

DOI: <https://doi.org/10.31110/consensus/2025-01/032-046>

УДК (UDC) 902.2

**CONSTRUCTION CERAMICS AND BACKGROUND ORNAMENTS OF THE MAUSOLEUMS
OF THE ANCIENT SETTLEMENT OF KHARABA GILAN****Vusala Fazil Beydullazade*****Abstract**

Azerbaijani architecture has gone through a long development path in its history from the Neolithic to the Middle Ages. The dwellings, defensive systems, public buildings and memorial monuments built in this large chronological range had their own architectural features. Over the centuries, construction techniques have improved, durable building materials have been discovered and spread all over the world. Among the building materials, it is worth mentioning construction ceramics and gage (lime with a mixture), which were widely used in the construction of memorial monuments and public buildings and contributed to the intensive development of architecture.

The purpose of the study is to analyze the architectural features of the mausoleums of the Kharaba Gilan settlement, built using building ceramics and lime (lime with impurities), as well as to study their decorative elements, including geometric ornaments and epigraphy.

Methodology. The study used complex methods of analysis: architectural and historical analysis, comparative method. The study of literary sources, archaeological data and materials of restoration works has been carried out.

Scientific novelty. The work reveals the importance of gage and building ceramics in the development of Azerbaijani architecture, emphasizing their influence on the strength, aesthetic expressiveness and durability of buildings. The study demonstrates that ‘architectural shirts’ with ornamental and epigraphic elements not only served a decorative function, but also contributed to the preservation of buildings.

Conclusions. As a result of the study, it was found that building materials such as burnt bricks and tar paper contributed to the creation of stable and aesthetically perfect architectural objects. The use of ‘architectural shirts’ with geometric ornaments and epigraphy highlights the high level of construction technology in medieval Azerbaijan. The analysis showed that these architectural elements are important for the preservation of cultural heritage and require further research in the context of restoration and protection of monuments.

Keywords: Azerbaijan, Nakhchivan, Kharaba Gilan, architecture, decorative baked bricks, background ornaments

* doctoral student, scientific worker Azerbaijan National Academy of Sciences Institute of Archeology and Anthropology, Baku, Azerbaijan. E-mail: vbeydullazade@gmail.com, ORCID: <https://orcid.org/0009-0004-8645-339X>

**БУДІВЕЛЬНА КЕРАМІКА ТА ФОНОВИЙ ОРНАМЕНТ МАВЗОЛЕЇВ
СТАРОДАВНЬОГО ПОСЕЛЕННЯ ХАРАБА ГІЛЯН****Вусала Фазіл Бейдуллазаде*****Анотація**

За свою історію архітектура Азербайджану пройшла довгий шлях розвитку від неоліту до середньовіччя. Побудовані в цьому великому хронологічному діапазоні житла, оборонні системи, громадські споруди та меморіальні пам'ятки мали свої архітектурні особливості. Протягом століть техніка будівництва вдосконалювалася, були відкриті міцні будівельні матеріали, які поширилися по всьому світу. Серед будівельних матеріалів варто відзначити будівельну кераміку та калій (вапно з домішкою), які широко використовувалися при будівництві меморіальних пам'ятників і громадських споруд і сприяли інтенсивному розвитку архітектури.

Метою дослідження є аналіз архітектурних особливостей мавзолеїв поселення Хараба Гілян, побудованих з використанням будівельної кераміки та вапна (вапно з домішками), а також вивчення їх декоративних елементів, зокрема геометричного орнаменту та епіграфіки.

Методологія. У дослідженні використовувався комплекс методів аналізу: архітектурно-історичний аналіз, порівняльний метод. Проведено вивчення літературних джерел, археологічних даних та матеріалів реставраційних робіт.

Наукова новизна. У роботі розкривається значення калібрової та будівельної кераміки в розвитку азербайджанської архітектури, підкреслюється їх вплив на міцність, естетичну виразність і довговічність будівель. Дослідження демонструє, що «архітектурні сорочки» з елементами орнаменту та епіграфіки виконували не лише декоративну функцію, а й сприяли збереженню будівель.

Висновки. У результаті дослідження було встановлено, що такі будівельні матеріали, як обпалена цегла та дьоготь, сприяли створенню стабільних та естетично досконалих архітектурних об'єктів. Використання «архітектурних сорочок» з геометричним орнаментом і епіграфікою підкреслює високий рівень будівельної техніки в середньовічному Азербайджані. Аналіз показав, що ці архітектурні елементи є важливими для збереження культурної спадщини та потребують подальших досліджень у контексті реставрації та охорони пам'яток.

