

THE “DEEP PLAN” AS AN ENGINE OF MODERNITY IN BARCELONA’S RESIDENTIAL BUILDINGS. 1930-1970

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Abstract

The large building depth is a remarkable feature of the housing building of the historical urban fabric of Barcelona and is one of the elements that most characterize the identity of the city. The article investigates the influence of the “deep-plan” in the housing building of the second modernity, focusing on the difference between permanence and transformations. The deep plan was originally a response to the high demand for housing, but it turns into a structural law that becomes a common ground for the architects of the second modernity on which they experiment and introduce innovations in the arrangement of spaces. The deep plan has syntactic meaning in the plan layout arrangement. The overlapping of innovative theories, connections with another cultural environment as Milan, and professional practice turned into a figure with a semantic meaning.

Keywords: Barcelona; Housing buildings; Deep plan; Type; H-shaped Plan.

1. INTRODUCTION

This article is a spin-off of the broader research developed by the authors about the relationship between modern architecture in Barcelona and Milan from the Fascist-Francoist times to the end of the 1960s. Among the many subjects concerning this topic, the connection between the concept of type and the innovations provided by modern architects drew the authors' attention.

Thus, the target of this paper is a critical reflection on the thickness of the housing buildings and consequently on their deep plans and the way it has deeply affected the figurative values in housing design.

The thickness of one housing building is the span between two opposite façades or, in other words, the width of a cross-section. We will refer to this subject in terms of "thickness" or "deep plan". It's not only a matter of construction technique i.e thickness of the walls and bays, but a scenery where one can understand the quality of the space relating to the apartment benchmarks as the distance between the windows, the crossing of a threshold, the perception of dark and bright areas or the dialectic between compressions and expansion of space.

In Barcelona historical urban tissue (walled city and Ensanche) the thickness of the residential buildings is a structural law and thus a substantial part of the identity of the city. It has been brought about by the city building process, and by what Peter G. Rowe has called "collective possession", which is a "common notion of representativeness and sense of a pride" (Rowe 2006: 48), getting, for this reason, a part of the construction of the Catalans cultural experience.

2. METHODOLOGY AND OBJECTIVES

The methodology deployed is grounded on the typological study (Martí Arís 1990). It aims to deal with the recurrent forms in architecture to deduce general principles from the variations of forms that are analogous but not identical. The main tool is the comparative study of similar floor plans of residential buildings with a prominent thickness to point out what has changed and what is long-lasting in their formal structures.

The main goal is to demonstrate that the thickness is a permanence feature in the urban morphology

evolution and that it has been able to affect the housing buildings' shape from within.

The data are taken from examples drawn by a selection of different housing buildings belonging to the modernist architecture after the end of the civil war consistently with the above-mentioned research. The analysis was pursued by redrawing the floor plans and analysing the relationship and the hierarchies of the space and the connections among the rooms taking into account the influence of the thickness of the building.

3. ARGUMENT: THE HISTORICAL ROOTS OF THE DEEP PLAN

3.1 THE PLAN CERDÀ AND THE RENT-HOUSE BUILDING TYPE

The modern urban history of Barcelona paradoxically began in a dark period for the autonomist aims of the city. The 1714 military defeat by Philip V army marked the subdue to Madrid's political power. Nevertheless, the production grew, due first to the manufacturing-mercantile development and then to the industrial one.

The city was imprisoned in its wall with an irregular occupation of the ground: some districts were overcrowded, and others like the Raval were occupied mostly by vegetable gardens. The brutal insertion of the Citadel entailed the destruction of a significant sector of urban fabric partially mitigated by the outstanding district of the Barceloneta. In this period, the city's evolution followed the Baroque trend, meaning regulating the urban growth by employing rules for the composition of the façade with a lack of interest in the interiors of the housing buildings (Busquets 2005: 88).

From 1772 the urban fabric of the hyperdense walled city continued to grow over previously built plots giving rise to a "building within the built" process. A typological change took place as the craftsman houses evolved into a new kind of collective houses clustered around the communal stairways (Busquets 2005: 89).

In the frame of the extraordinary and incisive rational relationship between urban design, the form of construction, and new real estate mechanisms fulfilled by the Cerdà Plan (1860) the building plan thickness took a remarkable role

