

João Batista Vilanova Artigas, Paulo Mendes da Rocha e Fábio Pentecoste, Conjunto Habitacional Zexinho Magalhães Prado, Guarulhos, São Paulo, 1967. © Vilanova Artigas Foundation Photographic Archive

Social Housing in the 60s in São Paulo

BY MARIA LUIZA SANVITTO

The 60s was a decade of profound change in Brazil. The federal capital was transferred to Brasília, which represented the realization of the ideal of the modern city envisaged at CIAM IV. Modern architecture, which in its Brazilian version, was characterized by the *Escola Carioca* (Rio de Janeiro School), gave way to the São Paulo *avant-garde*, concerned with truth to materials and social aspirations. In politics we saw the shift from a democratic government to a military dictatorship, which sought to legitimize itself through the creation of a state funding system to solve the nation's housing deficit. These factors created the conditions for the development of a series of housing projects, including the exemplary project discussed in this paper.

The 40s and 50s constituted a golden era for Brazilian architecture in its modern version. Later, the construction of Brasília constituted the materialization of the modern city envisaged at CIAM IV conference, in 1933, on board the ocean liner *Patris II* between Marseille and Athens. That Congress originated *La Charte d'Athenes*, which defended functional zoning, isolated buildings in open areas and collective land in opposition to the configuration of the urban spaces of the traditional city.

In the early 60s, through the use of exposed concrete, the feat of great clear spans and the boldness of the cantilevers, structure came to play a role in form generation, and the architectural *avant-garde* was no longer in Rio de Janeiro, but in São Paulo. Exposed concrete and the structure marked their presence in the designs of the *Paulista* architects, who turned their attention to the continuity of the internal spaces. With their commitment to truth, to materials and spatial continuity, as well as other common compositional principles that characterized Brutalism as a style, this *avant-garde* consolidated the *Escola Paulista* (São Paulo School), in a similar way to the *Escola Carioca* (Rio School).

An Opportunity for Social Housing

In August 1964, the Brazilian government created the *Banco Nacional de Habitação – BNH* (National Housing Bank) to centralize the resources destined for social housing. During its existence, from 1964 to 1986, BNH provided housing funding on an unprecedented scale, producing three million housing units during its twenty years of operation.

After its creation, BNH went through a structuring period until 1967, with the implementation of the Housing Finance System (*Sistema Financeiro da Habitação*), setting up fund-raising bodies to capture the funds to be managed by the bank and allocated to the National Housing Plan. These funds set BNH effectively in action, with the construction of numerous housing projects, including, in the 60s, the housing

project *Conjunto Habitacional Zezinbo Magalhães Prado*, in the municipality of Guarulhos in São Paulo state.

An Outstanding Example of Collective Housing Project

The *Conjunto Habitacional Zezinbo Magalhães Prado* was proposed for an area of 180 ha in the municipality of Guarulhos, São Paulo state, near the former air base of Cumbica, now Guarulhos International Airport. Located approximately 20 km from the city of São Paulo, in the periphery of the city of Guarulhos, the original project predicted 10,560 units. The area allocated to the housing project was split into two unequal parts by the Via Dutra motorway, running in the east/west direction, making a larger area on the northern side. The southern sector was not executed.

Designed in 1967, the Cumbica project was the work of renowned architects committed to the São Paulo Brutalist movement: João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Moura Penteadó. The design was published in specialized magazines in the 70s, setting it in the national spotlight. Later, the design and the building were widely published in the biographies of its authors and in books about modern Brazilian architecture.

The importance and the repercussions of the *Conjunto Habitacional Zezinbo Magalhães Prado* is not only due to its size. With capacity to house approximately 55,000 residents, according to the initial forecast, the project promoted the reformulation of housing and the valorization of urban equipment as a complement to housing. Based on technological innovation, the project sought to achieve cost reduction and higher building standards, as well as to incorporate domestic equipment in the building. These initiatives ensured the project's exemplary status. The design for the *Conjunto Zezinbo Magalhães Prado* has been repeatedly cited due to its innovative character with regards both to architectural and urban design aspects. The execution of the project started in the early 70s, and went on for five years.

