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“LUÍS DE CAMÕES”

BRIDGING GENERATIONS:

Critically Addressing the Housing Crisis in Portugal

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Abstract

In recent years, public policies have failed to boost the construction of affordable housing, leaving two age groups particularly vulnerable: the elderly population, increasingly isolated and in need of social and urban reintegration, and young adults, increasingly economically disadvantaged. The (shared) needs of these two age groups would benefit greatly from cohabitation. Initiatives that promote intergenerational living have proven promising, but efforts remain insufficient and unable to respond to the urgent need to increase the housing supply in large urban centers, such as Lisbon. Based on this premise, this thesis proposes encouraging multigenerational cohabitation through the development of a new architectural typology that responds to the needs of both generations. The hypothesis put forward involves a cohabitation model based on a more agile and sustainable development program, which can be easily replicated in other areas of Lisbon and other cities in the country.

Key words: *Cohabitation, Aging Population, Young Adults, Housing Crisis*

Resumo

Nos últimos anos, as políticas públicas não conseguiram impulsionar a construção de habitação a custos acessíveis, deixando dois grupos etários particularmente vulneráveis: a população idosa, cada vez mais isolada e a necessitar de reintegração social e urbana, e a geração mais jovem, economicamente desfavorecida. As necessidades (partilhadas) destes dois grupos etários beneficiariam enormemente com a coabitação. As iniciativas que promovem a convivência intergeracional têm-se revelado promissoras, mas continuam a ser insuficientes e incapazes de dar resposta à urgência da necessidade de aumentar a oferta habitacional nos grandes centros urbanos, como Lisboa. Partindo desta premissa, esta tese propõe o incentivo à coabitação multigeracional através do desenvolvimento de uma nova tipologia arquitectónica que responda às necessidades de ambas as gerações. A hipótese colocada passa por um modelo de coabitação assente num programa mais ágil e sustentável, que possa ser facilmente replicado noutras áreas de Lisboa e noutras cidades do país.

Palavras chave: *Coabitação, Envelhecimento da População, Jovens, Crise Habitacional*

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Introduction

The current housing supply in Portugal makes it extremely difficult for its population to acquire affordable housing. In particular, an increasingly forgotten aging population and young adults, whether students or workers, are struggling to afford rents in Lisbon as real estate

prices have skyrocketed in the past decade. Recent decades have seen the construction of larger housing formats, with 2 to 4+ bedrooms, which do not favor these age groups. Young adults between the ages of 18 and 35, and seniors aged 60 and above, will, in 20 years, represent over 60% of Portugal's population. As these two age groups constitute the majority of the population that requires affordable housing, they become our target audience to more quickly address the general housing shortage in Portugal.

Current efforts to address the significant shortage of affordable housing in Portugal are insufficient, particularly for the most aforementioned disadvantaged segments of the population. While the number of single person households has doubled in the past decades, and the average family size has halved, we can easily observe (Part 2) that the housing market and the state have always prioritized larger-than-necessary housing units to house more people in less units, than promoting a larger quantity and higher density of smaller units to house less people in more units. To address the housing issue at hand, we must better gauge the specific living needs of these two age groups most in need. By proposing a new cohabitational architectural typology, we can mitigate the housing crisis, reintegrate the aging population into the socio-urban environment, and provide young adults with opportunities for upward mobility. The reintegration of seniors will have the added benefit of preventing various types of health deteriorations, and by providing accessible housing to young adults, we can help to ensure their future ability to accumulate wealth more effectively.

By examining the historical evolution of these age groups, their current requirements, and the failure to respond to them, we will identify the most suitable conditions to expedite an architectural solution. This will require a new architectural typology that responds to today's demographic and economic needs, a social strategy that takes advantage of the shared needs of intergenerational living, an architectural program that makes appropriate urban use and disposition of said typologies, use construction methods that are more cost effective and easily replicable, with the support of a new, simple economic strategy that makes affordable housing not only truly affordable, but economically viable and easily replicable. Typologies should be smaller than what the market offers and the state develops, intergenerational living should be understood as cohabitation, the urban setting should be much denser than currently permissible, the assembly of this architecture should undertake the flexible benefits of modular prefabrication, and the supporting economic strategy should consider a partnership between the public and private sector through the abundance of undeveloped and abandoned public land, economic tax incentives, and the expertise and capital of the private sector – land that will be chosen considering factors such as proximity to essential services like public transport,

universities, pharmacies and healthcare facilities. This approach would ensure the sustainability of the affordability of housing, allowing even the flexibility to adapt to demographic changes over time – not considered since the beginning of the 20th century – thus effectively mitigating the housing crisis. Many of these strategies have already been used effectively but separately across Europe.

The benefit of grouping these young adults and senior citizens is not arbitrary, these not only have similar needs, but also complementary ones, making them suitable for cohabitation. For instance, a two-bedroom apartment can house a student and an elderly person. They both require smaller, denser and easier-to-maintain living spaces. Through shared spaces, young adults benefit from lower rents without depleting their life savings, while seniors benefit from the social company and the support of a younger generation, ensuring healthy societal reintegration. These developments should include extensive shared public spaces adjacent to the private housing units, providing the elderly with outdoor gardens while also incentivizing a generationally and demographically mixed social environment.

By observing and analyzing present key performance indicators of the Portuguese housing market and its population's demographics, we can quickly identify that the construction of housing has not responded to the population's needs — there exists a canyon between what the market and the state have misunderstood they need to supply, and what the population has demographically demonstrated to require. In order to fully understand how these observations came to fruition, we require a much deeper dive into the historical data and cultural context that has evolved into the conditions of today's crisis. First and foremost, in order to propose a new architectural typology, it is essential to study the history of Portuguese demographics, the history of affordable housing and the socio-political entanglement of the two. The understanding we will extract from analyzing this century old story in detail, will illuminate the origins of today's lack of housing and financially disadvantaged young adults and senior citizens (currently 50% of the population), in order to effectively address their current housing needs.

Origins: Lack of Response to Demographic Evolutions

Throughout the 20th century, the population of urban centers in Portugal grew rapidly. Metropolitan areas such as Lisbon, Porto, and many smaller ones nearly tripled in size during

this period.¹ An increasing demand for housing in urban centers necessary to accommodate the rapidly depopulating rural areas brought awareness to the emergence of a looming housing crisis at the time. This led to the development of strategies to address the housing needs of low-income families. Importantly, this period marked the transition from an unregulated, primarily private market to the first state-led — albeit relatively timid — housing interventions. These initiatives eventually evolved into large-scale state housing programmes with legislative backing.

Despite these efforts, the post-dictatorship decades of housing programmes continued to cater to outdated notions of the Estado Novo's regimented 20th century population demographics, favoring larger nuclear families and real estate to house them. As we approach the end of the first quarter of the 21st century, we face another housing crisis. The conditions in the urban centers reveal an inadequate housing capacity for a more individualistic society comprising a lonesome aging population and, and financially precarious young adults. The state has failed to meet their needs, resulting in a housing market that is neither affordable nor accessible.

Since the 1970s, family sizes have halved, the number of single-person households has doubled, the supply of new housing has collapsed, average rents have nearly doubled the minimum salary, the population has aged drastically, and many public sector efforts have either fallen short or become bogged in bureaucracy. How can we respond swiftly to this maturing housing crisis, which particularly deprives younger generations of affordable housing and leaves an aging population isolated?

It is imperative to understand that no single cause can be attributed to the housing crisis at hand in Portugal. The perfect storm requires the perfect conditions to take shape, although a few chief elements to sustain its backbone. Despite there being enough housing in Portugal to house its population, a large quantity is inadequate, rural and degraded — cumulatively left behind by the exodus that has populated urban centers the past century, indicating the persistent need for new construction. The past decade (2011 to 2021) has seen the construction of eight times less housing than each of the previous three decades (1981 to 2011), individually.² The supply of housing in urban centers in Portugal has been violently choked. As the authors of

¹ ALBERGARIA, Henrique — A Dinâmica Populacional das Cidades do Continente Portugues. *Revista da Estatística*, 2º Quarter, Instituto Nacional de Estatística. Lisboa: Estampa, 1999.

² Pordata — Alojamentos Segundo OS Censos: Total e Por Forma de Ocupação. *Pordata*. [Em linha] Lisboa: Pordata, 2024. [Consult. 5 Mai. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/alojamentos+segundo+os+censos+total+e+por+forma+de+ocupacao-146>.

Trancas a Porta: Desfazendo mitos sobre a crise da habitação state, «It is not very difficult to imagine how different the housing problem would be if 700,000 more houses had been built during that period (or even just half of that). We would have more houses available, but, in addition, those that exist today would be cheaper, since the increase in supply would release pressure on prices.»³ The presence of a constantly supplying housing market wouldn't only ensure availability of housing, and potentially more financial accessibility to housing, but it should also have a tendency to respond to the typological requirements of a population and its demographic variations over time in order to do so effectively. The lack of sufficient social housing programs that are adequate, and excessive barriers imposed by the same state on the housing market drives a lot of potential housing supply into hibernation,⁴ resulting (along with other factors discussed later) in a low-volume housing market lacking accessibility for a Portuguese population that has been left completely uncatered for; of which the most affected are the financially disadvantaged younger as well as aging populations. NOVA Urban Planning and Human Geography Professor João Seixas describes that «As young people cannot find housing, they also do not form families, or do not leave their parents homes, or (those who can) emigrate abroad. Thus, we have the formation of a new type of modern *family* demographic that is of increasingly smaller dimensions, not only made up of young adults who are unable to afford living independently and therefore reproduce, but also of a drastically aging population (leftover from higher 20th century fertility rates) that is increasingly lonesome.»⁵

The elderly and young adult age groups (18 to 35, and 60+) combined make up 49.94% of the country's population.⁶ The size of families has decreased, and the number of single person families has doubled, presenting today's increasingly skewing population pyramid. In 20 years, this same age group combination could account for 60% of Portugal's population. Despite this, there is something serendipitous about the marriage of these two age groups, they require the similar housing typology that the housing market is lacking; smaller apartments that can be more densely packed, more accessible rents, and shared living spaces that preserve their individuality but incentivize a social environment. In order to more quickly address a lack of

³ PINTO, Carlos Guimarães, et al. — *Trancas À Porta: Desfazendo Mitos Sobre a Crise Da Habitação*. Lisboa: Alêtheia, 2023.

⁴ Hence the creation of Simplex.PETRONILHO, Ana — Simplex Do Licenciamento de Obras Entra Em Vigor a 4 de Março. *ECO*. [Em linha] Lisboa: Sapo, 2024. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:eco.sapo.pt/2024/01/08/simplex-do-licenciamento-de-obras-entra-em-vigor-a-4-de-marco/>.

⁵ See "Affordable Cohousing between a Young & Aging Population: Interview with João Seixas" in Annex.

⁶ Pordata — População Residente Em Idade Ativa: Total e Por Grupos Etários. *Pordata*. [Em linha] Lisboa: Pordata, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/populacao+residente+em+idade+ativa+total+e+por+grupos+etarios-3245>.

housing supply, we should more quickly address this majority of the country's population that can be grouped together. The health and longevity of the senior population — a forgotten segment of Portuguese society — would benefit from the cohabitation with young adults while more likely supporting rent requirements for young adults who in turn sport the social capacity and energy to care for the elderly. Thus, we must develop a cohabitational architectural typology that can house these two population segments. By addressing this majority population group that requires smaller housing units, and therefore a higher urban density, we can more swiftly tackle a lacking housing supply. Via a potential collaboration between the public and private sectors which have both failed individually, and through the promise of certain incentives (both fiscal and bureaucratic), it would be possible to sustain a new architectural multi-generational cohabitation typology that is able to house a greater density — addressing the housing crisis faster — while remaining affordable.

The coalescence of all these shortcomings and demographical evolution are no coincidence. In fact, much of this perfect storm was slowly, but artificially produced over time through the enforcement of cultural and urban policies that entrusted little consideration to the capacity of the housing market to help resolve a lack of housing supply; from the encouragement of larger families and therefore larger housing units throughout the long 20th century dictatorship, the “enforcement” of homeownership (rather than rental) through subsidized mortgages in the decades following the Carnation Revolution in 1974, the construction slump in the early 2000s following a sharp increase in debt and loss of confidence after joining the euro, the devastation of the 2008 crisis, stagnation of licensing and prioritization of urban rehabilitation via financial incentive programs in the 2010s, and finally the creation of short term rental programs that favored the more profitable transient residents via the tourism boom, altogether leading to the total collapse of new supply of affordable housing appropriately dimensioned that should cater to a now disadvantaged and oversized young adult and aging population in need. In order to generate new notions of affordable housing that could lead to the healthier and faster cohabitation of disadvantaged young adults and lonely senior citizens, we must first understand this history in detail, so that through the analysis of the successes and failures of the events that led us to today's setting we may develop this new typological makeup that responds to today's demographic needs.

Part 1. A Brief History of Affordable Housing: Setting the Stage for Today

Throughout the *República Portuguesa* (First Portuguese Republic), which preceded the *Ditadura Nacional*, the municipality of Lisbon demonstrated itself as relatively indifferent towards the development of affordable housing destined for its slowly growing population (the population boom only started a few years before the coup) — it built no state housing during the entirety of its government. The republican regime affirmed its “aim” to eradicate local slums and promote low cost social housing through new legislation (Decreto n.º4137, April 1918) published by the government of Sidónio Pais. This was achieved through private, cooperative or corporation sponsored construction supported by state owned bank (Caixa Geral de Depósitos) loans at fixed low (4%) rates and property tax exemptions for up to 20 years. Most of all the construction activity was led by private developers, which over time sustained the illusion that the housing market was healthy, permitting the Lisbon Municipality to concern itself with other matters. Eventually however, a lack of financial incentives fostered disinterest in building of rent-controlled houses on behalf of private promoters led the Ministry of Labor to finance the of 733 houses in Lisbon (Bairro do Arco do Cego and Bairro da Ajuda breaking grounds in 1919 and 1920 respectively) which had to be halted in 1922 due to financial stress, only to be resumed in 1927 and completed in 1931 during the beginning of the *Ditadura Nacional*, after the collapse of the republican regime.⁷

The *Ditadura Nacional* subsequently put in place a framework of policies that stimulated economic housing for its population via the promotion by private entities.⁸ Due to the overwhelming financial structure proposed by the state to private developers, efforts during this period were dwarfed even by their republican precedent. In seven short years (1926-1933) during which the population of Portugal and Lisbon increased dramatically, according to certificates from the municipal *Comissão de Casas Econômicas* (Economic Housing Commission) at the time, the *Ditadura Nacional* left two developments (A & B) unfinished, and concluded through these private entities a mere thirteen developments (1-13) of affordable housing of rural classification throughout Lisbon’s periphery where the acquisition of land resulted as less costly. The erection of these “private” developments were often dispersed individual buildings rarely aggregated to constitute any sort of formal or planned

⁷ TEIXEIRA, Manuel C.o — As Estratégias de habitação em Portugal, 1880-1940. *Análise Social*. Lisboa: Instituto Ciências Sociais da Universidade de Lisboa, vol. 27, no. 115, 1992. pp. 65–89. [Disponível em: <http://www.jstor.org/stable/41010899>]. pp. 76-78.

⁸ GALLAGHER, Tom — *Portugal: A Twentieth-Century Interpretation*. Manchester: Manchester University Press, 1983. pp. 153-163.

neighborhoods as these were developed in accordance with the limited resources available to the appointed private developers.⁹ The *Ditadura Nacional*, like the República Portuguesa — although it presented more far-reaching efforts — left much to be desired [Fig. 1]. Despite the short-lived and rather unsubstantial endeavor, their efforts set an interesting precedent for the private financing of social housing that are very pertinent to the foundation of this thesis, and thus we assume as object of study the politics of information around the construction of social housing, which became more formal and sustainable during the *Estado Novo*, but inconsistent and poorly managed after the Carnation Revolution in 1974. As is evident, the possibility of a public-private social housing endeavor is not new, and although it is a reality that the present government has great difficulty embracing, it can be reconsidered more carefully so that it is mutually beneficial and financially incentivizing.

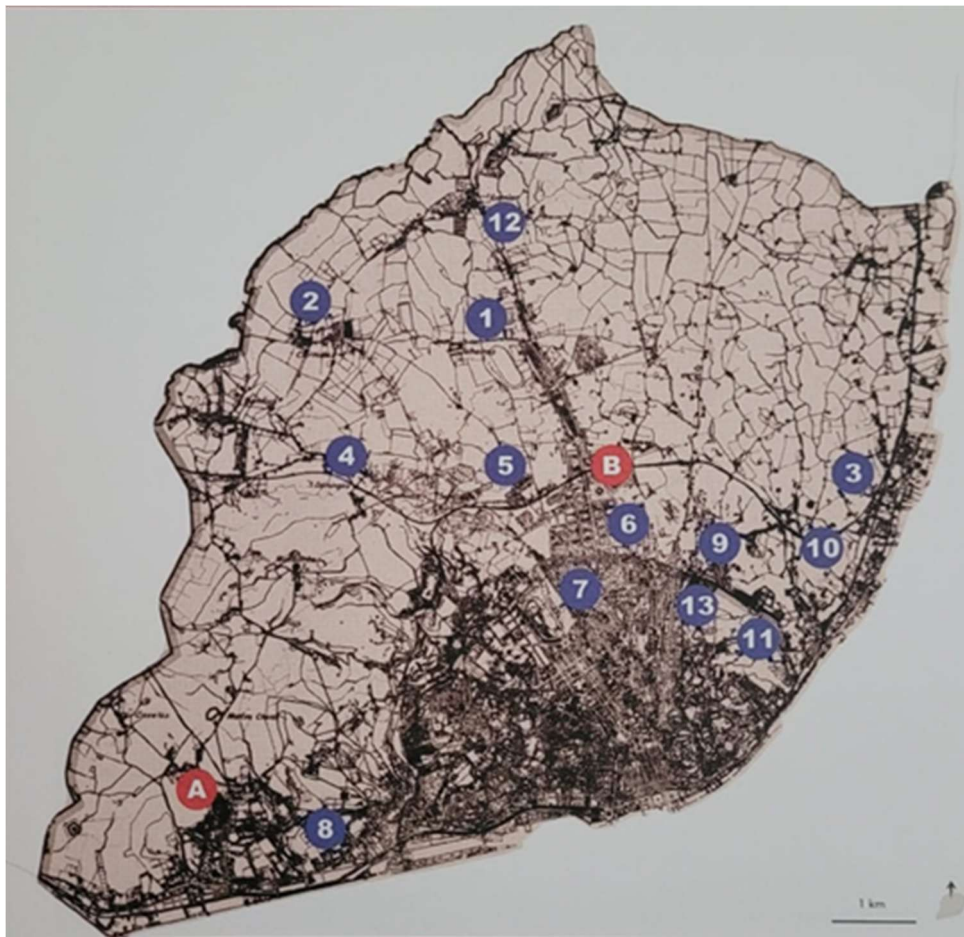


Figure 1: Social housing projects promoted during the *Ditadura Nacional*. Graphic from Gonalo Antunes.

⁹ ANTUNES, Gonalo — *Políticas de Habitação em Lisboa: Da Monarquia à Democracia*. Lisboa: Estampa, 2023. p. 70.

“God, Fatherland & Family”: The Encouragement of Larger Family Nuclei

The precarious state of housing in Portugal brought forward from the 1920s required not only urgent intervention by the state, but also a culturally unifying dogma through which a highly stratified and expanding Portuguese population could be consolidated and persuaded. Penned in 1933, the Portuguese Constitution foresaw the consolidation of housing policies under a framework of private architecture founded on Raul Lino’s proposed highly regional (but nationalistic) *Casa Portuguesa* (“Portuguese House”). The Portuguese House manifested through *Estado Novo*’s discourse of the family unit, a central theme through which the state cemented its ideology, clearly illustrated in the national propaganda posters describing the new “Trilogy of National Education” which transmitted the dominant values of Salazarism: “God, Fatherland and” — most importantly — “Family”. The *Estado Novo*’s economic housing program materialized through the family unit as the foundation of Portuguese society, identity and tradition, through which the state exercised its authority and dominance only to be met by generational obedience, and instrumentalizing this through architectural social programs which foresaw the territorial segregation of working classes — although the official affordable housing discourse of the regime aimed to help the working classes, it ultimately aided the growth of the middle class. At a time of great economic and social transformation, official ideological discourse discouraged urbanism and industrialization, forcibly channeling the intentions of housing policies through traditionalist, Catholic and ruralist values in line with the organization of family units which at the time migrated from rural to urban centers in great numbers. As stated in the constitutional article n11, in the Government’s Diary of the 22nd February 1933 (I.^a série, n.º43):

The State ensures the constitution and defense of the family, as a source of conservation and development of the Portuguese people, as the primary basis of education, discipline and social harmony and as a foundation of the political and administrative order through its aggregation in the parish and municipality.

It is important to note that family units at the time were significantly larger than present — the *Estado Novo* was very susceptible and observant of its population and cultural context, its ideology and subsequent housing policies purposefully accommodated contemporary demographics. By the 1960, well into the rule of *Estado Novo* (1933-1974), a family was

composed of 3.7 people (50% larger than nowadays) [Fig. 2],¹⁰ and 90% — and growing, at the time — of child births in Portugal were within married households [Fig. 3].¹¹ It is difficult to determine whether *Estado Novo* statistically studied their population in depth, but it had a deep understanding of its population's needs which it itself encouraged, and effectively predicted the same population's demographic development. It is only after the Carnation Revolution in 1974 which disbanded the *Estado Novo* that demographics concerning the family unit began to decline, meaning that not only did the *Estado Novo* nurture a cultural context that already existed, it helped it flourish, and then accommodate it, by developing affordable housing programs favoring growing family clusters, ranging exclusively from single family homes to multi-family, multi-story developments.

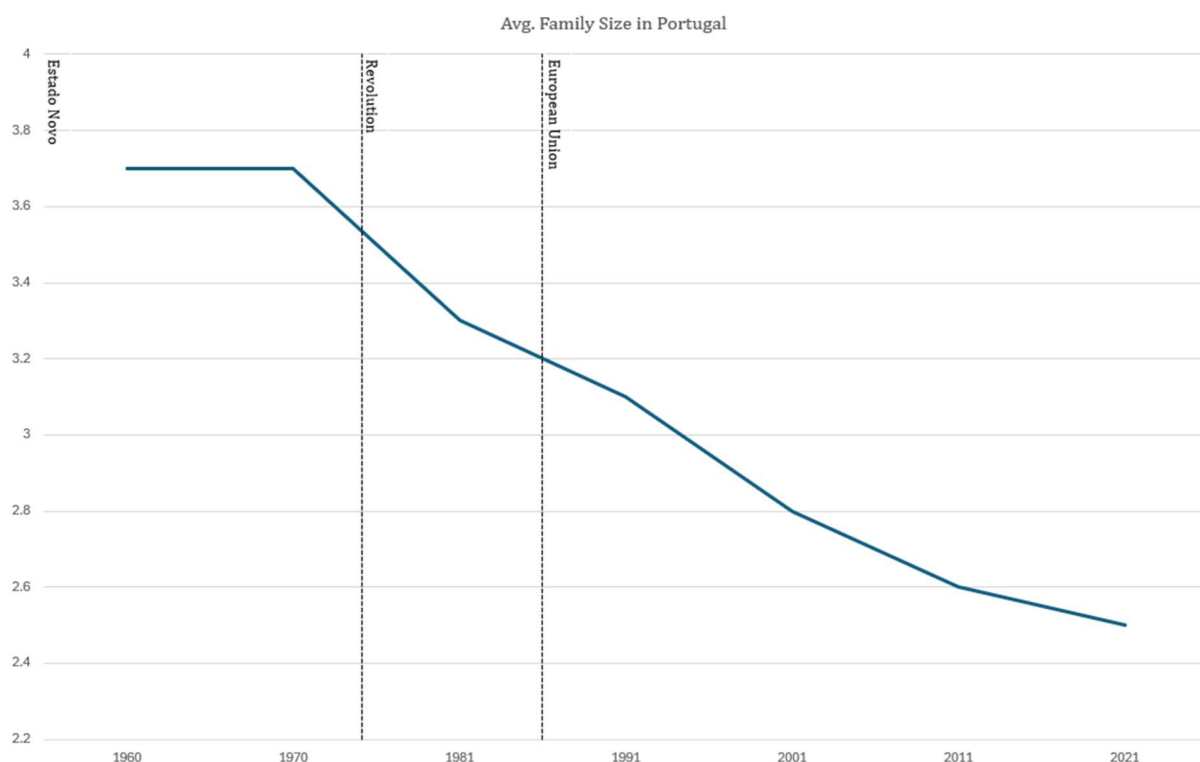


Figure 2: Average family size in Portugal, from 1960 to 2021. Graph by author, data from Pordata.

¹⁰ Pordata — Dimensão Média Das Famílias Segundo OS Censos. *Pordata*. [Em linha] Lisboa: Pordata, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/dimensao+media+das+familias+segundo+os+censos-908>.

¹¹ Instituto Nacional de Estatística — *Revista de Estudos Demográficos* n°33, Ano de edição 2003, Lisboa, 2004. pp. 7.

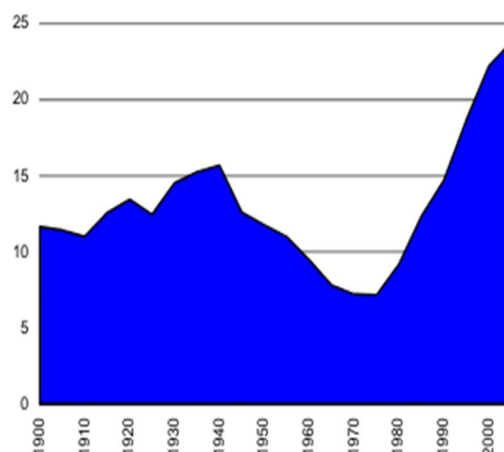


Figure 3: Percentage of children born outside marriage from 1900-2001. Graph and data from the Instituto Nacional de Estatística.

At its inception in 1933, the government had already launched a social housing program (Decreto-Lei n.º 23 052, September 1933) which financed public workers' homes, under a scheme that would sell it back to them at a fixed rate over a period of 25 years, aiming to attain the regime's goal: every Portuguese family owning their own home. The so-called "Portuguese House" model which based itself on the traditional quotidian values of the Portuguese population was an attempt by the *Estado Novo* to transplant the rural life into the city to accommodate the sudden influx of rural population into urban centers like Lisbon. In 1920, the population of Portugal was 6,080,136 of which about 19.9% (1,213,216) lived in urban areas. By 1940, seven years into the *Estado Novo*, it had increased significantly to 7,755,423 of which a higher 22% (1,711,364) lived in urban areas.¹² Lisbon alone saw a growth of 209,800 inhabitants between 1920 and 1940, while between 1911 and 1920 under the *República Portuguesa* its population had grown by only 52,900 inhabitants [Fig. 4].¹³ During the same time period (1920-1940), the number of housing units in Lisbon grew from 101,630 to 156,371 (more than 50% growth of which at least 6% was social housing!),¹⁴ while the number of units per person in the city decreased from 4.76 to 4.44,¹⁵ it came closer and closer to the number of

¹² MARQUES DA SILVA, F. — O Povoamento da Metrópole através dos Censos. anexo III; Instituto Nacional de Estatística, *A Cidade do Posto: Símula Estatística (1864-1968)*. Lisboa: Instituto Nacional de Estatística, 1971. pp. 14-15.

¹³ TEIXEIRA, Manuel C.o — As Estratégias de habitação em Portugal, 1880-1940. *Análise Social*. Lisboa: Instituto Ciências Sociais da Universidade de Lisboa, vol. 27, no. 115, 1992. pp. 65-89. [Disponível em: <http://www.jstor.org/stable/41010899>]. p. 79.

¹⁴ *Ibid.*, p. 81.

¹⁵ MOREIRA, Manuel Vicente — *Problemas Da Habitação (Ensaio Social)*. Lisboa: Estampa, 1950. p. 336.

people per family nationally, slowly achieving Salazar's vision of the "Portuguese House," and every family owning their home.

Year	Population	Housing Units	People / Housing Unit
1864	163,763	42,180	3.88
1878	187,404	45,749	4.09
1890	291,206	67,623	4.30
1900	356,009	77,805	4.57
1911	431,738	92,986	4.64
1920	484,664	101,630	4.76
1930	591,939	-	-
1940	694,389	156,371	4.44

Figure 4: Population of Lisbon (center), number of housing units, and people per housing units. Table by author, data from *Instituto Nacional de Estatística*.

