Collective residential neighbourhoods in Algeria: between reality and planning. A case study of the 800 Housing Units neighbourhood in Batna City

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Summary

The housing problem, or housing crisis, affecting most Algerian cities has compelled political and executive authorities at all levels (central, regional, and local) to adopt numerous housing policies aimed at reducing the significant gap between the two sides of the housing equation (high demand – low supply). Additionally, the challenge of providing housing units to realize all planned housing projects troubles local officials. Therefore, there has been a trend towards prioritizing collective housing projects to rationalize property consumption and enhance the real estate portfolio of local communities.

Batna city has had its share of these collective housing programs, and our research paper focused on its deteriorating reality due to numerous changes affecting both the built and unbuilt environment. This has led to a decline in the quality of life in these neighbourhoods, prompting the intervention of relevant authorities to launch 'urban improvement' projects to rectify the imbalances recorded in the urban aspect of most collective residential neighbourhoods, including the 800 Housing Units neighbourhood (800-Unit Neighbourhood) as a good example. The process has been initiated to stop the aforementioned area from a deteriorating and elevate it from poor condition to a better, if not ideal, situation.

In conclusion, we recommend that urban laws be activated to halt any illegal alterations or modifications, and above all, that design aspect of collective housing units during the planning phase be considered to align with residents' preferences before the latter occupy them and make changes, thereby avoiding visual pollution with urban concepts.

1. Introduction

Algerian government has adopted a specific policy for collective housing and prioritized it in all sectoral programs and development plans in the period immediately following independence. All support was directed towards the housing sector, especially targeting vulnerable and low-income groups. Numerous housing projects were implemented, covering all major urban agglomerations (ACL) in every state, especially the cities serving as state capitals. Alongside these projects, various housing formats were introduced, with the majority being designated as social housing. To organize the process, the state adopted the policy of New Urban Housing Zones (ZHUN), which was implemented from 1975 until the end of the 1980s.

The city of Batna had its share of housing projects under the New Urban Housing Zones policy. We have attempted to shed light on a model that these projects had followed, and we have chosen the 800-Unit Neighbourhood due to its strategic location in the city. Moreover, we have observed numerous imbalances in various aspects of the neighbourhood, which we will detail in this research paper. Our aim is to assess whether the adopted housing policy has succeeded or failed. Is the quality of life in these areas satisfactory or not? Additionally, we seek to propose suitable solutions to rectify these imbalances.

2. Study area location (Batna City)

2.1. Geographical location

Batna city is located between the following coordinates:

- Between the longitudinal lines: 6° and 08', and 6° and 22' East of the Greenwich Meridian.
- Between the latitudinal lines: 35° and 51', and 35° and 57' North of the Equator.

2.2. Administrative location

Batna municipality is one of the 61 municipalities comprising Batna province. It is administratively bordered by the following municipalities: Sraynia and Fesdis to the north and northeast, Ayoun El Atrous to the east, Tazoult to the southeast, Wadi El Sheaba to the south and southwest, and Wadi El Maa to the northwest [PDAU Batna 2008, p. 6] – Fig. 1.
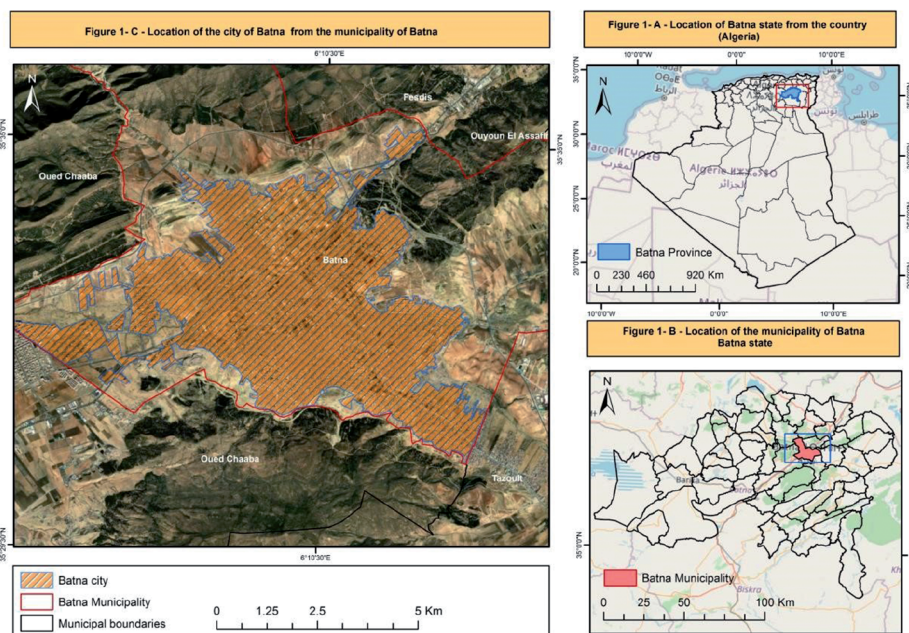
Source: compiled by the researcher using ArcMap, March 2024.

