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Capa: Tower in the railway station of Ressano Garcia. Mozambique, 2019. Foto: Ana Silva Fernandes.

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Retracing continuity and discontinuity of a vernacular typology mass housing in the colonial context of Morocco: the case of the city of Casablanca

Fatima Zohra Saaid*, Najoua Beqqal*, Mouna Sedreddine* e Siham Elgharbi*

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The use of the courtyard house as an architectural typology in mass housing testifies of a long urban history in Morocco. First, in the *Medinas*, Morocco's traditional cities, that have existed for several centuries and still continue to fulfill some of their original functions, to large contemporary residential complexes. During the colonial period, this same typology was used as part of the mass housing for the migrating rural population, particularly in the city of Casablanca.

From the early years of the French protectorate, in 1910, Casablanca faced the dual challenge of a massive rural population seeking work combined with a strong need for housing for these populations that settled in insanitary slums. As of 1917, this situation was exacerbated in the political context that decided to raise Casablanca as the economic capital of Morocco, taking advantage of the existence of the recently constructed important commercial port.

To resolve this urgent situation, architects of the colonial period experimented with new urban practices, through mass housing projects which were presented in the 9th International Congress of Modern Architects at Aix-en-Provence in 1953. Those colonial experimentations played a fundamental shift in modern architectural debates (Eleb, 1999: 55), revealing innovative approaches in favor of an housing adapted to the cultural specificities and lifestyles of the regular average inhabitants. Instead of imposing a housing model similar to the workers' cities in Europe, the approaches initiated in the Moroccan colonial context reflect theoretical and practical positions of foreign architects, who reinterpreted vernacular architectural typologies, specific to the Moroccan context, especially the courtyard house.

The first position is an answer to the political vision of the Marechal Hubert Lyautey¹ seeking respect and safeguard of the national traditions and by separating the new European cities from *indigenous* ones (Cohen & Eleb, 1998: 202). Marechal Lyautey appointed French architects who designed a new district for Muslims working class to overcome the massive demand for housing called *la Cité Habous*. This district, designed in

 <https://doi.org/10.21747/0874-2375/afr39a3>

* National School of Architecture/Morocco.

¹ Marechal Hubert Lyautey was the First General Resident of the French protectorate in Morocco in 1912.

1914 in the city of Casablanca, reproduces the aesthetic and traditional courtyard house typology of the *Medina*.

In 1950, so as to solve the persistent dwelling crisis of Muslims working class in Casablanca, French architect Michel Ecochard² developed another approach called *Habitat marocain for the greatest number* based on individual courtyard house typology in *Carrières Centrales* district. The third experiment was implemented in 1953 in the same district and within the same program *Habitat for the greatest number*. French Architect George Candilis³ from the ATBAT Afrique group⁴ designed a collective mass housing with high-rise courtyard houses typology called *Nids d'abeilles*.

Literature dedicated to mass housing experiences during the colonial period in Morocco has almost depicted experiments made by M. Ecochard and the ATBAT Group as a new shift in modern architecture discourses.

However, the main purpose of this contribution is to retrace continuities and discontinuities of those experiments led by foreign architects during the colonial context in Morocco, focusing on how the courtyard house as a vernacular typology led to a unprecedented architectural and urban typology model that paved the way for a new approach, beyond their own temporal and geographical context.

La Nouvelle Ville Indigène: la Cité Habous in 1914

The beginning of the 20th century probably marks a decisive period in urban planning in Morocco. When the French protectorate was established in Morocco in 1912, the political vision of the Resident-General Lyautey, based on respecting culture and traditions of the population, was conclusive on the urban landscape of the country. This option, motivated by a concern to control ethnic groups, meant that the new cities were totally separated from the traditional urban the traditional urban fabric: the *Medina*.

In 1914, French architect and urban planner Henri Prost was appointed by Lyautey at the head of the Department of Urban Planning and Architecture. Winner of Grand Prix of Rome in 1902 and taking advantage of his numerous experiments on urban planning⁵ in Europe, Prost's intervention in the Moroccan context fixed a detailed regulatory framework for the development of cities. In Casablanca, Prost undertook several measures according to its specific context: fast and chaotic spatial development combined with the insanitary slums occupied by the rural Muslim population. The urban planning was based on separating urban functions according to a specific zoning. His actions included the development of a new hierarchical roads system, the definition of land use rules and hygienic easements as well as areas including the central area of housing and commerce, industrial zones, and recreational areas.

As the *Medina* was already overcrowded, Prost conceived the *Nouvelle Ville Indigène* called *Habous*, as a new city dedicated to resolving the mass housing issue for the "indigenous".

