

The roof furniture and floor tiles

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The High Street excavation produced examples of five types of ceramic roof furniture of medieval date: ridge-tiles, unglazed roof-tiles, possible fragments of roof ventilators, peg-tiles and a part of a roof finial, all of which constitute an important contribution to the study of medieval roofing materials in Scotland. As well as a number of pieces of stone slate, a number of floor-tile fragments are included in this report, together with a wooden roof shingle.

Floor tiles (Illus 113)

Eight fragments of flooring tile were found. Two of them (Cat Nos 73, 74) seem to be related in terms of glazing, thickness (13mm) and coarse fabric texture, and are most likely from the same floor. From the parallel edges of the larger fragment it is possible that its complete dimensions were 120mm by 120mm. They are both of an orange-red fabric with a grey core. The edges are under-cut. On the larger fragment the glazing is dark green, mottled and lightly dimpled. There is considerable abrasion on the surface and towards the edges where the glaze has been worn off. On the smaller fragment the glaze is also mottled green, thinning to dark brown towards the edges. In places the glaze which has a fresh appearance is crazed. In neither case has a slip been used.

The other pieces comprise:
a small fragment (Cat No 75), 17mm thick, of orange fabric with a reduced sandwich grey core. The base has traces of mortar; the upper surface of thinly applied olive-green glaze;
a fragment (Cat No 76), 11mm thick, of dark orange fabric with numerous quartz inclusions breaking through the light brown glaze which abrasion has reduced to a matt finish. The base has been shallowly keyed;
a single fragment (Cat No 77), 20mm thick, of grey buff fabric similar in texture to the peg tile clay. The base has been smoothed, and like the vertically cut edges, stained black. Traces of a pitted honey-coloured glaze over a slip are on the upper surface;
three small fragments (Cat No 78; Illus 113), 16mm thick, of an orange-red fabric with a fresh amber glaze over a cream or white slip inlay producing a yellowish finish. The design has been lightly impressed with the slip brushed over the tile face and the latter scraped level. The bottom of the impression has a thin, patchy filling of slip with traces of outward spill beneath the glaze covering. It is possible that this sequence was reversed, a layer of slip having been brushed over the



Illus 113 Floor tile fragments A0501, C2003 and comparative tile from Hermelinghen, Artois, northern France (after Norton 1994).

tile before stamping giving a stamp-on-slip result. Generally a stamp-on-slip method produces a sharper more angular profile than the slip-over-impression, but the two techniques are frequently difficult to distinguish (Drury 1981).

Roof finial (Illus 114)

The decorative anthropomorphic finial (Cat No 65) is one of only two from Perth, the other having been recovered from excavations at Mill Street (Hall 1995, 976). A globular example was noted in the Melrose Abbey collection by Cruden (1953, 163, 167) and was compared by him to one from St Giles Chapel, Hereford. Wood (1965, 296–9) citing Dunning, mentions zoomorphic and anthropomorphic finials and briefly discusses their origins and typological development from the 13th to 14th centuries. Finials were usually hollow with holes in the top or sides to allow the smoke to escape. Gradually, however, they became purely decorative devices without vents and it is to this later category that the High Street example belongs. It has been extensively damaged so that only the head and a small conical neck plug remain. It is difficult to ascertain whether the plug has acted as a socket attachment for the missing neck and base or whether it has been formed as an integral part of the total figure intended to strengthen the joint. It is too slight to have been a means for securing the head to the ridge tile.

In general appearance the head is similar to pottery roof finials illustrated by Dunning (1975, 297) especially his group V types. Its facial composition is fairly well



Illus 114 *Anthropomorphic ceramic roof finial A4750 showing 'ridged' hat.*
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balanced and consists of bulbous eyes with slits for pupils and a hooked nose. The mouth is a simple slit with no lips. There are random hair striations down each side of the head with a crude attempt at a moustache and eyebrows. A beard has been applied and is also regularly striated. The head is earless and is topped by a peaked cap. The light grey fabric has been thickly coated with a black glaze.

Peg tiles

Sixty-four pieces of unglazed peg-tile were recovered, of which 50 (A01–0827) were found in MF7305, a pit in Building 18. Of the fragments from the pit, nine were reconstructed into a single flat fragment giving a complete width of 198mm, a broken length of 193mm by 18mm thick; centrally near the top is a single peg hole. A further ten pieces were similarly reconstructed to form a sizeable fragment with a slight curve; its

thickness ranged from 25mm in the body of the tile to 17mm at the edges. The sandy, grey buff fabric of all the pieces has been well prepared from a finely textured clay, is relatively free from inclusions and has been evenly fired. The under surfaces show signs of having been in sand-lined trays or moulds in which the tiles have been carefully pressed to produce an extremely smooth upper surface. Faint striations of the wood pattern are visible, as is a recurring blemish with minute diamond-shaped indentations indicating a single source of manufacture. The edges have been pared round, smoothed and slightly undercut. One fragment has an animal's paw print in the top corner and a single peg hole. Another piece (Cat No 64) of an orange fabric, 21mm thick, with a number of quartz inclusions, has an upper surface regularly textured with a straw impress.

