



Santa María Micaela, present view.



# Critical and typological analysis of the habitat in Spain after developmentalism

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**Abstract:** For the study at hand, it is necessary to analyse the constructive legacy of the last decades by identifying a model and a type of architecture that allows its study, as a specific example in time and place. With this in mind, we can justify a certain type of approach to the “new” architectural project, which may be somewhat appropriate to a given historical period. Today, cities are undergoing processes of certain obsolescence by presenting attributes that have become commonplace for urban reflection. (Guajardo, 2017). In Spain in particular, to speak of residential obsolescence refers mainly to social housing. These buildings were constructed in the 1950s, 1960s and 1970s, and the issue of regeneration has become one of the major issues of concern to the public administration and therefore to the potential tenant or buyer in the field of residential housing. At present, where new construction is playing a secondary role (due to the excessive growth in construction prior to the 2008 crisis), the national housing stock is saturated and unaffordable. This situation prompts other strategies that respond to the criteria of taking advantage of existing housing, adapting them to the present day with more efficient and sustainable spatial needs. The recent pandemic has greatly restricted privacy in houses. It has raised concerns that the standard construction model we have had in Spain and Italy, (countries with very similar customs), responds to a rigidity that due to the partitions and dividing walls (among other elements) are not adaptable. As a result, it would be interesting to start thinking from the very genesis of the project about interchangeable, transformable, flexible spaces, which allow a better adaptation to current and future needs. In addition, this idea would also be useful for reconditioning the family nucleus as it changes over time. As a case study, we propose the analysis and study of the possibility to transform some prototypes of dwellings from the 1960s belonging to the so-called social housing in the district of Tres Forques in Valencia (eastern Spain), which can serve as an obvious example for the task in hand.

**Keywords:** flexibility in architecture; social housing; spatial improvement; social developmentalism.

## Autarchy and modernity

In order to better understand the events of those years, we look back and analyse where the policy of so-called Spanish developmentalism was established and which took place in the decade of the late 1950s. At that time, Spain was trying to emerge from a situation of social and economic lethargy after the Spanish Civil War (1936 to 1939), which left Spain in a situation of misery, shortage of food, lack of energy resources and a generalised deterioration in construction and technological backwardness. The shantytowns, overcrowding and relocation caused by the migratory flows towards the cities meant that it was not enough just to rebuild what existed, giving rise to development and construction plans capable of, by force, reconstructing a future and reorganizing a society under the Franco dictatorship.

A new era has emerged and the current modernization in Europe, after the war, had but one objective: the search for social and economic progress. As a result, all countries made an effort to create new alternatives for improvement. Particularly in Spain where immediately after the end of the war, the National Housing Institute (INV) was created, which had to comply with minimum hygienic, technical and economic conditions established in Norms and Ordinances, which were under the political, administrative rank and other entities such as the *Obra Sindical del Hogar*, OSH, (Fig. 1), or the Law on Subsidized Housing, all of which were part of the state system. It is important to mention that this is not the focus of this paper. It is however essential to note that three categories were established in terms of size and quality, ranging from a modest 60 to 80 m<sup>2</sup> to 110 m<sup>2</sup> for those who had more purchasing power. Unfortunately, this ended in a certain failure as it led to a sale with higher profits for the developers as it was aimed at a more economically well-off class, which indirectly led to a kind of veiled law between supply and demand.

Towards the end of the 1950s and after the National Assemblies of Architects and the establishment of technical, economic and social conditions, the National Stabilisation Plan was launched, which in reality was a change in the economic development model of the time and which, in a way, came to replace the model based on an autarkic or semi-autarkic ideology, very typical of authoritarian regimes. It was in 1957 when Franco decided to liberalise society in pursuit of progress in all social spheres; after realising that a self-managed economy with respect to the outside world was going to be a continuous failure, and that Spain, for obvious reasons, would suffer from a manifest isolation from the rest of the countries that participated in World War II. Therefore, the Spanish economy opened up to other foreign markets

and entered a period of spectacular growth compared to previous years. Here it is important to point out that this liberation and opening up to a new industrial and, above all, commercial world was a source of concern for the dictator, especially as he thought that this change could upset the essential points of the dictatorship, since, as liberalisation began, the regime demanded political freedom, forcing it to relax repressive mechanisms and, above all, those of self-control. Moreover, there was also a concern to show a timid and retrograde image, since at that time Spain had very little visible repercussions, let alone a brand image in the eyes of foreign countries. Therefore, and almost automatically, there was a shift to the idea of a legitimacy of artisanal performance, and political ideology lost its strength. Thus began a technocratic era with substantial changes in the political system, affecting the administrative system in a decisive way, which would bring about another new change, namely the practice of working from the idea of the state and not from ideas under a fascist regime. To succeed in creating an effective economic development would mean generating a largely middle-class model, which in some way would be the driving force that would allow the development of the long-awaited economy of progress. In 1970, when the so-called Transition took place, the country recognised that this transformation was a useful process.