The *Nouvelle Ville Indigène* was a practical response to accommodate 5000 Muslim inhabitants that respected the principle of separation promoted by Lyautey. It was entrusted to a French team of architects including Albert Laprade⁶, Auguste Cadet⁷ and Edmon

² Michel Ecochard, architect, and urban planner born in Paris in 1905, studied at the *École des Beaux-Arts* in Paris (1925-1931).

³ Born in Baku in 1913, George Candilis was a Greek architect and urban planner, he studied architecture at the Polytechnic School of Athens from 1931 to 1936.

⁴ The African branch of the *Atelier des bâtisseurs* (ATBAT) founded by Le Corbusier, located in the city of Tangier in Morocco. Prost is the author of the extension plan of the city of Antwerp in Belgium in 1910-1921 and collaborated on the extension plan of Paris in 1912-1913.

⁶ French architect (1883-1978), he undertook many urban renewal projects and published a series of sketch books of architecture in Morocco and Mediterranean countries.

⁷ French architect (1881-1956) in Lyon, he was posted in 1918 to the "*Service des Plans de Villes*", in Rabat. He studied at the *Ecole des Beaux-Arts* in Paris, in 1911.

Brion⁸. Those direct protagonists achieved a mixture between tradition and modernity, implementing traditional architectural principles depicted in the *Medina* as well as modern requirements “*c’est une ville indigène ou, plus exactement la ville construite par les architectes français pour les indigènes, en tenant compte de leurs mœurs, de leur scrupule et en y ajoutant ce que notre hygiène peut ajouter*”⁹ (Vaillat, 1931: 12).

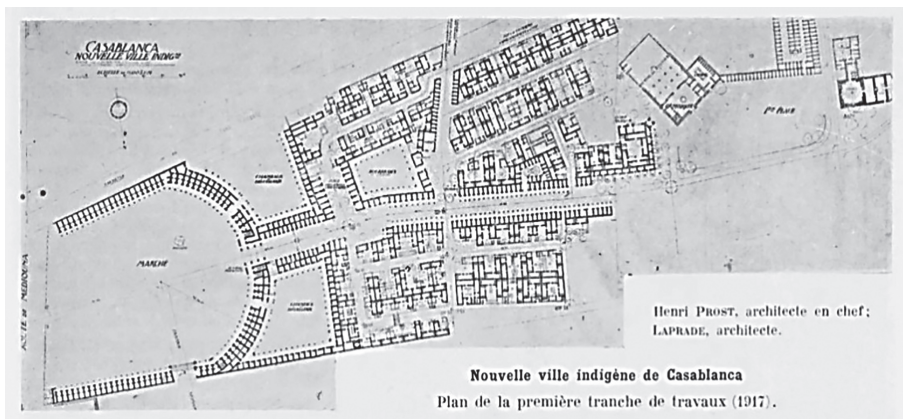
*“It is an indigenous city or, more exactly, the city built by French architects for the natives, taking into account their customs, their scruples and offering to it what our hygiene can offer”*¹⁰

The double reference to tradition and modernity asserts itself in the urban design of the first part of *la Ville Nouvelle Indigène*, la cité *Habous*, through an organic organization including different urban functions and respecting urban art design principles:

“The way in which Laprade tackled the problem was undoubtedly characterized by the romantic outlook typical of the generation of the Beaux-Arts, but his operation should be considered in terms of the cultural climate prevailing in Morocco as a direct result of Lyautey’s policy, relating to the safeguard and pre-servation of the old native towns.” (Arcuri & Pasquali, 1985: 14).

The central function of the neighborhood, in particular, was accentuated by the existence of public facilities such as the *Mahkama* (the court), the mosque and the commerce, but also by the careful and monumental treatment of Moorish style¹⁰ brought to the housing and the various facilities in the center of the district. The *Habous neighborhood* integrates architectural vocabulary and urban art, enhancing the perspectives on the singular buildings (Ilustração 01 and 02). In addition to those principles, *la Cité Habous* has been equipped with

Ilustração 01– Master plan of the first phase of the new Indigenous city: the Habous district.



