

FROM ISLAMIC ARCHITECTURE TO ALGORITHM: RECONSTRUCTING A CEILING OF AN IRANIAN MOSQUE

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ABSTRACT

In this paper, I will document how I departed from an interlocking geometric design of a ceiling in a mosque in Kerman, Iran. I recorded the appearance of the geometric designs, fragmented their order and translated these complex designs into prints, frottages, and paintings. This complex and unusual brick ceiling incorporates all aspect of rectilinear geometry. Parallel lines of bricks, carefully crafted and inlaid create shapes that are organized through a fascinating grid. Through a logical understanding of this grid I am able to recreate and begin my individual experimentation on paper. My pieces follow the order of the original design, but develop into a new visual reading.

INTRODUCTION

“The study of sensible geometry leads to skill in all the practical arts, while the study of intelligible geometry leads to skill in the intellectual arts because this science is one of the gates through which we move to the knowledge of the essence of the soul, and that is the root of all knowledge ...”¹

In December and January of 2005/2006 I had the opportunity to be escorted by my daughter through Iran traveling to the historical cities of Shiraz, Esfahan, Yazd, and Kerman.

Unlike in other Muslim countries, where women generally are not allowed to visit the interiors of mosques, in Shi’it Iran women may enter mosques, theological seminaries, and other religious institutions outside of the prayer hours without a problem, and often without wearing a full-length chador.

Mosques and their often adjacent theological seminaries are the most important buildings in Islamic architecture. In Iran, their craftsmanship is exquisite and their motifs, decorative materials, and color scheme vary from one city to another. For example, in Esfahani architecture, pink, blue and yellow colors dominate the mosaics and tile work, while in Kerman the color scheme was reduced to yellow and blue and almost no decorative tiles were used; only glazed bricks and mosaic tiles.

A particular ceiling of the Iman mosque in Kerman struck me as a very unusual design; the linear geometry moved effortlessly over the concave surface and created a slight distorted feeling of an optical illusion.

The earliest example of this technique can be seen in the “Mausoleum of *Ismail the Sumanid in Bokhara. ...*”² This kind of decorative brickwork in Iran dates back to the first century.

I have no dates and other information on the ceiling I used as a departure for my pieces of the mosque in Kerman, but the beauty and execution of mastering the technique of brickwork inspired all of the following pieces.

DEVELOPMENT IN MY WORK

As a visual artist I am always searching for new inspirations which would add to my visual vocabulary. Consciously or subconsciously I have been influenced by early architecture, structures and textiles which have nourished my work for more than four decades. I depart from an existing motif and recreate a new series of pieces. I use geometry as a tool, to determine scale, order, and repetition of -lines, shapes, and color.

In general, geometric designs in Islamic patterns are based on a grid. These are then broken down into identical units and repeated in regular sequences, a practical method of constructing geometric designs.

The brick ceiling of the mosque in Kerman does not follow the repetitive tessellation we have seen in traditional Islamic patterns; here we are looking at rectilinear geometric shapes, organized into different units, which are interlocking into interesting combinations. These motifs are not repeated throughout the ceiling, rather the ceiling as a whole appears like one unique design.



Figure 1

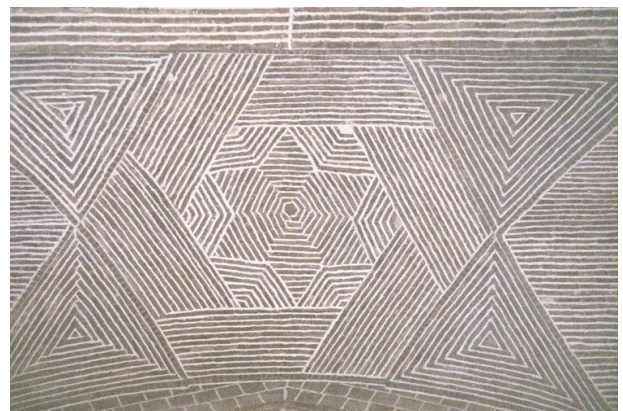


Figure 2

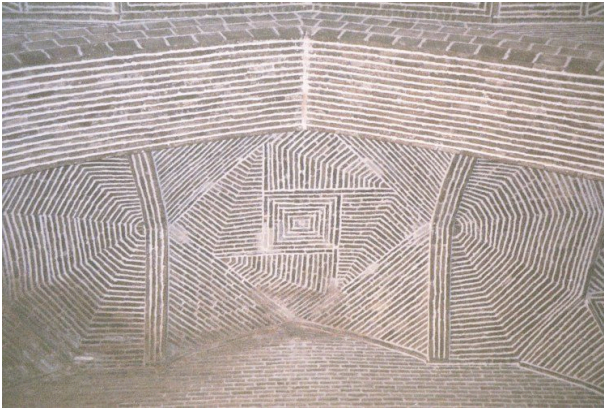


Figure 3



Figure 4

This piqued my artistic interest, but it was not until I came back to my studio that I began to discover and understand the richness of those unusual design combinations. My photo-documentation was the only reference I had to work with. I have not been able to find any other documentation of these particular interior architectural elements of this Kerman mosque.

