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# TWELFTH-CENTURY FLOOR- AND ROOF-TILES AT ORFORD CASTLE

by P.J. DRURY, F.S.A., A.R.I.C.S. and E.C. NORTON, M.A., PH.D.

ORFORD CASTLE as built by Henry II consisted of the surviving keep surrounded by a now lost curtain wall with projecting towers. Its construction can be reliably dated from the Pipe Rolls to between 1165-66 and 1172-73. The keep is thought to have been completed first, probably by 1167 (Brown 1964, 4-5; Brown *et al* 1963, II, 769-71). It is of a unique type, cylindrical within but polygonal without, with three projecting rectangular towers which rise as turrets above the top of the main walls. It preserves its original 12th-century form, and later alterations appear to have been minimal. An oven in the north-east turret and a kitchen fireplace in the western projecting tower at first-floor level both incorporate fragments and wasters of ceramic floor- and roof-tiles. As long ago as 1842, it was observed that the oven was constructed of 'Norman brick' (Hartshorne 1842, 69). The purpose of this short paper is to establish that the tiles in both the oven and the kitchen fireplace form part of the original fabric of c.1165-67, and to discuss their significance in the light of this early date.

## THE RELATIONSHIP OF THE TILES TO THE FABRIC

The north-east turret contains a large oven, consisting of a small firing chamber at floor level connected by a flue to the baking chamber at a higher level (Pl. I). The oven is largely constructed of the same materials as the rest of the keep, that is, local septaria with limestone dressings. The septaria in the turret, as in most of the castle, is very decayed and eroded, so that the coursing of the stones around the oven is not immediately clear. However, close examination of the structure in November 1980 left no reason to doubt that the oven was indeed part of the original construction of the turret. Raking out of selected joints in the stonework confirmed that the mortar was similar throughout. The oven shows little sign of use, and none of ancient repair.

The floor of the firing chamber is formed of nine glazed floor-tiles c.170mm square, all semi-wasters or 'seconds', comprising two examples of Fig. 1.1 (Sherlock 1980, no 140), five of Fig. 1.2 and two plain tiles. The walls of the chamber, which are of stone, were built up off the edges of the tiled floor and prove that the tiles form an integral part of the structure. The interior face of the dome of the baking chamber, as well as the arch opening into it, is constructed of sherds of roof-tiles set on edge, together with a few floor-tiles similar to those used in the firing chamber. The structure is generally reminiscent of the approximately contemporary oven set into a turret (or rather, extended buttress) at roof level in the baronial castle at Conisbrough, South Yorkshire, dated c.1180-90 (Brown 1964, 15 for plan), though at Conisbrough the oven consists of a single chamber whose dome is formed of spalls of stone set on edge.

The fireplace in the first-floor kitchen, on the west side of the keep, is set into the outer wall of the projecting tower, and is surmounted by a semi-circular arch (Pl.II). The fireback is again formed of tile-sherds set on edge, as in the dome of the oven; they are mostly roof-tiles, but there are a few floor-tiles, including at least one comparable to Fig. 1.1. They are laid largely in herringbone pattern, and line both the back and the reveals of the fireplace. In the north wall an upper horizontal course continues about a metre beyond the fireplace into one of the horizontal joints of the stonework (Pl. II, right). This shows that the tiles are part of the original structure of the keep, as is also indicated by the general form of the fireplace with its round arch, the absence of any sign of alteration and the use of identical mortar throughout the walls of the kitchen.

Like the oven in the turret, this fireplace shows little sign of use. Its position suggests that it was intended as a privy kitchen, but in practice most cooking and baking seem to have been done in more spacious buildings in the bailey. By contrast, the large fireplaces in the halls on the ground floor and

