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Imāmzāda ʿAbdallāh at Kūdzar, Iran: New Insights Regarding its Architectural Revetments

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Abstract
The mausoleum of Imāmzāda ʿAbdallāh (Markazī province, Iran) has been attributed to the period between the 10th to 12th century AD. Its interior surfaces have been understood to be decorated in gypsum-based stuccos, but this research reveals the existence of hitherto unexpected compositions. Despite its significance for the history of Iranian architecture, this monument still lacks thorough scrutiny of its architecture and decoration. This study presents new insights into the monument's history and unique artistic production of its architectural decoration. It includes a full documentation of inscriptions, a detailed plan, and sections. Furthermore, it proposes a technological and stylistic comparison of the mausoleum's revetments with Seljuk stuccos. Finally, the results of decorative materials' analytical study reveal the nature of its decorative materials.

Introduction

The monument, which is the subject of this research, was registered as the Šāhzāda ʿAbdallāh mausoleum in the Iran National Heritage List under registration no. 1704 in 1986, and attributed to the 10th century AD. However, its original function and dating remains a matter of debate. The interior surface is completely covered with stucco decoration up to its ceiling, which makes this monument unique. The dome area has a plain layer of plaster, applied as part of the restoration process in the last century. There is no accurate information about the façades of this octagonal building, as its exterior surface was completely repaired. Up to now, no extensive studies have been carried out on this building. A brief document provided by the Cultural Heritage Department reports their initial reviews and observations of this mausoleum. This is the first document that also includes the reading of the existing inscriptions.[2] The building was also briefly described in a few reports relating to the historical monuments of Iran. None of these publications provide new information about this building.[3] In recent years, very few studies have been done on this monument, which provided some pieces of new information about this building (Šarīfīnīyā 2013: 74-84; Sārīḫānī, Šarīfīnīyā and Aḥmadī 2015: 155-174). In the following sections we shed light on various parts of this monument and its decoration, by a detailed investigation, which expands our understanding of this building and its probable functionality.

1 University of Bamberg.
2 Archive of Iran Cultural Heritage, Handcraft and Tourism Organization in Arāk.
3 For further information see the Law "Āṯār-i tārīḫī dar panāh-i Qānūn" in Aṯar 12-14, 173 (1986/1365š); see also Uqābī 1997: 259.

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Historical and Geographical Background

The mausoleum of ʿAbdallāh is situated in a small village known today as Kūdzar, which is located in the Markazī province, 36 km south-east of Arāk towards Ḫumain. The village lies in a mountainous region at an elevation of 1880 m asl. The etymology of the village's name "Kūdzar" is not clear: the locals attribute the name to the surrounding yellow-colored hills 'Kūh-i Zar'. According to the book of Tārīḫ-i Qum, written in the 10th century AD, the name "Kūzdar'' refers to an area in the Qum province that includes 44 villages (Qumī 2006: 56-59, 119). It seems that historically this area, including the studied village, was administratively affiliated to the city of Qum, which was Shia-dominated. Despite this fact, in the 10th century the dominant religion in most parts of Iran was Sunni Islam.[4]

The mausoleum is located on top of a hill overlooking the village, which in the past was surrounded by the village's graveyard. In recent years, any new burial within a radius of 50 m around the mausoleum has been banned. Thereafter, various buildings were constructed on the northern and western sides of this mausoleum to meet the needs of the pilgrims. According to Shia tenets, this tomb belongs to ʿAbdallāh ibn-i Muḥammad, a descendant of the Shia seventh Imam and the new tomb annexed to this building belongs to his sister, Ḥalīma Ḫātūn. However, no historical evidence has been provided to qualify this claim. According to the locals, an older adobe-made chamber stood in the place of the second mausoleum (Ḥalīma Ḫātūn), which was severely damaged in the past, therefore it was recently fully deconstructed and rebuilt (Fig. 1).

Structure

The mausoleum has an octagonal floor plan outside and inside. There is no information available on the nature of the tomb's original façade. Based on the only photograph available of the building's façade, taken in 1986, it was completely covered by a cement layer. Due to improper repairs, this building now has the appearance of new façades (Fig. 1).

In recent years the foundation of the building has become visible due to the existence of drainage ditches around the mausoleum. The construction rests on an octagonal foundation, made of stone, underneath of which is a bedrock.[5]

The monument of Imāmzāda ʿAbdallāh was roofed with a dome construction. Brick was used as the building material. The total height of the mausoleum to the apex is about 11.95 meters on the current exterior and from the present ground level in the interior it measures 11.25 meters. Due to the shape of the dome, it seems that the dome was probably a discontinuous double-shell dome with a pointed arch for the external shell. (Figs. 2, 3). The exterior shell has been demolished and what remains today is the interior shell, functioning as the roof of the building. Recent renovations on the mausoleum's façade have erased the original signs that would allow the determination of the dome's external shape.

