

MLA+

Mangrove Wetland Museum

Press Release - April 2021



12 Moments in the Mangroves

Project: Mangrove Wetland Museum

Area: 39,500 m²

Year: 2020

Location: : Futian District, Shenzhen (CN)

Design: MLA+; Nieto Sobejano Arquitectos, WADI Design

Design Team:

Markus Appenzeller, Ruizhi Cao, Ruoqing Wu, Xian Chen, Zhichao Tu, Lanlan Liu, Yawei Wang, Jialin Wu, Zilai Li

Short Description:

The Mangrove Wetland Museum is a memory extension of the layered grounds, showing the city of Shenzhen's attention and emphasis on ecological civilization and cultural construction, and gradually exploring the new normal of symbiosis between man and nature.

Project Description:

In the summer of 2020, MLA+ and Nieto Sobejano Arquitectos GmbH, Wadi Engineering Design Consulting (Beijing) Co., Ltd. participated in The International Tender for Architectural and Landscape Design of Shenzhen Mangrove Wetland Museum, and were honored to enter the top three.

This is undoubtedly a high level competition, and from the open results of the competition, we also got a glimpse of the different approaches of each of them from different perspectives such as urban

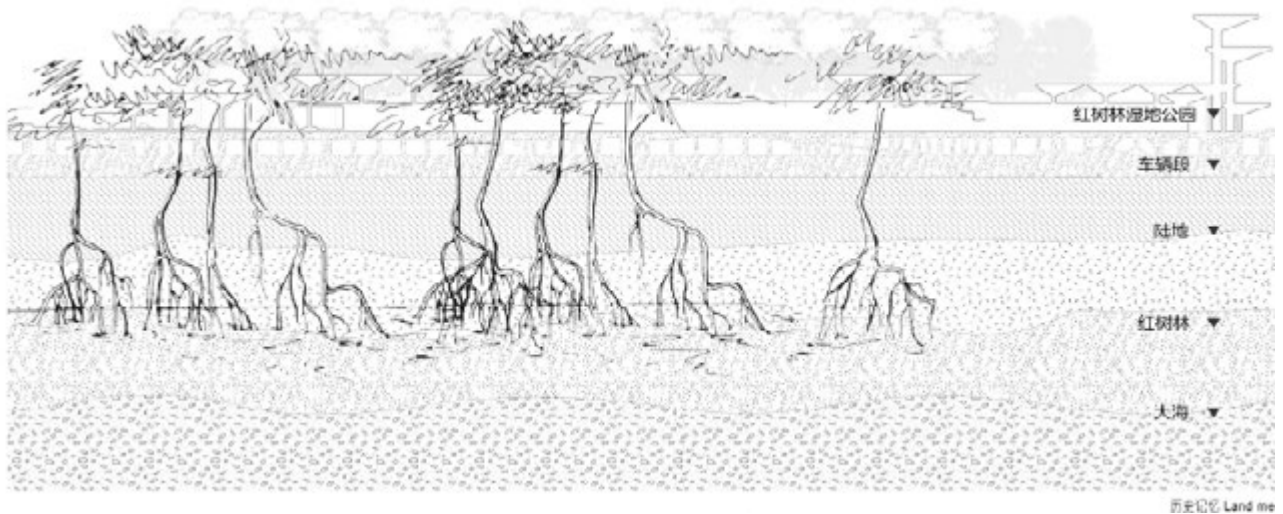
design, structuralism and organic architecture.. It has been more than half a year since the release date of the competition, and we have been thinking and summarizing what we have learned in this competition.