The *Guarulhos* project sought to integrate all the services and equipment that complement housing. The plan included shops, eight elementary state schools, three high schools, a technical school, a general hospital, an out-patient emergency clinic, a health centre, a baby health clinic, a stadium with capacity for 10,000 people, two cinemas, a hotel, a theatre, a church, a club, a shopping center, a water tower and gasworks. The initial forecast in the original design was that those services and equipment would be used not only by the housing project's residents but also by the neighboring communities.

The Freguesias (Neighbourhoods)

Vilanova Artigas, Mendes da Rocha and Penteadó's project proposed a rational solution consisting of parallel bars, interconnected in pairs by vertical circulation at each four apartments per floor, three-story slab on *pilotis*. They are distributed in groups of 32 blocks, in a disposition that Artigas denominated *freguesias* (parishes/neighborhoods), which had autonomy in terms of access to daily supplies and elementary education. *Freguesias* are connected through open and uninterrupted spaces achieved by the use of *pilotis*, leading to a central open area set up with equipment to be used by the entire housing project. The *freguesias* are formed by four modules consisting of eight double bars disposed in quadrants that allow the homogeneity of the group at the urban scale. The shops in each *freguesia* are disposed along a central longitudinal line, in two blocks with two floors each. The school is located in a peripheral position.

While in Brasília the *neighborhood unit* is formed by four superblocks, the *Cumbica* project is organized in *freguesias*, formed by quadrants, each with eight double bars. The relation between the buildings and the traffic structure is remarkably different when we compare Brasília's superblocks and the *freguesias*. Brasília follows the Athens Charter's recommendations and moves the buildings away from the streets. In Lúcio Costa's design, the position of the buildings inside the superblocks was not strict, suggesting that they could be disposed in a variety of ways. On the other hand, he took care to include an area with dense tree cover in the periphery of the superblocks. In *Cumbica*, the blocks are not peripheral, but strongly marked by the location of the parallel blocks. There is a relationship between the road system and the position of the buildings, which are aligned longitudinally or perpendicularly to the streets.

Similarly to the *neighborhood unit* concept used by Lúcio Costa in Brasília, where the interior of the superblocks is reserved for access to the parking areas, the *Cumbica* project also included the hierarchization of traffic, seeking to preserve each one of the quadrants that form the *freguesias*. When we compare their dimensions, the *freguesias* have an approximately square area with sides measuring 400 metres, resulting in four blocks with 200 metres on each side; Brasília's superblocks, which form the *neighborhood areas* in sets of four, were dimensioned by Costa with 280 × 280 metres.

The use of *pilotis* reveals a strong identification with the modern doctrine of the need for clear open areas. The areas

under the buildings are designed for general use, according to the discourse of modern architecture. The design did not foresee any parking facilities, but that should not be seen as lack of foresight, as the car industry was still incipient at that time and car ownership was the privilege of a small minority. Neither in Brasília's superblocks nor in *Cumbica* are there any mixed-use buildings. Shops, recreation facilities and services are located in specific areas and buildings.

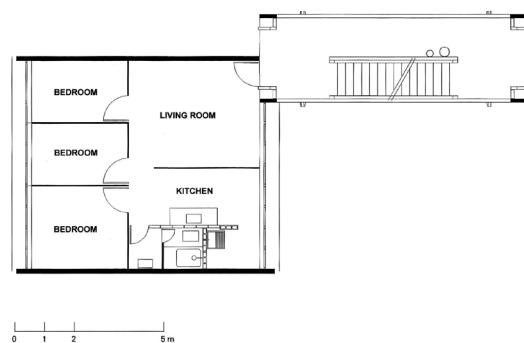
The Block

The *Conjunto Zezinho Magalhães Prado* consists of a single type of block, formed by two parallel bars, typically three story slabs on *pilotis* at ground level. The parallel bars are connected by walkways that also access the stairs, corresponding to the horizontal and vertical circulation elements, respectively. This circulation system serves four apartments per floor, in an "H" layout that is repeated five times in alignment, forming the model block. Each block has 20 apartments per floor, totalling 60 apartments per set of two parallel bars.

