

Pharmacophore

ISSN-2229-5402

Journal home page: <http://www.pharmacophorejournal.com>



A RESEARCH ON THE STRUCTURE AND DECORATION OF SCIENTIFIC-RELIGIOUS BUILDINGS BUILT IN SHAH ABBAS 1 ERA (CASE STUDY: MOLLA ABDOLLAH MOSQUE-SCHOOL)

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ARTICLE INFO

Received:

03th Jun 2017

Accepted:

29th Nov 2017

Available online:

14th Dec 2017

Keywords: *Safavid era architecture, Structure, Decoration, Molla Abdollah mosque-school*

ABSTRACT

Mosque-schools as places for the integration of science and worship, are of great importance in Isfahani architecture style of Safavid era. Molla Abdollah mosque-school is one of the oldest sample of such architecture style as well as one of few scientific-worshiping monuments built in Shah Abbas I era. In this regard, in the present study, it has been tried to study and identify the typology of architecture structure and decorations of the mentioned building during integrative process to answer the main question raised in this study: what specific features does Molla Abdollah mosque-school have in terms of architecture structure and dependent decorations?

Material and Methods: In terms of method, the present study is descriptive-analytical research. Also, the data was collected by desk research and field observations and the data was analyzed qualitatively.

Results: The results show that in terms of structure, Molla Abdollah two-Iwan building including school (chambers), mosque and two Iwans, had been distinctly built from other similar buildings and has many notable points. Also, in terms of decorations, the largest share belongs to the exquisite mosaic tiles with big plant motifs and arabesques that their instances have been seen less within the same building. In addition, in terms of materials, the inscriptions of this building are on the bed of tile and stone with Bannai Kufic, Thuluth and Nasta'liq scripts and in terms of contents, Kufic inscriptions are exclusively for the praise of Imam Ali (AS), Thuluth inscriptions have Quranic themes, the hadith and narratives and Nasta'liq script was used for the only stone inscription of the building with the theme of deed of endowment.

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To Cite This Article: Mohieddin Aghadavoudi, Ali Reza Khajeh Ahmad Attari, Bahareh Taghavinejad, Iman Zakariaee Kermani, (2017), "A research on the structure and decoration of scientific-religious buildings built in Shah Abbas 1 era (Case study: Molla Abdollah mosque-school)", *Pharmacophore*, **8(6S)**, e-1173140.

Introduction

With the establishment of the Safavid Shi'ite dynasty and development of wide activities in a range of culture, civilization and culture progress would be smoothed. After stabilization of this government, wide activities in the field of school construction emerged in Iran; this process had been accelerated since Shah Abbas achieved the rule and the capital was transferred to Isfahan. This era was also a period of social and political peace and security and many schools were constructed in Isfahan with the support of the king, royal family, princes, courtiers, officials, doctors, eunuchs, influential people in the community and philanthropists and this process was strongly followed by the end of the Safavid dynasty. Molla Abdollah Mosque-school is one of the outstanding examples of art and architecture related to the Safavid dynasty and

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Shah Abbas I era that in addition to preservation of its original formation in terms of structure and decorations, it also has retained its scientific-religious land use up to the current era. According to the documents, this majestic building has been built with the direct orders of the king. It has specific and unique characteristics in addition to the similarities with other similar buildings of this period and studying and knowing them can help and strengthen the structure typology and decoration of the mosque-schools built in this era. With this introduction on the importance of this subject and with the aim of promoting the knowledge and studying the scientific-religious monuments, in the present study, it was tried to study Molla Abdollah mosque-school in terms of structure and decorations with a coherent approach. Therefore, most of the drawn and written documents about this school were studied. Then, its architecture and decorations were studied by field observations. The mentioned steps are presented in the forms of texts and illustrated tables with the preservation of overall coherence in the present study.

