



Affonso E. Reidy, Carmen Portinho, Pedregulho Housing Complex, Rio de Janeiro, Brazil, 1948-1960.
Alfredo Brito, restoration, 2005-2015. © César Barreto, 2015.

Preserving a modern housing model: the restoration of Pedregulho Housing Neighborhood

BY FLÁVIA BRITO DO NASCIMENTO

This paper examines the history of Pedregulho Housing Neighborhood, built between 1948 and 1960 by the Department of Popular Housing in Rio de Janeiro, Brazil, from the first concepts to the restoration in 2015. Conceived by the urbanists Carmen Portinho and Affonso E. Reidy, it became one of the most emblematic works of modern Brazilian architecture. After years of neglect, in 2015 housing Block A of the neighborhood underwent restoration, one of the only such projects on social housing complexes in Latin America. The paper discusses the housing complex's history, focusing on the intervention and restoration project, its criteria and challenges, and also the aims and demands by the residents during the works.

Introduction

In September 2015, restoration began in Pedregulho Housing Neighborhood, a major accomplishment in Brazil's architectural history. Built between 1948 and 1960 by a partnership between the feminist and urbanist Carmen Portinho (1903-2001) and the architect Affonso E. Reidy (1909-1964)¹ under the Department of Popular Housing (DHP) of the city of Rio de Janeiro, the complex embodied the canonical ideas of modern Brazilian architecture of the 1940s and 1950s, such as plasticity, integration between the arts, constructive rigor and modernist urban planning.

The Department of Popular Housing was founded in 1946 with the goal of building residential estates for city employees.² The feminist Carmen Portinho took on the role of director and gave priority to collective buildings. A town planner by training, she shared the ideals of the Modern Movement and became involved in social housing after an internship in England in 1945, where she studied post-war reconstruction.³ Upon her return to Brazil, she supported the construction of autonomous neighborhood units. Aware of the growing impact of modern Brazilian architecture abroad, the DHP witnessed the spread of the Rio de Janeiro metropolis and the rapid spread of the city's shantytowns, the *favelas*. Its answer to these problems was to build public housing estates.⁴

From 1948 to 1960, four neighborhood units were built along these lines, but none of them as originally designed.⁵ The DHP's initiative was part of a series of efforts to solve Rio de Janeiro's housing crisis, such as the housing policies of the Institute of Retirements and Pensions.⁶ Pedregulho – whose official name is “Prefeito Mendes de Morais Residential Complex” but is also known as “Minhocão” [big worm] – was the most recognizable of such attempts, receiving great attention from experts in the field, starting in 1950,⁷ when it was first delivered, through to the present, after its restoration.

As designed by modernist architect and urban planner Affonso E. Reidy⁸ – who was also the Director of Urbanism for the city of Rio de Janeiro – the complex was conceived as an “autonomous neighborhood unit” featuring social, medical and educational services; collective vertical blocks, with large open spaces; separation of pedestrian from vehicular traffic; social services directed towards educating residents on a new way of living; and access to the housing units through lease agreements, with the rent calculated as a percentage of salary and deducted from their paychecks. The formal repertoire of Brazilian modern architecture⁹ is easily recognized in the use of various elements such as *brises soleils*, *cobogós* [perforated breeze block screens], *pilotis*, free plan, and the association with fine arts (works by Roberto Burle Marx (1909-1994) and Anísio Medeiros (1922-2003) were featured on the exterior and interior murals).