Ключові слова: Азербайджан, Нахичевань, Хараба Гілян, архітектура, декоративна випалена цегла, фоновий орнамент

Цитування: Beydullazade, V. (2025). Construction Ceramics and Background Ornaments of the Mausoleums of the Ancient Settlement of Kharaba Gilan. *Consensus*, 1, 32-46.
<https://doi.org/10.31110/consensus/2025-01/032-046>

URL: <https://konsensus.net.ua/index.php/konsensus/article/view/142>

* докторант, науковий співробітник Інституту археології та антропології Національної академії наук Азербайджану, Баку, Азербайджан. E-mail: vbeydullazade@gmail.com. ORCID: <https://orcid.org/0009-0004-8645-339X>

Introduction. Decorative bricks and intermediate ornaments, one of the most important building materials of medieval construction art, are important elements in architecture that reflect not only aesthetic value, but also the rich history of material culture. These elements, both as structural functionality and as a means of artistic expression, played a huge role in the development of Azerbaijani architecture¹. The main attention in the article is focused on exquisite art samples of medieval construction architecture. The main purpose of the study is to investigate the functional and aesthetic purpose of decorative bricks and intermediate decorations on the basis of building materials found in the ruined Gilan urban area, to determine the principles of application of these materials in medieval architecture, their place and importance in regional architecture². and aesthetic purpose of decorative bricks and intermediate decorations on the basis of building materials found in the ruined Gilan urban area, to determine the principles of application of these materials in medieval architecture, their place and importance in regional architecture.

Research objectives: 1. Analysis of the functionality of decorative bricks and their intermediate decoration: to determine the role they play in the architectural structure and their functions as building elements.

2. Investigation of aesthetic value: to evaluate the aesthetic characteristics of decorative bricks and intermediate decorations through the design principles of the ornaments used, artisanal techniques and means of artistic expression.

3. Identification of principles applied in architecture: to analyze how these materials were used in medieval architecture, their integration into structure and design.

4. Highlighting historical and cultural heritage: revealing the rich history and cultural traditions of Azerbaijani architecture through Found building materials.

5. Assessment of significance in the modern context: to analyze the role and potential application possibilities of decorative bricks and their intermediate decoration in the field of modern architecture and artistic expression.

This study provides in-depth knowledge of the functional and aesthetic role of decorative bricks and intermediate ornaments, which are one of the most important pearls of Azerbaijani architecture, both in terms of architectural history and cultural heritage, and serves to understand the place of these materials in medieval construction art in a broader context³.

Literature review (historiography of the problem). The study of building ceramics and background ornaments of mausoleums of the Kharaba Gilan settlement is based on a wide range of scientific works devoted to architecture, decorative arts and epigraphy of Azerbaijan.

¹ Badalova F Visual Facilities of Medieval Architecture in Azerbaijan // Architecture and Modern Information Technologies. 2021. № 1 (54). С. 114-122. DOI: 10.24412/1998-4839-2021-1-114-122. URL: https://marhi.ru/AMIT/2021/1kvart21/PDF/07_badalova.pdf

² Исмаїлова Л.Г. Азербайджанские архитекторы эпохи Возрождения (IX-XII вв.). URL: <https://cyberleninka.ru/article/n/azerbaydzhanskie-arhitektory-epohi-vozhrozhdeniya-ix-xii-vv/viewer>

³ The Architecture of Azerbaijan. (2017.). *Embassy of Azerbaijan in Chisinau*. Retrieved from <https://chisinau.mfa.gov.az/en/news/3159/the-architecture-of-azerbaijan>

Sources on architecture and decorative arts One of the key sources is the work of R. Efendi, T. Sir *Azerbaijan Decoration Art* (2010), which examines the decorative traditions of Azerbaijani art, including ornaments and their stylistic features. The study touches upon the issue of the use of building ceramics in the design of architectural structures, which is of interest for studying the mausoleums of Kharaba Gilan⁴.

The fundamental works on the architecture of medieval Azerbaijan belong to A.R. Salamzade and K.M. Mammadzade. Their works *The Son of Ishmael, and the Son of Isaac* (1976)⁵ and Salamzade A.R. *Monuments of Nakhchivan School of Azerbaijani Architecture* (1985) analyze the features of building traditions characteristic of medieval monuments, including mausoleums. These studies help to identify the specifics of ceramic decoration and its relationship with the general architectural trends of the region.

A classic work on the history of architecture in Azerbaijan is the collective monograph by M. Useynov, L. Bretanitsky and A. Salamzade's *The History of Architecture of Azerbaijan* (1963)⁶, which summarizes knowledge about architecture from various periods, including the use of building ceramics in mausoleums.

Epigraphy and historical and architectural research B. Ibrahimli made a significant contribution to the study of the mausoleums of Kharaba Gilan in the article about the Epigraphy of Ruined Gilan (2012)⁷. The author analyzes the epigraphic monuments preserved on the architectural structures of the region and their influence on the study of the historical context of the monuments.

B.I. Ibragimov's work *The Newly Discovered Mausoleum of the 12th century in Kharaba Gilan* (1984)⁸ also presents an important study on the architectural features of the newly opened mausoleum. The author examines its construction, the use of building ceramics and decorative features, which provides valuable information about the development of architecture in the XII century.

Analysis of building ceramics A study of the development of building ceramics in a broader context is presented in the work of Y. Majidzadeh *The development of the pottery kiln in Iran from prehistoric to historical periods* (1975)⁹. Although the article mainly examines the Iranian tradition, an analysis of the technological aspects of ceramic production allows us to draw parallels with the architectural monuments of Azerbaijan, including the mausoleums of Kharaba Gilan.

Historical and cultural context The bibliography *Historical Monuments and Toponyms of Azerbaijan* (2016)¹⁰, which contains an extensive list of sources on this topic, is useful for

⁴ Əfəndi R., Əfəndi T. Azərbaycan bəzək sənəti. Bakı, 2010. S. 52–54.