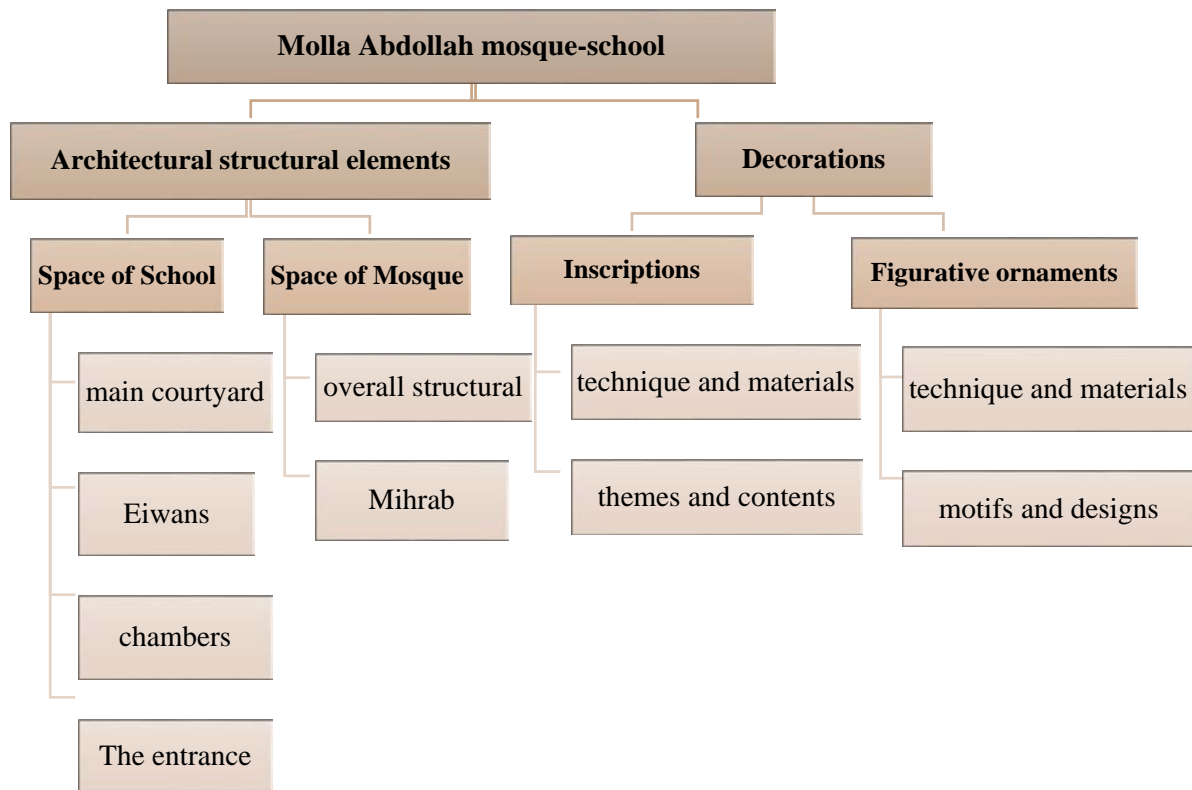


Diagram1. Structure of research elements

Literature Review

Despite the important role of schools and buildings in art and architecture of the Safavid era, little research about various aspects of these buildings has been registered and conducted research often presented general descriptions of these buildings. One of the most important resources in which Molla Abdollah mosque-school was mentioned, is a book "Treasures of monuments in Isfahan" written by [1]. This book includes historical and descriptive information about the date of its construction, how it was built, its size, shape and the texts of historical inscriptions. In this book, [1] mentioned to decorative tiling of this building as the specific examples of decorations related to Shah Abbas I era. Also, [2], in a book entitled "The results of days", presented the information on monuments and especially schools and mosque-schools. It includes a history of construction of such buildings, their history and structure and introduction of specific figures derived from them. Also, in this book, some discussions on the scope of endowment in the Safavid era and its effects and the introduction of a number of dedicators have been raised.

Research Method

The present study is a developmental study in terms of goal and it was conducted using descriptive-analytical method. In order to collect the data, in addition to a desk study and various references including books, articles, theses, research projects as well as valid databases and sites and other similar references in the fields of architecture, decorations, historical information and architectural review, field studies including observation, photography and interview were used in the present study.