Observing these trends since prior to the formation of the *Estado Novo*, and taking into consideration the unfavorable conditions for private financing of affordable housing, the state undertook a very hands-on approach — it controlled the entire development process of affordable housing, from the acquisition of plots, to financing (through the *Instituto Nacional do Trabalho e Previdência* (INTP, National Institute of Labor and Social Security, of the Ministry of Corporations), construction, the distribution of its units and management of the developments.¹⁶ The dictatorial regime's *Programa de Casas Economicas* became responsible for a total of 115 urban developments totaling 14,420 homes between 1933 and 1971 — an average rate of 380 units per year for 38 years¹⁷ — the longest running social housing program in Portuguese history, and the second most productive social housing program until present (the most productive program in modern Portuguese history began in 1987 and is still running). Considering the construction technology available at the time, this was an impressive political

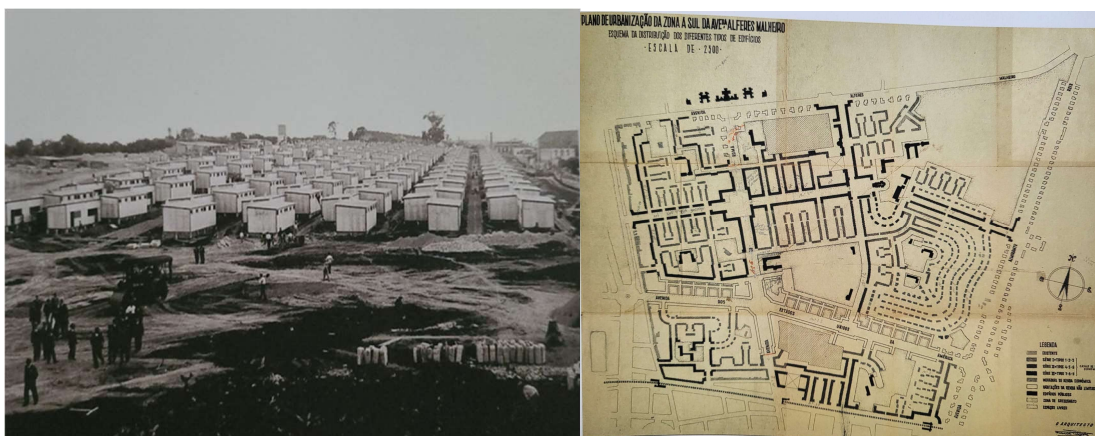
¹⁶ TEIXEIRA, Manuel C.o — As Estratégias de habitação em Portugal, 1880-1940. *Análise Social*. Lisboa: Instituto Ciências Sociais da Universidade de Lisboa, vol. 27, no. 115, 1992. pp. 65–89. [Disponível em: <http://www.jstor.org/stable/41010899>]. pp. 80-81.

¹⁷ LAMEIRA, Gisela — Habitação subsidiada pelo Estado em Portugal. Uma panorâmica tipo-morfológica no âmbito do Plurifamiliar (1910-1974). *Contexto Programa Projeto: Arquitetura e Políticas Públicas de Habitação*. Porto: Faculdade de Arquitetura da Universidade do Porto, 2014. p. 172.

feat, and additionally, the sheer amount of units built over four decades allowed for a decent amount of typological experimentation.

In 1936, running in parallel to the *Programa de Casas Economicas (PCE)*, the *Companhia Central de Urbanização (CCU* — Central Urbanization Company) was created to promote affordable housing in conjunction with the legislation set forth in 1928 during the *Ditadura Nacional*. Although it was less productive than the *PCE*, with significant resources, the *CCU* promoted affordable and social housing developments in Lisbon that exemplified the *Estado Novo*'s aptitude and deep understanding of the population they were serving, appropriately catering to their demographic requirements. The aggregation and urbanization of plots in Alto da Ajuda (1937) for example, epitomized the urban typologies aiming to house the population at the time. Although it remains unbuilt due to the municipality's reappropriation of the plots, the typical proposal stipulated 117 single family homes, and 102 multi-family buildings composed of three-to-four floors, including the construction of a dedicated kindergarten¹⁸ — a welcome urban representation of the dominant social values proposed by Salazar.

Although much of the affordable housing built by the *Estado Novo* was developed under rationalist theories subject to “minimum dwelling” strategies, this eventually led to the development of several demountable neighborhoods composed of hundreds of prefabricated homes as early as the late 1930s to house the growing population of Lisbon quickly. To the satisfaction of Salazar and his commission, the dimension and success rate of the developments demonstrated a capable and growing state.

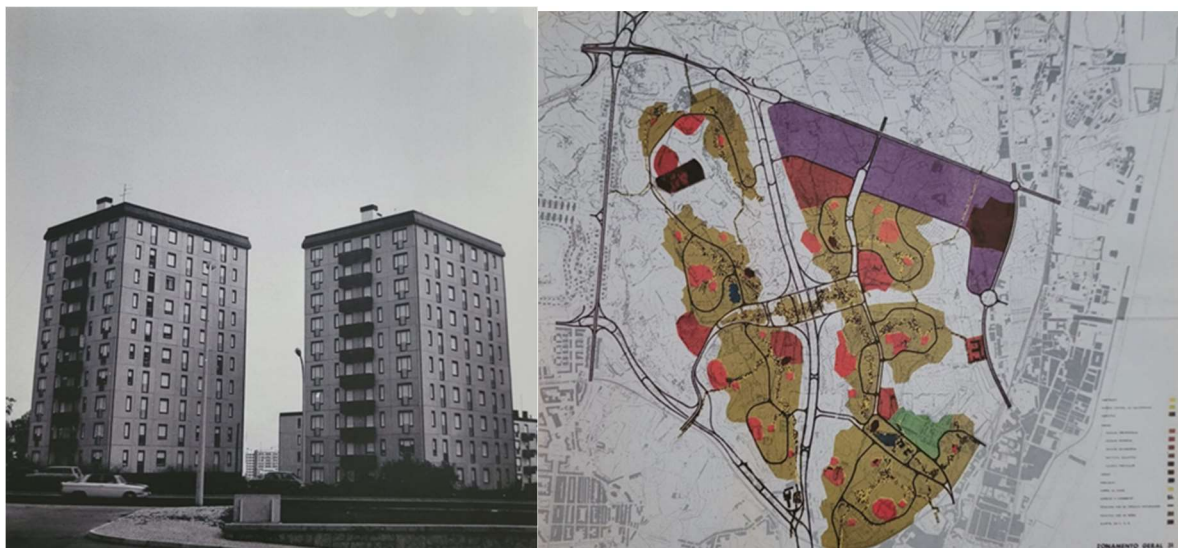


¹⁸ ANTUNES, Gonalo — *Políticas de Habitação em Lisboa: Da Monarquia à Democracia*. Lisboa: Estampa, 2023. p. 68.

Figure 5: The *Bairro da Quinta da Calçada* (1950) prefabricated single family homes neighborhood, built between 1938 and 1939. Approximately 500 housing units.

Figure 6: *Plano de Urbanização da Zona Sul da Avenida Alferes Malheiro*, 1945. Affordable rent development spanning 230 hectares, or 12,000 units housing approximately 45,000 people. Built between 1947 and the end of 1950s.

The *Estado Novo* later enacted other social programs focusing on Low Rent Housing, exemplified below in the urban master plan of Alvalade (1947-1950s) which alone provided 12,000 lodgings with a capacity for 45,000 people. Programs of Minimal, Modest and Moderate Rents in the late 1960s revealed a progression towards higher urban density by becoming increasingly vertical and occupying less and less hectarage, such as Olivais Sul proposing 8,500 units for 34,000 inhabitants in 1968,¹⁹ or the master planning of Chelas, which over 501 hectares would house 64,000 inhabitants in 16,000 units.²⁰ In both these developments, each unit aimed to house 4 residents, representing the approximate value of the family nucleus at the time attaining the regional balance previously discussed between people-per-housing and people-per-family — a scenario that is very distant from today's reality. Towards the end of the *Estado Novo*, it became evident that the state not only financed, but incentivized new construction, that was not only dense, but also expressed increasingly vertically — unpopular themes in today's government. This set the stage for accommodating decades of housing policies for generations and urban growth to come that would grow to modern-day Portuguese society.



¹⁹ ANTUNES, Gonalo — *Políticas de Habitao em Lisboa: Da Monarquia à Democracia*. Lisboa: Estampa, 2023. pp. 181-195.

²⁰ Gabinete Tcnico de Habitao — *Planta de Zoneamento de Chelas, Plano de urbanizao de Chelas*. 1965. pp. 138-139.

Figure 7: Quinta do Morgado, Olivais. More than 1,420 units built. Vasco Gouveia de Figueiredo, 1968. Arquivo Municipal de Lisboa.

Figure 8: Zoning plan of Chelas, 1965. 501 hectares, and approximately 16,000 units for approximately 64,000 people.

Despite this, Lisbon still retained several highly degraded and slum-like areas, but as far as affordable housing goes during the dictatorship, the ideologies proposed by Salazar were very suitable to underlying Portuguese demographics it helped form. It was unifying, rapidly catering to the increasing demand in housing by a population that increased from 6.8 million²¹ to around 9 million²² between 1930 and 1974, and from 591,939 to approximately 800,000 during the same period just in Lisbon — a reading of modern demographics and statistics that post-1974 politics has been not only unable to replicate, but evidently unwilling to study, implementing policies and incentives that do not respond to a modern population's requirements [Fig. 9]. The population of Lisbon then violently declines after the end of the *Estado Novo* back to the 1920s and 1930s *Dictadura Nacional* levels as the country entered economic stagnation post-Carnation Revolution due to a series of events discussed later, which brings us to a fundamental question in 2023: if so much was built, and the population has declined so much from its previous peak, why is there a housing shortage and crisis?

²¹ MARQUES DA SILVA, F. — O Povoamento da Metrópole através dos Censos. anexo III; Instituto Nacional de Estatística, *A Cidade do Posto: Símula Estatística (1864-1968)*. Lisboa: Instituto Nacional de Estatística, 1971. pp. 14-15.

²² Pordata — População Residente Por Migrações Segundo OS Censos. *Pordata*. [Em linha] Lisboa: Pordata , 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/populacao+residente+por+migracoes+segundo+os+censos-3752>.

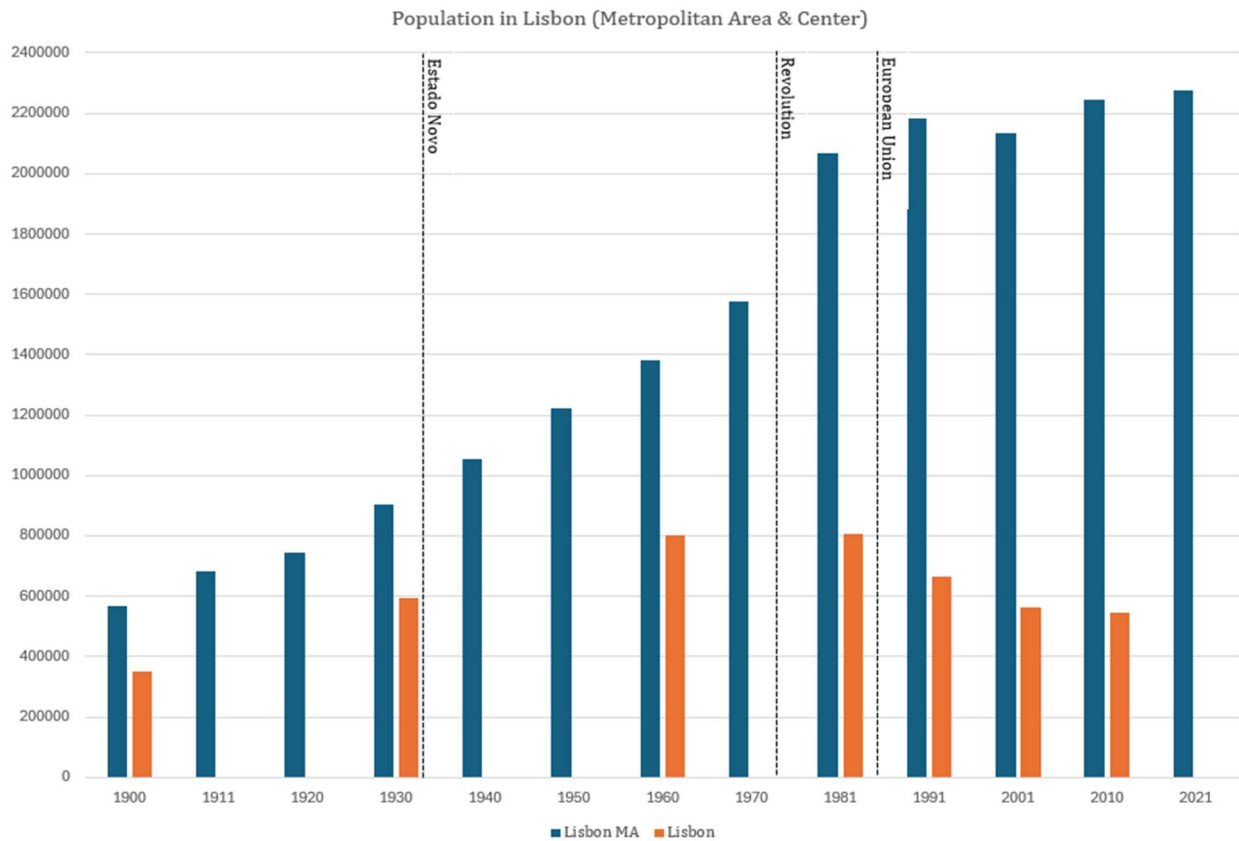


Figure 9: Population of Lisbon over time. Graphic by author with data from the *Instituto Nacional de Estatística*.

Despite never achieving the immense objective of rendering every Portuguese family a homeowner, throughout the regime of the *Estado Novo* the state employed several prolific strategies that were fruitfully housing — although not all of it — a growing population [Fig. 10]. As much as the programs produced vast amounts of housing, they couldn't produce them fast enough to house all the rural population exponentially rushing to urban centers. Interpretations of the *Estado Novo*'s exercise of its regime and ideological motivations may be divisive, but all-in-all it incentivized construction. It was responsive because it catered to the adherence to the ideological family values it imposed on its population. In terms of housing its population, *Estado Novo*'s ideology *fit* the population, and the population *fit* *Estado Novo*'s ideology. This is the greatest lesson we can learn from *Estado Novo*'s housing policies, it boasted a fitting marriage between cultural policy and housing policy, therefore, it studied the habitational needs of its population in accordance with the cultural structure and values that were shaped by the family unit, which at the time, the most descriptive demographic of the Portuguese population.

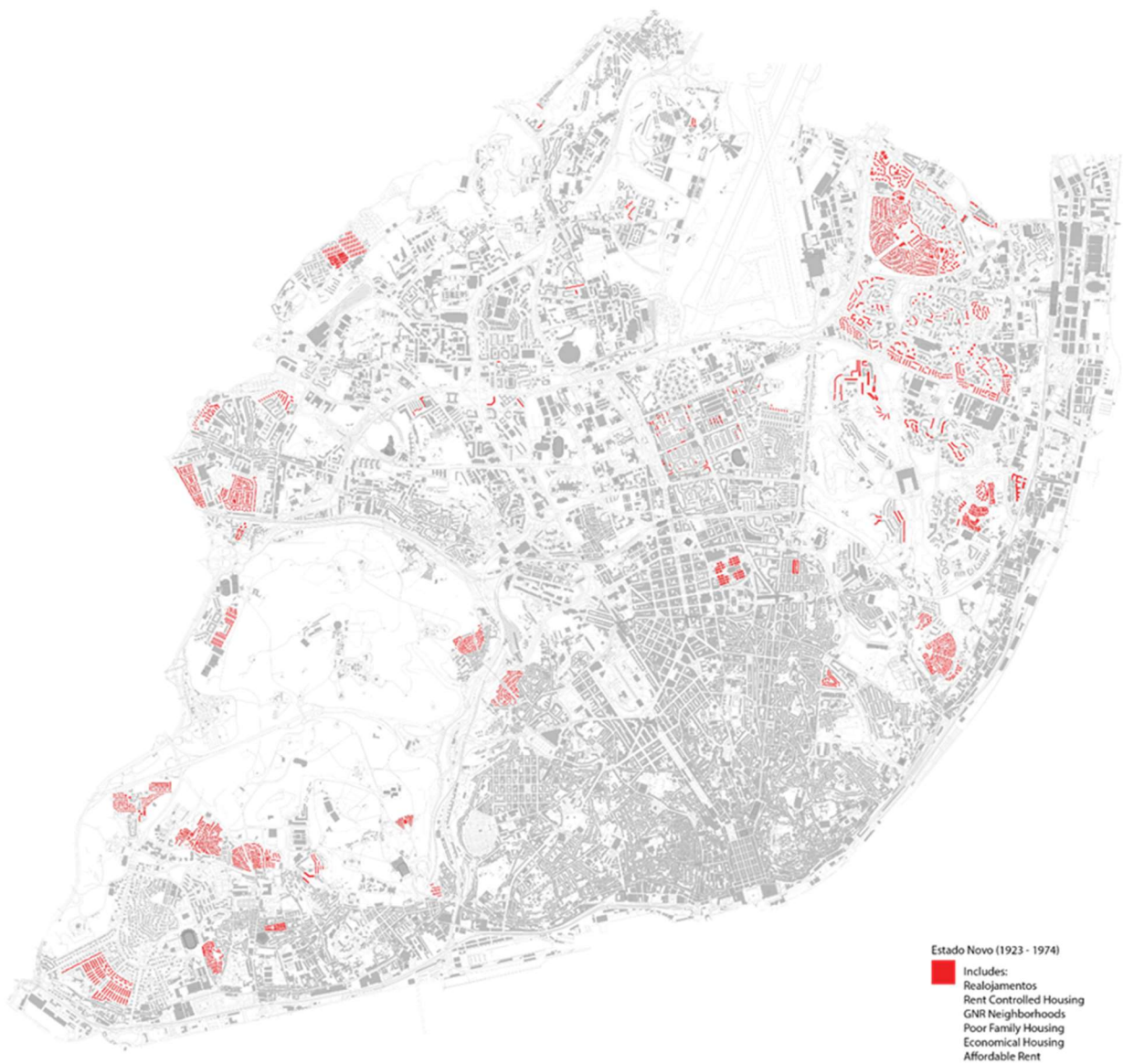


Figure 10: The housing programs completed during the length of the *Ditadura Nacional* (1923-1932) and *Estado Novo* (1933-1974). Partial replication of graphic by author, based on the work of Gonalo Antunes.

“The Right to Housing”: The Encouragement of Homeownership for All

A post revolution Portuguese government inherited a largely unfinished housing project of an urban population boom. By the end of the *Estado Novo*, despite its great efforts, 40% of the population that lived in precarious conditions lived within the districts of Lisbon (and Porto).²³ Under an ideologically reactionary socialist premise heavily persuaded by the communist sphere of influence present at the time, the *República Portuguesa* (3^a) established in 1974 continued the social housing of its population under a new banner; housing as a basic constitutional right for all, decreed on the 10th of April, 1976 via Article 65 (Part I, Title III, Chapter II) of the Portuguese Constitution (which would periodically be revised, expanded and/or adjusted).²⁴

1. Everyone has the right, for themselves and their family, to a home of adequate size, in hygienic and comfortable conditions, which preserves personal intimacy and the privacy of their family.
2. To ensure the right to housing, it is up to the State to:
 - a. Program and execute a housing policy included in general territorial planning plans and supported by urbanization plans that guarantee the existence of an adequate network of transport and social equipment;
 - b. Encourage and support initiatives by local communities and populations aimed at solving their housing problems and promoting self-construction and the creation of housing cooperatives;
 - c. Stimulate private construction, with subordination to the general interest;
3. The State shall adopt a policy aimed at establishing a rent system that is compatible with family income and home ownership.
4. The State and local authorities will exercise effective control over the real estate supply, carry out the necessary nationalization or municipalization of urban land and define its respective right of use.²⁵

The new constitution effectively segregated the state from management of the housing market, by declaring itself as sole contender to the making and promoting of social housing, while liberalizing and giving free reign (despite being heavily regulated with regards to

²³ Instituto Nacional de Estatística — *Anuário Estatístico de Portugal – 1973*. [Em linha] Lisboa: Instituto Nacional de Estatística, 1974. [Consult. 15 Feb. 2024] Disponível em WWW:<URL:https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=261855133&PUBLICACOESmodo=2>.

²⁴ In 1982, Article 65 (Part I, Title III, Chapter II) would undergo no changes. In 1997, number 2b would change to: “Promote, in collaboration with local authorities, the construction of economic and social housing;”, 2c would gain the additional words “and access to owned or rented housing;”, the addition of a new subnumber 2d, “Encourage and support initiatives by local communities and populations, aimed at solving their respective housing problems and promoting the creation of housing cooperatives and self-construction;”, as well as the addition of a new number 5, “The participation of interested parties in the preparation of urban planning instruments and any other physical planning instruments for the territory is guaranteed.”. In 2004, number 2b would change to “Promote, in collaboration with the autonomous regions and local authorities, the construction of economic and social housing;”. All versions accessible through *Diário da República*, the official government paper and National Printing House, where all the laws, decree-laws and decisions by the Constitutional Court, available online. Governo Constitucional — Constituição Da República Portuguesa – CRP – Artigo 65.o.” *Diário Da República*. [Em linha] Lisboa: Diário Da República, 2005. [Consult. 5 Mai. 2024] Disponível em WWW:<URL:diariodarepublica.pt/dr/legislacao-consolidada/decreto-aprovacao-constituicao/1976-34520775-50476675>.

²⁵ Procuradoria-Geral Distrital de Lisboa — Artigo 65.º (Habitação). *Procuradoria-Geral Distrital de Lisboa*. [Em linha] Lisboa: Procuradoria-Geral Distrital de Lisboa, 1976. [Consult. 5 Mai. 2024] Disponível em WWW:<URL:https://www.pgdlisboa.pt/leis/lei_busca_art_velho.php?nid=4&artigonum=4A0065&n_versao=1&so_miolo=S>.

licensing) to the housing market, hoping it would resolve the general supply and affordability of housing across the board by itself. As João Seixas states, «The responsibility towards the constitutional right to housing [...] was almost always deferred to a philosophy of market response — it was seldom defended as public policy.» It «was never formally prioritized or bureaucratically formalized, and therefore always remained a concern of secondary consideration.»²⁶ What did the state then do following the beginning of democracy in Portugal? With the beginning of democracy came several new ambitions. Now that the population had been groomed into larger family units, it was time to finally give them their “Portuguese Home” through the uncontested constitutional right to housing. This new, refreshing and very well received general cultural housing “policy” manifested itself throughout all financial instruments of homemaking; the state, financial institutions as well as the real estate market. As the state let the market resolve its housing needs of supply & demand for those who could afford financing from private institutions, it concerned itself with population segments that couldn’t. Notwithstanding, those who could, also benefited from subsidies that further encouraged homeownership — ever so moving away from the constitution of a rental market which slowly began to consist mostly of frozen rents that survived the revolution (nationalized in 1974, and that continue to this day). Through public financing and generous subsidies, the state would father the housing of the less fortunate via ambitious social housing programs, but unlike other public domains of investment by the state (education, health, transport), housing would not muster much political muscle.

²⁶ See "Affordable Cohousing between a Young & Aging Population: Interview with João Seixas" in Annex.

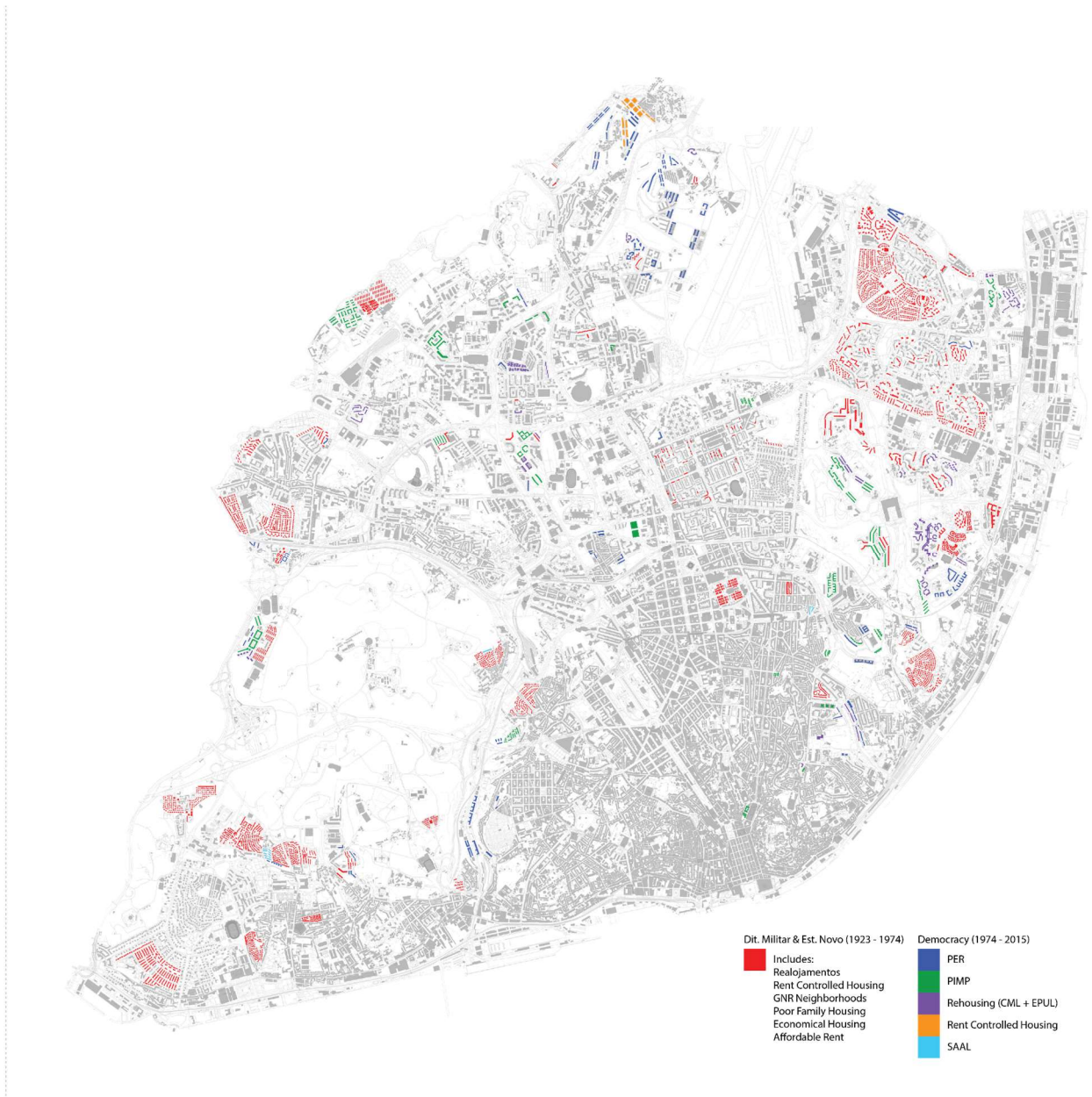


Figure 11: The housing programs completed after the *Ditadura Nacional* and *Estado Novo* (included for comparison), from 1974 to 2015. Replication of graphic by author, based on the work of Gonalo Antunes.

Since 1974, the Portuguese state has boasted the inauguration — and seizure — of many social housing programs [Fig. 11]. In 1974, the most ideologically charismatic of them all — come the end of a nationalistic regime — the *Servio de Apoio Ambulat3rio Local* (SAAL), a variety of housing relocation initiatives dubbed the *Realojamentos* (between 1974 and 1985), a plethora of cooperative housing programs generally referred to as *Cooperativas* eventually grouped under one umbrella in 1980, the *Federa3o Nacional de Cooperativas de Habita3o Econ3mica* (FENACHE — still in existence today), the *Plano de Interven3o a M3dio Prazo* (PIMP), the most ambitious of all, the *Programa Especial de Realojamento* (PER), which

started in 1993, and the *Empresa Pública de Urbanização de Lisboa (EPUL)* that fail-started in 1971 and was brought back in 1996. All of these built a significant amount of social housing units (albeit not being enough), of which however, many failed to deliver the total housing units promised when inaugurated.