PRINTS, FROTTAGES, PAINTINGS

I departed directly from four different segments of the ceiling (Figure 1, 2, 3, 4). Shapes were cut from linear embossed rubber (Figure 5, 6), assembled, and printed as an embossing.

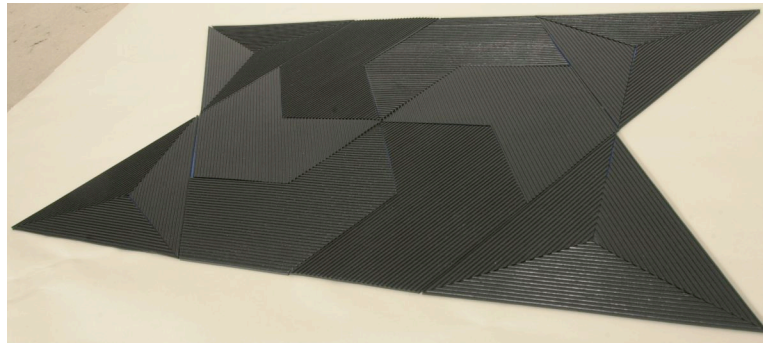


Figure 5

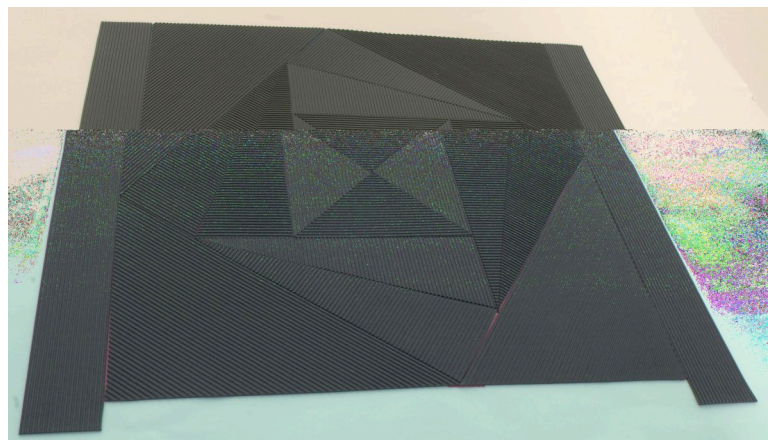


Figure 6

The reversed side of the printed design on paper was then frottaged with graphite (Figure 7, 8, 9, 10).

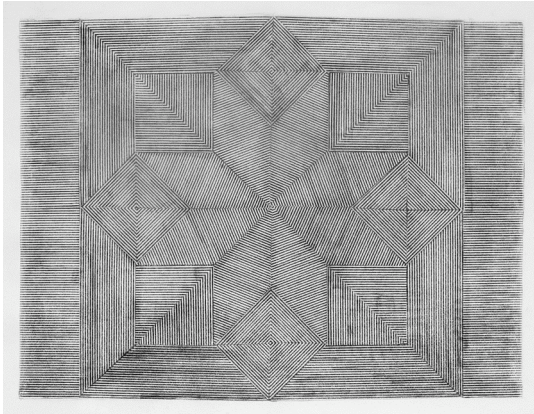


Figure 7

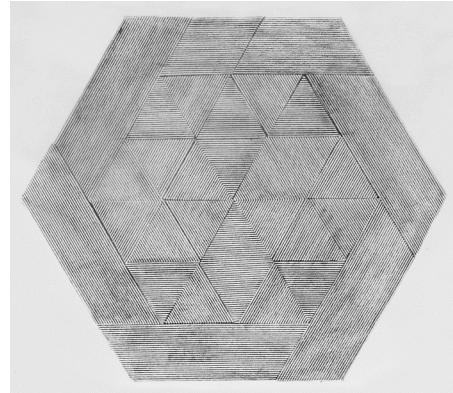


Figure 8

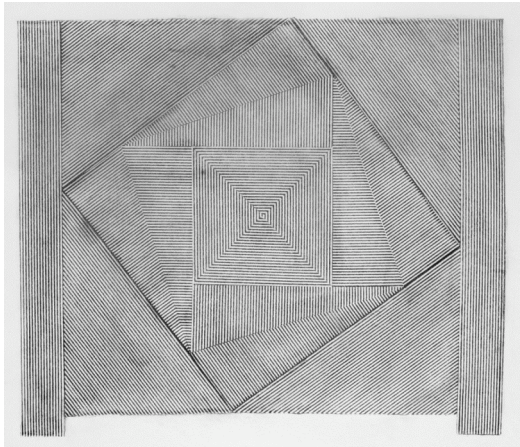


Figure 9

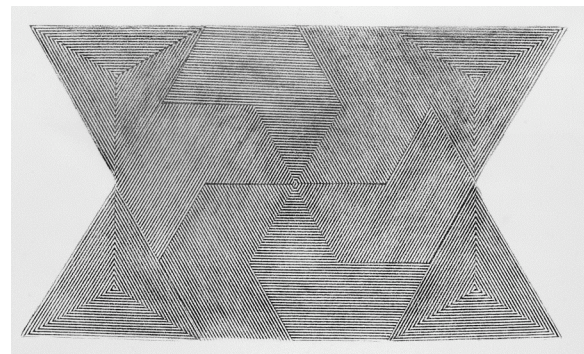


Figure 10

Pigment, wax and oil sticks were added (Figure 11, 12, 13, 14). I chose to combine shapes through color, still following the order of my departure; this way I could create different designs from the same plate.

