J. Appl. Environ. Biol. Sci., 3(8)100-111, 2013

© 2013, TextRoad Publication

ISSN: 2090-4274
Journal of Applied Environmental and Biological Sciences
www.textroad.com

An Investigation of the Architectural Structure of Façades in Houses of Tabriz in Qajar and Early Pahlavi I Era

Solmaz Babazadeh Oskuei[1*], Golnaz Pakravan[2]

[1]Department of Architecture, Osku Branch, Islamic Azad University, Osku, Iran
[2]Department of Architecture, Basmenj Branch, Islamic Azad University, Basmenj, Iran

ABSTRACT

The present study was intended to examine the architectural styles and methods in residential buildings of the city of Tabriz in Qajar and early Pahlavi I era as an attempt to improve the residential space and give identity to the buildings and the urban spaces of Tabriz. The study aims to figure out the existing concepts and the conditions in these residential buildings so that the modern buildings would be designed with regard to these concepts and covert values in Iranian houses. Dull and unappealing architectural quality of houses, inconsistency and the eradication and lack of the long-established originality in contemporary houses has obliged different societies to find a solution to this issue. Although some studies have been conducted with regard to the houses of Tabriz, they have not produced comprehensive and outstanding findings. Hence, as a reaction against this lack of research, the present study adopted a descriptive-analytical and library approaches to conduct a primary and original research to examine the organization and structuring methods of façades in Qajar and early Pahlavi I era.

The purpose of the study was to identify the notions and concepts, pinpoint the necessary requirements and create a comprehensive view of the different dimensions of the long-established concepts and notions in order to construct buildings and complexes which would be more consistent and congruous with the needs of human beings.

Having optimally used space and location, the Iranian architect incorporated all the necessary components in line with a certain purpose within a well-organized and useful complex and hence constructed the house with regard to its context and situation so that all the components were taken into account. Results of the study not only revealed the rational and perfect presence of designing elements in the façades of old houses in Tabriz but also demonstrated the preciseness and rigor of the Iranian architect in structuring and adapting the façades so that they would respond to human beings' needs and create an innovative manifestation and establish a distinctive identity to the life and urban spacees.

KEY WORDS: houses, Façade, architecture, Qajar & Pahlavi

INTRODUCTION

House is considered as the source and target habitat of typical life for human beings. People leave their houses to work and socialize with others and after doing work and getting experience they go back home. Indeed, house has such a high significance for human being that it can be considered as the focal center of his habitat. Hence, it can be maintained that the house as "the center of human's world" should satisfy his requirements and needs, both in its inner space and outer manifestation. House is considered as a place toward which people develop a sense of belonging and attachment. Hence, human beings perceive life as a path to reach civilization and sophistication and hence they undoubtedly attempt to establish such a milieu and habitat that would help them fulfill their desired identity and sophistication[1].

With regard to the above-mentioned motivation, previous studies related to the old houses were reviewed. The first category of studies included the articles and books in which the house was generally studied in Iranian architecture and some of them involved case studies of well-known houses in the city of Tabriz and other Iranian cities. The second category of studies included the documents available at the Cultural Heritage Organization of Tabriz; the content of these documents included the brief history or plans of some residential buildings in Tabriz whose practical utility was changed after they were repaired and maintained. Thus it can be observed that, in particular, no studies have been conducted into the architecture of the façades of old houses. As the people's lifestyle changed in the second half of the last century, the concept and notion of "house" and "residence" was replaced with "residential unit" and occupancy and replacement instead of repair and maintenance were the events which happened in our cities. Timely intervention in historical contexts and structures has not been done to harmonize and coordinate them with new industrial phenomenon and hence the old buildings fell victims of new

***Corresponding Author:** Solmaz Babazadeh Oskuei, Department of Architecture, Osku Branch, Islamic Azad University, Osku, Iran. Email : Solmazbabazade@yahoo.com

urban phenomena such as asphalt and lamp post. In modern urban manifestations of the house, it is apparently distinct from its surroundings and this distinction springs only from differences in terms of height, materials, color, retrogression and differences in other specific features with its surrounding buildings.

However, the sense of entering into one' own private domain as distinctive from public places is missing from them. The use of wide transparent exteriors, uneven wavy geometry and oblique angles in façades regardless of the indigenous surroundings distort the serenity and tranquility of the space and eradicate the spatial congruity and unity [2].

Moreover, non compliance of modern houses with climatic condition led to exploitation of fossil energy to generate environmental comfort (heating and cooling), which have resulted in environmental pollution and malformation and abnormality in the process of construction in country[3] . In modern architecture, the houses have been combined and blended with their surrounding in such a way that visual disturbance has increased and houses can no longer be considered as private and individual places.

While in the past the windows, terraces and iwans faced the inner space of the house, now they look out of the house on all sides and cause disturbance for neighboring houses and the surrounding passages between the houses. The designing architect never puts himself in the shoes of the members of the house and does not design the house from inside to outside so that the house would be considered as the clothes of the members of the house. Instead, modern architects like a sculptor stand outside of the house and design and blend the shapes and forms so that they are appealing only from a passerby' viewpoint. As a result, the designed spaces are often dull, featureless and lifeless.

