THE BUILDING MATERIALS

THE FLOOR TILES (Fig. 47) by S. Robinson

A total of 228 floor tile fragments were recovered from the site, of which 172 came from stratified contexts. The remaining 56, being unstratified, are not considered in the following discussion. Of the stratified fragments 106 had recognisable surface decoration, 25 had unidentifiable decoration, and 41 were plain.

Two different fabric types were identified, both of which have been previously described in detail.1 All the decorated floor tiles and the majority of plain floor tiles are of the same fabric type with quartz and grog inclusions (IIIC); one plain tile fragment, however, has pink and white quartz inclusions (IIIB), a fabric paralleled by a pottery fabric originating to the south of Oxford.2

Plain tiles

The majority (27) of the plain tile fragments came from a single context (F1005, Phase 3/3, Group 8), having been re-used in a tile-on-edge hearth. Other fragments, including that with the pink and white quartz inclusions (IIIB), came from various contexts, all appearing to have been re-used in hearths, no context being later than Phase 3.

Decorated Tiles

The decorated floor tiles can be divided into three classes on the basis of provenance. The three areas on site from which floor tiles came were: 1. the pentice; 2. the chapel and 3. other miscellaneous locations, including general demolition layers. To a certain extent different designs can be seen to correlate to the different provenances; the relationship between these locations and the design types can be seen in Table 1.

All the decorated tiles are of the unkeyed, printed variety such as were produced at Penn.3 Only three of the 11 different designs identified, however, were recorded by Hohler as being Penn types.4

Class 1

All the 48 tiles in this group came from contexts around and within the pentice, three of which (F589, 732 and 548) are Phase 4/2, the remainder being Phase 5. All the complete tiles recovered were about 11.5cm square. Mortar impressions found (F589) suggest the tiles were laid diagonally to the walls of the building.

Four different designs are present, all of which have been described by Haberly.5 The commonest of these (31 fragments) is Haberly type LXXIX, but types CIX (7 fragments), CLXXXI (9 fragments) and CCLIV (1 fragment) also occur. Of these designs only CIX is paralleled at Penn (P74);6 the other three designs, however, appear to have possibly been influenced by Penn designs.

Class 2

This class contains only 15 decorated tile fragments, all of which came from contexts within the chapel, one of which (F144) is of Phase 3/1, two (F169/1 and 145) are Phase 4/1 and the rest are Phase 5. Again, complete tiles are about 11.5cm square; the presence of tiles scored longitudinally before firing, then broken in half afterwards so as to fit at the edge of the floor, implies that they were laid square to the walls of the chapel. Three different designs (A-C below; Fig. 47) are present, none of which have been described before.

A. A geometrical design of four straight lines running from the corners to the centre of the tile. The centre is enclosed by a square, diagonal to the sides of the tile. The lines are ornamented with leaves and trefoils, the design being vaguely similar to Penn types P88-89.7

B. This design consists of a central six-petalled flower and corner quadrants, each containing, as far as can be ascertained, a different motif:

i) ?Five-petalled flower
ii) Sprig of acorn and oak leaves
iii) An animal (?bull) head,
iv) Lost.

C. An unusual design of a central ? monks head within a circular band, from which radiate alternately trefoils (towards the corners) and oak leaves (four of each).

Class 3

This is a varied group of 43 decorated tile fragments from miscellaneous contexts, one (F25) a modern ditch cut, two (F563 and 635) from Phase 4/2, the rest from Phase 5. It includes demolition layers and those contexts containing very few fragments not assignable to either of the above classes. A large number of different designs were identified, including those already mentioned. The designs present are listed in Table 1.

Table 1. List of decorated tile design types present in Class 3.

Design Type		No. of Fragments	Parallels
Haberly type8	LXXVII	1	
	LXXIX	22	
	CII	1	Penn type9 P171a
	CVII	1	
	CIX	9	P74
	CXVI	1	P157
	CLXXXI	4	
New designs	A	2	
	B	1	
	C	1	
Total		43	

Conclusions

The floor tiles from the site are found in two main concentrations, each consisting of a small number of designs, different in either case. Of the remaining tiles a few came from other areas on site, and larger quantities came from demolition layers.

The earliest floor tiles are plain ones from Phases 2 and 3; the only plain tiles later than Phase 3 are from contexts also containing decorated floor tiles, suggesting that the earliest floor tiles used in the manor were plain rather than decorated. The earliest decorated floor tiles are from Phase 3/1 but are believed to be intrusive (F144), although associated with the first chapel. Printed floor tiles are being produced at Penn from the mid-fourteenth to early fifteenth centuries (certainly no earlier).10 All but one of the other decorated floor tiles came from contexts within Phases 4/1, 4/2 and 5.