From 1961 onwards, Spain experienced its greatest social and economic development, supported by a hard-working and enthusiastic middle class. According to official statistics, between 1961 and 1973, 3,347,768 dwellings were built in Spain, with more than 350,000 in 1974 and 375,000 in the following year, 1975.

This “boom” had a logical explanation namely that of “aperturist”, a model introduced by the government towards a new society of progress. This implied (as in other neighbouring countries), a massive emigration from the countryside to the city to work in the newly founded industries and factories. In this case, it was an immediate reaction and not a new one, the most significant precedent being England when, after the industrial revolution and even before building the social housing for the workers that would constitute the workers’ quarters, they began to live in the factories themselves. In the case of Spain, with a barely significant industrial model or dependent in many cases on foreign response, there was an immediate demand for the construction of thousands of dwellings, as a multitude of shantytowns were being built on the outskirts where the factories were located. Until then, construction in Spain had no stimulus and the rented housing system, together with *fondas* (Spanish pension system) continued to be the most widespread and used in all the cities. The arrival of mainly young people in search of the jobs offered by the industrial model meant

that in the short term the construction of new residential neighbourhoods and subsequently the need to build educational, social and health infrastructures, etc., which would allow them to prosper.

Here it is important to highlight two important issues. One of them is the classification of land by means of a substantial reform of the 1956 Law on Land Regime and Urban Planning, which was to allow for a new urban regulation of land in accordance with the social function of property. It was at this time that land was classified as urban and rustic, a simplistic distinction that has survived to the present day with a very popular status in terms of knowledge of the term. The land considered urban will be assigned a commercial value, and the rent obtained would be converted into profits for the owners. This meant that housing developments became a profitable business partly because the land was acquired at a low price and had maximum subsidies. This led to the construction of blocks of up to 13 storeys, the so-called H-blocks which housed up to 40 and 50 homes per block. Evidently, in this case, the state was the promoter of the construction development plans and therefore the main beneficiary.

The second issue is of a constructive nature and has also survived to the present day. Given the high demand for housing due to the above-mentioned aspects, it was necessary to build quickly and the most commonly used system was the construction of reinforced concrete structures. The steel structure companies were not developed at that time for construction systems and prefabricated construction seemed to be something out of the national construction model, although the work of the innovative architect Rafael Leoz (1921), who created the Foundation for Research and Promotion of Social Architecture in 1969 and proposed his famous “Hele” module (from the surnames Hervás and Leoz), was already well known. The architect sought to eradicate shantytowns with a theoretical, formal (and revolutionary) approach based on the repetition of modular elements for a prefabricated construction for social housing. “The architect Leoz has come to systematise the aesthetic architectural composition that can be created by means of industrial processes”, said Le Corbusier. (Boden, 1971).

Returning to the reinforced concrete construction model of the time, it is interesting to point out the pathology that has been known for many years: aluminosis. This physical-chemical phenomenon took place in the period we are dealing with, mainly the decade from the sixties to the seventies, when the use of aluminous cement spread rapidly. It was believed that concrete and construction elements made with this type of concrete (such as pre-stressed concrete joists), experienced high mechanical resistance, allowing the molds to be stripped

and reused more quickly, as well as removing the supports and starting the process again.

A phenomenon of alteration in the chemical composition of the material (from a hexagonal to a cubic crystalline structure) reduced the density of the material and reduced the intrinsic volume, thus increasing the porosity and permeability of the binder. This decrease in the strength of the element and the increased vulnerability of the reinforcement to certain external environmental agents, such as moisture, led to a significant alteration in the integrity of the concrete. Similarly, the pathology was frequent in outdoor concrete elements in coastal areas, where the presence of chlorides accelerates the corrosion process of the reinforcement, in unventilated sanitary slabs or other elements affected by leaks. The pathology took approximately twenty years to fully develop once the first renovation, after renovations of dwellings and restoration of structures had started.

This technological situation (although unsuccessful, as would be demonstrated in the future), formed part of the national construction development and was partly responsible for the fact that, in a period of 15 years, almost five million houses were built, one and a half million more than was foreseen in the 3rd National Housing Plan from 1961 to 1975.

