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THE TYPOLOGIES OF THE HOUSES IN THE MEDINA OF ANNABA-ALGERIA

Labbaci Ines
Department of Architecture Annaba.
Badji Mokhtar University Annaba

Attoui Redha
Department of Architecture Annaba.
Badji Mokhtar University Annaba

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ABSTRACT

The patio house is a cultural production, it bears witness to the social practices of ancient societies that shaped its spaces by considering their own cultures and needs, this is how it was born and developed into a spontaneous architecture consistent with the environment, the prevailing climate, the culture and interests of the family and its future generations,

For years, the Annaba Medina had suffered from the precariousness of unhealthy, over-densified housing. The original families were leaving and low-income rural immigrants were finding the Medina a favorable host structure, with large empty mansions and a type of house with patios that lent itself to renting by the piece.

The unsuitability of this urban fabric for the current standards and practices of the inhabitants, and contemporary development, were the main causes of the changes made by the Medinese throughout the area, mainly affecting the original urban form.

Through this research, we have tried to analyze the traditional domestic space to highlight the new typologies of houses in Medina.

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Introduction.

The construction of identity is a multi-dimensional process that is unique to each individual. It accompanies us from birth, and even before, until the end of our lives. As a result, throughout our evolution, and each time we occupy a given space, we ensure that our spatial entity evolves by introducing a series of transformations. However, these transformations are not always deliberately chosen; they are sometimes imposed for various reasons.

Housing has an informative capacity, expressing the lives of society through the socio-cultural values that make up its soul. It is difficult to see culture, but it is easy to see what it produces (RAPOPORT, Amos, 1992).

It should be remembered that the quantity and quality of alterations made to a home depend on several factors, including the nature of the property and its condition. If the property is in good condition, the modifications will generally be cosmetic or will aim to make the resident more comfortable. If, on the other hand, the property is in poor condition, the priority is restoration and maintenance.

The financial and budgetary factor also has a major influence on the future of the converted space. This is what determines the quality of the materials used and the nature of the modifications undertaken, which can range from simple, improvised, and superficial DIY to in-depth, well-thought-out, and properly executed restoration.

This reflection prompts us to ask how the above-mentioned factors affect the preservation of cultural and historical monuments, particularly those in Algeria, which are undeniable witnesses to the process of building the identity of the country and its people, but which are dying and dying under the ravages of time, neglect, ignorance and failure to adapt to contemporary requirements. To better explore this issue, we'll take a look at the current state of the patio houses in the Medina of Annaba. What has become of them? How have they changed over the years? What are the new types?

To answer this question, we will analyze 42 houses located in the northern part of the Medina. We chose this area because of its proximity to the Boumarouane mosque and the Ben Antera water source, and we believe that it was the first nucleus of the Annaba Medina.

Methodology.

Firstly, we will take stock of the houses. Then we will begin the phase of analytical reading of the plans to define the typologies of the existing houses. Finally, we will classify the houses according to:

1 – Typology of the patio;
2 – Typology of the staircase and its location;
3 – Skifa;
4 – Type of occupation by family.

First: patio typology.

The patio is the most characteristic element of the house in the Medina because it is with its typology (central, corner, linear, adjacent, L-shaped, T-shaped, or integrated) (BOULFAINE Warda, 2010), its location and its dimensions that we can conclude if the block has undergone an action of segmentation/division, alignment/adjustment... The patios of the houses of the Medina were the central point around which the other spaces were grouped.

The new shapes of the patio reveal the nature of the transformations carried out on the houses and the added parts. They also tell us how the tastes of the inhabitants have changed over time, and how the importance of this space has evolved both technically and spiritually.

Secondly: the type of staircase and its location.

Medina houses were generally single-story or ground floor with a terrace accessible only to women. Consequently, the location of the staircase and its shape show us whether the staircase existed when the house was built or whether it was added during the horizontal/vertical extension.

What's more, if the staircase is at the end of the floor plan, with intimate access and a generally straight shape, we can deduce that it was there from the beginning. But if it is located on the patio with direct access and half or quarter-turn shapes, we can deduce that it is a staircase added during the horizontal extension of the house.

Third: Skifa.

Skifa is a feature that characterizes the patio house, its existence shows that the house was built in the medieval period, and the latter still retains its architectural cachet despite the change in its role.

Fourth: occupation by family.

In our view, it is important to look at the type of occupation of the houses in our corpus. To this end, we will look at whether the house is:

– single occupancy;
– collective: occupation by room.

unit-based: a family occupies two or three rooms with a sanitary block, independent access, and sharing the same patio and stairwell.

The wilaya of Annaba.

Annaba is located in north-eastern Algeria and is the fourth-largest city in the country. It stretches along 80 km of Mediterranean coastline, on flat terrain covering an area of around 1,412 km^2.

The Medina of Annaba.

The Medina used to be a very dynamic and important center of life (BENTRADE Djamel Eddine, 2011) and is known today under the common name of 'Place d'Armes'. Located in the heart of the city, it covers an area of 16 hectares and had 12,405 inhabitants in 2015 (AUA Hafiane Abderrahim, 2006).

Figure 1. Geographical location of Algeria.

Source : Voici une liste des pays africains et leur capitale papiyon 24ht,19 aout 2023, https://papiyon24.com/2023/08/19/voici-une-liste-des-pays-africains-et-leur-capitale.

Figure 2. Geographical location of the wilaya of Annaba.

Source : Carte Algérie wilayas, Plan et cartes des villes Algérienne - خريطة الجزائر, Map interactif, carte géographique, carte routière, http://www.carte-algerie.com/carte-algerie/carte-algerie-wilayas.jpg.

Figure 3: geographical location of the Medina of Annaba,

Source : Enjeux et instruments d'une politique urbaine, le logement évolutif comme alternative au quartier précaire de Sidi-Harb d'Annaba (Nord-Est Algérien) d'Annaba, Hayet Mabrouk, April 15, 2020, érudit.

Geographically, the parade ground is set on a slope overlooking the sea, giving it a defensive character. Its slope, which gradually decreases towards the west, ensures that it is open to the city (Idem).

This historic fabric bears witness to the urban heritage handed down by the region's inhabitants over time and, like other traditional Algerian towns, is in a critical situation, despite the assets it contains in terms of its form and practices.

This part of the town has a particularly rich architectural and urban heritage (architectural and architectural elements, diverse and homogenous fabric). However, it is threatened by the risk of certain disappearance in the face of the destructive factors acting on it: dysfunction and imbalances (spatial, demographic, social, economic, urban), (BENABBES Kaghouche Samia, 13-14 May 2008).

As a result, its functional structures are weakened and unable to play an effective part in the city's urban dynamic. Lack of hygiene, inadequate adaptation to contemporary requirements, and the aging of the built environment make the fabric more delicate and fragile. Added to this are the social factors mentioned above. A situation that places this heritage at an intermediate level of urban integration on the verge of marginalization. (Idem).

Historical overview of the Medina of Annaba.

1. Medina of Annaba between (8th to 19th century).

Annaba, known as 'Madinat Seybouse', was part of the Arab-Muslim states that were established in eastern North Africa between the 8th and 16th centuries, such as the Fatimid state (10th century) and then the Zirid state (late 10th and 11th centuries).), followed by the Zirid State (late 10th and 11th centuries), the Hammadite State (11th and 12th centuries), the Al-Muwahidin Empire (12th century), and the Hafsid State (13th to 16th centuries) (DAHMANI Said, 2002).

During the Fatimid period, the Roman city of Hippo (the first urban settlement in Annaba) was still inhabited until the tenth century.

The remains of the city, which had probably been neglected, soon led to its downfall. In 373 A.H. - 983 A.D., with the arrival of the Zirids, the last occupants of the ancient city began to build, 3 km to the north, in the shelter of a promontory overlooking the Mediterranean Sea, a new small town called 'Bûna El Haditha' (Bouna the new), which took on the new nickname of 'Médinat Zaoui', in homage to its founder of Andalusian origin, the sovereign 'Mohamed Zaoui″.

The construction of a new 'Médinat Zaoui' district, all the more so as the old Numidian town was not only uninhabited but also subject to flooding caused by the overflowing waters of the Seybouse and the silting up of the mouth of the Bejjima.

Another objective was to build the new district on a hillside, both to guard against any attempt by the enemy to land and to make up for the lack of security in the event of a siege against the former Hippo.

Religious and scientific needs gave rise to the Abou Marouane El Bouni mosque, the foundation of which led to the building of houses in the same area.

Very quickly, as the population grew, it was necessary to extend new arteries and anticipate the promontory overlooking the sea, the need to accommodate it, to allow urban expansion throughout the Medina.

2. The Medina during the colonial period (1830 to 1962).

On their arrival, the colonists found themselves faced with an Arab-Muslim Medina, characterized by a traditional spatial structure, with a layout of narrow, winding streets and alleys, as well as dense, introverted islets.

These characteristics of the Medina fabric were a real constraint for the colonial administration, which had just settled in Bûna, given that this form did not adapt to European customs, especially with the arrival of motorization. Another factor was the need to defend and control the population, something that was not possible with the winding streets, which were an ideal place to organize revolts (BENTRADE Djamel Eddine, 2011).

As a result, they began to carry out the first actions on the whole of the old fabric, with plans for layouts, the construction of new European-style buildings, the construction of facilities, etc.

In morphological terms, the interventions carried out by the colonial administration in the Annaba Medina resulted in reconfigurations affecting the road network, with a new, fairly geometric grid superimposed on the old, more organic grid. This has had an impact on the other components, mainly the blocks, several of which have changed form.

3. The Annaba Medina after independence (1962 to the present day).

The country's independence was accompanied by a socio-economic and urban upheaval in the old town, essentially in its housing stock, which had been vacated by the European population and abandoned by the original families, and had become a place of welcome for a population from the countryside. Instead of being a place for urban life, the Medina has become an abandoned transit area.