In the discontinuous double-shell domes there are considerable distances between the two shells. This discontinuity may start either from the base or from the top of the drum. It seems that the external shell of the building must have begun from the base of the dome, and that the dome itself lacked a drum in its external shell. Examples of such double shelled

4 For further information see Faqīhī Tabrīzī 2007: 50-56; Šarāhī 2014: 930.

5 The initial plans and drains of the Imāmzādaʿ Abdallāh have been prepared by ʿAbbas Towḥīdīyān.

domes are available in most regions of Iran, with the best and probably the first surviving double shelled domes being the Ḫarraqān Towers, dating back to the 11th century.[6]

The tombs of Haftādu-du Tan and the Čihil Duḫtarān in Sārūq as well as the Imāmzāda ʿAbdallāh in the village of Fārsīǧān in this historical region, which can be compared to Imāmzāda ʿAbdallāh in Kūzdar, often have Muqarnas or a clear drum in the zone of transition in their dome chambers. In most domes of similar type there is an inscription between the walls and the base of the dome, which acts as the zone of transition. Here the dome has no drums. It also does not have a zone of transition in its chamber. The dome seems to have no specific transition zone. The builder has used the joining points of the walls to transform the octagonal plan into a circle. In this space, the architect has filled the angle created in the junctures by an arch shaped in the intervals between the engaged-columns (Fig. 7).

The entrance of Imāmzāda ʿAbdallāh is located on the north-eastern side of the old building. It has a pointed arch, 3.30 meters high, above which sits an original window-light. The entrance is placed on one of the 8 sides of its octagonal plan, with the *mihrab*-niche positioned on the opposite side (Fig. 4). The *mihrab* niche is positioned in the South-west wall. In contrast to the *mihrab* niche, which deviates from the *qibla* direction (*circa* 37 degrees), the cenotaph is oriented towards Mecca.[7] This metal shrine was built in recent years, and there is no information about the older, probably wooden one.

The wall is structured over the dado zone as a series of several flat niches. The niches are separated by decorative engaged-columns that are decorated with stucco. The pillars end in small capitals on which seat-pointed arches are attached. This structure is around 20 square meters. In the second wall, there are original round arch windows. Above the *mihrab*, there are two windows on top of each other; from those only the lower one is original.

Decoration

Stucco decoration completely covered the inside of this structure from the dado to the foot of the dome area. Geometric and floral motifs next to the inscriptions were embossed in stucco. Considering these decorations, we can state that the revetment of this mausoleum follows a particular model, in which the decorative elements are determined by the space.

During the recent construction (reconstruction) of the north-eastern chamber, the entrance portal was covered with modern tiles, bricks and cut mirrors (Fig. 5). However, the interior of the entrance niche including the soffit and the walls of its acute arch still shows the original stucco revetment (Fig. 6). Two Kufic inscriptions in a wide band are placed between the dado and the soffit of the entrance niche, reading Basmala, which is an appropriate quote for the entrance of a building. Large floral elements consisting of symmetrically arranged pairs of tendrils with half palmettes fill the space between the letters of these inscriptions. The walls and soffit of this niche follow the same decorative designs in a flat carved stucco as the walls and soffits of the windows with a round arch, which are placed in every second niche. In this model, the soffit is filled with repeating patterns of the abstracted shape of four-pointed stars with spiral wings creating undulating surfaces. Their components are accentuated by drilled holes and lines. The similar motifs can be seen in the dado zone of the entrance niche, however, they are surrounded by octagonal geometric shapes.

6 For further information on double shelled domes see: Ashkan and Ahmad 2012: 287-319.

7 The dimensions of the *mihrab* were measured and documented in 2015 by M. Alimohammadi, A. Azartashnamin and M. Moeini.

The dado zone of the Kūdzar mausoleum is interrupted by the entrance niche in the north-west and the *mihrab* niche in the south-west. This zone is adorned with a girih pattern, which is characterized by its star-and-polygon compositions. A koranic inscription band in cursive script closes this zone on the top. The beginning and end of this inscription are destroyed. However, based on the remaining words, it can still be identified as a koranic inscription (5: 55-61).[8] The floral motifs such as tendrils and undulating scrolls with blossoms and leaves fill the background of this inscription. A second band of turquoise tiles in a hexagonal shape lies over this epigraphic band and closes the dado zone at the top and both sides of the *mihrab*. Only a few fragments of these tiles have survived (Fig. 13).

