first hard, then soft: house architecture and the future-ready value of plan flexibility

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abstract

This text-based essay conceptualises uncertainty in architectural interiors as 'plan flexibility', with a normative focus on its future-oriented qualities. I concentrate on one specific typology: housing. In this context, a 'good', future-ready plan refers to the quality of conserving options and resources for coming generations of dwellers; it builds from principles of architectural resilience, or exaptation, where design ambitions link to preparing for an increasingly vague future where ecological, economic, political, and socio-cultural conditions of human life are difficult to anticipate. Despite risks of temporal agnosticism, I argue that focusing on housing allows me to discuss the forthcoming architectural needs of individuals without fully committing to an era-bound programme. My contribution focuses on asserting the long-term value of dwellings' flexibility in terms of *programme* indeterminacy (multipurpose use of space; hard-then-soft) rather than *formal* indeterminacy (adaptable elements; soft-then-hard). I define the notions of *programme* indeterminacy and formal indeterminacy, which I briefly tie back to the modernist history of alternative models of flexible domestic dwelling. I then comment at length on the interiors of Portuguese architect Álvaro Siza Vieira's *Wohnhaus Schlesisches Tor* (Berlin, *Internationale Bauausstellung*, 1984–1987), making the case for some of the abovementioned design principles. I contextualise *Wohnhaus Schlesisches Tor*'s interior design ambitions and effects in light of contemporary characterisations of housing adequacy and argue for the potential of the 'extra room' as one possible manifestation of the desired plan flexibility: this, inter alia, develops into a broader reflection on measures such as the 'bedroom tax' policies, and into a celebration of future-ready attitudes in planning houses.

keywords

temporal stability; architectural flexibility; programme indeterminacy; formal indeterminacy; *Wohnhaus Schlesisches Tor*

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short introducing remarks

Uncertainty in architectural interiors is examined in this text-based essay through the concept of 'plan flexibility' and its future-oriented qualities, focusing on domestic interiors. A 'good' future-ready plan here refers to conserving options and resources for future generations, referring to architectural resilience and preparing for uncertain times ahead. The contribution highlights the long-term value of programme indeterminacy, which it contrasts with formal indeterminacy; I define these concepts and trace their roots in modernist models of flexible dwellings. An in-depth analysis of Álvaro Siza Vieira's *Wohnhaus Schlesisches Tor* (1984–1987) in Berlin then illustrates the application of these design principles. Interior layouts of Siza Vieira's dwellings are analysed in the context of contemporary adequacy; in this analysis, I argue for the concept of the 'extra room' as a manifestation of plan flexibility. The essay finally closes with a brief reflection on housing policies such as the British 'bedroom tax' (2013).

shift in architectural cultures: new context, new aim?

Malleability, mobility, softness; these are notions that contrast a certain tradition of design in architecture. In past times, built realisations were deemed good when permanent, hard, stable.[01] To design and erect material infrastructure was already to do so in the spirit of solidity and durability; as signifiers of long-established power, architectural objects were to project an impression of fixity, immutability, and rootedness—they were to reflect the fixity, immutability, and rootedness of the (ideological) systems and influential actors that participated in its perpetuation. To frame it in the conceptual language of the present essay, these architectural objects were to project an impression of order and certainty. Churches, banks, manors, museums, town halls: these buildings had to appear rock-solid, steady, inevitable. Their form and function in the world's fabric are certain. In the context of such narratives, the future-readiness of architecture is understood as changelessness. Residential or institutional constructions are not to adapt to new societal dynamics and demands but to withstand them.

Present-day considerations now turn the resolution of built environments and objects towards notions of adaptability and openness to change, a thought-provoking professional move that arises as an answer to pressing economic and environmental challenges. Unjust distributive patterns and the climate crisis make for a bleak vision of the future. Architects and designers are challenged on their use and forming of resources; their realisations are held to new standards of sustainability and adaptability. Buildings and their interiors behave in novel elastic, evolutive, customable, dynamic, mobile, modulable, supple ways. In the context of such narratives, the future-readiness of architecture is understood as exaptation, as flexibility. Residential or institutional constructions are to adapt to new societal dynamics and demands—through an array of smart structural and programmatic tools, they work towards preventing their temporal

obsolescence. Uncertain times are ahead; should architects respond with uncertain designs? And when they do, what formal qualities should participate in their good future-ready performance?

This sort of interrogative, hypothetical exercise, where scenarios of normative judgements are adapted and extended to future material conditions, must qualify its interpretation of 'good' architectures. As professionals of the built environment face these new contextual pressures, any theorising that purports to say something meaningful about architectural value and future readiness ought to better define and clarify its standards and references. I therefore posit (and will proceed to defend) the following: a good, resilient design relates to the set of options available to users in the future. By 'conserving options', building projects shape up to enable future generations to act and make decisions based on their values, emerging information, and aspirations.[02]

Of course, the conservation of options comes hand in hand with the conservation of necessary material resources to realise those options. Building users' ability to keep options open during uncertain circumstances and use new information as it becomes available amounts to one exaptative manifestation of architectural making; the purpose of flexibility is here thought to enable dwellers to possess a wide range of options to choose from, in response to new context-related information. Designing a flexible space already contributes to the conservation or expansion of options for future users, whose capacity to choose can be measured as the 'number of available options' that result from chosen options in the present. In this view, even when our (architectural) future is considered uncertain, 'flexibility itself can be considered a resource that may be conserved and passed down to future generations.'[03]

