A Study of the Decorations in the Four Minarets of Sultan Hussein Mirza School in Herat

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Abstract
Sultan Hussein Mirza School is one of the great and magnificent buildings of the Timurid period of Herat, which is located in the north of the old city of Herat. The school was once a place for scientists and scholars in the region, and historians have written extensively about it. The buildings and paintings of this famous school are collapsing and demolishing day by day. The purpose of writing this article is to examine the decorations in the four minarets of Sultan Hussein Mirza School. This article is conducted by Library and Field Research method. The Library Research is related to the history and process of the school building and its post excavations. In the Field Research section, the author himself has visited the school area and the four remaining minarets of Sultan Hussein’s school and wrote the observations of each minaret separately. The results show that all four minarets in school are decorated. Its decorations include geometric patterns, Arabesque motifs, Kufic inscriptions and Muqarnas.

Keywords: School, Timurids, Tiles, Geometric patterns and Arabesque motifs.

Introduction
During his thirty-eight years in power, Sultan Hussein Mirza, along with his consultant minister Amir AlishirNavai, prospered the culture and art of Herat, the capital of the Timurids.

They paid close attention to the construction of mosques, schools, monasteries, hospitals, libraries, and other public utilities. The school known as Sultan Hussein Mirza (Sultan Hussein Bayqara) is one of the most beautiful and magnificent schools of the Timurid period.

This prominent and beautiful Timurid school is located at the Herat Avenue in the northern site of the old city. According to historians, the doors and walls of this school were full of paintings, and it was a masterpiece of architecture in the region.

Problem Statement
The gradual collapse and destruction of the paintings and the building of Sultan Hussein Mirza school in Herat. Historic buildings and their paintings, especially those buildings from the Timurid period, which are more than five centuries old, are being destroyed over time due to climate issues.

Issue Importance
Generally, As evidenced by, all monuments in Herat are collapsing day by day. Therefore, it is important to record and achieve its decorations to preserve the artistic and historical identity of this land.

Objective
To study the remaining drawings of the four minarets of Sultan Hussein Mirza School in Herat.
Questions
1. What decorations did Sultan Hussein school’s minarets have?
2. Do the four minarets have the same decorations?
3. What are the used materials in drawings of the school’s four minarets?

Sultan Hussein Mirza School
One of the greatest buildings of the Renaissance era in Herat was the school and Khanqah of Sultan Hussein Mirza, which in terms of size and glory was larger than the schools of Goharshad and Amir Ali Shir Navai.

The large dome, arches, and porches adorned with tiles and plasters, large Shabestan, lower booths, the flow of clean water from the middle of the school, and the presence of thousands of scholars and world-renowned scholars of science and literature added to its prestige. (Bahra, 1389: 59).

Sultan School and Khanqah were established by order of Sultan Hussein Mirza and were built in 898 AH. (Mojtabavi, 1389: 130).

Regarding the professors in Sultan Hosayn Mirza School, Esfazari writes: “Among the great masters of Herat school in that era were: Shahab al-Din Lotfallah Hafez Abru, Mo’ in al-Din Mohammad Farahi, Molla Hussian Kashefi, Mo’ in al-Din Mohammad Esfazari, Kamal al-Din Hussain Gazargahi, Molla Abdullah Ibn Abd al-Rahman al-MushtaharBalasil al-Wa’iz (author of the book: Marsad Al Iqbal Al Sultania or Heart Shrines) KhwajahMo’in al-Din Jami, Yusuf Ahl, Mohammad Tusi, Mohammad Khvand Shah, and Khwand Mir” (Esfazari, 1339:33).

The structure of Sultan Hussein Mirza School was somewhat similar to Goharshad Begum School. A large and high portico was located on the west side, and a large dome was built at the back of the portico. The tomb of Sultan Hussein Mirza and several other tombs of princes and relatives of the Sultan could be seen in that tomb. On the east side, the upper and middle porch overlooks the school courtyard, and from this portico, like the Mahd-e-Olia school, the gate opened to a hexagonal vestibule. After the vestibule, there is a gate to the east, which was the school gate, and the other two gates opened to the north and south to the two great Shabestan. That is, there was a large Shabestan to the north of the vestibule and another large Shabestan to the south. From the outside, a large, tall portico opened to the east, which was considered the school gate. Like Goharshad School, on the right and left side of the portico, two lower booths and two upper booths were visible. The four full-fledged circular minarets were located high and towering in the four corners of the school. Inside the school, on the right and left side of the portico, there are two stairs towards the rooms and the upper booths.

