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Paulo Mendes da Rocha's housing archetype

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Abstract

Paulo Mendes da Rocha renowned Brazilian architect and winner of the Pritzker Prize in 2006. Throughout his career, he made numerous works of different scales and programs; including single-family homes, residential complexes, and social housing projects. Within his work, especially that of a residential nature, the frequency of certain design decisions is evident: functional, constructive, and expressive. This recidivism of characteristics could be described as an archetype of residential spaces. Through a comparative process of 2 houses of different temporalities, it is intended to deduce which is the archetype of Mendes da Rocha's house. A free and elevated floor above the level of the sidewalk, continuous rooms that share service cores, and walls that do not completely close the spaces; are some of the characteristics that define the archetype of housing. Deciphering this archetype allows us to better understand the influence of Mendes da Rocha's homes on modern Brazilian architecture.

1. Introduction

Before the analysis to which the article focuses, it is essential to understand the theoretical basis on which Paulo Mendes da Rocha built his architecture. Mendes da Rocha finished his studies as an architect at Mackenzie University in Sao Paulo in the 50s. (Contier & Anelli, 2015) A time when Brazil was in a state of social and political change since the population was in a process of urbanization with a large migration of the rural population to the cities.

Thus, while cities were under a phenomenon of accelerated urbanization, architectural thinking began to fragment into two major movements. (Bardi, 2016, Aziz Amen, 2017; Aziz Amen & Nia, 2018; Amen & Kuzovic, 2018; Amen & Nia, 2021) In Rio de Janeiro an architecture had been established that took advantage of the plasticity of concrete based on Corbusian architecture; meanwhile in Sao Paulo at the end of the 50s this architectural model began to be questioned. (Giroto, n.d.)

In 1948 a group of architects living in São Paulo and headed by Joao Vilanova Artigas met. The main intention of the meeting was to find the bases that would determine what we know today as the architecture of the "Escola Paulista" (Medrano, 2017) This model of architectural thinking was characterized by a deep relationship with the place. The buildings built under the term of the Paulista School had a characteristic void built, which became part of the city, as a return of space that endowed the building to society. (Jose Ferrando, 2014). Artigas expressed that the training received by architects was insufficient and clearly engineering. This training to which the architects were exposed helped Artigas to seek a theoretical and coherent basis of what São Paulo architecture should represent. Josep Ferrando, 2013) Four actions were defined: "an arrangement of the topography that manipulates the zero level; a unitary volumetry with a roof-façade; a structural language that defined the form and the interior-exterior relationship and the construction of an interior void in the form of a square, patio or vestibule sheltered by the program" (Jose Ferrando, 2014, p. 8).

Topographic Architecture:

Before settling any building, it was sought to modify the topography of the site in such a way that a new horizon can be generated that is closer to the user compared to the strong presence of nature.

Unit volumetry.

A new horizon was built under a single roof that sheltered the entire program in a single volume and with this gesture, the projects turned their backs on the configuration of the city's fabric.

Spatial Structure

In São Paulo the chair that taught architecture contained great technical and engineering content, this training allowed the Paulista architects to use the structure as an element that was part of the visual composition within the composition of the architectural form. The structures had the characteristic of saving large distances between supports; without them being expressed as a simple skeleton. (Contier & Anelli, 2015)

An element to which the São Paulo architects paid particular attention in each of their works is how the encounter between the roof and the vertical load-bearing elements arises.

Democratic vacuum

"The exterior volumetric sensible contrasted with a complex interior space" (Jose Ferrando, 2014, p. 15) Due to the structure model used to have large spans on the roof, this usually allowed buildings to be partially or raised on their ground floor so that these spaces can be used as contact squares with the ground. This covered space generated a transparent threshold which allowed the gaze to cross the built block.

