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## Mass Housing Neighbourhoods in Medium-Sized Andalusian Cities. Between Historic City Centres and New Peripheral Developments

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# Mass Housing Neighbourhoods in Medium-Sized Andalusian Cities. Between Historic City Centres and New Peripheral Developments

Daniel Navas-Carrillo<sup>1</sup>, María Teresa Pérez-Cano<sup>1</sup>, Carlos Rosa-Jiménez<sup>2</sup>

<sup>1</sup>Patrimonio y Desarrollo Urbano Territorial en Andalucía (HUM700). Departamento de Urbanística y Ordenación del Territorio. Universidad de Sevilla. Spain

<sup>2</sup>Urbanismo, Turismo, Paisaje e Innovación Arquitectónica (HUM969). Departamento de Arte y Arquitectura. Universidad de Málaga. Spain

dnavas@us.es

**Abstract.** This paper aims to analyse the evolution experienced by the neighbourhoods that comprise the so-called first periphery. Most of them have been thoroughly studied, has led to recognize their values and to be included in the catalogues of heritage protection of their respective cities. However, this research shows that is pending an in-depth analysis in cities of intermediate scale. Its significance lies not only in the fact that they are the most significant operations of architecture of the modern movement in their respective cities, but are especially noteworthy the values derived from its strategic location within the urban structure of these intermediate scale cities. Being near to city centre, they have been constituted as transition pieces between historic sites, new peripheral developments, and even, their nearest territory. As method, this research proposes a comparative analysis of traceability among different study cases, from medium-sized cities of the Andalusian Coast (Spain). In this context, it means recording the evolution that these promotions have been experienced since their first designs until their current situation. It attempts to find the characteristics that have resulted in the urban configuration of this periphery and to recognize the sum of all the cultural, economic, social and technological aspects that conditions the ways of life that today are detected in them. Definitely, the knowledge generated by this research allows extracting architectural and urban values of these examples, which justify its necessary dissemination as part of our legacy.

## 1. Introduction

This paper focuses on the neighbourhoods that were built due to the "urgent residential needs that existed in Europe at the end of the mid-century wars in response to the transfer of rural-urban population" [1]. Following the precepts of the modern city of the Charter of Athens (1933), share many of the morphological and typological characteristics with the rest of Europe. However, Spanish cities have introduced certain peculiarities in their development because of the socio-political context marked by strong state control. In this sense, the housing policy during the Franco's regime is not alien to the guidelines in economic matters that were set. In those years (1939-1976) several laws were approved, but all of them try to get the same goal: resolve the persisting housing problem, firstly by the need of rebuild a post-war country and later due to the overcrowding that were affecting the main urban areas.



Sambricio can be highlighted as one of the main authors that broach the study of social housing in Spain from a global approximation. His works have served as basis for the development of many other researches: Moya González [2], Ferrer i Aixalá [3], Gaja Díaz [4], Fernández García [5], Gutiérrez Mozo y Caro Gallego [6] o Queiro Quijada [7]. All these works are focus on the largest Spanish cities. It is uncommon to find literature analysing the intermediate municipalities that were recipient of these migration processes thanks to their strategic location within the territorial structure of their region. These are the so-called medium-sized cities, which are recognised as essential for the development of a more sustainable territorial model. A medium-sized city is not defined by population data, but its functional position as a centre of its county.

The weight of the medium-sized cities is a fundamental characteristic that defines the territorial structure of Andalusia [8]. Within the set of Medium-Sized Cities in Andalusia, two situations must be recognised. On the coast, the strong economic and demographic development experienced, and the particular dynamics of urban growth tend to the continuous occupation of the entire coastline, absorbing the historical nuclei. This paper parts from a position in defense of the recovery of the existing city as an alternative to a model of expansive growth. In this sense, the Andalusian coast, a territory strongly anthropized as a consequence of its development as a tourist destination, is presented as a space of opportunity for the objectives of this research.

