The Patio House Typology and the Modern Architecture: Two practical and theoretical lessons from the Moroccan colonial context

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Abstract
Architectural practices of mass housing in the French protectorate context of Morocco was a fertile breeding ground for responses to address the urgent needs of housing. While the Modern Movement provides universal solutions to answer housing demand through universal concepts, disregarding the specific questions of context, a shift occurred in the city of Casablanca from 1917 with foreign architects. Their work not only aims to address the housing needs but fundamentally to set up an "adapted habitat". Under the concern of local culture and the everyday life of the rural inhabitants, their practices inaugurate relevant solutions for a large-scale patio house urban scheme. This contextual interpretation reading culminates into two great proposals: the neo-medina “Habous neighborhood” and the grid 8x8 of Ecochard in “Carrières Centrales”. Through architectural and historical analysis, this paper is concerned with how in the Moroccan colonial context the proposals of mass housing programs associated to the patio house typology contributed to erect new practices and theories that goes beyond its own context. This makes manifest the fact that the Moroccan colonial context was never 'a laboratory', but rather a fertile territory of innovative leading principles for the modern architecture.

Keywords: patio house; adapted-habitat; Habous neighborhood; the 8x8 grid; Casablanca.
The patio house as an architectural typology testifies of a long urban history in the Moroccan context, first in the "Medina", the traditional city that existed for several centuries and continues up until now to fulfill some of its original functions, and second in the large-scale contemporary housing complexes. During the colonial period, this architectural typology is associated to great housing programs dedicated to the migrating rural population, particularly in the city of Casablanca.

In 1910 Casablanca faced a dual challenge: the massive flow of rural population grouped in shelters combined with the strong need for housing for these migrating flows. As of 1917, this situation exacerbated after the decision of the political protectorate to raise Casablanca as the economic capital of Morocco, taking advantage of the recent construction of the strategic harbor.

To address the urgent housing needs, architects of the colonial period developed new urban practices, through mass housing programs. One of these colonial initiatives was presented in the 9th International Congress of Modern Architects "CIAM" at Aix-en-Provence in 1953, and played a fundamental role in shifting modern architectural debates.

Instead of introducing dwellings typology in Europeans cities, the approaches initiated in the Moroccan colonial context reflect theoretical and practical positions of foreign architects, who reinterpreted specific architectural typologies to the Moroccan context, especially the patio house.

The first position is an answer to the political vision of Resident-General Lyautey's colonial administration. He named French architects Henri Prost and Albert Laprade, who designed and referred to the Habous district as an « indigenous neighborhood » (Cohen et al., 1998:202) dedicated especially to Muslim populations and that is separated from the new "European" neighborhoods. Seeking respect and safeguard of the national traditions, the Habous district was designed as a new medina that reproduces the aesthetic and ornamental details of traditional architecture, and takes the traditional patio house as an architectural typology.

In the 1950s, to solve the phenomenal rural migration that still persisted in the city of Casablanca, the French "Service de l’Urbanisme" led by M. Ecochard, developed singular practices. Far from being an exclusive reference to the Modern Movement’s principles, Ecochard’s team showed interest to the specificities of the Moroccan context and undertook an in-depth anthropological research, focusing on the rural immigrants’ lifestyles. The team developed an adapted single housing based on pat house typologies: Casablanca’s Carrières Centrales neighborhood, in the frame of a Grid 8X8 known in Morocco as la trame d’Ecochard.

The approach initiated by the French "Service de l’Urbanisme" to devise solutions to urgent housing, has paved the way for other formulations in North Africa and Europe.

Patio house was the architectural typology advocated in these successive experiments, and its interpretations led to the design of new typologies and urban models.