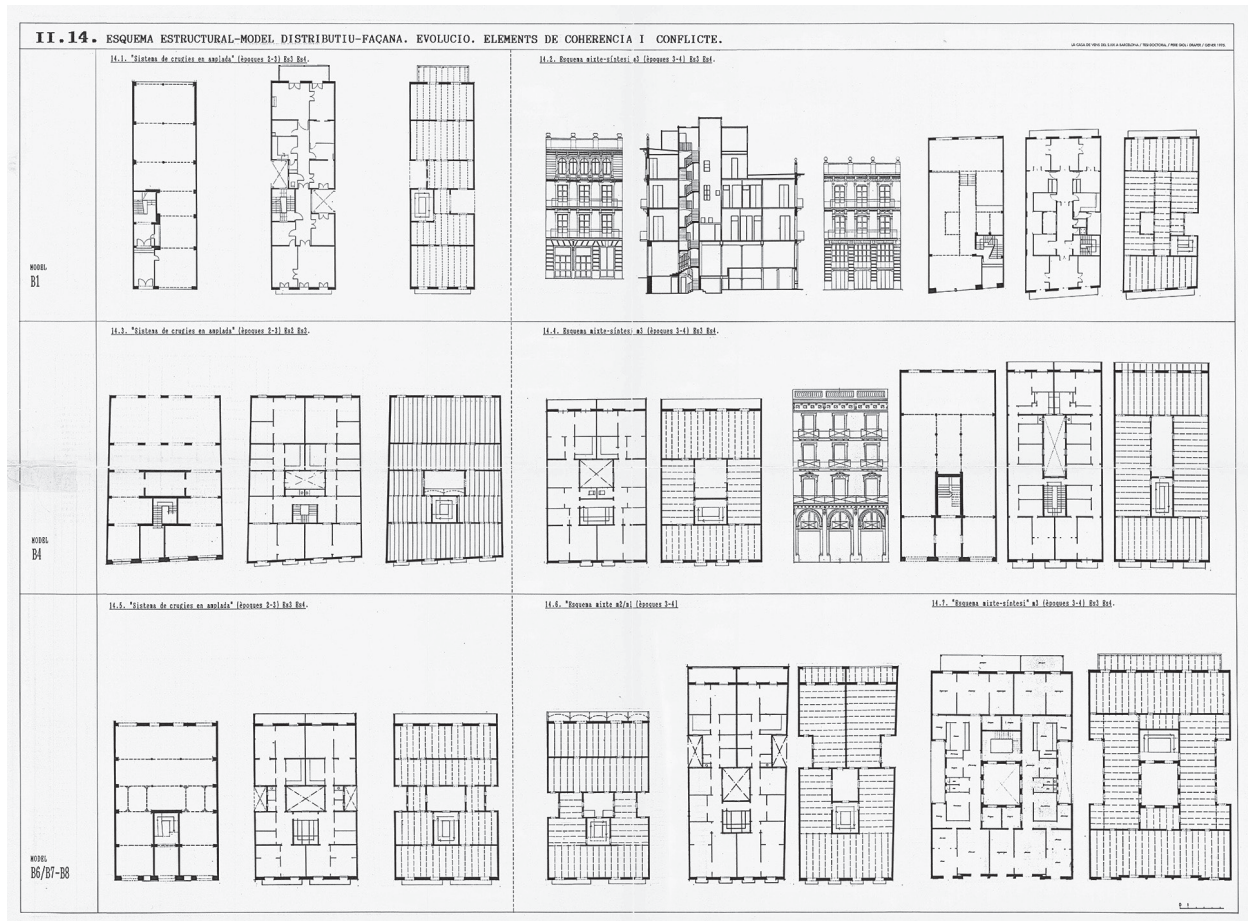


Fig. 1. Comparison of different residential buildings of Barcelona historical urban fabric by structural and distributive standpoint. Pere Giol i Draper, 1995, drawing no. 11.14.

as a “morphological” factor able to actualize the hippodameus blocks pattern.

It has been stated that Cerdà’s plan lies on a double background: the theoretical studies with the methodological innovations and the actual development of the Ensanche, which instead was a real estate matter (Busquets 2005: 299). In this regard, the density was a consequence of the concrete construction of the city.

The density took place mainly through the rent-house building type. Although this kind of type had been experimented with before Plan Cerdà (Solà-Morales 2010), it became very successful with the ongoing development of Ensanche as it fulfilled the real estate needs to be nurtured by the city’s fast economic growth. Each new ordinance introduced increases in building surfaces until the General Metropolitan Plan of 1976.

The speculative pressure increased the thickness of the building from 25 to 28 meters. The favourable connection between the increasing thickness and

the real estate development made a long-lasting typological invariant in the settlement evolution.

The overall result is a notable dense urban fabric. “Barcelona was an overly dense place trading on spatially consolidated property values and referred to locally as the second densest city in the world after Calcutta” (Rowe 2006: 37).

Whatever architectural shape has a typological root, and the one of the deep plan rent-house has to be searched in the historical urban tissue.

Pere Giol i Draper carried out an accurate study on the rent house type built between 1750 and 1920, focusing on the walled city and some nearby areas of Ensanche (Fig. 1). He provided documentary proof about the spreading of the deep plan that can be considered as permanence in the urban tissue. The rent houses grow in deepness similarly to the burgrave plot occupying the back courtyard space and the increasing thickness can be considered a permanence in the evolution of the urban fabric.

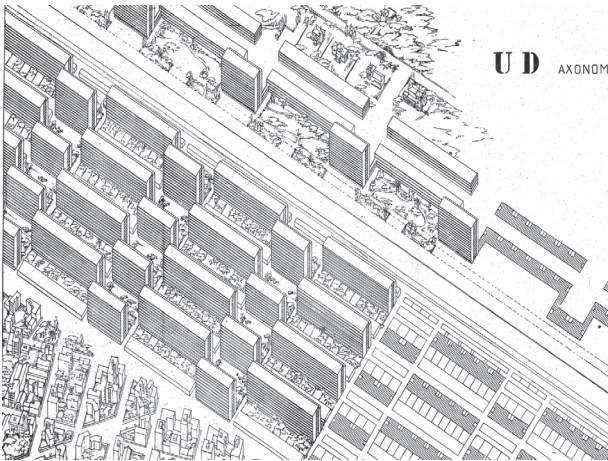


Fig. 2. Urbanización de la Gran vía Diagonal, project by GATEPAC. AC, no 4, p. 24.

The most common building type has a rectangular floor plan whose shortest side looks onto the street. It has one or more small patios in the geometrical centre so that the layout has four outlooks: two on the street, one on the courtyard and two on the inner patio. All of them guarantee fine cross ventilation.

The development goes on even throughout the joining of different adjacent plots. Draper compares a lot of floor plans at the same scale following a research method based on the interpretation of the physical form of the urban fabric according to the studies on urban morphology carried on in Italy at Milan and Venice Faculty of Architecture during the late 1960s (Solà Morales 2001). Once taken a good sample size of houses he examined the similarities among floor plan layouts deducing that since 1750 (corresponding to the beginning of industrialisation), the depth of the buildings, located in the lower Raval and the Roman city, first doubled and then quadrupled between 1890 and 1920. Therefore, the growth of the street front was much less than that in-depth so that the buildings maintained their elongated shape towards the centre of the block (Gioli Draper 1995). The rent house “is aligned parallel to the street and built as a row house with a 10-15 meter façade about 25 meters deep [...]”. The residential floor generally had two apartments per landing which were for rental. Sometimes the owner would reside in a larger apartment occupying the entire first floor” (Roca et al. 2015: 98).