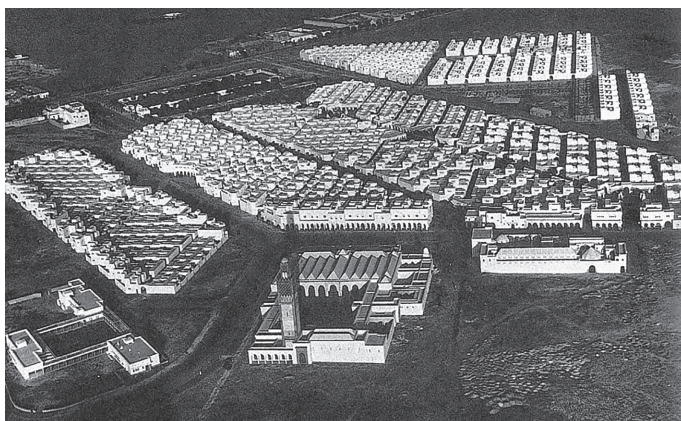
Source: Laprade, 1932

⁸ French architect (1885-1973) in Soissons. After studying at the Ecole des Beaux-Arts in Paris, he moved to Casablanca after the First World War and joined Auguste Cadet until the mid-1930s.

⁹ Translated by the authors.

¹⁰ Moorish architecture refers to an architectural genre related to the Moors, who had an artistic influence on the Iberian Peninsula during the Muslim period, giving birth to this particular technique. It translates into a refined oriental expression, particularly borrowed from the Arab-Persian style, with particular emphasis on arches, cupolas, chiseled stuccoes, massive carved doors, earthenware and mosaics, Koranic inscriptions, etc...

Ilustração 02 – The new Indigenous city: the Habous district.



Source: Cohen & Eleb, 1998.

water, electricity and sanitation facilities, while traffic was ensured by carriageways. Housing is another interesting element of this architectural and urban approach. It is particularly characterized by the highly sensitive attitude of Laprade and his team to the values depicted in the architecture of the *Medina* as to local lifestyles to design the Muslims dwellings.

“Nous utilisons nos rares loisirs à remplir des carnets d’innombrables croquis,...Parmi les documents indigènes étudiés avec ferveur, rien ne nous intéressait, ne parlait plus au cœur que les maisons pauvres de Rabat et Salé la ville sœur. Nous avons passé des heures à les explorer, dessiner, mesurer. Mais avant tout, on en savourait le charme infini(...)” (Laprade, 1932: 96).

*“We use our rare leisure to fill notebooks with innumerable sketches...Among the indigenous documents studied with fervor, nothing interested us, spoke more to the heart than the poor houses of Rabat and Salé, its sister city. We spent hours exploring, drawing, measuring them. But above all, we savored its infinite charm (...)”*¹¹

Far from being a simple pastiche of traditional and vernacular architecture, Laprade carefully explored the domestic architecture of the traditional courtyard house, and the sketches¹² he accurately crafted contributed to the widening of the architectural vocabulary reference (Ilustração 03).

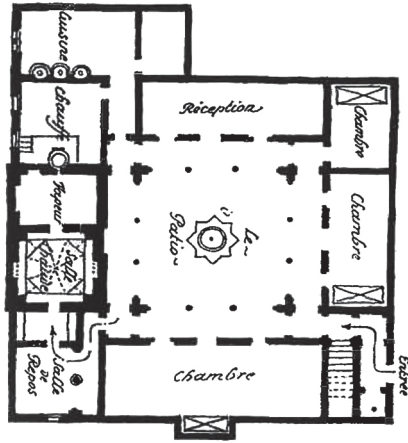
The first 257 houses in the *Habous* neighborhood were drawn one by one, their plans combining several models to create a quality urban compound, testimony of Laprade’s team knowledge of these housing concepts.

These houses, which represent the framework of the neighborhood, are differentiated according to the street and the social class. So, the *Habous* district provided modest houses close to the commerce area, while the important houses are placed in the quiet part of the neighborhood next to the mosque. The architects conceived different typologies based on the Moroccan courtyard house and integrated the conditions of comfort and hygiene (toilets connected to sewers, electricity and telephone). In order to preserve privacy, courtyard houses were conceived in such a way that there wouldn’t be any vis-à-vis between the doors of the houses. To respond to the principle of adapted housing Laprade distinguished two housing programs: single-family and multi-family housing (Ilustração 04 and 05).

¹¹ Translated by the authors.

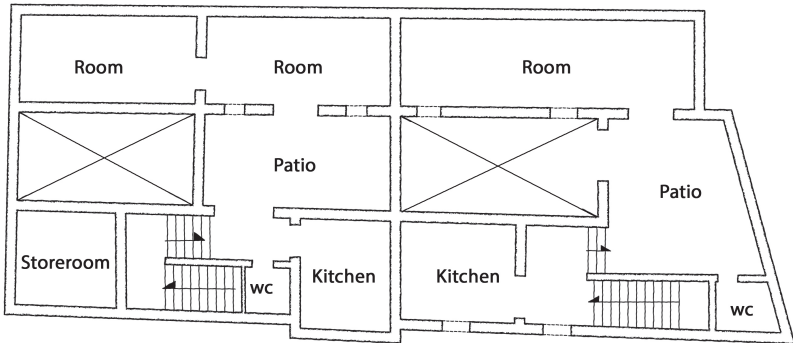
¹² Many sketches on the large and modest traditional house illustrate the work of Jean Galloti *“The garden and the Arab house in Morocco”* published in 1926.

