



## Deterioration of the Urban Heritage Fields Case study of Bordj Zemmoura City -Algeria

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**Abstract:** The paper deals with the issue of the deterioration of the urban heritage fields of the city of Bordj Zemmoura, which negatively affected the social and economic characteristics of the population and the identity and privacy of the field, which represents the problem of the research, where we addressed it by diagnosing this case and identifying its various manifestations on the built and non-built field, leading to its material and immaterial causes. The main objective of the research is to build an informed base for the phenomenon of the deterioration of urban heritage fields in general and the city of Bordj Zemmoura in particular, and to identify the factors causing it to help develop effective solutions to reduce its effects in urban reality. It also ends with monitoring the most important results represented in the deterioration of the urban heritage field of the city of Bordj Zemmoura is caused by the first is the urban expansion practiced by the residents randomly without taking into consideration the regulation and the current laws.

**Keywords:** urban deterioration; urban heritage fields; City of Bordj Zemmoura; cultural identity; urban expansion.

**Détérioration des espaces du patrimoine urbain, étude de cas de la ville de Bordj Zemmoura - Algérie**

**Résumé :** L'article aborde la question de la détérioration des espaces du patrimoine urbain de la ville de Bordj Zemmoura, qui a affecté négativement les caractéristiques sociales et économiques de la population et l'identité et l'intimité de l'espace, ce qui représente le problème de la recherche, où nous l'avons abordé en diagnostiquant ce cas et en identifiant ses différentes manifestations sur l'espace bâti et non bâti, conduisant à ses causes matérielles et immatérielles. L'objectif principal de la recherche est de constituer une base informée sur le phénomène de détérioration des espaces du patrimoine urbain en général et de la ville de Bordj Zemmoura en particulier, et d'identifier les facteurs qui le provoquent pour aider à développer des solutions efficaces pour réduire ses effets dans réalité urbaine. Il se termine également par le suivi des résultats les plus importants représentés dans la détérioration de l'espace du patrimoine urbain de la ville de Bordj Zemmoura causée en premier par l'expansion urbaine pratiquée par les habitants, loin des réglementations et des lois applicables.

**Mots-clés :** détérioration urbaine, espaces du patrimoine urbain, ville de Bordj Zemmoura, identité culturelle, expansion urbaine.

## Introduction

In an era characterized by globalization, modernity and openness, the study of urban heritage fields is gaining great importance to researchers in various sciences, we find Marc Cote (1993, p.03) in geography, Bilal Zarouali and Arada (2021, pp.374-394), Lulwah Adel Alsulaim and Waleed Saad Alzamil (2021), in architecture and urbanism. The methods used in their research varied according to the objective they aspired to. The importance of these fields stems from the fact that they reflect the cultural identity of their residents and embodies their civilizational values with its religious, cultural, social, economic, political and environmental characteristics throughout the eras, where it was an expression of the resident's local lifestyle and a part of their daily social experiences and behaviors arising in their traditional society (K. Walsh, 2002), It was made to suit their human needs with the possibilities available to them, and this is what made it a unique in a model that provided the building and served the individual and society in complete harmony and enhanced privacy and community life in these fields and overcame natural problems (A. Al-Nafi', B. Al-Kinai, A. Amer, 2015).

During their long history, these urban heritage fields have been exposed to various types of problems, among which are urban deterioration. As a result of various factors whose source is either nature, such as the impact of time, erosion, and natural disasters, or human beings, such as population growth, migration, modern developments in technology, transportation and communications (Y. Mahgoub, 1995), and the change they cause in the way of life and in the use of the field. These factors often lead to the distortion and even the loss of the urban characteristics of the heritage fields, which in turn affected the psychological, health, social and cultural life of the population, which formed a negative relationship between the human being and the public space and thus negatively reflected on the identity of the field and its residents (E. S. L. Farhan, 2014).

Algeria, like other countries of the world, enjoys the diversity of its urban heritage fields resulting from the accumulation of many cultures throughout its history. Due to the colonial survey and both types of immigration, in addition to the continuous demolition that caused the deterioration of its heritage urban fabrics, the state's orientation to modern programs for the development of cities has also contributed to the decline in the urban level. Similar to the rest of the Algerian cities, we chose Bordj Zemmoura as a model for the study because it is a multinational and multicultural city. Where it started with the Berber presence, followed by the Roman, then the Arab, then the Turkish (M. Karbakhal, 1984, p383), and finally with the French presence, this rich heritage formed her

memory in the past and can be an important base for tourism development now and in the future, but on the other hand it is witnessing a clear deterioration of its urban heritage fields.