The Housing Units

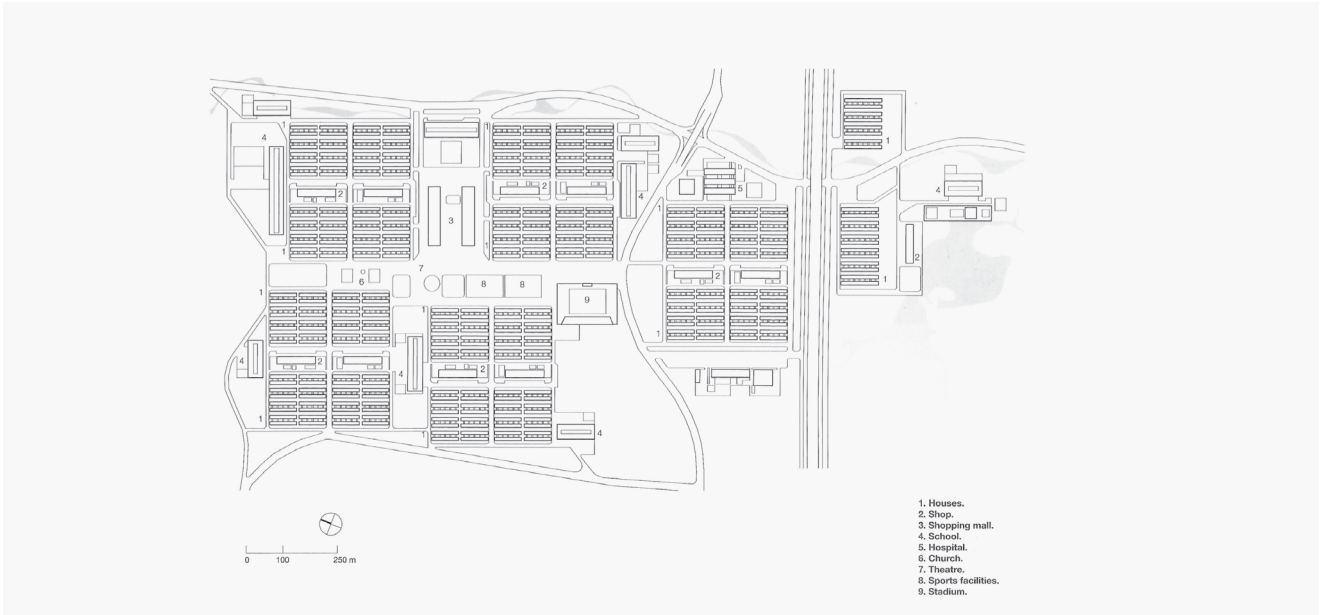
As was the case with other areas of the project, the housing units were the object of interest and definition of innovative concepts. Just as the model block is repeated to form the *freguesias*, the parallel bars reproduce one single type of apartment. The units consist of three bedrooms, a living room, a bathroom, a kitchen and a laundry/utility room. The living room, the kitchen and the laundry room face the internal yard configured by the two parallel bars. The three bedrooms are privileged with a location aligned with the external façades, and the bathroom occupies an internal position without contact with the façades.

In the original design, the apartments were 8.20 metres wide and 8.00 metres deep, excluding the volume of the windowsills that protrude outwards, and are assigned internally to wardrobes. In the final project, the width was reduced to 7.20 metres, while the original depth was maintained.