Overall, operationalisability should guide the examination of design principles for achieving the future-oriented adequacy of architectural objects and spaces. A principle being 'operationalisable' matters to its general appropriateness and appeal. Operationalisability relates to the definition of a concept in such ways that it can be, somehow, distinguishable and understandable enough to be practically measured. To state the obvious, it must be possible to know what these architectural principles entail and if they have been satisfied. So, the principles that guide the making of 'good' built interiors should be 'operationalisable' and 'operational'; only then can they become of use for professionals of the built environment (architects, designers, builders, architectural educators, policy-makers) who are presently engaged in developing and evaluating their projects, in light of new contextual compulsions. Context, again, matters deeply to an inquiry that admits of temporal uncertainty and variation. Practically, these new contextual compulsions—be they ecological, economic, political, or socio-cultural—are difficult to anticipate. Intensifying of environmental degradations (anticipated

ecological sphere), of the neoliberal 'profit-prioritising' market (anticipated economic sphere), of nationalist dynamics (anticipated political sphere), of social life digitalisation (anticipated socio-cultural sphere): such empirical contingencies ultimately matter for an argument like mine, which seeks to provide operationalisable guidance for the making of future-ready dwellings.

What will this future really look like? While 'reasonably probable,' these impactful spheres of human existence aren't universally predetermined or fixed but fast-changing, mutable; their forthcoming features remain elusive. All in all, we cannot deny our inherent ignorance about the pace and direction of technological change in coming times—at this level, we do remain quite ignorant about the 'detailed nature and quantum' of architectural features that future peoples in future contexts will require to achieve satisfaction of their needs.[04]

In order to better account for this key temporal agnosticism, I propose to limit my argument to one typology (and one case study) of architectural spaces: *housing*, which I interchangeably refer to as 'domestic architecture,' 'domestic interiors,' or 'dwellings.' I outline two definitions of this typology in the following segment, focusing on its time-bound—temporally stable or unstable—features. Doing so, I argue, allows me to make stronger evaluative statements about the significance of these features in future architectural situations.

two definitions of domestic architecture, with comments on temporal stability

Housing definitions that orient towards the fulfilment of *basic needs* correspond to a level of certainty in the context of a temporal examination. Basic domestic architecture implies that an individual or family has protection from the elements, a place to store belongings, and the ability to fulfil basic physical needs such as sleeping, washing, and consuming food. The term 'housing' is conceptualised as 'shelter, lodging,' 'dwelling provided for people,' 'something that covers or protects.'[05] It aims to enable and maintain normal human functioning; it concentrates on a specific class of obvious disadvantages, and tries to eliminate them. It is a building, an interior, an enclosure, or a material structure that shelters an individual from external elements (rain, sun, snow, wind, or adverse animals and pathogens) that are out of her control. To serve its minimal function, housing must be suitable to the climate. It is not functional if it's too cold or too hot, too humid, too bright or too dark, too cramped, or too dirty.

Now, other important features of domestic interiors relate to basic infrastructures and services. Sanitation, lighting, clean water supply and drains, energy for cooking, road access, garbage disposal, sufficient storage, heating or cooling devices are features that participate in rendering the shelter 'habitable'—but note that these features dance a fine line between *being basic* and *participating in adequacy*. Both basic housing

elements (roofs, walls, floors, windows, and doors, along with land) and these additional material assets and services represent large intergenerational expenditures, whether in an urban or rural context.

Housing definitions that orient towards the fulfilment of *adequacy* correspond to a level of uncertainty in the context of a temporal examination. The concept of housing adequacy is most difficult to detail, since adequacy is often thought to relate to the abovementioned temporal and cultural spheres, to technological development and socioeconomic contexts and norms. Housing is where we dwell and sleep in peace. It is where we reproduce: the space of the private nuclear household. It thus represents the basic architectural space; for most of us, it is where we develop family relations.[06] Adequate domestic interiors give people a measure of intimacy, security, and stability. Without a home, pursuing personal aspirations, participating in societal projects, finding and sustaining a professional occupation, getting an education, or raising children are nearly impossible.

Here, housing deeply relates to wellbeing, social security, and work: it gives us the means to lead good and productive lives. When we purchase a house or rent an apartment, we are also securing access to larger life networks—to a common world infrastructure that connects us with 'jobs, entertainment, necessities, visual delights, encounters, barriers, threats, beneficial relationships, educational opportunities, sports facilities, and places that are more or less protected from surveillance.'[07] Features that participate in the 'goodness' of domestic architecture include, among others, availability of materials, affordability, habitability, accessibility, legal security of tenure, and cultural and temporal adequacy. The latter is of special significance to us, as it directly relates to the notion of architectural flexibility.

This sort of descriptive work informs my limitation of the present examination of *housing interiors*. Of course, an appreciable range of buildings are now designed with future-ready ambitions; the insights I advance could extend to these other typologies. However, given the direct ways in which housing weaves into our most essential physiological and mental needs, we can attribute to it an important degree of temporal stability. An answer to the challenges of temporal agnosticism identified above, the concept of temporal stability refers to the simple intuition that individuals from all backgrounds should be able to 'imagine the future' of an architectural space, able to imagine its constant presence or importance in the lives of future humans. Its present-day importance won't suffice—we need a bit of certainty; we need some imaginable, predictable pattern that allows us to imagine the building's form or impact on individuals' good or bad existence in many decades' (or centuries') time. The architecture of dwellings provides us with such a pattern.