Such architectural designing does not take the surrounding environment and the underlying context into account and hence they have a formalistic composition[2]. As a matter of fact, it should be noted that the surrounding environment makes a definite impression on human beings.

They constantly interact with their physical environment and have an impact on their surrounding area. World Health Organization considers surrounding environment to be an effective factor in people' health. Thus, the application of related psychological principles in the architectural designing of buildings can bring about the citizen's mental peace and quiet, develop a mental consistency and enhance the satisfaction and quality of life; they can further reduce people' stress and intense feelings and improve their mental health and wellbeing[4].

Nowadays, many humanistic, social, cultural and native values and assets are ignored due to compulsions and requirements of modern life and hence the serious consequences of them can cause damages to families and members of the society. In the past, the native people of this territory had such outstanding skills that they could maintain a desirable interaction and harmony between the underlying surroundings and the house itself; however, such remarkable skills seem to have been neglected and destroyed in modern times[5].

The Designing of contemporary suffer from serious drawbacks in their structures and functions such as façade, quality of construction and implementation. Many of the inconsistencies and dysfunctions of the modern houses which become visible when they are utilized are considered to be the consequence of neglecting the principles and traditions of Iranian architecture. Traditional Iranian architecture in the past was consistent and congruent with the environmental, social, cultural and native features of the territory[6]. The modern houses with all their available apparatuses and features cannot respond to the needs and demands of life. Furthermore, the designing of façades in the residential buildings need significant emendations and reforms in different aspects. The present paper will try to study the façade of old houses of Tabriz with assuming the impact of architectural patterns and raised expectation in designing facades of houses in Qajar and Pahlavi I era in improving the designing quality of the facades of modern houses, to present innovative and crucial solution with the usage of the respectable culture and traditions of the past times to afford the demands of the society

RESEARCH METHOD

The present study adopted an analytical-descriptive method and procedure of "reviewing library texts and documents". It is considered to be a primary research which collected original data. In general, it can be argued that data collection can be carried out either directly or indirectly: direct data collection in a study makes use of oral and written questionnaires and interviews with the authorities of the Cultural Heritage Organization and with the prominent scholars who are well-informed in the field of traditional Iranian architecture of Quajar era. The direct method of data collection also involves empirical observations, preparing sketches and taking photographs for a comprehensive understanding of the architecture of the spaces of old houses. The indirect method of data collections involves the use of books, written references, historical documents, sketches and plans in relation to old houses of Tabriz which are available at the Cultural Heritage Organization of the province of Eastern Azerbaijan.

Therefore, all documents, data and plans of 35 selected houses were prepared. Then, relations between different components of data were investigated and general understanding of the considered issue was obtained after classifying, interpreting, construing and analyzing the data which included content analysis of written references and

architectural analysis of façades of 35 selected houses through the related plans and images along with an interview with the concerned experts.

1. Geographical and Historical Background of Tabriz

The city of Tabriz is the capital city of the province of Eastern Azerbaijan and the second biggest industrial city of Iran. With an area of 11800 square kilometers, Tabriz is located in the middle of the province, in the northeast of Urmiah Lake, at a distance of 619 km from the west of Tehran and 150 km from the south of Jolfa which is the borderline between Islamic Republic of Iran and the Republic of Azerbaijan. The city lies at longitude 46º and 15´´ east and latitude 38º and 8´´ north of the Greenwich meridian[7].

Authentic written documents and research findings of well-known Iranian and European researchers indicate the existence of a great ancient civilization for the city of Tabriz. Tabriz is deemed to be a city on the Silk Road connecting east to the west. The historical origin of the city of Tabriz dates back to Mannaeans and before them and based on the existing archeological evidences and documents, the city has a 4000-year-old history. The rich variety of architecture in Tabriz reveals its long-lasting history and it is referred to as a vibrant, dynamic, vigorous city which was considered to be the cradle of literary works, mysticism, intellect and science. Inasmuch as the city of Tabriz has a great background and since it had been the origin of many dynasties and successions of rulers of Iran, the number of historical houses in Tabriz is considered to be high. The major reason for the existence of the wide variety and multitude of unique historical houses in Tabriz was that it turned into the second political center of commandment and kingdom at the time of Prince Abbas Mirza (the Prince of Qajar) [8].

Fig 1. Political divisions of the province of Eastern Azerbaijan

2. The Monarchy of Qajar in Iran

Qajarian was the dynasty governing in Iran from about 1779 to 1925. The founder of the Qajar dynasty was Agha Mohammad Khan Qajar who was crowned in Tehran in 1779 and the last Qajar king was Ahmad Shah who was overthrown by Reza Shah Pahlavi in 1925[9].

