THE IMPACT OF RE-USE OF HISTORICAL AND CULTURAL BUILDINGS UPON THEIR SUSTAINABILITY STANDARDS (STUDY OF HISTORICAL BUILDINGS RE-USED IN THE CITY OF TRIPOLI)

MARIAM M.T. SHIBUB

Tripoli University

dr.mariamshibub@gmail.com

Received: October 2017 – Acceptance: September 2018

Abstract

The cultural factor of the user has an impact upon buildings, and when maintaining, reusing and preserving historical buildings, especially when there is a change in users, the cultural impact of the user is particularly significant. The cultural factor of the new user has a great effect on the nature of architectural terms of the old building to be preserved and reused, and often his changes cause the building to lose the architectural identity which emanated from the original or former user's culture. Do historical factors also have an impact upon the sustainability of the building? What is the relationship between this impact and the sustainability of historical buildings? The architect may find it difficult to show the architectural value of the historical building when there is a contradiction between the historical identity of the building and the identity and culture of the current user.

The problem is evident in regions and cities with different types of historical buildings that witnessed occupation and colonialism or succession of political systems with different cultures that produced an architecture with various terms belonging to the cultures of the owner of the building or the user during the period of construction such as in the city of South Tripoli. The decision of re-use that neglects the impact of the cultural factor has an effect on the architectural heritage value of the building and makes it lose its sustainability as a nourishing source of authentic culture.

This research paper deals with the concept of architectural sustainability, particularly in the field of architectural and urban heritage. It aims to show the impacts of cultural factors of the user on the building and the guidelines to be followed to achieve a sustainable architectural and urban heritage before making the decision to reuse and maintain through the examination and analysis of previous experiments and selected case studies from different regions of the city of South Tripoli,as well as other local cases such as traditional architecture in Libyan coastal, mountain and desert cities.

This research paper attempts to answer the following question: If sustainability means continuity and preservation of resources and their sustainability, what is the impact of cultural and historical factors on the sustainability of historical buildings in the city of South Tripoli on reuse controls?

Keywords: Culture, Historical building, Sustainability, Architectural heritage, Traditional architecture.

Word Count: 4504

1. INTRODUCTION

The current style of architecture in Tripoli is not the result of one aspect, but is a reaction to several works, behaviors, values and concepts throughout history that have affected the attitude and style of life in the city, resulting in changes to thesystems of shape and function of its buildings which is evidenced in the various architectural environments and reflected in the city's streets, corridors, walkers' movement, public transport system, open public yards, and various buildings. All of these aspects affect and have been affected by the peoples and their behavior, resulting in a variable lifestyle, which is reflected on the recent city pang diagram.

The recent planning diagram of Tripoli can be historically evaluated according to three architectural districts reflecting the city's history since the Islamic launch up to today. The first district includes old city of Tripoli as it was before the Italian colonization, comprised of the area inside the old city walls, and forms 8% from the approved planning diagram area until the year 2000. The second district refers to the area to the east and south of the old city. It was erected during the period of Italian colonization in Tripoli, and forms 12% of the planning diagram area. The remaining third district, which was erected after independence and the appearance of oil in Libya forms 80% of the planning diagram. The historical building aspect results in multiple entities at the architectural and planning level that have cultural and historical roots. Despite the fact that the concept of architectural sustainability has recently appeared in Libya, in recent years, the country has witnessed an increased interest in the preservation of its historical buildings and their sustainability.

1.1. What is the meaning of sustainability of the historical buildings?

Sustainability is defined in the dictionary as the preservation of resources and the maintenance of their continuity. The word is composed of "sustain", meaning "constant", and "able", meaning "capable". The interpretation components of the word mean stability of the method of use of resources, not harming the resources, in a way which is relevant to the lifestyle of the original user of the resource (Bennetts, 2000). This analysis points to the concept of sustainability in a crucial form, and connects human life to the extent of probability of environmental systems of nature which leads us to a comprehensive term connecting social, cultural, and environmental life and development known as (ESD).