I wish to emphasise this point once again. In the context of research that centres on

the future-oriented adequacy of domestic interiors, temporal stability is a crucial criterion. If the identified design measures are to garner professional support, they must demonstrate how they accommodate this criterion. While our human prospects are uncertain, future individuals' demand for adequate housing units constitutes a reasonable parameter to depart from. In other words, focusing on domestic spaces matters because the further into the future one hopes to carry an architectural principle, the more will it be the case that one is making design decisions under uncertainty. How can one make relevant use of 'plan flexibility' as a valuable design principle without working at such a level of generality that the relevance of the principle for specific challenges concerning spatial adequacy is lost? There remains much vagueness about the specific architecture needed for achieving future satisfaction. By contrast, as typology, housing offers an interesting degree of knowledge about the constituents of future people's wellbeing.

Compared to the indeterminacy of future generations' lifestyles (and the material infrastructure that is to support it), a study of domestic interiors offers key foundations on which to build design targets and principles. Given the limits to the substitutability of different basic functions enabled by housing, we can begin to say something about what ought to be passed down to future dwellers. Let us return to the first definition of domestic space that was outlined—that which connects to the satisfaction of basic needs. The temporal stability of housing typology relates to its first need-oriented definition; it relates to human minimal flourishing (as in the human ability to lead a minimally good life)—a 'stable' aim indeed. In that sense, domestic spaces are not merely instrumental. They are also categorical in some more 'profound sense' of being essential to present and future individuals.

So, despite a certain degree of agnosticism, adequacy in house architecture represents a justifiable and fruitful framework for further conceptualising time-bound design principles like flexibility. In the next section, I substantiate this principle by identifying two types of openness—henceforth indeterminacy—that characterise the making of most 'flexible' interiors.

distinguishing programme indeterminacy and formal indeterminacy

'Architectural indeterminacy' or 'plan indeterminacy' is, per se, an incomplete concept: we must develop it by indicating the types of design approaches that are, in turn, used to achieve it. This distinction between types of 'architectural indeterminacy' (open types, flexible types) can be subtle; some domestic spaces present qualities that concurrently relate to indeterminacy in programmed activities and in constructed forms. While programme indeterminacy and formal indeterminacy aren't strictly 'mutually exclusive', they constitute the most substantive strategies,

and known attempts, at creating an architecture that can be modified towards changing future conditions. My goal is to identify and classify certain general (and operationalisable) 'architectural preconditions' that must be satisfied by housing interiors if these interiors are to show true flexibility; if they are to remain adequate over long periods.

Manifestations of 'architectural indeterminacy' link to open-ended processes of definition and redefinition of an interior place, for instance, in the possibility of fitting out or redeveloping the space on a given surface or in the ability to increase or decrease a surface. Through a great range of transformations of programme and form, multiple alternatives (options) of usage and occupancy are made possible for present and future inhabitants. So, when architects speak of their housing projects as elastic, evolutive, customisable, dynamic, mobile, modulable, and so on, they usually do so in light of the two aforementioned principles of programme indeterminacy and formal indeterminacy. What differentiates the former principle from the latter?

Formal indeterminacy connects to the physical structure and layout of a dwelling's interior, which can be modulated with partitions and other movable elements. As opposed to 'formally determinate' rooms, which remain materially fixed, spaces that present 'formally indeterminate' qualities are shape-shifting; they are kinetic, filled with sliding partitions and rotating panels, framed with pivoting doors and hoistable decks. They are mechanised to various analogue or machinic degrees; they are adaptable in a way that is first soft (light-weight elements are being moved around), then hard (these elements are fixed into place, conferring a 'temporary rigidity' to the inside milieu). Housing is conceived of as a soft-then-hard architectural venture. We can say that architectural indeterminacy in form does not require that architects directly provide dwellers with final, resolved plan layouts. The general idea is that these architects should create spaces that enable present and future persons to meet their respective housing needs through their own physical work and efforts—women, men, and children of most ages can take part in the activity of moving construction elements around their home's interiors. In short, formal indeterminacy usually supposes a finite floor area, and volume, within which rooms are modified at will.

Programme indeterminacy connects to the types of activities expected to occur within a domestic interior's distinctive zones. We get 'formally determinate' rooms with unvarying size and static opening placements, but these rooms are not furnished in 'programmatically determinate' ways. In other words, the function-specific features architects and users associate with the various zones of the house are disseminated or absent. In many architectural cultures, standards regarding minimal proportions and equipment of dwelling units differentiate between programmes: kitchens, living spaces, or

bedrooms are at times quantified and qualified separately, with some distinct set of design rules—with some 'programmatically determinate' features.[08]

Architectural indeterminacy in programme does not require that makers of the built environment directly provide dwellers with final, resolved, function-oriented rooms. The general idea is that these expert makers should create spaces that enable present and future persons to meet their respective housing needs through their own varying schemes of room occupation. Interior spaces are not dimensioned and fitted to fit one domestic programme but many. In short, we have a conceptual oscillation between what inhabitants have in a domestic space (hard, material-bound conditions) and what habitants can do or be in that space (soft, activity-bound conditions).

