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**TRANSFORMATION
SCENARIOS OF THE 4TH
DISTRICT: THE SOCIO-
SPATIAL DYNAMICS
BETWEEN HOUSING
AND WORK IN THE
DISTRICT: FLORESTA -
PORTO ALEGRE**

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Abstract: This work focuses on the type-morphological study of District: Floresta, in the 4th District of Porto Alegre, territory linked to the industrialization and expansion of the urban fabric in the beginning of the 20th century. It seeks to investigate the socio-spatial dynamics between housing and work and identify the patterns of change in residential and industrial architecture over the years, allowing the establishment of an overview of the urban phenomena involved with the transformation of cities and their future urban scenarios, especially in this fragment of the capital. *gaúcha* currently permeated by great speculative interest. The research is justified by diagnosing a recurrent panorama in the production of contemporary cities in the Southern Cone: the conflict between the discourse of capital, cultural heritage and material memory. Therefore, this work aims to infer future scenarios and alternatives for urban intervention, through the temporal investigation of past typological states, to support urban planning in the present, confronting the vocational dynamics of the neighborhood with possible urban solutions. Urban space is understood as a complex and adaptive system, where past, present and future do not completely disappear and are always constituted in a condensed state of the history of cities. Based on this premise, this study is divided into time series, evolutionary stages of the system that mark the beginning of urbanization, the period of growth and the period of major changes in the primary structure. The typological cut (residences and industrial warehouses) is justified by the urban evolution of the neighborhood, economically characterized by the provision of services and industrialization, housing for

workers and ethnic-cultural diversity. The investigation of urban dynamics through time series is capable of describing and predicting the macro-spatial process of transformation, within pre-defined time intervals. In this way, it instrumentalizes urban interventions on historical bases as a tool capable of strengthening the housing-work vocation of the neighborhood, respecting social diversity and economically encouraging the location.

Keywords: Worker typologies, type-morphological patterns, socio-spatial dynamics.

INTRODUCTION TO THE CONTEXT OF THE 4TH DISTRICT

The urban phenomenon to be analyzed in this work focuses on the changes that impact historic centers and cultural axes, such as the 4th District of Porto Alegre, a region that had great economic and industrial importance for the city and today lives the dilemma of abandonment versus planning modernizing urbanism. In this arena of game of interests are private initiative, local residents, and social layers that live or work there - without support from the public power - in constant rhetorical and ideological dispute over the appropriation of this place. As far as the role of urban planning and management is concerned, there is not much discrepancy. Major intervention projects propose sudden changes in the primary structure¹ and in the urban fabric². In this context, it is possible to recognize two actors leading the transformations: the real estate market and public management with a privatization bias. And these new scenarios structured in a complex process of gentrification³ they print marks in the spatial memory of the city; these

1. The **primary structure** refers to those structuring elements of the urban fabric such as: **arterial roads**, capable of connecting the different regions of the city; **urban attractors and/or poles**, points capable of concentrating and/or dispersing large numbers of people; **urban centers**, concentration of activities and services and transport terminals.

2. The **urban fabric** refers to the configuration patterns of open and built spaces.

3. The word **gentrification**, which comes from the English word *gentry* - from Old French *genterie*-, refers to the European

brands, in turn, directly affect the dynamics of housing, work and local culture.

The region of the 4th District is key to Porto Alegre's relationship with the other municipalities in the metropolitan region. The character of a privileged location remains the same since its genesis: the 4th District is relatively close to the city's port. It is located on Canal dos Navegantes (Delta do Jacuí), and links the regional production center with one of the largest maritime ports in Mercosur, the Port of Rio Grande. Its primary structure is composed of roads with important flow in the city, which define the connection with the highways to the coast, the western interior of the State (the BR-116, BR-290 and BR-448 highways), with the city's bus station and the Historic Center; in addition to the international connection established by the airport, also positioned at the exit of the city. In the midst of all this, there are also single-family and multi-family residential uses with few floors. The 4th District comprises all or part of the Floresta, Marcílio Dias, São Geraldo, Navegantes, Farrapos and Humaitá neighborhoods.

