

## **CAPIBARIBE PARK, RE-WEAVING A CITY THROUGH GREEN AND PUBLIC SPACES**

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### **Abstract**

This paper deals with the research methodology and interventions proposed for a 30km linear park along the main watercourse of Recife, Northeast Brazil. The project was commissioned by the Municipality to a research group at the Federal University dealing with multidisciplinary studies and innovative solutions for the city. The project is a strategic plan that tackles environmental, spatial and social issues. Such a change in the configuration of the city is perceived as a framework that will propel the transformation of Recife, a city with more than 30% of its surface covered by nature reserves of forest and mangroves, but where public spaces and parks represent only 0.5%. One of the main challenges in this project is how to reconnect citizens with the river. Nearly 500 years old, Recife has seen its relationship with the river change drastically over time, the advent of motorised transport in parallel with the expansion of the city having reversed its early integration with the river. The spaces along the riversides are no longer central but now part of the city's periphery. The proposed park thus seeks a reinvention of the city, grounded in expanding the potential and qualities of existing public spaces and vacant areas, whilst prioritizing public and non-motorised means of transportation and structuring vital and sustainable places.

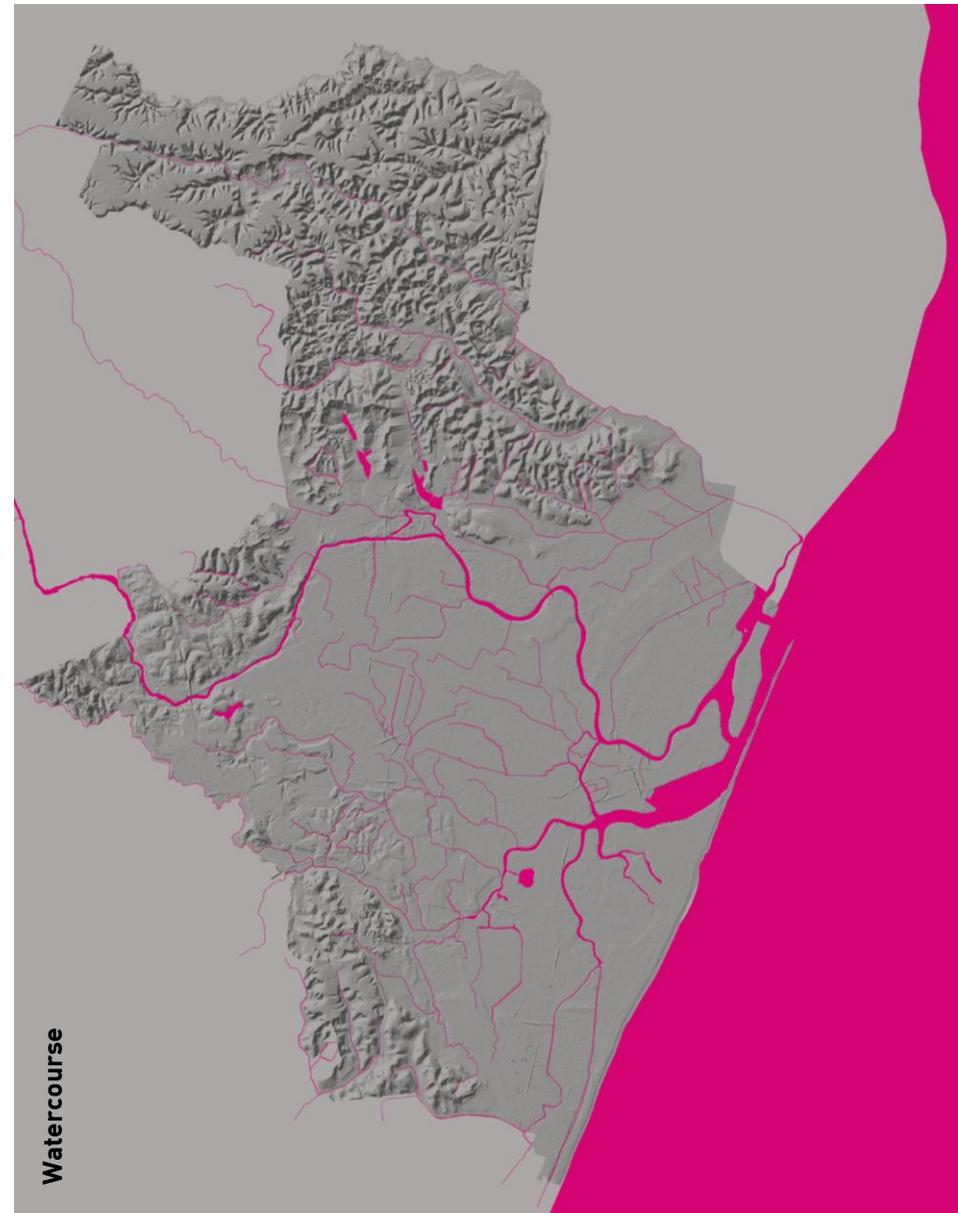


## CAPIBARIBE PARK, RE-WEAVING A CITY THROUGH GREEN AND PUBLIC SPACES

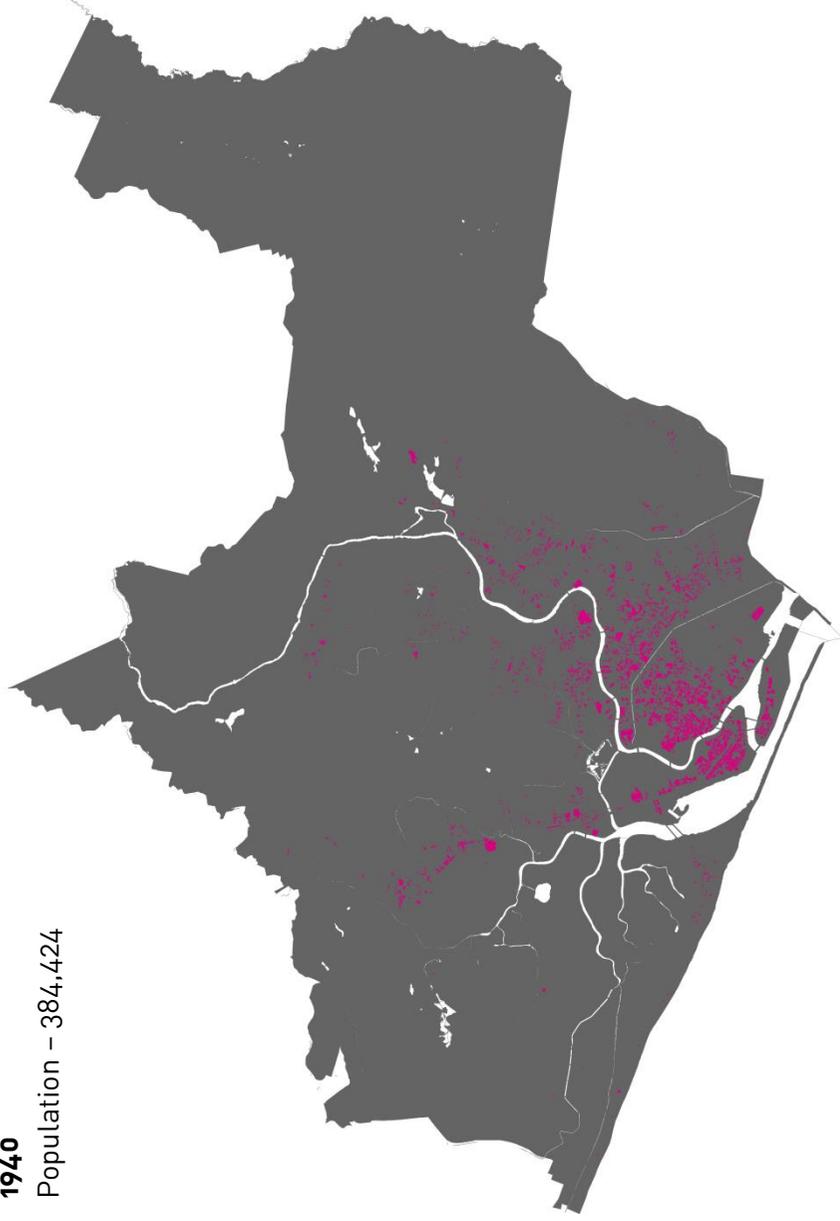
This paper deals with a series of lost (or broken) relationships: the rupture between nature and the city which is sheltered by it, the disconnection between the city fabric and its riverbanks and the loss of people's experience with public spaces. These structural and complex issues call for new solutions in the articulation of knowledge in the design of a comprehensive plan and solution negotiation with society.