Ilustração 03 – Floorplan of a traditional Arab house, illustration by Albert Laprade for Jean Galloti.

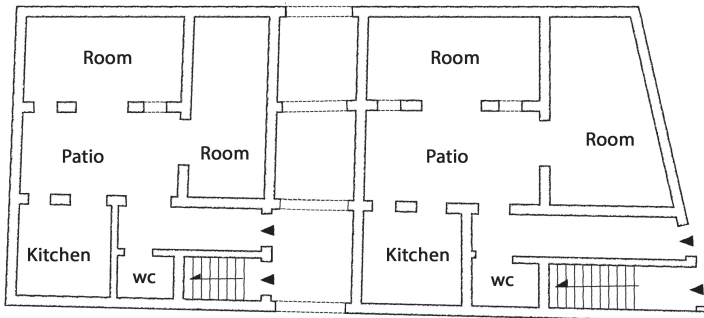


Source: Gallotti, 1926.

Ilustração 04 – Multi-family dwelling

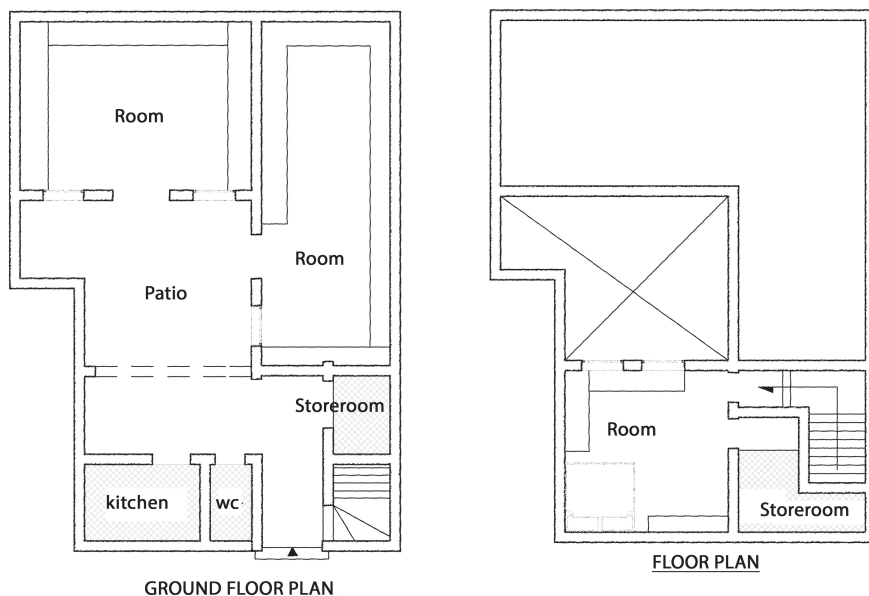


FLOOR PLAN



GROUND FLOOR PLAN

Ilustração 05 – Single family dwelling



The typology of multi-family dwelling incorporates some principles of the traditional house by the existence of the space adjacent to the patio and the laying out of a private entrance for each unit. Not common in the *Habous* neighborhood, this two-storey house had a shared courtyard or patio to four dwellings: two on the ground floor and two on the floor. Each dwelling with a living area of 65 square meters including the courtyard, contained two rooms in length, whereas the outbuildings (kitchen and sanitary) were organized on the ground floor around the courtyard. The two dwellings' upstairs were distributed around a gallery receiving daylight from the empty courtyard.

The most common typology in the *Habous* district is the single-family dwelling organized around the courtyard. This two-storey dwelling contains three rooms. The kitchen and the bathroom are aligned at the corners of the ground floor and directly lead to one courtyard that communicates with the main courtyard. At the entrance, a chicane serves as a transition space from public space to private space, thus preserving the intimacy of the domestic space. At the entrance of the house, stairs arranged independently ensure access to the terrace. Both, courtyard and terrace play the role of the private space.

Among the courtyard house typologies conceived by Laprade, those relating to the largest houses were a faithful and respectful interpretation of the traditional Moroccan courtyard house. On the ground floor as well as on the floor, rooms and kitchen were all organized around the courtyard. The house measures up to 170 square meters. Laprade used particularly the traditional decoration both in the interior and on the facades, and large windows on the outside (Ilustração 06).