3. Effective Elements and Factors in Façade Organization

3.1. Cultural Orientation

architecture of those houses. By the term privacy here, we mean that room and space was designed so that it has the sense of privacy in structure and inner being. Privacy in terms of spatial structure includes principles which account for the security of space and privacy in terms of inner being accounts for respect and value for the inner architecture and brings comfort and convenience. In those houses, the structure of the building provides privacy and security for the owner and the spatial qualities guarantees peace and quiet. As a matter of fact, the architect's use of such a principle brings respect and dignity for private life. In the architecture of Qajar houses, "privacy and the lack of view to the neighboring building" was considered to be one of designing standards in architecture. Privacy and the significance of having privacy was given a lot of attention in designing Qajar houses which can be verified by the fact that the windows of the façades looked out on the main yard i.e., the inner area of the house. Such values had remarkable impacts on the establishment of architectural forms, the position and the size of windows, the position of entrances to the buildings and the roofs and more attention was given to the façades of the yards[10].

However, throughout the Pahlavi I dynasty, along with the social religious changes, the most distinguishing characteristic of architecture in Iran, namely, attention to the inside of the house was distracted and attention was suddenly switched Ideological and religious issues were taken into consideration in the architectural organization of Qajar houses in Tabriz and privacy as a fundamental and dominating principle on every aspect of their life was considered and observed in the from the inside of the buildings to its outside. This phenomenon originated from

modern thinking and was inspired from modernistic processes. Thus, social dignity and protection of privacy were cast and manifested in the mould of new and modern cultural outlooks and consequently the inside-oriented architecture of Iran was transformed into outside-oriented architecture[11].

3.2. Horizontal and Vertical Lines

At the time of early Qajar dynasty, Horizontal lines in houses which typically had one or two floors and an underground floor had a key and outstanding role and the emphasis and prominence of horizontal lines and sides was dominant. The horizontal line used to be applied two or many times in this architecture.

At first, the horizontal line might emerge on a level which establishes the foundation of the building and is manifested as a platform or yard. The second time, the horizontal line might be manifested at the edge of the architectural wall where the vertical elements of the building such as walls of the yard are fixed to it.

In this style of architecture, horizontal lines regulate, harmonize, tranquilize and balance the vertical lines and elements and hence relieve the excitation and tension[12].

Moreover, Qajar architects classically persisted in establishing and preserving the balance between the horizontal and vertical lines in the façades of the buildings which was realized based on the application of "symmetry".

In contrast with Qajar architecture, the façades of Pahlavi buildings have made the maximal use of vertical elements and signs. columns and windows had the most prominent role in this style of façades whose purpose was to intensify a sense of awe and magnificence in the eye of the viewer. Unlike the vertical development of columns and windows, the buildings themselves are stretched and extended horizontally and the buildings themselves lie massively and heavily on the ground. The blending of horizontally and vertically linear elements in the façades of Pahlavi buildings gave an image of non-uniform repetition[11].

3.3. Iwan

Iwan refers to a semi-roofed space which is limited from three sides and is only open from one side. It is deemed to be one of the most significant parts of the house which had a role in the overall structure and organization of the building. iwan has been known as an independent space which can have varying functions[13]. Based on their sharp-witted skills and experiences about the manner of the placement and the positioning of the iwan on the overall structure of the building, the Tabrizian architects(architects from Tabriz) designed the iwan so that it would be congruous with the whole building and would not be perceived as a superfluous part. When the iwans were designed on the main axis and facet of the building, they were laid and embedded in front of the major parts of the building such as halls, se-dari[1] and panj-dari rooms[2] which were often made of large sashes so as to let in more sun lights [14]. In the architecture of traditional houses, three groups of open, closed and semi-closed spaces were not separately built; rather, they make sense along one another. In other words, the degree of lightness or darkness of rooms gradually decreases so that one converts into another. This style of combination of contiguous parts can be considered as an expansion from one into the other, for example, from iwan into panj-dari room or conversely from panj-dari room to the iwan. In terms of space, iwan is the extension and continuation of open and closed spaces and in some way it maintains the spatial hierarchy and organization. On the other hand, the integration of horizontal and vertical layers around the yard, the continuation, consistency and the combination of open, closed and roofed parts eliminates spatial closure and hence we can perceive fluidity inside the historical houses. In traditional architecture, the semi-open parts function as the interfaces and connect open and closed spaces and the closed spaces are connected to the open spaces by means of semi-open spaces. Iwan incorporates some features of both open and closed spaces in itself. iwan consist of both open and closed spaces features and has both functional and formal role.

In addition to the mentioned attributes, iwan generates spatial variety and inspires a sense of unique life. Moreover, in terms of decoration, iwan is considered to be an important space since it connects the alcove, hall and chambers to the yard and in Iranian architecture iwan adopts the most beautiful and artistic decoration. In the houses of mid Qajar era, the overall southern iwan covers all the façades of the house which include: Tanabi[3] or Kaleis[4] or spring house[5]. The spacious and overall iwans of the façades In the late Qajar and beginning of Pahlavi era change into small iwans which are made only from one room or space. As a result, the iwans lost their earlier awe and magnificence. In Pahlavi era, the iwans became single and small and as the Tanabi moved to a corner of the house, the sashes changed into segmental windows. Also, the yard was limited into the remaining space around the house while the yard encircled and accommodated the house in the architecture of Qajar era[15].

