

The Households' resilience: domestic space and remote work among a pandemic emergency

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Abstract

This article aims to identify domestic space's contemporary requirements, recognizing the processes in which, due to changes in the way we live, or unforeseen circumstances, the need to redistribute or redivide our liveable spaces arises.

More demanding in terms of spatial separation, domestic space is influenced by behavioural because the household itself evolves and/or because emergencies induce new uses in spaces once designed for something else.

The current pandemic situation has exposed the inefficiency of some of the current (and past) architectural trends. Domestic space is considered a group of areas with a single use in mind or with idealized uses never put into practice by its inhabitants.

Flexibility is, therefore, a requirement, where the collected demands and constraints could be the starting point for research focused on new housing types and new construction methods, harbouring the needed elasticity to accommodate different living patterns under unforeseen circumstances.

Keywords: domestic space; walls; pandemic; remote work; household.

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Introduction

Dividing a house's liveable space has always been a question in domestic architecture, at least since mankind started building their shelters. Even before privacy (as we define it nowadays) was a demand, dividing spaces and defining routes inside the house was already a concern, in the sense that, besides the practical spatial dimension, there have always been social and ritual reasons behind the use of domestic space.

The way the dweller runs through these spaces and how they are perceived by him, even if such a route was bound by objects (Krampen, 1989, p. 130), defined those social and ritual characteristics, which grounded Pierre Bourdieu's analysis of the Berber House (1970): through its spaces, objects, routes and

cultural meaning, he meticulously describes and analyses the objects and spaces defined by them, and how they are the result of not only practical reasons but also of different degrees of privacy among the household and their visitors.

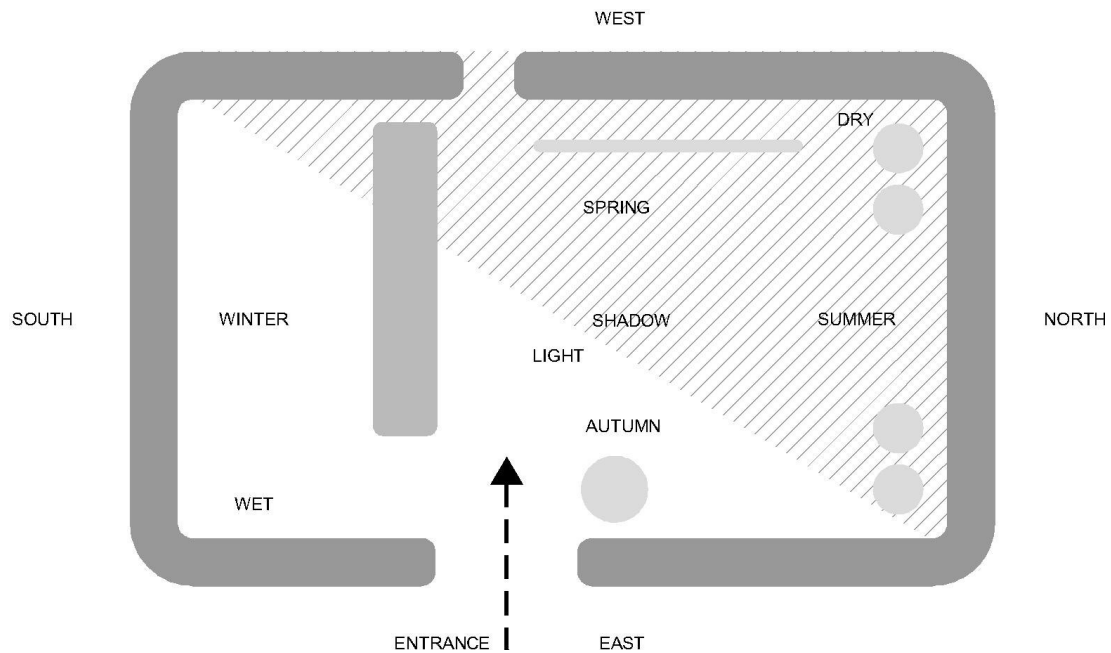


Fig. 1. Schematic plan of the Berber house, according to the analysis of Pierre Bourdieu (Author's illustration. All rights reserved).

Some can argue that the cultural distance between the mentioned example and our contemporary culture may lose relevance to the present research. However, Baruch Bligh (2011, p. 21) defends that it is precisely among Models and Types that lie on the margin of what we define as the norm that we can define its stereotypes' features. He refers mainly to the more recent proposals in architecture and design, regarding its past references, but we can also make use of the opposite assumption, that the past can also be better understood when comparing it to contemporary proposals (and its dogmas): thus, recurring to the past to debate present problems can be accepted as an equally solid argument.

Therefore, we can make use of an even further example (both temporally, culturally and civilizational) like Skara Brae, a Neolithic settlement located in the Orkney Islands in the United Kingdom, which was inhabited between 3200 and 2200 B.C. (*Skara Brae - The Discovery and Excavation of Orkney's Finest Neolithic Settlement*, n.d.). It stood buried under the sand (which ensured its preservation), before it was uncovered by a storm in the XIX century, revealing circular houses that had no compartmentation. However, from its entrance, several elements were disposed of strategically creating a route, which indicated not only different uses but also their hierarchy: fire was in the centre, in front of the entrance; in its opposing wall was a stone element, presumably used as shelving (in which the household's more important items were stored, in front of whoever entered the house); between this "shelf" and the fireplace there was a stone, presumably a seat for the most important member of the household (again, in front of the door and immediately visible for those who walked in); to the left of the entrance there was another stone element, facing the inside of the house (also used as storage but for household items), which, in practice, required a circular route to the right.

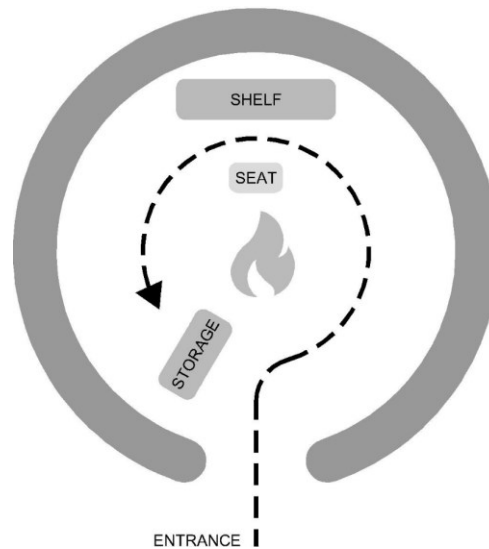


Fig. 2. Schematic plan of Skara Brae's house (Author's illustration. All rights reserved).

