tile of type 7 were found in the High Medieval deposits.

The largest quantity of material came from the late Medieval phase, which included brick and ridge tile, but was dominated by floor and peg tile. The peg tile was all quite crude with circular, square and diamond peg holes. The character of the peg tile suggests it was probably made and used during the earlier phases. Some similar peg tile occurred residually in the post-medieval phase also. The floor tile included one decorated bichrome tile with quarter circles in each corner with a central fleur-de-lys, but the remainder were plain glazed Flemish style, mostly with an amber glaze over a white slip, with one dark green. Several different sizes were present and the largest 246 mm wide had been scored diagonally but never snapped to create triangular tiles. The decorated tile is unexpected on this property as there is little evidence from the other building material to suggest any great expenditure was lavished on the property.

Post-medieval material included pantile and brick.

Tenement 168

The only tile round in the Late Saxon phase was Roman, of which a few pieces occurred in later phases also. The majority of tile came from High Medieval phases and was predominantly crested greenish brown glazed ridge tile, with one identified as type 1 crest. Some fragments of floor tile and brick were also present. A plain unglazed floor tile in fabric E and curved/flanged roof tile in the same fabric are probably residual from the Anglo-Norman phase. Half of a 'Tudor' type brick was the only material from the Late medieval phase. All the tile from the post-medieval and early modern phases appears to be Medieval in date, mainly roofing including peg tiles and crested glazed ridge tile of type 12 with thumb pressed spurs.

Much of the material found on this tenement were incorporated in floor surfaces or make-up layers.

Tenement 169

The greater part of the tile from this tenement was deposited during the High Medieval phase in a number of pits. It consisted almost entirely of roofing including fairly crude peg tile in fabric A2 and glazed crested ridge tile of type of type 5 and 8.

From the post-medieval and early modern phases came pieces of brick, paviour and peg tile, which were broadly contemporary with the periods in which they were deposited.

Tenement 170

This tenement was one of the more prolific producing large quantities of tile (337 fragments weighing nearly 57 kg) distributed through all phases, though with the greatest abundance in the post-mediaeval and early modern phases.

In the Late Saxon phase Roman tile dominated and included tegula, flue tile and brick and no doubt indicates the deliberate recycling of this material. A fragment of brown glazed curved roof tile may be intrusive Anglo-Norman and as too a glazed flat tile, probably ridge of 13th-14th century date.

In the Anglo-Norman phase fragments of flanged and curved roof tile and floor tile all in fabric E represent the earliest use of tile. Further fragments were found in High and Late Medieval deposits and their presence suggests an early building was using these materials in its construction. Significant quantities of Roman tile suggest this was still being deliberately re-used in this period or that earlier structures utilising it were being demolished or refurbished. Peg tile and glazed crested ridge tile of type 1 and 1a, represent refurbishment of the roof or construction of additional wings or structures roofed with newer tile forms.

The High Medieval phase was dominated by glazed crested ridge tile, which occurred in a range of fabrics, glaze colours (light and dark green, greenish or olive brown) and crest types 6, 7 and 8. One appears to have the base of an integral louver surviving in the ridge. A few brick fragments, including Roman, also occurred.

In the Late medieval phase there is a change of emphasis with a quantity of brick appearing, generally rather rough and crude. Some plain floor tiles with a thick dark brown glaze also occur. There also appears to be changes in the roofing with flat unglazed tile, probably peg tile fragments, and glazed amber, brown and olive green ridge tile, though without evidence for crests surviving.

In the post-medieval phase there is a notable increase in the quantity of brick recovered, with sizes slightly larger overall to the earlier examples. The flat roof tile includes definite examples of peg tile and most appears to be the fairly well made, neatly finished roof tile, c 15 mm thick that first appears

generally during the High Medieval period. Glazed ridge tile similar to that found in the preceding periods occurred with some exhibiting evidence of crests, one of type 5 or 6.

In the Early Modern phase of all the tenements this one produced the largest quantity of ceramic building material. A large proportion was formed by brick of varying sizes ranging in date from medieval to 18th-19th century. Several had diagonal skintling marks. One had the end fired grey possibly for use in diaperwork but several others were burnt or fired grey on other faces and they may have been used in an oven or kiln or fireplace. Several floor tiles were found including a quarry tile and two yellow glazed Flemish type, one scored diagonally. One piece of perforated kiln floor probably of medieval date also occurred. Roofing included peg tile, most of post-medieval date but including some older medieval material as well as fragments of glazed ridge tile with type 2 and 7 crests and a possible fragment of louver. There was also a quantity of pantile, which represents some of the last roofing material used in this tenement. Several pieces of brown glazed sewer pipe were also found and date between 18th and 20th centuries.

Tenement 171

Apart from a single fragment of tile of uncertain date in the Anglo-Norman phase, all material on this tenement was found in post-medieval and later phase contexts. Quantities are small and include a mix of odd fragments of medieval ridge tile and yellow plain glazed floor, Tudor brick and post-medieval brick, flat roof tile, pantile and possible chimney pot.

Tenement 172

This tenement was amongst those producing substantial amounts of ceramic building material (332 fragments weighing over 58 kg) dispersed through all phases. Changes appear to have been effected in all phases and the buildings on this tenement were constantly refurbished, altered or added to both inside and out.

A significant quantity of Roman brick, flue and plain tile was found in the late Saxon phase with smaller amounts in the Anglo-Norman high medieval and postmedieval phases. From the Anglo-Norman phase contemporary products comprised a fragment of brick, some floor tile and a hearth tile. Quantities of tile increased considerably in the high medieval phase and the presence of flanged and curved roof tile suggest this type of roofing had been in use during the preceding period, but was replaced by new forms in this period.

During the high medieval phase greater quantities of crested ridge tile and peg tile were found indicating that this replaced the earlier Anglo-Norman roofing. The proportion of peg tile to ridge tile is low suggesting that the ridge was used in conjunction with slate roofing, some of which was found on the tenement though not in great density. The ridge tile included crests of type 1, 1b and 8. Two fragments of possible louver hood were also identified. Plain floor tile glazed dark brown and greenish brown as well as unglazed was in use. A number of medieval bricks indicate these were now replacing Roman brick in construction.

No brick was found in late medieval deposits, possibly indicating a cessation in major construction work, though interior improvements are reflected in the appearance of new larger floor tiles with yellow glazed (amber over a white slip) in addition to dark brown glazed, probably laid in a chequerboard pattern. Greenish brown glazed ridge tile with a type 11 small pyramidal crest occurred in small quantity together with a large part of two louvers, which would have come into use during the preceding period. Their removal may indicate that chimneys were constructed in the late medieval phase.

Alterations and improvements to buildings continued in the post-medieval with a small quantity of brick indicating some structural changes and the medieval glazed floor tile probably being replaced. The major change was perhaps to the roof as significant quantities of medieval flat and peg tile were found together with crested ridge tile both unglazed and green glazed with crest types 1 and 5. A single piece of unabraded pantile may indicate that the medieval roofing was replaced with the newly introduced pantiles during this phase.

Further changes took place in the early modern phase with the provision of drains and service trenches. The deposition in these and pits of a few post-medieval bricks and glazed floor tiles may represent disturbance of discarded building materials in earlier levels. Flat roof tile and peg tile of late medieval or early postmedieval date indicates further repairs to the roof and an increase in pantile suggests this was in more general use by now. Two wall tiles indicate internal changes to the fabric of the buildings. One was a Delft tile of c 1750-1775 date and the second in a geometric design probably later 19th or early 20th century. Both could have been used in surrounds for new fireplaces.

Tenement 173

This tenement produced similar quantities of tile (403 fragments, 48 kg) to the adjacent plot (tenement 172) possibly suggesting the two were closely associated. Tenement 238 to the rear was also associated at some stage during the medieval period when it formed part of the garden for this tenement. Material was deposited throughout all phases from the late Saxon to the early modern, with the largest amount found in the high medieval phase.

A substantial quantity of Roman brick and flue tile was recovered from Late Saxon, Anglo-Norman and high medieval deposits suggesting this was very deliberately obtained for re-use in the structures on this tenement. Anglo-Norman curved and flanged roof tile was found discarded in Anglo-Norman and high medieval pits. A tiny fragment in a Late Saxon pit is most probably intrusive. A circular disc 64 mm in diameter had been made from one of these tiles. In addition during the Anglo-Norman phase medieval brick, plain unglazed floor tile and a small fragment of crest ridge tile (type 6) were found.

During the high medieval phase medieval brick was found in small quantity indicating its earliest use though Roman brick was still a more frequent occurrence. The assemblage is dominated by roofing during the high medieval phase especially crested ridge tile, which included a wide range of crest types (type 1, 1b, 5, 6, 8 and 10). Lesser quantities of peg tile suggest that at least some areas of the buildings were fully roofed with ceramic tile, but the larger quantity of ridge tile suggest it was probably combined with other materials such as slates or stone roof tile. The use of slates built into the cellar walls with which the tiles would be contemporary indicate slate was available and being used at this time on the property and is reinforced by the large quantity of loose found in the deposits of this phase. The high status of the property is emphasised by the presence of other roof furniture, which includes fragments of bottle finial and possibly louver.

Plain glazed (green, amber, brown) and unglazed floor tiles were in use during the high medieval period. The same types of glazed floor tiles, with addition of yellow and dark green, continued in use into later periods with two being found in a late medieval floor surface (1105), one very heavily worn reflecting a long period of use.

A few examples of hearth tiles and kiln floor with skewer and nail stabbed perforations were found during the high medieval phase suggesting malting may have been taking place on the premises during this phase.

During the late medieval phase apart from the floor tiles already mentioned, only a brick and fragments of ridge tile were found, possibly reflecting a period when few changes were made to the buildings and little refurbishment took place.

It would appear that major repairs or changes were made to the building during the post-medieval period. The cellar was refloored with late medieval or early post-medieval bricks and the numbers of bricks found in other contexts suggest various structural changes were made. The bricks are of varying dates, the earlier medieval or late medieval forms reflecting demolition of earlier structures whilst the post-medieval bricks no doubt reflect a succession of modernisations up to the mid 18th century, possibly refacing in brick or new additions. These changes are also seen in the roofing material with Welsh slate and pantile replacing earlier materials, though peg tile also continued in use. It is possible the slate and peg tile merely represent repairs to structures largely roofed with the earlier materials. Internal alterations are indicated by the Delft ware tile of mid 18th century date.

Brick again dominates the assemblage of the early modern phase. The presence of medieval crested ridge tile and glazed floor tiles may indicate that earlier floors and roofing remained in use till this period.

Tenement 174

Moderate quantities of tile (148 fragments, 20 kg) were found on this tenement occurring in all phases from Anglo-Norman onwards with the largest quantities of building material occurring in the late and post-medieval phase. From this earliest phase most of the material was Roman brick, but some pieces of plain brown glazed floor tile and a piece of roof tile both made in Fabric E are evidence of Anglo-Norman construction.

During the high medieval phase peg and ridge tile with a type 2 crest replaced the earlier roofing materials and plain glazed floor tiles in green and brown may have replaced or extended earlier tiled floors.

The characteristics of the building materials is similar in both the late medieval and post-medieval phases. Brick first appears in the late medieval phase, but becomes much more plentiful in the post-medieval period suggesting major structural changes may have occurred then. This is perhaps reflected in the brickwork found in the surviving walls and floors of the cellar.

Glazed and unglazed floor tiles continued in use in the late medieval phase with the addition of yellow and greenish brown colours. A fragment of hearth tile and skewer stabbed perforated kiln floor suggests a malting kiln may also have been in use. Roofing was dominated during both the late medieval and post-medieval period by flat roof and peg tiles together with ridge tile, one piece with a type 1 crest and another with a type 3a crest. The predominance of medieval roofing and flooring in these later phases may suggest much material resulted from repairs and replacement of medieval tiles when necessary, rather than major refurbishment. The post-medieval forms present are confined to brick and peg tile.

Tenement 175

A relatively small quantity of 45 fragments (6684 g) was found on this tenement. Apart from three pieces of Roman tile found in the Late Saxon phase deposits all brick and tile was found in High Medieval phase pit fills. A few fragments of flanged or curved roof tile and floor tile in fabric E hints at building activity in the Anglo-Norman period. The main medieval assemblage included a few bricks of differing sizes all made in fabric A or A2, some plain floor tiles two glazed greenish brown, and some possible hearth tiles burnt grey on top, together with fragments of perforated kiln floor tile. Roofing was dominated by crested ridge tile glazed in various shades of green and olive-brown with crests of type 1 and 5.

Tenement 176

A small quantity of tile amounting to 23 fragments (5613 g) was found on this area. Two fragments of Roman tile and three indeterminate fragments were found in the Late Saxon phase and a third piece of Roman tile in the High Medieval phase. The only material contemporary with this phase were a few pieces of crested ridge tile, whilst a scrap of roof tile in fabric E may be residual Anglo-Norman. A slightly larger quantity of material occurred in the post-medieval phase comprising bricks and peg tile probably deriving from late Medieval buildings and some pantile being the only material of post-medieval date.

Tenement 177

Only 43 fragments (1558 g) were found and included some pieces of Roman tegula and brick found in High Medieval contexts. A few fragments were found in the Anglo-Norman phase including a small piece of flanged roof tile, of which more occurred in the High Medieval deposits. Apart from some drain pipes from early modern layers, the remainder of the assemblage was found in High Medieval pit fills and consisted of small quantities of green glazed crested ridge tile, flat roof tile and brick.

Tenement 178

A total of 70 fragments (4608 g) were found spread though all phases from Anglo-Norman to early modern, though the main period deposition of brick and tile was in the late medieval phase decreasing somewhat in the post-medieval phase. Material from the Anglo-Norman phase included Roman brick and a group of three circular discs all c. 50 mm diameter chipped from flanged or curved roof tile. From the high medieval deposits came single pieces of flat roof tile and crested ridge tile with a type 9 crest modified by chipping to type 3.

The late medieval and post-medieval deposits were dominated by flat roof and peg tile, together with a few floor tiles including one glazed brown and one yellow (amber on a white slip), two perforated kiln floor tiles and broken fragments of brick.

Tenement 179

A slight increase in quantity to 102 fragments (8920 g) occurred in this tenement compared to the plots immediately to the south. The main period of deposition was the Late Medieval with small quantities in the preceding High Medieval phase and some residual medieval material in the early modern phase together with some drainpipe from modern services. The medieval assemblage was dominated by flat roof and peg tile together with some glazed crested ridge tile and brick. A few pieces of floor tile comprised parts of a dark brown glazed floor tile and a decorated Penn floor tile with inlaid dotted circle and quatrefoil. Some of the peg tile and brick appeared crude and roughly made suggesting that it had originated from a building constructed earlier in the medieval period, possibly in the 13th century with the peg tile possibly being utilised in conjunction with the glazed ridge tile. The presence of the decorated floor tile is unexpected on this property, which had produced little evidence for the use of quality building materials in its construction. The possibility is that it in fact derived from the adjacent Polymond Hall property.

