

Flexibility redefining Habitability in the Contemporary City

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Abstract

The project of living has always had the role of adapting the spaces of daily living to the logic of general functionality induced by the economic, productive and social processes in place, following and directing the evolution of the way of life. In an urban society rich in individuality and complex, where increasingly diverse cultures and ways of living emerge, the goals must be to thoroughly test the kinds of transformation of the housing culture; precisely because the ability to equip the ‘new categories’ with adequate and affordable housing, with comfortable spaces and an architectural identity, is one of the most complex aspects of the contemporary city. Living the contemporary city implicates a comparison with ways of live in continuous evolution: who lives do it in forms and with different times, on its social and generational affiliation. To investigate on the domestic space, in a society in continuous evolution, it points out new tied up housing orders to the temporariness, to the flexibility, to the adaptability, in which an architecture “clear, comprehensible, assimilable” it determines deeply the urban environment. Ongoing experiments show that the concepts of flexibility and adaptability are fundamental in the evolution of the living space, focusing also on research into a ‘modular’ architecture that is both sustainable and innovative. This is evident in the contemporary composition of the accommodation, which identifies the transition from the “living machine” to the “living machine”, in which the “free floor” is transformed into a “flexible plant”. The reason behind this comparison is to disprove how much in caring for contemporary cities, the exigences related to urbanization today force to define the living around concepts as the flexibility to meet the needs of belonging, identity and well-being to which many inhabitants aspire in today’s city. To do it we would define the first two concepts indicated by Adrian Forty then develop with emphasis the flexibility through technical means that is also spatial flexibility at constant surface. We would implement the concept in a particular housing typology understood as social housing to succinctly deduce the contribution to the structuration of this form of accommodation.

Keywords: flessibility; contemporary city; living; architecture; urban Space.

Introduction

Abitare (living) from the latin *habitare*, iterative of *habere* “to have frequently”, commonly points out the action of having *the habit* in a place. The etymology of the word does not describe, anyway, the variety of the ways where the living is shown, even more in a period when it assumes new and non-traditional shapes. Some ways of contemporary living - usual, different, delocalized, virtual, always connected – come from the technical revolution, globalization, precariousness and flexibility, they all influence the shapes of housing, of working and, finally, urban space. The dwelling represents a basic request of contemporary humankind. Before being an utilitarian aspect

of living it is a primary anthropological practice, a complex system to which the building, the cultivating, the adorning, the venerating, the taking care belongs.

In architecture Following the definition of living, the term flexibility has become a *cliché*, like the word sustainability. Terms used and approved regardless of their meaning. It literally suggests the immediate potential for change and movement.

There is a simplistic association between flexibility and progress: something that changes and disjoins the chains of tradition, something that can be continually changed is always new. The rhetoric of flexibility dominates. It is difficult to draw a historical picture of the flexibility of the house, it comes from a distance. For millennia, man has adapted his space to his needs. The flexibility of residence, in fact, has its roots in the vernacular, the so-called “*architecture without architects*”¹, the place of the expression of the needs of the human being.

The search for flexibility is thus the result of research carried out, first and foremost, by the Bauhaus movement in Germany, but also by rationalist designers in the Netherlands, who were among the main theorizers of a new architecture that, through the rational design of the rooms, the modularity of the structures and the use of cheap materials; could satisfy these new urgent needs. The need for flexibility was one of the cornerstones of modernist architecture, in which we sought to break with the established practices of the past, which could not respond to modern life.

Walter Gropius thought in 1925 that “...houses must be designed in such a way as to take account of the individual needs arising from the size of the family and the profession of the head of the family, ensuring flexibility. It is therefore necessary to standardize and produce in series not the whole house but its parts in order to form, with their combinations, various types of houses.”

Flexibility was intended to be a feature of an efficient space, which could be reshaped as needed. On the one hand, the designers sought to make space flexible by standardizing the size of the living quarters, studying the layout and interior furnishings. On the other hand, the studies focused on the use of the space of the accommodation by the inhabitants, during the hours of the day. The results of the research led the designers to find that there were underutilized spaces that needed another function during the rest of the day. In both analyzes, the functional view of space was based on the fact that these actions were always the same and, moreover, that the inhabitants all had the same lifestyle: the typical user was born.

Although the concept of flexibility is not new in the field of architecture, it is only since the 1950s that it has been recognized, especially in the interior of modern movement, as an architectural principle (although some elements of flexibility can be found in previously produced architectural works) since it was sought to untie the link between the form and the function, through the insertion, within the design, of the factors of time and the unknown². The introduction of these factors broadens the perspective of architectural design, in which the before and after become

¹ Rudofsky, *Architecture without architects. A short introduction to Non-Pedigreed Architecture*, New York, Doubleday & Company, 1964.

² Adrian Forty, *Parole e edifici. Un vocabolario per l'architettura moderna*, Pendragon 2005 (ed. or. Words and Buildings: A Vocabulary of Modern Architecture, London, Thames and Hudson 2000) p.144.

fundamental, and allows the architectural discipline to incorporate the potential for change, both before and beyond employment, through flexibility and adaptability.

The distinction between the terms is not random, because if the term adaptability refers to the ability to cope with different social uses of a space, the term flexibility refers to the ability to cope with different physical solutions³. Therefore, if adaptability is based on themes of use, flexibility is directed to form and technique.

Flexibility is therefore a cultural and then design process that can enable buildings to respond to changing models and needs, both social and technological. The architectural concept of flexibility has taken on different meanings, resulting from needs and events that have led to the production of different and even conflicting results. According to architectural historian Adrian Forty, the meaning of the word “flexibility” in architecture is threefold:

- 1) Redundancy;
- 2) flexibility as political strategy;
- 3) Constant surface flexibility - Flexibility through technical means.