These covered squares that formed inside the buildings not only had an architectural connotation, but they obeyed a social characteristic of the time. Due to the military dictatorships that Brazil faced during the 50s and 60s, the lack of freedoms allowed these empty spaces to be used as Agoras for society. (Sandler, 2007)



Figure 1. Photograph of MASP (Museum of Art of São Paulo) photograph Pedro Kok

2. Methodology

To establish the correlation between the residential works of Mendes Da Rocha and determine whether or not there is an archetype, the development of the article has been based on two phases. The first focuses on explaining how the Butanta house is configured, from the architectural program to its spatial composition. As well as indicating how each of these design decisions is related to the critical thinking of the architect who wanted to express his socio-political ideals and leave them embodied in his own home. After this, as explained by Rodriguez (2010), the most representative patterns of housing are determined to determine the archetype of housing. Finally, in a second instance of the article, a description of a second home of the architect of different temporality is generated and the aforementioned characteristics are sought. This seeks to establish compliance with the characteristics that make up the archetype of housing.

3. Paulo Mendes da Rocha and the Butanta house.

Paulo Mendes da Rocha is today one of the most outstanding Brazilian architects for his architectural work, characterized by its simplicity and austerity in the use of materials. Also recognized for the remarkable use of the structure as an architectural element that interacts with the user and space. Helio Piñón describes Mendes da Rocha's work as: "above all architecture: that is, the product of a subjective action that is oriented towards universal values, to the point that each of its manifestations reaches an autonomous entity, even for the author, as only happens with acts of genuine creation." (Pinion, 2003)

Graduated in architecture from Mackenzie University in Sao Paulo in the mid-1950s. The quality of Mendes da Rocha's work always prevailed from the beginning of his career as an architect. In such a way that Joao Vilanova Artigas invited him to be an adjunct professor at the FAU-SP at the beginning of the 1960s.(Hernandez Martinez, 2008)

Mendes da Rocha's architectural career has been characterized by the deep reflection that exists in each of his projects, thus creating works of "true architecture". (Piñón & Mendes da Rocha, 2003) A characteristic of Mendes da Rocha's architectural project is its ability to synthesize the designed space to its minimum expression, that is, the work has a characteristic austerity in its composition of elements that form it, and the materials are exposed without coatings. (Zein, 2008) Authors have tried to classify Mendes da Rocha's architecture as brutalist or minimalist, but Paulo himself catalogs it as simply Architecture.

While Mendes da Rocha is recognized for its highly sensitive architectural works on medium and large scales; a less recognized or studied aspect is the quality found in his smaller-scale works, whether residential or not. (Zein, 2008) Particularly the residential work of the architect allows evidencing a deep analysis of the way of inhabiting the house within the time. Just as Joao Villanova Artigas did not see housing as an object free from the urban environment; Between the city and the house, there is a permeable barrier that delimits the two urban uses.

Paulo Mendes Da Rocha designs two twin houses, one for his sister and the other for him, for two years, since 1962, and began to be built in 1964. The design of the houses resulted in a space that several architectural critics determine as a manifesto.(Pisani & Dal Co, 2015) The house respects the principles of São Paulo architecture previously described: a single and elevated floor volume, the conformation of an apartment house, and the identity of the volume and structure. It is not a complex house on a spatial level, but without a client to keep happy, Mendes da Roche in his own house founded and expressed the architectural quality of the residential space. (Garcia del Monte, Flores, Prieto, & Cardenas, 2013)

Mendes da Rocha, along with other Paulista architects, had a left-wing political orientation; which led to the raise of socio-political ideas in the construction of living space. The Butanta house was designed to use the post-tensioned concrete structure trying to take the project to the prefabrication of the house. This would lead to a house that is repeatable and multipliable. (Pisani & Dal Co, 2015) The exhaustive modulation in all the façade elements, as well as the internal partitions, pointed toward the mass production of the house. The construction system of housing was not common within its category, but rather responded to public construction, serving as a test to take the residences towards mass construction.(Martinez & Lage, 2017)

Mendes da Rocha distributed the house except for a small block of service and machinery, on a single level supported on four columns. The shadow caused by the columns, together with a topographic movement designed to create privacy towards the house, as well as to give continuity to the urban landscape, generated an illusion that the house floated. The ground movement has a small opening through which pedestrian and vehicular entry to the house is generated.



Figure 2. Butanta house photograph (Paulo Mendes da Rocha) photograph by Nelson Kon

When entering the area between the slope, the only thing that can be seen is the service block, the four columns, and the slab on which the house sits that flies in the four directions of the structure. (Pisani & Dal Co, 2015) While the roof slabs fly over the two main facades, to one side sheltering the access stairs and to the other protecting the social areas from the sun.