3.3.1 .Position of iwans and their Functions in Qajar and Early Pahlavi Eras

In the majority of early houses in Qajar era, iwan was located along the main axis, mainly at the southern side of Tanabi; iwan casts shade in summer and it doesn't prevent sunshine from penetrating into the depth of the tanabi

in winter. As a result, optimal amount of southern sunlight would shine into and illuminate the tanabi. Furthermore, iwan protects the windows, sashes and body of the house against climatic damages such as rain. In the houses of Qajar era, façade of a house could usually be seen from the back of the iwan and tanabi, Kaleis, spring house and other elements of the house which lied at the heart of the façade[12]. Along with the advent of iwans to the architecture of houses in the middle of Qajar era, major changes were made in the façades of the buildings; namely, columnar iwans were included as one of the distinguishing features of the architecture of this era. However, in late houses, iwan was made no only along the primary axis but also it was made along the secondary axis. At the end of Qajar and the beginning of Pahlavi era, massive iwans were transformed to such small iwans which were allocated to only one room and space; consequently, the size and area of bright and vivid spaces were likewise affected.

3.3.2. Dominant patterns in the façades of Qajar and Pahlavi eras

The shapes of iwans in Qajar era included wall-to-wall (overall) and individual shapes. The conducted studies and analyses on the forms of iwans indicated that designers considered different alternatives in terms of height so as to add to the beauty of the building. In Qajar era, iwan had the following features:

- In a wall-to-wall (comprehensive) in the façade or in the height.
- At the center of the main façade or at the center of the main axis in height.
- At the sides of the main axis of the façade or at the side of the main axis of façade in height.
- At one side of the main axis of façade.

In Pahlavi I era, balcony and the phenomenon of constructing balconies were manifested in the façades facing streets and in this way a new connection and relationship between the internal domain of the house and the alleys and streets was maintained[11].

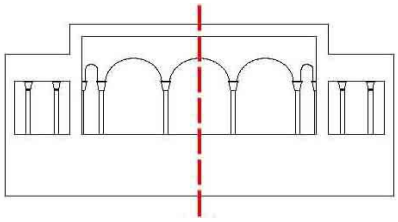

Fig 2. Comprehensive iwan in height- Ghadaki House.

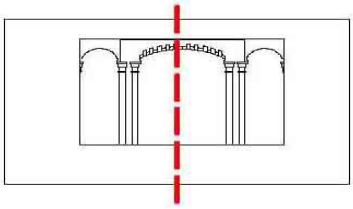

Fig 3. Iwan at the center of the main façade- Alavi House.

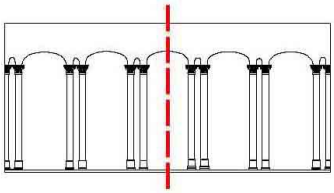

Fig 4. Comprehensive iwan - Sharbat Oghli House.

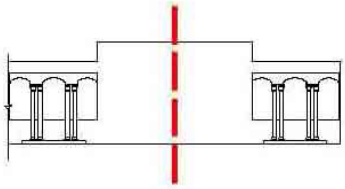

Fig 5. Iwan on the both sides of the main axis of façade- Kalantari House

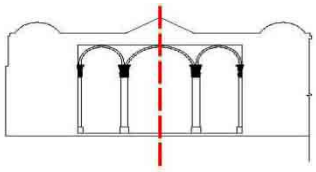

Fig 6. Iwan at the center of the main façade in height- Heidarzaadeh House

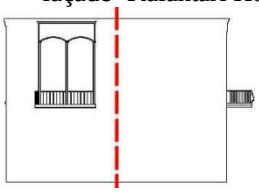

Fig 7. Iwan at one side of the main axis of façade- Zamani House.

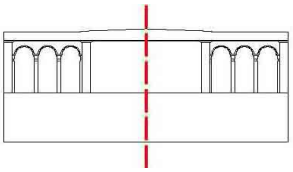

Fig 8. Iwan on both sides of the main axis of the façade- Salmasi House.

3.4. Staircase

In early Qajar era, stairs were considered as unimportant elements which merely connected different floors of the house to each other in an invisible and unseen manner. For example, stairs which connected the link between the ground floor and the first floor, especially Kaleis were placed at the corner of the corridor or were placed at one of the corners of the tanabi in a cross[12].

In the middle of Qajar era, stairs were placed at the main axis of the building. In the traditional architecture of Iran, staircase was not considered as an important and outstanding element at the entrance of the house. In general, the stairs as the connecting links of different floors had a great height and were placed at such positions that were not magnificent and beautiful. The use of staircase as a manifest and functional-decorative element in the architecture of Qajar houses became widespread and frequent in imitation of European architecture[14]. In late Qajar era, stairs, whether as external or internal elements of the building were regarded as an outstanding and significant part of the house which is an evidence of the fact that it was imported and imitated from European architecture. The stairs usually lied along the main axis of the building[12].

Before Pahlavi I era, the internal staircase of the building had lower spatial and local value than the other internal parts of the building and this feature was observed in any kind of building especially the houses. However, in early Pahlavi era, stairs gained high significance in structuring and regulating the functions and relationships of different internal parts of the houses. In the entrance threshold of the building, the staircase had a wide, ornamental and stately design and format and inside the house it was placed at the center of the building and hence the staircase was transformed into a spacious, magnificent and grand part of the house. Staircase was assumed and allocated a particular and central space in the structure of the house.