+ Mangrove – Man’s Grove

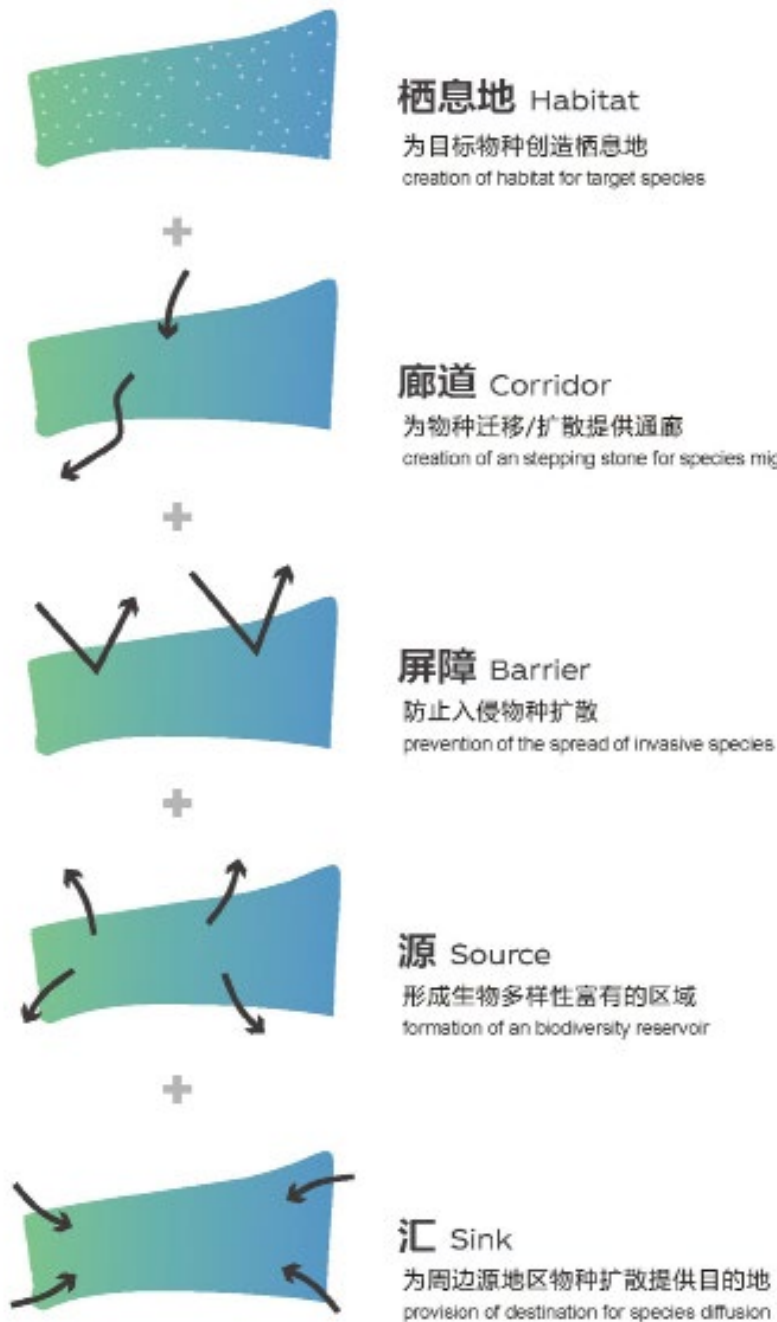
Before 1984, the land where the museum was located was still the sea and mangroves. With more than 30 years of urban development, land has gradually become part of the city, and the Shenzhen Bay Mangrove Forest has witnessed the development and growth of Shenzhen.



+ 0.13km² site, 60km² Survey

Located in the ecologically sensitive area on the north side of the mangrove reserve, every step of the design is closely related to the surrounding ecology. We need to study the ecosystem structure of 6,000 hectares of natural land. During the short competition period, we have followed the ecologists to survey the lands, including soil and water quality, invasive species, fauna and flora, etc. every factor in the ecosystem is interlinked. We found that if the path is too wide, reptiles will be stepped on by humans when

they crossed at night; we found that the mangrove forests require special attention to invasive species, because even one seed flying into the mangrove forest will affect their living environment; and every step of design and behavior in the city has a profound impact on animals and plants. We can't just design on the site itself, but think about the site in a more macroscopic system.



Use ecological engineering methods to enhance the structure and function of ecosystem. Design and establish five elements of habitat, corridors, barriers, sources, and sinks in order to maximize ecosystem functions and services. The purpose is to develop an eco-friendly experience, and create plantation and water facility management based on the life process of the target species.



+ Bird Friendly

The delicate balance of the ecosystem needs to rely on the mutual constraints of different elements to achieve a relatively stable balance.

A certain type of habitat simply created cannot achieve a relatively stable balance.