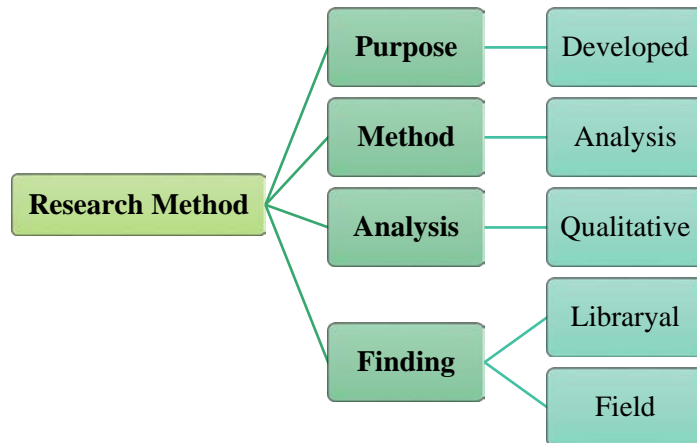


Diagram 2. Research Method

A brief introduction of Molla Abdollah mosque-school

This monument is located at the end of the Grocery Marker and in the neighborhood of Shah Bathroom. This mosque-school is one of the buildings for students to stay and it was constructed in 11th century AH with the order of Shah Abbas I so that Molana Abdollah Shoshtari, who was one of the first-rate scholar in the Safavid era and had much dignity to Shah Abbas I, taught in it. The exact date of its construction is not specified. However, using the stylistics of famous tiles used in the building, it can be attributed to the era of Shah Abbas I [3]. About this monument, Sharden writes: "Molla Abdollah school is the greatest and widest school in Isfahan and a great scholar like Allameh Mohammad Baqer Majlisi fully qualified jurist in divine Science is responsible for its management" (The same). After passing its portal, one can enter open space in front of a building facing the street (this entrance was originally a part of Chahar suq (market place) and after traversing a long corridor, one can enter its courtyard. The main space of the school was formed around square-rectangle-shaped courtyard. Due to rectangular stoops, its angles were chamfered. This school, unlike many schools built in the Safavid era, was constructed as two-Iwan building and one reason for this may be to avoid 4-Iwan style to create greater number of chambers. The height of the two main Iwans is approximately equal to the height of the buildings next to it and this reduces the importance of the Mihrab as a little. It must be noted that southwest iwan had been paid more attention compared to other iwans due to its position in the direction of Qibla. The chambers were constructed on two floors around a central courtyard. 27 chambers were built on ground floor and 23 chambers were constructed on first floor (The same: 21). This building has been registered in the list of national monuments on 22th December 1934.

Description of Molla Abdollah mosque-school in terms of plan and façade

Courtyard: The main space of the school was formed around square-rectangle-shaped courtyard and its angles were chamfered to create rectangular stoops. The dimensions of courtyard are about 26*5.28 and its lateral sides are about 80.3 m. according to the dimensions of courtyard and the elements of this monument, it is considered as medium-size building compared to other buildings constructed in the Safavid era. The materials used in this building are brick with muddy mortar, plaster, cut stone and wood [4].

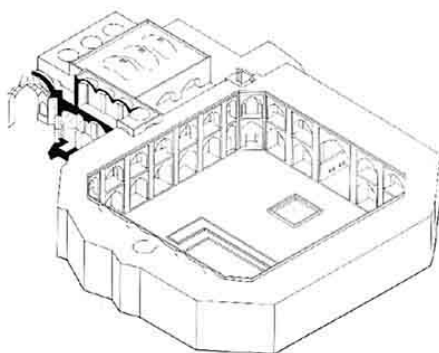


Figure1. Three-dimensional image of the building [5]