I believe such an approach to the creation of dwellings represents a fruitful answer to canon non-materialistic challenges. When considering material features that correspond to house functions considering temporal variation, we must remember that accounts of housing adequacy should uphold non-materialistic aims. Non-materialism requires architects and developers to consider the *imperfect conversion* of material resources into individual wellbeing at home. Architectural elements, objects, accessories: these material means are not perfect indicators of (how they translate into) individual wellbeing.[09] By supplementing hard, material-bound conditions with a focus on activities and capabilities, a 'programmatically indeterminate' approach to the design of housing interiors appears to better account for differences in conversion factors.

This kind of reflection about formal and programme indeterminacy in the making of interiors allows for a partial reappraisal of, inter alia, modernist experiments on 'evolutionary housing' (from the French 'Habitat Évolutif') and the likes—this is a short essay, and the historical lineage of the architectures of indeterminacy in the past century has received its fair share of scholarly attention.[10] Given this falls outside the scope of this essay, we can posit the following: evolutionary housing projects were a significant theoretical and professional movement and manifested in formally and programmatically indeterminate interiors, though established cultures tend to focus on the obvious, flashy arrangements of the former. Floor plans were depicted in different spatial and intergenerational stages (soft-then-hard); observations were made about alternative programmatic use of certain rooms (hard-then-soft). Of the latter phenomenon, the Greek-French architect and urbanist Georges Candilis (1913–1995) recalled that 'residents [of his newly built housing complex] were using the spaces in a manner different from its intention at the time of design,' and that 'this was exactly what he wanted.'[11] Interiors doubled as spheres of choice, which were to be formalised by architects for dwellers. Still, such modernist experiments in design flexibility also came with downsides:

> The architectural concept of flexibility still relied on the old assumption that dwelling was a relatively neutral set of practices that could be subjected to rationalization. In everyday life, inhabitants experienced the architectural technologies of flexible dwelling not so much as neutral enablers *but as anathema to the feeling of a stable home*. While architects and developers cast mobile partitions as liberating instruments, their very mobility posed an almost ontological obstacle for inhabitants in the process of homemaking.[12]

The quote hints at a crucial insight: for all its promises of freedom, dynamism, and customisability, formal indeterminacy in house interiors did not and do not always match the domestic experiences and desires of their present and future inhabitants. Individuals' feeling of a stable home seems to require more (or other) than modernist, 'rationalising' formal flexibility. Unlike, perhaps, mobility in programme, mobility in form might turn out to be a little too uncertain for users' wellbeing—for their experience of true housing adequacy.

wohnhaus schlesisches tor—context

On account of the previous claims about domestic architectures, their temporal stability and the manners in which they can be designed as 'programmatically indeterminate' and 'formally indeterminate', I would like to now turn to one case study that arises as a potent material manifestation of such claims. To be sure, many housing projects constitute rich examples of 'uncertain' design attitudes; I have chosen to closely and comprehensively examine one of them, the interiors of Portuguese architect Álvaro Siza Vieira's *Wohnhaus Schlesisches Tor*, commonly known as *Bonjour Tristesse* (1984–1987). I argue that this social housing project utilises principles of 'architectural indeterminacy' or 'plan indeterminacy' that orient towards the (lesser explored) principle of hard-then-soft programme indeterminacy.

Pritzker-winning (1992) architect Álvaro Siza Vieira was commissioned by Berlin municipal authorities at the beginning of the 1980s to draw and build a housing corner block in the then-dilapidated area of Kreuzberg. Siza Vieira's building was to be part of a larger pool of experimental architectures, which were to be completed in time for the opening of German capital's *Internationale Bauausstellung* (IBA), or *International Building Exhibition*, in 1987. Other architects who were similarly commissioned to take part in the large-scale building exhibition included the famous Peter Eisenman, Aldo Rossi, and James Sterling. These big names of post-modern architecture were invited and encouraged to rethink the rebuilding of a run-down, post-war, housing crisis-facing Berlin; guidelines from the exhibition leaders made mention that the designed entries ought to focus on gentle city renewal and critical reconstruction—architects were to demonstrate a balance between contextual awareness, creative freedom, and progressive vision.

Many building typologies were proposed; Álvaro Siza Vieira chose to work on social housing on an open, urban site that initially belonged to Kleistpark Hausverwaltung. *Bonjour Tristesse* was consequently built at the corner of a large nineteenth-century city block in the run-down Kreuzberg district, in a large void left after the war. Importantly, at the time, almost half the population of Kreuzberg were not German citizens; they had come predominantly from Turkey as part of the early 1960s guest worker state programme or had fled the 1980 Turkish coup d'état and its subsequent violence.[13] This greatly informed the aforesaid, sought-after 'contextual awareness' *Internationale Bauausstellung* architects like Siza Vieira were tasked to demonstrate. Strong of his mid-1970s experiences with popular consultations on housing adequacy, the Portuguese architect's response to this context awareness challenge not only addressed style, materials, and proportions (formal context), but it also included his instigation of participative meetings with users (social context).[14]

Wohnhaus Schlesisches Tor's seven-story structure is known for its uninterrupted and curvy façade, which nicely connects to adjacent, existing walls; a dense and regular (rigid) grid of windows refers to the typical order and rhythm of neighbouring infrastructure. A few commercial functions (a total of eight shops) are placed on the ground floor of the building; the remaining six levels house a total of fifty-six domestic dwellings of varying sizes (forty-six units are made up of seven types of four or five-room apartments, as well as ten special apartments for the elderly). Importantly, original sketches by the Portuguese architect actually showed a housing complex containing twenty large apartments of a size deemed suitable for large Kreuzberg immigrant families. However, economic pressure from the IBA authorities led to increased dwelling numbers and a significant reduction of their originally intended size.[15] Final proposed typical apartment plans show *traversant* housing units ranging from sixty-four to eighty-five square metres and equipped with basic amenities—a compact kitchen, an equally compact bathroom, a salon, and one or two small bed chambers, which are labelled as 'rooms.' In area and height, these spaces followed the funding guidelines for German social housing [Fig. 01].[16]