Since a lot of these decorated tiles show similarities with the Penn designs it seems likely that they are the products of a single local workshop whose tilers possibly had some connection with Penn. As all the decorated and plain floor tiles except one and the majority of the roof tiles are of an identical fabric (white quartz and grog, IIIC), all were probably being produced in the same area, possibly by the same kilns. This fabric-type probably came from south-east Oxfordshire centring on Nettlebed, as mentioned above.

Samples of decorated floor tile have been examined in detail by x-ray fluorescence and atomic absorption methods. The results obtained show the Chalgrove tiles to be similar to decorated floor tiles from Stonor House (ref?), suggesting a similar area of production for both sets of tiles, again in south-east Oxfordshire.

Acknowledgement

I am grateful to Chris Storey for recording the floor tiles from the site.

Notes

1. N. Palmer, `A Beaker Burial and Medieval Tenements in the Hamel, Oxford', Oxoniensia xlv (1980), fiche 2, D10.
2. B.G. Durham, `Archaeological Investigations in St. Aldate's', Oxoniensia xlii (1977), 114-120, Fabric AG.
3. E. Eames, A catalogue of the lead-glazed earthenware tiles in the British Museum (B.M.P. 1980).
4. C. Hohler, `Medieval Paving Tiles in Buckinghamshire', Records of Bucks. xiv (1941), 1-49.
5. L. Haberley, Mediaeval English Paving Tiles (Oxford, 1937).
6. Hohler op. cit.
7. Ibid.
8. Haberly op. cit.
9. Hohler op. cit.
10. E. Eames, Medieval Tiles, A Handbook (B.M.P. 1968).

THE ROOF TILES by S. Robinson

The roof tile fragments from a single stratified string were examined and recorded in detail to see whether any variation with time could be identified. The remaining roof tile fragments recovered were examined, though not recorded, to establish whether any additional information could be gathered.

Stratified string

Of the 204 separate tile fragments contained in the string 152 were positively identified as roof tiles, the remaining 52 were classed as miscellaneous, the fragments being too small to identify or measure.

Four different fabric types were recognised, all of which have been previously described in detail,1 the fabric types present being: pink quartz inclusions (IIIA); pink and white quartz and iron (IIIB); white quartz and grog (IIIC), and grey and white quartz and grog (IV). The fabric with pink quartz inclusions (IIIA) is paralleled by a pottery fabric-type coming from an area east of Oxford centring on Brill,2 and the pink and white quartz and iron (IIIB) fabric is paralleled by one originating to the south of Oxford.3

Three tile fragments are of particular interest. The first (from F19, Phase 5, Group 23) is the white quartz and grog (IIIC) fabric, and contains a sizeable patch of white (pipe) clay within the body of the tile. White clay is found at Shotover south of Oxford, in the Reading beds, and a deposit of pipe clay also occurs in the parish of Henley.4 The presence of white clay suggests that tiles of the white quartz and grog (IIIC) fabric may be manufactured in south east Oxfordshire.

The other two fragments (from F26 and 516, Phase 5, Group 23) are of the pink and white quartz and iron (IIIB) fabric. Both have been fired hard in reducing conditions and are vitrified. One also has a grey `glaze' on its unbroken edge, probably due to the presence of soda-sand during firing. The presence of this sand and the high degree of firing may be accidental, but the introduction of soda-sand and the technique of hard firing were later used by brickmakers to produce decorative grey and blue headers. The only notable relationship between fabric type and phase (Table 1.) is that the grey and white quartz and grog (IV) fabric is only seen in the last phase (Phase 5), suggesting it may be a later fabric type. However, there are not many tile fragments from the earlier phases, so this observation need not necessarily be significant.

All the tile fragments recorded, with the exception of two, are flat roofing tiles with peg holes (1.6cm diameter) for wooden pegs to hold the tiles on the roof. Some tiles also have mortar traces on their underside, suggesting they were mortared to prevent them from moving. A few fragments are covered with mortar, and their presence in a wall context (F992, Phase 3/1, Group 7) implies they were re-used as building material. Only one complete roof tile was recovered (F19, Phase 5, Group 23); it is 27.5cm long and 17.0cm wide. Several other half tiles were recovered; in all cases their width is between 16.5cm and 17.5cm. No fragment is thicker than 1.8cm, most being 1.3cm or 1.4cm thick.