Therefore, it was clear that this awakening towards progress was a kind of race to close the gap with other European countries that had benefited more after the war, such as Italy, which at the time already had a higher per capita income than Spain and was also a major beneficiary of the European Recovery Program, better known as the American Marshall Plan. A program that provided economic support to all those countries most affected by World War II. This aid was terminated four years after the war, but Spain still had a lot of improvements to make in comparison to other European countries. Italy, like Spain, broke away from the autarkic model of the 1930s, but was able to adjust quickly to the models of growth and modernity. In Italy, the threats that competition with other actors could pose were transformed into a stimulus to be better and more competitive, by having design, quality and an affordable price due to low labour costs. They were also able to skilfully manage other resources such as the export of useful machinery for sectors such as energy, iron and steel production and engineering, where part of the country’s history is embodied in the effectiveness of technology adapted to the needs of the local context. In any case, the so-called Italian economic *miracolo*, (miracle) which in some cases coincides somewhat chronologically with Spain, occurred much earlier than in Spain.

In Italy, the phenomenon of INA-Casa appears, which was the intervention plan, called: *Provvedimenti per incrementare l'occupazione operaia, agevolando la costruzione di case per lavoratori*, (measures to increase workers' employment, facilitating the construction of houses for workers) a program with funds from the *Istituto Nazionale della Assicurazione*, (National Insurance Institute INA), (Law of 28 February 1949), which although the word house was named, in reality it was about creating neighbourhoods (of houses), and infrastructures that meant the reactivation of the country after war, as well as labour occupation through the construction of social housing. The initiative ran for 14 years, with the most important period between 1956 and 1963. It is important to note that this program was a major field of architectural experimentation for many Italian professionals, offering a social housing model that was community-oriented and gave thousands of people access to modern, hygienic housing. For this reason, the figure of Fanfani, the Minister of Labour and the driving force behind the program, became well known. This action had already been preceded by Fanfani himself in the fight against poverty through the publication *Colloqui sui poveri*, in which he stressed the importance of housing conditions and their link to poverty. In the construction of these houses, he defended the handcrafted aspect of construction, avoiding prefabrication and therefore encouraging a high level of labour contracting.

Not only the best Italian architects (including Ridolfi, Muratori, Figini e Pollini, Ernesto Nathan Rogers, Ponti, Libera, Carlo, Mario de Renzi, Ludovico Quaroni, Samonà, and Vittorio Gregotti), but most Italian architects and engineers of the time worked on the projects for these neighbourhoods scattered throughout Italy, whether in buildings, housing or INA-Casa community facilities. In addition to the above, these neighbourhoods were intended to provide a new urban structure, almost reminiscent of the *vicinato*, in the sense of recovering the public space and the encounter between the inhabitants, creating a sense of self-sufficiency and social belonging, an approach in line with some positions, such as, for example, the definition of inhabiting set out by Heidegger in his 1951 lecture, "to build, to inhabit, to think". The INA-Casa plan, which brought together everything from simple housing to social and community life, was a catalyst for what we could understand as the "social and moral reconstruction of Italy" (De Biagi, 2017).

In the case of housing in Spain, the promoter would be the state through the Development Plans of the Ministry of Housing. The first of these was the Law of 19 April 1939 and other legislative actions, the most important being the National Housing Plan for the period 1961-1976 or the

"Official Protection Housing", which was subsidized by the state and lasted until the 1980s.

## Social housing with an author's signature

The link between architecture and politics is as obvious as it is ambiguous. It is not clear that there is an immediate connection between political ideas and architectural styles. It is true that, until the Stabilisation Plan at the end of the fifties, the stylistic choice could be said to be thematic in nature, classicist public buildings, a certain rationalism for functional works and a certain vernacular *folklore* for popular housing, but the time had come to design housing that had not yet been defined in an obvious and generalised architectural context. It is true that there was a starting point, the architects had experienced the glory of the concepts of modern architecture; already second generation in Spain. Le Corbusier was already a point of reference and the works could be classified as cubist or classical, with a tendency more towards aesthetics than politics, even if only apparently. This situation is analogous to that in Italy, where Piacentini and Terragni represent two antagonistic conceptual ideologies in style with the same characteristics as in Spain. However, it was necessary to read between the lines, since, for example, the international white style was less shared by the rationalist architects of Madrid, who used brick in excess.

In any case, and again coinciding in both countries, the social housing projects were a magnificent opportunity to carry out and present "useful" and valuable projects, a showcase with only one limit: budgetary constraints.

