

# Typo-Morphological Laboratories During the 20th Century: a General Overview on the State-Subsidized Multifamily Housing Projects in Portugal (1910–1974)

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## ABSTRACT

In Portugal, although the single-family remained the preferred model for a large set of public housing initiatives until the early 1950s, multifamily buildings in the urban context played a significant part in shaping the city centres of the most important Portuguese cities, Lisbon and Porto. Particularly in the post-war period (mainly the 1950s–1970s), these residential architectures had a key role in the urban transformation of these cities, namely in their morphological consolidation and expansion.

During these decades, different sorts of promoters generated types and models carrying their own identity, either in terms of typology design, construction practices or influences from international contexts. The private promoters, real estate developers, and state housing promoters followed agendas involving divergent factors, such as political and legal frameworks, financial resources and urban settings.

In terms of public initiatives, during the first three quarters of the 20<sup>th</sup> century, several housing programmes were implemented in Portugal with the aim of providing proper dwellings for a large part of the Portuguese population. Focusing on Porto and Lisbon, for example, the public sector had been deeply involved in its urban dynamics since the 1940s, implementing housing solutions aiming not only at inhabitants with lower resources but also an emerging middle-class that took advantage of the possibility of renting or buying their houses with beneficial terms. Also, these initiatives resulted in large urban operations that were strategically connected with the planned expansion of the urban fabric through residential areas, imposing urban models which were radically different from the traditional composition systems. The constructed buildings were also a vehicle of effective typological experimentation, exploring the “minimum dwelling” principles and the rationale of renovated distribution.

Through a panoramic overview of the housing programmes which were carried out or supported by Portuguese public initiatives between 1910s–1974s, the aim is:

- to identify some of the most relevant residential estates built during this period;
- to clarify the associated regulation in terms of housing policies;
- to highlight their relevance not only in terms of their impact on the cities, morphological transformation but also regarding the proposal of new housing typologies.

## BIOGRAPHY

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## SHIFTING PARADIGMS. THE EMERGENCE OF MULTIFAMILY HOUSING MODELS DURING THE 1ST HALF OF THE 20TH CENTURY

For almost seven decades, between 1910, the date of the implementation of the 1st Portuguese Republic (1910–1926), and 1974, the date of the fall of the *Estado Novo* dictatorship regime (1933–1974), several housing programmes were implemented. Each one showed different approaches regarding dwelling typologies in general, and multifamily housing particularly, and most of the estates built had a different impact on the cities' morphological and functional structure.

The 20th century public housing production was extensively mapped by the research project “Mapping Public Housing” [<https://mappingpublichousing.up.pt/en/>]. Its purpose was to identify the housing programmes subsidized by the state and their spatial concretizations during the period 1910–1974: neighbourhoods, collective buildings or single-family houses. The current status of the ongoing inventory carried out throughout this research project has allowed a comprehensive vision of the typological experimentation carried out until 1974.

The research project database currently holds about six hundred records (referring mostly to neighbourhoods built with varying dimensions), from which about two hundred include multifamily housing buildings. Within this universe, it is possible to find various types of buildings, with different number or storeys and access systems. Intermediate or hybrid solutions, i.e., buildings that have direct/individual access to the apartments from the street, were a frequent option, especially in the housing programmes implemented during the middle 1940s. A distribution gallery or vertical access cores were developed in a larger set of buildings, mainly in those constructed after 1945.

Although the multifamily type, with vertical access and several apartments on each floor, was a well-known type of building among private housing sector construction, particularly in Lisbon, clearly it was not the first option when it came to the public initiatives. During the 1930s and 1940s, the housing programmes implemented were focused on spreading low-density neighbourhoods, a sort of garden cities with single-family houses with individual small gardens. These housing policies allowed the construction of large parts of the city of Lisbon and Porto, contributing to their planned expansion and morphological restructuring, but failed to offer a global solution for the housing needs felt during that period.

## HOUSING PROGRAMMES, MULTIFAMILY HOUSING BUILDINGS AND CITY MODELS. A GENERAL OVERVIEW

This panoramic overview focuses on a residential stock that frequently does not stand out for its architectural quality, defining a particular object of study—the state-subsidized multifamily housing buildings built in Portugal, a temporal frame—the period between 1910–1974, and a particular perspective of approach—the typological and morphological analysis. It aims to identify some of the most relevant residential estates built during this period, in terms of scale, morphological impact on the cities' expansion and the innovative approach regarding the design of the dwellings, framing their current regulation in terms of housing policies.

### 1. THE FIRST EXPERIENCES

The “Affordable Houses Neighbourhoods” (*Bairros de Casas Económicas*—BCE, Decree-Law 4,137, 25 April 1918) constitutes the first housing programme in which several provisions were promulgated on the construction and sale of affordable houses for the underprivileged classes of the urban population. Although this public initiative (and its regulatory framework) was directed towards the construction of single-family dwellings and housing in terraced houses (article 4), in the three neighbourhoods built under this programme, it is relevant to refer to the *Ajuda* neighbourhood, in Lisbon (1918–1935) [MdH DB a215], which proposed multifamily housing buildings with three storeys along with single-family buildings.