Literature dedicated to social housing proposal during the colonial period in Morocco has presented the work of Michel Ecochard as the most valuable practice for the modern architecture

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2. First General Resident of the French protectorate in Morocco in 1912
3. Michel ECOCHARD was born in Paris in 1905, architect and urban planner, studied at the Ecole des Beaux-Arts in Paris (1925-1931).
which had pointed to new solutions. Moreover, in focusing on this colonial proposal, the Moroccan context has been mostly observed if not laboratory, then at least territory for experimentation\(^6\) and dissemination of architectural principles that emanate from the metropole.

Thus, the main purpose of this contribution is to emphasize how the mass housing design associated to the patio house typology contributed to raise two relevant architectural and urban practices: the first one occurs under Laprade team in 1917 and the second one was built by Ecochard’s team in 1952. These practices based on the concept of the “adapted habitat” provide solutions to the specific local culture and lifestyles of the Moroccan inhabitants. Those proposals led the way on setting innovative practices and theories for the renewal of the Modern Movement debates.

1. **In 1917: The Patio House and the definition of the Habous District**

The beginning of the 20\(^{th}\) century marks a decisive period for urban planning in Morocco. When the French protectorate was established in Morocco in 1912, the political vision of the Resident-General Lyautey, which based on respecting culture and traditions of the country, played a major role in the urban landscape of the country and the development of their cities. Thus, the new cities were totally separated from the Medinas, also known as the traditional urban fabric. This option was also motivated by a concern to control ethnic groups.

In 1914, this political context was assigned to the architect and urban planner Henri Prost, who was appointed by Lyautey at the head of the "Service de l’Urbanisme et de l’architecture". Prost was the winner of Grand Prix of Rome in 1902 and had the advantage of his numerous experiments on urban planning\(^7\) in Europe; his intervention established a detailed regulatory framework for the development of cities in the Moroccan context based on the zoning regulation that attributes specific activities according to areas.

As the Medina was saturated, and because of the fast and chaotic urban development in Casablanca, Prost undertook several measures according to this specific context marked by the deteriorating and insanitary conditions of the rural population living in slums. His work included the development of a new hierarchical roads system, the definition of land use rules and hygienic easements in the central housing and business area, as well as recreational and industrial areas.

Prost conceived an "indigenous city", a kind of new Medina, which is according to him, an adequate housing solution for the Muslim populations based on patio houses, but also the practical response according to Lyautey’s principle of separation. The Habous district was planned to accommodate 5000 inhabitants, as the first phase of this "new medina". Prost had tasked his French team headed by Albert Laprade and composed by architects, of whom Auguste Cadet\(^8\) and Edmon Brion\(^9\), to design a mixture between "modernity", by introducing hygiene and comfort conditions

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\(^7\) Prost was 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

\(^8\) A French architect, born in 1881 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.

\(^9\) A French architect, born in 1885 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.
into the neighborhood, and tradition, by crystallizing traditional architectural references of the Medina.

Vaillat noted: "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" [It is an indigenous city or, more exactly a city built by French architects for the indigenous, taking into account their customs, their scruples and adding to it what our hygiene can add.] (Vaillat, 1931, p.12).

![Image](https://example.com/image.png)

Figure 1: Albert Laprade, floorplan of a traditional Arab house, illustration for Jean Galloti, *le jardin et la Maison arabe.*

The double reference to tradition and modernity asserts itself in the Habous urban design through an organic organization integrating different urban functions. The central function is emphasized by the public services such as the Mahkama (tribunal), the mosque and businesses. In addition, some urban modern principles were incorporated such as the supply of water and electricity, sewers, and traffic ensured by carriageways. The Habous architectural vocabulary includes the architectural Moorish style\(^\text{10}\) brought to the housing facades and the various equipments located in the main square, but also developed the perspective on the important buildings of the neighborhood.