The Gatepac Group, *Grupo de Artistas y Técnicos Españoles para el Progreso de la Arquitectura Contemporánea*, designed, among its many interventions, the *Poblados Dirigidos* and *Concursos de Viviendas sociales* (1956 to 1966), giving rise to the current Catalogues of Modern Architecture. These include important examples that have remained in the urban composition of many of our cities as living examples of his work. In the same way, the new neighbourhoods or adjoining settlements included the design intervention of many renowned architects (among others, Carvajal, García de Paredes, Corrales, Molezún), resulting in a formal and compositional product of great interest. The result was not only a single-family or colony architecture, but also the building in the so-called "high rise block" with magnificent examples in cooperative regime with "duplex" typology such as Santa María Micaela by Santiago Artal in 1958, (Fig. 2) in Valencia or the Antonio Rueda group in 1965 by García Sanz, Marés Felú and Valls Abad in the same city, both works recognized in the Spanish Iberian DO.CO.MO.MO.





Figure 1 | Notebooks from Architecture and Lansaping n°105 (1974). Recovered by Tortosa, M.; 2017.



Figure 2 | Collective housing Santa María Micaela Valencia, Artal, S.,1958. Source: Author's own work 2022.

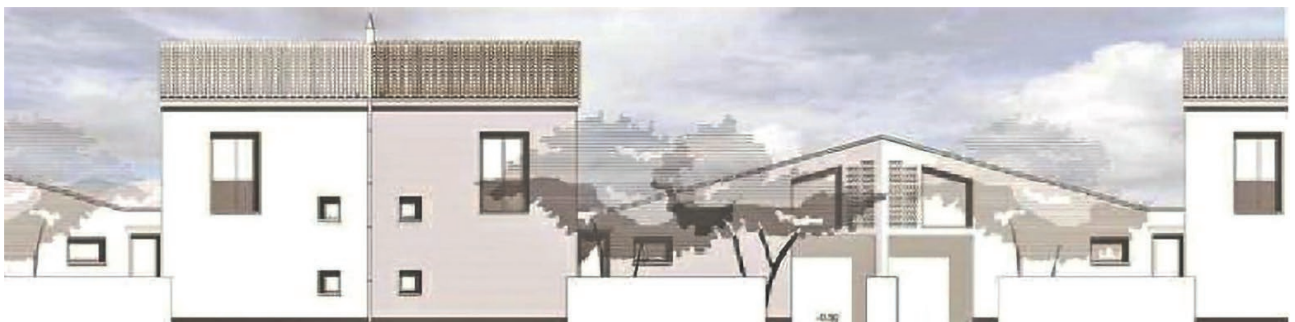


Figure 3 | Housing of Borgo La Martella, Matera, Quaroni, L.,1953. Source: Author's own work, 2022.

In Italy, the location and territory were more precisely adapted to the design concept, creating other alternatives such as the site of La Martella (Fig. 3) by Quaroni in 1951, which gave way to a “neighbourhood” of a rural nature, but with the same underlying idea, that of redeeming and recovering existing social and community aspects.

Likewise, the Eduardo Torroja Institute was an obligatory point of reference for the control of the work planned and being carried out, as it was the first national centre of experimentation from which to promote the necessary evolution of construction systems towards industrialization, based on knowledge of the constituent material itself.

The Institute's group led by the engineer Eduardo Torroja had one aim: to research, promote and disseminate all fields related to construction from each and every one of its technical and scientific aspects in order to promote progress in an outdated industry. It sought to revolutionise production systems from the handling of the material itself to its standardisation and industrialisation. The Institute had a clear line of action. It was not just a matter of disseminating among professionals - engineers and architects - the new calculation procedures, the new appearance of materials and regulations. The aim was broader than that; to achieve the progress of Spanish society by putting technology at its service, and to achieve it, it was necessary to reach industry and revolutionize it.

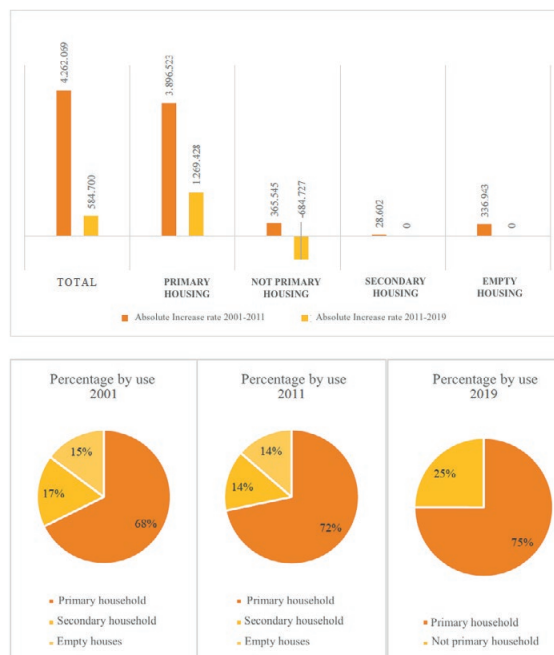
In 1931, Eduardo Torroja was one of the residents of the *Parque-Residencia (Cooperativa de Casas Económicas)*, built by Bergamín and Blanco Soler, where a large number of professionals and progressive intellectuals lived, and as an inhabitant he shared in the defects and virtues of this type of housing.