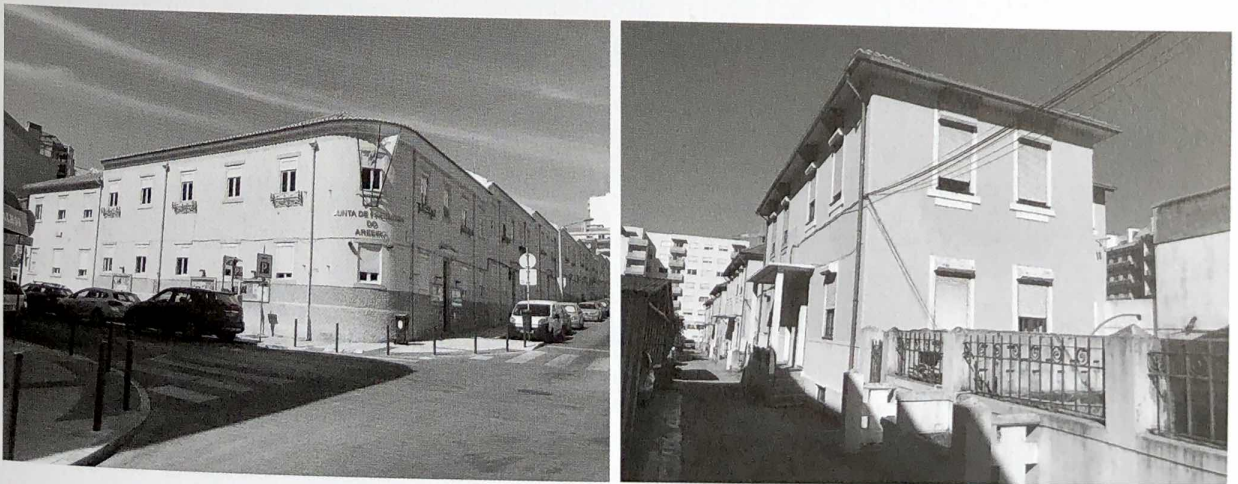


Fig. 1 and 2 President Carmona Municipal Neighbourhood (Lisbon, 1927–1935)—102 dwellings (single-family and multifamily buildings), on the left. GPS: 38.739993N 9.131524W (left); Neighbourhood of the insurance company “O Trabalho” (Porto, 1928)—18 dwellings. GPS: 38.739993N 9.131524W (right). Photos by Gisela Lameira (2018).

Later in 1928, the “Affordable Houses System” programme (*Regime das Casas Económicas*–RCE, Decree-Law 16,055, 22 October 1928) followed this direction, also advancing some neighbourhoods with multifamily models. Two examples stand out, one in Lisbon and other in Porto, both proposing a two-storey housing block with shared vertical access to the apartments (two on each floor).

By the late 1920s, this type of buildings, close to some low-end solutions built by the private sector, sought to solve the housing needs in a more effective way, especially in Lisbon with the construction of 102 dwellings.

The implementation of the dictatorship in Portugal (*Estado Novo*, 1933) made it difficult to develop further this line of experimentation, as the regime clearly privileged the construction of single-family houses as an “instrument of social control.”<sup>1</sup> Until the late 1950s, the first housing programme created during the *Estado Novo*, the “Affordable Houses” programme (*Casas Económicas*–CE, Decree-Law 23,052, 23 September 1933), did not produce other types of buildings for housing, nor even intermediate solutions.

According to the “Mapping Public Housing” inventory, the “Affordable Houses” programme built around 70 neighbourhoods over nearly five decades (1933–1971). Only from the late 1950s was the inclusion of multifamily housing types considered (in about 12 examples), such as the *Viso* neighbourhood (Porto, 1958–1965) [MdH DB a11], the *Cedro* neighbourhood (Vila Nova de Gaia, 1962–1966) [MdH DB a261], and the *Mira-Sintra/ICESA* neighbourhood (Aguilva-Cacém, 1965–1975) [MdH DB a267].

## 2. THE POST-WAR PERIOD AS A TURNING POINT.

The shift to the construction of multifamily housing models, observed around the 1940s, indicates that the single-family model wasn’t able to fulfil the housing needs felt at the time. In this sense, several housing programmes were then implemented, which defined a turning point in terms of public housing policies and led to intense experimentation in terms of typological solutions. The first examples built during this period pointed to intermediate solutions, housing building types with few floors, direct access to the apartments or vertical access systems serving just a few dwellings. In specific situations, architectural solutions were restricted by the legislation itself, which limited the height of the buildings to four floors. That was the case with the formulation of the 1945 Decree-Law for the “*Affordable Rent Houses*” programme.

<sup>1</sup> Sérgio Dias Silva and Rui J.G. Ramos. “Housing, Nationalism and Social Control: The First Years of The Portuguese *Estado Novo*’s Affordable Houses Programme,” in *Southern modernisms from A to Z and back again*, ed. Joana Cunha Leal et al (Porto: Centro de Estudos Arnaldo Araújo–CESAP/ESAP, Instituto de História da Arte–FCSH/UNL, 2015), 261.

The “Houses for Poor Families” programme (*Casas para Famílias Pobres*–CP, Decree-Law 34,486, 6 April 1945), also implemented at the same time, was meant for the most disadvantaged fringe of the population, which was ineligible for housing via other public housing offers. Although this programme started with individual houses, during the early 1950s it turned to multifamily housing types, hybrid models with two floors, and housing blocks with several floors and access galleries (about a dozen examples, from eighty-seven currently listed).

The *São Vicente de Paulo* neighbourhood (1950) [MdH DB a552] and the *Rainha Dona Leonor* neighbourhood, stage 2 (1955) [MdH DB a801], both located in Porto, are interesting cases regarding the use of galleries as optimised distribution systems in the set of examples identified in this programme. The housing buildings in the *Quinta do Jacinto* neighbourhood [MdH DB a676], with a T-shape, vertical accesses, and three apartments on each floor, added an extra layer of experimentation, through a rational plan that organized the location of the buildings according to their solar exposure.



Fig. 3, 4 and 5 *São Vicente de Paulo* neighbourhood (Porto, 1950)–18 dwellings, on the left. GPS: 41.154289N 8.578656W (left); *Quinta do Jacinto* neighbourhood (Lisbon, 1950–1957), Raúl Tojal, José de Lima Franco–180 dwellings. GPS: 38.707352N 9.176778W (middle); *Rainha Dona Leonor* neighbourhood, stage 2 (Porto, 1955)–100 dwellings, on the right. GPS: 41.149087N 8.662276W (right). Photos by Gisela Lameira (2018).