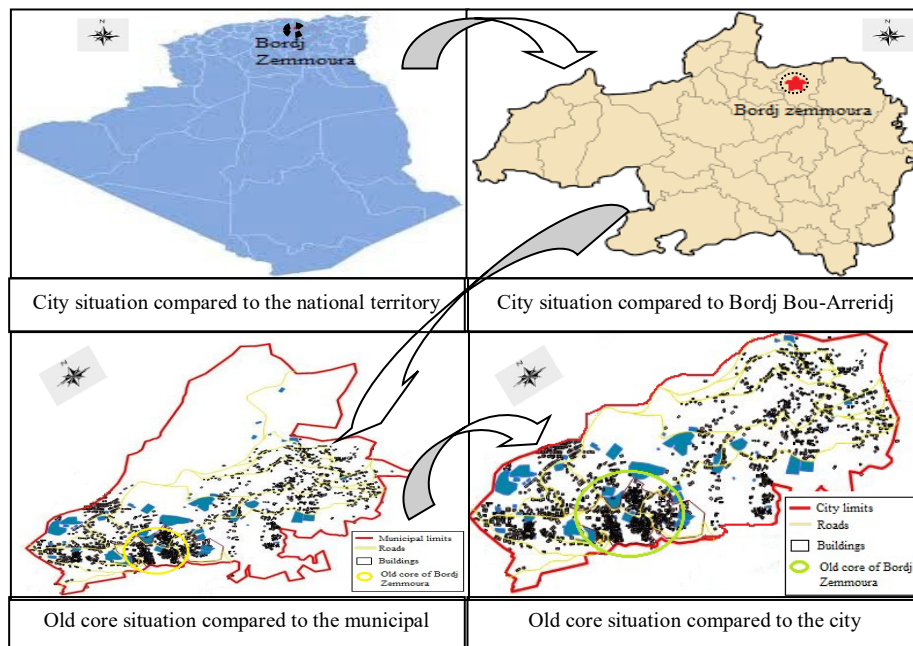
*Research Methodology:*

In the research, we relied on the analytical descriptive approach while studying the characteristics of the heritage spatial structure of Bordj Zemmoura city and its deterioration in order to find out the factors that influence it. We have used scientific tools that can help us in our research process, such as observation to examine the current status of the heritage urban fields in Bordj Zemmoura on the ground, and photographs to help us observe and bring the image closer to the reader.

**1. Characteristics of the heritage spatial structure of the city of Bordj Zemmoura:**

The city of Bordj Zemmoura is located in the northeastern part of the national territory within the Biban mountain range, at an altitude of about 850 meters at sea level, and is located at a distance of 30 km north of Bordj Bou-Arredj (National Study Office, 2004, p. 03). And the old core of Bordj Zemmoura is located on the southern border of the city, where it is bordered on the north and the west by Bouaziz neighborhood, and on the east by the Al-Sator neighborhood, and on the south by the rugged terrain and valley (Figure1).

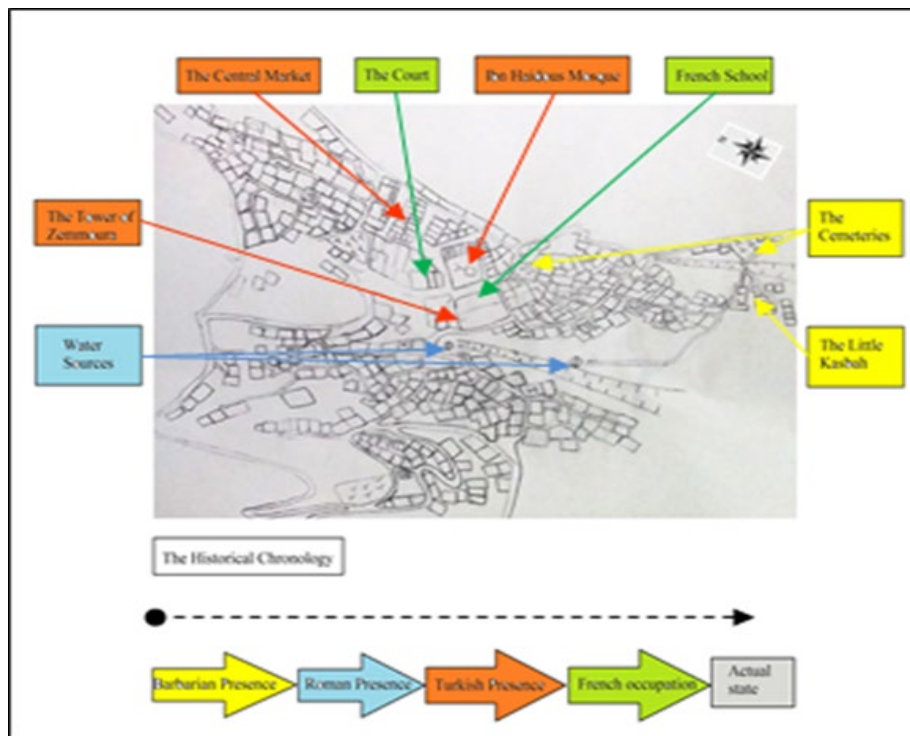
**Fig.1 Location of the city of Bordj Zemmoura:**



Source: author

The first nucleus of the Bordj Zemmoura was formed in the tenth century AD and it was a barbarian center, then several civilizations succeeded it: The Romans, Muslims, Turks, and French colonialism due to its strategic location that dominates the ancient roads and important routes and its natural resources, especially water sources (Figure2).