The urban form of the Medina has undergone several changes, with demolition and reconstruction, the collapse of buildings, and the re-appropriation of inhabited space all having an impact on its built environment, which is currently in a critical state, threatening its very existence.

The patio house.

The traditional house is part of cultural production, insofar as it bears witness to the social practices of traditional societies, which have shaped its spaces by taking into account their own culture and needs.

Roderick Lawrence (R LAWRENCE Architect, author of Housing, Dwellings, and Homes: Design Theory, Research, and Practice) argues that it responds perfectly to cultural references and social concerns (FATHULLA Shaida Jamal).

Every society is exposed to changes affecting its social structure, due to several factors such as social interactions, industrial and technological development as well as natural damage or war.

The effects of globalization and modernization have disrupted lifestyles and cultural paradigms. This issue was addressed by Edward Bono (BONO E 1933 -2021 psychologist, author of the book: I am Right, you are Wrong, Penguin Books, London), who argued that transformations and changes in cultural paradigms lead to a shift in thinking, which in turn leads to a change in attitudes and actions towards the problems that individuals are likely to encounter. This effectively affects our way of life, our interests, our relationships, and our living space (BENSLIMANE Hanifa, 2017).

"True identity is the result of a living culture, the imposition of external values leads only to the loss of identity with unsustainable results" (BEHLOUL University, 1996).

Results and discussion.

The patio house has undergone several modifications over time, creating new types of houses. The interest of this work is to distinguish the variants of plans that exist in the Medina of Annaba and whether the patio house still retains its usefulness and architectural value.

To answer this question, we have chosen to study 42 houses located near the Abou Marouane mosque, which forms the core of the Medina.

The first stage consisted of taking stock of the situation, after which we began the phase of classifying the houses according to the 4 characteristics mentioned above (patio typology, type and location of staircases, skifa, occupation by family). The final stage enabled us to identify 5 distinct types of houses.

House types.
1st type: 4- to 5-room plan:

Location:

Figure 4 : geographical location of the 1st category in the medina of Annaba.

Source : plan d'occupation de sol de la médina d'Annaba, 2006, AUA Hafiane Abderrahim, Realised by the author.

House code: 357-287-278.

Description.

- This type is characterized by a trapezoidal floor plan with a maximum of 4 to 5 rooms and a surface area that varies between (14 m^2 and 42m^2).
- These houses are privately owned and occupied by heirs of the same family (one to two families maximum).
- At the entrance, there is a small hall that leads directly to the stairwell. This strong hall-stairwell junction ensures privacy and makes each floor independent of the other.
- The layout is generally the same on each level.
- The surface area of the rooms varies from 4 m^2 to 14 m^2.
- In case 278: the ground floor is a business, this house is organized in height, and is arranged by a stairwell that gives access to the different levels.

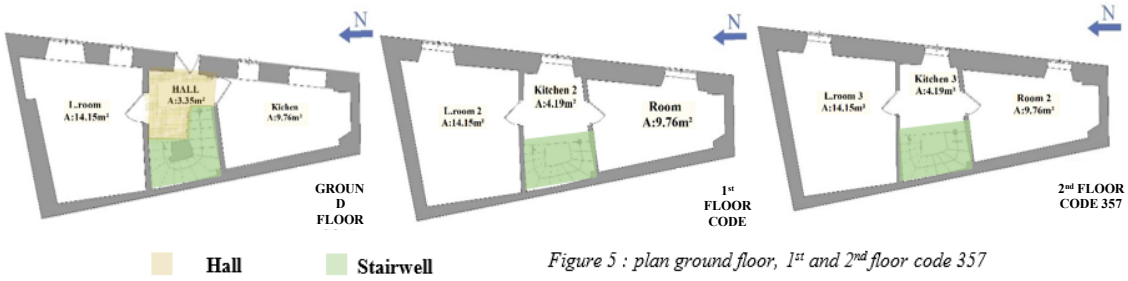

Figure 5 : plan ground floor, 1st and 2nd floor code 357

Source : architectural plan survey realised by HECHIM R, 2018, City laboratory and urban and landscape architectural heritage,university Badji Mokhtar Annaba, The Diagram made by the author,2024

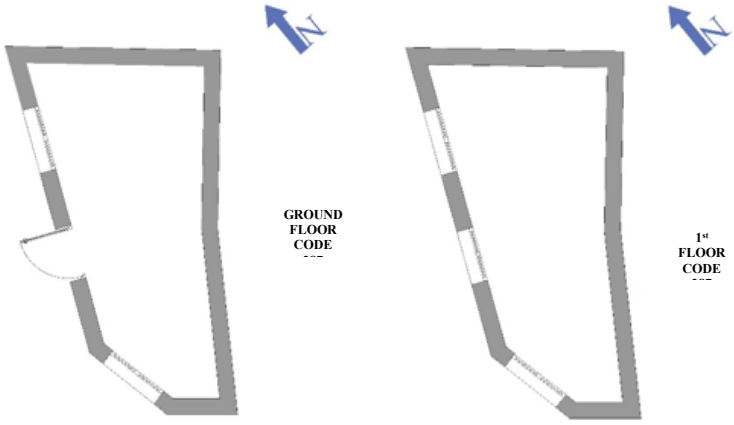

Figure 6 : plan ground floor, 1st floor code 287.

Source : City laboratory and urban and landscape architectural heritage,university Badji Mokhtar Annaba, The Diagram made by the author,2020

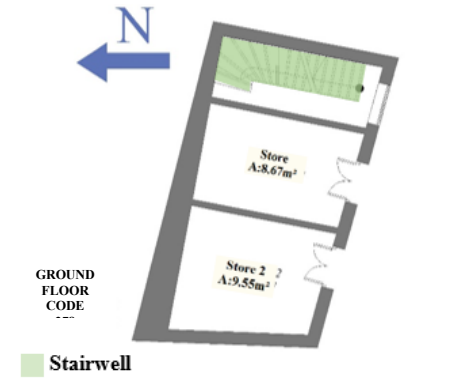

Figure 7 : plan ground floor code 278.

Source : architectural plan survey realised by AMMI Y,2018 , City laboratory and urban and landscape architectural heritage,university Badji Mokhtar Annaba, The Diagram made by the author,2020

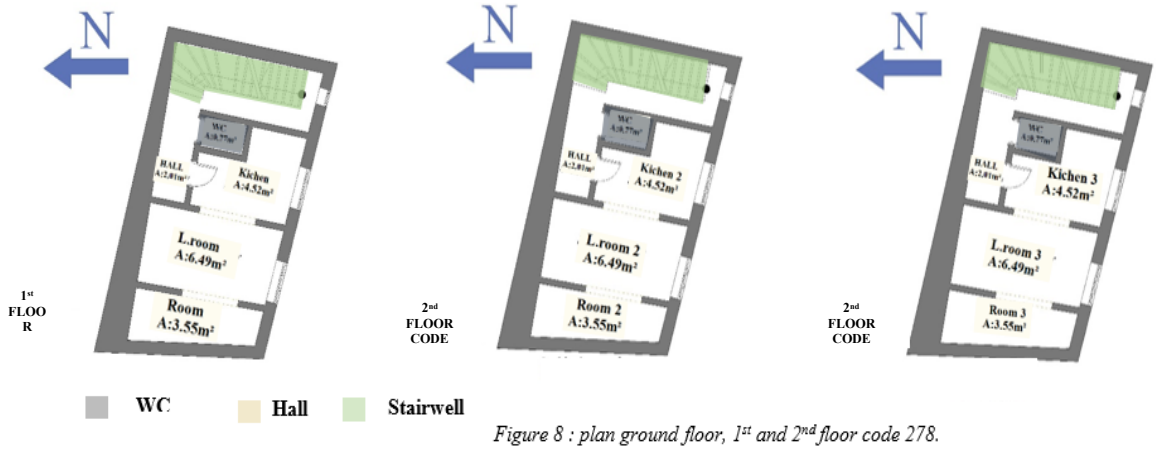

Figure 8 : plan ground floor, 1st and 2nd floor code 278.

Source : architectural plan survey realised by AMMI Y,2018, City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba. The Diagram made by the author.2020

2nd type: House without Skifa.

Location:

Figure 9. Geographical location of the 2nd category in the medina of Annaba.

Source: plan d'occupation de sol de la médina d'Annaba, 2006, AUA Hafiane Abderrahim, Realised by the author.

A. With direct access to the patio.

House code: 389-384-449-442.

Description;

– This type exists in three forms:

1. If the house has a small surface area (63.35 m^2 to 72.01 m^2): case 389-384, its access leads directly onto the 'L' shaped patio, around which all the spaces are organized, the latter is a quadrilateral surrounded by a facade and 3 party walls.

– Access to the next floors is via a stairwell at the end of the quadrilateral patio.

– Each family occupies one or two bedrooms ($5m^2$ to $19m^2$) and shares the same WC.

2. If the house has been restored or refurbished, as in case 449, it is reserved for a single family. As soon as you enter the house, you will find a large patio with an integrated staircase leading to the next floors.

– The ground floor consists of day areas and the first floor of night areas.

3. The patio has a new use, as in case 442:

– At the entrance to the house there is the L-shaped patio that organizes all the rooms and is located around it, it allows you to take the stairs to go to the next floors or to go to the garage, the left side of the plan has been added (a covered courtyard and a toilet block) with independent access.

– The surface area of the rooms varies between $15m^2$ and $36m^2$.