The “Affordable Rent Houses” programme (*Casas de Renda Económica*–CRE, Law 2007, 7 May 1945), implemented via Affordable Housing–Federation of Provident Funds (*Habitações Económicas/Federação de Caixas de Previdência*–HE/FCP) was developed in a different direction. This housing initiative was intended to provide access to lower-rent houses, targeting residents who could not apply for the single-family houses constructed under the “Affordable Houses” programme in force since 1933.

During its lifespan, this housing programme constructed a relevant number of multifamily residential complexes. According to the ongoing inventory of the research project “Mapping Public Housing,” about 115 neighbourhoods and 14,420 dwellings were built, from which around one hundred included multifamily housing types. This allowed effective experimentation, engaged with the proposal of new city models in line with the Charter of Athens urban paradigms, the introduction of new languages, either related to Modern Movement principles or to regionalist reinterpretations, and the design of typologies closely linked to the rationalist theories underlying the “minimum dwelling” ideal.

The project of Miguel Jacobetty Rosa for the *Alvalade complex, Cells 1 and 2* (1945–1948) [MdH DB a89], located in Lisbon, was first adopted as a typological model to reproduce across the country. During the 1950s and the 1960s, new strategies emerged, namely with the intervention of Nuno Teotónio Pereira and a large set of well known “modern” architects, such as Nuno Portas, Bartolomeu Costa Cabral, João Andresen, Ruy Athougua, among others, who tried to approach each intervention according to local specificities, or to incorporate modern features at distinct levels. The *Alvalade* neighbourhood, Cells 1 and 2, the *Ramalde* residential unit (Porto, 1950–1954) [MdH DB a22] the *Soda Póvoa* neighbourhood (Vila Franca de Xira, 1953) [MdH DB a96], the *Cabo-Mor* neighbourhood (Vila Nova de Gaia, 1957) [MdH DB a30], and the *Caixas da Previdência* neighbourhood (Paredes, 1957) [MdH DB a88] are some built examples where the authors developed rational apartment designs with regular configurations, seeking minimum dwelling areas, the optimization of circulation spaces and the compression of living spaces. Projects such as the *Santa Marta* neighbourhood (Barcelos, 1955–1962) [MdH DB a42] and *Torres Vermelhas da Pasteleira* (Porto, 1966–1972) [MdH DB a16], explored other lines of intervention, closer to vernacular references and “organic” approaches that were being explored, for example in Italy, in the INA-Casa residential complexes.

As some of these estates occupy large plots, new urban models were tested, namely the design of rational layouts with structuring axes and buildings placed parallel to each other according to the best solar exposure. The exterior areas located between the buildings were frequently planned to be green areas with pathways. On the one hand, this rationalist Charter of Athens approach can be seen in the *Ramalde* residential unit, the *Caixas da Previdência* neighbourhood (Coimbra, 1965) [MdH DB a57] or the *Cabo-Mor* neighbourhood, while the site plan distribution of *Torres Vermelhas da Pasteleira* suggests, on the other hand, the organicist influence from 1960s Italian residential settlements.

Some examples:



Fig. 6 and 7 Cabo-Mor neighbourhood (V. Nova de Gaia, 1957), João Andresen—72 dwellings. GPS: 41.119662N 8.613127W (left); Caixas da Previdência neighbourhood (Coimbra, 1965), Jorge Albuquerque—180 dwellings, GPS: 0.197993N; 8.411143W (right). Photos by Gisela Lameira (2018).

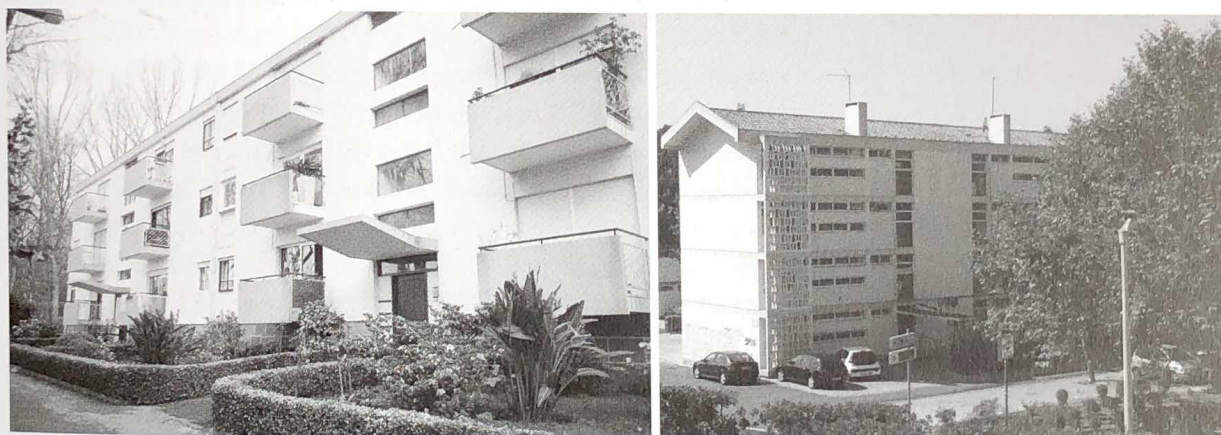


Fig. 8 and 9 Ramalde residential unit, Stage 1 & 2, (Porto, 1950–1954), Fernando Távora—426 dwellings, GPS: 41.167382N 8.655740W (left); Caixas da Previdência neighbourhood (Paredes, 1957), Ruy Athouguia—160 dwellings. GPS: 38.692053N 9.349484W (right). Photos by Gisela Lameira (2018).