The combination of Pedregulho's social purpose and unique architectural solution, and Carmen Portinho's political involvement, caused the complex to be highlighted in several international magazines, drawing interest from Brazilian and international architects.¹⁰ However, the construction process was rather tumultuous, as the project came under heavy criticism for its high costs and sophistication level, and was considered an impractical solution for Rio de Janeiro's worker housing problem. The first buildings, the gardens and the pool were delivered in 1950-1951, while the rest of the buildings and facilities took another decade to be completed. The large, meandering housing block – Block A – was built in the 1950s, and by the time it was delivered the DHP was nearly defunct and the city of Rio de Janeiro's housing policies had taken other directions.¹¹

Despite the difficulties associated with construction and maintenance, the residential buildings were occupied and managed by social workers from the DHP and Carmen Portinho throughout the 1950s.¹² Problems with managing the communal laundry area, the pool, the cleaning of

shared spaces and resident admission were present from the beginning, at the same time that the building received extensive coverage in the specialized media.¹³ These problems became even more pronounced in 1962, when the DHP became defunct and residents began managing these facilities, even though the State retained the ownership of the apartments. The lack of maintenance of the common spaces and the deterioration or closing of the shared facilities (laundry, market and health clinic), combined with the lack of centralized management, led to the physical deterioration of the building complex. All of this led to increasing the demand for renovation, often driven by an idealized image of the complex featured in the media shortly after its completion, and denial of its present-day uses and contradictions.

Restoring the icon: criteria and challenges for intervening in a social housing project

Aging, unplanned uses and maintenance issues affected several buildings from the mid-20th century.¹⁴ In many cases, critics argued that these buildings were inadequate or that the Modern Movement had failed. Social housing projects are part of this perceived frustration with the modern construction experience. In addition to the physical wear and tear, the buildings were also subject to the failure narrative and misuse.¹⁵ Pedregulho Housing Complex is very representative of this process, as it reached the 1980s with the marks of time acquired through years of lack of maintenance and neglect by public authorities. But in Brazil, unlike many European countries, modern architecture has not been the target of explicit criticism. On the contrary, the legacy of the great masters of Brazilian architecture was developed in the 1980s, and their achievements celebrated. Criticism of the Modern Movement was faint, and the idea that it had run its course lived side-by-side with the exaltation of the great masters of Brazilian architecture, many of whom were still alive, and were subjects of countless tributes and publications.¹⁶

Despite being neglected by the government, residents appropriated the buildings over the years – even though they did not have title to the property – and made renovations and internal improvements. In the 2000s, about 50% of the residents had arrived during the first waves of occupation in the 1960s, and consisted mostly of service providers, industry workers and government employees.¹⁷ They were mainly from a working class that experienced upward mobility during Brazil's period of economic stability, with access to consumer goods symbolizing the country's recent social transformations.¹⁸ Since the properties belong to the Rio de Janeiro State Government, which has never managed the occupation of the apartments, the units were transferred or sold through contracts between the parties. In this scenario, in which residents were faced with the government's inaction and were visited by many different architects, expectations grew for the restoration.

Even though it is listed as a Rio de Janeiro heritage site,¹⁹ there has not been adequate conservation of the buildings

and the decision to carry out the restoration project resulted from inadequate works performed by public authorities in Block A, the curvilinear emblematic housing building. From this moment on, a movement to properly renew the building grew stronger. What sets Pedregulho's renovation project apart in the context of some of the other post-war housing projects is that it was listed as a cultural heritage site and, therefore, worthy of restoration. The effort to have it recognized as a cultural asset was led by the architect and Professor Alfredo Britto (1935-2015), who played a key role in the entire process. Along with the residents' association of the complex, represented by its director Hamilton Marinho (1957-), they involved class entities and public authorities, pushing for the owner of the building to hire contractors and carry out the necessary works.²⁰

In 2005, a Strategic Plan for the works was developed by Alfredo Britto's architectural firm, describing the architectural problems of each building in the residential complex, as well as the main demands of the community. This plan was the basis of the preliminary project for the recovery and restoration of the housing complex between 2009 and 2010. The conceptual and architectural complexity of the original design and the implications of intervening in a building from the modern period, plus the poor state and the various forms of occupation of the residential and non-residential buildings, required a cautious and carefully planned approach.²¹ In the challenge of restoring Pedregulho, the methods and criteria for the recovery and restoration of monuments produced by the Modern Movement did not essentially differ from those applied to buildings from earlier historical periods.