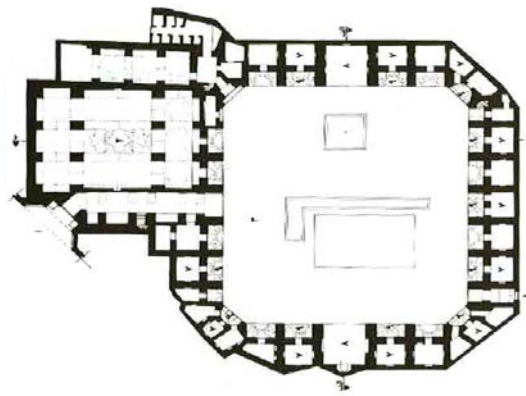


Figure2. Plan of the building [5]

Iwans: Molla Abdollah school has two-iwan structure and its southwest iwan had been emphasized more as prayer room and meeting place due to its location in the direction of Qibla and the Mihrab built in it [4]. This iwan has a mihrab decorated by Muqarnas. The floor of it had carpeted with tiles. The only difference between it an northeast iwan is that northeast iwan has no mihrab. Each iwan is composed of a vertical part including a rectangular frame. This frame involves a span with zgzag vault. Southwest iwan was decorated as half-dome using Karbandi. Its Mihrab was decorated by Muqarnas, tiling and historical inscriptions.

Chambers: the angles of the school were chamfered from the both inside and outside and this provides the ground to build more chambers. The chambers were built on two floors around a central courtyard. 27 chambers were built on ground floor and 23 chambers were constructed on first floor [3]. Each chamber consists of a stoop, entrance and main room.

Mosque: a large prayer room is located on the northwest side of the building. The decorative elements used in this space are concentrated in its mihrab. The plinth of mihrab was covered by marble altar and its other surfaces were tiled using two mosaic and brick methods. In the middle of the mihrab, there are inscriptions with white-colored Thuluth script on the qzure-colored background and with religious themes. Other expressions with Banaei Kufic scripts were used under the part of mihrab decorated using Muqarnas. Overall, the prayer room includes arches that in the middle part, they are located on four brick pillars.

Entrance set: Molla Abdollah school has two doors and its main door is in the great market and open to confectionary market. Its main entrance is perpendicular to the north-south axis of the great market. This part of building is in the vicinity of Shah Char suq (of the main points of the great market). The main decorations of this part including historical inscriptions (1218 A.H) placed on the upper part of the doorway are related to Fath Ali Shah Qajar[6]. In terms of exterior façade, although two sides of the school were joined to urban context, its portal is located on one side of the Char suq and completely separated itself from the market and with the increase in the height of the façade, it shows its differentiation compared to other nearby buildings. An overview of structure of the building is provided in Table 1.

Table1. Architectural elements and structure of Molla Abdollah mosque-school

| Architectural elements | | Description | |
|------------------------|-------------------------|--|--|
| Geometry of building | | Square | The overall plan is square-shaped. |
| neighborhood | | The main member of MadarShah urban complex | This building along with other services buildings form MadarShah urban complex. |
| Water stream | | Water stream passes through the building. | There is a ditch in the building that makes the space in the building fresh and has been filled with water in recent years. |
| Entrance elements | Portal | In line with the road | The entrance is parallel to the road. |
| | Entrances | Main and secondary entrances | The building has two main and secondary entrances. |
| | Vestibule structure | Rectangle | The structure of vestibular starting from the main door is rectangle. |
| | connections | Access to iwans, courtyard and lateral spaces through chamfers | The entrance is connected to other elements in the building indirectly and or with the change in a way |
| courtyard | Spatial structure | Rectangular courtyard with chamfers | Relatively large dimensions courtyard with 4 chamfers that, in addition to beautification of essential places, places a number chambers in itself. |
| | Façade building | Two iwans in the line of chambers | the façade of courtyard was built using two iwans |
| | Harmonizing with nature | Garden, pond, large stone container | Harmonizing with nature with the use of 4 gardens (symbol of Iranian chaharbaq), pond and large stone container |
| Mosque and prayer room | Plan | Octagonal | The plan of prayer room is rectangle and its entrance opens to courtyard. |
| | location | On northwest | The mosque and shabistan are located adjacent to the entrance courtyard |

