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The Capibaribe Park:

Restructuring the urban fabric of the city of Recife by articulating public spaces

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Abstract

This paper describes the research methodology and interventions proposed for a 30km linear park along the main river system of the city of Recife, Brazil.

This project has been commissioned by the Municipality of Recife to the Federal University of Pernambuco – UFPE and it has been developed in the last two years by a multidisciplinary team coordinated by InCiTi, a group focused on research and innovation for the city.

The aim of the project is to provide a strategic plan that tackles environmental, spatial and social issues. However, the project extrapolates the immediate boundaries that are under the influence of the river system, given the fact that such change in the social – spatial configuration of the city is perceived as a framework or initial structure of support that will ignite the transformation of the city.

Therefore the proposed park seeks elements that are able to promote the reinvention of the city, grounded mainly on expanding the potential and qualities of existing public spaces and the vacant or underused areas along water courses, with the aim of intensifying the use of these spaces for people and improving their connection with the city. Most of the strategies proposed in the project are based on structuring vital and sustainable places and on the priority for public and non-motorized modes of transportation.

One of the main challenges in this research is how to reconnect citizens and river. Recife is a city that is nearly 500 years old where the relation between city and river has drastically changed in time. In the early years and to a certain extent during the expansion of the city, the river was one of the main structures of transport and connection among the initial settlements that formed the city. The advent of the car and other modes of transportation in parallel with the expansion of the city to areas not directly related to the river, reverts the former relation between city – river; spaces along the water are no longer at the centre but at the city's periphery.

That inversion of the role of the spaces along the river is evident in the analysis of the axial map of Recife. The structure of the river represents a gap in the continuity of the city fabric. Such divide is even more relevant when combining the syntactic analysis with data regarding income, access to public services and public spaces. In the current setting, the river segregates social groups, it is a barrier to fluid circulation in the city, a void in the urban fabric. The Park project aims to bridge this void in the city structure using a network of public spaces, connected mainly by cyclist and pedestrian paths.

The main expected outcome of this project, apart from everything related to the improvement of the environmental conditions, is the use the spatial structure of a park as a framework that can reweave a divided city.

Keywords

Public spaces, spatial segregation, non-motorized mobility, urban vitality.

1. Introduction

This article analyses the relation between the urban structure of the city of Recife, in the North-eastern coast of Brazil, and the Capibaribe River, the main water course of this city territory. This analysis is part of a process to implement the “Capibaribe Park” – a project which aims to rescue the historic affectionate relationship the city has with the waters of this river. The river was a central element in the foundation and development of this city, but it lost its function during the structuring of its territory, becoming an obstacle in the articulation of the urban space. Based on morphological studies and the historical and social logic of the spaces along the margins of the river, this study identified the connections necessary so that the Capibaribe River may be the protagonist of the environmental and urbanistic quality of a city that is innately “aquacentric”.

2. Recife and the Capibaribe River: history of the relationship of the city with the river.

Recife’s identification with the waters of the Capibaribe River is one of the most striking features in its history. It is no coincidence that the term ‘Brazilian Venice’ was used to disseminate and promote it as a touristic destination for a long time, despite the limitations of such a comparison. The reason for such an analogy was exactly the cityscape of a historical city constructed amongst fluvial networks.

In the case of Recife, the initial urban nuclei was constructed on top of a thin strip of land (isthmus), located between the waters of the Atlantic Ocean and the basin of the Capibaribe River. This isthmus connected a natural port, formed by the reefs, and a hill to the north, where the Portuguese constructed the city of Olinda, first capital of the province of Pernambuco. Although the Portuguese chose an elevated and dry place to build their city, when the Dutch occupied the territory in the 17th century, they settled in the flooded lands where there already was a small village next to the port (by the reefs which denote the name of the city). After the expulsion of the Dutch, this urban nucleus became the main economic centre of the region, later as provincial capital, one of the biggest cities of Brazil up to the middle of the 19th century. The peculiarity of this geographical spot, completely surrounded by water, is one of the most emphasized characteristics in the studies about the history of this city.

“In Recife, what is not water, was once water or is a reminder of water, which explains its nick name as the ‘amphibious city’. (...) Everywhere, memories of what the disappearing waters left are re-lived (...) The ‘tyranny of the water’ subjugated the land – sea water that covered it in remote times, river water that cuts and deviates ... waters from the dams ... waters from the marshes overshadowed and hidden by the mangroves, the sea water that does not capitulate before the reefs and returns twice a day to visit along the river banks its lost dominion.” (OLIVEIRA, 1942, p. 48).

For many centuries the expansion of Recife happened at the expenses of the flooded plains of the Capibaribe, where the built landscape was conditioned by its capacity to confront or adapt to the natural course of the waters. The predominance of the waters in this territory is registered in historical maps (see Figure 01), where it is clear that the Capibaribe is only one of many rivers in the plain.