Tenement 180

Comparable quantities of tile (86 fragments, 9435 g) were found to the adjacent tenement 179.

A Roman tegula was the only tile from the Late Saxon phase and indeterminate fragments from the Anglo-Norman phase. Further fragments of Roman tile occurred in the high and post-medieval periods. The main period of deposition was in the High Medieval with slight decreases in late and post-medieval. The only early modern material was drain pipe.

Material from the high and late medieval deposits was mixed with several Anglo-Norman curved and flange tiles including discs chipped from these, flat roof and crested ridge tile, brick and a bichrome decorated floor tile. In the post-medieval period there is a slight change in emphasis with the appearance of pantile, floor paviour and peg tile suggesting refurbishment of buildings. An overfired brick may come from a kiln or oven.

Tenement 237

This tenement has produced the largest collection of building material. Only a few fragments of Roman brick and tile were found in the late Saxon phase and some pieces of peg tile are thought to be intrusive. In the Anglo-Norman phase there is a considerable increase, which includes further Roman brick, though almost no contemporary brick. The main roof tile was the curved and flanged type, a clear indicator of the status of the buildings constructed on the plot. A small quantity of flat peg tile and small fragments of glazed ridge tile were also present heralding the introduction of new forms. Plain glazed floor tile made in the same fabric (E) as the curved and flanged tiles also occurred. Two circular discs chipped from tiles of this fabric also occurred.

In the High Medieval phase a further increase in the quantity and variety of tile is seen. Roman brick is still present, but it would appear that it was now being replaced by contemporary bricks which make their appearance in significant quantity. Curved and flanged tiles though still present co-exist with crude peg tiles, which come into more general use together with roof slates. The latter may have been the preferred roofing material used in conjunction with crested ridge tiles glazed in varying shades of green , brown and amber, which appear in quantity in this phase exhibiting several different crest types, including the triangular ‘coxcomb’ (type 1, 1a and 2), triangular with large perforations through the spurs (type 6), small pyramidal spurs (type 11), hand moulded (type 4) and thumb pressed (type 12). These are also likely to have been used in conjunction with roof slates, which were also found in quantity on this property during this phase.

A range of other roof furniture was also in use including chimney, louvers and finials. Two different types of finial were present in the form of a substantial part of a bottle finial integral with a ridge tile with shallow pyramidal spurs (type 11) and an anthropomorphic, horse and rider type. These reflect the continuing high status of the buildings on this tenement.

Floor tiles were common, though all are plain glazed either dark green or brown, or amber over a white slip to produce a light opaque yellow, suggesting floors were tiled to produce a chequerboard pattern. The presence of hearth and perforated kiln floor tiles indicate the presence of other structures and the possibility that grain was being malted or prepared in some way on the premises.

The same suite of materials continues into the late medieval phase, though proportions change. Roman tile and the Anglo-Norman floor and roofing in fabric E was now vestigial suggesting such materials had been replaced as buildings were refurbished or rebuilt. Peg tile continued in use but quantities suggest slate continued as the dominant roofing material combined with crested ridge tiles, which exhibit an increased number of crest patterns. Roof furniture is less common though a second fragment of horse and rider finial occurred.

Flooring is again dominated by plain glazed tile as in the preceding period. However a fragment of bichrome decorated tile with a fleur-de-lys design suggest at least one room had been tiled with this more prestigious type.

Malting kiln floor tiles increase suggesting this activity was of increasing importance in this period.

Much of the tile found in post-medieval contexts is of medieval manufacture and reflects the continued use of earlier structures. Brick of 'Tudor' type was present in quantity with some apparently used in floor surfaces or steps from the heavy wear on the surfaces and edge. As in previous periods floor tile was found in plain glazed forms in green or dark brown and yellow, but the tiles were larger and thicker than earlier types.

Hearth and kiln floor tiles continued in use and burning on some bricks suggest these were used in the construction of fireplaces or ovens.

The roofing is dominated by peg tile much of it clearly manufactured in the preceding periods from its character, though continuing in use till repairs were necessary with post-medieval tiles also present. Crested ridge tile was less common, though glazed in the same range of colours and crests were all of type 1. One of ridge crests of type 1 had an incised lines radiating from the spurs may be a late form. Several pieces were heavily weathered indicating they had been on the roofs for many years. Some fragments of louver hood were found, but no other roof furniture, which probably reflects changes in both construction and fashion. Quantities of slate roofing decreased in contrast to ceramic roof tile, which had gradually increased to the later periods, suggesting this was now the preferred roofing material.

A fragment of Delft wall tile with pastoral scene dating from the mid 18th century is one of the latest items from the tenement.

Tenement 238

The relatively low quantities (50; 9 kg) of tile may reflect the use of this plot as a garden variously for tenements 173 and 237 during the medieval period. The character of the tile on tenement 238, if not directly associated with buildings on this plot, could be linked to either of these associated tenements, as both supported buildings of quality reflecting their status. Material occurs throughout all phases, but the main periods of deposition are the high medieval and post-medieval phases.

The earliest tiles are a few fragments of Anglo-Norman flanged and curved roof tile occurring in the Anglo-Norman phase and residually in high and post-medieval deposits. Fragments of Roman brick, tegula and flue tile were found in the high medieval phase, though glazed ridge tile dominated the assemblage from this period together with lesser amounts of flat unglazed roof tile. A medieval brick and floor tile possibly used in a hearth also occurred in this phase. A single fragment of yellow glazed floor tile was found in the late medieval deposits, though a further floor tile glazed dark green was found in a post-medieval demolition rubble layer (3556) which accounted for all material from this phase. This additionally included fragments of medieval brick, crested ridge tile of types 9 and 11. From an early modern phase service trench came part of a peg tile probably of post-medieval date.

Tenement 239

This small assemblage (44 fragments; 6 kg) was entirely made up of medieval material deposited in the high medieval phase the vast majority from a single pit (1344) with only a few pieces from a post-medieval context. This is dominated by roofing comprising peg tile and green and brown glazed ridge tile

including a type 1 crest. Several plain glazed brown and unglazed floor tiles were present, together with a small quantity of Roman and medieval brick. These deposits appear to represent a single phase of refurbishment of roof and floors during the medieval period.

Tenement 240

This property produced one of the smaller groups (66 fragments; 9 kg) of brick and tile found in all phases, though virtually all medieval in character, with the main periods of deposition in high medieval and post-medieval phases. Only a few tiny fragments of tile were found in Anglo-Norman contexts, but several curved and flanged roof tiles found in later deposits are evidence of ceramic roofing in use at this time.

The tile in the high medieval phase consisted exclusively of green and brown glazed ridge tile with a variety of crests including triangular 'coxcomb' (type 1), large perforated triangular spurs (type 6) and small thumb-pressed spurs (type 12). Although only a small quantity of slate was recovered on this property it is likely the ridge tile was used in conjunction with roof slates. One of the post-medieval layers was composed of slate (6370). Only a single piece of flat roof tile was found built into a wall (7010). A small quantity of rough hand made brick with organic impressions was also found, two of which formed part of the same wall.

A small quantity of tile comprising roofing – peg and ridge tile and dark green and yellow glazed floor tiles came from the fill of late medieval pit 6682.

During the post-medieval phase part of a brick and peg tile were reused in a floor or yard surface (7136). Glazed yellow and brown floor tiles were recovered from other layers and pit fill. It is possible one of the floor tiles was an encaustic decorated tile. The majority of the tile of this phase consisted of roofing, which comprised peg tile, ridge tile with crests of type 1 and 2 and louver. This combination suggests earlier slates had been replaced by peg tile during the preceding phase of refurbishment.

A few pieces of medieval brick, floor and roof tile also occurred in early modern layers.

Although the quantities of tile are not great, they suggest they derive from a building of some quality. There are suggestions in the historical record that this may have been a vacant plot, possibly linked with tenement 239. However the presence of high status roofing items such as the Anglo-Norman forms and louver fragments forms a stronger link with the property on the other side, tenement 241.

Tenement 241

This tenement produced a moderate quantity of ceramic building material (117 fragments, 17 kg) which occurred throughout all periods from late Saxon increasing through Anglo-Norman to the high medieval phase being the main focus of building activity and declining thereafter.

A significant quantity of Roman brick and tile was found in Saxon, Anglo-Norman and high medieval deposits. Fragments of roofing in fabric E which included flanged and curved tile, and possibly chimney or louver and ridge tile are likely to be of Anglo-Norman date. Other roofing found in high medieval deposits dominated the group and comprised substantial quantities of crested ridge tile, glazed in various shades of green, amber or brown and with crest types 1d, 8, 9 and B, flat peg tile, greenish brown glazed louver fragments and a pair of near complete chimney pots of 13th century date. A large quantity of slate was also found on this tenement suggesting the buildings utilised both slate and peg tile in conjunction with the ridge tiles.

A few pieces of brown, green and yellow glazed floor tile was found in high and late medieval pit fills. A small quantity of rough hand made bricks were found in high medieval pit fills and a single fragment of late medieval or early post-medieval brick with a heavily vitrified green surface may have been used in the construction of an oven or kiln.

The character of the assemblage suggests the medieval buildings on this plot included many features indicative of wealth and status.

Tenement 242

A low density scatter (46 fragments; 5 kg) of material from the late Saxon to early modern occurred with the main emphasis of deposition in the late medieval. A small quantity of Roman brick and flue tile was found in the late Saxon and Anglo-Norman phases. In demolition debris (8146) and a floor surface (8228) assigned to the high medieval phase was found small quantities of crested ridge tile, flat roof tile and brick. Further crested ridge tile of type 5 was found in a demolition deposit (8029) of late medieval date. The evidence suggests the building on this plot was roofed in some other material such as slate with the ridge finished with decorative ceramic crested ridge tiles. Some post-medieval brick and peg tile was recovered from two early modern pits suggesting later refurbishment of the building using these materials.

Tenement 243

A small scatter of tiles (13; less than 1.5 kg) was found on this plot during late Saxon to high medieval phases. A few pieces of Roman brick and plain tile occurred during the late Saxon, Anglo-Norman and high medieval phases with the addition of some Anglo-Norman flanged and curved roof tile in fabric E during the Anglo-Norman phase, a tiny fragment of flat roof tile during the high medieval and a partial brick from early modern deposits. One might have expected the quantities of Roman tile in the earlier phases to herald a greater use of ceramic materials in later phases, but this does not appear to have come to fruition, though the relatively small area of the tenement available for excavation may have affected the assemblage recovered.

References

Allan, J P, 1984, *Medieval and Post-Medieval finds from Exeter, 1971-1980* Exeter City Council and University of Exeter

Allan, J P, and Keen, L 1984 The Medieval Floor Tiles in Allan 1984

Betts, I M, 1985, *A scientific investigation of the brick and tile industry of York to the mid-eighteenth century* (unpublished PhD thesis, University of Bradford), 384

Brodribb, G, 1987, *Roman Brick and Tile* Alan Sutton

Cleal, R, 2000 Ceramic Building Material in Young, C J, *Excavations at Carisbrooke Castle , Isle of Wight, 1921-1996* English Heritage and Wessex Archaeology Report No **18**

Cotter, J, 2008, Medieval London-type Ware Kilns Discovered at Woolwich in MPRG Newsletter No 61 http://www.medievalpottery.org.uk/nlcurr.htm

Cotton, M A, and Gathercole, P W, *Excavations at Clausentum, Southampton, 1951-54* Ministry of Works, Archaeological Reports, No **2**, 1958

Cunliffe, B, *Winchester Excavations 1949-1960 Volume 1* City of Winchester Museums and Libraries Committee

Dunning, G C, 1961 Medieval Chimney-pots in Jope, E M, (Ed) *Studies in Building History*, 78-93

Dunning, G C, 1964 Finial and Louver in Cunliffe, B, *Winchester Excavations 1949-1960 Volume 1* City of Winchester Museums and Libraries Committee

Dunning, G C, 1966 A Pottery louver from great Easton, Essex *Medieval Archaeology* Volume **10**, 74-80

Dunning, G C, 1974 A Horse and Knight Roof Finial in Baker, D, Dunning, G C, and Eames, E S, Excavations in the area of Mill Street, Bedford, 1971, *Beds. Archaeol. J.* **9**, 99-128

Dunning, G C, 1975, 'Roofing Materials' in C. P. S. Platt and R. Coleman-Smith (eds.), *Excavations in Medieval Southampton 1953-69,* 2, The Finds (Leicester): 186-93

Dunning, G C, 1977, Louver & Chimney in Cunliffe, B W, *Excavations at Portchester Castle Volume III: Medieval, the outer bailey and its defences* Society of Antiquaries Research Report **34**

Dunning, G C, 1979 Head of a Horse and Rider Roof Finial in Cunliffe, B. (ed) *Excavations in Bath*, 1950-1975, 149-53 CRAAGS Excavation Report No. **1**

Durham, E, 2008 Brick and Tile in Cunliffe, B, W, and Poole, C, *The Danebury Environs Roman Programme A Wessex Landscape during the Roman Era Volume 2 – Part 7 Dunkirt Barn, Abbotts Ann, Hants, 2005 and 2006* EH and OUSA – Monograph No.71

Foot, R, 1994 Report on the Brick and Tile from the Brooks excavation, Winchester unpubl.