⁵ Salamzadə Ə.R. Əcəmi Əbubəkr oğlu və Naxçıvan məktəbi abidələri. Bakı: İşiq, 1976.

⁶ Salamzadə Ə.R., Məmmədzadə K.M. Azərbaycan memarlığının Naxçıvan məktəbi abidələri. Bakı: Elm, 1985.

⁷ İbrahimli B. Xaraba Gilanın epiqrafikası haqqında // Antik və Orta əsr Azərbaycan şəhərləri: Arxeoloji irsi, tarixi və memarlığı. Beynəlxalq Elmi Konfransın Materialları. Bakı, 2012.

⁸ Усейнов М., Бретаницкий Л., Саламзаде А. История архитектуры Азербайджана. Москва, 1963.

⁹ Majidzadeh Y. The development of the pottery kiln in Iran from prehistoric to historical periods. *Paléorient*. 1975. Vol. 3. Pp. 207–221. URL: <https://www.persee.fr>

¹⁰ Сафаралиева Г. (сост.). Исторические памятники и топонимы Азербайджана: библиография / спец. ред. и отв. за выпуск К. Тахиров; ред. Л. Ахундова. Баку, 2016.

understanding the general cultural and historical environment in which the architecture of mausoleums developed. An important place in the study of religious aspects related to mausoleums is occupied by the work *Religions of Central Asia and Azerbaijan. Volume I. Traditional Beliefs and Shamanism* (2016)¹¹, which examines the religious background of the Middle Ages.

The analyzed literature demonstrates that the study of building ceramics and background ornaments of the mausoleums of Kharaba Gilan is based on a wide range of scientific works covering architectural traditions, decorative arts, epigraphy and historical and cultural context. Further in-depth study of these aspects will make it possible to more fully reconstruct the artistic appearance and technological features of the mausoleums of this region.

Main material. The medieval architecture of Azerbaijan reflects the rich cultural heritage and main achievements of previous periods. The main innovations in the construction art of this period are the construction of grandiose buildings for various purposes using baked bricks, decorative baked bricks and clay as a fixing agent, which played an important role in the development of architecture. The decoration of facades of buildings and faces of tombs with complex geometric ornaments not only conditioned the development of material culture, but also created conditions for the revival of the ancient roots of the spiritual culture of the people from generation to generation. Decorative bricks and intermediate decorations are of great importance in formation of local features of Nakhchivan architectural school, preservation up to our time, promotion of national culture.

Decorative bricks and intermediate ornaments obtained during the study of medieval tombs in the ruined Gilan City are valuable examples of art, which clearly show the diversity of styles among architectural schools, revealing the existence of economic-cultural and architectural ties between the regions. Decorative bricks, used as decorative elements on the facades of architectural monuments, tombs, mosques and other structures, played an important role both for the aesthetics of architecture and for the reflection of deep traces of culture.

In the course of the study, archaeological objects and finds were thoroughly investigated using the methods of comparative, construction-technological, symbolic and iconographic analysis. At this time, similar tombs included in the Nakhchivan-Maragha School of architecture, their architectural method, construction ceramics were involved in the research. In general, the functional and aesthetic significance of decorative bricks and intermediate decorations in medieval architecture was investigated using various research methods. Ornaments on Memorial Monuments can be divided into three groups:

1. *Geometric patterns.*
2. *Epigraphic decorations.*
3. *Stamp pictorial and symbolic ornaments.*

The most complex and original examples of geometric ornaments are found in our

¹¹ The Architecture of Azerbaijan. (2017.). *Embassy of Azerbaijan in Chisinau*. Retrieved from <https://chisinau.mfa.gov.az/en/news/3159/the-architecture-of-azerbaijan>

architectural monuments of the Middle Ages. From this point of view, the tombs of Yusif Kuseyir Oglu (1162) and Momina Khatun (1187), built by Ajami Abubakr Oglu in Nakhchivan in the XII century, attract particular attention. Geometric patterns are generally divided into two main groups: simple and complex. Among the simple geometric patterns, baklava's similar motifs stand out, which became more complex over time and received the name 'kətəba'. Complex geometric ornaments were mainly applied in the artistic design of architectural monuments. In particular, the most beautiful and complex versions of these patterns are observed in architectural monuments built in the XIII-XIV centuries. Most of the geometric ornaments performed on stone, wood, clay carvings, as well as on bricks and tiles were built on the basis of a grid composition, formed from the repetition of certain figures and lines¹².

On each of the six faces of the mausoleum of Yusif ibn Kuseyir, independent geometric pattern motifs are embroidered with triangular, hexagonal, rhombic-shaped blocks, which are tightly combined with the main walls¹³. As a result of archaeological excavations carried out at the site of the city of Kharaba-Gilan since 1977, rich archaeological finds have been obtained that allow you to explore the long chronological period from the early Bronze Age to the late Middle Ages. A special place among these materials is occupied by finds of medieval architecture. Decorative fired bricks have played an important role in the history of architecture in making complex geometric ornaments in the form of blocks, known as 'architectural shirts'. These inscriptions and ornaments decorating the tombs of momuna Khatun, Yusif Kuseyir Oglu and Kharaba-Gilan are considered one of the important achievements of the Nakhchivan architectural school¹⁴.