In December 2010, works finally began on Block A, including emergency structural restoration works on the first-floor slab, removal of garbage that had been accumulating for decades on the ground floor, overhaul of the plumbing and roof, and an attempt at enclosing the complex. It is important to note that residents remained in their homes throughout the entire project, keeping a close eye on the entire process and dealing with the inconveniences. After so many years of abandonment, expectations surrounding the restoration were enormous.

The work lasted through 2015, at a total cost of 45 million reais. The size of the project presented all sorts of challenges to the architects' team, residents and workers. The two most difficult aspects, both technically and socially, were replacing the west-facing window frames and the *cobogós*. Both elements were emblematic of "modern carioca architecture" and its relationship with the tropical climate. Constant use and lack of maintenance led to the progressive replacement of the original wooden frames, whose complex design featuring articulating shutters and glass panels were impractical and offered poor thermal efficiency. When the project began, only 8 of the 272 original frames were still in place. After long negotiations with the residents, who viewed their replacement frames as a right and an improvement, both sides agreed to installing new aluminum windows, painted in the same shade of blue as the original ones. This solution, widely debated among experts, was aimed at rescuing the original design of the project, while, at the

01 Affonso E. Reidy, Carmen Portinho, Pedregulho Housing Complex, Rio de Janeiro, Brazil, 1948-1960.
© Henry-Russell Hitchcock, *Latin American Architecture since 1945*, New York, Museum of Modern Art, 1955, 130.



02 Affonso E. Reidy, Carmen Portinho, Pedregulho Housing Complex, Rio de Janeiro, Brazil, 1948-1960.
© Grupo de Pesquisa Pioneiros da Habitação Social no Brasil, c. 1950.

same time, ensuring the longevity of the historic buildings by using more durable materials.

The windows episode shows how the appropriations and uses of residents in residential buildings over time gave new meaning to modern design paradigms, such as the concern with thermal comfort in the “carioca school” of architecture. The windows were a very special element in the composition of the Pedregulho Housing Complex, which, together with *brise soleils*, were used in almost all buildings of the complex to enclose circulation areas or passages.

In Block A, *cobogós* were installed in the corridors leading to the housing units. Its long winding corridors had been widely photographed and publicized. But by the time the restoration project began, they had been degraded due to heavy usage and decay over time. Since the original ceramic pieces were no longer available on the market, they were replaced by currently manufactured pieces of different formats. An important perception of the uniqueness and language of the work, as the residents sought to keep the building’s unique features intact as much as possible. The “patchwork” aspect caused by panels with missing or randomly replaced parts was one of the aspects that bothered visitors the most. Faced with the enormous difficulty of finding suppliers to make new parts (a process that took two years), the restoration team chose to replace most of the *cobogó* panels.

The restoration works had a direct impact on the daily lives of residents. According to reports by Hamilton Marinho,²² nearly all units had some type of renovation work done during the restoration project – that affected only the external parts –, especially in the spaces that were deemed most fragile: the kitchen and the bathroom. The extensive renovations did not increase the real estate value significantly, since the residents do not yet have a legal title to the apartments. It is believed that once the ownership issue is solved, the apartments will increase in value, and be worth about as much as similar apartments in the neighborhood. Even though the increase in value coincided with the start of the renovation project, it did not lead to significant changes. These transformations occurred as residents began to age and accessibility to the building became an issue. Because Pedregulho is located atop a steep mountain, with no elevators and an internal staircase in the duplex apartments, accessibility to and around the apartments has become an increasing concern for those who have lived there since the 1960s.

Here lies one of the major contradictions of the housing project: the collapse of the public housing project, mainly due to government’s inaction. Residents had to take on all the complex building management tasks, and the neighborhood unit never functioned as planned. Without proper



03 Affonso E. Reidy, Carmen Portinho, Pedregulho Housing Complex, Rio de Janeiro, Brazil, 1948-1960. Alfredo Britto, restoration, 2005-2015. Block A, North facade under work, 2014. © Alfredo Britto, 2015.

management, the apartments fell into the hands of the private market, albeit not entirely. Apart from the affection and appreciation that residents have for the complex, there are basically two aspects that contributed to keeping the original residents, in a way, to maintaining the project's social nature: its geographical location in Rio de Janeiro – while generally considered a good area, it is an industrial neighborhood, far from being coveted by the middle class –, and the lack of ownership.

