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**Original Research Article**

# An Analytical Approach to the Architectural Arrays of Qajar Houses

## (Case Study: The Qajar House of Faiz Mahdavi in the City of Kermanshah)\*

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### Abstract

The evolution of architectural arrays in the Qajar houses of Kermanshah appeared due to the architectural changes under the influence of Western architectural patterns in Iran. The development of the architectural decorations of these houses was manifested by using the concepts of aesthetics, creativity, and thoughts of architect artists in accordance with the needs and facilities available in this period. In this research, how to use architectural arrays, especially in Faiz Mahdavi's house in Kermanshah city as a valuable cultural-heritage collection in the historical context of the city and the analysis of the influence of architectural development patterns in the architectural arrays of Qajar houses have been raised as the basic research questions that have been raised so far Not evaluated. This research with the historical, interpretive, and comparative research method during the stages of "investigating the patterns of arrays and determining the influential components of traditional Iranian architecture and Western architecture in Qajar houses"; "Comparative analysis of how and the extent of influence of traditional Iranian architecture and Western architecture in the architectural arrays of Faiz Mahdavi's house" and "explanation and evaluation of how and how much the architectural arrays are modeled on traditional Iranian architecture and Western architecture in Faiz Mahdavi's house" were carried out. The analysis of the subject in this article was made possible based on the collection of data gathered through document analysis, library research, and field studies. Analyzing and summarizing the results obtained from the evaluation findings of this research comparatively shows that the evolutions and patterning of the architectural arrays of Faiz Mahdavi's Qajar house, during two different stages, the outer and inner spaces of the house were initially influenced by the traditional Iranian architectural decorations in the form of simple decorations and then Combining the art of traditional decorations with luxurious western decorations.

**Keywords:** *Arrays, Architecture, Qajar houses, Faiz Mahdavi's house, Kermanshah.*

\*This article has been taken from the doctoral dissertation entitled "The effects of the development process of architecture and modern urban planning on the formation and evolution of

the architecture of Qajar houses" with the collaboration of the authors.

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## Introduction

Iran's Qajar architecture was influenced by the influence of Western architecture in terms of conceptual and physical aspects. And such developments led to the integration of Iranian architectural patterns with European patterns; Combined changes appeared in residential buildings in details, forms, shapes, and decorations. The architectural arrays of the Qajar houses of Kermanshah, due to the development process and with the formation of the city's ecology, the construction of streets, and the formation of new neighborhoods and in the field of architecture with the creation of new and extroverted spaces, changes in the form, shell, and decorations were manifested in the physical structure. The studies of this research are based on the importance of the subject by analyzing and recognizing the manifestation of the patterns of architectural arrays of Qajar houses, which revealed the cultural and architectural roots of each region; How to be influenced by the existing Iranian traditional techniques, the influence of western architectural development and the revival of previous ideas and architecture in terms of enriching Iranian culture from the worldview of the architectural arrays of the Qajar houses of Kermanshah has been realized. But so far, the arrays of Faiz Mahdavi's house in Kermanshah city have not been evaluated in this way in terms of the degree of influence of traditional architectural components, western architecture, and architectural decoration patterns. In this research, firstly, the evolution process of the art of Qajar architectural decorations in Iran and then its examples in Faiz Mahdavi's house as a valuable heritage-cultural collection in the historical context of the city have been comparatively analyzed. While referring to the background of the research and analysis of the subject in this article based on the information in the form of documents, library, and field studies, in the examination of the hypotheses it seems that the influence of the Western architectural development approach caused the emergence of the art patterns of the Qajar architectural decorations of Iran and the changes

in the architectural arrays of the Faiz Mahdavi's Qajar house takes the example of decorations in this range.

Research questions Considering the importance of the topic, content, and aesthetic values, with a comparative approach and with an analytical approach, this research seeks to find answers to the following two questions: 1. How were the architectural arrays of Faiz Mahdavi's Qajar house in Kermanshah? 2. What was the influence of architectural development patterns in the architectural arrays of Faiz Mahdavi's Qajar house in Kermanshah?

## Research background

By examining the background of the research of architectural arrays, we found that, in the field of decorations in different historical periods of Iran and the architectural arrays of the Qajar period in buildings, numerous researches have been formed in the form of books or articles, and in this regard, most of the researchers focus on typology and description of external and decorative features. Architectural works have been focused; By examining the research background of the Qajar houses of Kermanshah, it seems that in some of the studied documents arrays in works of art have been discussed independently of architecture or in general, but so far no systematic and independent study has been done on the subject of the present research and the analysis of architectural arrays. Faiz Mahdavi Qajar House of Kermanshah and the degree of imitation of architectural arrays from the components of traditional Iranian architecture and Western architecture in this building has not been done in this way. With these interpretations, it is possible to benefit from related research in this field; These studies are described in [Tables 1, 2 & 3](#) in the form of the following groups:

## Research Methodology

In line with the goals and foundations of the research, the research method of this research is to deal with the events that happened in the past and the process of the impression of the history of the analysis of the works which depends on the cultural and social changes

Table 1. History of research related to Kermanshah. Source: Authors.

History of research related to Kermanshah				
Research of the first group: Kermanshah				
Issue	Author	Documentation	Title	Year
Kermanshah	Karimi	Book	Kermanshah Historical geography and detailed history of	(1938)
Topic	In this book, the natural, geographical, and historical characteristics of Kermanshah city have been discussed in the form of a general analysis of the subject; but the architectural decorations of the houses are not mentioned.			
Kermanshah	Bayat	Book	Brief Geography of Kermanshah	(1978)
Topic	In this book, the geographical and historical characteristics of the western region of Iran and the city of Kermanshah have been examined in general.			
Kermanshah	Afshar Sistani	Book	Civilization Kermanshahan and its ancient	(1992)
Topic	In this book, natural, geographical, historical, social, and economic conditions have been fully analyzed.			
Kermanshah	Soltani	Book	Historical geography and detailed history of Kermanshah	(2002)
Topic	In this book, the historical geography, economy, education, art, and culture of Kermanshah city have been examined, but the architectural decorations of the buildings have not been studied in detail.			
Kermanshah	Moradi	Book	Image of cultural heritage of Kermanshah	(2003)
Topic	In this book, the historical, geographical, cultural, economic, and social aspects of Kermanshah province have been fully analyzed and examined, and the decorations of the buildings are evident in them.			
Research of the second group: Architecture of Kermanshah				
Issue	Author	Documentation	Title	Year
Architecture	Biglari	Book	History of Kermanshah in the Qajar Era	(1995)
Topic	This book has fully explained the historical, social, political, and economic attitude of Kermanshah city in the Qajar era. In this analysis, the architecture of Kermanshah in this period and various buildings have been researched in general.			
Architecture	Shayanfar	Book	Kermanshah, a familiar land	(1998)
Topic	In this book, the architectural and historical works of Kermanshah city in different periods have been compared, but there is no mention of architectural decorations in this analysis.			
Architecture	Borumand Sorkhabi	Book	In search of urban identity of Kermanshah	(2009)
Topic	In this book, the natural, geographical, historical, social, and economic conditions have been fully analyzed and the history of Kermanshah city, architecture, and history of urbanization in Kermanshah have been discussed and Qajar houses have been introduced in a general way and it is one of the suitable sources for analysis. The studied houses are compared with other periods of architecture and it is considered as a good source for knowing and studying Qajar architecture.			
Research of the third group: architectural decorations of Kermanshah				
Issue	Author	Documentation	Title	Year
Decorations	Hosseini, Ahmadzadeh & Shayganfar	Article	Investigation of architectural decorations of the Qajar period in Kermanshah	(2015)
Topic	In this article, the characteristics of architecture and decorations related to it have been investigated, described, and analyzed, and the importance of the decorations of the buildings of Kermanshah city during the Qajar era has been pointed out. In general, this research has dealt with the general introduction to the Qajar architecture of Kermanshah and the types of decorations in the buildings of this era; but the approach and method of this research are different from the current article.			