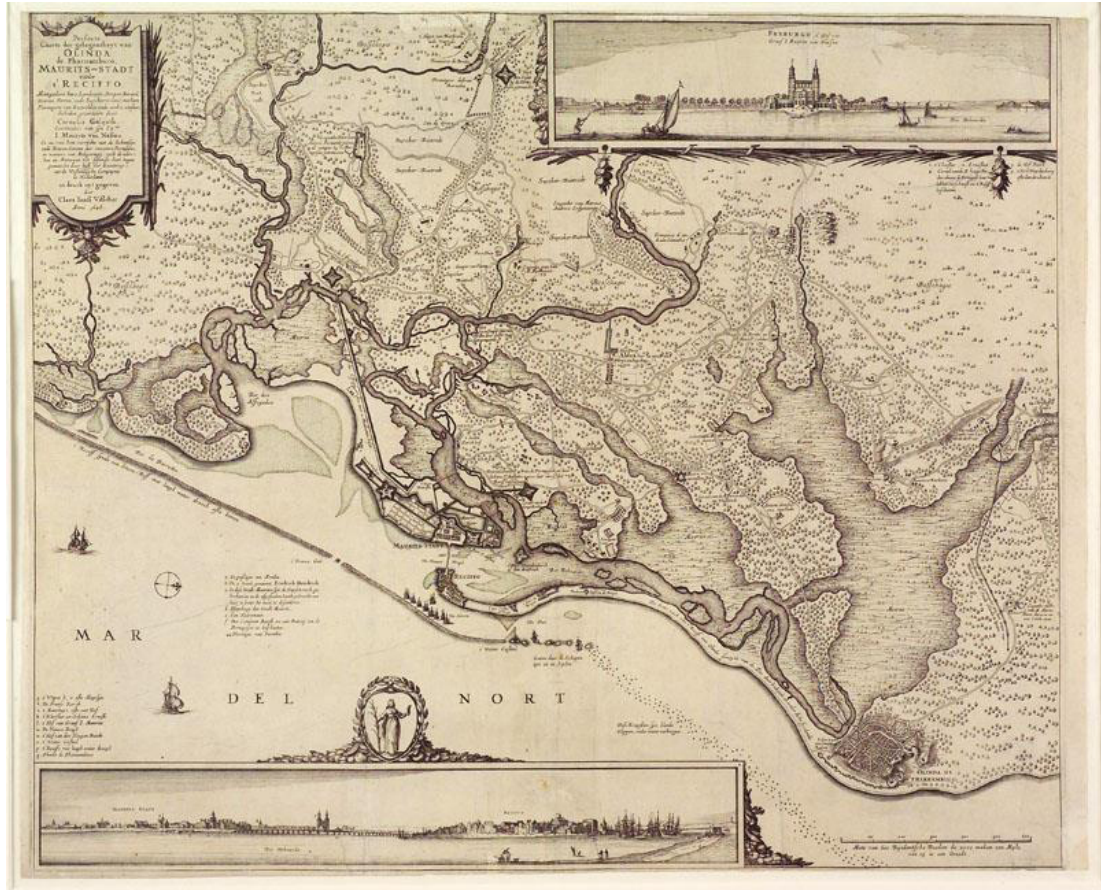


Figure 1: Map of Recife / Olinda / Mauritsstad by Cornelis de Goliath (1648) (Het Scheepvaartmuseum Amsterdam).

The more intense expansion of the city towards the dry lands of the continent happened in the middle of the 19th century. However, the Capibaribe River remained an important element in the structuring of the urban space, as it was one of the main transportation routes to the districts which sprung along the river banks (Souto Maior, Silva, 1992, apud Villaça, 1996). The river role was not limited to transportation, as its waters were also used for leisure, hygiene and public health since the middle of the 18th century (Villaça, 1996).

This connection between the fluvial network and the urban fabric was present in the morphological genesis of the city as demonstrated in a study by Amorim and Loureiro (2000). Their study presents a series of axial maps representing historical periods of Recife, where it is clear that great part of the more integrated sections of its urban fabric were structured towards the waterfronts.

However, the vertiginous growth of the population during the 20th century, and the substitution of fluvial transportation for terrestrial vehicles, which started in the 19th century (trams, trains and motor vehicles), made the Capibaribe lose its influence as a structuring element of the urban space. Moreover, aside from the changes in transportation, other factors contributed to this loss of importance of river areas in the city: the periodical flooding of the river which modified the margins and prevented its permanent occupation, and the cultural change which substituted the river bath

for the sea bath as a leisure and hygienic activity – this last consideration having a direct relation too with the growing degradation of the quality of the river waters, consequence of the precarious sewage services of Recife, which did not keep up with the growth of its population.

Some urban plans were also elaborated in the first half of the 20th century to “modernize” the city, some of them proposing the implementation of Urban Parks along the margins of the Capibaribe River. However, these propositions did not come through and the Capibaribe continued its long process of degradation (Melo, 2003).

In the last decades of the 20th century plans for the Capibaribe River were more focused on engineering projects which artificialized the margins of the river in two ways: a project rectified many parts of the riverbed, eliminating curves and winding areas to “contain” the river on its bed and reduce the seasonal inundations. Another project that was partially implemented proposed the construction of express ways along the whole urban margin of the river. These interventions ignored the interrelationship between the city and its waters.

Thus, despite having its history and image strongly connected to the waters of the Capibaribe River, Recife entered the 21st century with an urban structure, with few exceptions, that barely values this spatial relationship, especially in the expansion areas of the 20th century.

3. Current urban structure of Recife: the city with its back to the river

When wandering in town it is not difficult to perceive that most of the population of Recife does not use the space at the margins or the river in their daily activities. In spite of this, the river is still very present in the general imaginary about the city, including the images used to promote the city as a destination.

Evidently, this “distance” with regards to the river is manifested in the urban structure. The spatial structure of a city is an expression of the life of the society that inhabits it, but most of all, according to the conception of spatial syntax (Hillier and Hanson, 1984), it is an element which influences and reenergizes the behaviour of this society.

Therefore the objective of this study was to analyse how the urban configuration of Recife contributes to maintaining this distance, and how urbanistic interventions can modify this reality. To carry out this analysis, in addition to the spatial syntax instruments, some multidisciplinary studies were used.

But, before the specific analysis of the relationship between the urban structure of Recife and the Capibaribe River, it is necessary to present some general considerations about the urban fabric of this city.

4. Urban Layout of Recife: a patchwork quilt

As mentioned in the opening of the text, this city was born as a spontaneous settlement located in a waterscape. From this original nucleus, other parts of urban fabric were aggregated or super-imposed, confronting or adapting to the limitations of the environment according to the socioeconomic forces of each historical moment and the different cultural influences that left their marks upon the territory.

This combination of elements in the formation of Recife resulted in quite a heterogeneous urban fabric. Part of this fabric presents regular grids, while others have a more organic layout, following the water courses and the curvy hills that were occupied in the 20th century. This set of elements in this urban fabric has its own peculiar attributes, but it shares typical characteristics of Brazilian cities, represented by the allegory of the “patchwork quilt” mentioned in the study of Medeiros & Holanda (2007, p29-05).

