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Excavations at Carmarthen Greyfriars 1983-1990

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13TH-16TH CENTURY EARTHENWARE AND OOLITIC LIMESTONE FLOORTILES

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Introduction — the excavation background

EXCAVATIONS at the site of Carmarthen Grey friars commenced in 1983 in advance of the construction of a Tesco superstore. Two major years of work followed. A proposal to construct a shopping mall linking the superstore with the old town centre enabled further work to be undertaken between 1987 and 1990 when adjacent land became available. Prior to 1983 nothing was known of the precise position or scale of the friary's buildings.

The house is first recorded in 1282. The excavations demonstrated that the domestic buildings originally ranged around a single cloister set to the south of the church, this work cannot be dated any closer to sometime around 1250-1282. The next phase of activity - which may be viewed as part of a rolling programme of development - saw the addition of a second cloister with new buildings including a possible Infirmary, and the construction of a more elaborate system of drains. This had probably been completed before the end of the 13th century. Thus in a comparatively short timespan Carmarthen Greyfriars had grown into a substantial complex for a Franciscan Friary - and this is probably due in part to Royal patronage.

The only detailed work on the church has been within the choir - the site of the nave is still covered by inhabited cottages. The development of the building appears to have been basically a narrow nave and choir much in line with other mendicant churches. By the early 15th century the nave was extended northwards either by the addition of a north aisle or by doubling the width of the nave by the construction of a parallel range. The choir had three steps leading to the sanctuary, and these appear to be contemporary with the original construction of the building.

There is a fairly detailed Suppression inventory in 1538 and a description of the heraldry in 1530. At this date the choir was evidently crammed with monuments of local nobility some of whose tombs were removed at the Dissolution. These include Edmund Tudor (father of Henry VII) removed to St David's Cathedral; and Sir Rhys ap Thomas now in St Peter's Carmarthen.

The finds from the excavations (deposited in Carmarthen Museum) include a large collection of floor tiles, a very varied assemblage of medieval pottery, coins and jettons, stained glass (including a near complete late 13th century window); religious items; a large assemblage of human skeletal remains and other small finds. These are reported in the volumes of Topic Reports published by the Dyfed Archaeological Trust, and listed on the back cover of this volume. The topic reports also cover the structural history of the friary (excavation report); it is hoped that a synoptic report will appear in *Medieval Archaeology* or *Archaeological Cambrensis* and a popular report will also be published by the Trust.

Finance for the excavation was provided by Cadw/Welsh Historic Monuments, The Manpower Services Commission Community Programme and Vanson PLC. Permission to excavate was granted by the landowners: Carmarthen District Council, T. P. Hughes Ltd, the Land Authority for Wales and Vanson PLC. The Trust would like to express its thanks to all these organisations, and individuals involved in this long-term project.

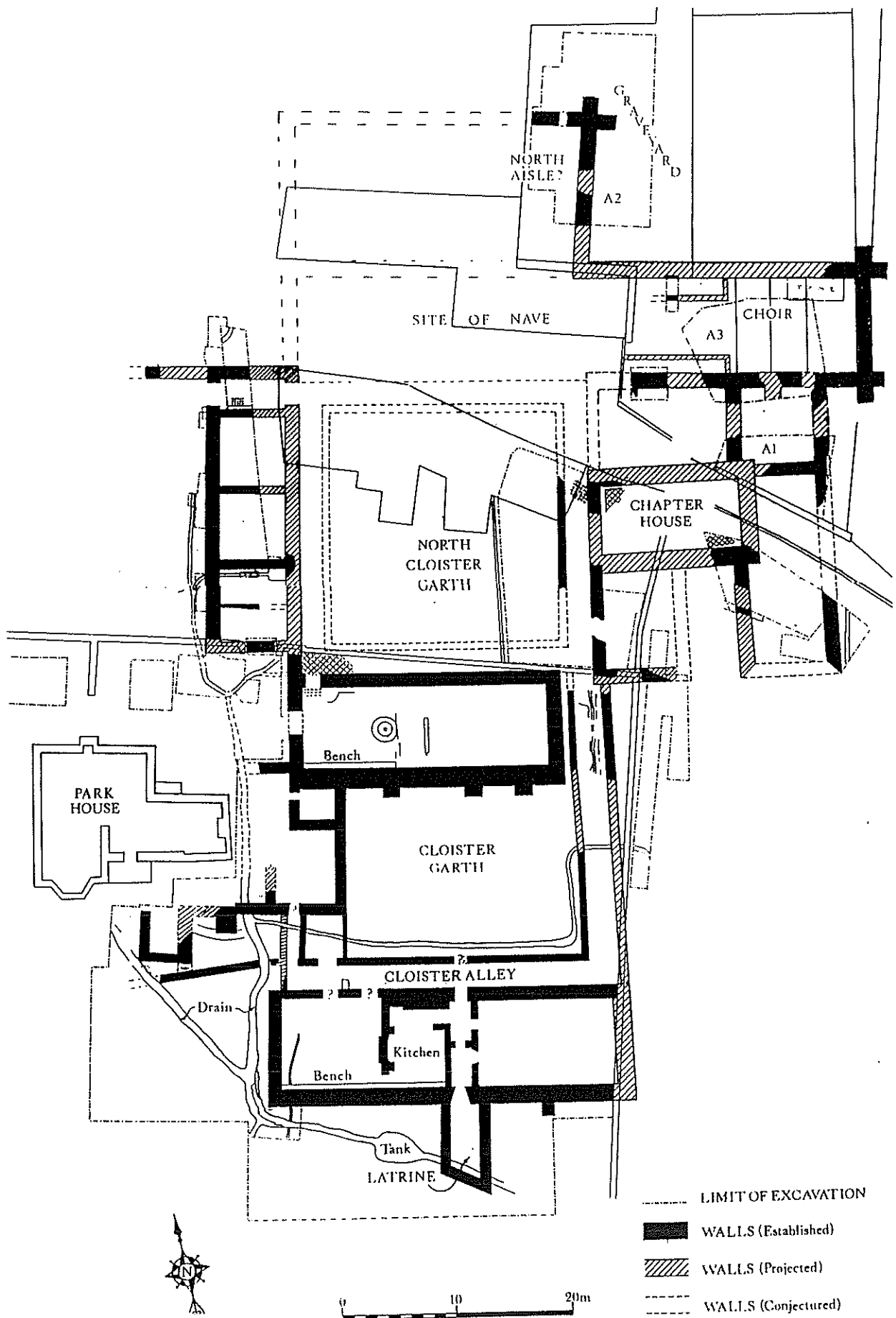
Terrence James

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ACKNOWLEDGEMENTS

Work on studying the decorated floor tiles was ongoing throughout the period of excavation and many people have worked on their study. We would like to pay particular thanks to John Lewis whose work on decorated floor tiles in the principality is unrivalled. Recognition of known tile patterns has largely been a result of his freely-given advice. Hilary White of Hereford and Worcester Museums also commented on decorated patterns, and Dr Law-

rence Butler made some useful comments and corrections. We would also like to thank Jackie Briggs for her meticulous work on the final tile drawings; and Mike Ponsford, Bristol Museum, Mark Redknap of the National Museum of Wales, and staff at Carmarthen Museum for allowing us to consult their respective tile collections.



Restored plan of Carmarthen Greyfriars

DECORATED FLOORTILES

Introduction

The decorated floortiles from the Friary are with but one exception, two-colour inlaid varieties. Broadly speaking the decorated floortiles fall into two broad groupings – Early and Late. The bulk of the early tiles probably date from the early 14th century, although some tiles may be mid to late 14th. The second group belongs to the mid 15th to early 16th century. It has not been possible to confidently categorise every pattern into either group, since there is an overlap in characteristics between the early tiles and those which belong to the later 14th century. In some cases tiles are too fragmentary to allow accurate assessment. Variations are due in part to the nature of manufacture. The width of tile is not a foolproof method of categorisation, since considerable variation in tile size has been noted from what is demonstrably the same tile stamp. It is accepted that allowance was made for shrinkage so that a 6 inch unfired square tile would become about 5 inches square after firing (Eames 1980, p. 17). Considerable variation in size could result depending on where a tile was placed within the kiln. Variation in the quality of fabric is also common within

tiles of the same pattern. However it can be generally stated that the earlier tiles are less well-fired, their fabric is often friable as a result of underfiring, and they rarely have any glaze remaining. The earliest tiles have very little or no bevel, whereas late tiles are distinctly bevelled. Weight of tiles can be used as an indicator for the categories, since the later tiles are much thicker than the earlier, are better fired, and in terms of mass are heavier. However, overfiring seems to produce a heavier tile, so that two tiles of the same pattern can vary in weight by as much as 10 per cent. The later tiles, all of Severn Valley origin, are far better quality than the earlier varieties, although for obvious reasons they were not subject to as great a period of exposure and use as the earlier categories. However the quality of glaze of the Severn Valley tiles is not as good as earlier varieties. The design of the Early patterns lend themselves to being laid either on their own, or arranged at 90 degree angles to one-another to form 4-tile patterns; by contrast most late patterns are part of 4- or 16-tile designs and do not appear aesthetically pleasing as single-tile pavements.

Group Characteristics

The Early Tiles.

The main characteristic of the early tiles is their thinness (i.e. average 18mm, but varying between 17mm and 23 mm). They also have little or no bevel. Although none of these tiles were recovered in situ, a good area of mortar tile impressions survived in the choir to indicate that the tiles were laid *parallel* to the wall lines. This is interesting in view of the design of the patterns of these tiles, which include a large number which contain lines, boxes or designs that form *oblique* patterns giving the impression that the tiles were set obliquely (as was the predominant fashion in the later Middle Ages). It is arguable that tiles laid diagonally wear better compared to those laid parallel. The tiles that fall into the early group are patterns 1-4, 6, 9-12, 16-17, 19, 24-25, 27-29, 35, 37-8, 41, 43, 48-49, 58 and 61-2. Pattern 16 was originally categorised as being later 14th century, but there is incontrovertible evidence that its manufacture is contemporary with pattern 24 – a distinctly Early type. Those patterns that can be classified as forming oblique/linear patterns when laid together or in combinations, include patterns 1,

3, 9, 11-12, 38 (with 24) and 35. Another characteristic of some of the early patterns is the number with flower designs: 1, 3, 6, 10, and 48. The latter is also heraldic; other heraldry present in the early patterns is represented by 37 and 58. A number of patterns that do not have shields but bear evident signs of representing heraldry include the following: 38 (possibly sometimes in combination with 24), which may relate to the Despencer arms with its basketwork design; pattern 2 which compares with a shielded floortile of the de Genneville arms at Tewkesbury, and pattern 49, a derivative of the Grandison arms (Hilary White, pers. comm.). By the same token patterns 4 and 12 must be heraldic with their pily and saltire elements). Taken in total heraldry is thus represented in greater measure than superficial assessment suggests. Pattern 27 gives an impression of fenestration, as does to some extent pattern 11.

The early patterns are largely unique and with little parallel. The possibility that they were manufactured on site or locally is conceivable, but there is no good evidence to prove this either way. A number of tile fragments that could be described as

wasters (or perhaps very poor 'seconds') have been recovered. Five of the six fragments belong to, or possibly to, the early category. There are many 'seconds' in pattern 28. Some of these were clearly never laid in floors, but became incorporated within wall fabric. That they could have been part of a bought-in consignment is of course a possibility. There is a distinct similarity between these decorated tiles and Plain type 1 (below, p. 24) which suggests that the early decorated tiles were laid in conjunction with plain varieties. However there was a far larger number of early decorated tiles compared to the plain variety, but the pavements must have been dominated by the decorated types.

?Later 14th century tiles

Two tile patterns are arguably of later 14th century date—numbers 13 and 14. These tiles are somewhat thicker than the earlier group (24-25mm) and appear better made, with a bevel.

Dating the Patterns.

In the absence of surviving floors in stratified contexts, it is not possible to establish precise dates for individual patterns. The best that can be achieved is to point to general dates for the tile groups. In this context the Early group is the most difficult to date, and we have relied heavily on the personal comments of John Lewis. He suggests that on stylistic grounds and analogy to datable tiles or pavements elsewhere, the earliest tiles must date to the early 14th century. He accepts that some tiles are perhaps of later 14th century date, based partly on arguments for the dating of pattern 13 with the de Brian arms.

The latest patterns—of Severn valley origin—are well studied from other sites and for this reason fairly closely datable. Alan Vince, in his doctoral thesis has argued that the Droitwich tiling, which is represented in patterns 8, 21, 23, 40 and 53 was in production from c. 1340 until the middle of the 15th century, giving way to the Malvern industries exemplified by the Canynges pavement type tiles. One of the last Droitwich pavements was in the Beauchamp Chapel at Tewkesbury Abbey c. 1437. Since this 16-tile design is present at Greyfriars (Pattern 21), then we can say that the Carmarthen examples were laid sometime between this date and the end of tile production in c. 1450. This suggests that we may have two periods of late reflooring, one around

15th/16th century tiles

The Late patterns are predominantly all known from other sites in Wales, are commonly found in churches in south Worcestershire, and of Severn Valley manufacture. They were clearly 'bought-in' and not manufactured locally. These tiles are more uniform in size, with pronounced bevels and are consistently thicker than the Early types. This group includes 16-tiles designs (21, 22, 23) one of which (21) incorporates the Beauchamp-armorial design of Severn Valley type dated to between c. 1430–c.1450. The group contains popular combination of tiles that form a cross with central 'ihs' sacred monogram. There are a number of 4-tile patterns with inscriptions or pseudo-inscriptions around them, one with an armorial shield. The group includes one 'alphabet' tile with letters within quartered lozenges (63) and there are some half 2-lozenge border tiles. It is evident that the late tiles were used in conjunction with plain floortiles.

1450, and another towards the end of the 15th or perhaps very early 16th century, when the Malvern-Canynges types were introduced. These later tiles are dated by Vince to after 1470 although Eames suggests 1481 or later (Vince, 1983, p.299). Vince further argues that the Canynges pavement dates to c. 1481 or later and that the St David's pavement of these tiles is c. 1496 or later, whilst a commissioned series at Carew* is dated to c. 1485–1528 (type 22). Fragments of this tile group were found in patches of surviving floors (at the same level as black and yellow plain Malvernian Type 7 tiles), and these relate to the last floors in the choir; thus 16-tile pavements were laid in conjunction with plain type 7 tiles. It is possible that work associated with the erection of Sir Rhys ap Thomas' tomb (1525) and his endowment of £20 to the friars contained in his will (*Arch Camb.* 1892, p. 90) would have resulted in the laying of these later patterns. The date for the earlier Droitwich tiles is close enough to the death of Edmund Tudor (1456) and the building of his tomb in the centre of the choir, to suggest an occasion for the introduction of the mid-15th century tile grouping.

*? by Sir Rhys ap Thomas (which could thus be associated with the Greyfriars group).