When it came to housing, Laprade considered it as the key element of this urban approach to conceive the Muslims dwellings. This aspect marks the highly sensitive attitude of Laprade to the Medina’s vernacular architectural value. Far from being a simple pastiche of traditional and vernacular architecture, Laprade carefully explores the domestic architecture of the traditional patio house. The sketches\(^\text{11}\) which he has accurately recorded, contributed to widening this architectural vocabulary:

\[\text{Nous utilisons nos rares loisirs à remplir des carnets d’innombrables croquis, Parmi les documents indigènes étudiés avec ferveur, rien ne nous intéressait, ne parlait plus au cœur que les maisons pauvres de Rabat et Salé la ville sœur. Nous}\]

\(^{10}\) Or a neo-Mauresque architecture refers to an architectural style related to the Moors, who had an artistic influence on the Iberian Peninsula during the Muslim period, and gave genesis to this vocabulary.

\(^{11}\) A large number of his sketches on the large and modest traditional house illustrate the work of Galloti. Gallotti, J. (1926). Le jardin et la maison arabels au Maroc. A. Lévy.
we use our rare leisure to fill notebooks with innumerable sketches, ... Among the
indigenous documents studied with great passion, nothing interested us nor spoke
more to the heart than the modest houses of Rabat and its sister city Salé. We had
spent hours exploring, drawing, measuring. But above all, we savored its infinite
charm (…)]
rooms in length, while the outbuildings (kitchen and sanitary) are organized on the ground floor around the patio. The two dwellings on the first floor are accessed by a staircase illuminated by daylight from the patio.

Figure 3: Multi-family patio house floor plan

The most common typology in the Habous district is the single-family dwelling. This two-story dwelling contains three rooms organized around the patio. The kitchen and sanitary facilities are located at the corners on the ground floor and lead directly to the patio that communicates with the main house. At the entrance, there is a chicane that serves as a transition between public and private spaces, thus preserving the privacy of the domestic space, while stairs are arranged independently giving access to the terrace. Both patio and terrace play the role of the private space.

Figure 4: Single-family patio house floorplan
Among the patio houses designed by Laprade, the typology dedicated to the important families is as faithful as possible to the traditional Moroccan patio house. The house measures up to 170 square meters and is in the interior as well as on the façade decorated in the traditional style. Rooms are organized in L or U shape, and the sanitary and kitchen are all arranged around the patio. There is one exception though in this imitated typology: the large windows on the facade.

The typology dedicated to the very modest dwelling has two rooms and is an extrovert scheme that involves architectural elements in the Western style expressed by the distinguished treatment on the façades with loggias, terraces and the turrets that exhibit stairs on the facade.

When Laprade was assigned to Rabat, his work was relayed by architects Brion and Cadet and was completely achieved in 1955. The Habous neighborhood architecture reproduces ambiences and the spirit of the “Medina”, providing responses to address the urgent housing needs under the so called “adapted habitat” for the Muslims.

Figure 5: Important patio house floor plan

Figure 6: A modest patio house facade with commerce on the ground floor
This experiment that takes into account specific culture can be regarded as a hybrid architectural vocabulary that combines specific references to Moroccan architecture with the Western ones (monumental decoration, terraces, loggias, large windows, perspective). New building materials (the concrete) was used the principles of hygienism and comfort such as the advent of sanitation and connections to water and electricity networks were executed. The work of Laprade conceived to solve issues of urgent and massive demand of housing, and embrace innovative practices on architectural design correlated to urban planning approach based on the idea of developing new single housing typologies.

Laprade’s research on the traditional patio house contributed to the renewal of the architectural vocabulary in the colonial period, what François Béguin calls the arabisation12 this particular phenomenon of colonial architecture.

Whereas the architects of the Habous neighborhood focused their proposals on the formal arrangements of the Medina, the second proposal initiated from the 50s by a new generation of foreign architects extended this reflection to the functional aspects in the domestic space.

2. In 1952, "The Patio House" for the Greatest Number

The work of the CIAM’s branch in Morocco to address the urgent housing needs is considered as the major experience in both Moroccan history and the international scene of modern architecture.