Besides the space hierarchization, this example is also interesting because of the differentiation between the load-bearing system (the outside walls) and the non-load-bearing elements (like the “shelf” and the “cabinet”), despite being made of stone (since wood was a very scarce resource on-site), can still be freely described as “furniture” which also acted as a space divider.

Based on this feature we can ask ourselves if space (and its compartmentation) can be a matter of product design or should it be an architecture's exclusive feature. In general, the consulted literature doesn't debate this very thoroughly, informally referring to space as a matter of architecture, and objects as product design's domain.

Martin Krampen, already quoted, goes further in defining these concepts, establishing scale as the most obvious difference between both disciplines. He adds that architecture is composed of space defined by fixed elements, while Design also defines space but through elements which are mobile or physically disconnected from their context (1989, p. 139). In other words, space is perceived as a domain of both disciplines, which are distinguished by the flexibility of its partitions concerning the space's container.

We can rely on a more restricted definition, in which the wall, whether fixed, mobile, or detached, is an “object” of product design, while the choice of its location is a product of an architectural intention. At first sight, it seems a more simplistic concept than the one proposed by Martin Krampen, but it just means that a designer can create architecture with his objects, while an architect can also recur to moveable objects to create architecture. As Krampen says, space is always modelled, despite the “official” category of the proposer.

The household's ever-changing needs

According to Irene Cieraad (2006, p. 1), “domestic space” is a definition coined by anthropologist Mary Douglas in 1970, which gave the “domestic site” (a merely functional place) anthropological and symbolic features. Nowadays domestic space it's understood as a space divisible through fixed elements, although which “professional” is responsible for said elements is not specified, as, perhaps, it's not considered a matter for anthropology.

However, the permanent character of these elements (partitions and/or walls) is somewhat accepted by all, but it corresponds to a (nowadays considered incorrect) idea that the house's spatial needs remain unchanged through its household's lifespan. This, in turn, is also based upon the wrong idea that the household is an unchangeable structure: the nuclear family (a couple and their offspring), repeating itself generation after generation. The truth is that the household can be composed of a variety of dwellers that can include the extended family, even members that only temporarily inhabit the house or participate in its domestic dynamics (Afonso, 2000, p. 156), and also people that don't share blood ties. Also, if we consider a nuclear family according to an occidental concept, we can conclude that a house, built upon this notion, can be difficult to adapt to other cultures (migrants, for example).

Therefore, domestic space, as a dynamic and evolving organism, is a matter of research in architecture: we can study it through its physical growth (Gomes, 2016; Silva Dias & Portas, 1972), or through the alteration of the inner elements (contained by the impossible to change outside shell), namely its compartmentation, to adapt it to its dwellers' changing needs (Habraken et al., 2000; Schneider & Till, 2007). This kind of research refers mostly to public housing, which is not a field of knowledge that we should exclusively report. It is, however, a context in which the architect can be more experimental, and where new paradigms are (mostly) defined.

This last example – altering internal space – is the subject of our paper, since it corresponds to most situations (because we live in apartments or because it's cheaper than enlarging a house (Mull, 2020), which ends up being a permanent situation (contrary to the notion of change and evolution we are pursuing). “El diseño de soportes” (Habraken et al., 2000) is a study carried out by a group of Dutch architects to make mass-built housing estates more versatile. They had precisely identified that the “family” was no longer the house's exclusive household, but also that even those traditional families saw their needs change through time (and, of course, when migrant families were housed in such mass fabricated estates, their culture and way of living interfered – or was interfered – by the house's rigid layout).

So, in 1964, the SAR architects (Stitching Architecture Research) developed a grid for all new houses would be designed upon: the component containing that grid (that could not be altered) was the Support, and the Separable Units were the moveable components that could be altered (demolishing the existing walls): they would “move” according to that grid, ensuring, for example, that any changes (introduced by the dweller) could be rebuilt through prefabricated elements.

The obsolescence of domestic spaces in contemporary life.

In most cases, our houses are not conceived upon such a grid, so in our “unchangeable container,” it's the walls and their components that must have the necessary modulation to adapt to the pre-existing dimensions. Like SAR architects had already noticed in the 1960s, we can also identify certain activities and uses, associated with specific domestic spaces, that became obsolete, or, at least subject to obsolescence during the household's evolving process. In certain circumstances, because such spaces were never used according to their intended purpose (based upon an idealized way of life it never came to be).

The Modern Movement (and, more specifically, Functionalism) is probably the most accurate example of this aspect: it defined domestic spaces with sizes and areas scientifically determined, according to usage, lighting, and ventilation needs, in which, for example, the kitchen was understood as uniquely practical space (like a production line) without any sociocultural connotation. “A new form of science”

(‘Translator’s introduction’, 2002, p. xx), that in the middle XX century was already considered a “fiction, simulating efficiency” (Montaner, 2001, p. 232).

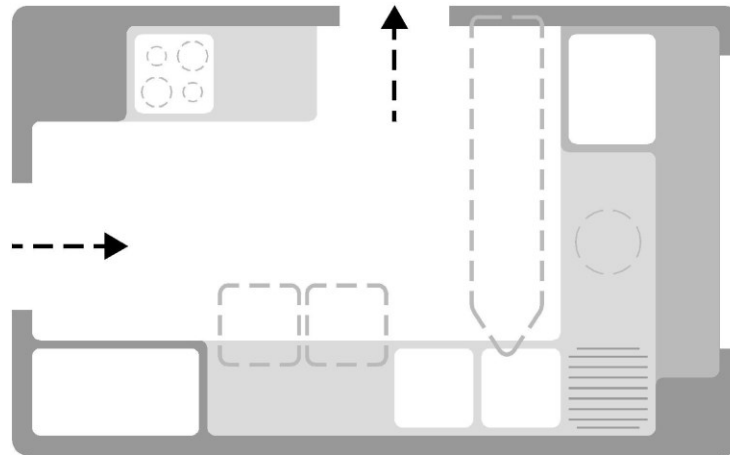


Fig. 3. Schematic plan of Margarete Schutte-Lissotzky’s Frankfurt kitchen (Author’s illustration. All rights reserved).