Ridge tiles

No complete example of a ridge tile was recovered and all have been classified here as a single group. The largest fragments (Cat Nos 32b, 39d) measure 180mm by 150mm by 16mm thick and 180mm by 174mm by 15mm thick respectively. The thickness of all the pieces is consistent at 12mm to 16mm. Damage to the apical curves makes it difficult to establish whether the tiles were crested or plain. Examples (Cat Nos 1 and 33) with pieces of continuing curve suggest that some were plain topped, while what may be a small separate fragment of cresting (Cat No 31f) points to a parallel type noted by Dunning at Southampton (1975, 191, 195, 196), Beresford at Penhallam (1974, 135) and Clarke and Carter at King's Lynn (1977, 299). They are of a light orange or sandy buff fabric with a reduced grey core resulting from rapid firing. The clay is fairly finely textured and relatively free from inclusions. Minute specks of mica occur. The under surface of the tiles is smooth but is frequently pitted by small indentations and by sand from moulds prior to shaping. On one fragment the base has been rolled and scraped, probably with a wooden implement. A feature common to many is for the under surface edge to have been scraped back slightly and smoothed. With the exception of two pieces (Cat Nos 18, 44) the under surfaces and edges are free from residual mortar and lime traces. In a number of pieces, wide, shallow upper surface indentations and an overlap at the edges indicate that the clay has been rolled out. On a number of corner fragments there is a slight throw-off to the edge. The upper surfaces have all been glazed; a slip has not been used. Light and dark olive-green colours occur, sometimes slightly mottled by the common failure of the copper oxide to mix evenly with the lead glaze. The glaze frequently fades to a clear orange tone on the oxidised edges creating a patchy effect towards the rims. On a number of pieces the glaze has been thickly applied and has a fresh lustrous quality. Its application has been on the entire upper surface and not simply

at the apex. Nearly all the glaze has surface pitting as a result of reaction between the lead oxide and the silica. Both the common brown speckling and gritty texture of the glazing are associated with iron oxide either in the clay or in the glaze itself. While much of the glaze retains a fresh look, there is frequent evidence of surface cracking and in one piece (Cat No 43) which is completely oxidised the glaze is blackened and has bubbled. In common with English practice noted by Eames (1976, 212), the tiles seem to have been glazed while unfired, then single-fired.

As none of the curved ridge tiles shows any significant variation in thickness in the body of the tile, it may be tentatively suggested that one fragment (Cat No 34d), which tapers from a central thickness of 20mm to a rim width of 12mm, represents a different type (Dunning 1975, no 1397; Beresford 1974, 135) which was both heavier and more pointed at the apex to form an inverted V.

The absence of binding raises the question of securing the ridge tiles. A solution may lie in what appears to be a fragment of glazed apical curve with terminal thickening and a down-turned lip with mortar adhesion on its external surface that acted as a nib set in a mortar bed (Cat No 38d).

Roof ventilators

The existence of this classification is open to doubt; it is based on six indeterminable fragments four of which are glazed on both surfaces and two (Cat Nos 49 and 50) on the upper surface only. Two unstratified fragments (A1047, A1167) which are different pieces of the same fragment are of light grey buff fabric 15mm thick. The larger piece has a rim and on the outer surface there is an applied strip. The drab, olive-green glaze has been thickly applied at the angle of the outer surface and in places it has crazed and bubbled which suggests overfiring. In their original form the ventilators might approximate to those illustrated by Clarke and Carter (1977, 305).

Slates

Four fragments of stone slate were also recovered, two of them with peg holes and one with faint traces of lime bedding (Cat Nos 66–69). They are of micaceous lower old red sandstone, fine grained and well cleaved. They have been tooled around their edges. The largest measures 296mm by 185mm by 15mm. Two pieces of densely micaceous charcoal grey stone slate were also found (Cat Nos 70–71).

Unglazed roof tiles

Only three small, flat fragments were found. Although thinner, two (Cat Nos 51, 52) were similar in colour

and in their coarse fabric with its large number of quartz inclusions, to a large example retrieved from St Adrian's Priory on the Isle of May where a number of thin glazed roof tiles were located by a lighthouse keeper (di Folco 1981). It is not possible to say whether the pieces were nibbed or holed.

