

A JORDANIAN MODEL IN CONSERVATION OF ARCHITECTURAL HERITAGE

Case Study Dar As Saraya Government Building, Madaba, Jordan

Saqer Mustafa Sqour, Muhannad Tarad

Engineering College, Al al-Bayt University, Mafraq, Jordan

Abstract

Jordan being part of the Arab and Islamic world has passed different eras throughout the history. It is rich in architectural heritage; although, awareness of need for conservation is recent. Nevertheless, a lot of work has been done.

This paper deals with the extent to which Jordanian efforts have succeeded. It looks at the historical background, examines conservation in Jordan, and concentrates on Madaba, as one of the historic cities of the country. Besides, the paper presents Dar As Saraya as a case study. The building is presented in certain detail to learn lessons in the context, and to examine construction, materials and techniques.

The purpose of this paper is a try to study and analyze a case study; to present certain recommendations to help proposing conservation plans.

The methods used for conducting this study are as follows:

- Reviewing literature on the subject of architectural heritage in Jordan.
- Studying background of the heritage in Madaba city.
- Studying different opinions regarding building conservation.
- Presenting Dar As Saraya as a case study, and studying it in some details to show an example of how building conservation is taking place in Jordan.

Keywords: building conservation, conservation in Jordan, Jordanian historical buildings, traditional buildings, Ottoman buildings in Jordan

ИОРДАНСКИЙ ОПЫТ СОХРАНЕНИЯ АРХИТЕКТУРНОГО НАСЛЕДИЯ

На примере правительственного здания Дар-Эс-Сарайа, Мадаба, Иордания

Saqer Mustafa Sqour, Muhannad Tarad

Инженерный колледж, Университет Аль аль-Байт, Мафрак, Иордания

Аннотация

Иордания является частью арабского и исламского мира и прошла через разные эпохи в своей истории. Страна богата архитектурным наследием, хотя, осознание необходимости его сохранения наступило недавно. Тем не менее, много работы уже было сделано в данном направлении.

В статье анализируется, в какой степени стремление сохранения архитектурного наследия Иордании увенчались успехом. Рассматривается сохранение города Мадаба, как одного из исторических городов страны в Иордании. Кроме того, в качестве примера в статье описывается сооружение Дар-Эс-Сарайа. Здание представляет определенный интерес с точки зрения изучения его конструкций, материалов и технологий строительства.

Эта статья является попыткой изучить и проанализировать конкретный архитектурный пример для того, чтобы представить определенные рекомендации, помочь предложить соответствующие планы по его сохранению.

Методы, используемые для проведения данного исследования, заключаются в следующем:

- Обзор литературы по теме архитектурного наследия в Иордании.
- Изучение наследия в городе Мадаба.
- Изучение разных мнений относительно сохранения здания.
- Представление и детального изучения Дар-Эс-Сарайа в качестве примера сохранения архитектурного сооружения Иордании.

Ключевые слова: сохранение здания, наследие Иордании, иорданские исторические здания, традиционные здания, османские здания в Иордании

1 – Introduction

Jordan is a rich country in its architectural heritage. Archaeological evidence proves that each century of the last 5000 years is covered by that heritage [1]. The country passed different periods starting from the pre-historic civilization; passing through the Nabatian, Greek, Roman, Byzantine, Islamic and modern periods. All these periods left significant buildings which represent valuable resources for history, tourism and scientific research. The historic cities are full of rich architectural traditions illustrating craft skills, design and urban form. These works display social, cultural and technical achievements.

Nowadays urban centers of Jordan are growing at an unprecedented rate, through both natural increase in population and migration from villages to cities, besides the migration from neighboring countries. The present urban population of Jordan is estimated at 6.632 million (as estimated by 15th Sep 2014) [2].

Social and material changes that took place during the latest developments, include goods, transport and scientific means. In this search for modernity the reasons for conserving heritage are occasionally sacrificed. In Jordan there are many historic towns where the heritage is under varying degrees of threat.

Because of the mentioned awareness for conservation, different international and local organizations started various projects to preserve and conserve architectural heritage. Thus, conservation work started on major monuments, castles, historical public buildings, historical private buildings, traditional houses, schools and traditional urban spaces and city centers.