The main achievements of the Nakhchivan architectural school are the tombs of Yusif Kuseyir Oglu (1162) and Momina Khatun (1186), which have survived to our time. The main building material in the monuments belonging to this school was baked bricks made of clay. These bricks had different shades of color (yellow, pink, reddish or green). Their standard dimensions were 20×20×5 CM. Decorative bricks, cladding and glazed tiles were used in geometric ornaments.

The sunken parts of the surfaces are covered with geometric ornament as a whole. This technique was previously observed in the Tomb of Yusif Kuseyir oglu. However, the ornaments in this monument were made in the color of ordinary bricks. In the Tomb of Momina Khatun, along with the complication of the structure of the ornament, the inclusion of turquoise elements in its composition can be regarded as an important innovation. As a result of the creation of more complex ornaments and the application of turquoise color, the patterns on the surfaces of the Tomb of Momina Khatun became richer and more expressive¹⁵. In addition, the floral images on the GEC filling between the

¹² Əfəndi R., Əfəndi T. Azərbaycan bəzək sənəti. Bakı, 2010. S. 16.

¹³ Усейинов М., Бретаницкий Л., Саламзаде А. История архитектуры Азербайджана. Москва, 1963. С. 97.

¹⁴ İbrahimli B. Xaraba Gilanın epigrafiyası haqqında // Antik və Orta əsr Azərbaycan şəhərləri: Arxeoloji irsi, tarixi və memarlığı. Beynəlxalq Elmi Konfransın Materialları. Bakı, 2012. S. 341.

¹⁵ Salamzadə Ə.R. Əcəmi Əbubəkr oğlu və Naxçıvan məktəbi abidələri. Bakı: İşiq, 1976. S. 24.

decorative bricks that make up the geometric ornaments have deformed and eroded over time, being exposed to external influences – rain, snow and wind. However, within the framework of the restoration work, a significant part of the floral images on the GEC were restored again. Quadrangular, Hexagonal and octagonal medallions were used among architectural inscriptions and geometric ornaments. Three different types of these medallions are found. Medallions of the first type were made by casting on quadrangular fired bricks. These medallions were cast in portions and cooked with high quality.



Fig. 1. Medallions of the first type

Hexagonal medallions are mainly made of cashmere. They were placed on hexagonal tiles about 2.0–2.5 cm thick with brown glaze symmetrically, and the remaining areas were covered with blue glaze and baked. Although these inscriptions look aesthetically pleasing, the main problem is that the inscriptions do not fit snugly on the tile. It is possible to determine the content or meaning of the inscriptions by the location of the letters on the tiles. Interestingly, the blue glaze adheres more strongly to the tile than other colours, so their location is easily distinguished against the background of the blue glaze, although the inscriptions are cast. The inscriptions of the third type were also cast on tiles, but in a completely different way. These inscriptions are made mainly in the

form of an octagon formed by the symmetrical intersection of two quadrangles of the same size. Exquisite inscriptions and patterns were laid out on the tile with different colors, brush, and then covered with a layer of colorless glaze and baked. The octagonal tomb located in the first memorial complex in Kharaba-Gilan city is one of the clearest examples of the Nakhchivan architectural school. This tomb is a tower-type monument with a central dome. Each of the brick blocks covering its facade is decorated with different patterns. The architecture of the Kharaba-Gilan tomb is in many ways similar to the tombs of Yusif ibn Kuseyir and Momina Khatun. Nakhchivan architects used decorative bricks to create patterned ornaments. In the architecture of Central Asia, such ornaments were laid on the GEC. Decorative baked bricks were skillfully used in these three adbeds. Of the decorative bricks discovered in the ruined Gilan area, it is exactly the same as the bricks found in the other two monuments. The ornaments on the facade of the tomb are made in the form of symmetrical compositions. Each ornament consists of six, eight or quadrangular shapes located in the center. Nakhichevan architects made details and proportions of ornaments with great skill, which ensured the exquisite and elegant appearance of the tombs. The door and decorative elements of the Kharaba-Gilan Tomb resemble the Tomb of Momina Khatun. This similarity indicates the general style and direction of development of the Nakhchivan architectural school¹⁶. The consequences of the preference for brick were of great

¹⁶ Ибрагимов Б.И. Нововыявленный мавзолей XII в. в Хараба Гилане. Доклады Академии Наук Азербайджанской ССР. 1984. Т. XL, № 7. С. 90.

importance for the history of architecture not only in Nakhchivan, but elsewhere. First of all, as a result of this advantage and use, various new stylistic forms have arisen in architecture. It should also be noted that brick, due to its low cost, is perhaps the most affordable of all construction tools. Brickwork buildings become simple and durable. But the large flat surfaces that the brick construction naturally creates create difficulties for the decor. Medieval architects had made extensive use of the decorative possibilities of brick. The use of tiles opened up great opportunities for architects in obtaining more effective decorations and enhancing artistic expressiveness. In 2024, during the excavation of the tomb in the second memorial Complex in the II memorial Complex at the site of Kharaba Gilan, a large number of ara decorations with various ornaments and decorative baked bricks made of Gage were discovered¹⁷. Since traces of decorative bricks remain in the intermediate decorations, it is possible to determine which bricks were processed where the ornament was made. There are examples of ancient roots among the ARA ornaments. Among them, intermediate decorations with the image of the swastika, the sun and the moon attract attention. The image of the swastika, which the Turks called 'their' icon, has been considered throughout history as a symbol representing the four main entities of mankind, and in some cases the sun. Scientific research shows that the term is of Indian origin, with the 'sva' part meaning 'good' and 'asti' meaning 'to be'¹⁸.