Discussion

The Perth roof furniture considered in total makes an extremely interesting and significant statement about roof covering and the ridge line of the medieval secular Scottish house. As no early roofs survive externally either in Scotland or England (Wood 1965, 292–9) and reliance must therefore be on documentary and archaeological sources, a brief, selective outline of both Scottish and English work in this field would be useful to establish a general background into which one can place and assess the Perth finds.

There is ample documentary evidence from English sources to suggest a fairly widespread legislation from c1212 (Turner 1851, 282) onwards to encourage roofing buildings '...not with reed, nor rush, straw nor stubble, but with tile or shingle or boards...'. On the late 12th-century manor house excavated at Wharram Percy, tiles seem to have been used round the chimney head and the rest of the roof thatched (Beresford and Hurst 1971, 100). From the excavations at the Old Deanery, Salisbury, glazed roof tiles were found, but not in sufficient quantity to indicate a total roof coverage (Drinkwater 1964, 55). From Spaunton in Yorkshire at the Manor House farm, green glazed ridge tiles have been recovered (Wilson and Hurst 1963, 338). Evidence from Wawne in the East Riding indicated that the medieval roofs were tiled (*ibid.*, 345). In Sussex, in some twenty towns, villages and isolated houses, crested ridge tiles dating from the 15th century are still to be seen on the roofs (*ibid.*, 349). Nibbed clay roof tiles dating from c1270 were found at Bishop's Waltham, Hampshire (*ibid.*, 319). Quantities of roofing stone and tiles from the 12th to 16th centuries have been recovered at Milton Ernest in Bedfordshire (Wilson and Hurst 1964, 270). From Tower Hill Farm, Sussex, a wattled building with a tiled roof of 13th to 14th century date has been found which offers a possible comparative analogue for some of the Perth buildings (*ibid.*, 294).

From the quarries at Collyweston in Northamptonshire, stone slates were transported for Rockingham Castle in 1375, the purpose here, as with the tile, being 'that so all fear might be removed and all danger of fire' (Wood 1965, 295). There was an extensive trade in blue schist slate over south England from Devon and Cornwall. In the late 12th century, and intensifying in the 13th, thousands of slates were being shipped from the Devon ports of Dartmouth, Totnes and Plympton to Southampton for work on the royal buildings at Winchester and at Southampton itself (*ibid.*).

As is not unusual in a Scottish context, there is neither the amount of documentary source material nor has the archaeological investigation been carried out to produce any valid quantitative comparison. Nonetheless, from the end of the 15th century there are references to slates being used on royal buildings at Edinburgh Castle, Stirling Castle, Falkland Palace and of slate quarrying in the Lochmaben area and of freighting at Dunbar and Queensferry (TA, i, 89, 285, 358–9; iii, 144, 150, 175, 181, 298; vii, 218, 230, 342; viii, 132, 133, 315–16). An entry in the Dunkeld Rental Book dated 1513 records the purchase of some 14,000 'Caithness slates' for the reroofing of the Carmelite Friary church in Perth at a cost of £49 (*Dunk Rent*, 233–9).

A royal licence for the manufacture of 'good and sufficient tyill for building and sclaitting of houssis at lowe raittis' was sought in 1611 (*RPC*, ix, 598). It was not until 1621 that we find parliamentary legislation enacting, for Edinburgh alone, that 'no maner of persoun or persones salbe suffered or permitted to builde anye houses within the said burgh... Bot suche as salbe covered with Sklaite or skailzee leid tyild or thakstane...'. In 1681 the legislation was repeated and extended to include Glasgow, Aberdeen, Dundee and Stirling while at the same time encouragement and support was offered through the Privy Council to any magistrate of a royal burgh who applied for help to enforce a similar programme in his particular burgh (*APS*, iv, 626, c26; viii, 357, c97). In 1698 these measures, primarily aimed at fire prevention, were reinforced by a regulation for the building of chimneys in Edinburgh (*APS*, x, 150, c8).

While it is of course difficult to ascertain how effective the Scottish legislation was, as fires continued throughout the 17th century to wreak havoc on the thatched roofs of the burghs, there is sporadic evidence to suggest that in both ecclesiastical and secular domestic buildings, a gradual replacement of thatch with slates was being carried out. In the remote upland parish of Dunbog in Fife, for example, in 1668–9, 600 slates were shipped across the Tay from Dundee to Ballinbreich to replace part of the thatch roof on the church (National Archives of Scotland, CH2/102/1, Dunbog Kirk Session Minutes 1666–1730). Similarly in 1699, 2500 slates were brought from Angus, possibly from the quarries at Carmyllie, to re-roof Forgan church (National Archives of Scotland, CH2/160/1, Forgan Kirk Session Minutes, 1695–1723).