Different universities in Jordan pay attention to building conservation; starting from the University of Jordan that has M Sc. educational program in the field. Also, Yarmouk University and other universities have different programs on conservation. Unfortunately there are no proper laboratories to support those programs.

Private sector also plays an important role in conservation. Different organizations took the responsibility of educating architects and encouraging them to take care of the architectural heritage of the country. Another support for conservation is coming in these days from the international non-profit organizations. These bodies come from France, Italy, Germany, United States and others, who are taking interest in this field, such as US AID, HABITAT, and The Cress Foundation [3].

The case study of this paper is a public building called Dar As Saraya. It is located in Dar Saraya Castle in Madaba. The area of the initially erected building was 500 sq. meters, which became 860 sq meters after the restoration and additions. The World Bank financed the project. And the Ministry of Tourism and Antiquities of Jordan took responsibility of the supervision. Al Bitar, a Jordanian Consulting Company designed the project.

2 - Levels of Conservation:

In conservation, different levels of intervention on buildings are not necessarily applicable to the whole fabric of buildings. In other words, the need for conservation varies; therefore, it is necessary to distinguish scales of intervention from conservation up to renewal. According to Bernard [4]: there are seven scales of intervention, they are below:

1. Prevention of Worsening: This is an indirect conservation, similar to preserving and controlling environmental pollution.
2. Preservation: This means keeping the building in its existing state by repairing to prevent further decay.
3. Consolidation: This includes applying new materials on or with the fabric to ensure its continued durability.
4. Restoration: It means to revive the original concept of buildings as the original fabric or use; or as both fabric and use.
5. Rehabilitation: Represents adaptation of the building to a present-day use. Obviously, this will preserve the building on the long run.
6. Reproduction: To copy an existing artifact, or to replace several missing elements or parts of the building.
7. Reconstruction: Rebuilding a new building by copying an old one. Because of wars, earthquakes, fire or other disasters.

On the other hand, according to Fetch [5]: there are several levels of intervention, these levels include: Restoration, conservation, reconstitution, adaptive reuse, reconstruction and replication: **Restoration** is the return of a building to an earlier condition. **Conservation** is "The physical intervention in the fabric of an artifact" [6]. **Reconstitution** is "The more radical version of conservation" [7]. The act here is to save the building piece-by-piece. Adaptive **reuse** is to adjust a structure to re-assign use of the space. **Reconstruction** is a new recreation of a structure that no longer exists. And, **Replication** is to create a copy for an existing building, element or group of elements.

However, one or more of these levels of intervention can be applied for any building [8]. Thus, in the case study of this research, some of these levels are analyzed in the following sections.

3 - The Case Study "Dar As Saraya"

3 - 1 Location and Background:

Madaba is one of the twelve governorates of Jordan. It includes different natural and historical monuments. It is located 33 kilometers south of the capital *Amman*, and rises around 774 meters above the sea level. The province is rich in archaeological sites and ancient heritage places like *Um Al Rasas* village, the *Byzantine church* on the *Nebo Mountain* and the *Amkaor Mountain*.

Madaba is an *Aramid* (Syriac) word; it means fruit juice [9] Also, it may have the meaning of calm water or fertile place [10]. The city dates back to the *Iron Age*, around (1300 BC). In the twelfth century BC it was among the cities of *Moab* before being invaded and burned [11].