Fig. 1. Administrative location of Batna City and Municipality

3. Analytical study of the 800-Unit Neighbourhood

3.1. The origin

The 800-Unit Neighbourhood is one of the collective residential estates under the Office for the Promotion and Management of Real Estate (OPGI), representing one of the early experiments in prefabricated construction in Batna City within the framework of the New Urban Housing Zones policy.

The project was registered in November 1980, and the construction commenced on January 15, 1981, by the major building contractor, the EPTB company. However, the contract was terminated in February 1989 due to the contractor's inability to complete the project. The remaining secondary works were then assigned to several private contractors.

3.1.1. Project restructuring

The project underwent restructuring, which reduced the number of housing units from 800 to 414 (Batna Real Estate Promotion and Management Office).

3.1.2. Neighbourhood's densification

The neighbourhood underwent a densification process by adding a new building frame consisting of residential buildings distributed as follows: 47 cooperative housing units,

6 and 9 units for the health sector, and 15 units for the education sector, bringing the total number of housing units in the neighbourhood to 491 (Fig. 2).
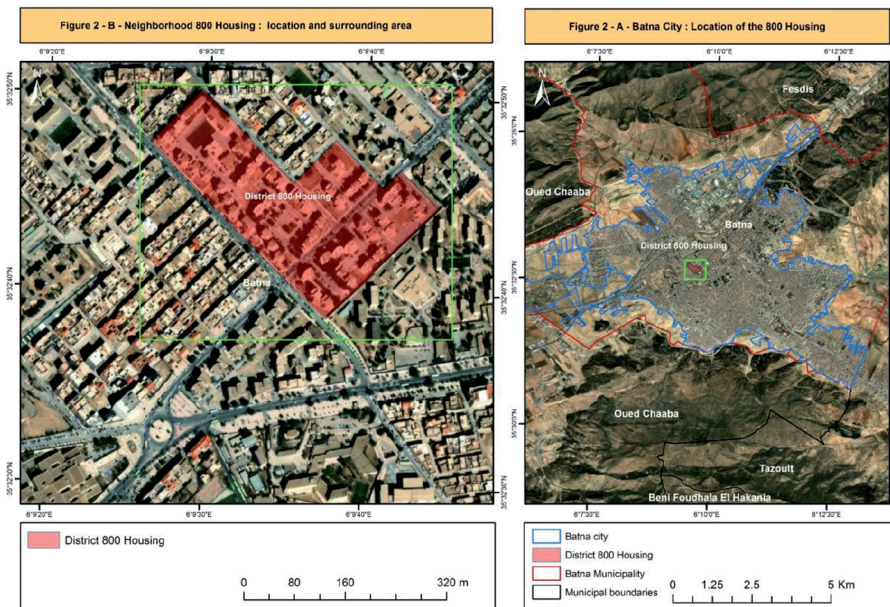
Source: compiled by the researcher using ArcMap, March 2024

Fig. 2. Location of the 800-Unit Neighbourhood Relative to Batna City

3.2. Scope of the study

1. **Neighbourhood's location:**

    The 800-Unit Neighbourhood is situated in the southwest of Batna City, on the eastern side of the second new urban residential area, adjacent to two main roads: the Brothers Abdullah Road connecting Biskra Road and Mustafa Kaouda Road, and the road linking Biskra and Brothers Mazouach passing through the 1020-Unit neighbourhood.

2. **Neighbourhood's boundaries:**

    The neighbourhood is bordered by 164-Unit Neighbourhood to the north, University Residence Dwadi Saleh and 126-Unit Neighbourhood to the east, the residential subdivision of Mujahideen to the west, and Ben Fliss residential subdivision and 300-Unit Neighbourhood to the south. The neighbourhood covers an area estimated at 7.5579 hectares (800-Unit Neighbourhood block plan).

