The Experience of Intermediate Housing in Algeria: Between Social And Spatial Arrangements (The Case Of Touggourt)

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Abstract
This paper aims to assess the characteristics of intermediate housing and the factors influencing residents' perceptions in an approach to improve the quality of the built environment. The study is based on the compatibility between social practices and the spatial configuration of the habitat. The main criterion used to control this consensual mechanism is the degree of satisfaction of the users of the inhabited space, as the primary stakeholders in the habitat design process. The results of the survey show that the characteristics of the intermediate housing have a direct influence on the spatial configuration of the habitat. The quality of the spaces it provides contributes fully to reducing the transformation of the inhabited space. The study encourages architects and urban planners to formally design local intermediate housing with a view to the housing of the future.

Keywords: Intermediate Housing; Quality Of Habitat; Social Practice; Spatial Configuration; Appropriation.

1. Introduction
The habitat is an institution created in a series of complex structures. The complexity of the parameters cannot be limited by the influence of climate, building materials, location and economy. According to Rapoport (1969) other complex cultural, moral and spiritual parameters are fully involved in the design of the habitat. Its main objective is the creation of an environment best suited to a people’s needs and way of life. In other words, it is a social unit of space, since it is intended to reflect the socio-cultural values of the society. Indeed, the habitat is considered as the starting point of a whole social life constituting a total environment whether spatial, social, cultural or economic. Several studies have been carried out on the diversity of problems related to habitat, its international dimension and its position at the intersection of several disciplines (Hamidou, 1989). Some research on habitat includes research on social and spatial duality. They focus almost exclusively on questions related to social practices and spatial configurations that have generally resulted in the appropriation of residential space (Bouchanine, 1988; Haumont, 1968; Rapoport, 1969; Pinson, 1992; Raymond, 1974; Paquot, 2005). This interest is explained by the idea that habitat is the immediate expression of the way of life that results from the practice and daily use of human activity. The user identifies and weaves social relationships in the space in which he or she resides. As shown by the variety of works available in this literature, it is not enough to produce a habitat according to standard and universal norms for the use of the inhabitant.

On the contrary, the scope of the social dimension guarantees the harmonious development of social life in which space is intended to preserve intimacy and the primacy of maintaining family intimacy (Thyssen, 1983), and the appropriation of space interprets the abolition of socio-cultural values. The duality between social and spatial arrangements is therefore a subject of great interest. Furthermore, the search for a quality habitat is in the interest of several stakeholders in the housing design process, whether they are project owners, developers, political decision-makers or consumers of the inhabited space. Thus, intermediate housing seems to be a hybrid typology that brings together all these expectations. Intermediate housing is the diversity linked to its forms; from the pyramidal to the parallelepiped shape (Moley, 1999), it constitutes a cornerstone of architectural thinking in terms of the design of inhabited space in the present era. Indeed, it reflects the social and architectural issues that are crucial for the production of quality housing that is sustainable over time.

Indeed, housing must be in social and spatial synergy in the process of reconciling spatial proximity and social distance. It is for this set of problems that it becomes necessary to produce alternatives accordingly and in line with the changes in social practices in progress. These changes force us to question the factors influencing the perception of the inhabitants to improve the quality of their built environment. However, the characteristics and requirements of housing have a profound influence on the residential space, the psychological balance and the multiple individual activities necessary to satisfy the needs and socio-cultural values of the consumers of the inhabited space.

The interest of this architectural layout can also be seen in the particularity of this hybrid habitat and its position at the centre of current debates on sustainable development issues, hence the notion of habitat quality in the design of the project (Bayenay, 2011). This third approach, between collective and individual, embodies the habitability criteria so
much sought after by the inhabitants and seems to be a coherent approach to these current issues (Allen, Bonetti and Werlen, 2010). Thus, the study of this type of habitat is interesting to the extent that it will allow, through current research devoted to analytical study, to understand the intermediate housing and to detect all its characteristics in the town of Touggourt in south-eastern Algeria. Moreover, this study identifies the factors influencing the perception of the inhabitants in a process aimed at improving the quality of the built environment. In addition, it aims to highlight the extent of the accounting between social practices and the spatial configuration of residential space as manifested in the Touggourt habitat.

