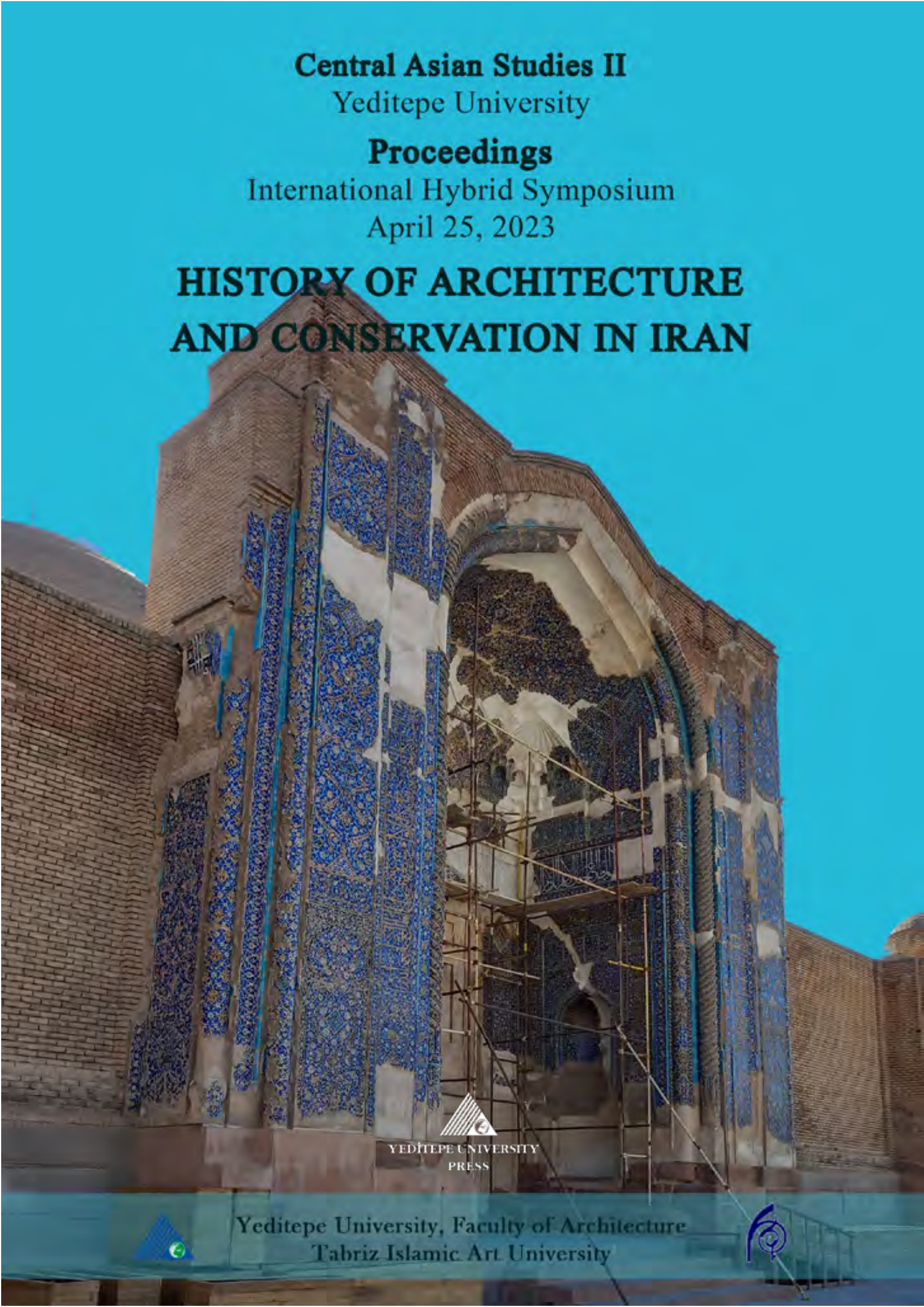
Central Asian Studies II
Yeditepe University

Proceedings
International Hybrid Symposium
April 25, 2023

HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN



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Yeditepe University, Faculty of Architecture
Tabriz Islamic Art University

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HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN

International Hybrid Symposium

PROCEEDINGS

YEDITEPE UNIVERSITY, FACULTY OF ARCHITECTURE &
TABRIZ ISLAMIC ART UNIVERSITY

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PREFACE

Iran and Turkey, two countries with unique, old and rich historical civilizations, have many cultural partnerships. For the protection of the architectural remnants of the civilizations of common heritage of Turkish governments such as the Seljuks and Ilkhanids, which have a commen cultural value in the lands of the two countries, necessitated the investigation of their architectural relations along with local cultural influences. In this symposium, it is aimed to understand the common plan features, ornametation orders and construction techniques, and to obtain architectural communication components by examining the original architectural remains built during the Great Seljuk period in Iran.

This study is a type of fundamental-theoretical and technical research dating back to before the 15th century, focusing on building technology in Iran and Turkey, and its results will be able to provide technical and scientific assistance to experts in the history of architecture and restoration. The aim of this study will be to present a comparative analysis of the architectural decoration and building elements of the Anatolian Seljuk period, which started in 1071 in Turkey, with the Turkish (Seljuk) Architecture in Iran. With these respects, in this symposium, the early architectural features of Iranian Architecture (before the 15th century) will be examined and compared with the features of early Turkish Architecture in Anatolia (from the 11th century).

Organized in cooperation with Yeditepe University and Tabriz Islamic Arts University, this symposium is the second study* examining the origins of Anatolian Turkish Architecture in Central Asia. In this book, you will find studies by academics from Istanbul and Tabriz, which will explore the History of Iranian Architecture and the challenges of the conservation of the architectural heritage.

Moderator
Prof. Dr. Ayşe Gülçin Küçükkaya
April 2023, Istanbul

*See for the first book;
https://drive.google.com/drive/folders/1Z_GWXsHqqKjIs_RJG2WYZ5yjtjEVLnPb?usp=sharing

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN

SYMPOSIUM PROGRAM

APRIL 25, 2023

Link to join Webinar
https://zoom.us/j/3270525861

Turkey/**Iran**	***OPENNING SPEECHES***
9.00-9.20/	*Moderator,* ***Prof. Dr. AYŞE GÜLÇIN KÜÇÜKKAYA****, Yeditepe University*
10.00-10.20	*Dean,* **Prof. Dr. Ahad Nejad EBRAHIMI,** Tabriz Islamic Art University

9.20-13.00/**10.20-14.00** **HISTORY OF ARCHITECTURE IN IRAN** (Chair; **Prof. Dr. Ahad Nejad EBRAHIMI**)

Section I

"*Seljuk Architecture with an Emphasis on Iranian Azerbaijan",* **Prof. Dr. Ahad Nejad EBRAHIMI,** Tabriz Islamic Art University, **Ph.D. Candidate Mahya TOORANPOOR,** Tabriz Islamic Art University

"Studying the Structure and Decorations of Tabriz Grand Mosque in the Seljuk Period", **Prof. Dr. Farzin HAGHPARAST,** Tabriz Islamic Art University**, Dr. Nahideh REZAEI,** Tabriz Islamic Art University, **Dr. Raana Najjari NABI,** Shahid Rajaee Teacher Training University, Tehran

"*A Study of the Ardebil Jomeh Mosque with an Emphasis on the "Gonbad Khaneh", or the dome Chamber",* **Prof. Dr. Ahad Nejad EBRAHIMI,** Tabriz Islamic Art University, **Prof. Dr. Farhad AKHOUNDI**, Tabriz Islamic Art University**, Sayed Jafar HASHEMI**, Arak University, **Master Student Zahra DADJOU**, Tabriz Islamic Art University

"The Investigation of the Architectural Structure of Masjid-I Jami of Urmia, Emphasizing Dome-Chamber", ***Prof.*** **Dr. Mozaffar ABBASZADEH**, *Urmia University,* **Ph.D. Candidate Leila DANESH,** *University of York,* **Master Student *Aram ALIZADEGAN****,** *University of Tehran,* **Master Student *Soroor TARIGHI****,** *University of Tehran*

"Comparing Turkmen and Timurid Mosques Architecture", **Ph.D. Candidate Aref Azizpour SHOUBI**, Tabriz Islamic Art University, **Prof. Dr. Ahad Nejad EBRAHIMI,** Tabriz Islamic Art University

"Evaluation of Morphology of Historical Marketplaces from the Seljuk to the Pahlavi Dynasty" (Case study: Tabriz Grand Bazaar)" **Prof. Dr. Farzin Haghparast,** Tabriz Islamic Art University, **Dr. Raana Najjari Nabi,** Shahid Rajaee Teacher Training University, Tehran, **Dr. Nahideh Rezaei,** Tabriz Islamic Art University

"Impacts of Iran Architecture on Anatolian Turkish Architecture", **Prof. Dr. Ayşe Gülçin KÜÇÜKKAYA**, Yeditepe University

13.00-14.00/**14.00-15.00** **L u n c h**

14.00-17.00/**15.00-18.00** **R E S T O R A T I O N** (Chair; **Prof. Dr. Farzin HAGHPARAST**)

Section II

"Recognition of the Architecture and Restoration of Tabriz's Goy-Masjid (Blue Mosque)", **Prof. Dr. Ahad Nejad Ebrahimi**, *Tabriz Islamic Art University,* **Ph.D. Candidate Aylar Javadpour**, Tabriz Islamic Art University

*"*A Model for Conservation of Historical Buildings and Sites the Role of Cultural Heritage Organization", **Prof. Dr. Farzin Haghparast-**Tabriz Islamic Art University, Faculty of Architecture and Urbanism

"Heritage Conservation Techniques and Their Application in Tabriz Historic Houses: A Case Study of Sadaghiani's House", **Prof. Dr. Ahad Nejad EBRAHIMI,** Tabriz Islamic Art University, **Ph.D. Candidate Masha Shab AHANG**, Tabriz Islamic Art University

"Conservation of Natural Heriytage in Kendovan/Iran", **Prof. Dr. Ayşe Gülçin KÜÇÜKKAYA**, Yeditepe University **Master Student Yeganeh BELOON,** Yeditepe University,

"Iran Grand Museum Complex in Tehran", **Ph.D. Candidate Hamid Binaei FAAL**, ICOMOS Consultant of Iran (unpublished)

17.00-18.00/**18.00-19.00** **C o n c l u s i o n**

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN

TABLE OF CONTENTS

SECTION I
HISTORY OF ARCHITECTURE IN IRAN

Seljuk Architecture with an Emphasis on Iranian Azerbaijan *1*
Prof. Dr. AHAD NEJAD EBRAHIMI, Ph.D. Candidate MAHYA TOORANPOOR

Studying the Structure and Decorations of Tabriz Grand Mosque in the Seljuk Period *21*
Prof. Dr. FARZIN HAGHPARAST, Dr. NAHIDEH REZAEI, Dr. RAANA NAJJARI NABI

A Study of the Ardebil Jomeh Mosque with an Emphasis on the "Gonbad Khaneh", or the dome Chamber 37
Prof. Dr. AHAD NEJAD EBRAHIMI, Prof. Dr. FARHAD AKHOUNDI, SAYED JAFAR HASHEMI, Master Student ZAHRA DADJOU

The Investigation of the Architectural Structure of Masjid-I Jami of Urmia, Emphasizing Dome-Chamber 61
Prof. Dr. MOZAFFAR ABBASZADEH, Ph.D. Candidate LEILA DANESH, Master Student ARAM ALIZADEGAN, Master Student SOROOR TARIGHI

Comparing Turkmen and Tımurid Mosques Architecture *79*
Ph.D. Candidate AREF AZIZPOUR SHOUBI, Prof. Dr. AHAD NEJAD EBRAHIMI

Evaluation of Morphology of Historical Marketplaces from the Seljuk to the Pahlavi Dynasty (Case study: Tabriz Grand Bazaar) 93
Prof. Dr. FARZIN HAGHPARAST, Dr. RAANA NAJJARI NABI, Dr. NAHIDEH REZAEI

Historical Development of Masjed-e Jame of Isfahan 111
Ph.D. Candidate HAMID BINAEI FAAL (ICOMOS/Iran Consultant), Ph.D. Candidate TANSU DOĞAN (Ed.)

History and Development of Sheik Safi Al-din Khanegah and Shrine Essemble in Ardabil..... 145
Ph.D. Candidate HAMID BINAEI FAAL (ICOMOS/Iran Consultant), Ph.D. Candidate PINAR LÜTFİYE ALKAN (Ed.)

Impacts of Iran Architecture on Anatolian Turkish Architecture *177*
Prof. Dr. AYŞE GÜLÇİN KÜÇÜKKAYA

SECTION II
RESTORATION IN IRAN

Recognition of the Architecture and Restoration of Tabriz's Goy-Masjid (Blue Mosque).....*195*
Prof. Dr. AHAD NEJAD EBRAHIMI, Ph.D. Candidate AYLAR JAVADPOUR

A Model for Conservation of Historical Buildings and Sites the Role of Cultural Heritage Organization.....231
Prof. Dr. FARZIN HAGHPARAST

Heritage Conservation Techniques and Their Application in Tabriz Historic Houses: A Case Study of Sadaghiani's House.....*247*
Prof. Dr. AHAD NEJAD EBRAHIMI, Ph.D. Candidate MASHA SHAB AHANG

State of Conservation of Masjed-e Jame of Isfahan.....*265*
Ph.D. Candidate HAMID BINAEI FAAL (ICOMOS/Iran Consultant), Ph.D. Candidate TANSU DOĞAN (Ed.)

Conservation of Natural Heritage in Kendovan, Iran.....*287*
Prof. Dr. AYŞE GÜLÇİN KÜÇÜKKAYA, Master Student YEGANEH BELOON

SYMPOSIUM PHOTOGRAPHS.....300

SECTION I

HISTORY OF ARCHITECTURE IN IRAN

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
INTERNATIONAL HYBRID SYMPOSIUM - APRIL 25, 2023
Yeditepe University, Faculty of Architecture, Istanbul, Turkey
Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

SELJUK ARCHITECTURE WITH AN EMPHASIS ON IRANIAN AZERBAIJAN

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Abstract

The Seljuk's were a tribe of the Oghuz Turks, they came to govern the regions of Iran by defeating the Ghaznavids and the Al-e-Buyeh tribe. The change of the ruling religion centered on the Abbasid caliph in Baghdad made them try to use architecture to show their religious and ethnic identity. With brick, a durable material, they built buildings that have been able to maintain their grandeur and splendor until today. Most of the remaining buildings include religious, tombs, service and public buildings and can be seen in different geographical locations in different states of Iran, Afghanistan and Turkey. One of them was the Azerbaijan state, which, despite having common features with the architecture of other places, has differences in shape, form and materials. The purpose of this research is to find these differences and similarities. The research results show that there are similarities in the field of materials; but regarding the type of decorations, the buildings of this region have complex geometry while being simple. But the pattern of mosques is completely different from the others in this period. Despite the presence of the domed area and the porch in this period, the mosques of this region have accepted the new model in continuity and loyalty to the previous model.

Key words: *Azerbaijan Architecture, Seljuk Architecture, East Azerbaijan Historical Monuments*

Introduction

The architecture of each region, in addition to showing the power, strength and Proficiency of the artists and craftsmen, in terms of culture, is also the view and thought of the policymakers and religious planners of that time.

During the emergence of the Seljuks as a fanatic Sunni tribe with the Turkic ethnicity of Oghuz, the Islamic world had a special place, the rule of the powerful Al-e-Buyeh government with the Shia religion in the East of the Islamic world and the Fatimid government in the West of Islam almost led the Islamic world towards the Shia governments.

The efforts of these governments were aimed at reducing the influence of the

Abbasid caliphate on the Islamic world. The presence of the Seljuk s, was not only a pursuit of ethnic and tribal government, but also an attempt to pay attention to Sunni religions during the restoration of the caliphate.

However, this issue made the architecture procedure and its changes a priority in the Seljukian period. the Seljuk s tried to develop tombs and public benefit buildings such as mosques, mausoleum towers and caravanserais, With the power and wealth they had acquired. they introduced a new model of mosques to the Islamic world, by adding domed area and porches to mosques. The noteworthy point in the study of these buildings show that pattern changing was not a general rule in the Seljuk period, and the climate plays an important role in it. due to cold and dry weather, Architecture in the Azerbaijan state climate has differences in form, and the purpose of this article is to find these differences.

Research methodology

In terms of the form and type of government, the Seljuk s had two characteristics: religion and a single government. Therefore, at the beginning of their govern, they were very strict towards other religions, and Khwaja Nizam al-Mulk had advised the rulers to be strict with the Shiites. According to these features, it is expected to find similarities in architectural form in the buildings constructed by the government within its domain, but despite the many similarities, studies show the fundamental differences. Therefore, the main problem of this research is to find this similarities and differences in the Azerbaijan state with other Seljuk's parts and states. This research is a type oftheoretical research that is done with descriptive-analytical method.

The Azerbaijan state territory

Azerbaijan and its borders are the controversial cases and there are conflicting opinions on this issue. According to Tabari's history (1987), Azerbaijan is from Hamedan to Darband Khazran in the Caucasus.

Moghdasi (1982) writes that Azerbaijan, Arran and Armenia form a large state, which is called Rihab state, which means the region of high plains in front of the region of mountains in Median and the region of Aqor (آقور), a region with plains in Mesopotamia.

In the 4th century, Ibn Hawqal (1987) considered Armenia, Azerbaijan and Iran as one region "I counted these as one region because as far as I have seen it was under the rule of one person" (Ibn Hawqal,1987, 81).

The border of Azerbaijan is from the border of Barda (Barda) to the border of Zanjan, and its cities include: Bar-Kari, Selmas, Moqan, Khoi, Warthan, Bilqan, Maragheh, Niriz, and Tabriz.

On the other side, it is connected to the cities of Dilmistan, Taram, and Gilan, and it is one of their cities: Barzeh, and Shapur Chavet, and Khune, and Miane, and Marand, and Khoi, and Kolsera, and

Barzand, which were in ruins. Afshin made it a city and landed there.

From Barzand to Warthan, which is the end of the territory of Azerbaijan, it is twelve Farsangs and it is from Azerbaijan (al-Boldan, Ibn al-Faqih / brief translation, Mohammad Reza Hakimi, p.129) In Akhbar al-Bilad, Zakariya Qazvini writes about Azerbaijan: It is a country in the middle of Iraq-e-Ajam and Arran, it contains many cities, rivers and big mountains, including Mount Sablan. Ahmad Kasravi believes: In the first centuries of Islam, when the Tajiks ruled everywhere in Iran, Arran was governed by the Azerbaijan, and whoever was sent from Syria or Baghdad as a governor to both of them, sat in Azerbaijan. Sometimes Armenia was governed by the Azerbaijan too. This is why these three lands were mentioned together. Abbas Zaryab Khoei believes that regarding to the Azerbaijan northern border in the 4th and 5th Ah century until the Yaqut Hamvis (7th ah) period, the reason for this contradiction is the Muslim domination over all of Azerbaijan and Arran and the conversion of these two territories people to Islam. Due to this, geographers lost the borders of Arran and Azerbaijan, and therefore sometimes they raised the Azerbaijan northern border to the much northern parts Aras River. the name of Arran was influenced by the Azerbaijan name, which was more famous. Berthold believes that Arran joined to Azerbaijan exactly at this time. Mohammad Javad Mashkoor also wrote: The state of Arran, which was known by this name in the Islamic era, was called Qarabagh (Black Garden or Big Garden) from the Turks Qaraqyunlu and Aq Qyunlu period until the First World War.

Yaqut Hamavi states: the border of Azerbaijan is Barza'a from the east, Arzanjan from the west, and Balad Dilam, Gilan and Tarem from the north (Hamavi, Majam al-Boldan, p.172). Hamdullah Mustofi writes: Its borders are connected with the Iraq-e-Ajam, Moghan, Georgia, Armenia, and Kurdistan (Mostofi, Nezheh al-Qulob, p.85).

This difference in determining the border based on historical periods was due to the type of government and communication that was different during variouse governments.

Azerbaijan during the Seljuk period

Despite the importance of the Seljuk period in Azerbaijan and the existence of important monuments such as the Jame Mosque in Ardabil, Tabriz, Urmia, Marand and tombs in Tabriz, Maragheh and Nakhchivan, there is a fundamental lack of textual sources and it is difficult to determin Azerbaijan government boundaries in this period. Ibn Maskowayh (1997) is written that the nation armies known as the Russians invaded Azerbaijan and occupied Barda and took its people captive. Referring to this, it can be determined that the borders of Azerbaijan reached Barda from the north. The author of Jahannameh mentions three rivers that flow in Azerbaijan in a chapter entitled Jihonha (rivers): Kur is one of the rivers near to Azerbaijan, three miles

away from the city of Bardea, which is called Kur, its fountain is Alan, north of Arran.

Ras (Aras) is also a river near Azerbaijan which is called Ras. Its fountain is the borders of Armenia and Abyaz (Qezel Ozen) in Azerbaijan is a river which is called the Abyaz River, and the Persians call it Sepidrud, and its fountain is the mountains of Armenia and Azerbaijan (Bekran, 1963, p.51-50). Yaqut Hamavi (1965) considered Azerbaijan as a part of the fifth region in Ma'jamol-buldan.



Figure 1. The territory of Azerbaijan state before the beginning of Seljuk rule

About its boundaries He said: "The border of Azerbaijan from the east is the Bardea and from the west is the Arzanjan and from the north are the land of Deilam, Gil and Tarem."(Yakut, 1965, p.128)

To sum up, until the Seljuk period, Azerbaijan had several governments such as Ravadians, Shadadian and the Shervanians and smaller local governments, but the attack of the Seljuks was the end of these governments and the only government who were able to continue their political life by accepting the Seljuk government were the Shervanians. Pirif said: "The arrival of the Seljuks in Azerbaijan and the fall of the local governments also led to the territorial integrity of this land which means with the destruction of these governments, the provinces of Azerbaijan, which were divided among these governments, came under the rule of a single government under the title of the Seljuk Empire." (Pirif, 2006)

Pre-Seljuk Architecture

This period is one of the golden and splendor eras of Islamic art and architecture. Seljuks had no offer able art and architecture in their background, but with proper management and using the technical, artistic and administrative power of the geographical area under their rule, they were able to create a magnificent and stable architecture. The Seljuks advent coincided with the Ghaznavids, the Al-Buyas, and the Samanids government, and each of these had built buildings within their lands.

The study of Al-e-Buyeh architecture shows that their efforts were along the lines of reviving the pre-Islamic arts of Iran. "In fact, this period showed a kind of cultural and artistic revival, which was a kind of return to the old heritage of Iran" (Elhami 2019, p.21).

The same thing can be observed about the Samanids. An example of architectural revival can be seen in the Samanid tomb. This tomb is the pre-Islamic Chahartaq, which with elegant brickwork make its way to the Islamic period.



Figure 2. left Sang-Best in Khorasan, right Robat Mahi

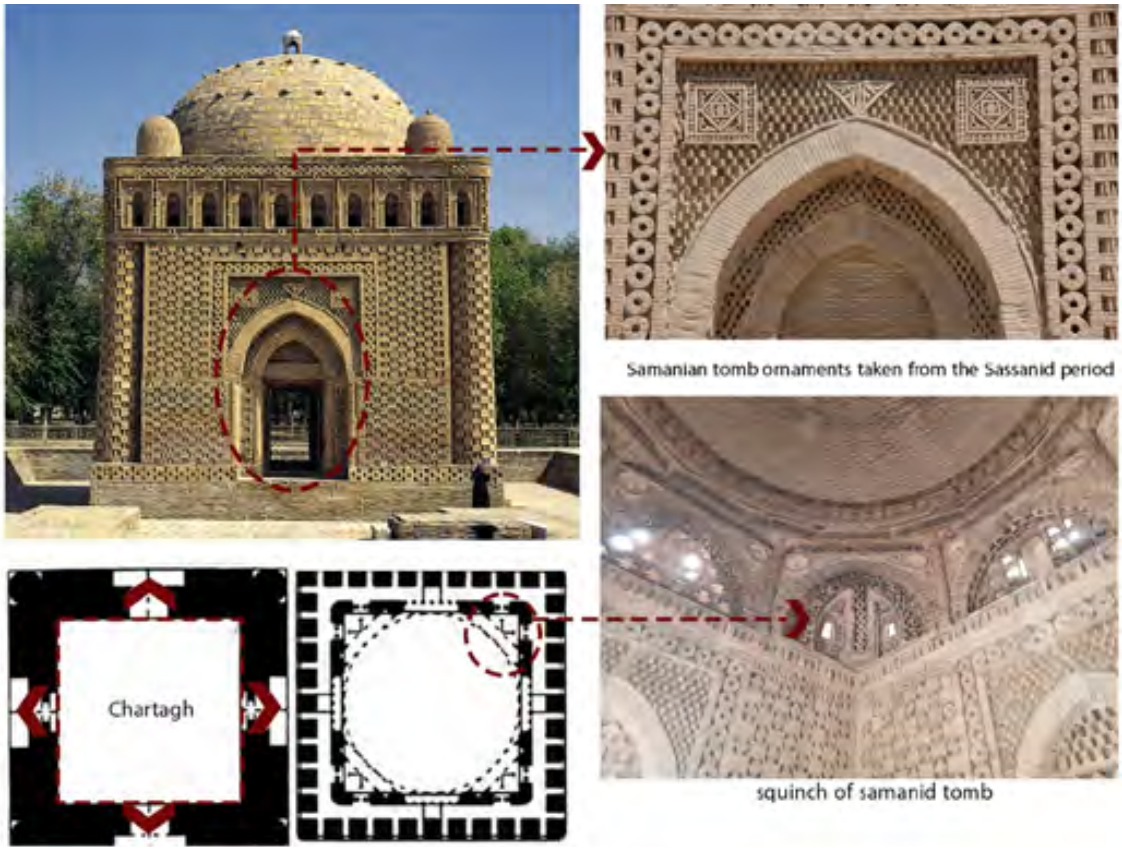


Figure 3. Samanid Tomb



Figure 2. Jorjir mosque Fourth century AH

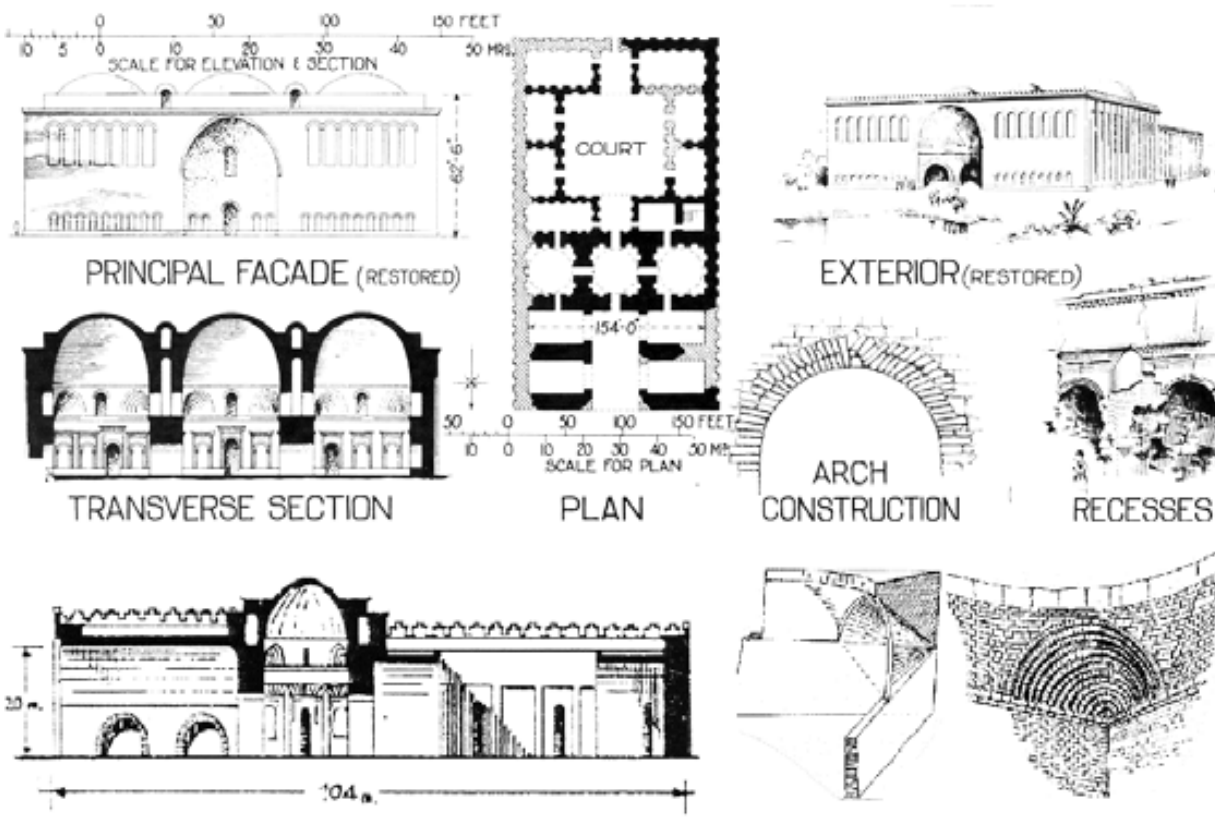


Figure 3 Sasanian (Palace at Firuzabad) - Ardashir I's Palace at Firuzabad, 3rd century AD (Fletcher, 1957)

The Ghaznavids also showed that they have good skill and ability in using brickwork decorations by building the city of Ghazna and the remaining minarets around this city and the city of Sang-Best in Khorasan.

Therefore, it can be said that one of the important features of architecture in the era before the pre-Seljuks is the increase in using bricks, plastering and the creation of motifs on different surfaces of buildings and works. Although Pirnia (2010) tries to attribute these features to presence of the Seljuks and believes that a new style of architecture was created in the Seljuk period, which is called the Razi style.

In this style, buildings were built Stronger with beautiful brick decorations in new designs and spaces and structures.

Pirnia (2010) also attributes the use of beautiful brickwork decorations and sturdiness in construction to Iran before Islam and the Sassanid period, which can be seen in Firouzabad, Sarvestan and Tape Mil Varamin during the Sassanid period.

But by comparing the characteristics of the Sassanid era with the Al-e-Buyeh, Samanian and Ghaznavid government periods, it should be concluded that this period, despite its similarities to pre-Islamic architecture, has an independent shape and structural identity.

Architectural feature / Historical periods	formal	ornamental	functional	Structural
Sasanid	Four-porches, dome area - Chartaghi	Plastering, brickwork - rubble	ritual (temples) - political (palace) – religious) chartaghi)	Arched brick and stone structures
Case study	Sarvostan Palace - Ardeshir Palace - Dokhtar Castle - Bishapur - Firuzabad - Mil Hill - Haji Abad - Anahita Temple – Takht-e- Suleiman - Zahak Castle			
Samanid - Al-Buyeh- Ghaznavid	Chartaghi- Shabestani- Stavand(porch with column)	Brickwork- vault	Tomb- masque	Arched structure and flat brick-clay-stone
Case study	Tomb of Samanid -Arab Ata-four Khiva minarets-Nyriz Jame Mosque- Lashgari Bazar Palace-Sabketgin tomb-Arslan Jazeb-Masoud Minar-Rabat Mahi			
Saljuq	Four-porches (back to Sasanid)	Brickwork- plaster- tiling	Religious-educational- monumental	Brick structures with physical decorations
Case study	Isfahan Grand Mosque - Maragheh Tomb Towers - Khargerd Nezamiyeh School - Zavareh Grand Mosque - Mosques - Mausoleum Towers – Schools			

Table 1. Matching architectural features of historical periods

Seljuk Architecture

The architecture in this period was the continuation of the the Al-e-Buyeh , Samani and Ghaznavid periods architecture , and the use of bricks continued in this period in different building surfaces. The Seljuk period had two characteristics: religion and unitarity government.

In this period, with the outstanding men such as Amid-Al-Mulk and Nizam-Al-Mulk, the government type and religion were seen based on the Iran pre-Islamic era. Nizam-Al-Mulk introduced the pre-Islamic era rule type as the right way to govern. By mentioning stories from that era, he tries to tell their methods to the people. the construction of masque was continued and the change of the mosques pattern in Iran can be seen. Until the Seljuk era, the architectural model of mosques was the pray hall (Shabestani) model taken from the early Islamic mosques of Iran and the Islamic world.

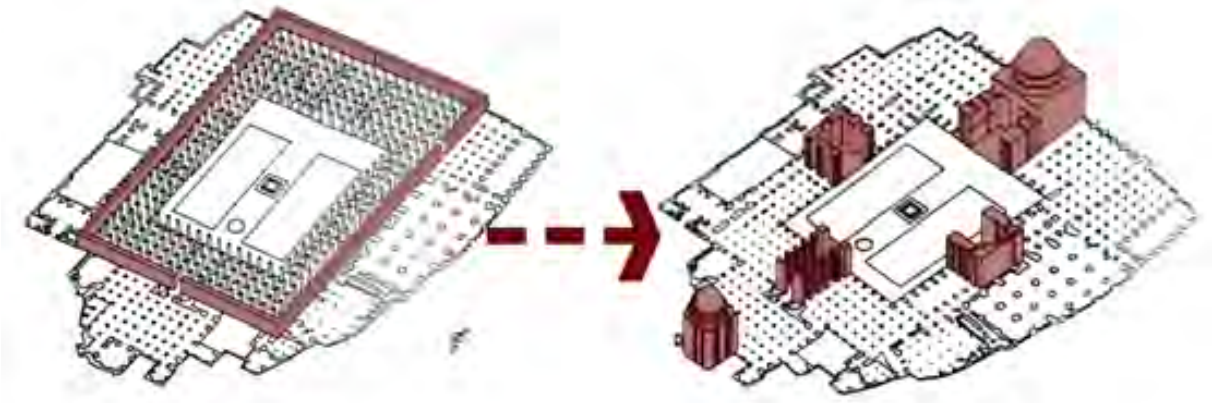


Figure 4. Great masque of Esfahan: left pre-Saljuk mosque (Shabestani) - right Saljuk mosque (four-eivan)

In this period, with the influence of the Sassanid architecture, the model of the mosque was changed to four–eivan and domes, and mosques such as The Great Mosque (or Masjid-e Jameh) of Isfahan, Ardestan, Zavareh, Golpaigan, and Barsian were built. In the pre-Islamic period, the four-eivan–pattern was seen in the Ashur Sassanid palace and the domed model was seen in the buildings of Sarvestan Palace, Bishapur Hall, and Firuzabad Palace.



Figure 5. Firuzabad palace

Construction of tombs in the form of individual towers, such as the Samanid tomb and Arslan Jazeb in Khorasan, was built before this era during the Samanid and Ghaznavid periods with a square plan and influenced by the Sassanid Chartaghi pattern. In this period, construction of the tomb was continued in different shapes: circle (The Three Domes Tower), octagonal (Kharraqan Towers), decagonal (The Blue Dome of Maragheh and Momine Khatun Mausoleum), square (Alavian dome and Pir-i Takestan Mausoleum). The ornament in this period was mainly brickwork using geometric motifs that were used with special complexity.

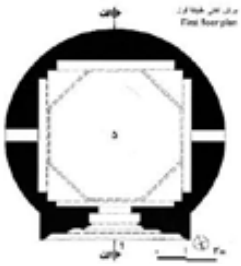
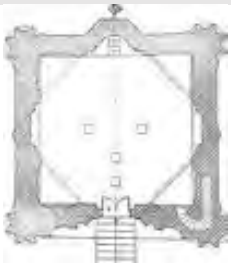
tombs	Momine Khatun Mausoleum	The Three Domes Tower	Alavian dome	Kharraqan Tower
plan				
picture				

Table 2. Pre- Seljuk Architecture tombs

The important point of these decorations was that they act as structural element. That is, the structure and the decoration were intertwined. The use of wood to make doors, windows, shrines, columns, ceiling beams and frames is one of the characteristics of Islamic architecture, which can also be seen in Seljuk architecture.

The most significant of the use of wood in the Seljuk period can be seen in the Eşrefoğlu Mosque in eastern Turkey.

In this period, different plasters were used on the surfaces and they could be classified based on the thickness and designs used. Arches with the use of pointed arch can be seen abundantly in the buildings of this period.

One of the characteristic features of the architecture of the Seljuk period is the use of a vault in the form of Patkaneh to transfer the square plan to a circle in the construction of domes, which can be seen in almost all the domes of mosques.

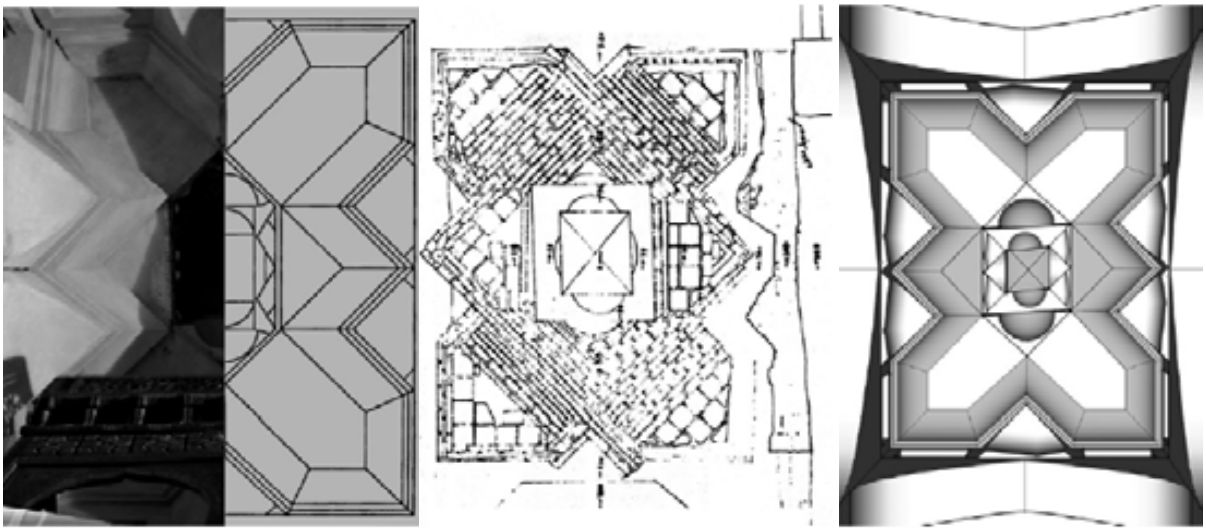


Figure 6. Patkaneh cover in Nayin Jame Mosque, Isfahan (Safayi pour and etall, 2013)

Seljuk Architecture in East Azerbaijan

Due to the different climate, culture and ethnicity that it has than the other parts of Iran, Azerbaijan also has many structural and shape differences with the architecture of other regions.

Contrary to the opinion of many researchers who apply the principles and standards governing the architecture of the center of Iran to the architecture of this region, in fact, there are similarities and differences for this subject, which require a comparative study.

Among the buildings of the Seljuk era in Azerbaijan, we can mention Qabakh Tepe in Selmas (Seljuki-Timurian and Safavid), Ziwiyeh hill (before history and Seljuki) - Pir Khamush Mausoleum in Marand city - Remains of Dilman city in Selmas - Marand Grand Mosque - Urmia Grand Mosque - Tabriz Grand Mosque, Tabriz Four Minaret Tomb, Maragheh Tomb Tower (Red Dome, Blue Dome and Round Dome) and Momine Khatun Mausoleum.

Grand Mosque (Jame' Masjid): Among the most prominent mosques of Azerbaijan, we can mention the four mosques of Tabriz-Ardebil-Urmia and Marand, which were repaired and developed during the Seljuk period.

Ardabil Jame Mosque: It is a mosque located on top of an ancient hill in Ardabil Bazaar neighborhood.

The exact date of the mosque is not known, some have mentioned it before Islam and on a fire temple (Mousavi 2002).

Some have attributed it to the Seljuk period and some have tried to consider it as the continuation of the mosques of the Seljuk era in the Ilkhanid period (Mousavi 2002, Kayani 2010, Safari 1991, Shahbazi Shiran 2016).

Among these opinions, some believed that this mosque had four porches. But this comment was rejected.

Currently, the mosque has a dome and a dome aera with a porch in front of the dome area, and a pray hall (shabestan) and a minaret on the west side of the dome area, and only its foundations remain.

This mosque doesn't follow the traditional pattern of four porches of mosques of the Seljuk period; But the dome area shows the proportions of the Seljuk period with a dome of 15 x 15 meters.

Its main decoration is stucco and its cornering is Squinch type.

Around the dome area, there is a small corridor that surrounds three sides of the dome, and its cornering is of the squinch type, as same which can be seen in the Seljuk domes of Qazvin and Borujerd.

But the main dome with the grooves in its tholobate (Gariv) shows that the dome was restored in the later periods and probably in the Il-khanid period; Because none of the domes of the Seljuk period have a stem like this.



Figure 7. Ardabil Jame Mosque

Tabriz Jame Mosque: Tabriz Jame Mosque has a vague history and plan shape, and almost such a plan and arrangement cannot be seen in any of Iran's Jame Mosques.

The oldest part of this mosque has columns and an arch cover with a combination of stone and brick materials, the initial plan of which probably goes back to the Rawadid dynasty period (Omrani 2007). Rawadid were a local government that was appointed during the Abbasid caliphate in 240 AH and ruled Azerbaijan until the end of the Seljuk Period.

The main part of the Shabistan Mosque is built with Kajave arches and has a stucco altar that dates back to the Seljuk (Rawadian) and Il-Khanid periods.

The original plan of the mosque is in the basement and its upper part was rebuilt after the earthquake of 1781 AH.

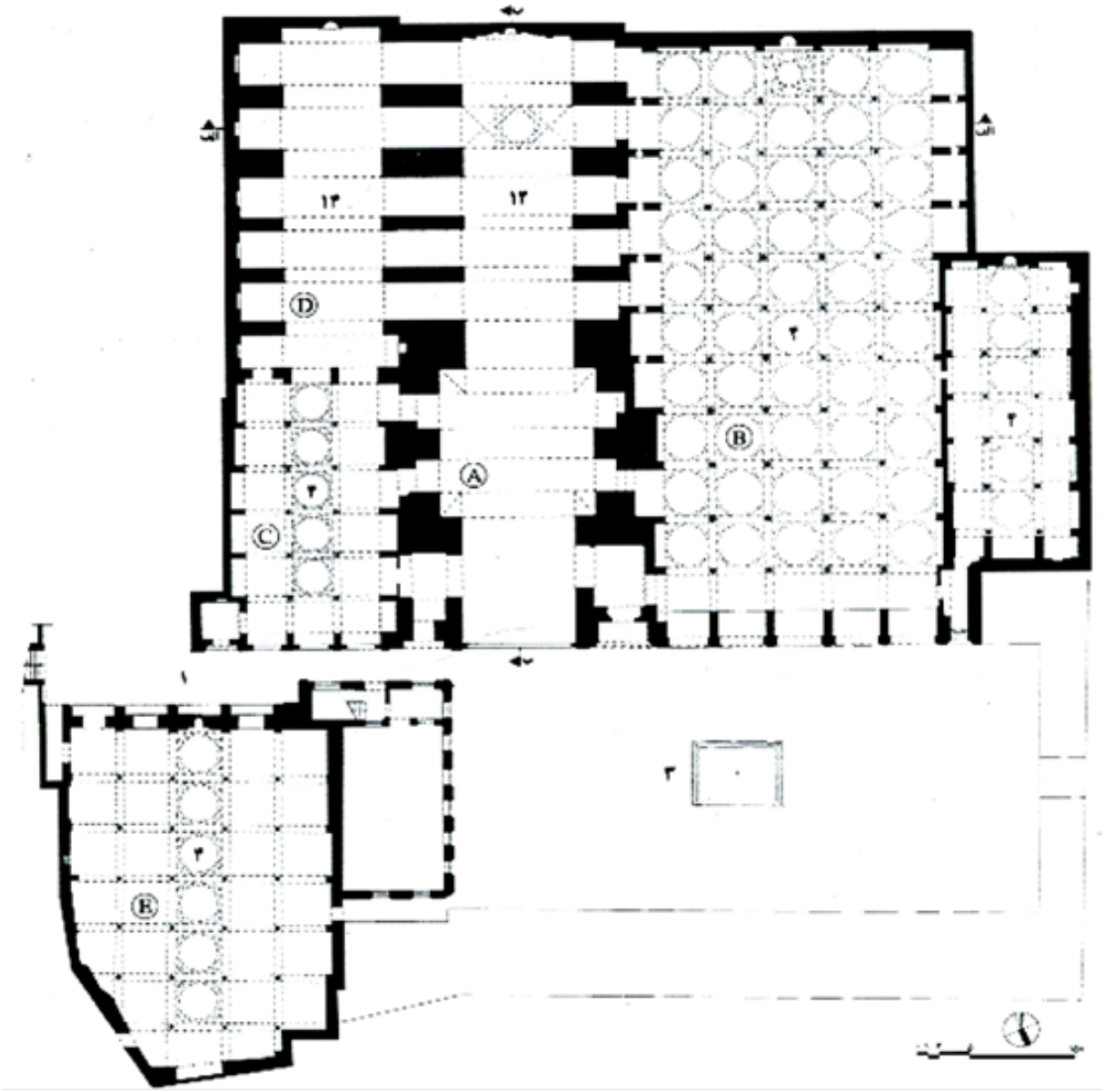


Figure 8. Tabriz Jame Mosque

Marand Jame Mosque: The Marand Jame Mosque has a shabestan plan that is surrounded by a Seljuk period dome area.

According to the inscription on the wall of the dome, this dome was built in the year 1092 Ac and its altar was added belonging to the Ilkhani period in the year 1331 AC during the reign of Sultan Abu Saeed Bahadur Khan Ilkhani.

The mosque does not have a courtyard or a porch, and it is a completely covered mosque, which is decorated with brickwork and stucco decorations, dome area and shabestan. Because the dome has

collapsed, no information is available on the shape and type of the dome.

But its cornering is the Patkaneh type, due to the removal of the vault, this cornering of domed is different of the Seljuk period.

Urmia Jame Mosque: this complex was built on the remains of pre-Islamic and early Islamic architecture. Numerous constructions have been done in this complex from the first Islamic centuries until today (Abbaszadeh, 2022).

This dome mosque is completely enclosed with at least an opening, which was built on the eastern side of the Shabistan mosque in 580 AH.

On the eastern and western sides of this dome, there is a small corridor that is not clear to what purpose it was built; but it is most likely related to the dome area directly.

Patkaneh has been used in the construction of the corning of the the Jame Mosque dome in Urmia, which is common in many corner constructions of dome in Iran.

But the cornering of this dome is very similar to the cornering of the red dome of Maragheh, and it has shape differences with the cornering of the domes of the Seljuk period in central Iran.

In general, it should be said: while having similarities with Seljuk domes, the dome of Urmia Mosque has subtle differences from it.

Tomb Tower: The oldest tower of tombs in the Azerbaijan region can be attributed to the Red Dome of Maragheh and Chaharminar Mosque of Tabriz, which belonged to the Ilis period (probably the survivors of the Rawadians) who were the governors of the Seljuk period in this region. In the Seljuk period, plaster and tiles were used for the first time along with molded bricks.

In other words, the combination of several types of materials in one role was one of the initiatives of the Seljuks, which was also used in the next era.

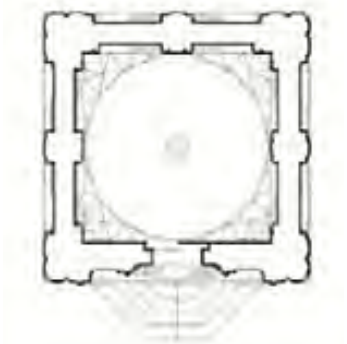
In the Red Dome, although the architect wanted to give more effect to his work by using a few pieces of tiling, his goal was not to create a decorative work.

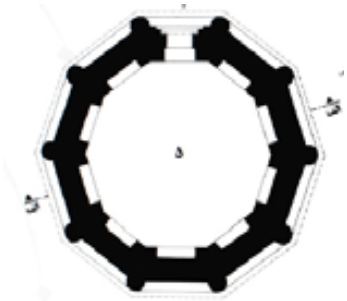
This can be seen from the precise and tasteful tools used in other places. He did not decorate the building with color, but like his predecessors, he decorated his work with designs and creating shadows and lights.

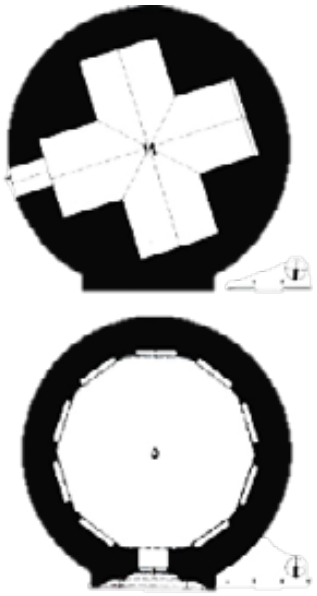
In the Gonbad-e Sorkh, a collection of these decorative Mongol and brickwork decorations and various inscriptions and carvings have given the building a special effect.

The blue dome and the circular tower are also very similar to the red dome in their decorations. The continuation of this use of tiles can be clearly seen in the tomb of Momine Khatun Mausoleum.

Another issue is the use of different shapes and forms in these tomb towers, which are square, circular, octagonal and decagonal shapes used by the architects of this period in the Azerbaijan area.

Maragheh city tombs		
The name of the tomb	**Construction features**	**Images**
Maragheh Red dome	The Red Dome is located in the city of Maragheh in East Azarbaijan province. Although this building was apparently located in a cemetery in the past, it is currently located in the southern part and close to the city center. The date of construction and the name of the architect of the Red Dome are clearly obvious in the existence inscription. On the northern front and above the arch of the red dome, an inscription written on red carved bricks indicates the date of the building. In it, the history of the building is written in Arabic as follows: بنی مشهد فی الحادی عشر من شوال سنه اثنین و اربعین و خمسائه. which means that this place was built in the year 542 AH. The Red Dome is the oldest and most exquisite work among the four tomb towers in Maragheh city. This building got its name from the red color of the bricks used in the facade. This building is quadrangular and in the past it had a two-shell dome cover, but now only the short inner Araghchin dome remains, and only the tholobate (Gariv:گریو) along with its three corners remain from its octagonal pyramidal dome. The building consists of two parts, the upper shabestan and the lower crypt, the floor of the shabestan is based on the crypt consisting of arch and masonry dome. the masonry arches of this roof are based on a quadrangular pillar (side 60 cm and height 90 cm). Among the Islamic tombs, apart from Imamzade Shoaib Jolfa in Kordasht, this is the only building that has a pillar built in the middle of the crypt.With the beginning of the construction of this building, the Razi period in Iranian architecture has ended and this building is the turning point and the beginning of Azari architecture. Cultural heritage experts believe that this building was used to determine the months of the year and hours of the day before the Maragheh observatory, and the holes created on the sides of this building indicate this. (Iskanderzadeh and Samadian, 2016) the paving of the main shabestan is still there. It is a cover composed of rectangular stones that have been laid. The inside of the building is covered with plaster and there are no traces of painting or plastering. The ornaments of this part consist of twin arches with small columns. Similar to the arches that decorate the three sides of the external sides of the building. The inside of the building is completely empty. In line with the reason for the construction of the Shabestan and cellar and the way of spatial arrangement, nothing is visible.. (Godard et al., 1992)	   

Blue dome	According to the plastered inscription inside the crypt, it is possible that the blue dome was built as a tomb tower. This building has two floors; It includes the main space and the cellar. The main space was decorated with plastering and tiling with a high dome, and the dome was probably two shells, and its outer covering was in the shape of Turkish Spire ten. The mausoleum is a ten-sided tower; whose exterior has beautiful decorations composed of unglazed and glazed turquoise-colored bricks and pottery with geometric patterns. Experts consider this building to be similar to Momine Khatun Mausoleum in Nakhchivan.The decorations of the building can be examined in two general groups: interior decorations and exterior decorations, the basement and the main room, and can be classified into the following four groups: 1. Bricklaying 2. Inscription (inscription and decorative lines carved from bricks) 3. Tiling (turquoise glazed tiles) 4. Moqrans (Starnjad and Taghizadeh, 2015)	 
Momine Khatun Mausoleum	- The map of the tomb is 10-sided and has a prismatic body. - The height of the building is about 25 meters and it is among the most beautiful buildings of the Seljuk period, which is placed on a short seat with a height of 42 centimeters. - The lateral sides of the tomb are each in a rectangular arch with brick and tile decorative borders and surahs from the Qur'an in Kufic script, which are stretched to the top of the edge of the tomb, which leads to the moqrans works around the tomb. - The composition and decoration of these arcades (Nughols) have caused the tomb to not show its original volume and as a result it looks smaller. - What adorns the body of this mausoleum is its separate geometric brick patterns, which are also covered with the outer surfaces of the walls. In this arrangement, turquoise colored tile bricks are used and the intricate polygonal geometric motifs have a great impact on the tomb's decorations. - The letters of the surrounding inscriptions are all embossed with polished bricks and turquoise colored tiles. The whole body of the building is covered with various decorations. - The entrance to the mausoleum, which is located on the eastern side of the tomb, has a decorative crescent on the pillars on both sides of the door. (Khodai, 2015)	 

Circular (Modavvar) tower	The second tomb of Maragheh - historically - is a circular tower with nothing left of its dome and roof. It is a completely unknown mausoleum and the value of this building is that it clearly shows the development of the enamel facade during the short period between the date of construction of this building and the date of completion of the Red Dome. Like the other four tombs in Maragheh, it is made of bricks and placed on a high stone platform with a crypt in between. This tomb looks simpler and seems to be a defense tower. It is short and undecorated, which is decorated only in the entrance area with rich motifs, similar to the main facade of the Red Dome. And also the door frames that include the entrance door are made similar to the mentioned building. There is an inscription in Kufic script above the door and another inscription above the arch. But the powerful architecture of the previous building has turned into simplicity in this tomb and has given its place to patterns similar to carpet patterns. In this building, a patterned brick has appeared. Color, which did not play an important role in the decoration of the Red Dome, has achieved a high position here. The letters of the inscriptions and the interwoven motifs above them are made of turquoise colored tiles. And also the door frames that include the entrance door are made similar to the mentioned building. There is an inscription in Kufic script above the door and another inscription above the arch. But the powerful architecture of the previous building has turned into simplicity in this tomb and has given its place to patterns similar to carpet patterns. In this building, a patterned brick has appeared.Color, which did not play an important role in the decoration of the Red Dome, has achieved a high position here. The letters of the inscriptions and the interwoven motifs above them are made of turquoise colored tiles. In the above inscription, the famous verse (Surah 21, Verse 36): "كل نفس ذائقة الموت." is written, followed by : "تم النباء برجب" The continuation of the sentence in the lower inscription is as follows: منة ثلث وستين وخمسمائه. The year 593 AH is equal to 1167-8 AD. Therefore, the contents of both inscriptions are as follows: "Every living thing will die one day. This building was completed in the month of Rajab in the year 563. (Godar and others, 1992)	  

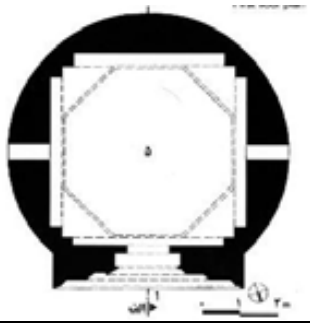
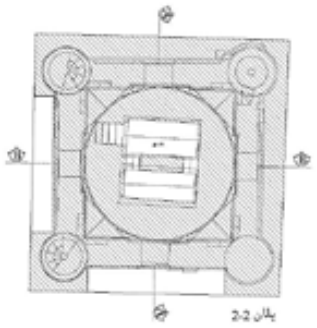
Three domes of Urmia	The main plan of this tower is circular. However, the interior plan and the tomb room are square, and the architect with special skill built this square room in a cylindrical tower, and again turned this room into a circle with architectural solutions, then raised the dome. The height of the tower, which currently lacks its main external dome, reaches 9.5 meters. - This building consists of a stone substructure, high and with a cellar, on which a brick building that includes the main shabestan of the tomb is built. In this tomb, there is no trace of tiling and the use of color, and the letters, lines, and patterns are made with stone.	 
Tabriz's four minarets	This mausoleum is located in the historical neighborhood of Chahar Minar, near the historical and large bazaar of Tabriz. In the current situation, the floor of this tomb is 4.30 meters lower than the floor of Tabriz, and the approximate length of its sides is a square with length and width of six meters.In the past, there was a wooden shrine in the middle of this dome, which was removed and returned to its original state when the original floor of this shrine was found. It includes a double grave with probably marble materials, which has been destroyed over time. Hafez Hossein Karbalai, one of the historians of the Safavid period, writes about this shrine: This dome is known as the dome of Amir Mola, and this Amir Mola is Amir Mamlan, the son of Amir Vahsudan bin Muhammad Rawadi, who was ruling in the Tabriz during the time of al-Qaim Bamarullah Abbasi. The dome is his burial place, and there is a tomb which on its tablet it's written that: هذا مرقد سلاله ال طه ویس، علی بن مجاهد بند زید بن علی بن حسین بن علی بن ابی طالب علیهم اسلام.. It turns out that before he was buried, the honorable Sayyid was buried there, and the father of Amir Mamlan and himself, because of the honor and dignity of that honorable Sayyid Mukhtar, and also their engagment in the family of the Sayyid , may God bless him and grant him peace, have chosen that tomb as their buril (Hafiz Tabrizi 2001, p. 450) There are four short minarets at the corners of this square. The cornering of the small dome in the middle is of the squinch type.	 

Table 3. Maragheh city tombs

Conclusion

The architecture of the Seljuk era was the architecture of the predecessor. This architecture was able to create new ideas for the architecture of this period based on the continuation of existing shapes, forms and decorations. Brick is one of the most important materials in this period. The use of the brick as a building material goes back to pre-Islamic era; But its use as a decorative element get prevalent especially in the post-Islamic era. Brick in Islamic architecture has been used to withstand separate loads and spaces. Bricks also appear as a decorative element with a combination of other architectural constituents The roughness of building materials was destroyed by decoration and created a spirit and life.The most important feature of brick is its use in the form of geometric motifs that create different designs.This method appeared for the first time in the buildings of the Islamic period using bricks carved to create geometric inscriptions and inscriptions.The brick gradually became the most important decorative style in the Seljuk era, and until the eighth century, it was a unique art in the Islamic world.The architectural pattern of the mosques was changed to four-porche pattern during this period. This should be the reproduction of pre -Islamic patterns of Iran in the Islamic period. Tombization was also used as one of the most important elements in a widespread application and was used in various forms of circle, square and polygon.

Reference

1. M. Abbaszadeh and L. Danesh, "Investigation of the architectural structure and historical periodization of Urmia Jame Mosque", Iranian Architectural Studies, 10(19), 91-113, 2021.
2. R. A. Moskawieh, “Tajareb Al-Omam (The experiences of the nations)”, transl. A. N. Manzavi, Vols. 5-6, Tehran, 1997.
3. N. B. Mohammad Bakran, "Jahannameh," by M. A. Riahi, Ibn Sina Publications, Tehran, 1963.
4. D. Elhami, “Cultural flourishing in the age of Al-Buyeh". Philosophy and Kalam Magazine, Lessons from the School of Islam, 10, 21-32, 2000.
5. M. Eskanderzadeh, and M. Samadian, “Architectural features and decorations used in Maragheh Red Dome”, Islamic and Hist. Arch. and Urban Plan. Res. Conference of Iran, Tehran, Iran, 2017.
6. A. Godard, V. Godard, M. Siro, et al., "Works of Iran, volumes one to four," translated by A. H. S. Moghadam, Mashhad: Astan Quds Razavi Islamic Research Foundation, 2005.
7. Ibn Hawqal, "Iran in the face of the earth (Iran in Surat-al-arz) (Ibn Hoqal's travel book)," trans. Dr. J. Shaar, Amir Kabir Publications, Tehran, 1987.
8. Ibn Faqih, "Abridged Book of Al-Boldan: The Part Related to Iran," trans. M. R. Hakimi, Farhang Foundation Iran, Tehran, 1971.
9. H. H. Ibn Karbalai Tabrizi, "Ruzat al-Jinnan and Janat al-Jinan," edit. J. S. al-Qarai, Sotoudeh Publ., Tabriz, 2001.
10. M. Y. Kiyani, "The history of Iranian architectural art in the Islamic period," 1st edition, Tehran: Samt, 2010.

11. S. Khodayi, "Review and comparison of the decorations of the red and blue tombs of Maragheh State - Ministry of Science, Research, and Technology - Al-Zahra University - Faculty of Arts," [Online]. https://ganj.irandoc.ac.ir//#/search?keywords=Inspection and comparison of the decorations of the red and blue tombs of Maragheh&basicscope=1, 2016.
12. A. A. M. bin Ahmad Moghdisi, "Ahsan al-Taqasim fi Marafah al-Aqalim," translated by Dr. A. Manzavi, Kavian Print, vol. 1, p.810, Tehran, 1982.
13. H. Mostofi, "Nazheh al-Qulob," by the efforts of M. Debirsiyaghi, Qazvin: Hadith Imroz, 2000.
14. M. Mousavi, "Ardabil Grand Mosque in the light of archaeological excavations," Archeology and History, 2002.
15. National Museum of Asian Art, Smithsonian Institution, "Smithsonian Learning Lab Resource: Sang Bast (Iran): Arslan Jadhib Mausoleum and Minaret: View of the Mausoleum's Octogonal Zone of Transition Topped with Encircling Band of Arabic Inscription (Part 1/4)," Smithsonian Learning Lab, Smithsonian Office of Educational Technology, Feb. 13, 2021. [Online]. Available: https://learninglab.si.edu/q/r/5816646.
16. B. Omrani and M. Aminian, "Speculation in Sahib Abad Square and Hasan Padeshah (king) Collection," Faculty of Literature and Humanities, Isfahan University, p. 118-91, Isfahan 2007.
17. P. Vaqif, "Historical and political geography of Azerbaijan in Turkish with alphabet (Latin)," Baku: Araz, 2002.
18. B. Safari, "Ardabil at the Passage, History of Ardabil, second volume," published by Islamic Azad University, 2nd edition, 1990-1992.
19. S. H. Shahbazi and H. Habib, "The history and trends of the architectural developments of Juma Mosque, Ardabil," in International Conference on Urban Planning Architecture, Construction, Art and Environment, Future Horizons, Looking at the Past, Tehran Conference, p. 131, 2016.
20. S. Sattaranjad and H. Taghizadeh, "Investigation and study of decorative elements and arrays in Gobd Kobud and Ghaffarieh Maragheh," in Annual Scientific-Specialized Conf. on Civil Eng., Arch., Urban Plan. and Geography Sc. in Ancient and Cont. Iran, 2015.
21. H. Safaipour, G. Memarian, and M. Bamanian, "Understanding the meaning of patkaneh covering through the analysis of the first examples in Iranian architecture," Iranian Architectural Studies, vol. 3, no. 5, p. 5-19, SID, 2013. [Online]. Available: https://sid.ir/paper/ 491833/fa.
22. M. b. J. Tabari, "Tabari's Tarikh Tarikh Al-Rasul and Al-Muluk," transl. A. Q. Payandeh, Asatir Pub., Tehran, 1987.
23. Y. H. Yaqut Hamvi, A. N. Manzavi, M. Jozi, and A. Mehrparor, "Al-Boldan, dictionary," 2 c., Tehran - Iran: Organization of Cultural Heritage of the Country (Research), 2001-2004.
24. Y. H. Yaqut Hamavi, "Majam al-Baldan," vol. 1, p. 559, Leipzig: Wostenfeld Press, 1965. (Originally published 1873-1866, Tehran Offset Press).

STUDYING THE STRUCTURE AND DECORATIONS OF TABRIZ GRAND MOSQUE IN THE SELJUK PERIOD

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Abstract

Mosques always have a privileged position in Islamic society and role diverse functions in political and social dimensions. Therefore, according to the architectural style of different ages, they have adopted certain structures and decorations. Considering that Tabriz Jame Mosque is one of the most prominent buildings of the Seljuk period, the study aims to identify, compile and analyze the structural and decoration aspects of the mosque in this period. The research method is descriptive-analytical and based on library, field, and visiting collections.

In the architectural style of this building, tile work, lithograph art, decoration with mirrors, and similar decorations do not exist. The building has old stucco works and dome arches in the form of octagonal geometry and brick decorations. These subjects are the characteristics of the buildings of the 5th & 6th centuries AH. There is a combination of Kufi and Maraq script in the Grand mosque inscription. There are these items with plant decorations in the inscriptions. These items are the characteristics of the Seljuk style of Iran. Such features have turned this building into a famous and distinct Architectural work.

Key words: *Structure, Decorations, Inscription, Tabriz Grand Mosque, Seljuk Period*

Introduction

One of the identity aspects of an Islamic city is the mosque, which plays a fundamental role both in terms of external identity and spiritual identity (Naghizadeh, 1999, 349). After Islam, mosques were established in cities and during different periods. Tabriz Grand Mosque is one of the most important and beautiful mosques. Today, there is not much left of the original building of the

mosque and the related evidence, and in this sense, it is not possible to make an exact date and determine the name of the founder of the original building of the mosque. But according to some sources such as Marzbannameh's book, the peak growth of this mosque dates back to the Seljuk period. Although it has been renovated and added in different periods.

Grand (Jame) Mosque of Tabriz is one of the rare mosques that contains artworks of several centuries in different periods. It is very important to compare the artistic values of different periods with each other.

As it will be further planned, after flourishing in the Seljuk period and being destroyed, the Jame Mosque was again noticed and repaired in the period of the Mughal patriarchs, and some parts were added to it, where the lofty altar (mihrab) was plastered, which is a relic of that period. And above the altar arch, there is a plaster inscription in Kufic script from the period of the Mughal Ilkhans.

During the reign of Agh Qoyunluyan, in Azerbaijan, Seljuq Shah Begum built a high dome decorated with all kinds of mosaic tiles in the northern part of this mosque. After severe destruction in the earthquake in 1193 AH, the mosque building was completely rebuilt during the Qajar era, and over time, parts of the mosque have been restored in the current period as well.

In the following, general statements will be made and then the findings will be presented.

1. Theoretical Foundations

In this section, firstly the definition and concept are discussed and then suggestions are made.

1.1. Definition Of Concepts

1.1.1. Mosque

The mosque is widely used in the Qur'an to refer to a place of worship (Hillenbrand 2013:43) and is a combination of physical (house) and semantic (God) aspects. On the other hand, it is the most complete symbol of Islamic architecture. (Balkhari 2012: 376). In many lands, especially in Iran, very old mosques can be found, places of worship in the past were old houses or palaces, and people have renovated them and turned them into mosques (Memarian 2012: 268). The final goal of mosque architecture is to supply the unity and the concept of society and focus on these factors (Pope 1994: 77 and Balkhari, 2012: 378).

1.1.2. Seljuk Art

The result of centuries of art masters' experience is a souvenir that today is known as Islamic architecture (Kazemi, Kalantari, 2012: 42; Kaptan, 2013: 5). Hence, Islamic buildings express religious, social and political beliefs in the form of traditional spaces (Michell, 1978).

The Seljuk era is one of the most important eras of Islamic art, which caused many changes in Iranian art, especially architectural decorations. In this era, due to the peace and political stability of the Seljuk territory, artists had

more favorable conditions and were able to create many works (Kiani, 1995: 54). Of course, with the existence of a scholarly minister like Khwaja Nizam al-Mulk in the government system, as well as the presence of Ibn Sina's students and great poets such as Nasser Khosrow, Khayyam and Khaqani in this period, the fruitfulness of people and artists and the prosperity of Seljuk industries and techniques should not be far from the mind. The Seljuk period in Iran continued for about two centuries, starting from 429 AH with the conquests of the Seljuks and continuing until the establishment of the Mughal patriarchs in the 7th century AH (Bazworth and others, 2001: 76).

The various changes and developments that occurred in this period in the decoration and architectural field gradually led to the creation of new types of architectural decorations in terms of shape, function, implementation, and related concepts in Iranian-Islamic architecture in this period (Hatam, 2000: 13-15 and Ettinghausen, 1970: 131). Various developments and innovations such as the use of different plastering techniques, the use of tiles, and brickwork in this period have caused the architectural decorations of the Seljuk era and the subsequent periods such as the Khwarezmshahi and Ilkhani periods to be more diverse and extensive than the early period of Islamic architecture (Cutley and Hamby, 1998: 21-22). In this period, the characteristics of Seljuk art continued and provided a basis for further progress in the following periods. The rule of the Mughal patriarchs continued from 663 to 756 AH (Iqbal Ashtiani, Pirnia, and Javanmardi 2010: 672).

Ever since the Ilkhani rulers started rebuilding and ruined Iran after their brutal destruction, they supported the clash of different cultures and attracted artists, scientists, and writers from different lands to their court (Schrato and Grube 1997:3-7). It can be said that Ilkhani architecture did not create a new style in the history of Iranian architecture, but it was somewhat a continuation of Seljuk architecture and inherited its plans and techniques; also brickwork in the architectural decorations of this period followed the Seljuk style of brickwork but stucco art reached its peak in terms of techniques and execution methods during the Ilkhanate era (Shokfete and Kakhaki 2013: 65). A comprehensive study of the architectural decorations of the Seljuk era can lead to a comprehensive understanding of the architectural decorations of mentioned time and the changes that occurred in the following centuries. One of the most important decorations of this period is brickwork, and art history researchers consider the perfection of these decorations to belong to the Seljuk period (Ettinghausen, 1999).

1.1.3. Seljuk Architecture and Related Decorations

The characteristics of Islamic architecture in Iran took a uniform style in the Seljuk period which were imitated in the following period or were completed (Hillenbrand 2009: 141). The Seljuk

Period shows the gradual evolution of the general pattern of Iranian mosques in that Ilkhani architects adopted the plan, materials, and construction method of the Seljuqs. Building Public buildings (mosques, minarets, caravanserais, schools, burial buildings), designing mosques in the form of four porches and the widespread use of two-shell domes were works of this period. There were also changes in decorations such as the use of tiles in the exterior decoration of the building, the extensive use of brick in the external exterior decoration, and the extensive use of stucco in the interior and the decoration of the muqarnas (Ettinghausen and Graber 1999: 401; Godar 1998: 416; Cutlery and Hamby 1997:11).

The major technical advances of Seljuk art took place in the years of its decline in the middle of the 6th century AH; So it can be said, their art was at its peak at the time of their fall (Kiani 54:1995; Bazworth and others 2001: 123-124) and this is because it played an effective role in the artistic flourishing of next era.

The art of arranging bricks in a building to provide decorative facades which is suitable for the shape and physics of the building is called brick decoration. The brickworks that are found throughout the country are signs of their time's art. Some are sometimes developed by artists taking inspiration from each other's work or the past.

The important point is, the function of brick, like some arches of Jame Mosque in Isfahan, is not only decorative but also used to show the direction of pressure (Panahi, 2012, 814). The superior power of Seljuk arches is a manifestation of structural forces and originates from brick patterns more than the basic forms of its basic forms in traditional Iranian architecture. So in this period, shapes and forms have gone beyond their material and familiar meanings and They find a higher quality than their appearance (Hatam, 2000: 242-247; Pope, 1994: 145).

1.1.4. Brickwork Decorations

In the various architectural works left from different periods after Islam in Iran, we have always seen valuable examples of Iranian masters creating brick surfaces in the most beautiful designs and beautiful and balanced proportions. In this regard, the exterior of the building has been a suitable background for artists to apply their taste, especially in the art of brickwork, to instill a stunning grandeur and beauty.

Decoration gives life to the violence and heaviness of materials such as bricks and makes them beautiful, light, and weightless. The remarkable feature of the buildings of the Seljuk period was the extensive use of bricks, which Iranian architects finally displayed their skill, art, and creativity in this use (Petersen, 2002: 37).

In the Seljuk period, buildings emerged with different forms of bricks. The bricks used in Seljuk architecture can be classified in terms of dimensions, production methods, types of parts, types of motifs, and arrangements.

2. Literature Review

There are many books and research in the field of Seljuk history. Seljuk art is mentioned in most Islamic art books and a small part of such books are also dedicated to Seljuk architecture. But in particular, Seljuk art has been introduced by a few people such as Katli and Hambi, which could not be a comprehensive and complete narrator of the great art of this period.

Meanwhile, Gholam Ali Hatem's book titled Islamic Architecture of Iran in the Seljuk period is one of the important sources in this field.

In this book, the important works of the Seljuk period and the description of the building are introduced and their decorations are briefly introduced.

However, the rights of the article about the most important period of brickwork decorations in Iran's architecture during the Seljuk era have not been fully fulfilled.

In the book of building materials, Zohreh Bozormehri gave a general introduction to some brickwork decorations. Mahmoud Maher al-Naqsh in the book Iran's brickwork heritage has sketched the types of late decorative bricks and some geometric motifs of brickwork in different eras and five Seljuk buildings.

There are also articles in this field that usually introduce or examine one or more specific buildings on a case-by-case basis; For example, in his article, Mitra Azad examined three minarets of the Seljuk era in terms of function, form, and decorations (Azad, 2014) or other branches of this field have been discussed, such as the concept of geometric decorations of brickwork (Rashund, 2011).

Much research has been done in the field of the mosque, which is discussed in several examples according to the importance of the subject. Some books such as; Principes et methodes de l'art scar'e (Burckhardt, 2013), identify the sacred (Nasr, 2012- 2010), investigate of the archetypal stable characteristics (Gulabchi and Zainalifarid, 2012), investigate the pattern of Iranian and Ottoman mosques (Hillenbrand, 2013), examination Ottoman architecture (Goodwin, 2010).

Among other important works in the field of mosques, Hossein Zamarshidi (2009) has mentioned double-porch mosques in the book which is titled "Mosque in Iranian Architecture".

Past, Present, Future, (University of Arts Publications, 1999) examines mosques in different periods and mentions the developments and theories, and assumptions of Andre Godard, Sheila Blair, and Shahriar Adel. Sheila Blair and Jonathan Bloom (1985) in an article referring to Zozen School, (Zozen School: Islamic Architecture of Eastern Iran on the eve of the Mongol invasion) investigated the various theories and hypotheses that she has written about this historical building. Also, Andre Godard examined and analyzed the mosques of Iran in the book "Artifacts of Iran" (1998).

2.1. Research Background

In this section, studies related to the architecture of Iranian mosques are discussed.

Given the importance of the mosque in the architecture of Iran, the main research in this regard can be classified based on three main approaches. The first approach analyzes the building of the mosques, spaces, elements, and the construction technologies and materials, proportions, and colors based on assuming the authenticity of the architectural work in understanding it (Haji Ghasemi, 2011) from different aspects. In another approach, the architecture of mosques has been read by assuming the correctness of major categories, including regional stylistics (Pirnia, 2005). Also, it has been tried to recognize the developments of mosques within the changes and existing styles of each period. In this approach, some researchers agreed with the governmental classifications mainly done by orientalists, including Arthur Pope, Donald Wilber, and Robert Hillenbrand. Meanwhile, monographic studies include the main part of these studies. In the third approach, it is assumed that the evolutions of the mosques were more culturalrather than political and geographical, and the Iranians' wisdom and mystical discourses can be recognized.

Among the above approaches, some research or prominent theories were selected due to the following reason and scrutinized in Table 1 (Bagherzadeh Kasiri et al, 2121).

Researcher	Approach	Research Area	Results	Authors' Analysis
Beheshti	Cultural	Features of the Iranian mosque	Analyzing the relationship between the interior and exterior in the architecture of the Iranian mosques, understanding the importance of culture in recognizing the architecture, the role of the religion and spirituality in the Iranian thought and reflection of Sheikh Lotfoallah mosque based on the Hajj rituals (Beheshti, 2011).	The stated approach emphasizes the difference and distinction of the mosque construction in the cultural zone of Iran from other parts of the Islamic world and considers its unique features the result of the Iranian culture.
Noghrekar	Cultural	The Islamic identity in Iranian architecture and urban planning	Studying the architectural buildings in Iran based on the components of the Iranian Islamic identity and understanding them in the wisdom system of the Islamic worldview.	The importance of the architectural identity, particularly in the mosque, in the state theory can be a dynamic solution in creating the space of the mosque based on Islamic wisdom.

Qayyoomi Bidhendi	Cultural	The temperament of Time: The Idea of Living Time	It is possible to understand the architectural works, especially mosques, based on recognizing the temperament of time and living time in each period of the history of Iran (Qayyoomi & Bidhendi, 2013)	The stated theory emphasizes the importance of style in the analysis of each building, providing a precise understanding of the architecture based on contextual terms.
Kabir Saber, et al	Cultural	Interaction between the nature, politics, and culture in the architecture of the Blue Mosque of Tabriz	In the architectural design of Blue Mosque, the interaction between the built environment and natural environment has been achieved based on an approach in which politics have dominated other components (Kabir Saber & Amjad Mohammadi, 2017).	The researchers could analyze the logical relationship between the architecture and environment by recognizing the architecture and culture of Azerbaijan.
Ajorlou	The authenticity of understand ng of the work and style of the Iranian architecture	Historical stylistics of the architecture of Azerbaijan	Tracing the fundamental effects of the local schools of Azerbaijan and architects of Tabriz and Nakhjavan on the Ilkhanid and Timurid architectural styles and applying and classifying the indicators of those effects (Ajorlou, 2010).	The researcher's studies on the architecture of Azerbaijan mosques for an accurate understanding of the context have led to valid results and have well highlighted the regional characteristics.
Yeganeh, Hashemi & SHahraki	The authenticity of understandi ng of the work	Analyzing the Decorations and motifs of the Ilkhanid mosques	Ornament in Islamic art and architecture is a sacred affair and has symbolic concepts (Yeganeh, Hashemi, & Shahraki, 2017)	A semantic approach on the ele-ments and components in the com prehensive research h on the encoding of ornaments in understanding Iranian architecture is remarkable.

Table 1. Analysis of the Major Studies on the Architecture of Mosques. (Bagherzadeh Kasiri, 2121, 24-25)

3. Materials and Methods

3.1. Method

Conducting research using the "case study" method includes a four-step process, which is: a- stating the problem and selecting the case (unit of analysis), b- collecting data, c- organizing data, and d- compiling a report (Merriam, 1988, p.153). Through this method, which includes library and field studies (photographs, observations, part-by-part observation, and interviews in the study context), data are collected and analyzed.

3.2. Materials

Tabriz Grand Mosque is one of the historical buildings of this city. This mosque, which is also mentioned as "Jamei Kabiri" in historical books, has been the Jame Mosque of Tabriz since the beginning of its establishment, and the Tabriz Bazaar was formed around it.

This mosque is located in the traditional context of Tabriz city and was registered as one of Iran's national monuments on January 6, 1932, with registration number 171 (Figure 1).

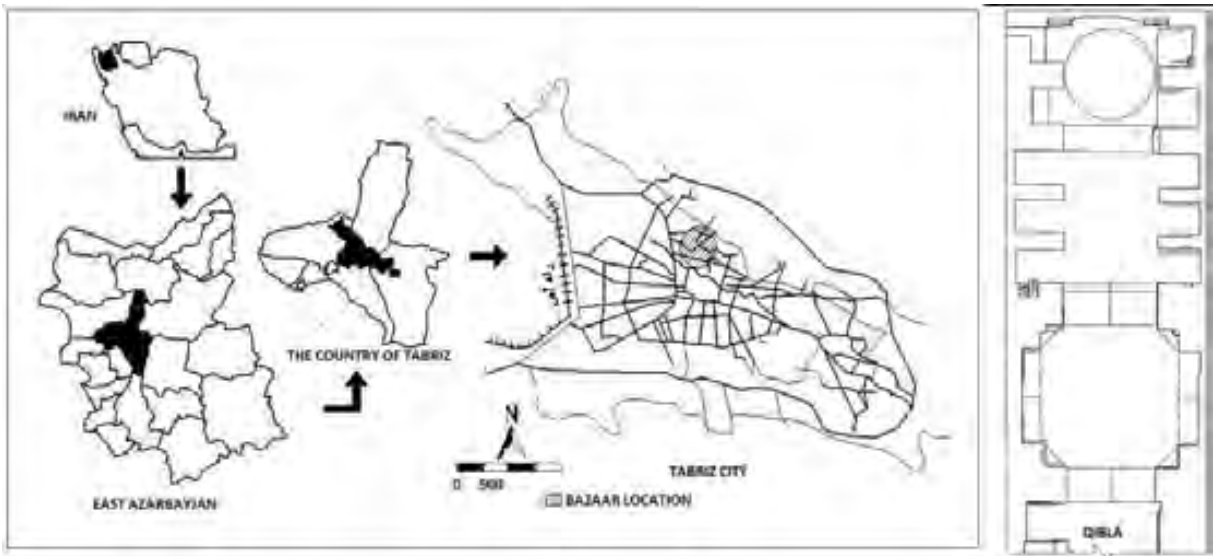


Figure 1: Left; The location of the mosque in the city, right: plan of the mosque

4. Research Findings

4.1. History and General İntroduction of the Collection

The exact date of construction of this mosque is not clear, but it is located inside the old context and next to the covered bazaar. The original core of the mosque was a prayer hall called Jame Tabriz, and elements were added to the mosque during different periods. Next to the mosque, there are two schools in the north and east of the building, which are known by the names of Talebiyya School and Jafariyah School, respectively. In the western facade of the Talebiyeh School today, there is a high door with two minarets, which shows the Talebiyeh school more than the facade of the mosque. There are two doors to enter the mosque complex.

One door from the right side of the alley and the other from the side of the traditional bazaar. This complex includes Jame Mosque, Hojjatul Islam Mosque, Khaloglu Mosque, Elchag Mosque, Public Library, Dinuri Mosque, and Talibiyah School.

In addition, the complex has a central and rectangular courtyard. The minarets in the complex do not belong to the Jama Mosque and form part of the Talebiyeh school building (Figure 2).

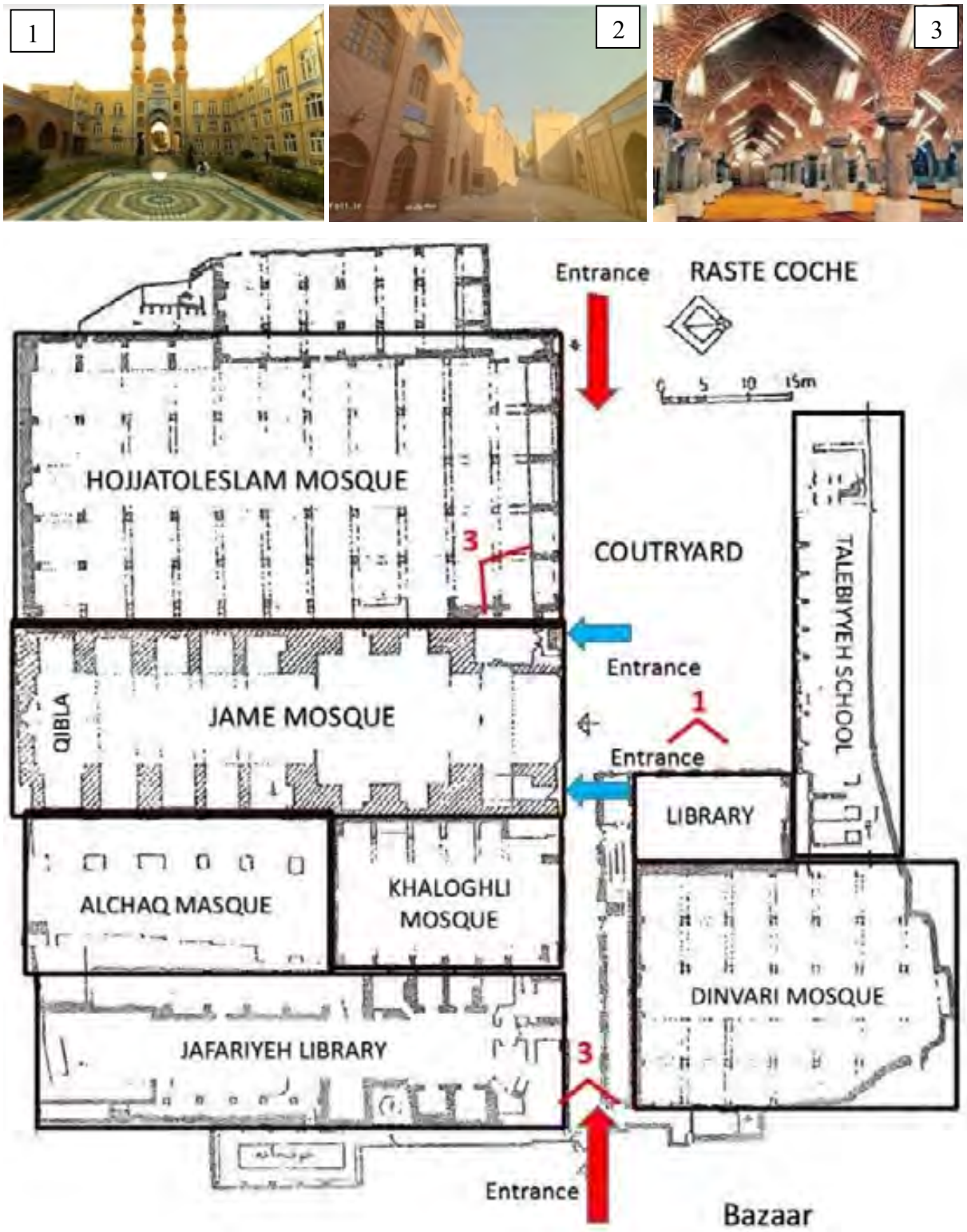


Figure 2: Jame mosque complex, source: URL1

4.2. Distinctive Architectural and Decorative Features of Jame Mosque

The main building of the mosque has a length of 62 meters, inside the building, there is a middle section with a very large arch, which is 15 meters wide. The mosque is divided into two parts, the northern part is 28 meters long with a small width and the southern part is 32 meters long. Five beautiful arches in the eastern and southwestern parts of the nave complete the grandeur of the mosque. These arches were added to the mosque during the Qajar period and the restoration. The arches are two-story. Their length, and centimeters. Their width reaches about 60 meters. The current basement part of the mosque has signs of the colored stucco of the old prayer hall, a plastered altar (mihrab) from the Ilkhanate period, which was covered during the repairs after the earthquake of 1193 AH (Sabunian Yazdet al, 2013).

At the end of this part, a white marble altar with spiral designs in the Safavid style can be seen. Currently, this altar is located in the main chapel and its restoration work has been completed by the experts of the Cultural Heritage Organization. This altar, like other altars, has rectangular dimensions and one or two arches which are in the middle and there is an original inscription around it. These unique inscriptions belong to the Ilkhani period and are based on the calligraphy pattern of the Seljuk period and are especially influenced by the inscriptions of the Jame Mosque and Heydarieh School of Qazvin. The length of this inscription is 18 meters and 80 centimeters and its width is 1 meter and 40 centimeters. Considering that the beginning of the inscription is on the zero point, which is the floor of the current court, changes may occur in it, because the placement of the word of God in the foot part is unjustified and distasteful from the point of view of Shari'ah.

All the plaster inscriptions of the Ilkhanid period are considered to be a single and unique work of art in their way. the altar inscription of Tabriz Jame Mosque is also a collection of interconnected and composed of three linear, geometric, and plant systems in which a very good harmony is created between these elements (Figure 3).



Figure 3: Stucco art of Tabriz Grand Mosque, source: URL2

In the field of sculpting and tiling, it should also be said that during the reign of Agh Qoyunlular, in Azerbaijan, a lofty dome decorated with all kinds of mosaic tiling was built by Seljuq Shah Begum, whose foundations and corners remain.

In terms of size, this mosque is considered large in the city of Tabriz. If the measure of size is only the surface and the enclosed space between the four columns (The usual distance between the columns of pillared mosques) is considered a module; Examples with a size larger than 12 modules are considered large mosques in comparison with other mosques of the same type.

Therefore, the Jame Mosque, having a size of more than 12 modules, is classified as a large mosque. From the point of zoning view, it can be said that in this mosque, both the private space and the public space can be seen, which adds to its spatial desirability.

In such a case, mainly the side spaces, hojrah, and arches, which destroy the deformed angles of the mosque, are considered private areas and create privacy for the users (Figure 4-A).

About the general form of the plan. It can be said this mosque has a long extension and the Qibla is located across the mosque, which creates a special feeling in worship with its unique structure (Figure 4-B).

Regarding the architectural structure, Jame Mosque is considered an arched mosque. Vaulted mosques have organized their main space by connecting the arches (Figure 4-C).

The light of the mosque is provided from the front-facing of altar and also from the ceiling (Figure 4-D).

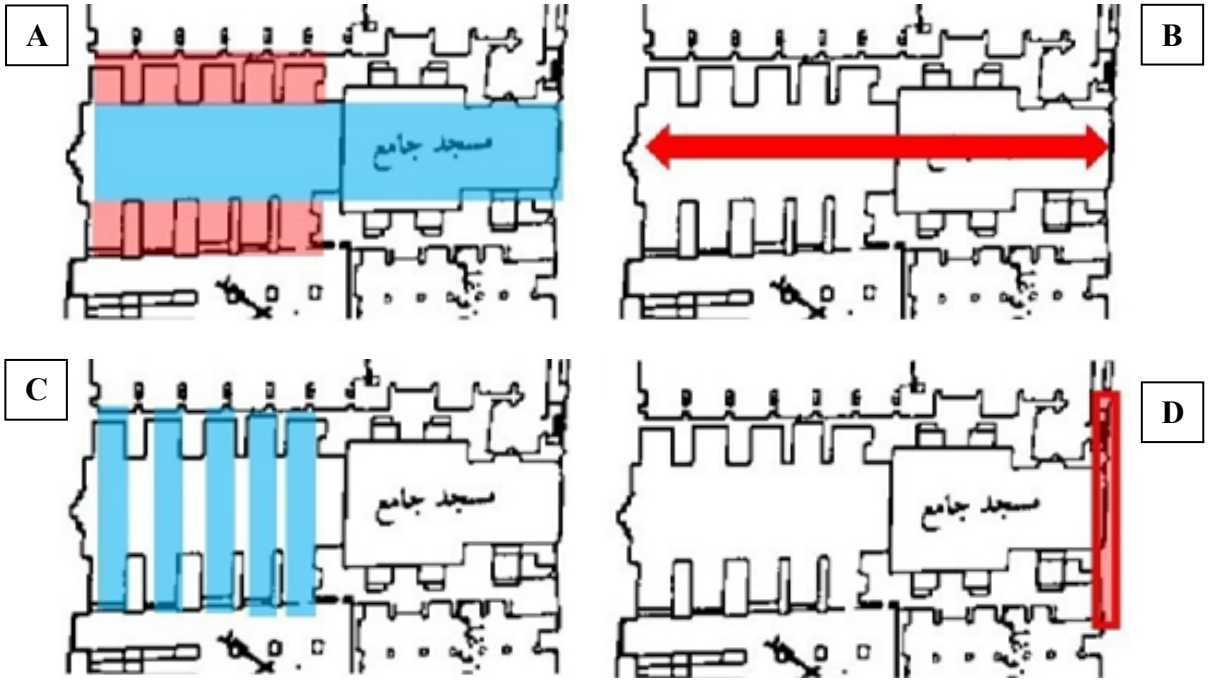




Figure 4: From the left; zone, stretching, arch, lighting in Jame Mosque

In terms of materials, the historical mosques of Tabriz generally have a brick structure which contributes to their simplicity and better understanding. The brick texture is a distinctive feature of Jame Mosque (Figure 5).

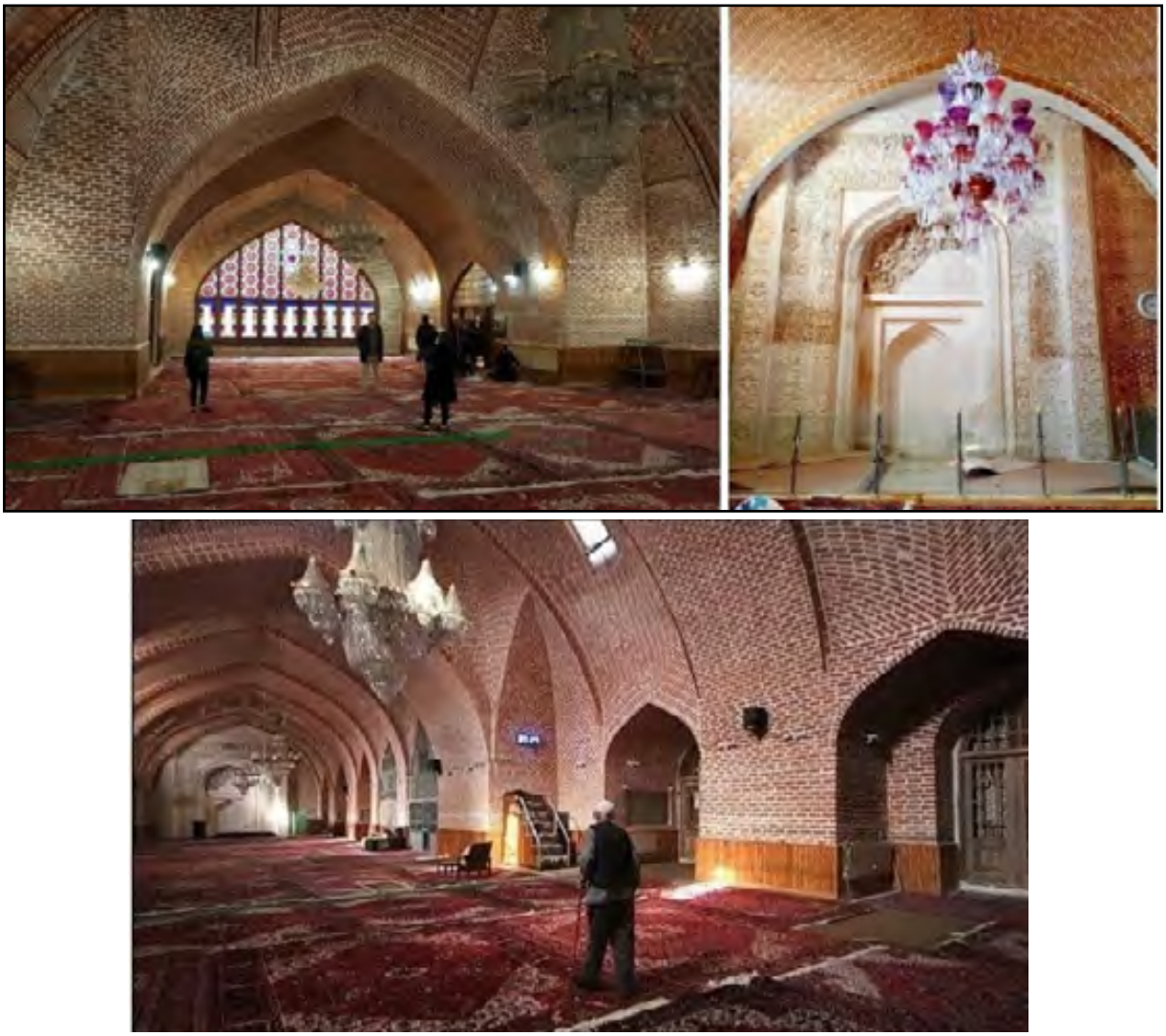


Figure 5: Interior view of the Jame Mosque (URL2)

In mosques that can be entered from both sides of the porch; a special intelligence has been done to increase the mental readiness of the audience and the entrance hall leads to a magnificent hall, this feature is one of the characteristics of Iranian architecture. The entrance hall and vestibule space are a turning point in the design of the hierarchical system of entering these mosques. This space creates a level of preparation in the audience before entering and encourages people to walk the path due to providing a suitable visual view of the court. Also, this mosque used to have one porch, but later it has been converted into two porches. It also has two entrance doors in the north and south parts, which can be accessed from both. Passing through the nave causes disturbances in the mind of the user, and it can be said that mosques with entrances in the body facing the Qibla, which is placed behind the worshipers; be more successful.