Haggarty, G and Murray, C, 1992 A highly decorated roof-finial from Edinburgh in Gaimster, D and Redknap, M (Eds) *Everyday and Exotic Pottery from Europe c. 650-1900 Studies in honour of John G. Hurst* Oxbow Books, 194-7

Jope, E M, 1951 The development of pottery ridge tiles in the Oxford region *Oxoniensia* **14**, 86-8

Lewis, J M, 1987, Roof tiles: some observations and questions (The Sixth Gerald Dunning Memorial Lecture, Belfast, 6 April 1987) in *Medieval Ceramics* **11**, 3-14

McDermott, J, 1999 Evidence of Roman Southampton's Hinterland at the New Magistrates' Court, London Road in PHFCAS **54**, 183-8

Musty, J, Algar, D J, and Ewence, P F, 1969 Medieval Pottery Kilns at Laverstock near Salisbury, Wiltshire in *Archaeologia* **102**, 83-150

Pearce, J E, Vince, A G, and Jenner, M A, 1985 *A Dated Type-Series of London Medieval Pottery Part 2 London-type Ware* London and Middlesex Achaeological Society Special paper No. **6**

C. P. S. Platt and R. Coleman-Smith (eds.), *Excavations in Medieval Southampton 1953-69,* 2, The Finds (Leicester): 186-93

Poole forthcoming The OA CBM recordng manual, online OA Library

Poole and Shaffrey in prep The Ceramic Building Material from Northgate House and the Cultural Centre, Winchester

Smith, M P, 2002 A Roman Settlement and Iron Workin Site at St Denys, Southampton (SOU 981) in *PHFCAS* **57**, 30-37

Streeten, A D F, 1985 Ceramic Building Material in J.N. Hare *Battle Abbey The Eastern Range of the Excavations of 1979-80* HBMCE Archaeological Report no. **2**

Tomalin, D J, 1987 *Roman Wight A Guide Catalogue to "The Island of Vectis, very near to Britannia"* Isle of Wight CC, Newport

Webster, L E, and Cherry, J, 19734 Medieval Britain in 1973 M*ed Arch Vol **18***, 209

CBM: Appendix 1 Fabric Descriptions

Abbreviations used: R: rounded, SR: sub-rounded, SA: subangular, A: angular. Fe: iron. AN: Anglo-Norman; Emod: early modern

Medieval - Post-medieval Fabrics

Fabric A:
Colour: red, pink, yellowish red, reddish yellow, buff, or cream, with diffuse cream laminations / streaks
Matrix: Fine laminated sandy micaceous clay; fine sandy silty clay, highly micaceous, laminated; sometimes intensely resulting in marbled texture. grainy texture.
Fine inclusions: fine quartz sand frequent - common fine-medium sand, mixed, poorly sorted: quartz (R-SR). Occasional – rare fine mica, platy <0.1mm.
Coarse inclusions: rounded red ferruginous grits and /or cream buff? calcareous clay pellets and /or unwedged clay 1-7mm
Ref Sample:
Used for: bricks, floor, hearth/kiln tile, peg tile,
Phase: present in all phases. Main period of use: High-Late Med, early Post-medieval

Fabric A1:
Colour: range of colours from pale pink/cream, reddish brown to red-maroon/cream/buff. Shades of orange are most common, but the combination of cream and maroon is also quite common. Some bricks were predominantly cream in colour. One overfired brick was purple/grey-black
Matrix: fine silty micaceous clay matrix; diffusely laminated, sometimes less micaceous, more powdery. The lamination in the clay is more distinct than A or A2
Fine inclusions: Variable density of quartz sand; high density of fine sand <0.2 mm; low - moderate density of medium quartz sand 0.2-0.5 mm (R-SR). The quartz sand grains at the coarser end of the spectrum (0.3-0.5 mm) tend to be sparser and scattered. Dark red Fe oxide grains/clay 0.5-0.6mm R-SR
Coarse inclusions: high density of red clay pellets up to 3 mm [R], cream buff [R] silty micaceous clay pellets 0.5-8mm; rare shell --> 25 mm
Phase: present in all phases AN-EMOD. Main period of use: High-Late Med continuing into post-medieval.
used for bricks (medieval), floor, paviour, roof & peg tile
Ref Sample: (3681)

Fabric A2:

Colour: red, yellowish red, light orange, cream, brown. Sometimes with a distinct buff brown or light grey core.
Matrix: laminated micaceous clay
Fine inclusions: generally moderate density of medium quartz sand 0.2-0.5mm
Coarse inclusions: large maroon red ferruginous clay pellets [R] and buff cream pellets [R] and unwedged clay fragments [A], predominantly 0.5-8 mm. The red grits appear commoner, but possibly because they stand out more from the matrix than the buff. Some of the red grits are composed partly or wholly of red ferruginous sandstone.

In the post-medieval version the fabric matrix is better prepared and mixed with smaller clay pellets and less red ferruginous grits visible, and in some cases a higher density of coarser sand grains c. 0.3-0.5 mm.

Phase: present in all phases. Probably intrusive in late Saxon, but introduced in Anglo-Norman. Main period of use: High-Late Med, post-medieval

used predominantly for peg tile (especially very coarse crudely made tile) and brick, also pantile, floor, paviour and hearth tile. Where the form is not apparent this was sometimes difficult to separate from the Roman fabric Winc: E1
Ref Sample: (3681)

Fabric B:

Colour: Red, reddish brown, yellowish red, maroon red
Matrix: hard, very uniform even texture; fine sandy-silty micaceous clay
Fine inclusions: frequent – high density of fine quartz sand, more variable quantities of medium-coarse sand, though generally moderate to dense. The quartz sand is poorly sorted 0.1-0.8 mm. Rare coarse mica plates c.0.3 mm.
Coarse inclusions: Common dark red Fe oxide grit [R] 0.5-3 mm or red ferruginous clay pellets up to 6 mm. Occasional-rare white flint grit (A-SA) 0.5-6 mm in some brick and floor tile.
In some examples of perforated malting floor there was a higher density of sand and a greater proportion of coarse quartz sand merging to Med 1 fabrics.
The general impression of this fabric is that it is using the same clay source as fabric A, but is generally better prepared.
Used mainly for floor tiles, kiln tiles, bricks and to a lesser extent roofing, mainly peg tile.
Phase: present in all phases. Main period of use: High-Late Med, early Post-medieval
Ref Sample: 3681

Fabric C

Colour: red, orange brown; sometimes with buff; grey core
Matrix: Fine sandy silty micaceous clay matrix, generally very uniform and smooth texture.
Fine inclusions: moderate density of medium quartz sand [SR-SA] mostly 0.1-0.5 mm but occasionally up to 2 mm and more rarely 3 mm.
Used for roofing: peg and pantile.
Phase: present in all phases. Main period of use: High-Late Med, early Post-medieval
Ref Sample: 1387

Fabric D

Colour: Red, orange, reddish yellow, light-mid brown
Matrix: Hard very fine sandy micaceous clay fabric; fractured surface fine grainy. Well mixed and prepared.
Fine inclusions: Sand content moderate-high density of fine and medium sized sand up to 0.3mm. Scattered coarse quartz sand 0.6-0.7 mm. Most sand is angular-subangular, with little rounded sand. Occasional / rare white rounded calcareous/chalk grits.
Essentially in hand specimen without additional magnification, no individual grains are visible and it presents a very uniform paste.
Can be very similar to Med 2 or Med 4.

Used for predominantly for roofing especially peg tile and pantile; also drain pipes, and infrequently for brick and floor.
Phase: present in all phases. Main period of use: Late Medieval and Post-medieval
Ref Sample: 3681

Fabric E

Colour: Dark red, reddish brown, often with pale or mid grey core.
Matrix: occasional fine mica flecks in clay
Fine inclusions: high density of coarse sand: quartz (R-SR) c. 0.5-2mm,
Coarse inclusions: white calcite [A] 0.5-3 mm; flint (A-SA-SR) (0.5-4 mm).
Distinctive white speckled appearance from flint.

Used for Anglo Norman flanged and curved roof tiles (and circular discs cut from curved and flanged roofing), floor tiles and hearth/kiln tiles; also a small number of ridge tiles.
Phase: present in all phases, but noticeably decreasing after the High medieval phase, suggesting it is all residual in later phases. Main period of use: Anglo-Norman – High Med.
Ref Sample: 350 and 1374

Fabric F

Colour: red, orange, maroon,
Matrix: fine sandy micaceous clay, diffuse banding / lamination not normally visible.
Fine inclusions: High density of fine-medium quartz sand, poorly sorted, occasional mica, some medium-coarse quartz sand.
Coarse inclusions: distinguished by scattered – low density of small red Fe oxide grit / Fe rich clay grains 0.5-5 mm, but most c. 2 mm or less and diffuse coarse micaceous clay pellets. Some examples contain grits, small gravel or pebbles of chert or flint.

Phase: present in all phases from Anglo-Norman to Early modern. Main period of use: High-Late Med, Post-medieval
Used almost exclusively for brick, also one floor tile and peg tile.
Ref Sample: 3681

Fabric G

Four samples were grouped under this category but none were the same, having only the characteristic of coarse grits in common. Ctx 6368 may be a very coarse version of Med 1a or Med 3 with quartz grits up to 3 mm. Ctx 6844 is a red laminated clay matrix with cream streaks containing frequent coarse quartzite grits [R] 1-7 mm; it may be a variety of Fabric A1 with the addition of coarse grits or Med 1c.

Ctx 5008 is distinct from all other fabrics. It contains very coarse grit, gravel and shell in very high density as well as frequent angular quartz sand, verging towards E, but much coarser and distinguished by the coarse grits.

Colour: orange, reddish yellow, reddish brown
Matrix: well mixed uniform fine clay
Fine inclusions: frequent coarse quartz sand [A-R] 0.5-2 mm
Coarse inclusions: very coarse angular - sub-ang flint/chert grits 3-12 mm
Ref Sample: 5008
These gritty fabrics have been used for floor or kiln tile, apart form one roof tile.
Phase: period of use: Late Med - early Post-medieval (14^{th} – 16^{th} C)

Fabric Med 1

Colour: Light - mid reddish yellow, orange; pale - mid grey core. May be light grey throughout.
Matrix: fine clay matrix

Fine inclusions: moderate to very high density of quartz sand 0.2-0.8 mm SA-SR Quartz sand usually clear or rose. There were some noted as finer containing a greater proportion of sand at the finer end of the scale and few or no coarse sand grains.
Coarse inclusions: None
Some variability was noted within this group, accounting for its equivalence to six categories in the Southampton type series. However it was not felt that further subdivision other than those below was practicable, nor likely to be useful.
Ref Sample:

Fabric Med 1a

Colour: Light - mid reddish yellow, orange; pale, light or mid grey core. May be light grey throughout. In floor or kiln tile it is usually red or orange throughout.
Matrix: fine well prepared clay.
Fine inclusions: very high density of well sorted medium-coarse quartz sand usually clear, some rose, c. 0.4-0.6 mm, well rounded.
Coarse inclusions: none
Used for roofing, especially crested ridge, also peg and louvres; floor, hearth and kiln tile.
Phase: present in Anglo-Norman – early modern phase contexts. Main period of use: High-Late Medieval, and early Post-medieval, but small number in Anglo-Norman must indicate commencement of manufacture. Manufacture in this fabric probably ceased early in the Post-medieval period if not before.
Ref Sample: 350, 354

Fabric Med 1b

Characteristics essentially same as Med1, but contains a scatter of coarse inclusions: stone grits (flint or chert usually) 2-8mm
Used for roofing: peg and ridge tile; floor and kiln tiles; and unusually one brick.
Phase: present in all phases. Main period of use: High-Late Med, early Post-medieval
Ref Sample:

Fabric Med 1c

This is essentially the same as Med 1 or 1a in its broad characteristics combined with fabric A2.
Colour: same as Med 1, but grey is less common and the red – orange range predominates.
Matrix: fine smooth laminated clay matrix. Some times the matrix is more like Med2 with a moderate density of fine sand.
Fine inclusions: as for Med1/Med1a - high density of med quartz sand.
Coarse inclusions: micaceous buff clay pellets and/or red Fe oxide grains/clay pellets [R] 1-6 mm
Used for floor, kiln and hearth tile; and roofing: peg and ridge tile
Phase: Occurs in all phases, though probably intrusive in Late Saxon and possibly also in Anglo-Norman, though this may herald the start of production. The main period of production and use was High – Late Medieval.
Ref Sample:

Fabric Med 2

Colour: Reddish brown, red, orange; rarely with pale grey core.
Matrix: Uniform fine sandy clay matrix, containing some fine mica and frequent fine quartz <0.1 mm.

Fine inclusions: Frequent fine – medium quartz sand 0.1-0.3 mm (SR-SA); consistent low density of scattered coarser quartz sand grains (mostly white and clear) [R-SR] 0.5-0.8 mm. Some white angular grains ?calcite.
Coarse inclusions: very rare orange-red clay pellets (possibly grog) [R] and Fe grit [R]c.1-1.5 mm.
Used for roofing: ridge, peg tile and louver; floor and kiln tile.
Phase present in AN-EMOD phases. Main period of production and use is High-Late Med (probably 13-15th C), declining in early Post-medieval.
Ref Sample:

Fabric Med 3

Colour: red, orange; sometimes with mid-dark grey core
Matrix: fine uniform clay.
Fine inclusions: high density of medium - coarse quartz sand, common white quartz (SA-R) 0.5-1.5mm and equal amounts of clear or pink (Fe stained) quartz [R-SR]; coarse quartz sand forms a small percentage of the fabric.
Coarse inclusions: Rare red ferruginous sandstone grits and flint/chert grits c. 3 mm. White platy angular shell grits up to 5 mm distinguishes this fabric. This has some similarities to fabric E, but compared side by side this is definitely finer with most sand in the medium size range <0.5 mm. There are examples closer t o Fabric E with more coarse grains, but in general the density of flint grit found in E is lacking and frequently is barely present.
Used for roofing: ridge, peg tile, chimney pots; floor tile.
Phase: present in AN- Post-medieval phases. Period of production and use: High-Late Medieval; has effectively disappeared by the post-medieval phase.
Ref Sample:

Fabric Med 4

Colour: red-orange, reddish brown, orange brown; light, mid or dark grey core sometimes present.
Matrix: slightly micaceous clay matrix: consistent presence of fine mica.
Fine inclusions: high density of fine quartz sand [R-SR] <1 mm plus rare scattered coarse quartz grains [R-SR] 0.5-1.5 mm Red-orange ferruginous clay pellets 0.5-1 mm (possibly grog).
A variant of this fabric containing common chalk sand and grit up to 7 mm was used for two partial glazed floor tiles (?joining).
Used for roofing: peg, ridge tile and louver.
Phase: present from Anglo-Norman to early modern phases. Main period of production and use: High-late Medieval (mainly 13th – 14th C), and continuing in use into the early Post-medieval.
Ref Sample:

Early Modern Fabrics

Fabric Mod1

Colour: cream
Matrix: fine uniform hard clay. Fine grainy fracture.
Fine inclusions: low – moderate density of clear quartz sand [R] well sorted c. 0.2 mm and occasional red sandy clay pellets [R] c. 1 mm.
In the more modern wall tile inclusions were absent apart from a few Fe silt grains visible at high magnification (x40).
Used for wall tile.
Ref Sample (5010), (448)

Fabric Mod1a

Colour: cream
Matrix: as for Mod1 with silt size quartz. Hard; rough fracture.
Fine inclusions: Low density scatter of red and black iron grains [R] 0.1-1 mm.
Used for drain/sewer pipe.
Ref Sample (5199)

Fabric Mod1b

Colour: cream, light yellowish red, light brown.
Matrix: as for Mod1 possibly with very diffuse cream silty clay pellets (hard to distinguish from matrix).
Inclusions: Common black-maroon irregular iron grains 0.2-3mm, but most 0.5-0.8 mm.
Used for drain/sewer pipe.
Ref Sample (5200)

Fabric Mod2

Colour: light brown
Matrix: Fine clay matrix, hard with slightly vitrified hackly fracture surface.
Fine inclusions: Moderate density of sand [SA-SR] 0.2-0.5 mm comprising quartz, black grains (Fe) and white calcareous grains ?chalk.
Used for drain/sewer pipe.
Ref Sample (6463) (6029)

Roman Fabrics

Fabric Winc: A
calcareous or shelly
Used for brick.
Ref. sample: (65)

Fabric Winc: B

Colour: red
Matrix: slightly micaceous clay. hard; matrix may be finely laminated.
Fine inclusions: moderate-low density of fine sand <0.2 mm, mostly <0.1 mm
Coarse inclusions: medium and coarse red/maroon grains of ferruginous grits: some are red clay pellets [R, rarely A] 1-4 mm, but many are grits of burnt ferruginous sandstone 0.1-1 mm.
Used for brick.
Ref Sample:

Fabric Winc: C

Colour: orange, red, dark red
Matrix: smooth fracture
Fine inclusions: quartz sand [R-SR] 0.2-0.5 mm well sorted in variable density from sparse to frequent, though generally of moderate density.
Coarse inclusions: rare red or black iron grits 0.5-4 mm
Used for brick, *tegula mammata*, flue, *tegula*.

