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The meaning of comfort in residential environments

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**ABSTRACT**

The theme of this article is the meaning of comfort in built environments, especially residential ones, and stemmed from research conducted for elaborating a PhD thesis (2011). Its primary objective is to study this particular meaning of comfort, through the attributes that compose it. The main methodological procedure used was a literature review, via texts that are more representative of the field of architecture. In order to systematize this investigation, two spheres were worked with, one physical and the other subjective, which combine the attributes of comfort. The first is tied to the earliest anxieties of human beings, associated with their physical integrity. The second is related to more subjective desires, which vary according to the social group and its culture. With respect to the evolutionary development of the idea of comfort, the emergence of the attributes related to the physical context can be noted first, and then those from the subjective context. However, these spheres complement each other, in a relationship based on exchange and mutual dependence. The importance of this article lies in its contribution to the discussion regarding the topic of comfort not being limited to environmental parameters, a view that is still widely held in architecture and urbanism courses.

**Keywords:** Comfort; Housing; Architecture; Built Environment.

The notion of comfort is always present when we think of qualifying an object or space, as though it represented the ultimate synthesis between design and use, resulting in complete personal satisfaction. Nevertheless, how difficult it is to define. Comfort does not invite generalizations. It varies from culture to culture, from person to person. How then can we sum up its meaning?

Understanding the meaning of comfort was the driving force behind this study, which in turn gave rise to this article. Its aim, therefore, is to determine the attributes that contribute to defining the meaning of comfort as applied to built-environments, particularly housing. This topic warrants being addressed due to the need to broaden the discussion on the meaning of comfort, since the understanding of this concept, in terms of built environments, is still very much limited to the environmental sphere.

Although comfort is a common topic in literature geared toward architecture, I selected, as the primary references for this study, two works that deal with the meaning of comfort in built environments. The first author, Witold Rybczynski (1996), approaches the understanding of the meaning of comfort as a whole, formed by transparent layers of meaning added one by one throughout the course of time. The second author, Aloísio Leoni Schmid (2005), studies the way in which meanings affect the perception of comfort in built environments, demonstrating that it is not only the physiological system that determines comfort, but also expressiveness, which entails subjective aspects.

The methodology used for conducting this research was based on a literature review, which can be divided into two stages: the first, where the two texts that orient this research were examined, followed by a second stage, where books related to architecture were perused, in an effort to obtain a breakdown of the attributes to be studied.

The analysis was based on a synthesis of the definitions of comfort elaborated by Rybczynski (1996) and Schmid (2005). This analysis resulted in the definition of the attributes, and their division into two main categories – the physical context and the subjective context. This manner of categorizing the attributes was not meant to divide the idea of comfort in two, but rather to show how the attributes can be grouped according to their central ideas, with there being, however, a strong interrelationship between both contexts, as though one served as a backdrop to the other.

## Comfort and Housing

The word comfort is shrouded in an aura of subjectivity. The meaning of this word in the Portuguese language is related to the sense of well-being, which is difficult to define objectively, since it varies in each cultural environment and according to each individual. However, its synonyms, coziness and relief, would

indicate that there is something related to warmth in the first, and the absence of discomfort in the second. The relationship between comfort and relief is linked to a more physical nature, while the relationship between comfort and coziness, to a more subjective nature. We can associate the notion of comfort to that which Christopher Alexander (1981) defines as the quality without a name, which is objective, but difficult to define:

*It is not simple beauty of form and color. Man can make that without making nature. It is not only fitness to purpose. Man can make that too without making nature. And it is not the quality that comes from faith. Man can make that too without making nature. The quality which has no name includes these simpler, sweeter qualities. But, it is so ordinary as well that it somehow reminds us of the passing of our lives (Alexander, 1891, p. 43).*

Alexander (Op. Cit.) claims that this quality is “objective”, which refers to the fact that every human being can feel it and be aware of this sentiment. However, when he mentions that the quality needs a name, it is precisely because it lacks a definition, due to how very subjective it is to qualify. According to the author, several words could to some extent provide a name for this quality (living, whole, comfortable, free, exact, eternal), but none fully exemplify its meaning.

