

# CONSERVATION OF URBAN HERITAGE IN HISTORICAL CENTRES OF CONTEMPORARY CITIES

KABILA FARIS HMOOD

Department of Architecture, Al-Zytoonah University of Jordan, Jordan

## ABSTRACT

Cities with no memories certainly miss the joy of presenting the past and, as a result, struggle to dream of building their future. The aim of this research stems from the importance of urban and architectural heritage in historic districts of cities in the present and future. This importance leads to sustainable development, which satisfies the needs of the present and protects future rights. Also, it highlights the importance of studying “urban conservation”. Moreover, there is an increasing population growth which causes expansion in contemporary cities; the reason behind this is the rapid expansion of modern urban, commercial and residential land use towards the historical centre of cities. The findings of this research confirm that orientation, which is accentuated in the present, is necessary to link the conservation of the old and planning for the contemporary projects in a unified architectural and constructional policy. The comparative research methodology uses an analytical approach through many successful and unsuccessful experiments and attempts to answer several questions, such as: What is urban conservation? How do cities of historical depth deal with modern planning? What should we do as we face the rapid increase in modern needs in the present? What are the reasons behind the loss of urban heritage? Why does urban heritage decrease, particularly in Arab cities? Finally, the research reaches its conclusions and possible recommendations. This paper shows that preventing the new residential expansion or any other modern function in the historical centre is a must unless done to create a balance between the old and contemporary through rehabilitating and investing in the heritage. *Keywords: policies of urban renewal, rehabilitation, historical cities, urban and architectural heritage, urban conservation, urban fabric.*

## 1 INTRODUCTION

To enable cities to grow in a correct organic way, we need, according to researchers, to create suitable social and natural conditions which help the residents’ emotional, historical and cultural attachment to their cities. Also, we have to link a city’s cultural heritage and its modern architectural planning [1]. It is important to note that preserving cities has become a goal for many. Therefore, concerned agencies struggle with negligence, pollution and destruction. These agencies focus on harmonising the necessities of protecting the urban and architectural style in which cities and traditional spaces derive their original values. The reason for those agencies’ existence, along with reviving these urban spaces and merging them through modern dynamics, is that they adapt to the development of individual and group lifestyles and meet their modern needs [2].

## 2 URBAN CONSERVATION

Urban conservation is “the process which cares about the quality of the urban environment, through putting a program which helps protect cities and urban areas, along with excluding these areas from environmental and visual pollution” [3]. Based on the expansion of the city’s historical centre, urban and architectural conservation has become essential. That is because urban and architectural conservation is attached to the urban fabric, not just buildings. Accordingly, the first step is planning the conservation and modernisation processes. To avoid errors in urban planning, it must be ensured that errors are committed when considering individual buildings as cultural topics, not as parts of a whole. The increased attention given



to residing in the cities' historical centres, is not only due to socioeconomic reasons but also some facts relating to the context and environment, which are as follows:

1. The cities' historical centres are a fabric of buildings and roads from different periods creating a diverse structure in its culture and architecture.
2. Correct urban conservatism makes the historical centre the focus of cultural events, so it is not just limited to residential interest. If the conservation is incomplete, we may lose more cities and their inherited urban and architectural structure.
3. Modern pressures, including commercial expansion, in which the land uses are different along with transportation and overpopulation.

All these purposes create a burden, which affects the city's infrastructure. As a result, the city's traditional service axis expands severely, not to mention the random architectural expansion, which requires taking all the measures that can help preserve buildings and their urban cultural context [4].