1.2. What Is the meaning of {ESD}?

The acronym ESD stands for "Ecology and Economy", Sociocultural and Sustainability, and Development and Design. This is the comprehensive concept for sustainability. It is a socio-cultural concept used in Western countries, and indicates that the problem is economic, environmental, social, cultural, and international, relating to the humanitarian issue, and is connected to the process of development, design and population spread regarding land use resulting from an increasing population and the effects of the presence of human beings on the earth. Some interpretations of (ESD) deal with the deeds aimed at reducing the effects of local population increases due to globalization such as freedom in commerce, industry, transport and investment. This concept is directly connected to the issues of social, cultural, and economical health aspects which are affected by the environment and natural resources necessary for human life, or sustainability of three factors.

According to Terry, environmental, economic, socio-cultural, and development and design are known as the essential factors contributing to success (Antony, R. Terry, W. Helen B. 2003).

The term "architectural sustainability" considers the architectural activities of production, development and design to take place according to several factors and rules that consider the building from social, cultural and environmental points of view as one unit of the affecting factors. This raises several questions, the most important of which are the following:

What do the historical buildings mean for sustainability? What is the meaning of sustainability of historical buildings?

Of course, architecture generally connects with several values, including the social, the cultural, and the economical, and historical buildings are results of these concepts. The sustainability concepts require reconsideration of these social, cultural and economic values and their reconceptualization. This reconceptualization may benefit from the historical buildings and their heritage for sustainability.

The sustainability of historical buildings will involve performing a method of sustainability from this archive--using it and benefiting from it. One may inquire about the difference between sustainability and the preservation of the heritage of historical buildings. This will be explained in the conclusion of this paper. No doubt, the preservation of the heritage of historical buildings will be useful for architectural or urban sustainability.

At the Conference of International Architecture and Design which convened in Chicago in June 1993 under the slogan of "Environmental and Social Sustainability", the conference announced that the environmental sustainability of place and social sustainability is crucially to the practice of the architectural designer and his professional responsibility. This imposes a moral commitment on the architect during his performance of the development and design processes. Some designers, known as green designers, such as William McDonough, have adopted sustainable design principles. In *Hanover*, developed by McDonough when he was assigned by the Hanover City Council in Germany via the Hanover International Fair in 2000 to set the fundamental points that support sustainable design, identified nine points.

We present the extent of impact of the cultural and historical factors on the works of preserving the historical buildings dealt with in this paper specifically The Church of Algeria Square, preserved by the Islamic Call Society, which was changed into a mosque, The Wadan Hotel, which was maintained and re-used by The Intercontinental Wadan Hotel, and Al Dahra Church, which was refurbished and maintained by the Italian Cultural Centre. These examples were chosen from Tripoli and re-used during the 1930s under the Italian colonization of Libya. They are of the same architectural style, and illustrate obvious cultural impacts that were different from the traditional local style of Tripoli. They were re-used by authorities of different cultures and authorities.

1.3. Buildings and culture

Culture is considered to be a crucial feature of every society. It can be dealt with from three angles. The first is defined as culture of the life of a group of people. The second defines it as a system of symbols and meanings illustrating the environment. Hence, culture is reflected on the relationship between the human beings and the environment (Antonio D. King, 1981) .

The importance of preserving heritage, traditions and sustainability renders successful solutions as guiding factors for design or development of the architectural environment due to the fact that the heritage reflects

the cultural needs of the user and fully expresses it not only in one aspect but in all his behaviors and features (Alexander, 1989). Many of the interested characters in relevant issues confirm this point (Rapoport, 1977).

If we consider the urban architectural environment as an illustration for the cultural knowledge according to the awareness and capabilities of users, this picture will differ and alter when the user of these buildings changes and affects the shape of buildings. We shall further deal with the subject of the shape and culture.