The floodplain on which the city of Recife is located is permeated by a large number of rivers and streams, the River Capibaribe being the principal watercourse in this system. The integration of the small city and its neighbourhoods with the River Capibaribe took place in a spontaneous, fluid way. The river was the primary means of transportation and economic exchange, its landscaped value and amenities being recognized by society, which saw its banks as a privileged location for dwelling and leisure.

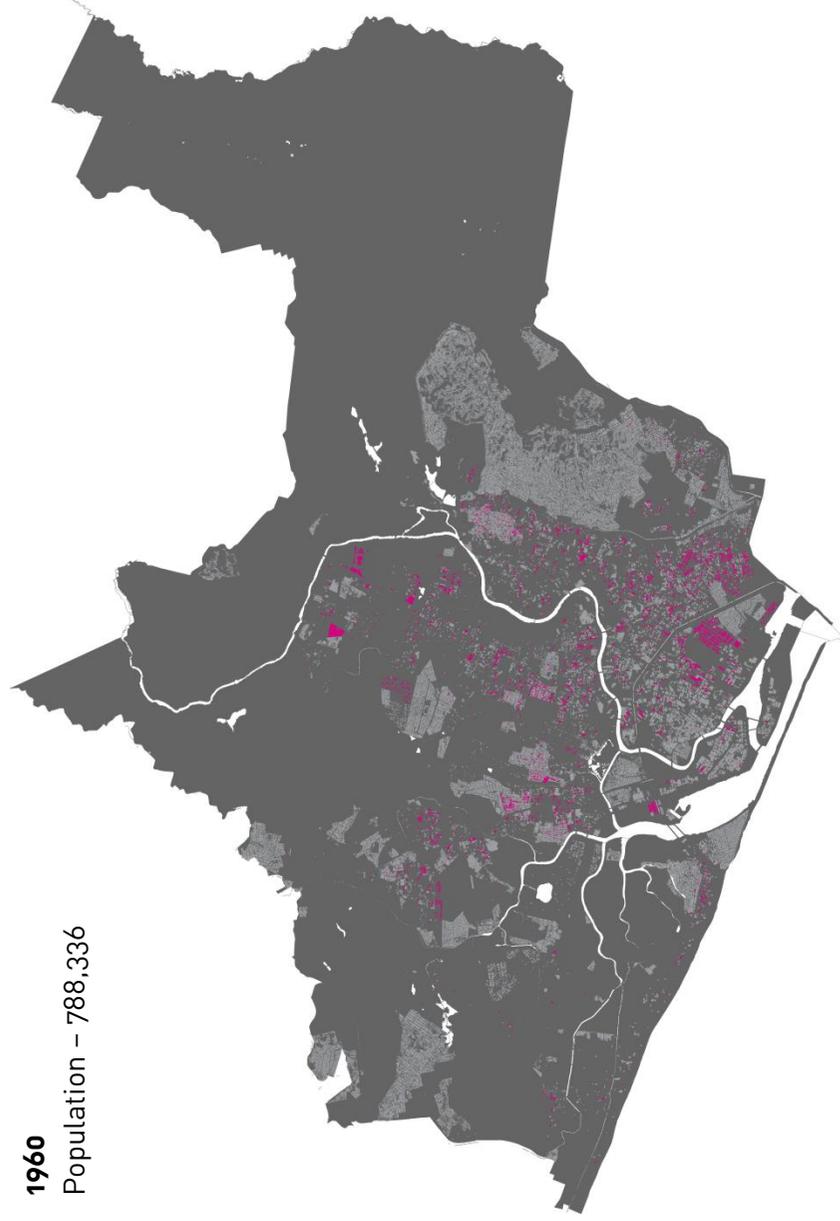
This harmonious coexistence has been lost with the growth of the city, which, expanding through successive waves of land reclamation from the watercourses has become more vulnerable to the tidal regime characteristic of a floodplain. The direct consequences of this conflict with the River, where the city turns its back on the banks, include the loss of environmental quality, a major disconnection of the city from the river, which becomes a socio-spatial barrier.