The entrance to the prayer hall of the Jama Mosque is from the north and south sides and behind the worshipers (Figure 6).

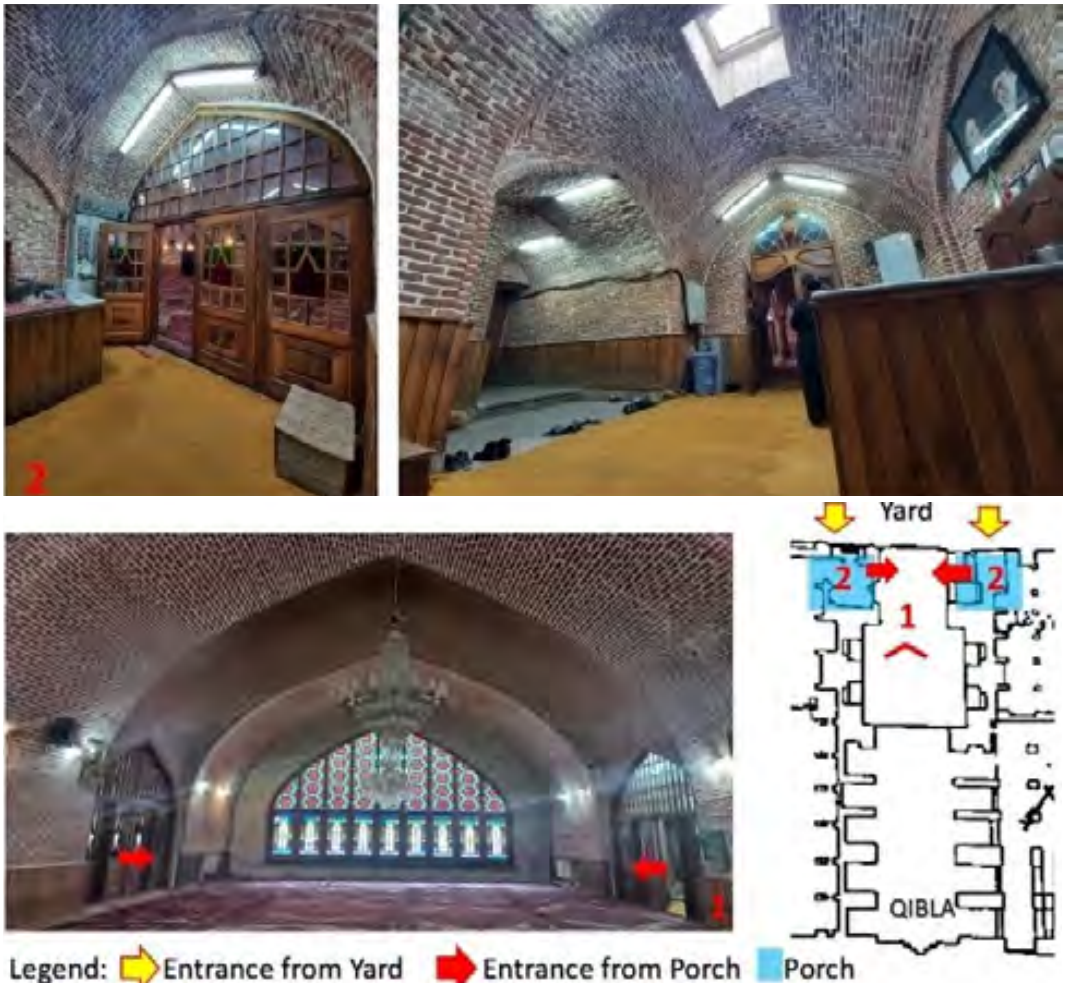


Figure 6: The location of the porches and the entrances to the Jame Mosque

5. Summary and Conclusion

It was determined by the investigations that the altar is the most important part of the mosque's decorations and has delicate and elaborate decorations.

The stucco decorations of the mosque belonging to the Ilkhanid period. The inscription on the altar of Tabriz Jame Mosque is an interconnected collection consisting of three linear, geometric, and plant systems in which a very appropriate harmony has been created between these elements.

In terms of size, this mosque is considered large. In terms of structure, the mosque is more similar to the Seljuk and Ilkhanid periods' mosques, and in terms of decorations, there are various elements of plastering and tiling on the altar that refer to the Seljuk and Ilkhanid periods.

It can also be said that both private and public spaces can be seen in this mosque, which adds to its spatial desirability.

The longitudinal extension is considered as a public area and around the hojre creates privacy for users.

From the point of view of the architectural structure, Jame Mosque is considered as an arched mosque.

The light of the mosque is provided from the front facing of the altar and also from the ceiling.

In terms of materials, this mosque is one of the mosques with a brick texture.

Also, this mosque used to have one porch, but later it has been converted into two porches.

It also has two entrance doors in the north and south parts, which can be accessed from both.

References

1. H. Balkhari Qahi, "Mystical foundations of Islamic art and architecture," Tehran: Surah Mehr, 2012.
2. S. Bagherzadeh Kasiria et al., "Explaining the Experience of Spatial Quality of Jame Mosques in East Azerbaijan Based on the Space Atmosphere Theory," Armanshahr Architecture and Urban Development, vol. 14, no. 35, pp. 23-36, 2021.
3. S. Blair and J. Bloom, "Islamic Art and Architecture 2 (1800-1250)," translated by Y. Azhand, Farhangistan Publications, Tehran, 1994.
4. T. Burckhardt, "Principes et methodes de l'art scar'e," translated by J. Sattari, Soroush Publications, Tehran, 2012.
5. R. Ettinghausen, "The Flowering of Seljuq Art," Metropolitan Museum Journal, pp. 113-131, 1970.
6. R. Ettinghausen and O. Grabar, "The Art and Architecture of Islam," translated by Y. Azhand, Tehran: The Organization for Researching and Composing University Textbooks in the Humanities (SAMT), 1987.
7. E. S. Ettinghausen, "Woven in Stone and Brick. Decorative Programs in Seljuk and Post-Seljuk Architecture and their Symbolic Value, Art Turcnurkish Art," in Congress international dart turc, Fondation Max Van Berchem, Geneva, 1999.

8. A. Godard, "Art of Iran," translated by B. Habibi, Publications of Shahid Beheshti University, Tehran, 1998.
9. G. Goodwin, "History of Ottoman Architecture," translated by A. Eshraghi, 1st edition, Farhangistan Honar Publishing House, Tehran, 2010.
10. M. Gulabchi and A. Zainalifarid, "Archetypal Architecture," University of Tehran, Tehran, 2011.
11. M. Gulabchi and A. Zainalifarid, "Archetypal Architecture," University of Tehran, Tehran, 2011.
12. R. Hillenbrand, "Islamic Architecture: Form, Function, and Concept," translated by I. Etesam, Corporation of Urban Planning and Processing, Tehran, 2009.
13. R. Hillenbrand, "Islamic architecture: form, function and meaning," translated by B. A. Zadeh Shirazi, Rozeneh Publications, Tehran, 2013.
14. G. Hatam, "Iran Islamic Architecture in Seljuk Period," Jahad Daneshgahi (Iranian Academic Center for Education, Culture and Research), Tehran, 2000.
15. K. Kaptan, "Early Islamic Architecture and Structural Configurations," International Journal of Architecture and Urban Development, vol. 3, no. 2, pp. 5-12, 2013.
16. A. I. Ashtiyani, H. Pirnia, and L. Javanmardi, "Complete History of Iran," Arvand va Sama Pub, Tehran, 2010.
17. S. M. Kazemi and H. Kalantari Khalilabadi, "Spiritual messaging tools in mosque architecture with an emphasis on the role of Islamic ideology," Iranian Islamic City Studies Quarterly, vol. 6, pp. 41-46, 2012.
18. M. Y. Kiani, "Art history of Iran in Islamic Era," Tehran: The Organization for Researching and Composing University Textbooks in the Humanities (SAMT), 1995.
19. G. Memarian, "Persian architecture," Tehran: Soroush Danesh, 2013.
20. S. B. Merriam, "Case Research in Education: A Qualitative Approach," Jossey-Bass Pub, San Francisco, 1988.
21. G. Michell, "Architecture of the Islamic World," Thames and Hudson Press, London, 1978.
22. M. Naghizadeh, "Islamic city and architecture," Isfahan: Mani, 1999.
23. S. H. Nasr, "The Principle of Unity and Sacred Architecture of Islam," Tehran: Hikmat, 2010.
24. S. H. Nasr, "Islamic art and spirituality," translated by I. Rahmati, University of Tehran, Tehran, 2012.
25. A. Panahi, "Application of geometry in brick decoration of Islamic architecture of Iran in Seljuk period," Journal of American Science, vol. 8, no. 6, p. 814-821, 2012.
26. A. Petersen, "Dictionary of Islamic Architecture," New York: Routledge, 2002.
27. M. K. Pirnia, "Stylistics of Iranian Architecture," Tehran: Soroush Danesh, 2004. [Online]. Available: https://b2n.ir/136409.
28. A. U. Pope, "Persian Architecture," translated by G. H. S. Afshar, Tehran: Farhangan, 2006.
29. A. Pourahmad and S. Mousavi, "The Social Nature of the City," Iranian-Islamic City Scientific Research Quarterly, vol. 1, no. 2, 2010.

30. M. Sabunian Yazd et al, "Ganjnameh: Culture of Islamic architectural works of Iran: Jame mosques," Publisher: Rozaneh, 2013.
31. U. Schrato and E. Grube, "The History of Iranian Arts (Ilkhanid and Teimorid Arts)," translated by Y. Azhand, Tehran: Mola, 1997.
32. A. Shekofteh and A. Salehi kakhki, "Techniques and Changes of Stucco Decorations in Iranian Architecture from 7th to 9th Century Hijry Qamari," Negareh (Journal of Faculty of Art Shahed University), vol. 9, no. 30, pp. 62-81, 2014.
33. J. S. Hardan and B. Mohamed, "Factors Impact on Religious Tourism Market: The Case of the Palestinian Territories," Int. Jour. of Bus. and Man., vol. 6, no. 7, 2011.
34. "URL1:https://kheshtazin.com/main/post/2122"
35. "URL2: https://www.tabriz.ir/"

A STUDY OF THE ARDEBIL JOMEH MOSQUE WITH AN EMPHASIS ON THE "GONBAD KHANEH", OR THE DOME CHAMBER

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Abstract

Azerbaijan is one of the major architectural centers in Iran, influencing architecture and its development by offering climatic models and patterns. It was also an important architectural zone during the reign of the Seljuks, and a variety of buildings exist in the cities like Ardebil. Back then, it used to be a significant center, and the Jomeh Mosque of Ardebil is one of the buildings of the same period. While the dome of the mosque was originally built in the Seljuk period according to the references, it also contains layers of architecture dating back to the pre-Islamic era. It was later destroyed by natural and human elements. The first restoration of the mosque was carried out by the Ilkhanids, adding the "Gariv" or the drum to the reconstructed dome. The physical analysis of the city in various periods establishes the station of the building and its connection with other urban elements. Currently, the dome of the building has collapsed, and its remains are partially visible in two sectors. This study aims to remodel the architecture of the Jomeh Mosque and provide solutions for its preservation.

Keywords: *The Seljuk architecture, the "Gonbad_khaneh" or the dome-chamber in the Seljuk mosques, the architecture of Azerbaijan, the Jomeh Mosque of Ardebil*

1. Introduction

The Jameh Mosque of Ardebil, also locally known as the "Jomeh Masjed", is a precious historical monument in Ardebil. According to the local belief, it has been constructed on the remains of a pre-Islamic "Atashkadeh" or fire temple. However, the gradual desolation and violation of the building's enclosure have left the mosque with a collapsed dome, representing various architectural periods.

Therefore, many researchers have endeavored to introduce its architecture by providing imaginary models. Many fail to do so, as the models are frequently incompatible with the documents and archeological findings. The current research employs reliable references and field observations to study the monument. Later, the research provides the architectural model of the "Gonbad-Khaneh", or the dome-chamber, determines the type of the dome, and evaluates the applied restoration approaches according to the current damages.

2. Research History

A traveler crossing Ardebil in 1703 describes the building as follows: “This mosque is located in the eastern district of the city at the top of a small hill. It is divided into multiple parts to receive those who pray.

The main part is located under the dome (the dome chamber). It is quite large and is surrounded by a wall, resembling a church bell (Lebroune, 1718).



Figure 1. The drawing of the mosque in the itinerary, p. 148 (Siroux, 1941, 186)

Jacque de Morgan (who visited the building in 1894) regards it as the palace of Osman Khan by mistake. F. Saur (1910) notes the pointed dome.

This monument has been neglected despite its history and impact on architecture, and there are very few resources about it; one of the most reliable is the article written by Maxim Siroux (1941). Jamehi (1995), Shahbazi Shiran (2004), and Anisi (2017) are other researchers who have investigated this subject. Table 1 includes the researchers and their studies.

Researcher	*Studies*
The first scientific research, carried out by Maxim Siroux and published as an article in the "Institut de France" bulletin (1941)	*Describes the architectural specifics and history of the monument* *depicts an imaginary drawing of the arch of the dome by providing reasons based on the surveyed plans of the mosque and the remains of the dome* *Notes the location of the monument: It is located in the northeast of the current city of Ardebil, built on top of a man-made hill that is 5 meters tall.* *The Seljuk squinch dome and the arched Ivan were destroyed in the Mongol Invasion.* *Points out the second life period of the building, and the complete restoration of the dome.*
Adam Auleaurious (1984)	*Traveled to Ardebil in the Safavid era, and regards the Jomeh Masjed as the largest mosque in his itinerary.*
Andre Godard (1998)	*Discusses the physical evolution of the monument in the book 'The Art of Iran', compares it with the Ghleh-Dokhtar castle in Firozabad, Fars, and notes the similarity of its architecture with the Ivan architecture of the Sassanid period.*
Baba Safari (1974)	*Studies the history, architecture, and historical events the mosque has been through.*
Husain Zomarshidi (1995), Mohammad Oghabi (1999), Rample (1935)	*Discuss the history, construction periods, ornaments, and architecture of the monument*
Donald Wilber (1969), Yousef Kiyani (1995)	*Emphasize the ornaments of the building, and present some information about the mihrab of the mosque.*
Haelen Brand (1998)	*Discusses the formal structure, and notes the fact that "... currently, the general form of the mosque consists of the Gonbad_khaneh (dome chamber) and the Ivan attached to it. This composition is a Seljuk pattern, and at the time, was applied without combination with any other Ivans."*

Seyyed Mohammad Mousavi (1997)	*Discusses the results of the archeological explorations within the building.* *The building is located on the top of an archeological hill consisting of pre-Islamic ruins.* *Studying the sections caused by non-scientific excavations show that the hill probably dates back to the Parthian or Sassanid periods.* *The collapsed dome and its arch are hardly discussed.*
Habib Shahbazi Shiran (2004)	*To achieve the history of the Jomeh Mosque and its evolution in various periods, we are to rely on two resources: First, the narratives of local residents and the studies of Iranian and foreign researchers, and second, the outcome of the archeological excavations in situ.* *The Jomeh Mosque of Ardebil has been demolished and rebuilt for various reasons. It is mutually agreed that the major damage was caused by the earthquake.* *A study of the architectural evolution of the Jomeh Mosque of Ardebil*
Masoumeh Bidbarg (2017)	*Recognizing the Jomeh Mosque as a major Islamic monument, analyzing its formal and physical characteristics in different periods, noticing the Seljuk extensions: The Chartaqi (room surrounded by arches on four sides) and the brick dome at the top.*
Alireza Anisi (2017)	*Discusses and recognizes the Jomeh Mosque in the book "A Study in the architectural preservation of the Jomeh Mosque, Ardebil. Also, presents a restoration plan for the preservation of the monument and the restoration of the collapsed dome.*

Table 1. The theories about the architecture of the Jomeh Mosque of Ardebil (organized by the Author)

3. Physical Evolution of the City with an Emphasis on the Monument

The physical [analysis] of the city from the Islamic period to the Mongol invasion: According to the history books and the itineraries, Ardebil was a perfect example of an Islamic city in the 4th century A.H.

The city square including the mosque and a cross-shaped bazaar (figure 2) along with the remains of the excavated elements at the bottom of the mosque indicate that the initial mosque dates back to the Al-e-Bouyeh period; the primary mosque may be imagined on top of the late fire temple.

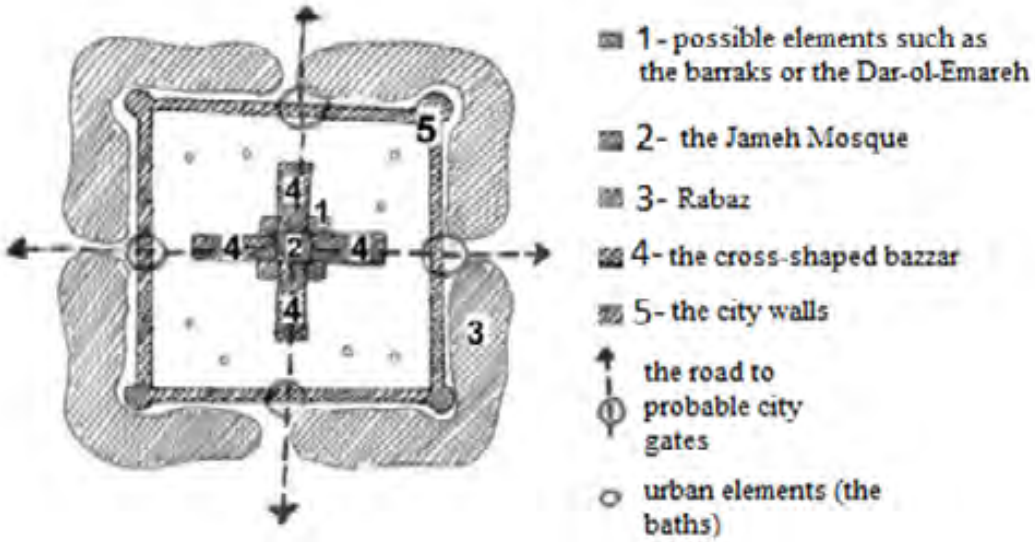


Figure 2. A drawing depicting the city from the pre-Islamic era to the Seljuk period, (reference: Peyghami and RezaZadeh, 2009)



Figure 3. Ardebil in the Safavid period (1637), drawn by Adam Auleaurious (Auleaurious, 1984)

The physical analysis of the city from the Mongol invasion to the Safavid period: Although the city had preserved its significance to the Mongol period, the Mongol invasion left it with much destruction, and the Jomeh Masjed took damage. The mosque was a lot vaster during the reign of the Ilkhanid and the Seljuks. The Ilkhanids carried out the last general restoration, and it continued to be prosperous by the early Safavid period.

The physical [analysis] of the city in the Safavid period: Ardebil was at its prime during the Safavid era. The cohesion of urban spaces and the construction of large squares (including the main urban elements) resulted in a democratic urban pattern. The development of the bazaar and its sub-branches (joining the centers of the neighborhoods) led to a stronger connection between the Jomeh Masjed and the Sheikh Safi Tomb (Figure 3).

The physical [analysis] of the city in the Ghajar period: Ardebil experienced its last age of prosperity in the Safavid period. By the end of that age, it started to decline. The connection between the Jomeh Masjed and the Sheikh Safi tomb was weakened, and finally, it was totally severed by the construction of the city wall (Figure 4).

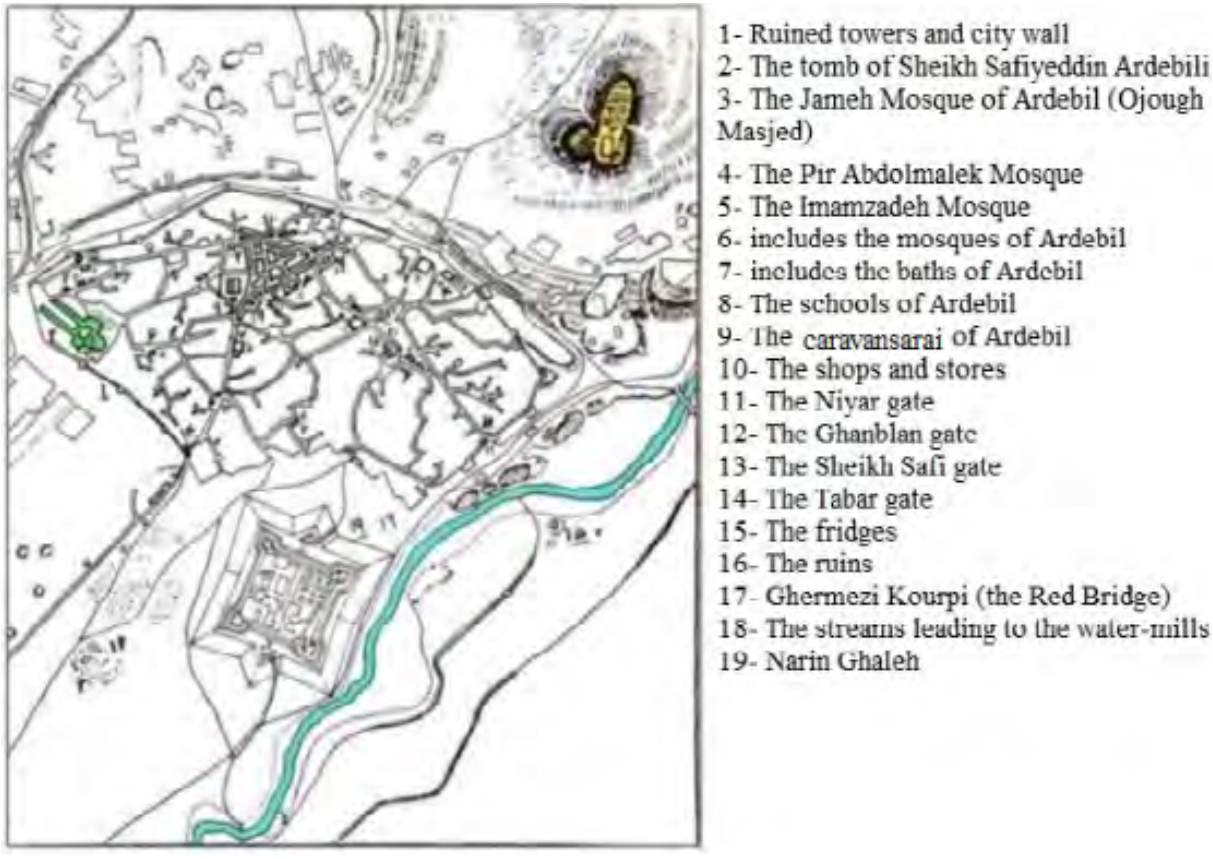


Figure 4. Ardebil in the Ghajar period, 1827, map provided by the Russian engineers (Giyasi, 1991, 27)

The physical [analysis] of the city after the Ghajar period to now: Street planning was one of the primary urban measures taken after the Ghajar period.

In 1977, the hill of Jomeh Mosque was partially destroyed to construct a street, causing irreversible damage. Today, the monument is located in the historical district of the city, on top of a hill between the old neighborhoods Pir_Shamseddin and Abdullah Shah.

In 1936 the monument was registered as a national heritage in the center of documents at the National Cultural Heritage organization under registration number 248.



Figure 5. The current location of the monument (organized by the author)

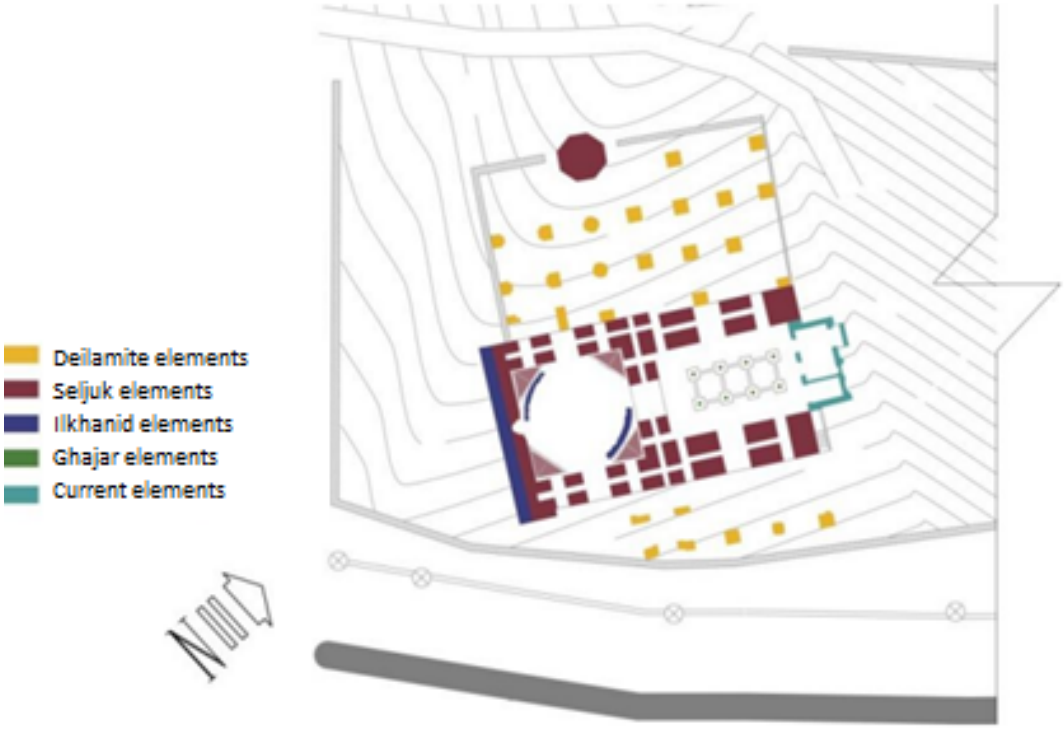


Figure 6. The phasing plan (provided by the authors)

4. Jomeh Mosque of Ardebil

Since 1988, the scientific board of the national organization of cultural heritage has carried out scientific research and archeological explorations on the hill and the Jomeh Mosque, proving the existence of the bottom layers and the adobe walls dating back to the Parthians.

According to archeological theories, the mosque was built on the remains of a Sassanid fire temple (Jamehi, 1995, p.14).

The construction stages may be summarized into three phases. The first step is the foundation and the Sassanid building.

Next, in the fifth century A.H., a mosque with the same form is built over its ruins; the minaret was also built in the same period.

In the seventh century, the dome and the ornaments evolved without causing fundamental changes in the building (Siroux, 1941, p.185).

The Mosque at the Age of the Daylamites

The researchers carried out some archeological explorations and excavations in the years 1974, 1988, and 1989, which led to the discovery of Daylamite pedestals installed between the Gonbad_khaneh (the dome chamber) and the minaret (figure 7).

They were shaped as polygons, and made from sculpted rocks (Shahbazi Shiran, 2004, p.41).



Figure 7. The remains of the Daylamite architectural foundation (The authors)

The mosque at the time of the Seljuks:

The major part of the mosque (whose remains still exist), along with a minaret a few meters away from the Gonbad_khaneh, belongs to the Seljuk period (figure 8).



Figure 8. The dome chamber, the Ivan, and the Seljuk minaret (The authors)

According to Siroux (1941, 183), given the fact that all the arches (including those in the corridor) are of the same characteristics, and that there are no breaks in the walls of the corridor connecting the main components of the mosque (the dome chamber, the dome, and the Ivan), they seem to have been constructed in the same period. In addition, the bricks of the dome chamber and the Ivan are of the same size. He also mentions that a steep, heavy dome covered the dome chamber back then, placed on top of a thick drum which was later destroyed.

Jamehi (1995) believes that such a corridor would have solely existed in the Seljuk style. Habib Shahbazi Shiran (2004) describes the current structure of the Jomeh Masjed as compatible with the main specifications of the "Chartaq with Ivan" pattern, one of the six mosque plan patterns dating back to the Seljuks.

In addition, ornaments like plaster seals between the bricks indicate that the age of the monument and the dome chamber dates back to the Seljuk period (figure 9).

"Although using ornamental plaster seals was common in both the Seljuk and Ilkhanid dynasties, the similarity of the seals of the mosque to other Seljuk buildings may relate them to the same period." (Anisi, 2017, p.41).



Figure 9. Seljuk plaster seals on the eastern wall of Gonbad_khaneh (dome chamber) (Anisi, 2017, p.41)

The main mihrab is in the center of the southern wall, and the remains of the Seljuk mihrab are visible through an opening (figure 10). The remains of a blue inscription in the Kufic script indicate its age and Seljuk origin.



Figure 10. The remains of the Kufic inscription on the Seljuk mihrab (Anisi, 2017, p.45)

The mosque in the Ilkhanid period:

Siroux (1941, 184) points out the [beginning of the] second life span of the building with the complete restoration of the dome.

The drum of the dome consisted of two parts: the inner one was in the form of a simple cylinder, bearing the structural loads, and its outer segmented shell was merely ornamental (figure 11).



Figure 11. The Ilkhanid drum of the dome (The author)

The segments were adorned with pieces of blue-green tiles and bricks, resembling monuments of the second half of the seventh century A.H. He states that the mosque consisted of the Gonbad_khaneh and the Ivan in the Seljuk period and that the latest restoration and repair took place in the Ilkhanid era.

During the Seljuk period, the corners of the roof were squinch-shaped, aiming to translate a square body into a round base supporting the dome and its drum. According to Siroux (1941, 185), their ornaments date back to the Ilkhanid period (figures 12, 13, 14).



Figure 12. A painting on the Gonbad_khaneh squinch (The archive of the Ardebil cultural heritage organization)



Figure 13. The restoration of the squinch on the north-east corner (from the archive of the Ardebil cultural heritage organization)



Figure 14. The painting on the Gonbad_khaneh squinch (from the archive of the Ardebil cultural heritage organization)

Figure 15 displays the Ilkhanid mihrab located on the southern side.

Jamehi (1995) and Anisi (2017) have noted the muqarnas of the mihrab and its ornaments, stating that it dates back to the Ilkhanid period. It is constructed in front of the Seljuk Mihrab and is visible today.



Figure 15. The Ilkhanid mihrab (The author)

The mosque in the Ghajar period:

Ivan's arched roof had already collapsed. To restore that, in the Ghajar period, the floor level was increased by two meters, and eight wooden pillars were added to support a flat roof, turning it into a "Shabistan", or prayer chamber.

Today, it is open to the praying public (figure 16).



Figure 16. The shabistan with a flat roof supported by the beams (The author)

5. The Architecture of the Building

The building has a rectangular plan 36.5 meters long and 19.7 meters wide and consists of the dome chamber and the Ivan (figure 17).

The arch of the Ivan is destroyed along with the dome; some of its remains may still be perceived.

The dome chamber has a rectangular base, 12.6 by 12.5 meters, and includes three main parts: The Bashn (the cubic base), the Chapireh (squinch), and the dome.

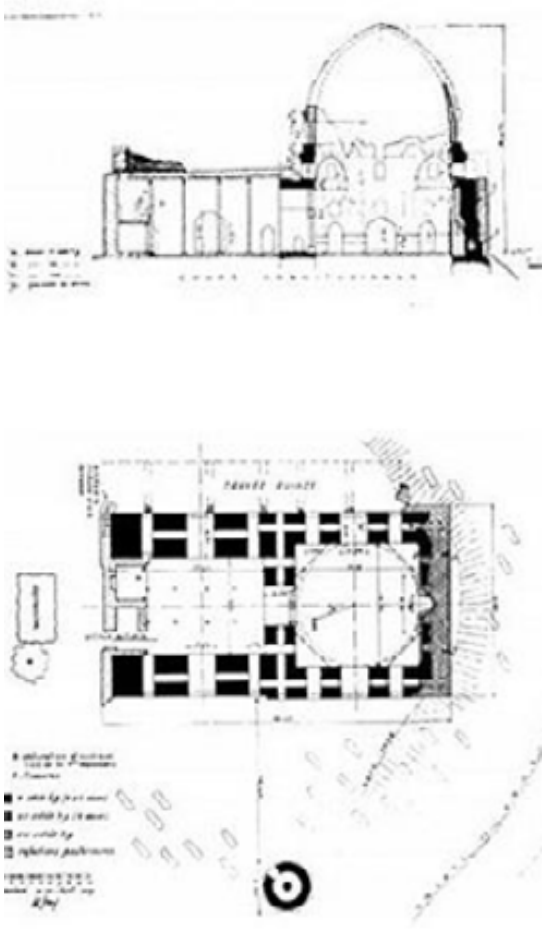


Figure 17. The plan and the section of the Jomeh mosque of Ardebil (Siroux, 1941, 194)

The "Bashn" or the dome chamber:

The dome chamber has a square-shaped plan, with the altar in the middle of the southern wall.

The other three sides possess three openings each, and those in the middle are taller and wider than the others.

There are arched corridors in the walls all around the dome chamber, also connected by narrower corridors (figure 18).

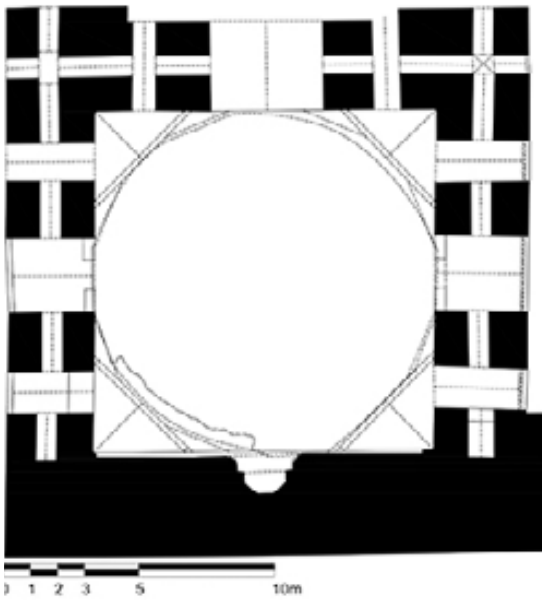


Figure 18. The plan (The author)

The base of the dome at the corners:

The "Chapireh" or the base of the dome at the corners is squinch-shaped (figure 19), supporting the dome over the Bashn by the gradual transition of the square base into an octagon, and later a Hexadecane.



Figure 19. Inside the dome chamber (The author)

There is a whispering gallery, a narrow corridor on the pillars, which goes around the Chapireh on the outer side and provides access to the base of the dome.

There are some openings in this part, along with the squinch-shaped corners, providing light and air circulation in the interior.

The Dome:

Currently, the remains of the drum of the dome may be seen on the northeast and southwest sides (figure 20).

As the dome no longer existed, the dome chamber was exposed to natural and human damage.

Therefore, in 1998, an iranite roof was constructed in place of the former dome on the top of its base (figure 21).

Then, in 2012, the temporary roof was collected and replaced with a metal dome covered with concrete (figure 22).

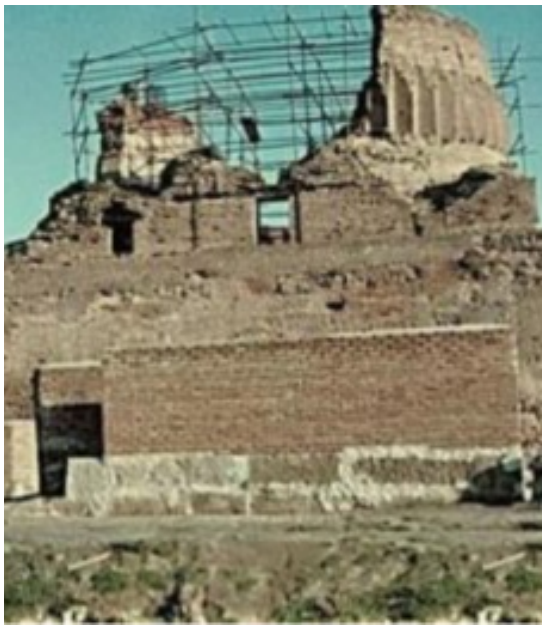


Figure 20. The remains of the drum of the dome (reference: the archive of the Cultural Heritage Organization of Ardebil)



Figure 21. The iranite roof in place of the dome (reference: the archive of the Cultural Heritage Organization of Ardebil)



Figure 22. The metal dome covered by concrete (reference: the archive of the Cultural Heritage Organization of Ardebil)

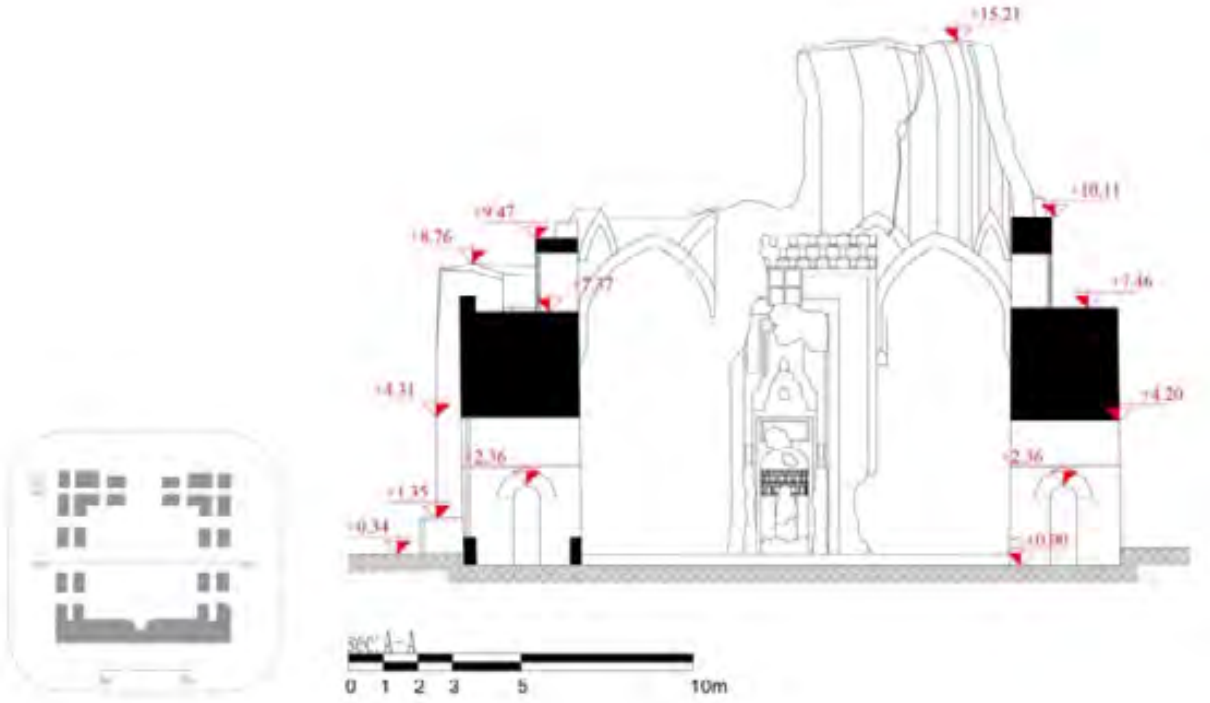


Figure 23. The Cross section (reference: the author)

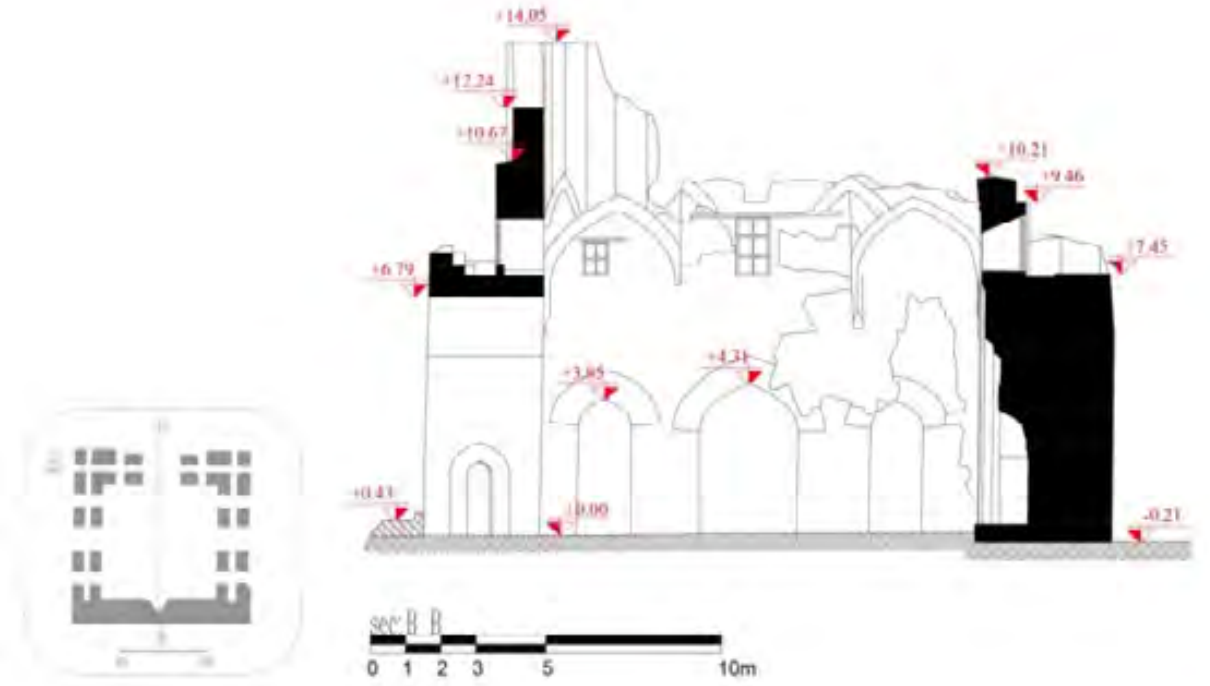
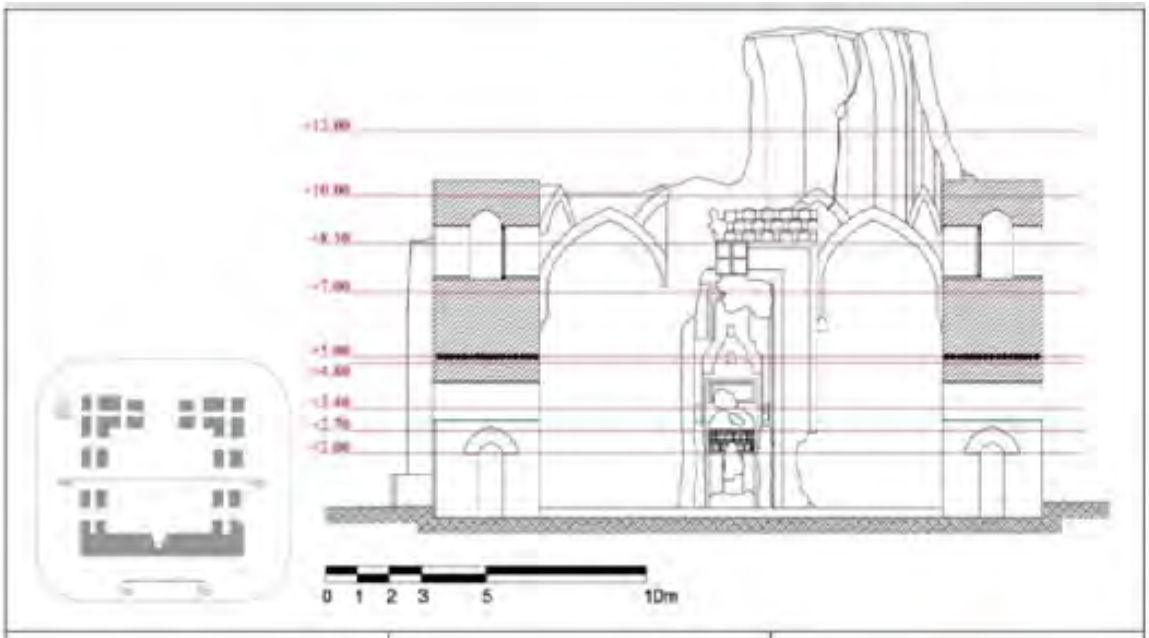
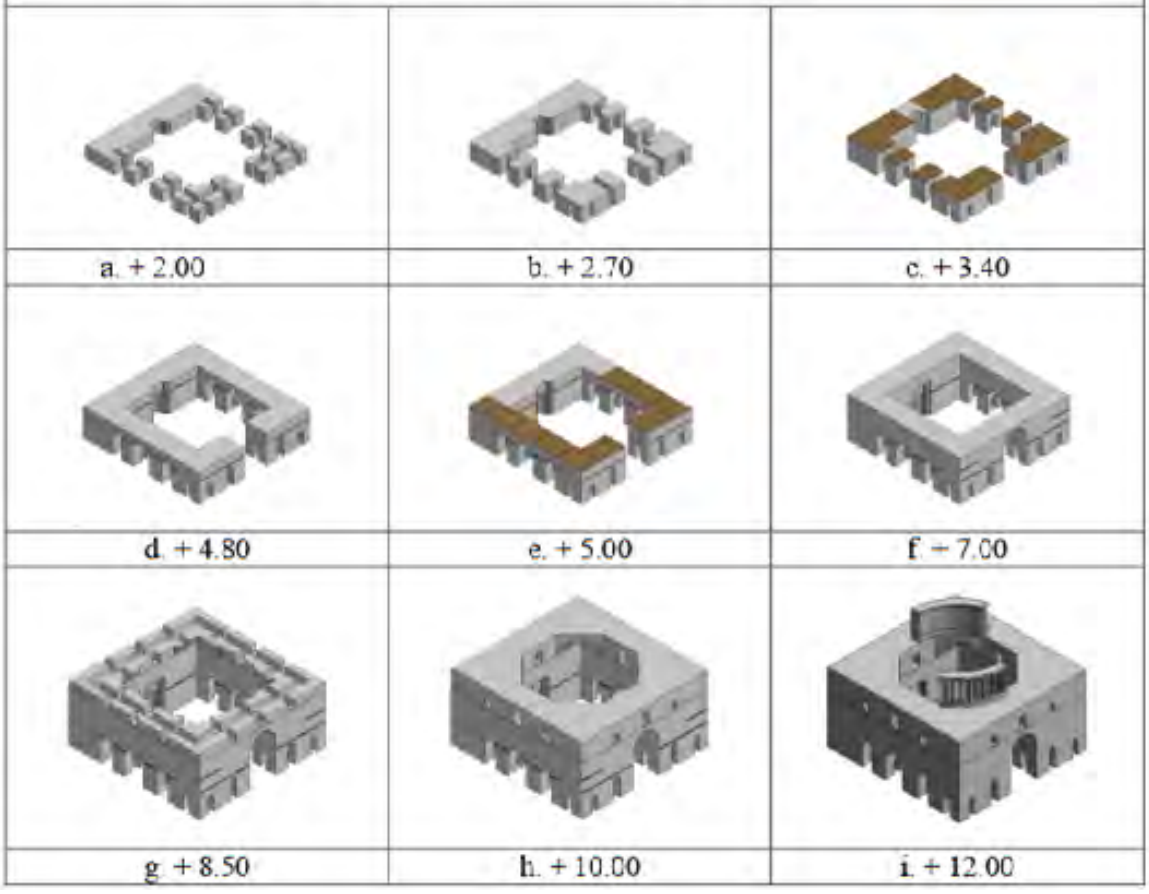


Figure 24. The longitudinal section (reference: the author)





a. + 2.00	b. + 2.70	c. + 3.40
d. + 4.80	e. + 5.00	f. + 7.00
g. + 8.50	h. + 10.00	i. + 12.00

Table 2. The plan in various levels (organized by the authors)

Construction material	*Place of application*
Brick	*The main construction material in the Seljuk period* *The major material used in this building* *Mostly square-shaped, 23*23*6 centimeters (Anisi, 1396,141)*
Stone	*Used to strengthen the building's foundation (the river rocks and riprap)* *Stone dado*
Lime mortar (Sarooj)	*Used in constructing the base course* *The lime mortar of the building required insulation due to the climatic conditions, humidity, and underground waters. Therefore, a cinder was added to the lime to insulate it. The resulting mortar was called Sarooj.*
Gypsum	*The main ingredient of the mortar attaching the bricks with ornamental seals* *Used in the ornaments of the frame around the mihrab, and for smoothing the interior surfaces,*
Wood	*A row of wooden timber inside the wall on various levels* *The frame of the openings, and lintels*
Tiles	*Ilkhanate blue-green tiles exist on the drum of the dome*

Table 3. The construction materials of the building (organized by the authors)

6. Restoration measures

Ali Akbar Sarafraz (1974) led a series of explorations in the Jomeh Mosque enclosure, leading to primary restoration measures in the following years.

A strategic board was organized to discuss all restoration items.

The board members were also responsible for checking their technical compatibility with the theoretical foundations of restoration before implementation and approving them.

Afterward, they would be carried out according to the specified schedule.

Restoration Measures
Reinforcing the foundations
Description
Several holes (3 in the dome chamber, and 7 elsewhere) were dug to reach the hard, untouched earth, and were filled with riprap and lime mortar. Their dimensions and depths varied according to the requirements.

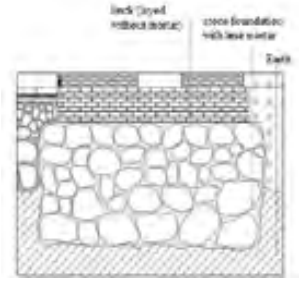
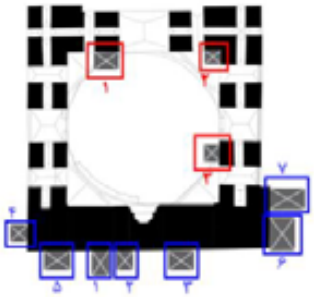
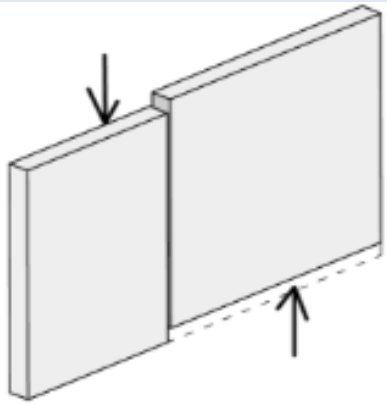
Pictures	***Technical Details***	***Plan***
		

Table 4. The restoration measures 1 (organized by the authors)

Restoration Measure
Repairing the crack in the south side
Description



Vertical crack

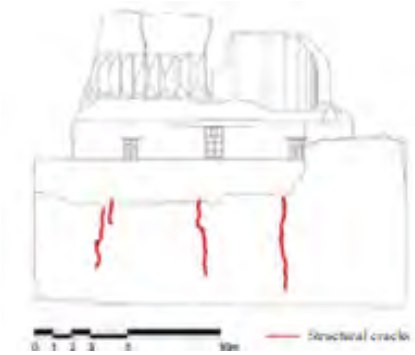
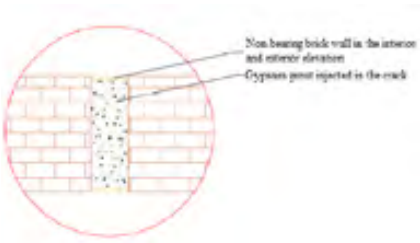
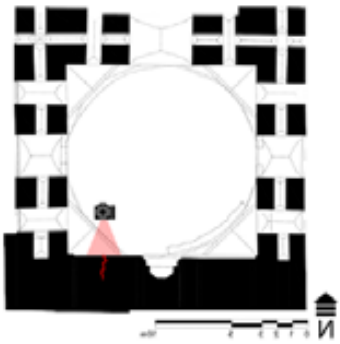
Equal size on the exterior and interior

In-plane displacement parallel to the crack

Caused by vertical soil settlement

(De Vent, I. A. E. (2011), 74)

The southeast corner of the hill was excavated to extend the road. Unfortunately, it has led to soil settlement, gradually causing vertical structural cracks. Recognizing the development of the crack through time (caused by the thrust), its activity was inspected by implementing witness samples and periodic observations. Having made sure of its inactivity, the restoration began, starting with clearing the crack with air pressure and rinsing. Afterward, two non-bearing brick walls were constructed within the crack, receding 1-2 centimeters from the interior and exterior elevations. They marked the place of repair in harmony with the current conditions and structure. Later, gypsum grout was injected into the space between the walls, filling it. The gypsum grout must be used as soon as it is mixed; this increases the quality of restoration. It is injected step by step and in proportion to the width of the crack. In this fashion, every stage solidifies and dries before the next injection, preventing hollowness.

Pictures	*Technical details*	*Plan*
		
		

Post-restoration pictures	
	

Table 5. The restoration measurements 2 (organized by the author)

Restoration measure
The restoration of the western wall
Description
Replacement of rotten materials destroyed by humidity
Plan ***Picture***



Table 6. Restoration measures 3 (organized by the author)

Restoration measure
The restoration of the eastern elevation
Description
Replacement of rotten materials, destroyed due to humidity
Plan ***Picture***



Table 7. Restoration measures 4 (organized by the author)

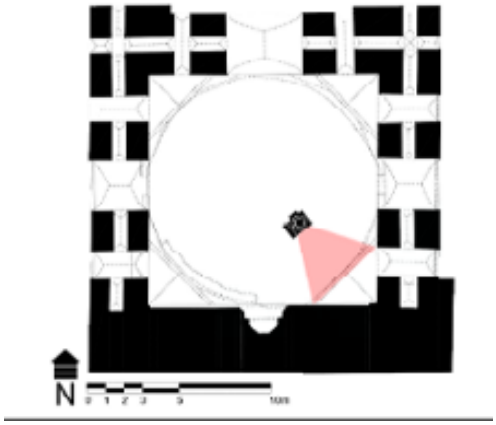
Restoration measure	
The restoration of the squinch on the south-east corner	
Plan	***Picture***
	

Table 8. Restoration measures 5 (organized by the author)

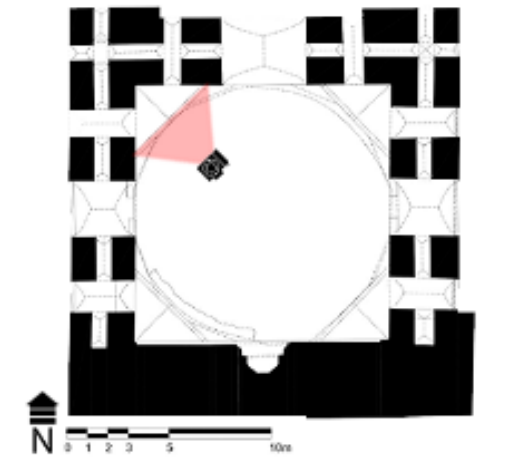
Restoration measure	
The restoration of the squinch on the north-west corner	
Plan	***Picture***
	

Table 9. Restoration measures 6 (organized by the author)

Restoration measure
Replacement of the rotten timber in the eastern and western parts of the southern wall
Description
This part was restored traditionally. The rotten timbers were dislocated manually, and replaced with fresh timbers. They were placed in the holes manually, using hand pressure.

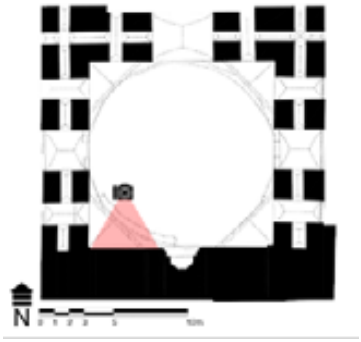
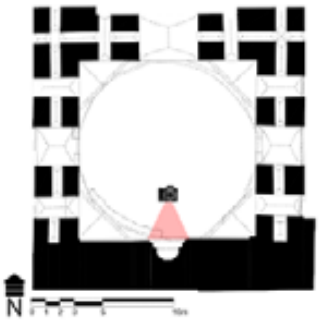
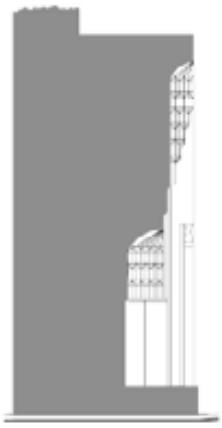
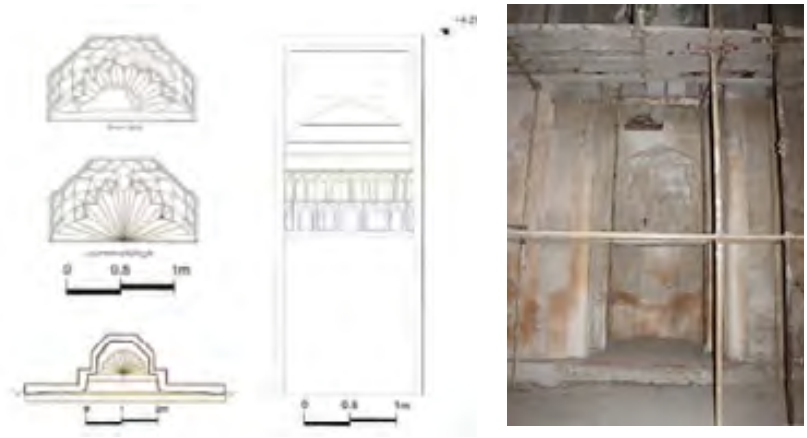
Plan	***Pictures***	
		

Table 10. Restoration measures 7 (organized by the author)

Restoration measure
The restoration of the Mihrab
Description
A part of the mihrab had collapsed due to thrust loads. It was repaired, along with the destroyed segments of the plaster muqarnas of the mihrab.

Plan	***Technical details***	***Pictures***
		



(Anisi, 2017,44)

Table 11. Restoration measures 8 (organized by the author)

Restoration measure
The restoration of the horizontal muqarnas above the mihrab
Description
The ornamental horizontal muqarnas above the mihrab had been partially damaged by the thrust loads; it was reconstructed.

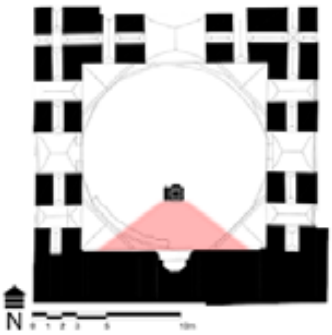
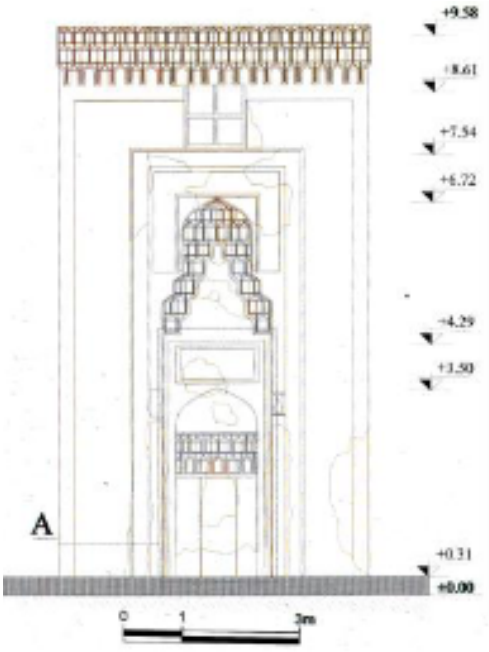
Plan	***Technical details***	***Pictures***
		

Table 12. Restoration measures 9 (organized by the author)

7. Conclusion

According to the studies and research focused on the stages of evolution over time, the building was of significant position in the pre-Islamic period.

Afterward, in the Seljuk period, a mosque was built over the ruins of the former building. The monument was at its prime during the reign of the Seljuks, and was an important structure for the Ilkhanids; the first series of restoration and repair took place back then, and a 'gariv' or drum was added while reconstructing the dome.

The mosque, which also consisted of a dome chamber and an Ivan, experienced more changes in the following periods.

During the reign of various governments, the building lost its significance in the urban structure and was left desolate on the city's outskirts.

Today, the building has received general restoration and refurbishment, like repairing the crack of the southern wall caused by thrust loads. It was inspected, cleared of debris, and injected with grout.

However, despite the restoration efforts like reinforcing the foundation of the dome chamber, repairing its ornaments (such as the plaster muqarnas of the mihrab), and replacing the weathered, rotten materials in the walls with fresh construction materials, the evidence of neglect and destruction is still visible.

Acknowledgment: Thank you to Mrs. Aylar Javadpour for preparing the final version of the article based on the symposium format.

References

1. A. Anisi, "A study of architectural preservation of Jomeh Masjed, Ardebil," The research center of cultural heritage and tourism, Tehran, 2017.
2. A. Auleaurious, "The itinerary of Auleaurious," translated by A. Behpour, Tehran, Ebtekar, 1984.
3. M. Bidbarg, H. Shahbazi Shiran, and F. Bidbarg, "Study of the artistic and architectural characteristics of Jameh Mosque of Ardebil in various periods," The Journal of Research in Art and Human Sciences, vol. 3, no. 14, pp. 1, 25-38, 2017.
4. L. Remple, "The mausoleum of Ismael the Samanide," Bulletin of the American Institute for Persian Art and Archaeology, vol. 55, no. 1, Jun. 1935.
5. De Morgan, "Mission seientific en perse, etudes geographiques," Paris, Ernest Leroux, 1894.
6. I. A. E. De Vent, "Structural damage in masonry: Developing diagnostic decision support," 2011.
7. A. Godard, "The art of Iran," translated by B. Habibi, Shahid Beheshti University publications, Tehran, 1998.
8. R. Healen Brand, "The Islamic architecture: Form, Function, and meaning," Bagher AyatollahZadeh Shirazi, Rozaneh Journal, Tehran, 1998.
9. B. Jamehi, "A glance at the historical monuments and buildings of Ardebil," Scientific and Cultural publication, 1995.
10. Lebrun, "Voyage en perse," Paris, 1718.
11. L. Golombek and D. Wilbert, "The Timurid architecture in Iran and Touran," Mohammad Yousef Kiyani, the national

cultural heritage organization, Tehran, 1995.

12. S. Mousavi, "The Jameh Mosque of Ardebil," collection of papers of the conference "Mosque Architecture: The past, present, and future," University of Art, pp. 633-650, Isfahan, 1997.
13. M. M. Oghabi, "The encyclopedia of monuments in the Islamic period (Mosques)," Soureh publication, Tehran, 1999.
14. A. R. Zadeh Ardebili and L. Peyghami, "Providing an approach for intervention in the urban tissues derived from the recognition of the traditional city (case study: Ardebil)," Journal of Fine Arts, Architecture, and Urbanism, no. 38, pp. 73-84, 2009.
15. B. Safari, "Ardebil through the history," 2nd volume, Tehran, 1974.
16. A. A. Sarafraz, "Results of archeological explorations," 1974.
17. F. Sarre, "Denkmaler Persischer Baukunst," Berlin, 1910.
18. M. Siroux, "The Jameh Mosque of Ardebil," translated by N. Athar Journal, vol. 15-16, pp. 250-180, Imani, 1941.
19. H. Shahbazi Shiran, "Research and analysis of the architectural elements and components of Jomeh Masjed in Ardebil," Raad Journalism Institute, Ardebil, 2004.
20. The Center of Documents at the Technical Office of the National Cultural Heritage Organization of Ardebil.
21. D. Wilbert, "The Islamic architecture of Iran in the Ilkhanid period," translated by A. Faryar, Ph.D., Tehran, Scientific and Cultural Publication Corporation, p. 147.
22. H. Zomarshidi, "The mosque in the architecture of Iran," Keyhan, Tehran, 1995.

CENTRAL ASIAN STUDIES II
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Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

THE INVESTIGATION OF THE ARCHITECTURAL STRUCTURE OF MASJID-I JAMIʿ OF URMIA, EMPHASIZING DOME-CHAMBER

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Abstract

The masjid-i jamiʿ of Urmia located in the town of the same name which is the centre of the West-Azerbaijan province in the north-west of Iran. The mosque complex underwent sustained development and changes over the centuries; therefore, the precise date of the foundation is still uncertain. It consists of a dome-chamber with flanking shabistan and an open courtyard which was surrounded by chambers of Zand era previously. The traces of what appears to belong to an earlier structure was also found under the current structure. Current literature on the mosque implies multiple periods of constructions, with the earliest survived date 676 AH on the monumental Ilkhanid mihrab, followed by 1181 AH Zand and later Qajar signature panels. However, the structural evidence shows that the core of the mosque seems to be the dome-chamber which is attributed to the Seljuq era. This research aims to investigate the developments of the mosque through Seljuq period, focusing on its dome chamber. The dome-chamber of the Masjid-i jamiʿ of Urmia shares similar characteristics in terms of ground plan, proportions, and elevation with its Seljuq counterparts in Iran, although, in the matter of zone of transition it is marked disparities. From the structural point of view, the zone of transition in Masjid-i jamiʿ of Urmia, where load bearing Patkāné (concaved niches) mounted each other, proposes a unique architectural feature in the north-west of Iran. In other word, this section comprises three rows of 24 niches which have been removed or hidden in some parts. This section presents a specific example, the parallels of which found in the mosque of Ibn Tulun, Mausoleum of Imam al-Shafi'i and the mausoleum of Shajar al-Durr in Egypt as well as the Alaaddin Mosque and the Gök Madrasah in Turkey.

Key words: *Masjid-i Jamiʿ, Urmia, Dome-chamber, Seljuq, Transitional zone*

Construction Sequence of Masjid-i jamiʿ of Urmia

The Masjid-i Jmai of Urmia is located in the historical core of the city, adjacent to the old Bazaar (Figure 1). The significance of the city is emphasized by al- *Muqqadasi*, Ibn Shahr-e Ashub, Yaqut Humavi, Belazardi, and Hamdullah Mostofi. Al- *Muqqadasi* in Ahsan al-taqasim says (15, p. 565), "Urmia is beautiful, and has a castle, the Jami is among the market, it has dam and stream" (3, p. 520).

The building of the first mosque on this site is thought to have been erected in the early Islamic centuries and just like other early mosques appeared to follow the so-called hypostyle or shabistani type. An excavation carried out by ICHO in the years 1969 to 1977, revealed the remains of old piers underneath the current shabistan[1] (Figure 2), and further excavations can shed a light on the precise style of the early structure (8, p. 23).

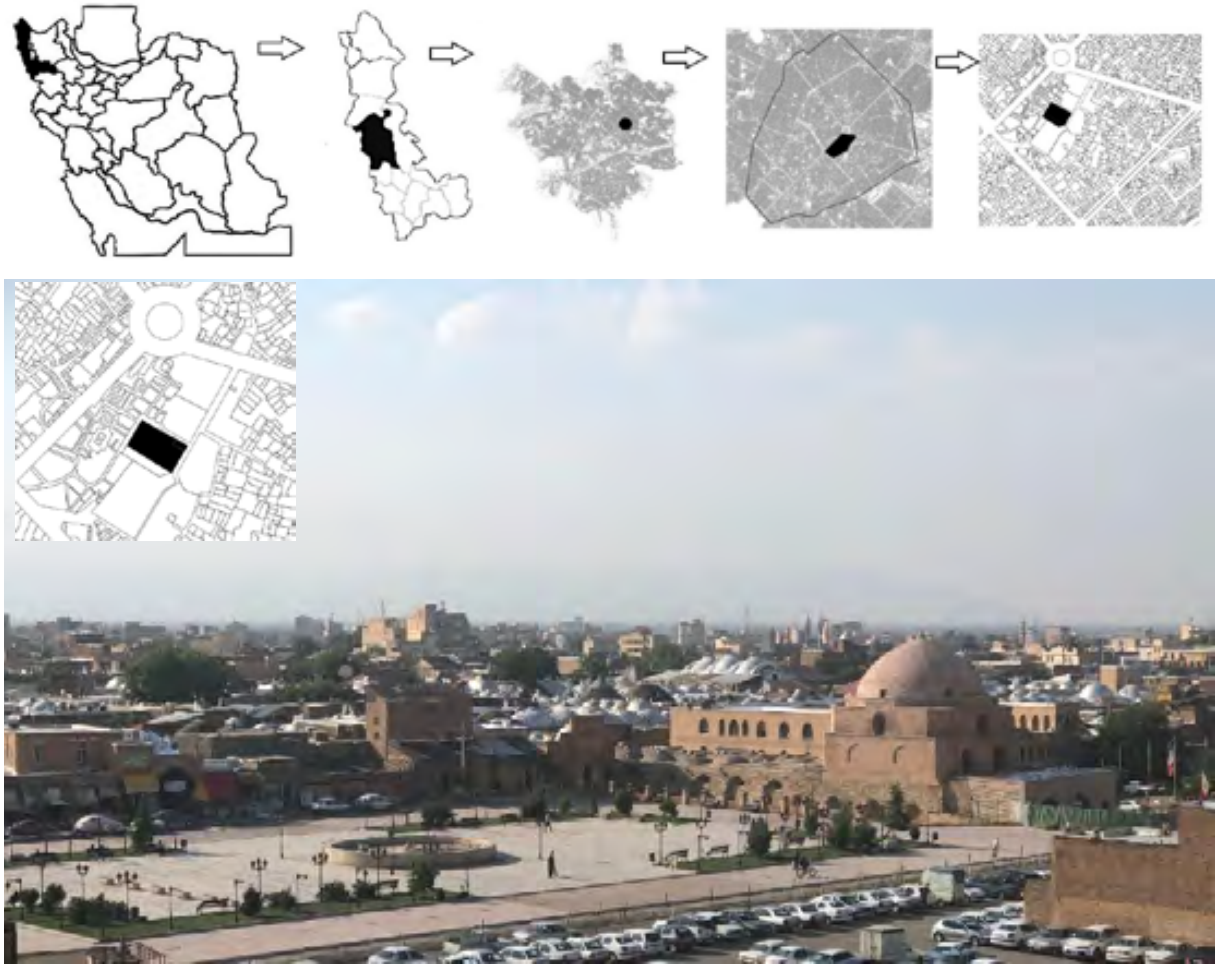


Figure 1. Urmia, Masjid-i Jamiʿ; the position of the Masjid-i jamiʿ of Urmia.

[1] Nave, Prayer Hall

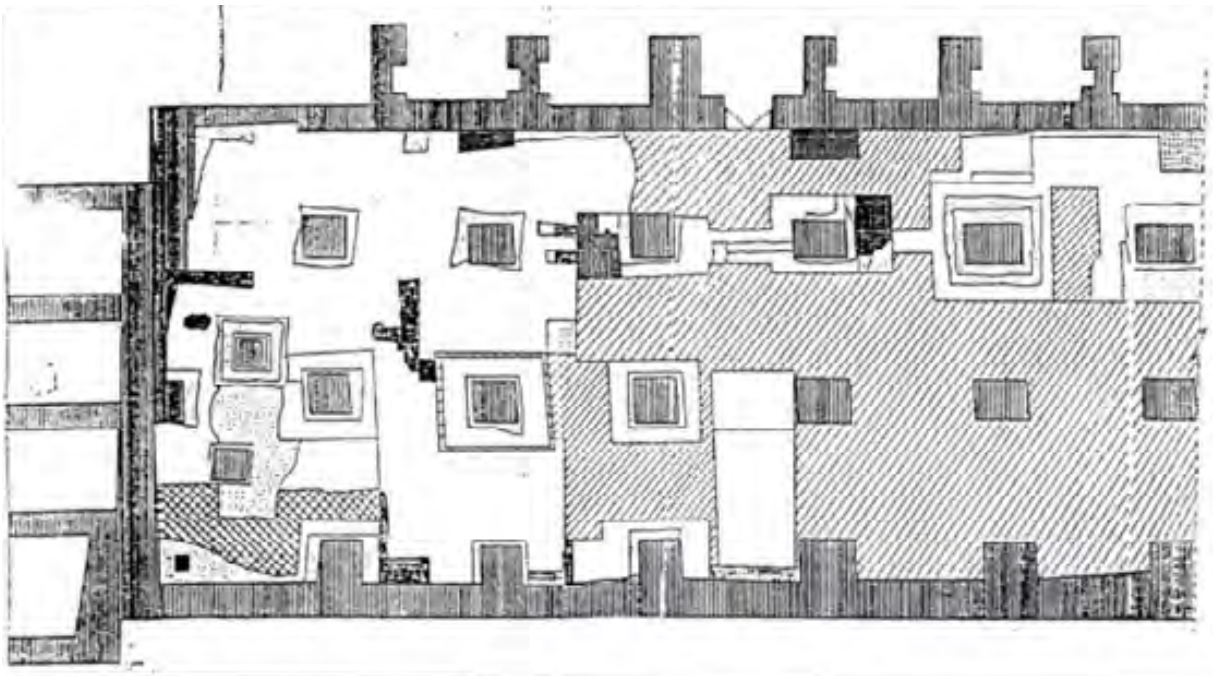


Figure 2.A Urmia, Masjid-i Jami'; the remain of early structure under the current shabistan (Archive of ICHO).



Figure 2.B Urmia, Masjid-i Jami'; the remain of early structure under the current shabistan (Archive of ICHO).

The current structure comprises a dome-chamber with flanking shabistan, seven survived chambers as well as recently added *Huzaya Elmiya*[2] and newly reconstructed eastern chambers (Figure 3).

The available evidence suggests that the core of the complex is the south corner dome-chamber that most probably dates to the Seljuq period (4, p. 39). It is possible that during 11th to 12th century, the dome chamber was added to the early structure which could be a shabistani mosque, and despite the common arrangements of the dome chambers, no iwan[3] was built in front of it.

The current shabistan, which is three bays deep and nine bays wide, is located on the south side of the courtyard, flanks the

[2] *Religious school. Persian:* حوزه علمیه.
[3] *A vaulted hall, walled on three sides, with one end entirely open.*

dome-chamber to the south-west. This measures 13.4 m. x 47 m and has two entrances to the main courtyard.

The western shabistan which is nine bays deep and three bays wide, was roofed by a series of small brick domes set on heavy piers. The irregular intercolumniation and the varied styles of construction, along with different material used in this part, suggest that it was erected through different periods.

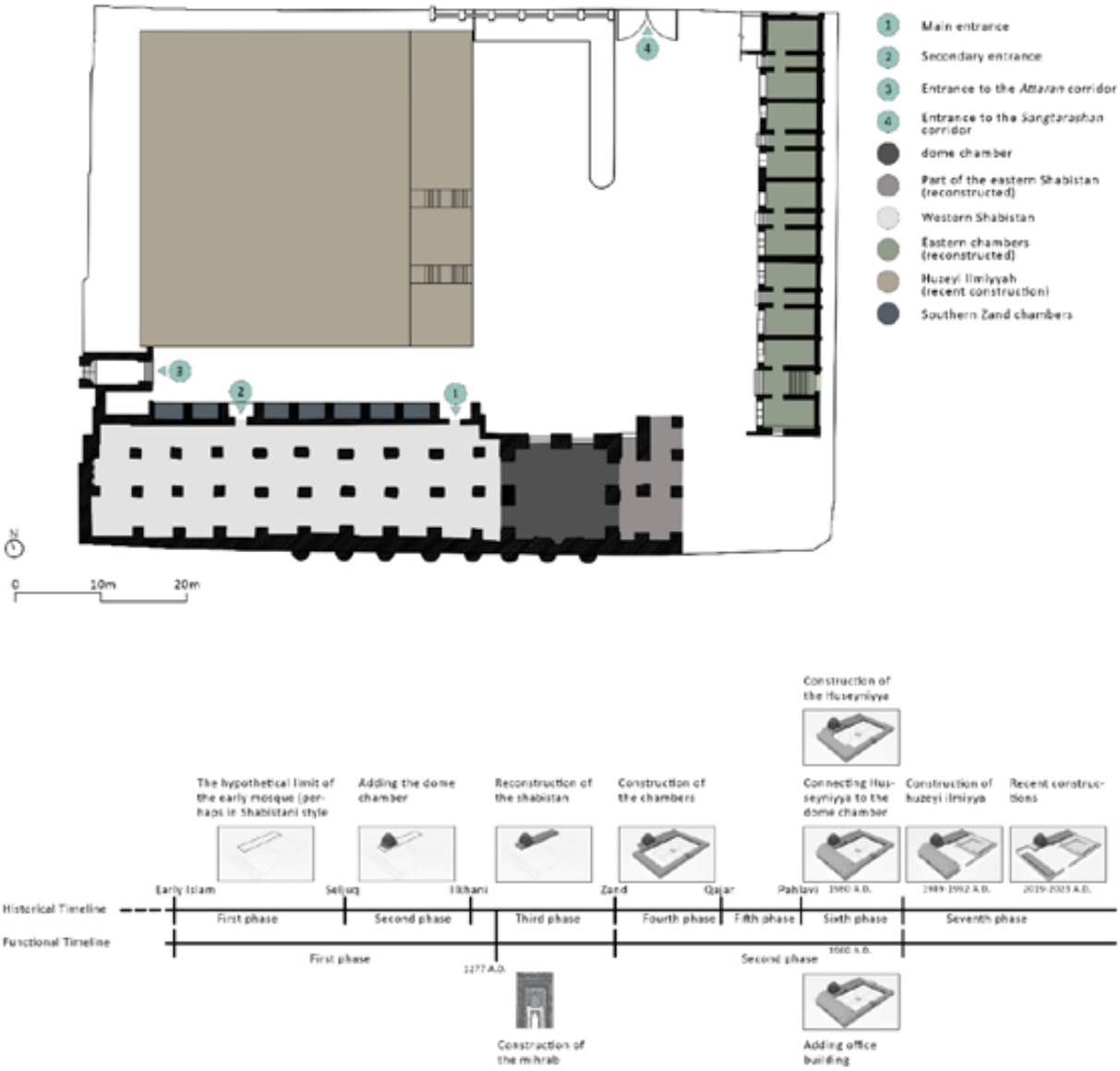


Figure 3. Urmia, Masjid-i Jami'; ground plan and construction hierarchy.

The most peculiar part of the complex is the Seljuq dome chamber, which houses a monumental Ilkhanid stucco mihrab (Figure 4). The lower parts of the mihrab

heavily restore, but its significance lies in the fact that it bears the date 676/1277 and the name of the craftsman with a *nisba* to Tabriz. The mihrab is comparable with other Ilkhanid mihrabs such as those of the Marand and Tabriz Jami Mosques.



Figure 4. Urmia, Masjid-i Jamiʿ mihrab (2021).

Along the north side of the mosque is an open courtyard which was covered by chambers of Zand period previously (Figure 5a) (13, p. 45).

According to an inscription installed at one of the entrances to the shabistan, in the year 1184 (1770), by order of Reza Goli Khan Biglerbigi[4] who was once the ruler of Urmia, a large courtyard with surrounding chambers were erected (10. P. 192) (Figure 5b).

However, due to interventions in recent decades, all the chambers except some of them to the south side, were being destroyed and new constructions including the eastern hall and the religious school known as *Huzaya Elmiya* added. Through the most recent interventions, the pitched hall destroyed, and based on the results of the excavations, the eastern chambers and the east flanking bay to the dome chamber was reconstructed (Figure 6).

[4] *D. 1901.*



Figure 5a. Urmia, Masjid-i Jamiʿ; The courtyard surrounding by Zand chambers and eastern hall (1970s) (Archive of ICHO).



Figure 5b. Urmia, Masjid-i Jamiʿ before the interventions (1956) (Archive of ICHO).



Figure 6. Urmia, Masjid-i Jami'; general view of the dome chamber and recently reconstructed eastern chambers (2023).

The Dome Chamber of Masjid-i jami' of Urmia

The dome-chamber is square in plan, measures 10.75 x 10.75 meter at ground level and is about 18 meter high. It consists of three main sections; the so called bashan, which is in turn divided into two sections, the zone of transition, and the dome (Figure 7).

The dome is a pointed arch and is of a single shell, being almost discrete at the top. It rests upon a sixteen-sided drum, which is visible from the outside. This clear division of the zone of the transition into two sections can be seen in other Seljuq dome chambers such as those of Gunbad-i Nizam al-Mulk in Isfahan and Davazdah Imam in Yazd (Figure 8).

Within the chamber, the dome is set on the zone of a transition, in the centre of each side there is a window with a distinctive trefoil-type arch, framed by Qajar inscription band. Below this zone, there are two windows of the pointed arch, which is in turn framed by Qajar inscription bands, in each side of the chamber.

However, the mihrab on the qibla wall blocks two windows corresponding to similar pairs in the other walls. This indicates that the chamber itself must antedate 1277 CE (6, p. 112). In the lower section, in the so-called *bashan* section, the walls break up by two openings on three sides, which use as entrance to the flanking shabistans on western and eastern sides, and as window on the northern side.

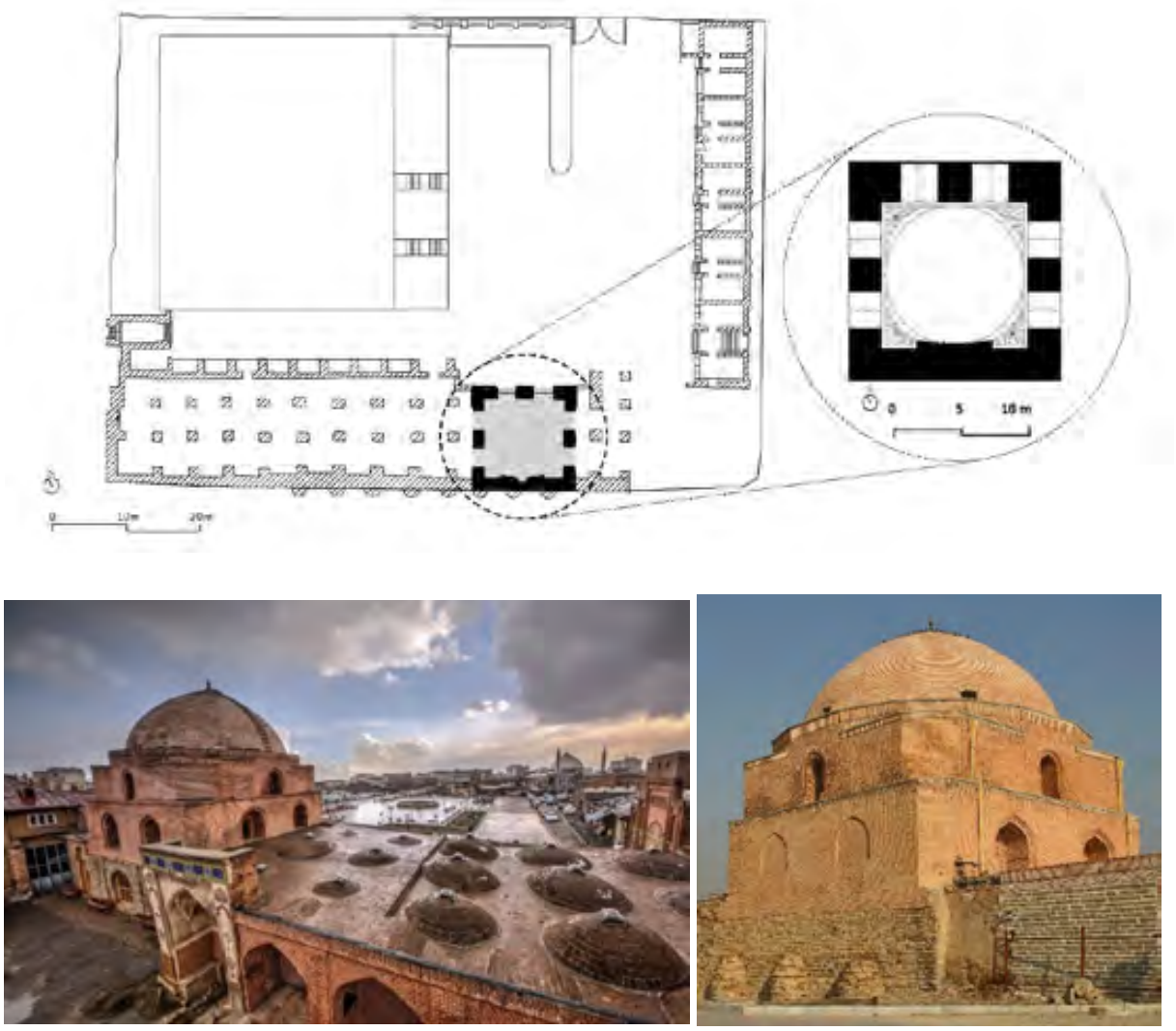


Figure 7.a. Urmia, Masjid-i Jami‘; The plan, sections, interior and exterior of the dome chamber

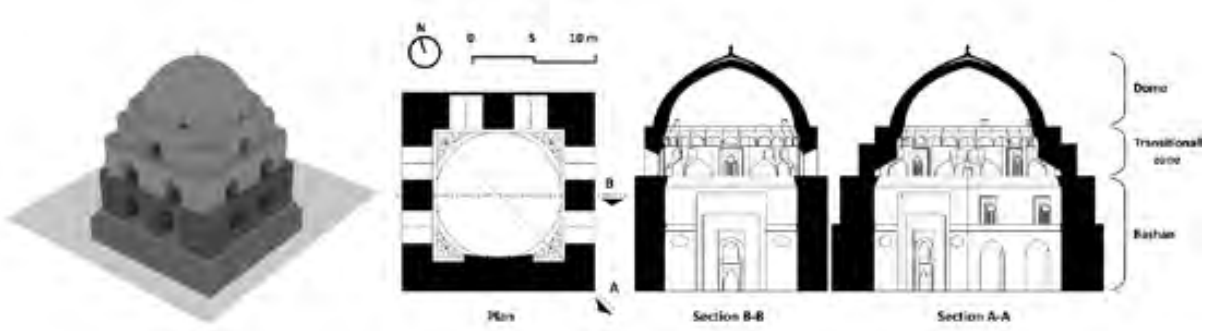




Figure 7.b. Urmia, Masjid-i Jami ʿ; The plan, sections, interior and exterior of the dome chamber.

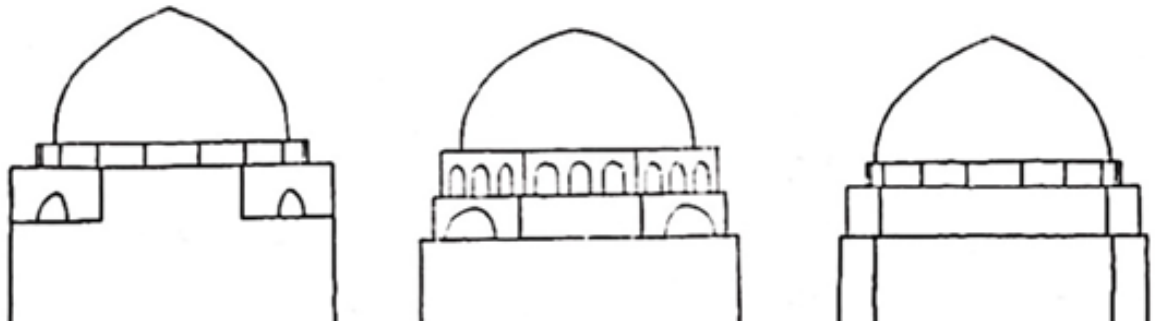


Figure 8. Urmia, Masjid-i Jami ʿ; the dome chambers of Nizam al-Mulk (left), Davāzdah Imām (middle) and Urmia (right).

An examination of Seljuq dome chambers in northwest of Iran by Professor Hillenbrand, revealed that six Seljuq dome mosques that of Haydariya in Qazvin, and the Jami Mosques of Qazvin, Qurva, Urmia, and Marand, form a homogenous local school in this area. Although the dome chamber of Urmia shares similar characteristics with the rest of the dome chambers in Iran, on the evidence of ground plan and size, it is comparable to the mosques in Qazvin and Qurva (14, p. 95).

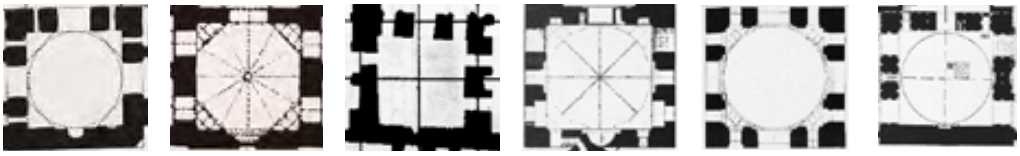
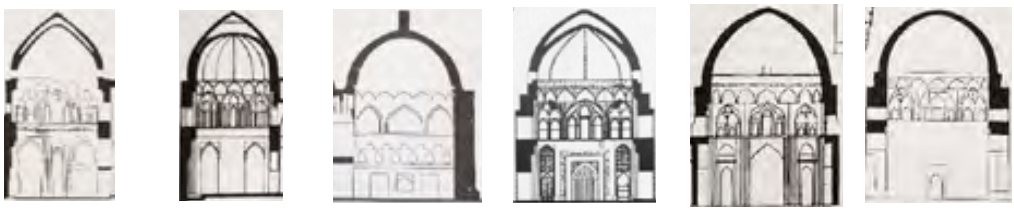
Dome Chamber	Nizam al-Mulk	Ardestan	Zavareh	Qazvin	Barsian	Taj al-Mulk
Construction year (A.D)	1158-1160	1135	1113-1115	1097-1099	1088	1080
Plan						
Section						

Table 1. Comparisons between the dome chambers of Iran.

Zone of the Transition

From the architectural point of view, various techniques used to achieve the transition from the square to the round in order to provide a base for the dome over.

The development of such an architectural element goes back to the pre-Islamic period, where early squinches of a square, converted it to a form, upon which a dome was set easily (7, p. 9). This technique reached its zenith during Seljuq period when the dome chambers had an important role in mosque architecture.

From the various techniques that were developed over time to transition from the basic plan of the building to a dome, pendentive and squinch were the most common ones used by architects. One of the most distinguishing features of the zone of the transition in the Seljuq dome chambers in Iran is the arched squinch (Figure 9).

A variation of this architectural solution can be seen in almost every mosque. In the most common method of this technique, eight connected arches place over the square to convert it to an octagon.

In the next step, this octagon becomes a Hexadecanol and in the same way, it finally becomes a circle at the base of the dome.

Various methods used to fill the diagonally placed corner arches at the internal angles, from which the so-called *patkāné*, which has been used in Masjid-i jamiʿ of Urmia, shall examine in detail.

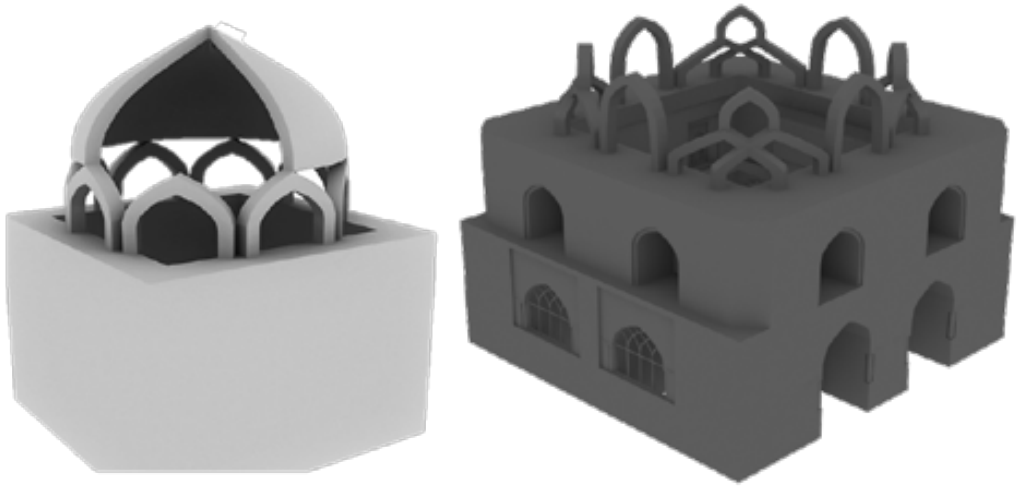


Figure 9. The common method of Iranian transitional zone in comparison with Masjid-i jamiʿ of Urmia.

Patkāné

A survey of the literature on the word *patkāné* indicates that there is much confusion in the definition and application of the word. Pirnia considers the best definition for *Patkāné* as "a series of niches, superimposed each other to fill in the free space of the corner arch." This element serves both as a decoration and structural feature in the corner construction in Iranian architecture.

While the cornering of the domes in the Jami Mosques in Yazd, and Varamin, as well as buqʿa Pirbakran present decorative *patkānés*, the ones in the Jami Mosques of Isfahan, Ardistan, and Barsian were formed from structural *patkāné*.

In these examples, niches are usually combined based on dividing the triangles created in the four corners of the dome's square plan. In this way, each triangle is divided into two equal triangles.

Then, by dividing the two sides corresponding to the walls into two equal parts and connecting the middle points, four triangles, and two squares are created, and the squares themselves are split into two triangles (Figure 10).

