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Pattern Research Project

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Pattern Research Project: An Investigation of The Pattern And Printing Process - Pietra Dura

Zichen Zhou

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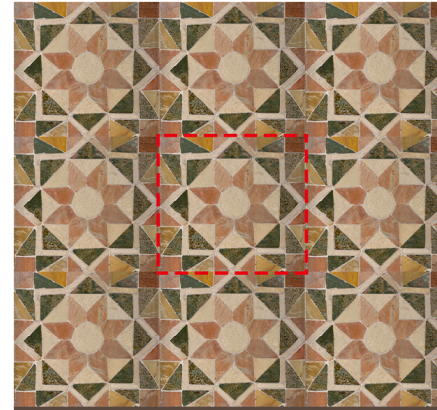
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Pietra Dura

Zichen Zhou Pietra Dura Pattern

Pattern Identification:

This pattern was found in the Cathedral of the Sacred Heart, Richmond, VA. The Cathedral of the Sacred Heart was designed by the famous New York architect Joseph H. McGuire. The whole church followed the Italian Renaissance Revival style. Joseph used Virginia granite and Indiana limestone on the exterior and ceramic tiles and a copper-jacketed dome 118 feet across complete the roof. The pattern was found on the altar table at the center of the platform. The altar table was made of granite and marble. The pattern was designed to decorate the altar table. The main figure looks like a flower with eight petals. There are many triangles surrounding the main figure. The pattern was made by 30°, 60°, and 45° angles, and was a geometric and symmetrical pattern. This pattern is 5 inches long and 3.5 inches wide. The main colors of the pattern are dark red, laguna (light yellow) and steel (Gray). This pattern shows on the front, back and both sides of the altar table. The designer used this pattern to add decoration to this religious object.



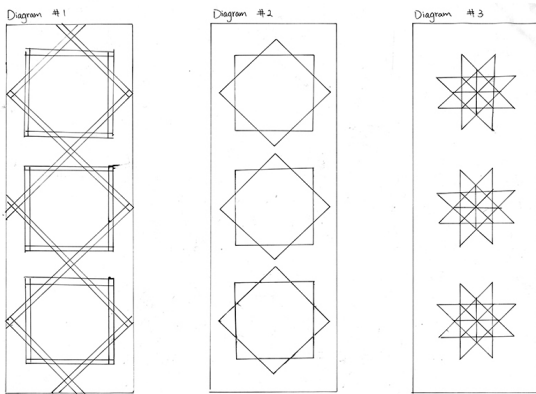
Pattern Repeat

This pattern repeats with every 3.5 x 5" rectangle, as shown above outlined in red.

Pattern Color



Craft Study



Pattern Craft

1. Colorful hard stones are carefully selected.
2. A traditional bow saw is used to cut the stones into slices 3mm to 4mm thick.
3. The stone, jasper, is glued to a piece of backing slate to strengthen it.
4. The design is traced onto paper.
5. The flower motifs are made first. Each shape is cut out of paper and glued to the stone. The stone is cut using a bow saw.
6. The bow is fitted with an Iron wire which has no teeth. Carborundum, an abrasive paste, is used to aid the cutting action. After the cutting process only the edge of the finished surface needs to be filed. The space at the back is filled first with gesso (a mixture of glue and chalk) and then with glue.
7. Using paper shapes, the outline of the design is marked out on the background stone, which is black Belgian marble.
8. Small holes are drilled into the marble, the wire of the saw is passed through and the area is cut out using a bow saw.
9. The edges are filed.
10. The mosaic pieces are glued into the background stone. Some glue is removed from the back and substituted with gesso.
11. The back is polished to level it and is glued to a sheet of slate.
12. The mosaic front is polished by hand first using agate, a hard stone and then successively finer grades of emery.
13. Wax is applied and the mosaic is buffed.
14. The panel is finished

Pattern Culture

The designer used pietra dura to design this pattern. Pietra dura is a mosaic, any of several kinds of hard stone used in commesso mosaic work, an art that flourished in Florence particularly in the late 16th and 17th centuries and involved the fashioning of highly illusionistic pictures out of cut-to-shape pieces of coloured stone. Usually people used Pietra dura on tabletops and small wall panels for decoration. The most commonly used of these hard stones were quartzes, chalcedonies, agates, jaspers, granites, porphyries, and petrified woods, all of which are variable in hue and together provide an almost limitless range of colour. Lapis lazuli, a semihard stone of brilliant blue, was the only stone regularly used in commesso work that does not fall into the pietra dura classification. (Source number: 1)

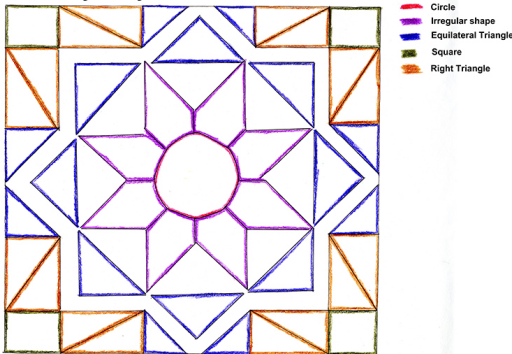
Developed in antiquity, originally consisted of shaping stones with small saws, wires and other metal instruments and adding them to decorative objects such as vases or small sculptures. The art was revived during the Renaissance by Italian craftsmen and the first hard-stone workshop was established by the Medici family in Florence in 1588. The art was also practiced at the courts of Naples, Madrid, Prague, Paris and elsewhere. From the late 16th century, the colorful stones were arranged on furniture as landscapes and flower scenes. (Source number: 5)

Pattern Design

This pattern was based on the Italian Renaissance concepts in which geometry and design elements are fused with one another forming a unique new direction in design. The designer said his design is not a copy of anything, it is based on the spirit of those Italian Renaissance concepts. His intention with the altar was to create a work of art that encouraged spiritual contemplation, and a visual reminder that the altar is a representation of Christ sacrificed.



Geometry Study



The above picture is the full view of the alter table in the Cathedral of the Sacred Heart.

The picture on the left is an Italian Baroque style pietra dura panel, height 70 3/4 in.; width 39 1/4 in.