However, within the morphological diversity of this fabric it is possible to perceive the marking presence of long winding lines. Some of these lines, whose organic layout was inherited from rural

dirt-roads, assumed important roles as connecting routes amongst the neighbourhoods of the city. Based on this observation, we thought that the representation of the street pattern of Recife in axial maps would be more accurate by incorporating the concept of “continuity lines”, developed by Amorim & Figueiredo (2004).

“A continuity line is the aggregation of several axial lines to represent an urban path in its longest extension, respecting a maximum sinuosity previously defined. It is based on two main arguments: first, that the notion of continuity is already embedded in the axial system; and second, that the continuity lines reinforce the relationship between configurational properties and the hidden geometry of the axial maps.”

To incorporate the continuity lines in the analysis of the urban framework of Recife, we used the software MindWalk®, developed by Figueiredo in 2002. In this software, a tool, *merge*, connects the axial lines according to a predetermined maximum angle and an approximation minimum, which ignores small distances between intersections correctly choosing the best continuation (Amorim & Figueiredo, 2004). To clarify the difference of results of this method in the case of Recife, table 01 shows the comparison between the numbers of axial lines using the two different approaches: segment map and continuation lines.

Segments	Continuity Lines (<i>merge</i> 45° – 10°)
21,159 axial lines	13,882 axial lines

Table 1: Comparison of axial lines of Recife

The selected angle in this case, as a parameter of axial line continuity, was of 45°. This choice was obtained through experimentation, by comparing axial maps with the empirical knowledge over some of the most important sinuous routes of the city, which are clearly perceived and used as continuous routes in the day-to-day of the city, even with respect to the flux of vehicles (see Figure 2).

After applying this criterion of continuity we obtained the maps of local and global integration presented in Figure 03. The synthesis of values is presented in Table 2.

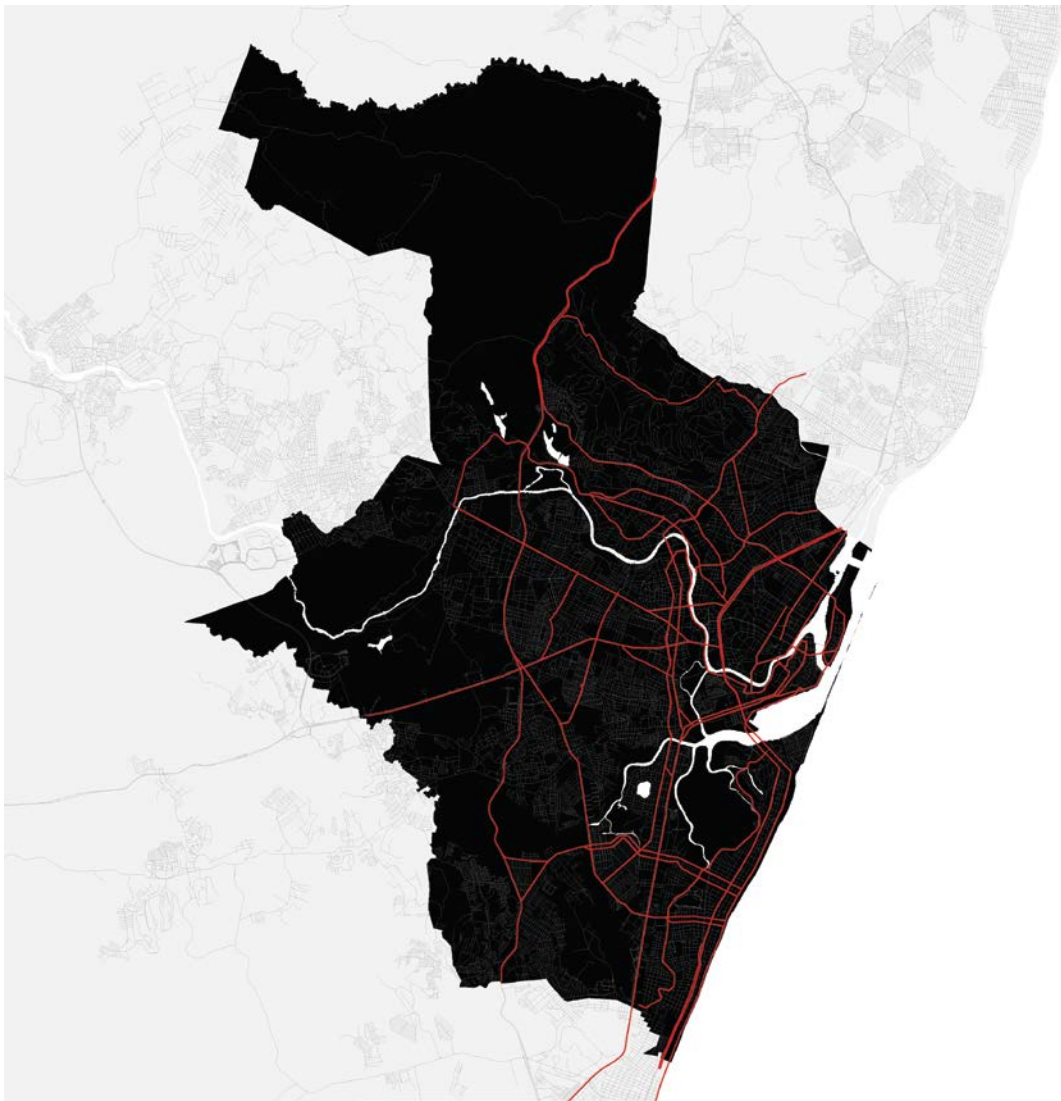


Figure 02: Main road system. (Authors' own).