Apart from the entrance and the *mihrab*'s niche, all the other six blind niches above the dado zone follow the same decoration design, which are the stucco revetments in complicated geometric patterns made of interlaced polygonal ornaments. Each niche has its own geometric composition, which means there are six different girih patterns. Floral motifs in the derived form of the beveled style with grid patterns as well as tendrils, half-palmette, abstracted shape of stars, etc., fill these geometric patterns. Centrally grooved tendrils around the circular pattern in some of the geometric panels are one of the significant schemes in the decorative design of these blind niches. Another eye-catching element in the design of the stucco revetment in Imāmzāda ʿAbdallāh are the floral motives on the top of the grid patterns. Both mentioned elements, centrally grooved tendrils around the circular pattern and floral motives on the top of the grid patterns, can be found in the tympanum of the small niche of the *mihrab*.

The two corners of the blind niches together form a stucco panel filled with rising tendrils and floral ornaments (Figs. 7, 8). The same panel can be seen in the inner field of the small niche in the *mihrab*. This stucco *mihrab* is the most-preserved part of this monument. In addition to the inscriptions, which are the major decorative element in the *mihrab*, floral and geometric patterns are used here. Geometric patterns decorate the engaged-column shaft. Moreover, we have a girih pattern in the tympanum of both niches, which is also somewhat similar to the pattern of the dado (Figs. 9, 10).

There are five main inscription bands on this *mihrab*, three of them in Kufic and two in cursive. In terms of content, four of them are Koranic, and one is the building inscription. A cursive inscription was included in the wide band frames of the *mihrab* niche, whose text is a standard caption of the Koran (17: 79-80), for the *mihrabs* from the Seljuk period onwards in Iran.[9] The floor in front of the *mihrab* was raised in later periods; thereby the lower left part of this inscription was covered. Additionally, at the end of the band due to lack of space, there are some words written horizontally in a tiny format. The floral motifs such as tendrils of two parallel lines and undulating scrolls with a variety of blossoms and leaves fill the space between the letters. Furthermore, there are hanging decorative elements on this frame band. The parallel elements can be found in identical form on the inscription band around the dome and iwan of the Ardistān Friday Mosque (ʿAzīzpūr and Ṣāliḥī Kāḫkī 2013-2014: 81; Hutt and Harrow 1977: 111). The spandrels of the outer *mihrab* niche are filled with the floral motifs

8 The inscriptions of Imāmzāda ʿAbdallāh was first read by Ismāʿīl Zuhra (Archive of Iran Cultural Heritage, Handcraft and Tourism Organization). In the present study, all the inscriptions have been re-examined, which caused slight changes in the initial reading.

9 This text can be found in the *mihrabs* of Zawāra Friday Mosque, Gunbad Mosque in Sangān-iI Pāyīn, Mīyāndih Mosque of Qamsar etc.

in high relief. The floral motifs such as tendrils and half palmette fill the background of the spandrels.

The outer *mihrab* niche of Imāmzāda ʿAbdallāh bears double inscription bands on its archivolt and soffit. This peculiarity can also be seen in the Ardistān Friday Mosque, in its main *mihrab*; both niches have double-inscription bands on their archivolt and soffit (Pope 1977: pls. 322, 323b). The inscription band on the archivolt is in simple Kufic script with a koranic text (23: 1-5). The same issue for fitting the whole text occurs as well in this band, where the fifth verse of this Surah is written parallel on the right-hand side above the last part of this inscription. The same text in Kufic script can be found in the same spot of the main *mihrab* niche of the Ardistan Friday Mosque.

The inscription on the soffit surrounded the tympanum of the outer niche. It is in cursive script and contains the whole verses of the first Surah of the Koran (1:1-7). Similar to other mentioned inscriptions in this building, fitting the entire verse on this band is also an issue. Aside from that there are also some errors in writing, misspellings, and missing words on the both mentioned inscriptions.

The design of the girih patterns on the tympanum of the outer *mihrab*'s niche is comparable to some Seljuk monuments in Iran.

The frame band of the inner *mihrab* niche is adorned with a Kufic inscription, which is the only surviving building inscription of this structure. This epigraphic band presented the person who was thought to be the founder of this building. Unfortunately, apart from the titles of this person, nothing of his identity has been preserved, probably because the floor in front of the *mihrab* was raised and thereby the lower part of the inscription was covered. The text is:

بسم الله الرحمن الرحيم [ا] مر بعمارة هذه الصفة المعمورة / صاحبها الامير السيد / العالم الزاهد فخرالد[ين] [شيخ]الاسلام شرف الساد[ات] ...

Bism Allāh al-raḥmān al-raḥīm [a]mara bi-ʿimārat hāḏihi al-ṣuffa al-maʿmūra / ṣāḥibuhā al-amīr al-sayyid / al-ʿālim al-zāhid Faḫr al-D[īn] [šayḫ] al-islām šarafʿal-Sād[āt]...