Ref Sample:

Fabric Winc: C – Wincm: 39

Colour: mottled red - maroon
Matrix: fine grainy texture
Fine inclusions: high density of poorly sorted sand [SA-SR] 0.1-0.5
Coarse inclusions: frequent cream calcareous pellets [R] 0.5-2.5 mm. Occasional red ferruginous clay pellets [R] < 4 mm.
Used for flue.
Ref Sample: (135)

Fabric Winc: C gritty

Colour: dark reddish brown
Matrix: fine grainy texture to clay matrix.
Fine inclusions: high density of poorly sorted quartz sand (rose and clear) [SA-R] 0.1-0.5 mm
Coarse inclusions: low-moderate scatter of coarse flint/chert grits [A & R] 2-8 mm.
The basic fabric is the same as C but with additional coarse grits incorporated.
Used for plain tile.
Ref Sample: (7290)

Fabric Winc: D or D mica

Colour: orange, red, reddish brown
Matrix: fine silty micaceous clay with very fine grainy fracture. Generally hard and fairly dense.
Fine inclusions: mica is mainly silt size with a few larger grains up to 0.2 mm. Rare scattered quartz sand [SA-SR] 0.1-0.4 mm, though sometimes quantities approach common – frequent. Also red ferruginous inclusions of same size.
Used for brick.
Ref Sample:

Fabric Winc: E1

Colour: various shades of red, reddish yellow, yellowish red; with cream or pale brown streaks.
Matrix: laminated sandy clay matrix.
Coarse inclusions: Frequent coarse cream angular unwedged clay pellets and rounded clay pellets up to 15 mm size.
Used for brick, flue, *tegula*.
Ref Sample:

Fabric Winc: E2

Colour: orange, red; sometimes with pale or light grey core.
Matrix: fine grainy or sometimes hackly fracture.
Fine inclusions: moderate-high density of poorly sorted quartz sand, fine and medium though mainly 0.2-0.3 mm, [SA-SR]
Coarse inclusions: variable in density from occasional to frequent - cream calcareous clay pellets and red maroon ferruginous clay grits, usually rounded, but some sub-angular up to 6 mm.
Used for brick, wall tile, flue, voussoir, *tegula*.

Ref Sample:

Fabric Winc: E3

Colour: orange, red; sometimes with faint or diffuse thin grey core.
Matrix: commonly hard and dense with a smooth fracture. Finely laminated clay with fine cream streaks and lenses.
Fine inclusions: scattered fine - medium quartz sand [R-SR] 0.1-0.2 mm mostly.
Used for brick, *tegula mammata*, flue, *tegula*.
Ref Sample: (8113) (8149)

Fabric Winc: G

Colour: reddish brown surface and margins; grey core.
Matrix: fine silty clay, slightly laminated with faint calcareous cream streaks; smooth fractured surface.
Fine inclusions: low density of medium quartz sand 2-4 mm [R-SR] and more common irregular reddish maroon ferruginous grits; occasional unwedged clay pellets.
Coarse inclusions: low density of rounded calcareous or chalk grit inclusions 0.5-3 mm
Used for plain tile.
Ref Sample:

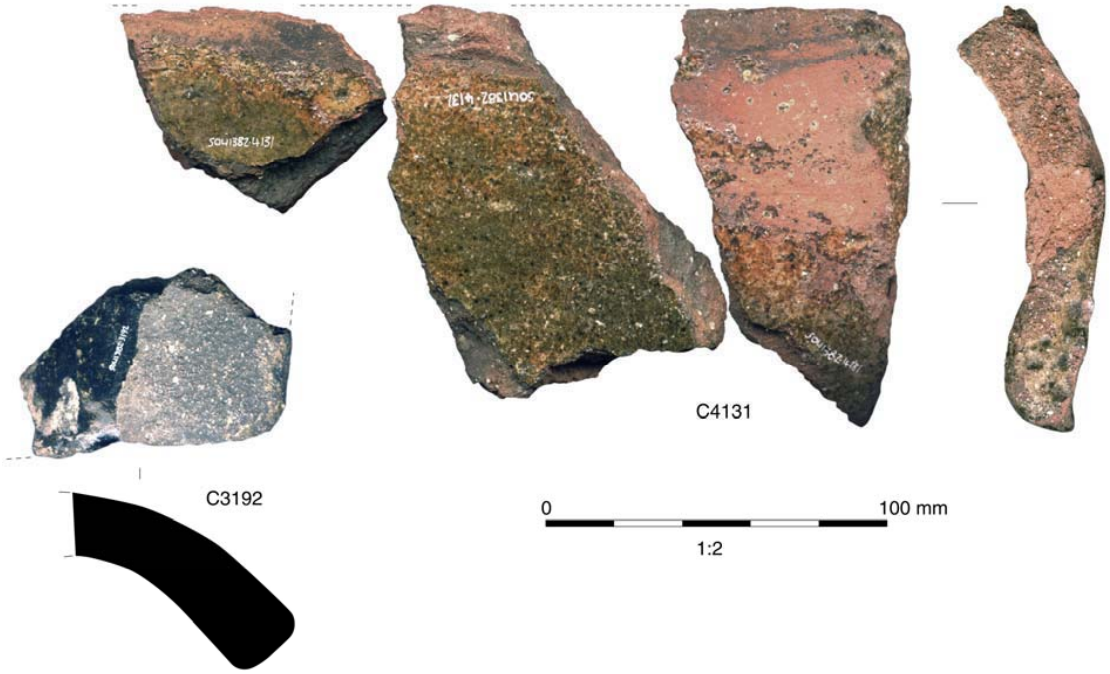
Correlation of SOFQ fabrics with Southampton type series

Southampton Series No	SOFQ Fabric	Phase	Comments
1	**A**	M/PM	
2	**Med 2**	M	
3	**Winc: C**	RB	? same as Wincm: 39
4	**Med 1b / 1c**	M	
5	**Med 4?**	M	
6	**No equivalent**	M	If present included with Med 2 or 4 though possibly none present
7	**Mod 1b**	EMOD	
8	**Med 1 – Med 1a**	M	
9	**F and Winc: E1**	M/PM & RB	The two pieces under this number looked very different to me – should one have had a different number?
10	**D**	M-PM	
11	**Med 1a**	M	
12	**~**		
13	**Med 2**	M	
14	**Med 1**	M	
15	**E**	M	though 15 is not as coarse as most E
16	**Med 1a**	M	
17	**E**	M	
18	**B**	M	
19	**B or Winc: E2**	?RB	Soton type sample looked RB to me
20	**A2**	M	
21			Not seen
22	**Winc: D**	RB	
23	**Med 1**	M	equiv to Soton whiteware pot fab 1044
24	**Med 1**	M	
25	**?C**	?	or could be RB fab
26			Not seen
27	**Med 1**	M	
28	**A2**	M	
29	**A2**	M	
30	**Winc: E3**	RB	
31	**B**	M	
32	**D**	M-PM	
33			
34	**A / A1**	M	
35	**C or B?**	M	
36			
37	**Med 1a /1c**	M	
38	**Med 1**	M	
39			
40			

Southampton Series No	SOFQ Fabric	Phase	Comments
41	**Med 3?**		
42			
43	**Med 1a**		
44			

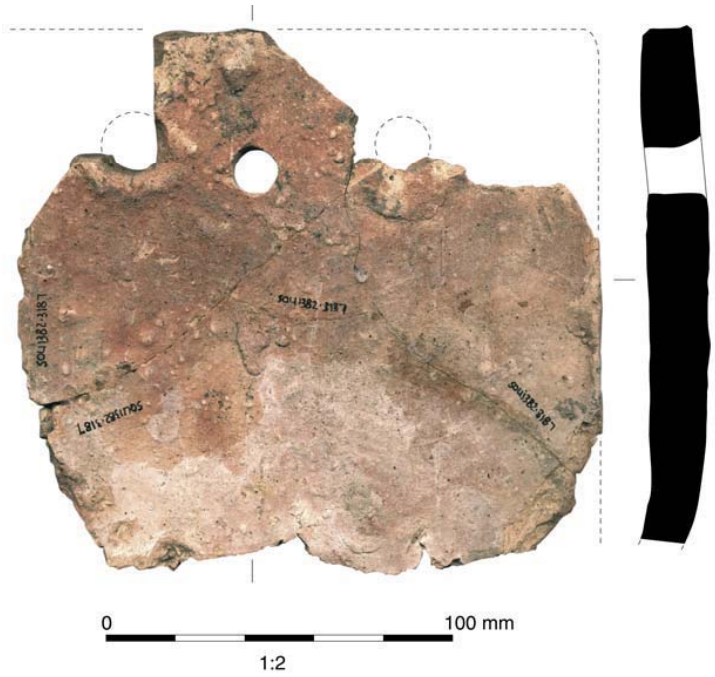
SOFQ Fabric	Southampton Series No	SOFQ Phase	Comments
A	**1, 34**	M - PM	
A1	**34**	M - PM	
A2	**20, 28, 29**	M - PM	
B	**19, 31, ?35**	M - PM	
C	**25, ?35**	M - PM	
D	**10**	M - PM	
E	**15, 12?**	AN	
F	**9**	M - PM	
G	**~**	M	The small number in G probably represents several fabrics
Med 1	**8, 14, 23, 24, 27, 38**	M	
Med 1a	**16, 11, 37, 43**	M	
Med 1b	**4,**	M	
Med 1c	**?4, ?37**	M	
Med 2	**2, 13,**	M	
Med 3	**?41**	M	41 is not a direct equivalent, though similar
Med 4	**?5,**	M	
Mod 1a	**~**	early modern	
Mod 1b	**7**	early modern	
Mod 2	**~**	early modern	

1. Anglo-Norman flanged roof tile ('tegula' type) Tenement (4128) Fabric E; width (estimated): c 270 mm; length >125 mm; 20 mm thick. Nail hole 11-12 mm diameter.

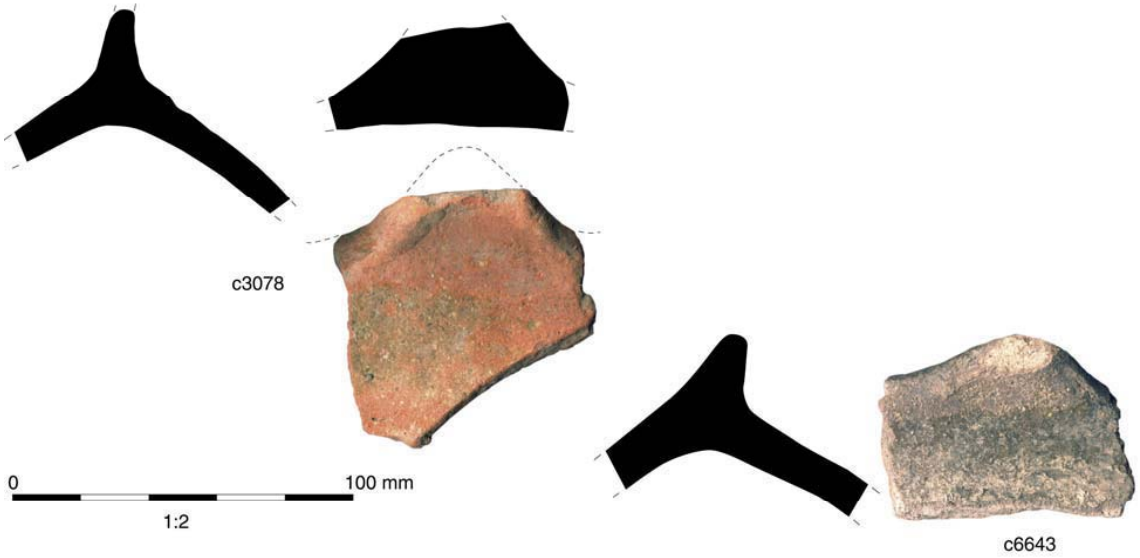


2a. Anglo-Norman curved roof tile ('imbrex' type) Tenement (4131) Fabric E; width: c 140 mm; height c 120 mm; 23-24 mm thick.

2b. Anglo-Norman curved roof tile ('imbrex' type) Tenement 237 (3192) Fabric E; width: c 140 mm; height 62 m

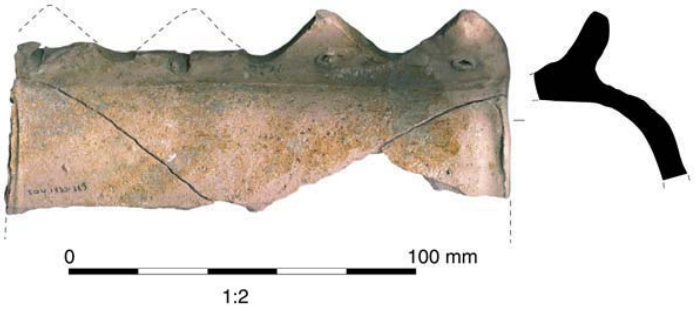


3. Peg tile probably of earlier medieval date Tenement 237 (3187) Fabric; width: 172 mm; length >155 mm; 15 mm thick. Peg holes: LH conical 21-10 mm diameter; central cylindrical 13x14 mm diameter. RH cylindrical 15 mm diameter; all centred 38-40 mm from top edge.

