A Model Development to Adaptive Reuse of Iranian Qajar Houses: An Approach to Sociocultural Concept
(A Case: Nasir Al-Din Mirza House)

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Abstract This study aims to formulate the most influential factors in the decision making process for the Reuse of abandoned historic houses in Tehran. Nasir Al-Din Mirza House as a case study was selected as this house has a traditional pattern which has evolved over thousands of years. However, due to the changes in lifestyle, it has been abandoned. Granting a new type of land use to architectural heritage which can no longer keep their main land-use is the best way to save them. This heritage is rich in historical-cultural values that must be transferred to the next generations. Granting new type of land-use, in addition to honoring these buildings, upgrades the identity and vitality of urban sites. Moreover, besides attracting foreign tourists, this heritage would be converted to an entertainment place for domestic tourists. In this descriptive study, interviews, in depth-observations, impressions, and library studies were used to gather appropriated data. Multiple Attribute Decision Making (MADM) technique was used to data analysis. Finally, identifying the most significant factors and weighting them, two types of land use including restaurants and coffee shops with the highest points were proposed. The most influential factors of such a selection were comments of the concerned individuals including experts, locals and tourists, lack of damage caused by the new reuse to the current form, all parts of the building not being blocked by the new reuse to be visited by tourists as well as the proper relationship between the new reuse and the surrounding site.

Keywords: Adaptive Reuse, Development, Decision Making, Architectural Heritage, Iranian Qajar Houses


1. Introduction

Traditional architecture is a physical manifestation of each nation's culture. All the past architectural forms were established with regard to social and economic values to meet specific needs [1]. These cultural-historical values should be preserved and transmitted to future generations. An ancient city without its historical elements is like a man who does not have any memory of the past in his mind [2]. While many traditions have been lost, many of them have also been revived and efforts should be made to preserve them. Traditional houses in Tehran are mainly evacuated and abandoned by their residents who intended to live in modern houses. Changes in lifestyle are the main reason for the inefficiency of such houses to be inhabited. Depending on the relative importance of historic buildings in terms of value and physical condition, various conservation techniques such as restoration, protection, preservation, rehabilitation, reconstruction, and reuse can be used [3,4]. This study aims to expand reuse literature. Reuse of the monuments which can no longer meet their original use is usually associated with the preservation and restoration of the building framework and some of its unique features [5,6]. The excessive costs of preservation and restoration as well as increased attention to sustainable development have placed reuse at the peak of the suggestions [7]. Two approaches to reuse have been proposed: compatible reuse and most appropriate reuse [8]. Two business and cultural approaches to reuse can also be posed. In the business approach, the employer is mainly private and expects the capital return. In the cultural approach, the government is mainly the employer and preserving and expressing cultural values are of essence. The main research question is: With regard to different conditions governing each monument, how is the most appropriate reuse determined? The process is presented via a case study (Nasir Al-Din Mirza House) in Tehran. Nasir Al-Din Mirza House was built in the Iranian Qajar era and is of value and architectural identity in the central and cultural-historical part of Tehran. This study aims to investigate the logical process of granting reuse to this historic house as a case study.

2. Literature Review on Adaptive Reuse

At the first glance, the advantage of reuse can be viewed from both cultural and economic perspectives.
Since architecture is a cultural phenomenon, organization and form of a house is strongly influenced by the cultural background to which it belongs [9]. In addition to increasing the lifespan of a building, reuse transmits the cultural values to the next generations [10]. Reuse can also prevent the destruction [11]. Most experts regard reuse as the most appropriate and the only solution to preserve the legacy of the past. Innovative discovery of reuse and its linking to the history leads to the honor of the cultural heritage [12]. From an economic viewpoint, the old buildings are the potential sources of providing affordable structures. That's why the buildings have been adapted to different reuses during the history [13]. Repurposing old buildings can provide affordable housing for the cultural and commercial use [11]. The construction of buildings always has more longevity than their use [14]. Reuse can make the lifespan of the structure longer [12].

New demands emerged in the modern era have made the reuse of old buildings necessary [15]. Buildings selected for change can be categorized into two groups with or without historical values. These buildings have lost their reuse due to weariness or changes in life style. Langston suggests of social, technological, functional, and legal standards to specify these wearinesses [16]. Moreover, from the urban perspective, failure of the historic contexts to meet the daily needs makes reuse necessary [17]. According to Australia ICOMOS Charter (1999), if a building is to be reused, the type of use must be compatible with the building. Any type of reuse which can survive without causing damage to the structure of the monument can be considered a consistent reuse [18]. In the reuse process, the dialectic form and function are the most important issues and reuse can be regarded successful when there is a proper agreement between the reuse and the existing form [19] when the form and the function match well, buildings would bring about a positive feeling to which people have access while using the building. Emotional interaction along with economic and social fields is involved in the process of change [20]. Any change in the form of monument is possible only with an understanding of the logic behind it. This logic is primarily resulted from the values from which each monument is more or less benefiting. In the next step, understanding the idea also includes the form and materials recognition [21,22]. To sum, the nature of the monuments should be preserved during the reuse process [23]. Another important necessity in the decision-making process to change monuments uses is involving all the individuals concerned [24].