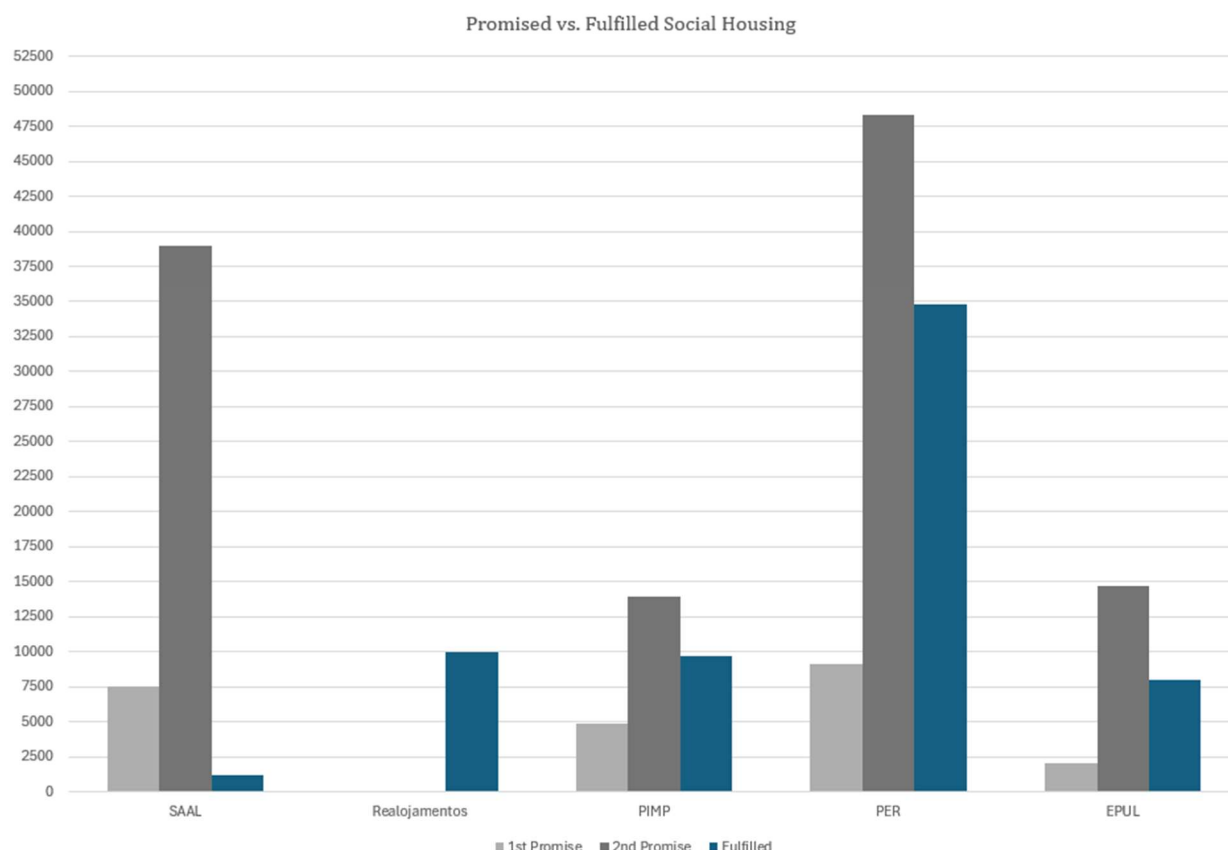


Figure 12: Initial housing program units planned, growth of the same promises and their fulfillment, per housing program (SAAL, Realojamentos, PIMP, PER & EPUL). Graph by author, data from different sources.

Of the 7,500 housing units promised by *SAAL*²⁷ (later bloated to around 40,000 homes - sources vary just above or just below),²⁸ only between 1,200²⁹ and 1,480³⁰ were built by the program's end, as it changed hands until the municipality redirected funds to *Realojamento*

²⁷ ANTUNES, Gonalo — *Políticas de Habitação em Lisboa: Da Monarquia à Democracia*. Lisboa: Estampa, 2023. p. 254.

²⁸ ALVES, José Baptista — *Processo SAAL*. Lisboa: AbrilAbril, 2017. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:https://www.abrilabril.pt/processo-saal>; and, SAAL, Conselho Nacional — *Livro branco do SAAL 1974-1976*. Lisboa: Conselho Nacional do SAAL, 1976.

²⁹ ANTUNES, Gonalo, op. cit., p. 254.

³⁰ PIRES, Catarina — Operações SAAL: pode a habitação em Lisboa aprender com este sonho de Abril? *aMensagem*. [Em linha] Lisboa: aMensagem, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:https://amensagem.pt/2023/04/25/operacoes-saal-habitacao-lisboa-sonho-de-abril/>.

programs which between 1974 and 1985 promoted the construction of 10,000 homes.³¹ As a relocation program in order to tear down 20,000 shacks in the existing slums in Lisbon, *PIMP* projected 4,880 homes but exceeded its promise, eventually completing 9,698 homes.³² *PER* delivered over 34,759 homes after increasing its promise to about 48,000 homes from an initial promise of just over 9,000. During its first decade, it completed 9,135 homes within the Lisbon Municipality.³³ Finally, *EPUL*, which promised around 2,000 units and delivered around 8,000 homes over the course of two decades had grown to promise nearly 15,000 homes [Fig. 12]. Over the same stretch of period during these programs, housing units erected under the 250 cooperative housing efforts amount to 160,000 units.³⁴



Figure 13: A typical housing unit typology from SAAL (in this case the development known as *Bairro SAAL da Praia de Angeiras*, boasting homes with old ideals for larger families when families were already much smaller, projected in 1976 and built in 1985. Plans recreated by author.

³¹ ANTUNES, Gonalo — *Políticas de Habitação em Lisboa: Da Monarquia à Democracia*. Lisboa: Estampa, 2023. p. 297.

³² GOUVEIA, Mario — Plano Especial de Realojamento (PER). *Arquivo Municipal*. [Em linha] Lisboa: Câmara Municipal de Lisboa, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:arquivomunicipal.lisboa.pt/atividades-e-difusao/documento-do-mes/detalhe/plano-especial-de-realojamento-per>.

³³ — 30 anos de per: O programa que acabou com mais de 10 mil barracas de lisboa. *Diário das Notícias*. [Em linha] Lisboa: Diário das Notícias, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:https://www.dn.pt/local/30-anos-de-per-o-programa-que-acabou-com-mais-de-10-mil-barracas-de-lisboa-16016778.html/>.

³⁴ SANTOS, Paulo M — Cooperativas de Habitação: Como Funcionam e Por Que Razão Caíram Em Desuso No Nosso País, Enquanto Prosperam Noutros Países Europeus. *Visão*. [Em linha] Lisboa: Visão, 2023. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:visao.pt/atualidade/economia/2023-09-03-cooperativas-de-habitacao-como-funcionam-e-por-que-razao-cairam-em-desuso-no-nosso-pais-enquanto-prosperam-noutros-paises-europeus/>.

If we combine the great social housing efforts here listed, the total units promoted by the state over the course of 50 years since the formation of the Portuguese welfare state amounts to just under 64,000 housing units — just over half of the housing units promoted and built by the housing market only in 2002 (125,708).³⁵ Despite the many social housing programs throughout the last decades of the 20th century, access to housing would grow almost exclusively through the market, with public authorities encouraging the acquisition or construction of one's own home via subsidized long term bank loans composed of low interest rates — a policy that will absorb more than 70% of total investment in the public sector housing, until its extinction in 2002. The predominance of homeownership, acquired through credit and mortgage debt, and most importantly, due to major deficiencies in the rental market, would considerably influence the residential mobility of the population.³⁶

The state's inability to provide social housing highlights something important; throughout the past five decades, we witness, as Ana Drago states, «the reconfiguration of the role of the state itself: reorganizing its role into a regulatory body of urban spaces, defining the rules for private construction initiatives and encouraging access to housing through the market itself,» encouraging a construction boom.³⁷ Most of the housing programs during this period embodied a state-led encouragement of home-ownership through a combination of dedicated public investment and subsidized mortgages (loans). This was a tendency that was also adopted by the housing market — the state encouraged homeownership to the rest of the population through private mortgages. Between the 80s and 2000s, Lisbon (along with Porto) would be the only region of Portugal showing positive demographic variations, through rapid suburban and peri-urban sprawls. In 1960, only 10% of Portugal's population owned a home. Over five decades of encouragement from both the public and private sector, by 2011 home ownership had risen to 50%.³⁸ In 1984, more than 74% of Portugal's population's wealth sat in housing. As the conditions for home owning became more precarious however, with a drastic change in the financial climate after the adoption of the Euro, the financial crisis of 2007 and the heavily gentrifying tourism boom of the 2010s [Fig. 14], this statistic declined consistently until

³⁵ Pordata — Fogos Concluídos Em Construções Novas Para Habitação Familiar: Total e Por Tipologia Do Fogo. *Pordata*. [Em linha] Lisboa: Pordata, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/fogos+concluidos+em+construcoes+novas+para+habitacao+familiar+total+e+por+tipologia+do+fogo-189>; and ANTUNES, Gonçalo — *Políticas de Habitação em Lisboa: Da Monarquia à Democracia*. Lisboa: Estampa, 2023. pp. 254-336.

³⁶ SEIXAS, João — *Lisboa Em Metamorfose*. Lisboa: Fundação Francisco Manuel Dos Santos, 2021. pp. 32-38.

³⁷ DRAGO, Ana — *Um País a Tornar-Se Urbano e Democrático: A Questão Urbana Na Primeira Década Da Democracia Portuguesa*. ISCTE – Instituto Universitário de Lisboa. Lisboa: Estampa, 2020. p. 16.

³⁸ SEIXAS, João, op. cit., p. 36.

reaching 51% in 2016 [Fig. 15]. Throughout the decades of these defining events, the proportion of state aid through public policy would not keep up with rising housing costs, while the housing market reigned “free,” and was not only unprepared for what was to come, but also, like the state, was not responding to the demographic housing requirements of its nation, eventually burdening the population with a supply problem (discussed later, see Part 2). And after so much encouragement towards home ownership rather than encouraging the growth of (also) a rental market, the large population of home ownerships was even less prepared.

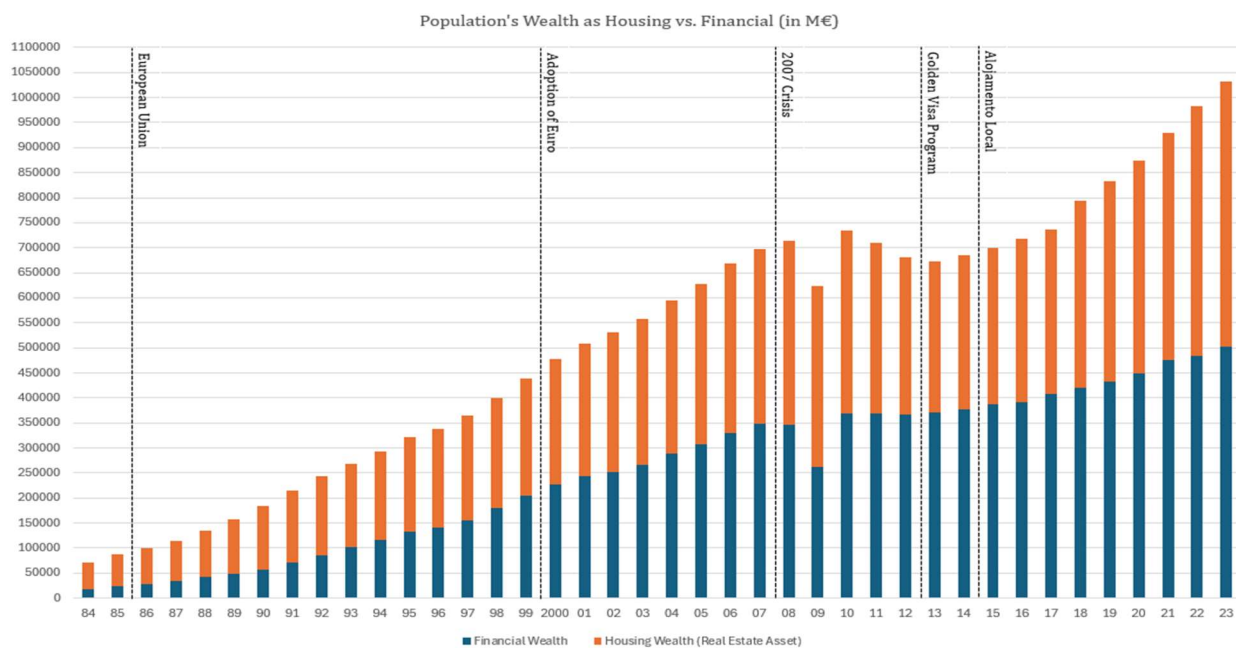


Figure 14: Portuguese Population’s Wealth expressed in terms of Housing as a real estate asset, versus Financial Wealth. Graph by author with data from Banco de Portugal.

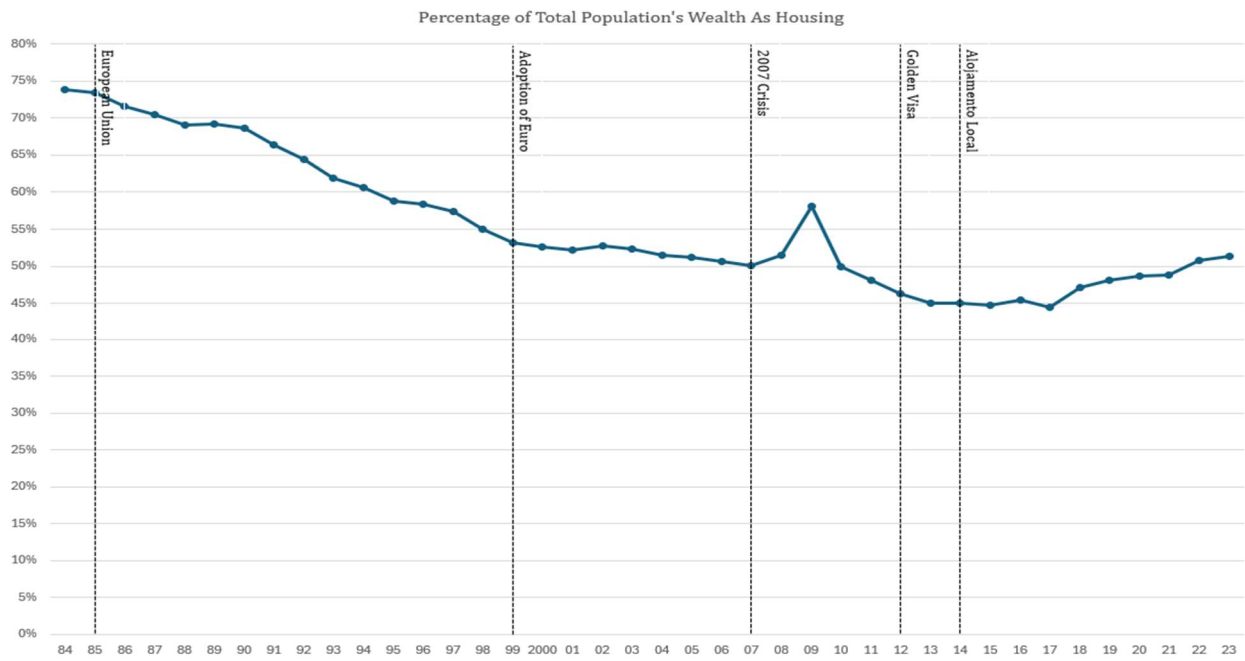


Figure 15: Housing as percentage of the Population's Total Wealth. Graph by author with data from Banco de Portugal.

The Discouragement of the Early 2000s & Boom of the 2010s

As the 2000s approached, inevitable adoption of the Euro (in 1999) corresponded to an economic recession due to a sharp increase in debt, and loss of confidence in financial institutions that would dramatically slow down the housing construction momentum in Portugal after peaking in 2002 — a tendency that would later cushion the impact of the 2007 crisis. The *unforeseeable* arrival of the 2007 crisis was an unwelcome surprise to a population that for almost seven decades was culturally incentivized to own a home. The population was heavily rooted in mortgage credits. 80% of household debt was linked to housing loans. Concomitantly, new construction fell sharply year-by-year until 2015 [Fig. 16].

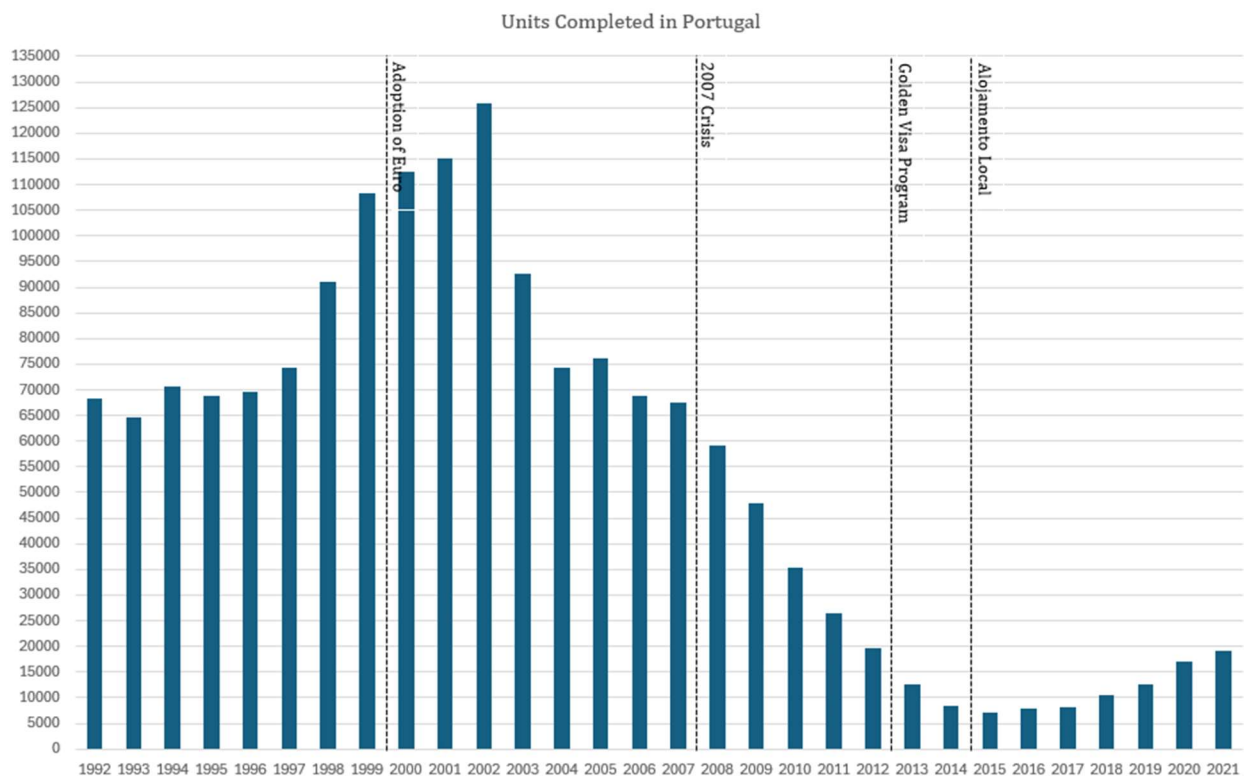


Figure 16: The number of housing units completed in Portugal from 1992 to 2021. Graph by author with data from Pordata.

According to João Seixas *Lisboa em Metamorfose* (2023), by 2011 the municipality of Lisbon alone had around 10,000 buildings in a dilapidated state. Across the Lisbon Metropolitan Area this number would grow to 48,000 buildings. Following in the footsteps of its new continental compatriots, after the crisis Lisbon repositioned its urban policies like many other European cities. Through a set of public policies advertising tax benefits (IMI, IMT, IRS, IRC and most famously VAT exemptions), prioritized licensing and easy credit, Lisbon began

encouraging the rehabilitation of its existing housing stock. Through fiscal incentives, since construction had shown no sign of recuperating (reducing IVA from 23% to 6% exclusively for renovation), Lisbon even worsened IMI taxes for people holding dilapidated buildings. Urban rehabilitation would come to represent 32% of total licensing in the entire metropolitan area of Lisbon, and 92% of licensing within the municipality of its center. With this, came the birth of the short term rental program *Alojamento Local* (AL), which resulted in a boom of foreign investment along with tourism.

Through the revitalization of its urban landscape, Lisbon also radically altered the mechanics of its supply; for just about a decade following the enactment of these policies, most investment in real estate did not produce much new construction while demand soared. In fact, it did quite the opposite, it worsened the affordability climate of the local housing market as the stock of available rental properties would redirect itself to more profitable and flexible options such as AL. Very quickly, average rents doubled before 2020. With families reducing in size over time, the number of single-person families increasing, a large young population becoming of home-ownership-age, the housing supply landscape became highly unfavorable, leaving the two most susceptible groups with regards to home purchasing power or rent affordability — young adults and senior citizens — without the means to afford a home.

In 2001 70% of young adults owned a home. Just over two decades later, as a new generation came of the same age, in 2023 only 40% of the same age group would come to own a home.³⁹ Simultaneously, as the substantial adult population entered the senior age group, the population pyramid of Portugal changed substantially. Seniors too began to struggle to afford housing, let alone in-home care. Without enough cultural incentive or policies for the caring of senior citizens, over 16% of Portugal's population (who's home ownership rates most suffered from the 2007 crisis) now over 65 years of age found themselves in detrimental states of solitude. Many of the young adults of an *Estado Novo* era who were promised large homes and families either now can't sustain them, or live alone in them, while today's young adults struggle to leave their parents' homes. These two main population segments remain heavily disadvantaged at the maturing of yet another crisis, through a shortage of typographically appropriate and affordable housing.

³⁹ LEITÃO, Luís — Percentagem de Jovens Com Casa Própria Caiu a Pique Nos Últimos 20 Anos. *ECO*. [Em linha] Lisboa: Sapo, 2023. [Consult. 20 Mar. 2024] Disponível em WWW:<[URL:eco.sapo.pt/2023/10/04/percentagem-de-jovens-com-casa-propria-caiu-a-pique-nos-ultimos-20-anos/](http://eco.sapo.pt/2023/10/04/percentagem-de-jovens-com-casa-propria-caiu-a-pique-nos-ultimos-20-anos/)>.

Part 2. Analysis: The Housing Crisis, and a Disadvantaged Young & Aging Population

*Politics continue to fail to understand what cities really need.*⁴⁰ – Joao Seixas

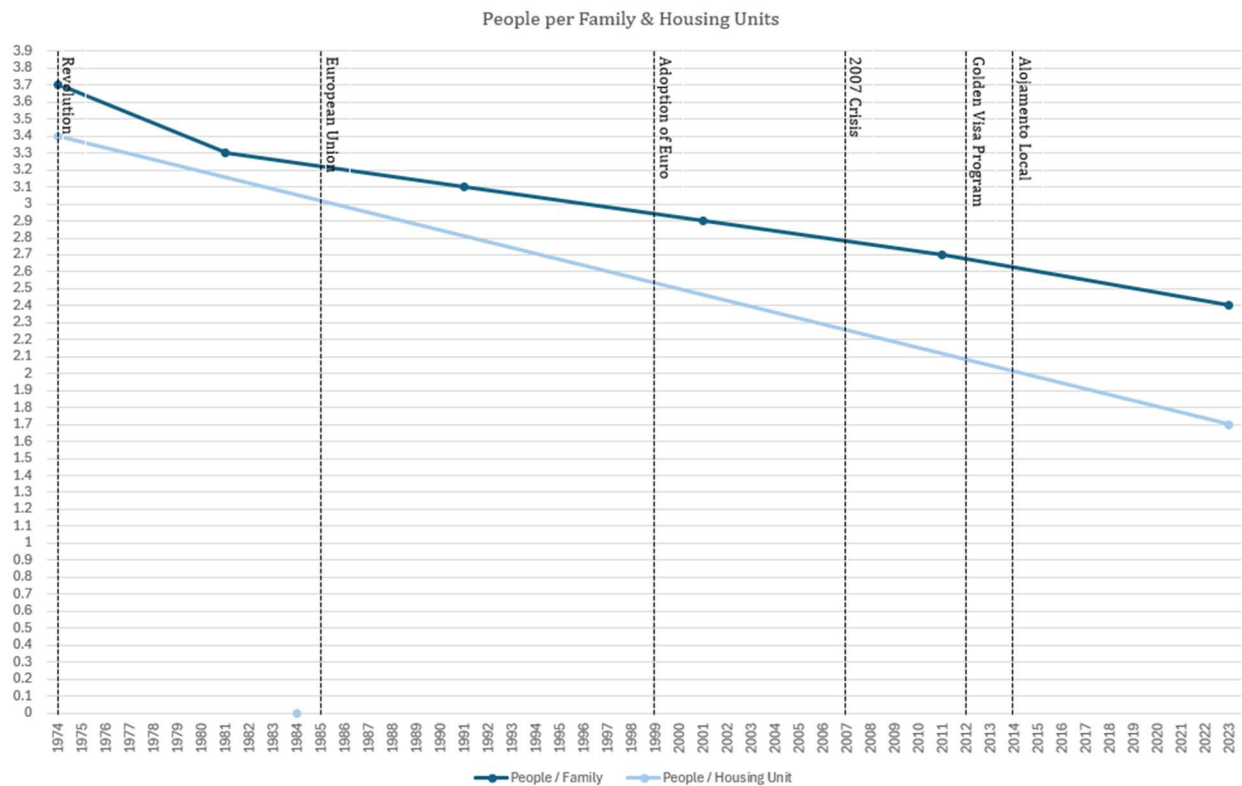


Figure 17: The average number of people per family decreases constantly since the end of the *Estado Novo*, while the number of housing units per population increases steadily, illustrating a demographic supply & demand problem. Data from Pordata.

⁴⁰ PAIVA, Ana Sofia — João Seixas: ‘A Política Continua a Não Perceber o Que é Que as Cidades Realmente Necessitam. *NOVAFCSH+Lisboa*. [Em linha] Lisboa: Universidade NOVA Lisboa, 2022. [Consult. 4 Jul. 2024] Disponível em WWW:<URL:<https://maislisboa.fcsh.unl.pt/joao-seixas-a-politica-continua-a-nao-perceber-bem-o-que-e-que-as-cidades-realmente-necessitam/>>.

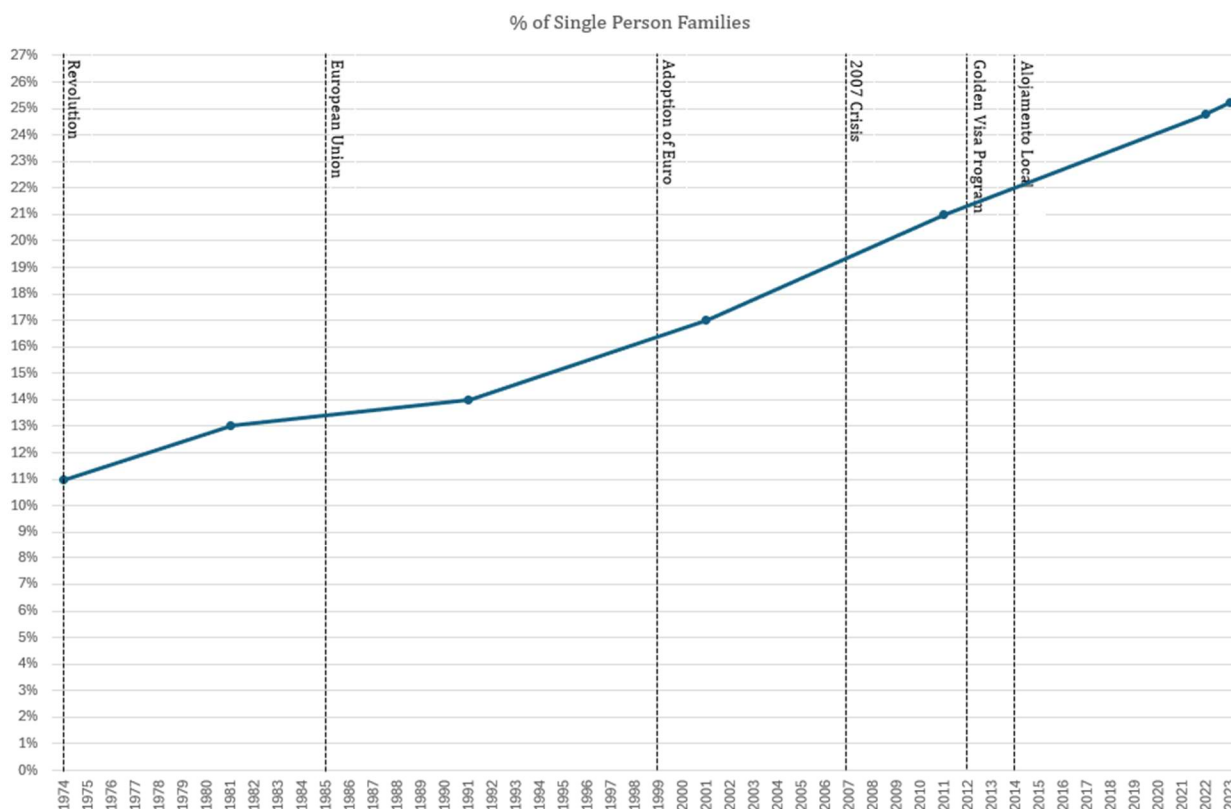


Figure 18: The percentage of families in Portugal that are composed of a single person has steadily increased since the end of the *Estado Novo*, signifying a growing need for smaller housing units. Data from Pordata.