The figurative meaning of the term flexible then naturally assumed the sense of ability “*to vary, to change, to adapt to different situations or conditions*”. Today in architecture the term flexibility has become a *cliché*, like the word sustainability.

Contemporary living

“Humans are soft and flexible when they are born, hard and rigid when they die. Trees and plants are tender and flexible when alive, dry and rigid when dead. Therefore, the hard and the rigid are companions of death, the soft and the flexible are companions of life. A fighter who can’t retreat can’t win; a tree unable to bend breaks. Stiffness and strength are lower, flexibility and softness are higher.” Lao Tse, China, 531 b.C.

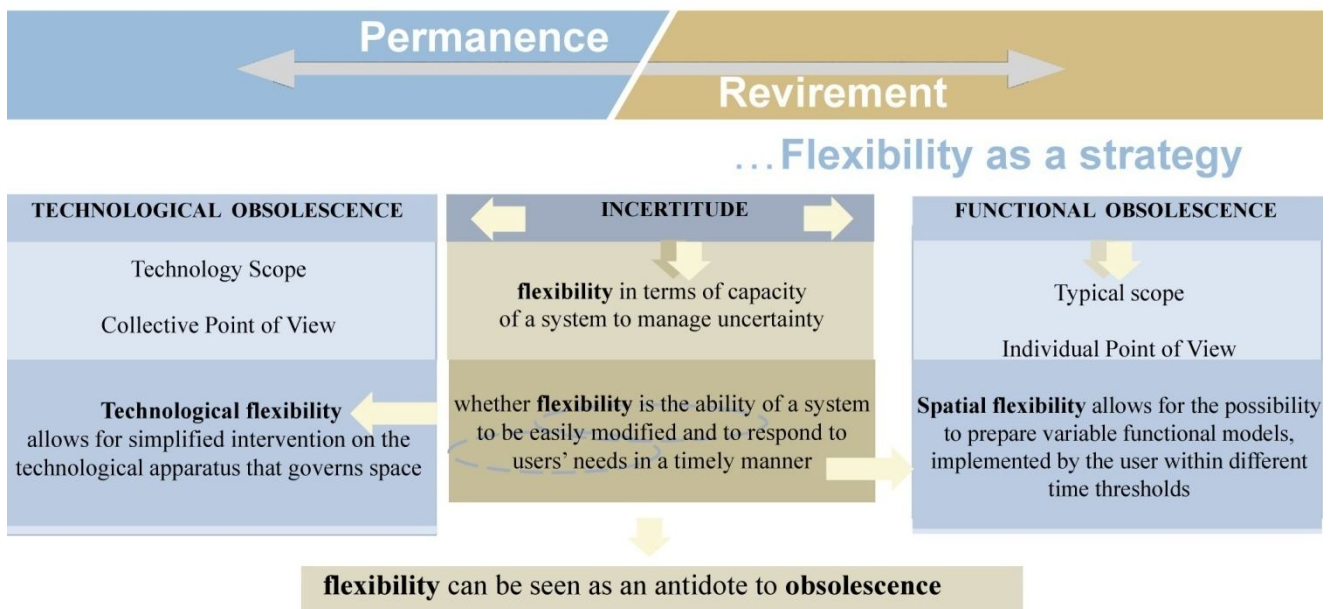
The theme of living is closely linked to the socio-economic dynamics of the historical reference period and is shaped in the light of the changes taking place. In this paragraph we want to explore the nature of the needs of living, determined by the new social, political and economic conditions, which have led to a metamorphosis of the concept of living contemporary. The etymological meaning of the word “to live” is derived from the Latin verb Habere, i.e. to possess (as to possess a home) from which the Latin word Habitus: habit, from which the word habit originates, literally understood as a natural disposition. Living, in Western culture, is therefore a concept that is linked to a constant way of being, made up of moments that are repeated. However, the introduction of the concept of flexibility in the economic and labor structure of society has influenced individuals’ personal lives and habits. Richard Sennett writes: *“If the house was once a given, a natural site that housed the family and its future, an element of stability related to a project and its development and the rhythms of life appeared punctuated by ordered and linear sequences - a job, a house, a family,*

³ Steven Groak, *The Idea of Building*, London, E&FN Spon, 1992, p. 154.

a place of belonging - today this linearity of sequences seems to be compromised and the very terms of this equation radically changed”.

The traditional model of living, which established the roots with a territory and with a community, is today flanked by new models resulting from the insertion of new elements within the equation: such as temporaneity, precariousness, mobility, flexibility.

The change within the space of the house has produced new housing models, which reflect this new state and has opened up new possible avenues to be undertaken in the evolution of the residence.



Flexibility as living strategy in the contemporary city
Source: Author

The control over the lifecycle of the building, the technological and functional obsolescence of a system in general, and the living space in particular, entails the need to incorporate the flexibility criterion into the design; this requires a reflection on both the building system and the organization of the technological apparatus, which means reflecting on the relationship between spatial and technological flexibility.

Access to housing

The neoliberal management of the cities, (to which the process of privatization is increasingly being matched the consideration of the house as a commodity) ; as well as the progressive disappearance of the Welfarian vision of housing; have profoundly changed the landscape of the house in the world over the decades, in which the revival of ancient problems, evidently never resolved, or the conflict between the necessity of life and the valorization of the house, can be seen with harshness. However, although the theme of access to the home is not new, the conditions on the outlines have changed, and are repeated throughout the territories of the globe, albeit unevenly. The economic crisis of the last decade has highlighted many of the contradictions already in place, with important differences for each state of the world, showing different levels in welfare systems, property structures, legal, regulatory and even cultural contexts. The crisis and its consequences have exacerbated the critical elements, including the increase in mass unemployment, difficulties in accessing credit and accelerating job insecurity. These phenomena have led to difficulties for a large section of the population in accessing the market for residence. This situation can in some cases result in real barriers, in which the cost of housing is too high.

