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From Use to Design: Rethinking Urban Furniture for Sustainable Urban Spaces (Case of Plazas in Batna)

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Abstract

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Urban furniture, long relegated to a purely decorative role, is now recognized as a crucial component in the design of public spaces. In Algeria, it often remains poorly adapted to local socio-economic and environmental realities. This research focuses on analyzing the impact of urban furniture on the plazas in Batna, assessing its role in transforming these spaces into sustainable and functional areas. The aim is to demonstrate that urban furniture design, far from being incidental, profoundly influences key factors such as comfort, safety, utility, and the aesthetics of public spaces. By reflecting on the adaptability of urban furniture elements, we highlight their fundamental contribution to sustainable urban planning. This study underscores the importance of thoughtful, adaptive, and intelligent furniture in creating more resilient, pleasant, and genuinely functional cities, aligned with the needs of users and contemporary environmental challenges.

Keywords: Urban furniture, public space, sustainable urban planning, resilient cities.

1. Introduction

Urban public space is a true reflection of city life, offering a place for social interaction, cultural expression, and communal engagement within cities. It encompasses all publicly accessible areas, such as squares, parks, pedestrian streets, and serves as the stage for the free movement of individuals (Samali, 2012). These spaces play a vital role in the development of social fabric by providing opportunities for users to connect, relax, participate in events, and engage in collective activities.

The design and planning of urban public spaces are crucial for fostering conviviality and social interaction. They influence mobility, accessibility, security, and the quality of life of residents (Amen 2021; Amen and Kuzovic 2018b; Aziz Amen 2022; Al-Dujaili, and Amen 2018). In this context, urban furniture contributes to creating a distinctive and appealing atmosphere in cities.

The introduction of urban furniture is indispensable; it has been defined as a set of public or private objects or devices installed in public spaces to offer services to the population while fulfilling several functions, such as guiding users, providing rest areas, and offering shelter, among others (Alloua, Bouragan, and Chibouk, 2017). Urban furniture is an inseparable component of urban design and one of the most important elements of the city. As an organized and planned human institution, the city must respond to the evolving and multifaceted needs of its inhabitants. It is essential to ensure harmony among its various elements.

The city is characterized by its urban fabric, which includes both built and unbuilt spaces. Urban furniture structures these unbuilt spaces, facilitating the daily life of city dwellers in various ways. These urban elements can also be considered as integrated works of art within the public space. They support urban activities and offer both residents and visitors spaces for relaxation and enjoyment.

The urban environment is constantly evolving, driven by urban furniture and the interactions of users with these elements. Urban planners thus strive to create a harmonious balance between inhabitants and their living environment. Today, cities have transformed, leaning more towards becoming smart cities, and the introduction of smart urban furniture marks a major milestone in the enhancement of quality of life within urban environments. This ingenious fusion of contemporary technology with conventional urban infrastructure offers the possibility of a more connected, efficient, and environmentally friendly urban experience. By combining familiar elements such as benches, bus stops,

public lighting, and other urban installations with advanced sensors, wireless networks, and data collection systems, smart urban furniture addresses a range of complex urban challenges. These challenges include traffic management, optimized energy usage, the promotion of universal accessibility, and more. The underlying goal of this evolution is to reinvent public spaces, making them more welcoming, inclusive, and environmentally sustainable. This promising evolution is part of an approach aimed at creating more convivial, inclusive, and durable public spaces, contributing to improved quality of life and the flourishing of urban residents within their environments.

3. Material and Methods

This study focuses on the challenges of use and design of urban furniture in the public squares of downtown Batna, chosen as the field of analysis due to its urban centrality and nodal function. Indeed, this area polarizes the main traffic axes, attracting both local residents and external visitors. Its historical significance enhances its status, as it still retains a built heritage and public facilities inherited from the French colonial era, which continue to meet the daily needs of users.

The methodological approach adopted is based on a comparative analysis of two public spaces selected for their regular usage and their indicative value in terms of urban planning: the Republic Square “Place de la République” or “Place Harsous” and the Place de la Route de Biskra (formerly known as Place des Boules). The choice of these sites was based on the degree of alignment between urban furniture arrangements and observed social practices. Although these locations have undergone successive redevelopment operations (construction, rehabilitation, restructuring), their recent evolution has led to significant spatial and functional transformations. These changes have progressively modified their attractiveness, influencing the ways in which they are used and generating differentiated uses depending on the specific characteristics of each square.

This research thus aims to decipher the interactions between urban design and civic appropriation, in a context where the requalification of public spaces raises questions about their ability to maintain an inclusive function.