Twenty-three years after the departure of Prost, the urban situation in Morocco shows its limits. Urban growth largely bypassed Prost's urban planning layouts and the working-class population living in miserable and precarious housing known as shantytowns had settled in the city’s outskirts. After the Second World War, this situation became politically sensitive; therefore, the Resident General Erik Labonne13 named Michel Ecochard head of the “Service de l’Urbanisme” in 1946. Thanks to his previous experience as an archeologist, architect and urban planner in Syria, Ecochard had a good knowledge of Arabic culture. Ecochard was also a disciple of Le Corbusier and the head of GAMMA (Groupe d’Architectes Modernes Marocains) the CIAMs branch in Morocco14.

Instead of advocating for universal solutions of the modern architecture, the solution that he carried for housing issues in the Moroccan context was far from being an exclusive spread of the functional principles of the Athens Charters; it revealed an innovative approach in practice and in theory. His work relies on new methods of investigation focused on culture and rural population’s lifestyle. Ecochard and his acclaimed multidisciplinary team borrowed a "toolbox for urban planning"15: specific instruments and methods that are a combination of quantitative and qualitative surveys, which provided a complete analysis that articulates the physical characteristics of the terrain but also the complex economic and social aspects of the Moroccan context, namely the very low living standards of shantytowns dwellers. The surveys led to set up the theoretical framework for planning a Moroccan "adapted habitat" at the lowest price, that Ecochard published under the name of "habitat for the greatest number"16.

Far from criticizing the "shantytown" as a form of deficiency, Ecochard considered characteristics of the slum dwellers as a typological reference to take into account in the modern neighborhoods, beside the reference to the old urban fabric of the Muslim the Medina\(^\text{17}\).

In addition to the survey, Ecochard developed the Grid 8x8, 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 square meters which forms a low-rise patio house: the basis of the Grid. Ecochard coined this principle of the grid for 'horizontal concentration' and regarded it as the best possible way to act within the urgent urban situation in Morocco". (Avermate, 2010: p.91).


This new urban scheme included different public spaces such as boulevards, and individual low-rise houses of different areas that consisted of two or three rooms arranged around the patio as an entry space. Each unit consisted of two patio houses, which are grouped into four units. The typology adopted is the "L" shaped patio house with no windows on the outside. The 5x5m of the patio allows several functions: separates rooms from kitchen and bathroom, provides lighting, access to different rooms and circulation, and guarantees privacy.

The Grid 8x8 reach a density of 350 inhabitants per hectare (2,47 acre), this has been possible by relying on the principle of the “neighborhood unit »\(^\text{18}\).

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\(^\text{18}\) The paternity of the neighborhood unit is still unresolved today. For many analysts, C.A Perry does not "invent the concept of neighborhood unit", but retranscribes and articulates a planning idea that is present in the garden city theory of Ebenezer Howard in 1898 (Dahir, 1950). 212), Jannière, H. (2008). Planifier le quotidien. Voisinage et unité de
Theoretically, this neighborhood unit concept that was first developed in the United States made possible the organization of the functions of the collective life of Carrières Centrales neighborhood.

The "neighborhood unit" that Ecochard projected is a hierarchical combination which on a large scale provides the necessary public functions: social services, economic, administration, cult, recreation and education, and on a small scale, consisted of four to five vicinal units that provide numerous everyday services such as the oven, mill and shops.

Figure 8: Carrières Centrales, Casablanca, April 1950; grouping of four 8 by 8 units. Units with two or three rooms

Figure 9: Plan for an 8m x 8m patio house. Units with two or three rooms. Collection Écochard: Urban Planning in Morocco, source Aga Khan Trust for Culture. https://archnet.org/media_contents/93717

The major characteristic of Ecochard's approach is his evolutionary urban concept that took into account physical and social transformations that could occur. Thus, different configurations were possible under the principle of the Grid, which would vary over time and through location.

Carrières Centrales neighborhood as the second proposal offered another attempt to the issue of "an adapted habitat" in the Moroccan colonial context. The work of Ecochard’s Team displaced the architectural reference from universal principles towards a local reference based on the shantytown and the Medina, and linked to the patio house dwellings as a single housing typology.