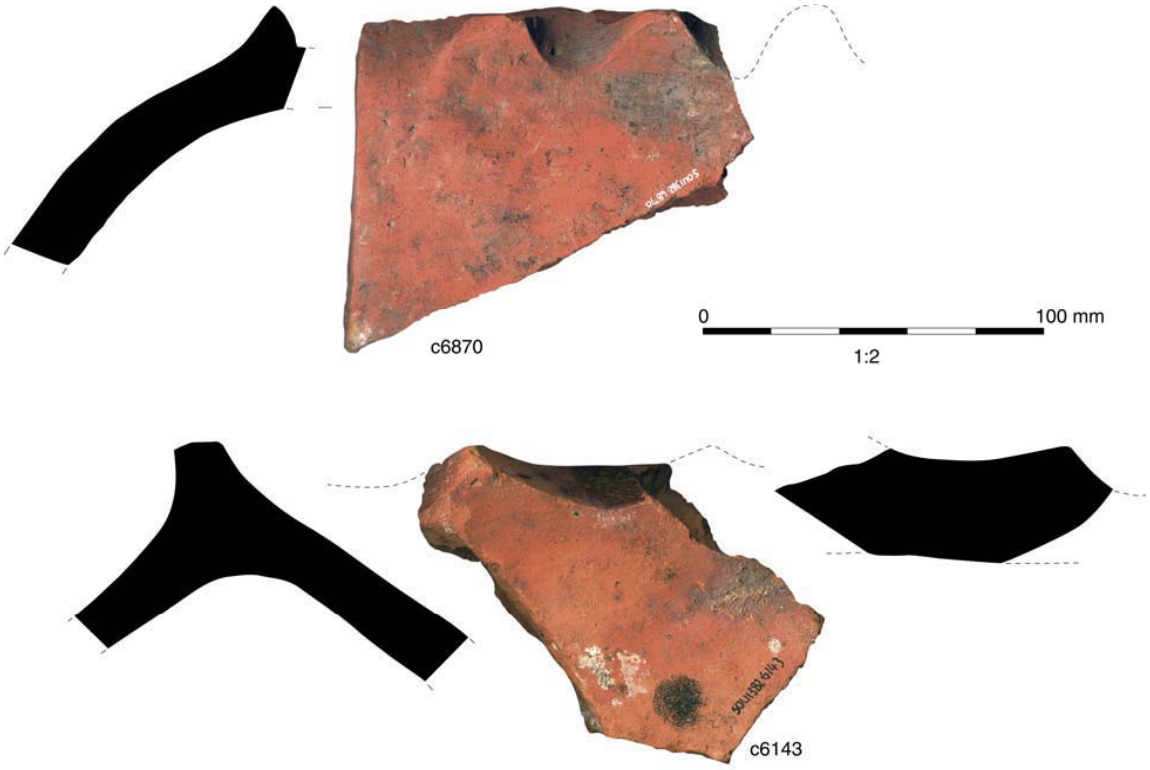


4. Crest type 1: triangular spurs with rounded edges and tapering to apex.
(a) Tenement 237 (3078) patchy brown glaze; crest formed as applied strip, cut and moulded to shape spurs: 70 mm long, 18-06 mm wide, >30 mm high
(b) Tenement (6643) patchy olive-green glaze, spur: 60 mm long; 18-10 mm wide; c 25 mm high.

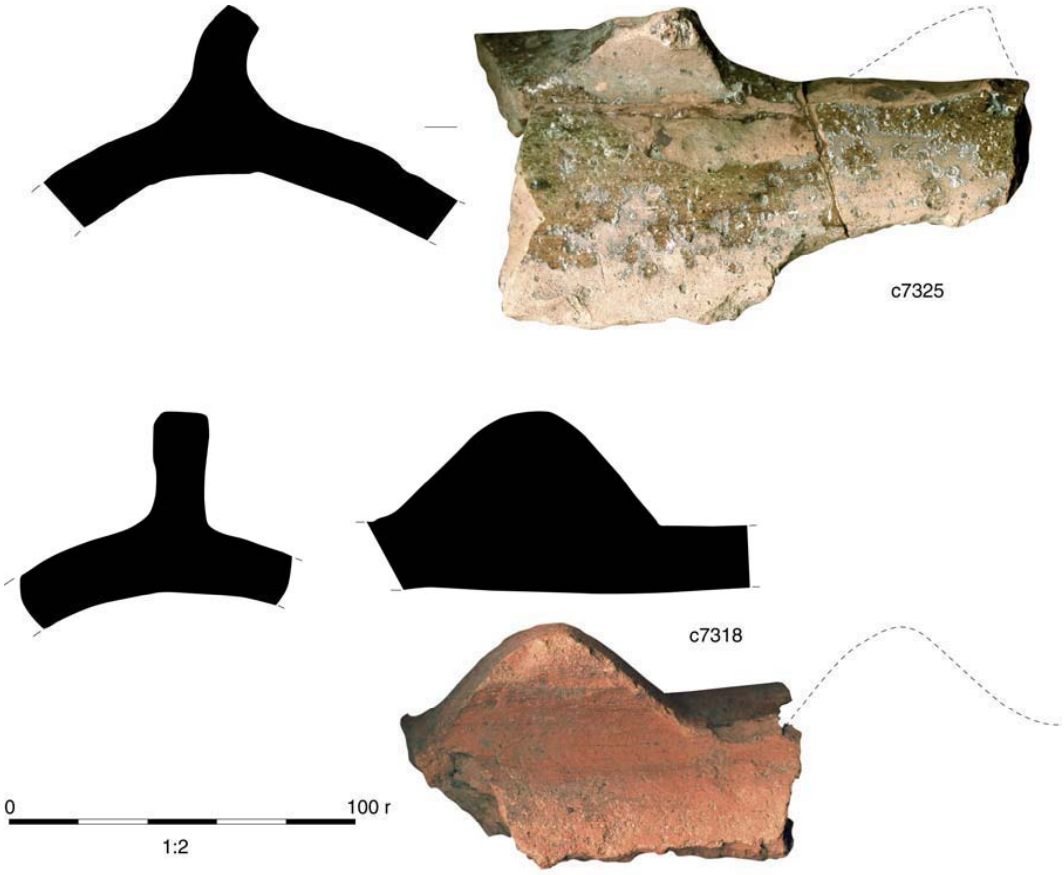
5. Ridge tile: crest type 1a triangular spurs cut the full height of the crest down to or into the tile apex. Cross-section rectangular with flat or rounded edge; crest sides may be vertical or slightly converging. Tenement 175 green glaze with dark green copper speckles (3781) spurs: 45 and 52 mm long; 26 and 20 mm high; 10-12 mm wide.



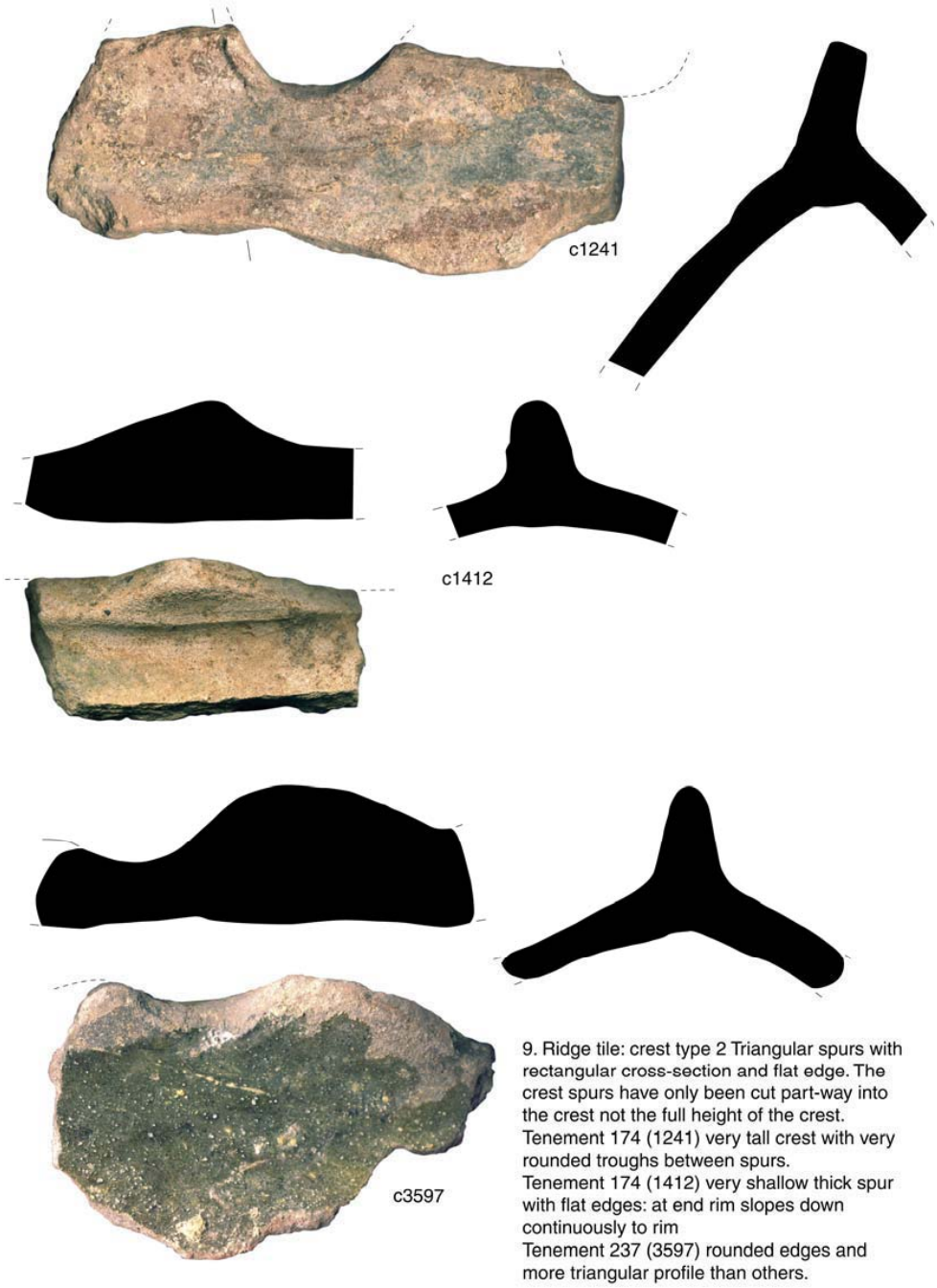
6. Ridge tile: crest type 1b The base of each spur is pierced centrally by a small circular hole c 8 mm diameter Tenement 172 (367) thin amber glaze; spur: 80 mm long; 40 mm high, 10-12 mm wide; perforation at base of each spur 7-10 mm.



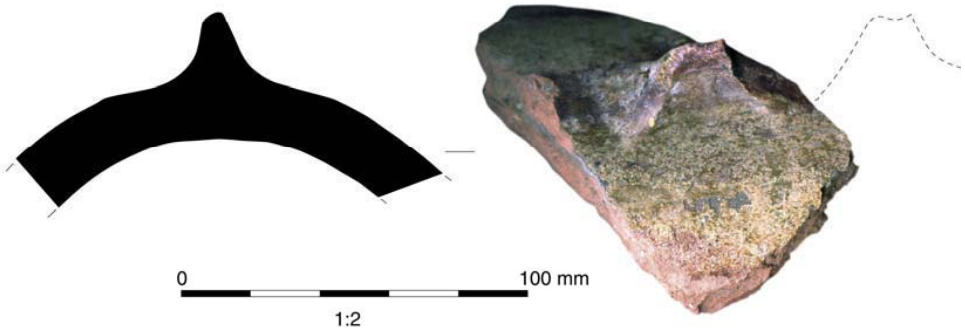
7. Ridge tile: crest type 1c (a) Tenement 172 (6870) (b) Tenement 170 (6143)



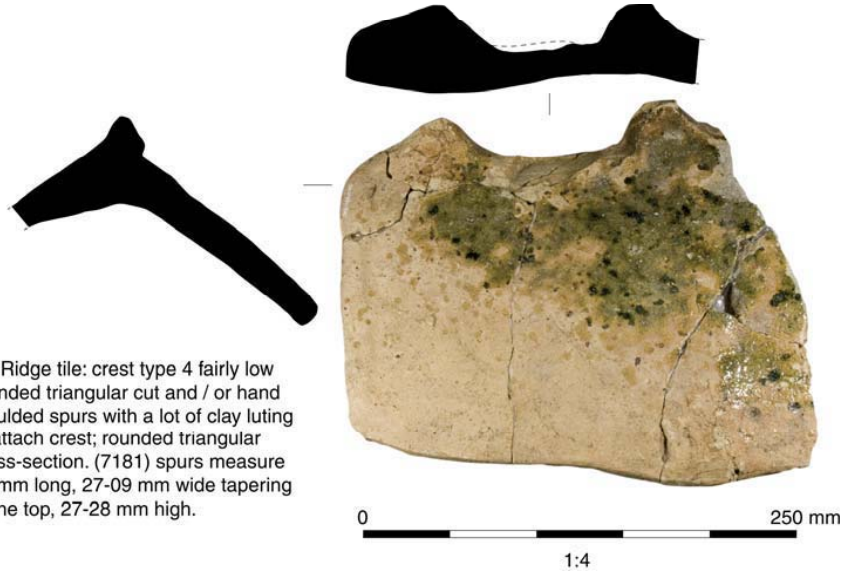
8. Ridge tile: crest type 1d Tenement 241 (7318)Tenement 170 (7325)



9. Ridge tile: crest type 2 Triangular spurs with rectangular cross-section and flat edge. The crest spurs have only been cut part-way into the crest not the full height of the crest.
Tenement 174 (1241) very tall crest with very rounded troughs between spurs.
Tenement 174 (1412) very shallow thick spur with flat edges: at end rim slopes down continuously to rim
Tenement 237 (3597) rounded edges and more triangular profile than others.