##### 2.1 Successful universal experiments (old and modern)

In this section, this paper tries to answer the question: What should be done as we face the rapid increase in modern needs in the present? it mentions some universal experiments which has successfully achieved harmony between the old and modern. Fig. 1 illustrates one of the universal experiments conducted to add the modern element to the cultural heritage centres of cities. It can be noticed that the traditional architectural fabric is maintained. For instance, the architectural expansion is seen in the city of Leipzig. The conservation of the inner order of urban fabric and the heritage is lost for reasons beyond human control. This means the preservation of the urban structure and the weaving of roads and historical buildings are ignored. The local historical network has been studied, and the decision was taken to preserve some public buildings with the main divisions of the city. It was also decided to overlook the minor subdivisions to create the needed harmony between the modern and old through a complete overview of the urban fabric. This decision stems from the correct understanding of urban contexts, which leads the planners to integrate the new within the old. The application of such a method is evident in European cities, such as Vienna (Fig. 2), Paris (Fig. 3), London, Boston and Danzig (Fig. 4). Despite the need for quick construction and satisfying the needs of society after World War I and II [4].

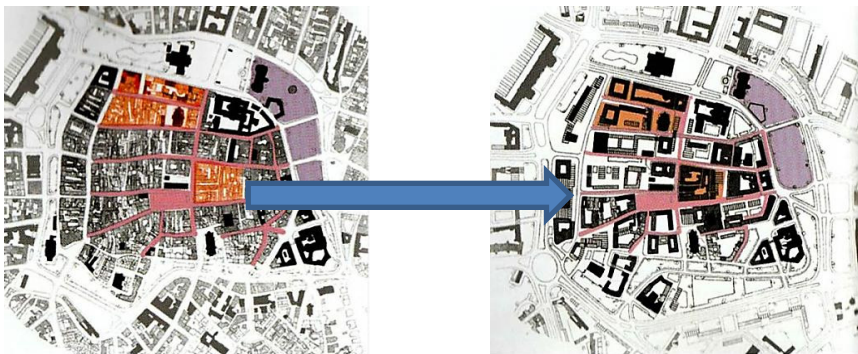


Figure 1: The importance of preserving the traditional urban fabric, at least in the case of losing the heritage and adding the modern element: Leipzig city.

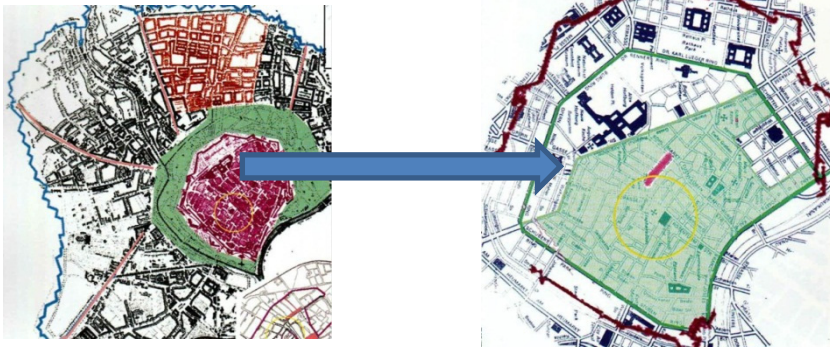


Figure 2: Vienna, with its improvement and apparent harmony between the old and modern by preserving its essential monuments and morphologies.

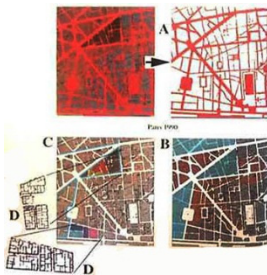


Figure 3: Paris, its main roads network, development, and growth.

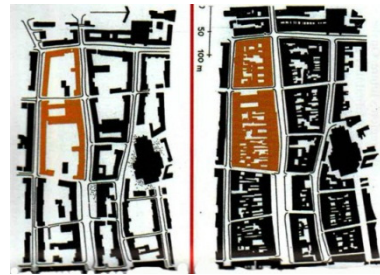


Figure 4: Harmony between the old and new, with preservation after war damages in the city of Danzig in the north of Poland.