Porto Alegre is a city that concentrated its first settlements in the relationship it establishes with the Guaíba water body. The first Azorean immigrants occupied the city center region, consolidating a city with a Portuguese layout, with regular roads, which climbed the high points and large hills, for the establishment of the privileged layers. The city gradually expanded with the camps towards the east, south and north. But the region of the 4th District, from the beginning, was the focus of this strong connection due to its strategic location. On a very flat site, with low topography and a checkered layout - characteristics that facilitate spatial organization - German

immigrants, in the first half of the 20th century, settled there and prospered, transforming family businesses into large companies, employing a large number of high number of workers. In this period, the Italians, Poles, Arabs and, to a lesser extent, Spaniards, Austrians, Israelis and Portuguese joined the German immigration. This scenario portrays a great social diversity, where many ethnic groups lived in the same block, becoming a "polyphonic space", a place that knew how to teach the meaning of differences (CONSTANTINO, 2002; pg 118). However, at the end of the 19th century there were still no public policies under the responsibility of the State to promote work and housing. Therefore, in a patronal way, the great industrial entrepreneurs built, in this same neighborhood, their factories, houses for their employees and all other urban equipment necessary to carry out daily activities.

Thus, with a still rarefied urbanization, many urban voids were occupied by farms, areas were built for warehouses, industries and housing for workers; as the strips of land move away from the shore, the topography rises and so does the purchasing power of the residents, since the lower areas were also more swampy, reserved for the less privileged social strata. This dynamic of urbanization, which lasted from 1820 to 1940, configures a scenario of great socioeconomic diversity, a characteristic that remains until the present day. After the 1941 flood disaster, industries began to leave the 4th District, with a large transfer of these services, which needed infrastructure and large warehouses, to the Metropolitan Region of Porto Alegre.

Currently, within this region, and more specifically in the same neighborhood - Floresta - historical buildings and old

rural nobility who appropriated communal lands for raising sheep. Currently, the name gentrification is given to the urban transformation process that redefines the cultural identity of a locality through the change of urban aesthetics and real estate valuation, making it difficult for the low-income population to remain in the gentrified space.

factory warehouses, middle-class housing, occupations and villages in the struggle for housing, informal work places, recycling sheds, commerce nightclubs and prostitution points, as well as variety in local and street commerce, squares, urban equipment, services in general. A neighborhood that generates urban diversity, which in the face of “revitalizing” urban planning initiatives runs the risk of being completely mischaracterized and at the mercy of Capital.

THEORETICAL AND CONCEPTUAL LANDMARK

The urban landscape has undergone many changes over the years. Society is transformed and perhaps the first evidence that indicates this change is manifested in the constructed form of everyday spaces. The city is the background for the social manifestations that take place in it, and these views of Urban Geography commonly place it as a passive being in the routine of everyday life; as if the city were an entity at the service of those who inhabit it, and at the same time subject to any modifications that its inhabitants make in it. This thesis that subordinates the success of cities to the coordinated voluntarism of its citizens (KRAFTA, 2014) is related to studies that see the city merely as a result, or instrument of a social process, and ignores the existence of a self-regulation factor. of the locational phenomenon. However, there are approaches to urban studies that consider the existence of micro-spatial rules that establish conversions and randomness in city spaces; it is the Science of Complexity.

In the Science of Complexity, the city presents itself as a complex and adaptive system, capable of self-organizing, defining patterns in time and space (KRAFTA and CONSTANTINOU, 2007). Within this vision of the city, the intra-urban dynamics of the transformations of built form units

in the 4th District of Porto Alegre, more specifically in the Floresta neighborhood, are explored, investigating the emergence of socio-spatial patterns over time. It is known that the urban form is constantly changing, both through social relations and through the transformation of built stocks: new constructions, demolitions or adaptations. Within this dynamic, it is considered that each lot has a vocation. This vocation is changeable, since the centers of development and degradation within the urban space change over the years, due to several factors: among them the action of the public power to meet certain demands in specific areas, as well as economic changes and influence of the real estate market. Although each lot or region has a vocational tendency, it is up to the government to determine guidelines for transforming the space through legislation and the Master Plan. Therefore, the system has a capacity for self-regulation, but it is susceptible, to a certain extent - although not fully -, to human action and to the political-administrative relations established in this system.