The region of Oued Righ (Touggourt) was chosen for two major reasons: the study of the experience of intermediate housing in Algeria and its specificity. Indeed, it presents an interesting particularity for this type of housing as it differs from other Algerian experiences by its historical past of the very rich architectural heritage of the ksour (fortified village) sheltering the traditional Saharan habitat. It is an architectural design that is well integrated into its physical environment. The reflection of its space is the result of a synergy of socio-cultural and climatic factors. The historical background of the town of Touggourt, like other Algerian towns, has witnessed changes in its urban fabric. The traditional Saharan habitat is juxtaposed with the recent intermediate housing. The connotation of social practices is expressed and materialized in the residential space. This specificity has left singular traces on the inhabited space and the diversity of the architectural forms produced: historical, morphological and spatial diversity. Thus, it is important to clarify the notion of “intermediate housing” before highlighting it in the Oued Righ (Touggourt) region with regard to social practices and spatial configurations.

2. Intermediate housing: an atypical concept
According to the Dictionary of Housing and Dwelling (Segaud, Brun and Driant, 2002), it is a form of housing that appeared in 1970 and is defined in the operations of collective housing. But in the space, the layout and the annexes (terrace, garden) of each apartment, the individual housing is evoked. It is considered as an alternative to the collective housing itself.

According to the French administrative circular of August 9, 1974, the definition of intermediate housing has both an individual access, a private outdoor space at least equal to 1/4 of the dwelling surface, and a maximum height of fourth levels. This definition, which is still applicable without being modified, does not mention either form or collective housing. This non-specificity has given architects great freedom in the design of space and a diversity of forms and adaptability (Bayenay, 2011).

However, the definition of individual superimposed housing declined on a large scale: a larger number of dwellings but maintains the principle of direct access to all housing and for each apartment a private outdoor space (Mialet, 2006). This definition includes only the two criteria of the of the French administrative circular definition, the vertical dimension is no longer addressed but the individual superimposed connotation goes in the same direction, the novelty lies in the nomination but the substance is identical (Bayenay, 2011). In Algeria, the decree of October 17, 2005 published in the Official Journal No. 13 of February 16, 2005, defines it as any construction carried out; under two levels; with independent access on a common land unit. With reference to this definition, it is considered as a truncated collective housing. This type of habitat has not received enough importance from the regulatory point of view. Since the 1990s, efforts have been made to design and implement housing projects, designed as social intermediate housing by public developers or promoted by private developers in peripheral areas of cities. Most of the operations are reserved for southern Algeria for reasons of land availability. The intermediate housing differs from the other types of collective or individual housing by the criteria of definition: access, land, height, private outdoor spaces (Table 1).

3. Social/spatial arrangements
Social practices are a set of internalized behaviors, domestic and social activities. They are designed according to a cultural model (De Certeau, 1990). The inhabited space is the physical support in which social practices are structured, focusing on the compatibility between social practices and the spatial configuration of the habitat. It is therefore a question of understanding the consensual mechanism between this duality, in a way establishing the relationship between the inhabitant and his inhabited space, the ways (social arrangements) in which the inhabitant invests and consumes his
inhabited space (spatial arrangements), are generally translated by the space appropriation strategies to satisfy their needs. Therefore, housing must take into account all these socio-cultural factors such as: family structure, the nature of social relations, the place of women and the importance of intimacy within the buildings (Boubakeur, 1987). Moreover, it is “an authentic architecture can only exist in a living tradition” (Fathy, 1973).

Figure 1. Duality between social practices and spatial configuration

4. An overview of the Touggourt town

The valley of Oued Righ extends over 160km from South to North. It is considered as the largest palm grove in the eastern Algerian Sahara, where each oasis has its own particularity, and one of the first two date terroirs thanks to the climatic conditions and the availability of water. As a result, the region attracted colonization to settle massively in its northern part (Côte, 2006). The region is very well known for its rich architectural heritage including a significant number of traditional cores, some of which are in ruins, very few of which are still standing.