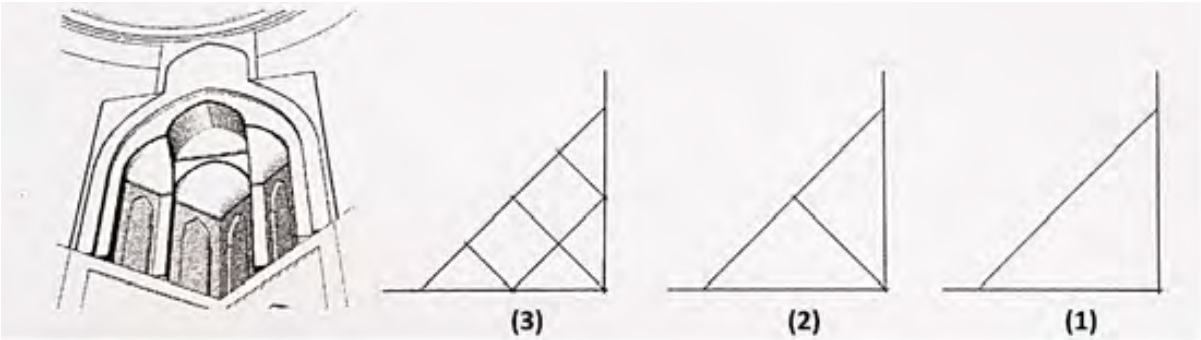


Figure 10. Urmia, Masjid-i Jamiʿ; the squinch of the dome of Nizam al-Mulk.

Zone of Transition in Masjid-i jamiʿ of Urmia

Featuring an intricate style of structure, the zone of transition here forms from a series of niches in three tiers, in the first and second of them, the niches are separated by corresponding windows on each side. Receding back to the intersection of the two walls in the first row, the niche of each corner is divided into three lobes, in the lower part of the middle one a small squinch was placed. In the middle zone, with the same outline, a further row of niches is placed above, thus getting a gradual transition toward a circle. Later, a series of encircling niches, provide the base for the drum of the dome. These niches here are smaller than the others and there are 24 of them (Figure 11.a). In this arrangement, each niche is mounted on the apexes of the lower ones, thus creating a set of adjoining niches. The parallels to this method can be seen in the south and west iwans of Isfahan Jami Mosque, as well as in the corners of the domes of Varzaneh, and Golpayegan Jami Mosques. Unlike the corner structure which has been developed in the domes of Taj al-Mulk and Nizam al-Mulk in Isfahan, this method allows for the better extension of the niches. In this technique, the number of the superimposed niches is always equal in each row and only the size of the niches changes in the upper zones. (Figure 11.b).

A close examination of the technique indicates that the type of the niches varies in shape based on the position they are placed. These elements can be developed either with curved or plane surfaces. Unlike the concave niches the flat ones are none-load bearing and thus can be treated with freedom, pierced in some cases, so as to permit a window being placed there. There are examples of this form in the tomb of Baba Qasim, the southern and western iwans of Isfahan Jami Mosque, and the Varzaneh Jami mosque (Figure 12).



Figure 11: Urmia, Masjid-i Jamiʿ; the transitional zone of the Masjid-i jamiʿ of Urmia (a) and the arrangements of the niches (b)

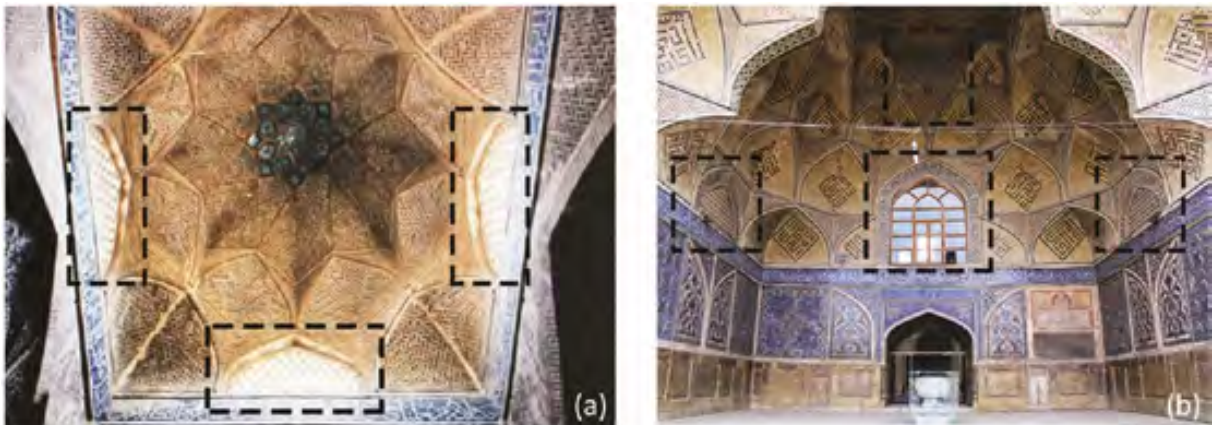


Figure 12. Examples of the flat niches found in the Baba Qasim Tomb (a) and the southern iwan of Isfahan Jami Mosque (b) (www.Kare1.ir).

While the eight connected arches are a standard form of converting a square into a circle in the dome chambers of Iran, some evidence implies that this technique is entirely absent in the zone of transition of Masjid-i jamiʿ of Urmia. The placement of eight hypothetical arches on the square of the dome-chamber indicates that due to the current position of the niches, these hypothetical arches protrude from the transitional zone and do not hide behind the niches (Figure 13). Another point that makes this method of placement impossible for the Masjid-i jamiʿ of Urmia is the orientation of the plates adjacent to the windows. Unlike the general method of corner construction in Iran, these plates are not parallel to each other and oriented in a way that intersect each other. This prevents the hypothetical arch from being placed on a position to remain hidden under the niches as it loses its bearing capacity so that part of the load which can be taken by the arch, deflects it to the sides and caused it to lose its balance (Figure 14).



Figure 13. Urmia, Masjid-i Jamiʿ; placement of the 8 hypothetical arch ribs in the transitional zone

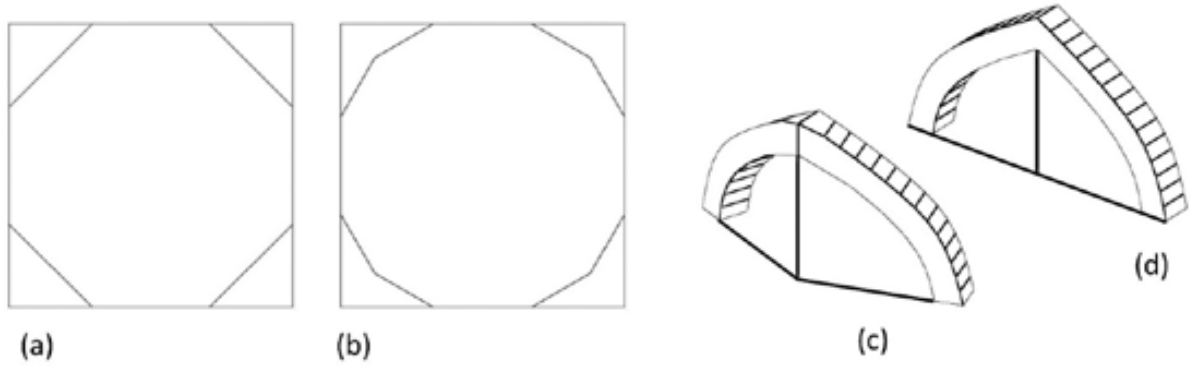


Figure 14. The plan of the panels adjacent to the windows in prevalent transitional zone (a), in Urmia Jami Mosque dome chamber (b), decorative arch ribs (c) and structural arch ribs (d)

Looking at various techniques, it becomes clear that a completely different approach is taken by the architect in Masjid-i jamiʿ of Urmia. In this building, the transition from a square to circle was managed with twenty-four niches mounted each other in three rows, some of which have been removed or hidden based on the position they have taken (Figure 15). In this arrangement, the square is divided into twenty-four sections by the hypothetical radii which radiate from the centre of the dome. In the next step, each section which had formed a niche, come forward, to place a further row of niches above. This process is repeated in three tiers until the last zone, where the size of all niches is equal (Figure 16). This arrangement of niches creates a new organization of patkane as a transitional zone, which is rarely seen in Iranian architecture. According to this placement, there should be three and four additional niches in the first and second rows, in addition to the niches in the corners. A point that can help in confirming this, is the existence of a bare space between the windows and their adjacent plates, which confirms a niche of smaller in size being placed to the right and left of the flat panels to fill this space (Figure 17).

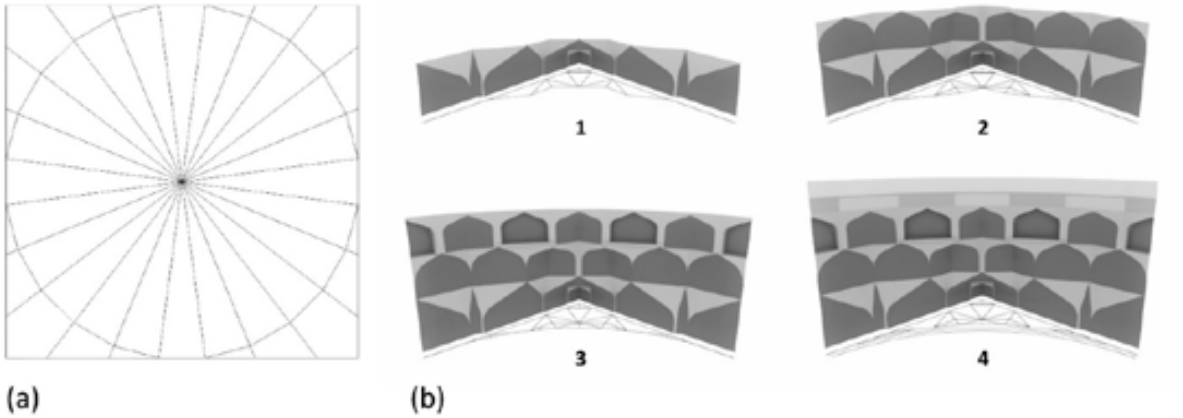


Figure 15. Urmia, Masjid-i Jamiʿ; dividing the circle into 24 parts by its inscribed circle (a) and the rows of transitional zone (b)

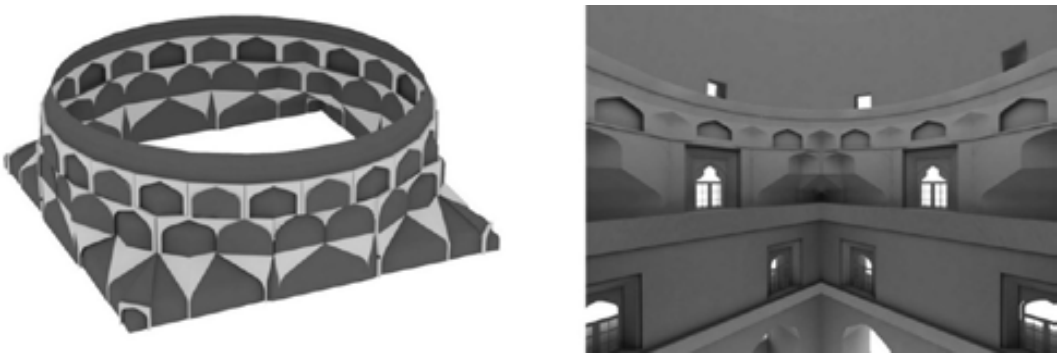


Figure 16. Urmia, Masjid-i Jamiʿ; transitional zone of Urmia Jami Mosque dome chamber



Figure 17. Urmia, Masjid-i Jamiʿ; hidden niches with brighter color in transitional zone (a) and placement of hidden niche in the wall (b)

The technical description and structural analysis make it possible to propose a model for the position of arches in the transitional zone of the Masjid-i jamiʿ of Urmia, although it cannot be proven due to the thick layer of plaster that covers it and makes the arches invisible. In this method, in contrast with the contemporary examples of Iran, instead of a simple arch across the angle of the walls, three pointed arches are arranged in the squinches, from which two lower arches intersected each other and provide the base for the placement of the third arch above (Figure 18).

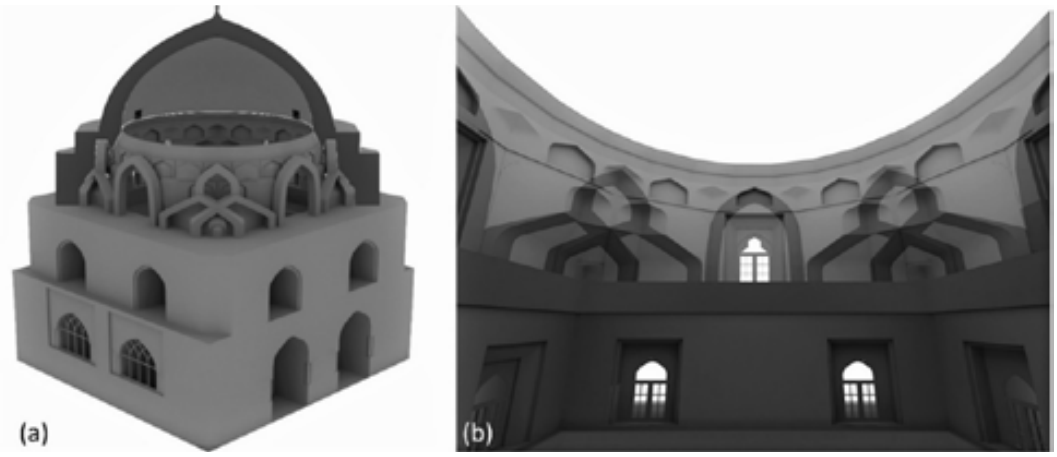


Figure 18. Urmia, Masjid-i Jamiʿ; suggested model to placement of arch ribs

Comparative Analysis

As mentioned unlike the common method of converting a square into 8, 16, 32-sided zones, that links the dome with the base, in this method firstly the square is divided into a suitable number of niches and then the same number of niches is repeated in the upper rows (Figure 19).This solution to the problem of supporting a dome over a square base had evolved less in Iran with the only extant seen in the dome of the Soltanieh. Here, the dome is interposed over three tiers of niches in the transitional zone on a base in plan of an octagonal which eases the transition to dome (Figure 20). The limited use of this technique in Iran, heightens the need to trace the use of the same method in other Islamic countries, for we find surviving examples in Egypt and Anatolia. In eastern Anatolia and before the Ottoman conquest, the main method for converting a square to a circle was the use "Turkish triangles" in a row to unite the plan with the dome above. From the resemblance to the arrangement of the niches in the Masjid-i jamiʿ of Urmia, we could expect that in case of increasing the rows, the number of the triangles would be the same and thus they become smaller in the upper tiers. There are many examples of this type of transitional zone, which can be mentioned in Alaaddin Mosque (1235) and the Gök Madrasah (1271-72) in Sivas (Figure 21).

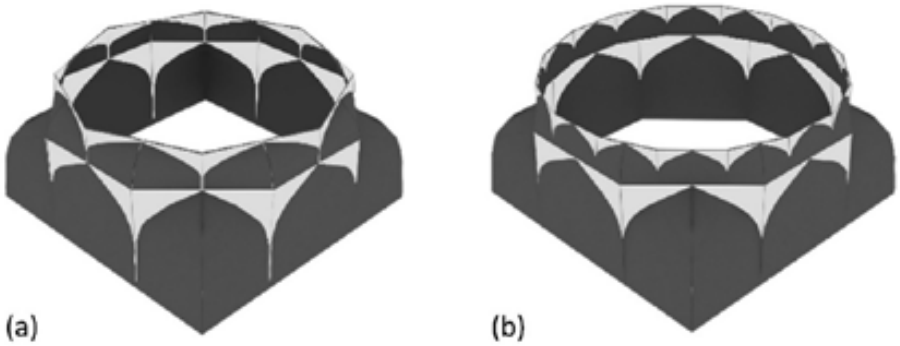


Figure 19. Urmia, Masjid-i Jamiʿ; method used in Masjid-i jamiʿ of Urmia dome chamber (a) Standard method used in Iranian Transitional zone (b)



Figure 20. Dome of Soltanieh transitional zone (Pope, 2003)



Figure 21. The 3D model of Turkish triangle (a), transitional zone of Aladdin Mosque in Konya (b) and Gök Medrese in Sivas (c) (www.alamy.com)

This solution was also applied in some of the examples in Egypt, which share similar characteristic with Masjid-i jamiʿ of Urmia in terms of the number of rows and arrangement and overall shape of niches. Among these we can mention the mosque of Ibn Tulun (1297), Mausoleum of Imam al-Shafi'i (1211), and the mausoleum of Shajar al-Durr (1250) in Cairo (Figure 22).

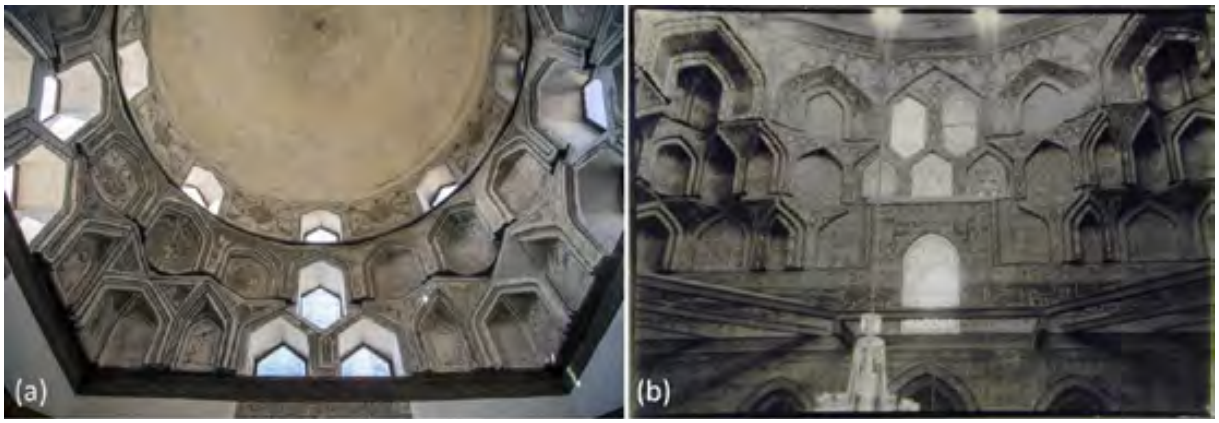


Figure 22. The Mausoleum of Shajar al-Durr (a) and the Mausoleum of Imam al-Shafi'I (b) (www.madamasr.com) (www.archnet.org)

Conclusion

The Masjid-i Jami of Urmia present a dominant type in Iranian architecture, originated from developments during Seljuq period.

The significance of this building lies on a dome chamber which presents the peculiar features of Seljuq dome chambers in Iran. However, in term of the zone of transition, there are differences in the way that circular dome rests on the square. The technical analysis helped us to shed some light on the zone of transition of Masjid-i jamiʿ of Urmia, focusing on a specific but relatively unexplored type of architectural solution used to unite the base with the dome above.

Unlike the common type of arrangement of the elements in the transitional zone of the dome chambers in Iran, this building represents alternative structural approach to the transition.

There is little evidence to use the same technique in Iran, although it is possible to trace a fairly close examples in terms of arrangements in Turkey. This technique is also typical of Egyptian examples that the

superimposed niches form the zone of transition for the domes.

As we have seen from our survey on various techniques for the transition, this method is out of a significance, not only in its structural use, but also in its potential for the extension of niches in different tiers to easily set a dome on the base.

However, the origins of the technique cannot be established from the evidence currently available, so that further research on a number of aspects of the technique would be needed to clarify the problem and the variants provided to this technique by the examples of Islamic architecture.

References

1. A. U. Pope and P. Ackerman, A Survey of Persian Art from Prehistoric times to the Present vol III, Oxford University Press, London, 1964.
2. A. Ghouchani, "Barrasi-e Katibehay-i Borj-i Se-Gonbad wa Masjid Jami Urumiye," vol. 37, pp. 39-48, Athar, 2016.
3. A. Kavyanpour, Tarikh-i Urumiye, Tehran, Azarkohan, 1999.
4. J. C. Wilson, "The Masjid-i Jamiʿ of Riza'iya," Bulletin of the American Institute for Iranian Art and Archaeology, vol. 5, pp. 38-43, 1937.
5. C. Edwards and D. Edwards, "The Evolution of the Shouldered Arch in Medieval Islamic Architecture," Architectural History, vol. 42, pp. 68-95, 1999.
6. D. N. Wilber, The Architecture of Islamic Iran: The Il Khanid Period, Princeton University Press, Princeton, 1949.
7. D. Jones and G. Michell, "Squinches and Pendentives: Problems and Definitions," Art and Archaeology Research Papers, vol. 1, pp. 9-25, 1972.
8. E. Heydari, Masjid Jami Urumiye. Unpublished report, Urmia, ICHO, 1980.
9. E. Heydari, "Gozarish-i Mogadamati wa Toseʿe wa Tahavol-i Memari wa Shahrsazi-i Urumiye," in Majmuʿi Magalat-i Kongire Tarikh-i Memari wa Shahrsazi-i Iran vol IV, ed. B. A. Shirazi, Kirman, Sazman-i Mirath-i Farhangi Kishvar, 26Feb-02Mar 1996.
10. H. Anzali, Urumiye dar Gozar-i Zaman, Tehran, Dastan, 2005.
11. I. A. Sistani, Nigahi bi Azarbaijan Gharbi vol I, Tehran, Samen al-A'ime, 2003.
12. L. Korn, "Seljuq Dome Chambers in Iran. A Multi-Faceted Phenomenon of Islamic Art," Winckelmann Lecture, 2006.
13. M. Tamadon, Ozazaʿ Iran dar Jang-i Aval ya Tarikhi-i Rizai'ya, Tehran, Eslamiye, 1971.
14. R. Hillenbrand, "Saljuq Dome Chambers in North-West Iran," Iran, vol. 14, pp. 93-102, 1976.
15. S. al-D. A. al-Muqqadasi, Ahsan al-Taqasim fi Maʿrifat al-Aqalim, Berlin, Brill, 1906.

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
INTERNATIONAL HYBRID SYMPOSIUM - APRIL 25, 2023
Yeditepe University, Faculty of Architecture, Istanbul, Turkey
Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

COMPARING TURKMEN AND TIMURID MOSQUES ARCHITECTURE

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Abstract

In the study of Iranian architecture, the Turkmen period is an important historical period. Studies of the few remaining Turkmen period buildings have been more limited than those of Timurid architecture, and the research has been carried out under the Timurid architecture. Research in the architecture of this period encountered challenges due to its location near the border between countries and the lack of buildings left after the earthquake. As a result of these challenges, Turkmen buildings have been studied in Iran under Timurid architecture and in Turkey under Ottoman architecture. Therefore, Turkoman architecture was little known. Mosques represent a significant architectural feature of this period. Recent archaeological excavations have revealed the base of the Hassan Padshah (King Hassan) Mosque, allowing us to re-examine the mosques of this historical period in order to determine the architectural differences between Turkmen and Timurid mosques. A comparative study of the mosques of the Timurid and Turkmen periods is being conducted in order to determine the architectural similarities and differences between these two periods, which were culturally and politically interconnected in a historical period, in order to gain a deeper understanding of their architecture.

Keywords: *Timurid mosque architecture, Turkmen mosque architecture, Mosque-mausoleum, Blue Mosque in Tabriz, King Hassan Mosque in Tabriz*

Introduction

Turkmen architecture was a significant historical period of Iranian architecture, which influenced subsequent architectural styles. As a result of the proximity to the border, war, and frequent earthquakes in the Azerbaijan region, few buildings from this era have survived. As a result of these factors, research into the history of architecture in this period has been fraught with difficulties. Several numbers of researchers have examined Turkmen architecture under Timurid architecture. This can be attributed to the strong political and cultural ties between Turkmen and Timurids as well as the

closeness between the two governments' architectures.

The architecture of the Turkmen period was not mentioned in Pirnia's book, as he attributed it to Timurid architecture (Memarian 2019: 266). Donald Wilbur considers the Blue Mosque to belong to Jahanshah without considering the Turkoman period (Wilber & Golembek 1995: 581). The blue mosque was described as the most impressive mosque of the Timurid period by Hillenbrand (2011: 150). Gholamhossein Memarian (2019), quoting Muhammad Ali Mukhleshi, vaguely refers to each period: "The Blue Mosque of Tabriz is one of the most outstanding works of the end of the Azeri style and the Timurid period." During the Qaraqoyunlu period, this mosque was built, with an inscription dating to 870 AH (Memamarian, 2019, 88). The lack of studied buildings and the division of land owned by the Turkmen, mostly in the east of Turkey, including Hosin Kefia, the summer capital of Aqqoyunlu, and northern Iraq, as well as the lands of Aran and Sharvan, explain why these buildings have not been studied.

In light of these cases, research into the architecture of this period faces serious challenges and needs to be addressed.

As a result of archaeological excavations conducted by the Cultural Heritage Department in the King's Hassan complex since 2006, the historical part of the King's Hassan Mosque has been revealed. The works discovered during recent excavations of the King Hassan Mosque, especially in the dome section, demonstrate a unique and distinct architecture style when compared to the Blue Mosques in Tabriz and Shah Mosques in Mashhad. While sharing some characteristics with Timurid mosque architecture, this type has many differences.

The current research aims to examine the architectural differences and commonalities of the mosques of the Timurid and Turkoman periods. This is to determine the architectural differences and commonalities of the mosques of the Turkmen and Timurid periods, which were extremely cultural and political in a historical context.

Several subsequent architectures were influenced by Turkmen architecture. Knowing the architecture of Turkmen mosques also provides a way to learn more about the architecture of this period, which is why the purpose of this research is significant.

Research Methodology

This research was carried out using the descriptive-analytical method to make a comparative comparison between Timurid and Turkmen architectures, which collected information by studying written sources and on the ground by studying selected mosques that were constructed during this period and their structure was also preserved from that period.

Turkmen-period mosques include the Blue mosque of Tabriz, Hasanpadshah Tabriz, and Shah Mosque of Mashhad, and Timurid mosques include Guharshad Mashhad, Bibi Khanum Samarkand, and Neishabur Mosque. This research seeks to answer the question, what are the architectural differences between Timurid and Turkmen mosques?

Case Studies: Timurid and Turkmen mosques

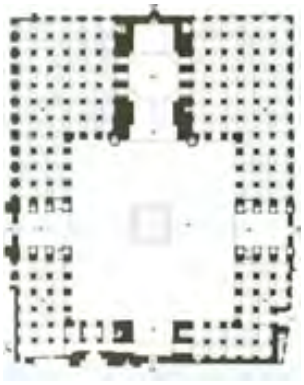
Religious structures have always been prominent in Iran's architectural history, and mosques were of particular interest during the Timurid and Turkoman eras. During this period, the rulers were responsible for constructing and reconstructing many buildings, including mosques. But since this study was devoted to comparing the architecture of the Timurid and Turkmen mosques, the mosques that were developed or renovated during these two dynasties, or the mosques that were built there and later transformed, have not been examined in this study.

Timurid mosques: There have been several Timurid mosques found with their physical structure preserved over time, including Bibi Khanum Mosque in Samarkand, Friday Mosque of Neishabur, and Guharshad Mosque in Mashhad. These mosques are described below.

Guharshad Mosque: The founder of this building was Mrs. Guharshad (Shahrukh's wife). A cornice of this mosque mentions the completion of construction in 821 AD. The other cornice also introduces Qavamuddin Shirazi as the architect of the mosque, who had a hand in astronomy, mathematics and geometry in addition to architecture (Sahragard, 2011).

Bibi Khanum Mosque: This mosque was built after Timur's war with India, whose founder was Timur's wife Bibi Khanum. It has been reported that this mosque is the largest Four-Iwan Mosque in Central Asia, and according to the cornice on the Iwan, the completion of the building was in 806 (Ebrahimi, 1397: 141).

Friday Mosque of Neishabur: the construction of this building dates back to the Sultan Hossein Bayqra period according to the cornice inside the building (Haji Ghasemi, 2003: 138).

	Image
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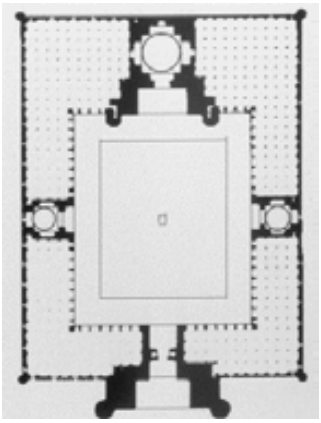
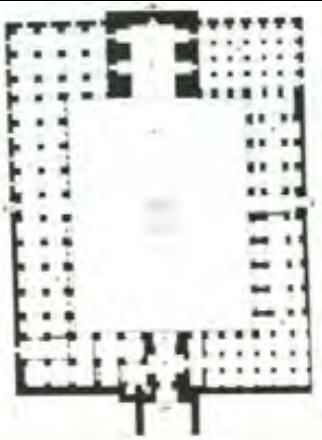
Bibi Khanum Mosque (archnet.org)	
	
(Friday Mosque of Neishabur (Hajj Ghasemi, 2003, A, 139	
	

Table4, Timurid mosques

Turkmen Mosques: Mosques belonging to Turkmen architecture include the Blue Mosque of Tabriz, the King's Hassan Mosque and the Shah Mosque of Mashhad. Although the Shah Mosque of Mashhad was not built by the Turkmen, its architecture was based on the architecture of the Blue Mosque and its builder was a Tabrizi.

Blue Mosque: The Jahanshah Mosque or the Blue Mosque of Tabriz is one of the works of Abul Muzaffar Jahanshah bin Qara Yusuf from the Qaraquyunlu Turkmen dynasty, which is the only remaining building of the Muzaffarih complex of Tabriz. "This complex included a mosque, a library, a tomb and a monastery, a reservoir for Sufis" (Shaisteh Far, 2012, 21). "This building was finished in 870 Hijri under the supervision and supervision of Jan Beg Khatoon (Jahanshah's wife)" (Shehbazi Shiran 2016).

King Hassan Mosque: This mosque was one of the buildings of Uzun Hassan Square in Tabriz, which is known today as Sahib Al-Amr. The Nasriya Complex consisted of a school, mosque, tomb of King Hassan, hospital (Darul-Masakin), and Sahib Abad Garden (Sarabi et al, 2020: 92) which were destroyed by the earthquake.

However, in recent excavations, the original Tahrang of the mosque appeared and "in the Metraghchi miniature, its facade was also depicted, which is one of the largest buildings around the square in terms of scale" (Balblian Asl and Dostar,

2018). During his visit to this mosque in 1050 AH, Chalabi wrote: "The building of this mosque is one of the masterpieces of architecture. Its domes are all tiled and have openings on four sides that are decorated with marble" (Zaka, 1989: 187).

Shah Mosque: In many ways, Shah Mosque in Mashhad has been compared with the Blue Mosque, since its builder was a person from Tabriz (Aube 2016, 56). This mosque has a square shape and a spherical dome, without a court.

Compared to the Blue Mosque of Tabriz, this building, built in 870 AH, is the most similar. There are graves in the basement of this mosque that belong to Amir Malik Shah and his family (Mirzaei and Khaqani, 2015).

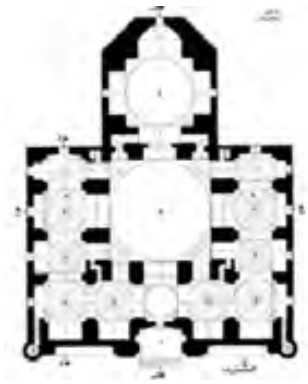
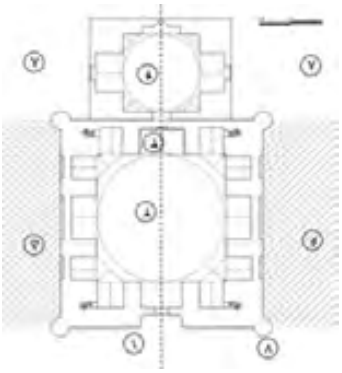
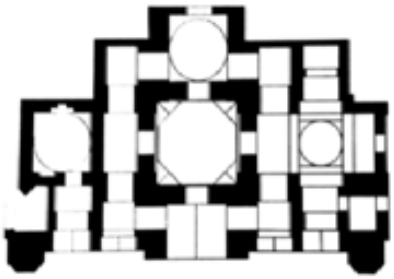
	Image
(Blue Mosque of Tabriz, (Haji Ghasemi 2003, B, 60	
	
King Hassan Mosque, (Sarabi et al, 2019)	
	
(Shah Mosque in Mashhad, (Labaf Khaniki and Saber Moghadam, 2006	
	

Table 5. Turkmen Mosques

Comparative analysis of Timurid and Turkmen mosques

Since mosques serve a religious function and play an important role in Islamic society, they have received constant attention. Nonetheless, the way in which Timurid and Turkmen mosques are used is one of the most important differences between them. As well as serving as mosques for prayer, Turkmen mosques had tombs for burials. Timurid mosques are primarily used for prayer, and no tombs are found inside. A Turkmen mosque is often referred to as a mosque-tomb.

Based on the establishment of the middle space, the Iranian architectural system organizes and establishes the spaces around it (Ranjabr 2017). Additionally, it divides it into two longitudinal (axial) and radial branches (Wilber and Golmbek, 1995).

Timurid architecture is characterized by this middle space, the courtyard, which serves as the unit of organization (Pope and Ackerman, 1995, 1323). Traditional architects have always paid attention to the emphasis of the axes in building design. When two Iwanes are facing each other in the courtyard, the linear axis is created by connecting them (Nawai and Haji Ghasemi, 2011, 59).

Wilber defines radial organization as the arrangement of space around a central dome. In Turkmen Mosque, radial organization was used instead of linear organization. Observing the Qibleh in the mosque's spaces is also important in its architectural system. Qibleh should be understood correctly by the users.

The Qibleh in mosques with radial organization is strengthened by linking the dome and the Iwan (the entrance facing the Qibleh). This orientation identifies the presence of the altar (Mihrab). There was also a distinction in the constituent elements of the mosques as a result of the difference in use and geometric system of the Timurid and Turkmen mosques.

Courtyard: The courtyard is the first characteristic that distinguishes Turkmen mosque construction from Timurid architecture.

Like many previous mosques, the Timurid mosque had the courtyard at the center, and the porches were arranged in two or four directions, continuing the introversion of the Iwan style.

In contrast, the building of the Shah Mosque, the Blue Mosque, and the image of the Hasan Padshah Mosque in the miniatures and obtained base from excavations indicate there is no central courtyard. There was a yard in front of the mosque as part of the complex's yard.

By placing the mosque in front of a yard, the mosque will be showier, grand, and magnificent.

Shabestan (Nave) and Dome chamber: the shabestan was the main space in early mosques, and this mosque has a unified space. As a result of the connection between the dome and the shabestan, the vast and unified space of the shabestan was broken (Hojjat et al., 2015, 22).

In timurid mosques, shabestan is located on both sides of the dome. There is a high degree of continuity in the architecture of Turkmen mosques. So, the dome became a nave by covering more space, and the shabestan was eliminated in order to solve the discontinuity between it and the dome.

Iwan: In terms of the differences between the Iwanes of Timurid and Turkmen mosques. In Timurid mosques, there were two or four Iwanes facing each other. It served as the link between the nave or dome chamber and the courtyard. A single Iwan was used in the main facade of the Turkmen mosque, which served as the building's entrance.

In order to make the distinction between outside and inside more clear, a step was placed at the beginning of the Iwan of the Blue Mosque. As far as communication is concerned, the Iwanes of this period were not like those of Timurid mosques, which connected the courtyard to the main space, such as the nave or dome, but also connected the courtyard to the portico.

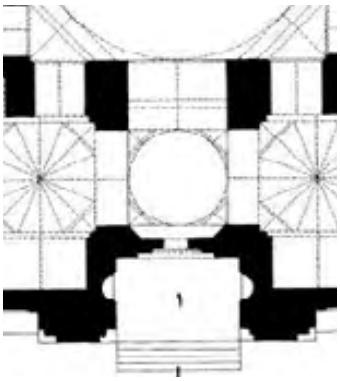
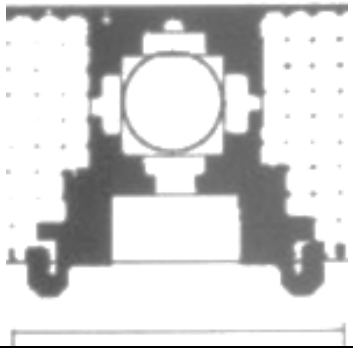
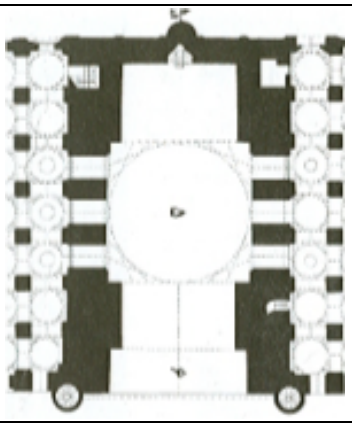
<table>
<tr><td colspan="3">Turkmen</td></tr>
<tr><td>The Shah Mosque</td><td colspan="2">The Blue Mosque</td></tr>
<tr><td>  </td><td colspan="2">  </td></tr>
<tr><td colspan="3">Timurid</td></tr>
<tr><td>Bibi Khanum Mosque</td><td>Friday Mosque of Neishabur</td><td>Guharshad Mosque</td></tr>
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Figure 9. Iwan in Timurid and Turkmen mosques

Portico: In Timurid architecture, arches were often used instead of walls.

Arches around the mosque's courtyard may be open or closed.

A closed portico has decorative value, and Timurid architecture uses porticoes as cells that surround a courtyard (Wilber and Golembek, 1995, 115).

The architectural porticos of Timurid and Turkmen period mosques differ from each other due to the removal of the courtyard and the centrality of the dome.

Instead of being connected to the courtyard, the portico surrounds the dome. It serves as the spatial interface between the porch and the dome.

As well as providing access to the dome space, it helps transfer the thrust force of the dome to the building.

Mihrab (altar): The Mihrab of the Blue Mosque has been destroyed by the earthquake. Samarkand's Bibi Khanom Mosque has suffered a great deal of destruction.

Also, the tiling on the mihrab of the Shah Mosque was recently added during restoration and is not historically accurate.

Due to this, it is not possible to specify their exact style.

The Shah Mosque	The Blue Mosque
	

Bibi Khanum Mosque	Guharshad Mosque
	

Figure 10. Mihrab in Timurid and Turkmen mosques

Material: The building structure uses bricks and stones among other materials.

A distinctive feature of Timurid and Turkmen mosque architecture is the use of stone for the shalud, the outer plinth and floor of the building, as seen in the Blue Mosque. There may be a reason for that, since Tabriz is cold and has a resistance to frost.

Due to a lack of stone supply in those areas, stone is not visible in these Timurid mosques, and the foundations of the buildings are built with baked bricks, which are buried under rubble stone.



Figure 11. The use of stone in the Blue Mosque

Decorations: Timurid decorations not only give unity to the building, but also act as an integral part.

A building's exterior becomes almost an independent entity through decoration (Wilber and Golembek, 1995, 172).

This was the period during which geometrical designs became popular, both in terms of scale (shredding images into smaller elements successively), or on the other hand, making them bigger in a manner never seen before, in terms of color composition, techniques, materials, placement, patterns of plant curves, the transformation of an icon, an inscription or a bush flower (Necipoğlu, & Al-Asad 1995: 154).

These decorations can be classified into three main categories: floral, Gireh-work, and inscriptions, all of which can be found on Turkmen and Timurid buildings.

Other Timurid and Turkmen decoration features include the separation of the structure from the decoration and "hiding the entire building structure under the decoration" (Makinejad, 2009, 32), which led to the use of various types of tiles.

Turkmen and Timurid buildings were decorated with various types of tiles.

Seven color tiles, single color tiles, brick and tile combinations, cute-tile (muaragh) Zarin-Fam tiles, Muaghli, and Zar-Andud tiles are all found in Timurid and Turkmen buildings.

Gireh

Floral

Inscription


Table 3. Decorations: Gireh, Floral, inscription

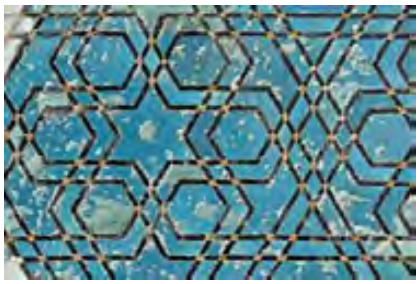
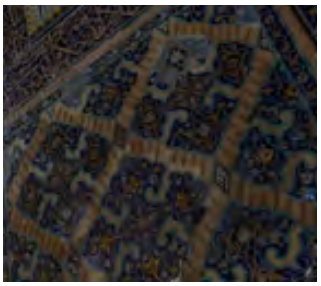
Tiles in the Blue Mosque		
single color tiles	Seven color tiles	cute-tile (muaragh)
		
Muaghli	Zarin-Fam tiles	brick & tile combinations
		
Tiles in the Guharshad Mosque		
single color tiles	Seven color tiles	cute-tile (muaragh)
		
Muaghli	Zarin-Fam tiles	brick & tile combinations
		

Table 4. Tiles in the Timurid and Turkmen Mosque

Conclusion

One of the important works of Iranian architecture is the architecture of Turkmens in Azerbaijan, which has influenced subsequent architecture.

Previously, it was investigated within the Timurid architectural category that the explanation for it was not limited to the widespread destruction of Turkmen buildings as a result of the earthquake, but also shared similar characteristics, such as a similar decorative style, a similar emphasis on parallelism, and a similar use of materials in construction.

As a result of recent archaeological excavations at the base of the King Hassan Mosque along with historical documents, it has been possible to compare the mosques of this historical dynasty and to compare Turkmen and Timurid mosques according to their architectural characteristics. Turkmen mosques are distinguished from Timurid mosques in terms of usage. While Timurid mosques served only as mosques, Turkmen mosques also served as tombs, which was not the case with Timurid mosques. Timurid mosques have a longitudinal space arrangement, with the courtyard at the center and the Iwanes converging around it.

The Turkmen Mosque is radial in shape, with a dome at the center and other surrounding spaces. There are also fundamental differences between the mosque components of these two dynasties.

The courtyard in Timurid mosques is in the center of the mosque, with other elements arranged around it, but in Turkmen mosques, the complex courtyard is located outside the building, and the entire building is roofed. Consequently, buildings appear to be more impressive.

Turkmen mosques were more formal than Timurid mosques. Timurid mosques have a dome placed in the middle of the nave, separating the two spaces, but Turkmen mosques have removed the nave from the mosque space with the expansion of the dome chamber. There were also differences in the placement and number of Iwan. It was common for Timurid mosques to have multiple Iwanes, while Turkmen mosques only had one Iwan. In Timurid mosques, the Iwan is placed between the court space and the nave or dome.

As the entrance to the Turkmen mosques, the Iwan was connected to the outside space of the portico. Turkmen mosques have porticoes surrounding their domes, whereas Timurid mosques have porticoes surrounding their courtyards.

The Timurid and Turkmen mosques also used minarets to emphasize symmetry. Timurid and Turkmen mosques emphasized geometric unity with three decoration techniques: Gireh, Inscription, and Floral. They were almost the same in terms of the use of materials. Unlike Timurid mosques, Turkmen mosques use stones for their foundations instead of bricks and rubble.

References

1. S. Aube, "The Uzun Hasan Mosque in Tabriz: New Perspectives on a Tabrizi Ceramic Tile Workshop," Muqarnas, vol. 33, pp. 1-18, 2016. [Online]. Available: https://doi.org/10.1163/22118993_03301P004.
2. L. Balilan Asl and F. Dostar, "Analysis of Visual Features of Tabriz Miniature of Beyan-i Menazil Book and Typology of Structural Elements of Tabriz City in the 10th Century A.H.," Negareh Journal, vol. 13, no. 48, pp. 34-53, 2018. [Online]. doi: 10.22070/negareh.2019.883.
3. E. Ebrahimi, "Review of Timurid period architecture (with emphasis on mosques and schools)," Religious Culture Approach Quarterly, vol. 1, no. 4, pp. 137-159, 2017.
4. K. Haji Ghasemi, Treasure book; the eighth book: Jameh mosques [in Persian]. Tehran: Shahid Beheshti University Press, 2003.
5. K. Haji Ghasemi, Treasure book; Culture of Islamic works of Iran; The sixth volume: mosques [in Persian]. Tehran: Shahid Beheshti University, 2003.
6. R. Hilenbrand, Islamic Architecture; Form, function and meaning [in Persian]. Translation: B. Ayeollah Zadeh Shirazi. Tehran: Rozeneh Publications, 2011.
7. I. Hojat, S. Golestani, and M. Saedvandi, "The Addition of Dome Chamber to Iranian Mosques, The Story Of Joining And Separating Of Space" [in Persian], Honar-Ha-Ye-Ziba: Memary Va Shahrsazi, vol. 20, no. 3, pp. 21-30, 2015.
8. R. A. Labaf Khaniki and F. Sabermoghaddam, Mosques in Khorasan (Razavi, North, South): from the beginning to contemporary times [in Persian]. Tehran: Organization of Cultural Heritage, Crafts and Tourism, 2006.
9. M. Makinjad, History of art in the Islamic period; Architectural decorations [in Persian]. Tehran: Samt, 2009.
10. Q. H. Memarian, Iranian Architecture; Dastgah-Shenasi [in Persian]. Tehran: Goljam, 2019.
11. Q. H. Memarian, Style recognition [in Persian]. Tehran: Soroush, 2005.
12. N. Mirzai and S. Khaqani, "Historical investigation of Shah Mosque in Mashhad," Journal of Great Khorasan, vol. 5, no. 20, pp. 56-43, 2015.
13. K. Navai and K. Haji Qassemi, Khesht-o Khial; An Interpretation of Iranian Islamic Architecture [in Persian]. Tehran: Soroush, 2011.
14. G. Necipoğlu and M. Al-Asad, The Topkapı Scroll: Geometry and Ornament in Islamic Architecture: Topkapı Palace Museum Library MSNo Title. Los_Angeles: Getty Center for the History of Art and the Humanities, 1995. doi:9780892363353
15. A. U. Pope and P. Ackerman, An overview of Iranian art, from prehistoric times to today; The third volume: Architecture of the Islamic era [in Persian]. Ed. C. Parham. Tehran: Scientific and Cultural Publications, 1999.
16. A. Ranjbar Kermani and A. Maleki, "Review of the Central Space Model in the Iranian Cultural Region" [in Persian], Journal of Iranian Architecture Studies, vol. 6, no. 11, pp. 22-41, 2017.
17. M. Sarabi, L. Balilan, and B. Ajorloo, "Architectural recreation of Hassan Padishah Mosque in Tabriz" [in Persian], Honar-Ha-Ye-Ziba: Memary Va Shahrsazi, vol. 25, no. 1, pp. 91-104, 2020. doi: 10.22059/jfaup.2021.306359.672493
18. M. Sahragerd, Artistic masterpieces at the threshold of Razavi's Quds: the inscriptions of the Goharshad Mosque [in

Persian]. Mashhad: Astan Quds Razavi, 2011.

19. M. Shaistfar and F. Khamsa, "Firouzeh, the gem of the mosques (with a look at the Goharshad Mosques of Mashhad and the Kabud Mosques of Tabriz in the 9th century AH/15th AD)" [in Persian], Jelveh Honar, no. 10, pp. 19-32, 2013.
20. H. Shiran, S. M. Hosseininia, and M. Kazempour, "Analysis of the influence of mysticism and Sufism on the themes and decorations of the inscriptions of the Blue Mosque in Tabriz," Firuzeh Islam; Islamic architecture and urban planning research, third year, no. 4, 2016.
21. D. Wilber and L. Golembek, Timurid architecture in Iran and Turan [in Persian]. Translated by K. E. Afsar and M. Y. Kiani. Tehran: Iran's Cultural Heritage Organization, 1995.
22. Y. Zaka, Cities of Iran [in Persian]. C3. Written by M. Y. Kayani. Tehran: Islamic Culture and Irshad Printing House in collaboration with Jihad Academic Publishing House, 1989.

EVALUATION OF MORPHOLOGY OF HISTORICAL MARKETPLACES FROM SELJUK TO PAHLAVI DYNASTY (CASE STUDY: TABRIZ GRAND BAZAAR)

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Abstract

The bazaar as a humanitarian phenomenon in Iranian-Islamic cities is the kind of region that has succeeded in maintaining its sociocultural reputation in urban development. The article aims to investigate the morphology of Tabriz Grand bazaar from Seljuk to Pahlavi dynasty and extract the main factors to provide appropriate solutions for designing future marketplaces based on these indications. The research method is the descriptive-analytical method. The accurate study of causes and reasons of Tabriz Bazaar's development or recession as the covered lengthy Bazaar in the post-Islamic period (especially the magnificent period of Seljuk, Ilkhani, Qajar, and Pahlavi chain), in the northwest of Iran along the Silk Road, makes to exploit various economic, social and physical indicators and sub-indicators. Finally, it is considered to illustrate the commercial, social, and cultural role of the bazaar as a tourism center in Tabriz. The significant elements in the changes and transformations of the Tabriz Grand Bazaar are divided into behavioral, physical, and functional components. It is worthy to contemplate the existence of various changes in the three dimensions stated in the contemporary period, which shows the need to pay attention to the morphology of Tabriz Bazaar's structure in the city.

Key words: *Tabriz Grand Bazaar, Historical marketplaces, Morphology, Seljuk and Pahlavi dynasty.*

Introduction

Traditional marketplaces are the result of continuing valuable experiences that are formed by adapting to the environment and various functions and have always played a significant role in the growth and development of the surrounding environment and cities.

Throughout the era, the marketplace (bazaar) in Iran has played a prominent role as a bridge between East and West, as a long-standing and still dynamic economic-social institution, and besides, it has dedicated a unique place in cultural exchanges, architectural interactions, and the tourism sector. But nowadays, due to the development of urban spaces and the high rate of modernization, confrontation, and interaction between new needs have arisen so, so the position and form of the Bazaar, and subsequently the physical and functional life of the bazaars have suffered a gradual decline. Therefore, paying attention to the concept of the bazaar and its evolution can provide solutions for its improvement. In this regard, Tabriz Grand Bazaar - one of the most brilliant bazaars in Iran and registered in the UNESCO heritage - is evaluated. Tabriz has been of interest since the beginning due to its strategic location in historical periods and it has attracted the consideration of the governors there as the beating heart of Azerbaijan, and with its location on the path of trade routes (silk road) and the presence of security, it is the dominant economic activity of trade thus It has extended in the city.

The name Tabriz bazaar became popular in the Seljuk period and gained a lot of fame and prestige in the Il-KhanidI period, which continued until the Ağ Qoyunlu era and was discussed at the international level. During the Qajar period, it enjoyed high prosperity and had a superior position to play a national role in the field of production, distribution, services, and supply. The covered market has an area of 100 hectares.

In this regard, it can be said that the market complex is 28.9733 hectares and the market area is 75.4082 hectares (ICHHTO 2009, pp. 6). In this regard, it can be said that the market complex is 28.9733 hectares and the market area is 75.4082 hectares (ICHHTO 2009, pp. 6). Currently, most of the parts of Tabriz Grand Bazaar belong to the 18th century, when Tabriz became the commercial center of Iran with the construction of Sara, Timchehs, and Neighborhood marketplaces (Safamanesh et al., 1956).

At the end of the Qajar and the beginning of the Pahlavi rule, after the new developments resulting from the interaction with hasty modernization, Tabriz Grand Bazaar, which had once provided a platform for the import and export of goods at the national and even international level with the centrality of production, services, and supply, and many users, lost his positions and even his decisive roles and could not fulfill the public's wishes. With the change in consumption patterns and the creation and governance of new production relationships, many places at the bazaar (such as Sara, Caravanserai, stores and etc.) were abandoned and many occupations such as coppersmithing, blacksmithing, etc. vanished. As a result, the bazaar ranks gradually lost their previous importance and some of them were changed to service activities that did not have a suitable spatial, activity, and physical hierarchy system, while in the

past, traditional markets played major roles in economic, political, social and religious affairs. Today, following the recent developments, the marketplaces can no longer have their previous functions in the cities, and the ups and downs in the functioning of the bazaar have formed a different body to benefit and respond to its demand. Therefore, in this research, the function and body of the bazaar in different periods are identified and explained.

Theoretical framework

Generally, the bazaar means the creation of a suitable method (place or platform) for introducing and confronting the supply and demand side, producer and consumer, buyer and seller, etc. (about any good or service in the economy) and it doesn't just mean the physical place of trade. Marketplaces have evolved throughout history and have seen physical and functional differences. Traditional bazaars had a wide scope in terms of playing a role in society, in stance four major roles economic, political, social, and religious terms. But the economic role of bazaars totally is the most significant and main role, and mainly they have been created because of meeting people's needs. In the following, in order to create a common understanding, the concept of the bazaar and its related definitions will be explained.

Bazaar

There are many definitions for the bazaar in economic literature. Dehkhoda (1931), defines the bazaar as follows; Merchants' trading square, a shop which is known as the marketplace where all kinds of goods are sold, and sometimes long alleys were arranged and shops were built on the sides. Over the centuries, people around the world came together to trade and buy and sell goods in their commercial and population centers. The first cities had trade links and goods were moved by cattle. The result of these commercial activities was that merchants and businessmen spread and developed new ideas and inventions. Money, as the main axis of activity, quickly appeared in the market, and culture developed alongside and parallel to marketplaces (McMillan, 2023, pp.35). Dominick Salvatore (2003, pp.10) considers the marketplace as a place or situation where buyers and sellers buy and sell goods, services, and resources. This definition of the bazaar is considered as a place or situation, which is compatible with both today's marketplaces and early bazaars in ancient times when the economy was very simple and people gathered to exchange goods in certain places. Second, this definition is general and includes the market of goods, services, and goods (Masoominia, 2004, pp.56).

According to Philip Kotler (2016, pp. 9), the bazaar is a set of potential and actual buyers of a product. These buyers have a common need or desire that can be satisfied through trade. Historically, a bazaar refers to a place where buyers and sellers go to exchange goods or services. But economists call the collection of

buyers and sellers who buy and sell certain goods or services a market. At the same time, the market is sometimes referred to groups other than customers or buyers, such as the labor market (Kotler, 2016).

The bazaar, in the sense of the mechanism of exchange, is a process in which the confrontation of buyers and sellers with each other determines the price and quantity of goods (Samuelson & Nordhaus, 2009, pp. 80). Market, according to Weberth (1975, pp. 94-45), refers to the main economic center of the eastern city and the special part of traditional business activities, which is often located in the village in the center of the city. George Clark also writes in the definition and description of the bazaar, the marketplace is the most excellent and practical center for trade and business that mankind has ever invented for himself. In general, it can be said that the bazaar is the best center for production, distribution of products and transactions.

In Iran, since the past periods, because the general activities of the city were concentrated in the bazaar, it has been considered the center of the city from the economic-social and cultural viewpoint, and during the time, the centrality of the bazaar and its comprehensiveness are developed in determining the main lines of life of all citizens.

The bazaar in the traditional cities of Iran has never been completely planned in advance and has been ready to accept many flexibilities in terms of space and functionality, with the expansion of commercial cities and producers of small industrial products, it has gradually created a large body and has direct access to it and the number of urban- architecture units become unique.

In other words, the bazaar is presented as the only urban element dominating and conditioning the city, which has functional and physical unity. Three main uses are assigned to the urban bazaar; Maintaining and developing the general city (through commercial exchanges of agricultural products, and handicrafts), fostering the spirit and enhancing the socio-cultural relations of the citizens (through the establishment of free contacts in all places built for any purpose and become available directly or indirectly to marketers) and strengthening religious-ethical beliefs and foundations that can be used to preserve the religion of Islam (Falamaki, 1994, pp.143).

Therefore, traditional markets are an interconnected set of production, service, and supply systems. Their lives have always depended on the rotation of economic and production wheels. In the old cities, markets were originally the center of economic gravity and the center of the capital productivity system, and based on production and industry, they became the leadership of economic affairs. However, in recent years, the economic foundation of these institutions, as a result of changes caused by globalization, has undergone a fundamental change in direction from a production economy to a service economy.

In general, what emerges from the above definitions is that the market is an evolutionary and structured tree equipped for the production and supply of products, exchange of goods, buying and selling, commercial services that are directly related to the city gates, and, on the other hand, to commercial elements. Social, religious, service, cultural, and recreational, up to the border of residential areas and other parts of the city have permanent connections.

Background research

In relation to foreign marketplaces, we can say; the bazaar is an important urban element in China, Italy and Islamic countries such as Turkey and Iran (Mack, 2002) and many researchers have evaluated it from different aspects. The market in Indonesia and Morocco (Khairunnisa & Tjung, 2019; Geertz, 1978), the Iranian market (Adelzadeh, 2016; Masoudi Nejad, 2005; Karimi, 1998; Hanachi &Yadollahi, 2011; Kalan et al., 2014; Pourjafar et al., 2011; Falamaki, 1994; Soltanzadeh, 2001) Italian market (Mack, 2002); The Romanian market, (Watts et al., 2004), the market in India (Tumbe et al., 2018; Deka, 2017), the market in Georgia (Khutsishvili, 2018; Tumbe, 2018; Fischer, 2019) with different economic perspectives. Cultural, historical, etc. have been investigated.

Regarding the studies of domestic marketplaces focusing on Tabriz Grand Bazaar, it can be said that this bazaar also has studies of various aspects of domestic and foreign documents.

For example, in an article, the effective factors in the structural development of Iran's historical markets (case study: Tabriz market) have been investigated. A fundamental type of study is a theory conducted through historical interpretation. The materials required for this research have been collected through library studies, historical documents, field surveys in the historical bazaars of Iran, and also the historical marketplace of Tabriz.

Data analysis shows that urban centers and elements have played a direct role in creating the quality of the historical bazaar structure, and their manifestation in the Tabriz Grand bazaar has been the emergence of two parallel bazaar lines (Pourjafar et al., 2013) or research related to Tabriz bazaar bridges, which was conducted through library and field, tries to emphasize the reconstruction of bazaar bridges to revive the valuable structural space.

According to the author, the reconstruction of bazaar bridges in Tabriz will breathe life into the economic, social, cultural, and environmental aspects of the marketplace (Gholipour Shayani, 2016) or the study of the impact of roads on the formation of Iranian bazaars (case study: Tabriz historical bazaar) which is an interpretative – historical method, with the help of archival documents and field research, it shows that the streets and marketplaces of Tabriz had a significant impact on the formation of each other, and

the gates of the city also played a very important role in this regard (Nejad Ebrahimi et al., 2013).

Among the examples of studies, we can refer to the descriptive-historical research of Marsoosi and Khani (2001) concerning the Tabriz bazaar to analyze the economic functions of this market and its sphere of influence.

Quantitatively reducing the loading level of commercial activities, creating competitiveness with the aim of spatial and economic efficiency, strengthening, revitalizing, and central development of the country with commercial business performance, improving the efficiency and optimal economic efficiency, as well as the activities of the metropolitan city of Tabriz using internal capacities.

The centrality of the historical context of the region, the qualitative strengthening, and the promotion of the bazaar as the economic center of the metropolis of Tabriz are among the findings of the research.

Research method

Case study

Tabriz Grand Bazaar is one of the most privileged marketplaces in the world, all its streets, markets, Dallans, Caravanserais and Timchehs are connected.

The area of Tabriz Grand Bazaar, as a complex, is 13 hectares, of which 7.2 hectares are exclusively for the commercial sector. This bazaar has about 5500 shops and stores, 40 types of occupations, 35 Saras, 25 Timchehes, 20 Rastehes, 20 masques, 11 Dalans and 9 religious schools, it is known as the city of Tabriz (ICHHTO, 2009). In addition to being a special socio-economic environment and creating a special class-ethnic system, the bazaar of Tabriz was able to take action in active systems and become one of the specialized groups in the city that has the power to react to unfavorable socio-economic and political conditions (Figure 1).

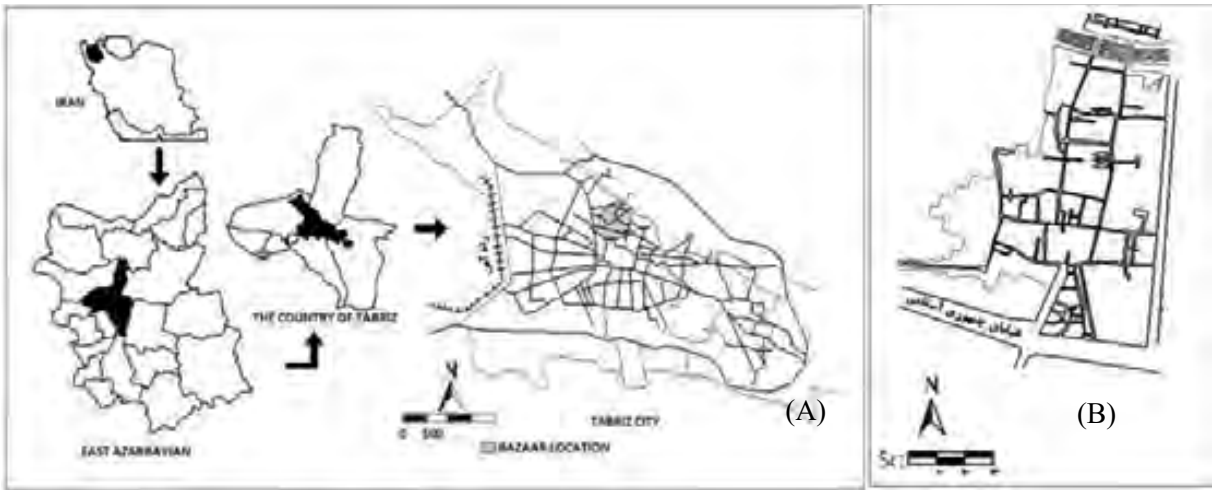


Figure 1: A: location of Tabriz Grand bazaar in Tabriz city, B: Tabriz Bazaar, (source: Tabriz Comprehensives Plan, 2013)

Method

Conducting research using the "case study" method includes a four-step process, which is: a- stating the problem and selecting the case (unit of analysis), b- collecting data, c- organizing data, and d- compiling a report (Merriam, 1988, pp. 153). Through this method, which includes the study of texts, and photos, taking and observing the study platform, the function, and structure of the marketplace in different periods are understood and explained. The resulting data is followed by organizing and then drawing conclusions from the data and compiling a report.

Finding

Iranian Bazaar

The history of the formation of the city and the bazaar are intertwined and no city can be imagined without a bazaar (Mehdipour, 2013, pp.13). During the Māda period, the concept of the bazaar was still in its embryonic stage, its texture and physical construction were in its initial stages (Habibi, 2013, pp.7). Achaemenians, by conquering the civilized lands and with commercial exchanges between the West and the East, established the main base of the bazaar in the cities of Iran. During the Seleucid period, cities had two perpendicular streets and a square at the intersection, around which markets were established. The Parthians built the bazaar in the city and near the main roads (Pourahmad, 1997, pp. 65-69).

In the Sassanid period, with the comprehensive presence of the government in commerce, industry and Iran's role in international trade of that day, trade relations with China, India, Eastern Rome, Hejaz, Abyssinia, etc. became effective in the urban economy of the Sassanid government and the element in its current meaning, the market found a body and formed neighborhoods along its way (Saraie, 2011, pp.29).

The primary core of urban marketplaces was formed and developed in open spaces and important squares of neighborhoods (Chardin, 1969, pp. 94-95). In the early Islamic centuries, the bazaar remained almost the same as the Sassanid bazaars, and from the second century onwards, it formed one of the main and important elements of commercial cities and even some large villages. In the period of Mongols and Timurids, the bazaar was still considered one of the important spatial-functional pillars of the cities. The creation of marketplaces with a pre-planned plan was the attention of the kings from the Safavid era onwards.

Evolution of Tabriz Grand Bazaar in Azerbaijan during Māda, Achaemenians, Seljuk periods

One of the traditional bazaars in Iran is Tabriz Grand Bazaar, which dates back to the early periods of Iran's urban development and after Islam. Due to numerous earthquakes, no old building can be found in this period. To examine the physical and functional structure of Tabriz Grand Bazaar, the first available

sources are the travelogues of Western and Eastern tourists that describe the bazaar and the city of Tabriz. By examining these sources, it is possible to find the background of the marketplace in Azerbaijan in **the Māda** period, where the worldview of philanthropy and the framework of a monotheistic ontology was dominant and the basis of employment throughout the **Māda** was agriculture and livestock, the fertility of the soil, the favorable climate under artificial irrigation led to the development of agriculture and it was gardening. In terms of the presence of various mines such as iron, oil, etc., as well as terrestrial materials such as wood and agricultural and livestock products, it creates a suitable field for the growth of professions and the production of work tools and life supplies, etc. Trade with neighboring lands has been popular for a long time. During the Achaemenid rule, peace and tranquility were established to some extent and favorable conditions for the flourishing of commerce and cultural relations emerged. From the available information, it appears that the basis of economy and employment in the Parthian period was based on agriculture, animal husbandry and commerce, and there had been advances in the field of industry and craftsmanship, especially textiles, leatherwork, weapons, and the manufacture of glassware and pottery. Unlike the previous empires, the Sassanians managed to create extensive changes in production relations and ownership methods by dominating all the material and spiritual relations of the society (Habibi, 2005, pp.28-29). In this period, again, agriculture was the dominant part of economic activities and the basis of Azerbaijan's economy. Despite the development of production forces, the natural economy dominated the society's economy. Apart from agriculture, there were industrial activities as well, and the craftsmen were employed on a rotating basis or in small workshops in such professions as texture, blacksmithing, carpentry and woodcraft, making and repairing various tools and handicrafts, and also, while meeting the needs of the lords and farmers, they gave a part of their income to the owners. The development of production activities - agriculture, animal husbandry and industry and political concentration and establishing security helped the development of domestic and foreign trade in the Sassanid period. The development of domestic trade had reached the point where the marketplaces of the cities turned into active centers of trade and various goods were transferred from the surroundings to the heart of the cities. Foreign trade was also more prosperous than in previous periods.

After Islam and its acceptance by Iranians, the importance of the bazaar did not diminish, especially due to the religious teachings to clarify and trust the businessmen and the people, this urban element became the most emphasis space of the city after the mosque. In this period, the matter of Azerbaijan from the economic, political, cultural, and social

Mughal Khanes along the roads, two categories of cities prospered. One is cities like Yazd and Kashan, which had small local marketplaces, and the other was cities that were located on commercial highways and had large warehouses and extensive marketplaces, including Tabriz (Petrushevsky, 1966, pp.22). For this reason, commercial cities became the mediators of communication between the West and the East, and Tabriz, as the capital of this wide authority, became the center of attention as the gateway to Europe, India, and China. It grew and developed during this period, the presence of merchants from different countries increased, and many architectural complexes were built. On the other hand, in 1258 AD, with the fall of the Abbasid Caliphate, Baghdad lost its prosperity as a base of Islam and a commercial-political city, and Tabriz became one of the world's most significant commercial centers as a transit city.

Pope wrote about the rapid growth of Tabriz during this period: The greatest achievement of such development was the construction of the town of Shanb-e-Ghazan, half a mile south of Tabriz, which, since the time of the construction of Persepolis, had no equal in diversity, organization, and grandeur (Pope, 2004, pp.171). Ibn Battuta also (in 1327 AD) visited Tabriz and wrote: "We entered the city from Baghdad gate and reached a big market called Ghazan market, which was the best market I had seen in the whole world". Also, before Shanb-e-Ghazan, in this period, before the emergence of TabrizBazaar, a small town called Rashīd was built by Rashīd al-Dīn Faḍlullāh Hamadānī (1247–1318 AD) near Tabriz, which is described in reliable sources: this city had 30,000 houses, 1,500 shops, 24 caravanserais, and a great number of mosques, schools, baths, a dyeing workshop, a mint, and a papermaking workshop. Regarding the geographical location of the city, it should be said that Marco Polo (1275AD) called it one of the prosperous cities where the main occupation of its residents in manufacturing and trading (Polo, 1959).

Also, Bertold Spuler praised and mentioned Tabriz in terms of domestic trade and goods abundance (Shpuler, 1955, pp.433). While describing the city of Tabriz in terms of its geographical location, Clavijo speaks of the streets and marketplaces of Tabriz where all kinds of goods are sold: "In the markets, you can find silk fabrics, cotton, raw silk, jewelry, and all kinds of utensils. With the fall of the Il-Khanid, there were interruptions in the foreign trade of Tabriz, but with the formation of the Timurid Empire and Timur's support policies to create security along the trade routes, Tabriz regained its past commercial importance. During this period, Tabriz maintained its commercial position and it is stated in the documents quoted by Clavijo (1406AD) that Tabriz has wide streets, wide squares, and large buildings. The caravanserais were built very beautifully with the facilities of offices and shops, and the streets and marketplaces were full of goods. All kinds of fabrics, jewelry, perfumes, and dishes

are seen in the bazaar (Clavijo, 2009). This process grew more during the rule of the **Kara Koyunlu** and reached its peak in the period of the Aq Qoyunlu, so this city played an important role in international trade. The most main trade routes leading to Tabriz during the period of Aq Qoyunlu were the trade route that went from Tabriz to Diyarbakır and from there to Aleppo. The trade route reached from Tabriz to Erzurum and from there to Bursa (Clavijo, 2009). Another way to export goods from Tabriz to Anatolia was through Mount Ararat to Erzincan (Dalsar, 1960, pp.128-129). It can be said that from the 13th to the 16th AD, Tabriz experienced one of the most extraordinary situations in Iran economically and politically. In **the Safavid** era, despite the foreign invasions and the proximity of the marketplace to the Ottoman borders and the constant wars between Iran and the Ottomans, as well as the occurrence of two severe earthquakes, Tabriz was still of economic importance, and the bazaar was a serious commercial position. Chardin, (1671 AD) in his travelogue, reports about fifteen thousand shops were in Tabriz and the best marketplaces in Asia were built in Tabriz, where precious artifacts and all kinds of jewelry were bought and sold.

According to Chardin, Tabriz Grand Bazaar was built by the order of Uzun Hasan. Despite the establishment of East India companies and the opening of sea routes, the export of Iranian goods in the eastern marketplaces (India, Japan, etc.) was booming. But, along with severe earthquakes, the change of the commercial route from the northwest to the southeast had very negative effects on the commercial situation of the city, the continuous invasion of the Ottomans and the migration of merchants from this city, the economic and historical function of Tabriz city will become weak Pourmohammadi, 2009, pp. 22).

During the Afsharid period, due to the war and lack of security, there was no change in trade, but with the establishment of relative stability in the Zand dynasty, many major activities were carried out, including the construction of the famous battlement with eight gates. Behind these gates, bazaars were built, and some of which were connected to the city's central bazaar, such as Rahli bazaar, Shotorban, sorkhab, etc. Until the terrible earthquake of Tabriz (1779 AD) totally annihilated it. In general, the occurrence of an earthquake and the severity of its destruction is one of the characteristics of Tabriz. But after every earthquake, the city has been rebuilt and continues to live. At the end of the 18th century, the construction of a new battlement around Tabriz by Najaf-Qoli Khan (1781 AD) was the beginning of the market activities. The main purpose of building a battlement with 8 gates (Khyaban, Baghmisheh, Sorkhab, Shetraban, Istanbul, Gajil, Mahadmehin, Nobur) around it was to protect the market and the new government seat of the city (Habibi, 2012). With successive growth and prosperity, Tabriz expanded rapidly, and the bazaar was located in the center of the

city and inside the battlement (Khamachi, 1996, pp.34).

At the end of the Qajar period, the expansion of Europe's machine industries and the cheapness and the abundance of its goods, as well as the changes in trade routes due to the expansion of means of transportation and the import of foreign goods, caused Tabriz lost its former position and its flourishing economy began to stagnate. The Second World War also caused a lot of economic and social damage.

Evolution of Tabriz Grand Bazaar in Azerbaijan during the Qajar and Pahlavi period

It is considered the traditional residence of the Qajar crown princes and the second most important city of Iran after the Dar al-Khalifah Naseri in the Qajar dynasty. On the one hand, the political importance of Tabriz and its location on the northwestern border of Iran had turned this city into a gateway for the entry of modernity and the advancements of the outside world into the country (Balilan Asl, 2014, pp. 57).

Trade in the Qajar district was more or less prosperous, and many houses and rows were built in the bazaar. According to researchers, even between 1840 and 1850 AD, despite the unfavorable business situation, Tabriz was still the greatest commercial city in Iran. So that in 1840, Tabriz was one of the main trade centers of Iran and had launched a quarter to a third of Iran's trade. Such a situation existed for the export of goods to Europe, that is, the goods flowed from different parts of the country and were collected in Tabriz, and from there they were exported to Europe, and the operations were carried out by Tabriz companies. In general, since the beginning of the 19th century, Tabriz was considered the commercial center of European trade with northern Iran and with Central Asia until 1868 AD (Ibid., pp. 403). The modern movement that was formed in Europe during the Age of Enlightenment opened its way to Iran much later than the technological manifestations of modernity. The appearance of this delay in the general texture and structure of the cities was also demonstrative; So that in the Qajar period, "the urban context and its spatial organization did not show major differences (in terms of structure and content) with the city of the Safavid period. The bazaar is still the main hinge and the backbone of the city because it is always in addition to its economic-commercial role, it is also the place of demonstration of all forms and social-cultural formations (Habibi, 2005, pp. 121). Urban life underwent a lot of transformations during this period with the developments of transportation and communication networks so that with the advent of cars, the transitions in the city accelerated and the pattern of development occurred in the context and entire biological complexes. The traditional context of Tabriz was created with narrow and non-geometric paths, with functional order, under the influence

of social, political, security, and economic conditions. In the first period of the Qajar period, these changes in the context of Tabriz city were accompanied by insignificant interventions, but in the second period, followed by the Pahlavi period, the amount of intervention in the tissues increased (Mohammadzadeh et al., 2014, pp.88-91). During the first period of Qajar, Tabriz bazaar became a commercial base and a place of business dealings with England and Russia. However, in the second period of the Qajar period, due to socio-economic developments, part of the old structure and organization of this area underwent a transformation. The commercial route of Tabriz bazaar, which is based on one of the 21 important movement routes of the city, is in a state of disarray during this period of time. So that it had serious problems at the points of intersection with the newly built streets (Behmansharad, 2010, pp.204)

The newly built streets cut off the bazaar of Tabriz and the bazaar was divided into two parts, which reduced and stopped the influence of the market in the city. However, the difference between this period and the following periods was the establishment of new streets based on valuable urban activities in the past. This means that the movement that played an important role in the city in the past urban hierarchy and established important urban connections, was noticed in the streets of this period. Tarbiat, Imam Khomeini (former Pahlavi), Ferdowsi, and Shahid Beheshti (former Mansour) streets are all among this category of streets. (Mohammadzadeh etal., 2014, pp. 91)

But in general, it emphasizes the movement that is conceptually mentioned above. The existence of valuable architectural traditions and native architects has also made this period become a valuable construction phase that has special architectural values.

Due to proper movement features in the formation of the streets, these street constructions caused less destruction and damage to the context, and for this reason, the inner parts of the residential context were not damaged in any way. It is necessary to re-emphasize that the architecture of this period has not yet been affected by political developments and in a way it can be considered as the continuation of Qajar architecture. It should be mentioned that the intensity of inconsistencies and destructions during the Pahlavi period is more than in any other period (Kiani, 2007, pp.180).

During the reign of Pahlavi, I, the administrative apparatus and the army were organized according to western models, and the industrialization of the domestic country was defined as the main goal of government programs. The urban society, without containing the economic cores and recognizing the transition from a workshop to a factory economy and turning into a production society, finds itself in the ever-increasing expansion of the state bureaucratic apparatus (Habibi 2005, pp.152).

In the meantime, the outbreak of World War II also caused a lot of economic and social damage and the urban industrial economy was stopped. With the creation of new spaces and streets, the interaction between the bazaar and neighborhoods disappeared. But after the end of the war, the preparations for rapid all-around economic, social, and cultural developments began, and with the construction plans of Tabriz, it took on an industrial face. From the end of Pahlavi, I, the oil economy was formed, which in turn was effective in weakening traditional services.

With Pahlavi II coming to power, the oil economy widened the class gap in society, but at the same time, with the establishment of numerous factories, the expansion of banks, and the construction plans of the great and old city of Tabriz, it took on an industrial face and became one of the industrial hubs and large manufacturing factories Competition with the industrialized countries of the world was created.

The new perception of urbanization was influenced by the introduction of new urban elements such as streets, changes in taste and lifestyle, and traditional bazaars. The emergence of more streets was also a fundamental variable that led to the separation of traditional bazaars. Tabriz, like other places, with the emergence of a phenomenon called the automobile, challenged the city's communication field and imposed its requirements both quantitatively and qualitatively on the city's access system; Therefore, the street sweeps made a serious change on the face and quality of the effective area of the streets of Tabriz, and this caused the birth of new commercial places in the form of street commercial spaces, commercial complexes, and arcades.

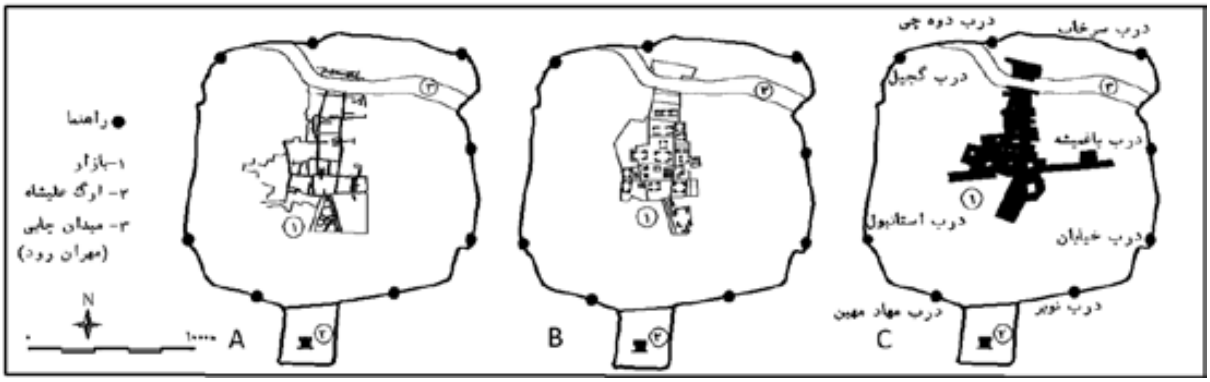


Figure 3: Tabriz market in (A) Gajar, (B) Pahlavi, (C) Islamic Republic periods, (source: Habibi, 2013, pp. 47)

Conclusion

The formation of the city of Tabriz has always been damaged by earthquakes and continuous wars. From the late Qajar period to the Pahlavi period, extensive urban changes were observed in the cities, especially in Tabriz. Tabriz, which has become the second largest city in the country due to the extensive activity of the bazaar, and from the political point of

view, is considered one of the main decision-making centers, in this period, it has undergone changes in its urban appearance and streets for car traffic. It was created in the city. The first streets were in the early 1921 AD. It caused great damage to the structure of the bazaar and caused the separation of parts of the bazaar and the division of neighborhoods into separate structures.

Tabriz Grand Bazaar after constitutionalism (after 1921 AD) fell into disrepair due to neglect. Another consequence of these streets is the transformation of the organic geometry into a structure with a regular, straight-line geometry suitable for rider movement. Of course, it should be pointed out that the urban developments in Pahlavi I were more systematic than in period II, but due to the continuity of the city system and the relationship of different elements with each other, the results of the developments were not favorable and, in some cases, caused a decrease in the density of the context and functional weakness of urban spaces. Also, the economic stagnation of the region after 1941 AD and the loss of domestic and local investors played an important role in the exhaustion of the market. This neglect reached its peak in the 50s and 60s and had the greatest impact on the market. From Pahlavi's rule until today, he has had a different attitude towards streets and urban passages. The consequences of such an attitude in urban planning are the emphasis on historical discontinuity, modernism, the loss of urban cohesion, and the destruction of old structures and many historical buildings in this period. In this sense, the bazaar is one of the vulnerable buildings and experienced some irreparable damages.

From the Qajar period onwards, as a result of the all-around decline of Iran's culture and economy and the disintegration of traditions, these buildings also showed significant deterioration. But despite this, the bazaar is still considered one of the extraordinary physical and social elements of the city.

In general, until the middle of the 15th century, marketplaces played an important role in the development and expansion of Iranian-Islamic cities. In the contemporary period, the transformation in this structure caused a fundamental change in the urban-market structure. The disconnection of the roads from the historical context of the bazaar was accompanied by the influx of renovations and the isolation of the historical residential content around the bazaar. Creating a gap in the context causes a change in the central position of the market in the city and a change in its internal communication, creating separate spaces by losing their original concepts and creating a spatial sequence. In the traditional context, the bazaar was related to the neighborhoods, private and semi-private spaces, and with the passing of the street, the context became fragmented and the physical and spatial hierarchies were disrupted, which caused confusion in the activity, formal and spatial system. Another factor in attacking the historical axis and discrediting the marketplace is

the establishment of heterogeneous architecture with the original architecture of the passages in the historical context, which is not only alien to the original architecture of this axis but also does not have the slightest unity or connection with other contemporary buildings. It is important in the anonymity and dimming of the historical axis.

Therefore, in the final summary of the definition of the motifs of the bazaar, its connection, and its place in the city, it can be said that the bazaar is one of the most influential elements of the city on social, political, and economic developments throughout the ages and as a foundational element. The direction of fundamental changes in society has been discussed; so, in Iranian cities, the bazaar is considered one of the most important urban spaces and functional elements. The importance of paying attention to the market in the vicinity of the historical context makes it necessary to pay more attention to preserve this powerful economic-spatial-social element.

References

1. J.L. Abu-Lughod, "The Islamic City-Historic Myth, Islamic Essence, and Contemporary Relevance," International Journal of Middle East Studies, vol. 19, no. 2, pp. 155-176, May 1987.
2. M. Abū ʿAbd al-Lāh, "The Travels of Ibn Battuta," Translated by M. A. Movahed, Tehran, Iran: Bonghahe Tarjome, Nashr Ketab, 1958.
3. M. Abū ʿAbd al-Lāh, The Travels of Ibn Battuta. Translated by M. A. Movahed. Tehran, Iran: Bonghahe Tarjome, Nashr Ketab, 1958.
4. A. Adelzadeh, "Social dimensions of bazaar in historical cities of Iran: The Tabriz bazaar," The International Journal of Engineering and Science (IJES), vol. 5, pp. 36-44, 2016.
5. L. Balilan Asl, S. Khorshidian Ahmar, S. Sattarzadeh, and M. Nouri, "Reconstruction of the Qajar Dynasty Tabriz Daralsaltanat Governmental Palaces, According to Historical Documents," Honar-ha-ye-Ziba Memari-va-Shahrsazi, vol. 19, no. 1, pp. 33-42, 2014. doi: 10.22059/jfaup.2014.55374.
6. J. Behmansharad, "In Search of Tabriz Urban Identity," Urban Studies and Architecture Research Center, Tehran, Iran, 2010.
7. E. Çelebi, Evlia Çelebi Itinerary, Vol. 2, Translated to Persian by H.H. Nakhchivani, Shafag Press, Tabriz, Iran, 1896.
8. J. Chardin, "Chardin's travelogue," Translated by M. Abbasi and E. Yaghmaei, 3rd ed., Amir Kabir, Tehran, Iran, 1969.
9. A. Dehkhoda, Dehkhoda Dictionary, Tehran University, Tehran, Iran, 1931.
10. F. Dalsar, Türk Sanayi ve Ticaret Tarihinde Bursada Ipekçilik, Üniversitesi Iktisat Fakültesi, Istanbul, Turkey, 1960.
11. M. M. Falamaki, Revival of buildings and cities, Tehran University Press, Tehran, Iran, 1994.
12. D. Fisher-Gewirtzman, D. Shach-Pinsly, A. I. Wagner, and M. Burt, "View oriented three dimensional visual analysis models for the urban environment," Urban Design International, vol. 10, pp. 23–37, 2005.
13. C. Geertz, "The Bazaar Economy: Information and Search in Peasant Marketing," American Economic Review, vol. 68, pp. 28–32, 1978.

14. R. Gholipour Shayani, "Pol Bazaar: Interactional Architecture with the Urban Space the case of Tabriz bazaar," Gazi University Journal of Science GU J Sci, vol. 29, no. 2, pp. 373–389, 2016.
15. M. Habibi, Tabriz Grand Bazaar. Tehran, Iran: Iranian Studies Foundation, 2013.
16. M. Habibi, "From the flux to city," Tehran University, Tehran, 2005.
17. P. Hanachi and S. Yadollahi, "Tabriz Historical Bazaar in the Context of Change," ICOMOS, Paris, 2011.
18. M. Ibn Huqal, "Surat al-Arz'. Translated by Jafar Shoar," published: Vita, Tehran, Iran, 1966.
19. Iranian Cultural Heritage, Handicrafts and Tourism Organization (ICHHTO), "World Heritage nomination dossier of Tabriz Historic Bazaar Complex," Deputy of Cultural Heritage, Tehran, 2009.
20. A. Kalan and E. Oliveira, "A sustainable architecture approach to the economic and social aspects of the bazaar of Tabriz," Independent Researcher, MPRA, no. 53245, University of Groningen, 2014.
21. K. Karimi, "Continuity and change in old cities: an analytical investigation of the spatial structure in Iranian and English historical cities and after modernization," UCL, Ph.D. dissertation, University of London, 1998.
22. M. Khairunnisa and L. Ju Tjung, "The Development plan of 'Rusun' integrated modern market (case study: Grogol Market)," IOP Conf. Series: Materials Science and Engineering, vol. 508, article 012033, 2019 DOI: 10.1088/1757-899X/508/1/012033.
23. P. Kotler and K. L. Keller, "Marketing management 15th ed.," 15th Harlow, 2016.
24. B. Khamachi, "Tabriz Bazaar through the Ages," Tabriz: Ashina, 1996.
25. M. Khairunnisa and T. Liong Ju, "The Development plan of 'Rusun' integrated modern market (case study: Grogol Market)," IOP Conf. Series: Materials Science and Engineering, vol. 508, 2019, article 012033.
26. M. Kiani, "The First Period of Pahlavi's Architecture," Tehran: Institute for Iranian Contemporary Historical Studies (IICHS), 2007.
27. R. E. Mack, "Bazaar to piazza," University of California Press, 2002.
28. N. Marsoosi and M. B. Khani, "Economical, functional analysis of Tabriz Bazaar and its sphere of influence," Human Geography Studies, vol. 75, no. 1, pp. 133–152, 2001.
29. A. Masoominia, "Favorable market, full competition," Islamic Economy, vol. 15, no. 4, pp. 55-80, 2004.
30. R. Masoudi Nejad, "Social Bazaar and Commercial Bazaar; Comparative Study of Spatial Role of Iranian Bazaar in the Historic Cities in Different Social-Economic Context," London, UK, 2005.
31. J. McMillan, "Reinventing the Bazaar: A Natural History of Markets Paperback," W. W. Norton & Company, 2003.
32. A. Mehdipour and H. Rashidinai, "Persian bazaar and its impact on evolution of historic urban cores: The case of Isfahan," The Macro Theme Review: A Multidisciplinary Journal of Global Macro Trends, vol. 2, no. 5, pp. 12-17, 2013.
33. S. B. Merriam, "Case Research in Education: A Qualitative Approach," Jossey-Bass Pub, San Francisci, 1988.
34. R. Mohammadzadeh, P. Jamali, and M. R. Pour mohamadi, "The role of modern urbanization in Tabriz pedestrian traffic violations," Honar-ha-ye- Ziba Memari-va- Shahrsazi, vol. 10, pp. 17-26, 2014.
35. A. Nejad Ebrahimi, F. Pour Rahimian, and M. Sahraei Loron, "Impacts of Urban

Passages on Formation of Iranian Bazaars: Case Study of the Historic Bazaar of Tabriz," International Journal of Architectural Research, vol. 7, no. 2, pp. 61-75, 2013.

36. I. Petrushevsky, "Islam in Iran," State University of New York Press, 1966.
37. M. Polo, "The Travels," translated by Ronald Latham, Penguin Classics, London, 1958.
38. A. U. Pope, "Architecture of Iran," translated by Gholamhossein Sadri Afshar, Farhangian Publication, Tehran, 2004.
39. N. Poormohammadi, "Eastern Armenia from the documents," The Month of History and Geography, vol. 137, pp. 9-81, 2009.
40. M. Pourjafar, A. Nazhad Ebrahimi, and M. Ansari, "Effective factors in structural development of Iranian historical bazaars case study: Tabriz Bazaar," J. Basic Appl. Scientific Res., vol. 3, no. 2, pp. 272-282, 2013.
41. A. Pourahmad, "Geography and Kerman market functions," Center of Kermanology Press, second edition, 1997.
42. M. H. Saraie, "Islamic - Iranian Bazaar Changes: (A Case study of Yazd Bazaar)," Journal of studies on Iranian Islamic city, vol. 2, no. 1, pp. 25-37, Winter 2011.
43. E. Sangsai, H. Omrani, and B. Omrani, "History and architecture of Tabriz bazaar," 1st Ed., Sotudeh, Tabriz, Iran, 2008.
44. K. Safamanesh, Y. Rashtchiyan, and B. Monadi zadeh, "Tabriz Physycal Structure and its Changes in Two Late Centuries," Goftegu, vol. 18, pp. 33-53, 1956.
45. D. Salvatore, "Front cover image for Microeconomics: theory and applications Microeconomics: theory and applications," Oxford University Press, New York, 2003.
46. P. A. Samuelson and W. Nordhaus, "Economics," 19th Edition, McGraw Hill, 2009.
47. B. Spuler, "Die Mongolen in Iran. Politik, Verwaltung und Kultur der Ilchanzeit. 1220-1350," 2nd ed., Akademie-Verlag, Berlin, 1955.
48. H. Soltanzadeh, "Urban spaces in the historical context of Iran," Culture and Tuncer Architecture Press, Tehran, 2001.
49. J. B. Tavernier, "Tavernier's Travelogue," translated by Hamid Arbab Shirani, 1st Ed., Publisher: Niloofar, Tehran, Iran, 2004.
50. I. Watts and M. K. Costina, "Multiculturalism, Integration and Bazaars," KONTUR Nr, vol. 10, pp. 14-19, 2014.
51. E. Wirth and G. Heinz, "Der Bazar von Isfahan," Tubinger Atlas des Vorderen Orients, Weisbaden: Dr Ludwig Reichert, 1975.
52. Y. Zoka, "Earthquakes of Tabriz," Publisher: Ketab Sara, Tehran, Iran, 1989.

CENTRAL ASIAN STUDIES II
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HISTORICAL DEVELOPMENT OF MASJED-E JAME' OF ISFAHAN*

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Abstract

Masjed-e Jāme' of Isfahan (MJI) is a significant example of Islamic architecture and urban planning in Iran. Its history and development are intertwined with the birth and growth of the city of Isfahan, which emerged with the spread of Islam in Iran. The mosque underwent several phases of construction and expansion, reflecting the influence of various rulers and civilizations that came to Isfahan throughout history. Despite the decline of the city's importance and the abandonment of many Safavid-era buildings and monuments, Masjed-e Jāme' of Isfahan remained a center of religious and social activity, attracting people from all walks of life. The establishment of the ICHHTO after the Islamic revolution in Iran has helped to preserve and protect this important cultural heritage site for future generations.

This text discusses the history and development of Masjed-e Jāme' of Isfahan, the largest mosque in Iran, which is considered an important example of Islamic architecture and urban planning. The mosque's construction and expansion are intertwined with the birth and growth of the city of Isfahan, which emerged with the spread of Islam in Iran. Despite the decline of the city's importance, Masjed-e Jāme' of Isfahan remained a center of religious and social activity, attracting people from all walks of life. The establishment of the ICHHTO after the Islamic revolution in Iran has helped to preserve and protect this important cultural heritage site. Overall, the text provides insight into the significance of this historic mosque and its role in the development of Islamic architecture and urban planning in Iran.

Keywords: *Masjed-e Jāme' of Isfahan, Isfahan, Historical development*

**This study was produced from the report of the Masjed-e Jame' of Isfahan submitted to UNESCO in 2011.*

Introduction

Since the birth, growth and ongoing development of *Masjed-e Jāme'* of Isfahan in the first century AH has always been accompanied by the formation of the initial conception of this Islamic city as well as its physical development through time. Isfahan is the biggest great mosque located in Iran.

Today Isfahan is considered as an Islamic city regarding the history of architecture and urban planning. Actually, before Islam there was no great city with this name. In fact, the birth of Isfahan city has been simultaneous with the emergence of Islam in Iran. The influence of Islam along with old traditions has inspired Iranian architecture. As a result, Isfahan residents have created valuable architectural monuments.

In the middle of the second century AH (8th century AD) historians have repeatedly mentioned the construction of a mosque in Isfahan. But this preliminary building was destroyed less than a century later and was replaced by another much larger mosque in such a way that relics of the first mosque were buried beneath the current one. During archaeological excavations done on Masjed-e Jāme' of Isfahan site, remains of its Qiblah wall as well as parts of stucco decorations of its mehrab has been discovered and comparative studies have shown the close relationship between its stucco decorative models with pre Islamic experiences. After a while, the mosque, which was not enough for the population, was expanded and added new additions in different periods. In addition, all the rulers and civilizations that came to the city of Isfahan throughout history made new additions and arrangements to the Isfahan mosque and contributed to the Islamic architecture in the city.

From the middle of the twelfth century AH (17th century AD) e.g. the collapse of the Safavid rule when the Qajar dynasty came to power, until the emergence of industrial developments in Iran, the importance of Isfahan city decreased gradually and due to the transfer of capital to Tehran most of the buildings and monuments belonging to the Safavid era were abandoned and gradually fell into ruin.

But Masjed-e Jāme' of Isfahan kept its significance because it remained the main center for holding religious ceremonies and daily gathering of people coming from all walks of life. As a result, they tried to look after it and to take care of it continuously. After the Islamic revolution in Iran, the ICHHTO[1] was established and it was entrusted with this sensitive duty legally according to the ratification of the parliament.