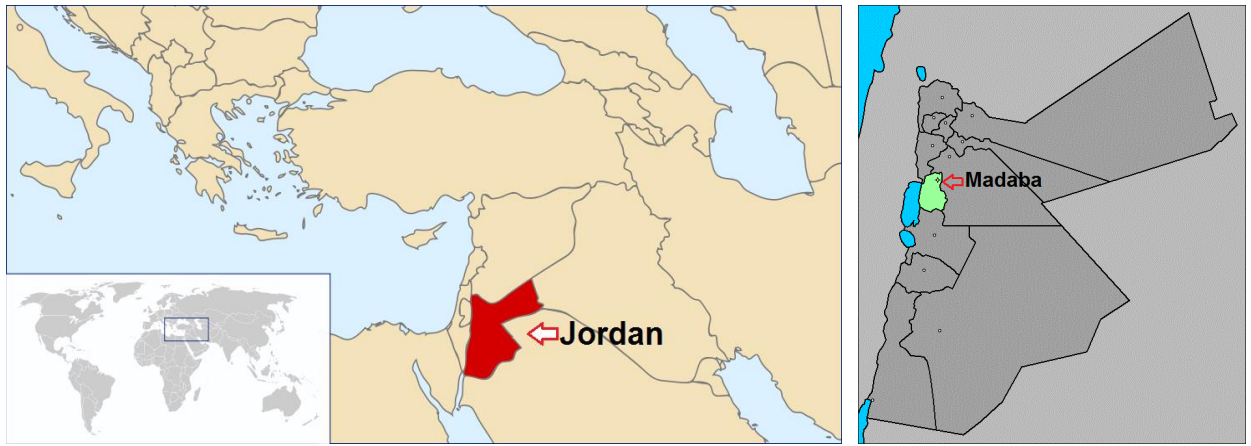


Fig. 1. A map shows the location of the city of Madaba within Jordan

In the ninth century BC the city was ruled by a king named *Misha*, then by *Nabataeas*, who became professional in trade and rebuilt the city.

When the area came under the rule of *Alexander the Great*, the leaders of Syria were blessed with Greek civilization. Later, around 395 AD *Madaba* became one of the cities of the province that belonged to the *Byzantine Empire*. However, *Madaba* reached its magnificence at the end of the sixth century. And in that period the several significant architectural works and works of mosaic were produced [12]. *In the mid of the seventh century AD Madaba* became part of the Islamic *caliphate* in the same way as the rest of the cities of the Levant [13]. Afterwards, in 1516 AD the *Ottoman Empire* ruled the city; they set up several security stations to control the vast territory of the empire. One of these stations "*Dar As Saraya*" was the case study of this paper.

In Modern ages, Madaba is considered to be one of the oldest cities in Jordan; Christian tribes settled in the city in 1880 AD [14]; who founded a group of churches, such as a *Greek Orthodox Church* and *Catholic Church*. The latter has the oldest mosaic original map of the Holy City, which dates back to the mid of the sixth century AD [15].

3 - 2 Historical Background:

During Ottoman time the Caliphs ordered to build centers for the governors in different Jordanian cities such as Salt [16] and Madaba. However, *Dar As Saraya* was among them. The date of the construction is 1896 AD (according to the inscription above the main entrance of the building). One-storied building stands as a police station plus an office for the Ottoman governor. In addition, during the Ottoman Empire a house for the Government was founded in Madaba around 1898 AD [17], which is near to the date mentioned in the inscription above the main entrance of the building.



Fig. 2. Dar as Saraya before 1940 s (Left). And after 1946 AD (Right)

In 1922, "*Dar As Saraya*" was used as the building for government departments. And in the 1940s the *British* added the second floor. They used the building as a headquarter for the Magistrate's Court of Madaba until the late seventies of the last century; since then, it was a police station until 2004 AD, in which it became the property of the Ministry of Tourism and Antiquities for its historical importance.

3 – 3 Details of the Conservation Project:

Project Name: Dar As Saraya

General location: situated in Dar Saraya Castle in Madaba.

Area of the historic building: 500 sq. meters

Area of the building after the additions: 860 sq. meters

Category: Legacy

Type of activity: restoration

Responsibility: The Ministry of Tourism and Antiquities of Jordan

Financing: The World Bank

The designer: The Al Bitar Consulting Company

Executing company: The Planner Contracting Company

Starting Studies: 2006 AD

Starting Restoration: October 2008 AD

Completion of Restoration: 2010 AD

Cost of repairs: JD 1000000.

Operator of the project: The *Arabs Canaanites Company*.

3 - 4 Aims of conserving "Dar As Saraya":

The Ministry of Tourism and Antiquities had several reasons for conserving such buildings. Its names are:

- To preserve historical heritage of the building, and to highlight the value and symbolism of the heritage of Madaba through the ages.
- To maintain the building and rehabilitate it to re-use it as a distinguished museum, which will be different from those museums found at Madaba. Further, the proposed use of such historic buildings has social, cultural or economic benefits [18]. In the long run, the buildings will add to the national income, and support development of the society, instead of being only resourced consumer [19].
- To provide the city with a magnet center for tourism by using it as a museum to introduce the history of Madaba to foreign tourists and locals.
- To create a learning center for students in schools to be familiar with the architectural heritage of Madaba.
- To increase the public awareness on the importance of historical buildings.
- To highlight the advantages and positive features of the building and the surrounded environment.