Alexander describes the discussion about this quality applied to the environment, as a means of reaffirming the importance of how it is built. In his view, there is a way to build, connected to our nature, which ensures the full development of life in such environments. He calls this “the timeless way of building”, defined by a pattern originating from different combinatorial processes, but always similar in their overall structures and how they operate (Alexander, 1981).

In order to design comfortable cities, David Sucher (2010) proposes giving prominence to relationships between people. To do so, he highlights three rules for zoning and designing cities, which prioritize the interaction created by people walking: build alongside sidewalks, make the fronts of buildings permeable and prohibit parking in front of buildings. As a result, this type of urban design, separating pedestrians from vehicles, would strengthen interaction between people as they meet while strolling, shopping or taking their children out for recreation.

People interacting together in a city is also the secret for making big cities safer, since the movement of people on sidewalks, properly shielded from vehicle traffic, increases pedestrian visibility and reduces the possibility of criminal acts occurring. This visibility is also enhanced by the view afforded by the permeability of the buildings next to the sidewalks (Jacobs, 2009). Safety is one of the main elements that comprise the meaning of comfort, as will be mentioned further down.

The intent of this article, however, is to examine domestic space, which is defined here as a protected territory, where the private activities of a resident or family are carried out, as well as where their memories are stored. As Jézabelle

Ekambi-Schmidt (1974) describe, it's like a human shell or a personally appropriated sphere defined by private space.

*(...) all human beings take shelter, create a personal space, a mobile or immobile territory whose borders are established through symbolic limits which take on concrete form with certain ritual objects or through the existence of opaque and resistant ceilings and walls. These limits define an "inside" and "outside", a "home" and "someone else's home"; they seek to thermally insulate, protect from the elements, but also to protect from sights and noise, support a roof or covering, as well as produce an "empty surface to fill and decorate" (Ekambi-Schmidt, 1974, p. 11).*

The attainment of comfort in the home environment is rooted in the notion of habitability. According to Bollnow (2008), the properties of habitability of a residential environment are: to be an enclosure, serving as a refuge from the outside world; provide space dimensioned according to the needs of whoever will inhabit it; have furniture that adequately fills this space; provide thermal comfort; is attentive to the arrangement of the space; expresses the identity of whoever inhabits it; preserves the memory of the family that resides in it, and lastly is the family dwelling.

The relationship between the concept of comfort and the cultural context can be noted in a study by Iñaki Ábalos (2008), which deals with the influence of the way we think on the way we live. The system created by Mies van der Rohe, through his courtyard houses, seeks to diversify residential projects based on common types, providing privacy and beauty. In the existentialist house, exemplified by Heidegger's small holiday abode, the space must contain the objects of importance for the personal history of its occupant. In the positivist house, created for fiction, comfort focuses on efficiency, based on the accommodation between space and the equipment designed for a model family. The Cartesian abstractionism of the space proposed in the modernist environment is put aside in the phenomenological house, where environmental phenomena are meant to be interpreted subjectively by those who inhabit it. In the loft, the spatial continuity suggests the adaptation of space for coexistence between different activities – work, recreation and dwelling place. The deconstruction of the house occurs in conjunction with the deconstruction of the relationship between interior and exterior, as well as public and private, in terms of privacy. Finally, alternative forms of living can also be found in the pragmatic house, where priority is given to environmental comfort through the equipment that arose during the twentieth century.

This article, therefore, presents a study of the different elements that make up the meaning of comfort, encompassing both its physical and subjective aspects, based on a bibliography that deals with the direct application between comfort and built environments. Through other important works for studying architecture, the elements that constitute the concept of comfort will be outlined further down.

## Two dimensions for comfort

*(...) comfort is, at the same time, something simple and complex. It includes several transparent layers of meaning – privacy, well-being, convenience – some deeper than others. (RYBCZYNSKI, 1996, p. 236).*

*Comfort, therefore, is actually solace, and this does not restrict, but rather opens up the field of environmental comfort, to the point of imposing interdisciplinarity as the only alternative for survival. I hope that comfort is not only an idea, but that it will materialize in environments, giving them meaning. (SCHMID, 2005, p. 329)*

Due to the complexity of studying the meaning of comfort in built environments, we attempted to structure the research based on two works that specifically address this topic: *Home - A Short History of an Idea* (1996), by Witold Rybczynski; and *A Ideia de Conforto: reflexões sobre o ambiente construído* (2005), by Aloísio Leoni Schmid. Both treat the idea of comfort as a concept that is built through the addition of attributes. This, however, does not bar the study of works related to the field of architecture as mentioned in the introduction.