'In the name of God ordered the construction of this flourishing ṣuffa (roofed pavilion), its patron, the Amīr, the sayyid, the knowledgeable, the ascetic Faḫr al-Dīn, šayḫ of Islāms, nobility of the Sayyids...'

This inscription provides two important pieces of evidence about this structure. First, this domed structure was presented as a Ṣuffa.[10] Second, the owner of this building was called an elder with splendid titles.

By looking for the word Ṣuffa in a large number of historical sources, there is no reference to a mausoleum or tomb. Ṣuffa refers to a roofed place or pavilion, which can belong to a mosque,[11] palace or even Khanaqah (Dihḫudā 1994-1995: 13213; Kīyānī 2010-2011: 93, 96).

10 For further information see ʿAṭṭārzāda 2017.

11 This word is mentioned in three building inscriptions in Iran, two of them are in the Great Mosque of Ardistān, which refer to the construction of the south and north iwans in 555h/1160 and 946h/1539-40. (Hunarfar 1965-1966: 215, 218) The third building inscription located in the Great mosque of Qasr al-Dašt in Šīrāz, dated 875h/1470-71 (Muṣṭafawī 1964: 80).

Ibn Baṭṭūṭa reports in his itinerary on structures (Zawāyā) of Madrassa with many facilities in the mountain areas in central Iran, where travelers could stay and which provided for them (Ibn Baṭṭūṭa 1986: 205-206). Accordingly, this dome could be identified as a structure of an institution, such as a Khanaqah, which was also used as the tomb for its founder after his death. Thereafter, during the ages, it has lost its original functionality. The building was probably transformed into a tomb of a holy person for the collective memory of locals, which is nowadays called Imāmzāda ʿAbdallāh. More supportive evidence for such a hypothesis is that early Khanaqahs between the 3rd-9th and the 7th-14th century had two central buildings, one of which functioned as a small mosque for praying purpose (most probably also with a *mihrab*), and the founder would be buried in one of these after his death (Böwering and Melvin-Koushki 2012).

The spandrels of the small *mihrab* niche are adorned with floral motifs in high relief. On the small niche's archivolt is an inscription band in simple Kufic with a punctured background. This inscription bears the entire text of the Surah 112.

The tympanum of the small niche is adorned with an elaborated composition of geometrical and floral patterns. Thick tendrils form stylized geometric patterns, which are chained together through rosette motifs forming a girih Pattern. The inner field of the small niche is decorated with the floral motifs and at the top of this rectangular field can be seen a Kufic inscription band, which is no longer readable.

By looking at the inscriptions of the Imāmzāda ʿAbdallāh, it becomes clear that the artist was not expert in the conception and execution of the inscriptions. This could be the reason for the errors in writing, misspelling, missing words, and always the difficulty in fitting the entire text in the inscription bands.

Dating

According to the mentioned comparable examples, the motifs and ornaments in this domed-chamber are very similar to the parallel examples from the Seljuk period. The most similarities can be found with the stucco revetment of the Ardistān Friday Mosque. There are not only in the identical patterns like hanging decorative elements or the use of double inscription bands surrounding the tympanum, but also in the epigraphic program.

In addition to the extensive stucco revetment in the decoration's design of the Kūdzar domed structure, there is a limited use of tiles in a decorative band. The use of tiles in the Iranian building's decoration is an old tradition that dates back to the early 12th century. The Minarets of Sīn in Iṣfahān, Ḫwāḫa Atābak tomb in Kirmān, Ḥaidariyya mosque of Qazwīn and tomb towers of Marāġa are examples of the limited use of tiles and glazed pottery in the decoration's design in the Seljuk era.

Using girih patterns is also another peculiarity of the stucco revetment in the Kūdzar mausoleum. Such girih patterns are consistently used on the monuments and minarets of the Seljuk era (Pope 1977: pls. 358-360) like at two tomb towers in Ḫaraqān (Stronach and Young 1966: pls. VII-XII), the tomb towers of Marāġa (Hutt and Harrow 1977: pl. 60; Seherr-Thoss 1968: pls. 30-36.), and the Ḫwāḫa Atābak tomb (Pope 1977: pl. 529a). The best-preserved example of girih compositions in stucco decorations, which is the most similar to our mausoleum in Kūdzar, are the stucco panels from the madrassa in Ray dated around the 11-12th century (Figs. 11, 12). Based on these comparative analyses, Imāmzāda ʿAbdallāh of Kūdzar

can be dated back to around the middle of the 12th century. Achieving exact dating may be possible through archaeological investigation or by absolute dating.