[1] *ICHHTO: Iranian Cultural Heritage, Handicrafts and Tourism Organization*

1. Location, Geographical Issues, Maps and Plans, Buffer Zone



Figure 1. Location of the Isfahan province (ICHHTO archive)



Point	N	E
C1	32° 40' 07.87809"	51° 41' 06.78538"
C2	32° 40' 10.31066"	51° 41' 03.01779"
C3	32° 40' 10.49402"	51° 41' 02.90178"
C4	32° 40' 12.15977"	51° 41' 04.27362"
C5	32° 40' 12.65223"	51° 41' 04.88046"
C6	32° 40' 13.28904"	51° 41' 05.82432"
C7	32° 40' 13.33001"	51° 41' 06.11152"
C8	32° 40' 14.11261"	51° 41' 07.53243"

Point	N	E
C9	32° 40' 13.88893"	51° 41' 08.15593"
C10	32° 40' 13.44846"	51° 41' 09.08677"
C11	32° 40' 12.48058"	51° 41' 09.07231"
C12	32° 40' 10.88225"	51° 41' 09.99756"
C13	32° 40' 09.94007"	51° 41' 08.97685"
C14	32° 40' 09.47329"	51° 41' 09.00580"
C15	32° 40' 09.13125"	51° 41' 08.66041"
C16	32° 40' 08.45667"	51° 41' 07.86846"

Figure 3. Map of the core zone

2. History and Development

Masjed-e Jāme' of Isfahan (Henceforth MJI) is located north-east of Isfahan. As one of the oldest mosque in Iran embodying various architectural developments, it is also known as Masjed-e Jāme' Atiq and Masjed-e Jāme' Adineh (Friday mosque). This vast historical complex, measured as 140×170m, is situated near Meydan-e Kohneh of Isfahan (Isfahan old square). Today it is included such different parts as Neza al-Molk dome, Taj al-Molk dome, Sahn-e Chahar Ayvān (four-porched courtyard), a number of Shabestans (Nave) and a building known as Madrasa Muzaffari (school of Muzaffari).

Though in late 19th century it has attracted the attention of such people as the well-known French architects Flandin and Coste in terms of research an surveying (Flandin, 1841), systematic researches started in 1940s with the works of Iranian and foreign researchers on the building and its decorative features. Among earliest scholars, Gabriel and Sauvaget on the one hand, and Godard on the other, proposed two different views on the original building of MJI[2] and its historical evolution and posed a number of theories.

3. Historical Antecedent of MJI

3.1. Forming of the Original Mosque

The original Core of today Isfahan is two modest residents called as *Jey* and *Yavan*. *Jey* situated at the brinks of *Zayandarud*, had four gates and was a sort of "political" center of nearby settlements. *Jey* has had old citadel located at the commercial path of the region and was a "shelter-settlement" of the travels and Caravans. The basic elements of *Jey* were a square or *Meydan*, in front of the so-called gate of *Khur* at the north of the city. At the early Islamic era, *Jey*, contrary to the defenseless circular city of *Yavan*, had its own garrison to be used by Moslem conquerors who would build a *Jom'a* mosque in the city. *Yavan*, which also crossed by the same commercial road, was located at a flat plain. After the Moslem conquests, the defensive role of Jay was reduced due to political stability as well as Irano- Arab admixtures. Therefore, the political center transformed from *Jey* to *Khashinan*, a village between *Jey* and *Yavan* (Hamidi, 1997).

In other words, *Khashinan* transmuted in *Yavan* (Hamidi, 1997). After sack of *Ayyub* himself by the anger *Khalif'a Mehdi* the *Abbasid*, the Arabs of *Tayyem* tribe, settled in the village of *Tayran* in the Isfahani's nearby, decided to built a huge *Jāme' Masjid* (Friday mosque) in *Yavan* and to transfer the so-called pulpit of *Ibn-e Ziad* to there. It was carried out at 156 AH at the reign of *Hani ibn-e abi Hani*, some five years after the change of *Yavan* in to a town. This was the same contemporary MJI (as the third *Masjed-e Jāme'*) with its *Ayyub* pulpit. In this way

[2] *MJI: Masjed-e Jāme' of Isfahan*

and after construction of MJI, *Yavan* extended through the desert direction and about 15 villages were added to it (Honarfar, 1967).

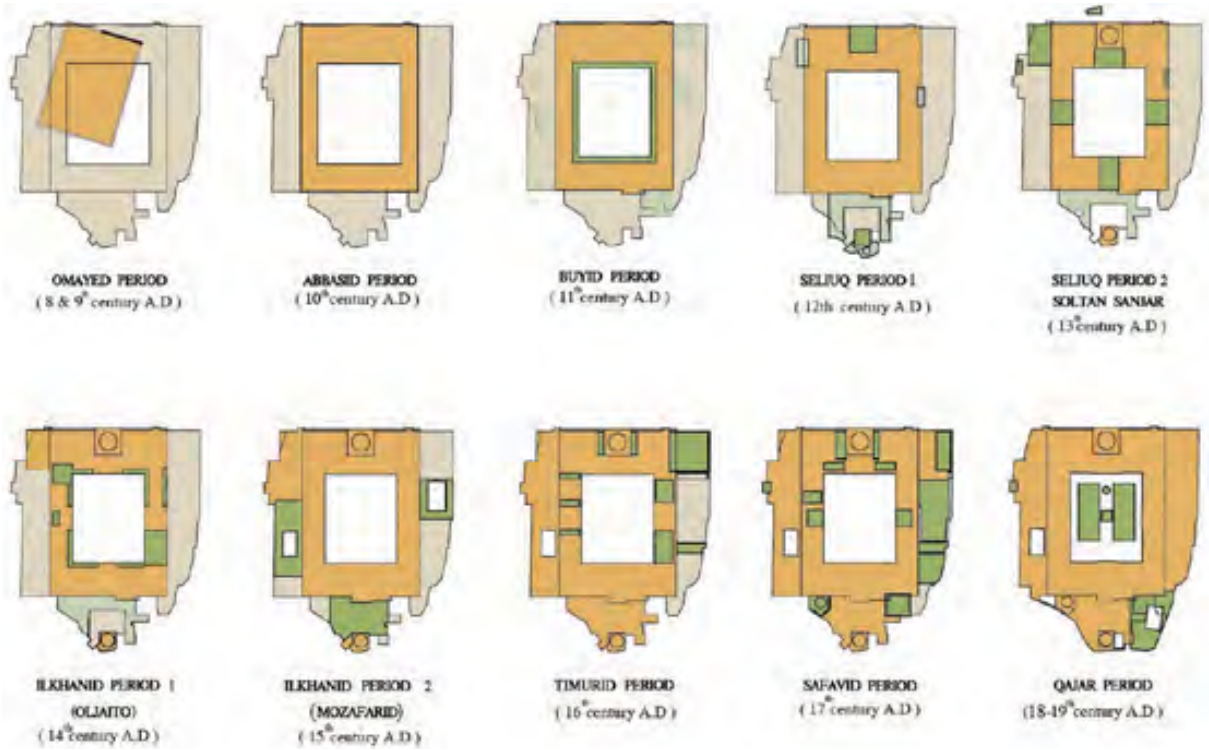


Figure 4. Periods of Masjed-e Jāme

In general, and according to historical documents, MJI has undergone two basic construction phases at the "first period" (namely, the *Abbasid Khalif'a* era) as follows: A. (Construction of) the main body of the mosque in the second century AH by the Arabs of *Tayran* village of *Tayyem* tribe.B. Development of the mosque by the local people following the enlargement of *Yavan* and attachment of some extra parts to it, such as the lands of *Khasib abad* (after *Khasib ibn-e Salm*, who added it to the mosque and who also built a shrine there).

This early from of the mosque, was of *Bumoslemi* type (columned nave; its Qiblah (*Qibla*) direction differed some 20 to 30 degrees from contemporary one) (Pirnia, 2007).

3.2. Location, Architecture and Decorative Features of the Original MJI (2nd Century AH)

Excavation carried out at MJI have revealed the location of original mosque built at the time of *Mansur* the *Khalif'a* and referred to by *Abu Na'im* and *Mafrukhi.*

Mehrab and an important part of the mud-brick wall of Qiblah side are decorated with impressive plaster-works, being discovered at different heights of about 40 and 90 cm below the floor of the southern court of the (present) MJI. The original

mosque was in rectangular shape of approximate width of 52 to 55m and was in a north-eastern to south-western oblique direction with respect to the axis of the (present) MIJ.

The mosque having once (probably) a colonnaded court at its southern side, had not been constructed over a "pristine " ground; namely, the discovery of the remains of a *Sassanid* building with its decorative plaster-work, finding of a remain of a column of the same period, some parts of the floor of the corresponding building and also discovery of some traces from earliest Islamic times at the site, all indicate that MJI had been built at 2nd century AH over an area belonging to late *Sassanids* period, whose buildings were probably still in use in the first and second century AH, and then in 7th and 8th century (with some changes).

Orientation of the mosque on the north-eastern to south-western axis was also accommodated with the same direction as the *Sassanid* buildings.

The late Dr. B.A.Z. Shirazi for the first time introduced the olds document mentioning the history of MJI; namely the book entitled as *Zekr-e Akhbar-e Isfahan* (on Isfahan news"), written by *Hafiz Abu-Na'im Isfahani*, which draws in a fairly well fashion the rate of formation of the mosque (Mir Shahzadeh, 2008). He has given a precise of description about the mosque's location and states that it has been built in the land of synagogues, itself belonged to a sage who was brought from Roman Empire to Persia by *Firuz I* the *Sassanid* (459-483 AD). He builds a house of Divan (secretary) and a shrine within the village "citadel". As *Abu-Na'im* confirms, the shrines land is in location a mosque, itself being beside the square of *Soleiman*, the latter clearly accommodates with the contemporary *Meydan-e-Kohneh*.

Archaeological excavations also revealed impressive decorative plaster-works from second century AH in the lower section of Qiblah wall and on a part of walls within MJI's *mehrab*. These masterfully carried out decorations include chains of plants and beads as well as other figures engraved on a sort of vine-leaf background.

The plaster-works originate from a decoration tradition of *Hellenic-Sassanid* style used later at the time of *Umayyad* and developed more at the *Abbasid* period. These predate the so-called decorative plaster- works known as "a style" used at the buildings of Samarra at third century AH (Ettinghausen, 1987).

As Galdieri states, Andre Godard has ruled out the hypothesis according to which a relation existed between the building of *Saljuq* mosque (the current one) with that original one of the *Abbasid* period. He also believed that the former was built on a "pristine" ground (free of any older structure). He had only accepted that the original and contemporary masques shared just their ground (Galdieri, 1972; Godard, 1989).



Figure 5. Archeological finding at the Nezam al-Molk chamber (MJIB)



Figure 6. Discovering the pre-Abbasid mosque wall during excavation of Nezam al-Molk dome chamber (MJIB)

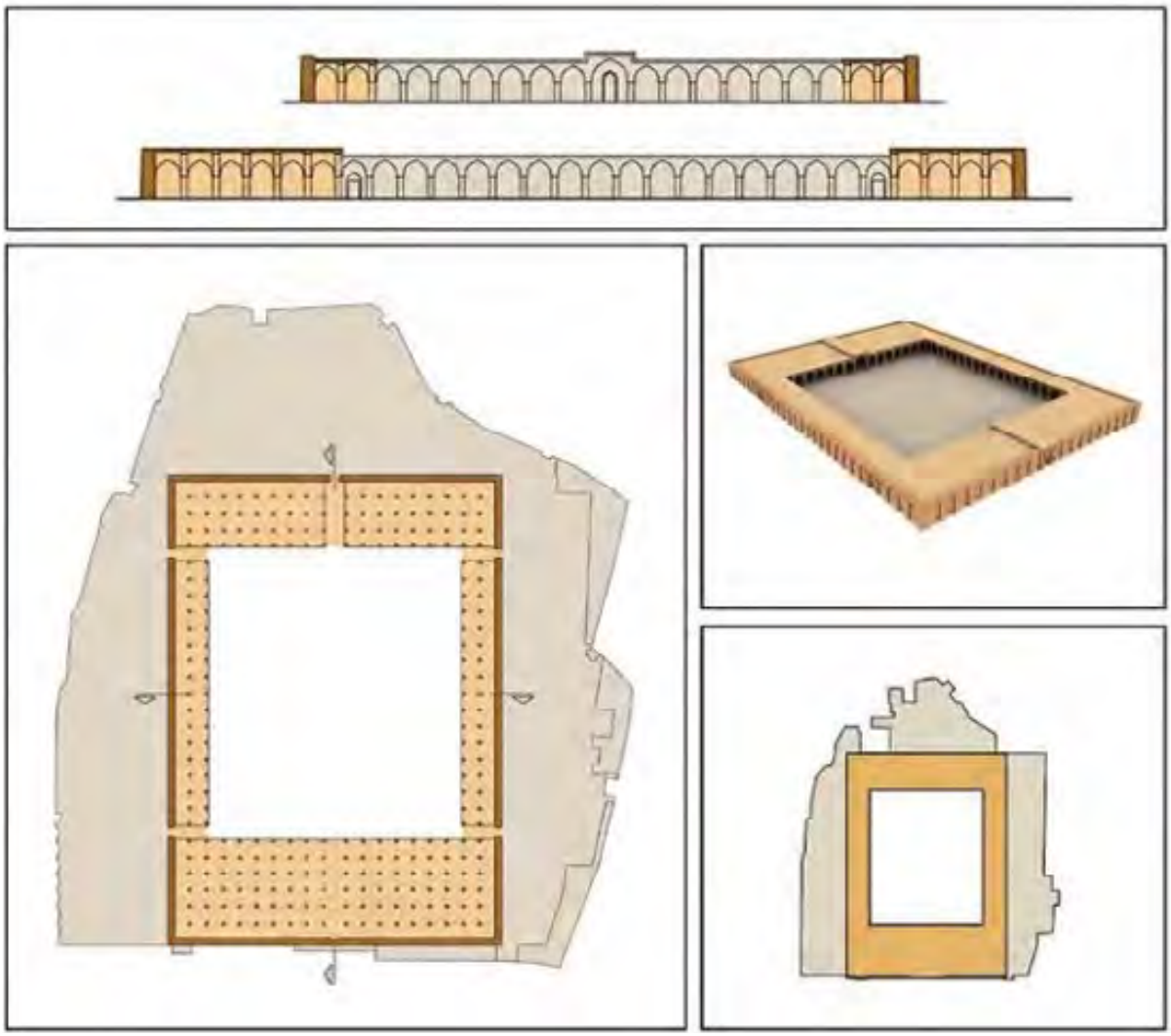


Figure 7. The 10th century (The Abbasid period) (MJIB, Jabal Ameli)

But Galdieri's own researcher showed that the original building, the design and much of the architectural features of *Masjed-e Jāme'* have never destroyed or abandoned and on the contrary, it was the basis for whole of changes and developments of the mosque for a long period of about 12 centuries (Galdieri, 1972).

Current evidence, such as the heights at which the columns have been broken down, as well as a lack of last underground objects, confirm the fact that contrary to Godard's point of view, the architects of *Saljuqs* period didn't work on a vast ground free of every older monument and that they didn't begin their work with "confusing" remain, and instead, they were confronting a living huge standing building in spite of damages as well as its "perturbed" state.

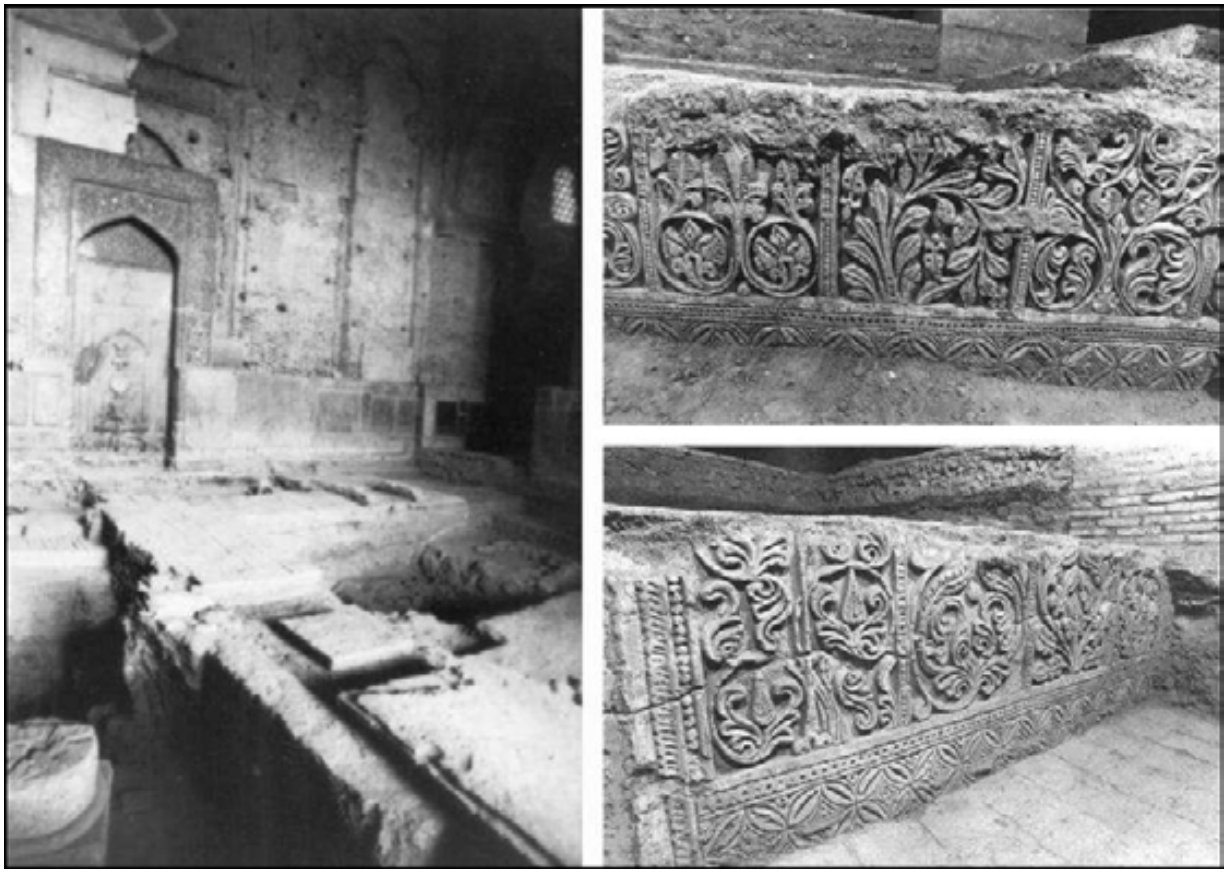


Figure 8. Discovering the pre-Abbasid mosque wall during excavation of Nezam al-Molk dome (MJIB)

3.3. Second Phase (Third Century AH Mosque)

The "new" mosque construction started at the third century (226 AH) at the reign of Al- Mo'tasem, the Abbasid, and at the rule of Yahya ibn-e Malek-e Khazari, after whose time, Abu Ali son of Rostam, extended the mosque at the reign of Al-Moqtader the Abbasid. The mosque had four building units which should not be confused with the mosque's porches ("Corridors round the nave's sides); as Mafrukhi later points out, "to each of these buildings it was attached a portico, each of which connected to the forum though doors opened to corridors and alleys". These four buildings were occupied by Khaneqahs, Madrasas (schools) as well as other standard joined "sub-institution" of every huge Masjed-e Jāme' of the period (Godard, 1989).

MJI was in fact the first university town whose library provided various source materials for masters and students and opened the way for higher researches in Isfahan. The mosque thus enjoyed an outstanding stature and played on important role in cultural developments of Isfahan (Montazer al-gha'me, 2009).

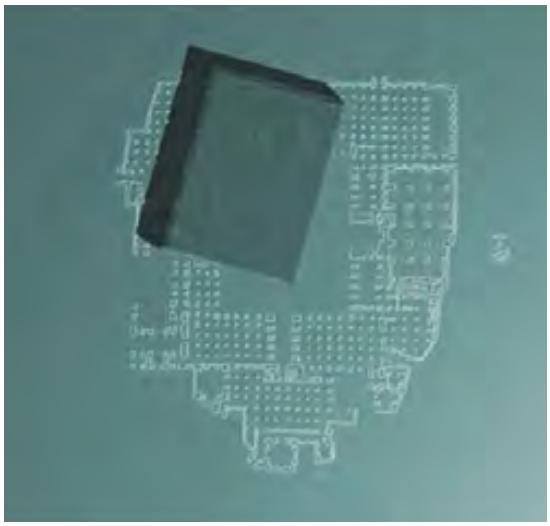


Figure 9. Masjed-e Jāme' in Umayyad period (MJIB, Memarian)

The mosque expanded further later at the reign of Al-Moqtader the Khalif'a and at the rule of Ahmad ibn-e Mansur. This time Abu Ali son of Rostam (mentioned before) annexed to the mosque the lands known as Rostam abad (Mafrukhi, 1949).

By development of Isfahan at the time of Al-Mo'tasem the Abbasid, MJI was reconstructed in much higher scale and with its Qiblah direction being modified. Location and architectural features of this mosque are also clarified through the worst of researchers.

The new building was in rectangular shape and included two colonnaded courts at its northern and southern sides, and two colonnaded porticos at the eastern and western sides, all round a central court. Archeological researches revealed the square-shaped base-columns of the original column in an approximate 4.35 m distance from each other. The southern Qiblah Shabestan had six rows of columns, the northern had four rows, and two eastern and western porticos each had two rows of columns.

In northern and southern courts, the central nave was perpendicular to Qiblah had with a wider space distance of about 5.50m between column rows with respect to non-central ones. The existence of a similar wider distance at the northern court, peculiar to this mosque, probably means that the entrance to the mosque was at the middle of northern wall and that the entrance path was in north-to-south direction.

The nave of the "new" mosque has had a greater area compared to roofed parts; different parts of which, from foundation to façade, have been uncovered in all four sides. At the latest decades of third century AH, the building contained 262 arches and 355 bricked pillars, as the courtyard consisted an 18×15 opening mouths. The middle rows of Qiblah – axis – arch – spans were wider than other opening spans. At this time, the mosque Shabestans were covered by lumbers in a flat manner.

Due to later development of the mosque, the traces of its wall, originally 420m in length, are embedded in the roofed spaces. A major part of enclosure wall, to a considerable height, has been discovered in the eastern front of the mosque and uncovered the old situation of external façade of the mud-brick wall in this side of the complex. Its length was about 126m and the height, assuming the mosque floor was exactly flat at the time, measured as 8 meters.

The wall surface was decorated with 28 blind – arches, reflecting the column and arch structures of courts' interior space (Reza Abbasi museum, 1979). Whole surface of the wall was covered by a layer of Simgel (clay mixed with soft straws) (Galdieri, 1991).Though the newly-built MJI with its colonnaded court and porticos round the central court, redolent of the simple hypostyle mosque of Kufeh (reconstructed by Umayyad at 670 AD) (Sauvaget, 1938), but it has followed the developed styles of other great mosques of the era, namely those at the reigns of Abdul Malek (685-705 AD) and then Valid the first (705-715 AD).

A sample of these developments can be seen in the Shabestan of such mosques as that of Masjed-e Jāme' Umavides (Umayyad) in the masques (706 AD) in which the colonnaded network of Qiblah side is no longer evenly and the central inter column ambulatory, beginning from the nave and terminating to the mehrab, has been chosen wider (as in MJI). This is a usual feature of Umayyad mosques such as Masjed-al Aqsa in Jerusalem and others in Halab, Basreh and Hamah (in Syria).

The same style was respected at the Abbasid period; e.g. at the MJI and other mosques of the period. Among them one can specially mention the MJ and Abu Delf mosques, both of Samarra, being built at the time of Motavakel the Abbasid (847-861 AD). In this way, MJI is one of the first types of Abbasid mosques predating those of Samarra, being a follow up of the Umayyad style which embraced also the later developments of Abbasid mosques. Not only the design as well as much of the basic elements of mosque's building never destroyed, but they became as bases for later extensions, developments as well as architectural and ornamental changes of MJI for a long period of about 12 centuries (To be discussed below).

3.4. MJI at the Al-I Buyid Period

In spite of Deylamians' military engagements for dominating Isfahan, the city enjoyed a relatively peaceful and prosperous time during their reign. Masjed-e Jāme' of Isfahan (Atiq) also for its own sake underwent changes and developments during Al-I Buyid dynasty period whose remains have been uncovered by recent unearthing just as the remains of Abbasid mosque.

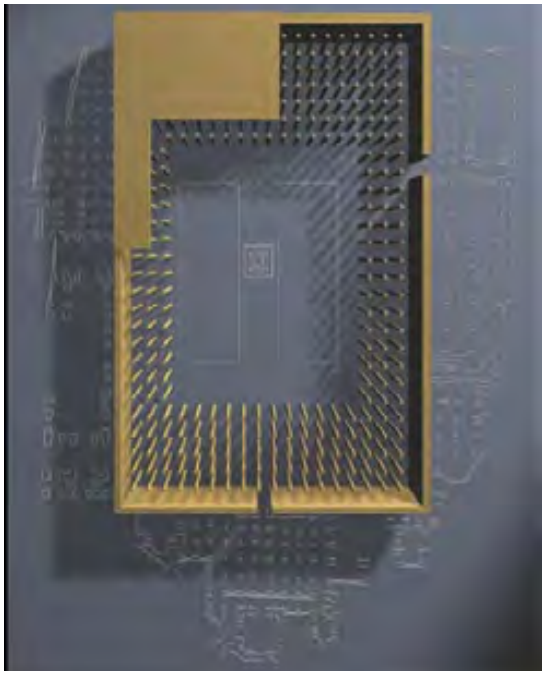


Figure 10. Al-I Buyid hypostyle mosque (MJIB, Memarian)

The basic design of the mosque didn't change so much at this phase, but for the sake of further developments some construction was attached to the building, a general restoration program was conducted, and some measures for architectural promotions carried out on the façade using bricks. Colonnaded spaces of the four sides of court extended by adding a row of bricked column at the side next to the court.

Though in this way the courtyard's space reduced, but the architectural and ornamental features of new columns contributed marvelously to the simple façade of court through their external surface decorations with brick – made geometric designs. This geometric decoration style, being produced by little sized bricks, similar to corresponding ornamental features of the door façade of Masjed-e Saqir Jur jir, has been also seen particularly in buildings from the first half of the fourth century AH in north-eastern Iran. The discovery of the remains of a number of other bricked columns from the same kin at the eastern, south-western, western and north-western parts of the mosque, in the external surface of mud-brick wall enclosure of the Abbasid mosque (being currently bellow the roofed spaces of the MJI), shows that the mosque had been surrounded by buildings with colonnaded networks. Perhaps these columns were in fact the remains of the same four – buildings described by Mafrukhi, once enclosed the courtyards of the mosque and were tangent to the Bazaar which was related to mosque through doors and alleys (Mafrukhi, 1949).

The same author also speaks of a door opened the mosque to the "Rangrazan Bazaar", with an arch over it and two at either sides over two base – columns. These two (by now) missed Minarets should be identified as one of the first "coupled – Minarets" in Islamic architecture.

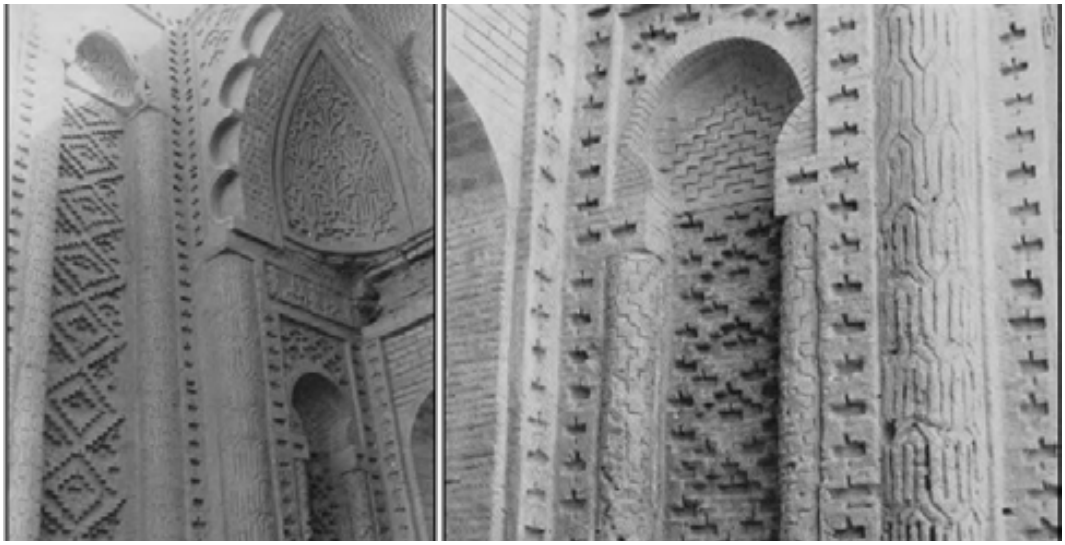


Figure 11. Al-I Buyid elements (MJIB)

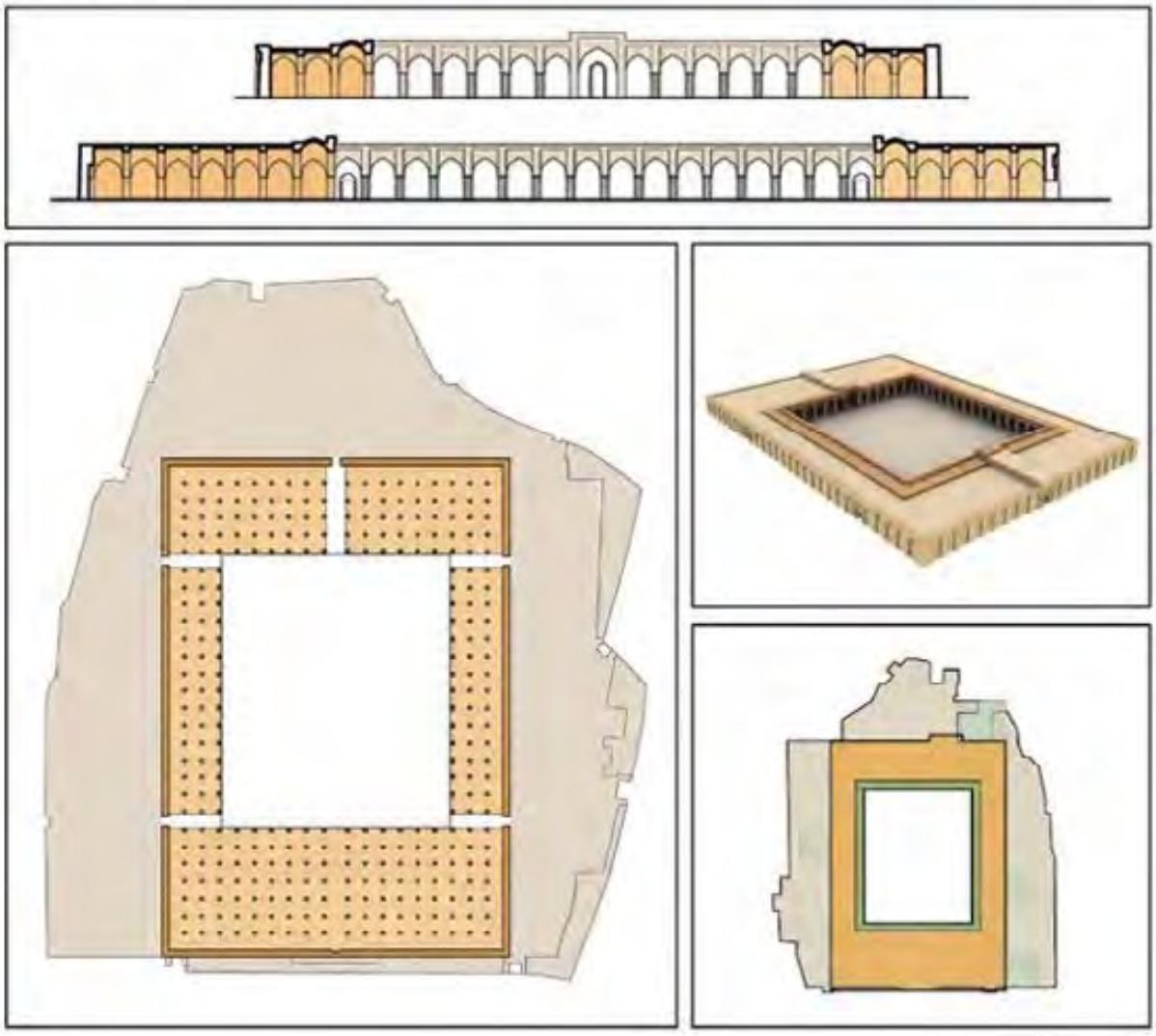


Figure 12. The 11th century mosque (The Al- I Buyid period) (MJIB, Jabal Ameli)

3.5. MJI in Seljuqs Period

Important architectural ans decorative development took place at this period and the building's architectural design changed through different phases. The first one was at the reign of *Malek Shah*. In the southern court of the mosque (behind southern *Ayvān*, known as *Soffe' Saheb*) and at its *Maqsur'e,* a domed hall with huge dimensions of 14.30 to 14.60m (inner sides), 21m (outer sides) and with approximate height of 26.97m was built on a square base on the order of king's famous chancellor, *Nezam al-Molk*. Its commemorative inscription has the names of the king as well as his chancellor, the founder of the building; which were being engraved over the dome's base with a simple *Kufi*c script with no date at all (Honarfar, 1972). Shila Blair investigated the inscription's text and geonology of *Malek Shah* wherein, compared it with eleven, more texts of the same king (having their own dates), and concluded

that the date of the dom's construction was sometime between September of 1086 to March of 1088 AD.

Adoption of another *Maqsur'e* from the mentioned one at 1088 AD (according to its inscription) at the north of the same mosque (behind the northern *Ayvān* know as *Soffe' Darvish*) is a strong evidence to the fact that the original *Maqsur'e* of *Nezam al-Molk* had been built before that date. So as to provide the needed space for construction of the new *Maqsur'e*, which is famed as "*Nezam al-Molk* dome", 24 columns from those of regular – circular *Abbasid* nave were broken, rendering a change in the old architectural style of the mosque in its southern part. Fairly wide (4.5m) roof – free porches constructed round the *Maqsur'e* in its north, east and western directions.

In this way, the dome was constructed at end of nave's central inter column ambulatory in a single and isolated manner so that to be completely open from three sides. Construction of the mosque's southern *Ayvān*, which was carried out as the second phase of changes at *Seljuqs* period, as well as coverings of roof- free porches at the east and west of the *Maqsur'e*, which was carried at later at 14th century AD, changed the original isolated state of *Nezam al-Molk's Maqsur'e* and connected it from two sides to the court and to the older parts of southern court. The basic shapes of the inner and outer façade of *Maqsur'e* were identified through recent investigations (Some parts of which were gradually changed the shape or covered by later constructions).

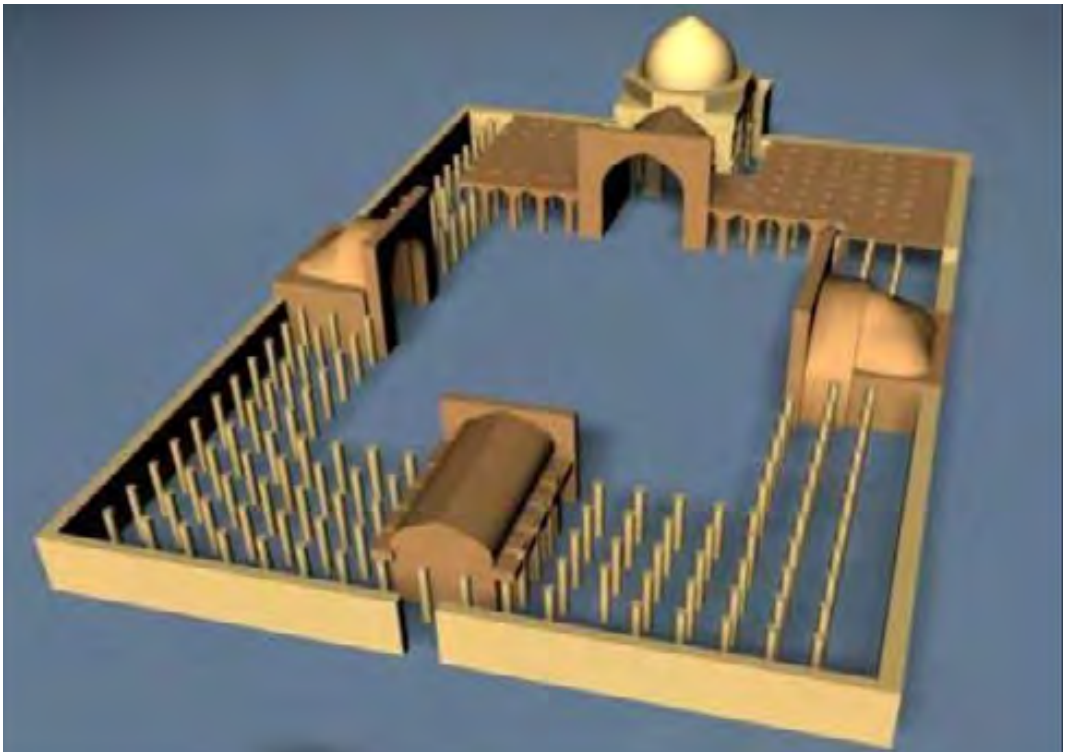


Figure 13. Seljuq mosque (I) (MJIB, Memarian)

Though *Nezam al-Mok* dome, followed the old Moslem tradition, from *Umayyad* onwards, to put an emphasizes on this important part of great mosques, but this one provided a new style in the structure of *Maqsur'e* with its characteristic dimensions, general combinations, and free and isolated structure in the hypostyle fabric, there by becoming a prototype for later *Maqsur'es* of large mosques. The dome became a source of inspiration for mosque architecture from *Seljuqs* period onwards.

This new style of *Seljuq Maqsur'es* went far beyond the Persian borders with its ever increasing importance and affected the mosque architecture of other Moslem states. As vivid examples one can mention mosques of*Artaghian* in Anatoly, the large mosque of *Sultan Mamluk bibres* the first in Cairo (Aslanapa, 1970), or mosque of *Marini Mansureh* near *Talmesan* in Algeria (Margias, 1954).

The first building to be constructed by imitating the *Nezam al-Molk* dome, is the one built at the far north of MJI and on its southern – northern axis. This monument, today known as *Taj al-Molk* dome or *Gonbad-e Khagi* (egg shaped dome) has been constructed, according to its inscription, by *Abu Al-ghana'em ibn-e Khosrow Shirazi*, dubbed as *Taj al-Molk*, at 481 IC, who was an opponent of *Nezam al-Molk* and his successor.

This construction marked the second phase of basic changes of mosques in *Seljuqs* period. It is constructed over a square base with (inner) dimensions of 9.80 to 10 m and (outer) 14 m, and with an approximate height of 20.60 m.

While being less than its predecessor in dimension, but this is a superior of it for its proportions as well as delicacy and elegance. It is also considered as one of the masterpieces of Iranian architecture. There exist various hypotheses on the functional role of this dome which is a unique evidence for the existence of a second dome in the mosque's structure. Scholars at first believed that the building was used independently as a library or as a sort of "VIP-abode" which was used by the *sultan* for resting before full – entering the mosque or for accepting of state officials (Sauvaget, 1938). According to Barbara Finester, *Taj al-Molk* dome was the *Mazalem Ayvān* or where cases of injustice were brought up and resolved but according to Suaje, *Taj al-Molk* dome served as the resting place for the king and where he held audience prior to the start of religious rituals. But the mosque was set on fire in 515 AH. According to an inscription in *Kufic* script which can be partially read, upon one of its north doors:"After the fire of 515 AH, the structure was reconstructed." On the other hand, *Ibn-e Asir* writes that one week before the fire of one of the royal palaces, *Masjed-e Jāme'* of Isfahan one of the most magnificent and beautiful*Masjed Jāme's* of its kind was also set on fire by the *Batenieh* sect. He continues that it suffered heavy damages so that the entire four half-burnt buildings must be demolished. The façade of *Masjed-e Jāme'* of Isfahan had a domed pavilion and

a wide platform on both ends of its north and south sides and remains of burnt structures could be seen on east and west sides of it (Godard et al, 1368 SAH).

But more recent investigations have shown that the lack of a separate staircase is a reason to accept that the dome has had two entrances just from the east and south and was not constructed as an independent structure and was instead a part of a complex, combined from palaces or governmental buildings in the north at eastern-north of the mosque. It has enjoyed, however, from the outset an important relation with formal using.

The third phase of basic changes at *Seljuqs* period, was the construction of four *Ayvāns* of the mosque, probably at the time of mosque's reconstruction following its burnings by *Bantheniehs* which severely damaged it (Ibn-e Asir, 595/10). It is noteworthy that oldest survived portal of the mosque at its north-eastern front, has an inscription in the mosque at its north- eastern front, has an inscription in *Kufi*c script (including the 114th verse of *Bagharah*, from Quran) at the end of which the reconstruction of the building after its burning at 51 AH (1121 AD) has been pointed out 5.

In this phase and after the construction of southern *Ayvān*, those of western, eastern and ultimately the northern ones were built which are today known as *Ayvān-e Saheb*, *Ostad*, *Shagerd* and *Darvish* respectively. This caused a drastic change in mosque's structure, though the territory of the old mosque was fully respected.

The southern *Ayvān* should probably been constructed to obviate the isolation of *Nezam al-Molk* dome and counted as a covered space for relating the dome and the court.

Thus it became possible to enter the huge space bellow the dome through the *Ayvān* which rendered the dome another distinguished advantage (Galdieri, 1991). There existed also a number of connecting "bays" with different spaces of the mosque.

Basic features of the southern *Ayvān* have been determined up to nine meters of height from the yard in spite of various changes applied to it during centuries. Two services – staircases, similar to those of *Maqsur'e*, provided access to the roof through this *Ayvān*. This southern *Ayvān* has had probably a "flat" covering-overlay just like the whole mosque.

This flat ceiling was not directly erected over columns, but the beams were put on a row of arches which were over the columns parallel to the Qiblah's wall (Galdieri, 1976). During the restoration programs of 1948 – 1949 and recent investigations, some remains of *Seljuq* facades, such as a number of blind arches (decorated by bricks) as well as decorative seals in "inter – bricks" spaces were discovered bellow the decorative layers of tiles which once covered the main front of *Ayvān* towards the court. The original *Seljuq* arches were also appeared over the external faces of eastern and western walls of *Ayvān*, following the removal of layers of stucco.



Figure 14. The Seljuq facades (MJIB)

Eastern and western and *Ayvāns* were related with side – hallways through spans embedded in their lateral walls. At the end of eastern *Ayvān*, being constructed instead of the old *Abbasid* mud – brick wall of the mosque, exists a hollow *Shah neshin* – like space as well as two less sized spaces in its two sides which ore related to both *Shah neshin* and the *Ayvān*.

The inner cover – overlay of eastern *Ayvān* in its original fabric, has been *Muqarnas* – type with large dimensions which dates probably back to an *Ilkhanids* period – reconstruction white a new design. The eastern *Ayvān* has maintained most remains of *Seljuqs* period on its court – side façade compared with other three *Ayvāns*. It has been cleared that ornamental features of the two eastern and western *Ayvān*'s main elevations have been similar to those of southern *Ayvān*. This similarity is more evident in brick-works as well as in plaster seals of inter – bricks spaces.

Construction of northern *Ayvān* was probably the last part of this phase of basic changes at Seljuq time. No trace has been remained from its main façade which was still standing up to 1934 and to the 3.5m dept from the edge of the court. The present one is nothing but a today reconstruction.

The northern end of this *Ayvān* accommodates with the original mud-brick wall of the mosque. The Shah neshin situated at the end of this *Ayvān* accommodates with the original mud – brick wall of the mosque. The alcove situated at the end of *Ayvān* has become related to two vast lateral spaces in its original form. It has had a connection from its middle part to the formal pass way- corridor beginning from Taj al-Molkdome and reached to the mosque's court after passing the northern *Ayvān.* Among one of the features of northern *Ayvān* of the building is its eastern and western walls.

In each side, and instead of a wall, use has been made of rectangular shaped constructions. Piers, each with two semicircularly shaped ends and with a "connecting" portal. In this way this *Ayvān* was constructed in a special way;

namely that which was open from the two sides. In later times, and probably when the roofing style of the mosque changed from flat to arched type, the open and passable spans of the two side piers were closed by bricks and the apparent form of the northern Ayvān changed basically. Generally, it should be said that while four *Ayvāns* of the mosque were not constructed simultaneously, but all have been designed and built at the golden age of Seljuqs era (Galdieri, 1991).

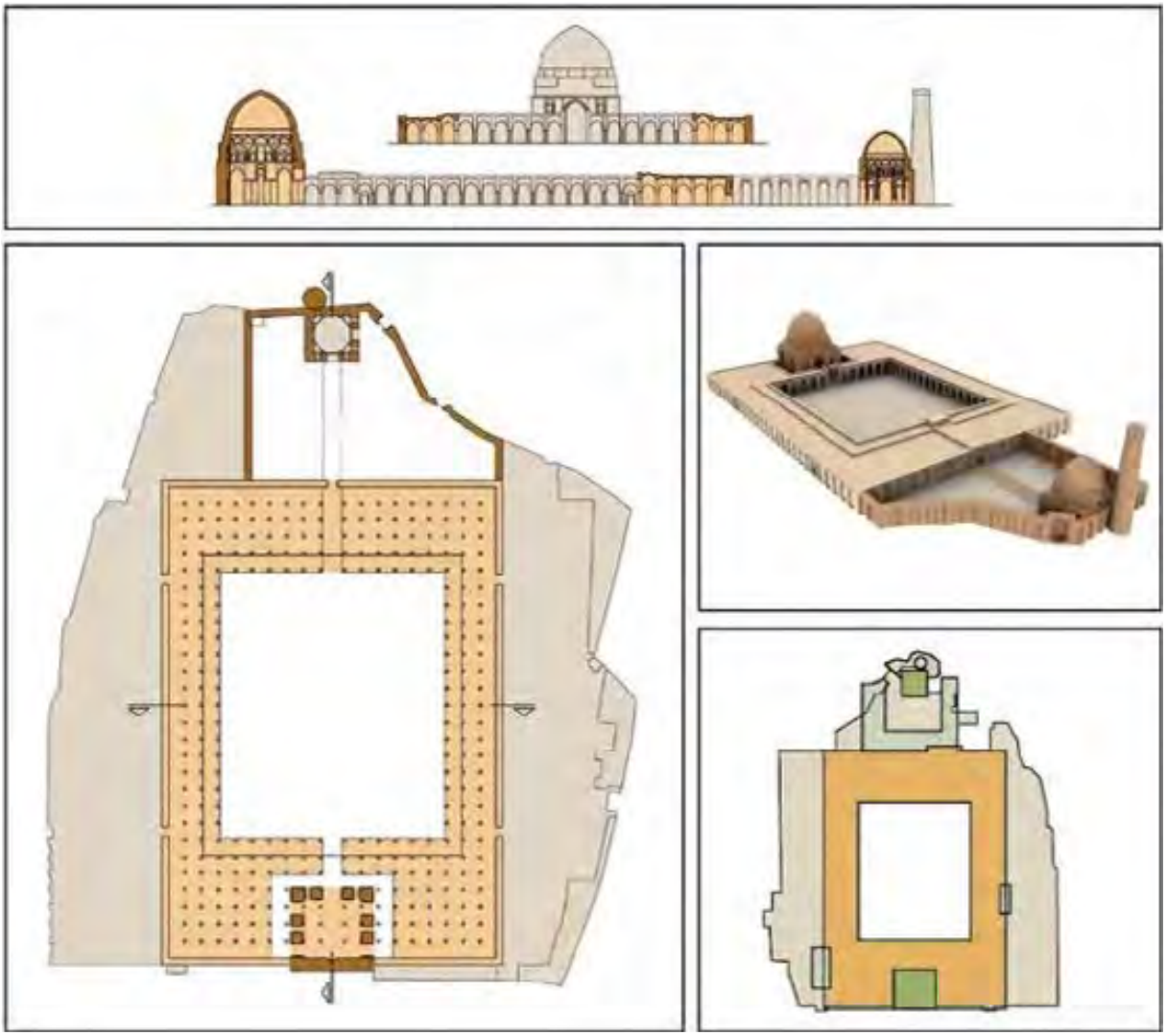


Figure 15. The 12th century mosque (The Seljuq I period) (MJIB, Jabal Ameli)

The design changes of "hypostyle mosques" to "*Chahar Ayvāni*" ones, were probably begun from MJI and should be reckoned up as the greatest progress in Iranian mosque – building tradition. Since then it became a specific feature of Iranian mosques architecture and also became a model for mosques in other Islamic states. Among other measures in *Seljuqs* era in MJI, one can mention the continuation and development of the building in the south-eastern part and beyond the old mud –

brick wall enclosure which also gave rise to removing of a large part of this wall. The function of this part (which is nowadays known as library) is not clear. Recent research works have weakened the likelihood of accommodating this place with the library described by *Mafrukhi* (Mafrukhi, 1949). Currently there is no sufficient evidence for a fixed assignment of the place of the mentioned library.

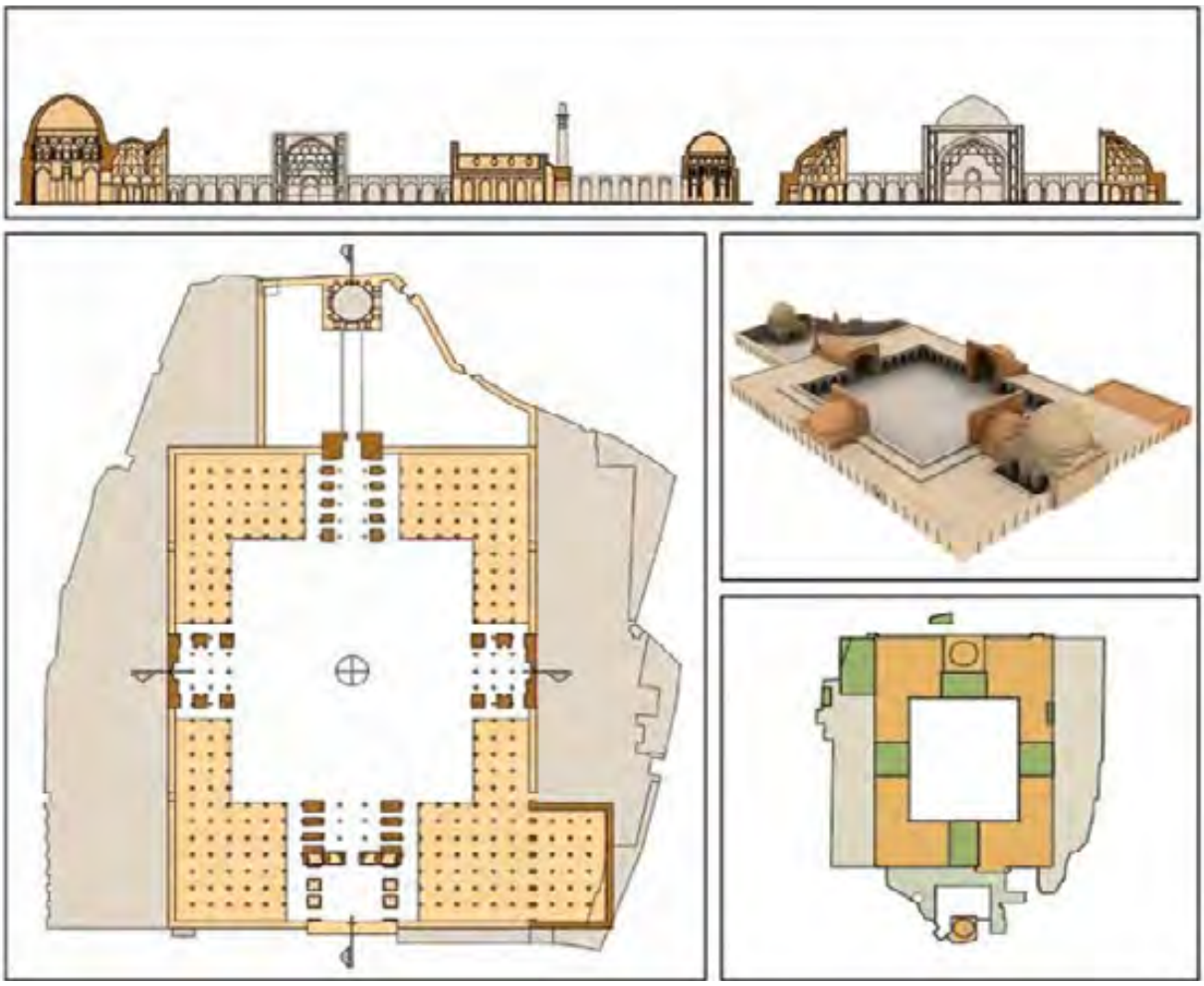


Figure 16. The 13th century mosque (The Seljuq II period) (MJIB, Jabal Ameli)

3.6. MJI at the Ilkhanid and Muzaffarid Periods

After Mongolian raid and up to the *Ilkhanid* reign, MJI didn't experience any sort of significant change and following the resurrection of Isfahan, its *Masjed-e Jāme'* also became once again a center of attention.After introduction of a *Chahar Ayvāni* design at *Seljuqs* period, the first measure at the *Ilkhanid* era was a change in mosque's elevation to a two – storey one in such a way that while the entity of the lofty – arch – like elevation is remained, it just becomes halved (in to two equal height). In this way, the court yard's elevation also divided into two stories, while retaining its dimensional

proportions. For this sake, (the archway) spans next to the yard were all become arched and thus, a corridor – like space created at the upper storey and contiguous to the yard court. For producing such arches, the length of the first row piers of the façade were increased to 3-303 m from the original 1 m.

As Galdieri writes, Andre Godard has identified a single phase of elevation-change to two storeys in the inner- yard space while investigating the western south corner of the court and the western *Ayvān*. He explained it as in this phase; facades of piers towards the court were decorated with little square tiles of white and blue.He attributed this kind of decoration to the part of *Uljeitu* and hypothesized that in this era, all facades in the court- yard were decorated in this manner; while, on the contrary, Galdieri has ruled out the very existence of such façade on the other side of western *Ayvān* and has found a sort of brick decoration on the piers' facades (Galdieri, 1991). He either belongs this brick decoration to some time before that explained by Godard, or attributes it to the fact that at the *Ilkhanids* period, façade builders left "complete – summarizations" at the both sides of the western *Ayvān* as unimportant (Galdieri, 1991).

The current façade is also attributed to the reign of *Uzun Hassan* at whose time, an abridged parapet was also constructed at the edge of upper ambulatory floor (Galdieri, 1991). The tile works of the mosque's façade were reconstructed by Godard (1930) and then by Galdieri (Galdieri, 1991). Examples of later interventions were also appeared in investigating some parts of the mosque which Galdieri has dubbed it as "span increase". It means reconstruction of spaces through following the old fabric order of the mosque. Even some columniations have been re- used, but previous space divisions have been abandoned due to their modest size as well as their embarrassing repetitions. In the new order, dimensions are increased while respecting proportions in space divisions (Galdieri, 1991). An example of such change is the hall at the north of western *Ayvān* of the mosque at which the well – known *mehrab* of *Uljeitu* is situated (Galdieri, 1991).

This hall is nowadays called as "*Uljeitu's mosque*". Godard believed that it was constructed by *Qotb-e din Shah Mahmud* at 768 AH, but recent investigations in the nave within which *mehrab* is being located, cleared that before making of the nave within which *mehrab* is being located, cleared that before making of the *mehrab*, first this part of the old mosque has changed and a colonnaded nave was built at the place of current hall and with a complete different shape, with circular arches, over the remains of *Seljuq* mosque, and that the *mehrab* was accommodated there just after these.

Mehrab of this hall is also counted as one of the exquisite monuments of *Ilkhanid*,

from the time of *Uljeitu*, as is being called after him as *Uljeitu mehrab*. It is placed at the exterior façade of northern wall of western *Ayvān*, within a nave (also known as *Shabestan-e Uljeitu*), itself located at the northern part of the (main) nave's western side.

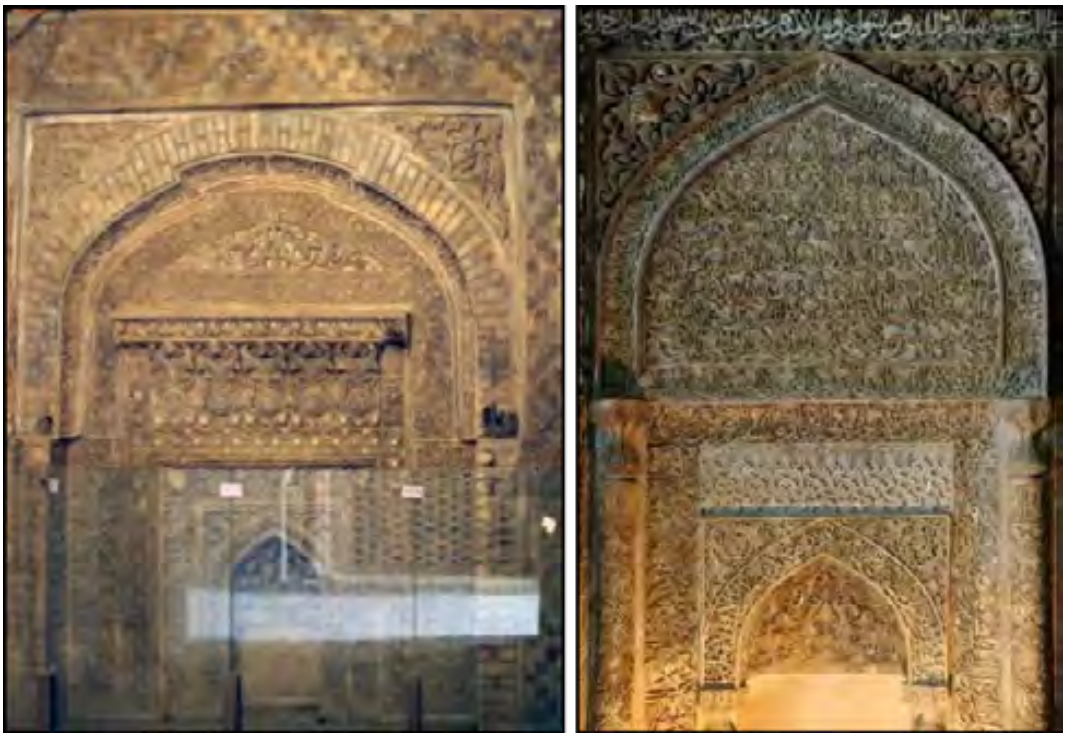


Figure 17. Uljeitu and Ilkhanid mehrabs (MJIB, Bakhtiar)

This *mehrab* (altar) with its double blind-arch, is a beautiful example of plastered altars of Iranian mosques and includes various inscriptions in *Thuluth* script and a single one in *Kufic*, and is beautifully decorated with geometric and plant impressions.

The *mehrab* is built at 1310 AD (= 710 AH) according to an inscription in the name of *Sultan Mohammad* (*Uljeitu*) being carved at the central panel of its upper arch, by the aid of his minister, *Sa'id al- Haqq-e va ding Mohammad- e Savi* and under supervision of *Azod ibn- e Ali Masetery*. It is a part of what has been built, added or reconstructed at that time.

Another plastered *mehrab* of *Ilkhanid* exists in the covered corridor of the eastern entrance to the mosque. A new inscription was found during 1982 restoration operations bellow the stucco layers, while working on *Muqarnas* as of upper storey of alcove at the northern *Ayvān.* The date of the inscription is destroyed, but the name of a ruler is mentioned on whose order, the cloister at the upper section of northern *Ayvān* has been built. The inscription, according to its script and decoration, belongs probably to *Ilkhanids* period of 7th and 8th century AH. A commemorative line is written at the wall of this cloister dated 841 AH

(1437 AD), referring to a date more recent that those mentioned above. This discovery is of great importance for dating different phases, as details of consecutive Architecture and decorative developments have not yet been completely clarified. The "winter – *Shabestan*" or *Dar ash-Shata* which is located at the western side of the mosque, behind western *Ayvān* and beyond the old mosque territory (at the direction of mud- brick wall), occupies a vast area of about 50×25 m. Recent investigations in this area have revealed the existence of a *Mosallah* (Public place for Friday prayer) belonging to*Muzaffarids* period, a great whose part has been destroyed during past centuries. Basic features of this open prayer place included a central nave of 21×25 m dimensions, on each of which fronts and passing spans have been accommodated.

Those at northern and southern sides are of the same sizes, while the middle ones on the east and western fronts (namely, on larger sides of the *Mosallah*) have been built with a greater size. The remains from the beautiful *mehrab* of the *Mosallah* have been found at the middle parts of the southern wall. Current nave, or *Dar ash-Shata* on the site of *Mosallah*, has been probably built on the reign of *Shah Tahmaseb* the *Safavid* at 1575 AD.

Identification of *Muzaffarid Mosallah* and determination of the date at which it became changed to the covered nave of present days at *Safavids* period, rules out the former hypothesis of Godard to attribute it to *Timurids* era. This theory is based on a written inscription of 1447 AD (851 AH) over the entrance portal of *Uljeitu* hall from court – yard side, which Godard relates it to the *Dar ash-Shata* entrance. It is noteworthy that construction of this portal at *Timurids* era was not coincided with that of *Dar ash-Shata*, and was instead simultaneous with the coverings of the ambulatory and its southern entrance as well as coverings of spaces located at north and south of western *Ayvān*. It seems that the entrance located at the end of southern ambulatory of western *Ayvān* was in fact, the main entrance of *Beit ash-Shata* instead of the short entrance relating *Uljeitu*'s nave to it. A firm evidence for it is the big size of *Beit ash-Shata* as well as southern entrance decorative arch (Galdieri, 1991).

Plaster decorations of this entrance is by now severely damaged, but its inscription has been read previously by Gabriel and Honarfar (Galdieri, 1991). The inscription has no date, but Galdieri has calculated it as 983 AH according to two last words of the inscription (The calculus of *Abjads* corresponding to that of Romans). In additions, Galdieri has identified a number of *Safavid* architecture features; such as specific manner of making constructional elements, namely the voluminous and hollow (*Mojavvaf*) elements, and original red stucco *Ezarehs* (plinths). Another reason is the unusual state of coverings as four- fold arches, a similar of which exists in the lower*Shabestan* of *Sheikh Lotf Allah* mosque at Isfahan (Galdieri, 1991). He also believes that the *Shabestan* of *Beit*

ash-Shata was in fact the model for the mentioned mosque. It seems that in both of these *Shabestans*, load bearing elements of the building have been built in a very strong and thick manner, while the bulky hexagon columns are approximately hollow (Galdieri, 1991).

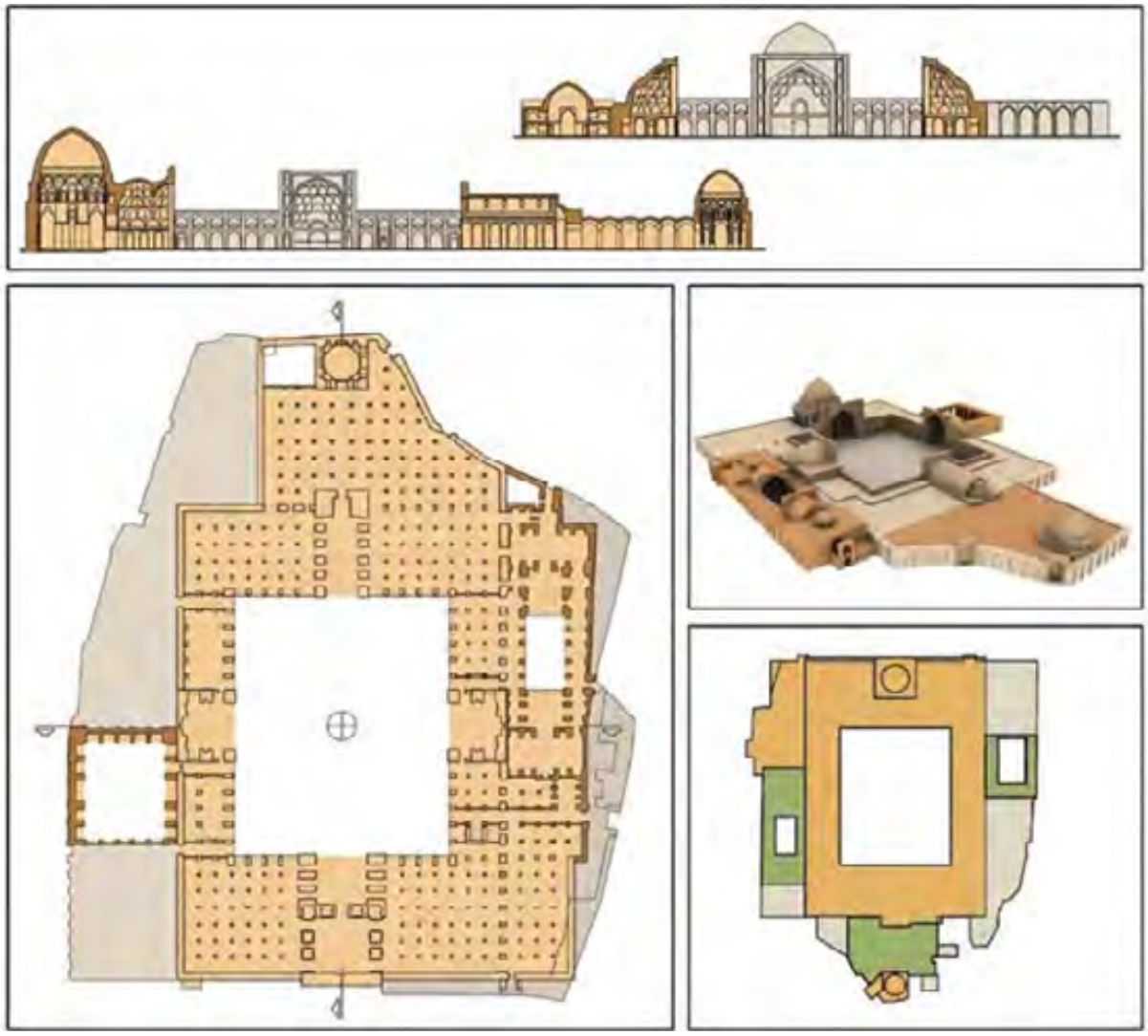


Figure 18. The 14th century mosque (The Ilkhanid period) (MJIB, Jabal Ameli)

Among other important measures carried out in *Muzaffarid* period at MJI, is the construction of building known as a "*Madrasa of Muzaffar*" next to the eastern *Ayvān*, beyond the *Abbasid* mosque territory and at the direction of its old wall. This has been constructed, according to its inscription, at the reign of *Qotb-e din Shah Mahmud Muzaffar*, a ruler of Isfahan, and by *Morteza* son of *Hassan-e Abbasi Zeinabi*, Sometime between 759 to 776 AH (1358 to 1374 AD). The school with dimensions of 25×65 m, includes a large rectangular shaped court with a vast *Ayvān* and then a hall at the eastern-western axis (with a *mehrab* within) at its

southern part. The northern part of the *Madrasa*'s court has also had a similar situation in its original form.

The *Madrasa* building was become related to the back of eastern *Ayvān* through three portals embedded respectively at *Shah neshin* and at two old lateral rooms at the end of this *Ayvān*. These three spaces were used as pass ways. In later times and when these three spaces became closed from *Ayvān* side, they became used only as a storage rooms of school properties or as servant- room. They ultimately became blocked from the school side too and thereby become abandoned. Among other *Muzaffarid* period monuments, one can mention the northern portal of the mosque, at the north- eastern part of *Taj al-Molk* dome, being built at 768 AH (1367AD) according to its tiled *Kufic* inscription.

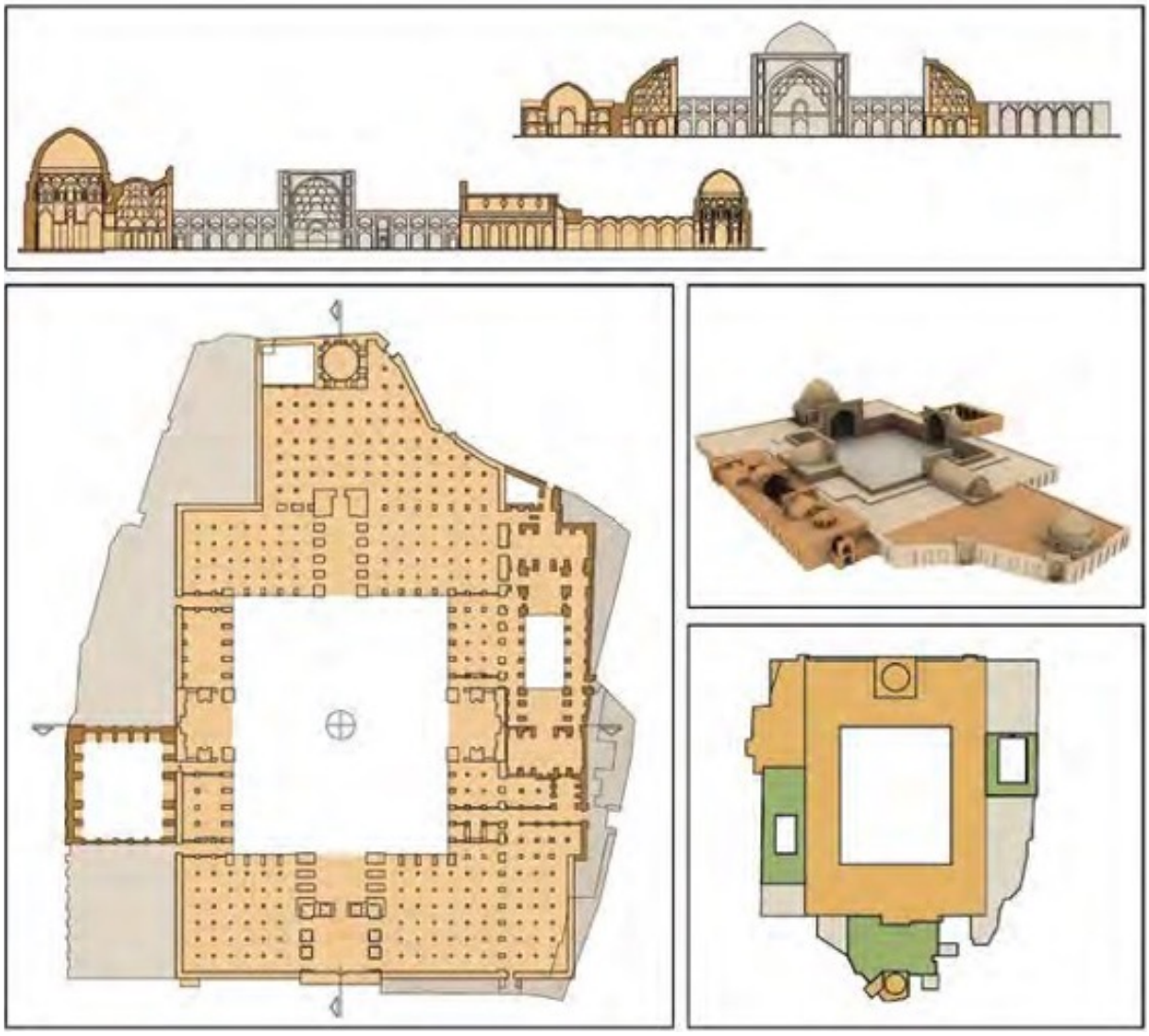


Figure 19. The 15th century mosque (The Muzaffarid period) (MJIB, Jabal Ameli)

3.7. MJI in Timurids and Safavids Eras

Some changes were applied to MJI during *Timurids* domination of Isfahan. In recent investigations, remains of an old *Shabestan* belonging to *Timurids* period has been found at the south- western part of the mosque, at a place today known as *Safavid Shabestan*. The *Shabestan*, being restricted to the old western wall of initial mosque from the east, has a square shape at whose each side having seven arcaded mouths over a regular colonnaded network. The mentioned *Shabestan* had been built in a free place, and it is very likely that in this part of the mosque (namely, at the south of *Muzaffarid Mosallah* and current place of *Safavid Shabestan*) no building had existed at all. Remains of *Al-I Buyid* period found there is probably nothing but semi – destroyed and abandoned buildings of that era. In *Safavids* period and between 1543 and 1572 AD, part of the *Timurid Shabestan* was destroyed at its western port; and then a new *Shabestan* were built with a rectangular – shape base, with six rows of arches, each with nine meter – wide bays, in this way, *Shabestan* at the south – western part corner of the mosque reached to its current appearance with two completely distinct western and eastern parts. Identification of the building of the *Timurid* court as well as its changes at *Safavids* era, rules out the old hypothesis of Godard on dating whole of this part at 1591 AD (999 AH). That theory was based on a written inscription with that date, engraved on two door matches of the mosque's western entrance, at the northern pass way of the mentioned *Shabestan*. But the content of the text, just points to the donation of the *Masjed- e Kabir (Jame')* by *Molana Mohamad-e Motlaq* and no mention has been made al all from its contiguous *Shabestan* (Galdieri, 1991).

Another attempt at *Timurids* period at the mosque was the coverings of the mentioned pass way (shared between the *Timurid Shabestan* and *Muzaffari Mosallah*), being carried out by a row of bricked Arches including six bays. At the late *Safavid* times, some changes were made on the roof of this pass way, and in its western span contiguous to the mosque's entrance portal of *Safavids* period in particular. This had been simultaneous with the coverings of spaces between north and south of western *Ayvān*, themselves coinciding with date at which the portal of *Uljeitu*'s hall was built from the *Shabestan* side, namely at 851 AH (1447 AD) (Galdieri, 1991).

At the same *Timurids* era, the open lateral pass ways of eastern *Ayvān* and those of *Nezam al- Molk* dome in the southern front of the mosque were covered; thereby, the eastern *Ayvān* and the *Maqsur'e* ceased to remain Isolated and free, and became attached to contiguous structures. The pass ways of eastern *Ayvān* were covered probably at late 8th and early 9th century AH with *Muqarnas* arches, and for this reason, their walls

became loftier to 9 to 11 meters. At the late *Safavid* or even later to the early *Qajar* period, a flat arch was erected at middle heights of these pass ways (5,25 m distant from the floor) which divided spaces of lateral side pass ways of eastern *Ayvān* to two sub – sections in vertical direction.

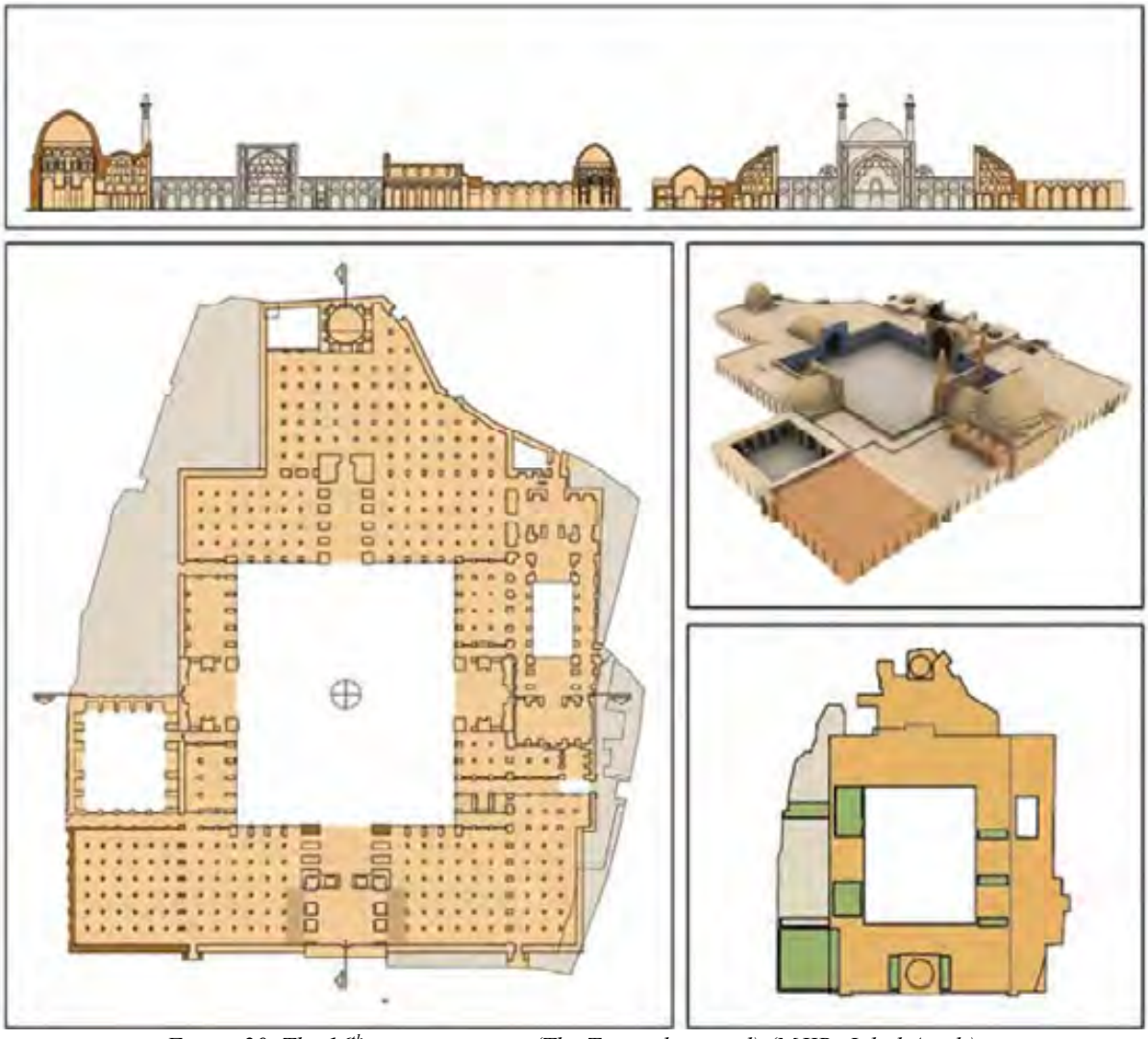


Figure 20. The 16th century mosque (The Timurids period) (MJIB, Jabal Ameli)

Maybe due to reduced importance of two laterals – side – pass ways of the *Ayvān* and for losing their function as entrances at that time. Perhaps secondary function was provided by constructing needed spaces on second storeys over them. In a similar way and at the ends of 8th century AH, open western and eastern walkways of *Maqsur'e* became covered symmetrically at some upper heights. According to available inscriptions between *Muqarnases* of southern *Ayvān*'s arch, some measures for a general repair of MJI and reconstruction of the cover of this *Ayvān* have been carried out at 880 AH.

Today we don't know so much on the extend of this operations at the MJI. The arch of the southern *Ayvān* and its two Minarets have probably been built at this time.

No significant changes have been made at MJI at *Safavids* period, but crucial measures were carried out for it restoration. Basic changes were in fact in its facades and in their decorations. A significant portion of the facades of today mosque is belonged to this era. At the reign of *Tahmaseb* the first (Third quarter of 10th century AH), after destroying the western front of *Timurid Shabestan* situated at the south – western corner of the mosque, a new *Shabestan* was built at this part which changed the appearance of the old *Shabestan*.

Muzaffarid Mosallah at the western front of the mosque also experienced an alteration and the current covered *Shabestan* known as *Dar ash- Shata* was built on its site with a network of bulky hexagon columns. According to Galdieri's hypothesis, it was probably simultaneous with the construction of entrance building situated at the end of southern pass way of western *Ayvān* at the reign of *Tahmaseb* the first (1575 AD) which was used as the main entrance of *Dar ash-Shata.*

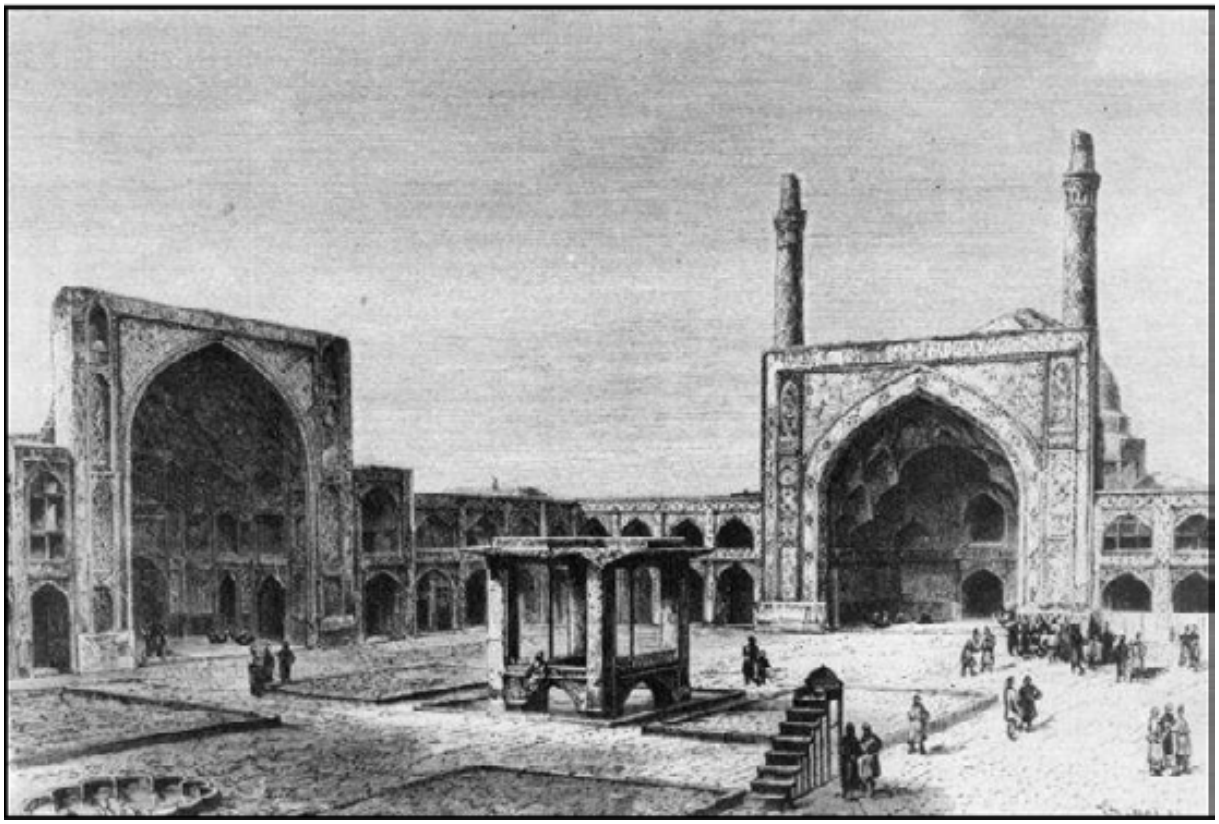


Figure 21. Masjed-e Jāme', Flandin, 1840-1841(MJIB)

Historical and religious available inscriptions from *Safavids* period at the *Ayvāns* imply some measures whose details and successions art not so obvious. The text of some of them generally refer to repair and decoration of MJI at the reigns of *Tahmaseb* the first, *Abbas* the second, *Soleiman* and *Shah Sultan Hosein* (the last *Safavid*). For example, at the upper part of three inner walls of southern *Ayvān*, a tile–worked inscriptions in *Thuluth* script, with combination of words and expressions in Persian and Arabic, worked by *Kamal al-din Hafiz- e Heravi* the calligraphist, mentions the repairs and decoration works carried out at the mosque at reign of *Tahmaseb* the first, by the will of a beneficent lady called *Aqa Sultan* and under supervision of *Mohammad-e Isfahani* which ended at 938 AH (1352 AD). A second inscription of the same year exists at the inner arch crescent within this *Ayvān* including the first eight verses of *Osrah Sura* of *Quran*.

Another inscription at the façade of southern *Ayvān*, being installed at the reign of *Shah Tahmaseb*, was included the first 21 verses of *Fateh Sura*. At the reign of *Shah Abbas,* the second, the horizontal inscription of this panel (including verses 8 to 16) substituted by another one, this time of a historical type, with the name of this king, dated 1070 AH (1660 AD). This written document redolent of a repair and decoration of the mosque by the order of *Shah Abbas* the second and following the attempts of his grandfather, *Shah Tahamaseb* (Galdieri, 1991).

The marble *mehrab* situated at southern front of eastern *Ayvān* has been built at 1587 AD (992 AH) according to its inscription. Another inscription at the inner – *Ayvān* tile works, at the lower margins of *Muqarnases*, dated 1682 AD (1093 AH), implies a repair of this old building by *Soleiman* the *Safavid*. The inner over lay got perhaps changed at the reign of *Soleiman* and become reconstructed in lower scales and in *Muqarnas* forms. A big part of the *Muqarnas* arch in its current state, is from reconstructions following a restoration program of the collapsed cover of this *Ayvān*, carried out at 1947. Some measures were also carried out just from aesthetical viewpoints at eastern *Ayvān*, probably at the reign of *Sultan Hosein*. In this phase, most parts of inner walls of the *Ayvān* was covered by a new plaster layer over which a delicate brick – work impression has been carried out.

As noted previously, at the ending years of *Safavids* period, an arch was being constructed at the middle heights of the lateral- side pass ways of this *Ayvān*. On the other hand, for the sake of providing more space for the crowd, the arches of part of the *Shabestan* were destroyed and their columns were cut away.

A number of inscriptions dated 1112 AH (1700 AD), of the time of *Sultan Hosein* exist at the western *Ayvān* which imply a reconstruction of this *Ayvān* and the mosque as well as their decorations.

A significant part of northern *Ayvān*'s decorations was probably decorated at the

reign of *Shah Soleiman* the *Safavid* who has also rebuilt *Masjed-e Jāme' Atiq* at 1682 AD (1093 AH) according to an inscription on the upper part of *Ayvān*'s wall.

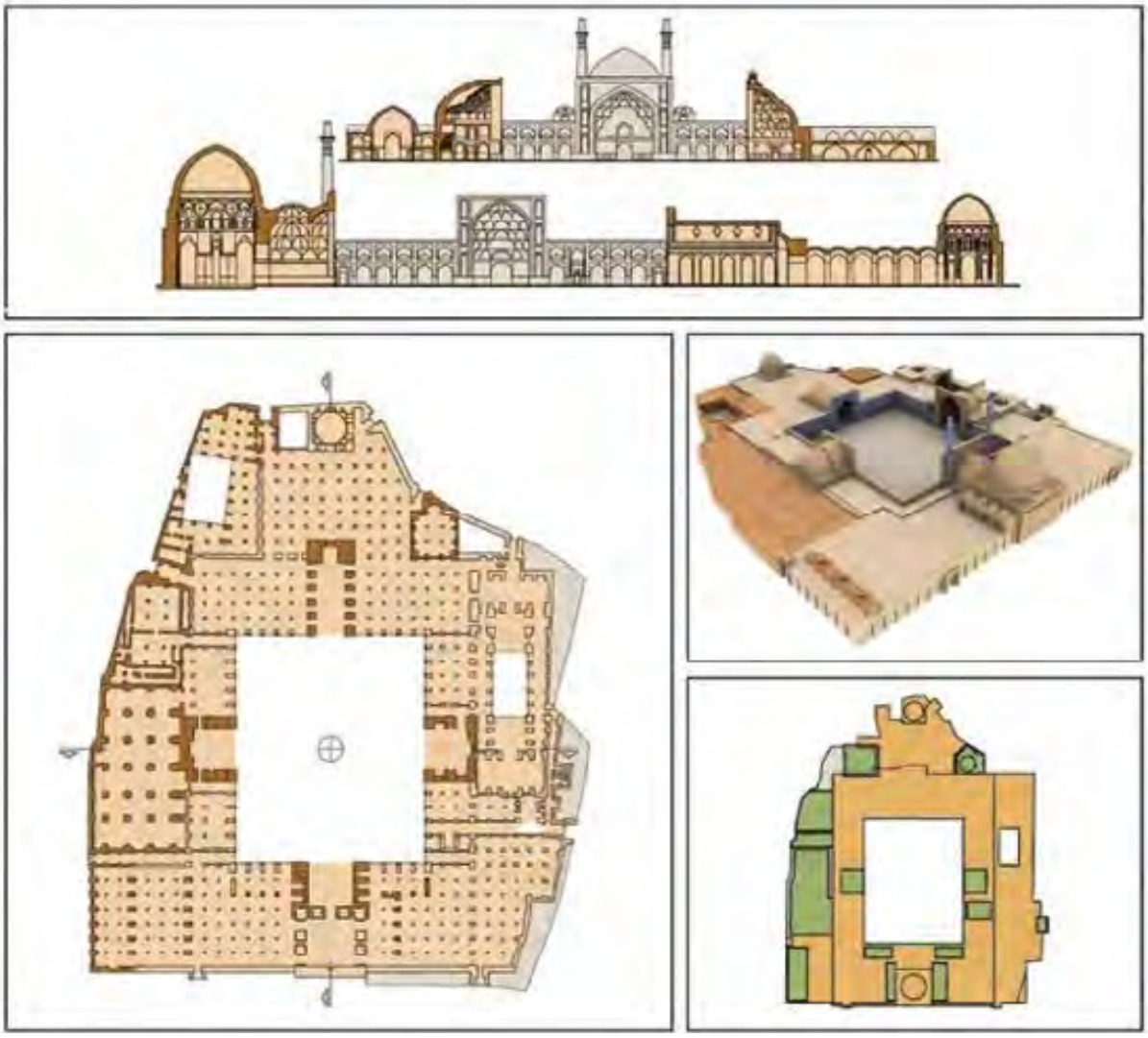


Figure 22. The 17th century mosque (The Safavids period) (MJIB, by Jabal Ameli)

After the collapse of *Safavids* dynasty, MJI retained its importance and since then has remained still alive in spite of numerous measures continuously carried out. Even an order by *Ashraf* the Afghan (the occupier of Isfahan) for repair of MJI can be seen on an inscription at the *Ayvān* of school of *Muzaffari*, dated 1139 AH (1727 AD) (Galdieri, 1991).

Recently a wall painting from *Zands* period has been found at the northern part of *Dar – Ash – Shata'* dated 1199 AH (1785 AD), according to its inscription, *Mir Qasem-e Hoseini*, son of *Mir Hadi,* has been named as the "Painter" of MJI.

Some restorations have been carried out at *Qajar* periods like previous eras. A tiled

inscription with *Thuluth* script (dated 1218 AH = 1803 AD) exists on today entrance portal of the mosque, situated at eastern- south of it, which refer to repairs of the same portal as well as the market contiguous to its *Saqqa Khaneh* at the reign of *Fateh Ali Shah*. Also some 50 years ago, various parts of the mosque were repaired and restored.

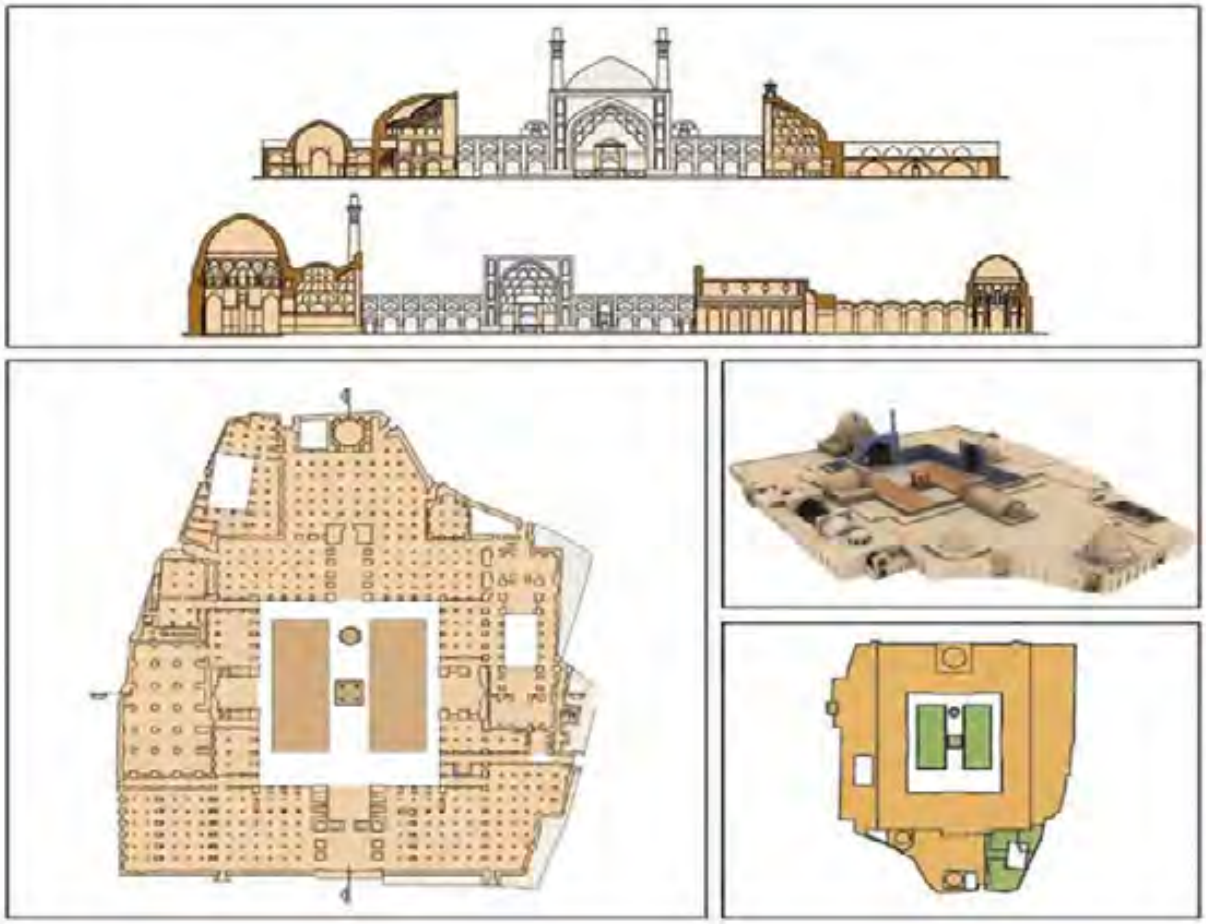


Figure 23. The 19th century mosque (The Qajar period) (MJIB, Jabal Ameli)

Archeological investigations and restoration projects of the mosque between 1970 to 1978 which clarified different phases of shaping of this old mosque are among most important measures carried out in contemporary era at this monument. Field investigations the site underwent until an air- attack by Iraq war- planes at 12th of March, 1984, and two rockets PP severely damaged two separate areas at the north and south of the mosque (close to the southern dome and very close to northern dome); totally an area equivalent to 2000 square meters. At the southern part, 11 chambers from *Bazaar-e Araban* (market of Arabs) one of the oldest markets of Isfahan as well as 11 bays of south – eastern court of the mosque, related to extensions of the mosque at *Seljuqs* era, together with

Karvansara Shokr beik and a part of *Bazaar-e Majlesi* were destroyed. ICHHTO attempted to their reconstruction on the basis of maps and photos of previous situations of damaged areas. To sum up, changes in design of MJI from a *Shabestan* with a wider nave, to include a *Maqsur'e* as well as construction of a "*Chahar Ayvāns*", each were crucial points in the history of architecture whose reflection became clear in architectural art of many Islamic states today, the great role of *Seljuq* buildings of Isfahan may be found in any field of Islamic world's art and architecture, in such monuments as Samarra the *Abbasid* or Cairo the *Fatemid*. The MJI is inscribed at the inventory of Iranian monuments under serial No. 328.