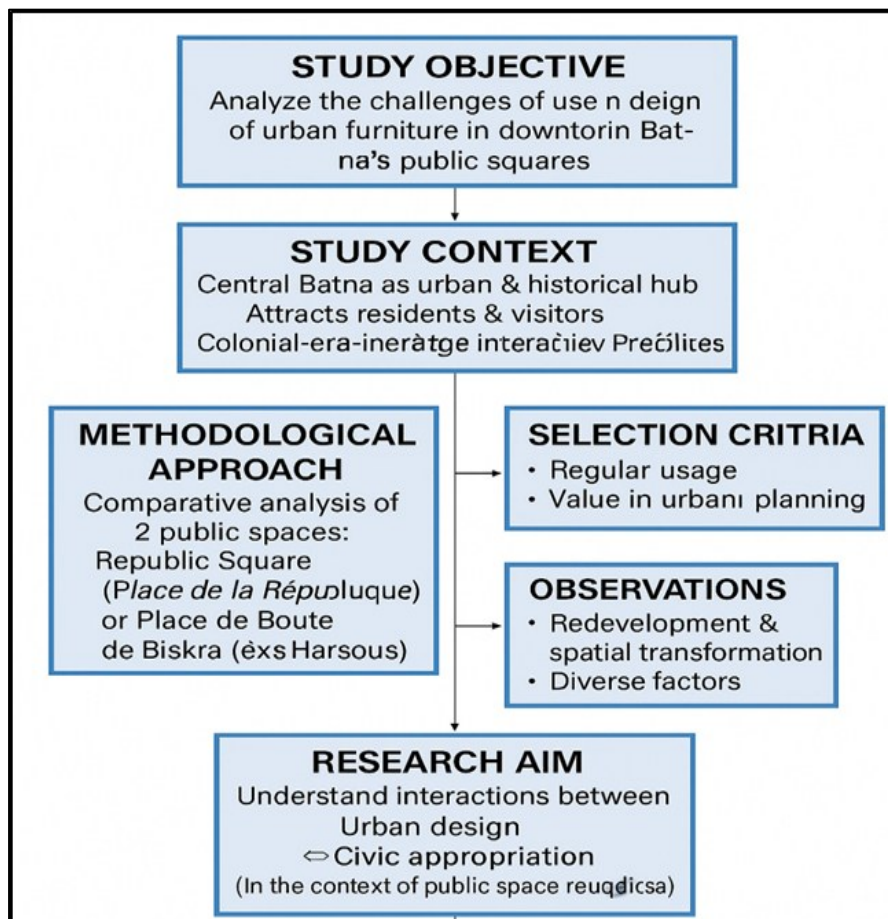


Figure 1. The Work Process (Authors, 2025).

3.1. Case Study Presentation

Located in the eastern part of Algeria, the Wilaya of Batna occupies a remarkable geographical position between the meridians 4° and 7° east and the parallels 35° and 36° north. With an area of 12039Km², this territory is characterized by its location at the confluence of the Tellian Atlas and Saharan Atlas mountain systems. This unique geomorphological configuration profoundly influences the climatic parameters of the region and conditions human settlement patterns.

Situated in the northeastern part of the Wilaya, the city of Batna occupies a strategic position as a major urban center. Holding historical significance as the regional capital of the Aurès, this agglomeration serves as the administrative hub both at the wilaya and municipal levels, covering an area of 11641ha.

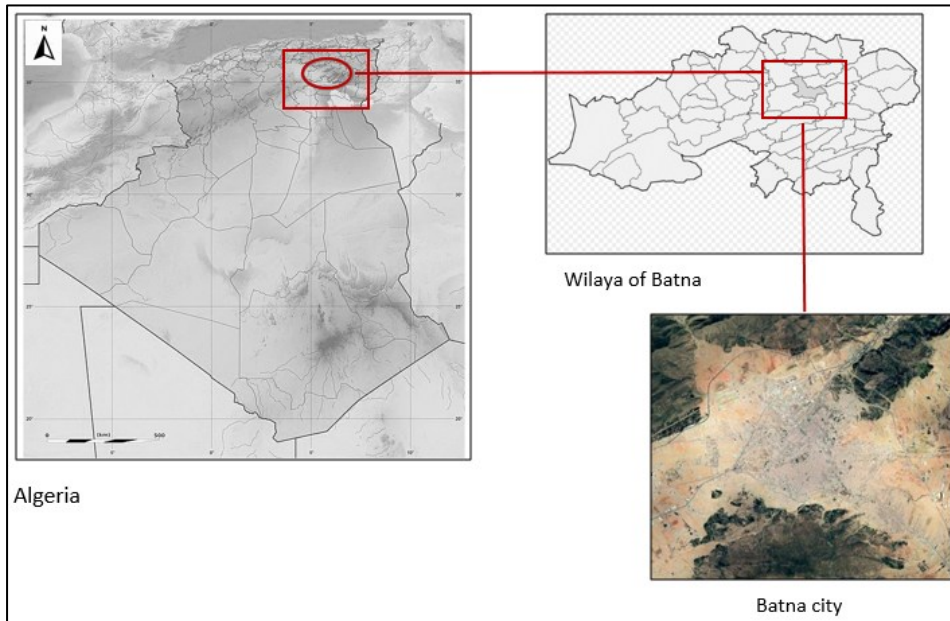
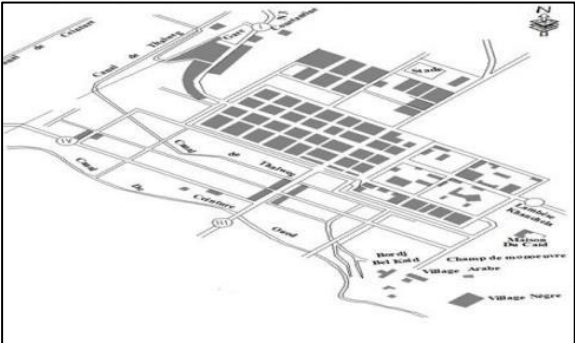
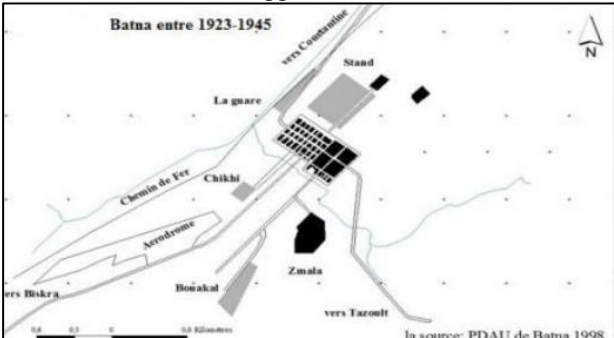