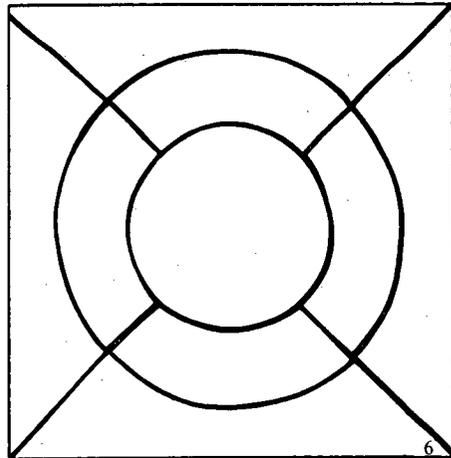
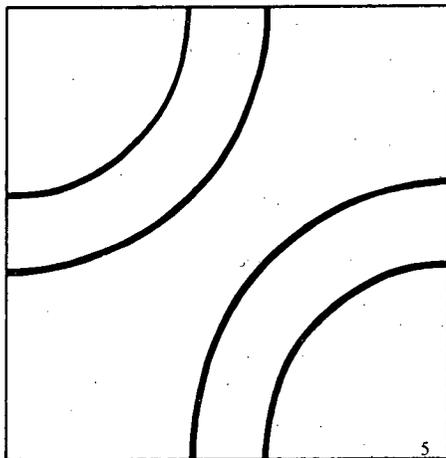
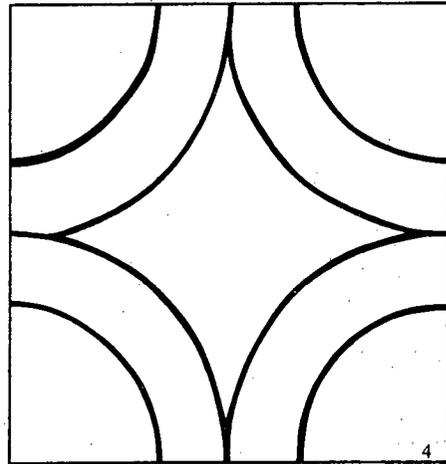
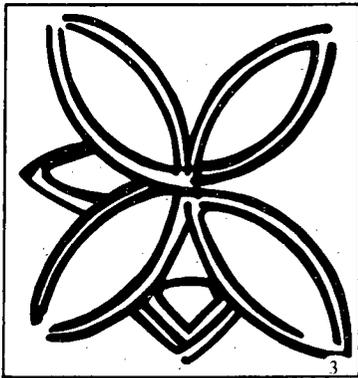
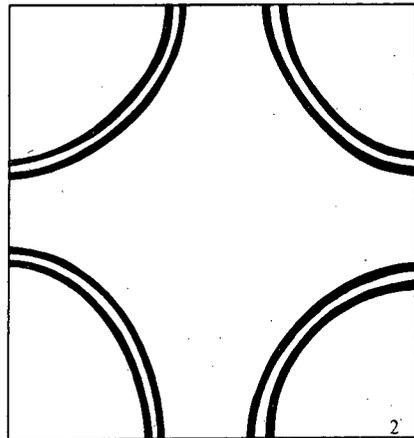
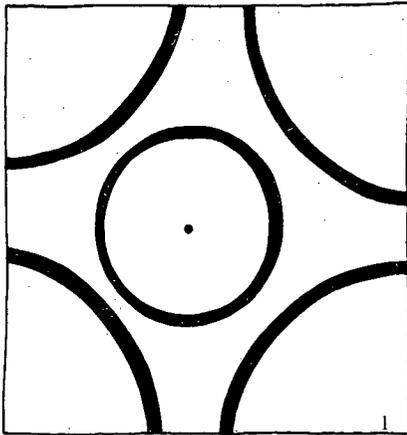


FIG. 1 — (1), (2) Floor tile designs at Orford Castle, both drawn from various examples *in situ* in the fabric of the turret oven and first-floor kitchen fireplace; (3) floor tile design from Sawley Abbey, North Yorkshire; (4) - (6), designs of tiles in the floor of the chapelle Saint-Michel in the collegiate church of Saint-Quentin, Aisne (scale 1:3).

first floor show clear evidence of late medieval alteration (Brown 1964, 17-19): the stonework above the fireplaces was completely remodelled and the firebacks were renewed using bricks and tiles of different sizes laid in a quite different way. In short, both the oven in the turret and the fireplace in the first-floor kitchen are part of the original structure of the keep, and they enable the tiles which are built into them to be dated c.1165-67.