Although it is still a workers housing building, the increase in property value is a reality waiting to happen. There is no risk that the residents will be evicted, given the continuous use and occupation over these years, but the feeling of insecurity and the expectation of ownership are evident. Demand for ownership remains a constant concern, and residents expect to have legal title to the properties at some point in the future. This will likely happen in the form of an official condominium with building fees, proper administration, and management of the newly restored building. The pending work and the need for maintenance are already real. Currently, residents pay nothing to the state and about half of them make voluntary contributions to the residents' association, which, despite its unofficial status, provides residents with trash removal and mail distribution services. Alfredo Britto, who oversaw the restoration project, suggested the formation of a permanent building committee after the works are completed to provide the necessary maintenance that the buildings never had.

In the challenge to restore the Pedregulho Housing Complex, the team supervised by Alfredo Britto restored respecting the methods and criteria that were historically established by the disciplinary field of restoration.²³ Seeking theoretical and technical rigor in the study stages and during execution of the works, the team faced unprecedented and very complex human, financial and technical challenges. Restoring a building of social housing, an icon of modern Brazilian architecture, but with a history of neglect by the government, meant having to weave restoration practice and theory. Even though the criteria for restoring modern architecture is not different from those of works from other periods, the conservation problems faced (as is typical of works of this magnitude) were very unique. Only with a thorough knowledge of the building, its construction and history, was it possible to propose solutions that would update the building as 21st century social housing and respect it as a cultural asset.

There were major technical and economic difficulties, and, in some situations, they dictated the solutions used, as in the case of the *cobogós* and the floors in common areas that needed to be replaced entirely. The stakeholders involved in the process (residents, Residents Association of the Pedregulho Housing Complex, CEHAB-Rio and Concrejato, a construction company) demanded solutions which were, at the same time, demanded by the restoration team as they sought viable solutions and commitment to the problems faced. Therefore, the Block A restoration project resulted in both the search for an ideal image of an icon

04 Afonso E. Reidy, Carmen Portinho, Pedregulho Housing Complex, Rio de Janeiro, Brazil, 1948-1960. Alfredo Britto, restoration, 2005-2015, Block A, New *cobogó* panels viewed from the interior. © Alfredo Britto, 2015.



of Brazilian modern architecture and, at the same time, in updating the social housing nature of this building, in line with present-day demands.

The restored complex and challenges for the near future

Throughout its history, the Pedregulho Housing Complex suffered excessively from government neglect and the administrative separation of the residential units from the facilities. The restoration of Block A was the first major challenge faced on the road to recovery for the residential complex. The gardens designed by Roberto Burle Marx still have not yet received proper conservation. The identified problems include the change of use or the abandonment of the other buildings of the “neighborhood unit”, such as the laundry, the health clinic and the day care center and the separation of the school from the rest of the complex.

Other issues still need to be addressed, either through renovation or in the management phase of the complex after the Block A works are completed, such as the deactivation of the laundry, garbage management, the increase in the number of cars, security (which may or may not involve installing a fence around the complex), recovery and new use of abandoned buildings (health clinic, laundry and market). For Alfredo Britto,²⁴ the urgent task of the post-renovation period was to create a Permanent Maintenance Committee for the building to handle any repairs and new interventions, which has not yet happened.

The challenges that arise from now on are those of a building that is perpetuated for future generations both as housing and cultural heritage, and which must adapt to the reality of the 21st century, either through the private actions of its residents or through the works carried out by the State. The pioneering nature of the restoration of a social housing project in Brazil does not allow us to infer what shapes this cultural asset will take in the future, as a living and inhabited organism. It seems to us that the management and administration of the public asset should reiterate its popular housing character, providing conditions for it to remain a testimony to the history of social housing in Brazil



05 Affonso E. Reidy, Carmen Portinho, Pedregulho Housing Complex, Rio de Janeiro, Brazil, 1948-1960. Block A, Southwest facade before the restoration. © Flávia Brito do Nascimento, 2000.

and to be recognized for its social, historical, symbolic, cognitive and cultural attributes, as well as for its use.