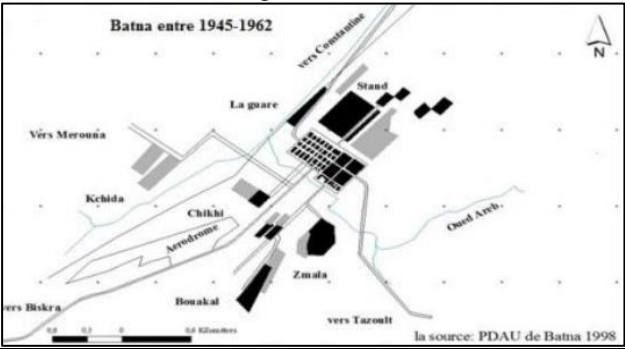
Figure 2. Geographical Location of the City of Batna.

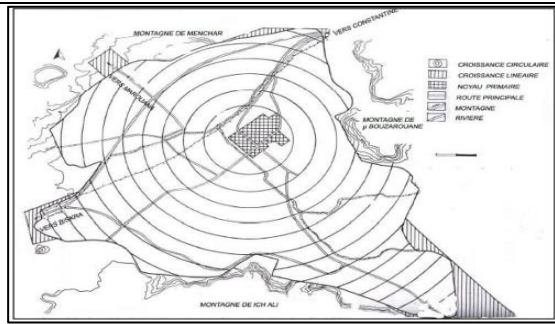
3.2. The Urban Evolution of the City of Batna

Batna has undergone two distinct periods that have marked its existence and urban development: the colonial period, a period of city foundation, and the post-colonial period (after independence) (Khiredine and Aichour, 2022).

Table 1.

<ul style="list-style-type: none"> - The founding of the city and the creation of the core: - A military camp in the southeast, thus forming the first center of which would become the future city of Batna. 	<p>The Periode from 1844 to 1923</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">The colonial period (period of settlement)</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">The morphogenesis of the city of Batna through the different periods</p>
<ul style="list-style-type: none"> - The construction of an airfield to the southwest of the colonial core and the establishment of a railway line to the west - The fragmentation of the urban core in three directions (SCU of Batna, 2010): - The establishment of the Stand neighborhood with an orthogonal grid along Mously Street in the northeastern part - The creation of the Fourrière neighborhood near the train station in the northwest - The first constructions of the future Chikhi and Bouakal neighborhoods in the southeastern and southwestern directions of the agglomeration 	<p>The Periode from 1923 to 1945</p>		

