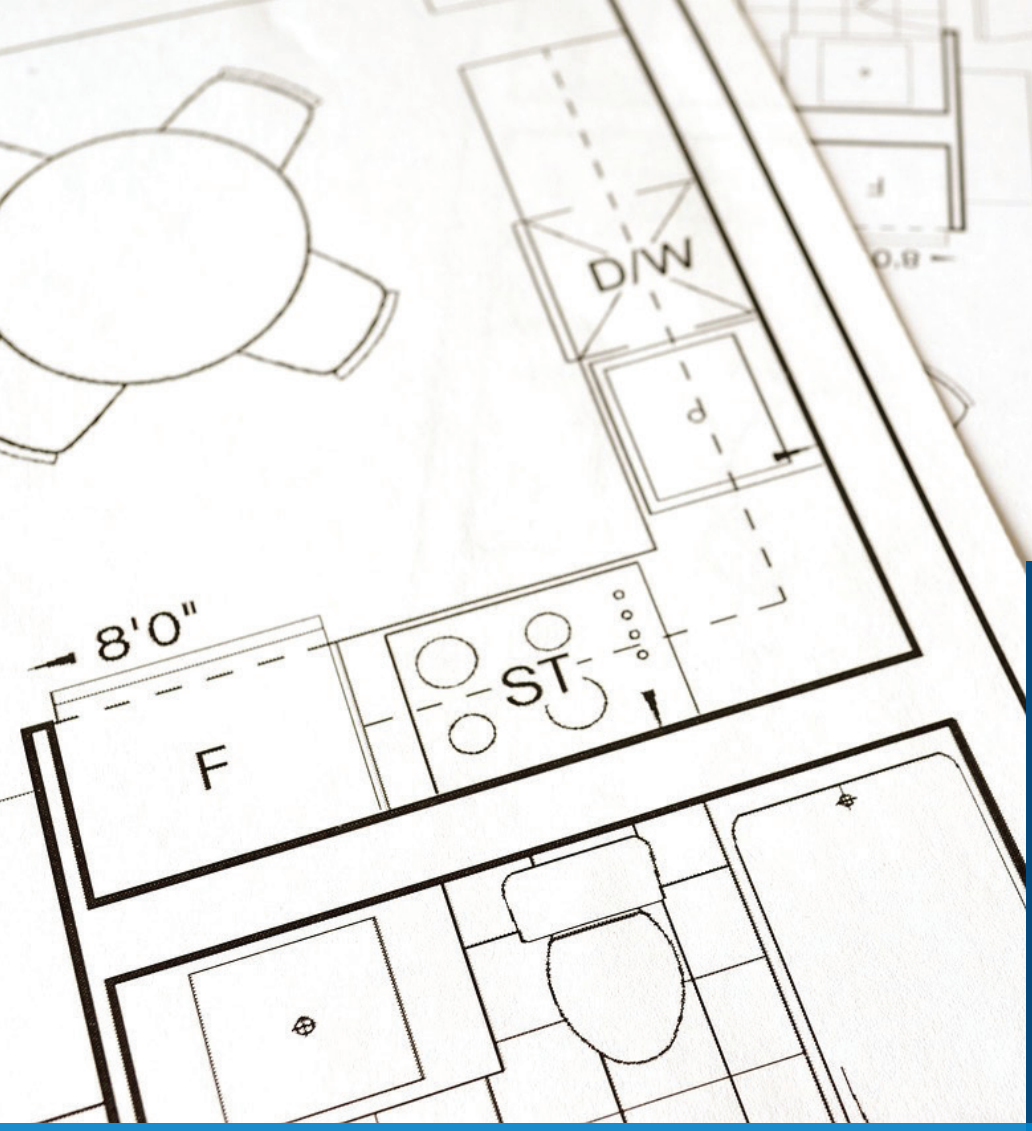

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Table of Contents

Urban Planning
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EDITORIAL

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Housing Norms and Standards: The Design of Everyday Life

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Abstract

This editorial introduces the articles in this thematic issue, which bridge the gap between technical housing standards, design practices, and socio-cultural norms.

Keywords

everyday practices; home; housing design; technical standards

The way we live and our quality of life significantly depend on the lived experience of our homes and the type and quality of space they offer. Housing equality, security, and quality are important for the health and well-being of everyone. In countries with an advanced economy, people often spend most of their time at home. For instance, in Great Britain in 2023, adults spent on average 18 hours and 43 minutes at home every day (IPA, 2023). Housing design is therefore greatly informed by generalisations related to social and cultural norms or expectations around home use and lifestyles, especially in housing that tends to be designed to minimum standards and requirements such as social, public, and affordable housing.

Housing reflects both the socio-cultural expectations and norms around what a home should look like and provide, as well as the technical standards meant to ensure homes are safe, usable, sustainable, and decent. Housing is where socio-technical concerns become standardised and spatialised, but also where they are challenged by everyday routines and changing lifestyles.

This thematic issue of *Urban Planning* aims to bridge the commonly found separations between studies of technical housing standards, design practice, and socio-cultural norms, acknowledging that they are deeply entangled. Decent housing is the outcome of appropriate design standards and maintenance as well as the different perceptions of housing quality by diverse housing stakeholders and economic or political constraints.

The recent Covid-19 pandemic has laid bare some of the immediate effects of poor housing quality, with two-thirds of social housing tenants in England having experienced a mental health deterioration (Mind, 2020) and almost 40% of households suffering from overcrowding reporting psychological distress (Tinson & Clair, 2020). The pandemic has also revealed how the lived experience of homes and housing needs can substantially differ from that envisioned by normative design standards and the assumptions on home use and useability they are based on (Jacoby & Alonso, 2022).

This thematic issue provides a wide range of discussions on how socio-technical discourses shape housing concepts and realities. In "The Lifestyles of Space Standards: Concepts and Design Problems," Alvaro Arancibia reviews the theoretical basis and changing interpretations of space standards. His analysis, framed by a study of Georges Canguilhem's *The Normal and the Pathological* (1978) and Karel Teige's *The Minimum Dwelling* (1932), explores fundamental concepts, historical approaches, and specific applications of space standards in England and Chile. Based on this, Arancibia argues for a more architectural practice-based understanding that can address the evolving needs of diverse households and create more inclusive and adaptable living spaces.

Related to this conceptual reevaluation of space standards, several articles focus on specific drivers or aspects of housing design guides and standards. Lucia Alonso Aranda examines the development of housing standards in "The Influence of Space Standards on Housing Typologies: The Evolution of the Nuclear Family Dwelling in England." The study investigates how a state-led promotion of the nuclear family since the nineteenth century has shaped housing policy, regulations, and standards. This promotion is especially evident in key housing reports such as the *Tudor Walters Report* (1918), the *Dudley Report* (1944), and the *Parker Morris Report* (1961) in England. The article analyses how these reports and standards have fostered typological shifts and layout preferences in response to changes in personal and social interactions at home, and how they relate to the spatial hierarchies and family dynamics of nuclear families. Given recent demographic and societal changes, she posits the need for more innovative design solutions and evidence-based space standards that can address contemporary transformations in housing demand and use.

In "Handbook, Standard, Room: The Prescription of Residential Room Types in Sweden Between 1942 and 2023," Daniel Movilla Vega and Lluis Juan Liñán provide a detailed study of how residential room types, rather than unit layouts, became the focus of housing design handbooks in Sweden. Reflecting changes in housing policy and a broader national modernisation project, these room types employ standards in a way that productively challenges housing norms and invites their reinterpretation by designers. The recent disaggregation of the room into its functional, separable parts in design manuals indicates to the authors a further shift in the conceptualisation and implementation of regulations. This shift represents a move from prescriptive to performance-based regulations, which can overcome the limitations of dimensional or layout requirements and abstract the function-specific room to an idea.

Savia Palate, in "Heating Standards and Obsolescence in Post-War Britain's *Homes for Today and Tomorrow*," examines how *Homes for Today and Tomorrow* (1961), the basis of the so-called Parker Morris Standards in England, advocated for a future-proof "adaptable home," and how this required the provision of larger homes and modern heating systems. However, the promise of flexible, comfortable, and healthy homes through a transition from the traditional open fireplace to smokeless central heating was complicated by its dependence on wider socio-economic and environmental changes. As Palate argues, raising heating

standards and efficiency came with the introduction of new domestic appliances that promoted consumerism and increased waste production. This shift also raised questions about the equitable distribution of infrastructures and housing investments, as well as efforts in modernisation, environmental concerns, and class-related housing inequalities.

Palate's historical enquiry into heating is complemented by Yaneira Wilson and Yankel Fijalkow's "Energy Renovation and Inhabitants' Health Literacy: Three Housing Buildings in Paris," a study of why, in current social housing in need of retrofitting and modernisation, the ability by residents to control their environment through heating becomes a fundamental element of care and housing inequality. The article develops a methodology for assessing housing quality in relation to "health literacy in housing," taking into consideration "building monographs," collective memories, "inhabited surveys" or cartographies of homes, and individual decisions on trade-offs between prohibitive heating costs and health and wellbeing benefits. According to Wilson and Fijalkow, physiological experience and lived knowledge of housing are essential to negotiating daily life in substandard housing and improving physical and mental health outcomes.

Like Wilson and Fijalkow, Raül Avilla-Royo and Ibon Bilbao focus on lived experiences and mapping home uses and layouts to analyse the actual occupation of homes in "Domestic Cartographies: A Post-Occupancy Ethnographic Assessment of Barcelona's Social Housing Strategies, 2015–2023." The article provides an in-depth analysis of recently completed social housing, using a novel user-centred and qualitative approach to assess public housing policies in relation to housing procurement strategies. The qualitative review of housing projects planned and completed in the last eight years is complemented by quantitative data. Based on this analysis, the article concludes with policy evaluations and recommendations at the scale of the neighbourhood, building, and dwelling.

Another article that reevaluates subsidised housing projects using a mixed-methods approach is "Compact Housing for Incremental Growth: The K206 RDP Project in Alexandra, Johannesburg" by Afua Wilcox, Nelson Mota, Marietta Haffner, and Marja Elsinga. Completed in 2010 as part of the South African Reconstruction and Development Programme (RDP), the K206 scheme is used as a case to discuss the importance of establishing and integrating both appropriate technical standards and context-specific design solutions while considering the long-term social, economic, and spatial needs of residents. In particular, the article reflects on the challenges and opportunities of incremental housing and the phenomenon of the backyard room as a spatial solution to socio-economic demands in low-income housing.

In contrast to these post-occupancy evaluations, Ayşe Zeynep Aydemir and Tomris Akın consider in "Adaptive Reuse of High-Rise Buildings for Housing: A Study of Istanbul Central Business District" how adaptive reuse offers opportunities for speculative housing design in a studio-work-as-research context. Based on an in-depth analysis of real-life urban and economic conditions and a range of speculative design propositions focusing on sustainable, affordable housing, they explore potential new spatial norms and standards and how these are culturally and typologically contextual to the site. The design speculations and analysis result in a series of local but also transferable insights about adaptive reuse and the increasingly important relationship between housing standards and environmental concerns.

While the question of lived housing experience is evident in many of the articles and integral to their research methodology, in several contributions, it is the main concern. Oliver Moss and Adele Irving, in

"Manifesting the Imagined Homeless Body: A Case Study of the Men's Social Services Centre, Newcastle-upon-Tyne, UK," use the case of the Salvation Army's Men's Social Services Centre in Newcastle, designed by the architects Ryder & Yates (1975), to examine how architectural intentions shape lived experiences of the homeless. Based on a 10-year study, the article discusses how conceptions and imaginations of the homeless body are instrumentalised by a person-centred architectural design that is empathetic, moralising, and pedagogical. It further explores how the experience of the hostel is influenced by the tensions between a simultaneously caring and institutional architecture, highlighting the contingent relationship that exists between lived experiences and design intentions.

Sophie Johnson, in "Domesticity as Nation Building in the United Arab Emirates," investigates how intangible cultural heritage is produced by collective lived experiences of homes. Studying the Emirati villa, she analyses how its provision and design are part of a nation-building and modernisation effort through imagining and constructing a shared history and future. National identity is simultaneously spatialised and enculturated through domestic architecture, the social norms that inform it, and everyday cultural practices around hospitality. The compression of housing histories and cultural production in the UAE, therefore, challenges the conventional distinction between "authentic" and "invented" heritage.

Whereas Johnson studies contemporary domesticity, Francesca Romana Forlini, in "The Cultural Construction of the Domestic Space in France: Women's Lived Experience and the Materialization of Customs," asks similar questions about the history of domesticity as a cultural construct in France. The article scrutinises the lived experience and social or individual identities of women as shaped by domestic interiors, societal norms, gender stereotypes, and the regulatory power exerted by the French state through mass housing design. It further analyses how female resistance to social norms and normative cultural systems emerges through the subversion of codified behaviours and aesthetics, resulting in incremental transformations of domestic interiors and emancipation from the strictures of the "art of living."

The articles in this thematic issue discuss housing typologies and technical standards across different geographies, times, and cultures. They demonstrate how interactions between norms and standards are contextual, leading to different technical requirements and socio-cultural expectations. However, common to the projects studied in the articles is a focus on subsidised forms of housing, whether social, public, affordable, or emergency homes. Subsidised housing developments often share social, economic, and political agendas as well as extensive standardisation of their design and are the housing sector in which minimum standards often matter most (Ozer & Jacoby, 2022). As evident from the range of contributions, socio-technical discourses tend to be interdisciplinary and consider often both the technical housing standards and the lived experience or changes in socio-cultural norms that challenge them.

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Conflict of Interests

The authors declare no conflict of interests.

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ARTICLE

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The Lifestyles of Space Standards: Concepts and Design Problems

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Abstract

Space standards are envisioned as a powerful means to regulate dwelling design, ensuring the quality, functionality, and safety of homes. Their ultimate objective is to guarantee a minimum level of design quality that can accommodate a wide range of domestic activities. While space standards primarily focus on isolated quantitative aspects such as overall size, room dimensions, and occupancy limits, they also make assumptions about activities to be performed by ideal "users" and specific lifestyles to be accommodated within a home. However, these assumptions are being challenged by the increasing demands and diverse activities taking place in the dwelling realm, which call into question the validity of existing space standards. In response to these challenges, this article conducts a critical review of the theoretical basis and various interpretations of space standards, particularly in the context of England. It explores their fundamental concepts and historical approaches, as well as examines specific examples of their application and their correlation with design strategies. By delving into the concepts of "the normal" and "the minimum dwelling," the article discusses the three main dimensions of space standards: program, user, and size. Consequently, it argues for a more comprehensive understanding of the general application of space standards, which requires incorporating architectural design problems, particularly from the perspective of flexibility. This approach takes into account the evolving needs and diversity of households, as well as the creation of inclusive and adaptable living spaces.

Keywords

dwelling design; flexible housing; housing design quality; minimum dwelling; space standards

1. Introduction

By the first half of the 20th century, particularly in England, space standards emerged as an important regulatory tool for housing supply, capable of targeting specific market segments or the broader housing

sector in alignment with housing policy goals. Although not universally mandatory, these "standards" represent criteria and guidelines employed to govern the dwelling's design. They aim to ensure housing quality and functionality, specifically concerning the minimum or maximum of various dwelling areas and the interrelationships between these spaces (Madeddu et al., 2015, p. 79). The complexity of the various considerations involved in the implementation and evaluation of space standards cannot be overstated, and it is essential to approach this subject with nuance.

Space standards are a mechanism to secure basic habitability through a minimum standard of space provision that enables the various activities expected to take place in a home. This has to consider not only common activities but also diverse uses, functional changes, lifestyles, and household types. Moreover, what is considered a minimum standard is not universal but depends on how different needs and uses are interpreted and the context in which the standards are implemented. Significant variations in notions of minimum standards can be observed across countries, especially between developing and developed ones. Exemplifying this is the comparison between England and Chile, two countries with a similar conceptualization of space standards but with notable differences in the definition of basic living spaces along with their respective minimum sizes (Jacoby et al., 2022). These differences might be explained by a set of variables that come into play when defining a standard, relating to ergonomic-functional limitations, cultural norms, and affordability.

The first variable primarily concerns establishing minimum dimensions or areas necessary to facilitate common activities by calculating room sizes based on the dimensions of standard furniture required for these activities, occasionally including a prescriptive furniture schedule. The second variable relates to the dwelling program, which has to meet the needs of diverse household sizes and types. This ensures that the essential functions of a home are met by providing rooms and areas for specific uses. The third variable concerns the economic viability of standards, leading some countries to define space standards that push the concept of minimum provision to its limits.

While space standards tend to be in principle qualitative, aimed at improving housing quality, they are predominantly measured quantitatively. Emphasis is placed on the overall size of the housing unit, room dimensions, and the number of occupants. However, standards often make assumptions about the activities and lifestyles within a home, effectively restricting the life possible within these spaces. This normative approach is, however, challenged by the increasing diversity of activities found in homes, especially since the onset of the Covid-19 pandemic, but also due to changing demographics and variety of household types (Çaki, 2022).

The diversity of domestic space requirements, family compositions, and lifestyles, coupled with a preference for quantitative criteria, raises questions about the validity of current space standards. This suggests that space standards should be reviewed both in their theoretical basis, as well as in their definition and application. Based on this, the article poses the following questions: What are the fundamental concepts and problems that produce space standards? How have these changed historically? These questions are explored through the analysis of how space standards are applied and relate to design strategies and lifestyles, particularly in the context of England. Being a pioneer in this domain, England has a longstanding history of space standards, tracing back to the influential Tudor Walters report in 1918, which initiated a regulatory tradition concerning space standards that persists to this day, where various regulatory mechanisms and design strategies have

been explored to standardize dwelling design (Park, 2017, p. 18). This analysis is given context by the concepts of the "normal" by Canguilhem and "minimum dwelling" by Teige and the three main design dimensions of space standards: program, user, and size. Each dimension is exemplified by a key moment in the historical development of space standards and its specific architectural outcome. Based on this, the article examines how space standards can be understood as design principles that shape and support particular ways of living and the various degrees of flexibility they offer to the user.

2. The Normal

Space standards have a strong normative effect and to disregard this would be to discard their agency in regulating the housing supply. Rather than questioning the value of space standards to the process of dwelling design, one can argue that the problem lies in their current focus on largely quantitative considerations. Georges Canguilhem in *The Normal and the Pathological* (1991) provides a clarification of the notion of the normal through which one could rethink this limitation of the quantitative approach to standards. To Canguilhem, the term "normal" can be understood in two ways. On the one hand, it can be defined in purely quantitative terms. This understands the normal as the average demand, measurable by fixed parameters. On the other, the normal can be understood from a qualitative point of view. This understands it as an unstable state, with its demand varying and requiring a versatile response. The normal is not predictable, rather, it continuously changes—as habits, knowledge, technology, and life conditions evolve. Based on this, one can argue that the idea of the normal is related to the ability to accommodate changes, establishing or reestablishing, depending on the case, the basic necessary conditions to address the various demands that arise throughout the development of people's lives, understanding that these evolve either due to the intrinsic factors of each stage of life or new needs that unexpectedly arise.

The distinction between quantitative and qualitative definitions of the normal by Canguilhem derives from his critique of how science has understood health and disease since the early 19th century as separated by a rigid and immobile line defined by the normal. Instead, he argues that the normal is expansive and projective, as the conditions of disease exist within its domain. He stresses that the course of life is not determined by a mechanical and ideal sequence of episodes but by exceptions, which inform the notion of the normal. That is, life is not a pacific motion of events but in a constant fight and negotiation with the limits of norms. Canguilhem sees an example of this in the problem of ageing. He argues that youth is the ideal age in terms of health, but at the same time, it has a limited duration, representing only a period of life, and therefore cannot be seen as normative for other periods such as childhood, adulthood, and old age. As Canguilhem (1991, p. 197) states:

> Being healthy means being not only normal in a given situation but also normative in this and other eventual situations. What characterizes health is the possibility of transcending the norm, which defines the momentary normal, the possibility of tolerating infractions of the habitual norm and instituting new norms in new situations.…Health is a margin of tolerance for the inconstancies of the environment.

Canguilhem's understanding of the notion of the normal allows conceptualizing space standards in different terms than they are currently framed by design considerations based on ideal situations that are typically expressed in minimum room sizes, dwelling areas, and furniture schedules, among others. The implication of this approach is the creation of fixed-design solutions. This is a highly technical view of space standards, as it seeks to provide specific answers to each predicted activity. At its extreme, this leads to the indiscriminate

creation of space standards, with each tailored specifically to a particular action or situation, forcing the housing unit to absorb domestic activities in an isolated manner.

This raises the question of how to overcome this problem. Can the current approach to standards be rethought as a mechanism capable of encompassing aspects of the normal, including the need to absorb changes and a variety of usage demands for housing design? Following Canguilhem, space standards, when viewed in their normative capacity, cannot be just a set of momentary normal design solutions and are only fully effective when capable of accommodating the unforeseen. Therefore, less rigid methods for determining space standards are needed. But how can space standards provide a margin of tolerance beyond the ordinary? One possible answer is that space standards should not be conceived autonomously but should be understood in terms of design strategies that permit not only more flexible responses but also lead to an economy in the regulation of dwelling space.

3. The Minimum Dwelling Concept

For a meaningful reassessment of space standards, it is imperative to revisit the starting point: the concept of the minimum dwelling. Karel Teige (2002), in his work *The Minimum Dwelling*—originally published in Czech in 1932—presents a compelling argument for a comprehensive approach to dwelling design that balances both quantitative and qualitative dimensions while simultaneously giving significant importance to the social aspects defining minimal housing. Teige challenges the principles of the early Modern Movement, as focused on standardization and mass-produced housing without sufficient consideration for the quality of living conditions that ensue. Instead, Teige (2002, p. 42) calls for a complete reimagining of housing design to address what he terms "the housing question":

> The question of the dwelling for those earning the subsistence minimum is, for practical reasons, impossible to solve, simply because the so-called subsistence minimum is identified with a living standard that, in effect, precludes them from a dwelling that, for all intents and purposes, would provide a minimally adequate standard as something affordable rather than as an unattainable luxury.

The quantitative aspects of space standards are undeniably crucial, as they define a threshold that safeguards decent housing by guaranteeing a certain level of comfort and usability within a home. However, when comfort and usability are pursued without restraint, it often results in housing solutions that are unaffordable luxuries, contributing to the growing challenge of housing affordability and availability (Madeddu et al., 2015, p. 77). This problem is notably exemplified in England, where an increase in space standards based on a demand for more functional space has not translated into greater access to affordable housing due to the widening gap between property prices and the incomes of those in need of housing (Chanon, 2017).

As Teige posits, the design of dwellings must take into consideration principles of efficiency to keep costs manageable and ensure affordability. He emphasizes the significance of minimal housing and underscores the necessity of rethinking the basic, functional dwelling program. This, he argues, has to depart from the conventional bourgeois housing model, which, under the precepts of comfort, increases the number of functions within a single housing unit rather than prioritizing functions essential for a minimal dwelling. The conventional approach leads to inefficient and unaffordable housing, fundamentally at odds with the principle of providing housing for all. According to Teige, a minimum dwelling should only consider the

functions vital for life to ensure access to adequately equipped and well-designed living spaces that can foster individual and societal well-being. This approach is essential to providing decent, comfortable, and affordable housing to everyone, through which the housing question is addressed.

Teige's critique of the bourgeois housing model does not mean that a minimum dwelling is a mere space for sleeping, restricted to fulfilling only biological necessities. Rather, he emphasizes that a dwelling is a dynamic and social space, requiring the organization of domestic functions according to varying degrees of privacy. This challenges the conventional approach to space standards, which is typically presented as a neutral list of design requirements, as individual design instances, that do not necessarily work or relate coherently with each other when applied as a whole, and thus create functional and well-designed dwelling arrangements. Teige, in line with his philosophy, contends that these potential relationships should not be seen as additional mechanical requirements but as an essential part of the strategic reasoning and fundamental elements of a minimum dwelling. These elements encompass the program, size, household composition, and lifestyle. Teige suggests that creating a minimum dwelling is a highly complex endeavour, as it necessitates accommodating "maximal life" (2002, p. 33) in a minimal space for individuals living on or near the subsistence minimum. In this context, Teige introduces the concept of the "mini-max dwelling" (2002, p. 33), bringing together two seemingly contradictory notions. On the one hand, the idea of the minimum pertains to the quantitative aspects of design, particularly focusing on size and efficiency. On the other, the idea of maximal life is inherently qualitative, rooted in the act of dwelling and the concept of livability. This livability means the ability to enjoy a decent life within one's home, underscoring the importance of housing quality and comfort alongside considerations of size and efficiency.

Teige further argues that to fully conceptualize the minimum dwelling, it is also necessary to distinguish between two limits. The lower is the "modus non moriendi" (when one does not die of hunger), which is the basic condition for satisfying biological needs. This limit has been the fundamental concern of housing provision and the basis for the production of space standards that ensure dwelling usability at the most rudimentary level. According to Teige, this level is insufficient to comprehensively meet the needs of dwelling from a qualitative perspective of the housing problem. This "minimum vivendi" (the minimum that allows one to survive), which is to Teige the main challenge of housing design, is the threshold to consider in a minimum provision that reflects on both functional and social needs.

In the context of space standards, the "minimum vivendi" precept can be related to current discussions about well-being, and the provision of adequate levels of comfort to a wide range of users. This includes aspects such as natural lighting, ventilation, thermal comfort, accessibility, and adaptability. However, the implementation of these precepts is often limited by budget constraints. The cost of providing housing at this standard can be too high for governments and housing developers, which raises discussions about the balance between design quality and cost.

4. Dwelling Program

The evolution of space standards can be discussed through Canguilhem's idea of the normal and Teige's mini-max dwelling, which provide a theoretical background to the minimum dwelling concept and account for its different scopes and dimensions. The first dimension is the dwelling program. This relates to the household composition, which in turn defines the relationship between rooms and the general functions of the home.

One of the well-known first efforts to standardize a minimum dwelling program was the Model Lodging-House designed by Henry Roberts in 1851. With four flats arranged in a two-storey building, Roberts proposes a dwelling that shapes family life through functional relations related to individual and group demands (Figure 1). His housing solution, comprising a dwelling program of three bedrooms, a bathroom, a kitchen, and living-dining area is carefully arranged to produce functional relationships that support what, at that time, was considered a "conventional" family. The program was organized in a way to allow for a clear differentiation between private and public activities at home. On the one hand, there are bedrooms, for the family members, differentiating between parents and children. The latter could be separated according to their gender, to grant privacy according to biological needs. In this way, both the specificity and the differentiation of functions are fundamental to decisions in the dwelling design. On the other, public activities are efficiently organized as a continuous space without corridors or nooks, establishing a direct visual control between the bedrooms and kitchen-bathroom area.

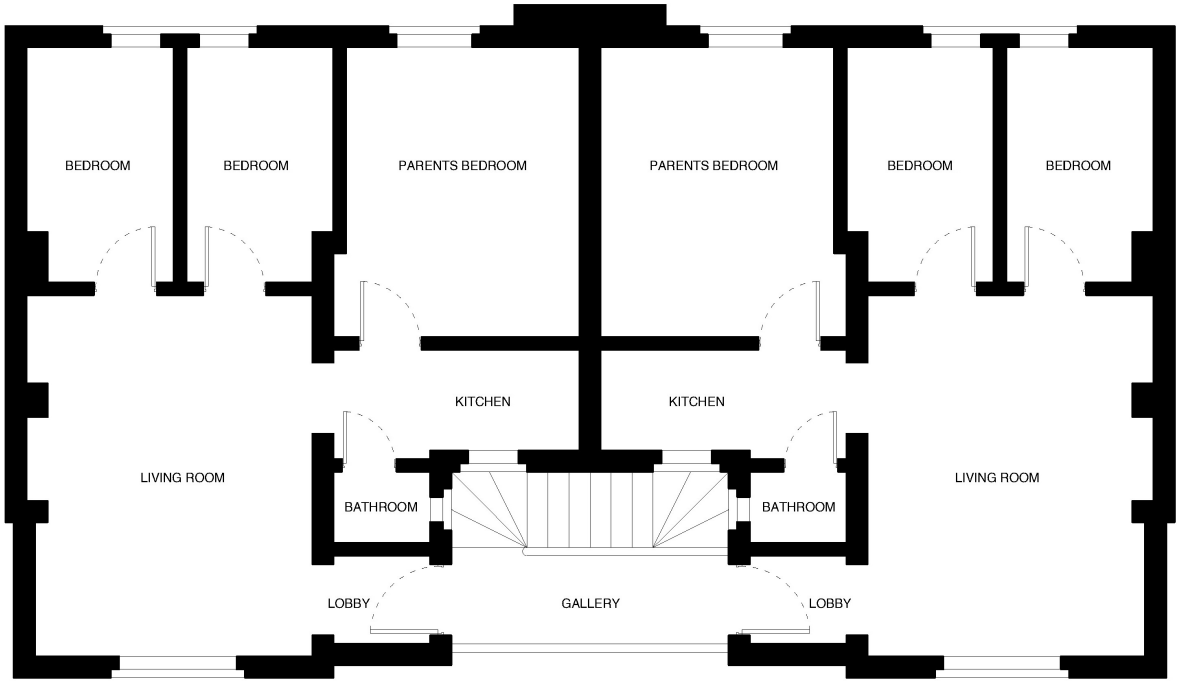

Figure 1. Model Lodging-House floor plan. Source: Drawn by the author from Roberts (1867, p. 121).

Although Roberts' housing model included a series of other design considerations, over time the proposed dwelling program became a paradigm for the conventional nuclear family housing in Western societies during the 19th and 20th centuries and, thus, a primary driver for housing standardization (Aureli & Giudici, 2016, p. 125).

While widely adopted and historically successful, such a housing program faces two significant challenges. First, it presupposes a singular and unchanging family structure. However, today's families are more diverse than ever before. Therefore, relying on a one-size-fits-all program as a solution is inadequate. Secondly, this prescribed housing program assumes fixed functions that can meet all demands within a home, whether functional or social. However, as already argued by Teige, this traditional housing program is bourgeois and limited, and changing lifestyles require more flexibility to adapt to transforming functional and social needs.

5. The User and the Quantified Dwelling

Another fundamental aspect of standards is the protection and preservation of assumed common activities through the use of minimum spaces and their supposed correlation to user needs (Park, 2017). This implies that standards and lifestyles can be predicted. However, it is crucial to note that the act of prediction is not entirely scientific and, therefore, encompasses a significant subjective component. This aspect is overlooked in favor of presenting ideal design situations that are supposed to ensure the functional performance of the home. By connecting minimum floor areas to specific functions, activity predictions are presented as objective data and expressed in quantitative terms. This preference for quantification is in part due to it being often challenging to reliably measure qualitative aspects such as comfort and well-being that space standards are to provide. A quantitative approach seems to offer a more objective measure, regardless of the different levels of precision found in different countries or specific contexts (Appolloni & D'Alessandro, 2021).

The drive for more usability-efficient homes has led to a decade-long focus on a technical understanding of housing design. This evolution, particularly pronounced in developed countries like England, has made space standards a key indicator of the quality of housing design (Jacoby et al., 2022). These standards no longer cater solely to the needs of average users but encompass a broader spectrum of society (see Figure 2). This promotes a concept of "normal" in space standards similar to Canguilhem's "margin of tolerance" (1978, p. 197). It starts to consider more diverse needs, such as accessibility and ageing, by providing more generous spaces than the bare functional minimum, ensuring usability for various user groups (Imrie, 2003). At the same time, space standards in other countries remain at the threshold for minimum usability. An example of this is Chile, where space standards prioritize primary functions, adhering to Teige's "modus non moriendi" concept and pushing minimum provision to the extreme (see Figure 3).

In both the cases in England and Chile, the central focus is on quantifying domestic space, with space standards used to measure functions effectively. This approach bears resemblance to the functionalist approach in early Modern Movement dwelling studies. Particularly the ones based on the concept of Existenzminimum, developed at the Second International Congress of Modern Architecture (CIAM II) in Frankfurt in 1929, which aimed "to construct new low-cost housing to meet an increasingly severe housing shortage" (Mumford, 2000, p. 29). The outcomes of CIAM II are documented in the book *Die Wohnung für das Existenzminimum* (May et al., 1930), comprising 100 different dwelling layouts. These layouts were organized following a Fordist rationalization, with typical activities at home arranged in a way to bring maximum order, efficiency, and comfort to users. Notably, the standardization of the kitchen, with meticulous measurements of activities and space usage, exemplified this functionalist approach to design.

The functionalist approach not only influenced the spatial arrangement of the dwelling unit but was also used to define the household structure. The housewife's role was confined to domestic production within a small and isolated kitchen and the reproduction of the family, turning her into a "professional" of the home (Giudici, 2018). This architectural and social design assigned specific functions to the housewife, focusing on managing domestic affairs.

The kitchen and the strict relation between subject and function are one of the first effects of the incipient standardization of the dwelling unit during the first half of the 20th century, as is evident in England through the first version of the *Housing Manual* (Great Britain et al., 1944), followed by its subsequent versions in

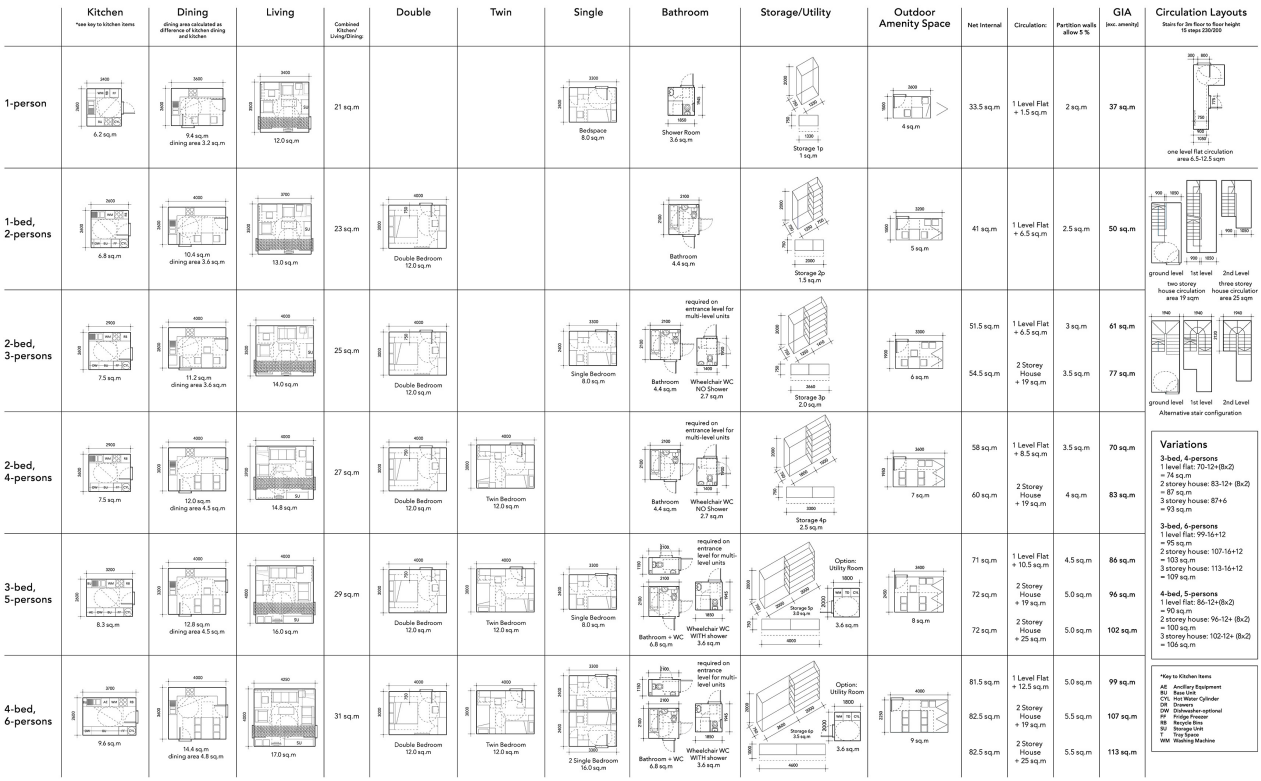

Figure 2. Application of space standards according to different dwelling sizes and room types. Source: Mayor of London (2010, p. 92).

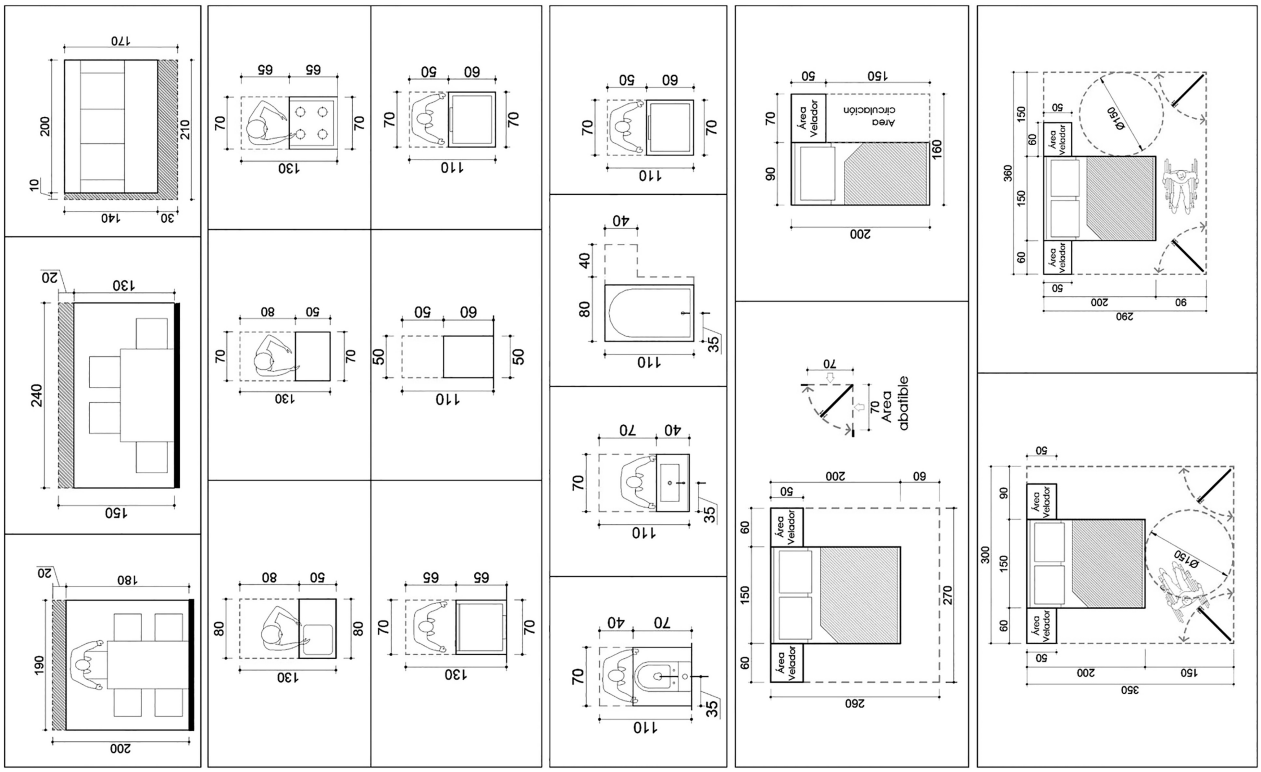

Figure 3. Furniture schedule for low-income housing in Chile developed according to minimum usability. Source: Ministerio de Vivienda y Urbanismo de Chile (2017, p. 3).

1949, 1954, and 1955. This relationship is embodied in the modern idea of the user. To Adrian Forty (2000, p. 312), the idea of the "user" eliminates the subject as an "occupant" or "inhabitant," denying individual requirements and subjectivity. Instead, the concept of "user" becomes a means to dictate functions to dwellers. The word "user" is no more than a vague concept that deprives modern societies of their own living experiences. The *Housing Manual* is an example of the exacerbation of the kitchen as a means for the standardization of dwelling design. Here, three types of kitchens imply each a clear definition of its "user" and a corresponding lifestyle. Each kitchen brings with it a logic of organizing the dwelling unit, separated into a "kitchen-living room," "working kitchen," or "dining kitchen," which were thought as corresponding to a specific domestic lifestyle, manifesting through the proximity and functional relationship between the dining area and the kitchen (see Figure 4).

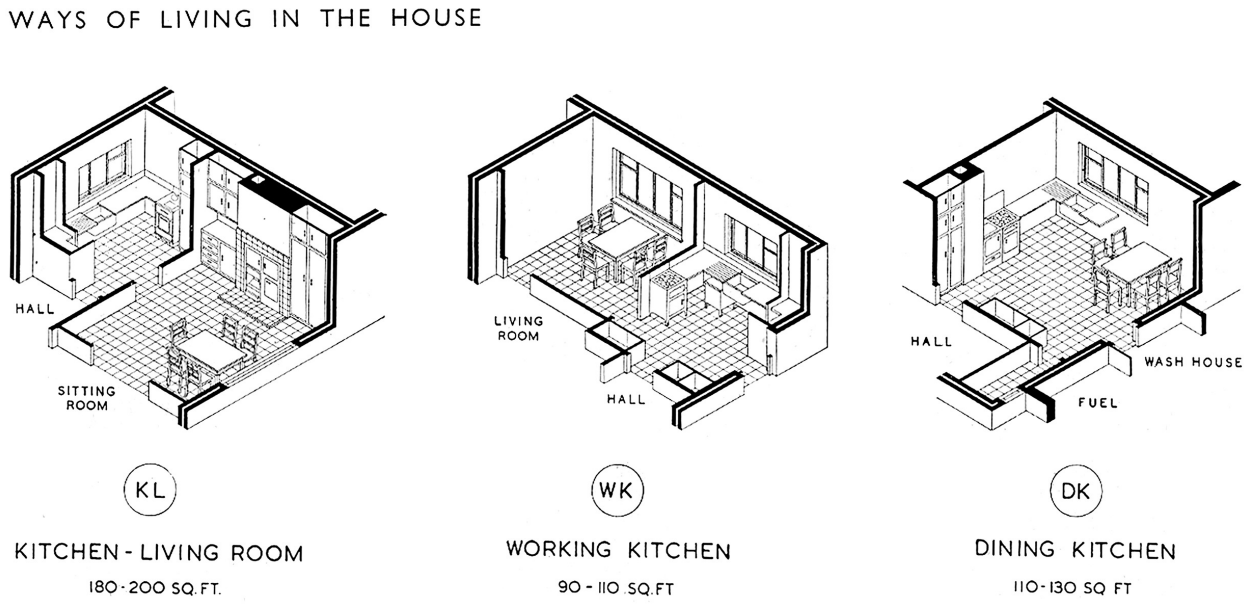

Figure 4. Different lifestyles emerging from three proposed kitchen layouts. Source: Great Britain et al. (1949, p. 40).

The kitchen's role as a dominant standardized space in homes during the first half of the 20th century was notable, but no longer the sole driver of spatial quantification in dwellings. More recently in the 1990s, the need for universal accessibility has emerged as a housing standardization driver. Addressing the increased spatial requirements of individuals with reduced mobility became a critical aspect of space standards. This shifted the challenge from merely catering to diverse user needs to recognizing that an individual's demands can change over time. The concept of fixed functions and spaces designed exclusively for a specific purpose was therefore no longer suitable. An illustration of this new approach to housing design is the establishment of the Lifetime Homes Standards in the UK in 1991, which accommodate the evolving needs of residents while responding to rigorous accessibility requirements, and represent a qualitative shift in standard creation. The Lifetime Homes Design Guide (Habinteg Housing Association, 2011, p. 3) states:

> Good housing design is thoughtful, forward-looking design that maximizes utility, independence, and quality of life, while not compromising other design issues such as aesthetics or cost effectiveness....Standard is an expression of inclusive design. It seeks to provide design solutions in general-needs housing that can meet the changing needs of the widest range of households.

This underscores that standardized housing design can significantly enhance the quality of life. However, offering a qualitative response entails an in-depth assessment of domestic space. Consequently, aligned with the functional studies of the early Modern Movement, there is an intensified focus on predicting activities and greater precision when determining the spaces and activities needed within a home.

A prime example of the continued influence of functionalism in space standards is the use of furniture schedules and diagrams. These combine furniture dimensions with usable space and, in some cases, room layouts. Comparable to design manuals like Ernst Neufert's *Architect's Data* (1936), they provide highly detailed design solutions advocating for a singular and efficient use of space tailored to specific activities. However, they rarely define ranges or alternatives of use, as space standards seem to be more focused on ideal solutions that, in turn, respond to a deliberate act of predicting lifestyles within the home.

6. Dwelling Size

The third dimension of housing standards encompasses adaptability and versatility to accommodate evolving lifestyles. The report *Homes for Today and Tomorrow* (Great Britain & Ministry of Housing and Local Government, 1961) by the UK's Parker Morris Committee, establishing the Parker Morris standards, serves as an early example of this approach by avoiding overly-specific space standards and explicit design solutions. Instead, it focused on general quantitative factors like floor areas, offering a list of preferred domestic and technical conditions and conceptual diagrams depicting common domestic dynamics and potential home uses. Rather than prescribing standards for each room based on functions, the report advocated for an overall increase in dwelling size. This enlargement was seen as a means to provide greater design adaptability that can meet individual needs.

The Parker Morris report introduced a radical shift in thinking about dwellings. Aiming to accommodate "new patterns of living" (Great Britain & Ministry of Housing and Local Government, 1961, p. 2), the report encouraged the adoption of larger homes to accommodate new leisure and socialization activities within the household. By leveraging technological advances, labour-intensive routines like cooking and cleaning could be replaced by new appliances, which however required additional space. This shift in spatial distribution and reasoning introduced a novel concept of efficiency. Instead of concentrating solely on functional spaces, the focus shifted toward the overall management of the household and social performance.

This paradigm shift recognized that domestic appliances and mass-produced goods, like vacuum cleaners, microwaves, electric cookers, blenders, washer-dryer machines, dishwashers, televisions, and stereo hi-fi consoles, could contribute to a more socially and spatially liberated home. The house was transformed into a fluid space defined not by rigid walls but interconnected areas. The report utilized conceptual diagrams that dissolved the physical boundaries of dwellings, emphasizing spatial connectivity, diverse domestic activities, and the proliferation of technology and appliances (Figure 5).

Programmatic indeterminacy became a new cornerstone of housing standards, acknowledging the need to adapt to unpredictable demands of modern life that are constantly evolving and impossible to predict. Spatial redundancy emerged as a strategy to deal with shifting living patterns and needs. However, while the Parker Morris report prioritized the needs of residents and seemingly overcame the modernist idea of the "user," its idea of freedom based on technological appliances inadvertently established a new form of functionalism.

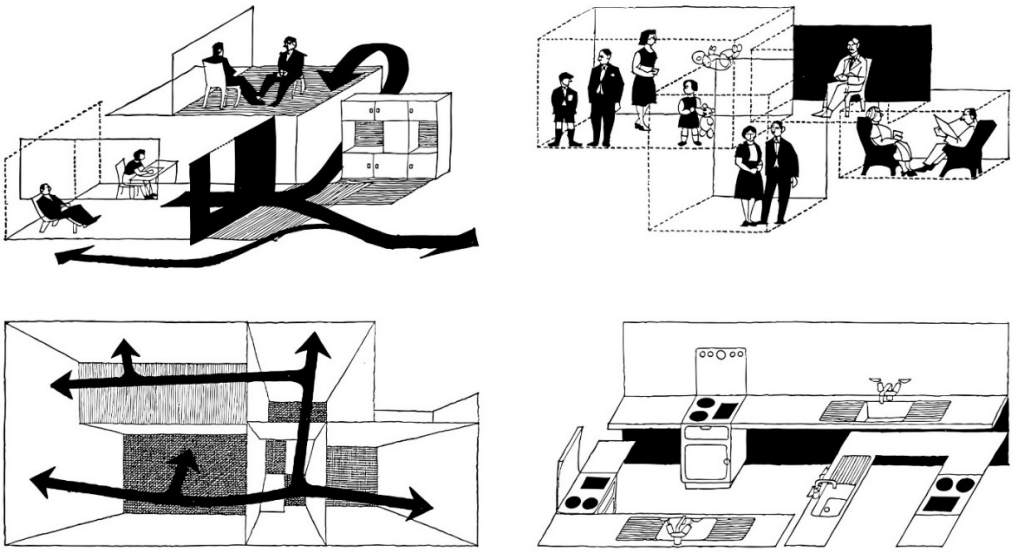

Figure 5. Diagrams that express the ideas of space fluidity, space indeterminacy, and adaptability. Source: Great Britain and Ministry of Housing and Local Government (1961, p. 1).

As Gary A. Boyd (2015, p. 45) highlighted, Homes for Today and Tomorrow:

> Represent a continuation and completion of the Fordist house project. Their diagrams are icons of a dream of a planned economy where domestic technologies and living space would be deployed by the State as a means of achieving balance between production and consumption at the level of the nation.

Consequently, homes were transformed into spaces designed to absorb commodities but, ultimately, became commodities themselves (see Figure 6).

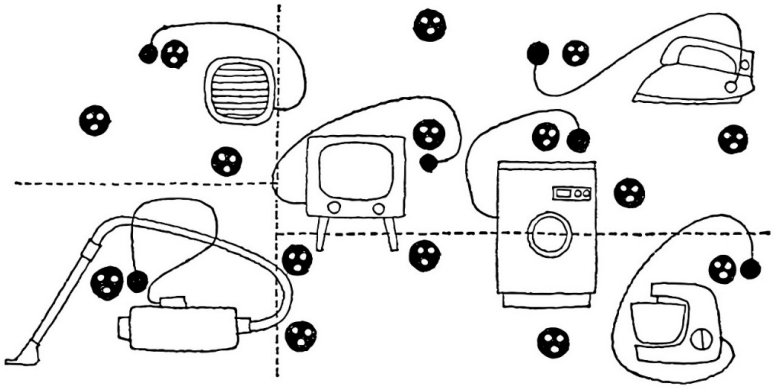

Figure 6. Diagram that centres on the deployment of technological appliances as drivers of new living patterns. Source: Great Britain and Ministry of Housing and Local Government (1961, p. 26).

7. Flexibility

The adaptability of the standards proposed by the Parker Morris committee in the UK to new lifestyles and socialization came at the expense of a fundamental contradiction with the provision of basic housing. Design

quality was defined by larger minimum sizes, making housing less affordable. This conflict precipitated the debate around the Parker Morris Standards, ultimately leading to their abolition in 1980. This decision generated concerns about the reduction of space in new homes and raised worries about the potential loss of benefits associated with the decrease in living space in households (Carmona et al., 2010). However, it was still imperative to incorporate space standards and design criteria capable of both effectively quantifying and efficiently accommodating typical activities and equipment within the home (Noble, 1982). Established by the Housing Corporation in 1983, the *Design and Contract Criteria* document aimed to address this problem. It acknowledged that the production of space standards was not a direct and generic translation of the housing program and user profile, but had to be flexible enough to produce different and more versatile layout configurations (Housing Corporation, 1983).

Although at first the idea of flexibility is understood from a technical perspective with an important emphasis on spatial quantification, the problem of design itself comes to the fore, leaving behind the indeterminacy inherent in the adaptability proposed by Parker Morris. In other words, focusing on flexibility means putting design strategies into play. Some current standards, like those proposed by Lifetime Homes, embraced design strategies promoting flexibility. For example, they suggested that conventional bathrooms, complete with bathtubs, be convertible to accessible bathrooms, featuring a shower unit designed for a wheelchair's turning radius (Figure 7). Another strategy involved allocating space for a future lift installation (Figure 8). While these proposals were undoubtedly desirable, their implementation was often limited to countries with fewer housing provision challenges, primarily due to their higher costs. This raised questions about the feasibility of space standards offering comprehensive, flexible solutions that transcend the confines of functionalism, especially in developing economies.

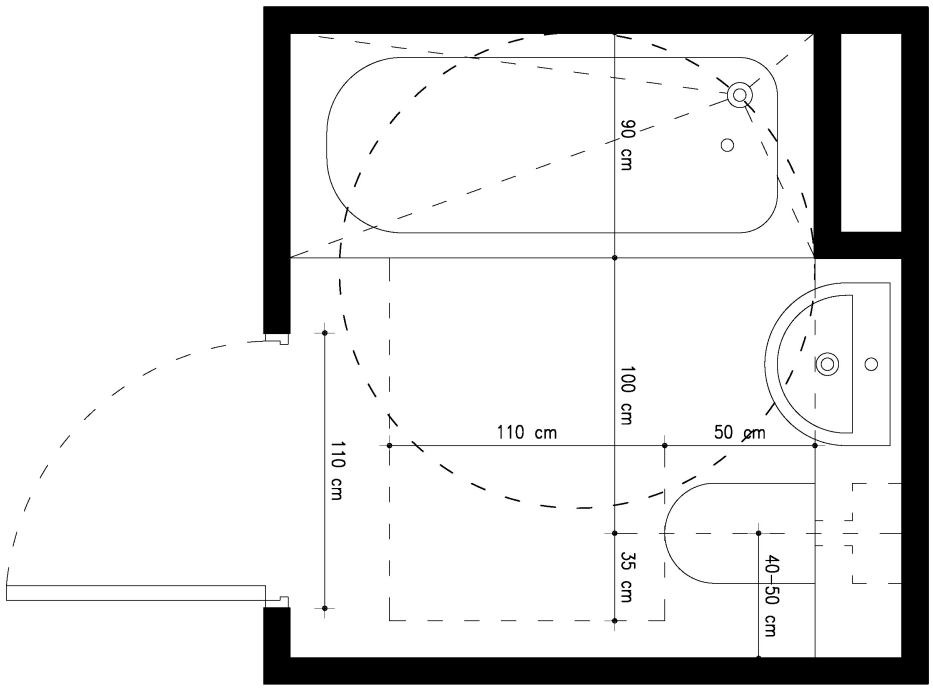

Figure 7. Example of guidance for adaptability of bathrooms to facilitate the transition from a tub-based to a shower-accessible configuration. Source: Drawn by the author from Habinteg Housing Association (2011, p. 45).

Figure 8. Example of a design strategy that considers accommodating an elevator in the future and thus ensuring accessibility over time. Source: Drawn by the author from Habinteg Housing Association (2011, p. 49).

The problem of flexibility on a day-to-day basis remains a key issue that should be considered when creating space standards. This means designing for varied uses instead of static functions and fixed furniture dimensions. This must, however, avoid a deterministic understanding of flexibility. Illustrative of this is the Schröder House by Gerrit Rietveld, built in 1924. A complex sliding panel system on the upper floor transforms the plan according to changing uses throughout the day and night. In this way, the house can have an open plan or be divided into several rooms that can accommodate different uses (Figure 9). The problem with this design strategy is that, although it is flexible in spatial terms, it is not in functional terms. What is proposed is still a rigid design solution that forces the change of spaces when carrying out specific activities. Opposite dwelling functions such as private and public ones cannot coexist due to each requiring the space of the other, which prevents the use of spaces in a manner different from what is prescribed in their plan.

This approach to flexibility is, in fact, comparable to functionalist strategies that aim to achieve a highly "efficient" use of space. Wall beds, sofa beds, folding desks, and sliding wardrobes are all mechanisms to transform the function of spaces, and in most cases, result in a highly deterministic dwelling layout. In doing so, the "user" is once again subject to a very limited form of living, which can be understood through Canguilhem's idea of the normal. From that point of view, one can argue that dwelling solutions based on technical means define an ideal sequencing of uses that do not "tolerate infractions" nor include a "margin of tolerance" (Canguilhem, 1991, p. 197) that can simultaneously accommodate functions belonging to different natures, such as sleeping and socializing (bedroom and living room). This kind of flexibility is only possible when demands for space do not overlap, which typically means that dwellings are for the use of a single person. Otherwise, couples and families will always be fighting for the space that each demands.

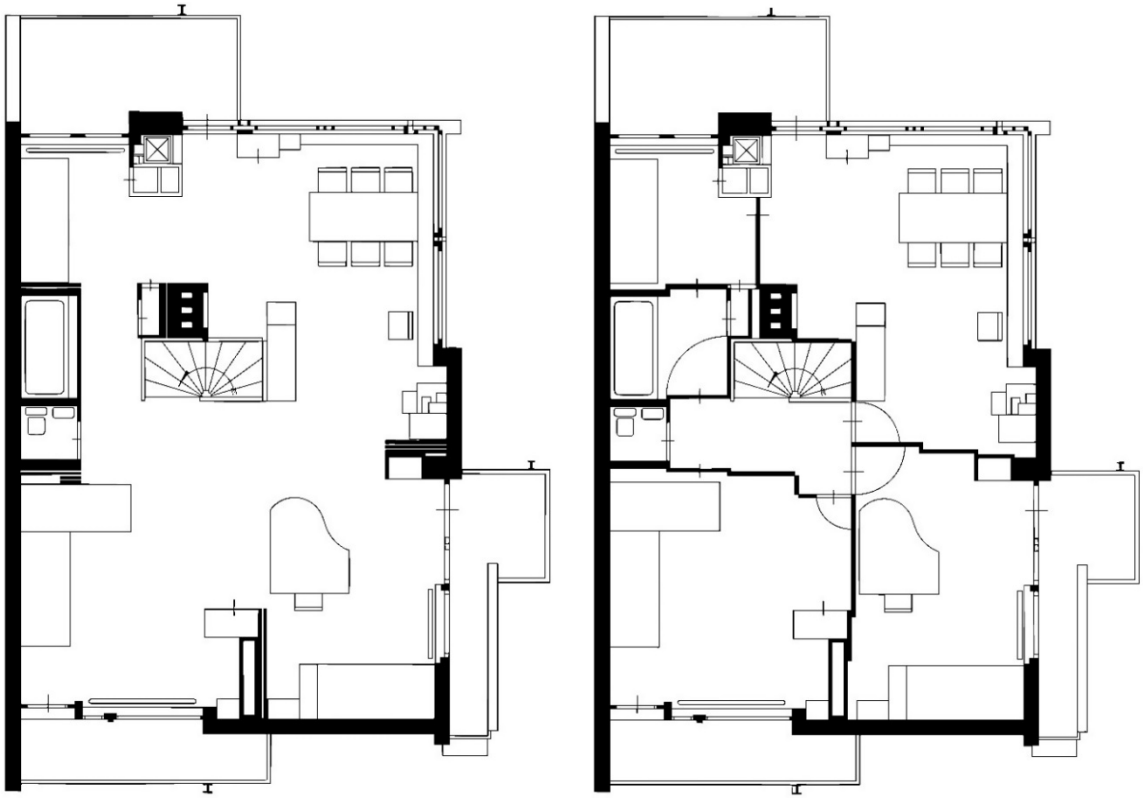

Figure 9. Gerrit Rietveld's Schröder House and the two ways of using the first floor depending on the use of sliding doors. Source: Drawn by the author from Forty (2000, p. 145).

We could then ask how to reconcile functional requirements, demographic changes, household transformations, and technological development in a single design framework. According to Jeremy Till (2008), this can be achieved by overcoming one-sided approaches to dwelling design. On the one hand, these have to do with the rigid and functional arrangement of the dwelling program. On the other, they standardize domestic activities at home. As Till (2008, p. 11) claims, "the issue with space standards is exactly that, they become standard so that the only way that one understands space is through standardization, and the way we standardize it is by measuring it." Instead, he proposes a more balanced approach based on the dwelling as an agglomeration of hard and soft spaces. Hard space determines how it can be used, whereas soft space is unspecified and allows different uses. That is to say, the first only responds to a fixed function and the second to multiple ones. To Till, a clear example of soft space is the Britz Housing (1925) by Bruno Taut. In this project, the dwelling is defined by three service spaces (kitchen, bathroom, and pantry) and a set of rooms or soft spaces with indeterminate functions (Figure 10). This means that the disposition of the dining room and living room—traditionally arranged in a fixed and hierarchical area of the plan—can vary according to different needs. This way, it is the dweller who signifies soft spaces by providing a temporary function to them. Such freedom avoids reproducing conventional dwelling arrangements that fail to answer to changing needs. Thus, if the concept of flexibility is understood as a strategy to create neutral space in contrast to highly functional and determined space, it can become a powerful means for dwelling design. It can answer questions of efficiency (quantitative problem)—dealing, for example, with spatial or programmatic redundancy—and respond to changing demands, which are related to the very idea of the normal as a qualitative problem, thus allowing life to continuously develop.

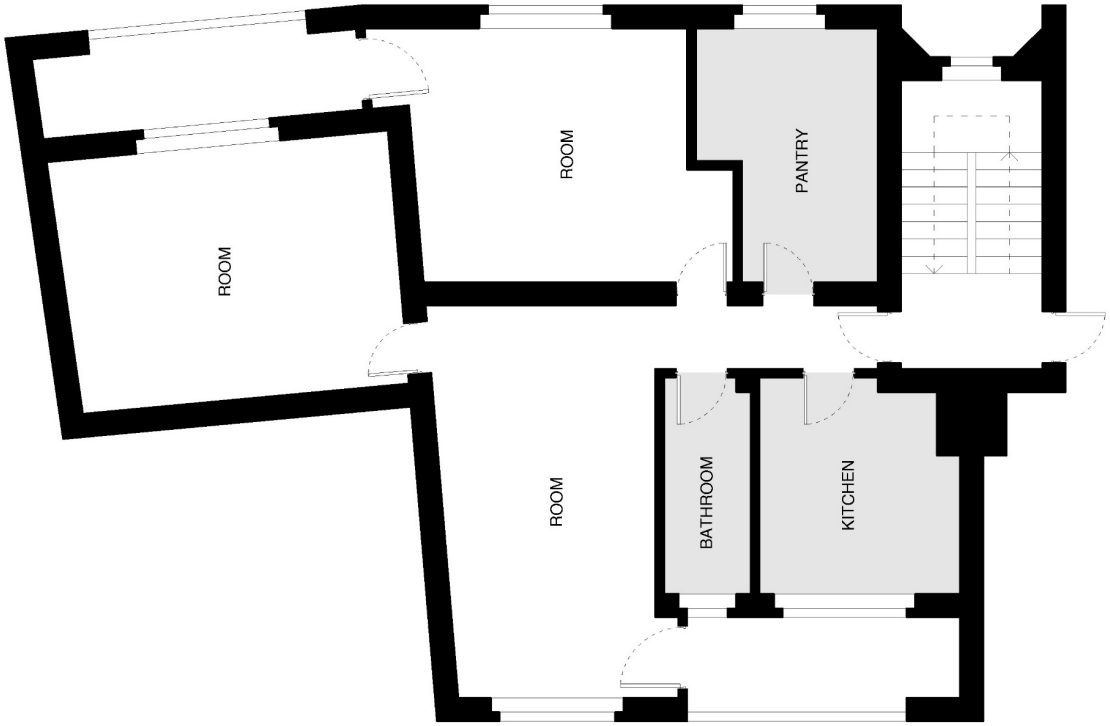

Figure 10. Typical floor plan of the Britz Housing by Bruno Taut, which differentiates between functionally specific and non-specific rooms. Source: Drawn by the author from Till and Schneider (2005, p. 289).

8. Conclusion

This article advocates for a more comprehensive approach to space standards that can consider both the quality and versatility of living spaces from the perspective of a basic housing unit. The traditional quantitative focus of space standards, emphasizing overall size, room and furniture dimensions, and occupancy limits, primarily centers on addressing problems of inefficiency. However, this approach often neglects the requirements of comfort and well-being, as it pushes these aspects to their limits, often simplifying the reality of individuals or families and creating stereotypes that are not consistent with real lifestyles. To overcome this limitation, it is essential to shift towards a more nuanced understanding of space standards that incorporates both quantitative and qualitative dimensions.

One way to achieve this is by reconsidering the concepts of "the normal" and "the minimum dwelling." On the one hand, the normative approach to space standards, based on fixed parameters, should be complemented by a qualitative understanding that allows for variability and versatile responses. By embracing a qualitative notion of the normal, space standards should be able to accommodate changes and set the conditions for typical activities of daily life while also providing flexibility and adaptability for unpredictable changes. On the other hand, Teige's mini-max dwelling concept offers valuable insights for the production of space standards, since it distinguishes between a biological-ergonometric minimum and a minimum of vital order—one capable of ensuring the basic conditions for the development of life itself. Facing the challenge of minimum housing means seeking a delicate balance between aspects of housing efficiency—addressing quantitative problems such as minimum sizes and affordability must be considered—and the essential aspects of comfort, ultimately aiming at the strategic organization of the domestic space.

Based on the above, this article proposes three design dimensions through which it is possible to unfold the concepts of "the normal" and "the minimum dwelling." The first one is the dwelling program, as standardized homes are often understood just as a reduced version of a large, conventional house, resulting in the over-accumulation of functions within a space that essentially only requires an elementary configuration. Furthermore, the dwelling program is often associated with outdated societal ideas, exemplified by conventional and biased design approaches like the one proposed by Henry Roberts, which no longer align with today's diverse social dynamics and family compositions. The second design dimension is that of the user. This centers around typical activities and routines that emerge from the idealization of lifestyles, which translates into the standardization—and often simplification—of individual demands. This is a process that ultimately results in the absolute quantification of the dwelling unit. Earlier examples of this approach were initially the user stereotypes proposed by CIAM II and the Housing Manuals in the UK, and much later the appearance of the problem of accessibility, which intensified the dimensional regulation of the dwelling space. The third and last proposed dimension is size. Through spatial abundance, the problems that come with the definition of "users" and the subsequent prediction of activities seem to appear to be resolved, allowing not only the meeting of spatial demands but also the accommodation of unpredictable changes. This approach promotes new forms of socialization and facilitates access to comfort through technology. This idea, however, contradicts the very concept of minimum housing, as is evident in the case of the standards proposed by the Parker Morris committee.

Rather than privileging one design dimension over the others, what is proposed here is a more strategic approach to the implementation of space standards that incorporates architectural design strategies, particularly by using the concept of flexibility. This approach allows for the reconciliation of the concepts of "the normal" and "the minimum dwelling," thus combining issues of spatial efficiency (quantitative) with versatility and adaptability of uses (qualitative). However, the proposed idea of flexibility should not be understood as another form of functionalism that requires high levels of technical control for the absolute orchestration of spaces, furniture, and activities at home. Instead, flexibility should be addressed as a strategic design problem, and not as a standard in itself, balancing spaces subject to high standardization (hard spaces) and functionally indeterminate spaces (soft spaces). This approach allows adaptability to today's demands, including accommodating diverse activities and changing household compositions, and supports different lifestyles.

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Conflict of Interests

The author declares no conflict of interests.

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Alvaro Arancibia is an architect from the Pontificia Universidad Católica de Chile, holding an MPhil in urban design and a PhD in architectural design, both from the Architectural Association. His practice and research focus on issues of collective housing and urban design, particularly in the context of Santiago de Chile. As a researcher, he was awarded with the "AA Graduate Prize for Research: Outstanding Work 2015–2016" for his doctoral thesis. Since 2022, he has been working as a co-investigator for the project "Housing Standardisation: The Architecture of Regulations and Design Standards," funded by the AHRC (UK) and developed jointly by the Royal College of Art and the Pontificia Universidad Católica de Chile. Through his architectural practice, he has won several housing competitions organized by the Ministry of Housing (Chile), notable among them being the "Mirador Laguna" project, to be completed in 2024. Both Alvaro's design proposals and written works have been internationally published and presented at universities in Chile, the UK, and Mexico.