#### THE TILES

All the tiles are in a hard red-brown sandy fabric, sometimes overfired and reduced. The *roof-tiles* measure c.330-350 x 190-200 x 18-20mm. They have two circular pegholes near the top edge for fixing and the lower third (at least) of the top surface is covered with a plain lead glaze, firing brownish-red. The *floor-tiles* are c.165-170mm square and 25-30mm thick, with undercut sides and with bases retaining sand from the form. The surviving specimens are mostly overfired and reduced almost to black, the glaze appearing a similar colour. One properly oxidised example in the kitchen fireplace is of a rich brown colour, and this is probably the intended finish. The designs (Fig. 1.1-2) were incised into the surface with compasses, the lines being 2-5mm wide and 1-2mm deep. On some specimens of design 1 a compass-hole is visible in the centre. Because of the technique used, each specimen is slightly different.

The Orford Castle tiles are among the earliest glazed roof- and floor-tiles in the country. It was only in the middle of the 12th century that, for the first time since the Roman period, ceramic building materials began to be manufactured in significant quantities in Britain. Thus began their prominent rôle in the buildings of the British Isles which has continued until the present day.

Apart from the doubtful case of the Anglo-Saxon bricks at Brixworth, Northants (Everson and Parsons 1979), the only known ceramic building materials certainly attributable to the Anglo-Saxon period are some decorated polychrome relief tiles found recently at a number of major late Saxon sites, including Bury St Edmunds Abbey (Gem and Keen 1981, 20-26). They date probably to the 10th or early 11th century and form an isolated series which is apparently unconnected to the standard medieval types of decorated floor-tiles and which has as yet no continental parallels. Extremely interesting though they are, these tiles were clearly exceptional products, and it is evident that there was no large-scale production of ceramic building materials in Anglo-Saxon England.

A similar picture emerges on the continent. Following the collapse of the Western Empire, the production of ceramic building materials all but ceased in north-west Europe. Though there are a few architectural ceramics of various kinds from Merovingian and Carolingian France, for instance, (Norton 1983b, 35-36), the great revival of these industries in northern France, the Low Countries and Germany only took place from about the middle of the 12th century. The re-emergence of major brick and tile industries in this period was of capital importance for the subsequent development of architecture in north-west Europe, but the stages by which it took place are very imperfectly understood. The techniques were no doubt ultimately derived from the countries bordering the northern shores of the western Mediterranean, where brick and tile production may well have continued more or less unbroken from the late Roman period. It is perhaps significant that the standard type of medieval tile kiln was very similar to Roman tile kilns (McWhirr 1979b), a fact which again suggests some continuity of tradition from the late Roman period.

The Orford tiles are important because they are precisely dated examples within a period from which few ceramic building materials survive and even fewer are well dated. The only comparable material in East Anglia is the elaborate brickwork used in the Cistercian Abbey at Coggeshall, of c.1150-1225. It includes complex shaped bricks of various kinds, and large flat bonding tiles of the Roman type (Gardner 1955; Drury 1981, 126-27); a few fragments have recently come to light which suggest that glazed floor- and roof-tiles were also produced (Drury and Norton forthcoming). Finds of roof-tiles from sites in other areas dating to the late 12th and early 13th centuries show that two quite different systems of roof-covering were in use at the same time. *Tegulae* and *imbrices*, of a kind more

familiar from the Roman period, are known from various sites in southern England, including Reading Abbey (Armitage *et al* 1981, 361), Southampton (Platt and Coleman-Smith 1975, ii, fig. 212, 1386-90), and from *c.*1170 contexts in London (Armitage *et al* 1981, 360). At Scarborough in North Yorkshire a date in the mid-12th century for tiles of this type has been suggested on archaeological grounds (Drury 1981, 127). Although basically of a Roman type, a distinctively medieval feature of some of these tiles is the use of a lead glaze on their surface. However, this system of roof-covering seems to have gone out of fashion around the start of the 13th century. The type which became standard was the flat tile fixed through holes with wooden pegs or iron nails—essentially a skeuomorph of the north European wooden shingle, though sometimes modified to allow fixing by a projecting lug on the back (Drury 1981, 131). Such tiles begin to appear in London contemporaneously with the Roman-type *tegulae* and *imbrices* from about 1170 (Armitage *et al* 1981, 361), but the Orford Castle tiles must take precedence as the earliest *securely dated* examples so far discovered.