## Rehabilitation and flexibility, the “old” housing of the future

Today it is clear that the trend has reversed towards less production of new buildings and the recovery of the consolidated city, historic centres and neighbourhoods. There is a positive correlation between the growth of real estate activity as a result of property growth, which necessarily leads to the deterioration of the consolidated city. The Spanish housing stock now needs a policy to overcome this vicious circle, a thorough rethinking of the relationship between urban planning and housing, between the creation of new urban land, and aid for the maintenance of occupied housing or the recovery of unoccupied housing; with guiding criteria that must be very different from those that inspire the private sector. The case of the social housing of the 60s, which is a prototype in many cases of little attraction, represents an opportunity to create current models that correspond to a new real estate pattern where, with greater or lesser versatility, these dwellings do not end up abandoned or forgotten, as we can see in many cities in Spain.

The data currently available on a national level report that in 2001 there were 3,106,422 unoccupied dwellings which increased to 3,443,365 in 2011 (INE), which leads us to believe that there is an important number of dwellings (Figs. 4 and 5), with many possibilities for action and with a response for various models of occupation.

The flexible architecture approach to the project may prove to be one of the most appropriate means for the



Figures 4 and 5 | Secondary housing census INE (2001/2011) and percentage of occupation. Author's own work.

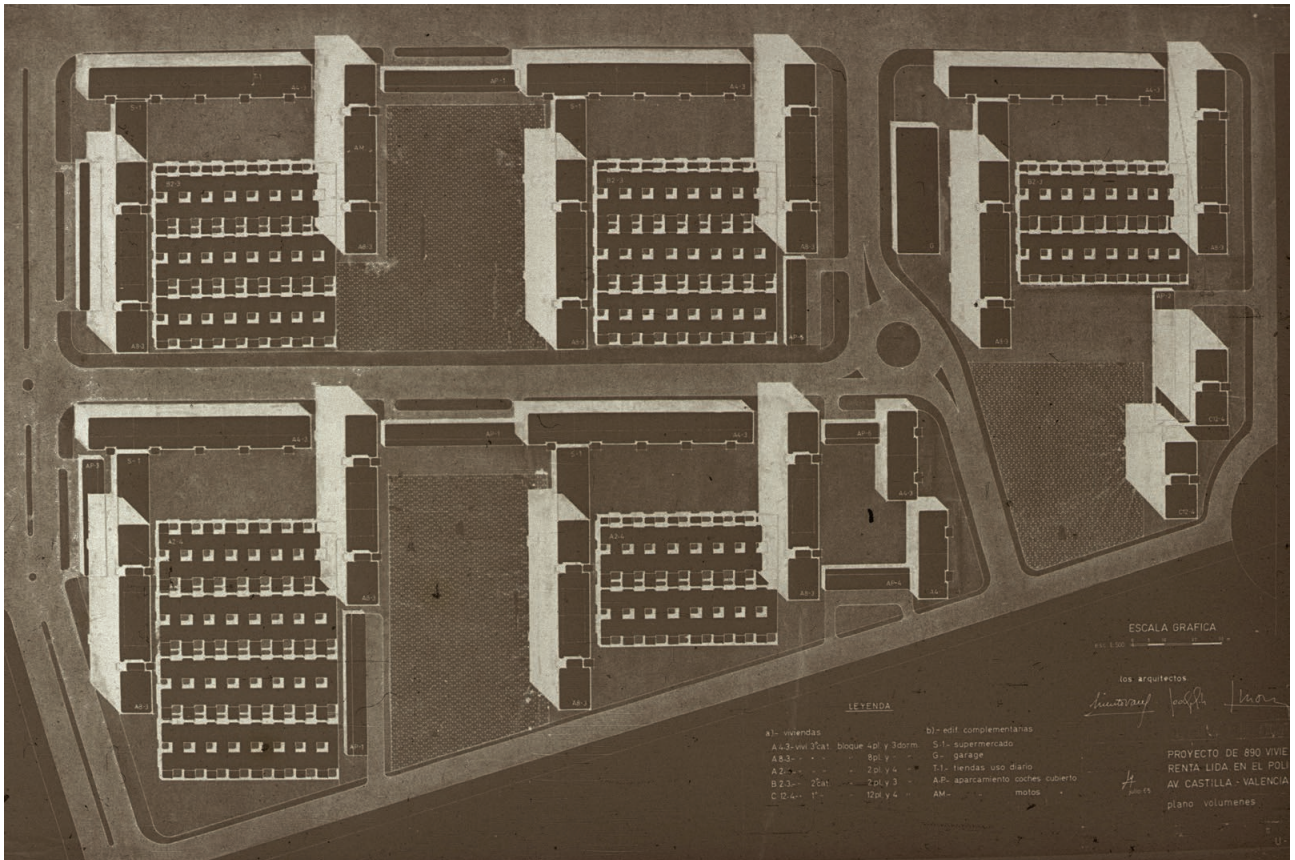
refurbishing and recovery of this built legacy, allowing maximum use to be made of previously defined spaces (albeit with limitations in terms of structure and facilities), however, applied to new construction, it may allow the start of a new construction dynamic.