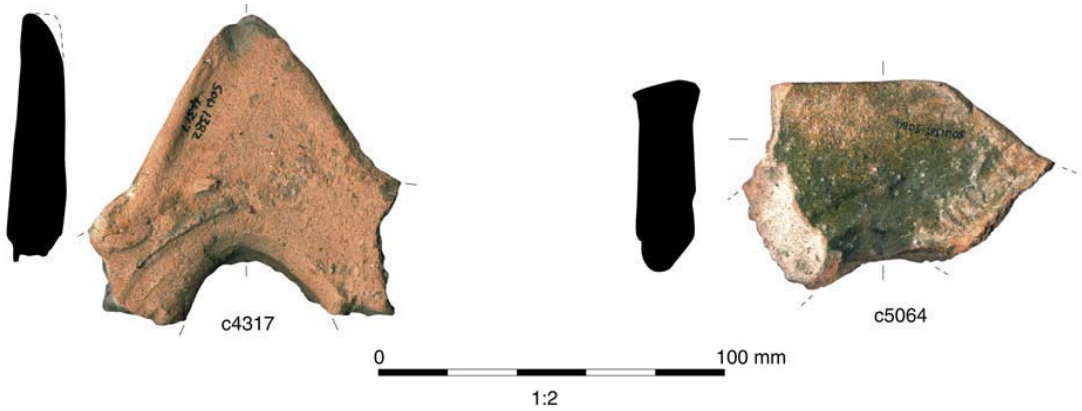


10. Ridge tile: crest type 3 Truncated triangular spurs with flat apex. Tenement 174 (1284) spurs knife cut; 45 mm long at base; 15 mm long at top

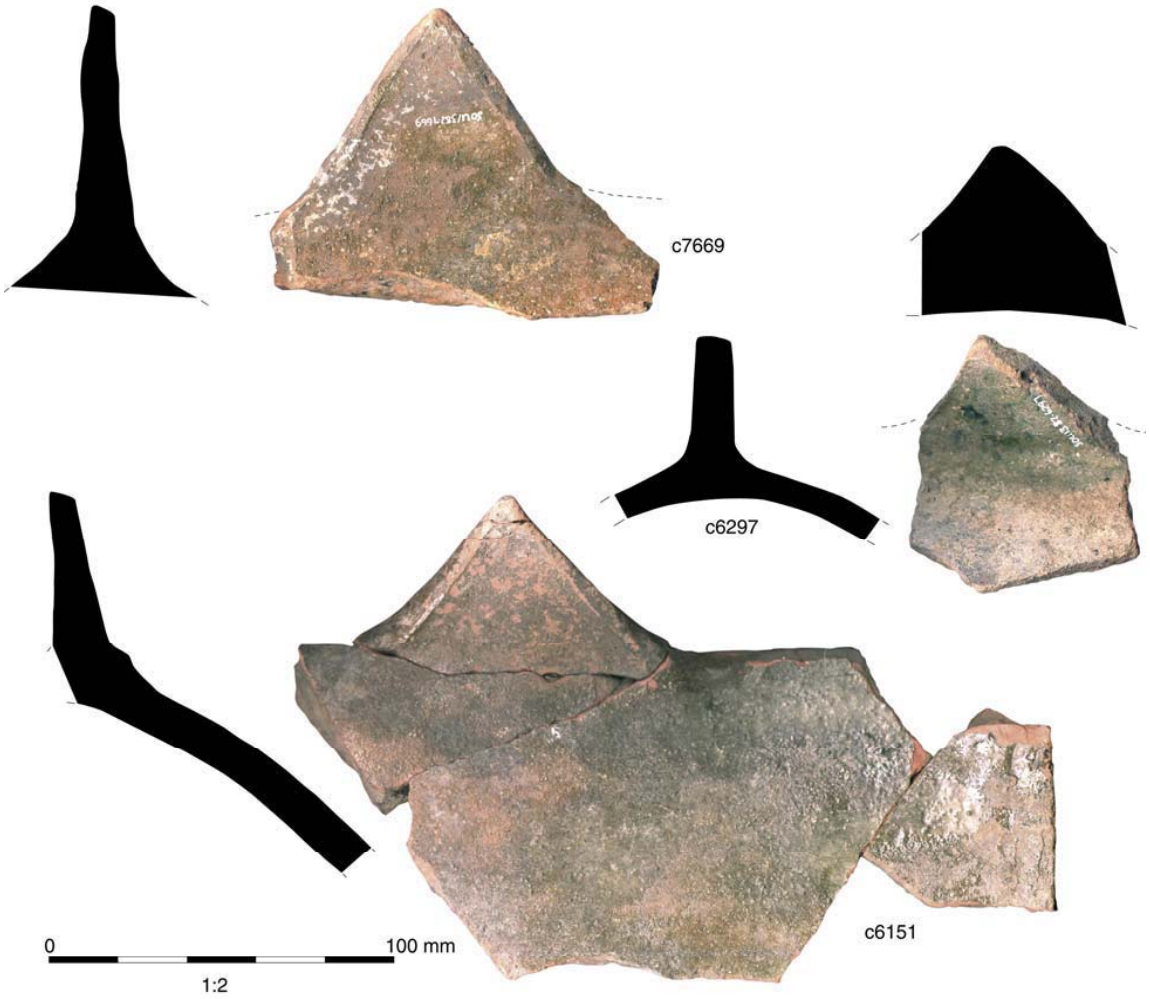


11. Ridge tile: crest type 4 fairly low rounded triangular cut and / or hand moulded spurs with a lot of clay luting to attach crest; rounded triangular cross-section. (7181) spurs measure 50 mm long, 27-09 mm wide tapering to the top, 27-28 mm high.

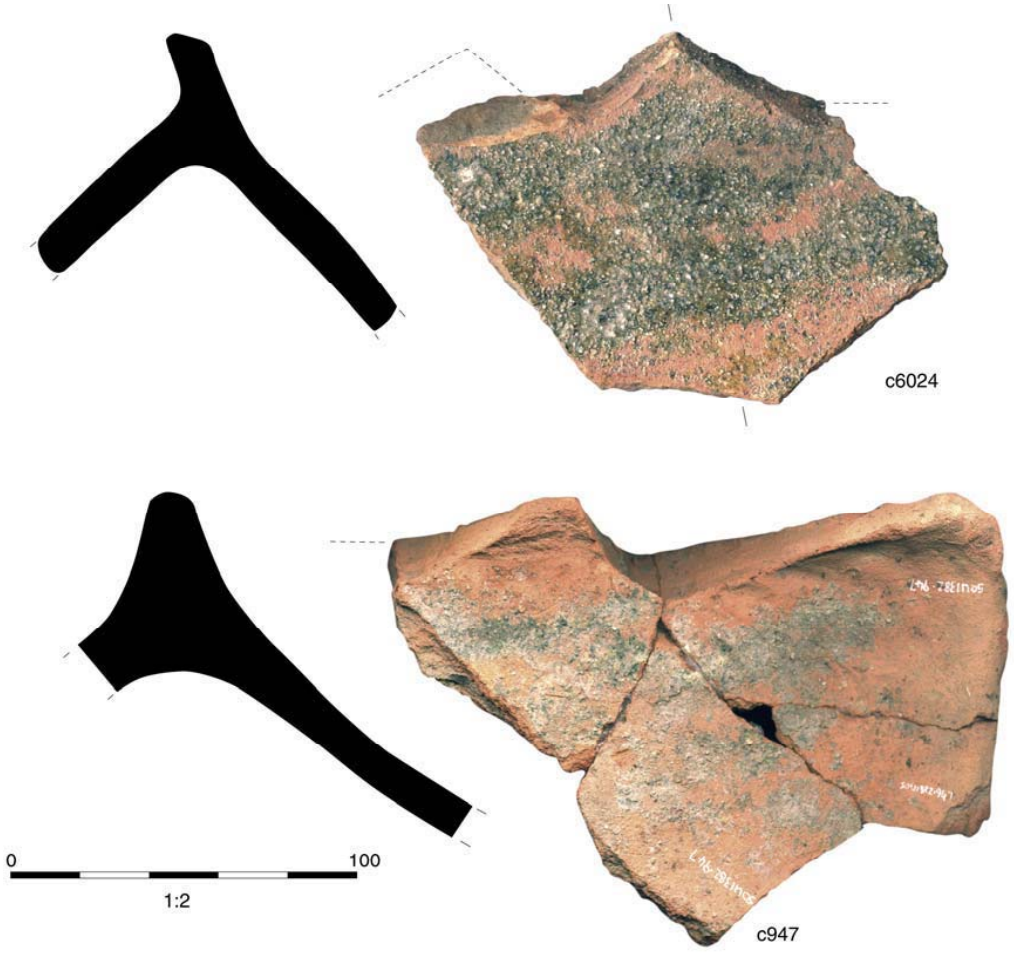
12. Ridge tile: crest type 5 large crest made of semi-circular conjoined nibs each perforated by a large semi-circular aperture with a finger groove encircling the aperture ('loch Ness monster' type). Rectangular cross-section with flat rim. Knife stab marks along basal angle of both sides. Tenement 172 (250): heavily overfired and vitrified; part crest and ridge profile Tenement 242 (8029) end of crest 16-25 mm wide; 65-75 mm high; aperture c 40 mm high.



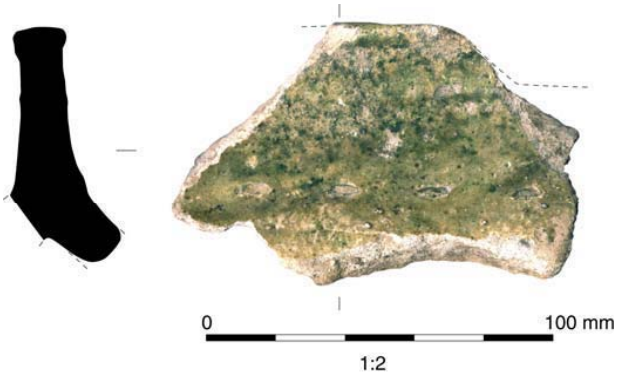
13. Ridge tile: crest type 6: large crest made of conjoined triangular spurs each perforated by an aperture that can be (a) triangular (b) semi-circular. Rectangular cross-section with flat rim. Knife stab marks along basal angle of both sides.
(a)Tenement 237 (4317) Type 6b spur 80 mm long; 60 mm high; 17-13 mm thick. Patchy amber-brown glaze.
(b)Tenement 177 (5064) Type 6b spur 15 mm thick; green glaze



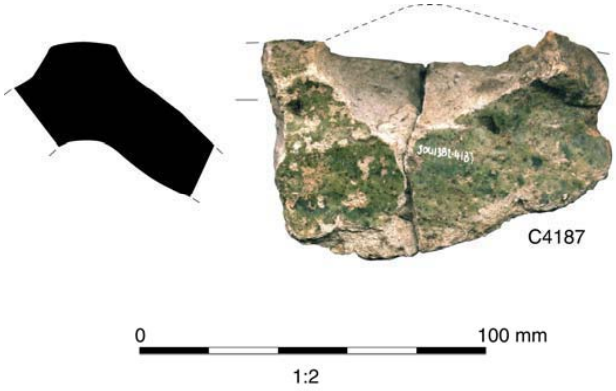
14. Ridge tile: crest type 7: large triangular spurs possibly individually applied. If applied as a continuous strip knife cutting into the ridge apex has separated the spurs so they become detached as individual spurs. Cross-section narrows to apex; edges and arrises of spurs rounded smoothed by hand.
(a) Tenement 170 (6297) individual spur with projecting rib along attached base where keyed in to apex.
(b) Tenement 170 (6151) spur 85 mm long, 50 mm high, 15-10 mm thick
(c) Tenement (7669) spur 85 mm long; 70 mm high; 14-07 mm wide. Patchy amber brown glaze.



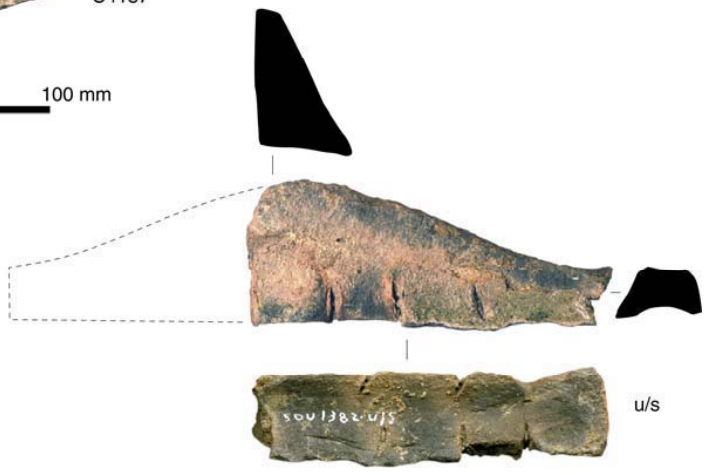
15. Ridge tile: crest type 8 triangular asymmetric crest spurs. Rectangular cross-section with flat rim. Knife cut.
(a) Tenement 169 (6024)
(b) Tenement 173 (947)

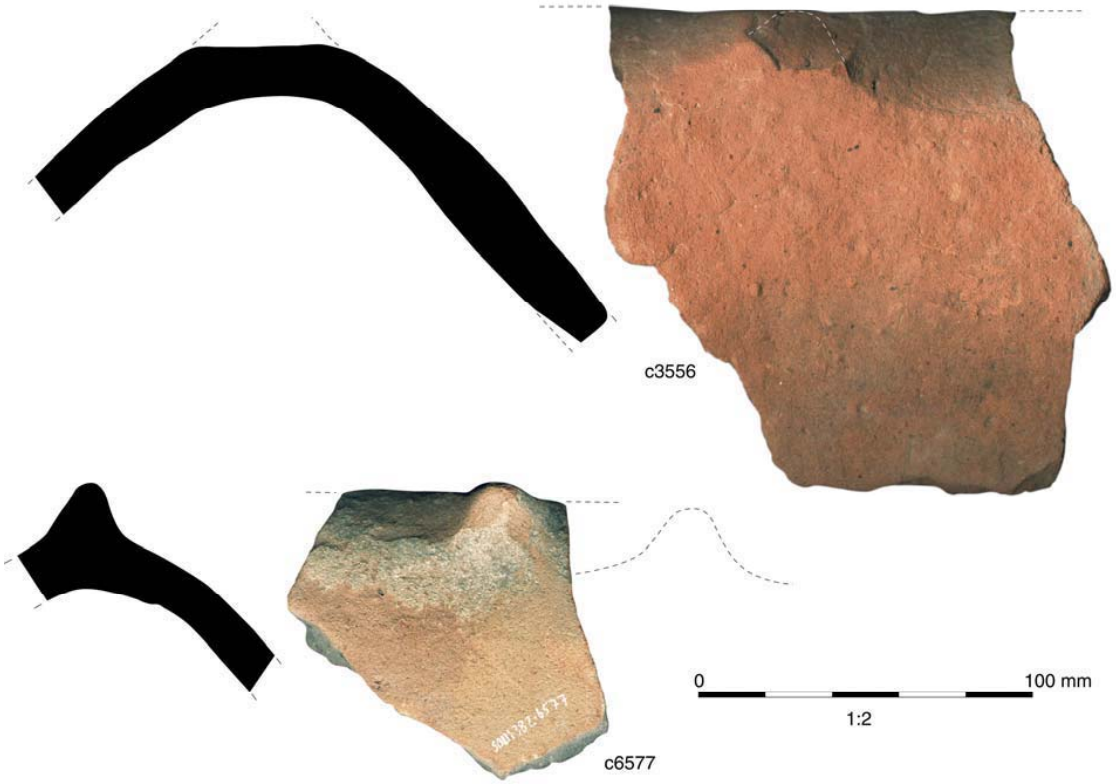


16. Ridge tile: crest type 9 Continuous solid applied crest with flattened expanded top edge and with knife stab marks along base (probably to aid attachment). Tenement 178 (5135) Crest: 50 mm high, 20 mm thick at the base, thinning to 10 mm, and widening to 14 mm at the top. This example was modified to type 3 post-firing: chipped into truncated triangular spurs measuring 38 mm long at the top and 110 mm long at the base.