**Conclusion**

French colonialism in Morocco has played an important role to address the urgent demand of dwellings. To conceive an "adapted habitat" for the rural population, both Laprade and Ecochard developed an architectural framework based on patio house typology.
The intention of these foreign architects working under colonial rule played a great role in shifting the concept of housing from universal doctrines that celebrate an imported housing typology, to practices based on a deep understanding dealing with the cultural, social and climatic context of Morocco.

Laprade’s housing program in the Habous neighborhood is not a copy of the working-class mass housing in Europe, but rather a manifestation of an early architectural modernity that claims a homecoming to traditional references, based on deep observation and learning from the existing situation. The patio house as an architectural typology allowed Laprade to produce multiple "adapted housing", the basic cell that shapes the Habous urban form with a population of three thousand inhabitants.

Interestingly, this architectural synthesis process between the replication of the formal arrangements of the traditional houses and modern issues distinguish the Habous work as "…. a mid-way point in the transition from arabesque details to formal abstraction in colonial modernism based on the spatial organization of traditional areas of Casablanca." 19

Attempting to address the chaotic urbanism of Prost’s city and the urgent housing needs, the second practice with Ecochard and his team adopted new scientific principles. Surveys and anthropological approaches constitute new tools to design another proposal for the "adapted habitat" post-war. This proposal drew from the tradition of the Medina, and the rural environment introduced a modernist version of the patio house, allowing for the rapid settling and expanding modern neighborhood of eight thousand inhabitants.

Ecochard added the reference to culture to the functionalist principles to conceive an evolutionary patio house typology that fit the local lifestyle. This is what explains the enduring use of the Grid 8x8: "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 perenniality. » (Avermate, 2010:95). Thus, the Grid system continued to be the main urban planning framework all over the country even after the independence when the Moroccan administration had amended it to the Improved Sanitary Grid20.

Those reinterpretations of the patio house typology for the concern of "adapted habitat" brought alternatives to Universalist or radical practices, and from the beginning, carried out a distinctive architectural design and urban solutions to modern principles. Indeed, the Moroccan colonial context was never just 'a laboratory' as it had spread new architectural vocabulary and fundamentally marked a turning point in the modern architecture scene. At this point, Cohen has reconsidered its position

Some methodological precautions must also be taken. The first consists in taking care to avoid abusing the metaphor of “laboratory”, something to which I myself have sometimes succumbed. Often fruitful, this metaphor discerns in projects undertaken in the colonies an experimental moment whose results only find their sense if exported again, this time back into the colonial powers’ own countries. But this figure speech can also obscure the reality of the process. An innovative undertaking is not inevitably an experimental one. It is only experimental if an

20 Pinson and Zakrani define it as “a reformulation of the state architectural pattern” which became from 1964 a common habitat model in Morocco. This pattern consists on a Grid of 8x8 or 10x10 of embryonic high-rise patio houses with the possibility of the addition of storeys. Pinson and Zakrani discussed the interesting inhabitant’s practices to express their cultural models that consisted on major transformations and included many varied uses of the patio space. The patio’s functions are therefore paradoxically defined. Pinson, D., & Zakrani, M. (1987a). Maroc : L’espace centré et le passage de la maison médinale à l’immeuble urbain. Les Cahiers de la recherche architecturale / Les Cahiers de la recherche architecturale et urbaine, 20 21, 104-111.
explicit protocol exists for observing the activity and the re-evaluating its premises. It is therefore advisable to demonstrate the existence of such procedures rigorously.²¹

Theoretically, the Grid 8x8 initiated profound debates in the Congress of Modern Architects of 1952 and a year later at the Aix en Provence scene. Debates were focused on investigating the patio as a modernist scheme for understanding the relationship between the public and the private sphere, and defining a holistic approach for the theme of "habitat" as a reformulation of post-war modern principles in architecture²².

References


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