1.4. Shape and culture

To connect the design or modern development with the environment, it is very important to study the environment in which the culture is situated, as well as the relationship between the shape and the culture. The reason for this is that it is necessary to create an architectural environment that can be accepted and known by local citizens or foreign visitors resulting from an interpretation of the shape meanings that were ultimately affected by culture. This illustrates that the environment is a group of relationships between various shapes, as well as shapes and peoples, and these relationships have a regular form and homogeneous architectural aspect. It is not a mere random gathering of shapes and people, but it is the result of a group of reactions to the surroundings as a gathering between various cultures and behaviors. (Antonio D. King 1981) Antony D. King illustrates that the impact of reactions or communication between the various parties can be studied and described by determining who communicates with whom, as well as the criteria of each party? In addition to this, identifying the circumstances in which communication takes place--the how and the where is also fundamental. Answering these questions while bearing in mind the structure of the surrounding social institutions within the culture determines the methods to be adopted for building the architectural environment. If the people realize and understand the mystery of environmental criteria and their impact on determining the form of a certain building, they will know how to act suitably in the existing environment. Hence, bringing clarity to mysteries and direct communication about the existing forms has resulted in the ideal re-use of traditional architecture (Rapoport, 1977).

The cultural meaning of a given development or design will generally be expressed through the constructions, materials colors, forms, size, or furniture of a given building, in addition to the intervals of time during which the building was extended, as well as through surrounding elements. Time can be expressed in two ways: linearly and circuitously. The first follows a logical progression, while the second cycles back and forth through the past, present and future. These different ways of conceptualizing time will have an impact on the behavior, actions and decisions within a given culture (Barret, 1986).

Since the beginning of the human race, it has been the goal of man to order his surrounding environment in order to protect himself against the elements, as well as against wildlife. Human beings have built their own shelters for positive purposes.

Space organization reflects the various values and activities of the user. At the same time, space organization should reflect ideal concepts, such as homogeneity between the natural space and the perceived space, as well as the other unperceived materialistic dimensions (Bacon, 1986).

2. DIVERSIFICATION OF CULTURE FEATURES

There is a diversity of culture features among people who own the same values, doctrines and forms of systems. This diversification will result in varying relationships between the people and things they build, as well as diverse relationships between and construction and its surroundings.

Our insufficient knowledge about the relationship between the people, their constructions or their surroundings have caused several problems and have resulted in design with poor solutions. Architects, designers, or planners should thoroughly consider the psychiatric, social and cultural needs of a construction's previous users. Neglecting to consider these factors will have a negative impact on the mode of preservation or development of the buildings, particularly the historical ones. This effect is evident in the non-quantitative examples that have an impact on acts, behavior, opinions and interpretations of the people wherein the designer has dealt with the architectural environment as an expression of the culture. According to this relationship, we can say that changes in urban or architectural form will happen upon change of culture and objectives. Whereas, the human being will create a suitable environment according to his concept and taste in architecture. Just as the taste in music or theater of one person or a group of people is affected by his cultural environment, so also is his taste in architecture.

The environment of the user is not confined to the natural aspects surrounding the human being, but is also is a reflection of the cultural features for that human being. Rapoport explained that when we abide by the entity and culture and obtain a valuable vision, we would have various options to connect the natural, cultural and design aspects; whereas, the recommended criteria for culture needs reading as it has an impact on the environment form and settlement. Hence, we find the architectural environment reflecting the types of social and cultural change to acquire a harmonious co-existence between the individuals and their environment. The settlement of the individuals is a natural expression for the various features of the cultural life.

Dr. Rajab Abu Dabos, 2003 Libyan Professor of Philosophy and Interpretation defines civilization as the materialistic aspect of the culture, which means that every materialistic production has a relationship with culture. This was obvious during the study of the impact of culture on architecture. We realize that the architectural environment elements reflect the cultural elements of society within the environment (Lanch, 1981). Hence, we can logically say that the architectural elements of the historical buildings that were established in Tripoli during the Italian period of colonization were a result of the colonizer's culture for that period, which means that these buildings have a cultural heritage that does not belong to the culture of the citizens of Tripoli. They form a different cultural source from the original culture and this was a problem facing the architects in dealing with the preservation of these buildings. Whereas these buildings illustrate a humanitarian experience in dealing with nature, there may also be lessons on sustainability. Furthermore, these buildings also bear cultural, intellectual and historical meanings from the past. How can the architect deal with this heritage while such buildings are undergoing maintenance? What is the effect of this on sustainability elements of the buildings? We shall realize how the architect will deal with these points through the selection of various and similar historical buildings. The function, user and the owner each bring various cultural values to be considered when performing external and internal maintenance. Their impact on the sustainability elements on the following indicated buildings is listed in table (1), which features the Church of Algeria Square, The Wadan Hotel, and Al-Dahra Church. All of these buildings exist in Tripoli today and were erected during the period of Italian colonization. Below is a synopsis about the structures.