New and flexible construction accessible to next generations, who, like the current one, will have new and different needs, an existing housing stock that is as “usable” as possible, and at the same time give the sector a better opportunity to evolve and innovate towards different needs, while maintaining a built heritage that is always current and modern, without unjustified expenditure of new urban land.

## The Antonio Rueda social housing group, Valencia, Spain 1965

This mid-1960s project reflects the spirit of the aforementioned and serves as an example for the practical case presented below, given that many of the dwellings in this complex are empty or seriously deteriorated both externally and internally. Furthermore, this neighbourhood was declared vulnerable, according to the 2001 INE, *Instituto Nacional de Estadística* Census, data collected in the Catalogue of the Observatory of Urban Vulnerability,





Figures 6 and 7 | Urban plan and view of the Antonio Rueda complex. Source: Original pictures from architect's son.





Figures 8, 9 and 10 | Different aspects of the Antonio Rueda complex. Source: Original pictures from architect's son.

1996. From an urban planning point of view, the concept of vulnerability expresses the critical situation in which a given space finds itself, “so that, if action is not taken on

the bases of the problem, the area will enter into crisis and a functional and social degradation of the area may occur, leading to marginalisation” (Hernández, 2007).

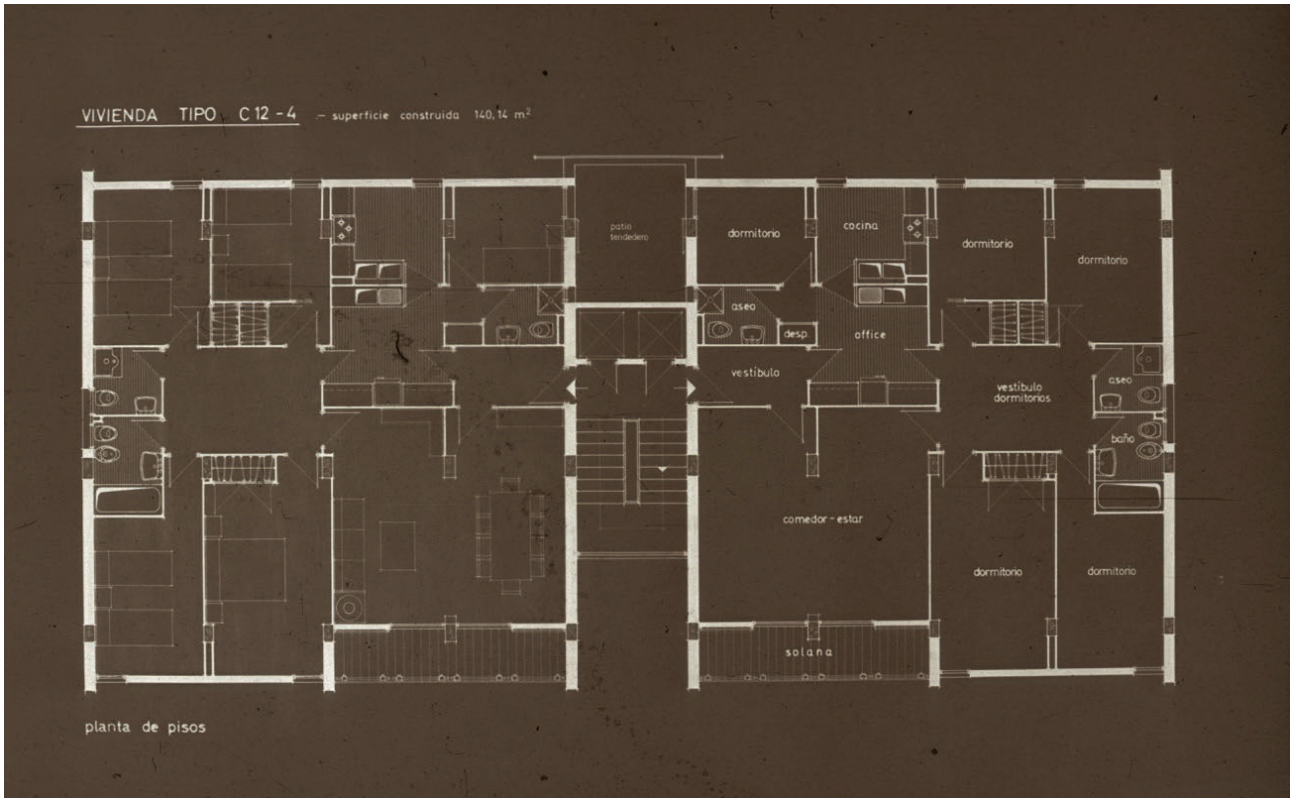


Figure 11 | Antonio Rueda project. Original photo of the plan of the main tower dwellings.