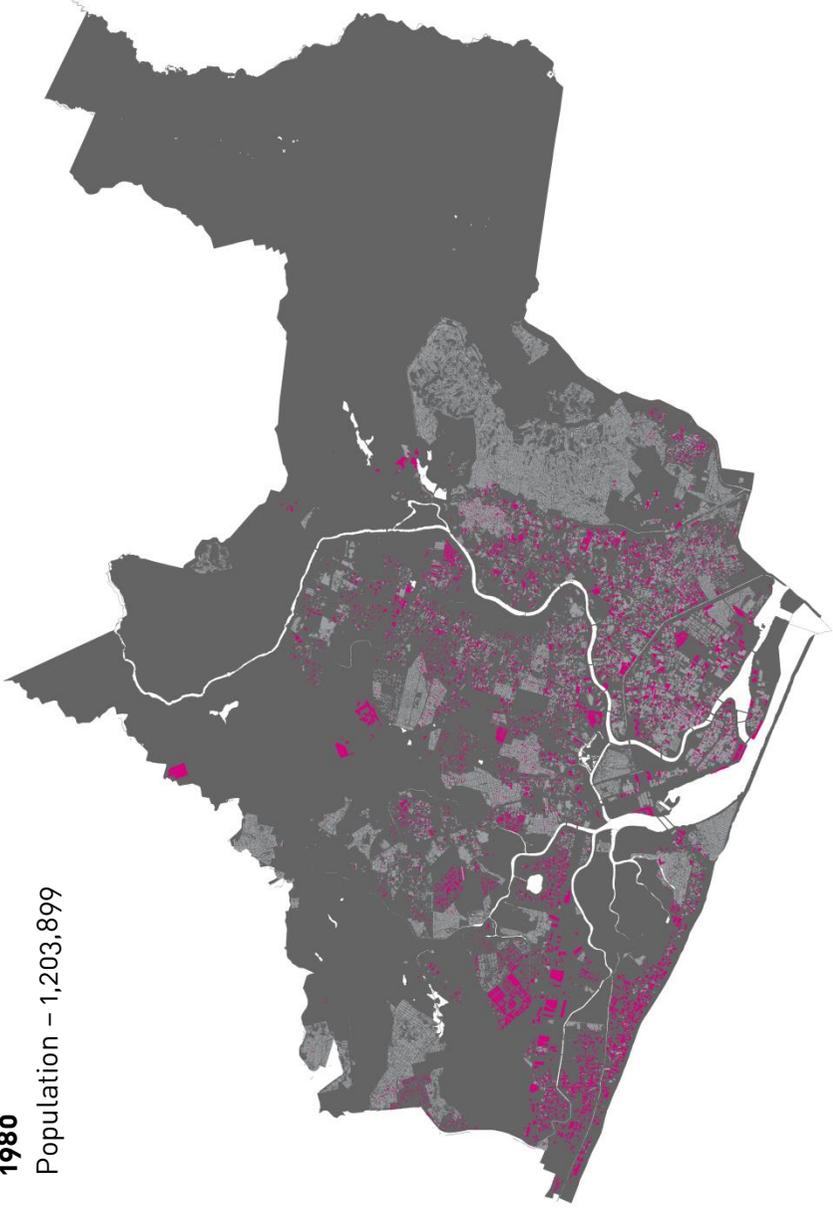
**1940**  
Population – 384,424



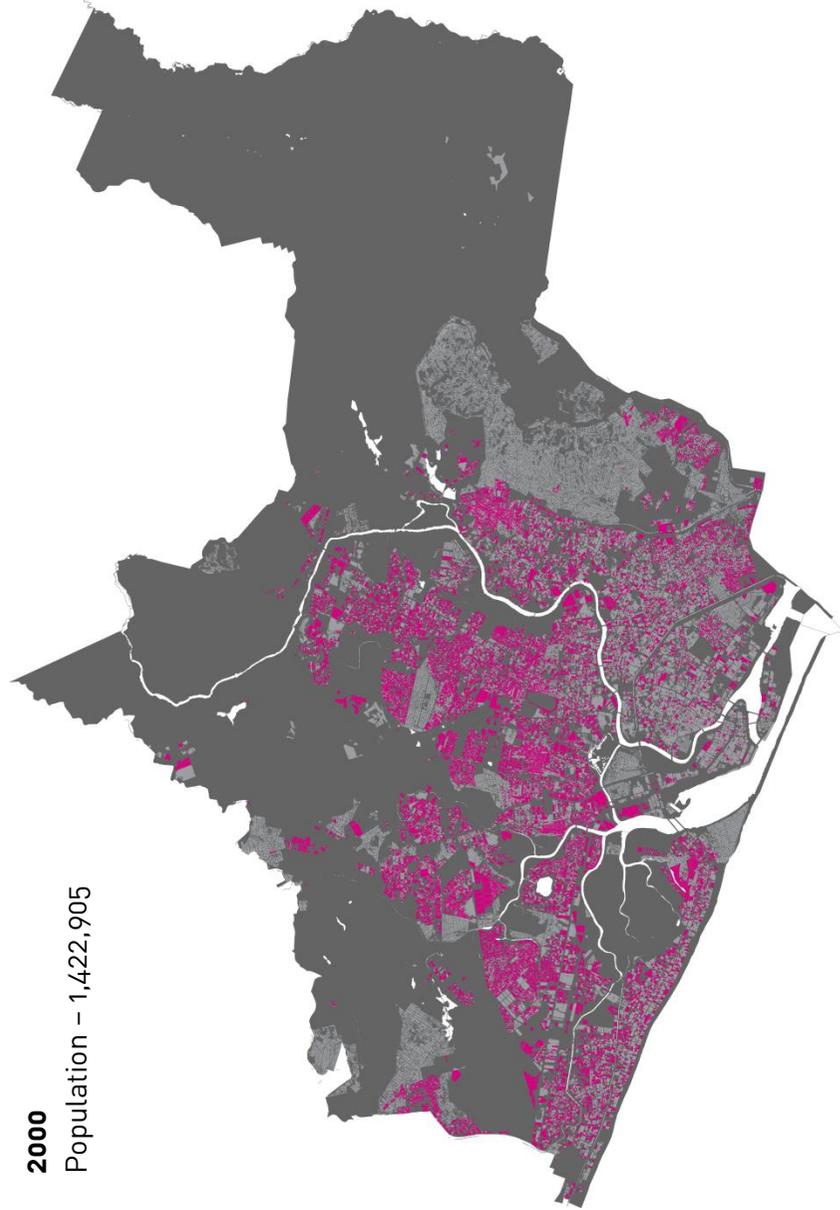
**1960**  
Population – 788,336



**1980**  
Population – 1,203,899



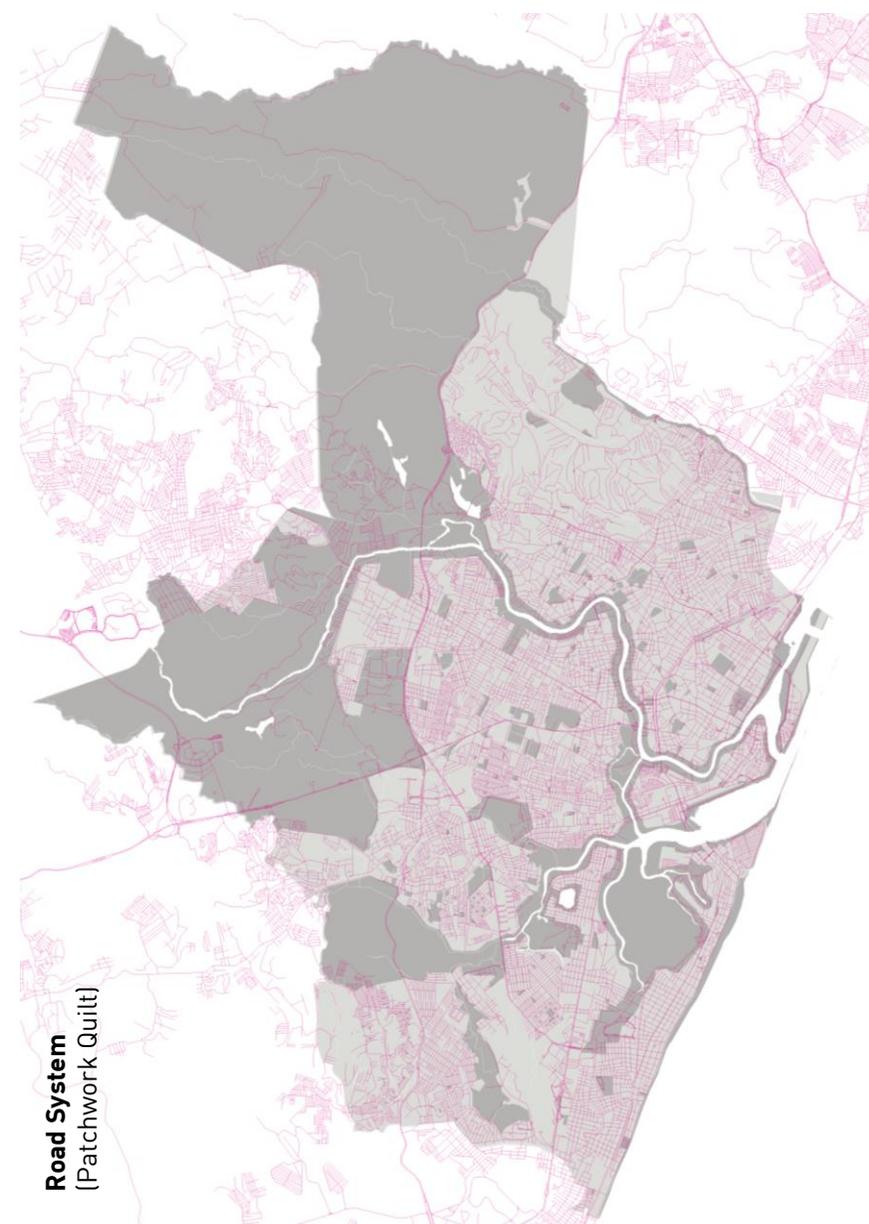
**2000**  
Population – 1,422,905



The combination of these different elements has resulted in a somewhat heterogeneous urban fabric, with parts that display a regular grid pattern and others that have an organic outline, following the path of the watercourses or the contours of the hills occupied in the second half of the 20th Century. Although the composition of this urban fabric has peculiar attributes, it also fits the typical configurational characteristics of Brazilian cities, represented by the metaphor of “patchwork quilt”, cited in the study of Medeiros & Holanda (2007, p29-05).