According to historical sources, the swastika is widespread as a symbol that carries the meaning of happiness and desire. In Islamic culture, this sign was known and widely used under the name 'cherkhi-Falek'. This religious and decorative element, the ends of which are directed in four directions in the form of rectangles, was applied in the culture of Azerbaijan from the Neolithic to the XIX century in various objects, including household items and architectural samples. According to the conclusions of German and Italian scientists who studied the origin of the swastika, this icon is considered a symbol of the sun. According to research, the initial image of the sun (striped circle) was stylized over time and brought to a more simplified form, resulting in the swastika symbol¹⁹. The swastika-patterned ara decoration discovered during the excavation of Tomb No. 1 of the second memorial complex is 6.0 cm wide and 7.0 cm long. The GEC ornament with a depth of 0.8-1.3 cm of the patterns was laid by the pressing method, only one of this ornament was found. And the thickness is 2.8 cm in the middle and 1.8 cm at the edges.

A total of 18 fragments of ara decoration with a relief pattern were found, four of them are whole. The length is 9.8 cm, the width is 9.4 cm, the depth of the patterns is 0.9-1 cm. In the ornament with the length of the flat pattern in the middle of 8.4 cm, the diameter of the dots is 0.8 cm and 0.7 cm from the edge. Circular patterns are 8.6 cm in diameter and 1.3-1.8 cm wide.

¹⁷ Badalova F. Visual Facilities of Medieval Architecture in Azerbaijan. *Architecture and Modern Information Technologies*, 2021. (1) 54. DOI: [10.24412/1998-4839-2021-1-114-122](https://doi.org/10.24412/1998-4839-2021-1-114-122)

¹⁸ Əfəndi R., Əfəndi T. *Azərbaycan bəzək sənəti*. Bakı, 2010. S. 71.

¹⁹ Мицаи. Религии Центральной Азии и Азербайджана. Т. I: Традиционные верования и шаманизм. Самарканд, 2016. С. 44.



Fig. 2. Swastika pattern decoration

There is a difference in the size of the intermediate ornaments in the form of a Seljuk chain according to the place of processing. So far, decorations with 2, 3, 4 rings have been discovered. The width of the chain is 1.8-2.0 cm, the depth of the patterns is 0.8-0.9 in the middle and 0.3-0.4 cm at the edges. The length of the ornament in the image is 10.8 cm, the width is 4.0 cm, the thickness is 3.0-3.7 cm. Presumably, it was mainly worked out on the edges of the compositions.

In the intermediate decoration in a circular shape, the diameter of the circle in the middle is 8.5 cm, and the strip around the circle is decorated with triangular basma patterns. The seat of the triangles is 3.0 cm, the height is 1.5 cm, the seat inside the Strip is arranged at a certain interval towards the circle. On the left side of the decoration there are two circular cuts 4.2 cm apart (depth-4.5 cm). Most likely it is the location of decorative baked bricks²⁰. Also on the perimeter of the decoration are visible traces of bricks. The diameter of the intermediate decoration is 14.2 cm, the thickness is 2.1 cm in the middle. Intermediate ornament with a single-handed Seljuk chain pattern, length 9.8-8.8 cm, width 2.0-4.0 cm, thickness 3.8 cm, depth of ornaments 1.3-0.9 cm. There is a triangle pressing pattern on the end of the chain. It seems that these intermediate decorations are more often embroidered in the corners, where the patterns intersect. Single-stranded chain ornaments adorn both the side and head sides of decorative bricks. In the completed place there is a triangle printing pattern, the length of the pattern is 8 cm, the width is 4.5-5.3 cm, the thickness is 1.9 cm, and the depth of the

There is a difference between point patterns. There is a distance of 4 cm on one side and 4.5 cm on the opposite side. In general, the molding of this ornament, which is laid out by the pressing method, is not standard. At first glance, it seems that the mold was laid on wet clay, but in fact, the finished mold was pressed onto the wet mortar. And before pressing, the mold was immersed in a gray powder solution.

Ornaments embroidered between the bricks at the corners and edges of the pattern composition have also been found. Depending on the location, the sizes and depth of the patterns vary, and the middle patterns are drilled slightly deeper than the edge patterns. Another intermediate ornament consists of three parallel lines with a length of 14 cm and a width of 3.6-4.0 cm. The depth of the line in the middle is 0.9-1.0 cm, the depth of the lines on the sides is 0.3-0.4 cm, the length of the patterns is 12.4 cm, and the thickness of the



Fig. 3. Processing of intermediate ornaments in the form of Seljuk chain

²⁰ Salamzadə Ə.R., Məmmədzadə K.M. Azərbaycan memarlığının Naxçıvan məktəbi abidələri. Bakı: Elm, 1985. S. 33-36.

patterns is 1.3–0.9 cm. The depth of the middle patterns of the GEC with an intermediate ornament with a printed pattern is 1.2 cm, while the depth of the patterns on the edge is 0.6–0.9 cm. The width of the fragment is 8 cm, the thickness is 4 cm, and the height is 9.8 cm.