Issues relating to access to housing are most evident in urban areas, where people are increasingly flocking to their homes, looking for work and new life prospects, given the services that are available in cities with a larger presence. The exodus from the countryside to urban areas is certainly not a new issue, but the extent of the phenomenon of urbanization now on a global scale.

On the other hand, the flexibility within the labor structure has also led to an increase in labor mobility, but not matched by adequate offers in the rental property market, due to its short-term nature, often not supported by rental contracts, but also for the services offered. Precarious workers also have difficulties in gaining access to both the rental and property market because of the time limit which, on the one hand, creates financial problems, because of the lack of stability in income (not necessarily low, but precarious) in access to credit. This also includes out-of-home students who, even with possible scholarships, are unable to access the rental market. In conclusion, issues of access to housing have revived the housing issue, which is presented in a considerably more complex way due to a diverse and fragile demand that implies a rethink not only of the housing space or of residence policies.

Demographic change and the transformation of the traditional family

An important issue for contemporary living is related to the changes in users, due to the profound demographic changes of the population, taking on the role of primary importance within the agenda of many states. Major demographic changes have occurred in the population at global level in

recent decades, triggered by several factors such as lower birth and fertility rates, increased life expectancy, the transformation of households, changes in the role of women, increased geographical mobility and higher levels of migration. These changes affect the very structure of the population, and are now very significant in terms of the concrete effects they generate, particularly in terms of the demands of a constantly changing society which have led to the transformation of housing patterns.

Traditionally, the family has been defined as a group of people connected by blood or marriage, typically consisting of a married couple and their dependants. However, the user narrative, based on the formation of the family, as described above, proves to be limiting due to its increasingly smoky and confusing boundaries. In fact, we are now seeing a greater presence of new types of family relations or cohabitation, such as registered partnerships, consensual unions and single-parent families. One of the most visible phenomena is the increase in the number of people living alone. This is due both to personal reasons, linked to their independence, and to the increasing number of divorced or separated persons, in others due to the increase in the average age of the population with the consequent increase in the population made up of widowers who choose to be alone.

In all cities today, the numerical variations within households are also linked to other factors, such as the residence of children in their home nucleus after they have reached the age of majority. The modification of the traditional family nucleus has generated new housing models characterized by temporality, in which the sharing of space, beyond the period as a student, is increasingly attractive.

Contemporary living and inflexibility

The design of the residence is measured today, with an extremely uncertain and changing context, which has led to the gradual typological and functional obsolescence of the housing models inherited from the past. The economic crisis on the one hand has highlighted some problems linked to property, and to the difficulty of access to the home by a large section of the population; on the other hand, as described above, the formation of new user profiles, which have resulted in new lifestyles and forms of the living space. This diversification prevents any classification because the identifying characteristics of the historical classes no longer find a group to which they belong, but are mixed together by income, level of education, cultural origin, etc. This in turn implies that it is impossible to combine a specific residential model. Standardization of the type user has led the search for the residence of the type family in the accommodation theorization (type). Nowadays, this mechanism would have no purpose, because not only does it not find a macro group of users to turn to, but also because it would not take into account the changes within them. An additional level of demand complexity is related to the duration of the stay. In fact, it is possible to identify within the variety of demand a need for a short, and therefore temporary, stay, located mainly in urban

areas, where fixed-term workers, university students outside the office converge, but also the immigrant population linked to the temporary nature of visas and job insecurity.

The economic crisis, in fact, despite the enormous socio-economic difficulties that it has generated and continues to generate, has proved a valuable historical moment that has allowed the culture of production (and therefore also of architectural culture) to be directed towards a new value system, fostering innovation and experimentation through a more humble architecture, which makes the lack (of resources of any kind) an opportunity. Diversification has generated new ways of living: changes in the structure and time of work, as well as technological innovation have encouraged the connection of working spaces within housing, economic but also social needs have fostered new models of cohousing. These changes take place in the space of the house, where the private and public dimension of the accommodation is changed. These new demands are, however, countered by an offer that is unsuitable and rigid to change, leading to immobility. However, contemporary needs call for a new need for flexibility, which, as in the past, is linked to many factors, redefining the quality of living.

Flexibility in the contemporary city

The production of the space of the house was interpreted until the 1950s as a long-term consumer product, which is dealt with when it no longer works, with huge consequences not only related to the obsolescence of the object itself, but also the context in which they are erected.

The issue of the obsolescence of the building stock has often resulted in costly demolitions, wasting money and resources. However, in this new scenario a modest vision of architecture is modeled, attentive to the long-term vision of the building process, which reopens a new relationship with the user with a view to social, economic and environmental sustainability.

In the introduction, the three meanings assumed by the word “flexibility” in the architectural field according to the architectural historian Adrian Forty were indicated: Redundancy; Flexibility as a political strategy; Flexibility through technical means.

- Redundancy

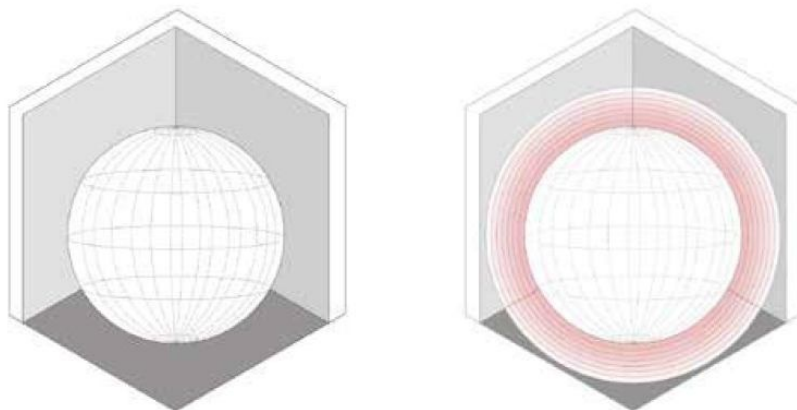
Redundancy is an element of the flexibility introduced by architect Rem Koolhaas in *S, M, L, XL* (1995). He describes space redundancy as an element that allows the building to define itself as flexible because: *“flexibility is not the exhaustive anticipation of all possible changes... it is rather the creation of a margin - an excess capacity that allows uses that are different and even opposite.”*⁴

increases a building’s potential for change. Redundancy, however, has critical elements, as it is a counter-trend in the dynamics of society’s dominant economic system that link space to an