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ARTICLE

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The Influence of Space Standards on Housing Typologies: The Evolution of the Nuclear Family Dwelling in England

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Abstract

This article explores the evolution of dwelling typologies in London, examining how regulations and standards have transformed housing layouts and indirectly informed personal and social interactions at home. Housing policy of the past century, as reflected through space standards, type plans, housing manuals, and reports, reveal a socio-political agenda of promoting nuclear family dwellings, traditionally a household of parents and their children. This article contributes to this discussion by exploring the contextual drivers, spatial reasoning, and evidence underpinning the decisions of housing reports such as the *Tudor Walters Report* (1918), the *Dudley Report* (1944), and the *Parker Morris Report* (1961). Changes in household structures can be seen through regulations: from multiple families sharing a house, to the separation of individual families into single homes, to prioritising the individual over the family unit. This article analyses how five historical moments in which typological shifts promoted nuclear family dwellings that have determined spatial hierarchies and family dynamics around cooking, eating, and socialising. Similarly, societal shifts in housing expectations, such as the changing perceptions of social status symbols, privacy, gender roles, and household dynamics have contributed to the spatial arrangement and layout of homes. By shedding light on the socio-technical transformations, this research highlights the need for innovative design solutions and evidence-based space standards to meet contemporary needs.

Keywords

design standards; housing typologies; nuclear family; post-war housing; space standards; terraced housing

1. Introduction

How we live has influenced housing design and space standards, and they, in turn, have shaped the way we live. The size and design of spaces within homes are not only determined by space standards and regulations but a combination of demographic, social, cultural, economic, technological, and environmental drivers. Cultural beliefs, stereotypes, and shifting social norms have played a key role in influencing housing policy, shaping the physical form of homes, and defining the expectations and aspirations people have of housing. Many factors have been fundamental in the transformation of domesticity by defining a new spatial hierarchy of rooms and the social organisation and patterns of life at home. This article studies space standards and the continuous interplay of drivers, including spatial, technical, and typological changes, in relation to the nuclear family dwelling in England.

Housing regulations and space standards from British housing manuals, reports, and policies of the past century, reveal a socio-political agenda of promoting nuclear family dwellings—a household unit of two generations, traditionally parent or parents and their children. Minimum dwelling standards have typically been linked with the nuclear family (Gallent et al., 2010; Milner & Madigan, 2004; Park, 2017), with their plan reflecting the social relationships of the family (Hole, 1965) and common ways of using the home. This relationship between council housing, standards, and layouts has been widely discussed by architectural historians and practitioners, however, often focusing on one predominant period, design, regulatory, or social perspective.

For example, Carmona et al. (2010) and Park (2017) have analysed space standards in relation to council housing design. M. Roberts (1991) studied how housing policy was continuously shaped by family policy in the 20th century, although heavily steered by a gendered vision of the family and the division of labour. Sennett (2003) explored how urban growth in the 19th century led to the change of the household, from an "extended" family to the "nuclear" one. However, how standards and regulations are a means of designing dwellings and how this might dictate how people live is often overlooked, and the function and nature of domestic spaces have remained largely unchallenged. This article contributes to this discussion by studying how regulations and standards have had an impact on housing layouts and indirectly inform personal and social interactions at home.

Perceptions of home can widely differ, but within a specific time and location, there tends to be a shared understanding of what a home should be. For Forty (1992), this consensus influences the design of domestic spaces and items, determining what is considered beautiful or proper. The presence or absence of certain rooms reveals an interplay of government regulations, market forces, and technical concerns that shape our living spaces. An example of this is the disappearance of the parlour in interwar homes or the overlap of functions in contemporary open-plan dwellings. Regulations are not only situated "within particular models of society and governance prevalent at a particular time," but equally take "their shape from the philosophy of governance prevalent at that time" (Cooper, 2010, p. 147). However, the influence of building regulations on housing typologies and vice versa is not always linear and often difficult "to disentangle in terms of cause and effect" (Muthesius, 1982, p. 5). This article will offer a new examination of the correlation between housing regulations and design concerning changing forms of socio-technical reasoning and how this informs domestic use, family relations, and housing typologies.

Several reports have tried to provide coherent evidence on which to base housing policy and design. These include *The Way We Live Now: What People Need and Expect From Their Homes* (Finlay et al., 2012) and *How Occupants Behave and Interact With Their Homes: The Impact on Energy Use, Comfort, Control and Satisfaction* (National House Building Council, 2011). However, *Space in New Homes: What Residents Think* (Commission for Architecture and the Built Environment, 2009), which analyses the level of satisfaction in privately-built homes since 2002 in England, concludes that varying degrees of satisfaction with the design and layout of homes demonstrate the subjectivity of assessing housing quality and use. Although the subjectivity of housing experience is important, this article is particularly interested in the various shared rationales that have led to changing housing expectations and use as well as the socio-spatial dynamics that have informed new nuclear family dwelling typologies. This article delves into the reasoning of how dwelling typologies have adapted to changing needs and circumstances, and the spatial reasoning and evidence underpinning the decisions of policymakers and architects. It analyses the typological shifts evident in five historical moments that promoted nuclear family dwellings.

The first moment is defined by the Victorian terraced house and how shifting household sizes, along with concerns about hygiene, sanitation, and morality, created more compact housing replacing slums and addressing overcrowding. The second illustrates how the need to house the working class, as well as the preference for houses over flats, led to new dwelling typologies, such as the cottage flat. The third encompasses the period before and after the First World War when the *Tudor Walters Report* proposed the first widely adopted minimum space standards. The fourth and fifth moments relate to post-Second World War reports and manuals, such as the *Dudley Report*, the *Housing Manuals* of 1944 and 1949, and the *Parker Morris Report*.

These moments will be analysed through the services in the home and how they define spatial hierarchies and determine family dynamics around cooking, eating, and socialising. Technological advancements and the integration of basic sanitation provisions, water supply, and central heating into homes revolutionised room sizes, functionality, and the layout of bathrooms and kitchens. At the same time, the rising affluence of the working class and the introduction of household appliances like electric refrigerators and washing machines redefined what was considered essential in a modern home (Hollow, 2014). This article will highlight these societal shifts in expectations, such as the changing perceptions of social status symbols, privacy, gender roles, and household dynamics that contribute to the definition of domestic public and private areas and the spatial arrangement and hierarchy of rooms (Ravetz & Turkington, 2013).

2. The Victorian Terrace: Adapting Services Into the Functional Family Dwelling

The overcrowded and unsanitary conditions that led to widespread cholera epidemics in the 19th century, as well as Victorian morality and rapid industrialisation, resulted in the rise of the nuclear family dwelling. Prompted by unsanitary living conditions, in 1848, public health acts and model bye-laws were introduced as the first regulations defining minimum standards for housing. The Victorian bye-law terraced house was a smaller, more compact scaled-down version of previous terraced houses (Firley & Deupi, 2023), meant to control overcrowding and poor sanitation while providing housing for workers in the city.

The spatial layout of Victorian and Edwardian bye-law terraced houses reflected underlying gender divisions in traditional family life (Hepworth, 1999; Matrix, 2022). Historians have pointed out the symbolic distinctions

between the front and back, as well as the private and public spaces within 19th-century speculative housing (Burnett, 1986; Muthesius, 1982). Victorian terraces with only two rooms per floor typically had a parlour in the front room and a combined kitchen–living–scullery in the back room. In those with three rooms, the front room would be a parlour and the back rooms a kitchen–living room, with a scullery in the rear extension. Domestic chores considered private, such as laundry and cooking, were relegated to the kitchen, while more public activities such as receiving guests, would be carried out in the parlour (M. Roberts, 1990). The parlour was a room representative of social status, with larger houses having both a parlour and a sitting room.

The main heating source of a Victorian terraced house was coal. This had a significant impact on housing design to enable the delivery, storage, and removal of coal and its ash, with hearths and flues installed throughout a dwelling. Eventually, central heating would allow for more flexibility in the design of a home, as room layouts no longer depended on the position of chimneys.

The terraced housing typology, however, existed well before basic sanitation provisions became standard. Although water closets predate the sewer system, due to cost, they were mainly used by the upper classes and required the installation of individual cisterns, tanks, and pumps. It was also common for people to access sanitary facilities away from home, and bathhouses played an important role in serving nearly 1.5 million bathers in 1891 (Penner, 2014). In some working-class homes, the bath was moved from the kitchen into a separate bathroom, typically located at the end of a rear extension on the ground floor (Figure 1).

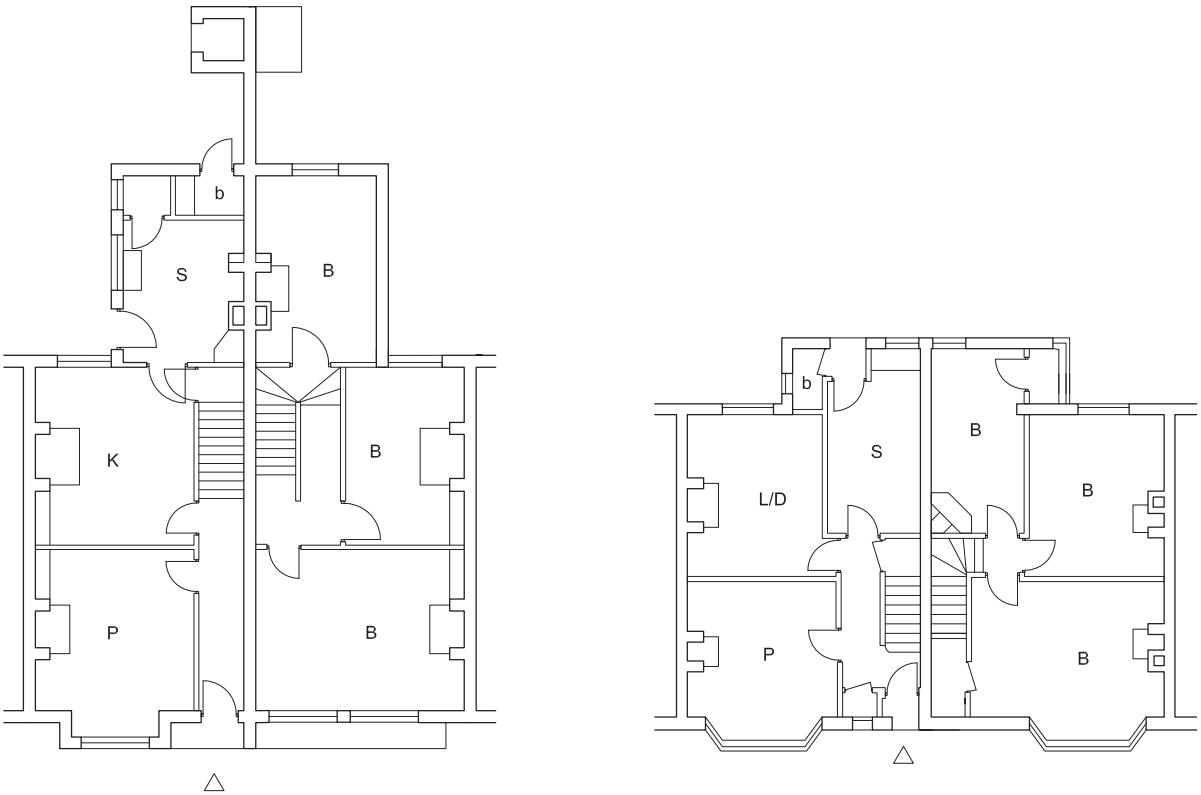

Figure 1. Variations in frontage and layout in three-bedroom two-storey houses: Artizans, Labourers & General Dwelling Company, Noel Park, 1881–1913 (left) had the scullery in the rear extension, while the London County Council White Hart Lane Estate, Tottenham, 1913 (right) shortened the rear extension by incorporating the scullery. Redrawn by the author from Muthesius (1982, p. 95) and Swenarton (2018, p. 35).

Typically, the kitchen was for cooking but also often for eating, and it was common for it to have a movable zinc bathtub. In comparison, the scullery was like a wet kitchen, used for food preparation, washing up, and laundry—activities requiring the use of water. Laundry was done in a "copper," a large metal tub with a heat source in which clothes would be boiled unless a house had access to a separate, shared washhouse. In larger houses, food storage would be in pantries, cellars, and larders, but, in smaller houses, people would buy their food on a more daily basis. Bye-law terraced houses had to be provided with a larder with a ventilated panel, but these were later often demolished to enlarge the kitchen. The kitchen was often too small to eat in; therefore, the family would sit for meals in the dining room and be served by the housewife (M. Roberts, 1990). New technology and services in the kitchen were seen as key to saving time and labour, but the technological "improvements" also reinforced the gendered nature of household chores (Pennell, 2016).

Victorian terraces became widely associated with slums and overcrowding, as terraced houses in cities like London were often sublet to two or three working-class families who shared the rent. Even though houses were designed for one family, multiple occupancy implied no major changes to the design, including bathrooms and services. Therefore, towards the end of the 19th and beginning of the 20th century, speculative builders began to provide smaller and more compact houses in the suburbs of London. These new small terraced houses, equivalent to just over half a standard-sized terraced house with a rear extension, were intended for the sole use of one family, thus creating new social, spatial, and technical standards. Changes in the terraced house typology would be subtle, and even though houses became smaller in size, they were used by a single family, as intended and designed for. However, how spaces were used would drastically change, since the nuclear family was now able to use all rooms without sharing with other families. One of the first changes was the elimination or shortening of the rear extension that housed the kitchen, scullery, and WC (Figure 1). This meant houses were built slightly wider than previously and the functions of the kitchen and scullery were often combined. Wider houses meant that bathrooms could be integrated into the home, and while still placed at the back of the house, they could be accessed from the inside.

3. Half-Houses and Tenements: The Alternative to the Two-Storey Family Dwelling

During the early Victorian period, housing standards were set not through regulatory measures but by introducing exemplary cases or prototypes, such as the "model dwellings" advocated by housing philanthropists and reformers (Clifford & Ferm, 2021). From the 1840s, philanthropic model housing companies and industrial reformers, including the East End Dwellings Company and Peabody Trust, played a significant role in the development of working-class housing that consisted of multi-storey tenement blocks, terraced houses, and cottage flats. These trusts developed "model dwellings" not only as spatial examples for standard housing design but also as a social model to counter the perceived "immorality" in slums. The model dwellings not only improved the living conditions of the working classes but also provided a competitive rate of return on investment, earning them the title "five percent philanthropy" (Tarn, 1975). However, the housing provision by philanthropic companies and social reformers was small, with the majority of working-class housing in Victorian England delivered by individual speculative builders (Mitchell, 1988).

The design of speculative tenement blocks drew inspiration from Henry Roberts' *Model Houses for Four Families*, created for the Great Exhibition of 1851 and constructed by the Society for Improving the Conditions of the Labouring Classes (Figure 2). Roberts' design featured self-contained flats for only one nuclear family, equipped with running water and natural ventilation, a defined separation of living spaces, including distinct

kitchen and living areas, and most notably, separate bedrooms for parents and children of different genders (Chey, 2018). Although the idea of the nuclear family was not new, what changed was the urban nuclear family and its way of operating (Ravetz & Turkington, 2013; Sennett, 2003). The family would only truly become "nuclear" once all functions and amenities were found exclusively within the home, and the family no longer depended on neighbours or shared facilities (Giudici, 2018). While the new housing models meant a great advancement in living quality, they also isolated the "model" wife in a self-contained unit (Giudici, 2018).

The repetitive and standardised layout of tenements reflected the pragmatism and moralist values of Victorian philanthropy (Davidovici, 2017). To avoid the multiple entrances and exits found in slums, which were associated with immorality and lack of control, the introduction of corridors was also instrumental in social control (Evans, 1997).

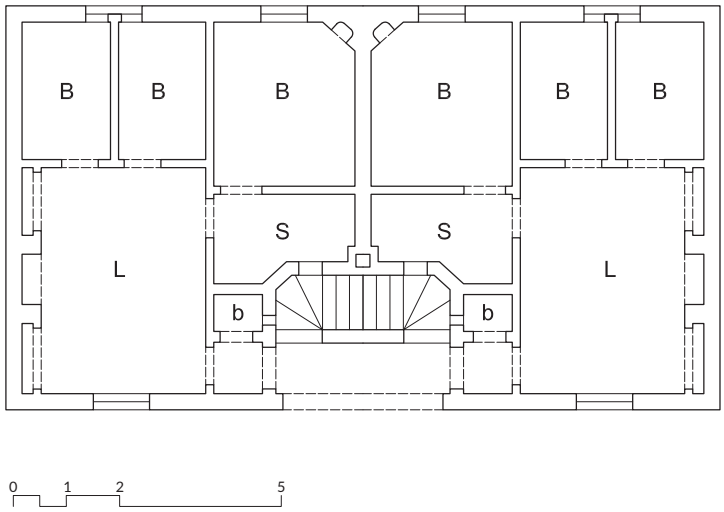

Figure 2. Plan of the double house by Henry Roberts for the Society for Improving the Conditions of the Working Classes in 1850. Redrawn by the author from Roberts (1851, p. 10).

Even though household sizes were reduced, many two-storey houses were still shared by at least two families, each occupying a floor or, in more extreme cases, a room (Thom, 2017). By 1911, 40% of families in London shared a house (Muthesius, 1982). Both financial constraints and the preference to live in a house rather than a tenement flat led to the informal adaptations of terraced housing. Guides for house conversions therefore emerged as early as 1871 with Banister Fletcher's *Model Houses for the Working Classes*, which proposed model plans for adapting existing terraced houses into single-storey one-family flats (Figure 3). By the 1880s, private developers began to offer shared ground floor sculleries or two-storey rear extensions with a room for a kitchen on both floors, as in Park Town in Battersea (Figure 4; see Thom & Reid, 2010). But more commonly, these subdivisions were made by individuals in less formal ways. However, other than overcrowding, there were several problems with sharing a small house. For example, piped water and a "copper" water heater were only available in the ground-floor scullery, meaning upper-floor tenants had to carry their water up the stairs.

The cottage flat, a dwelling typology mostly associated with Northern England, appeared in response to the need of workers who could not afford the higher rents of traditional family dwellings but desired to live in a house. Cottage flats, sometimes referred to as maisonettes, were at the time of their conception also called tenement flats or "half houses" (Thom, 2017). Unlike a maisonette or duplex distributed across two floors,

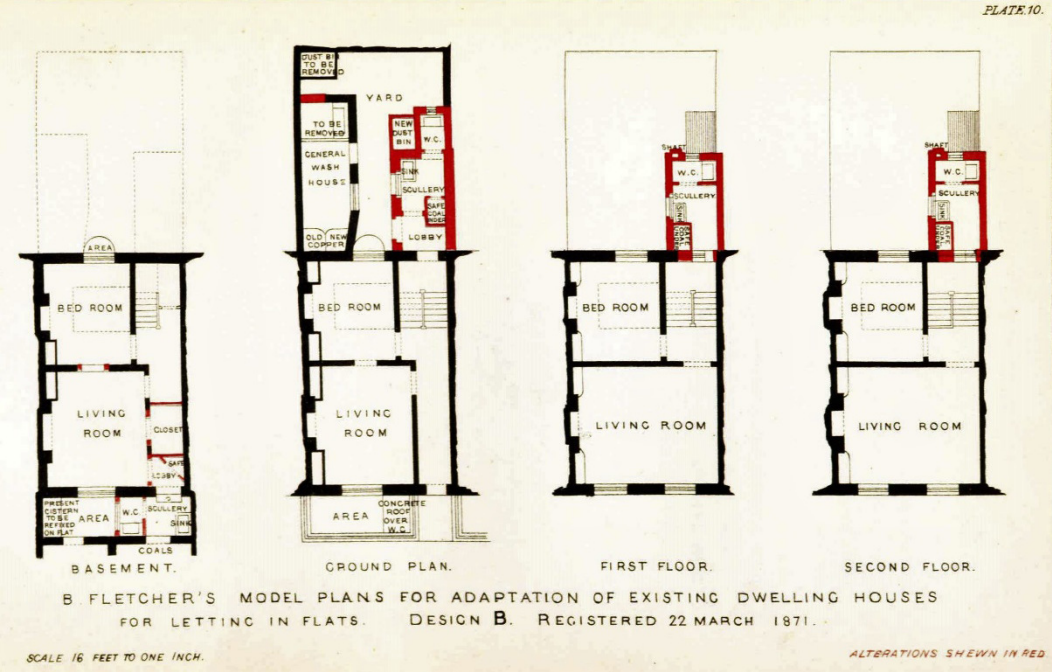

Figure 3. Model plans for alterations (in red) of existing dwelling houses for letting into individual flats. Source: Fletcher (1877, p. 26).

each cottage flat houses one family per floor. Its overall building appearance is similar to a two-storey suburban terraced house, but each cottage flat has its own ground floor street access with entrances of the adjoining flat above or below paired. Although each family occupied their own floor, the first cottage flats shared an entrance and an internal corridor leading to the stairs of the upper dwelling unlike subsequent purpose-built solutions (Figure 4). Purpose-built cottage flats were considered at the time a fashionable type of accommodation for young working families in London (Goodchild, 2016) and perceived as better than a flat within a block (Thom, 2017).

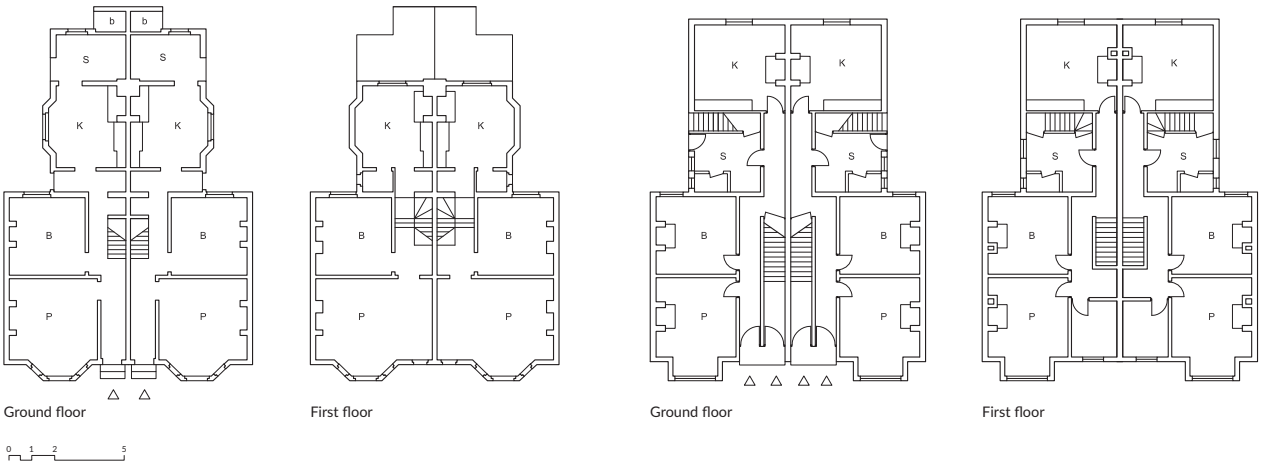

Figure 4. Ground and first floor of cottage flats: Park Town cottage flats, Battersea, 1884 (left) shared an entrance and a ground floor scullery but each had its own kitchen; North Bank Road, Walthamstow, 1905 (right) had separate entrances and services. Redrawn by the author from Thom (2017, p. 41) and Muthesius (1982, p. 166).

In London, the first cottage flats were Albert Street in Spitalfields (1858) and Victoria Cottages (1864) by the Metropolitan Association for Improving the Dwellings of the Industrious Classes, whose designs are attributed to Henry Roberts (Tarn, 1975). They were arranged in parallel rows of two-storey buildings with the uniform appearance of terraced houses. Starting with cottage flats, the transformation of housing typologies, such as semi-detached houses or maisonettes, were deeply rooted in social aspirations and necessities that preferred dwellings to function and appear like houses.

4. The Tudor Walters and the Compact Family Home

At the start of the 20th century, the average household size in the UK was around 4.5 people, but, in distinction to family sizes, they greatly diminished with the disappearance of resident domestic servants. For Ravetz and Turkington (2013), the new compact family home led to a family "nuclearisation" by cutting ties with the extended family and creating a stronger domestic culture and leisure time. This led to the growth of the middle class and new ideas of what constituted a home (Forty, 1992).

Published at the end of the First World War, the *Tudor Walters Report* by the Tudor Walters Committee (1918) included space standards and housing type plans to address a post-war housing shortage. According to Swenarton (2008), the report is the first time that housing quality was "formally acknowledged" at a national level. Despite being the first comprehensive housing report in the UK and consolidating the first space standards and developing typical dwelling plans (Jacoby et al., 2022), prior regulations and housing policy had a significant impact on housing typologies and their internal layout. For example, the Building Act of 1774, by determining the relationship between building classes, size, and shape, created an optimal way of designing buildings to avoid higher taxation, which effectively discouraged experimentation (Summerson & Colvin, 2003) and resulted in a standardised long and narrow Georgian terraced house.

Compared to subsequent Victorian bye-laws, the post-war standards recommended by the *Tudor Walters Report* were "a major innovation in social policy" (Burnett, 1986, p. 218), with the report focused not only on health but also on the design and layout of housing. The report's objective was to create a more compact home designed for the needs of the nuclear family. These new terraced houses were built in groups of four to six, featuring private gardens to both the front and rear. The space per person was calculated by the Committee based on criteria of health and convenience, establishing a space of 500 ft^3 (14.16 m^3) per adult (Tudor Walters Committee, 1918). This meant that houses ranged from 76 m^2 to 114 m^2 in size.

The Committee warned against common narrow-fronted houses with rear extensions and recommended shorter terraces with wider frontage to avoid overcrowding. They argued that wider homes would benefit not only from sun exposure but also reduced costs, as they required shorter rafters, less height in gable walls, and smaller party walls and chimneys (Tudor Walters Committee, 1918). The front and back rooms and the rear extension were accessed through a hall, and in cases when the back room was used for the kitchen, the scullery was accessed through the kitchen. The shift in width also allowed for more options to position the hallway and staircase (Figure 5), as well as a third bedroom and an upstairs bathroom. The third bedroom was considered essential by social reformers, as it allowed children of different sexes to be separated.

Even though by 1914 most dwellings had a piped water supply, this was shared in houses with multiple occupancies. It was subsequently in the interwar period that the bathroom made its way to the first floor,

with the *Tudor Walters Report* advocating having an upstairs bathroom in its type plans (Figure 5). All new council housing started to have a separate bathroom, typically located on the first floor above the kitchen, with the bath and sink in one compartment and the toilet in another. This signified a substantial shift in the domestic routines of households, distinguishing between upstairs and downstairs activities. Some bathrooms began to have both cold and hot water taps and water for baths was often heated by a back boiler, although some still heated it in pans or kettles in the kitchen on the ground floor (Ravetz & Turkington, 2013).

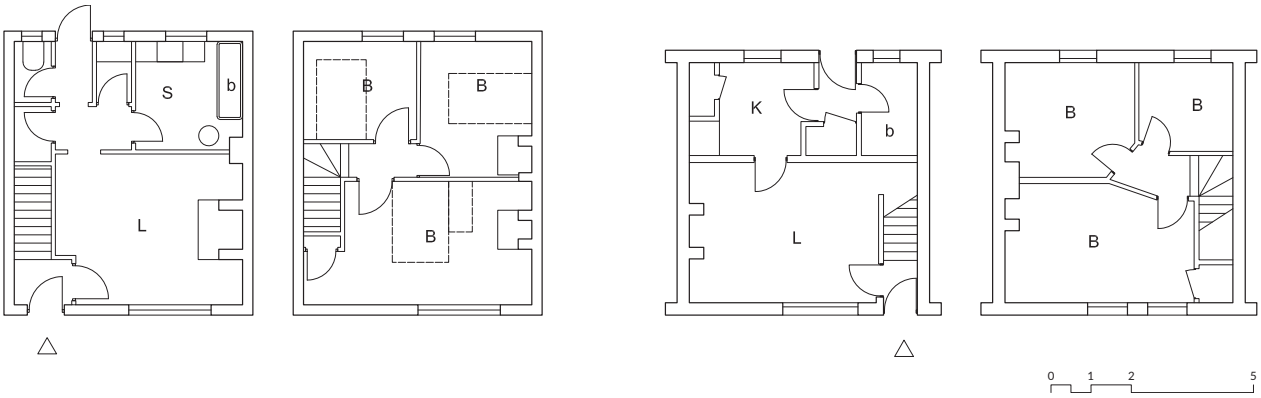

Figure 5. House type from the *Tudor Walters Report*, 1918 (left) and Office of Works Chapel House Estate, Poplar, 1921 (right). Note: Compared to Figure 1, these houses would be smaller and more compact. Redrawn by the author from Tudor Walters Committee (1918, p. 28) and Hobhouse (1994).

The need to separate the scullery from the kitchen came at the beginning of the 20th century. According to the Tudor Walters Committee (1918), evidence collected from working-class dwellings, particularly housewives, pointed out the inconvenience of household members washing in the scullery, especially when preparing meals. This was further corroborated by medical experts who accentuated the significance of access to running water and adequate washing facilities.

The report proposed two layout types: homes with a living room and larger ones with both a parlour and living room. The parlour was omitted in some homes due to cost, but this raised concerns with the Committee about the improper use of the rooms. They feared that the lack of a third room meant that dwellers "would live mainly in the scullery," both eating and cooking in the same room (Tudor Walters Committee, 1918). The Committee was aware of the practicalities of previous arrangements of using the living room for cooking, with one fire serving many purposes, thus, saving labour and fuel costs; nevertheless, they still opted to sacrifice functionality for the "cleaner activities of the family" (Tudor Walters Committee, 1918, p. 25). In defining where people should eat and prepare food, the Committee failed to fully address the needs of the working class by providing two day rooms in addition to a multifunctional kitchen (Ravetz & Turkington, 2013).

In lieu of a parlour, the living room was promoted as the new family room where no "dirty work" or eating would occur. But against the Committee's recommendations, some cooking continued in the family room. Houses had either a scullery or a kitchen, although activities would often overlap bringing confusion about the name of rooms, for example, the sitting room would be used also as a dining room and even for some cooking. The Committee emphasised instead that the parlour or living room should not be used to accommodate a

larger kitchen, and "where it is not possible to provide except in this way, we recommend that it be omitted" (Tudor Walters Committee, 1918, p. 25).

The Housing and Town Planning Act of 1919 (Addison Act) formally adopted many recommendations of the *Tudor Walters Report*. While local authorities only provided 2% of new dwellings before the Addison Act, this surged from 1919 to 1923 to over 60% (Bowley, 1985). The Housing (Additional Powers) Act of 1919 motivated private builders to adhere to the new housing standards by offering subsidies of £130 for rentals and £160 for saleable homes that met them (Spink, 2005). This incentivised consistency in design across private and public housing, but space standards ultimately led to rising rental costs, making the new homes unaffordable to the working classes they were intended for. Nevertheless, the recommendations presented by the Tudor Walters Committee reflect a snapshot of what society prioritised at that moment, as well as their judgement of what they felt was the "correct" way of living. The report instrumentalised the socio-spatial relations between space standards and the recommended ways in which households, as a nuclear family unit, should inhabit their homes.

5. Defining "Other" Households: New Post-Second World War Housing Typologies

The interwar kitchenette had a back door to the side driveway or back garden and sometimes a serving hatch to the back room, if used for dining. It combined all the food preparation functions of the scullery and kitchen but had no space for a table and chairs. Despite being small, the kitchenette was deliberately placed to permit monitoring of all circulation in a home, as the front door, hall, stairs, and back garden could be surveyed from its location. With the passing of time and more appliances such as washing machines and dishwashers, the kitchenette, however, seemed increasingly unsuited for modern life. Modern kitchens were inspired by the Frankfurt kitchen designed by Margarete Schütte-Lihotzky in 1926, which was suitable for both houses and flats due to its galley layout (Darling, 2005). A kitchen with cupboards saved space and came with gas, electric refrigerators, and deep sinks. The instantaneous water heater, first invented in the 19th century but improved in the 1920s, was widely installed now in council flats. The laundry moved into the kitchen with the arrival of a "twin tub" laundry machine that could connect to the sink tap. While bathrooms and kitchens represented an advance in living standards, they were expensive until the standardisation of fittings and connections during the interwar period increased efficiency and lowered their costs.

Similar to sanitary services, a large increase in the use of electricity for cooking came in the period between the wars. Local authorities began to rent out cookers and heaters to their tenants, in parallel to a rapid rise in their sales as well as that of toasters, kettles, and small appliances from the 1930s onward. The increasing affordability of household appliances and their constant advertisement profoundly impacted societal perceptions of what was deemed essential within the home. No longer regarded as extravagant purchases, domestic appliances like the electric refrigerator became increasingly seen as required in a modern home (Hollow, 2014).

In the late 1930s, housing stakeholders gathered input from experts, third-sector organisations, and professional bodies along with a growing interest in understanding and shaping public opinion. Council estate tenants were increasingly regarded as individuals with distinct needs, as "clients" or "users," rather than simply recipients of government assistance (Hollow, 2014). For Clifford and Ferm (2021, p. 12), the post-war standards reflected "a belief in scientific rationality in their development and social democracy in

their application." Thus, in 1942, as part of the government's post-war reconstruction planning, the Ministry of Health created a new housing sub-committee under the chair of Lord Dudley (Design of Dwellings Committee or Dudley Committee) to consolidate evidence on which to base housing policy and standards.

The Women's Advisory Housing Council, set up in 1936 and including more than 30 women's groups such as the Mothers Union and the National Council of Women, coordinated a mass housing survey on how its members would like to live and wanted their homes to be laid out to meet their daily needs. The Mothers Union found that women wanted spacious and affordable family homes with three to four bedrooms. Their support for traditional family homes was based on the belief that poor housing would deter couples from having children (Beaumont, 2013). Parliamentary debates echoed this by asserting that "if you want a high birth rate it is very important not to have…over-concentrations of population in flats," as women might want to have more children if homes are more attractive (UK Parliament, 1946). Evidence submitted by the Mothers Union to the Dudley Committee in 1942 incorporated many requests made by the women's groups, a testament to their influence on housing design policy. Aspects such as the inclusion of gas and electric appliances and the concept of "dining kitchens" were included by the Dudley Committee in its 1944 *Design of Dwellings* report (Beaumont, 2013).

In addition to the *Dudley Report*, other post-Second World War housing policies, such as the *County of London Plan* (1943) and the *Housing Manuals* (1944 and 1949) encouraged housing schemes with a variety of dwelling typologies and layouts to cater to diverse and changing households. As the majority of dwellings built between the wars had three bedrooms, the *Dudley Report* called for new dwelling types, particularly for large families, elderly people, childless couples, and one-person households (Ministry of Housing and Local Government [MHLG], 1944a). Despite the *Dudley Report* and the recommendations of the 1944 and 1949 *Housing Manuals* for more diverse house types, standard designs were still predominantly for three-bedroom houses, with one-bedroom dwellings for older or disabled people only mentioned under the category of "other" (Milner & Madigan, 2004).

The MHLG later proposed that large families requiring four or more bedrooms should live in houses, other families in three-bedroom cottages or maisonettes, and small households in blocks of flats (MHLG, 1958). Mix-housing developments such as Alton West (1959) by the London County Council Architects Department led by Colin Lucas also included new housing typologies, for example, three-storey terraced houses with widths of only 3.66 m, stairs located centrally between a front and back room, and the kitchen and dining room on the ground floor separated from a living room on the first floor (Figure 6). While mixed-typology development created more housing variety, the assumption that certain households such as larger families were better suited for houses or maisonettes persisted. The *Dudley Report*, "aware of the keen controversy of the house versus the flat," suggested that flats be "primarily for childless households" (MHLG, 1944a, p. 12). The *Housing Manual* of 1949 accordingly presented maisonettes as a compromise between flats and houses with a garden, although acknowledging there is no real substitute for a house with a garden, especially for families with young children (MHLG, 1949). Nevertheless, the post-war housing shortage and the reconstruction efforts changed London from a city of houses to one predominantly of flats.

The standards set in place were, therefore, a response to the spatial hierarchies of a household defined by traditional family life. While the provision of bedrooms was previously largely based on moral concerns, in the post-war period the focus increasingly shifted to "the user" and issues around privacy, flexibility, and personal

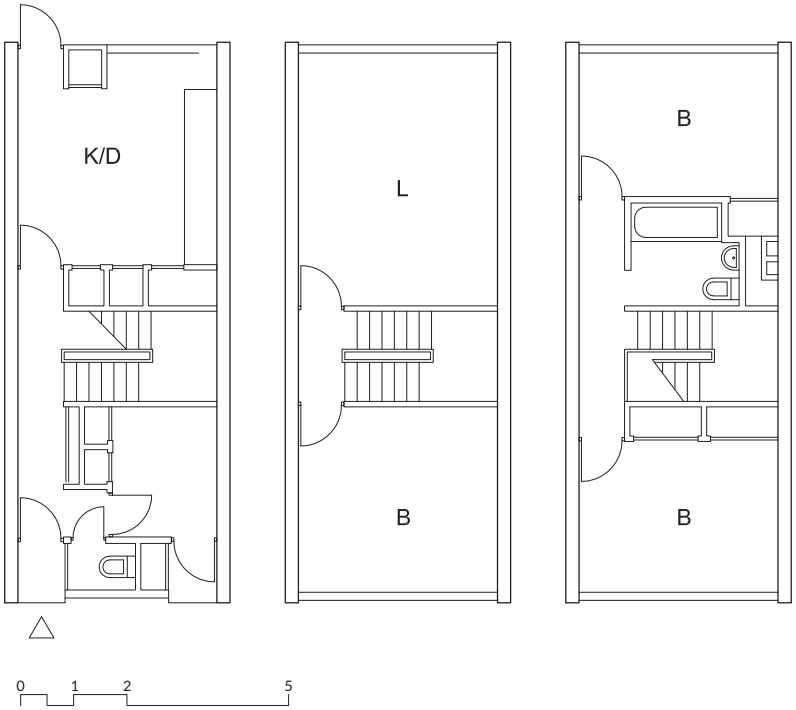

Figure 6. Three-storey terraced house: Alton West, 1959. Redrawn by the author from "The slab and point blocks of flats" (1959).

space. As opposed to the Victorian terraced house that had a socially representative "public" room facing the front elevation, many post-war houses switched the living room with the kitchen to gain privacy (Figures 7 and 8). This was especially common in maisonettes with external access galleries running along the front.

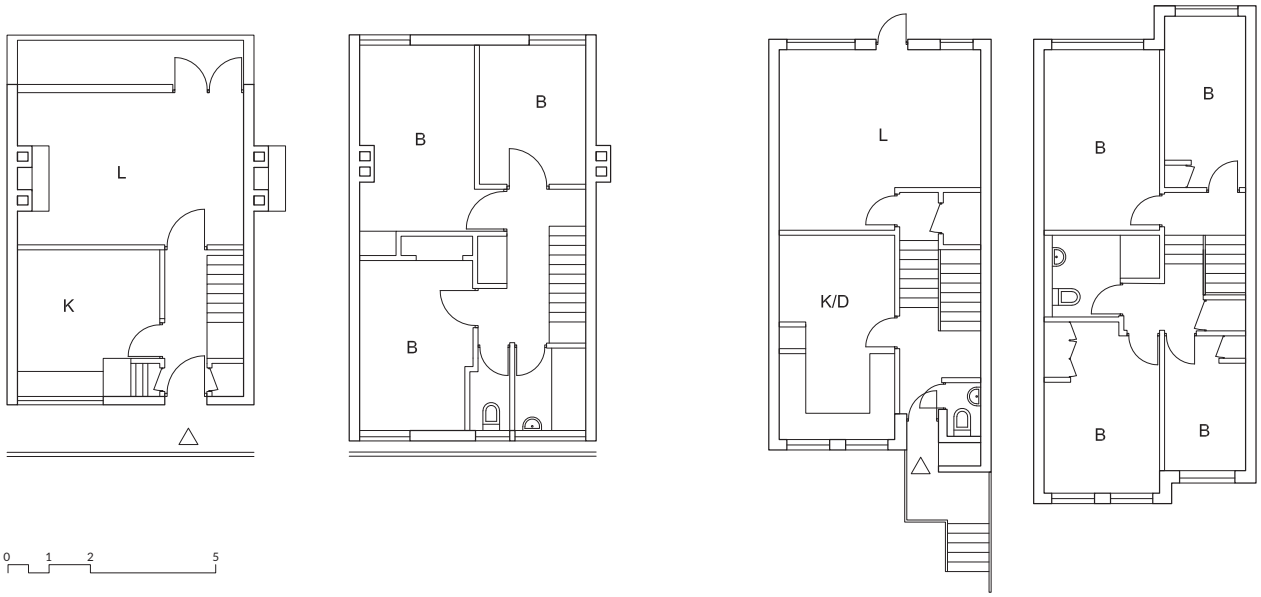

Figure 7. Ground and first-floor maisonettes: Canada Estate, Bermondsey, 1962 (left), and Lillington Gardens, Westminster, 1971 (right); both had the kitchen in the front and living room in the back and Lillington Gardens also had a downstairs toilet. Redrawn by the author from Crawford (1975).

Services in the home saw further changes when the *Dudley Report* suggested that homes with more than four occupants should have both an upstairs bathroom and a downstairs toilet with a washbasin (Figure 6). Its recommendations and standardised plans of the *Housing Manuals* of 1944 and 1949 also promoted substantially larger kitchens at the back of the house with space for both cooking and dining to ensure enough living space. While previously the living room housed many family activities, the report expressed people's preference to have a family room only for social and recreational uses (MHLG, 1944a).

The *Housing Manuals* eliminated the parlour altogether, proposing three new housing types: one with a dining kitchen, one with a separate working kitchen and dining room, and another with a kitchen–living room and a small separate utility room (Figure 8; MHLG, 1944b, 1949). Once the cooking equipment was moved to the kitchen, the *Dudley Report* claimed people would find it more convenient to have their meals there, because serving meals directly from the cooking stove to the table significantly reduced housework. The report also highlighted that there should be a separate area for laundry, for the "drying of clothes, and dirty jobs which should not be done in a room in which meals are eaten" (MHLG, 1944a, p. 12). But the Committee also acknowledged that the desire to eat where the food was cooked led to people eating in the kitchen, even if it was not fit for purpose.

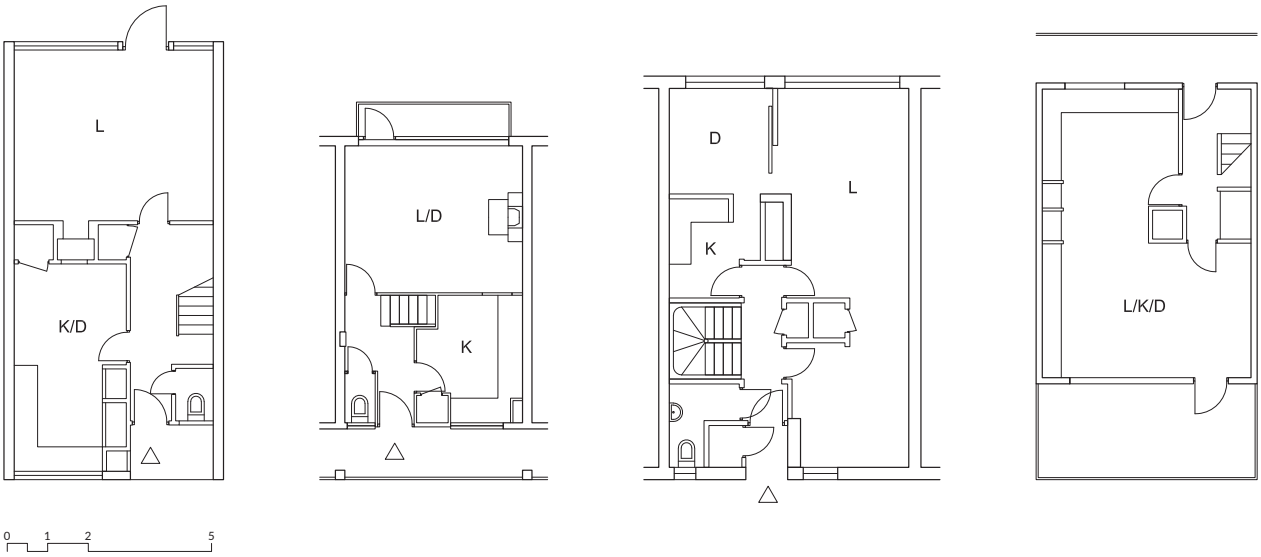

Figure 8. Ground floor of four examples of different kitchen, living, and dining layouts: From left to right, kitchen and dining room combined in a four-bedroom, two-storey house in Alton West, Roehampton (1959); living and dining room combined in a two-bedroom, two-storey London County Council maisonette type plan (1956); a separate room for kitchen, dining, and living in a four-bedroom, two-storey maisonette, in Linden Grove (1970); and an open plan combined living, dining, and cooking areas in a two-bedroom, two-storey maisonette in Thamesmead (1972). Redrawn by the author from "Alton West, Roehampton" (2009); London County Council (1956); Crawford (1975); Greater London Council (1976, p. 15).

6. Homes for Today and Tomorrow: Family Versus Individual Needs

Crucial to housing progress was the housing report *Homes for Today and Tomorrow* (*Parker Morris Report*), published in 1961 by the Parker Morris Committee for the MHLG. The Parker Morris standards represent the "first set of comprehensive, evidence-based space standards" (Park, 2017, p. 3). Similar to earlier housing reports, it made recommendations on minimum housing standards, including internal floor areas.

The recommended standards not only focused on dimensions and areas but also the usability of spaces, with spaces designed to meet the various activities associated with different family compositions and lifespans.

Aware of demographic changes, the Committee considered "the teenager" and the "working mother" as important members of the domestic space (Kefford, 2017). The *Parker Morris Report* thus re-imagined the family as individuals with different consumption patterns, necessities, and spaces in the home, which in turn had an impact on individual space and privacy as well as technical aspects such as central heating (Kefford, 2017). The privileging of the individual over the family unit is evident from the recommendation that all adolescent and adult children should have separate rooms, regardless of their sex. This advocated for more single bedrooms, even if smaller, in order to give each family member privacy.

The *Parker Morris Report* fully embraced an increasingly consumerist culture by acknowledging the shift from the home as a shelter to one that can do more than "fulfil the basic requirements" where people can "express the fullness of their lives" (MHLG, 1961a, p. 3). Leisure, hobbies, and consumption became an intrinsic part of the home (Kefford, 2017). The report's highlighting of a "home for family needs" (MHLG, 1961a) contrasted with previous reports on space standards that prioritised "traditional" family homes (Palate, 2022). Nevertheless, its notion of a "working mother" still had a gendered and paternalist tone that is now outdated (Park, 2017). This can be seen in *Design Bulletin 6: Space in the Home* (1968)—a supplement to the *Parker Morris Report* by the Ministry of Housing—that proposed space requirements based on activities such as "coming back from shopping loaded up, mother needs space to put the pram and the shopping" (MHLG, 1963, p. 4).

After the Second World War, architects responded to the decline of servants in homes and the changing role of working- and middle-class women by introducing "open-plan" designs (M. Roberts, 1990). While post-war standards promoted separated spaces and functions, new discussions about open-plan living emerged. Removing room divisions allowed the creation of a continuous space for the kitchen, living, and dining, spanning from the back to the front of the house (Figure 8). Although the Committee regarded open-plan layouts as a contemporary house design that could potentially gain popularity in the future (Kefford, 2017), it discouraged its adoption due to "little privacy from view, from noise, or from distraction" (MHLG, 1961b, p. 9).

The contradiction between the Parker Morris standards advocating for open spaces and, at the same time, for individual privacy led to concerns around flexibility. In 1961, the MHLG proposed the *Adaptable House*, a model home with 91 m^2 that provided more space and privacy, making it adaptable to a family's changing needs during what they called the seven stages of a family's lifecycle over a period of 50 years (MHLG, 1961a). The house, designed with movable partitions, provided surplus living space on the ground floor that could be converted into a bedroom when children became teenagers (Figure 9).

In redefining domestic use, the Committee was aware that the specification of space standards with determined room labels assumed a conventional arrangement and how each space would be used. They argued that flexibility could be achieved by looking at the needs of the dwellers and, instead of setting minimum room sizes, only proposing the minimum size of the whole dwelling. In that sense, the report made similarities between a modern-day kitchen and that of a 19th-century scullery due to the multiple uses it had. The "family homes" in Ravenscroft Road in West Ham, built in 1964 to the Parker Morris standards, had an extra room on the ground floor that could be used as a small bedroom or office (Figure 10).

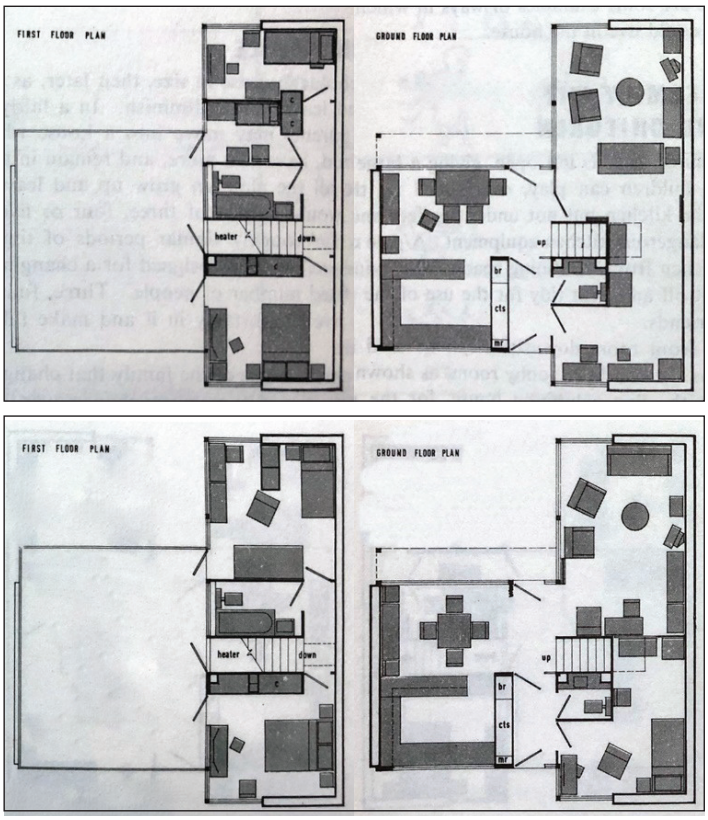

Figure 9. Comparison of lower and upper floorplans of a family with three young children (top) and a family of four adults (bottom). Source: MHLG (1961a, pp. 6–8).

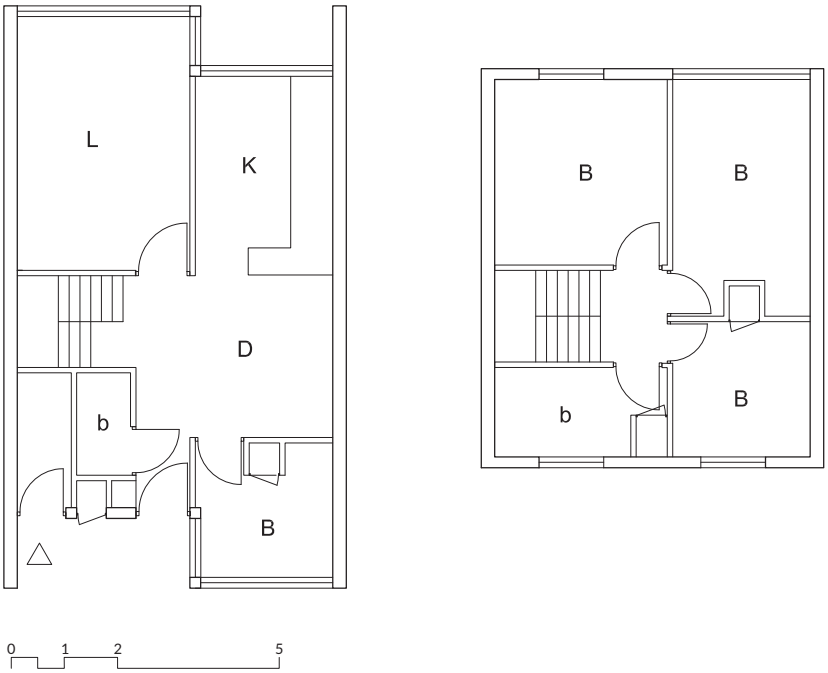

Figure 10. Ground and first-floor three-bedroom house following the *Parker Morris Report* recommendations: Ravenscroft Road, West Ham, 1964, MHLG. Redrawn by the author from MHLG (1969, p. 41).

However, new technical challenges arose in implementing the recommendation of the *Parker Morris Report*. For example, S. W. Gilbert, the secretary of the Housing Standards Sub-Committee of the Central Housing Advisory Committee, pointed out that the Institution of Electrical Engineers regulations made it impossible to use an electric appliance in the bathroom, preventing it from housing a washing machine or spin dryer, although the Committee considered this to be more efficient (Gilbert, 1960). Thus, regulations and user preferences or habits had to be better coordinated and make homes suitable to changing needs.

7. Conclusion

As Imrie (2005, p. 47) points out, "housing quality, or people's experiences of domestic life and living, cannot be understood in isolation from the moral encoding or order of domestic design." It is essential that space standards take into account the lessons learned from the past while forging innovative, evidence-based solutions that resonate with contemporary societal needs and aspirations.

While many of the reports previously mentioned may appear to be similar in how they determine minimal dwelling sizes, their reasoning is quite different, as are the outcomes and recommendations. Type plans and internal floor areas were presented as the optimal way of living, derived from ideas of future housing and needs, such as the *Parker Morris Report* and open-plan living. Once the baseline for sanitation and health was established through local bye-laws and the *Tudor Walters Report*, there was less emphasis on Victorian morals, with post-war space standards acknowledging the importance of evidence based on anthropometric measurements and social surveys. There was also a big shift from the *Tudor Walters Report*'s idea of the family as a cohesive unit, compared to the *Parker Morris Report*, which despite remaining paternalistic, prioritised the individual and their needs.

Henry Robert's self-contained flat for the nuclear family, novel at that time, is not drastically different to flat typologies today. Nonetheless, how we understand and inhabit them, has changed significantly. For example, living rooms used to imply a certain conviviality among family members, which might no longer be the case today in households of non-related adult sharers. Similarly, the hierarchy of bedrooms with its clear spatial distinctions between the parent's and the children's bedrooms is perhaps less applicable today where bedrooms host a variety of functions such as studying or working.

Even though one-family households still account for the majority of households, one in three UK households in 2022 was a one-person household (Office for National Statistics, 2022). Such demographic shifts, as well as a wider range of users, have to be reflected in new housing. A similar significant shift in household structures could be seen in the past: from multiple families sharing a house to the separation of individual families into single homes, to prioritising the individual over the family unit.

Many dwelling typologies continue to maintain a strong connection to their historical origins, prompting a reassessment of how social expectations and technical rationale should guide the development of housing design today. However, with shifting societal dynamics, climate change, and increased housing commodification, it is important to understand how space standards and building regulations might determine housing quality and have to be adapted to ongoing transformations. This prompts questions about the space standards needed to ensure adequate and equitable housing as well as the evidence that can underpin these decisions.

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Conflict of Interests

The author declares no conflict of interests.

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ARTICLE

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Handbook, Standard, Room: The Prescription of Residential Room Types in Sweden Between 1942 and 2023

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Abstract

Norms and handbooks have played a key role in the design of residential rooms in Sweden since the 1940s. Ever since, changes in housing policies have led to varying definitions and regulations of residential rooms, allowing their existence, defining their configuration, and framing their performance. And yet, none of these rooms has been built; they are prescribed room types that belong in the pages of handbooks that validate the framework in which housing design can operate. What are these prescribed room types? What do they look like? Who and what do they include? Have they changed over time? In response to these questions, this article follows the evolution of a set of residential room types in the design handbooks that have accompanied housing policy bills in Sweden from 1942 to 2023. These manuals are not the law itself but operate as an interface for professionals and designers by reflecting the practical consequences of the norm. Diagrams, dimensions, texts, and references to housing literature vary from handbook to handbook to define the specific traits of each type of room. By studying these traits in relation to key moments of Swedish housing politics, the article reveals the role that norms and standards have played in the establishment of the regulatory regime in which housing design in Sweden operates today.

Keywords

housing design; housing regulations; housing standards; residential rooms; room typology; Sweden

1. Introductory Remarks on the Room as a Subject of Study in Housing Research

In architectural design, history, and theory, domestic architecture is often anchored in typology, an intellectual tool that facilitates the systematization, organization, and navigation of housing as a body of work. The specific

characteristics that classify residential projects through this lens are as varying as the very notion of type (Tostões & Silva, 2022), and it is not the purpose of this article to delve into them. Regardless of this variety, however, there seems to be a remarkable consensus around the typological levels that drive classification and analysis, most notably the building form and the dwelling unit (Leupen & Mooij, 2022). As a result, we can find extensive literature on housing that is organized around these two levels (Gameren, 2023; Heckmann & Schneider, 2017; Karakusevic & Batchelor, 2017; Lapuerta et al., 2021; Ledent & Porotto, 2023; Nylander, 2018; Pierini et al., 2023), while other scales and spatial components of a residential project, particularly the rooms, have been rarely the subject of typological studies.

One exception is the recent work of Kärrholm (2020), who has conducted extensive research on the typological evolution of residential rooms in Sweden. Kärrholm's approach to type considers both form and use and results in the characterization of room types as "territorial sorts," that is, as spatial entities connected to specific uses and meanings, whose emergence, transformation, or disappearance in the residential architecture of a country involves significant material and cultural changes. In his own words:

> Types…are in fact a way of turning a certain space into a socio-material actor with a certain effect, i.e., into a territory. One could also describe them as "sorts" to make clear that they are not defined by a standard set of entities (like prototypes might be), but must be seen as a more fluid assemblage where no entity is in itself obligatory. (Kärrholm, 2020, p. 2)

In this article, we add to Kärrholm's line of research by focusing on the residential room types included in the design handbooks that have accompanied housing policy bills and norms in Sweden in the last nine decades. The reason why we focus on these manuals and not the bills is because of the particularities of their format. Unlike strictly textual norms, handbooks include explanations, drawings, tables, and references to guide designers through the field of action established by legislation. By reflecting the practical consequences of the norms and offering compliant examples, these manuals constitute a unique source for professionals and operate as an interface that bridges regulations, research, and design. In so doing, they have defined the types of rooms legislated and prescribed by the Swedish nation since 1942—their spatial traits, designated functions, and, going back to Kärrholm, their socio-material scope.

2. An Account of Swedish Housing Design Handbooks

Housing norms and standards have been subject to many accounts in Swedish historiography (Berger et al., 2007; Nylander, 2018; Nylander et al., 2018; Thiberg, 1990). In the last decade, different scholars have studied these standards in detail (Carrai, 2021), as well as their socio-cultural effects (Mattsson, 2010, 2023; Pries, 2022), that is, their performative capacity in the construction of what Perers (2020) has defined as an ideal image of the Swedish apartment home. By studying the design handbooks that have accompanied these norms and standards since 1942, we aim to shed light on the role these manuals have played in the construction of the meta-project that has guided the manifold spatial outcomes of Swedish residential architecture in that period.

Our account starts with a 28-page blue-covered handbook called *Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans* (Westholm, 1942; see Figure 1). The manual, widely identified as the first national directive for housing, was issued by Statens byggnadslånebyrå (the Swedish Building Loan Agency) as a set of minimum standards that developers should comply with to obtain cheap

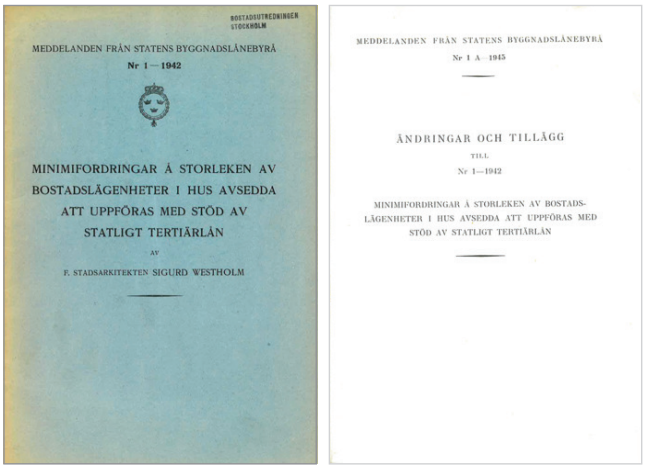


Figure 1. Cover of *Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans*, published in 1942 by Statens byggnadslånebyrå (left) and cover page to the 1945 amended version (right).

loans for the construction of residential projects. It came as an outcome of a broader state initiative led by the social democrats to stimulate housing from a non-speculative approach after a period characterized by broad political agreements and emerging social reforms, which laid the foundations for the welfare state housing policy. Westholm's handbook, or bible, as is commonly referred to, strove for good design, hygiene, and practicality in the home without including any floorplan or picture, only through well-structured and easy-to-read tables, authoritative text, and prescriptive measurements (see Figure 5).

Westholm's publication came right after the birth of a new genre in architectural literature, the design handbook. The early Ramsey and Sleeper's *Architectural Graphic Standards*, published in the US in 1932, or Ernst Neufert's *Bauentwurfslehre*, published in Germany in 1936, had marked a starting point for recurring editions that would soon be identified with normative architectural practice (Emmons & Mihalache, 2013). Enrooted in Taylorist notions of domestic standardization and household efficiency, both in language and ideology, these books of practice established a clear framework for architectural design. They were produced to be widely read, assimilated, applied, and reproduced, and, in so doing, they normalized ideas on how to design, use, and evaluate domestic architecture (Carrai, 2021).

Following this same spirit, a new version of Westholm's handbook was published 12 years later. With the title of *God Bostad* (*Good Housing*), the new handbook was issued in 1954 by Kungl. bostadsstyrelsen (the Royal Housing Board of Sweden), a central government authority tasked with providing housing and managing state loans in the two decades that followed (see Figure 2). The board updated and expanded the manual with reasoned recommendations and diagrams prepared after the results of interview studies and laboratory experiments. Among these were the Utredningen för hem- och familjefrågor (the Investigation Into Home and Family Affairs) or the latest studies by Hemmens Forskningsinstitut (the Home's Research Institute), which established national standards regarding lighting, furnishing, and room dimensions. By providing instructions for spatial organization and disseminating new housing standards, *God Bostad* was manifestly intended to regulate Swedish domestic space, but also to install the home at the epicenter of Swedish politics. Through the manual, the powerful Housing Board funnelled the social democrat's ideal of spatial justice, i.e., the equal provision of a generous range of life's necessities, synthesized in a set of standards tied to the state housing credit system.

Figure 2. Cover of *God Bostad*, published in 1954 (left), 1960 (middle), and 1964 (right) by Kungl. bostadsstyrelsen.

The aspirations for good and egalitarian planning that were characteristic of Sweden's folkhem (Carrai, 2021; Mattsson & Wallenstein, 2010) were mediated by the handbook, which acted both as a design guideline for the new residential environments and as evaluation criteria for the needs of the residents populating them. The drawings with furniture arrangements, the room designations, and the measurements contained in the 32 glossy pages of *God Bostad* permeated the projects that landed in the office of the Housing Board to receive a state loan since its first publication in 1954. The national standards, updated in the subsequent editions of 1960 and 1964, spread and solidified in the domestic spaces built during the 1950s and Miljonprogrammet (Million Housing Program), the state-led housing program from 1965 to 1974. For two decades, the construction of new dwellings in Sweden hit a record high, and so did the purchasing power of Swedish residents.

Interestingly, the standards coded in the manual were not alien to the logic of consumerism, despite its connection to the decommodification of housing. Every new edition of *God Bostad* evolved according to knowledge produced through prototype testing, ambitious consumer surveys, and the ensuing redefinition of standards to better meet the needs of certain "types" of households. As Pries (2022) has suggested, Sweden's standard relationship with consumer groups and research on product design was inspired by earlier debates on Fordist standardization and mass production. In this context, the handbook contributed to the transformation of precise spatial arrangements into predictable consumer goods tied to mass production and national planning, as well as the creation of a predictable Swedish consumer aligned with the market (Mattsson, 2010).

Another edition of *God Bostad* was prepared in 1970 but never published. Instead, a new handbook came in 1977 with a new title—*Bostadsbestämmelser* (*Housing Directives*)—in a new format and under a new authorship by Statens planverk (the Swedish National Board of Urban Planning; see Figure 3). The standards of the 1964 edition of *God Bostad* had been in force until they were incorporated in the legally binding Svensk byggnorm of 1975 (the Swedish Building Code), a code that got rid of many of the texts that justified the qualities and dimensional standards for new constructions and introduced a significant shift from prescriptive to performance-based regulations. In other words, the new Building Code focused on what Swedish domestic space should do rather than on its spatial qualities (Mattsson, 2023, pp. 123–130).

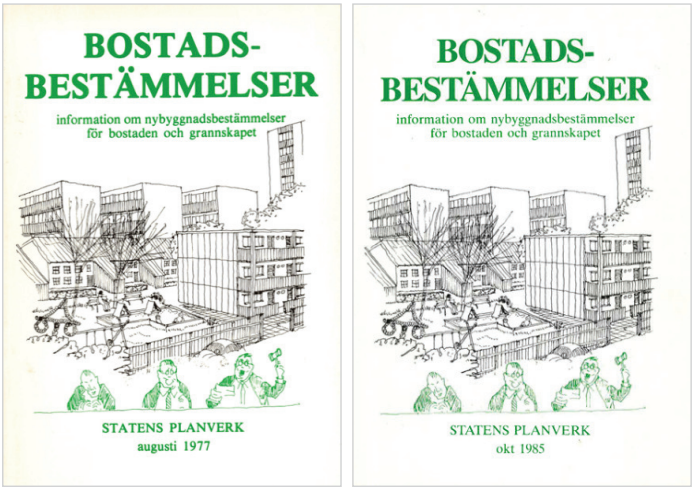


Figure 3. Cover of the first (left) and last edition (right) of *Bostadsbestämmelser*, the handbook published by Statens planverk in 1977 and 1985.

Lacking the solutions and reasonings of its predecessor, the norms were exposed to increasing debate and criticism, also by those who did not seek housing loans. To counteract this perception and resist the turn by the performance-based code, the handbook published by the National Board of Urban Planning presented the regulations and standards in a reasoned and accessible fashion: a richly illustrated A5 catalogue printed in uncoated paper with a table of contents and a subject register to look up specific information, as well as a few ruled-pages at the end for own notes and completions.

Despite its renewed, handy appearance, *Bostadsbestämmelser* sought continuity with *God Bostad* and focused on spatial knowledge. To that extent, the Board of Urban Planning prepared the handbook in consultation with the Housing Board and Konsumentverket (the Swedish Consumer Agency), as well as practicing architects who examined, translated, and evaluated norms and recommendations. The architectural imprint sought by the director of the board, Lennart Holm, became evident in the drawings that spread across the 128 pages of the new manual, including diagrams, floorplans, axonometric views, urban plans, or construction details. In hindsight, the handbook and its later editions, published in 1979, 1984, and 1985, could be seen as the highpoint of the welfarist implementation of housing standards through planning since, contrary to the previous manuals and their connection to the state loan system, the underlying regulations applied to all new projects. Moreover, the spatial solutions prescribed in the handbook served as a template for evaluation that reinforced the multi-scalar production of housing that had been enabled by Westholm's manual and *God Bostad* (Pries, 2022, pp. 298–299). While the national bodies detailed the norms and standards that were required to get a housing permit, municipal planners were responsible for evaluating the compliance of the projects they received. Following Pries (2022), it could be argued that the standards contained in these handbooks shaped domestic space according to a technocratic view of social justice that simultaneously served to measure the needs and to evaluate the responses of housing projects.

In 1997, a new handbook was published. It was also titled *Bostadsbestämmelser* but, albeit it shared the name, format, layout, internal structure, and style of its predecessor, it was the first manual not issued by a Swedish public authority but by an information company for the construction sector, Svensk byggtjänst (see Figure 4).