Technical and Archaeometric Analysis

The uniqueness and the value of this monument and its architectural decoration from an art-historic point of view has been well discussed in the former sections. Several observations have suggested a more detailed investigation on these decorations with analytical methods. First of all, there is a clear color-contrast between the restored part of the decorations, which is already brownish-yellowish in color, and the original stuccos, which resemble even more the color of earthen-based materials. This contrast is also visible between the historical mortar used for attaching the glazed tiles to the wall and the color to the stucco decorations. Furthermore, there are several areas of the wall decoration showing a clear attack of termites, which is very unusual for stucco decorations made of gypsum-based materials. Additionally, in a few spots, where the exterior layer of the decoration is damaged, traces of straw are visible. These observations encouraged us to do a more detailed and scientific investigation about the nature of the materials used for these stucco decorations.

Three samples were collected from the broken edge of the stucco decorations from the *mihrab* (StB-50), wall (StB-46), and dado (StB-49). The elemental analysis (p-XRF) was performed by a portable XRF analyser (ThermoFischer Scientific/Niton™ XL3t). The results reveal that all the samples possess the basic elements required to be identified as a mixture of clay and gypsum, namely silicon and aluminum from the clay particles, and calcium and sulfur as the components of their gypsum part. Regarding the semi-quantitative results of p-XRF, it is helpful to have a ratio between these elements to recognize which sample has a higher percentage of clay, and which one consists of a greater proportion of gypsum. The biplot of the analytical results (Fig. 14) shows that the sample from the *mihrab* has the lowest values of calcium and sulfur, while the sample from the dado possessed the highest values of these elements. The sample from the wall decoration is projected in between. These results show that the sample from the wall decoration and dado are most likely made of a clay/gypsum mixture, while the sample from the *mihrab* has a lower ratio of calcium/sulfur component, and likely is made from a clay-based material with gypsum impurities.

It can be concluded that an intentional mixture of gypsum with clay-based material was used for most part of the stucco decoration of this monument, however, for the *mihrab* a higher ratio of clay-based material was used. Regarding such a composition with a higher percentage of clay-based material, the stucco master had to deal with the shrinkage problem of clay during the drying process, which could be quite a challenging problem from a technical point of view. A high-resolution elemental analysis is required to understand the exact percentage of the mixture and draw a conclusive picture for this unusual decoration.

Conclusion

The monument of Imāmzāda ʿAbdallāh has a simple octagonal plan with a small interior area. This is a regular plan, which can be seen in tombs or other dome-chamber-based structures from the 10th to 13th centuries, and even later in Iran. Despite the octagonal plans, these buildings could differ in construction, building materials or function. The monumental inscription of this building has raised questions about its initial function. Accordingly, this building might be considered as a domed room of a larger institution such as a Madrasa

or Khanaqah. It can be cautiously claimed that this structure has acquired the identity of a tomb place, first after the burial of its founder or a respected person who was related to this building. The extensive stucco decoration of this building, which is another remarkable characteristic of Imāmzāda ʿAbdallāh, is made of a gypsum/clay mixture, where particularly its *mihrab* possesses a higher ratio of clay to gypsum. According to the design of these decoration and comparative studies, the interior of Imāmzāda ʿAbdallāh has only one phase, which belongs approximately to the middle of 12th century. To sum up, this less investigated monument is more likely to be a single-standing part of a larger complex with remarkable stucco decoration from the Seljuk period, which has likely gone through the process of function-change through time and ended up being called Imāmzāda ʿAbdallāh.

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Fig. 1: Exterior view of the mausoleum of Imāmzāda ʿAbdallāh