⁴ OMA, *Rem Koolhaas, Bruce Mau, S, M, L, XL, The Monacelli Press, 1995*

economic value. For this reason, not many residential projects have worked with flexibility through space redundancy, on the contrary flexibility is used more for optimizing the little space available. In fact, the theme of redundancy is often associated with the re-use of industrial buildings, which are oversized compared to the types of building declared for residential use.

The characteristics of these buildings, the generous dimensions in height as well as the surface, the perimeter bearing system and the almost lack of internal septa, make them suitable for adapting. This system includes the residential type of the loft. The loft was born in New York in the 1970s, from the conversion of disused industrial spaces into housing, which were purchased for little money by artists who made it a home-atelier space. From this experiment the loft became an urban residential type, which has now entered the residential permanently. Its main features are the almost total absence of partition walls, a much higher height than the minimum standards and the large windows. It is an open and porous space, which allows internal fluidity, in which the transition between functions does not take place in a clear but gradual way. Porosity is also reached with the outside through the large windows, which means more light and air but less privacy. To inhabit the fluid space, it means changing the traditional residential model linked to the zoning of functions, of the sleeping area with the living area. Moreover, the redundancy of the space allows it to adapt to the evolution of the family, and the functions within it. These characteristics make the loft type a space with a high potential for change, which does not depend on the size alone, but on the characteristics described, which allows the fluidity of the space and therefore, a high level of flexibility.



Redundancy

Spatial redundancy is more easily found in large dimensions, but it can also be found in small environments where a game is left between the used space and the potentially usable space.

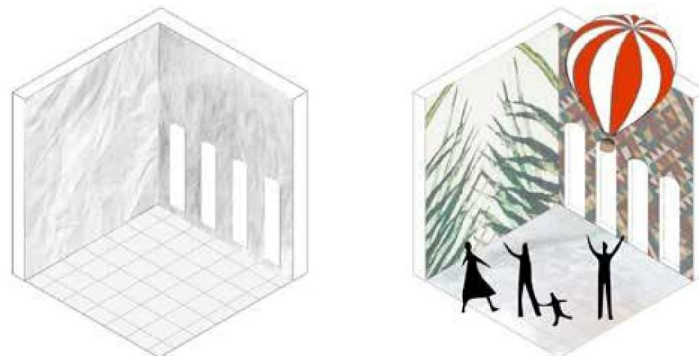


An industrial loft at New York

Source : <https://www.pinterest.fr/pin/296463587957394647>

Flexibility as a political strategy

Another meaning of the term flexibility is not aimed at buildings, but rather at their use. Flexibility has also been investigated and researched as an architectural element capable of making possible the freedom of use of a space. There are several nuances that the flexible term assumes in this “category”, but its meaning comes from criticism, around the sixties, against capitalism, which emphasized the commercialization of daily life and the deterministic aspects of functionalism. “Functionalism places the emphasis on function to such an extent that, since each function has a specifically assigned place within space, the possibility of multifunctionality is eliminated.”⁵ The reaction to this process was elaborated by the French philosopher and urban planner Henri Lefebvre. He developed his own idea of urbanism, linked to Marxist concepts, whose aim was to free daily life from the triviality in which modern capitalist society confines it.



Flexibility as political strategy

⁵ Henri Lefebvre, *La produzione dello Spazio*, Moizzi Editore, 1976 (ed.or. *La production de l'espace*, Parigi, Éditions Anthropos, 1974).

According to this principle, in order to be able to counter the deterministic dynamics produced by capitalism, it was necessary for the user, through “positive acts”, to reappropriate the freedom of space.

In this vision he considered the figure of the architect to be complicit, who had promoted, through functionalism, the flattening of man’s life, conceived as a standard. Flexibility in this sense, within functional determination, could not exist and, therefore, takes on political value.

Other avenues, led by designers such as Cedric Price, Constant and Yona Friedman, proved to be absolutely in favor of architecture, the means by which to allow the diversification of the use of space. Although their architectures achieved flexibility through technical means.

Their ultimate goal was a flexibility that could unravel the rigid system and functional classifications that capitalism had created. In a 1959 article by Constant entitled *The Great Game to Come*:

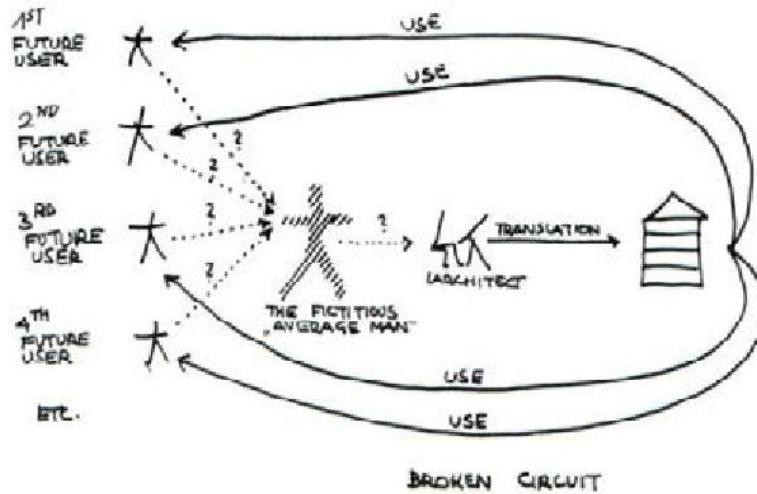
*“We believe that all static and non-modifiable elements should be avoided and that the precondition for a fixed relationship between the architectural elements and the events that will take place within them is the variable and changing character of the buildings.”*⁶

Constant challenged the stability and fixity of architecture in evolving with its inhabitants, who were far from immune to change. The architecture had to modify its reference values. From the 1960s onwards there emerged the awareness, on the one hand of the limits born from the too abstraction of modernist architecture and, on the other, the need to address the “poor sectors of society to which the profession normally did not address”. To bridge this division between designers and societies, a number of reformist interventions were born, declaredly anti-utopian that put the user’s vision at the center of the design.