The urban actors that operate in this complex system that is the city can be diverse, it can be said that each one has its own arena of action: the public power, divided into legislative, judicial and executive, with roles of revising and elaborating master plans, constructive regulations and percentages, inferences about territorial disputes (whether physical or in the ideological and economic field), and execution of “improvements” in the city’s infrastructure; the actors can also be citizens, institutional groups of private interest, militancy groups for collective causes. The actors are, therefore, political positions, residents, the real estate market, non-governmental organizations: all protagonists of the different arenas that make up the city, and each one with a fundamental

role in formal and social transformations. In this sense, the urban and local landscape changes according to the performance of each agent, both individually in their arenas and at the intersection between them, each with its purpose and idea of how the city works. Each represents a force and action vector.

METHODOLOGY AND STRUCTURE OF THE ANALYSIS

The methodology relates the residential typologies and their adaptations of use and form to the urban structure and its dynamics, considering the urban space as a complex and adaptive system, where past, present and future make up a dense and horizontal state in the urban evolution. Most of the houses in the Floresta neighborhood were built to meet the housing needs of industrial workers. From a broader perspective, studying the relationship between these typologies and the morphological transformations of the surroundings is important since, currently, the deficit of popular housing in contemporary cities in Latin America is still very large, and it is increasingly necessary to the study on the reuse of already consolidated and disused urban structures, to meet this demand.

Some questions structure the work: with the progressive migration of industries to the metropolitan region, what happened to the workers' housing and the workers in the neighborhood? What is the destination of the old warehouses that no longer house the focus of labor work? How to reconcile the "revitalization" projects of the 4th District - under the sights of the real estate market - with the premises of an urban planning that respects the socio-spatial identity?

The relationship between building typology and urban morphology goes through several transformations in the city space, configuring a cumulative and

adaptive process. To better understand this relationship, the investigation starts from the recognition of the smallest urban parcel - the lot - as an entity correlated with its neighboring lots and adjacent public spaces; therefore, the city is investigated as an urban configurational system. This approach understands the tripartite urban space, constituted by built form (building), territory (lot or parcel destined for building) and public space (the interstitial space between the first two elements). Thus, the morphological study is based on a systematic analysis of these three types of manifestations in the city. The relationship between the typological approach and the study of morphology allows us to understand the rules that describe the built form and how it is influenced and also influences the complexity of the urban fabric. Investigating, therefore, the type-morphological patterns of this historic neighborhood allows the analysis of the transformation of this tripartite relationship: the appropriation of the residents of their lots, the influence on adjacent lots and the socialization of public spaces carried out by urban agents.

As for the investigation of patterns, the analysis is built from the idea that some self-regulatory behaviors of the urban system are latent and recurrent in certain circumstances. The existence of randomness and variability in the transformation of locational stocks is recognized. However, in a consolidated primary structure, it is possible to identify micro-spatial rules that order patterns of transformation of typologies (in form and use) in relation to the neighborhood (CONSTANTINO and KRAFTA, 2008).

Therefore, discussing the theme of urban form in relation to socio-spatial dynamics, seeks to bring an interdisciplinary approach between architecture and urbanism and the temporal implications in the social organism

of the city. The study of morphology allows us to rescue social processes crystallized in the urban form, creating an urban planning strategy that condenses the evolutionary stages of this complex system that is the city and instrumentalizes the prediction of future and democratic urban scenarios.

TRANSFORMATION SCENARIOS OF THE URBAN FORM

According to Santos (1982): “the modes of production write history in time and social formations write it in space” (SANTOS, 1982, p.88). These transformations, therefore, do not happen randomly, but go back to an economic and social context that needs to be understood so that notes can be made of what lies behind these actions, led by the private sector and by the public power.