Fig. 2: Interior view towards the *mihrab*

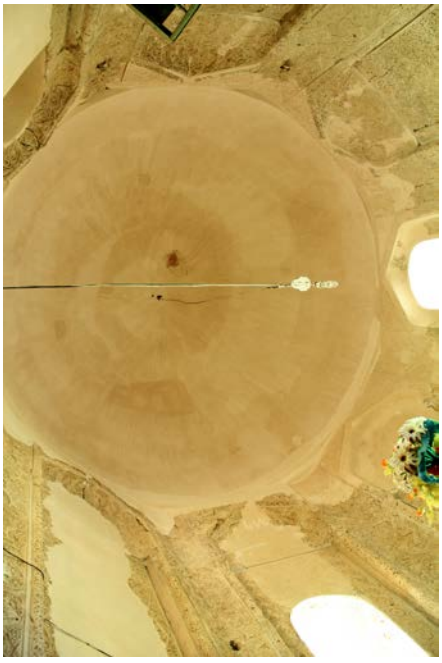


Fig. 3: Dome-chamber

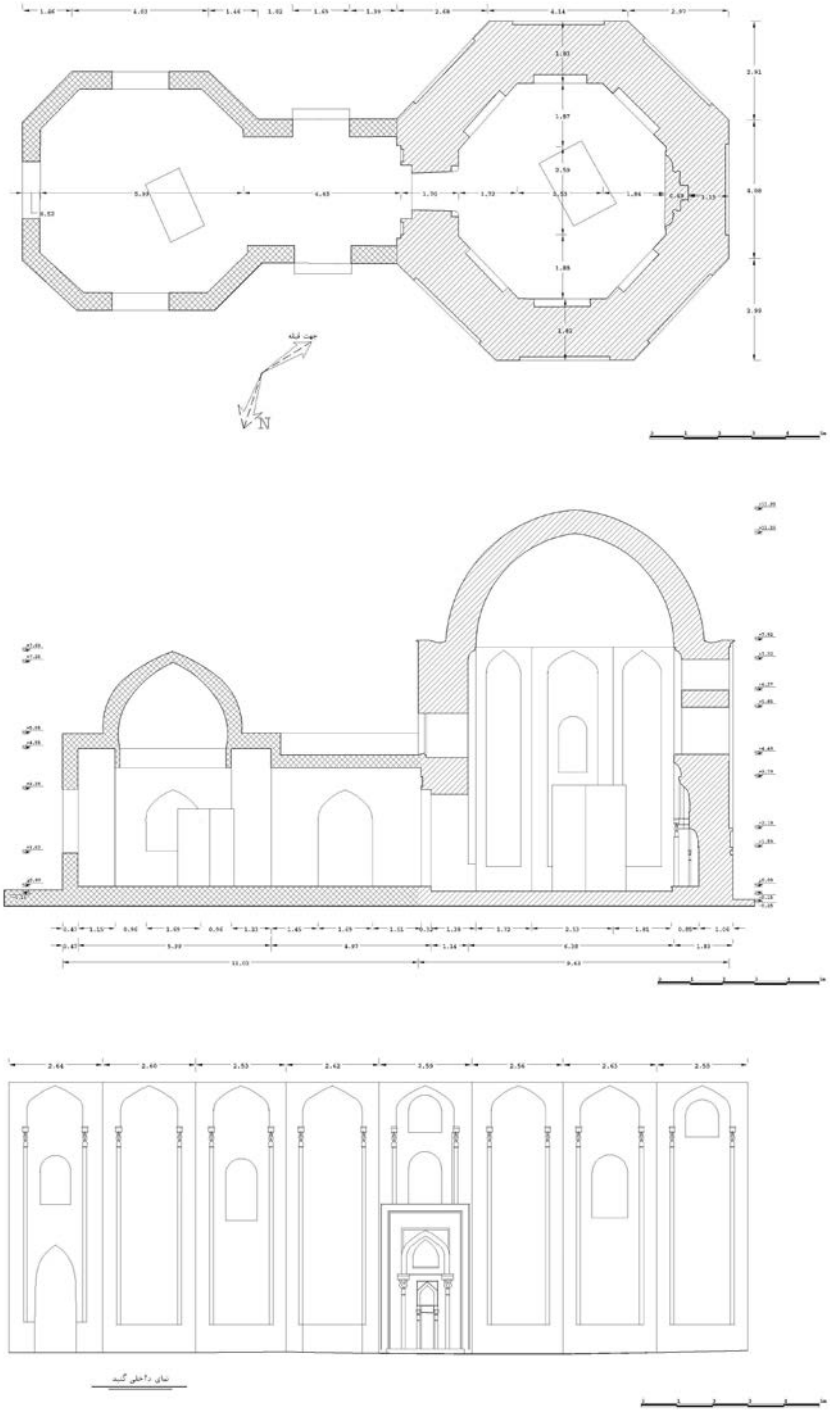


Fig. 4: Plan, section and interior view

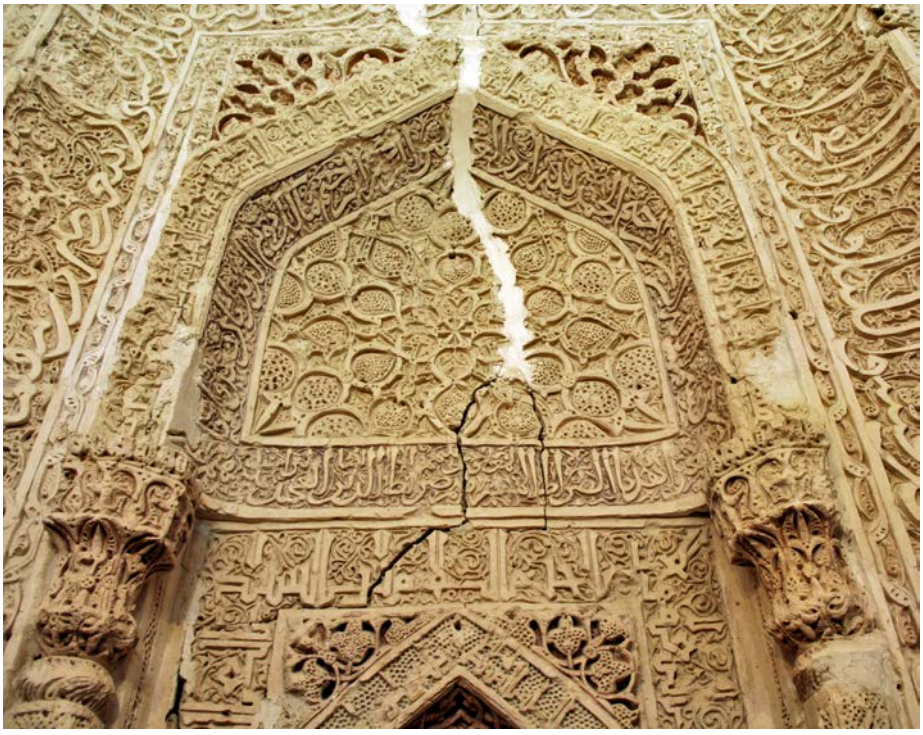
Fig. 5: Additional entrance to the main one

