ASSESSING THE ADAPTIVE REUSE OF HERITAGE

SILVIA MAZZETTO

Dept of Architecture, College of Architecture and Design, Prince Sultan University Riyadh, Saudi Arabia

In the last decades, due to oil discovery, many Middle East countries have experienced rapid urban growth and accelerated infrastructure and transport developments. A lively debate is currently investigating the directions for the new urban and architectural growth. The construction of contemporary cities characterized by innovation and technologies is in contrast with the need to preserve and rehabilitate the national heritage by establishing new links with local history and culture. The paper presents some significant examples of recently completed adaptive reuse projects in the Middle East area and shows the growing need to strengthen local heritage value. The interventions were assessed by considering the environmental, socio-economic, and socio-cultural aspects derived from the adaptive reuse project. As a cultural, social, environmental, and energy-saving value, sustainability is one of the most important principles that should be applied to any restorative intervention on heritage. The assessment results show that there are many links between heritage restoration, promotion of cultural values, synergy with climate, and the compatible adaptive reuse of the restored buildings. Therefore, the concept of sustainability is addressed through its meaning of unity and harmony in a broad sense by considering the respect for the ecosystem, social aspects, investments, and costs, which may vary depending on the scale of interventions (urban- architectural). The aim is to define a persistent approach to restoration while respecting the environmental principles of sustainability.

Keywords: Sustainability, Society, Environment, Traditional culture, Architectural heritage.

1 SAFEGUARD AND REUSE OF ARCHITECTURAL HERITAGE

In the Arabian Peninsula, the recent oil discovery has completely transformed the local traditions and enhanced the economy by transforming the local settlements from ancient agglomerations into an advanced regional and international economic hub. Oil production began in 1938 with the first discovery of some oil fields located in the eastern province of Saudi Arabia and Bahrain. The discovery immediately generated a fast boom that completely changed the traditional economy of the Gulf Countries. In the 1970s, oil production and exportation have produced a massive revolution in the Gulf Regions that have completely transformed the traditional use of buildings and urban fabric. The fast growth in 1950 involved mainly six capitals in the Gulf Countries, producing a fast growth in population and infrastructure: Kuwait City in the northern Gulf; Dubai, and Abu Dhabi, in the southern side of the Gulf, in the United Arab Emirates. In the southeastern area, Muscat in Oman has enormously developed, and Riyadh, the capital of Saudi Arabia, is still undergoing a construction boom. The fast growth has promoted new emerging challenges and new developing strategies on the urban fabric. In particular, in the old city centers, many modern buildings were built by adopting reinforced concrete constructions that,
since the 1950s, have influenced and impacted the traditional culture. To preserve and protect the loss of local traditions embedded into the architectural roots, many recent attempts have tried to link the future with local culture and context in search for a new local architectural identity through the rehabilitation and reuse of many heritage buildings that have been restored and adapted to the new contemporary social needs. In recent decades, the governmental institutions responsible for safeguarding the heritage in the Gulf Countries have promoted and financed the completion of many adaptive reuse interventions both on an architectural and urban scale to revitalize and reuse many heritage sites seriously damaged after many years of abandonment (Salama and Wiedman 2013). The topic of the heritage safeguard and reuse for the requalification of the cultural values has been subjected to a renewed interest in the last decade, in rediscovering and promoting the local traditions to be preserved for future generations. Extending the building's life into the future aims to preserve the local constructive traditions and social values of buildings and places (Mazzetto 2020). In literature, investigations have been conducted in analyzing the heritage conservation projects in the Gulf Countries but there is a current lack on assessing and comparing the conservative projects in terms of sustainable results and approaches adopted for the reuses (Guillaud et al. 2014, Landorf, 2009, Di Pasquale et al. 2016, Miccoli et al. 2009, Wai-Yin and Shu-Yun 2004). Sustainability is the intervention’s capability to adapt to environmental circumstances, which involves using available resources to satisfy local needs and requirements. The World Heritage definition of sustainable adaptive reuse is linked to the principles that increase the life cycle of heritage and lead to significant social, cultural, environmental, and economic results. For many years, the United Nations Educational, Scientific and Cultural Organization (UNESCO-ICOMOS 2010) has promoted the principles of safeguard, sustainability, and enhancement of cultural identity for the national heritage. The paper presents a comparison between some adaptive reuse interventions, which have been completed in the Gulf Countries, to assess the adopted sustainable approaches for heritage building and area reuse. For evaluating the adaptive reuse interventions, we have selected three primary areas of comparison: socio-cultural, environmental, and socio-economic. The reuse of heritage buildings and the preservation of original structures usually involve many values: social, economic, cultural, and resource enhancement. Together with the projects' sustainability, many of these factors and values have recently been promoted by the UN General Assembly (2015) to enhance the value of heritage restoration, which is linked with the country's growth.