The floor-tiles are no less interesting than the roof-tiles. Decorated glazed floor-tiles were a characteristic and distinctive feature of medieval architecture over most of north-west Europe, with no known antecedents except the isolated Anglo-Saxon polychrome relief tiles already mentioned. Elaborate tile pavements appear regularly in England from the second quarter of the 13th century, but earlier examples are extremely rare, and the Orford Castle tiles are among the earliest not merely in this country, but in the whole of Europe.

A group of extremely fine high relief tiles from the chapter house at St Albans are contemporary with the Orford tiles, dating to *c.*1160 (Biddle and Kjølbye-Biddle 1980, 24-25; London 1984, 392, no. 552). Fragments almost certainly made by the same workshop have been recorded at two dependencies of St Albans, Hertford Priory and Wymondham Priory (Philips 1904, 46, no. vi; Drury and Norton forthcoming), and it is possible that some of the other early relief tiles in Britain, such as those from Buckfast Abbey, should now be placed in the 12th century (Norton forthcoming). Relief tiles dating to the later 12th century are also known from European sites as far afield as Czechoslovakia, Alsace (Norton 1983b, 133-34), and Denmark (Hansen and Sorensen 1984). These relief tiles, however, are both technically and stylistically very different from the Orford tiles.

Among English tiles, a much better comparison is provided by a series known from three sites in Kent - Faversham Abbey (Rigold 1968, 44-47), St Augustine's Abbey, Canterbury (Horton forthcoming), and Blackfriars, Canterbury (Eames 1975, 88-89; 1980, no. 2214). They were probably made at Clowes Wood, near Tyler Hill, a few kilometres north of Canterbury, where wasters have been found (Eames 1975, 89). The tiles are similar to those at Orford, *c.*170mm square, with designs incised by hand, sometimes with the help of a compass. In addition, parts of the surface are covered with white slip, a feature which does not appear on any of the surviving Orford tiles. The designs include large circular patterns covering many tiles, simple foliate motifs, animal and human figures, and a number of simple geometrical patterns, some of which are very similar to those on the Orford tiles. The date of this series is somewhat uncertain, estimates ranging from the early 13th century (Rigold 1968, 44) to the early 14th (Eames 1975, 88-89; 1980, 62-63). It seems most likely, however, that they date to shortly before the middle of the 13th century, perhaps to the 1240s (Norton 1983b, 197-98). They are thus considerably later than the Orford Castle tiles.

The best parallels are provided by a distinctive series of tiles found over much of north-west Europe, but above all in France, and particularly associated with the Cistercian Order. During the 12th and early 13th centuries, decorative tile pavements seem to have been more common in the geographical area covered by modern France than in Britain. The usual type consists of plain mosaic tiles very similar in conception to the mid-13th-century mosaic tile pavements of northern England and southern Scotland (Eames and Beulah 1956; Eames 1980, 72-82; Norton forthcoming). The Cistercians, however, seem to have preferred square (or occasionally rectangular or octagonal) tiles decorated with simple linear geometric patterns, some of which are closely comparable to the Orford Castle designs (Norton 1983a; 1983b, 110-29; forthcoming). The designs were either incised by hand

(sometimes with the help of a compass) or applied with a wooden stamp, the latter being known technically as line-impressed or counter-relief tiles. The use of a stamp was probably a technical advance on the more laborious process of drawing the designs by hand, but all these tiles can be considered to belong to a single series. They are always monochrome, like those at Orford. Examples have been found at Cistercian abbeys in France, particularly in Burgundy and the surrounding regions, and sporadically in England, Belgium, Switzerland and even as far afield as the abbey of Pilis in Hungary. In England, tiles of this type have recently been identified at the abbeys of Bordesley, Boxley, Sawley and Waverley (Norton 1983a, 103; 1983b, 110-29; forthcoming). A single specimen found at Sawley in the 19th century but apparently now lost bears a hand-incised design of a distinctly irregular form (Fig. 1.3) as compared with the Orford designs. Closest of all to the Orford Castle tiles, except that they are unglazed, are those from the Hungarian abbey of Pilis (Pl. III a-c), where, as at Orford, the hole made by the compass is sometimes clearly visible. This exceptionally widely distributed series of Cistercian tiles may be dated to the decades c.1190-1220.

