

Repurposing of industrial remnants in the city of Rio de Janeiro

Refuncionalização do remanescente industrial na cidade do Rio de Janeiro

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Abstract

This article proposes reflections on the processes of deindustrialization and repurposing of former factories, railway stations, and port warehouses, as well as their impacts on the urban space, based on a survey and a mapping of industrial remnants in the city of Rio de Janeiro. The study is grounded on bibliographical and documentary research, and the theoretical framework revolves around the concepts of repurposing, industrial heritage, and industrial remnants. The findings reveal that most repurposed remnants have functions related to culture/art and consumption, while a quarter of the industrial remnants are currently abandoned and without function. It is concluded that, despite the neglect and abandonment of these facilities, there are opportunities to devise pathways for creating new uses for these industrial remnants.

Keywords: industrial remnants; repurposing; deindustrialization; industrial heritage; Rio de Janeiro.

Resumo

Este artigo propõe reflexões sobre os processos de desindustrialização e de refuncionalização de antigas fábricas, estações ferroviárias e armazéns portuários, e seus impactos no tecido urbano a partir de levantamento e mapeamento dos remanescentes industriais na cidade do Rio de Janeiro. A pesquisa baseia-se em levantamento bibliográfico e documental, e as referências teóricas giram em torno dos conceitos de refuncionalização, patrimônio industrial e remanescentes industriais. Os resultados revelam que a maioria dos remanescentes refuncionalizados hoje possuem funções ligadas à cultura, à arte e ao consumo, e um quarto dos remanescentes encontram-se, atualmente, abandonados e sem função. Conclui-se que, apesar de certo descaso e abandono dessas instalações, existem oportunidades para pensar caminhos para a criação de novos usos para esses remanescentes.

Palavras-chave: remanescentes industriais; refuncionalização; desindustrialização; patrimônio industrial; Rio de Janeiro.



Introduction

Processes of productive restructuring and deindustrialization (Harvey, 2001, 2014), the aestheticization of everyday life and gentrification (Featherstone, 1995), and urban interventions (Leite, 2006) have transformed regions, cities, and neighborhoods around the world. In the case of Rio de Janeiro, these processes intensified in the 21st century due to preparations for two major sporting events: the FIFA World Cup in 2014 and the 2016 Olympic Games. The interventions and changes carried out in Rio's port area are paradigmatic;¹ however, other parts of the city also received urban redevelopment projects that further highlighted the deindustrialization process the state capital has undergone, which began to accelerate in the 1970s.

As a result of Rio de Janeiro's deindustrialization, many industrial facilities were either abandoned or refunctionalized, being used as creative spaces (collectives of artists, artisans, designers, architects), cultural spaces (museums, cultural centers, performance venues), or consumer spaces (shopping malls, supermarkets, and bar and restaurant complexes), or were converted into residential areas.

From the perspective of Santos (1985, 1998, 2002), refunctionalization is understood here as a process or procedure through which a new function and new rationality, responding to new socioeconomic needs, are assigned to an urban object. It refers to the adaptation of urban objects to the uses and consumptions of a given historical moment. The refunctionalization

of factories, warehouses, port facilities, and railway stations occurs within the context of the shift from an industrial economy to a post-industrial economy, heavily based on creative industries² and the service sector.

The phenomenon of refunctionalization of industrial facilities is observed in cities around the world, and while some of the most well-known and studied cases are in Europe, such as LX Factory in Lisbon (Gabriel et al., 2013), Indústria Robinson in Porto Alegre (Pacheco, 2020), Palo Alto in Barcelona (Oliveira, 2015), and La Friche in Marseille (Andres, 2011), it is a phenomenon affecting both central and peripheral countries. In Brazil, there are notable examples, such as the iconic SESC Pompéia in São Paulo, an architectural project by Lina Bo Bardi.

Fontes (2006) notes that "the preservation of industrial spaces, though still on a small scale, is already a reality in Brazil" and cites successful refunctionalization experiences, as well as mobilizations and initiatives by community social movements for the preservation of factories and workers' neighborhoods in São Paulo. In Rio de Janeiro, such experiences and mobilizations are scarcer. There are few initiatives aimed at creating organizations for studies, research, and mobilizations focused on preserving industrial heritage, coordinating civil society, labor unions, and business entities, and seeking alternatives for the revitalization or refunctionalization of industrial heritage, such as the Brazilian Committee for the Preservation of Industrial Heritage.

This paper aims to present reflections on the processes of deindustrialization and refunctionalization of old factories, railway

stations, and port warehouses, and their impacts on the urban space, based on the survey and mapping of industrial remnants in the city of Rio de Janeiro.

Rio de Janeiro: from industry to services

According to Baer (1985), Brazil's industrialization began in the second half of the 19th century in Rio de Janeiro, when the then capital of the Empire of Brazil started receiving significant investments in the industrial sector. In the words of Brasil (2022), factors contributing to this condition included the arrival of the Portuguese Royal Family in Brazil in 1808, the opening of the ports that same year, and the repeal of the decree that prohibited all industrial activities in the Colony in 1809. However, it was the Alves Branco Tariff, established in 1844, which raised import duties, and the Eusébio de Queirós Law of 1850, which banned the slave trade, which allowed Rio de Janeiro to make substantial progress in its industrialization process. "These drives toward industrialization in the city of Rio de Janeiro extended from the imperial period through the early decades of the Republic" (Brasil, 2022, p. 15).