Of course, there is merit in the work of those architects that, although attached to beliefs that proved to be, if not incorrect, at least not as dogmatic as they were initially intended. Margarete Schutte-Lissotzky’s Frankfurt kitchen can be criticized for not considering the cultural aspects of a kitchen: by turning it into a “production unit”, it missed the dining area where the household maintained most of its social dynamics, namely between the cook, diners and close visitors. Architecture as a place of ritual would mark the turning point of Aldo Rossi’s rationalism into a more expressive language, which he states through a series of evocative photographs, namely a very powerful one of a kitchen table (Lynch, 2008, p. 22). And even those who criticize the economical reasoning and efficiency that guided such research, resulting in “sadistic surfaces that slavishly follow minimalist fashion loved by academics” (Aresta & Salingaros, 2021, p. 4) tend to forget that what the working classes of the 1920s had was, in some cases, living conditions still found in nowadays Favelas, whose problems were emphasized by the COVID-19 lockdown (Parreiras, 2021).

What we also should remember in Lissotzky’s defence is that she laid the grounds for the kitchen as we know it today: most of us never renounced the kitchen table, but all the remaining furniture, once detached elements for storage, cooking, and washing, is now fully integrated into a much more practical “element” including all the necessary features for the above-mentioned uses.

Another example - covering the whole house – can be found in Alexander Klein’s work, much of it conducted theoretically but based upon practical research which included the design of housing units and the circulation paths within. As a Functionalist, he conducted his work as if we moved almost in a robotic manner, solely conducted by physiological needs (“forgetting”, in the 1920s what Irene Cieerad would “rediscover” in the 1970s): over a typical apartment, and other designed by him, he draw circulation schemes that intended to show how dwellers circulated inside the house, stating that his solution was better because it kept the private areas secluded from the communal areas, meaning paths would not cross and privacy was kept.

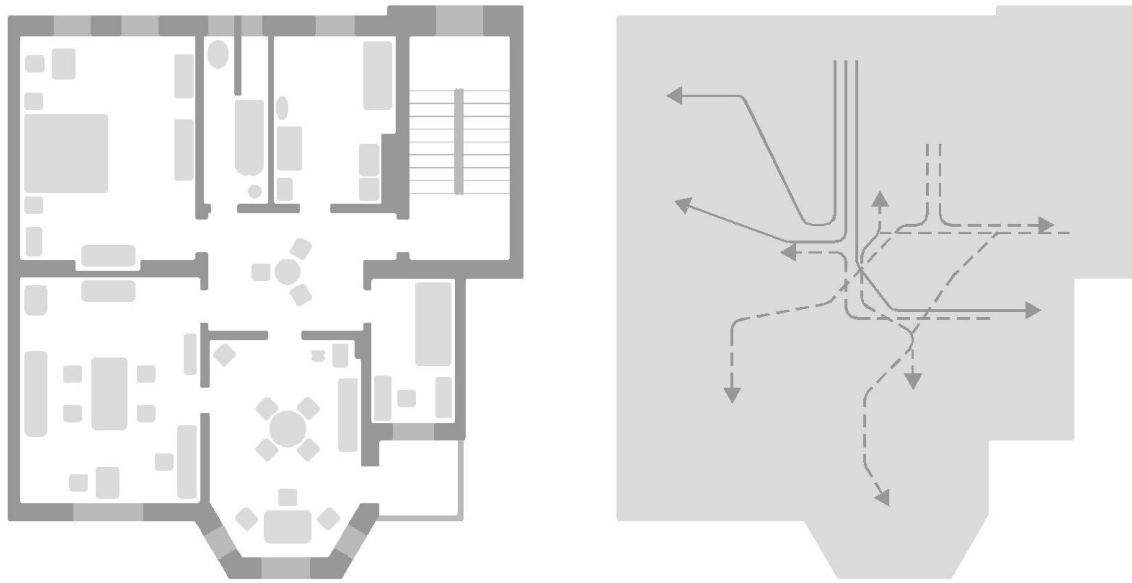


Fig. 4. Schematic plan of Klein's "bad example", where common and private paths would cross in the family's everyday life (Author's illustration over Klein's "Functional Housing for Frictionless Living"(Bauer & Penner, 1934, p. 203). All rights reserved).

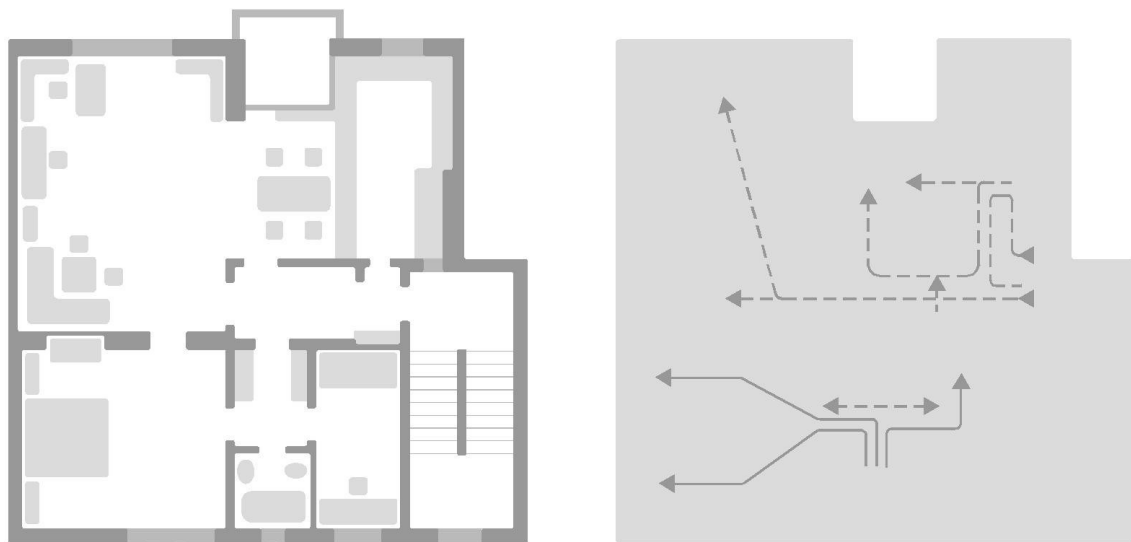


Fig. 5. Alexander Klein's "god example", with separate paths among private and common areas of the house, is based upon its own Bad Durremberg project (Author's illustration over Klein's "Functional Housing for Frictionless Living" (Bauer & Penner, 1934, p. 203). All rights reserved).