The distribution of tile types and patterns

Since most of the tile recovered was not *in situ* but spread around the site in destruction layers, it is now almost impossible to say with any precision what buildings were floored with particular decorated tiles. A series of computer generated distribution maps showing the find spot of each recognisable pattern was produced (see archive report). This clearly shows that the excavated building to produce the most tile was the choir. No examples of patterns 5 and 7 (the half border tiles), patterns 30-31, or the cross design 32/39 were discovered in the choir, but this does not necessarily mean that the tiles could not have been present in the choir. The overall impression given by the distribution maps is that material from the church and chapter house (both certainly tiled) found their way over the whole friary complex during the 450 years since the Dissolution. Some patterns (e.g. 10, 11, 12, 22, 27, 28) were evidently spread over the whole site, whereas others (13, 16 and 49) were found in or near the choir. In general, however, the distributions tell us little that could not be gleaned from studying the findspots of *in situ* floor tiles to highlight where tiles were or were not used. What can be said is that the southernmost range of the Friary (Infirmary) was never tiled and had beaten earth floors. The range between the two cloisters did have patches of *in situ* late Malvernian tiles (patterns 5 & 7) laid near plain Normandy tiles, which were also found within the building's latest floor. There was no good evidence for the ground floor rooms of the west range being tiled, although the entrance cross passage on the north side had oolitic limestone tiles as did the Great Cloister alleys. What survived of floors in the Chapter House indicates that this was floored in plain tiles (Plain type 2, below p.25), although only the very NW and SE corners survived and we have

no certain way of knowing if the central area was different. A small area of the very east of the north part of the Nave (the north 'aisle') was floored in plain green glazed tiles (Plain type 6). Unfortunately it has not been possible to establish what, if any, decorated varieties may have embellished the lay part of the Friary church, although fragments of patterns 8, 21, 23, and 61 were found in a trial trench in 1987 (context 1380) which straddled the east wall of the Nave. Thus it is only within the Choir that there can be any certainty. What type of original floor covering existed in the 13th century church could not be established, but the probability is that there were no inlaid decorated tiles in use. The choir was floored with decorated tiles from the early 14th century, and this floor was repaired and/or re-laid sometime around the middle of the century. The tile impressions left by a floor of 14th century date (context 1861) showed that the tiles had been laid parallel to the main axis of the building, unlike the late floors which were set diagonally. There are a number of mid 15th century patterns which, when combined with the numerous plain floortiles, indicate a probable complete reflooring in the middle of the century, which itself was replaced or altered in the late 15th or more probably early 16th century. The few *in situ* tiles of the last choir floor include parts of a pattern 22 pavement which coexisted with alternate yellow and black plain Malvern tiles. The abundance of Malvern plain tiles *vis-à-vis* the decorated indicate that plain tiles far outnumbered the decorated in the last floors. This is in direct contrast to the fourteenth century floors which were predominantly composed of decorated tiles.

FABRICS AND CHARACTERISTICS OF DECORATED TILES.

METHODOLOGY

The methods of recording are some of those recommended in the CBA handbook (Stopford, 1990). Every fragment of tile was counted and weighed. Tiles with a complete dimension (length or breadth) were measured, whilst all fragments were measured for thickness. The degree of bevel on each fragment was also noted (VE = vertical; SL = slight; ST = steep; DK = don't know; CB = counter bevel). Tiles of the same pattern invariably share the same colour glaze, for this reason it was considered unnecessary to record the glaze colour on every fragment. Any variation in the colour of the glaze is noted in the text. The degree of wear on the surface of tiles was recorded on a scale of 1-4. Whilst 1 was extremely good, 4 was very poor, often with no traces of slip or glaze surviving (ibid, p. 26).

Data were then collated and the information interpreted statistically. The overall results are itemised in the gazetteer (below). The gazetteer gives an indication of the quantity and quality of tiles, and also reveals any patterns or discrepancies in the angle of bevel.

A type fabric series of decorated and plain tiles from the Friary was constructed. Fabrics were examined with a hand lens. In the absence of scientific analysis, division into fabric types is tentative and the present series must not be regarded as final. Stopford (1990, p. 5) notes that 'where there are no very distinctive inclusions, visually recorded fabrics may only show archaeologically useful distinctions at the broadest level'.

Type fabric A. (See also Plain tile Type 1, p.24)

Patterns: 1, 2, 3, 4, 6, 9, 10A, 10B, 11, 12, 13, 14, 16, 17, 19, 24, 25, 27, 28, 29, 35, 37, 38, 41, 43, 48, 49, 51, 61, 62.

Tiles are oxidised orange through to red. Overfired examples have a dark grey reduced body. As a result of differential firing and subsequent use, tiles vary in hardness. Some are soft and silty, but most are hard, slightly sandy and rough. The highly fired tiles are very hard and dense.

All tiles contain fairly frequent but scattered grains of angular quartz, more or less of uniform size. Characteristic inclusions are occasional dark red gravels, usually rounded and up to 20mm across. Also visible, are shiny red-brown shale fragments. These are usually laminated and of irregular shape

and size. The fabric contains some unidentified rock fragments of sandy colour and texture as well as dark brown and black inclusions, some of which are soft and powdery. In addition to these are very occasional soft white inclusions which react with Hcl. All the tiles contain a small amount of mica.

The tiles in this fabric group are two-coloured inlaid types, the depth of inlay varying slightly, but usually around 1-2mm deep. The colour of the glaze when it survives is brown on the body and varying shades of yellow on the white clay inlay. Overfired tiles have a dark purple glaze with a metallic lustrous finish. Glaze drips are frequently found along the sides and on the base of tiles. The under surface of most are rough with some sand.

Some tiles are slightly warped, others display signs of tile contact in the kiln. The glaze is often pitted, smeared and uneven, but in spite of all the recognised faults there are no obvious wasters.

Type fabric B.

Pattern: 58.

A single tile in a hard sandy fabric, oxidised red throughout. It contains frequent red grog inclusions, occasional rounded clay pellets and a few quartz grits.

There is only one tile in this fabric, Pattern No.58. The tile is a two-coloured inlaid type. The depth of inlay is shallow, less than 1mm. The glaze on the body fabric is brown and yellow over the white clay slip. The base of the tile is sandy.

Type fabric C. (See also Plain tile Type 7, p. 27)

Patterns: 5, 7, 8, 18, 20, 21, 22, 23, 26, 31, 32, 39, 40, 53, 63.

All of the tiles in this fabric are well fired. Most are completely oxidised, varying in colour from orange to dark red. Tiles are fired hard to very hard and dense. Old breaks have a smooth, shiny, almost glistening appearance whilst new breaks are slightly rough.

The fabric is characteristically sandy, containing many, sometimes abundant quartz sands, mostly rounded and always well sorted. There are also some larger white quartzite grits. Occasional dark rock fragments occur, nearly always rounded (Malvern floor tiles contain angular rock fragments), sometimes angular and mostly red in colour. These

range in size from 3-19mm across. A few rounded clay pellets are visible in the fracture. Unidentified inclusions of dark brown, sometimes black material are found in most tiles. These can be either soft and powdery or hard and slightly metallic.

The tiles grouped under this fabric are nearly all well known 'Severn Valley' types, possibly of Malvern/Worcestershire manufacture. They are all two-coloured tiles. The colour of the glaze on the body is either a clear honey brown or a deep chocolate brown. Glaze drips and splashes are a common feature along the edges. The glaze over the white clay can be cream or yellow. The depth of white clay slip varies. It is often very thin, almost a wash-like consistency. Where the slip is thin, it is frequently smeared, leaving very little trace of the pattern and never an impression of that pattern. The evidence would suggest that the printing method was used on these tiles. All the tiles in this fabric are sanded on the base.

Type fabric D.

Pattern: 30.

Tile Pattern 30 is a well recognised 'Severn Valley' type. Slight physical and fabric differences distinguish it from tiles grouped under fabric type C.

There are only two tiles in this fabric. Both are oxidised red at the surface with pink margins and a thick pale grey core. The fabric is hard and visibly very sandy. Sands are rounded and angular and fairly well sorted. Larger fragments of angular quartz are prominent, these measure up to 11mm across. The fabric also contains a few clay pellets and occasional soft brown inclusions.

The glaze on the body fabric is a clear honey brown and yellow over the white clay slip. Both tiles have a smooth base with no trace of sand.

Type fabric E. (See also Plain tile Type 5, p. 26)

Patterns: 15, 64.

Tiles are oxidised red and fired hard to very hard. Old breaks are slightly shiny whilst new breaks are coarse and visibly gritty. The fabric is tempered with fine sands. The main types of inclusions are white angular quartzite grits, up to 8mm across. There are also a few clay pellets, unidentified black material and occasional white inclusions, which are soft and react with Hcl.

There are two patterns in this fabric. Pattern 15 is of the two coloured inlay variety. There were only two tiles of this pattern recovered from the Friary. The depth of inlay is shallow, less than 1mm. The colour of the glaze on the body fabric is dark brown, and yellow over the white clay. One of the tiles has clay fused to its upper surface where it was in contact with another tile in the kiln. The slip is also smeared in patches. Both tiles have a relatively smooth base with no trace of sand.

Pattern 64 is distinct from all other decorated tiles found at the Friary. It is the only tile with line-incised decoration. One small fragment was recovered and only part of the pattern was extant. The whole of the upper surface is covered with a white slip. The line decoration is hand-incised through the slip. The glaze over the white clay is yellow, whilst the line decoration shows the colour of the clay beneath.

DETAILED GAZETTEER OF DECORATED TILES:

The following conventions are used in the tables after each tile: complete means either complete or reconstructed from joining fragments. Degree of wear is based on CBA recommendations (Stopford, 1990) 1 = all slip and 75% glaze present; 2 = more than 50% glaze and 75% slip present; 3 = less than 25% of glaze but more than 50% slip present; 4 = less than 25% of slip and no glaze present. The amount of bevel is recorded thus – VE = vertical (no bevel); SL = slight bevel; ST = steeply bevelled; DK = don't know (i.e. no edge present); CB = counter bevel, which most often occurs in conjunction with SL. Total weight is the sum total of all fragments and tiles of the specific pattern number. All percentages in the tables have been rounded to the nearest unit. The dimensions of tiles are usually for complete examples (when present), but considerable variations were noted in most patterns. Reference to the archive catalogue, which records the dimensions of every tile, is recommended for any further comparative work on tile sizes. Drawing at one-third scale can be found in the Appendix at the end of this volume.

EARLY PATTERNS (?Early 14th century)



PATTERN 1. 120 x 120 x 19. 127x?x22. No parallel but design similar to BM 2213. (The latter is larger, and fleurs-de-lis differ in shape, Kentish, 13/14th cent). Early to mid 14th, cf. Tintern tiles.

WEAR	1	2	3	4	
No. of frags	3	5	16	5	
% of Total	10	17	55	17	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	7	17	—	5	—
% of Total	24	58	—	17	—

Total No. of Frags 30. Complete = 1; Total Weight = 3790
Notes: 2 possible wasters or seconds



PATTERN 2. 122 x 120 x 18 Three cinquefoils set within a bend (or bend sinister) over a bendy ground. No parallel. (?Could be laid with pattern 49). cf the 14th century heraldic tile at Tewkesbury and Bredon said to be de Genneville arms (barry of 6 Or and Azure, on a bend qu, three roses argent).

WEAR	1	2	3	4	
No. of frags	1	15	23	7	
% of Total	2	31	51	14	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	17	17	—	13	—
% of Total	36	36	—	27	—

Total No. of Frags. 47. Complete = 1; Total Weight 6191g
Note: 2 possible wasters or seconds.



PATTERN 3. 125 x 125 x 17. Large central rosette in double lozenge with quartered rosettes in corners. No parallel but had similarities with BM 2348 and 1349 (Halesowen, 13/14th cent).

WEAR	1	2	3	4	
No. of frags	—	19	25	7	
% of Total	—	37	49	13	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	5	41	—	5	—
% of Total	9	80	—	9	—

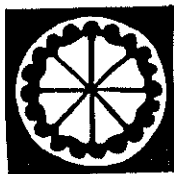
Total No. of Frags 50. Complete = 1; Total Weight = 6579
Notes: 3 possible wasters or seconds; 1 tile with a pared under-surface (object 4013)



PATTERN 4. 1232x ?? x 20 Three elongated lozenges set obliquely. No parallel. Possibly heraldic paly bendy?

WEAR	1	2	3	4	
No. of frags	2	11	15	5	
% of Total	5	30	51	13	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	21	7	—	2	7
% of Total	56	19	—	5	19

Total No. of Frags 37. Complete = 0; Total Weight = 5673g
Notes: 3 possible seconds, one of which is warped; 1 tile smeared or blotchy.



PATTERN 6. 127 x 1243x 21; 124x121x20. Rosette in a circle of invected serrations. No parallel, but central rosette common design throughout Middle Ages.

WEAR	1	2	3	4
No. of frags	3	20	25	14
% of Total	4	32	40	22

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	21	28	—	11	1
% of Total	33	45	—	17	1

Total No. of Frags 62. Complete = 6; Total Weight = 10471g
Notes: 2 possible seconds; 1 smeared tile.



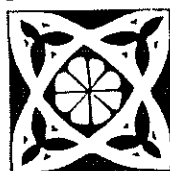
PATTERN 9. 127 x 124 x 20 Pattern of open circles in 'broken' lozenges. No parallel.

WEAR	1	2	3	4
No. of frags	3	8	6	1
% of Total	16	44	33	5

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	4	11	—	2	1
% of Total	22	61	—	11	5

Total No. of Frags 18. Complete = 0; Total Weight = 3405g
Notes: 2 possible wasters or seconds. NB These visually have degree of wear = 1 or 2 suggesting that either they were not used or that the glaze and fabric is so highly fired resulting in good survival.



10a



10b

PATTERN 10. 10a. 119x ?? x 21 Rosette in crossed vesicas with trefoils in corners. No parallel but common design type (BM 2370-79) throughout the Middle Ages., cf. mid 14th century Neath tiles.

WEAR	1	2	3	4
No. of frags	—	4	3	2
% of Total	—	44	33	22

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	2	6	—	1	—
% of Total	22	66	—	11	—

Total No. of Frags 9. Complete = 0; Total Weight = 1590g

10b. 121 x 121 x 18. Similar in all respects apart from vesicas, which interlace (underlap/overlap). cf. mid 14th Neath tiles.