Axial lines	Global Integration		Local Integration	
	Highest	Lowest	Highest	Lowest
RECIFE 2014 (13,447 lines)	1.9524	0.2584	5.2698	0.3333
Integration Nucleus Recife (672 lines)	1.9524	1.6503	5.2698	3.5239
Integration Nucleus Park Zone (452 lines)	1.8626	1.6349	4.4382	3.0074

Table 2: Integration values of the axial lines of Recife

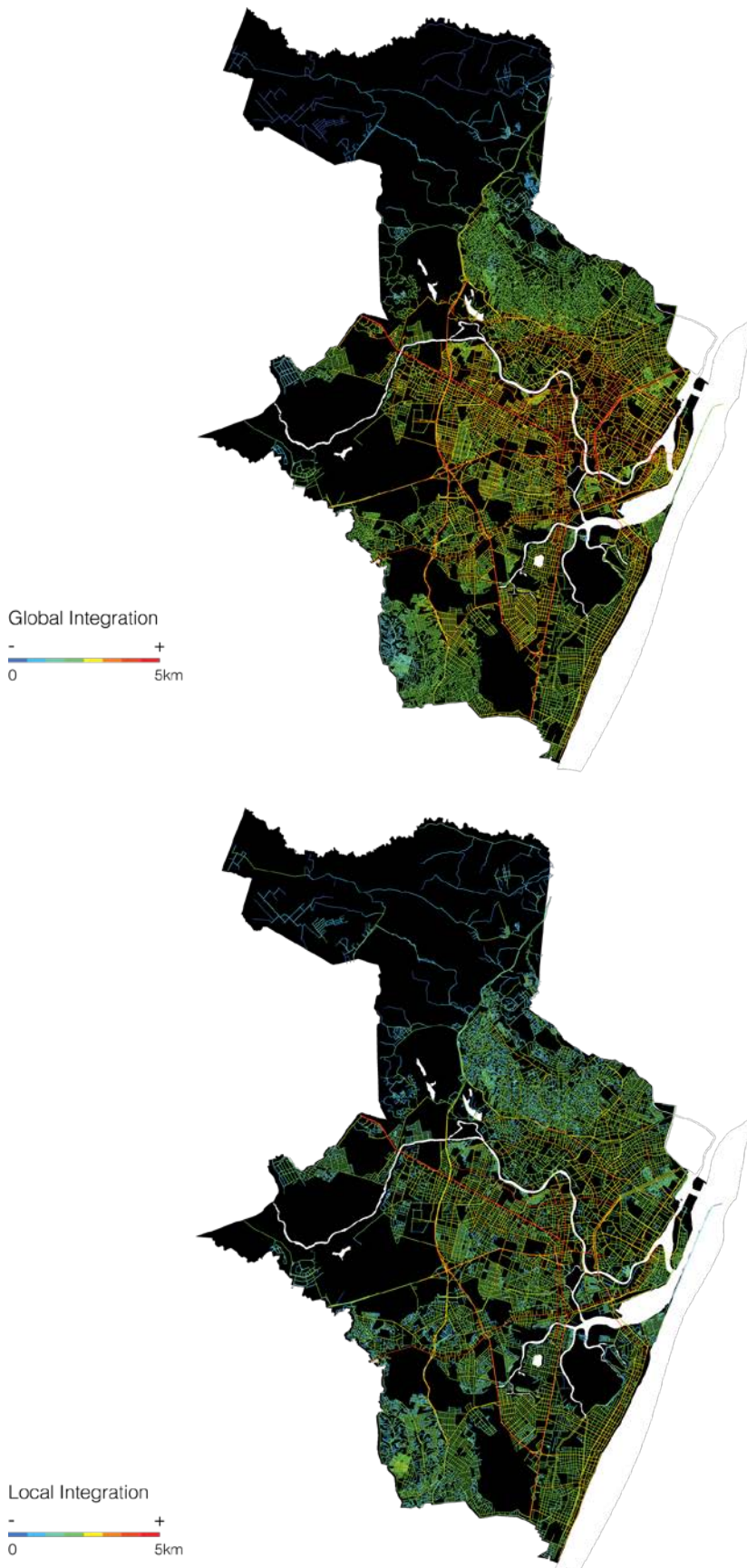


Figure 3: Integration Analysis (2014) (Authors' own).