After World War II, the attention of European countries shifted towards historical neighbourhoods and areas. Before that, their attention was limited to important historical buildings in the urban fabric. European countries have taken quick and favourable policies towards protecting their cultural and architectural heritage, such as the preservation policy. This policy cares for the urban, social and economical environment to preserve its buildings, urban fabric and style of the old city as a historical symbol, which should be kept in its original form. When historical buildings are reused, their inherited heritage and fabric to fit the current era without affecting the external appearance of the building, it creates an investment opportunity for the heritage through the reuse policy. Rehabilitation policy is evident and applicable when the preserved building is open to its external surroundings. That is done to increase its economic and social standards through intervening in the inherited buildings from one side – i.e. restoration, renewal, protection, maintenance and reusing – and protecting its historical contexts from another. It is necessary to put standards to ensure the permanence and continuance of buildings in their architectural frame by applying the protection policy, which is connected to the restoration and renewal policy of legacies [3]. Accordingly, the old urban structure must be preserved while constructing new buildings, not to mention the importance of harmony while constructing new buildings between the ancient

and modern architectural styles. In Paris, it is evident that there is a synchronisation between its urban structure, the streets of the 19<sup>th</sup> century with the system of the current streets, and the harmony between the various architectural styles. Accordingly, urban conservation in historical cities during their expansion attempts to meet the era's demands, which can be achieved by applying urban renewal policies. Urban renewal policies aim to maintain the urban fabric and structure of the inherited cities, with the urban infill of modern demands, without ignoring the harmony in the buildings' architectural style and their valuable surroundings. In Ulus, Ankara, Turkey, it can be seen that the urban structure and road networks are used while maintaining unique buildings and limiting vehicle entrance times to those roads. This solution for conservation is convenient, especially when municipalities decide to open the city as a tourist attraction site by preserving its heritage without adding any modern elements to it. At the same time, municipalities tend to apply rehabilitation, which meets the modern needs of the residents.

Fig. 5 shows the city of Ulus, besides some examples of cities that are aware of the importance of conserving their urban heritage and the architectural one (Alicante, Spain; Granada, Spain; and Baku, Azerbaijan, old city centre) [5]. The findings of this research confirm the orientation accentuated in the present is necessary to link the conservation of the old and the planning for the contemporary projects in a unified architectural and construction policy. The main reason behind this policy is the city's incapability to separate old urban fabrics from modern constructive needs, which is accompanied by the essential planning for contemporary constructional fabrics.

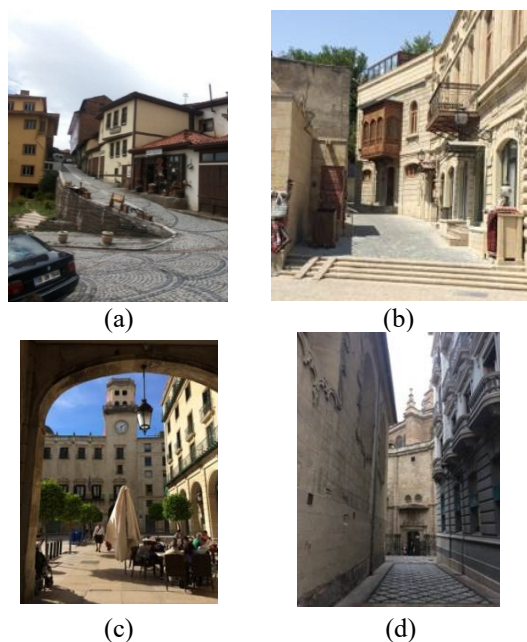


Figure 5: Examples of cities aware of the importance of conserving their urban heritage and the architectural one. (a) Ulus in Ankara, urban conservation is evident while modern elements are present in a way that adapts to the old structure; (b) Baku, Azerbaijan; (c) Alicante, Spain; and (d) Granada, Spain.