WEAR	1	2	3	4
No. of frags	2	8	12	8
% of Total	6	27	40	27

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	6	17	—	5	2
% of Total	20	57	—	16	6

Total No. of Frags 30. Complete = 0; Total Weight = 4968g

10a or 10b (i.e. type uncertain)

WEAR	1	2	3	4
No. of frags	—	2	7	2
% of Total	—	18	63	18

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	2	8	—	1	—
% of Total	18	72	—	9	—

Total No. of Frags 11. Complete = 0; Total Weight = 731g
Note: 1 possible waster or second

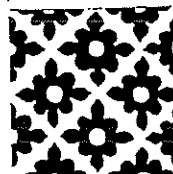
10a and 10b combined

WEAR	1	2	3	4
No. of frags	2	14	22	12
% of Total	4	28	44	24

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	10	31	—	7	2
% of Total	20	62	—	14	4

Total No. of Frags 50. Complete = 0; Total Weight = 7289g
Note: 1 possible waster or second.



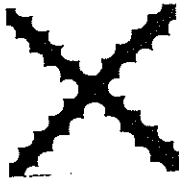
PATTERN 11. 127 x 127 x 20. Sort of rosette, but lozenge shaped with spot in centre. Set in parallel lines obliquely, with the rosettes halved along edges. No parallel. (?could be laid with 12)

WEAR	1	2	3	4
No. of frags	10	25	53	13
% of Total	9	24	52	12

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	22	54	—	22	3
% of Total	21	53	—	21	2

Total No. of Frags 101. Complete = 3; Total Weight = 14719g
Note: 11 tile fragments 'smeared', not necessarily seconds.



PATTERN 12. 129 x 127 x 18; 127 x 125 x 17. Cross with engrailed edges running from corners. No parallel. (?could be laid with 11). Possibly heraldic saltire?

WEAR	1	2	3	4
No. of frags	2	4	25	21
% of Total	3	7	48	40

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	21	23	—	8	—
% of Total	40	44	—	15	—

Total No. of Frags 52. Complete = 2; Total Weight = 7657g
Note: 2 possible waster or seconds, one of which is warped (Object 6417). 1 smeared tile (Object 5067). One tile has the pattern of another (unidentified, but one aping fenestration?) tile on its underside.



PATTERN 16. 128 x 126 x 20; 125 x 126 x 20. 4-tile pattern. No parallel. One tile had pattern stamped into the underside, since the bevel appears reversed. Tile 16 has a heavier feel to it than most of the Early types; it is undoubtedly contemporary with pattern 24 as both patterns were fired at the same time (see 24, infra.).

WEAR	1	2	3	4
No. of frags	2	12	23	15
% of Total	3	23	44	28

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	10	33	1	5	3
% of Total	19	63	1	9	5

Total No. of Frags 52. Complete = 1; Total Weight = 8867g
Notes: 2 possible wasters or seconds; 2 smeared.



PATTERN 17. 129 x ?? x 18. 4-tile pattern. Fleur-de-lis inside corner of quarter of an arc, with trefoils and quatrefoils.

WEAR	1	2	3	4
No. of frags	—	1	1	2
% of Total	—	25	25	50

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	1	2	—	—	1
% of Total	25	50	—	—	25

Total No. of Frags 4. Complete = 0; Total Weight = 821g



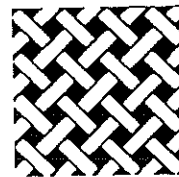
PATTERN 19. ?? x ?? x 19–26. 4-tile pattern, with linked trefoils radiating from one corner and separated by trefoils branching from a quarter arc.

WEAR	1	2	3	4
No. of frags	1	1	3	4
% of Total	11	11	33	44

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	7	—	2	—
% of Total	—	77	—	22	—

Total No. of Frags 9. Complete = 0; Total Weight = 1222g
Note: 3 smeared.



PATTERN 24. 127 x ?? x 17. Cross-lattice interlaced 'basket-work' design. No parallel. Probably laid with pattern 38. NB. Adhering to the rear of one of these tiles was part of the inlay of a pattern 16 tile, which proves that tiles 16 and 24 were in the kiln during the same firing, the two tiles evidently touching one another during firing.

WEAR	1	2	3	4
No. of frags	2	3	4	1
% of Total	20	30	40	10

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	3	5	—	2	—
% of Total	30	50	—	20	—

Total No. of Frags 10. Complete = 0; Total Weight = 1927g
Note: 1 second, 1 smeared; One tile (Object 6452) has part of a pattern 16 tile adhering to its underside.

PATTERN 24 OR 38 (indistinguishable fragments)

WEAR	1	2	3	4
No. of frags	—	5	6	—
% of Total	—	45	54	—

Fabric Type A

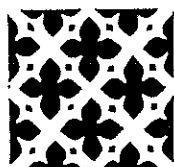
BEVEL	VE	SL	ST	DK	CB
No. of frags.	2	3	—	6	—
% of Total	18	27	—	54	—

Total No. of Frags 11. Complete = 0; Total Weight = 765g
Note: Patterns 24 and 38 are identical in some respects, and small fragments are thus sometime indistinguishable. However it can be said that there are 9 certain fragments of 24 and 37 of Pattern 38.



PATTERN 25. 130 x ?? x 25. 4-tile pattern. Cross-over pattern with quatrefoils. No parallel?

WEAR	1	2	3	4	
No. of frags	—	2	4	—	
% of Total	—	33	66	—	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	3	3	—	—	—
% of Total	50	50	—	—	—
Total No. of Frags 6. Complete = 0; Total Weight = 1350g					
Notes: 1 second; 1 smeared.					



PATTERN 27. 127 x 125 x 21; 125 x ? x 18; 128 x ? x 22. Criss-cross of inlay forming lozenge-shaped quatrefoils in the unimpressed part of tile, aping fenestration. of Neath tiles.

WEAR	1	2	3	4	
No. of frags	2	2	25	7	
% of Total	5	5	69	19	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	11	10	—	6	9
% of Total	30	27	—	16	25
Total No. of Frags 36. Complete = 2; Total Weight = 5367g					
Note: 1 possible waster/second; 4 smeared.					



PATTERN 28. 122 x 121 x 21; 122 x 1120 x 20; 122 x 120 x 20. 4-tile pattern. Quarter arc and two separate half circles which when joined to an adjacent tile would form a circle with four conjoined circles/spots inside. Present at Carew Church.

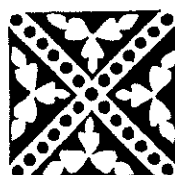
WEAR	1	2	3	4	
No. of frags	13	16	22	21	
% of Total	18	22	30	29	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	45	17	2	7	1
% of Total	62	23	2	9	1

Total No. of Frags 72. Complete = 4; Total Weight = 10797g
Notes: 12 wasters or seconds; 2 smeared.



PATTERN 29. 125 x 125 x 19; 127 x 117 x 20. Part of 16-tile pattern, similar to one in the Monks' Choir at Neath. Curving lines forming an arc with one line interrupted by small open circles at intervals. Rest of tile dominated by fleur-de-lis set diagonally.

WEAR	1	2	3	4	
No. of frags	4	7	14	12	
% of Total	10	18	37	32	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	13	15	—	6	3
% of Total	35	40	—	16	8
Total No. of Frags 37. Complete = 2; Total Weight = 5976g					
Four possible wasters or seconds, two of which are highly fired and one is noticeably warped. Also four highly fired tiles, not necessarily wasters or seconds.					



PATTERN 35. 130 x ? x 24; 127 x 126 x 20. Diagonal cross with dots running along arms and foliage within the angles of the cross. Feels heavier than usual Early types, but stratigraphically found in 14th century church layers.

WEAR	1	2	3	4	
No. of frags	—	1	10	8	
% of Total	—	5	52	42	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	11	4	—	2	2
% of Total	57	21	—	10	10
Total No. of Frags 19. Complete = 0; Total Weight = 2941g					
2 smeared.					



PATTERN 37. Fragments (5 in all from at least 3 tiles) 17-19mm deep, one 125mm long. Heraldic shield set diagonally, a gyrony of 8, with quartered circular design in one corner. No parallel

WEAR	1	2	3	4	
No. of frags	—	2	3	—	
% of Total	—	40	60	—	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	5	—	—	—	—
% of Total	100	—	—	—	—
Total No. of Frags 5. Complete = 0; Total Weight = 892g					



PATTERN 38. (see also 24) 128 x ? x 17; 127 x ? x 22; 126 x ? x 25. Quartered pattern with diagonal and 'Basket work' lattice. The basketwork weave identical to 24, and could be laid with 24. The design may be based on the Despenser arms, which are depicted in Neath tiles (always in shields). These are assumed to be early 14th century.

WEAR	1	2	3	4
No. of frags	5	9	15	8
% of Total	13	24	40	21

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	18	15	2	2	—
% of Total	48	40	5	5	—

Total No. of Frags 37. Complete = 1; Total Weight = 681g
Note: 3 possible wasters/seconds; 1 smeared; two tiles cut across into halves (oblongs).



PATTERN 41. Fragments 18-23 mm deep. A diagonal cross which when joined to other tiles of the same pattern form pointed quatrefoils with spots on each petal. A pavement would have a similar impression of fenestration like 27.

WEAR	1	2	3	4
No. of frags	—	3	1	3
% of Total	—	42	14	42

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	3	1	—	1	2
% of Total	42	14	—	14	28

Total No. of Frags 7. Complete = 0; Total Weight = 1185g
Note: 1 smeared.



PATTERN 43. Fragments 21-25 mm deep. 4-tile radial pattern, quarter circle with two petals of an octofoil. Similar vane to some Tintern patterns. No parallel.

WEAR	1	2	3	4
No. of frags	—	1	2	—
% of Total	—	33	66	—

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	1	2	—	—	—
% of Total	33	66	—	—	—

Total No. of Frags 3. Complete = 0; Total Weight = 347g



PATTERN 48. 124 x 120 x 19; 130 x 127 x 18 Pseudo-heraldic. Armourial shield set obliquely in tile with depressed fluer-de-lis to chief. Bend sinister with three cinquefoils.

WEAR	1	2	3	4
No. of frags	8	11	15	6
% of Total	20	27	37	15

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	10	20	—	6	4
% of Total	25	50	—	15	10

Total No. of Frags 40. Complete = 2; Total Weight = 515g
Notes: 4 highly fired, not necessarily wasters or seconds; 2 smeared.



PATTERN 49. 122 x ?? x 18-23. A bendy of 6 with a bend or bend sinister. The bend contains two birds (Eagles 'flying'?) with a bishop's mitre between them in the centre of the tile. No parallel. Thought to be a derivative of the Grandison arms (H. White, Pers. comm.)

WEAR	1	2	3	4
No. of frags	—	1	9	10
% of Total	—	5	45	50

Fabric Type A

BEVEL	VE	SL	ST	DK	CB
No. of frags.	1	13	—	6	—
% of Total	5	65	—	30	—

Total No. of Frags 20. Complete = 0; Total Weight = 2588g



PATTERN 58 140 x ? x 22. Good bevel. Fairly elongated shield set obliquely with trefoil/furs set in

corners to chief, dexter and sinister. The Arms of Scotland, a Lion passant. One tile only. Large dimensions. No parallel.

WEAR	1	2	3	4	
No. of frags	—	—	1	—	
% of Total	—	—	100	—	
<i>Fabric Type B</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	1	—	—	—
% of Total	—	100	—	—	—

Total No. of Frags 1. Complete = 0; Total Weight = 556g.
Note: Only one fragment, but near-complete.



PATTERN 61. 124 x 122 x 21. Circular single tile pattern with central rosette enclosed within the border of encircling alternate triangles. No parallel.

WEAR	1	2	3	4
No. of frags	—	1	1	—

% of Total	—	50	50	—	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	1	—	1
% of Total	—	—	50	—	50

Total No. of Frags 2. Complete = 0; Total Weight = 634g



PATTERN 62. 127 x ? x 18. No bevel. 4-tile tracery pattern corner motif and quatrefoils.

WEAR	1	2	3	4	
No. of frags	—	—	1	1	
% of Total	—	—	50	50	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	—	—	2
% of Total	—	—	—	—	100

Total No. of Frags 2. Complete = 0; Total Weight = 310g

EARLY PATTERNS (?Later 14th century)



PATTERN 13. 130 x ?? x 22; 128 x ? x 24; 126 x ? x 21. Heraldic shield (Or three Piles Azure) of De Brian with quartered wheel cross and spot above in corner. No parallel in Eames, although the De Brian shield appears in her pattern 1674 (Shaftesbury Abbey, Dorset dated 1330-1375). This tile pattern has been found at Carew church, and according to Spurrell at Worcester. Spurrell's drawing of this tile (p. 80) differs in that there is no quarter-segment wheel cross in the corner of the tile, but just the arc alone. It is probable that the example chosen by Spurrell had worn away at this point. Note: A Sir Guy de Bryan married Joan, daughter of Sir John Carew (?hence the Carew connection) who was brother to Reginald de Brian. He was elected bishop of St David's 1349, and removed to Worcester 1352 where he is buried (d. 1361, (?hence the Worcester

connection)). Uncertain if of the Laugharne or Brampton de Brians (the Laugharnes are Or, 3 piles meeting in base azure, and these arms are to be found in St David's). John de Brian was a prebendary of St David's in 1351 (a preferment held by Reginald before 1349) which prebend passed to Phillip de Brian (n.d.). This he exchanged in 1381 for the free chapel of Stratford sub castle, Wilts. If these persons can be used to date the tile, and there seems to be a case here (ie Cerew and Worcester connections) then the tile could be mid-to-late 14th century. Present at Carew Church.

WEAR	1	2	3	4	
No. of frags	—	7	24	30	
% of Total	—	11	39	49	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	19	27	1	12	2
% of Total	31	44	1	19	3

Total No. of Frags 61. Complete = 0; Total Weight = 11169g
Note: 1 second; 1 smeared. No complete tiles, but two or three are near complete examples.



PATTERN 14. 124 x ?? x 24. Tile with patterns in each corner. (1) a rosette in a circle; (2) 5 joining open circles forming a whole with petals joining at each corner (thus a rosette?). (3) and (4) missing, but sufficient of (3) survives to suggest that it is not a mirror of (1) but could be (2). Four separate patterns are not unlikely, but it is probable that the

unknown quarters contain mirror patterns of their diagonals. No parallel.

WEAR	1	2	3	4	
No. of frags	—	1	2	—	
% of Total	—	33	66	—	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	2	1	—
% of Total	—	—	66	33	—

Total No. of Frags 3. Complete = 0; Total Weight = 446g

LATER PATTERNS (15th century)



PATTERN 15. 137 x 135 x 25. Heraldic shield of Rhys ap Tewdwr (a lion rampant) with two-strand cabling running the length of the tile to Dexter and Sinister. No parallel. Large dimensions.

WEAR	1	2	3	4	
No. of frags	3	—	—	—	
% of Total	100	—	—	—	
<i>Fabric Type E</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	3	—	—	—
% of Total	—	100	—	—	—

Total No. of Frags 3. Complete = 0; Total Weight = 710g
Minimum number of tiles represented = 2



PATTERN 64. ? x ? 28mm. Fragment incised pattern (a leaf or bird wing?) in a yellow glazed tile. The fabric is similar to tile pattern 15, and for this reason alone it has been placed chronologically with 15. This is the only example of an incised tile from the site.