The most important factors that determine the choice of examples or case studies in this subject is the cultural differentiation between users and owners and their differences of intellectual or ideological and cultural reuse while maintaining the same function for the building. Thus, three criteria have been developed for the choice of the subject of the study:

1) The building has been redeveloped and re-used

2) reused for the same function with different user

3) to be one of the most famous landmarks in the city of Tripoli.

Thus, the most famous buildings built during the period of the Italian occupation of Libya were chosen and re-developed and re-used after the revolution of 1969, namely, the Church of Algeria Square, Wadan Hotel and Church of Al-Dahra, figure 1 shows their places in the map of Tripoli . These buildings are distinguished by their monuments, which clear Italian and Islamic influences in their architecture

Figure 1. Tripoli 2011

Algeria Square Church

Wadan Hotel

Al-Dahra Church

2.1. Algeria Square Church

This church was established in the early period of the Italian colonization of Libya, in the beginning of the thirties. It is the greatest church in Libya and illustrates a prominent feature of architecture in Tripoli in terms of the site and largeness (see figures 2, 3). It lies on the waterfront of the city. In addition to its beautiful architectural aspect, there is its axel position pointing towards Rome, the seat of the Catholic Church and home to the Pope, to the North. After the year 69 A.D. and departure of the Romans from Libya, there were no longer any Christians in Libya with the exclusion of some embassy employees. The church closed down, so the Islamic Call Society has maintained and used it as a mosque and as a Quran memorization center as illustrated in the figures 4, 5.

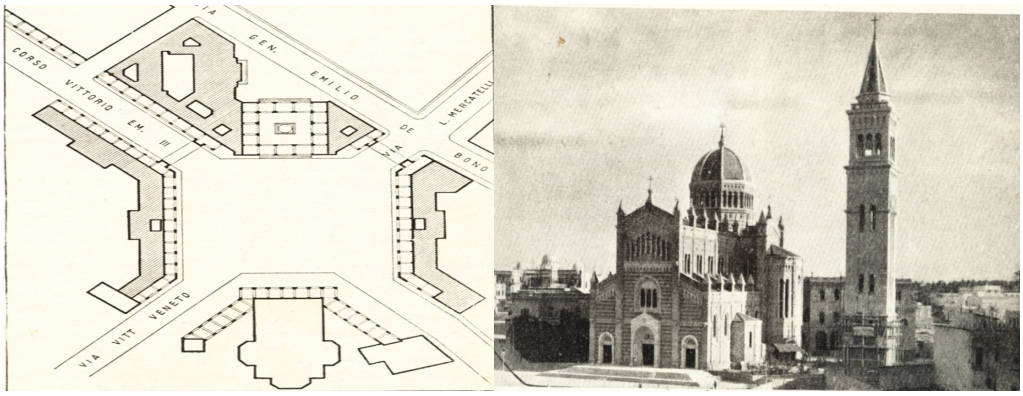


Figure 2, 3. La Nuova Cattedrale (Algeria Square Mosque) (Tripoli, 1932)

Figure 4, 5. Algeria Square Mosque, Tripoli.

2.2. Wadan Hotel

This hotel was established in the year 1934 (figure, 6) on the coast near Tripoli's Old City on an area of land of approximately one hectare in an agricultural district. Its design was distinguished by a high, prominent tower, which acts as a clear focal point at the visual axis of movement. It previously contained seventy rooms distributed on four floors and an under-ground level from the southern front, a night club, a swimming pool, a Turkish *hamam*, a cinema, restaurants, and sitting and reception halls. The large hotel, which faces the waterfront, is a well-known example of Italian colonial architecture in Tripoli. İt has been maintanced by Amman company and used as its previouse fumction (Hotel) (see figures 7, 8).