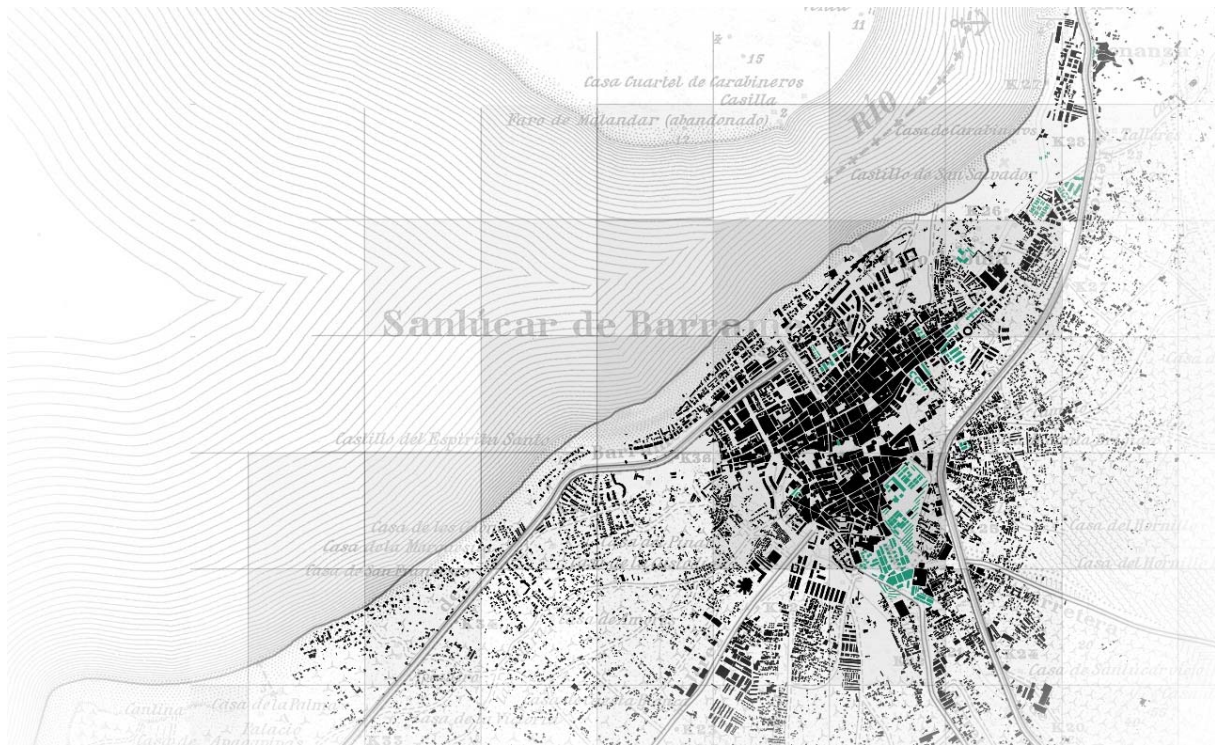
## **2. Mass Housing Neighbourhoods in Medium-Sized Andalusian Cities through the most representative case: Sanlúcar de Barrameda**

Sanlúcar de Barrameda emerges as the most representative medium-sized city of the Andalusian coast in the construction of public housing between 1950 and 1980 [9]. Located on the northwest coast of Cadiz, its historical development has been marked by its location at the mouth of the Guadalquivir River and next to the Doñana National Park. This strategic position has given to the city a significant role within the region since the first civilizations that occupied this territory: Tartessians, Phoenicians, Punic, Greeks, Carthaginians and Romans.

Unlike the cities that have been mainly focus on tourism, whose growth has been exponential, it has maintained a multifunctional model based on a progressive demographic growth. Tourism and viticulture have historically gone hand in hand, in addition to other economic basis such as fishing or saline industry linked to salt marshlands.

Although it is true that the first tourism, linked to the upper classes, differs from the model of mass tourism that began to consolidate in Spain in the 60s and 70s thanks to the creation of the so-called Centres of National Tourist Interest. In the 1960s, policies for the promotion of international tourism were developed in Spain as one of the pillars of growth of the Spanish economy. Among their objectives, it planned new tourist settlements along the whole Spanish coast, in addition to the increase of existing ones. This caused the take-off of mass tourism in Spain [11]. These tourist centres became a product of great interest to private investors due to the economic and legal advantages that the legislation granted their promoters.

Sanlúcar, not being the recipient of any of these centres, moves away from coastal cities that have aroused greater investment interest in the private sector. This has meant that it becomes also a significant case due to the high percentage of public promotions versus private ones, being much higher than the rest of the medium-sized coastal cities. The importance of having identified a large number of public promotions in the city of Sanlúcar de Barrameda, is not only a matter of quantity. Taking into account the objectives of the research, it seems logical to think that addressing the most significant case of the whole sample will allow draw conclusions whose validity is likely to be extrapolated to other contexts.