WEAR	1	2	3	4	
No. of frags	1	—	—	—	
% of Total	100	—	—	—	
<i>Fabric Type E</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	1	—	—
% of Total	35	40	—	16	8

Total No. of Frags 1. Complete = 0; Total Weight = 104g

LATE PATTERNS: 15th/16th century Severn Valley



PATTERN 5. 123 x 62 x 30; 124 x 62 x 30. Good bevel, but more vertical on one side (see 7, below). Two lozenges surrounded by white slip. Paralleled at St Davids, Malvern/Bristol areas.

WEAR	1	2	3	4	
No. of frags	3	4	1	—	
% of Total	37	50	12	—	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	8	—	—
% of Total	—	—	100	—	—

Total No. of Frags 8. Complete = 7; Total Weight = 3168
Notes: 1 tile with a pared undersurface (object 4013)



PATTERN 7. 120 x 61 x 25; 120 x 58 x 25. Good bevel, but more vertical on one side. Two lozenges in white slip (the reverse of No. 5). ?St Davids/Carew. Late 15th- early 16th Severn Valley. The lack of bevel on one side (seen also in 5) results from the fact that these half-tiles were moulded as full squares, an incision was then made vertically partly through the two halves by inserting what appear to be a concave-bladed implement. Slip was clearly applied after this, and the tile, still in one piece was fired. The tile would have been easily broken into to half tiles, presumably at the floor laying stage.

WEAR	1	2	3	4	
No. of frags	2	—	—	—	
% of Total	100	—	—	—	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	2	—	—
% of Total	—	—	100	—	—

Total No. of Frags 2. Complete = 2; Total Weight = 641g



PATTERN 8. 125 x 125 x 27; 129 x 129 x 27. Large fleur-de-lis set diagonally to form a 4-tile pattern. Parallel to BM 2162. Droitwich, not later than c. 1450.

[group with 20, 29?]

WEAR	1	2	3	4	
No. of frags	3	7	3	1	
% of Total	21	50	21	7	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	14	—	—
% of Total	—	—	100	—	—

Total No. of Frags 14. Complete = 2; Total Weight = 4391g



PATTERN 18. 129 x 129 x 27. 4-tile pattern. Similar to BM 2771 Possibly Droitwich c. 1450. May be a design at St David's Palace which has a different top

corner from BM 2771, but otherwise the same.

WEAR	1	2	3	4	
No. of frags	8	10	5	3	
% of Total	30	38	19	11	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	2	22	2	—
% of Total	—	7	84	7	—

Total No. of Frags 26. Complete = 1; Total Weight = 5034g
Note: 2 smeared.



PATTERN 20. 125 x 123 x 28. 4-tile pattern with fleur-de-lis in one corner extending to and overlaying part of an arc of a circle with foliage in opposite corner and a cinquefoil. Paralleled at St David's and Carew, Malvern/Bristol area late 15th-early 16th century.

WEAR	1	2	3	4	
No. of frags	7	—	—	—	
% of Total	100	—	—	—	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	7	—	—
% of Total	—	—	100	—	—

Total No. of Frags 7. Complete = 1; Total Weight = 1578g

PATTERN 21. 130 x ?? x 26. 16-tile with Beauchamp arms. BM 2909; 130 x ?? x 27. BM 2910; 127 x ?? x 29. BM 2908; 130 x ?? x 27. BM 2907, frags. 25-28mm thick. These are undoubtedly the same tiles, of Droitwich manufacture, found at the Beauchamp Chapel at Tewkesbury Abbey (c. 1437) and Broadway Priory. No later than c. 1450.

PATTERN 21 (TOTAL OF ALL TYPES)

WEAR	1	2	3	4	
No. of frags	6	5	8	5	
% of Total	25	20	33	20	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	23	—1	—
% of Total	—	—	96	4	—

Total No. of Frags 24. Complete = 0; Total Weight = 5912g

Topic Report No. 1: Medieval Floortiles



PATTERN 21 (BM 2907)

WEAR	1	2	3	4
No. of frags	1	1	—	4
% of Total	16	16	—	66

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	6	—	—
% of Total	—	—	100	—	—

Total No. of Frags 6. Complete = 0; Total Weight = 1320g



PATTERN 21 (BM 2908)

WEAR	1	2	3	4
No. of frags	1	1	3	1
% of Total	16	16	50	16

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	5	1	—
% of Total	—	—	83	16	—

Total No. of Frags 6. Complete = 2; Total Weight = 1563g



PATTERN 21 (BM 2909)

WEAR	1	2	3	4
No. of frags	1	1	4	—
% of Total	16	16	66	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	6	—	—
% of Total	—	—	100	—	—

Total No. of Frags 6. Complete = 0; Total Weight = 1411g



PATTERN 21 (BM 2910)

WEAR	1	2	3	4
No. of frags	3	2	1	—
% of Total	50	33	16	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	6	—	—
% of Total	—	—	100	—	—

Total No. of Frags 6. Complete = 0; Total Weight = 1618g
Note: 1 smeared.

PATTERN 22. ?130 x ?? x ??, 16-tile pattern. BM 2980 125 x ?? x 25. BM 2982 129 x 129 x 27. BM 2983; 127 x ?? x 29. BM 2981 126 x ? x 25. Severn valley manufacture. The same tiles are found at Broadway Priory and St Davids, late 15th-early 16th century.

PATTERN 22 (TOTAL OF ALL TYPES)

WEAR	1	2	3	4
No. of frags	19	24	20	5
% of Total	27	35	29	7

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	1	62	5	—
% of Total	—	1	91	7	—

Total No. of Frags 68. Complete = 1; Total Weight = 13598g



PATTERN 22 (BM 2980)

WEAR	1	2	3	4
No. of frags	5	5	4	4
% of Total	27	27	22	22

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	1	16	1	—
% of Total	—	5	88	5	—

Total No. of Frags 18. Complete = 0; Total Weight = 2692g
Notes: 1 smeared.



PATTERN 22 (BM 2981)

WEAR	1	2	3	4
No. of frags	4	4	1	—
% of Total	44	44	11	22

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	7	2	—
% of Total	—	5	77	22	—

Total No. of Frags 9. Complete = 0; Total Weight = 1837g



PATTERN 22 (BM 2982)

WEAR	1	2	3	4
No. of frags	6	12	8	—
% of Total	23	46	30	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	1	25	1	—
% of Total	—	1	96	3	—

Total No. of Frags 26. Complete = 1; Total Weight = 6378g



PATTERN 22 (BM 2981 or 2982)

WEAR	1	2	3	4
No. of frags	2	1	3	1
% of Total	28	14	42	14

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	7	—	—
% of Total	—	—	100	—	—

Total No. of Frags 7. Complete = 0; Total Weight = 945g



PATTERN 22 (BM 2983)

WEAR	1	2	3	4
No. of frags	2	2	4	—
% of Total	25	25	50	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	7	1	—
% of Total	—	—	87	12	—

Total No. of Frags 8. Complete = 0; Total Weight = 1746g

PATTERN 23. 16-tile pattern. BM 3003; 130 x 127 x 25. BM 3004 130 x 127 x 25. Droitwich manufacture, found at Broadway Priory, St David's Cathedral and one example from Carew Church.

PATTERN 23 (TOTAL OF ALL TYPES)

WEAR	1	2	3	4
No. of frags	20	15	10	1
% of Total	43	32	21	2

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	1	44	2	—
% of Total	—	1	95	4	—

Total No. of Frags 46. Complete = 1; Total Weight = 10619g



PATTERN 23 (BM 3003)

WEAR	1	2	3	4
No. of frags	10	6	2	—
% of Total	55	33	11	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	18	—	—
% of Total	—	—	100	—	—

Total No. of Frags 18. Complete = 1; Total Weight = 4393g



PATTERN 23 (BM 3004)

WEAR	1	2	3	4
No. of frags	10	9	8	1
% of Total	35	32	28	3

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	26	2	—
% of Total	—	—	92	7	—

Total No. of Frags 28. Complete = 0; Total Weight = 6226g
Note: 1 smeared.



PATTERN 26. 128 x ?? x 27; 125 x ? x 27. 4-tile pattern, quarter arc, cinquefoil in one corner, quarter of flower in an other to form central rosette in 4-tile combination. BM 2803. ?Severn valley manufacture, found at Lilleshall and Evesham. Late 15th-early 16th century. May be centre design of 23.

WEAR	1	2	3	4
No. of frags	8	10	7	3
% of Total	28	35	25	10

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	25	3	—
% of Total	—	—	89	10	—

Total No. of Frags 28. Complete = 0; Total Weight = 5015g
Note: 1 smeared.



PATTERN 30. 134 x ? x 27. Inscription around the arms of England before 1340. Parallel with BM 1480, Gt. Malvern Priory/Gloucester Cathedral. (1450s), a design present at Raglan Castle, Monmouth Priory, Llangattok-nigh-Usk church. The series includes a tile with date 1456.

WEAR	1	2	3	4
No. of frags	—	2	—	—
% of Total	—	100	—	—

Fabric Type D

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	2	—	—
% of Total	—	—	100	—	—

Total No. of Frags 2. Complete = 0; Total Weight = 547g



PATTERN 31. 123 x ?? x 27 4-tile pattern with 'Ave Maria' inscription. Severn Valley manufacture. Parallel to BM 1442. (Canynge pavement/Bristol type) found at St Davids. Late 15th-early 16th,

WEAR	1	2	3	4
No. of frags	5	—	—	—
% of Total	100	—	—	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	5	—	—
% of Total	—	—	100	—	—

Total No. of Frags 5. Complete = 0; Total Weight = 861g



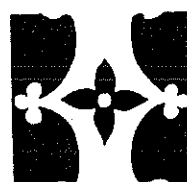
PATTERN 32. Fragment, 23mm deep. Centrally placed sacred monogram 'ihc' [Jesus] similar to BM 1417, Severn Valley manufacture, 15th century, but not the same impress, as the Carmarthen example has (1) a notch out of the left side of the 'i' and (2) a slight difference in the surround of the corner trefoils. The latter match with similar features in No. 33. Part of cross design with pattern 39 (which survived complete at Worcester Cathedral until the 19th century, H. White, pers. comm). Late 15th-early 16th century found at St David's.

WEAR	1	2	3	4
No. of frags	1	—	—	—
% of Total	100	—	—	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	1	—	—
% of Total	—	—	100	—	—

Total No. of Frags 1. Complete = 0; Total Weight = 222g
Note: Slightly smeared.



PATTERN 39. Fragments. 22–30mm. deep. Part of cross combination used with 32. cf. BM 2581-2. Worcestershire/Broadway Priory. Late 15th-early 16th century, differs from St David's version, but perhaps similar to the one present at Carew Church.

WEAR	1	2	3	4
No. of frags	1	2	3	—
% of Total	16	33	50	—

Fabric Type C

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	5	1	—
% of Total	—	—	83	16	—

Total No. of Frags 6. Complete = 0; Total Weight = 681g
Note: See also 32.



PATTERN 40. 130 x 128 x 28; 128 x ? x 27. Four-tile pattern with quarter arc, and a heart with cinquefoils. Parallel to BM 3000. Droitwich, not later than c. 1450. Occurs in Worcestershire as a 16 tile pattern. Present at Carew.

WEAR	1	2	3	4	
No. of frags	1	4	2	2	
% of Total	11	44	22	22	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	9	—	—
% of Total	—	—	100	—	—

Total No. of Frags 9. Complete = 2; Total Weight = 3719g



PATTERN 53. 130 x ? x 27. 4-tile 'oakleaf' pattern with quarter arc and external foliage. Droitwich, not later than c. 1450.

WEAR	1	2	3	4	
No. of frags	5	1	1	—	
% of Total	71	14	14	—	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	7	—	—
% of Total	—	—	100	—	—

Total No. of Frags 7. Complete = 0; Total Weight = 1418g



PATTERN 63. 120 x ? x 25. Good bevel. Combination of four lozenges quartered to form an alphabet tile with letters W, S. Probably Severn Valley manufacture. Alphabet tiles exist at Cerew and Coshes-ton churches.

WEAR	1	2	3	4	
No. of frags	2	—	—	—	
% of Total	100	—	—	—	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	2	—	—
% of Total	—	—	100	—	—

Total No. of Frags 2. Complete = 0; Total Weight = 273g
Note: Makes one tile only.

UNCERTAIN PATTERN (probably 14th century)



PATTERN 51. 1 fragment 17mm deep. A large ?leaf-type pattern.

WEAR	1	2	3	4	
No. of frags	—	—	—	1	
% of Total	—	—	—	100	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	—	—	1	—
% of Total	—	—	—	100	—

Total No. of Frags 1. Complete = 0; Total Weight = 142g

PLAIN GLAZED FLOOR TILE.

A total of 2,860 fragments of plain floor tile weighing 597,962 kilos was recovered from excavations at Greyfriars. Of these 2,585 are square and 275 are triangles. Fragments which were either too small or too poorly preserved to allow classification were counted, weighed and then discarded on site. For the purpose of this report only tiles which were kept were studied. Information on discarded tile is available in the site archive.

At the early stages of excavation a type series was compiled of the plain floor tiles, based partly on visual characteristics and partly on fabric. During the process of this study a new type series has been compiled based solely on visual characteristics, namely dimensions, degree of bevel, glaze colour and treatment of the base of tiles. The CBA handbook was used as a general guide to recording.

Eight different types have been identified. Two types from the original series have since been recognised as roofing tile, another two types are now discounted, both of which are distinct only as a result of different firing temperatures. Each of the eight types in the present series has been quantitatively assessed, the results are recorded in tabular form (Tables 1-3).

A number of plain tiles (Types 1, 3, 5 and 7) are seen to match fabrics in the decorated series, whilst others (Types 2, 4, 6 and 8) do not. This evidence indicates that the latter group were not laid with decorated tiles. Conversely plain tiles which match decorated tiles were laid together or in close association with each other, this was certainly the practice in the late medieval period. The number of plain tiles of type 1 (344 fragments) to decorated tiles (884 fragments) in the same fabric (TF.A) is indicative of the minimal use of plain tiles in early pavements. Those plain tiles with no matching decorated tiles were very probably always laid on their own, possibly confined to different buildings. The bulk of plain type 2 (TF.F) tiles fall into this category, some of which were found *in situ* in the Chapter House, which did not, from the limited area of excavation, produce any other tile type. Study of the tables (right) show that by far the most dominant plain tile is Type 7. These late Severn Valley varieties were found *in situ* within the choir in association with decorated 16-tile pavement type 22 tiles. The most common colours for these plain type 7 tiles is yellow and black (see table below, p. 27), which is the combination in which they were found in the choir. Brown and dark green were the other colours of this tile type, but form a statistically much smaller number. The numerically small number of plain types 3,

4 5, and 6 point to these being used for either piecemeal patching and repair, or localised relaying associated with perhaps the building of new tombs. Alternatively, they could have been laid within the nave (type 6 certainly did), which was not excavated, which may explain the small numbers discovered.