Touggourt is located in the south-eastern part of the Algerian Sahara, 660 km south-east of the capital Algiers, 227 km south of Biskra, and 161 km north-east of Ouargla (wilaya). Touggourt is the capital of the Oued Righ valley and a crossroads and commercial exchange city, linking the town of Biskra-Ouargla (North-South) by the N03 axis, the town of El Oued (East) and Touggourt-Masaad (West) by the N16 axis (Figure 2). Its territory extends over: Tebesbest, Nezla, Zaouia Al Abidia and Touggourt. It includes 3 main traditional settlements: Mestàoua, Nezla and Tebesbest, sheltering the ksour which are established near the oases. Similar to other Algerian towns, the urban fabric of the town of Touggourt has undergone changes. The traditional core, which is the ksar (fortified village) (in juxtaposition with the colonial fabric), is characterized by a regular orthogonal layout. The traditional fabric unites with the recent districts; they are juxtaposed and gradually occupy the site between the palm grove and the National Road N°3. These alterations make it an interesting example for research.

Figure 2. Location of the town of Touggourt along the axes
Source: Côte, 2006
5. Habitat Spatial Structure

5.1. Traditional Habitat Characteristics of ksar Nezla
The traditional Saharan *ksour* habitat is built in perfect harmony and symbiosis with its hostile site. It consists of a compact group of fortified dwellings surrounded by a vast palm grove (Sriti and Tabet-Aoul, 2004). Water is one of the reasons for the occupation of urban space in the south.

Ksar Nezla is an implementation mode of an architectural production well integrated in its physical environment. The reflection of its space results from a synergy of socio-cultural and climatic factors. It responds to the residents needs and adapts to the local climate by using local materials. The traditional Touggoutois dwelling does not have a standard plan, it is atypical, characterized by introverted, these rooms are articulated around a courtyard (*haouch*).

On the ground floor, the chicane (*squifa*) entrance is through a buffer space between the main entrance and the interior rooms of the house, it ensures privacy. *Squifa* leads to both a guest room (*bit eddiaf*) and a courtyard (*el haouch*). The courtyard (*el haouch*) is the largest opened space; it allows the lighting and distribution of the other rooms. Before crossing the *squifa*, the threshold (*el atba*) is a symbolic barrier, which serves to mark the external space from the inside.

The *sabat* is a covered open space with arcades, as a gallery, it forms a barrier space between the courtyard and the rooms. This shaded space also serves as a resting area. The courtyard revolves around the rooms, the *sabat* is a space for storing consumer goods (*makhzene*). The polynuclear structure of the family indicates the number of rooms from which several brothers occupy the same dwelling (Figure 3).

![Figure 3. Ground floor plan of a traditional dwelling in Nezla (Touggourt)](https://touggourt.org/)

Source: [https://touggourt.org/](https://touggourt.org/)

Access to the upper floor is by stairs. It includes one or more bedrooms (*byout*) and a terrace (*stah*) (Figure 4). The terrace is also used for various activities: a meeting place, a conviviality area, a place to spend the evening and a very pleasant place to sleep at night during the hot season.

![Figure 4. Floor plan of a traditional dwelling in Nezla (Touggourt)](https://touggourt.org/)

Source: [https://touggourt.org/](https://touggourt.org/)

The height of a dwelling does not reach 2 levels. The materials used for the construction of the *ksar* are: clay, plaster, and palm trunks. The public spaces from the street to the alley are well preserved. The streets are narrow and winding, covered over several hundred meters giving a passage of light, very pleasant in the hot season.