**Figure 1.** Neighbourhood built in Sanlúcar de Barrameda between 1950 and 1980

### 3. The neighbourhood of Jesus Nazareno

#### 3.1. Site Considerations

The so-called *Egido del Palmar de San Sebastián*, where agricultural activity has historically prevailed, is the most developed area in terms of social housing in Sanlúcar de Barrameda. Its name is due to the old hermitage dedicated to San Sebastián whose construction, according to Velázquez-Gaztelu [12] dates from 1507.

This area of orchards was divided by a promenade called *Paseo de las Acacias* or *Paseo de los Arrecifes* (current Godoy Avenue). According to Climent Buzón [13], its construction dates from the beginning of the 19th century, when the City Council, led by Godoy, accepts José Huet's proposal to locate a 100-meter long tree-lined promenade in this area. It was especially intended for the neighbors of the *Barrio Alto* (uptown) because of their proximity to this new urban axis. Being an extension of the *Meson del Duque* and *Cruz del Monaguillo* streets, its construction allowed to connect the historical city center with the roads that have traditionally linked Sanlúcar de Barrameda with Puerto de Santa María, Jerez and Trebujena.

After the civil war, the local government decided to build new promotions of social housing in plots of municipal ownership. According to Gómez Díaz-Franzón [14], the City Council had about 12 hectares of land in this area. This fact has undoubtedly conditioned that its urban development has been characterized by the construction of social housing.

In addition to this fact, it is possible to take into account other characteristics that would influence the process of urbanization of this area. On the one hand, the *Paseo de las Acacias* had fallen into disuse as a recreation promenade, being especially deteriorated. For example, the benches located on both sides of this promenade were dismantled in the 1930s. On the other, both topography and

geological conditions were especially advantageous, avoiding particularly costly operations as a result of large earthworks or special building foundations.

The agricultural group proposed by Barbadillo in 1942 were the first houses that were built in this area. Its design was entrusted to the architect José Delgado Lejal in 1943. Its construction began in 1945 and finished three years later. The dwellings were organized into blocks of six or four houses grouped in pairs. They were separated by an external corridor in order to access into the backyard with the animals directly from the street. These were occupied with stables or chicken coops, being currently transformed into other rooms of the house. This type fits the characteristics of autarchic rural housing of the time. It is similar to the home prototype used in the villages of colonization in this region<sup>I</sup>. In this area, other groups of similar characteristics are found: the houses of *Instituto Laboral* (1957-1959) and the first phase of the neighborhood *El Carmen* (1961). All these groups are located on the road to Puerto de Santa María (now Puerto Street). It was a necessary path for agricultural labourers who were the recipients of these homes.

The group of agricultural houses would be the first realization of the OSH in Sanlúcar, followed by the neighbourhood of *Nuestra Sra. de los Angeles* (1958-1962) and the neighborhood *Jesus Nazareno* (1965-1971). In both cases, the previous ruralizing style is abandoned in favor of an architecture assimilated to the Modern Movement. According to Manuel Lacasa and Suárez-Inclán [15], architect of the first of these two groups, an "urban type" was followed, i.e. multi-family blocks organized to obtain the maximum efficiency in its implantation, measured in terms of number of homes. It is formed by 24 linear blocks formed by different portals of two dwellings per floor in five levels. As the previous ones, all the blocs were oriented to the Puerto de Santa María road (now Puerto Street).

The neighbourhood Jesus Nazareno is the result of the study of lots to apply the National Plan in Sanlúcar de Barrameda, elaborated by Arévalo Camacho in 1963. The lot was divided into two orchards destined to the cultivation of orange trees. It was crossed longitudinally by the Paseo de las Acacias. It was renamed in 1961 as Jesús Nazareno Street at the behest of the brotherhood of the city. Currently named as Godoy Avenue, it continues to be an axis of connection with the city center, although the inter-municipal connection has been displaced to Puerto Street. At the time of their planning, these lands were in the limit of the consolidated city. Therefore, it was sought that the future dwellings will be totally integrated within the urban structure of the city, occupying the empty space between the historical city center and the near neighborhoods already built.