Fig. 6: Original entrance (main portal)

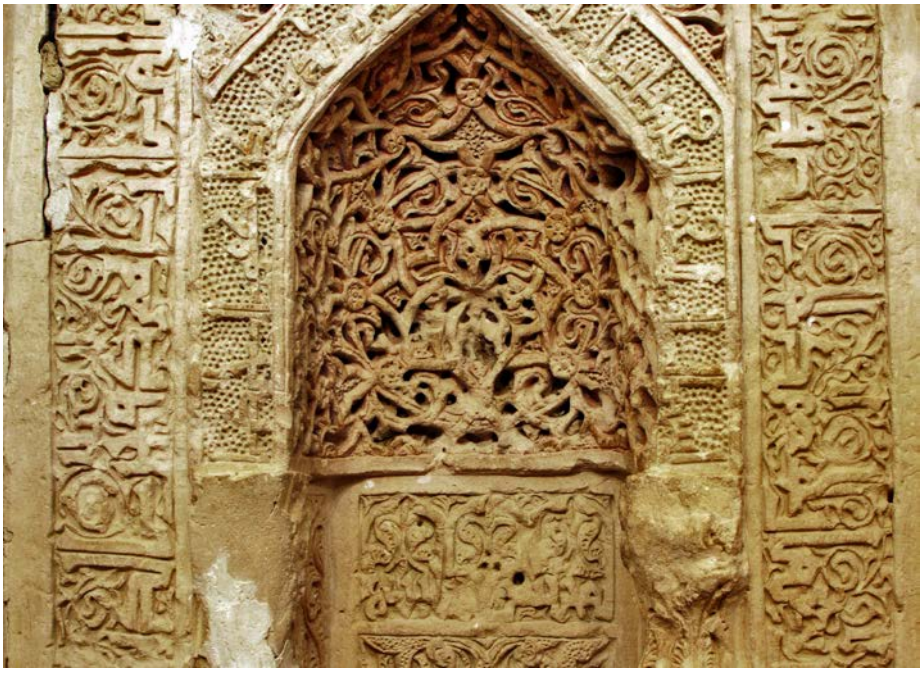
Fig. 7: Stucco panels above the dado

Fig. 8: Interior view with stucco panels

Fig. 9: Mihrab

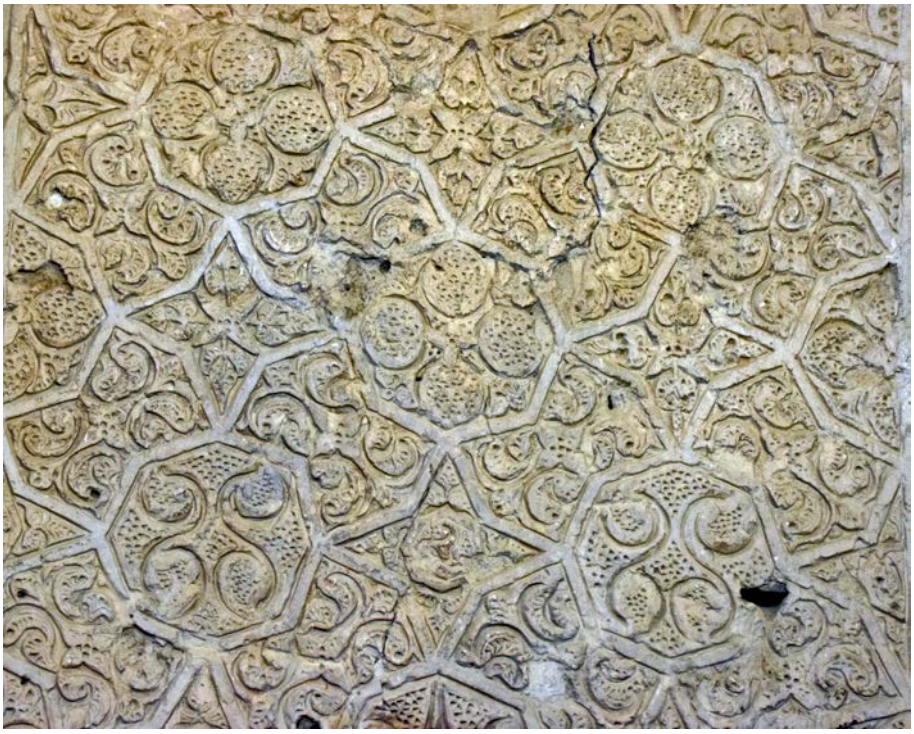


10A



10B

Fig. 10: Details of the *mihrab*

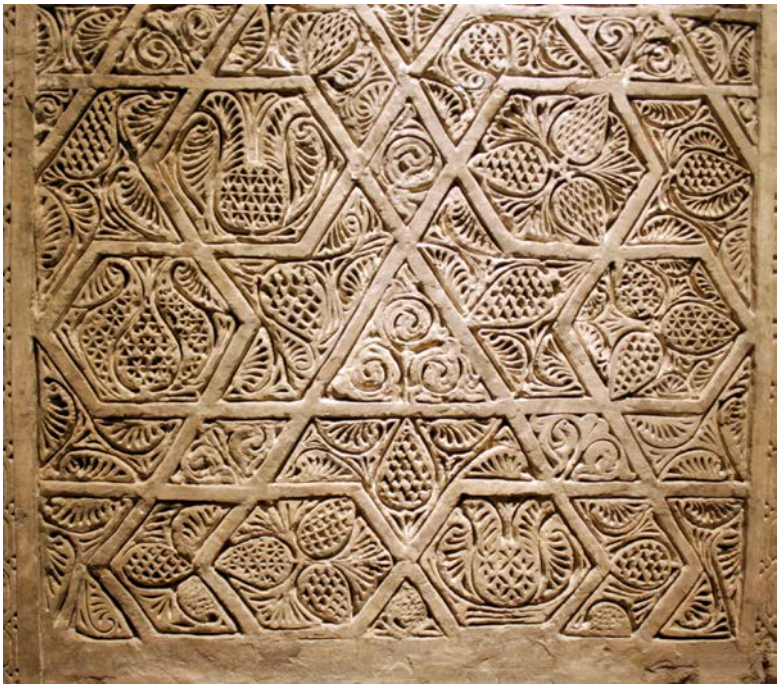


11A

11B

Fig. 11: Stucco panel from Imāmzāda ʿAbdallāh

12A