At the two bases of the inner porch, that is, the bases of the portico and the corridors of the stairs; two pieces of Rokham Rock were installed on the wall with a length of two and a half guz (equivalent to 2.6m). These two pieces of stone were like transparent and polished crystal, and on them were beautifully carved and polished crystal, and on them were beautifully carved and engraved motifs. These motifs were embroidered on seven-color tiles in the form of ornamented inlays and so adorned with craftsmanship and jewelry, which you think it’s a piece painted with watercolor; enameled and decorated by the greatest painter. In the middle of both pieces of stone, two verses of poetry were engraved and filled with azure tiles. It is a pity that these two exquisite pieces of stone, the price of each of which was notable, were destroyed when the mosque was demolished by workers.

Injil Stream flowed under the north porch, passed through the middle of the school, and flowed out under the south porch.

Four high minarets were located in the four corners of the school. During the siege of Herat by Amir KabirDost Mohammad Khan, Amir Shahnnavaz Khan, the son of Sardar Sultan Ahmad Khan, targeted and destroyed the domes of each of these minarets. Shahnnavaz Khan had been informed that Amir Dost Mohammad Khan had hidden in one of the minarets of Sultan Hussein Mirza’s school, and from there, he was looking at the situation in the city and the siege. Shahnnavaz Khan ordered the artilleryman of Shah KaramBeig Tower, located in the northeastern corner of Herat, to target the domes of minarets to shoot his opponent (FekriSaljuqi, 1343: 20-22).

The Remnants of the School
Four minarets remain from the school of Sultan Hussein Mirza, which are located outside Behzad.
Park on Khiaban Street and Injil Stream (Picture 1). The minarets of this school have very beautiful and high-quality tiles and motifs that amaze the viewers (Rajaei, 1347: 41).

![Picture 1: View of the Four Minarets of Sultan Hussein Mirza School, North of the Old City of Herat, Afghanistan](image)

The height of the four minarets of the school is as follows: southwest minaret 51 m and 83 cm, northwest minaret 54 m and 25 cm, northeast minaret 58 m and 23 cm, and southeast minaret 56 m and 40 cm (Pagliro, 1364: 21).

Excavations in the School

Restoration of three minarets in the southwest, northwest, and northeast began in April 1977. Prior to the intervention in the minarets’ building, their condition was assessed. A temporary pit was dug in all areas of Sultan Hussein Mirza School to find the connections of the four standing minarets in the four corners of the mansion, and the walls of the compound were opened. On average, the school yard is 105 x 103 meters and covers an area of 1,100 square meters, including adjoining rooms outside the courtyard. The study found that the foundations of all four minarets were fixed. The foundations are made of pieces of stone with Chuna and ash, which is hardened like cement. They are cylindrical, with a diameter of 11 meters. A 7-meter-long pit around the southeast minaret made it clear that the foundations were considered in depth. However, its actual size was impossible to estimate due to the presence of water. These minarets have a strong pole to a height of 15 meters, their diameter is 7 meters at the bottom and narrow at five meters at the top. At the top of this solid foundation, there is a strong stem, and inside it, the stairs reach a height of 48 meters and lead to a circular balcony that has been destroyed. The upper part of the minarets consists of a 25 cm thick cylindrical area that had a wooden base in the past. Because the upper parts have been destroyed, their original height is not known, but they may have been at least 70 meters high (Pagliro, 1364: 21-22).

As a result of these excavations and clearings, the remains of several old houses were found, from which one can learn about the main and old buildings of the school. Furthermore, large, engraved, and calligraphic tiles were obtained during the cleaning step, which can be said to have been parts of the western porch of Sultan Hussein Mirza School.

Considering the artistic characteristics of these tiles, it can be said that their designs should be the work of Kamaluddin Behzad, a famous painter and miniature artist of the ninth century AH, and its words must have been written by one of the great masters of the calligraphy of that time. (Javad, 1359: 88).

The main foundations of the school and the mausoleum of Sultan Hussein Mirza have been cleaned and found from earthen hills in recent years. The foundations have mosaic tiles and beautiful decorations that must be repaired and preserved according to technical principles (Rajaei, 1361: 72).

The Sultan Hussein Mirza School is still a site for the first archeological researches. The short time and staff shortages limited the research to a hole and some preliminary cleaning.