According to the project memory [16], the affected areas had in their proximities the basic urban networks. The City Council had undertaken to complete water, electricity and sewerage services to ensure the perfect and adequate endowment of the housing group. The estimated housing deficit amounted to approximately 1,360 homes, due to the natural increase of the population and the state and quality of existing housing<sup>II</sup>. The private initiative focused on the construction of independent single-family homes (promoted by their own owners) and isolated multi-family housing developments.

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<sup>I</sup> The villages of colonization were built under the policies of transformation of the agricultural space for the settlement of self-sufficient rural peasantry. They tried to stop the strong migration processes from the countryside to the city. More than 300 settlements were built in Spain by the initiative of the National Institute of Colonization in 1939, under the Ministry of Agriculture

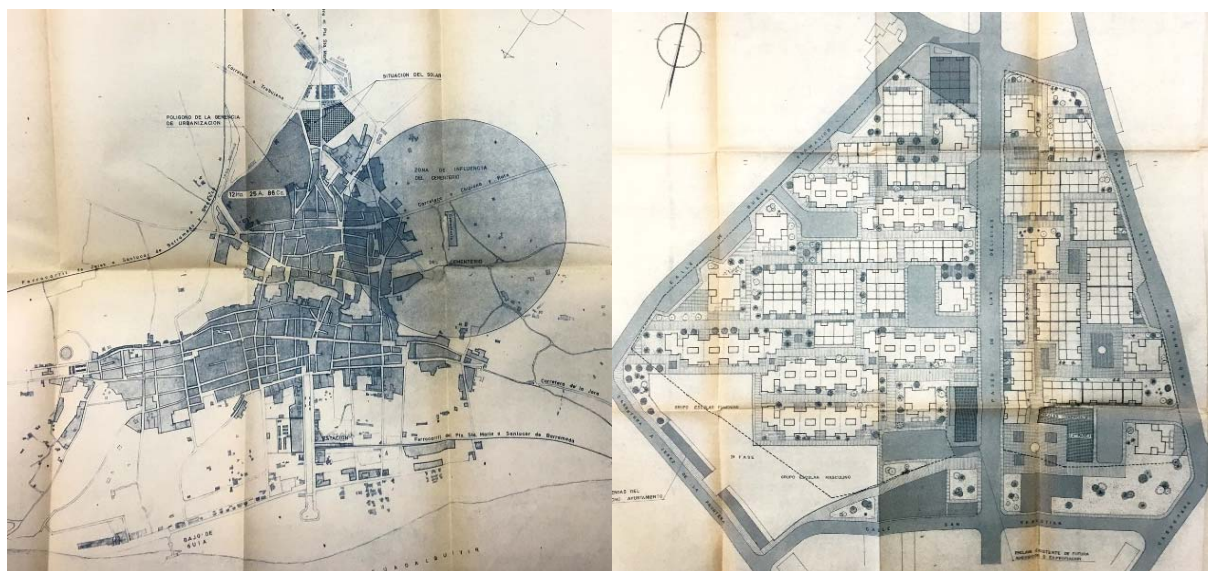
<sup>II</sup> Although only 450 homes are built in the neighbourhood of Jesus Nazareno, the construction of 900 houses in the adjacent residential polygon El Palomar was already planned. The forecast was that only 20% of the existing homes were equipped with modern sanitary and hygiene services, and that 70% were in poor condition, 8% in a very poor state of conservation and 2% in ruin.

This area is completed by three other social housing projects designed and built during the 1970s. First, the neighbourhood of *San Lucas* (1972-1975) was promoted by the *Patronato Municipal de la Vivienda* (Municipal Housing Institute). It responds to an open design, with seven free-standing blocks of five floors, with four units for each level (except ground floor, which remains unoccupied). They were built in one of the plots that were still vacant between the previous groups and historic city. Contiguous to these dwellings, a group of houses for teachers was built linked to the nearby schools, which was formed by four linear blocks with two units per floor in four levels. The last group built in the area was the residential polygon *El Palomar* (1974-1978) with 900 houses and an area of 125 hectares.

### 3.2. Criteria for the urban form of the neighbourhood

The area initially proposed reaches a total area of 46,369 m<sup>2</sup>, of which 16,758 m<sup>2</sup> correspond to one of the plots and 29,611 m<sup>2</sup> to the other. In the study of lots to apply the National Plan in Sanlúcar de Barrameda, the need to add other small plots of the northern and southern boundaries was already taken into consideration. Although there were certain disagreements with their owners these plots were initially included in the project, resulting a total extension of 55,775 m<sup>2</sup>. Its possible expropriation was justified by the fact that the poor architectural quality of its buildings would lead to a depreciation of its value [17].

