Computational Modelling of Objects Represented in Images: Fundamentals, Methods and Applications III

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Cosmatesque pavement of Montecassino Abbey.
History through geometric analysis

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ABSTRACT: The aim of this article is to show how images of various kinds, including photographs, surveying drawings, graphic rendering and all types of representation can support the analysis, study and documentation of historical floor surfaces in general, and in particular that in the abbatial basilica of Montecassino and other churches in its territory, once known as the “Land of Saint Benedict”.

1 COSMATESQUE PAVEMENTS

The Cosmatesque school had its beginning in the early 12th century, and was chiefly active in Rome during the Romanesque period. The Cosmati (1) are a typical example of craftsmen whose artistic education and work were often hereditary, handed down in the family. Consequently, preferences for certain types of pattern or specific designs are characteristic of a particular group.

The Cosmati masters’ work featured square or rectangular decorated panels set off by ribbons of mosaic wrapped around porphyry disks. The mosaic sections were always interspersed with white marble bands, essential in lending rhythm to the decorative scheme.

The can be no doubt that the main characteristic of a Cosmatesque pavement is the central strip that leads from the church entrance directly to the apse (Fig. 1).

The simplest type of central strip consists of a series of porphyry roundels joined by interlacing bands of mosaic and contrasting white marble in a guilloche pattern. This type became increasingly complicated, with later examples showing a highly complex design. Another common pattern for the central strip is the quincunx (Fig. 2), or in other words a square containing a central roundel surrounded by four other roundels, all connected by ribbons of mosaic and bands of marble. These two types of central strip were often combined to form extremely complex patterns.

After the central decorative motif was established, the entire floor surface was covered with rectangles in geometrical patterns that were usually repeated symmetrically around the longitudinal axis of the central design, with more attention devoted to the general effect of the surface as a whole than to the panel itself (Fig. 3).

2 DATING COSMATESQUE WORK THROUGH GEOMETRIC ANALYSIS

The Cosmati are a typical example of craftsmen whose artistic education and work were often hereditary, handed down in the family. Consequently, preferences

Figure 1. Rome, Cosmatesque pavement in the Basilica of San Crisogono.

Figure 2. Castel Sant’Elia, Cosmatesque pavement of the basilica.
Plate IV. Decorative geometric patterns found in the pavements of Montecassino, San Vincenzo al Volturno and Sant’Elia Fiumberpido.

variations from those of the pavement of Montecassino (Plate IV).

4.2 The church of Santa Maria Maggiore in Sant’Elia Fiumberpido

The building, datable to the very end of the 12th century and restored after the war, is a rectangular hall church with the entrance on the long side.

The approximately 10 square meter section of pavement that is still visible (Fig. 8), postdating that in the abbey of Montecassino by around a century, is made up of rectangles of varying size arranged around the altar and bordered by white marble strips.

The distribution of the panels appears to have no direct relationship with the church’s floor plan and, unlike most pavements of this type, puts no particular emphasis on the central strip.

For the most part, the geometric layouts are based on arrays of squares, rectangles, triangles, rhombuses and octagons, with only one of the patterns featuring circular elements.

Of the eleven geometric patterns that can be identified in the floor surface, almost all are part of the Roman and Late Antique decorative repertory (Plate I), while four were to become part of the decorations commonly used by the Cosmati masters throughout the entire period of their activity (Plate II). Another four are completely unknown, appearing for the first and only time in this pavement, and are thus to be ascribed to a more “pre-Cosmatesque” repertory (Plate III). Others are found among the patterns used for the pavement in the abbey of Montecassino (Plate IV), while some belong to the decorative repertory associated with the oldest family of Roman marble workers, that of Magister Paulus.

With the evidence available to us, it is risky to attempt to attribute the Sant’Elia pavement to the family of Magister Paulus, though the hypothesis is a fascinating one. We can only emphasize that the period in which these craftsmen were active (1108–1170) matches that in which the Sant’Elia pavement was executed, and that the family was active both in Rome and in the rest of Lazio.

5 CONCLUSIONS

A Cosmatesque pavement’s period of construction and attribution can be identified with a good degree of approximation by analyzing its total surface and overall design, as well as the geometric layout of the individual panels of which pavements of this kind are made up.

A systematic study of the patterns typical of each family of craftsmen, in fact, is essential in an analysis of this kind, as each Cosmati family had certain particular patterns that would be included in the family’s pavements as its hallmark.

A study of this kind, based on a thorough investigation of the stylistic and geometric features through photographs and/or drawings, is an example of how image analysis can contribute effectively to an understanding of historical architecture.
REFERENCES