Figure 6. Wadan Hotel 1934

Figure 7. Wadan Hotel 1960

Figure 8. Wadan Hotel 2016

2.3. Al-Dahra Church

This church was also established during the early period of Italian colonization in Libya in the thirties (figure 9). It is a church of moderate size, situated on a large square, and was established in Tripoli to be a prominent building in the surrounding district. In addition to its beautiful architectural aspect, its axial position points toward the North. After 1969 and departure of the Italians from Libya, this church was left open to be used by the Christian expatriates under supervision of the Italian embassy, which was responsible for its maintenance as shown in pictures, 10 and 11.

Figure 9. Chiesa Di San Francesco (Al-Dahra Chuch) 1936.

Figures 10, 11. Al-Dahra Chuch

№	Type of Building	Function		User		Remarks
		Before Maintenance	After Maintenance	Before Maintenance	After Maintenance	
1	Church	Religious (Church)	Religious (Mosque)	Christian	Muslim	The owner and user were changed
2	Hotel	Accommodation & Luxury	Accommodation & Luxury	Tourism	Tourism	The owner was changed
3	Church	Religious (Church)	Religious (Church)	Christian	Christian	The same user & owner

Table 1. Illustrates the number of the building, its function, and the user before and after maintenance.

The study methodology is summarized by the registration of the architectural changes that happened to the three selected buildings after maintenance and re-use. Next, these changes were classified by either omission,

addition, or modification on the external and internal building elements which include the walls, columns, entrance, doors, domes, and windows, as indicated in the enclosed table 2. Information was collected during field visits to each building, through interviews conducted to gather the reasons for these cultural and historical changes, as well as their impact on the sustainability of historical buildings according to the explained meanings of sustainability of historical building.

Building		Changes made on the building's elements						Resons		
		indoor			Outdoor			clutural	hostirical	others
		omission	addition	modivication	remove	addition	Modivication			
walls	1		•			•				•
	2		•			•				•
	3									
columnes	1		•			•				•
	2		•			•				•
	3									
floors	1	•	•	•	•	•	•	•	•	•
	2	•	•	•	•	•	•	•	•	•
	3	•	•	•	•	•	•	•	•	•
roofs	1					•	•	•		
	2		•			•				
	3									
Interences	1			•			•	•	•	
	2			•			•			•
	3									
doors	1			•			•	•	•	
	2			•			•			•
	3									
windows	1			•			•	•		
	2			•			•			•
	3									
domes	1			•			•	•	•	•
	2			•			•			•

	3									

Table 2. Changes made on the building's elements.

The sustainability elements of historical buildings were determined according to the enclosed form displayed in table 3 prepared according to The Hanover Principles (2000) for sustainable design which were previously explained.

№	Hanover's Sustainable Design Principles	Building 1	Building 2	Building 3
1	Preserving human rights for a healthy, diverse, cooperative and integrate coexistence with nature.	X	X	X
2	Interaction with natural world and different impacts of design considerations on remote levels.	X	X	X
3	Respecting the relationship between the soul and the substance in terms of the correlation between spiritual and material consciousness	*	*	*
4	Achieving the success of natural systems and taking advantage of them without any damage.	X	X	X
5	Not burdening future generations regarding the requirements of maintenance and vigilant management of risk.	X	X	X
6	Removal of waste concept and re-life cycle of production and consumption processes	X	X	X
7	Maintaining energy consumption and depending on natural energy flow that is constant sun source	X	X	X
8	Considering nature as an interesting example and a correct model and not a nuisance.	*	*	*
9	Involving users and restoring the integrative relationship between natural elements and human activity	*	*	*

Table 3. Illustrates the reflection of The Hanover (2000) Sustainable Design Principles

3. RESULTS

Through the field visits and field surveys listed in table 2 and table 5 illustrate the elements in the pictures. All the resulting changes for the three buildings were made for the reasons indicated during the interviews with the staff of the selected sample. The field information is classified in one of three ways: "historical", "cultural" and "other". Table 4 summarizes all the changes as follows:

Building №	Changes	Cultural	Historical	Others
1	Walls, columns, roofs, surfaces, ends, domes, entrances, windows, doors, broiders internally and externally	√	√	
2	There are changes in the same previous elements except the broiders and domes.			√
3	There are no changes except for the floor tiles			√

Table 4. Changes in (Cultural, Historical and Others).