Perhaps the most simple, but also the most significant data points in the taletelling of the current supply & demand problem in Lisbon, and Portugal are the changes in family size, population per housing unit ratio, and number of families composed of a single person. Since the end of *Estado Novo* and the beginning of the *República Portuguesa*, average family sizes have dramatically dropped, from 3.7 people per family, to 2.4 individuals per family [Fig. 17]. At the same time, the number of people per housing has also drastically decreased, meaning that there should in theory, be more housing available for the population of Portugal. However, a deeper look into the distribution of 21st century family structures reveals that the number of single person families has more than doubled since the beginning of Portuguese democracy. The population of Portugal (just over 10 million) is composed of approximately 4,245,000 families,⁴¹ of which 25.4% are single person families in need of smaller housing typologies [Fig. 18]. This sheds light on a very simple matter; there are technically enough homes for every person in Portugal since there are 1.7 people per housing unit, and family average size is

⁴¹ Pordata — Agregados Domésticos Privados, Por Grupo Etário Do Representante Da Família. *Pordata*. [Em linha] Lisboa: Pordata, 2024. [Consult. 5 Mai. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/agregados+domesticos+privados++por+grupo+etario+do+representante+da+familia-821>.

2.4 people, but they are not the appropriate housing typologies to accommodate the change in demographics over the past 50 years. The average family size has drastically decreased and the number of single-person families has drastically increased. This means that we have a large segment of the population that requires much smaller housing units than families did in the decades leading up to today. So if there are many more housing units per person since 1974, then the market (as well as the state) have simply not been supplying the appropriate typologies to its population — for a long time. These have been supplying a surplus of larger units over time that are out of age, with not only new construction responding still to *Estado Novo* era family structures, but also through incessantly encouraged rehabilitation of old existing housing supply that also catered to the similar demographics when built in the first half of the 20th century.

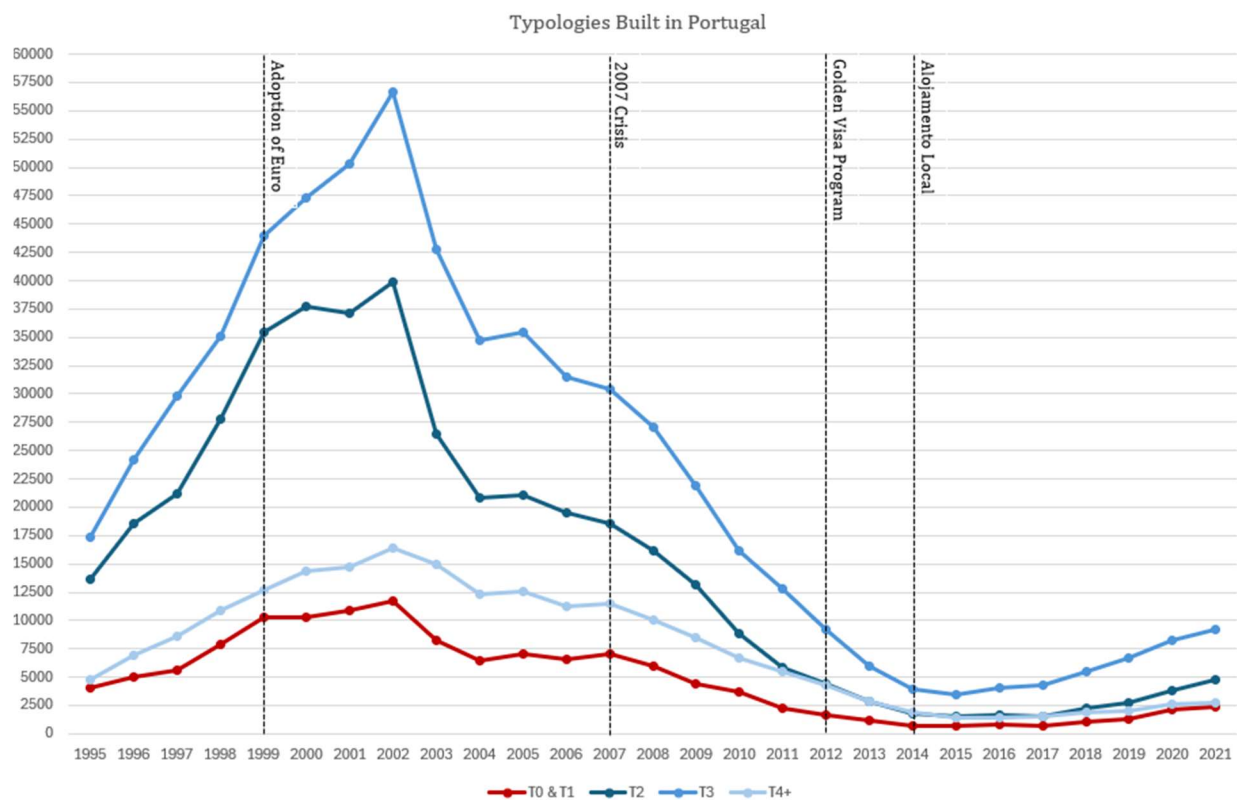


Figure 19: The number of units built per year between 1995 and 2021 by category of typology (size). Data from Pordata.

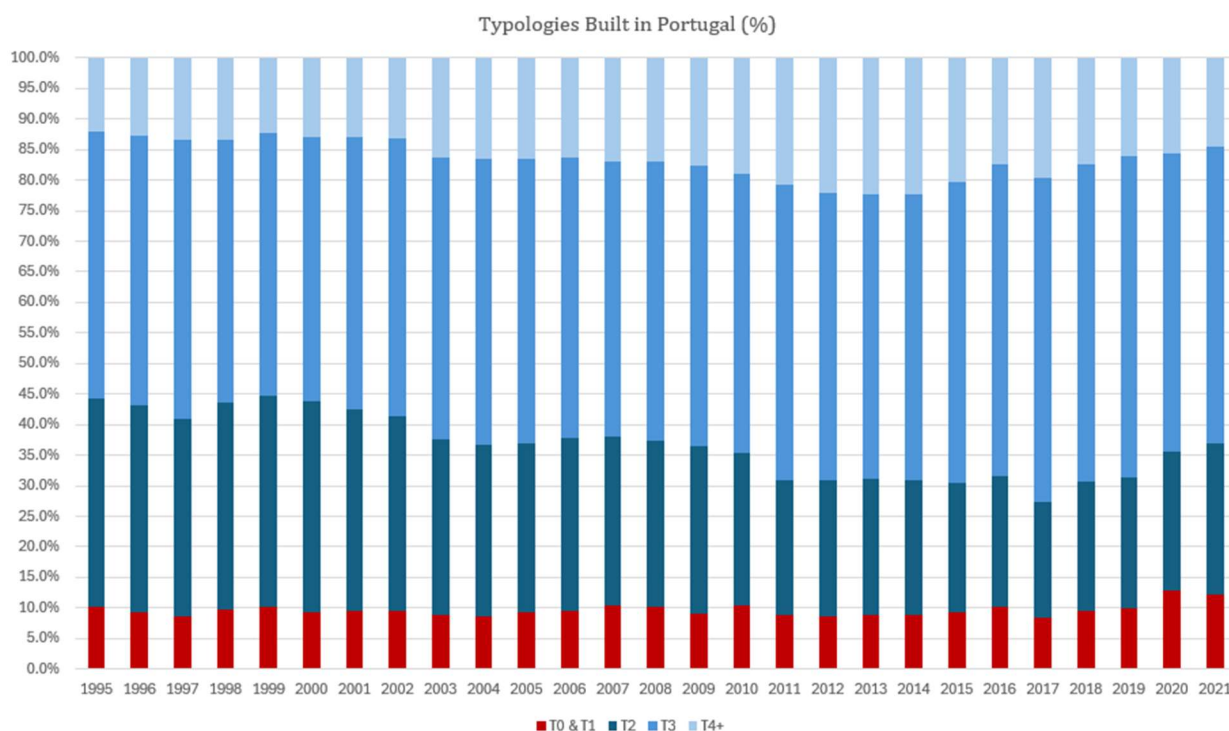


Figure 20: The number of units built per year between 1995 and 2021 by category of typology (size) as a percentage of the total. Graph by author, data from Pordata.

The introduction of new T0s and T1s combined have never exceeded 12.8% of all the typologies built. In fact, with the exception of 2020 and 2021, the total is usually below 10%, where the 20% increase in proportion of T0s & T1s finally illustrate some market response to the sheer lack of smaller units. T2s — also popular among seniors, young adults and students under forms of shared living — had the largest decrease, from 34.2% of new units in 1995 to a consistent percentage in the low 20s the past decade. Again, the combined proportion of T0s, T1s and T2s show a late market response but a growing tendency for the construction of smaller units since 2017. T3s always dominated the market, controlling anywhere between 42.9% and 53.2% of the market in any given year [Fig. 19 & 20]. In 2022 however, the Instituto Nacional de Estatística reported yet another decline in proportions of new T0s and T1s.⁴² According to the Engels & Volkers Portugal Market Report 2022-2023, on the contrary to what is happening in other regions of the country, demand for housing in the Lisbon Metropolitan Area is dominated by the search for smaller apartments, ranging from 39 to 150m², a range that would encompass the most coveted housing typologies by the two age groups under question.⁴³ While

⁴² LIMA, Francisco ed. — Instituto Nacional de Estatística, Lisboa. *Estatísticas Da Construção e Habitação – 2022*. Lisboa: Instituto Nacional de Estatística, 2023. pp. 38-45.

⁴³ Engels & Volkers Portugal Market Report 2022-2023 summarized by Portugal's leading real estate marketplace platform, Idealista — Quais São as Tipologias de Casas Mais Procuradas Em Portugal? *Idealista*. [Em linha]

this encompasses a wide range of housing typologies, it is significantly lower than the national average demand for homes of 300m², highlighting at the very least a much higher demand for smaller typologies, considering the minimum gross areas per typology (according to the national *Regulamento Geral das Edificações Urbanas* — RGEU)⁴⁴ are 35m² for a T0, 52m² for a T1, 72m² for a T2, 91m² for a T3 and 105m² for a T4. So within this significant mismatch between the housing market and the population's housing needs, who is most severely affected?

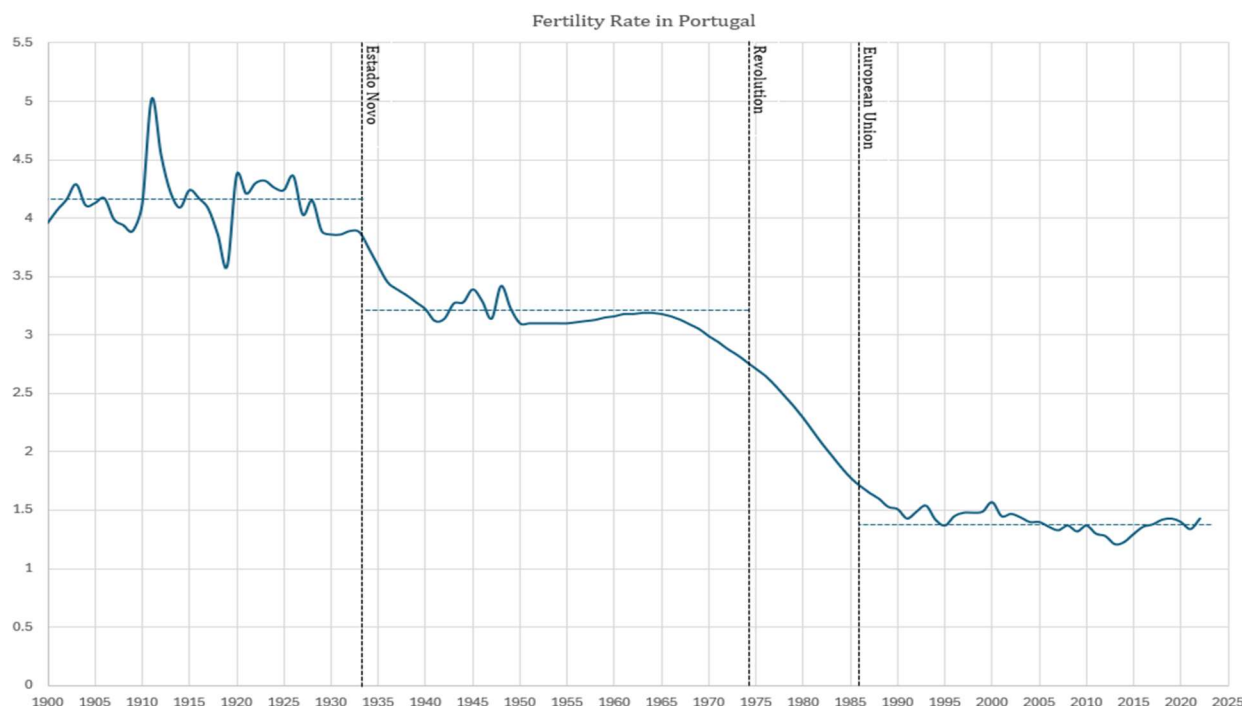


Figure 21: Fertility rate in Portugal from 1900 to 2023.

The difference between Portugal's population spread between today and during *Estado Novo* completely opposites. At the time, the regime's encouragement of the family nucleus resulted in consistent fertility rates averaging above a replacement rate of 3.0. Towards the end of the regime, fertility rates fell drastically and stabilized shortly after Portugal's entry into the European Union, maintaining a below replacement average under 1.5 until present [Fig. 21]. Over the course of the 40 years of dictatorial rule encouraging larger family structures, Portugal grew a very large young workforce that now makes up a highly disproportionate aging population, slowly inverting over the past six decades the national population pyramid. The

Lisboa: Idealista, 2022. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:www.idealista.pt/news/imobiliario/habitacao/2022/12/07/55196-quais-sao-as-tipologias-de-casas-mais-procuradas-em-portugal>.

⁴⁴ Governo Constitucional — Regulamento Geral Das Edificações Urbanas – RGEU, Decreto-Lei n.º 38382. *Diário Da República*. [Em linha] Lisboa: Diário da República, 2024. [Consult. 4 Jul. 2024] Disponível em WWW:<URL:diariodarepublica.pt/dr/legislacao-consolidada/decreto-lei/1951-120610500>.

national health system has done little to cater to this heavy influx of aging adults becoming seniors, and like young adults today, many struggle to afford housing alone, slowly, but inevitably, highlighting two of the largest preoccupations being expressed nationally today, as Portugal traverses yet another housing crisis; the ability to provide adequately accessible and invigorating housing to seniors who feel increasingly lonely, and the ability for young adults (including students) to have access to affordable housing.

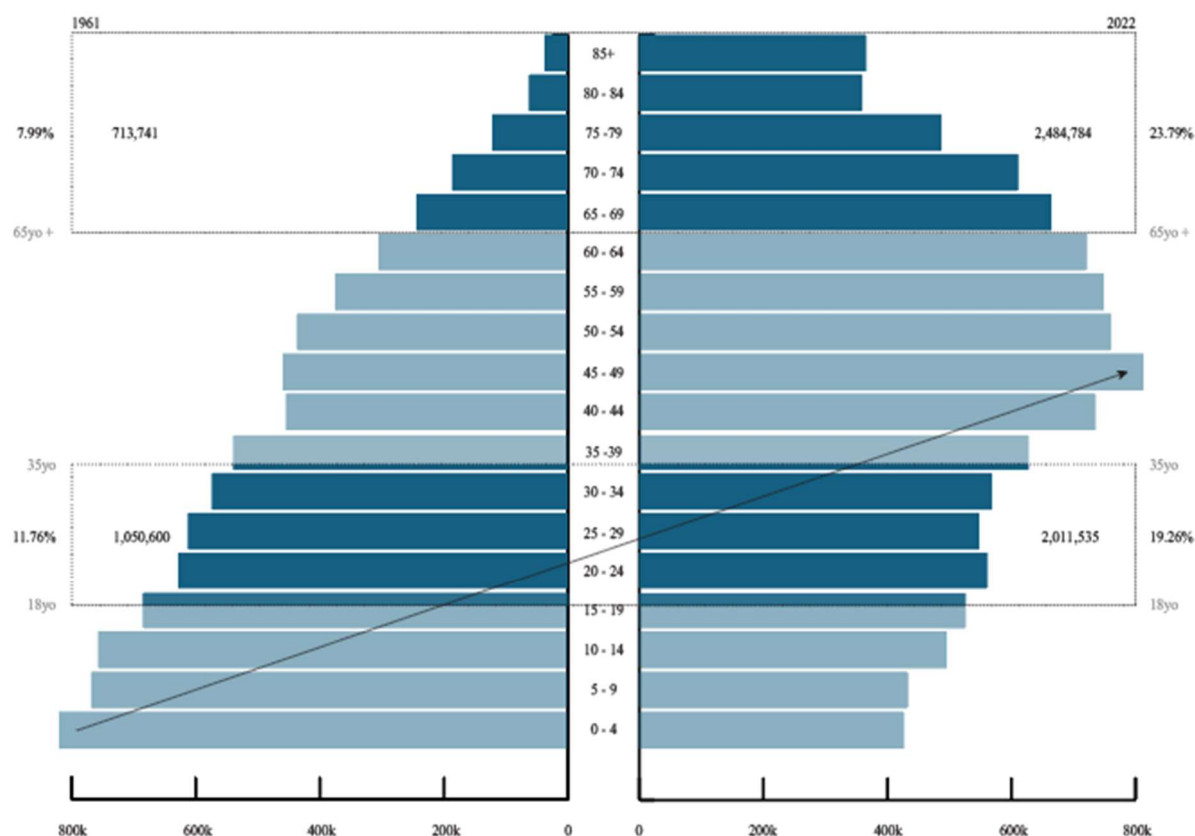


Figure 22: The population pyramid showing a very high fertility rate and young population in 1961 during the Estado Novo, a heavily aging population six decades later in 2022. Today, young adults and seniors make up more than 43% of the population. Graph by author and data from *Instituto Nacional de Estatística*.

According to the national health service, *Serviço Nacional de Saúde*, there exist 2,526 retirement homes in Portugal, which at current capacity hold only 99,234 seniors nationwide.⁴⁵ According to the 2022 population census, seniors (herein considered 65 years old or more as described by the state) comprise about 2,484,784 people, or 23.79% of Portugal's population

⁴⁵ Serviço Nacional de Saúde — Estruturas Residenciais Para Idosos – SNS. *Serviço Nacional de Saúde*. [Em linha] Lisboa: Serviço Nacional de Saúde, 2020. [Consult. 4 Jul. 2024] Disponível em WWW:<URL:www.sns.gov.pt/noticias/2020/08/12/estruturas-residenciais-para-idosos/>.

[Fig. 22].⁴⁶ In 20 years, if we project the present population pyramid forwards, we can expect the senior portion of the population to reach over 3.5 million people, or +35% of the population [Fig. 23].

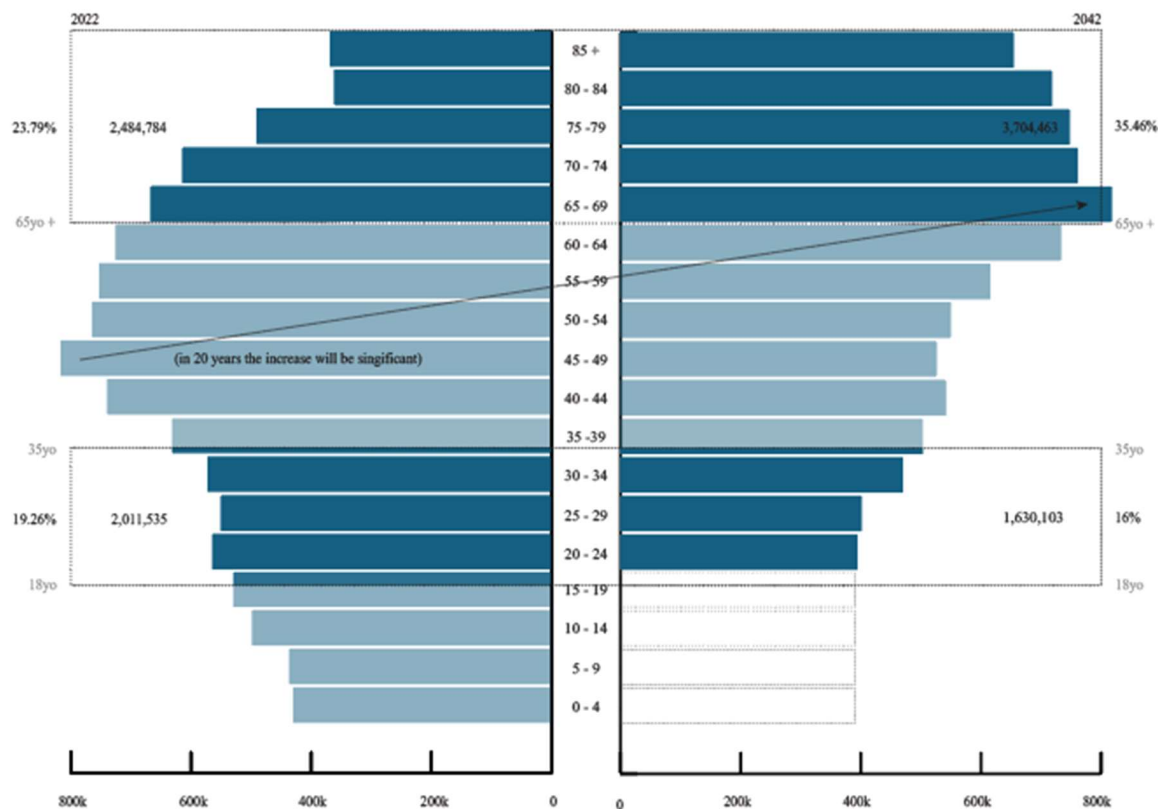


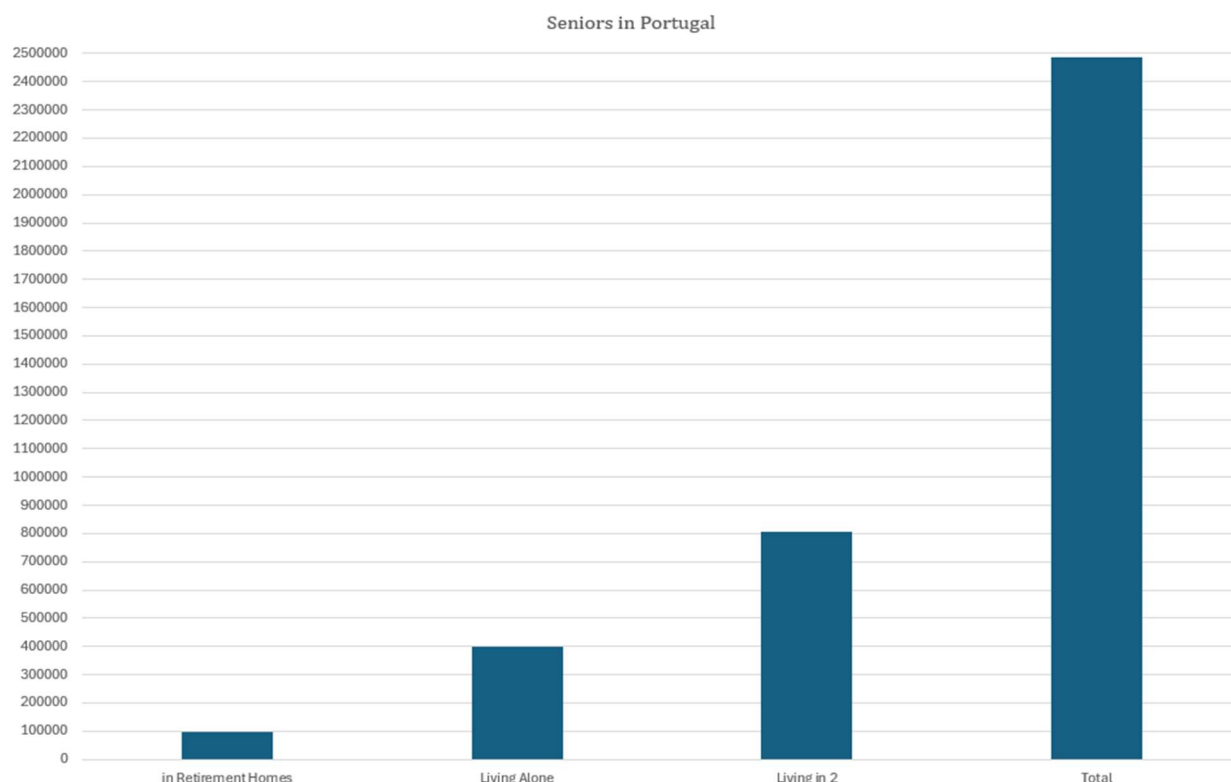
Figure 23: If we extrapolate the same population pyramid to just under twenty years from now, we can approximately expect the combined age groups of young adults and seniors to make up more than 51% of the population in 20 years. Extrapolation and graph done by the author. Data from Instituto Nacional de Estatística.

Every year the *Guarda Nacional da Republica* (GNR) also conducts an independent *Censos Senior*, whose objective is to raise awareness among the elderly about adopting safety behaviors and survey the conditions in which they live. In 2022, of the seniors they surveyed across the country, more than 44,511 were found to live in complete solitude — the exact number of total seniors surveyed is not disclosed, but previous *Censos Senior* suggest those found to be lonely are expected to be around half.⁴⁷ But according to polls, in Portugal, 1.7

⁴⁶ Pordata — População Residente: Total E Por Grupo Etário. *Pordata*. [Em linha] Lisboa: Pordata, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/populacao+residente+total+e+por+grupo+etario-10>.

⁴⁷ LUSA — Mais de 44.500 Idosos Vivem Sozinhos Ou Isolados Em Portugal. *Público*. [Em linha] Lisboa: Público, 2022. [Consult. 15 Fev. 2024] Disponível em

million seniors affirm that they live in solitude.⁴⁸ Studies made reference to in the *Revista Portuguesa de Medicina Geral e Familiar* (RPMGF), suggest that it is estimated that approximately 50% of adults over the age of 60 years old are at risk of social isolation and prolonged loneliness.⁴⁹ About 12% of Portugal's population (60% of the elderly population — 400,964 people) lives alone, or in the exclusive company of another elderly (804,577). A tendency which has grown 28% from 2001 to 2011 [Fig. 24].⁵⁰



WWW:<URL:www.publico.pt/2022/11/03/sociedade/noticia/44500-idosos-vivem-sozinhos-isolados-portugal-2026298>.

⁴⁸ LUZ, Paulo Sofia — Jovens Portugueses São Dos Mais Qualificados Mas Em Maior Risco de Pobreza E Exclusão Social. *Diário de Notícias*. [Em linha] Lisboa: Diário das Notícias, 2023. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:www.dn.pt/sociedade/jovens-portugueses-sao-dos-mais-qualificados-mas-em-maior-risco-de-pobreza-e-exclusao-social-16778271.html/#:~:text=Um%20total%20de%2095%25%20dos,que%20hoje%20%C3%A9%20tornado%20p%C3%BAblico>.

⁴⁹ LANDEIRO, Filipa, et al. — Reducing social isolation and loneliness in older people: A systematic review protocol. *BMJ Open*, London: BMJ, vol. 7, no. 5, 2017, [Disponível em: <https://doi.org/10.1136/bmjopen-2016-013778>]. pp. 1–5. (<https://doi.org/10.1136/bmjopen-2016-013778>)

⁵⁰ Instituto Nacional de Estatística — Censos 2011: Mais de Um Milhão e Duzentos Mil Idosos Vivem Sós Ou Em Companhia de Outros Idosos. *Instituto Nacional de Estatística*. [Em linha] Lisboa: Instituto Nacional de Estatística, 2012. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=134582847&DESTAQUESmodo=2>.