In the two works selected for orienting the research on the meaning of comfort (Rybczynski, 1996; Schmid, 2005), we pinpointed the idea that a qualitative evolution of the concept of comfort has taken place over the course of time, when different attributes were progressively added to the meaning of comfort. The addition of these attributes is responsible for the complexity of its meaning that ended up encompassing both the physical and subjective dimensions.

The evolution of the idea of comfort, as applied to the domestic context, entails more than the pursuit of well-being: “it begins with a vision of the home as a setting for an emerging interior life” (Rybczynski, 1996, p. 48). Thus, the construction of the idea of comfort, applied to the home, occurred according to the evolution of the subjective aspirations of its occupants: first, the quest for safety from outsiders and intemperate weather; then for privacy; followed by domesticity, turning this shelter into a home; environmental comfort and efficiency were recognized later on; and lastly, importance was placed on beauty, by means of style and austerity (Rybczynski, 1996).

Another study that deals with the search for the meaning of comfort, applied to built environments, is by Aloísio Leoni Schmid (2005). This author investigated the health field, and likewise concluded that the concept of comfort did in fact evolve, starting with the corporal context in which there is relief from pain (absence of discomfort), then moving into sociocultural and environmental contexts, when comfort takes on a broader meaning, linked to the satisfaction of more subjective aspects of human beings.

The achievement of comfort occurs through different contexts. The first, the physical context, is connected to the physical needs of bodily mechanisms, such as metabolism. The second is the psycho-spiritual context, related to be-

liefs on a spiritual plane and a consciousness of self, which can be exemplified by the comfort found in a religion; whereas the sociocultural context is connected to family and social relationships, as well as traditions and rituals, and can be exemplified by the support of family or the rite that precedes the discharge process in the case of hospitalization. Finally, the environmental context refers to that which takes place independent of the person – temperature, sound, odor and landscape, among others – and can be exemplified by the adjustment of these environmental aspects, through minimizing odors and noise and by comfortable furniture arrangements (Schmid, 2005).

Schmid (2005) also believes that the concept of comfort should be understood as attributes that take into account physical (corporal context) and subjective (sociocultural context) aspects, through three values: comfort, adjustment and expressiveness. Comfort is related to the absence of discomfort with respect to air, light, sound, heat and surfaces. Adjustment is the adaptation of comfort to production requirements, not related to the residential environment. And expressiveness is associated with the form of the environment, which is tied to function, because it only makes sense if linked to the comfort arising from protection.

Based on the argument of the two authors above – that the idea of comfort is composed of physical and subjective contexts – the elements were categorized that comprise the idea of comfort, forming a set of attributes.

## Attributes related to the physical context

Physical context attributes are those which ensure comfort from the standpoint of human bodily integrity. Hence, they would be linked to the idea of relief from discomfort arising from feelings of pain and/or insecurity, due to direct exposure to the natural environment and danger.

Physical context attributes go forming a solid foundation for fulfilling primary needs, while subjective context attributes join together and consolidate the notion of well-being.

### a) Safety

In his investigation of the first primitive hut, Rykwert (2003) describes how the history of architecture approaches the first human dwelling, whose functions would vary, but have in common the pursuit of protection. The central idea of the study by Rykwert (2003) is that one of the main reasons for building the primitive hut was the pursuit of safety. Safety ends up being a primary attribute of comfort, in that it serves as the foundation for well-being, protecting man against the direct effects of the elements. This attribute is also found in the work of Schmid as a step following relief from discomfort (or pain), which would be freedom. That is, from the moment “primitive man” experiences the

discomfort resulting from a hostile environment – storms, sun, diseases, enemies – he builds his dwelling.