## 2.2 Urban conservation: Arabian experiments

Arabian cities have gone under many long historical periods, combining old and modern structures in their urban fabric, as shown in Fig. 6. Overpopulation and intense competition between modern functions have been created, primarily residential and commercial uses, architectural heritage and urban structure. In contrast, the modern architecture movement had significantly caused the loss of whole inherited neighbourhoods when the residential function expanded towards the historical centres of these traditional cities. The conceptual design approach in Arab Islamic cities can be better understood in a broader framework concerning the relationship between social structures and spatial forms, with a correlation between spatial organisation and the patterns of social relations. In these traditional Arab cities, according to the socio-spatial character of their structure, the “social logic of space” is defined by looking at the possible social dimensions of the prevailing spatial properties. Specifically, potential implications of layout structure in the movement patterns of users are explored by differentiating between the more permanent users, inhabitants who may be assumed to have a reasonable full knowledge of the system, and the strangers who know it less fully [6]. Based on the overpopulation in cities and their expansions, urban conservation and policies have become a necessity, and the role of the inherited urban structure cannot be ignored. In some modern cities, especially Arab ones, urban policies are needed to stop the deterioration and extinction of the inherited urban fabric. Thus, it is necessary to create an integrative harmonic situation between old and modern areas in the urban fabric. This process has to begin by studying the economic, social, historical, and artistic aspects to contemplate the city’s economic events, residents’ population, their social relations, and the historical and artistic importance of its buildings. In addition, there is a need to identify its features as an individual composition of the inherited buildings and as a complete urban context. Also, it is essential to gather information about the archaeological importance of the cities. Information gathering for this purpose can be done by studying their inherited buildings, history,

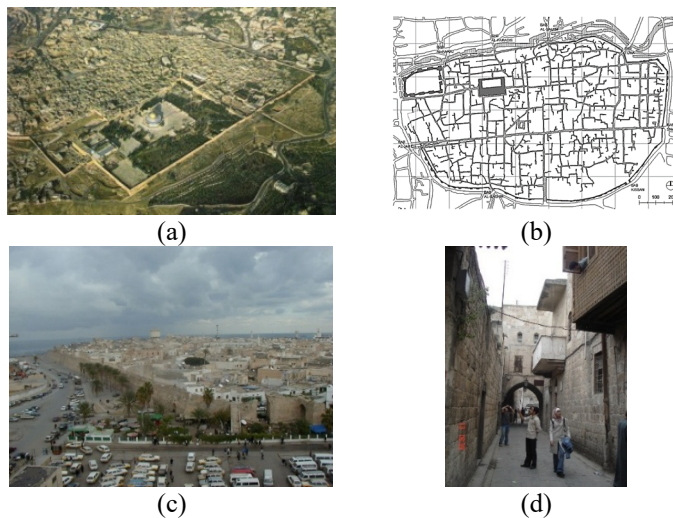


Figure 6: Example of Arabian cities with an urban fabric of historical centre. (a) Jerusalem; (b) Damascus, Syria; (c) Tripoli, Libya; and (d) Aleppo, Syria.



architectural style, and artistic elements and executing archaeological mining in chosen locations from the old towns [3], [7].

### 3 LOSS OF URBAN HERITAGE, PARTICULARLY IN ARAB CITIES

With the delay in practising comprehensive planning processes, the inherited urban fabric has become threatened by many factors. These factors can be summarised as follows:

1. The rapid change in the modern Arab's needs exceeded the speed of change in the urban fabric, which has created a gap between the needed contemporary function and the inherited style. As a result, it is causing unjustified destruction of some inherited planning units, making them harmonise with the new functions.
2. Investment also threatens the inherited urban fabric. As the competition between different functions increases, the importance of central areas in Arab cities, mainly functions that can increase the value of the land, property or rent, to achieve the highest profit increases. Usually, this kind of investment may destroy the existing heritage.
3. The exacerbation of traffic problems in central areas of Arab cities had degraded its streets, roads, and alleys; meanwhile, historical cities in developed countries started to close these areas for vehicle movements.
4. Most developing Arab countries do not have master plans to protect the heritage or have been applying westernising strategies to their cities in terms of development, not preserving the city's architectural and planning identity and maintaining them. All this has led to the negligence of inherited urban areas in the Arab region [8].

These are the primary associated policy factors behind the loss of urban heritage in the Arab region. Still, many other natural and human factors undeniably influence the loss of architectural and urban heritage. However, this research paper chose to analyse the reasons connected to the loss of inheritance due to residential expansions with the official planners avoiding the loss of significant heritage. Some architect specialists present many human threats that potentially cause harm to the inherited urban fabric. One possible threat is the lack of correct planning, which creates a gap between the needed function and the inherited style. Another threat is the diminishing of heritage, which is connected to several obstacles, both natural – internal and external, and human – intentional and unintentional. Also, the owners of inherited buildings are unaware of their value, causing their loss and a lack of social awareness about their historical background [8], [9].