The program is located on an almost perfectly quadrangular floor and is divided into three zones marked by the circulations; in the central strip is the service area of the house, the kitchen, and the bedrooms with their respective wet areas that are ventilated and illuminated in a zenithal way. (Medrano, 2017) The strip that is immediately next to the main staircase lacks a specific program, this is occupied by a concrete counter that lengthens as much as the pivoting windows of the façade. The last strip is occupied more clearly since it contains the residential program of living, that is a dining room that is attached to the kitchen furniture, the furniture that makes up the room that is next to a fireplace, a drawing table, and at the ends of the space furniture made of concrete. (Montaner, 2014)

The configuration of the plant results in a combination in which the most private area of the house is cornered by the most public areas, but, as well as in the limits of the house with the city, these internally try to dilute. The separation between areas is configured with wooden screens that do not touch the upper structure, leaving an opening of approximately ten centimeters between the closures, leaving practically the rooms without a way to isolate them. (Montaner, 2015) The rooms also have sliding doors that connect with the two public areas of the house, allowing at almost all times a permeability between the intimate and the public.

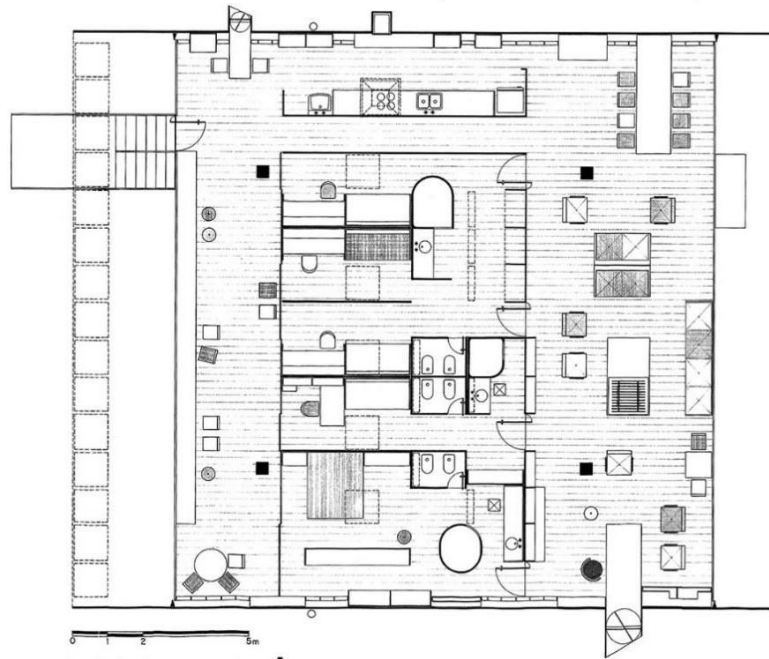


Figure 3. Butanta House Floor (Paulo Mendes da Rocha) AV Archive Arquitectura Viva

Internally the concrete furniture would not allow changes or adaptations, thus creating a domestic space that moves away from visual and physical comfort. (quote) The small furniture prevented the use of storage, thus affecting users' consumption. (Gold et al., 2019) The use of concrete as a single project material eliminated the use of coatings, either internal or external, exposing as the only decorative element the texture of construction and architecture. The house lacks decorative elements, trying to evoke austerity, closing the doors of the house to exterior art. (ROSATTI, 2016, p. 46). The floor plan and the physical space configured in each environment with furniture such as tables and desks provide the space to be used as a place of intellectual production.