2.1. Reuse and Tourism

Regarding the preservation of cultural heritage, UNESCO Cultural Heritage Congress obliged the states to adopt a policy which aims to determine a role for cultural heritage in peoples' lives. One the most important entertainment places in each country is cultural heritage [26]. There is a relationship between the consumption of cultural products in each community and leisure, cultural awareness, transportation, and economic level. In the reuse process, reuse can be assigned to three groups of activities: cultural tourism, accommodation, and trading [27]. It should be noted that visiting the reused monuments could distract the tourists from their main use due to changes made [28].

2.2. Reuse and Sustainability

Multinational Committee for Protection of Cultural and Natural Heritage (UNESCO 2008) support land-uses that are culturally sustainable. Sustainability is defined as "meeting the present needs without endangering the ability of future generations to meet their needs" [29]. Sustainability in the field of construction refers to the use of historic buildings to make them comply with the resent requirements [30]. Protection of cultural heritage leads to sustainable development. The purpose of sustainability in this field is to manage resources in order to meet the social, economic, and aesthetic needs [31].

2.3. Values of Architecture and Developers

An important part of the value of each historic building contains shared values - as a symbol of group identity and memories. The values help people to create a sense of belonging to the city and the community. Due to such a sense of belonging, sustainable development will continuously be done. Integrity Architectural is one of the factors based on which the value of a monument can be identified and evaluated [32]. Murtagh and Nelson regard architectural integrity as an extract from a number of factors such as: style, construction, location, materials, definition, and so on [33,34]. Monuments with their own cultural values can be reused as hotels, restaurants, or as social places by developers. The developers may be public or private. In Iran, the role of the public sector is more highlighted; however, the private sector is the pioneer of reusing monuments in most developed countries. One of the main differences between private and public employers is their sensitivity to the preservation of the historic values of the building. It is claimed that private employers are less sensitive than their public counterpart [33].

3. Research Methodology

This study is a case study. In order to collect data and to examine the existing historic structures, field observation and library study were used. In the field data collection method, interviews were conducted after receiving the plan, details, and images of the sample. Three groups of people have been interviewed. The first group consists of 12 experts being thoroughly interviewed. The second group consists of local people, 30 of whom are asked some questions. The third group consists of domestic and foreign tourists, 20 of whom were interviewed. Finally, after data analysis, decision making was done using the Multiple Attribute Decision Making (MADM) technique. The Multiple Attribute Decision Making makes the decision-making process in the presence of different and even inconsistent standards [35]. It has been generally agreed that multi-criteria decision-making can offer a formal methodology to deal with such decision problems, taking into account available technical information and cultural values [36,37]. Due to being long, a summary of the MADM path is presented herein. In order to prioritize the proposed reuses, the decision-making model should be
developed based on the general policies of the system reconstruction and other affecting factors. Because these factors should be compared and measured to be used in decision-making models, an index was considered for each factor using the brainstorming techniques and opinions of experts, locals, and tourists. Since all indices are not of the same importance, each index is weighted with regard to the views of the interviewees. The total weight is 100. In order to evaluate and select the most appropriate use, the Simple Additive Weighting (SAW) method was selected from (MADM) methods. Finally, the score for each proposed use along with weighted sum of all scores for all indices was calculated.

4. Case Study

Nasir Al-Din Mirza House was built during the Qajar era in 1907 ordered by Nasir Al-Din Mirza- Mirza Muzaffar Al-Din Shah's eldest son. The house is located in the central part of Tehran between Toopkhaneh Square and Naser Khosro Street. In Tehran Development plan, this central part is considered as the cultural-historical core of the city. The presence of cultural-historical sites such as Golestan Palace, Ancient Iran Museum, the National Garden Collection, and the like annually attracts thousands of domestic and foreign tourists to this part of Tehran. The plan of the Nasir Al-Din Mirza House has traditional pattern of Iranian houses, which has evolved over thousands of years (Figure 1). The house also enjoys magnificent decorations (Figure 2). Considering the potentials and valuable points of each monument, it can be claimed that there is no standard guidelines for choosing the appropriate and fixed use. Therefore, targeted process is specifically required for the development of each monument. Figure 1 shows a proposed process of reusing for the Nasir Al-Din Mirza House. The measures taken on the basis of the process are explained below and the results are presented in separate sections (Figure 3).