On the other hand, very modest dwellings with two rooms involve architectural composition in the Western style, particularly by the monumental treatment on the facades. Those houses are rather extroverted as they include loggias, terraces and the turrets that exhibit stairs on the façade (Ilustração 07).

Focusing on the specific culture and lifestyles of the Muslims, Laprade was able to respond to a huge demand for a so-called adapted housing. The *Habous* neighborhood represents a mass housing program based on hybrid architectural and urban vocabulary that combines vernacular references to Western architectural elements (e.g. monumental decoration, terraces, loggias, large windows). Courtyard houses are built with new materials (concrete) and integrate principles of hygienic urbanism and comfort such as the advent of sanitation network and connections to water and electricity networks.

Ilustração 06 – Large courtyard house floor plan

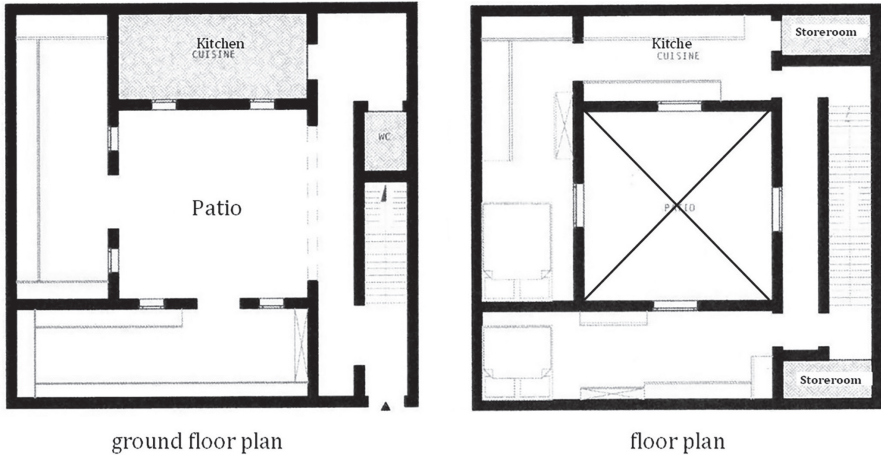
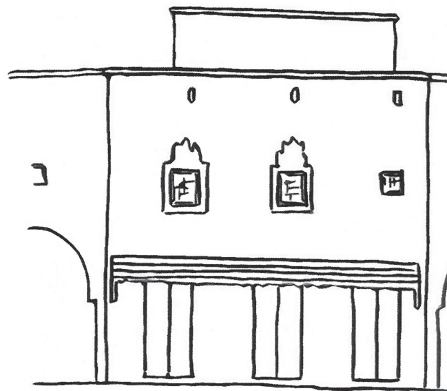


Ilustração 07 – A modest courtyard house facade with commerce on the ground floor



The new housing typologies (namely the multi-family courtyard house) in the *Habous* neighborhood represent an innovative mass housing experiment. Laprade's research on vernacular architecture contributed to widen knowledge in architecture and particularly the aspects related to the traditional courtyard house. He also contributed to the renewal of the architectural vocabulary of the colonial period, F. Beguin mentioned "*this*

particular aspect of the research carried out in Morocco as an evolution of the “Arabizing” line in colonial architecture” (Arcuri & Pasquali, 1985: 16).

The *Habous* district was completely achieved in 1955 with architects Brion and Cadet after the departure of Laprade to Rabat. Its architecture reproduced the ambiances and spirit of the place of the *Medina* and Laprade’s solutions for an adapted housing within cultural specificities for the Muslim population. Yet, this experience was criticized being expensive and not to extend reasoning to the functional aspects of the domestic space. This task would be carried by the new generation of foreign architects starting from the 50s.

Ecochard: *The courtyard house for the greatest number, in 1952*

The responses provided by the CIAM’s branch in Morocco to the issue of mass housing is considered a major experience in both the history of Morocco and in the history of modern architecture on the international scene.

The urban policy of Henri Prost shows its limits in the city of Casablanca, and the new neighborhoods known as *cit  Habous* could no longer contain the rural population flows. This situation became unsustainable after the Second World War.

Twenty-three years after the departure of Prost, the urban situation in Morocco was still deficient. Urban growth largely bypassed the urban planning layouts of Prost’s plans. A precarious housing known as shantytowns was another concomitant manifestation of this

urban crisis of housing for the proletarian population of rural origin.