**Fig.2 The historical evolution of the old core of Bordj Zemmoura:**



Source: author

In general, we distinguish in the heritage spatial structure of the city of Bordj Zemmoura the following elements: the built framework, the road network, the reefs, slopes and water sources and the following describes the composition and function of each of them:

The urban fabric of the city's heritage field consists of three residential neighborhoods: Dhra' Halima which is located in the southeast, Al Suwaiqah which is located in the southwest, and Oulad Belhoushat which is located in the north, each of which has one or more mosques and a cemetery, built around a group of elements represented in the Great Mosque, the school and a water spring. These neighborhoods are divided into nuclei inhabited by extended families, which reflect the unity and cohesion of the community. The urban fabric is characterized by a compact and combined composition of the residential

buildings, interspersed with the courtyards and patios of the dwellings that form the unbuilt spaces. This urban fabric crosses a main road from which an organic network of paths and passages of human dimensions leads to the housing unit. It expresses the type of social life and levels of privacy from the public to private domain (Figure3).

The road network is formed in an orderly manner on a gradual basis from the main road that passes through the central nucleus called the Central Market and links it to the rest of the city. It is the social and economic lifeline in its union with the components of the central market, which are the mosque, the school, the water source, the public square, a group of equipment, shops and a weekly market. Thus, it constitutes a field of traffic and convergence. A group of narrow and tortuous paths branch off towards residential neighborhoods, where they are used by cars and pedestrians alike. They also branch out into paths suitable for the passage of pedestrians and animals leading to homes to ensure security, stability and inviolability (Figure3).

The built framework includes a group of residential buildings resulting from natural growth to reflect the social and cultural status of the residents, their customs and traditions. Its styles varied between Berber, Turkish and French, and differed in their architectural details (Figure3).

With regard to the Berber and Turkish style, the buildings were adjacent to each other so that there were no spaces except the inner courtyard and some maneuvers, their height ranged from one to two floors at most, with deaf facades directed inward to the yard, which is the center of life within the residential unit, it is sometimes interspersed with small openings overlooking the alleys. What works to confirm the inviolability and privacy that suits the privacy of the residents (Figure3).

As for the colonial style, it came to obliterate the cultural identity by directing the housing units to the outside using windows and balconies with the absence of the inner courtyard. And with regard to the materials used in constructing the buildings, they are local, represented in wood, stone, soil mixed with hay and locally made tiles (Figure3).

The heritage urban fabric is permeated with a group of reefs and slopes that the residents exploited in planting vegetables, fruit trees, olive trees and some fields of wheat and barley, and this reflects the extent to which nature is respected and adapted to it. There is also a water source in the heritage center called "Ain al-Suwaïqah" and another in Dhar'a Halima called "Ain Ras al-Kaf" (Figure3).

**Fig.3 The heritage spatial structure of the city of Bordj Zemmoura:**



Source: author

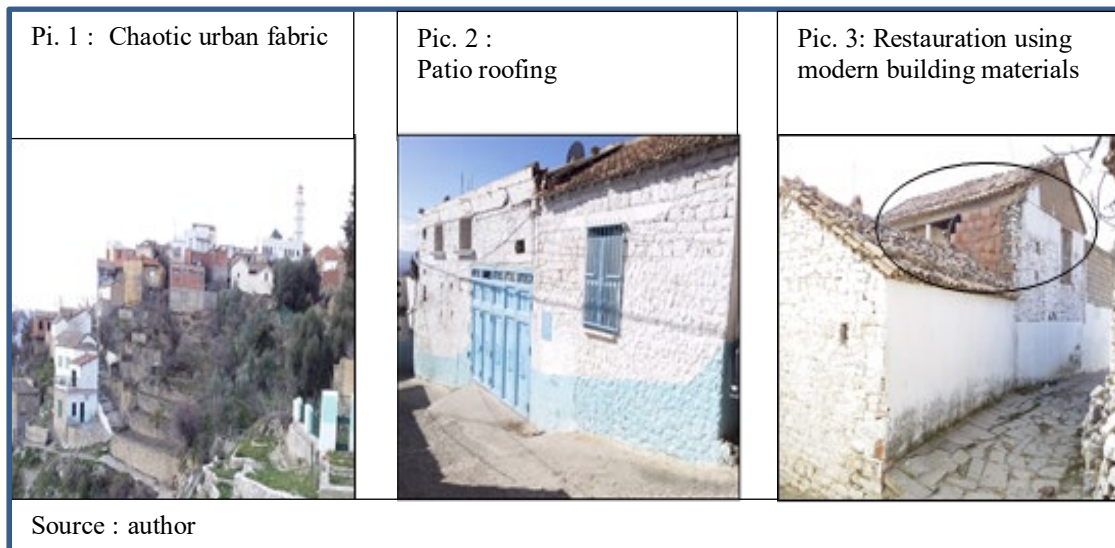
## **2. Manifestations of the deterioration of the heritage urban fields of the city of Bordj Zemmoura**

