STUDY OF RESTORATION AND REPAIR PLAN OF ISFAHAN HISTORICAL HOUSES (CASE STUDY: SHERIFFDOM HOUSE)

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ABSTRACT

Isfahan is full of valuable historical houses that unfortunately, because of lack of enough care, are being deteriorated and destroyed. Of the most beautiful and valuable repaired houses in Isfahan is the historical Sheriffdom house which was built in Safavid period. The house is located in Paderakht district and at the neighbourhood of Kohne square and Jame' mosque. The repair had finished in 21 November 2004 and it is used as an organizational place now. This paper includes three main parts; first, recognition of the building consisting of investigating its situation and historical record and introducing its different parts. Second, determination of the damages and recognition of the damaging factors (human or natural) and, finally, presentation of the repair plan.

KEYWORDS: Sheriffdom house, Isfahan, Repairing the building, historic houses, Safavid dynasty.

INTRODUCTION

Isfahan is a historical town that has an important role in Iranian history and architecture (Pourjafar et al., 2014; Tavasoli, 2013). During its hundred years of improvement, the city has become one of the most significant cities in the world (Karimi and Mohamed, 2003). In recent decades, it has been the center of attention and high density of population because of concentration of economic activities like industries, tourism and also demands for cultural development which caused for different types of industries, housing, transport, business, educational and entertainment uses (Ferdowsian, 2002). The brilliant period of urban architecture and development of this city was started from the Al-Buyid and Seljuq dynasties and completed in Safavid period (Moradi et al., 2012). There are different historic buildings in Isfahan registered as historic heritage in UNESCO. In 2006, Isfahan was introduced as the cultural capital of the Islam world. This city is famous to having the Islamic pretty architecture and a lot of beautiful boulevards, covered bridges, palaces, mosques and unique minaret. The historic cities and traditional houses are of the most important evidence of the past life style. In a nutshell, Protection from these historic values is protection from the cultural values of that area (Ipekoglu, 2006). It should be mentioned that the importance of protection from and repair of the works physical characteristics should be along with the emphasis on the cultural, social and economic aspects of that historic period (Pendlebury and Gibson, 2009; Tunbridge and Ashworth, 1996) leading to acquaintance and understanding of the tourists from the past life style. On the other hand, the aim of the repair and conservation of historical places is to revive the past images and memoirs, restoring the traditional parts which still survive, and to adapt the traditional fabric to use in modern life (Assari and Mahesh, 2011). The Isfahan valuable historic complex includes the oldest and most precious historic building with a unique architecture. This city has a high capacity for absorbing the international tourists to present a better understanding from history, culture and natural environment of Iran to the world people (Nor and Rahmat Shah, 2012). Nowadays, Isfahan has been changed into a big touristic-industrial city inherited a great heritage from the past (Karimi and Mohamed, 2003). Isfahan is full of historic houses and districts faced with problems to be preserved, restored and repaired owing to their plurality.

Research Aims

At first, considering the importance of Sheriffdom house and according to the field studies, it is necessary to, investigating and recognition the building status quo precisely, examine its pathology and present a suitable and effective solution for repair and reconstruction of this unique building. The reconstruction was done in three phases:

1- The field studies on the building
2- The pathology of building
3- Examination of how to repair and reconstruct the building
BUILDING KNOWLEDGE

Historical Background
Undoubtedly, the Safavid period is considered as the most brilliant period of Iran’s historic architecture and urbanization (Taghavi et al., 2013). Making a strong central government, security made by stability of government, innovations and advances in building technology, development of cities because of the economic development and the Safavid kings’ temper of liking art and artists are of effective factors in developing and prosperity of architecture and urbanization in that period. The Safavid period should be regarded as the brilliant climax of this kind of architecture in process of house building. Safavid era started with the advent of Safavid dynasty from 1501 to 1722 (Sani, 2013). Figure 1 reveals Isfahan in Safavid era. The Sheriffdom house dated back to more than three hundreds ago built due to Iranian architectural principles and decorated with wooden doors and sashes, very beautiful Mogharnas and new tore.

Figure 1. Isfahan in Safavid era

Introduction of building
This building built in a land with 1600 square meter area and arena with about 1230 square meter area and substructure with about 2000 square meter area in three facades. The main rooms of the main façade (the north façade) have an excellent and unique decoration because of the social position of the owner and doing some social affairs in it. The building has one main entrance, one vestibule, guest room and ten primary spaces and some secondary spaces such as backyard and wind tower. (Figure 2)

Figure 2. The Three-dimensional of Sheriffdom house

Review of the building decorations style
There are many exquisite and beautiful decorations in various spaces which give them an excellent view. The exquisite Mogharnas and golden and turquoise painting gives a particular view to the main space (Guest room) of this house.
Every other space has its own tore, sash, Mogharnas and painted decorations, most rooms have fireplace decorated with tore and painted (Figure 3).