Two ridge tile fragments were recovered (from F44, Phase 4/2, Group 10, and F520/1, Phase 5, Group 23). Both are the same shape, with neither glaze nor any form of ridge decoration.

The Remaining Tiles

A cursory examination of the rest of the roof tile fragments revealed three additional features worth noting here. Otherwise, the fact that there were no significant differences between the stratified string and the rest of the tiles suggests that the string was representative of the site as a whole.

In addition to the four fabric types already mentioned there were four tile fragments with limestone and white quartz inclusions and voids (VIIA).5 One of these fragments is from Phase 2/3 (F279/1, moat, probably redeposited), suggesting that the fabric type begins in the early 14th century, earlier than previously thought.

Several tiles contained impressions of animal feet. These are both dog paw prints and hoof prints of goats or deer. One fragment has an impression on its underside that resembles a broad bean.

One form of roof tile not previously encountered was the corner tile or hip tile, used for covering the corners on hipped roofs. These tiles all have a 0.8cm square hole, some showing signs of iron staining, and were clearly held by nails rather than wooden pegs.

Discussion

The suggestion that tiles of the white quartz and grog fabric (IIIC) came from south-east Oxfordshire is supported by documentary evidence.6 Documents of 1312-13 record the delivery of 15,000 flat peg and 150 crests and ridge tiles for the roofing of a new byre in Cuxham, the parish adjacent to Chalgrove. The place of manufacture of these tiles is not mentioned, but may well have been Nettlebed which was a major production centre for roof tiles in the mid-14th century and probably was making tiles earlier than this. The first reference to Nettlebed is in 1365, when 35,000 tiles were supplied for Wallingford Castle, and references continue into the mid-15th century.

According to Jope there is also documentary evidence that ridge tiles were being made at Penn in the late 13th century.7 This production centre is also a possible source for the Chalgrove roof tiles, although Penn is twice the distance of Nettlebed from Chalgrove.

From the variation in fabric types, especially the presence of the pink quartz fabric (IIIA), it is suggested that roof tiles were brought from different manufacturing centres to roof the buildings. No clear chronological patterning is evident in the use of the different fabric types. It seems likely that the white and grey quartz and grog fabrics (IV) were being produced in the same area as the white quartz and grog fabric (IIIC).

Table 1. To show the relationship between context (phase) and fabric type of the roof tiles (including misc. ones) from a single stratified string.

		Fabric Type				
Phase	Context	IIIA	IIIB	IIIC	IV	Total
5	19	2	6	15	-	23
5	26	-	1	3	-	4
5	234/1	-	-	1	-	1
5	275/1	-	1	-	-	1
5	500/1	3	5	11	3	22
5	501/1	-	1	1	-	2
5	502/1	2	1	-	-	3
5	510/1	-	-	1	-	1
5	511/1	-	1	1	-	2
5	512/1	9	3	48	2	62
5	515/1	-	1	2	-	3
5	520/1	4	5	19	5	33
4/2	44	-	-	1	-	1
4/2	639/1	-	3	1	-	4
4/2	733/1	-	3	-	-	3
4/2	737/1	1	-	3	-	4
4/2	739	1	-	-	-	1
4/2	741/1	1	-	-	-	1
4/2	765/1	2	-	1	-	3
4/2	806/1	-	-	1	-	1
4/2	825/1	-	-	1	-	1
3/1	56	1	2	2	-	5
3/1	763/1	-	1	-	-	1
3/1	766/1	2	-	3	-	5
3/1	927/1	1	-	-	-	1
3/1	982	2	1	4	-	7
3/1	1053/1	1	-	-	-	1
2	356/1	1	-	4	-	5
2	924/1	-	-	2	-	2
1	839/1	-	-	1	-	1
Total		33	35	126	10	204

Notes

1. N. Palmer, `A Beaker Burial and Medieval Tenements in the Hamel, Oxford', Oxoniensia xlv (1980), fiche 2, D10.
2. B.G. Durham, `Archaeological Investigations in St.Aldate's', Oxoniensia xlii (1977), 114-120, Fabric AM.
3. Ibid. Fabric AG.
4. Geol. Soc. Mem. (1908).

5. Post-Medieval Gazeteer, Oxoniensia, forthcoming.
6. C.J. Bond, S. Gosling and J. Rhodes, Oxfordshire Brickmakers (Oxfordshire Museums Service Publication No.14, 1980).
7. E.M. Jope, `The Development of Pottery Ridge Tiles in the Oxford Region', Oxoniensia xvi (1951), 86.