The reviewing the characteristics of the heritage spatial structure of the city of Bordj Zemmoura cannot turn a blind eye to the depth of deterioration and the problems it suffers from current which made it, the urban field is threatened by urban chaos that does not appropriate with the traditional fabric that characterizes it especially with the urban development and undirected individual and collective interventions aimed at keeping pace with the current era, which made it suffers from many problems, which are manifested in the following:

### **2.1. Built frame :**

- The collapse of the old urban fabric and the disappearance of the cohesive character that distinguishes it, due to the demolition of many housing units that are part of it, and the emergence of a chaotic fabric resulting from the invasion of concrete buildings that differ in their concept and its scale and quality of life for heritage buildings, which affects the general appearance of the fabric (picture 1).
- Many residents resorted to roofing their patios with reinforced concrete because they lost the role they had previously played, and increasing the number of floors (picture 2).

- The use of modern building materials such as reinforced concrete to restore the roof, cement and bricks to restore damaged fields and to complete or strengthen the collapsed parts, which distorted the image of heritage buildings as a result of the overlap between the modern and old form in the same building (picture 3).



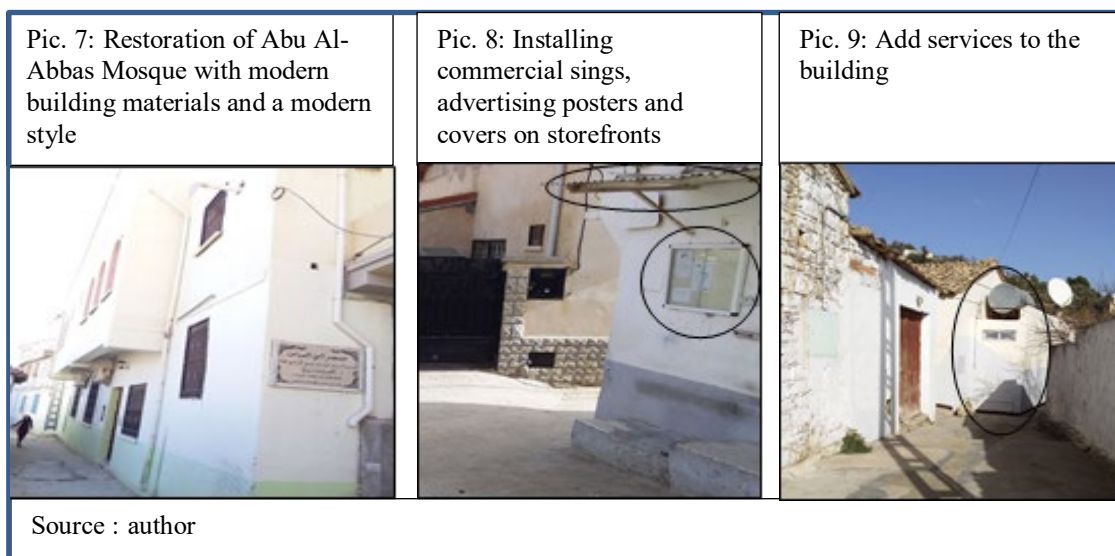
- Random interventions that lead to distortion of the urban facade, through erroneous restoration work, such as painting the exterior of heritage buildings, adding writings and drawings on walls using colors and paints and pasting advertisements (Picture 4)

- Demolition of heritage buildings and their replacement with new buildings with modern designs and multiple floors threatens the structural integrity of the adjacent heritage buildings and affects their general shape, and creates visual chaos resulting from the heterogeneity between old and modern in terms of size, architectural features, building materials, as well as urban blocks (Picture 5).

- Distortion of the visual landscape of valuable heritage buildings by their proximity to modern buildings of high heights that are obscured by them and are not commensurate with their historical and aesthetic value (Picture 6)