TABLE 1: Totals of Plain Square Tiles

Square Tiles	No. of Frags	Complete Tiles	Weight Gms.
Type 1	344	2	51655
Type 2	528	17	119373
Type 3	31	0	6344
Type 4	22	0	1949
Type 5	22	3	7611
Type 6	16	3	3821
Type 7	1396	28	302199
Type 8	226	4	45324
Total	2585	57	538276

TABLE 2: Totals of Plain Triangular Tiles

Triangles	No. of Frags	Complete Tiles	Weight Gms.
Type 1	5	0	631
Type 2	31	3	8178
Type 3	0	0	0
Type 4	0	0	0
Type 5	2	0	622
Type 6	12	1	2270
Type 7	225	19	47985
Type 8	0	0	0
Total	275	23	59686

TABLE 3: Summary of all Plain Tiles

Square Tiles	2585	57	538276
Triangles	275	23	59686
Total of all	2860	80	5979602

TYPE CHARACTERISTICS AND FABRICS.

METHODOLOGY

This section lists the eight plain floor types. Under each type there is a brief description of the type fabric (TF A-H). Where plain type fabrics match those of decorated tiles the relevant type letter is given (see decorated series above). There then follows a detailed description of the type, based on visual characteristics. Any evidence for manufacturing techniques is included here.

The methods of recording are those used for the decorated tiles. There is a wider range of glaze colours in the plain type series. One type might have several distinctly different colour glazes. It was therefore necessary to record the colour on every fragment. (colour abbreviations follow those used in the Eames' catalogue of tiles in the British Museum (1980, 1, 286). BL = black; BR = brown; Y = yellow; GD = dark green; GL = light green; OL = olive; P = purple; DK = don't know).

Information on each type is illustrated in tabular form. Apart from Type 7 tiles the tables make no distinction of glaze colour, to avoid confusion this information is discussed in the text.

Plain Type 1.

Fabric: (TF.A—See also Decorated Series Patterns: 1, 2, 3, 4, 6, 9, 10A, 10B, 11, 12, 13, 14, 16, 17, 19, 24, 25, 27, 28, 29, 35, 37, 38, 41, 43, 48, 49, 51, 61, 62 above).

SQUARE TILES

WEAR	1	2	3	4	
No. of frags	127	85	91	41	
% of Total	36	24	26	11	
<i>Fabric Type A</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	111	90	28	108	7
% of Total	32	26	8	31	2

Total No. of Frags 344. Complete = 2; Total Weight = 51655g
Colours: BR, DK, P, OL, GD

TRIANGLES

WEAR	1	2	3	4
No. of frags	2	2	1	0
% of Total	40	40	20	0
<i>Fabric Type A</i>				

BEVEL	VE	SL	ST	DK	CB
No. of frags.	0	1	2	2	0
% of Total	0	20	40	40	2

Total Frags. 5, Total Weight 631. There was one example of a scored tiles that could have been cut into a further 2 triangles. Colour: BR

There are 344 fragments of square tiles. Sides measure between 126 and 128mm in length and 18 and 22mm thick (overfired examples are smaller as a result of shrinkage, one example measuring 117 x 115 x 20mm). Most have vertical or slightly bevelled edges, a few thicker examples are steep. Seven examples are scored to cut into small tiles of approximately 40mm square. As well as the square tiles there are five triangles, none with a measurable length. One of these has been scored to cut into a further two triangles.

The colour of the glaze varies from a dull yellowish-brown through to dark brown. Overfired examples are coloured purple with a metallic lustrous finish. The quality of the glaze varies, it is usually patchy and often pitted. Glaze drips and splashes are frequently found along the edge and base of tiles. The lower surfaces are slightly sandy, and in most cases rough and uneven.

A significant number of tiles were evidently in contact with other tiles in the kiln, these have clay fused to them, mostly on the upper surface and sometimes on the side.

A characteristic not noted on decorated tiles of type fabric A is small nail holes which occur on the upper surface of most plain type 1 tiles. These are found at approximately 4cm from the corner and at similar intervals along the edge. Such holes are thought to have been made from the points of nails 'hammered through a wooden template or stamp, in order to hold the clay firmly during manufacture' (Stopford, 1990, p. 8).

The overall quality of type 1 tiles is poor. A number are overfired, a few are slightly warped and many display signs of neglect in their manufacture. Nevertheless none of the tiles could be classed as wasters. By today's standards these tiles would be regarded as unfit for sale or at best very poor 'seconds'. Despite any imperfections, mortar found adhering to their sides and base is certain proof of use.

Plain Type 2.

Fabric: (TF.F).

SQUARE TILES					
WEAR	1	2	3	4	
No. of frags	10	40	109	369	
% of Total	1	7	20	69	
<i>Fabric Type F</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	394	0	0	134	0
% of Total	74	0	0	25	0
Total frags 528. Complete 17, av. dimensions 198 x 197 x 22 (1450g). Total weight 119373g. Keying in 55 fragments (10% of total). Colours OL, DK.					
TRIANGLES					
WEAR	1	2	3	4	
No. of frags	6	7	3	15	
% of Total	19	22	9	48	
<i>Fabric Type F</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	31	0	0	0	0
% of Total	100	0	0	0	0
Total Frags. 31, Complete tiles 3, av. size 265 x 192 x 185 x 22 (713g). Total weight 8178. Colours OL, DK					

This appears to be a locally produced gravel-tempered fabric. Surfaces are usually oxidised buff or pink, although the upper surface is very often partly reduced. The core is always reduced and is greyish-blue in colour. Tiles are generally hard fired and the appearance is gritty. Many of the tiles are very heavily tempered, others are less so. (The uniformity of type characteristics is strong evidence for a single production centre, although two different centres, producing identical tiles, and using a similar clay source cannot be ruled out). Inclusions are abundant. The most common types are rounded ?shale gravels which usually appear red, light grey and off white (off white inclusions are unidentified fine grained fragments which do not react with Hcl) in the oxidised parts of the tiles and blue-grey in the reduced areas. A small amount of white quartz grains are visible in the core, also very occasional white inclusions which react with Hcl.

There are 528 fragments of square tiles (17 are complete, all but one reconstructed from joining fragments). Tiles are large and heavy with measurable lengths of between 195 and 202mm, and between 22 and 24mm thick. All surviving edge fragments have a vertical profile.

There are 31 fragments of triangular tiles. These were made by cutting square tiles diagonally before firing. The usual practice was to cut the tile through half its thickness, then snap it in half after firing, thus avoiding problems of awkward stacking in the kiln and of transportation. These tiles have been cut through the complete thickness of the tile before being fired.

The glaze, when it survives, is olive green, rarely

covering the complete surface of the tile. It is usually thin and patchy with no apparent slip beneath. The sides and base of tiles are mostly clean with little evidence of surplus glaze occurring as drips and splashes.

The base of tiles are rough and not sanded. Finger impressions on the undersurface are a regular feature on type 2 tiles, indicative of constant handling during the early stages of their manufacture.

Square keying occurs on the base of 55 fragments (10%). Why so few have keying is uncertain. A square pronged implement was used, either a nail or some type of forked tool.

The usual practice of firing tiles in the kiln was to stack them on edge and diagonally; proof of this is often seen on the sides and surfaces of tiles. But none of type 2 tiles show evidence of contact with other tiles in the kiln, which would seem to indicate some other method of stacking.

The fabric is comparable to the Whitland Abbey 'Agnus Dei' relief tiles which have also been found at Haverfordwest Priory. A tile from St. David's Bishop's Palace (now in the National Museum of Wales) is of similar fabric and dimensions, but totally different keying. The similarity of fabric to local pottery fabric Type A5 and ridge tile Type A (O'Mahoney, 1991) and the West Wales distribution of tiles with similar fabrics, implies local production. Local pottery fabric Type A5 occurs in small amounts at the Friary in mid 13th to early 14th century contexts (O'Mahoney, 1991). If type 2 floortiles are of the same fabric, and there are distinct similarities, it might be argued that the tiles are of 13th century date. This would mean that the original (and only) tiled floor in the Chapter House was laid in the 13th century. This is further supported by O'Mahoney's suggestion that the large quantities of local ridge tile implies local production. Whether this was done by itinerant tilers is uncertain. However, the combined evidence for local floortile, ridgetile and pottery seems to point at an indigenous industry around the time of the establishment of Greyfriars.

Plain type 3.

Fabric: (TF.A1).

SQUARE TILES

WEAR	1	2	3	4	
No. of frags	0	2	18	11	
% of Total	0	6	58	35	
<i>Fabric Type A1</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	7	6	0	15	3
% of Total	22	19	0	48	9

Total No. of Frags 344. Total weight 6344 g.
Colours GL, OL, GD, Y, DK

Tiles are oxidised an orange-red brick colour, sometimes with a thin grey core. They are fairly hard fired although new breaks are rough and inclined to laminate. Surfaces are invariably dull and often silty. Characteristic but infrequent inclusions are shiny red-brown shaley fragments and rounded red sandstone gravels. Quartz sands are visible in the core, also very occasional soft white inclusions which react with Hcl. All of the tiles contain a small amount of mica.

There are 31 fragments of tile, probably all from square tiles, but none are complete. Tiles with one complete dimension measure on average 128mm. The thickness varies between 21 and 28mm, but most are in the 24/25mm range. Tiles which have a surviving edge are vertical or very slightly bevelled, whilst a small number have a reverse counter bevel. The quality of the glaze is consistently poor with the appearance of being well worn. The colour varies from light to olive green, over a white slip. These tiles were apparently dipped into the slip. One of the tiles has remains of slip along the sides, any excess was usually scraped off.

Small nail holes are found on the upper surface of tiles, a feature noticed on type 1 tiles (see above). The base of tiles are quite rough and it is uncertain whether or not they were sanded.

The fragmentary nature and poor quality of these tiles provide no real clues as to their origin or indeed manufacture. Their similarity to plain type 1 tiles is discussed below (p. 28). Whether or not these few fragments represent a distinct type remains unclear.

Plain type 4.

Fabric: (TF.F1).

SQUARE TILES

WEAR	1	2	3	4	
No. of frags	6	6	1	9	
% of Total	27	27	4	40	
<i>Fabric Type F1</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	5	0	0	9	8
% of Total	22	0	0	40	36

Total No. of Frags 22. Total weight 1949g. Colours Y, GL, DK. Measurable lengths 124 x ? x 19; 125 x ? x 20.

This is a gravel tempered fabric, not dissimilar to that of type 2 (TF.F) tiles, but with smaller inclusions. Surfaces are oxidised pink or orange, although the upper surface is sometimes partly reduced. The core is either a light or dark bluish-grey. Tiles are usually hard fired and fairly dense, containing frequent inclusions. The most common types are small shaley gravels, rounded and of more

or less uniform size. These appear red in the oxidised parts and dark grey in the reduced core. All tiles contain a small amount of white quartz.

There are 22 fragments of tile, all are probably from square tiles. Two fragments of tile with one complete length, measure 125mm long. The thickness varies between 19 and 21mm. Diagnostic fragments have either a vertical or counter-bevelled edge.

All of the tiles have a white slip on their upper surface, this appears to have been applied with a brush. A pale greenish-yellow glaze rarely survives, but when it does, it covers the whole of the upper surface. The base of tiles are rough, unsanded and not apparently keyed.

There is no conclusive evidence to suggest manufacturing techniques used in producing these tiles. There is a possible parallel with a similar tile from Talley Abbey in the National Museum of Wales. One would suspect that, like type 2 tiles, they were possibly made by 'local' potters rather than tilers.

Plain type 5.

Fabric: (TF.E— See also Decorated Series Patterns 15, 64, above).

SQUARE TILES

WEAR	1	2	3	4	
No. of frags	13	6	3	0	
% of Total	59	27	13	0	
<i>Fabric Type E</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	1	8	10	3	0
% of Total	4	36	45	13	0

Total No. of Frags 22. Complete 3. Total weight 7611g. Complete measurements 137 x 136 x 29 (852g); 132 x 130 x 30 (978g); 135 x 134 x 30 (1100g). Colours Y, BL, GD, BR, OL. There are two examples of deeply scored tiles to cut into triangles. Glaze of tiles pitted, crazed and often smeared.

TRIANGLES

WEAR	1	2	3	4	
No. of frags	0	2	0	0	
% of Total	0	100	0	0	
<i>Fabric Type E</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	0	0	2	0	0
% of Total	0	0	100	0	0

Total No. of Frags 2. Total weight 622g. Colour Y.

There are 22 fragments of square tile, of these three are complete. Tiles measure between 130 and 136mm in length and between 28 and 30mm thick. The degree of bevel is generally quite steep, though a few examples are less so. Two of the square tiles have been deeply scored to cut into triangles. Five fragments of triangular tile are halved squares,

broken after firing.

Tiles are coloured yellow, 'black', brown and dark green. The overall quality of the glaze is good, although it is sometimes crazed and is inclined to flake off. There is also the occasional green staining on yellow coloured tiles. The base of tiles are rough and not sanded.

A small number have clay from other tiles fused to their sides, the evidence would suggest that they were stacked on edge in the kiln.

There are visual as well as fabric similarities between these and plain Malvern tiles (type 7). A closely related source is possible. The superior quality of type 7 tiles might explain the apparent scarcity of type 5 tiles at the Friary, but there is no conclusive dating evidence to support this idea.

Plain type 6.

Fabric: (TF.G).

SQUARE TILES

WEAR	1	2	3	4	
No. of frags	10	4	2	0	
% of Total	62	25	12	0	
<i>Fabric Type G</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	5	4	3	4	0
% of Total	31	25	18	25	0

Total No. of Frags 16; Complete 3 140 x 138 x 18 (644g), 140 x 139 x 20 (682g), 145 x 144 x 18 (708g). Total weight 3821g. Five frags are keyed (31% of total). Colours GD, OL.

TRIANGLES

WEAR	1	2	3	4	
No. of frags	8	1	3	0	
% of Total	66	8	25	0	
<i>Fabric Type G</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	3	3	2	4	0
% of Total	25	25	16	33	0

Total No. of frags 12. Complete 1 195 x 141 x 140 x 19 (375g). Total weight 2270g. Colour GD.

The fabric of these tiles corresponds with 'Llanstephan' pottery fabric B9 and ridge tile Type H (O'Mahoney, 1991). Surfaces are oxidised pinkish-buff and the core is a dark bluish-grey. Tiles are hard fired with frequent white calcareous inclusions visible in the core. There are also few grey gravels and occasional dark red sandstone inclusions. All tiles contain a small amount of quartz.