Although the context and way of use have been modified, the relationship between the city, the society that inhabits it and the River Capibaribe remains very strong in the imagination of its inhabitants, principally those that still keep certain customs, such as fishing, riverbank dwellings on stilts, crossings or short journeys by boat. But it is in the absence of an active use of the riverbanks that the greatest discontinuity in habits can be perceived, owing partly to the disconnected occupation of the riverside and in part to the global shift in worldview, which at a certain point in time began to look to technology rather than the environment around us.

Since the beginning of the 21st Century, it has been possible to perceive a clear change in the way of analyzing and thinking about the city. The traditional format of city planning, which sees the city as a rigid structure, disconnected from its functioning and the wishes of its users, no longer meets the needs of this complex system that, with dynamic characteristics (evolution, growth and change), understands that these processes can be followed and directed, but rarely imposed (BATTY, 2007).



Within this context, a profound knowledge of the city in all its subsystems is indispensable: the buildings, the built infrastructures, the technical infrastructures and the ecological infrastructure (QUINTAS & CURADO, 2010) that, with the society that inhabits and uses them, make up this complex system.

The innovative aspect of this project began when the Municipality invited the Federal University to gather a network of researchers cooperating towards an integrated vision of environmental and urban systems and to think through what would be necessary for the development of a sustainable plan for the River Capibaribe. A transdisciplinary perspective of the relationship between these subsystems enabled the researchers to recognize essential issues for treating with respect the survival relationships between fauna, flora, nature and the society which inhabits it.

The resulting plan of the partnership between University, Municipality and inhabitants became an Urban Plan for Environmental Recovery and an urban park project alongside the banks of the River Capibaribe, approximately 15km long and passing through 42 districts (nearly 1/3 of the city). Within this context, different realities can be observed on a scale ranging from pockets of preserved forest to historically built areas, including precarious dwellings on stilts, tall buildings, roads for motorised vehicles and squares, all considerably disconnected from one another.

A brief analysis established the perspectives that would come to guide the unfolding research and project, which are the following:

The River as a promoter of environmental recovery

The River as a promoter of urban and social integration

The River as an articulator of non-motorised mobility

Five analyses were identified to connect with the perspectives established and are of fundamental importance to the development of this project: Open Space availability, Environmental Legislation, existence of Natural Systems, the need for Urban Connections, recognition and improvement of Transformability Potential of the entire park area.

## **PARK ZONE DELIMITATION**

The compatibilization of the analyses enabled the recognition of a bigger influence area of the Capibaribe Park and transition between the existing infrastructure and the natural system of the River Capibaribe. The same analyses also allowed the delimitation of the first limit and legal area for the Capibaribe Park.

This region, that structures itself around the Capibaribe Park - denominated Park Zone - and will concentrate actions that aim to reintroduce the Capibaribe into the mental map of the inhabitants through the establishment of emotional relationships, encounter and exchange, and towards which the city will look in order to create new opportunities for education and socio-economic development.

The results point to a new opportunity for the restructuring of the whole territory around the River Capibaribe. In the groupings of vacant and potential spaces, in the watercourse network, in the existing street network and in the need to improve spatial integration, we can envisage an opportunity for the development of a new integrated and integrating structure whose axis would be the River Capibaribe. Restoring the river's role as the city's structuring axis, with public functions defined around it and improvement of access and connections recovers the importance and the vitality of

this natural element in the socio-spatial integration of the various neighbourhoods along the river.

Large public spaces, used by people of different social, racial and cultural groups, are important social friction areas, but it is the public spaces in neighbourhoods that contribute to the feeling of identity and belonging, awakening the sociability and knowledge that nourish shared memory and community life. In this sense, it is indispensable to enable the connection between these large public spaces in such a way as to induce and allow free access to all citizens to a broader experience of the city parks. Another important aspect in the construction of these spaces is the understanding of the vocations and wishes of each area, as well as, participative construction in which the users of each section play an active role in the definition and planning of each new space, thus increasing the chances of these places being duly appropriated by the community.

The construction of this network of public spaces is one more effort in the attempt to bring to this stretch of the city, not only to the recreational spaces, but also to their internal and access connections, the qualities of an urban park, such as: trees, an accessible and inviting street system, encouragement of non-motorised access and the installation of suitable urban furniture.

The Idea of the ecological structure fits in this context as an alternative to the traditional models of city construction, in which each subsystem has its own independent function. Here, the superimposition of functions enables each component to be incorporated into this complex system more easily and to establish itself as an integral part of the city, thus minimizing threats.

## **SENSITIVE DYNAMICS: ENVIRONMENTAL CONNECTION RECOVERY**

The creation of this ecological structure aims to minimize the impacts caused by urban expansion, and has converted many cities into important ecological habitats for countless species of animals, to the point of being considered as complete ecosystems and establishing what can now be called Urban Fauna. In this context it becomes indispensable to ensure diversified flora, within a set of interconnected green areas, in such a way as to provide not only food and refuge, but also the possibility of safe movement. It is known that the ecological structure of a city is one of its most important elements, performing a vast range of functions and being seen as fundamental for the quality of life and health of citizens, as well as for the city's attractiveness.

The incorporation of public spaces located along the banks of the River Capibaribe into this ecological structure represents not only a possibility of protection and reestablishment of the environmental functions of this natural system, but also the expectation of increasing the green area of the city, This takes on an even greater importance with the current prospect of climate change, in which unexpected volumes of rainwater or tides require even more area for accommodation. Moreover, the considerable number of streams and channels that cross the city and flow into the river reveals a great potential for establishing a system of ecological connections based on green (vegetation) and blue (watercourses). This may increase the effectiveness of this urban ecological structure, since it allows for the creation of relationships between the areas, prevents the interruption of flow and maintains the ecological continuity essential for the urban balance (QUINTAS & CURADO 2010). This ecological network integrated into a quality street system that

prioritizes non-motorised transport can reinforce relationships with the surviving natural systems on or beyond the banks, strengthening, preserving and consolidating their presence as an integral part of the city.

### **SPATIAL DYNAMICS: SPACE, CONNECTIONS AND THE MOBILITY CHALLENGE**

A urban plan is the existence of a functional system of urban connections, with a connected street network that facilitates access to the Park from areas near the river or from more distant locations by connection with public transport points. The evaluation of the urban connections allows us to identify the trend of movement between different city areas and, together with other variables, enables us to correlate the spatial structure with several social phenomena. This interaction between space and society can be observed in 3 different movements: the relationship between the individual and their daily activities, the movements to carry out activities and the materialization of these activities in a building or space (ZECHLINSKI, 2013).