These principles were revised by the succeeding generation of architects (and designers), which were more attentive to the dynamics of existing households and their sociocultural needs (which coexisted side by side with their practical ones). Even in cost-controlled housing (with diminutive areas) some tried to propose two meal areas, one in the kitchen (for daily meals), and the other in the living room (Portas, 1969). Once again, although the reference concerns cost-controlled housing, this model was adopted by most of the apartments (and houses) in the Portuguese built landscape, for instance, in which the living room is disproportionally big just to accommodate a (formal) dining area.

Generally speaking, the “formal meal” is a use that is diminishing (even disappearing) from our daily dynamics, whereas the dining room furniture (very occasionally used) is an investment that will never be monetized as such: during the Covid-19 lockdown, where many of us had to work remotely, some used for the first time the dining table, precisely as a working area (something that was already referred by Amanda Mull (2020)).

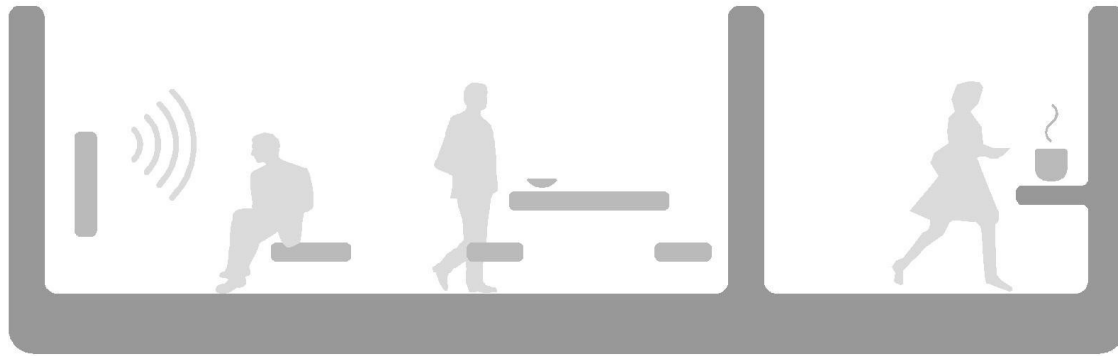


Fig. 6. The schematic section of the separation between cooking and dining in most homes is inherited from a solution that ignores the sociological function of the kitchen table (Author’s illustration. All rights reserved).



Fig. 7. Schematic section of the proportion reserved for a bedroom and a master bedroom, based upon the assumption that the former is only used for sleeping, when it can carry out other types of uses, like working (Author’s illustration. All rights reserved).

This kind of reasoning (which, according to Martin Krampen, may be related to architecture and design) can, however, make us aware of the offered opportunities in terms of “re-compartmentation” of the domestic space: for example, demolishing the wall that separates the kitchen and the dining area (and “moving” such wall to separate the newly “reunited” kitchen from the living area), or even creating an office space, isolating the unused dining area from the living room.

The perception of a “changeable” or “evolutionary” house is therefore closely connected to the above-mentioned awareness that a house’s occupants aren’t always the nuclear family, but a household composed of several people reunited for various reasons (being it blood ties or rent sharing). So, if we try to apply Klein’s reasoning in a contemporary apartment, we might get a result apart from what he defined as a “good solution”, but closer to the specifications required by a previously unidentified household.

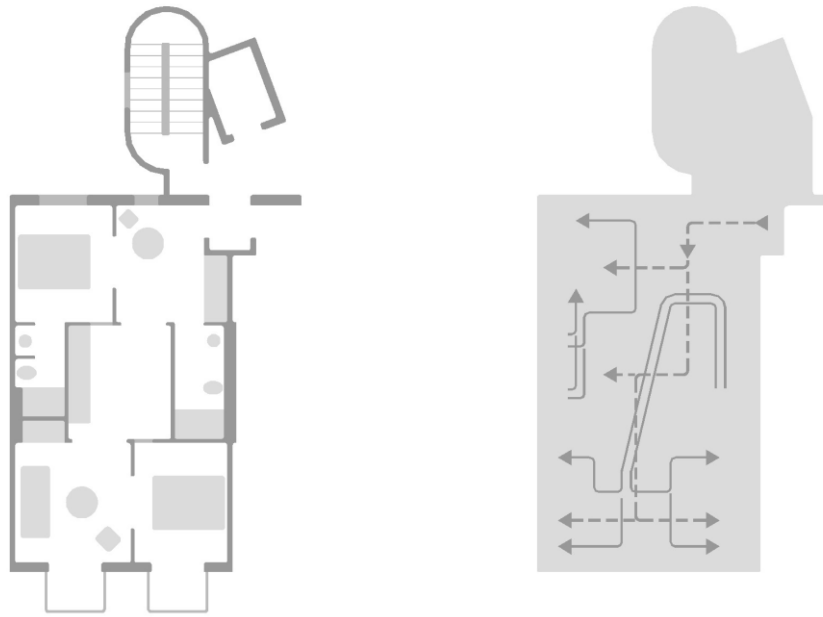


Fig. 8. MAIO's "22 Dwellings Housing Block" in Barcelona, which, according to Alexander Klein's circulation scheme, would be a "bad solution", since to access private and common areas paths are constantly crossed (Author's illustration over MAIO's architectural plans (*MAIO – Architectural Office Based in Barcelona*, n.d.). All rights reserved).

MAIO is an architectural office based in Barcelona author of the "22 Dwellings Housing Block", whose authors also call "110 rooms" on their website. The reason behind this name is the fact that more than designing a flat, according to an expected program (living room, kitchen, bedrooms, bathrooms), the architects preferred to design a system of rooms that can be used as desired. Also, each apartment can be expanded or reduced by adding or subtracting rooms (*MAIO – Architectural Office Based in Barcelona*, n.d.). We can identify in its plans the bathrooms and kitchen, but the remaining spaces can only be assumed by the preconceived references that we have of what private and common spaces are (or through the furniture icons used by its authors to reference the plans, that vary from apartment to apartment, and floor to floor). Anna Puigjaner, one of the members of MAIO, in a conference held in 2017 (Centro Cultural de Belem, 2017), also stated that, since the apartments had water infrastructures throughout the bounding walls, at any moment the apartment's layout could be completely changed, including moving the kitchen in any direction (or even to carry out without a kitchen, we may add, since Puigjaner is the author of research called "Kitchenless City", where she surveys housing solutions that omitted the kitchen in its layout, and how we can adopt them in the 21st century (Bestard, 2016)).