Considering the importance and extent of this historic house, its reuse leads to reactions in the neighborhood and region elements. Accordingly, considering the importance of selecting the type of reuse and its adaptability with the nature of its location, in addition to preserving the building values, results in the livelihood of its surrounding neighborhood. The emphasis of important documents such as Bura Charter in Australia (1996) on the delegation of
adaptable reuses and avoidance of imposing unfamiliar reuses on monuments also approves this claim. Since a proper reuse selection process requires a comprehensive and in-depth investigation, we, using an interpretive approach, first investigated factors and indices affecting the access to a complete understanding of reuses compatible with the building and the site (Figure 4).

According to studies conducted on the recognition of Naser Al-din Mirza House and its surrounding urban context, we found out important points such as understanding the role of this House in relation to its surrounding monuments such as: Dar Al-Fonoon School, Royal Bank, National Garden, Golestan Palace, and so on. Table 1. Possible activities in Naser Al-din Mirza House according to field studies

<table>
<thead>
<tr>
<th>Possible activities</th>
<th>Type of reuse</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guest room - Traditional Hotel – Royal flats</td>
<td>Accommodative</td>
<td>1</td>
</tr>
<tr>
<td>Museum - Gallery - Photography Studio - Auction hall</td>
<td>Cultural and Art</td>
<td>2</td>
</tr>
<tr>
<td>Tourist Information Center - Embassy - Institution Office</td>
<td>Administrative</td>
<td>3</td>
</tr>
<tr>
<td>Crafts Selling - Bookstore - Selling Musical Instruments</td>
<td>Services</td>
<td>4</td>
</tr>
<tr>
<td>Coffee Shop - Restaurants</td>
<td>Catering</td>
<td>5</td>
</tr>
<tr>
<td>Training Classes - Art Workshop - Library - Research centers</td>
<td>Educational</td>
<td>6</td>
</tr>
</tbody>
</table>

Accordingly, this historic house as a tourist attraction, in addition to entering into people's lives, can be effective in restoring the identity of Tehran via absorbing domestic and foreign tourists. Considering all the points mentioned, a list of different reuses for this House is presented in Table 1.

With regard to 6 types of proposed reuses shown in Table 1 and agreements and disagreements with each option, Multiple Attribute Decision Making (MADM) technique was used to make practical decisions considering several complex quantitative and qualitative factors. This technique is used when there are several pre-defined plans, each of which meets a level of the indices concerned by the decision maker. According to this technique- summarized in Section 3 of this article-the final score of each proposed reuse (weighted sum of all scores for all indices) include: accommodative (720), cultural-art (633), administrative (602), services (569), catering (814), educational (655). As it can be observed in the following graph, catering with the highest score of reuse will be selected for this historic house.

Due to the lack of a suitable catering place in the neighborhood of this historical context in Tehran, granting reuses such as restaurants and coffee shops can results in
the vitality of this the urban context and in the satisfaction of domestic and foreign tourists.

5. Conclusion

In this study was to identify the most influential factors in the decision making process of Reuse in order to specify the most appropriate reuse for a historic house in Tehran. Each historic monument has unique conditions and features which make it impossible to develop a general formula in order to choose the most appropriate type of reuse. We can only point out the most important factors. First, the views and opinions of the concerned individuals as well as experts of the field, local people and domestic and foreign tourists were the first important factor in this process. The second factor is the relationship between the reuse and the new form so that reusing should not damage the form. Third, reusing should not prevent tourists to visit all parts of the house. Fourth, reusing should not interfere with tourists’ understanding of the buildings’ main function. Fifth, reusing should be related to the surrounding urban context and result in the vitality of the neighboring historic regions.

The traditional pattern of Iranian houses can be called a multifunctional pattern since the existing spaces of these houses are not pre-defined for certain functions such as bedrooms. There is a flexible connection between human behaviors, furniture and context of these houses. Therefore, the whole ranges of functions which can adapt to these houses are far more than the other buildings (e. g. bathrooms or caravanserais). In this case study, reuses such as restaurants and coffee shops were proposed for Naser Al-din Mirza House, considering all affecting factors. The traditional Iranian houses have been adaptively reused as a way of conserving and developing the structures due to physical, technological, economic, functional or social obsolescence. This re-use will limit damage to the structures and develops cultural and historical assets. But a restaurant needs further additions to a structure, particularly for lodging. Wet spaces such as kitchens and WC will be placed in dry spaces, a rearrangement that produces moisture on the walls of structure that may ultimately damage the buildings. Furthermore, the appropriate level of visitor use must be determined.

References