<p>- The outbreak of the War of Liberation in 1954, followed by the launch of the Constantine Plan in 1958.</p> <p>-In the north, the European districts were characterized by collective housing buildings (HLM) and a reinforcement of military infrastructure through the construction of barracks to the northeast of the colonial core, notably along Rue de France near the Camp.</p> <p>-In the south, the traditional neighborhoods saw the development resettlement housing projects: the Chikhi housing estate with 252 units, the "cité évolutive" with 192 units, and Kechida with 262 units. At the same time, new informal settlements also emerged, such as Kechida and Parc à Fourrage in the east, along with the expansion of traditional neighborhoods.</p> 	<p>The Periode from 1945 to 1962</p>		
<p>- An informal expansion of traditional neighborhoods such as Bouakal, Chikhi, and Parc à Fourrage was observed.</p> <p>- In 1968, the Special Aurès Program was launched.</p> <p>- Among the most significant achievements in the housing sector were the construction of 150 rural housing units, 375 urban housing units, the 150-unit housing estate, the 20 August estate with 114 units, the Gruyère estate with 27 units, and the 84-unit estate (PDAU-Batna, 2011).</p>	<p>The Periode from 1962 to 1978</p>		
<p>- The spatial fragmentation of the urban area</p>	<p>The Periode from 1978 to 1984</p>		
<p>- The saturation of the urban fabric.</p> <p>- A Master Urban Plan (PUD) for the city of Batna, complemented by an Urban Modernization Plan, was enacted in 1978. This plan initiated a large-scale program that included the construction of both collective and individual housing, cooperatives, subdivisions, as well as new urban housing zones (ZHUN).</p>	<p>The Periode from 1984 to 1995</p>		
<p>- The Black Decade defined this period, marked particularly by insecurity and a massive migratory influx.</p> <p>- A second Master Urban Plan (PUD) was developed in 1985 with the aim of reorganizing, rebalancing, and controlling the rapid and spontaneous urbanization of informal settlements.</p> <p>- This period also witnessed the launch of the Urban Development Master Plan (PDAU) for the city of Batna in 1994, although it was not officially approved until 1998.</p>	<p>The Periode from 1995 to 2005</p>		
<p>- Unrestricted expansion.</p> <p>- Excessive urbanization characterized by the emergence and spread of informal housing. This led to the consumption of fertile land through horizontal sprawl.</p>	<p>The Periode from 1995 to 2005</p>		
<p>- The uncontrolled expansion of urbanization in all directions gradually led to dysfunctions in the organization of the urban fabric.</p> <p>- The revision of the Urban Development and Planning Master Plan (PDAU) in 2005.</p> <p>- The creation of two urban hubs: the residential hub of Hamla in the municipality of Oued Châaba, and the university hub in the municipality of Fésdis.</p> <p>- The city's expansion followed three main linear axes, extending toward the municipalities of Tazoult, Fésdis, and Oued Châaba.</p>	<p>Contemporary urbanization</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">The post-colonial period</p>	



3.3. The Selected Study Area in the City of Batna (Batna City Center)

Our study area corresponds to the central sector of the city of Batna, identified as POS Zone N°08 in urban planning documents. This strategic sector, covering an area of 161.2 hectares, represents the historical and functional core of the agglomeration. As the true nerve center of the city’s economic, social, and cultural life, it is distinguished by its European heritage and rich multicultural character, the result of a blending of populations and traditions (Benaïcha, 2021).

This cosmopolitan nature has fostered the emergence of numerous public spaces dedicated to social interaction, celebrations, and political and religious gatherings. Among these emblematic places, to the north, are the Ben Boulaid alleys (formerly the Bocca Garden), which host two major squares of high symbolic value: Ben Boulaid Square and Martyrs’ Square, both designed with commemorative and memorial intentions.

Further toward the center, separated by Avenue de la République, lie Harsous Square (formerly the Church Square) and the 19 May 1945 Theatre Square (formerly a public square), which are directly connected to the market and reflect the commercial and cultural dynamism of the area.

Finally, on the periphery of the district, along Avenue de l’Indépendance; also known as the Biskra Road (formerly Avenue de France); is another important public space: the Aire de Repos Square (formerly the Boule Garden or Market Square), located between this avenue and Avenue Grine Belkacem. This space marks one of the transitional points between the historic center and the expanding neighborhoods. It is bounded by:

- North: the railway station district and Bouzourane neighborhood,
- South: the Z’ mala neighborhood,
- East: the Parc A Fourage neighborhood and the military zone,
- West: the El-Nasr neighborhood and the industrial zone.



Figure 3. The city center of Batna (Google Earth adapted by Authors, 2025).

3.4. Public Squares in the City Center of Batna

Our focus will be directed toward public squares in the city of Batna and the contribution they make to the residents’ quality of life through urban furniture and amenities.

Considering its geographic size, population, and even its politico-administrative status (as the fifth largest city in the country, capital of the Aurès region, and administrative center of the wilaya), Batna does not possess a sufficient number of urban public squares. With only six squares of varying size, the city falls short of meeting the urban needs of over 300,000 inhabitants.

Indeed, the city suffers from a significant lack of public urban spaces, but when it comes specifically to public squares, this shortage becomes symptomatic of a chronic issue. Since city life is experienced through its public spaces, the absence of such spaces equates to the absence of a vibrant and healthy urban lifestyle.

Thus, when enumerating its public squares, Batna counts only:

3.4.1. The Republic Square (Harsous Square or formerly Church Square)

Built in 1855 and designated as a public square in 1863, Harsous Square (ormerly known as Church Square) was a central site for festivities and national ceremonies during the colonial era in Batna.

After independence, the church was demolished and, in 1970, replaced by a water basin, while the rest of the area was added to the square. Since then, Harsous Square has undergone several urban redevelopment projects, including the removal of the water basin, which marked one of the most significant transformations of this public space (Ismail, 2015).



Figure 5. The Republic Square.