3 - 5 Pre-construction phases of restoration:

The building passed several stages of construction:

1. In 1896 AD the ground floor was built on a high hill. Thus, it views most of the region of Madaba. It formed a series of intersecting vault rooms around the lane heading from North to South, with two entrances ending with an open square.

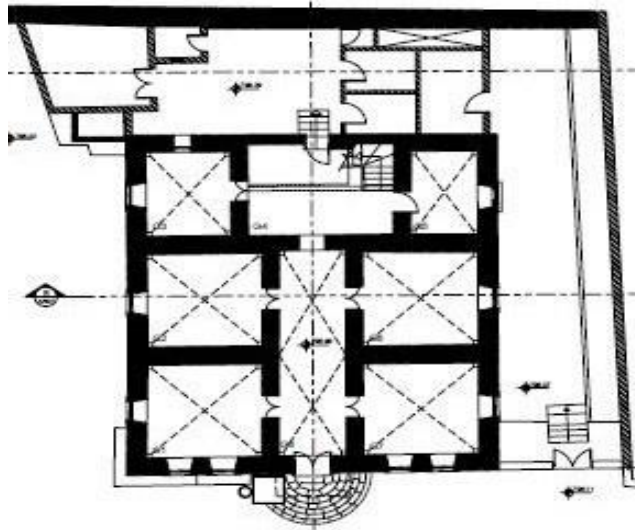


Fig. 3. Ground Floor with the close later addition

2. The first floor was added after 1946 AD, with load bearing walls.

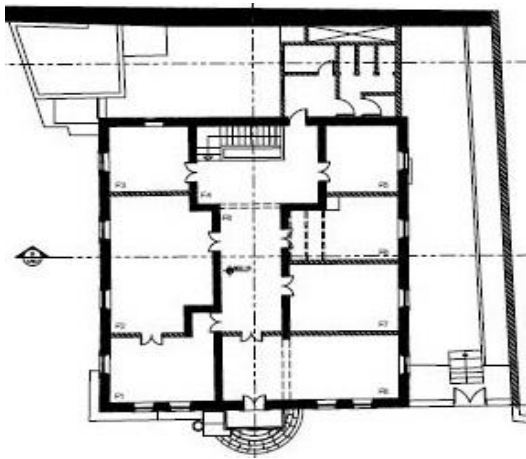


Fig. 4. First Floor with the adjacent later addition

3. An adjacent single floor building was added in the eastern court, and another two-storeyed building was added in the South.

3 - 6 Maintenance stages before restoration:

"Dar As Saraya" passed through several stages of maintenance because it suffered from the cracks resulted from rainwater diverting into the foundation. This weakened the foundation. The maintenance included unloading portion of the foundation and put rebar and injected into the bottom of the reinforced concrete walls.

Another stage of maintenance took place when the authorities dumped around the building, removed the damaged concrete and replaced it with modern tiled floors. Besides, they put cement coverage over the southern facade.

The third stage of maintenance of the building was done after the exposure to a fire in the seventies of the last century.



Fig. 5. First maintenance stage

3 – 7 Uses and Building Materials before Conservation:

The building of "*Dar As Saraya*" is square and consists of two floors:

Ground floor: Used as a police station with a security kiosk on its entrances, the main entrance of the building is facing north. In addition, there is another entrance for service subsidiary on the southern side of the building.

First floor: The spaces in this floor are utilized as rest rooms for the police officers. Though, the entrance of this level is from the backstairs on the southern side of the building.

The building materials used before the restoration are detailed in the following illustration:

<p>The building was built of carved stone and cement mortar.</p>	
<p>Doors and windows were made of iron and steel as well as the kink protection for windows.</p>	
<p>The interior walls were painted with textured plaster, white and colored paint</p>	
<p>Mud and little stones were used in the intervals between the stones during construction.</p>	



Fig. 6. The materials used for constructing the building in its beginning

3 – 8 Restoration and Conservation Process:

The building was restored internally and externally, and the additions were added to the project. Further, the building was converted into a museum to represent history of the city of Madaba.