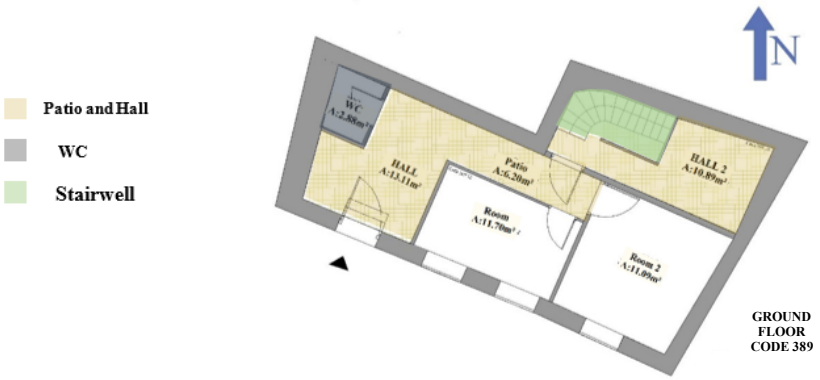

Figure 10 : plan ground floor, 1st and 2nd floor code 389

Source : architectural plan survey realised by GHEDDAB N, KHELLOUT Y, NEGRI M, 2015, City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba, The Diagram made by the author,2020

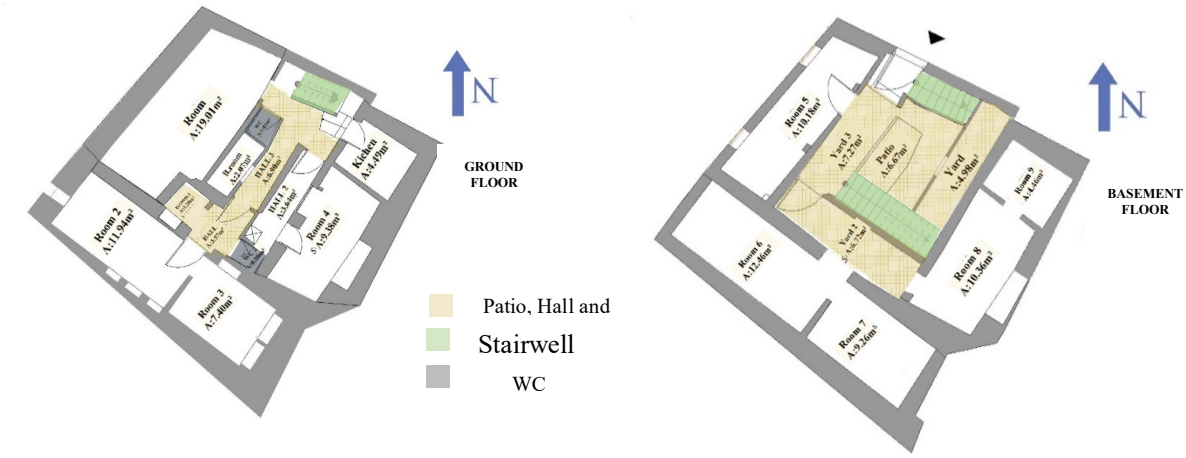

Figure 11. Basement and ground floor. plan code 384.

Source: architectural plan survey realised by AOUADI F, 2018. City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba, The Diagram made by the author, 2020.

Figure 12. Plan ground floor, 1st floor code. 449.

Source: architectural plan survey realised by BOUABDELEH S, 2018. City laboratory and urban and landscape architectural heritge,university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

Figure 13. Plan ground floor, 1st floor code 442.

Source: architectural plan survey realised by BOUABDELEH S ,2018, City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

B. Wih indirect access to the patio (an intermediate space; hall between the access and the patio).

House code: 326-348-279-316-387:

Description;

– At the entrance to the house, there is a small hall leading directly to the central patio, which provides access and distribution to the various spaces. Access to the upper floors is via a straight single or double stairwell, the location of which differs from plan to plan, but is always visible and accessible.

– The stairwell is always more than one story high (R+1 or R+2), with the occasional addition of a second stairwell (387-316-277), located at the end of the plan with discreet access; the purpose of this second stairwell is to reduce the flow of traffic.

– These houses are either communal, rented by the room, or occupied by heirs of the same family who share the same sanitary facilities (one per floor or one for all the inhabitants on the ground floor). The type of accommodation varies between an F1 (5m^2 to 36m^2), F2 (13m^2), F4 (55.85m^2), and F5 (90.6m^2), and the size of the bedrooms varies between (3m^2 to 22m^2).

– Only one case has a shop (387), with the addition of a second door to access the adjoining house.

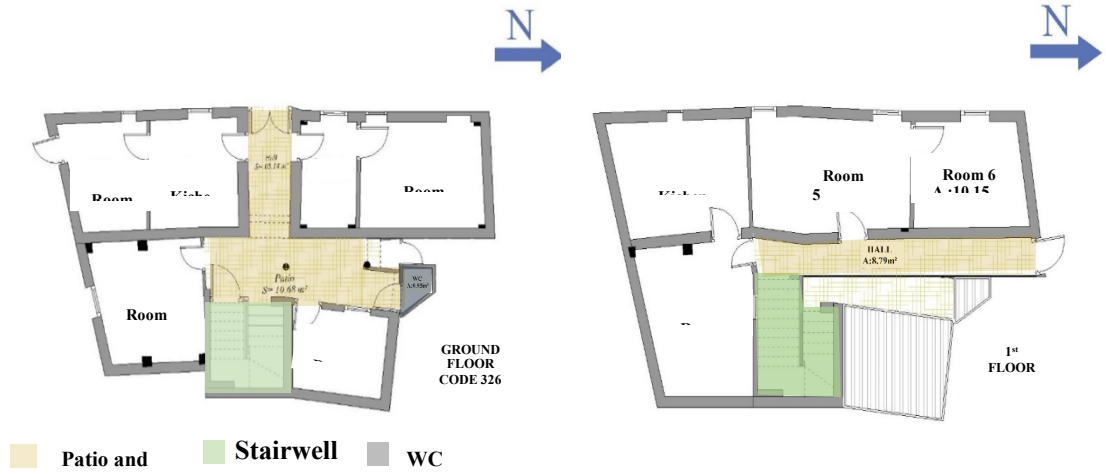

Figure 14. Plan ground floor, 1st floor.

Source: architectural plan survey realised by the author, 2020,
City laboratory and urban and landscape architectual heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2024.

Figure 15. Basement, ground floor, 1st floor code 348.

Source: architectural plan survey realised by the author, 2020. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba.
The Diagram made by the author, 2024.

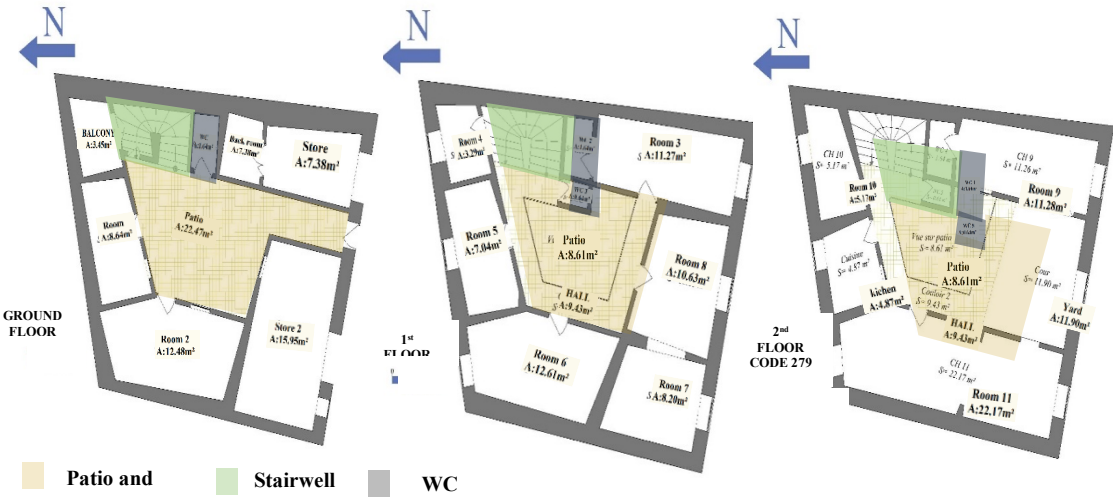

Figure 16. Plan ground floor, 1st and 2nd floor.

Source: architectural plan survey realised by AMMI Y, 2018.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

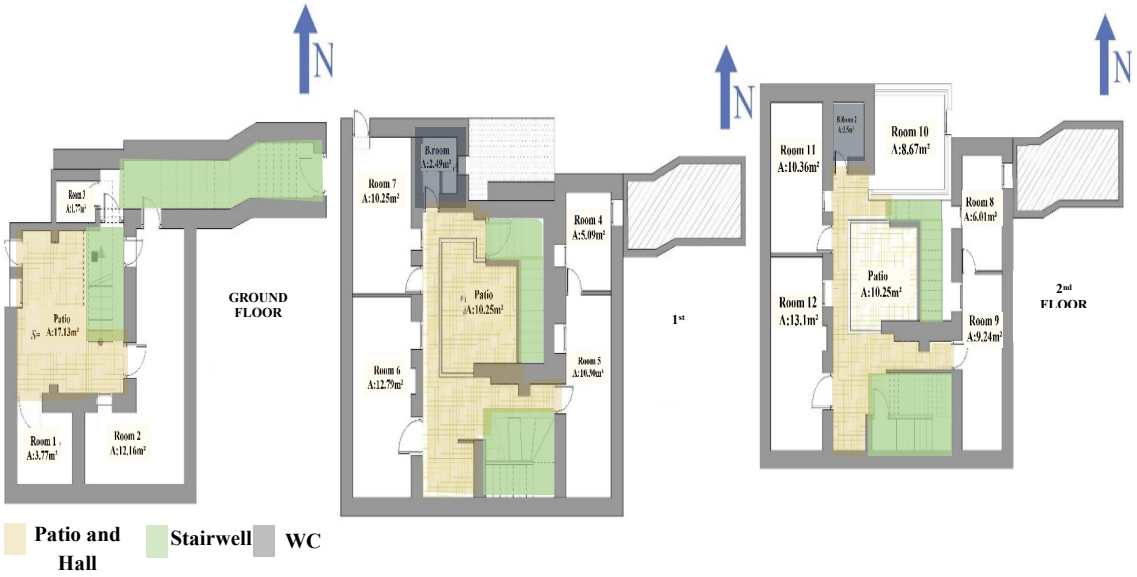

Figure 17. Plan ground floor, 1st and 2nd floor. code 316.