### 4 URBAN POLICIES OF SOME ARAB CITIES “DUAL CITIES”

Arab cities that combine old and modern structures in their urban fabric and need to meet their residents' demands have varied in their urban policies. For instance, Side Bou Said city in Tunisia uses the method of preserving the structure of the whole city without removing or adding any new elements. However, the city modulates and rehabilitates its original form, considering it a tourist attraction that serves the tourism and current residential needs. Another example, in the cities of Sousse and Fez in Tunisia, the method of preserving the old structure while corresponding to both cities' development needs to construct new buildings using the same materials, architectural style and height, as shown in Fig. 7. The old structure has been separated from the modern one by maintaining sufficient space between them. These examples illustrate the concept of “dual cities” in which the old parts preserve their architectural style while the modern part of the city is being developed in the same heritage style. This concept likely leads the city's residents to immigrate towards modern residential style cities, therefore losing the essential sustainable city elements: its residents. In the city of Constantine in Algeria and the Algerian capital Algeria, especially in historical centres,

the conservation of the urban structure, road networks and particularly the urban design of buildings, and the modern elements through urban infill are evident (Fig. 8).



Figure 7: Tunisia's cities preserve their architectural and urban structure and the network of roads in the traditional city. (a) The city of Sidi Bou Said, Tunisia; and (b) The city of Sosa, Tunisia.



Figure 8: Urban conservation in Constantine, and Alegria, the capital of Algeria, historical centre. (a) Algeria, the capital of Algeria; and (b) Constantine, Algeria.

## 5 LOSS OF URBAN HERITAGE, PARTICULARLY IN BAGHDAD: MODERN AND OLD

In the inherited city of Baghdad, the loss of the architectural and urban heritage is found, as appeared back in the first decades of the 20th century. An example of splitting streets at the core of urban fabric is when Baghdad municipality, in 1921, expanded Al-Rasheed Street – initially constructed by the Ottoman ruler Abd Al-Wahhab Basha (1904–1905) – which destroyed a significant part of Murjan mosque and school, which were built in 1354. The heritage destruction in the 20th century does not stop here. Al-Kholafaa Street has also been split, parallel to Al-Rasheed Street at the rubble of the aged homes, which are decorated by their welcoming courtyards and pretty “Shanasheel”. Iraqi architect Dr Mohammad Makkeyyah spoke about his unique experience dealing with the Al-Kholafaa mosque as an ancient Abbassid monument. He was asked to revive the mosque for its religious and social role during the 1960s.

“I was asked to rehabilitate Al-Kholafaa mosque and its minaret at the centre of Baghdad, which is the house of the Abbassid Caliphate. Its duties were carried out through Al Baghdadi and Alaal Sababeeh neighbourhoods. With time, the market dominated the area, and nothing was left of the mosque and its minaret except approximately 1600 square meters. Despite the small area given for the project, I tried my best to benefit from every span. Therefore, the first concern was to try preserving the pillar tower of the minaret and protect its figure in the space of the high surrounding buildings, in addition to surrounding the minaret and mosque with a space, protecting them from the construction around them”.

He continues his speech:

“I suggested closing the street known as the Republic Street, to create a square which suits the historical mosque’s status, and achieving the car movement from under the square”.

However, in reality, this main street, along with its subdivisions, extinguish Baghdad’s natural and historical fabric, in which the mosque and its minaret were the centres of the old days [3]. Fig. 9 shows what took place in Al-Kadhimiya, due to the expansion of the service functions over the traditional urban fabric. Fig. 10 shows the residential project in Haifa Street, which gives a clear example of heritage loss in Baghdad. Al-Kadhimiya mainly suffered from abstracting the traditional homes surrounding Al-Kathemi Shrine during the late seventies in the 20th century. This abstraction was done to construct a multi-floor car parking, which has not been completed until this day. The area was spacious surrounding the shrine, built on the rubble of traditional houses. Even though the residents were compensated, nobody compensated Baghdad and Al-Kadhimiya for their lost heritage.