The distancing of the city from the river is clearly manifested in the urban structure. From reading the morphology of Recife over the areas near the banks of the Capibaribe, the impression of an “incomplete” urban fabric stands out. The fragmentation and low connectivity of the lines on the boundaries between the river and the city, like a fabric that “falls apart” on approaching the river, is noteworthy. The river is not perceived by those who walk through the city, with the exception of the city center, which is surrounded by water. The need is perceived for a greater irrigation in the areas adjoining the banks, as well as enabling public access to them, given that most of the perimeter in question is currently inaccessible to the

population. This same analysis reinforces the need for better articulation between the two riverbanks of the Capibaribe, with the aim of improving not only spatial integration, but also social integration and facilitating access to public facilities or transport.

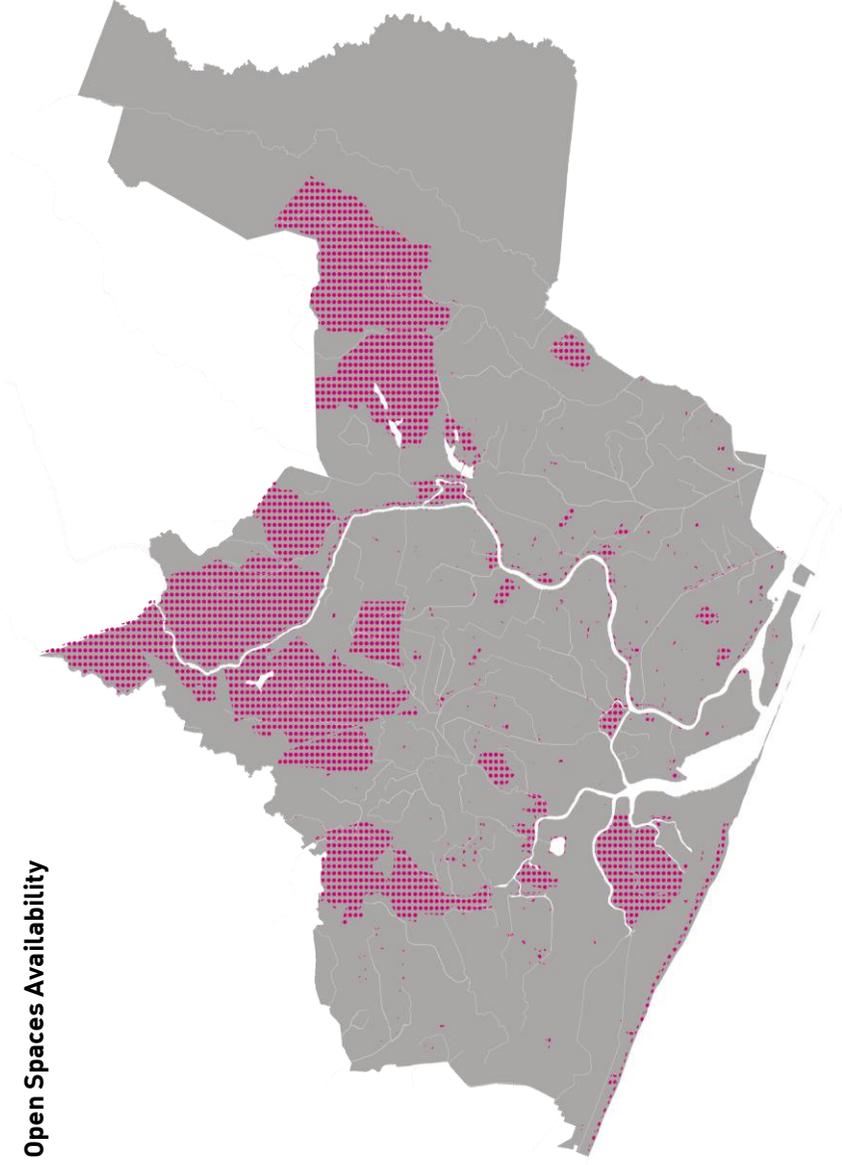
### **SOCIAL DYNAMICS: URBAN VITALITY AND TRANSFORMATION**

Urban vitality is understood as being the capacity of the space, whether public or not, of promoting a greater integration among people or at least co-presence, a fundamental element to evaluate the performance of public spaces. This notion of vitality approaches the concepts related to urbanity, which, according to Hillier (2007) and Peponis (1987), refer to the capacity of the space to promote the meeting of buildings and public space, between residents and passers-by and between the different scales of movement. The concepts of urbanity and vitality thus converge, on relating spatial, social and use dimensions.