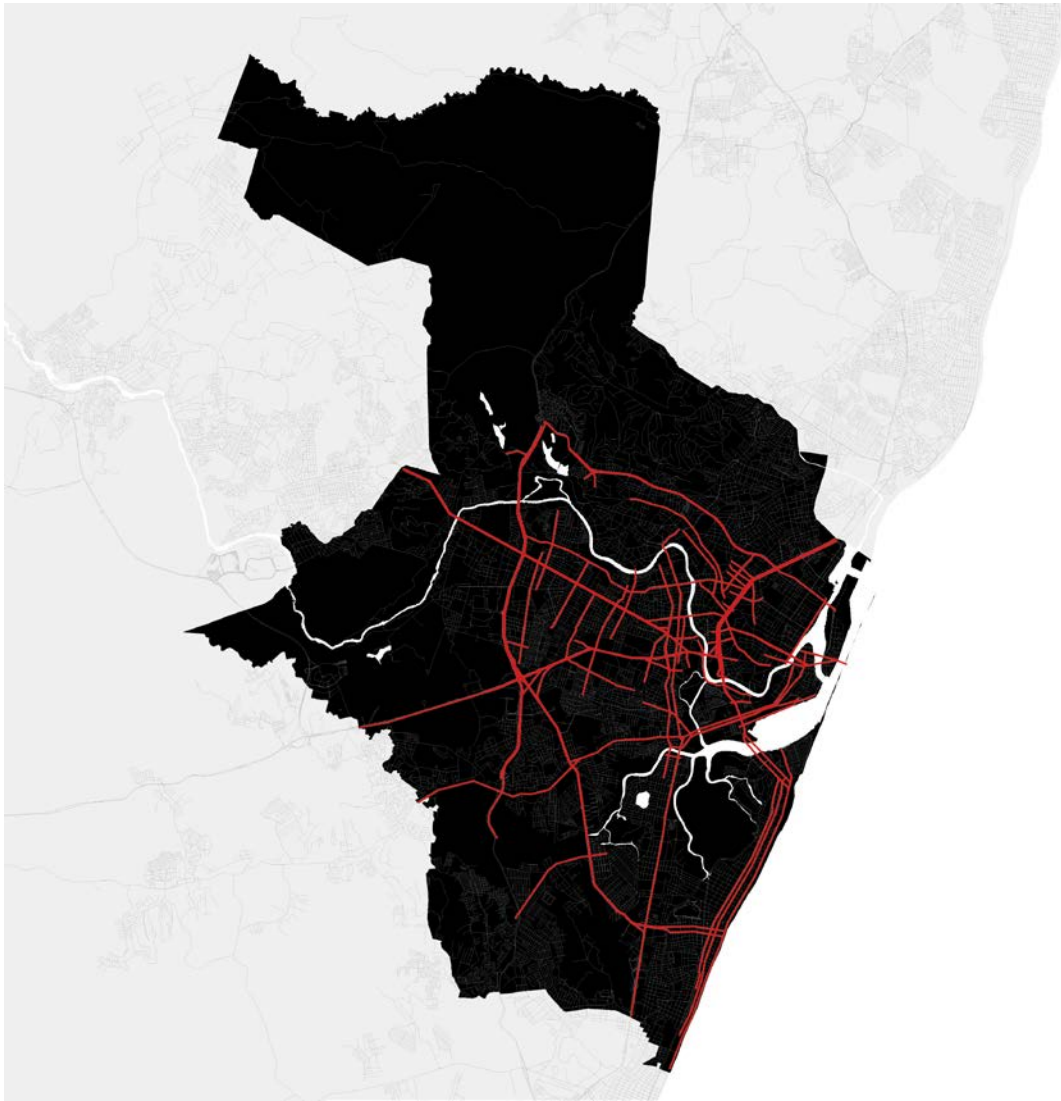


Figure 4: 100 most integrated lines. (Authors' own).

According to the principles of spatial syntax, the integration nucleus is of special interest for the comprehension of the structure of the urban framework, because it points out the most relevant locations of population movement. When observing the lines which make up the integration nucleus (IN) of Recife, one notices that it is located in the central region of the map, with lines that extend to the borders of the urban fabric. The main conducting routes (more integrated) of this system are presented in table 03, grouped together according to their connection direction.

East – West Axis		
Main roads	Integration (Global)	Integration (Local)
A - Abdias de Carvalho	1.8839	4.8349
B - Av. Caxangá	1.9524	5.2698
C - Av. Sul	1.8717	4.6807
D - Av. Norte	1.8032	4.7087

North – South Axis		
Main roads	Integration (Global)	Integration (Local)
E - BR101	1.8898	4.3931
F - Av. Recife	1.8464	4.9735
G - Real da Torre	1.9424	5.0020
H - Estrada dos Remédios	1.9173	5.0438
I - Av. Mascarenhas de Moraes	1.9103	5.1260
J - Av. Agamenon Magalhães	1.9359	4.9624
K - Av. Domingos Ferreira	1.6620	4.2492
L - Av. Conselheiro Aguiar	1.6676	4.4213
M - Av. Boa Viagem	1.6713	4.4845

Table 3: Integration values of the main transportation routes of Recife.

When comparing a map of the public transportation system with the map of the 100 most integrated streets of the system (Figure 04), we identified that most of the routes used as transportation corridors are part of the integration nucleus of the city. This comparison confirms the validity of the spatial syntax reading, as well as the importance of these transportation routes (and of the integration nucleus) for the mobility system of Recife.

5. The Capibaribe River and the urban structure of Recife

In the case of Recife, a relevant indicator of the relation between the urban framework and the Capibaribe River is the low quality and scarcity of public spaces along the riverbank areas. In the field research we observed that most of the land along the margins are in one of the following conditions: they are part of private lots; they are government lands without public use; or they are areas occupied by precarious settlements (stilt-housing, favelas), where the spaces at the margins are also “not open to the city”.

When focusing on the reading of the axial map of Recife regarding the areas near the margins of the Capibaribe, what stands out is the impression of an “incomplete” urban fabric. The fragmentation and low connectivity of the lines at the border between the river and the city is notorious as a fabric that “disintegrates” as it approaches the river.

The second important reading of the axial map which expresses the relation of the city with the river are the integration measurements (global and local). Here, the presupposition is that the existence of more integrated spaces next to the margins are directly related with the urban vitality of the riverbank areas.

Urban vitality in this case would be the capacity of the space, public or not, to promote greater integration among people, or at least higher copresence, considering that these are fundamental elements to qualify public spaces. This notion of vitality is close to the concepts related to urbanity,

which according to Hillier (2007) and Peponis (1987) refers to the capacity of the space to promote the integration between buildings and the public space, between residents and visitors and among the different scales of movement. Thus, concepts such as urbanity and vitality converge as they inter-relate spatial, social and utilitarian dimensions.

The analyses of the many areas along the river look for potential possibilities and restrictive realities to attain greater urbanity, by relating syntactic data, mainly of integration, with the historical conditioning factors of the formation of the place.

Another reference used in the present study was the research of Mello (2012), which focuses on the relationship of some Brazilian cities and water bodies. In this study, the author identifies two main lines of thinking: the valorisation and integration of the water bodies with the urban landscape; and the opposite, their denial. Recife, in the present scenario, for the most part fits in the second, where “water bodies are not considered, and buildings and their bordering-lots have their backs to them”. (Mello, 2012, p. 67)



Figure 5: Integration analysis at the river margins (2014) (Authors’ own).

However, we cannot affirm that the city-river relation is a uniform configuration. The analyses point to a variation in the potential of the present spaces to promote urban vitality.