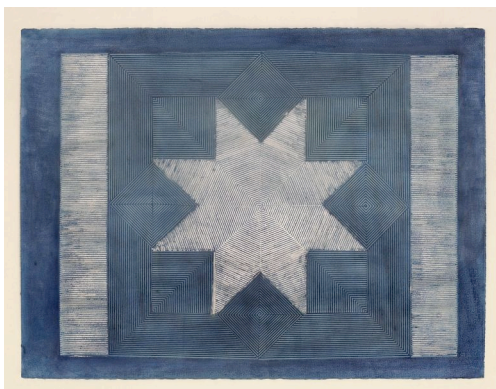


Figure 11. Octagon star with extended squares within a square

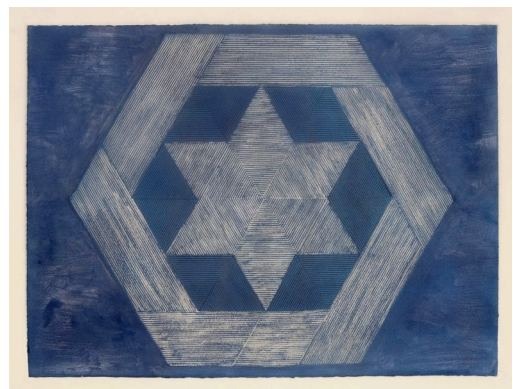


Figure 12. Hexagon within hexagon framed through interlocking trapezoid shapes.

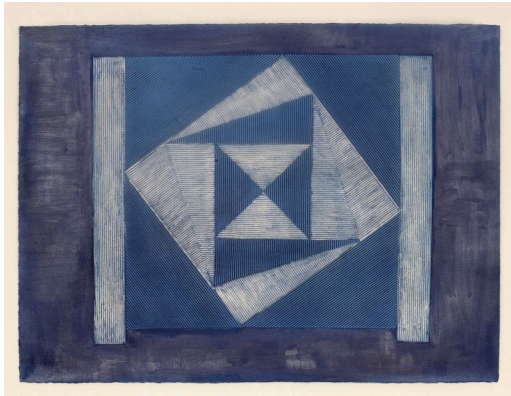


Figure 13. Four rotating squares between two columns

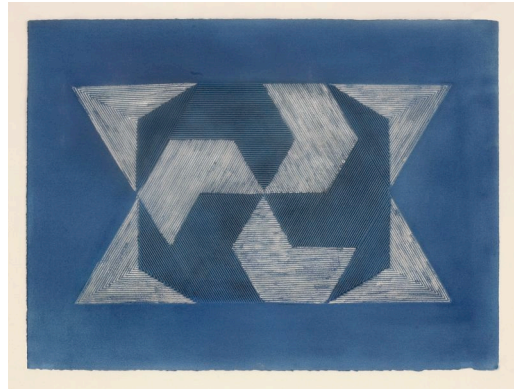


Figure 14. Two hexagons framed with four equilateral triangles

“Geometry became highly important in the Islamic world as its figures and constructions were permeated with symbolic, cosmological and philosophical significance ...”³

“The four elements, nature and cosmic alchemical principles are widespread and important in the sciences in Islam ...”⁴

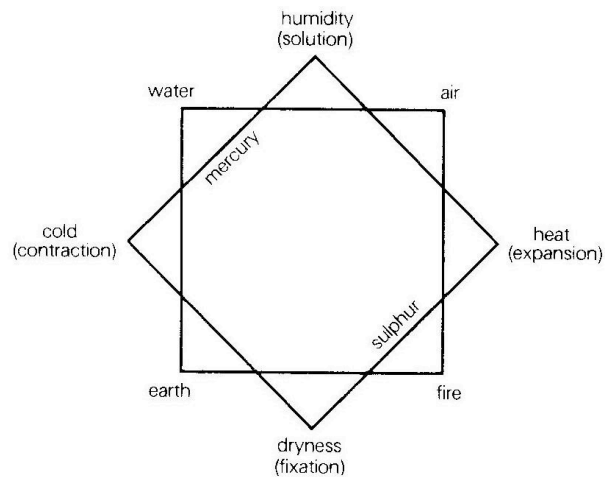


Figure 15

I like to assume that there are hidden symbols in this ceiling. Looking at diagrams in Islamic science we see the square, or the square within the square or the turned square, where each corner might be related to different elements, water, air, earth and fire. (Figure 15) This diagram came to my mind while I was working on the piece “Octagon Star with extended Squares within Squares”.

CONCLUSION

This is not an archeological / architectural documentation; the outcome of my pieces are more important than the departure. My pieces have to speak for themselves, but their departure depended entirely on the understanding of the origin of the ceiling of the mosque in Kerman.

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