Figure 24: There are almost 2.5 million seniors in Portugal, of which almost 80,000 live in the exclusive company of another senior, almost 400,000 live in complete solitude. Nationally, there is only a capacity for less than 100,000 seniors in retirement homes. Graph by author, and data from *Serviço Nacional de Saúde* and *Instituto Nacional de Estatística*.

Loneliness has been shown to be linked to an increase in anxiety, depression, suicide attempts, high blood pressure, cardiovascular disease, functional limitations, cognitive decline and mortality — all of which contribute to a faster aging process.⁵¹ In Portugal, according to a study by the Uniao das Misericordias, about nine in ten individuals in retirement homes suffer from cognitive degeneration, and 78% of the elderly suffer from dementia. In 42% of the cases, the reason for institutionalization in a home had to do with dependence on assistance and 30% with isolation or loneliness.⁵² It is generally accepted that social integration demonstrates very successful results with regards to preventing mortality and morbidity in the population.⁵³ In an attempt to reintegrate the senior population socially, a few national initiatives have identified that this demographic's necessities pair particularly well with those of the other housing preoccupation being expressed; rent assisted living for young students and adults who struggle to pay for housing in a relentlessly rising rental market.

⁵¹GERST-EMERSON, Kerstin, and Jayani Jayawardhana — Loneliness as a Public Health Issue: The Impact of Loneliness on Health Care utilization Among Older Adults. *American Journal of Public Health*. New York: American Public Health Association, vol. 105, no. 5, 2015, pp. 1013–1019. [Disponível em: <https://doi.org/10.2105/ajph.2014.302427>].; and, FAISCA, Leticia Raquel, et al. — Solidão e Sintomatologia Depressiva na Velhice. *Análise Psicológica*. Cambridge: Cambridge University Press, vol. 37, no. 1, 2019, pp. 209–222. [Disponível em: <https://doi.org/10.14417/ap.1549>].

⁵² LUSA — Quase 80% Dos Idosos Que Vivem Em Lares Sofrem de Demência.” *Diário de Notícias*. [Em linha] Lisboa: Diário de Notícias, 2016. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:www.dn.pt/sociedade/quase-80-dos-idosos-que-vivem-em-lares-sofrem-de-demencia-5112617.html>].

⁵³ RIBEIRO, A. S. T. — Isolamento social e solidão dos idosos em tempo de COVID-19. *Revista Portuguesa De Medicina Geral E Familiar*. Lisboa: Revista Portuguesa De Medicina Geral E Familiar, vol. 38, no. 5, 2002. pp. 539–44. [Disponível em: <https://doi.org/10.32385/rpmgf.v38i5.13347>].

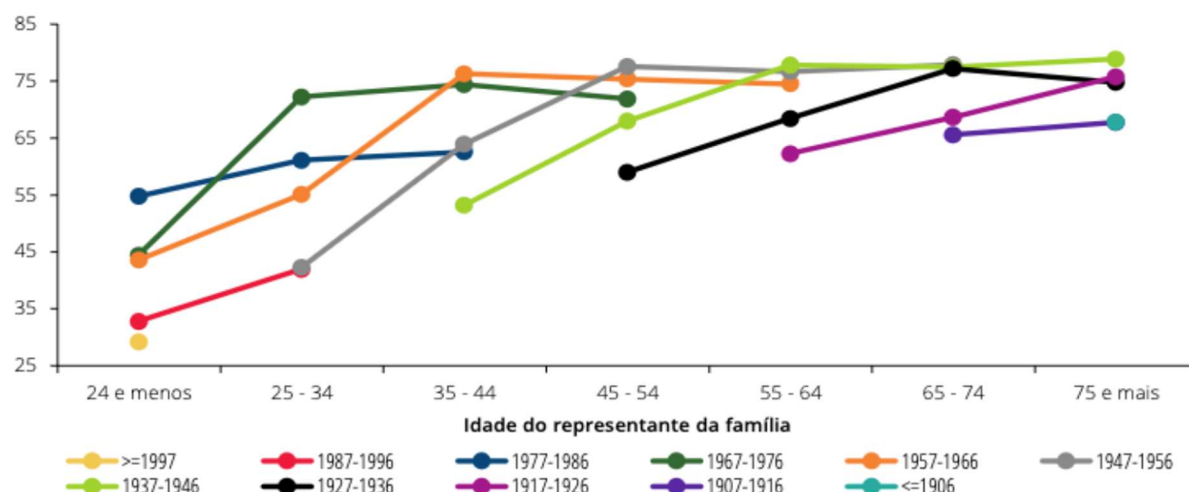


Figure 25: Families who own their primary residency, by age groups and decade of birth of the family representative. Young adults have the lowest rate of home ownership. Graph from the newspaper *Sapo*, with data from *Instituto Nacional de Estatística*.

There exist students paying more than €750 for unfurnished studios in Lisbon,⁵⁴ a value that is equivalent to half of the average national salary,⁵⁵ which students and most young adults are not privy to. Expressed in other terms, the average national salary has risen by 27.7% since 2015, but rents have risen 37% just from 2021 to 2022.⁵⁶ Young adults in Portugal are among the highest risk of poverty and social exclusion in Europe. A study indicates that home ownership among young adults between the ages of 25 and 34 (part of the age group of interest, 18 to 35) born between 1977 and 1986 (now 38 to 47 years old — no longer young adults) was above 61% around 2011. Of today's 25 to 34 age group however, only 42% own a home [Fig.

⁵⁴ OLIVEIRA, Ruis — Alojamento: Há Estudantes a Pagar Mais de €750 Por Um Estúdio Sem Qualquer Mobília, 'Como Uma Tenda.' *Jornal Expresso*. [Em linha] Lisboa: Jornal Expresso, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:expresso.pt/sociedade/ensino/2023-03-24-Alojamento-ha-estudantes-a-pagar-mais-de-750-por-um-estudio-sem-qualquer-mobilia-como-uma-tenda-7d6e4d2e>.

⁵⁵ Governo da República Portuguesa — Salário Médio Por Trabalhador Atingiu 1.505 Euros Em 2023. *XXIII Governo – República Portuguesa, Governo Constitucional*. [Em linha] Lisboa: Governo da República Portuguesa, 2024. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.portugal.gov.pt/pt/gc23/comunicacao/comunicado?i=salario-medio-por-trabalhador-atingiu-1505-euros-em-2023>.

⁵⁶ Visão — Rendas Em Lisboa Aumentam 37% No Espaço de Um Ano. *Visão*. [Em linha] Lisboa: Visão, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:visao.pt/imobiliario/2023-01-19-rendas-em-lisboa-aumentam-37-no-espaco-de-um-ano/>.

25].⁵⁷ Eurostat agency, from the European Commission, estimated that in 2021 56.4% of young adults in Portugal between the ages of 25 and 34 still lived with their parents, an 11.9% growth from 2011.⁵⁸ Furthermore, a staggering 95% of younger adults aged 18 to 24 live with their parents.⁵⁹ At a total of 2,011,535, young adults (18 – 35 years old) make up 19.26% of the population that could potentially benefit from more financially accessible housing were the housing to be shared.⁶⁰ Since seniors would benefit from the social integration, there is a housing opportunity here that can be easily taken advantage of that greatly benefits both age groups financially and in terms of longevity. These ideas are not new, and tangentially relevant programs have flourished in a few European countries, but they have solemnly been put into practice in Portugal. Cohabitation is very sparse in Portugal, but it is not a completely foreign concept, it is a motivating vehicle to afford rent. As Paula Sofia Luz states, «officially verified cohabitation in Portugal (of non-married individuals, majority young adults) is low, representing only 3.7% of the total resident population in 2001».⁶¹ There exist nationally however, as of late, a few recent initiatives that have sought to bridge the housing gap between a young students (in particular requiring rent-assisted living) and senior citizens which tend to

⁵⁷ LUSA — Jovens Donos de Habitação Própria São Menos Do Que Em Gerações Anteriores – Renascença.” *Rádio Renascença*. [Em linha] Lisboa: Sapo, 2023. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:rr.sapo.pt/noticia/pais/2023/11/03/jovens-donos-de-habitacao-propria-sao-menos-do-que-em-geracoes-antiores/353632/>.

⁵⁸ ALARCOS, Ana P. — Mais de 50% Dos Jovens Em Portugal Vive Com Os Pais – e Na Europa?” *Idealista*. [Em linha] Lisboa: Idealista, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.idealista.pt/news/imobiliario/habitacao/2023/05/23/57955-mais-de-50-dos-jovens-em-portugal-vive-com-os-pais-e-na-europa>.

⁵⁹ LUZ, Paulo Sofia — Jovens Portugueses São Dos Mais Qualificados Mas Em Maior Risco de Pobreza E Exclusão Social. *Diário de Notícias*. [Em linha] Lisboa: Diário das Notícias, 2023. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:www.dn.pt/sociedade/jovens-portugueses-sao-dos-mais-qualificados-mas-em-maior-risco-de-pobreza-e-exclusao-social-16778271.html/#:~:text=Um%20total%20de%2095%25%20dos,que%20hoje%20%C3%A9%20tornado%20p%C3%ABlico>.

⁶⁰ Pordata — População Residente: Total E Por Grupo Etário. *Pordata*. [Em linha] Lisboa: Pordata, 2023. [Consult. 15 Fev. 2024] Disponível em WWW:<URL:www.pordata.pt/portugal/populacao+residente+total+e+por+grupo+etario-10>.

⁶¹ The author of the study also explains, “a partir de 1995 a situação torna-se mais clara porque passa a ser possível distinguir os nascimentos fora do casamento com coabitação dos pais e sem coabitação dos pais, ou seja, se os pais do nado-vivo vivem ou não em residência comum, independentemente do seu estado civil.” LEITE, Sofia — União de Facto em Portugal. *Revista de Estudos Demográficos*, no. 33. Lisboa: Instituto Nacional de Estatística, 2003. pp. 95–140.

share similar living requirements; smaller spaces, lower rents, proximity to services of interest, and most importantly, social inclusion.

Towards the end of 2023 an initiative called *Partilha Casa* (or “Home Sharing”) — now available in the Lisbon, Coimbra and soon also in the Porto metropolitan areas — launched with the aim to mitigate the difficulty young university students have accessing affordable accommodation and the loneliness experienced at large by the senior population.⁶² The site consists of a digital platform that facilitates the placement of young students and the elderly to established cohousing programs. According to their site (partilhacasa.pt), seniors that live alone can dispose of their available bedrooms through the platform, which then collects applications from students. These applications are sorted, and after evaluations of all individuals, young students are paired with seniors, under the pretense that the young students aid the seniors with their monthly expenses and provide them company. The platform also aggregates other existing programs concerning intergenerational cohabitation channeling applications to *Abraço Gerações* or *Une-Idades*. The platform has received an overwhelming majority of young student applications from young students in contrast to elderly applications — which could be due to either superior young digital literacy and therefore easier access to the platform or lack of a dedicated outreach program targeting the elderly segment directly. After more than a thousand applications since its launch, the program has recently begun housing its first “couples”.⁶³ It is hard to assess the performance of the platform without further detail, but no further metrics or data with regards to its successes can be found, or have willingly been shared by the platform and its partners upon contact, and since we have no way of knowing what the post-screening adoption rate is, we can only assume an application rate of around under one hundred and twenty five applications per month.

In Coimbra, the program *Abraço Gerações* (or “Generational Hug”) undertakes a similar mission promoted by the *Associação das Cozinhas Económicas Rainha Santa Isabel* (ACERSI), in partnership with the *Associação Académica de Coimbra* and its pertinent alumni associations. *Abraço Gerações* aims to house students for free, prioritizing access to those who most require financial assistance through due diligence and ending senior solitude. Similarly to

⁶² LOPES, Sara — *Partilha Casa: A Nova Plataforma Quer Juntar Jovens e Idosos Sob O Mesmo Teto*. *NiT*. [Em linha] Lisboa: NiT, 2024. [Consult. 10 Jun. 2024] Disponível em WWW:<[URL:www.nit.pt/fora-de-casa/nacidade/partilha-casa-a-nova-plataforma-quer-juntar-jovens-e-idosos-sob-o-mesmo-teto](http://WWW:www.nit.pt/fora-de-casa/nacidade/partilha-casa-a-nova-plataforma-quer-juntar-jovens-e-idosos-sob-o-mesmo-teto)>.

⁶³ Unspecific statistics (unlikely to be due to data protection laws as the data is anonymous, but the practice of internal company policy) supplied via email by Filipa Matilde Marinho de Seabra, the Director of Marketing and Communication of MEO (telecommunications), which sponsored the digital technology for hosting the *Partilha Casa* platform, on June 5th, 2024.

Partilha Casa, Abraço Gerações encourages the student's financial participation in the shared monthly living expenses instead, as well as daily tasks, such as aiding the receipt of mail or accompaniment to medical appointments. Their base requirements stipulate the necessity of access to a kitchen, bathroom, and a bedroom with a desk. The seniors seeking to be accommodated however, must show no signs of cognitive decline, or need of physical assistance, and must display a sufficient degree of autonomy.⁶⁴

The *Programa Aconchego* implemented in Porto by its City Hall in 2004 in partnership with the Federação Académica do Porto (FAP) aims to house citizens aged 60 or over that are living alone, with university students between the ages of 18 and 35 years who are not residents of the municipality of Porto. The program was awarded the Innovation@Home prize in 2018 in Quebec for its innovative approach to reintegrating senior citizens into society and aiding the supply of more financially accessible accommodation for students. It aims at combating loneliness and isolation of senior citizens, and facilitates accommodation for university students new to Porto. According to the World Health Organization (WHO), «older people report great satisfaction with the intergenerational relationships provided by the Aconchego Program. Moreover, the majority of the candidates say that they want to join the Program to have company, especially during the night. The students report that, besides the benefit of the cost reductions, they gain a positive and homelike environment that improves their performance at the university.»⁶⁵ Yet in 20 years of operation, the program only helped 281 students find a home that guaranteed its senior hosts company.⁶⁶

The programs seem to “work” but remain rather young and have yet to prove their effectiveness as similar ones have done in other European cities. In their composition however, these consider only a very niche subset of real estate available and already existing in Portugal.

⁶⁴ BAPTISTA, Sofia Correia, e Sara Tarita — Seniores Partilham Casa Com Estudantes Universitários: Debaixo Do Mesmo Teto, Criam-Se Laços Entre Diferentes Gerações. *Jornal Expresso*. [Em linha] Lisboa: Jornal Expresso, 2023. [Consult. 10 Jun. 2024] Disponível em WWW:<URL:expresso.pt/longevidade/2023-06-08-Seniores-partilham-casa-com-estudantes-universitarios-debaixo-do-mesmo-teto-criam-se-lacos-entre-diferentes-geracoes-32bf8f0f>.

⁶⁵ World Health Organization — Aconchego Program. *World Health Organization*. [Em linha] Geneva: World Health Organization, 2024. [Consult. 10 Jun. 2024] Disponível em WWW:<URL:extranet.who.int/agefriendlyworld/afp/acochego-program/>.

⁶⁶ MONTEIRO, Maria Claudia — Aconchego Encheu de Samba e Ternura a Vida de Maria de Fátima. *Smart Cities*. [Em linha] Matosinhos: Smart Cities, 2024. [Consult. 10 Jun. 2024] Disponível em WWW:<URL:smart-cities.pt/tag/rasarp/>.

Once again, the state and the housing market were unable to cater to its population appropriately, leaving it with a severe scarcity of social and affordable housing due also to little state efforts. Consider that it wasn't until as late as 2017 — after 45 years of welfare state and housing initiatives — that a dedicated statal housing role was instituted (*Secretaria de Estado da Habitação*), which has so far created numerous programs to alleviate accessibility to affordable housing that we are yet to see resolve.⁶⁷ The country desperately requires more supply of appropriate housing (smaller units), and we must therefore envision the development of new housing that permits the typological flexibility to co-house these demographic segments faster, as they represent most of the housing-disadvantaged population of Portugal within the largest age groups under question.

Part 3. Cohabitation: A New Typology of Affordable Housing

Now that we have understood that these two age groups are compatible, especially considering that efforts have been made to bring these together, we must devise a strategy that makes the housing products truly accessible. In order for them to be accessible, they must be easy, quick and financially viable to build. Existing efforts to cohouse these two age groups conveniently take advantage of existing construction, rather than proposing new developments.

⁶⁷ Programs like, *Primeiro Direito*, *Programa Porta de Entrada*, *Chave na Mão*, *Da Habitação ao Habitat*, *Programa de Arrendamento Acessível*, and in 2019 the *Programa de Renda Acessível*. However, to overcome regional and bureaucratic shortcomings, municipalities began creating their own local programs.

In 2019 for example, the city of Lisbon created the *Programa de Renda Acessível* (PRA), a municipal concession model where the city forego *available* unbuilt land parcels within metropolitan Lisbon for the private sector to develop them under the condition that they would provide and manage accessible housing. This demonstrates the city's willingness to cooperate under a public/private sector partnership of sorts in order to attempt resolving the affordable housing shortage, which allows us the possibility of proposing a similar partnership for the purpose of this thesis. Through the platform *Plataforma Habitar Lisboa* young adults and families can apply to PRA which operates under a lottery system. The program remains young, but has thus far, according to Carlos Moedas — the president of the city council — delivered 1,823 housing units the past five years (in Lisbon) ranging from T0s to T3s, of which 815 are within the affordable bracket with rents starting at €150.⁶⁸ It remains however a model of slow implementation in batches, and we need a model that makes the development of affordable cohousing that is so attractive to the private sector that the housing market jumps at the occasion.

As we determined in the previous chapter (Part 2), the more we dig into this topic, the more we will find these two age groups to be compatible (today) due to the suitable convenience and practicality of their congruous deficiencies. As the academic expert João Seixas explains during an interview for the purpose of this research;

The compatibility of these two largely separated age groups (students, young adults and senior citizens) initially comes down to a fundamental matter of practicality; some have property, and others don't. Senior citizens are more likely to have property at their disposal, in which they are found to commonly live precariously alone, and young students and adults are more likely to be in need of housing. It's a question of being able to combine inverse compatible needs here. In the homes of the elderly there is a lot of loneliness, because they live alone, while young adults retain a relevant capacity for furthering a more integrative environment as a more socially stimulating agent. While senior citizens retain the ability to project an image of rooted familial stability in the household, young people are facing major shortages of employment, financial and housing provisions.

In terms of housing requirements, the two age groups fit like puzzle pieces. João Seixas continues;

⁶⁸ Idealista — Lisboa Abre Concursos Para Mais 70 Casas Com Renda Acessível. *Idealista*. [Em linha] Lisboa: Idealista, 2024. [Consult. 10 Jun. 2024] Disponível em WWW:<URL:www.idealista.pt/news/imobiliario/habitacao/2024/05/15/64016-lisboa-abre-concursos-para-mais-70-casas-com-renda-acessivel>.

Cohabitation between the elderly and young people is interesting under the agreement of certain sets of rules. Both sides of users to this equation must be thoroughly screened and filtered. The individual compatibility of the two generations must be tested, as the potential for this cohabitation is built on mutual trust. Affordable rent values are imperative for young adults, which at the same time could benefit the elderly because the elderly have financial problems too.⁶⁹

As determined thus far, and reinforced by João Seixas, access to affordable housing is the most pressing underlying factor of the crisis at hand, especially for these two distinct age groups. While we have seen it is possible to house them together through existing supply of housing, it does not produce enough housing fast enough to try and combat the shortage. It would be easier to find seniors (and young adults) in need of a home, rather than seniors who live alone. So before designing new urban typologies to cohause these two precariously compatible age groups, we have to find a way to guarantee, via policy of sorts, their affordability. As we have also determined historically, entrusting the state to develop affordable housing independently often results in compromised efforts. On the other hand, entrusting the affordability of housing to the housing market is also a non-starter. However, through the expression of another convenient marriage in this equation, we can attempt to put into practice the aforementioned Article 65 (Part I, Title III, Chapter II) of the Portuguese constitution; by matching the state's resources with the housing market's (private sector's) experience — through policy — we could help guarantee the affordability of housing. The vast amount of unbuilt and abandoned land owned by the state in Lisbon that can be taken advantage of in this proposal, is enough to not only solve the current housing crisis, but perhaps even prevent it from ever occurring again (see next sections).

It must be noted that a scenario where we hypothesize the collaboration between the state and the private sector through the use of public land is not new. In fact, following the end of the dictatorship, in November 1974, the state created a program called *Contratos de Desenvolvimento para Habitação (CDH)*.⁷⁰ This program was an attempted reform of the existing state driven social housing contracts exercising controlled rents (commonly known as “casas de renda limitada”) through fiscal incentives and exemptions, as well as access to state on behalf of the state to private developers — a measure put into practice during the *Estado*

⁶⁹ See "Affordable Cohousing between a Young & Aging Population: Interview with João Seixas" in Annex.

⁷⁰ Governo Constitucional — Decreto-Lei n.º 663/74 de 26 de Novembro. *Diário do Governo* n.º 275/1974 – Série I. Lisboa: Ministérios das Finanças e do Equipamento Social e do Ambiente, 1974. [Disponível em: <https://diariodarepublica.pt/dr/detalhe/decreto-lei/663-1974-466074>].

Novo in 1947.⁷¹ Despite attempting to reduce the risk for private investors, the ensemble of benefits proposed through the *CDH* program were not sufficiently attractive for the private sector, resulting in 17,807 bedrooms across Portugal, between 1974 and 1992 — less than 1,000 bedrooms per year of which only 10% were in central Lisbon.⁷² The program was later discontinued, and reformed into another that promoted housing at controlled costs (*Habitações a Custos Controlados*, in 1985).⁷³

As we've observed, for this to be possible, the government needs to create more favorable conditions for the private sector to build affordable (but profitable!) housing. For viability purposes, we need to consider the cost of land, the cost of construction, the notoriously bureaucratically slow licensing processes, and the fiscal tariffs or taxes imposed on the aforementioned (IMT, VAT, IRC and the *Derrama Municipal* tax). According to the major private developers active in the Lisbon housing market, interviewed for the purpose of this thesis, almost 60% of a development's cost is taxes. Under these conditions — plus the acquisition and maintenance of land as well as construction — privately financed housing could never be affordable housing by state standards. Private developers would be in favor of developing projects consisting of 100% affordable (social) housing projects, but these need to be financially attractive to incentivize their passive construction. Public land in Lisbon is abundant, much of it without construction or plans for it. Making public land available for the private development of affordable housing would be a great start towards the affordability of housing. It is cheaper for the government to give just the land, rather than to finance the land and the construction.

Incentivizing Affordable Housing

⁷¹ Governo Constitucional — Decreto-Lei n.º 36 212, de 7 de Abril. *Diário do Governo* n.º 78/1947 — Série I. Lisboa: Ministérios das Finanças e das Obras Públicas, 1947. [Disponível em: <https://diariodarepublica.pt/dr/detalhe/decreto-lei/36212-415048>]; and, FERREIRA, A. F. — *Por uma nova política de habitação*. Lisboa: Edições Afrontamento, 1987.

⁷² ANTUNES, Gonçalo — *Políticas de habitação – 200 anos*. Lisboa: Caleidoscópio e Câmara Municipal de Lisboa, 2018; and, ANTUNES, Gonçalo — *Política de habitação social em Portugal: de 1974 à actualidade*, Dossiê: Habitação nas áreas urbanas de Lisboa e Porto: Da comunidade aos decisores políticos. *Sociólogo*. Lisboa: Sociólogo, Série II. . pp. 7-17. [Disponível em: <https://doi.org/10.4000/sociologico.4662>].

⁷³ Governo Constitucional — Decreto-Lei n.º 236/85 de 5 de Julho. *Diário da República* n.º 152/1985 — Série I. Lisboa: Ministério do Equipamento Social, 1985. [Disponível em: <https://diariodarepublica.pt/dr/detalhe/decreto-lei/236-1985-183049>].



Figure 26: A map of all the public land parcels in Lisbon, both developed or built (dark gray) or undeveloped or unbuilt (blue). Diagram by author, with data provided by the Municipal Chamber of Lisbon (in the form of a 2021 AutoCAD file), then cross referenced with up to date Google Earth imaging.

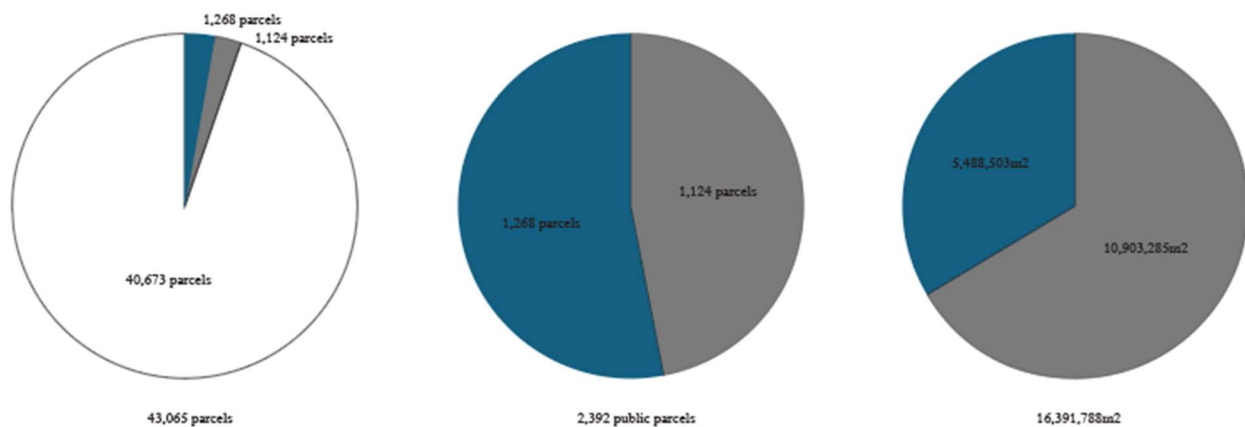


Figure 27: Subdivision of the parcels shown in the map in Figure 26 by category. Diagram by author, with data provided by the Municipal Chamber of Lisbon (in the form of a 2021 AutoCAD file), then cross referenced with up to date Google Earth imaging.

Currently, the municipality of Lisbon has about 43,065 land parcels. Of these, 2,392 are public or municipal parcels, but only 1,124 of the public parcels have ever been developed or built on. This leaves us with 1,268 unbuilt or undeveloped parcels within central Lisbon, making up almost 5.5m2 million [Fig. 26 & 27]; a massive and untapped “natural” resource that should be taken advantage of in the collaboration between the public and private sectors to incentivize the construction of new affordable housing. With the cost of land reduced via contribution from the public sector, we could consider the concession of all and any taxes or fiscal tariffs imposed on construction for the purpose of producing affordable housing. The fiscal burden of construction in the private market is overwhelming, and surely has contributed to the low levels of construction after the 2007 crisis.⁷⁴ By removing these, as many real estate developers in Lisbon argue, it could become easy to supply the market with houses priced much lower while still allowing private developers to produce reasonable profit margins — a win-win for both the private and the public sector. With the appropriate conditions, the private sector would easily observe it as a great bargain, and subsequently adhere and start building cross-generational affordable housing.

⁷⁴ Construction implies an IMT tax of 6%, VAT of 23%, IRC of 21.5%, and the *Derrama Municipal* on real estate profit between 1.5 to 3%, IRS 20% of and Social Security (23.7% from the employer, and 11% from the employee). Exemptions from these, considering the project is fully dedicated to affordable housing, would be the largest step towards making affordable housing easier to produce, but also profitable and attractive to private developers to develop en masse.