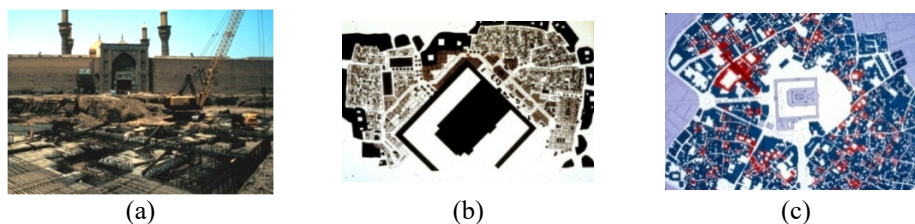


Figure 9: Al-Kadhimiya city in Baghdad. (a) An archived image shows the urban fabric around Al-Kathemi Shrine after removing and destroying the traditional houses; (b) and (c) Satellite maps showing Al-Kadhimiya city, Baghdad, before and after the abstraction and destruction of the urban fabric around Al-Kathemi Shrine.

In Hayfa Street, two multi-floor residential buildings were constructed, separating the residents and the building masses occupying spacious lands. Fig. 10 shows Hayfa Street, cutting the traditional urban fabric in the eighties of the 20th century. Consequently, this caused a loss of the inherited heritage in Al-Karkh on the west side of Baghdad. These figures also show the width of the street and how it shreds the traditional urban fabric transforming the area into a group of scattered islands.





Figure 10: Haifa Street [3].

## 6 HAIFA RESIDENTIAL COMPLEX IN BAGHDAD

Haifa residential complex is located in Al-Karkh in the western part of Baghdad, with eight complex parts. Sector (8) comprises nine 15 floor residential flat buildings [10]. Haifa residential complex is made of high separated residential masses – 15 floors – and lacks any idealisation structure in combining residential buildings. These residential buildings can be divided based on their height or methods of gathering into the following types:

1. High-rise residencies: high-altitude buildings as high as ten floors.
2. Low rise residencies: average altitudes buildings of two to ten floors, gather around open spaces for residential service, shared parking lots and a service centre for activities.

These residential are more personal and socially connected; they have a private urban identity and an ability to organise their open spaces. As Thompson sees it, it increases the interaction between its residents and the environment [11], [12]. In contrast, Iraqi architect Mo'ath Al-Lousi, who was assigned to design residential buildings on Haifa Street, mentions in his book "Nostos. A Tale of a Street in Baghdad" his attempts to transform Haifa Street from a "monster" which has enormous buildings that violate the traditional fabric of Al Karkh. Mo'ath's attempts trigger a debate about how this change would have affected the traditional fabric if it was not for Mo'ath's efforts. In the book's first chapter, the designer describes the traditional area of Al-Karkh. "The Karkh development project, specifically the area that was removed during the mid-1950s, destroyed a distinct architectural fabric that can be seen in the mosques, public baths, markets and activities on both sides of Baghdad – both sides of the Tigris. A genuine lifestyle has been forever lost, without documentation". The designer of Haifa's buildings agrees that the traditional urban fabric has suffered a significant loss and extinction. In the sixth chapter, he also mentions that his office was invited to participate in an architectural competition to find architectural solutions for a street in central Baghdad Al-Karkh. It is an extension of a project erected by the capital's municipality for nine buildings with fifteen floors on one street. The author describes the 15 floor residential buildings as he says:

"The fifteen-floor buildings will seem like bizarre pilings in Baghdad's sky; nine of which are in front of Sheikh Sandal's mosque, near the districts of "Al-Falahat" and "Al-Fahama". It is considered an unusual urban fabric compared to its surroundings" [13].

What can be seen today in Haifa Street (Fig. 11) is after modification of what was initially planned and after Mo'ath Al-ALousi's efforts. Therefore, an important question arises: What is the architectural relationship between old and modern could have been?