This investigation intends to identify which are the main agents involved in the process and to reveal the nature of this transformation, who it serves and what are its implications in the socio-spatial dynamics of the Floresta neighborhood, in the 4th District. The analysis of the urban transformation of this neighborhood makes it possible to identify patterns of permanence, adaptation and change in urban typologies, and allows us to infer about the most favorable and/or most vulnerable points in urban intervention, respecting the neighborhood's vocation, and avoiding the pitfalls of gentrification.

The 1938 thematic map, shown in figure 01a, reveals the social and economic dynamics of that period: working-class houses close to work, inserted in a small city system, supplied with all the necessary infrastructure for services and leisure activities. In typological terms, therefore, we have the leasing of large warehouses, sheds and factories very close, if not side by side, to small single-story houses or townhouses. As for the spatialized urban form, this relationship represents

large plots of land next to small plots of minimal frontage and great depth. Initially, this type-morphological pattern may seem aggressive, as the planialtimetric scales are quite different. However, it is possible to analyze these adjacent implantations in a positive way, since the industrial typology in the first decades of the 20th century was mostly Art-Deco façades, showing that a harmonious urban fabric was established with the workers' and workers' residences. non-aggressive aesthetics, unlike what modernized industries did in the following decades.

The house is an important element in the formation of the identity of a place, as well as a way of consolidating and appropriating the space. In this sense, the Workers' Villages or Industrial Neighborhoods constituted a kind of family image, which established closer neighborly relations, since the same group of people who established work relations in the factory environment probably permeated similar paths on the home-work path, in addition to carrying out other daily activities in the same urban perimeter. This whole scenario contributed to the composition of District: Floresta, as an example of appropriation of spaces for collective use, with a community character. A true materialization of the concept of eyes from the street (JACOBS, 2011), through the appropriation of activities that are opposed to ideas of privacy, that is, the use of collective areas, which give this character of diversity. The eyes on the street give a greater sense of security in the public space, strengthen neighborhood relations, make the street an extension of the home. In the thematic map shown in figure 01b, it is possible to visualize this housing-work neighborhood as a generator of vitality and urban diversity.

The proximity between home and work in today's times is a privilege, since the

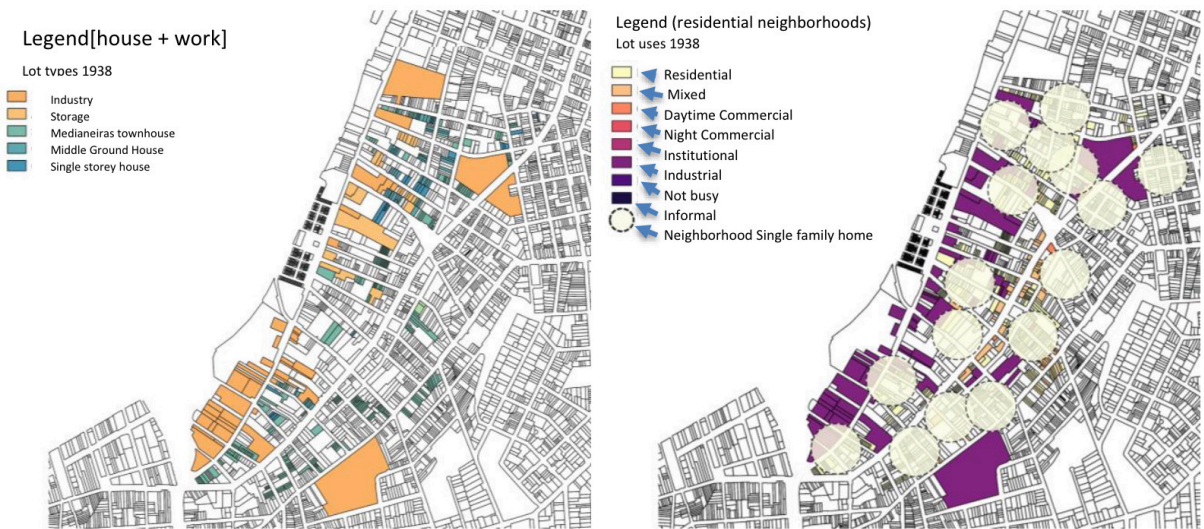


Figure 01a: Typological relationship between home and work in 1938.