Ilustra o 08 – *Carri res Centrales*, Casablanca, Aerial view of a neighborhood unit



Becoming a politically sensitive issue after the Second World War, the Resident-General Erik Labonne¹³ appointed in 1946 Michel Ecochard as head of the Town Planning Department. Ecochard had a remarkable knowledge of the Arab culture, because of his previous experience as an archeologist, architect and urban planner in Syria.

However, even as a disciple of Le Corbusier and member of the CIAM’s branch in Morocco (Chaouni, 2011: 60), the solutions carried by the French expert Ecochard in the context of Morocco were far from being an exclusive spread of the functional principles of the Athens Charters that celebrate universal solutions, revealing an innovative approach in practice and in theory.

His work was based on new methods of investigation focused on analysis of the culture and the rural population’s lifestyles. Ecochard and his acclaimed multidisciplinary team in the Town Planning Department borrowed a toolbox for urban planning: specific instruments and methods combining quantitative and qualitative surveys (Avermaete, 2010: 77). This toolbox

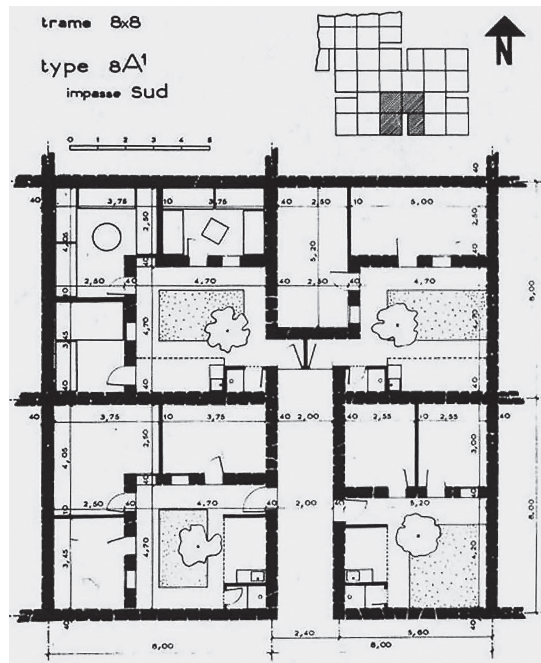
¹³ General-Resident in Morocco from March 2, 1946, to May 14, 1947.

provided a complete analysis that articulated the environmental characteristics as well as the complex economic and social aspects of the Moroccan context, namely the very low standard of living of shantytowns dwellers. The surveys set up a theoretical framework for planning a Moroccan adapted housing for the poor, which was published by Ecochard in his book “*Habitat Pour le Plus Grand Nombre*” (habitat for the greatest number) in 1950 (Ilustração 08).

Far from being a criticism of the shantytown as an image of deficiency¹⁴, like Laprade’s approach that took references from the modest houses of the *medinas* of Rabat and Salé to design the *Habous* district, Ecochard was inspired by the medina and by the shantytown which he considered as a new solution of housing, offering typological characteristics that could be integrated into modern neighborhoods.

In addition to the survey, in practice Ecochard developed the “8x8 Grid”, an instrument which articulates an architectural approach to an urban system: parceling and infrastructure. It consists of an orthogonal axis at a regular distance of 8m that corresponds to a unit of 64-meter acre that is a low-rise courtyard house with two or three rooms. Each four units are gathered around the courtyard. The typology adopted is the L-shaped courtyard house with no windows on the outside. While ensuring privacy, the 5x5m courtyard allowed several functions: lighting, access for different rooms, and separating rooms from kitchen and bathroom (Ilustração 09). The Grid created a matrix of an urban system with different public spaces.

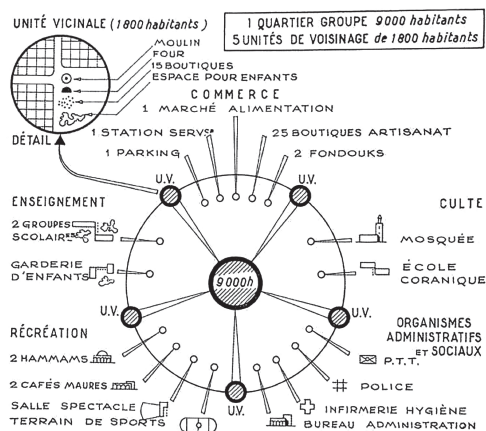
Ilustração 09 – Group of four 8 by 8 units. Units with two or three rooms



Source: Ecochard, 1950.

¹⁴ Ibid.