Now, a trained eye will notice another sort of space niched in floor plans of Álvaro Siza Vieira's *Bonjour Tristesse* apartments. This is the tiny, programmatically indeterminate portion of the housing project's unit floor plan: the extra room. An 'unidentified void space' accessed from the unit's living room, this space was approved by municipal officials as a winter garden, but compellingly lends itself to diverse interior usages.
In effect, the extra room of *Wohnhaus Schlesisches Tor* sits as a spatial leftover of sorts, an interstice. Scholars attribute Siza Vieira's inclusion of this room to participation workshops with future users of the project, to the productive 'tensions between architects and users,' and to Siza

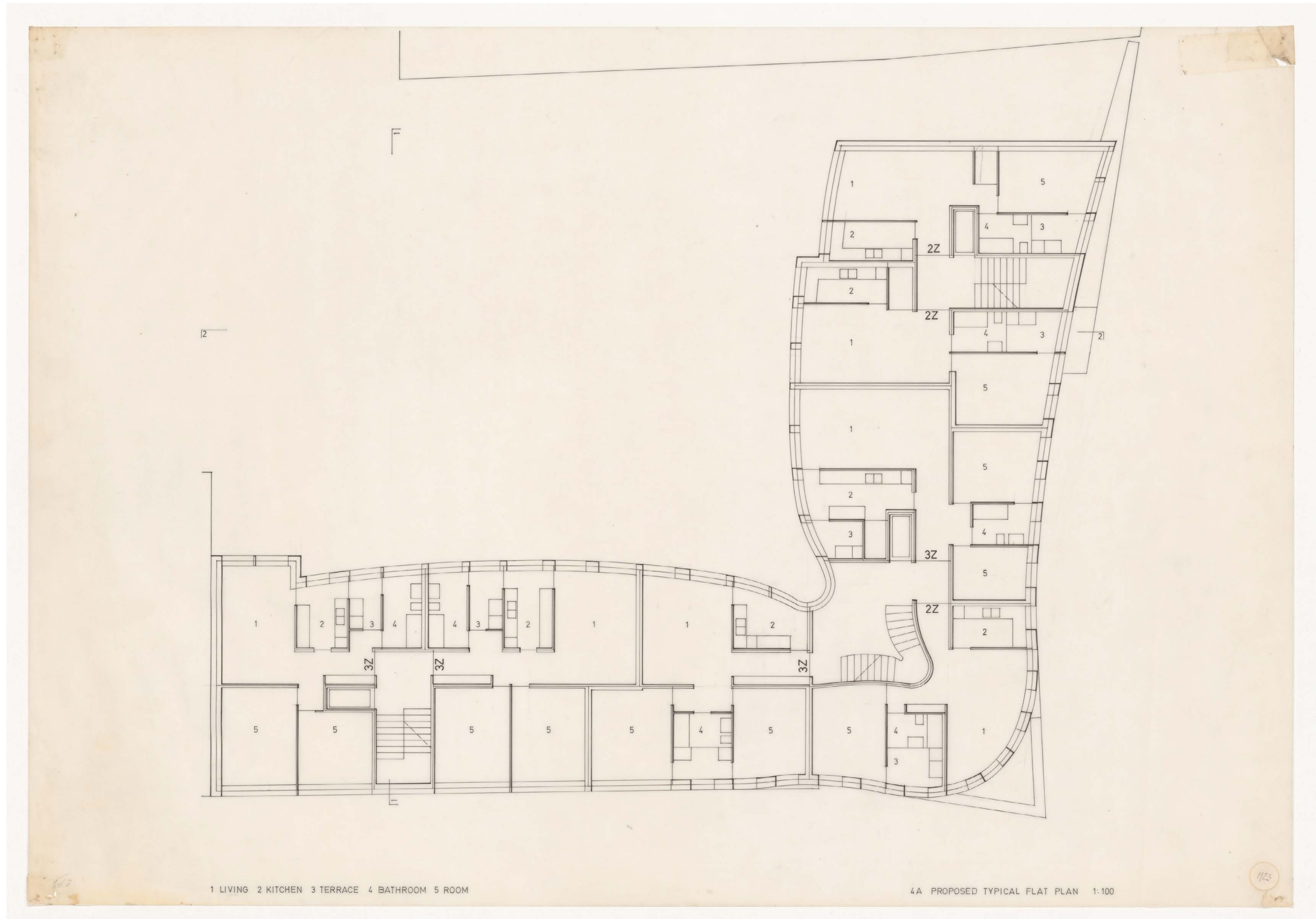

Figure 01.
'Plan for typical flat for Edificio de Apartamentos Bonjour Tristesse [Bonjour Tristesse residential complex], Block 121, Berlin, Germany', 1980. Álvaro Siza fonds, Canadian Centre for Architecture, Gift of Álvaro Siza, © Álvaro Siza

Vieira's intuition and wish that design be a continuous process that came out of such participative frictions—some of these scholars have actually identified the compact, programmatically indeterminate room as 'one of [Siza Vieira's] crucial architectural contributions in the name of participation.'[17] The apartments' extra void was his small but effective gesture toward cultural variability in (and specificity to) spatial use, prescribing a zone for residents' voice at the stage of interior design.