When we observe the maps (Figures 03 and 05) and the syntactic values of the urban fabric, shown in table 04, we see that the lines that are near the river margins are mostly lines with little integration momentum when compared to the urban area as a whole.

Axial lines	GLOBAL INTEGRATION		LOCAL INTEGRATION	
	Highest	Lowest	Highest	Lowest
RECIFE (13,447 axial lines)	1.9524	0.2584	5.2698	0.3333
River margins (123 axial lines)	1.7837	0.6084	4.0818	0.3333

Table 4: Comparative of syntactic values of the framework of Recife with the margins of the Capibaribe.

Thus, it is evident that the urban fabric is more segregated along the river areas, presenting also low connectivity between opposite margins of the river. However, some sections are exceptions in this general scenario and these can be considered positive references in the urban structure of Recife as a whole and should be given some consideration.

The region of the historical centre of Recife has lines with good levels of integration bordering the Capibaribe. As mentioned earlier, this region of the city has an urban fabric which holds traces of its urban genesis, a structure which was strongly linked to the course of the river.

In some neighbourhoods up river but still close to the city centre, it is possible to see a good level of integration of the axial lines along the riverbank areas. There are two main factors that contribute to this: the proximity of the integration nucleus of the city; and the presence of a more “complete” and well-connected urban framework, with important routes in the margins of the river, some with global integration values between 1.60 and 1.72. In the rest of the sections, the fabric of the riverbank areas is extremely fragmented, with several lines that do not reach the margins, or when they do they do not cross the river nor do they connect with parallel lines to their course.

The section that has lower connectivity levels is situated between two bridges, one in a highway that crosses the western zone of the city in the North-South direction, and another at the most accentuated curve of the river downstream. This section is characterized by the absence of bridges connecting the margins. There are only two pedestrian overpasses with strong restrictions for public use due to their low accessibility and negative general perception regarding security (because of the neighbouring informal settlements). In this region, the Capibaribe is characterized more as a barrier between the North-Zone and the Centre-West Region of the city.

In the left margin of this section of the river (to the North) there are two neighbourhoods which concentrate great part of the upper class populations of Recife; while in the right margin (to the South) there are lower and middle class neighbourhoods. In the right margin there is also social housing with families who were removed from the riverbank areas by urbanization projects of ‘hygienic’ character, carried out since the 1980’s.

In spite of the differences of income in both margins of this section of the river, the urban fabric is very fragmented and segregated in both sides, generating clear consequences over the low interaction of the population with the river. Field work showed that even with the presence of some public parks, interaction of the population with the river is still restricted in this region.

In this case, the Capibaribe River works as a barrier which contributes to the worsening of the spatial segregation between the different strata of society, and even to the disconnection of the lower class population with public spaces which are generally situated near or in the higher income neighbourhoods. As Figure 06 shows, there is a direct relation between the income level and the presence of public spaces, as well as an inverse relation with population density. The population with the highest income chooses where to live, and the presence of public spaces (parks and squares) seems to be an important factor in this choice.

Another relevant study carried out to evaluate the relation between the urban framework and the river analyzed the relation between plots and parcels with the river. Although it was limited to only one specific section, this study had an expressive result. All the openings (accesses) to each lot were identified to verify if they connected to the margins of the river or not. The study showed that most of the lots along the margins of the river are closed to it, and many use these spaces for parking. Without a doubt there is great landscape potential that is being wasted in these occupations because it does not allow people to arrive and to transit along these sections of the river.

What has been observed in the part of the study could be interpreted as a consequence of the movement of substitution and densification of the built environment in Recife, normally through verticalization of residential buildings. This change in the form of the edifications has significantly influenced the relation between public and private spaces, as it has modified the constitution of the border between both. Densification interferes in the way public spaces are appropriated, and instead of increasing the level of urbanity, as one might expect, it has had an inverse effect in Recife.

This analysis of the current urban fabric of Recife confirms the validity of a colloquial expression, which has been used frequently to describe the current relation city - river: “Recife gave its back to the Capibaribe”.

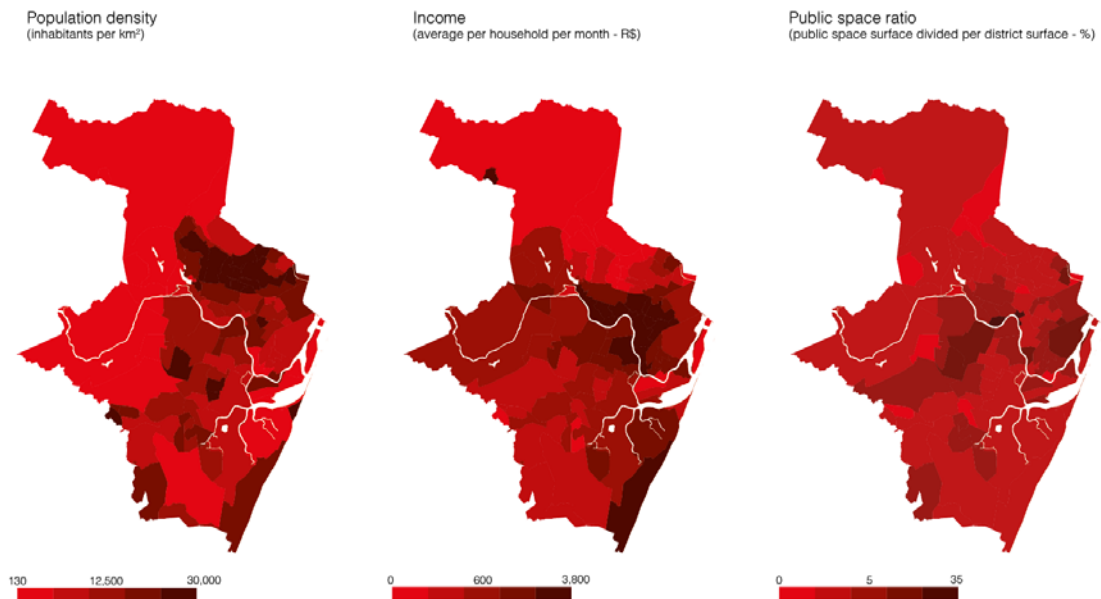


Figure 6: Comparison of income, density and access to public space (Authors' own).