Fig. 10 and 11 Santa Marta neighbourhood (Barcelos, 1955–1962), Nuno Teotónio Pereira—20 dwellings. GPS: 41.534584N 8.608408W (left); Torres vermelhas da Pasteleira (Porto, 1966–1972), João Serôdio, Luís Almeida d'Eça, Rui Paixão—500 dwellings, on the right. GPS: 41.1513384N 8.6630958W (right) Photos by Gisela Lameira (2018).



Fig. 12 and 13 Alvalade neighbourhood, Cells 1 and 2 (Lisbon, 1945–1948), Miguel Jacobetty Rosa–2066 dwellings, on the left. GPS: 38.752311N 9.146895W (left); Soda Póvoa neighbourhood (Vila Franca de Xira, 1953), Nuno Teotónio Pereira–12 dwellings. GPS: 38.859693N 9.067165W (right). Photos by Gisela Lameira (2018).

The “Houses for Fishermen” programme (*Casas para Pescadores*–CP, Decree-Law 35,732, 4 July 1946) was at first supported by Law 1953, dated March 11, 1937, which establishes the bases for the creation in all fishing centres of social cooperation organizations with legal personality, known as “Fishermen’s Houses,” and later by Decree-Law 35,732 of July 4, 1946, that allowed the Central Board of Fishermen’s Houses to borrow loans to finance the construction of the buildings. According to the current inventory, it constructed fifty-six neighbourhoods, of which fourteen included shared access to the apartments. In this particular programme, implemented in Portuguese coastal areas, the most produced building is the two-storey type with direct access to two apartments, repeated in several locations (Matosinhos, Póvoa de Varzim, Sines, etc.), although some neighbourhoods have housing blocks with several stories and vertical access.



Fig. 14 and 15 Fishermen’s Houses neighbourhood, Matosinhos (stage 3, 1958), Alexandre Bastos–104 dwellings, on the left. GPS: 41.187778N 8.679868W (left); Fishermen’s Houses neighbourhood, Matosinhos (stage 2, 1958), Alexandre Bastos–56 dwellings. GPS: 41.187778N 8.679868W (right); Photos by Gisela Lameira (2018).



That is the case of Fishermen's Houses neighbourhood in Matosinhos (3<sup>rd</sup> stage) and Fishermen's Houses neighbourhood of Torre in Cascais (1<sup>st</sup> & 2<sup>nd</sup> stage, 1963–1965).

From another perspective, the "Houses with Controlled Rent" programme (*Casas de Renda Limitada*–CRP, Decree-Law 36,212, 7 April 1947), tried to increase cooperation between private investment and the public sector, through the previous fixing of the maximum total rent to be charged for the apartments. Although only three neighbourhoods located in Lisbon were built, they represent remarkable examples of the interpretation of the modern movement in Portugal, both in terms of urban concept and the design of the typologies. As the dwellings built under this housing programme were intended for a sector of the population that had some resources, the apartments areas and interior distributions exposed clear differences regarding other housing programmes' solutions. The "Plan of Improvements for the city of Porto" (*Plano de Melhoramentos da Cidade do Porto*–PMP, Decree-Law 40,616, 28 May 1956), a municipal document implemented in 1956 with the aim of solving the housing needs in Porto through the construction of about 6,000 homes in ten years, gave rise to a large set of residential settlements of varying sizes that were built on the first periphery of the city, contributing to its planned expansion and urbanization. The houses built under the "Improvement Plan for the City of Porto" had a direct connection with the "Houses for Poor Families" programme of 1945, and therefore followed its main principles.



Fig. 16, 17 and 18 Estacas neighbourhood (Lisbon, 1949–1955) [MdH DB a548], Ruy Athouguia, Sebastião Formosinho Sanchez–264 dwellings. GPS: 38.746497N 9.137728W (left); Residential complex in Avenida dos Estados Unidos da América (Lisbon, 1954) [MdH DB a544], Manuel Laginha, Pedro Cid, João B. Vasconcelos–540 dwellings. GPS: 38.749121N 9.136709W (middle) Residential complex in Avenida Infante Santo (Lisbon, 1949–1955) [MdH DB a546], Alberto J. Pessoa, Hernani Gandra, João Abel Manta–184 dwellings. GPS: 38.709920N 9.165252W (right). Photos by Gisela Lameira (2018).

The 30 neighbourhoods built under this housing programme comprise buildings with a varying number of storeys (at least four) and vertical accesses or distribution galleries, following type-projects in most cases. During the construction of the Improvement Plan neighbourhoods which took place between 1957 and 1977, it is possible to underline that the design of the typologies was gradually fine-tuned, in a process of experimentation that started to connect the shape of the housing buildings and its site more closely. This can be confirmed through the comparison of the neighbourhoods of *Pasteleira* [MdH DB a196], *Bom Sucesso* [MdH DB a691], and *Carvalhido* [MdH DB a693], from the beginning of the programme (1956–1958), namely the rationality of the layouts materialized from the site plan to the apartment design, with later projects implemented in the city, such as the *Falcão* neighbourhood (1967–1972) [MdH DB a715]. Some examples:

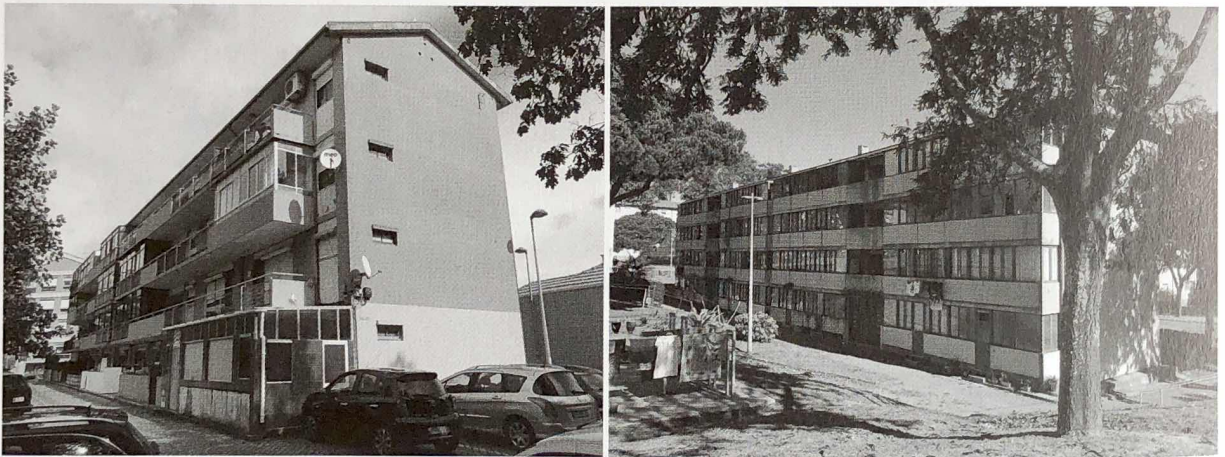


Fig. 19 and 20 Bom Sucesso low-income housing unit neighbourhood (Porto, 1956–1958)–126 dwellings [Gallery buildings], GPS: 41.153723N 8.632201W (left); Pasteleira low-income housing unit neighbourhood (Porto, 1957)–608 dwellings [Gallery buildings/Vertical access buildings], GPS: 41.153944N 8.659717W (right). Photos by Gisela Lameira (2018).

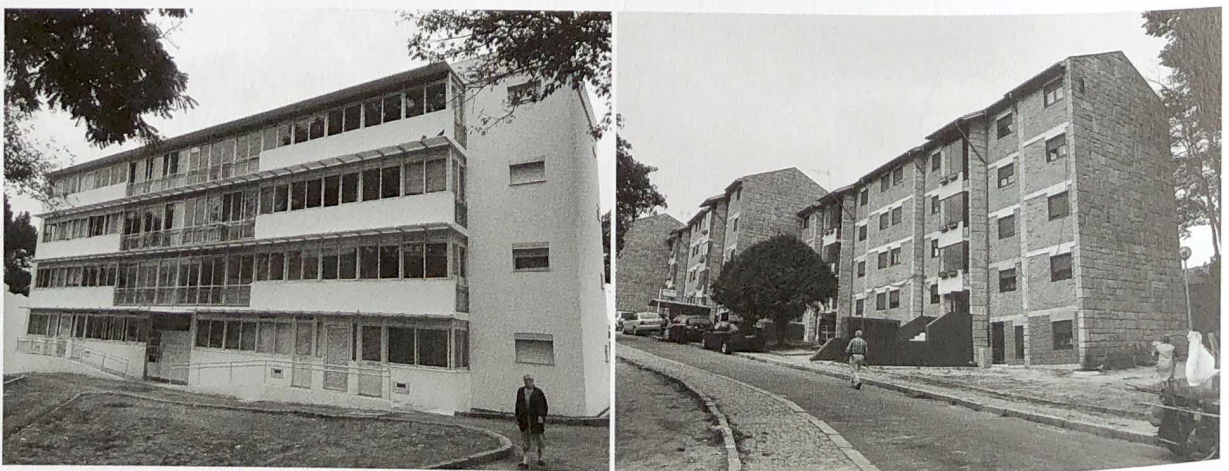


Fig. 21 and 22 Carvalhido low-income housing unit neighbourhood, (Porto, 1957–1958)–264 dwellings, GPS: 41.169443N 8.622784W (left); Falcão low-income housing unit neighbourhood, (Porto, 1967–1972, stage 1)–224 dwellings. GPS: 41.158975N 8.576916W (right). Photos by Gisela Lameira (2018).

Despite the specificities that can be found in each particular project, these residential complexes share the same rationale in terms of urban concept: large plots with a layout that organized parallel housing buildings, green areas, paths and streets that would connect with the urban structure defined by the Master Plan of Porto of 1962. Nevertheless, following some principles defined in the Charter of Athens, in most cases the urban model which was achieved seems to falter regarding its coordination with the pre-existing surroundings, creating fragmented pieces of urban fabric. This remark is particularly noticeable in most settlements of the Improvement Plan, as they neither incorporate others type of structures (facilities buildings, schools, commercial areas, etc.), fundamental for the inner dynamics of the ensemble, nor do they define hierarchies in the design of the street system and its connection to existing roads.

### 3. BETWEEN THE LATE 1950S AND THE EARLY 1970S. LARGE SCALE INTERVENTIONS.

The analysis of the state-subsidized housing programmes implemented from the late 1950s to 1974 points towards three of the larger settlements built in Lisbon in the early 1960s, namely the neighbourhoods of *Olivais Norte*, *Olivais Sul*, and *Chelas*. The Urbanization Plan of *Olivais Norte* neighbourhood (1955–1960) [MdH DB a186], for example, incorporated 5,000 dwellings in multifamily buildings spread over a 40 ha area, while about 6,986 dwellings were built for that of *Olivais Sul* neighbourhood (1959–1962) [MdH DB a193] in a 186 ha area.<sup>2</sup> These residential zones were developed under the “Plan for Constructing New Housing” programme (*Plano de Construção de Novas Habitações-PCNH*, Decree-Law 42,454, 18 August 1959), which established the global strategy for the construction of low-income dwellings linked to the planned expansion of the urban structure of Lisbon. Several affordable housing promoters were engaged with this strategy. Through this Plan, the *Olivais Sul*, *Olivais Norte*, and *Chelas* ensembles turned into large-scale multifamily housing laboratories. The investment made in the design of the urbanization plans<sup>3</sup> and the definition of coordination and monitoring instruments (such as the creation of a Technical Office for Housing—*Gabinete Técnico da Habitação-GTH*), allowed exploration and diversity of typological projects instead of the implementation of type projects and standardized solutions. Also, the overall urban concept of the plan was characterized by several aspects that contributed to an integrated process, such as the financial autonomy enabled by the selling of the plots, the definition of street hierarchies, the incorporation of equipment buildings, or the study of built large-scale neighbourhoods from international contexts.