If the coloration of the otherwise remarkably detailed 1580 Geddy town plan of St Andrews (National Library of Scotland, MS 20996) can be accepted as being representationally accurate, then there is a strong suggestion here that slating was a consistent feature of the burgh by that date. Both Dunbar (1966, 176) and Richardson (1929, 310) draw attention to the existence of flat roofing tiles of the 12th to 13th centuries from Scottish sites, Richardson

citing examples from Melrose Abbey, North Berwick, St Andrews Priory, St Adrian's on the Isle of May and Inchcolm Abbey. The Isle of May in particular has yielded samples from which three categories can be established: a flat, unglazed type of very coarse light orange fabric; a flat type with green and light orange glaze and a small fragment of coxcomb cresting from a ridge tile. A fragment of the unglazed variety has a nib attachment on its undersurface (di Folco 1981, 523–4). Will (2008, 130) noted that over 3000 fragments of ceramic roof tile, of a coarse white to buff fabric similar in appearance to that recovered by the Isle of May light house keeper, came from excavations at the monastery now identified as St Ethernan's.

The ceramic section of the Perth roof furniture would appear from more closely datable material to span a period from the mid-13th to 14th centuries. The finds of the flat, glazed and unglazed tiles, which include the cohesive group of unglazed 13th-century peg tiles from the pit in Building 18, were too few in number and too scattered throughout the site to be convincingly associated with any one building or series of buildings for consideration as total roof coverage. What is suggested here is that they were used along with a covering of thatch as a single or multiple row at the wall head or that they were part of a small surround of tiles at the chimney head. The relatively short optimum life of wattle buildings of some eight to twenty years considered together with their supportive strength precludes the use of tiling as a total covering for them. It is unfortunate that the majority of the ridge tile fragments, mostly recovered from dump-soil in the Lade in Areas 5 and 6, cannot be linked to a substantial stone building.

The homogeneity of the relatively few pieces of ridge tile, however, does tend to indicate a single structure of origin with the important factor being that their existence establishes, as they cannot be used with thatch, a related total roof cover of slate or tile from a 13th- or 14th-century date. They indicate too a varied ridge line with the occurrence of at least two anthropomorphic finials at each gable giving a roof cover and decoration comparable to the more sophisticated of English examples.

The recovery of the relatively small number of all types of tile is explicable in terms of the roof or roofs of the site serving as a quarry for neighbouring buildings of a later date.

Recent chemical sourcing of Scottish floor tiles has indicated that tiles were being manufactured across medieval Scotland presumably in close proximity to the major monastic houses (Haggarty, Hall and Chenery 2011), and that contrary to previously published assertions it would appear that the industry was much more active in the 12th and 13th centuries (Norton 1994, 162). Indeed one of the most striking parts of this analysis is the fact that different chemical signatures were received for both redware pottery and tiles

suggesting firstly that they were produced in different kilns and secondly there must remain many kilns still to be located.

The only tilery so far discovered and excavated in Scotland at the Cistercian nunnery at North Berwick in East Lothian (Richardson 1929, 281–310; Hall forthcoming) produced both roof and floor tile although the presence of the former was only proved by the more recent excavations.

The essential importance of the ceramic roof furniture and the slates, however, lies not so much in what they either firmly or tentatively suggest of the nature and extent of the roof covering at this particular site, but the wider implications they have for the roof covering of secular medieval buildings in Scotland in general which now seem to have had a richness and variety hitherto unsuspected.

References to the use of roofing shingles or 'spule thak' as they were known in Scots are as exiguous as the find itself. The chapel and 'werkhouss' at Edinburgh castle were 'theiked' with them in 1496 by two workmen, John Mawar and Dande Achinson, to whom it is noted payment was also made for nails (TA, i, 279, 291, 302). The location of the Perth example (Cat No 72) from Building 23 in Area 3 (Phase IIB–IIff) is compatible with a wattle and daub structure of the mid-12th century. Its small size (162mm by 88mm) may indicate a position on the roof nearer the ridge line.

Beyond establishing the four categories of the floor tile fragments, very little can be said as to what extent they constituted the different parts of the tiled floors which would have probably been within the Parliament House site. The thin, decorated slip-over-impression or stamp-on-slip fragments, which have no parallels from either ecclesiastical or secular sites in Scotland, are of 15th-century date. They are contemporary with fragments Cat Nos 75 and 77, although from a different area of flooring; the remainder are probably of a late 15th- to 16th-century date. Christopher Norton has suggested that these decorated fragments may come from tiles similar to those from the Chateau de Hermelingshen, Artois, Northern France (1994, 150 and Fig 6 no 13).

This group of ceramic building material from a major Scottish urban excavation serves to highlight the type of information regarding the construction and aspect of medieval buildings that can be recovered by archaeology alone. The use of chemical sourcing as a tool for identifying the provenance of such material is proving to be very important and with that in mind it is important that the technique is applied to samples from this assemblage at some future stage.

