

# The relationship between historical buildings and contemporary technology

Abeer AL-Soub<sup>1</sup>, Eiman Griaz<sup>2</sup>

1. Abeer AL-Soub, Department of Architecture, AL-Balqa Applied University, Al-Salt, Jordan, email: abeer.salah89@hotmail.com
2. Eiman Griaz, Department of Architecture, Yarmouk University, Irbid, Jordan, emile:Eiman.griaz@Yahoo.com

## Abstract

This research will address the relationship between the historical buildings and the contemporary style, how they will interact with each other cohesively, and discuss the effect of the contemporary addition on the spirit of the historical area or buildings. The research will show the importance and the advantages of the contemporary style integration and try to explain the principles and the variables which could be adapted while making a preservation or contemporary additions to the historical buildings.

**Key words:** historical buildings, contemporary architecture, contemporary technology.

## 1. Introduction

Heritage and cultural buildings conservation is important to understand the history of human civilization, preservation began to emerge in the time of the emergence of archaeological discoveries, and got a great interest since the late eighteenth century.

Then two schools emerged in this field: the first one encouraged **the preservation**, John Ruskin was the main proponent of it then William Morris followed him. The second school encouraged **the restoration** Eugène Viollet-le-Duc was the main proponent of it. Interests in this field increased after World War II as a result of the loss and destruction a lot of human history, so organizations and architects attached great interest in it.

As a result of the rapid development in our life and the emergence of new technology, a new method emerged to integrate both new and old together in a balance way which didn't affect on buildings values, a new approach emerged in preservations called **contrasting style** which using a new materials and technologies which represent the current age for the new additions to the historical buildings.

## 2. Method

This study used a three-stage approach to explain the relationship between historical buildings and contemporary technologies.

### 2.1. Literature review

A critical review for the history of preservation and the contemporary additions of historical building to explain the important principles for the historical buildings preservation, and the opinion of some international organizations which concerned to protect the historic resources and explained their position for the new additions for historic buildings.

### 2.2. Interviews

Making interviews with Jordanian architects whom familiar in this field to explain their principles and variables in preservation and the additions for historical buildings, to help us to make a good evaluation for the case studies in the research.

### 2.3 case studies

The research analyze three case studies in three different cities, Solomon's Pools project in Beithlehem, Abo Darweesh mosque in Amman and Arar house in Irbid, each one followed different conservation school, the research aims to evaluate these examples from the parameters or the principles which we took them from the literature review and the interviews.

## 3. Literature review

preservation in Jordan is using in archeological conservation, in dealing with any building or antiques which founded before 1750, on the other hand restoration is allowed just in historical and heritage buildings, which founded after 1750.

That is mean Jordan is following the two types of preservation, the first one which established by John Ruskin, and the other one by Viollet-le-Duc.

Ruskin and Le-Duc developed method of conservation as a developed of the treatment of preservation

movement, which created in the nineteenth century, as a response of the eighteenth century old buildings situation, which began considered valuable and must be preserved for future generations.

Ruskin believed in **preservation**, "places a high premium on the retention of all historic fabric through conservation, maintenance and repair. It reflects a building's continuum over time, through successive occupancies, and the respectful changes and alterations that are made."<sup>1</sup> in another word he believed in conserving building by frequent maintenance, without integration new materials, this maintenance and development must be gradual, Ruskin believed that the beauty lies within ruins and natural process of decay of a building.

In the opposite, Le-Duc believed in restoring buildings and improves it to get the perfection, **restoration** is "the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods."<sup>1</sup> Le-Duc made a series of restoration in the medieval buildings, with overhauling and adding some details to get one ideal building, sometimes towers, pointed roofs and new materials were added.

The national organizations like The United Nations Educational, Scientific and Cultural Organization (UNESCO), The International Council on Monuments and Sites (ICOMOS), and The National Park Service (NPS), had almost the same opinion, all of them against the idea of any addition. But there is no problem of using contemporary ideas and materials to present usefulness for users, without harm the historical fabric, but every addition must present its time.