For the platform cover of the Qiaocheng East Depot of the site, unlike other habitats with low human disturbance, the mangrove museum in the future will have more human activities intervention. A more comprehensive system is needed. Only one type of

wetland is far from enough to attract birds. Meanwhile, the living conditions of the foundation species is as important as the umbrella species. The habitat creation effect can not be achieved by only creating a habitat for umbrella species. Therefore, we chose the basic group of species that maintain the biological structure of the habitat ecosystem: predatory insects, benthic animals, amphibians, reptiles and birds as the target species to meet the needs of their activities in different seasons for their whole life cycle.



+ Sunrise to Midnight in the Mangroves

What surprises us most about the survey is that we found the beauty and magic of mangrove forests in the mangrove reserve, and this experience is difficult for the public to perceive. The twelve moments of mangroves are inspired by the experience. Counting from 1 to 12, from sunrise to midnight, we provide comprehensive nature education and scientific research exchange activities.

Meanwhile, it will be difficult to fully display the real mangrove experience to the public.



+ Design and Inspired

The shape of the mangrove is the driving force of architectural design. The basic form of architecture is derived from the metaphor of mangroves. The construction logic corresponds to the shape of the tree: roots, stumps and trunks. The green building technology is also derived from nature. The unit structure acts as a filter device for sunlight and water to provide a comfortable indoor space. In the buffer zone between the inner bay and the city, natural jungle and man-made forest are intertwined here

We make the clearing in this 'forest'. According to the depot column layout, we create structures of different densities. The basic structural unit corresponds to the load capacity of the underground part, and the museum space design is finely customized through structural calculations. The column framework echoes the forests. Create a rich, diversified and sustainable life system through a system that can be superimposed infinitely.