Of great interest is the work carried out by architect Yona Friedman, since the 1950s, who proposes in his theory of “mobile architecture” light, layered and dynamic structures to solve the problems linked to the uncontrolled growth of cities. His idea of flexibility lies in concepts such as low soil consumption, dismount ability and removability, and finally transformability according to the needs of the individual. Flexibility becomes a tool by which individuals can create their own space, in which the will of the community is taken into account. The duration of the proposed residences is not infinite, as according to its principles they must have the possibility to be easily removed and relocated.⁷

⁶ Constant Nieuwenhuys, *The Great Game to Come*, *Architectural Review*, 137, gennaio 1965, p. 74

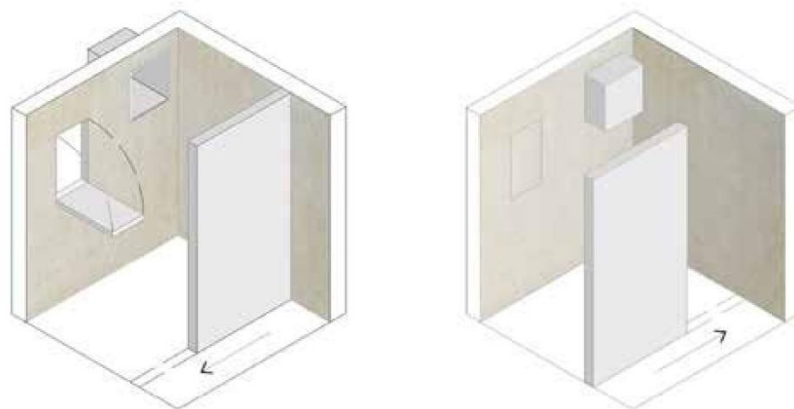
⁷ Adrian Forty, *Parole e edifici. Un vocabolario per l’architettura Moderna*, Bologna, Pendragon, 2004 (Words an Buildings. A vocabulary of Modern Architecture, 2000) p.150



Circuito rotto. 'Toward a scientific architecture'. Yona Friedman. 1975

Flexibility through technical means - Space flexibility at constant surface

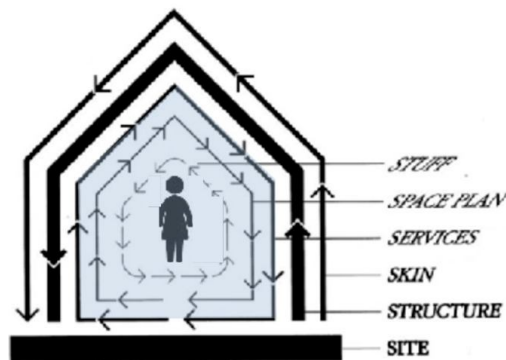
This kind of flexibility is perhaps the first sense in which it was understood in architecture, namely the ability to change the potential for change of a space through technology and technology. It's also the best-known meaning, what we still find today in the common language, and it's easy to see why: if the flexibility of a space lies in its ability to "change," our first thought is about systems and mechanisms that can modify the shape of a room, or its internal layout, etc. But even within this category there are different architectural applications to reach the potential for change.



Flexibility through technical means

At the end of the Great War, the need to solve the pressing demand for housing, emphasized the need to think of a housing market with high functionality, in order to deliver homes to the struggling population. There was a strong need for residences especially for the working class, the so-called “home for all” was sought. The main objective of architectural research was, first and foremost, to cut costs and ensure that the masses had access to the house. Those who gave ample space to the design of new residential types, were first and foremost the exponents of the Modern Movement. Although the need for flexibility was developed around the need for low-cost housing, it was also sought in other contexts, where flexibility is expressed as architectural quality.

In the wake of this research, Stewart Brand follows Devoto & Oli’s thinking that the duration, “permanence in time” of the “housing” good is closely linked to its flexibility, that is, its ability to adapt to changing demand. In other words, the permanence of the most durable components of the house is the framework within which change can take place. The building must be designed to accommodate the needs of different speeds of change and to accommodate them in the right way.



The six “S” of Stewart Brand

An example of this concept is the House of Schröder in Rietveld in Utrecht.⁸ The house was built in 1924 on two levels.



Schröder House in Rietveld, Utrecht, 1924
Source:
<https://www.iconichouses.org/houses/rietveld-schroder-house>

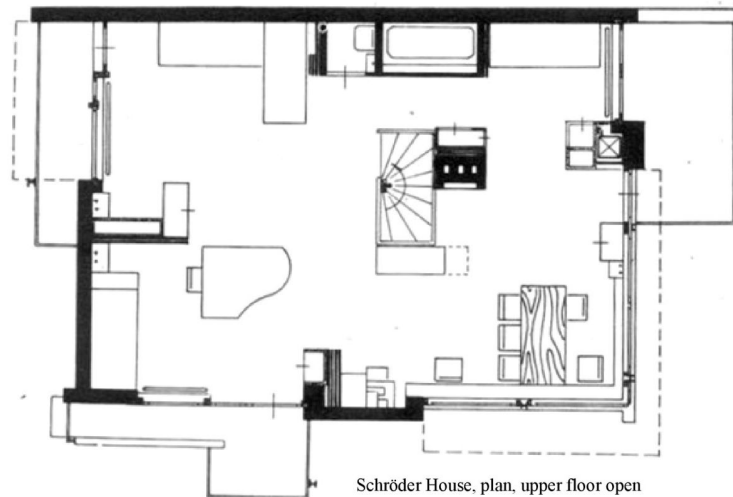
⁸ Adrian Forty, *Parole e edifici. Un vocabolario per l'architettura Moderna*, Bologna, Pendragon, 2004 (Words an Buildings. A vocabulary of Modern Architecture, 2000) p.148.