The increase in density may be considered a permanent feature feed by the high demand for



Fig. 3. Apartment layout of one building of Urbanización de la Gran vía Diagonal. AC, no 4, p. 24.

housing. From 1939, the arising of horizontal ownership involved the downsizing of standard housing units so that the typical plan could host four apartments. The counterpart increase of density was the lack of quality of the space and the ceasing of cross ventilation; besides, the high number of rooms in a deep plan means many of them to need to be ventilated by small lightweights.

During the first decades of the twentieth century, modernist architects of GATEPAC realized that the deep plans, whose thickness can stretch up to 28 meters, represented a significant health issue. On average, one-third of the apartments were ventilated only by lightwell so that, as we have seen above, the inner room takes light and air only through them. The new rationalist residential complex in the Diagonal presented in the issue n. 4 of AC journal (Proyecto de urbanización 1931) consists of arrays of parallel slab housing buildings approximately 16 meters thick. They are obviously thinner than the ones in the Manzaneras or in the historical fabric but pretty sizeable. Nevertheless, in the layout of the apartments, there is a double band of bedrooms that compels the architects to ventilate the inner spaces through a deep loggia.

Of course, the thin plan depends on the building type but is usually considered one of the traits of modernist residential building: the post lintel construction system allows thin walls, lighter envelopes, and a large quantity of light. The interaction of these issues makes the image of the buildings something slim (Migdol 2020).

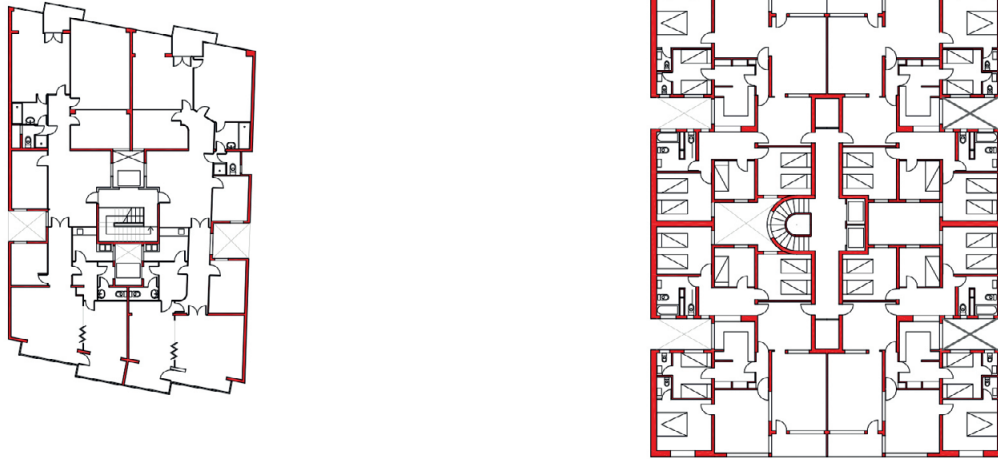


Fig. 4. G. Rodríguez i Arias: house in via Augusta (1931). R. Duran i Reynals: house Jaume Espona, Calle Camp d'en Vidal (1935). Scale 1:500. Redraw M. Lucchini.

But it would be very naïve to associate modern architecture with the thin plan; in Barcelona, on the contrary, the deep plan is one of the main features of modern architecture.

Between the end of the 1940s and the beginning of the 1950s, the moderate easing of repression by the Francoist regime and the partial opening of borders with consequent timid development of international trades laid the foundations for a rebirth of that Modernity that the civil war and the dictatorship had erased.

The Barcelona modernist architecture was boosted by the cultural activity of Grup R (1951-1961). It was an association composed of fourteen architects¹ liven up by the willingness to recover intellectual vigour in the poor cultural environment of Francoist Barcelona. Their work was highly influential and brought to the fore by four exhibitions organized between 1952 and 1958. (Rodríguez and Torres 1994: 24).

In line with what was happening among the modern architects of Milan with whom they were in close contact, (Jaén i Urban and Lucchini 2016) the Grup R considered the more rigid functionalism and its unyielding ideas outdated, making instead for a more comprehensive approach. On the one hand, there was a clear rejection of the classicist and monumental rhetoric of the regime; on the other hand, popular and traditional architecture is integrated and reinterpreted in favour of a

desire for synthesis that "seeks to enclose light and shadow, intelligence and instinct" (Teixidor 1952: 20).

Such syncretism is discernible in the floor plan types development. The deep plans are not abandoned but transformed. The first step of this trajectory lies in two buildings designed in the 1930s, which in some respects represent a connection between the first and second modernity in Barcelona: they are the house in via Augusta, built-in 1931 by Germà Rodríguez i Arias (one of the founders of GATEPAC) and the house Jaume Espona in Calle Camp d'en Vidal (1935) designed by Raimon Duran i Reynals.

Although these houses manifest a modernist language, they give continuity to the traditional deep floor plans, setting the stage for future innovations. Both are dwelling for the middle class built on deep plots in perimeter blocks so that the thickness of the building stretches to 25 meters in the first case and 29 in the second. The blocks are not far from Ensanche, and they belong to the urban fabric developed afterwards, encompassing the former municipalities in a Barcelona of a million inhabitants.