Source: architectural plan survey realised by the author ,2020. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author,2024.

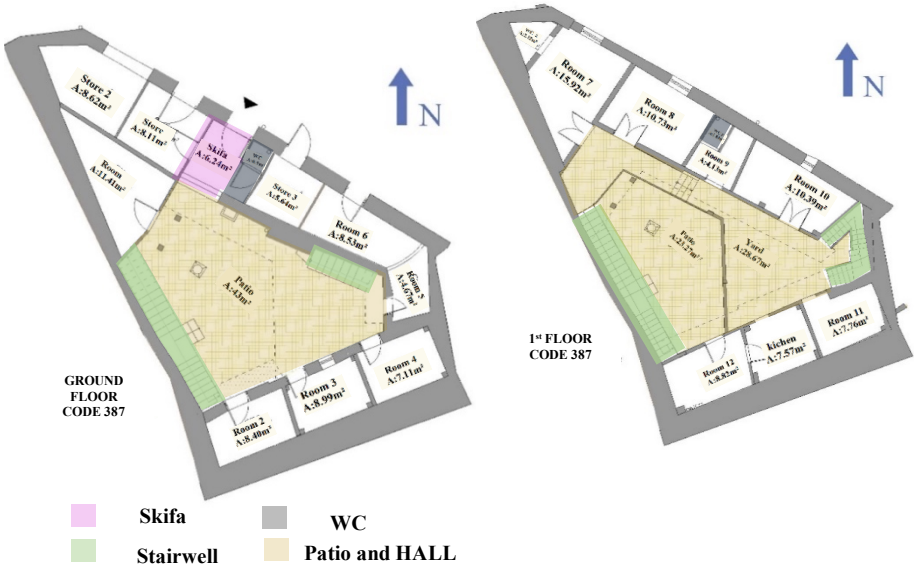

Figure 18. Plan ground floor, 1st floor code 387.

Source: architectural plan survey realised by AOUADI F,2018. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author, 2020.

3rd type: Patio house with Skifa.

Location:

Figure 19: geographical location of the 3rd category in the medina of Annaba.

Source : plan d'occupation de sol de la médina d'Annaba, 2006, AUA Hafiane Abderrahim, Realised by the author.

A. With direct access to the patio.

House code: 317- 321-320-319-391.

Description;

There are two types of houses:

A house of individual vocation or a house occupied by a maximum of two families cases (317-321).

At the entrance, there is a Skifa which leads to a central patio around which the other spaces are organized. It also provides ventilation and sunlight for the rooms which have no external openings; the patio is a quadrilateral surrounded by a single façade and the others are adjoining blind walls.

The service block completely occupies one side of the house. Inside this block, the small abuse rooms are distributed from the staircases.

The single or double stairwell is located on the patio, with discreet access.

A house occupied by different entities;

At the entrance is Skifa, which leads to the central patio, which distributes the flow to the various rooms around it.

The upper floors can be accessed via a straight, single staircase that occupies one side of the house.

Each bedroom is occupied by a family sharing the same multi-story WC.

There are 4 types of flat; F1 (18 m^2 to 30m^2), F2 (50 m^2 to 67 m^2), F3 (36 m^2 to 80 m^2), and an F5 (129.53 m^2), and the surface area of the bedrooms varies between (3 m^2 to 21 m^2).

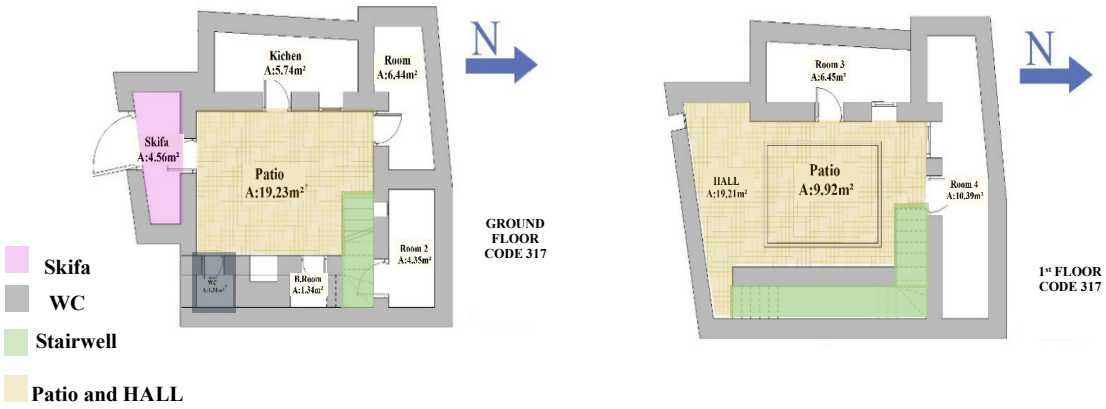

Figure 20. Ground floor, 1st floor code 317.

Source: architectural plan survey realised by the author , 2020. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author 2024.

Figure 21. Ground floor, 1st floor code 321.

Source: architectural plan survey realised by the author, 2020.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2024.

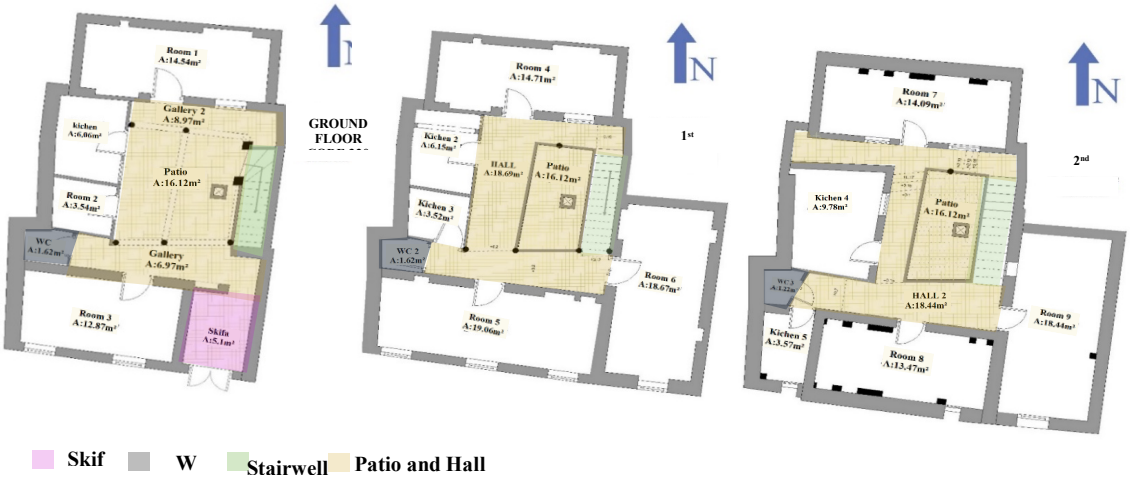

Figure 22. Ground floor, 1st floor code 320.

Source: architectural plan survey realised by the author, 2020. City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2024.

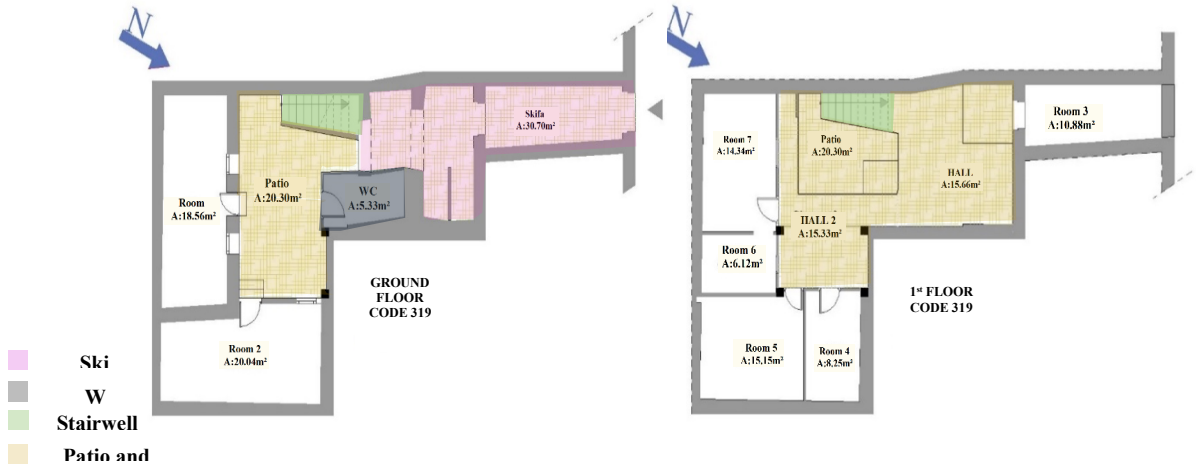

Figure 23. Ground floor, 1st floor .code 319.

Source: architectural plan survey realised by HARRATH B, Tine N, Saksi I. 2015, City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

Figure 24. Ground floor code 391.

Source: architectural plan survey realised by AOUADI F, 2018.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

B. With chicane access:

House code: 327-388-323-356-365-358-386-418-282.

Description;

- This type of house is the most popular, with a chicane entrance separating the public space outside from the private life inside. This Skifa provides direct access to the central patio, where an active well is integrated, and the spaces are organized around the patio by entity, with each family occupying one to two bedrooms maximum with a surface area (4 m^2 to 65 m^2) and sharing the same multi-story sanitary block.

- The flats are of the following types: F1 (7.87m^2 to 26 m^2), F2 (12 m^2 to 280 m^2), F3 (31 m^2 to 285 m^2), F4 (115 m^2).