By the end of the 1880s, Rio de Janeiro already had the highest concentration of workers and factories in the country (...) This was due to the accumulation of capital from agricultural enterprises or foreign trade businesses; the ease of financing from major banks headquartered in the capital of the country; a reasonably sized consumer market, covering not only the city but also the tributary region served by the railway network; a large concentration

of low-skilled workers; and the role of steam power, which replaced water as the driving force. (Oliveira, 1992, p. 95)

According to Albernaz and Diógenes (2022), the first industries in Rio de Janeiro were established in the downtown area due to the ease of production distribution and in the surrounding areas with access to hydraulic power. Due to changes in energy sources, political and economic shifts, and the growth of the urban population, factories began to relocate to the suburbs of the northern zone. These areas not only offered large and affordable land but also had access to electrical power and railway networks, allowing for efficient product distribution and easy access to raw materials.

Ribeiro (2002) notes that Rio de Janeiro's pioneering role and leadership in industrialization lasted until the early 20th century, when São Paulo overtook it, primarily due to the excess profits generated by São Paulo producers from coffee exports. "This loss of industrial ranking brought, in the long term, a new profile to the city: that of a 'Marvelous' city, while still remaining an industrialized city" (Brasil, 2022, p. 4). Cavalcanti and Fontes (2011) argue that over time, there has been a certain erasure of Rio de Janeiro's industrial past, "the memory of which is little visible or valued in the social imagination related to the city" (Cavalcanti & Fontes, 2011, p. 12). In an interview with *Revista Museu*, Fontes emphasizes this sentiment:

The construction of Rio's official identity highlights its role as the federal capital and its natural beauty. The city's industrialization established strong connections with urban geography, the transportation system, the formation of

various neighborhoods and slums, as well as with numerous cultural aspects of Rio, such as *samba*. This is not to mention the economic and political impacts. Social struggles in the city during the 20th century are incomprehensible outside the context of the industrial world. However, this industrial past seems to have been largely erased from the history and memory of Rio de Janeiro. (*Revista Museu*, 2018, no page)

According to Azevedo (2010), from the second half of the 1970s, Rio de Janeiro entered a period of pronounced economic decline, particularly in the industrial sector. Due to the process of industrial decentralization in Brazil, encouraged by the federal government and which expanded the manufacturing network beyond the Southeast Region and major metropolitan areas to other regions and smaller cities, and the more general process of deindustrialization, there was a marked increase in factory closures in Rio de Janeiro.

Rowthorn and Ramaswamy (1997), in their study of this process in developed countries, describe deindustrialization as a continuous and widespread reduction in the share of manufacturing employment in total employment within an economy, which is an intrinsic characteristic of economic development. In the opinion of Centeno (2019), Rowthorn and Ramaswamy (1997) argue that there is a correlation between deindustrialization and the development of the tertiary sector, as most factory workers are reallocated to the service sector.

However, Silva and Lourenço (2014) argue that the Brazilian case showed different nuances, characterized by an early deindustrialization, where “the share of

industrial employment loses relative space to other sectors permanently, especially services; however, the turning point occurs before per capita income reaches that of a developed country” (Silva & Lourenço, 2014, p. 71). Additionally, Tregenna (2009) notes that early deindustrialization is also marked by its occurrence before the country’s industrial sector has reached maturity.

From a complementary perspective, Brasil (2022) contends that deindustrialization in Brazil resulted from successive economic crises triggered by trade and financial liberalization, economic deregulation, high inflation, competition with China, and the importation of neoliberal ideals from former President Fernando Henrique Cardoso’s administration.

In this context, Centeno (2019) points out that new developmental economists argue that the deindustrialization process in Brazil began in the final decades of the 20th century due to the “perverse combination of trade and financial liberalization, the appreciation of terms of trade (a period of commodity price increase), and an appreciated exchange rate” (Centeno, 2019, p. 84).

The trade liberalization proposed during the Collor and FHC administrations did not succeed in inducing investment in research and development within companies, increasing international market penetration, or producing a positive shock for the competitiveness of the Brazilian industrial sector. (...) Therefore, trade liberalization should not be considered strictly perverse in its intent, but it was an ill-conceived policy due to its rapid implementation and the macroeconomic environment of an appreciated real exchange rate and high real interest rates since the stabilization

of prices in the mid-1990s, leading to a loss of competitiveness for the national industry both in the foreign and domestic markets. (Centeno, 2019, p. 104)

The author also highlights a correlation between Brazilian deindustrialization and the development of the primary sector, focusing on commodity production. The deindustrialization process is said to have favored “already developed and competitive sectors, primarily those with natural comparative advantages (commodities)” (Centeno, 2019, p. 94), resulting in the disappearance of industrial sectors with even nascent competitive advantages and contributing to the development of an economy oriented towards less sophisticated products.