3. **Importance of the neighbourhood's location:**

    The 800-Unit Neighbourhood occupies a significant location due to the following features:

- Proximity to surrounding amenities such as the university, courthouse, police center, and administrative district;
- Being located in the structured part of Urban Residential Area II;
- Its benefit from the passage of the axis linking the Biskra Road and Mustafa Kaouda Road has given it excellent connectivity to the city center.

3.3. Urban study

3.3.1. Built framework

The built framework of the neighbourhood consists of the area occupied by its buildings, estimated at 54 buildings covering an area of 1,1642 Hectare, equivalent to 15.40% of the total neighbourhood area. The unbuilt area is approximately 363,937 m², accounting for 84.60% of the total neighbourhood area (800-Unit Neighbourhood block plan).

3.3.1.1. Land use

The land acquisition coefficient (CES) and land occupation coefficient (COS) for the 800-Unit Neighbourhood provide us with the land acquisition ratio and housing density values (Table 1).

Table 1. Characteristics of the Built Framework of the 800-Unit Neighbourhood

Land area [m²]	Built area [m²]	CES	COS	Number of units	Density (units/Hectare)
75,579	11,642	0.15	0.64	491	64.97

Source: researcher's compilation, March 2024

We found that the land acquisition coefficient CES = 0.15, indicating that 15% of the neighbourhood's total area is allocated to the built framework of buildings, implying the availability of significant open spaces.

3.3.1.2. Housing density

Housing density is an important criterion for illustrating the relationship between the built and the unbuilt framework. With the current number of units in the 800-Unit Neighbourhood estimated at 491 units (800-Unit Neighbourhood block plan), the housing density is approximately 64.97 units per hectare (Table 1).

3.3.1.3. Building patterns

The buildings are multi-story structures sharing a common entrance. They vary in external appearance (i.e. in their facades), layout, and number of floors as follows:

A. Functional Housing: Consists of three buildings, two of which are dedicated to the education sector, each with 3 levels (R+2), and one building dedicated to the health sector with four floors (R+3), each housing four units on the ground floor.

B. **Cooperative Housing:** Consists of five buildings, each with five floors (R+4), with each floor containing two units (F4, F3), and they are in good structural status as they have been most recently completed.

C. **Social Housing:** This is the predominant and distinctive type of housing in the neighbourhood, consisting of 46 buildings, each comprising five floors (R+4), with each floor containing two units (apartments). These units vary in size from floor to floor and are characterized by:

3.3.1.4. *Facades*

Architectural treatment of the facades is lacking, and they feature a series of openings (windows, balconies) with uniform dimensions and simple shapes.

3.3.1.5. *Staircases*

Access to the floors is via the staircase, which houses technical amenities for each unit, along with a series of openings and lighting.

3.3.1.6. *Entry to the building*

The etry indicates the building number and the numbers of the units it contains. Often, multiple buildings share the same number, while some are unnumbered. Each entry is equipped with mailboxes for the residents of the building.

3.3.1.7. *Building materials*

The chief construction material is reinforced concrete. However, the paint is deteriorating due to its age and poor quality.

3.3.1.8. *External appearance*

The buildings in the 800-Unit Neighbourhood exhibit varied and irregular shapes due to the lack of uniformity in the sizes of the units.

3.3.1.9. *Nature of property ownership*

The property ownership of the 800-Unit Neighbourhood belongs to the Office for Promotion and Management of Real Estate Assets (OPGI) of Batna City. OPGI oversaw the construction of the various types of housing in the neighbourhood (social, cooperative, functional).

Table 2. 800-Unit neighbourhood – property ownership structure

Nature of ownership	Leased from OPGI	Leased from private owners	Private ownership	Total
Number	71	104	316	491
Percentage [%]	14.46	21.18	64.36	100

Source: Office for Promotion and Management of Real Estate Assets (OPGI), Batna, February 2024

Source: compiled by the researcher using ArcMap, March 2024

Fig. 3. 800-Unit Neighbourhood – built and unbuilt framework

From the table, we find that 64.36% of the units are privately owned after being purchased from OPGI through transfer procedures. 14.46% of the units are rented from OPGI, and the remaining percentage is rented from private landlords (Table 2).

3.3.1.10. Condition of the built framework

A. Building condition:

The assessment of building condition relates to its maintenance and cleanliness. Through field observation of the neighbourhood, it is evident that:

- **Cleanliness:** Cleanliness is lacking in many buildings, indicated by the deteriorated internal surroundings of the building and the prevalence of dirt in the stairwells and graffiti on the walls, attributed to the residents' indifference and the neglect on the part of OPGI.
- **Maintenance:** Building maintenance is almost nonexistent, as evident from the deteriorating paint, damaged doors, and lack of lighting in stairwells due to theft and vandalism, coupled with OPGI's neglect of repair and maintenance.