Figure 24. MJI at Present (MJIB, Memarin)

4. Conclusion

Isfahan Mesjid, also known as the Masjid-i-Jameh, is a prominent mosque located in the historic city of Isfahan, Iran. The mosque has a rich history that spans over a thousand years and reflects the changing political, cultural, and artistic influences that have shaped the region.

The mosque was originally built during the Abbasid Caliphate in the 8th century, but it underwent several renovations and expansions over the centuries, reflecting the changing religious and cultural practices of the Muslim community in Isfahan.

The Seljuk Turks, who ruled the region in the 11th century, made significant additions to the mosque, including the iconic dome and minarets. Later, during the Safavid period in the 16th century, the mosque underwent another major renovation, which included the addition of intricate tile work, calligraphy, and decorative elements that are still admired today.

Throughout its history, Isfahan Mesjid has served not only as a place of worship but also as a center of learning, culture, and community life. The mosque has witnessed significant events in Iranian history, such as the Constitutional Revolution of 1905-1911 and the Islamic Revolution of 1979, and has played a role in shaping the political and social identity of the region.

Today, Isfahan Mesjid stands as a testament to the rich history and cultural heritage of Iran. Its architectural and artistic features reflect the various cultural and religious influences that have shaped the region over the centuries. The mosque continues to be an important site of worship and cultural exchange, attracting visitors from around the world who come to marvel at its beauty and learn about its history.

In conclusion, the historical development of Isfahan Mesjid is a fascinating reflection of the changing political, cultural, and artistic influences that have shaped the region over the centuries. The mosque's rich history and cultural significance make it an important landmark in Iran and a testament to the enduring legacy of Islamic architecture and art.

Refrences

1. A. Abounaim Esfahani, "Express the news of Esfahan," with effort of Dring & Liden, 1934.
2. A. Abounaim Esfahani, "Express the news of Esfahan," N. Kasra, Trans., Seda va Sima press, 1980.
3. O. Aslanapa, "Turkish Art and Architecture," London, 1970.
4. S. Blair and J. Bloom, "Islamic Arts," London, 1997.
5. R. Ettinghausen and O. Grabar, "The Art and Architecture of Islam 650-1250," Somerset, 1987.
6. E. Flandin and P. Coste, "Voyage en Perse," Paris, 1840-1841.
7. A. Gabriel, "Le Masdjid-i Djum'a d'Isfahans, Ars Islamica," New York, 1968.
8. E. Galdieri, "Isfahan: Masgid-i G'um'a," Rome, vol. I, 1972, vol. II, 1973, vol. III, 1984.
9. O. Galdieri, "Esfahan Masjid-e-Jame," A. Jabalameli, Trans., Cultural Heritage Organization, Esfahan, 1991.
10. O. Galdieri, "New data about the usual building principles of Esfahan Masjid-e-Jame," The Culture of Iran Architecture, Tehran, 1975.
11. O. Galdieri, "New data about the Nezamol Molk's dome at Esfahan Masjid-e-Jame," The Culture of Iran Architecture, no.2-3, Tehran, 1976.
12. O. Galdieri, "Esfahan Majid-e-Jome in Ale Bouyeh ages," H.A. Soltanzadeh Pasyan, Trans., National Conservation Organization of Iran ancient works, Bita.

13. A. Godard, "Les anciennes mosquees, de I'Iran, Historique du Masdjid-e Djum'a d'Isfahans," Athar-e Iran, 1936.
14. L. Golombek and D. Wilber, "The Timurid Architecture of Iran and Turan," Princeton, 1988.
15. M. Hamidi, "The skeleton of Tehran city (recognition of the concepts and samples)," Technical Engineering Assistant of Tehran Municipality, Tehran Engineering & Technical Consulting Organization, 1998.
16. L. Honarvar, "The historical troughs of Esfahan in Safaviye age," Honar va Mardom, 8th year, no.152, 1967.
17. L. Honarvar, "The historical treasures of Esfahan," Esfahan, 1972.
18. M. Mafarokhi, "Pamphlet of Esfahan beauties," H.R. Avi, Trans., with effort of Aghbal. A, Tehran, 1949.
19. G. Margais, "L'architecture musulmane d'occident," Paris, 1954.
20. S. Mirshahzade, "Esfahan Masjid-e-Jame; the pivotal research of place at miracle of light," Danesh Nama Monthly Magazine, no.161-162, Systems Engineering Organization, Esfahan, 2009.
21. A. Montazerolghayem, "Esfahan cultural situation till fifth century Hijri," Professional-technical monthly magazine of Danesh NamaN, no. 167-169, System Engineering Organization, Esfahan, 2009.
22. M. Pirniya, "The stylistics of Iranian architecture," in G.H. Memarian (Ed.), Pazhuhandeh, Tehran, 2002.
23. L. Rempel, "The Mausoleum of Isma'il the Samanid," Bulletin of the American Institute of Persian Art and Archaeology, vol. IV, 1936.
24. J. Sauvaget, "La mosquee omeyyade de Medine," Paris, 1947.

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
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Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

HISTORY AND DEVELOPMENT OF SHEIKH SAFI AL-DIN KHANEGAH AND SHRINE ENSEMBLE IN ARDABIL[1]

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Abstract

Ardabil have gained more significance than Mashhad and Qom, and became the prime national holy city of Iran due to its being the base of the Safavi dynast. Even during the 16th and 17th centuries AD, when the capital was in Tabriz, Qazvin, and Isfahan, Ardabil have remained the only national and religious capital. The Sheik Safi al-Din Khānegāh and Shrine Ensemble that was built as a result of the religious importance of Ardabil, has been instrumental in making the city a religious center. The Sheik Safi al-Din Khānegāh and Shrine Ensemble in Ardabil that has been built as a complex of bazaars, public baths, squares, religious facilities and houses was the largest khānegāh (Sufic place for spiritual retreat) in Iran. During the period, the ensemble was of special national significance as the most prominent shrine of the founder of the dynasty and evolved into a display of exceptional sacred works of architecture and art and a center for Sufi religious pilgrimage and ritual.

In this text, after giving preliminary information about Sufism in order to understand the influence on the architectural decisions of the ensemble, the history and development of the building complex as an outstanding representation of the fundamental principles of Sufism is discussed. The ensemble, which is formed by the combination of many buildings that have survived partially or completely and discovered through excavations, has been evaluated on the scale of buildings. In this context, the text will be useful in monitoring the historical importance and development of the Sheik Safi al-Din Khānegāh and Shrine Ensemble in Ardabil.

Keywords: *Safavi, Sufism, Sheik Safi al-Din, Khānegāh and Shrine Ensemble, Ardabil*

Introduction

Sufism[2] is generally described as the inner mystical dimension of Islam. It has begun to develop into a spiritual movement in the 9th and 10th centuries, and then flourished between the 13th and 16th centuries throughout the Islamic world as a

**This study was produced from the report of the Masjed-e Jame' of Isfahan submitted to UNESCO in 2011.*

[1] *Tasawwuf, from sūf 'wool' in Arabic or safā 'purity'*

vigorous religious and intellectual culture. Sufism has left a number of physical artistic manifestations, particularly in central Asia. After Sheikh Zāhed e-Gilānis death who was the master of Sheikh Safi al-Din, Sheikh Safi al-Din took his place and developed his own tariqat which acquired its name and from which Safavi Sufism originated. He has founded a khānegāh in Ardabil, which was later to become his shrine. The Khānegāh and Shrine ensemble of Sheikh Safi al-din Ardabil is in two aspects an example of an exchange of human values in the field of universal culture; this kind of exchange has been so effective and influential in the history of the intellectual developments in the Islamic world and in the Islamic architecture that can be considered as one of the most significant universal values of the property: Ideological and intellectual values which are manifested in the architecture; Architectural techniques and methods (fig. 1).



Figure 1: The Sheikh Safi al-din Khānegāh ensemble

The spatial and architectural layout of the ensemble became a prototype for an innovative architectural expression, and a basic reference for other khānegāhs and shrines in many countries. The artistic and architectural design of the ensemble has established a new style that was taken as a fundamental reference for the world-famous Safavi art and architecture.

1. History of Sheikh safi Khānegāh and Shrine Ensemble in Ardabil

The city of Ardabil the birth place of Sheikh Safi al-din, has been a holy city for

the Iranians from the very ancient times till the date; the foot of Mount Sabalān is known to have been the birth place of Zoroaster, and to be a blessed, fertile land, as well as a sacred land in the Iranian mythology. Being so, the location has had the potentials to be chosen and proposed by Sheikh Zāhed Gilāni, the master and preceptor of Sheikh Safi al-din, for construction of the Khānegāh.

When Iran underwent the Islamic conquest, Ardabil was the largest city in north-western Iran and it remained so until the advent of the Safavid Dynasty, of which Sheikh Safi al-Din (1252-1334) is the eponym (fig. 2).



Figure 212: Location of the Ardabil province (ICHHTO archive)

According to Wilber: *"When initially built, the historical and religious ensemble of Sheikh Safi al-din Ardabil functioned as microcosmic city with bazaars, public baths and meydāns, religious facilities, houses, and offices of its very own" (Wilber, 1995)*. The property enjoyed great facilities as the largest and most complete Khānegāh ensemble in Iran. In the reign of Safavi kings, as Khānegāh ensembles were wound up, this ensemble took on particular political and national importance as the prominent shrine of the founder of Safavi dynasty. In other words, this ensemble turned to a gallery holding works of different styles of art and archeology from 8th century to early 12th century AH/AD 14th - 18th centuries.

The oldest historical source to have mentioned this ensemble and its construction works are Safwat al-Safā by Ibn-i Bazzāz Ardabili (759 AH/AD 1358), and Sarih al-Milk by And-ol Mo'men Abdi Beyg-e Shirazi (975 AH/AD 1567), the pair of them including some narratives that indicate the holiness and antiquity of the shrine. As a whole, Sheikh Safi al-din's Khānegāh at his own time had various service and facility areas. After his departure, and at the rule of his successors, it became one of the most important pilgrimage places for the Muslims, and particularly for the Shiites, insofar as most European tourists have named it one of the largest and most significant religious places for the Iranians as well as other Muslims. What these tourists report is an indication of the deep respect Iranians show for this religious place.

According to historical documents, this place has once been considered as the sole most important and most sacred religious sites among the Shiites[1]. Kumpfer of

[1] *The word Shiite is exclusively contributed to the followers of Imām Ali and his descendants. The Shiites were friends and lovers of Imām Ali and prophet Mohammad (PBUH), who initiated waves of protest in*

Germany, who has traveled to Iran between the years 1096-1105 AH/AD 1685- 1694 writes in this regard: *"the most prominent, largest, and most beautiful holy shrines in Iran are undoubtedly as follows: first, Imām Reza's holy shrine in Mashhad, second, the shrine of his sister, Ma'soumeh, in Qom, and third, Sheikh Safi al-din's Shrine in Ardabil" (Kumpfer, 1984).* Also, the then ambassador of Philippe III, the king of Spain, who visited Iran in the year 1013 AH/ AD 1604 has named Sultānia, Ardabil, and Mashhad as the most renowned holy cities of Iran (Figuera, 1984).

Depending on the time of construction, the function, and the scales, all buildings of the shrine that are mostly of religious function, have an inseparable connection with the main edifice, and are similar to it in one way or more. Sheikh Safi al-din Ardabili Khānegāh and Shrine Ensemble has been skillfully planned and designed in such a way as to perfectly meet the requirements of Safavi school, and also in view of the composition, form, and use if traditional material and the knowledge of the time. The planning is expressive of the importance of a central, significant Khānegāh. All buildings with their function, overall look, and structure, together with the decorative elements and themes used to ornament the surfaces and the façade of the buildings demonstrate a perfect religious unity and order. The combination of glazed bricks with plain bricks, designed with Mo'aqeli technique[2] (which is one complicated artistic technique of architectural decoration), the scales, sizes, and measurements of positive and negative spaces, light-and-shade effects, rhythms, and all other creative forms designed in accordance with the historical and cultural backdrops of the area are all evidences of a very smart trend in architecture and urban designing. Also, planning of the ensemble has been in such a way as to maximize the use of the smallest areas of space. Study of the measurements of courtyards and rectangular spaces shows that the golden section in the proportions of length to width; a sort of order of respect has been observed in the height of the domes and other architectural spaces in such a way that none of the structures in the entire ensemble is higher than Allāh Allāh dome or the shrine of Sheikh.

To the archeologists' undisputed assumption, an ensemble of shrine buildings consists of a number of structures built around a central tomb of people of religious or political importance, which have developed further in the course of time into a splendid complex of buildings with tremendous political and religious importance. In Iran, people and rulers have always cared much about constructing, developing, decorating, and preserving such ensembles. *"Development of such buildings is in close relation with*

order to establish the rights of the prophet's family as his successors over religious and political caliphate and authority.

[2] *Mo'aqeli technique is one complicated artistic technique of architectural decoration.*

development of religion, and the sacredness of the very person buried in the tomb. That is to say, the more respect people show for him, and the more penetrative the religion gets, the more artistic and architectural endeavor and elegance becomes manifest in the structures of the shrine, insomuch as sometimes the formation of a shrine is central to the genesis or development of the city around it; the shrine then becomes the center for various religious, political, social, and economic activities of the city." (Kazem, 1999).

Forms of the Iranian traditional architecture, square plans, rectangles, octagons, basilicas, plans of Iranian schools, Iranian gardens, and graves of various periods are employed in the design of the architectural form of the ensemble. Also all architectural and artistic forms serve Safavi Tariqat and religious order. According to verbal narrations, visible evidences, and field studies, all decorative elements of the ensemble, including inscriptions and non-inscriptions, are formed up to serve the mystical notions and philosophy of Safavi Tariqat. existence of 8 doors and portals from Āli Qāpu gate to the tomb of Sheikh indicates the significance of numbers 7 and 8, as they are respectively indicatives of station of spiritual excursion to know Allāh and the 8 pivotal bases of Sufism, as it is rooted in 8 doors and 8 paradises, which are the station of Safavi Tariqat in reaching the truth (fig. 3).

Sheikh Safi al-din ensemble consists of a range of buildings including the tomb, Khānegāh, the library, the mosque, the school, Haram khānā (Muhiyy al-din mausoleum), the cistern, the Hospital, the kitchen, the butlery [Sharbet khānā], and some offices.



Figure 3: Seven stages in Safavi's Tariqat in reaching the truth, manifested in Sheikh safi Khānegāh and Shrine Ensemble in Ardabil plan

In the reign of Sheikh Safi al-din's political and religious successors, particularly during the rule of Shāh Abbās I, many structures were added to the ensemble, and some existing buildings were drastically transformed. The place, which had basically meant to serve as a Khānegāh ensemble with the purpose of training the disciples of Sheikh Safi al-din, later changed altered to a large pilgrimage site thanks to the cares and efforts of the descendants of Sheikh. So, the importance of this ensemble is in the first place attributed to the great ancestor of the Safavi. Within the ensemble is located the tombs some of the predecessors of the Safavi such as Sheikh Sadr al-din, Sheikh Junaid, Sultān Heydar, and Shāh Ismāil I,

together with some other princes and a number of scholars. Some of the members of the royal family, such as Sām Mirzā, the brother of Tahmāsp I, chose to reside in Ardabil, and the first four Safavi rulers are buried in Ardabil, in the vicinity of their great ancestor. Even though from the reign of Shāh Abbās the great on the Safavi kings have been buried at the holy shrine of Fātimā Ma'soume in Qom, Shāh Abbās and his successors all considered Ardabil as their national pilgrimage site, and so tried to improve and develop.Though four centuries have elapsed after his death, the Shrine of Sheikh Safi al-din, and the shrine of the founder of Safavi dynasty has won a very special place among people. The public's cordial respect and believe in the Safavi and their shrine is considerable even to date. The many followers and enthusiasts of Sheikh Safi al-din and Shāh Ismāil all around Iran as well as Anatolia, Damascus, and the republic of Azerbaijan under names such as Ahl-e hagh and Sufis who follow them is a proof of their dynamic ideology. *"the number of a sect of the enthusiasts of the Safavi dynasty in Anatolia and Damascus named the enthusiasts of Shāh Ismāil is indicative the Safavi sublime position." (Tabriz Uni, 2004).*

One of the most significant traditional and religious ceremonies held by Ardabili people is "laying the washtub" [Tasht Gozāri] in the month of Moharram, which has been performed for centuries, more magnificent year after year. The ceremonies of Darvāzeh [gate] mosque and Āli Qāpusi neighborhood, which is one of historical neighborhoods of Ardabil, begins at Sheikh Safi al-din's shrine.

The important point in these ceremonies is that Sheikh Safi al-din's shrine is central to the rituals. Centuries have elapsed, and the moaning groups still move near the shrine, and through a determined route pass Gāzorān neighborhood and Āli Qāpusi square, and finally head for Sar cheshmeh mosque from the west side of the shrine. Olearius, too, mentions this in his logbook, saying: *"on the last day of the moaning rituals, the groups move in the streets from the morning until noon, and later, attend the ceremonies in the evening. The place for them to gather is in front of Sheikh Safi al-din's Shrine, at which stands a tall flag, which has, according to narratives, been erected by Fātimā, prophet Mohammad's daughter, and has then been brought to Ardabil and erected there from Medina by Sheikh Sadr al-din, the son of Sheikh Safi al-din." (Olearius, 2000).*

Most researchers on the architecture of the Safavi era, including Arthur Upham Pope, are to believe that the buildings of the ensemble incorporated into one integrated complex owing to care and efforts of Shāh Tahmāsp I for the first time (Pope, 1965). In the next stages, in the reign of Shāh Abbās the Great, Shāh Abbās II, and Shāh Safi al-din, many alterations were made in the ensemble, and Safavi kings have played an active role in the development of the ensemble. The kings spared no

expenses in decorating the structures of the shrine with a variety of artistic works including mural paintings, illumination, calligraphy, and splendid decorative elements such as various types of colored and faience tiles, plasterwork, stalactite work, wood engraving, wood inlay, and knotting work.

Decorations used in various spaces of the ensemble are among its most significant elements. The decorations can be discussed in view of their content and connotation, forms, choice of colors, style of performance, material used, function, and date of creation. Designers and creators of the ensemble have in fact shifted the attention of the observers from the small measurements of the spaces, and given them a sort of spiritual and mystical immensity instead by using colors and ornaments; instances of this are spotted in the tombs of Sheikh Safi al-din and Shāh Ismail, the alcove, Chini Khānā, and various parts of Qandil Khānā.



Figure 4: Landscape zone of Sheikh safi Khānegāh and Shrine Ensemble in Ardabil

2. Developments of Sheikh safi Khānegāh and Shrine Ensemble in Ardabil

The history and development of Sheikh Safi Khānegāh and Shrine Ensemble in Ardabil include more than 400 years; can be explained in form of following chronological maps.

The researchers have identified four main building phases in which the most important structures were built or substantially modified: In the initial period from 1300 to 1349, the fundamental layout of the shrine was established. This phase involved the construction of essential structures including Sheikh Safi al-Din Ardabili Khānegāh, Haram-khānā, Allāh Allāh Dome, Sāhat, Dār al-Huffāz Hall, Shāhnishin, the Middle Courtyard, and the New Chilla Khānā (fig. 5). These key buildings formed the core of the ensemble during this period, setting the foundation for its subsequent development and significance.

In the second period, spanning from 1349 to 1544, a substantial amount of construction occurred within the ensemble. Notable additions during this period include the construction of the sepulchres of Shah Ismail and his mother, the establishment of Dār al-Hadith, the creation of Jannat-sarā, the development of Shahidgāh, and the construction of the sepulchre yard to the south of Sheikh Safi al-Din's tomb. These constructions primarily took place in the 16th century, as indicated by historical evidence (fig. 6).

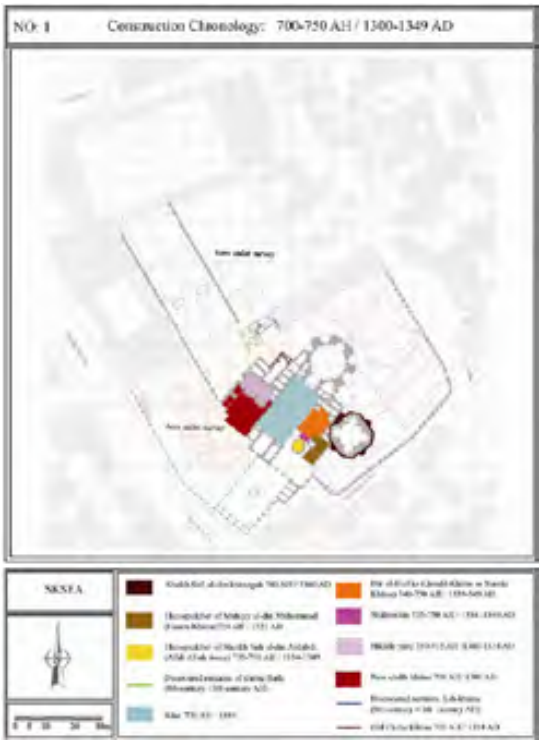


Figure 5: Construction Chronology 1300-1349

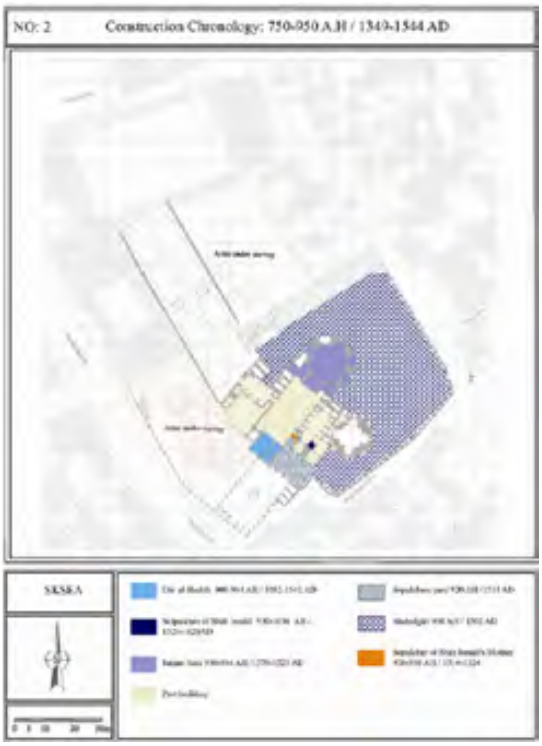


Figure 6: Construction Chronology 1349-1544

During the third period, spanning from 1544 to 1752, the ensemble underwent notable expansions and enhancements. The Chini-khānā, a prominent structure, took on its present form, showcasing its architectural refinement and intricate design. Additionally, the majestic Shāh Abbāsi Gate was constructed, adding a grand entrance to the ensemble. The enchanting Garden Courtyard was also brought into existence during this period, further enhancing the aesthetic appeal of the ensemble (fig. 7).

During the period from 1752 to the 20th century, significant expansions and additions were made to the ensemble. Structures such as the school, toilets, engine room, and greenhouse were constructed, with the majority of these additions taking place in the 20th century (fig. 8).

At present, the shrine of Sheikh Safi al-din consists of the following parts and buildings (fig. 9):

A. *Sheikh Safi al-din tomb (Allāh Allāh dome)*
B. *Shāh Ismāil I tomb*
C. *Muhiyy al-din muhammad tomb (Haram-khānā)*
D. *Shāhnishin (alcove)*
E. *Dār al-Huffāz (Qandil-khānā)*
F. *Chini-khānā (Khānegāh)*
G. *Jannat-sarā*
H. *Sāhat or Sahn (Area)*
I. *Shāh Abbāsi gate (lofty Gateway)*
J. *Middle yard (passageway)*
K. *New Chilla Khānā*



Figure 7: Construction Chronology 1544-1752



Figure 8: Construction Chronology 1752- 20th cnt.

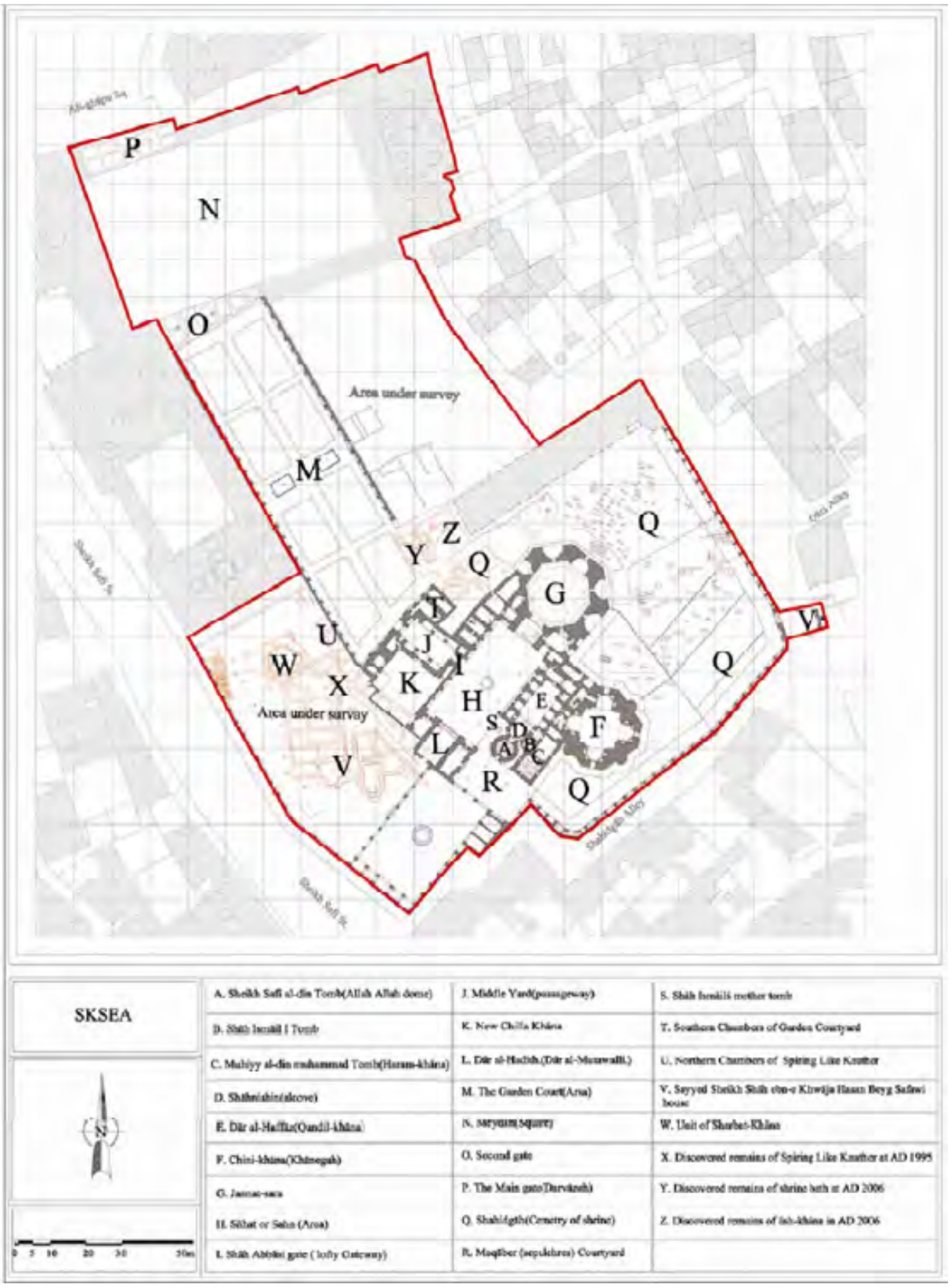


Figure 9: Key plan of Sheikh safi al-din Khanegah and Shrine Ensemble in Ardabil (abb. SKSEA)

L. Dār al-Hadith (Dār al-Mutawalli)
M. The garden court (Arsa)
N. Meydān (Square)
O. The Second Gate
P. The Main gate (Darvāzeh)
Q. Shahidgāh (Cemetry of shrine)
R. Maqāber courtyard (sepulchres)
S. Shāh Ismāilś mother tomb
T. Southern chambers of garden courtyard
U. Northern chambers of Spiring like Kauther
V. Sayyed Sheikh Shāh ebn-e Khwāja Hasan Beyg Safawi house
W. Unit of Sharbat-Khānā
X. Remains of spiring like Kauther at AD 1995
Y. Remains of shrine bath at AD 2006
Z. Remains of Āsh-Khānā in AD 2006.

A. Sheikh Safi al-din Tomb (Allāh Allāh Dome)

Sheikh Safi al-din's Shrine is located to the southern side of the building known as Qandil-Khānā or Dār al-Huffāz, and to the north of the area known as the graveyard (fig. 10).



Figure 10: Key plan of Sheikh Safi's shrine (Allāh Allāh dome)

Sheikh Safi al-Din's Shrine, also known as the Allah Allah Dome due to the repetition of the word "Allah" in the inscriptions, is a cylindrical brick structure built upon a polygonal stone base. This cylindrical structure was built in the year 735 AH/ AD 1335 after the departure of Sheikh Safi al-din's son and successor, Sheikh Sadr al-din Musā after his departure. It took 10 years to be constructed.

At present, the shrine building is reached through Dār al-Huffāz. The outside of the structure looks like a regular brick octagon, while the inside is a cylindrical body, with diameter of approximately 6 meters, circumference of 22, and height of 17.5 meter, built on a polygonal foundation of stone. On top of this, cylindrical body is erected a double-shelled dome, whose profile looks like a pointed horseshoe. In addition, there is also a finial apparently made of gilt copper or brass. Such structure is single in kind as for form and tile work as compared to similar structures of the time.

Sheikh Safi al-din's tomb is in fact a freestanding, separate structure. It has two doorways with the look of blind arcades, of which one is located on the western side and is named Qibla Qāpusi (Door to Qibla), and has grilles, while the other one is located opposite the former, with the look of deep blind arcade, installed at the joint of the shrine tower to Dār al-Huffāz Hall. The entrance to Sheikh's Shrine was formerly located on to the south, but this door, which opens to the Graveyard (Maqāber courtyad), is currently used to give light to the inside of the tomb. Weaver dates the construction and installation of window and door frames

and the decoration of the front major courtyard of Sheikh Safi al-din's Shrine back to 950 AH/ 1543 AD, i.e. the 10th century AH (Weaver, 1971).

The floor of the shrine is covered with yellowish brown brick tiles; however, archeological excavations conducted by the ICHHTO on the floor of the dome building revealed proofs that very elegant tile works existed on the lower part of the wall (fig. 11).

The shrine features a circular exterior design and an octagonal interior layout. Its crescent-shaped double-shell dome is adorned with intricate Kufic calligraphy inscriptions from the Quran. The most significant part of the ornaments of Sheikh Safi al-din's tomb is Mo'agheli Kufic inscriptions on the body of the tomb, which is decorated with the holy word of Allāh. The dome of Sheikh's tomb has been renowned as Allāh Allāh dome due to repetition of this word on the outer shell of the structure. In this tower, the word Allāh has been inserted horizontally and vertically in Mo'agheli Kufic script, using glazed turquoise tiles with extreme delicacy. This part of the structure is unquestionably considered as the most elegant and most beautiful part of the whole shrine due to the combination of tile and brick. Such style in making inscriptions is one of the best-known styles of the type, which was frequently used in decoration of religious sites during Ilkhānids and Timourids. Inside, one can find vibrant plasterwork, paintings, calligraphic writings, and lacquer-painted wooden works, believed to have been added during the 19th century.



Figure 11: View of Allāh Allāh dome.

Weaver, elucidating the date of Sheikh Safi al-din Ensemble building, retains; “It seems that Sheikh Safi al-din Shrine is the second building of the ensemble in terms of its age. This cylinder-shaped building having a ship-like dome and rectangular writings in Kufic and flat geometric designs, is most probably assigned to the year 749 AH/1348 AD, because these domes were prevalent in the early 5th century, and this style of dome–making

has been continued during centuries. Nevertheless, southern window (Qibla–Qapusi) ornamentation has probably been added in ninth or tenth century that is the time Dār al–Huffāz (Weaver, 1971).

B. Shāh Ismāil's I Mausoleum

Shāh Ismāil's tomb is indeed too ordinary a structure for the man who was the founder of a long-lasting dynasty, and who ruled the country masterfully for nearly a quarter of a century. This shrine, which is known by the public as Shāh Ismāil's dome, has a shorter, narrower dome as compared to the adjacent structures, and is surrounded in a small, dreary room. It looks somehow undersized as compared to the pair of Sheikh Safi al-din's and Muhiyy al-din Mohammad's tombs between which it is located (fig. 12).



Figure 12: Key plan of Shāh Ismāil's sepulcher

Shāh Ismāil's shrine is square-shaped room measuring 2.4 by 2.7 meter, whose ceiling is shielded by a double-shell brick dome (fig. 13). Despite being shorter and smaller than most of the buildings within the ensemble, this shrine is the most elegant part of the religious ensemble of Ardabil as for its artistic fineness and decorative elements. It is of particular significance due to the existence of temperas, illumination works, an exquisite grave chest with its unique wood inlay work, and the plasterwork inscription done by Alireza Abbāsi, the prominent calligrapher contemporary with Shāh Abbās the Great.



Figure 13: Shāh Ismāils dome with tilework

Though most reliable and considerable European travelers have described the location of all of the buildings of the ensemble in details, there is nothing found [in their travel logs] about architectural details of Shāh Ismāil's shrine. As inferred from their notes, they could not have had the permission to enter the inside of the tomb due to religious or governmental bans; thus, like Haram Khānā, it was a place they could not see and could not describe. Apparently, they were only allowed to observe [such buildings] from a distance. Obviously, it is gathered from

what European travelers of the Safavi' era have said that none of them has been given the permission to see inside of the tomb and the wooden chest of Shāh Ismāil due to religious bans and to the fabric covering the chest. Nevertheless, these bans were all lifted ever since the Safavi were overthrown. Since then on, most of the travelers who have visited the shrine have had access to the tombs, and they have made notes about the ornaments and the grave chests. The inside of the tomb is indeed a gallery of the history of Iranian painting and illumination. Various works of art, such as murals, tile work, gilding, and inscriptions are manifest here to the perfection.

Apart from the significance of the building per se, the wooden chest of Shāh Ismāil's shrine is one of the most notable pieces of art work from the Safavi epoch in Ardabil, and one of the examples of the art of wood inlay work in Iran. The very elaborately worked ornamentations of this unique piece consist of wood inlay, engraving, and knotting work, which are out together with perfect mastery.

C. Muhiyy al-Din Muhammad's Shrine (Haram Khānā)

The historical building of Muhiyy al-din Muhammad, also known as Haram Khānā is located in the south of Sheikh Safi al-din's shrine and the alcove (fig. 14). It comprises a vestibule, a corridor, and two spaces, one square-shaped, and the other, rectangular. It was built particularly to bury Sheikh's son, Muhiyy al-din Mohammad in the year 724 AH/ AD 1323-24; later, with more of Safavi family members buried there, it changed to the family tomb for the Safavi, and was given the name Haram Khānā. Nowadays it is clear that the sanctuary is prior to Sheikh Safi's Shrine, but they are not so far from one another in time and the similarities between them are not so important to be explained. In fact, their differences are due to the progress and development of the techniques used in one period. The dome inscription text is the other study resource of Shrine that defines the work age.



Figure 14: Key plan of Muhiyy al-din Mohammad's shrine (Haram Khānā)

The main entrance to Haram Khānā is to the right of the width of the wall of the alcove. It comprises a double-door the surface of which is covered with a silver plate. Like other doors of the shrine, the door of Haram Khānā was once decorated with arabesques, floral patterns, and Farsi inscriptions, but now not much of that glorious beauty is left. Passing through the aforesaid door, one enters a corridor of 2.75 1.77 m; on either sides of it are two

marble gravestones with their superb engravings. The corridor is covered with white plaster, and is clear of any sort of patterns, decorations, or inscriptions. After passing through the portico and the porch, one enters the main space of the Haram Khānā or the shrine of Muhiyy al-din Mohammad, the son of Sheikh Safi al-din. There are 10 graves in Haram Khānā with marble gravestones and wooden chests. The chests are regarded as some of the most valuable treasures of the shrine back from the 8th century AH as for their decorative elements of engraving, fretwork, wood inlay, and knotting work.

The semicircular dome of this building over a sloped, oblique area shows the transformation of the square of the base into the dome; this are, in turn, is erected on four squelch the base of the dome is decorated all around with complicated geometrical patterns of knotting work, and with a combination of white and turquoise tiles and plain bricks, gives astonishing beauty to this burial site (fig. 15).



Figure 15: Tomb of Muhiyy al-din, known as Haram Khānā.the tomb of Ismāil is behind its.

The shell of the semicircular dome covering this room, which consists of an entrance hall, a corridor and two rectangular and square shaped rooms where the funeral chests are placed, was reconstructed in 1915.

D. Shāhnishin (The Alcove)

As the Shāhnishin shows, it has been situated between Allāh Allāh dome and Dār al-Huffāz and considering the issue that the two mentioned buildings have been built by Sheikh Sadr al-din Thus Shāhnishin has also been constructed in Sheikh Sadr al-din Musa times and during the construction of Sheikh Sadr al-dins mausoleum dome. At that time, this was considered as a porch on that tomb. The alcove is space of 4.8 by 5.7 m, located in the south end of Dār al-Huffāz (fig. 16).



Figure 16: Key plan of Shāhnishin (The alcove)

There is an elevation of 70 cm (two steps) between the floor of Dār al-Huffāz and the alcove. It is separated from Dār al-Huffāz by an iron window covered with silver plates, and a latticed door (fig. 17).

The entrance of the alcove to Dār al-Huffāz forms an altar-like space. Thus, as a long hall, Dār al-Huffāz has been divided to two parts: the southern part comprises the blind arcade and the

pentagonal porch, and is somehow shorter and narrower than the northern part.

The point is the order of moves to arrive to the center of the ensemble ends here. This order includes the portal in the first place, which is then followed by the corridor, the Prayers room (which in turn includes the three parts of the entrance, the prayer room, and the alcove), and finally, the alcove and the tomb of Sheikh Safi al-din.



Figure 17: The portal of Dār al-Huffāz

The southern half of the alcove, which is located on the short, pentagonal porch, comprises a short, fluting semi-dome, which has lines of nice stalactite work.

E. Dār al-Huffāz Hall (Qandil Khānā, Qandils Room)

Contemplation and consideration of historical resources show that Dār al-Huffāz Hall had been began and supervised by Sadr al-din, the most powerful successor of the Safavi. In the resources related to late 8th c/ Hijra and Safavi era, this outstanding work is known as Sacred lodge; settled by Sadr al-din Musa and it has gained the present form through changes in Safavi Sultāns times. Sheikh Safi's shrine and then Dār al-Huffāz hall have been built by Sadr al-din Musa from 735 to 750 lunar year / AD 1349-1335.

Dār al-Huffāz hall, through history, has been known with so many names such as Khānegāh (convent), Hazirre (lodge), Dār al-Huffāz, chapel and Qandil-Khāna. Though this hall functioned as a place for reciting and memorizing Koran during the Safavi period, [which is the reason why it is called the Dār al-Huffāz- the place for those who memorize Koran], it was also worthy of the name given to it later as Qandil Khānā due to the many beautiful lanterns hanging from (fig. 18).



Figure 18: Key plan of Dār al-Huffāz Hall

Dār al-Huffāz is rectangular hall, measuring 11.5 by 6 m, which has expanded in the east side of the main courtyard of the shrine, northwards and southwards. It has 3 chambers built along its east and west walls, decorated with

stalactite work, calligraphy, and illumination work. This attractive building, which is nowadays known as Qandil Khānā, was originally meant to serve as a place for memorizing Koran. There are chambers on the two levels of this hall, along the inside of it.

Being attached to Allāh Allāh dome, it actually functions as the fore of the tomb. The southern part of the hall is built in the form of a porch inside, known as the alcove. This part has been skillfully linked to the cylindrical tomb of Sheikh Safi al-din.

The façade of Dār al-Huffāz which faces the courtyard comprises five vertical frames, in which are inserted 10 windows, that is two windows in each frame. These vertical frames are separated from the plain brick texture by faiences of blue, white, and orange.

There is a large portal in the northern end of the west wall of Dār-al Huffāz with the same style as the portals of the Timurids.

The upper part of this portal is like a semi-dome, set up on trimorphous. The arch of the ceiling of the portal is a four-centered one, erected on a pair of small lateral pillars.

Mae of marble, the pillars and their capitals are decorated with beautiful stalactites, and the pedestals are decorated with carvings and engravings.

The basis of Dār-al Huffāz portal is 55 cm high, made of marble and andesite. Its upper part is made of bricks (fig. 19).



Figure 19: View of Dār al-Huffāz; known as Qandil Khānā. looking tomb of Ismāil I in the right site of fig

There is spiral staircase in the furthest end of the west side of the north wall of the portico, through which the upper level of the hall and its chambers are reached. There is a double-door in the northern side of the portico, which is the only way of accessing the chambers of the second floor, and consequently the third floor from the ground level. Passing through this door and stepping up the spiral staircase, one reaches the landing of the second floor, and then, through the door in the south of this landing, to a rectangular space. The staircase goes up to finally end in a chamber on the third floor.

The painting and decoration of Dār al-Huffāz Hall with floral motifs and the symbolism in its decoration is because of its function and close link to Koran and other religious issues.

Unlike other Safavi buildings in which they have amply used portraits, scenes from feasts, fights, hunting, and historical and fictional themes, no such things are seen in this site (fig. 20 and 21).



Figure 20: Interior view of the Dār al-Huffāz

The most significant feature of Dār-al Huffāz Hall is the vastness of its inscriptions of Koran, words of the prophet, great Praises, prayers, and the account of Sheikh Safi al-din's titles on the façade and inside the hall.

In other words, the longest Koranic inscription of the entire shrine is inserted in this building.

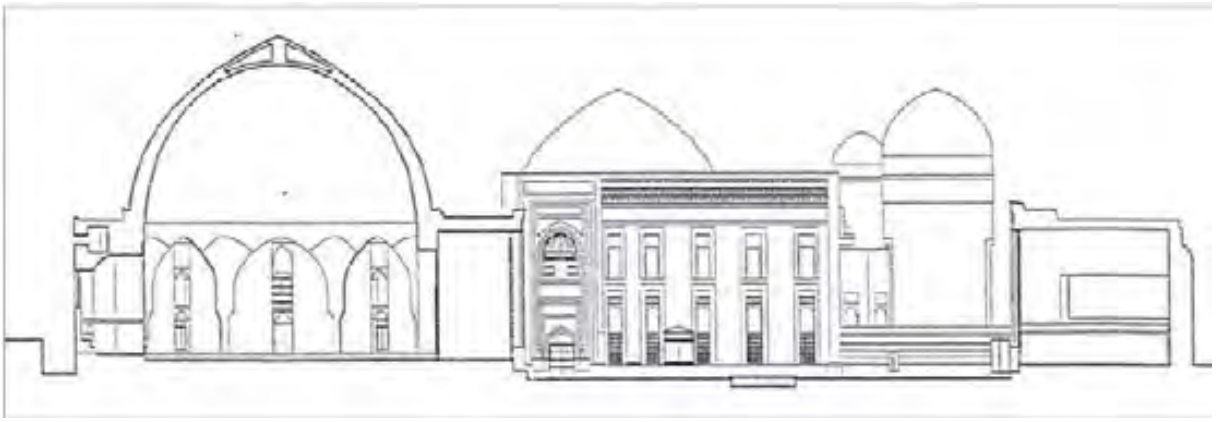


Figure 21: Section of eastern side of SKSEA (Iranian Cultural Heritage and Tourism Documentation Center)

F. Chini Khānā Building / Khānegāh

In view of architecture and decoration, the Chini-Khānā building ranks among the masterpieces of the 11th century in the shrine of Ardabil. Chini Khānā is a structure built on or inside an older building; Under the Chini Khānā there is a vault implying an older era. When a person passes through the corridor, situated in the second and first vault of Dār al-Huffāz wall towards the inner part of the Chini Khānā, he would see that porticoes of Chini Khānā designed with artistic plastering have been constructed in older porticos. Ismāil Dibaj who was responsible for investigation and repair of Sheikh Safi's shrine buildings in 1368 lunar year/AD 1914 assign Chini Khāna building to Shāh Safi.

This asymmetrical, domed building is located to the east of Dār al-Huffāz Hall, and is linked to it through two narrow entrances. The inside of the building is made as a tetragon of 18m diagonal; there is a polygonal depression in each of the walls of the room, which altogether make four semioctagonal blind arcades (fig. 22).



Figure 22: Key plan of Chini Khānā building

Chini Khānā building has the look of a collection room; the order of the niches and their special containers indicate the significance of this exquisite site.

As mentioned earlier, Chini Khānā building is in the shape of an irregular octagon, whose five sides out of eight are prominently seen; the other three are attached to the Haram Khānā and other buildings of the shrine.

Chini Khānā building is a matter of interest for those who are keen on Iranian architecture due to the use of secrets of authentic Iranian architecture. Various forms of art such as plasterwork, tilework, and illuminations are of the most exquisite works of art at this tremendous structure. What makes this building even more wonderful is that its entire dado is covered with tiles, and above it, the surface is decorated with plaster-moldings and delicate illuminations.

The interior of the Chini-khānā is adorned with intricate stalactite decorations and rasmi-bandi[1] motifs. The construction materials employed throughout the ensemble encompass a diverse range, including timber elements, various types of bricks, stone for foundations and plinths, multi-colored tiles, faience, gilded tiles, marble for decorative elements and flooring, different woods for funerary chests and grave-posts, chinaware, gold plating, vermilion, cobalt, cotton, gold plate, copper, silver, plaster, lime, and clay mortar (fig 23).



Figure 23: Interior view of the Chini Khānā

G. Jannat Sarā Mosque

Jannat Sarā is located in the north of the apron of Sheikh Safi al-din's shrine, opposite the porch of Dār al-Hadith (fig. 24). This building is the largest structure in the entire ensemble, and is a great example of Safavi architecture in Ardabil.

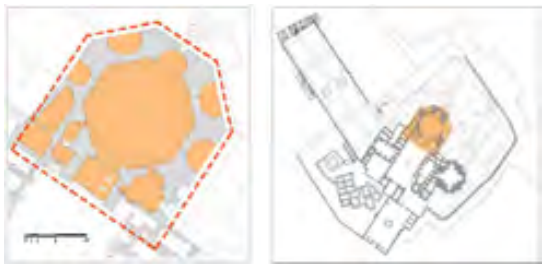


Figure 24: Key plan of Jannat Sarā

The diagonal plan of Jannat Sarā, with its deep blind arcades and the destroyed dome, is of an exemplary order, which has

[1] *Rasmi-bandi stands out as a distinctive and original pattern in traditional architecture, serving as a ceiling covering. This domestic artwork epitomizes the mastery of Iranian architects in the field of geometry. In contrast to other architectural geometric ornaments such as Yazdi-Bandi, Muqarnas, and kaseh-sazi, Rasmi-bandi strives for an impeccable arrangement and order within its design (Farshchi, Nia and Ashrafi, 2017).*

been common elsewhere in Iran. The plan of Jannat Sara has kept its octagonal shape on the pair of levels inside; on each side, a niche-formed false arch surrounds the large arches.

Jannat Sara building is the tallest building of the complex in terms of height and area. Regarding Jannat Sarā function, three hypotheses can be presented; some consider it as shrine, some as Dervish Square and some others as mosque or chapel.

H. Sāhat (The Apron)

The Sāhat, also known as the courtyard, is a rectangular open space that features a centrally located rounded poly-lobed pool (fig. 25).

This part is about 30.5 m long and 16 m wide. The courtyard serves as an access point to various buildings mentioned earlier, including the now dilapidated New Chilla Khānā, the Dār al-Hadith, and the Middle Courtyard through the Shāh Abbāsi Gate.



Figure 25: Key plan of Sāhat

The ground is covered in grayish black andesite stone; it has a pool in the middle, whose perimeter is made of three stone circles with a diameter of 0.5 m. The 12 - sided pool of the apron with a diameter of 4 m is made of andesite stones. It has the shape of a roundel with 12 sides, which symbolizes the 12 Imams of the Shiites.



Figure 26: The apron or Sāhat

I. Shāh Abbāsi Gate (Lofty Gateway)

This portal is located to the west side of the main apron (courtyard) of the shrine (fig. 27).



Figure 27: Key plan of Shāh Abbāsi gate or Dargāh-e Mo'alla

The façade comprises a rather high portal, elaborately made tilework, and stalactite work with four symmetrical blinded arcades on the two sides. The blind arcades are smaller and shorter as compared to the portal.

All of the blind arcades and the entire façade are decorated with faience tiles and Arabic inscriptions. The shallow blind arcades are not meant to serve as shade, but as decorative elements.

What is interesting about this portal is the existence of two historical inscriptions, which are important in its chronology.[2] Thus, relying on the date of the present inscriptions on the portal and also the name of the place which is called Shāh Abbās portal in all probability, this work has been contacted in Shāh Abbās I era.



Figure 28: View of Shāh Abbāsi portal

J. The Minor Courtyard or Pish Khān (Middle Courtyard)

As Abdi Beyg reports, the minor courtyard of the shrine is referred to as the platform [Suffa] in Sarih al-Milk: *"The honorable tombs of some of the Rulers and Intimate friends, and vaulted tombs of the children of sheikhs, and it is a passage way; this is the portal at which they hide in solitude, and through which they enter the mentioned apron; in front of the portal is another portal which opens to the holy shrine." (Abdi Beyg)* (fig. 29).

"Sarre named this courtyard as Pish Khān [the porch] as it was a part of the shrine." (Weaver, 1971).



Figure 29: Key plan of Pish khān

The middle courtyard has the look of an unroofed rectangular corridor of 14 m length and 6 m width. There have been 4 entrances on each of its sides; the southern entrance was known as Shāh Abbāsi portal; the northern entrance opens to the garden-yard, and has stalactites from the Pahlavi period, which have partially collapsed; through the hole thus made the faience tilework and inscription lines of Safavi period are visible.

The type of tilework used in parts of the space, particularly on the façade facing the apron and in its opposite side, is charming.

K. New Chillā Khānā

There have been two Chilla[3] Khānā's in the shrine of Sheikh Safi for the 40-day periods of solitude held by Sheikh Safi al-din and Sheikh Sadr al-din and their disciples. The two buildings were located in a short distance from one another, and

[2] *For more information, pp.310-312.*
[3] *Chilla: the 40-day period of solitude to practice prayer and asceticism*

were located to the west of the apron (fig. 30).



Figure 30: Key plan of New Chillā Khānā

The new Chilla Khānā has been built in the time sheikh Sadr al-din Musa (735-794 AH/ 1335-1393 AD) with 40 chambers and a magnificent dome. After passing through the door of the minor courtyard of the marble corridor to the south, one finds himself in an open area known as the new Chilla Khānā. This part is located between the major courtyard and the apron to its north and south.

The main function of Chilla Khānā can be understood from the explanation provided by Olearius: *"there were two beautiful candlesticks with some candles in them in the middle of the large domed structure; some clergymen clad in white were near the wall. It can be inferred from this account that this place was in fact the Dervishes' square, or their residence." (Weaver, 1971).*

According to Sarih al-Milk, Chilla Khānā that has had 40 rooms, had served as a place for dervishes to gather and hold their ceremonies. In the excavations of 2006 in the two south and west sides of new Chilla Khānā, numerous chambers of the type were discovered, some of which had open ovens.

L. Dār al-Hadith or Taq-e Mutewalli Hall

The other name of this place, Dār al-Hadith is located to the south of the apron it is also known as Dār al-Salām and Taq-e Mutewalli (Dār al-Motewalli). This building comprises a porch in the form of hall in the middle, and two small porticos on either side.

As the name Dār al-Hadith and Dār al-Salām indicate, this place had originally been meant to serve as a place for learning religious instructions extracted from words of the prophet and Imams and also was used to receive and serve guests.

The building comprises a large hall of 620 m by 10 m size with vaulted ceiling, stretching in north-south directions. Located opposite Jannat Sara, this hall has a grille of 11 m height with geometrical designs and a knotting work. The floor of the porch has an elevation of 75 cm from the apron; the access to the hall is by a step reaching the platform (fig. 31).



Figure 3113: Key plan of Dār al-Hadith or Taq-e Mutewalli Hall

The inside of the hall is whitewashed with plaster. Some researchers including Dibāj consider it probable that *"this space served as a mosque and a place for*

preaching in the 13th century AH." (Dibaj, 1964).

The elevated porch of Dār al-Hadith, along with its two chambers, showcases inscriptions of the Quran and the sayings of the Prophet, written in Thulth and Kufic scripts. The facade is intricately adorned with floral motifs and inscriptions crafted on faience colored tiles (fig. 32).



Figure 32: View of Dār al-Hadith,at present this building known as Tagh-Mutawalli

M. Garden Courtyard (The Arsa)

The major courtyard, which is also known as the Sheikh courtyard, is a very asymmetrical area of 27 m wide (west side), and 89 to 100 m long, made in the same style as the Persian gardens (fig. 33).Currently there are two rectangular, stone pools are located in the middle of the courtyard; they once brought the water from Ahl-e Iman (believers) area [neighborhood] to this place through piping system. The garden is connected to the Middle Courtyard or passageway and the Meydān through two portals located on the shorter sides. These portals are accompanied by neighboring houses and service buildings, forming a gateway between the garden and its surroundings.



Figure 33: Key plan of Garden Court (Arsa)

In the archeological excavations of the year 1995, remains of clay water pipes were discovered behind western wall of the garden yard. This yard and its garden are assigned to Sheikh Joneid and *"the assignment of this yard to the 9th century Hegira is confirmed by Olearius account, first he has called it the large yard and assigned its construction to Sheikh Joneid AD 1448-1461 / 852-65 lunar years. This yard has the shape of a large trapezoid rectangular that has been built similar to the entrance belonging to Timurid era in Gohar Shād Mosque."* (Wilber, 1995). Today, its appearance relates more to the repair of 19th century AD and restoration in AD 1904 / 1322 lunar year.

N. Meydan (Square)

The Meydan of the ensemble is located between the main portal to the north, and the second portal to the south (fig. 34). The Meydān, a tetragonal space, was the

initial area that visitors would encounter after passing through the Main Gate.



Figure 34: Key plan of Meydan (Square)

In the plans made by Sarre, the Meydan is shown as having a tetragonal shape. The Main Gate of the ensemble, known as the Darvāzeh, is no longer in existence.

The remains of this Meydan are vanished under the developing streets in the process of development of the city, but is hoped to be resumed by archeological excavations.

O. The Second Gate

After passing through the main gate of the shrine to the south of Āli Qapu Square, one enters a tetragonal square with an entrance to its south, which is known as the second portal (fig. 35 and 36).



Figure 35: Key plan of the second gate

This part of the property, which had been restored during the Pahlavi period, is now experiencing more of restoration work planned in the project of Sheikh Safi al-din.



Figure 36: The second entrance of SKSEA from north

P. The Main Gate (Darvāzeh)

Today, nothing is left from the main portal of the shrine, which was once a magnificent monument of the rule of Shāh Abbās II. This is the shrine special doorway (fig. 37). According to the valid documents and pictures, this portal was formerly ornamented by inlay and vaulted ornamentation. Now it is being rebuilt. by doing practical archeological researches, the bases of this historical portal would be discovered and would play an essential role in its reconstruction.

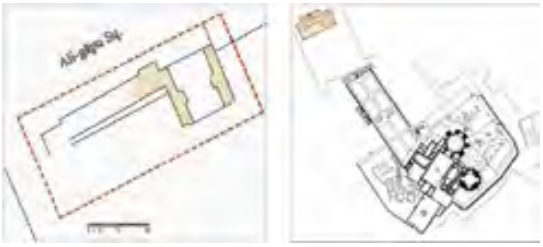


Figure 14: Key plan of the main gate (Darvāzeh)

This portal, with its splendid entrance, was located to the east of the Meydan

leading to Āli Qāpu. As the historical accounts have, it was made of the most delicate faience, and had a Naqara Khānā[4] built on top, which was used to call the Muslims for prayers. There are notes of the magnificence of this portal in the reports of European travelers of the Safavi era such as Olearius, Della Valle, and Madelslo.

Q. Shahidgāh (Cemetery)

Shahidgāh is cemetery which surrounds the east and south sides of the shrine of Sheikh Safi al-din (fig. 38).



Figure 15: Key plan of Shahidgāh Cemetery

The name Shahidgāh was first given to the place in the time of Shāh Ismāil. It functioned as the burial place for the disciples of Sheikh Safi al-Din, as well as for religious and political personalities after the establishment of the Safavid dynasty.

The gravestones of Shahidgāh cemetery are divided into six groups in view of their decorative elements: floral, geometrical, faunal, human figures and portrays, symbolic, calligraphy works. All in all, management and documentation of the gravestones and other objects of this area seems necessary due to the artistic values and historical significance of Shahidgāh site.

However, archeological excavations of decade AD 1971 / 1391 lunar proved that Shahidgāh had lacked any architectural work and was used merely as a cemetery.



Figure 16: The sample of Graved stones in Shahidgāh

R. Maqāber Courtyard / The Graveyard / Haram Khānā Courtyard (Sepulchers)

The graveyard is located to the south of the buildings of the shrine and the tomb of Sheikh Safi (fig. 40). It comprises an enclosure of 15 m by 11 m.



Figure 40: Key plan of Haram Khānā courtyard

[4] *The place where kettledrums were beaten at fixed intervals.*

What makes the gravestone of the graveyard particularly magnificent is, along with its belonging to the founder of the Safavi dynasty, the ingenious performance of the most skilled artists of stone carving, inscription writing, engraving, and calligraphy in creation of its unique beauties. It is unique among all other gravestones of the shrine in consideration of its elaborate decorations and inscriptions, as no other gravestone in the entire Shahidgāh cemetery has been decorated in a similar way.

S. The Tomb Believed to Belong to Shāh Ismāil I's Mother

The aforesaid gravestone was formerly separated from the apron of the shrine by a small, insignificant vaulted brick roof and a stone wall stretching along the southern façade of Dār al-Huffāz up to the eastern wall of Dār al-Hadith. The entrance to the tomb, and consequently to the graveyard was through doors inserted in the wall. There was also a stone inscription with Thuluth script and turning arabesques along the upper part of the wall between the apron and the graveyard. As the old pictures at the shrine evidence, the mentioned tomb was still standing until the year 1976, but in the same year, the tomb was destroyed, and the old stones of its wall were cut and leveled, and were used to make steps and platforms. (Tabatabaim and Jamal Al- din, 1976).

T. Chambers to the left of the Garden Courtyard

In the south of the garden yard and to its left towards the middle courtyard, there are three chambers made of brick with stone dados, which have been built over the graves of the martyrs of Chāldorān at the same time as the wall of the garden courtyard. Traces of burials in Safavi period were discovered in adepth of 90 cm in the excavation of the middle chamber in the year 1997. The chambers are bare of any decoration, and their floor has an elevation of 90cm from the current level of the yard.

U. Chambers to the north of Cheshme Kauthar

Excavated and discovered in the year 1995, the northern chambers comprise 4 spaces. They are located not so far from the wall of the garden yard, behind the western wall. They are built parallel to the wall of this part of the yard, and are of similar measurements.

V. House of Sayyed Sheikh Shāh I-bin-e Khwāja Hassan Beyg-e Safavi and the SayyediBeyg Safavi's heirs

These units have been built behind Dār al-Hadith and to its west, and have been separated from this building by a corridor stretched north south (fig. 43).

The relics of the house of Sayyed Sheikh Shāh Bin Khwāja Hassan Beyg Safavi were discovered in the excavation works of the year 1995. They comprise five units and the residential area made of square-shaped bricks and lime mortar. The dados were made of malon stones, and were

vaulted according to architectural evidence all entries faced south and opened to the alley of Sheikh.

After the fall of the Safavi, all this structures were buried under debris, and were later occupied by burials and more recent residential construction. The architecture relics were found in the excavations of the year 1995.

W. The unit of Sharbat Khānā

It is built as if a cellar made of square-shaped bricks and retouched stone dado. This structure with its umbellate was discovered in the excavations of the year 1995. It is located to the west of the cistern or Chesmeh Kauthar, is it goes in Sarih al-Milk and diagram of de Morgān.

X. Cheshmeh Kauthar (the Cistern)

The cistern is located on the west of the new Chilla Khānā and comprises a square space of 2.57 m depth (fig. 44). It has had stonewalls of, and was vaulted. No more than a little portion of the eastern part of the vault now exists as the rest has been demolished to be replaced by toilets.

On the bottom of the north wall there is a canal through which water ran to the shrine. The flow of water entered this canal through clay water pipes from the south, and was controlled by the shutter built in the brick wall of the east of the cistern.

Y. Parts of the remains of Ensemble bath

Relics of the bath of the shrine were found in the excavations of the year 2006. It was right next to the kitchen on the west. The Pool, Tamr Khānā the gutter, the basin, the tiled wall of the bath, stone floor, and the built-in clay water pipes were among the most significant findings of the excavation. Pumice-stone and bath bowls are other objects found in this area (fig. 45).

Z. Parts of the remains of Āsh Khānā (the Kitchen)

Parts of the kitchen were found right next to the east of the bath. The most important findings of this part are the relics of a brick pier of 195 by 195 cm.

Destroyed buildings of the ensemble

Several structures are mentioned in the book of Sarih al-Milk, of which no trace is now spotted. They have been demolished in various historical periods. Below is the report of Abdi Beyg, which can inform the readers about the vastness of destructions in the shrine:

- ***The chamber [Hujre]*** in which resided the executives of oblations. It is attached to the old Chilla Khānā and its additions, parallel to the new Chilla Khānā; its upper chamber belongs to the new Chilla Khānā, and comprises more than 40 chambers; it was described earlier.
- ***The kitchen [Matbakh]:*** according to Sarih al -Milk, it is certainly known that there has been a kitchen in this religious ensemble ever since the 11th century. (Morton, 1975). According to the Abbāsi History, Shāh Abbās built

a kitchen in the shrine in the year 1014 AH/ 1605 AD. The bath and the kitchen are located in the area to the west of Shahidgāh. A passageway went from the courtyard to Jannat Sarā, the kitchen, and Shāhidgāh, and then continued out of the courtyard of the old Chilla Khānā. The bath was located somewhere in the east corner of the courtyard, Havij Khānā, and the residential houses. Jannat Sarā was separated from the kitchen on one side by its yard. Therefore, the kitchen was located somewhere behind the bath; the building described by Della Valle seems to be very similar to it.

- ***Khabbāz Khānā [the bakery]*** to the north west of the kitchen Sherbet Khānā located next to the blessed side of, which is its entrance, comprises the pool, a place for making sweets, and a porch facing the west, and the butlery, and the attached chambers. Sherbet Khānā is located to the southwest side of the yard next to the office, with a fountain on the other side, and between that and the new Chilla Khānā. When Shāh Abbās was at the shrine in the year 1021 AH/ 1612 AD, he visited Sherbet Khānā. It is inferred from Sarih al -Milk, the main building of Sherbet Khānā had been built in the time of Sheikh Safi al-din, but the other parts attached were built after his death.
- ***The bath*** known as the bath of the elites [Mashāyekh] which is endowed by Sheikh Safi al-din according to deed of endowment of Qāzi [the judge] Fazlollah Abidi, written in the period of guidance of Sheikh Sadr al-din in the month of Zul-Qa'ade of the year 761 AH/ 1469 AD. The bath is located between the enclosure of the shrine on one side, the passageway of the kitchen and the bakery on another side, and the Saqā Khānā and Naqāreh Khānā.
- ***Daftar Khānā [the office]*** comprises the vestibule, the house, and the enclosure; to its west is located the upper chamber and the lower chamber, between sherbet Khānā and Havij Khānā.
- ***Havij Khānā*** and the storage room with the upper and lower chambers; some of them existed from the old times, and some other houses were bought and attached in the reign of the Victorious Successor.
- ***Naqāreh Khānā*****,** under which is located Saqā Khānā, and behind it is located the furnace of the bath-house, some of the houses which belong to the holy shrine, which ultimately lead to the firewood store [Himeh Khānā].
- ***The chamber [Hujre]*** to the left of the main portal, facing the holy shrine with its inside and vestibule The chamber to the right of the main portal, which also faces the holy shrine towards Havij Khānā in which are, located the graves of the children of the elites

- ***The portal which is located between the two mentioned chambers*****,** and is attached to the Jabbah Alamian. Formerly, there was a mill around this area at the riverbank, but it is destroyed, and it is not clear where exactly it had been located.
- ***The Rouh Afzā space*** is outside the shrine, and in front of it are the alley and the stores; it continues through to the river. Some of the chambers are bordered with the river and the garden of the school; during the time of the eminent custodianship of the leading scientist Zahiran Ebrahima they had set up a platform in the middle of this area, and covered it with carpets, and made a pool.
- ***The mill*** near the Khānegāh of the school: now it is completely ruined, and its exact position is not known.
- ***One complete chamber:*** It is ruined over the courses of history, and its location is not known.
- There were ***houses*** and enclosures which have been bought during the glorious rule of the Victorious Successor [Shāh Tahmāsp I] –May Allāh make his life as a king eternal- so that Jannat Sara and other structures and enclosures are built over them; their ownership documents of them are available.
- ***Qāleb gāh,*** the butchery bought by the custodian of the shrine in the month of Sha'ban of the year 949 from the heirs of Shāh Shoja'to be attached to the courtyard of the holy shrine.

3. Conclusion

The Sheikh Safi al-Din Khānegāh and Shrine Ensemble in Ardabil represents an extraordinary testament to artistic and architectural virtuosity, bearing exceptional universal significance. Its eminent status lies in its unparalleled manifestation of the fundamental tenets of Sufism, epitomizing the spiritual and philosophical dimensions of this mystical Islamic tradition. The spatial arrangement of the architectural complex holds symbolic significance as it intricately delineates and evokes the spiritual journey of Sufism, encompassing the practices of Dhekr (invocation) and the creed of Safavi Tariqat.

Moreover, the decorative elements adorning the ensemble, such as inscriptions, wood inlays, engravings, murals, wall decorations, carpets, and prayer mats, have all been purposefully crafted to align with and serve the mystical philosophy of Safavi Tariqat. Notably, the presence of abundant floral motifs within the inscriptions throughout the ensemble conveys symbolic representations of paradise.

Within the Sheikh Safi al-Din Khānegāh and Shrine Ensemble, the process of composition did not occur instantaneously; instead, it underwent a gradual evolution, steadily progressing towards its ultimate state of perfection over a considerable period of time.

However, historical evidence suggests that the final composition of the ensemble can be predominantly attributed to the concluding era of Safavid rule, as it reflects the culmination of architectural and artistic developments achieved during that time. Considering all the aforementioned aspects, it is plausible to assert that the compositions integrated into the design and planning of the Sheikh Safi al-Din Khānegāh and Shrine Ensemble exemplify an architectural ideal that can be likened to a Gesamtkunstwerk. In this context, the various elements harmoniously converge, akin to musical notes that collectively contribute to the overarching symphony of mysticism. This holistic approach engenders a unified and immersive experience, where every component resonates in unison, creating an aesthetic masterpiece.

The Khānegāh and Shrine Ensemble of Sheikh Safi al-din Ardabili harmoniously amalgamates diverse architectural styles and mystical elements, giving rise to a distinct synthesis that exemplifies an ethereal perfection.

By incorporating and innovating upon existing elements, this ensemble has become an exemplary archetype for the construction of Khānegāh and Shrine ensembles, epitomizing a pinnacle of mystic artistry.

Ardabil, being the birthplace of the Safavid Dynasty, attained a position of utmost importance surpassing that of Mashhad and Qom, and emerged as the foremost holy city in Iran. Even during the 16th and 17th centuries, when the capital shifted between Tabriz, Qazvin, and Isfahan, Ardabil retained its status as the sole national religious capital for the rulers of Iran. This enduring significance highlights Ardabil's enduring spiritual and political influence throughout the Safavid era. The Khānegāh and Shrine Ensemble of Sheikh Safi al-din Ardabili was officially inscribed on the National Heritage List in the year 1931. This recognition underscores the exceptional value and significance attributed to the ensemble, acknowledging its cultural, historical, and architectural importance within the national context. The inscription serves to preserve and safeguard this remarkable site for future generations, ensuring its continued appreciation and protection.

Sheikh Safi al-Din's creed underwent a remarkable evolution, transcending local origins to achieve national and international recognition. Its influence extended far beyond the borders of Iran and Azerbaijan, encompassing regions such as Anatolia, Sham (Syria), Ceylon (Sri Lanka), and China in the east, as well as Yemen in the west. This expansive reach encompassed a substantial portion of the world during that era, underscoring the widespread impact and significance of Sheikh Safi al-Din's teachings and spiritual legacy.

ICOMOS acknowledges that the provided justification effectively establishes a connection between the tangible elements, such as the architecture and artistic

collections, and the intangible values associated with Sufism and religious practices within the nominated property. Furthermore, ICOMOS recognizes that the artistry displayed in the design, construction, and decoration executed by Iranian builders and artists showcases a profound incorporation of the nuanced symbolism inherent in Sufi philosophy.

This intricate integration has resulted in an exquisite elegance, harmonious equilibrium, and spiritual essence pervading the sequence of spaces throughout the complex. Such exceptional craftsmanship and thoughtful design further enhance the overall significance and value of the ensemble.

ICOMOS recognizes the Sheikh Safi al-din Khānegāh and Shrine Ensemble in Ardabil for its remarkable architectural and artistic excellence, showcasing both originality and the ability to cater to spiritual and functional requirements.

The property's Outstanding Universal Value has been duly acknowledged. Based on its evaluation, ICOMOS recommends the inscription of the Sheikh Safi al-din Khānegāh and Shrine Ensemble in Ardabil, Islamic Republic of Iran, on the World Heritage List, highlighting its significance in meeting criteria (i), (ii), and (iv). These criteria pertain to the property's exceptional cultural and architectural value, its representation of significant human achievements, and its exceptional testimony to a cultural tradition or civilization.

Refrences

1. Dibāj, I. Historical buildings and works of Azerbāijān, central consult of impend festival of Iran, Tehran, 1967.
2. Farshchi, H. R.; Nia A. D. and Ashrafi, A. The geometric system of single impost rasmi-bandi, derived from peripheral circle. Maremat & Memari-e Iran, 2017.
3. Figuera, Garcia de Silva, Travel log of the Spanish ambassador to the court of Shāh Abbās I, translated by Qolamreza Sami'I, Tehran, Nashr-e No, 1984.
4. ICHHTO archive (Iranian Cultural Heritage, Handicrafts and Tourism Organisation)
5. Kazem, M. Z., Encyclopedia of historical monuments of the Islamic period (shrine structures), second edition, 1999.
6. Kumpfer, E. Travel log of Kumpfer to the Royal Court of Iran, transated by Keykavoos Jahandari, Tehran, Kharazmi publications, 1984.
7. Morton, A. H. The Ardabil Shrine in the reign of Shah Tahmasp I, Iran (XII) 1974, (XIII), 1975.
8. Olearius, A., Travel log of Adam Olearius, v. 2, Hussein Kordbache, Tehran, Hirmand, first edition, 2000.
9. Pope, A.U., Persian Architecture: The Triumph of Form and Color, George Braziller, first edition, 1965.
10. Sarih Al-Molek, Tehran, National Library, number 2734/ف
11. Tabriz University, Collection of articles the Safavi in the arena of the history of Iran, by offices of Maqsoud Ali, Tabriz, 2004.
12. Tabatabaim, T. and Jamal Al- din, S., Archaeology Works of Azarbāijān Shargni, Associetion of National Works, 1976.

13. UNESCO (United Nations Education, Culture and Science) World Heritage Convention.
14. Weaver, M. A., The Conservation of the shrine of Sheikh Safi at Ardabil. Second preliminary study, Paris, 1971.
15. Weaver, M. A, asic study of conservation issues in five historical buildings of Iran, translated by Keramatollah Afsar, organization for conservation of archaeological properties, Tehran, 1977.
16. Wilber, D., The Timurid architecture in Iran and Turkistan, translated by Keramat al-lāh Afsar and Mohammad Yousuf Kiāni, Tehran, ICHHTO, first edition, 1995.

CENTRAL ASIAN STUDIES II
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Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

IMPACTS OF IRANIAN ARCHITECTURE ON ANATOLIAN TURKISH ARCHITECTURE

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Abstract

The most important transit route of the Turkish nation, which has migrated from Central Asia to Anatolia and established different states for centuries, is the lands of Iran. The Great Seljuk Empire, which was founded in the 11th century and ruled until the 14th century, is a large and powerful Turkish state established in Iran and Anatolia. The Architecture of the Great Seljuk State, as well as having the architectural characteristics of Central Asia seen in the period of Karakhanids and Ghaznavids before Iran, was also met off the deep-rooted architectural culture in Iran that went back to pre-Islamic times. In this study, we will try to examine the common features of Turkish Architecture, focusing on architectural elements such as arches and domes, either it is in Iran or Anatolia.

Keywords: *Turkish Architecture, Iran, Anatolia, Seljuk*

Introduction

Architecture is the product of culture and culture forms the background of the formation of architecture. It is essential to review the environmental and historical background of the architecture as well as the technologies of creation. It will be possible to identify the cultural values of 13th Century Ottoman Turkish architecture by examining the interaction of the architectural structures of the Turks in Anatolia and Iran, beginning in the 11th century with the ancient civilizations in Iran and Central Asian Old Turkish Cultures.

I. Historic Background

Although it is accepted that the Turks originally migrated from Central Asia, when and where exactly they were is controversial. And as it is not possible to draw the geographical boundaries of the old Turkish migration route, it is also very difficult to determine a narrow region (See Figure 1). According to archaeological and anthropological research, the Brachycephalic Caucasian race, who lived

in the North-Western regions of the Altai-Sayan Mountains from the early Stone Age, underwent a cultural development and from 1700 BC they became the "Andronova" people as a mass immigrant and warring people, began to spread around with more distinctive features representing (See Figure 1) [12].

The oldest known of these migrations is the Asian Huns. In 300 BC, it came to Europe (present-day Hungary) with an expansionist route following the north of the Caspian Sea. Another branch went to the Maverau River (in the region between the Amuderya and Siriderya rivers) via Kazakhstan. According to Chinese sources, the Göktürks and later the Karakhanids, Ghaznavids, in Turkmenistan-Uzbekistan were the first Turkish states to be established in 500 AD., in this area. Turkish tribes in the Transoxiana region. He founded the Great Seljuk Empire under the rule of Seljuk Bey by mixing with the Turkic Oghuz tribes (Oguz) descending from Horosan-the east of the Caspian Sea (Fig.1-Yellow painted area) in the 1037s.



Figure 1. The routes of Early Turkish migrations from Central Asia; Adapted from the Internet of the Ancient World map [1]; The yellow-painted area belonging to the Early Oghuzs at the beginning of the 11th century is Horosan. This region has always been very important for the Seljuk state and has always been used by building a palace. [22]

Great Selchuks reigning from Turkmenistan to Anatolia (including Iran) are seen as the forefathers of Turks in Turkey. Oghuz who is the pioneer of the Great Seljuk Empire, in the X. century, lived in the areas extending from the east of the Caspian Sea to the Syr Darya-Seyhun River [7]. At that time Around the

Oghuzes, there were tribes of Turkish descent (Khazars and Bulgars in the west, Karluks in the east, Kimeks in the north) and the Islamic world in the south. On the other hand, they are only in the South, religion, and race. They were neighbors with another tribe, the Iranian states, which was different from them in terms of civilization [7]. Although we know that there was a ruler bearing the title of Yabgu at the head of these Oghuzes, we do not have much information about the nature of the state. Meanwhile, some Turkish groups who went to Islamic countries were not only serving in the armies of Islamic states but also were placed on the borders to act as guards against the Turkish danger coming from the North [7, 8]. Just before Seljuk Bey became Yabgu, contacts had already begun between the Oghuz Turks and the Arabs, and the Iranian national states. The Seljuks controlled a large area stretching from the Hindu Kush Mountains to Western Anatolia and from Central Asia to the Persian Gulf. Seljuks, who first captured Khorasan after gaining power near the Aral Sea, moved into Iran from here and then took control of the cities in Anatolia. (See Fig.1; Yellow pained area) The Turkish-Persian Traditional Architecture developed during the Seljuk period (1040-1118 A.D) in the Persianate zone [11]. The Great Seljuk Empire is an Iranianized, Turkish [9,10] Sunni Muslim empire founded by the Kınık tribe of the Oghuz Turks. The Seljuk Empire was founded in 1037 by Tughril (990–1063) and his brother Chaghri (989–1060), both of whom co-ruled over its territories. From their homelands near the Aral Sea, the Seljuks advanced first into Khorasan and into the Iranian mainland [18]. They then moved west to conquer Baghdad, filling up the power vacuum that had been caused by struggles between the Arab Abbasid Caliphate and the Iranian Empire [18]. The subsequent Seljuk expansion into eastern Anatolia triggered the Byzantine–Seljuk wars, with the Battle of Malazgirt in 1071 marking a decisive turning point in the conflict in favor of the Seljuks [13].

Thus, The Great Seljuk Empire was founded in 1037 A.D by Tugrul Bey (1016–63). Seljuk Bey, who was the grandfather of Tugrul and had a high position in the Oghuz Yabgu State, gave his name to both the dynasty and the empire that ruled the country. At these crusading Turkish Tribes formed the Anatolian Selchuk State (1071-1308 A.D) in Asia Minor and as from 1277 A.D by the setting up of regional provinces Turkish Art began to take root in this region. One of these provinces, the Osmanlı (Osman's Sons) Province of 1299 A.D developed into the Ottoman Empire and created the most magnificent monuments in Asia, Europe, and North Africa, for about 600 years (See Fig.1).

II. The Role of Pre-Islamic Cultures on Turkish Architecture in Iran

It is possible to reveal the possible structural and formal interactions of architecture by separating the periodical and cultural features of the structural and decorative elements of architecture

belonging to different periods and cultures, and by examining the form, space, geometry, and proportions.



Figure 2. Persian Empire at its greatest extent in 525 B.C. [1]

The pre-Islamic styles of Iranian architecture draw on 3-4 thousand years of architectural development from suffered its share of destruction, including Alexander the Great's decision to burn Persepolis, there are sufficient remains to form a picture of its classical architecture [4]. Comparing the arches, (Fig.3) domes, and the full curve values forms, with little but rich engineering techniques, intuitive and experimental forms of static, show full knowledge and awareness in the 11th Century [5].



Figure 3. Tāq Kasrā or Ayvān-e Kesrā are the remains of a Sasanian-era Persian monument in Iraq, dated 3 or 6 Centuries; It was the facade of the main palace in Ctesiphon and is the only visible remaining structure of the ancient capital city. The archway is considered a landmark in the history of architecture, [1] and is the second-largest single-span - egg shape vault of unreinforced brickwork in the world after the Gavmishan Bridge. [23]

II. I. Architectural Elements in Pre-Islamic Architecture in Iran and Transoxiana

Structural or architectural elements can be felt along with human senses and their forces. This fact can be seen inside and outside the buildings or a specific structural element.

The archways as structural elements in urban spaces, while the structural response needs to define the spatial qualities of the soul to represent the integration approach.

A. Pointed Arch on a Buddhist Icon

Archaeological studies show that while flat lintels were used in Ancient Egypt, and semicircular arches were used in Ancient Rome, tapering egg-form arches were used in Buddhist buildings in Iraq, Iran and Transoxiana.

In fact, a pointed arch shape very close to the Iranian and Turkish pointed arch, seen in Iran and Anatolia today, appeared in the Buddha statues (Fig. 5) in the 2nd Century Feyaztepe ruins of Southern Uzbekistan [14] and on a gate arch, belong to 7th Century Akbesim Buddhist Temple (Fig. 4) in Suyab [15]. And also, Tāq Kasrā or Ayvān-e Kesrā, (Fig.3) the remains of a Sasanian-era Persian monument in Iraq, dated 3rd or 6th Centuries is the largest egg-form pointed vault in the world [1].



Figure 4. An Early egg-shaped pointed arch in Central Asia was found during an excavation of a 7th-century Buddhist temple at Suyab (14)



Figure 5. Two types of pointed arches framing a Buddha statue can be seen in the 2nd-century Buddhist Complex of Fayaztepe Tirmiz (15). The inner arch shows the egg form, while the outer arch shows a top point.



Figure 6. Zoroastrian ceremonial complex and Towers of Silence (Dakhma), were used for burial ceremonies, Yazd, Iran [17].

B. Turkish Pointed arch in a Zoroastrian Tomb

According to Zoroastrian belief, the deceased was not cremated and buried in order to avoid contamination of the four main elements of nature (water, air, earth and fire). The corpse was expected to be torn apart and eaten by scavenger birds on a high point until the bones remained. Dakhma Gozari (burial ceremony) was performed for the dead [2]. In this context, according to religious beliefs, the circle was the best form of the plan to build a Dakhma because the circle was a symbol of eternity and the equality of the poor and the rich before God. The structure of Dakhma was functionally in line with the Zoroastrian religion, as it consisted of strong and high walls and an east-facing entrance. Also inside Dakhma is a sloping platform containing a large well or cemetery (astodan) [2]. The Dakhmas were built outside the city and on the highlands, in addition, a complex serving the families of the dead was usually built on the side of the hill [16]. (See Figure 6)

After the meat of the dead was eaten by the vultures, the bones were collected and placed in a ceramic container, and this container was placed in a tomb. The Turkish pointed arched tomb, which we see in the photograph in the Afrasiab Museum, is a Zoroastrian tomb and there are four vessels in one tomb. (See Figure 7) Afrasiab is an ancient region of Northern Samarkand, present-day Uzbekistan that dates from 500 BC to 1220 AD before the Mongol invasion in the 13th century. [16] A photograph taken from an excavation site among the exhibits in the Afrasiab Museum shows that a Turkish pointed arch was used in the construction of the tomb in AD 200 (See Photo-Fig.7). According to Pahlavi and Islamic sources, Efrasiyab is a grandson of Tūr (Avestan: Turiya) and one of the three sons of the legendary Zoroastrian king Feridun (Fereidun).

According to the Shahnameh work, Efrasiyab is the legendary king, the hero of Turan and the archenemy of Iran. In Persian (Persian) mythology, Efrasiyab is considered one of the most prominent among the legendary Turanian kings; Efrasiyab is a formidable warrior, skilful general and agent of Ahriman, who is endowed with magical powers of deception to destroy Iranian civilization [23]. In the Shahnameh, it is said that Efrasiyab's lineage is descended from the Persian king Feridun [23].

The fact that some architectural forms can be seen in Zoroastrian or Buddhist architecture in Iran and Iraq, like Afrasiab, can be interpreted in two ways. 1. In the same region, over time, communities of Buddhist or Zoroastrian faith may have lived. 2. The people of the region may have converted (like Turks becoming Muslims). In any case, the fact that the arch of the tomb door seen in the excavation photograph we saw in the Afrasiab Museum is a Turkish pointed arch is the most important proof that the community living here, whether Buddhist or Zoroastrian, is Turkish.



Figure 7. Turkish pointed arch is seen on the facade of the tomb (2nd Century), among the excavation photos, in the Afrosiyob Archaeology Museum in Samarkand. (Photos had been taken by the Author, 2022)



Fig.8. Turkish pointed arch on the building in Armenian and Georgian old locations in Caucasia-There are probably Christians among the Turks who came to these regions before the birth of Islam in 622.

III.The Turkish Arches Properties

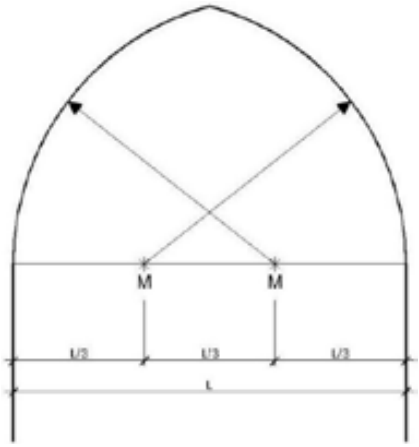


Figure.9

Type 1. The pointed arch is drawn by dividing the arch opening into 3, the section from one side of the symmetry axis as the center of the half arch on the other side (Fig.9).

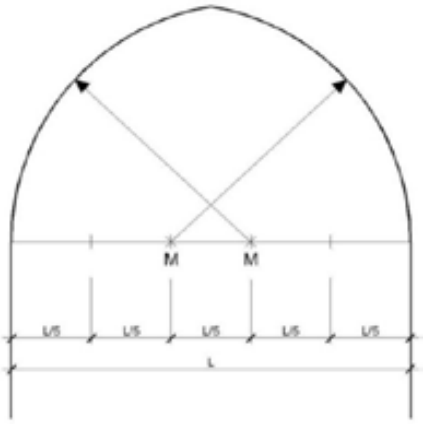


Figure.10

Type 2. The pointed arch is drawn by dividing the arch opening into 5, the section points close to the axis of symmetry as the center of the remaining half of the arch axis on the other side (Fig. 10).

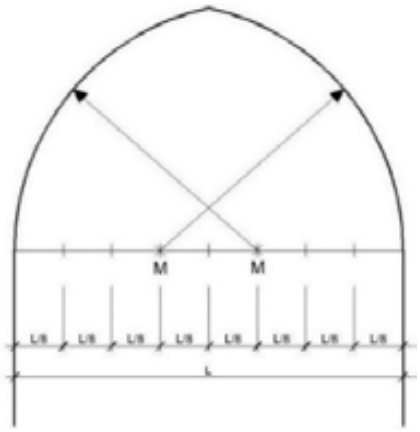


Figure.11

Type 3. Pointed arch is drawn by dividing the arch opening into 8 and section points close to the axis of symmetry being the center axis from the other part of the half arch. (Fig.11)

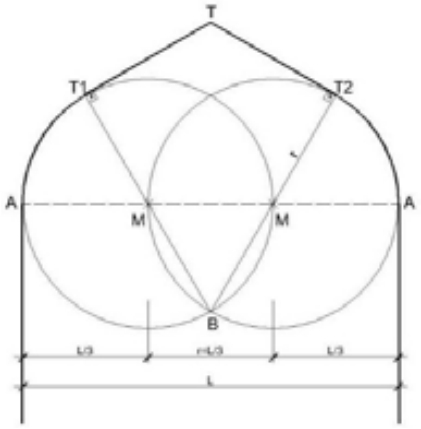


Figure.12

Type 4. It is the pointed arch formed by the tangents drawn to the circles from the T1 and T2 points, which is obtained by combining the B intersection points and M center points of the circles drawn with r=L/3 radius. (Fig.12)

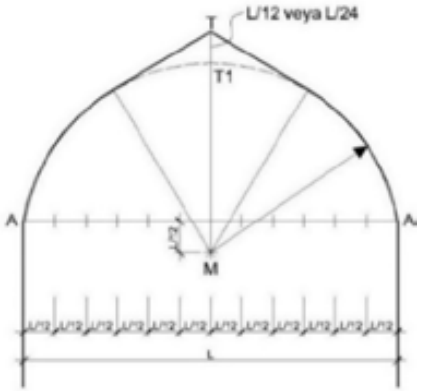


Figure.13

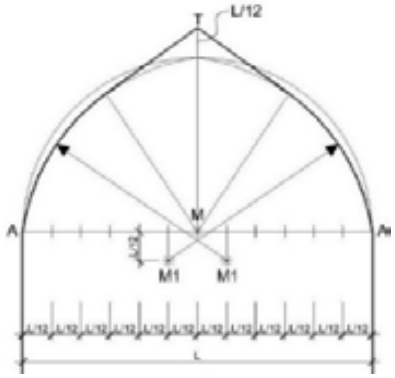


Figure.14

Type 5. The arch span is divided into 12. It is the only center taken 1/12 unit below the Stirrup line. A semicircle AT1A with center M is drawn.

The T-peak is marked 1/12, sometimes 1/24 units above, and forms this type of pointed arch with tangents drawn from this point to the semicircle. (Fig.13)

Type 6. Arch opening is divided into12. Sliding down the nearest point of the arch axis on the 1/12 length of opening section two M1 and M2 centers were found. First being the center point M is the midpoint of the stirrup lines, drawn semicircle T1 takye is raised to L / 12 length, T point is found. Then M1-M2 centered circles parts and with tangents drawn from T point are complete. (Fig.14)

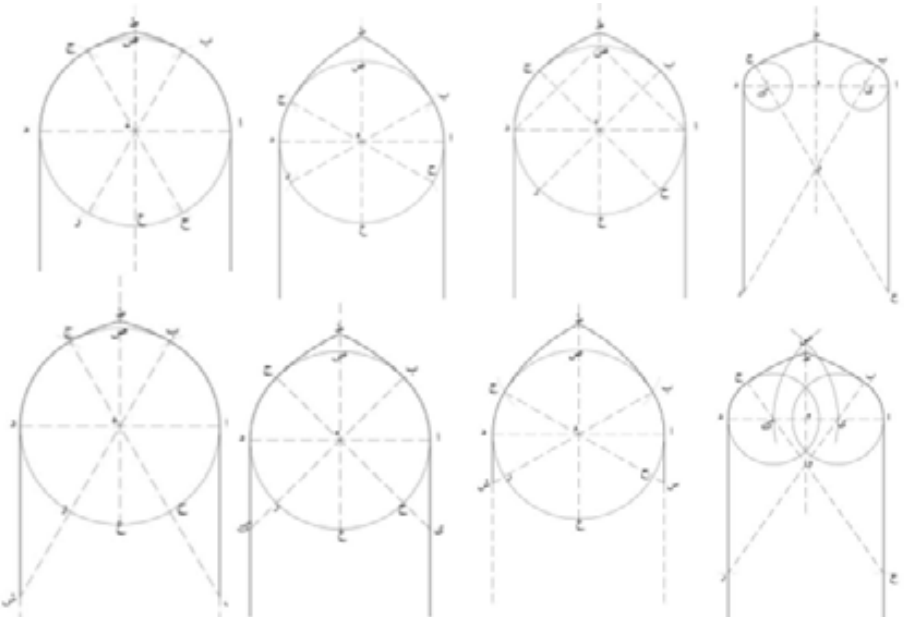


Figure 15. Iranian Pointed Arches are similar to Turkish Pointed Arches, but instead of the pointed arch created by drawing a straight line, a tangent is created with a second circle in the Iranian arch. I believe that this form driven from Uzbekistan to Iran, after the Timurid period in the 14th century. Until the 14th century in Iran, the Turkish pointed belt types described above must have been used.