Although deindustrialization occurred throughout Brazil, Sobral (2017) notes that the state of Rio de Janeiro was one of the epicenters of national deindustrialization. Filho, Campos, and Brandão (2018) indicate that in this process of deindustrialization and economic reprimarization, the economy of the State of Rio de Janeiro lost space and importance within the broader Brazilian economy:

[...] overtaken by the epicenter of accumulation – which has become increasingly hypertrophied in São Paulo – and by new specialized hubs in the export economy, such as regions rich in minerals and with significant agricultural importance – virtually irrelevant in the state. (Filho, Campos, & Brandão, 2018, no page)

According to Oliveira & Rodrigues (2009) and Abreu et al. (2019), as a consequence of the deindustrialization process in the capital of Rio de Janeiro, the city has established itself as a center for services and creative industries, while

other cities in the state have gained industrial status through new efforts to industrialize the state, initiated in the late 20th century, such as in the Baixada Fluminense cities of Nova Iguaçu and Duque de Caxias. “The city of Rio de Janeiro [...] would reshape its economic weight by reaffirming its role as a provider of modern services, while the Baixada Fluminense would strengthen its legacy with the consolidation of industries” (Oliveira & Rodrigues, 2009, p. 135).

Abreu et al. (2019) suggest that this condition reflects the historically constructed relationship between capital and the Baixada Fluminense:

[...] areas like the Baixada Fluminense received activities deemed ‘undesirable,’ such as the installation of industries, slaughterhouses, and dumps, with the growing social and functional division of urban territories. Thus, while the wealthier areas of the capital came to be regarded as ‘commerce’ and ‘service’ areas, particularly focusing on tourism and business, the suburbs and peripheral cities of Rio were assigned the ‘dirty’ uses of the city, creating a new segmentation of urban space. (Abreu et al., 2019, p. 3)

This relationship between the industrial sector and the image of cities also reflected within the capital of Rio de Janeiro, with the creation of industrial districts in the 1970s that transformed the western zone into a large industrial park, at the expense of the downtown and northern zones. According to Brasil (2022), the creation of industrial districts in the western zone was both a way to mitigate the deindustrialization process and the means to generate a population shift of low-income residents from the downtown and southern areas of the city, which underwent

the largest urban interventions. “The city began to be organized not only to be beautiful but also efficient, exploiting new areas like the western zone and freeing the urban space from industries, which moved to peripheral areas” (Brasil, 2022, p. 78).

In the 1960s, the apparent concentration of the population and productive activities in the North Zone and Downtown Area of Rio de Janeiro (then the state of Guanabara) was hindering industrial growth. This situation was beginning a process of factory relocations to other states and, primarily, to neighboring municipalities of the state of Rio de Janeiro. In an attempt to halt the deindustrialization of the municipality, the former state of Guanabara government created five industrial districts (Fazenda Botafogo, Palmares, Santa Cruz, Paciência, and Campo Grande). With the exception of Fazenda Botafogo, four of these districts are located in the Western Zone of Rio de Janeiro. (Damas, 2008, p. 8)

The closure and relocation of industries, as part of the deindustrialization process in Rio de Janeiro, left behind various industrial facilities that either became abandoned or were refunctionalized as residential areas, consumer spaces, or creative hubs. Undoubtedly, the deindustrialization process in the capital has had a range of socioeconomic impacts on the city, most intensely affecting the urban space and the lives of people living around the industrial remnants. According to Cavalcanti & Fontes (2011), the correlation between deindustrialization and increased crime, social inequalities, and urban degradation, identified by social scientists in various cities in the United

States and Europe (Beynon, Hudson, & Sadler, 1996; Cowie & Heathcott, 2003), has also been observed in Rio de Janeiro. Paulo Fontes further points to the emergence of drug trafficking and increasing marginalization in areas where industrialization was most prominent in Rio de Janeiro; he notes that “the dismantling of local identity due to factory closures and the subsequent rise in unemployment have exacerbated the growing violence we experience” (*Revista Museu*, 2018).

Refunctionalization and preservation of industrial remnants and heritage

As noted in the Introduction of this essay, in the words of Santos (1985, 1998, 2002), refunctionalization is understood here as a process or procedure through which a new function and new rationality, responding to new socioeconomic needs, are assigned to an urban object. It is, therefore, a phenomenon of adapting urban objects to the uses and consumptions of a given historical moment. The refunctionalization of factories, warehouses, port facilities, and railway stations occurs within the context of the shift from an industrial economy to a post-industrial economy.

As the economy profoundly changes, as well as the corresponding society, and as the types of economic and other relationships substantially shift, cities rapidly become something different from what they were previously. (Santos, 1985, p. 34)

According to Santos (1985), the analysis of transformations in urban space can be approached from the perspectives of production instances or societal structures. However, the author envisions a new possibility for analysis through four fundamental categories for understanding spatial production: structure, process, function, and form. These categories define space in relation to society, as “whenever society (the social totality) undergoes a change, the geographical forms or objects (both new and old) assume new functions” (Santos, 1985, p. 36). Thus, in addition to highlighting the impact of the social totality on space, Santos advocates for the interrelation between the four categories, such as the connections between form and function.

If form is primarily a result, it is also a social factor. Once created and used in the execution of the function assigned to it, the form often remains waiting for the next dynamic shift in society, when it will likely be called upon to fulfill a new function. (Ibid., p. 41)

Thus, Santos (1985) presents the concept that space and geographical objects are impacted by social and economic transformations, leading to changes in their categories of structure, process, function, and form. Although he does not provide a definitive definition of refunctionalization in his works, Santos addresses this process significantly, primarily through the analysis of the category of function, on which social transformations act “demanding new functions and assigning different values to geographical forms” (ibid., p. 43).