B. Unit condition:

Condition of units: According to data obtained from relevant sources, we found that the average (fair) structural condition is the most prevalent at 80.65%, followed

by good condition at 15.68%, primarily attributed to the most recently constructed units (LSP), and finally, poor condition at 3.67%.

Table 3. 800-Unit Neighbourhood – condition of units

Structural condition	Good	Fair	Poor	Total
Number of units	77	396	18	491
Percentage [%]	15.68	80.65	3.67	100

Source: Office for Promotion and Management of Real Estate Assets (OPGI), Batna, March 2024

C. General organization of buildings:
  1. **Building layout:** The layout of buildings follows a path of least resistance, lacking proper planning. Buildings in the neighbourhood are arranged around courtyards, mostly used as parking lots. Most buildings are situated along the main road, Boulevard des Frères Abdallah, and the connecting road between the 800-Unit Neighbourhood and the 1020-Unit Neighbourhood.
  2. **Alignment with roads:** Buildings are aligned parallel to roads, with a setback distance ranging from 5 to 17.5 meters, depending on the importance and type of the road. There are two types of alignments: gradual alignment and regular alignment (Fig. 3).
  3. **Boundaries between buildings:** The distances between adjacent buildings range from 17.5 to 27 meters, and distances between facing buildings range from 40 to 70 meters.

D. Facades:

Blank facades face the main roads, while front facades facing different directions (north, east, south, west) are organized around courtyards and parking lots connected to pathways leading to building entrances.

E. Building materials:

All buildings in the neighbourhood are constructed using modern materials, including iron, bricks, cement, and others. Attention should be paid to factors like solar exposure and ventilation in the design process to ensure proper building framework (buildings) design (external opening dimensions, spacing between buildings, etc.).

3.3.2. Unbuilt framework

The unbuilt framework in the 800-Unit Neighbourhood includes road networks, parking areas, children's play areas, green spaces, and vacant spaces (Fig. 3).

3.3.2.1. Green spaces

Some vacant spaces in the neighbourhood have been landscaped into green areas under the supervision of the Technical Department of Batna Municipality.

3.3.2.2. *Parking areas*

Most internal courtyards have been converted into parking spaces at the expense of play and recreational areas. There are 159 parking spaces. However, with a standard of 0.5 cars per unit (the national average for car ownership), there is a shortfall of 36 parking spaces in the neighbourhood.

3.3.2.3. *Children's play areas*

Unfortunately, there is a lack of designated children's play areas in the neighbourhood, depriving children of outdoor activities. This aspect has not received the necessary attention.

3.3.2.4. *Vacant areas*

These mainly consist of spaces between roads, parking areas, and buildings, which are open and undeveloped spaces.

3.3.2.5. *Primary and secondary road networks*

The neighbourhood is traversed by main traffic arteries, divided into units, alongside roads connecting these arteries and residential units. The most important ones include:

- Boulevard des Frères Abdallah: with a width of 16 meters, facing the rear facades of the buildings, and in good condition.
  - A. **Access points:** These connect primary and secondary roads to residential units with a width of 6 meters, mostly ending in parking areas, and are in good condition.
  - B. **Service roads:** These serve as extensions of tertiary road sidewalks (access points), connecting to parking areas, which, in turn, connect to building entrances. They have a width of 2 meters.

3.3.2.6. *Environmental aspect*

The neighbourhood suffers from environmental degradation due to indiscriminate dumping and accumulation of garbage in non-designated areas, reflecting residents' lack of awareness and neglect of their neighbourhood.

3.4. Population study

3.4.1. Population density

The population of the neighbourhood, according to the General Census of Housing and Population for the year 2022, was estimated at 2892 individuals [Statistical Guide of Batna Municipality 2022, p. 37], with a density of approximately 383 individuals per hectare.

3.5. Household size (Dwelling Occupancy Rate, Room Occupancy Rate)

It is difficult to control the values of the dwelling occupancy rate (TOL) due to the variation in dwelling sizes in the neighbourhood (number of rooms), such as F3, F4, and F5.

3.6. Study of changes

The changes introduced to the buildings in the 800-Unit Neighbourhood reveal a lack of alignment between the designs of the dwellings and the culture and number of occupants. It appears to be an attempt to adapt to current needs. We recorded the changes outlined in Table 4 after field observations.