The reasoning behind this solution is the same that has been carried out by the architects Riegler Riewe Architekten in their Bahnhofstrasse apartment building (1992), where multiple passages between rooms made them adaptable to various degrees of privacy (at least visually, since doors and sliding panels can't offer the same kind of quiet a wall does). We may add that Mies van der Rohe might did the same in his Weissenhof proposal (1927), where each floor had different solutions for the same area, structure and elevations (proposing from a "regular" apartment to an open space loft, a stance that although defines him as Modernist, it certainly doesn't define his work as Functionalist). What seems to differ in MAIO's proposal is that its authors assume that every inner wall in their apartments can be demolished for it to be reorganized according to its owners' needs (which the project also facilitates through the above-mentioned infrastructure layout). Riegler Riewe's proposal also as an infrastructure layout that allows the kitchen to move to the living room area (making it smaller, but offering the former kitchen area as another private room; however, altering the complete layout is not an option, at least explicitly).

So, if we accept the impermanence of most of our domestic spaces, based not only on every possible household we can imagine but also on the fact that constantly moving is simultaneously a consequence and a cause for impermanence, we can discover a need and define an opportunity to create more dynamic housing spaces which can change according to our changing needs. However, due to the frequency of which will occur, the real opportunity resides not in the possibility of demolishing and rebuilding, in traditional terms, but to create movable partition systems, or easy-to-assemble and disassemble walls, whose components could be rearranged in new partitions, according to the needs. All of this without neglecting its appearance, which must have the dignity required to be part of the domestic environment (certainly different from an industrial space, to which we normally associate such systems, and which constitutes the majority of the available products (*Simple, Reusable, Cost-Effective Modular Wall Systems*, n.d.; *Temporary Wall Solutions* | *Durable Modular Construction Walls*, n.d.)).

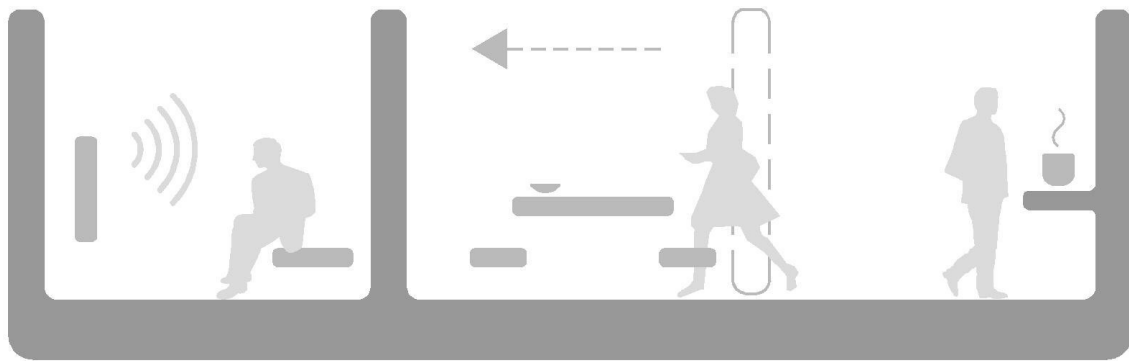


Fig. 9. Schematic section of the living and dining area, with the latter now part of the kitchen, by changing the wall that once separated kitchen and dining – which can also be an addition (Author's illustration. All rights reserved).

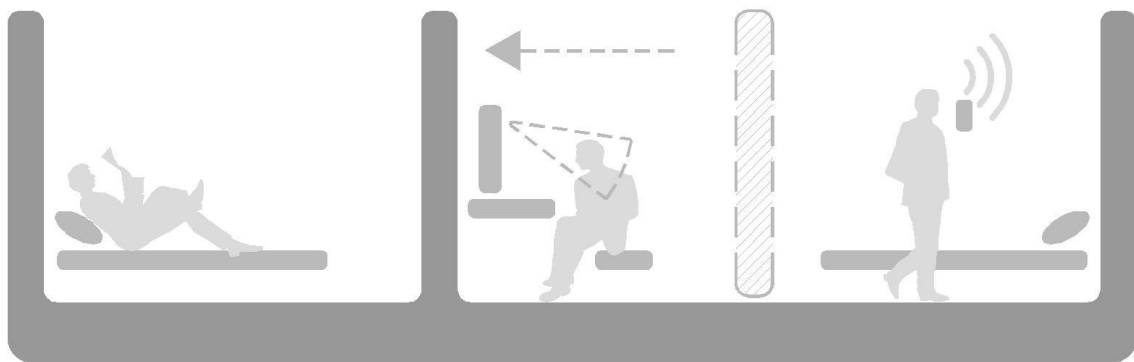


Fig. 10. Schematic section of the bedrooms, where the subdivision of each can make way for office space, be it temporary or permanent. All rights reserved).

Covid-19, lockdown, remote working, and compartmentation's functional requirements.

Despite the two years that have passed since the pandemic situation started (with its constant restrictions, lockdown included), it is still early to have scientific literature about the consequences of Covid-19 in the domestic space, and design's adequate responses to the imposed challenges. However, it is already possible to find inquiries that can collect precious information to start establishing practical proposals to

solve the above-mentioned problems - even if most of those inquiries refer to socioeconomic studies (Cuerdo-Vilches et al., 2020, p. 2).

However, the article, “A Mixed Approach on Resilience of Spanish Dwellings and Households during COVID-19 Lockdown”, already shows how the (Spanish) domestic space and its households faced the pandemic crisis, referring that the more vulnerable households were the most affected ones, which comes with no surprise as they are the ones with smaller, uncomfortable, and overcrowded houses (which can justify our cost-controlled housing bibliography). The research is, nevertheless, inconclusive regarding most questions one can arouse about the subject, but still refers, based on a series of questions asked to residents, that the need for outdoor spaces, better insulation, and bigger area houses were the prevalent needs.

