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## A study on assimilation of Taj Mahal architecture in product designing

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### Abstract

Inspiration has long been considered important in many creative professions including architectural design, which plays an important role in shaping visual appearance of products. Every design begins with great inspiration. One of the inspirations is architectural styles of buildings that strive to preserve the cultural heritage of an entire civilization. In combination with other work on inspiration, these findings can help shape how design is taught and how inspiration tools are developed. This is a study conducted to understand the different motifs, colours, interior and intricate designs used in decorating Taj Mahal. The jali lattice, floral motifs on makrana marbles have been inspiration for designing products.

**Keywords:** earrings, floral design, Jali work, Makrana marbles, mojari

### 1. Introduction

An immense mausoleum of white marble, built in Agra by order of the Mughal emperor Shah Jahan in memory of his favourite wife, the Taj Mahal is the jewel of Muslim art in India and one of the universally admired masterpieces of the world's heritage is Taj Mahal <sup>[1]</sup>. An ivory-white marble mausoleum on the southern bank of the river Yamuna in the Indian city of Agra is also called as 'Crown of the Palace' <sup>[2]</sup>.

The Taj Mahal of Agra is one of the Seven Wonders of the World, for reasons more than just looking magnificent. Two architects are mentioned by name, Ustad Ahmad Lahauri and Mir Abd-ul Karim in writings by Lahauri's son Lutfullah Muhandis <sup>[1]</sup>.

### 2. Motifs used

Makrana marble is a type of white marble, popular for use in sculpture and building decor. Makrana marble is known for its smooth finishing and shine they are with various sizes and different designs with some floral and some geometrical design. Floral designs and geometrical designs which are used in the Taj Mahal <sup>[3]</sup>. Versatile enough to prove effective in hot dry as well as a hot humid climate zone small perforation has been seen in a wall of Taj Mahal called as Makrana Jali Lattice. The Jali have a definite cut-outs shape to the sunlight directly falls on the Jali and it gives a beautiful sunlight shadow inside the Taj Mahal. It also allows air to move cross Breeze and ventilation <sup>[4]</sup>. Therefore, Floral design of Makrana Marble and Marble Jali lattice was the motifs which were inspired to design products.

### 3. Colours used

Whole Taj Mahal is of all Brown Shades, Cream Shades and white. Most of the Taj Mahal is of White colour 80% is used. And for motifs and other detailing part others primary Bright colours are used like Blue, Red, Green, etc.

Various surface ornamentation technique was used in this project. Embellishment through embroidery, jali work was implemented for designing products.

### 4. Aim of the study

1. To study the designs and motifs used in Taj Mahal.
2. To design products based on the data collection.

## 5. Methodology

**A. Data collection:** For the collection of authentic data, multiple journals were searched. Secondary data was also collected by visiting internet websites. For making the products, images of Taj Mahal were used as an inspiration. The commonly used motifs and colours were studied in depth. Some of the colours and motifs were used as an inspiration for designing the products.

**B. Swatch development:** The Swatch were developed by using computer software for product two commercially viable it should be attractive and innovative keeping these two factors in mind the product was designed. Ten swatches were prepared out of which three swatches were selected. The specific watch was made under the developing of product also the costing was done to under the making cost and keeping in mind the target market.

**i) Swatch 1:** For this swatch, makrana marble was an inspiration with the floral motif (fig no.1). This motif contains all primary colours and their shades. The swatch was prepared by making embroidery, cutwork and fabric painting. The swatch is quite similar with the motif. Cutwork was done at the centre of motif. And rest of work was done by satin stitch embroidery (fig no. 2) to cover the part of cutwork; a piece of fabric painted cloth was added as patch. Hence, embroidery, patch work and cut work these surface ornamentations were done in the swatch 1.



Fig 1: Makrana marble [6]



Fig 2: Swatch1

## Technique used

**Satin stitch:** Start by bringing your needle up from behind your hoop, along the pattern line. Re-insert your needle directly across from your last exit point. You'll be making stitches that span all the way across the shape. Start your next stitch across from, but not next to, the end of your last stitch.

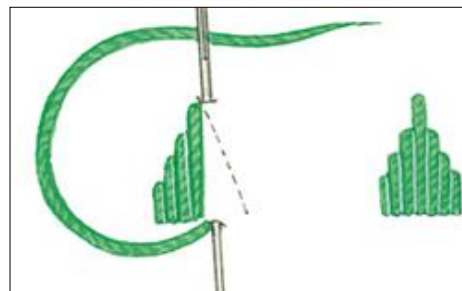


Fig 3: Satin stitch

**ii) Swatch 2:** For this Swatch, marble jali lattice was an inspiration (fig no. 4). The swatch was prepared by making embroidery and jali work. For this preparation, the motif was traced on cloth with the help of yellow carbon paper. A hexagonal shape with 7 circles inside was made on a cotton fabric. The border of hexagonal and circles was finished by satin stitch embroidery and the remaining part was cutwork. With the help of embroidery thread, inside the circle jali were made as shown in the (fig no. 5).