Sotratti (2015) associates refunctionalization with a crucial strategy within a model of strategic urban planning, consisting of “the process of transforming the functions of architectural elements from a specific past historical period.” It would thus be a consequence of the socio-spatial restructuring of a city, led by certain social groups, and could encompass buildings, neighborhoods, cities, or even entire regions. The author understands that strategic refunctionalization is related to functions such as tourism, culture, business, commerce, and residences. However, while the economic potential should be considered, Sotratti warns that the first step in refunctionalization should be to study the symbolic and architectural importance of the heritage, ensuring the appreciation of history and memory. To determine if a refunctionalization event has been successful, the author argues that one should observe whether the objectives have been achieved or if deviations have occurred, such as merely enhancing the consumerist and spectacular appeal of the spaces. Ruivo (2018) also supports the idea that, despite refunctionalization being strongly associated with the economic advantages it can offer, this process stands out primarily for its sustainable potential and the historical and identity value preserved through the installation, thus rescuing the city’s memory.

In the contemporary context, the phenomenon of refunctionalization has become more evident in industrial spaces. According to Jesus (2019), it is an obvious response to the demands of the post-industrial city, considering that many buildings are unused due to factors such as globalization making the market more

competitive, leading to the closure of industries, and the relocation of facilities to places with cheaper labor and land, which may be within the same city or in other countries.

Refunctionalization of an industrial facility is deemed successful when its historical and symbolic value is preserved. This introduces an additional focus on the issue of cultural heritage—more specifically, industrial heritage.

Smith (2006) advocates a notion of heritage as a cultural and social process in transformation that seeks meaning for the present and as an act of remembrance and construction of memories that shape a community. According to the author, the concept of heritage should not center on ownership and preservation but on the transmission of knowledge and memory, as heritage is not merely a static materiality belonging to the past, but primarily a transforming cultural process.

In the Brazilian context, according to Brasil (2022), cultural heritage emerged as national historical and artistic heritage at the dawn of the Republic, associated with notions of identity and nation. The movement gained momentum during the Vargas Era, heavily influenced by the modernist movement, when the National Historical and Artistic Heritage Service (SPHAN) was established in 1937. By the late 20th century, a more comprehensive notion of heritage had consolidated in the country, aligning with global changes. This paradigm shift is evident in the Brazilian Federal Constitution of 1988, which defines cultural heritage as the set of material and immaterial goods, analyzed individually or collectively, that bear reference to the identity, action, and memory of the various groups forming Brazilian society.

One type of cultural heritage is industrial heritage, which, according to Brasil (2022), gained worldwide prominence mainly after World War II due to the destruction of numerous industrial buildings. However, studies on industrial heritage were consolidated from 1978 onwards with the establishment of the International Committee for the Conservation of the Industrial Heritage (TICCIH), which has key milestones including the Nizhny Tagil Charter (TICCIH, 2003) and the Seville Charter (TICCIH, 2018), which established guidelines on the subject, such as the definition and scope of industrial heritage.

Industrial heritage encompasses the remnants of industrial culture that have historical, technological, social, architectural, or scientific value. These remnants include buildings and machinery, workshops, factories, mines and processing and refining sites, warehouses, centers for the production, transmission, and use of energy, transportation means and all their structures and infrastructures, as well as places where social activities related to industry developed, such as housing, places of worship, or educational sites. (TICCIH, 2003)

However, this concept was revised by the organization in the Seville Charter, which broadened its scope to also include intangible heritage, such as the memory of work, encompassing habits, celebrations, customs, and trades of industrial workers. Meneguello (2011) emphasizes that industrial heritage is a dynamic field of research and practice referring to a set of architectural assets or sites related to production logics and the elucidation of technical knowledge transmission. Beyond the protection of collections and the presence of

industrial buildings in the urban space, industrial heritage also encompasses the entire universe of work memory and workers, their practices and methods, their material and visual culture, as the industrial remnants, whether material or immaterial, establish the link between modes of production and culture.

In this context, Brasil (2022) presents a definition of industrial heritage taking into account the updates and revisions of the Seville Charter:

[...] remnants of industrial culture and their infrastructures, identified based on their historical, technological, social, architectural, and/or scientific values, both material and immaterial, recognized by various actors involved in production and/or services dynamics, or by governmental and non-governmental entities, and which necessarily carry associated with these remnants the memory of work and workers of various types and all related manifestations within labor activities dynamics. (Brasil, 2022, p. 122)

Based on these conceptual demarcations, it is understood that not every industrial remnant is considered industrial heritage, as “it is necessary to recognize innovations in these buildings that have caused profound changes in production methods and led to social, technical, and economic evolutions” (Brasil, 2022, p. 167). From the ideas of ‘industrial voids’ and ‘industrial ruins’ and the concept of ‘friches industrielles’ presented by Mendonça (2001),³ industrial remnants are considered as industrial spaces that were productive at a certain period but no longer

serve the industrial activity for which they were originally built. Thus, former industrial facilities that are no longer used, vacant, abandoned, or refunctionalized are categorized as industrial remnants. This includes not only factories but also port facilities (warehouses and storage areas) and railway stations, which are fundamental elements in the industrial production process.

Mapping industrial remnants in Rio

In the second half of the 20th century and into the 21st century, the processes of refunctionalizing industrial remnants in Rio de Janeiro intensified, according to Fontes & Cavalcanti (2011), as discussions around the conservation of industrial heritage grew more prominent.