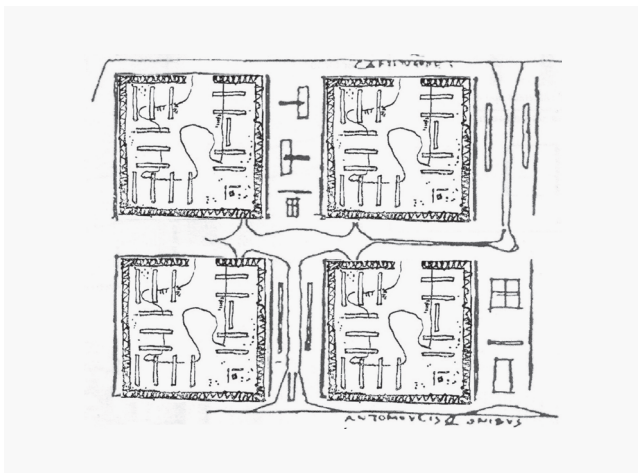
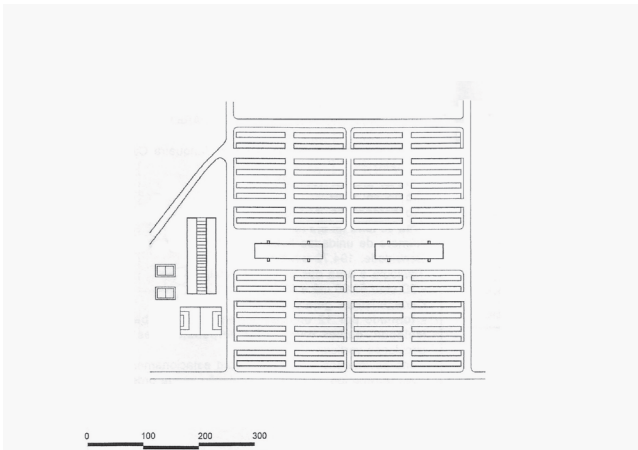


01 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Penteadó, *Conjunto Zezinho Magalhães Prado*, São Paulo, 1967. Apartments. © ARTIGAS, Rosa [org.], Paulo Mendes da Rocha, São Paulo, Cosac & Naify, 2000, p. 187.

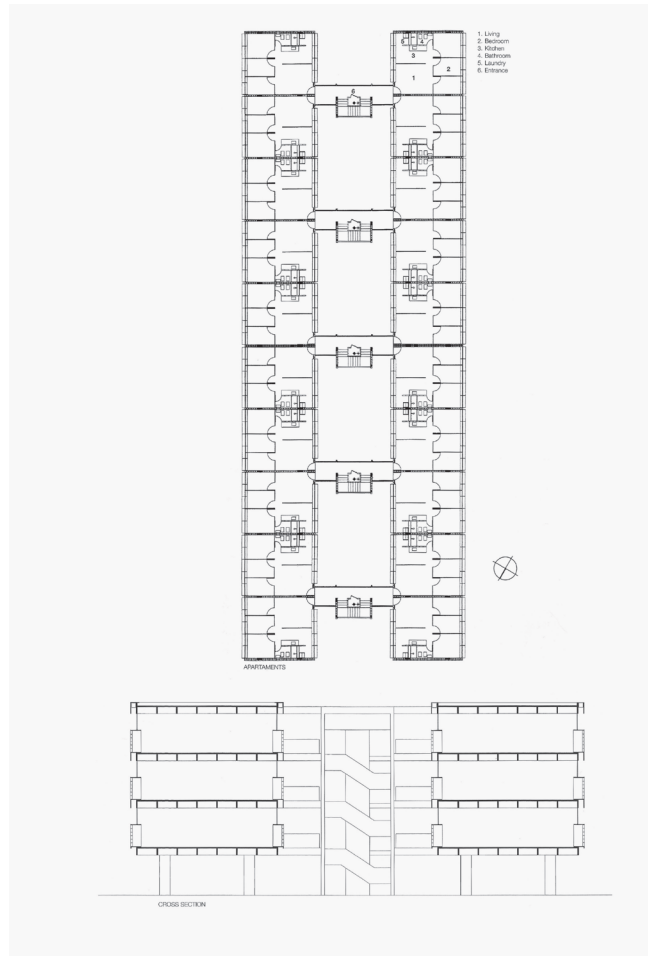
02 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Pentead, *Conjunto Habitacional Zezinho Magalhães Prado*, São Paulo, 1967. © João Batista Vilanova Artigas, 2G, No. 54, Barcelona, Editorial Gustavo Gili, 2010, p. 106.



03 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Pentead, *Conjunto Habitacional Zezinho Magalhães Prado*, São Paulo, 1967. © João Batista Vilanova Artigas, 2G, No. 54, Barcelona, Editorial Gustavo Gili, 2010, p. 106.



04 Lúcio Costa, Neighbourhood Unit, Brasília, 1957. Source: Alberto Xavier (org.), *Lúcio Costa: Sobre Arquitetura*, Porto Alegre, Centro de Estudantes Universitários de Arquitetura, 1962, p. 269, 273.