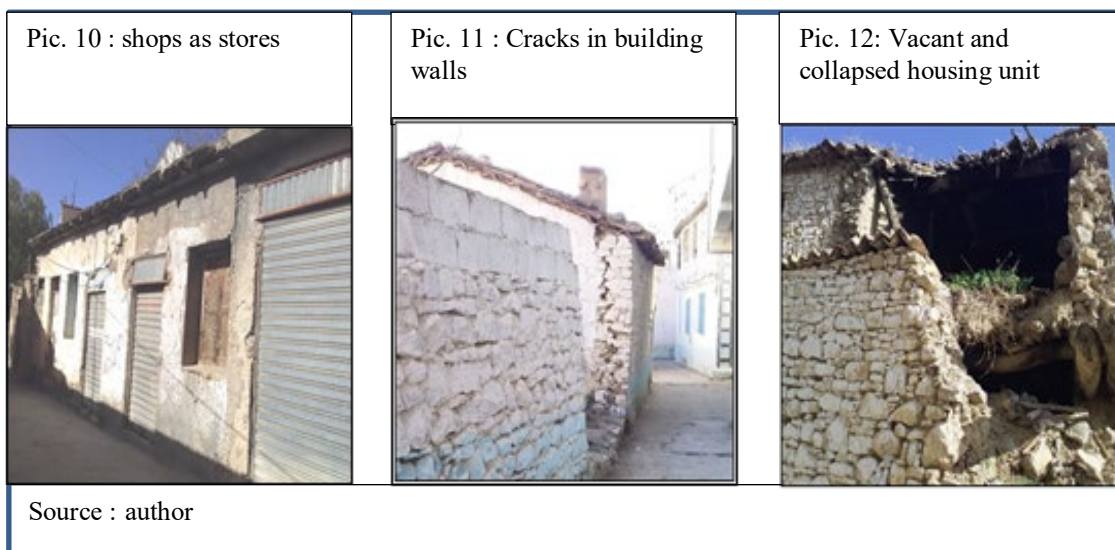


- The wrong restoration of mosques using modern building materials and a modern style, resulting from a lack of experience and a failure to follow the scientific foundations of restoration, for example: Abu Al-Abbas Mosque built in (1442-1493 AD), restarted in (2014 AD) (Picture 7).
- The spread of commercial banners, light signals, advertising posters and covers installed on storefronts, where heritage facilities are distorted and subjected to damage and demolition (Picture 8).
- Encroachment on heritage buildings by partial demolition, or by making internal changes by dividing the building or externally by adding rooms and services, which leads to the deterioration of their construction condition (Picture 9).

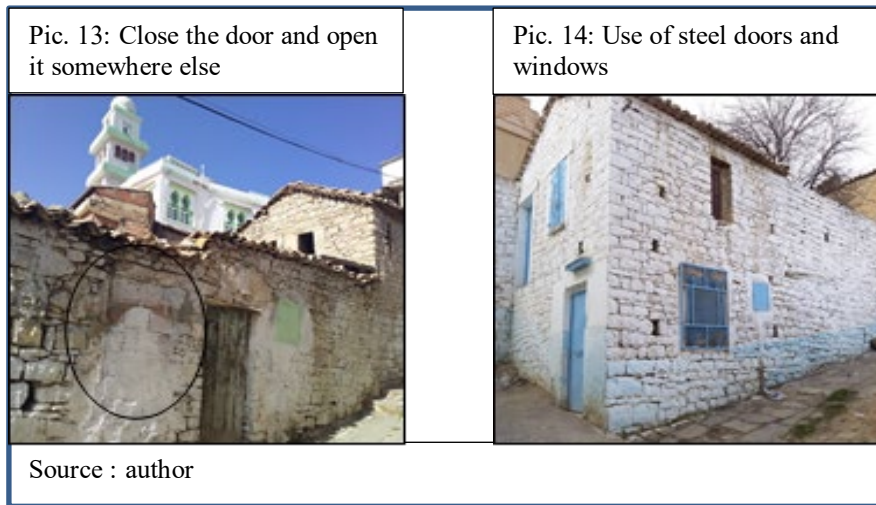




- Use contrary to the function of the original buildings, where the ground floors were transformed into shops, which created an overlap between the residential and commercial function. Or has been used as stores for commercial materials, which affects their safety (Picture 10).
- Deterioration of the structural condition of heritage buildings and the emergence of cracks at the level of their walls and facades due to the damage of old building materials (mud, stones, wood) or new ones (cement) (Picture 11).
- The spread of some vacant and collapsed housing units that pose a threat to the life and environment of the residents, and that used to spread dirt and demolition waste or to spread social groups (Picture 12).