Consolidating this idea, we see that for Heidegger (2008) the principle, to dwell, means to safeguard. Safeguard is, in the real sense of the word, something positive and takes place when we leave something beforehand in its own nature, and “corresponds to the word free (freien): free it into a preserve of peace. To dwell, to be set at peace, means to remain at peace within the free sphere that safeguards each thing in its nature.” (Heidegger, 2008, p. 129)

Thus, it can be concluded that safety is a primary attribute for experiencing comfort, because it lies at the foundation of existence itself, and consequently the act of dwelling. This notion of safety is not only in regard to the elements, but other factors as well.

#### **b) Environmental adjustment<sup>1</sup>**

Laugier’s idea for the creation of the primitive hut is related to safety associated with the discomfort arising from man’s exposure to nature. However, to be comfortable, a dwelling must constitute more than shelter. This outlook has already been noted in the definition of comfort in built environments, when Rybczynski (1996) argues that the notion of comfort begins with the search for environmental adjustment in the dwelling.

In order to obtain a biological balance between the environment and his body, man develops various physical and psychological reactions, seeking, therein, the minimal expenditure of his own energy. Olgay (1998) defines a zone in which man expends this minimal amount of energy to stay in equilibrium with the environment, freeing up the remaining energy for productivity. This is called a comfort zone and is situated mainly in the home, equipped with the best conditions for habitation, thus satisfying all man’s physiological needs.

In the writings of Vitruvius (2006), one can detect a concern to accommodate architecture, climate and the effects of this accommodation on health. According to him, architects needed to know, among other subjects, the discipline of medicine. On the basis of this knowledge, they would be able to conciliate the climate and the quality of the air, water and site, providing a healthy dwelling. In his principles – solidity, utility and beauty – utility is defined as the proper adaptation of land use and the orientation of each room in relation to exposure to the sun.

Construction elements constitute an important resource if it is not possible to adjust the orientation of the rooms with respect to solar radiation. The choice of building materials is another resource for environmental adjustments in buildings. When environmental adjustments cannot be obtained naturally, or

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<sup>1</sup> For the purpose of this paper, environmental adjustment is defined as the environmental comfort associated with sanitation.

through construction materials and techniques, it is also possible to make use of technology. Technological progress offers, over time, a series of mechanisms aimed at achieving an accommodation between man and built environments.

In the domestic realm, the use of technology began with the goal of improving indoor air quality, impaired by the smoke from the fireplaces. Concern about the indoor air quality of houses intensified at the start of the nineteenth century, when large cities resolved to reduce external sources of pollution, in addition to that generated by the occupants themselves. It was known that breathing produced carbon dioxide and that its accumulation in the home environment could be harmful to health and comfort (Rybczynski, 1996).

Technology would eventually transcend the limits of environmental adjustments, also ushering in improvements to everyday domestic activities, through the introduction of equipment. As a result, a new attitude would be noted toward housing, in line with the historical era, which was marked by the Industrial Revolution. The space of the house would be reworked in order to improve domestic activities, by interjecting the concept of efficiency.

### c) Efficiency

The concept of efficiency applied to housing was an approach greatly used by Le Corbusier (2004). According to him, the paradigm of the twentieth century was the machine, an element whose concept basically drew on efficiency. The “machine for living in”, his conception of what a house should be, can be summed up as a minimum, flexible and comfortable space for living, open to ventilation and lighting, with furnishings that are efficient in their uses and adequate circulation. The free plan, achieved through freeing the walls from their structural function, enables the house to be adjusted to each family. Furniture is prefabricated and integrated within the housing, in order to meet the needs of human activities.

This concept of efficiency applied to the reduction of built environment is a topic that has been studied since the early twentieth century. We cite here a work which focuses on applying ideas contained in factory organization to the carrying out of daily household chores: the book written by Christine Frederick, *Household Engineering: scientific management in the home*, published in 1919. In the introduction, the author presents her personal dilemma: how can one take care of household chores, the children and still have time for one’s own interests? This question motivated her research, which lasted for five years and was based on applying management concepts to domestic tasks. The first spatial intervention that she proposes is reducing the size of the kitchen, which in her opinion should be compact. The second is placing the cupboards close to where the chores will be performed in order to “save steps”. With the same goal in mind and also to avoid a cross flow of movement, Christine proposes dividing the kitchen environment into two sectors, one for food prep and the other

for washing dishes. The equipment and furniture would then be arranged according to the order of the steps for each task.