Figure 4. Cover of the first (left) and last edition (right) of *Bostadsbestämmelser*, the handbook published by the company Svensk byggtjänst in 1997 and 2023.

Since the 1997 edition, Svensk byggtjänst has published 12 more editions of *Bostadsbestämmelser*, the last one in 2023. Like the previous handbooks, they compile regulations and recommendations from various sources and institutions in an easily understandable manner, providing the readers with explanations of their purpose and context. However, the level of detail in relation to drawings and dimensions is substantially reduced, in line with the evolution of the underlying housing norms. In this regard, the transition from detailed requirements to performance-based regulations had taken a step further in 1993 with Boverkets Byggregler, the building regulations issued by the current Swedish National Board of Housing. In them, instructions to meet the law were softly worded, and dimensioned spatial solutions were removed and replaced by general advice referring to the standards decided by private and public actors through the Swedish Institute for Standards. Now, it was the builder who was expected to take responsibility for the planning of domestic space, even when the detailed standards disseminated by the previous handbooks were no longer in place.

Despite the new manual still casts an image of authority, accuracy, and universality that normalizes a national domestic doctrine characterized by *good* housing—functional, proportionate, beautiful, and easy to furnish, clean and maintain—the period when design and regulations went hand in hand was over in 1989. All the national institutions that provided a welfare system through planning, including the Housing Board, the Board of Urban Planning, and the Swedish Ministry of Housing, closed at the turn of the decade. The gradual process of deregulation and subsequent reregulation of the building codes, characterized by a state-led neo-liberalization of residential architecture as described by Mattsson (2023), signaled a new political era in terms of housing that was embedded in the new *Bostadsbestämmelser*.

As we have succinctly observed, the main traits of the handbook as a genre are essential to the ways in which these publications perform their role. Together, in a sequence of overlaps rather than replacements, these handbooks have shaped an evolving artefact that mediates housing design in Sweden, turning standards into both guidelines and evaluation criteria. In so doing, the handbooks articulate a multi-scalar network in which we can point at three main actors: the ordinary residential consumer (those members of the household whose practices are enrooted in consumerism and codified in the manuals, but also those who come to visit or use domestic space as a workplace, such as home helpers), the architect (those who apply the information of the

manuals to produce architectural projects), and the state and municipal bureaucrats (turned into legitimate supervisors of the resident's rights). Although it is never explicitly said in them, these manuals became one of the tools of a political and social project that was meant to be translated into domestic space.

To know more about it, we have selected one edition of each of these handbooks as the main source of our analysis (Table 1). From the two versions of the one published by Statens byggnadslånebyrå, *Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans*, we have selected the first as the original prototype of this type of publication (Westholm, 1942). For the other three—*God Bostad*, published by Kungl. bostadsstyrelsen; *Bostadsbestämmelser*, published by Statens planverk; and *Bostadsbestämmelser*, published by Svensk byggtjänst—we have selected the last editions as the most evolved ones of the series, that is, the ones that have been subject to more changes and amendments (Kungl. bostadsstyrelsen, 1964; Statens planverk, 1985; Svensk byggtjänst, 2023).

Table 1. The main traits of the four selected handbooks.

	Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans (1942)	*God Bostad* (1964)	*Bostadsbestämmelser* (1985)	*Bostadsbestämmelser 2023* (2023)
Content	Normative regulations and recommendations that had to be considered in the design and construction of the interior of apartment buildings that intended to obtain a tertiary loan	Normative regulations and standards that had to be considered in the design, construction, and technical aspects of the interior of apartment buildings, as well as planning and outdoor spaces, that intended to obtain a tertiary loan	Regulations and recommendations that apply to housing in Sweden, from design to management and use	Regulations and recommendations that apply to housing in Sweden, from design to management and use, including European construction standards
Purpose	Prevent the design of technically unusable apartments and promote good design in new apartment buildings	Update the previous handbook, offer up-to-date information, and promote a sustained increase in housing standards	Simplify and clarify an expanded normative framework to facilitate that housing design meets the regulations	Ensure that knowledge is not lost and facilitate legal compliance for housing design according to an updated collection of norms and regulations
Audience	Architects, building contractors, and municipal bodies	Architects, building contractors, municipal officials, and other agents who have to do with housing construction	Professionals, tenants and owners, and regulating bodies	Not specified
Format	C5	C5	A5	A5 and digital

Table 1. (Cont.) The main traits of the four selected handbooks.

	Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans (1942)	*God Bostad* (1964)	*Bostadsbestämmelser* (1985)	*Bostadsbestämmelser 2023* (2023)
Pages	28	65	123	199
Table of contents	No	Table of contents including room types and functions	Table of contents including room types and functions	Table of contents including room types and functions
Index	No	No	Alphabetical index containing room types	Alphabetical index containing room types
Tables, illustrations, and measured drawings	Tables included in the main body of text addressing a selection of room types; no illustrations nor measured drawings	Tables, illustrations, and measured drawings included in an appendix addressing furniture arrangements and a selection of room types	Tables, illustrations, and measured drawings included in the main body of text addressing a selection of room types	Tables, illustrations, and measured drawings included in the main body of text addressing furniture arrangements
References	No	References to norms included in the main body of text, plus research literature on a selection of room types	References to norms included in the main body of text and in an appendix, both containing research literature on a selection of room types	References to norms included in the margins and references to research literature included in the main body of text

3. The Room in the Handbook: A Short History

The reading, analysis, and comparison of the four manuals listed in the previous section articulate a brief history of the use of the residential room as the basic component of multifamily housing design in Sweden. In this section, we follow this history by focusing on two main aspects: the approach of each manual to the room and its functional mandate, and the different types of rooms included in each manual.

3.1. Statens Byggnadslånebyrå's Handbook: Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans *(1942)*

The first of the manuals in this short history is the one that more clearly presents room types as territories in Kärrholm's (2020) sense, that is, as spatial actors connected to a wide range of socio-material projections (see Figure 5). In the 28 pages of the handbook, room types guide the author's arguments on the necessity of rationalizing and improving residential architecture in Sweden, both in terms of content and structure. The specificities of each type of room are determined by precise spatial and functional definitions, but also

by crisp reflections on their history, limitations, and societal roles. As an example, the manual makes a difference between one-room apartments for men and for women, stating that the latter should include kitchens, while the former should not (Westholm, 1942, p. 6). Also, the kitchenette is described as a response to the difficult period that followed the First World War, and it is deemed limiting and not competitive in relation to "*det verkliga köket*," or the real kitchen of the modern home (Westholm, 1942, p. 13).

These and other reflections exemplify the cultural dimension assigned to room types in the manual, as well as their role in organizing Swedish society at large. To the authors, the proper selection of rooms in residential architecture is a fundamental tool to address a particular national problem:

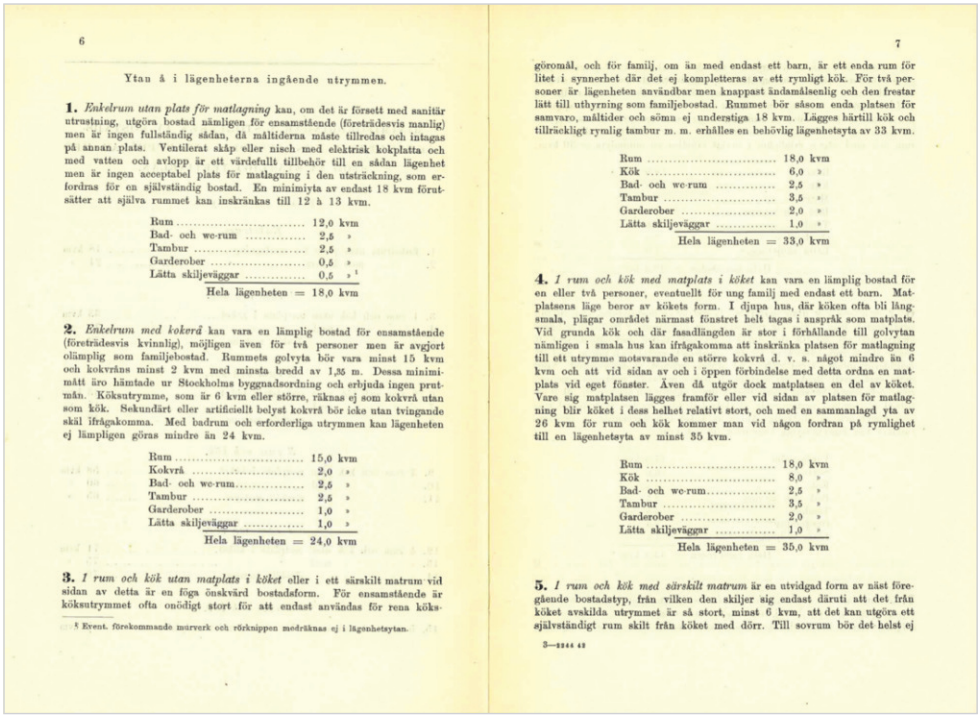
> It is widely known that the population issue in our country is in a critical situation. Its close connection with the housing issue is probably not unknown either. Under such conditions, it is in the nature of things that the government measures, which intend to support the housing construction industry, should primarily focus on housing suitable for full-fledged families, i.e., for those with at least five members….Through the advent of new apartments with several rooms, which better meets the need for space in the family home than is the case with the apartment with only one room and a kitchen, existing apartments of the latter type will now be freed up, whereby the need for such is met to a certain extent. From the public's point of view, the availability of suitable family housing must first and foremost be ensured. (Westholm, 1942, p. 26)

The family apartment is the corrective tool, and the functional room is the unit that shapes it. A modern apparatus that was to be applied throughout the Swedish territory, regardless of existing geographic and cultural differences. Knowledge and well-informed experience make the case for universality and justify the response to the demands of a national citizen with normal wishes:

> Since in this context only the normal need for housing is of interest, one does not have to count on individual wishes that go beyond this need or lie alongside general conditions for good and purposeful housing of simple nature. (Westholm, 1942, p. 15)

The general conditions of good and purposeful housing are established in the manual by means of room types, since, as noted on pages 5 to 12, the rational layout of an apartment implies the division into spaces for different purposes. The number of divisions depends on the floor area available, and the production of spaces that are well-proportioned, well-lit, well-furnished, and can be accessed independently. According to the authors, "the different spaces within the home must have a size that corresponds to their purpose" (Westholm, 1942, p. 21). In some instances, like the kitchen, the allocation of specific equipment is also referred to as a defining condition.

This equation of space and purpose not only results in the use of room types as the fundamental component of the family apartment but also in a specific selection. In other words, the manual defines the rooms that are deemed adequate for the production of the modern family apartment. In the first part of the booklet, devoted to the minimum requirements for residential apartments in buildings intended to be built with the support of a tertiary loan, the following room types are listed and specified: *badrum* (bathroom), *WC-rum* (water closet), *tambur* (lobby or antechamber), *kök* (kitchen), *kokvrå* (cooking nook), *matrum* (dining room), *vardagsrum* (living



6

Ytan å i lägenheterna ingående utrymmen.

1. *Enkelrum utan plats för matlagning* kan, om det är försett med sanitär utrustning, utgöra bostad nämligen för ensamstående (företrädesvis manlig) men är ingen fullständig sådan, då måltiderna måste tillredas och intagas på annan plats. Ventilerat skåp eller nisch med elektrisk kokplatta och med vatten och avlopp är ett värdefullt tillbehör till en sådan lägenhet men är ingen acceptabel plats för matlagning i den utsträckning, som erfordras för en självständig bostad. En minimiyta av endast 18 kvm förutsätter att själva rummet kan inskränkas till 12 à 13 kvm.

Rum	12,0 kvm
Bad- och we-rum	2,5 »
Tambur	2,5 »
Garderober	0,5 »
Lätta skiljeväggar	0,5 »[1]
Hela lägenheten =	18,0 kvm

2. *Enkelrum med kokvrå* kan vara en lämplig bostad för ensamstående (företrädesvis kvinnlig), möjligen även för två personer men är avgjort olämplig som familjebostad. Rummets golvyta bör vara minst 15 kvm och kokvråns minst 2 kvm med minsta bredd av 1,35 m. Dessa minimimått äro hämtade ur Stockholms byggnadsordning och erbjuda ingen prutmån. Köksutrymme, som är 6 kvm eller större, räknas ej som kokvrå utan som kök. Sekundärt eller artificiellt belyst kokvrå bör icke utan tvingande skäl ifrågakomma. Med badrum och erforderliga utrymmen kan lägenheten ej lämpligen göras mindre än 24 kvm.

Rum	15,0 kvm
Kokvrå	2,0 »
Bad- och we-rum	2,5 »
Tambur	2,5 »
Garderober	1,0 »
Lätta skiljeväggar	1,0 »
Hela lägenheten =	24,0 kvm

3. *I rum och kök utan matplats i köket* eller i ett särskilt matrum vid sidan av detta är en föga önskvärd bostadsform. För ensamstående är köksutrymmet ofta onödigt stort för att endast användas för rena köks-

[1] Eventl. förekommande mörverk och rörknippen medräknas ej i lägenhetsytan.

7

göromål, och för familj, om än med endast ett barn, är ett enda rum för litet i synnerhet där det ej kompletteras av ett rymligt kök. För två personer är lägenheten användbar men knappast ändamålsenlig och den fresatar lätt till uthyrning som familjebostad. Rummet bör såsom enda platsen för samvaro, måltider och sömn ej understiga 18 kvm. Lägges härtill kök och tillräckligt rymlig tambur m. m. erhålles en behövlig lägenhetsyta av 33 kvm.

Rum	18,0 kvm
Kök	6,0 »
Bad- och we-rum	2,5 »
Tambur	3,5 »
Garderober	2,0 »
Lätta skiljeväggar	1,0 »
Hela lägenheten =	33,0 kvm

4. *I rum och kök med matplats i köket* kan vara en lämplig bostad för en eller två personer, eventuellt för ung familj med endast ett barn. Matplatsens läge beror av kökets form. I djupa hus, där köken ofta bli långsmala, plägar området närmast fönstret helt tagas i anspråk som matplats. Vid grunda kök och där fasadlängden är stor i förhållande till golvytan nämligen i smala hus kan ifrågakomma att inskränka platsen för matlagning till ett utrymme motsvarande en större kokvrå d. v. s. något mindre än 6 kvm och att vid sidan av och i öppen förbindelse med detta ordna en matplats vid eget fönster. Även då utgör dock matplatsen en del av köket. Vare sig matplatsen lägges framför eller vid sidan av platsen för matlagning blir köket i dess helhet relativt stort, och med en sammanlagd yta av 26 kvm för rum och kök kommer man vid någon fordran på rymlighet till en lägenhetsyta av minst 35 kvm.

Rum	18,0 kvm
Kök	8,0 »
Bad- och we-rum	2,5 »
Tambur	3,5 »
Garderober	2,0 »
Lätta skiljeväggar	1,0 »
Hela lägenheten =	35,0 kvm

5. *I rum och kök med särskilt matrum* är en utvidgad form av näst föregående bostadstyp, från vilken den skiljer sig endast däruti att det från köket avskilda utrymmet är så stort, minst 6 kvm, att det kan utgöra ett självständigt rum skilt från köket med dörr. Till sovrum bör det helst ej

3—[illegible]

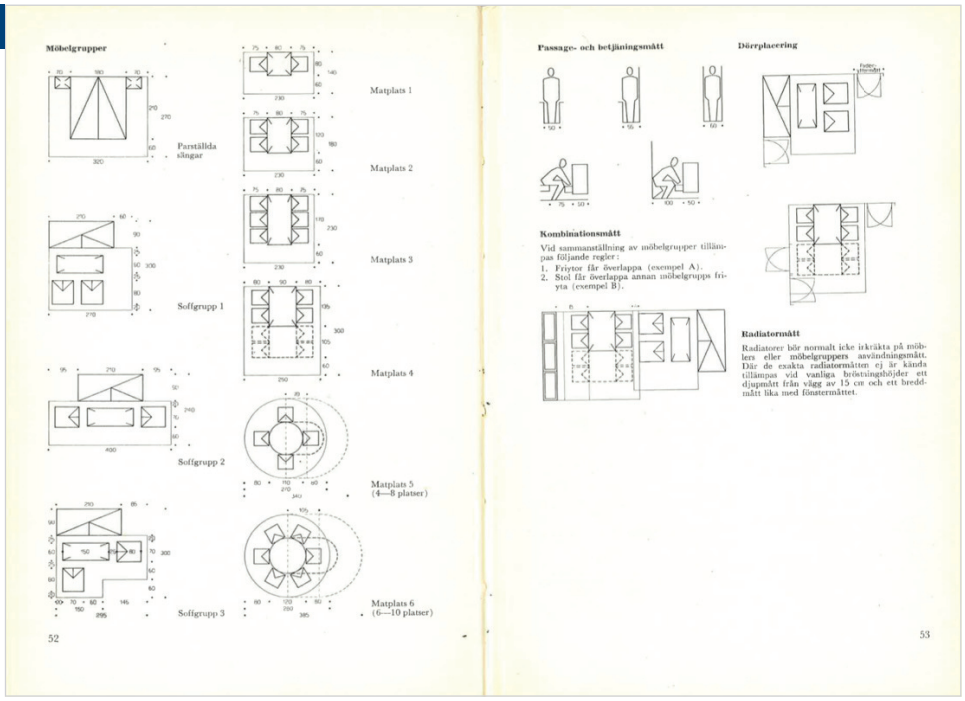
Figure 5. Tables specifying the minimum size requirements for each room type in apartments and houses built using tertiary government loans, published by Statens byggnadslånebyrå. Source: Westholm (1942, pp. 6–7).

room), and *sovrum* (bedroom). Interestingly, these are not the only room types the authors address in the manual; others are discussed in other sections of the handbook as rooms to be replaced, such as the *finrum* (the "nice" room), the *salong* (the salon), the *sällskapsrum* (the parlour), or the *jungfrukammare* (the maid's room). It could be argued, then, that the listed rooms were the ones that made apartment buildings eligible for tertiary loans—a purposeful selection of spaces and functions that guided residential architecture in the decades that followed the publication of the handbook.

3.2. Kungl. Bostadsstyrelsen's Handbook: God Bostad i Dag och i Morgon *(1964)*

God Bostad is triangulated around research, law, and design experience. In the introduction to the manual, the authors declare that housing research has allowed them to know the practical inner workings of many types of housing projects at multiple scales (Kungl. bostadsstyrelsen, 1964, p. 7). As a result, the manual covers a wide design spectrum, from overall planning to functions, spaces, and equipment in the apartment, as well as sound insulation, electrical installation, and climate. The appendices at the end of the manual, between pages 51 and 65, summarized the most relevant requirements and recommendations, with detailed drawings of furniture, tables with the Swedish standard for doors, windows, and cupboards, and, finally, a selection of tables with the minimum dimensional standards related to room types (see Figure 6). The measurements given for the dining area, the kitchen work area, the living room, the hygiene area, storage areas, and outdoors for playgrounds, amongst others, became a guide for architects at the drafting board and set the basis for the review for government loans. Interestingly, the standards included in the handbook did not always correspond with the minimum requirements established by the underlying law. Supported by housing design experience and research literature, the reasonings presented in the text favored the prescribed dimensional standards being higher than the legal ones.

a



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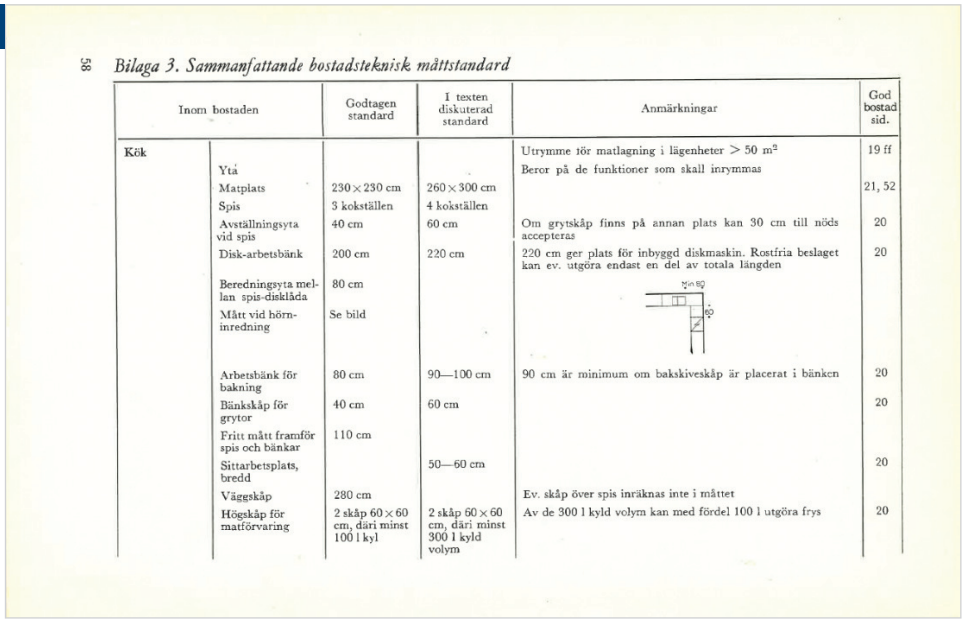

58 *Bilaga 3. Sammanfattande bostadsteknisk måttstandard*

Inom bostaden		Godtagen standard	I texten diskuterad standard	Anmärkningar	God bostad sid.
Kök				Utrymme för matlagning i lägenheter > 50 m²	19 ff
	Yta			Beror på de funktioner som skall inrymmas	
	Matplats	230×230 cm	260×300 cm		21, 52
	Spis	3 kokställen	4 kokställen		
	Avställningsyta vid spis	40 cm	60 cm	Om grytskåp finns på annan plats kan 30 cm till nöds accepteras	20
	Disk-arbetsbänk	200 cm	220 cm	220 cm ger plats för inbygd diskmaskin. Rostfria beslaget kan ev. utgöra endast en del av totala längden	20
	Beredningsyta mellan spis-diskläda	80 cm			
	Mått vid hörninredning	Se bild			
	Arbetsbänk för bakning	80 cm	90—100 cm	90 cm är minimum om bakskiveskåp är placerat i bänken	20
	Bänkskåp för grytor	40 cm	60 cm		20
	Fritt mått framför spis och bänkar	110 cm			
	Sittarbetsplats, bredd		50—60 cm		20
	Väggskåp	280 cm		Ev. skåp över spis inräknas inte i måttet	
	Högskåp för matförvaring	2 skåp 60×60 cm, däri minst 100 l kyl	2 skåp 60×60 cm, däri minst 300 l kyld volym	Av de 300 l kyld volym kan med fördel 100 l utgöra frys	20

Figure 6. *God Bostad*: (a) Appendix 1 including detailed drawings and dimensions of residential furniture and (b) Appendix 3, including a table specifying the minimum size requirements for a residential kitchen, published by Kungl. bostadsstyrelsen (1964, pp. 52–53 [a], 58 [b]).

The manual is explicit in its purpose: It reports on the functions that homes must fulfill and the spatial standards that must be met. In other words, functions and spaces are once again related in an equation with a clear solution, the room type, or the room that accommodates a specific function:

> The number of rooms should under any circumstances be at least so large that no more than two people need to share a room, that children over 12 of different sexes can have separate bedrooms and that no one needs to sleep in the kitchen or living room. The size and dimensions of the various living spaces

> must be such that there is enough space for the required furniture and furnishings without neglecting the requirement for sufficient open spaces. (Kungl. bostadsstyrelsen, 1964, pp. 8–9)

Like Westholm's handbook, *God Bostad* makes use of the room type as an instrument that shapes functions at multiple scales. Moreover, as in its predecessor, the required number of rooms is determined by the need for privacy, which is equated in the handbook to the night function. As a result, the manual can be read to a certain extent as a perfected version of Westholm's work, expanding on the range and precision of the aspects and spatial entities that shape good quality housing, including a selection of rooms exterior to the apartment.

In addition to these exterior rooms, there are two remarkable aspects in which *God Bostad* differs from the 1942 handbook. The first is the selection of the room types of the apartment. While Westholm justified the selection of certain rooms over others, somehow setting the basis for their legitimacy, *God Bostad* is built around a predetermined set: the *badrum* (bathroom), the *tambur* (lobby or antechamber), the *kök* (kitchen), the *kokvrå* (cooking nook), the *vardagsrum* (living room), and the *sovrum* (bedroom) remain in the list of prescribed room types. To wrap the list up, three more rooms are timidly added, the *sovalkov* (sleeping alcove), the *balkong* (balcony), and when appropriate, the *tvätt rum* (washroom). The *matrum* (dining room) is removed, and the *WC-rum* (water closet) becomes the *separat wc* (separate water closet).

The second aspect has to do with the factors that determine the definition of both the apartment and the room types. In Westholm's handbook, the type of apartment was defined by the amount of rooms—1 RK (one-room apartment), 2 RK (two-room apartment), etc.—and the standards of each room depended on the type of apartment. In *God Bostad*, on the contrary, the basic constraint is not always the number of rooms. As an example, the different standards for the kitchen depend on the area of the apartment—whether it is bigger or smaller than 50 m^2 (Kungl. bostadsstyrelsen, 1964, pp. 58–60)—and the standards for the bathroom refer to the people sleeping in the apartment and not to the number of rooms (Kungl. bostadsstyrelsen, 1964, p. 62).

In short, *God Bostad* consolidates the room type as the spatial entity at the core of residential architecture, while it loosens the link between room and apartment, somehow accepting a certain degree of variability and adaptation in the overall design. This shift towards the autonomy of the rooms was motivated by the expertise developed on each type through research and reflected the handbook's endeavor to establish the room as a primary scale of housing design.

3.3. Statens Planverk's Handbook: Bostadsbestämmelser. Information om Nybyggnadsbestämmelser för Bostaden och Grannskapet *(1985)*

The handbook published by the National Board of Urban Planning, Statens planverk, addresses the minimum requirements that are to be met by any new housing building for permanent use in Sweden, whether it receives a state loan or not. Like *God Bostad*, it offers a multifaceted approach to housing design, expanding its focus to aspects such as maintenance, safety, energy, adaptability, or administrative management.

The first of the four chapters of the manual presents a new version of the interplay between apartment, function, and room. Much like its predecessor, the sections of this chapter are named according to functions and room types. In contrast to the two previous handbooks, however, examples of room types are drawn with detailed dimensions and furniture arrangements (see Figure 7). The tables with standards from *God Bostad*

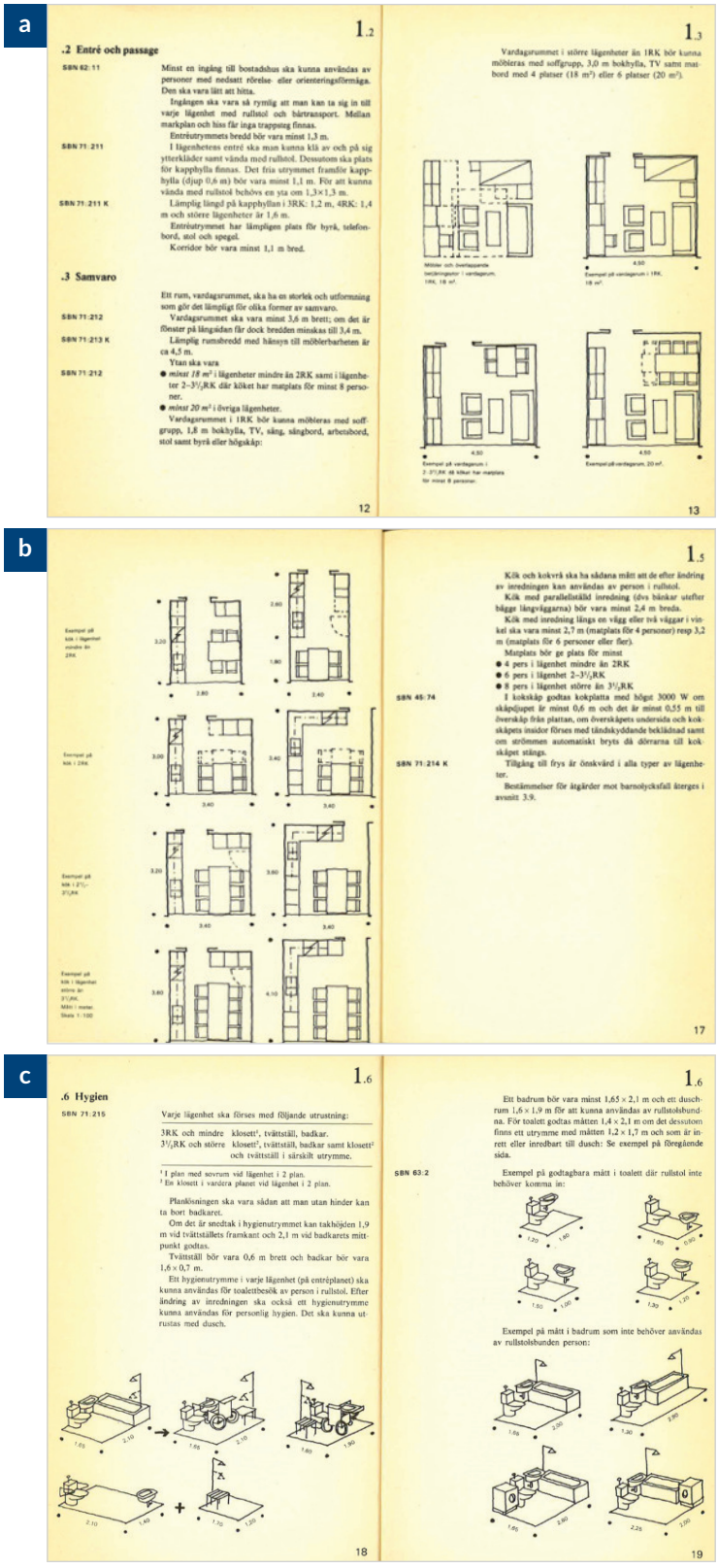

Figure 7. Examples of (a) residential living rooms, (b) kitchens, and (c) bathrooms, shower rooms, and toilet rooms with dimensions and furniture arrangements to meet the regulations from the Swedish Building Code, published by Statens planverk (1985, pp. 12–13 [a], 16–17 [b], 18–19 [c]).

have disappeared, and the minimum dimensions for equipment and furniture configurations have become tied to specific examples of rooms that meet the regulations of the Swedish Building Code. In a way, then, *Bostadsbestämmelser* presents rooms as elemental design components. The underlying logic is that, if each type of room meets the Building Code, the apartment will. In line with this logic, a standard height from floor to ceiling of 2.40 m applies to all the room types—except for the 2.30 of the attic rooms—so they can be easily combined (Statens planverk, 1985, p. 11), as well as a standard request for windows towards open air and good daylight in rooms for living and cooking.

The handbook also introduces a new system to count these rooms and to qualify apartments. For example, a living room and room that can be furnished as a bedroom for two people is counted as one room if it is bigger than 10 m^2. A bedroom for one person counts as half a room and has to be at least 7 m^2 big (Statens planverk, 1985, p. 8). The introduction of the half room responds to a general reflection on the flexibility of the apartment, deemed as a desirable quality in housing design. Examples of a basic form of flexibility are that one-person rooms can be combined into larger rooms and that the parents' bedroom can be divided into two smaller rooms. According to the authors, the flexible apartment allows for variations in the number of sleeping places or the use of living areas (Statens planverk, 1985, p. 10), a condition that is facilitated by the definition of certain circumstances under which different functions can take place in the same spatial entity.

The capacities that link function and space in a room are surface area, light and ventilation, height, accessibility in the overall configuration of the apartment, and furnishability, that is, the possibility of accommodating certain furniture arrangements. The latter is of particular relevance, for it defines space as a function of furniture: "Room design, door and window placement must be such that the rooms can be well furnished for their purpose" (Statens planverk, 1985, p. 10). Consequently, the examples of room types included in the manual are bound to specific furniture arrangements.

In addition to the definition of the rules for a residential room to meet the Swedish Building Code, Statens planverk's handbook persists in prescribing a certain selection of room types. The *badrum* (bathroom), the *kök* (kitchen), the *kokvrå* (cooking nook), the *vardagsrum* (living room), and the *sovrum* (bedroom) remain on the list; the *balkong* (balcony), which had made its appearance in *God Bostad*, consolidates its presence. The *duschrum* (shower room) firmly enters the selection; the *bastu* (sauna) makes a timid appearance; the *sovalkov* (sleeping alcove) leaves it; the *tambur* (lobby or antechamber) transforms from a room type into a place, the *entré* (entrance); and the *separat wc* (separate water closet), once again, changes name to become the *toalett* (toilet room).

The design of the apartment is not just based on the configuration of these room types, but also their relation. To meet the requirements of the Swedish Building Code, the placement of rooms must create a suitable context in terms of function and maintenance. In this regard, the handbook offers certain tactics to facilitate cohabitation, starting with the general consideration that every room should be accessible through a neutral connection, i.e., from a space that does not have a specific program, such as the hallway, so that the apartment is less locked in its use and conflicts between household members are avoided (Statens planverk, 1985, p. 9).

Furthermore, the rules that delimit the ways in which room types can be combined and/or accessed vary according to the number of rooms in an apartment. For example, in a 2 RK apartment, the bedroom can be

accessed via the kitchen if it can also be accessed through the living room; in a 2 1/2 RK or larger, one of the bedrooms may only be accessed via the kitchen; and, under any circumstances, a bedroom can be the only passage to another room (Statens planverk, 1985, p. 9). In Statens planverk's handbook, in short, these tactics enhance design thinking based on rooms as the basic component of an apartment.

3.4. Svensk Byggtjänst's Handbook: Bostadsbestämmelser 2023. En Handbok om Byggbestämmelser för Bostäder och Bostadsmiljö—Nybyggnad och Ändring *(2023)*

In *Bostadsbestämmelser 2023*, the last version of the handbook published by Svensk byggtjänst, previous directives are considered excessively detailed, and a less regulated framework is meant to inaugurate new design possibilities. The argument is grounded on the perceived necessity to prevent the regulatory system from hindering technological development (Svensk byggtjänst, 2023, p. 10). Interestingly, this necessity has a dual regulatory effect: While detailed spatial requirements for rooms dissolve, technical requirements such as accessibility or energy performance solidify.

This new direction becomes apparent in the content of the handbook. A first look at the index does not reveal significant changes: The division into four chapters from the homonymous handbook published by Statens planverk is maintained, the first of them being devoted to the design of the apartment and the residential building from a spatial and functional perspective. The epigraphs from this chapter refer to both functions and certain room types, such as the *vardgasrum* (living room), the *allrum* (family room), or the *sovrum* (bedroom). However, a reading from pages 9 to 80 quickly reveals that room sizes, their relation to one another, or their furnishability no longer guide the transmission of the norm. The previous requirements regarding the dimensions, sizes, and shapes of rooms are replaced by functional demands, with drawings focusing on furniture and equipment, such as beds, sitting groups, or cooking benches, all of them decontextualized from the rooms they might belong to (see Figure 8). In other words, rooms seem to disappear as the basic spatial component in the design of apartments, whereas functions are strengthened.

There is, however, one room that remains as an identifiable spatial entity mandatory for all apartments: the *personlig hygienrum* or *hygienrum* (the room for personal hygiene). The handbook refers to regulation Boverkets Byggregler 3:22, about the general design of dwellings, in which Boverket states that in the dwelling there must be at least one separate room for personal hygiene: "Personal hygiene is the only residential function which according to the building regulations requires a separate room." (Svensk byggtjänst, 2023, p. 21). In the section devoted to this function, the drawings illustrate different examples of the dimensions of the room, furnishing, and equipment (see Figure 9). The only other space that includes similar drawings is the balcony, while other spaces within the residence are prescribed as mandatory to allow for cooking, meals, togetherness, rest and sleep, hygiene, and storage (Svensk byggtjänst, 2023, p. 15). But these spaces are no longer named as they were in the previous manuals; they are not qualified as rooms. As an example, the use of the word *kök* (kitchen) is avoided in the section of the handbook corresponding to the general design of a dwelling, as well as the design concerning the specific function of cooking (Svensk byggtjänst, 2023, pp. 9–26, 35–40). The selection of room types made by Westholm in 1942, consolidated in Kungl. bostadsstyrelsen's and Statens planverk's handbooks, is wiped out in the 2023 manual. Together with the *balkong*, the *hygienrum* is the only room that remains.

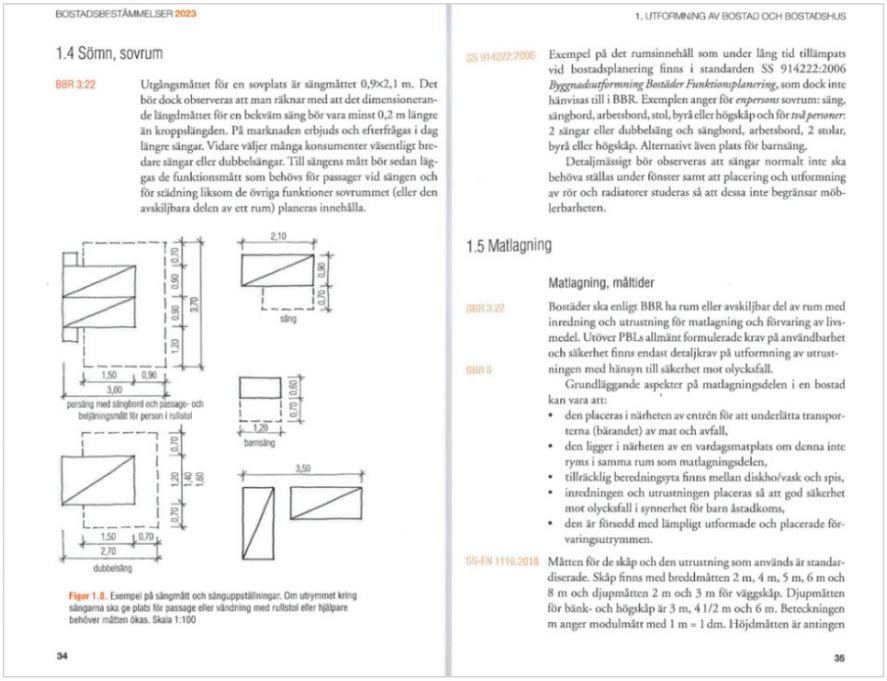

Figure 8. Examples of bed dimensions and bed arrangements published by Svensk byggtjänst (2023, pp. 34–35).

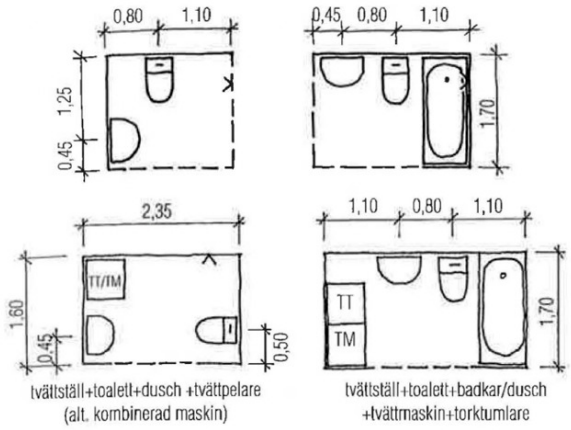

Figure 9. Examples of dimensions for an accessible *hygienrum* and possibilities for its equipment and furnishing published by Svensk byggtjänst (2023, p. 45).

To break the bond between function and room in the definition of the spaces of an apartment, a new spatial entity is born: the *avskiljbar del av rum* (separable part of a room). It is described as a space that must have windows towards the exterior and must be designed so that the function for which it is intended can be separated with walls from the rest of the room (Svensk byggtjänst, 2023, p. 20). However, the walls do not have to be provided from the beginning. Rooms, understood as separated spatial entities, are thus presented as a possibility instead of a starting point. In return, functions can extend over different spaces and find new arrangements. With the exception of the *hygienrum*, in the 2023 manual, it is the apartment that turns into a room, separable into different parts depending on size and functions.

This shift entails a new model for the definition and classification of apartments. Since rooms other than the *hygienrum* are no longer mandatory, apartments are typified and regulated according to their floor area. For apartments bigger than 55 m^2, one room or a separable part of a room for sleep and rest must be provided with enough space for a double bed. For apartments between 35 and 55 m^2, either the space for cooking or the space for sleep and rest has to be a separable part of a room. In this case, it is not necessary to provide space for a double bed. For apartments smaller than 35 m^2, the functions of togetherness, sleep and rest, and cooking can exist in the same space and overlap (Svensk byggtjänst, 2023, p. 20).

3.5. A Changing Selection of Room Types

Table 2 in this section synthesizes one of the main findings of the reading and comparison of the four handbooks studied in this article: Together, they articulate a history of crystallization and dissolution of residential room types. The first manuals made a strong attempt to define a set of spatial entities linked to specific functions, whose insertion into an apartment was meant to produce good quality housing. These room types crystallized by means of naming, indexing, detailed design, and, above all, recurrence from one manual to another. Beginning with Westholm's first publication, where rooms were openly presented as types, or spatial entities with meaning in Kärrholm's (2020) sense, Table 2 traces an evolving process in which the initial selection of rooms is sharpened, perfected, and complemented.

This process confirms Kärrholm's (2020, p. 15) reflection on the historical stabilization of a set of room types and its relation to a stabilized type of home. The inclusion and enforcement of a consistent selection of room types in the first three handbooks is inseparable from the construction of collective imagination and

Table 2. Room types prescribed in the four handbooks analyzed in the article, their minimum required areas, and main requirements.

Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans (1942)	*God Bostad* (1964)	*Bostadsbestämmelser* (1985)	*Bostadsbestämmelser 2023* (2023)
Bathroom/WC *(2.5–4 m^2)* • Includes washing and drying of clothes • Not mandatory in apartments not intended for families	Bathroom/separate WC *(>3 m^2)* • Accessible from neutral space • A shower, instead of a bath, can be accepted in certain circumstances • Should not include washing clothes, other than socks and underwear • Heavier laundry tasks can be accommodated in a distinct washroom inside the apartment	Bathroom/ shower-room/toilet *(dimensions based on accessibility)* • Wide range of technical considerations, including waterproofing or appliances	Room for personal hygiene *(>1.7 × 1.9 m)* • Must include basin, toilet, and shower • Must enable use by a person sitting in a wheelchair • Can include a washing machine and water heater • A bathtub is recommended for families with children

Table 2. (Cont.) Room types prescribed in the four handbooks analyzed in the article, their minimum required areas, and main requirements.

Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans (1942)	*God Bostad* (1964)	*Bostadsbestämmelser* (1985)	*Bostadsbestämmelser 2023* (2023)
Lobby *(2.5–6 m²)* • Described as a neutral space • Should include a *städskrubben* (cabinet for scrubbing and sweeping) and a wardrobe	Lobby *(140 × 170 cm or 120 × 140 cm)* • Described as a neutral space • Includes mirror, chair, and storage • Desirable to include an alcove for coats	—	Separable part of a room *(dimensions not specified)* • For all the functions listed in the handbook: sleep and rest, togetherness, cooking, meals, laundry, and storage • Must have a window towards the exterior
Kitchen/cooking nook *(6–9 m²)* • Cited as the most important room in the home • Includes space for a stove, food storage, preparation and arrangement, dishes and storage, baking, and ironing • The cooking nook is considered for certain types of 1 RK apartments	Kitchen/cooking nook *(standard dimensions depending on the size of the apartment)* • Cited as the central space in the home • Supervision of children must be considered • Designed based on the Swedish standard for kitchen equipment • Sleeping is not allowed • A place for meals or *matplats* has to be included in the kitchen or in connection to it • The cooking nook is allowed in apartments smaller than 50 m²	Kitchen/cooking nook *(standard dimensions depending on equipment)* • Must accommodate a *matplats* or be connected to a dining area • Must be dimensioned so it can be used by a person in a wheelchair • The size of the *matplats* depends on the number of rooms • The cooking nook is considered and described	
Dining room (6 m²) • Connected to the kitchen • It can be used temporarily as a place to rest or do homework			
Living room *(17–20 m²)* • Used for gatherings, socializing, entertainment, or work • Occasionally, it can serve as a bedroom or as a dining room	Living room *(>18–>20 m²)* • Cited as the family's gathering place • Used for rest, amusement, light work, and socializing • Includes sofa group, table group, storage, radiogramophone, and TV • It may include a *matplats*	Living room *(>18–>20 m²)* • Suitable for different forms of togetherness • Dimensions depend on furnishing • In bigger apartments, it should include a group sofa, bookshelf, TV, and eating table	

Table 2. (Cont.) Room types prescribed in the four handbooks analyzed in the article, their minimum required areas, and main requirements.

Minimum Size Requirements for Apartments and Houses Built Using Tertiary Government Loans (1942)	*God Bostad* (1964)	*Bostadsbestämmelser* (1985)	*Bostadsbestämmelser 2023* (2023)
Bedroom *(7–12 m^2)* • The number of bedrooms should attend to the gender separation of youngsters • In small apartments, it can accommodate functions other than sleeping, but not eating	Bedroom *(7–15 m^2)* • Provides separate and undisturbed sleeping space • Not intended for more than two people • Children over 12 and different sexes must have separate bedrooms Sleeping alcove *(210 × 145 cm, one bed; 210 × 260 cm, two beds)* • Does not need to include a window • Connected to the dining room (with an opening >210 cm)	Bedroom *(7–12 m^2)* • Single includes bed, bed table, working table, chair, bureau, or tall cabinet • Double includes two beds, two bed tables, a working table, two chairs, a bureau, or a tall cabinet	
—	Balcony *(140 × 200 cm)* • Protected from wind and view from the neighbors • Provides space for a small *matplats* • A balcony that is recessed or protected by side screens is preferable to a fully open one	Balcony *(140 × 200 cm)* • Mandatory in all apartments bigger than 1 RK • Accessible to the sun but protected from visibility and wind • Should be next to the kitchen or living room	Balcony *(dimensions based on standards)* • Ideally located to capture the evening sun • Protected from visibility and wind • If smaller than 140 × 200 cm, it only provides space for single-sitting furniture and airing clothes
—	—	Sauna *(dimensions based on safety regulations)* • Not mandatory	Sauna *(dimensions based on safety regulations)* • Not mandatory

residential culture at large through reading, assimilation, rehearsal, and reproduction. The rooms included in the handbooks were necessary for a dignified life, lived in a typical home. In other words, the history of the crystallization of rooms is also a history of the crystallization of roles: those of the household members and also those of the architect or the municipal officer.

In the last handbook, however, this selection of room types dissolves in favor of residential functions no longer bound to specific spaces. Here, dissolution is carried out through abstraction and loss of graphic definition;

rooms disappear as separated entities and as legally binding deliverables of a project, with only one exception—the room for personal hygiene. If there is one thing we can learn by looking at the transformation of room types in these publications, it is that the development of a residential culture is as unstable as the fate of the rooms that host it.

4. Conclusions

This article has aimed to investigate the prescription of residential room types through the design handbooks that have mediated the transmission of housing norms and standards in Sweden in the last nine decades. By focusing on four of these manuals, the article discusses the changing role that room types, understood as territorial sorts (Kärrholm, 2020), have played in the configuration of Swedish residential architecture. Looking at the rooms included in these handbooks rather than specific built cases has allowed us to scrutinize two main areas of reflection.

The first is the dual condition of the handbooks, simultaneously a designed product and a design tool. The handbooks were a tool and a product of the modernization project of Sweden, an essential interface to both coding and normalizing the residential culture of the country. As Pries (2022) identifies, the Swedish domestic landscape has been quietly but steadily shaped, for decades, by architects who systematically built for the needs that the standards included in these handbooks sought to measure. Studying a comprehensive selection of residential projects from the last century, Nylander (2007) has noted that the useful room—a separate spatial entity performing a specific function—characterized Swedish residential architecture since the 1930s, as well as the perspective of what constitutes a good home. A more recent review of housing projects shows that the tendency towards a more performance-based regulation is evidenced in the design of new apartments, where traditional names of rooms are kept, but physical limits start to dissolve (Runting et al., 2021).

The second area is the tension between prescription and innovation present in the handbooks, for it reflects wider tendencies in national regulations. This tension is evidenced if we look at the reception of the standards that originated, shaped, and modified the room types included in the manuals. In *Bostadsbestämmelser 2023*, an explicit note is made on the pressure exerted by designers and the construction industry to simplify building regulations (Svensk byggtjänst, 2023, p. 7). This pressure has led to Möjligheternas byggregler, MöBy, a project promoted by Boverket for a new regulatory model consisting of fewer rules, formulated as functional requirements and not dimensional standards, and containing only binding regulations. In this model, general advice, references to standards, or other guidelines disappear, and the majority of room types as spatial entities bound to dimensional and organizational qualities.

This disappearance culminates in a change in trend undergone by the norms that have legally framed the production of residential architecture in Sweden since 1942. Originally, the handbooks that accompanied these norms made an explicit effort to set dimensional standards to raise the quality of housing architecture. As it has been analyzed in the manuals from 1942 and 1964, this effort had a twofold strategic effect. First, standards were decoupled from the minimum requirements included in the norm, offering solutions and examples that exceeded and improved those required by the law, all sustained by arguments and comparison to the most basic, complying solutions. In so doing, these manuals used standards that were more prospective than prescriptive, that is, as a replicable model meant to enhance the possibilities of the

residential architecture that was to come. Secondly, this model was grounded in the standardization of room types, or, in other words, in the definition—graphic, dimensional, and nominative—of a set of rooms in relation to different functions. An increase in the dimensional standards signified an increase in the housing standard, an explicit governmental goal by the time the last edition of *God Bostad* was published, as announced by its contemporary report from Bostadsbyggnadsutredningen (the Housing Construction Inquiry), *Higher Housing Standard* (Dalén & Holm, 1965).

In the 1985 handbook, the difference between standard and minimum requirements was blurred, and no separation was made between norm and standard. Yet, rooms and furnishing arrangements are very detailed, offering themselves as readily available examples that bring together what is desirable and what is required in the design of housing architecture. As a result, the manual presents itself as a turning point in relation to the research and development of Sweden's residential architecture, focusing innovation on aspects other than space, such as building performance and construction, while fostering compliance with a standard that is considered to be good. The steady relationship between housing research, regulations, and design seems to have reached a level of stability in which quality, standards, and rooms belong together: The standard makes the room inasmuch the room makes the standard.

The 2023 handbook replaces rooms with functions and introduces a new spatial category, the separable part of a room. In so doing, the manual points to a new direction for the design and development of Swedish residential architecture guided by reflections on flexibility and adaptation. When referring to the Swedish Standard SS 91 42 21, the authors declare that, even if the standard constitutes a suitable basis for assessing the long-term usability of an apartment, it reflects a solution that exceeds the requirements of the norm, implicitly inviting designers to challenge the standard, and redefining their ability to innovate as a task of optimization (Svensk byggtjänst, 2023, p. 15). Such an invitation is sustained by a renouncement to graphically translate the norm in relation to the selection of rooms made in the previous handbooks. The rules, now mostly abstract, textual information, promote a design approach that is no longer connected to a set of functional rooms and standard configurations.

The dissolution of the room as the basic unit of a dwelling in the current manual, grounded on several decades of private discomfort with the limits and requirements of the housing norms established in the 20th century, defines a new framework that seems to increase the freedom to think, design, and develop domestic space. Arguably, this freedom is wrapped around notions of optimization and reduction, given that it is in apartments with reduced areas (between 35 and 55 m^2, and below 35 m^2), where the overlay and combination of functions not only becomes a possibility—for developers—but presents itself as a challenge—for designers. In 1942, Sigurd Westholm grounded his arguments on the necessity of clearly defined, separated rooms, on a question of privacy. Rooms addressed different subjects—the adult, the toddler, the near-adult child, etc.—and separation and privacy were presented as a precondition for the different needs, rhythms, and rituals of different peoples. Revisited today, some of the examples that sustain these arguments—like the need for separating near-adults of opposite sexes—read archaic and fusty. However, when confronted with the need to work from home or take care of a relative, privacy and separation, or a different room, still make a difference. An unsatisfied need for privacy is for many a source of lack of comfort in the home and one of the most tackling consequences of overcrowding and optimization.

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Conflict of Interests

The authors declare no conflict of interests.

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Heating Standards and Obsolescence in Post-War Britain's *Homes for Today and Tomorrow*

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Abstract

In 1962, a short film by Shell-Mex and BP Limited (Companies of the Royal Dutch/Shell Group and the British Petroleum Group) was prepared for the 29th Annual Conference and Exhibition of the National Society of Clean Air in Britain to encourage British households to shift from coal domestic fires to smokeless heating appliances. One year earlier, in 1961, the most influential report on space standards in Britain was published, titled *Homes for Today and Tomorrow* (also known as the *Parker Morris Report*), which advocated for flexibility in the home through larger size homes and better heating. This article focuses on the report's emphasis on better heating as one way to fulfil the concept of the "adaptable home," and it introduces the discussions about heating standards during the report's making, underlining the open domestic fire as an obsolete technology. These discussions, however, were entangled with socio-cultural endeavours and consumerist aspirations for modernisation, placing the removal of an otherwise pervasive domestic element within a broader net of forces, actors, and dilemmas involved in decision-making and planning. This article, composed as a historical acquisition, oscillates from the scale of the domestic fireplace to the housing scale, raising the issue of obsolescence in housing provision, which is still salient today.

Keywords

adaptable home; air pollution; council housing; domestic waste; heating standards; *Homes for Today and Tomorrow*; *Parker Morris Report*

1. Introduction

In 1962, a short film by Shell-Mex and BP Limited (Companies of the Royal Dutch/Shell Group and the British Petroleum Group) was prepared for the 29th Annual Conference and Exhibition of the National Society of

Clean Air in Britain (see Figure 1). The conference was dedicated to "fuel efficiency and domestic heating" to encourage British households to trade their domestic heating equipment in for smokeless appliances. Perhaps an early form of greenwashing practices from the oil industry (Parr, 2009), this 21-minute colour film depicted London's grimy streets and aspects of everyday life affected by smoke, also including a comparison of lungs: one belonging to a countryside dweller and the other one to a city dweller (see Figure 2). According to the film, domestic fires were not only releasing smoke emissions lasting even after fires were extinguished, but they involved also an enormous waste of raw materials that could be better used for the production of other goods, such as soaps, disinfectants, scents, nylons, and ammonia—products that, ironically, some decades later, would be similarly characterised as polluting (Huber, 2013, p. 180). Measures to improve industrial chimneys were taken for them to burn fuel properly and remove grit and dust from flue gases. Steam railway engines were also shifting to diesel. Electric trains were producing almost zero smoke. It was now the time for domestic

Figure 1. Still from the Shell-Mex and BP *Clean Air* film for the 1962 Annual Conference and Exhibition of the National Clean Air Society. Source: "*Clean Air*, a Shell-Mex and B. P. public service film" (1962).

Figure 2. Comparison of lungs. Still from the Shell-Mex and BP *Clean Air* film for the 1962 Annual Conference and Exhibition of the National Clean Air Society. Source: "*Clean Air*, a Shell-Mex and B. P. public service film" (1962).

chimneys and the traditional coal fireplace to be considered obsolete (Berry, 1958, p. 1074), a time when an abundance of choice regarding alternatives was also in place. The film aimed to raise awareness of the impact caused by the traditional coal fireplace, which was, during that time, the most common household heating device, convincing people to enhance the benefits of smokeless heating devices by gas, oil, or electricity. The coal industry, however, was still fighting to retain its share in the domestic fuel market, considering alternative smokeless fuels for household use (Kirk, 1961, p. 80).

The transition to smokeless heating devices in the home was already underlined a year earlier, in 1961, when the report *Homes for Today and Tomorrow* (also known as the *Parker Morris Report*) was published. *Homes for Today and Tomorrow*, perhaps the most influential report on space standards in Britain, underlined the importance of flexibility in the home, envisioning the "adaptable house," "the house which could easily be altered as circumstances changed" (Ministry of Housing and Local Government [MHLG], 1961, p. 11). Therefore, the adaptable house could increase the longevity of housing, fighting against the "rapidity of obsolescence," as mentioned in the first draft of the report ("First draft of the Parker Morris Report," 1960), even if it was later abolished, with the final publication emphasising today's abundance. The obsolescence of housing was considered a fundamental problem in Britain's housing market, with studies in the 1960s depicting how the housing stock in Britain was one of the oldest in Europe. For example, an article titled "The Housing Crisis" ("The Housing Crisis," 1961, p. 1149), highlighted that if most houses over 100 years old can be considered obsolete, along with the existence of slums, there was a need to demolish up to 200,000 houses per year if the nation was to start anew by 1980.

According to the report, there were two major components to achieve adaptability in the design of the home: larger size and better heating. This article focuses on the emphasis of *Homes for Today and Tomorrow* on better domestic heating as a means to fulfil the concept of the adaptable house and introduces the discussions about heating standards during the report's making that aimed to dismiss the open domestic fire. The fireplace was rejected as an outmoded technology in the advent of cleaner and more efficient appliances, reflecting the prevalent definition of obsolescence, associated with temporality and transition in the face of changing technology, performance, and economics (Abramson, 2016, p. 3). The transition towards smokeless heating devices, however, was inevitably entangled with socio-cultural endeavours and consumerist aspirations for modernisation, placing the removal of an otherwise pervasive domestic element within a broader net of forces, actors, and dilemmas involved in decision-making and planning. This article, composed as a historical acquisition, oscillates from the scale of the domestic fireplace to the housing scale, raising the issue of obsolescence in housing provision, which is still salient today. It draws from archival documents, such as meeting minutes, written evidence, and correspondence, related to the making of *Homes for Today and Tomorrow* and the 29th Annual Conference and Exhibition of the National Society of Clean Air in Britain, now stored in the UK's National Archives. These documents are complemented with articles, critiques, and debates collected from a series of historical journals published in the late 1950s and throughout the 1960s, such as the *Electrical Times*, *Housing Review*, and the *Official Architecture and Planning*.

2. Better Heating for Homes for Today and Tomorrow

Homes for Today and Tomorrow was the third report on space standards published by the government. It followed on recommendations suggested by the two earlier reports, the first one to be the *Tudor Walters Report* of 1918, which had coincided with the establishment of council housing following the First World

War (Swenarton, 1981), and the 1944 *Dudley Report* with the acute housing shortage provoked by the Second World War (Bullock, 2002). By the late 1950s, the minimum standards of earlier reports and hygienic preoccupations were no longer adequate, with the new report underlining that "an increasing proportion of people are coming to expect their home to do more than fulfil the basic requirements" (MHLG, 1961, p. 3). Indeed, the Parker Morris Committee convened for the first time in 1958 under the aegis of the MHLG for *Homes for Today and Tomorrow*, which seemed necessary because "the country has undergone a social and economic revolution" (MHLG, 1961, p. 1), with full employment, national health services, and social insurance benefits, such as family allowances and retirement pensions. Better living wages and the affordability of labour-saving appliances meant that people could enjoy the comfort of their home, which was no longer merely "a shelter and a roof over our heads" (MHLG, 1961, p. 9). The Committee was chaired by Sir Parker Morris, a former town clerk of Westminster who was at the time chair of the National Federation of Housing Societies, and it was comprised of health service representatives and housing officers, deliberately including women members and members from across the various parts of the country due to evident financial asymmetries between the northern and southern areas. As the first report to prescribe standards for both council and private enterprise housing provision, the Committee included architects involved in council housing, as well as architects working with housebuilders in private enterprise. Even though the report became mandatory only for council housing, its terms of reference and, therefore, its making took into consideration the improvement of both council and private enterprise housing in an effort to mitigate the stigma between the two.

The Parker Morris Committee applied a sociological method through fieldwork and questionnaires, and the overall process involved over two years of meetings. A questionnaire was circulated to receive a meticulous collection of evidence from a long list of individual consultants, institutions, manufacturers, and housing organisations, which set out the report's emphases on larger homes and better heating as the main components to achieve adaptability in the home: "The major changes required can be summed up in two words—space and heating" (MHLG, 1961, p. 2). On the one hand, the report called for larger houses because "homes are being built at the present time…too small to hold the possessions, in which so much of the new affluence is expressed" (MHLG, 1961, p. 2). The Parker Morris Committee believed that houses could be flexible only if they were large enough, also encouraging the architect's creativity (Palate, 2023, p. 460). On the other hand, the report underlined the significance of better heating, where "a mother looking after a family wants a system that does not take too much of her time and effort and quickly gives her a warm house when she returns from shopping and taking the smaller children to school" (MHLG, 1961, p. 23).

During that time, Britain seemed to be far behind compared to other Western countries, with Abner Silverman, a US consultant to the Parker Morris Committee, expressing in puzzlement that "the only way to keep warm in this country was to take a hot bath" ("Oral evidence by Mr. Abner Silverman," 1960). Efforts to install better heating in new housing developments occurred since the 1940s, with the example of the Churchill Gardens housing estate, designed by Philip Powell and J. Hidalgo Moya, when, coincidentally, Sir Parker Morris was still the town clerk at Westminster. The estate was the first to feature a district heating scheme in the country, with a central heating system connecting all separate buildings under one infrastructure (Manley, 2013). By the 1960s, the importance of domestic heating would become a widespread conviction, discussed in architectural circles, such as Reyner Banham's seminal essay "A House is Not a Home" (Banham, 1965), referring to the importance of technological progress in increasing a building's functionality and of mechanical services in securing environmental control in a building.

For *Homes for Today and Tomorrow*, central heating was the ideal solution (see Figure 3). It was already popular in other countries, such as Scandinavia and the US, providing not only advantages related to warmth and comfort but also in terms of independence and privacy among the individual members of the household. According to the report:

> Family life is both communal and individual. There is the process of coming together for activities in which the family joins as a whole—meals, conversation, common pursuits, and so on; and there is the need for privacy to pursue individual activities, such as reading, writing, and following particular hobbies. This dual tendency in family life has always been handicapped during the winter months, except amongst the well-off, because of the inability of most people to afford heating. (MHLG, 1961, p. 15)

The domestic fireplace as a heating device would mean that family life, "both communal and individual," had to occur solely in the living room, as the only warm room in the home. Instead, central heating could improve the home's usability, releasing the burden of enforced coexistence: "It seems to us entirely wrong to go on building homes in which so much of the available space cannot be used for day-to-day activities throughout the year" (MHLG, 1961, p. 3).

If better heating in the home was assumed to ensure privacy, flexibility, and freedom among all household members, the discussions around heating standards were much more complex, revealing competitive economies and socio-cultural dilemmas at a period of rising consumerist aspirations for modernisation and affluence (Kefford, 2018), as well as national efforts for energy transition and smokeless heating devices away from the traditional open fire. The urgency for smokeless heating in the home was simultaneously a human need associated with cleanliness, hygiene, and public health, as it was an element of comfort, convenience, and affluence.

3. Towards a Smokeless Domestic

The shift from the domestic fireplace to alternative smokeless heating appliances was urgent due to emerging evidence on air pollution and public health, leading to the formulation of relevant policies. Already, since the 1956 Clean Air Act, local authorities established smoke-controlled areas and fined domestic smoke emissions:

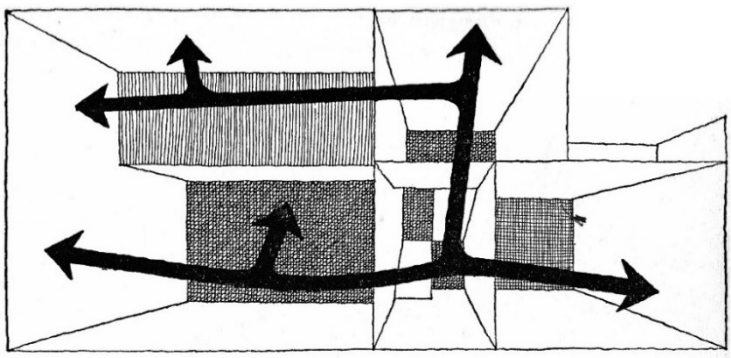

Figure 3. One of the six illustrations of *Homes for Today and Tomorrow* on central heating, drawn by Gordon Cullen. Source: MHLG (1961, p. 16).

£10 for the first offence and up to £100 for subsequent offences (Ashby & Anderson, 1977). These fines aimed to encourage families using coal and coke for heating to shift towards smokeless fuels. The 1956 Clean Air Act was the first step of the British parliament to overcome the "social and economic evil" of air pollution, as characterised by the report of the Committee on Air Pollution ("Committee on Air Pollution," 1954), following the detrimental repercussions of the Great Smog of London in 1952. Even though, according to Charles Hill, then Minister of Housing and Local Government, in 1958, there was still "a long way to go before grimy big towns become clean" ("Dr Hill on clean air progress," 1962), by 1962 improvements were achieved with more than a thousand Smoke Control Areas designated by the 1956 Act, with the potential to expand this designation at a rate of 350 new areas per year. These designated areas made smoke control orders applicable to nearly a million householders in England and Wales. The act had immediate consequences for the design of the home, renouncing the fireplace as obsolete, which was a much-needed change because "smoke-laden atmosphere harms health and costs the nation £250 million a year" ("*Clean Air*, a Shell-Mex and B. P. public service film—What the film says," 1962). In the case of public health too, smoke emissions were translated in economic terms, referring to both state expenses and the workers' productivity.

For the *Electrical Times* journal, however, the clean air campaign was not the driving force behind the rapid increase of electrical heating use in the home. Instead:

> It has long since dawned on the housewife that the cheerful appearance of the coal fire is not sufficient compensation for the dirt, smoke, and soot which is inevitable accompaniment particularly in these days of poor quality, highly expensive coal. ("Electricity in the Home," 1960, p. 341)

Gas and electric cookers were becoming popular appliances in the home, and by the mid-20th century, they were readily available in modern designs, appealing to consumers. Advertisements, manufacturers, and the media were all mobilised to promote the idea of a smokeless city, where coal fire as the traditional technology could only be antiquated (Mosley, 2016). The need for cleaner air was simultaneously a health and hygiene prerequisite in people's lives, a political project for the nation's economy, and a capitalistic endeavour of stylish commodities as alternatives to the domestic fireplace, associated with issues of class and gender.

There was, however, some difficulty in selecting which fuel was the best, mostly due to regional differences between urban and rural life in the northern and southern areas of the country. For example, in coal-producing areas, the open fire in the living area, installed either in the form of a combination grate or back-to-back grate, was still prominent despite the lack of efficiency or cleanliness (Charlton, 1959, p. 78), a case that was boosting the National Coal Board's confidence "that solid fuel is the most satisfactory and acceptable means of heating in the average British home" (Kirk, 1961, p. 80). This reluctance, however, was not only financially driven. According to studies on various redevelopment schemes that relocated tenants from inadequate housing to newly built homes, there were several opinions. In the case of Hutchesontown-Gorbals, a 19th-century industrial suburb in Glasgow redeveloped in the late 1950s, the appraisal research report on tenants' satisfaction demonstrated that almost half of the tenants, mostly elderly, expressed disappointment with the transition from a coal fire and gas cooker to all-electric heating and cooking appliances, with one or two tenants even regretting the change. There were also cases where a man complained that "without a coal fire he no longer had a convenient place to spit, and another considered that 'an electric fire gives you a sore head—it burns up the oxygen' " ("The Design and Use of Central Area Dwellings," 1961, pp. 8–9). Similar tendencies were observed in surveys and schemes by the

London County Council around the same time, with at least one survey demonstrating that over three-quarters of tenants living in flats preferred to retain their domestic open fire for heated water, good warmth, and its "cheerful" atmosphere (Carlsson-Hyslop, 2016, p. 90). It was evident that new technologies required new knowledge and social habits, leading local officials to start scheduling visits to houses to provide in-person information on alternative fuels, type of fittings, and the economic benefits that energy transition away from the coal fire could bring to each household in the long term. In addition, grants were incentively provided by councils for households to buy new heating equipment, which, for pensioners, could even amount to the whole bill (see Figure 4).