There are 16 fragments of square tile. Complete tiles measure approximately 140mm by 138mm, and 16 and 20mm thick. The angle of bevel is variable. Two of the square tiles are scored to cut into triangles. There are an additional 12 fragments of trian-

gular tile. Triangular tiles in this fabric are made from square tiles, which have been cut through half their thickness before firing and broken later.

An olive green glaze covers the whole of the upper surface of tiles. The quality is generally good and obviously hard wearing. The base of tiles are rough and not sanded. Keying occurs on the undersurface of five (31%) fragments. This was apparently achieved with a stick, stabbed into the base of the tile at an oblique angle. There is no visible evidence to suggest methods of stacking in the kiln.

It has been noted already, that the products of this industry were skillfully made (O'Mahoney, 1991), and often superior in quality to other 'local' wares. For what appears to be a well made possibly local tile, with evidence for careful handling, there are surprisingly very few found at the Friary.

Plain type 7. 'Malvern' tiles

Fabric: (TF.C) See also Decorated Series Patterns: 5, 7, 8, 18, 20, 21, 22, 23, 26, 31, 32, 39, 40, 53, 63.

SQUARE TILES

WEAR	1	2	3	4	
No. of frags	520	283	240	353	
% of Total	37	20	17	25	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	0	149	1107	140	0
% of Total	0	10	79	10	0

Total No. of Frags 1396. Total complete 28 (average dimensions 127 x 125 x 27 (c. 800g). Total weight 302,199g. Colours Y, BR, BL, GD, DK amounts as follows:

COLOUR:	Y	BR	BL	GD	DK
No. of frags.	496	131	592	30	147
% of Total	35	9	42	2	10

TRIANGLES

WEAR	1	2	3	4	
No. of frags	128	22	29	46	
% of Total	56	9	12	20	
<i>Fabric Type C</i>					
BEVEL	VE	SL	ST	DK	CB
No. of frags.	0	9	209	7	0
% of Total	0	4	92	3	0

Total No. of Frags 225. Complete 19 (average dimensions 167 x 122 x 119 x 25. Total weight 47985g. Colours Y, BR, BL, GD, DK, amounts as follows:

COLOUR:	Y	BR	BL	GD	DK
No. of frags.	96	33	79	4	13
% of Total	42	14	35	1	5

There are a total of 1,396 fragments of square tile. Complete tiles measure approximately 127 by 125mm, and 22 to 28mm thick. Three smaller tiles, measuring approximately 40mm square, are the

products of larger tiles. Additionally there are 225 fragments of triangular tile, these too are made from square tiles, scored; and then broken after firing. Two of the triangles are quarter size. The majority of tiles have a steep bevel.

Tiles are coloured yellow, 'black', dark brown and a very dark green. 'Black' and yellow tiles are the most prolific. A number of tiles are very badly worn with little or no glaze surviving, these could be decorated types. The quality of the glaze is generally good. The base of tiles are always very sandy.

There is much evidence to suggest careless stacking. Many tiles display signs of edge contact, where tiles have been stacked on edge. A significant number have linear impressions on the upper surface, where tiles have clearly leant against each other in the kiln. Contact signs are less conspicuous on corresponding decorated tiles.

The uniformity of type characteristics would seem to imply one source area for these tiles, somewhere in the Malvern/Severn Valley region; but scientific analysis of the fabric would be needed to prove this assumption.

Plain type 8. — 'NORMANDY' Tiles

Fabric: (TF.H).

WEAR	1	2	3	4	
No.of frags	68	14	13	131	
% of Total	30	6	5	57	
<hr/>					
Fabric Type H					
BEVEL	VI	SI	ST	DK	CB
No. of frags.	33	64	23	106	0
% of Total	14	28	10	46	0

Total No. of Frags 226. Total complete 4 157 x 155 x 22

(1020g), 158 x 154 x 22 (991g). Total weight 45324. One example of a tile scored ready to cut into triangles, only 3 examples showing evidence of edge contact and one of upper surface contact.

These tiles have a white or pale salmon pink fabric. It has a tendency to be streaky with poorly mixed lumps of white and red clay visible in the fracture. Tiles are fairly hard but are inclined to laminate. The overall appearance is granular with characteristic inclusions of rounded and angular quartz grits up to 7mm across.

There are 226 fragments of tile. Due to the fragmentary nature of these tiles it is uncertain whether any triangles are present or if they all come from square tiles. The only evidence for triangular tiles is one tile which is scored to produce two triangles. Sides measure between 152 and 163mm in length and 20 and 28mm thick. The degree of bevel varies.

The majority of tiles have lost their glaze. The glaze that does exist is either a bright green or yellow over a white slip. The quality can be very good, but crazing and flaking of the glaze is a common feature. The base of tiles are slightly rough but not sanded.

There is very little evidence to suggest methods of kiln stacking. Only three tiles display signs of edge contact.

These have been called 'Normandy' tiles, and have been found at Carmarthen Priory. Their distribution along the Southern seaboard of Britain is well attested. At the time of writing study of this tile type was being undertaken by the Museum Service at Poole and a petrological analysis suggests a number of possible sources: western Normandy/Paris basin, Saintonge and does not rule out the possibility of areas of England (Williams, 1991).

PLAIN TYPES WITH CHARACTERISTICS AND FABRICS SIMILAR TO DECORATED TILES.

Below are grouped plain and decorated types which have common fabrics.

Plain Type 1 (TF.A) and Plain Type 3 (TF.A1):

Certain anomalies have come to light in the division of fabric types. The study of the decorated tiles (above) highlighted difficulties of dating the early designs. Plain type 1 tiles (TF.A) are clearly linked to decorated tiles grouped under type fabric A. Both are comparable in terms of size and fabric. Plain type 3 tiles (TF.A1) are of a very similar fabric

to Type 1 tiles and share many of the same physical characteristics as well as some of the patterns. There are only 31 fragments (1% of total plain) of type 3 tiles compared with 349 fragments of type 1 (12% of total plain). Type 3 tiles are fractionally thicker and the overall appearance is more primitive. There were only a few fragments of the thicker decorated tiles sharing the same patterns and none with a measurable length; for these reasons fabric and visual distinctions were not so clear cut and all were grouped under one fabric type. Any irregularity in the fabric and thickness of the tile was seen as an aberration of the norm. Pattern 13 and to a

lesser extent pattern 14 (only 3 fragments), both grouped under type fabric 1, should perhaps be linked with plain type 3 tiles as both are thicker than the rest of the decorated tiles in this group (with the exception of the few fragments just mentioned). On the basis of style patterns 13 and 14 are thought to be later. The uncertainties arising from these anomalies are those of origin and date. Are plain types 1 and 3 the products of two separate kilns, using closely related clays? Or are type 3 tiles a later group using the same clay, inheriting some patterns from their predecessors as well as introducing their own new patterns (patterns 13 and 14)? There is no conclusive evidence to prove either theory.

Plain Type 5 (TF.E):

Plain type 5 tiles (less than 1% of total plain) bear a striking resemblance to decorated tiles of type fabric E (Patterns 15 and 64). On stylistic grounds pattern 15 is thought to be later fourteenth century rather than early. Pattern 64, the only incised tile

found at the Friary, is also likely to be later. The size and thickness of these tiles are akin to plain and decorated tiles of Malvern/Severn Valley manufacture (TF.C). Also, the fabrics are not dissimilar which could suggest a closely related clay source and possibly a similar date of manufacture.

Plain Type 7 (TF.C):

The fabric of Plain type 7 tiles is in every respect similar to decorated Malvern/Severn Valley tiles. These tiles form the bulk of the plain tile assemblage (56% of total plain). Any distinction in fabric was put down to different firing temperatures. Further work is needed with this group to determine the exact kiln source and whether indeed tiles come from one or more production centres.

PLAIN TYPES WITH NO SIMILARITIES TO DECORATED TILES:

Plain Type 2 (TF.F) and Plain Type 4 (TF.F1):

Plain type 2 (19% of total plain) and plain type 4 (less than 1% of total plain) are thought to be the products of local kilns. The fabrics are similar to pottery and ridge tile in Dyfed gravel tempered ware. Plain type 2 tiles (TF.F) are unusually large and heavy, some with keying on the reverse. Similar tiles were found at the Augustinian Priory at Carmarthen (James 1985). Plain type 4 tiles (TF.F1) are noticeably smaller in size and not apparently keyed. Although visually distinct, the fabric inclusions are similar. However, inclusions of plain type 4 tiles are finer and the fabric is noticeably more compact. Plain type 2 tiles (TF.F) vary in the amount of inclusions present, whilst some are very heavily tempered others are less so, possibly representing different batches of clay mix.

Plain Type 6 (TF.G):

Plain type 6 tiles (less than 1% of total plain) are assumed to be a local product in a recognised pottery fabric known as 'Llanstephan Ware'. Pottery (O Mahoney, Types B9-B12) and ridge tile (O Mahoney Type H) in this fabric were first found at Llanstephan, hence the type name. The products of this industry are now thought to be of Carmarthen (estuarine) manufacture.

Plain Type 8 (TF.H):

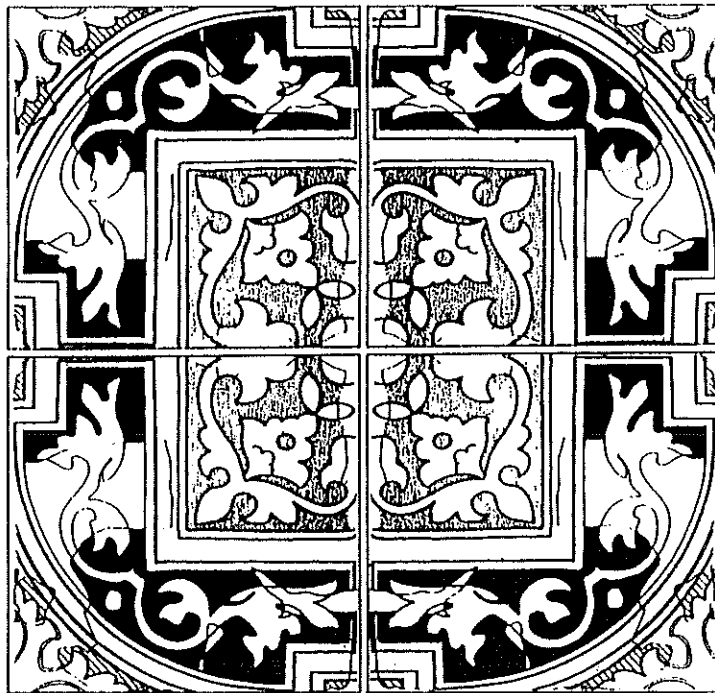
Plain type 8 tiles (7% of total plain) are a well recognised tile fabric believed to be of Normandy origin. Their distribution along the southern coastal waters of Britain would support a theory of importation. Identical tiles were recovered during excavations at the Augustinian Priory at Carmarthen (James 1985, 133).

Fabric Types: cross reference table

Fabric descriptions can be found in the relevant sections on Decorated Tiles listed from page 9, and Plain Tiles from page 24 above, in conjunction with reference to the following table.

Type Fabric	Plain Tile Type	Decorated Type
A	1	1-6, 9-14, 16-17, 19, 24-25, 27-29, 35, 37-38, 41, 43, 48-49, 51, 61-62.
A1	3	—
B	—	58
C	7	5, 7, 8, 18, 20-23, 26, 31-32, 39-40, 53, 63.
D	—	30
E	5	15, 64
F	2	—
F1	4	—
G	6	—
H	8	—

MAIOLICA TILES



Reconstruction at one third scale from numerous overlapping fragments.
Areas shown in outline indicate where the drawing is reconstructed
Black/solid = Blue; Stipple = Green; Hatching = Yellow-orange.

FOURTEEN fragments of Maiolica tiles were recovered from the Friary area. The main contexts to produce these fragments were:

582 a robber trench of the west range of the Great Cloister in association with demolition rubble as late as the 18th/19th century.

218 a dump layer south of the latter and west of the south range of the Great Cloister.

2010 a 16th/17th century rubbish pit near the east wall of the choir.

The pattern of these tiles is from a known design published in the Nanne Ottema tile collection at Leeuwarden (Korf n.d. 1969, 25 No.38). It is also paralleled in Rackham (1923) no. C485-1923. A fragment of the same pattern was recovered from excavations at St Ebbe's, Oxford from a 17th century context (Hassall, et al. 1984 263, 263). Other unprovenanced fragments are to be found in the Layton Bequest (P.623) in the Museum of London (John Lewis, pers. comm.). Maiolica tiles with different patterns, come from Raglan Castle.

Tiles of this type started production in the Antwerp area c. 1550 and they may date from 1550-1580. It is suggested that these were wall tiles, perhaps forming a surround to a fire place, although their use on floors cannot be discounted.

Clearly the tiles cannot be associated with any Friary building prior to the Dissolution if production commenced c. 1550. The establishment of Thomas Lloyd's grammar school in 1543 may have resulted in the refurbishment of some of the buildings, but the school closed in 1547. Evidence for the existence of Friars' Park House before the 17th century is uncertain. It may be that the fragments came from somewhere outside of the site.

DESCRIPTION: These tiles have a creamy-yellow or buff coloured fabric. All tiles are fired very hard and dense and some have been blackened near to and at the surface whilst in the kiln. The most frequent inclusions are rounded quartz sands. The fabric contains a few scattered orange and red-brown fragments, some of which

are soft and easily scratched, and others which are hard and slightly metallic. There are also some soft white inclusions which react with HCl as well as very occasional small flint grits.

Tiles are coloured blue on a white background with infill colours of pale green, and yellow-orange. There is enough variation in the patterns between different tiles to suggest considerable hand colouring, but some form of printing may also have been employed. The glaze itself is generally good although sometimes pitted and with a tendency to flake off.