A part of UNESCO mission is to protect heritage architecture because of its cultural and historical value, its attitude toward addition was clear in Vienna memorandum which talked about (word heritage and contemporary architecture managing the historic urban landscape). In Article 21 of this Memorandum UNESCO, states that "urban planning, contemporary architecture and preservation of the historic urban landscape should avoid all forms of pseudo-historical design, as they constitute a denial of both the historical and the contemporary alike. One historical view should not supplant others, as history must remain readable, while continuity of culture through quality interventions is the ultimate goal."<sup>2</sup> the state express that UNESCO with contrast style in any addition to the historical buildings, to make the new addition clear and anyone can read it.

ICOMOS created to promote conservation and protection of cultural heritage, they were against any addition if that hurt the important and historical parts of the building, until they recognized the importance of reusing these historic buildings, and the need of contemporary additions to develop the community. It concerned in all treaties for the treatment of additions to historic buildings, ICOMOS believed that the incorporating historic monuments into contemporary life is important, to make a harmony between the old and new, and to create the value of the new addition.

NPS believed that the contemporary addition to the historic buildings will destroy or harm important historical parts or materials, and this addition may effect on its rate of acceptance in the National Register of Historic Places.

The position of NPS was determined in the state "a new addition to a historic building has the potential to damage and destroy significant historic material and features and to change its historic character. A new addition also has the potential to change how one perceives what is genuinely historic and thus to diminish those qualities that make the building eligible for listing in the National Register of Historic Places."<sup>3</sup>

The three main requirements of the NPS for additions to historic buildings are:

- (1) preserve significant historic materials and features.
- (2) preserve the historic character.
- (3) protect the historical significance by making a visual distinction between old and new.

The international organizations put requirements for contemporary addition and materials; any addition must protect the historical characteristic and the important historical features, by visual discrimination between the old

<sup>1</sup> "Introduction: choosing an appropriate treatment". Secretary of interior's standard of the treatment of historic properties. U.S national park service retrieved April 5, 2011.

<sup>2</sup> UNESCO, *Vienna Memorandum*, <http://whc.unesco.org/archive/2005/whc05-15ga-inf7e.pdf>.

<sup>3</sup> Weeks, Preservation Brief No.14, p.1.

and the new, the addition must be on the rear or on the secondary elevation, addition size must be proportional with the building size, and the integrated materials must not be harm the characteristics of the building, all of this does not necessarily mean the success of the process.

These recommendations, although providing general guidance, do not guarantee the success of the new intervention or the protection of the historic materials and the historic character of the structure.

#### 4. Interviews

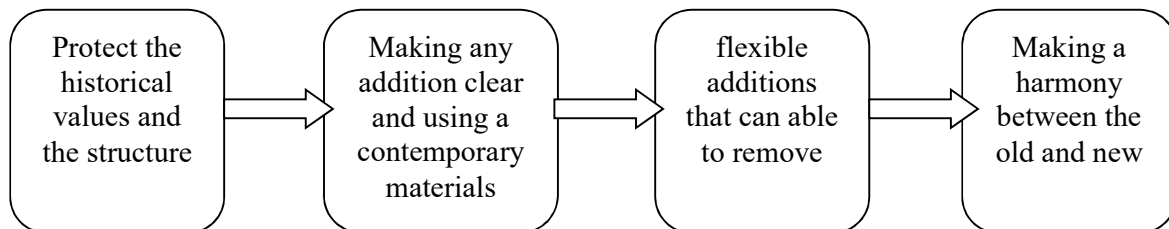
##### I) Dr. farouk yaghmoure

Dr yaghmoure is Jordanian / Palestinian architect, contributed significantly to the creation of public awareness towards the historical and cultural sites and urban areas, he designed many and various projects, some of them was in restoration and preservation such as Solomon's Pools project in Beithlehem , Amman institute offices project, and Beit sahour development project .