Notes

- 1 About the relationship between public and private works of Carmen Portinho and Affonso E. Reidy refer to Flávia Nascimento, “Da rede à BKF: a casa privada e o conjunto público de Carmen Portinho e Affonso Reidy”, in Flávia Brito do Nascimento, Joana Mello de Carvalho e Silva; José Tavares Correia de Lira, Silvana Barbosa Rubino (ed.), *Domesticidade, gênero e cultura material*, São Paulo, Editora da Universidade de São Paulo, 2017. About the Department of Popular Housing see Flávia Nascimento, *Entre a estética e o hábito: o Departamento de Habitação Popular, Rio de Janeiro, 1946-1960*, Rio de Janeiro, Secretaria Geral das Culturas, 2008.
- 2 For the history of the Department of Popular Housing see Flávia Nascimento, *op. cit.*, and Flávia Nascimento, “Houses for Rio: City Hall’s Department of Popular Housing (1946-1960)”, in Alfredo Britto (ed.), *Pedregulho, um sonho pioneiro da habitação popular no Brasil*, Rio de Janeiro, Edições de Janeiro, 2015, 20-53.
- 3 Carmen Portinho’s biography has been explored in Ana Luiza Nobre, *Carmen Portinho: o moderno em construção*, Rio de Janeiro, Relume Dumará/PCRJ, 1999; and Carmen Portinho, *Por toda a minha vida*, Rio de Janeiro, Eduerj, 1999.
- 4 On her return to Brazil, Carmen Portinho wrote a series of newspaper articles on social housing presenting what she had seen in England and also her ideas on the matter. Carmen Portinho, “Habitação Popular”, *Correio da Manhã*, 17th March 1946.
- 5 The other housing complexes designed by DHP are Paquetá, Marquês de São Vicente and Vila Isabel, all partially built in Rio de Janeiro’s North Zone.
- 6 Nabil Bonduki, Ana P. Koury (ed.), *Os pioneiros da habitação social*, São Paulo, Editora da Unesp/Sesc, 2014; Nilce Aravecchia-Botas, *Estado, arquitetura e desenvolvimento: a ação habitacional do Iapi*, São Paulo, Editora Fap Unifesp, 2016; Ana P. Koury, “Modern housing estates and the production of the Brazilian city (1937-1960)”, *Planning Perspectives*, Vol. 24, 2019.
- 7 Brazilian modern architecture received international attention during WWII. MoMa’s exhibition *Brazil Builds* and the Catalogue were important means of recognizing the works in the country. Zilah Quezadodecker, *Brazil built: the architecture of the modern movement in Brazil*, London, New York, Spon Press, 2001; Philip L. Goodwin, *Brazil Builds. Architecture New and Old 1652-1942*, New York, The Museum of Modern Art, 1943.
- 8 For the life and works of Affonso E. Reidy see Nabil Bonduki (ed.), *Affonso Eduardo Reidy*, Lisboa, São Paulo, Instituto Lina Bo e P. M. Bardi, 2000.
- 9 Carlos Martins, “Hay algo de irracional...”, *Block*, No. 4, December 1999, 8-22; Hugo Segawa, *Arquiteturas no Brasil: 1900-1990*, São Paulo, Edusp, 1997.
- 10 It was published in magazines such as *Architectural Forum* (1947), *Domus* (1948, 1951), *L’Architecture d’Aujourd’hui* (1949, 1954), *Architectural Record* (1950, 1952, 1958), *The Architectural Review* (1950, 1952, 1954), *Techniques et Architecture* (1951), *El Emará & Fonoun* (1952), *Werk* (1953), *Progressive Architecture* (1955), *Architect & Buildings News* (1956), *Arquitetura México* (1957/1958), *Aujourd’hui, art et architecture* (1955), *Zodiac* (1960). For the reception of Brazilian modern architecture abroad see Nelci Tinem, *O alvo do olhar estrangeiro: o Brasil na historiografia da arquitetura moderna*, João Pessoa, Universitária, 2006.
- 11 Flávia Nascimento, 2015, *op. cit.*, 20-53.
- 12 DHP, *Departamento de Habitação Popular – Relatório do Serviço Social*, Rio de Janeiro, DHP, 1961.
- 13 “Má Administração vem prejudicando o Conjunto do Pedregulho”, *Tribuna da Imprensa*, Rio de Janeiro, 26th January 1953.