<sup>2</sup> Teresa Heitor, “Olivais e Chelas: operações urbanísticas de grande escala,” Centro de Estudos em Inovação, Tecnologia e Políticas de Desenvolvimento, IST Mestrado em Engenharia de Concepção, História Económica, Tecnologia e Sociedade, 2004.

<sup>3</sup> *Olivais Sul*—Urbanization Plan (Lisbon, 1959–1968)—6986 dwellings. GPS: 38.763863N 9.109696W  
*Olivais Norte*—Urbanization Plan (Lisbon, 1955–1960)—2500 dwellings. GPS: 38.775152N 9.113723W  
*Chelas*—Urbanization Plan (Lisbon, 1962–1967–1990)—2590 dwellings. GPS: 38.749126N 9.117121W

Some examples (*Olivais Norte* neighbourhood):



Fig. 23, 24 and 25 Cell A-Cat. II (Lisbon, 1957–1968), Nuno Teotónio Pereira, Nuno Portas, António Pinto de Freitas–384 dwellings. GPS: 38.776181N 9.116921W (left); Cell A-Cat. III (Lisbon, 1959–1964), Cândido Palma de Melo, Artur Pires Martins–128 dwellings. GPS: 38.775414N 9.114904W (middle); Building type IID (Lisbon, 1958–1960), Pedro Cid, Fernando Torres et al.–80 dwellings. GPS: 38.776376N 9.114732W (right). Photos by Gisela Lameira (2018).

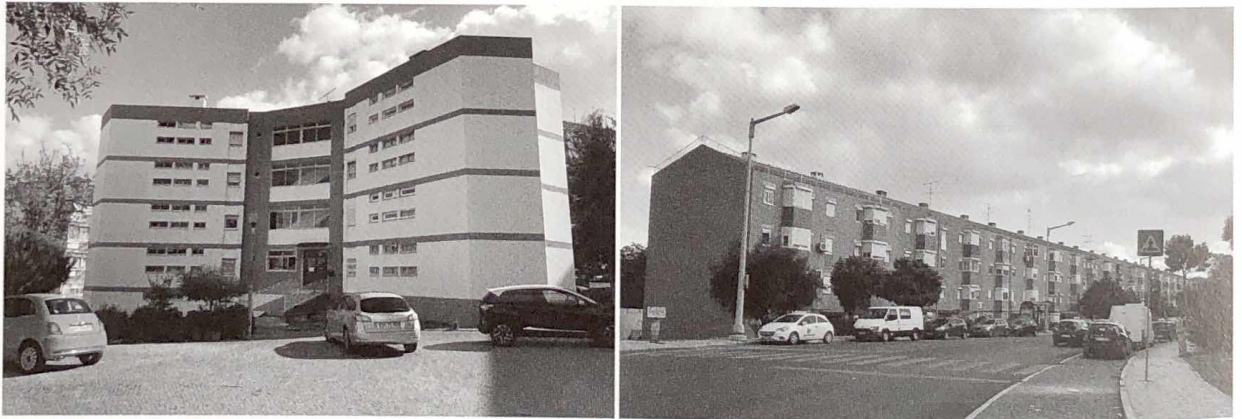


Fig. 26 and 27 Cell A-Y type (Lisbon, 1960), João Barros Vasconcelos Esteves–900 dwellings. GPS: 38.775749N; 9.113916W (left); Building type IC (Lisbon, 1959), João Braula Reis, João Matoso–90 dwellings. GPS: 38.775749N 9.113916W (right). Photos by Gisela Lameira (2018).

Some examples (*Olivais Sul* neighbourhood):

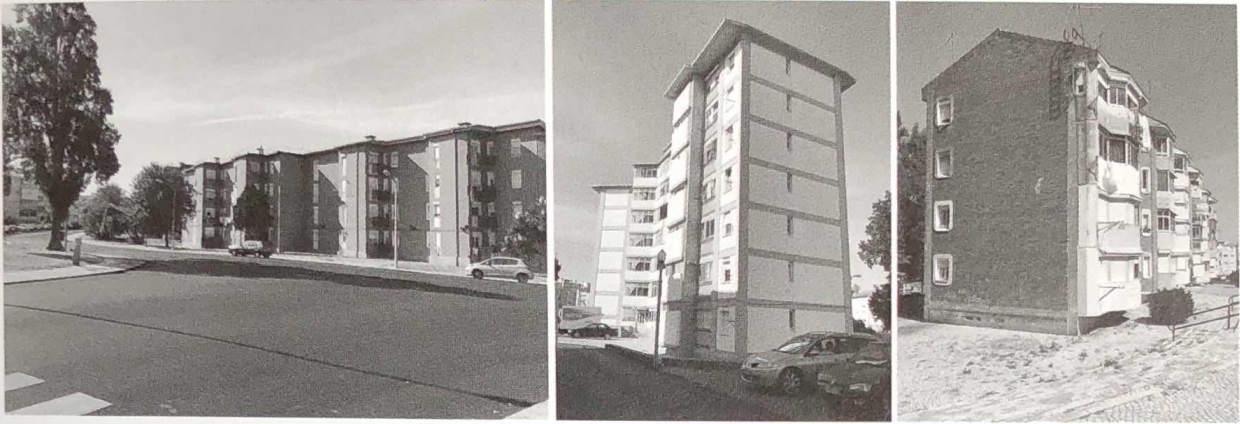


Fig. 28, 29 and 30 Cell C-Cat.I, (Lisbon, 1960–1964), Vasco Croft, Justino Morais, Joaquim Cadima–972 dwellings, on the left. GPS: 38.764514N 9.122760W; Cell B-Cat. II-Plot 29, 46, (Lisbon, 1960), Vítor Figueiredo, Vasco Lobo–140 dwellings. GPS: 38.766580N 9.121002W; Cell C/freestanding slabs, (Lisbon, 1958–1968), Nuno Teotónio Pereira, Nuno Portas, Bartolomeu da Costa Cabral, José Maria Torre do Valle, Pedro Vieira de Almeida, Rui Gamito (eng.)–272 dwellings, on the right. GPS: 38.765831N 9.115313W. Photos by Gisela Lameira (2018).