STONE SLATES by P. Page and J. Garlinge

A total of 78 fragments and whole stone slates were recovered from the excavation, representing a minimum of 54 individual tiles. Of these, 21 were complete slates.

Each fragment was examined and an attempt was made to divide them into different fabric types. The dimensions and shape of each tile, and the position of its peg hole was also recorded on the tile recording sheets. Eight apparently different stone tile fabrics were noted. An example of each fabric type was examined by Philip Powell, who found that they represented a maximum of 3 different quarry sources:

1. Fabric 1 was identified as Forest Marble, the nearest source of which to Chalgrove is at Filkins, Oxfordshire;1
2. Fabrics 2-4 and 6-8 were all identified as Stonesfield Slate from the north of Oxfordshire;
3. Fabric 5 was unidentifiable.

The use of the three sources throughout the different phases of the site's history is quantified in Table 1. below.

Table 1. To show the percentage of each slate type in each phase, the percentage of the total number of slates in each phase, and the percentage of the total number of slates of each slate type.

Phase:	2	3/1	3/2 -4/2	3/1	4/2	5	U/S	% oftotal
Source:								
1.	60%	-	-	-	5.88	2.94	-	6.33
2.	20%	87.5	100	100	94.12	88.24	100	87.34
?	20%	12.5	-	-	-	8.82	-	6.33
Total sherds per phase:	5	8	2	3	17	34	9	
% of total per phase:								

6.41 10.26 2.56 3.85 21.79 43.59 11.54

With such a small sample it would be unwise to attempt to draw too many conclusions from the above table. The distribution of the slate types is particularly suspect as it was, and still is, quite common to find different types of slates on the same roof. It is interesting to note that no slates were uncovered from Phase 1, and this absence may indicate something about the status of the structures in that phase. The spatial distribution is also of interest, with all but 2 fragments of stone slate located around the manor house (A), particularly on its north side. This would seem to suggest that none of the farm buildings around the courtyard were roofed in slate.

Were the majority of the slates from contexts associated with the alterations of Phase 3/1, it would be reasonable to suggest that the manor house was roofed with slates in Phase 2, and that these were replaced in 3/1 with the ubiquitous clay roof tile. However, the majority of the slates came from contexts of Phases 4/2 and 5. This makes it much more likely that building D, north of building A, was roofed in slate. A layer of slates (F1148) was noted between buildings A and D, and this would represent debris from the construction of its roof. The demolition of building D in Phase 4/2 would have provided the slate fragments found in the dump (F573), which covered that building. If any building at Chalgrove in the late 15th century was still roofed with slates the majority of them, if they were not re-used on another building, would probably have been sold. The indications from the documentary evidence would support this.2

It is possible that no building at Chalgrove ever had a slate roof, and that like the worked stone they were salvaged from the alterations to the church;3 however as this did not take place until the early 14th century, it would imply that the Phase 2 slates were intrusive.

Notes

1. Poulton, near Fairford, Gloucestershire, was known to produce slates from at least the 17th century.
2. See J.Blair, `The Barentins and Chalgrove', p.
3. `The Worked Stone' report, M

THE MEDIEVAL BRICK FRAGMENTS (Fig. 50) by J. Steane

Six fragments were submitted for identification and comments. Five are illustrated, and the other is of similar fabric but does not add further new information.

1. Fragment of brick. 19 cm. x 10.5 cm. x 5.5 cm. Side illustrated shows straw or grass impressions. Edge illustrated shows mould impressions. A soft sandy fabric, Munsell No. 2.5Y 8/4. WS15, F26, Phase 5, Group 23.
2. Fragment of brick. 12 cm. x 10.5 cm. x 5.5 cm. Side illustrated shows structures caused during moulding. The laminated clay has been pressed into a mould and then the top layer of clay has been cleaned off with a strike or similar traditional brickmakers' tool. There are several possible straw impressions on the other side. Munsell No. 10 YR 8/3. WS52, F26, Phase 5, Group 23.