(Qayoumi Bidhendi, 2004, 77); An interpretative history was selected. The analysis of the subject in this article was made possible at the stage of identification, organization, and evaluation based on the collection of data in the form of documents, libraries, and field studies in the desired study area. It should be noted that the pictures and maps taken from the case study were prepared under the influence of the course of

developments during the past periods, and parts of these changes in Faiz Mahdavi's house in the forms of (destruction, restoration, and re-creation of the collection) were visible at the time of writing the research and has led to the abstraction of physical spaces. The research implementation process is based on the steps in Fig. 1 as follows: 1. Examination of patterns of arrays and determination of influencing factors of

Table 2. History of research related to Qajar. Source: Authors.

History of research related to Qajar				
Research of the fourth group: Qajar architecture				
Issue	Author	Documentation	Title	Year
Architecture	Afshar Asl & Khosravi	Book	Architecture of Iran in the Qajar period	(1998)
Topic	In this book, the characteristics of Qajar architecture have been thoroughly investigated and architectural decorations have been analyzed case by case in different buildings, and it is considered a good source for understanding Qajar architecture.			
Architecture	Kamali	Article	“Architecture of the Qajar Period”	(2010)
Topic	In this article, the position of Qajar architecture, the change of the introverted to extroverted structural pattern has been discussed and the important points of Qajar art and architecture including: the role of Qajar architecture in the previous architectural history of Iran, the investigation of characteristics, elements and forms of architecture, the factors influencing the formation of architecture, The innovations of the Qajar era, the investigation of the types of Qajar buildings and the introduction of common architectural elements in this era have been pointed out, and the influences of Western architecture have been reviewed in general.			
Architecture	Farhad & Kashani	Article	Survey of architecture and urban planning in the Qajar period	(2009)
Topic	In this article, the introduction of the determining factors in Qajar architecture is mentioned, and the characteristics of architecture and urban planning in this period are analyzed, and appropriate sources are discussed on the subject.			
Architecture	Ghobadian	Article	Dar al-Khilafah Naseri	(2009)
Topic	In this article, the phenomenon of tradition and modernity in Tehran’s contemporary architecture has been analyzed, and the art of Qajar architecture has been examined, and it is from the main sources and according to the subject, which has dealt with the contrast between tradition and modernity.			
Architecture	Riyazi	Book	The effect of modernity on Tehran’s space organization	(2009)
Topic	This article refers to the study of the formation and changes in the structure of Tehran’s space during this period and studies the impact of modernity in the Qajar period and is considered as one of the sources close to the subject.			
Architecture	Shahroudi	Article	Cultural interactions between Iran and Europe on Iranian Qajar period architecture	(2014)
Topic	This article examines the changes caused by new needs and the emergence of technology under the influence of Western models and the non-use of traditional models, and analyzes the effects of cultural interactions between Iran and Europe, and is similar to the current research in terms of approach.			
Research of the fifth group: Qajar house				
Issue	Author	Documentation	Title	Year
House	Memarian	Book	Getting to know Iranian residential architecture	(1993)
Topic	This book examines the typology of introverts and extroverts, examines architectural elements, structural patterns, and house decorations, and by analyzing the spatial structural patterns and elements, it points out the details of the decorations, which is consistent with the current research.			
House	Kateb	Book	Architecture of Iranian houses	(2006)
Topic	This book examines the architectural characteristics of traditional houses, architectural decorations in Tehran and is similar to the subject of the present analysis.			
House	Haeri Mazandarani	Book	Home, culture, nature	(2009)
Topic	By examining the houses of the Qajar period, this book deals with the loss of the relationship of today’s houses with culture and nature.			
House	Ghelichkhani	Article	An analytical approach to the transformation of the Iranian Qajar	(2012)
Topic	This article examines the architectural developments in relation to the environment, lifestyle and social space in Qajar houses, which is similar in terms of approach and content in a part of the research.			
Research of the sixth group: Qajar architectural decorations				
Issue	Author	Documentation	Title	Year
Decorations	Goudarzi	Book	Ayine Khial	(2009)
Topic	It examines the Qajar architecture, architectural decorative motifs in Tehran and introduces the decorations, but it is limited only to the buildings of Tehran and is used as one of the appropriate sources in the subject of this research.			

Rest of table 2.

History of research related to Qajar				
Decorations	Makinejad	Book	Iranian Art History in the Islamic Period	(2008)
Topic	He has investigated the Islamic architectural decorations in terms of content and the course of developments and various implementation methods, but he has less pointed to the historical, cultural and social background.			
Decorations	Bozorgmehri& Khodadadi	Book	Iranian uprights	(2011)
Topic	This book examines the classification of Islamic architectural decorations, their terms, methods and types of use and is a suitable source of architectural decorations.			
Decorations	Molanaei & Soleimani	Article	Additional decorations and elements to Qajar Islamic architecture	(2022)
Topic	He analyzed the decorations of Qajar architecture and the influence of Western art, and the purpose of this research is to know the decorations and supplementary elements to Islamic architecture. In the results of the analysis of decorations in this period, compared to the previous periods, it has decreased and it is one of the most recent sources used.			
Decorations	Kiani	Book	Decorations related to the architecture of Iran during the Islamic period	(1997)
Topic	As one of the main sources of architectural decorations, this book introduces various types of architectural arrays in the Islamic and Qajar periods and analyzes different buildings, but similarities and differences with the present research are observed.			

traditional Iranian architecture and western architecture in Qajar houses: A correct interpretation of the problem is presented in relation to the known work; The facts related to the subject are deduced and the patterns of arrays and influential components from the traditional architecture of Iran and the architecture of the West are determined and investigated as evaluation criteria of Qajar houses. 2 Selecting and analyzing the features of Faiz Mahdavi's Qajar house in Kermanshah: a) Choosing a house b) Analyzing the indicators. By examining the theoretical foundations, a case study is selected in such a way that it shows the trend of being influenced by the traditional architecture of Iran and Western architecture in terms of the construction date. Faiz Mahdavi Qajar House, a valuable heritage-cultural complex in the historical context of Kermanshah city, which was built in the second half of the 13th century AH and was registered as one of the national monuments of Iran in 2006, has the mentioned characteristics. Analysis of the effectiveness of the desired indicators in the form of architectural arrays including: "transom window, stalactite work, carving, fresco, brickwork, mirror work, liming, smalto, karbandi, tile work, painting, stucco work, chandelier, wallpaper, pediment, flat and raised ceilings, velvet curtains and sculpture" are among the components of traditional Iranian architecture and

The influence of Western architecture development takes place in the Qajar house and the state of the architectural arrays of Faiz Mahdavi Qajar house is evaluated; Finally, based on the degree of effectiveness, small values (in percentage units) are presented in the form of tables and graphs. 3. "Conclusion": The results of the research "Comparative analysis of the impact of traditional Iranian architecture and Western architecture on the determined components", "Comparative analysis of how and the impact of traditional Iranian architecture and Western architecture in the architectural arrays of Faiz Mahdavi's house" and finally "Explanation and evaluation of how and the degree of modeling of the arrays" It provides the architecture of traditional Iranian architecture and Western architecture in Faiz Mahdavi's house.

Theoretical Foundations Developments and progress in the field of Qajar architecture appeared simultaneously with the confrontation between the development process and modernity in the West, and urban development caused indirect transformation in Iran (Afshar Asl & Khosravi, 1998, 125). The weakening of the historical traditions of Iranian architecture during the Qajar period, the development of Western architecture, and changes in architectural patterns were formed by the visit of Iranian men, students, and artists to European

Table 3. The history of research related to Iran's case examples. Source: Authors.