3.4.2. Theatre Square (now known as 19th May 1945 Square)

Laid out in 1899, well before the construction of the theatre itself, Theatre Square was conceived as a natural extension of the cultural building. It featured complementary elements such as a bandstand surrounded by trees and green spaces, along with a fountain positioned at the front, creating a harmonious and vibrant setting. Following independence, the square underwent several phases of redevelopment, gradually altering its original appearance (Ismail, 2015; Benaïcha et al., 2023).



Figure 6. Theatre Square Before.

3.4.3. Martyrs' Square (Sahat Chouhada)

Originally, the site was home to the Bocca Alley Gardens. In 1853, a small public square was established at the center of these alleys, designed as a circular garden intended for rest and leisurely strolls in the heart of the city. Following independence, as part of broader urban redevelopment efforts aimed at modernizing public spaces, the square underwent unfortunate transformations. Green areas were significantly reduced, replaced by poorly executed paving that diminished the original serene and verdant character of the space.



Figure 7. Martyrs' Square before.

3.4.4. Mostepha Benboulaïd Square (Formerly the Monument to the Dead)

In 1899, a new square called "Le Nouveau Square" was created within the Bocca Gardens. Originally conceived as a space for relaxation, this place gradually took on a memorial significance. Between 1910 and 1920, it even served as the site for public executions, which further reinforced its symbolic meaning.

Between 1924 and 1925, the square was adorned with a monument to the fallen soldiers, designed by sculptor Camille Alaphilippe and architect Charles Montland. This monument was inaugurated on November 11, 1925, in honor of the soldiers who died during World War I.

After Algeria's independence, this colonial symbol was moved to the Christian cemetery. In its place, a column crowned with the bust of Mostepha Benboulaïd, an iconic figure from the Aurès region and a hero of the War of Liberation, was erected. This transformation turned the space into a national memorial and a celebration of Algerian identity.



Figure 8. Mostepha Benboulaïd Square.

3.4.5. The Place of the Biskra Road (The Garden of Boules)

Originally, this space was merely a linear garden running along the Avenue de France, now known as the Biskra Road. For over a century, it served as a green promenade, offering residents a peaceful retreat in the heart of the city.

It was only after independence that this space began to transform into a true urban square. In 1972, with the rise of urbanization along the Biskra Road corridor, local authorities decided to preserve this green space by enclosing it with fences. It was then redesigned to include boules courts, which gave it the popular name *Le Jardin de Boules*.

However, the project did not meet its intended goals. Over time, the square was gradually abandoned. It became a refuge for marginalized populations and unfortunately suffered from acts of vandalism and insecurity. This environment of degradation led to its prolonged closure, leaving the space suspended between memory and neglect.



Figure 9. The Place of the Biskra Road (The Garden of Boules).

4. Results and discussion

4.1. Urban analysis of the Republic Square (Place Harsous) in Batna, Algeria

• Historical Context

Originally established in 1855 as the forecourt of a church built during the French colonial era, the area was officially named Church Square in 1863. It quickly became a gathering point for public events, hosting national celebrations such as the Bastille Day ball, Sunday mass, wedding processions, and other festive or religious occasions. Its proximity to the Traders' Hotel also made it a favored spot for merchants and locals to relax and socialize.

Following Algeria's independence, the church was demolished, marking a significant shift in the square's identity. In its place, a large water fountain surrounded by stone benches was built, giving rise to what became known as Place Harsous. By the 1970s, the entire space had been incorporated into the public square and underwent several redevelopment phases. In the 1990s, the water basin was removed and replaced with a tiled pavement, often criticized for its poor quality. Around the same time, phone booths were removed due to the rise of mobile phones, and several multipurpose kiosks were added.

Today, Place Harsous is a fully paved open space, featuring modest landscaping with shrubs and public seating areas. Two multi-service kiosks remain on-site, and the square is mostly frequented by men. It continues to serve as a vibrant passage within the urban fabric of Batna.

Located on the northern side of Avenue de la République, the square is framed by two parallel streets El Fidaayines Street (formerly Gambetta Street) and Ben Badis Street and intersects with Frères Bouabssa Street. It can be accessed via three main entry points: a primary one from Avenue de la République and two secondary ones, from Avenue de l'Indépendance and from Ben Boulaïd Promenade (Place Ben Boulaïd), across from the regional post office.

The surrounding buildings serve mixed functions: shops on the ground floor, public services such as banks, the post office, and the theater, with residential units above. Key urban landmarks include the main post office, the regional theater, and, facing the square, the traditional market with its historic *rahba* (open-air market area). (Guedoudj, 2013, 2022; Ismail, 2015).

• Social and Cultural Dynamics

Usage Patterns:

- Predominantly frequented by men for rest and socialization.

- Venue for public gatherings and informal meetings.

Community Role:

- Acts as a social condenser, fostering interactions among diverse demographic groups.

Urban Attractiveness and Functionality:

- Proximity and comfort are primary factors influencing the square's attractiveness.
- Shopping and leisure activities enhance appeal but are not solely sufficient.
- The variety and duration of activities, along with user interaction with the environment, are crucial for fostering sociability.