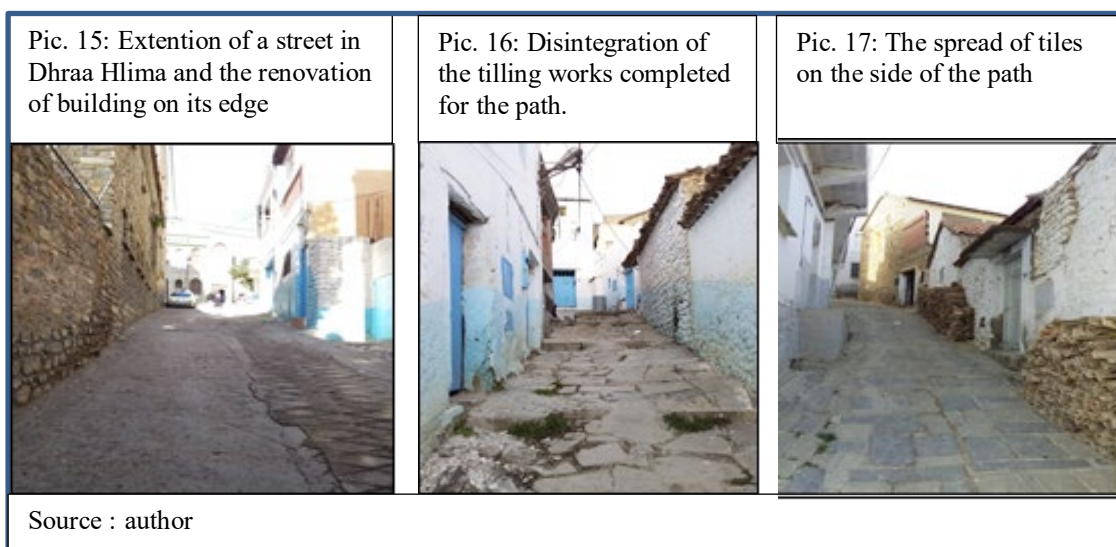


- The resident's abandonment of crafts and the preoccupation of the owners of commercial establishments with modern and advanced activities that do not correspond to the function of the building and are not consistent with the nature of the heritage field.
- Distortion of the heritage architectural style by making modifications to the facades by adding borrowed openings such as window openings and balconies or close the openings, in addition to using of modern means on heritage buildings that contradict their traditional character, such as doors, iron windows, windows... (Picture 13 and 14).






## 2.2. *Unbuilt frame :*

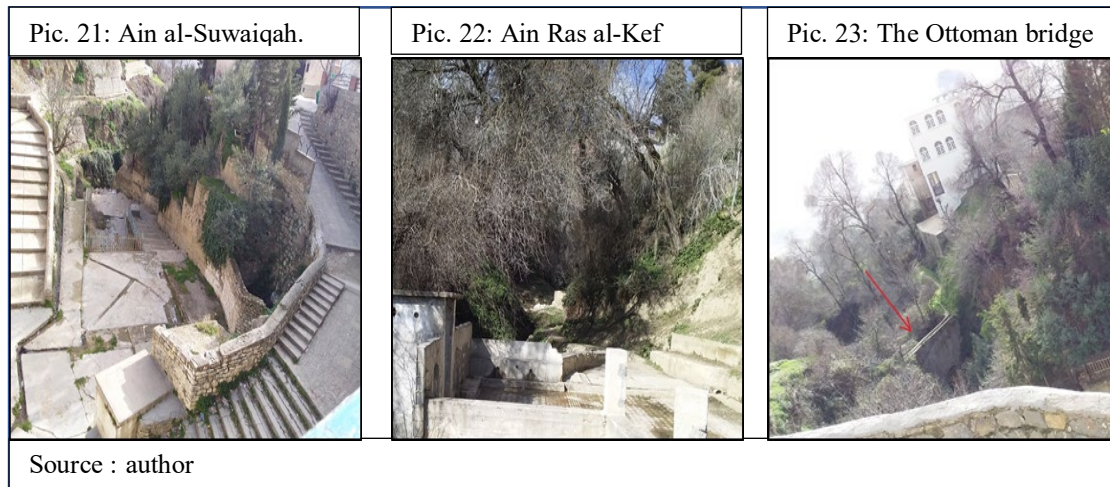
- Loss of homogeneity in urban formations as a result of the expansion of some streets within residential neighborhoods at the expense of heritage buildings, due to the conflict of movement spaces with the needs of new means of transportation (the car) (Picture 15).
- The disintegration of the recently completed preparation and tiling works for some roads and paths due to incomplete works and the random and continuous interventions of the residents of the field (Picture 16).
- The spread of waste resulting from the demolition of old buildings represented by stones, wood and bricks, or modern building materials such as sand, gravel and bricks... on the sides of roads and corridors (Picture 17).



- Stripping the squares of their main role of meeting and recreation, and making them parking lots for transport buses and cars, or stopping places for shops, or reserved for some commercial activities (Picture 18).
- Connecting the various networks of gas, electricity, water and sewage, and what follows is the opening of outlets and extensions at the level of walls, ceiling and floors, in addition to the introduction of air conditioning units and television receivers, negatively affects the constructional condition of the heritage buildings and distorts their architectural image (Picture 19).
- Columns carrying medium-pressure power lines are attached to the walls of buildings, and their passage over homes, near balconies and windows poses a danger to buildings their occupants (Picture 20).

<p>Pic. 18: Allocating the square to parking lot for transport buses and cars.</p>	<p>Pic. 19: Opening outlets to connect electricity, water, gas and air conditioning</p>	<p>Pic. 20: Adhesion of electricity poles to the walls of the building</p>
		
<p>Source : author</p>		

- Noise pollution resulting from the movement of transportation, bus drivers and buyers in the center, and the resulting vibrations and pressures on the soil, which led to the deterioration of the condition of the roads and heritage buildings adjacent to them.
- Deterioration of the structural condition of the water and aesthetic components "Ain al-Suwaiqah", "Ain Ras al-Kef" and "the Ottoman bridge" which is a heritage landmark of historical and cultural value (Picture 21, 22, 23).