There is a noticeable increasing contestation over the memory of (and within) various urban spaces and territories. Combined with community actions, public and academic initiatives, and private sector refunctionalization projects (such as the conversion of the former Nova América and Bangu factories into shopping malls or Carrefour supermarket chain’s attempt to occupy the old Souza Cruz factory in Tijuca, among many other examples), this has led to an emerging but growing awareness, even in Rio, of the need for and potential benefits of preserving what is termed industrial heritage. (Ibid, p. 13)

Fontes (2006) has already pointed out that one of the major challenges in preserving industrial heritage is the lack of systematic and organized data to support research and actions that ensure its survival. In this context, the following analyses are derived from the work of mapping abandoned or refunctionalized industrial sites in the city of Rio. This mapping was conducted using secondary data from bibliographic and documentary research, resulting in the identification of 56 industrial remnants in the urban landscape of the city. Please note that this number refers to large and medium-sized remnants, while smaller facilities scattered throughout the city would require fieldwork for primary data collection.⁴

The absence of a unified database on Rio's industrial remnants led to the use of various research sources. Initially, remnants categorized as industrial heritage were identified through bibliographic research, utilizing Brasil's (2022) doctoral thesis and Fajardo's (2014) Guide to Rio de Janeiro's Cultural Heritage. Additionally, documentary research was conducted on national (IPHAN), state (Inepac), and municipal (CMPC) cultural heritage protection agencies' websites. Subsequently, for mapping non-heritage industrial remnants, national newspapers and magazines, notably *O Globo* and *Folha de São Paulo*, as well as local news portals such as *Diário do Rio* and *Veja Rio*, were consulted. Based on articles published in these outlets and to supplement the information, additional sites cited in the published articles were located and accessed via hyperlinks.⁵

Based on the secondary data collected through bibliographic and documentary sources, a spreadsheet was created in Excel containing all the collected information. The research data were processed using the software, and a data table was constructed with the following columns: current name of the space; former name of the space (factory name); full address; industrial sector; year of factory opening; year of factory closure; year of refunctionalization; current owner; current function of the facilities; industrial heritage (Yes/No); state of preservation; sources (with links to individual folders containing additional information and images for each of the 56 industrial remnants). Subsequently, the information was georeferenced, and thematic maps were generated using QGIS software.⁶

Regarding the location of industrial remnants in Rio, a predominance in neighborhoods belonging to the downtown area of the city is evident: Centro, Saúde, Santo Cristo, and São Cristóvão. As noted by Albernaz & Diógenes (2023), industrialization in Rio began in the downtown area and its surroundings, serving as Brazil's major industrial hub for many years. However, starting in the 1920s, Rio's industrial sector shifted to the northern suburbs due to competitive advantages offered to industries in these areas and the incentive provided by the Agache Plan, an urban remodeling plan for Rio de Janeiro aimed at reducing the concentration in the downtown area. Quantitatively, the northern zone of Rio appears as the second region

with the highest concentration of industrial remnants. The southern and western zones have less representation. In the case of the southern zone, the historical development of this area has always been strongly associated with elite environments, focusing on residential and leisure spaces. The expansion of this region occurred simultaneously with the consolidation of the 'Marvelous City' reputation, overshadowing the city's industrial character. For the western zone, industrialization only began in the 1970s with the creation of industrial districts (Damas, 2008); consequently, there are few remnants in this area, while the number of operational industrial facilities is significant, making it the largest industrial hub in the capital today.

In terms of the industrial sectors of the remnants, there is a predominance of sectors supporting industrial production, such as infrastructure, storage, transportation, and energy. The sectors with the most representation in terms of production goods are: food, textile, and metallurgical.

In the analysis of current owners, a certain balance was identified between private properties (42.9% of the remnants are private, including those in the Voluntary Sector) and public properties (46.5% are public).⁷ Among these, the majority are municipally or federally owned, with the state of Rio de Janeiro having a minor role in owning or possessing industrial remnants.

Regarding the new functions acquired by refunctionalized industrial remnants, there is a strong predominance of these facilities becoming cultural spaces (museums, cultural centers, concert halls, and multifunctional cultural spaces), accounting for more than half of the mapped cases in the city. Examples include: the Fundação Progresso Cultural Center, an arts, education, and social project space, and the first case of refunctionalization in Rio, located in Lapa, downtown; the Bhering Factory, a former chocolate factory in the Santo Cristo neighborhood of the port area, now occupied by artists, craftsmen, designers, and other creative industry professionals; and the Pier Mauá, a complex of 17 warehouses used for cultural, musical, corporate, and gastronomic events in the port area of Rio.

Next in prominence are consumer spaces: shopping malls and supermarkets, notably, the well-studied Nova América Shopping Mall, located in Del Castilho on the site of the former Companhia de Tecidos Nova América, and Bangu Shopping Mall, which occupies the old Fábrica Bangu space, an important textile factory, with the latter being the one that preserved the most original architectural features of the factory.

