

# Gloucester Cathedral: a painted medieval floor in the Choir Gallery

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*The south choir gallery is a late 11th-century structure modified in the mid 14th century, as is the adjoining south transept east gallery chapel (Welander 1991, 150; Wilson 1985, 73). A single brick floor laid in a simple herringbone pattern extends throughout both of these galleries; documentary evidence, in the form of building accounts, provides a date in the 1670s for laying this floor with 8,900 bricks purchased from Worcester (Welander 1991, 373). This brick pavement was partially lifted in 1935 revealing a geometric pattern in an underlying surface. The feature was photographed at the time (ibid, 374), but was interpreted as a mortar bed for the brick floor.*

*During 2001 the brick floor was lifted along several narrow channels for inserting cables, as part of improvements to the fire precautions being carried out in the cathedral. Nine trenches, 200-300mm in width, were cut by maintenance staff, involving removal of some bricks and excavation of the substrate to a depth of 100-150mm below current floor level. The level at which this 'mortar bed' floor was encountered was 130-140mm below the present 17th century brick pavement. A total of 44m was cut in this way.*

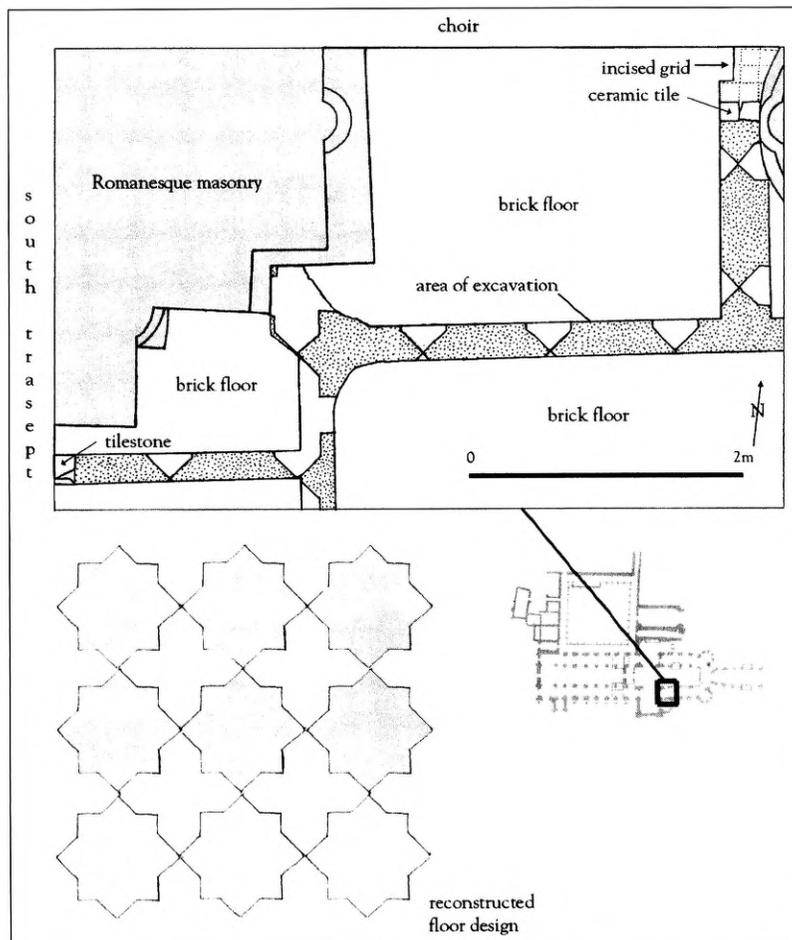


Fig 1 Gloucester Cathedral, south Choir Gallery and reconstructed floor design

## The painted floor

The earliest archaeological feature uncovered was a mortar floor surface with painted and incised decoration in the form of a repeating geometric pattern (Fig 1). The floor was identified in all the trenches in the choir gallery up to the easternmost Romanesque pier of the choir; east of this pier it was absent. It was not found in any of the trenches cut in the south transept east gallery.

The surface was best preserved in the north-west corner of the choir gallery, by the south-east pier of the crossing. At this point the colouring became visible when the surface was moistened with a fine spray. Elsewhere the exposed floor surface was abraded with all traces of pigment removed, but with the incised decoration still visible. The preservation of the exposed floor surface in the north-west corner of the choir gallery is probably due to its protected position, proximal as it is to the standing masonry of the Romanesque piers.

Sufficient decorated floor was exposed to allow the design to be reconstructed. It is a regular repeating pattern of interlocking white crosses, with the arms meeting in points, on a red background. Alternatively the design could be described as a grid of eight pointed red stars

on a white background. The pattern is formed by two parallel grooves 10mm apart, that mark the border of the crosses and run in an under-and-over rhythm, diagonally across the design, where the pointed arms of the crosses meet.