Figure 4. Butanta house photograph (Paulo Mendes da Rocha) photograph by Nelson Kon

Flavio Motta, a close friend of Mendes da Rocha describes the architect's residence as a "rationalized favela" (Motta, 1967, p.18). The dilution of the boundaries between the private areas of the dwelling created a

coexistence in which the inhabitants were forced to share in daily activities. Paulo Mendes da Rocha once declared that: "there is no such thing as private space; if not different degrees of public space" (Mendes da Rocha, 2016). While Villanova Artigas paraphrasing Alberti and Palladio argued that "the city is a house" and "the house is a city", Mendes da Rocha changed the approach a bit saying that "the city is born from the house" and "the house is not the place to live, man inhabits the city" The house is designed for those who recognize the city (Pisani & Dal Co, 2015). Motta also adds that "this house has not been seen before, this is the house for those who recognize the city as their habitat" (Motta, 1967, p.19). There is no sense of privacy, as inhabiting is a social act. (Pisani & Dal Co, 2015).

4. James Francis King House

In 1972 James Francis King asked Mendes da Rocha to design a house for him, being a neighbor of Mario Masetti he fully knew the quality of Mendes da Rocha's architectural work. The house was implanted in a place full of vegetation, in which previously there was a forest and this left certain foci of trees. The land on which the house is implanted has a slope that increases at the back and the house and in this area, the remaining vegetation of the forest has been intact.

The house is elevated on pilotis in such a way that the entire construction level of the apartment is completely open and seeks integration with the landscape of the site. On this level are located the pool and the staircase which are endowed with sinuous shapes to able to be mimicked with the forms of nature. While the built counterpart of the elevated level of housing is square. (Pisani & Dal Co, 2015) Due to this counterpoint of forms, the relationship between the built object and the landscape around the construction becomes complex, since the house at the same time the house moves away from the natural landscape but attaches to it while building following its forms. (Zein, 2008)

The access to the house is dictated by a central staircase, which when finished reaches a passage, which if taken to the right takes it directly to the social area of the house; but if it is taken to the left it takes it directly to the service area of the house. The floor of the house is organized in an "L" shape around the central courtyard. Although this central courtyard exists, the open corridor that surrounds it functions purely as a passage and does not fulfill a functional character, so it cannot be considered a quadrangular organization around the courtyard. (Zein, 2000)



Figure 5. Photograph house James Francis King (Paulo Mendes da Rocha) photograph Leonardo Finotti

The functional part has a simple organization in which three main strips can be abstracted, the first and attached to one of the edges of the house are the rooms that look towards the pool and the landscape.

The service cores of the rooms are configured between them and to illuminate and ventilate they have the use the resource of zenithal light. The rooms are connected by a circulation that is located next to the continuous window of the façade that is protected by Brise-soleils and in turn, connects directly with the social space, diluting the private character of the rooms. (Pisani & Dal Co, 2015)



Figure 6. James Francis King House Photography (Paulo Mendes da Rocha) AV Archive Arquitectura Viva

In the central strip, there is a large room that has views toward both fronts of the house as well as looks towards the central courtyard. (Martinez & Lage, 2017) In this strip is centered a chimney as an organizing center of family activity; while the rest of the space was left without a specific use, free so that it can be transformed into everything that the family needs. "The house has an interior landscape that contrasts with the spaciousness of the exterior. It shows the interior life of the house, the circulation of public services, the people who enter and leave" It is a text found on the fourth page of the preliminary draft (Pisani & Dal Co, 2015, p132). The room is defined by two windows, one facing the outside with bright lighting while having another facing the courtyard and illuminating the space more subtly.

5. Results

The description of the two houses indicates how certain characteristics that express Paulo Mendes da Rocha's social and political thinking are repeated in his residential works. This thinking modified the way in which the residents themselves interacted and obliged them to accept the way of living proposed by the architect. By trying to promote criticism and social awareness, Mendes da Rocha aimed to use space to strengthen thinking. With his architecture, he tried to perfect the tectonics of concrete and modulate it in order to bring prefabrication to housing, something he would achieve years later with the Milan Housing project.

6. Conclusions

The work of Paulo Mendes da Rocha in the residential representation, although it takes as a basis the parameters of the architecture of the Paulista School with the 5 points mentioned above, also has an approach and a development in which it is about organizing the houses in such a way that they suggest the way of interacting of

users. As Verde Zein notes, the author works throughout his career on repeated themes, with a suggestive panorama and without ever repeating himself. (2000)

7. Acknowledgments.

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8. Conflict of interest

We declare that there is no conflict of interest.

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Figure 5

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Figure 6

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