Between the late 1960s and 1974, three other public housing initiatives were implemented addressing specific questions: the “Plan for Rehousing Disaster Victims” (*Plano de Realojamento dos Sinistrados*–PRS, Decree-Law 48,240, 17 February 1968); some neighbourhoods advanced by the “Housing Development Fund” (*Fundo de Fomento da Habitação*–FFH, Decree-Law 49,033, 28 May 1969), an organization with legal personality and administrative and financial autonomy, created with the purpose of contributing to the resolution of the housing problem; and the development of the “Department of the Sines Area” (*Gabinete da área de Sines*–GAS, Decree-Law 270, 19 June 1971), designed to promote the urban-industrial development of a specific zone in Sines. Among the neighbourhoods built via the “Housing Development Fund” (FFH), the well-known housing estate of *Alto do Zambujal* in Amadora (Buraca, 1974–1977) [MdH DB a743], designed by Vitor Figueiredo and Duarte Cabral Mello, and the *Bela Vista* neighbourhood (Setúbal, 1974) [MdH DB a744] by José Charters Monteiro and José Sousa Martins, stand out regarding the scale of the settlements and the urban models implemented. Both estates can be seen as relevant experiments regarding the morphological redefinition of the relationship between the design of collective exterior spaces and the disposition of the buildings. Their plans propose an interpretation of the housing quarter as the composition unit of the urban structure, clearly going beyond the Charter of Athens paradigm, where buildings were spread out in landscaped areas.

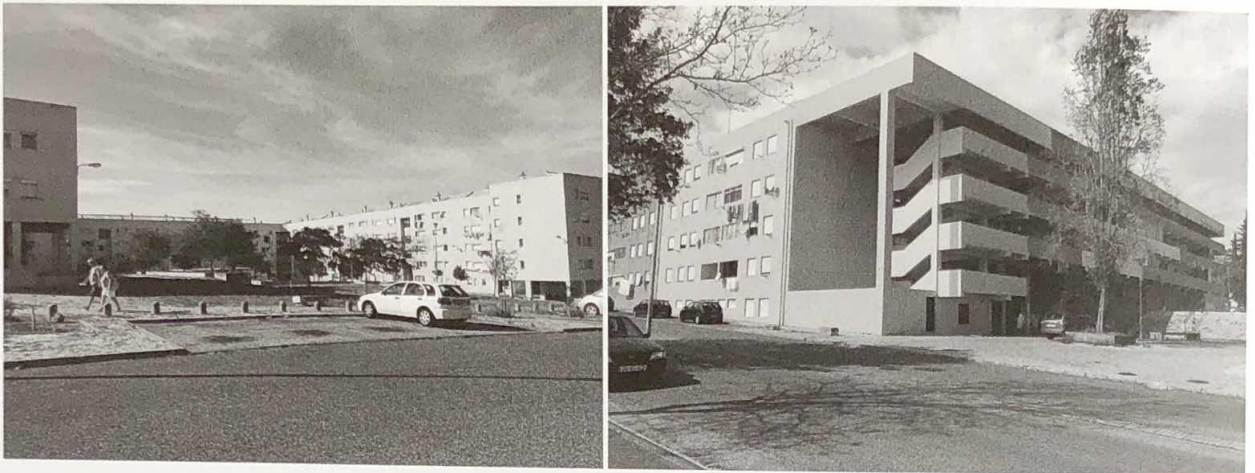


Fig. 31 e 32 Housing estate of Alto do Zambujal (Amadora, 1974–1977), Vitor Figueiredo, Duarte Cabral Melo–601 dwellings (multifamily housing buildings and terraced houses). GPS: 38.737508N 9.208744W (left); Bela Vista neighbourhood (Setúbal, 1974), José Charters Monteiro, José Sousa Martins–840 dwellings (distribution gallery buildings). GPS: 38.522116N 8.869128W (right). Photos by Gisela Lameira (2018).

## CONCLUSIONS

This general overview of the state-subsidized housing programmes implemented during the first three-quarters of the 20<sup>th</sup> century brought together a heterogeneous set of housing solutions, with varying degrees of architectural quality and impact in the planned expansion of Portuguese cities such as Porto and Lisbon.

### 1. THE “ORDINARY” CONSTRUCTION OF MODERNITY. MODERN SIGNS THROUGH ARCHITECTURAL AND URBAN DESIGN.

It is possible to suggest that this overview sheds light on the history of the genealogy of the modernity brought by the less known or valued production of multifamily housing. On the one hand, influences of the Modern Movement can be clearly pointed out through specific signs regarding urban concepts (rational layouts, freestanding slabs spread, solar exposure, etc.) and buildings’ architectural options (volume, materiality, building language, typology design, etc.). On the other hand, international references were also adapted and reinterpreted considering the local character of the sites, especially in some interventions carried out via the “Affordable Rent Houses” programme.