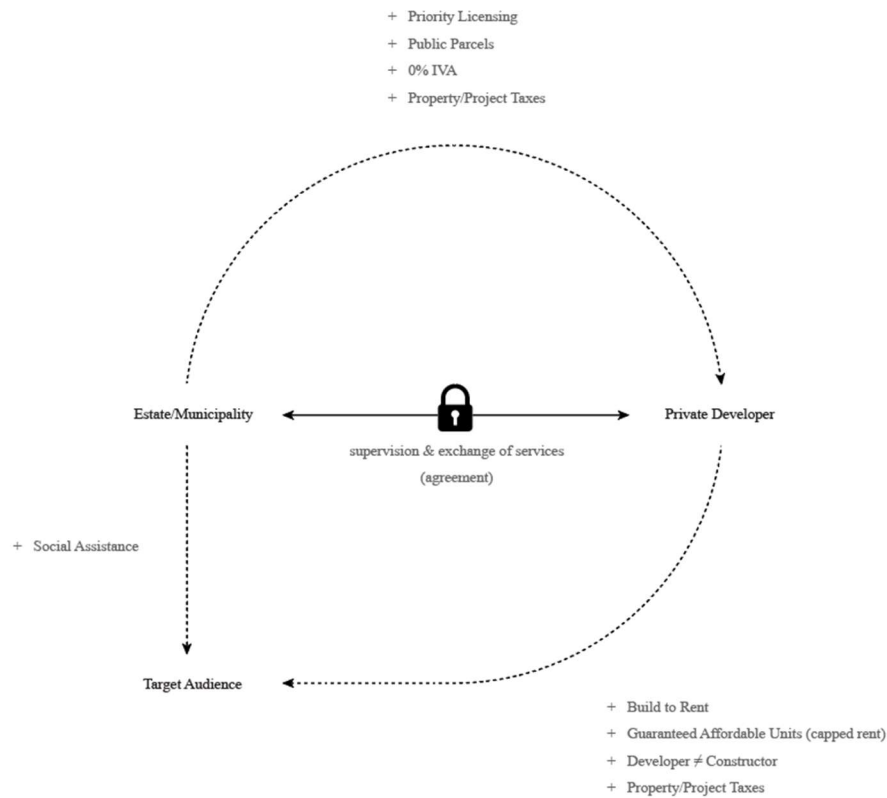


Figure 28: The proposed strategy between the public and private sector, to encourage the passive construction of affordable housing on behalf of the housing market. Diagram by author.

Through land and fiscal concessions, priority licensing (exclusive to affordable housing projects), the state would make it attractive for the housing market to actively develop affordable housing. In order to consummate this public-private sector marriage, and take advantage of the concessions put in place, the private developer would then only exclusively develop to rent, with guaranteed affordability metrics set by the state. Throughout this process, the state is given uninterrupted supervision at every step until and after the affordable housing is delivered [Fig. 28]. We must also consider that to manage the influx of residents appropriately, as is done through existing cross-generational cohousing programs.⁷⁵ With an economic strategy as such, that guarantees affordable housing to be fast and attractive investment for the private sector, we can guarantee that any new typologies of architecture

⁷⁵ A residential or condominium association of sorts would have to exist, managed by representatives of both the public and private sectors together, in a manner that binds the two sectors towards the strict purpose of fathering truly attainable developments.

developed specifically for the purpose of affordable housing, in this case cohabitation of a disadvantaged young adult and aging population, will sustain itself as such over time.

Despite the conveniently fitting complements between the young adult age segment and an aging population of Portugal, the possibility for cohabitation must be studied attentively to carefully satisfy the unusual demographic mix in order to fulfill each age group's basic needs as objectively as possible. Understanding the needs of both groups will help us define where to introduce this new architectural typology within the urban fabric. Not all the needs of a young adult are similar to a senior's, and vice versa, but all needs of both age groups are quantifiable. Both demographics require easy access to public transportation, but a senior citizen's proximity to a healthcare facility or pharmacy (due to potentially restricted capacity for mobility) are stricter than a student's proximity to a university. A study in the *Australian Journal of Transport Geography* — the largest study exploring the primary needs of seniors in care homes — suggests that the populations of old-care homes require all auxiliary services to be within a comfortable distance of 500m — calculated radially. While it is safe to assume that young adults are able to sustain larger distances on foot, the study shows that almost all the residents of the 1,249 old-care homes surveyed throughout the country, comprising 103,308 seniors (almost half of all care home residents in Australia), are not willing to walk more than 500m of distance to reach their required services [Fig. 29]. We can thus take the preferred walkable distance limit of the senior group as an overarching limitation that encompasses both groups. After establishing urban mobility as primary concern, the senior population examined was also asked to express the order of importance of the auxiliary services they require. In order of importance following Transportation, the Pharmacy was first and the second was Groceries, followed by other services of less critical importance [Fig. 30].⁷⁶

⁷⁶ AMINI-BEHBAHANI, Peiman, et al. — Walking distances from services and destinations for residential aged-care centres in Australian cities. *Journal of Transport Geography*, vol. 85. [Em linha] Amsterdam: Journal of Transport Geography, 2020. [Consult. 20 Mar. 2024] Disponível em WWW:<URL:<https://doi.org/10.1016/j.jtrangeo.2020.102707>>. pp. 1-8.

City	Sydney	Melbourne	Brisbane	Canberra	Adelaide	Perth
Average	204	241	217	227	281	277
<500m	95.8%	91.8%	86.9%	88.5%	86.8%	91.3%
500-1000m	3.3%	6.7%	8.8%	11.5%	13.2%	8.1%
1000-1500m	0.6%	1.0%	0.6%	0.0%	0.0%	0.0%
1500-2000m	0.0%	0.5%	2.5%	0.0%	0.0%	0.0%
>2000m	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%

Figure 29: A study of almost half of Australia's senior home population reveals the majority favor walking distances of less than 500m to their required activity. Data table from the Australian Journal of Transport Geography.

Service	Pharmacy	Grocery	Café	News Agents	Post Office	Lottery
Rank	1	2	3	4	5	6
Weight	0.28	0.23	0.19	0.14	0.09	0.04

Figure 30: The same seniors – after transportation – rank Pharmacies and Groceries as the most important services near where they live. Data table from the Australian Journal of Transport Geography.



Figure 31: Superposition of 500m radii from train or metro stations to public land parcels. Viable parcels (blue), inviable parcels (light gray) and parcels that are already developed (dark gray). Diagram by author.

The superposition of 500m radii from train or metro stations highlights the first filtration of ideal locations from 1,268 unbuilt public land parcels in Lisbon down to 334 comfortably accessible locations [Fig. 31]. The same logic is then applied to healthcare services. A 500m radius is applied to all Pharmacies, Health Centers and Hospitals in Lisbon, this time however, from the parcels themselves. We stipulate that for a parcel to remain viable, it must be within 500m of a pharmacy and a health center, all else is discarded, filtering the collection of 334 viable parcels down to 140 parcels [Fig. 32].

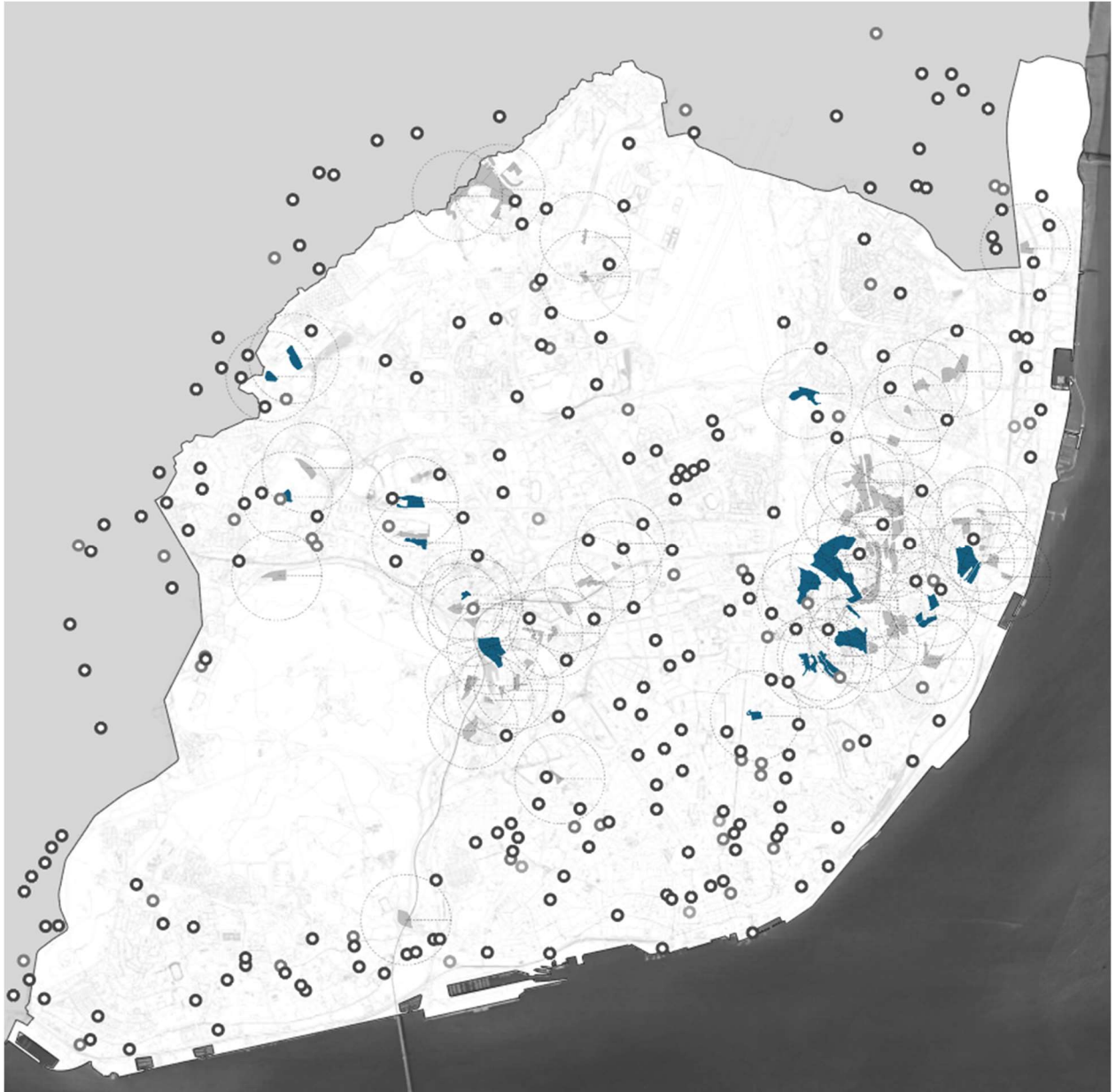


Figure 32: Superposition of 500m radii from Pharmacies (black), Health Centers (dark gray) and Hospitals (light gray). Viable parcels (blue) and inviable parcels (light gray). Diagram by author, location data extracted from Google Maps.

We apply the same logic once more to grocery services, applying a 500m radius to all 140 parcels, stipulating that each parcel must have at least one supermarket and one mini market within reach, filtering the viable parcels once more down to 120. By adjacency, these 120 parcels can then be combined into 18 larger sites [Fig. 33].

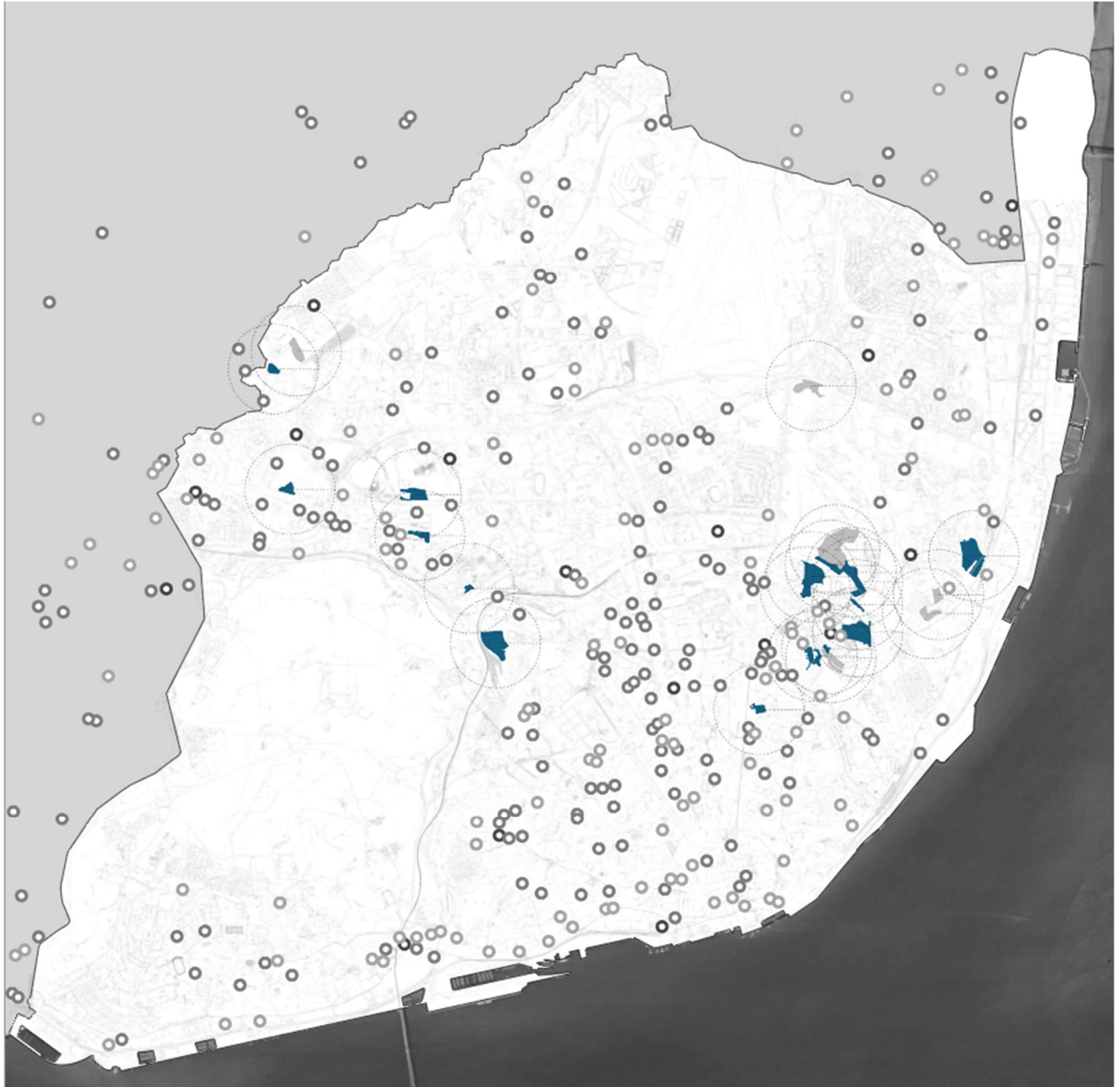


Figure 33: Superposition of 500m radii from Municipal Markets (black), Supermarkets (dark gray) and Minimarkets (light gray). Viable parcels (blue) and inviable parcels (light gray). Diagram by author, location data extracted from Google Maps.

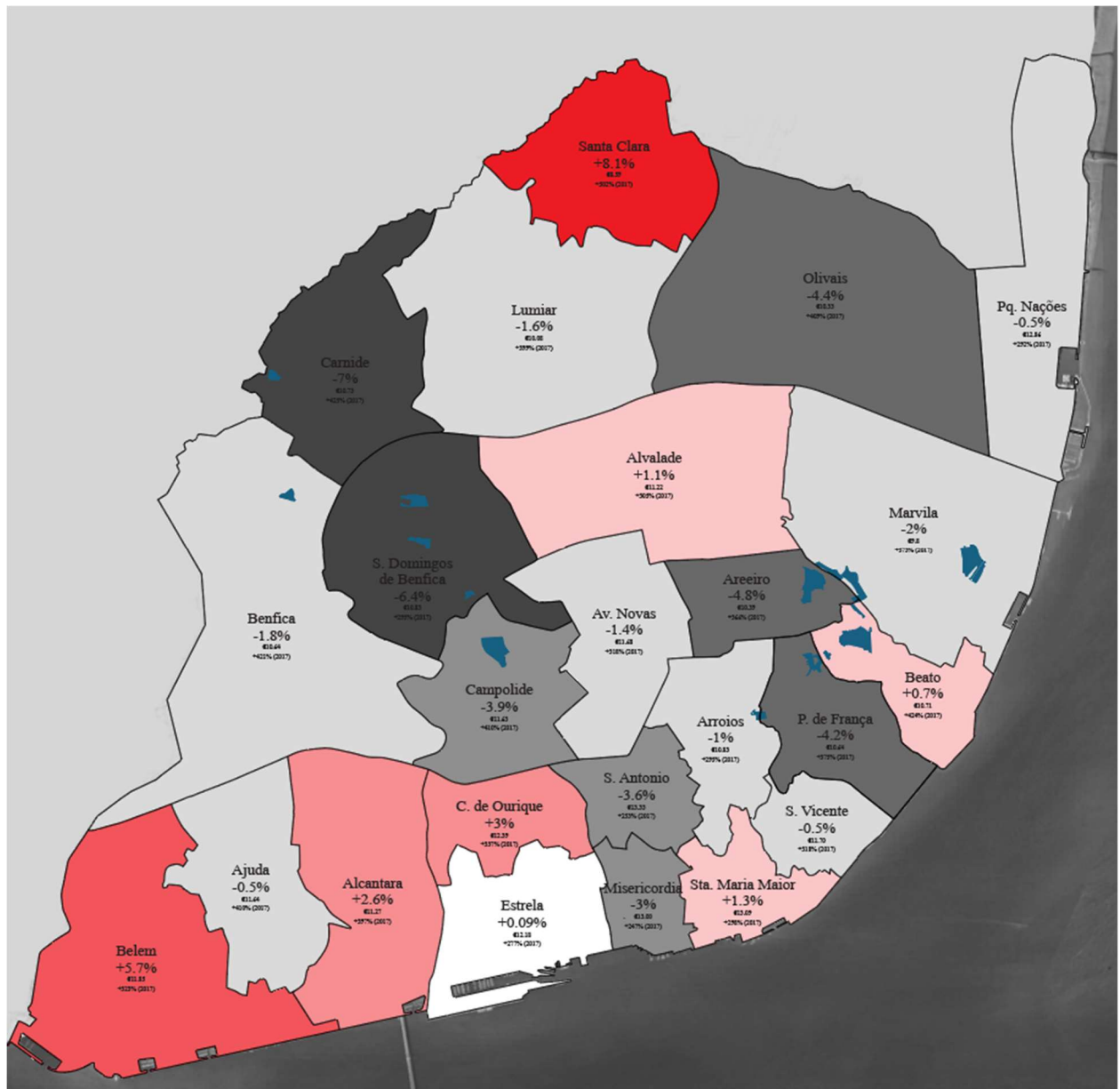


Figure 34: The 18 sites over neighborhoods and their average changes in rent over the past few years. Darker gray signifies falling rents, Red signifies increase. Diagram by author, data from newspapers *Jornal de Negocios* and *Sapo*.

By superimposing the 18 sites onto the neighborhoods and their average rent price change over the past few years, we can quickly notice without much elaboration that none of the sites of interest are in areas of concern [Fig. 34]. Due to poor solar exposure, the site in the parish of Carnide is discarded, leaving us with 17 sites that range in size anywhere from 3,916m² to 59,320m² [Fig. 35].



Figure 35: The 18 sites spread out across Lisbon are tested for adequate solar exposure throughout the year.

Diagram by author.



Figure 36: The 17 sites (and their qualities) that are ideal to house the age groups in question. Diagram by author.

This means that for the purpose of cohousing seniors and young adults, there are 17 specific sites that accommodate the minimum demographical requirements, where the architectural typology being proposed in this thesis could be replicated [Fig. 36]. To showcase the proposed architectural typology of cohabitation, we will select the smallest site 9, with an area of 3,916m², located in the northwestern edge of the parish of Beato [Fig. 37].



Figure 37: Chosen site (Site 9) located in the Beato parish, and its proximity to services of interest within 500m.

Diagram by author.

Now has come the time to retrieve what we have learned from the analysis of the population segments under question, in order to determine the typologies that will be expressed architecturally in this site. By revisiting Figures 17 & 18, we remember that today's demographics not only demand, but require an increasing quantity of smaller housing units. By revisiting Figures 19 & 20, we remember that in fact, both the housing market so far (including public efforts) have failed to provide said smaller housing units required. The analysis surrounding the observations in Figures 22, 23, 24 & 25 that we must take advantage of the size of smaller units to more densely pack them in an urban setting, with much more density than currently being practiced in Lisbon. Cohousing also allows the use of less square meters to house more people, more inhabitants for less apartments providing a smaller housing-unit-per-head ratio. By reducing the configuration of smaller cohousing typologies to interchangeable modules, we can create a simple construction manual of easily modifiable housing units. Consistent with a variety of both senior and student housing developments around the world, we must consider the interactions encouraged by coliving, and develop and include within our system of modules, the distinguishment between shared private spaces, and shared public spaces, in order to stimulate and preserve an immersive and socially integrative urban environment. All indoor housing spaces will be destined for cohabitation, and all non-indoor spaces will be destined and used as transitional spaces. That way we can take advantage of typical transition spaces (ie. corridors, elevators, patios, terraces, balconies, rooftops, etc) – that

are typically lost real estate – and give them a second life as shared public gardens servicing the shared living units.

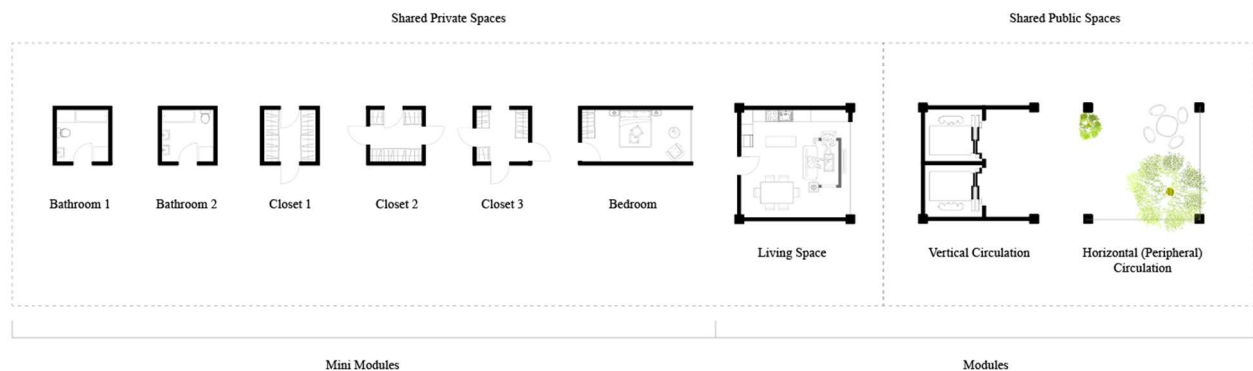


Figure 38: The library of Mini Modules of the typological system that can be used to compose larger housing Modules. Diagram by author.

The base Mini Modules, for flexibility purposes, dispose of a few dispositions in order to maximize the flexibility and arrangement of the Mini Modules into larger Modules that make-up the housing units. This includes a set of two bathroom types, three closet types, one bedroom type, one living space type, one vertical circulation Module, and one horizontal circulation Module that doubles as shared outdoor gardens for the building's population [Fig. 38]. Mini Modules range between 2.2m by 2.2m to 2.2m by 4.4m, while larger Modules composing housing Units, follow a 4.4m by 4.4m grid that facilitates the distribution of units, their density and other spaces on the site.

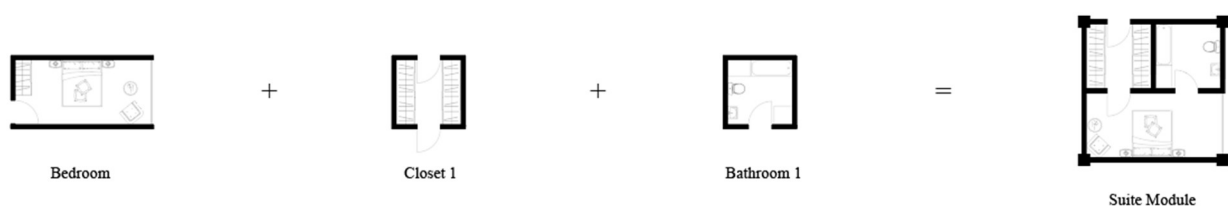


Figure 39: Example of combination of Mini Modules to form the private quarters (Module) of a resident, then used to compose a housing unit. Diagram by author.

When arranged into larger modules, for example, adding bathroom, closet and bedroom Mini Modules together results in a larger Module for a resident that could be used to make part of a housing unit [Fig. 39].

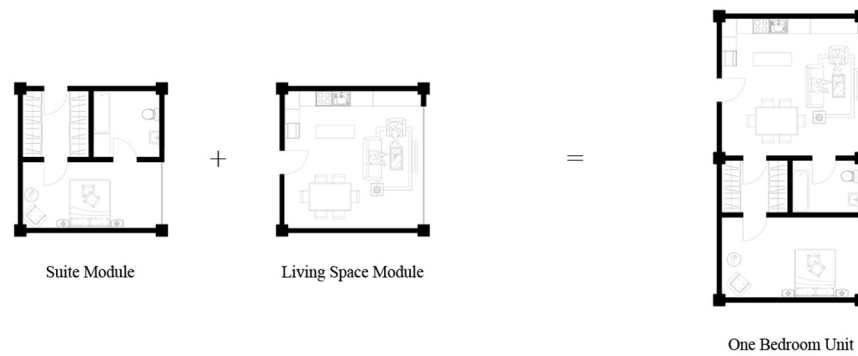


Figure 40: Combination of Modules to form a one bedroom housing Unit. Diagram by author.

When we in turn combine larger Modules, we can compose numerous housing Units which are of interest for the multi-generational mix this cohabitation typology requires [Fig. 40 & 41]. The ability for young adults to live alone, with seniors, or a multiple combination of each [Fig. 42], at an average of private living space ranging between 30 to 46m² per resident — smaller than the minimum permitted by the regulations set forth by the *Regulamento Geral das Edificações Urbanas* (RGEU), and therefore included in the licensing concessions discussed earlier in the new economic strategy illustrated in Figure 28. The puzzle nature of the Units generated by Modules, in turn by Mini Modules, is playful, and flexible, allowing for a distinctly new urban fabric of intertwined residential and public spaces that anatomically encourage social integration at all scales, making the system extremely efficient, and easily replicable [Fig. 43, 44, 45, 46 & 47].

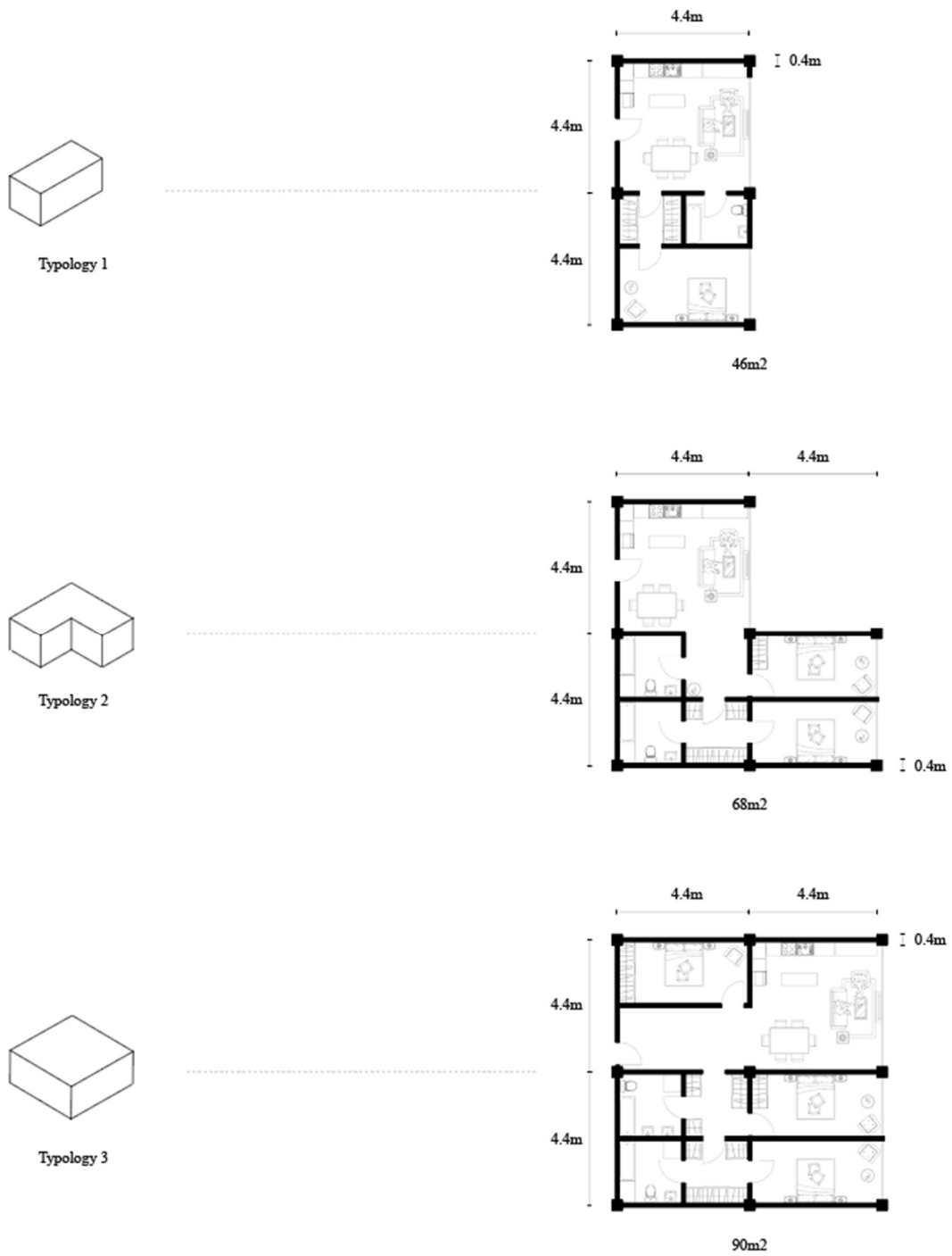


Figure 41: Typology 1, Typology 2 and Typology 3. Respectively, a one bedroom, a two bedroom and a three bedroom Unit. Diagram by author.