(a)



(b)

Figure 11: Residential buildings in Haifa street, reduction of the traditional fabric, and the contrast to the city's horizontal horizon can be noticed. (a) The residential buildings in Haifa Street, which heightened in contrast to the city's skyline; and (b) Haifa street during its construction. The reduction of the traditional fabric can be noticed. (Source: Google Images.)

Al-Alousi [13] continues talking about the disadvantages of construction on Haifa Street. He says:

“Haifa project had many flaws: the absence of open spaces which balances the residential population, it lacks for parking lots, and it has a shortage in public parks. Therefore, construction officials inserted designs of parks and short columns to prevent cars from parking on the side streets, protective fences, wastebaskets, shades for the traffic police and terraces for sitting”.

In addition to what Haifa Street development project raises, it has destroyed multiple traditional fabric components, whether during the first splitting of the street in the eighties or while rising residential buildings stole their architectural identity from their surroundings. Sadly, it wasn't a successful residential complex. In the author's recent visit to Haifa Street, Baghdad in July 2021, the author observed (Fig. 12) the absence of traditional buildings obstructed by negligence, immigration and lack of harmony with the high crates that have



(a)



(b)



(c)

Figure 12: Current worn-out state of some traditional homes on the side of Al-Karkh.

been built near these traditional fabrics. This modernisation cuts the ties between them without mercy, becoming lost and marginalised. Thus, by evaluating Haifa Street residential complex, there are many disadvantages, some of which the author has documented with pictures. It is evident and can be seen that the street struggles to maintain the traditional heritage houses and has become deserted (field visit: July 2021).

## 7 DISCUSSION

This analytical study argues, socially, that such residential complexes weaken the relationships between residents, decrease their connection, and make children more isolated. The social separation between the new and original inhabitants through the new residential buildings has become a barrier burdening them. Research notes that gathering homes around central yards motivates social interactions. The residential complex in Haifa Street can not be considered an actual residential complex; it is the linear gathering of residential masses separated from each other, parallel to Haifa Street, separating the original inhabitants. Even though these residential buildings are isolated from vehicle movements, they lack open spaces suitable for all ages. Haifa Street is a residential complex that lacks privacy because it allows strangers to enter the area since it is constructed on a public street, even if the responsible architects tried to elevate the ground floor apartment and separate the parking level from the entrance level. What has a negative impact on the use of open spaces is the separation of masses from each other and the absence of interaction between them architecturally, which leads to the lack of social connections between residents, contrary to the solid social relations in the traditional urban fabric which has been removed. These residential buildings were erected along a broader area. They lack green places and trees, considered the main factor for adapting to the climatic environment that corresponds to the residents' needs. Therefore, Haifa Street experiment caused a loss of the inherited urban fabric and has not achieved a satisfactory residential complex. The loss was double; it has not acquired the connection between the old and modern, nor has it accomplished the needed link between the built masses and open spaces in the residential complex.

## 8 CONCLUSION AND RECOMMENDATIONS

The issue of constructing modern cities and the vast expansion in current cities forces us to study their urban fabric and characteristics. They also allow us to research conservation possibilities of what must be preserved and rehabilitated. Attempts to protect historical centres of Arabic cities are very few. Even though preserving the heritage highlights the historical identity, spreading archaeological awareness and developing the society's overall conservation spirit is necessary. Increasing population intensity in historical boroughs generally does not comply with urbanism principles. Along with their transportation facilities and the additional functions and population loads, such boroughs in the city centre will inevitably become unsuitable for accommodation. This paper recommends the following:

1. Confirming the necessity of inclusiveness in the urban renewal policies, including the building conservation process. (i.e. reviving the inherited architectural fabric through holding activities and applying different renewal policies).
2. It is necessary to study the environmental importance of the old city, its open spaces, gardens and infrastructure, engage residents in developing protection plans in cooperation with the specialised authority, and encourage tourism to the old city without damaging its features. These steps allow residents to gain economic benefits from the tourism income and that their traditional possessions are worth protecting.
3. The tendency of the people in charge towards protecting the old buildings alone, without focusing on their surroundings, structure, old urban and architectural morphology, road



networks, masses and their important monuments, led to the destruction of many alleys and roads and neighbourhoods.