The history of research related to Iran's case examples				
Case studies in different cities of Iran :Researches of the seventh group				
Issue	Author	Documentation	Title	Year
Architectural identity	Ghasemi Sichani & Memarian	Article	Recognizing the identity of Iranian architecture through the analysis of Qajar houses in Isfahan	(2008)
Topic	This article has investigated the shape, climate and cultural patterns of Qajar houses in Isfahan and has emphasized more on the typology of houses and architectural identity.			
Architecture & culture	Armaghan, Soltanzadeh & IraniBehbahani	Article	Architecture and culture in Qajar houses of Tehran	(2013)
Topic	This article examines the way of life, architecture, and decorations of Qajar and the influence of western style in Qajar houses of Tehran, and to some extent, it has similarities with the present research			
Architecture & culture	Ebrahimi, Soltanzadeh & Keramati	Article	Reflection of Western culture in the evolution of lifestyle and architecture of late Qajar houses in Hamadan	(2017)
Topic	This article has examined the influence of the behavioral patterns of the people in the formation of the living space, the effectiveness of the Western culture in the lifestyle of the people of Hamedan, and the architecture of the houses.			
&Tradition modernity	Ramezan Jamaat & Neyestani	Article	The effects of tradition and modernity in the entrance spaces of Tehran houses during the Qajar period	(2010)
Topic	This article divides the architectural characteristics of Qajar houses in Tehran and analyzes the effects of tradition and modernity in some of the houses and is very close to the current research.			
Houses	Roshandel, Hashemi Zarjabad & Ghorbani	Article	Research on the architecture of traditional Qajar houses	(2016)
Topic	Introduced and recognized the architecture of the Qajar Taqvi house in Nehbandan and examines the degree of compliance with the principles of Iranian-Islamic architecture such as: the principle of introversion, privacy, brickwork, tilework stucco work, impluviums and Sashes, and it has similarities and differences with the current research.			
Typology	Khakpour, Ansari & Tahernian	Article	Typology of Rasht's old style houses	(2010)
Topic	In the article, the authors have discussed the typology of the old texture houses of Rasht and the separation of architectural patterns, and in general, they have examined the considered houses in detail.			
Houses	Saremi Naeini & Masoudi	Article	Investigation of historical houses in Birjand, Qajar period	(2010)
Topic	This article has analyzed the influence of climatic conditions, introversion in the architecture of Qajar houses and decorations by emphasizing case study in Birjand			
Houses	Zarei	Article	features of the Qajar Investigation of residential architectural period of Shiraz	(2010)
Topic	This article describes the characteristics of architecture, structure, decorations and examines the effects of Western architecture and is similar to the current research in terms of approach.			
Decorations	Babazadeh Eskoui & Pakravan	Article	Design patterns of Qajar facades	(2011)
Topic	The authors have investigated the architecture in terms of structure, aesthetics and the influence of the West in the architecture of houses, but in terms of the approach of the article, it has similarities and differences in terms of evaluation.			
Decorations	Elmi Jafarlo	Article	Investigation of architectural decorations of the Qajar period with an emphasis on European motifs in the works of this period in Shiraz	(2014)
Topic	It examines the decorative motifs of Iranian architecture with regard to the relationship with Western societies and the extensive changes in society and the effects on architecture.			
Aesthetics	Sadeghi, Ekhlas & Kamel Nia	Article	Investigation of the role of architectural aesthetics in Iranian houses, a case study: the historical houses of Mashhad	(2018)
Topic	This article examines how the principles of aesthetics are realized in Iranian architecture, which has similarities with the present research in terms of dealing with the influence of the West on the architecture of that era.			

Rest of Table 3.

The history of research related to Iran's case examples				
Decorations	Shah Mohammadia & Sediq	Article	Investigation of the use of materials in the formation of motifs used in Qajar era decorations (Tehran houses)	(2015)
Topic	This article examines the decoration of Qajar architecture, examines the impact of materials on different motifs in houses, and is close to the topic of research on the use of motifs in traditional and Western architecture, and of course, it has differences in terms of approach and evaluation.			
Houses	Dabdabeh & Farhinia	Article	Investigating the effect of changing the use of the interior architecture of Behnam house	(2017)
Topic	This article examines flexibility with a change of use, responding to new needs, integration, and continuity of various spaces and decorations in the interior of the Qajar house, and in terms of change of use in the case in question, it is similar to the current research.			

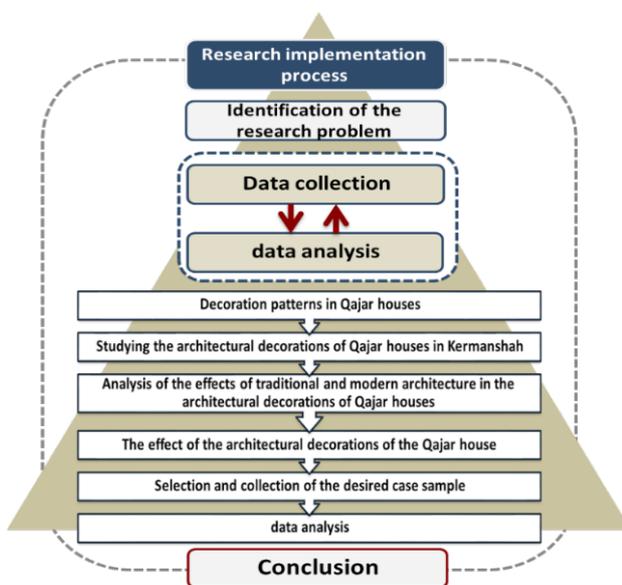


Fig. 1. Research implementation process. Source: Authors.

countries and were imposed on architects by employers. In this situation, due to the differences in cultural and technological issues with Western architecture, architecture was hastily manifested, while architecture emerged selectively in later periods (Saremi, 1995, 34). Iran's Qajar architecture was formed under the influence of great conceptual and physical changes, and with the influence of Western architecture, European architectural patterns were integrated with Iranian patterns; In residential buildings, such developments took place in details, forms, shapes and decorations (Tahmasbifard, 2020, 49). From the point of view of many theorists of Qajar architecture, this period is semi-modern and different from the principles of traditional architecture; Qajar architecture emerged

as a transitional period with changes in various characteristics and factors (Haj Mohamadi, Ahmadi, Tabassi & Seyed Alhosseini, 2021, 117). During the Qajar era, the structural pattern of spaces was in accordance with traditional architecture; The design was integrated, traditional and influenced by Western architecture, and western elements, details, forms, shapes and decorations were modeled in the buildings (Bani Masoud, 2011, 700). The development of urban planning patterns and the emergence of western elements were influential in the formation and design of buildings that fit the urban space and caused changes in the field of traditional Iranian architecture. The transformation in architecture and urban planning in this era was formed by the emergence of new spaces in the fabric of the city in the form of a combination of tradition and modernity (Qobadian, 2004, 18). The changes in the early Qajar period, together with other artistic and social phenomena, were influenced by the internal phenomena of the society (Sajadi, 2014, 80). The encounter between European technology and Iran's traditional culture initially led to the acceptance of Western ideas and material manifestations, and in the middle of this period, it turned into a confrontation between tradition and modernity (Bani Masoud, 2011, 78). The forms of Iranian buildings, which were formed with the principles of traditional architecture and in the structure of traditional cities, appeared with a western appearance in the middle of this period (Ramezan Jamaat & Neyestani, 2012, 66). The architectural decorations of Iran were developed in each historical

period according to the existing needs and facilities and influenced the spirit of the place; It became the manifestation of different parts of the architectural elements from part to whole and was implemented in the building with different methods (Makinejad, 2008, 95). The characteristic architectural decorations appeared in the exterior and interior spaces of the buildings and introduced the architectural identity by expressing cultural, historical, and social values. The distinctions of decoration styles in different periods were significant considering geographical, economic, social, and religious characteristics, and Iranian architects used a series of architectural arrays such as Patterned wooden ceilings, beautiful wooden columns, and column capitals, the use of prominent designs on the ceilings, carving, knotting, cantilever, and purple created luxurious buildings (Kateb, 2006, 341). The main decorations of Qajar architecture influenced by the West were tile work, stonework, painting, and mirror work, which have decorative motifs including abstract shapes, Arabesque, Motifs, Archetypal role of Farangi, landscapes and hunting grounds, flowers and chickens, pictures of kings and princes, lions, suns and angels (Makinejad, 2008, 48). The naturalistic and luxurious aspects of the motifs created a worldly space different from the spiritual state of the previous periods (Momeni, Attarian & Ghadrnan Qaramaleki, 2014, 130). Qajar decorations are influenced by the use of Western decorations, a variety of colors, luxury, the use of natural elements such as birds and flowers in motifs, and the execution of designs in a non-geometric manner (Kianmehr, Tagavi-nejad & Mirsalehian, 2014, 86). Architectural arrays in major parts of palaces and aristocratic houses were mirrored in different ways, and the use of embossed stucco inside buildings was very popular (Ayatollahi, 2010, 299); Also, the use of semicircular and centaur arches became common in palaces and residential buildings (Pasian khamari, Rajabali & Farrokhzad, 2017). The architectural arrays of Qajar buildings, by using alternating curved lines in the facade, repetition, and rhythm in the arch and