Figure 01b: Residential neighborhood and functional typologies in 1938.

Source: author CONSTANTINOU (2019).

reduction in journeys and time in traffic provides a better use of “non-work” time. In Porto Alegre in 1938, it was not a privilege, but a factor in the spatial organization of District: Floresta. There are two types of spaces in cities, according to C. Santos (1985): the constructed, closed and privatized space; and open space for collective use. In the 4th District, the proximity and working-class residential neighborhood could provide a constant community life in the public space; it is in the collective scope that the social dynamics of urban life manifest themselves. This socio-spatial dynamic reflected in District: Floresta was based on scenarios of the street, the path between home and work, the appreciation of public space and neighborhood relations. These connections allow the establishment of a path of urban vitality (in dashed lines), shown in figure 02 below.

From 1940 the 4th District undergoes a major transformation in its primary structure: large avenues are built, as well as viaducts and roundabouts. The landscape of the Floresta

neighborhood begins to change with the inauguration of Avenida Farrapos, the first intervention in the primary structure of the neighborhood, marking the beginning of the feeling of modernity. In the same period, Salgado Filho Airport was inaugurated, transforming Avenida Farrapos into the “Passarela da Modernidade Porto Alegrense”, lined with buildings in the Art-Deco style. The neighborhood began to undergo very rapid transformations, growing rapidly between the 1940s and 1950s, beginning to transform the rarefied landscape of small houses close to industries into more densely populated blocks with residential and mixed buildings, warehouses, shops and services linked to production. industrial. The urban landscape began to change again at the end of the 1950s, when Travessia Getúlio Vargas was built in 1958, which distorted the intersection of Voluntários da Pátria and Conceição streets, already consolidated areas; and the approval of the Master Plan of 1959, which transformed the Forest into an industrial zone.

Legend [home + work]

Lot types 1938







-  Industry
-  Storage
-  Medianeiras townhouse
-  Middle Ground House
-  Single storey house
-  Urban vitality route






Figure 02: Routes of urban vitality in 1938.

Source: author MACHADO (2019).

MAPA 1938

Legenda

-  Área de uso residencial com comércio local e Industrial
-  conexão com o rio
-  conexão com a cidade
-  Av. Farrapos (1940)
-  Av. Voluntários da Pátria
-  Rua da Conceição