6. The Capibaribe Park

The Capibaribe Park Project is a result of an agreement, signed in 2013 between the Municipality of Recife – PCR and the Federal University of Pernambuco – UFPE, represented by the research and innovation group for the city – InCiTi. The Capibaribe Park proposes an environmental recovery plan and urbanistic articulation of the Capibaribe River, including projects for interventions in sections of the riverbank margins.

However, a proposal of merely treating the margins of the river was expanded after a reading of the territory which brought to light the necessity of integrating into the plan the many streams, as well as the remaining big green patches of Atlantic Forest. This decision resulted in the proposition of a more ambitious plan, with the perspective of shifting Recife towards a “Park City” before the year of 2037, when it will celebrate its 500th anniversary.

The concept of a “Park City” is based on the idea that the public space in general must have urbanistic qualities that approximate it to the concept of a Park, where the environment is favourable to the meeting and joyful coexistence of people.

To meet the challenges of bringing together citizens and riverscape, some actions were taken: the environmental recovery of the hydrographic basin; the connection of the river and its tributaries with the urban fabric; and the implementation of solutions for sustainable urban mobility. This means restructuring the urban territory through the consolidation of green corridors which spread throughout the city by way of streams, canals and transit ways.

The plan for the Capibaribe Park follows the logic of an open plan, composed by spatial strategies which may catalyse other movements of transformation in the city. For this, four basic project directives were established to expand urbanity potential and improve connections along the river:

To arrive: this category articulates river and city, trying to strengthen connectivity with the river margin. The idea is to “infiltrate” the Park into the urban space, to conform access routes as part of the Park, promoting a transition between city and public space which stimulates and conducts people towards the Capibaribe.

To promenade: this strategy establishes conditions for an ecological, educational and leisurely trajectory for the citizen that transits along the margins of the river. This strategy is related to the reoccupation of the margins of the Capibaribe through the articulation of segregated and less integrated existing routes. It also tries to increase the constitutivity of the spaces along the riverbanks by creating a new front for these spaces.

To cross: the objective here is to connect opposing margins, by improving the interconnection of the urban fabric. This strategy focuses mainly on bridges for pedestrians and cyclists, but also on boat-crossings. This measure is not only of local interest but it is also effective for the global structure of the city so that the river no longer functions as an urban barrier.

To embrace: this strategy promotes spaces for permanence along the river by creating leisure activities and places where people can mingle. These spaces improve physical and visual accessibility and citizens are naturally drawn to the river. This strategy involves the handling of the dense mangrove vegetation, which in spite of its ecological importance, works as a visual barrier. It is necessary to create “windows” and passage ways which stimulate contact between people and the river.

It is important to highlight that these categories of intervention are related to the variables proposed by Holanda (pp. 308-315) to determine the level of urbanity of an urban space, and that they were latter applied in the context of Brazilian riverfronts by Mello (2012, p. 69). Among the variables pointed out by Mello to evaluate the level of urbanity, four are related to spatial syntax: constitutivity (number of openings/accesses), physical accessibility, visual accessibility and integration. These categories refer to the facility with which spaces are seen, accessed and integrated to the rest of the urban system – including the use and destination of spaces, which corresponds to the semantic character of the analysis.

7. Effects of the Capibaribe Park on the city of Recife.

With the perspective of reducing the great deficit of public spaces in the city of Recife, the plan for the Capibaribe Park attempts to include and make available the urban margins of the river which are currently inaccessible or extremely segregated, so that they are appropriated as Public Parks. However, for this to be successful it is also necessary to elaborate urbanistic interventions to articulate these “new” spaces to the urban whole, to “open” the city to the river.

One of the central strategies for this is the improvement of the integration level of the urban fabric along the riverbank areas. In fact, in many sections it is merely a question of complementing the unfinished urban fabric, by considering interventions for the existing lots that are closed to the river, the inadequate public lands and the informal settlements which are extremely segregated.

This logic of complementation of the urban fabric and improvement of the level of integration includes also the implementation of new crossings in strategic points, especially in sections of greater spatial and social segregation.

It is essential to highlight that within the concept of the Capibaribe Park, the complementation of the urban fabric is focused mainly on the creation or adaptation of passage ways for pedestrians and cyclists. This would be a way of returning the margins of the Capibaribe to people, and not to automobiles, as was the intention decades ago. This observation is important because theoretically, the implementation of roads on the river margins would also increase the level of integration of the urban framework, but without providing the qualities desired for this context.

The interventions proposed for the Capibaribe Park have two time frames. The first stage is the year 2020, while the second aspires for a city transformation up to the year 2037, the city's 500th anniversary.

The conception of the Capibaribe Park explored the landscape and natural qualities of the river margins, as well as its great articulation potential over the urban framework. The application of the projectual categories (to arrive, to promenade, to cross and to embrace), will happen more incisively in a specific area named Park Zone. This Park Zone will further extend the area of influence of this plan, allowing the spilling of interventions of the Park over the urban space.

From this conceptual base some guiding principles for the various interventions along the river were established with the objective of offering quality urban spaces, to be implemented by several actors.

Along the Park, 45 km of bicycle lanes are proposed, connecting the city from East to West and passing through more than 30 neighbourhoods. This connection also includes the implementation of wide sidewalks and wooded areas for pedestrians, a simple element of urbanization that is still limited in the context of Recife. Twelve new bridges will also be implemented for pedestrians and cyclists, as well as more than 90 "infiltrations", that is, transit ways with attributes that approximate them and attract people to the Park (paths, wooded areas, bike lanes). To complement these actions, several spaces of leisure and contemplation will be included to "embrace" the river (parks, decks, squares).