Catalogue

Roof-tiles and fittings

Ridge-tile fragments

1 Orange fabric with reduced grey core. Light green glaze of gritty texture and densely speckled; throw-off on one edge; broken atypical curve. 142mm by 120mm by 12mm.

A1346; C2705–2; M4e; Phase Vd,Vdd; Rig V

2a Sandy buff fabric; applied ridge on the under surface. Olive-green glaze thinning to light green; dimpled. Slightly curved with reduced grey core. 140mm by 90mm by 15mm tapering to 10mm.

b Flat fragment with the beginning of an atypical curve. Orange fabric with reduced grey core. Olive-green glaze thinning to orange and clear towards the edges; dimpled and speckled. 137mm by 90mm by 15mm tapering to 11mm on outer and bottom edge.

A3205; C2168–4; P1a; Phase Vd; Rig VI

3 Grey buff fabric. Light green mottled glaze with gritty texture. Trimmed on upper and under surfaces of bottom and outer edges; throw-off on outer edge. 110mm by 100mm by 15mm tapering to 10mm at bottom edge.

A0219; C0058–5&A; CG023; Phase 14; Rig VII

4a Gently curved; light orange, buff fabric with reduced grey core; beginning of an atypical curve. Olive-green glaze.

b Light orange fabric. Light green glaze with gritty texture. 65mm by 29mm by 12mm.

A6840; C1091–6; CG033; Phase F

5 Sandy buff fabric. Mottled olive-green glaze thinning to clear with gritty texture; dimpled and speckled; reduced grey core. 90mm by 65mm by 12mm tapering to 10mm.

A3268; C2150–4; M3b; Phase Vd; Rig VI

6 Light grey fabric with reduced grey core. Bottom edge has a pressed overhang. Olive-green glaze thinning to clear and worn with a slightly gritty texture; evidence of a throw-off. 95mm by 70mm by 15mm.

A4336; C2168–4; P1a; Phase Vd; Rig VI

7 Light buff fabric with reduced grey core. Upper surface shows signs of roller marks. Light green glaze with gritty texture; dimpled and speckled. 110mm by 85mm by 15mm.

A0609; C0093–5&A; Lade (4); Phase 6–12(b–e)

8 Light orange fabric with reduced grey core. Slightly curved upper surface with light green glaze; gritty texture, dimpled and speckled. 85mm by 65mm.

A7136; C1101–6; CG033; Phase F

9 Light orange fabric with light grey core. Light green glaze with gritty texture thinning at edges; dimpled and speckled. Trimmed at remaining corner. 100mm by 72mm by 16mm.

A0534; C0029–5&A; Lade (2); Phase 6–12(d)

10 Light orange fabric with light grey reduced core. Light green glaze. Trimmed at bottom edge. 80mm by 59mm by 15mm tapering to 10mm.

A12505; C1099–6; CG033; Phase F

11 Light orange fabric with reduced grey core. Pronounced apical curve with evidence of roller marks. Dark and mottled green glaze; dimpled and speckled. 105mm by 92mm by 15mm tapering to 9mm.

A1527; C1018–6; Building A(a), T1030; Phase I; Rigs V and VI

12 Orange fabric with reduced grey core (see Cat No 25); curved with slight throw-off. Thick olive-green glaze running around rim to under surface. 60mm by 55mm by 15mm.

A6293; C1084–6; Lade; Phase C–F

13 Orange fabric with a reduced grey core. Light green glaze; dimpled. 55mm by 40mm by 12mm tapering to 10mm.

A0414; C1005–B; T1006, D1006; Unstratified

14 Light orange fabric with light grey core. Trimmed at edge of under and upper surface. Thick olive-green glaze; evidence of roller marks on upper surface. 58mm by 15mm tapering to 10mm.

A2610; C1050–6; Modern, T1050, D1050; Rig IV

15 Light orange fabric with reduced grey core; evidence on upper surface of pressed clay overhang and trimming on under surface edge. Olive-green glaze; dimpled. Upper surface slightly dished with a throw-off. 66mm by 54mm by 13mm tapering to 10mm.

A2326; C0218–5; Garden 1; Phase 15

16a Heavily damaged fragment of light orange fabric with reduced grey core; trimmed at under surface edge. Traces of olive green glaze; dimpled. 62mm by 45mm by 12mm.

b Curved fragment of light orange fabric evenly fired; clear, dull glaze; dimpled. 65mm by 60mm by 16mm tapering to 11mm.