Ilustração 10 – Michel Ecochard’s Neighborhood unit



Source: In "Urban planning and construction for the greatest number"

The 8x8 Grid offered a density of 350 inhabitants per hectare (2,47 acre) theoretically this principle has been solved by relying to the principle of the neighborhood unit¹⁵. This principle this option which was attributed to Clarence Arthur Perry (1872-1944) in the United States made possible the organization of neighborhoods and life in *Carrières Centrales*.

The neighborhood unit that Ecochard projected is a hierarchical combination which on the large scale is represented by the neighborhood of 9,000 inhabitants with all the necessary public functions: social services, economic, administration, cult, recreation and education, and at the lowest level it consisted of four to five vicinal units that provide the population with a number of everyday services such as the oven, mill and shops (Ilustração 10).

The most remarkable characteristic of the Ecochard approach was the ability to be an evolutionary urban pattern that took into account the physical and social transformation that could occur. Thus, different configurations that vary throughout location and time were then possible by the principle of the Grid.

The elements that is common to all these mass housing experiments that took place on the Moroccan colonial context was the interest for the vernacular typologies to define a low rise adapted housing. Both, the works of Laprade and Ecochard took into account the reference to the vernacular urban housing: the *Medina* and the shantytown. Later the approach of the ATBAT Group, members on the CIAM's branch in Morocco too, offered another attempt of "an adapted housing" and displaced the focus from an urban housing model reference towards a rural model.

Collective housing of ATBAT Africa: the *Kasbah* as a model in 1953

After the Second World War, the colonial Urban Planning Department changed its position by developing high-rise mass housing as being adapted for Muslim populations. This changing position was due to the fact that in the new Medina many inhabitants had added floors to their dwellings. Besides also Moroccan representatives to the Housing Commission claimed to reconsider the high-rise housing for Moroccans like in the European community. Thus in

¹⁵ In a large literature the principle of neighborhood unit as urban framework was invented by the American sociologist Clarence Arthur Perry (1872-1944).

1953, in parallel with the 8x8 Grid based on functionalist principles, Ecochard assigned to the ATBAT Africa Group led by Georges Candilis to conceive the vertical extension of the horizontal Grid. With the collaboration of Vladimir Bodiansky and Shadrach Woods, the Group proposed in the neighborhood of “*Carrières Centrales*” three buildings arranged in “U” in the middle of the low-rise courtyard houses and presented this collective housing as a link with the rural architecture of the *Kasbah* in the south of Morocco (Ilustração 11).

The Group experimented with the courtyard vertically in the two emblematic buildings the *Nid d’abeilles* (Honeycomb) and *Sémiramis*, the first block with suspended enclosed courtyards on the facade facing South and the corridors on the north facade. On the second building, the facade facing east and west and the units are reached by passageways that lead courtyards opening on the two facades.

Elements such as courtyards, corridors represent a response to the climate issues, on the other hand this new typology of collective housing is according to ATBAT Group fit the rural inhabitant’s collective life and their predisposition to gradually adopt modern lifestyle (Ilustração 12).

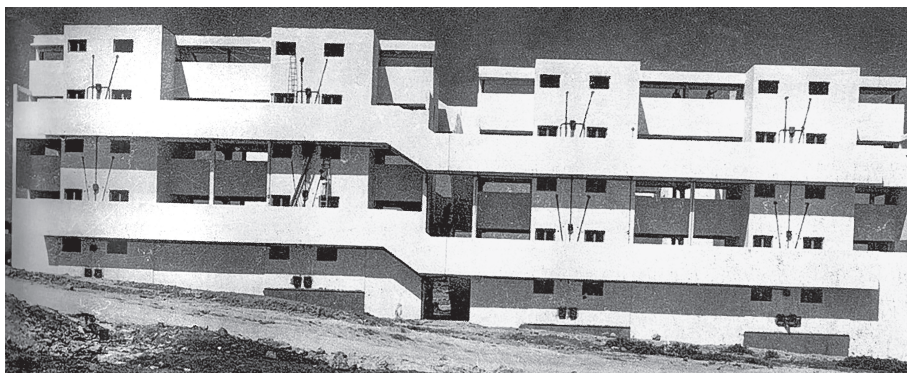
However, the experience of mass housing developing a high-rise courtyard house supposed to be reproducible throughout Morocco was not as successful as the low-rise housing. Thus “*the Ecochard Grid has in the past decades proven to be one of these hard interventions that have marked the development of the metropolis of Casablanca in a determinate way. A first illustration of this perennality*” (Avermaete, 2010: 95). The collective housing that was conceived to play the role of an evolutionary process from rural to modern life had not been

Ilustração 11 – High-rise housing Honeycomb and *Sémiramis* in the middle of low-rise dwellings. “*Carrières Centrales*”, Casablanca.