Figure 10. The analysis focuses on Harsous Square and its surrounding urban fabric in the city of Batna (Developed by Authors).

The overall layout of the square introduces a distinct spatial configuration within the urban fabric. Along Frères Bouabssa Street, the Square acts as a focal point and visual landmark.

a. Position of the Square Relative to the Street

The square occupies an urban block among those lining the street and extends 45 meters in length, slightly protruding into the road. It is positioned laterally in relation to the street axis, offering both visibility and accessibility.

b. Geometric Layout

The Harsous Square features:

- regular rectangular shape, allowing for a clear and coherent spatial organization.
- Open, paved square facilitating pedestrian movement.
- Surrounded by key structures: post office, commercial establishments, and transportation hubs.
- Design promotes versatility for various activities.

c. Peripheral Buildings

The buildings surrounding the square are architecturally diverse, reflecting different historical periods and urban functions:

- **Façade 1:** Hosts two public buildings from the colonial period (the Post Office and the Lakhdari School) both notable for their historical significance, volumetric massing, and distinctive forms.
- **Façade 2:** Occupied by the BNA Bank, a contemporary building that contrasts with its historical surroundings and sits prominently at the corner facing the square.
- **Façade 3:** Composed of colonial-era residential buildings with ground-floor commercial shops, mostly men's clothing stores.

d. Added Built Elements

A kiosk located at the corner across from the post office brings vibrancy to the square and serves as a point of daily activity and informal commerce.

The Square plays a key role in the social life of the city, serving as a preferred public gathering space for citizens. The sidewalk surfaces are carefully treated and paved in *Opus incertum* using marble stone, contributing to the aesthetic and tactile quality of the space.

Analysis of urban furniture:

The analysis of urban furniture begins by categorizing the elements according to their function within the public space. Once classified, each item is mapped on the site plan to understand its spatial arrangement.

In the case of Place Harsous, four main categories of urban furniture can be identified: comfort furniture, commercial and reception furniture, technical furniture, and lighting equipment. Field observations have identified the following components:

- **Seating:** Concrete benches without backrests or armrests are prevalent, offering basic seating options.
- **Vegetation:** Limited greenery is present, with few trees providing shade, affecting thermal comfort.
- **Lighting:** Standard street lamps are installed, ensuring visibility during nighttime but lacking in aesthetic appeal.
- **Signage:** Traffic and informational signs are present but may not be optimally placed for pedestrian guidance.
- **Commercial Kiosks:** Open structures offering newspapers, refreshments, and public telephones.

• **Types of Urban Furniture:**

1. Comfort Furniture:

Public benches: The public square is equipped with **public benches, trash bins** but their limited number and poor condition reduce the space's attractiveness and functionality..



Figure 11. Public Comfort Furniture (Benches) in Harsous Square (Authors, 2025).

2. Commercial and Reception Furniture:

Kiosk: Located at the corner of the square, across from the post office, this fully open kiosk is used for selling newspapers, magazines, and other items. It also includes public telephones.



Figure 12. Commercial and Reception Furniture (Kiosk) and (coffee) in Harsous Square (Authors, 2025).

3. Technical Furniture:

billboards: the advertising structures have been installed and are positioned on site. It emphasizes that the billboards are already set up at the location, ready to display content.



Figure 13. Technical Furniture (billboards) in Harsous Square (Authors, 2025).

bus station:



Figure 14. bus station in Harsous Square in the city of Batna (Authors,2025).

4. Lighting Equipment:

Street lamps (candelabras): Curved light poles typically installed on one side of the street, at corners and mid-block locations. The square is equipped with several candelabras ensuring proper illumination.



Figure 15. Lighting Equipment (Street lamps (candelabras)) in Harsous Square (Authors, 2025).

4.2. Urban analysis of the Place of the Biskra Road (The Garden of Boules) in Batna, Algeria

•Historical Context

Located along Avenue de l'Indépendance (formerly Avenue de France, on the Biskra road), this urban square in Batna reflects a layered history shaped by the city's social and spatial transformations.

Originally, the site was a linear garden that stretched along the avenue, serving as a shaded walkway for over a century. Following Algeria's independence, and amid growing urban development along the Biskra axis, local authorities decided to transform the space. In 1972, it was redeveloped into a fenced public garden, designed to host pétanque games; a feature that gave the square its nickname and local identity. The project aimed to preserve a green pocket within the increasingly dense urban environment.

Unfortunately, the outcome diverged from its original intent. Poor supervision and a lack of maintenance allowed the area to deteriorate. Over time, it became a neglected space, often occupied by marginalized individuals and marked by vandalism and petty crime. Eventually, the square was closed off for a prolonged period due to safety concerns.

Positioned at the intersection of Grine Belkacem Street to the right and the El Gourzi wadi canal to the left; which is now fully covered and includes public seating as an extension of the square; the site enjoys two main access points: a primary entrance from Avenue de l'Indépendance, and a secondary one from the nearby 84 Logements housing development (Ismail, 2015).