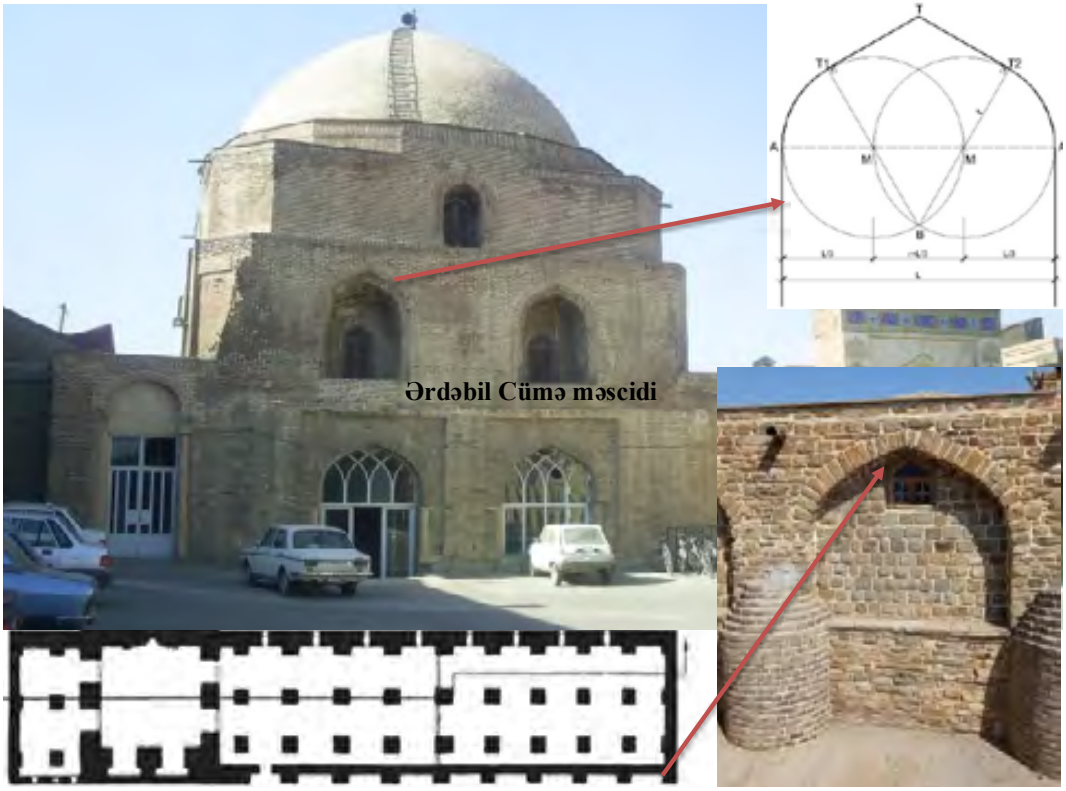


Figure 16. Turkish Pointed arch on the Ardabil Cuma Mescid in Iran, Great Seljuk era Building



Figure 17. Turkish Pointed arch on the Pirsaat Xanagahı, Great Seljuk era Building [Photos from 18]

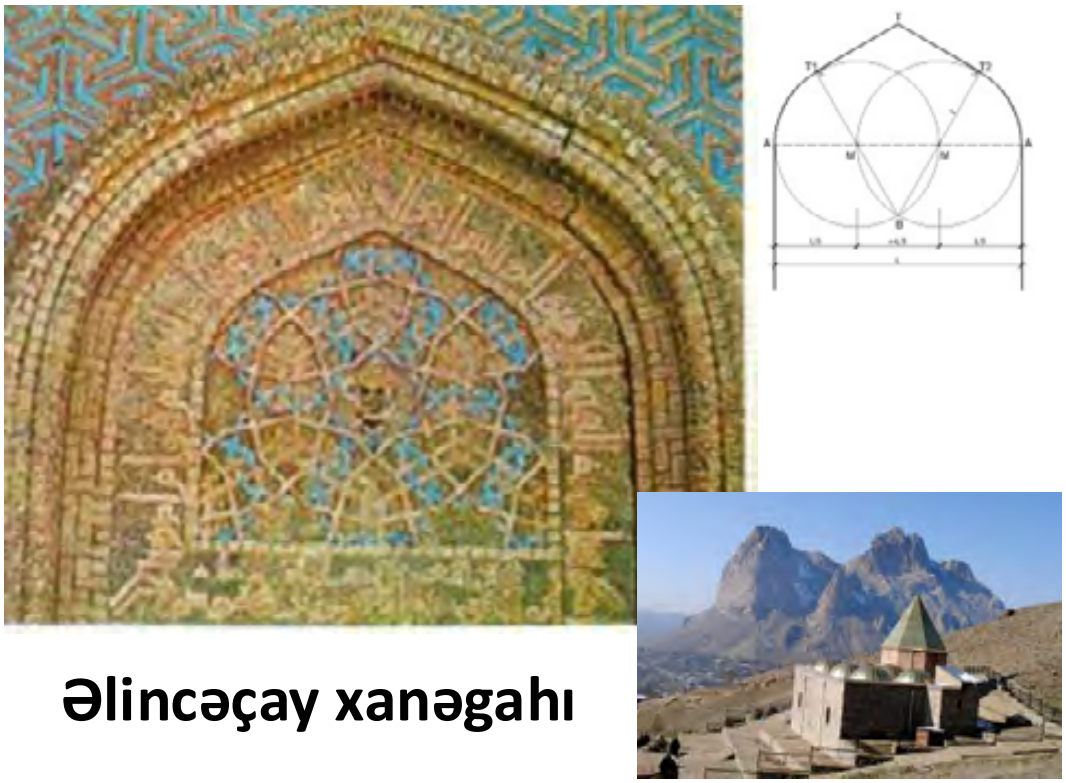


Figure 18. Turkish Pointed arch on the Alincaçay Xanagahı, Great Seljuk Building [Photos from 18]



Figure 19. Turkish Pointed arch on the Gumbed-I Kabud in Maraga, Great Seljuk Building



Figure 20. Remnant of the Turkish Pointed arch on the original mihrab plate of Goy Mescid, Tabriz, Iran

IV. Early Planning of the Mosques in Eastern Anatolia and western Iran

A. Transversly Developed Plan with a Dome

Transversely developed plan with multi column and a dome in front of the mihrab can be seen in Southeast Anatolian Turkish architecture at 12th Century. (Fig. 21-26)

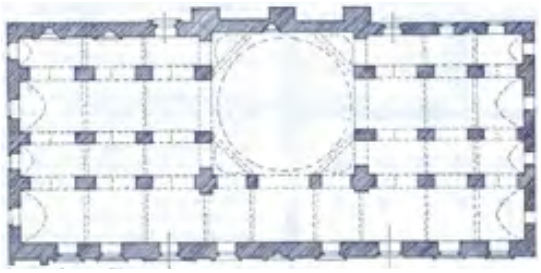


Figure 21. Silvan Great Mosque in Southeast Anatolia



Figure 22. Diyarbakır Great Mosque is the earliest example in Anatolia. The multi-legged main venue that develops transversely to the south of a large courtyard forms the original design.

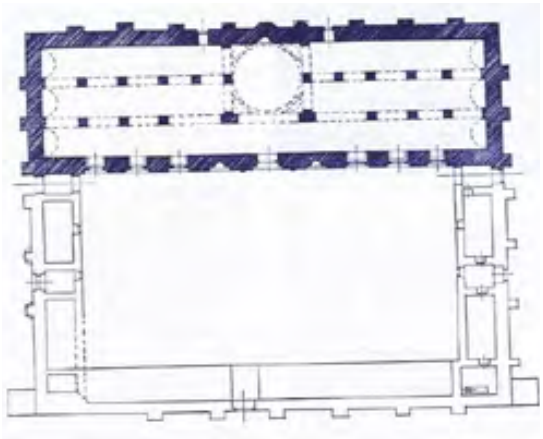


Figure 23 Kızıltepe-Dunaysır Great Mosque was built by Mardin Artuklular (1184-1205) in Kızıltepe, Anatolia

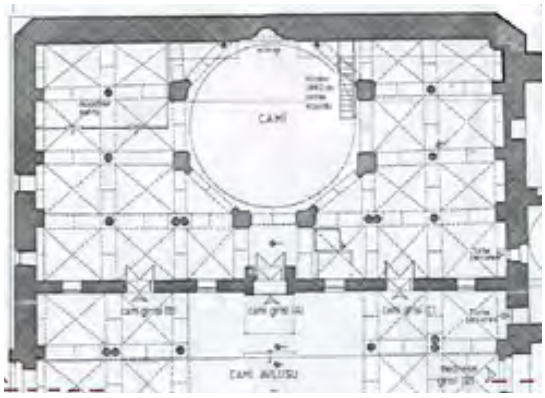


Figure 24. Manisa Great Mosque (1366)

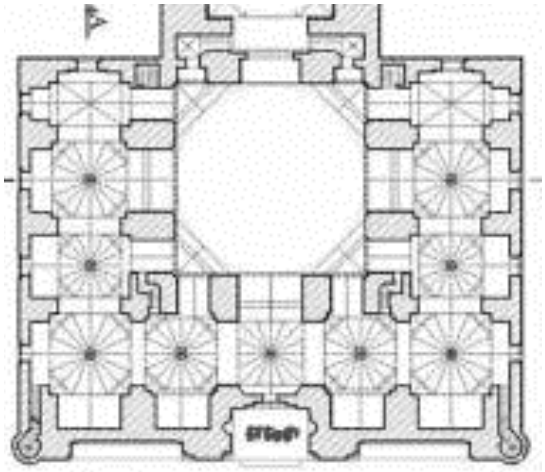


Figure 25. Supposed first plan form of Goy Mescid, Tabriz, Iran- before the construction of the tomb, 14th Century.

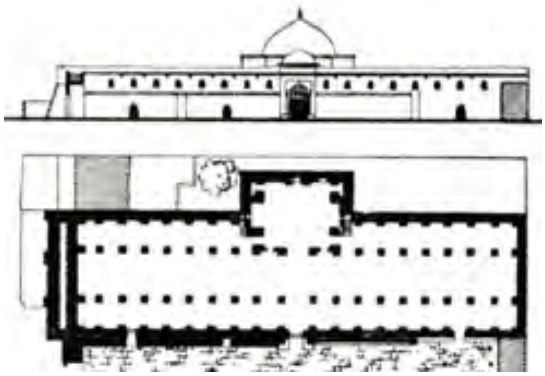


Figure 26. Darband Cuma Mescidi (14th Century) [18]

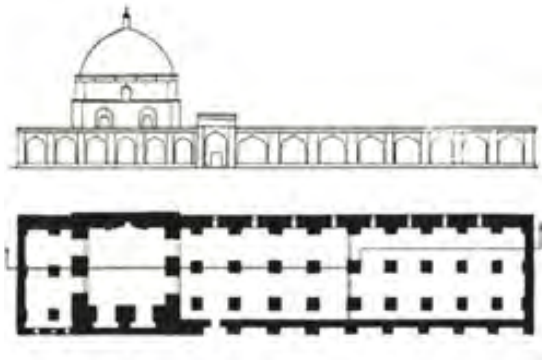


Figure 27. Urmia Cuma Mescidi (14th Century) [18]

The domed, transversely developed plan scheme in front of the mihrab, seen in Anatolia and Iran during the Great Seljuk period, led to the emergence of 2 different types in Ottoman Architecture. Type 1; single-domed mosques, type 2; they are multi-column (multi-legged) mosques. (Fig.31)

B. Multi-Legged Plan Mosques in Iran and Anatolia

The transverse plane scheme and in front of the mihrab with a dome were become dominant with many columns in this plan scheme. The second step, it will be multi column (legged) plan shape. (Fig.28-31)

Multi-Legged Plan Type Mosques was popular in the Early Ottoman Architecture. In the 12th century, in Danişmentli mosques, while the dome design is indispensable in front of the multi-legged main space and the mihrab, the space leaves the transverse development aside, and a multi-footed and near-square space structure emerges. (Fig.29)

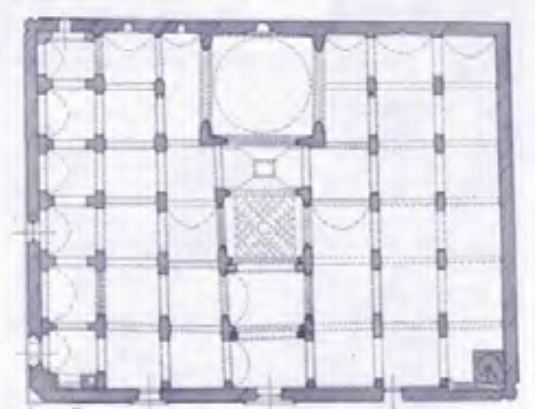


Figure 28. Erzurum Great Mosque in East Anatolia

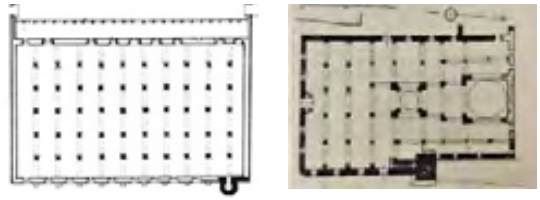


Figure 29. Danişmentli Mosques in Anatolia (Sivas Great Mosque and Kayseri Great Mosque)

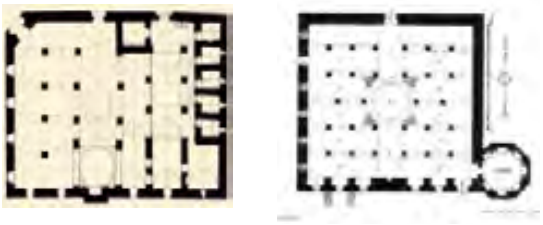


Figure 30. Danişmentli Mosques in Anatolia (Kayseri Güllük Mosque and Lala Muslihiiddin Mosque)

Conclusion

Although the architecture that developed on the axis of Anatolia and Iran, which started with the establishment of the great Seljuk state on Iran in 1040 and the making of Rey the capital, was born in Transoxiana and re-emerged in the west (North Africa and Anatolia), Iranian artists played an important role in this development. It is known that the Timurid period architecture, which was effective in Transoxiana in the 14th century, started with the masters brought from Iran by Timur, who came to Anatolia for the Ankara War, on his return to Samarkand.

The Turkish pointed arch was seen in Samarkand, Bukhara, North Africa (Tulunoğlu Mosque), and the Caucasus before the 9th century.

The Turkish pointed arch, seen in Afrasiyab in the 2nd century, was used in the 9th century in the Ismail Samani Tomb in Samarkand and in the Tulunoğlu Ahmet Mosque in North Africa in the same century.

The Turkish pointed arch, which was also seen in Iran in the 11th and 13th centuries. It is the Turkish identity that continued in the Ottoman Architecture in Anatolia in the centuries. Turks created their own architectural identity (with Turkish pointed arch) in AD.

They have identified it since the 2nd century and used it as an identifying element (stamp) wherever they went.

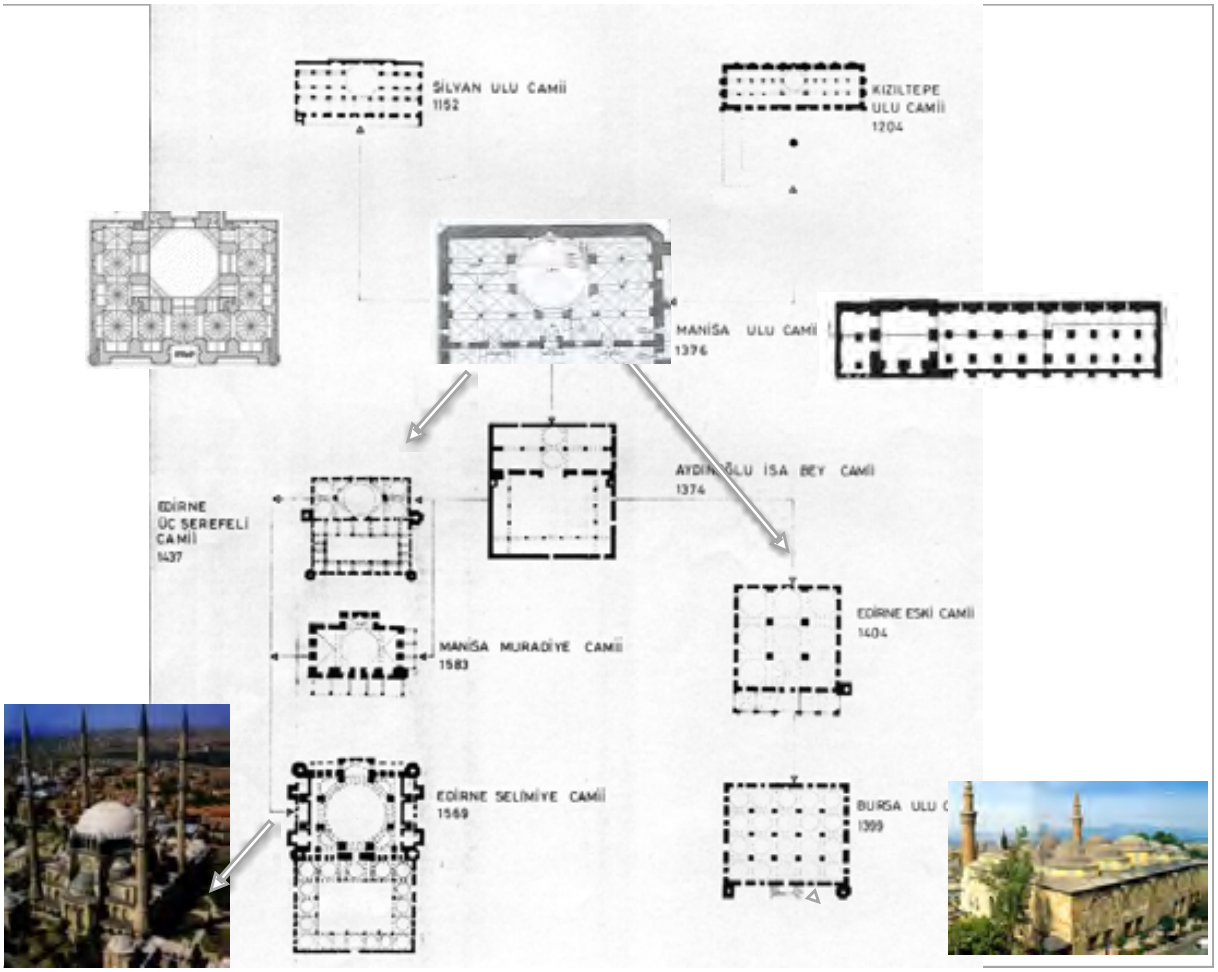


Figure 31. Progress of Ottoman Mosque Architecture-Schematic Analysis; The domed, transversely developed mihrab front plan scheme seen in Anatolia and Iran during the Great Seljuks period led to the emergence of 2 different types in Ottoman Architecture. Type 1; single-domed mosques, type 2; multi-column (multi-legged) mosques.

References

1. R. Bedrosian, "Maps of Ancient World," [Online]. Available: https://archive.org/details/HistoricalMaps/page/n163/mode/2up.
2. R. S. Gholampoura and D. H. Banib, "A Research on Construction Method of Indian Parsis' and Iranian Zoroastrians' Dakhmas," Armanshahr Architecture & Urban Development, vol. 14, no. 35, pp. 109-125, 2021.
3. L. Abolghasemi, "The norm of form finding in Iranian Architecture," Jahad Daneshgahi Publications, Iran, 1978.
4. K. Taghizadeh, "An Investigation of Historical Structures in Iranian Ancient Architecture," Architecture Research, vol. 1, no. 1, pp. 1-7, 2011.
5. M. Farshad, "Iranian engineering history," Gooyesh publications, Iran, 1988.
6. E. J. Keall, "AYVĀN-E KESRĀ," in Encyclopædia Iranica, vol. III/2, Awāʾel al-maqālāt–Azerbaijan IV, E. Yarshater, Ed., London and New York: Routledge & Kegan Paul, pp. 155–159, 1987.

7. M. A. Köymen, Büyük Selçuklu İmparatorluğunun Kuruluşu, Kuruluş Devri, c.1, Ankara, 2018.
8. W. Barthold, Turkestan, down to the Mongoli Invasion, translated from the Original Russian and revised by the author with the assistance of H. A. R. Gibb, M.A., London: Oxford University Press, 1928.
9. A. C. S. Peacock, "Aḥmad of Niğde's al-Walad al-Shafīq and the Seljuk Past," Anatolian Studies, vol. 54, 2004.
10. J. Scott and J. Meisami, Persian Historiography to the End of the Twelfth Century, Edinburgh: Edinburgh University Press, 1999.
11. M. Mandelbaum, Central Asia and the World: Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan, and Turkmenistan, New York: Council on Foreign Relations, 1994.
12. M. Tekin, Türk Tarihi Ansiklopedisi, İstanbul: Milliyet Gazetesi Yayını, 1991.
13. A. C. S. Peacock, Early Seljūq History: A New Interpretation, London and New York: Routledge Studies in the History of Iran and Turkey, 2010.
14. M. Cezar, Anadolu Öncesi Türklerde Şehir ve Mimarlık, İstanbul: İş Bankası Yayını, 1977.
15. A. G. Küçükkaya and O. Abdurazzoqov, "Early Islamic Turkish Tombs In The Central Asia - Maveraunnehır And Kaffal Shashı Tomb In Tashkent," presented at the International Online Symposium, Yeditepe University, Faculty Of Architecture, Tashkent Institute Of Architecture And Civil Engineering, Apr. 7, 2022, pp. 33-51. [Online]. Available: https://drive.google.com/drive/folders/1Z_GWXsHqqKjIs_RJG2WYZ5yjtjEVLnPb?usp=sharing
16. G. A. Fedorov-Davydov, "Archaeological Research in Central Asia of the Muslim Period."
17. B. Amanbaeva, V. A. Kolchenko, and K. A. Sataev, "Kyrgyzstan," in The Artistic Culture of Central Asia and Azerbaijan in the 9th–15th Centuries, vol. IV, Samarkand—Tashkent: IICAS, pp. 55-97, 2013.
18. G. Mammadova and Z. Mammadova, History Of Architecture Of Azerbaijan, Medieval Architecture, The Second Volume, Baku, 2005.
19. "Islamic Archaeology," World Archaeology, vol. 14, no. 3, pp. 393-405, Feb. 1983.
20. A. G. Küçükkaya, "Türk Mimarisinin Orijini Meselesi ve Türk Sivri Kemeri" (0rigine of Turkish Architecture and Turkish Pointed Archs), in I. Uluslararası Türk Kültürü ve Tarihi Sempozyumu, 19-21 Nisan 2018, Yeditepe Üniversitesi, İstanbul.
21. "Yeditepe Üniversitesi Tarih Bölümü I. Uluslararası Türk Kültürü ve Tarihi Sempozyumu 19-21 Nisan 2018 Bildiri Kitabı," [Online]. Available: https://www.academia.edu/37662446/Yeditepe_%C3%9Cniversitesi_Tarih_B%C3%B6l%C3%BCm%C3%BC_I._Uluslararas%C4%B1_T%C3%BCrk_K%C3%BClt%C3%BCr%C3%BC_ve_Tarihi_Sempozyumu_19201_Nisan_2018_Bildiri_Kitab%C4%B1.
22. Piyadeoğlu, Cihan, Selçuklular-Yeni Bir Devrin Başlangıcı, Kronik Kitap, Istanbul 2020.
23. https://en.wikipedia.org/wiki/Taq_Kasra#cite_note-Iranica1-1

SECTION II

RESTORATION



Inside of Goy Masjed, Tabriz

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
INTERNATIONAL HYBRID SYMPOSIUM - APRIL 25, 2023
Yeditepe University, Faculty of Architecture, Istanbul, Turkey
Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

RECOGNITION OF THE ARCHITECTURAL AND RESTORATION OF TABRIZ'S GOY-MASJID (BLUE MOSQUE)

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Abstract

Goy-Masjid of Tabriz is the only example of architecture from the Muzaffariyya complex of the Turkomans period of Qaraquyunlu has unique architectural features which have a valuable position in the architecture of Iranian mosques. Which made it different from earlier and later mosques. And different viewpoints are presented in terms of the difference in the architectural form with other mosques and the origin of its design, and it is emphasized to emulate the architecture of other regions. While our knowledge of the architecture of the original building is only through historical documents because natural and human factors have caused serious damage to its architecture throughout history. And the current building is the result of conservation, repair, and restoration operations. The purpose of this research is to provide views on the origin of the Goy-Masjid architecture and to analyze and examine a pattern of the architecture of Iranian mosques, four porches in the plan of the mosque, to find out how it is used and displayed in the form of the Goy-Masjid and also according to the features mentioned in the historical documents, the connection between the restoration operations and it should be checked. For this purpose, the research questions have been proposed as follows: What is the relationship between the form and plan of the Goy-Masjid and Iranian mosques, and the second question, what is the connection between the restoration operations carried out and the architecture of the Goy-Masjid? The research method used was the descriptive-analytical method. The results of the research showed: The form and plan of the Goy-Masjid have an Iranian origin, in which the pattern of Iranian mosques is observed differently and while the repairs and restorations carried out to protect and maintain the Goy-Masjid, the operations in the embellishment of the building have moved forward in line with the foundations, but in the geometry and proportions of the original structure, the features of the building have not been observed.

Keywords: *Goy-Masjid of Tabriz, Turkomans of Qaraquyunlu, Muzaffariyya complex, Turkomans Architecture*

Introduction

Since the architecture of the Goy[13]-Masjid[14] building has unique features compared to previous buildings and has emerged differently from the known designs in mosques, it has a specific place in the history of Iranian architecture. And even after the construction of the Goy-Masjid, there is no example like it or a design derived from it in architecture.

Knowing more about the architectural features of the Goy-Masjid helps to identify the architecture of the Turkomans of Qaraquyunlu and its origin and evolutionary path.

The values and ideology of this imperial, which influenced their monuments in their short-term government, have been given a valuable place in the history of architecture. In addition, such recognition and investigation will have a great impact on the protection and restoration operations of the Goy-Masjid and its surroundings in the future.

The purpose of this research is to provide viewpoints on the origin of the Goy-Masjid architecture and to analyze and examine a pattern of the architecture of Iranian mosques, four porches in the plan of the mosque, to find out how it is used and displayed in the form of the Goy-Masjid and also according to the features mentioned in the historical documents, the connection between the restoration operations and it should be checked.

While the only available source of information about the Goy-Masjid is historical documents and writings because due to the serious damage caused to the Muzaffariyya complex due to natural and human factors, there is little information about the ruins left from the mosque before its restoration operations.

Methodology

To achieve the goals and answer the questions, descriptive-analytical methods have been used.

By describing the history and architecture of the Muzaffariyya complex through library documents and evidence, an attempt has been made to introduce and identify the architectural features of this valuable historical complex, and by expressing the results of previous research and examining the architectural features of the Goy-Masjid, we can gain an understanding of its original architectural design and presented the results by analyzing the findings.

Previous Studies or Research

As mentioned, the importance of the architecture of the mosque and the unknown nature of some of its features have caused it to be emphasized in a lot of research and about those issues discussed.

Below, we have discussed the structure of some of this research.

[13] *Means Blue*

[14] *Mosque*

Research title		
Author and publication year	**Research question or purpose**	**Research content - results**
The main report: The essence of the tune of verses in the motifs form of the Goy-Masjid - (Golestan Quran Journal)		
Golestan Quran (2000)	Verses on the pillars of the dome	The architectural features and embellishments of the mosque have been described, and the way of writing the verses of the eight pillars of it has been discussed.
The Goy-Masjid or Muzaffariyya Mansion - (Journal of Faculty of Literature and Human Sciences, University of Tabriz)		
Hossein Nakhjovani (1948)	-	It describes the current state of the mosque, the kings of Qaraquyunlu, praises the embellishments and inscriptions inside and outside the mosque, and the writings of travelers.
The Goy-Masjid yesterday-today - (From the collection of articles of the 3rd Congress of the history of architecture and urbanism of Iran)		
Abdul Rahman Wahabzadeh (2006)	-	Description: the founder of the Muzaffariyya complex, history, the mosque's deed of endowment, the writings of historians and travelers, the causes of the damage to the complex, the Tabriz earthquakes, repairs, the characteristics of the dome, The comparison of the mosque with examples of the Islamic world, the plan and embellishments of the mosque, restoration, archaeological research and exploration around the mosque have been discussed.
Architectural Morphology of Tabriz Goy-Masjid - (Motaleat memari Iran Journal)		
Mohammad Baqer Kabir Saber – Hamed Mazaherian – Mahnaz Peyrovi (2013)	- The architectural identity of the Goy-Masjid of Tabriz is rooted in the architectural culture of which land? - If the volume composition of this building is derived from imported architectural models, then why do Iranian architectural forms make waves in their appearance? - How and to what extent was the cultural atmosphere of 9th-century Iran effective in the final development of this architectural work?	In the beginning, some views of scholars and researchers regarding this building and the origin of its form are pointed out, followed by the description of the history and architecture and understanding of the architecture of the Muzaffariyya complex, the architectural form of the mosque (plan, dome, embellishments), examples of similar buildings in Anatolia (Ottoman) and Timurid, a summary of the similarities and differences with the examples has been discussed. In conclusion, in terms of form, the Goy-Masjid is considered similar to Iranian mosques, and in terms of structure, body, and construction based on Iranian architecture and tile work, they consider it to be the result of the excellence of this art in the Timurid period, and the final product was an Iranian architecture.
Geometry and proportions in the architecture of the Quyunlu Turkoman period, Goy-Masjid (Firuze Jahan Islam) – (Ketab Mah Olum & Fonon Journal)		
Mojtaba Ansari - Ahad Nejad Ebrahimi (2010)	Trying to identify (the process of formation and development of Gereh and geometry and proportions), introducing and presenting drawing solutions to analyze the differences and similarities	Regarding the formation of geometry and Gereh in the embellishments related to Islamic architecture, the Turkoman period, the study of the geometry and motifs and artists of the Goy-Masjid and comparison with similar works under the headings of the Goy-Masjid, architectural features, geometry and proportions of the building, classification of embellishments, architect and The builder and calligrapher of the building have proceeded and the plan of possible proportions of the structure portal is presented.

Observations on Tabriz Goy-Masjid's Place in the History of Turkish Architecture and Its Latest Situation – (8 uluslararasi Turk Kulturu Kongresi Bildiriler-II)		
Nuri Seçgin (2013)	The subject of this research is to investigate the features of plan, architecture, and embellishments in the framework of relations between Anatolia and Tabriz.	At first, the building and construction date are introduced, then the traveler's writings, features of the plan and embellishments, and similarities with Anatolian mosques have been discussed. As a result, the research has identified the Goy-Masjid as one of the most important works of Turk architecture outside of Anatolia. To identify and describe some early Ottoman architectural buildings as a reference, it was the only representative of Tabriz architecture. However, the connection between Tabriz and Anatolia should not be considered a one-way effect but should be recognized and evaluated in the framework of mutual interaction.
The Origin of the Architectural Model of the Goy-Masjid in Tabriz - (Motaleat Memari Iran)		
Mohsen Dehghani Tafti – Zahra al Sadat Modarreszadeh – Gholam Hossein Memarian (2021)	- How has the Goy-Masjid of Tabriz been formed in political, governance, social, and cultural geography? - The construction pattern of Tabriz Goy-Masjid is rooted in the culture and architectural experiences of which region? Iranian or Ottoman architecture? - Where is the place of Tabriz Goy-Masjid's construction model in its entirety and parts, in the scope of its territorial architecture?	In the content of the research, the history and geography of the land at the time of the formation of the mosque, the biography of Jahanshah and his wife, the political and cultural relations of Jahanshah, the analysis of the architecture of the Goy-Masjid and the origin of the pattern, etc. have been discussed. The findings have shown that although there were extensive cultural connections between the Ottoman Imperial and the Qaraquyunlus during Jahanshah's era and before him, in the matter of architecture, the one-sided influence of Iranian artists, architects, and tilers on Ottoman architecture is evident. The Goy-Masjid of Tabriz, which is a mosque connected to a tomb, has completely Iranian roots in the sense of space, function, architectural drawing (plan), structure, facade, and embellishments, and in terms of the construction pattern, it was formed in the continuation of the expansion of Iranian dome buildings.
Nature, Politics, and Architecture; Reading out the interaction of nature, politics, and cultural components in the architecture-creating process of Tabriz Goy-Masjid – (Journal of Research in Islamic Architecture)		
Mohammad Baqer Kabirsaber – Amir Amjad Mohammadi (2019)	- What are the requirements and necessities of naturalistic architecture in Tabriz's environmental and climatic conditions? - To what extent did the architect of the Tabriz Goy-Masjid, architecture of this building, adhere the principles of convergence and harmony with the nature and climate of the region? - What is the reason for the existence of some incompatibility between the architectural design of the mosque and the system of nature and environment?	In the content of the article, knowledge of the building, background, theoretical framework, explanation of concepts (naturalism, nature avoidance), nature system in Tabriz plain, the relationship between architecture and nature in the structural system of Goy-Masjid, construction, environmental interactions (harmony with climate and nature, disharmony with climate and nature), ... and the expression and description of other cases have been discussed in each section. As a result, the findings have shown that in the quality of the interaction between the natural environment and the artificial environment of the Goy-Masjid architecture, the component of authoritarian politics and the grandeur of the monarchy prevailed over other components. And the native architectural culture of the region and the traditional measures of assimilation with the climate has been overshadowed by the idealism of the Qaraquyunlus.

Table 1. Some of the Previous Studies or Research

Turkomans (Turkomans Architecture)

Turkomans had migrated from Central Asia. Who have been marching and showing their power for several decades from Azerbaijan to Khorasan and from Shirvan to Fars (Kabirsaber and Peyrovi 2014, 73). Two powerful clans of this imperial with origin from Anatolian land were Aqquyunlu in Diyarbakir and Qaraquyunlu in the north of Lake Van (Javadi 1973, 90). Among the most important architectural traces of these two Turkoman imperials in Tabriz are the Sahib-Abad complex belonging to the Aqquyunlus and the Muzaffariyya complex belonging to the Qaraquyunlus.

In 1202 AD, the Qaraquyunlus led by Teoreh Beyg of Oghuz descent (the 8th ancestor of Jahanshah, the third king of the Qaraquyunluhs) came from Turkestan to Eastern Anatolia and Iran with thirty thousand tents (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 9). Qaraquyunlus known as Baranians (Zokā 1989, 183) ruled Azerbaijan and a large part of Iran in the 15th century AD (Kabirsabar, Mazaherian, and Peyrovi 2013, 8). Qaraquyunlus had migrated to Anatolia before the start of their rule during the invasion of Genghis or the rule of Arghun-Khan (Hashemi 2012, 50). But in the year 1406 AD, with the defeat of Mirza Abu Bakr by Qarayusuf on the banks of the Aras River and the capture of Tabriz by him, he chose it as the capital of the Turkoman imperial (Sultanzadeh 2010, 38). Qarayousef is known as the first king of this government, and after him, his son Iskandar bin Qarayousef came to rule.

After the death of the last Ilkhanate and the removal of Al Jalair (centered in Tabriz), the Qaraquyunlus imperial was formed, and it ended (in 1466 AD) with Jahanshah's attack on Diyarbakir (Anatolia) and with the defeat of Uzun Hassan, the king of Aqquyunlu (Hashemi 2011, 50). Jahanshah (Iskander's brother) came to power with the defeat and retreat of Iskandar from Shahrukh in 1434 AD and the surrender of Jahanshah, and Shahrukh handing over Azerbaijan and northwestern Iran to him in 1435 AD. (Sultanzadeh 2010, 38). After Jahanshah, the last king of Qaraquyunlus was Hasan Ali bin Jahanshah who ruled for one year (Nakhjovani 1948, 12).

During Jahanshah's era, the Qaraquyunlus was in the neighborhood of the Timurid, Ottoman, and Aqquyunlu of Turkoman imperials. This branch of Turkoman imperial lasted for 63 years, and Jahanshah bin Qarayousef was its third king, and after he was killed in 1467 AD, he was also buried in the Muzaffariyya complex (Nakhjovani 1948, 12). While during his reign, the Qaraquyunlus were at the peak of their power. And Azerbaijan (Northwest of Iran) had become one of the centers of culture and civilization (Wahabzadeh 2006, 214). In the documents, Jahanshah is mentioned as a person who is interested in development (Mashkur 1973, 641). Jahanshah After the death of Iskander was engaged in the

construction and settlement of Tabriz and built a complex of beautiful buildings in the city (Sultanzadeh 2010, 38). Who tried to legitimize the capital (Tabriz) and increase the prestige of the city by consolidating the power and eliminating competitors? (Kabirsaber and Mohammadi 2018, 90) After Jahanshah, when the power of Qaraquyunlus was reduced, Uzun Hasan founded the government of Aqquyunlus (Javadi 1973, 91). The difficulty in knowing the history of Qaraquyunlu is more than Aqquyunlu, and the reason for this seems to be the lack of stability of the Qaraquyunlu imperial, they have not got a chance to have scribes in the court like other governments to write history and record events (Kabirsaber and Peyrovi 2014, 78).

Muzaffariyya Complex

The Muzaffariyya complex was a trace of the Turkoman era of Qaraquyunlu in Tabriz, and due to the damage caused throughout history, only the ruins of the Goy-Masjid remained from this valuable complex. At the time of its construction, this complex was located outside the city and at the khiyābān gate, next to the old historical road Kohne Khiavan (Wahabzadeh 2006, 242). And the northwest-southeast axis of the Silk Road was also located in the north of the complex (Mohammadzadeh and Mansouri 2017, 19). But Peyrovi and Kabirsaber (2016) regarding the location of this road Silk Road have considered it more logical to pass through the complex's Meydan (square) than inside the Goy-Masjid Sahn (Courtyard) (Peyrovi and Kabirsaber 2016, 18). With its construction, an important center was formed in the east of the city, and the later period, with the construction of the Sahib-Abad complex in the north of the city, the Bazaar (as the center of the city) was developed towards these two centers (Mohammadzadeh and Mansouri 2017, 19).

The Muzaffariyya complex is considered the works of Jahanshah, one of the most important rulers of Qaraquyunlus in their capital, Tabriz (Javadi 1973, 90).

During the period of Aqquyunlus, the daughter of Jahanshah Saleheh-Khātun endeavored to complete and built buildings of the Muzaffariyya complex (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 8). Wahabzadeh (2006) believes that Jahanshah was undoubtedly under the influence of Anatolian architecture (his origin means the West) and under the influence of the East, as he was also a person of good taste and a professional poet, he wanted to build a complex with the artistic characteristics of both Islamic lands (Wahabzadeh 2006, 237).

Based on historical documents and analysis, the Muzaffariyya complex was built as a religious-educational complex, and during the Ilkhanate period, such buildings were known as Abvab al-Albar (Hag Parast and Nejad Ebrahimi 2014, 90).

This complex included various elements in line with its function. Like a Masjid,

Maqbareh[15], Sahn[16], Howz Khaneh[17], Madrasa[18], library, Caravanserai, Sufi Khangah[19], Qanāt[20], Zemestani & Tabestani Qorfes[21] , vast Bāqāt[22], etc. (Figure 1) And it was named after its builder Ab-Al-Muzaffar Jahanshah (Wahabzadeh 2006, 216) (Hag Parast and Nejad Ebrahimi 2014, 91 & 94) Jahanshah had been given himself the epithet of Ab-Al-Muzaffar and Muzaffar-Aldin (Wahabzadeh 2006, 213).

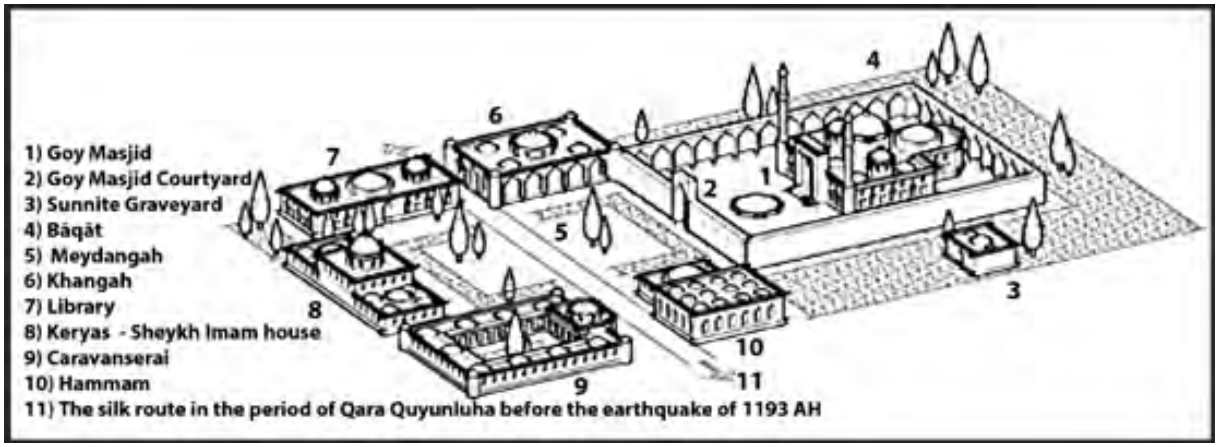


Figure 1. Reconstruction and hypothetical design of the Muzaffariyya complex in the Qaraquyunluhs period in another research, (Kabirsaber, Mazaherian, and Peyrovi 2013, 9)

According to Lisa Golombek (1995), among the monuments of the lustrous period of the Turkomans in Tabriz, there are no traces left except the Goy-Masjid, which should be considered the same as Timur's Samarkand and Shahrukh's Herat (Golombek 1995, 62). There has also been a fact that most of the architects of Samarkand and Herat's historical monuments were from Tabriz, Shiraz, and Isfahan (Wahabzadeh 2006, 238).

On the other hand, the possibility of existing open space like a central square (in the Muzaffariyya complex) with the elements of the complex around it. (Haqparast and Nejad Ebrahimi 2014, 94). This feature of the complex is having a Meydan[23], not unlike Samarkand's Registan complex.

Goy-Masjid (Blue Mosque)

The Goy-Masjid as an element of the Muzaffariyya complex with its unique architectural features, both in terms of architectural form and decorations, has an important place in the history of Iranian architecture.

Based on inscriptions and documents, the time of its construction reaches before the date of 1468 AD, which was built by the

[15] *Tomb*
[16] *Courtyard*
[17] *Pools*
[18] *School*
[19] *Monastery*
[20] *Aqueduct*
[21] *Hibernal and Estival Rooms*
[22] *Gardens*
[23] *Square*

order of Jahanshah by his wife Jahan-Khatun-Jan-Begum (Ibn-Karbalaie 2004, 524). According to history, the most influential person in the political and social life of Jahanshah was his wife (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 8). While another construction date has been found in the inscriptions. However, it is believed that the date 1465 AD in the inscription of the entrance portal belongs to the time when the Kashi-Kari[24] of the portal was completed (Kabirsaber, Mazaherian, and Peyrovi 2013, 8).

Hafez Hossein Karbalaie (2004) in his description of the mosque in the second half of the 16th century «… At the eastern entrance of Tabriz, which is called the Khiyābān, there is a very beautiful and elegant mansion (Complex) known as Muzaffariyya. Which is one of the relics of Abul-Muzaffar Jahanshah King, the son of Qarayousef, the son of Tore Mesh, and the son of Beiram the Turkoman Khāje. This imperial is also called Qaraquyunlu and Barani. It seems that this complex was built by the efforts of his respected wife, Khatun Jan Begum, … (may God teach her proof). The mentioned person was very charitable, righteous, and chaste, and was buried in the same tomb. And… (As Jahanshah, he used the pseudonym Haghighi in poetry), was a great king. On the twelfth of the fourth month of 1467 AD, he was killed by Hasan the King, and he was buried in that Maqbareh along with most of his children.» (Ibn-Karbalaie 2004, 524).



Figure 2. Entrance of Mosque (Jan 2023), (Authors)

[24] *Tiling*

The architect of this construction was Mir Shams-Aldin Memar from Tabriz, or Khāje-Ali-bin-Osman Kujaji under the management of Ez-Aldin Qāpuči (Hag Parast and Nejad Ebrahimi 2014, 94). While Hossein Karbalaie states, Khatun-Jan-Begum called the important masters of Tabriz to the palace to build the Muzaffariyya complex and chose Kujaji among them (Seçkin 2013, 1026). In terms of architecture, it has unique features. Which contains a large part of Turkmen's art (Hag Parast and Nejad Ebrahimi 2014, 91). Its body was built in eight years and its interior design and Kashi-Kari in twenty-two years (Golestan Quran 2000, 21). The name of the mosque is also derived from its Kashi-Kari embellishments (Mo'arraq[25]), which are named because of their color. In Turk, it is known as Goy-Masjid, and in Persian, it is known as Masjed-e Kabud (Blue Mosque). It is also known as the Firuze-ye-Islam[26].

It is noteworthy that the building of the Goy-Masjid was built in combination with the Maqbareh along with its specific elements around it. That the Howz-Khane-ha, Sahn, and Revag[27] were part of those elements. This family tomb is the burial place of Jahanshah, his wife, and his children (Wahabzadeh 2006, 214).

The Goy-Masjid has been exposed to steady and stern damage throughout history due to political, economic, natural, and religious reasons. And the mosque and tomb from that complex have reached the modern era with repairs and restoration.



Figure 3. South view (exterior view of the tomb from the back) (Jan 2023), (Authors)

[25] *A type of Kashi-Kari*
[26] *Turquoise of Islam*
[27] *Porch*

The Architectural Features of Goy-Masjid

The Goy-Masjid was built with two connected Gombad-Khāne[28], the largest one belonging to the mosque and the other smaller dome belonging to the Maqbareh (in the south of the building) and with a minaret on the sides of the portal or entrance porch. Also, it was built without a Miyansara[29], and the Sahn facing the entrance portal is considered the mosque courtyard (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 12).

The entrance to the mosque is from the porch of the entrance portal in the north of the building and access to the Maqbareh is from inside the mosque, which is after entering the inside of the mosque from the sides of the mosque's mehrāb (Figure 5).

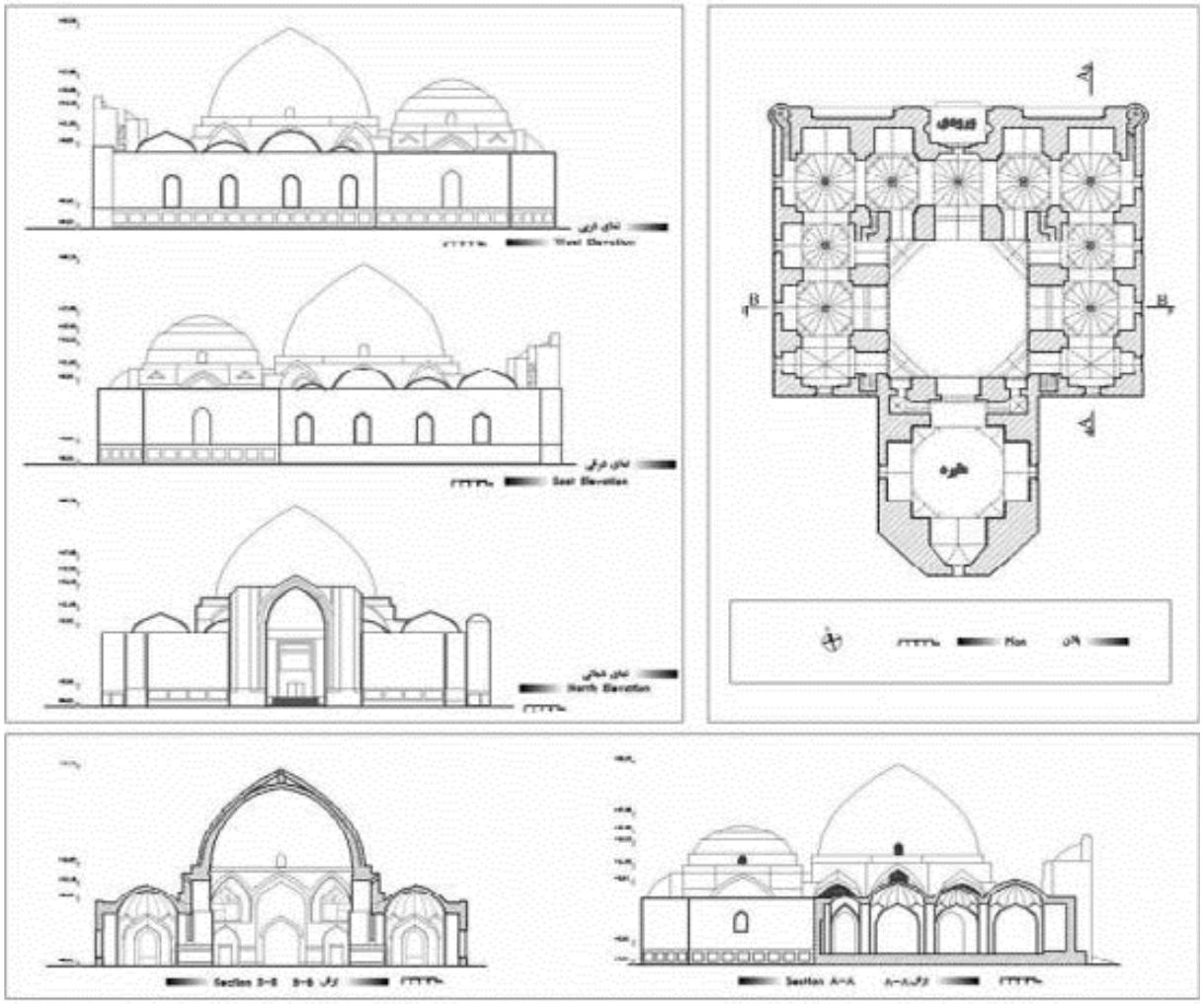


Figure 4. Plan, sections, and views of the Goy-Masjid, (Hag Parast and Nejad Ebrahimi 2014, 91)

[28] *Rotunda domed hall*

[29] *Central courtyard*

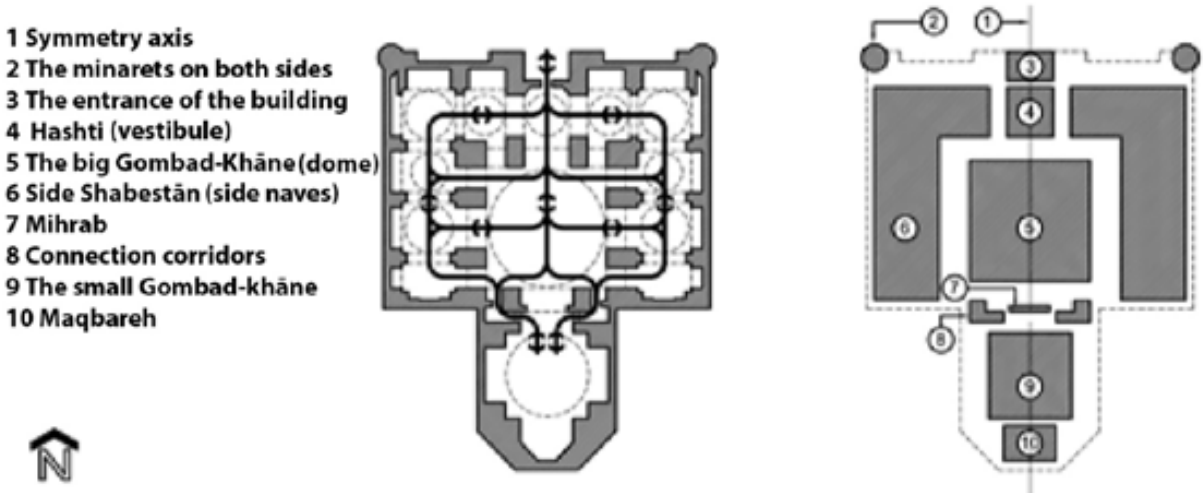
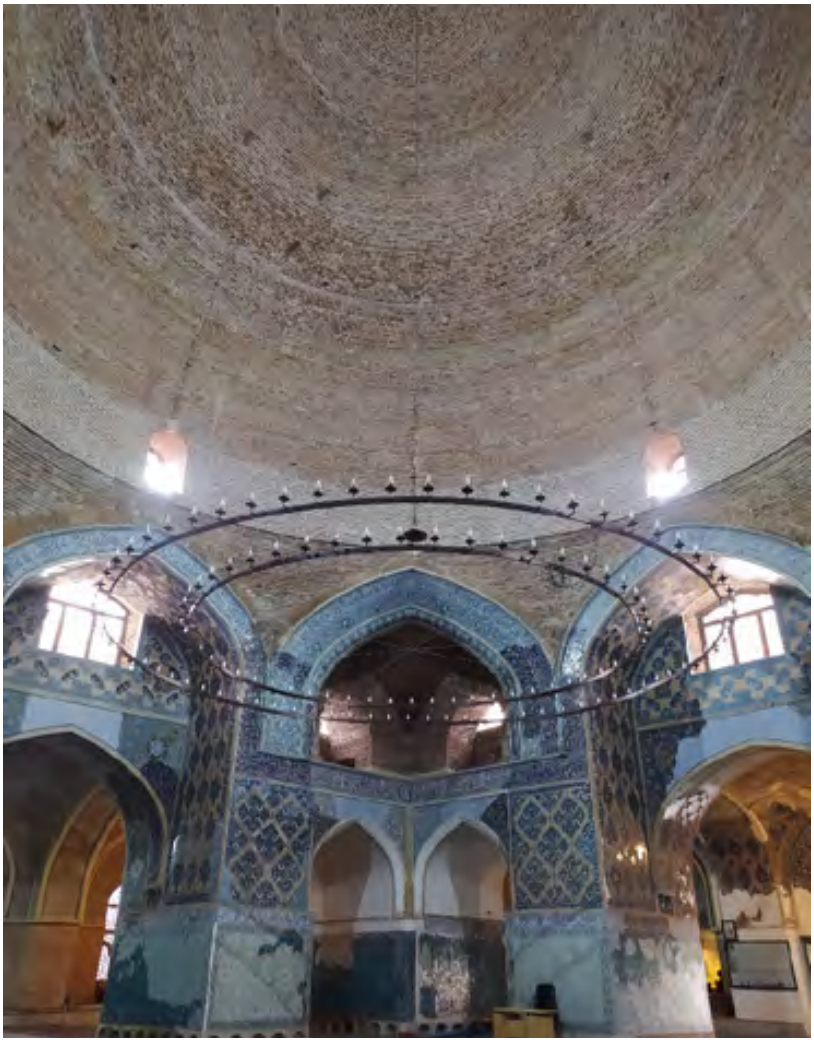


Figure 5. The connection between the spaces of the Goy-Masjid, source: Kabirsaber, Mazaherian, and Peyrovi 2013, 11)



(Figure 6. The big Gombad-Khāne (Dec 2022), Authors.)

Due to the planning and decorative features of the Goy-Masjid, Nuri Seçgin (2013) considered it one of the most important buildings in the history of Turk architecture, which represents a school that is reflected in many buildings of its time in the context of cultural, social, and economic relations (Seçgin 2013, 1026).

In terms of its form of plan and its specific volume, it is different from other architectural examples of Iranian mosques, and it is built in a compact and mass architecture, which has a beautiful visual interaction with the surrounding space despite the limited connection of the internal spaces with its surroundings (Kabirsaber, Mazaherian, and Peyrovi 2013, 6 & 13). The plan of the mosque is in the form of an inverted T. that the symmetry of the architecture in the building should be attributed to the proportions of the Timurid architecture of the Khorasan (of Iran) and Mā-Warā-an-Nahr[30] regions (Ansari and Nejad Ebrahimi 2010, 39). While it does not have a Miyansara like other mosques.

At the same time, it has been designed in a way that is compatible with the climate of Tabriz (Kabirsaber, Mazaherian, and Peyrovi 2013, 10). Jahanshah's wife and daughters had built mosques in the cities of Iran, Mashhad, Tabriz, and Taft, which had similar characteristics, such as the absence of a Miyansara, the privacy of the mosque space due to belonging to a Khangah complex or Sufi thought, a cultural base due to its connection to a Khangah, ... (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 10). Sultanzadeh (2010) believes that "the design and execution of the mosque's embellishments are derived from Iranian art, but the characteristics of the design are adapted from Ottoman mosques." (Sultanzadeh 2010, 167). On the other hand, Ertuğrul Ökten (2014) attributes the plan of the mosque to the Rab'-e Rashidi building in Tabriz, which was beyond Timurid art (Ökten 2014, 376).

In the architectural history of Iranian mosques, the Goy-Masjid, with its special architectural style, has shone and extinguished once, like a single star, which after its construction "could not arouse the enthusiasm and desire of subsequent architects to repeat and complete its form." (Kabirsaber, Mazaherian, and Peyrovi 2013, 6 & 21). Which the Qaraquyunlus tried to declare their political-social authority through the glorification and grandeur of the architectural language (Kabirsaber and Mohammadi 2019, 105).

As mentioned, the origin of the Goy-Masjid plan in the form of two back-to-back Gombads without a courtyard is attributed to the evolution of similar examples in Ottoman architecture, such as Pustinpuş Baba Zawiyah in Yenişehir, Orhan Camii in Bursa, Yildirim Mosque in Bursa, Hüdavendigar Mosque in Bursa, Yeşil Cami[31] in Bursa, etc. (Figure 8) (Wahabzadeh 2006, 238).

[30] *Transoxiana*

[31] *Mosque*

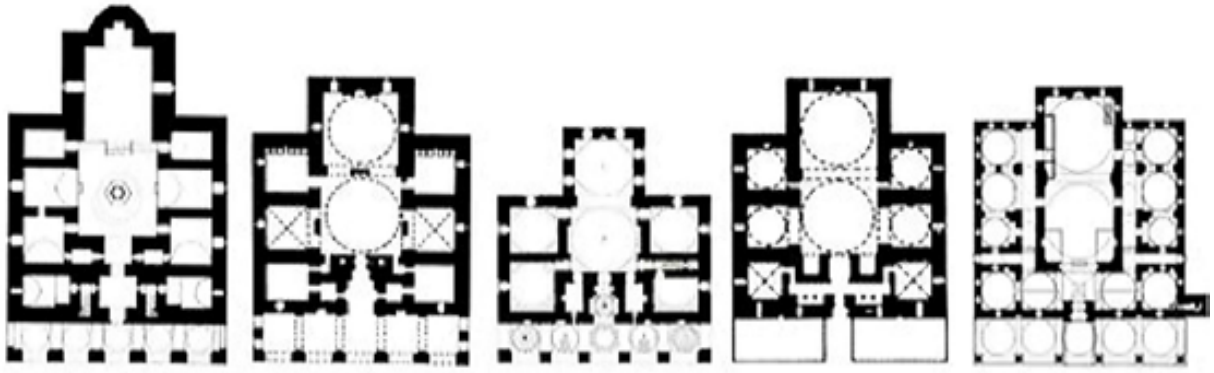


Figure 8. Plans of some two- Gombad[32] Anatolian mosques in the Ottoman period after the conquest of Bursa, (Kabirsaber, Mazaherian, and Peyrovi 2013, 16)

Also because of having a T-shaped plan, this attitude is raised. Quoted from Esin (1980) and Mantran (1952) it is noteworthy that the economic and cultural relations between the Qaraquyunlus and the Ottomans were such that many merchants and artists have always come and gone through the Tabriz-Bursa caravan route, and most of the Ottoman Turks came to Tabriz to learn art and architecture, and Tabriz architects also used to go to Ottoman cities for the construction, calligraphy, and Kashi-Kari of some important and royal buildings (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 10). This claim of origin from Ottoman architecture was due to the similarity of shape with mosques of the same period in Anatolia. Yahya Zokā (1989) considers the cultural and social relations between Iran and Anatolia in the 16th century AD to be the cause of this similarity regarding the architectural form of the mosque and suggests that Yeşil Cami of Bursa is derived from the architecture of the Goy-Masjid (Zokā 1989). It is mentioned in the history that "Timur took a group with him as well as the painter Ali Ibn Ilyas Ali when he returned to Samarkand from the war, who was later commissioned to build Yeşil Mosque in Bursa, and masters from Tabriz also worked with him." (Seçgin 2013, 1030).

It should be noted that the construction time of the Yeşil[33] Mosque is before the Goy-Masjid. Pirnia (2004) also accepts the slight similarity of the Goy-Masjid with the architecture of the Ottoman mosques in Bursa, but he did not consider this as a definite reason for modeling, rather considered to be derived from the Shah-Wali-Taft Mosque, and the Sheikh Lotfollah Mosque is derived from the Goy-Masjid (Figure 7) (Pirnia 2004, 266).

[32] *Dome*
[33] *Green*

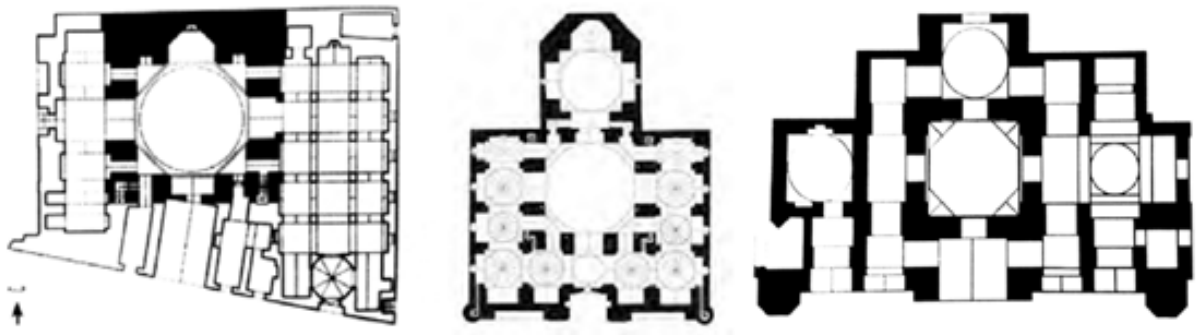


Figure 7. From right to left; mosque - the tomb of Shah Mashhad (1451 AD), mosque – the tomb of Tabriz Goy-Masjid (1465 AD), Shah Wali Taft Mosque (1468 AD), (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 11)

Some researchers point out its similarity to Isfahan's Shah Mosque and Ulu Cami, one of the Qaraquyunlu buildings (Seçgin 2013, 1030). In the book named Islamic Art and Architecture in Iran and Central Asia, Sheila Blair and Jonathan Bloom pointed out the possibility that the architect of the Imam Mosque in Mashhad was the same as the Goy-Masjid, and this architect knew about the architecture of the Yeşil Mosque and related with it (Kabirsaber, Mazaherian, and Peyrovi 2013, 7).

Robert Hillenbrand also believes that the architectural form of Goy-Masjid is the result of the evolution of Timurid architectural experiences and the continuation of Khorasan architectural experiences similar to the Shah Mosque of Mashhad (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 6). Of course, considering the T-shaped plan of the Goy-Masjid, this type of plan was used especially in the 14th AD in some architectural buildings of Anatolian Turk Beyliks and before that, it was mostly used in the Ottoman period (Seçgin 2013, 1030).

The mosques that were built in Bursa during the Ottoman period and are famous for their multi-functional buildings had their origins in the four-Eyvān[34] pattern of the Seljuk schools and were formed in the form of a Gombad-Khāne on the Miyansara space with four Eyvāns (porches) covered with Tāq-Ahang[35] on four sides (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 16).

It is worth mentioning that during the Ottoman period, Kashi-Kari embellishments were not used in buildings, especially on the exterior, but in general, some researchers have considered the architecture of northwestern Iran to be influenced by the culture of the powerful neighboring Russian and Ottoman empires (Kabirsaber, Mazaherian, and Peyrovi 2013, 7 & 15). The achievement of research in this regard "has

[34] *Porch*

[35] *A kind of arch*

acknowledged the similarity of the Goy-Masjid with Anatolian mosques in terms of its two-domed form, and in terms of its construction, form, structure and Kashi-Kari Mo'arraq, it is indebted to Iranian architecture and in this way, the imported form combined with the elements of Iranian architecture culture has taken on an Iranian countenance." (Kabirsaber, Mazaherian, and Peyrovi 2013, 21).

According to Seçgin (2013), "in general, it can be said that these approaches are based on the similarity in the form of the plan that the buildings show in terms of their external lines." (Seçgin 2013, 1031). Quoted from Moudon (1997) the shape and form of a building generally are the results of a process that has been overtly and covertly influenced by various ideas and concepts rooted in the past (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 7).

In the research of Dehghani Tafti et al (2021), it is stated that: "The architecture of the Goy-Masjid has no similarities with the mosques of Bursa, and in the style and method of building the structure, the exterior, and embellishments such as the execution of the Tāq[36], the Chapire-Sazi[37] under the Gombad, the structure and The embellishments of the portal ... are profoundly different, And the formation of the Goy-Masjid is in the continuation of the expansion of Iran's Gombad-Khāne-i buildings, and it is most related to the decorations of the mosques of Bursa. » (Dehghani Tafti, Modarreszadeh, and Memarian 2021, 18 & 19).

Perhaps at first glance, in terms of the presence of two Gombads in the structure of the Goy-Masjid and the origin of the Turkomans Qaraquyunlu from Anatolia and examples of two- Gombad mosques in the Ottoman period, it was concluded that the pattern of the Goy-Masjid was derived from them. But according to the course of development and the architectural characteristics of Iranian mosques throughout history, one of the products of which was the import and addition of the Eyvān to the plan of the mosques.

Based on that, the patterns of Iranian mosques are classified into Shabestān[38]-e, single Eyvān, single Eyvān with Gombad, two-Eyvān, two-Eyvān with Gombad and four-Eyvān with Gombad.

If we match these common patterns in the form and plan of mosques, i.e., the four-Eyvān with Gombad with the design of the Goy-Masjid, we can achieve an important point.

This pattern is generally designed as a single Gombad in the plan, including the central space as a Miyansara with four-Eyvān that open to this space, and a Gombad or Gombad-Khāne behind one of the Eyvān is designed towards the Kiblah. For example, the pattern of four-Eyvān has appeared over time in the plan of Jameh Mosque of Isfahan (Figure 9).

[36] *Arch*
[37] *Squinching*
[38] *Seraglio*

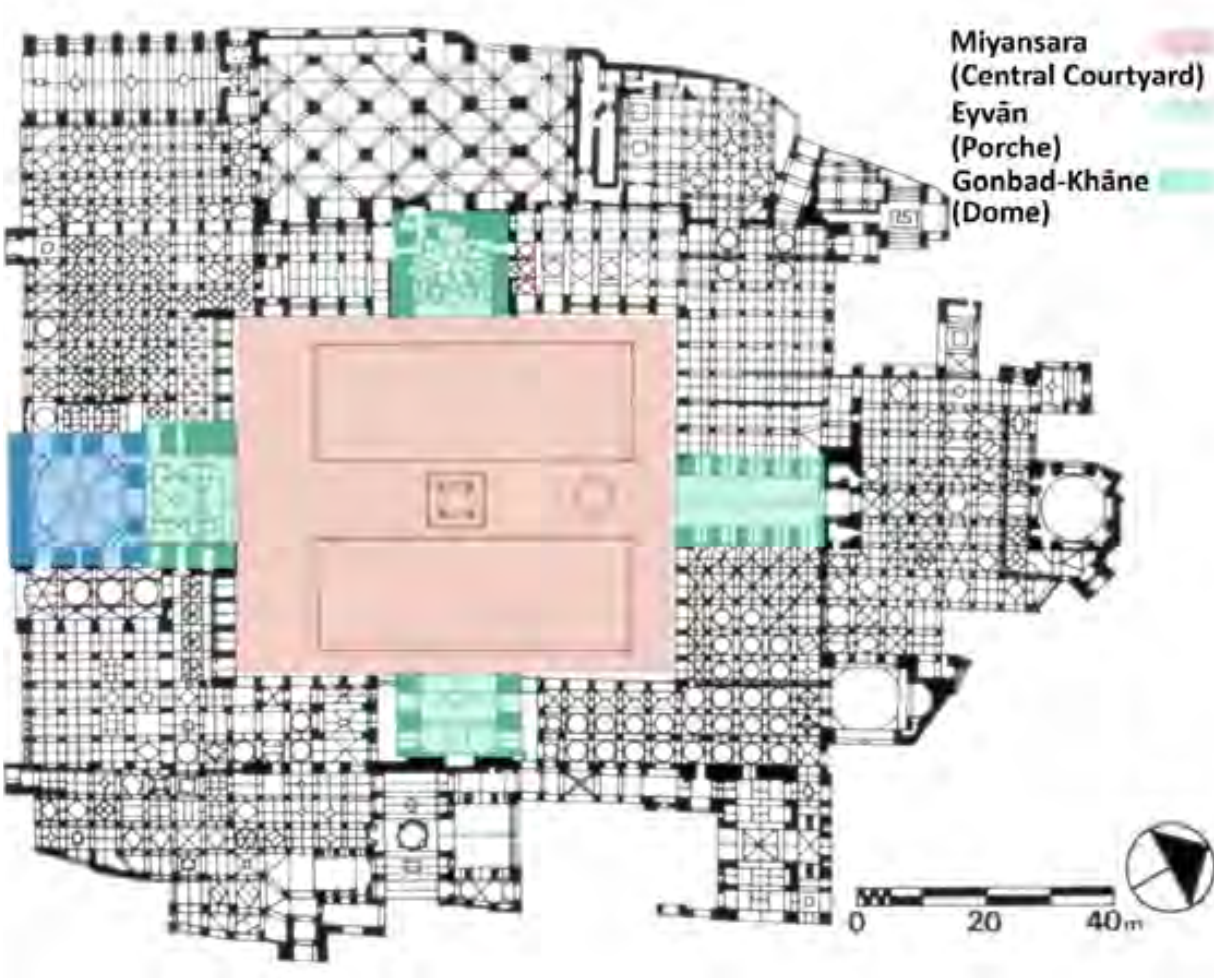


Figure 9. Jameh Mosque of Isfahan (777 AD Construction time of the primary building), (Analysis by Authors)

In general, the main spaces of the Goy-Masjid have side Shabestān, a large Gombad, and a small Gombad without a Miyansara or courtyard. Which plans clearly show the relationship and place of these spaces. Kabirsaber and Mohammadi (2019) stated in their research that the Goy-Masjid has a plan without a Miyansara, that the Gombad is placed on the Miyansara in a four-Eyvān pattern, the level of contact with the outside is also reduced, and it is designed in harmony with the climate with minimal openings (Kabirsaber and Mohammadi 2019, 98 & 99).

On the other hand, by considering the pattern of Iranian mosques and analyzing the components of the plan of the Goy-Masjid, it can be found that the pattern of Iranian mosques has been manifested differently (Figure 10).

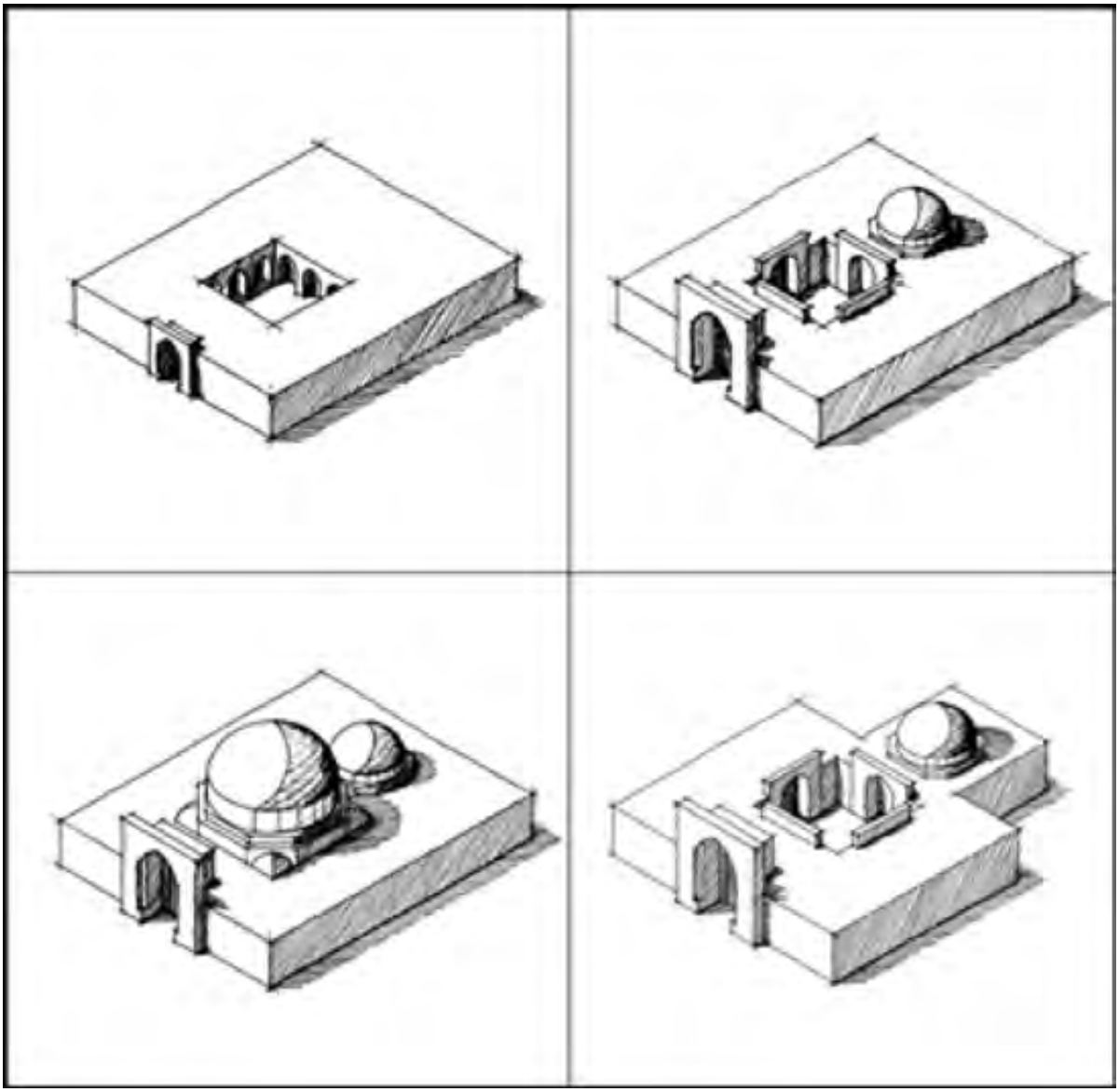


Figure 10. Comparing the architectural elements of the Goy-Masjid with the simple pattern of Iranian mosques, (Kabirsaber and Mohammadi 2019, 98)

As a more detailed investigation in this regard, if we consider the form of the Jameh Mosque of Ardestan (built in the 12th century AD) as an example of an Iranian-Islamic Mosque with four-Eyvān with Gombad pattern, and then analyze the form of the Goy-Masjid, we can reach significant results.

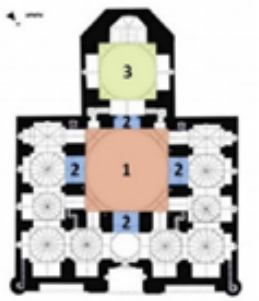
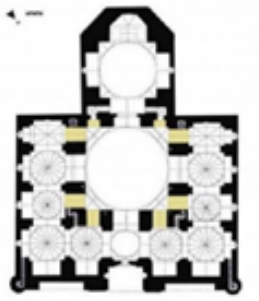
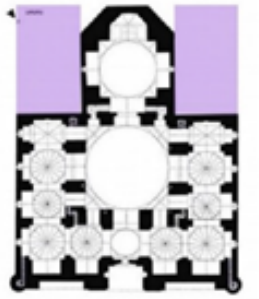
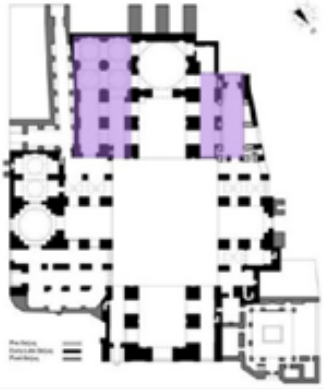
Mosque of Muzaffariyya Complex (Turkoman's Qaraquyunlu period)	Example of an Iranian-Islamic mosque
Goy-Masjid of Tabriz	Jameh Mosque of Ardestan
	
1) The big Gombad-Khāne as Miyansara 2) Four Tāq around the big Gombad-Khāne as Eyvāns 3) The Gombad of the Maqbareh as a Gombad-Khāne	1) Miyansara 2) Eyvān 3) Gombad-Khāne
	
Side Tāq-ha[27] beside the main Tāq-ha	Eyvān-Che[26] or Tāq-ha on the sides of the main Eyvān-ha
	
The place of the non-existent Shabestān on sides	The Shabestān on the sides of the Gombad-Khāne

Table 2. The comparison of the Goy-Masjid and the example of a mosque with the four-Eyvān with a single ad pattern, (Authors)

In the writings and travelogues of European and Iranian historians and travelers, the greatness, splendor, and glory of this mosque are abundantly mentioned (Nakhjovani 1948, 18).

One of the most important descriptions and writings about the mosque is related to the travelogue of Jean-Baptiste Tavernier, a French traveler, and merchant in 1646 AD. He defines the Goy-Masjid as follows: "… The mosque was outside the city on the way to Isfahan and has a facade with a fifty feet height, A Korsi[39] with eight steps discrepancy from the floor, The exterior walls with Kashi[40] in different colors and the interior walls with great Noqush[41] in Arabic architectural style and writings of gold and azure in Arabic, Two high minarets with small diameters with a staircase inside, The facade of the minarets is made of shiny patterned Kashi and bricks, The door of the mosque has a maximum width of 4 feet and in the middle the white hewn stone slab, which facade manifestation on its surface in great way, Access to the inside of the Gombad (dome) through the corridors, it is 36 feet in diameter, and is on 12 pillars from the inside and 16 pillars from the outside, Pillars with a volume of 6 square feet, A platform of white marble around the Gombad, which is empty from the bottom and cellular (place for shoes), The inside of the Gombad is covered like a painting with small square bricks of different colored tiles with flowers and bushes with Arabic words in between, Another smaller and prettier Gombad with transparent white marble (mehrāb[42]) at the end and a plinth at the bottom of the Gombad-Khāne made of white marble 8 feet high and without a base.

The smaller Gombad is completely covered with violet colored enamel with flat flower designs on it, The outer surface of both Gombad is covered with Kashi with a prominent design, The outer cover of the larger Gombad with a design of white flowers on a green context, The outer cover of the smaller Gombad with a design of white stars on a black context, The wooden pulpits inside the mosque, Two big and transparent white stone slabs in the south of the mosque which are colored red by the sunlight and makes it possible to read them in the glitter, In front of the mosque was Sheikh Imam's house and the Hammams (baths) …" (Nakhjovani 1948, 18 & 19 & 20). And likewise, mentioned the passage from the mosque to the tomb through the door (Seçgin 2013, 1013).

[39] *Base*
[40] *Tile*
[41] *Pattern*
[42] *Altar*



Figure 11. The entrance portal of a mosque (Mar 2023), (Authors)

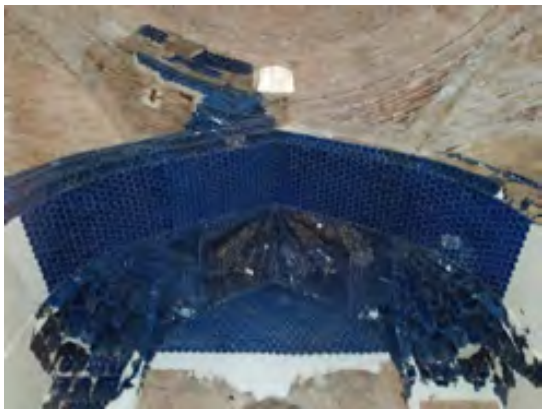


Figure 12. The Kashi-Kari and muqarnas embellishments above the northern Tāq of the Maqbareh Gombad-Khāne (small Gombad-Khāne) (Dec 2022), Authors)



Figure 13: Mehrāb of the Maqbareh (at the south) (Dec 2022), (source: Authors)

The Ottoman traveler Evliya Çelebi mentioned the mosque in his travelogue during his visit to Tabriz in 1640 AD: "The mosque door is higher than the Tāq-Kasra with great domes, a great building decorated with beautiful Kashi, The doors and walls decorated with colorful and comprehensive Kashi are so charming that whoever enters it will not want to leave..." he described (Wahabzadeh 2006, 218). In the writings of the author of Cihânnümâ history, Kâtip Çelebi, who was present in Tabriz in 1644 AD, the architectural features of the mosque can be seen as follows: "... inside and outside, and its portal and minaret are decorated with Kashi. It has a dome and a minaret, and its mesh and openings are skillfully and interestingly carved from phlegmy stone, it is smaller but more beautiful than the Sultan Hassan Mosque. "(Sultanzadeh 2010, 154).



Figure 14. The miniature of Matrakçı Nasuh in the 16th century AD, (Matrakçı Nasuh)



(Figure 15. The Goy-Masjid in the miniature of Matrakçı Nasuh (16th AD), Source: Matrakçı Nasuh)

Old pictures of the city show the state of the Goy-Masjid. The miniature of the Ottoman painter Matrakçı Nasuh during his trip to Iran in the 16th AD with the Ottoman army of the Safavid period displays the oldest image of the mosque (Figure 14).

It can be seen that the Gombad is placed on a cylindrical Gariv[43], which was probably the original form of the mosque, it should be noted that in Timurid period architecture, the long Sarv[44] dome on an elongated cylindrical Gariv is one of the best innovations of that period (Figure 15) (Kabirsaber, Mazaherian, and Peyrovi 2013, 12). By matching the Gombad on the Gariv of the Timurid period and the Matrakçı miniature from the Goy-Masjid and considering the proportions of the side Gombad of the Goy-Masjid, it can be seen that the original Gombad is different from the Gombad that was built during the restoration (Figure 16 & 17) (Ansari and Nejad Ebrahimi 2010, 40).

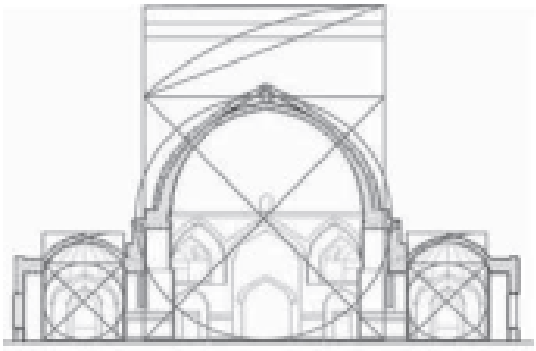


Figure 16. Proportions in the section of the Goy-Masjid, (Ansari and Nejad Ebrahimi 2010, 40)

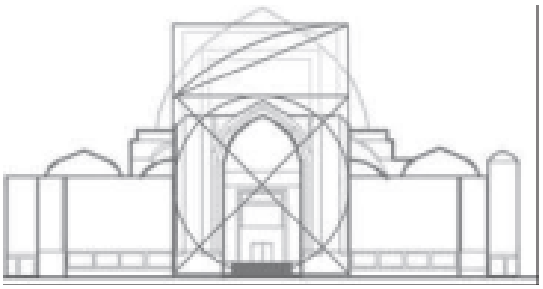


Figure 17. Probable proportions of the original entrance portal compared to the restored portal, (Ansari and Nejad Ebrahimi 2010, 41)



Figure 18. North view (Mar 2023), (Authors)

[43] *Stem*

[44] *Cypress*

And after that, can see the mosque in Jean Chardin's drawing from Tabriz in the 17th century AD (Figure 19). While his writings and drawings are not consistent and, in his writings, contrary to his image, he has described the mosque with two small minarets and two other minarets with special characteristics and different from the small Minaret (related to different periods), As the small minarets are considered instead of the base of the big minarets (Sultanzadeh 2010, 160) (Hag Parast, Nejad Ebrahimi 2014, 93).

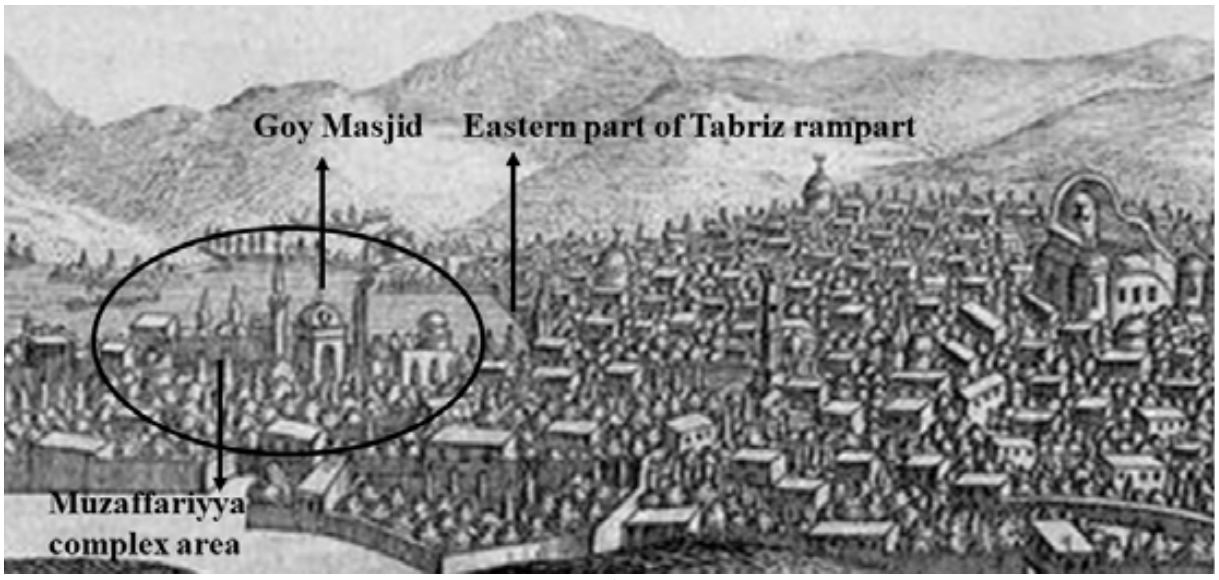


Figure 19. Chardin's drawing from Tabriz city (17th AD), (Hag Parast and Nejad Ebrahimi 2014, 91)

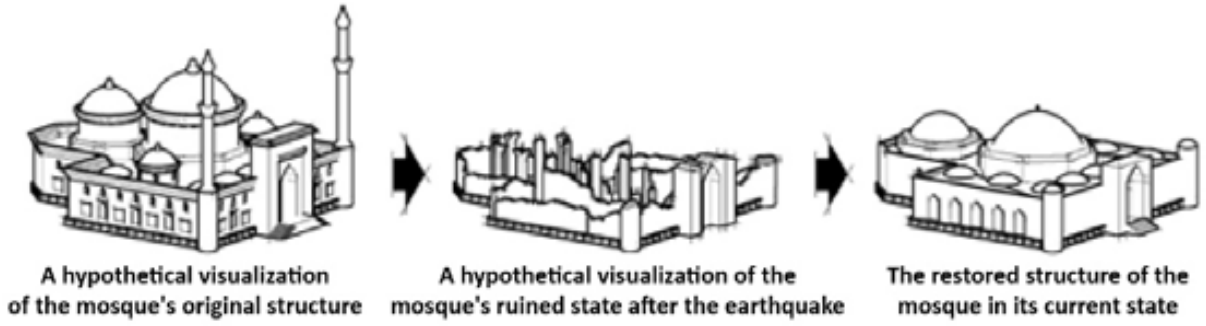


Figure 20. The plan for rebuilding the architectural form of the Goy-Masjid is based on documents, Matrakçı's miniatures, and Chardin's drawing, (Kabirsaber, Mazaherian, and Peyrovi 2013, 12)

In the Qajar period, in the book of Dārossaltane of Tabriz, Nader Mirza (1994) described the Goy-Masjid: "Anyone who describes the details of the construction of Jahanshah's Goy-Masjid has given himself a gratis effort, and no one has been able to cope with the excellence of one inch of it... Time passes, and time will not see such a building again. "(Mirza 1994, 108).

In the writings of Madame Jane Dieulafoy in 1841 AD, there are such descriptions about the mosque while it was in a state of ruin: "Referring to the greatness and beauty and the turquoise Kashi-kari of the building and the entrance with the spiral columns connected to the building and its oval crescent, Colored Kashi-kari skillfully cut into small pieces connected together which is a total on the surface of the Revag, whose combined components are not visible at first glance, In the painting and the combination of colors so much tenderness and elegance are used that a person sees himself in front of an excellent painting full of greenery and flowers and there is a unique harmony between light blue & dark green & yellow and white colors and leaves and flowers, It has a monotonous blue (Kabud - Goy) context without reducing its overall softness (the name of the mosque is famous for this reason), The presence of two different large halls and destroyed domes inside the building, The first hall with colorful Kashi, gray tiles with red flowers and with a combination of plinths different from the body, the second hall is decorated with octagonal cut blue Kashi with azure and gold colors along with inscriptions in Arabic script with a mehrāb, a floor with very magnificent and beautiful cobblestones and ..." (Sultanzadeh 2010, 160 & 161 & 162 & 163).



Figure 21. The embellishments above the entrance portal Tāq of a mosque (Dec 2022), (Authors)



Figure 22. South Tāq and mehrāb place of mosque's Gombad-Khāne (Dec 2022), (Authors)

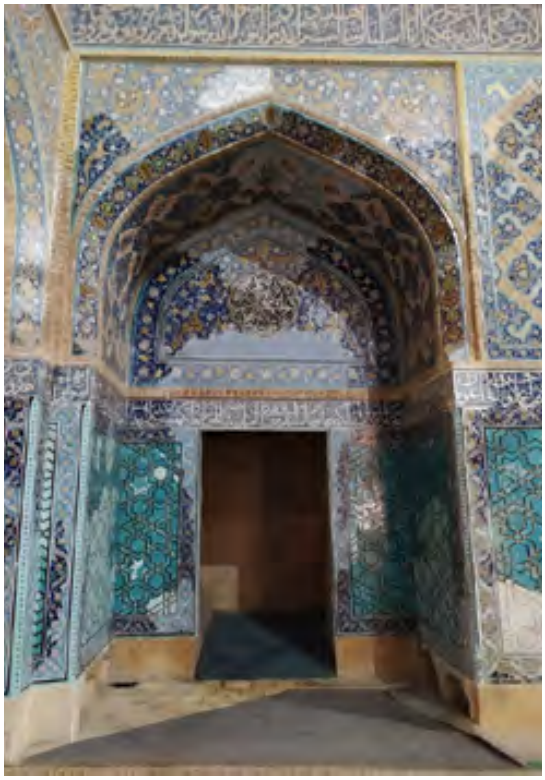


Figure 23. Connection corridors beside Mehrāb of the mosque for entering the Maqbareh (Dec 2022), (Authors)

Embellishments of the Goy-Masjid

As mentioned earlier, the name of the mosque owes its name to its Kashi-Kari, and in this sense, the architecture of the mosque is very important. The art of Kashi-Kari in this mosque is of the highest type in the Islamic world, i.e. appearing with the Mo'arraq style with azure, turquoise, black and white tiles and the use of various Eslimi[45] designs (Golestan Quran 2000, 21). In Seyyed Jamal Turabi Tabatabaie's book (1992), it is mentioned in the praise of Kashi-Karan[46]: "The hands who created a masterpiece once and for all and gave soul to an incomparable building and gave it life and dried up and went away forever to create a similar work" (Turabi Tabatabaie 1992, 1).

From the inscription " Under the supervision of Az-Aldin Qāpuchi-Ibn-Malek" in the inscription that is located between the Islamic motifs and the tile work, we understand under whose supervision it was built (Ansari and Nejad Ebrahimi 2010, 40). The Kashi-Kari of the Goy-Masjid is considered by the majority of Islamic architecture history researchers to represent the most advanced level of ceramic engineering in ancient Iran (Kabirsaber, Mazaherian, and Peyrovi 2013, 13).

Regarding the embellishments of Islamic architectural buildings, "Islamic architects and artists have always tried to show the glory and majesty of the truths and beauties of nature, it indicates the pinnacle, splendor, and majesty of the absolute truth, which is the presence of the Holy Exalted." (Ansari and Nejad Ebrahimi 2010, 36). The difference between the embellishment of the mosque and the Magbareh (in terms of the unique color) is one of the features which makes the mosque embellishment technique interesting, which is reflected in the visual and psychological perception of the interior spaces and is probably related to the function of both spaces (Seçgin 2013, 1028). Embellishments with rich combinations can be seen in the mosque and on the other hand, embellishments in black and dark azure can be seen in the Magbareh.

[45] *Islamic*

[46] *Tilers*



Figure 24. View from east Tāq to the big Gombad-Khāne of a mosque (Dec 2022), (Authors)



Figure 25. View of side Tāq of the big Gombad-Khāne of a mosque (Dec 2022), (Authors)

Among the examples of Kashi, we can mention the Quranic inscription on the portal of the mosque, which is made of white Kashi with blue text and Tholut script (Nakhjovani 1948, 15). And also, the entrance of the mosque has Mo'arraq Kashi with unglazed bricks, and gilded decorative screws (Golestan Quran 2000, 21). On the other hand, the Mehrāb of the mosque has the most beautiful Mo'arraq Kashi (azure, turquoise, black and white) with Eslimi designs and rows of elaborate Moqarnas (similar to Safavid architecture) (Golestan Quran 2000, 21). But its Mo'arraq Kashi (tiles), motifs, and marbles are incomparable with mosques of the Safavid period or other periods (Nakhjovani 1948, 16).

In terms of Mo'arraq Kashi-Kari, the Goy-Masjid has similarities with the Hasan Padeshah Mosque of Tabriz, located in Sahib Abad Meydan, belonging to the Aqquyunlus period. The Kashi-ha[47], in terms of color and type, and the band inscriptions on the margin (which can also be seen in the Gombad-Khāne of the Goy-Masjid), The method of building a row under the Goy-Masjid with the view of the southern platform and the eastern platform of the Hassan Padeshah Mosque, the Mehrāb of both, the foundations of the central Gombad, the structure, and plan of the central Gombad, the stone inscriptions around the inner trunk in the two mosques are the same and similar (Omrani and Aminian 2007, 102 & 113 & 115). There are different Quranic inscriptions on the eight pillars of the mosque with the themes of Tavakkul[48], Tasbih[49], Hamd[50], Salaam, Towhid[51], Doā[52], and Resālat[53].

The two-shell dome above these bases is spherical from the inside and at a distance of about 120 cm from the outside of the Shabdari Arc (pointed arch with ten parts) (Golestan Quran 2000, 21 & 22). Regarding the tiling of the Goy-Masjid, Yahya Zokā says: "This style of Kashi-Kari is not comparable to the special geometrical compositions of the Seljuk and Mughal arts and is much superior to them." And it is executed with pleasant and stunning quality (Zokā 1989, 186). It is worth mentioning that the Maqbareh also has embellishments such as Muqarnas and marble plinths with carvings of Ayāt[54] on them (Golestan Quran 2000, 22).



Figure 26. Fragments of mosque Kashi-Kari (Dec 2022), (Authors)

[47] *Tiles*
[48] *Reliance*
[49] *Rosary*
[50] *Praise*
[51] *Monotheism*
[52] *Prayer*
[53] *Prophetic mission*
[54] *Quranic verses*



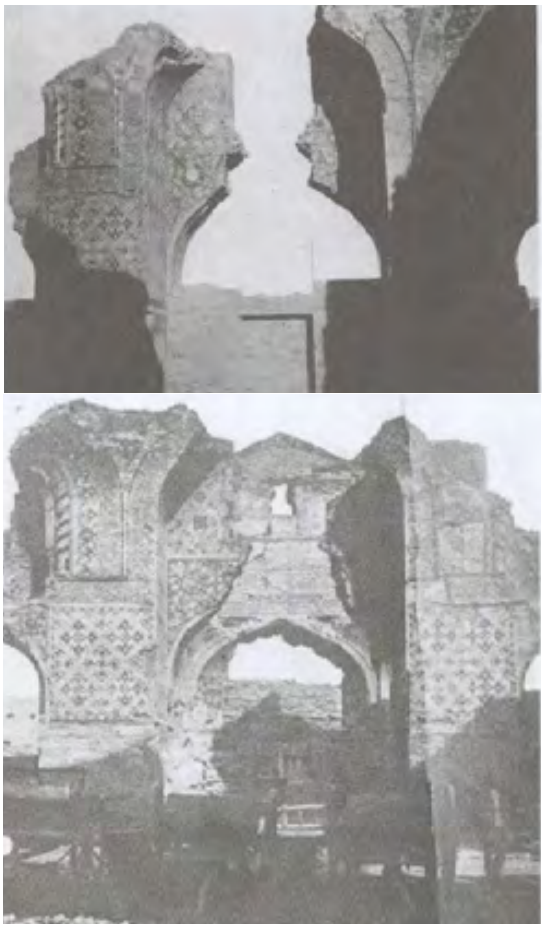
Figure 27. Embellishments of mosque pillar (Dec 2022), (Authors)

Restoration of the Goy-Masjid

In the writings of the French architect and archaeologist Andre Godard in 1928 AD regarding the Goy-Masjid, which was invited to Iran for the establishment of the Archaeological Service and the preparation of the list of historical buildings, it is stated: "There is nothing left of this great mosque except for a few foundations and a part of the outer wall and its front, which has fallen into a pitiful condition. But what remains is so beautiful and geometrically usable that the Iranian Archeology Group decided to preserve it as it is, i.e. Don't start renewing the large Gombad building on shaky and unstable foundations and completing the Kashi-Kari (which they can't build today)." (Wahabzadeh 2006, 229 & 230).