The floor plan of Rodríguez i Arias's house is almost symmetrical, and its geometrical center corresponds to the stairwell around which kitchens and baths are clustered. The surface is arranged in bands parallel to the façade and the transversal walls. The smallest rooms in the inner part of the building take light and air only through a small lightwell placed on the centerline. The

¹ Balcells, Bassó, Bohigas, Coderch, Gili, Giráldez, Martorell, Monguió, Moragas, Pratmarsó, Ribas, Sostres, Valls e Vayreda more the outer members Mitjans and Mascaró. Coderch leaves the Grup in 1952.

arrangement of Jaume Espona is slightly different: the four apartments are symmetrically repeated. Everyone is 15 meters deep, and the core with the wet services is grouped around a lightwell. Compared to Rodríguez i Arias' house, the main differences consist in the directional space, the more oversized kitchen, while the living room is fully separated into two areas one for dining and one for conversation.

Those houses are a turning point through tradition and modernism: Rodríguez I Arias' floor plan shares several similarities with those of the historical urban fabric classified by Giol i Draper as the most advanced typological evolution of the rent-house (Giol i Draper 1995: 73-74) due to the same way to group the rooms in bands arranged around a center point. Instead, Duran i Reynals house contains the seed of the slab buildings arrangement as the hint to an elongated space.

4. RESULTS

4.1 MORAGAS I GALLISSÀ: THE GRIDIRION PATTERN LAYOUT

Three paradigmatic types of the deep plan stem from the above-mentioned examples, albeit with many variations: they are the "gridiron" pattern layout the U and the H-shaped model.

Probably Antoni de Moragas i Gallissà is the Catalan architect whose projects paid attention to the gridiron pattern more than any other. An orthogonal grid framework underlies the layout composed of bands of rooms which follow the building perimeter enclosing the central core with the stairwell, the lifts and some shafts. Each floor plan hosts four or more flats symmetrically arranged to form a repeatable module that spans from the 24-meter thickness of the house in carrer Gomis to the 28.10 of one in via Augusta-carrer Brusi.

In the four storeys block of flats in carrer Gomis (1953-1954) the dwellings are accessed by the staircase without lift, around which two patios, four lightwells, shafts, minimal sanitary facilities, vestibules and kitchens and tiny bedrooms are housed. The house, whose floor plan is square-shaped, has a large core (approximately the 37% of the whole surface) where all the facilities are clustered. The sizes of the rooms are similar, and from a dimensional point of view, there is no hierarchy among them: the living has the

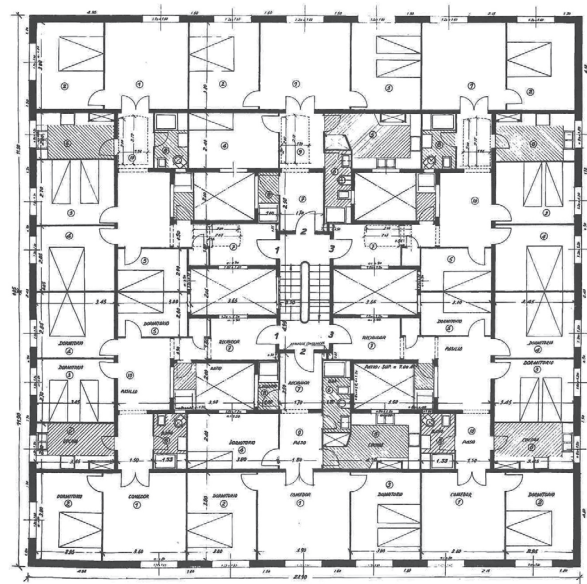


Fig. 5. A. De Moragas i Gallissà: house in calle Gomis 32, (1953-1954). From A. de *Moragas i Gallissà Arquitecte*. Barcelona: COAC. p. 64

same role as the bedroom. The hierarchy of the rooms is ambiguous, their functions can be easily swapped or merged, configuring an apartment layout that despite the unmovable partitions and the reinforced concrete load-bearing walls, can be considered flexible (Monteys 2006: 62).

The formal principle that addresses the layout's order is the addition of rooms giving the space a sequential character. The whole arrangement system is monolithic, but the steadiness of the form provides surprisingly a certain degree of freedom in the practical use of the spaces.

Moragas' subsequent houses belong to the same typological series. The buildings in Carrer Sant Antoni Maria Claret (1956-1957), the Casas de los Toros (1960-1962), the house in Gran Via de les Corts Catalanes (1959-1962) in via Augusta (1964-1970) and the blocks of flat among the streets via Augusta, carrer Brusi and Sant Elies (1966-1968), exemplifies the modular composition. The essential elements corresponding to the rooms, stairwells and shafts are repeated in such a way as to make the blocks so dense and thick that their urban value does not depend on the way they are arranged in space but on their mass.

These plans can be considered as an evolution of the types of the historical fabric of Barcelona classified as "banda espacial" (Giol i Draper

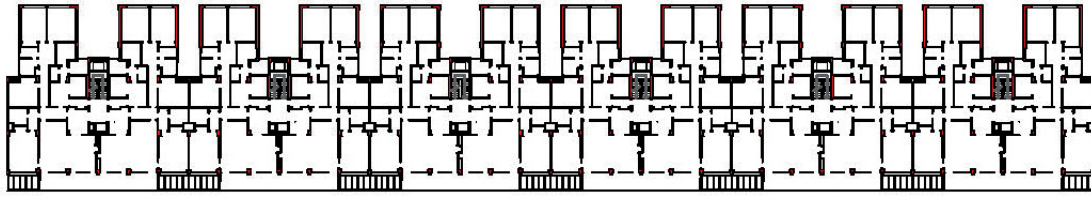


Fig. 6. F. Mitjans: Illa Seida Housing building. Floor plan, Scale 1:1000. Redraw M. Lucchini.