The ground floor is organized in a “traditional” way, while the upper floor is left free, an open space where the opening and closing of sliding panels define the internal layout. The high degree of internal flexibility allows dynamism within the residence. More spaces can be merged to enlarge others, or new functions can be allowed in the rooms; for example, by removing the wall between the living room and the bedroom of one of Mr. Schröder’s daughters, where a single room is created where films can be shown on the wall, thanks to a device inside a cabinet that provided the exit of a projector. The only fixed element of the building is the toilet. The flexibility on the first floor, where the Schröder family was housed, was aimed at the dynamism of the internal functions, in which they modify and combine unique and shared spaces.

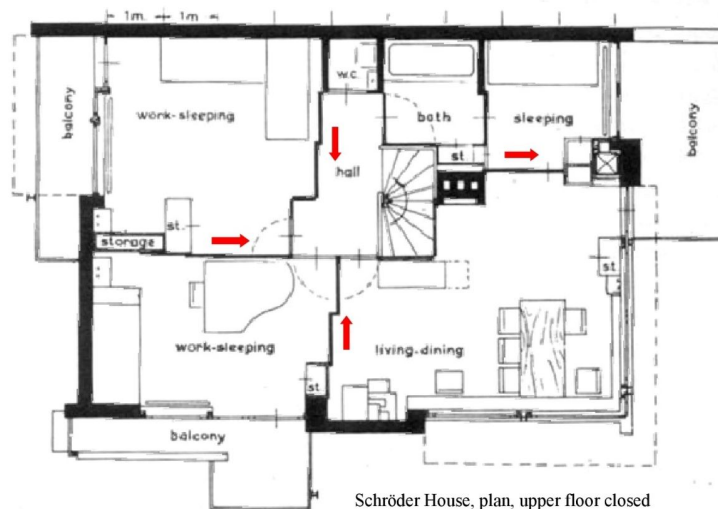


Schröder House, plan, ground floor
 Source : <https://www.pinterest>

The ground floor was arranged so that it could be rented, and possibly divided into self-contained accommodation.



Schröder House, plan, upper floor open



Schröder House, plan, upper floor closed

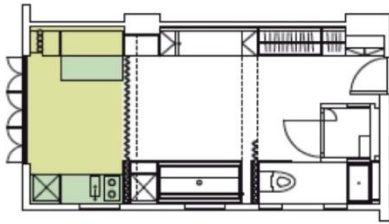
(Modified by author)

Schröder House, while fully representing the internal flexibility desired by the modern movement, remained a unique case, a model. Rietveld's close contacts with his client and the almost craftsmanship of the mobile systems and devices could not be an adequate solution for the masses. The current experiments show that the concepts of flexibility and adaptability are fundamental in the evolution of the living space, focusing also on research into a 'modular' architecture that is both sustainable and innovative.

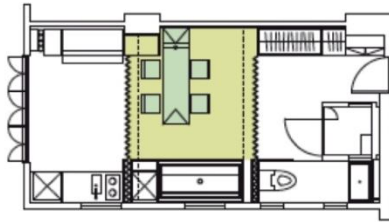
This is evident in the contemporary composition of the accommodation, which identifies the transition from the "living machine" to the "living machine", in which the "free floor" is transformed into a "flexible plant". Moreover, the transformation of residential spaces also implies

changes in the urban environment, which finds its real dimension in these relationships between domestic places, where contemporary culture “becomes the reference value”.

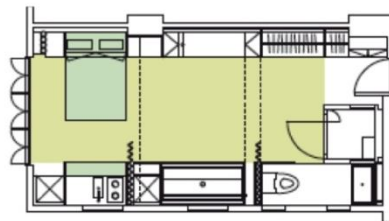
Kitchen use configuration



Lunch configuration



Bedroom configuration



G. Chang, *Domestic Transformer*, Hon Kong , Cina 2007.

Distributive flexibility and flexibility of use for a habitat typology: the social housing

The theme of living accommodation can be combined with that of typological and social flexibility. In this second case, architectural research that seeks to hybridize the two types of dwellings of collective housing and individual housing is interesting. The grouping of several single-family homes responds both to the desire for autonomy and to the desire for community life. Through different types of funding, a social mix is guaranteed, consisting of different generations, cultures and family situations.

Distributive flexibility: The conventional house, produced from the fifties by the construction industry, is today considered to be inadequate to meet the always different needs of families and, despite the reduction of households, it appears small and inadequate.

The particularity of residences intended for social housing lies in the fact that they are intended for particular categories of inhabitants. At a time of highly diverse and volatile demand for housing, it is especially important to be able to modify housing to ensure increased use over time. The theme of flexibility can be seen as a possible solution to this need, as it can respond to the variety and instability of housing demand. The flexibility consists essentially of adopting the model of the car as a reference, that is to say, taking the strategy of multiplying the options in order to try to answer the various questions of the inhabitant, then identifying, within each type of user, ranges that vary in relation to the purchasing power of each tenant. According to this model it is possible to provide dwellings for traditional nuclear families, large families, single parents, accommodation for young people and the elderly. Flexibility is therefore the key theme in housing design in a social housing intervention. 'The reduction of the components within the household, the increase of single persons, as explained above, the extension of the precariousness of social vulnerability and the consequent need to contain the costs for the home, push to favor small average cuts (two-room and three-room) characterized by the search for a high level of flexibility that allows the apartment to follow, at least in part, the transformations and changes over time of the spatial and functional needs expressed by the beneficiary nucleus.'