WEAR	1	2	3	4
No. of frags	6	7	1	0
% of Total	42	50	7	0

BEVEL	VE	SL	ST	DK	CB
No. of frags.	—	2	11	1	—
% of Total	—	14	78	7	—

Total No. of Frags 14. Complete = 0; Total Weight = 1413

SPANISH TILE

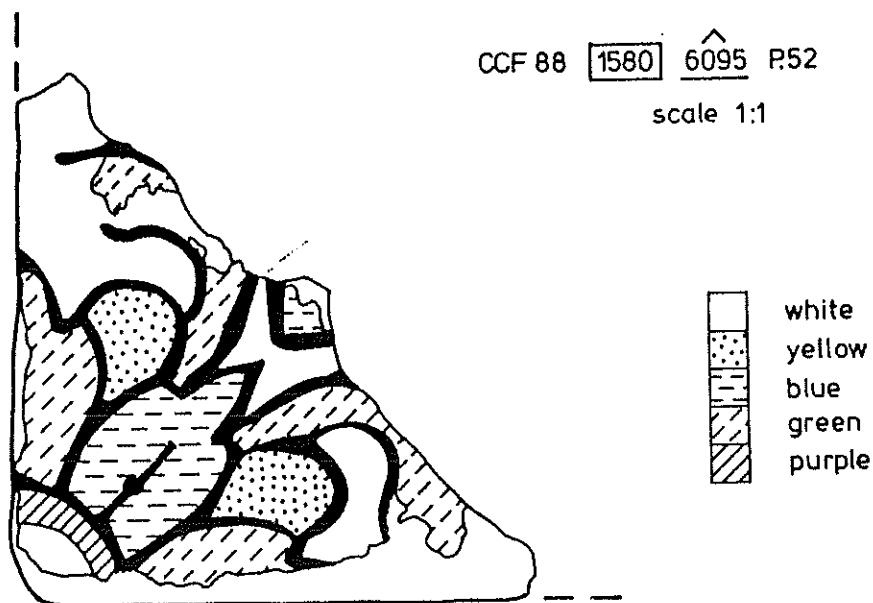
Corner fragment of tile decorated in the 'cuerda-seca' method in which the outlines of the design are below the glazed surface of the tile. Colours used are white (tin), blue (cobalt), purple (manganese) and green (copper). Superficially the fabric is pretty much the same as others I have seen from the Seville region - light buff, fine, with some inclusions of quartz. Thickness: 27mm; sides bevelled inwards slightly.

Decoration: Foliate 4-tile component repeating.

The tile dates probably from the latter part of the 15th century, although the upper surface of the tile is so worn that I am not able to find a dated parallel.

Tiles decorated in the manner described were replaced early in the 16th century by tiles decorated in the 'arista' or 'cuenca' method, although the two methods of decoration overlapped for a while. 'Cuerda-seca' tiles are a rare find in the U.K. Only one other is known, to my knowledge, and this is from a London site. This is the only example of a Spanish tile to have come from Wales, and as such, is a very special find indeed.

BRUCE WILLIAMS
(City of Bristol Museum & Art Gallery)



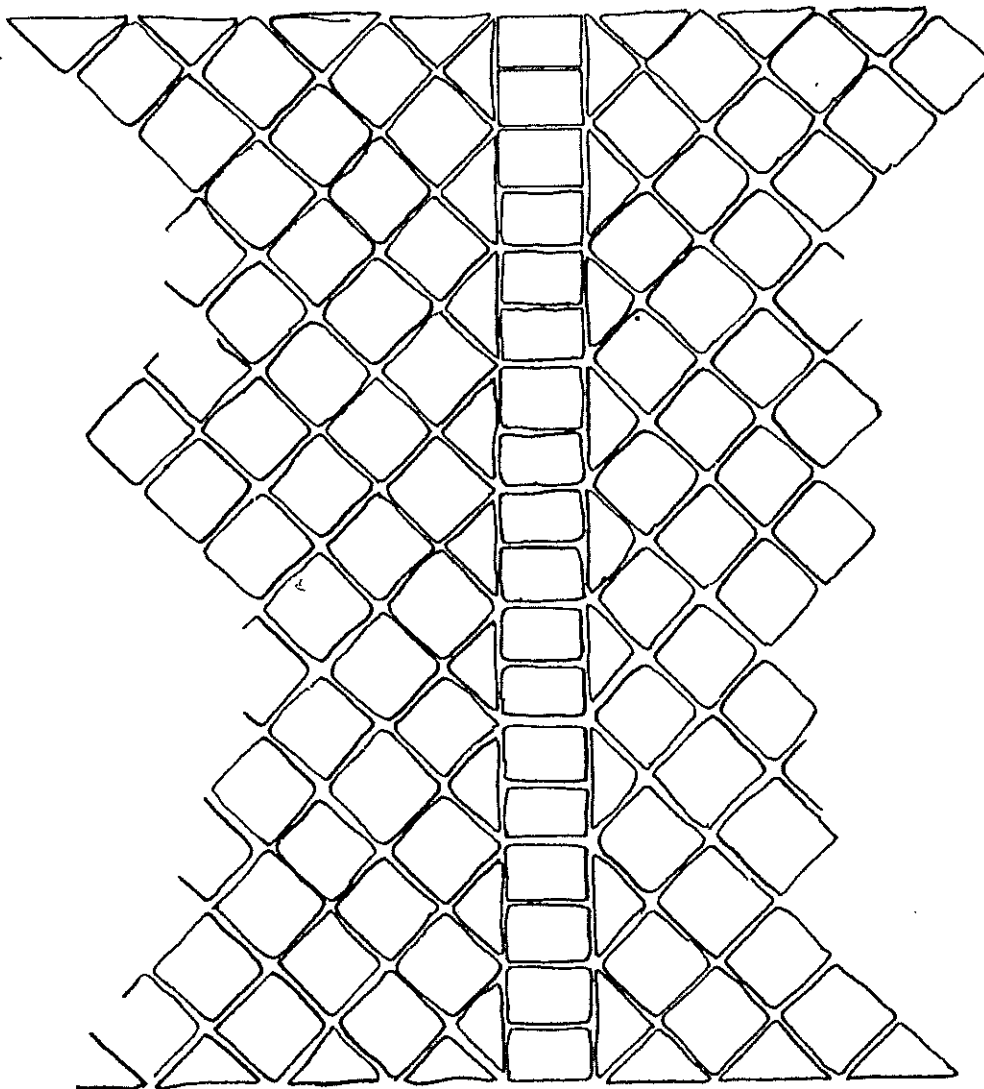
OOLITIC LIMESTONE FLOOR TILES.

In addition to the ceramic tiles there are 173 fragments of oolitic limestone floor tile. Of the total, there is only one complete square tile (reconstructed from several fragments). The tile measures 305 x 305 x 45mm (one foot square). An incomplete example of smaller dimensions measures 260 x 210 x 40mm. Tiles have a thickness of between 31 and 55mm though most are between 40 and 45mm thick. Fragments with a larger but incomplete depth are possibly not tile, since the same freestone was used for decorative mouldings at the Friary.

There are eleven triangular tiles. The largest of these has an incomplete length of 275mm. The smallest measures 113 x 91 x 77 x 53mm. There are also two possible lozenge shaped tiles. Small areas of

pavement noted in the Great Cloister alleys (see drawing below) were composed of oolite tiles one foot (305mm) square, eight triangles of the same dimension, and rectangular tiles six inches (153mm) by eight inches (203mm). Imperial measurements were evidently used for their manufacture. None of the 6x8 inch tiles were recovered, but were left *in situ* in context 224.

The upper surfaces of tiles are smooth and highly polished and the edges and corners are rounded off. Cutting marks are visible along the sides and bases of most tiles.



Reconstruction of the method employed to lay oolite floortiles in the Great Cloister alley as observed in context 224. It is unknown at what intervals the bands of rectangular tiles were laid. On the basis of a floor area calculated at 300 square metres, it is estimated that at least 7,500 tiles would have been needed to floor the Great Cloister alley and its approach passage.

APPENDIX

DECORATED FLOORTILE DRAWINGS

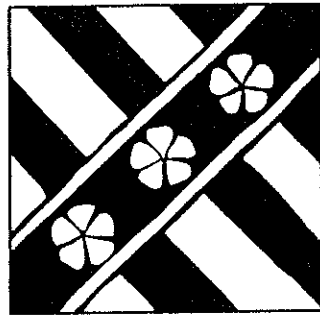
The following pages contain one third scale drawings of floortiles in type series numerical order. Gaps in the type series sequence are due to certain earlier types being deleted when it was realised that they were parts of already recognised patterns. The conventions used in the drawings broadly follow guide-lines set down in the CBA handbook (Stopford, 1990, pp. 36-38). Each tile pattern was drawn at 1:1 scale: where many complete tiles of a particular pattern existed the drawings attempt to record a representation of the characteristics of all tiles, rather than be a tracing of a single tile. This method avoids the possibility of emphasising accidental variations in the patterns. Where no complete tiles existed, then a complete drawing is only presented when the fragments used could be confidently assembled to provide a whole design. If there was any doubt only the best fragment of tile was drawn, apart from two cases (patterns 49 and 53), where two drawings have been produced. Stippling is used to show parts of a tile where the pattern could not be established. The final drawings, which are deposited with the site archive, were then reduced on a photocopier to 1:3 scale. This may result in some distortion of the image, and researchers are advised to look at the relevant tables for dimensions.

Any detailed comparative work should involve consultation of the original drawings and the tiles themselves, which are deposited in Carmarthen Museum (boxed in type-series order). Those who wish to look for tile patterns according to common groupings may find the following table of assistance:

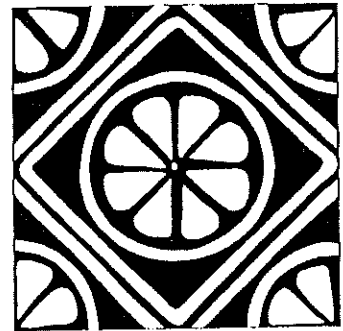
4-Tile Groups	8, 13, 16-20, 25, 26, 28-31, 37, 40, 43, 748, 53, 758, 62
16-Tile Groups	21-23
Heraldic or Heraldic Elements	72, 74, 712, 13, 15, 24 + 38, 30, 37, 48, 749, 58
Fleur-de-lis included	1, 8, 16-20, 25, 29, 753
Vesicas	10a, 10b
Lettering	30-32, 63
Half/Border	5, 7
Single tiles that form combinations when laid together	1-4, 9-12, 14, 24, 27, 35, 38, 41, 49



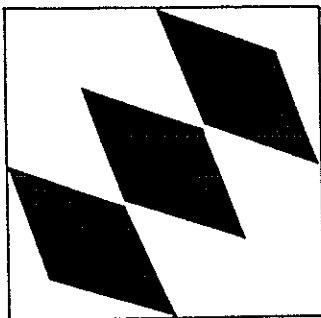
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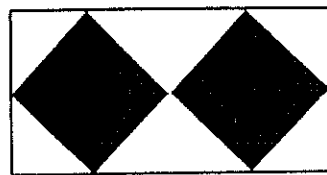
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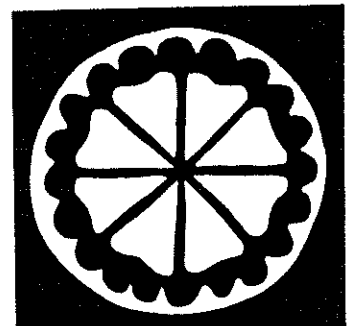
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4



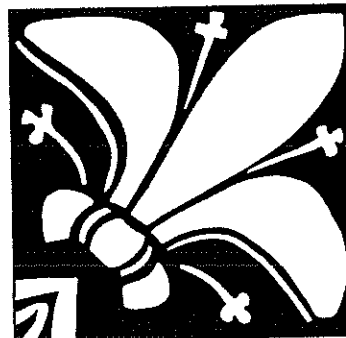
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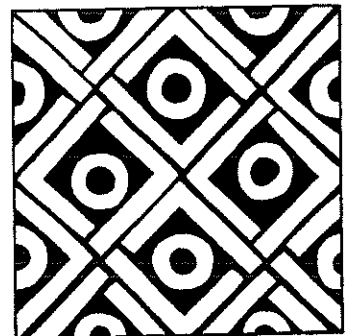
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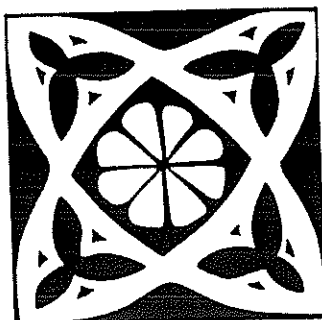
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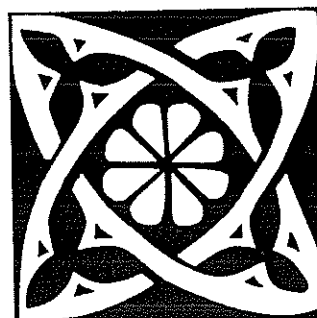
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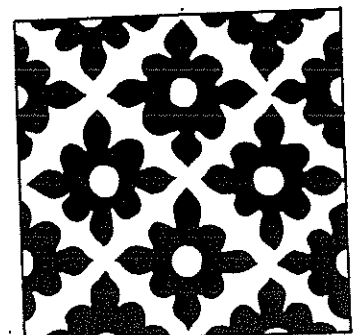
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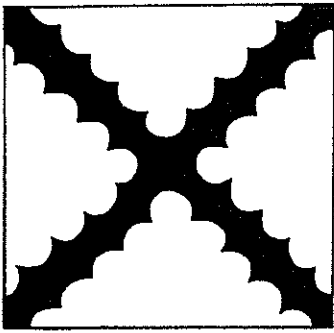
10a



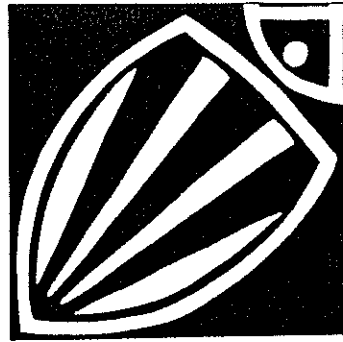
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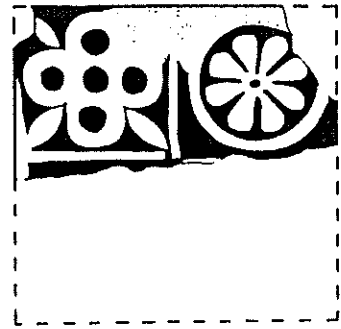
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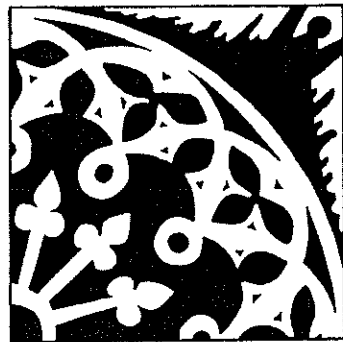
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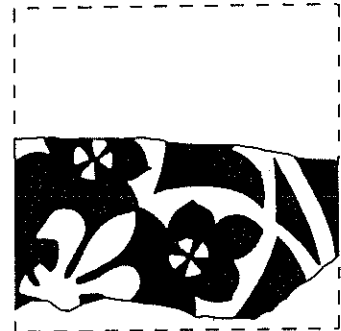
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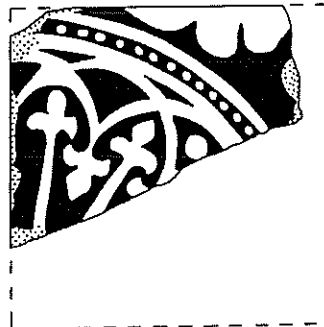
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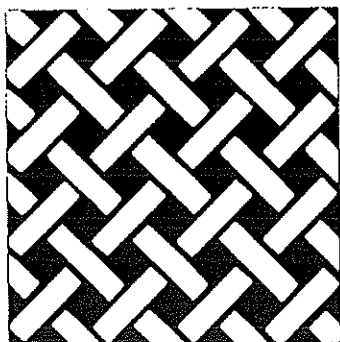
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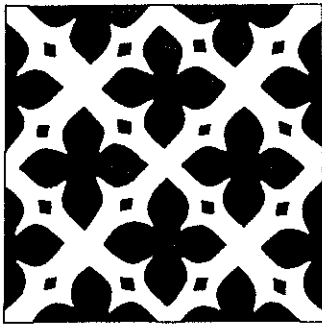
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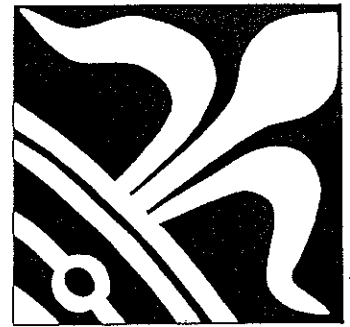
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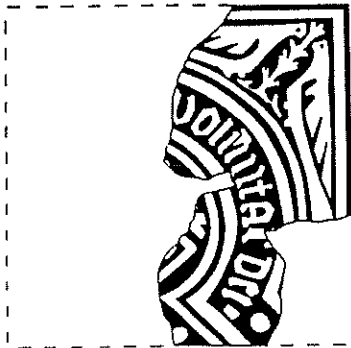
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28