The dominant design of the internal staircase was such that at the starting point it was wide and then at the Landing it was split into two separate lateral staircase; otherwise, two staircases started at the sides in a spiral design; all of the designs for the staircase in Pahlavi era were impressed with and imitated the European architecture.

Furthermore, the staircase was not restricted to the internal space of the building and the purpose of elaborating and enhancing the magnificence of a building necessitated the placement of the staircase to the outer façade of the building[11].

Fig 9. The stairs of Amir Nezam Garoosi's house

Fig 10. The stairs of Parvin Etesami's house

3.4.1. Dominant patterns in the placement of staircase and platforms in the façade, in Qajar and Pahlavi eras

In Qajar era, staircase and platform were placed at the sides of the main axis of the façade or at one side of it or at the center of the main façade which faced the yard. As mentioned above in Qajar era, the yards were inside-oriented. However, since the houses of Pahlavi I era were outside-oriented and the façade were considered as parts of the urban spaces, hence, the application of the staircase in front of the entrance was essential. It needs to be mentioned that in houses of the Pahlavi I era the outside staircases were less magnificent and splendid than the inner staircases.

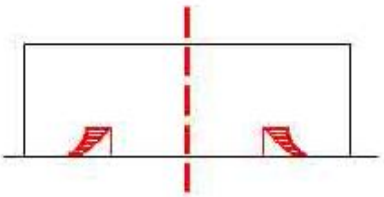

Fig 11. The use of staircase and stage at the sides of the main axis of the façade(Kompani House- Behnam House).

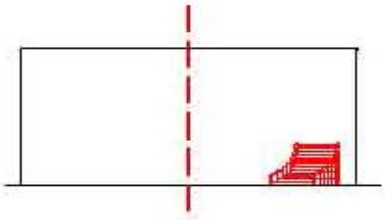

Fig 12. The use of staircase at one side of the main axis of the façade(Blouurchian House- Koocheh Meshkian House).

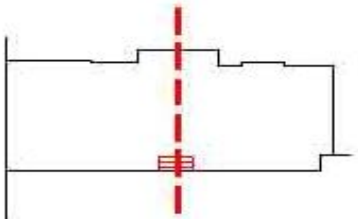

Fig 13. The use of staircase or stage at the center of the main façade.

3.5. Column

In the mid Qajar era, the construction of the houses of the rich increasingly imitated the designs of European buildings. As a case in point, the column had an essential role. Huge decorated and ornamented columns appeared in villas and palaces. The majority of these columns made up of baroque in their ornament but not in their foundation. The outer quality and composition of the columns was more important than base inherent which eventually resulted the Iranian baroque architecture. Complex designs carved on stone and decorative plasterwork with flowering shrup on mixed luxurious columns and the variety of unique designs are among distinguished characteristics of wealthy houses in this period, which indicate the understanding of symbolic value of columns in this period[9]. Capitals with European architectural style, which have unique and Corinthian decorations and crenate leaf and Roman semicircle arches are found in residential buildings in the mid period of Qajar government; thus, this period deserves to be called eclecticism period of Tabriz residential architecture[14]. In the late Qajar period and early Pahlavi era, columns were manifested in urban perspective as well and, although they did not show off in spite of their grandeur, they were observed in all kinds of classic styles and unique innovations in design of column capitals belonging to the same setting. In most buildings, Doric, glorious and luxurious columns, even Ionia abstracted columns and, more importantly, the types which were rich of mixed or Corinthian orders, mostly with flowering shrup, were found. Main body of some columns is cylindrical; but, the columns with tetragonal or hexagonal cross section which received more attention in capitals are mostly observed such that base and body have been influenced. A layer of plaster covers wooden beams, over which flat two-dimensional motifs are plastered. Capitals have been also found which have been probably added later and are dazzling in terms of abstraction[16].

Fig 14. Capital of column in Sharbat Oghli house

Fig 15. Capital of column in Ghadaki house

Fig 16. Capital of column in Mojtahedi house

3.6. Adapting buildings with climatic conditions

One of the principles of construction in Qajar houses of Tabriz is suitable orientation of buildings considering motion of the sun in sky and optimal use of its thermal energy in different seasons. In traditional Iranian buildings, there were three directions which showed the best position of buildings in each climate and ron's order(northeast–southwest) was used in Tabriz because important problems were made in conditions of cities in some regions while this issue was not considered or residents in houses faced some problems in terms of light and energy absorption or useful use of wind. Correct use of desirable wind, especially prevailing wind, and its application in ventilation and cooling of spaces used in summer were of climatic measures which were used in Qajar period. Main space of winter hall was located on main axis and its panj-dari rooms were generally made of large sashes for more sunlight entrance. Using thermal capacity of soil in spring and summer in spaces such as basements was among other climatic techniques to seasonally store heat. Soil temperature in depths of below 6 m is almost stable and equals mean annual surface temperature; thus, presence of summer

and winter spaces and use of earth depth and living at the heart of soil have had positive consequences which have been correctly used in architecture of Tabriz Qajar period. To be related to the external space and have better ventilation and lighting, height of the basement was 1 m above ground level, the windows of which were evident in the façade of most houses. Use of accessory elements such as iwans and shades besides using radiation proofs(vertical or horizontal blades which control sunlight in windows), curtains, netted windows with colorful glasses, paths for controlling depth and radiation of the sun into the building in summer and winter are based on needs of residents for solar energy. While angle of sun radiation in winter allows sunlight to penetrate into buildings, using local materials with suitable thermal capacity considering the climate is one of the strategies used in residential architecture of Qajar period. Accordingly, not only suitable materials of each climate are used but also additional expenses such as transportation expenses are saved[5].