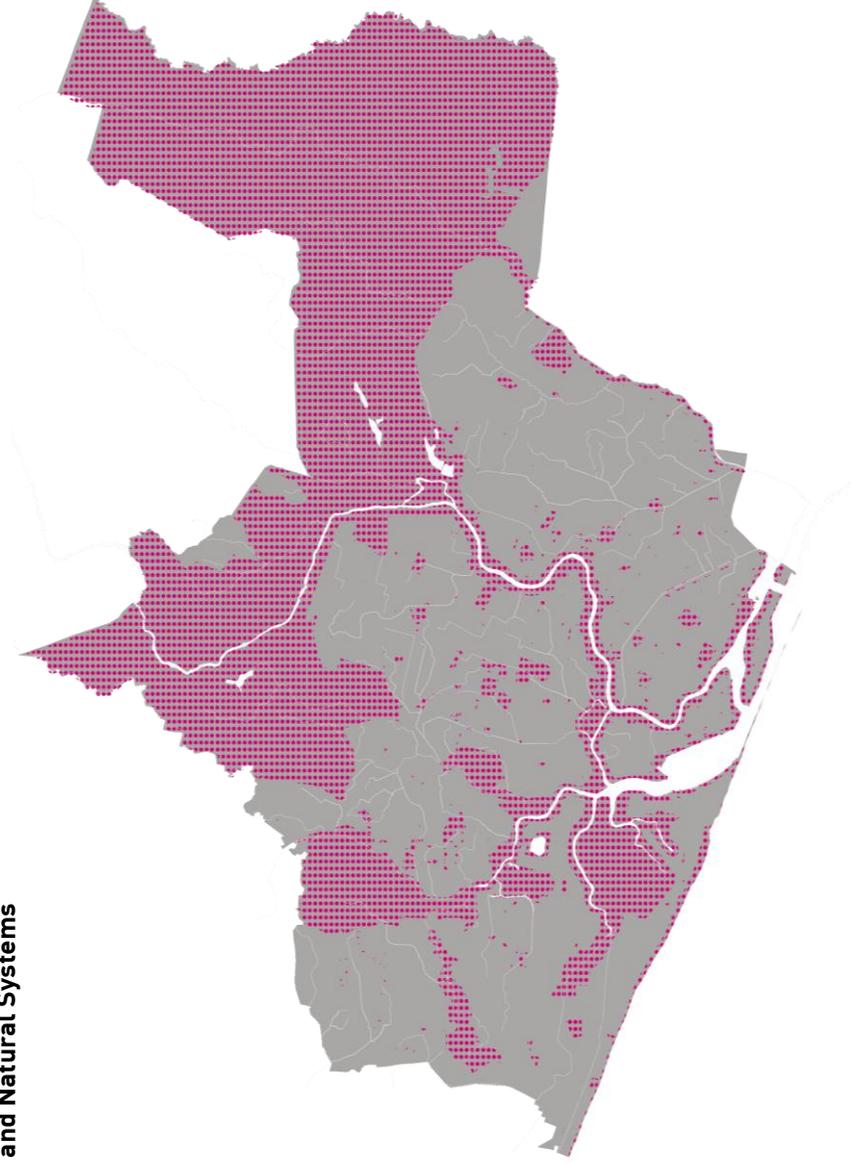
### **LEGITIMACY CHALLENGE**

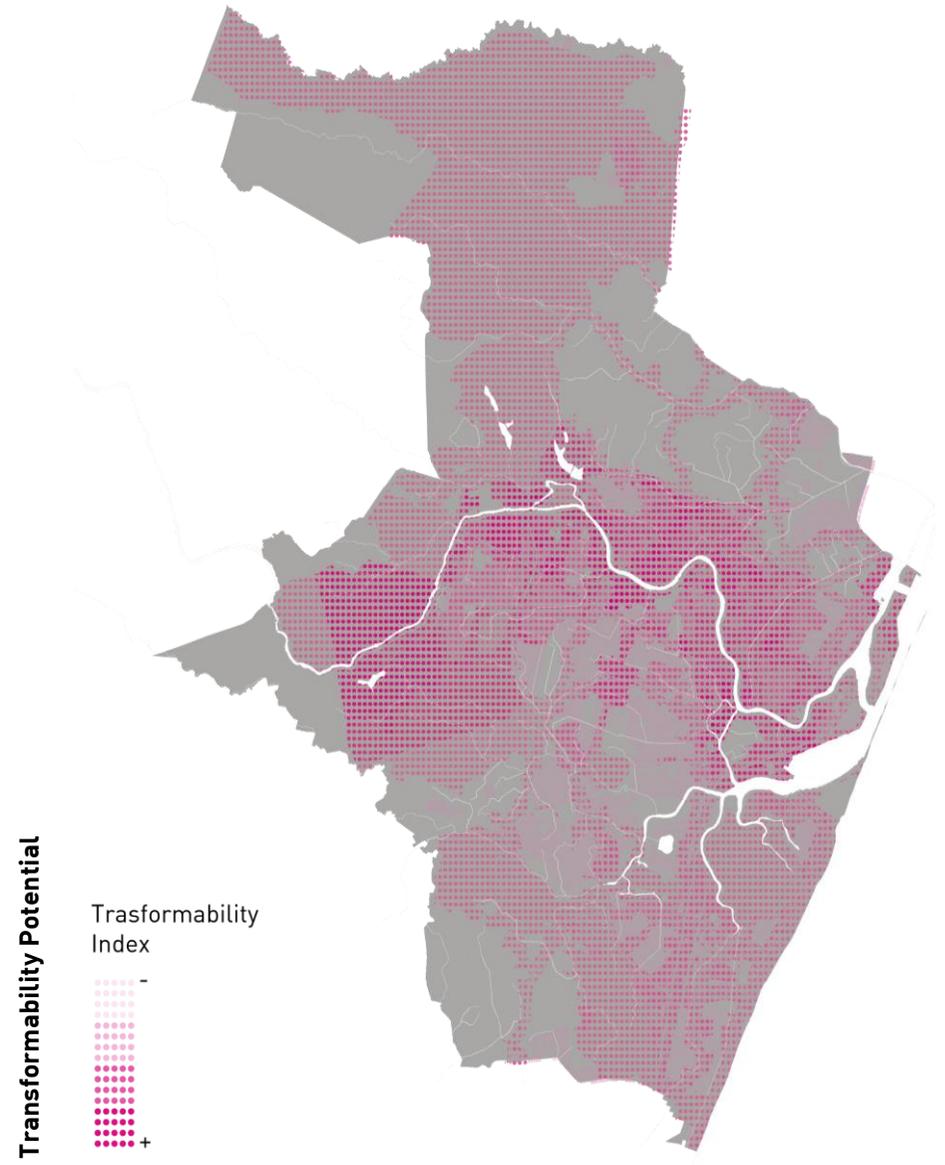
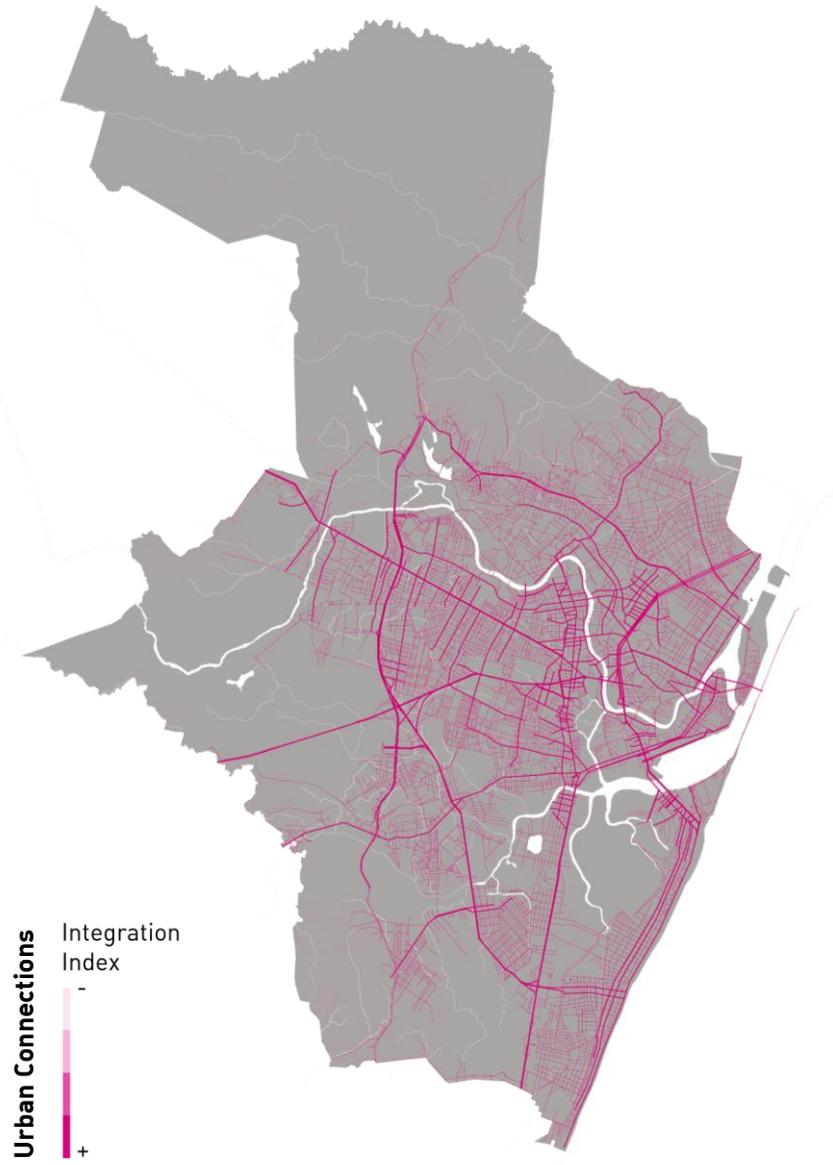
The understanding of city dynamics is fundamental to direct joint effort of the public authorities and academia, in order to achieve the goals established by this urban plan and also to deal with unforeseen effects, such as low acceptance by the population or pressure from real estate. This information will bring input to the future definition of a management and monitoring plan, which will have, among other responsibilities, the mission of articulating the different public and civil spheres in a participative, flexible structure, which should adapt to the constant changes in the city. Special legislation for the Park Zone, which will meet the specific regulatory needs of this region in an integrated and transdisciplinary way, should also be constituted.