4. Old cities need specialised authorities monitoring them and stopping attacks. Also, such authorities must contact organisations, such as UNESCO, Arab Towns Organisation, Aga Khan Agency, etc. And hold yearly scientific conferences in which modern planning issues are discussed.
5. Preventing new residential expansion or any other modern function in the historical centre, unless done in a way that creates a balance between the old and modern, through rehabilitating and investing in the heritage.

Lastly, this is not a call for imitating the past blindly. Instead, it calls for harmonising the old and dealing with it as an essential part of the city's history. Only then communities can benefit from such historical momentums in the future. This paper found that humans are responsible for achieving a new urban pattern, which successfully connects the old with the new. Then when any new construction is taking place, it must be studied and planned ideally. Therefore, the new element can be seen as an infill pattern for the old, resulting in its success. Besides, attention must be paid to the urban fabric surrounding the city to prevent architectural isolation between what is planned and its context. Based on the previous, the clarity of the goal and correct understanding of the masses' relationship with open spaces, then understanding the surrounding context gives integration in the decision-making process. Also, the key to achieving successful urban conservation is in the understanding of the appropriate approaches towards tackling the complex issues of the "living city" as in all contemporary cities with historical centres, especially in the Arab world and developing countries.

#### REFERENCES

- [1] Ahmad, N.H., Harmonisation between the urban planning and the Arab city's historical context. *The Architectural, Scientific Journal*, **1**(4), p. 67, 1988.
- [2] Al-qozairi, S.K, Conservation of old cities, general introduction from the conservation of old cities. *The Organisation and Supervision Committee of the Old City of Benghazi*, Benghazi, pp. 17–22, 2007.
- [3] Al-Maliki, K.F., *The Arabic Urban and Architectural Innovations*, 2nd ed., Al-Waraq Publishing Agency: Amman-Jordan, pp. 30–293, 2021.
- [4] Cohen, N., *Urban Planning Conservation and Preservation*, McGraw-Hill: New York, pp. 11–94, 2011.
- [5] Hmood, K. & Disli, G., Sustainable development of urban conservation heritage: An analytic study of Kursunlu mosque in Ulus, Ankara. *Sustainable Development and Planning*, **14**(3), pp. 273–288, 2019.
- [6] Dabbour L.M., Morphology of quarters in traditional Arab Islamic city: A case of the traditional city of Damascus. *Frontiers of Architectural Research*, **10**, pp. 50–65, 2021. [www.keaipublishing.com/foar](http://www.keaipublishing.com/foar).
- [7] Feilden, B., *Introduction into Conservation*, UNESCO Press: Rome, p. 34, 1979.
- [8] Al-Maliki, K.F., *Arabic Urban and Architectural Heritage Conservation, Maintenance and Rehabilitation*, 2nd ed., Al-Warak Publishing Agency: Amman-Jordan, pp. 34–57, 2011.
- [9] Al-Maliki, K.F. & Al-Bayati, N., Conservation and rehabilitation of traditional buildings. *The Arabic Universities Union Journal*, **1**(7), pp. 130–131, 2000.



- [10] Al-Hadidi, A., The open space in residential compounds: Spatial organisation and its affect in developing social relations communications between residents. Master's thesis, Faculty of Engineering, Architecture Department, University of Baghdad, p. 137, 2001.
- [11] Hornbeck, J.S., *Apartment and Dormitories*, McGraw-Hill: New York, p. 16, 1998.
- [12] Tandy, C., Handbook of urban landscape. *The Architect's Journal, Technical Section*, The Architectural Press: London, p. 158, 1978.
- [13] Al-Alousi, M., *Nustus: A Tale of a Street in Baghdad*, Al-Remal Publishing Agency, Cyprus: Amman, Jordan, pp. 20–169, 2012.