One notable issue is the memory preservation of these remnants. Few of them, after refunctionalization, prominently and visibly preserve their industrial past in a way that is accessible to the public. The examples

of cultural and consumer spaces mentioned above – particularly the Fundação Progresso Cultural Center, the Bhering Factory, Nova América Shopping Mall, and Bangu Shopping Mall – are exceptions compared to the other refunctionalized remnants in Rio. Even so, these efforts are modest and of low quality, often lacking the prominence they deserve and generally going unnoticed by visitors. For instance, at Fundação Progresso (Figure 1), there is only a small table on the ground floor with a brief history of the place (Figure 2), including the period when the building housed a stove and safe factory. On the second floor, there are a few totems with photos of the old factory equipment (Figure 3). The Bhering Factory maintains a ‘Chocolate Museum,’ a

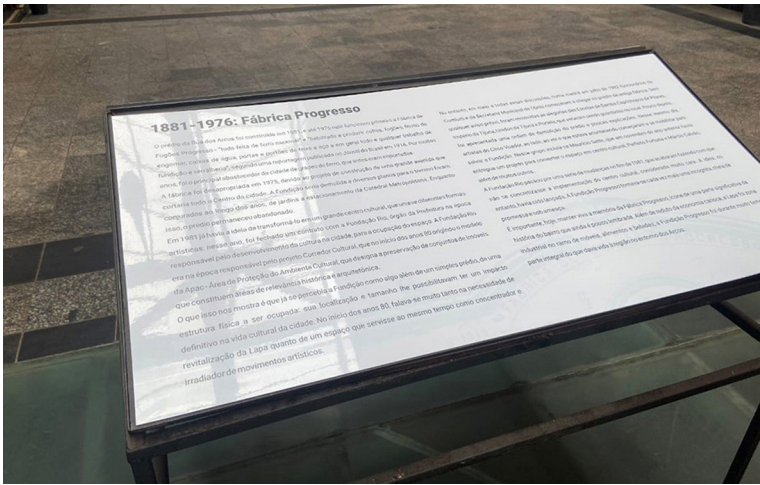
small, somewhat hidden space displaying old machinery with some explanations about chocolate-making stages (Figures 4 and 5). The museum is not even included in the brochure that lists the studios, shops, cafés, bistros, and collective facilities (restrooms, stairs, and elevators) provided to visitors at the reception (Figures 6 and 7). Regarding the shopping malls, Nova América has a plaque with a brief history of the factory near the chimney at one of the mall entrances (Figures 8 and 9). Bangu Shopping Mall has more interesting initiatives aiming to gather the collection and stories of the former weaving mill, including a memory center and some posts on Facebook (Figures 10, 11, and 12).

Figure 1 – Current façade of Fundação Progresso



Creator: Thiago Vargas, in 2024.

Figure 2 – Information table about the stove and safe factory



Creator: Thiago Vargas, in 2024.

Figure 3 – Totem with photos of the old factory machinery



Creator: Thiago Vargas, in 2024.

Figures 4 and 5 – ‘Chocolate Museum’ at the Bhering Factory



Creator: Thiago Vargas, in 2024.

Figures 6 and 7 – Bhering Factory: entrance and brochure



Creator: Thiago Vargas, in 2024.

Figures 8 and 9 – Nova América Shopping Mall: plaque and chimney



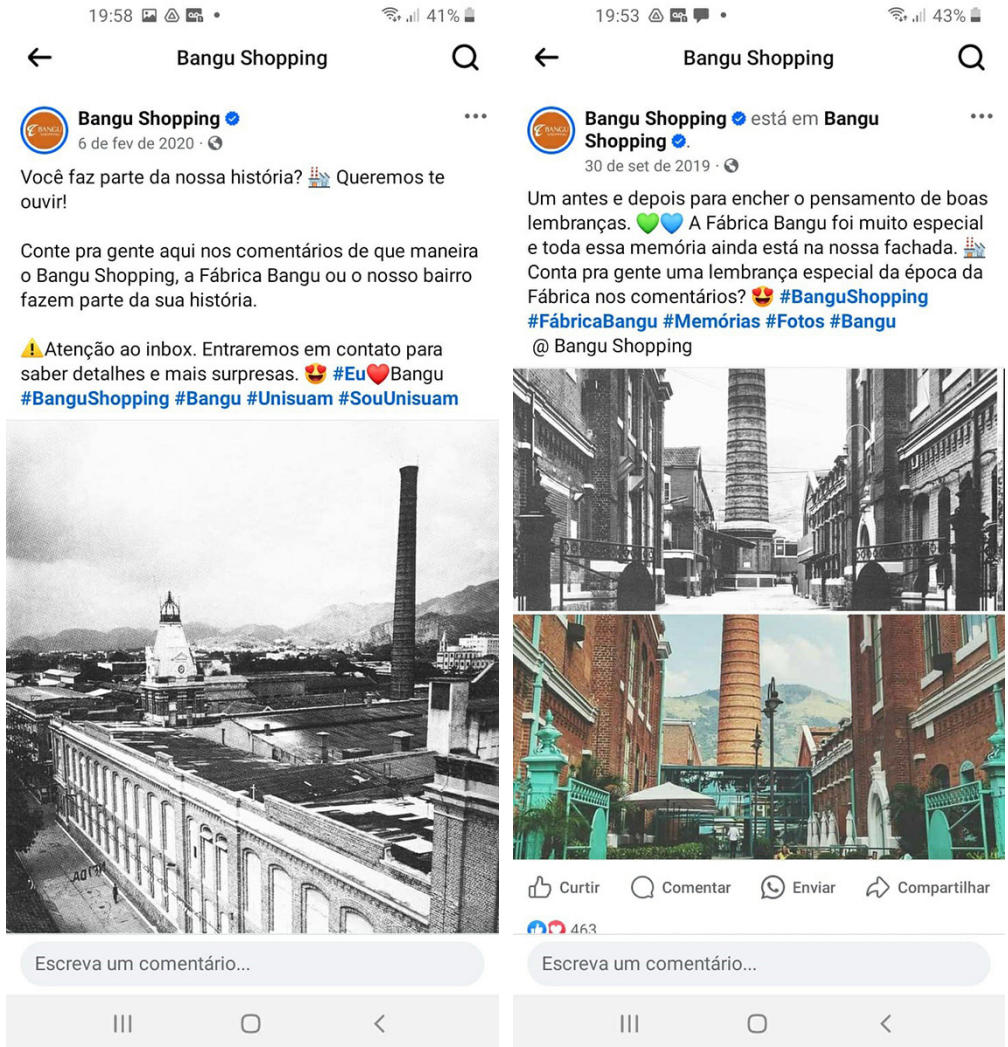
Creator: Thiago Vargas, in 2024.