Another research, from December 2020 (um month older than the above-mentioned paper), focused specifically on remote working and studying (Loureiro & Campos, 2021), gives us more information about the subject (and even if refers exclusively the Brazilian reality, its results can also be applied to other contexts). Its authors admit that its scope is reduced regarding poorer households (which had more difficulty in accessing digital devices to reply to the electronic-only questionnaire), but, if we consider that the most represented households were the ones with less financial struggles, the obtained results refer situations that we, at first sight, would consider absent in this social-economical context.

Remote work and dedicated spaces.

The authors immediately state the lack of ergonomics of the existing furniture (especially when used intensively) in rooms that weren't prepared to work as an office space. However, some problems were common to those who have always worked from home (not just during the pandemic), like house chores, or the visible “scenario” and environmental noise in video calls. The real problem was the shared spaces: because they were used for different purposes (where some work while others play/prepare a meal/rest), and even if there was an office space, it became shared once parents and/or students had to do remote work/study (which in the video call scenario, that can last for hours, it became a real problem). If we remember, the authors of the above research paper acknowledge that they had difficulties reaching the poorer households, their case studies being people with some wealth, “who lived in apartments above 180sqm, who also reported being dissatisfied”. It seems that, regardless of area or financial situation, the real issue was the inadequacy of their houses and their compartmentation.

It is worth mentioning that, more recently, other research regarding the consequences of a lockdown in the domestic space was published, with some literature referring to the dwelling's features that can help contain the disease's spread among the household (Zarrabi et al., 2021), but one, in particular, is of particular importance because it directly complements the Loureiro's and Fonseca de Santos' article (Loureiro & Campos, 2021): the research carried out at a Brazilian Favela (Parreiras, 2021) (which was not identified for a matter of privacy, and the names of the interviewed women were also changed) exposed the living conditions of its inhabitants, where houses are occupied by extended families in restricted spaces with scarce or no ventilation whatsoever (Parreiras, 2021, p. 52), often with one single room where all the household confined together. If the former Brazilian study it was stated that low-income households were hard to reach because of the lack of electronic devices, in this one, it was stated that the internet was the only mean of communication, through WhatsApp, which was a deliberate methodological option, since people could be reached through text, images and audio messages (“written messages – usually underused in conversations – have become the main means of expressing more sensitive, intimate facts, since it would be impossible to record audio within the shared home environment” (Parreiras, 2021, p. 53)). Violence - sexual and gender-based - is, therefore, a, often hidden, direct consequence of this kind of promiscuous space sharing during the pandemic crisis (Parreiras, 2021, p. 55 quoting Onyango and Regan, 2020), which makes us wonder if the “machines for living (...)

designed for soulless bodies with no autonomy to feel and think” (Aresta & Salingaros, 2021, p. 5) can be demonized in such ways – especially a pandemic context - since under very strict budgets they offered privacy and salubrity to families who lived, in the 1920s working-class neighbourhoods, in environments still found nowadays in the above-mentioned favelas.

Compartmentation and open-floor concept.

One of the consequences of the today’s real-estate pressure is the increasingly small apartments in the city centres, with media reporting situations where dwellers sharing these micro-apartments looked for some privacy in hallways and emergency exits “just to escape from their roommates” (Hubbard, 2020) (which can make us wonder how much the market has reduced our living quality, bringing it closer to the one of a favela, in terms of area). Even if we don’t consider these extreme examples, it becomes common to read media articles, where authors defend the need to introduce some changes in today’s house’s layout, namely in their (lack of) partitions: many advocate the end of the “open-plan” (Barret, 2020; Chayka, 2020; Mull, 2020; Thompson, 2021), a change sensed since every dweller stopped sharing the same TV and started having their own electronic devices (Thompson, 2021). Or, as Daniel Koch (2016) puts it, it reflects a need for avoidance on behalf of the dwellers, not in a negative way, but the sense that people seek/need shelter from another’s mindset, which is also a social behaviour). Besides that, when constantly at home, the energy consumption, the noise, or the background in video calls shed some light on the shortcomings of the open space (despite its qualities) in which the typical New York loft doesn’t seem as “romantic” as before (Chayka, 2020, quoting architect Florian Idenburg).



Fig. 11. Schematic section of an open space solution, where unexpected tasks lead o conflicting uses (Author’s illustration. All rights reserved).

This wouldn’t be the first-time health issues have deep consequences in domestic space: Peter Barret (2020) states that the germ-harboring canopied beds were abandoned when Louis Pasteur discovered the link between bacteria and infectious diseases, or that the extra bathroom at the entrance hall derives from the entranceway vanity room where hands were washed during the Spanish flu. Tuberculosis is also referred to as being the main responsible for the core features of Modern Architecture (namely the big windows and white surfaces (Thompson, 2021, quoting architect John MacLaughlin)), explaining Mies van der Rohe and Marcel Breuer’s austere architecture, that was hospital-like (Chayka, 2020, quoting architect and historian Beatriz Colomina). Even Modernism’s easily wipeable unornamented and fibreglass furniture “owe as much to the fear of tuberculosis than any utopian design philosophy” (Barret, 2020).

It’s, therefore, very hard to accept that the “antiseptic” environment of Modernist architecture can be considered inadequate for human needs, unable to provide an effective environment, with “narrow and sterile corridors” (forgetting the George Muehe’s Haus am Horn corridor-less solution), “oppressive low

ceilings” (ignoring Le Corbusier’s double-height living rooms, simulating the outside space in its 18 storey Unité d’Habitation in Marseille) (Aresta & Salingaros, 2021, p. 3), “windows that ignore the path of the sun” (Aresta & Salingaros, 2021, p. 3) (as if Lloyd Wright’s Solar Hemicycle house never existed), with no relation with nature (contrary to what Aalto’s Paimio Sanatorium did) unable to consider space for spirituality (Aresta & Salingaros, 2021, p. 2) (forgetting Barragan’s own house) when one of the primary goals of Modernist architecture - salubrity - was defined for people to survive health emergencies (like the one we are living).

The interviewed designers and architects seem to consider that the above-mentioned difficulties can be seen as opportunities: architect Jing Liu (interviewed by Chayka, 2020) was designing an apartment building in which the apartment’s kitchen, dining room, and living room were open space, but with the possibility of being divided. In another example, architect Koray Duman reflects that walls, traditionally a fixed feature, would be “fun” if equipped with wheels (quoted by Chayka, 2020).