Table 4. 800-Unit Neighbourhood – changes affecting dwellings

Type of changes	Closing and fencing	Modifying room size	Repainting	Modifying the kitchen	Renewing sewage installations	Full-partial tiling	Installing new openings	Other changes	Total
Number	13	5	9	7	4	6	3	2	49
%	26.53	10.20	18.37	14.29	8.16	12.24	6.12	4.08	100

Source: field survey among the neighbourhood's residents, March 2024

3.6.1. Changes in the built framework

3.6.1.1. *Changes in dwellings*

From the table below, we find that most of the changes affected the balconies, accounting for 26.53% of the total sample of 49 surveys conducted among the neighbourhood's residents.

3.6.1.2. *Facade changes*

From Table 4, we find that the majority of changes affected the balconies at a rate of 26.53%, which directly impacts the disfigurement of the buildings' facades alongside the installation of new openings. The fencing is inconsistently shaped and colored, resulting in visual pollution that detracts from the architectural aesthetics of the buildings.

3.6.2. Reasons for changes

Through the survey process, we found that there are several reasons that prompted the residents of the neighbourhood to make these changes (either internal or external). Below, we list the most important of these reasons:

1. Security concerns (escalation of theft, Fig. 4),
2. Housing constraints (in comparison with the average occupancy rate TOL),
3. Conservative customs and traditions,
4. Ventilation and sunlight access facilitation.

3.6.3. Changes in the unbuilt framework

3.6.3.1. *Staircase enclosures*

Staircase enclosures in most buildings of the 800-Unit Neighbourhood underwent changes in all their components (staircase lighting, main building doors, technical closets, mailbox units).

3.6.3.2. *Changes in vacant and unprepared spaces*

Field observations revealed that areas within the public domain underwent changes, with significant alterations observed. Key changes in these areas include:

- Conversion of most open spaces into parking areas at the expense of areas designated for gatherings, recreation, and social interaction within the neighbourhood;
- Multiplicity of entrances to these spaces and the misalignment of building entrances with those areas rendered them ineffective as spaces directed towards neighbourhood residents, turning them into transit areas and dumping grounds.

Source: Field Survey – Researcher, March 2024

Fig. 4. 800 Housing Units Neighbourhood – changes in the built and unbuilt framework

4. Significant imbalances requiring intervention

Based on the foregoing, we can identify the following imbalances:

- large distances between buildings leading to neglected and undeveloped spaces,
- building entrances facing away from internal spaces, rendering them ineffective,
- repetition of the same building design, leading to monotony in the neighbourhood's appearance.

Numerous changes introduced to the housing have disfigured the aesthetics of building facades, resulting in what is known as visual pollution. The reason behind making changes was to preserve privacy, according to customs and traditions.

5. Proposed solutions to correct imbalances

5.1. Urban improvement process

It is a mechanism for human advancement, enabling residents to enjoy a stable and safe life, facilitating their access to services to meet their basic needs, including health, environment, decent housing, and easy access to public amenities, entertainment, and culture. It encourages their integration and social interaction, strengthens their willingness to exercise citizenship by participating in the management of their living spaces within the framework of dialogue and solidarity [Harakat 2001].

5.2. Objectives and activities of urban improvement

According to Directive Law No. 06/06 dated February 20, 2006, Articles 06, 09, and 10 precisely delineate all activities related to urban improvement, summarized as follows:

- improving the living environment for residents,
- reducing disparities between neighbourhoods and promoting social cohesion,
- maintaining cleanliness and environmental protection.

5.3. Parties involved in urban improvement

- Ministry of Housing and Urban Planning at the central level,
- Provincial government,
- Municipality,
- Residents, neighbourhood associations, and civil society (participatory culture),
- Project owner,
- Directorate of Urban Planning, Architecture, and Construction.

5.4. Local authority action and financial resources allocation

According to the source, in the years 2021–2022 Batna province benefited from funancing, under the special program for urban improvement works, with a total amount of 451.4 million DZD from the Special Fund for Economic Development of the High Plateaus, distributed among 21 districts, Batna district being one of them. Batna province benefited from 7 projects, one of which included the 800 Housing Units Neighbourhood.

Urban improvement operations included:

1. Regularly renewing building paint with quality paint.
2. Rehabilitating road axes and repaving them, as well as paving sidewalks.
3. Upgrading drinking water and sewage networks.
4. Developing and equipping recreational and playground areas.

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