Roman arch in the window, the harmony of the type of decorations and color, the similarity of the column heads, the unity of the elements and design of the facade, the observance of the symmetry of the columns and column heads in the facade were revealed; A general understanding of the collection of building decorations was achieved due to the connection of these elements with each other (Amini, Motalebi & Dabagchi, 2019). The content and theme of Qajar architectural decorations were distinguished in a novel and unique way with the influence of Western culture, and the different execution of such decorations was one of the characteristic features of this period (Afzal Tousi, Selahi & Selahi, 2012, 578). In this period, the style of decoration of Qajar buildings appeared as a combination of Western Iranian (Nazarboland, 2016). Characteristics of Iran's Qajar architectural arrays, based on the information of the documents, the background of this research and field studies are detailed in Table 4.

Qajar city of Kermanshah During this period, Kermanshah was known as the center of the government of Mohammad Ali Mirza Dolatshah, which included a large part of the Western region of Iran. According to the documents and descriptions of historians, traders, travelers and the map of the city according to Figs. 2 & 3, extensive changes in the formation and development of Kermanshah took place according to the political, economic, social and cultural situations in the framework of an organized system by the Qajar prince. The existing functions in the region led to the emergence of the government palace, Mashgh Square, Naqarehkhane, Jame Mosque, Bazaar, Topkhaneh Square and Diwankhaneh in Kermanshah city (Borumand Sorkhabi, 2009, 170).

Architecture of Qajar houses in Kermanshah The introduction of Western architectural patterns into the Qajar residential architecture in Kermanshah and its integration with traditional architecture created changes. Features of Qajar architecture of Kermanshah are shown in Table 5 as follows.

Architectural patterns of the appearance of Qajar houses

Table 4. Characteristics of Qajar architectural arrays in Iran. Source: Authors.

Characteristics of Qajar architectural arrays of Iran	
Stucco work	Qajar Stucco works were densely executed, with luxurious and varied designs, and two views emerged in the Stucco work of the buildings: 1. Traditional Stucco works: using Iranian Motifs and elements; 2. Combined Stucco works: the combination of Iranian and Western designs.
Sculptural	Qajar stone decorations, using different forms, had a performance similar to the luxurious designs of Qajar plasters. Then three points of view can be seen in the sculpting of buildings: 1. Imitation of traditional Iranian architecture 2. Influence of Western architecture 3. Combining Iranian and Western architectural art.
Transom window	Qajar Transom window were done along with tiles and as a past performance
Tile work	Qajar Tile work has the following characteristics: the traditional implementation of tile work, the use of themes similar to Western examples, the use of combined Iranian and European tile work, the use of plant Motifs, nature, the role of humans taken from Farangi patterns, taking the example of the warm colors used. In Western mansions such as: yellow, orange, pink and red and the spread of the Qajar Tile work technique.
Painting	Qajar painting has been examined in 2 periods as follows: The first period, the reign of Fath Ali Shah and Mohammad Shah: having an idealistic attitude in the painting of palaces and residential buildings, Paintings in the form of a single face of the king; The use of oil paint in paintings, introducing religious works and animal images into painting, observing the principles of painting. Iranian, not using the principles of simulating Western painting and showing beauty by Iranian painters, the execution of frugal paintings on the walls and niches of buildings. The second period, the reign of Naser al-Din Shah: the evolution of Iranian painting and the influence of modernity on the traditional style of Iranian art, following the example of Western painting.

Early cores of the Qajar city of Kermanshah

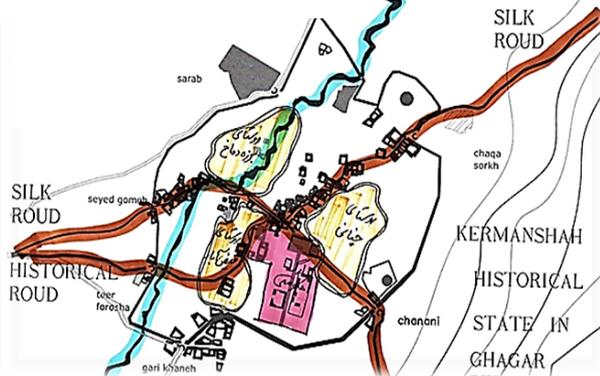


Fig. 2. The first nuclei of the Qajar city of Kermanshah. Source: Cultural Heritage of Kermanshah Province.

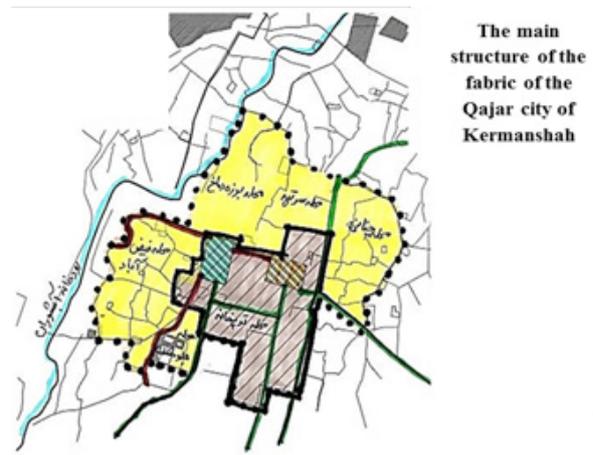


Fig. 3. The main structure of the fabric of the Qajar city of Kermanshah. Source: Cultural Heritage of Kermanshah Province.

have been analyzed according to the indicators cited in Table 6 as follows:

Characteristics of Qajar houses arrays in Kermanshah The emergence of modernism and development in the architecture and urban planning of Kermanshah during the Qajar era brought remarkable developments in the use of architectural arrays; In this research, the characteristics of the materials and arrays of Qajar houses in Kermanshah, based on information from documents and field studies, are described in Table 7 as follows.

Faiz Mahdavi's house in Kermanshah Faiz Mahdavi's

house was built in the second half of the 13th century AH in the old context of the city and in the neighborhood of the historical market of Kermanshah in Alafkhaneh neighborhood according to Figs. 4 & 5; this building was formed as a valuable collection of mosque, Hosseiniyeh, bath and house buildings (Soltani, 2002, 415).

The ownership of this house was originally owned by the Faiz Mahdavi family, whose presence as one of the religious authorities of Kermanshah during the Qajar era and the main focus of the constitutional uprising in Western Iran caused many constitutionalists to benefit from their teachings (Afshar Sistani, 1992, 1087); In

Table 5. Review of Qajar architectural features of Kermanshah. Source: Authors.

Characteristics of Qajar architecture of Kermanshah		
Wall	Balcony	Entrance
Dividing the facade into a number of openings with windows	Balconies imitating Western buildings and using the Baghdadi design	Designing high entrances and using balconies
		
Basement	Arch	Materials
The appearance of the basement in the exterior of the building	Beginning of the Qajar period: The use of load-bearing entrance arches; Middle of the Qajar period: The use of wooden lintel, semi-circular arches, basket-handle arch, and ovals; Last period: Removal of arch, exedras, Knocker, and rings.	Last period: the spread of Western architectural style and transformation of materials and technology
Staircase Placement vertically next to or along the entrance		
		

Table 6. Architectural patterns of Qajar houses. Source: Authors.