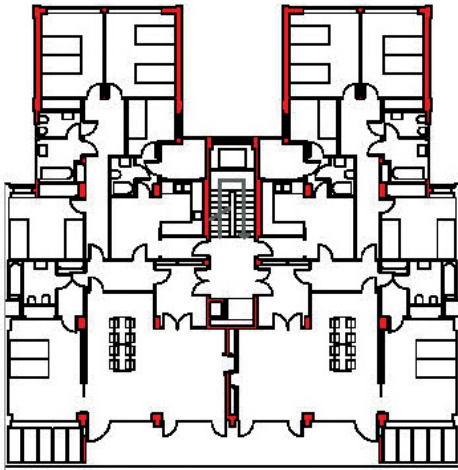


Fig. 7. F. Mitjans: Illa Seida Housing building. Plan of a dwelling unit scale 1:500. Redraw M. Lucchini.



Fig. 8. F. Mitjans: Illa Seida Housing building. View from Avinguda de Sarrià. Photo M. Lucchini.

1995: 28) buildings, that is, with the rooms gathered in bands.

This also demonstrates the vast culture of Moragas considered an exponent of what was once the liberal thought capable of amalgamating the knowledge of the past with the will to transform the city without upsetting it (Montaner 1997: 33).

4.2 GROUP R AND MODERN MOVEMENT

The eldest architect of Group R was Francesc Mitjans i Miró (1909-2006), who changed the way of designing the plan layouts of residential buildings without making radical rifts with tradition.

Mitjans in the first project for Oller house in carrer d'Amigó 76 (1941-1944)- a small 18 meters thick buildings placed in a perimeter wall block southern of via Augusta – arranged the rooms in two bands aligned with the front and rear façades; so, the matrix array of Moragas is turned into a two-strip frame hinged on the cross-shaped

core of the stairwell and sanitary facilities. In the final proposal the gravity centre is no longer the stairwell but a sequence of three living rooms diagonally connected. The space is more flowing so that the room relationships become dynamic and no more static.

As time went by, Mitjans' design strategy dealt with the dimensions and role of spaces usually considered ancillary, namely lightwells patios and connections. In the houses in calle Balmes no. 182 (1945-1948) and calle Ferran Agulló (1945-1953) although very different in expression, a neoclassic style in the first and modernist expression in the latter, the patios have been doubled and placed to each of the sides of the building, and consequently, they become narrower and deeper than usual.

Meanwhile, the corridors are turned into lobbies establishing a different way to access the main places of the house by means of "in between" spaces.

The idea of connecting the room on a diagonal previously tested in the house in calle Amigó

addressed the Mitjans' interest in reshaping the passageway. In the block of flats in calle Vallmajor (1955) and in the housing building Seida, he designed a pretty large lobby or, in the second case, a more complex system with two entrance doors, one of which brings in the kitchen and the office. This arrangement gives a physical aspect to the building's deepness making it more bearable despite the lack of natural light. (Benedito Ribelles 2015: 50).

When Mitjans dealt with more complex buildings like the Illa Seida in ronda General Mitre (1955-1958), the CYT (1958-1959) in via Augusta or La Colmena (1959) again in ronda Mitre, he had to cope with the urban role of buildings increased in size and complexity. The size of this block of houses compelled him to change the way to arrange the flats layouts. Mitjans addressed his effort towards two issues: making large and dense buildings able to fulfil the real estate demands simply and cheaply and sorting out the poor ventilation of the traditional deep plan. He planned a modular design based on the reiteration of a U-shaped model matching with two apartments accessed directly off a core of stairs and lift. As the thickness of those buildings is notable, a patio was needed but instead of a vacuum in the middle of a dense plan Mitjans merged the patio with the rear façade getting in such a way the U-shaped figure. This is particularly evident in the Illa Seida building, which is 130 meters long and 21.75 thick. The requested wide surface (the flats were addressed to the bourgeoisie) necessitated a big thick central band of services that hosts a kitchen with independent access and a room for the service staff with its bathroom. In the Illa Seida the depth has been exploited to underline a compositional theme typical of Mitjans, namely a vast loggia extended along the entire width of the apartments, which becomes an intermediate space between inside and outside. (Martinez et al. 2015).

In 1996, shortly before the 90th Mitjan's birthday, Bohigas, sent him an open letter from the *Avui* newspaper where he underlined the modernity of his architecture, expressly citing the typological innovation in the distribution of his buildings:

"[...] In your work there is still a more instructive factor: the proposal of a new distributional type of housing that has been a model for a long time. Until the postwar period, the most used types in Barcelona were rooted more or less in the models used by Enric Sagnier in the Ensanche: staircases

with open patios and houses with distribution corridors from façade to façade. I would say that you were the first to question this model and transform it into an articulated floor plan in which the staircase assumed a domestic expression and the floors were organized in functional sequences (Bohigas 2003: 90).

4.3 THE H-SHAPED PLAN AND THE DOUBLE SLABS

Apart from the U-shape plan, another type of plan is relatively frequent both in Barcelona and other cities of Spain during the second modernity: it is the H-shaped plan so named as it reminds the shape of a metal profile so that the web is the core with the staircase while the flanges correspond to the dwellings.

The main feature of the H-shaped plan is the modularity: indeed, it can be found both in small buildings whose wideness is precisely that of the H-shaped modules, and in the large blocks of flats, usually designed as slab buildings. Examples of the first case are the house in calle Rosellon 152 (1964-1966) by Emilio Donato Folch or the famous José Antonio Coderch's ISM house at La Barceloneta.

Donato Folch's house represents the smallest H-shaped module unit with an urban meaning. The four apartments of two different sizes are symmetrically grouped two by two around the core. Consistently with the load-bearing structure made up of supporting walls, their layout is arranged utilizing bands perpendicular to the façades. These last are equal so that the building has no difference between the front and the rear. The thickness of the plan (approximately 34 meters) may be considered astonishing if compared to the relatively short width of the façade. In this regard, one ought to consider that according to the original project, the building should have deployed two H modules supported by pilotis (Lobet i Ribeiro).