On one side, the location of the decorative baked brick is visible.

Drop-shaped decorative baked bricks located on the columns located in the exterior of the Tomb of Momina Khatun were also found in the ruined Gilan tombs²¹. Drop-shaped decorative baked bricks have a difference in size and are 4.6 cm wide and 9.7 cm high, and their baking is of very high quality. This brick, cut using formwork, is of a certain thickness for placement on the wall. A small-sized drop-shaped decorative brick is 4.5 cm wide and 8.5 cm high. And the thickness of the brick is 8.5 cm.



Fig. 4. Drop-shaped decorative baked bricks

A quarter of a 3 cm thick square-shaped baked brick was found. Such bricks border the Facing of the tomb from below and above, and their dimensions are 11×10.2 cm. Decorative baked bricks with an arc on one side are divided into 22.6 cm in diameter into 5 parts, starting from the center, before baking laid in a round brick mold. These bricks were used in the columns adjacent to the wall framing the faces of the Tomb. The sides are 10.8 cm, the thickness is 5 cm. The dimensions of the sides of the fired brick are 10.5×8.6 cm, and the thickness is 4.5–4.8 cm. About a quarter of a square-shaped brick has a double strip drawn on it before baking with a finger on a diagonal. This is a sign of the master on the brick, which indicates the number of bricks in a certain amount, in a word, the sign was used for purpose.

Decorative baked brick of a semicircular shape is, for the time being, the smallest of the bricks of a similar shape²². The reach is like an arch. It can be the underside of writing in Arabic script. Its dimensions, 7.5×7.8 cm, thickness is 4.1 cm. The width of the hollow in the middle is 2 cm, the depth is 2.2 cm. Decorative baked brick in the form of a semicircle is cut and made of square bricks with a thickness of 5 cm, which were removed from the mold before baking. In this form, brick specimens with different sizes are found. Its dimensions are 7.5×10 cm, its thickness is 5 cm, and the width of the hollow in the middle is 4.2 cm, and its depth is 2.5 cm. Decorative baked brick, made in the form of half of an oblong ring, is the largest of the bricks of this shape, which has been discovered for the time

Fig. 5. double strip drawn before baking with a finger



Fig. 5. double strip drawn before baking with a finger

²¹ Сафаралиева Г. (сост.). Исторические памятники и топонимы Азербайджана: библиография / спец. ред. и отв. за выпуск К. Тахиров; ред. Л. Ахундова. Баку, 2016. С. 47.

²² Ибрагимов Б. И. Нововьявленный мавзолей XII в. в Хараба Гилане. Доклады Академии Наук Азербайджанской ССР. 1984. Т. XL, № 7. С. 87–91.



Figure 6

being. Its dimensions are 11.6×9.2 cm, and its thickness is 5.4 cm. The dimensions of the hollow in the middle are 6×4.6 cm, and the depth is 2.4 cm. Decorative baked brick in the form of a Pentagon, and the length of its four sides is 7.5 cm. When cutting the back, a corner was taken relatively thick (40 cm) in this form there are bricks of different sizes. The dimensions of the discovered such bricks differ little from each other.

Some of the decorative baked bricks cut into cubes from baked bricks 4.5 cm thick have a relatively thick back. These bricks are worked on the border of the cladding and differ in size, like decorative fired bricks, which are drop-shaped. One of these bricks used in the architectural shirt is the big one in the form of a small cube.

The dimensions of the decorative baked brick cut into a quadrangular shape are 11×4.5×7.5 cm, the thickness is 4.7 cm. Decorative baked bricks of various sizes in the form of triangles were found in the ruined Gilan tombs. The thickness of one of them is 5 cm, the seat is 10.5 cm, and the length of the sides is 7.5 cm. One is a slice-shaped brick cut from a round brick. The dimensions of the brick are 10.0×11×3.5 cm.

The triangle-shaped otherscarpic measures 11.5×10.5×5 cm. Decorative baked bricks made in trapezoidal forms are made in different sizes. There are also examples of decorative baked bricks in the



Figure 7



Figure 8

form of the letter 'S'. Since they are found separately, it is difficult to determine where their composition was processed. 50–60 's' shaped decorative bricks were found. Large and small size decorative bricks of 'S' shape were also used in the Tomb of Momina Khatun. The dimensions of large decorative bricks are 3.5×11.0×6.0 cm.

The reverse side of the decorative baked brick in a circular shape is cubic in shape. The diameter of the brick is 5.2 cm, the dimensions of the cubic part are 4.0×4.0×5.0 cm, the height is 10.5 cm.