Figure 10 – Entrance of the Bangu Factory Memory Space



Creator: Mariana Cardoso, in 2024.

Figures 11 and 12 – Screenshots of Bangu Shopping Mall's Facebook posts



Source: Bangu Shopping, in 2020.

Regarding the ongoing refunctionalization processes in the city of Rio de Janeiro, these efforts are characterized by their lengthy durations, bureaucratic complexity, and the active involvement and competition among various social actors. This is evident, for example, in the case of the former Realengo Cartridge Factory, a vast industrial complex where some spaces have already been refunctionalized – such as the Realengo Campus of Colégio Pedro II, which now occupies one of the main buildings of the old factory. Currently, another area of the complex, which still contains several derelict factory buildings, is undergoing refunctionalization, and by the end of 2024, the Jornalista Susana Napolini Realengo Park is expected to be inaugurated. However, public demands for the space to be given a new function began decades ago, in 2004. According to Candida (2017), the space was the site of a power struggle, with the Brazilian Army wishing to convert it into a residential area exclusively for its members, while the grassroots movement ‘O Realengo Que Queremos’ advocated for the establishment of an ecological park. It was only in 2021 that the Rio Municipal Government began work on the park’s construction.

Another case involving the actions of various social actors is the former site of the A Guitarra de Prata musical instrument factory, which operated from 1887 to 2014 on Rua da Carioca. The historic store was evicted by the Opportunity Real Estate Investment Fund. However, the buildings on Rua da Carioca were listed and expropriated by the Rio Heritage of Humanity Institute (IRPH) in June 2013, creating the Rua da Carioca Cultural Site (Bastos, 2014). In March 2022, a feminist collective occupied

the space to support women in situations of vulnerability, claiming that the property had been unused for over 8 years and was not fulfilling its social function (Pitasse, 2022). Although it currently belongs to the Municipal Government of Rio, the facility remains occupied by Casa Almerinda Gama, managed by the Olga Benário Movement. The public authorities, however, are attempting to reclaim the space through legal action (Casa Almerinda Gama, 2022).

The Leopoldina Railway Station – officially known as Barão de Mauá Station – is another emblematic case of protracted refunctionalization processes. Located on Avenida Francisco Bicalho in the northern zone, the former station operated until 2001 and is a historic building listed by the Institute of National Historical and Artistic Heritage (IPHAN). After two decades of complete abandonment and with risks of fire and collapse, in 2023 the federal government took over the administration of the facility, which had previously been under the responsibility of the private concessionaire SuperVia (Schmidt, 2023), promising to restore the station. However, in February 2024, the administration was transferred from the federal government to the city of Rio, which plans to build a housing complex for the Minha Casa Minha Vida program, a convention center, and a new Cidade do Samba complex at the site.

There are other more complex and seemingly indefinite cases, such as the Moinho Fluminense, Brazil’s first wheat milling factory. After the company relocated its operations to the municipality of Duque de Caxias in 2016, the space in the Saúde neighborhood, in the

downtown area, went through several attempts at refunctionalization (Lucena, 2017). In 2019, it was purchased by Autonomy Investimentos & Afiliates (Agenda Bafafá, 2020). The company announced plans to turn the Moinho Fluminense into a multifunctional space with seven floors, including a shopping mall, hotel, offices, bars, restaurants, art exhibition areas, and event spaces. The completion of the first phase of refunctionalization was initially scheduled for 2025 (Vieira, Lima, & Luz, 2022). However, no construction has begun, and the industrial complex remains closed, with some of its buildings in a state of deterioration.

Some cases of abandonment are even more pronounced. For example, the former factory of the defunct Companhia Estadual de Gás (CEG) on Avenida Presidente Vargas in downtown Rio, despite being listed for its architectural, historical, and cultural significance, has been abandoned for years and is now covered in graffiti. Similarly, the GE industrial complex in the Maria da Graça neighborhood—a railway suburb in the North Zone—has been unused since 2008, when the factory closed and was sold to Efficient Lighting Products (ELP), a company that subsequently went bankrupt. Since then, the facility has remained closed and in ruins, with ELP being sued by the Municipal Government of Rio due to serious environmental issues, as the site was surrounded by toxic materials (Brito, 2018). As of September 2023, the facility was managed by an administrator appointed by the ELP Bankruptcy Court. The court had issued a preliminary injunction granting the state of Rio de Janeiro control over the property, with plans to develop social projects aimed at generating

employment and income in the area. These projects include a production market, a new Military Police Battalion, a specialty medical clinic, an urban park, an Olympic village, and a commerce complex (Lopes, 2023). However, the refunctionalization process has yet to begin, as has the transfer of property ownership, indicating a long road ahead before the space takes on a new function.