Initially all the projected homes had three and four bedrooms of class A<sup>III</sup> that were organized in three types of blocks or typologies. The first one was formed by single-family homes with three bedrooms, which were organized on two floors, and had a small garden-backyard. In the second type, houses with three bedrooms were organized in four-story H-blocks with four units per floor and commercial premises on ground floor. The third type were blocks arranged longitudinally, where the central part (three stories) were occupied with three-bedroom homes and the ends (two stories) with four-bedroom ones.



**Figure 2.** Neighbourhood Jesús Nazareno. Situation and urban configuration

As regards the criteria used for the urban form of the neighbourhood, Arévalo and Marín opted for a large number of single-family houses, 150 in total, which were completed with blocks (300 houses) until reaching a density of 80 houses per hectare. This value is somewhat lower than the parameters

<sup>III</sup> Housing for families with lower incomes, which surface ranged from 50 to 80 m<sup>2</sup>.

contemplated in the drafting of the National Housing Plan. In this urban configuration, part of the land was reserved to build a school. The National Plan also required the construction of religious equipment. In this case, the demand was resolved with the existing Church of San Sebastián.

The buildings were placed parallel or perpendicular to Godoy Avenue (arranged at an angle of  $24^\circ$  counter clockwise to the north-south axis). Small squares were formed that were connected by pedestrian streets and used to locate the H-blocks. Therefore, the layout of the dwellings did not respond to criteria of solemnity or orientation, placing them in the north-south, or east-west. While single-family types had double exterior facade, the blocks were organized towards an exterior facade and an interior one (courtyard).

This urban form will not be finally adopted for various reasons. Among them, a more efficient management was sought according to the topographic and geological conditions of the terrain. Except for minor modifications, typologies were maintained in the new proposed urban configuration.



**Figure 3.** Neighbourhood Jesús Nazareno. Types A, B and C

### 3.2.1. Type A. Single-family blocks of 2 floors

The functional layout of this house follows the scheme established by the OSH for 3-bedroom homes, adjusted to a usable floor area of 65.06 m<sup>2</sup>. Following a typology of paired single-family dwelling with a backyard, groups of 8 to 16 dwellings were initially grouped in a simple layout (a single row of houses), double (two rows of symmetrical houses separated by patios) or mixed. In the final planning, these blocks have 16, 20 or 24 houses. Except for one exception, all blocks have a double layout, i.e. blocks have two symmetric rows of houses that are oriented in the east-west direction. Depending on their location, some also have a small front yard. There is a total of 8 blocks and 150 houses of this type.

### 3.2.2. Type B. Multi-family blocks of 2 and 3 floors

It is a type formed by a sequence of chained buildings with two houses per plant. They consist of three-bedroom homes in the central part, and with 4-bedroom homes at the end of the block. In the first case, the wet rooms are concentrated around interior yards, while in the second they are concentrated around pseudo-exterior ones. These have a latticework of ceramic pieces to maintain a unitary volumetry. The programmatic distribution of both types coincides, as in the previous case, with the standardized dimensions for class A dwellings.

The result is homes that respectively have a living surface of 61.71 and 71.77 m<sup>2</sup>. In the whole neighbourhood, there are 6 blocks of this type, with 132 houses of the first subtype and 24 of the second one. Although with certain differences, these houses are reminiscent of Fisac's dwellings in the Poblado de Zofio village in Madrid (1956) or the group San Francisco Solano (1957-1962), designed by Rafael de la Hoz for OSH in Montilla (Cordoba). Authors such as Sambricio [18] Rabasco Pozuelo [19] or Blázquez de Pineda [20] recognize that these dwellings in Montilla were the referent followed by many architects in subsequent OSH projects.

### 3.2.3. *Type C. Multi-family blocks of 4-5 plants*

The functional layout of this home also follows the scheme established by OSH for 3-bedroom homes. In this case, the homes were adjusted to a useful area of 69.40 m<sup>2</sup>. Following a typology of free-standing H-block, it is composed of 16 dwellings, 4 per floor. These are grouped around the staircase, which is located in a central position. In this way, each of the houses occupies one of the corners of the block, concentrating the wet rooms around semi-enclosed courtyards on both sides of the stairs. In the whole neighborhood there are 9 blocks with a total number of 144 houses of this type. In order to adapt to the topography, the building presents a half-floor unevenness making use of the intermediate landings to access to two of the dwellings. This also allowed locating commercial premises on the ground floor, open to a portico that let establish certain continuity with the outdoor space.