Decorative baked bricks of various shapes are found in the ruined Gilan City area. Almost all of the decorative bricks here are geometric in shape. Decorative baked bricks in the form of trapeziums, rhombuses, triangles, cubes and quadrangles are the majority. Geometric ornaments are similar to ornaments in the Tomb of Momina Khatun. This is confirmed by the similarity of The Shape of the decorative bricks found in the tombs, the same layout of the

decorative bricks left on the walls²³. In 2024, four turquoise-colored Kashi fragments were found in Tomb No. 1 of the second Memorial Complex in the ruined Gilan City site. Tile fragments have a quality color layer. The integrity of the glaze layer on the ceramics, the absence of color fading, the remaining brightness confirm that it is an alloy. One side is triangular in shape. The thickness of the Scutes is 1.5 cm, the length of the angular part is 3.1 cm, and the wingspan varies in the range of 5.9–9.0 cm. Whitening is observed in the layers of glaze this is also due to the fact that the tiles are exposed to moisture.

Tiles in the form of a cross with triangular saving wings are usually found in decorations called ‘qirix’. In ‘Qirix’ ornaments, there is an octagon in the middle of four cruciform tiles and an embroidered tile on top. Similar clay samples are kept in the Hermitage Museum in St. Petersburg, Russia. These tiles are also turquoise in colour, their size is 4.5×3.6×1.5 cm. The fact that these tiles placed in the Hermitage in the section on Iran are similar to those found in Nakhchivan suggests that they also belong to the Nakhchivan–Maragha School of architecture.



Figure 10

Burnt bricks discovered in the ruined city of Gilan, the middle of which is carved in The Shape of a semicircle, are an element of calligraphic decoration. It should be noted that ordinary and decorative fired bricks used in the construction of monuments of Nakhchivan architectural school are much better quality than baked bricks found in other regions of Azerbaijan. Studies have shown that decorative fired bricks and intermediate decoration have long been the main building material in the construction of memorial

monuments decorated with complex geometric ornaments. The tombs explored in the first and second memorial complexes in Kharaba Gilan city allow a comprehensive study of the monuments of the Nakhchivan School of architecture. Each tomb and memorial monument is lined with brick blocks decorated with different ornaments²⁴. These ornaments consist of six, eight and quadrangular figures arranged in the form of symmetrical compositions and have exquisite and elegant details. The dimensions of each ornament and its precise processing to the smallest detail show the high level of skill of Nakhchivan architects in this area. The facade decoration of the cube-shaped tomb in the ruined Gilan City Place



Figure 9

²³ Majidzadeh Y. The development of the pottery kiln in Iran from prehistoric to historical periods. *Paléorient*. 1975. № 3. С. 207–221. URL: <https://www.persee.fr>

²⁴ Гияси Д. Архитектура Азербайджанского Средневековья. *IRS-Heritage*. 2006. № 1 (19). С. 18–22. URL: <https://irs-az.com/new/pdf/090621141215.pdf>.

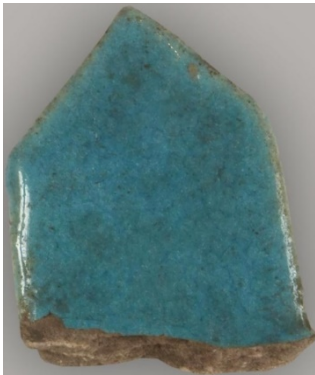


Figure 11

consists of corner columns and wall surfaces inlaid with patterned bricks. According to these characteristics, it can be said that it is similar to the Tomb of the 'Red Dome' in Maragha²⁵. The ornate bricks of the Kharaba-Gilan tomb were often worked in the corners and in certain parts of the walls. The different sizes and shapes of these decorations vary according to the location of each element. Also, on flat surfaces, naturally created by brick, important decorative styles and designs were applied. Medieval architects made the most of the decorative possibilities of brick, creating new and important stylistic forms. Although the Nakhchivan memorial monuments have been thoroughly studied for many years by various fields of art and, in particular, by architects, but little attention was paid to intermediate decorations

and construction ceramics, no attempts were made to interpret the essence of the patterns, to reveal their semantic meaning. Studies show that semantic and calligraphic ornaments were used in Nakhchivan memorial monuments. The decorative bricks and intermediate decorations of medieval architecture are an important archaeological and architectural legacy that carries not only aesthetic value, but also reflects the culture of the time, the belief system and the life of the people²⁶. Ornaments of tombs in Nakhchivan city and in Kharaba Gilan city and ara decorations on Gaj demonstrate the construction techniques of simple and complex style forms in the history of architecture, and the results of the research conducted in this direction reveal the rich history of the culture of Azerbaijan²⁷.

Conclusion. In medieval Azerbaijani architecture, decorative bricks and intermediate ornaments acted as important functional and aesthetic elements. Within the framework of this study, the analysis of building materials found in the ruined Gilan urban area showed that decorative bricks and intermediate decorations not only increased the aesthetic value of buildings, but also acted as an architectural code reflecting the socio-cultural and economic characteristics of the era. These decorative elements, which play an important role in the preservation and development of the local features of the Nakhchivan-Maragha architectural school, are valuable examples of art demonstrating the diversity of styles among architectural schools. The widespread use of geometric, epigraphic and symbolic ornaments on medieval tombs, mosques and other monumental structures influenced the formation and development of their architectural traditions. The conducted studies show that complex technological methods were used in the preparation of decorative bricks, and the uniqueness of architectural monuments was ensured through

²⁵ Salamzadə Ə.R., Məmmədzadə K.M. Azərbaycan memarlığının Naxçıvan məktəbi abidələri. Bakı: Elm, 1985. C. 184.