- The only difference is the type and positioning of the stairwell, the patio-stairwell relationship, Skifa/stairwell, of which there are 3 categories:

1st category: staircase/patio relationship (327-388-323).

A straight, quarter-turn staircase starting from the center of a central patio. The staircase has a direct relationship with the patio and a visible access that facilitates movement between the two levels.

2nd category: staircase / Skifa relationship (356-365-358-386).

This category takes two forms: a house with a single straight quarter-turn stairwell with a radiating step near Skifa, or a house with two stairwells, the first straight at the patio and the second half-turn at Skifa.

A direct relationship between the Skifa and the round staircase, with each floor dependent on the other, and the addition of a second stairwell in some cases: reduces flow and circulation.

3rd category: discreet staircase (418-282).

The right-hand quarter-turn stairwell at the end of the floor plans with discreet access. These original houses have only one level, and the staircase was added when the house was extended horizontally.

Figure 25. Ground floor, 1st floor code 327.

Source: architectural plan survey realised by the author, 2020.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author, 2024.

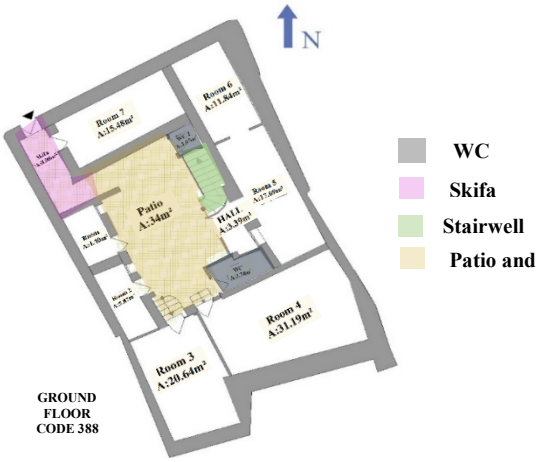

Figure 26. Ground floor code 388.

Source: architectural plan survey realised by AOUADI F, 2018.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author, 2020.

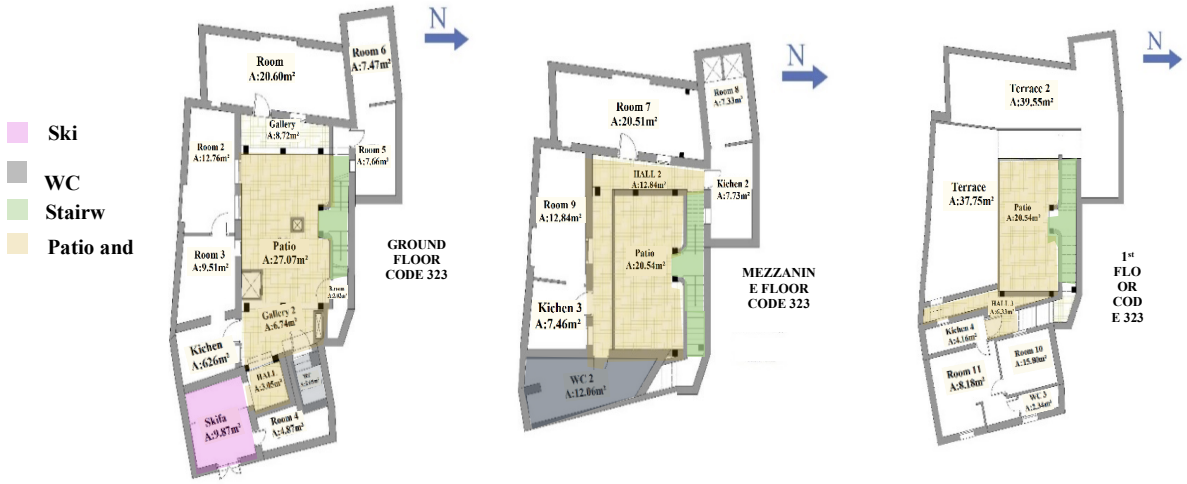

Figure 27. Ground floor plan, mezzanine and 1st floor.

Source: architectural plan survey realised by the author, 2020.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba,
The Diagram made by the author, 2024.

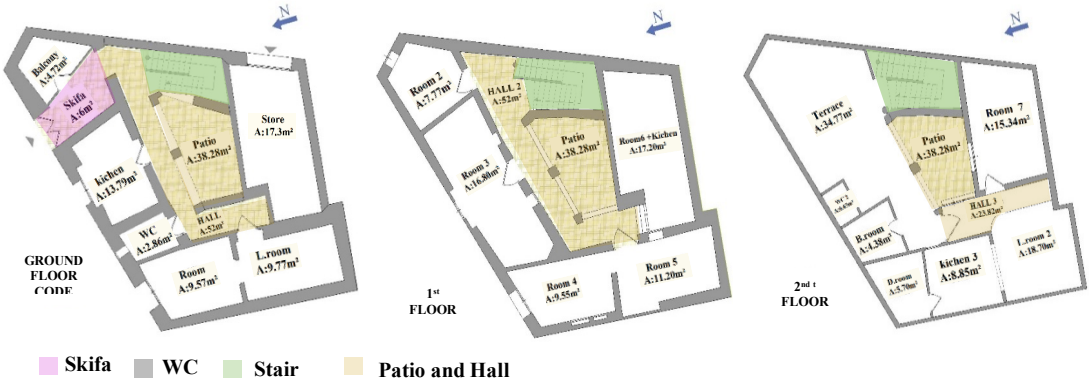

Figure 28. Ground floor plan, 1st and 2nd floor. code 356.

Source: architectural plan survey realised by HECHIM R, 2018.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2024.

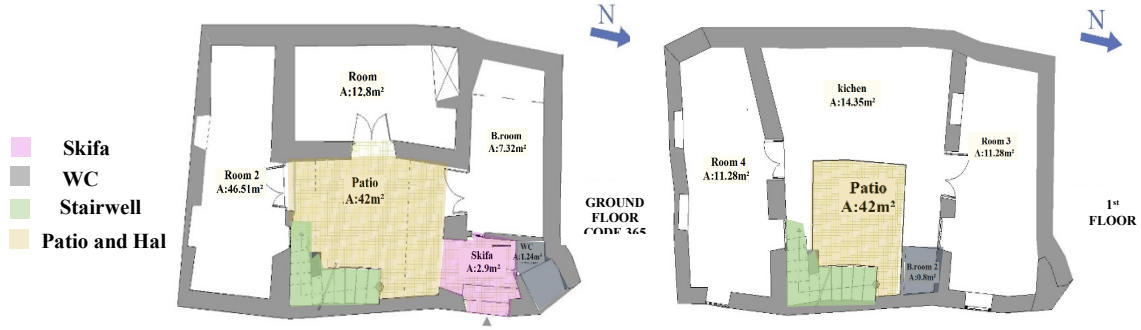

Figure 29. Ground floor plan and 1st floor code 365.

Source: architectural plan survey realised by BAIRI N, BENTOUMI N, 2018. City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

Figure 30. Ground floor plan and 1st floor code 358.

Source: architectural plan survey realised by HECHIM R, 2018.
City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2024.

Figure 31. Ground floor plan, 1st floor code 386.

Source: architectural plan survey realised by AOUADI F, 2018. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

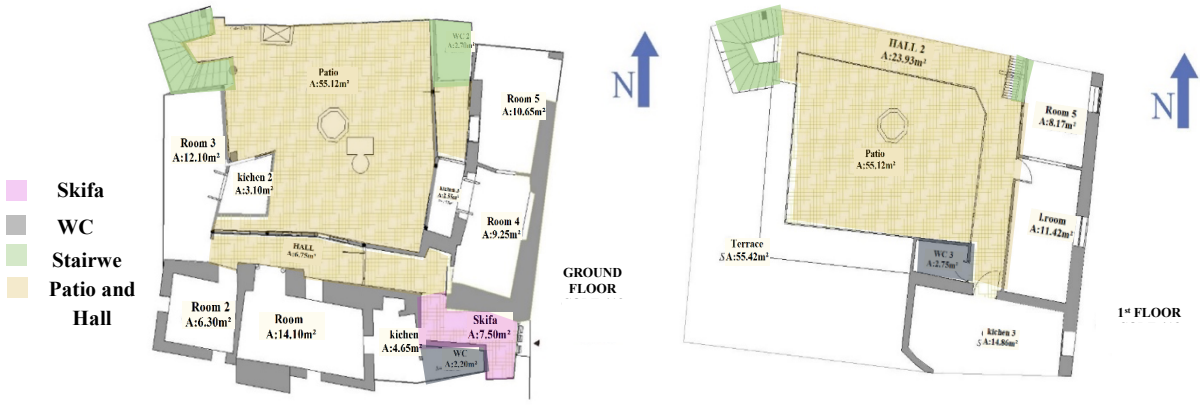

Figure 32. Ground floor plan, 1st floor code 418.

Source: architectural plan survey realised by the BOULEDROUA W, LAKHAL K, SAKER N, 2015. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author, 2024.