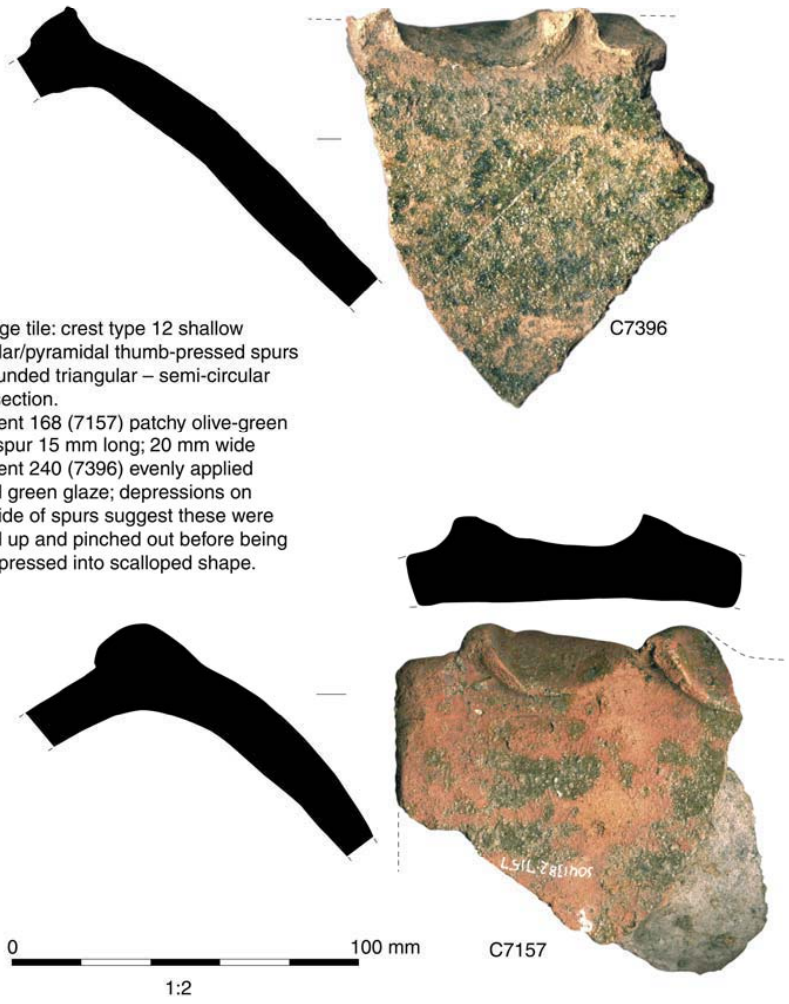


17. Ridge tile: crest type 10 a thick chunky spur with flat edge and knife stabbing along base. Tenement 237 (4187) base of crest showing knife stabbing; spur 70 mm long; 15 mm wide mottled green glaze
U/S detached spur from end of tile with knife stab marks on its underside; the spur starts at the rim from its apex: 95 mm long; 20-07 mm wide tapering to top.

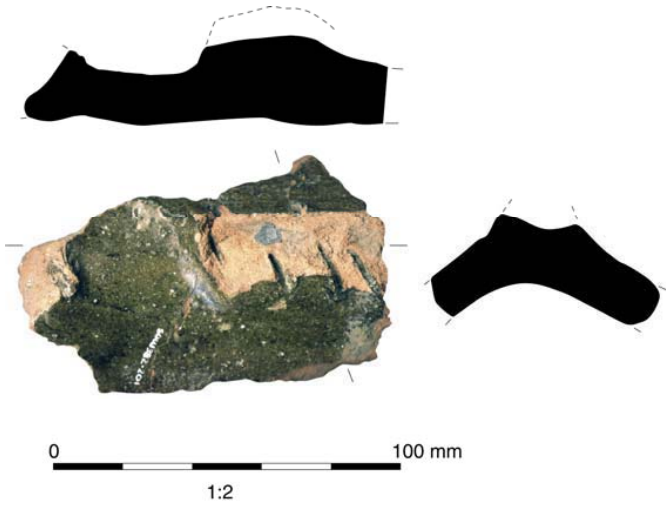




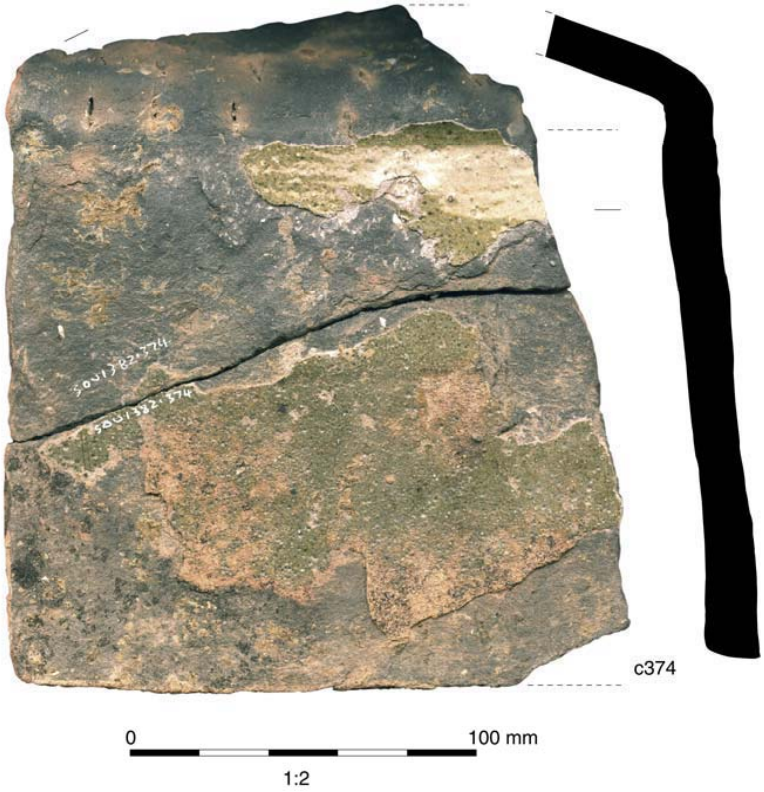
18. Ridge tile: crest type 11 small pyramidal spurs widely spaced
Tenement 238 (3556) unglazed; spur is missing but appears to be of pyramidal form 32 mm long 25 mm wide.
Tenement 172 (6577) greenish brown glaze; spur 30 mm long, 25 mm wide; 15 mm high.



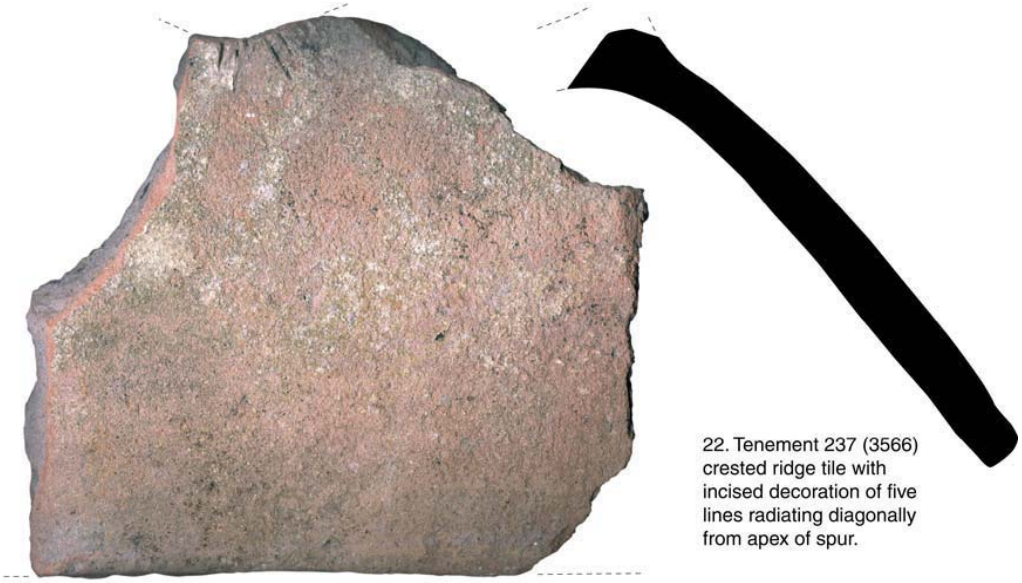
19. Ridge tile: crest type 12 shallow triangular/pyramidal thumb-pressed spurs with rounded triangular – semi-circular cross-section.
Tenement 168 (7157) patchy olive-green glaze; spur 15 mm long; 20 mm wide
Tenement 240 (7396) evenly applied mottled green glaze; depressions on underside of spurs suggest these were pushed up and pinched out before being thumb pressed into scalloped shape.



20. Tenement 173 (201) apex of ridge tile of type 5 or 6 crest with good example of diagonal knife stabbed keying.

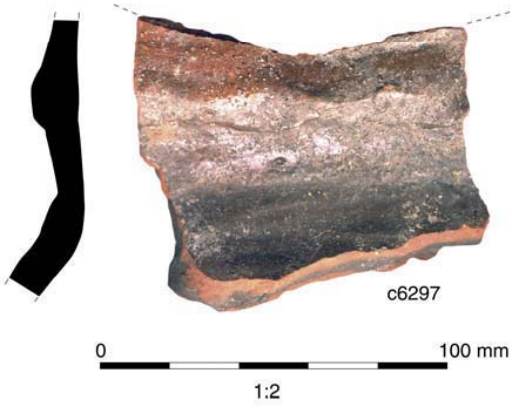


21. Tenement 172 (374) Complete profile across one half of ridge tile (crest missing) with knife stabbed keying visible in top for attaching crest

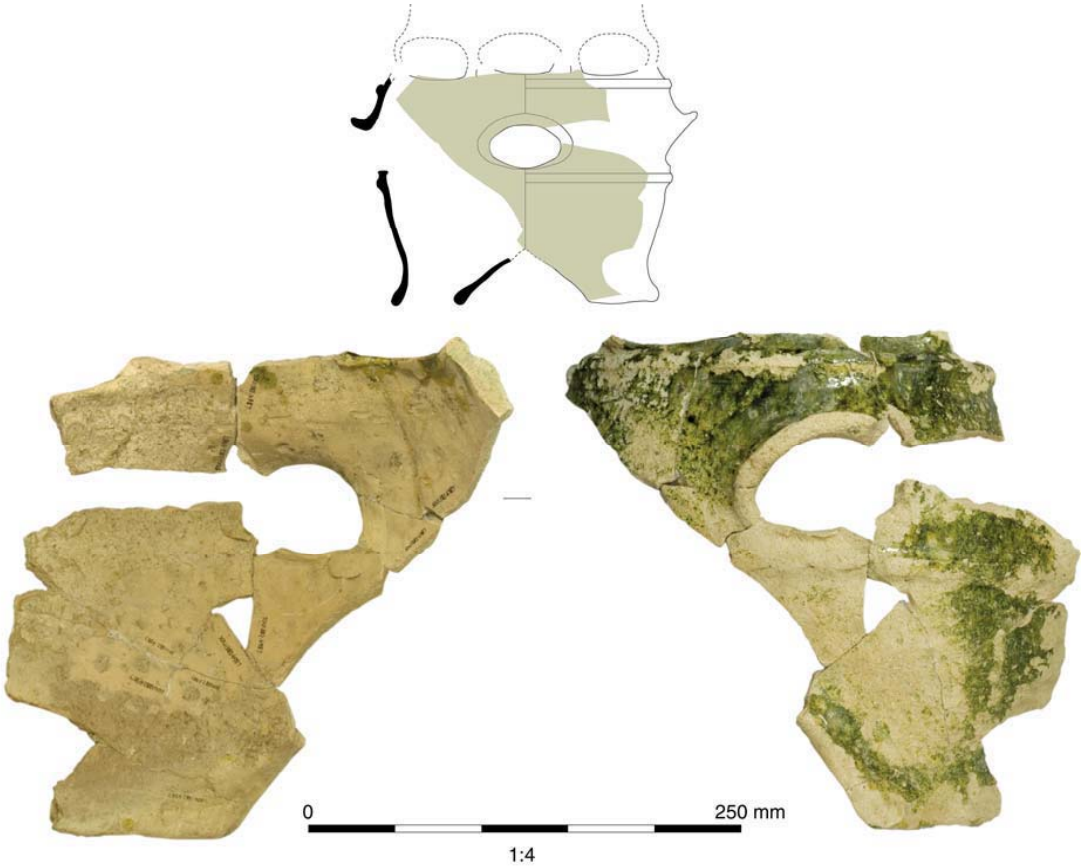


22. Tenement 237 (3566) crested ridge tile with incised decoration of five lines radiating diagonally from apex of spur.

23. Tenement 173 (913) side of ridge tile with incised sinuous dendritic lines running lengthways



24. Tenement 170 (6297) Side of ridge tile with aperture for louver with thumb impressed ridged decoration along shoulder of tile below louver.



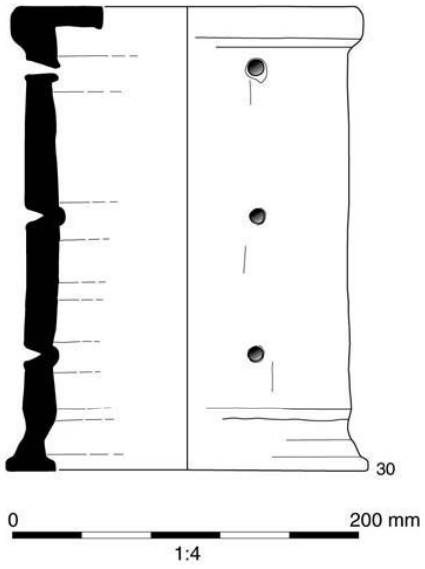
25. Louver Lower section of louver encircled by an applied cordon 150 mm above the base. Above this were oval hooded vents 80-90 mm long. Glazed in bottle green. Tenement 172 (6987) Fabric Med1 (Southampton white ware) Diameter (at cordon) c 340 mm; height: >190 mm; wall thickness 7-10 mm.