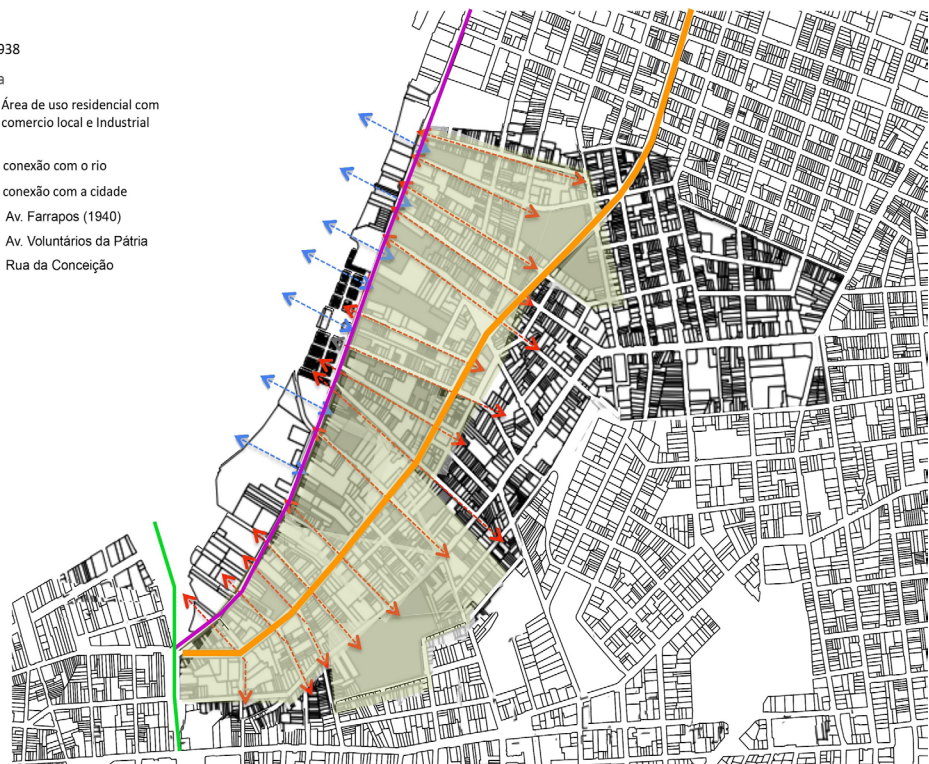


Figure 03: Synthesis of spatial transformations in the first time series.

Source: authors CONSTANTINOU and MACHADO (2019).

Between 1970 and 1980, another major socio-spatial transformation took place due to the construction of Avenida Castelo Branco and the Farrapos Bus Corridor: the first completely isolated the city from the river, and the second segregated part of District: Floresta from the rest of the city due to the reduction of roads. transversal. These factors added to an urban legislation to encourage industry and with housing limitations, resulted in the decay of local houses, built in the period prior to the Master Plan of 1959. With this, the residents of the 4th District were limited to the few remaining former residents to new residents with lower purchasing power, attracted by low rents and proximity to the central area.

The current scenario of District: Floresta presents a moment of growth stagnation and with little urban renewal. With the passage of time and housing emptiness, many adaptations were made to originally residential and industrial typologies; for example, buildings that in other periods were single-family residences, today house tenements and informal occupations. Many factory sheds maintained the structure of the work relationship: from former factories, they now house recycling sheds. Another characteristic of the state of stagnation and decline is the existence of many empty properties and in a high state of degradation, a factor used in the discourse of modernizing renovation as an argument in favor of the formulation of large plans for “improvements” in the region.

The MasterPlan, the most recent intervention plan for the region, is a project coordinated by the City Hall in partnership with “Universidade Federal do Rio Grande do Sul (UFRGS) and aims to revitalize the 4th District as part of a set of actions for the economic development and transformation of the new “Innovative Pole of the 21st Century”. Through the promotion of Public-Private

Partnerships (PPPs) as a tool for renewing degraded areas, the MasterPlan intensifies the valorization of land use through densification and the insertion of new economic agents. The biggest problem involving these large urban interventions is the impact of these massive real estate investments that end up forcing the migration and relocation of local residents and the working class, who, due to the progressive increase in the prices of services and infrastructure in the region, are no longer able to sustain their initial way of life due to the phenomenon of gentrification (COSTA, 2016).

If on the one hand we have the impact of large-scale interventions, on the other we have the self-regulation of the urban system through specific actions generated or not by the public authorities. An example of these specific actions generated by the community itself is the creative district created in District: Floresta. It is a collaborative project initially developed by *UrbsNova Porto Alegre – Barcelona*, a social design and innovation agency. Currently there are around 100 participants concentrated in an area of approximately 250 hectares, which develop activities in the visual, literary and scenic arts, design, architecture, fashion, advertising, and other creative services. The Creative District includes the Floresta and São Geraldo neighborhoods, in the 4th District, and adjacent areas of the Moinhos de Vento and Independência neighborhoods (neighboring neighborhoods). Among the two alternatives for urban transformation in dispute, it is believed that the punctual *bottom up* proposals (from the micro to the macro scale) are less harmful to the local population, while those on a large scale that represent a *top down* behavior (from the macro scale) to the microscale) are generating gentrification.