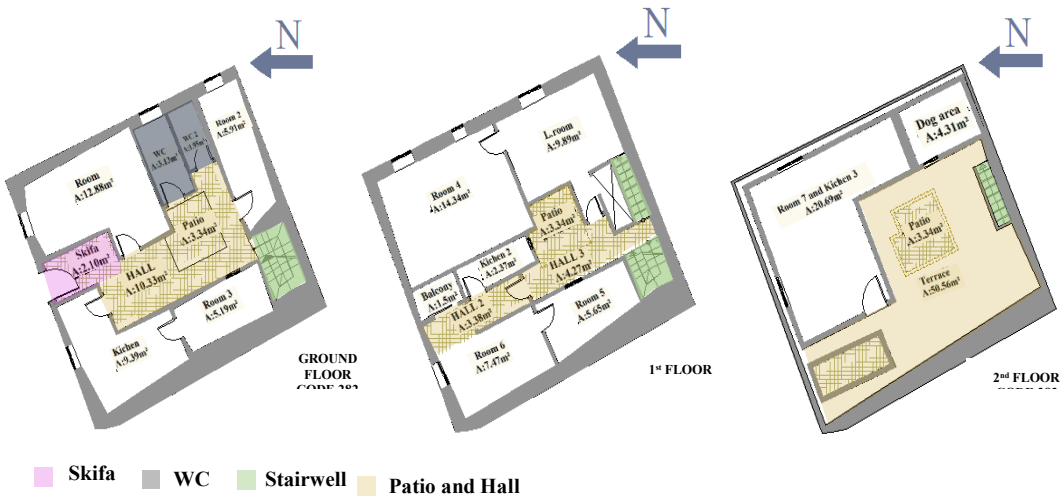

Figure 33. Ground floor plan, 1st and 2nd floor code 282.

Source: architectural plan survey realised by AMMI Y, 2018. City laboratory and urban and landscape architectural heritge, university Badji Mokhtar Annaba, The Diagram made by the author, 2020.

4th type: Building:

Location:

Figure 34. Geographical location of the 4th category in the medina of Annaba.

Source: plan d'occupation de sol de la médina d'Annaba, 2006.
AUA Hafiane Abderrahim, Realised by the author.

Description;

A. Building with 3 to 4 flats.

House code: 437-280-281-355.

- It's a building It has a shop or garage on the ground floor, and access to the building is independent. to the building is independent, leading directly to the staircase to the next floors. following floors.
- Each floor has one or two apartments or two flats, each of which is reserved for a single family. The flats vary in size: F2 (20 m^2 to 51 m^2), F3 (42 m^2 to 73 m^2), and the size of the bedrooms (5 m^2 to 15 m^2).
- The addition of a second of a second stairwell with one or two wings in the lower part of the plan (281-437) due to the horizontal extension, which facilitates accessibility and flow.

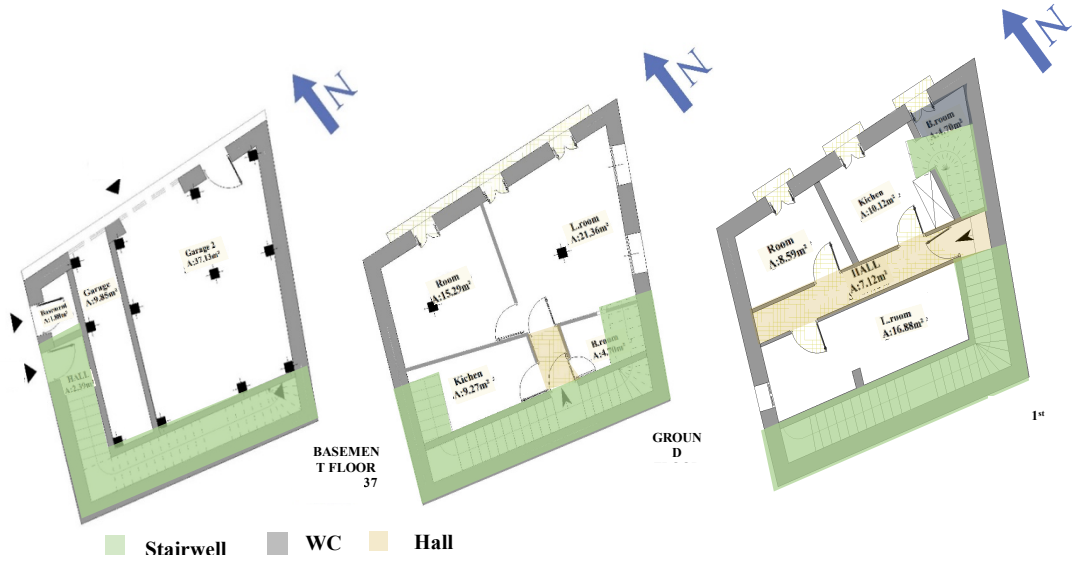

Figure 35. Ground floor plan, 1st floor code 437.

Source: architectural plan survey realised by BOUABDELEH S, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

Figure 36. Ground floor plan, 1st and 2nd floor. code 280.

Source: architectural plan survey realised by AMMI Y, 2018. City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

Figure 37. Ground floor plan, 1st and 2nd floor code 281.

Source: architectural plan survey realised by AMMI Y, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

Figure 38. Ground floor plan, 1st and 2nd floor code 355.

Source: architectural plan survey realised by HECHIM R, 2018. City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba, The Diagram made by the author, 2024.

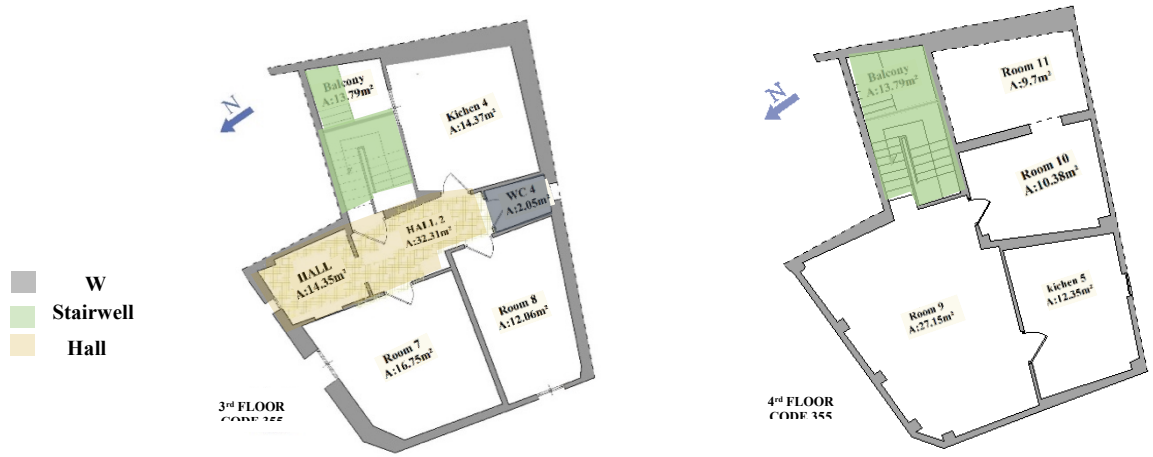

Figure 39. 3rd and 4rd plane floor code 355.

Source: architectural plan survey realised by HECHIM R, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba,
The Diagram made by the author, 2024.

B. Building with 10 to 20 flats.

B-1: With patio:

House code:

446-441-380-314-381.

Description;

- At the entrance, there is a hall that leads to the patio, which leads to the various flats. The patio is made up of 3 to 4 levels, comprising F1 flats (23 m^2 to 28 m^2), F2 flats (13 m^2 to 47 m^2), F3 flats (47 m^2 to 55 m^2), or units of type F1 (23 m^2 to 28 m^2), F2 (30 m^2), F3 (55 m^2), the case (381), the surface area of the rooms varies between (4 m^2 to 18.54 m^2).

- The building still retains its architectural structure, only the interior layout of the houses has undergone modification and reorganization. The upper floors can be reached by following a must-type staircase in the center of the patio with visible access, the direct relationship between the staircase and the patio facilitates the connection between the levels.

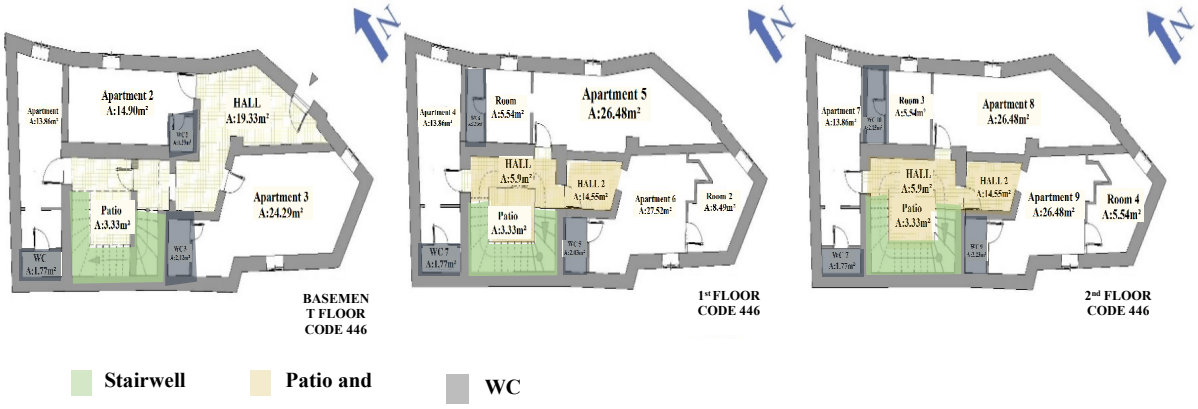

Figure 40. Ground floor plan, 1st and 2nd floor code 446.

Source: architectural plan survey realised by BOUABDELEH S, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba,
Diagram made by the author, 2020.

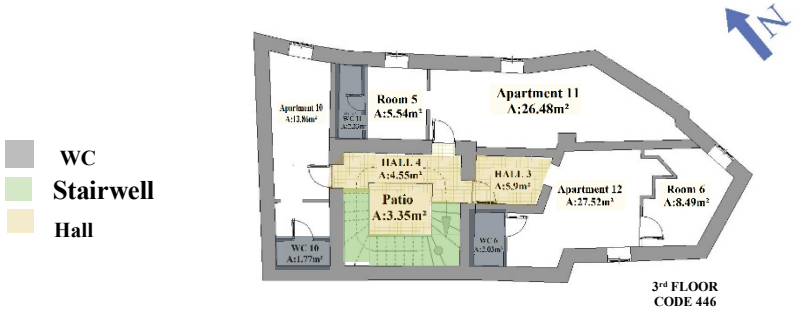

Figure 41. 3rd floor plan code 446.