A flexible and up-to-date strategy involves the revaluation of a housing design that belongs to an indelible historical context, while at the same time allowing affordable and contained prices to make way for a new tenant or owner.

Drawn up by the architects Valls, García and Marés on behalf of the *Obra Sindical del Hogar* O.H.S. and the I.N.V., the project included 1002 dwellings occupying 10 hectares of the 28 hectares of the estate, which explains the enormous importance that the use of services and green areas represented, and which, with a certain romanticism, showed the ideal of a community of progress and wellbeing.

Each neighbourhood unit is flexible enough to adapt to the geometry of the plot, which is why it consists of a four-storey block with a north-south orientation in the upper part, two parallel linear blocks of eight storeys with an east-west orientation and a group of single-family dwellings of two storeys, known by the same architects as the *Casbah Cartesiana*, located in the central part of each neighbourhood unit. There are two twelve-storey

towers. The single-family dwellings are developed around a private courtyard and the structural displacement of the upper floor creates a play of light by means of light wells in the pedestrian streets that give access to the dwellings, due to the alternation of covered and uncovered areas.

Of the 1,002 dwellings in the complex, three different types can be found and are classified in three categories, i.e., first, second and third.

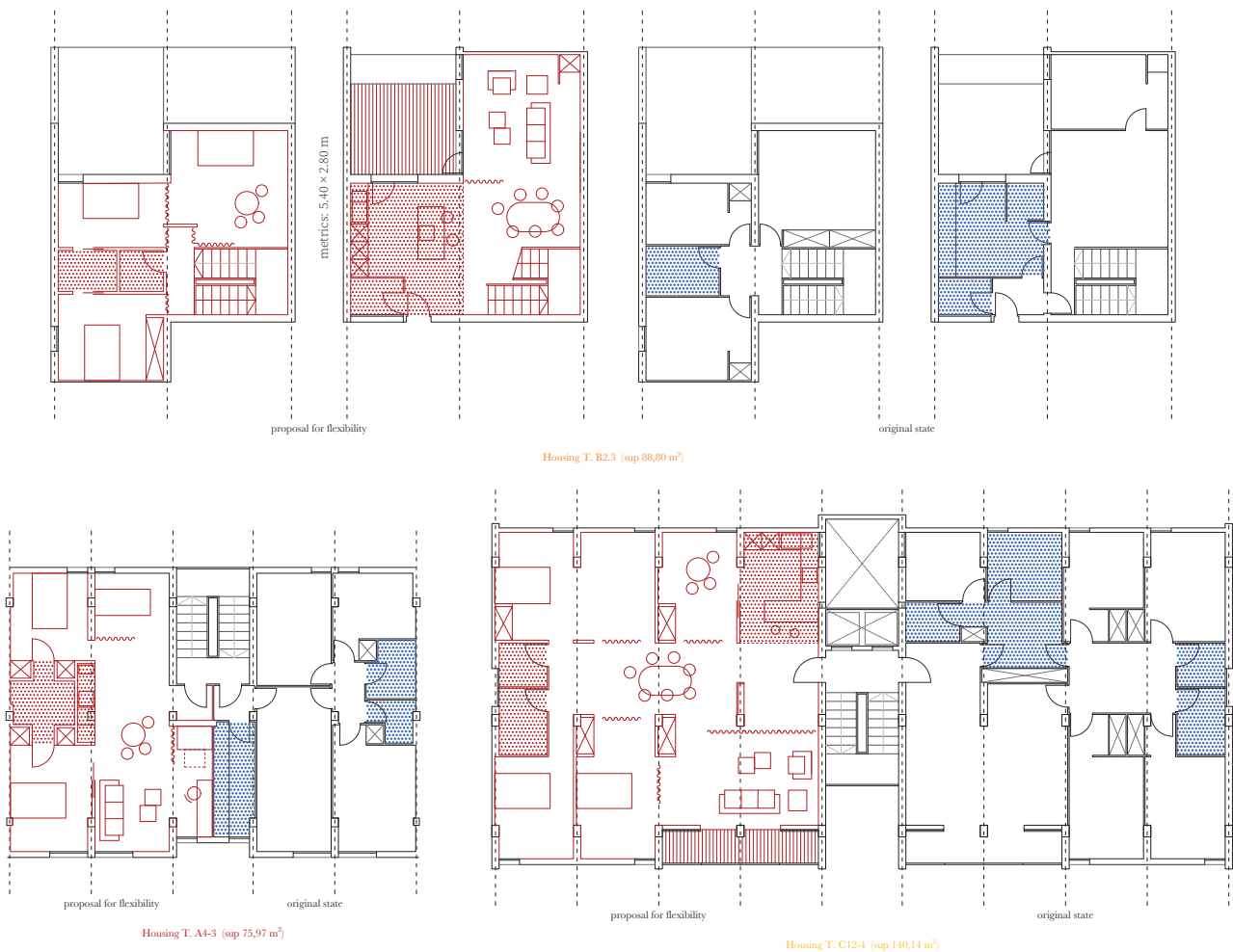
The two towers are predominant in the complex with a symmetrical interior composition through a central core containing two dwellings per floor, the aforementioned first category, high quality flats of 140 m<sup>2</sup> surface area, a typology with a servant's area, toilet and bedroom for service personnel.