Immersed in a highly commercial area, the square is surrounded by shops lining Avenue de l'Indépendance and faces Benflis Street, a wholesale hub known for cosmetic products. Informal vendors from the adjacent residential area add to the constant activity. A police station located just a few meters away further highlights the square's strategic role in the neighborhood.

In response to the square's past decline, a new phase of redevelopment was launched. The fencing was removed, and the space was redesigned with a more open layout. However, the new landscaping has been criticized for its poor quality. Much of the greenery was removed in favor of tiled paving, and a central fountain was added in an attempt to rebrand the space as a lively public square (Guedoudje, 2013).

Today, the area functions as an open esplanade at the heart of a bustling commercial district. It stands as both a reflection of Batna's historical layers and an example of its ongoing urban reinvention.

• Social and Cultural Dynamics

Usage Patterns:

- A place for passersby to rest, meet, and socialize..
- Mainly frequented by a young population.
- Generally attracts a mixed-gender audience.
- A transitional space between two parts of the city.
- Suitable for strolling and relaxation.

Community Role:

- Serves as a social hub, facilitating interactions among diverse groups of people.
- **Urban Attractiveness and Functionality:**
 - The square is seen as an attractive landmark.
 - A variety of uses, with playgrounds for children and relaxation areas for adults.
 - The plot is widely used by different sections of society due to its variety of activities.
 - The plot performs several functions such as a transitional space, a play area, a relaxation area and a meeting place for various appointments.

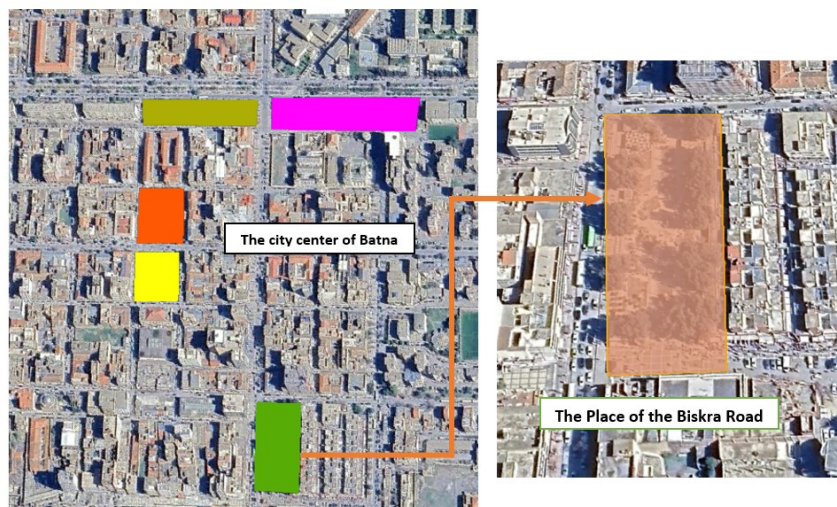


Figure 16. The analysis focuses on the place of Biskra road and its surrounding urban fabric in the city of Batna (Developed by Authors).

a. Position of the Square Relative to the Street

Along the road to Biskra, the square occupies a very important position. This is considered a well-known shopping street. This square offers both visibility and access to several adjacent spaces.

b. Geometric Layout

The place of the Biskra road features:

- uniform rectangular shape, which promotes a clear and coherent spatial organization.
- An open paved square allows pedestrians to move without difficulty. Therefore, undeveloped bare land areas such as green spaces.
- Surrounded by important structures: the market of 84 housing, various shops and a school specialized in teaching the Koran.
- The design promotes versatility for various activities.

c. Peripheral Buildings

The buildings surrounding the square are almost identical in architecture:

- **Façade 1:** houses individual dwellings along the axis of the road to Biskra, with a ground floor occupied by premises for trade in clothing for men, women and children.
- **Façade 2:** occupied by houses with ground floors occupied by commerce (women's and children's clothing stores).
- **Façade 3:** composed of an educational establishment (a school to teach the Quran).

d. Added Built Elements

Kiosks and fast food offer very important services for users of different ages.

The square plays a key role in the social and urban life of the city, serving as a privileged public space for the citizens of the city and for those outside the city.

The plot, despite several renovations, still suffers from a flagrant deficit in its development.

● Analysis of urban furniture:

The analysis of urban furniture begins by classifying the elements according to their function in public space. Once classified, each element is mapped to the site map in order to understand its spatial arrangement.

In the case of Biskra Road Square, four main categories of street furniture can be distinguished: comfort furniture, commercial and reception furniture, technical furniture and lighting equipment. Field observations identified the following components:

- **Seating:** Wrought iron benches with back and no armrests are common, offering basic seating options but they are limited.
 - **Vegetation:** The existing vegetation is in the form of trees along the main façade on the road to Biskra, providing shade, and affecting thermal comfort.
 - **Lighting:** Standard street lamps are installed, ensuring visibility at night but lacking aesthetics.
 - **Signage:** Signs and information are present but may not be optimally placed to guide pedestrians.
 - **Commercial Kiosks and fast food:** open structures offering various services with the presence of tables, chairs, umbrellas and fenced areas for eating and drinking.
- **Types of Urban Furniture:**

1. Comfort Furniture:

Public benches: These are long wrought iron benches with backrest and without armrests, placed a little everywhere in the whole place.