In her years-long photo series (2009–2012), architect Esra Akcan documented different fittings of this programmatically indeterminate room. Her images beautifully feature the glassy interior partitions, the plants and curtains, the chairs, the towels and carpets, the storage—functions and objects of the everyday domestic life of dwellers, who were offered a slit of architecture without a given purpose; among other usages, families in the building used the space for religious practice or meal preparation, or as an additional bedroom for their young children.[18] Three of

Figure 02.

Figures 02, 03.
Karaçizmeli's apartment in Álvaro Siza's *Bonjour Tristesse* in Block 121 for IBA-1984/87, photographed by Esra Akcan for her book *Open Architecture* (Berlin: Walter de Gruyter GmbH, 2018). Image courtesy of Esra Akcan.

Akcan's photographs are reproduced below [Fig. 02, 03]. They show the extra room of *Bonjour Tristesse* dweller Yüksel Karaçizmeli, an elderly Turkish woman who moved in the building's second-floor corner apartment with her husband and their two sons in 1987 and still lives there.

In these depictions of constructed domesticity, one can recognise mundane cooking apparel and accessories. An oven sits near a large window, with a refrigerator by its side. A little table and chair are facing this set-up—one can imagine a seated silhouette, busy with vegetable chopping, or relaxed while reading a worn-out cookbook. This is one story of appropriation of the 'unidentified void space' among dozens:

> Karaçizmeli turned [the extra room] into an additional kitchen that can be well ventilated and brought in her own oven, refrigerator and got help from a mechanical engineer that she could find easily through her personal relations in her working place at Siemens. When the owner had explained the apartment plan to her before she moved in, he had not told her about the open kitchen, and when she discovered it, it was too late to move to another apartment. She was shocked because she found the open kitchen inappropriate for Turkish cooking due to the strong smells that would permeate the whole apartment. Therefore, she now has a two-part kitchen: an open section for washing,

> preparing, storing, and eating food, and another section for cooking, divided from the first part by a glass partition.[19]

***wohnhaus schlesisches tor*—lessons**

I believe Yüksel Karaçizmeli's reinvention of this little 'pocket of space' speaks to the power and generosity—and so, to the future-ready adequacy—of the uncertain interior when it is declined along certain principles of 'architectural indeterminacy' or 'plan indeterminacy', in the specific sense of programme indeterminacy. Karaçizmeli had specific individual needs that, if unmet, would have rendered her housing set-up (and her experience of being housed) partly inadequate. Despite its small size, the *Wohnhaus Schlesisches Tor*'s extra room served its user well: in the example at play, a two-part kitchen enabled domestic behaviours and activities that were as necessary as they were unique to the person undertaking them. As such, programme indeterminacy ties us back to the social and psychological aspects of the house, emphasised in the second adequacy-related definition proposed in this essay's third section. What is of value here, really, is what present and future dwellers are enabled to do, what they are capable of.

Across time, programme indeterminacy does open up crucial options for individuals' beings and doings at home, for present and future people's genuine opportunities to realise those beings and doings that are important to them. To be sure, professionals of the built environment who pursue architectural flexibility can and should concern themselves with the material apparel of house-related activities. However, they should also work to better facilitate the many programmes that can take place within one fixed space over long periods of use. If they attempt the latter, housing is closer to becoming a hard-then-soft architectural venture.

We should take good note of the conceptual affinity between cross-cultural adaptation and cross-temporal adaptation in the making of interiors. The interiors of *Wohnhaus Schlesisches Tor* were, as narrated, designed to accommodate the varying needs of Kreuzberg's Turkish immigrant communities: anecdotes relating to the building's origin story—and its participation-informed development—made it clear that the architect and the (municipal) developers demonstrated an appreciable openness to 'alternative' or 'culturally differentiated' forms of domestic living. This openness translated with success (as reported in Yüksel Karaçizmeli's story) into features like the 'unidentified void space'; alternative and culturally differentiated forms of domestic living were, in effect, positively enabled, keeping multiple options open for dwellers in anticipation of unexpected cultural needs and the emergence of new forms of domesticity.[20] I argue that this cross-cultural feature of Siza Vieira's dwellings makes a good case for its cross-temporal adequacy. Alternative occupations indeed link to uncertainty across cultures and times. One can reasonably infer that if culturally

differentiated occupations can be enabled through the making of the extra room, temporally differentiated occupations can, too, be enabled; unexpected temporal needs can, too, be met.

The historical teachings of the Berlin *Wohnhaus Schlesisches Tor* apartments point to attractive contemporary potentialities and counterparts. I have said that 'unidentified void spaces' in the building were used for religious practice, heavy cooking, or child nursing; we can easily imagine equivalent present-day uses (a home office during COVID, a playroom, a fitness studio, a bibliothèque) and even indulge in thinking of speculative, near-future usages (a virtual gaming arena, a space for vertical gardening, and micro waste management solutions). Again, individual housing needs might vary across time, but the simple affordance of a small, programmatically indeterminate interior allows for an augmented range of functions to take place effectively inside the home.