Architectural patterns of Qajar houses in Kermanshah	
Symmetry	High symmetry axis with more detailed decorations.
Opening	Various dimensions of the opening, the window stretched vertically, the width of the window is smaller than the door, rectangular and arched.
Railing	Window and balcony railing:(wooden& metal), exterior Iwan railing and stair guard:(wooden), Terrace railing .inside the building with various designs and patterns:(metal)
Brick	Brick facade decorations with various designs and patterns:Kazakh square brick:(the flooring of the courtyard),Molded and decorative brick: (column head), Embossed Mohri brick: (the edge of the Iwan & pendentive),Patterned bricks: (window edge, wall surface, and roof edge), Geometric patterned brick: (window edge, wall surface, and roof edge).
Decorations	Stone decorations:engraved stones:(cymatium),flowers in the Transom window:(entrance), Arched splay: (door and window), arch:(between the columns), basket-handle arch:(door), equilateral arch:(door),arch: (window).
Balcony	Exposed houses: covered balconies with at least two columns around them.
Entrance	Extroverted houses: stairs, introverted houses: the entrance.
Ceiling	Inclined
Pediment& cymatium	Pediment: the entrance of the building, cymatium: the front of the building, the highest part of the facade of the building
Column	The beginning of the Qajar period:(traditional and in the interior of the building). Last Qajar period: (appearance in the urban landscape). Column decorations:Inspired by Iranian art(brick, plaster& mirror designs), columns and classical columned Iwan, columned entrances and blind arcade, shafts(carved plaster), decoration of column and column&corroded and delicately cylindrical).material of columns:(brick plaster).&head:(brick
Window, Cancelli & Eyelet	Window:number, dimensions, size, and form(traditional and integrated pattern in the first years,middle and Farangi pattern in the second half).The first half of the Qajar period: window (simple & rectangular, with 2 or more fixed or opening sashes, rectangular,curved inscriptions).Last Qajar period:new designs of openings. &(tile, stone, wood eyelet: providing light and air conditioning, cancelli:protection inside the building plaster).

Table 7. Materials and arrays of Qajar houses in Kermanshah. Source: Authors.

<b>Materials and arrays of Qajar houses in Kermanshah</b>	
Materials	
Structure	Building structure: brick and wood;-Column & roof: bearing wall and wooden timber; Farangi patterns: roof -Balcony: the protrusion of the wooden beam. two-shell construction technique & covering: stone and metal sheet used in the first-floor ceiling from the surface of the facade wall.
Facade	Tarash and Mohri bricks; Windows & doors: wooden. railing: wooden and metal. Facade execution method: a combination of tile work and stucco work with a brick façade.
	
Decorations	
Brick work	Interior, exterior facades, inscriptions, window frames, the surface on columns, jertz & lachaki. Pishbor & Mohri bricks:- The body and facade of the roof cymatium, and street architecture of the city. Types of brickwork: Molded bricks:- in different geometric and non-geometric sizes and shapes with various designs and patterns (Column base, Column head, border, inscription, relief, and cave-relievo). Preparation steps:- Cutting on the surface of Kazakh bricks, kneading in the mold, in different ways; Ghavareh- bori brick:- from flat pieces of brick or curved pieces, frames with different designs and patterns; Mohri or patterned decorative brickwork:- Square, rectangle, rhombus, and cross with various relief and cave-relievo patterns on the arch, border, cymatium, wall, entrance, and window; Application of decorative brick: - Application of border (patterned brick); Application of single brick with a full pattern:- in the middle of simple and cut bricks; Set of four bricks together:- a complete pattern; Patterned brick:- Framing of a large design on a wide Facade.
	
Tile work	- tile with Arabesque, Khatai motifs;- Images of kings, literary, epic, Quranic, mythological stories, flowers and birds;- Extensive use of yellow and orange colors in the decoration of buildings;- Forming, sculpting and the Pattern of the human face with the appearance of straw and pink colors;- Clay tiles, maqeli on the facade of buildings between windows and inscriptions- Most of the tiling works in the Imad al-Dawla Mosque, Tekiye Moaven al-Molk and in residential houses.
	
Stucco work & mirror work	With the spread of modernity and innovations in the homes of nobles; - the use of smalto: with motifs, flower and bush designs, and Arabesque motifs;- the use of convex glass: mirror, curved and non-geometric; - Application of mirror work and Stucco work along with painting and calligraphy: ceiling and stalactite work; - different shapes of the mirror: Triangle, rhombus, rectangle, square, diamond-cut and in the way of knotting;- Stucco work application: frame, tympanum, pendentive, and cymatium;- Stucco work decorations: relief and semi-embossed with human and plant characters; - Ceiling plastering: Geometric designs and simple colors.
	

such a way that the formation of Faiz Mahdavi's house, mosque, library and Hosseiniyeh complex was proposed as a place to receive pilgrims of the highest shrines and

seekers of knowledge, which led to the creation of cultural, social, religious and economic organizations in the neighborhood and affected people's lives (*ibid.*).



Fig. 4. The neighborhoods and gates of Kermanshah. Source: Cultural Heritage of Kermanshah Province.

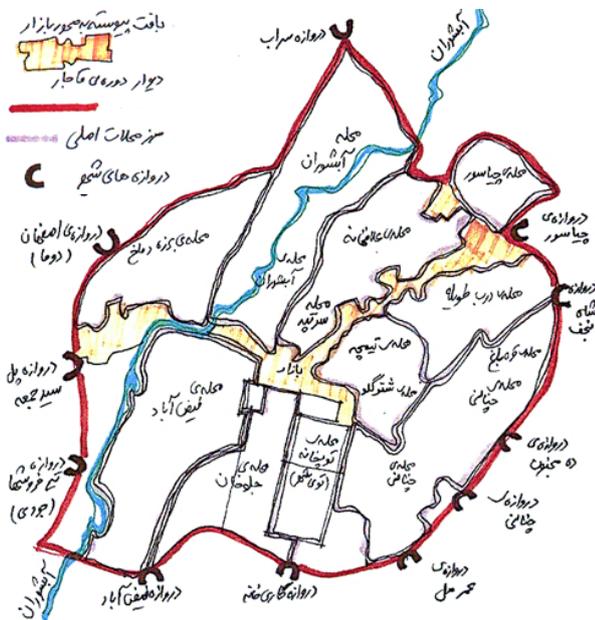


Fig. 5. Alafkhaneh neighborhood and Faiz Mahdavi's house. Source: Cultural Heritage of Kermanshah Province.

This house was acquired by the cultural heritage of Kermanshah province in 1370 and was registered as one of Iran's national monuments with registration number 17560 in 1385. Faiz Mahdavi's house was put into operation as a spinning museum in 2014 with the aim of strengthening the province's handicrafts (Fars); In 2015, Faiz Mahdavi's house was put into operation as Kermanshah spinning museum to strengthen the province's handicrafts (Isna); after the fire incident in 2017, the Fund for the Restoration and Exploitation of Historical and Cultural Buildings and Places by the Department of Cultural Heritage, Handicrafts and

Tourism of the province handed over this house to the private investors through an auction to change its use according to Fig. 6.

In 2022, with the permission of the General Directorate of Cultural Heritage, Tourism and Handicrafts, this house was changed and turned into a residential, catering, and cultural complex, and according to Fig. 7, it was recognized as a model of revival, and revitalization to organize and enrich other historical houses in Kermanshah.

Today, according to the historical, physical, and cultural values, Faiz Mahdavi's heritage house has been recreated according to Fig. 8. In this regard, Mohammad Ali Soltani, a researcher of the history of Kermanshah, introduced this house as the "Kermanshah Constitutional House" and demanded the establishment of the Kermanshah Constitutional History Museum in this building, and in 2022, a part of the halls of this house was dedicated to photographs and constitutional documents (Isna).

Architectural features of Faiz Mahdavi's Qajar house The architectural features of Faiz Mahdavi's house: based on the information of documents and field studies, it has been examined in detail in Fig. 7.