## 3.3. Traceability: evolution of the types

### 3.3.1. *Modifications about the urban form of the neighbourhood*

Once the works were auctioned in 1968, some modifications were made in the original project of 1965. These changes were reflected in the reformed project in December 1970. According to the information contained in this document [21], it had been necessary to reconsider the primitive planning, since it had not been able to acquire the rest of the plots due to the persistence of disagreements with their owners.

This allowed modifying the initial order criteria. The main facades of H-blocks were aligned to both sides of the avenue. At the same time, the single-family blocks were linearly grouped allowing. In this new configuration, all the patios remained in an interior position. With the exception of two of the groups, all houses were located east-west.

As in the original project, since the types were not modified, single-family types had double exterior façade and the blocks were organized towards an exterior facade and an interior one. On the other hand, the reorganization helped to a more efficient use of the available surface, locating two ample parking on both sides of the avenue. This way, the pedestrian paths are interrupted, which run between the different groupings of blocks and various garden areas. In addition, it should be noted that the new arrangement of the blocks made it possible to adjust them better to the slopes of the terrain, being notable the reduction of the budget destined to earthwork.

In our opinion, this new organization of the neighbourhood has greater urban interest, especially in the recognition of the avenue as the main articulating axis. This new configuration with the buildings of greater height in the perimeter allows configuring an interior of lower density according to the scale of the rest of the city. In addition, the incorporation of commercial activity in the ground floor potentiates the character of the avenue as relational and meeting urban space. These shops are located in a series of porticos, which allow widening the section of the avenue. This area includes a common zone with gardens and benches. The historical function of this axis as a promenade must be remembered, which is somewhat recovered with this new urban configuration.

### 3.3.2. *Improving comfort conditions*

The analysis of the constructive solutions of these types has detected problems of compatibility between structure and envelope system. These are a direct consequence of a poor adaptation of the solutions traditionally adopted for load-bearing wall systems to the façade's new requirements after losing its bearing function. Once their loading function ceases, their composition varies, but not their thickness in most cases. According to Paricio Ansuátegui [22] the reproduction of a traditional facade by means of two independent and thin sheets introduces serious problems.





**Figure 4.** Neighbourhood Jesús Nazareno. Current urban form

The slenderness of the outer sheet and the fact of not receiving more load than its own weight can cause it to lose stability before any mechanical action. In addition, this solution is specially conditioned by the deformations of the slabs, which can cause the appearance of cracks and fissures. These pathologies can be greatly increased as a result of the thermal expansion and contraction of the façade by direct exposure. In addition to the own mechanical and thermal actions on the facades, it is necessary to contemplate the consequences of the differences of behaviour that these actions can cause between enclosure and structure. This fact is especially evident in the traceability analysis of type A1 houses which combine metallic structure with a traditional façade.

In the other blocks, these problems are evident in singular points such as windows and parapets. In addition to detachments in beams, historically cracks have appeared in doorjambes due to the deformation of the slab which also show an independent behaviour of each layer of the enclosure. During the drafting of the projects and the execution of the dwellings of each of the three types analyzed, an important process of reformulation of the relationship between structure and envelope system has been detected. This is especially significant in strategic points such as the fronts of the slabs.

It was originally planned that the outer layer of the facade would pass in front of the structure, significantly reducing its section at that point. Finally, the cladding of the structural elements (slabs and pillars) becomes independent from the rest of the facade. In some cases, with a minimal setback, and in others being much more evident.

The passage of time has shown that this reformulation did not solve the primitive problem. The appearance of pathologies has led to many owners have intervened on the facades, resorting to new coatings and plasters. Monolayer applications of a certain thickness have been especially used. No information was obtained from these projects, but the oral consulted sources hold that in most cases the cladding in beams and pillars was removed in order to reproduce the original solution.



**Figure 5.** Neighbourhood Jesús Nazareno. Pathologies in types A, B and C

Another of the main pathologies identified is the presence of moisture in the encounter of walls with the terrain due to the absence of waterproofing measures. The own neighbours have turned to the placement of a protective skirting board on the ground floor in both single-family homes as well as multi-family ones. This solution does not avoid the problems of capillarity, but those caused by direct action of rain, besides being an aesthetic measure.