A0195; C0050–5&A; Lade (3); Phase 6–12(d–e)

17a Light orange fabric with reduced grey core (see Cat No 45); gently curved. Light green glaze running onto outer edge; dimpled. 58mm by 37mm by 11mm.

b Light orange fabric with faint grey core (see Cat No 45). Light green glaze. 50mm by 30mm by 12mm.

A5202; C1065–6; Lade; Phase C–F.

18 Light orange fabric. Trimmed on under surface edge and heavily damaged on glazed upper surface. Clay has been rolled thin for 20mm back from edge. Light green glaze. 75mm by 59mm by 17mm.

A0321; C0027–5&A; Lade (5); Phase 6–12(e)

19 Buff fabric; curved with traces of under surface scraping; thick reduced grey core. Thick olive-green glaze thinning at outer edge; dimpled. 96mm by 70mm by 13mm.

A1106; C2102–4; M3c; Phase Vd(VI); Rig V

20 Light grey buff fabric evenly fired. Under surface has been pared along edge and worked to give a gripping ridge. Upper surface has roller indentations. Thick olive-green glaze, patchy and thinning to edge where it is dimpled. 115mm by 95mm by 14mm.

A01-0055; C7000-7-10; Unstratified; Rigs VI-VIII

21 Light orange fabric with a grey core (see Cat No 7); curved. Olive-green glaze; slight dimpling. Heavily damaged upper surface. 64mm by 44mm by 15mm.

A0663; C0093-5&A; Lade (4); Phase 6-12(b-e)

22 Light orange fabric with thick grey core; curved; pared at one edge. Olive-green glaze running thin at edge; dimpled; slight throw-off. 61mm by 58mm by 15mm.

A3050; C2163-4; M3c; Phase Vd; Rig V

23 Light orange buff fabric with faint grey core. Light green glaze. 55mm by 27mm by 14mm.

A0639 (marked A0638); C2001-3/4; Unstratified; Rigs V and VI

24a Light orange fabric evenly fired. Patchy light green glaze; dimpled; slightly curved; scraped at bottom edge. 95mm by 60mm by 14mm.

b Light orange fabric with roller indentation on upper surface. Olive-green glaze thinning to patchy clear; crazed; dimpled. 54mm by 46mm by 11mm.

c Light orange fabric with reduced grey core; slightly curved. Light green glaze thinning to clear at rim; slightly dimpled. 60mm by 54mm by 13mm.

d Light orange fabric with faint grey core; rim rounded to under surface; slight corner throw-off. Residual light green glaze thinning to clear. 75mm by 73mm by 15mm.

e Light orange fabric with thick grey core. Light green glaze thinning towards rim; rounded rims. 80mm by 69mm by 13mm.

A01-0089; C7000-7-10; Unstratified; Rigs VI-VIII

25 Reddish orange fabric with light grey core. Light green glaze; speckled with gritty texture. Pared and trimmed on under surface edges. 95mm by 71mm by 17mm tapering to 11mm.

A6297; C1083-6; Lade; Phase C-F

26 Buff fabric with light grey core. Light green glaze; dimpled. 51mm by 47mm by 12mm.

A1433; C2115-4; M3e, Pit 2111; Phase Vdd>; Rig VI

27 Light orange fabric with thin light grey core; slightly curved. Evidence of rolling on upper surface. Light green glaze; dimpled. 60mm by 40mm by 15mm.

A0216; C0001-5&A; Unstratified; Phase 19; Rigs VII and VIII

28 Orange fabric with a grey core; curved. Heavily damaged on upper surface. Olive-green glaze. 80mm by 69mm by 16mm.

A0645; C2006-3/4; Unstratified; Rigs V and VI

29a Orange fabric with thick, light grey core; slightly curved.

Olive-green glaze thinning to clear; dimpled and speckled.

Trimmed at under surface edge. 87mm by 68mm by 15mm.

b Buff fabric with light grey core; trimmed at edges. Olive-green glaze thinning to clear; dimpled. 75mm by 55mm by 15mm.

A01-0008; C7000-7-10; Unstratified; Rigs VI-VIII

30a Light orange fabric with a faint grey core. Light green glaze. 48mm by 34mm by 16mm.

b Reddish orange fabric with grey sandwich core. Worn light green glaze; dimpled. Under surface has thin mortar coating. 60mm by 39mm by 18mm.

A1652; C0206-5; Garden 2; Phase 17 (see Cat No 43)

31a Orange fabric; coarse texture clay with reduced grey core; curved. Light green glaze; dimpled and speckled; thinning at edges. 96mm by 74mm by 13mm.

b Light orange fabric with thick grey core; curved. Olive-green glaze. 100mm by 50mm by 13mm.

c Orange fabric with thick dark grey core; curved; evidence of scraping on under surface. Light green glaze. 64mm by 33mm by 11mm.

d Light orange fabric with thick grey core; slightly curved. Light green glaze; dimpled, speckled; evidence of scraping on under surface. 94mm by 80mm by 15mm.

e Light orange fabric with thick light grey core. Light green glaze, speckled. 50mm by 40mm by 16mm.

f Pyramidal shape, possible fragment of cresting. Light orange fabric with light grey core. Light green glaze. 35mm by 35mm by 9mm.