To analyse the effects of the implementation of the park, we first considered the interventions proposed for its initial phase (which are better defined): new access routes to the margins, bicycle lanes, pedestrian paths and new bridges. With this complementation of the urban fabric, there will be considerable additional permeability at the margins, with a gain of 83 axial lines (Figures 07 and 08), totalizing 206 axial lines along the Capibaribe River. When calculating the level of integration of the urban fabric with these interventions, we measured the following results:

Axial lines	GLOBAL INTEGRATION		LOCAL INTEGRATION	
	Highest	Lowest	Highest	Lowest
RECIFE 2020 (13,882 axial lines)	2.1293	0.2729	5.1743	0.3333
MARGINS OF THE RIVER 2020 (206 axial lines)	2.145	0.7315	4.9550	0.3333
RECIFE 2014 (13,447 axial lines)	2.1388	0.2738	5.323	0.3333
MARGINS OF THE RIVER 2014 (123 axial lines)	1.7837	0.6084	4.0818	0.3333

Table 5: Comparative of integration syntactic values with the implementation of the Capibaribe Park.

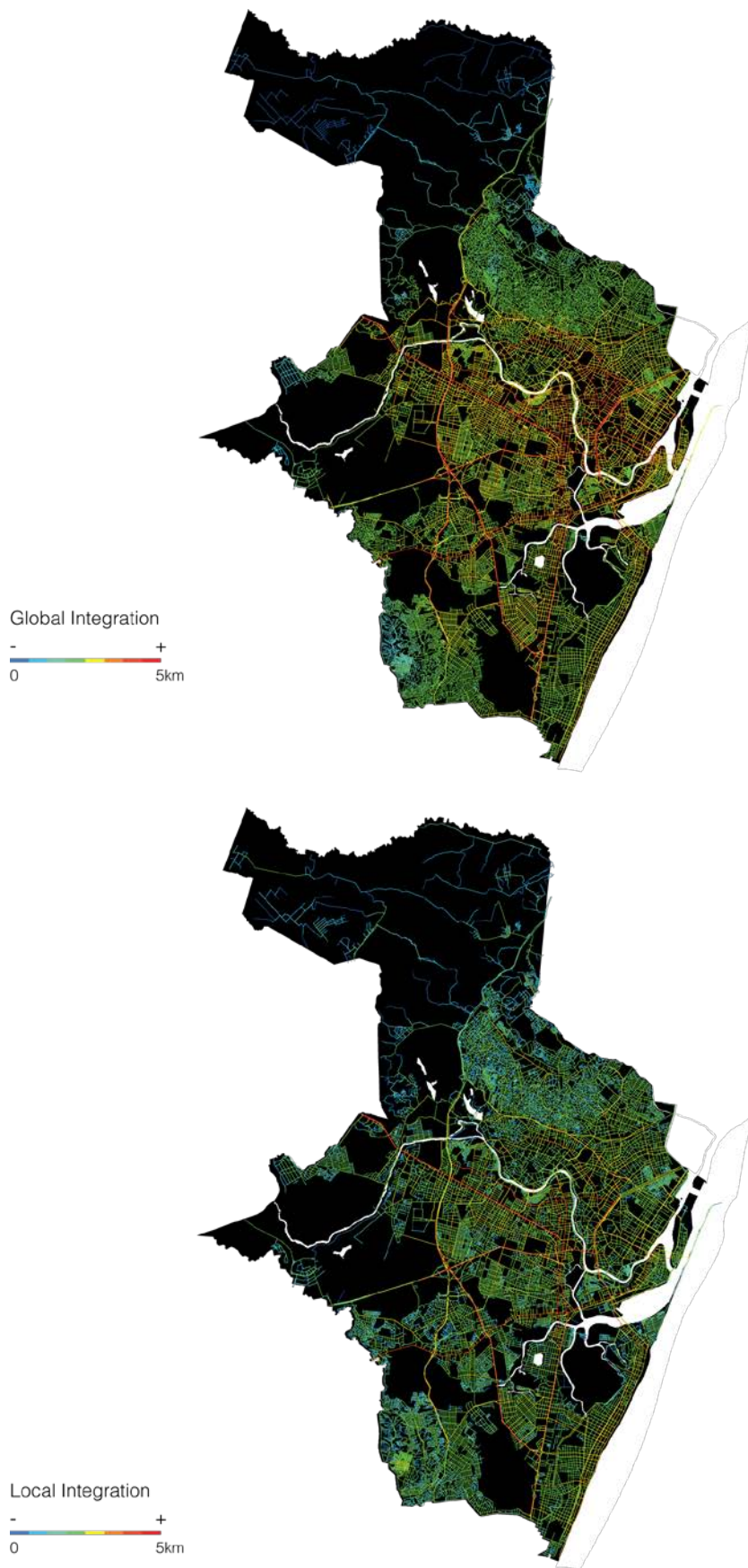


Figure 7: Integration Analysis (2020) (Source: Authors' own)



Figure 8: Integration analysis at the river margins (2020) (Authors' own)

When comparing both moments, a significant gain is seen in the global integration, as the highest value for the margins (2.145) will get very close to the highest value for the city as a whole (2.1293). At the local level, there will also be an increase. In comparison with the previous value of 2014 (4.0818), the increase will be discrete (4.9550), but if compared to the highest local value we will have in 2020 (5.1743), the difference will be lower between the values of (5.1743 – 4.9550).

This analysis shows the expressive gains that should be reached through the interventions of the Capibaribe Park Plan, in terms of integration of the urban framework with the river. Moreover, the proposed bridges should also improve the interaction between the two margins, which will be more connected, especially in the regions where there is a higher income gap.

To conclude, we would like to reiterate that the objective of the proposal elaborated for the Capibaribe Park is not only to offer a new relation between the river and the urban fabric, but also to take this opportunity to reweave great part of the urban fabric of this city, to bring the river back as the main element of articulation of the space.

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