But undoubtedly, the authors who have analyzed the façades traditionally used in this type of housing in Spain point to thermal protection as one of the weakest points [23][24][25]. In most of the houses have been replaced the joinery by other of greater energetic and acoustic insulation. There are only a few cases of complete energy rehabilitation of the façade. According to the same sources, the adopted solution in these cases has been an external thermal insulation composite system (ETICS / EIFS) with an insulating lime plaster base which gives continuity to the thermal envelope of the building<sup>IV</sup>.

### 3.3.3. *Adapting to new lifestyles*

In a gradual process, many families have modified the original typology to adapt it to the new familiar necessities. This has led to most of the gardens and backyards of single-family homes have been occupied, and the number of plants has been increased in some of the cases. In absence of a specific urban legislation to regulate this area, it started a process that has resulted in the vast majority of residential units (detached houses and ground floor apartments) have seen their original surface area increased, this process has been radicalized in recent years, causing a gap between the existing typology and the prevailing mode of life - in order to adapt original types to current needs.

To understand the causes that originate this process it is possible to explain briefly the origin of these houses. In the context of the Franco's regime, housing had to respond to a certain way of life, conditioned by a very specific ideology [26]. At the same time, the complicated economic situation of that moment cannot be forgotten. A country with very limited resources had to be rebuilt after a civil war. For this reason, although there are several residential typologies, all of them respond to the same prototype of family. Anyway, this is no different form the world architectural context. The architectural rationalism rose after World War II as a response to social needs and political changes which had happened in Europe. This promoted a housing standardization in order to achieve greater social welfare. But, do these minimum standards respond to a multiple casuistry?

<sup>IV</sup> This solution can be assimilated to the mineral insulation system of Weber, formed by a projected thermal mortar. For a thickness of 3 cm the thermal resistance of the solution is 0.714 m<sup>2</sup> K / W. The new values of transmittance are lower than 0.94 W / m<sup>2</sup> K, limit of thermal transmittance in walls according to Spanish Technical Building Code.

The answer is clear if the new social paradigm is recognized, which encompasses a society of unstable horizontal networks to connect disparate lifestyles. These differ from the prototype that has been attempted to impose. According to the current technological world, the houses of the XX century require a re-programming to adapt them to the changing needs of habitability that the 21st century demands.

#### 4. Conclusions

First, this research has shown that the relevance of these neighbourhoods lies not only in the fact that they are the most significant operations of architecture of the modern movement in their respective cities, but the knowledge generated by this research has allowed to extract their architectural and urban values, which justify its necessary dissemination. Values derived from its strategic location within the urban structure of these intermediate scale cities are especially noteworthy. Being near to city centre, they have been constituted as transition pieces between historic sites, new peripheral developments, and even, their nearest territory.

Secondly, the studied cases have suffered significant modifications carried out directly by its inhabitants unlike cases built in large cities. In main cities, the regional administration has played a decisive role in its recovery by financing - almost exclusively – the regeneration processes of this type of neighbourhood. In medium-sized cities, these changes arise in its own evolution as a living whole and that demonstrates the potential that can have a community to regenerate and renew their spaces and damaged goods.

The concept of resilience applied to urban reality can be introduced here. According to Polése, [27], this can be focused from two visions. The first one has to do with the ability of a city to rebuild itself after some catastrophe, whether natural or manmade. This is the most widespread view in the scientific literature, but it lacks application in this context. However, the second perspective that has been insufficiently studied is directly related to the intrinsic capacity as collective to resist and adapt continuously to adverse conditions in a continuous transformation context such as the current one, giving the user an active role in the conservation of their homes. The challenge is to transcend current policies on urban regeneration from practices that aim to reinforce the sense of community and the empowerment of citizenship [28]. This is one of the main current paradigm shifts in line with the objectives of the Europe 2020 strategy for smart, sustainable and inclusive growth, looking for optimizing the time, space, as well as, the material and economic resources, [29].

This new vision is in line with the evolution of the heritage concept in recent years. This has transcended the architectural considerations that have traditionally defined it, to include intangible aspects that advocate the reflection of identity as a society and its attractiveness as a guarantee of survival. Therefore, it can be concluded that the development of the resilient capacity of the communities that inhabit these neighbourhoods is a priority to be addressed in the design of new policies of urban regeneration and cultural heritage management.

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