One concern already presented by Christine Frederick, which would become more relevant in the post-war era, is in regard to ergonomics. Although the author would not have used this exact term, since it only emerged years later, her concerns related to the height of surfaces, use of materials and lighting conditions in workplaces would be consistent with the issue of ergonomics, which deals with the adapting of work to man (Lida, 2003).

In Christine Frederick's view (1919), in addition to efficient furniture arrangement, the kitchen should have cupboards and work surfaces situated at appropriate heights. The author also recommends the use of "stools" at an appropriate height for activities such as washing dishes, cleaning and peeling vegetables or even for resting. Le Corbusier would also take into account the comfort achieved through integration between humans, domestic objects and architecture. Furthermore, he would establish a modular man concept, which would generate a scale of proportions which he called the modulator system. An interesting fact is that Christine does not set a typical height for countertops and tables, but she does explain, via drawings that show woodwork details, how to adapt them to a more convenient height.

## Attributes of the subjective context

Since it constitutes a cultural product, the idea of comfort totes a range of subjective elements. These elements work together with the physical elements for the attainment of full comfort. Thus, all the attributes described above have a close relationship, in terms of conditioning and complementing, with those listed below, since a house does not provide "only physical refuge, but also psychological" (Botton, 2007, p. 10). The attributes presented below are connected by the fact that they are developed in a subjective context, manifesting a strong cultural aspect. The attribute of territory, for example, is linked to safety. However, its inclusion in a cultural context turns it into an element laden with subjectivity.

### a) Territory

With respect to territory, following is the definition given by Fischer (1994):

*The concept of territory thus designates the use we make of places according to the psychological and cultural meanings that social frameworks confer upon them. Territory generally corresponds to a marked physical space; it is often organized for a defined activity and to host a person or group; it is represented by a particular configuration according to the functions that it fulfills and determines a style of occupation of space for those who are there. (Fischer, 1994, p.23)*

With a central theme based on approaching space through sociocultural elements, Fischer's work introduces a concept of territory as the delimiting of a space by an individual, through objects that mark the places, or via limits, which the author calls boundaries, which can be either material or symbolic.

Territory is closely linked to the sense of security. According to Hall (2005), territoriality is defined as a "behavior by which an organism characteristically lays claim to an area and defends it against members of its own species" (Hall, 2005, p. 10). One of the functions of this territoriality is the control of density, since density can generally end up causing conflict. This conflict can be avoided, however, if each person has his own territory (Sommer, 1973). This marked physical space can range in scale from a small room to a large city, provided bonds are maintained that form groups that identify with each other.

The identity of each individual or group is contained in the space through the mechanism of appropriation. In regard to this mechanism, Fischer's work (1994) will be used as a reference, which defines appropriation as a process of "action and intervention over an area, in order to transform and personalize it; this system of influence on the places encompasses the forms and types of intervention over the space that translate into relations of ownership and attachment" (Fischer, 1994, p. 82). Through appropriation, the space is structured on the basis of objects that correspond to the needs of the individuals, conferring upon it a sense of belonging. Also according to this author, appropriation is implemented better when an environment is designed not only to meet a specific activity, but allows for the inclusion of other activities. Therefore, flexibility is an important factor for ensuring appropriation.

#### **b) Home**

The "word home brought together the meanings of house and household, of dwelling and of refuge, of ownership and affection" (Rybczynski, 1996, p. 73). The meaning of the word "lar" (home) – found in Portuguese language dictionaries – refers to the part of the kitchen where the fire is lit, having as synonyms the words house and family. This meaning may have been influenced by the Greeks, who worshiped the fire inside their homes. Greek houses usually contained an altar, where there always had to be ashes and lighted coals. It was the obligation of the master of the house to keep the fire of the altar alive, since the "fire ceased to glow upon the altar only when the entire family had perished: an extinguished hearth, an extinguished family, were synonymous expressions among the ancients" (Coulanges, 2003, p. 27). Home refers to coziness, the gathering of the family and memories (memories contained in the home).