In the largest apartments, there are no corridors, but a circular pathway which crosses the living room leading to the gallery placed on both the fronts. It has a double meaning: on the one hand is an "in-between" space, neither public nor private, placed behind the façades, which in turn looks like a transparent skin made by glass, mullions and rolling shutters; on the other hand, it connects the living room to the night area, providing further access to the bedrooms. Indeed, the main route

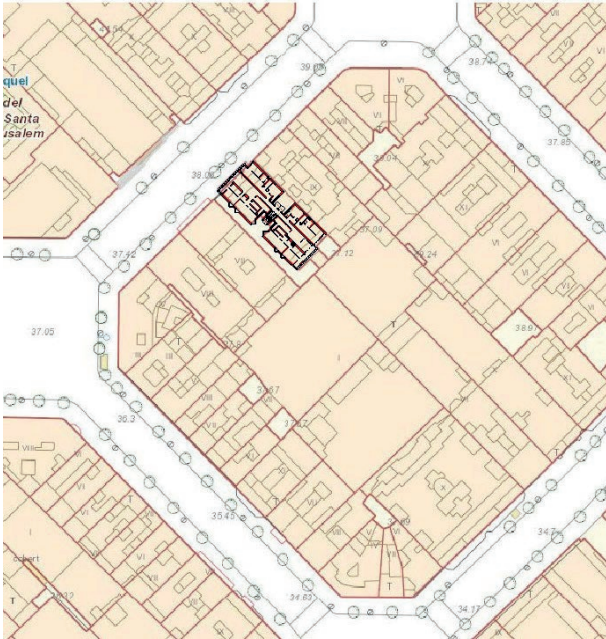


Fig. 9. E. Donato Folch. House in c. Rosselló.in the urban fabric. Redraw and graphic elaboration M. Lucchini.

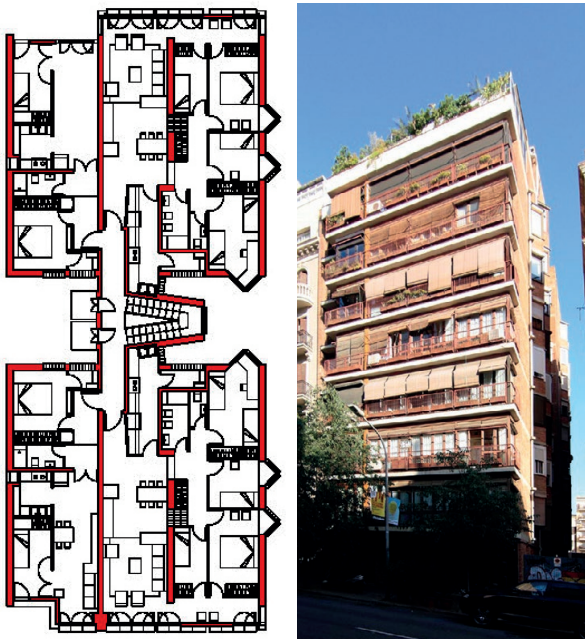


Fig. 10. E. Donato Folch. House in calle Rosselló. Floor plan scale 1:500 and view from the street. Redraw and photo M. Lucchini.

turns clockwise, passing between the living and the kitchen. There is even a third entrance to the night area, namely a passage beyond the dining table, which remains as a sort of island in the middle of the pathways. The complexity of the

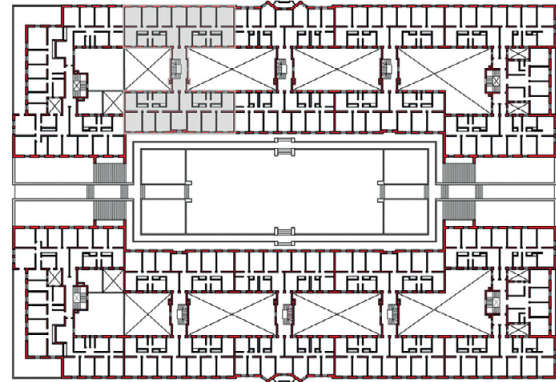


Fig. 11. S. Zuazo. Casa de las Flores, Madrid. Scale 1:1500. Redraw M. Lucchini.

space of this house can't be explained in terms of the distinction between servers and served rooms but rather as an endeavour to get a dynamic balance between privacy, and freedom.

The project bears "expression and knowledge" (Donato 1967: 34) proposing inventions full of charm, such as the mentioned glass galleries that filter sunlight, and many references to the Barcelona traditional construction such as the floor plans and some expressive choices, as the brick cladding, the stands and the wooden shutter.

However, the phenomenology of the H-shaped module must be investigated in a particular typological series called the "double slab" known in Spanish as *cuerpo lineal doble* (Lucchini and Jaén 2019). These are very thick buildings, apparently made up of two parallel slabs arranged at close distances; actually, these buildings may be better figured out as a sequence of several H-shaped units framed on the staircase and one or two patios.

The genealogy of the double slab building type is rooted in the block of flats known as Casa de las Flores (1930-1932), designed in Madrid for the middle class by the architect and real estate developer Secundino Zuazo (1887-1971) which stretches for 10,712 m² of surface occupying a whole block northern of the Ensanche de Castro (1860). Despite its archaic figuration, based on masonry, the Casa de las Flores stays in the framework of modernism: Zuazo, following the lessons of the contemporary European rationalist avant-garde, perfects the double slab type, skillfully transforming a large closed block into a system of parallel buildings based on the repetition