At the same time, the market was offering an abundance of choices on alternative fuels, such as oil, gas, and electricity, with a manifold of organisations submitting their views to the Parker Morris Committee, sharing their vision on the future of domestic heating. Among them, Shell-Mex and BP Limited provided the Parker Morris Committee with an extensive document on "The Future of Oil as a Means of Domestic Heating." According to the document, oil-fired central heating has been available in Britain for years, but it was considered a luxury, suitable only for large houses. This changed because of "higher standards of living" and "an increasing demand for the comfort provided by whole house heating" ("Shell-Mex and B. P. Limited," 1960, p. 1). The demand for domestic heating was estimated to rapidly increase, with the oil industry taking "its place alongside gas, electricity, and solid fuel industries satisfying the fuel requirements of the consumer" ("Shell-Mex and B. P. Limited," 1960, p. 9). This future, however, seemed shared among almost every other relevant stakeholder: The British Electrical Development Association noted that "the future of heating lay with electricity" ("Oral evidence—British Electrical Development Association," 1960). For them, "the fireplace has been superseded as the centre of the home round which the family gathers" ("Oral evidence—British Electrical Development Association," 1960) because of the television, a significant element in shifting the focal character away from the hearth. Their focus was now on electric floor warming. That the television was enthusiastically taking the place of the fireplace was seconded by the Institution of Heating and

Figure 4. Local authority consultant during home visit: Still from the Shell-Mex and BP *Clean Air* film for the 1962 Annual Conference and Exhibition of the National Clean Air Society. Source: "*Clean Air*, a Shell-Mex and B. P. public service film" (1962).

Ventilating Engineers too ("Institution of Heating and Ventilating Engineers," 1960), even though the Coal Utilisation Council insisted in their submission to the Parker Morris Committee that "there was still a big future for the open fire—people would continue to value its cheerfulness" ("Coal Utilisation Council," 1959). The Women's Advisory Council on Solid Fuel would agree, claiming that "the number of centrally heated houses will also increase, but a great majority of people will still prefer to have one solid fuel fire" ("Women's Advisory Council on Solid Fuel," 1959), demonstrating that not every housewife was on the same team when the ministry feminised this smokeless shift arguing that cleaner air could "not be achieved without the co-operation and support of the householders and—even more—of the housewives" ("*Clean Air*, a Shell-Mex and B. P. public service film—What the minister said," 1962).

This multiplicity of voices in terms of heating was not coincidental. In fact, gas and electricity organisations have been in an energy battle since the 1930s, with the principle of "freedom to choose" becoming a political settlement reached by the parliament (Trentmann & Carlsson-Hyslop, 2018, p. 818). The battle started with lighting, then cooking, and peaked by the end of the 20th century with the popularisation of heating space and water in a domestic environment, which prevailed in the use of household energy. The Parker Morris heating recommendations became mandatory in 1967 for new towns and all council housing by 1969. According to the Parker Morris recommendations, kitchen and circulation space in the home needed to maintain a temperature of 13 °C, and living and dining spaces at 18 °C when the outside temperature dropped below −1 °C (MHLG, 1968, p. 38). By the time, however, the *Parker Morris Report* encouraged the installation of central heating in most housing estates, earlier agreements that provided tenants with the freedom to choose their preferred fuel for domestic use were outdated. If central heating was to be installed, the tenant had no choice. The choice was inevitably made by the local authority in council housing provision or the developer in private enterprise provision. In some cases, however, tenants were allowed to install additional appliances that could indeed choose, to complement, for example, electric heating with a gas cooker. In other cases, energy providers ensured to orchestrate future demand by expanding outlets, appliances, and wiring in housing (Trentmann & Carlsson-Hyslop, 2018, p. 822). For example, if gas were to be used for central heating, then it was probable that the home would be equipped with plenty of electric outlets to enable the simultaneous consumption of another fuel, underlining energy dependencies in the design of the home, and subsequently, in the tenants' living patterns.

Beyond that, tenants had to either accept the choice of their local authority or make their own decisions based on the market's availability, associated with their income group, regional situation, or the household's size. Tenants did not only ask for better heating but heating they could control. According to studies conducted in the 1960s on tenants' satisfaction with heating types, tenants were generally pleased when heating was controlled by them, meaning that they also held financial control of their consumption. Whereas heating was controlled by the landlord and the tenants were paying a fixed sum, abusive behaviours were observed, such as the tendency to waste water or to open the windows without switching the radiators off. In these cases, however, the heating was on only during "heating months," meaning winter months, and in cold weather outside this period, tenants had to use their own personal appliances that were still costly (Bolser, 1962, p. 30), often resuming the compromise of having only one room warm, like with the fireplace. Tenants were inevitably caught between individual choice and individual responsibility, an embodiment of cultivating social habits and norms to responsibly stay warm, while evolving themselves into modern subjects, fully capable of choosing and using the latest domestic technologies. As explained by Rose (1989, pp. 205–213), in the 1950s and 1960s a fundamental shift in political rationality removed the state from being a coercive regulator

of moral conduct, placing the pressures of public opinion and personal conscience as markers in the private sphere of individual preferences.

Notions of warmth, comfort, and efficiency in the home were, by the 1960s, widely discussed and entangled with the advent of mass consumerism culture and the repercussions this affluent society introduced. According to *Homes for Today and Tomorrow*, "the post war rise in living standards has eased one problem…[it] made another one acute" (MHLG, 1961, p. 28). The fireplace was not only a heating technology in the home, but it was also used for burning domestic waste. New estates using smokeless heating devices demonstrated a refuse overflow due to "the increase in the quantities of the empty cartons and packages that people throw away each week" (MHLG, 1961, p. 28). In fact, it was documented that, in 1968, 14 million tons of domestic waste were collected, doubling the average of eight million before the Second World War (Cooper, 2008). The issue was particularly delicate in flats. Waste, however, was the broader outcome of a series of obsolete technologies in the design of the home, superseded by new ones that were not the result of a throwaway affluent society, but hygiene improvements. For example, the refrigerator and the freezer entered the home to discard the unreliable larder, a cavernous room for people to store food and drinks in low temperatures. They increased, however, the decline of door-to-door milk delivery and the devouring of frozen foods, paper cartons, and other new forms of packaging food, which were conveniently consumed daily to release the working housewife from hours of cooking. Whereas the introduction of clean technologies was yet another relief to continue consumerism-as-usual, increased domestic waste embodied another controversy, one between the desire to install better heating for a controlled interior environment and the uncontrollable refuse disposal, that once outside the home could be interpreted, perhaps, as someone else's problem.

The entanglements of efficiency and consumerism, as well as hygiene and waste, were already evident as early as in the 1920s when Christine Frederick accompanied her time-saving diagrams to release the housewife from the burdens of domestic labour using advocations, such as "Mrs Consumer [who] has billions to spend—the greatest surplus money value ever given to woman to spend in all history" (Frederick, 1929, p. 251). Frederick coined the term "progressive obsolescence" to describe consumers' readiness to scrap old possessions and to favour new and better ones regularly, allocating their income to consumption instead of savings (Marchand, 1985; Strasser, 1999). Increased domestic waste caused the frustration of housing experts, planners, and municipal authorities, who were already troubled with refuse systems since the early 20th century. The *Parker Morris Report*, perhaps not surprisingly, did not offer an explicit solution to the problem, claiming that it required additional research. In the same manner, however, it would seem anachronistic to criticise Frederic today (even though many have done this already) because of the effort then to benefit the housewife in search of equality within patriarchal societal constructs (Rutherford, 2003). It would seem equally anachronistic to criticise the Parker Morris Committee for encouraging affluence and convenience in the home given that, for the majority of the British population, this was the first time to live and enjoy the comfort of one's own home, away from overcrowding and unhygienic living conditions.

There is, however, a major dilemma in this story. The shift towards smokeless heating devices, involving the proliferation of central heating in housing provision, was rarely the tenants' individual choice. It required legislation changes and the implementation of large-scale, regional infrastructure in the same manner that electricity became available in most parts of the country a few decades earlier. It was an incremental, yet relative transition, associated with the human need to be warm, as well as an element of comfort, and a technological device that turned into a major driver in energy demand and dependency. At the same time,

still, in 1960, more than a quarter of households lacked an indoor toilet, and 38% lacked a fixed bath, with the majority of people still taking one bath a week (Obelkevich, 1994, p. 142). Those without a bathroom were still bathing in a tin bathtub in front of a coal fire, highlighting perhaps the irony of requesting them to purchase a smokeless heating device instead. For the Parker Morris Committee (MHLG, 1961, p. 6), it was clear that "better homes will cost more money." The confidence in better homes relied on "a sufficient number of people," who "are prepared to pay the extra charges for a better article" (MHLG, 1961, p. 6). Better homes, and subsequently smokeless air, could be realised, so long as this "sufficient number of people" could push them forward. This exclusive, yet honest argument, underlines the contemporary question of the historical responsibility of fuel consumption in a system committed to the unequal distribution of wealth and power, reinforcing perhaps the so-called "capitalocene" argument that rejects anthropocentric flattening, moving from "humans did it" to "some humans did it" (Moore, 2019).

4. Conclusion

One of the major critiques that led to the abolishment of the Parker Morris standards and the fall of council housing was the state's incapacity to provide affordable housing for those belonging to the lowest social classes. An example of such arguments was published in *Official Architecture and Planning* in 1969, in an article titled "Pollution by Planning." The article included the findings of a broader study conducted by Jon Gower Davies at the University of Newcastle, later published in a book, *The Evangelistic Bureaucrat: A Study of a Planning Exercise in Newcastle upon Tyne* (J. G. Davies, 1972). Even though Davies's work has been heavily criticised due to its focus on one case study and its innate prejudice openly admitted in the book (Darke, 1973; Dennis, 1973), the article's approach towards "pollution" reflected on issues of class division and obsolescence in housing provision, reminding in a way Henri Lefebvre's "sociology of the dustbin," an exploration of the mundane marginalised aspects of everyday life that underlines the attachment of waste to the logic of modernity (Lefebvre, 2002, p. 43) to exacerbate power dynamics and asymmetries. One could argue that Davies saw himself as another Vance Packard, aggravating the negative connotation of consumerism associated with excessive materialism as Packard does in his seminal book *The Waste Makers*, published in 1960 (Packard, 1960, p. iii). Indeed, the study focused on the neighbourhood of Rye Hill in Newcastle Upon Tyne, which involved an ambitious regeneration scheme in the 1960s "to retain and modernise to Parker Morris standards all the dwellings within a 'comprehensive development area'" (D. Davies, 1969, p. 687). However, comprehensiveness was more of an illusion than a realistic aspiration.

The area of Rye Hill rapidly shifted from a wealthy suburb to an industrial working-class urban area during the 19th century following the opening of Armstrong's factory for coal exports and shipbuilding. The decline of the industry and changes in the economy gradually left the area derelict, vandalised, and abandoned. There were only a few residents left, and Davies categorised them in three collectives: "the immigrants," in their majority Indians and Pakistani, but also from Eastern Europe and Ireland; "the respectables," those unfortunate to have lost their past wealth; and "the deviants," the social outcasts, associated with violence and misconduct. According to Davies, these vulnerable collectives and the diversity of residents in the area were blindly dismissed by the planners that put their aspirations first, embracing the *Parker Morris Report*'s "affluent thesis," suggesting that "there is no problem in effecting consumption of higher standards of living because we are all rich these days" and granting planners with "the right to use public power to make consumption compulsory" (D. Davies, 1969, p. 688). Even though a newly redeveloped area, Rye Hill was already obsolete—a second-generation obsolescence in need of another redevelopment.

Whereas regeneration plans for the twilight area of Rye Hill are not to be criticised—people did need better homes—Davies's study reveals a gap between the present and the future, a gap which was fundamental to anticipate the *Homes for Today and Tomorrow*'s afterlife. The report was, indeed, a much-needed document to secure better housing and heating and its significance should not be diminished. Its timing, however, was unfortunate. Rye Hill was a harbinger of a broken and unsustainable economy underway, a portrayal of the tensions among environmental concerns, social and class injustices, and the aspirations of modernisation. Post-war prosperity, as experienced by the majority of the British population in the late 1950s, was soon followed by an erosive economic instability that culminated in the turmoil of the 1970s. Financial misfortunes raised the public's opposition against state interventionism and public expenditure, identifying the Parker Morris standards and, subsequently, the houses produced as "extravagant" and "ridiculously expensive" ("Parker Morris to go," 1978). As a response, the Thatcherite government abolished space standards in 1981 as an obstacle to development, following the privatisation of council housing in 1980.

Perhaps an irony to the aforementioned critiques against the Parker Morris standards, their abolishment and the privatisation of council housing explicitly denied the right to adequate and affordable housing to those vulnerable social collectives, financially incapable of finding a proper shelter. The end of the welfare state reflects how the emerging middle class of the late 1950s envisioned homes for the future, guided, however, by short-term aspirations of the present. In the years that followed, the oil crisis of the 1970s and the resulting rapid inflation were detrimental to the wages of those in delicate situations, such as pensioners, retirees, low-paid workers, and civil servants, while even well-paid workers were becoming unemployed. In less than 50 years, the financial crisis of 2008 ignited challenges in the property market and called for the reinstatement of space standards as one measure against the making of tiny homes, often as small as 23 m^2, and described by some as "the answer to Britain's housing crisis" (Hawken, 2017). The interplay among the housing question, modernisation aspirations, and early steps towards cleaner air reveals the contingent entanglement of agencies and mutual interdependencies from the interior of the home to the broader city, and from the local to the global. On the local scale, people with no indoor toilets were expected to go smokeless. On the global scale, the geopolitics of development still expect less developed countries to catch up with sustainability measures. The *Clean Air* film by Shell-Mex and BP Limited concluded with a question still salient, yet controversial, today: "We are in the middle of one of the most heartening endeavours of our time…of course it will cost us a few pounds on our fire places—but isn't clean air worth a few pounds?" ("*Clean Air*, a Shell-Mex and B. P. public service film—What the minister said," 1962).

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Conflict of Interests

The author declares no conflict of interests.

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ARTICLE

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Energy Renovation and Inhabitants' Health Literacy: Three Housing Buildings in Paris

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Abstract

Today, whether condominiums or social housing, Parisian buildings are undergoing a series of renovation processes aimed at enhancing their construction quality. This renewal, however, impacts the social life of the buildings, which has consolidated over the years. As a socio-technical process, renovation transforms existing architectural forms based on current housing standards. However, while a building may be composed of materials and populations, it is also the result of history, from its construction to its daily maintenance or degradation. Interpreted as such, this article posits that people with no control over their living environments are more likely to suffer from health problems, due to a lack of knowledge about underlying causes or low health literacy regarding living spaces. Consequently, their inability to adapt raises the question: How does an individual's ability to control their living space influence their health? As part of the SAPHIR program, this article explores this by seeking to understand residents' abilities, actions, and feelings concerning the tension between individual satisfaction levels and their impact on physical and mental health. It does so through three case studies of buildings constructed prior to 1973, focusing on their design, morphology, location, legal status, norms, and population types. Conducting individual interviews and collective focus groups allowed us to highlight the links between these elements by creating inhabitant and building typologies from different historical periods and standards.

Keywords

health; housing quality; Paris; renovation; social housing

1. Health Literacy in Housing

In France, the 2020 Covid-19 crisis was followed by a heightened debate surrounding housing, with three official reports denouncing its low quality, and the Minister of Housing launching a special concourse of ideas entitled Engagés Pour la Qualité du Logement de Demain (Committed to Quality Housing for the Future). The Lemas/Badia report (Lemas, 2020), for one, criticizes surface area reduction in social housing, along with its adaptability, lighting, and relationship to the outside world. Further, the report by Laurent Girometti and François Leclerq (2021) proposes a reference framework for improving the quality of housing used to meet new inhabitants' needs. The report by the Institut des Hautes Études Pour l'Action Dans le Logement (2021), on the other hand, highlights designers' lack of understanding of uses and lifestyles.

Nevertheless, housing quality cannot be determined solely based on its technical dimensions. This article thus postulates that the World Health Organization's definition of health (i.e., a feeling of physical and mental well-being; Fijalkow & Wilson, 2023) can be used as a basis for studying housing quality. The idea is to consider health beyond the absence of disease (Boorse, 1977), which implies considering health research as a way of mitigating the vulnerability of populations (Girotto, 2023). In this way, the notion of "care" is defined as "activities we do to remain, continue, and repair our world so that we may live in it as well as possible" (Tronto, 2015, p. 3). "Health literacy," on the other hand, is defined according to Professor Scott K. Simonds' definition, who coined the term at an academic conference in 1974 (Dignard, 2015). Many researchers have examined the notion of health literacy over the last 20 years. Krystine Sørensen, for example, compiled a body of academic work in 2012, proposing that this notion involves the knowledge, motivation, and competencies that individuals may possess to identify, understand, and evaluate health-related information, the mastery of which could enable them to make better decisions about disease prevention and their overall health (Sørensen et al., 2012). Rootman and Gordon-El-Bihbety (2008) suggest that this notion refers to the ability to access, understand, assess, and transmit health-related information in various contexts throughout life, without specifying the physical environment or living space. Along with the other criteria mentioned above, Nutbeam (1986, p. 357) considers the "cognitive and social skills that determine motivation and ability of individuals to gain access to, understand and use information to promote and maintain good health." Furthermore, surveys define different "determinants" and "levels" (Swope & Hernández, 2019) of health literacy, which have been reinterpreted by the Santé Paris Habitat Histoire Residentielle (Paris Housing Health and Residential History; SAPHIR) program, the framework of this research.

SAPHIR is a research program fully funded by the Agence Régionale de Santé Île-de-France (Ile de France Regional Health Agency), involving researchers and students in architecture, sociology, geography, and public health.

The program argues that, in particular social and spatial contexts, health conditions and perceptions thereof enable certain residents to develop the ability to assess the quality of their homes. This research thus seeks to elaborate upon how people act to improve their life quality and, therefore, their physical environments and housing (Fijalkow & Wilson, 2024). Among the various criteria, the notion of "competence" is of great interest, as it underpins other variables, such as the "ability to evaluate" and apply this knowledge to prevent disease (Van den Broucke, 2017) and address the necessary conditions for creating a healthier environment. Health literacy in housing (HLH) is assessed by comparing the differences between objective diagnoses and

subjective perceptions of health in housing. Care, on the other hand, implies that the world may be repaired, including one's body, oneself, and one's environment, all of which are linked through a complex, life-sustaining network (Tronto, 2015). Within the SAPHIR program, spatial dimensions and architectural quality are central to these notions.

The Covid-19 crisis transformed living standards, bringing housing and work closer together. Factors such as the amount of time spent at home per day and the importance of communal spaces have thus influenced housing design (Bick et al., 2023), which is now being further impacted by the energy crisis in Europe (Halkos & Gkampoura, 2021). The government responses in France have led to proposals for the rehabilitation of its housing stock. However, this implies that construction works be carried out to improve insulation and heating systems, which can take time. This means that some must put up with lower heat temperatures to avoid paying unusually high bills. The qualities expected of housing vary according to the socio-economic status of residents and are not limited to the interior of an individual housing unit. At the very least, they are considered at the scale of the building, where numerous discussions take place, as was seen during the pandemic (Grant, 2020). This raises several questions: What skills do residents have to make the connection between health problems and housing, especially those related to temperature (Stojilovska et al., 2021)? What capacity do they have to intervene and improve their habitat? Heating seems to be a particularly appropriate topic, insofar as it concerns the health of individuals and is subject to individual and collective regulation (Crowley, 2001); can people independently fight against the energy difficulties they are confronted with (Liddell & Morris, 2010; Shove, 2003)? Do they consider this an individual or collective struggle? Can housing design and standards (particularly heating) help explain their behavior? What health risks and external variables could influence their decision-making? Is it the cost, the lack of knowledge about public or technical aid, or neighbors' judgment concerning these actions? This article aims to shed light on the link between these elements through a typology of inhabitants and buildings corresponding to different historical periods and standards.

The interaction between health and housing quality can be theorized as shown in Figure 1. This type of relationship was documented by Harrington et al. (2005), noting that, according to socially mediated processes, "poorer health" can lead to a decline in the economic status of individuals. They analyzed how living in an energy-precarious household and having a low socio-economic status directly influences people's mental health. The results of their research allowed them to identify objective conditions that directly impact people's well-being, such as decent heating, air quality, or ventilation (Zúñiga-Bello et al., 2019). For example, a relationship exists between the cooling of one's body and the ability to close a window properly, whether the issue is controllable by the person or stems from a technical problem. This "ability to control" one's domestic environment clearly influences mental and physical health. Similarly, people who cannot control the heat in their homes are more likely to fall ill, as low apartment temperature increases humidity and therefore indoor pollution (leading to mold and dust mites, for example), in addition to more traditional illnesses, such as the flu or asthma (Bluyssen, 2010). Among the subjective variables are personal and emotional control, as well as material conditions, such as lighting or sound quality (Ortiz et al., 2017), which increase the likelihood of "feeling able" to control a healthy space and have a more sustainable quality of life.

These objective and subjective gauges of housing quality require the integration of residential trajectories and, more broadly, the history of apartment occupancy, which is fundamental for the analysis of energy consumption and spatial occupation (Shove, 2017). Stress, anxiety, insecurity, and the accumulation of several unhealthy factors in housing can lead to suicidal thoughts (Colleville & Kermarec, 2021) or generate

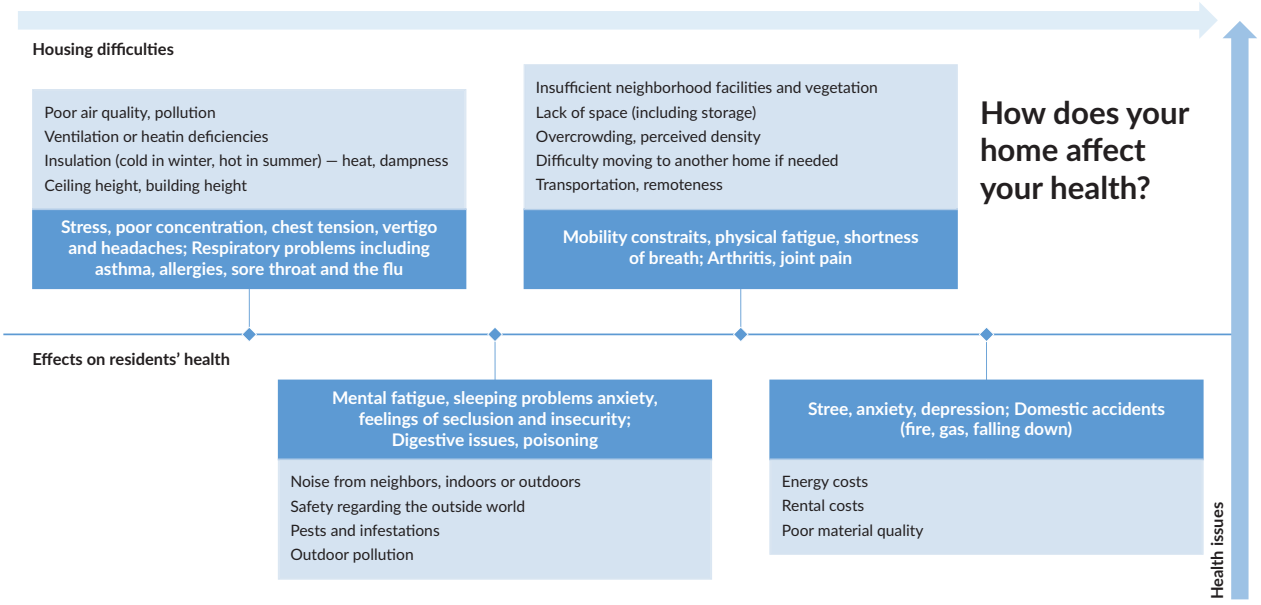

Figure 1. Summary table: The influence of housing on health and associated physical or psychological illnesses.

aggressive impulses or behaviors within the family structure itself or towards neighbors and building managers. In the field of mental health, the notion of "subjectivation" can be considered as a set of social processes that reinforce the subject's point of view, as opposed to more "objective" elements of a physical or social nature (Benamouzig, 2010), which are also important. From a narrative perspective, combining the history of places with residents' stories and trajectories helps increase people's ability to more openly and naturally exchange about their place of residence. According to housing research theory, this would therefore imply the possibility for inhabitants to leave or move, i.e., the principle of mobility (Wacquant & Wilson, 1989); to adapt the dwelling to all ages and life cycles, i.e., the principle of adaptability (Altaş & Özsoy, 1998); to recognize oneself in one's living space, i.e., the principle of identity (Proshansky, 1978; Proshansky et al., 2014); and to express one's attachment to a place, i.e., the principle of narrativity (Fijalkow, 2017).

According to Hirschman (1970), all private and public institutions can reduce the quality of goods and services. Faced with these failings, users behave in three ways: They leave the institution, they challenge it, or they are loyal to it (Hirschman, 1970). The first two are warning mechanisms for the institution, which is confronted with the individual expertise of users. While the use of exit is well known, this is not so much the case when users challenge their everyday living spaces, thereby using a corrective force that should be recognized and encouraged. In our case study, this represents the highest level of literacy.

2. SAPHIR: Narrative Research Interventions and Teaching Methodologies

The SAPHIR research program is based on a sample of 12 apartment buildings in the east of Paris and its northeastern suburbs, selected according to the year of construction (and thus compliance with standards, especially thermal and acoustic), spatial density, location in the city, access to amenities, occupancy status (condominiums, social housing), and population type (age and income brackets). Among these are one particularly insalubrious building in the 18th arrondissement of Paris, one poorly insulated condominium in

the inner suburbs of Paris, several *habitat à bon marché* (or the prior French social housing scheme) from the 1920s, and *habitation à loyer modéré* (or social housing) from the 1970s. It also examines social housing complexes built in the heart of Paris in the 1980s, more recent buildings compliant with sustainable development standards from the 2000s, former army barracks "rehabilitated" into housing, and recently built "mixed" social housing/middle-class condominiums. The aim of the methodology is to produce a series of building monographs based on archives and interviews, reconstructing the history and collective memory of these buildings to question the way in which this past does, or does not, play a role in current crises (Covid-19, energy, etc.).

The various components of this methodology make it possible to diagnose and assess housing quality at both the scale of the building and the apartment, allowing us to unpack residents' literacy by applying the writings of Sørensen (2012) and Tronto (2015) to housing. SAPHIR postulates that residents express and mobilize knowledge and values in response to the problems they face daily. For instance, a parent decides to heat the bathroom before their child bathes to prevent them from getting sick. The drive to safeguard the children's health despite temperature restrictions draws on both values (staying healthy) and representations (ideal parenthood). It is therefore through what is called "critical situations," or everyday dilemmas, that the possibility of acting emerges, as can be seen in Figure 2. Some examples include opening the windows to maintain air quality after a shower, minimizing noise from radiator pipes to preserve privacy, protecting indoor air quality from outdoor odors, working at home in a space not especially adapted for this purpose, or turning on the heater to dry laundry and fight humidity.

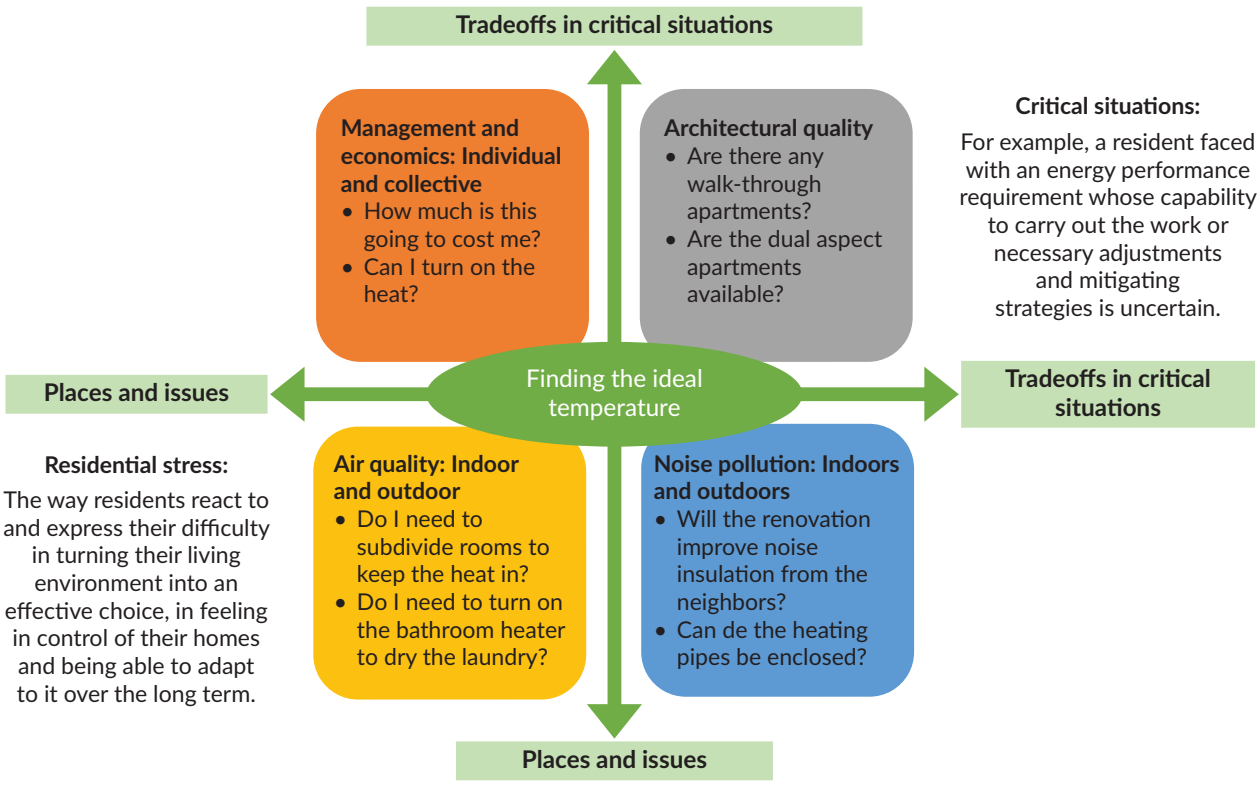

Figure 2. SAPHIR conceptual project.

When residents find themselves at a dead end or faced with a choice—i.e., a critical situation—they must make tradeoffs that require them to change context (e.g., by leaving or rearranging the space). In housing, the quest for energy efficiency is naturally at the heart of these critical situations.

To gather the appropriate data, the following phases were carried out. During the first phase of the study, "educational cafes" were organized by the researchers and presented to the residents. These meetings took place in the lobby, at the foot of the building or in the courtyard and involved willing residents who stopped and took the time to consult a didactic poster on the impact of housing quality on physical and mental health. The goal was to raise residents' awareness of these issues by involving them as voluntary participants in the survey. Although the residents were not specifically selected for the interviews, access to the landlord's statistics provided the socio-economic information necessary to ensure various categories from all floors of the building were accounted for (Fijalkow & Wilson, 2024).

The second phase consisted of a series of individual interviews with tenants, enabling them to explain their residential history, hardships, housing and neighborhood practices, and the existing or non-existent connections they make with health. This was accompanied by "inhabited surveys," that is, the cartography of the layout and location of household objects and furnishings, illustrating occupation density and room multifunctionality. These interviews and surveys were summarized in "places and issues" sheets, which represent high-tension spaces highlighted in the interviews (including windows, elevators, balconies, stairwells, heating, common areas, etc.) and are the subject of stories, rumors, and qualifiers that are often fraught with meaning, at the heart of the critical situations mentioned above.

The third phase involved inviting residents to focus-group workshops (see Figure 3) to confirm the scope of the "places and issues" and "critical situations," allowing them to express their views, feelings and the influence of their living environment on health in relation to their personal history as well as that of the building. Floor plans of the building, apartments, and their adaptation by residents were therefore used.

Based on fieldwork and research findings, it is argued that while residents' quest for control over their environment is central to their living system (heat control, safeguarding individual property, etc.), this need is perhaps different from that of technicians and managers, who are primarily concerned with the building's

Figure 3. Focus group in Paris.

energy performance. In this respect, the study of HLH is a fundamental indicator, enabling an understanding of how residents perceive their homes through physiological experiences (feeling too hot or too cold, dressing warmly, using caulking techniques). A building's overall performance cannot be solely defined by energy, but involves several associated factors, as this fieldwork has shown. These include noise pollution, poor architectural layout, and management practices along with residents' daily practices.

3. Three Residential and Health Related Narratives of Buildings Constructed Before the 1970s

Three buildings seem representative of various climate change, norms, and home use trends (Salat, 2009), as well as particular forms of literacy: a 19th-century private rental apartment building, currently in a state of energy insecurity; a 1920s Parisian social housing block; and a 1960s suburban apartment block built to low standards and in need of major thermal renovation (for socio-economic and technical details of all three, see Table 1). Two key common factors of these buildings are their construction prior to 1974 when the first technical building rules came into action, and their targeting by the 2021 Loi Climat et Résilience (French Climate and Resilience Law). This law requires residential building owners to conduct energy renovations within the next few years, with the help of state funds, unless they wish to face the consequence of no longer being able to rent or sell their properties. Although these renovations may be carried out from the interior of dwellings, doing so requires complex logistical arrangements. Exterior renovation work is thus more common but is fraught with financial, technical, social, and administrative obstacles. Compared to previous renovation processes, the energy renovation measures of the 2020s appear less authoritarian than those carried out by Haussmann (1852–1870) through demolition and reconstruction. Also known as "bulldozer renovation," this is the same method that was applied to older neighborhoods in the 1970s. Today, however, energy renovation is not seen as an urban policy involving spatial planning, but rather as a way of dealing with individual situations, which are thus the focus of this research.

Table 1. The three buildings studied.

	Letort (Paris 18th Arrondissement)	Tolbiac (Paris 5th Arrondissement)	Diderot (Champigny)
Year of construction	1890	1920	1960
Number of housing units	30	59	150
Population type and social class	Young couples with children and working-class, single-parent families	Elderly, single, and middle-class	Young couples with children; middle-/ lower-middle-class
Occupation status	Private rental housing	Social rental housing	Condominium
Spatial layout	Closed without any common spaces, seven stories	Closed courtyard, eight stories	Closed courtyard, five stories (communal garden inside the residence)
Heating type	Individual electric heating	Individual gas heating	Communal water heating
Housing type	Studio to three bedrooms (non-dual aspect)	One to three bedrooms (non-dual aspect)	Studio to three bedrooms (dual aspect)
Number of interviewees	Five inhabitants and one neighborhood association	15 inhabitants and one caretaker	15 inhabitants

3.1. Active and Inactive "Expert" HLH Residents in Substandard Housing

In France, rules to combat substandard housing have been strengthened since the first law was passed against it in 1850 (Fijalkow, 1998). Today, however, official reports deplore the multiplicity of procedures (a total of 26 articles in the Public 145 Health Code), with local elected officials finding themselves on the frontline (Fijalkow & Maresca, 2019). The "peril" procedure (Article L.511–1 of the French Building and Housing Code), for example, is the best-known measure, representing the mayor's power to order work such as reinforcement or demolition when required, who can also act as ex-officio if nothing is done within the short deadline set. In doing so, however, the municipality may incur expenses on behalf of someone else, with no possibility for reimbursement. Residents thus have access to a procedure that allows them to report their dwellings unfit for human habitation, although this procedure does not guarantee their legal occupancy status. Furthermore, landlords can be prosecuted for renting out substandard accommodation at very high prices, thereby directly endangering and taking advantage of their tenants. Nevertheless, fewer than 100 convictions are handed down each year. This represents the context in which almost one million substandard dwellings exist in France today (Fondation Abbé Pierre, 2023), including the one on Rue Letort.

According to archives (Direction générale des finances publiques, 2023; "Service technique de l'assainissement," 1900), the Rue Letort building (Figure 4) was built in 1887 on a narrow plot of 217 m^2. With over six floors, totaling 669 m^2, it comprises 18 rental apartments with an average individual size of 37 m^2. It is located beside Porte de Clignancourt, in a busy working-class area at the edge of Paris. During the post-war period, tenants were workers (roofers, toolmakers, millers, etc.), living in their two-room apartments as couples with two or three children. Since the building was well equipped for the time (with water, gas, and electricity), applications were regularly received to occupy vacant units. Today, however, there is much proof of the building's non-compliance with current standards, if not inhabitability. For example, in 2022, the two owners received five rulings against them (Judgment 05.04.2022), condemning the high level of humidity in the dwellings, the degraded state of the common areas, the inadequate heating, the faulty ventilation system causing odors and mold, along with the presence of lead and major cracks. According to the interviews, the tenants compensate for the lack of communal heating with oil-filled space radiators, which are a fire hazard. Most of the tenants cite health issues for themselves and their children, including respiratory and mental health problems, which were confirmed by medical certificates. As stated in the judgment, the owners have defended themselves by denying these facts, referring to work that has, according to interviews, been carried out incorrectly, such as the installation of a mechanical ventilation system.

The tenants interviewed in the building were young working-class families with children, either immigrants or descendants thereof, struggling to find accommodation separate from their families in the center of the urban area where they work and study. One family of five, for example, has been living in a one-bedroom unit for 11 years. Their residential experience has been a bitter one, leaving them feeling "abandoned" with a lack of recourse when it comes to the management agency and sluggish landlords. Furthermore, all residents interviewed stated they had not chosen to live there and felt forced to stay despite a strong desire to move.

Signs of high residential density in the building and in the neighborhood were expressed and confirmed in the interviews. Further, poor air circulation in the apartments on the lowest floors was also highlighted. The neighborhood is not seen as a positive resource, despite its sought-after location in Paris. In terms of

Figure 4. Building facade and view of the courtyard from inside an apartment.

proximity, residents tend to avoid shops and places that have stamped the neighborhood as being ridden with drug dealing.

The main complaint voiced by tenants was dampness. For Nadia, a 30-year-old tenant with one child, this problem surfaces in the form of "black marks" on the walls (mold) and breathing difficulties, causing allergies and infections, which are cited as triggers for asthma attacks and chronic sinusitis. Each winter, Lamia, a 35-year-old single tenant, reports having to throw out clothing, change the furniture and repaint the apartment, carrying the dampness around in the smell of her clothes. This situation is strongly associated with air quality, prompting tenants to air out as soon as the weather permits, outside of the winter months. Some use air fresheners to dissipate the smell of dampness. Moreover, the absence of balconies in most apartments leads tenants to dry their laundry inside, which worsens humidity. Some attribute this problem to the building's poor rain proofing, others to the ventilation system, which is either outdated or non-existent, while others point out that the floors are not level, which, to them, means the building is probably poorly constructed.

The question of heating, which is both individual and electric, was the second focus of the interviews. Electric radiators of mediocre quality have been provided by the owner. However, the building's poor insulation causes high energy consumption, which is criticized by residents as being expensive and inefficient. For some inhabitants, like Rania, who only heat for a few hours in the evening, this is harmful to her two children's health. Moreover, most residents expressed that insulation is also a problem in the summer.

Physical and mental health is also frequently mentioned, often regarding children who are "always sick." This contributes to a shared collective feeling of not being at home in this hostile environment, especially when it comes to their children, whom they wish to protect. Nevertheless, residents are unable to carry out repairs themselves and are thus forced to accept these constraints, leaving their homes unadaptable to their lifestyles. This feeling of alienation is reinforced by the presence of squatters in the communal areas and the lack of

soundproofing. While several court rulings have directly addressed this issue, the work carried out by the landlords in response has proven itself ineffective.

There is a widespread sense among tenants that they are not living in decent accommodation. Nadia, for instance, remembers the Covid-19 lockdown as having allowed a family of five to share a two room, 40 m^2 space, exacerbating feelings of immobility and surface area insufficiency, and leading to outcomes such as preventing the children's educational success. Working from home, therefore, does not seem to be a viable option, given the dampness and cramped conditions.

According to the majority of the interviews, the adaptability of the dwellings appears to be low, and the residents' desire to leave has discouraged them from carrying out any work. For tenants, the insecurity of the area reinforces the idea of these homes being temporary places of transition. It should be noted, however, that many of the tenants and their families have painted the flats, as they were rented out in their current state, with significant traces of damp and mold. Despite residents' high health literacy, seen through their awareness and motivation, this example of a substandard building shows the design's limited capacity to evolve. Thus, rather than transforming and adapting their homes to meet their needs, which is not possible for tenants under French law (Civil Code), they prefer to move out (Hirschman, 1970). The places and issues most identified are the walls, windows, and communal areas, while the main critical situation is the residents' struggle against dampness. With this in light, even if they wish to leave the building, they continue carrying out minor work to keep it viable.

3.2. Active and Inactive "Expert and Layperson" HLH Residents in an Outdated Social Housing Building

In France, social housing is highly regulated by the state, which sets rent prices and determines their architectural design. Social housing represents 18% of the housing stock in Paris and is growing steadily, thanks to support from the municipality. Rent prices for this type of housing are below the private market and are scaled from one to four, with one being for the lowest-income levels and four being for average-income families, according to the National Social Housing Organization and the Atelier Parisien d'Urbanisme (APUR, 2018). The first social housing buildings date back to the 1920s and were built to low standards for low-income populations (Dumont, 1991). This is the case for the 118 Rue de Tolbiac building, located near the center of Paris, which ranked one on the social housing scale.

The building's outstanding architecture has been listed as a heritage site, with its red-brick facade (Figure 5a) and a large brick archway leading to a closed courtyard, typical of hygienist architecture (Dumont, 1991). The 60-unit apartment building is therefore "protected" by the City of Paris, as the design is a legacy of the city's social housing policy that served its most disadvantaged residents at the beginning of the 20th century. Most of the apartments contain one to three bedrooms, arranged lengthways around a corridor, often with no openings or windows. The inner courtyard, set away from the street with green spaces, is appreciated by the tenants who seem proud to talk about "their" garden, despite it being the source of irritating noise (voices and the slamming of garbage bin lids). Today, according to our interviewees, this now middle-class building has been rendered precarious by heightened energy prices linked to the current crisis, which can be seen in residents' DIY practices and strategies to avoid financial burdens.

Figure 5. Current building photos (a) and the modification of the larder (b).

Semi-annual revenue surveys conducted by the housing authority among tenants show major income disparities in the building. The overwhelming majority of interview respondents were women, often retired. Some maintain artistic activities (painter, music teacher, etc.), while others are single mothers at the head of single-parent families, the high percentage of which corresponds to the proportion of small homes. Two distinct groups were identified: older tenants (more than 20 years of residence) and new arrivals (less than 10 years), both with different attitudes. Older tenants seem to fall into the "loyalty" category, as developed by Hirschman (1970), falling back on individual strategies to solve their problems. Others, particularly the new tenants, "voice" their concerns. For example, Jeanne-Lise (tenant) has developed an expert position with the landlord, pointing out the shortcomings of her home (foul odors, non-compliant electrical outlets, high utility bills, etc.). Abigaël, another tenant, has taken action against sound pollution by filing a complaint to the public housing authorities. By using the writing skills acquired through her job at the hospital, she attentively read her complaint at the educational cafe session, revealing a high level of literacy due to her involvement in collective action.

The poor quality of these homes is largely due to their age and their non-compliance to today's standards (built with poor materials, low thermal and sound insulation and small rooms), making them less adapted to the expectations of the current middle-class tenants (Dumont, 1991). The flats are arranged around a long, narrow, windowless corridor that leads from one room to the next, serving as the backbone of each unit. In interviews, inhabitants noted that the lack of windows makes this space unattractive. The rooms are poorly proportioned (living room 20 m^2, minimum bedroom size 10.5 m^2, ceiling height 2.5 m) and lack natural light. According to the latest reports on the quality of housing in France, the size of apartments should be: one bedroom 28 m^2, two bedrooms 45 m^2, three bedrooms 62 m^2, four bedrooms 79 m^2, and five bedrooms 96 m^2 (Girometti & Leclercq, 2021). This is a source of frustration for most inhabitant respondents: "I find the rooms very small and it's not easy sometimes. Not only are they tiny, but in terms of light, the rooms are very deep. And storage is almost non-existent" (Hélène, tenant). This type of apartment is also a source of air quality and insulation issues. For instance, each apartment features exterior-facing larders (Figure 5b), which were designed before the invention of the refrigerator (around 1950) and thus let in cold air, according to today's tenants. Consequently, they waste heat and are often obstructed. Similarly, the very small, windowless

bathroom added in the 1970s is an additional problem, as the existing ventilation is useless, creating dampness that chips the paint on the walls and ceiling which needs to be redone every two years.

Sound insulation is also a major problem. According to the building caretaker, there are quite a few tenants with psychological problems such as stress and anxiety, which are linked to lack of sleep. Furniture movement is one of the major sources of this nuisance. Hélène, for example, says that her ex-husband would jump at the slightest sound. Edgar, another tenant, recalls the tension caused by a neighbor with psychiatric problems who used to scream from time to time. Living on his own and having made major investments in his apartment, Edgar is keenly aware of the things that can damage these upgrades. Abigael, another neighbor, told us that she is taking legal action against a ground-floor business since the noise from construction work is affecting her peace of mind and her sleep. She has thus used her professional expertise in health matters to write a report to the landlord. In addition, living in a noisy neighborhood, she installed a specific soundproof window in her son's bedroom, which overlooks the street.

In the interviews, the price of gas appeared to be a major concern for most of the tenants and is even referred to as shocking by Abigaël. The cost of heating makes it difficult for many people to afford the rent, with one tenant stating that "the recommended 19 degrees is not enough." This forced restraint has led residents like Abigaël to buy electric blankets and wear shawls around the house. Concerning energy costs and thermal comfort, Jeanne-Lise, a single mother who has lived there with her youngest son for the past 10 years, complains of a draft in her home while acknowledging that the social landlord's recent replacement of her front door has made her apartment less energy consuming. Nevertheless, the cold continues to affect the well-being of the tenant, who is recognized as a disabled worker and has a long history of health problems.

Social landlords are required to account for people with serious health problems. This was thus included in the survey sample, as it can show how this type of housing is also used to care for people. Tenants are aware of the difficulty of insulating their homes, whether from the inside or the outside. The modest surface areas and their awkward layout make thermal insulation from the inside unthinkable, whilst the brickwork and the heritage value of the facade make thermal insulation from the outside difficult to foresee. On the other hand, almost all tenants appreciate the thermal comfort provided by the building materials (stone and therefore thick walls) in the summer, i.e., a cool space during high temperatures.

According to most inhabitants, this housing's poor quality is largely due to its age and its unsuitability for a less poor and less family-orientated population. The location and the building's heritage value are important factors for these middle-class tenants. While our survey enabled the development of a shared diagnosis, identifying problems with the noise, ventilation, and heating, remnants of early 20th-century social housing technical standards have hindered the evolution of this building, despite its need for energy renovation. This is understood by both residents and the owner. Renovation from the outside of the building is essential, as it would be costly to carry out the work inside the smaller apartments. However, this would mean confronting the heritage element of the building facade, which is protected by municipal regulations.

In this building, the central problem is the facade and the historic vaults, which block any possibility of thermal and acoustic improvements, especially since the apartments are narrow. The critical situations that arise are expensive individual heating, small room furnishing, and noise generated by the building's density.

Nevertheless, the tenants wish to stay due to its central location in Paris in an attractive building, therefore inciting them to protest the landlord. Another critical situation is the installation of communal garbage disposal in the center of the courtyard, which devalues the building's image and how it is perceived by residents, who are critical of the landlord over this point. In the focus groups, residents denounced this stigmatizing feature.

3.3. Active and Inactive "Resigned" HLH Residents in a Poorly Insulated Building

In France, condominiums are governed by the Law on Condominium Ownership of July 10, 1965 (No. 65557). Under this framework, the ownership of a private space entails the co-ownership of a common space, meaning that maintenance-related aspects are decided by elected bodies. In condominiums, the difficulty of sharing a collective project can be explained by the diversity of residents' backgrounds and interests. However, recent French government-sponsored energy efficiency renovations and the 2021 Climate and Resilience Law are set to restrict the rental and sale of energy-guzzling homes, thus threatening the value of older condominiums built before 1970. This is the case with the Diderot residence in Champigny-sur-Marne.

Located just outside of Paris, the Diderot building in Champigny-sur-Marne evokes the post-Second-World-War reconstruction period. In 1955, the Ministry of Housing launched the Housing Million project, a competition for construction companies to create a three-room housing unit with an average cost (excluding land) of a maximum of one million francs. According to Flamand (1989), this could be considered a very low price at that time, especially when compared to the average price for constructing housing units of the same characteristics. The Société Coopérative d'Habitation à Loyer Modéré de Champigny-sur-Marne, created in 1953 by the mayor of the city, built this building on a flood-prone piece of land, which was therefore probably relatively inexpensive. It is a five-story complex built around a rectangular courtyard with its back to the street. The apartments were built to reduced standards for low-income condominium buyers who qualified for the social housing scheme. Today, the building has recently welcomed lower-middle-class populations (nursery school principals, nurses, nannies, etc.) seeking to acquire property in the Paris region as its "new owners."

Nowadays, residents consider it an outdated building, with worn, noisy wooden floors, outdated paintwork and classic room layouts. Heating is distributed by cast-iron radiators from a central boiler room that operates poorly, and the building suffers from serious insulation-related heat loss, as interviewees reported (Figure 6b). The building is classified F on the energy performance scale (which goes from A, *excellent*, to G, *very low energy savings*). Nevertheless, the new owners say they are satisfied with their apartments, which they have "redone" (an expression used by inhabitants to discuss adaptations and repairs) each in their own way and according to their financial means. Some have simply repainted the rooms, while others have changed the layout of the bedrooms and the living room and opened up the kitchen. The apartments have thus proven themselves adaptable to today's lifestyles, housing family types that are less common than the nuclear family of the 1960s and therefore in need of particular spatial organizations (single-parent families, divorced people, mixed families, and so on).

These middle-class families (with children under 18) have bought (or rented) private property in an area they describe as privileged, on the banks of the Marne River and "20 minutes from the center of Paris," far from the working-class neighborhoods of Champigny (which they do not name, except by toponymy: "the top").

One of the couples interviewed, Sophie and her husband (psychiatric nurses, 35 years old, with two children), describe their search for the perfect apartment when leaving Paris:

> It had to be accessible, not necessarily by public transport, but by road. We didn't want to be near a highway, because we didn't want the noise and car pollution. We looked at the air quality, that's it. We had a lot of criteria. We wanted a three-bedroom apartment. We absolutely needed a balcony.

Mobility is emphasized as essential in respondents' choice to buy and settle permanently in the area, to be closer to the commercial utilities, facilities, and social amenities that are key factors in the functioning of the housing complex.

The large garden surrounded by the buildings is a second element of satisfaction, allowing parents to let their children play outside (Figure 6a). They view this element positively with regard to the gardens of individual houses, "where children get bored" (specific remark of an inhabitant during a focus group). The condominium recently sold land to individual houses in order to close the residence and secure the parking lot. This operation has enhanced the value of the condominium. In accordance with the principle of mobility, we note that it is a chosen neighborhood and that few inhabitants consider leaving, except for retirement.

According to most inhabitants, the only defect corresponds to energy-related problems in the buildings, and they admit to being cold in winter, except for those who have insulated their apartments from the inside. As for sound insulation, many refuse to consider this as a problem, insofar as the condominium does not have financing for the work, whether it be at the collective scale of the building or the individual scale of the apartment. Several interviewees mentioned being stressed and worried about the noise coming from the heating pipes and would like to enclose this place and issue to avoid hearing their neighbors. However, aside from this being forbidden, their preference is to keep the heat inside the apartment, leading to feelings of loss of control over their privacy. For example, one housing block has major problems with a neighbor who interviewees called unbearable, unhealthy, insane, and disrespectful. This critical situation has been reported to the police and the process of evicting this family is underway. Some residents expressed irritation and aggression at the situation, explaining that they recently turned off their neighbor's water to show their collective anger.

Figure 6. Current building photos (a) and windows from the interior (b).

The inhabitants have been able to represent themselves in the real estate market and in the city's social hierarchy (at a distance from the working-class neighborhoods and close to the wealthy communities). They have adapted their housing and invested in local sociability, especially since they have little chance of being able to leave it in the current real estate climate. It remains to be seen, however, whether this will lead them to take the fate of the condominium into their hands. The problems linked to the building's compliance with the French Climate Plan are systematically avoided and postponed, and it seems that residents will continue to manage according to their own means. Although this observation is paradoxical, it seems here that non-standard buildings can contribute to the well-being of their inhabitants. This community demonstrates a health literacy that is only slightly developing in the face of more attractive factors (proximity to Paris, reasonably priced property, and the presence of a community center). As a result, thermal and acoustic issues are unfavorable elements in the diagnosis. Housing quality thus depends on possibility (housing as an aid for capability) and inhabitants' ability to manage their environment. While the design of homes can freely evolve according to residents' desires, financial limitations prevent an overall thermal renovation. The main issue in this building is undeniably the heating, which the residents do not seem to be able to control, mainly because of the building's insulation. For most of them, the low level of heating is the price they must pay for access to homeownership close to Paris. They can therefore be seen as in a posture of adaptation that is leading them into an unfavorable critical situation regarding their health, of which they are gradually becoming aware.

4. Conclusions

While a building is built by materials and people, it is also the result of a narrative, from its construction to its daily maintenance (or degradation). The three examples in this article show how historical construction decisions (choice of reduced standard, target population, profitability) have an impact on current occupants and their living strategies. The history of the buildings also makes it possible to understand heating practices in relation to health. Inhabitants thus mobilize this past, either to understand the difficulties, to protest, or to resign themselves and accommodate their living conditions.

The Rue Letort building is characterized by technical faults in terms of noise, pollution, poor air quality, mold, and overcrowding. Inhabitants are able to link these factors to their physical and mental health, i.e., flu, asthma, and stress. According to Sørensen et al. (2012), all the residents have a high level of health literacy surrounding their substandard housing, as they move from observation to action, mobilizing legal tools to assert their rights. For these young working-class people, the building's main quality is its location. With no expectations of improving their heating, there is a strong collective desire to escape this setting, especially if they are able to find social housing. They can thus be referred to as active inhabitants (Figure 7) in terms of their HLH.

Overall, residents who are experts in HLH were quick to signal respiratory problems and stress, while others did not make these connections and can thus be referred to as inactive in HLH (Wilson & Fijalkow, 2023). There were also elderly tenants who sought to appeal to the owner, who can be seen as laypeople in HLH (Wilson & Fijalkow, 2023). These profiles ultimately hamper collective dynamics. As thermal renovation seems to be technically difficult, tenants carry out minor DIY work themselves. According to the results of this research, these small gestures correspond to the first or the second level of HLH.

In Champigny, the possibility of using individual and collective spaces at the convenience of the inhabitants, as well as their capacity to create strong social bonds, reflects a better sense of well-being and a healthier habitat,

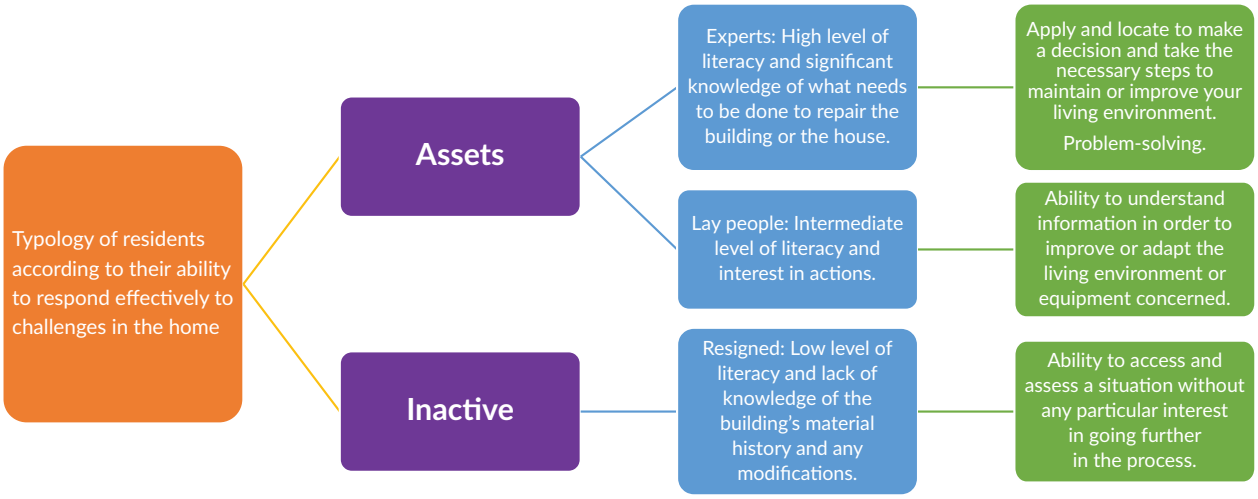

Figure 7. Awareness of health problems related to housing conditions.

demonstrating the importance of architectural forms. However, the community seems to postpone any project and narrative for the future, as shown by the absence of a response to the requirements outlined in energy legislation. In different ways, the three case studies show that outdated equipment of the post-war period is no longer up to thermal comfort standards and that expectations in terms of healthy housing have changed.

The comparison of the three types of buildings reveals different types of HLH. While the residents of Rue Letort understand the health issues at stake in their homes, in the social housing of Rue de Tolbiac, mobilization is more complex, and residents feel the need to develop their technical expertise to mobilize against the social landlord. The Diderot condominium demonstrated that awareness of health issues linked to heating was slow to emerge, despite there being a more widely sought-after notion of collective well-being.

While health in housing struggles to appear on the public agenda, the SAPHIR program proposes a methodology to enable residents to question the quality of their housing through their health concerns. In this context, it is possible to put forth a typology of possible categories of inhabitants to make connections between the symptoms of their health conditions and lifestyles, which can be mapped as a typology of HLH.

The qualitative method of interviewing residents about their residential histories holds different objectives than a quantitative questionnaire survey. Through in-depth interviews with individuals and groups, key issues and critical situations were sought out and identified. To verify this, regular analysis sessions were organized between researchers and interviewers, all of whom attended educational cafes and focus groups.

This hands-on research questions urban planning policy in the field of energy efficiency renovation. Looking at the issues from a health perspective enables residents to address their own experiences, instead of confusing them with the search for energy efficiency as promoted by top-down interests. This enables a distancing from technical promises of home automation through artificial intelligence (Miori & Russo, 2012), allowing for the choice of sobriety to be approached as a societal option in the face of the technicization of the home (Illich et al., 1973). Inhabitants' ability to control their environment can thus be seen as a fundamental element of care.

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Conflict of Interests

The authors declare no conflict of interests.

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ARTICLE

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Domestic Cartographies: A Post-Occupancy Ethnographic Assessment of Barcelona's Social Housing Strategies, 2015–2023

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Abstract

The lack of affordable housing remains a major problem in Spain. Following the decline in public and affordable housing production caused by the economic, political, and social crisis of 2008, efforts to produce public housing were reactivated in the mid-2010s, gaining increasing importance. In Barcelona, housing policies have played a central role in recent political discourse, particularly with the tenure of housing rights activist Ada Colau (2015–2023). With traditional approaches failing to address the housing emergency, the local government introduced five new procurement strategies to increase the affordable housing stock. These involve new forms of council housing, delegated developments, limited-profit investments, zero-equity housing cooperatives, and urban refurbishment. This article uses a mixed methods approach to analyse these strategies. The analysis spans all design phases, from inception to construction, and includes post-occupancy evaluations. Methods include typological analysis, expert interviews, and spatial performance analysis using ethnographic methods and inhabitant interviews. The results evidence the importance of diversifying procurement models, tailoring approaches to different user profiles, and enhancing emerging opportunities by including new stakeholders in the development process.

Keywords

affordable housing; Barcelona Housing Plan; cooperative housing; emergency shelters; housing policies; post-occupancy evaluation; social housing

1. Introduction: Reconsidering the Evaluation of Public Housing Policies

Despite a steady production of public housing since the 1960s, access to housing represents one of the biggest urban and social problems in Spain. Housing policies in Spain have long promoted speculative real estate

development and privatisation of the public housing stock, creating links between property ownership, social status, the building industry, and national economic development (Colau & Alemany, 2012). This has resulted in a shortage of affordable housing, particularly affecting young and vulnerable groups (Ajuntament de Barcelona, 2017). Only approximately 2% of Barcelona's housing stock is publicly owned, with 98% remaining in the private property market (Observatori Metropolità de l'Habitatge de Barcelona, 2018a, 2018b). A substantial increase of 148% in housing prices from 2000 to 2018 compared to only a 3% rise in wages has led to personal economic insecurity and, at the urban level, social exclusion, urban segregation, and gentrification (Observatori Metropolità de l'Habitatge de Barcelona, 2018a, 2018b). During the same period, 60,000 foreclosure evictions (Observatori DESC, 2020) have led to a shift in the way in which housing is perceived: from a source of security to one of emotional instability.

In 2015, a citizens' platform led by the housing rights activist Ada Colau created Barcelona en Comú (Barcelona in Common), a municipalist organisation which won the local elections that year and made housing its municipal policy focus. In 2016, they declared a housing emergency and developed the *Plan for the Right to Housing in Barcelona 2016–2025* to respond to the requirements of Law 18/2007 from 2007. Both the plan and law aimed at an increase in the proportion of affordable housing in the city from 2% to 15%, translating into new 90,000 subsidised housing units (Buron & González de Molina, 2023). To achieve this and overcome the limitations of traditional procurement, Barcelona en Comú revised the two existing housing strategies and created five new ones (Table 1).

Table 1. Barcelona's affordable housing production strategies, organised by developer and building status.

	Public production	Delegated development	Private promotion with public grants
New buildings	Municipal Institute of Housing and Renovation's (IMHAB) council housing production IMHAB industrialised council housing production*	Foundations and Zero Equity Cooperatives (FFZEC) Agreement* Public–private partnership: Habitatge Metròpolis (Barcelona's affordable housing production)*	—
Refurbishment	Retrofitting purchased buildings*	—	Mobilisation of empty housing Urban regeneration of vulnerable areas*

Note: * Municipal strategies developed after 2015.

In December 2021, Barcelona's City Council and the Catalan Architects Association commissioned the architects and researchers Ibon Bilbao and Caterina Figuerola to undertake an evaluation of the public housing strategies and policies since 2015 (Figuerola & Bilbao, 2023). This article further develops the analysis of the case studies used in that evaluation.

Public housing policies are commonly evaluated quantitatively in terms of housing supply and qualitatively by analysing built plans: as an outcome and not as a process. However, this approach—which includes former periodical evaluations (Communication Department of the Barcelona Municipal Housing and Renovation Institute, 2019; Falagán, 2019b; Trilla i Bellart, 2006)—does not capture the impact of different

stakeholders' involvement in procurement processes nor problems or opportunities arising from these interactions. Moreover, these evaluations do not analyse how users interact with their spaces and perceive them, which are, however, key criteria that should inform housing procurement and evaluation. The need to evaluate space-use performance has become especially evident since the outbreak of Covid-19, which fostered debates around the capacity of domestic space to effectively respond to user needs and activities.

With the aim of re-evaluating the process and outcome of Barcelona's public housing policies from 2015 to 2023, this article poses the following questions: First, considering the diversity of housing strategies, how effective are they in addressing the housing deficit? What opportunities arise for meeting different user needs through the inclusion of new housing developers and procurement models? Second, how can user-centred post-occupancy evaluations (POEs) provide new insights for decision-making in public housing policy? And in order to facilitate that, which new evaluation criteria should be considered?

2. Methods

To build on the previous evaluation of public housing policies, the methods employed and the scope of their analysis were partially expanded. This resulted in two parallel analyses presented in this article, each with individually specific methods.

First, an analysis of the project gestation from conception to completion, including management, design evolution, stakeholder insights, and construction until first inhabitation, was undertaken using the following research methods in addition to a review of Figuerola and Bilbao (2023):

- Interviews and regular meetings with municipal housing agencies, i.e., the Housing Department of Barcelona City Council (Vanesa Valino, head of cabinet) and the Gerencia de Vivienda (Javier Buron, housing manager; Joan Recases; housing manager associate): They provided an overview of the strategies and contacts with municipal departments that supplied data on housing supply.
- The analysis of 21 case studies and their development: This involved comparing early ideas and competition plans, intermediate stages, tests and dead-ends, and as-built plans. Technical information and data regarding the duration of phases and stakeholder involvement were requested from designers and developers.
- Two debates with all stakeholders involved in public housing procurement in Barcelona including the local government, designer teams, delegated developers, construction companies, and the Catalan Architects' Association: The first debate focused on new housing and the second on refurbishment projects, both were structured around the issues of participant experience in the different phases of strategic and design development, with consideration given to qualitative design parameters (typological innovation, industrialisation, environmental parameters, maintenance), procedural parameters (design competitions, user roles, unexpected problems encountered) and inhabitation evaluation (learning and maintenance).

Second, a POE to collect data on user experience and domestic space performance was conducted using the following research methods:

- Annotation and recording of the current state of the homes: 16 inhabited floor plans were drawn as "domestic cartographies" and compared to the pre-inhabited plans provided by the project designers.

- Photographic survey: First, comparable photographs of dwellings in the same building were taken to analyse different ways of appropriating the same domestic space. Second, photographs of common spaces in the buildings were taken to describe their use and evaluate their functioning. Third, exterior photographs of the buildings in their current state were taken to study their urban context and compare them.
- 66 at-home structured interviews with residents: They were asked three questions corresponding to three scales of inhabiting, from general to specific—"How is your neighbourhood/building/house?" This avoided conditioning answers and differed from the closed nature of questionnaires in allowing users to elaborate on what they considered relevant. Interviews lasted 30 minutes on average.

These methods combine POEs and ethnographic methods. The work builds on previous ethnographic POE housing studies (Arnold & Graesch, 2002; Arnold et al., 2012; Khajehzadeh & Vale, 2016). A POE focuses on building performance after a period of occupation (Meir et al., 2007; Roberts et al., 2019) and can generate value for municipal governments through learning loops (Brioso et al., 2018). Most commonly, a POE analyses energy consumption, user satisfaction, indoor environment quality, productivity, etc., using defined assessment protocols (Li et al., 2018). On the other hand, exploratory walkthroughs enable the evaluation of spatial efficiency in relation to spatial comfort, circulation, and spatial arrangement (Sanni-Anibire et al., 2016; Seve et al., 2023), complementing user interviews and photographic surveys.

In POEs, outcomes are typically presented through descriptions, pictures, or diagrams, rather than through ethnographic post-occupancy redrawing. However, the redrawing of architectural plans and other projections provides specific knowledge (Jacoby, 2016; Lima & Vieira, 2017) and is an essential tool for architectural and spatial thinking, especially regarding spatial and social relationships (Evans, 1989). If "inhabiting means to leave footprints" (Benjamin, 1972, p. 183), then furniture and objects are more than behavioural elements that allow for the use of space by linking it with its occupants (Bourdieu, 1979; Sanni-Anibire et al., 2016). Thus, "domestic cartography" constitutes the mapping of houses through architectural drawings that include detailed representations of objects and furniture, which act as a projection of inhabitants' subjectivities in space, revealing not only activities but also memories, preferences, identities, and spatial conflicts. In the domestic cartographies presented, any technical or constructive element that the inhabitant does not perceive is expressly erased, while the representation of the dwelling has been extended towards the shared space connected to dwelling access. The direct comparison between what was planned (design project floor plan) and what is being produced (inhabited floor plan), together with the photographic comparison of rooms sharing a common design, occupied differently in dwellings within the same building, facilitates a direct discussion of adaptability, appropriation, and privacy that theoretical research does not permit.

2.1. Case Study Selection

All case studies were municipal housing produced in the period 2015–2023. In 2023, 68.11% of the 13,489 flats proposed by the municipal government were achieved (Table 2). While 5,469 dwelling units resulted from traditional housing models, new models delivered 3,719 units.