Figure 17. Public Comfort Furniture (Benches) in the Place of the Biskra Road (Authors, 2025).

2. Green spaces: spaces surrounded by concrete are devoid of vegetation, making them suitable for use as children's play areas.



Figure 18. Green spaces (Authors, 2025).

3. Commercial and Reception Furniture:

Two kiosks Located at the right and left corners of the square, overlooking the shopping street Biskra road, these fully open kiosks are used to sell various things such as newspapers and other items.

The plot also includes two nearby fast food shops overlooking the plot, offering services for users who want to eat and drink fresh drinks in summer. Thus, there are two other open spaces, but partially fenced, with the presence of tables and chairs to sit. Both are located right next to the ice cream and cold drinks kiosks.



Figure 19. Commercial and reception furniture (Authors, 2025).

4. Hygiene and cleanliness furniture:

The plot includes waste bins in the corners, but which are not suitable for their purpose.



Figure 20. Cleanliness furniture (Authors, 2025).

5. Lighting Equipment:

Street lamps: Curved light poles typically installed on one side of the street, at corners and mid-block locations. The square is equipped with several candelabras ensuring proper illumination.



Figure 21. Street lamps (Authors, 2025).

4.3. A comparative analysis between the “Place Harsous” and the “Place de la Route de Biskra”

Table 2. A comparative analysis between the “Place Harsous” and the “Place de la Route de Biskra”.

Criterion	Place Harsous (Place de la République)	Place of the Biskra Road (ex-Place des Boules)
Historical Context	Formerly the church forecourt (est. 1855), renamed Church Square in 1863, church demolished after 1962, fountain erected, then fully paved by the 1990s.	Originally a linear colonial-era garden, converted in 1972 into a fenced pétanque garden (“Place des Boules”), later opened up and paved with a central fountain in recent redevelopments.
Area & Shape	2 900 m ² ; regular rectangle slightly protruding into Avenue de la République.	3 200 m ² (approx.); elongated rectangle running along Avenue de l’Indépendance (Biskra Road).
Spatial Configuration	Fully paved in marble opus incertum; three main access points; surrounded by mixed-use façades (shops, post office, theater, residences).	Partially paved with large bare zones; two primary entrances (avenue and adjacent housing estate); flanked by shops, school, police station, and informal vending areas.
Comfort Furniture	Sparse concrete benches without backs/armrests; few trash bins; minimal greenery (only low shrubs).	Limited wrought-iron benches with backs (no armrests) concrete planters devoid of plants (often used as play areas); rows of shade trees along main façade.

Commercial/ Reception Furniture	Two multi-service kiosks selling newspapers, refreshments, and hosting public telephones.	Two open kiosks for newspapers/refreshments plus two adjacent fast-food outlets with tables, chairs, umbrellas, and partial fencing.
Technical Furniture	Several billboards installed and ready for advertising; a simple bus stop shelter.	Dispersed advertising panels; no dedicated bus shelter (pedestrian traffic only).
Lighting	Standard candelabra-style street lamps at edges and corners; functional but lacking aesthetic integration.	Single-arm lamp posts at intersections and mid-block; adequate illumination but no cohesive design theme.
Usage Patterns	Predominantly male users resting and socializing; serves as a pedestrian conduit between commercial and administrative nodes.	Mixed-gender crowds (including families and youth); used for strolling, resting, and transitional circulation between residential and commercial areas.
Attractiveness Functionality	Limited sociability due to insufficient and poor-condition furniture; strong visual link to Frères Bouabssa Street but low comfort.	Known locally as a pétanque spot; versatile uses (play, rest, meeting), yet hampered by low-quality paving and reduced greenery.

5. Conclusion

The study of the two sites reveals divergent approaches to urban planning. The Place Harsous, which has a rich historical past linked to the presence of a church, is currently characterized by a functional but minimalist layout. There is a sober urban furniture (especially uncomfortable benches and limited vegetation) which limits its ability to promote social interactions. Although it occupies a central place in the urban fabric, its use remains mainly functional. On the other hand, the esplanade of the road of Biskra, offers a more dynamic atmosphere with its trees providing shade and informal shops. However, the uneven surface and lack of maintenance of the trough plantations reflect an incomplete development. The first option suffers from a lack of attractiveness due to its rigidity, while the second option is criticized for its lack of aesthetic and functional consistency. An in-depth analysis of furniture ergonomics, coating quality and landscape integration could transform these spaces into living environments that meet the diverse needs of users.

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Conflict of Interests

The Author(s) declare(s) that there is no conflict of interest.

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