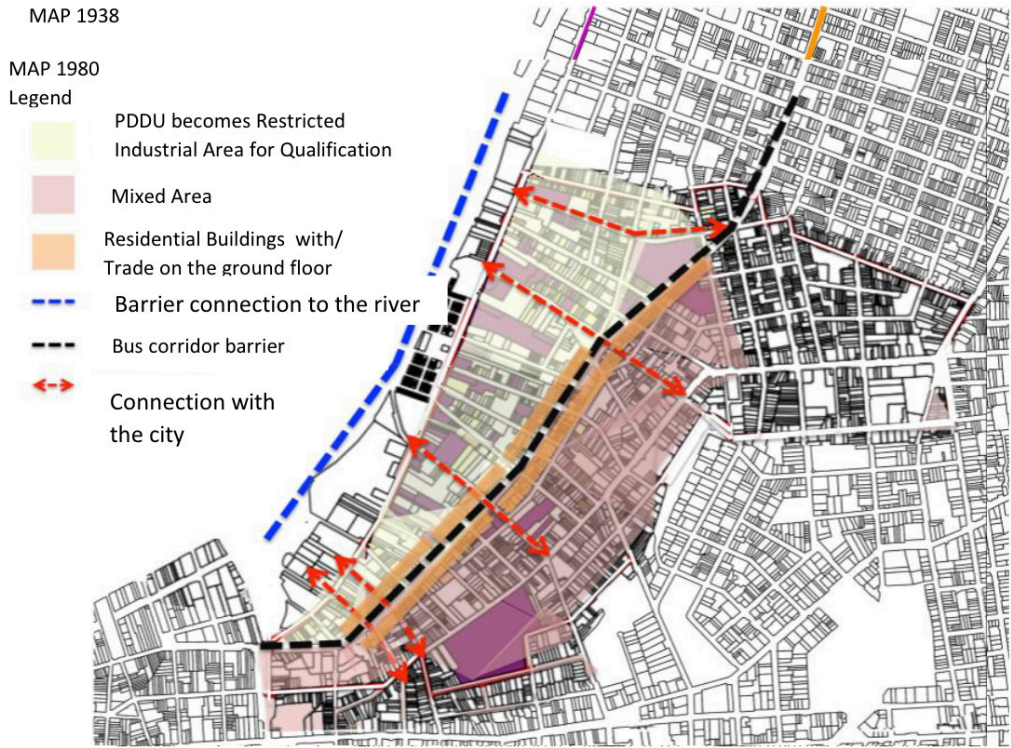


Figure 04: Synthesis of spatial transformations in the second time series.

Source: author CONSTANTINOU (2019).