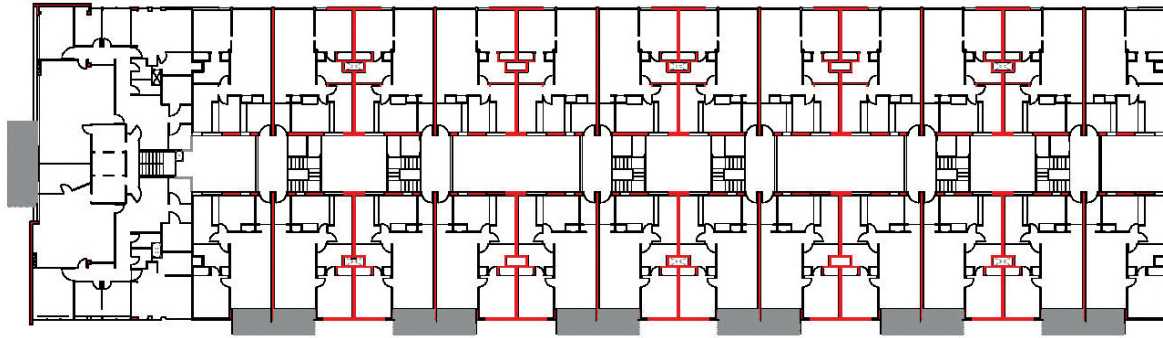


Fig. 12. F. Barba Corsini. Mitre block of flat. Scale 1:500. Redraw M. Lucchini.



Fig. 13. F. Barba Corsini. Mitre. Plan of the apartments Scale 1:200. Redraw M. Lucchini.

of the H-shaped module, where some houses face the street and others the patio, obtaining better lighting and ventilation conditions than usual in the continuous perimeter blocks (Zuazo 2003: 54-62).

The Casa de Las Flores was widely known and probably influenced high-density residential design throughout Spain becoming the double-slab buildings' prototype. Part of the fame of the Casa de Las Flores was likely due to the Chilean poet Pablo Neruda: when he arrived in Spain in 1935 as consul of Chile, he settled in one of the apartments, which became a meeting place for the poets of Generation 27.



Figure 14. F. Barba Corsini. Mitre. Photo M. Lucchini.

Furthermore, Zuazo was a prominent real estate developer; according to some sources, he employed Coderch in his office, and before and after the war, his companies built "several tens of thousands of houses" (Zuazo 2003: 32).

The double slab buildings are widely spread in Barcelona's urban fabric. One can focus on a typological series of four double-slab residential buildings. These are the Mitre designed by Francisco Barba Corsini (1959-1964) in Ronda General. Mitre, the Mediterraneo in calle Consell de Cent by Bonet i Castellana and Josep Puig Tornè (1960-1966), the houses in calle Pallars (1958-61), and in Avenida Meridiana (1960-1965), both designed by MBM studio.

Surprisingly, the most paradigmatic and innovative building is the Mitre. The project was not meant to bear an ideological programme but was sparked by a real estate development, which involved Barba Corsini himself. Nowadays no one would question the cultural meaning of the building and his role in the modernist architecture (Monteys y Fuertes 1998).



Fig. 15. A. Bonet Castellà. Mediterráneo housing building. The *chafalán* faces the modern façade. Photo M. Lucchini.

So far, we have considered apartments that aimed to exploit the morphological features of the deep plan in the most efficient way, softening obvious disadvantages such as the lack of light through innovative solutions concerning the hierarchy of the rooms and the connection spaces. The El Mitre's apartments go beyond questioning the rigid limits of the traditional rooms. The relatively small floor areas (123.5 sm), of the two units in which the two wings of the H-shaped module are divided, can accommodate dwellings of different sizes addressed to a wide range of users, from the childless couples to a family of three to five. Barba Corsini designed the space according to a flexibility principle to combine different functions for many users. While the position of the master bedroom doesn't change, like that of the bathrooms and kitchens, the inner part of the flats on the interior patios between the kitchen and the entrance can vary to become the dining or a bedroom for one/three people. The smallest

apartments host niches for beds and other furniture, thus obtaining a minimal space.

The entrance intersects the sleeping area creating a "pass-through" bedroom where a collapsible wall divides the sleeping niche from the circulation space. The movable wall also appears in the master bedroom; in some cases, the wall between the bedroom and living room can slide to generate the fusion between these two spaces.

If the Mitre is innovative in the apartment arrangement, the Mediterráneo built in Calle Consell de Cent, in the urban fabric of the Ensanche, is forward-looking the relationship with the *chafalán*. The street corner design is a morphological issue, well-known both in the construction of cities and in shaping the buildings. It is not just a matter of junction between two façades but even of creating a sense of place where two streets meet. In Barcelona, this issue has always been more complicated because the 32 meters length of cut-off corner is unusual (Solà-Morales 2010: 155). What is unusual about the Mediterráneo building is the corner solution between Carrer Consell de Cent and Carrer Comte Borrel: Bonet Castellà, instead of a chamfered façade, ends the two slabs with a ninety-degree corner shifting the shortest fronts approximately 20 meters relative to each other.

The urban space of the *chafalán* is merged with the open space of the ground floor marked by the concrete lattice girders that support the buildings defining an alternative to the usual chamfered corner and enhancing the spatial richness of the block as well. The breaking of the *chafalán* has been probably prompted by the willingness to get out from the traditional square grid layout of the Ensanche (Hernández 2020); it reminds the modernism urban design inspired by the GATEPAC and arises a spatial juxtaposition whose background is the section of the double-slab buildings. Thus, the semantic field of the thickness of the structure moves from the technical field to the urban design one since the section takes a figurative value in the context of the urban space.