There are completed units for all strategies except for the public–private partnership model, which only started in 2021. Vulnerable areas of urban regeneration are not included in this study as they do not add new public housing units. To analyse the remaining five strategies, 16 buildings were selected as case studies

Table 2. The status of the seven strategies in 2023.

Strategy/status	Completed units in 2023 (dwellings or accommodation units)**	With approved planning	Progress (completed and approved)
Traditional strategies prior to 2015			
IMHAB council housing production	1,112	2,610	5,469
Mobilisation of empty housing	1,747	No planning; depends on opportunities, based on the right to first refusal	
New housing strategies after 2015			
IMHAB industrialised council housing production	54	324	3,719
FFZEC Agreement	156	918	
Public–private partnership (Habitatge Metròpolis Barcelona)	0	762	
Retrofitting purchased buildings	1,505	No planning; depends on opportunities, based on the right to first refusal	
Vulnerable areas of urban regeneration	2,306	No planning; depends on vulnerable case detection programmes	No new units*
TOTAL	6,881	4,614	68.11% (9,188/13,489)

Notes: * This strategy serves private communities and individuals who benefit from refurbishment subsidies, thus improving existing housing stock, but does not create new public housing units; ** while "housing" is defined by the national Código Técnico Edificación and regional (Catalonia) habitability (Generalitat de Catalunya, 2012), "accommodation" is regulated by the endowment accommodation (Generalitat de Catalunya, 2014, 2020) and has less restrictive comfort standards designed for short-period stays; progress is calculated as achieved/aimed housing units (based on Ajuntament de Barcelona, 2017). Source: Authors' work based on data provided by the Municipality of Barcelona and the Gerència d'Habitatge in December 2022.

(Table 3). Six case studies with different housing procurement models are analysed in detail in this article, framed by a discussion on their development strategies—traditional strategies (IMHAB council housing production and mobilisation of empty housing)—and new strategies—industrialisation (IMHAB industrialised council housing production), delegated production (FFZEC Agreement and public–private partnership), and refurbishment (retrofitting purchased buildings).

An average of three visits were made for each case: The first two provided an initial contact and generated confidence, and data was collected on the third.

Table 4 specifies the number of visits made, users contacted, and interviews conducted. Depending on the ownership and management scheme of buildings, different methods were employed:

1. Regular rental social housing, with the building managed directly by users: Before any visits were made, IMHAB, the owner, leafleted the building to request user collaboration. This approach proved ineffective,

Table 3. Case studies analysed.

Project and address	Developer	Architects	User		Tenure		Dwelling units	Gestating period (months)	Total area (m^2)	Budget (€)
			User profile	User time of stay	Tenure regime	User regime				
Traditional strategies prior to 2015										
IMHAB council housing production										
Sancho de Ávila II (Infanta Isabel str., 9–11)	IMHAB	Baas—Jordi Badia	General applicants	75 years, renewable	Surface right	Usufructuary	68 units	156	15,196	15,028,844
Glòries (Bolivia str., 45–49)	IMHAB	Bonell i Gil/Peris + Toral	Elderly	5 years, renewable	Rental	Social renting	105 units	114.5	26,740	27,939,918
Can Fabra (Parellada str., 7–11)	IMHAB	Roldán + Berengué	Young people	5 years, renewable	Rental	Social renting	44 units	122.5	4,252	4,677,200
Josep Pla (Pere IV str., 455–457)	IMHAB	Estudi Massip-Bosch	General applicants	Indefinite	Purchase	Ownership	51 units	119	8,919	15,139,000
			Elderly	5 years, renewable	Rental	Social renting	27 units			
Bon Pastor (Biosca str., 17–25)	IMHAB	Pascual–Ausió	General applicants	Indefinite	Purchase	Ownership	61 units	88	11,540	8,649,554
Quatre Camins (Infanta Isabel str., 9–11)	IMHAB	Ravetllat Ribas	Elderly	5 years, renewable	Rental	Social renting	44 units	101	4,833	4,842,565
Tànger (Tánger str., 38–42)	IMHAB	Coll–Leclerc	General applicants	7 years, renewable	Rental	Social renting	47 units	95	5,570	5,995,631
			Social emergency	5 years, renewable	Rental	Social renting	20 emergency shelters			
Mobilisation of empty housing										
Floridablanca (Floridablanca str., 106)	IMHAB	IMHAB technical services	General applicants	7 years renewable	Rental	Social renting	18 units	33	8,748	7,122,182.36
Poble-sec*	Fundación Hàbitat3	Caterina Figuerola	Social emergency	3 years	Surface right	Temporary accommodation	2 units	15	147.87	71,606.00

Table 3. (Cont.) Case studies analysed.

Project and address	Developer	Architects	User		Tenure		Dwelling units	Gestating period (months)	Total area (m^2)	Budget (€)
			User profile	User time of stay	Tenure regime	User regime				
Casa Bloc Residential Home* (de la Residència str., 10)	Fundación Hàbitat3	Estudi fàbric	General applicants	7 years, renewable	Surface right	Social renting	15 units	52	1,120	614,083.18
			Social emergency	5 years, renewable	Surface right	Temporary accommodation	2 units			
Gran de Gràcia*	Fundación Hàbitat3	Fundación Hàbitat3 technical services	Social emergency	3 years	Rental	Temporary accommodation	1 unit	0**	56	0**
Independència (Independència str., 287)	IMHAB	IMHAB technical services	Social emergency	Undetermined	Rental	Temporary accommodation	10 units	0**	620	0**
New housing strategies after 2015										
IMHAB industrialised council housing production										
Allotjaments de Proximitat Provisionals (APROP) Ciutat Vella (Nou de Sant Francesc str., 10)	IMHAB + Municipal Institute of Social Services	Straddle3 + Eulia Arkitektura + Yaiza Terré	Social emergency	5 years, renewable	Surface right	Temporary local accommodations	12 emergency shelters	32.5	816	1,042,402.89
FFZEC Agreement										
La Balma (Espronceda str., 131–135)	Sostre Civic Housing Cooperative	Lacol + laBoqueria Taller	Cooperativists	75 years, renewable	Surface right	Cession of use	20 units	62	2,347	2,725,622.14
Cirerers (Pla dels Cirerers str., 2–4)	Sostre Civic Housing Cooperative	Celobert	Cooperativists	75 years, renewable	Surface right	Cession of use	32 units	69	2,745	3,741,200
Retrofitting purchased buildings										
Encuny (Encuny str., 7)	IMHAB	MSA+A	General applicants	7 years, renewable	Rental	Social renting	114 units	New building, purchased	8,000	5,818,676.89 (purchase prize)

Notes: * The address is kept private upon request of the owner; ** no adaptation works were necessary, the properties were handed over in perfect condition; "tenure regime" refers to the legal framework of the entity that manages the ownership, while "user regime" to users; units are housing unless otherwise specified; the case studies presented in this article are in yellow.

as only 6% of residents had read the information before the first visit. The approach was changed to include an initial "cold call" visit to propose a day to visit the dwelling. A second visit was conducted for data collection. During a third visit, exterior photographs were taken. In some cases, a fourth visit was necessary to complete access to all dwellings.

2. Buildings under professional management (municipality or foundations) or in which users receive municipal social assistance: The person responsible for the management of the building contacted specific inhabitants. A first visit was used for data collection and a second for exterior photographs.
3. Housing cooperatives, where the community is cohesive: First contact was made with the person representing the cooperative, who would share the collaboration proposal with the community. A first visit for data collection was conducted and a second was to take exterior photographs. A third visit was necessary to complete access to all dwellings.

Table 4. Case study fieldwork: Number of visits and method used to access the dwellings (1, 2, and 3 as defined above).

Dwelling	Approach	Number of visits	Contacted users	Interviews (no. edited in video)
Traditional strategies prior to 2015				
IMHAB council housing production				
Sancho de Ávila II	1	4	29	4 (2)
Glòries	2	2	9	5 (2)
Can Fabra	1	3	10	5 (1)
Josep Pla	1	3	23	6 (1)
Bon Pastor	1	3	14	6 (1)
Quatre Camins	2	2	8	8 (2)
Tànger	1	4	20	7 (2)
Mobilisation of empty housing				
Floridablanca	1	3	10	2 (1)
Poble-sec	2	2	1	1 (1)
Casa Bloc	2	2	2	2 (1)
Gran de Gracia	2	2	1	1 (1)
Independencia	2	3	2	2 (1)
New housing strategies after 2015				
IMHAB industrialised council housing production				
APROP Ciutat Vella	2	2	3	3 (1)
FFZEC Agreement				
La Balma	3	3	6	4 (1)
Cirerers	3	3	21	6 (1)
Retrofitting purchased building				
Encuny	1	3	30	5 (2)
TOTAL		44	189	66 (21)

Note: Case studies presented hereafter are shadowed in yellow.

3. Findings

This section presents the six selected case studies grouped by developer: housing developed by IMHAB, delegated developments, and retrofitting purchased buildings.

3.1. Housing Developed by IMHAB

3.1.1. IMHAB

Since 1927, IMHAB (formerly Patronat Municipal de l'Habitatge) has been the municipal developer responsible for the procurement and management of new public housing. New buildings are developed through two public and consecutive competitions for design teams and construction companies. Residents are assigned from the Register of Applicants for Social Housing in Barcelona, the eligibility criteria for which include an income threshold, no registered property ownership, and being a citizen of Barcelona. These criteria were employed to target different groups: general applicants (Sancho de Ávila II), social renting derived from the municipal social services (Tànger building), elderly people (Glòries [Figure 2] and Quatre Camins), young people (Can Fabra), and people relocated due to urban transformation (Bon Pastor).

To increase public housing stock long-term, these homes are offered for rent or through the "right of surface" (users own the flat for 75 years, after which it returns to the public administration, who retain control over the land throughout), but no longer for sale (as is the case elsewhere in Spain). This adds to the complexity of maintenance and management. CEVASA, a leading private rental housing developer in Spain, estimates that the cost of maintenance over 75 years will be equivalent to 140% of build costs, more than doubling the required investment levels.

This strategy is explified with Tànger building (Figure 1) and Glòries case study (Figure 2).

Comparing architects' hypothetical drawings with inhabited situations shows that the day area is occupied very differently from how it was planned. In all cases, the position of the dining table and sofa have been exchanged to move the table closer to the light. The sofa, the living room cupboard, and the TV are much larger than expected, forcing the users to position the couch lengthwise—parallel to the kitchen counter—creating proximity which sometimes results in interference between the kitchen and other daily life activities. The insertion of the gallery, a passive climate control element, reduces the floor area of the room, but also its adaptability and makes it difficult to fit the users' furniture. However, the gallery is also the place that users customise and occupy the most. In the analysed flat, it became the pet's room. Privacy is controlled through different textile elements and objects, both in the access threshold and the gallery.

Observations by the inhabitants, Tànger:

- Neighbourhood scale:
  - Positive opinions:
    - Welcoming existing residents.
    - Process of pedestrianisation of the surrounding public space and proliferation of green areas.

Figure 1. Tànger case study, targeting general applicants and social emergency groups. On the left, the floor plans as built (top) and post-occupancy (below) are presented. On the right, the photographs are by Adrià Goula ([a], in Figuerola & Bilbao, 2023, p. 93) and Maite Caramés ([b, c, d, f], in Figuerola & Bilbao, 2023, pp. 87 [f], 88 [c], 89 [d], 93 [b]; [e] courtesy of Maite Caramés), 2022.

  - Negative opinions:
    - None expressed.
- Building scale:
  - Positive opinions:
    - Originality in the organisation of the common access spaces to the dwellings: They facilitate neighbourly relations and allow activity and visual control at the same time.
    - Use of all building levels: Lobby and corridors for meetings and conversation and deck as a solarium.
    - Aesthetically highly valued: Pride about living in an awarded building.
    - Mutual support network among neighbours.
  - Negative opinions:
    - Dwellings are allocated to people with different life situations, which sometimes results in cohabitation issues.
- Dwelling scale:
  - Positive opinions:
    - Practical and easy daily maintenance: Correct dwelling size.
    - Initial problems adapting to a flat smaller than their previous one; however, they consider it suits their current needs.
  - Negative opinions:
    - Quality and maintenance of some materials could be improved.
    - Dining room and terrace are small when compared to the kitchen.

The uses and furniture layout were not changed upon inhabitation, except for the inclusion of the bidet, added at the request of users. User appropriation is very evident in the photographs, extending along the walls and making the most of the centrifugal plan towards the corners.

Observations by the inhabitants, Glòries:

- Neighbourhood scale:
  - Positive opinions:
    - A feeling of welcome, affection, and care.
    - Good relationship with local businesses, which was highly valued during the pandemic.
    - Very good public transport network.
    - Open and airy spaces, with a good proportion of green areas.
  - Negative opinions:
    - Noise pollution problems at night due to leisure activities.
- Building scale:
  - Positive opinions:
    - Daily interaction with a small number of people.
    - The activities organised by the centre to promote social contact.
    - The infrastructure of common spaces facilitates social contact and the organisation of community activities.
    - Use of the whole building throughout the year.

Figure 2. Glòries case study, designed for elderly people. On the left, the floor plans as built (top, redrawn) and post-occupancy (below) are presented. On the right, the photographs are by Adrià Goula ([a], in Figuerola & Bilbao, 2023, p. 35) and Maite Caramés ([b–g], in Figuerola & Bilbao, 2023, pp. 40 [d, e], 41 [c, f], 45 [b], front page [g]), 2022.

  - Negative opinions:
    - The management of the building is outsourced, which generates: (a) problems with maintenance efficiency; (b) a difficult conversation with the owner, IMHAB; (c) over-bureaucratisation (the need to continuously justify the use of certain common areas).
- Dwelling scale:
  - Positive opinions:
    - They feel cared for.
    - Delighted, perfect for older people: They claim the same quality of proposal for young people.
    - It offers them all the comforts they need. It guarantees privacy or a voluntary relationship with little effort.
  - Negative opinions:
    - None expressed.

3.1.2. Mobilisation of Empty Housing

As a complementary strategy to new construction, in 2005, the municipal government of Joan Clos created a programme of collaboration with private owners of empty homes. Specifically, the aim was to incorporate dwellings that do not comply with habitability requirements, but where owners cannot afford the necessary refurbishment. In exchange for financial support (up to €20,000 per unit), the dwelling becomes part of the public rental stock for three years with a possibility of extension for three more. The administration not only acts as an intermediary but also as a guarantor between private owners and users, offering technical, legal, and social support to both. The dwelling can be managed by the city council (Floridablanca, Independència) or delegated, as in the Habitat3 Foundation's Empty Flats Programme (Poble-sec, Casa Bloc [Figure 3], and Gran de Gràcia). These refurbishments are adapted to different frameworks: For example, Independència works with tourist licences for social renting, providing temporary accommodation for people previously housed by the City Council's Social Services, while Gran de Gràcia provides housing for homeless people as a first step in their rehabilitation.

The uses and furniture layout were not changed upon inhabitation. Remarkably, what changes is the role played by the objects, fabrics, and auxiliary furniture, as well as the intensity of use and occupation of the terrace, equivalent to the bedroom or living room.

Observations by the inhabitants, Casa Bloc:

- Neighbourhood scale:
  - Positive opinions:
    - Easy accessibility.
    - Proximity trade.
    - The activities programmed by the community facilities.
  - Negative opinions:
    - None expressed.
- Building scale:
  - Positive opinions:
    - Peace of mind.

Figure 3. The Casa Bloc case study houses general applicants and social emergency groups. On the left, the floor plans as built (top, redrawn) and post-occupancy (below) are presented. On the right, the photographs are by Adrià Goula ([a], courtesy of Adrià Goula) and Maite Caramés ([b–e], in Figuerola & Bilbao, 2023, pp. 197 [e], 199 [c, d], 201 [b]), 2022.

        - Good coexistence but close relationship with few neighbours.
    - Negative opinions:
        - The building entrance area was not fully refurbished.
- Dwelling scale:
    - Positive opinions:
        - Surface area and distribution appropriate to needs.
        - Easy daily maintenance.
        - To be the first dwellers.
    - Negative opinions:
        - None expressed.

In addition to these two strategies, and given the urgent need for affordable housing, the Government of Barcelona en Comú implemented five new strategies in 2016 (Table 1).

3.1.3. IMHAB Industrialised Council Housing Production

This strategy aims to shorten the duration of public procurement through industrialisation. It has been implemented through two types of projects: public tender for industrialised housing and APROP.

3.1.3.1. Public Tender for Industrialised Housing

As explained by Melero (2023), director of technical services at IMHAB, the existing conventional system of IMHAB council housing production separates the two key agents in the process—the architects and the construction company—which extends the project period and limits technological innovation. A key strategic change since 2020 is to hold a single competition for both design and construction phases, forcing a conversation between architects and building companies and encouraging material and structural innovation.

3.1.3.2. APROP

APROP (Figure 4) housing was created by the Social Innovation team of the Social Services of the Barcelona City Council (not the Housing Department) to provide a provisional solution for evictees, by temporarily (a maximum of five years) relocating them in the same area to preserve their community ties. Given the lack of development plots for housing, this programme provides demountable buildings on plots intended for public facilities. APROP is a model of industrialised housing that aims to shorten construction times and reduce carbon emissions. To overcome restrictions in planning regulation, they are not classified as "housing" but as "accommodation." This distinction is key for the use of containers, as the regulations are less strict in the definition of spaces and minimum dwelling sizes, allowing a minimum usable floor area of 15 m^2 for one-person housing units and 25 m^2 for two occupants, far below the 40 m^2 minimum dwelling standard. Although APROP Ciutat Vella was seen as a suboptimal solution for emergency shelters and caused controversy, the negative connotations of the container were hidden behind a new façade.

Figure 4. APROP Ciutat Vella, proximity social emergency shelters. On the left, the floor plans of one shipping container unit as built (top, redrawn) and post-occupancy (below) are presented. On the right, the photographs are by Adrià Goula ([a], in Figuerola & Bilbao, 2023, p. 115) and Maite Caramés ([b–f], in Figuerola & Bilbao, 2023, pp. 119 [f], 120 [c, d], 121 [e], 123 [b]), 2022.

Observations by the inhabitants, APROP Ciutat Vella:

- Neighbourhood scale:
  - Positive opinions:
    - Tranquillity.
    - Proximity trade.
    - Being able to remain in the neighbourhood.
  - Negative opinions:
    - None expressed.
- Building scale:
  - Positive opinions:
    - Singular appearance.
    - The management and monitoring team.
  - Negative opinions:
    - None expressed.
- Dwelling scale:
  - Positive opinions:
    - Sufficient floor area for needs.
    - Easy daily maintenance.
    - They are not aware of being inside a container.
    - The threshold between the two façade envelopes: A welcoming space that connects with the street.
  - Negative opinions:
    - Area of the dwelling and the small storage area in the single-module housing.

The restricted dimensions of containers restrict user adaptability of the spaces. However, this limitation is addressed by enhancing the external areas. The walkway leading to the accommodation has vegetation and creates a space that fosters social relationships, and the threshold between the two façade envelopes becomes a domestic corner and a privacy control filter.

3.2. Delegated Developments

Aware of its limitations, Barcelona's City Council established a very uncommon collaboration with third-party agents for delegated developments. They involved both the third sector (FFZEC Agreement) and public–private partnerships of limited benefit (Habitatge Metròpolis Barcelona, which has not yet completed any projects). In both cases, the partners act as developers through a "right of surface."

3.2.1. FFZEC Agreement

In 2014, a prototype agreement between housing cooperatives and the municipality was signed under the mandate of Xavier Trias (Carrer Princesa and la Borda), which later became a municipal strategy under Colau's government in 2015 (including Cirerers; see Figure 5). This new system is based on the community land trust model. By keeping a strong link to the neighbourhood, users can be incorporated at the beginning of the design phase, which gives them the opportunity to benefit from their own decisions, support

innovative construction methods (for example, using cross-laminated timber), promote sustainability (environmental strategies), and make typological changes (common areas and spaces). Buildings are understood as social units that foster community development. Hence, housing is designed with a focus on community areas and not individual dwellings, opting for shared-use spaces in the building. This shift requires new design tools and novel typological solutions to comply with regulations conceived for traditional housing units (Avilla-Royo et al., 2021).

The design of the house incorporates common spaces as a natural extension of private space, with generous corridors on each landing where shared objects, such as laundry machines, are placed. Each dwelling unit is designed as an open space where the arrangement of furniture and objects defines the function of each part. In this sense, the inhabited floor plan aligns with the planned one, with the only change being the position of the dining table, now placed in the centre of the space due to the size of the sofa. The terrace has a floor area that allows for a diversity of uses, as evidenced by the number and type of elements found there.

However, in one case, the bed has been moved to the main façade (Figure 5f). Users decided to connect the day area with the collective spaces and to bring the rest to the more private façade. The role of the kitchen as a filtering mechanism between day and night areas may be questioned, but the dimension of the unitary space shows that it permits the appropriation of the space in various ways.

Observations by the inhabitants, Cirerers:

- Neighbourhood scale:
  - Positive opinions:
    - A politically aware neighbourhood with proactive people.
    - Proximity to the mountains, better air quality.
    - Sound comfort, bird sounds.
    - Ideal place to grow old.
    - Ground floor dedicated to community activities linked to the social and solidarity economy.
  - Negative opinions:
    - None expressed.
- Building scale:
  - Positive opinions:
    - A way of life manifesto.
    - They were able to participate in its strategic development and co-design.
    - It is designed for community, with well-sized communal spaces.
    - Open to the neighbourhood: It is implemented with respect for its morphology.
    - It fosters relationships that consolidate a community that cares.
  - Negative opinions:
    - None expressed.
- Dwelling scale:
  - Positive opinions:
    - Fulfils everything they need: Adequate private area that complements the communal area.
    - Solutions to housing problems are addressed collectively.
    - The door is almost always open.

Figure 5. Cirerers cooperative housing case study. On the left, the floor plans of one shipping container unit as built (top, redrawn) and post-occupancy (below) are presented. On the right, the photographs are by Adrià Goula ([a], in Figuerola & Bilbao, 2023, p. 149) and Maite Caramés ([b–f], in Figuerola & Bilbao, 2023, pp. 152 [e], 153 [d], 154 [c, f], 157 [b]), 2022.

        - The community facilitates comfort.
    - Negative opinions:
        - None expressed.

3.3. Refurbishment

To complement the mobilisation of the empty housing strategy, two types of programmes were created: retrofitting purchased buildings and vulnerable areas of urban regeneration. The refurbishment strategies start by assessing the state of buildings that, due to a lack of legal obligations or regulations, have not been maintained by owners and tenants. While retrofitting purchased buildings operates at a building scale, vulnerable areas of urban regeneration projects address both the condition of housing and nearby public space without creating new public housing.

3.3.1. Retrofitting Purchased Buildings

In 2016, the City Council developed a new strategy to purchase and refurbish housing, facilitated through IMHAB. This approach is based on the right of first refusal and the "extraordinary and urgent measures for the mobilisation of housing resulting from foreclosure processes" (Generalitat de Catalunya, 2015). To enhance the positive social impact, priority was given to poorly maintained buildings with socially or economically vulnerable inhabitants or areas affected by gentrification processes—An example is Raval, a complete microsurgical refurbishment of a building with 17 dwellings. On the other hand, Encuny (Figure 6) exemplifies the purchase of a newly built—but never inhabited—student residence equipped with communal spaces.

Observations by the inhabitants, Encuny:

- Neighbourhood scale:
    - Positive opinions:
        - None expressed.
    - Negative opinions:
        - They are on the edge of an industrial area, with no housing nearby.
        - 10 years have passed without services or local commerce.
        - Streets with very little traffic; feeling of insecurity.
- Building scale:
    - Positive opinions:
        - None expressed.
    - Negative opinions:
        - Virtually no relationships between neighbours.
        - Conflict between neighbours: Complicated personal situations.
        - They have never been able to access the outdoor common areas.
- Dwelling scale:
    - Positive opinions:
        - Perfect floor area and layout for a single-person.
        - The price they pay for rent.

Figure 6. Encuny case study. On the left, the floor plans of one shipping container unit as built (top, redrawn) and post-occupancy (below) are presented; although designed as a student residence, the access corridor as relational space was minimised. On the right, the photographs are by Adrià Goula ([a], in Figuerola & Bilbao, 2023, p. 106) and Maite Caramés ([b–e], in Figuerola & Bilbao, 2023, pp. 108 [b, d], 109 [c, e]), 2022.

    - The duration of the contract
- Negative opinions:
    - Difficult for two people to live together.
    - Over-connected areas.
    - Lack of privacy between the bedroom and the day area; doors to partition the home are needed.
    - Lack of balconies/terraces.

On the inhabited floor, the staircase has been removed as the lift is used almost exclusively. From there to the entrance of the house, the size of the corridors is reduced, which prevents informal encounters. As stated by inhabitants, the lack of visual and acoustic filters between the day and night areas negatively affects coexistence when there are two occupants. The mapped dwelling is inhabited by a single person; it is an extreme case of individuality with no dining table. In this case, the spatial continuity between day and night areas is positive: Even the passageways are occupied by objects and the continuous perimeter of the façade is filled with furniture and objects. A large part of the activities has naturally shifted to this perimeter.

The flats were allocated to dwellers with diverse profiles and lifestyles, resulting in minimal coexistence and, in many cases, conflicts, prompting IMAHB to classify communal areas as contentious and order their closure, although some users propose to open them. This is the only case study with a permanent security guard who conducts twice-daily inspections.

4. Discussion

4.1. Urban Layout

A mapping of housing strategies in Barcelona reveals the implementation of affordable housing policies across all districts, avoiding the concentration of developments in peripheral or low-income areas (Figure 7). However, depending on local needs or land availability, specific strategies are more prevalent in some neighbourhoods, highlighting the adaptability of strategies to the specific neighbourhood needs or context. For instance, in the vulnerable areas of urban regeneration, 78% of the 2,306 units are concentrated in three districts: 748 in Sant Martí, 650 in Nou Barris, and 402 in Sant Andreu. Over 80% of 3,722 units planned for new IMHAB development are in five of the 10 districts involved: Sant Andreu (877), Sant Martí (773), l'Eixample (572), Sants-Montjuïc (476), and Nou Barris (427), in contrast with other areas such as Les Corts (68) and Sarrià-Sant Gervasi (57). The planned IMHAB industrialised council housing production (378) is mostly concentrated in the districts of Sant Andreu (126) and Sant Martí (193).

All projects have been built in the compact city except Encuny, where users have been critical of their loose and fragmented urban fabric. An important consideration at the urban scale is the potential for a positive relationship between the building and its surroundings. In this context, users acknowledged that the neighbourhood completed their habitat, especially in the case of the elderly in Glòries and Casa Bloc, where local shops and services provided daily amenities and personal care. In this respect, the function allocated to the ground floor of social housing schemes is essential. Ground-floor dwellings generate a hermetic façade relationship to the surroundings due to privacy problems, but when facilities or common areas are located on the ground floor, it becomes a positive driving force for the neighbourhood, as in the case of the Glòries

Primary Care Centre, cooperative commerce in Cirerers, or the municipal service office in APROP Ciutat Vella or Tànger.

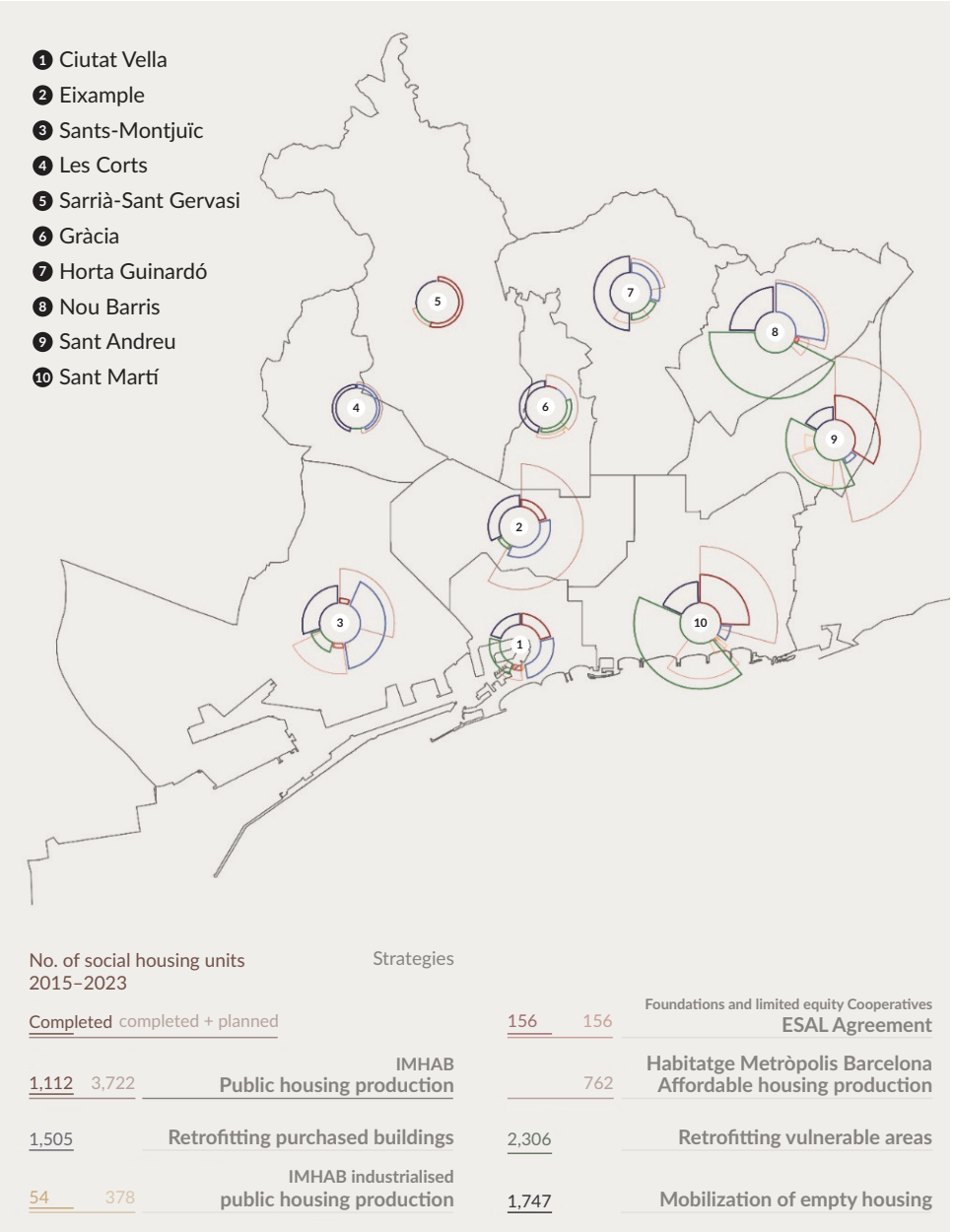

Figure 7. Affordable housing policies in Barcelona, organised by the 10 administrative districts of the city.

4.2. Timeline

A timeline (Figure 8) was used to analyse the time required to analyse the time required to produce housing under each of the available procedural frameworks, both in total and by phase. The new insight that this analysis provided was highly appreciated by the municipal government and housing agencies. As evident, the economic crisis of 2008 and the Covid-19 pandemic in 2020 clearly delayed ongoing processes. Concerning IMHAB council housing production, the standard period from project start to handover is almost

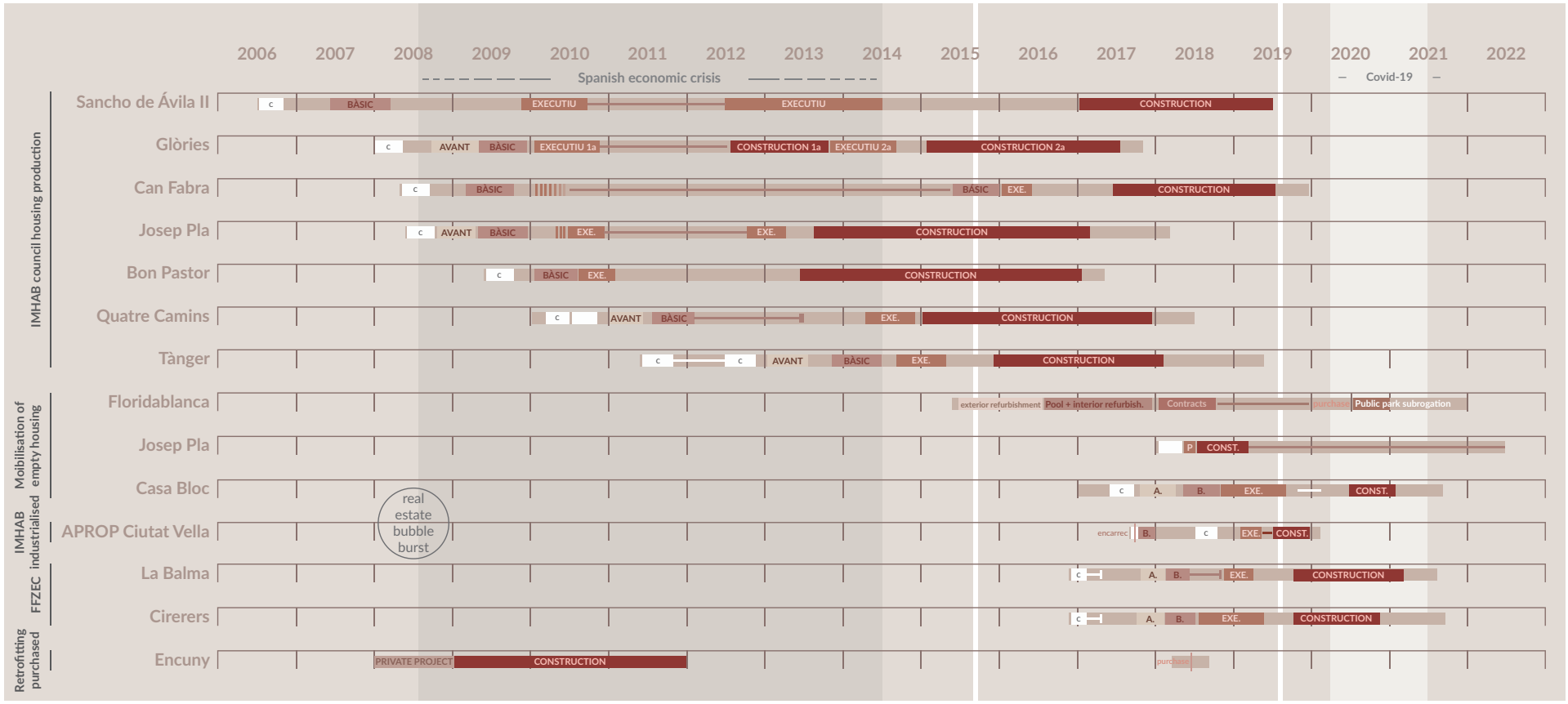

Figure 8. Timeline of the 16 buildings presented as examples of the five strategies. Notes: The cases of Gran de Gràcia and Independència are not shown because they did not involve construction work. *Avantprojecte*, *Projecte Bàsic*, and *Projecte Executiu* are the names of design stages in Spain.

10 years. This is not much more efficient than cooperative housing production which is often criticised for longer project periods due to the involvement of users in decision-making processes. However, delegated production (cooperative housing buildings La Balma and Cirerers) shortens the lead time to five years, and employing industrialised systems reduces lead times to three years, reducing the strategic and design development period by 35% (Melero, 2023). Refurbishment strategies can vary from the minimum time of purchase management (a few months; Encuny) to four to six years in the case of comprehensive refurbishment (not analysed in this article).

4.3. POE

4.3.1. User Priorities

This study highlights the importance of incorporating users and lifestyles in the evaluation of housing policies. Methodologically, the open questions in the interview allowed users to focus on what they considered most important.

At the neighbourhood scale, users highlighted the importance of a compact city and connection with facilities. Representative cases are Glòries, where the neighbourhood offers care services to the elderly residents, or APROP Ciutat Vella, which allows residents to be rehoused in their neighbourhood until permanent housing is found.

At the building level, users first highlighted the importance of common spaces and the extension of the dwellings towards shared areas. Secondly, they emphasised the possibility of relationships with neighbours and the ability to socialise with them, along with the need for privacy control. Cirerers is the most extreme case in this regard, as users perceive their private space as a complement to the communal space. In intermediate situations, such as Tànger, communal access areas serve as a place for relationships to be cultivated and remind inhabitants of building typologies that previously characterised the neighbourhood. A negative example is Encuny, which meets all desirable standards but suffers from community conflicts. This shows that the home extends beyond the front door and that the context—community, neighbourhood—in which the home is located is crucial.

At the dwelling level, the most commonly valued quality was the peace of mind from having their basic housing needs met. The adequate number of rooms per floor and dimensions of the space were also valued. The elderly in Glòries and residents of Tànger appreciate the little effort and time needed to keep their homes tidy and clean. Interestingly, the comments on aesthetics (“pretty” and “ugly”) were not significant; instead, emphasis was placed on the practicality of cleaning and maintenance of the materials.

It is worth noting that the only case which did receive criticism was Cirerers. Since users were involved in the project since the strategic development phase, they could anticipate—and address—future problems.

4.3.2. Researcher and Developer Priorities

An important issue in affordable housing provision is adaptability, which was analysed using post-occupancy plan drawings. Of the case studies presented here, apart from APROP Ciutat Vella, the most inflexible scheme

is Tànger, where the inhabitants are restricted in uses and furniture layouts by the limited floor areas and narrow dimensions. In contrast, Glòries and, to a lesser extent, Encuny have more generous floor areas that are organised circularly, which changes the perception of the space. All case studies assign a use to each space derived that correlates with standard dimensions. The exception is Cirerers, which allows inhabitants a freer appropriation of the flat, enabling them to sectorise the dwelling according to their preferences. Remarkably, no user asked for more space or an extra room in their dwelling. Other issues that have not been addressed but have been the subject of academic analysis include the gender perspective, the clothing cycle, the food cycle (Falagán, 2019a), the incidence of geometric formalisation, technological adequacy, hierarchisation of rooms, work and storage spaces, resource management, and energy use (Montaner et al., 2013).

5. Conclusions

The study evidences the importance of housing strategy diversification, which has led to a considerable increase of 68% in the number of housing units developed in Barcelona. However, housing procurement has been slower than expected, partially explained by the Covid-19 pandemic, but with an overall progress rate reaching 68.11% of the housing target numbers (9,288 out of 13,489 units). A diversification of housing strategies increased the number of stakeholders, such as delegated promoters (foundations, housing cooperatives, private developers), and made it possible to provide a greater range of homes serving diverse user needs, leading to new legal and technical processes. Additionally, these new strategies opened the possibility of experimentation in construction (industrialisation, new materials such as cross-laminated timber, reuse of containers), typology (shared spaces in cooperative housing), and post-occupancy management (self-management in housing cooperatives). Now that some of the initial administrative and logistical challenges of designing and launching new housing models have been overcome, it is reasonable to expect an acceleration of housing production by the new procurement strategies if policies are continued. However, the targets set out by the municipality may not be fully achieved.

At an urban scale, social housing was delivered through different strategies in all city districts and integrated social housing within the existing city. This has fostered synergies between existing and new users and activities. Coupled with high-quality design and construction, this approach has prevented the stigmatisation of social housing and created a sense of pride and belonging among users.

Barcelona's restricted possibilities for urban growth have limited the availability of land for new public housing. In 2015, it was estimated that Barcelona could only build 20,000 new social housing units (Ajuntament de Barcelona, 2017). In the next few decades, Barcelona will inevitably have to shift towards the refurbishment and incorporation of private housing to generate a supply of affordable homes, for which the current strategies are setting the groundwork. The accommodation of specific user needs is important, particularly for vulnerable groups. In parallel, it will become imperative to address the metropolitan dimension of housing, considering the impacts of placement and distribution in terms of land use and mobility infrastructure. This raises the challenge of scalability of strategies currently implemented in Barcelona (1,600,000 people as of 2019) to its metropolitan area as a whole (36 municipalities, 3,300,000 people).

Regarding research methods, the results achieved emphasise the importance of using a mixed methodology approach that incorporates expert analysis and ethnographic work, as well as understanding housing as a process and therefore, requiring evaluation of both its strategic and design phase and inhabitation stage.

This approach to housing as a process is something that this research seeks to underscore. The various methods employed have provided complementary information and enabled conclusions to be drawn about the design process and procedural decisions. In addition, they provide insights on which to base a series of recommendations for developers, policymakers, and designers, as follows.

5.1. Neighbourhood Scale

Choosing the right location for social housing is paramount in establishing a positive mutual impact between the building and the neighbourhood. A concentration of public housing in expanding neighbourhoods, situated on municipal peripheries should be avoided.

The ground floors of social housing blocks should be reserved for the provision of related public or communal activities (with a positive urban impact) rather than dwellings which often have privacy problems.

5.2. Building Scale

Users have a strong desire to connect with each other through shared spaces (Bon Pastor and Tànger). The common distribution of two dwellings per landing, traditionally aimed at minimising spaces for socialising, should be avoided. Generous corridors enable informal social contact and can host complementary domestic activities, but privacy should be maintained.

Furthermore, roofs (*terrats*) can be recovered as communal spaces for collective use (Glòries) and provide for functions such as laundry, leisure, and rest.

Incorporating areas for shared activities and uses scattered throughout the building makes them more accessible to all neighbours (Cirerers).

The social mix of inhabitants should be considered before inhabitation (Encuny) and, to facilitate better coexistence, temporary support by social services should be included (APROP).

5.3. Dwelling Scale

The comparison between the hypotheses of use in the architect's floor plans and the inhabited floor plans allows for several conclusions to be drawn. Housing should encourage greater flexibility of appropriation. In most cases, the position of the bed is fixed within the room, as is the position of the sofa in the living room. Floor areas and dimensions should be increased to accommodate different uses and layouts. Areas with uses left undefined are important, as they remain open for user interpretation and enable unexpected activities.

In the design development phase, there is a tendency to include very few pieces of furniture and objects in planning drawings, which actually shape possibilities for different activities and uses of space. Seating furniture drawn by architects is limited to chairs, sofas, and armchairs. However, benches, chaise-longues, pouffes, and many other pieces of furniture are what residents actually own and use.

The small furniture that is commonly drawn in plans during the design phase does not match reality. The sofas and TVs chosen by users are often very large. These findings bear similarities to past observations concerning the size of parking spaces, where regulations have been adapted to accommodate larger cars. In the same way, the size of living rooms should be reviewed.

The relationship between the kitchen and the dining room should be open to adaptation by users and include movable elements. A closed and separated kitchen reduces opportunities for interaction within the home, while a completely open kitchen conditions the space with its presence (activity, noise, smells).

Regulations should stipulate the provision of a space for drying clothes, which should be outside but unseen from the street. In the case studies presented here, observations of such spaces included insufficient sizing (Tànger) and difficulty or discomfort of access (Glòries). In Cirerers, some flats opt for a folding clothesline, which is placed on the terraces in the sun and takes up space, despite the large communal clothesline in front of the flats.

Regulations should also consider outdoor spaces (such as terraces and balconies) and intermediate spaces (such as galleries) as essential. These should be big enough to be considered exterior or semi-exterior rooms. These spaces should contain elements that enable users to control their privacy and exposure to weather.

There is a lack of space to facilitate the maintenance of the house, such as storage space for cleaning equipment and a washing area to accommodate large items (bags and backpacks, shoes, etc.). This space could be individual or collective if provided per floor.

Pets live in over half of the visited flats, a reality not contemplated by developers nor by the regulations, which should be revised. Each dwelling should have allocated storage space, which could be located in the common areas of the building.

As a final thought, it is important to show gratitude to users who have been involved in the research and, indirectly, improved housing policies. In the case of this research, they did so selflessly, with the main expressed motivations of having professional pictures and a post-occupancy drawing of their house and leaving their testimony. Each of the 66 users was given a copy of the book by Figuerola and Bilbao (2023) in which they could find their portrait and their home redrawn.

As future steps, we propose a re-analysis of these case studies to include topics that we consider important, such as gender perspectives, energy and waste management, the food and cooking cycle, and the clothing cycle. Given that users can be swayed by market norms which overlook issues that experts consider crucial, pedagogical activities are key to bringing users into conversations about the value of qualitative spatial dynamics and ways to claim them as fundamental for their living spaces.

Finally, these case studies should be re-evaluated in 10 years to understand their evolution and include cases that are currently in the strategic planning and development phase. Additionally, a typological and qualitative follow-up analysis of the dwellings would allow us to compare and discuss the standards of each strategy.

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

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Compact Housing for Incremental Growth: The K206 RDP Project in Alexandra, Johannesburg

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Abstract

The South African Reconstruction and Development Programme (RDP) was initiated to provide subsidised housing for low-income families. However, the programme faced challenges in establishing adequate technical guidelines and standards, resulting in subpar housing quality. This article discusses the multifaceted nature of subsidised housing design, emphasising the importance of incorporating technical housing standards as well as the spatial needs of residents based on their context (at both domestic and neighbourhood scales). The article focuses on the K206 housing RDP project in Alexandra, Johannesburg, as a case study that transitioned from generic technical standards to a resident-responsive design scheme that was inspired by the backyard room incremental expansions that were already prevalent in the Alexandra context. A critical review of South Africa's RDP housing design technical standards and policy is explored. The article also examines the density standards and allowances for incremental expansions introduced by the K206 project, analysing data derived from fieldwork observations, interviews, and the spatial analysis of 26 dwelling units. The study's findings underscore the significance of maintaining an equilibrium between technical standards and resident-responsive design decisions. The results demonstrate that tailoring the RDP housing design solutions to unique contextual needs can significantly elevate the quality of life of residents concerning income generation and flexibility for incremental expansion. However, this balance is delicate and disparities between the RDP technical standards and user-initiated development over time also have the potential to ultimately impair residents' living spaces.

Keywords

incremental housing; Reconstruction and Development Programme; South Africa; subsidised housing; technical norms; technical standards

1. Introduction

South Africa's Reconstruction and Development Programme (RDP), launched in 1994, aimed to provide fully subsidised state housing for low-income households following the country's independence. However, the programme encountered significant challenges in establishing adequate technical guidelines and standards, resulting in subpar housing quality, encompassing materials, design, and workmanship (Arrey, 2016; Lokko, 2013; Manomano et al., 2016; Mbatha, 2019). Tasked with the formidable responsibility of swiftly delivering housing to millions of low-income households within tight timeframes, the state hurriedly erected thousands of housing structures with insufficient attention to design and material quality.

The concept of subsidised housing design is multifaceted and varies across regions, with each country crafting its housing classifications based on constitutional practices, policies, and tenure preferences (Ozer & Jacoby, 2022; Susanto et al., 2020). Subsidised housing design is cost-sensitive, but international technical housing standards have been established to create a baseline for design standards (Gallent et al., 2010; Ishak et al., 2016; Ozer & Jacoby, 2022; Susanto et al., 2020). Ozer and Jacoby (2022) argue that these standards often revolve around minimum space requirements based on factors such as the number of bedrooms, the number of occupants per dwelling, or the functionality of the space.

In addition to technical housing standards, it is equally important for housing to reflect its sociocultural context and the spatial needs of its residents. Housing should consider the everyday life patterns unique to its inhabitants to complement, rather than hinder, their lifestyles (Canizaro, 2007; Frampton, 1983; Rapoport, 2000; Simone, 2004; Turner, 1976). Therefore, a critical approach to subsidised housing should incorporate technical housing standards, sociocultural context, and the spatial needs of the residents.

In South Africa, the most prominent form of subsidised housing is RDP housing, which is a programme fully subsidised by the state. This programme was a response to apartheid inequalities and an overhaul of previous state-funded and public housing norms and technical standards (Arrey, 2016; Greyling, 2009; Hickel, 2014; Hlatshwayo, 2016; Linstra, 2016). Although the South African government has undertaken initiatives to improve technical housing standards for subsidised housing during the democratic era, these enhancements have not effectively catered to the spatial requirements of residents (both the individual household and neighbourhood levels) in RDP housing designs, including the backyard rooms incrementally added by the residents to the original houses provided by the state. This inadequacy becomes apparent in the insufficient emphasis placed on the importance of state-subsidised housing being responsive to the sociocultural context and needs of residents across key technical standards in South Africa (CSIR, 2000; Department of Housing, 1994a; Department of Human Settlements [DoHS], 2004, 2009, 2014; National Upgrading Support Programme, 2015; National Planning Commission, 2012; Republic of South Africa, 1995). Despite policy improvements over time, a significant number of housing developments have suffered the consequences of inadequately built RDP houses, and because of this, the primary emphasis of RDP housing has been to meet technical housing standards, overlooking a more contextually responsive solutions to the residential preferences of its users. This results in mass housing that fails to meet the contextual requirements of its residents (Arrey, 2016; "Hundreds of RDP houses in Ekurhuleni to be revamped," 2008; Lokko, 2013; Manomano et al., 2016; Ntombela & Jili, 2020). Moreover, there is a lack of constructed instances and literature documenting RDP housing projects that have incorporated design strategies responsive to the local residents' aspirations.

In examining the complexities associated with subsidised housing in South Africa, particularly the lack of contextually responsive RDP housing projects, this article focuses on shedding light on the K206 housing project in Alexandra, Johannesburg. This initiative represents a departure from the conventional approach to state-subsidised housing, which often neglects design responsiveness to residents' needs and aspirations.

The K206 project addressed the spatial needs of its residents by incorporating Alexandra's backyard room culture, which supported incremental housing expansions initiated by the residents themselves. Backyard rooms in Alexandra play a crucial role in meeting the additional space requirements for RDP housing, which is typically too small for many families. Additionally, these rooms serve as rental spaces, providing a source of income for homeowners (Bank, 2007; Bonner & Nieftagodien, 2008; Harrison et al., 2014; Howe, 2020; Poulsen, 2010; Shapurjee & Charlton, 2013).

The K206 project, designed as a medium-density housing scheme, utilised cluster formations, innovative layouts, and units incorporating both single-storey and double-storey sections to address residents' aspirations. The most prevalent housing type of the scheme was specifically designed with additional backyard rooms, increased density, and provision for incremental housing expansions that aligned with residents' aspirations. The central research question guiding the exploration for this article is: How can a housing design approach be responsive to residents' aspirations and enhance subsidised housing design beyond mere technical standards?

The article will proceed to delve into the methods section, followed by an examination of the technical housing standards governing RDP housing. Subsequently, the exploration will shift to evolving densities and incremental housing in Alexandra township before delving into the resident-responsive design innovations of the K206 RDP project before its conclusion.

2. Methods

This research utilised a mixed-methods approach, integrating both a comprehensive literature review and an examination of housing technical standards. Furthermore, interviews were carried out with K206 management and industry experts to establish the historical context of the case study and RDP housing protocols. A spatial analysis of the incremental growth of standardised RDP units in Alexandra was performed as a benchmarch for comparative analysis. Additionally, interviews were conducted with K206 residents and spatial analyses were undertaken to understand the incremental expansion of their homes.

A comprehensive review of technical housing standards in South Africa was carried out (see Table 1). The study also included an analysis of standard RDP housing types and incremental expansions (Figure 2). Furthermore, a comparison of design strategies between standardised RDP units and the K206 unit was explored (Figure 3). An analysis of the incremental expansion of the K206 unit was conducted (Figure 4), highlighting the unique context-responsive design of the K206 project that accommodated incremental expansion and density.

The mixed-methods approach encompassed data collection from diverse sources on technical housing standards and policies, including policy documents, the national building code, human settlement guidelines, academic literature and input from K206 project management, and construction industry experts (a total of

seven interviews). To understand the RDP housing landscape and its transformation, policy documents were studied alongside industry expert interviews.

For an in-depth understanding of the case study, 26 resident interviews, spatial surveys, and analyses of 26 K206 dwelling units were conducted and comprehensive data collection aimed to analyse the potential for the incremental development of the K206 units.

Given the focus of this study on contrasting two sets of RDP design approaches—one without contextual considerations (standard RDP typology) and the other complemented by resident-responsive adjustments accommodating density and incremental expansion (K206 model)—an analysis of standardised RDP house plans and a survey of the K206 unit were conducted in Figure 5, inspired by expansion illustrations included in Susanto et al. (2020). The formulation of Figure 5 aimed to identify differences in incremental expansion potential and density in spatial planning when contrasting standard RDP typologies with those of the case study.

3. RDP Housing Technical Norms and Standards

RDP housing emerged from the 1994 RDP policy framework, designed to provide fully subsidised housing for low-income households (Department of Housing, 1994b). Initially characterised by minimal technical norms and standards, the policy landscape underwent a significant transformation with the introduction of the National Home Builders Registration Council in 1997, and in 2004, the introduction of the Breaking New Ground (BNG) strategy (a strategy to improve RDP housing) that moved from a focus on housing only to a focus on sustainable human settlements (DoHS, 2004).

The RDP policy, established in 1994 within the framework of South Africa's new democratic constitution, was rooted in the six fundamental principles of integration and sustainability, people-driven processes, peace and security, nation-building, meeting basic needs and infrastructure, democratisation, and assessment and accountability (Department of Housing, 1994b). RDP housing materialised as a government initiative to provide fully subsidised housing and services to South African citizens facing housing needs. Despite the noble intent, RDP housing has encountered extensive criticism and scrutiny. Concerns have been raised regarding corruption, mismanagement in allocation, inadequate house sizes, subpar housing materials, design deficiencies that include repetitive mass housing design with little attention to the diversity of typology, challenges in service provision and maintenance, suboptimal project locations, limited stakeholder and beneficiary involvement, tenure insecurity, unemployment, and instances of housing beneficiary misuse (Arrey, 2016; Dugard, 2020; Greyling, 2009; Makgobi et al., 2020; Manomano et al., 2016; Moolla et al., 2011; Sekoboto & Landman, 2019).

Following the implementation of the BNG strategy in 2004, several changes were implemented such as more central locations for housing. Furthermore, the criteria for RDP housing eligibility were refined to include South African citizenship, marital status or cohabitation with a partner, financial dependents, a monthly household income not exceeding R3,500 (approximately €200), and qualification as a first-time government subsidy recipient, first-time homeowner, or single military veteran without financial dependents (DoHS, 2022). Applicants were required to apply through a housing waiting list system. The BNG policy aimed to foster sustainable human settlements over providing only housing provision in

isolation of the human settlement they were located in. In parallel, technical norms and standards for RDP housing were raised.

After the BNG policy, substantial improvements were made to technical housing standards concerning housing design, as detailed in the *Housing Code* (DoHS, 2009) and updates of the *Red Book* (CSIR, 2000; DoHS, 2019). These standards became more explicit and comprehensive. Table 1 shows the technical standards of RDP housing.

Table 1 demonstrates, except for a handful of established standards, South Africa's technical housing standards, particularly those related to subsidised RDP housing which are largely centred on minimum space standards and passive heating and cooling systems. These standards lack specificity and fail to adequately address the context-related diverse design needs of the residents in these developments. While certain standards, such as minimum size requirements and housing ventilation, are useful, the emphasis on passive heating and orientation, often reinforced by a grid-based road system, has resulted in a dearth of neighbourhood character within stereotypical grid RDP layouts.

Table 1. Summarised architectural technical housing standards and guidelines of subsidised RDP housing.

Design-based technical standard theme	Elaborated architectural technical housing standards and guidelines
House sizing	The *2009 National Housing Code—Part 3* document from the DoHS establishes the minimum size of a house at 40 m^2 (DoHS, 2009, p. 25). According to the same document, the minimum room design standards encompass two bedrooms, a separate bathroom with a toilet, shower, and hand basin, and a combined living area and kitchen with a sink (DoHS, 2009, p. 25). For walls, the requirement is a minimum of 140 mm cement masonry units, as detailed in Section F.1(a) (DoHS, 2009, p. 29). Additionally, wall lengths and heights must conform to the specifications outlined in as indicated in the 2022 document from the South African Bureau of Standards (2022, pp. 75, 79). The DoHS mandates a minimum ceiling height of 2.4 m, as specified in Section J (DoHS, 2009, p. 31). This requirement is supported by the South African Bureau of Standards (2022, p. 52) in Section CC3.2. Moreover, the minimum slope level is governed by *SANS 10400* (South African Bureau of Standards, 2022, p. 90).
Lighting and ventilation	The *2009 National Housing Code—Part 3* document from the DoHS outlines requirements for lighting and ventilation in habitable rooms, bathrooms, shower rooms, and rooms containing a WC (DoHS, 2009, p. 32). According to this document, these rooms must be equipped with means of lighting and ventilation that allow for their intended use without compromising health and safety or causing nuisance. The minimum window area (light area) for each habitable room, including kitchens, is specified to be between 5% and 10% of the total floor area. Additionally, the document establishes that 5% of the floor area, with one opening having an area of at least 0.1 m^2, should constitute the minimum area of openable windows or controllable ventilation openings for each habitable room, including kitchens. Further details on window and ventilation positioning for optimal ventilation and light are also provided (DoHS, 2009, p. 32; South African Bureau of Standards, 2022, p. 102). Window positioning requirements are additionally governed by *SANS 10400* (South African Bureau of Standards, 2022, p. 98).

Table 1. (Cont.) Summarised architectural technical housing standards and guidelines of subsidised RDP housing.

Design-based technical standard theme	Elaborated architectural technical housing standards and guidelines
Thermal efficiency	The *2009 National Housing Code—Part 3* document from the DoHS emphasises guidelines for dwelling orientation (DoHS, 2009, p. 35). According to this document, the longer axis of the dwelling should be oriented as close to east/west as possible. The plan of the dwelling should be compact, with the rooms that are most frequently used and the major areas of glazing strategically positioned on the northern side of the building. This arrangement is designed to facilitate the penetration of solar heat through the glazing during the winter months. Furthermore, the document stipulates that the roof overhang on the northern wall should be sufficient to shade the windows from midday summer sunshine. Additionally, windows facing east and west should be limited in number and confined in area to the minimum necessary for daylight and ventilation. These guidelines for dwelling orientation and window placement are in accordance with the standards outlined by the South African Bureau of Standards (2022) document, specifically in Chapter XA.
Sustainable design considerations	The *2009 National Housing Code—Part 3* document from the DoHS discusses energy-efficient housing considerations (DoHS, 2009, p. 37). According to this document, energy efficiency in housing is predominantly influenced by natural elements such as the sun, wind, and rain. Consequently, to optimise the impact of these natural forces on buildings, careful attention must be given to the planning, location, and orientation of the housing. On a micro-level, the layout of the house also plays a crucial role in maximising the influence of climatic forces, as outlined in Section 2.3.1 of the DoHS (2009) document.
House plan and layout	The *2009 National Housing Code—Part 3* document emphasises specific design considerations for housing (DoHS, 2009, p. 38). The plan of the house should be crafted to maximise interior space while minimising exterior wall area, which is prone to heat loss in winter. To enhance energy efficiency, living spaces should be strategically arranged, with rooms where people spend the majority of their time situated on the northern side of the unit. Uninhabited rooms, such as bathrooms and storerooms, can serve as screens for unwanted western sun or act as barriers to prevent heat loss on south-facing facades. Ideally, living rooms and kitchens should be positioned on the northern side. In accordance with the general considerations outlined in Section 2.4.3 of the DoHS (2009, p. 45) document, all housing units should incorporate robust insulation measures to further ensure energy efficiency.
General considerations	The *2009 National Housing Code—Part 3* document underscores a general consideration for housing units (DoHS, 2009, p. 45). It mandates that all housing units must incorporate effective insulation measures to guarantee optimal energy efficiency.
Average size of typical RDP stand size	The sizing typically aligns with town planning standards for standalone RDP housing, as indicated by Harrison et al. (2014, p. 356) and corroborated by the City of Johannesburg (2018) and information provided by M. Jackson in a personal communication (2023, October 3).

Table 1. (Cont.) Summarised architectural technical housing standards and guidelines of subsidised RDP housing.

Design-based technical standard theme	Elaborated architectural technical housing standards and guidelines
Enhancing the housing product	The BNG strategy by the DoHS (2004, p. 23) elaborates on enhancing the housing product: • Enhancing settlement design: Enhancing measures and incentives to include design professionals at planning and project design stages, and develop design guidelines for designers and regulators to achieve sustainable and environmentally efficient settlements. This is aimed at promoting the development of a dignified size of housing that supports the morality of family and society. • Enhancing housing design: Enhance the traditional technologies and indigenous knowledge which are being used to construct housing in rural areas. There is a need to focus on changing the face of the stereotypical RDP houses and settlements through the promotion of alternative technology and design. • Addressing housing quality: Audit and develop a programme to address the poor quality of houses built before the introduction of national norms and standards (DoHS, 2004, Section 3.7).

In addition to the *National Housing Code* and BNG policy, the *Red Book* series was introduced to address various neighbourhood-scale issues, encompassing considerations for road and block design options, public walkways, environmental factors, parking areas, public squares, pedestrian streets, and spatial dimensions. However, these guidelines also remained relatively broad and did not offer practical insights. For example, one guideline suggested the need to "ensure an appropriate sense of enclosure that is on a human scale and fits into the context within which the space is situated" (CSIR, 2000, p. 7).

The predominance of stereotypical grid-based RDP housing, coupled with a lack of diversity, lack of attention to building scale, and lack of public–private building transitions and public amenity design, reveals that the *Red Book* series, despite its intentions, lacked accessibility in translating its guidelines into actualised developments. These standards and guidelines also failed to provide tools, insights, or a necessity for the integration of spatial design in low-income areas. They did not offer insights on specifically creating RDP developments that are responsive to the everyday needs of residents and the characteristics of their surroundings. Context-responsive design, as described by Canizaro (2007) and Frampton (1983), is a fundamental architectural design principle that is not substantially addressed in South African technical standards and is something that is greatly missing in our low-income housing design guidelines.

Furthermore, a significant body of urban design literature underscores the pivotal role of spatial and social community development as well as safety. Advocates have called for more resilient and sustainable neighbourhood designs that prioritise safety through enhanced visibility, smaller building clusters, diversity, and multifunctional housing typologies (Alexander, 1977; Bibri & Krogstie, 2017; Jacobs, 1961; Meerow et al., 2016). While the *Red Book* national guidelines on human settlement and neighbourhood planning and design have started exploring these principles, these guidelines have yet to be grounded in the South African context. A national policy that addresses the specific challenges faced by low-income and RDP neighbourhoods on a neighbourhood scale or that caters to residents' experiences through design is (still) missing (DoHS, 2014, 2019). Even though the BNG mandate aimed to transform RDP housing (DoHS, 2004),

there has been no comprehensive national-level intervention or guidelines to address critical issues related to informality, backyard rooms, township formations, and unemployment from a neighbourhood-scale spatial perspective (City of Johannesburg, 2016; CSIR, 2000; DoHS, 2019). It is worth noting that while the City of Cape Town passed an urban design policy in 2013 addressing informality at a neighbourhood scale, it has not been implemented in any other South African city (City of Cape Town, 2013).

After examining current guidelines and technical standards related to RDP housing, we have identified a deficiency in addressing design considerations that account for residents' needs and aspirations within their context. Section 4 will investigate contextually relevant design considerations in Alexandra, focusing on density and incremental housing.

4. Evolving Density and Incremental Housing Norms in Alexandra

Alexandra Township, which is located within 3 km of Sandton, Africa's richest square mile with many employment and economic opportunities, boasts one of the highest population densities, as high as 25,978 people per square kilometre. With an average of five persons per dwelling, this translates to up to a density of 160 dwelling units per hectare, and in 2009, the township had already accumulated more than 90,000 housing structures (Alexandra Renewal Project [ARP], 2009; Harrison et al., 2014; Howe, 2020; Mbanjwa, 2018; Sondzaba, 2019; Wazimap, 2011). This high density is largely related to informal housing infill and caused the layering of diverse housing typologies which include incrementally extended backyard rooms. The township comprises freehold tenure single-story houses, which were established as early as 1912, as well as a mix of RDP fully subsidised houses, flats, and workers' hostels. Notably, both freehold tenure and RDP housing often include multiple rental backyard units, incremental extensions to the initial house provided by the government, which were initiated by the residents themselves. This practice was historically rooted in the need to supplement income for freehold tenure houses due to high property prices driven up by the apartheid government. According to Bonner and Nieftagodien (2008), it also served as a political defence against forced removals during apartheid, as the greater the number of residents settled within a plot, the more challenging it became for the apartheid authorities to carry out forced relocations. Informal settlements, like the Sjwetla settlement, can also be found between established settlements and along riverbanks (Bonner & Nieftagodien, 2008; Harrison et al., 2014). In addition to these typologies are also hostels, flats, and accommodation in factory subdivisions. However, the most prominent form of housing in Alexandra, accounting for more than half of the total number of dwelling units, is the incrementally developed backyard rooms, as demonstrated in Figure 1.

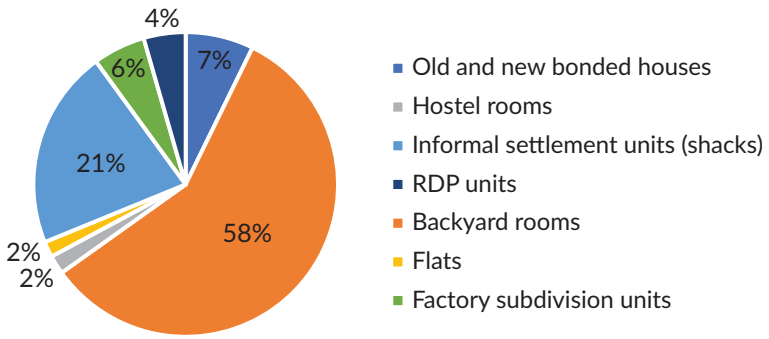

Figure 1. Typologies of Alexandra housing. Authors' work based on ARP (2009).

In summary, the history of Alexandra is characterised by resilience against forced removals, with the culture of backyard rooms serving as both a response to the need for affordable accommodation and as a form of resistance against displacement. These backyard rooms have incrementally expanded over time, providing space for family and economic opportunities to respond to the community's cultural history and residents' spatial needs over time (Bonner & Nieftagodien, 2008; Harrison et al., 2014; Mahlakanya & Willemse, 2022; Shapurjee & Charlton, 2013).

5. Resident Responsive Design Innovations in the K206 Housing Project

This section delves into the innovative resident-responsive design approaches of the K206 housing project, which employed contextually relevant solutions to tackle governance issues linked to informal settlement upgrading via state-subsidised housing. It will first examine the common housing practices involving incrementally constructed backyard rooms in Alexandra. Subsequently, it will explore the governance-related challenges tied to the K206 development, followed by an investigation into how resident-responsive design was employed to devise solutions addressing governance issues within the K206 development.