Dr yaghmoure concerned to be care during preservation of historical buildings, he considered that there is no bouders in preservation process in the historical buildings, if the architect didn't make any risk to the building , Dr yaghmoure used in his preservation projects a contrast style to be honest and to represent the contemporary materials and technologies, he believed that using a materials similar to the original materials in historical building to the preservation or the additions maybe it become similar by time to the original material then it make a misrepresentation, another reason was the old material as stones, which was used in historical buildings, had been made by handcrafts, if we want to used it now, it will be too expensive, because there is a few people work in handcrafts.

Dr yaghmoure believed that any addition to the historical buildings should be more careful in materials, colors ,and proportions to make a harmony with the historical building and don't make a rivalry between the old and new. He used a new materials in the additions for historical buildings such as glass , metals as steel and Copper , he liked using a wood and copper in additions because it make a harmony with the old materials by time.

Dr yaghmoure important ideas in dealing with historical buildings:



##### II) Aiman Zuaiter

An Jordanian architect, was born 1957, graduated from American university in biuret, worked with arch.Hassn Fathi, in Egypt, then with Arch.Rasem Badran till he established Teba consulting engineers in 1987.

Arch.zuaiter, used Islamic architecture style in his designs, encouraged the local architectural style with local materials, added to some historical buildings like Abu Darweesh mosque, and renovated buildings, like the prime minister building.

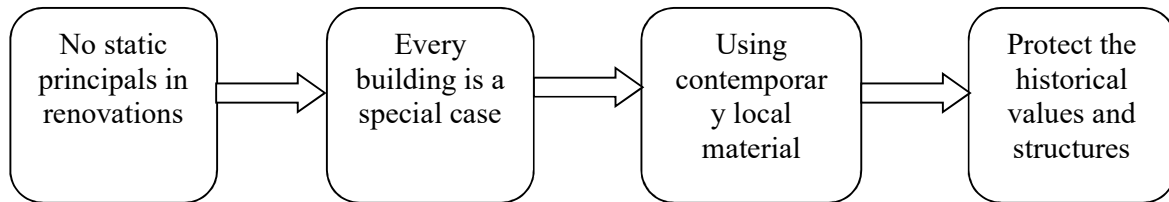
Arch.Zuaiter believed that there is more than one way in dealing with historical buildings, every building must treated as a special case, every building will assess the renovator how to deal with, some buildings probable to make additions to it ,some may lose his historical and ethical value, some must restore, and some must renovate as what it was.

Contemporary materials and technology can be used in renovation and addition, without affecting the building, some time we can't gain the renovation objectives unless using the original materials.

It is not important to present the addition or renovation time, the importance is to obtain the objectives of it, without affect the historical, ethical, and physiological value.

Arch.Zuaiter indicated to the importance of using local material, which is similar to the original one or closed to it in colors and textures.

Arch.Zuaiter important ideas in dealing with historical buildings:



### III) Abd Al Rahman Dwaikat

The wise manager of the Department of Antiquities, indicated that preservation in Jordan is using in archeological conservation, in dealing with any building or antiques which founded before 1750, on the other hand restoration is allowed just in historical and heritage buildings, which founded after 1750.

Department of Antiquities is not responsible of preservation of heritage buildings in general, because of that here in Jordan there is no specific introductions or legislations for historical preservation, there is no formal or special institutions for preservation, and all preservation works done by personal effort of architects, owners, and some Governmental agencies like ministry of municipalities and Greater Amman Municipality.

#### Case studies

#### Project No 2 : Abu Darweesh mosque, Amman- Jabal Al Ashrafyeh



Fig. 1. Site Map, Abu Darweesh mosque  
Source: [www.tibahjo.com](http://www.tibahjo.com)

**Original Building:** built in 1962, by al haj Hassan.

**Contemporary addition:** built in 2007, by Arch. Aiman Zuaiter.

**Original architectural style:** Islamic architecture.

**Addition architectural style:** postmodern architectural style.

The mosque built in Islamic architectural style, with black and white stone, which brought together the Mamluk and Ottoman in terms of uniformity, symmetry and colors in the building structure, engravings and drawings done by the calligrapher Sami Ne'ma.