The argument in support of the future-readiness of *Bonjour Tristesse*'s interiors is made stronger by the fact that its architect did not utilise more space than planned to make up the extra room. Remember, in light of economic and resource-saving concerns, *Internationale Bauausstellung* authorities had already pushed Álvaro Siza Vieira to increase the total number of dwellings first drawn in his project, from an initial twenty spacious apartments to forty-six compact ones. Unit areas were already scaled down; Siza Vieira thus carved out little 'programmatically indeterminate' pockets from them. In this sense, his architectural strategy was not additive but subtractive. The result of participative, attuned, and clever design iterations, an open-plan interior was permanently partitioned and the extra room was born.

As such, the room's *additive characteristic* is not defined in terms of quantitative space, as in more square metres, but represents more 'qualitative' space, as in one more programme. This is of interest for those engaging in the planning, developing, and making of dwellings in times of economic and environmental pressures. It is arguably compatible with, first, a calibrated maximisation of housing space for profit (economical sustainability prompt), and, second, a sought reduction of large, material-craving units into more compact ones (environmental sustainability prompt).

Relatedly, this additive feature of Siza Vieira's little room—linking to an increase of qualitative space, as contrasted with an increase of quantitative space—is common to the two forms of plan indeterminacy identified above. Both formally and programmatically indeterminate architectures appear to operate within a logic of subdivision, but programmatically indeterminate architectures avoid the aforementioned user dissatisfaction with fully mobile-built elements. Remember that formal indeterminacy in past house interiors seemed to work *against* individuals' feelings of place attachment and of a

stable home. A plausible, appealing and future-ready practice of plan flexibility should work *towards* place attachment and feelings of stability (social sustainability prompt). Overall, plan indeterminacy fares well in the face of market pressures, where a commodity's competitiveness and attractiveness make it more likely to answer consumers' demands (economical sustainability prompt)—Yüksel Karaçizmeli recalled wanting to move to another unit because she didn't like the apartment's open kitchen; as a consumer, she found the 'programmatically indeterminate room' made up for the built-in obstacle to her individual preferences, and settled in.

I want to conclude this section with a short reflection on the extant regulations of domestic spaces. The interiors of *Wohnhaus Schlesisches Tor* show the flexibility-related benefits that unprogrammed spaces bring to the design of housing units; doing so, they also provide us with new conceptual tools to understand and evaluate diverse housing policies that aim at 'maximising usage' of social dwellings. Think, inter alia, of the recent 'bedroom tax' (Great Britain, 2013), which consisted in the removal of the so-called 'spare room subsidy' for renters of state-controlled council houses and apartments; renters who had a spare room had a severe cut on their housing benefits imposed on them. While the policy actually failed in its resource-saving ambitions, its general concerns with overconsumption of domestic space—politicians spoke of the tax as an 'under-occupation penalty'—are relevant to a study of housing adequacy like ours.[21] In many setups, 'extra rooms' can and should be denounced as superfluous and wasteful, in a manner that recalls the pragmatic, economically driven pressures from the Berlin IBA authorities, leading Siza Vieira to maximise dwelling numbers and reduce their original size. Record-high demand for urban or city-near units coupled with current environmental concerns suggests that individuals might have to start changing (reducing) their 'housing consumption habits'—the British 'under-occupation penalty' represented one attempt to initiate such a change.[22]

However, interior designs like *Bonjour Tristesse* proved it is possible to operate within realistically sustainable principles while creating *additional*, programmatically indeterminate interiors. One likely oversight of regulatory bids such as the British tax of 2013 is that it evaluates programmatic user needs in terms of 'quantity of bedrooms'—the thought goes that if you have more than one bedroom per dweller, you are inevitably overconsuming. This is too simplistic. Siza Vieira showed us that good amounts of unexpected (yet important) user needs can be, in effect, answered with a small extra room; such a room can yield remarkable results in face of the uncertainty of user needs in present and future times. We could think of a modern-day regulatory scenario where existing open interiors are divided (as was the case with Yüksel Karaçizmeli and other residents' living rooms) without being counted as an 'extra

bedroom.'[23] By extension, another scenario would seek to limit total square metres per dweller without breaking them into numbers of distinct rooms. All in all, earnest commitments to architectural flexibility and temporal resilience can work to transform value judgement on the (un)desirability of additional spaces in housing, since they reasonably and responsibly answer to economic and ecological imperatives.

concluding remarks

This essay built on the simple premise that uncertain futures are ahead—in decades' and centuries' time, ecological, economic, political, and socio-cultural circumstances are bound to change. They will intensify or be dismantled and substituted in ways of which we remain ignorant. These changes will impact individuals' housing needs; despite a certain degree of agnosticism about the manners in which future people will dwell, we can work to conceptualise and create domestic spaces exhibiting enduring adequacy over an extended timeframe. Programmatically undetermined spaces like the *Wohnhaus Schlesisches Tor*'s extra room emerge as fruitful makings of flexible housing design in the face of time-bound incertitude.

I have shown that the architectural principle of (plan) flexibility emerges as one promising tool for designing good, future-ready house interiors. I critically examined and linked domestic spaces with a specific type of future-oriented performance; I argued that housing typologies, given their appreciable temporal stability, represent a plausible framework for normative value claims that extend long into uncertain times. Architecture has often been linked to intergenerational ambitions, and making resilient interiors in ecological, economic, and social crises is part of a long design culture in search of betterment and hope. I advanced and contended that indeterminacy in space can manifest formally (adaptable elements; soft-then-hard) or programmatically (quantity of space; hard-then-soft); while formal openness in the making of homes is a fairly well-established notion in the field, programme openness might need closer attention, both in theory and practice—by showing ways in which small, 'functionless' rooms can augment housing adequacy, the Berlin *Bonjour Tristesse* case study finally showed the cross-cultural potential—and so, the cross-temporal potential—of 'programme indeterminacy'.