Figure 28. Pictures of the mosque before restoration, (Wahabzadeh 2006, 248)



Figures 29 & 30. Pictures of the mosque before restoration, (Wahabzadeh 2006, 264)

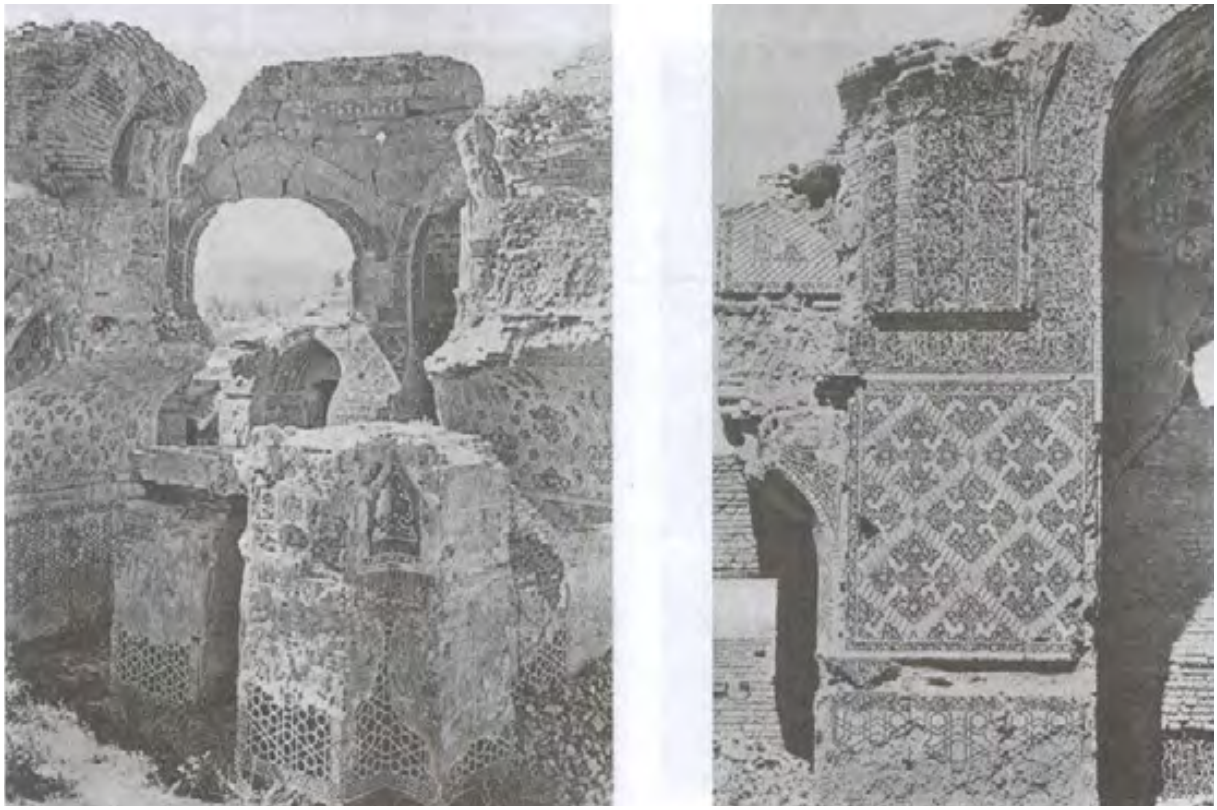


Figure 31. Pictures of the mosque before restoration, (Wahabzadeh 2006, 248)

The restoration of the Goy-Masjid to preserve the inscriptions and monuments by the National Organization for the Protection of Antiquities started in 1939 AD, the main portal was also repaired and some walls were rebuilt by Ismail Dibaj and Haj Abulqasem Memar between 1948-1949 AD (Golestan Quran 2000, 21). In the repairs started in 1939, to prevent the collapse and excessive deterioration of the main portal, they repaired it and blocked its cracks, and by rebuilding the Tāq behind the main portal and limiting it with new walls, they formed a simple and small mosque (Wahabzadeh 2006, 230).

With the outbreak of the Second World War, restorations were stopped until 1948. According to Abdul Ali Karang, in 1945 AD, some pieces of plinth marble were used in the southern part of the mosque to build the statue of Sattar Khan and in this way, only one piece of stone remains on the floor of the mosque from that marble pavement, which heaviness, size and cut surprised Dieulafoy (Wahabzadeh 2006, 231).

After the Second World War, restoration and repairs of the Goy-Masjid resumed. According to the instructions of the Department of Archeology in 1948, it is quoted: "The Goy-Masjid consists of a large and a small Shabestān, each of it covered by a Kashi Gombad, The entrance of Mosque is a grand and luxurious portal, which is connected to the north side of the

Great Shabestān by the Dahliz[55]. Smaller Tāq was also located between the portal and the large Shabestān, and today there are more or fewer traces of their pillars and foundations." (Wahabzadeh 2006, 231).

In the agenda of these repairs, it has been mentioned to provide items that are briefly stated (Wahabzadeh 2006, 231 & 232): - Preservation of exquisite Kashi-Kari - Maintenance of bases, Tāq and Gombad traces - Blocking cracks and strengthening traces likely to fall - Smoothing and cleaning the interior and exterior areas - Maintenance and installation of poured Kashi-Kari parts. And based on this order, the repair program was categorized as follows (Operations under the supervision of Ismail Dibaj and Haj Abulqasem Memar):

1	Blocking the cracks and seams of the great Shabestān and restoring its walls and Rumi[56]
2	Renovation of the walls and Rumi and the opening of the Tāq around the large Shabestān up to the top of the Tāq (the majority of it which exists) except for the Gombad according to the old condition without the slightest difference in terms of architecture, preserving the existing Kashi-Kari and the new parts without tiles, Construction of new brick materials according to old bricks
3	Revitalization of the north view: renewal of the foundations, Rumi, and Cheshme-Tāq on the sides of the main entrance of the mosque, Roman arches, and new coverings according to the old examples without minor differences.
4	With these repairs, the improper condition of the mosque is fixed, and the entrance hall becomes wider. At this stage, the covering of the large Shabestān and the restoration of the works of the small Shabestān, and the preservation of the remaining marble stones need further investigation.
Any action such as construction, etc., in the area around the mosque, is done under the supervision and approval of the General Department of Archaeology.	

Table 3. The repair program classification, (text source: Wahabzadeh 2006, 232 & 233 & 234)

According to Dibaj's description, "the repair and protection of the mosque continued until 1973 AD, but despite the repairs, due to moisture infiltration from the open space of the Maqbareh Gombad and large Shabestān and frost and temperature difference, the Kashi-Kari of the plinths collapsed up to a height of 2 meters. To preserve the importance of the traces, it was decided to cover the roofs. And in the continuation of the study of the foundation, which has hard and strong foundations of lime and rubble stone up to a depth of 2 meters in a thick layer of clay and a continuous 1.6-meter stone fortress on the foundation, this structure can withstand any type of coating. To select the architect for the Gombad of the Maqbareh and the Shabestān, which is the most suitable known cover, studies have been conducted throughout Iran so that the architect can implement it in harmony with the architecture and elegance of this building. That Ostad Reza Memar from

[55] *Corridor*

[56] *A kind of arch*

Tabriz undertook to make the Gombad of the Maqbareh a discrete Do-Posh-Gosasteh[57] Gombad with an internal opening of 11 meters and to avoid the high height and impact on the old and light weighted parts of the large Shabestān Gombad, Do-Posh-Be-Ham-Peyvasteh[58] with an internal diameter of 16.35 meters should be implemented.

The preparation and construction of the Gombad have started since the beginning of 1973, and all the Tāq-Jenaqi[59] around the large Shabestān and the Gombad of the eastern and western Shabestān and the facade of the mosque have been rebuilt. "(Wahabzadeh 2006, 234 & 235). This Gombad is implemented with the following specifications:

	Diameter	Height	Khiz (height of the arch)	Cover	Implementation method
Specifications of the large dome	- 16.35 meters from the inside - 19.20 meters from outside	- 19.70 meters from the inner floor to the inner cover - 22.60 meters from the inner floor to the tip of the Tāq-Jenaqi arch of the outer cover - 24.60 meters from the outer floor to the edge of the outer cover	- 8.17 meters inner dome - 11.04 meters outer cover	- The distance between the two layers is 2.10 meters, including the covers (38 cm each).	- Dividing the length of the Gombad circle into 32 sections, one of which is empty for the Khashkhashi hole

Table 4. Executive specifications of the dome, (text source: Wahabzadeh 2006, 235 & 236)



Figure 32. Reconstruction of the Maqbareh dome, (source: Wahabzadeh 2006, 259)

[57] *Two-layered*
[58] *Two connected layers*
[59] *A kind of arch*

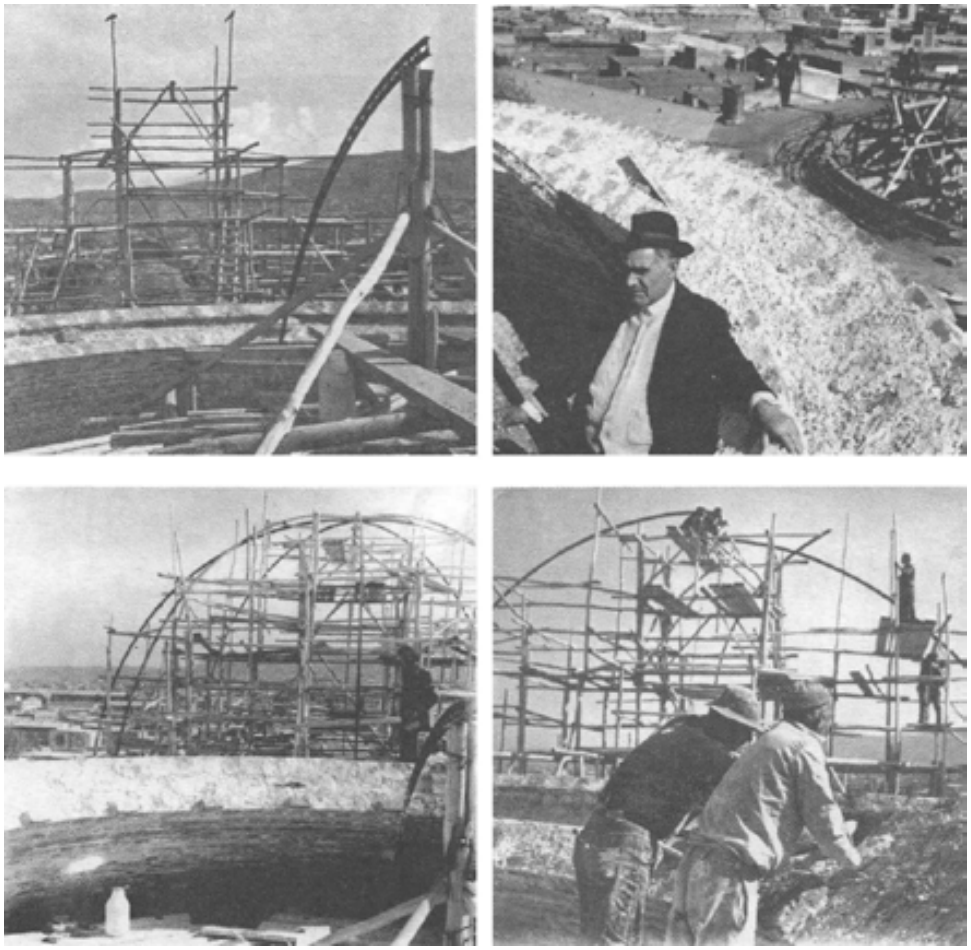


Figure 33. Reconstruction of the Maqbareh dome, (source: Wahabzadeh 2006, 254)

Regarding the repair of embellishments and Kashi-Kariha, in 1996 AD, its restoration priorities were categorized as follows:

1	Fastening and stabilization of the remaining Kashi-Kari.
2	Reconstruction of brick frames forming horizontal and vertical lines of interior architecture and inscriptions according to existing examples
3	Cleaning the surfaces and empty spots between Kashi-Kari (Gombad-Khāne) and whitening them with sandblasting, Kerma-Bandi, and without waves (the whitening level is 2-3 mm lower than the tiling level)
4	Framing inscriptions - painting inside frames and Gereh-Bandi
5	Completing and painting the written words and verses (which are in the form of spots) between the Quranic inscriptions and the Eslimi in the background with the previous specifications.
6	Designing and painting the Eslimi-haye Lachaki according to the remaining sections and parallels
7	Designing and painting the Gereh of the Gombad-Khāne plinth according to the documents and the remaining parts

Table 5. Restoration priorities of embellishments and Kashi-Kariha, (text source: Wahabzadeh 2006, 241 & 242)

At the end of the description of the restorations, it should be mentioned that the current state of the mosque is different from the original building in the Qaraquyunlus period, and its current Gombad is the result of contemporary restorations (Kabirsaber, Mazaherian, and Peyrovi 2013, 9 & 11) which is clear based on historical documents.



Figure 34. Northwest view of Mosque (Mar 2023), (source: Authors)



Figure 35. Embellishments (Kashi-Kari) of the western wall of the entrance Eyvān (Mar 2022), (source: Authors)



Figure 36. The remaining embellishments of the exterior walls of the mosque (Mar 2022), (source: Authors)



Figure 37. Embellishments of a pillar (Mar 2022), (source: Authors)



Figure 38. Embellishments of the ceiling of the Tāq (Mar 2022), (source: Authors)

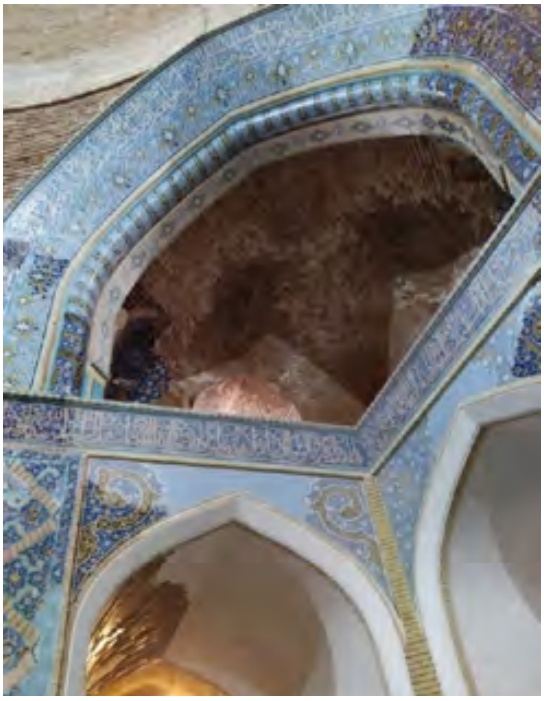


Figure 39. Embellishments of the Gombad-Khāne of a mosque (Mar 2022), (source: Authors)



Figure 40. The Gombad of the mosque (Mar 2022), (source: Authors)

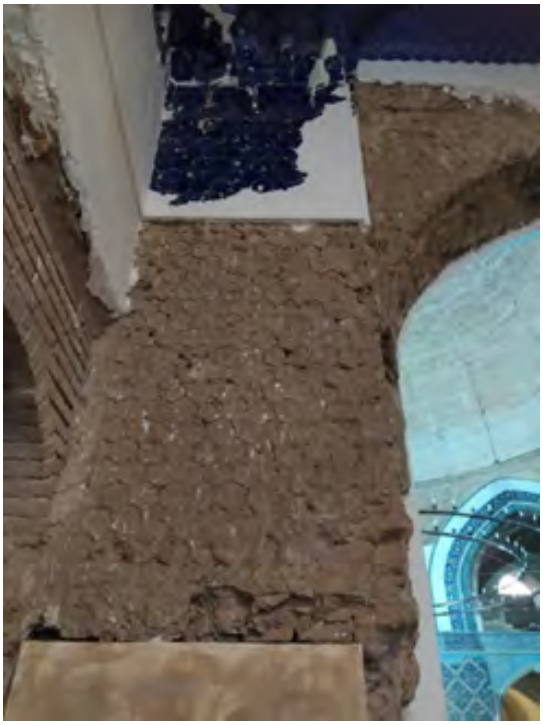


Figure 41. Embellishments of the north wall of Maqbareh (Mar 2022), (source: Authors)

Conclusion

The Muzaffariyya complex was one of the most important traces of the Turkoman era of Qaraquyunlu in Tabriz, which has a valuable place in the history of Iranian architecture. This complex also included various buildings, the most prominent of which was the complex's mosque, which is known as Goy-Masjid today. The majority believe that the mosque is inspired by the architecture of Anatolian mosques. But with a closer look and paying attention to the pattern of Iranian mosques, we can achieve a relationship between them. By matching the example of the four-Eyvān with the Gombad

pattern with the plan structure of the Goy-Masjid, it can be said that this single-Gombad pattern is used in a different way from the well-known pattern of Iranian mosques. This is an important issue, and like the embellishment of the mosque, which is the evolution of Iranian Kashi-Kari, the form, and plan of the Goy-Masjid have an Iranian origin. While, in general, the elements and features of the architecture of the building are indebted to Iranian architecture, by looking more closely at the information left from the original building of the mosque and by analyzing them, the structure of the Goy-Masjid can be imagined and described. That the repairs and restorations done to protect and maintain the Goy-Masjid have problems and of course, the changes made in it during the era have caused the difference between the current situation and the original building. And today, the result of the restoration operation in the decoration of the building has moved along with the basics, but in the geometry and proportions of the building, the features of the original structure have not been observed. Such as the difference in the big Gombad of the mosque, that the original Gombad was on a Gariv, and the proportions of the entrance portal were different and higher than the current situation, or the difference of the current minarets of the mosque are some of the cases that can be mentioned.

References

1. M. Ansari and A. Nejad Ebrahimi, "Geometry and proportions in the architecture of the Quyunlu Turkoman period - Goy-Masjid (Firuze Jahan Islam)," Journal of Ketab Mah Olum & Fonon, vol. 2, no. 129, p. 35-45, 2010.
2. J. Chardin, Chardin's travelogue: Vol. Second, I. Yaghmaie, Trans. Tus Publ., Tehran, 1995.
3. M. Dehghani Tafti, Z. A.-S. Modarreszadeh, and G. H. Memarian, "The Origin of the Architectural Model of the Goy-Masjid in Tabriz," Journal of Motaleat Memari Iran, vol. 10, no. 19, p. 5-23, 2021.
4. Ö. Ertuğrul, "Imperial Aqquyunlu Construction of Religious Establishments In The Late Fifteenth Century Tabriz," Politics, Patronage and the Transmission of Knowledge in 13th-15th Century Tabriz, vol. 8, p. 371–385, Tabriz, 2014.
5. Golestan Quran, "The main report: The essence of the tune of verses in the melodies form of the Goy-Masjid," Journal of Golestan Quran, vol. 20, p. 21-26, 2000.
6. L. Golombek, "Timurid architecture in Iran and Turan," K.-A. Afsar, Trans., Publications of the Cultural Heritage Organization, Tehran, 1995.
7. F. Hag Parast and A. Nejad Ebrahimi, "Imaginary reconstruction of Tabriz's Muzaffariyya mansion complex (Goy-Masjid) based on historical documents and texts," Jour. of Pazhohesh Honar, vol. 2, no. 7, p. 89-94, 2014.
8. S. H. Hashemi, "The religion of the Qaraquyunlus," Jour. of Roshd Amozesh Tarikh, vol. 13, no. 47, pp. 50-53, 2012.
9. H. H. Ibn Karbalai Tabrizi, "Ruzat al-Janan and Janat al-Janan," J. Sultan al-Quraei, Ed., 1st Edition. Sutude Publ., Tabriz, 2004.
10. H. Javadi, "Iran from the eyes of the Venetians (from the time of Uzun Hasan to the Shah Tahmaseb period)," Journal of Barresi-Haye Tarikhi, no. 49, p. 87-136, 1973.

11. M. B. Kabirsaber and A. Amjad Mohammadi, "Nature Politics and Architecture; Reading out the interaction of nature politics and cultural components in the architecture-creating process of Tabriz Goy-Masjid," Jour. of Research in Islamic Arch., vol. 7, no. 22, p. 89-107, 2019.
12. M. B. Kabirsaber and M. Peyrovi, "Architecture Heritage through the Understanding of Foreign Tourists from 15th to 16th Century AH - Case study: Analyses of anatomic resistance quality in the Goy-Masjid based on rereading the historical documents," Jour. of Research in Islamic Arch., vol. 3, no. 6, p. 68-83, 2015.
13. M. B. Kabirsaber, H. Mazaherian, and M. Peyrovi, "Architectural Morphology of Tabriz Goy-Masjid," Journal of Motaleat Memari Iran, no. 6, p. 5-23, 2013.
14. M. J. Mashkur, "The history of Tabriz until the end of the 9th century AH," Publ. of the National Art Association, Tehran, 1973.
15. N. Mirza, "History and geography of Dārossaltane of Tabriz," Sotude Publication, Tabriz, 1994.
16. S. Mohammadzadeh and S. A. Mansori, "The relationship between the Muzaffariyya complex and the spatial organization of Tabriz city from the Qaraquyunlus period to the Qajar period," Journal of Bagh Nazar, vol. 15, no. 68, p. 15-24, 2017.
17. H. Nakhjovani, "The Goy-Masjid or Muzaffariyya Mansion," Journal of Faculty of Literature and Human Sciences, University of Tabriz, no. 3, p. 11-20, 1948.
18. M. Nasuh, "Bayane Manazel" (R. Raees, Trans.; First Edition). Publications of Iran's Cultural Heritage Organization, Tehran, 2000.
19. B. Omrani and M. Aminian, "Speculation in Saheb Abad Meydan and Hasan Padeshah complex," History Journal of Faculty of Literature and Human Sciences - University of Isfahan, no. 50, p. 91118, 2007.
20. M. Peyrovi and M. B. Kabirsaber, "The importance of knowing the background of the site in the approach of comprehensive conservation, a case example: the site around the Goy-Masjid of Tabriz," Arman Shahr Journal, vol. 9, no. 17, p. 11-24, 2016.
21. M. K. Pirnia, "Iranian architectural stylistics," Memar Publ., Tehran, 2004.
22. N. Seçgin, "Tebriz Gök Mescid'in Türk Mimarlık Tarihindeki Yeri ve Son Durumuna İlişkin Gözlemler," in 8 Uluslararası Türk Kültürü Kongresi Bildiriler – II, vol. 2, p. 10251045, 2013.
23. H. Sultanzadeh, "Tabriz a Solid Cornerstone of Iranian Architecture" (2nd ed.). Cult. Research Office, Tehran, 2010.
24. S. J. Turabi Tabatabaie, "Kabud Mosque 'Firuze Islam'" (1st ed.). Mahd Azadi Publications, Tabriz, 2000.
25. A. R. Wahabzadeh, "The Goy-Masjid yesterday-today" (Vol. 2). Cultural Heritage Publications, Tehran, 2006.
26. Y. Zokā, "The formation of Tabriz - Iranian cities" Jahad Daneshgahi Pub., Tehran, 1989.

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
INTERNATIONAL HYBRID SYMPOSIUM - APRIL 25, 2023
Yeditepe University, Faculty of Architecture, Istanbul, Turkey
Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

CONSERVATION OF HISTORICAL BUILDINGS AND SITES IN IRAN "THE ROLE OF CULTURAL HERITAGE ORGANIZATION"

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Abstract

As W. J. Durant wrote in his reference series of Books called "The Story of Civilization" 1975; one of the most ancient civilizations were Sumer, Ashur, and Mad civilizations that were located in Mesopotamia,*
North of this area, the Azerbaijan region, included also a very rich culture in deep history, its culture and civilization called MEDIA one of the Achaemenid satrapies or the Medes/MAD civilization, also Urartian Inscriptions for 8th century B.C. all show the deep civilization and history in that area. The numbers of ancient and historical sites and monuments show the significance of conservation as highly crucial.
Conservation, restoration and rehabilitation, and renovation are almost some concepts of spirit giving to the dead body of buildings. In the other words, Architecture from a holistic point of view is a construction that includes the quality of space and its function as a spirit. Understanding the holistic concept may give a vast viewpoint to those responsible for historical cities' context conservation. However, many problems are involved in friction between those who are conserving historical context and some who are just following their personal interests!
A model of ordinary people and people's institutions as the social capital in conservation has been investigated in this paper. The conservation of the Tabriz-covered bazaar which has been given the Aga Khan Award for its model of people's participation in its restoration is a tight and solid reason for people's participation in the conservation method. Meanwhile we not should be forgotten of some breakthroughs by governmental and non-governmental organizations, sometimes for their non-transparent and non-clear goals!

Keywords: *Conservation, Cultural Heritage, Social Capital, Tabriz Grand Bazar*

**"Mesopotamia is a historical region of Western Asia situated within the Tigris–Euphrates River system, in the northern part of the Fertile Crescent", which is part of the historical region included present-day Iraq and Kuwait and parts of present-day Iran, Syria and Turkey.*

1. Introduction

Conservation of historical buildings and sites is a crucial aspect of preserving the rich cultural heritage of Iran. The role of Cultural Heritage Organization in Iran plays a significant role in safeguarding and managing historical buildings and sites throughout the country. This paper aims to explore the key role of the Cultural Heritage Organization in the conservation of historical buildings and sites in Iran. The paper will discuss the historical significance of Iran's cultural heritage, the challenges faced in conserving historical buildings and sites, and the various measures and strategies undertaken by the Cultural Heritage Organization to protect and preserve these invaluable treasures.

The Cultural Heritage Organization, as the main governmental body responsible for the protection, conservation, and management of cultural heritage in Iran, plays a multifaceted role in the conservation of historical buildings and sites. This includes conducting research and documentation, developing conservation plans and guidelines, implementing conservation projects, promoting public awareness and education, and collaborating with national and international stakeholders. The paper will delve into the various activities and initiatives undertaken by the Cultural Heritage Organization to ensure the preservation of Iran's historical buildings and sites. Furthermore, the paper will highlight the challenges faced in conserving historical buildings and sites in Iran, such as inadequate funding, lack of technical expertise, urban development pressures, natural disasters, and illegal activities. The role of the Cultural Heritage Organization in addressing these challenges and implementing effective conservation strategies will be examined. Lastly, the paper will discuss the significance of conserving historical buildings and sites in Iran, not only for their cultural and historical value but also for their economic, social, and tourism potential. The paper will emphasize the need for sustained efforts and collaboration among various stakeholders, including the government, local communities, academia, and international organizations, to ensure the successful conservation of Iran's historical buildings and sites.

In total, the role of the Cultural Heritage Organization in Iran is pivotal in the conservation of historical buildings and sites. Through its multifaceted activities and initiatives, the Cultural Heritage Organization plays a crucial role in safeguarding and managing Iran's rich cultural heritage, overcoming challenges, and promoting sustainable conservation practices. The paper also will contribute to the understanding of the role of the Cultural Heritage Organization in Iran and highlight the significance of conserving historical buildings and sites for the present and future generations. Must add that the problems and challenges are important issues of conserving historical sites and buildings in Iran, therefore to emphasize and discuss the challenges and

issues of restoration and renovation, the case of Tabriz Grand Bazaar will be introduced. This paper examines the conservation of cultural heritage and its relationship with social capital, using the Tabriz Grand Bazaar in Iran as a case study. The Tabriz Grand Bazaar is a historic and vibrant commercial center with significant cultural, economic, and social value. The paper explores the role of social capital in preserving and revitalizing the Tabriz Grand Bazaar, including its impact on conservation practices, community engagement, and sustainable development of the bazaar. The paper also highlights the challenges and opportunities associated with the conservation of cultural heritage in the context of social capital and provides recommendations for policymakers, practitioners, and stakeholders involved in heritage conservation

2. Material and Method

To critically analyze the relationship between the conservation of cultural heritage and social capital, using the Tabriz Grand Bazaar as a case study. A relevant literature review on conservation, cultural heritage, and social capital has been driven to provide a comprehensive analysis of how social capital influences the conservation practices, community engagement, and sustainable development of the Tabriz Grand Bazaar. Identify the challenges and opportunities associated with the conservation of cultural heritage in the context of social capital, and provide recommendations for policymakers, practitioners, and stakeholders involved in heritage conservation. The analysis is supported by evidence from scholarly sources and will contribute to the scholarly discourse on conservation and cultural heritage.

3. Literature Review

3.1. Conservation of Cultural Heritage

Conservation of cultural heritage refers to the protection, preservation, and management of tangible and intangible cultural assets, including historic sites, buildings, artifacts, traditions, and practices, for present and future generations. Conservation practices involve a range of activities such as documentation, restoration, rehabilitation, and maintenance, aimed at safeguarding cultural heritage from deterioration, destruction, or loss. Conservation of cultural heritage is a multifaceted process that involves various stakeholders and factors. One key aspect is the role of social capital, which refers to the social networks, norms, and trust that facilitate cooperation and collective action in a community (Putnam, 2000).

3.2. Social Capital

Social capital has been recognized as an important factor in the context of cultural heritage conservation, as it can contribute to the sustainability of heritage sites and their communities (Ghaffarianhoseini et al., 2014; Woolcock, 1998). Social capital refers to the networks, relationships, and social interactions that exist within a

community or society, and the resulting social norms, trust, reciprocity, and collective actions that emerge from these networks. Social capital can be seen as a valuable resource that influences individuals' and communities' social, economic, and cultural well-being. It has been recognized as a crucial factor in various aspects of community life, including governance, economic development, health, and cultural heritage management.

3.3. Tabriz Grand Bazaar

The Tabriz Grand Bazaar, located in Tabriz, Iran, is one of the world's oldest and largest covered bazaars, dating back to the 14th century. It is a UNESCO World Heritage site (UNESCO World Heritage Centre, 2021), and provides an interesting case study to explore the relationship between social capital and cultural heritage conservation. Tabeshian and Modarres (2019) conducted a study on community participation in the conservation of the Tabriz Grand Bazaar and found that social capital played a crucial role in facilitating community engagement and involvement in the conservation process. This highlighted how social networks, trust, and norms among the community members fostered cooperation and collective action in the conservation efforts. The Tabriz Grand Bazaar is known for its diverse architectural styles, historic buildings, and vibrant market activities, attracting tourists and locals alike. The Tabriz Grand Bazaar in Iran, which has been awarded the Aga Khan Award for its model of people's participation in its restoration, is mentioned as an example of people's participation in conservation methods. The research acknowledges the role of governmental and non-governmental organizations in conservation efforts but highlights potential issues related to transparency and clear goals in the next parts. Fig.1 shows the location of the Tabriz Grand Bazaar in Tabriz City.

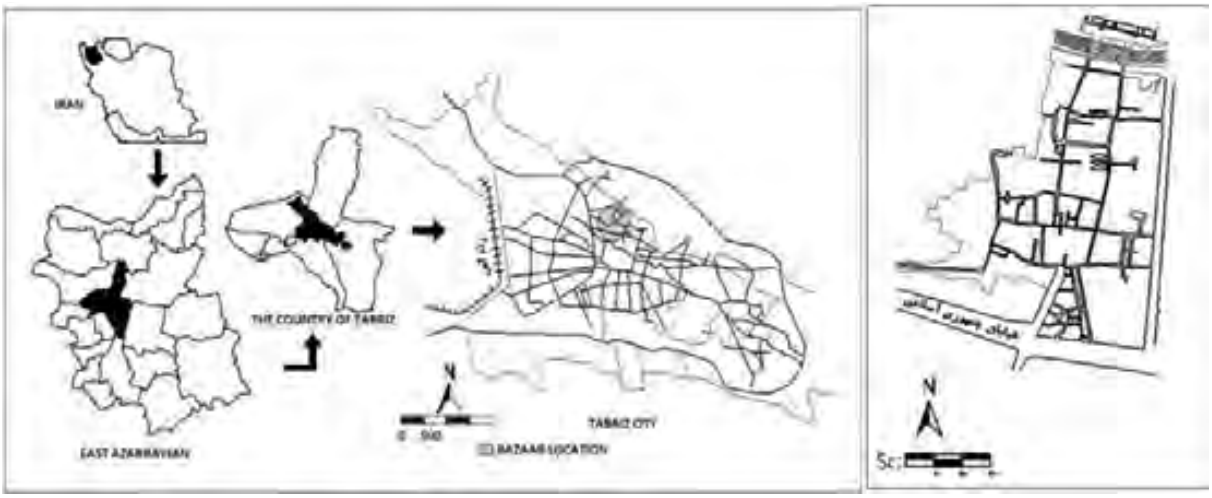


Figure 1. A) Location of Tabriz Grand Bazaar in Tabriz city, B) Tabriz Bazaar, source: Comprehensives Plan of Tabriz, (2013)

3.3.1. Social capital and restoration of Tabriz grand bazaar

Social participation in managing economic structures such as bazaars is a multi-dimensional process that is rooted in the economic, social, and multiple functions of the bazaar and its multiculturalism. This complex has always been considered one of the factors and places of identity for merchants and other citizens, which has led them and the government to participate in repairing the bazaar.

The most important achievements of the presence of merchants in the management of the revitalization of the grand bazaar were the beginning of their renewal in the field of restoration and revival of the historical complex and the realization of an integrated and coordinated management system, relying on the full participation of merchants in the physical and functional management of the bazaar.

For nearly seventy years, marketers had been denied participation in bazaar management due to the incorrect policies of the governments. Naturally, this long and continuous distance has forgotten the precious experience of cooperation between the merchants. At the same time, the cultural heritage organization also cooperated with the merchants (fig 2).

In recent years, social capital in the Bazaar was seriously damaged, which was greatly improved by this program. Furthermore, the sense of security, as well as the presence of trusted merchants in the field of social management and empowering people to intervene in the revival of the bazaar, will create a sense of satisfaction in the merchants, as well as the citizens, customers, and beneficiaries of this bazaar as one of the significant and Honorable works of architecture in the world.



Fig 2: A meeting with the merchant of Tabriz Grand Bazaar, regarding the restoration of the Bazaar. Source: Archive photos of Eng. Taghizadeh.

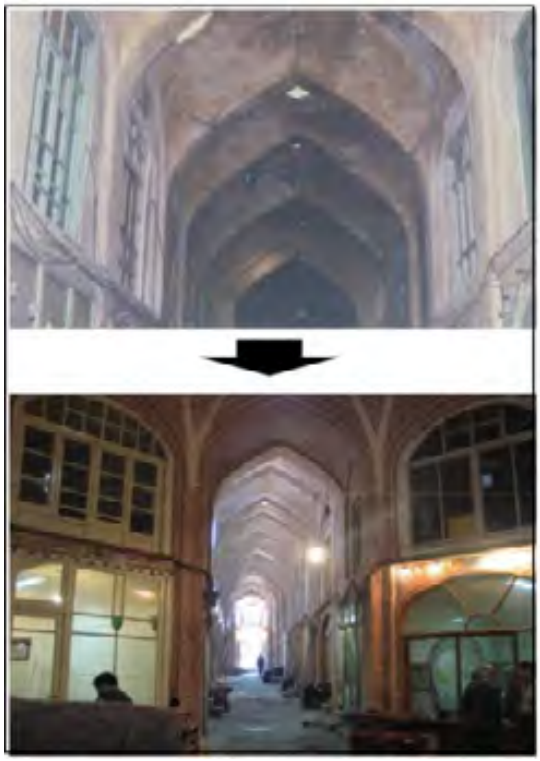


Figure 3: Restoration of Mirza Jalil Porch (Ibid)

The participation of the merchants is derived from their awareness and recognition and the feeling of loyalty and individual and collective responsibility towards the future of the bazaar. The key to success in business development in the bazaar is related to the participation of people, and it is clear that participation generally reduces the costs spent on improving and maintaining the bazaar. In the following. There are some pictures of the restoration of the bazaar with the cooperation between the cultural heritage organization and merchants (fig 3-7).



Figure 4: Restoration of Keshmeshchilar (Ibid)



Figure 5: Restoration of Mozaffarih Bazaar arches (Ibid)



Figure 6: Restoration of Amir Arcade (Ibid)



Figure 7: Restoration of Shaarbafan Arcade (Ibid)

3.4. Similar Cases

Similarly, Fernandez (2014) conducted a case study on Old San Juan, Puerto Rico, and found that social capital played a significant role in engaging the local community in heritage conservation initiatives.

The study emphasized how social networks and trust among community members facilitated collective action and community engagement in the preservation of cultural heritage.

In Italy, Franco and Perfetti (2017) conducted a study on "La Rocca" in Spoleto, and found that conservation efforts provided an opportunity for social capital generation. They highlighted how the engagement of local community members in the conservation process fostered social networks, trust, and cooperation, contributing to the preservation of cultural heritage.

Abu Aziz et al (2023) conducted a study on “Melaka” which is about the function of living heritage in advancing education for sustainable.

Development has been deemed a crucial goal by quality education as Sustainable Development Goal.

This article is to gather information on living heritage conservation toward creating a sustainability community by using the community-based education model on the communities’ attitudes, cultural knowledge, and awareness of the importance of living heritage, and their participation level towards living heritage conservation in Melaka UNESCO World Heritage Site. There is a positive significant relationship between the importance of living heritage and the local community’s participation level. The increasing of the participation level to ACTIVE would lead to a higher altitude, cultural knowledge, and awareness of the importance of living heritage in the local community.

3.5. The Relationship between Conservation of Cultural Heritage and Social Capital

The conservation of cultural heritage and social capital are closely interconnected and mutually influential. Several studies have highlighted the role of social capital in shaping conservation practices and outcomes, particularly in community-based heritage conservation initiatives. Social capital can influence heritage conservation through various mechanisms:

3.5.1. Community Engagement: Social capital can foster community engagement and participation in heritage conservation efforts. Strong social networks and relationships within a community can facilitate collective actions, volunteerism, and community mobilization for the preservation of cultural heritage.

For example, in the context of the Tabriz Grand Bazaar, social capital can enable the active involvement of local merchants, residents, and other stakeholders in conservation activities, such as

fundraising, awareness campaigns, and advocacy for policy support.

3.5.2. Traditional Knowledge and Practices

Social capital can contribute to the transmission and preservation of traditional knowledge and practices associated with cultural heritage.

Local networks, social norms, and intergenerational relationships can facilitate the transfer of traditional skills, craftsmanship, and cultural values that are vital for the conservation of heritage buildings, artifacts, and intangible practices.

For instance, in the Tabriz Grand Bazaar, social capital can facilitate the transmission of traditional craftsmanship skills from master artisans to apprentices, ensuring the continuity of traditional techniques in the restoration and maintenance of historic buildings.

3.5.3. Governance and Decision-making

Social capital can influence the governance and decision-making processes related to heritage conservation. Trust, reciprocity, and social cohesion within a community can facilitate collaborative decision-making, conflict resolution, and consensus-building in heritage conservation initiatives. Social capital can also foster partnerships and collaborations between different stakeholders, such as local communities, government agencies, and NGOs, for effective heritage conservation.

In the context of the Tabriz Grand Bazaar, social capital can influence the decision-making processes related to conservation practices, adaptive reuse of historic buildings, and urban planning, involving various stakeholders, including local merchants, residents, municipal authorities, and heritage experts.

3.5.4. Economic and Livelihood Benefits

Social capital can have economic and livelihood benefits for communities involved in heritage conservation.

Strong social networks and relationships can facilitate economic activities, such as tourism, handicrafts, and local businesses, which can provide economic incentives for communities to engage in heritage conservation.

For example, in the case of the Tabriz Grand Bazaar, social capital can contribute to the economic sustainability of the bazaar by promoting tourism, attracting visitors, and generating income for local merchants and residents through the sale of traditional products and etc.

3.5.5. Overall

These studies highlight the importance of social capital in the conservation of cultural heritage, including the Tabriz Grand Bazaar. Social networks, trust, and norms among community members facilitate community engagement, cooperation, and collective action, contributing to the sustainability and preservation of cultural heritage sites.

3.6. The Law on Conservation of Cultural Heritage

In Iran, the conservation and restoration of historic buildings are governed by the Law of the Islamic Republic of Iran on Conservation of Cultural Heritage (2008) and the operation method of the Historic Buildings and Restoration Fund (HBRF) (Iran Cultural Heritage, Handcrafts, and Tourism Organization, 2018). The HBRF is a specialized fund established to provide financial resources for the conservation, restoration, and maintenance of historic buildings in Iran (HBRF, n.d.).

The Law on Conservation of Cultural Heritage sets the legal framework for the protection, conservation, and restoration of historic buildings in Iran. It outlines the responsibilities of various stakeholders, including the government, local communities, and private owners, in the conservation process. It also provides guidelines for the identification, documentation, and management of historic buildings, as well as measures to ensure their sustainability and preservation.

The operation method of the HBRF details the procedures for applying for funding, evaluating and prioritizing conservation projects, and disbursing financial resources for approved projects. It also outlines the monitoring and evaluation mechanisms to ensure the effective use of funds and compliance with conservation standards.

The HBRF plays a significant role in financing and supporting conservation projects across Iran, including the Tabriz Grand Bazaar. It provides financial resources to conserve and restore historic buildings, encourages community engagement, and promotes sustainable conservation practices.

3.7. Discussion, Problems, Threats, and Opportunities

The conservation of historic sites is a complex process that involves addressing various challenges, mitigating threats, and capitalizing on opportunities.

Tabriz Grand Bazaar is a significant cultural heritage site with a rich history and deep civilization (Durant, 1975).

However, the conservation path of Tabriz Grand Bazaar is not without its problems, threats, and opportunities.

3.7.1. Problems in Conservation

One of the challenges in the conservation of Tabriz Grand Bazaar is the issue of deterioration and decay.

Historic buildings and structures within the bazaar may suffer from structural issues, weathering, erosion, and aging of materials, requiring careful assessment and intervention (Smith, 2010). Additionally, a lack of funding and resources can hinder the conservation process, including the hiring of skilled professionals, acquiring appropriate materials, and implementing proper conservation techniques (Yadav, 2019).

Conflicting interests and stakeholder management can also pose problems, as balancing the opinions and interests of local communities, shop owners, government agencies, and conservation experts can be challenging (Brown, 2015).

3.7.2. Threats to Conservation:

Urban development pressures pose threats to the conservation of Tabriz Grand Bazaar. Rapid urbanization and construction of modern buildings in the vicinity of the bazaar can encroach upon the historic site, affecting its physical and visual integrity (Kabirsaber, 2012). Inadequate regulations and enforcement mechanisms for historic conservation can also pose threats, as weak or inadequate guidelines may result in inappropriate interventions, alterations, or damage to the historic fabric of the bazaar (Anderson, 2019).

Furthermore, climate change and environmental risks, such as floods, earthquakes, and pollution, can pose threats to the conservation of Tabriz Grand Bazaar, requiring appropriate mitigation measures (Davis, 2016).

3.7.3. Opportunities in Conservation

Conservation of Tabriz Grand Bazaar presents opportunities for preserving local cultural heritage and generating economic benefits.

The successful model of people's participation in the restoration of Tabriz Grand Bazaar can lead to increased community engagement, ownership, and sustainability of conservation efforts (ICOMOS 2010).

Sustainable conservation practices can also be promoted, including the use of traditional and eco-friendly materials, energy-efficient interventions, and environmentally conscious approaches to waste management and water conservation (Hafez etal, 2023).

The conservation of Tabriz Grand Bazaar is faced with problems, threats, and opportunities. Proper management, funding, stakeholder engagement, and adherence to conservation principles and regulations are critical for the successful conservation of this historic site.

Efforts should be made to address the problems and threats while capitalizing on the opportunities to ensure the preservation of Tabriz Grand Bazaar for future generations.

3.8. Social Outcomes and Consequences of collaborative conservation:

3.8.1. The presence and re-participation of trusted merchants in matters related to the conservation of the Bazaar. The revival of the bazaar in a participatory manner has provided the presence of merchants and other stakeholders in decision-making and management.

3.8.2. A sense of security: Before the restoration, some parts of the bazaar were damaged, so shops were assigned to different uses, but after the restoration, the shopkeepers returned to the bazaar, and the citizens and tourists visited the bazaar with a sense of security.

3.8.3. General satisfaction: The sense of security and presence and active participation of merchants and citizens in the bazaar created a sense of satisfaction in people.

3.8.4. Improving services and increasing spatial quality in the market: After the restoration, facilities such as banks, restaurants, public toilets, and parking lots were added to the bazaar (figure 8-9).

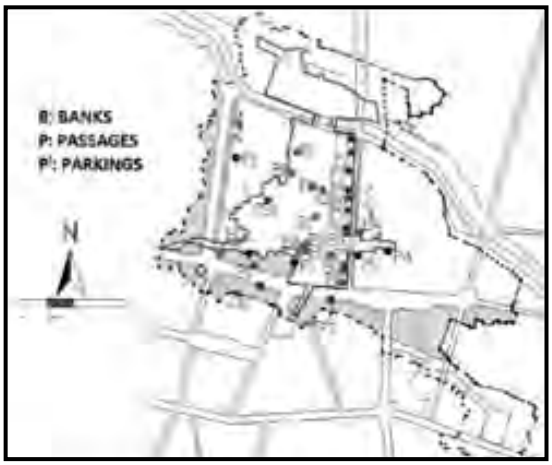


Fig 8: New services in the bazaar. (Rezaei. 2020: 102)



Figure 9. New services in the bazaar (Ibid)

3.8.5. Reducing the role of the government and increasing the role of merchants in the reconstruction of the bazaars.

The experience and financial contributions of businessmen have played a very effective role in speeding up the conservation of the bazaar.

3.8.6. Improving the Social and cultural composition of the bazaar

Because of the improvement of space quality, businesses unrelated to the bazaar were dismantled and replaced by related businesses, and land prices also increased.

3.8.7. Education

Cooperation between merchants and engineers in the matter of restoration, makes it possible to transfer experiences and brings good results

3.8.8. Belonging

The participation of the merchants and the assistance of the cultural heritage in the matter of restoration, and the knowledge of the merchants about their wealth in the bazaar, causes the belonging sense in users (Figure 11). The model of the effective components of collaborative reconstruction is presented (Figure 10).

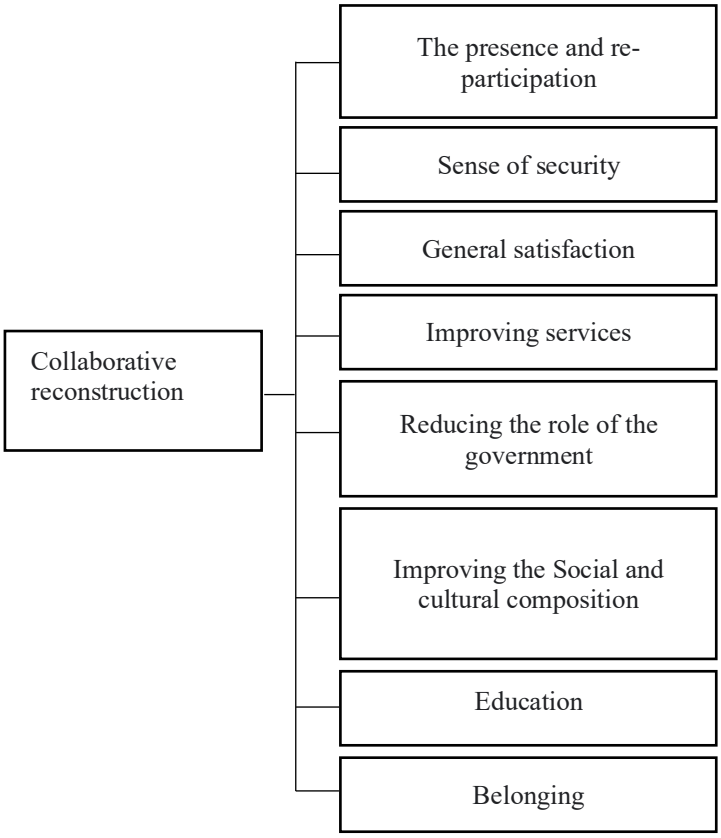


Figure 10. The model of the effective components of collaborative reconstruction



Figure 11. Performing mass ceremonies in the Tabriz Grand Bazaar

3.9. Conservation policies in Tabriz Bazaar

The findings of this research have been analyzed while considering different representative involved or affected by the process of preservation of architectural works, in line with the movement towards comprehensiveness in the process of preservation of architectural works. For this purpose, in addition to paying attention to all the attitudes expressed in all the groups, the attitudes of each of the groups of participants are also compared, analyzed and examined exclusively in relation to other groups and the topics mentioned in each group.

Also, in these studies, attention to the availability of information and expressed attitudes was also considered as one of the components of understanding the importance and impact of topics on the audience. In this way, the analysis of the findings provides a platform for the relative understanding of the general and specific concerns and tendencies of the participants of the work, as well as the commonalities and differences in the attitudes of each group, which is the basis for the convergence or divergence of their judgments and behaviors towards the process of protecting the work. The new policies for public participation in Tabriz bazaar conservation can be categorized in the following cases:

1. *The management of conservation should be done by the shopkeepers and the Cultural Heritage Organization should be the supervisor and guide.*
2. *Supply of rare materials in the market such as square bricks should be done by the Cultural Heritage Organization of the province.*
3. *The introduction of master craftsmen will be done by Cultural Heritage Organization if businessmen request.*
4. *At the beginning of the conservation, the financial participation of the bazaars should be increased from 10% to 25% and every year according to the justification of the bazaars, the above figure should be increased to 10% so that gradually all the financial resources necessary for the restoration will be done by the bazaars.*
5. *Necessary negotiations with the provincial economy and finance department should be done by the Cultural Heritage Organization so that the officials of the department can apply the obligatory discounts on Sara, Timcheh, and Rasteh that the restoration bazaars approved by the cultural heritage do.*
6. *The conservation should be done in such a way that the shops of the bazaars will not be closed and at least cause damage to shopkeepers' activities.*

In order to start the operation, negotiations should be conducted with the Tabriz municipality to issue a license for the conservation of the bazaar by the Cultural Heritage Organization and the Economy and Finance department in order to protect the rights of the businessmen who are renovating the shops and public spaces of the bazaar (Sara, Rasteh, and Timcheh). (Although both administrations had stated in advance that they will face very serious considerations and restrictions, the outcome of the negotiations is well predicted.)

Procedures started in this way one of the Cultural Heritage Organization of the province approached one of his acquaintances who were present in the bazaar and started negotiations about the benefits of conservation.

In these negotiations, an attempt was made to imagine a marketplace far from physical distress, something that usually conveys the fact that all the components of the bazaar are afflicted with it to the mentioned person, and finally, while informing them, he promised them the cooperation of Cultural Heritage Organization to assist in the restoration, conservation and arrange another meeting with a number of neighbors of the mentioned person in that Sara, Timche, Dalan, and Raste.

In the second session, usually, while informing the general population of that Sara and Rasteh about the condition of the bazaar in the past, its glory, and the effect of the integrated management of the businessmen on all the affairs of the bazaar, which was approved by some of the elderly present, and expressing the good consequences of the scientific conservation in the bazaar, the majority of them were convinced to begin the conservation of the public space of their Sara.

Finally, they were told that the management of the conservation, the collection of financial benefits and its costs, as well as the resolution of possible disputes between the shopkeepers, will belong to them and that the Cultural Heritage Organization is only related to the introduction of expert restorers (upon their request) to provide the necessary materials and equipment and deliver it to the restoration group.

Cultural Heritage Organization will be responsible for overseeing the good implementation of the restoration, and this organization will undertake to collect 25% of the required amount.

In order to implement the agreement and manage the implementation, the shop owners were asked to choose three people from among themselves, and all executive, financial and communication measures with the heritage and other executive bodies, including electricity and telecommunications, were started through their representatives.

The result was brilliant. The restored part was a new creature that the businessmen gave themselves. The restored space was very clean and bright, decorated, and the result of the group action of the shopkeepers. The next result was more interesting. More customers were attracted to the restored part of the marketplace and businesses in this part became more prosperous.

After some time, the result became more attractive and brighter. The prices of these shops that have been restored have increased significantly compared to other sections that have not been restored, and this action has caused some jobs not related to that part of the bazaar or stagnant activities to prefer to open their shops. With a good price, assign jobs

related to the main job of the desired Timcheh or Sara.

Therefore, the presence of heritage experts was not needed more than twice to justify its restoration and conservation, and after that, it was the shopkeepers of Saras and Timchehs who applied to start working in the public spaces of the bazaar (the section related to them).

So, after 2 years, the possibility of providing more human resources to be present in the bazaar was not really possible and was destined for the Cultural Heritage Organization of the province. Therefore, many applicants were usually noted by the heritage of the province in its appointment book.

Conclusion

In this research, relying on the achievements of social psychology, the extraction, and analysis of accessible attitudes for different groups in order to protect the heritage, based on the theoretical approach of causality, was considered. The results, in addition to emphasizing the central and partial issues of interest to the audience, indicate the existence of a significant theoretical convergence among different groups of beneficiaries regarding the issues related to the protection of this place.

The main attention and emphasis on physical aspects, on the one hand, represents the objective aspect of conservation and restoration in the minds of the audience, and on the other, the need to pay attention to social empowerment programs in order to increase awareness and understanding of other valuable and content aspects related to historical monuments.

Finally, considering the role and position of cultural heritage as a social resource for conservation and transferring cultural values to future generations, in addition to the need to consider people-oriented approaches in research and preservation measures for all cultural works of this land, examining how providing a dynamic and effective platform for continuous interactions with the objective and substantive processes of cultural heritage protection is one of the topics that can be processed in future researches in this field.

References

1. N. A. Abdul Aziz, N. F. Ariffin, N. A. Nor Atiah Ismail, and A. Alias, "Community Participation in the Importance of Living Heritage Conservation and Its Relationships with the Community-Based Education Model towards Creating a Sustainable Community in Melaka UNESCO World Heritage Site," *Sustainability*, vol. 15, no. 1935, pp. 3-19, 2023.
2. A. Anderson, "Inadequate regulations and enforcement mechanisms in historic conservation," *Journal of Heritage Management*, vol. 25, no. 3, pp. 123-140, 2019.
3. Taghizadeh Akbar, Archive photo, is the former general director of the Cultural Heritage and Tourism and Hand Craft Organization of East Azarbijan.
4. C. Brown, "Balancing conflicting interests in historic conservation: Tabriz Grand Bazaar case study," *International*

Journal of Cultural Heritage, vol. 12, no. 2, p. 87-103, 2015.

5. Comprehensives Plan of Tabriz, by Nagsh-e-Jahan Pars Consulting company, 2013
6. R. Davis, "Climate change and environmental risks to historic sites," *Conservation Science*, vol. 41, no. 4, p. 201-215, 2016.
7. W. J. Durant, "The Story of Civilization: Ancient Civilizations," New York, NY: Simon & Schuster, 1975.
8. G. Fernandez, "Social capital, cultural heritage, and community engagement in heritage conservation: A case study of Old San Juan, Puerto Rico," City & Community, vol. 13, no. 3, p. 273-297, 2014.
9. F. Franco and F. Perfetti, "Conservation as an opportunity for social capital generation: The case of 'La Rocca' in Spoleto (Italy)," Sustainability, vol. 9, no. 12, p. 2322, 2017.
10. A. Ghaffarianhoseini, A. Ghaffarianhoseini, N. Naismith, and J. Tookey, "Social capital and cultural heritage conservation in historic districts," Architectural Science Review, vol. 57, no. 2, p. 101-110, 2014.
11. F. Hafez, B. Sa'di, Y.H. Safa-Gamal, Y.H. Taufiq-Yap, M. Alrifaey, M. Seyedmahmoudian, F. Stojcevski, B. Horan, and S. Mekhilef, "Energy Efficiency in Sustainable Buildings: A Systematic Review with Taxonomy, Challenges, Motivations, Methodological Aspects, Recommendations, and Pathways for Future Research," Energy Strategy Reviews, vol. 45, p. 1-30, 2022. [Online]. Available: https://doi.org/10.1016/j.esr.2022.101013
12. https://doi.org/10.1016/j.esr.2022.101013
13. HBRF, "About HBRF Available: https://chre.ir/en.
14. Iran Cultural Heritage, Handcrafts, and Tourism Organization, "The operation method of the Historic Buildings and Restoration Fund," Tehran, Iran, 2018.
15. ICOMOS Report, "1346-ICOMOS-1681-en 132-146," 2010 [Online]. Available: https://whc.unesco.org/document/152434
16. B. M. Kabirsaber, "Deliberating Rashidedin Fazl Allah Planning Allah Case Study: A Review of Initial Creation of Fath Abad Village in Tabriz," Journal of Housing and Rural Environment, vol. 31, no. 140, p. 39-50, 2012.
17. "Law of the Islamic Republic of Iran on Conservation of Cultural Heritage," Tehran, Iran, 2008.
18. R. D. Putnam, "Bowling alone: The collapse and revival of American community," Simon and Schuster, 2000.
19. N. Rezaei, "A Survey on the Relationship between Contemporary Economical Activities and the Spatial Organization of Tabriz Grand Bazaar," Ph.D. dissertation, Tabriz Islamic Art University, 2020.
20. M. Tabeshian and A. Modarres, "Social capital and community participation in the conservation of historic bazaars: A case study of Tabriz Grand Bazaar, Iran," Sustainability, vol. 11, no. 21, p. 5911, 2019.
21. M. Woolcock, "Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework," Theory and Society, vol. 27, no. 2, p. 151-208, 1998.
22. UNESCO World Heritage Centre, "Tabriz Historic Bazaar Complex," Available: https://whc.unesco.org/en, 2021.
23. P. Yadav, "Construction Techniques in Architectural Conservation," Journal of Civil Engineering and Environmental Technology, vol. 6, no. 5, p. 344-348, 2019. Available: http://www.krishisanskriti.org/Publication.html.

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
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Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

HERITAGE CONSERVATION TECHNIQUES AND THEIR APPLICATION IN TABRIZ HISTORIC HOUSES: A CASE STUDY OF SADAGHIANI'S HOUSE

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Abstract

The conservation of historical and cultural heritage has always been an important issue. We highlight the historical identity when preserving our heritage. This article studies the types of conservation and restoration approaches in Tabriz city and examines its components in the Sadaghiani historical House. The preservation of heritage in all its forms poses several unique problems. The issue must be considered in terms of the cultural, economic, and political values of the society in which it exists. The problem of financing is one of the most important obstacles to accomplishing this task. The purpose of this article is to present the conservation approaches in Iran regarding the historical houses of Tabriz. The goal is to identify the theoretical models effective in Tabriz's historical house conservation in A Case Study of Sadaghiani's House. The research is a type of theoretical research conducted with interpretive-historical methods, and the necessary information has been collected through library studies and field surveys. The spaces in this house have changed over time. Parts of it have been destroyed or separated so that they are used after restoration as the Faculty of Architecture and Urbanism. There are 7 stages in the restoration approaches after the revolution in Tabriz, which Sadaghiani House conservation is categorized into three components: The second stage: protection with a cultural use approach, the fifth stage: large-scale urban protection, the seventh step: protection with a retrofitting approach.

Keywords: *Restoration of the building, patterns of preservation of historical monuments, Sadaghiani House, Tabriz*

Introduction

Building restoration refers to the process of correctly revealing the state of a historic building, as it looked in the past, and recovering the same by various measures while respecting its heritage value. Restoration involves returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components

without introducing new materials. Conservation means the process of retaining a structure's historical, architectural, aesthetic, and cultural significance. Preservation stands for maintaining the fabric of a place in its existing state and retarding deterioration whereas reconstruction implies returning a place as nearly as possible to a known earlier state and distinguished by the introduction of materials into the fabric. Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period (Sandbhor 2013).

Reconstruction is a method that is implemented when a cultural heritage building or a group of buildings are partially or completely destroyed due to natural disasters such as earthquakes and fires, or man-made causes. Rehabilitation of society, meeting the housing needs, restoring the symbolic value of the buildings for the city and society, as well as preventing the loss of social identity and memory are among the reasons for the implementation of the reconstruction method. (Akçay, Korkmaz et al. 2022) Establishing an effective method for the restoration of historic buildings and their reuse and sustainable renovation in terms of energy efficiency according to conservation needs is an especially important issue (Šekularac, Ivanović-Šekularac, et al. 2020). However, the condition and appearance of any monument are always the results of a constant historical process involving various changes, modifications, and transformations that have taken place over the years. These can be changes caused by both the forces of nature and human interference (Mollá, Sagarna, et al. 2022). Conservation in Iran has a history of one hundred years, although the concept of preservation of cultural and religious works in Iran has been mentioned since the Achaemenid period in the Biston inscription and in the Islamic period based on the existence of religious beliefs and the orders of the Holy Quran and the traditions of the infallible. But the new protection started at the same time with the formation of popular institutions and the approval of relevant laws in the National Assembly; After that, protective measures were always based on values and national and transnational regulations (NejadEbrahimi, Haghparast, et al. 2014).

The beginning of restoration and revival of the historical houses of Tabriz started by reviving the Mashrooteh (Constitutional) House as a Mashrooteh (Constitutional) Museum, the historical houses of Behnam, Qadaki, and Ganjeizadeh as the Faculty of Architecture and Urbanism of Tabriz Islamic Art University, Salmasi Houses as Sanjesh (Measurement) Museum, Amīr Neẓām Garrūsī House as Qajar Museum, Mirzaei, and Nishaburi House as a center of Quranic activities, the house of Sharbat-Oghli as the center of Iranology, the house of Dr. Urdo-badi as the National

Library and Archives of Iran in the northwest of the country, the house of Laleei as the foundation of historical researches of Yahya Zakka between the years 1996 and 2003 is a good start for the revival of the historical houses of Tabriz.

Due to its proximity to the borders of Ottoman and Imperial Russia and the many connections that merchants, businessmen, and politicians have had with these countries, Tabriz has had many effects on the construction of residential space from these centers, which is clearly evident by studying the shapes and forms of the houses. In this way, the house of Behnam or Qadaki can be compared as an example of the houses that have elongated porches in the facade with the house of Amir Nezam Garrusi. In Amir Nizam's house, there is a solar form with a pyramid shape in the main facade of Tabriz houses, there is a connection and it shows the adaptation of classical architecture, which is a symbol inspired by classical Greek and neo-classical European architecture. This shape can also be seen in Sauj Balaghi, Alavi, and Kalantari houses. "In the two mentioned examples [Savuj Bulaghi and Amir Nezam houses], to emphasize the porch, a centaur is placed in the middle, which is an imported element"(Keynejad and Shirazi 2020): 32, while before and In the early days of Qajar, the facades of the houses in Tabriz had long and high porches like Behnam's house in Tabriz. "The shape of the porch in this period [early Qajar era] is a rectangle with a longitudinal extension in the direction perpendicular to the main axis"(Keynejad and Shirazi 2020: 26).

Residential houses in Tabriz, like the society of Iran, underwent drastic changes and transformations, the change in lifestyle and the government's propaganda caused the people's desire for a house to change. And the third is in these houses, the number of built fronts is reduced and most of them are built on the north front (Lalei and Sehati houses) or on two fronts (Rastegar and Nishaburi houses). Also, there are houses in the form of kholahfrangi, which have an exterior view on all four sides (Keynejad and Shirazi 2020). Colorful Orosi windows are replaced with simple and unadorned rectangular windows. The vestibule and the hall, which were the template of the Qajar era, are replaced by different entrances, and there are no more luxurious vestibules of the previous period. In the houses of Mojtahedi and Ganjeizadeh, the halls, which had high ceilings, are divided into two floors, which causes the height of the ceilings to be shortened.

Research Methodology

The purpose of this article is to present the views and conservation approaches that have existed since the beginning of modernization in Iran regarding the historical houses of Tabriz. The objective of this research is to identify the theoretical models effective in the preservation of the historical Qajar houses of Tabriz and to examine the restoration experience of Sadaghiani House. The research is a type of theoretical research

conducted with interpretive-historical methods, and the necessary information has been collected through library studies and field surveys. The research question is: what are the common theoretical models used in the restoration and revival of historical houses in Tabriz during the contemporary century? These models have been examined in case examples.

Restoration Approaches

Cultural-historical houses are one of the prominent cultural signs and symbols among other historical cultural monuments, and since the house is a direct and direct reflection of the form and type of human life, its protection is necessary for generations. The protection of houses in Iran has had different stages, which are briefly mentioned below to deal with the houses in (Fig 1).

Briefly, four stages can be mentioned for the protection process of historical houses before the Islamic Revolution. (Table 1).

Describes the characteristics and examples of each stage. The reason for choosing these houses is due to the existence of documents and other studies of them.

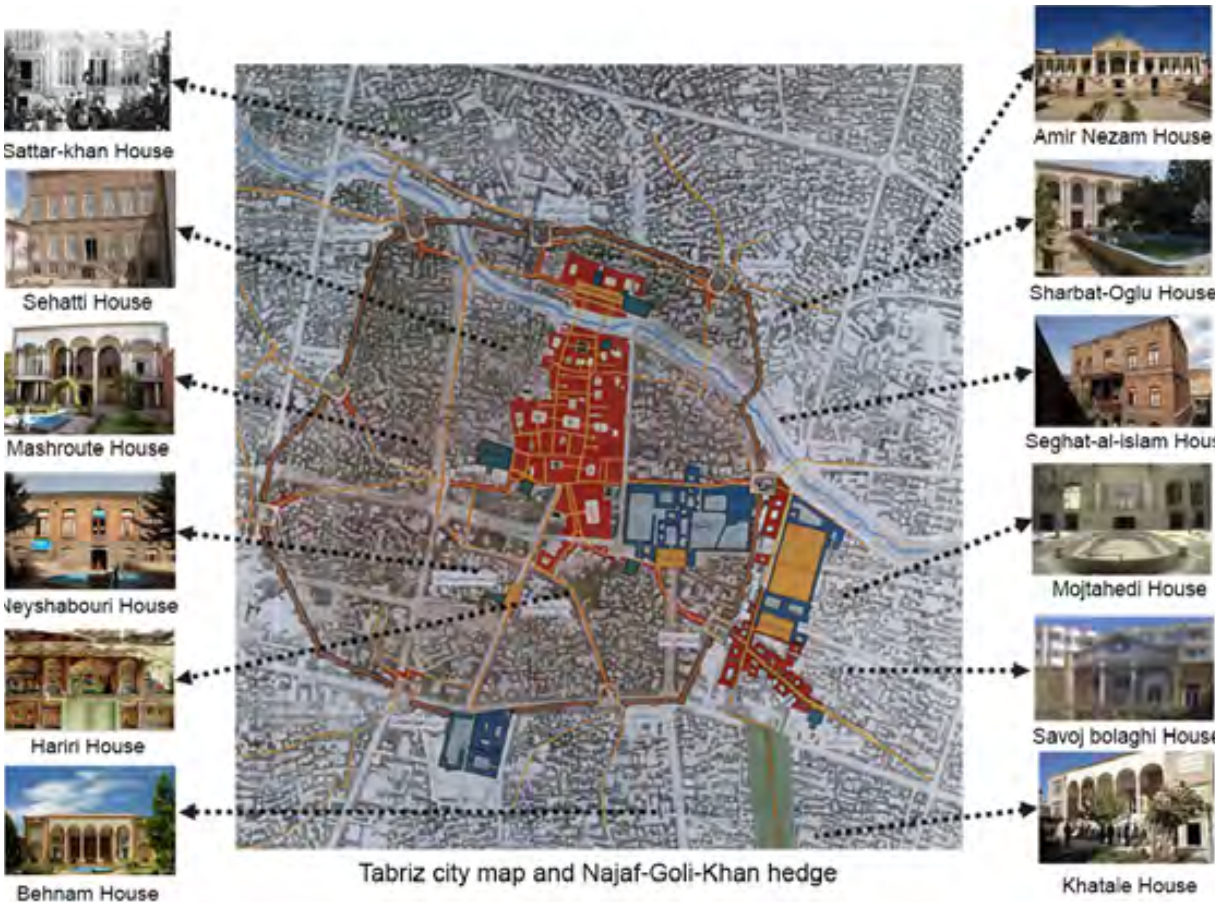


Figure 1. Important historical houses in the central core of Tabriz city (NejadEbrahimi, Haghparast, et al. 2014)

Restoration approaches before the Islamic Revolution		
Stages	*Headlines*	*Description*
Stage 1	*Additions of Western schemas to the traditional style, shapes, and forms*	*Removal of Orosi windows: Despite of the Qajar era, most of the Orosi windows were removed from historical houses which had financial and operational problems in protection and maintenance, and were replaced with smaller rectangular windows. (Like Behnam and Alavi Houses). (Kinejad 1389: 33)* *Removal/Division of Tanabi: the Orsi halls, which were built with a high height in the Qajar period, were divided into two floors by adding stairs on the sides (like Ganjeizadeh and Mojtahidis). (Kinejad 1389: 33)* *Remove /cover the porch: Adding a Porch area to the main hall by covering it or complete removal of the balcony and porch.*
Stage 2	*Protection regardless of the main structure of the building*	*Over time, with the reduction in the cost of building the building, compared to the preservation of the old body, the residents began to destroy and rebuild parts of the building. In most cases, only the basement of the house, which was immune from damage, was not reconstructed, and the rest of the house was completely rebuilt. (like Goharioun House)*
Stage 3	*Using elements of outstanding houses in other important buildings*	*The use of Orosies, tiling, and old doors of houses that are being demolished in other buildings that are being renovated is one of the most common works.*
Stage 4	*The beginning of the new registration and protection of works*	*The first registered building of Tabriz in the cultural heritage organization is the Constitutional House in 1354. The second national monument was the Amir Kabir House in 1375, 21 years after the first one.*

Table 6. Restoration approaches before the Islamic Revolution in Tabriz (source: authors)

With the introduction of new construction technologies and foreign architectural elements in the Pahlavi period, a distance was created from the continuous series of Iranian architectural styles. Among the changes in the architecture of the houses are the removal of large Orosi windows, the division of the nabs into two floors with a lower height, and the removal of the porches in the houses of Behnam, Sadaghiani, Ganjeizadeh, and Mojtahedi.

Over time and with the loss of the economic justification of maintaining old houses in the reconstruction process, the goal of modernizing the house was considered to preserve the ancient heritage and finally the built building had the least resemblance to the original work, and only the basement of the house due to its stable location In the third stage, with a change of perspective towards the cultural and historical heritage, the valuable elements and indicators of the historical buildings under destruction were preserved and in the reconstruction of other projects Or they were used in newly established buildings. Finally, in the fourth stage, after a gap of several years since the establishment of the National Organization for the Protection of Antiquities of Iran, a valuable approach to historical houses was formed, and by the end of Pahlavi's rule, 104 historical houses

were registered, of which only one house was in Tabriz.

After the settling down of the revolution and the end of the war, in the third decade, attention to cultural issues and protection grew a lot. In the meantime, historical houses played an essential role in the conservation planning process, but of course, this attention became the source of secondary problems. The protection of cultural-historical houses during the Islamic Revolution can be classified into seven stages which are described in (table 2).

Restoration approaches After the Islamic Revolution		
Stages	*Headlines*	*Description*
Stage 1	*Confusion in the use of protected buildings*	*In the 10 years from 1996 to 2005, 50 historical houses were registered on Iran's national heritage list in Tabriz. This caused a problem that is confusion of the space's function and how to use protected houses due to changing today's lifestyle. Although at the beginning it seemed that these houses can be considered as valuable historical city symbols even in the form of simple house-museums, but over time and the expansion of the number of houses, there was a need for making the house functional and revitalizing various uses. The first experience began with the formation of the Faculty of Architecture and Urbanism of the Tabriz Islamic Art University with the change of use of three houses named Behnam, Ganjeizadeh, and Qadaki.*
Stage 2	*protection with a cultural use approach*	*The first and most accessible use for the restored houses was the museum use; Among these examples, we can refer to the house of Mirza Mehdi Kozekanani (Mashrooteh Museum), the house of Amir Nezam Garrusi (Qajar Museum), the house of Salmasi (Sanjesh Museum), the house of Sehati (Museum of Science), and the house-museum of Shahriar. With the increasing use of the museum, the need for different cultural spaces became. One of the most outstanding works in this direction was the integration of the historical houses of Behnam, Qadaki, Ganjeizadeh, and Sadaghiani located in the Maqsoodiye neighborhood of Tabriz and changing their use to the Faculty of Architecture and Urbanism.*
Stage 3	*Protection for residential use*	*A limited number of historical houses in Tabriz were bought by real people between 2001 and 2005 with the encouragement of the cultural policymakers of Tabriz, and after their complete restoration, with the help and cooperation of the Cultural Heritage Organization, they were used again as living spaces. Including Boulurchian House and Khataei House in Sadr Alley.*
Stage 4	*protection with an economic utilization approach*	*With the establishment of the Pardisan Tourism plan in 1997, historical buildings could be assigned to various uses related to the tourism industry, including hotels and accommodation centers, and information and service centers. In Tabriz, although historical houses have not been seen as hotels, but in line with the economic exploitation of the houses, it is possible to mention the protection and restoration of Heydarzadeh House and changing its use as a tourism information center of East Azerbaijan province.*
Stage 5	*large-scale urban protection*	*After the transition from the registration of individual landmark buildings and historical houses in the form of residential, cultural, and economic use approaches, it is time to protect them on an urban scale. Although no measures have been taken regarding the national registration of urban blocks, we can point to the example of the Faculty of Architecture and Urbanism, which consists of seven large historical houses with an area of 21,000 square meters, which includes a part of the Maqsoodiyeh urban block.*

Stage 6	*withdrawal from the list of registered national monuments and destruction of historical and cultural houses*	*Over time the number of registered national monuments, especially historical houses located in the central contexts of cities, were acquired and destroyed by abusive people. This issue became more intense, especially with the increasing value of the land and economic benefits in demolition instead of reconstruction and use of buildings again. The owners of the houses filed a complaint with the Administrative Court of Justice and tried to remove their registered house from the list of national monuments. Part of Ganjaeizadeh's house is one of the historical houses in Tabriz which was destroyed in 2009.*
Stage 7	*protection with a retrofitting approach*	*Based on seismic issues, buildings are graded in four categories with very high, high, medium, and low importance coefficients depending on the uses formed in it. According to this classification, residential houses are placed in the category of medium importance factor, and educational spaces are placed in the high importance factor due to the presence of more people. Following the change of use in the Faculty of Architecture and Urbanism of Tabriz Islamic Arts University, the project as an example of retrofitting, Sedekiani House can be mentioned as one of the important retrofitting that has started since 2010, which was built using skeletal structures while preserving the original body, which was added to the Faculty of Architecture and Urbanism complex.*

Table 2. Restoration approaches After the Islamic Revolution in Tabriz (source: authors)

Tabriz Islamic Art University, Faculty of Architecture and Urbanism

In (table 2), restoration approaches in the contemporary period (after the revolution) in Tabriz were explained.

By reviewing the mentioned case examples, it seems like the complex of the Faculty in the Maqsoodiye neighborhood is one of the best restoration projects in Tabriz.

The philosophy of the presence of this complex is to change the use and vital restoration of the old houses of Tabriz city, by removing the dust from their faces, and new vitality was breathed into the body of these buildings (Keynejad and Shirazi 2020).

This faculty started in 1999 with the purchase and restoration of three old houses in the context of the old neighborhood (Fig 1).

Currently, it is operating with the development of more than 7 other old houses and a residential caravanserai in a city block with an area of about 22000 square meters.

This complex consists of 10 historical houses named Behnam, Ganjeizadeh, Qadaki, Sadaghiani, Mimar Ali Tabrizi (Goharioun), Ostad (Master) Reza Memaran (Javaherian) and Najafaqoli Khan (Ghafarian), etc (table 2).

In the meantime, Sadaghiani's house will be examined in detail in the rest of this article due to the lateness of its restoration and reconstruction project, its considerable area, the use of different methods, and the attractive process in its reconstruction.

After introducing the restoration process of the Sedekiani house, restoration approaches in this project will be reviewed.



Figure 2. The location of faculty is in Maqsoodie city block (source: authors)

picture			
name	*Behnam*	*Ganjeizadeh*	*Qadaki*
picture			
name	*Mimar Ali Tabrizi (Goharioun)*	*Master Reza Memaran (Javaherian)*	*Sedgh-ol-Saltaneh House*

Table 3. Important and famous houses of Tabriz Faculty of Architecture and Urbanism (source: authors)

Sadaghiani House Introduction

Sadaghiani Historical House is a complex of several interconnected houses and courtyards. This house belongs to the middle of the Qajar period and some parts go back to the Pahlavi period. It is located in the Nobar neighborhood of Tabriz. The buildings and spaces of this historical complex have changed over time. The construction of a new street on the east and north sides of the complex caused a significant part of it to be destroyed and parts of it to be separated or destroyed due to the widening of the surrounding streets and the missile strike during the Iran-Iraq war in 1985. This house is one of the historical houses in Tabriz that include decorations and has a unique plan. Considering the historical importance of this house and the change of its use as a part of the Faculty of Architecture and Urbanism of Tabriz Islamic Art University as well as the special restoration of this building, the house was selected for a case study. Table 4 presents the general trend of changes in recent decades.

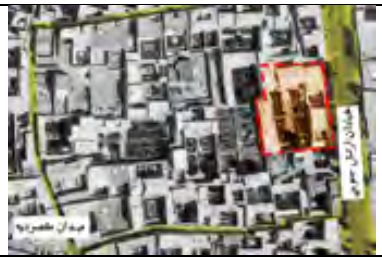
		
a. Aerial photo of Nobar neighborhood of Tabriz, 1956, (Source: Country Surveying Organization Analysis: Authors)	*B. Aerial photo of Nobar neighborhood of Tabriz, 1967, (Source: Country Surveying Organization Analysis: Authors)*	*C. Aerial photo of Nobar neighborhood of Tabriz, 1991, (Source: Country Surveying Organization Analysis: Authors)*

Table 4. The process of changing Sadaghiani's house in recent decades due to street construction (Authors)

Sadaghiani House belonged to one of the wealthy merchants of Tabriz who engaged in various activities and lived next to family and relatives. The oldest available image of this building has been presented in (figure 3). The Qajar-style facade of the main building is a part of the central courtyard and the house on the western side, the date of which is unknown. In this figure, stretched porches on the north front and the main spaces of the house on the west front can be seen. In the houses that belong to the early or middle Qajar period, there are a sitting room, a springhouse, corner upper rooms, and a porch (figure 4) as the main spaces and they are located along the main axis of the house.



Figure 3. The house's main building on the west side (Source: Archive of the Technical Office of Tabriz University of Islamic Art)

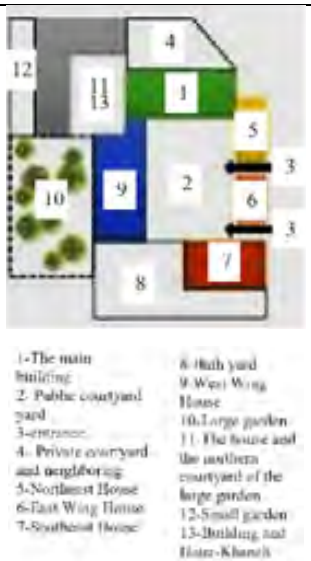


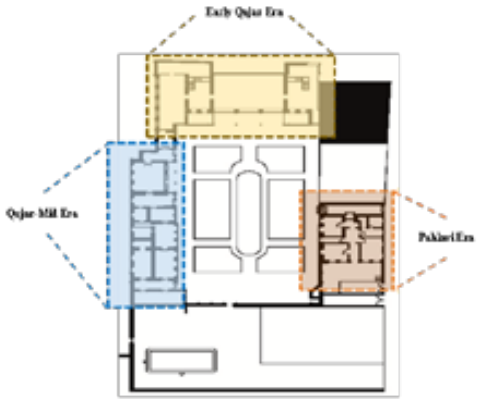
Figure 4- The house's main building on the North side with long porches, (Source: Archive of the Technical Office of Tabriz University of Islamic Art)

As presented in (table 5(a)), the multiplicity of spaces in this building is obvious. According to (table 5 (b)), the house included three separate parts from the very beginning, which were related to each other despite their independent identities and were reminiscent of the U-shape. However, they have been combined in subsequent periods. The northern house is the oldest and most important part. This area was the main space for family gatherings and had an inner yard called as Kitchen yard.

The eastern house is known as the Pahlavi house; due to the design of the plan, this part is completely in Pahlavi style and no other traces of Qajar principles can be seen in this part. The first floor is often used as a living room and reception area for guests and had access to the rooms through a vestibule. In the basement, there are more service spaces such as a kitchen, storage, and water storage.

The western wing of the building is located between the central courtyard and the garden and has a row of rooms facing the courtyard, the turning point of which is the hall of this complex, which is located in the middle of the north of the building and behind the porch.





A- Different spaces of the Sadaghiani complex	*B- Historical periodization of Sadaghiani House parts*

Table 5. Introduction and historical periodization of different parts of Sadaghiani House (Ebrahimi, Farrokhi, et al. 2022)

Sadaghiani House development periods

First period: This period is a bit vague, only according to the remains of the northern side of the springhouse, there might be a porch-like building in this section. The leftovers of the arched ceiling, the height of 4.7 meters on the northern side of the springhouse, etc. indicate that this part is the remains of a porch overlooking the south. Most of the remains from this period are related to its magnificent springhouse.

Second period: according to the remains of the underground floor and the sondage trenches in different parts of the building, indicates that the house included of three independent houses which were related to each other at the same time (figure 3). The southern part (third house) included an independent courtyard and house which was separated by a wall of others and was built in a period before the construction of the current Sadaghiani façade. There was a porch in front of the main courtyard. On the contrary, the first house overlooking the northern courtyard had an east-west extension, and the main front of the second house was on the west side of the courtyard, and this is what can be seen in some historical houses in Tabriz, such as Haj Sheikh House.

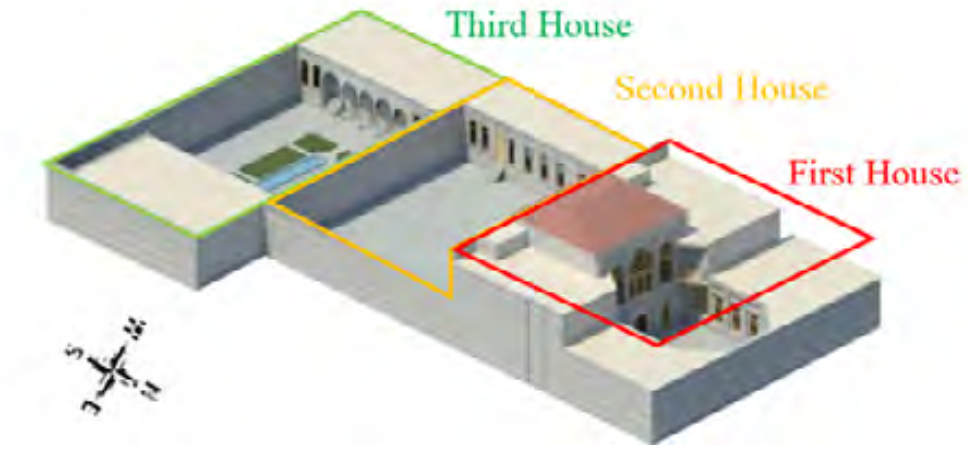


Figure 5. Building changes in the second period (Source: Authors)

Third period: Merging the northern and southern houses and turning them into a house happened in this period. At the same time, a large courtyard was created for Sadaghiani House by destroying parts of the southern house and the wall between the houses.

Fourth period: The changes in this period coincided with extensive urban changes in Tabriz. With the passage of the Road Development Law, the current Artesh Street was constructed, causing destroying of some parts of the eastern side.

Fifth period: In the second Pahlavi period, many changes were made in the interior and exterior of the house, including 1- the removal of a part of the

northeastern part of the house, which was separated due to dividing the house between the heirs. 2- The northern porch belonging to the Qajar period and its sashes were removed and it was added to the sitting room. 3- The eastern and western stairs also underwent many changes. 4- Changing the earring rooms; corner upper rooms were located on the northern elevation to the balcony. 5- Part of the large garden was demolished and an L-shaped building was built, which was later demolished totally. 6- The inner courtyard at the north of the house has been destroyed a result of the construction of Ark Street in 2003.

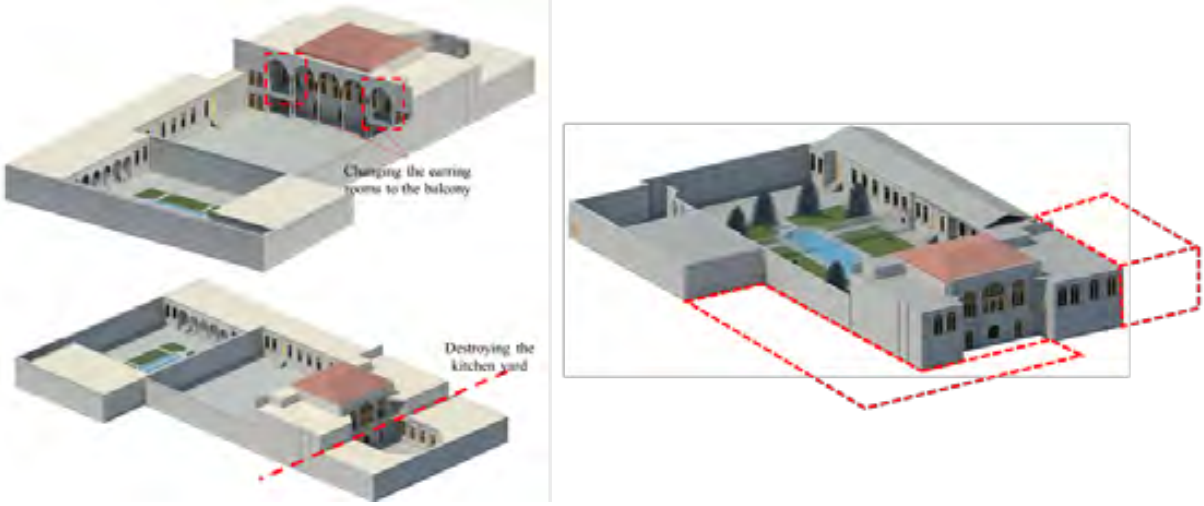


Figure 6. Changes made in the fifth period of the building (Source: Authors)

Interventions in Sadaghiani House

Main Springhouse

In the Sadaghiani springhouse, a small part of it was left in the southeast and west corners of the space (table 6), which was discovered and prepared based on the documents and comparative studies with other samples in the historical houses of Tabriz. The construction of the application plan was reconstructed and restored in 13 stages.

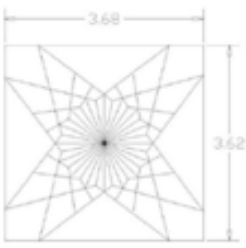
			
Springhouse remains	*The geometry of the springhouse's covering*	*3D model of springhouse arches*	*After springhouse restoration*

Table 6. Sadaghiani Springhouse (Source: Authors)

Inner courtyard on the north

After the destruction of this house in the path-opening process, with the agreement of the municipality and the cultural heritage organization, so that the main lines of the past inner courtyard could be shown by advancing on the footpath in the northern part (Ark Street). This work is done by creating a small space like an inner courtyard and only to the extent that it is reminiscent of the past, the entire sidewalk on the upper floor is covered and created as a building above the sidewalk, and its ground floor space acts as a semi-open space and Sabaat, as a beautiful urban space.



Figure 7. Inner courtyard new design on the north front to ark street (Source: Authors)

Main Façade on south

Sadaghiani's house had lofty and large porches on the south front overlooking the outer courtyard, but the additions of the Pahlavi period removed the porches, and residential spaces and rooms were built instead. By studying the historical images and matching those with the current state of information, their dimensions and sizes were gotten; then by designing the executive details and matching them with similar examples in historical houses, its details were defined.



Figure 9. Main south facade restoration structure (Source: Authors)

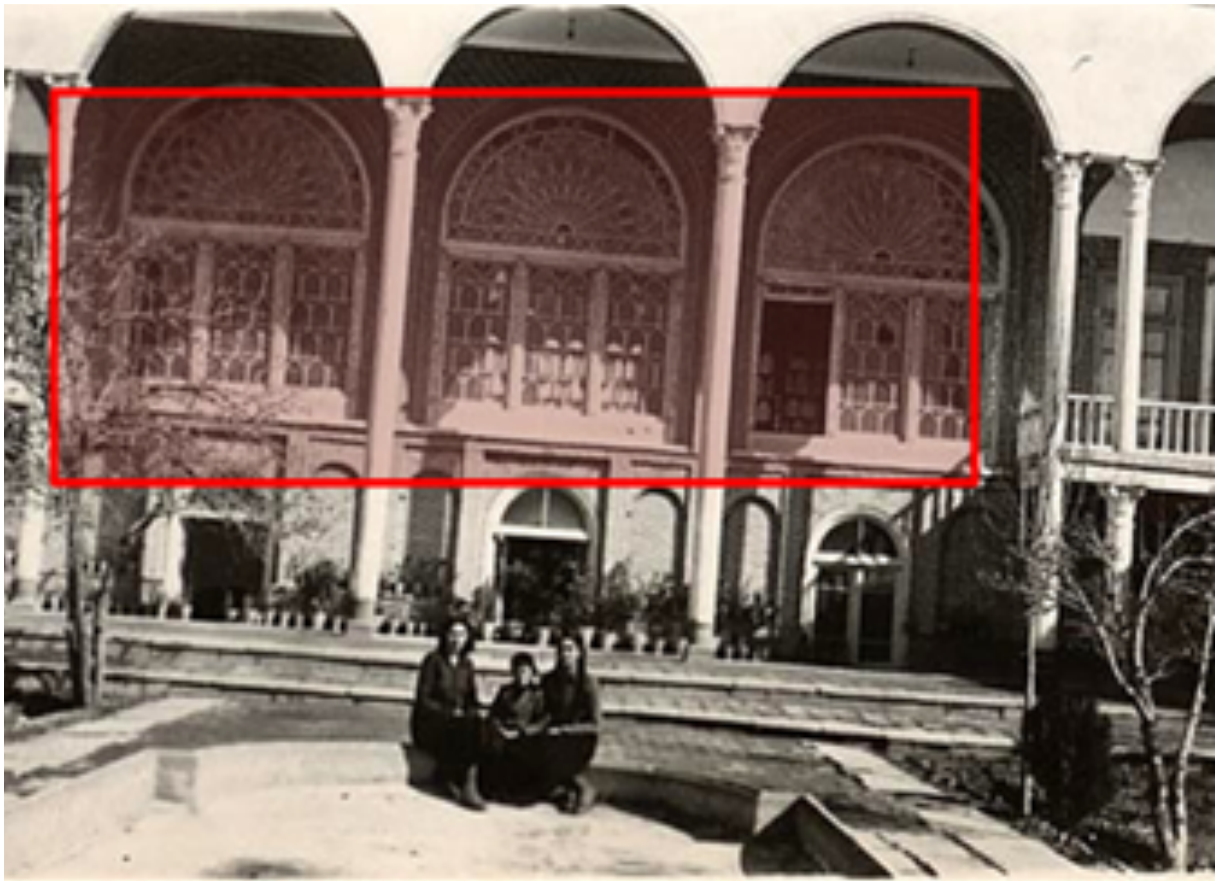


Figure 8. Main south Facade in old photos (Source: Authors)

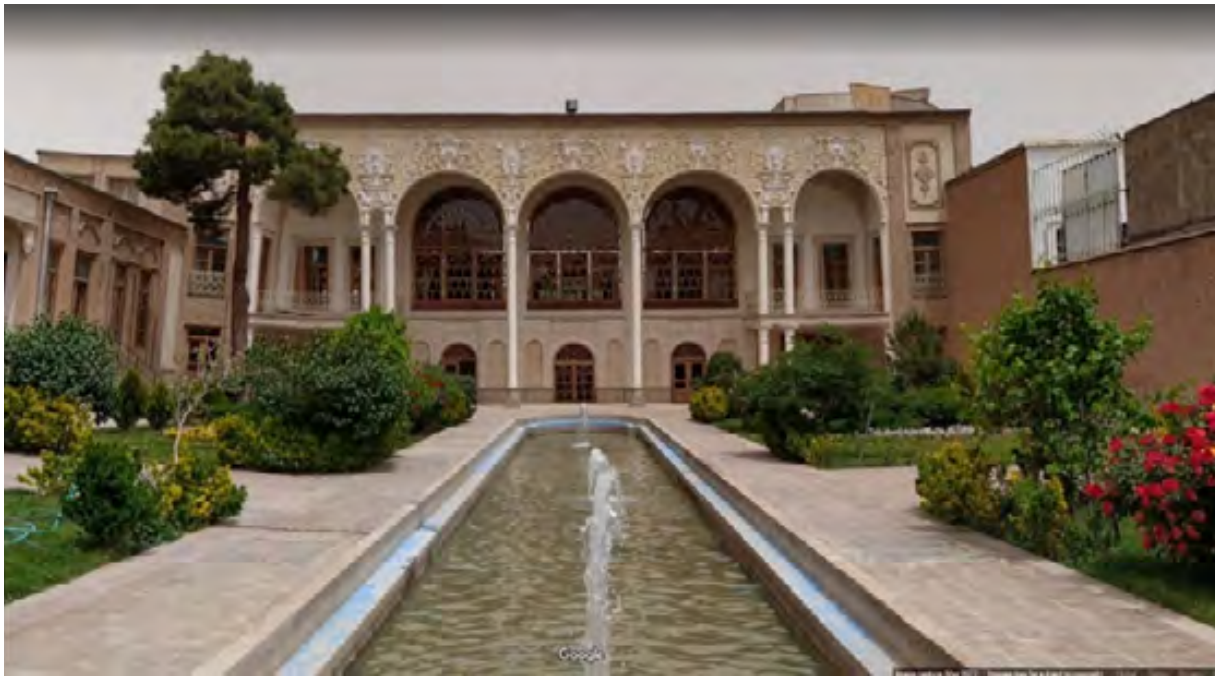


Figure 10. Sadaghiani Main south facade currently (Source: Authors)

According to the condition of the building, restoration and retrofitting measures include at three different levels:

1. The first level was the implementation of columns to transfer the load of the roof to the foundation, as well as connecting the existing walls to these columns and restraining the lateral movement of the surrounding walls, as well as restraining the floor load.
2. The second level was floor design and execution to prevent the transfer of the load related to the floor to the brick arches of the basement floor and restraining these loads by new structural elements.
3. The third level includes the design and implementation of a new style roof based on the shape model of the previous roof.