Source: architectural plan survey realised by BOUABDELEH S, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

Figure 42. Ground floor plan, 1st, 2nd and 3 rd floor code 441.

Source: City laboratory and urban and landscape architectural heritage,
university Badji Mokhtar Annaba, The Diagram made by the author, 2020.

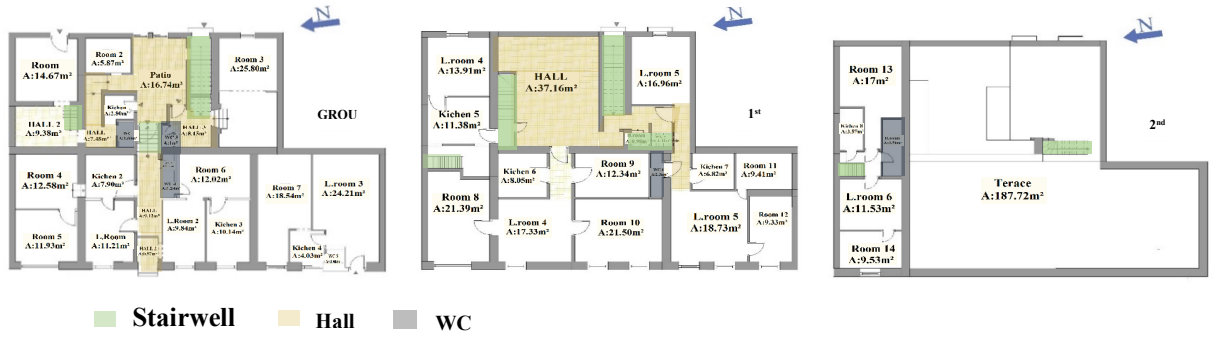

Figure 43. Ground floor plan, 1st, 2nd floor code 380.

Source: architectural plan survey realised by FRIDJET I, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

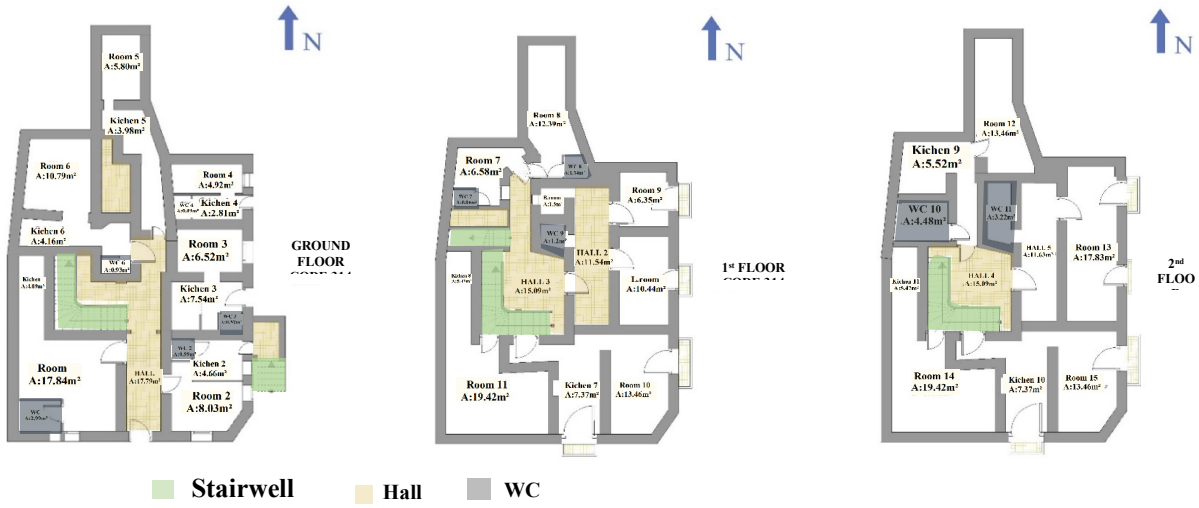

Figure 44 : ground floor plan, 1st, 2nd and 3 rd floor code 314.

Source: architectural plan survey realised by the author, 2020.
City laboratory and urban and [illegible] rsity Badji Mokhtar Annaba

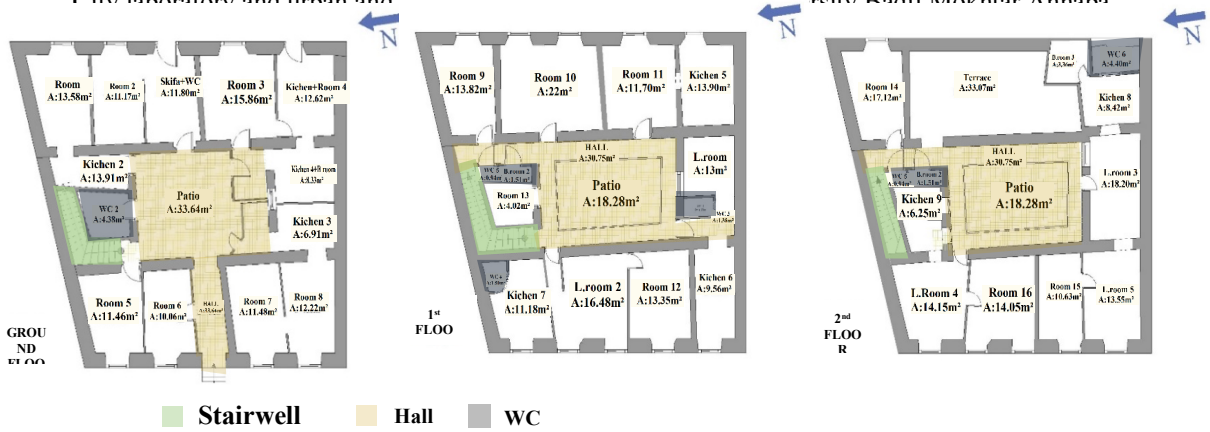

Figure 45. Ground floor plan, 1st, 2nd and 3 rd floor code 381.

Source: City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba, The Diagram made by the author, 2020.

B-2: Without patio:

House code: 379-439-276.

Description;

The first two levels are shops, and the block has independent access, as soon as you enter it you find a Hall that leads to the flats or you can take the stairs to access the next floors, the same spatial distribution for each floor: 3 flats of type F2(32 m^2 to 49 m^2), F3(39 m^2), F4(46 m^2 to 53 m^2), each flat is occupied by a single family, the surface area of the bedrooms (7m^2 to 20 m^2).

- In some houses (439): the building has undergone a horizontal extension, a large part of the patio was built over, and on the other levels, the patio was partially or covered, as well as the addition of a second stairwell and discreet access that leads to the secondary level of the adjoining house.

Figure 46. Ground floor plan, 1st floor code 379.

Source: architectural plan survey realised by FRIDJET I, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

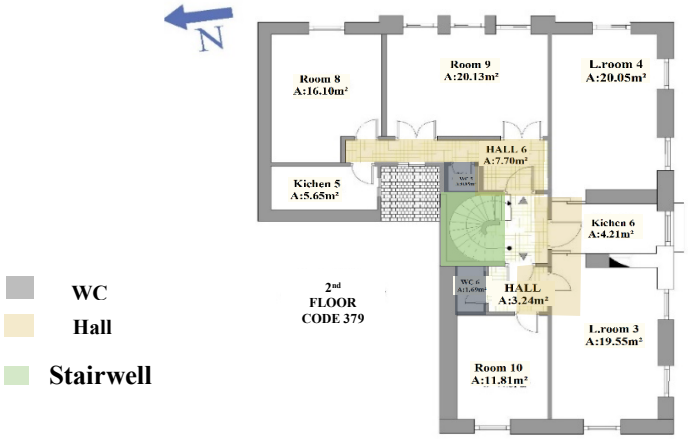

Figure 47. 2nd plan floor code 379.

Source: architectural plan survey realised by FRIDJET I, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

Figure 48. Ground floor plan, 1st, 2nd and 3 rd floor code 439.

Source: architectural plan survey realised by BOUABDELEH S ,2018. City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

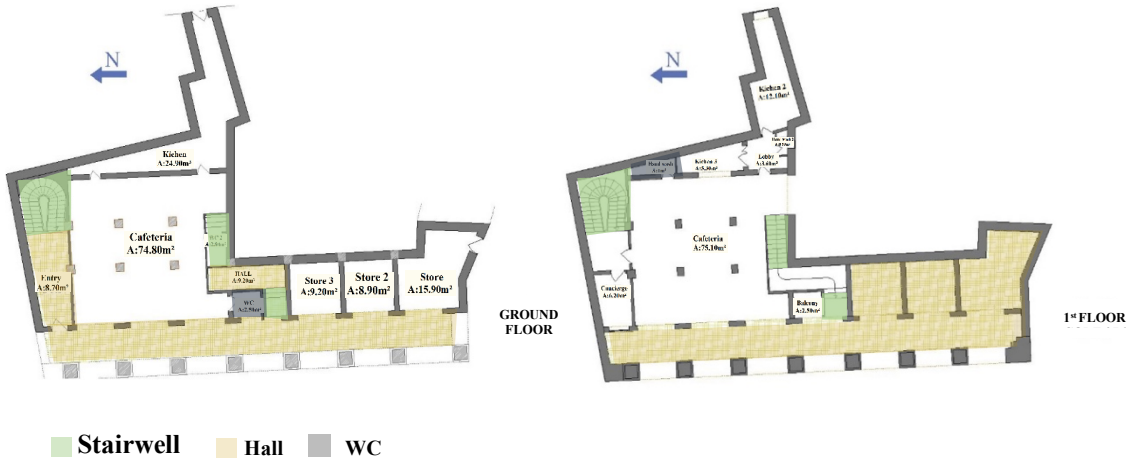

Figure 49. Ground floor plan, 1st floor code 276.