It was the largest and the most beautiful mosque in Amman, frequented by people from all parts of the Kingdom, and visited by many of the important figures to pray.

#### **The addition aims**

To highlight the mosque as an architectural and historical masterpiece, with a distinctive appearance on Amman

regions, and to create a pedestrians space in east Amman.

### The addition location

It is at the rear side (south side) of the original building. It is larger than the original building due to it is Plaza and buildings together.

### The addition

Include three buildings on an area of 4658 m<sup>2</sup>, the first building contains almost 9 shops on an area 372 m<sup>2</sup>, the second building on an area of 4200 m<sup>2</sup>, distributed over three floors, basement floor includes parking, administration offices and chambers of electricity and mechanics, ground floor includes eight shops, and a large hall, the first floor as a cultural center, and the back plaza used as a parking, the third building is a library on an 200 m<sup>2</sup>.

### The addition materials

The addition was built using yellow stones as a contrast with the original black and white stone, to respect the importance and excellence of the mosque, the relationship between colures were harmonious, without complexity and contradiction, beside beige Concrete in some buildings with some wood integration.



Fig.2. Abu Darweesh mosque, the original building  
Source: [www.ammonnews.net/article.aspx](http://www.ammonnews.net/article.aspx)



Fig.3, The new addition  
Source: [www.tibahjo.com](http://www.tibahjo.com)

## Project No 2 : Solomon's Pools project

Beithlehem

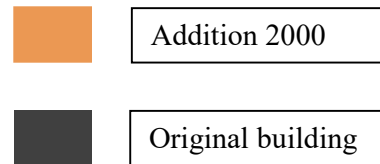


Fig. 4. Site Map, Solomon's Pools project  
Source: Google earth

**Original Building:** built in 1617 built by ottoman.

**Contemporary addition:** built in 2000, by Arch. Farouk yaghmoure .

**Original architectural style:** Islamic architecture.

**Addition architectural style:** postmodern architectural style.

The project contain 3 pools and castle built in ottoman age in 1617 . the castle built by in order of alsoltan

othman II to protect the pools, it built in rectangular shape (70 \*45) m<sup>2</sup> with one main entrance in the west wall , in each corner there was a squared tower with two stories and 50 rooms for solders .

### The addition aim

Make rehabilitation for the whole area to return its historical value after suffering of exposure and destruction of Israelis, and the inhabitant bad use, (As figure 5).

### The addition

Dr. yaghmoure used three types of preservation , the first one is to preserve the pools by using the same original materials ( pottery) , and rebuilt the tower by using the original material (stone) after discovering a crack along the wall, (as figure 6) , the second one was restoring the steers with similar materials to gain ideal building, (as figure 7), the thread one was making contemporary addition with new materials to the castle rooms, (as figure 8) .the architect philosophy was to create a space express the passing ages presented by L shape rooms , ended by the contemporary age, presented by a rotated room with different material (stone) than the addition material (glass).

### Addition Materials

The architect used glass, wood, cooper and metal in the additional rooms to make a clear contrast with the original building which built by stones. The using of cooper refer to its characteristic of dealing with weather conditions by changing its color by time.

The using of glass refer to its transparency, to make visual connection between inside and outside.

There was flexible metal columns far from the building skin, fixed by removable bolts , in case we want to remove the whole structure, (as figure 9).

### Addition location

The addition was at internal elevations, proportional with the original building.