5.2 Characteristics of recent intermediate housing

*Project context*
It is worth mentioning the operation that won the second national architecture prize in 2004. Its objective is to make quality housing as opposed to mass production of collective housing. The architect-designers of the project (Ariouat and Ouamane) brought together the conceptual and symbolic foundations of traditional *ksour* housing and contemporary...
housing. They proposed a local intermediate housing that has characteristics similar to the traditional habitat of the ksar in its socio-cultural dimension. This operation was carried out within the framework of the urban planning the POS (land use plan) of the commune Nezla, which is an urban extension of the town of Touggourt, all along the National Road RN°3. The towns of Nezla and Touggourt are surrounded by palm groves (Figure 5) which delimit their urbanization perimeter.

![Figure 5. The town of Nezla surrounded by palm groves](image)

The project consists of 100 intermediate housing units for hire-purchase, built in 2004 in an urban setting. The housing units are located in juxtaposed of the oasis site, on a 2.4 ha of land plot. The respective ratios are 26.6% living space, 45.3% green space and playgrounds and 28.4% mechanical and pedestrian traffic and parking space. The aim of this study is to gain a better understanding of the characteristics of the intermediate housing in terms of the perception of the resident residents and the influencing factors. It is therefore based on observation and a questionnaire survey of residents, as well as an interview with the design architects who contributed to this work. The results are summarized in the following subsections.

**Urban characteristics**

The urban composition derives from the urban facade, combined with the principle of the cell with a mass plan of orthogonal composition, different to that of the ksar. In addition to the filtering effect provided by the palm grove, the oasis has improved the surrounding thermal conditions, thanks to the evapotranspiration effect of the palm trees and the humidifying effect of the seghias (irrigation canal). Also, the choice of the location of the dwelling and the orientation of the paths are recommended as obstacles to limit the effect of the sand winds on the south side. Boreholes penetrate all along the plot on the oasis (North side). Spaces for social gathering and exchange are as much a quality of the traditional habitat. Therefore, each 2 or 4 dwellings are organized around a semi-public space with green areas, playgrounds and parking. In addition, the hierarchy of public/private space is respected. Exiting the apartment by an outside staircase or by a veranda (private space), allows the appropriation of the dwelling. Crossing a square between 2 dwellings, allows the exchange of conversation between the inhabitants where social life takes place (semi-public space). Passing through the urban gate of the city, before finding oneself in the street (public space) where the progressive passage of the pedestrian path ensures daily practices, the visual aspect of the round-arched urban gate serves as a landmark to identify oneself in the neighbourhoods. This psycho-sociological sensation gives a virtual limit and symbolic barrier to the neighbourhoods. The connotation of threshold and gate mark the transition between the interior and exterior space, which completely differentiates it from collective housing. It is important to note that these spaces are well defined and socially and spatially delimited by the development. This socio-spatial arrangement of spaces is so much sought after by the inhabitants. The outdoor space is well defined and delimited where the space’s creation for play or passage is perceived by the facilities and appropriated by the inhabitants. The presence of vegetation is a main reason for user satisfaction; it reduces the temperature and promotes social life. Some inhabitants plant as many green spaces as possible by appropriating the space they consider insufficient.

**Architectural characteristics**

All the dwellings are similar in that they are designed with a standard plan: F3 and F4. It is worth noting that the type of intermediate housing is respected by the low height. Since it does not exceed 2 levels, this socio-spatial arrangement is preferred by the users of the residentiel space similar of the traditional dwelling. The 3 openings on the facade of each dwelling explains the important role of the central space (Figure 6) to reduce as much as possible the rooms exposed to the sun by the combination of volumes offered by the intermediate housing.
A very important and structuring layout of the traditional house, around which all the rooms are organized, is the central space that replaces the 

_**hoouch.**_ The bedrooms and bathrooms are organized around this central space. Some spaces such as the living room and the kitchen open onto the private outdoor space, while the other rooms open onto the outside (the street) to take advantage of the natural light. The design of the intermediate housing is an expression of the spatial organization of the traditional habitat of the _ksar_. The aesthetic elements are reduced and are expressed by the _moucharabiehs_ (aesthetic element) and pinnacles of _ksar_ architecture. The roof ends with a curved line reflecting the dunes du Sahara (skyline).