At the northern edge of the painted floor, evidence of a raised border of ceramic and Stonesfield Slate tiles was found. Where this border is best preserved the painted surface could be clearly seen to rise up and adhere to the upper edge of the tiles. Here a Stonesfield Slate tile was removed showing that the painted floor did not extend beneath the tile border, confirming that floor and border are contemporaneous. The ceramic tile is 140 x 140mm and has traces of black glaze on its surface.

Immediately north, that is between the tiles and the plinth forming the base of the opening into the choir, an area of mortar had preserved traces of a grid of squares faintly incised into its surface. The size of the grid corresponds with that of the ceramic tile so the feature is interpreted as the layout design for the border of tiles and slate. The mortar surface is level with the surface of the two extant tiles so that a further shallow step would have been created if a border had been laid on this grid.

### *Archaeological dating*

The coloured floor abuts the masonry of the Romanesque pier that projects into the choir gallery with no intervening border. As the vault of the south ambulatory has not been replaced since its construction in the late 11th century it is possible that the floor formed a part of the original design of the choir gallery. The archaeology therefore provides a date range for the floor of between the late 11th century and the mid 17th century, the date of the present brick flooring. A layer of crushed oolitic limestone overlaid the floor followed by a thin layer of Cheltenham Sand upon which the present brick floor rested. The sand yielded a single small fragment of glazed stoneware. It was identified by Rod Burchill (Bristol and Region Archaeological Services) who suggested that it was English stoneware with an approximate date of 1660-1740, which accords well with the documentary evidence for the laying of the floor.

### *Mortar and pigment analysis*

A small quantity of the mortar was obtained for analysis from an area where the floor had disintegrated. Dr Graham Morgan (School of Archaeological Studies, University of Leicester) kindly performed an analysis of samples with both red and white surface colouring. The following is a summary of his results and comments.

*Microscopic examination suggests that both the red and white colouring was achieved by the application of very thin lime washes or crushed pigment <0.1mm in thickness.*

*The mortar upon which these colours were applied was a coarse off-white sandy lime mortar containing brown animal hair, lime lumps, fragments of oolitic and fossiliferous limestone, round to sub-angular quartz sand, seed and insect traces, fragments of haematite and ceramic material. The ratio of lime to aggregate is approximately 50:50. It is possible that the white surface colour could be a layer of calcium hydroxide that has formed on the surface of the setting mortar.*

*The red layer is hard and may have been achieved by the buon fresco technique, whereby crushed pigment is applied directly to the setting mortar. The red colour was derived from iron in the form of haematite or siderite. The white layer is softer and was probably applied as a wash. The presence of brown animal hair is highly unusual in floor mortars, so much so that it has not been possible to identify any other examples; it suggests wall plaster being used on floors! The earliest example of such hair plaster is 14th century, from an Oxford church. A 14th or 15th century date would be acceptable but an earlier date is not impossible.'*

### *Parallels for the design*

The use of art historical parallels may allow a more precise estimation of the age of the decorated floor. The design is Islamic and has been used to decorate a number of 12th century Sicilian churches and castles.

One such example is the Siculo-Arabic wooden stalactite ceiling of the Palatine Chapel, Palermo, commissioned by Roger II and attributed to Muslim craftsmen (Petzold 1995, 86, pl 59). The same design is found, with an interlocking border of crosses, decorating the soffits of the main arcade; it is also inlaid in the pavement of the same building. The chapel is dated to c 1140 (Demus 1949, pl 8).

It was used to decorate the walls and floors of the cathedral church of Monreale (*ibid*, pl. 75b, Altet 2001, 186-7), built between 1172-83 and, along with the Palatine Chapel, employs a number of other Islamic decorative and architectural devices (McLean 1997, 112).

The design was used in two of Palermo's 12th century castles: in the Stanza it is inlaid in the floor whereas at the Ziza it appears in a decorative border on the walls (Demus 1949, pl 13, 12).

More significantly the design is used as a framing device for devotional paintings on the Westminster Abbey painted panel (Tristram 1950, 562, pl 2, 3, Supp pl1). The panel is dated to c1270 (Foster 1991, 160) and it has been suggested that the Islamic component in the design was derived from 13th century Spain where, in the Castilian court, it was frequently used heraldic decoration (Tolley 1991, 186).

The design was used as a frame for a devotional scene, on an English cope of the late 13th century (Brieger 1957, pl 79b).

### Conclusion

These art historical parallels suggest a late 13th century date for this context, although a later date cannot be discounted. It could possibly be contemporary with the 11th century structure, but is, perhaps, more likely of the date suggested by the art historical examples. The coloured mortar and inscribed floor is of particular interest and importance as it has no British, and few continental, parallels, and demonstrates the need for close supervision of possible archaeological disturbance in ecclesiastical buildings.

### Acknowledgements

The writer would like to thank Rod Burchill, Carolyn Heighway, Laurence Keen, Graham Morgan, Christopher Norton and David Park for assistance and discussion. A copy of the full report can be consulted at the Gloucester Cathedral Library.

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