3.6.1. Light enjoyment in houses of Qajar and early Pahlavi I periods

Light has a noticeably special position in Qajar houses. Monochromic sunlight passes through sash prism and paves heart of the parlor after radiation to water surface inside the pond. In hot summers, iwan becomes sash canopy and, in cold winters, sunlight goes into depth of house and sprays color[15]. In fact, an architect prevents direct entrance of light into Tanabi by putting the iwan in front of this space and throws colorful lights on walls and roof so that motion of water causes light dance in this space which is fascinating. However, in Pahlavi I period, rotating the direction of windows from inside to outside formed a new definition of privacy into residential spaces. In this period, social privacy and protection of privacy emerged in the new form of cultural attitudes of the government and it was natural that windows with iwans, which were formerly opened to the yard, turned to alleys and streets as new windows which were sometimes along with balconies and privacy of houses was converted into privacy of alleys and districts and walls of yards became shorter for the first time. Since opening of windows to alleys and streets gave new privacy to them, they received a more decorative variety[11].

3.7. Decoration of façade

3.7.1. Utilization of brickwork

One of the evident architectural features of Qajar houses of Tabriz is their brickwork. During this period, application of brick in construction became so widespread that brickwork received a new importance not only in façades but also in structure of buildings and Tabriz can be easily regarded as entrance and expansion gate of a kind of brickwork in buildings. Like other cities of Azerbaijan, this city has different kinds of designs with curved lines and plant motifs with brick and bricks have been cut or carved according to the desired shapes. These decorations has given a special spirit to old houses in Tabriz and make old houses of this city special and distinguished. Since the mid Qajar period on, some architectural elements and decorations of western architecture were gradually used in some buildings[7].

Combination of different materials such as tile, brick, stone, windows and wooden doors and also fences has been used in decorations of façades of houses in Pahlavi I period; also, metalwork has been used in window shades and sometimes ceilings. However, each of these materials is used properly and this combination does not mean a mixture. In this period, the highest level of brick application has been made in façades of houses due to high rate of construction along with speed and simplicity of work. General approach toward decorative brick façade and use of Iranian classic(ancient) and western classic designs and lithographs in the first decade and use of straw decorations and retrogressions and progressions in brickwork have created new combination of eastern and sometimes western decoration in new façade of houses in addition to different shading on flat and simple walls. Architecture of this period is retrospective in proper use of decorations. It has not neglected entrance doors, corners, chamfers, edges and upper ends of buildings, margins and upper parts of windows and has used that space with decorations which sometimes model ancient architecture and some other times western or modern view and are also based on decorations of Islamic period. Façade of buildings in Pahlavi I period have brief and small references to different thoughts of developers at their time[11].

Fig 17. Brickwork of façade of Boloorchian house

Fig 18. Brickwork of façade of Alavi house

3.7.2. Utilization of plasterwork

Plaster is a material which is more flexible and softer than wood, stone, brick and other materials; therefore, it has high plasticity which is an opportunity for Qajar artists to manifest their abilities[17]. Plasterwork has been widespread in history of Qajar architecture as a valuable decoration and eye-catching creativities and innovations have appeared by plasterwork artists in architectural works of houses; each of the left works includes a very precious and valuable picture of art with philosophy, wisdom and culture of Iranian artists. In decorations of façade of houses in Qajar period, some natural manifestations and forms affected by traditional Iranian architecture and magnificent decorations and western decorations such as works of Rococo and Baroque periods have been used as complex carved works on stone and decorative plasterwork with flowering shrup complex Corinthian orders with a kind of hidden, functionalistic and sometimes evident luxury and nobility through applying flower and leaf decorations in western style and designs which have European landscapes and buildings with excessive designs and elements in one shot as if this kind of overcrowd and high expression of work considered a privilege and the artist always worried about forgetting something[16].

3.7.3. Utilization of sash

Sash is a kind of wooden and netted sliding window which is opened and closed by rolling up and down and its height is from floor to ceiling. In these windows, very delicate and complex arabesque designs are used in delicate and sophisticated manner which are decorated by colorful glasses such as green, red and blue[12]. Colorful glasses entered Iran in Safavid period and their usage was maximized in Qajar period in sashes[18].