3. Fragment of brick. 15 cm. x 9 cm. x 6 cm. There is a dab of mortar on the underside. The top of the brick shows striations caused by smoothing the clay after it has been pressed into the mould. The underside is pit-marked where the suction of the clay in the mould has caused some to be torn from the base of the brick. Munsell No. 2.5Y 8/4. WS32, F512, Phase 5, Group 23.
4. Small moulded brick fragment. 11 cm. x 6.5 cm. x 5.5 cm. Upper side is smooth, lower side pitted (see No.3) and there are marks of straw or grass impressions on one edge. The brick is bevelled with a semi-circular section but bruising has removed the top surface and the original profile has only survived on half the brick. Munsell No. 10 YR 6/2. WS18, U/S.
5. Moulded brick, sufficiently complete to make total reconstruction. 23 cm. x 11 cm. x 5 cm. Two edges are bevelled, one of which has a rectangular piece cut out of one corner. Top edge and two bevelled edges are smooth, the rest are pitted (see Nos.3 & 4). Munsell No. SY 8/3. WS17, U/S.

Gill Bussell of the Oxford University Laboratory for Archaeology has confirmed that the fragments are undoubtedly brick - they have been fired but not to a great temperature, they are made of iron-depleted clay, and are very soft.

A fragment was subjected to archaeomagnetic intensity investigation at the Research Laboratory for Archaeology and the History of Art, Oxford University, to discover whether or not it had ever undergone a firing process. A small (3 mm.) core was taken from the brick and put through a normal Thellier thermal re-magnetisation procedure using a SQUID magnetometer.1 The result of this indicated that the sample had indeed been heated to a temperature in excess of 450'C. at some point in its history, although whether this represents an original firing or an accidental heating is impossible to say.

Michael Hammett of the Brick Development Association) agrees that the material represents fired clay brick and considers that the raw material was Gault clay, an outcrop of which is in the Chalgrove area.2

The fragments are also of interest because they illustrate some of the techniques of medieval brick-making. These have been described by Brooks,3 and by Firman and Firman.4 The Chalgrove bricks confirm that the brick-maker sanded or wetted his mould, then threw into it a lump of prepared clay. The surfaces of the bricks were distinctly sandy to the touch. Surplus clay was sliced from the top of the mould by the strike (a wooden stick). This has left striations on the surface. The wet moulded bricks were then taken to the drying ground and laid out to dry on straw or grass. Their weight and plasticity caused the stalk impressions noted in Nos. 1, 2 and 4. There are no stony inclusions, but an occasional void suggests the former presence of grass in the fabric which was burned out during firing. The fabric is uniform in colour throughout the brick; there is no differently- coloured core to suggest over-firing. Perhaps the most interesting feature is the evidence for moulding and cutting the bricks into decorative shapes. Nos. 4 and 5 were clearly specially moulded to fulfil particular functions in the overall design. The chamfered edges on the other hand may have simply been cut down from standard bricks. One, No.6, has been cut as well as moulded.

The use of moulded brick is found in Belgium from as early as the 13th century.5 Moulded brick was used on a limited scale at Stonor Park. In 1416-17 Thomas Stonor bought 200,000 bricks from Michael Warwick for #40 and `The Flemings' are mentioned making bricks at `Crokkenende'.6 The medieval expression for moulded brick is "hewentile" and there are references in the Kirby Muxloe accounts of the 1480s to "breke leyers and hewers", for chimneys and vaulting.7 Since the bricks at Chalgrove were not found fixed in any structural context, their function is uncertain. A suggestion which can be made is that they were perhaps specially fashioned to provide a polychromatic, and therefore contrasting, edging to a fireplace or hearth. Their soft and crumbly surface would have made them unsuitable for any external use or any surface which was exposed to high temperatures. A late medieval or early post-medieval date would be acceptable.

Acknowledgements

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J. Bailey, Ancient Monuments Laboratory,
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London.

Notes

1. D. Walton,`Archaeomagnetic Intensity Measurements using a SQUID Magnetometer', Archaeometry xix(2), 192-200.
2. Geological Survey Sheet 254.
3. F.W. Brooks, `A Medieval Brickyard at Hull', Jnl.Brit.Archaeol.Ass. 3rd ser., iv (1939), 155-56.
4. R.J. and P.E. Firman, `A Geological Approach to the Study of Medieval Bricks', Mercian Geologist (1967).
5. J.P. Sosson, `Pour une Approche Economique et Sociale du Batiment, l'Exemple des Travaux Publics a Bruges aux XIV et XV Siecles', Bulletin de la Commission Royale des Monuments et des Sites, T2 (1972), 129-153.
6. C.J. Bond, S. Gosling, and J. Rhodes, Oxfordshire Brickmakers (Woodstock 1980), 3-5.
7. A. Hamilton Thompson, `The Building Accounts of Kirby Muxloe Castle, 480-4', Leicestershire Archaeol. Soc. (1913-14), 205, 208.