A6808; C1091-6; CG033; Phase F (see Cat No 4).

32a Large broken fragment, 20mm thick at centre; light orange fabric with grey core; pronounced apical curve; trimmed at under and upper surface edges; evidence of under surface scraping. Patchy olive-green glaze thinning at edges; dimpled, speckled. 180mm by 150mm by 16mm.

b Buff fabric with light grey core; slightly curved and scraped at edges; unevenly rolled under surface. Light green glaze, thinning to clear; dimpled, speckled. 114mm by 90mm by 15mm.

A01-0088; C7000-7-10; Unstratified; Rigs VI-VIII

33 Reddish orange fabric with thick grey core; tightly curved

apically with slight throw-off at the edge; under surface

scraping. Patchy light green glaze; speckled. 110mm by 65mm by 15mm.

A01-0036; C7000-7-10; Unstratified; Rigs VI-VIII

34a Orange fabric with thick grey core; slightly curved. Olive-green glaze; dimpled and speckled. 80mm by 50mm by 13mm.

b Orange fabric with thick grey core; slightly curved. Olive-green glaze fading at the edges; dimpled and speckled. 46mm by 33mm by 16mm.

c Light orange fabric with grey core; trimmed on under surface edge; evidence of roller marks on upper surface centrally. Patchy olive-green and light green glaze thinning at centre; dimpled and speckled. 104mm by 95mm by 20mm tapering to 13mm.

d Orange fabric with grey core; under surface scraping. Olive-green glaze with white flecks. 80mm by 50mm by 15mm.
A4988; C1076–6; CG032; Phase D–F

35a Orange fabric with faint grey core; slightly curved; trimmed at under surface edge. Light green glaze; speckled. 78mm by 46mm by 9mm.

b Light orange fabric with grey core; rounded edge, trimmed underneath. Patchy dark and light green glaze, thinning at edge; dimpled and slightly curved. 52mm by 49mm by 15mm.
A1031; C2103–4; M3d; Phase Vdd, Rigs V and VI

36 Light buff fabric with dark grey sandwich core. Dark green glaze; very worn. 80mm by 58mm by 15mm.
A1068; C2110–4; M3b; Phase Vd; Rig VI

37a Light orange fabric with light grey core; tight atypical curve. Olive-green glaze; gritty texture. 53mm by 44mm by 12mm.

b Buff fabric with dark grey sandwich core; heavily damaged fragment. Residual traces of light green glaze. 48mm by 44mm by 15mm.

A0672; C2002–3/4; Unstratified; Rigs V and VI

38a Buff fabric with light grey core; scraped on under surface to provide grip; extensively damaged on upper surface. Olive-green glaze; speckled. 78mm by 74mm by 15mm.

b Buff fabric with grey core. Olive-green glaze; dimpled and speckled. 68mm by 38mm by 13mm.

c Light orange fabric with light grey core; tightly curved apically; trimmed on under and upper surfaces of lower edge. Patchy olive-green glaze; dimpled and heavily speckled; thinning out towards throw-off edge. 180mm by 174mm by 15mm.

d Roughly oval shaped fragment with a splayed thickening and down turned lip. Light orange fabric with reduced sandwich core. Light green glaze on both surfaces. Traces of mortar adhesion on splay and underside. 15mm thick.

A0991; C2046–2; Unstratified; Rigs V and VI

39 Possible fragment of ridge tile. Light grey fabric, slightly curved. Glaze worn off, dark brown speckling remains. 53mm by 53mm by 20mm tapering to 15mm.

A9292?; C2002–3/4?; Unstratified

40 Light orange fabric with thin reduced core; trimmed on under surface edge. Clear glaze worn. 15mm thick tapering to 11mm.
A1137; C1001–6; Unstratified; Phase K

41 Light orange fabric with thick grey core; pared at edge. Light green worn glaze; speckled. Heavily damaged on upper and under surfaces. 45mm by 45mm by 16mm tapering to 12mm.
A0979; C2002–3/4; Unstratified; Rigs V and VI

The following smaller fragments have been classified as pieces of ridge tile on the basis of compositional and stylistic similarities:

42a Orange fabric with grey core and light green glaze.

b Orange fabric, curved with thin green glaze.

A0195; C0050–5&A; Lade (3); Phase 6–12(d–e)

43 Light orange fabric evenly fired; curved. Glaze blackened and blistered.

A2340; C0206–5; Garden 2; Phase 17

44 Light orange fabric; curved. Thick olive-green glaze; speckled and dimpled. Traces of mortar adhesion; under surface chipped.