The building was documented before starting the project. The designers documented floors, elevations, spaces, walls, materials, roof, stairs, doors, windows and surroundings. An example of the documents is as below:

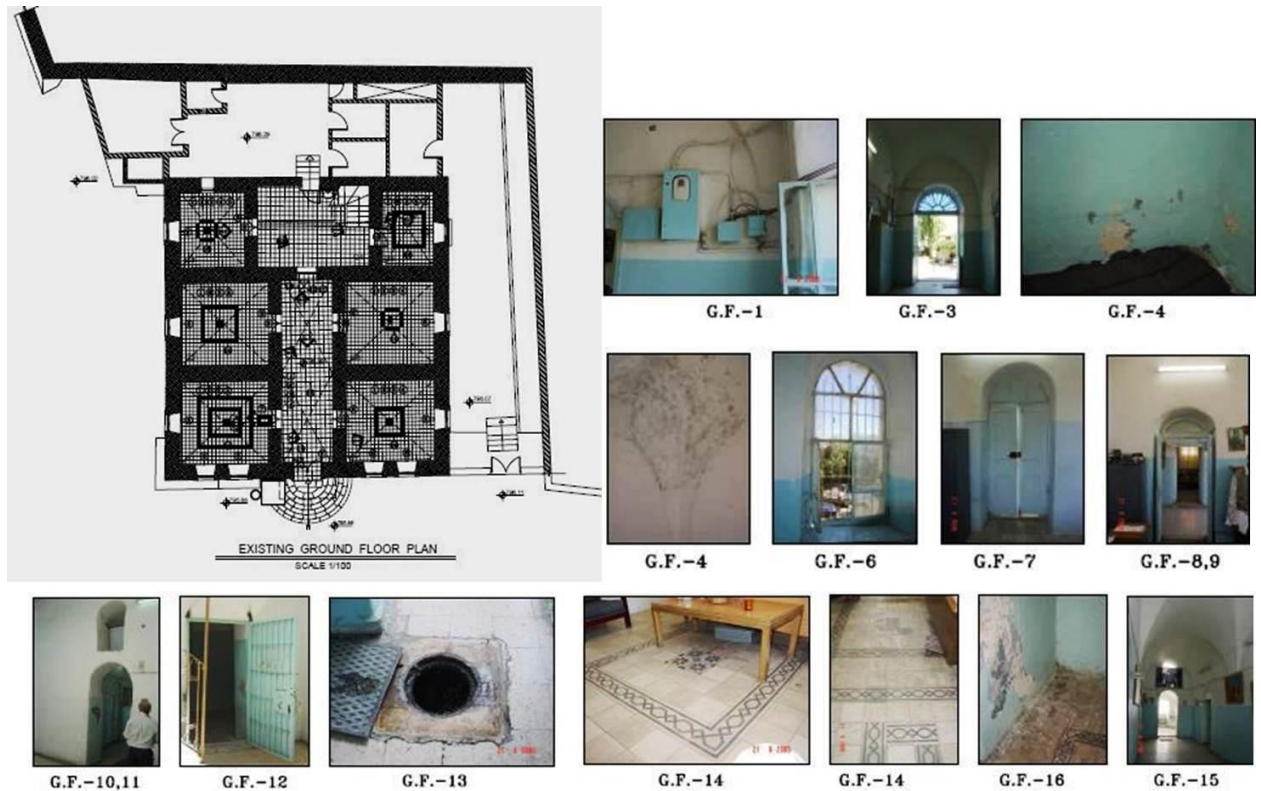








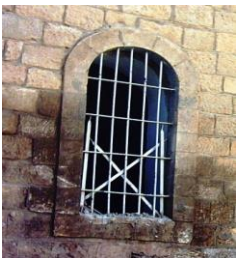
















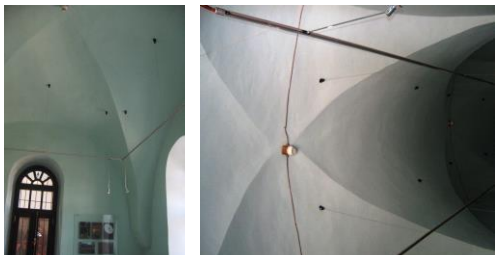
Fig. 7 shows how the designers documented the building. (Bitar Architects & Consultants)

The following table explains the stages of conservation done to the building of Dar As Saraya. It also shows the condition of the building, or parts of it, before and after the conservation.