Thus, a dwelling takes on another meaning when it forms a family abode, a safe place for engaging in very close relationships between people, who establish networks of support and trust. In the words of Alain de Botton "home is merely any place that succeeds in making more consistently available to us the important truths which the wider world ignores, or which our distracted and

irresolute selves have trouble holding on to” (Botton, 2007, p. 121, 123). It’s as if the environment that becomes a home brings in its wake another attribute of comfort – coziness – comprising that small organized chaos that we manage with our objects of everyday use. This is the essence of coziness: our territorial brand, that which is familiar to us. The home preserves our identity. It also preserves what we hold dear, what differentiates our home from other residential constructions.

We always make reference to this environment, which is inhabited by us and our loved ones and for that reason it receives the status of home. Of this home, there are always memories – simple recollections that can be of a conversation, a sense of understanding, a different and pleasant fragrance. This home also stores our history. When discussing nostalgia, Rybczynski (1996) attributes the desire to establish references with the past as an alternative to a world of rapid and constant change. And a home in this respect is a shelter, a controlled space where relics can be saved, where one can find in memories and objects relief from some momentary misfortune.

#### c) Privacy

The home comprised of a family is formed by each individual belonging to it. Although part of a collective whole, each individual needs time alone or for sharing an intimate moment with another person. It is important to note, however, that this attribute was only achieved over the course of time and was mainly influenced by the culture. In the Middle Ages, for example, there was no privacy. People shared the same room, the only one in the dwelling, where all the daily functions were performed. The family consisted of the parents, small children, apprentices and employees. The house was also used for work purposes, so it was public in nature.

The work of Vitruvius (2006), however, addressed the concern for privacy, viewing the house as divided into “the owners’ compartment”, a private area and “common spaces” designated for strangers.

Over time, housing started growing upwards, enabling division into compartments, and thus affording greater privacy. Although activities continued to be conducted jointly in one single room, masters and servants could be separated, as well as public and private areas, among the different floors of the house. Sleeping quarters also started to be separated. The house was divided into public quarters – the lower floors – and private quarters, situated on the upper floors. The kitchen was also segregated from the rest of the house, due to odors. In some cases, housing started being detached from the workplace, making it more private.

#### d) Beauty

With respect to beauty, we can start with the concept of beauty as an imitation of nature. Botton (2007) believes that works of art “are beautiful when they

manage to evoke that which appears to us as the most attractive, significant attributes of human beings and animals” (Botton, 2007, p. 84). This conception is important because it would be the benchmark advocated by Le Corbusier (2000) when he states that engineers bring pleasure to our eyes from calculations in accordance with the laws of the universe, directing their works to the realm of great art.

In addition to the qualities related to the mimesis of nature, we can find satisfaction in the values contained in it. Thus, “the buildings we admire are ultimately those which, in a variety of ways, extol values we think worthwhile (...) such as friendliness, kindness, subtlety, strength and intelligence. Our sense of beauty and our understanding of the nature of the good life are intertwined.” (Botton, 2007, p. 98)

## Conclusion or synthesis of the attributes of comfort

According to the definition given at the beginning of this chapter, the meaning of comfort consists of different attributes organized in two dimensions, one physical and the other subjective. The first is linked to the most primitive yearnings of man, whereas the second is related to something that is difficult to measure, but is essential to the sensation of well-being. The two dimensions always operate in an interconnected manner, one supporting the other. The table below summarizes the previously defined attributes of comfort, distributed according to the contexts in which they are attained:

TABLE 1: Attributes of comfort in architecture

Physical context attributes	Subjective context attributes
Safety	Territory
Efficiency	Home
Environmental Adjustment	Privacy
	Beauty

Source: authors

The attributes of the subjective context are intertwined due to being associated with the sensations that the residential environment can impart. The home is a territory designated to the family, which it appropriates and imbues with identity. It's a place where the family finds coziness and privacy in relation to the world outside. It also serves as a haven for memories. In order to constitute comfort, these attributes must be connected to the physical context, in other words, a home needs to be a safe and suitable territory from an environmental point of view. Beauty and efficiency are attributes that complement the notion of comfort, and are pursued by residents in their homes.

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