Standard housing, designed to meet the needs of most households, today reveals the most total inadequacy in a constantly changing situation, where preferences, ambitions and consumption tend to maximize personalization. The main factors that make standard housing inadequate are mainly due to the profound changes in the perception and enjoyment of the dwelling caused by the transformations of the organization and structural tasks of the contemporary family compared to the past. The impact of the changes affecting the current family on living spaces can be seen from the analysis of the reinterpretations made by the users themselves within their own homes. First, there is a desire to personalize and make less anonymous their space, the requirement of identity is difficult to express through technical parameters, but it is the one that most influences the attitudes of demand in the field of housing. The main needs that a house must meet can be summarized in two points:

- creation of new, modifiable spaces within the environment, such spaces are necessary to safeguard the individual needs of the occupants of the accommodation, to guarantee the privacy and the necessary isolation;
- the possibility of altering housing in the light of family developments. This factor introduces the theme of adaptability, which emphasizes the need to create dynamic spaces that change over time as the needs of its users change. Accommodation spaces should not be static and rigidly predestined, but different degrees of flexibility should be identified. Designing a dynamic dwelling means designing a dwelling that can adapt to family developments in a simple, economical and easily manageable way. Following the evolution of the household in an average long period of time from a design point of view involves the introduction of the time dimension in the living space, defining

projects that prepare conditions for varying the living space over time. Housing flexibility assumptions can be summarized in three categories:

- Change the internal distribution of a dwelling by keeping the surface constant, to allow the separation of portions that can become self-contained. This can be easily achieved, for example, by forecasting multiple installations and increasing inputs, in relation to a pre-arranged connective.

- Increase the living area within constant global volumes, by closing lodges, integrating spaces designed as residential reserve areas, splitting double height volumes into specially designed duplex accommodation.

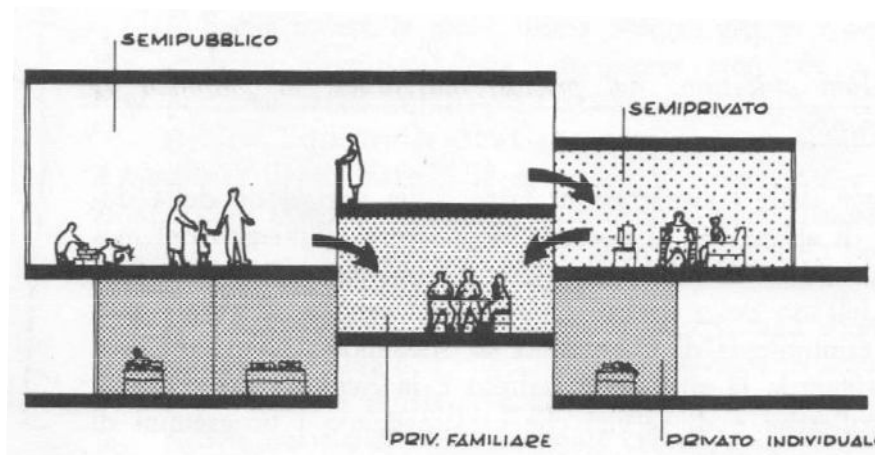
- By changing certain conditions within a household, it may be necessary to vary the distribution solutions from those in the initial accommodation. For example, the presence of an elderly person or a child who becomes an adult may mean that an independent space must be identified, even if it may be in direct relation to the original cell. In order to meet these possible future needs, it is appropriate to define at the project stage which provisions will allow the number of units to be varied or multiplied, while minimizing the work on masonry or installations.

In small accommodation, the construction of multiple entrances per dwelling will make it possible in the future to make different environments of the same dwelling unit independent by creating the possibility to use a portion of the dwelling for different and independent uses. This intervention allows the use of the accommodation in different ways, such as for work use with the realization of an independent study or allows to accommodate for example an elderly person or an adult guaranteeing the necessary independence and privacy. In order to ensure this flexibility within the housing unit, it is necessary to check the illuminant ratios at the design stage even after possible future changes. In the design phase it is necessary to prepare, both the structural system, preparing the possible increase of the slabs, but also the internal partitions system, characterized by high flexibility, then easily movable and replaceable if a new arrangement is required.

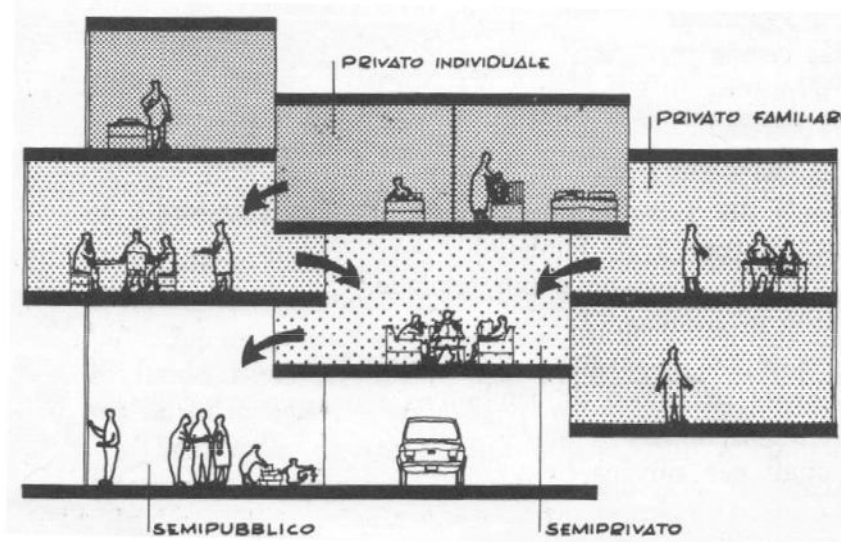
Flexibility of use: Since always, the relationship that everyone has with the living space is highly subjective and although you can imagine what the use of space is when designing an environment, there are infinite aspects that cannot be taken into account. The contemporary family reserves an increasing share of its interests and consumption to social relations, formerly the prerogative of the middle-upper middle class family and nowadays widespread practice among all social classes. The need to meet, to relate with the neighbor and consequently to receive and host, is an effect of individual mobility and the collapse of the parental relations, which makes friends and acquaintances occupy a significant portion of that space once destined for relatives. While in the past it was mainly the obligations of status that stimulated social relations, these have become very blunt and less formal today. Parallel to the need to be together, contemporary human being also expresses the need to be alone. Therefore, addressing the issue of flexibility of use, means going to assess and identify impersonal spaces, that is all those environments that can perform different functions, that accommodate the activities of the individual components or identify those premises