05 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Pentead, *Conjunto Zezinho Magalhães Prado*, São Paulo, 1967. Typical floor and cross section. © FERRAZ, Marcelo Carvalho (org.), *Vilanova Artigas: Arquitetos Brasileiros — Brazilian Architects*, São Paulo, Instituto Lina Bo e P. M. Bardi, 1997, p. 147 e 149.



06 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Penteadó, *Conjunto Zezinho Magalhães Prado*, São Paulo, 1967. Façade facing the space outside the parallel bars. © Vilanova Artigas Foundation Photographic Archive

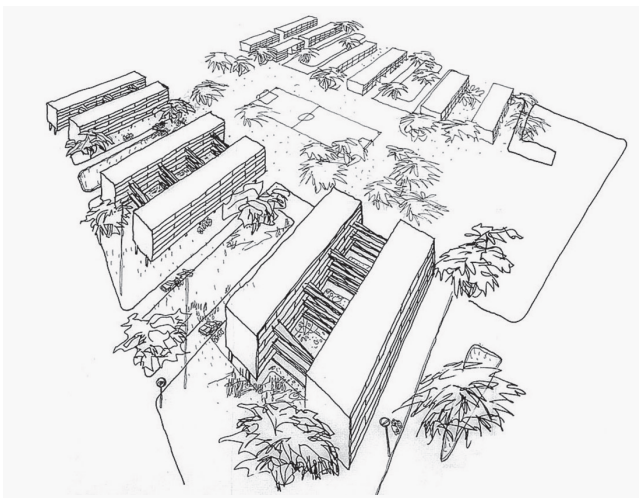


07 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Penteadó, *Conjunto Zezinho Magalhães Prado*, São Paulo, 1967. Blank Façades. © Vilanova Artigas Foundation Photographic Archive.

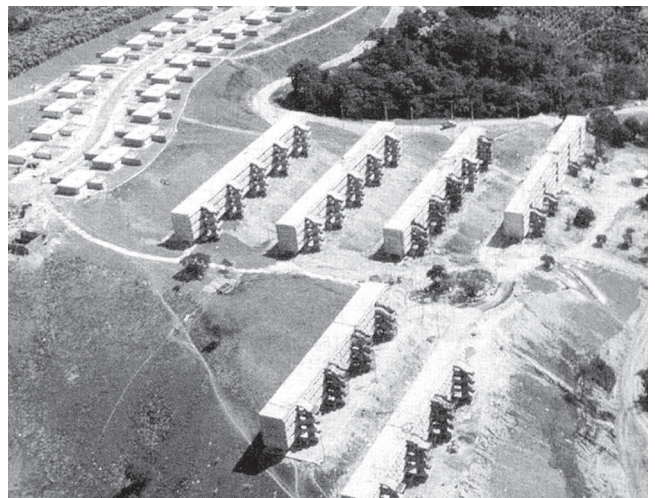
08 João Batista Vilanova Artigas, *Conjunto Habitacional Jardim CECAP*, Jundiaí, São Paulo State, 1972. © Vilanova Artigas Foundation Photographic Archive.



09 Abrahão Sanovicz, *Conjunto Residencial Parque Nova Cidade*, Jundiaí, São Paulo State, 1971. © *Projeto*, No. 42, São Paulo, August 1982, p. 139.



10 João Batista Vilanova Artigas and Fabio Penteadó, *Conjunto Habitacional CECAP Americana*, São Paulo, 1972. © Vilanova Artigas Foundation Photographic Archive.



11 Abrahão Sanovicz and José Carlos Olzon, *Conjunto Habitacional Parque das Águas*, Serra Negra, São Paulo, 1975. © Abrahão Sanovicz Archive.

Previous works by Paulo Mendes da Rocha and Vilanova Artigas, exponents of the *Brutalismo Paulista* (São Paulo Brutalism) and project coordinators at Cumbica, had already shown the use of the quadrilateral as form generator, where blank walls on opposite façades anticipated the possibility of juxtaposing serially produced units, while the other two walls were reserved for light and ventilation. The idea of the model was present in previous works by São Paulo architects, where the use of the quadrilateral resulted in a prism on *pilotis*, allowing it to be built on any kind of plot, regardless of the topography. Also, the association between Paulo Mendes da Rocha's residential work and the typical unit of Cumbica is evident both in the disposition of the internal plan and in the use of two opposite façades on blank walls against the other two with large glass panes.

