

URBAN BIOTOPES

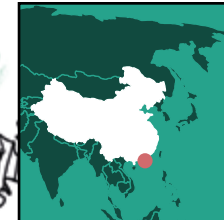
Julián Restrepo
TALLER Architects,
Colombia.

A new perspective on the integration of biodiversity in public space.

COMMITMENTS

2 6

Quote as: Restrepo, J. Urban Biotopes. P. 144-147. In: Mejía, M.A., Amaya-Espinel, J.D. (eds.), *BiodiverCities by 2030: Transforming Cities with Biodiversity*. Bogotá, Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. 2022. 288 pages.



SHENZHEN,
CHINA

Pop. 17,494,398

2,050 km²

5 m.a.s.l.



KEY
CONCEPTS

BIOTOPES

SPONGE CITIES

UNIVERSAL ACCESSIBILITY

The public space intervention in Qianhai, Shenzhen's financial center, proposes a new vision of landscaping and architecture that offers a relationship with ecosystems beyond an aesthetic and contemplative purpose.

The ambition for an ecological transformation of Chinese cities has given rise to a national public policy of **sponge cities**, leading to regional and local proposals. This city building strategy is based on the hydric behavior

of the territory to ensure that natural systems work hand in hand with artificial systems for adequate water regulation. Thus, the cities attached to the policy carry out public space projects that contribute to retaining, draining, or regulating water levels according to their specific needs.

Such is the case in Shenzhen, located in the Pearl River Delta, the largest urbanized area in the world. In this city, one of the conurbations of the delta, the public space intervention in Qianhai, Shenzhen's financial center, proposes a new vision of landscaping and architec-

ture that offers a relationship with ecosystems beyond an aesthetic and contemplative purpose. The Government of China has implemented an urban development plan for the past 40 years, aimed not only at turning the city into a center of economic and technological progress but also at developing policies for environmental preservation and the inclusion of nature in human life.

Thanks to these measures, Shenzhen had 1,090 parks at the end of 2019. Among them, 33 are natural, 152 are urban, and 905 are community, totaling a coverage of

park services and green land of 90.87%. Likewise, 41.2% of the city's territory is covered by forest, and its PM2.5 metrics place it among the top ten cities with the best air quality in the country. (Shenzhen Government Online, 2022). Also worth mentioning are the advances and explorations in the integration of flowers into urban space, pollution control in the river, and landscape renovations through projects to improve aquatic environments. In this way, Shenzhen has succeeded in meeting all the requirements to be classified as a **national forest city**, a goal set in 2015 (Qian, 2018).

QIANHAI: A WAY OF UNDERSTANDING AND REPLICATING ECOLOGICAL COMPLEXITY

For more than seven years, architecture firms TALLER, LOLA Landscape, and L+CC1 have worked on ecological and public space projects in Latin America, Europe, and Asia; taking advantage of their unique knowledge combination to explore new ways of building cities, ideally connected with nature. Such is the case of the urban renewal project in Qianhai, the financial center of the great municipality of Shenzhen, where one of the interventions consists of designing a 2 km linear park.

Wondering about the future of public space in cities, the architects discovered that the answer could be

found in the ability of public space to replicate the place's ecological complexity. The first necessity was to decipher the landscape; understand how the transition took place between the ecosystems of the Pearl River delta, in this case, between the G'uiwan River, Shenzhen Bay, and the Nanshan Mountain.

Once the **biotopes** in the mentioned delta were identified, the architects pre-selected which ones could be compatible and mutually beneficial with human activity and align with the users' needs. The premise was to design urban biotopes or typologies that would replicate the transition between ecosystems, allowing the continuity of the vegetation and the creation of atmospheres to avoid abrupt breaks.

Specifically, the linear park design incorporated four types of vegetation that characterize the Shenzhen region –wetlands, jungle, grasslands, and bamboo forest. The project is innovative to the extent that it recreates specific plant arrangements within the urban matrix.

The interrelation between nature and what is urban stands out to the extent that the biotopes overlap various functions of the city. The bamboo forest or the jungle, for example, generates shaded areas in a region characterized as subtropical, which creates spaces for appropriation and attracts greater biodiversity. The wetland allows continuity with Shenzhen Bay, has bioreme-

diation properties, and contributes to the absorption of excess rainwater in the city.

GUANGMING: NEW PERSPECTIVES FOR NEW TRAILS

Another experience the consortium carried out was the Guangming² Forest and Sports Park project. A space built in under four years and inaugurated in 2021, distinguished by a 5 km-long red bridge that connects the city's public space with the mountainous areas and its natural reserve, including areas for recreation and sports, and even concerts.

In the first instance, addressing this intervention in public space meant questioning cities' assembly based on the repetition of European and North American models. This work was based on a clear intention to recover the area's biodiversity, respect the farmers who live there, and showcase Shenzhen's innovative character.

The project involved significant social and ecological transformations. An example of this was the premise of providing **universal access** to various demographics within society, including people with disabilities, older adults, children, etc. Likewise, tree management has been an opportunity to bring in new species and revitalize the forest, which encouraged the community's relationship with the ecosystem and popularized the mountain route.

KEY LESSONS

- ➔ People's approach to nature can go beyond a contemplative mindset by introducing them to a functional relationship that provides social and ecological benefits, among many others.
- ➔ Regarding the red bridge project, there is a clear opportunity to promote sports activities that involve all the senses in the forest space, such as meditation, yoga, climbing, archery, and tai chi.
- ➔ Along the same lines, establishing a network of hiking trails, horseback riding, and mountain biking has been proposed.
- ➔ Participation mechanisms should focus on ecological preservation, recognizing the benefits of this type of project; among them, conservation awareness and biodiversity visibility, for example, through signage on the bike path about the respective biotope.
- ➔ Public space design and development can learn from natural systems and integrate them. Biomimicry on an urban scale can radically change how we conceive our environments.