2 HERITAGE REUSE METHODOLOGY FOR ASSESSMENT

The research assessment initially selected some interesting case studies of adaptive reuse interventions in the Gulf Countries. Architectural typologies have classified the cases study and functionality subdividing the interventions into three main categories: the adaptive reuse of defensive structures; the restoration of historical quarters, and the urban requalification of commercial areas and ancient souqs (Mazzetto and Petruccioli 2018, Mazzetto 2018a, Mazzetto 2018b). The comparison between the adaptive reuse interventions has identified similar strategies and approaches in recurring environmental contexts, with social or cultural interactions, in addition to the search for cultural identity and functional, social, and environmental adequacy.

The assessment methodology has been based into a subdivision of the following main criteria:

- A socio-economic criterion considers the highest social values achieved in a place or a building to enhance economic growth.
• A socio-cultural criterion to evaluate the social inclusion, the sense of community belonging, the perceivable cultural values, social attachment, and the appreciation of cultural diversity.

• An environmental criterion of adaptive projects to assess the environmental aspects, including the climatic condition and sustainable approaches.

Into the category of defensive structures, the research has compared the adaptive reuse of the ancient historical defensive structure of Al Zubarah fort located in Qatar and the Al Jahili fort located in the United Arab Emirates, in Al Ain.

Al Zubarah Fort, a typical Arab fort, has four defensive towers of limestone blocks restored in 2015 by the local Authority (Qatar Museum Authority QMA). The fort is currently reused as a museum to exhibit the findings of the Al Zubarah archeological site. The local tradition of the place, together with the fort well, is exhibited in the museum rooms to strengthen the socio-cultural value of Qatari defensive traditions. The intervention has promoted the socio-economic aspects of the place, reused after many years of abandonment by adapting the new use, with the environmental characteristics of the desert conditions.

The Al Jahili Fort in the United Arab Emirates has been entirely restored by the Governmental authority of Abu Dhabi in recent years (2007). Built in 1891 to defend the palm groves, in a desert climate with hot summers the fort is currently an exhibition center of explorative works and projects. The four defensive towers were entirely restored to reach the structural stability of coral and limestone blocks combined with local clay bricks. The fort complex also includes the landscaped gardens and the adjacent exhibition center. The samples of heritage defensive buildings structures that were initially constructed for defending the land and the rare wells of drinking water from foreign attacks and invasions exhibit a vital testimony on how the rehabilitation of heritage can enhance the values of traditions, social needs, and uses of places for the community survival. The category of residential buildings included some cases study of heritage buildings recently rehabilitated and reused in the Gulf Countries. The residential complex of the Heritage House Quarter in Doha (Qatar) has been restored in 2015 under the supervision of Mshheireb Properties and the local authorities. The residential complex includes four traditional Qatari houses where the traditional methodology for constructing residential buildings shows the adaptive strategies for the desert climate and arid environment. The complex is currently reused as a museum to exhibit old local memories where one can still perceive the cultural values of traditions that the local, sustainable credentials have enhanced.

Another residential complex has been recently restored (2003) in the United Arab Emirates (UAE) under the supervision of Dubai Municipality: Al Fahidi Historical site in the Al Bastakiya neighborhood in Dubai. Recently the residential area was wholly restored after many years of abandonment to preserve the value of the local traditions and the heritage remains that are still in place after massive demolitions. The dire state of deterioration due to the abandonment requested a massive structural consolidation of the original materials, partially modifying the urban fabric of the site. Most of the original materials have been repaired or replaced by traditional materials to respect the local style, such as wooden poles, staircases, windows, and doors after the intervention Al Fahidi residential complex in the Al Bastakiya area is currently reused as a cultural museum, open to the community and many tourists’ visits.

The residential complex of Ushayger Heritage Village (Figure 1) is located in the heart of the Najd region northwest of Riyadh, the Saudi Capital, close to a small mountain located on north of the village in a deserted environment. The area was restored many years ago by the residents of Ushayger, who decided to revitalize their own properties after many years of abandonment due to the newly constructed residential area. After the completion of main central areas, restored under the supervision of the Saudi Commission for Tourism and National Heritage (SCTH), the heritage
village is reused as a tourist residential area the attracts every year many locals and visitors to discover the ancient residential values and the characteristics of the site. The heritage village was used since 1,500 years by bedouins and pilgrims on their way to Makkah for the springs and palm groves. The heritage houses were restored using the traditional construction techniques of clay bricks, plasters, decorated wooden doors, and windows. The urban circulation is characterized by narrow lanes that exhibit the old testimony of residential life through the local museum, where traces of ancient ways of life are exhibited. A small community of residents still inhabits the site with its school, many shops, and the mosque. The restoration project brings to life the Najdi architecture with the distinctive triangular windows and the richly engraved wooden doors that still exhibit the name of families who live there, bringing back an example of sustainable reuse that enhances the local traditions the social values of ancient times. The residential reuse of important historical villages shows how the preservation of heritage helps enhance the traditional culture of the place by enhancing the transmission of socio-cultural aspects to future generations. The new functions demonstrate the old buildings' ability to adapt to the new inhabitants' needs. The selected interventions are actual examples of social values that strengthen the recognition of social cohesion in the territory.