| | | | |
|--------------------|-----------------|---------------------------------------|---|
| Proportions | | Two floors, 4-iwan and wide structure | The elements of the building were implemented completely and the area and structure of it are medium compared to the building of the Safavid era. |
| Chambers | Location | On two floors | The chambers were built on two floors in a symmetrical form and with the same structure |
| | Façade | Symmetrical, on both sides of iwans | Observing symmetrical form in the structure of chambers |
| | Number | About 50 chambers | A great number of chambers with accurate plan and on two floors |

Architectural ornaments review

Technique

Among the ornaments used in this building, the main and the most important ornament is tiling which can be observed on the most surfaces of the building. Given to its importance, all the surfaces cannot be addressed in the form of text so, an overview of these decorations is listed in Diagram 2 in terms of technique.

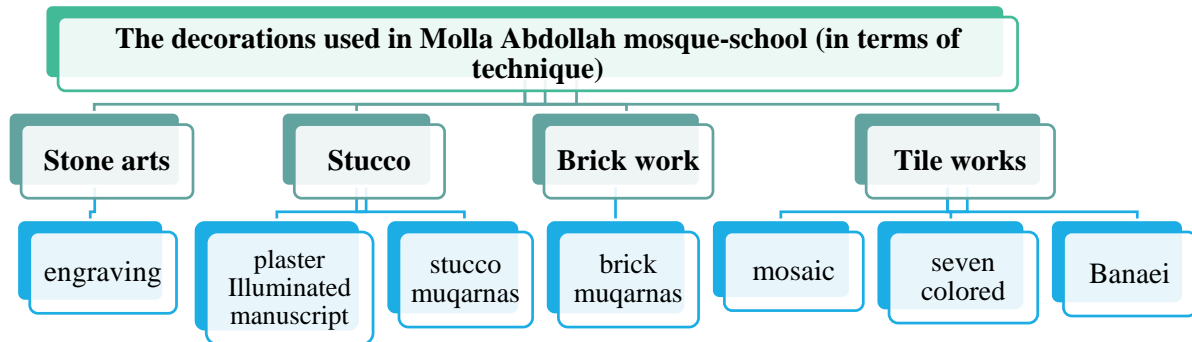


Diagram3. The techniques used in Molla Abdollah school-mosque

Motifs and designs

In addition to materials and technique, types of designs and motifs used in the decorations painted in Molla Abdollah monument is important in its turn. Due to the multiplicity, diversity and dominance of tiling in the building, classification and typology of designs and motifs have been done on the basis of decorations names, as shown in Diagram 3.

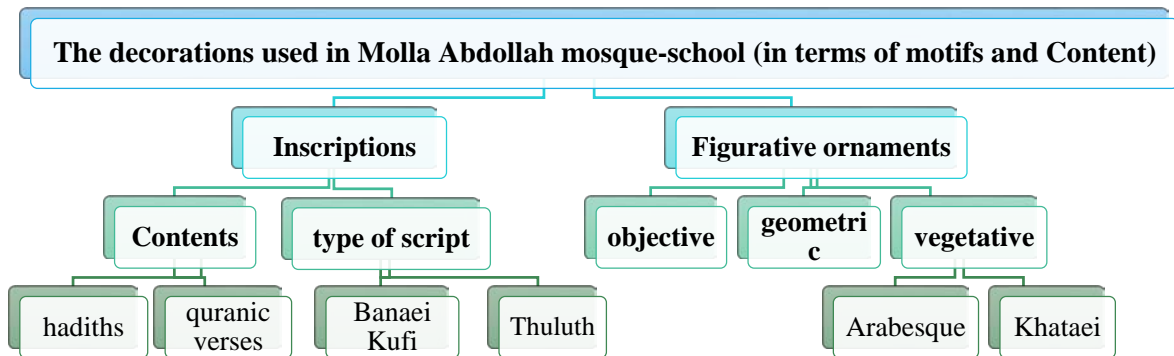





Diagram 4. Content review of arts used in Molla Abdollah mosque-school

According to the concentration and centralization of decorations on the exterior façade of main courtyard of building and chambers, the designs of colors of tiling decorations used in mentioned building can be briefly described as follows: the spandrels of iwans were decorated using mosaic tiles with torpedo mouth arabesque designs in azure, turquoise blue with foliage and black, white, green, brown and cream flowers. The spandrels of chambers were decorated with mosaic tiles on