A1033; C2010–4; Unstratified; Rigs V and VI

45 Light orange fabric with reduced grey core. Dark olive-green glaze; speckled. (see Cat No 17b).

A3819; C1065–6; Lade; Phase C–F

46 Sandy buff fabric with dark grey reduced grey core. Light green glaze dimpled. Corner fragment.

A01–1456; C7350–7; P8.2b; Phase IVb; Rig VII

47 Dark orange fabric of gritty texture; single large flint inclusion. Residual patchy light green glaze. Possible corner fragment.

A01–0681; C6030–10; M9b(b); Phase IVc, IVcc; Rig VIII

48 Sandy buff fabric with reduced grey core. Olive-green glaze; speckled. Traces of mortar on under surface.

A4849 or A4850; C2192–4; M3a; Phase Vb–Vc; Rigs V and VI

Roof ventilators

These are fully described under the general classification; the following additional details may be noted:

49 Orange fabric with light grey core. Light green glaze on both surfaces thinning to clear; dimpled and speckled. 70mm by 42mm by 8mm. (see Cat Nos 45 and 17b).

A5004; C1065–6; Lade; Phase C–F

50 Angled fragment of light orange fabric; roller marks on glazed surface; one wall 8mm thick, the other 12mm. Light green glaze thinning to clear and patchy; gritty texture.

A1137; C1001–6; Unstratified; Phase K.

Unglazed roof tiles

These are detailed under the general classification.

51 A0517; C0028–5&A; Lade (2); Phase 6–12(d)

52 A7672; C2544–3; P6; Phase IVcc, Va; Rig VI

Peg tiles

In addition to the fifty fragments from the pit in Building 18 (Phase 2a) (A01–0827) described under the general classification, the following are also included in this category.

53 A01–1308; C7326–7; M1.4f; Phase IVc; Rig VI (see Cat Nos 55 and 61)

54 A01–1331; C7323–7; B18 (Phase 2a), External 1–Pit 7314; Phase IVb; Rig VII

55 A01–1297; C7326–7; M1.4f; Phase IVc; Rig VI

56 A01–1411; C7347–7; MC146; Pit 7357; Phase <IVb; Rig VII

57 A01–1424; C7379–7; MC133; Phase IVa–IVb; Rig VII

58 A01–1101; C7298–7; B18 (Phase 2b), North Room, Hall and Hall South–Occupation (10); Phase IVb; Rig VII

59 A01–1205; C6138–10; M9b(b), Pit 6132; Phase IVc, IVcc; Rig VIII

60 A01–1104; C7284–7; P8.2b; Phase IVb; Rig VII

61 A01–1309; C7326–7; M1.4f; Phase IVc; Rig VI (see Cat Nos 53 and 55)

62 A01–1033; C7247–7; M9a; Phase IVc, IVcc; Rig VII

63 A9292; C2630–3; MC092, WW2631; Phase IIc–IIff; Rig V/VI

64 A12370; C4533–4; MC017; Phase Ia–Icc>; Rigs V and VI

Roof finial

65 See under general classification. A4750; C2817–2; B26, Floor/Occupation (10c); Phase IIg–IVaa; Rig V

Slates

Four fragments of stone slate were also recovered, two of them with peg holes and one with faint traces of lime bedding. They are of micaceous lower old red sandstone, fine grained and well cleaved. They have been tooled around their edges. The largest measures 296mm by 185mm by 15mm.

66 A0631; C2001–3/4; Unstratified; Rigs V and VI

67 A2621; C0213–5; CG024; Phase 14–16

68 A01–1137; C6142–10; M9b(b), T6142; Phase IVc, IVcc; Rig VIII

69 A3051; C2163–4; M3c; Phase Vd; Rig V

Two pieces of densely micaceous charcoal-grey stone slate were also found:

70 A11028; C4470–3; M1.1c, Pit 5005; Phase IId; Rig VI

71 A11119; C4564–4; MC117, Pit 4695; Phase IIe–IIIf; Rig V

Shingle

See also under general classification.

72 A11257; C2607–3; B23, North Room–Occupation (1a); Phase IIb–IIIf; Rig V

Floor tiles

See under general classification.

73 A0383; C1003–B; Unstratified

74 A0299; C1004–B; Unstratified

75 A1652; C0206–5; Garden 2; Phase 17

76 A0934; C2006–3/4 Unstratified; Rigs V and VI

77 A01–1099; C7227–7; M9a; Phase IVc, IVcc; Rig VII

78 A0501; C2003–7/10; Unstratified, Sondage 2003; Rigs VII and VIII

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