Table. 1 Study the damages to the building and its repair and reconstruction methods

<table>
<thead>
<tr>
<th>Study of repair</th>
<th>Explanation</th>
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</thead>
<tbody>
<tr>
<td>Description of damage</td>
<td>Gradually, penetrating the humidity in to the walls and behind the plinth stones and their high weight leads to replacing them and separating from the wall</td>
</tr>
<tr>
<td>Problem</td>
<td>Destroying the mortar behind the stones because of penetrating the humidity and falling the stones</td>
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<tr>
<td>Disruptive factors</td>
<td>penetrating the humidity and lack of care to the building</td>
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<tr>
<td>Imbalance</td>
<td>Damaging the building exterior view because of separating the plinth stones from the facade</td>
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<tr>
<td>Treatment</td>
<td>Using metal artifacts for connecting the plinth stones to the building wall (Figure 4)</td>
</tr>
<tr>
<td>Description of damage</td>
<td>Through passing the time and because of climatic factors, the chimney caps of fireplaces have been destroyed that leads to penetrating the humidity (of rain and snow) into chimney pipe and, finally, into the chimney whose effect is falling the materials of higher part and fireplaces coating.</td>
</tr>
<tr>
<td>Problem</td>
<td>Decaying the Fireplace and Junction of chimneys to them</td>
</tr>
<tr>
<td>Disruptive factors</td>
<td>External, natural, physical and climatic factors</td>
</tr>
<tr>
<td>Imbalance</td>
<td>Erosion of the mortar of higher part of the fireplaces which leads to their falling and cleaning the coating in fireplaces.</td>
</tr>
<tr>
<td>Treatment</td>
<td>Designing a suitable Cap for roof to prevent from penetrating the precipitation into the chimney, scraping the decayed coating and recoating the inside of fireplaces. (Figure 5)</td>
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<tr>
<td>Description of damage</td>
<td>The flooring of rooms has been damaged and worn-out because of direct effect of the Climatic factors and destruction of roofs.</td>
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<tr>
<td>Problem</td>
<td>Decaying the flooring</td>
</tr>
<tr>
<td>Disruptive factors</td>
<td>External, natural, physical, climatic factors and increasing humidity</td>
</tr>
<tr>
<td>Imbalance</td>
<td>The flooring has been non-flatted.</td>
</tr>
<tr>
<td>Treatment</td>
<td>The flooring is flatted using brick due to the proposed plan in Figure 6.</td>
</tr>
<tr>
<td>Description of damage</td>
<td>Damages resulted from facilities such as water, electricity, gas etc and deformation of façade perspective.</td>
</tr>
<tr>
<td>Disruptive factors</td>
<td>Human disruptive factors</td>
</tr>
<tr>
<td>Imbalance</td>
<td>Non-flattening of yard floor</td>
</tr>
<tr>
<td>Treatment</td>
<td>In order to control and reduce the damage resulted from installation and preventing from deformation of building façade easily, according to the proposal (Figure 7), an installation channel is constructed</td>
</tr>
</tbody>
</table>

Figure 3. Wooden decorations and fireplaces in Sheriffdom house
New application
One of the methods that are used to prolong the life of historic buildings is to give new application to them and using their spaces based on building capabilities. One of the most important characteristics of a sustainable city is the way of behaving with historical buildings since they are like Precious stones indicating the past Authenticity and identity of a city. Isfahan is full of precious historic buildings which are in jeopardy of destruction unfortunately. Nowadays is the last moment of register of these rich cultural and artistic heritages to be transported into next generation. Since the sporadic application of these building prevent from a strong and effective relationship of historic buildings with public audiences, one of the most important ways of rehabilitation of them is making a new application. In addition, it is can save the buildings from destruction and continue its using. Furthermore, the buildings will be preserved and take a new function leading to prosperity of tourism. One of the Isfahan famous historic houses is “Sheriffdom historic house” which has unfortunately been subject to destruction because of lack of enough care but was rescued by Isfahan municipal and cultural organization attempts. The repair was completed in 2004 and now, enjoying a new application, it welcomes to the interested tourists. Sheriffdom house is located in the downtown in north-western side of old Square (Kohneh) and in Padrakht district and of sheriff alley.

Repairing the building
Before repair of every building, the historical studies and archaeological research should be started. Afterwards, the disruptive factors must be recorded and understood for effective preservation and, next, the potential of repair interventions should be investigated. The rehabilitation and repair of a traditional and historical building will be successful if the plans and methods of reconstruction are the same as that of original construction. Also, the proposed repairs should be reversible so that they do not lead to damage to vital fabric if they have to be removed (Anna-Maria, 2009) and also the historic character of building be preserved (American Planning Association, 2006). Of the prettiest and valuable repaired houses in Isfahan is the Sheriffdom historical house built in Safavid period and used as an organizational space. It is among the few historical houses experienced a scientific and methodological plan during the past decade. Table (1) reveals the description of damages and method of repairing the vital parts of the building.

Other damages are:
Because of lack of water and wastewater Installations and because the alley level is higher than that of yard, water is accumulated in the yard floor and destroys the yard's flooring.
Rottenness and even breaking the ceiling wooden beams, sashes and windows because of penetrating the humidity and being eaten by the termites in recent years
Damage to the stone pool and gardens in the yard
Damage to some parts of the tore decorations and painting of the building

![Steel scope](image)

**Figure 4. Method of connecting plinth stones to the facade.**
CONCLUSION
Generally, recognition of the building and exact introduction of its observable damages by data collectors are of the most important parts of repair process. Cracks and subsidence and their procedures, all of deformations, even the probable ascending and descending humidity are of the most important items of this building pathology. Considering the above, it can be concluded that rehabilitation of this house is not just limited to some factors which tries to keep and preserve the framework condition of the building; namely repair. The important subject is keeping the building up to date and its adaptation with the citizens' social behaviour in the present time. Sheriffdom house repair has performed according to the repair plan and its phases are as follows:
1. Checking of the place and exactness in objective observations.
2. Field studies of the building and all of its constituents as well as understanding the damages.
3. Preparing the references and review using historical and art viewpoint.
4. The proposed program of Interventions in the building
5. Preparation of the Plan.

REFERENCES