Spatial patterns of Faiz Mahdavi's Qajar house The spaces of Faiz Mahdavi's house include 2 parts, the outer and inner spaces, which the architect of this building has distinguished from each other by using the level difference caused by the natural effects of the earth. The artistic design of the green space by the architect has led to proper spatial division. The pattern of the interior spaces of this house can be seen in the form of three floors in the north direction and two floors in the south direction and the middle part in the middle part according to Fig. 8. In this research, the location and function of the spaces of Faiz Mahdavi's house according to Fig. 9, 10 & 11 are detailed as follows:

Faiz Mahdavi's Qajar House arrays The formation and development of Faiz Mahdavi House was based on issues governing culture, social life, ideas and beliefs, and caused the emergence of objective effects

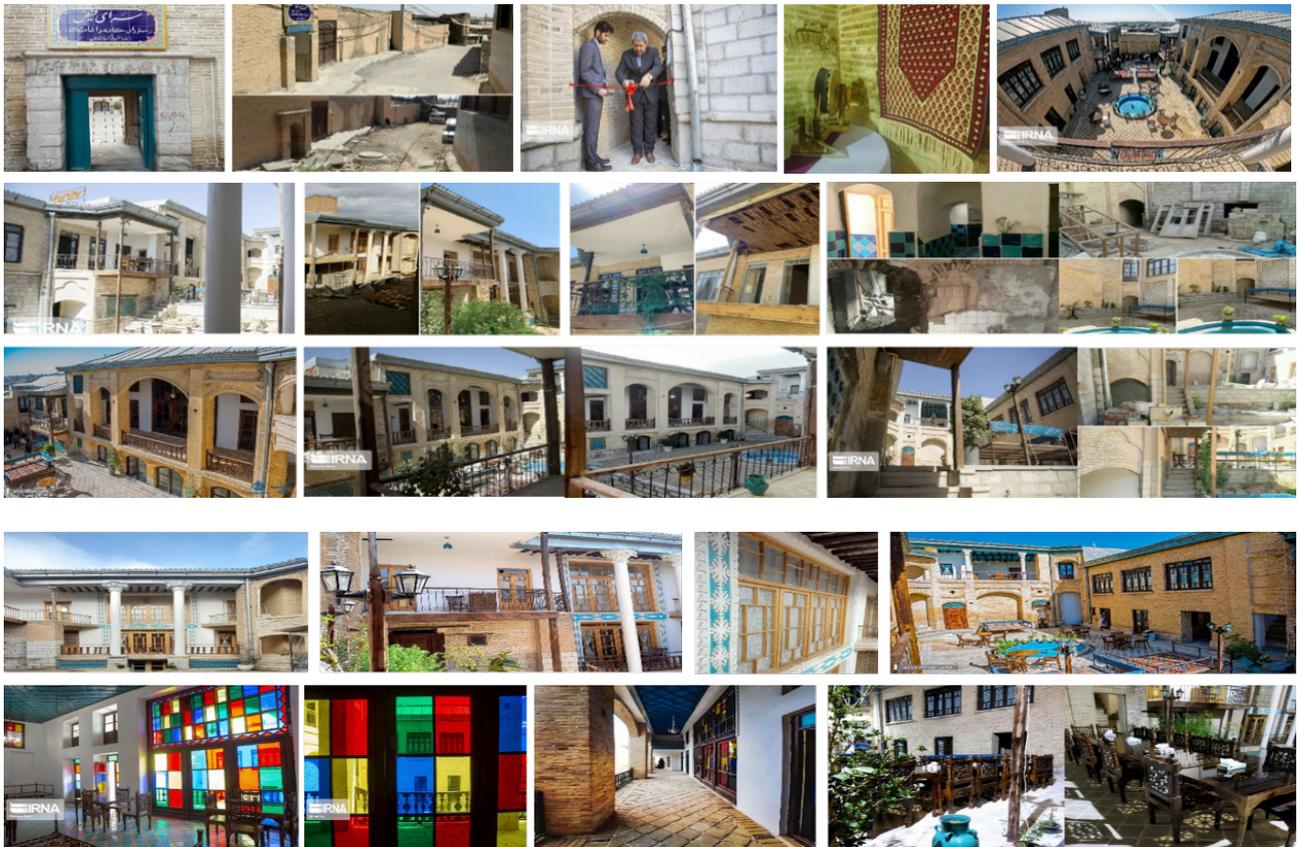


Fig. 6. Faiz Mahdavi's house in Kermanshah. Source: Cultural Heritage of Kermanshah Province.

Architectural features of Faiz Mahdavi's Qajar house		
<b>Placement position</b>		<ul style="list-style-type: none"> <li>Green: Access route from the Bazar</li> <li>Red: Access route from Sepah St.</li> <li>Blue: Access route from Alafkhaneh neighborhood</li> <li>Yellow: Access route from the Bazar</li> </ul>
<b>The old neighborhood of Alafkhaneh, Kermanshah</b>		
<b>Range</b>		
<b>Construction period</b>		
<b>The owner</b>		
<b>Building</b>		
<b>Area</b>	<b>Spaces</b>	<b>Difference</b>
900 square meters	It has a sash and many rooms	The plan is different from other Qajar buildings in Kermanshah
<b>Structure</b>	<b>Entrance</b>	<b>Designing</b>
integrated	Creating communication and maintaining the privacy of the yard	Using the level difference and creating a stepped building
<b>Plan</b>	<b>Western Front</b>	<b>Materials</b>
Introverted	Two brick columns with beautiful maqrans capitals, the existence of a sabbat on the west side of the building and communication between the inside and outside of the building	Brick, clay, stone, wood, soil, metal, lime, plaster
<b>Roof</b>	<b>Decorations</b>	
gable	Stucco work, brickwork, metal railings, framing and liming	

Fig. 7. Architectural features of Faiz Mahdavi's Qajar house. Source: authors. such as introversion and maintaining the principle of privacy. The architect's use of natural features in the placement of the building's spaces created a significant visual beauty, which is evident in the interior; It provided

a sense of dynamism in the space of the house due to the internal circulation of the building. The decorations of Qajar architecture were revealed under the influence of the development of Western architecture in the building of Faiz Mahdavi (Moradi, 2003, 105). The architectural arrays of Faiz Mahdavi's house were influenced by the development of western architecture in the form of plastering, brickwork, metal fences, framing and lime plastering. These elements have been examined in detail in Table 8.

Comparative evaluation of the effects of traditional and modern architectural development on the architectural decorations of Faiz Mahdavi's Qajar house in Kermanshah. The evaluation process of how and the degree of patterning of architectural arrays of Faiz Mahdavi's house from traditional Iranian architecture and Western architecture: evaluation which is in accordance with the determination of

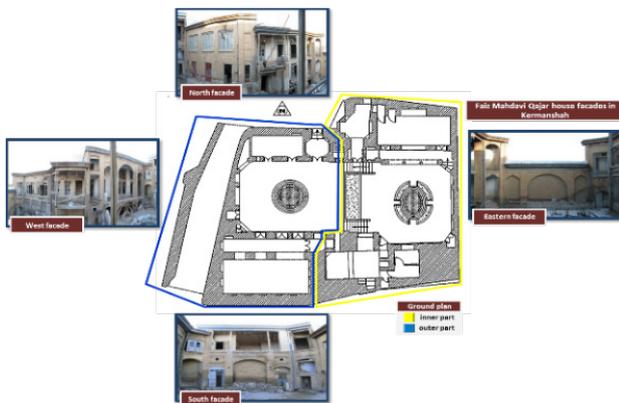


Fig. 8. Views of Faiz Mahdavi's house. Source: Cultural Heritage of Kermanshah Province.