Fig 19. Sash of Amir Nezam Garousi house

Fig 20. Sash on Ghadaki house

4. RESULTS

House construction method, dimensions, proportions and conformity with internal and external conditions of the residential unit in Qajar period all indicate effect and strength of human relations with equipment and conditions of natural environment and requirements which have emerged experimentally over time as principles, criteria and qualities in spatial structure of houses[19]. In façade of houses in Tabriz, order, symmetry and repetition are clearly seen. In pattern of size, shape and other characteristics of rooms such as division of external façade of rooms, triplet and quintuple divisions have been generally followed. In Qajar period, some of the governing patterns of traditional architecture were not considered in some cases; for example, paired divisions such as doublet and quartet divisions were used to divide surface of external façade of rooms in some buildings. Main spaces such as panj-dari and haft-dari rooms, sash and iwan were located on symmetrical axes or main axes of yard and other spaces such as se-dari rooms were on both sides of main spaces [20].

Research results of known patterns in design of main façades of houses in Qajar period are as follows:

-Using columned iwan as a decorative element which is harmonious with the entire façade and is used in two forms of wall to wall columned iwan and iwan in center of the main façade

-Simultaneous use of columned iwan and stairs as evident, applied and decorative elements in façade as iwan in center of main façade and stairs on both sides of the main axis of façade, as iwan in center of main façade and stairs on one side of the main axis of façade and as iwan and stairs on both sides of the main axis of façade

-Simultaneous use of gable and columned iwan in designing main façade

-Establishing main spaces such as hall and se-dari and do-dari rooms in the center of main façade (on the main axis of plan)

-Use of brick cornices in design of façade in Qajar period

Known patterns in design of main façades of houses in Pahlavi period are as follows:

-Designing building façades as a component of urban body

-Higher location of building from ground level and its representation in the middle and entrance of buildings are almost observed in all buildings, which better distinguishes a work from its surrounding, dominantly separates it from the environment and emphasizes its view and façade by creating a false but desirable height.

-Long entrances and high and extended columns in buildings

-Façade of buildings in Pahlavi period has made the most use of linear–vertical signs and elements. Columns and windows have the most important role in this application in order to add to the sense of grandeur and splendor of buildings.

-General approach to decorative brick façade and use of Iranian classic (ancient) and western classic designs and lithographs in the first decade based on time and place, varied use of brick, stone, tile and metal decorations both in design and materials

-Formation of balcony and phenomenon of balcony construction in façade of streets while constructing houses [11].

Generally, relevant expectations from façade in Qajar period include protection of humans against external threats such as atmospheric and climatic factors and annoying people. On the other hand, façade plays a role as the connector between internal and external, private and public, non-crowded and crowded, artificial and natural, light and ventilation supply and communication with nature and society. Openings (door and windows) play the role of physical or visual link as façade elements. In this period, façade did not remain only as a protector and internal and external link. Since clothes of people represented their personality, houses have also represented personality, value and social position of owners as second clothes. However, in Pahlavi I period, only a building and its façades are not considered; but, buildings are a component of a larger whole called urban space; its ugliness affects quality of public spaces and its beauty depends on harmony with other elements of that place. Buildings are not isolated and independent entities, which can attract the attention of designers and owners but are the element of united society while maintaining their personality and credit[21].

5. DISCUSSION

The issues posed in results of this paper and confirmation of hypotheses showed that:

- Patterns in designing façade of houses in Qajar and Pahlavi I periods had special concepts in using spatial organization in façade of houses with considerable effect on spirit of citizens and their social relations and a role in

quality improvement of façade design and attraction, splendor and beauty for contemporary urban spaces. Disorder of façades in contemporary buildings is originated from failure in accounting for expectations which have been created from façades in history. Modern houses with available equipment and conditions are not able to account for many living requirements; therefore, quality of designing façades in contemporary buildings can be improved using traditional patterns in the present era.

- Iranian society still adheres to most of its traditions. Current houses like houses of Qajar and Pahlavi periods are not residential units; but, they are a location for privacy and residence. Thus, protective role of façade in Iran is more important than the west and façade is obliged to protect its residents against external threats such as noise and view and climatic factors and establish internal and external, private and public and also natural and artificial relations. Residents should be able to see others from inside without being observed and, at the same time, façade should allow necessary light and ventilation and act as a joint between privacy and crowd and private and public. Therefore, the need for concurrent inclusion of four expectations of façade (protection, creation of relationship, introduction, and component of urban space) has been emphasized[21].

6. Conclusion

Our past architecture is the trustee of our culture. The contemporary architecture of Iran is lying on the middle of a continuum between the polar ends of the past and the future and is challenged to locate its route and survive. We regret to maintain that modern architects have given a lot of attention to technology they have ignored the respectable inner space within which people should live. Depending on the degree of westernization of the people, the lifestyles of them have remarkably varied and thus amidst such a high variety, the modern architecture has been deteriorated and disfigured. Such deterioration in our architecture calls us into the question that why we have ignored ourselves. In fact, it should be noted that the consideration of the Iranian identity is not the same as the imitation of the traditional architecture since the reproduction of the old designs is not deemed to be ideal and useful. Rather, the modern architecture design, on the one hand, should take the environmental, civil, technical and social pattern into consideration and on the other hand, they should produce architectural designs and patterns which are congruous with the early ideologies and concepts of the well-respected old houses. Furthermore, the architects should practice and encourage innovation and creativity in their designs.