azure background with fawn-colored arabesque designs and foliage and turquoise and white flowers and also on turquoise background with fawn-colored arabesque designs and foliage and azure, green and white flowers.

Table2. A review of decorations used in Molla Abdollah mosque-school

| Technique | Type of motif | location | Sample photos |
|-----------|---|--|--|
| mosaic | Vegetative | Decoration of exterior façade (spandrels), chambers and iwans and interior façade of the mosque, mihrab and interior façade of iwans |  |
| | Geometric in combination with muqarnas form | Muqarnas in zigzag form of mihrab |  |
| | Kufic inscriptions | In a symmetry form on the exterior façade of iwans and also, in the combination with other decorations in mihrab |  |

Inscriptions

Type of script: the types of scripts used to write the inscriptions of Molla Abdollah mosque-school were Banaei Kufic, Thuluth and Nastaliq scripts, more than half of them were written by Banaei Kufic script and 6 of 15 scripts were written by Thuluth script. Statistically, more than 50%, 40% and 10% of inscriptions were written by Banaei Kufic, Thuluth and Nastaliq scripts, respectively. It must be noted that the oldest inscription is stone inscription of deed of endowment placed on the southern iwan and related to 1088 AH and written by Nastaliq script and it is described more in following.

Contents and themes: since the Safavid dynasty was based on love and willingness to Imam Ali (as) as the 1st Imam of Shiites, the manifestations of this love can be frequently seen in different Safavid schools, including Molla Abdollah mosque-school. In this regard, four of eight Banaei Kufic inscriptions placed in exterior space, spandrels of southwest and northeast iwans have following themes: “Glory GOD is daily proud of his angels who are close to Ali ibn Abi Talib” and “Ali ibn Abi Talib is the door of bani Israel who comes in through it, he/she is faithful and who goes out through it, he/she is an infidel.”. Additionally, four other inscriptions which are actually a set in four separated frames placed in the space underneath the Muqarnas of Mihrab, have similar contents and themes as follows: “love of Ali ibn Abi Talib (AS) is a shield of fire”, “Ali (AS) is the leader of the jinn and humankind”, “Ali (AS) is the successor to the Prophet Muhammad (PBUH)”

and “Ali (AS) is a divider of hell and heaven” (Qasemi, 2011: 36). According to the themes of inscriptions, it can be found that all the inscriptions were written in praise of Imam Ali (AS).

Of the Thuluth inscriptions, 5 inscriptions were placed in the middle part of Mihrab and their contents are hadiths about the necessity of prayer and repentance, the glory of the God and declaration of faith, as follows: “hurry to say payer before its setback”, “hurry to repent before death”, “as you deserved, we didn’t serve, glorify and sanctify you”, “we didn’t know you as we should” and “I testify there is no god but God. I testify Muhammad is the messenger of God. I testify Ali is friend of God ” and only one inscription was placed in the interior space of northeast iwan and parts of Sura “Friday” were written on it [6].