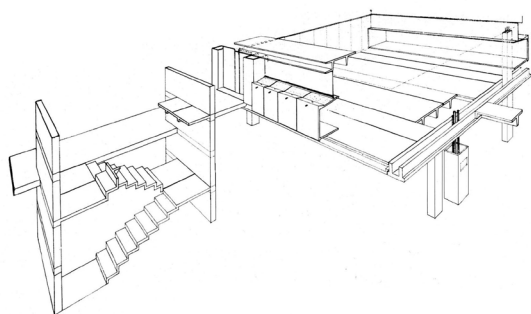
The Façades

There is no hierarchy of façades. Along the line of apartments, the vertical planes repeat the same frame, indistinctly, without differentiating between the façades facing the space between the two bars and those facing the space outside the group. The horizontal windows contribute to the image of modernity confirmed by the absence of sloping roofs and the presence of *pilotis*. On the two parallel bars that constitute each one of the 32 blocks of the *freguesias*, the end façades are blank walls that conclude the series of identical apartments. The access to the blocks on the ground floor, through the stairs between the bars, without connection with the façades, reinforces the absence of hierarchy between them.

The formal refinement, the exposed concrete, the rugged unfinished surfaces and the valorization of the construction elements, demonstrate a rationalization of design and construction, in a quest to achieve repetitiveness and economy.

Execution and Prefabrication

Even though the country still lacked an industrial basis that could guarantee prefabrication for a project of the magnitude of *Conjunto Zezinho Magalhães Prado*, its architects believed in its potential to drive construction industrialization. Hence, as a way of rationalizing the execution, in view of the scale of the project and its specificity as social housing, the team in charge of the project strove to incorporate the use of reinforced concrete and prefabrication in the proposal, conditioning the development of the project.



12 João Batista Vilanova Artigas, Paulo Mendes da Rocha and Fábio Penteadó, *Conjunto Zezinho Magalhães Prado*, São Paulo, 1967. Prefabrication, structural solution. © *Acrópole*, No. 372, São Paulo, April 1970, p. 34

The axonometric perspective of the housing unit shows the structural solution using precast concrete elements, where inverted “π” beams connect two columns transversally to the parallel bars, forming cantilevered elements on the two opposing façades. Moreover, they offer support to the double “T” floor and roof slabs, with the roof slabs being waterproofed and protected by thermal insulation plates. Between the units, concrete panels are juxtaposed on each side of the columns, separating the housing units. The external walls were planned to have precast concrete panels of approximately half a ceiling height, which would also be used as internal cupboards, below the windows with a deep sill incorporated in this room. The idea of including domestic equipment in the construction of the housing units was intended to spare costs for users, demonstrating also the architects' concern with the layout of the internal space. The first *freguesias* were built using the conventional system, with a structure cast on site and the external masonry in concrete blocks, a method that was subsequently replaced in other units by the tunnel system. The total prefabrication idealized by the architects never came to be employed.

Final Considerations

The design strategy of parallel bars connected by vertical circulation proposed for the *Conjunto Habitacional Zezinho Magalhães Prado* became a strong reference for subsequent projects. Among those deserving of mention, built between the late 60s and the early 70s, are the *Conjunto Residencial Parque Nova Cidade*, designed by the architect Abrahão Sanovicz, with landscape design by Roberto Burle Marx, and also *Jardim CECAP*, by Artigas, both in Jundiaí, in São Paulo state. In the same period, Artigas, together with Penteadó, again used the principle of the parallel bars in Americana — SP, but this project was not executed. The experience in using this design principle had repercussions throughout the 70s, and can be seen in the *Conjunto Habitacional Parque das Águas*, where Abrahão Sanovicz split the double bar solution, maintaining only one simple bar with external vertical circulation for every two units. ■

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Maria Luiza Sanvito

(b. 1952, Brazil). MA and PhD in Architecture, UFRFS, Brazil. Professor at Faculty of Architecture, UFRGS.