Alexandra has a high prevalence of incrementally built backyard room formations, as depicted in Figure 2. These spaces were not only intended for income-generating activities but also for expanding homes to accommodate extended family members when household sizes exceeded the limits set by technical norms

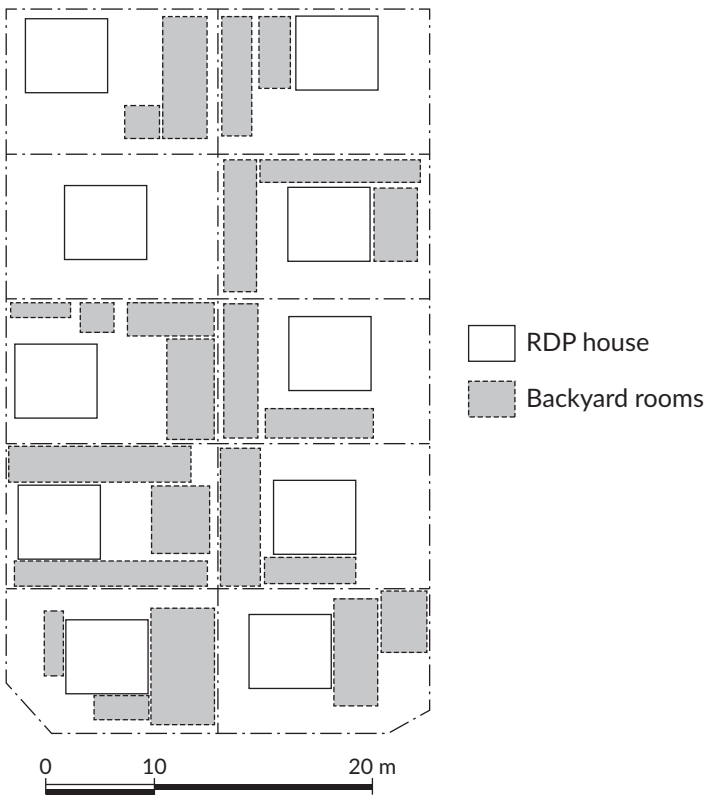

Figure 2. Mapping of RDP houses and backyard rooms between 1st Street and 2nd Street, Far East Bank, Alexandra.

(Table 1 outlines the minimum standards for a two-bedroom house, which in practice is significantly expanded upon with the addition of backyard rooms).

During the design and planning stages of the K206 development, it became evident that discerning significant developmental differences in informal settlement upgrading, especially within the densely populated housing environment of Alexandra, was a challenging goal to reach. Consequently, a departure from the conventional waiting list approach, commonly used for informal settlement upgrading in South Africa, was proposed and implemented (Harrison et al., 2014; Sondzaba, 2019). The block-by-block approach was introduced, which entailed the relocation of all residents from an informal settlement block to the K206 block (ARP, 2009; Harrison et al., 2014; Sondzaba, 2019). This informal settlement upgrading approach allowed for the complete redevelopment of the informal settlement area into new housing units and social facilities on the K206 site, thereby demonstrating a visible transformation in infrastructure development to the community (ARP, 2009; Harrison et al., 2014; Sondzaba, 2019).

While this concept appeared commendable in theory, as it allowed networks of residents to move, challenges surfaced when residents on waiting lists were informed of the change in systems. Now, not all residents in the earmarked informal settlement qualified for housing (for example those not having South African nationality), exacerbating the situation by granting access to housing for non-qualifying individuals (Public Protector South Africa, 2014). Despite these challenges, the strategy persisted in pursuit of the overarching goal of achieving tangible and visible improvements and development in the area for the residents.

To address this issue of accommodating both qualifying and non-qualifying residents, ARP management together with Anca Szalovitz architects developed an innovative house type, which was split in two components, devised to accommodate two forms of tenure. One owner-occupied double-storey two bedroom house, and an adjacent single-storey volume with two additional rooms to be rented out by the owners to non-qualifying households. This two-volume typology was distinctive in its capacity to respond to the need for housing densification through cluster formations. The K206 house type also acknowledged the prevalence of backyard rooms in Alexandra, incorporating opportunities for incremental expansion in response to the growing demand for housing and income generation in the area.

The K206 project allowed for vertical incremental extensions, above the single-storey volume dedicated to the rental rooms. The layout of this unit followed a medium-density cluster formation, drawing inspiration from the existing densities and incremental backyard room formations in Alexandra (J. Baskin, personal communication, December 1, 2022; S. Mkhonto, personal communication, August 5, 2022; A. Szalovitz, personal communication, March 29, 2022). These design innovations of the K206 unit were created in conjunction with RDP technical housing standards.

Sections 5.1 and 5.2 explore in detail these context-related design innovations (increased density and incremental growth) of the K206 project over and above the project's compliance with technical standards.

5.1. Density

The K206 housing project was inspired by the existing urban fabric of Alexandra, which exhibited significantly higher density compared to technical norms of RDP housing as demonstrated in Figure 3.

Elevated density proves especially advantageous in well-located areas, optimising the value of prime locations, typically superior to outlying ones (DoHS, 2004). Standard RDP housing plots adhere to a minimum size of 250 m^2 (Greyling, 2009; Harrison et al., 2014), corresponding to a maximum density of 40 dwelling units per hectare. Conversely, the K206 project, with its cluster layout and the unit incorporating both a single-storey and a double-storey section, was designed to accommodate six core units and six backyard room units (12 units) on a 750 m^2 plot when accounting for both core and rental units within a cluster, translating to a density of up to 160 dwelling units per hectare, four times higher than the standard densities of RDP housing as demonstrated in Figure 3.

The neighbourhood scale design quality of the K206 project was also considerably more thought out based on the evolved historical norms in Alexandra township (Harrison et al., 2014) than standardised RDP repetitive standalone neighbourhoods on a standardised grid system. It creatively adhered to several guidelines suggested in the *Red Book* that not only enabled increased density but also fostered smaller social groupings, enhancing social interactions among neighbours and providing additional safety and security opportunities. With more residents overlooking common areas where people enter and exit, the sense of community and surveillance was augmented. The arrangement of clustered buildings also enhanced the ability for individuals to orient themselves, despite the massive scale of the project.

It is important to note that despite managing to acquire considerably more density than most standardised norms of RDP housing as highlighted in Table 1, the K206 design also accommodated incremental extensions that responded to the existing incremental extensions in Alexandra based on its design form and site layout.

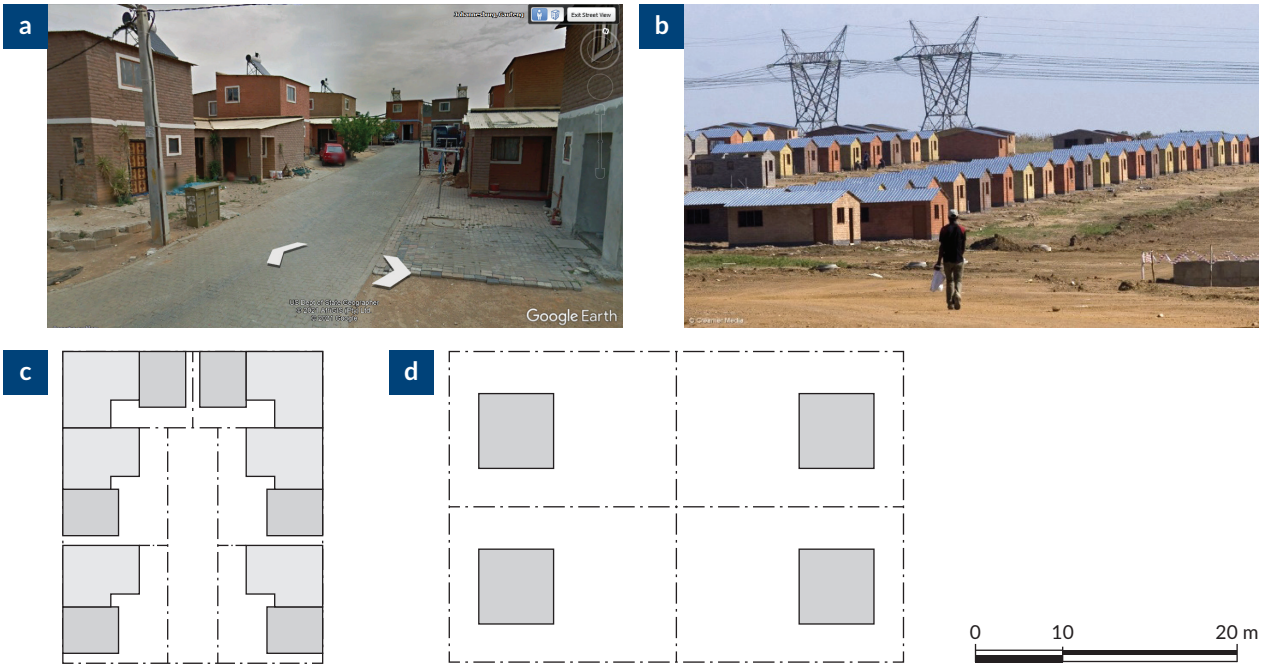

Figure 3. Density of K206 houses vs. RDP houses: (a) K206 houses (Google Earth Street view of K206 in 2013, accessed December 12, 2020); (b) the typical 40 m^2 standard single-storey RDP houses, design based on technical housing standards only (photo of Mogale City, Gauteng, by Daws in Odendaal, 2014); (c) K206 housing cluster plan that answers both technical standards and residents' contextual needs (layout inspired by drawings from ASA Architects); (d) typical 40 m^2 RDP houses plan (layout inspired by Mogale City RDP development).

5.2. Incremental Housing

Another K206 design innovation involved the design of a housing type incorporating both a single-storey and a double-storey volume as seen in Figure 4. This deliberate choice was made to facilitate the option of economic gain for residents, via two rental rooms, as well as allowing the vertical expansion of the single-storey volume, anticipating incremental growth. The government subsidised K206 project granted ownership to the beneficiary households for the double-storey core unit, and enabled income generation through the two additional rental rooms built in the single-storey volume (Public Protector South Africa, 2014).

The owners of these units were also given the option to vertically extend the single-storey volume, offering maximum flexibility with a flat timber roof. The internal housing layout was designed to allow a smooth transition between the entire house being occupied by the owner or the double-storey section being used by the owners while renting out the backyard rooms (Osman & Davey, 2011).

Although not initially foreseen by the designer and management (J. Baskin, personal communication, December 1, 2022; S. Mkhonto, personal communication, August 5, 2022; A. Szalovitz, personal communication, March 29, 2022), the remaining space allocated for gardens and parking could also be absorbed into the incremental expansion of the building and rental rooms as seen in Figure 4.

Overall, the layout's design flexibility proved particularly advantageous for various scenarios of incremental expansion. It allowed for internal merging to create larger units and provided owners with the option to utilise rental rooms for income generation. This income generation in many cases allowed residents to either improve the finishes of their homes or build even more rental rooms. Furthermore, the design anticipated the seamless development of a second storey above the single-storey rooms. Additionally, although not part of the original design intent, the plot size accommodated the addition of a garden and parking space next to the cluster driveway which unintentionally served as placeholders for residents to further extend into these

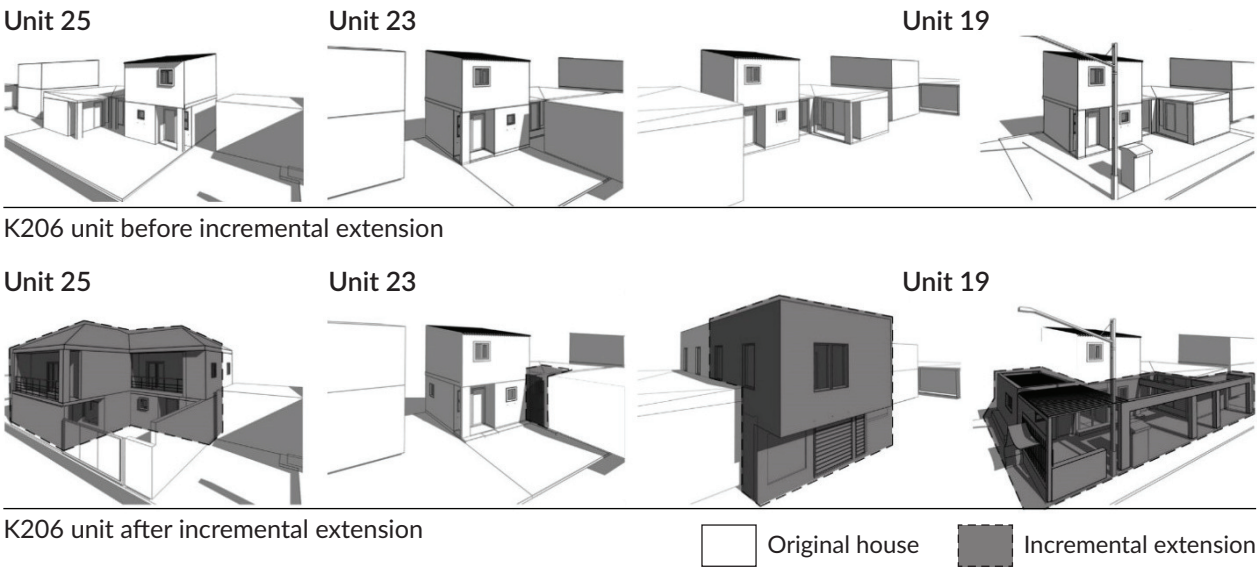

Figure 4. Representative examples of K206 units with incremental expansion.

open spaces (J. Baskin, personal communication, December 1, 2022; A. Szalovitz, personal communication, March 29, 2022).

The cluster layout of the K206 project facilitated a diverse range of opportunities for incremental expansion. As the spatial mapping indicated, the potential for such adaptation seemed to be influenced by the unit's position within the cluster (Wilcox et al., 2024). For instance, in cases where the unit's façade faced main roads, commercial opportunities like restaurants, chicken sales, or preschools became viable options. Moreover, the shape of the clusters often opened onto municipal land parcels that were not initially incorporated into the housing scheme. Many of these parcels were substantial in size and allowed residents to informally extend their homes. For example, one such land parcel accommodated an additional five backyard rooms, contributing to 50% of the owner's household income. In as much as the cluster composition allowed for opportunities to expand, periphery units had more opportunities to expand than internal units that did not border municipal land or street edges.

When comparing the K206 unit to the standard RDP unit in Figure 5, it is evident that the K206 unit generated a residential density much bigger than the standard RDP unit. The K206 project leveraged the minimum 40 m^2 requirement, providing two bedrooms, a bathroom, a living area, and a kitchen following the specified technical standards, all within the prescribed budget for an RDP house. Additionally, a special presidential budget allocation subsidised the RDP unit for the two extra backyard rooms (S. Mavundla, personal communication, September 30, 2020). These additional rooms were either occupied by two families at one room per family, or both rooms became a unit for a single family. The flat timber roof design encouraged vertical expansion, whereas standard RDP houses typically feature timber-pitched roofs, which are more challenging to modify for additional floors.

The potential for incremental expansion in the K206 unit exceeded initial expectations when compared to the standard RDP housing model. While standard RDP houses come with larger plot sizes, allowing for more space for backyard room expansion, our analysis of 26 K206 houses, in conjunction with national housing code regulations, reveals that single-story standalone houses on larger plots were less likely to expand vertically. Residents of single-storey stand-alone houses typically opted for horizontal incremental expansion due to the lower cost associated with single-story expansion. In contrast, K206 houses, which inherently offer opportunities for incremental vertical expansion, were more inclined to expand vertically. When site composition exercises were conducted comparing the potential for maximising incremental rooms in a K206 unit and plot with that in a standard RDP unit, plot, and incremental expansion, it was found that the outcomes were comparable in terms of the number of possible well-ventilated backyard rooms, as illustrated in the architectural analysis of incremental extensions in Figure 5. In terms of density, Table 2 demonstrates that with backyard extensions, and assuming each backyard room to be a dwelling unit, the K206 units allow for significantly more density potential than typical RDP units.

Observing Table 2, it is crucial to highlight that the K206 unit demonstrates greater efficiency in both density and backyard room outputs compared to standard RDP units.

Despite the considerable potential of the K206 project, particularly in its cluster-based design, many residents chose to gradually expand their homes by adding rooms with diverse housing quality and spatial configurations (typical of most backyard rooms; Poulsen, 2010). Some of these extensions utilised

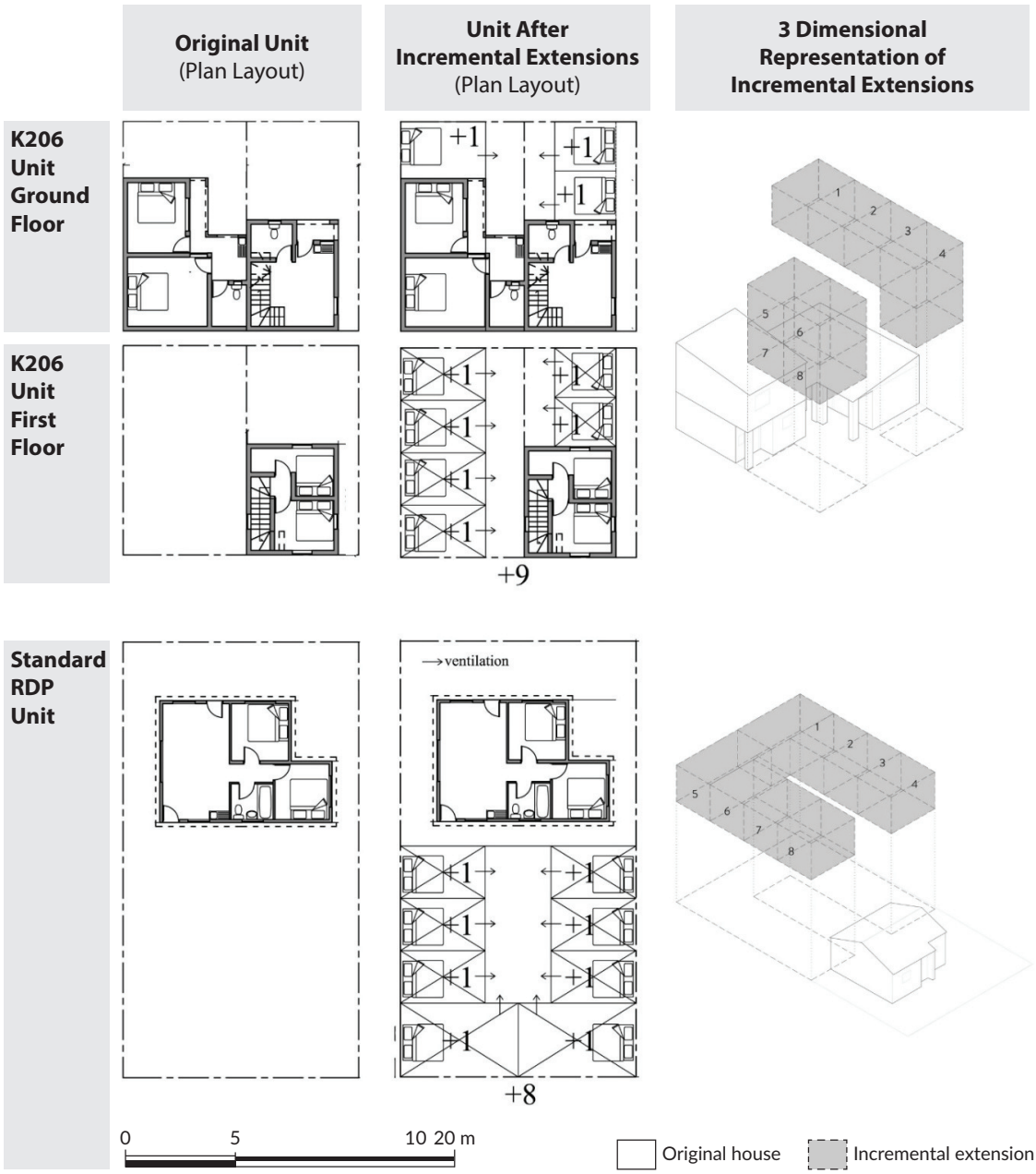

Figure 5. Density comparison of incremental potential between standard RDP unit and K206 unit.

Table 2. Comparative potential density of standard RDP unit to K206 unit with incrementally added backyard rooms based on Figure 5 layouts.

	Standard RDP unit	K206 unit
Density without backyard rooms	40 du/ha	160 du/ha
Density with one additional backyard room	80 du/ha	240 du/ha
Density with two additional backyard rooms	120 du/ha	320 du/ha
Density with 10 additional backyard rooms	440 du/ha	960 du/ha
Density with 11 additional backyard rooms	480 du/ha	1040 du/ha

Note: du/ha = dwelling units per hectare.

high-quality materials, providing adequate light and ventilation, while others were constructed with substandard materials and lacked proper lighting and ventilation. The decisive factors influencing material choices and spatial layouts were primarily driven by cost, with residents having additional income streams being more inclined to invest in higher-quality finishes. Residents and their builders played a pivotal role in determining most spatial layouts. Backyard room configurations typically included self-contained units where residents conducted various activities such as living, washing, sleeping, and cooking. A common toilet or toilets were shared among backyard room residents, and living areas were typically situated amid circulation areas around the rooms. The variation in housing and spatial design quality of incremental extensions highlights the challenge of achieving consistency in both the material quality and spatial quality of these extensions, despite the project's encouragement of incremental growth.

It is also worth noting that residents of the project still lack title deeds, rendering it even more difficult for the municipal authorities to regulate the quality of these extensions. Even willing residents cannot make housing extension applications because title deeds are required (S. Mkhonto, personal communication, August 5, 2022).

The K206 project's clustering approach was well-conceived in comparison to more standardised grid-like RDP configurations, both in terms of the unit's scale and its responsiveness to the local context, offering opportunities for incremental expansion. It also exhibited innovative neighbourhood design by implementing a cluster association of individual dwelling units, to enhance social integration among residents and safety within smaller clusters, as opposed to the conventional standalone houses on a grid system. Notably, despite the success of this design approach, which was completed in 2010, it has not gained widespread adoption or replication elsewhere. In the realm of RDP developments, standalone houses on a grid road network continue to dominate, despite policy recommendations advocating for housing typology diversity and intensification to mitigate urban sprawl.

The primary deterrent for broader adoption appears to be cost-related. The K206 project received additional special presidential funding for the creation of rental rooms, which would be challenging to replicate without subsidies. However, certain key principles inherent to this design, such as the clustering system, the balance of density with incremental expansion allowance, and the choice of roof design for vertical expansion, could still be adopted within the cost brackets of RDP housing. These principles facilitate the intensification and densification of urban areas, especially in regions with limited or expensive land availability.

While this model may not match the densities achieved by larger multi-story buildings, it responds to the everyday needs of residents and it provides residents with opportunities to incrementally expand their properties and accommodate the gradual changes that occur over time, including family growth and income generation through additional rooms. This distinguishes it from current multi-story RDP developments and their limitations in accommodating such incremental changes.

6. Conclusion

In conclusion, this study delves into the impact of resident-responsive design on improving state-subsidised housing beyond technical housing standards. The central research question guiding our exploration is: How can a design approach that is responsive to residents' aspirations enhance subsidised housing design beyond mere technical standards?

Using the K206 housing project as a case study, this article emphasises the urgency of enhancing technical housing standards and adjusting provisions to better align with the social, economic, and spatial needs of residents. This underscores the importance of implementing more detailed policies to ensure RDP housing design is contextually responsive. The K206 project, providing fully subsidised state housing for low-income families, extended beyond minimal technical design standards (traditional RDP housing design typically adheres only to basic technical design standards due to budget constraints). The project expanded on these standards to accommodate residents' aspirations and spatial needs rooted in the century-long tradition of Alexandra's backyard room culture and incremental housing expansions. The K206 unit typology and its cluster-based configuration, influenced by these spatial tendencies in Alexandra, demonstrated higher spatial efficiency, measured in terms of residential density, when compared to standard RDP housing.

Furthermore, interviews with residents and policymakers underscored the success of these design interventions, incorporating grassroots initiatives such as increased housing density and income-generating opportunities through incremental backyard room additions. The K206 project significantly elevated residents' quality of life by enhancing income prospects and providing flexibility for gradual expansion.

However, while the design interventions of the K206 project accommodated incremental growth, this study also sheds light on the conflicts and disparities arising when user-initiated developments deviate from established RDP technical standards. Although incremental spatial expansion brings positive economic benefits through income generation, it comes with trade-offs. The trade-offs include potential compromises in the quality of space and materials of the extensions that do not meet technical housing standards. Achieving the right balance between being responsive to local building practices and adhering to technical standards is a nuanced task, demanding careful consideration throughout the design and policy-making process.

The K206 project efficiently facilitated incremental expansion, surpassing the efficiency of standard RDP layouts. The K206 unit typology, featured a core double-storey home for the owner along with two additional rental rooms that exhibited good material and spatial design quality compared to resident-initiated backyard rooms typically associated with standardised RDP housing. Despite the positive aspect of the government-sponsored rental rooms, K206 residents continued to incrementally add more rooms of varying quality to their homes.

In summary, this research emphasises the importance of acknowledging and embracing the dynamic interplay between technical housing standards and addressing the social and economic needs of residents who live in subsidised housing. Achieving this equilibrium is crucial for addressing housing needs, enhancing the well-being of South Africa's low-income households, and remaining compliant with technical standards. Policymakers and practitioners, by embracing both the technical and social dimensions of housing design, can contribute to more effective and responsive housing solutions for vulnerable populations. The K206 housing project provides valuable lessons, highlighting the potential benefits of a holistic approach to subsidised housing design that combines the rigour of technical standards with the socio-cultural practices of its context.

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Conflict of Interests

The authors declare no conflict of interests.

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ARTICLE

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Adaptive Reuse of High-Rise Buildings for Housing: A Study of Istanbul Central Business District

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Abstract

The abrupt shift to remote work due to the Covid-19 pandemic increased vacant office spaces globally, especially in high-rent central business districts (CBDs). These vacant office spaces offer the potential for conversion into housing, addressing the shortage of affordable housing in central areas. Additionally, this topic presents a unique experimental ground for architecture students. This study focuses on the Istanbul CBD as a case study, examining the historical developments that led to a rise in office vacancy rates and housing inequality, and exploring the potential for adaptive reuse of these vacant office buildings. A key focus of this study is to underline the pedagogical value of adaptive reuse, highlighting how such projects can inspire more diverse and equitable housing models, fostering experimental and sustainable design approaches. It systematically evaluates the outcomes of a 4th-year architectural design studio that focuses on the adaptive reuse of the Tat Towers in the Istanbul CBD, a structurally vacant high-rise office building, and asks: How does the context of adaptive reuse enable a different design approach, and, potentially, new spatial norms and standards to emerge, and how might this hold a pedagogical value for architecture education? Following these questions, the article discusses how norms and standards are not only culturally but also typologically contextual, and how the students have explored how norms and standards might change, outlining new design approaches to adaptive reuse.

Keywords

adaptive reuse; building conversion; design studio; high-rise buildings; housing; office vacancy; spatial norms

1. Introduction

Covid-19 minimised the physical presence at work and created a sudden need for businesses and their employees to start or increase working from home (Istanbul Planlama Ajansı [IPA], 2021a; Organisation for Economic Co-Operation and Development, 2021). This trend continued and created higher vacancy rates in office markets worldwide, specifically in the central business districts (CBDs) with higher rents and operational costs. As a result, vacant office spaces are brought to the forefront as a potential for conversion into housing, and several opportunities and challenges arose, particularly concerning spatial norms and space standards in reusing such spaces.

Historically, high office vacancy rates have often been associated with financial and real estate crises (Remøy & van der Voordt, 2014), and oversupply of office spaces usually combined with a shortage of affordable housing (Barlow & Gann, 1995). Today, vacant offices represent a worry for global commercial property investors (Oliver, 2023) and simultaneously, an opportunity to address the growing demand for housing in central areas through adaptive reuse (Barlow & Gann, 1993; Bullen & Love, 2010; Canelas et al., 2022; Geraedts & van der Voordt, 2007; Keogh, 2023; Langston et al., 2008; Remøy & van der Voordt, 2014). For instance, the 1980s property boom (Ball, 1994) and the early 1990s recession resulted in high vacancy rates and the conversion of redundant office buildings into residential use in the City of London, Downtown Toronto (Heath, 2001), and Downtown Manhattan (Beauregard, 2005). Similarly, between 2002 and 2003, the dot-com bubble burst increased the vacancy rates in Tokyo, and since then, the conversion of vacant office buildings to residences has become common (Ogawa et al., 2007).

Post-Covid shifts in working habits, a downturn in property values, and relatively high cost and time of commuting resulted in higher rates of vacant offices. As of the second quarter in 2023, data reveals a 19.2% office vacancy rate nationwide in the US, with Downtown New York hitting a higher 24.2% (Cushman & Wakefield, 2023a). Central London saw an increase to 9.4% (Jones Lang LaSalle, 2023a), Downtown Toronto reached 15.8% (Coldwell Banker Richard Ellis, 2023a), Australia's CBDs reported 14.4% (Jones Lang LaSalle, 2023b), and Hong Kong experienced a record 15.7% vacancy rate (Coldwell Banker Richard Ellis, 2023b). Notably, a considerable proportion of these spaces are structurally vacant, implying extended durations of vacancy without a prospect of future occupancy (Remøy, 2010). Moreover, projections for the US suggest that without strategic interventions to improve or repurpose these spaces, only a quarter of office spaces will meet the demand by 2030 (Cushman & Wakefield, 2023b). These are not mere statistics but indicators of a profound shift in the urban fabric, necessitating strategic interventions.

In this context, Istanbul CBD is a compelling case. The Büyükdere–Maslak axis, which historically ran along a well-planned modern residential neighbourhood in the 1950s, has evolved into the major artery of the Istanbul CBD, where one-third of the Class A office space in the metropolitan area is located. According to recent data, the overall office vacancy rate in the Istanbul office market is 15.2% (Gayrimenkul Yatırımcıları Derneği, 2023), with the CBD's Class A office spaces witnessing a higher vacancy of 21.9% (Propin, 2023). Besides, Istanbul reportedly faces a housing crisis resulting from a combination of economic downturn, increasing influx of migrants, and extreme earthquake risk (World Bank, 2022). Despite these challenges in accessing affordable housing, the city experiences a new-build luxury housing surplus (IPA, 2021b) on the urban periphery and a significant vacancy in office spaces within the central districts.

Several factors contribute to the elevated vacancy rate in office spaces. First, the rapid increase in foreign exchange rates and high inflation in Turkey led to a rise in rents and operational costs. Second, the operational launch of the Istanbul Financial Centre in Ümraniye is anticipated to not only increase the total volume of available office spaces but also instigate the relocation of several key company headquarters. Third, the current architectural standards seem inadequate in accommodating the evolving demands of new working habits. Most significantly, the structurally vacant high-rises or "ghost buildings" substantially inflate the vacancy metrics. The Tat Towers in the Istanbul CBD, vacant since its completion in 2008, is a notable example. Excluding the expansive 142,000 sqm gross floor area of the Tat Towers, the Class A office vacancy in the area considerably narrows to 11.73% (Propin, 2023).

There is also legislative support for office-to-residential conversions but limited effort and know-how. The Zoning Regulations of Planned Areas defines CBDs as zones primarily for administrative, social, cultural, and commercial purposes, as well as social infrastructures. In 2022, a provisional article in building regulations was introduced, allowing up to an 80% conversion of land use from mixed-use (commercial and residential) to exclusively residential (Çevre, Şehircilik ve İklim Bakanlığı, 2022). This was aimed at repurposing a national surplus of 4 million sqm of office space into housing. Of this surplus, 1.5 million sqm is in Istanbul, equivalent to 10,000 new residential units.

Despite these legislative efforts, reports show that converting surplus office spaces in the Istanbul CBD to residential use could detrimentally impact living standards. This area's current social and technical infrastructure is designed for a maximum of 30% residential occupancy. Surpassing this limit could notably degrade the quality of life, including a projected 70% increase in traffic congestion (IPA, 2022). Therefore, while the legislative recognition for converting spaces in CBDs is evident, implementing these regulations requires clarification and refinement. Updated planning decisions, detailed design guidelines, and toolkits for practical application are notably absent and urgently needed.

While this topic requires immediate and collaborative action from governmental organisations, professional institutions, academic circles, and industry practitioners; it also presents an excellent research opportunity for architecture schools to explore and address these challenges in the design studio. More specifically, vacant high-rises have great potential for office-to-residential conversions. They not only offer earthquake safety and compliance with climate change strategies but are also conveniently located in the city centre and equipped with advanced infrastructure adaptable to the evolving spatial needs of residents. This entails a thoughtful reimagining of redundant buildings for relevant repurposing—explicitly to equitable housing, a critical review of urban planning with respect to environmental objectives, and a reassessment of spatial norms and standards in transforming global cities, all of which resonate with the complexity and research-led nature of advanced architecture studies.

Based on the outcomes from a senior year architectural design studio, this article asks how adaptive reuse context enables a different design approach in office-to-residential conversion, and potentially, new spatial norms and standards to emerge, and how this might hold a pedagogical value for architecture education. These questions are explored through a 4th-year architectural design studio, Tectonic Tactics, focusing on the conversion of Tat Towers—a structurally vacant, high-rise office building offering a strong case for adaptive reuse—to a residential function.

Moreover, the Istanbul CBD offers a valuable context due to its unique historical urban development—from affordable single-family houses and informal settlements to upscale housing developments—making it an ideal case to examine housing inequalities. From this point, this study aims to explore how the adaptive reuse of vacant office buildings might offer an opportunity to think about more diverse and equitable housing models as well as develop new design approaches that are more experimental and sustainable. The study is a means to explore issues of sustainability and how these might inform design briefs and strategies in architecture education.

The following sections introduce the research methodology, overview the historical developments leading to high office vacancy rates and housing disparities in the Istanbul CBD, outline the current spatial norms and standards in the area, and study the Tat Towers for potential reuses. This examination is crucial for exploring alternative living scenarios and influencing the democratisation of vacant private buildings in central urban areas, ultimately serving the public.

2. Method: Studio-Work-As-Research

Adaptive reuse stands as a distinct discipline, intersecting architecture, interior design, planning, engineering, and conservation (Plevoets & Van Cleempoel, 2019). It is recognised as both a cultural and architectural process with transformative potential (Lanz & Pendlebury, 2022). Along with the growing discussions on limiting new constructions or even advocating for a complete halt, it is progressively gaining more prominence in architectural education, with schools such as Hasselt University (BE), the Rhode Island School of Design (USA), the Manchester School of Architecture (UK), and Politecnico di Milano (IT) concentrating their curricula on this emergent field.

Acknowledging this pedagogical value, the study adopts a qualitative and exploratory research approach to evaluate the outcomes of Tectonic Tactics, a 4th-year architectural design studio conducted during the 2021/22 Autumn term. The course's primary objective was for students to develop research-driven design projects that integrate complex architectural programs within an urban context, along with advanced technological components and architectural representations. Focusing on the speculative and adaptive reuse scenarios in the Istanbul CBD provided students with a unique, real-world context.

The students explored the Büyükdere–Maslak axis, concentrating on the regeneration of two vacant structures: the Tat Towers and the Diamond of Istanbul. 38 students participated in the studio, with 34 working in pairs and four pursuing individual diploma projects for their design proposals. The term lasted 14 weeks and began with a five-week intense research phase. Students formed groups to compile a research book that covered five key topics: historical development, networks and infrastructure, energy and affordable life, the future of working and dwelling, and case studies of adaptive reuse. This research book later became a vital reference for their design process.

For their design proposals, the students conducted an in-depth analysis of vacant high-rises in the Istanbul CBD. The focus was divided, with six teams working on the Tat Towers and 14 teams on the Diamond of Istanbul. Given the study's limited scope, this article evaluates explicitly the six proposals for the Tat Towers, thereby excluding the projects concerning the Diamond of Istanbul. This narrower focus allows for a detailed examination of the student projects for the Tat Towers, highlighting the diverse approaches and solutions

proposed for its repurposing. Thinking through students' work helped us understand the research problem in a critical, speculative, and explorative way. It offered diverse perspectives on the future of vacant structures and equitable housing models.

Students' works were evaluated within a set of criteria. Based on the preliminary research on the adaptive reuse context and the historical development of the area, the criteria are technical solutions, design approach, use of space, organisation of sustainable living spaces, and integration with the city fabric. Six design proposals for the adaptive reuse of Tat Towers were evaluated. Their common and differentiating aspects were summarised and discussed according to the evaluation criteria.

3. Rising Vacancy Rates and Housing Pressures in the Istanbul CBD

The Istanbul CBD, widely known as the Büyükdere–Maslak axis, is distinct from its global counterparts in its inconsistent planning and development process. Historically, the area remained rural until the 1950s, planned initially as a military buffer zone for preserving Istanbul's northern forests and water basins. After the resignation of Henri Prost, the then-chief of the city's planning office, two major planning decisions were made in the area: first, the construction of the Levent houses in the 1950s, which were initially planned for low-income families, but eventually built as luxurious single-family houses; and second, the development of pharmacy, textile, and automotive industries until the 1980s (Öktem, 2005; Figure 1). With the arrival of internal migration flows, the industry rapidly led the spontaneous growth of squatter settlements around the axis that formed new neighbourhoods of Gültepe, Ortabayır, Çeliktepe, and Sanayi next to the industry and across the luxurious detached houses of Levent.

The four phases of the Levent housing project were built in the 1950s with the provision of low-rate, long-term loans for affordable housing by Emlak Kredi Bank, a former Turkish public bank specialising in real estate. The initiative aimed to address the issues of rapid urbanisation and housing shortages. However, the initial phases of the project drew criticism for their design as single-family homes, with unit sizes reaching 180 sqm,

Figure 1. Levent houses and industry development on Büyükdere Street. Images courtesy of Emlak Bank (left) and SALT Research/Gültekin Çizgen Archive (right).

which were too large to be considered affordable mass housing (Yöney & Salman, 2010). In contrast, the fourth phase was developed as multi-storey apartment blocks, which were later recognised in the national inventory as "an exemplary prestige housing area retaining its original settlement and architectural stylistic characteristics" (Ayataç et al., 2016, p. 266). Today, all phases of Levent houses remain occupied and are considered high-value properties.

With the infrastructural operations that connect the area to Istanbul's first (1974) and second (1988) Bosphorus bridges, as well as to its only international airport at the time, the axis attracted several of Turkey's largest holding companies to establish their headquarters (Öktem, 2011). The shift from industry to services became particularly evident in the Gayrettepe/Levent district, as former industrial buildings were demolished to build new high-rises. Today, this section of the CBD occupies a unique position, nestled between the Ortabayır and Levent neighbourhoods, presenting stark contrasts in sociological and demographic aspects and living standards (Figure 2).

Levent stands as a testament to urban planning ideals, with its single-family homes surrounded by gardens, systematic road layouts, parks, green spaces, and parking lots. In contrast, Ortabayır represents a more typical middle-class housing settlement, similar to Gültepe and Çeliktepe. The legal status of the informal housing in Ortabayır, Gültepe, and Çeliktepe underwent a significant shift in the 1980s, as these settlements were legalised (Ünsal, 2013). This legalisation was a governmental attempt to address the housing shortage,

Figure 2. Aerial view of the Büyükdere–Maslak axis.

especially in the absence of a formal social housing policy (Kuyucu & Ünsal, 2010). Despite these efforts, transforming the unplanned building stock into safe, affordable, and quality housing proved challenging. Here, you find irregularly structured, multi-storey apartments, lacking communal spaces, green areas, and parking.

In the following years, the Büyükdere–Maslak axis has become a landscape of diverse groups from business districts, gated communities, legalised squatter neighbourhoods, shopping malls, and university campuses. This transformation was initially driven by urban policies and planning decisions to attract direct foreign investments and new corporate headquarters. The axis became a hub for significant educational institutions, with the relocation of the Army War College and Istanbul Technical University, later followed by private universities. Moreover, a primary concern in the 2000s has been Istanbul's high earthquake risk, leading to the development of "branded housing projects" (Serin et al., 2020, p. 347) for exclusive communities in the area. Consequently, these multifaceted developments have intensified housing demands, reshaping the area's real-estate landscape.

On the other hand, the investment projects along the Büyükdere–Maslak axis did not always materialise as planned. For example, structures like the Tat Towers (1989–2008) and the Istanbul Tower 205 (2011–2019) have never been occupied and remained vacant since completion. The Rams Beyond Istanbul, formerly the Diamond of Istanbul, is currently under construction after being on hold for over a decade. These buildings have great potential for conversion into housing since they are safe from earthquakes, adaptable to climate change strategy and action plans, located in the city centre, and have high-tech infrastructure that can be appropriated for changing spatial needs.

Pressures on housing extend beyond the CBD and spread throughout Istanbul. It is estimated that over half of the housing stock of Istanbul is illegal either because the dwellings unlawfully occupied public or privately owned land, violated the zoning regulations, or were built without proper inspection and permits by disregarding the norms set by the authorities (Keyder, 1999, p. 143). Within the legislation, earthquake resilience, fire safety, and energy efficiency in buildings are three key regulations directly related to design and application (Altındaş, 2016) alongside city building codes. In the aftermath of the devastating 1999 Izmit earthquake, Turkey introduced new building codes—Turkish Earthquake Code 2007 and Turkish Building Earthquake Code 2018—that radically changed measurements and calculations, and limited design flexibility (Afet ve Acil Durum Yönetimi Başkanlığı, 2018; Bayındırlık ve İskan Bakanlığı, 2007). Although regulations were revised when needed, they were often loosely enforced; as a result, it was unlikely to succeed in extensive and skilful applications of design-oriented space standards.

Since 2019, the number of new constructions in Istanbul has dropped to a third of its previous levels (IPA, 2022), and over the last decade, these new constructions have predominantly been located on urban outskirts with limited access and infrastructure. This created a supply-demand imbalance in the housing market where the main provider is the deregulated private sector. From September 2021 to 2022, there has been a 212.2% increase in real estate prices (Türkiye Cumhuriyet Merkez Bankası, 2022), leaving the Istanbulites in a housing crisis, including newcomer students. Currently, there are over one million students enrolled in universities in Istanbul, where the student accommodation capacity is barely 120,000, according to official statistics.

4. Spatial Norms on the Buyukdere–Maslak Axis

The Büyükdere–Maslak axis has experienced varied regulations over the past 70 years due to discontinuities in its planning and development processes. When the zoning plan changed from industry to CBD, there was a subsequent shift in consumption patterns and lifestyles, ushering in upscale residences, shopping centres, and five-star hotels (Keyder, 1999). However, the spatial transformation of urban infrastructure failed to accommodate the demands of the new high-rises and their inhabitants. Economic instability expedited construction decisions, leading to the rise of large structures before essential infrastructure was in place. This absence of technological, regulatory, and legislative infrastructure resulted in a restricted and disconnected built environment. For instance, ground levels are used predominantly for commercial activities secured behind gates, while public access to upper floors and rooftops is non-existent. The street level is mainly car-oriented, with discontinuous sidewalks and crossings.

The parcels retain their long and narrow shapes from former industrial allocations, leading to the design of slender, elongated high-rise structures (Figure 3). While they tower upwards of 50–60 levels, they also extend underground for about 4–5 levels, encompassing functions like parking and storage. The base of these towers, spanning the first 4–5 floors above ground, often features more social programs. These spaces serve as shopping malls or community areas, tailored to the primary purpose of the building—be it residential or office space. Predominantly, these towers are occupied by offices and luxury residences, with their internal layouts mirroring global standards.

More than mere towering symbols of wealth, the towers can unify the contrasting Levent and Ortabayır districts. For example, the ground-level commercial spaces could play a crucial role as mediators,

Figure 3. The contrast between the office towers in Levent and the surrounding neighbourhoods.

harmonising the two distinct urban fabrics. For this, it is essential to diversify the social programs of these ground floors to cater to varied residential needs. To foster a deeper connection with the Ortabayır District, where open social spaces are limited, introducing outdoor activity zones, alongside indoor amenities, can help bridge the invisible divide between the areas.

High-rises along the Büyükdere–Maslak axis, visible from the Bosphorus and Asian side, symbolise Istanbul's modern transformation and embrace of new façade technologies. However, the privilege of their panoramic views is often reserved for a few, defined by socioeconomic status. One potential solution could be to open select levels of certain structures, such as the Tat Towers, to public programs, democratising the view.

5. Adaptive Reuse of the Tat Towers

To address current spatial issues in Istanbul, such as the unknown future of vacant offices in CBDs, the shortage of diverse and equitable housing models, and the absence of well-planned and adequate social and physical infrastructure, a fourth-year architectural design studio, Tectonic Tactics, was set up as a laboratory. This semester-long studio initiated a five-week intense research phase, where students examined the area. This covered the historical and spatial analysis of the area, mapping of transportation networks, infrastructure, and site-specific conditions, as well as exploration of energy production potentials, water collecting and treatment technologies, and alternative food sources. Further investigations sought to reimagine future working and dwelling models, as well as the future of commons. In the subsequent nine weeks, the term was dedicated to the design phase, where six groups of students developed adaptive reuse scenarios for the Tat Towers, integrating their research findings into tangible design solutions.

The 41-storey Tat Towers stand at the height of 143 metres, encompassing a gross floor area of 142,000 sqm. This expansive space is divided into 28 levels designated for office use, with an additional eight underground levels dedicated to parking, shopping, and recreational facilities. Each of the twin office towers occupies a floor space of 1,150 sqm, interconnected through a multi-level atrium that spans from the ground to the fifth floor, housing a shopping mall. Due to legal constraints, images of the interior and architectural drawings are limited. However, the plan drawing of the southern block shows that the building complex is constructed using reinforced concrete, and the towers' stability is achieved through 12 columns placed parallel to the core, aligning with the façade's octagonal design (Figure 4). The façade is designed with blue, uniformly panelled curtain walls (Figure 5). Students' analysis revealed that the adaptive reuse of less common typologies as such requires a different design approach and new solutions that might inform housing design.

Construction of the towers started in 1989 and reached completion in 2008, though the interiors remained unfinished. Towers have a strategic location at the entrance of the Büyükdere–Maslak axis, connecting two major traffic arteries, Büyükdere and Barbaros Avenues, linking to the first Bosphorus Bridge, and standing as one of the busiest public transportation hubs. One might expect the complex to have drawn considerable interest, yet the towers have remained vacant since their construction, embroiled in ongoing inheritance disputes among the owners. Legal disputes, rooted in familial conflicts, persist, making any demolition proposals questionable. Therefore, their 15-year condition as the city's "ghost towers" spotlights their potential for transformation and innovation. However, compounding the issue, a 2011 report by Istanbul Technical University highlighted structural compliance issues, noting that the existing system failed to meet the requirements of the Turkish Earthquake Code 2007 (Öztürk, 2011). As such, substantial repairs and

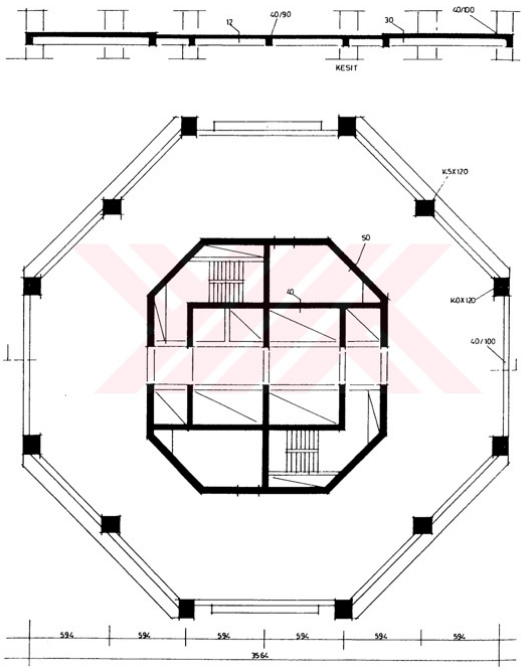


Figure 4. Plan drawing of the Tat Towers' southern block. Source: Yılmaz (1998, p. 56).

Figure 5. Street view of the Tat Towers.

strengthening work are prerequisites for the towers' future occupation in contrast with the newer high-rises along the Büyükdere–Maslak axis. Regarding this, students were also asked to consider and suggest structural improvements for a possible adaptive reuse scenario.

A notable aspect of the Tat Towers is their location directly across from the Zorlu Center, a mixed-use complex including residential, office, retail spaces, and performance centres. The construction of Zorlu Center, built on expropriated public land and once used as public housing of the General Directorate of Highways, was a matter of extensive public discourse. This vast 720,000 sqm complex, designed by Emre Arolat Architecture and Tabanlıoğlu Architects, was opened in 2014. The Centre boasts 72,000 sqm of

tiered green spaces and an expansive 45,000 sqm green roof, an "urban balcony" as named by the architects ("Zorlu Center / Tabanlioglu Architects + EAA - Emre Arolat Architecture," 2014). This green roof spans over the shopping mall, performance centre, and car park, with four luxurious towers—offering exclusive Bosphorus views and residences, offices, and a hotel—rising above. As one of Europe's largest green roofs, the "urban balcony" was conceived with the promise of public access. Ironically, despite its size and visibility, access remains restricted, resulting in a vast but inaccessible green vista (Figure 6). This makes the area particularly good for studying housing inequality and underlines the need for developing more diverse and equitable housing solutions.

Soules (2021) uses the Zorlu Center as an exemplar of "superpodiums," an architectural form that emerges from the rise of finance capitalism. Superpodiums amplify the housing liquidity by elevating residential towers above the ground and placing them on a "new" and "isolated" platform. The green roof of Zorlu Center, therefore, separates housing from the broader "global pool of investment assets." The intersection of finance capitalism and housing becomes particularly pronounced in such examples, given the financial sector's deep integration into housing real estate. Proximity to such a poignant symbol of stratification—between the "upstairs" elite and the "downstairs" masses—presents an opportunity. Any architectural proposal or intervention in this area would not only serve as a pioneering example but would also substantially boost public awareness. With predictions suggesting that by 2050 about 75% of an estimated 11 billion global population will reside in urban areas, the emphasis on vertical, dense housing becomes central in discussions of societal well-being. This makes the topic relevant for discourse within the architectural community and academic circles.

Students concentrated on scenarios addressing both environmental and site-specific concerns. While providing affordable housing for diverse demographics, these scenarios included programmes such as waste recycling, farming, energy conversion, education, retail, and services. All the studio projects emphasised the importance of crafting inclusive public spaces connected to residential functions; strengthening the structural system with innovative technology; and shaping a landmark that serves as a model for repurposing high-rise structures in a democratic manner.

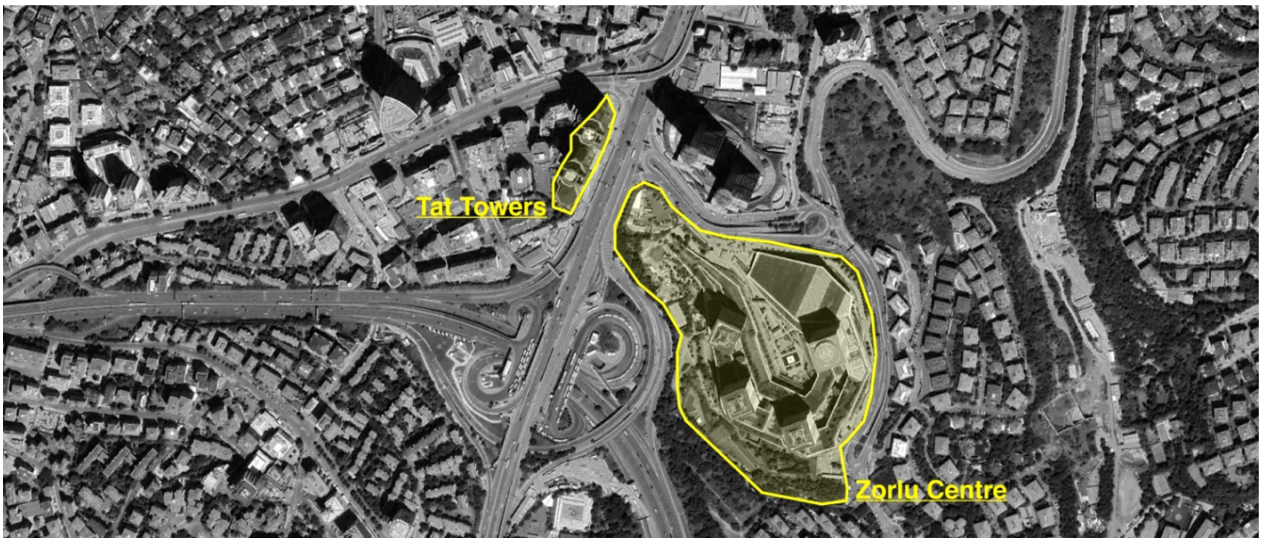
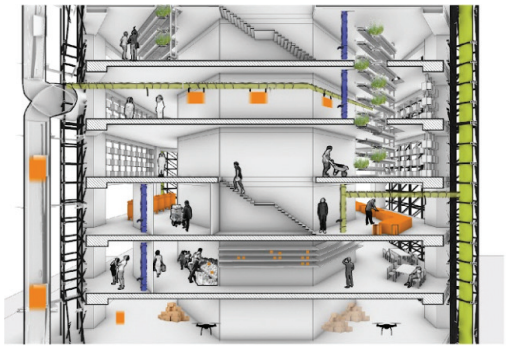
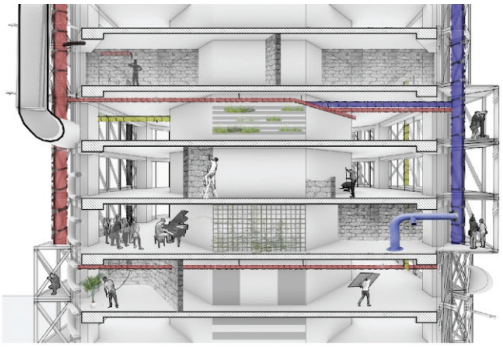


Figure 6. Aerial view of the Tat Towers and the Zorlu Center mixed-use complex.

Group 1 identified the high energy demands of heating, ventilation, and air conditioning systems as a key factor in the underutilisation of high-rises, and asked: How can we harness sufficient energy to facilitate co-living in these buildings? They suggested leveraging the unique aspects of high-rises, such as their height and visibility, to generate profit and forge an urban identity. This entailed a radical redesign, visibly integrating energy production systems into the building's façade, reflecting the area's industrial history (Figure 7). They proposed a set of sustainability measures: recycling waste, restoring water systems, installing wind turbines, promoting technologically advanced agriculture, and fostering urban beekeeping, the latter of which synergises with the diverse flora of the adjacent cemetery. These measures were designed to supply energy and food for both residents and public spaces. Regarding the future of housing,



Production + Drone System
The surplus of the products produced in the building is delivered to different regions with the drone system. This drone system, which repeats on different floors, enables the distribution of products quickly and easily.



Residence + Public Spaces
Users of the completely public space can temporarily use it for accommodation, work, etc. They also use it for activities. They can provide privacy by creating their own spaces with partition walls. The areas where the steel structure expands also increase publicity and increase the flexibility of the space.

Figure 7. Design proposal of Group 1. Images courtesy of D. Özer and H. Mutlu, 2021.

they predicted a shift in living patterns, with a trend towards reduced personal space, expanded communal areas, and downsizing or short-term uses.

Since the building is in an area used by office workers during the daytime, Group 1 proposed a residential solution that would allow those who work within the area but face housing affordability issues and long commutes the option to stay near their workplaces for short periods, with access to essential amenities like food and energy. Their concept reimagines not a house but a communal space offering "a bed" for the short term. Moreover, they strategically designed the towers to include public spaces, observation terraces on the upper levels, and exterior elevators. This proposal ensures that individuals from all income groups can access and enjoy the panoramic views of Istanbul, whether they are socialising, working, or resting.

Group 2 recognised the need for affordable eating options in the office-dense vicinity of the area, aiming to harness the communal spirit of food. They envisioned shared kitchens and expansive dining areas where people could gather at large tables for everyday meals or special events like weddings without incurring costs. Their vision included one tower dedicated to temporary uses—shared culinary spaces, event venues, a marketplace, and housing for office workers—while designating the other for permanent uses. The operation of the temporary tower was conceived to sustain itself, providing for energy and nutritional demands through methods like hydroponic farming, a distinction they wanted visibly reflected in the tower's façade. They proposed outfitting the left tower with a solar control façade to maximize spatial efficiency and modulate light and heat while reinforcing its structural integrity to support varied uses (Figure 8). Moreover, Group 2 planned to leverage the produce grown in the agricultural tower—considered a permanent use—by selling it at multiple outlets, thereby generating revenue and providing temporary housing units for local workers, aligning with the design proposal of Group 1.

Group 3 embraced the "entertainment for healing" concept addressing the psychological impact of economic strain and environmental distress. They proposed transforming the building into an accessible space for

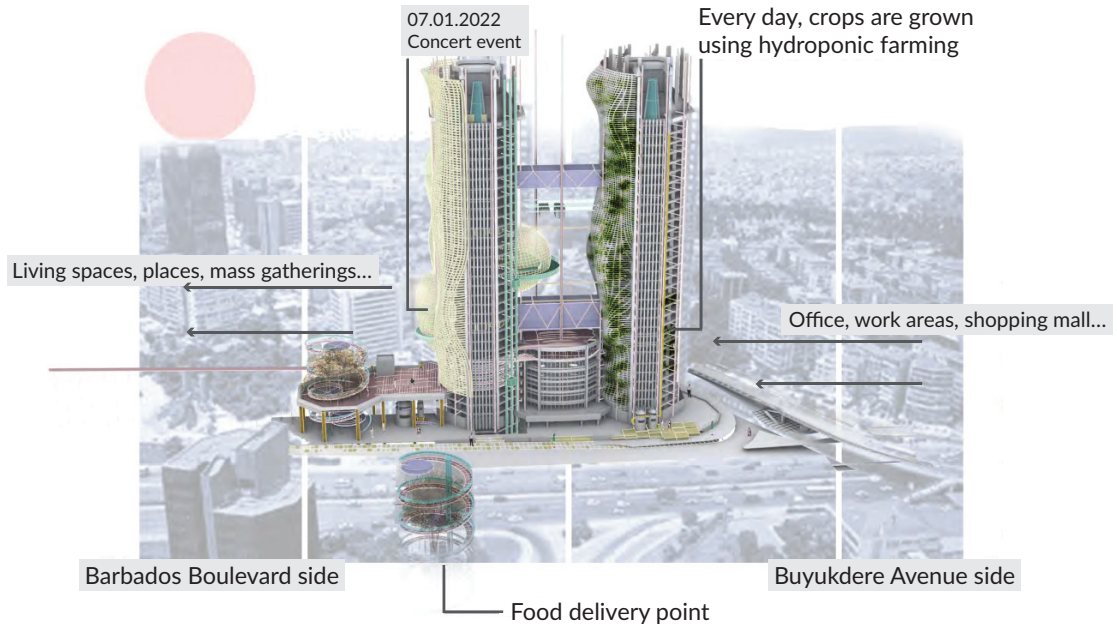
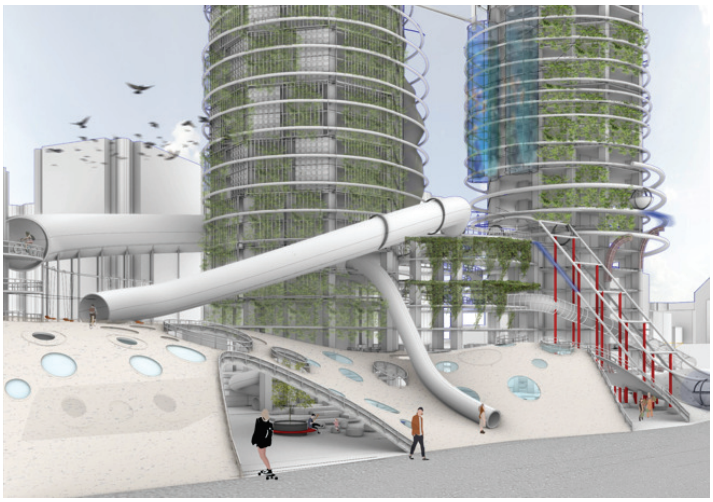


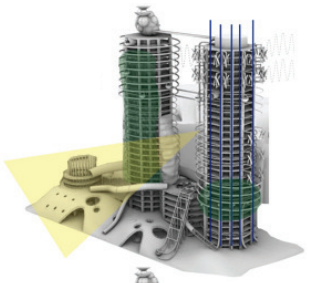
Figure 8. Design proposal of Group 2. Image courtesy of S. Koca and M. Sandıkçı, 2021.

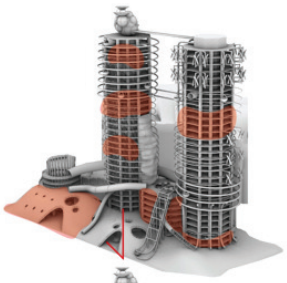
children, pedestrians, and cyclists by introducing a topographic façade that rises organically from the ground (Figure 9). This smoothly rising shell, intermittently perforated to allow natural light to penetrate, subtly refers to the underutilised shell of the Zorlu Center, which evolved into a green extension of the surrounding luxury estates over time. Their proposal aimed to create a multifunctional space where entertainment, housing, food, and energy production intersect harmoniously with hydroponic farming and algae cultivation, thus ensuring that the space was self-sustaining and engaging for individuals of all ages. Rejecting the conventional housing solutions, Group 3 reinterpreted the housing concept, seeking to provide shelter for those in need. They offered temporary housing to a broader demographic, including office workers, students, and women facing adversity.

Group 4 identified housing as a critical issue affecting not just families but also students and women in challenging circumstances, and they proposed a dual-purpose solution that would provide women's shelters and student dormitories within the building. They imagined the residents, as students and women, actively participating in vertical farming systems that would serve as a means of empowerment and a way to fulfil their basic needs. They also suggested a series of social programs to support the community further. Their



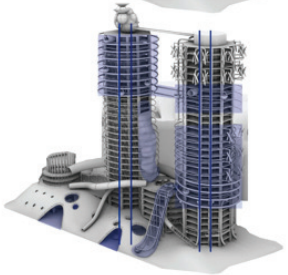
Step 1:
Open the building to the nature.
Natural resources (wind, sun, water) creating the systems that convert to energy (solar panels, wind turbines, aquaponic farming, vertical farming).

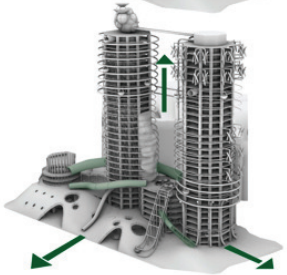




Step 2:
Adding commercial areas that create buildings' own economic cycle which is related with the future (data centers, future offices, drone garage, rentable event space, experimental open market).

Step 3:
Adding our main argument for structures to adapt the tower to our symbolic and innovative understanding.





Step 4:
Open the whole programs to the public.

Figure 9. Design proposal of Group 3. Images courtesy of C. Gürz and M. Kavçin, 2021.

architectural proposal features a shell beginning from the building's base and extending over the atrium, a design that not only covers the underground agricultural systems but also fosters public programs. This idea extends upon the unrealised ambitions of the Zorlu Center, bringing them to fruition. To address energy sustainability, they proposed the integration of algae panels into the façade, creating a unique night-time appearance. Their approach subverts traditional socioeconomic hierarchies, giving prominence and visibility to those often overlooked, ensuring that the towers' panorama is now a shared asset for all.

Group 5 proposed an innovative concept that refers to the area's historical ties to the textile industry and its position as a logistics hub due to its bridge connections. They envisioned repurposing textile recycling and clothing swaps as a communal meeting point, offering an alternative to traditional shopping malls. The building's height and central location were seen as strategic advantages, facilitating drone deliveries, and serving as a distribution centre for online shopping. Moreover, they suggested a sustainable energy and waste management approach for private and communal residences. Their proposal includes recycling furniture, water, and food waste, and integrating solar panels, wind turbines, and algae panels into the building's design, to create a self-sustaining ecosystem within the urban landscape. Their proposal also envisions inhabitants engaging in the building's production cycle, thereby eliminating the commute and creating a holistic environment that meets all essential needs of residents.

Group 6 identified disruptions to several systems, including accessibility, waste management, production, and housing in the area, and asked: How can we reconnect everyday life by treating the building as a topography? They analysed the urban actors, such as workers, shoppers, residents, travellers, and students, and addressed their needs to reconnect the dynamics of urban life. This includes transportation, offices, shops, recreational areas, and housing, with access through various designed paths and movements. By multiplying the ways of access, they challenged the conventional borders and limits of private property, questioned the dichotomies such as interior-exterior and public-private, and proposed an alternative sustainable living model for the Tat Towers (Figure 10).

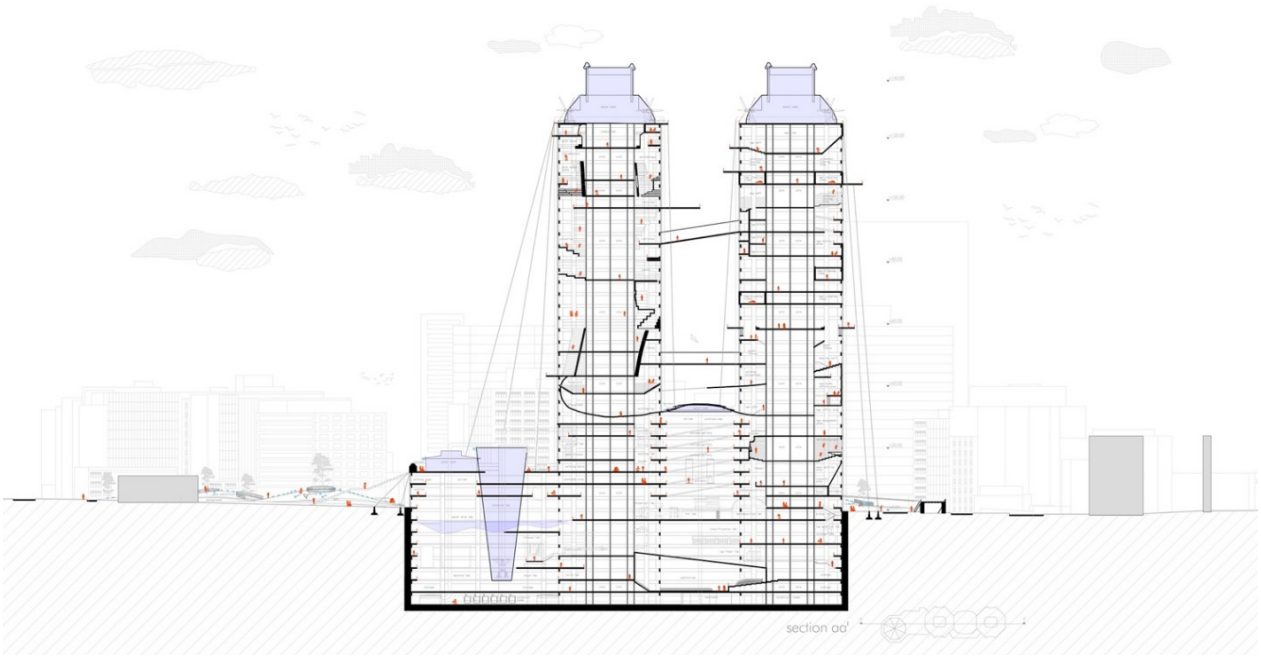


Figure 10. Design proposal of Group 6. Image courtesy of B. Meydancı and İ. Metin, 2021.

While discussing the topic in the design studio, the transformative potential of adaptive reuse was highlighted as a means to set a precedent. Beyond the benefits of lower costs and faster construction times, repurposing spaces with collective historical value into new, unique landmarks encouraged students to prioritise environmental considerations. It was critical for students to develop adaptable and flexible design proposals for various building types, including those under study.

Several recurring themes emerged in students' proposals. Foremost among these is the integration of food production into residential and social areas, a key component of the program. Proposals also included innovative solutions for the collection, purification, and reuse of water, and systems for recycling food and clothing. Renewable energy solutions featured prominently across the projects, with many advocating for using solar panels, algae-integrated façade systems, windshields, and wind turbines suited for high-rise buildings. These elements were functional and contributed to the building's unique identity and aesthetic.

The students' proposals reveal an understanding that housing issues are inextricably linked with economic and climate crises. A common thread across all design proposals is prioritising essential food, energy, and heating systems, reimagining the traditional home as a compact, temporary sleeping space. Moving away from standard 2- and 3-bedroom apartment layouts, the student projects envision short-term residential solutions, such as dormitories and shelters, to serve a diverse population. The emphasis on immediate, essential needs over traditional housing norms suggests that the urgency of the crisis has led to a focus on functionality and inclusivity in architectural design. For example, public spaces are integrated throughout the buildings, particularly on the upper levels, bringing communal areas closer to living spaces and enhancing accessibility.