A sandpit was dug around the base of the southwest minaret. The consequence of this excavation is the discovery of the lower parts of school buildings, which are still standing. Therefore, it would be appropriate to consider the topography of this area. Of course, with excavations all over the area, much of the plan for this mansion will be clear. As a result of the excavations, it became clear that the lower part of the minaret was built with eight corners, and deep porches were placed in these corners on the sides that were open. Other sides of these octagons were connected to the walls of the mansion. This lower part of the minaret is covered with semicircular tiles, while the upper part is completely covered with mosaic tiles in a network of white tiles.

In this way, it is clear that the additional excavations in this area will not only reveal the plan of what has recently been destroyed from the historic Timurid mansion but will also add information about
the decorative art of the recent Timurid period (Sultan Hussein Mirza’s reign). (Wanhug, 1364:43-44).

Materials Used in School

Sultan Hussein Mirza built a school, a Khanqah, and a tomb in a place called “Injil Stream” or “Injil Bridge” next to Herat’s royal palace, the domes of which were especially unique. The most commonly used colors were gold and azure, and gold bricks were placed beside them, which in the morning blushed red in the sunlight and had a special radiance. The walls were azure blue and had gold carpings (Bayani, 1383: 49).

It seems that all the elements are made with mosaic tiles, although it is possible that some of the multi-faceted elements were applied with seven-color tiles. The color spectrum of the tiles includes dark blue and light blue, black and white, pea, yellow, and green (Wilber, 1374: 436-437).

Sahib Bahira writes: “In this year, ie, 1023 AH, there is no school in the whole of Iran and Turan like the school of Mirza in glory. They built it with spending a great amount of money.” Yaqub Beig, king of Tabriz, given the union relations he had with Sultan Hosayn Mirza, sent 600 marble stones from Tabriz to be used in this school based on a request sent by Sultan (Khalili, 1383: 54).

The school’s minarets are constructed of 25 x 25 cm clay with 5 cm thickness covered with plaster. Wooden pickets are used to connect and strengthen different parts. In the northeastern minaret, the pickets are used in the middle of the stem to secure the outer part of the building to the center of the minaret. This method has not been used in the other three minarets when this was proved to be ineffective. The northeast minaret is the only minaret that shows the seams where the pickets are placed. It is quite understandable that the wood cuts off the elasticity in the minaret and transfers the pressure to the center, which is not capable of tolerating such pressure (Pegleiro, 1364: 21-22).

Decorations of the four minarets of Sultan Hossein Mirza School

In this section, the author of this article has analyzed the four minarets of the school of Sultan Hussein Mirza to know what types of paintings are currently available in the mentioned minarets.

Decorations of the Southwest Minaret

The southwest minaret of Sultan Hussein Mirza School has decorations such as Kufic and Thuluth Inscriptions, geometric patterns (knots), Islamic motifs and Muqarnas work. The mentioned decorations have been worked with mosaic tiles on the body of the minaret. Most of the decorations on the body of the minaret have been destroyed, except for the decorations on the southeast side of the minaret, which are half-destroyed. It is clear from the collapsed remnants of the minaret that climatic events, especially wind, snow, and rain, have largely destroyed the decorations on the north and west sides of the minaret.

The lower octagonal bed of the minaret is made of baked clay, which is 4 meters long on each side. The distance from the side of the minaret to the edge of the bed is one meter and fifty centimeters. The circumference of the lower part of the southwest minaret was 32 meters and 70 centimeters.

Inscriptions: Kufic words repeated around the southwest minaret at the beginning of the decorations from the bottom of the minaret, painted on mosaic tiles, in azure color. Another inscription is found at the top of the Kufic inscription, most of which is destroyed. It can be concluded from some of the movements of letters that the type of line is Thuluth, and it has been designed with white tile in the azure background in a mosaic way (Picture 2).

Geometric Patterns: Geometric patterns or knots are decorations drawn geometrically or using geometric shapes that have specific rules.

These motifs can be used in various places such as doors, around arches, porches, minarets, etc. Also, these designs can be used with materials such as baked clay, tiles, stone, wood, plaster, mirrors, and so on.
The southwest minaret of Sultan Hussein Mirza School also has geometric patterns, which are designed and worked on the body of the minaret in three types.

The first type: is “four knots” or “Qalamdan knots.” This knot is designed in a margin in which the Kufic words are written repeatedly. The color of the tile is turquoise.

The second type: is “knot eight and four” this knot is skillfully decorated as a single design around the minaret of the southwest of Sultan Hussein School, with bricks whose outer edge is rounded and painted with white tile glaze. (Picture 3).

The third type: is “knot six “ or “star knot.” The knot is designed on mosaic tiles in azure and turquoise blue, yellow, dark green, and black; very little of this knot remains. This knot is in the form of a margin at the top of the Kufic inscription on the body of the minaret (Picture 4).