Fig 4: Marble jali lattice [7]

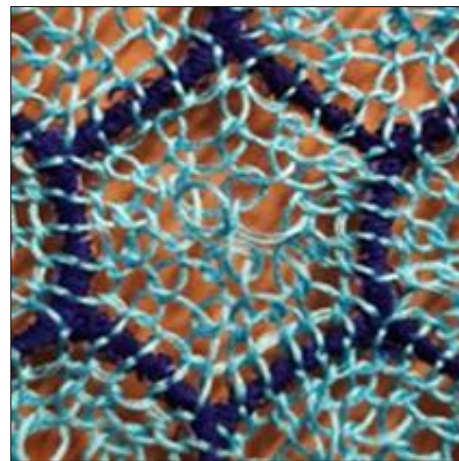


Fig 5: Swatch 2



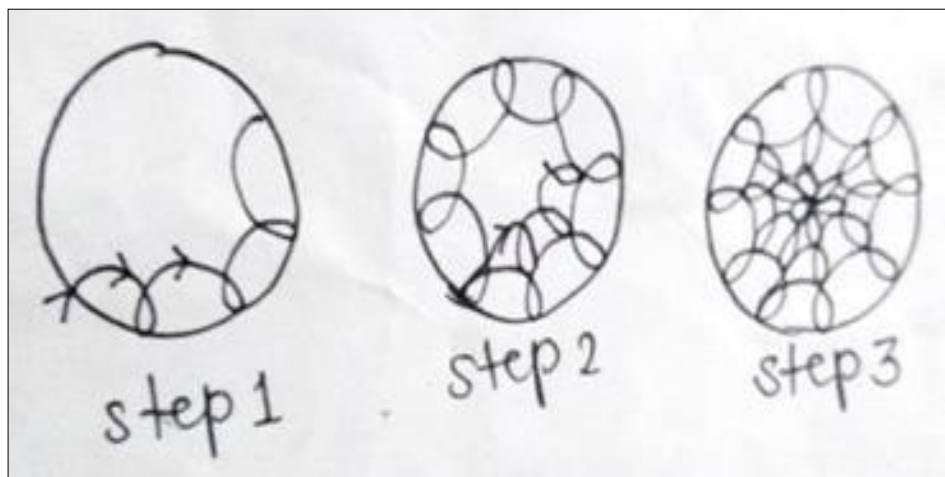


Fig 6: Jali work step

#### Technique used

**Jali work:** Start your needle from point A to B then B to C respectively; continue the process until the thread comes at the centre without stretching the thread. Tie knot at the centre. (Fig no.6)

iii) **Swatch 3:** For this Swatch, the whole Taj Mahal was an inspiration (fig no. 7). The swatch was prepared by doing surface ornamentation (fig no. 8). For this preparation, Taj Mahal motif was traced on a thick leather fabric.



Fig 7: Taj mahal <sup>[5]</sup>

#### Technique used

On a leather fabric, Rice and macramé cord were coloured with black with the help of acrylic paint. Macramé cords were stuck on some parts of the motif and the borders. The rest part was filled with black painted rice. At last, with the help of finger tips golden highlighter glitter was spread to give an effect of macramé cord lines and effect of the rice pattern.

#### Product development

##### Product 1: Mojari

For making Mojari, (table no. 1) Swatch 1 was implemented. The Mojari is made of thick jute fabric. The border was done by golden fabric. At the base, outer sole was made of leather with small heel. The floral motif of swatch 1 was implemented on the upper part of the Mojari. [Fig no. 2].

##### Product 2: Jali earrings

For making Jali Earring, (table no. 2) Swatch 2 was implemented on pair of earrings. For this Product, wooden ring, embroidery thread, beads and some feathers were used. Inside the wooden ring Jali was created by embroidery thread and beads and feathers are tied at the ring. [Fig no. 5].

##### Product 3: Clutch bag

For making clutch bag, (table no. 3) vegan leather is used. At the border of the clutch golden bears were used. For this bag, whole Taj Mahal was an inspiration. The design was made same at both front and back of the product. And the design was exactly same as swatch 3. [Fig no. 8].



Fig 8: Swatch 3

**Table 1:** Product No. 1

Dept.: Accessories	Season: Nov/Dec	Colours: Beige, Red, Yellow and Green	Material: Jute fabric, Leather for sole and heel, Embroidery threads.
  			

**Table 2:** Product No. 2

Dept.: Accessories	Season: Nov/Dec	Colour: Turquoise Blue, Dark blue	Material: Embroidery Thread, Feathers, Beads, Wooden ring, Embroidery thread
  			

**Table 3:** Product No. 3

Dept.: Accessories	Season: Nov/Dec	Colour: Golden black	Material: Golden beads, Rice, Leather, Black paint, Golden highlighter
  			

**6. Results**

Architecture can be an inspiration for product design. All examples of architecture whether traditional or contemporary can cause a creative Spark to the designer. The inspiration for products and details can be found in almost any architectural source the inspiring architecture may be a very familiar traditional building as well as artefact somewhere in the world which may be very far away. When architecture is investigated by the designer and an unexpected detail of the building may become one of the magnificent features of the product design. The designer must produce unique and innovative designs which will present new challenges new obstacles and new human dynamics.

**7. Discussions**

After making 10 swatches, 3 swatches were selected for product designing. For swatch development, inspiration taken from Taj Mahal like Archway, incised painting, Persian language calligraphy etc. The selected swatches were inspired by Makrana marble, marble Jali lattice and Taj Mahal as a motif. In the Swatch one, embroidery was made on cotton

fabric but for product designing the embroidery is finished on jute fabric for the product Mojari. In the Swatch 2, the cut work and Jali work was made on cotton fabric but product designing the Jali was made with the help of wooden ring. In the swatch 3, the macramé cord and rice were stick on plain cotton fabric whereas for product designing it was finished on leather fabric.

**8. Conclusion**

In conclusion, every Indian takes pride in the beauty of the Taj Mahal and its heritage. This monument is famous all over the world. Each piece of architecture is unique in its own way. Beauty lies in the eyes of the beholder it is up to the designer and their mental setup based on which they get inspiration of different art form. The beautiful the piece of art created. This was an attempt to design product based on Taj Mahal but there is lot of scope of amalgamation of art and design.

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