Perhaps the most apparent commonality in the adaptive reuse scenarios for this prominent structure is the reliance on technology to support the envisioned "new life form." The proposed technologies and their display are integral to each concept, with façade designs deliberately detailed to showcase a technological aesthetic. This approach marks a bold step away from traditional aesthetics, highlighting a commitment to innovation and originality in the designs.

6. Conclusion

In cities such as London, New York, Toronto, Tokyo, Melbourne, and Hong Kong, the major conversion drivers have been sustainability aims, obsolete office buildings, and a tight housing market (Remøy & van der Voordt, 2014). In contrast, many office buildings in the Istanbul CBD already align with the green certification standards, are relatively new, and there is a surplus in the housing market, albeit with concerns about quality and accessibility. However, due to extreme earthquake risk, migration trends, and economic challenges, the growing need for secure, affordable, and energy-efficient homes is evident; and skilful applications of design-oriented space standards are inevitable in conversion. Consequently, democratising vacant or redundant private properties in central areas through adaptive reuse would epitomise the future of high-rises towards serving the public.

Studying energy crises, high-rise buildings, and extreme conditions in architectural design studios is often overlooked, yet delving into these topics is crucial. It has become evident that rather than developing housing units strictly designed for specific user profiles, there is a pressing need for inherently adaptable spaces conducive to communal or co-living arrangements. These spaces should prioritise optimising resources and

energy consumption and incorporate strategies to counter extreme conditions. To address these intricate and multifaceted challenges, a broader discourse is essential. Integration with diverse academic courses and formulating comprehensive recommendations are imperative, especially in the current landscape, where both research and practical applications in design are undergoing significant transformations.

While this study focused on the Istanbul context through an architectural design studio, many observations and insights are transferable to broader scenarios. To conclude, the students' proposals for adaptive reuse of vacant high-rise offices, such as the Tat Towers, present the following key potentials and challenges:

- The recent construction of these buildings typically incorporates earthquake resistance, promising safe housing options for diverse groups. Nevertheless, pre-earthquake code structures like the Tat Towers require strengthening work for compliance and safety. Students' projects tackled these issues, proposing structural improvements for the Tat Towers.
- The distinction between residential and office spaces is anticipated to diminish. Students embraced this potential and developed architectural programs such as mix-use, adaptable spaces, and inclusive short-term housing solutions such as dormitories and shelters.
- At present, these buildings stand isolated from their surrounding neighbourhoods. Transforming them into mixed-use programmes, improving public accessibility, promoting walkability, and ensuring sidewalk continuity can create socially inclusive spaces as well as co-living and co-working options for diverse demographics. Students highlighted this issue by focusing on pedestrian access and public social programs.
- Given their visibility from multiple vistas and their central location, these buildings have the potential to serve as iconic landmarks or models for future developments. Recognising this, students prioritised the façade design of their proposals to inspire subsequent adaptive reuse projects.
- Their energy-efficient, high-tech façade systems can optimise energy consumption, conserving resources and fostering environmental awareness. Many student groups proposed generating energy by solar panels, algae-integrated façade systems, windshields, and wind turbines.
- The integration of production and recycling systems within the future living scenarios of high-rises was deemed essential. The students' proposals highlighted the inclusion of spaces for food production, such as hydroponic farms, and emphasised sustainability measures encompassing water system restoration, waste, and textile recycling.

While this article explored the potential of converting high-rise vacant office buildings in Istanbul's context, the findings remained relatively broad due to the limited timeframe of the architectural design studio. Further in-depth and targeted studies on design solutions are essential to determine specific internal space standards.

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Conflict of Interests

The authors declare no conflict of interests.

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ARTICLE

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Manifesting the Imagined Homeless Body: A Case Study of the Men's Social Services Centre, Newcastle-upon-Tyne, UK

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Abstract

In this article, we explore the changing ways in which the homeless body has been conceptualised by architects and providers of accommodation for single homeless individuals. Tracing developments from the post-war period to the present, we focus on the needs and characteristics of single homeless individuals as they are variously imagined and constructed through the architectural design process. Through detailed examination of the life course of the Ryder & Yates-designed Salvation Army Men's Social Services Centre, Newcastle-upon-Tyne, UK, we explore how conceptions of the homeless body—shaped by, inter alia, architectural references, professional orthodoxies, and prevailing ideologies of homelessness—influenced the lived experience of the building. In so doing, we bring renewed attention to the capacity of architectural design to generate and shape the affective responses of the single homeless body, and thus the architectural profession's vital role in tackling the homelessness problem.

Keywords

architectural design; homeless body; hostels; single homelessness; social control

1. Introduction

In March 2020, as the UK entered the first of a series of national lockdowns, the government announced plans to make 37,000 emergency accommodation places available to homeless people. Disproportionately affected by chronic health conditions, homeless people were considered both uniquely vulnerable to Covid-19 and exceptionally ill-equipped to ward off its effects. They were also, other commentators argued, a direct threat to the social distancing measures upon which an increasingly desperate government was embarked.

This somewhat conflicting framing of homeless people as simultaneously "vulnerable" and "troublesome" has long been a feature of the UK (and wider international) policy landscape. For most of the past century, in fact, the homelessness policy response has been characterised by a curious combination of care, suspicion, and coercive control (Mitchell, 2003).

Such a response betrays, in part, a frustration at our inability to grasp the homelessness problem. Indeed, despite decades of government intervention, homelessness levels are increasing. In 2022, 3,069 people were estimated to be sleeping rough in England on any given night: a 26% increase on the previous year's figure (Department for Levelling Up, Housing and Communities, 2022) and a mere fraction of the total number of people living in temporary and/or other insecure accommodation (Fitzpatrick et al., 2023). Thus, at this juncture, it seems almost inevitable that supported accommodation ("hostels") for those without permanent housing will remain a central component of the UK policy response, mirroring its significance in other European countries where homeless numbers are similarly on the rise (Foundation Abbé Pierre, 2017).

Over the past several decades, research has shed valuable light on the experiences of homeless people (e.g., men, women, youth, seniors, and families) in a wide range of geographical and institutional settings (see, for example, May & Cloke, 2014; McMordie, 2021). Despite this, our understanding of hostels—in which large numbers of homeless people reside—remains limited by their opacity and by methodological challenges associated with the sometimes-chaotic circumstances within them. Although designed as sites of refuge, research has also shown hostels to be sites of "threat," including to material safety, self-identity, and autonomy (see, for example, Holt et al., 2012). Thus, a disjuncture is revealed between the bodily experience of hostels and the realities envisioned in the architectural plan. Yet, few studies have examined the lived experience of hostels through the confluence of architectural design and the homeless *body*. This article fills this gap by examining the relationship between conceptions of the homeless body, the architectural design of hostels, and the complex nature of experiences within them.

Beginning by considering dominant conceptions of the homeless body, the article then briefly reflects on the development of the hostel landscape in England from the post-war period to the present, teasing out the changing ways in which policymakers, service providers, and architects have conceived of and catered to the homeless body. The discussion is then grounded through a detailed examination of the design and lived experience of the Salvation Army Men's Social Services Centre, Newcastle-upon-Tyne (hereafter Newcastle), UK. In this, we explore the extent to which design principles and ideas have, throughout the building's life, meshed with more contextual understandings of the homeless body, as expressed by employees and residents. We also consider some of the particularities of the homeless body, the simultaneously supportive and moralising tendencies of much architectural design practice, and the wider lessons to be learned from the building's 50-year lifespan.

2. Understanding the Homeless Body

The homeless population is diverse, comprising individuals with varied backgrounds, experiences, and priorities (Anderson & Christian, 2003). Nonetheless, there are several widely accepted sub-groups within the homeless population, including rough sleepers, hostel dwellers, and "sofa surfers" (the non-statutory or "single" homeless), as well as families, older people, and young people (the statutory homeless), among whom some degree of homogeneity can be found. The rough sleeper and single homeless populations that

are the focus of this article are predominantly male, owing in part to homeless women often having more housing rights than men due to, inter alia, pregnancy or maternity, having dependent children and being victims of domestic abuse. There is also evidence that women are better able to navigate homelessness, as seen through their increased utilisation of informal support networks (Bretherton, 2017).

Additional studies have revealed the multiple disadvantages facing single homeless people. These include Homeless Link's annual survey of single homeless needs and provision, the latest of which identified high levels of mental ill health, needs relating to offending behaviour, and substance misuse problems (Homeless Link, 2023; see also Bramley et al., 2020). Levels of severe mental illness, drug use, contact with the criminal justice system, and poor physical health have been found to be generally higher among males, with female homelessness more closely linked to poverty and the nature and availability (or lack thereof) of support (Busch-Geertsema, 2010). Linked to this, a growing body of research indicates that the lives of rough sleepers and single homeless individuals are frequently characterised by histories of trauma and adversity. Often connected to challenging childhood and familial experiences, these histories are noted as causal factors in heightened levels of isolation, loneliness, and often ultimately homelessness (Sanders & Brown, 2015). Indeed, homelessness itself is widely reported to be traumatic and to leave lasting mental and physical impacts, including depression, chronic illness, and respiratory and serious pulmonary diseases (Lewer et al., 2019). All too frequently, these impacts combine and compound, resulting in a life expectancy approximately 30 years below that of the general population (Thomas, 2012).

Despite the myriad challenges facing single homeless people, attitudes toward their plight are polarised, giving rise to a diverse policy and practice response. On the one hand, "trauma narratives" of homeless people "in constant need of rescue" (Dillabough & Kennelly, 2010, pp. 3–4) have long provoked offerings of food and friendship, particularly from voluntary, community, and faith groups. On the other hand, and despite increased understanding of the structural causes of homelessness, there remains an overriding emphasis on the individual shortcomings and deviant characteristics of these "wayward souls." This emphasis tends to focus the debate on issues of "responsibility" and how best to "manage" the behaviour of single homeless individuals, including through measures such as legal prohibitions on activities such as going to the toilet outdoors, the use of public space protection orders to deter rough sleeping in areas such as shop doorways, and the deployment of "hostile" architecture such as anti-homeless spikes (Anderson & Christian, 2003; Johnsen et al., 2018).

According to Kawash (1998), these overt strategies of coercion expose several underlying rationalities. Firstly, they articulate a deep-rooted perception of the homeless body as threatening to public safety and the moral order. Secondly, they highlight the continuing separation of public and private in capitalist societies, and how the literal home-less-ness of the homeless body positions it outside society's hegemonic norms. The result, Kawash (1998) explains, is that homeless bodies are both frequently denied access to the public realm and required to render themselves "smaller" in it (Kawash, 1998). This does not imply that all homeless individuals comply with these coercions; researchers have also traced acts of "creative resistance" by homeless people, including the construction of temporary structures on footpaths and in leftover spaces (dos Santos, 2005), as well as the occupation of seemingly uninhabitable spaces such as sewers and storm drains (Lancione, 2019). Yet, while these studies remind us that four walls are not necessarily essential to practices of homemaking, their findings merely reinforce the normative appeal of the hostel as the "proper place" for the single homeless body (Bretherton, 2017).

3. The Hostel Model and Landscape

The provision of (emergency) hostel accommodation has long been the UK's dominant response to homelessness, and this shows no signs of abating. There are currently 911 accommodation projects ("hostels") for single homeless people in England, collectively providing 33,093 bed spaces (Homeless Link, 2023). These are spread across a variety of accommodation types, ranging from large hostels run by major voluntary organisations to small shelters and refuges run by modestly sized charities and church groups. The users of these hostels are similarly diverse, with more than a third of projects catering to young people between the ages of 18–24, including consistently high numbers of care leavers, and approximately one-in-ten serving those with high or complex needs (Homeless Link, 2023). Despite this complexity, most projects subscribe to a logic whereby homeless individuals move progressively through a series of residential services before, finally, being supported into independent living (Johnsen & Teixeira, 2010).

The purpose and quality of hostels have undergone dramatic changes over the past half-century. Emergency accommodation first became widespread in the 1970s, when its role was limited to providing a "safe space" to eat, sleep, and wash. Despite awareness of the limitations of emergency hostels, the absence of funding to renew and refurbish them meant many services operated through goodwill and out of old, disused buildings that were not fit for purpose. In many ways, this reflected a wider impetus to *discourage* homelessness applications and long-term residency in hostels through the avoidance of "excessive comfort" (Fitzpatrick & Wygnanska, 2007). Since the 1990s, however, a series of initiatives, including the Hostel Capital Improvement Programme (2005–2008) and Places of hange (2008–2011Change (2008–2011), have been launched, all aimed at establishing minimum standards and "levelling up" actual and normative hostel conditions (Fitzpatrick & Wygnanska, 2007). Critically, these initiatives granted local authorities and other homelessness services substantial funding to, inter alia, replace and refurbish large-scale hostels, transform night shelters into short-stay assessment centres (many linked to daytime services), and increase the number of referrals to employment support (Department of Communities and Local Government, 2007).

More recently, in 2020, the government published its National Statement of Expectations (NSE) for supported housing, providing comprehensive guidance on the effective planning, commissioning, and delivery of supported housing. This has driven further improvements in physical standards, leading to the closure of many large hostels and the emergence of smaller, more specialised facilities, mainly catering to families with children, single (childless) people, and both younger and older people. The NSE has also prompted increases in the level of support hostels administer, with providers now delivering an average of ten supplementary services, ranging from general housing advice and digital skills training to "meaningful activity" (Homeless Link, 2023). On top of this, hostel providers have been encouraged to adopt psychologically- and trauma-informed approaches to care, with evidence suggesting that services employing these approaches achieve more positive outcomes with users than those that do not (McMordie, 2021). All of this indicates that supported accommodation has progressed significantly beyond the concept of being merely "emergency accommodation," where *any* accommodation is considered preferable to *none*, to a stage where minimum standards, defined more holistically, are gaining traction.

Even with these changes, the effectiveness of the UK's hostel provision remains the subject of considerable debate. Evidence indicates that hostels often prove highly effective in assisting individuals to meet immediate needs and cultivate the skills and resources necessary for independent living (Johnsen & Teixeira,

2010). However, levels of eviction and abandonment are high, especially among those with complex needs (McMordie, 2021), with many single homeless people reluctant to reside in hostels due to concerns about safety and welfare (Mackie et al., 2017). At the same time, the professionalisation of the UK's homelessness system has (as elsewhere) fuelled a more punitive attitude towards those who refuse "treatment," creating a situation in which hostels become a place where the homeless body is "tolerated, temporarily and for short periods of time" (Kawash, 1998, p. 327). In the last two sections of this paper, we have explored conceptualisations of the homeless body and the hostel accommodation landscape separately. In the section that follows, we bring these discussions together, thinking about the homeless body in relation to the architectural design of hostels.

4. Hostels, Architectural Design, and the Homeless Body

Despite the contribution of hostels to the management of homelessness, there has been relatively little examination of the architectural design of hostels and its impact on the efficacy of provision. Partly, this is due to the limited number of hostels designed specifically for the homeless population; however, even where they have been, there has yet to emerge a comprehensive study of how the homeless body was imagined and how this imaginary manifested in the design, layout, and material finish of the buildings created. While little may be known about architects' understanding of the *homeless* body, the body more generally is widely acknowledged as the primary site and vehicle of human experience. Indeed, scholars and practitioners have long conceived of architectural forms as the physical reflection of the human body (Imrie, 2003), with its dimensions, proportions, and properties serving as essential components in the design process. Arguably the most vivid illustration of this tendency is modernist architect Le Corbusier's (1948) "Modulor Man," an anthropometric scale of proportions whose idealised silhouette borrows from both the Fibonacci sequence and the hulking depictions of detectives in English crime novels.

For all its notoriety, the concept of the modulor man has been roundly criticised, with much of the criticism directed at its rendering of the human body as "able-bodied, taut, upright, male and…as self-evidently invariable, normal, vigorous and healthy" (Imrie, 2003, p. 49). In fact, with the possible exception of its maleness, the Corbusian framing of the human body runs contrary to much of the evidence presented here; evidence that has highlighted the frequently pained corporeality of the homeless body. Given this, it would be understandable to perceive the Corbusian framing to be an aberration within an otherwise thoughtful project of human-centred design. But as recently as the turn of the century, practising architects were observed engaging in processes of "self-imaging," or adopting "their own bodies as the dominant point of reference" (Imrie, 2003, p. 53). In his study of the education and training of practising architects in the UK, Imrie (2003, p. 47) encountered an overwhelmingly blunt treatment of the human form, one that left it "without sex, gender, race, or physical difference." He also noted the central and enduring role of design texts, exemplified by Neufert and Neufert's (2000) *Architects' Data*, in constructing and reproducing geometrical discourses.

While the profession still has much to learn, recent research inspires confidence that architects are at least more aware of their role as "body workers," and more willing to participate in person-centred design processes (Bromley, 2012; Buse et al., 2017). They are certainly more aware of the limitations of conceptualising buildings as mute and passive, rather than the outcome of myriad human, material, and discursive practices, all with their own cultural and political inflections (Kraftl, 2010). In this latter schema, the homeless body is not subject to

the building's design; rather, it too possesses agency and intentionality, responding to its circumstances in a variety of ways, ranging from open defiance to appropriation and homemaking. Datta's (2005) study of the lived experiences of emergency shelters is illustrative in this regard, showing how some homeless families are able to cultivate a sense of home through the procurement of furnishings and appliances.

However, while acknowledging the significance of recent attempts to foreground the materiality of everyday embodied practice (see, for example, Kraftl & Adey, 2008), we also contend that this approach is now itself becoming something of an orthodoxy. In other words, though we are sensitive to the pitfalls of determinist thinking, and to the fact that architectural design always exceeds symbolic and representational interpretation (Kraftl & Adey, 2008), we also perceive limitations in the shift away from representational approaches over the last two decades (Dewsbury et al., 2002). In particular, pushing cultural and representational influences the margins risk obscuring their vital role in the constitution of human and non-human worlds, and particularly those in which power is unevenly distributed and socially contested (Thien, 2005).

5. Methodology

In the remainder of this article, we conduct a detailed examination of the design and lived experience of the Salvation Army Men's Social Services Centre (hereafter "the Centre") in Newcastle, drawing upon data obtained over a 10-year period and through three main activities. First, searches were undertaken in the archives of Ryder Architecture, the Salvation Army, and Tyne & Wear Archives and Museums (Discovery Museum). These elicited a wealth of information on the history and origins of the Centre, including drawings, photographs, and specifications (many rich with handwritten annotations), as well as more general information on the accommodation landscape of which it formed part. Although possessing flat, representational characteristics, these sources shed important light on the perspectives of key stakeholders regarding the homeless body. Searches of the British Newspaper Archive were also conducted, introducing us to the perspectives of those living and working in the Centre throughout its lifespan. Second, archival materials were considered in conjunction with our own first-hand experiences of visiting and engaging with residents of the Centre, collected through previous participatory and (visual) ethnographic studies involving approximately 40 participants (Irving & Moss, 2018). While the aim of these studies was to scrutinise the experiences of individuals navigating the homelessness system in Newcastle as a whole, they also yielded valuable insights into conditions within the Centre specifically. And third, we collated the insights of approximately 20 further individuals working in homeless accommodation across the city, many of them gathered on-site within hostels and other types of temporary accommodation, including as part of various outreach activities. For this reason, many of our conversations were not voice-recorded, but rather documented in field notes and reflective memos (Power & Jansson, 2008). What follows, therefore, is a broad and deliberately impressionistic account of bodily existence at the interface between the architectural plan and contingent reality.

6. Case Study: The Men's Social Services Centre

6.1. Values and Ethos

The Men's Social Services Centre (hereafter "the Centre"; see Figure 1) opened on Friday, 10th January 1975. Custom-designed and purpose-built, it was heralded by the building's commissioner, the Salvation

Figure 1. The Men's Social Services Centre. Photo courtesy of Ryder Architecture.

Army, as a place of care and support for single homeless men, including those with serious substance and mental health concerns. Founded in 1865 under the leadership of the Methodist minister General William Booth (1829–1912), the Salvation Army had, over the intervening century, established itself as one of the most forward-thinking institutions in the homelessness sector. Certainly, from its inception, it was highly progressive: firstly, in recognising homelessness as the outcome of a complex interplay between various personal vulnerabilities and structural challenges such as addiction, loneliness, and unemployment; and secondly, by providing support aimed at addressing the root causes of homelessness rather than just its symptoms, and by performing this work in a way that was neither time-sensitive nor conditional. Such thinking about the causes of and potential solutions to homelessness was not met with agreement in academic and policy circles until at least the early 2000s, and in some respects, remains contentious today (see, for example, Fitzpatrick, 2005). Thus, the Centre can be conceived of as an extreme case through which to examine the causal patterns and trajectories of wellbeing in hostel accommodation (Flyvbjerg, 2006).

Of course, the Salvation Army's fiery rhetoric and stringent interpretation of Methodism was not entirely welcomed, with many in society critical of its views on consumption and leisure (a situation famously chronicled by George Bernard Shaw in his 1905 play, *Major Barbara*). Within the Salvation Army, these practices were deemed detrimental to individuals and families and considered contributing factors to what many perceived as an era of "moral decadence" ("Tynesiders gamble and drink far too hard," 1959). Many of their most disparaging remarks were directed at the working class communities of northern England, where they contended that drinking and gambling were endemic ("Tynesiders gamble and drink far too hard," 1959). Indeed, both these vices were implicated in the downfall of many of the men presenting to the Salvation Army, a significant proportion of whom were judged "hopeless…[and inclined to] follow the path of least resistance" (Morgan, 1967, p. 6). Such remarks earned the Salvation Army's "zealous proselytizers" (Cloke et al., 2010, p. 56) rebuke, both from those suspicious of its efforts at social control and those disillusioned by its reluctance to challenge the structural bases of inequality. Yet, in the absence of any statutory provision for single homeless people, the Salvation Army had, by the middle of the 20th century, cemented its position as one of the UK's leading providers of homeless accommodation, with its network of shelters growing to offer lodging for almost 10,000 men by the late 1960s (Smith, 1969).

The specific origins of the Centre can be traced to a 1965 review of the Salvation Army's hostel programme, *Tragedies of Affluence* (Salvation Army, 1965). This highlighted that despite the best efforts of the Salvation Army, up to 35,000 men nationally could still be found seeking "shelter and friendship" on a given night. The context in which the review was published was undoubtedly a challenging one—and no more so than in Newcastle. By the early 1970s, the city's homelessness problem was acute, prompting one leading social worker to label it "scandalous" and observe how more than 100 individuals could be regularly found enduring "freezing conditions in park shelters or seek[ing] refuge under the bridges of Newcastle's Quayside ("'Scandal' of the homeless," 1974). Yet, if the need for new housing for single homeless people was clear, it was, the authors of *Tragedies of Affluence* admitted, "not enough [for the Salvation Army and other organisations involved in providing basic needs] to provide a roof and a rough bed"; they had to transform the nation's hostels into "places that will restore a man's self-respect, with carpets, curtains, showers and games rooms" (Salvation Army, 1965, p. 11). The Salvation Army thus embarked on an ambitious new programme of hostel development which, in its commitment to improving physical standards, in many respects anticipated the Places of Change agenda of the 2000s (Cloke et al., 2010).

Unusually for an organisation wedded to tradition, the Centre was designed not by the Salvation Army's own in-house development team but by an external practice, Ryder & Yates. Established in 1953, Ryder & Yates, at its height, was the most powerful purveyor of architectural modernism in the North of England (Carroll, 2009; Giddings & Moss, 2017). Greatly influenced by the Russian émigré architect Berthold Lubetkin (1901–1990), for whom both (Gordon) Ryder (1919–2000) and (Peter) Yates (1920–1982) had worked during his short stint as Architect Planner of the Peterlee New Town project, and in Yates' case by the famed modernist Le Corbusier, with whom a lifelong friendship had been forged in post-war Paris, the practice pursued a variety of work including commercial, industrial, and residential endeavours; indeed, in 1969 the practice designed an extension to the Salvation Army's Newcastle maternity home (and later women's hostel), Hopedene (Carroll, 2009). Taking particular inspiration from Lubetkin's ambition for public buildings to exhibit not only functional clarity but also aesthetic appeal and inspirational qualities, the two architects developed a design on City Road that embodied the latest in architectural thinking and a progressive understanding of the homeless body. In his remark that the Centre would "serve in love those who need not only a shelter over their heads and food for their bodies, but spiritual healing for their souls" (Salvation Army, 1975), Clarence Wiseman, the recently-elected General (international leader) of the Salvation Army, alludes to a deeper commitment to addressing the needs of the homeless, viewing their bodies as creative, thinking subjects rather than passive, unthinking objects.

6.2. Location and Spatial Context

The Centre was built alongside the Keelmen's Hospital (see Figure 2) in the heart of Newcastle's Quayside. This followed extensive consultation with the local authority (Newcastle City Council), which supported the consolidation of multiple sites dedicated to addressing the homelessness crisis. In fact, it was believed that the merging of the two sites would engender "a feeling of 'place' "—in which residents of the Centre, too, would have a stake—and make "an important contribution to the urban scene" (Ryder & Yates, 1972, no pagination). Centrally located, in contrast to more recent initiatives which have sought to remove homeless people from urban centres by sequestering them in shelters on the periphery (Mair, 1986), the Centre lived up to its billing as "the easiest place for someone new to the area to find" (Ryder & Yates, 1972, no pagination), while a 24-hour open-door policy ensured those presenting could "be sure of a clean bed and

good meals round the clock" (Ryan, 1976, p. 122). Against the current policy emphasis on "area connection," whereby access to homelessness support services is contingent upon geographical connectedness, these policies appear surprisingly enlightened, with the homeless body judged on its merits rather than on any institutionally imposed descriptors.

To further integrate the Centre into the surrounding landscape, Ryder & Yates "respected the height of its older neighbour and its relationship to the road, sweeping the building back in an asymmetrical curve of brick and glass" (Pevsner & Richmond, 1992, p. 477; see Figure 3). Set back from the passing traffic, and with a generous frontage made up of manicured lawn and Peter Yates' signature "earth sculptures" (essentially undulating mounds of earth atop a concrete substrate)," the Centre cut an impressive, if imposing, figure, and the efforts did not stop there. In a gesture that evoked Lubetkin's Highpoint II at Highgate, the entrance to the Centre was outfitted with a distinctive boomerang-shaped canopy, which, on the occasion of its official opening, was described by Sir James Steel CBE as seeming to symbolise the organisation's "outstretched arms of caring" (Carroll, 2009, p. 111; see Figure 1). More than a mere decorative element, the canopy radiated a welcoming spirit distinct from contemporary homeless hostels with their anonymous exteriors and secure entry systems, offering those passing beneath it a sense of belonging, dignity, and hope. In the clamour to

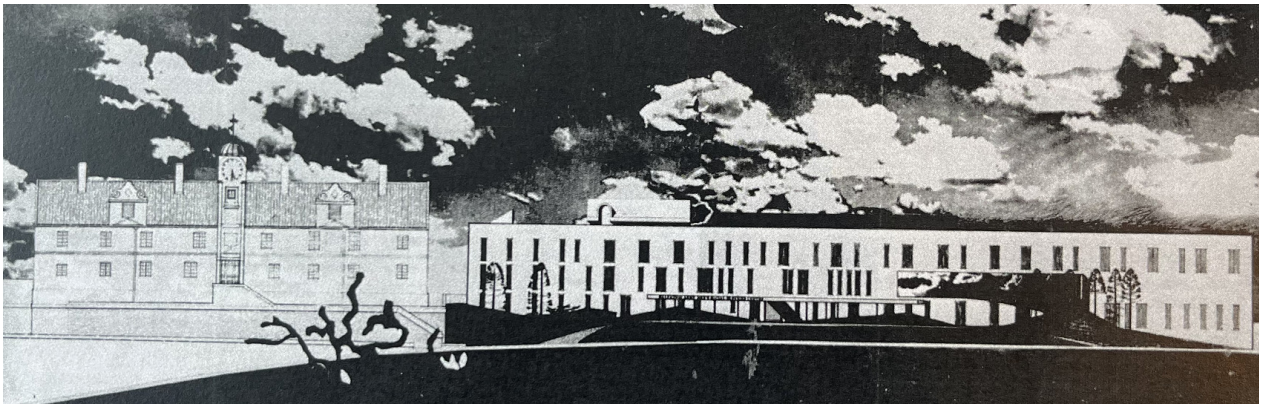

Figure 2. The Men's Social Services Centre (right) and early 18th-century Keelmen's Hospital. Image courtesy of Ryder Architecture.

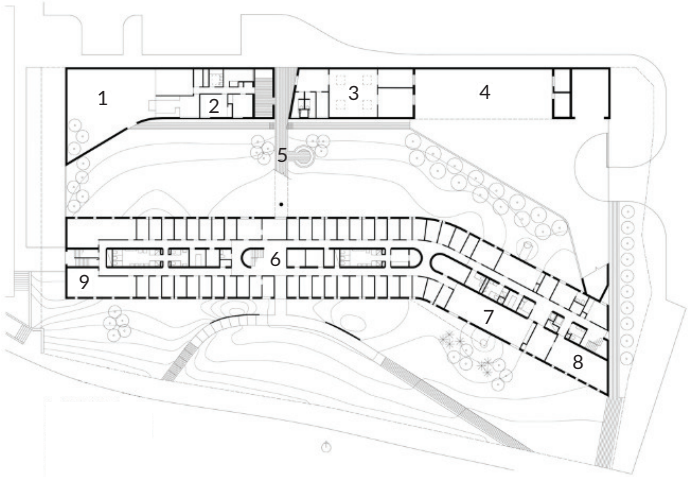

Figure 3. Building schematic. Image courtesy of Ryder Architecture.

better understand the everyday lived experiences of architectural space, it is important not to overlook the "ambient power" (Allen, 2006) caught up in such features, for visual communication and storytelling through them (as well as other signs and symbols) are processes which shape and compel human action.

6.3. Internal Layout and Fabric

Similar concerns for the thoughts and feelings of residents were embodied in the building's façade and other decorative elements. Most notably, in a clear debt to the region's shipbuilding heritage, the Centre borrowed the form and silhouette of a liner, with its rows of small windows resembling window-only cabins (Carroll, 2009). With this, a sense of togetherness and common cause is evoked, perhaps in the face of a sea of indifference; the 1970s was, after all, a decade in which single homelessness was still largely waiting to be discovered, much less dealt with. Furthermore, in recognition of the diverse experiences and individuality of the building's residents, the seemingly "casual arrangement of the windows"—which actually exemplified Le Corbusier's modulor proportions—was purposely "designed to avoid the institutional scale and spirit" of its predecessor, the "Men's Palace" (Ryder & Yates, 1972, no pagination).

For similar reasons, the building stood just three storeys high and, upon its opening, had the capacity to accommodate 184 men—three-quarters of them in cubicles rather than open dormitories (see Figure 4). Although this compares favourably with contemporary provisions, the Centre's capacity fell short of expectations set during the Salvation Army's ambitious yet ultimately challenging funding campaign. So much so, that at the time of its opening, the Centre accommodated no more men than had been housed at the former Men's Palace, whose "long soulless corridors…clinical looking white tiled walls…[and] sparse bathing facilities" had identified it as no longer "fit for purpose" ("Salvation Army on the move," 1974), and indeed, whose limited proportions had been implicated in the death of four men during a fire eight years earlier (Hedley, 1967). A key feature of the Centre's design, however, was the facility to reconfigure the internal partitions, which allowed, for example, the dormitories to be transformed into single bedrooms. Thus, by the mid-1990s, the Centre consisted of a reduced 98 rooms, and by the time of its closure in 2014, only 66 rooms, now equipped with en-suite facilities, were in use. This downsizing reflected a wider shift towards smaller hostel models that better catered to the safety, privacy, and dignity of those seeking support (Fitzpatrick & Wygnanska, 2007).

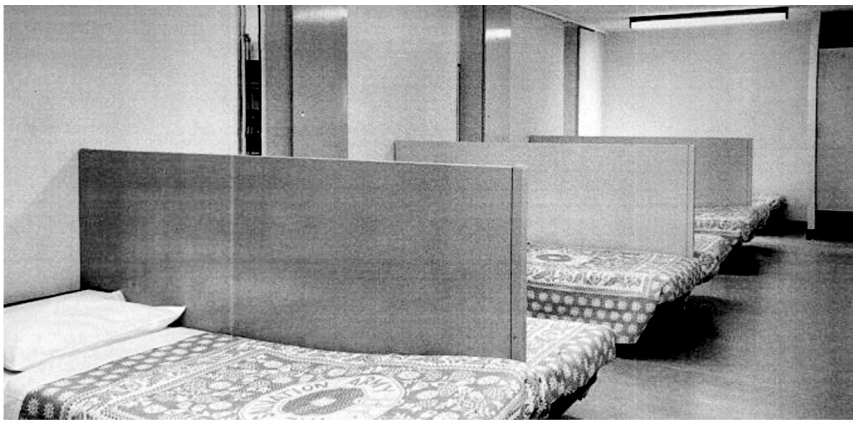

Figure 4. Dormitory bedrooms. Photo courtesy of Ryder Architecture.

All residents had convenient access to essential amenities, such as toilets and washing facilities, and were encouraged to utilise the in-house washing machines; however, it was observed that not all residents availed themselves of these facilities (Ryan, 1976). Certainly, alongside evidence of staff engaging in a variety of practices of care, there was a strong sense of the challenges of working with vulnerable and sometimes compromised bodies. The use of hard-wearing, wipe-down materials, for example, including the same blue brindle bricks that comprised the Centre's exterior walls, reveals a concern for hygiene and safety, while much is also made in the building's specification document of the Centre's two-stage ventilation system, complete with "boost" facility to "clear unwanted smells" (Ryder & Yates, 1972). Far from innocuous, such references align with longstanding portrayals of the homeless body as a source of "stench, waste and bodily excretions" (Kawash, 1998, p. 329). According to Mary Douglas, such "impurities" are widely seen as synonymous with social and moral defilement, but only (and crucially) in certain institutional settings. In other words, impurities are only considered as such because of the "systematic ordering and classification of matter" (Douglas, 1966, p. 35). In the social-reformist context of the Centre, where any impurity would likely have been seen as an impediment to communion with God, cleanliness and bodily hygiene would have been prerequisites for full and active citizenship, and therefore strongly promoted. That for some residents these ideals would have been difficult to attain (such was the precarity with which they lived) merely underscores the simultaneously coercive and enabling nature of much homeless service provision.

6.4. Communality and Socialisation

The Centre's facilities and services were housed in a central linear core, within easy reach of the bedrooms. This proximity was deliberate, being particularly important to the old and infirm who were located on the building's first floor. A small lift provided access to the other floors, catering to those who were unable to navigate the curving, partly open stair-well, although the Salvation Army was known to exhibit a suspicious attitude toward social mixing in confined and unsupervised spaces (Taylor, 1987). Residents also enjoyed access to various communal areas, including day rooms and a large canteen, which were supervised by the Centre's staff—numbering 28 in its early days—along with a small unit of volunteers, among whom women were often noted to serve "as mother figures to the men" (Ryan, 1976, p. 123). Whether the men themselves were complicit in this quasi-maternal relationship is unclear, but it is evident that the development of open, trusting relationships was integral to their engagement with the Centre's regime and policies (Watson et al., 2019). Residents were not under constant supervision, since the Salvation Army was committed to the Centre being considered "home" by the men, but staff admitted to keeping a "watchful eye" and intervening when concerns or issues arose (Ryan, 1976). In this sense, the Salvation Army mainly focused its efforts on rehabilitation, both by fostering healthy interpersonal relationships and cultivating a non-authoritarian atmosphere of nurturing and compassion (Garside, 1993).

In these ways, many of the Centre's communal areas acquired a distinctly "domestic" character, with their modern design and open-plan format encouraging family-like interaction and interdependence. Rich in spiritual significance, eating together was seen as a particularly important means of social and religious bonding, with one staff member reporting that a full-time cook was "kept busy in seeing that the ever-popular canteen is supplied with nourishing food" (Ryan, 1976, p. 123). Interestingly, such comments paint a more favourable picture of the caregiving environment than that conveyed by Kawash (1998), for whom the tendency of homeless services is to provide food that is "quick and easy" rather than nourishing and healthy. They also exemplify an attitude toward single homeless men, often associated with the

Salvation Army, that views the absence of family and informal support networks, along with the assistance and discipline they provide, as perhaps the most critical factor contributing to the downfall of homeless men. Certainly, providing advice and guidance on housing and resettlement was much less of a priority for the Salvation Army during the Centre's early years, as illustrated by Newcastle-based Brigadier Henry Jones's comment that, while "[t]here is liaison with council departments, and a few down-and-outs can be brought back to their families or into a permanent job and home…[the Salvation Army] is mainly concerned with housing, feeding and clothing the men" (Morgan, 1967, p. 6).

Contributing to the animated atmosphere, a south-facing oriel window, partly cantilevered to align with the curve of the building and running the length of one side of the canteen, allowed a ready supply of natural light to filter through (Carroll, 2009; see Figure 5). Typical of those admired by Le Corbusier, who considered ample light and clean air essential for the rational development of the individual, this window holds a prominent position in depictions of the Centre. Through the window, residents would have taken in views of the street and the Centre's grounds, which, in its early years, contained seats for those wishing "to sit and doze in the sun" (Ryan, 1976, p. 123). Scenes of this nature contrast sharply with those portrayed in contemporary sources, where the homeless body is invariably denied the opportunity to be still or idle (Jocoy & Del Casino, 2010). They are also striking for the way they challenge popular assumptions regarding how homeless people do (and *should*) spend their time; however, this should not be so surprising, as in previous projects exploring the everyday lives of homeless people, participants have discussed a range of attitudes and behaviours characteristic of "normal" functioning lifestyles (Irving & Moss, 2018).

Within the day rooms (see Figure 5), it was envisioned that the men could occupy themselves and form friendships through informal games and handcrafts. And, in an echo of earlier Salvation Army initiatives to promote the reintegration of single homeless individuals, some residents were permitted to take on paid work, with one staff member noting that "[m]uch of the casual work is done by residents…who are looking for a job, many of them discharged prisoners trying to get back on their feet" (Bovey, 1995, p. 5). Such accounts contrast sharply with those of the sector today, in which welfare benefits are often shown to impede employment opportunities for individuals living in high-cost supported accommodation (Webber et al., 2023), despite the well-documented benefits of work for individual wellbeing. One of the residents, Peter, who secured a job as a kitchen porter, said, "When I first came here, I didn't think I'd last long, but I've been here four or five years now, and it's all right" (Bovey, 1995, p. 5). In addition to work, opportunities for spiritual development could be found in the Centre's chapel. However, spirituality was as much a collective endeavour as an individual one, with prayer sessions taking place six days a week and Sunday gatherings regularly attracting up to 100 men (Ryan, 1976). Participation in religiosity has been shown to confer a range of benefits to homeless people, including reduced levels of substance misuse and psychological distress (Lovett & Weisz, 2021), though it is less in evidence in today's more secular environment and the debate over whether it is a conservative force or an emancipatory one remains polarised.

In the building's central core, a prevalence of curved walls express concern for the infirm, but also for the potential unruly behaviours of residents, reflecting commonplace understandings of hostels as both forces for change (Johnsen & Teixeira, 2010) and sites of retrenchment (McMordie, 2021). These walls are almost immediately counterpointed, however, by the contrasting geometry of the Centre's internal corridors, the linearity of which evokes Le Corbusier's (1948, p. 68) belief that "[t]he regulating line is a guarantee against wilfulness." Viewed in a more positive light, these corridors can be taken as means of orchestrating

neighbourliness and spontaneous conversation (see Figure 6). Certainly, the long corridors and dormitory-style rooms were envisioned to foster the development of friendships and alleviate the sense of isolation commonly associated with the homeless condition (Sanders & Brown, 2015). In this schema, the homeless body was not only deemed "salvageable" with the understanding and support of peers, but actually capable of giving back to the evolving economy of care. Indeed, it was with a sense of regret that some staff described how the transition to single-occupancy rooms—which unfolded over the course of the Centre's first two decades of operation—had in fact diminished the sense of community spirit. As one source, Mark, reflected: "Time was when everybody looked out for each other. That doesn't happen as much now.

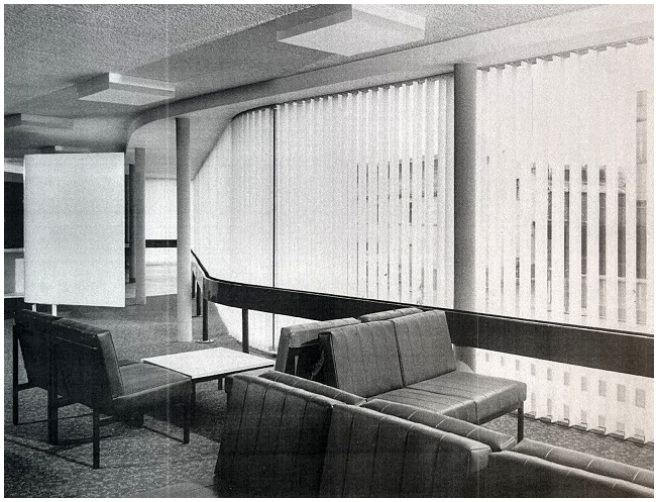

Figure 5. Communal day room. Photo courtesy of Ryder Architecture.

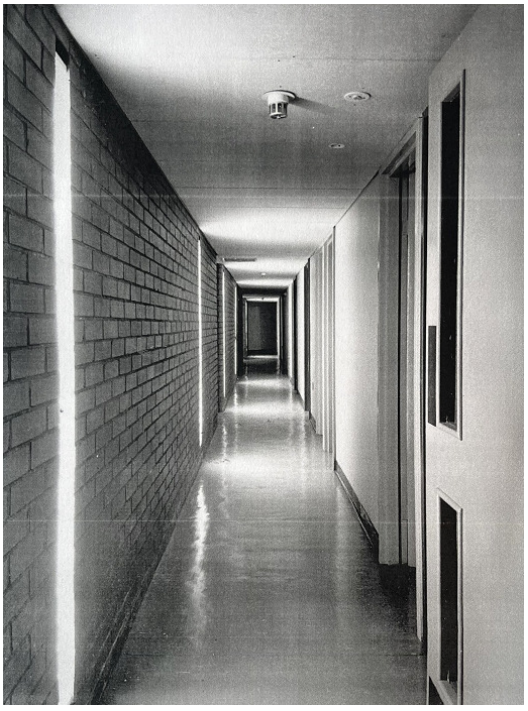

Figure 6. Internal corridors. Photo courtesy of Ryder Architecture.

Men go to their own rooms, shut the door and that's it" (Bovey, 1995, p. 5). Of course, underscoring the more general point about the difficulty of balancing intervention and independence, while peers are undoubtedly a crucial source of support for many single homeless men, it is also true that being compelled to be "in public" can have equally detrimental effects (Holt et al., 2012).

7. Conclusion

The contemporary hostel landscape, homelessness policy, and practice have progressed significantly since the immediate post-war period. While nonetheless punitive and stigmatising at times, today, practices are informed by an ethos of care, empathy, and welfare. Consequently, contemporary hostels which are a central component in housing the homeless population, strive to create atmospheres and environments characterised by this more modern, progressive ethos. However, what has arguably been overlooked within the contemporary hostel landscape is the importance of architectural design.

With this in mind, we have examined the location, key design features, and materiality of the Men's Social Services Centre to consider what lessons might be drawn. In so doing, we have explored the "body work" undertaken by the architects, Ryder & Yates, and their client, the Salvation Army, in anticipation of the (imagined) bodies that would inhabit the building. While respectful of the dimensions, proportions, and properties of the human body, our analysis reveals that the design of the Centre moved beyond traditional conceptions of the human body, instead reflecting the multiple and competing constructions of a body which is both highly vulnerable and dysfunctional. Accordingly, the building boasted features which were simultaneously empathetic and coercive, intended to facilitate the care and support of the inhabitants, while nonetheless seeking to manage any anti-social proclivities.

In many respects, the physical and psycho-social environment created reflects much that is now considered "best practice," and there is evidence that the building was successful in shaping the cognitive and affective responses of those who inhabited it, encouraging activities such as healthy eating, friendship building, and religious worship. Consideration of the lived experience of the Centre thus further highlights the positive role that person-centred buildings can play in the lives of those with limited agency, and it is perhaps not surprising that in 2015 the building received the status of "a significant welfare building with a highly distinctive character…[and a] high order of design quality and execution" (Historic England, n.d.).

Sadly, for some, the Centre closed in 2014 amid concerns about the efficacy of large-scale congregate environments for those with complex needs. Indeed, ideologies of care for the homeless have increasingly moved away from this model of single homeless accommodation (Fitzpatrick & Wygnanska, 2007). While the occupancy of the building reduced dramatically over its lifespan, even this sat outside new and preferred norms for hostel occupancy. The analysis thus reminds us of the relatively limited capacity of buildings to flex in response to changing norms and values. However, despite the its difficulties, this article has sought to demonstrate that we should not dismiss the Centre as a complete failure. Instead, we ought to consider what lessons can be learned from its architectural design and how these might be harnessed in the new hostel landscape, perhaps allowing the Centre to live on in spirit if not in form.

Acknowledgments

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Conflict of Interests

The authors declare no conflict of interests.

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Domesticity as Nation Building in the United Arab Emirates

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Abstract

The legacy passed on from one generation to another has deep connections to a shared identity, a sense of belonging, and cultural heritage. Different types of architecture reflect cultural and societal changes, especially housing. In the UAE, housing has played an important role in nation-building efforts, with the Emirati villa, a space filled with intangible practices through which domestic cultural production and national identity can be read. Therefore, the transformation of domesticity has been instrumental in the process of rapid Emiratisation and nation-building. This article discusses the tangible and intangible aspects of domesticity and hospitality found in the Emirati villa using conventional architectural analysis and live experience studies. By presenting what guides and informs domestic practices, one can read the interior space as a series of spatial qualities. It asks: How have Emirati homes become a means to create and preserve shared social practices? This aims to reveal how social practices, such as hospitality, are spatialised in Emirati homes, capturing everyday life and social norms. The article argues for the recognition of domestic cultural transformations as a valuable contribution to Emirati national identity over the last 50 years of nation-building.

Keywords

cultural heritage; domesticity; housing; nation-building; space production; United Arab Emirates

1. Introduction

The theorist Raymond Williams (1958) in his book *Culture is Ordinary* described culture as the pursuit of the spiritual rather than the material, highlighting that culture is *ordinary* and an ongoing process. Many types of architecture reflect cultural and societal changes. Housing, especially, has always been directly affected by external forces such as politics and economics, while also capturing everyday life. Homes can be considered the containers of everyday ordinary practices and wider social norms; over time these practices offer insights into a more collective identity. Thus, homes and the domestic practices within them can be understood as

embodying both tangible and intangible cultural heritage. Housing occupies a central social and political role in society by being considered the most important social welfare pillar and often a central means of ensuring political allegiance.

Reflecting on this relationship between social practices, identity, and political instrumentalisation, this article studies notions of the home and domesticity in the UAE by considering the socio-cultural characteristics and lifestyles of inhabitants. This is done in the context of new independence and oil discovery, which brought the idea of the *nation*, national heritage, and identity to the forefront of government consciousness in the 1970s. In particular, this article focuses on the Emirati villa typology as the concern and subject of nation-building in the UAE. The villa typology from the 1970s is defined as a stand-alone, one- or two-story building enclosed by a high wall defining the plot.

Anderson (1983) in *Imagined Communities* discusses a sense of *them* and *us*, when in the process of determining who is included and not, a sense of belonging is established. In the case of the UAE, this sense of belonging appeared difficult at the time of the union, in 1971. Tribal affiliation was strong in the 1970s and the new UAE had limited appeal to the deeply rooted belonging of the tribes. Sabban (2018) called this a *twin identity* and Rashid et al. (2022) go further to describe this identity as being socially anchored in tribal traditions, combined with ultra-modern construction and layout, which led to the UAE nation-building focusing on pure Arabness and Bedouin heritage. The wealth deriving from oil was invested into large-scale infrastructure and housing projects that visibly represented and spatialised a new national unity. Nation-building in a modern nation-state, like the UAE, is therefore a product of modernisation, social construction, and ideological invention (Litvak, 2009). Especially, the idea of being settled in a place was a new tradition, with the nation-building agenda closely linked to urban planning, and the provision of permanent housing to the Emirati population, which over the last 50 years has transformed and spatialised certain social practices such as hospitality.

Most homes predate *and* outlive the lifespans of their occupants. Consequently, the physical and material surroundings of a home can encapsulate their shared values across generations. The interior environment is key to giving meaning to people's daily and social lives and most of what matters to them often happens behind closed doors in the social space of the private sphere (Miller & Kozu, 2001).

Social space, according to Lefebvre (1974), is where cultural life is enacted, and patterns of social interaction emerge. Massey (1994), in "A Place Called Home," further highlights the pressure that space is under due to globalisation and calls this a phase of "time–space compression." Douglas (1991) refers to the home not as a fixed entity but as a movable space governed by forms of control and rules based on time and space. Therefore, homes embody both familial life and collective norms and practices.

King (1984) contends that relatively little attention has been paid to the domestic interior as an area of cultural production. This view is reiterated by Winton (2013) in "Inhabited Space: Critical Theories and the Domestic Interior." Lefebvre (1974) adds that space is structuring, and both encourages and discourages certain forms of behaviour, and interactions. The formal and social analysis of the interior can therefore reveal patterns of cultural etiquette, identity, and practices. These processes, everyday routines and rituals framed in a time and space are relevant when studying the forming of shared identity and heritage.

The transformation of the home can be considered to mirror the wider transformations of social relations. Yaneva (2012) in the book *Mapping Controversies in Architecture*, divides the world into *cause and effect*—in this instance, cause equals architecture and effect equals society—thus simplifying materiality and meaning. The shape, type, or style of buildings are in this sense deeply embedded in the social context of their time and offer an alternative way of thinking about how buildings emerge socially. Therefore, their analysis is a powerful means to inspect, interpret, and explain socio-spatial meanings.

Currently, there is no systematic documentation of the contemporary villa typology (Rashid et al., 2022), so this article explores the richness of these domestic histories in the UAE using a multi-disciplinary approach. It asks: How have Emirati homes become a means to create and preserve shared social practices? The aim of the article is to reveal how social practices such as hospitality are spatialised in Emirati homes and capture everyday life and social norms. It studies how the process of spatialising intangible practices becomes a more important driver and evidence of shared identity than the physical home itself. This starts to rethink the way interiors are studied by bringing together the analysis of the physical space with the experience of the inhabitant.

1.1. Methodology

To fully understand the significance of the idea of "home," one must overcome familiar academic boundaries (Hollows, 2008). The examination of domesticity and its relation to (in)tangible heritage necessitates diverse methods. This study employs a practice-led framework to reflect on the production of Emirati villas and their spaces. The means of interior design analysis are hereby understood as enabling more than just the study of object arrangements and as also revealing intangible aspects such as aspirations, identities, and experiences. Therefore, besides a formal analysis of housing design, this article explores how the lived experience of a home offers insights into spatial production, intangible heritage, and cultural transformations.

1.1.1. Drawing Analysis

As part of the research, a spatial study of 30 government villas and 30 privately designed villas was conducted to explore how the nation-building agenda is reflected in the design of Emirati villas. Spatial data, including plans, sections, and elevations for the villas, was collected and compared. This was used to analyse the architect's idea and the spatial value of interior spaces and to categorise spatial dimensions related to hospitality, services, and circulation.

A common way of studying the architect's intention and the relationship between design ideas, form, concept, and implementation is through the analysis of drawings, be it a sketch or more technical drawings. Among others, Unwin (1997) has presented strategies for using drawing in architectural analysis. Clark and Pause's (1985) studies of drawings focus on spatial order, while Jenkins (2003) discusses the active engagement of drawings and diagrams in uncovering the experience of architecture. The medium of drawing is widely seen as a "key disciplinary ally for architecture" (Kulper, 2013, p. 59).

Although Evans (1997) considers drawings the language of architecture serving as its main tool for communication, he also questions this by positing that "the transmutation that occurs between drawing and building remains to a large extent, an enigma," and indeed the drawing on its own has significant limitations as "not all things architectural can be arrived at through drawing" (Evans, 1997, p. 159). Nevertheless,

drawings are crucial in the design process, as they allow all parties to understand and evaluate the spatial relationships, dimensions, and visual appearance of a building. Drawings collectively serve as an essential tool to develop and communicate design intent and are a means to represent and test space and its social meanings. In part, this is possible as space, as defined by space standards, has, to some extent, become a measure of our social norms. Space in this sense can demonstrate conscious or subconscious decisions about what and how much space is needed for domestic life, with drawings capturing this process of design thinking and social conventions (Park, 2017).

Residential space standards are well established in the West. One of the best-known space standards is that proposed by the UK Parker Morris Committee (Ministry of Housing and Local Government, 1961) in their report *Homes for Today and Tomorrow*, which adopts a functional and analytical approach based on evidence collected through the observation of normal daily activities. However, in the UAE, the urban and social context is very different and to fully understand the intangible aspects of the production of domestic space—the process of interiorisation and spatialisation—some additional layers of questioning are needed.

In this article, drawings are read as a point where visualisation and thinking are fused into a relational and synthetic practice. This thinking can be abstracted from the drawings by analysing zoning, dimensions, functions, hierarchy, and decorations.

1.1.2. Lived Experience

Drawings alone are not enough to capture everyday lived experiences and domestic practices, with everyday meaning transferred or learnt within these spaces (Williams, 1958). The drawing analysis is therefore supported by 10 semi-structured interviews with residents and six within the design community to better understand the cultural practices that take place in homes. Each interview lasted around 40 minutes and was conducted between 2020 and 2022. The interviews were analysed following Braun and Clarke's (2006) six-phase approach to thematic analysis. This helped the identification and organisation of shared themes across the interviews, enabling the analysis of interior space as a series of spatial qualities and how traditions have become spatialised over time. Hereby, hospitality emerged as a key theme of analysis.

The research collected user data in homes in Dubai. Diary methods, combined with other methodologies, have been successfully used across a range of different disciplines (Bolger et al, 2002). To avoid perceptions of intrusion or interrogation, the chosen strategy was a "time and place" diary format, with participants recording activities throughout a 24-hour period. This method connects domestic rituals, activities, and behaviours to a time and place within the home, providing contextual insights into the lived experience of the occupants. It enables a more ethnographical understanding of the spatial qualities and rituals, by uncovering how spaces are actually used, beyond the architect's intentions.

Hospitality studies have traditionally been interdisciplinary in their approach, as scholars pursue diverse aims and objectives. In this study of Emirati housing, hospitality is framed through a heritage perspective to study shifting domestic boundaries and changing codes of etiquette within the home. Through the study of heritage and domestic spatiality, the intangible aspects of homes and hospitality are explored.

2. The Role of Housing in Nation-Building

It has been argued that the oil discovery in the early 1960s and the subsequent wealth distribution among the Emirati population created an authoritarian power structure, with the political or tribal elite controlling all assets (Foley, 1999; Reinisch & Thomas, 2022). This wealth distribution was also closely tied to citizenship, with citizenship policies, often linked to one's tribe, place of birth, or family book, determining the level of financial support a person was entitled to and measuring one's status as an Emirati citizen (Lori, 2013). In essence, citizenship in the UAE is dynamic, distinguishing citizens from expatriates, and it is closely linked to how Emiratis are provided with land to live on and property to live in by the state.

A modest government plot was around 24 × 20 m in the 1960s but has since increased to 31 × 44 m today. Figure 1 shows the plot but also urban density and layout changes between the 1960s to 2020s. The organic typology has been remodelled around a clear road infrastructure, with rows of villas sitting within the plot, not filling it. Initially, homes would typically fill the entire plot. However, the 1980s saw a shift when plot sizes tripled, but the actual size of a home stayed about the same. Over time, this relationship between plot and home size has changed, and the home now fills much of the plot again. The gifting of housing, education, and healthcare is part of a national building programme, meant to re-establish and maintain sovereignty by reinforcing tribal loyalties.

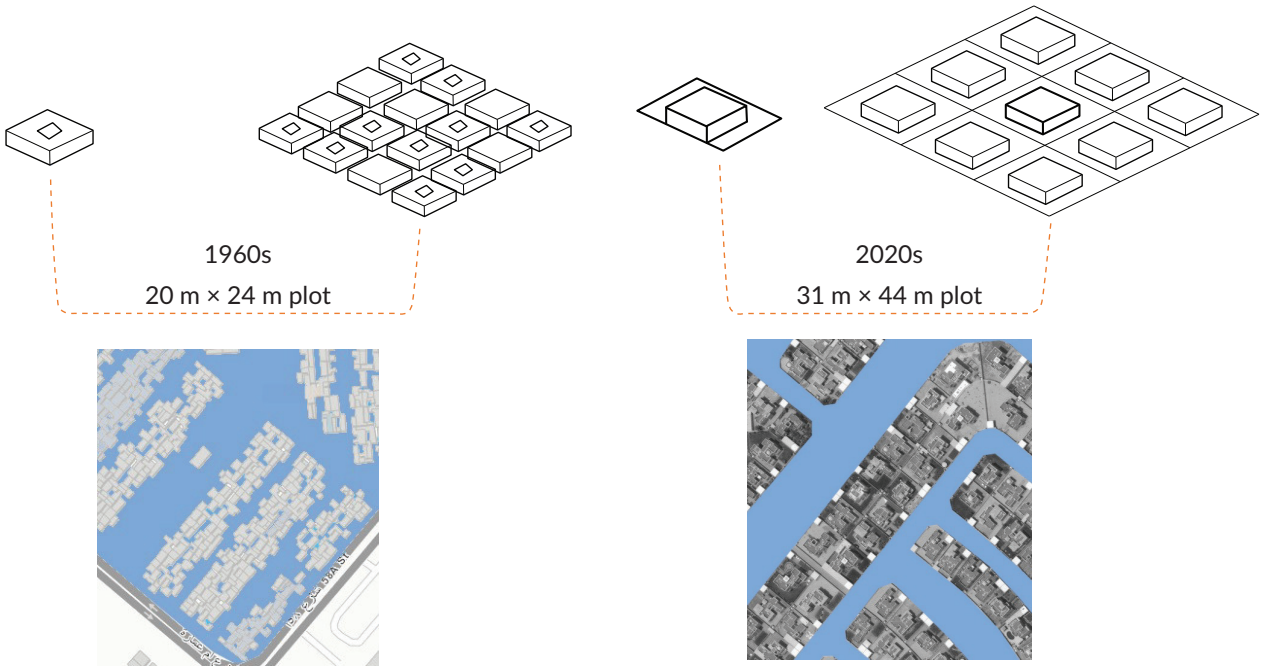

Figure 1. Changing plot sizes and urban layout over 50 years.

As the UAE emerged, so did a more structured nation-building agenda that, amongst others, focused on the provision of housing and the creation of new urban centres. Initially, in the 1960s and 1970s, the notion of better living conditions was used to encourage people from the peripheries to move into more central, urban locations, through the promise of better housing. Later this would be complimented by incentives such as access to healthcare and education.

Citizens started coming from Liwa, the empty quarter, to urban places like Abu Dhabi, where they were offered new housing with water and electricity (Heard-Bey, 1982). This housing was very different to the *arish* housing they were used to. Figure 2 shows an *arish* house. The structure is made from palm branches and trunks, utilising natural wind ventilation. Figure 3 shows a common housing cluster in Dubai in the 1960s, it is a mixture of *arish*, courtyard housing and low-rise modernism. These images highlight development that was already being undertaken before the 1971 union. There is a tendency to dismiss pre-union housing as not worthy of discussion but, by this point, there is already international and local architectural dialogue happening that is vital to understanding its contribution to modernising or remodelling traditional housing.

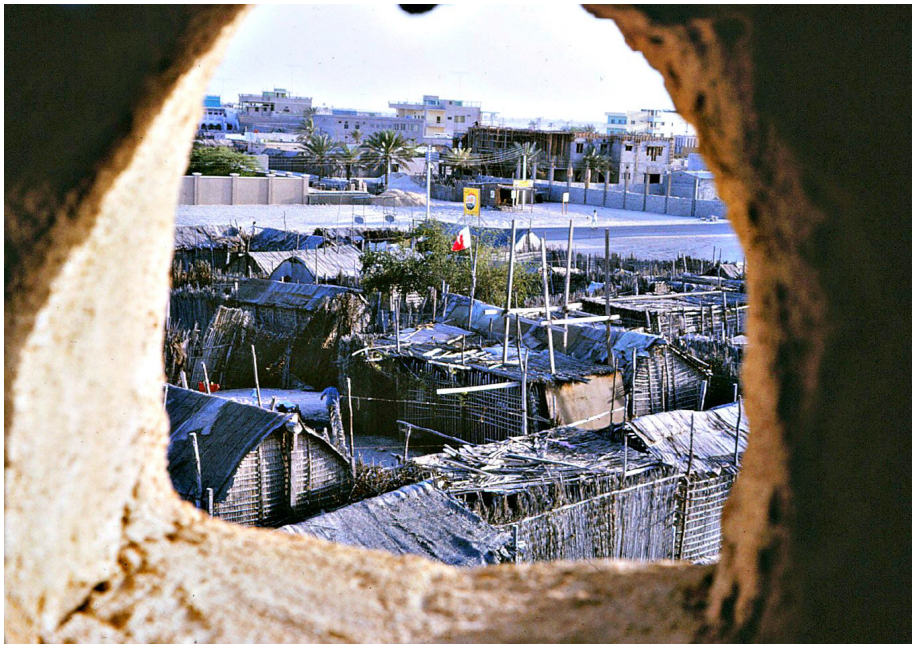

Figure 2. *Arish* community in Dubai, 1960s. Source: Courtesy of Len Chapman.

Figure 3. Housing cluster in Dubai, 1960s. Source: Courtesy of Len Chapman.

New, modern homes were built in the 1970s for a young nation still lacking basic infrastructure. In a bid to settle the nation, Sheikh Zayed further engaged international practices, to design national housing. These attempted to capture existing lifestyles and cultural patterns through a range of layouts and spatial possibilities while embracing up-to-date construction techniques and materials. To entice citizens to settle, they were provided by the government with land to build their homes on or offered subsidised or low-cost housing. This condensed historical timeframe of creating a national identity and infrastructure in the UAE and by default a national identity has meant that the Emirati narrative has always been forward-looking instead of looking back at the past. Without documentation of the past, it is difficult to understand spatial changes and it is essential to understand the heritage and cultural transformations on which shared identities depend.

Since the 1970s, increasing importance has been placed on tradition, heritage, and national identity across the UAE and the Gulf region in an attempt to create social cohesion within a minority local population (Mazzetto, 2018). However, by presenting heritage as a general 'linear, coherent and stable history of, and for, the population" (Erskine-Loftus et al., 2016, p. 1), this transition into modernity has been characterised as an imagined transition.

The concept of "imagined communities and traditions," which is perhaps one of the most cited terms when discussing nationalism or national identity in the region, originated in the 1980s. The first was Eric Hobsbawm and Terence Ranger and their *The Invention of Tradition* and, the second, was Benedict Anderson's *Imagined Communities*, both published in 1983. Despite being perceived as something from the past, Hobsbawm and Ranger (1983) argues that cultural practices are relatively new and a way to create national identity or unity. Anderson (1983) refers to a nation as a socially constructed community that is developing a national feeling, with the people in a community perceiving themselves as part of a group. This national identity is reinforced by the print and broadcast media through shared images, symbols, and activities that create a sense of collective identity (Hawker et al., 2005).

While academic studies of housing have tended to focus on the local and environmental context and how heritage studies are driven by world heritage policies, adopting a governance top-down perspective, new discussions about the *imagined* and politically driven heritage experiences within the UAE have emerged in more nuanced ways since the 2000s, building on Hobsbawm's and Anderson's work (AlMutawa, 2016; Hawker, 2002; Khalaf, 2002; MacLean, 2021, Prager, 2015). Aligned with this, the article considers an approach through the live experience of housing to expand conventional interior design analysis and study domestic cultural transformations in the UAE.

3. The Invention of a Housing Tradition

Wealth sharing in the UAE is closely tied to patronage and ensuring loyalty among various tribe families. In this context, housing and nation-building programmes are part of a national narrative to create a new sense of shared identity and a new housing tradition. The welfare provision or gifting of land, property, and services still continues today and has resulted in many Emirati neighbourhoods scattered across the UAE (Alawadi, 2018).

The current housing paradigm in the UAE tends to overlook continuities with the pre-oil era and its built-scapes (Rashid et al., 2022), assuming a sharp division between pre- and post-oil housing histories. This

tends to suggest that new developments seemingly rose from the sand in the 1970s and overlooks the role of wealth sharing through housing in creating a cohesive national identity, the influence of international practices in the Emirati villa design, or construction methods that were all formative to housing within the region. This makes it difficult to understand the intrinsic relationships between cultural transformations, spatial changes, and patterns that inform heritage and housing histories.

The lack of more diverse studies and systematic documentation of contemporary housing and its histories has facilitated an "invented" understanding of the past (Anderson, 1983; Bourdieu, 1993; Hobsbawm & Ranger, 1983; Rashid et al., 2022)—"invented" in the sense that international impact is not often given enough recognition beyond that of stating Sheikh Zayed's curiosity in the 1980s, even though nation-building programmes were developed by foreign consulates, as in the case with the UAE. Generally, the heritage narrative skips housing, jumping from Bedouin living to today's global setting (Hawker, 2002). The heritage of Emirati housing is often only written about from a traditional perspective, focusing on *arish* housing or natural cooling systems (Alawadi, 2018; Bani Hashim, 2018; Elsheshtawy, 2019; Hawker, 2002; Heard-Bey, 1982), with its interiority, domestic practices, and everyday life not considered having heritage value and therefore remaining largely undocumented.

The region has sought heritage recognition since the late 1970s, when the UAE joined UNESCO, indicating interest in formal heritage management (Silva, 2015). The ongoing debate about what *is* considered heritage value led in 2018 to The Modern Heritage Initiative was introduced to preserve buildings from the 1960s and 1970s, which have contributed to preserving "the memory of the place" (Sosa & Ahmad, 2022). However, housing tends to be dismissed, with neighbourhoods in Deira and more famously Shindagha and Al Fahidi modernised without consideration for its historical relevance (Alhasawi, 2019; Boussaa, 2014), a pattern that continues today. Al Shorta, a neighbourhood of 419 homes built in the late 1980s, was demolished in 2021, without any documentation, to make way for a large speculative development. Earlier in 2018, the first part of this neighbourhood also fell to the same fate; however, it is documented in *Lifescapes Beyond Bigness* (Alawadi, 2018). This demonstrated a lack of recognition in the neighbourhood, housing, and lived experience of a community that had lived and evolved over a 40-year period in Dubai.

Besides government-led heritage agendas, several proponents have presented an alternative perspective of nation-making projects, with the UAE Pavilion at the Venice Biennale being the most consistent. In 2014, the exhibition *Lest We Forget* (Bambling) created an archive of architectural developments in the UAE of the last century; in 2016, *Transformations: The Emirati National House* (Elsheshtawy) explored how standard housing was being adapted by residents, and, in 2018, *Lifescapes Beyond Bigness* (Alawadi) investigated everyday landscapes outside mega-developments. Each exhibition offered a different perspective and approach to understanding architecture in nation-making projects. Due to the intense development over the last 50 years, it is not surprising that there have been many different approaches to recognise and manage cultural heritage (Golfomitsou & Rico, 2014).