Arabesque Decoration: Arabesque is a decoration that is designed with curved, spirals lines with short branches and flowers and leaves in inscriptions with tiles, plaster, etc. Some scholars have considered the word Arabesque to be the same as Islamic and have said that it is derived from the Kufic script because its various designs are very similar to the letters of the Kufic alphabet.

Arabesque motifs can be seen around the minaret of the southwest, between the “eight and four” knots with mosaic tiles in a very beautiful way. Inside the eighth knot, there are patterns in the form of sunshine with a variety of designs and colors. Elements of Arabesque pattern used on the minaret include leaves, three leaves, petals, crowns, almonds, and torpedo mouths (Picture 5-6).

Muqarnas: Another decoration seen in the southwestern minaret of the school is Muqarnas in the high side, (Muqarnas is a prominent engraving, honeycomb vaulting plaster on the ceiling and tall mansions).

As it turns out from the building of the minaret, Muqarnas’s work has been done under the upper balcony of the minaret, which is covered with mosaic tiles. The tiles used in Muqarnas are often azure, turquoise, and white (Picture 7).

Decorations of the Northwest Minaret

According to the researchers, the northwestern minaret of the school has similar decorations such
as Kufic and Thuluth inscriptions, knotting patterns, Islamic motifs, and Muqarnas like the southwestern minaret. It is decorated with mosaic tiles in the southwestern minaret. The perimeter of the lower part of the minaret is 24 meters and 60 centimeters. Most of the minaret paintings in the northwest have been destroyed, and a small part of it is still visible on the southeast side of the minaret.

Kufic inscription with the words “Allah Akbar” has been decorated repeatedly with mosaic tiles around the minaret. However, there is nothing left of the tiles of the Thuluth inscription on the northwest minaret. It is only found from the background of the tile that there had been a Thuluth inscription similar to the inscription on the minaret of the southwestern part of the school there.

There is no difference between the designs, colors, and materials of geometric decorations in the northwest minaret and the southwest minaret. In the northwest minaret, there are “eight and four” knots, and “six or star” knots, as used in the southwest minaret.

Decorations of the Northeast Minaret

The school’s northeastern minaret also features paintings such as Kufic inscription, geometric patterns, Arabesque motifs, and Muqarnas work. The decorations in the minaret are made of mosaic tiles in azure, turquoise, yellow, green, white, and black colors. The circumference of the lower part is 24 meters and 80 centimeters.

The decorations in the northeast minaret of the school are destroyed more than in the southwest and northwest minarets. Of the decorations there, only the Kufic inscription remains undamaged. Also, a margin, which is a combination of leaves, petals, crowns, half-crowns, and almonds, is designed around the northeast minaret of the school under the Kufic inscription. It should be noted that many parts of this margin have been damaged and disappeared, and a small part of it is also found in the form of collapsed and scattered on the northeast side of the minaret (Picture 8).

Decorations of the Southeast Minaret

The southeastern minaret of the school is not much different from other minarets in the school in terms of decoration. The body of the minaret also features decorations such as geometric patterns, Islamic motifs, inscriptions, and Muqarnas work. However, the decorations of the above-mentioned minaret have been damaged more than the other three minarets in such a way that no decorations look undamaged. The perimeter of the lower part of the southeast minaret is 22 meters and 70 centimeters. Also, the decorations with mosaic tiles on the Moqarnas are available in the upper part of the southeast minaret, which has been designed with leaves, petals, crowns, torpedoes, etc.

Another decoration can be seen in the upper part of the southeastern minaret of the school, which is formed by the connection of several crowns together. The decoration is in the form of a knot, which is decorated on the body of the minaret with a white and flat glazed tile. The interior of the crown, like this one, is empty. It is not clear what decorations and colors were in between these (Picture 9).
Conclusions

After observing the school of Sultan Hussein Mirza on Herat Avenue, it was concluded that the school of Sultan Hussein was one of the most magnificent schools of the Timurid era in the first period (during the reign of Sultan Hussein). This large school has decorations such as Kufic and Thuluth Inscriptions, as well as geometric patterns, Islamic and Muqarnas works, most of which have been destroyed today, and a small number of these paintings remained in some parts of the school’s minarets.

In general, the decorations on the bodies of all four school minarets are the same, but in some parts, there are differences.

Geometric and Islamic decorations, inscriptions, and Muqarnas are used in the four minarets of the school with mosaic tiles and azure, turquoise, yellow, white, and black colors.

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