The latest site plan considers the neighboring fabric; respecting the identity of the area with modernistic necessary additions to fulfill the new use of the building.

Finally, the restoration was completed. The place has a new shape with new modern additions and new use. Nevertheless, it still reminds us about the activities of the 19th century.

<p>Main Entrance</p>	<p>Conservation respected the historical background of the building in all its details in each single stage of its creation</p>			
<p>Entrance Before</p>		<p>Entrance After</p>		
				
<p>Floor</p>	<p>By completing the project, floors and walls were renewable and clean. Designed with the same style and built with the same previous materials.</p>			
<p>Floor Before</p>		<p>Floor After</p>		
				
<p>Windows</p>				
<p>Windows Before</p>		<p>Windows After</p>		
				
<p>Bathrooms</p>	<p>Modern materials were used for bathrooms, stairs and elevator to show the difference and distinction between the old and the new. (According to the designer)</p>			
<p>Bathrooms & Sewerage Before</p>		<p>Bathrooms & Sewerage After</p>		
				

<p>Staircases</p>	<p>Stairs were shaded with a glass umbrella. They were left open from the top to provide lighting and air movement. Further, new materials were used.</p>
<p>Staircases before</p>	<p>Staircases After</p>
	
<p>Stones</p>	<p>External facades were restored by removing the damaged stones, and afterwards replaced. The rest of the stones were renovated, cleaned and returned to their old shape.</p>
<p>Stones on facade Before</p>	<p>Stone on facade After</p>
	
<p>Foundation</p>	<p>Around the damaged foundation they dumped, cleaned the old concrete and replaced it with different reinforcement and tiles.</p>
<p>Foundation Before</p>	<p>Foundation After</p>
	
<p>Electric wiring</p>	<p>The external electric wires we removed; they were re-installed and hidden to preserve the best view of the interiors.</p>
<p>Wiring before</p>	<p>Wiring after</p>
	


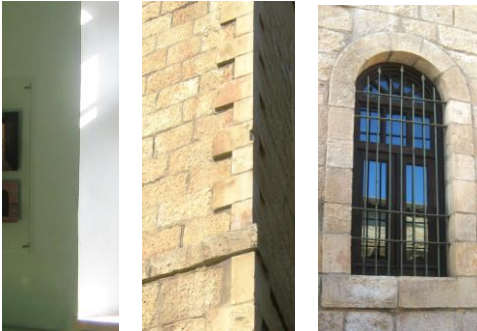

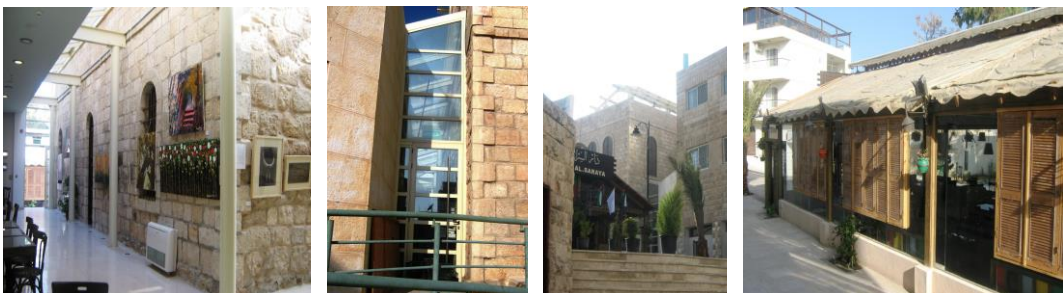


Damaged materials	Damaged materials were replaced with the new ones in the same old-fashioned view. The new materials match the architectural style of the original building.	
Before		After
		
Additions (Materials)		
		
Additions (Arena)	An arena around the building was designed to exploit different activities. The arena was covered with glass to provide proper lighting.	
		