12B

Fig. 12: Stucco panel from Rayy, National Museum of Tehrān

Fig. 13: Dado zone

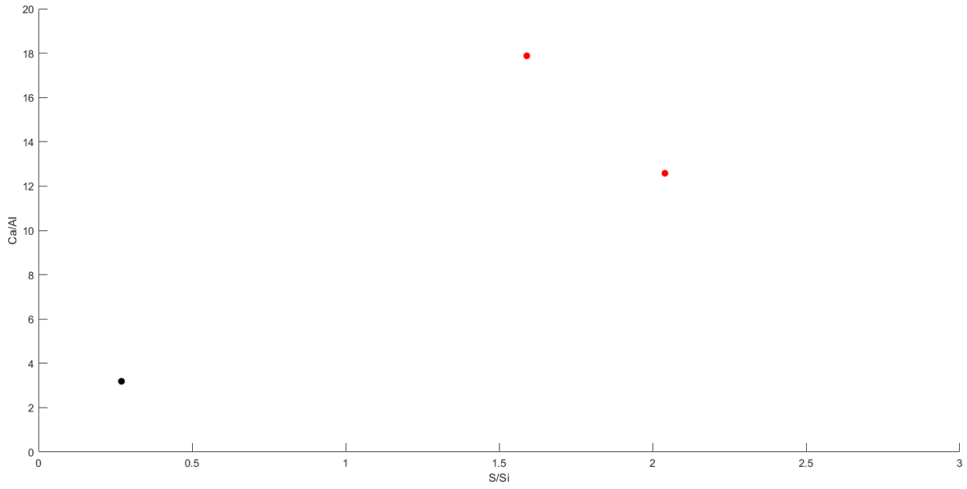


Fig. 14: The ratio between clay-based and gypsum-based components in stuccos: lower black spot is from the Mihrab and shows a low calcium sulfur ratio, while two red spots from dado and wall show a higher ratio for these elements (i.e. more gypsum)