Source: Cohen & Eleb, 1998

Ilustração 12 – Carrières Centrales, Casablanca, *Sémiramis* building



Source: In “*Casablanca Mythes et Illustrações d’une aventure urbaine*”.

Ilustração 13 - The Honeycomb housing type "Nid d'Abeilles" facade with suspended courtyards



Source: ATBAT-Afrique, 1953, in 1953. *Carrières Centrales, Casablanca.*

Ilustração 14 - The Honeycomb facade today, all suspended courtyards had been closed



Source: Photography by the authors, October 2018.

generalized. Today, the heavy transformations carried out by Honeycomb and Sémiramis' inhabitants in order to adapt the buildings to their real needs, such as closing the suspended courtyards, made them unrecognizable (Ilustração 13 and 14).

Ilustração 15 - The courtyard house typology interpretations through mass housing colonial and postcolonial experimentations

Approach	1914	1946	1953	From 1964
Initiated by	Laprade	Ecochard	Atbat	Moroccan administration
Architectural typology reference	Vernacular courtyard house typology			Modern courtyard house typology
Urban typology reference	The Medina as a model	Shantytown and the Medina as models	<i>The Kasbah as a model</i>	The Grid 8x8
Theoretical principles	hygienism			
	Mimetism/ Arabizing	Functionalism and rationalization		
			Bioclimatism	
Practical principles	Single housing + urban art design	Single housing (modern courtyard house typology) + Neighborhood unit	Collective housing Implemented in the 8x8 Grid	Single and collective housing courtyard house
The mass housing urban model proposal	The New Medina	8x8 Grid		<i>Adapted Grid or Trame Sanitaire Améliorée: TSA</i>

Conclusion

The French colonialism in Morocco played an important role in solving the issue of mass housing. Experiments operated by foreign architects in this context carried out innovative architectural and urban solutions that illustrated an important interest to local context and played an interesting shift in theory and in practice in local and international contexts. However, understanding the innovative practice of Ecochard and the ATBAT group in *housing for the greatest number* cannot be isolated from a historical analysis in a larger historical context that begins from 1914 and marks a real evolution in practice and theory.

Those mass housing experiments illustrate continuities and discontinuities in practice as well as in theory.

Those experimentations focusing on the principle of *Habitat adapté* crystallized deep understanding of the social, cultural and economic environment in the colonial context of Morocco. Thus, while having different outcomes, at the level of the approaches all those experimentations shared a fundamental interest to the same architectural typology: the courtyard house.

On the other hand, discontinuities are observed in the implementation of within different urban and architectural vernacular typology depicted on urban and rural context: the *Medina*, the shantytown and the *Kasbah*.

However, Ecochard's approach substituted the exclusive culture reference for an anthropological approach with an evolutionary typology that allow his proposal deeply fits the local lifestyle. This is probably what explains the enduring use of the 8x8 grid beyond its own historical context. Thus, the grid system has continued to be the main urban planning framework all over the country even after the independence, as the Moroccan administration has amended it on improved sanitary grid: TSA. The improved sanitary grid in the form of batches of 40 to 50m² with an embryonic housing comprising a room of 10 m², an individual water point; the beneficiaries paid rent, the subdivision was fully equipped with sanitation, water, electricity, public infrastructure and facilities.

Discontinuities are also observed on the new tools of investigation that had been established by Ecochard and his team on the specific colonial Moroccan context. Far from adopting the universal principle of modern architecture or romantic approach, Ecochard developed new scientific tools: statistical and anthropological surveys.

In addition to those tools, the third experiment of ATBAT through its interest for local context climate and vernacular architecture solutions inaugurated new bioclimatic and critical regionalism architectural discourses in this specific context. This evokes other aspects of discontinuity between the first foreign architects' team and the second one.

Those approaches developed through the Moroccan colonial context fundamentally influenced the modern discourse of architecture and initiated profound debates surrounding the concept of habitat at the Congress of Modern Architects later in *Aix-en-Provence* (Ilustração 15).

Those experiments were innovative as they rejected universal principles or models that were advocated in the metropolis. In fact, those experiments based on the discovery of the social and geographical colonial context paved the way for a new architectural and urban typologies and model which participated in spreading new architectural solutions for mass housing beyond its own geographical and historical context.

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Acronyms

- CIAM – Congrès Internationaux d'Architecture Moderne. (International Congresses of Modern Architecture).
- GAMMA – Groupe des Architectes Modernes Marocains (The Group of Moroccan Modern Architects).
- TSA – Trame sanitaire améliorée (Enhanced sanitary grid).