²⁶ Religions of Central Asia and Azerbaijan. Volume I. Traditional Beliefs and Shamanism. Samarkand: MITSAL, 2016. P. 105.

²⁷ Достиев Т.М. Средневековая городская культура Азербайджана: инновации и традиции. *Археология Евразийских степей*. 2018. № 4. С. 222–223. URL: <https://cyberleninka.ru/article/n/srednevekovaya-gorodskaya-kultura-azerbaydzhana-innovatsii-i-traditsii>

various patterns and compositions. In particular, geometric ornaments observed on the facades of Momina Khatun and Yusif Kuseyir Oglu tombs belonging to the Nakhchivan architectural school prove the high level of construction technology and artistic thought during this period. Thus, the study of decorative bricks and intermediate ornaments in medieval architecture not only determines their functional and aesthetic significance, but also proves the richness and sustainable development of the architectural heritage of Azerbaijan. The results of this study serve as a valuable resource for future archaeological and architectural research and contribute to the preservation and promotion of our national culture.

REFERENCES

- Badalova, F. (2021). Visual Facilities of Medieval Architecture in Azerbaijan. *Architecture and Modern Information Technologies*, (1) 54, 114–122. Retrieved from https://marhi.ru/AMIT/2021/ikvart21/PDF/07_badalova.pdf [in English].
- Dostiev, T.M. (2018). Srednevekovaia gorodskaia kultura Azerbaidzhana innovatsii i traditsii [Medieval Urban Culture of Azerbaijan: Innovations and Traditions]. *Arkheologiia Evraziiskikh Stepei*, 4, 222–223. Retrieved from <https://cyberleninka.ru/article/n/srednevekovaya-gorodskaya-kultura-azerbaydzhana-innovatsii-i-traditsii> [in Russian].
- Əfəndi, R. & Əfəndi, T. (2010). *Azərbaycan bəzək sənəti* [Azerbaijan Decoration Art]. Bakı [in Azerbaijani].
- Giyasi, D. (2006). *Arkitektura Azerbaydzhanskogo Srednevekov'ya* [Architecture of Azerbaijani Middle Ages]. *IRS-Heritage*, 1(19), 18–22. Retrieved from <https://irs-az.com/new/pdf/090621141215.pdf> [in Russian].
- Safaraliev, G. (Comp.), Takhirov, K. (Ed.) & Akhundova, L. (Red.). (2016). *Istoricheskie pamiatniki i toponimy Azerbaidzhana: Bibliografiia* [Historical monuments and toponyms of Azerbaijan: Bibliography]. Bakı [in Russian].
- İbrahimli, B. (2012). *Xaraba Gilanın epigrafikası haqqında* [On the epigraphy of Kharaba Gilan]. In *Antik və Orta əsr Azərbaycan şəhərləri: Arxeoloji irsi, tarixi və memarlığı. Beynəlxalq Elmi Konfransın Materialları*, 340–353). Bakı [in Azerbaijani].
- Ibragimov, B.I. (1984). *Novozyivaylenmy mauzoley XII v. v Kharaba Gilane* [Newly discovered 12th-century mausoleum in Kharaba Gilan]. *Doklady Akademii Nauk Azerbaidzhanskoy SSR*, 40 (7), 87–91. [in Russian].
- Ismailova, L.G. *Azerbaidzhanskii arkhitektory epokhi Vozrozhdeniia (IX–XII)*. [Azerbaijani Renaissance Architects (IX–XII Centuries)]. Retrieved from <https://cyberleninka.ru/article/n/azerbaydzhanskie-arhitektory-epohi-vozhrozhdeniya-ix-xii-vv/viewer> [in Russian].
- Majidzadeh, Y. (1975). The Development of the Pottery Kiln in Iran from Prehistoric to Historical Periods. *Paléorient*, 3, 207–221. Retrieved from <https://www.persee.fr> [in English].
- Medieval Azerbaijan and the Development of its Visual Media. (2022). *Vestnik MGSU*, 17 (1), 11–20. DOI: <https://doi.org/10.22227/1997-0935.2022.1.11-20> [in English].
- Religions of Central Asia and Azerbaijan (2016). Volume I. Traditional Beliefs and Shamanism. Samarkand: MITSAI [in English].
- Salamzadə, A.R. (1976). *Əcəmi Əbubəkr oğlu və Naxçıvan məktəbi abidələri (A.R. Salamzade and the Son of Ishmael, and the Son of Isaac)*. Bakı: Işıq [in Azerbaijani].
- Salamzadə, A.R. (1985). *Azərbaycan memarlığının Naxçıvan məktəbi abidələri* [Monuments of Nakhchivan

School of Azerbaijani Architecture]. Baku: Elm [in Azerbaijani].

The Architecture of Azerbaijan. (2017). *Embassy of Azerbaijan in Chisinau*. Retrieved from <https://chisinau.mfa.gov.az/en/news/3159/the-architecture-of-azerbaijan> [in English].

Useynov, M., Bretanitsky, L. & Salamzade, A. (1963). *Istoriya arkhitektury Azerbaidzhana* [History of Azerbaijani Architecture]. Moscow [in Russian].