To strengthen the building structure, it has been necessary to change the structural system and use durable and high-quality materials. For this purpose, the horizontal and vertical ties used in walls and ceilings have been replaced by reinforced concrete columns with bars, concrete slabs all over the basement ceiling, and steel trusses on the ground floor ceiling. Wooden lintels have also been replaced by steel lintels. Due to the change of use, the connections to the basement of this building have been deliberately transformed and major physical changes have taken place on the ground floor. Of course, it has been tried to show the location of the changes by signs on the ceilings (the location of the walls removed to use the space as an educational space). The basement has remained completely the same as in the old days. While the shape of the interior spaces has been changed (eliminations or additions) on the eastern side of the ground floor due to the change of use and the presence of more people, there has been no change on the western side. Materials integrity as one of the authenticity criteria has not been observed on the western side. However, form integrity has been observed in the facade and the basement of the building. The building also enjoys design integrity due to the presence of humans and their activities in it.

Conclusion

The conservation of historical and cultural heritage has always been an important issue. We highlight the historical identity when preserving our heritage. This article studies the types of conservation and restoration approaches in Tabriz city and examines its components in the Sadaghiani historical House. The preservation of heritage in all its forms poses several unique problems. The issue must consider in terms of the cultural, economic, and political values of the society in which it exists. The problem of financing is one of the most important obstacles to accomplishing this task. All these conditions led to the emergence of different approaches in two periods of government in Iran, the Pahlavi period and the Islamic Republic. In the Pahlavi period, 4 stages can be observed in the protection of historical monuments in

Tabriz such as 1 Influence from the West 2- Protection regardless of the main structure of the building 3- Using elements of outstanding houses in other important buildings 4- The beginning of the new registration and protection of works. With regime change in the Islamic Republic, the identification and registration of historical monuments increased rapidly. This had advantages and disadvantages. There are 7 reservation stages in this period: 1- Confusion in the use 2- cultural use approach 3- residential use approach 4- economic approach 5- large-scale urban protection 6- withdrawal from the list of Cultural Heritage 7- protection with a retrofitting approach.

By studying examples of the application of these approaches, we realized the importance of the Faculty of Architecture and Urbanism of Tabriz Islamic Art University project. This complex started with the renovation of 3 famous historical houses in Tabriz (Behnam, Ganjeizadeh, and Qadaki) and now it is almost a city block including 11 historical houses and other spaces in the Maqsoodiye neighborhood. One of the latest and biggest conservation and restoration projects in this complex is the Sadaghiani house.

This house belonged to one of the wealthy merchants of Tabriz, which underwent changes and transformations in 5 periods during its exploitation by its owners. Partly due to the needs of the house owner and partly due to the laws and urban changes, parts of the house were destroyed and transformed. In recent decades, a large part of the house was destroyed because of the neglect of residents and being abandoned and hit by missiles during the Iran-Iraq war. During the Faculty development plan, this house was renovated and restored based on the available documents and pictures for cultural and educational purposes.

The main body of the house (north wing) was completely destroyed except for the basement (springhouse), which based on the remains and documents and studies, the design of the springhouse, the main facade, and the inner courtyard are exactly as it was in the past but with new and reinforced structures and It was built in as it looked in the past.

The inner courtyard design was a pioneering move. In accordance with Restoration approaches; this house is part of a large-scale urban restoration project, and a variety of retrofitting techniques and strategies have been used.

One of the important works of this paper is an examination of the challenges of conservation in the contemporary era by studying restoration approaches in Tabriz houses and looking for them in one of the city's newest restoration projects.

With studies like this, by informing the people, the participation of people in preserving their heritage, identity, and awareness of its importance is considered as an effective factor in achieving the sustainability of these inheritances through a successful program of sustainable development.

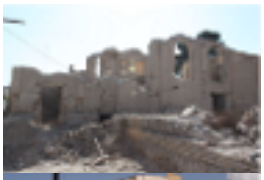
Main Part (north)						
Location	*Complication*	*Cause*	*Pictures*	*Restoration approaches*		
North Elevation	*• The wooden arch was replaced to reinforce the new metal arch in the main elevation. The facade in this part was reconstructed exactly according to the old pictures of the house and was built with new materials and structures.* *• Orosi decorations and windows were reconstructed exactly according to old pictures and documents*	*• A rocket hit the building* *• To be uninhabited for a long time* *• Negligence of the owners in repair and maintenance* *• Changing the staircases and facade balconies in different periods according to the owner's needs*	 	*The second stage: protection with a cultural use approach*	*The fifth stage: large-scale urban protection*	*The seventh step: protection with a retrofitting approach*
Underground	*• Demolition of a part of Hozkhaneh and North Androni* *• Few remains of the building* *• retrofitting and rebuilding exactly the same*	*• Construction of new Ark Street* *• Migration of previous residents* *• A rocket hit the building*				
First	*• Change of residential to educational use* *• Creating classrooms and communal spaces* *• Reinforcement of the structure* *• Reconstruction from scratch based on existing documents and contemporary needs* *• Wooden floor beams are used instead of concrete slabs.* *• Wooden columns were removed and replaced with reinforced concrete columns.* *• The use of a steel truss roof instead of a flat wooden beam roof*	*• Integration of the house with the Faculty of Architecture and Urbanism* *• Complete destruction of the structure* *• Considering the high volume of the user population* *• Changing the house plan into 5 main periods* *• Adding and removing exterior and interior elements according to need or financial ability*	 			

Table 7. Report of Main Part (North) (Author)

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References

1. C. Akcay, N. M. Korkmaz, and B. Sayin, "An approach for the reconstruction of a traditional masonry-wooden building

located in an archeological area. Part I: Methodology," Heritage Science, vol. 10, no. 1, p. 34, 2022.

2. L. Damas Mollá, M. Sagarna, A. Zabaleta, A. Aranburu, I. Antiguedad, and J. A. Uriarte, "Methodology for assessing the vulnerability of built cultural heritage," Science of The Total Environment, vol. 845, p. 157314, 2022.
3. A. N. Ebrahimi, S. Farrokhi, and M. Shabahang, "Criteria Affecting the Preservation of the Authenticity in Restoration of Sadaghiani's House in Tabriz," Bagh-e Nazar, vol. 19, no. 108, 2022.
4. S. Fadaei Nezhad and P. Eshrati, "Analysis of Authenticity Recognition Components in Cultural Heritage Conservation," HONAR-HA-YE-ZIBA, vol. 19, no. 4, pp. 77-86, 2015.
5. B. M. Feilden and Y. Jokilehto, "Evaluation for conservation," Haft Shahr, vol. 1, no. 12-13, pp. 17-25, 2003.
6. M. Habibi and M. Maghsoudi, "Urban Renovation," University of Tehran, Tehran, 2011.
7. J. Jokilehto and H. Stovel, "Viewpoints: The Debate on Authenticity," ICCROM Newsletter, vol. 21, pp. 6-8, 1995.
8. Y. Jokilehto, "A History of Architectural Conservation (M. H. Talebian, Kh. Bahari, Trans.)," Tehran: Rozaneh, 2016.
9. M. Keynejad and M. Shirazi, "The traditional houses of Tabriz (new edition)," Tabriz Islamic Art University, Tabriz, 2020.
10. A. NejadEbrahimi, F. Haghparast, and S. Keynezhad, "Theoretical Paradigms of Conservation and Maintenance of Cultural-Historical Houses in Gajar era in Tabriz," Specialized biannual journal of restoration and cultural heritage knowledge, vol. 5, 2014.
11. R. B. Sayali Sandbhor, "A systematic approach towards the restoration of heritage buildings – a case study," IJRET: International Journal of Research in Engineering and Technology, vol. 02, no. 03, 2013.
12. D. A. Scott, "Conservation and authenticity: Interactions and inquiries," Studies in Conservation, vol. 60, no. 5, pp. 291-305, 2015.
13. N. Šekularac, J. Ivanović-Šekularac, A. Petrovski, N. Macut, and M. Radojević, "Restoration of a Historic Building to Improve Energy Efficiency and Energy Saving—Case Study—The Dining Room within the Žiča Monastery Property," Sustainability, vol. 12, no. 15, 2020.
14. Building to Improve Energy Efficiency and Energy Saving—Case Study—The Dining Room within the Žiča Monastery Property." Sustainability 12(15).
15. World Heritage Centre (WHC), "Operational Guidelines for the Implementation of the World Heritage Convention," UNESCO, World Heritage Centre, 2008.

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
INTERNATIONAL HYBRID SYMPOSIUM - APRIL 25, 2023
Yeditepe University, Faculty of Architecture, İstanbul, Turkey
Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

STATE OF CONSERVATION OF MASJED-E JĀME' OF ISFAHAN*

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Abstract

Cultural heritage base of Masjed-e Jāme' of Isfahan is responsible for conducting conservation, documentation and research activities in the Masjed. Moreover, assuring and encouraging participation of Owqaf and local communities in conservation affairs is among the most crucial duties of the base.

The conservation process of Isfahan Mosque aimed to safeguard its cultural heritage. The project involved meticulous research, analysis, and collaboration with experts to develop a comprehensive conservation plan. The interventions spanned various periods, including initial construction, expansions, renovations, maintenance, repair, and restoration efforts. Skilled craftsmen played a crucial role in preserving the mosque's authenticity by employing traditional techniques and materials. The modern conservation process focused on stabilization, structural reinforcement, surface cleaning, and architectural conservation. Through these interventions, rich history of Masjed-e Jāme' of Isfahan and cultural significance were honored while ensuring its long-term survival for future generations successfully.

Keywords: *Restoration, Conservation, Masjed-e Jāme' of Isfahan*

1. Architectural History and Built Features of Masjed-e Jāme' of Isfahan

In contemporary times, *Masjed-e Jāme'* of Isfahan has attracted the attention of foreign and Iranian researchers due to its high historical, architectural and artistic values including Dr. Honarfar, professor of History in Isfahan University. He has allocated a significant part of his book on introducing historical monuments of Isfahan to the description of spaces and inscriptions of *Masjed-e Jāme'* of Isfahan. In addition, Professor Andre Godard from France, Professor Arthur Abraham Poop from USA and his compatriot Professor Myron Bemnet Smith are among those interested in this subject.

**This study was produced from the report of the Masjed-e Jame' of Isfahan submitted to UNESCO in 2011.*

But most of these honorable gentlemen have largely contented themselves with watching the outward appearance of the mosque as well as praising, presenting and describing its various sections. In effect, it was only Professor Galdieri whose knowledge, experience and patience resulted in major analytical and scientific operations regarding *Masjed-e Jāme'* of Isfahan. Here a brief description of these investigations is presented which went underway together with relevant field search. Initially Professor Galdieri began to study the area where the third century LAH mosque stood. The available historical documents that mostly are written ones confirm the presence of a *Shabestani* style mosque with a mud brick wall encircling it.



Figure 1. The 10th century mosque (the Abbasid era) (MJIB, Jabal Ameli)

After precise surveys about the existing walls, Professor Galdieri identified the remaining sections of this mud brick wall and after recovering it in its entirety drew its plan. Afterwards, he started searching for columned *Shabestan* spaces within the fence. Spots where he could easily find color traces as well as possible remains of the 3rd century mosque without causing the least harm to it were the area below *Nezam al-Molk* dome and *Ayvān*s around the court yard of the mosque. A few column remains were found following investigation operations by Isfahan master craftsmen through relocating the existing brick pavement and surface excavation. They were discovered inside the floor of the southern, northern, eastern and western *Ayvāns*. After precise identification of the architecture of the remains of these columns, Professor Galdieri succeeded in the discovery of the outline of the whole ancient mosque and mapped it accordingly. After these investigations and excavations, he found out that column remains on the yard edge of spots went under investigation had different shapes and were made of different materials compared to inner rows so he concluded that such remains actually belonged to additions made in the 11th century AD when the *Al-I Buyid* dynasty ruled in Iran. This was a point never disclosed until then let alone being discussed. Moreover, after surveying the remains of the mud brick wall standing in the eastern front of the mosque, Professor Galdieri discovered two other things: firstly, he found the wall façade toward the exterior which was decorated with false arches (*Taq nama*) as well as *Simgel* (type of mud based traditional plaster with gypsum decoration) Plaster and drew the original façade of the wall based on the available evidence.

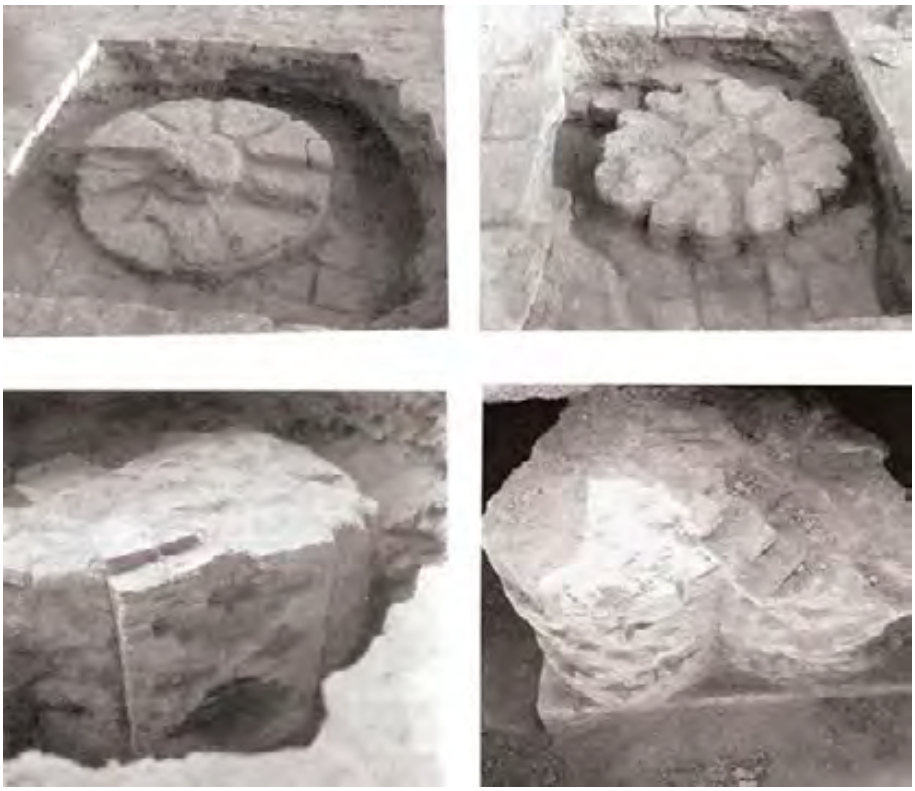


Figure 2. The pillar foundation under the floor of Ayvāns (MJIB)

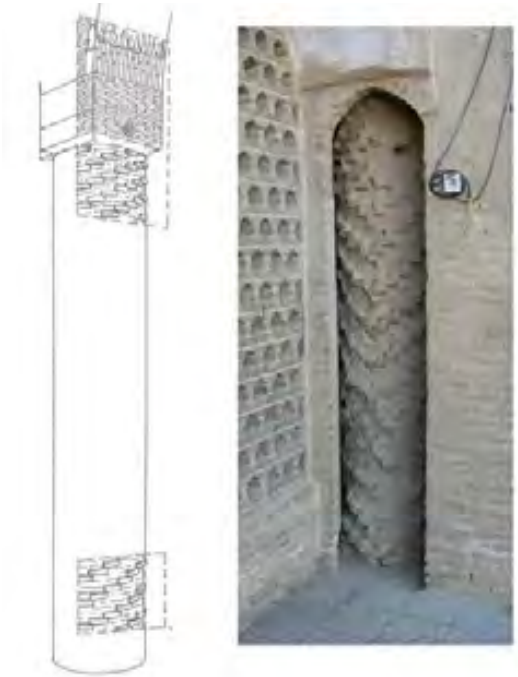


Figure 3. The 11th Century element (MJIB, Jabal Ameli)

Secondly, he found out the coverings at the same level as the beam layout (*Tir rizi*) of the *Shabestan* styled mosque belonging to the third century AH. In the upper section of the mud brick wall and in the remaining part of a regular and horizontal row, Professor Galdieri found a few holes which were the places used for installing the head beams (*Sar tir*) of the wooden covering. Consequently, he discovered the initial covering of the third century mosque based on this undeniable evidence.

By opening the brick pier in the south eastern corner of the court yard of *Masjed-e Jāme'* of Isfahan, Professor Galdieri uncovered a column belonging to the *Al-I Buyids* era. This was part of the

4th century AH annexations and from its outline he was able to give an impression about the layout of brick works as well as column decorations in that period of time. Then he made a miniature model of it and after further researches foresaw the possible presence of other *Al-I Buyid* columns hidden inside the piers and elaborated about it in his report.

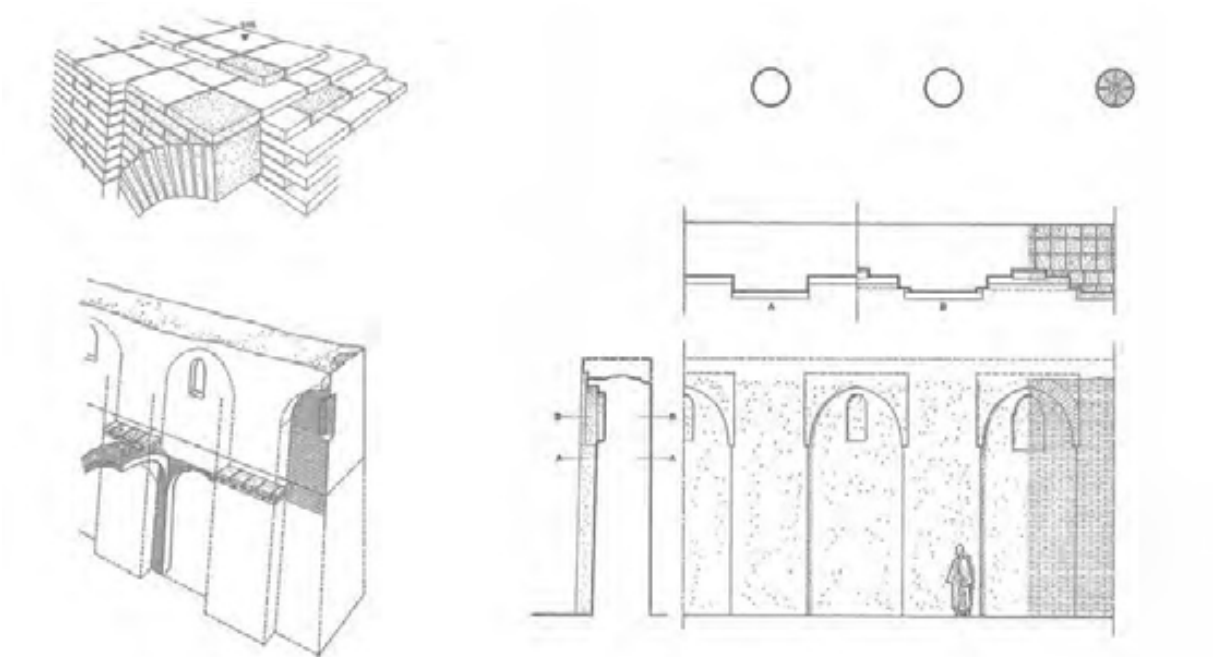


Figure 4. The mud brick premiere wall (Galdieri, 1973)



Figure 5. The circular pillar in the main yard (MJIB, Jabal Ameli)

Investigations of Professor Galdieri in the area below *Nezam al-Molk* dome and facades surrounding the dome revealed two points: firstly, the construction of *Nezam al-Molk* dome upon the main axis of the 3rd century mosque and secondly the complete openness of the dome from three directions on its north, east and west sides. Actually it was connected to the Kiblah wall only to its south.

The condition of stucco inscriptions as well as capitals decorations from inside the wall of later additions has proved quite clearly the original condition of *Gonbad-e Nezam al-Molk*.

After Investigations in the floor of *Uljeitu* prayer chamber, Professor Galdieri uncovered the foundation and column plinths of the 3rd century mosque and put an end to all the false theories about this area and proved that the assumed changes taken place here were a fact of history.

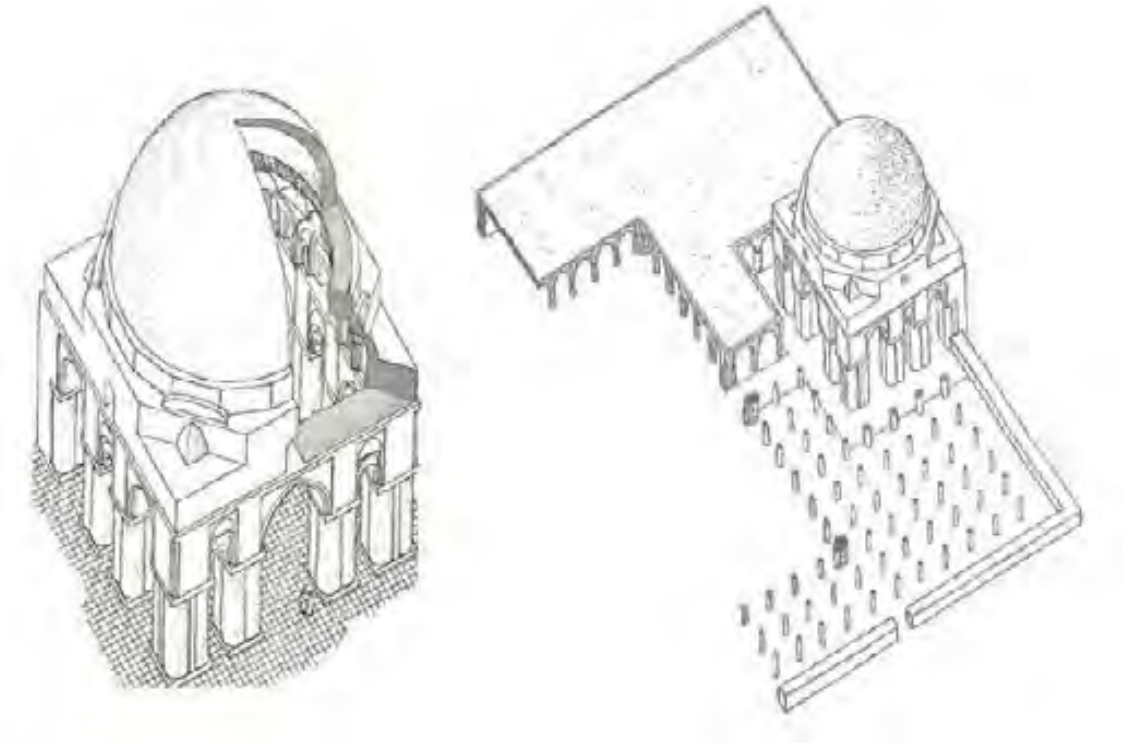


Figure 6. The Seljuq mosque (Galdieri, 1973)



Figure 7. Entrance of Uljeitu (MJIB)

He started further excavation and Investigation in the rooftop of the spot supposed to be the place where the mud brick wall of the 3rd century mosque stood in order to find out the manner of mosque expansion to east and west directions. Therefore, Professor Galdieri succeeded in detailed specifying of the east ward enlargement occurring in the *Seljuq* era as well as the west ward enlargement occurring in the *Timurids* era. In addition, he examined the connecting spot of existing minarets with *Seljuq* arch structures atop the south *Ayvān* arch and found out that *Ayvān* and minarets structure had been covered in two phases. Also Professor Galdieri found traces of the inner covering of the south *Ayvān* belonging to *Seljuqs* era inside the east *Ayvān* from within the existing *Do poosh*

(double shell dome) which has *Muqarnas* works and proved that these *Muqarnases* actually belonged to the *Safavids* era.

1.1. Archaeological Surveys and Investigations in Masjed-e Jāme' of Isfahan

Another aspect of studies done in the mosque pertains to archaeological excavations by ISMEO[60] team under the supervision of the late Professor Sherato in 1970s. Excavated spots shown on the annexed map supplied by Professor Genito are largely located inside the space of *Nezam al-Molk Gonbad Khaneh*, in the court yard of the mosque as well as in some sections of the north *Shabestan*.



Map 1. Archeological studies in the mosque (MJIB, Jabal Ameli)

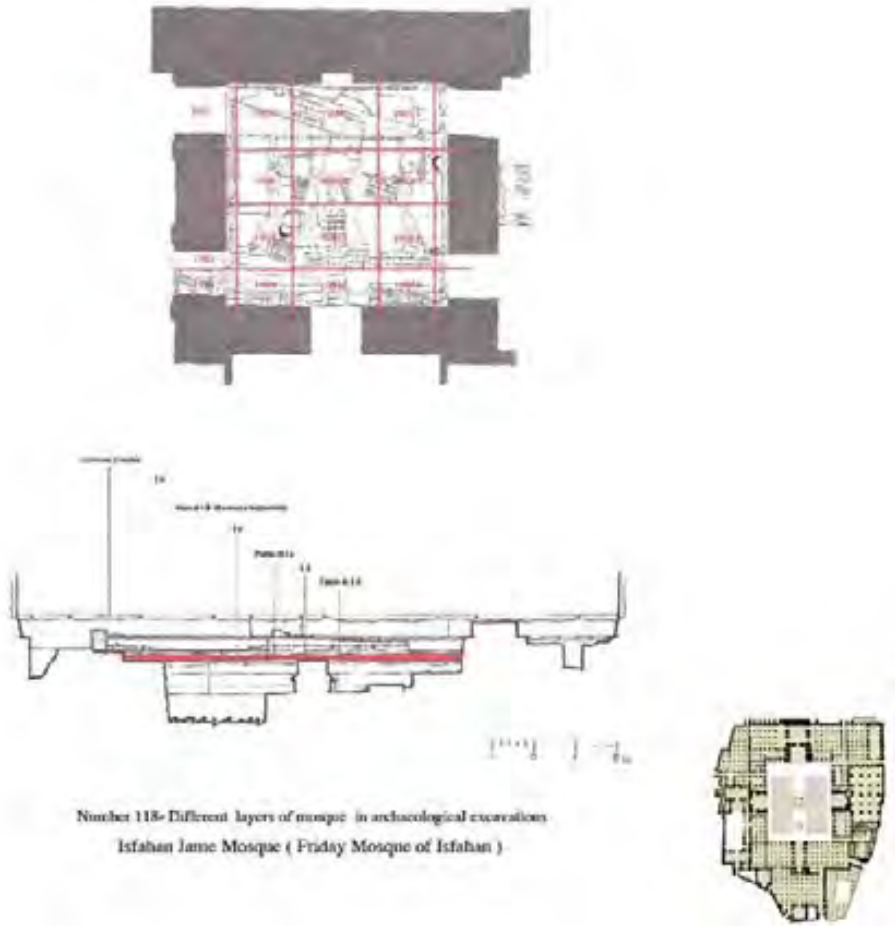
Excavations performed below the dome revealed several valuable historical layers. Beneath the *Safavid* marble stone layer present at the time the excavations began, at first a layer of brick pavement belonging to the *Seljuqs* era was found which was about 50cm lower than the *Safavid* layer. Beneath the *Seljuq* layer,

[60] *ISMEO: Associazione Internazionale di Studi sul Mediterraneo e l'Oriente / International Association of Mediterranean and Oriental Studies*

there exists the flooring of the 3rd century mosque and lower than that the *mehrab* wall and the flooring of the 2nd century mosque were seen.

After the resumption of excavation activities a brick column decorated with a stucco layer was found but the interesting point is that it is assumed to belong to the *Sassanids* era.

Excavations in the area of the north east *Shabestan* to a depth of two meters revealed quite significant relics from *Yavan* village. As said earlier, according to researchers of Isfahan history, in the third century AH, homes and fields of *Yavan* village were bought and the mosque was enlarged on the extra space gained. The discovery of these relics and residential remains pertaining to the time before the construction of the third century mosque disclosed many facts about the history of *Masjed-e Jāme'* of Isfahan. The structure of *Masjed-e Jāme'* of Isfahan is actually an integrated architectural whole but is consisted of various sections, some belonging to a specific construction period and others pertaining to periods before or after it. Therefore, various sections and periods of the construction of *Masjed-e Jāme'* of Isfahan are presented here.



Map 2. Different layers of mosque in archeological excavations (MJIB, Jabal Ameli)

2. Present Conservation

From early 14th century AH coincided with the third decade of the 20th century AD on, the issue of maintenance and conservation of historical monuments attracted the attention of Iranian authorities. In this regard, "the Protection of Antiques Law" was submitted to the Iranian parliament and was approved. According to articles and regulations of this law, all historical monuments and cultural heritage sites come under the protection of the legal system of the country. Thereafter, the identification of historical monuments across Iran started at a wide scale followed by their registration in the National Heritage List.

2.1. Restoration Activities In Masjed-E Jāme' Of Isfahan

Masjed-e Jāme' of Isfahan was among the first monuments registered in the National Heritage List but after thefounding of the Ministry of Antiques (Historical Monuments) and Fine Industries as well as its deputies in provincial centers including Isfahan, *Masjed-e Jāme'* of Isfahan came under systematic monitoring and protection in a formal and legal manner. Since then a special fund was allocated to the Ministry from state budget. In the meanwhile, the relevant administration in Isfahan prepared a program for restoration of a number of historical buildings and complexes and made it operational after its final approval. One of the traditional craftsmen quite familiar with construction techniques and materialsused in *Masjed-e Jāme'* of Isfahan was the late master craftsman, Hossein Moarefi. Here a brief description about consolidation of some spots in the mosque is presented in his words because no comprehensive report was ever found regarding his operations.

Moarefi: *"At that time an unstable condition could be seen in eastern Ayvān, in Muzaffarid School Ayvān and in the western minaret of Ayvān-e Saheb portal that had made all of us worried, so immediate and effective measures had to be taken in order to prevent the collapse of important elements of the mosque architecture. A French archaeologist called Andre Godard and a French architect named Engineer Siroux had come to Iran by the government request for studying historical buildings and teaching in the Archaeology Department of Tehran University. They also visited Isfahan occasionally and were consulted about damages appearing in Masjed-e Jāme' of Isfahan. The problem in the east Ayvān was the slight outward protrusion of its thick piers on the edge of the mosque court yard resulting in the cracking of the covering arch (Taq-e Pusheshi) of Ayvān near the outer edge and the partial collapse of its Muqarnases. The construction of a buttress wall (Posht band) was not possible because it took a large space in the court yard of the mosque and gave it an unpleasant sight so it was decided to prevent further drifting of the arch toward the yard and its collapse by resorting to the method of bracing (Mahar bandi). For this purpose,*

after the installation of a scaffold opposite the Ayvān where triangular forms (Lachakis) of the arch façade stood by removing a number of façade bricks, two iron beams were connected to previous iron beams. Then by bending down these bracing beams as far as the back of the Ayvān wall, their ends were linked to other vertical elements inserted formerly into piers behind Ayvān in order to inhibit the Ayvān movement. At that time another architectural element i.e. the western minaret of the southern Ayvān had lost its usual vertical state (Shaghul) for unknown reasons and therewas an imminent danger of minaret collapse if it drifted further. Therefore, to prevent this, a steel belt with a width of about one meter was installed in part of the minaret cylinder and theminaret movement was haltered in the opposite direction by a tow rope, finally the other end of the tow rope was fastened tight to the Ayvān wall.

The third spot was the south Ayvān arch of Muzaffari school (Madrasa) in which the eastern wall of Ayvān protruded outward and cracks could be seen in Ayvān arch. So in order to prevent the collapse of the beautiful Ayvān with all its inscriptions and tile works, two simultaneous operations went underway. Firstly, behind the curved wall, buttresses were reacted at several spots. Additionally, by using tow ropes, the double walls of Ayvān were braced against each other. Of course, these bracing elements are quite visible from Ayvān but are tolerated because they inhibit its collapse."



Photo 1.1. Restoration of the east Ayvān (MJIB, Jabal Ameli)



Figure 9. Restorations in the Muzaffari Madrasa (MJIB, Jabal Ameli)



Figure 10. Inscription for showing date and conductorof the restoration works (1951) (MJIB)

Among other restoration activities conducted under the auspices of the Culture Administration of Isfahan was repair of tile works in the entrance gate (*portal*) of *Uljeito Shabestan* as well as outward facades of southern and northern *Ayvān*s. The date of these operations has been written upon piers in tile work and glazing. Moreover, the piled up earth has been emptied from the interior space of *Shabestan*s in particular from the space of *Taj al- Molk* dome in order to make it more accessible for visitors.

Since early 1960's when the Ministry of Culture and Arts as well as the National Organization of Historical Monuments Conservation were founded in Iran, a cultural cooperation with Italy was established and Italian experts from ISMEO Institute came to Iran and the

investigation and restoration of some historical buildings in Isfahan and Shiraz was delegated to them. The deceased Professor Galdieri, head of ISMEO delegation began his studies in order to identify *Masjed-e Jāme'* of Isfahan in detail and launched a full scale investigation into historical chronology of this great structure. Before leaving Iran, Galdieri had finished the major part of his investigations and had published three books about *Masjed-e Jāme'* of Isfahan. These books have been translated by Dr. Abdollah Jabal Ameli into Farsi and have been printed and published by the Arts Academy of Iran in one volume. In the introduction of this collection, Professor Galdieri mentions that he has been involved in studying *Masjed-e Jāme'* of Isfahan since 1971 and the ISMEO Institute has published the results of his studies in three volumes until 1984.

Professor Galdieri used to perform his field investigations after every sounding (tranche) in order to date different phases of mosque construction and also conducted simultaneous restorations. He has this to say in the end of his reports about his restoration operations:

"After the elaboration of the above mentioned issues it can be concluded definitely that the only feasible method for consolidation of this type of structures is the usage to traditional techniqques and materials."

Professor Galdieri has enlisted the investigated and restored sites as follows in which the numbered spots have been represented based on the Schroeder Map:

- In the year 1972, Taq-o cheshmehs of bays number: 60- 63- 80- 161- 169 & 422 were studied and restored;
- In the year 1973, bays number: 47- 48 – 58 – 59 – 60 – 67 - 228 & 240 were studied and restored; 178
- In the year 1974, bays number: 150 – 151 – 152 – 153 – 154 – 159 – 160 – 473 & 474 were studied and restored;
- In the year 1975, bays number: 89 - 90 - 97- 98- 102 - 201- 202- 213- 214- 225- 236-237 - 238- 249 – 250 - 261- 262 & 269 were studied and restored;
- In the year 1977, bays number: 199 – 200 - 211- 223- 235- 247- 259- 260- 267- 268-270- 275- 276- 455- 456- 458- 463- 464- 465 & 466 were studied and restored;
- In the year 1978, restorations and investigations were largely focused on load bearing ribs (armatures) and single arches located in the interval of bays: 203 & 203, 214 & 215, 226 & 227, 238 & 239 and 270 & 271 in addition in the same year, bays no. 294 and 310 were restored.



Map 3. Overall plan showing dated ceiling restoration (MJIB, Jabal Ameli)

In another part of his report, Professor Galdieri has brought up the issue of moisture and how to prevent its penetration. He says that moisture has penetrated into the mosque structure in two forms: the first one is the descending dampness which is generated on roofs due to precipitations and the second one is the ascending dampness which is absorbed by vertical elements from the ground as well as from foundations. In order to deal with such a phenomenon, monitoring, controlling and conservation planning were launched so that gradually deteriorated *Taq-o cheshmehs* of the mosque especially in traditionally applied spots of *Kahgel* covering layers were eventually restored by the same traditional method.

The subject of the emergency state of roofs had also been pointed out earlier by the late engineer Maxim Siroux who had visited *Masjed-e Jāme'* of Isfahan as the UNESCO[2] representative. Therefore, recommendations of this expert were

[2] *UNESCO: United Nations Educational, Scientific and Cultural Organization*

heeded properly. The second type of moisture had been generated in the lower base of the walls and piers in particular in the west front beside the adjacent walk way. Following topical survey and study, it became clear that all across the lower part of the west wall of *Safavid* winter *Shabestan* was damp andbecause in the past, these sections of the mud brick wall had been restored by bricks and cement mortar, the upward drift of moisture had actually been aggravated. Here due to the significant height difference of the floor of the adjacent walk way and the floor of the mosque *Shabestan* (in which the former is 1.5m higher than the latter) so it was decided to install a ventilation duct inside the walk way behind the wall in order to inhibit moisture penetration which fortunately resulted in the elimination of dampness. The operation was conducted in years 1977 and 1981 in an area extending from bay number 391 as far as bay number 1.

After a delay of about one year due to the victory of the Islamic Revolution, the restoration activities continued by the newly founded ICHO[3] (which stands for: Iranian Cultural Heritage Organization) One of the tragic events worth mentioning was damages incurred during the Iran-Iraq war to *Masjed-e Jāme'* of Isfahan for example during an air raid in Esfand 1363 SAH (March 1985) by Iraqi bombers on Isfahan, a bomb fell right on the south east *Shabestan* of the mosque (the so called: *Seljuq* library) causing wide spread damage in it as well as in the adjacent Bazaar. The spot that was hit directly was totally destructed. After the bombardment, an area full of debris was left behind. Not only the bombing devastated a large area but also shock waves ensuing from it resulted in the vibration of *Taq-o cheshmehs* nearby and inner structural damages of them. Moreover, pieces of shrapnel hit the body of domes and tile work surfaces of the court yard within a relatively wide range. Damaged *Taq-o cheshmehs* bays of the mosque that were numbers: 20 - 21- 22- 30- 31- 39 & 40

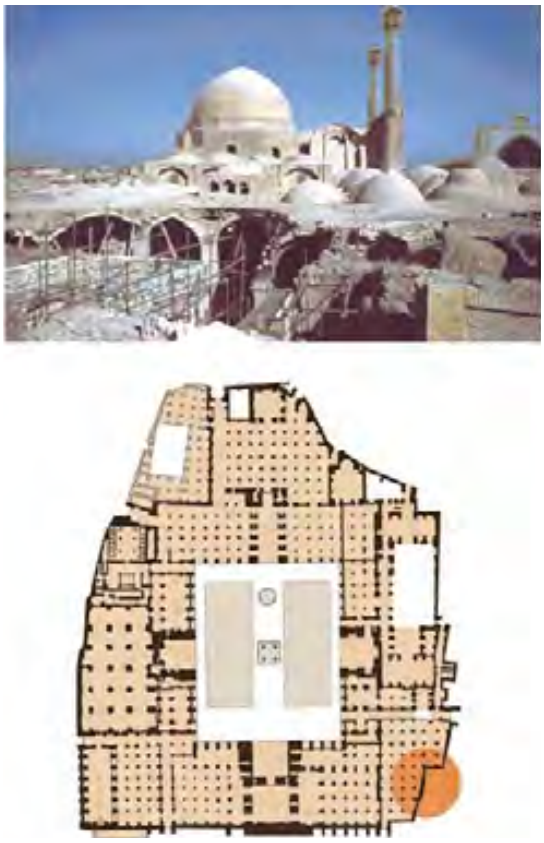


Figure 11. Destroyed part of Shabestan by Iraq bomb attack (MJIB, Jabal Ameli)

[3] *ICHO: Iranian Cultural Heritage Organization*

A brief description of reconstruction and restorative activities concerning the bombing damages in *Masjed-e Jāme'* of Isfahan is as follows:

- Clearing remains accumulated due to the destruction of brick *Taq-o cheshmehs*;
- Separating unbroken bricks from debris in order to be reused;
- Preparing an action plan and map for the reconstruction of the damaged section based on available documents;
- Conducting investigation for the purpose of finding the exact spot where foundationsand plinths (footings) stood;
- Reconstruction of columns, *Taq-o cheshmehs* and roof building by traditionalmethods;
- Moreover, brick crusts of *Taj al-Molk* dome as well as *Nezam al-Molk* dome wererepaired and useless bricks broken by shrapnel were replaced by new ones;
- In addition, damaged tile work surfaces of the courtyard were restored and reconstructed carefully.



Figure 12. Domes before and after restoration (MJIB, Jabal Ameli)

Among other essential operations was the elimination of moisture from the footing of brick piers whose outer façade toward the court yard has been covered with marble stones. In the past, usage had been made of gypsum plaster (*Gatch*) mortar for installing marble stones. During restorative activities, the stones were taken off their original positions one by one and the plaster mortar which absorbed earth moisture was cleaned off them. Afterwards, the placewhere stones leaned on earth was isolated by scientific methods, then was connected to the wall from its upper section by delicate metal clamps so that behind the stones became vacant making possible the respiration of the brick wall and eliminating the condensed moisture.

Brick platforms standing in the courtyard were restored in a manner that brick pavements were initially removed and were reinstalled later in their original positions after stronger ground works. The operation was conducted in order to prepare a flat surface for holding daily prayers.

Furthermore, following the excavations of the Italian archaeological team the floor of the areabelow *Nezam al-Molk* dome had become useless so it was revitalized accordingly. Firstly, the excavated parts were covered by sand and over them it was floored up to the same level as *Seljuqs* era flooring from which a few brick pavements still remained intact. Afterwards, due to the constant flow of visitors it was decided to cover the area by sand temporarily in order to prevent the erosion of *Seljuq* bricks and finally new flooring bricks appropriate for conservation purposes were laid on them.

Daily passage of visitors had eroded the covering *Safavid* bricks of the main entrance routefrom the west gate so a new row of bricks was laid over them in order to prevent their total destruction. The same action was repeated in the west corridor and the entire operation wasduly documented.

Several restorative operations have got underway in the northern *Ayvān* too. Here the former flooring had been moistened due to ascending dampness and because of the occasional usage of the place for prayer so it was decided to take the extra earth out carefully and then after installing a ventilation duct around *Ayvān* walls, the vacated spot was filled with hand earth mixed with macadam and finally bricks were laid upon them again. In the meanwhile, based on recommendations of the late Professor Galdieri signs of the existence of columns belonging to the third and fourth centuries AH on new brick pavements were investigated.



Figure 13. The main entrance (MJIB, Jabal Ameli)



Figure 14. The eastern Ayvān (MJIB, Jabal Ameli)

At the end of the north *Ayvān* where the distal bay is dipped in, there is a balcony like half floor with a lower cover enjoying very fine stucco works as well as ornamental and geometrical patterns. The stucco crust that is attached horizontally to the underside of the covering arch had gradually been weakened for various reasons at the spot where it adhered to the arch. Thus the risk of its collapse looked eminent. As a result the plaster layers were strengthened by trussing (*Sham zani*) from below and the injection of adherents mixed with gypsum from above. Moreover, by installing several wooden beams upon the arch, some of the spots that had drifted further away were tied to the beams by rust proof metal wires in order to prevent their collapse.

Gradually, a significant part of the *Kahgel* plaster of the roof tops in the north and west frontshad suffered from decay and there was the possibility of rain water penetration into roofs. Forthis reason, all of these surfaces were initially cleaned off their rotted *Kahgel* and after some ground preparation (flooring) and re-grading the *Kahgel* plaster was reapplied over them.

Due to the shedding of *Kahgel* plaster, the mud brick wall in the south west corner and inside of the public walk way had suffered from gradual erosion. Therefore,

reapplying *Kahgel* by traditional methods was performed after repairing edges of windows of *Safavid* prayer chamber (*Namaz Khaneh*).

In the past the *Muzaffari Madrasa* was located in the east front of the mosque had suffered serious damage due to its abandonment so that even the first rooms in the east front of the school had been totally damaged. As the school area lacked the capacity for holding religious ceremonies, it was decided to reconstruct the ruined sections and after revitalization of all of its spaces it was turned into a museum used for introducing the mosque as well as all the objects found during previous excavations that were presentable. In this relation, the ICHHTO[4] experts classified all the formerly discovered objects with the close collaboration of Italian experts. Then a considerable number of them were restored to be displayed in the museum that was to be opened in the revitalized school yard.

In the north western corner of the mosque where the old *Vozu Khaneh* (ablution room) stood, public facilities as well as a modern *Vozu Khaneh* for men and women have been constructed.

The entrance corridor an old area with *Taq-o cheshmeh* structures has been prepared in order to set up an exhibition and to introduce *Masjed-e Jāme'* of Isfahan. Mosque plans with necessary descriptions and a model inform the visitors about the general mosque architecture before they enter it.



Figure 15. The mud brick walls in the library (MJIB, Jabal Ameli)

[4] *ICHHTO: Iranian Cultural Heritage, Handicrafts and Tourism Organization*



Figure 16. The Muzaffari Madrasa (existing) (MJIB, Jabal Ameli)

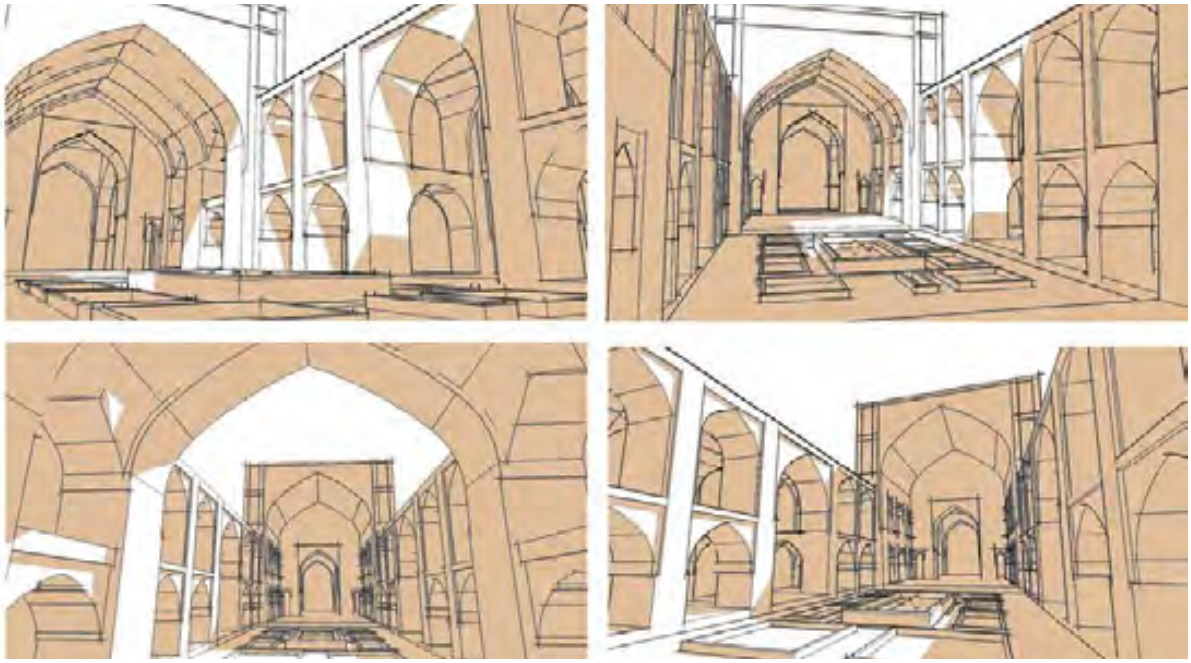
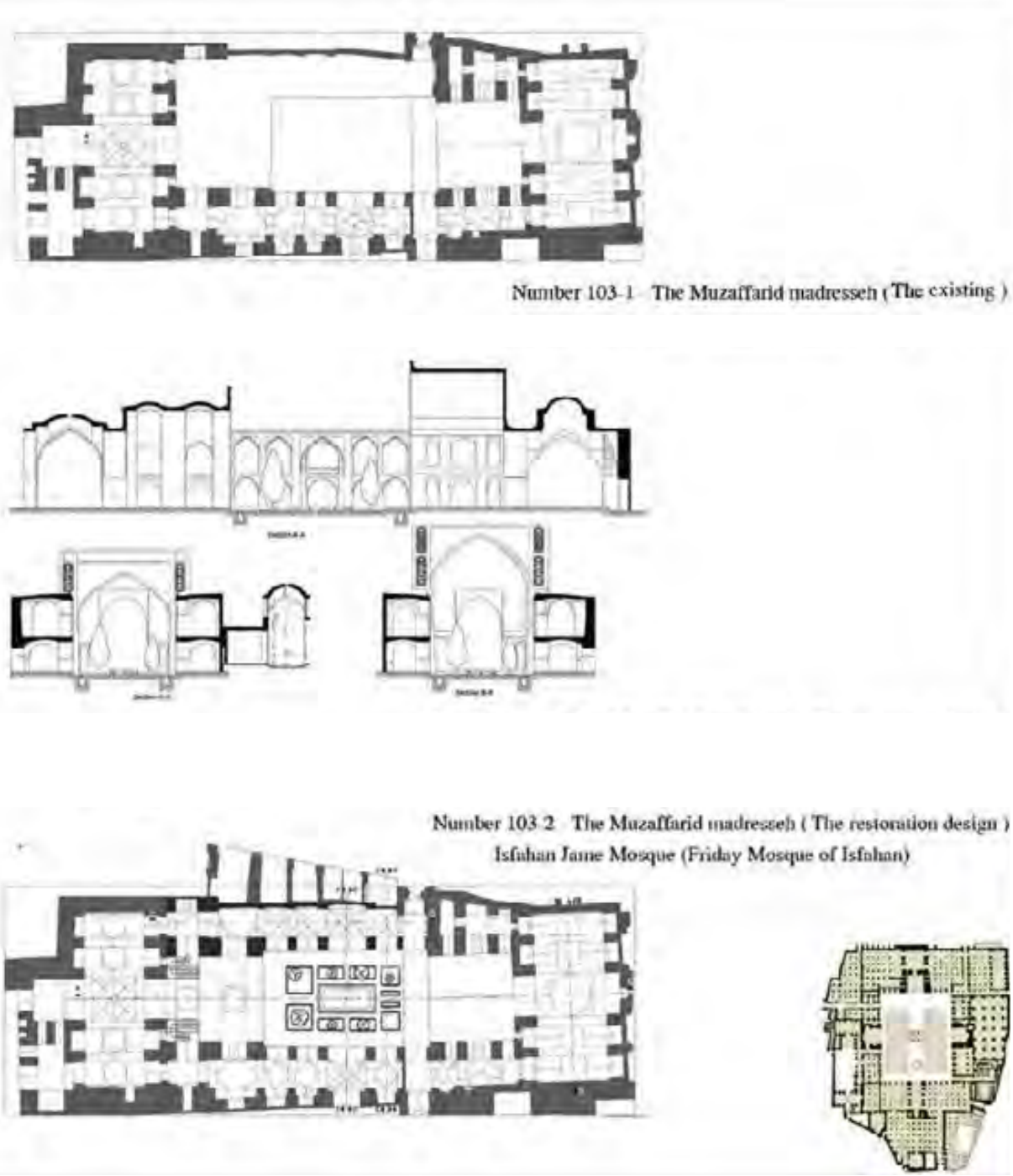


Figure 17. The Muzaffari Madrasa (restoration plan) (MJIB, Jabal Ameli)



Map 4. The Muzaffari Madrasa (restoration plan) (MJIB, Jabal Ameli)



Figure 18. Exhibition and introduction hall (MJIB, Jabal Ameli)

3. Conclusion

Isfahan Mosque has undergone various restoration works throughout different periods. From the initial construction stage, the mosque has been subject to restoration processes aimed at addressing structural issues and restoring its artistic elements. The construction of the mosque began in the 11th century, focusing on establishing the foundational structure. In subsequent periods, the mosque underwent expansions and restoration works to meet the needs of a growing congregation and align with evolving architectural trends. These interventions included the addition of courtyards, prayer halls, domes, minarets, and decorative elements.

Regular maintenance and repair works have been carried out to ensure the preservation and upkeep of the mosque. These activities aimed at addressing the natural wear and tear, preserving the structural integrity, and safeguarding the authenticity of the mosque's artistic elements. Additionally, comprehensive restoration works have been conducted at certain intervals to revive the mosque's original splendor and restore damaged areas. Skilled craftsmen utilized traditional techniques and materials to meticulously recreate intricate details and restore decorative elements.

The restoration works throughout the historical process of Isfahan Mosque were undertaken to preserve its cultural significance and transmit it to future generations. These interventions have

contributed to the structural stability, preservation of artistic elements, and rejuvenation of the mosque's historical fabric.

Refrences

1. "Esfahan Masjid-e-Jame and Newly Finding Ivan-e-Darvish Epigraphy," Asar Press, no.15-16, 1988.
2. Archaeologische Mitteilungen aus Iran, vol. V, Berlin, 1972.
3. N. Asarzadegan, "The Geometric Tile Work in Esfahan Masjid-e-Jame," The Development of Math, no.88, 2008.
4. N. Davoodi, "Demolition and Repairing of Ancient Works in Esfahan," Keyhan Farhangi, vol. 5, no. 1, 1989.
5. Esfahan Masjid-e-Jame: An Album of Iran Architecture, Karokargar, Aug. 29, 2005.
6. O. Galdieri, "Esfahan Masjid-e-Jame," Translated by A. Jabalameli, Cultural Heritage Organization, Esfahan, 1991.
7. O. Galdieri, "New Data about the Usual Building Principles of Esfahan Masjid-e-Jame," The Culture of Iran Architecture, Tehran, 1975.
8. O. Galdieri, "New Data about the Nezamol Molk's Dome at Esfahan Masjid-e-Jame," The Culture of Iran Architecture, no. 2-3, Tehran, 1976.
9. O. Galdieri, "Esfahan Majid-e-Jome in Ale Bouyeh Ages," Translated by H.A. Soltanzadeh Pasyan, National Conservation Organization of Iran Ancient Works, Bita.
10. O. Gerabar, "Esfahan Great Mosque," Translated by M.A. Mousavi Fereidani, with effort of Systems Engineering Organization of Esfanhan City, Mani, Esfahan, 2009.
11. A. Godar, "Iran Works (Vol.4)," Translated by A. Sarv Moghadam, Vol. 4, Mashhad: Islamic Research Institute of Astane Ghodse Razavi, 1992.
12. L. Golombek and D. Wilber, "The Timurid Architecture of Iran and Turan," Princeton, 1988.
13. O. Grabar, "The Great Mosque of Isfahan," London, 1990.
14. L. Honarvar, "The Historical Petrography (Description on Stone) of Esfahan Masjid Jome," Vahid, 2nd Year, 1964.
15. L. Honarvar, "The Unknown Works of Islamic Age in a Collection of Esfahan Monuments," Addicated to Javidan Heritage, no.38, 2002.
16. L. Honarvar, "The Historical Façade of Esfahan Masjid Jome," 5th Year, No.29, 1996.
17. H. Hoseini, "Esfahan Masjid Jame with So Many Problems," Shargh Press, 2005.
18. H. Hoseini, "Farewell with Millennial Architecture Document: Some Questions about Conservation of Esfahan Majid Jame," Hamshahri Press, 2009.
19. M. Jafari, "The Cultural Alienation in Architecture of Mosques," Mehr, No.43, 1998.
20. M. Javari, "The New Discoveries in Esfahan Athigh Square," Golastane Honar, No.14, 2009.
21. H. Mehrabi, "Esfahan Masjid-e-Jame: An Album of Iran Architecture," Javan Press, Sep. 15, 2005.
22. E. Moshiri, "The Mosque Architecture: Esfahan Masjid Jomeh," 1946.
23. H. Motodain, "Domed Penthouse, the Most Important Part in Architecture of the Iranian Mosques," Aesthetic Arts, No.31, 2007.
24. K. Nikzad Amirhoseini, "The History of Ancient Buildings in Esfahan," Dad Press, Esfahan, 1954.

25. S. Paknaz, "The Process of Changing Mosques Design to Iranian Ones in Saljoughi Age: The Case Study of Majid Jame at Esfahan," Abadi, No.54, 2009.
26. E. Parvizi, "The National Architecture in Point of View on Cultural Identity," National Studies, no.39, 2010.
27. M. Pirniya and M. Maherolnaghsh, "Jame Mosques of Iran: Esfahan Masjid-e-Jame," with effort of B. Ayatolahzade Shirazi, Reza Abbasi Museum, 1980.
28. M. Pirniya, "Mosques in Iranian Architecture at Islamic Age," with effort of M. Kiyani, Jahad Daneshgahi, Tehran, 1988.
29. M. Pirniya, "The Stylistics of Iranian Architecture," in Dr. Gh.H. Memarian (Ed.), Pazhuhandeh, Tehran, 2002.
30. A. Pope, "Travel to Iran in 1964 and also the Effect of Saljoughi's Double-Lap Domes in Majid-e-Jame".
31. A. Rafiei Mehrabadi, "Esfahan National (Public) Works," Public Works Association, 1973.
32. L. Rempel, "The Mausoleum of Isma`il the Samanid," Bulletin of the American Institute of Persian Art and Archaeology, vol. IV, 1936.
33. M.H. Riyahi Esfahani, "The Fire Accident of Esfahan Masjid Jame at Saljoughi Age: Masjid," 5th Year, No.30, Jan.-Feb. 1996.
34. M.H. Riyahi Esfahani, "The Nine-Hundredth Year of the Fire Accident in Esfahan Masjid Jame and Its Precious Library," Keihan Farhangi, 12th Year, No.12, 1995.
35. E. Schroeder, "Seljuq Period," A Survey of Persian Art, etc., Tehran, 1967.
36. H. Seif, "The Precious Plaster Moulding of the Esfahan-Masjid Jame - Oljaito Altar," Child Education Center, Tehran, 2006.
37. S. Shafaghi, "The Elements of Esfahan Market and Its Endowments," Dedicated to Javidan Heritage, No.38, 2002.
38. M. Shayestehfar, "The Glorify of Ali's Name in the Esfahan Epigraphs," Mahehonar Book, No.109-110, 2007.
39. M. Siro, "Esfahan-Masjid-e-Jame, In Report (A Special Planning for Conservation of Cultural Heritage Values in Accord with the Development of Tourism)," Yazmaq, Paris, 1968.
40. H. Stirling, "The Evolution of Mosques Architecture in Iran," Translated by M. Falahzadeh, Masjid, No.29.
41. S. Umberto, "The Primary Report about Archaeological Reviews at Esfahan Masjid-e-Jame," Iran Architecture Culture, No.4, Tehran, 1977.
42. A. Zamani, "The Effect of Sasani's Art in the Islamic Art," Ministry of Art & Culture, Tehran, 1979.
43. A. Zamani, "The Ornamental Extrados and Motifs in the Islamic Historical Works of Iran," 11th Year.

CENTRAL ASIAN STUDIES II
HISTORY OF ARCHITECTURE AND CONSERVATION IN IRAN
INTERNATIONAL HYBRID SYMPOSIUM - APRIL 25, 2023
Yeditepe University, Faculty of Architecture, Istanbul, Turkey
Tabriz Islamic Art University, Faculty of Architecture, Tabriz, Iran

CONSERVATION OF KANDOVAN NATURAL HERITAGE SITE IN IRAN

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Abstract

Kandovan is a unique cultural landscape area in Iran that gained a vernacular identity over time with the use of a geological formation made of igneous rocks in the south of Azerbaijan, Iran. As in Cappadocia, which is located in Turkey and is on the world heritage list, individual volcanic hills called "karan" have been carved by people to create architectural spaces (housing, barns, warehouses, etc.) and a vernacular architectural identity that local people have organized with local building materials over time in Kandovan, and contributed to this geological formation. Its natural appearance has partially changed over time and a cultural landscape has emerged. However, due to rapid and uncontrolled urbanization and tourism, structural and functional deteriorations are observed in areas used as hotels and residences and gaining a local architectural identity, today. Kandovan should be planned and protected with priority conservation policies.

Keywords: *Kandovan, Cappadocia, Natural Heritage, UNESCO, Karan*

1. Introduction

Kanodvan is a unique geological formation consisting of conical rocky hills in an eroded volcanic area located at the foot of Sahand Mountains, west of Nur Mountain, 50 km South of Tabriz (18 km fare from Üskü), North of Arshad Mountain, in the East Azerbaijan. Kandovan Village was settled by the local people and refugees as a residential area by different civilizations.

The Urmia River, which creates green recreation areas on both sides, passes in front of the village. (See Figure 2, 3) The unique topography is the result of differential erosion of volcanic tuff deposits by wind and water erosion. These are pillars, pillars, towers and needles with typical, natural features called “karan”.



Figure 1. Location of the Kandovan in Iran

Within these rock (tuff) formations, people have carved the rock hills that served as refuges, residences, storage, and places of worship dating from the 11th century. Local people carved these conical structures made of easy-to-carve tuff into houses, which they called "karan". Sahand Mountain boasts 17 peaks over 3000 meters in altitude, with hundreds of rivers and streams originating from it, which provide farming irrigation for the nearby villagers.

Also, the Sahand and its abundant natural beauties are a major tourist attraction, making mountain climbing and winter sports potential development sources for Kandovan (Fig.1-3).

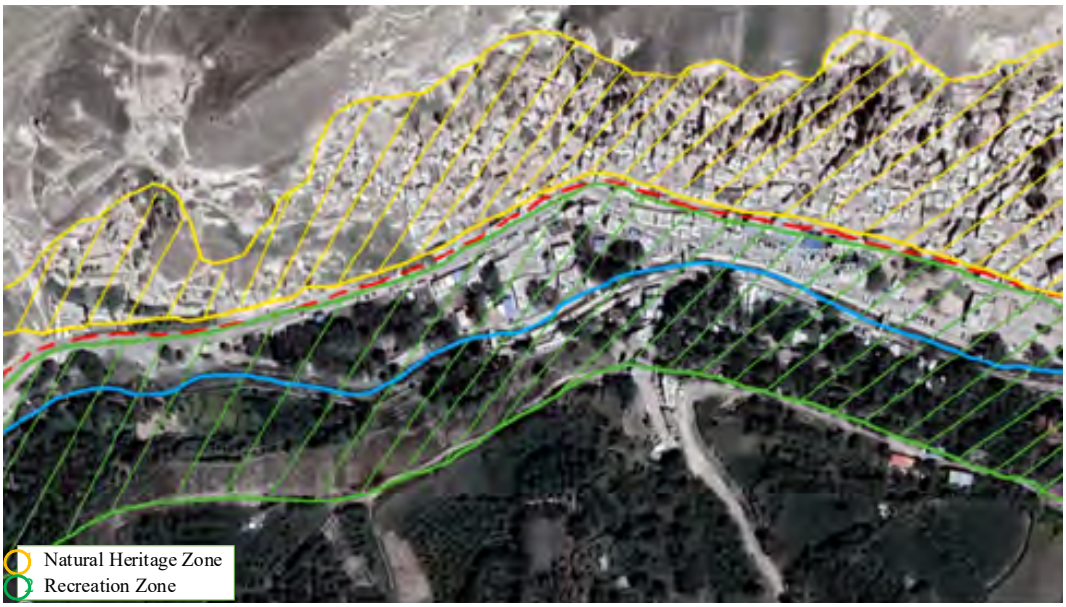


Figure 2. Google Map of Kandovan Village (2023); Urmia River (Kandovan Chai) passes through the village of Kandavan like a life-giving stream and separates the agricultural lands from the rocky residential areas.



Figure 3. Kandovan Village and early Karans – 2012 (Photo Parisa Karamnejad) (9)

2. Geological Formation of Karans

The volcanic activity of Sahand Mountain started from the Pelios Period, and ended 140 thousand years ago. Scientists have estimated the absolute age of different lavas of Sahand to be 12 million to 140 thousand years. According to them, the emergence of the Sahand volcanoes is most likely related to the renewal of activity of the Soltanieh Tabriz fault that passes through the Sahand Region (1).

The rock mass of Kandovan is non-welded ignimbrite with rhyolitic to dacitic composition that it is types of the pyroclastic deposits (Less than 10 million years) of the Sahand volcano (3).

The study area is located in altitude ranges between 2,220 m and 2,250 m and it has semi-arid and cold climate. The annual mean value of rainfall and temperature are 352 mm and 7.5 °C respectively. The dry season occurs between June and September. The minimum temperatures values sometimes reach up to −20 °C and the annual average number of rock wetting—drying and freezing—thawing cycles are 28 and 14 cycles respectively.

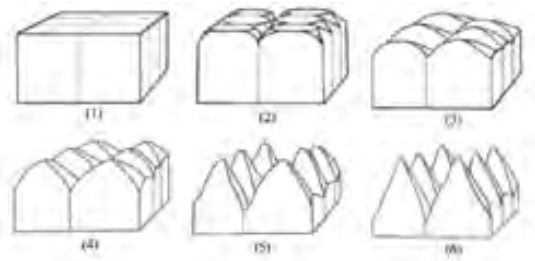


Figure 4. The schematic steps of the erosion and making of cone-shaped forms. Weathering and erosion of rocks along these discontinuities created the cone-shaped forms in Kandovan Village (2)

The geological structures, especially discontinuities, have an important role in the formation of cone-shaped rocky houses in the Kandovan Village. Weathering and erosion along discontinuities have created these shapes. Of course, some cones are being destroyed by continuous erosion along them. Based on the results of the physical properties of rock mass classification, Kandovan Village rocks have high porosity and low density and are susceptible to frost activity.



Figure 5. The minerals of the rocks are changed by chemical weathering and turn into new minerals with lower strength (physical weathering) and are more easily affected by mechanical wear (4). The waters coming down from Sahand Mountain caused mechanical erosion to form the karans. (10)

Therefore, the rock with these features can be considered as a rock with low durability to environmental factors. High porosity and water absorption increase water content in the rock. High water absorption along with consecutive thawing and freezing provides conditions for weathering especially physical weathering. The cone-shaped volcanic houses in the Kandovan have been taken this unique conical form because of these

geological structural factors (2). The conditions for weathering especially physical weathering. The cone-shaped volcanic houses in the Kandovan have been taken this unique conical form because of these geological structural factors (2).

4. Varneculer Architecture in Kandovan Natural Heritage Site

The word "vernacular", which was first used in 1861, is derived from the Latin word "vernaculus", which means native or belonging to a place/region (7). In fact, in the 'vernacular' dictionaries, which is a concept used in relation to language, the language of one region and the other word as a language specific to the region are taken into consideration. Regional Architecture: A region's own architectural formation language has meaning. (7) The rock architecture, which has been carved with primitive tools and materials and transformed into places such as residences, warehouses, barns, religious and sanitary spaces throughout history, is the dominant architecture. Interior and exterior architectural design shows a unique vernacular architectural character.

Local people, who usually living by farming, have started to earn money from truism income (hotel, touristic goods sales and restaurant sector) with the renewal of the ring road leading to the village in recent years. Local architecture, which has undergone social and physical changes under different natural effects in different periods for centuries, has lost its original identity with rapid and uncontrolled new urbanization in recent years. The natural houses, which were originally used by carving conical tuff natural rocks, were expanded over time by adding new constructions with local materials, in between original geological formations. (Fig.6) However, in recent years, high-rise buildings constructed using reinforced concrete construction, have been distorted this local architectural identity.

Today, Kandovan Architecture can be examined under three headings. A. Natural Rock Architecture B. Local Man-Made Architecture additions and C. New Rein. Concrete Constructions. (Fig. 8).

A. Natural Rock Structure

Volcanism is the name given to the event that occurs when magma in the depths of the underground rises to the surface. Magma cools on earth and forms volcanic rocks. Generally, it has a light and porous, easily workable structure left by air bubbles during cooling (13).

In Kandovan, the conical mini hills, which were formed by volcanic eruptions millions of years ago and called "karan", were carved with primitive tools and materials throughout history, and places such as residences, warehouses, barns, religious and sanitary places were created. Although it looks like a multi-story apartment, there is no indoor connection between the floors. Formed at the foot of Sayand Mountain and connected to one of them by balconies and bridges, karans create a unique neighborhood with narrow streets consisting of sloping steps and natural waterways (Fig.7-10).



Figure 6. Kandovan Village (2022) Unfortunately, the green area on both sides of the Urmia River, which lies in front of the natural protected area forming conical hills (dark) on the slopes of the valley, has deteriorated and uncontrolled, unqualified new structures have been placed. Tourism is developing, but uncontrolled growth is damaging this natural protection area. When the 2012 photograph in Figure 3 is compared with the 2022 photograph above, it is understood that the Village has grown extra ordinary, in 10 years.

B. Local Man-Made Additions

This architectural form complements the natural rock architecture to provide suitable living spaces in later periods, consisting of a combination of local creek and mud straw (formerly) in walls and beams, and cement-sand mortar today. They are wooden with a final mud coating on the roof. Most of the places such as tandoor, kitchen, toilet, warehouse, and sometimes settlements are built with these materials. It was also used in some of the deteriorated borders, in the past to repair the damaged part or to fill the unused spaces within the settlement boundaries (Fig.8). The cultural landscape that supports the geological form, unfortunately, is not seen today due to the addition of new reinforced concrete structures.



Figure 7. Natural Karans (2022)



Figure 8. Natural karans and new architectural additions around natural volcanic lands by using local materials (round creek stones, tree trunks, adobe, and mud etc.) also make valuable contributions as vernacular architectural elements. (2022)

C. New Reinforced Concrete Constructions

The new, reinforced concrete and brick architectural identity, which has nothing to do with Kandavan's local architecture, unfortunately has been rising rapidly on the banks of the Urmia River in recent years, hiding its original regional architectural identity. These reinforced concrete structures have very bad conditions in terms of construction quality, new brick and metal etc. does not comply with good quality standards with poor quality technology products. (Fig.9)



Figure 9. Unqualified new reinforced concrete structures such as barriers to natural karans. (10)

3.1. Morphology of a Karan

Karans formed by the volcanic eruption of Mount Sahand are in the form of conical hills 10-15 meters high and 5-8 meters in diameter [7]. Because of the Kandovan's cold climate, the western karans are empty. Since adequate protection is not provided, they gradually deteriorate. But eastern karans enjoy adequate sunlight so they are more favored by the locals. In general, a karan contains minimum 2, maximum 6 floors (Fig. 10), and never has a connection between the floors, inside. Each floor has private door, in the different directions, using slopy form of the topography.

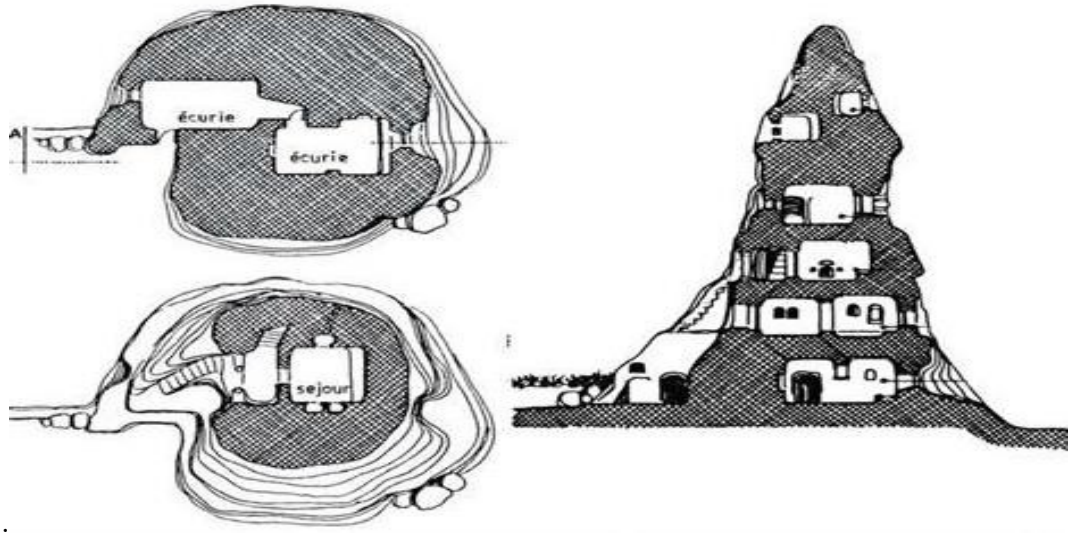


Figure 10. Morphology of a Karans (8)



Figure 11 a, b c. Some of the natural karans

Kandovan is a Muslim settlement. Its people live on farming. Dairy products and wool products are their livelihoods. Depending on the living conditions and production in Karan, local architectural forms and architectural elements were formed. The architectural spaces in these lands, used by the people of the region who speak Turkish and adhere to their traditions, constitute the integration of the traditional lifestyle. Locals love hospitality and saddle up for guest people only in a drawing room design. (See Figure 13)

Carpet is used as a floor covering in Iran, as well as to create decorative panels on the wall or as a cabinet door. Niches carved into the walls provide an alternative to the traditional "staircase-storage" area where portable furniture that can be folded, such as bed quilts, is stored. These niches are covered with carpets or handcrafted covers. (See Figure 13)

3.2. VernacularArchitecture-Terminology

Entrance Hall (Astana): The entrance hall of each karan is called (astana) (Fig.12- number 2) in the local term and it can be seen in two ways. In large areas where there is no space limit, sometimes it is done as a separate inlet filter and washing dishes and clothes and even the residents themselves are also done in this area. But in smaller karans, to prevent water from entering the living area, the threshold is separated from the main living area by a short stone wall, and washing is done in a part of the living area itself.



Figure 12. Architectural Elements of a karan (8)

Kitchen (Matbakh): It is usually outside the main room and in the area adjacent to it, but in some cases, cooking is also done in the main room. Cooking in the kitchens is also done using an oven, which is mostly used to cook bread, because like most villages in Iran, the main food of the residents of Kandavan is mostly bread and milk products, and food is rarely cooked. (8)



Figure.13. A living room for the gest people in a karan.

Storage (Sandog Khane): Small warehouses of Duran Karan where the household's weekly necessities such as pulses, wheat, barley and flour are kept.

Waterways (Abrizgah): Due to the calcareous soil and flow problems of wastewater in Kandovan, digging wells cannot be used to discharge wastewater. Instead, waterways are commonly constructed. Waterways are usually built next to pedestrian crossings and outside the houses, and sometimes they consist of two floors, the lower floor for feces and wastewater from the houses and the upper floor for rainwater. (See Figure 14)



Figure 14. A waterway in Kandovan (8)

Some roads have two wells, when one is full, the other well is activated until it dries up, and the dried animal dung is mixed with coal ash from tandoors and ovens and used as fertilizer in agriculture and farms. In the past, families used to share one abrizgah, but nowadays each family and household uses one abrizgah and one well.



Figure 15. Deep and dangerous cracks and previous consolidation work. In the picture, it is seen that a dirty crust formation on a karan, possibly caused by lichens, and a deep crack caused by thermal expansion are fixed with tapes against the risk of detachment. It is possible that a consolidated material was injected into this crack. These type tapes may also be placed to monitor how wide the crack has grown.

4. Conservation of Natural Stone

Due to the extreme temperature differences between day and night and the negative effects (thermal expansion) of the porous tuff behavior, which is the

main rock of the land, crust formations, cracks and detachments are observed in the field.

While the original tuff material shows irregular fractures in places, rain water can enter the inner surfaces from the cracks. In 1992, similar problems were observed in formations similar to those in Cappadocia in Turkey, and a waterproof mixture was prepared to prevent damage to the frescoes inside of the rocks and the *peribacaları* were covered in a capping way(6).

The expansion of cracks should be monitored and controlled. Otherwise, undesirable, dangerous large ruptures may occur. In the uncontrolled, unplanned growing village of Kandovan, unqualified buildings have disrupted the green recreation zone on both sides of the Urmia River, entering between the natural Karans, making it difficult to perceive the natural heritage formations (see Fig. 9, 15, 16) Kandovan Village protection plan should be prepared by government and take into consideration immediately. New constructions should not be allowed, unqualified additions that cause the original geological formation to be perceived poorly should be removed. Thus, the original natural heritage site will be easily perceived.

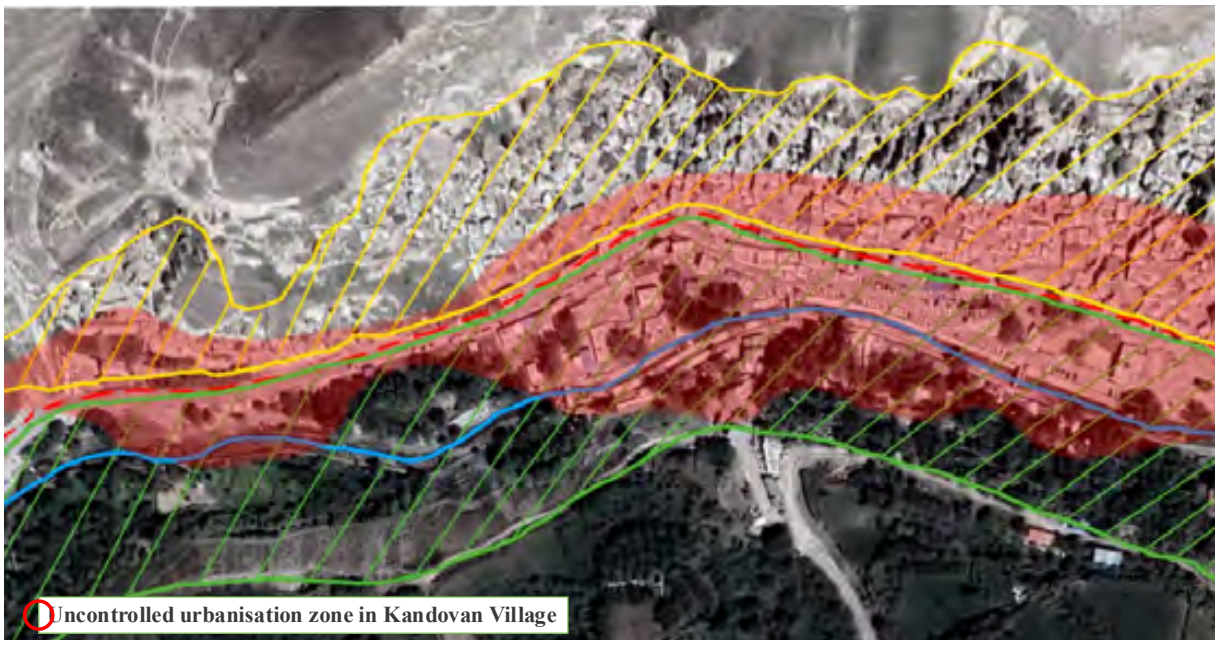


Figure 15. Plan shows the unqualified building zone (red) in Kandovan (10)

5. Examination Kendovan Heritage Site For Nomınation of Unesco WHL

To date, Kandovan is not on any of the UNESCO WHL lists, including the waiting list. However, Kandovan heritage site, with its extraordinary unique geological formation and vernaculer architectural identity, complies with the

following criterion for the nomination in UNESCO WHL (14).

The Kendovan Heritage Site meets the conditions of authenticity as its values and their attributes, including its historical setting, form, design, material and workmanship adequately reflect the cultural and natural values recognized in the inscription criteria.

(Criterion ii) It exhibits an important interchange of human values with owen vernacular identities, over a span of time or within a cultural area (Vernaqular architecture) of the Kendovan Plato with karans, on developments in architecture or technology, monumental arts, and landscape design,

Criterion (iii): The rupestral dwellings (karans), retain the fossilized image of a province of the early civilisations and the arrival of the Seljuk Turks (1071). Thus, they are the essential vestiges of a civilization which has disappeared. Karan's bear the unique or at least exceptional testimony to a cultural tradition (vernacular architecture) or to a civilization which is living or which has disappeared;

Criterion (v): Kendovan is an outstanding example of a traditional human settlement which has become vulnerable under the combined effects of natural erosion and, more recently, tourism.

Criterion (vii): In a spectacular landscape dramatically demonstrating erosional forces, the Kendovan valley and its surroundings provide a globally renowned and accessible display of hoodoo landforms and other erosional features, which are of great beauty, and which interact with the cultural elements of the landscape.



Figure 16. Overview shows that unplanned growing of the village should be taken in to control for Kandovan (10

The İranian Law for Protection of National Heritage (1930) is the first comprehensive law concerning various aspects cultural heritage.

This Law defines the procedure for identification of cultural heritage property (Article 1). It further mandates the Government to prepare a National Heritage List (Article 2), sets the criteria and legal protection for properties on this List, and stipulates legal provisions for archaeological excavations (12).

Legal protection, management and monitoring of the Kandovan Natural Heritage Site fall within the scope of national and regional governmental administrations.

The State and Regional Conservation Councils are responsible for keeping the register of monuments and sites, including carrying out all tasks related to the legal protection of monuments and listed buildings and the approval to carry out any restoration-related works.

Studies for revision and updating of the existing land use and conservation plan for Kandovan Heritage Site and village must be protected with major adjustments and spatial developments of towns located in the natural conservation sites must be strictly controlled.

Hotel developments must be taken into account the set limits for room capacities. Furthermore, local authorities should be advised to review land use decisions for areas that have been reserved for tourism developments in the town plans.

6. Conclusion

Kandovan Village is a unique cultural and natural heritage site (Mix Heritage) with its unique geological structure, local architectural values (Vernacular Architecture) produced by local people with natural materials and local craftsmanship, and it is worth nominate the UNESCO world heritage list.

A new conservation plan should be made by controlling both the deterioration in the geological structure of the karans, and rapid and unplanned growth of the city, and it should be included in the UNESCO world heritage list with an emergency response.

It is seen that the source of livelihood is provided by tourism revenues (hostels, hotels, restaurants, shops), and animal husbandry is applied in the second plan.

For this reason, Kandovan should be re-planned by the state as a touristic location and the protection of the natural heritage site should be examined in the foreground.

Inadequate interventions of the local people (such as widening windows and doors, replacing them with modern, compatible old and new materials) can be controlled with awareness.

After a major conservation program, education of local people will be the second important step to protect this unique historical natural heritage.

A major conservation plan, for the vernacular architecture and mixed urban-natural conservation sites, within the historic sections of Kendovan, together

with stone material conservation planning should be taken into consideration, urgently.

References

1. M. Paşapur ve S. Şahin, "İki Farklı Coğrafyadan Kaya Mimarisinde Ortak Yaklaşımlar/Saptamalar: Göreme (Türkiye) - Kandovan (İran)," 1. Nevşehir Tarih ve Kültür Sempozyumu, Nevşehir Üniversitesi Kapadokya Araştırma Ve Uygulama Merkezi (NEVKAM), Nevşehir, 16-19 Kasım 2011.
2. E. Kaljahi, M. Asghari-Bonab ve F. Amini-Birami, "Influence of Geological Structures and Weathering in Formation and Destruction of Cone-Shaped Rocky Houses of the Kandovan Village, Iran," in G. Lollino et al. (eds.), Engineering Geology for Society and Territory – Vol. 8, pp. 231-234, Springer International Publishing Switzerland, 2015.
3. N. Gauri ve H. Moienvaziri, "Stratigraphy, Petrology And Geochemistry Of Ignimbrite Layers Of Sahand," Yüksek Lisans Tezi, University of Tarbiat Moalem, Tehran, 2002.
4. M. Garcia-Vallés, T. Topal ve M. Vendrell-Saz, "Lithenic Growth as a Factor in The Physical Deterioration Or Protection Of Cappadocia Monuments," Environ Geol, cilt 43, pp. 776-781, 2003.
5. Consulting Engineers of Kohen Dej Sharestan, "Kandavan New Village," Report of Preparatory Studies, Islamic Revolution Housing Foundation Consultancy, Tabriz, 2010.
6. A. G. Kucukkaya, "Yapı Taşlarının Restorasyonu," IMIB, Istanbul 2014.
7. A. Eyüce, Geleneksel Yapılar ve Mekalar, Birsen Yayınevi, Istanbul, 2005.
8. E. Mollabashġ Elyad, "Mağara Evlerin Karşılaştırmalı Analizi," Yüksek Lisans Tezi, Hacettepe Üniversitesi Güzel Sanatlar Enstitüsü Ġçmimarlık ve Çevre Tasarımı Anabilim Dalı, Ankara, 2018.
9. UNWTO, "Kandovan Village, A Rocky Architectural Oddity in Iran," Tabriz Minucipality Turizm Development Organisation, [Online]. Available: https://www.unwto.org/ru/node/11255.
10. B. Yeganeh, "Conservation of The Natural Heritage in Iran (Kandovan Natural Conservation Site in Iran, South Azerbaijan)," Master Tezi, Yeditepe University, İstanbul, 2023.
11. Shutterstock, "Impressive Colorful Cityscape Image Persian Troglodyte Stock - Photo 1667408329," [Online]. Available: https://www.shutterstock.com/tr/image-photo/impressive-colorful-cityscape-image-persian-troglodyte-1667408329.
12. ICHHTO, "Nominations of Mescid-Cuma Jame of Isfahan, Protection and management of the property," Report for UNESCO, Tehran, 2011.
13. Kucukkaya G., Yapı Taşlarının Restorasyonu (Restoration of Stone Building Material), E book, Published by Yeditepe University, İstanbul, 2019. http://www.caglayan.com/urundetay/632993/Yapi-Taslarinin-Restorasyonu-Ayse-Gulcin-Kucukkaya-9789753070997
14. UNESCO WHL Criterias

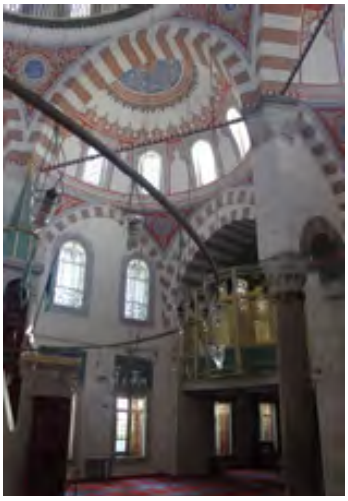
    https://whc.unesco.org/en/criteria/

SYMPOSIUM PHOTOGRAPHS

İSTANBUL, TURKEY (24th April 2023)



Marmara İlahiyat Camii
(photo by Ahad Nejad Ebrahimi)





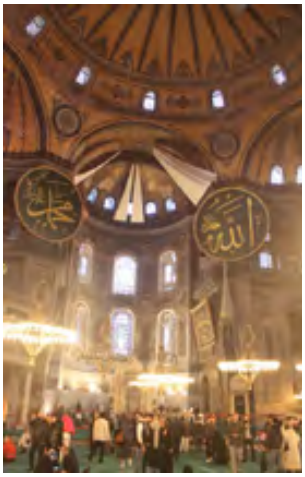
Çinili Camii
(photo by Ahad Nejad Ebrahimi)



Şakirin Camii
(photo by Aylar Javadpour)



Anadolu Hisarı
(photo by Ahad Nejad Ebrahimi)



Ayasofya Camii
(photo by Ahad Nejad Ebrahimi)



Sultanahmet Camii
(photo by Ahad Nejad Ebrahimi)



Yeditepe University,
Faculty of Architecture

İZNİK, TURKEY (26th April 2023)



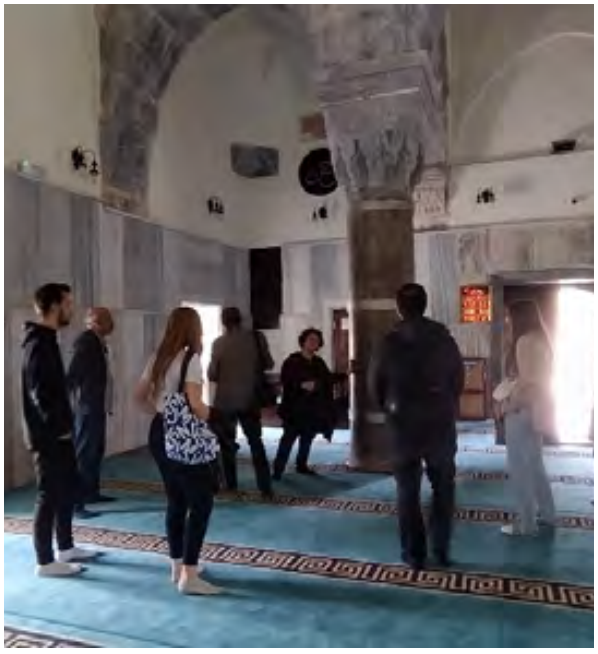
Lefke Kapı, first gate, İznik rampart
(photo by Ahad Nejad Ebrahimi)



Lefke Kapı, second gate, İznik rampart
(photo by Aylar Javadpour)



Yeşil Cami (photo by Ahad Nejad Ebrahimi)



Yeşil Cami (photo by Aylar Javadpour)



Nilüfer Hatun Imareti
(photo by Ahad Nejad Ebrahimi)



Nilüfer Hatun Imareti

BURSA, TURKEY (26th April 2023)



Yeşil Türbe
(photo by Aylar Javadpour)



Yeşil Cami
(photo by Aylar Javadpour)



Yeşil Cami (photo by Ahad Nejad Ebrahimi)





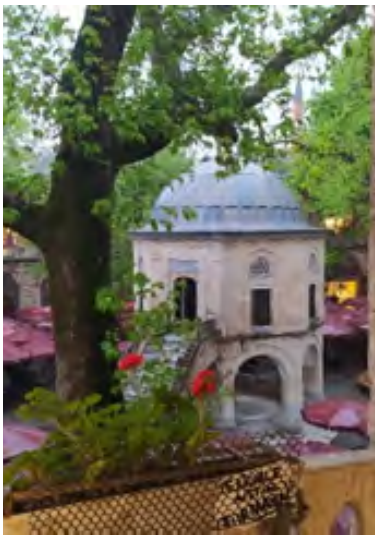
Tarihi Irgandı çarşılı köprü (photo by Ahad Nejad Ebrahimi)



Ulu Cami (photo by Ahad Nejad Ebrahimi)



Bursa evleri (photo by Aylar Javadpour)



Kuzahan
(photo by Aylar Javadpour)

EDİRNE, TURKEY (27th April 2023)



Sokollu Mehmet Paşa Cami, Havsa
(photo by Ahad Nejad Ebrahimi)

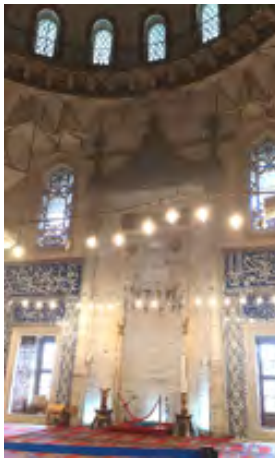


Arasta, Dua kübbesi, Havsa
(photo by Aylar Javadpour)



Selimiye Camii





Selimiye Camii (photo by Aylar Javadpour)





II. Bayezid Külliyesi, Cami (photo by Aylar Javadpour)



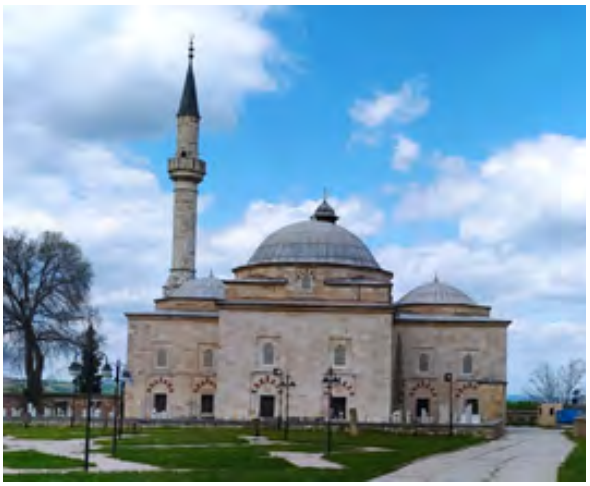
II. Bayezid Külliyesi, Şifahane
(photo by Ahad Nejad Ebrahimi)



II. Bayezid Külliyesi, İmaret
(photo by Aylar Javadpour)



II. Bayezid Külliyesi, İmaret
(photo by Ahad Nejad Ebrahimi)



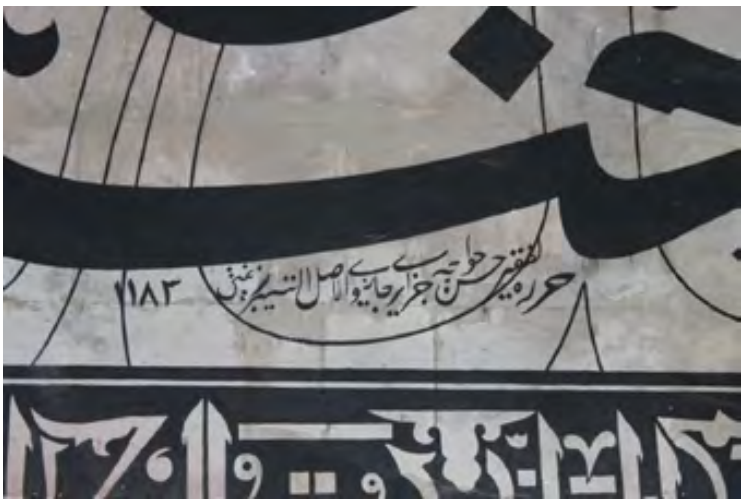
Muradiye Cami
(photo by Aylar Javadpour)



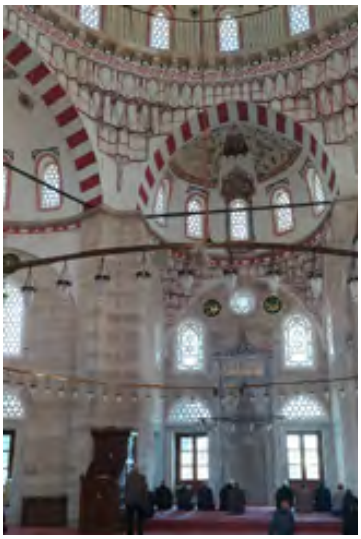
Muradiye Cami (photo by Ahad Nejad Ebrahimi)



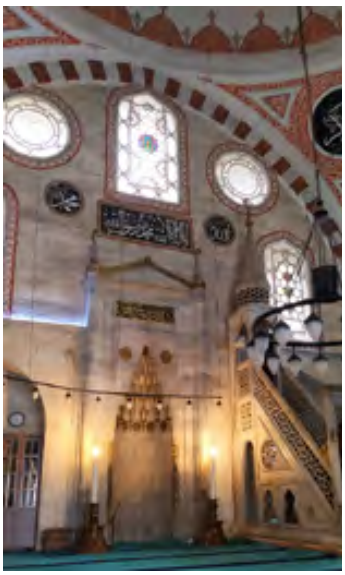
Trakya University, Faculty of Architecture

Eski Camii, The writings of the masters of Tabriz (photo by Ahad Nejad Ebrahimi)




Cedid Ali Paşa Camii, Babaeski (photo by Aylar Javadpour)




Sokollu Mehmet Paşa Camii, Lüleburgaz (photo by Ahad Nejad Ebrahimi)