Figure 1. Ushayger Heritage Village, located on the northwest side of the Saudi capital Riyadh, is one of the most frequented heritage places, visited by many tourists and locals (credits: author).

In the urban rehabilitation projects category, two primary interventions located in Qatar have been analyzed: the Al Wakrah fishermen village and Souq Waqif in Doha that are currently reused as new commercial areas. Souq Waqif in Doha was completed in July 2006 (Figure 2), while Al Wakrah village was restored in 2015; both interventions were supervised by the Private Engineering Office (PEO). The revitalization of the urban fabric of both the souq and the old fishermen's village has brought to a new life the use of old places neglected and abandoned for many years due to the restrictive environmental conditions of the desert with hot summers. Some buildings have been reconstructed using the typological approach, and the deteriorated old structures have been combined with the new ones. The functional adaptations have brought to a new life some traditional commercial activities, together with new restaurants and cafeterias. Both the two urban rehabilitation projects have preserved the identity of old social and commercial areas, enhancing the values of tradition and the local culture. The social values, deeply embedded into the environmental values of the places, have promoted a deep sense of appreciation of the local commercial culture.
3 ASSESSMENT OF ADAPTIVE REUSE INTERVENTIONS: RESULTS

The research aimed to demonstrate the importance of adopting sustainable approaches by assessing some reuse projects of architectural and urban heritage in the Gulf Countries by integrating formal, technological, and functional interventions with the sustainable growth of the city centers and the peripheral areas of the countries. The results help to understand how the rehabilitation of historic architecture and the awareness of the local heritage values can enhance the local, national identity. Table 1 proposes a synoptic framework to represent the assessment method adopted. Some intervention typologies have been considered (defensive structures, residential buildings, commercial area), together with the scale of the projects (architectural and urban scale), and the comparison between the interventions based on some socio-cultural, socio-economic, environmental, and sustainable values. In conclusion, the assessed adaptive reuse projects showed that all the projects had followed the restoration approach imposed by the government authorities responsible for the interventions. The comparison principles also have considered the scale of the intervention, the environmental aspects, the surroundings and the context of the historic building, the links with the traditions, the transmission of cultural and social values, the new buildings' functions, as well as the results of the reused places. All the assessed interventions of adaptive reuse have highlighted the enhancement of the socio-cultural and socio-economic conditions of the restored buildings and urban areas. Regarding the socio-cultural values, many interventions have strengthened the sense of belonging to the local traditional places by producing new entertainment and commercial areas (souqs) and by strengthening the values of local historical places (residential and fortified structures). Furthermore, from a socio-economic point of view, the reuse of heritage buildings and places has contributed to reestablishing the site’s value after being abandoned for many long years (Hakim 2007).

<table>
<thead>
<tr>
<th>Name</th>
<th>Place</th>
<th>Old use</th>
<th>Adaptive Reuse</th>
<th>Comparison principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Jahili Fort</td>
<td>Al-Ain Emirates</td>
<td>Defensive</td>
<td>Museum</td>
<td>Socio-cultural</td>
</tr>
<tr>
<td>Al Zubarah Fort</td>
<td>Doha Qatar</td>
<td>Defensive</td>
<td>Museum</td>
<td>Socio-cultural</td>
</tr>
<tr>
<td>Heritage Houses</td>
<td>Doha Qatar</td>
<td>Residential</td>
<td>Museum</td>
<td>Socio-cultural</td>
</tr>
</tbody>
</table>
**Table 1 (contd).**

<table>
<thead>
<tr>
<th>Urban Setting</th>
<th>Residential Land Use</th>
<th>Commercial Land Use</th>
<th>Socio-cultural Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ushayger Village</td>
<td>Residential</td>
<td>Residential</td>
<td>Socio-cultural environmental</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Commercial Museum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Fahid complex</td>
<td>Residential</td>
<td>Residential</td>
<td>Socio-cultural environmental</td>
</tr>
<tr>
<td>Dubai</td>
<td>Commercial Museum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Wakrah Souq</td>
<td>Residential</td>
<td>Commercial</td>
<td>Socio-cultural environmental</td>
</tr>
<tr>
<td>Doha Qatar</td>
<td>Commercial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Souq Waqif</td>
<td>Commercial</td>
<td>Commercial</td>
<td>Socio-cultural environmental</td>
</tr>
<tr>
<td>Doha Qatar</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acknowledgments**

The author would like to thank Prince Sultan University for their support and for providing an environment that nurtures collaboration and research.

**References**