Back elevation & Surroundings		
Before		After
		

Fig. 8 shows the stages and levels of conservation in the project. It also shows the images of the building before and after the restoration

4 – Critique, Conclusion and Recommendation:

Despite all efforts done for conserving historic buildings, a special attention should be paid to eliminating the threats to these buildings. However, several threats were traced while studying Dar As Saraya. Thus, the following threats affect the buildings and their surroundings [20]:

4 – 1 Threats to the architectural heritage and archaeological sites include:

- **Speeded up prices of lands:** The pace of land is hastening at an alarming rate. However, it is difficult to watch all sites to insure there is no significant archaeological fabric present. Thus, these prices and high-speed development stand as a real threat to the Jordanian historic sites.
- **Vandalism and destruction:** Local people used to destroy historic site searching for artifacts. Further, in certain places they used heavy excavating machines to access the site; thereby, damaging all ruins that obstacle their way to the artifacts.
- **Lack of awareness of people:** Usually, artifacts found in the site are worthless in the illegal antiquities market, therefore people used to search for the gold, breaking or damaging all other pieces and artifacts, being priceless in their market.
- **Weakness and difficulties in enforcement of rules:** There are several difficulties about enforcing the rules of antiquities in Jordan, because the society does not consider penalties as a deterrent. Further, there is a real need to have an acceptable law to protect the recent sites and the historic buildings [21].
- **Lack of professional training:** Lack of satisfactory trained professionals is a dangerous threat to the archaeological fabric in Jordan.
- **Lack of proper documentation:** Projects must have proper documentation. Fortunately, Dar As Saraya does not lack proper documentation, it was properly and professionally documented by the designer.
- **Lack of conservation policy:** Jordan needs a comprehensive written policy, which must guide all organizations related to conservation; therefore, different ministries and departments ought to cooperate and coordinate for imposing the national conservation policy.

Fortunately, *Dar As Saraya* did not suffer from lots of the threats mentioned above. This is because of the continuous use of the building during its entire life, what protected it from disturbance and vandalism.

4 – 2 Threats to the urban fabric including:

- **Demolition of significant urban fabric:** The authorities suppose that increasing in automobile number creates the need to demolish some of the existing buildings; obviously, historic ones are not excluded [22].
- **Failure to recognize significance of recent fabric:** Occasionally, buildings are demolished to build modern ones. This is done without considering the historic importance of these structures.
- **Modern development:** The pressure of modern development stands as another threat to the urban fabric, since modern building constructions and projects need to demolish the previous ones. Destroying those buildings is happening without considering the old fabric.

- **Improper modifications:** This is another threat. Therefore It is necessary to implement the proper intervention for conservation. Nevertheless, in Dar as Saraya there was unacceptable treatment for a few stone parts of the building; few parts of the stones have been sand-coated and covered with paints. Further, the additions to the building are in modern style and material; which, according to Fathi and Rafai, did not consider the harmony of the original massing, fenestration or materials of the structure [23].
- **Pollution:** Pollution contributes enormously in deterioration of limestone buildings in Jordan. It is the pollution that produces the acidic precipitation, which, in the long run, converts limestone into gypsum; obviously, the next rain will wash it away. Here it is important to mention that Madaba did not suffer from pollution till the beginning of this century, because it was a small city; however, people nowadays must consider this issue.

4 – 3 Conclusions and Recommendations:

All the above indications recommend the need to have trained specialists in architectural heritage. The country has need of experienced consultants with proper experience as there is difficulty in achieving the required conservation level. Despite the fact that there is an acceptable managerial guidance, there is still no broad experience in conservation.

Architectural Heritage in all developing countries is in danger, Jordan is not an exemption. Conservation is mainly threatened by the rapid growth of population, pollution and lack of awareness of the importance of conservation.