Private access is the second criterion characterizing intermediate housing. The entrance is from this private space via a veranda on the ground floor and a terrace on the first floor. It should be noted that this socio-spatial criterion is very much appreciated by the inhabitants; these spaces give them a feeling of home. The veranda plays the role of _sqifa_ (barrier space) as a visual obstacle of the traditional dwelling of the _ksar_ and the terrace upstairs that of the _stah_ (terrace). However, some responses related to privacy are noted in relation to opposite high houses. The last criterion concerns the presence of a private outdoor space.

However, the surface area of the terrace is important but insufficient for a real use. The private outdoor space is a continuity of the living spaces, it extends the living room and the kitchen by a veranda on the ground floor and a terrace with pergolas on the first floor.

This connection with the outside is very appreciated by the inhabitants, this is due to the configuration of the volumes and the superimposition of the plans, it can be noticed that the verandas and the terraces do not overhang. This layout makes it possible to avoid any view of the interior terrace and the privacy is preserved so desired by users. This space is considered as a multi-purpose space of the dwelling. It allows children to play or have meals with the family, the space is practiced by habits (Moley, 1999).

The visual design conceptualizes the interior-exterior relationship. This socio-spatial arrangement is more in line with the Algerian population's lifestyle. The constructive system used is the column-beam, translated by the use of concrete and brick. The touch of modernity appears imperative by the inhabitants who replace the traditional building materials of the _ksar_.

**Social and socio-economic characteristics**

The issue of the opposite dwelling sensation concerns the relationship between inside and outside. On the level of the main internalized façade, the opposite dwelling sensation is no longer felt because the inhabitants are no longer exposed to direct opposite dwelling sensation. On the externalized rear facades, the the opposite dwelling sensation is felt because of the direct openings. The more the prospect is diminished, the more the opposite dwelling sensation is perceived.

The notion of home is one of the characteristics of habitability provided by the habitat, the inhabitants located upstairs assimilate it to a small individual house. Whereas the presence of an upstairs, the inhabitants of the ground floor consider it as a small collective, hence the intermediate connotation.

In general, a real social life takes place and the habitat studied is perceived positively by the users of the space. The inhabitants have a good neighbourly relationship and social relations have been well established. The reduced number of heights and the absence of common areas in this case (staircase) require less maintenance and have favoured sociability over time.

In the recent intermediate housing, the marital family replaces the nuclear family in the traditional house. The nuclear family consists of 2 to 3 households, this polynuclear structure of the family indicates the number of rooms from which several brothers or cousins occupy the dwelling under the same roof. The family size of a single household is restricted from 4 to 6 persons; the young household adapts with the type of housing designed: F3 or F4.

**6. The correlation between social practices and spatial configuration**

The way in which the meaning of intermediate housing is interpreted, reflected in the architectural design and realization of these spaces, prevents certain socialization activities that constitute an important satisfaction criterion on the quality
of housing. Therefore, the analysis determined the design specification that best responds to the natural and climatic conditions of the study area.

The survey carried out among the inhabitants revealed that they wanted to live in this type of habitat, they have a rewarding impression. One of the first results of this survey indicates the importance of the socio-cultural dimension in the architectural design of the built environment. Much of the richness and diversity of the spaces has contributed to the reduction of certain modifications to the façades.

However, all these characteristics are inspired by traditional architecture, which is a main reason for the satisfaction of the inhabitants and allows them to qualify their habitats as being of high quality. As Pranlas-Descours confirms, “the quantity of thresholds, between public and private, allows this type to be developed” (Pranlas-Descours, 2011).

The consensual mechanism of the characteristics of the intermediate housing and the factors influencing its social and spatial content can be seen in several adaptations:

### 6.1 Adaptation of intermediate housing with socio-cultural practices

Socio-cultural practices are preserved; the relationship between inside and outside is very clear. Compared to the traditional house, the habitat studied offers almost the same spatial organization, the functional organization is done around a central space. This configuration showed a correlation between the intermediate housing, it takes into account the socio-cultural practices of the Algerian family and the preservation of intimacy. Different mechanisms are embodied in the space; the progressive passage from the outside to the inside by injecting buffer spaces. Thus, the openings giving onto the outside are treated either by the introvert or by *moucharabiye* (aesthetic element) and the hybrid treatment of the extroverted and introverted facades on both sides.