- 14 Theodore Prudon, *Preservation of Modern Architecture*, Hoboken, Wiley, 2008.
- 15 Susan Macdonald, “Materiality, monumentality and modernism: continuing the challenges in conserving Twentieth-century places”, *(Un)loved Modern. Conservation of 20th Century Heritage Conference. Identify. Manage. Conserve*, Sydney, Australia, 2009; M. Glendinning, “Ennobling the ordinary: Post War housing and the challenge of change”, *docomomo Journal* 39, Paris, **docomomo** International, 2008, 18-22.
- 16 Flávia Nascimento, *Blocos de memórias: habitação social, arquitetura moderna e patrimônio cultural*, São Paulo, Edusp, 2016.
- 17 Helga Silva, *Arquitetura moderna para a habitação popular: a apropriação dos espaços no Conjunto Residencial Mendes de Morais (Pedregulho)*, Rio de Janeiro, Master Thesis, PROARQ UFRJ, 2006.
- 18 Renato Lemos, “Pedregulho, a Human Landscape”, in Alfredo Britto, *Pedregulho, o sonho pioneiro da habitação popular no Brasil*, Rio de Janeiro, Edições de Janeiro, 2015, 160-163.
- 19 Decree No. 6383/86, Rio de Janeiro’s City Hall.
- 20 Alfredo Britto, *Pedregulho, o sonho pioneiro da habitação popular no Brasil*, Rio de Janeiro, Edições de Janeiro, 2015.
- 21 GAP/Grupo de Arquitetura e Planejamento, *Plano Estratégico – Projeto de Recuperação do Conjunto Residencial Prefeito Mendes de Moraes/Pedregulho*, Rio de Janeiro, GAP/CEHAB, 2004.
- 22 Interview with Hamilton Marinho on 25th July 2019, President of the Residents Association of the Mendes de Morais Housing Complex.
- 23 Susan Macdonald, *Modern Matters: Principles and Practice in Conserving Recent Architecture*, Shaftsbury, Donhead, 1996; Simona Salvo, “Restauro e ‘restauros’ das obras arquitetônicas do século 20: intervenções em arranha-céus em confronto”, *Pós: Revista do Programa de Pós-graduação em Arquitetura e Urbanismo da FAU-USP*, Vol. 23, São Paulo, 2008, 199-211; Beatriz Köhl, “Preservação da arquitetura moderna e metodologia de restauro”, *Pós: Revista do Programa de Pós-graduação em Arquitetura e Urbanismo da FAU-USP*, Vol. 19, São Paulo, 2006, 198-201; Theodore Prudon, *op. cit.*; Fernando Moreira, “Os desafios postos pela conservação da arquitetura moderna”, *Revista CPC*, No. 11, São Paulo, Nov. 2010-Apr. 2011, 152-187.
- 24 Alfredo Britto, *op. cit.*

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Flávia Brito do Nascimento

(Brazil, 1972) Historian, architect, and Professor at the University of São Paulo, School of Architecture and Urbanism. Post-doctoral fellow at *Université de Paris 1, Panthéon-Sorbonne* (2019-2020). Wrote several articles on heritage, social housing and Modern Movement in Brazil and the book *Blocos de Memórias: habitação social, arquitetura moderna e patrimônio cultural* (2016).