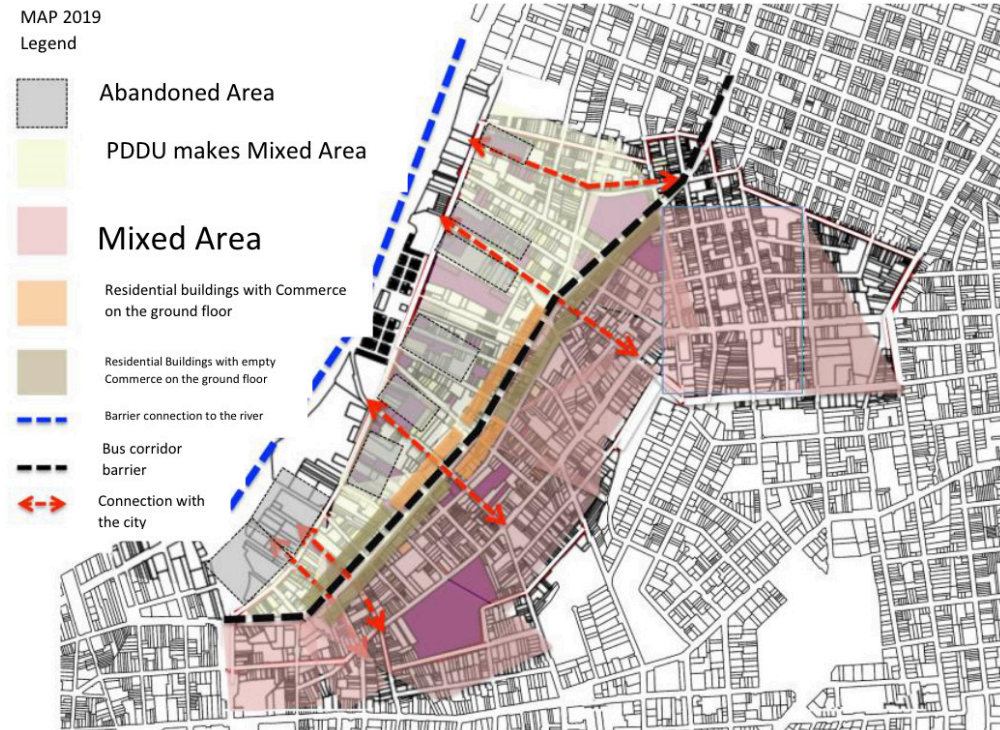


Figure 05: Synthesis of spatial transformations in the third time series.

Source: authoress CONSTANTINOU (2019).

CONSIDERATIONS ON THE PRESENT SCENARIO OF THE FOREST

There is an overlapping of social layers that configure the space of the 4th District. And each process of urban conformation that a place goes through reflects physical and material images in the structure of the city as a whole. According to MATTAR (2010), transformations that took place in this fragment of the city that is the 4th District entail changes in its urban morphology; and, while the region has formal attributes of identity, these aspects coexist with contrasting elements that give an ambiguous character, especially due to the typological and functional diversity. And this contradiction is shown in the reformulation of the socio-spatial dynamics, but also in the permanence of a typological character.

Currently, the dynamic between home and work is completely resignified in District: Floresta. The occupation of industrial sheds and types of warehouses due to the use of recycling demonstrates new work scenarios linked to local housing. Many residents of informal occupations that settled in the region structure their livelihood in recycling garbage. On the other hand, there is also the initiative of small offices and association of workers in the art area that use the nickname

of Creative District to develop collective work points such as co-workings and cultural galleries. The Creative District stands as an instrument and a way to avoid real estate speculation, because, with the occupation of the neighborhood by local initiatives, an identity with the space is created, and therefore a sense of belonging and duty of care for the neighborhood. A kind of resumption of conviviality and the former vitality of the public spaces of the 1930s.

This plurality is positive in the process of social resumption of the 4th District, since it is based on the dynamics of initial occupation, with housing for the working class and proximity to their workplace. A construction of place based on an archetype of the city of the past is sought: the urban sustainability that the region had, its complexity and systemic diversity, and self-sufficiency as a fragment are examples for the establishment of new relationships, new dynamics and resocialization of the public spaces today. In figures 06a and 06b we can see the ambiguity of scenarios in District: Floresta: places of abandonment and total mischaracterization converse in a journey also permeated by urban art, cultural manifestations and appropriation and socialization of public space.



Figure 06a: Paths of abandonment and mischaracterization.

Figure 06b: Routes of urban vitality and socialization of public space.

Source: author MACHADO (2019)

As controversial as the discourse of urban planning is, without it we cannot manage a city democratically. For this, analytical tools are essential to accompany the dynamics of urban form transformations and the understanding of their possible social, economic, cultural and environmental consequences. Urban structures are resignified in space and time in a complex and continuous way; therefore, it is necessary to understand these changes as a phenomenon of parts that alter the whole. Local interventions, which occasionally encourage greater collective appropriation of spaces, are much more suited to the autonomy of the system than large generalist plans for improvements. In the exercise of planning future urban scenarios, one must consider

the generation of harmonic concepts and the socialization of space, balancing the preexisting design, consolidated typologies, places of permanence and the contemporary urban fabric. In this continuous discussion on urban planning, master plans, technology hubs, housing deficit, real estate speculation and gentrification, the 4th District equates past and present, making the study of urban form a constant challenge for the future at stake in Porto Alegre.

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