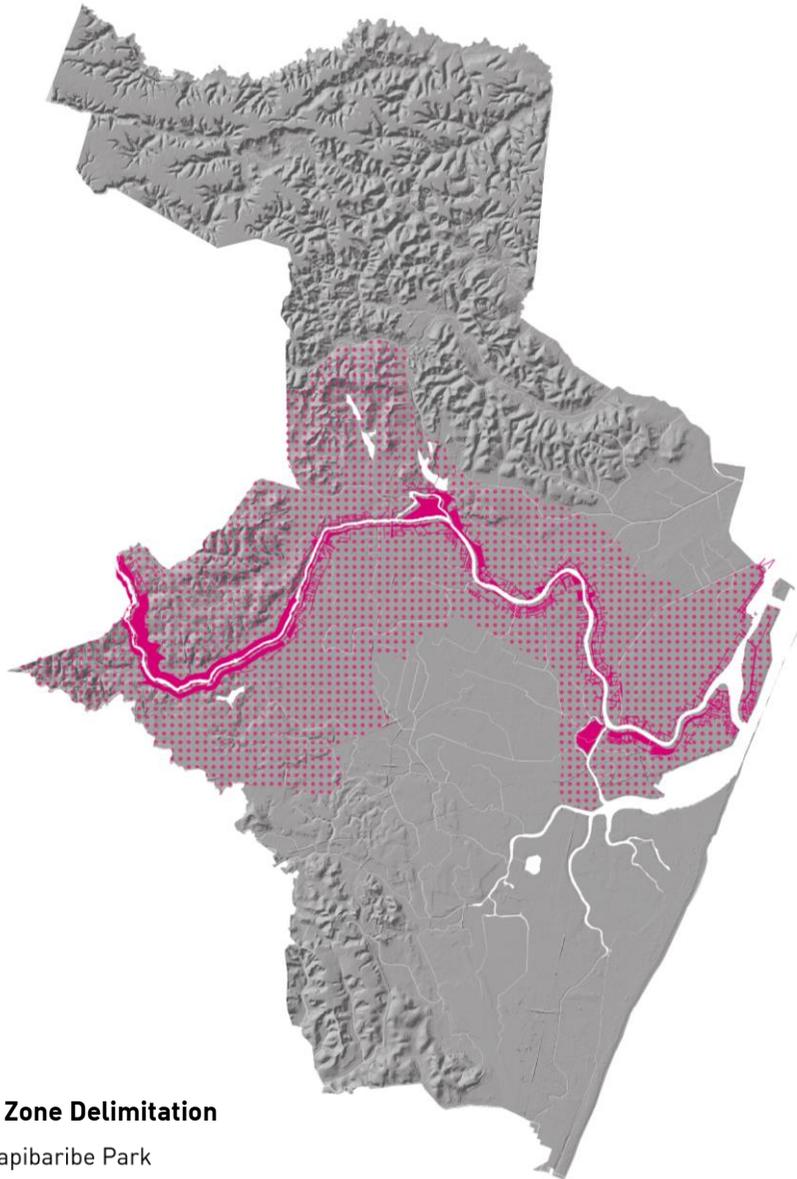
**Open Spaces Availability**



**Environmental Legislation  
and Natural Systems**

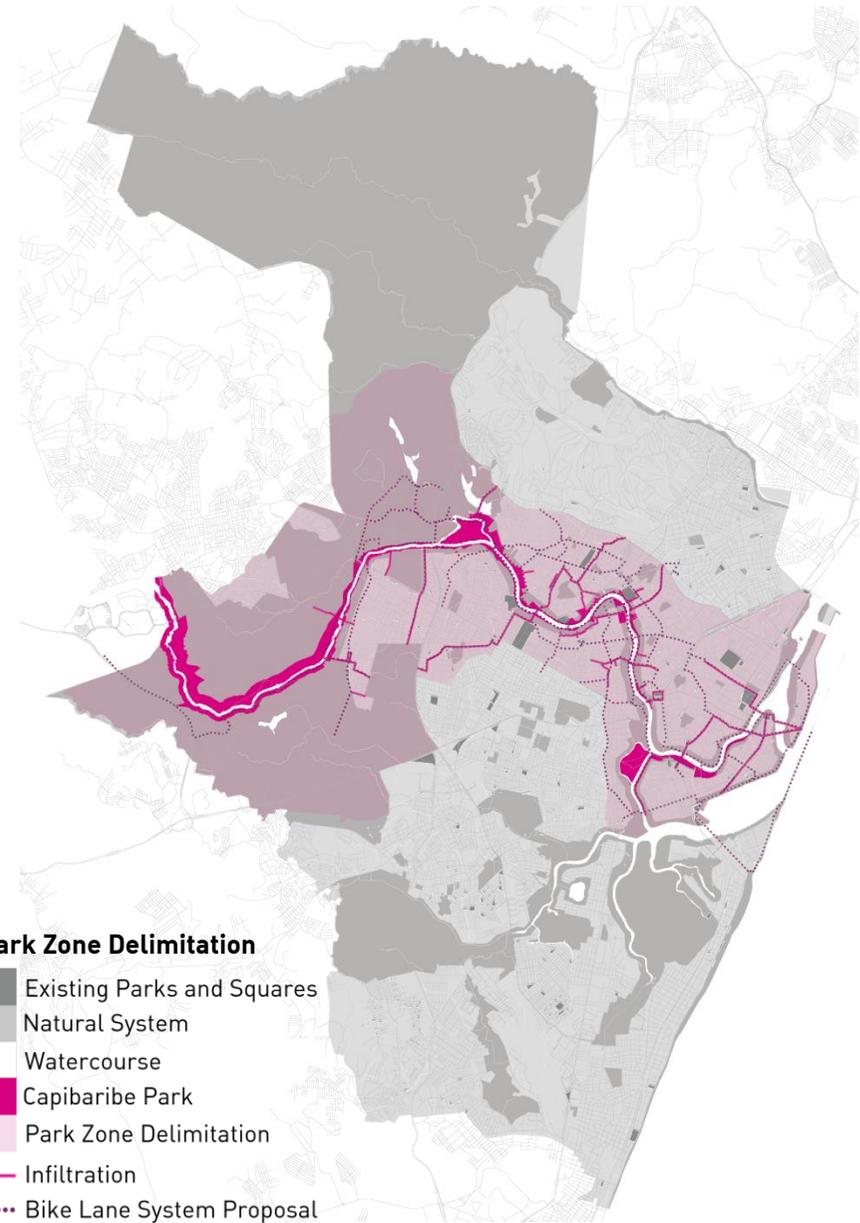






**Park Zone Delimitation**

- Capibaribe Park
- Park Zone Delimitation



**Park Zone Delimitation**

- Existing Parks and Squares
- Natural System
- Watercourse
- Capibaribe Park
- Park Zone Delimitation
- Infiltration
- Bike Lane System Proposal

## CAPIBARIBE PARK GUIDING CONCEPTS

Given the analyses and the perceived needs, four basic actions have been defined that will contribute to enhancing the use of the park and its integration with the urban environment in which it is embedded. They are the following:

**To arrive at the river** – To enable and improve access to the riverbanks, connecting public facilities of great vitality, important transport axes or public transport points to the Capibaribe Park, thus encouraging non-motorised movement and bringing urban vitality to this region. Priority will be given to the connections that follow urban streams or channels, which shall also be requalified within the characteristics established for this function. This street network will also include cycle lanes and cycle paths, as well as stretches for shared pedestrian and bicycle use. The integration of the Park with the rest of the city will encourage its use and future adoption by the population. These paths of integration have been denominated “infiltrations” and will also have the objective of irrigating the city with the same qualities defined for the Capibaribe Park, in such a way as to establish the ambience of the urban park in the area of the city that will extend beyond its edges (Park Zone). Another function of the infiltrations is to establish an ecological structure integrated into the city, which will allow connection between areas of important ecological value, an action that aims to strengthen the natural systems that make up the Capibaribe River Basin. The qualification of these routes consists of the treatment of the existing street system with interventions that encourage universal and diversified use, such as: improvement of pavements and infrastructure, tree-planting, installation of urban furniture, signposting and adaptation for universal accessibility.

**To cross the river** – To provide more regularly spaced connections between the two sides of the River Capibaribe along its whole length, enabling non-motorised crossing (pedestrians, bicycles and small boats). The improvement in the integration between the two sides will facilitate the access of the population to public services and public transport, aiding socio-spatial integration. The connections can be made in the form of footbridges, the upgrading of boat crossing points and the creation of new mooring points for small boats.

**To embrace the river** – The incorporation of public spaces on the riverbank into the city by means of definition of uses and activities directed towards the population, such as: squares, parks, cultural and sports facilities, and environmental conservation areas. The public use of these areas will enable them to be reintegrated into the daily life of the city and thus be reintroduced into the mental map of Recife’s citizens, stimulating the sense of belonging and ownership. Open areas identified as potential parts of the Capibaribe Park and located beyond the riversides will also be treated according to the same guidelines used for the riverbanks, in such a way as to extend to the whole Park Zone the characteristics of the park as a city-structuring public facility.

**To go along the river** – Free access to the riverbanks along the whole possible extension of the River Capibaribe within the limits of Recife, so as to allow their use and ownership by the population in the form of parks, squares, green areas, non-motorised mobility routes, sports and cultural facilities. The freeing of the riverbanks will permit the re-establishment of riverside vegetation, strengthening what is this city’s principal natural system, and will enable the Capibaribe to recover its role as a structuring axis for mobility in Recife. To this end, it is necessary that some structuring

actions will have to be planned and executed in an integrated fashion, such as: relocation of high-risk dwellings, repossession of plots occupied irregularly, definition of public use for vacant riverside plots, among other initiatives.

The Capibaribe Park project is the proposal of solutions that Recife needs and deserves. Its central axis is the idea that the River Capibaribe, a defining element of Recife's identity, should be the starting point of a new design for the city, beginning with the rediscovery of the riverside spaces to arrive at the full restructuring of the territory, its urban policies and those of ordering the built environment.

**PURA Capibaribe** – The Urban Plan for Environmental Recovery of the River Capibaribe — encompasses more than a project to create a park, or to institute public spaces linked to the recovery of watercourses and green spaces in the city of Recife. The plan's scope broadens and deepens from the recognition of the scale, the magnitude and the sense that the River Capibaribe and its basin have geographically and historically interposed — and interpose — on the growth and development of the city.

The clarity of the function of the River Capibaribe as the backbone of the municipal and metropolitan territory imposes the recognition of the interfaces, the limits, the crossings and points of exchange, as well as the juxtaposition and superimposition of layers, be they physical, technical or conceptual, analytical or propositional, disciplinary or practical-projectional, implied in diverse, interlocking degrees in the construction, in the study and in the projects of this system-territory of Capibaribe Park.

If an aquacentric city such as Recife needs and deserves a sustainable city design that provides support for the social and economic development dreamed of for generations, the Capibaribe System should be the starting point of this new urban reality.

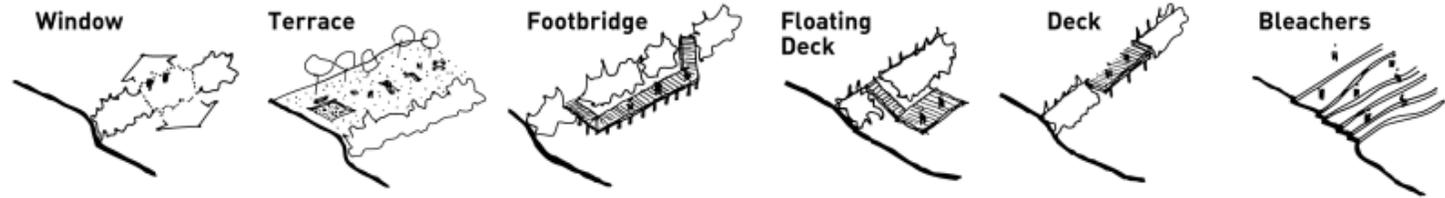
The results expected from the creation of this integrated system of parks along the river are manifold and some are worth highlighting: to contribute to the reduction of the average temperature in the 42 districts directly influenced; the gradual increase in public green areas; the creation of another channel for the movement of people — more than 40 km of cycle and pedestrian routes are envisaged.

This plan will result in an inestimable social dividend, even more significant when spaces and opportunities for connections between people are created, eliminating the existing physical and environmental barriers. The result is a stimulus for creativity and innovation, an increase in business possibilities, an economy of time spent in movement and, above all, a feeling of belonging and engagement of people with their own city. When public space becomes the interest of all, a park-city is a solid argument for good political, social and economic strategies to bear fruit.

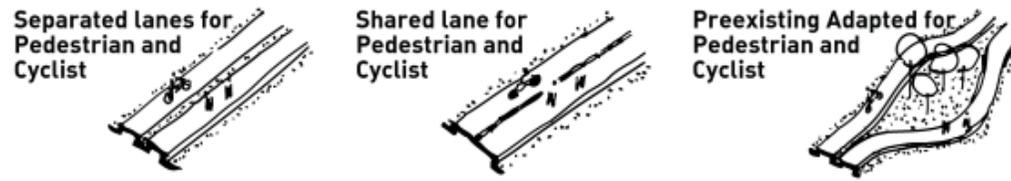
Planning a park-city is a project to change a mentality, it is a stimulus for people to take possession of the city, feel it, experience it, and build it. This is about a change in citizens' philosophy. Fragmented actions have shown themselves to be insufficient to deal with the complex challenges of a metropolis. We must work for a more integrated, integrative, inclusive, tolerant and democratic city.



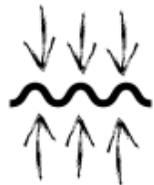
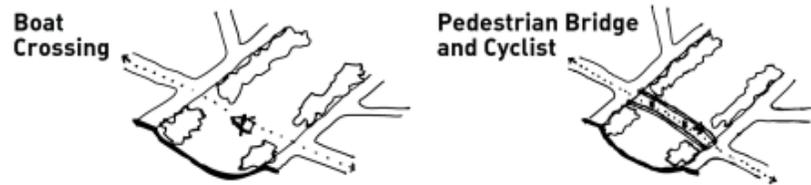
**TO EMBRACE**



**TO GO ALONG**



**TO CROSS**



**TO ARRIVE**