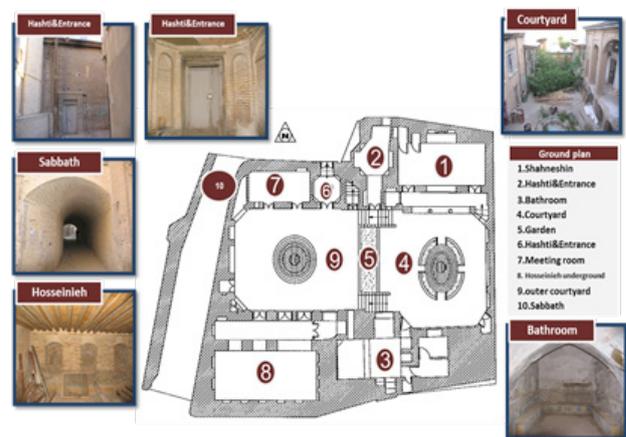


Fig. 9. The floor plan of Faiz Mahdavi's house. Source: Cultural Heritage of Kermanshah Province.

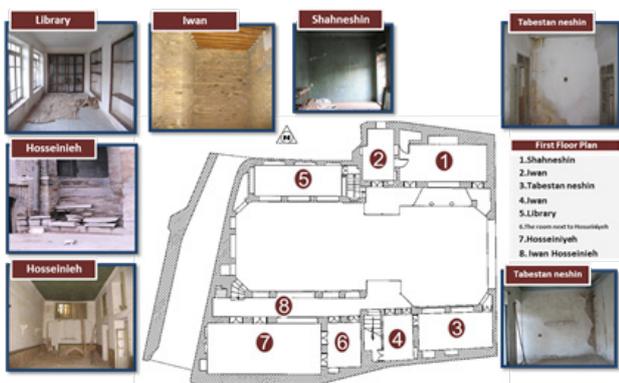


Fig. 10. First floor plan of Faiz Mahdavi house. Source: Cultural Heritage of Kermanshah Province.

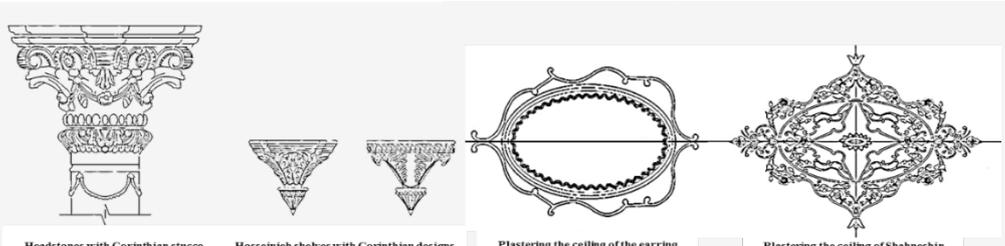
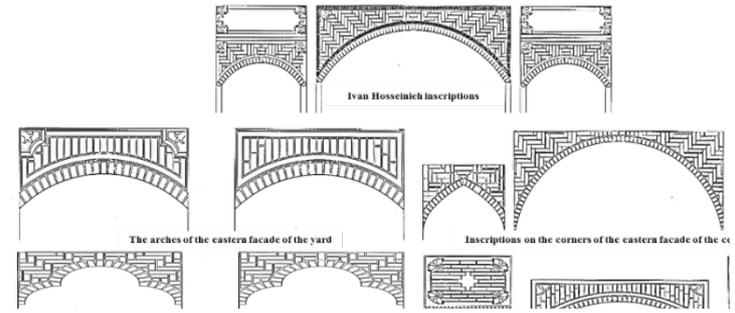
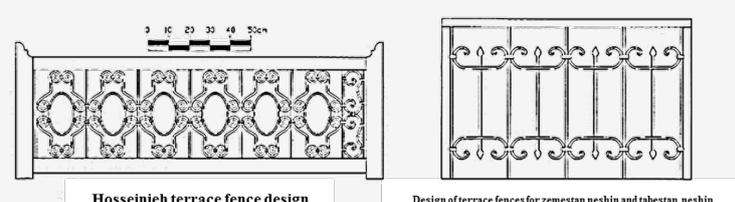
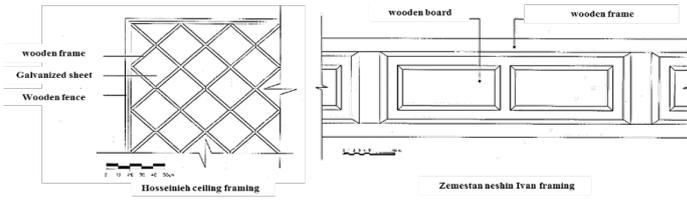


Fig. 11. Plan of the second floor of Faiz Mahdavi's house. Source: Cultural Heritage of Kermanshah Province.

the influence of the considered architecture on the components determined in this house with application in the decoration of the exterior and interior spaces of the house including: “transom window, stalactite work, carving, fresco, brickwork, mirror work, liming, smalto, karbandi, tile work, painting, stucco work, chandelier, wallpaper, pediment, flat and raised ceilings, velvet curtains and sculptures” According to the analysis of the characteristics, architectural elements, decorative and structural patterns of the space, according to Table 5, it has been presented separately. The criteria for evaluating the components in a documentary and library form are determined based on theoretical literature, research background, and field studies. The assessment of how and the extent of the influence of traditional Iranian architecture and Western architecture

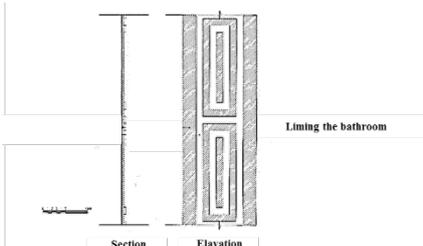
on the determined components is expressed separately in the form of the ratio of the number of traditional and Western architectural features in each of the indicators to the total of traditional and Western architectural features related to that indicator in percentage units. The evaluation criteria for each indicator are calculated from 0-100%. It should be noted that if one of the features in Table 9 is under the combined influence of traditional Iranian architecture and Western architecture at the same time, the evaluation criterion of 50% is considered. In this process, taking into account that the quantitative results obtained from this analysis cannot be considered as an accurate measure of the evaluation of the influence of traditional Iranian architecture and Western architecture in the architectural arrays of the house, but in answering the questions of this research,

Table 8. Architectural arrays of Faiz Mahdavi’s house in Kermanshah. Source: authors.

<b>Architectural arrays of Faiz Mahdavi’s Qajar house</b>		
➤ Stucco Work: This building has been implemented in two ways		
Pre-made plastering	Stucco work performed on site	
Stucco work on the heads of the columns of Iwan Shahneshin and Hosseiniyeh	Stucco work of Shahneshin ceiling, zemestanneshin and Hosseiniyeh ceilings	
		
Brickwork in the interior-exterior facades has been implemented with designs taken from western architecture: ➤		
Designs	context	Types
design of birds, plants, convex or concave border;	Stretcher, bull Stretcher, soldier& sailor;	in bird and plant designs;Bricks Molded bricks pish-por and mohri in the margins;Ordinary bricks in the text of the work.
		
➤ metal railings		
metal railings in terms of metal application and design	metal railings with metal fasteners and wooden frame	
Application: terraces and Iwan	Design type: Spiral.	
		
➤ Framing		
Hosseiniyeh ceiling frames	zemestanneshin frames	
wooden frames inside which there are coated tin sheets	wooden frames with wooden boards inside	
		

Rest of Table 8.