Source: architectural plan survey realised by AMMI Y, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

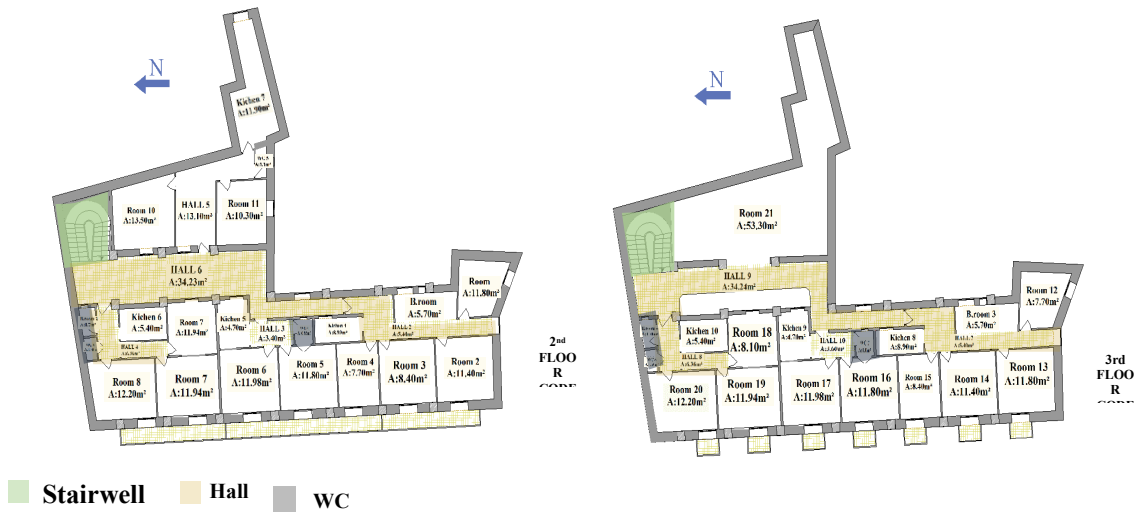

Figure 50: 2nd and 3rd floor code 276.

Source: architectural plan survey realised by AMMI Y, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba.
The Diagram made by the author, 2020.

5 th type: Self-built:

Location

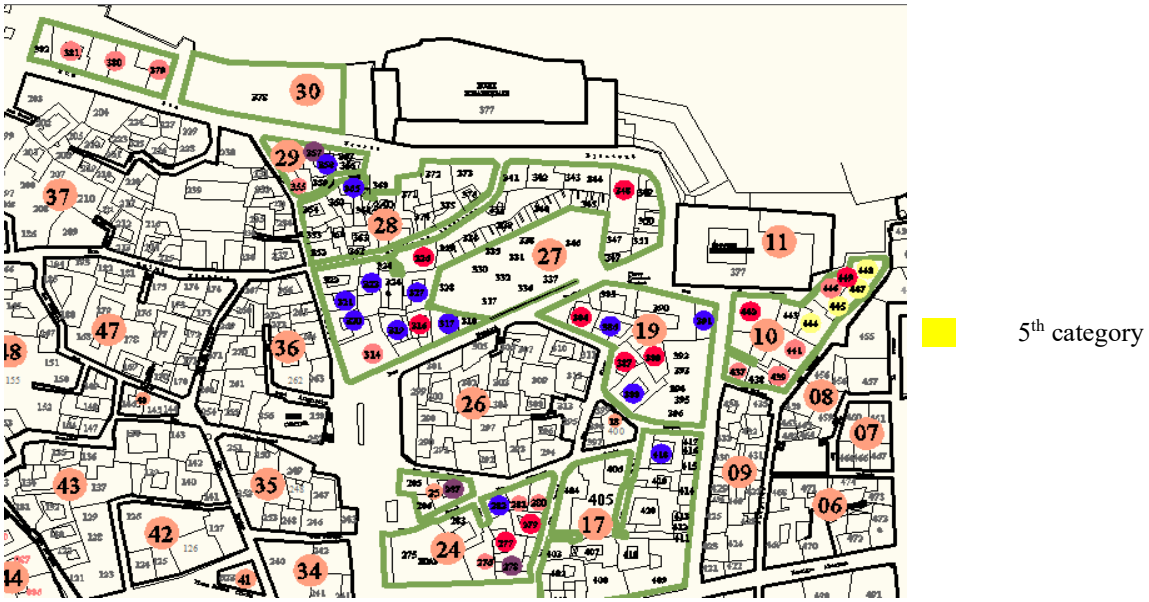

Figure 51. Geographical location of the 5th category in the medina of Annaba.

Source: Plan d'occupation de sol de la médina d'Annaba, 2006.
AUA Hafiane Abderrahim, Realised by the author.

A. On an empty site.

House code: 445-447-448.

Description;

– These are generally rooms (6 m^2 to 29 m^2) built on plots of land after the collapse of the original house, each room is occupied by a single family, the majority of rooms have no opening and some have a single window overlooking an inner courtyard.

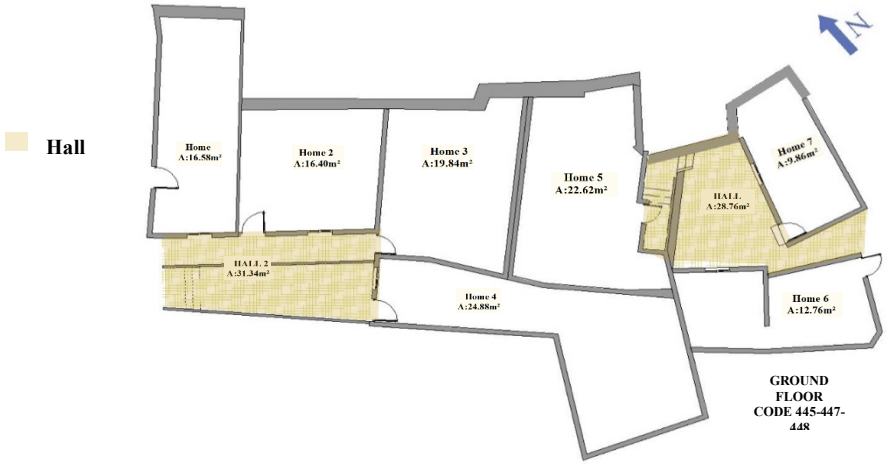

Figure 52. Ground floor plan code 445-447-448.

Source: architectural plan survey realised by BOUABDELEH S, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annab.
The Diagram made by the author, 2020.

B. On an existing structure.

House code: 444.

Description;

- A whole plot of land was completely rebuilt, retaining the shape and vertical structure of the old house. The surface area of the rooms varies from 7 m^2 to 17 m^2, some of which have independent access, but the majority share the same corridor and access, as well as a single WC.

Although these houses are self-built, they still retain the spirit of group living and sharing a common life, but in separate entities.

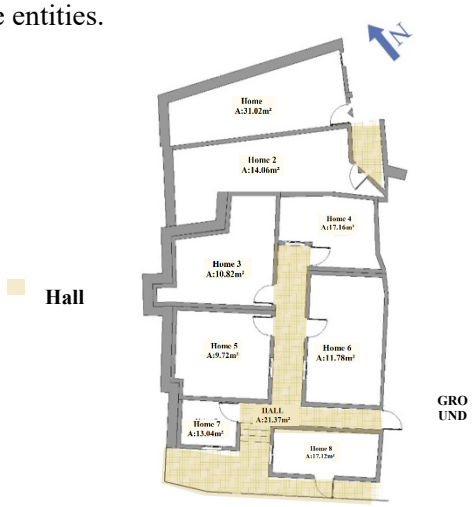

Figure 53. Ground floor plan code 444.
Source: architectural plan survey realised by BOUABDELEHS, 2018.
City laboratory and urban and landscape architectural heritage, university Badji Mokhtar Annaba,
The Diagram made by the author, 2020.

Conclusion.

The types of houses with patios in the Medina differ according to the presence or absence of fundamental architectural components and the relationship between them (patio, Skifa, stairwell, bedrooms, etc.).

They were designed to be inhabited by a single family, and the role of the patio, in this case, is twofold: on the one hand, it constitutes a secondary or tertiary circulation space between the less integrated galleries and the rooms, and on the other, it has an interesting versatility insofar as it allows domestic and social activities to be carried out (BENSLIMANE Hanifa, 2017).

The patio was the central element around which the other spaces were organized, but with the addition of one or two stairwells, their positioning (in Skifa, in the middle of the patio), as well as the restructuring of the spatial configuration of the houses following the increase in manages, were the triggering factors for the creation of new typologies.

In some cases, the patio has lost its function following the integration of the staircases into the Skifa, which has subsequently become a space for circulation and connection. What has influenced the usefulness of the patio or its function is the separation of public life from private life. Each family occupies a bedroom, and these rooms have become entities in their own right, being the bedroom, the living room, and the kitchen all in one space.

Some houses have been extended horizontally, necessitating the addition of a second, segregated stairwell with discreet access. This provides a link between the levels, making each floor independent and reducing the flow of traffic.

The buildings have retained their overall structure, only the interior spaces have been redesigned, with the patio built partially or covered completely, and the centrality system once again centered around a hall with a direct link to the stairwell.

There are also self-built houses built on an empty site after the collapse of the original house, or self-built houses built on a plot of land that has been completely rebuilt, retaining the shape and vertical structure of the old house. They take the form of rooms built side by side and are connected by a small hall.

The latrines have an average depth throughout the system in the case of several specimens, as it is a space shared between all the levels, while the kitchen is slightly deeper, due to its use by women only, so it is a space that must have been more segregated than integrated.

The last type is the houses that have retained their architectural character: the chicane entrance at Skifa leads to the patio with the well around which the other spaces are organized, and a staircase in the center of the patio gives access to the terrace. They are occupied by the original families or heirs of the same family.

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