### 2. TYPIFICATION, DIVERSITY AND AUTHORIAL APPROACHES.

In this broad set of examples, authorship is revealed as an important fact regarding the overall architectural quality and the integration of the ensembles in the urban structure.

When municipalities were the direct developers, type projects were frequently adopted as in the case of the “Improvement Plan for the City of Porto,” resulting in homogeneous settlements. Nevertheless, these neighbourhoods also incorporated Modern Movement principles from a simplified point of view, more effective in the rational design of the apartment, rather than in the proposed parcelled plan, which in most solutions revealed a fragile connection with the pre-existent urban fabric. In this case, the building innovation can be found more clearly in the apartment design, throughout the experimentation regarding the “minimum dwelling,” i.e., the challenge of reducing the areas and the programme of the household. Type projects can also be found in the Fishermen’s Houses, where lower resources for the building were well-defined. The first methodology led by the “Affordable Rent Houses” programme was also focused on the reproduction around the country of the building types developed by Miguel Jacobetty Rosa for the *Alvalade* complex, in Lisbon (1945). However, the involvement of Nuno Teotónio in the process enacted a significant diversification of the proposals, less abstract and much closer to the inhabitants’ needs and the character of the sites. The intervention of well-known architects contributed to the overall quality of the neighbourhoods built via this housing programme, between 1945 and 1977.

### 3. TYPES AND MODELS. INNOVATION IN ACCESS SYSTEMS AND RATIONALIZATION IN APARTMENT DESIGN.

Regarding the implementation of multifamily type of buildings, several solutions were put forward, from low-density models with only two floors and direct access to each apartment or a vertical access serving a few dwellings, to large buildings with distribution galleries and/or vertical access cores. Among the cases studied, the most current solution regarding access to the apartments is the design of stairways that reach a small number of dwellings on each level. The exploration of the potential and effectiveness of the distribution galleries in the building’s design can be found across several housing programmes, from low-end solutions built via the “Houses for Poor Families” programme (1945), to more sophisticated and qualified solutions developed in the “Houses with Controlled Rent” programme (1947) or the “Plan for Constructing New Housing” programme (1959), both developed in the area of Lisbon. Among lesser-known housing buildings from the 1950s, the design of the galleries and stair core of the *Soda Póvoa* neighbourhood (Vila Franca de Xira, 1953), designed by Nuno Teotónio Pereira, stands out as a remarkable example of the experimentation around the access systems.

During the period under analysis, the design of efficient dwellings is a cross-cutting priority across all the housing programmes. The typological experimentation clearly focuses on the design for the minimum dwelling, producing solutions with regular configuration and compact areas, which continuously explore the possibility of reducing the living areas.

#### 4. THE EXPANSION OF THE CITY THROUGH RESIDENTIAL AREAS. THE DEVELOPMENT OF NEW URBAN MODELS.

Among the neighbourhoods analysed it should be underlined that after a first phase where the Charter of Athens principles were tested, namely in the rational layouts developed in *Ramalde* residential unit (Porto, 1950–1954), the *Cabo-Mor* neighbourhood (Vila Nova de Gaia, 1957), or the *Caixas da Previdência* neighbourhood (Paredes, 1957), other approaches were tested, experimenting with more organicist tendencies in the disposition of the buildings. This line of approach can be seen in the *Torres Vermelhas da Pasteleira* neighbourhood (Porto, 1966–1972), a medium-scale settlement, or later in large urban operations such as the urbanization plans of *Olivais Sul* (Lisbon, 1959–1968) and *Olivais Norte* (Lisbon, 1955–1960). A shift in the proposals for urban models can be seen in the mid-1970s, in the housing estate of *Alto do Zambujal* (Amadora, 1974–1977), where the design of the plan seems to point to the return of the quarter as the “traditional composition unit,” redefining the morphological relationship between the outdoor spaces and the built areas.

The multifamily residential complexes built under the state-subsidized housing programmes acted as important morphological and typological laboratories during the period 1945–1974, supporting the renovation of the residential architectural codes and building standards current in Portugal over that period. This panoramic overview was only possible through the extensive inventory and information gathered by the database developed by the research project “Mapping Public Housing.”

#### ACKNOWLEDGMENTS

This paper was written as part of the CEAU/Mapping Public Housing project, which is co-financed by the European Regional Development Fund (ERDF) through COMPETE 2020–Operational Programme Competitiveness and Internationalization (POCI) and national funds from FCT under the PTDC/CPC-HAT/1688/2014 project and the POCI-01-0145-FEDER-007744 project.



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- Further bibliographical references about each housing programme and the mentioned neighbourhoods can be found at the MdH online database/Project List:
- [<https://mappingpublichousing.up.pt/en/>].

TITLE

Hidden in Plain Sight: Politics and Design in State-Subsidized Residential Architecture

EDITORS

Rui Jorge Garcia Ramos  
Virgílio Borges Pereira  
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COPY-EDITING AND PROOFREADING

David Tucker

PUBLISHER

Park Books

GRAPHIC DESIGN AND PAGINATION

Cristina Amil  
Sergio Dias Silva

COVER IMAGE

Affordable Houses Estate of Agualva-Cacém  
(Archs. Alberto Pessoa and João Abel Manta, Landscape Arch. Gonçalo Ribeiro Telles, Sintra, 1965–1976)  
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Park Books  
Niederdorfstrasse 54  
8001 Zurich  
Switzerland  
[www.park-books.com](http://www.park-books.com)

Park Books is being supported by the Federal Office of Culture with a general subsidy for the years 2021–2024. This book had the support of nation funds from FCT–Fundação para a Ciência e Tecnologia through the Centre for Studies in Architecture and Urbanism, Project Reference UIDB/00145/2020.

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The [MdH XXX] code refers to the record numbers in the Mapping Public Housing Database, available at <http://mappingpublichousing.up.pt/en/database/>

ISBN 978-3-03860-261-3

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