### 3. Reasons for the deterioration of the heritage urban fields in Bordj Zemmoura:

The continuation of the heritage urban fields in the city of Bordj Zemmoura depends in its form and content on its economic and social vitality and then on the awareness of its residents and their ability to maintain and revive them. However, there are several factors that lead to the deterioration of these fields, which is a distortion of the past in its beauty and originality, the city without its heritage filed is a city without memory, so we have to stand up the reasons that led to this deterioration can be summarized as follows:

#### 3.1. *Physical factors :*

- Urban expansion, whether horizontal or vertical, posed a major challenge facing the heritage urban fields in the city of Bordj Zemmoura, as its distinction removes all aspects of originality that through the total demolition of buildings or distortion of the visual image of urbanism and heritage architecture.
- Inappropriate interventions, whether by users and owners of heritage buildings, including all maintenance and inappropriate restoration and change in the functions of the building and parts of it.
- Absence of regular preventive maintenance and corrective maintenance (The National Organization for Urban Coordination, 2010, p. 18), in addition to its high expenses, whether for building materials or specialized labor given the low economic level of the inhabitants.
- The narrow space of heritage buildings and the difficulty of horizontal and vertical expansion in them, forcing their occupants to interfere with divisions or additions, thus distorting them.

- The lack of open fields within the urban heritage urban fabric in the city, and the narrow and meandering streets prevented them from adapting to modern means of transportation.
- The increasing demand for housing and the lack of housing programs, which led to the division of the single property.

### 3.2. *Environmental factors:*

- Natural disasters such as earthquakes and floods lead to the destruction of large parts of the heritage urban fields, whether they are buildings because of their old and inability to bear or roads and squares, especially with the sloping nature of the city on which the city is based.
- The factor of time plays a major role in the breakdown of the urban heritage urban fabric in the city, and this is due to its association with an integrated group of secondary causes such as the building material, the style and pattern of construction, and the quality of the urban fabric.

### 3.3. *Demographic and Social factors:*

- The manifestations of differentiation between residential neighborhoods led to change in the social structure of the heritage urban fields, with the migration of the indigenous population (M. Rafeian, N. Zahed, 2021) in pursuit of better living conditions in the new neighborhood, and leaving their homes exposed to destruction or new arrivals from different cultures lacking a sense of belonging to the field and not preserving it, especially with the disintegration of the neighborhood unit, which brought about major changes at the level of the heritage urban fabric and eliminated the element of self-monitoring of the field from its inhabitants.
- Human needs and desires change at a speed that exceeds the speed of change in the urban fabric, which creates a gap between the required function and the inherited form or style, which leads to the unjustified destruction of some inherited planning units, making them compatible with the new jobs (K. El-Maliki, 2004).
  - Changing social concepts after the extended family model was prevalent, there are tendencies towards independence and the independent family model, and this causes the division and fragmentation of the single property, or the total demolition of property and reconstruction.
  - The high population density resulting from the increasing population growth in the heritage urban fields led to an increase in the rate of overcrowding and the consequent increase in pressure on heritage buildings and infrastructure.

#### 3.4. *Economic factors:*

- The financial problems that such neighborhoods require to maintain their distinct character and character collide with other options such as demolishing and building them again or developing other urban fields. And if such financial consideration dominates in planning. So, the lives and exploits and glories of peoples can be taken (S. Laaribi, 2010).
- Absence of local financial contributions, whether by residents of heritage neighborhoods, associations or businessmen, has led to the neglect of specialized studies in the field of the city's heritage and the failure of preservation projects.
- The high prices of land in central sites that represent heritage urban fields contributed to abandoning the idea of preserving heritage in front of the physical force, which made the owners change the uses of their heritage buildings from residential to commercial or demolish them to establish commercial centers, or sell them and move to better places or Rent it and benefit from its financial returns, which resulted in a shift in land use and ownership pattern to undirected investment.
- The scarcity or absence of markets for selling traditional products and the lack of government support and encouragement led to the reluctance of the sons of craftsmen and artisans to practice the inherited profession, which contributed to the extinction of traditional crafts and industries.
- Ease of obtaining modern building materials at reasonable prices compared to traditional building materials that are characterized by scarcity and expensiveness, which makes the restoration process difficult and increases its cost with the low economic level of the residents.