The two-storey semi-detached houses can be of second or third category, the difference with respect to the A2-4 houses of third category is the reduction of constructed surface, being 88.80 m<sup>2</sup> the total; in addition to the change of program by eliminating a bedroom (the one corresponding to the ground floor).



	Category	Type	m <sup>2</sup>	No. of housing	Total housing
Housing	3rd Category	A8-3	140	560	830
		A4-3	75.97	174	
		A3-4	90.00	96	
	2nd Category	B2-3	88.80/76.00/90.00	44	
	1st Category	C12-4	140.14	128	
				Total	1,002

Figure 12 | Descriptive table of the different typologies and characteristics of dwellings. Author's own work.



Figures 13, 14 and 15 | Different proposals to improve and update of the main typologies in terms of spatial flexibility. Author's own work.

They are distributed in the three areas, with a grouping of streets in the different sectors of the estate. As for the third category, the most widespread typology of the project, the dwellings have a built area of 76 m<sup>2</sup> with a program of living-dining room, kitchen, three bedrooms, a bathroom and toilet, the latter in a central nucleus for the concentration of the facilities.

As a final part, three solutions are presented to the original dwellings, many of which are for sale, with the idea of having a more attractive offer for new owners or tenants in accordance with the current situation with the possibility of revitalising the neighbourhood and enjoying a complex of great social and architectural value.

## Conclusions

The work attempts to highlight various current aspects to be considered when managing either the occupation or the acquisition of dwellings, in particular those that are unoccupied and to be refurbished. In recent years there have been a series of events, some of them certainly unexpected, such as Covid-19, and others in which experts and professionals have not been able to react effectively in terms of time and cost to viable alternatives that involve spatial improvements. Likewise, the sector has not experienced a particularly significant technological advance, neither in the construction systems nor in the materials themselves, as the trends have meant a continuation of the traditional systems, i.e. in the way in which things were done in the past. As a result, in the face of the inexorable advance of time and the need for certain solutions in a rather short period of time to mitigate the problems

caused in recent years (significant migration and immigration, obsolete, undervalued, unoccupied spaces, etc.), have given rise to taking the necessary measures to improve the quality and quantity of the building materials used. This led to an initiative of change and transformation towards efficiency and utility in housing. As a result of “various” crises that have occurred and the social and economic changes, the reuse of a specific typology of existing housing is proposed, proposing a spatial flexibility that allows the adaptation of a growing and constantly changing family module (and therefore of new needs). An action that includes the use and revaluation of a building stock that is undervalued but of national and international heritage and architectural interest. The new proposal respects the existing modulation and this allows to generate spaces with similar metrics for different uses. It also complies with the CTE Technical Building Code and the DC-09 Design and Habitability Regulations.

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**NOTE:** All tables, drawings and pictures in this article were taken by the author, except for photos 6 to 11, original photos provided by Jorge García Valldecabres the son of the architect García Sanz, one of the architects of the Antonio Rueda Group project. Special thanks to the architect's son for his generous cooperation.