Throughout the research, it was found that in cases where residential complexes were built, the industrial facilities were completely demolished, in some cases with only the old factory's chimney remaining. For instance, the Solaris da Torre Condominium (commonly known as Tijolinho) which occupies the former site of the Cruzeiro and América Fabril Textile Factory in the Andaraí neighborhood, North Zone. Preserving chimneys is quite common, as they are symbolic objects associated with the industry.

The analysis of the current functions of Rio's industrial remnants revealed that 25% are currently 'functionless,' reflecting both the abandonment of these facilities and the potential for refunctionalization, indicating opportunities to consider new uses and paths for these remnants.

Final considerations

According to Baer (1985), Rio de Janeiro played a significant role in the early stages of industrialization in Brazil, with the downtown and northern regions emerging as major industrial hubs, hosting a substantial number

of manufacturing facilities. However, as Ribeiro (2002) points out, Rio de Janeiro's leading position in Brazilian industrialization lasted only until the early 20th century, when it was overtaken by São Paulo. From that point on, the city began to adopt a new profile as a service-oriented city and a new reputation as the 'marvelous city,' leading to an erasure of its industrial past, as noted by Cavalcanti & Fontes (2011) and Revista Museu (2018).

This situation was further exacerbated by Brazil's deindustrialization process in the 1970s, with the state of Rio de Janeiro being one of the epicenters of national deindustrialization (Sobral, 2017). As a result, the city solidified its role as a center for services and creative industries, emphasizing its function as a provider of modern services, particularly for tourism and business. The current identity of Rio, in addition to reinforcing its memory as the former capital, highlights its natural beauty.

In the last decades of the 20th century, global and national debates on industrial heritage gained momentum, and the processes of refunctionalizing these spaces intensified. Refunctionalizing industrial remnants has been identified as a significant option for preserving physical installations and industrial memory, as well as revitalizing certain areas of cities and even boosting tourism in some regions.

The findings of the research presented in this paper reveal that most of the refunctionalized remnants today serve functions related to creative industries, while a quarter of the remnants are currently abandoned and functionless. The conclusions

are as follows: (1) for the refunctionalized remnants, there is a need to work on the recovery and documentation of their industrial past – academia and heritage preservation agencies can play a role in this; (2) regarding inactive factories, port warehouses, and railway stations, despite some neglect and abandonment, there are opportunities to explore new uses for these remnants. Concerning creative economy and territory, the discussion focuses on the symbiotic relationship between these two aspects, where creative economic activities and their socio-cultural arrangements and interactions become a driving force for territorial development, while territorial specificities influence the execution of these activities, arrangements, and interactions. However, it is urgent to consider and propose refunctionalization projects that account for not only the architectural value of industrial facilities but also the historical, social, and cultural aspects of the city's industrial remnants.

Finally, it should be noted that, conducted through bibliographic and documentary research, this study aimed to identify the large-scale remnants of the city. However, it is acknowledged that there are also small-scale remnants (smaller factories and warehouses) that are part of Rio de Janeiro's urban landscape but can only be identified through primary data collection conducted via meticulous fieldwork. Future research stages include the development of a website tentatively named Industrial Remnants of Rio de Janeiro, which

will be available to the general public, and the publication of material identifying abandoned industries with refunctionalization potential, along with recommendations for participatory refunctionalization processes involving civil

society organizations, public agencies, and market sectors. It is anticipated that future research will broaden the geographic scope to encompass industrial remnants in other cities and municipalities across the state of Rio de Janeiro.

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Notes

- (1) Regarding the Porto Maravilha Project, initiated in 2009 with the aim of revitalizing the port area of Rio de Janeiro, see CDRJ (2009).
- (2) According to UNCTAD (2010), creative industries are those that originate from creativity, skill, and individual talent, and involve cycles of creation, production, and distribution of goods and services that use creativity and intellectual capital as primary inputs.
- (3) Please note that Mendonça (2001) does not use the term ‘industrial remnants’ in his paper. The reference to Mendonça’s work in developing the concept of industrial remnants is, therefore, a conjecture of this author.
- (4) Given the size of the team, budget, and available time, this survey was not included in the research project that led to this paper.

- (5) Despite this effort in bibliographic and documentary research, some information about certain factories could not be found, highlighting a significant gap in information and few records concerning Rio's industrial heritage. This reinforces the issue of the erasure of the city's industrial past, as indicated by Fontes (2018).
- (6) In a few months, the complete material (information and images) from the research will be made available on a publicly accessible website.
- (7) The current owner of one of the facilities analyzed, Cia. Hanseática (Brahma) in Tijuca, was classified as both Municipal and Private because the former factory space was transformed into two distinct venues with new functions: the Dance Center of the Municipal Government and a Commerce Gallery. This case reflects a trend in the refunctionalization process of some remnants, where the industrial facility is assigned different functions. Other examples illustrate this case, where, despite the same type of current ownership, the spaces have acquired different functions, such as the Santa Cruz Industrial Slaughterhouse – which now houses the Princesa Isabel Mansion and the Ecomuseum of the Santa Cruz Cultural Quarter – and the Manoel Lino Costa Foundry – which occupied numbers 152 and 154 on Rua Sacadura Cabral, with only the building at number 154 currently in use as an event space called Sacadura 154, established in 2014.

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