26. Louver Upper section of louver with four hooded oval vents 130, 135 140 and 157 mm long by c 50 mm high. Two small perforations 9 mm diameter, made pre-firing, are set asymmetrically 25 and 34 mm below the top edge. An applied cordon 10 mm wide encircles the louver 80 mm below the upper rim. SF257 Tenement 172 (6987) Fabric Med1 (Southampton white ware) Diameter: 134 mm (top); 200 mm (at cordon) 290 mm (max.); height: >160 mm; wall thickness 7-13 mm.

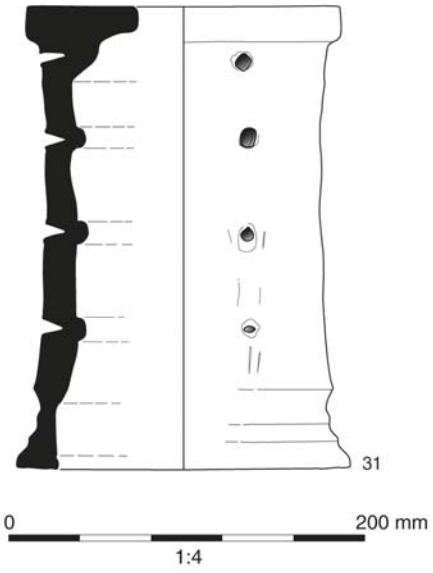
27. Louver fragment with two applied cordons running horizontally around the circumference: the larger has a triangular profile 24 mm wide x 9 mm high and the second is more rounded in profile 15 mm wide by 4-5 mm high. There are shallow stabbed dots in two irregular lines in the hollow between the two cordons and a further line on the other side of the larger cordon. The dots are c 5 mm diameter. Tenement 237 (3106) Thickness: 7-10 mm.

28. Finial: anthropomorphic finial of horse and rider type consisting of upper body of a man playing a trumpet or horn held in his RH. The left arm, which appears to have run diagonally across his chest has broken off possibly held the reins. The hair is stylised as a short bob (or tonsure) ending above the nape of the next. The man is bearded with the beard shown in stylised manner as a series of short incised lines down his right cheek to the chin; the trumpet obscures the left side of the face. The eyes are almond shaped faintly outlined with the pupils made by circular impressed depressions. A lentoidal incision in the RH side of his head may be intended to portray his ear, a similar but larger incision on the RH side under his arm may be intended to portray aspects of clothing. SF 72 Tenement 237 (3078)Fabric Med1a; diameter (base) 47 mm; >114 mm H.

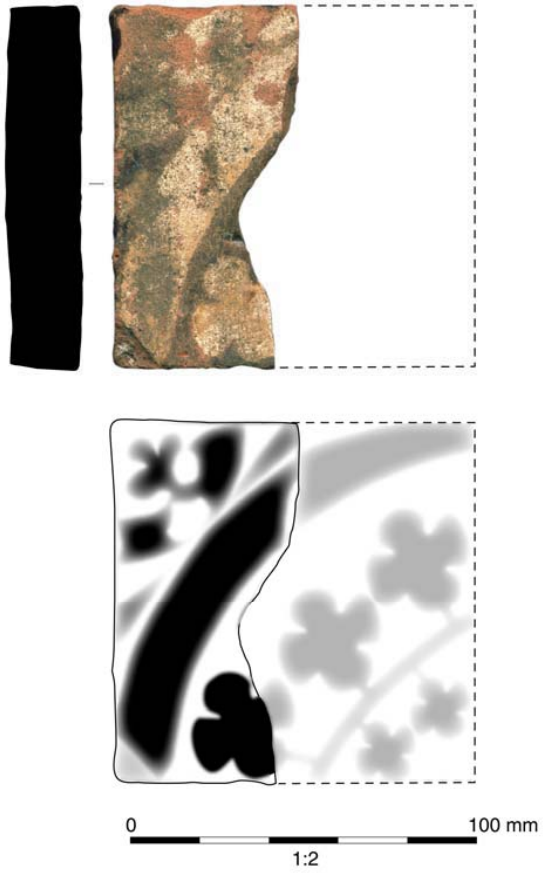
29. Finial: bottle shaped finial and crested ridge tile with crest type 11. Tenement 237 (4315) and (4317) Fabric: Med1a; Finial diameter: 85 mm (top); 162 mm max; 110 mm at base; height: 245 mm. Single pyramidal spur from ridge crest:



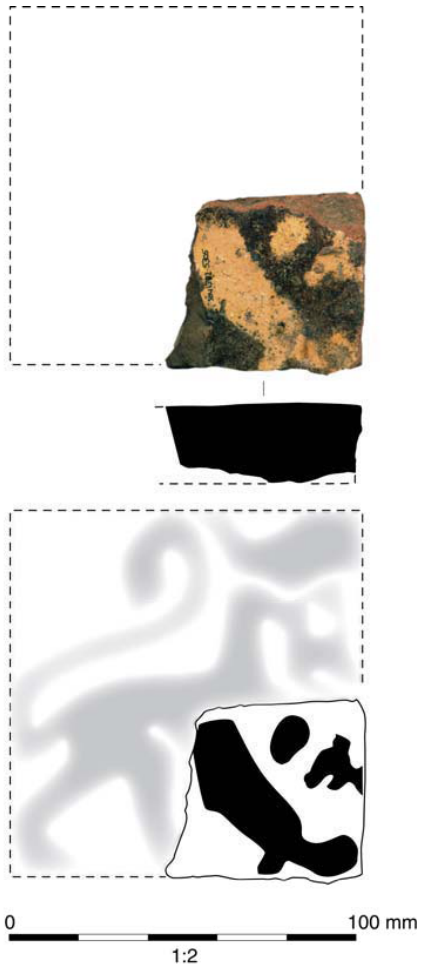
30. Chimney pot SF287 Tenement 241 (7417) Fabric Med3; height: 264 mm; top diameter: 173x182 mm; base diameter: 210 mm; wall thickness 13-18 mm. Decorated with six vertical lines of four skewer perforations 9 mm diameter. Vent in top egg-shaped 60x68 mm



31. Chimney pot SF288 Tenement 241 (7417) Fabric Med3; height: 260 mm; top diameter: 180 mm; base diameter: 200 mm; wall thickness 13-20 mm. Decorated with seven vertical lines of four or five skewer perforations 7 mm diameter. Vent in top, sub-circular 63x70 mm

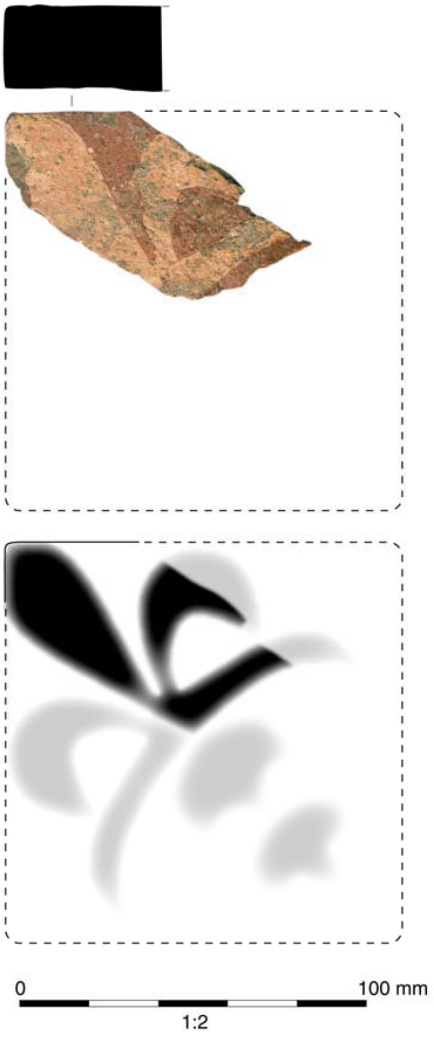


32. Floor tile Encaustic with stamped inlaid decoration Quarter dotted circle with small quatrefoil in interior; ?trefoil in corner. Tenement 179 (5155) Fabric B; length/ width: 105 mm; thickness: 23 mm



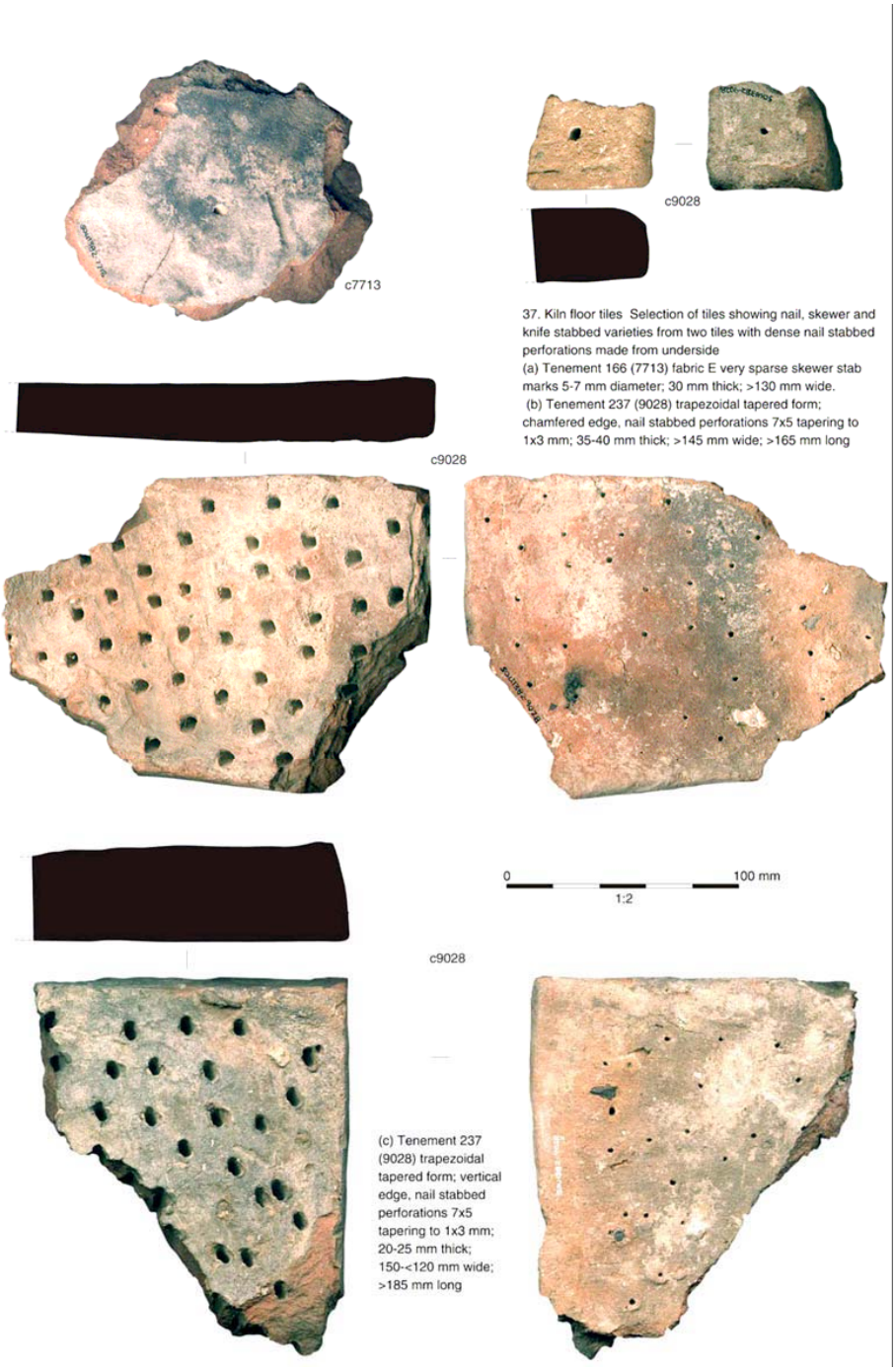
33. Floor tile Encaustic with stamped inlaid decoration Foliate or floral design: possibly part of fleur-de-lys. Tenement 180 (5305) Fabric B; thickness: 23 mm

34. Floor tile Encaustic with stamped inlaid decoration Central fleur-de-lys; quarter circles in corners enclosing quadrant of rosettes. Tenement 167 (7635) Fabric Med1c; length: 115 mm; width: 115 mm; thickness: 19 mm



35. Floor tile Encaustic with stamped inlaid decoration Fleur-de-lys set diagonally. Scoop cut in base. Tenement 237 (9028) Fabric A2; length/width (estimated): 180-200 mm; thickness: 25 mm

36. Floor tile Plain yellow glazed (amber over white slip) Tenement 173 (886) Fabric B; length and width: 116 mm (top) 111 mm (base); thickness: 32 mm Tenement 237 (3308) Fabric B; length and width 116 mm (top),112-3 mm (base); thickness: 29-31 mm Tenement 172 (6575) Fabric B; length: 240 mm (9" ½); width: 233 mm (9" 3/8); thickness: 30-37 mm (1" ½). Tenement (7638)



37. Kiln floor tiles Selection of tiles showing nail, skewer and knife stabbed varieties from two tiles with dense nail stabbed perforations made from underside
(a) Tenement 166 (7713) fabric E very sparse skewer stab marks 5-7 mm diameter; 30 mm thick; >130 mm wide.
(b) Tenement 237 (9028) trapezoidal tapered form; chamfered edge, nail stabbed perforations 7x5 tapering to 1x3 mm; 35-40 mm thick; >145 mm wide; >165 mm long

(c) Tenement 237 (9028) trapezoidal tapered form; vertical edge, nail stabbed perforations 7x5 tapering to 1x3 mm; 20-25 mm thick; 150-<120 mm wide; >185 mm long

38. Tile discs Tenement 178 (5146) Fabric E (a.) Amber-brown glaze. Length: 47 mm; width: 45 mm; thickness: 16 mm; weight: 38 g. (b.) Dark greenish brown glaze. Length: 55 mm; width: 50 mm; thickness: 17-19 mm; weight: 60 g. (c.) Amber - green glaze. Length: 58-53 mm; width: 54-50 mm; thickness: 25 mm; weight: 101 g.