Elements	Building (1) Algeria Square Church	Building (2) Wadan Hotel	Building (3) Al-Dahra Church
Decoration			
Endings			
colour			
walls, Columns			

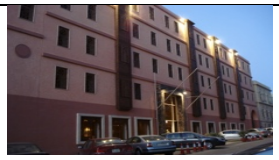
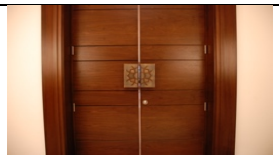
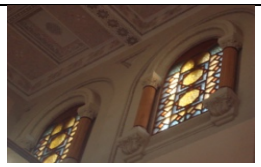
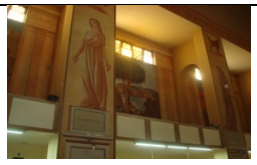
Floors			
Fences			
Entrances			
Doors			
windows			

Table 5. The Elements of the building.

4. DISCUSSION

We realize that the previous table did not indicate any changes in building no. 3 and that there were many changes to building no. 1, while building no. 2 had only minor modifications. How should we interpret this? In the table no 1, we find that building no. 3 was without changes and was distinguished by stability of the user and function. Logically, this will lead to stability of the objectives, the objectives of performing the maintenance and re-use. However, buildings no. 1 and 2, which underwent moderate to many changes, are distinguished by a cultural change of the user in the case of building no. 1, and in the case of building no. 2, the objectives of the use and owner changed. Furthermore, we realize the obvious difference in dealing with the broiders, ends and domes for cultural and religious reasons in building no. 1 and the objectives of the user no. 2 For example, the broiders were omitted from Algeria Square Church because they are not suitable for the mosque. They were preserved in the hotel as they add historical value to the hotel and add pleasure to the visitor. Now, the question is how the maintenance works dealt with sustainable design principles in the three examples. Table no. 3 illustrates the field-collected information about the reflection of the sustainable design principles and their impact on maintenance works. We realize that there was no great impact; if the maintenance works did not consider sustainable design principles that are preserving the energy, water, use of natural energy, dealing with waste and the need for permanent maintenance.

5. CONCLUSION

There are changes that happen to historical buildings when there is change of the user or the owner.
These changes have a relationship with the cultural factors of the building, e.g., whether it is used as a mosque or a church, and have a relationship with the objectives of the user - the owner of the luxurious hotel building.
There are no significant changes in the religious building in the case of stability of the user and the owner.
These changes influenced the preservation of historical buildings, whereas the principles of sustainable design were not reflected on them.
There is no effect by historical factors on the three buildings.
We did not realize any commitment by developers towards the crucial principles of sustainable design, such as energy consumption, use of natural energy resources, and getting rid of waste, re-cycling, or reducing the costs of maintenance and operation.

REFERENCES

Antony, R. Terry, W. Helen B. 2003. *Understanding Sustainable Architecture*. Published by Spon Press.

Alexander, C. 1989. *The Timeless way of Building*. Oxford University Press, New York.

Antonio, K. 1981. *Islamic Cities and Conservation*. The Unesco Press.

Bennetts, H. 2000. *Environmental issues and house design in Australia: images from theory and practice.* unpublished thesis, University of Adelaide.

Bacon E, N. 1986. *Design of Cities*. Revised Edition.

Barrett, J. 1986. *The Form and the Functions of the Central Area*. (Open University DT 201 Unit 12), Milton Keynes: Open University.

Beazley E. 1979. *Design and Detail of Space between Buildings*. The Architectural Press, London.

Brown, F.,1976. *Variety and Complexity in City Centre Renewal*. Oxford Polytechnic, Department of Architecture major study.

General Department of Culture., 1988. *Shadows and lights from Libya*.

Hoag, D., 1977. *Islamic Architecture*. Published Abrams, NY.

Lynch K., 1981. *A theory of good city form*. MIT Press.

King, A. D., 1997. *Building and Society*.

Merriam W., 1994. *Sustainability &Design*.

Rapoport, A., 1977. *Human Aspects of Urban Form: Towards a Man-environment Approach to Urban Form and Design*. Oxford, New York, Pergamon Press.

Rajb A., 2003. *Ideology of area*.