Tiles decorated with simple hand-incised designs were thus known on the continent before the end of the 12th century. They were particularly favoured by the Cistercians because they accorded better with Cistercian aesthetic principles than the much more colourful mosaic tile pavements generally used in France; but they were not unique to the order. Fragments of hand-incised tiles, not properly dated but probably belonging to the 12th or early 13th century, have been found at two non-Cistercian sites in France, while other square tiles with simple linear patterns much like those at Orford, this time of the line-impressed variety, survive in a floor in the chapelle Saint-Michel in the collegiate church of Saint-Quentin (Aisne), dated c.1195 (Fig. 1.3-6 here; Amé 1859, pt I, pl. opp. p. 120; Norton 1983a, figs 85-87; 1983b, 103-110).

Thus the Orford Castle tiles are at present the earliest known representatives of a type of floor-tile which was current in the later 12th and early 13th centuries. They indicate that pavements of this type, though particularly favoured by the Cistercians and spread by them over most of north-west Europe around the end of the 12th century, were almost certainly not actually invented by them. It cannot however be concluded, on the evidence of Orford Castle alone, that this type of tile was invented in England: there may well have been French prototypes which have not survived or await excavation. The quite different high relief tiles also appear in several different countries in the later 12th century; and in both cases the question of the origins of the technique cannot be resolved without further discoveries.

To sum up, the Orford Castle roof- and floor-tiles are exceptionally well-dated early examples of the products of the newly resurgent architectural ceramic industries of Britain and of north-west Europe as a whole. The roof-tiles are the earliest *dated* specimens of flat peg-tiles in the country, while the floor-tiles are, apart from those from St Albans, the earliest firmly dated decorated floor-tiles in Britain, and certainly the earliest dated examples of the hand-incised technique in Europe. Future discoveries may show whether or not roof- and floor-tiles were already known in England in the first half of the 12th century. Further back still, there remains the question of possible connections with the late Saxon polychrome relief tiles of the 10th and early 11th centuries. While at the moment there seems to be a gap of over a century between the disappearance of the latter and the revival of tile production in England in the mid-12th century, it is worth mentioning the existence, only recently reported, of plain glazed tiles in a late 11th-century context in one of the monastic buildings at Westminster Abbey (Gem 1981, 59-60), while some extraordinary decorated tiles attributed to the later 11th century from a church in Lisieux, in Normandy, deserve particular attention (Lachasse and Roy 1979, 317-18; Norton 1983b, 42-44). The significance of these finds, however, cannot be properly evaluated until they have been fully published.

To return, in conclusion, to Orford Castle itself, the extant tiles are all fragments or semi-wasters which have only survived through being built into the structure, and it is worth considering what their intended location would have been. The originally steeply-pitched conical roof of the keep was

probably lead-covered – at least, there is a reference to its repair with lead in 1307–08 (Brown *et al* 1963, 771) – but tiles could have been used on the buildings in the bailey. The decorated floor-tiles could also have adorned buildings (hall or chapel?) in the bailey, since neither the halls nor the chapel in the keep have floors carried on vaults, and thus were not suitable for a tile pavement. It may be that the floor tiles in particular were made primarily for use in the nearby parish church of St Bartholomew. The now-ruinous chancel was begun in 1166, and the building of which it formed part ‘must have been in grandeur a match to the castle’ (Pevsner and Radcliffe 1975, 383).

Since Orford was a major port, it is possible that the tiles were actually made further afield and shipped along the coast. In the later Middle Ages waste tiles could be sold as building material (Drury 1981, 133; Moorhouse 1981, 107), but the early date of the Orford Castle tiles relative to the general introduction of ceramic roof- and floor-tiles makes this unlikely, as does the absence of the distinctive decorated floor-tiles from any other site in the region. At Orford Castle the availability of wasters for use in the oven and kitchen fireplace indeed strongly suggests manufacture on or near the site. However this may be, the appearance of these remarkably early roof- and floor-tiles is consistent with the fact that Orford Castle was not only a royal building, but one of the most expensive building projects undertaken by Henry II (Brown 1964, 4).

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