The two housing blocks designed by MBM (Martorell, Bohigas, Mackay) in carrer Pallars and Avenida Meridiana are famous as they have been imbued by the search for a balance between innovation and tradition, reinterpreting what the Italian architect and modernist cultural

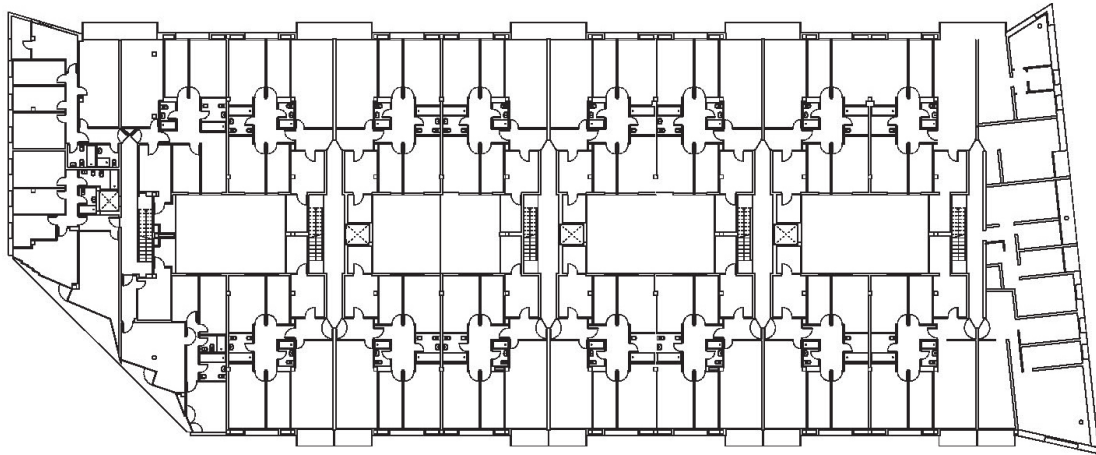


Fig. 16. J. Mateo. Block of flats Câtex factory at Poblenou. Scale 1:750. Redraw M. Lucchini.

leader Ernesto Nathan Rogers stated about the phenomenological reading of history and pre-existing environment (Baglione 2012).

The housing complex in carrer Pallars (1958-1961) was built to host metalworkers and their families; it shows a composite layout invisible in the elevations: the stairwells are backward so that between each living unit there is a recessed joint which makes the building like a sequence of six small towers. This design choice criticizes the continuity of the Ensanche perimeter blocks (Pierini 2008: 60) even if it takes their settlement principle especially the *chaflán* as an urban design rule.

Going back to MBM, they designed another double slab housing building along the Avenida Meridiana (1959-65); it is, arranged in three modules, this time with the web parallel to the street façade and a remarkable thickness of the building. Each module contains four apartments arranged in strips perpendicular to the façade: immediately after the entrance, one finds the wet area with a „pass-through” kitchen that leads to the centre of the house. The building is twelve storeys high, and the proportions give emphasis to its solid mass setting a correct relationship with the wide space of Avenida Meridiana. The façade is treated shaping the openings as „projecting angular double galleries” (González and Lacuesta 2002: 56), shaped to make the play of shadows highlighting the masonry texture of the façade.

From the 1980s, the recovery and relaunch of the city kicked off. In the beginning, the effort was focused on identifying the correct scale at which a practical coherence between “city form, social

purpose and cultural values can be fulfilled” (Rowe 2006: 61).

The deep plan and the H-shaped type kept their efficacious due to their “morphological” elasticity that let them to be part of the urban tissue or be a self-contained building.

An interesting study case built in the 1990s in the Poblenou urban sector is the redevelopment of the disused Câtex factory at Poblenou designed by Josep Lluís Mateo (1984-1991). Yet again the interaction among the deep plan, the double slab and the H-shaped type deal with an urban design issue aimed to stitch the urban fabric keeping the history of the place as a background.

The factory building was redeveloped into communal amenities such as a swimming pool and a social centre. The renovation involved the entire block, so the project provided a housing building shaped as double-slab public almost 30 meters thick and six floors high. The sides of the house are tapered to adapt to the edge of the block and especially to the *chaflán* on the southern side.

Despite the low height, the considerable mass of the double slab building turns it into the counterpart of the old factory bulk. The block can be comprehended as a whole spatial entity able to contrast the fragmentary nature of the urban fabric in the Poblenou area.

5. CONCLUSIONS

The identity of Barcelona’s is unique, and part of these uniqueness sits within the density which is a matter of form and not simply of quantity. The

deep plan of the housing building is functional for real estate, but its meaning goes beyond. The density merges with the deep plan, the shape of the urban blocks, and the architectural knowledge concerning housing design so that it turns into a shape that is deeply rooted in the culture of living.

In Barcelona, the density is intertwined with the architectural identity of the city, and it is mostly the outcome of the spreading of the deep plan. Both are the manifestation of the Barcelona people's lifestyle and of their relationship with the urban environment.

Thus, it is comparable to a "language" of the urban morphology which expresses the history of the city.

The deep plan that may be considered as an intermediate formal structure between the building type and the settlement scale, meaning the fabric made of blocks and the streets pattern. The tale of the deep plan is a notable chapter of the Barcelona's one and it is very clearly illustrative of the evolution and of the transition from the expansion to the urban renewal. Indeed, using a popular and buzzy word we can say that the types grounded on the deep plan are resilient.

The events that stressed (resilience is the property of an object to resume its original shape) the deep-plan were the recurrent urban renewals through shifts of scale corresponding to events like the 1992 Olympic Games, the 2004 Forum of Culture, 22@, the Sagrera Plan and so on, through which Barcelona presented itself to the European context.

But the deep plan even if it has several limits it is part of a cultural trajectory that has begun, as we have seen, from the history of the walled town crossing the Cerdà Plan and the Second Modernity. This is the reason that addressed architects as Carlos Ferrater with the Vertex Building or Coll-Lecrec with the LV facilities building (2014) in Carrer Villaroel or the social housing mix dwellings at @22 (2018) this last awarded as best social housing in Spain.

The double slabs are building types that, owing to the high density, and their unusual size, are a "window" to a much larger urban scales; in the meantime, they witnessed the heritage of the urban fabric of the Ensanche, represented by the thickness.

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