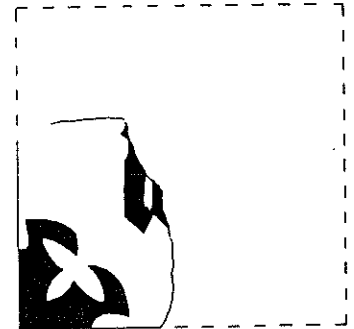
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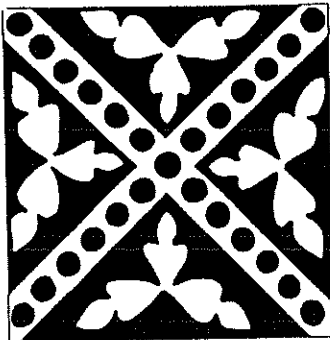
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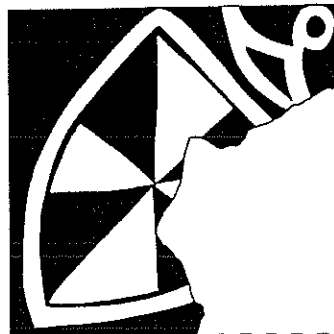
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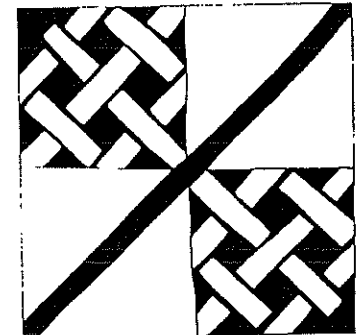
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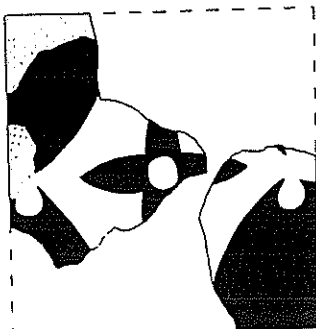
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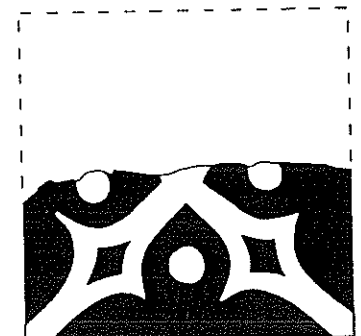
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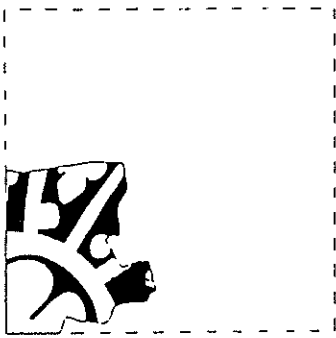
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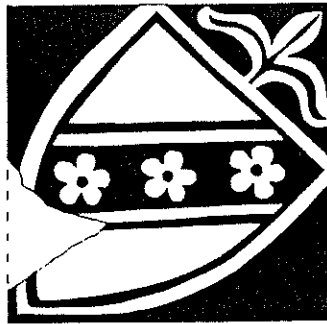
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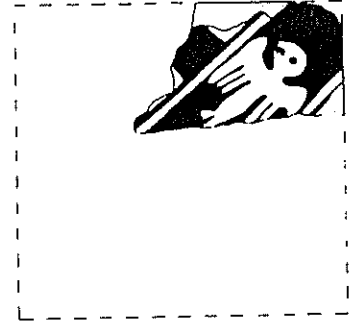
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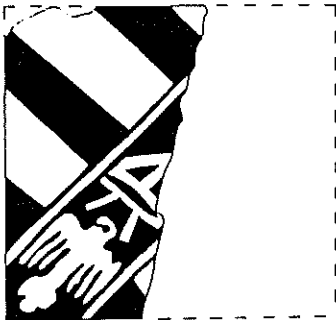
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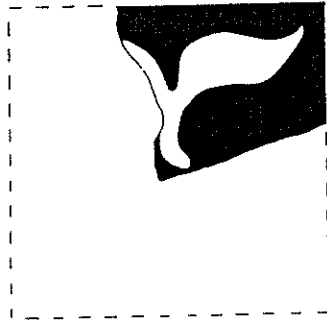
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49



49



51



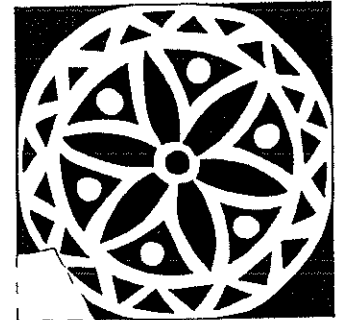
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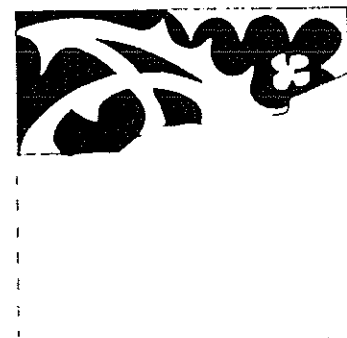
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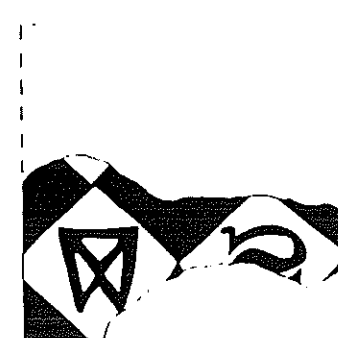
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61



62

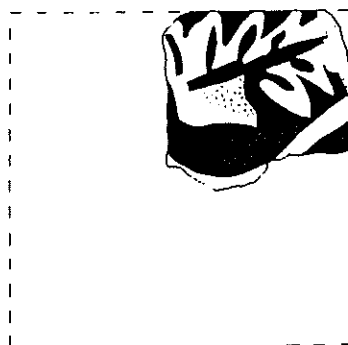


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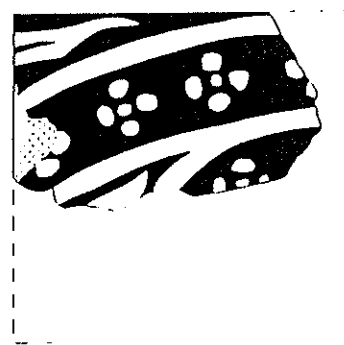


64

SIXTEEN-TILE DESIGN
Pattern 21



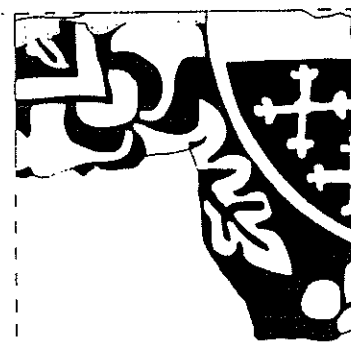
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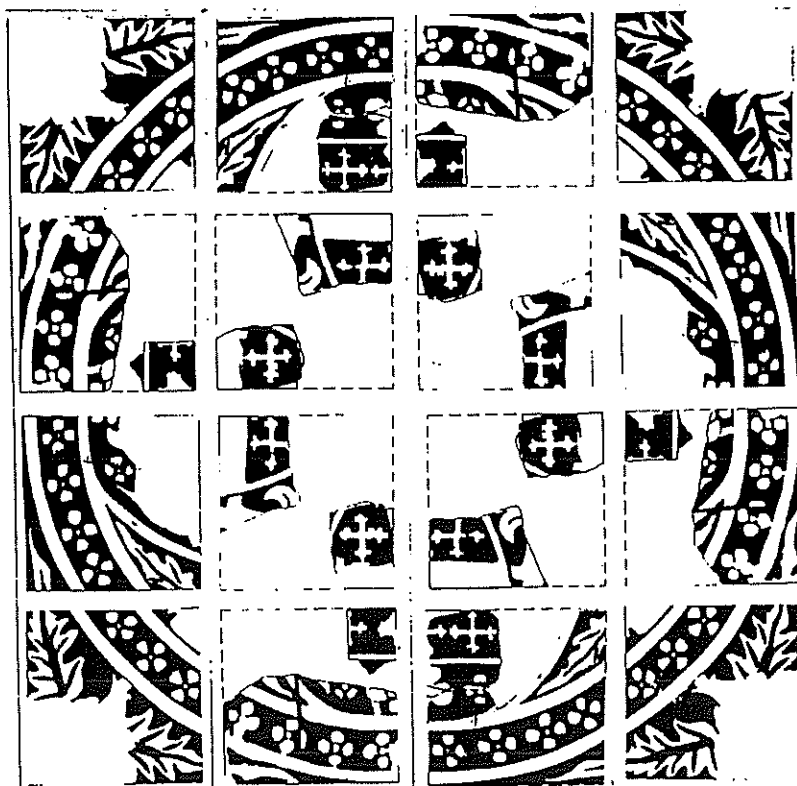
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BM2909



BM2910

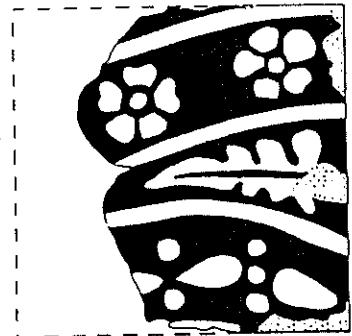


RECONSTRUCTION

SIXTEEN TILE DESIGN
Pattern 22



BM2980



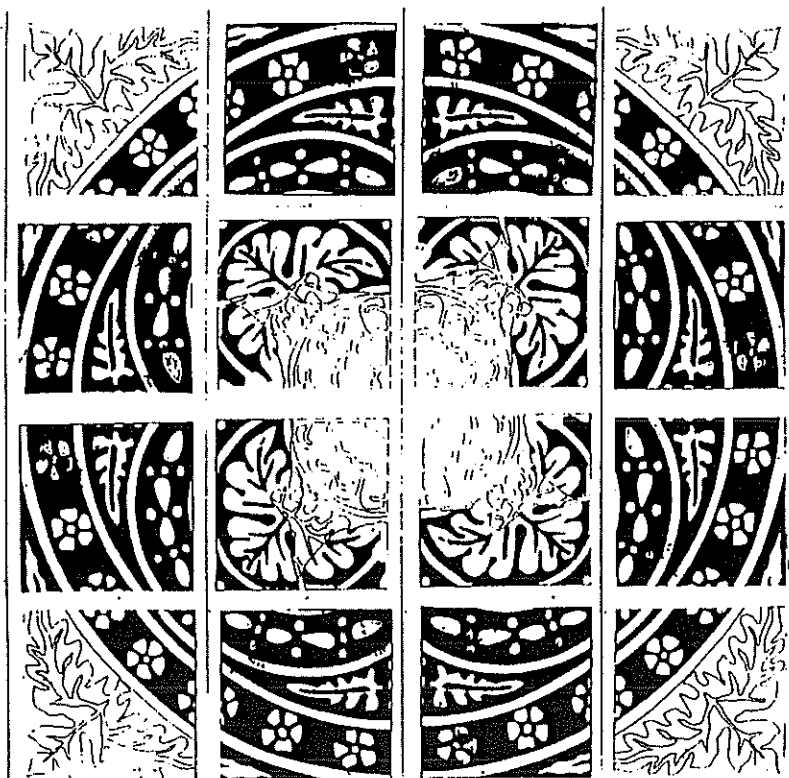
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BM2982



BM2983



RECONSTRUCTION

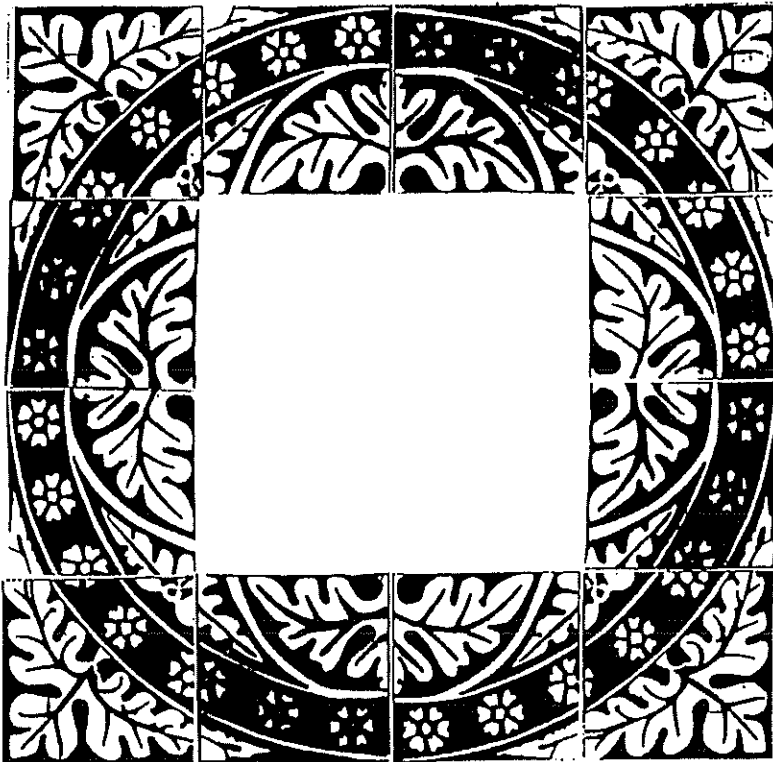


BM3004



BM3003

**SIXTEEN TILE DESIGN
Pattern 23**



RECONSTRUCTION