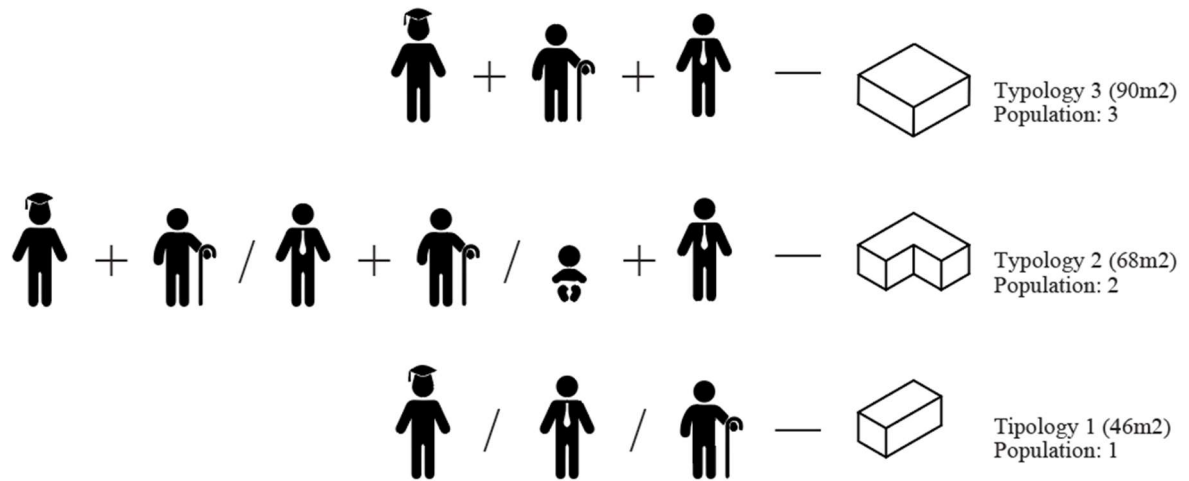


Figure 42: Possible arrangement of residents within housing Units. Diagram by author.

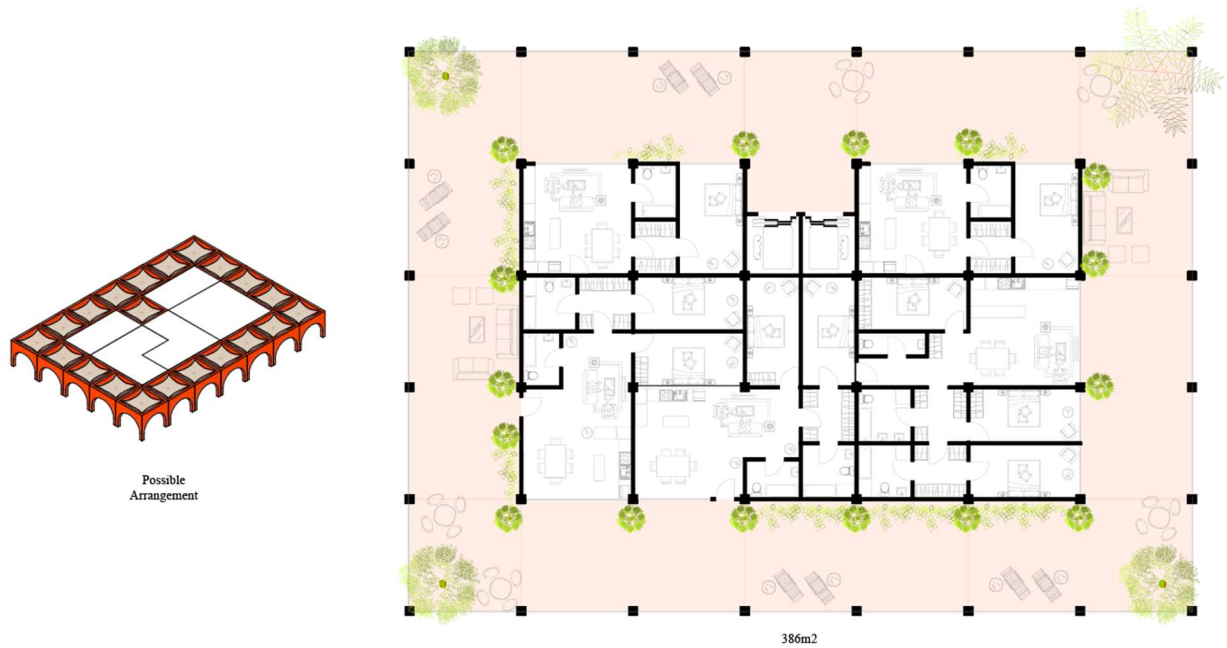


Figure 43: A possible arrangement of housing Units. Diagram by author.

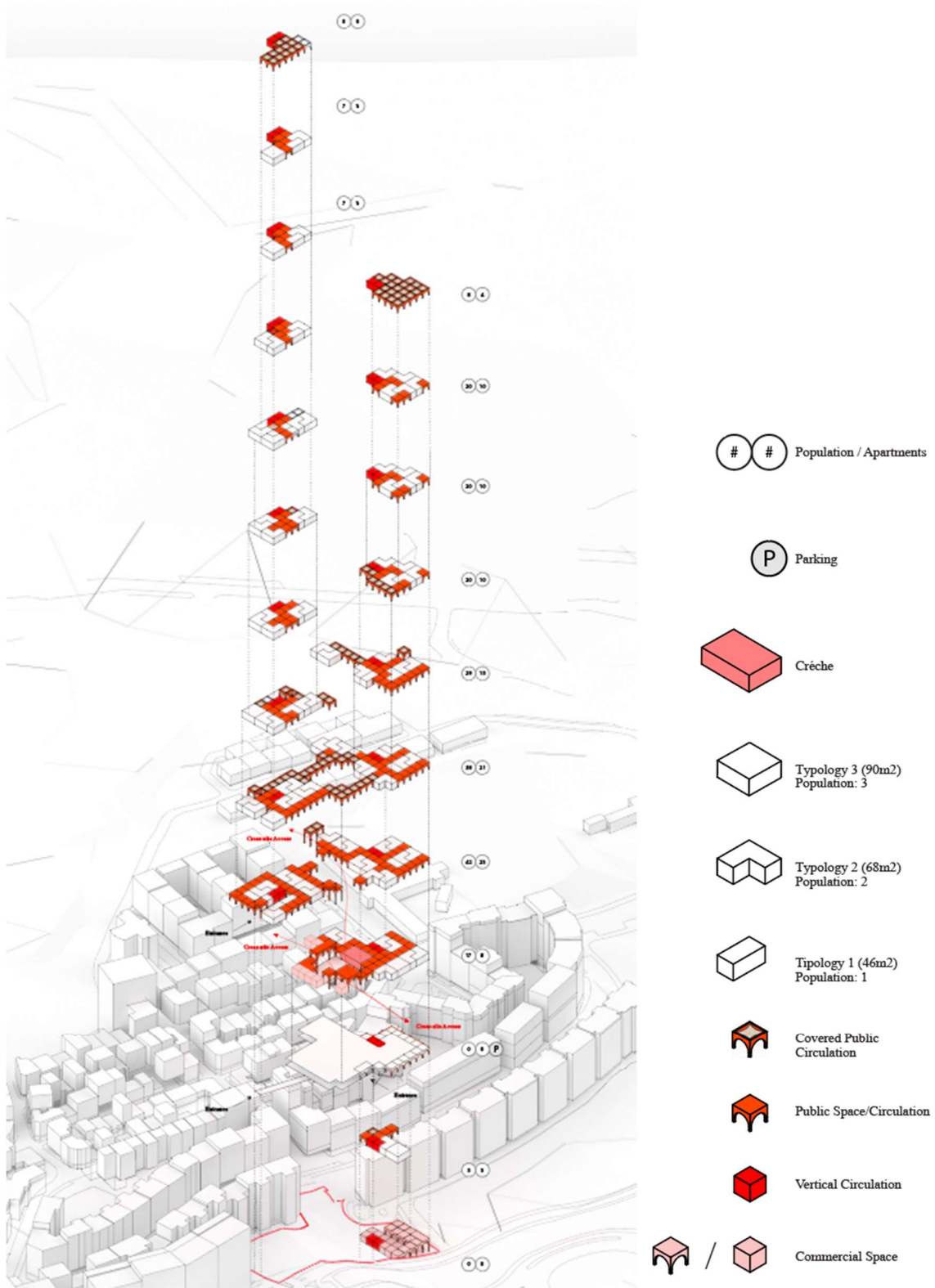


Figure 44: Implementation of housing Units on the site, along with public space Modules, a central courtyard and other supporting programs in Site 9. Diagram by author.

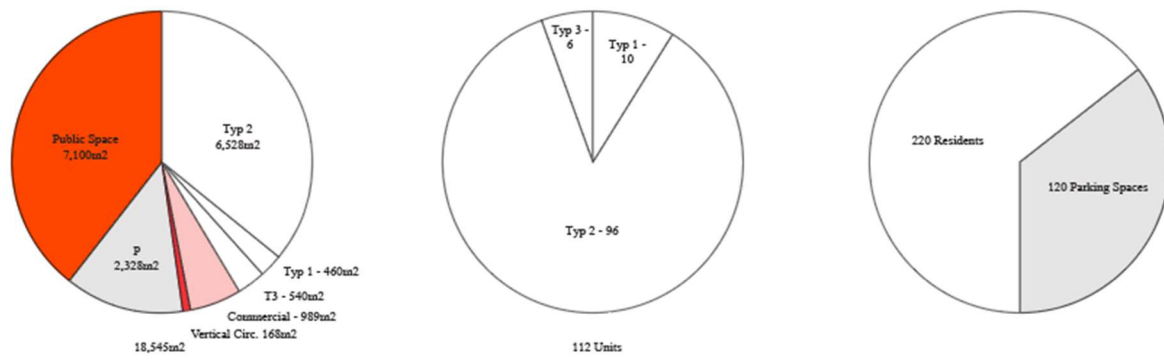


Figure 45: The subdivision of programs, typology mix and resident to parking ratio in Site 9. Diagram by author.

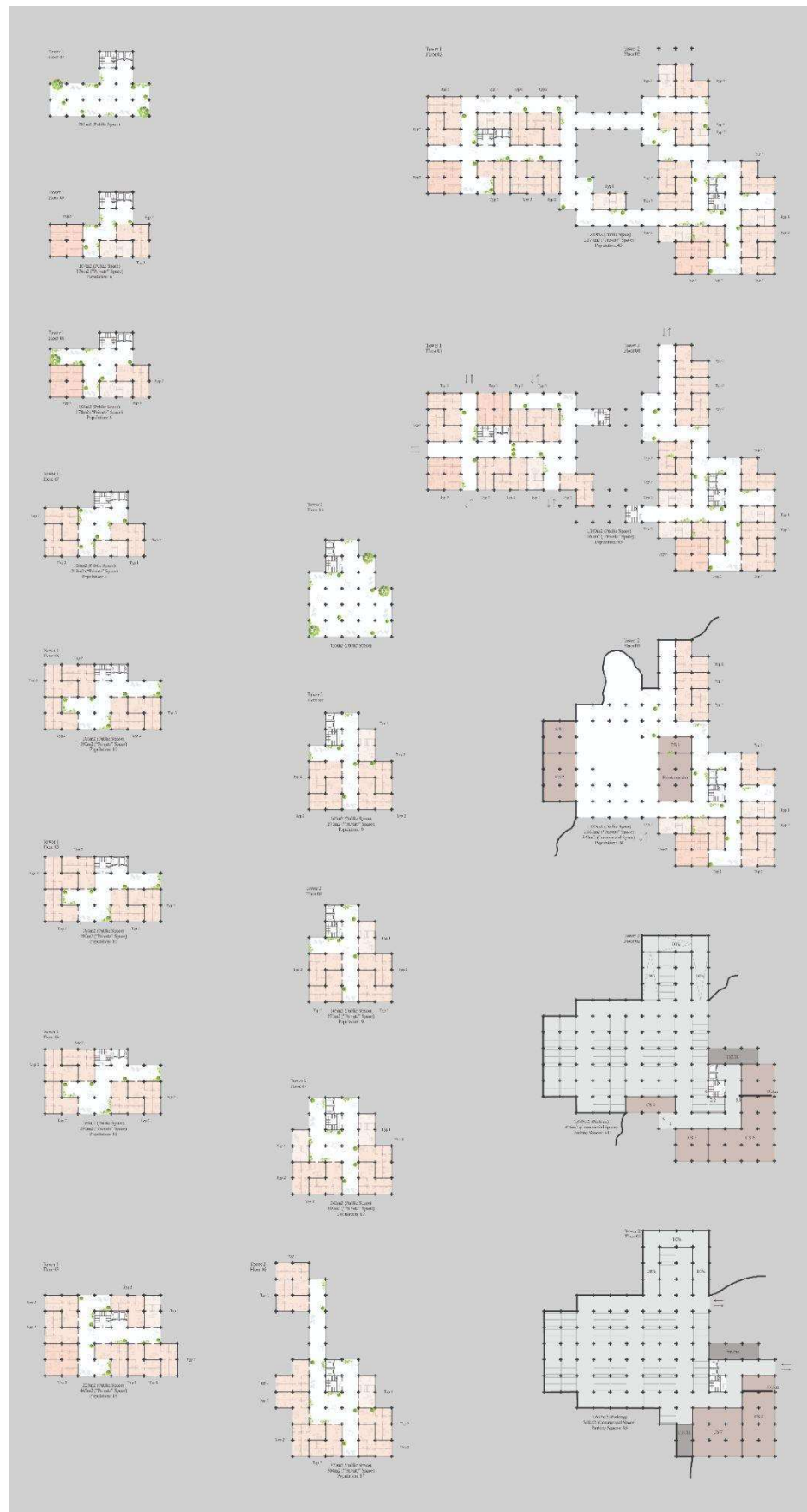




Figure 47: An axonometric 3D of the development on Site 9. Diagram by author.

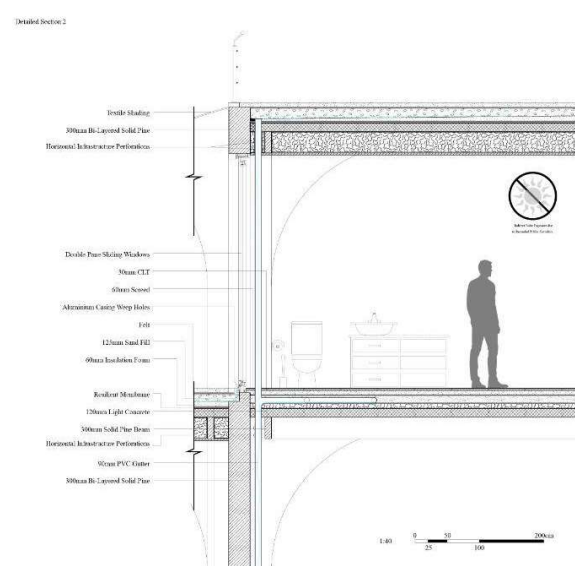
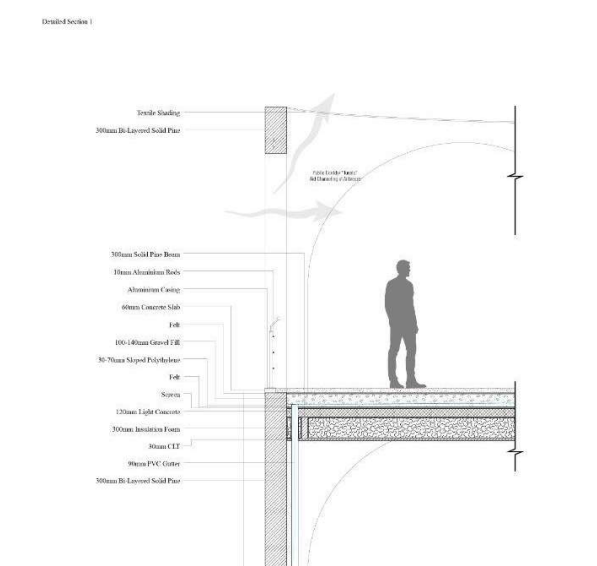
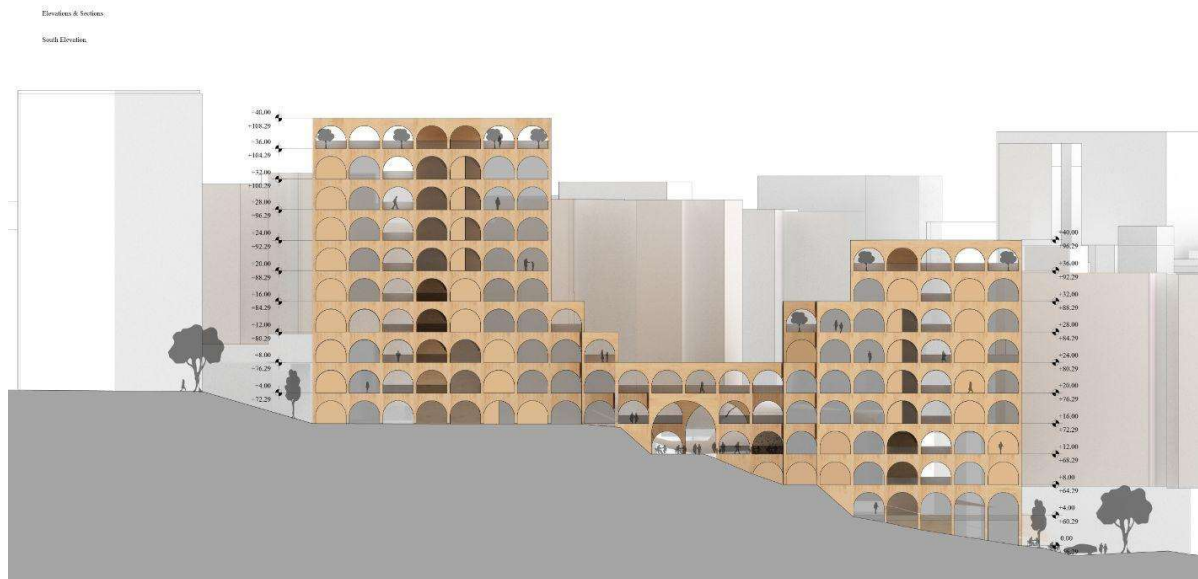


Figure 48, 49 & 50: South Facade, Longitudinal Section and constructive details of Site 9, respectively.

Diagrams by author.

Similar to the largely successful affordable housing complex A House for Artists in London, by London based architecture studio Apparata [Fig. 51 & 52], the housing Units are disposed and distributed in such a way to maximize peripheral shared public spaces that also double as transition spaces – since housing units are compressed as much as comfortably possible to increase density – in order to further encourage the integration of intergenerational co-living in a single housing complex [Fig. 43, 44, 45 & 46]. Coincidentally, many contemporary senior home projects now boast lavish gardens to improve health of its residents, a feature here considered for the new typology being proposed [Fig. 53].

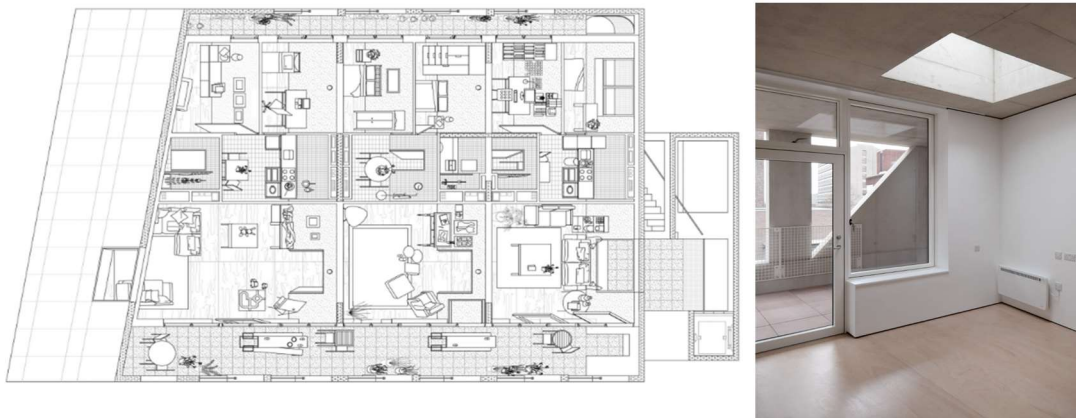


Figure 51 & 52: A House for Artists by Apparata in London. The affordable housing complex uses peripheral outdoor corridors as both transitory spaces and shared public areas for the residents.



Figure 53: The gardens of the Santa Rita Geriatric Center, in Menorca Spain, completed in 2003 by Manuel Ocaña.

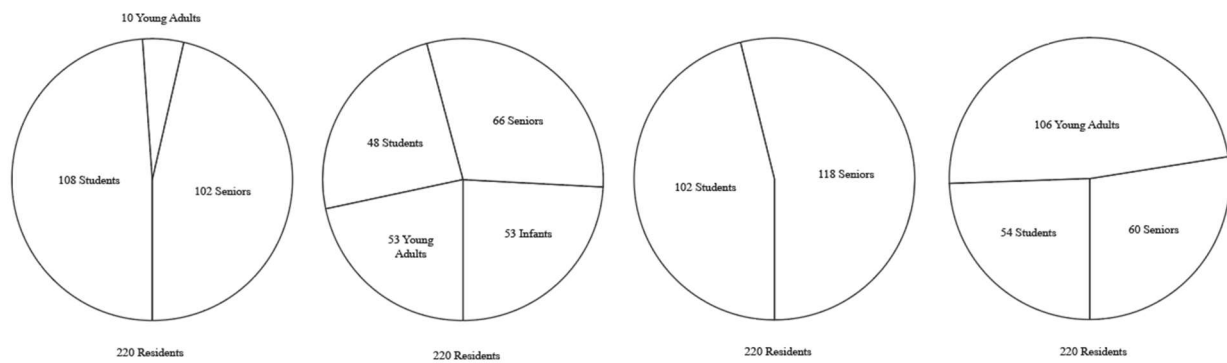


Figure 54: Possibilities of accommodation of different combinations of resident types in the Site 9 development.
Diagram by author.

Since we are able to recuperate transition spaces as shared public spaces, the ratio of public space to residential spaces is almost 1:1. The mix of Typologies proposed includes Typologies 1, 2 & 3, in order to allow for the flexibility of a variety of resident mixes, while retaining the imperative purpose of providing to a demographic population requiring smaller residential units. With 10 Typology 1 units that can host either a young adult or senior that can afford to and/or prefers to live alone but remain part of a community, 96 Typology 2 units that can host 2 residents (mixing young adults and seniors) and 6 Typology 3 units where three two young adults may share a home with a senior or vice versa. In only 10 floors — on a dramatic slope — we can fit 112 housing units of various Typologies (1, 2 & 3) accommodating up to 220 residents [Fig. 54]. The population density of Lisbon decreased from 6,382.7 to 5,416.8 individuals per square kilometer between 2012 and 2013, then stabilizing between 5,400 and 5,500 since.⁷⁷ Through the suitably compact Units and Typology mix proposed — 220 residents within a 3,916m² site (7,528m² of enclosed residences) — this complex boasts a population density of 56,180 per square kilometer – over ten times higher than the city’s average, while also hosting 7,100m² of public vertical gardens which is almost double the site’s area and close to a square meter of vertical garden per square meter of residence. This is not only denser than the densest city in Europe (Paris, just about 20,000/km²),⁷⁸ but also comfortably denser than

⁷⁷ LUZ, Beatriz — Population Density in Lisbon 2011-2022. *Statista*. [Em linha] New York: Statista, 2024. [Consult. 4 Jul. 2024]. Disponível em WWW:<URL:www.statista.com/statistics/1456504/population-density-lisbon/#:~:text=The%20population%20density%20in%20Lisbon,5%2C500%20inhabitants%20per%20square%20kilometer>.

⁷⁸ Institut National de la Statistique et des Etudes Economiques — Comparateur de Territoires. *Institut National de La Statistique et Des Études Économiques*. [Em linha] Paris: Institut National de la Statistique et des Etudes

the densest city in the world (Manila, over 42,000/km²).⁷⁹ This is perhaps the most important conclusive factor of this thesis, because we are significantly increasing the density of Lisbon's urban fabric by packing more smaller units in a smaller city area (while also retaining the qualities necessary for a healthy urban experience), meaning that we are able to respond to the required housing shortage faster than typical construction, on top of that, with less construction. All this, while remaining volumetrically congruous and consistent with its surroundings as to not steal access to views and solar exposure from its neighbors, meaning that through its system, the complex could potentially be significantly larger in volume, population, public space and density – a possibility easy to replicate in the other 16 developable public Sites deemed suitable for this population segment.

If we applied the same system across all other 16 Sites — with a combined area of 379,216m² or 0.379km² (sum from Figure 36) — we could potentially house, considering the same density as implemented in Site 9, at least 21,304 people. If we consider that most sites have more distant neighbors, and therefore the number of towers as well as their height could be greater than Site 9's (2 towers with 10 storeys), we could easily surpass the housing of 50,000 young adults and seniors just in central Lisbon (excluding the larger metropolitan area) – more than half of what the entire national health system houses, and almost 200 times more than what all the student-senior co-living programs existing in Portugal have done in the past 20 years.

Economiques, 2021. [Consult. 16 Jun. 2024]. Disponível em WWW:<URL:www.insee.fr/fr/statistiques/1405599?geo=UU2020-00851>.

⁷⁹ Philippine Statistics Authority — Population Projection Statistics. *Philippines Statistics Authority*. [Em linha] Quezon City: Philippine Statistics Authority, 2024. [Consult. 15 Fev. 2024]. Disponível em WWW:<URL:psa.gov.ph/statistics/census/projected-population>.