that can be made independent from the rest of the accommodation for the realization of particular functions. The answer to the needs is no longer to establish a rigid demarcation between living areas, the public part, and sleeping areas, the traditionally more private part of the accommodation, but rather to redefine the spaces of use in relation to constantly evolving needs. In order to ensure flexibility of use, the relationships between individual rooms should be modified by redistributing spaces in relation to functions and the reciprocal position within the accommodation. Not all rooms in a dwelling require the same degrees of freedom, it is necessary to identify which rooms need more fractionation to accommodate different functions and which have to be equipped with defined functions.

One can draw up a classification of the relationship between spaces belonging to the public and private sphere: - private individual, is the most intimate refuge in which the individual can belong, even from the family. The space for rest, recollection, meditation, creation - private family, is the space dedicated to collective activities such as lunch and recreation - private group, is represented by the common spaces to a group of accommodation, entrusted to the direct management of the inhabitants. The identification of the progressive levels of intimacy to be put between private life and life of relationship allows to adequately design the dimension and organization of the different spatial areas that differ by the type of more or less private activities that they welcome. Among the spaces that require more flexibility of use there is definitely the living area; it is in essence the least defined and definable space of the dwelling, extremely linked to objective conditions of the composition of the household. The living space, or living area has always taken on a central role in the life of the dwelling, and all other spaces gravitate around it. To solve this space the solutions can be multiple, in any case the relationship that this local has with the other environments is fundamental.



Connection between degrees of privatization/socialization



Connection between degrees of privatization/socialization

The characteristic of this space is to be on the one hand a collective space, with a function of hospitality and interactions, one can almost define the public area of the house, on the other hand individual and individual activities can be carried out in the same environment. For this reason it is very important to define some private “niches” within the living space, where it is possible to carry out individual activities without compromising the collective space. The division of the collective space by means of doors, screens or furnishings can allow to create more private spaces that can be assigned to different functions, in order to make the same environment polyvalent. These solutions ensure that each individual component performs its activities by carving out its own dimension within the common space.

Ambiguity of the concept of flexibility

The different understandings of the concept of flexibility reveal the ambiguity of the term, which on the one hand is used as a means of functionalism for definition of the use of space, on the other hand, turns out to be a tool of resistance to this process. The debate that flexibility opened in the course of the 1900s has been he developed around this contradiction.

The first debate on flexibility swung between two possible actions that would make a space flexible; that is, anticipating its change through a defined and determined project, or through the conception of an open architecture, in some aspects not finished, and thus, delivering it to the future.⁹

⁹ Adrian Forty, *Parole e edifici. Un vocabolario per l'architettura moderna*, Pendragon 2005, p. 145

Within this picture, the criticism made by figures such as Aldo Van Eyck and Herman Hertzberger questioned the effects of flexibility.

Hertzberger, in particular, argued that the foresight of the future within the design linked to the concept of “indefinite and neutral” prevented the designer from making a clear choice, with outcomes boring and far from the needs of the user. Instead, according to his view, flexibility was to be sought in forms unique in that they were ‘multipurpose’, capable of accommodating different purposes without changing. As the architectural historian A. Forty points out, the criticism of Hertzberger was actually not toward “flexibility” but toward functionalism. its nature of abstraction of the typical user’s living space. *(‘...’) even if living and working or eating and sleeping could rightly be called of the activities, this does not mean that they make specific demands on the space in which they take place - it is the people who make specific requests because of their desire to interpret in their own way a single function.*”¹⁰

Conclusion

The project of living has always had the role of adapting the spaces of daily living to the logic of general functionality induced by the economic, productive and social processes in place, following and directing the evolution of the way of life. In an urban society complex and rich in individuality, in which increasingly diverse cultures and ways of life emerge, the objectives to be pursued must be those of a thorough verification of the types of transformation of the housing culture; precisely because it is possible to provide the ‘new categories’ with adequate and economical housing, with comfortable spaces and with an architectural identity, is one of the most complex aspects of the contemporary city. It can therefore be concluded that the theme of flexibility is proposed as an alternative to the functionalist myth, based on the specialization and the supra-regulation of space. The functionalist idea of space is opposed by one based on interactions, functional hybrids, the temporal and spatial indeterminacy of the architectural project.

Flexibility is a complex concept which, as we have seen, works on several levels of the project, it can influence the physical structure of the building, its management and its meaning. For this reason, in order to be effective, it is necessary for flexibility to work in the relationship between the elements that generate a space and not on the individual devices, so as to accommodate the possibilities from every level of reading, expanding the potential of space, and enhancing it in meaning and value. Flexibility in its various senses must consider several aspects at the same time, in an overall perspective including complexity, through irregular, non-linear and open pathways

¹⁰ A. Van Eyck. *A Step towards a Configurative Discipline*, in “Forum”, 1962, pp 81-89

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