A Western influence on this early development is evident from a footnote by Bristol-Rhys (2009) in *Emirati Historical Narratives*, which states that by the late 1950s, there was increasing resentment about living conditions in the Trucial States, and the British were held accountable for having done little more than helping themselves. However, with the European, American, and Gulf Cooperation Council states all involved in construction projects in the region, the Emirati villa typology was heavily influenced by external

cultural developments. For example, in Dubai, the British Architect John Harris, and in Abu Dhabi, the Egyptian Planner Abdul Rahman Makhlouf, were key figures in developing masterplans.

With the large expat population arriving in the 1980s also arrived the "LA suburban lifestyle," exemplified by well-known developments such as 100 Villas and Chicago Beach. Figure 4 is 100 Villas (since destroyed) which was an expat community of single-story villas, with pools, greenery, and simple infrastructure. These developments introduced a resort feel with swimming pools, tennis courts, and cafes. They would pave the way for the development of similar small compounds in Jumeirah and Umm Sequim over the next 15 years. At the same time, plots of land were being sold to wealthy merchants to build housing for expats.

Figure 4. Iconic 100 Villas in Dubai, destroyed in 1998. Source: Kareem (2018).

However, this lifestyle was not yet comparable to the majority of the local citizens, who still lived without running water, electricity, or sewage systems. In contrast to expat housing, a diverse architectural landscape, *arish* housing was still very common, connecting community facilities with *sikkas*. However, by the 1980s, courtyard housing and high-rises would widely coexist with the adoption of Western lifestyles and conveniences.

Key studies of national housing were conducted by Al-Mansoori (1997), El-Aswad (1996), Elsheshtawy (2019), and Heard-Bey (1982). Worth mentioning is the Bayt Sha'bi (the national house), which was the result of a low-cost, mass housing initiative. By the 1970s, these mass-produced, simple two-bedroom villas with a kitchen, bathroom, and courtyard were being built by the thousands (Elsheshtawy, 2019). However, they did not meet the cultural needs of the Emiratis, failing to capture local identity and provide suitable spaces for customary practices. Over time, makeshift additions made these homes more suitable to local expectations shaped by gender-specific activities, varied needs for privacy, and different hospitality practices (El-Aswad, 1996).

The early villas built in the 1970s and 1980s had a limited understanding of these culturally important aspects and were largely based on imported housing ideas and lifestyles, though this is not widely acknowledged when discussing the cultural heritage of the UAE. Figure 5 shows a typical government Emirati villa from 1974, demonstrating the "dirty" kitchen outside of the living quarters of the villa. The majlis has its own entry point, to allow male and female privacy, which is valued both culturally and religiously. This spatial understanding has cultural importance valued even from the Bedouin era when there were clear practices happening in spaces.

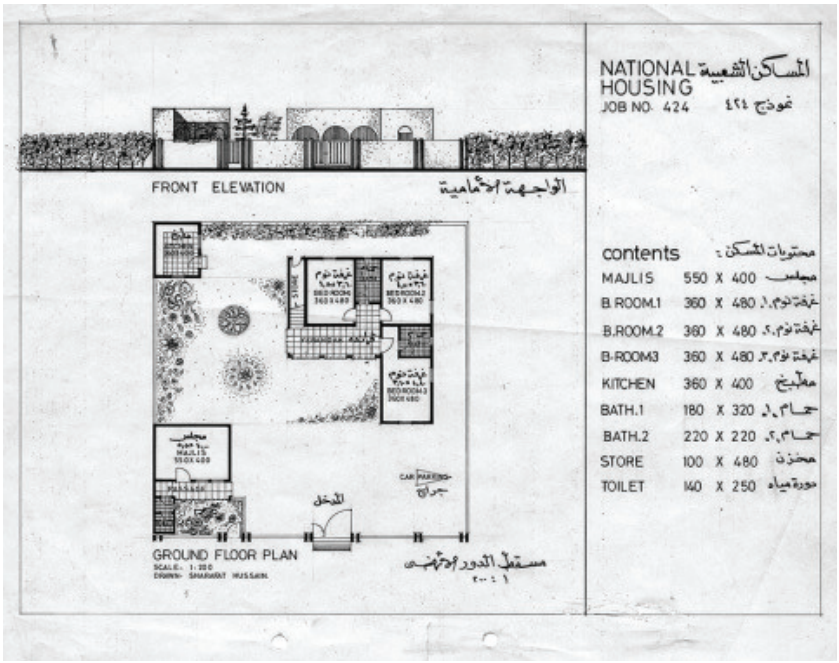

Figure 5. A typical 1974 plan, illustrating the "dirty" kitchen and the majlis accessible from its own entrance. Source: Elsheshtawy (2019, p. 30).

Figure 6 is a typical interior layout of a Bedouin tent. There is interior flexibility; however, it is clear the importance of spatial practices for the users. The family space is tucked away at the back away from the public gaze and the male guest space outside the tent. Many spatial divisions were still apparent in the 1974 plan (Figure 5). The villa typology has become representative of a local way of living: From the 2000s onwards, they have adopted a more familiar layout, demonstrating an international input. Figure 7 shows a typical plan from a government project in 2000. It is from a large neighbourhood in Dubai, that has over 500 villas. This is a standard two-story, three-bedroom, standalone villa that sits centrally in a plot of 30 × 40 m. The kitchen is now inside the villa, with clear service access to the maids' quarters and back door. The majlis is within the villa but does have its own private entrance. What these samples demonstrate is the Western influence on spatial planning within the Emirati villa. Another way to understand the importance of these spatial developments is through privately designed Emirati villas. This example is one of 500 villas built in 2007 in Basha South in Dubai with two to five bedrooms. Housing policy does allow some transformations within the plot that accommodate a more culturally traditional approach. The privately designed villas in Dubai give an insight into what spaces are important to Emirati. While the plot size most of the time is much larger than in government villas, the relationship between dimensions is still relevant to understanding spatial value.

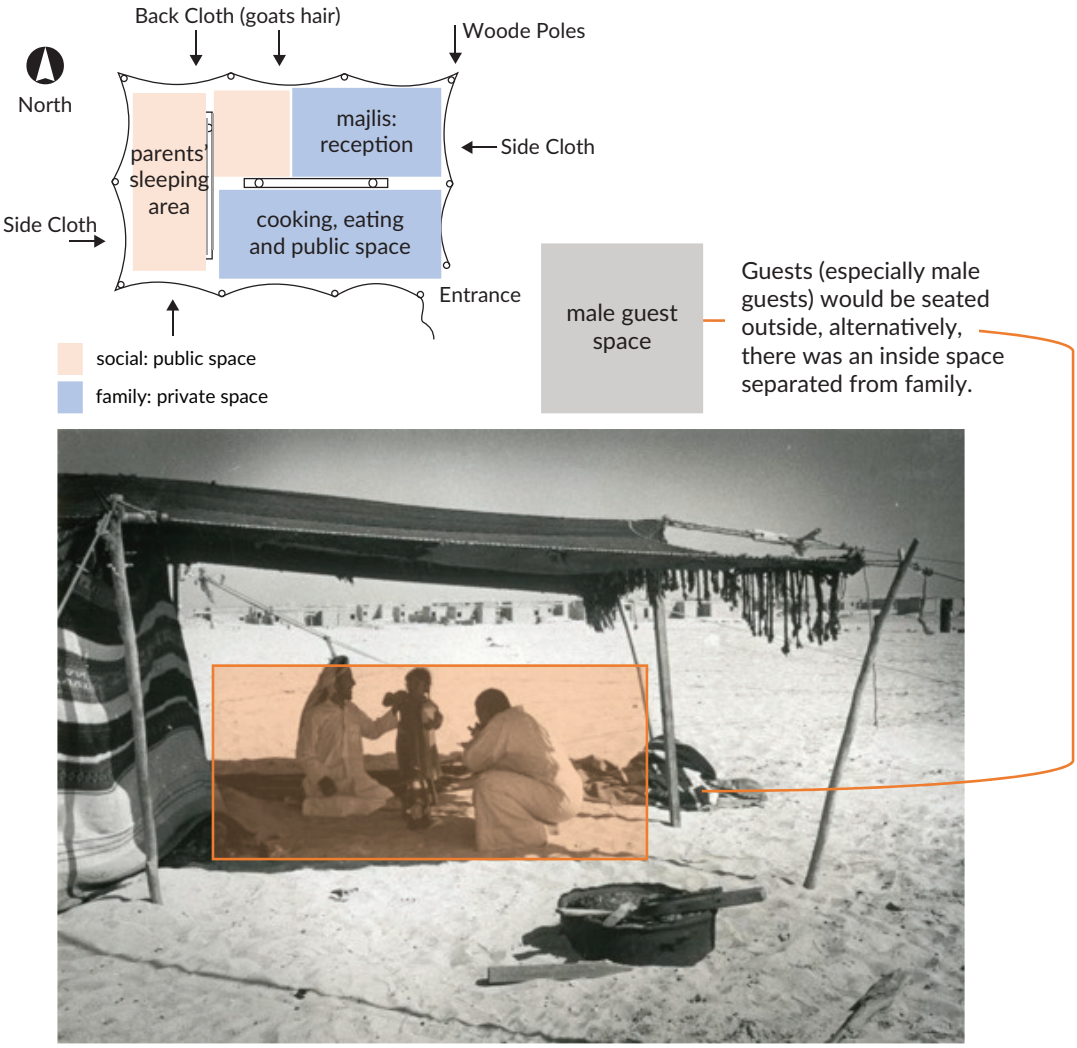

Figure 6. Typical Bedouin layout and spatial arrangements. Source: Courtesy of Catholic Documentation Centre of the Radboud University Nijmegen.

Figure 7. A typical plan from 2000: The kitchen is inside the villa, with service access from the rear of the house and the majlis has a separate entrance from the foyer.

The spatial importance of hospitality is demonstrated through the ground floor. The ground floor has a male majlis, a guest room with an ensuite, a spatially lavish entrance, and a serviced kitchen at the rear. The family space is on the first floor, demonstrating the value given to the management of guests within the domestic sphere, with over a third of the available interior space dedicated to this. While already evident in government housing, in comparison, larger privately designed villas provide an even better understanding of spatial preferences.

This "invented" authenticity prevents acknowledging the foreign influence on interior spatial development and how, over time, it has been negotiated to become part of a national identity. As the notion of heritage is being redefined in the Arab region, it is an interesting time to reconsider the Emirati villa typology as part of a wider architectural dialogue with its local historical past and contemporary presence.

4. Hospitality and the Spatialisation of Intangible Practices

The recognition that housing provides much more than a mere physical shelter and encompasses aspects such as security, privacy, social relations, status, and community is widely acknowledged (Foley, 1999; Smith, 1970). In the UAE, where housing is widely *gifted* to the native population, social status is often expressed through the symbolic materiality found in dramatic villa facades, entrance hallways, and luxurious majlis—all designed for the gaze of visitors. As evident from a historical study of housing (Alawadi, 2018; El-Aswad, 1996; Elsheshtawy, 2019; Rashid et al., 2022), hospitality is a critical concept that can be considered an important form of intangible heritage and part of the nation-building story (Martín, 2021). Hospitality is key to Emirati culture, influencing the management of people and the production of interior space, which is also evident in how this has evolved over time.

Welcoming guests and the associated daily rituals and practices are an essential aspect of many cultures, indeed the very act of the "ethics and politics of welcoming the other" is considered a fundamental part of domestic and social life (La Caze, 2007, p. 67). Brotherton and Wood (2007) understand hospitality from a social science perspective as a form of social control and an act of mediation. Selwyn (2001, p. 19) alludes to the fact that hospitality converts "strangers into familiars, enemies into friends, friends into better friends, outsiders into insiders, non-kin into kin." These aspects of social control are also evident in the various spatialities found within Emirati homes.

Ordinary daily hospitality practices permit social, cultural, ethical, and political discourses to be learnt and passed on from one to the next generation. They are thus vital forms of transmitting intangible heritage and demonstrate the various ways in which people give meaning to their domestic environment and spatialise social relationships. As spaces are intimately related to the self, "these status symbols serve to maintain social order by supporting hierarchical differentiation among people" (Dubois & Ordabayeva, 2015, p. 17). This is legible in the UAE, where the home is a place in which social values continue to be taught and displayed for others to see, as demonstrated in the *Lest We Forget* UAE Pavilion at the Venice Biennale (Bambling & Tracy, 2014). To Williams (1958), culture is thus observed and understood at every social level of society, with learning occurring in everyday life through experiences of one's home, family life, lifestyles, and so forth. The common meaning created between members of a society *is* what makes a society and its culture—or in this case national identity.

Social values are reflected in the homes people live in and consequently in the way they want them to be designed. In an interview conducted by the author with an interior designer, they stated this when discussing their clients:

> The most important space they are going to spend on, whether they are rich, *yanni* or not, old or young, is the majlis and entrance. People are coming to see those spaces. It is like presenting yourself but through your particular space. The finishes are the most important thing within these spaces.

This is also evident when studying the layout drawings of Emirati villas. Understanding spatial analysis, from both the public and private sectors helps to categorise spatial dimensions, which indicate a value given to different rooms and functions. This suggests, supported by the housing policy of the UAE, a recognition of a more cosmopolitan audience, particularly in the Emirate of Dubai.

Measuring the space of government villas reveals a clear hierarchy of rooms, such as the majlis (predominantly male) and the main entrance or hallway, evident from their size within the overall space. This type of space is intended for guests to experience the home and evidence the social and intergenerational value placed on hospitality practices. However, within the more constrained space of government-provided villas, any specific female space is omitted while male social space is prioritised.

As the interview of a male Emirati national demonstrates, specific rituals and protocols when entering a formal majlis are observed:

> The majlis is designed in a way that he sits in the middle, but then you don't bypass everyone else, you actually say hello to five or six people. You start with the right-hand side and then you make your way through, by saying hello to everyone, then you reach him. You just have to say hello and that's what we do until we reach our great uncle.

These domestic practices and rituals are clearly valued among Emirati nationals and thus have to be understood by designers. An interior designer who was interviewed for this study fully recognised their role in facilitating the importance of the ritual and social status in their design:

> The majlis must have a feature wall, and this feature wall must have a sofa and two chairs. One must enter and see this wall. This is the most important, the oldest man will sit on the sofa. Here, the oldest is the most important. He will sit in the middle of the sofa, and we are all going to sit around. There must be service tables between each of the sofas. They would have coffee, sweets, dates, and delicate cakes for any meeting in the majlis.

The spatial practices of hospitality and the spatial typologies which are designed to support a range of cultural norms, embed a sense of identity and meaning from within. This is confirmed by an interview with an Emirati female:

> In my home, we do have a living room type area and a formal majlis area. In most cases, we would be sitting in the informal living space, as the majlis is designated for more formal guests and events. The formal majlis is quite refined and thus not a space where you can kick your shoes and relax, so to speak. It commands attention but also somehow respect. A mature and wise space.

The cultural importance of domestic space was acknowledged by UNESCO in 2015 when the majlis was included on the Representative List of the Intangible Cultural Heritage of Humanity. Whatever the social status of a resident, the majlis is a space for the transfer of oral heritage and traditions and thus has become recognised as a space that holds cultural value.

There have been various attempts to capture and formalise the essence of home through interior design practice, for example, in the works of Ioannidou (2020) and Sloane (2014). These attempts involve layering different research approaches to capture the tangible and intangible aspects of one's home. A common aspect across these approaches is the study of the interior from sociological, anthropological, and philosophical perspectives, recognising that "people's homes embody and express cultural and lifestyle preferences" (Hanson, 1998, p. 1).

By grouping spaces with similar demands or hierarchal dimensions, the cultural role that hospitality plays within the home becomes clear. Considering the formal majlis, central circulation space, and formal family or female living areas that take up most of a ground floor, especially in privately designed villas, it illustrates how hospitality gives meaning to spatial production.

To relate the lived experience to the spatial analysis, interviews and user diaries were used to understand the rituals or practices that took place in these spaces. They provide an analytical study of the needs of each space and how the people used it, offering a sense of spatial satisfaction. Public space within the villa serves as the setting for hospitality activities, reinforcing hospitality as an important cultural activity. The quote in Figure 8 from an industry representative, illustrates how food preparation has a different social meaning and function, with the "dirty" kitchen provided outside so that the smell of cooking does not enter the visitors' space, once again highlighting the importance of hospitality within spatial production.

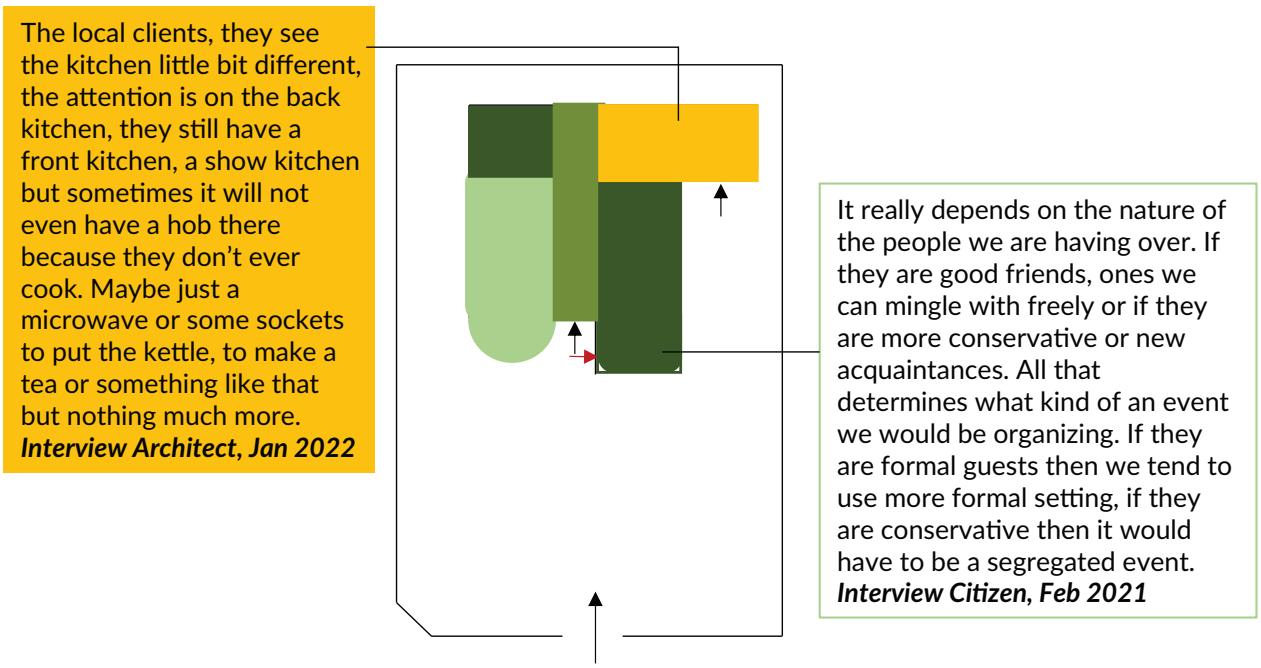

Figure 8. Spatial relationships of a ground floor from a privately designed villa, 2007. The ground floor is primarily reserved for visitors and hospitality rituals.

By considering how spatial production has changed in relation to hospitality rituals and how social status is formed, maintained and binds (tribal) community, national identity is revealed. The second quote in Figure 8 is from an interviewee who touches upon formal rituals around different types of visitors, and how that impacts how the interior spaces are used. These interviews help gain a deeper understanding of how the spaces are understood and how this, at times, might be in conflict with the standardised layout of government villas.

The place and activity records proved to be an effective tool in understanding the daily rituals of space production over a 24-hour period. Figure 9 shows the results from a time, place, and activity diary from a family of seven and a maid. It documents the movements of all the family members within the home, including the maid, indicating what spaces they spend time in and the activities taking place. This example, collected by a young male in his early 20s, specifically shows how the majlis is a space primarily used for

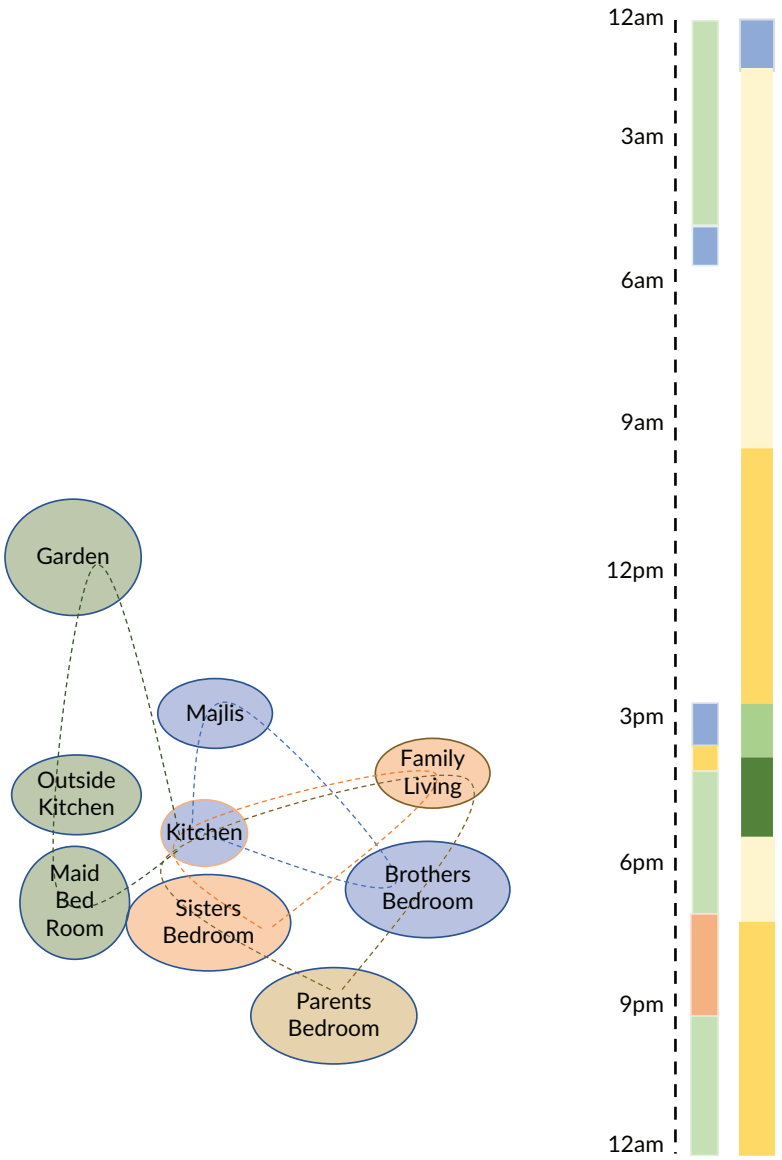

Figure 9. The analysis from the place and activity sample. It demonstrates how space is *actually* used, over a 24hr period, by the various members of a family.

working and socialising by the younger male members of the family, often spending 10 hours a day in there. The rest of the family did not enter this space throughout the 24-hour period during which data was collected and tended to use their bedrooms or the common family space more.

The majlis is exemplary for how spaces are actually used and reveals cultural connections that continue to be central to everyday hospitality practices and wider community identity. Hospitality, in this context, is both seen as necessary and compulsory, acting as a social mechanism through which intangible heritage is spatialised and can be read. This understanding is supported by interviews with designers, who described how, through the design of home elements, social standing and social control are reasserted as a part of the language of hospitality. Effectively reading and producing interiors, especially when rethinking the way a nation-building agenda is used to spatialise norms, requires consideration of the multi-layered aspects of domesticity.

Space, from an urban level right down to a domestic scale, is about defining boundaries—for example, the boundaries existing between national and expatriates or between guests, male, female, and family or service areas. Each of these boundaries has rituals and practices attached to it. Over the last 50 years, the Emirati villa has undergone significant changes from urban layout to interior spatial layout, some of which have been demonstrated here. This has led to shifts in how each generation understands their cultural settings differently. As a result, cultural transformations continue to evolve but the social code remains apparent.

This article has tried to outline a method for documenting a lived experience and the role it plays in the study of intangible heritage and interior design. The analysis of the dynamic nature of the home and its social status offers greater insights into the daily practices that take place within it. This documentation provides a valuable resource for reflection and study of how domestic space production is important to sharing socio-spatial practices. It also highlights how shared values, meanings, and expectations are transmitted between generations and become part of a national identity.

5. Conclusion

Various processes of modernisation have impacted Emirati domesticity. Rising standards of living, increased travel, and improvements in education have all directly contributed to the transformation of domestic life. Although transformations occur in every country, the extent and speed at which these changes have occurred in the UAE are unusual. While these transformations can be registered at the scale of domesticity, they have much broader implications for creating shared identity and value systems.

The subject of intangible heritage and nation-building is not unique to the UAE or the Gulf Corporation Council countries more generally and forms part of a wider conversation. What is unique however about the current discussion within the UAE is it happening now and its compression into a one-generation transition. Nation-building was a way to settle people in the 1970s, but it is still being developed and reflected upon today. Limited documentation on housing history makes this a vital time to collect more data and reconsider the role of domesticity in the wider nation-building programme.

Beyond the facades, grand entrances, and spacious interiors, intangible practices reveal cultural production. Observing and documenting ordinary daily practices permit us to understand the relationships between “authentic” and “invented” heritage. Spatial qualities and production are experienced through shared

meaning and purpose, as demonstrated by hospitality practices through which this article has attempted to understand spatial forms and Emirati culture. The study of intangible practices is an increasingly important aspect of studying cultural transformations within domesticity in the UAE but also elsewhere.

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Conflict of Interests

The author declares no conflict of interests.

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About the Author

Sophie A. Johnson is an assistant professor in the School of Interior Design at the Canadian University Dubai. With over 25 years in design education, she brings together her expertise in practice-led research into design education. Her expertise lies in understanding (in)tangible heritage and cultural transformations through space production and interior spatial qualities. This is apparent in her teaching philosophy where practice-led research methods are developed with students to better understand spatial qualities, beyond purely aesthetics.

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ARTICLE

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The Cultural Construction of the Domestic Space in France: Women's Lived Experience and the Materialization of Customs

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Abstract

This article explores the intersecting processes of construction of the home, social, and individual identities through domestic practices inside French housing. It examines the design and occupation of French homes as crucial moments for the consolidation of subjectivities, beliefs, and ideologies manifested through daily actions that are influenced by normative cultural systems. In specific, it looks at codified domestic behaviours and their aesthetic dimension, focusing on how the French "art of living" has influenced taste, design, appropriation, and decoration of domestic interiors. Architectural treatises along with etiquette manuals are analysed as they both represent—through the written word and architectural drawings—cultural and gender stereotypes as well as societal norms and expectations that inform housing design and domestic practices. These documents directly assist in the cultural construction of the domestic space, uncovering mechanisms of reproduction and representation that inform the use and design of residential architecture. By focusing on women's lived experiences, this research looks at the consolidation of feminine domestic cultures and how they fostered small-scale physical transformations of dwellings' interiors through daily negotiations that define self-identity and interpersonal power relations. These dynamics are referred to as "cultural domesticity." The latter frames this study along with feminist literature, situating women's contribution to the aesthetic and spatial development of French apartments. What emerges from this study is that the French state historically exercised a regulatory power that impacted daily life and housing design.

Keywords

culture; decoration; domesticity; dwelling; feminism; France; gender; home; interior; women

1. Introduction

The universe of everyday life in France is studded with words that ennoble or codify the most banal of everyday actions; for instance, the expression "way of life"—which refers to the habits, customs, and beliefs that characterise the way of conducting one's existence—in French translates as *art de vivre* (the art of living). The idea that common actions such as dressing, eating, and conversing can acquire artistic status has served to reinforce social hierarchies and regulate social conduct throughout the centuries. Manuals, books, and guides of all sorts proliferated in bookstores and homes to instruct on the best ways to behave in all circumstances. Manners, customs, pleasantries, and celebrations represented, therefore, nothing but a strict system of social norms that seem to be embellished under the false promise of a life worthy of being exhibited as an artwork.

This article focuses on the typically feminine and highly codified practice, still very important in French culture, of receiving guests at home. What makes this particularly relevant to this study is the unique relationship between reception practices and the interior disposition of French homes, which is exceptionally legible in this context. This is evident from a wide range of manuals and treatises on the series of gestural, spatial, and design aspects linked to receiving guests.

One can trace the origins of the culture of reception to the great royal courts of the seventeenth century. There, etiquette laws were consolidated along with the centralised power of the king and, at the same time, the reception process was formalised and materialised in the enfilade spaces of aristocratic estates. The most important aspect of this study, however, concerns its development first within the domestic spaces of the French bourgeoisie and later in that of the middle class. This class-based approach relies on the theory of Bourdieu, who studied the mechanisms of social and class reproduction through symbolic domination at the cultural and social levels and, specifically, through the exercise of taste (Bourdieu, 1979). Good taste is, indeed, the prerogative of the upper classes, the custodians of high culture, and is instrumental for the consolidation of social and class distinctions.

These distinctions are not just class-related but also gendered. In her research on feminine taste, Sparke (2010) has clarified the masculine qualities of modernist good taste and its symbolic domination through high culture. Notably, taste reinforces distinctions between social classes and excludes both the working class and women. These mechanisms of exclusion are materialised in the domestic space and condition not only aesthetic choices made inside French homes but also mundane behaviours and the use and disposition of domestic interiors. The middle-class apartment encapsulates these dynamics as taste, along with the codification of practices and the gendered distinction of domestic spheres, not only has a strong gendered and aesthetic component but also clear spatial implications.

This study thence looks at the codification of spaces and actions in French domestic interiors, focusing on the dwellings' reception spaces: the living room and—somewhat surprisingly—the bedroom, two rooms often adjacent in France. Both spaces will be analysed in detail integrating Eleb's (1990) extensive research on the subject. This is joined by a more detailed study of the double bed, a piece of furniture that not only summarises the public character of the bedroom—mainly thanks to its style, decoration, and position—but also helped reconstruct the evolution of families' affective systems and relationships. Since both the spatial and performative aspects have been extensively codified and normalised in France, especially in the second

half of the twentieth century, it was possible to trace their corresponding, mutual evolution. What characterises the French context is the unconscious conformity—both of inhabitants and architects—to these spatial, distributive, and social norms.

As previously mentioned, the research's methodology derives from Bourdieu's book *Distinction: A Social Critique of the Judgement of Taste* (1979). Specifically, his notion of habitus reconciles the objective structure—or institutionalised frame—of the architectural plan with the subjective dimension of appropriation and enculturation (Forlini, 2024). A series of mixed research methods—typological, historiographical, and comparative—lay down the basis for the interdisciplinary approach of this study that is complemented by, but also integrates, existing feminist and sociological theory. In other words, typological analysis underpins the hypothesis that habitus has spatial implications that can be read in dwelling plans. The combination of methodology and methods drives this research's spatial analysis of feminine domestic cultures and practices. This provides new insights into the relationship between the user and architectural space by specifically combining Bourdieu's sociological, structuralist framework and feminism with an architectural design study, expanding both views on the construction of subjective identity (subjective structures) as it is tightly connected to architectural space (objective structures), and domestic interiors specifically.

This study specifically focuses on the multi-faceted relationship between the internal distribution of dwellings and the daily practices that unfold within them from a critical, feminist standpoint, highlighting women's lived experience in the domestic sphere. Thus, on the one hand, this study focuses on the role that women play as homemakers; on the other, it examines the spatial and design implications of women's domestic practices and cultures, which are becoming more individualised and, therefore, play a substantial role in contemporary domesticity.

"Cultural domesticity" is the interdisciplinary, theoretical, and analytical lens advanced in this analysis aimed at studying female domesticity, spatial design, and culture. In specific, it describes gendered domestic cultures, clarifies the specific typological focus of this research, and exemplifies the cultural dimension of this study. Culture plays a transversal role across all levels of analysis brought forward in this research. Cultural sociology clarifies that self- and class-making are determined by culture, including gender identity (Adkins & Skeggs, 2005). Culture determines how people construct their self-identities, see, and orient themselves in both the social and physical space. The inevitable interaction with it—itself an act of design—generates new cultures.

This article thus focuses on the feminine dimension of domestic culture in France, a Western country where the two spheres (the domestic and the feminine) have been historically joined. From this analysis, it emerges that the oppressive, hetero-patriarchal, and architectural framework that historically trapped women into the home became the ground of resistance that in turn shaped women's self-identity. Bourdieu's (1979) theory integrated by the feminist reading of Skeggs and Adkins (2005) supports the argument that it is precisely within the objective structures (of national culture, patriarchy, class, economy, and the dwelling's layout) that framed women's personal experience and trapped them inside (reassuring) stereotypes that women found ways to express themselves (Forlini, 2024). Feminine domestic culture is, indeed, based on the reworking of objective structures, which are oftentimes patriarchal and normative (Forlini, 2024).

The implications of cultural domesticity that emerge from this study are threefold. First of all, the cultural and spatial relevance of daily actions and individual occupation of architectural space is hereby recognized

and, consequently, cultural domesticity elevates ordinary female actions in the home by arguing that they are culturally and aesthetically valid. Secondly, it proposes a critique of the traditional aesthetic values of art and architectural historians, values that have so far pushed feminine taste and the decoration of domestic interiors to the margins, branding them as "kitsch" (Sparke, 2010, pp. XXIV–XXV). Finally, it proposes a unitary feminist theoretical framework for the study of the occupation and design of the domestic space that includes the spatial and decorative alterations made by the inhabitants, considered worthy of further study.

2. The Materialization of Customs

2.1. Savoir-Vivre

To learn and perform the art of living, the French have been historically expected to master *savoir-vivre* (literally translated as "knowing how to live," or "good manners"). *Savoir-vivre* was first theorised in the nineteenth century and circulated among the members of the bourgeoisie in the form of small books (Figure 1). These manuals were first a peculiarity of the upper classes, but later became popular among the middle class. They covered any aspect of daily life, suggesting the perfect way to approach strangers, setting up the table, writing a letter, welcoming guests, and so on. Most notably, these books were meant to instruct individuals how to behave in every aspect of social life through codified and ritualised practices, with the legitimisation of good manners adopted from the high bourgeoisie that held political power. This also had spatial implications, as each practice was strictly associated with the spaces in which it was performed.

A chapter on "the visit" is present in every manual, from the earliest examples to the most recent ones, which also looks at today's popular aperitifs (Figure 1). Some of these reception practices and guides were even republished in encyclopedias (Figure 2). Figure 2 precisely illustrates some of the important behavioural codes that were to be adopted during a visit. Each image portrays guests and hosts having conversations, both in the salons and bedrooms, with one caption explaining the importance a good conversation plays during the visit (although the conversation should not last for too long; Figure 2, first illustration): "Politeness has fixed rigorous terms for some visits, not conforming to them means to lack of savoir-vivre" (Clément, 1879, p. 131).

Each action codified in the books on *savoir-vivre* did not detach itself from the unspoken code of "etiquette" that regulated social interaction among the wealthy classes of French society (Martin, 1993). Although each social class had access to its *savoir-vivre* book, etiquette was almost exclusive to the upper classes.

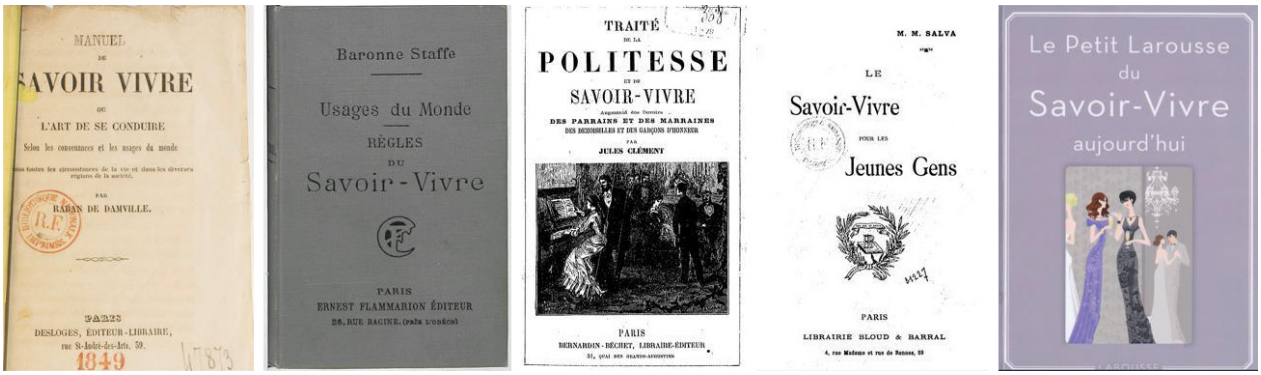

Figure 1. Covers of the *Savoir-Vivre* manuals published respectively in 1849, 1860, 1879, 1898, and 2011.

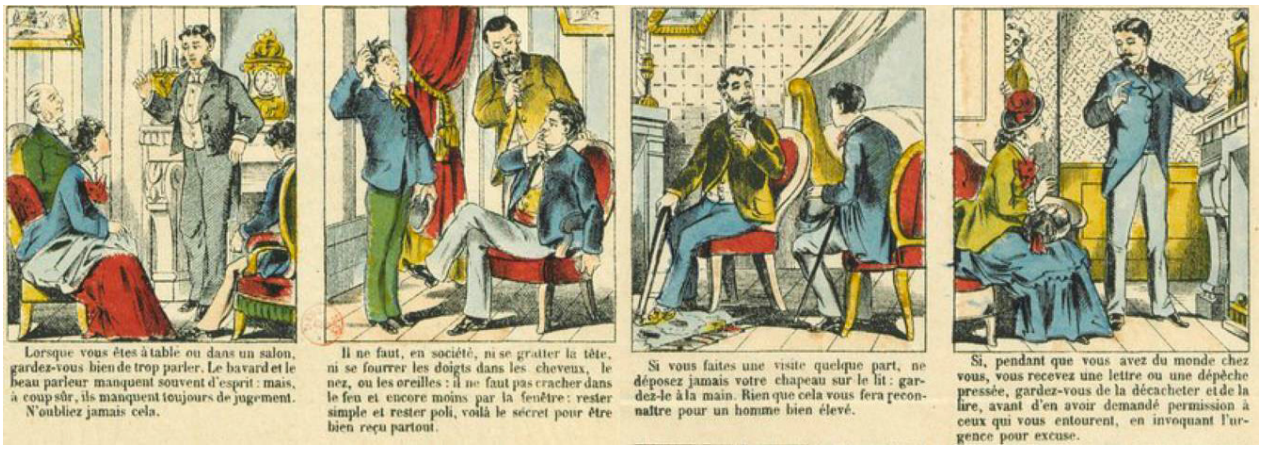

Figure 2. Illustrations on how to properly behave during a visit as illustrated in the 1883 French Encyclopaedia. Source: "Simples notions de civilité: Puérile et honnête" (1883).

Adherence to its rules was a guarantor of social distinction and a manifestation of so-called *convenance* (decorum, propriety). Its adoption, alongside *savoir-vivre*, defined the complex landscape of social norms that regulated everyday life and, specifically, the protocols that one had to adopt inside French homes. In the case of the visit social protocols spatially unfolded in the representational spaces of the house. It also regulated more intimate family relationships such as, for instance, conjugal relationships or the education of children. In short, *savoir-vivre*, etiquette, *convenance*, and decorum were the means through which social norms were defined, legitimised, and reinstated in social life to control interpersonal behaviours. It is worth adding that these behaviours require a proper *mise-en-place*: a subtle system of material culture and décor based on symbols that follow the rules of decorum. This is manifested both tangibly (in interior decorations) and intangibly (through reception practices and manners).

Norms for social interaction based on *savoir-vivre* and ceremonies based on etiquette were gradually absorbed by French society and still play an important role in domestic life. These "daily rituals of reception" have been largely studied in traditional anthropology, with Rosselin (2006, pp. 53–54) explaining that the crossing of a threshold symbolises the beginning of new status, a transition that is ritually marked across cultures and agreed upon by a shared "social and cultural consensus"; she stresses the fact that, in France, the rituals of reception are still particularly important, and goes on to say that "when people are coming for dinner at the home of a couple the man is usually in charge of welcoming guests while the woman is in the kitchen finishing the preparation of the meal." However, social rules for welcoming guests forbid children to open the door (Rosselin, 2006, p. 53). This unspoken rule has clear gender connotations, and the simple act of opening the door to guests not only influences the position of bodies in the space of the home but also defines patriarchal, gendered roles.

Not surprisingly, Rosselin's description (2006) is similar to the practice of visiting described in late-nineteenth-century *savoir-vivre* manuals, except for the fact that during the aperitif food is usually served. The traditional visit, instead, rarely involved consuming food, and gender roles were generally inverted: the lady of the house played a central role, as she was the conductor of a domestic play that was performed during a visit. This introduces some of the key gender dynamics that unfold inside French interiors. The change in the role of women in welcoming guests exemplifies the shift in the mechanisms of women's oppression from the *ancién régime* to modern times. Indeed, the fall of the aristocracy, the gradual

leveling of classes, and the absence of domestic servants changed women's condition and role inside the domestic sphere. If in the past their clothed bodies were seen as an extension of the interior décor that accorded not only with its pleasing aesthetic but also possessed a symbolic dimension, the leveling of social classes and introduction of wives' domestic labour forced them into the kitchen, marginalising their role as hosts. Baker (2013) clarifies Bourdieu's (1998, p. 99) position that considers women "as aesthetic objects" who "naturally take charge of everything concerned with aesthetics" in the "division of domestic labour," anticipating women's centrality in the exercise of their taste in the domestic setting. While aristocratic women were in charge of welcoming guests, because they symbolically embodied the home and family (and thus its social status), middle-class women focused on preparing for the visit but delegated the act of welcoming guests to their husbands (Rosselin, 2006). In short, women's objectification and ceremonial role gradually changed, shifting into labour exploitation: instead of blending in with the wallpaper, the modern woman simply disappeared behind the kitchen door.

2.2. Distribution and Tripartition

Savoir-vivre and distribution treatises emerged in the nineteenth century along with the rise of the bourgeoisie as the leading social class. By the nineteenth century, French architects started to describe the urban bourgeoisie as the norm, establishing a dwelling program and its spatial organisation based on its members' needs. The "art of distribution" reflected this interest and became a subject of major nineteenth-century treatises on domestic architecture. Renowned nineteenth-century architects such as César Daly and Eugène Viollet-le-Duc wrote about distribution, basing their analysis entirely on wealthy bourgeois accommodations. In Daly's most famous treatise, *L'Architecture Privée au Dix-neuvième Siècle sous Napoleon III* (Private Architecture in the Nineteenth Century under Napoleon III) (1864), he clarified the necessity of a tripartition between the private area (which was more intimate and devoted to the family), the public area (devoted to the reception and representation of the inhabitants), and services (Eleb, 1990). This tripartition, considered as the model for any type of dwelling, was subsequently applied to the so-called *maison à loyer* and *maison de rapport* types of middle-class apartment buildings (Figures 3 and 4). Throughout the nineteenth and twentieth centuries, architects tried to mediate and adjust the interior distribution principles, adapting them to the dimensions of modest dwellings.

A proliferation of nineteenth-century treatises on the art of distribution or manuals on the art of *savoir-vivre* amongst the bourgeoisie helped establish the heterosexual nuclear family as the social norm and strengthened an ideological system that instrumentalised the French apartment as a model of social conformism. The architectural project of normalising a bourgeois lifestyle was accompanied by an adherence to the rules of decorum, exerting a combined social and spatial control over French citizens. Indeed, the physical effects of codified practices can be analysed in the distribution of reception spaces in residential interiors, ranging from early eighteenth-century aristocratic homes to twentieth-century collective housing (Figure 5). Thence, *savoir-vivre* represented an explicit pedagogical and moral project with great ramifications for the design of domestic architecture.

These processes favoured the construction of French domestic spaces, both socially and architecturally, thereby becoming forms and spaces of representation. Specifically, the house was understood, according to Wigley (1992, p. 350), "as much the product of texts as its condition of possibility. The new forms of writing both depend on and assist in the cultural construction of those spaces. They are literally part of the spaces."

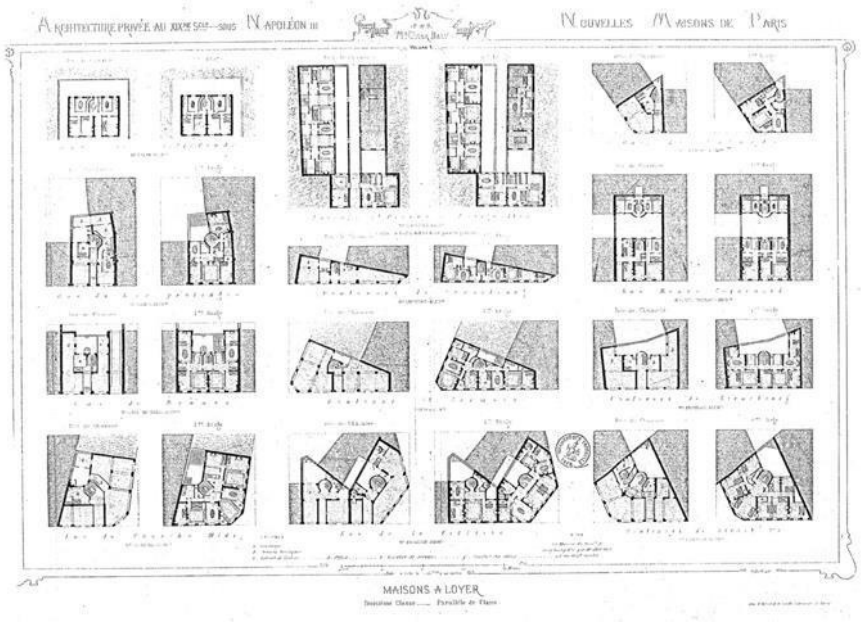

Figure 3. *Maison à loyer* drawn by César Daly. Source: Daly (1864).

Figure 4. Tripartition of reception spaces (dotted) of a private palace (eighteenth century), a *hôtel particulier*, and a *maison de rapport* (nineteenth century). Drawn by the author based on Eleb (1990).

Wigley (1992) further argues that it is possible to say that treatises and manuals accorded to the cultural construction of the French apartment, enforcing patriarchal systems of oppression through which women's sexuality was controlled. Hence, both treatises and manuals were instrumental in the cultural construction of the home as a system of representation that produces, shapes, and confines sexuality and gender—they are, therefore, powerful cultural forms of representation. Gender difference "operates as a mechanism in the construction of various cultural representations" that, in turn, guide the architect's hands (Rendell et al., 2000, p. 105). In short, the social codes and practices that derive from these documents turn the home into a cultural construct that shapes both gender and domestic space.

Architects therefore reproduced stereotypical and normalised gender roles through their design. This means that the material and cultural construction (both textual and architectural) of the home has substantial ideological roots and coincides with the construction of the gendered subjectivities that occupy it. Treatises

and manuals, but above all, the "art of distribution" intertwined with the new "science of life," therefore, are not simple guidelines for the design of French residential buildings but tools with both spatial and political implications. Thus, architects have historically reproduced systems of control and specific cultural and spatial forms embedded in France's patriarchal society. Moreover, social status placed the architect in a position of power, which legitimised their treatises' pedagogical intent. This might explain the (passive) acceptance and reproduction of the dwelling's distribution model for centuries.

As anticipated, these considerations should be supported by feminist architectural theory. This new science of interior distribution indeed resulted in an ideological spatial division within domestic walls, proving that architecture can create a clear division of both roles and power within the socially constructed family unit. The bourgeois apartment materialised gendered distinctions, consequently separating public and private spaces inside the home. A clear dividing line defined the layout of the house: the reception area was the realm of the *maître de maison* (master of the house) and generally faced the street side, whereas the private one was dominated by the more functional and intimate rooms that were the undisputed realm of the lady of the house (Figure 4). The third element of the tripartition type, the shared spaces for public reception, was itself tripartite: the centre was occupied by a large living room (sometimes accompanied by a dining room) and the two sides hosted the bedrooms for the husband and wife (Figure 5). Exceptionally in the French case both bedrooms opened to the living room, with all three combined representing the status of a family (Figures 4, 6, 7, and 9).

The tripartition rule continued to play a fundamental role in the distribution of the upper classes' private residences: the division of the reception areas, the access via an enfilade, and the public character of the

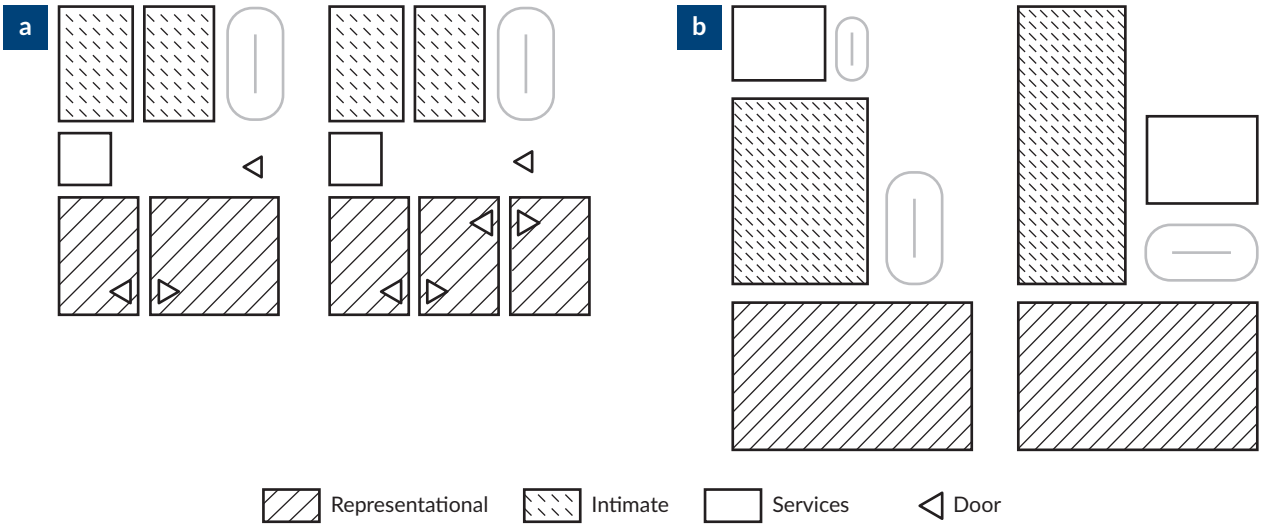

Figure 5. (a) Diagrammatic distribution of a twentieth-century middle-class apartment with two different layout solutions for the representational spaces. Left: large living room and master bedroom next to it (room on the left), with direct access. Right: double living room (room at the centre and the right) with central opening connecting the two spaces, and adjacent master bedroom (room on the left) with direct access from the central living room. **(b)** Diagram of the distribution of French bourgeois apartments. Nineteenth-century high bourgeoisie model on the left (with domestic servants' separate staircase), and twentieth-century bourgeois or high middle-class model on the right. Representational spaces remain tripartite and face the street. An internal courtyard is usually located in the top right corner. Intimate zones and services usually face the courtyard. Drawn by the author based on Eleb (1990).

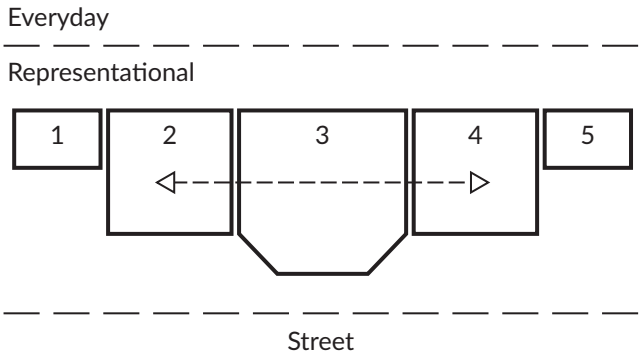

Figure 6. Distribution diagram of representational spaces of an aristocratic or high-bourgeois residence. Number 3 is the central salon, usually connected to other salons or the main bedrooms of the madame and monsieur of the house (2, 4) through an enfilade. Rooms 1 and 5 are annexes to the bedrooms. Drawn by the author based on Eleb (1990).

Figure 7. *Intérieur avec femme en rouge de dos*, Félix Vallotton, 1903. Source: Wikimedia Commons (n.d.-a).

bedroom appear to be remnants of the eighteenth-century aristocratic practices of intimately receiving guests in the bedroom. Furthermore, the public character of the room was emphasised by the distribution of pieces of furniture and the proliferation of chairs that indicate the potential number of guests that could spend time in the bedroom with the host (Hellman, 2010, p. 139). Notably, the lady of the house's bedroom granted them a certain freedom, independence, and the chance to strengthen affective ties outside the family nucleus (Figure 8).

Figure 8. *Women in an interior*, Paul Delaroche, 1825–1835. Source: Cleveland Museum of Art (n.d.).

3. Furniture, Objects, and the Construction of Self-Identity

3.1. The Marital Bed

During the Third Republic, in the second half of the nineteenth century, a new idea of being *chez-soi* (at one's own home) gradually began to emerge among the various layers of the middle class. It was a completely new, low-cut concept detached from the sheer representation of status. As for the middle class, a crystallisation of the dwelling typology occurred (Figure 5) and reflected the project of the normalisation of French society that took place in the twentieth century (Eleb, 1990, 1995). The emergence of this new idea of conjugal affective ties, alongside the necessity of architects to adapt the distribution principles to smaller dwellings (the *maisons à loyer*), led to changes in the use of the representative rooms. This is especially reflected in the development of the marital bed, which as a single piece of furniture summarises major social changes in French society up to the present, when an increased need for privacy challenges the public character of the bedroom.

This passage can be easily summarised in the use of the two terms: *chambre de parade* (parade room), adopted in seventeenth-century French aristocratic mansions, and *chambre principale* (main room), an early nineteenth-century version of the so-called marital bedroom (Eleb, 1990). The genesis of this characterisation of the bedroom dates back to the Middle Ages when rooms did not respond to specific functions and many people shared the same space. The bed itself, with its imposing structure and heavy curtains, guaranteed privacy and heating, making up for the lack of an isolated, private room. Interestingly, the void left between the bed and the wall was called a *ruelle* (small street) in France. These conditions favoured the development of the canopy bed type, considered an integral part of this process of monumentalising furniture. The latter sheltered and protected from indiscreet eyes, assuming an objecthood similar to that of a house. The system of furniture associated with the bedroom was linked to sociability and intimacy, encompassing the double status (public and private) of the bedroom (Hellman, 2010).

Figure 9. *La comtesse Jean de Polignac, née Marie-Blanche di Pietro*, Édouard Vuillard, 1928–1932. Source: Wikimedia Commons (n.d.-b).

Until that moment, the size of the room had been regulated by that of the bed, as major treatise writers considered it the main piece of furniture of a house, so its shape and arrangement determined those of other furniture pieces (Eleb, 1990). The architecture and decoration of the bed gradually evolved from the curtained bed to the marital bed, finally placed in what we commonly call the parents' room, the symbol of the nuclear family. Just as in the canopy bed, the intimacy associated with the family was an integral part of representational devices associated with the social conventions belonging to every age. By the beginning of the twentieth century, the largest and most important room (the one with the double bed) belonged only to the woman of the house, while her husband found sleep in a separate room, often in a single bed. A good example, highlighted by Eleb (1995), is that of the Hôtel de l'Avenue de Ségur in Paris (Figure 10). The lady's bedroom functioned as the conjugal room and is located in the middle of the representational spaces facing the main street, whereas that of her husband is moved to the back, with not even a bed drawn in plan to indicate its use (Eleb, 1995). The husband, indeed, slept either on a single bed or a removable one. So, if he wanted to be intimate with his wife, he was forced to move into the room of his spouse. This is an interesting moment in the development of the French apartment since the wife's bed coincides with the marital bed. This had great consequences for women at large: the gradual consolidation of the marital bedroom as an evolution of the previous tripartite organisation went hand-in-hand with the loss of their fundamental spatial independence (Eleb, 1990, 1995).

This dynamic can be inscribed within the processes of emergence of intimacy and conjugal love, and the consolidation of women's identity within the hetero-patriarchal family structure. Family relationships are instrumental in the definition of narratives of the self. Not by chance did the distribution of the husband and wife's bedroom in France relate to both the definition of their individualities—materialised in the bed—and their position within the family and in the architecture's plan. Figure 5 shows that although it was still

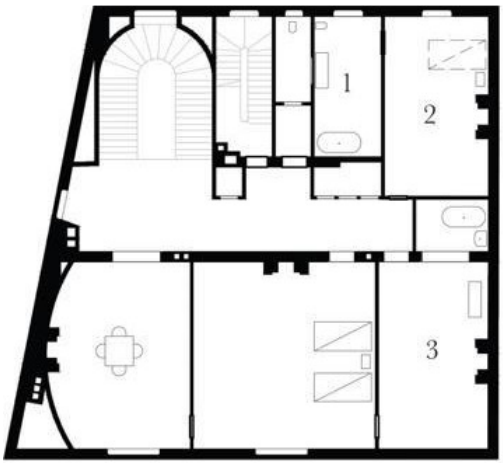

Figure 10. Hôtel de l'Avenue de Ségur, Paris (ca. 1880). (1) monsieur's annexes and (3) madame's annexes. In the top right corner (2), the study room can be converted into monsieur's bedroom. At the centre is the marital bedroom, right next to the living room and directly accessible from it. Drawn by the author based on Eleb (1990).

adjacent to the salon, the bedroom stopped being part of an enfilade (Figure 4). The relationship between living areas remained direct, but the conjugal bedroom became accessible from both the corridor and a door located at one end of the salon (Figure 5).

The social control exerted over the lower and middle classes took shape through a mass organisation of the family that was masked as a promise to improve the standards of living through housing (Donzelot, 1979). Social and spatial planning thence adhered to bourgeois morality, with both the family unit and its inhabitation designed to reproduce the established order both materially and symbolically. Due to the emergence of conjugal intimacy, the direct opening of the marital bedroom towards the living room was no longer considered appropriate, with architects trying to provide more privacy whilst remaining faithful to traditional distribution principles. The solution found was quite simple (Figure 5): architects moved the door from the former central position towards the exterior wall.

Despite the formal similarities in the plan organisation of the various dwelling types, the marital bedroom acquired different meanings and roles depending on the social class that was inhabiting the apartment. It was, for instance, open to shared daily activities in the small flats of the working class, gradually acquired the status of private and intimate room for the members of the middle class, and remained an important reception space amongst the members of the bourgeoisie. Its importance and role differed also between members of the same family. As previously mentioned, it played a fundamental role in the lady of the house's life. Her personal space was, indeed, devoted to the unfolding and strengthening of social relationships and the development of her gender and self-identity. In fact, the bedroom was not the only space inside French apartments in which women negotiated their modern identity and role within the patriarchal family; *savoir-vivre* manuals, advice books, and magazines guided women in the process of consolidation of their personal identity, mediated by gestures and tastes but also by practices of homemaking and intimacy (Sparke, 2010). Their activities and choices had repercussions on the architectural space both at an aesthetic and spatial level. By operating within the boundaries of the system aimed at repressing them, women were able to find patterns of resistance through inhabitation, appropriation, and alteration (Forlini, 2024).

The French interior becomes, therefore, the space in which cultural domesticity gradually emerges. Indeed, the occupation of the French apartment's bedrooms today is quite peculiar, but although it is a reversal of the high bourgeois model (Figure 10), with the woman seeking spatial independence in a separate bedroom and the husband relegated to the marital bedroom (now moved to the back of the apartment), it still clearly reflects the dynamics between the intimate, gendered, and individual dimensions of domestic living discussed.

3.2. Conservatism, Misappropriation, and Domestic Consumption

The representational rooms of French apartments are spaces of social and cultural conformity but also distinction, rooms in which women and men have been historically performing the choreographed practices of visits according to hierarchical roles and pre-defined codes, but also rooms in which modern and gender subjectivities have been constantly negotiated and consolidated. Feminine taste and style are often expressed inside domestic interiors by women amateur decorators, housewives who started engaging with interior decoration from the eighteenth century onwards (Sparke, 2010). French eighteenth-century aesthetics and interior decoration were embedded in an "overtly feminine world of luxury and elitism" which, according to Sparke (2010), influenced the emergence of a feminine interior aesthetic. Bourdieu's theory identified the mechanisms of taste and class distinction—enforced by the laws of *convenance*—via cultural, symbolic, and economic capital and the reproduction of habitus, exemplified here by both décor and manners. Class distinction and privilege were, thence, expressed through both taste and luxury and enforced through aesthetic criticism: by defining the exclusive boundaries of good taste, the higher strata of social classes reasserted their power.

The taste reform in the twentieth century was not very different in its aims, as the bourgeoisie in power tried to redefine the contours of good taste and high culture by criticising female aesthetics—which relied heavily on the consumption of mass-produced furniture and fittings—and by exerting paternalistic control over the middle and working classes through the design of housing (Donzelot, 1979). The main difference lies in the gendered character of high-cultural manifestations. As Sparke (2010) has extensively demonstrated, if on the one hand eighteenth-century French interior design reflected feminine taste as it exalted the aesthetic over the functional (which influenced ideas of décor until the nineteenth century) and symbolic meaning over honesty, on the other hand, twentieth-century modernist and functionalist high art and architecture qualified as masculine, explicitly rejecting feminine taste and interiors. By outlining the boundaries of twentieth-century good taste, taste reformers marked not only the distance between the bourgeoisie in power and the lower classes but also between male and female tastemakers and creatives.

To Sparke (2010, p. 162), "modern design effectively marginalised feminine culture and left no linguistic or philosophical space for it to compete with what rapidly became the dominant patriarchal culture." She further argues that in the UK, women negotiated their modern identities by recovering traditional feminine domesticity. They became guardians of the past and were, subsequently, accused by taste reformers and design experts of being anti-progressive. The so-called "culture of conservatism" in women describes widespread practices of design and interior occupation of inter- and post-war housing (Sparke, 2010). Tellingly, the author clarifies that conservative domesticity was promoted through the media and became "embedded as an ideal across class lines in interwar society. And the particular model of domesticity it resembled was that of Victorian society nearly a century earlier" (Sparke, 2010, p. 98). It is considered a form of "resistance to the model of modernity that women were being asked to negotiate" (Sparke, 2010, p. 99).

This Janus-faced conservative modernism, therefore, looked both forward, as it represented women's own negotiate face of modernism, and backward, as it relied on past domestic models: "Inevitably, the bulk of their work resided somewhere in the middle, blending modernist ideals with those of feminine domesticity" (Sparke, 2010, p. 99). Conservative modernism and women's conservatism describe women's domestic culture through a feminist lens and play a fundamental role in the understanding of cultural domesticity.

The dual nature of feminine domesticity, materialised in women's consumption choices in the domestic realm, can be analysed from two key perspectives. On the one hand, it favours the reproduction of patterns of dominance on a spatial, embodied, and objectual level—this point is also supported by sociological and feminist literature that sees consumption as a passive activity of subjugated and dominated women (Partington, 1989). On the other hand, there is a body of social and feminist theory that sees consumption, appropriation, and interior occupation as fundamental to the expression and consolidation of feminine values and domestic cultures. To Douglas (1982), shopping was a liberation, an integral moment in the formation of women's identity. Attfield (1989) reinforces this point as she looks at mass consumption and how domestic consumption could potentially have a positive impact on women's lives via interior appropriation through decoration. Partington (1989, pp. 209–210) goes even further by explaining that the purchase, use, and display of "commodities and cultural objects" are instrumental for the assertion and celebration of femininity, with the designed objects saying more:

> About the designer's self-image than it does about the female consumer's needs….Chairs, for instance, were being designed as if sitting down was the only use they had, whereas the female consumer was using them to represent her relations with friends, with husbands and children, with inlaws and with herself…demonstrating the consumer skills she had acquired in a variety of contexts and situations. She used all design objects to make meanings; the fact that these objects also had ostensibly practical functions was irrelevant.

This is a crucial point, as the different uses and meanings attributed to design objects—just like interiors—are acts of resistance of women towards the paternalistic, patriarchal, and pedagogical nature of architectural design, including modernist and mass-produced housing. Indeed, "exactly how, and under what circumstances, women consume goods and services are crucial to the ways in which meanings are articulated in feminine culture" (Partington, 1989, p. 206). This subtle act of resistance is generative of female domestic culture and aesthetics, and key for the formation of women's identities, which are filtered by processes of meaning-attribution, an extension of individuality to the inanimate words of objects and architecture. Partington (1989, p. 211) indeed states that "women's misappropriation of commodities as evidence of resistance" is often unconscious, pertaining to the reworking of shared cultural norms, yet it is the first step towards the acknowledgment of feminine cultural domesticity. The chair is also a particularly relevant case, as Partington's description recalls the role that chairs have usually played inside French interiors across centuries, especially when they embody female sociability inside the home.

The tension between the prescriptive codes of the patriarchy, design, good taste, and behaviours are, therefore, countered by an individual reaction of women consumers and decorators which may or may not have reproduced shared cultural practices, and norms, or they may or may not have appropriated new forms and symbols. Regardless of the patriarchal ideology associated with the object or practice acquired, the use, meaning, and values attributed to them by female consumers, inhabitants (and decorators) generate

resistance and inform feminine culture. “It is precisely through consuming that feminine knowledge was articulated” (Partington, 1989, p. 212), along with feminine meanings and values, which are part and parcel of the feminine enculturation of domesticity. Feminine consumption inserts itself within the larger arena of gender conflict within the domestic sphere, the space where gender politics unfold. Consumption can be, therefore, seen as a different form of appropriation of architectural space aimed at the more positive activity of homemaking, along with the more personal processes of meaning attribution and construction of narratives of the self.

4. Conclusion

This article advances a feminist reading of the spatial and typological evolution of the French dwelling based on habitus, gendered spaces, and practices—including the visit and homemaking. The cultural manifestations of French domesticity discussed are closely interconnected as they concur with the historical, aesthetic, spatial, and performative dimensions of the French home. Feminine domesticity positions itself within these codified dynamics, but it is through the reworking of known, shared culture and codes that women consolidate their identities. These processes have, as shown through historical and contemporary examples, both aesthetic and spatial implications.

They are also small acts of resistance that emerge from lived experience, which are usually overlooked by architects but play a central role in the study of cultural domesticity. It is also worth mentioning that the analytical lens of cultural domesticity advanced in this article can potentially be applied to any cultural context. The study of enculturated practices along with the identification of sexist spatial and symbolic boundaries inside domestic interiors is, indeed, particularly explicit in France. Having uncovered the main characteristics of cultural domesticity, it is easier to identify similar dynamics, even if manifested in subtler ways. It would be, therefore, interesting to extend this study to other Western countries, identify new gendered, alternative domesticities and their socio-spatial implications, and even explore how cultural domesticity could potentially apply to non-Western contexts. The socio-spatial analysis could be enriched by a feminist intersectional approach, or flanked by new critical gender and race theory, extending cultural domesticity to non-binary or diverse ethnic identities. This could be applied to the French context as well, moving this study beyond privileged white women’s experience and extending it to women of colour, from the working-class, or more in general women from more modest backgrounds.

This research also demonstrates that the debate around heterosexual, middle-class, nuclear families, and women—the subjects of stereotyping and normalisation throughout the twentieth century—has not been exhausted. Individual, gendered identities are negotiated precisely within normalising, stereotyping institutions and systems. They are the foundations of a daily struggle that ultimately produces meaning, change, value, and culture. Throughout this research it became, therefore, necessary to rethink what constitutes design: reproduction or reappropriation of institutional frameworks or spaces became a valuable aspect of architectural design seen as a continuous, daily process that is not the exclusive prerogative of the architect. It is also tightly connected to self-formation and the construction of gendered and ethnic identities, which are becoming increasingly valuable components of architectural research. This applies specifically to studies on lived experience, which have been, so far, marginal to architectural theory and practice. This research, therefore, positions itself within the broader context of new architectural histories, specifically the emergence of new feminist architectural histories and theories with a

methodological emphasis on the relationship between identity, culture, lived experience, spatial alterations, and existing architecture.

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Conflict of Interests

The author declares no conflict of interests.

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