Table3. Conclusion of characteristics of Molla Abdollah mosque-school

| characteristics of Molla Abdollah mosque-school in terms of architectural structure and decorations | |
|---|---|
| Overall building structure | 1- unique two-iwan structure, building on two floors and impressive fit between the structure and the land use |
| | 2- four divisions (cruciform) governing the components of elements of the building |
| | 3- Application of the principle of symmetry in all components from the largest components such as iwans and portal to the smallest ones such as arches in chambers |
| | 4-Representation of Iranian Chaharbagh archetype in the building through combining gardens in the cruciform form and passing water stream through them |
| | 5- integration of educational spaces such as schools and chambers with liturgical space of the mosque located in the northwest of the building. |
| | 6- proportionality between length and width and dimensions of components with their applications as well as greater emphasis on areas such as iwans and main portal by large size and volume of decorations |
| | 7- Breaking direct entry to the building and creating entry process through breaking the way along the corridor |
| | 8- rectangular chamfers of the main courtyard that were used to increase the number of health and services spaces that it is good that there are on the periphery of the building. |
| Decorations | 1- high quality implementation of decorations with different methods and materials which fits with the support of the king, including a. the use of the most original and noble designs and the most durable tiling techniques, i.e. arabesques and Khataei designs on mosaic tiles which have more flexibility in proportion to the space. b. the use of techniques such as engraving on the implementation of the most prominent inscriptions of the building |
| | 3- the use of various symmetries such as reflective, transitive and rotational symmetries on all parts of the surfaces decorated from composition of decorative elements on a specific surface to used motifs |
| | 4- the proportionality between used techniques and motifs and their locations and land use of the building |
| | 5- the application of aesthetics governing all the decorations through observing all the factors addressed in Islamic aesthetics at whole and detail scales |
| | 9- observation of negative and positive spaces in the background |
| | 10- appropriateness of the materials and types of script used in the implementation of the inscription and their locations and also the themes used in the inscriptions |
| | 11- The impressive balance between themes and concepts used in the inscription and scientific and religious nature of the building |
| | 12- The balance between dimensions of colored surfaces and type of paint used in decorations |

Conclusion

Based on the recognition performed in the present study, there are a few number of schools and specific scientific-religious buildings related to Shah Abbas I era in Isfahan Town (the capital of the safavid) compared to other architectural styles, so, limited number of buildings can have proper research capacity. In this regard, Molla Abdollah mosque-school as one of such buildings which can be used nowadays, was studied in a coherent process in the present study. Accordingly, in order to answer the most important question raised in this study, it can be said that in the field of overall structure, the architecture of this building has specific characteristics and there are clear differences between it and other similar buildings. The mentioned building consists of school and chambers on two floors and shabistan and mosque and also it was built in two-

iwan form. Also, unlike other buildings of this era, specializing the iwans and other elements and separating them based on their importance have been not more emphasized using various decorations and dimensions. But in the field of architectural ornaments that the majority of the results are assigned to it, it can be said that this building was decorated with the support of the king using the valuable mosaic tiles. The interesting thing about this technique was applying the color combination of glazed and unglazed tiles that give special visual effects to the courtyard. Also, these decorations are unique in terms of technique, combination of designs and motifs. Mentioned decorations were often implemented in spandrels of chambers, exterior and interior facades of iwans. They were designed as large arabesques and in some cases, they were combined with elegant and simple khataeies on two floors. The majority of the Safavid buildings, especially Shah Abbas era, were full of tiling decorations and they have special place in terms of the diversity and frequency of motifs and techniques. It must be noted that aesthetic principals governing all the decorations, studied in the present study were the use of various reflective, transitive and rotational symmetries, observing positive and negative space of background, the balance between colors, impressive proportion between motifs and inscriptions and their locations as well as land use of the building and etc. also, another specific characteristic of the building, in terms of decorations, is the replacement of stone inscription with the theme of endowment. And this was less observed in other building of the Safavid era. Finally, it can be said that Molla Abdollah mosque-school as one of the famous scientific-religious buildings related to the Shah Abbas I era, has specific characteristics in two aspects of architectural structure and decorations and the research on it can strengthen the individuals' information about it as well as typology of mosque-schools of the Safavid era. Due to paucity of space and grandeur of the building, all aspects of the building cannot be addressed in the present study. So, it is suggested to conduct other studies on it in order to promote people's information, who are interested in Islamic-Iranian art and architecture and to identify structural and content patterns used in this building and the relationships between different elements and their roots.

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