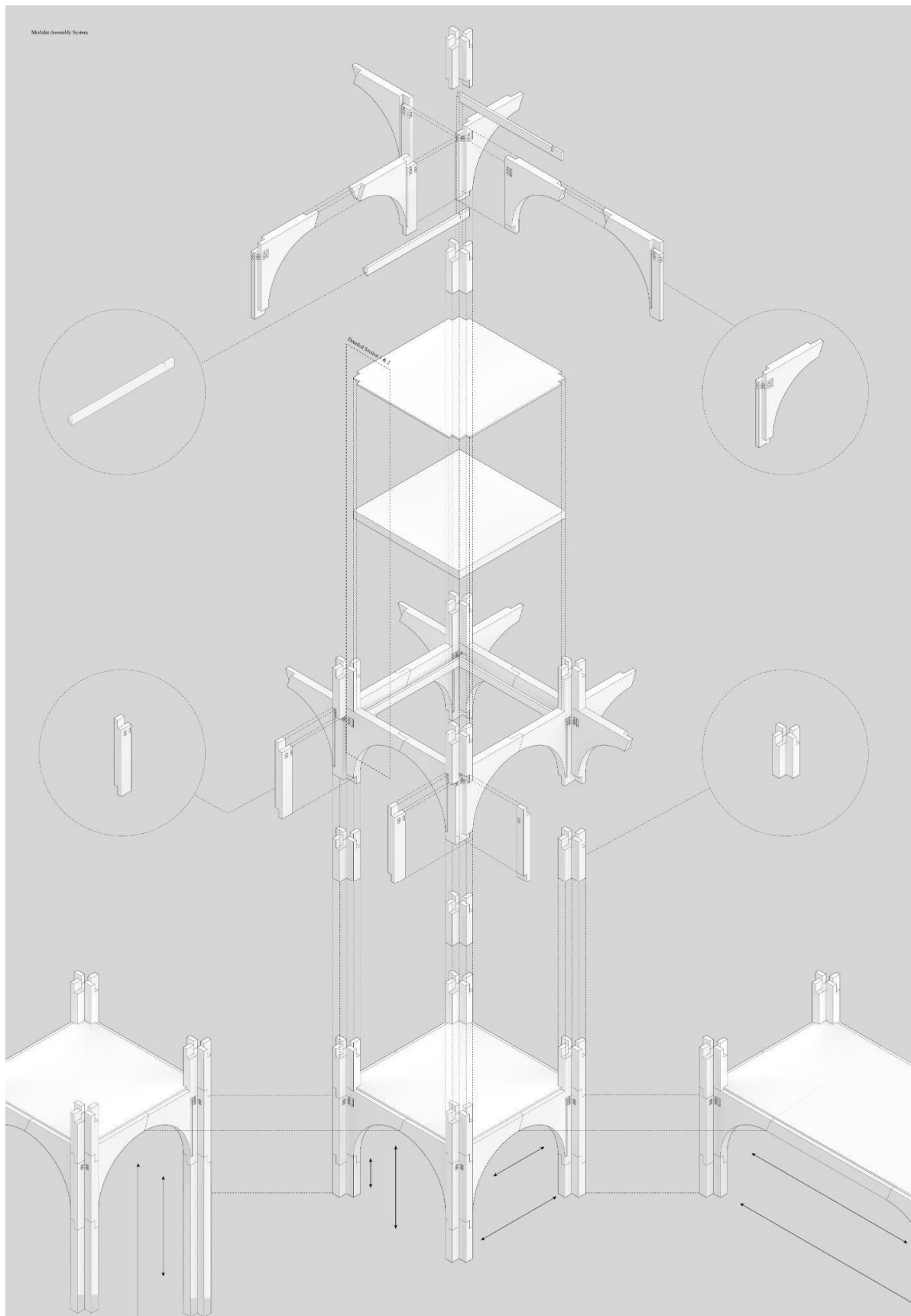
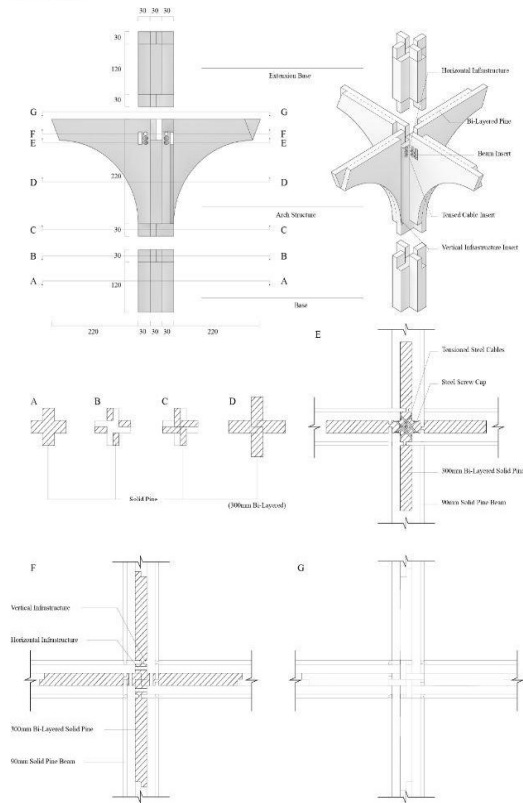
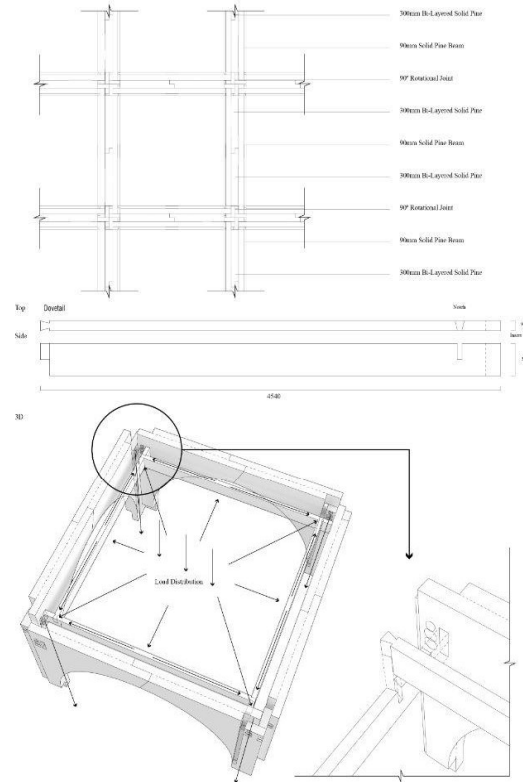


Figure 55: A prefabricated modular construction system that can be easily assembled on site. Diagram by author.

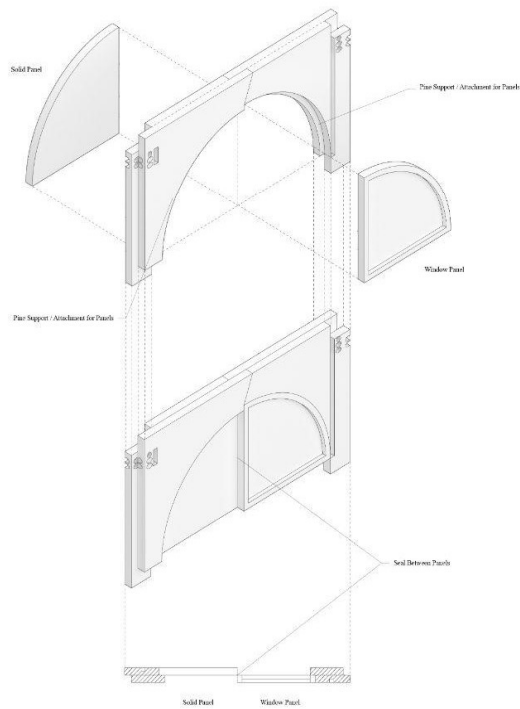
Primary Structure - Vertical



Secondary Structure - Horizontal



Tertiary Structure - Panels



Quaternary Structure - Infrastructure

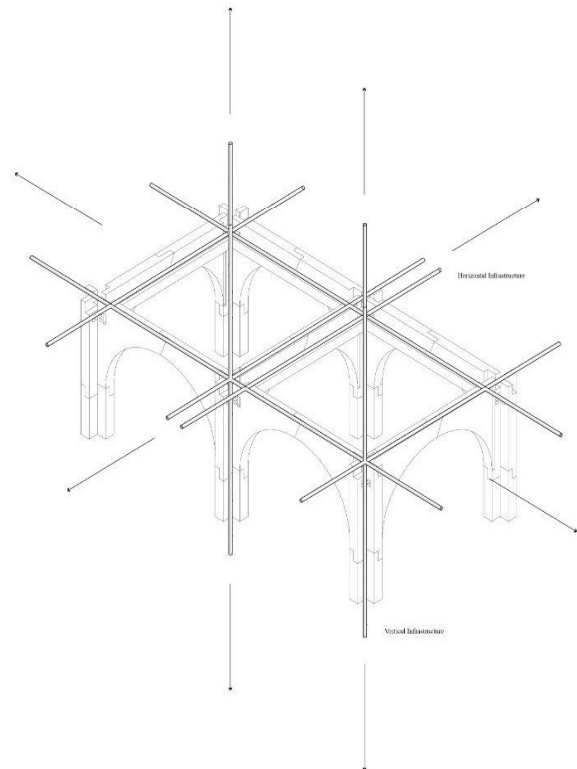


Figure 56: Insertion of infrastructure between the assembled modules. Diagram by author.

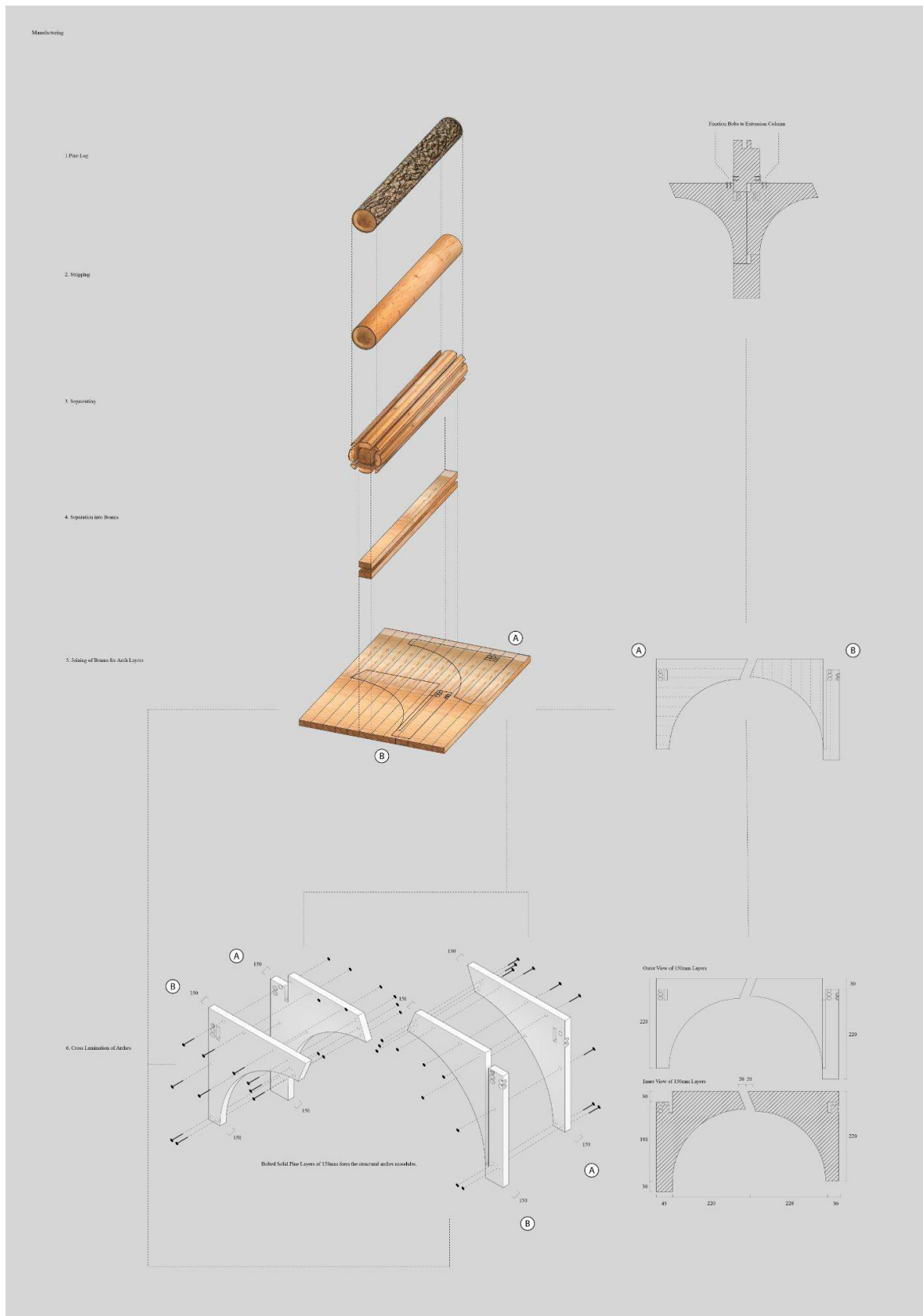


Figure 57: Demonstration of process from raw material to construction module for assembly of the system.

Diagram by author.

To facilitate the sustainability of an easily replicable modular system and the speed of assembly (and therefore speed of construction, making the project cheaper), the construction of the Modules is broken down into the assembly of easily assemblable prefabricated parts, that may be assembled directly on site. The simple repetition of 3 interlocking elements, the arch, the pillar, and the corner cap allow for the expansion of the system in any direction on the x, y and z axes. The extension of a beam aggregable between arches and of the pillar then also allows for other dimensions suitable to accommodate larger and more open public spaces, allowing for the economic and typological systems to not only respond faster and more appropriately to the unsatisfied demand of a disadvantaged young adult and aging population, but to also coherently carry forward the same principles through its constructive system.

Conclusion: Supplying What is Demanded

All in all, in the past century Portugal has been a relatively productive producer of housing, yet producing housing without critically analyzing the changing needs of demographic transfigurations over time can lead to an incompatibility between supply and demand — the case in Portugal today. As of 2019, all the programs and efforts made thus far, correspond to an existing pool of only 118,000 social housing units. This corresponds to only 2% of the national housing stock, housing only 2.5% of the population, or 270,000 people.⁸⁰ In the next twenty years, young adults and senior citizens will make up more than 50% of Portugal's population [Fig. 23], most of which, as we have seen, either struggles to leave the family household on one end (young adults), or are isolated from the same (seniors). Deficiencies since the end of the nationalist regime in 1974, expressed by both the public and private real estate sectors — through state subsidized housing and the housing market itself — have left a generation of young adults unable to afford housing, and a significant aging population uncared for who also struggles to make housing ends meet. The mechanisms that govern the housing of the population of Lisbon failed to cater to its needs, suggesting that potentially, a unification of both sector's resources holds the key to incentivizing the construction of affordable housing and appropriate housing typologies. Understanding how we arrived at the present point was imperative in determining and devising an appropriate response and solution to the problems plaguing the current housing crisis in Lisbon.

While the amalgamation of young adults and lonesome seniors citizens have shown to bear high levels of compatibility — through the consolidation of similar and complementary needs — it is not a new idea, but efforts to employ strategies of cohabitation have been few, underwhelming and inconsistent, most of which have attempted to use the already existing housing supply. Through the foundation of a simple economic policy that makes affordable housing attractive for the private sector to develop actively, through a collaborative relationship between the public and private sector that takes advantage of destitute public land parcels, the proposed new easy-to-assemble and easy-to-organize modular architectural Typologies (consisting of smaller interchangeable modules) can be easily reconfigured, and applied throughout the city of Lisbon.

Lisbon has been, for the purpose of this thesis, used as an urban case study to devise the ensemble of these strategies and typologies, and shape them into a morphological urban response that caters to the inherited and immediate needs of present demographics. Through

⁸⁰ ANTUNES, Gonalo — Pol tica de habita o social em Portugal: de 1974   actualidade, Dossi : Habita o nas  reas urbanas de Lisboa e Porto: Da comunidade aos decisores pol ticos. *Soci logo*. Lisboa: Soci logo, S rie II. . pp. 7-17. [Dispon vel em: <https://doi.org/10.4000/sociologico.4662>].

the analysis of this thesis and meticulous cross reference between the municipal CAD file and GoogleEarth, we learned that Lisbon alone harbors about 1,268 unbuilt public parcels which together consist of 5,488,503m² (FIG 26 & 27). After carefully selecting land parcels suitable to our combined target audience and their needs, we determined 17 ideal sites of varying sizes where to exercise the new architectural typologies. The combined surface area of the 17 ideal sites is 383,132m² (0.38km²), of which, for the purpose of this exercise, we only used 3,916m² — Site 9 (FIG 36). Under the proposed density restrictions, the area of Site 9 allowed us to produce 112 units housing 220 residents (FIG 44 & 45) with a population density of 56,180 per square kilometer — more than ten times that of Lisbon (see Page 82). If we were to apply the same density (which could potentially be higher) in the other 16 sites, they would house over 21,500 people just in Lisbon. If we consider that the systems devised here in this thesis are not limited by geographical location (rather by conditions of the already existing urban fabric themselves, ie. distances from pharmacies or public transport), they can be applied and reconfigured to respond to land parcels and demographics in any other urban centers, anywhere — herein lies the beauty of this thesis' proposed system and typology.

Other urban centers like Porto, Braga, Coimbra, Faro, Evora, and main others, retain unused public land that can be taken advantage of under the same analyses and processes, producing always different morphological results through the same systems proposed here — efforts that could potentially occur simultaneously in different regions as to tackle the problem faster, so that under a less bureaucratic and more sustainable program that incentivizes their construction, we can not only ensure a decent home to those who require it, but also ensure the longevity and upward mobility of these demographics, and their inclusivity into the urban-socio-economic fabric of Portuguese society.

Annex

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Affordable Cohousing between a Young & Aging Population:

Interview with João Seixas – 05.06.2024

João Seixas, a professor at the Department of Geography & Regional Planning at the NOVA university in Lisbon, is leading a project titled “Quartos Acessíveis”. This project seeks to address housing shortages, rent unaffordability, and senior loneliness by facilitating financially disadvantaged students to live in seniors’ homes. This interview takes place at a critical time in the housing market in Portugal – while a young adult generation struggles to afford housing, and a growing aging population suffers from loneliness and isolation – with the intent of gaining better understanding about how this came to be, why these two distinct generations are so compatible, and how they could benefit from cohabitation.

Francesco Silveira Catemario di Quadri (FSCdQ): What policies do you believe have contributed to the current housing crisis and affordable housing shortage in Lisbon?

João Seixas (JS): The current housing crisis in Lisbon can be traced back to several key factors. Primarily, housing has never been effectively recognised as a fundamental right within the state’s housing policies. Housing policy was never formally prioritized or bureaucratically formalized, consequently relegating it to a matter of secondary concern. Moreover, despite the establishment of democracy in Portugal, which brought certain welfare guarantees and rights

like a national healthcare system, free and accessible education, and a robust social security system providing for a 14-month salary paid over a 12-month period, housing has not seen the same level of proactive support. The constitutional right to housing, enshrined in Article 65 of the 1976 constitution, has consistently been overshadowed by market-driven approaches rather than being actively defended through public policy. There have been only two sporadic instances of governmental intervention aimed at addressing the needs of the most disadvantaged. Notably, these were briefly pursued post-revolution through initiatives like the *Serviço de Apoio Ambulatório Local* (SAAL) and in the 1980s with the *Programa Especial de Realojamento* (PER), targeting severe housing shortages in the metropolitan areas of Lisbon and Porto. Outside these efforts, the prevailing approach has been to delegate housing solutions to the market. Although there was a public policy in place, it predominantly revolved around subsidized bank credit. From the 1980s to the early 2000s, until the policy ended in 2003, a significant amount of public investment supported subsidized credits that primarily facilitated homeownership. This approach lacked a structural policy framework – there was no enduring, ideologically adaptable addressing diverse housing needs across different societal demographics. Support for housing acquisition did not consider the territorial planning, or the varying needs of different family structures, ages, or demographic groups. Simultaneously, the rental market began to deteriorate, a trend that started during the Estado Novo regime with frozen rent incomes, and persisted into the democratic era. Attempts at liberalization were made, but these lacked the necessary social support mechanisms to stabilize incomes, leading to significant financial instability and eventually resulting in the complete deregulation of the rental market. This situation worsened during the austerity period under the Troika government, which saw a complete liberalization of an already precarious and fragile rental market. In recent years, there has been an increase in rental contractors, a trend not driven by improvements in policy or reflective of broader welfare realities, but rather a symptom of the systemic challenges in acquiring affordable housing. Furthermore, the global financial crisis of 2008 triggered a prolonged period of low interest rates, leading to significant investments in real estate. This trend, initially local, has escalated into a global phenomenon, often disregarding local conditions and needs, thereby exacerbating the difficulties for local families. These families, operating at a local level, face increasingly challenging efforts to access housing at reasonable prices and conditions, greatly increasing the effort necessary from the families who are now going to market.

FSCdQ: Could you clarify what you mean by “effort” in the context of housing affordability?

JS: The effort refers to the proportion of a family's total net income that is allocated towards rent or housing payments.

FSCdQ: Is it accurate to say that housing costs should ideally not exceed around 30% of a household's net income?

JS: The typical effort rate should be between 30 to 35%, but this rate is continuously increasing. Real estate investments have been exerting significant pressure on housing profitability, a situation linked to the 2007 financial crisis and the ongoing loss of new construction. On average, the effort rate for Portuguese families is about 8 to 10%. This figure stems from nearly

two decades of subsidized credit; those who purchased homes between 1987 and 2003 with such credits, typically on 25 to 30-year terms (which have now ended or are ending), have very low or almost negligible housing costs. The issue arises for those entering the market in the past decade. When examined, there is a stark generational injustice. Effort rates across generations are radically different, compounded by territorial injustice, since the greatest pressure is in major cities where universities, jobs, and municipal facilities are concentrated. Nowadays, renting a home requires 80% of the average national income, while buying a home accounts for 70% of one's salary.

FSCdQ: These are the political-sectoral reasons which you encompass in great detail in your publication *Lisboa Em Metamorfose*. You describe these as being very structurally embedded into the fabric of Portuguese territory, implying some sort of hierarchical system that geographically dictates urban policy. Could you expand on this?

JS: Absolutely. There's also a deeper, more structural reason that's very significant in Portugal. This is one of the most centralized countries in the world. We don't have regions. Municipalities are crucial, yet their political clout is significantly limited in terms of financial resources; they have limited financial, budgetary, fiscal, and political capacities. If you look at the total public expenditure across all OECD countries, what percentage is allocated to local or regional authorities? Out of all the OECD countries (excluding micro-nations like Cyprus or Malta, which have different needs), Portugal ranks as the second worst in terms of the percentage of public expenditure that is the responsibility of local authorities, at only 11%. Only Greece performs worse. In highly regionalized or federalized countries, such as Italy or Spain, these percentages can reach 40 to 50%. This reflects a lack of commitment from the country itself to genuinely consider territorial policies. This is due to our history. We are a country where the state created the nation, not the other way around. This means that while Portugal has very effective global policies (such as diplomacy) and the assets of the central state are strong, the territory and cities are somewhat neglected. Housing is not seen as a matter of spatial justice.

FSCdQ: It appears that housing consistently ranks last in terms of public expenditure priorities, always trailing behind sectors like education and health.

JS: Housing has always been an issue that *we* thought the market would resolve. The market could have had more support, more regulation or direction from a regulatory body that would study its changing population's needs over time in order to orchestrate well timed responses.

FSCdQ: This raises an interesting point. There appears to be a significant ideological divide between the public and private sectors concerning real estate and housing. According to the most active real estate developers in Portugal (in terms of volume), the state hinders new construction.

JS: It is very clear that public administration should be much more efficient, but this does not mean that there should be less public administration. It has to be more efficient. This also applies to territorial planning. Land use planning in Portugal has only existed since the 1990s. Land use planning in Portugal only began in the 1990s with the introduction of Municipal

Master Plans (PDMs) and related legislation. All this legislation was designed for the paradigm that existed before the financial crisis. Until then, there was extensive construction without the need for effective territorial planning.

FSCdQ: Up until the adoption of the Euro.

JS: Yes, until 2003. In a way, that turned out to be a blessing, and that's why Portugal didn't hit rock bottom in 2007. We hit it more gently than other European countries. Now, we've been in a post-crisis paradigm for quite some time. We're still trying to adjust, and it hasn't been easy. The Socialist Party government struggled to recognize housing as a problem. It wasn't until 2017/18 that a minister of state for housing was established. . At the same time, legislation continued to support rehabilitation, construction, and the influx of mass tourism, which at a certain point began to put considerable pressure on both the rental and housing markets. There is no balance. What's needed is intelligent management that varies from region to region, from parish to parish, from neighborhood to neighborhood. Essentially, we are pressuring areas that historically have always been better served in terms of facilities, transportation, schools, etc.

FSCdQ: In your view, are the policies and legislations currently being pushed and proposed by the authorities helping or exacerbating the situation?

JS: More for the better, I would say. However, local authorities have very limited power, which introduces another factor. There have been decades of frozen rents, a financial crisis that heavily impacted businesses, especially in construction and real estate, and a tremendous influx of tourism in a country with beautiful cities. On the other side, people are becoming increasingly desperate for housing, facing ever-higher affordability rates. The debate on housing policies in Portugal is still very much entrenched and dealing with strong ideological divisions. These ideological differences have always existed in the health and education sectors, but in housing, they are particularly pronounced because both sides harbor significant resentments. The private sector thinks the state is an obstacle, and vice versa. There's a lot of resentment.

FSCdQ: This is interesting because I have been contemplating a strategy where both sides work together. An economic strategy in which private developers develop affordable housing, through the donation of public land by the municipality of Lisbon, which has more than two thousand plots of land, around half of which are completely built.

JS: Such a proposal has already been rejected, where it was stipulated that private developers would have to guarantee a percentage of the development to be accessible housing.

FSCdQ: In this case I would propose 100% of the developments to be accessible housing of higher densities under public supervision. So that it is attractive to construction companies, with less taxes. On the other hand, the state would no longer need to develop affordable housing.

JS: That's an interesting approach. The current housing crisis is so serious that there is no silver bullet. Multiple strategies are required, and one of the most important is to increase the public housing stock so that the government can provide for the most needy families. However, it's

also crucial to promote the rental market. Cities with poor rental markets don't function well. Currently, private developers are focusing on segments that offer the highest returns, such as large luxury homes and properties for tourism (AL). There should be policies in place to incentivize private developers to build affordable housing and create typologies that meet the current demographic and family needs. If the typology is smaller, the rent will also be lower. This isn't happening at the moment, but it needs to.

FSCdQ: It has been five decades of construction of larger typologies that cater to outdated regime-era family structures, but also the more recent renovation of larger typologies throughout Lisbon via all the latest tax incentives implemented. At the beginning of the 2000s, the total number of T2s, T3s and T4s+ being built was more than 10x greater than that of T0s and T1s.

JS: Right, and that doesn't make any sense!

FSCdQ: In the meantime, single person families have doubled since the Revolution, and the average size of families since then has halved. How does all that has happened, and everything we have discussed, come into play with regards to this changing family structure and currently heavily skewed population pyramid of Portugal? In particular, such a large young adult population unable to afford housing and a large aging population segment that remains isolated and forgotten.

JS: This is a tail-in-the-mouth conundrum. It's a vicious cycle. As young people cannot find housing, they also do not form families, or do not leave their parents' homes, or those who can, emigrate. Thus, we have the formation of a new type of modern *family* demographic that is of increasingly smaller dimensions, not only made up of young adults who are unable to afford living independently and therefore reproduce, but also of a drastically aging population (leftover from higher 20th century fertility rates) that is increasingly lonesome. Now there are hundreds of thousands of elderly people living alone in large houses. All of this needs to be considered when creating new solutions. Building new homes requires a lot of time, effort, and capital.

FSCdQ: What makes these two age groups so special? What makes them so compatible with regards to their potential cohabitation?

JS: Some have property, and others don't. It is a question of being able to combine different compatible needs here. The homes of seniors are full of loneliness, because they live alone. Young people are facing major problems of labor, financial and housing insecurity. Cohabitation between the elderly and young people is interesting but must be done according to certain rules. Affordable rent prices would benefit both groups since the elderly also face financial difficulties.

FSCdQ: There are several cohabitation programs for young people and the elderly in Lisbon, Coimbra and Porto (namely *Partilha Casas*, *Abraço Gerações*, and *Programa Aconchego*). They seem to work, but there is no performance data regarding the success of these programs.

The *Programa Aconchego* has existed for 20 years and has only found housing for 281 students. *Partilha Casas* has existed for 8 months and already has more than 1000 applications (from students and elderly people), but it is not known how many found homes. They all seem to work, but there is no accessible data that is conclusive. What about the *Quartos Acesiveis* program you are developing with NOVA university?

JS: I don't like building a house from its roof, and therefore it only goes live when the essential foundations of the project have been placed. One of them is at an institutional and financial level: guaranteeing payment. Because it takes a lot of investment to build a matching platform. There is a need for a network of partners who give owners confidence to bring their rooms and properties to the network. So we are building the platform and its required networks. At the same time we require a marketing strategy in parallel for channeling these age groups. After everything is set up, we can start pilot programs with NOVA's university students. We still have a long way to go, and we will take our time to develop it because we are dealing with people's trust, and it is fundamental we preserve and cultivate this trust. Mrs. Clotilde will not bring a student into her home without having great trust, even if he pays rent.

FSCdQ: How will the matching process work? What steps will be taken to ensure compatibility and trust between seniors and students?

JS: We have a set of rules and processes. Senior property owners apply with their available rooms, and students apply on the other end listing their socio-economic requirements or capacities, as this program is not for all students, it is only for those who require the most socio-economic assistance. An internal team filters through and manages all the applicant's submissions, taking their time to find the best fit between candidates to match them appropriately, considering accessible rents well below market value.

FSCdQ: What are the biggest challenges you are facing in the development of this program and platform?

JS: The biggest challenge is the maintenance and administration of said trust between parties and partners participating in the program. This trust is essential for the program to become a viable solution to the shortage of housing in urban centers, targeting first and foremost, a generation coming of age without financial access to housing. It's a win-win, young students gain access to more financially accessible rooms, and senior citizens become less lonely and gain through the cohabitation of the students financial support for their expenses.