#### 3.5. *Cultural factors:*

- Weak cultural development and the absence of the role of activists and local associations in spreading awareness of the importance of the urban heritage in the city and the need to protect it and carry out awareness-raising campaigns, and the limited information available on the heritage of the region contributes to underestimating its value among residents and visitors.
- Opening up to the West through the means of communication and external migration led to the distortion of the distinguished Islamic personality as a result of its collision with Western culture, where Arab Societies were concerned with superficial appearances and gradually abandoned the inherited architectural and urban privacy and identity, and the urban heritage became a manifestation of civilizational backwardness.
- Lack of cultural and cognitive awareness of the value of the heritage field among its residents, as the poor classes with limited culture constitute the majority of the population of these fields, which seek in the first place to achieve

their personal interests without considering the importance of those fields (F. Labib Mohamed, A. A. Nour Eddine, 1966), especially that the field does not bring material benefits to the population, which does not encourage to maintain and take care of it.

### 3.6. *Technological factors:*

- The development of building systems and materials contributed to eliminating the possibility of continuing to use traditional materials and replacing them with modern materials that imposed new methods of implementation, which led to the emergence of patterns and shapes of modern buildings that do not correspond to the vocabulary of the old character. It also encouraged freedom of construction at the expense of the old dilapidated buildings, whose priority became to demolish them and build a place with greater capabilities and heights instead of maintaining and restoring them (A. Loulah, 1983).
- The extinction of some crafts, skills and techniques qualified for high-quality technical restoration (The National Organization for Urban Coordination, 2010, p.18), in the absence of the institutions that make up such experiences, which led to the use of inappropriate methods and materials - despite the development in restoration materials - that caused the deterioration of the urban heritage fields due to the requirements of Technical experience and a specialized workforce in this field.
- The entry of modern technologies such as electricity, telephone, internet and air conditioners led to the demolition of large parts of heritage buildings and visual distortion of urban heritage fields, and the attempt to provide various services from infrastructure and networks in ill-considered ways that do not fit with the privacy of the existing heritage urban fabric led to damage to the architectural and urban heritage in the city.
- Reliance on mechanical means of transportation and the audio-visual pollution that they cause and severe vibrations that negatively affect the cohesion of heritage buildings. And also the opening and paving of new roads that permeate the urban heritage fabric effect on the privacy and lifestyle of the residents on the one hand, and on the buildings on the other hand by destroying and removing large parts of them due to the inconsistency of the narrow and meandering streets with the mechanical movement.

### 3.7. *Political, administrative and organizational factors:*

- Colonialism had a great impact on the total or partial destruction of the heritage urban fields in the city of Bordj Zemmoura, which was a platform for scholars, a protected fortress and a center for trade exchanges, then lost its privacy and homogeneity and became strange in construction, form and content.

- External migration of some owners of heritage buildings while keeping the ownership of their homes empty, which accelerates their destruction and extinction.
- Granting financial subsidies within the framework of rural housing for the city of Bordj Zemmoura as a special case due to the increasing demand for housing and the lack of real estate vessels that receive social housing projects, which encouraged the residents to demolish their old buildings to benefit from this support to replace them with modern buildings.
- The shortcomings in the legislation concerned with the protection of urban heritage and the absence of supervision on the plans that affect the urban heritage fabric on the part of the municipalities due to the critical role played by this latter in changing the map of urban heritage fields.
- Neglecting the registration of valuable heritage buildings and urban heritage fields in the city in the list of tangible heritage, so they cannot be subject to conservation laws and policies.
- Lack of government investment programs in the field of heritage and the economic boom it reflects, and the adoption of modern urban projects separate from urban heritage, which caused the loss of the city's heritage identity.
- Applying the same building laws to modern cities and urban heritage fields without taking into account the specificity of the traditional fabric, which led to the replacement of modern buildings in the place of the old ones that do not fit the nature of the heritage field and negatively affect the rest of the heritage buildings.
- Lack of integration studies between the urban heritage fields in the city with modern expansions to achieve continuity in urban formation, measurement and movement, as all studies was based on the principle of isolating the old center and freezing its neighborhoods and did not take into account the presence of two different textures in the city plan.

## **Conclusion**

Our study of the various manifestations of the deterioration of the heritage urban fields of the city of Bordj Zemmoura is motivated by the research for the reasons behind this deterioration, once the cause is known, it becomes possible to find means to protect and preserve. After analyzing what we have been exposed to, we found that the city of Bordj Zemmoura has a variety of heritage urban fields and a distinct identity that must be protected and preserved for future generations, due to the continuity of urban life in these fields without interruption, it has been affected by successive human development and changes during their long history and have been subjected to many encroachments that



have led to the deterioration of their urban heritage, the most prominent manifestations of which were the following:

- Deterioration of the structural condition of the buildings.
- Total or partial demolition of many heritage buildings and their reconstruction using modern materials and construction methods, which led to visual pollution.
- Inappropriate interventions on the built or unbuilt frame through restoration and maintenance work or a change of function or boundaries.  
This deterioration is controlled by a number of factors, most notably:
  - The random expansion practiced by the residents at the expense of the existing heritage urban fabric, especially with the application of rural development projects that contributed to the exacerbation of the urban renewal policy.
  - Permanent migration of heritage buildings while retaining their ownership or use by foreign residents.
  - High population density and low economic level.

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