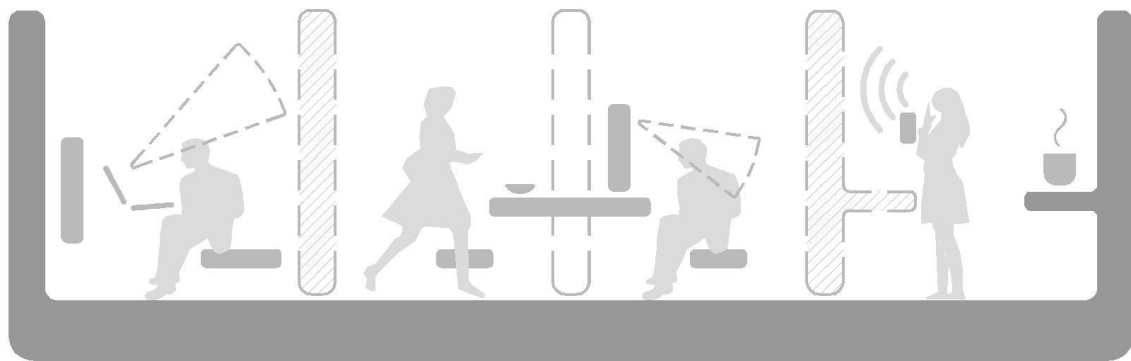


Fig. 12. Schematic section of the house’s living, dining and cooking areas, where movable or temporary partitions are added to accommodate different uses, permanent or transitory (Author’s illustration. All rights reserved).

The impermanence of the domestic space

The referred sources seem to be assertive about the consequences of Covid-19 in the domestic space, but odds are that its influence might not be permanent. We can expect that some habits acquired in the meantime may remain, such as remote working (at least in some professions). But even in this case, it’s enough that only one of the occupants of the once shared spaces remains at home, for the described problems don’t occur.

Also, the household’s mutations felt over time (beyond those imposed by a pandemic) tend to alter the domestic space, but even those mustn’t be considered absolute: today’s spatial expectations are different from the ones that preceded us, and, almost certainly, future requirements will be different than today’s requirements, for reasons that are almost impossible to foresee.

So, to advocate now the end of the open space would probably make as much sense as to advocate, when it appeared, its predominancy over all other spatial solutions. Peter Madison (quoted by Barret, 2020) states that “it would be a great step backwards to return to cloistered Victorian-era living”, proposing instead “flexible spaces with sliding panels that can be opened and closed to divide off sections”. So, flexibility it’s probably the more consistent response to an increasingly volatile household, even within its generation.

Pauline Garvey, based upon the assumption that the contemporary man achieves its coherence through a constant revision of his context (aligned with his state of mind) conducted research called “Organized

Disorder” (Garvey, 2001), in which she studied several Norwegian case studies composed by dwellers that tried to renovate their houses by relocating their furniture: it’s not a matter of house decoration (since none of the subjects bought new or extra furniture), but a gesture in which people readapt their space according to their new needs, practical, mental or spiritual, as a sociocultural instinct of renovation through the control and manipulation of their objects. Adding walls to what’s transitory (multiplying the possibilities of combination of one’s possessions, as opposed to the everyday banality) would be to add them to the household’s Material Culture, that is, to the objects on which the affection of their owners falls.

In conclusion

It can be argued that, at this stage, the consequences of the pandemic on architecture and design are still difficult to assess, in the sense that the problems identified, and the solutions pointed out can constitute untimely reactions to a “process” still in progress. But we also identified that a health pandemic is a just one more element that makes the domestic (and work) space an organism in persevering mutation: the open office, which has long been adopted in the workplace, carries in everyday life the inconveniences that are now pointed out in domestic confinement, such as lack of privacy, noise propagation, inconvenience during calls, etc.

There are, however, recurring issues that can give us more clues about the research to be carried out, since most of the referred models don’t address some of the pointed faults in the above-mentioned case studies. Privacy is much more than visually isolating someone, and soundproofing can’t be underrated, as sliding walls (“shaped” as furniture or big panels) can’t provide the privacy required not only for professional video calls but also for private talks or sound produced by basic human behaviour (in a private sphere). And we can’t (won’t) certainly rely on text messages to recover (part of the) lost privacy. So, it seems that sliding elements or other big openings can only address the separation of common areas, and not common and private areas (at the best, it can provide seclusion between daytime and night-time).

Another option could be to compartmentalize a house into small areas for each to be addressed to a (non-disclosed) use, even if it meant to have a succession of small rooms, like in Kazuyo Sejima’s House in Plum Grove (Arquitectura Viva, n.d.). But, if this solution allows a great deal of privacy since it’s a fixed feature, it would interfere with the household’s life together – in which the open space still carries a lot of virtues.

Despite its flexibility, sliding panels and big openings still carry a predetermined layout, so, it seems that MAIO’s proposal holds a virtue that could be also part of the answer: not in the spatial solution itself, but how it disposes of the infrastructures along the sidewall that goes from one façade to the other, to allow a larger variety of spatial solutions, even if that would imply demolishing the whole interior.

However, if we wish to avoid constant demolitions and rebuilding, with the undesired waste, we should find a solution where walls are not fixed nor are movable: portable, removable, detachable walls or partitions can be the “basis” of future research, based upon principles of ease of assembly and disassembly (enabling its execution by the dweller) guaranteeing the reversibility of the process; the reuse of its components in new walls, after the partition’s disassembly (avoiding a new investment and reducing or eliminating waste); acoustic and visual separation (to protect one’s privacy) and, finally, the fundamental requirement that the resulting product must have the necessary aesthetics and quality to be perceived by “its” dwellers as an element capable of being liked and/or devoted as any other (movable) part of one’s home (like their furniture and mementoes).

It might be that Covid-19 and the urgency to respond to its demands, in terms of health, work and education, just gave more visibility to a need that has always been felt, and that is to be able to (re)configure our living and working space according to change. This should be considered as an opportunity to use our creativity and technic to design a solution that, besides aesthetic values, adds practicality and eco-friendly values that lack in the existing solutions.