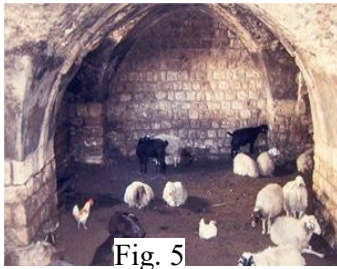


Fig. 5



Fig. 6



Fig. 7



Fig. 8

source : [www.yagarchitecture.com](http://www.yagarchitecture.com)



Fig. 9

### Arar House, Irbed, southern slopes of the archeological hill

**Original Building:** built in 1890, by unknown.

**Original architectural style:** Arabian architectural style.

The House consists of five rooms and two ewans with an area of 202 m<sup>2</sup>, and 294 m<sup>2</sup> external yard, with black stone tiles, 60% of it was damaged before the restoration process as a result of addition the water tank. From the west there was a fence of stone and mud with uninformed height and Thickness, including a door of 1 m width

and 1.5m height, this door connects the poet's house with the other house next to it. This door was canceled due to divisions in the property after the death of the owner of these houses

### **The addition and renovation**

Southern concrete fence has been added of less than a meter and a half high, the renovation happened to the main entrance, the northern wall, western façade which newly built and integrated it with the rest, processing internal eastern and northern ewans, and re-connect the services (electricity, water, and sanitation). The eastern room roof next to the northern ewan, had been renovate, the internal arch rebuilt, the external yard rebuilt by using black stone, doors and windows had been re-making in the same shapes and measurements as the originals.

### **Materials**

The used material was similar to the original (wood bridges and Bamboo), besides replacing the soil with reinforced concrete, The southern fence was covered with the same stone which is used in the house and also the western elevation was covered with the same stone.

This fence was covered from both sides with stone and the last two rows were replaced with the black stone and continued to be linked with the upper parapet of the house, because a new parapet was added to the ceiling.



Fig.10, court yard black stone tiling



Fig.11, The renovated house

### **Discussion**

The selected policy to deal with the historic buildings must be suitable with the present age characteristics, which the pioneers architect of historical preservation and the international organization talked about. That's mean a clear contrast between the old and the new, must express its age by materials or construction technology, to improve the visual awareness for each age.

Jordan's history since the founding of the emirate to the present time is a short history, which means the presence of a small number of historic and heritage buildings that represent different civilizations that came on home soil and attest to the prosperity of different architectural styles, like Syrian, Egyptian and Turkish style.

These buildings need especial protection, and especial treatment in case of addition, because of its historical and sociological value in Jordanian community.

Jordanian architects divided into Supporters and opponents for contemporary additions, where we can found a lot of historical buildings renovated as the original and reused as galleries and cafes, while the contemporary additions still primitive with few support from the government and municipalities like Amman institute case (as figure 12) which redesigned with contemporary additions which later ignored.



Fig 12, source : [www.yagarchitecture.com](http://www.yagarchitecture.com)

It is easy to use new methods in dealing with historical buildings, using simulation where the visitors can live the old experience in contemporary place start to be affordable . This addition prefer to be flexible to remove it in case harming the original buildings.

Lighting system can be use to complete the destroyed parts visually insisted reconstructed it. 21 century known as the age of technological revolution that's mean there is a lot of technology which affordable to use with the historical buildings without affecting the historical and ethical values.

Conclusion (result)

#### References

- Hassan .A, (1998), Theoretical framework proposal for policies dealing with historic districts.
- Fitsh .j , (1990), Historic Preservation: Curatorial Management of the Built World,
- Quinlisk.M, Heritage and contemporary architecture: engaging with the architects as part of local heritage listing, Clive lucas, stapleton & partners Pty Ltd, Sydney, Australia.
- Torres.Z, (2009), Master of Historic Preservation, Historic Buildings and Contemporary Additions: The Elements of a Cohesive Design Relationship, University of Maryland, College Park.
- Avila.F, (2008), ARCHITECTURE AND TEMPORALITY IN CONSERVATION PHILOSOPHY: CESARE BRANDI, University of Nottingham.
- Great Irbid Municipality, the annual book 2004, Irbid Municipality major publications, Oxford Ambassador, Irbid 2005.
- Gwanmh, Y. The city of Irbid in modern Islamic publications of the Center for Studies of Jordan, Yarmouk University, Irbid 1986.