In spite of all work done for conservation of Architectural Heritage in Jordan, there is a need for improvement. Hence, to accomplish that, the following recommendations are to be taken into consideration:

- Land use plan within the historic areas, either in Madaba or in other cities should be strictly monitored and controlled.
- Educating people concerning the importance of the architectural heritage is essential, which is to be done through the radio and television. It is necessary to implement all means of education to promote public awareness.
- Experiences of other nations and the lessons of history are to be understood in order to achieve improved techniques, methods and results in conservation.
- Efforts of government and the private sector must be coordinated. Therefore there is a need for an organization which should coordinate the conservation work done by such associations. This organization should coordinate, control, monitor and evaluate the conservation at each stage.
- Centers for training people to maintain architectural conservation should be encouraged and supported.
- There should be strategic policies identifying specific priority action; and wider planning studies to produce a structure plan for the city. Further, the authorities must conserve other individual historic edifices in the city, especially privately owned ones; this can be done through the involvement of owners of these buildings.
- Finally, the density of population in all major city centers must be reduced by relocation of commercial centers and different industries.

References:

1. Harding, Lankester G; 1965; **The Antiquities of Jordan**, Lutterworth Press, London, England, P. 22.
2. Department of Statistics, 2014, Government of Jordan. Available at: http://www.dos.gov.jo/dos_home_e/main/index.htm
3. Mahadin; Kamel, 1993, **The preservation of Jordan Cultural Heritage**, Symposium on the Conservation of Architectural Heritage in Jordan and the Arab World 20-25 November, 1993, p. 14.
4. Fielden, Sir Bernard; 1989, **Guideline for Conservation**, (New Delhi, India,), Passim.
5. Fitch, James Marston; **Historic Preservation**, 1990; Curatorial Management in the Built World; The University Press of Virginia; USA; P.46.
6. Ibid, P.46
7. Ibid, P.46
8. Mahadin; Kamel, O p. Cit, p. 3
9. An Nahas, Sami Salama, **History of Modern Madaba**, 1987, 1st. Edition, Ad Dar Al Arabiya Printing Press, Amman, Jordan, P. 8.
10. Al Uzaizi; Rox Bin Zaed, 1985, **Madaba in History**, University of Jordan, Amman, Jordan, P.154.
11. Harding, Lankester; **Op Cit**. P. 66.
12. Saba, George; and Rox Al Uzaizi; 1961, **Madaba in History**, Francis Fathers Press, Jerusalem Palestine. Passim.
13. Al Zubi, Yahya and Suad al Shehab, 1995, **Characteristics of the Traditional Houses in Madaba**, Ad Dustour Printing Press, Amman, Jordan, P. 26.
14. An Nahas, Sami Salama, **Op. Cit**. PP. 48, 49, 50.
15. Harding, Lankester; **Op Cit**. P. 67.
16. Muath, Saifuddin and others, 2011, **Architectural heritage in the Hashemite Kingdom of Jordan**, Scientific Royal Society, Alsafeer Printing Press, Amman, Jordan, PP. 5,15.
17. An Nahas, Sami Salama, **Op. Cit**. P. 99 FF.
18. Mustafa, Bassam M, 2010, **The Economic Role of Rehabilitating Historical Buildings**, Proceeding of the First International Conference of Architectural Heritage in Islamic Countries, Riyadh, Saudi Arabia.
19. Noor Ed Din, Mohammad Imad, 2011, **Conservation of buildings by Rehabilitation**, Research Papers on Architectural Heritage for the National Built heritage Forum, Jeddah, Saudi Arabia, P. 219.
20. Mahadin; Kamel, 1993, **The preservation of Jordan Cultural Heritage**, Symposium on the Conservation of Architectural Heritage in Jordan and the Arab World 20-25 November, 1993, P. 7.

21. Palumbo, Gaetano, 1992, **Proposal for a Comprehensive Legislative Approach**, Unpublished lecture given at Friends of archaeology in 7th. December, 1992, Amman, Jordan.
22. Mahadin, Kamel, 1993, **Regional Architecture in Jordan**, Architecture Development in the Muslim World, York, P.10.
23. Fathi, Ihsan and Taleb Rafai, 1992, **Traditional Houses in Amman**, Department of Architecture, University of Jordan, Amman, Jordan.

DATA ABOUT THE AUTHORS

Saqer Mustafa Sqour

PhD. Assistant Professor in Architecture, Department of Architecture, Engineering College, Al al-Bayt University, Mafraq, Jordan
e-mail: saqer_sqour@yahoo.com

Muhannad Tarad

PhD. Assistant Professor in Architecture, Department of Architecture, Engineering College, Al al-Bayt University, Mafraq, Jordan
e-mail: saqer_sqour@yahoo.com