- Afonso, A. I. (2000). Grupo Doméstico e Mudança Social: Abordagens quantitativas e qualitativas. *Etnográfica*, IV, 153–182.
- Aresta, M., & Salinger, N. A. (2021). The Importance of Domestic Space in the Times of COVID-19. *Challenges*, 12(2), 27. <https://doi.org/10.3390/challe12020027>
- Arquitectura Viva. (n.d.). *House in a Plum Grove, Tokyo—Kazuyo Sejima & Associates* [Online Magazine]. Arquitectura Viva. Retrieved 28 April 2022, from <https://arquitecturaviva.com/works/casa-en-un-huerto-con-ciruelos-tokio-4>
- Barret, P. (2020, September 28). *How COVID-19 will change home designs*. [Revista]. @RACV. <https://www.racv.com.au/royalauto/living/at-home/covid-19-home-designs.html>
- Bauer, C., & Penner, B. (1934). *Modern housing* (1.^a). University of Minnesota Press.
- Bestard, C. (2016, August 17). *The 'Kitchenless' House: A Concept for the 21st Century* [Interview]. <https://www.archdaily.com/793370/the-kitchenless-house-a-concept-for-the-21st-century>
- Blich, B. B. (2011). Design and Architecture as a Philosophical question. *GENERATIVE ART 2011 Proceedings*, 10.
- Bourdieu, P. (1970). The Berber house or the world reversed. *Social Science Information*, 9(2), 151–170. <https://doi.org/10.1177/053901847000900213>
- Centro Cultural de Belem. (2017, September 7). *Conferências da Garagem—Anna Puigjaner | Kitchenless City*. <https://www.youtube.com/watch?v=LUavq-CTo7M>
- Chayka, K. (2020, June 17). *How the Coronavirus Will Reshape Architecture*. The New Yorker. <https://www.newyorker.com/culture/dept-of-design/how-the-coronavirus-will-reshape-architecture>
- Cieraad, I. (2006). *At home: An anthropology of domestic space*. Syracuse University Press.
- Cuerdo-Vilches, T., Navas-Martín, M. A., & Oteiza, I. (2020). A Mixed Approach on Resilience of Spanish Dwellings and Households during COVID-19 Lockdown. *Sustainability*, 12(23), 10198. <https://doi.org/10.3390/su122310198>
- Garvey, P. (2001). Organized Disorder: Moving Furniture in Norwegian Homes. In *Home possessions: Material culture behind closed doors* (1^a, p. 47 a 68). Berg.
- Gomes, M. J. A. (2016). *Bairro da Malagueira de Siza Vieira: Factores de apropriação identitária em torno da casa*. Caleidoscópio.
- Habraken, N. J., Boekholt, J. T., Thyssen, A. P., & Dinjens, P. J. M. (2000). *El Diseño de soportes* (2.^a edição). Gustavo Gili.
- Hubbard, P. (2020, May 4). *How COVID-19 might change the way we live and work for good | Feature from King's College London* [Universidade]. King's College London. <https://www.kcl.ac.uk/how-covid-19-might-change-the-way-we-live-and-work-for-good>
- Koch, D. (2016). On Avoidance: Reflections on Processes of Socio-spatial Structuring. *Civil Engineering and Architecture*, 4, 67–78. <https://doi.org/10.13189/cea.2016.040204>
- Krampen, M. (1989). Semiotics in Architecture and Industrial/Product Design. *Design Issues*, 5(2), 124. <https://doi.org/10.2307/1511519>
- Loureiro, P. S., & Campos, P. E. F. de. (2021). Covid-19: Teletrabalho e tele-estudo em espaços residenciais. *Arquitextos*, 254.04. <https://vitruvius.com.br/revistas/read/arquitextos/22.254/8141>
- Lynch, K. (2008, February 28). Aldo Rossi Knew all about the symbolic power of a kitchen table. *The Architect's Journal*, 28.02.08, 22.
- MAIO – Architectural office based in Barcelona. (n.d.). Retrieved 15 July 2019, from <https://www.maio-architects.com/project/110-rooms/>
- Montaner, J. M. (2001). *Depois do movimento moderno: Arquitetura da segunda metade do século XX*. Gustavo Gili.
- Mull, A. (2020, July 27). *The End of Open-Plan Everything* [Jornal]. The Atlantic. <https://www.theatlantic.com/technology/archive/2020/07/walls-pandemic-open-plan/614590/>
- Parreiras, C. (2021). The COVID-19 Pandemic and the Reconfigurations of Domestic Space in Favelas: Brief Reflections on Intimacies and Precariousness. *Anthropology in Action*, 28(1), 52–56. <https://doi.org/10.3167/aia.2021.280110>
- Portas, N. (1969). *Funções e Exigências de Áreas da Habitação, Informação Técnica: Edifícios*. Laboratório Nacional de Engenharia Civil.
- Schneider, T., & Till, J. (2007). *Flexible housing*. Elsevier Architectural Press.
- Silva Dias, F., & Portas, N. (1972, October). Habitação evolutiva'. *Arquitectura – revista de arte e construção*, 126, 100-1 21.
- Simple, Reusable, Cost-Effective Modular Wall Systems. (n.d.). Retrieved 11 October 2021, from <https://www.mallforms.com/modular-wall-systems/>
- Skara Brae—The Discovery and Excavation of Orkney's finest Neolithic Settlement. (n.d.). Retrieved 28 July 2021, from <http://www.orkneyjar.com/history/skarabrae/>

- Temporary Wall Solutions | Durable Modular Construction Walls*. (n.d.). STARC Systems. Retrieved 11 October 2021, from <https://starcsystems.com/products/realwall/>
- Thompson, S. (2021, May 22). *The end of open plan: How the pandemic changed home design*. The Irish Times. <https://www.irishtimes.com/life-and-style/homes-and-property/interiors/the-end-of-open-plan-how-the-pandemic-changed-home-design-1.4565056>
- Translator's introduction. (2002). In *The minimum dwelling = L'habitation minimum = Die Kleinstwohnung: The housing crisis, housing reform* (pp. xi–xxviii). MIT Press ; Graham Foundation for Advanced Studies in the Fine Arts.
- Zarrabi, M., Yazdanfar, S.-A., & Hosseini, S.-B. (2021). COVID-19 and healthy home preferences: The case of apartment residents in Tehran. *Journal of Building Engineering*, 35, 102021. <https://doi.org/10.1016/j.jobe.2020.102021>