**Architectural arrays of Faiz Mahdavi's Qajar house**

➤ liming	
Implementation of liming plan in the bathroom	
Covering the underlying surface with a coating layer; ;Adding soot to the coating mortar	Painting the coated layer with natural color; Designing the intended motifs;Removing negative parts and revealing patterns.
	

in the form of an explanation and evaluation of how and The degree of modeling of architectural arrays from traditional Iranian architecture and western architecture based on the comparative comparison of determined components and their evaluation according to [Table 9](#) has been effective. According to the determined indicators influenced by the traditional architecture of Iran and Western architecture in [Table 9](#), the example of the case in question has been evaluated in detail below. The results of the evaluation of “The manner and degree of modeling of architectural arrays from traditional Iranian architecture and Western architecture in Faiz Mahdavi’s house”, According to the analysis of the features, architectural elements, decorative and structural patterns of the space and indicators influenced by traditional and western decorations, according to the above diagrams, it has been effective in answering the questions of this research as follows: Decoration elements of the first stage: The decorations of this stage in Faiz Mahdavi’s house in the form of “brickwork, Columns and blind arcade, Fountain, green space, stucco work, Wooden roofs, painting, karbandi, fresco, liming, doors & windows, and smalto” are at the highest level of [Fig. 12](#); The decorations of this indicator in the form of “tiling, mirroring, moqrans and inlay” occupy 50% of the surface. Also, the decorations of this characteristic in the form of “pediment, fresco, wallpaper, chandelier, curtain, statue and inscription” were not used in Faiz

Mahdavi’s house. Decoration elements of the second stage: The decorations of this stage in Faiz Mahdavi’s house in the form of “brickwork, Columns and blind arcade, Fountain, green space, stucco work, Wooden roofs, painting, fresco, door and window, and smalto” are on the highest level of the surface; The decorations of this indicator in the form of “tile work, mirror work, stalactite work” occupy 50% of the surface. Also, the decorations of this characteristic in the form of “pediment, fresco, wallpaper, chandelier, curtain, statue and inscription” were not used in Faiz Mahdavi’s house. Influence of characteristics affected by traditional and modern decorations: According to [Fig. 13](#), the influence of the indicators can be seen in the decorations of “brickwork, Columns and blind arcade, Fountain, green space, stucco work, Wooden roofs, painting, fresco, door and window, and smalto” respectively, which is placed at the highest level. Also, the amount of effects in the decorations of “tile work, mirror work, karbandi, liming, stalactite work” has taken 50%.

### Conclusion

The transformations of the Qajar house of Faiz Mahdavi in Kermanshah were modeled after the characteristics of Iranian culture, social interactions, and prevailing beliefs in the society. The formation and changes of this house were accompanied by the emergence of objective effects such as introversion and maintaining the principle

Table 9. Evaluation of Faiz Mahdavi’s house arrays. Source: Authors.

Arrays Of Qajar Houses									
The First Stage: The Effects Of Traditional Iranian Architecture									
Traditional arrays	Transom Window	Stalactite Work	Carving	Fresco	Brick work	Liming	Mirror Work	Smalto	Karbandi
	0%	50%	50%	100%	100%	100%	50%	100%	100%
	Tile Work		Painting			Stucco Work			
	50%		100%			100%			
Exterior Decorations	Brick work	Tile Work	Columns and Blind Arcades		Fountain		Green Space		
	100%	50%			100%		100%		
Interior Decorations	Brick work	Tile Work	Stucco Work	Wooden Roofs	Painting	Mirror Work	Karbandi	Fresco	Liming
	100%	50%	100%	100%	100%	50%	100%	100%	100%
The Second Stage: Western Architectural Influences									
Western arrays	Transom Window	Carving	Karbandi	Fresco	Brick work	Mirror Work	Tile Work	Smalto	Chandelier
	0%	50%	50%	100%	100%	50%	50%	100%	0%
	Stucco Work	Wall paper	Painting	Pediment		Velvet Curtains And Statues		Flat And Prominent Ceilings	
	100%	0%	100%	0%		100%		0%	
Exterior Decorations	Brick work	Tile Work	Columns and Blind Arcades		Fountain	Green Space	Pediment	Door& Window	
	100%	50%	100%		100%	100%	0%	100%	
Interior Decorations	Stucco Work	Tile Work	Painting	Wooden Roofs	Fresco	Mirror Work	Wall paper	Chandelier	Velvet Curtains And Statues
	100%	50%	100%	100%	0%	0%	0%	0%	0%

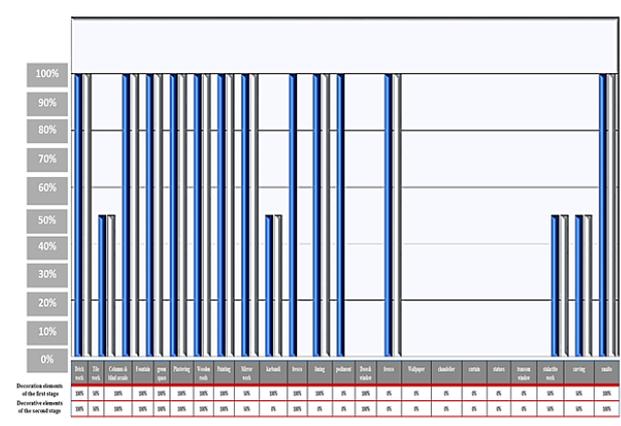


Fig. 12. Indicators affected by the decorative elements of the first and second stages. Source: authors.

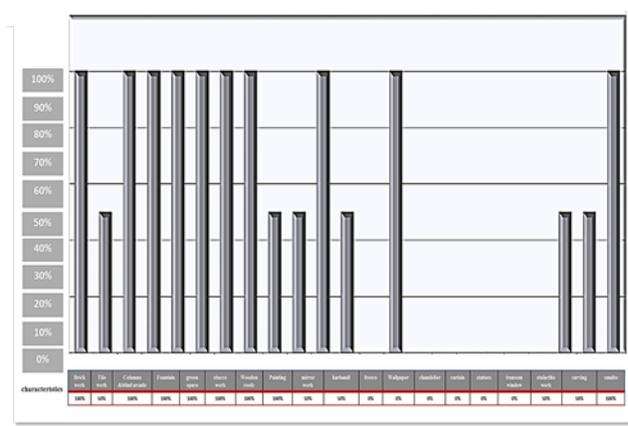


Fig. 13. Determining the relative percentage of influence of indicators. Source: authors.

of privacy. The architect’s use of natural features in the placement of the building’s spaces created a significant visual beauty that can be seen in the interior of the house

and provided a sense of dynamism in the space of the house due to the internal circulation of the building. The decorations of Qajar architecture under the influence of

the development of Western architecture were visible in the building of Faiz Mahdavi. The spaces of Faiz Mahdavi's house include two parts, the outer and inner spaces, and the architect of this house is distinguished from each other by using the difference in the surface caused by the natural effects of the earth. The findings of this research show that the evolution of the architectural arrays of Faiz Mahdavi Qajar house in the spaces of the house, which includes two parts of the outer and inner spaces, were revealed during the first and second stages under the influence of traditional Iranian architecture and Western architecture. Evaluation of the factors affected by architectural decorations, the decoration elements of the first stage in Faiz Mahdavi's house are "brickwork, Columns and blind arcade, Fountain, green space, stucco work, Wooden roofs, painting, karbandi, fresco, liming, doors and windows, and smalto" It can be seen at the highest level and at this stage, the decorations of "pediment, fresco, wallpaper, chandeliers, curtains, statues and inscriptions" are not used. The decoration elements of the second stage, in Faiz Mahdavi's house, "brickwork, Columns and blind arcade, Fountain, green space, stucco work, Wooden roofs, fresco, doors and windows, and smalto" decorations can be seen at the highest level, and in this stage, "pediment, fresco, wallpaper, chandeliers, curtains, statues, and transom window" have not been used. The degree of influence of the indicators affected by the first and second stage decorations, in the house of Faiz Mahdavi, in the decorations "brickwork, columns and arches, Fountain, green space, stucco work, wooden roofs, painting, fresco, door and window, and smalto" at the highest level. It can be seen from the chart, and then it has influenced the decorations of "tile work, mirror work, karbandi, liming, stalactite work". As a result of the transformations and modeling of the architectural decorations of Faiz Mahdavi's Qajar house, during two different stages, the exterior and interior spaces of the house have been influenced by the traditional Iranian architectural decorations in the form of simple decorations and then combining the art of traditional

decorations with luxurious western decorations. To continue the research, the following topics are suggested to the researchers in this field: 1. Examining architectural arrays of houses in the form of regional studies in other parts of Iran; 2. Using the stages of the research method of this research, in analyzing the same issue in different historical periods of Iran; 3. Studying the influence of the findings of this research on other case examples in other periods of Iranian architecture.

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