Respondents specified that they do not make many alterations inside or outside the dwelling. The inhabitants of a few dwellings on the ground floor, privatize the intermediate space by creating gardens to appropriate the space and preserve a certain intimacy. Finally, the meanings of the phenomena of appropriation of space interpret both the socio-cultural models of the inhabitant and the narrowness of the space (Semmoud, 2007).

### 6.2 Adaptation of the intermediate housing with the family structure

Socio-economic and cultural conditions have changed over time and the marital family is replacing the extended family in the traditional *ksar* habitat. The habitat is designed to accommodate this marital family structure. The adaptation is evident in the spatial organization of the housing. The type proposed as F3 or F4 to the size of the family type F3 and F4 correspond to their family structure. The family structure adapts well with these dwellings and it does not represent a problem for these families.

### 6.3 Adaptation of intermediate housing to socio-economic conditions

The housing studied is designed for people whose income level is among the middle social categories. It comprises an identical socio-economic population consisting of a family of average economic level. The jobs exercised by the families surveyed reflect their status, they are in different fields (trade, civil servant, education, etc.), since they are tenants and their incomes correspond to their economic status.

### 7. Conclusions

This work associated the study of the experience of intermediate housing with the context of social practices and spatial configuration, given the importance of the links between the inhabitant and his or her living space. This study focused on improving the quality of the built environment. The search for quality is demanded by several actors in the housing design process to ensure social and individual well-being. The objective was to assess the characteristics of the intermediate housing and the parameters that influence the perception of the inhabitants.

In this context, the study of intermediate housing through its characteristics, spatial configurations and social practices reveals its adaptation to the socio-cultural needs and practices of society. The study has shown that there is a perfect correlation between the social and spatial arrangements. The qualities of the intermediate housing close to the traditional habitat strongly diminish the transformations and appropriation of space. The traditional habitat has proved its capacity to adapt to its hostile environment, through a knowhow in the logic of occupation of space, the scope of the social dimension, the spatial structure and the use of local materials.

The socio-cultural practices dictated by this architectural heritage inherited from a long tradition serve as lessons in terms of social dimensions and practices. The recourse to traditional architecture proves to be essential, it’s not a reproduction of the habitat itself but the intermediate housing refers to the traditional habitat in the scope of the socio-cultural dimension as well by the spatial organization as well as aesthetics. The specificity of this hybrid habitat of a combination of tradition and desire for modernity is expressed by the use of materials and the treatment of the facades. As a result, the habitat studied offers characteristics such as: individualized access, the presence of private outdoor spaces (the terrace), low height (human scale) and the gradual transition of spaces, they are highly appreciated and sought after by consumers of the inhabited space. These socio-spatial arrangements thus respond to the desires of the inhabitants with a double slice of individualisation and collectivisation of the space. Social practices are woven, just as community life and neighbourhood ties develop between inhabitants.
This is achieved thanks to the presence of certain spaces and their configurations favouring the meeting of the inhabitants that certain intermediate outdoor spaces such as green spaces, or feelings: intimacy, being “at home”. In addition to the surface area of the common areas which favour social life, these values are a true testimony of a perfect harmony ensured by a progressive transition from public to private space. Thus, the intermediary habitat is a habitat where living together reigns. Finally, the experience of intermediate housing has led to a socially and spatially coupled duality, and has contributed to the development of the “living together” approach. All experimentation is necessary to overcome certain monotonous stereotyped models to which we are sensitive by trying to draw the lines of a habitat in which we want to live in the future, according to our natural, climatic, socio-economic and above all socio-cultural conditions. According to Christian Moley’s line of thought, “the habitat remains inhabited by habit”.

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