My argument hopes to rally architects, designers, builders, architectural educators, and policy-makers. To them, I say believe in the power of the hard-then-soft domestic interior and in programme indeterminacy's contribution to ensuring the time-bound adequacy of dwellings. A promising future awaits us if we care to build it well.

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notes

01 These architectural properties were celebrated and sought after in many parts of the human world. Yet, it must be stressed that one finds many historical examples of African, Indian, Asian, or Pan-American Indigenous architecture that were articulated around deeply different notions of permanence and stability, privileging malleability and mobility in rich ways. The topic deserves a stand-alone study, and so falls outside the scope of the present essay.

02 Edith Brown Weiss, 'In Fairness to Future Generations and Sustainable Development', *International Law Policy*, 8.19 (1992), 19–26 (pp. 24–25).

03 For details on the concept of flexibility in future-oriented planning, see: Jose D. Teodoro, 'Flexibility for Intergenerational Justice in Climate Resilience Decision-Making: An Application on Sea-Level Rise in the Netherlands', *Sustainability Science*, 18 (2022), 1355–1365, p.1359.

04 Ian Gough, 'Climate Change and Sustainable Welfare: The Centrality of Human Needs', *Cambridge Journal of Economics* (2015), 1194–1214 (p. 1203).

05 'Housing', Merriam-Webster <https://www.merriam-webster.com/dictionary/housing>; Cambridge Dictionary <https://dictionary.cambridge.org/dictionary/english/housing> [accessed 24 November 2022]

06 Kirsi Saarikangas, *Model Houses for Model Families* (Helsinki: Societas Historica Fennica, 1993), p. 7.

07 Margaret Kohn, *The Death and Life of the Urban Commonwealth* (Oxford: Oxford University Press, 2016), p. 2.

08 Think of features like special volt outlets and plumbing connections (kitchen, bathroom), or minimal dimensions: building codes from Norway or Canada, for example, specify ventilation-related volumes or window-to-space ratios for bedrooms, which dictate plan sizes and opening placements. See: TEK17 Byggteknisk forskrift, § 13-2. Ventilasjon i boligbygning <https://dibk.no/regelverk/byggteknisk-forskrift-tek17/13/i/13-2?_t_q=soverom>; 'Code national du bâtiment' Paragraphe 9.9.10.1. 1 <https://publications-cnrc.canada.ca/fra/voir/td/?id=7eae2721-7ff6-4e26-ac77-c9e90eb8cc0b&dsl=fr> [accessed 10 August 2023].

09 Lukas Meyer and Thomas Pölzler, *Basic Needs and Sufficiency: The Foundations of Intergenerational Justice* (Oxford: Oxford University Press, 2022), pp. 1–32 (pp. 9–10).

10 See, among others: Tatjana Schneider and Jeremy Till, *Flexible Housing: The Means to the End* (Abingdon: Routledge, 2006), pp. 1–11.

11 Kosuke Matsubara, 'A Shift from "Habitat pour le plus grand nombre" to "Habitat évolutif" in Post-war Francophonie', *Journal of Architecture and Planning* (2020), 601–14 (p. 606).

12 My italics. Kenny Cupers, *The Social Project: Housing Postwar France* (Minneapolis: University of Minnesota Press, 2014), p. 299.

13 Esra Akcan, *Open Architecture. Migration, Citizenship and the Urban Renewal of Berlin-Kreuzberg by IBA 1984/87* (Berlin: Walter de Gruyter GmbH, 2018), p. 10.

14 The Berlin apartments were Siza Vieira's first completed work outside his native country of Portugal; in parallel to the completion of *Bonjour Tristesse*, he led the building of social housing units in The Hague (1983–1988), the architecture of which similarly had to adapt to the needs of the local Muslim population. In both projects, future residents with a recent immigration history were invited to participatory meetings and influenced Siza Vieira's final design for the dwellings.

15 Filipe Lacerda, 'Research for a Language: Álvaro Siza in Berlin', *IOP Conference Series: Materials Science and Engineering* (2019), 1–10 (p. 2).

16 Lacerda, 'Research for a Language'.

17 Akcan, *Open Architecture*, p. 268.

18 Esra Akcan, 'Bonjour Tristesse' (Canadian Center for Architecture, https://www.cca.qc.ca/en/articles/issues/22/ideas-of-living/32694/bonjour-tristesse, 2009-2012). [accessed 24 January 2023]

19 Akcan, *Open Architecture*, pp. 277–78.

20 Teodoro, 'Flexibility for Intergenerational Justice in Climate Resilience Decision-Making', p. 1356.

21 Kenneth Gibb, 'The Multiple Policy Failures of the UK Bedroom Tax', *International Journal of Housing Policy*, 15.2 (2015), 148–66 (p. 148).

22 While the policy was limited to social housing, which is controlled by local councils and could easily be regulated, an interesting version of a ruling on housing overconsumption could attempt to discourage housing overconsumption across the market, regardless of formats of tenure. While controversial, this would signal systemic commitments and ambitions.

23 Even if one was to advocate this sort of measure, there remains the problem that the council houses or apartments where the bedroom tax was applied are already made of quite small rooms, which would be difficult to divide down into Siza Vieira-like 'extra pockets of space'.