The first step in sorting out the issue of façade is to identify the trends of thought and ideology and examine the facilities and limitations of the society. The modern architects not only need to be aware of the present circumstances and situations of urban life but also they need to consider the expectations about the façades of the buildings on the part of the citizens. Recognition of principles, rules and criteria of traditional architecture and shaping them into expressive language pave the way for what is intended and it is the duty of all architects to take a step on this way by referring to authentic references and valuable pieces of evidence. Therefore, one should consider special measures applied in traditional architecture for improving Iranian construction, whether in terms of design or execution of works and execution of suitable methods in designing buildings based on climate of the place, considering natural and imperishable forces such as the sun and wind and improving thermal conditions of biological spaces because using natural energies saves fuel and, more importantly, promotes quality of comfort and health of residential environments. The measures taken in architecture of houses which have been formed based on needs of Iranians and construction environment can be useful for reaching a suitable Iranian house pattern.

It is hoped that architects and designers of buildings conduct more specialized investigations on utilization manner of valuable patterns of traditional Iranian architecture along with today's global architecture and climate-coordinated construction in future.

Acknowledgment

The present paper is the written report of the research project entitled “Architectural Investigation of the Residential Buildings in Qajar and Early Pahlavi eras in the City of Tabriz.” The authors express their acknowledgment and gratitude to the Research Deputy of Islamic Azad University, Osku Branch for granting this research project.

REFERENCES

[1] Vasigh, B., A. Pashooteni Zadeh, M. Bemanian, 2009, Place and house from Islamic perspective, Interdisciplinary Studies of Holy Quran j.,1(3): 97.

[2] Noghrehkar A, 2008, Introduction to Islamic identity in architecture and urban planning, Payam-Sima Publication and Design Company, pp: 536-539.

[3] Zamarshidi, H., 2011, Iranian architectural teachings and residential construction from Qajar period till now, Islamic Iranian City j, 1(3): 6.

[4] Saffarinia M., 2011, Effect of different residential environments (villas or all kinds of apartments) on mental health, happiness and well-being of adolescent girls, Studies of Social Psychology j, 1(1): 63-68.

[5] Zandieh M., S. Parvardi Nejad, 2010, Sustainable development and its concepts in Iranian residential architecture, Housing and Rural Environment j, 29(130): 3-19.

[6] Ghasemzadeh, M., B. Kari, F., Tahmasbi, 2010, Rural house and rules of saving Energy, Housing and Rural Environment j, 29(131): 54.

[7] Omrani B,H. Esmaeili Sangari, 2006, The Historical Texture of Tabriz city,Samira Publication,pp:2,127-128.
[8] Khamachi B, 2007, My city: Tabriz, Nedaye Shams Publication, pp: 9-13.

[9]Ghobadian V, 2007, Architecture in the Nasseri capital, Pashotan Publication,pp: 244-46.

[10] Seifian, M., M. ahmoudi, 2007, Privacy in Traditional Iranian Architecture, Identity of City j, 1(1):3-10.

[11] Kiani M, 2007, Architecture in Pahlavi I period (transformation of thoughts, emergence and formation of 20-year period architecture of contemporary Iran 1920-1941): Publication of Institute of Iran Cotemporary History Studies, pp: 235-256.

[12] Noghrehkar, A., M. Hamzeh Nejad, M. Pir Babaei and M. Heidarian, 2010, Clarity in architecture of Qajar houses in Tabriz, Proceedings of Qajar Conference, 7-11.

[13] Mahmoudi, A., 2005, Reviewing importance of iwan in traditional houses, Fine Arts j, 62(22): 56.

[14] Bani Masoud A, 2009, Contemporary Iranian architecture (in struggle between tradition and modernity), Century Architectural Art Publication, pp: 170-171.

[15] Shirazi, M., 2008, Narration and residence, Architecture and Construction j, (6):34.

[16] Godarzi M, 2009. Mirror of imagination. Soreh Mehr Publication.

[17] Kobari S, 2012. Materialogy. Knowledge and Technique Publication, pp: 22.

[18] Alipour, N., 2011. Studying design of sashes of Qajari palaces in Tehran: Negareh., 6(18): 7.

[19] Soltanzadeh H, 2007. Tabriz: a firm adobe in Iranian architecture. Cultural Research Office Publication, pp: 90-93.

[20] Mir Lotfi, M., M. Tavakoli, M. Bandani, 2012. Comparative study of position of geographical directions of rural houses and energy consumption in Sistan region: Housing and Rural Environment j, 31(138): 39.

[21] Pakzad , J., 2003.Phenomenology of façade of residential houses and formation of its expectations: Fine Arts j, 102(14): 14.

End note

[1] room with three doors and triple divisions on the main facet of the building.
[2] a more formal room than a three-way.
[3] main large rooms which usually lie at the heart of the house and have large sashes.
[4] Rooms located at the two sides of the Tanabi on the upper floor which were caused by the great height of the parlor and usually had a view to it.
[5] A covered elevated part at the centre of which there is a pool and it is also associated with other parts.