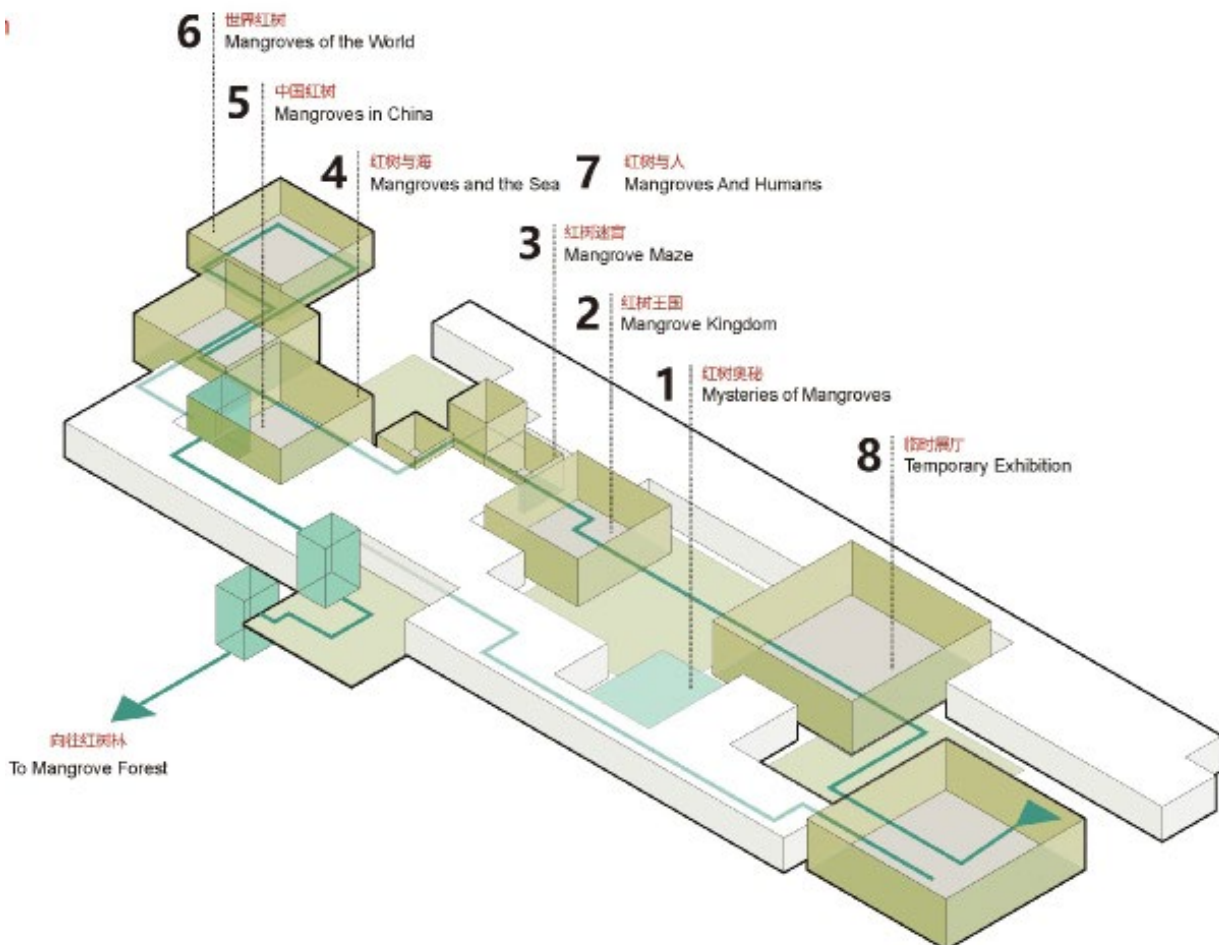
+ Flexible Space Combinations

Starting from the traditional linear organization of the museum, the succession of spaces have been developed. Arrange the main exhibition hall along the long axis in the east-west direction and create a public path. The VIP and logistics entrances are located on the north side of the building, the main entrance and drop-off area are located at the southeast corner of the site, and the south side is reserved for the connection with the mangrove reserve.

After visitors have finished viewing the exhibition, they can enter the mangrove reserve through the tunnel directly. In addition to the main exhibition

space, in terms of functional distribution, the logistics and service space is located on the north side of the museum, complementing the office buildings. The main exhibition space faces the mangrove forest and is located on the south side. The unitized structure is in the form of a settlement, forming a diverse outdoor expo space.

The internal viewing flow is guided by five square exhibition halls, while the viewing experience is guided by three different scales of spaces. Visitors will have diverse experiences of different scales, and space



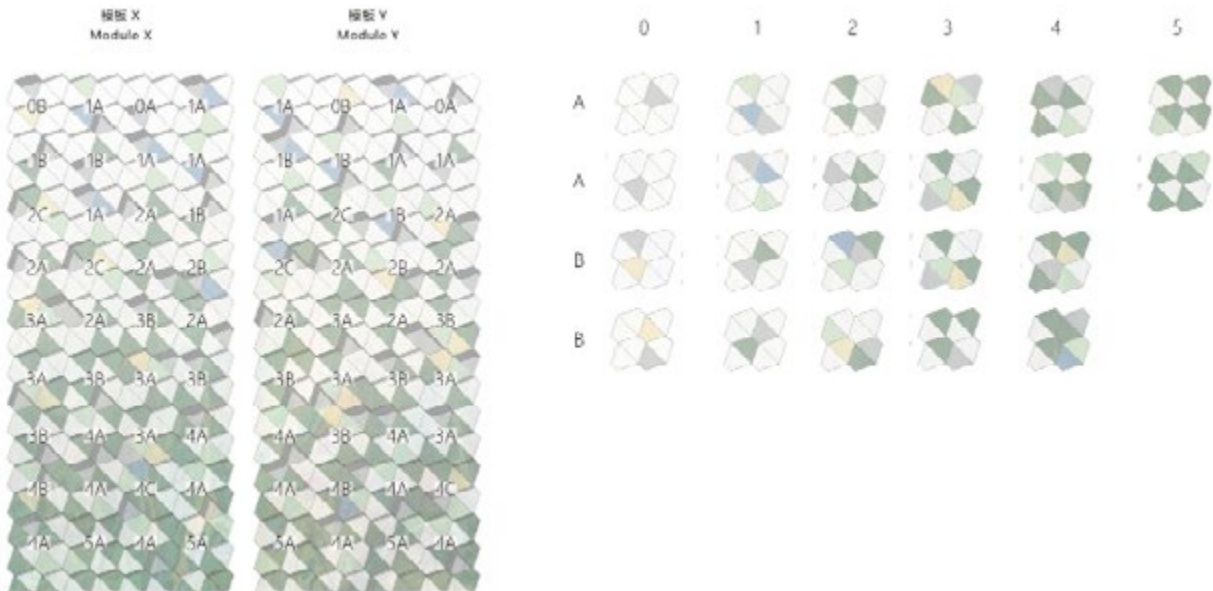
+ Skin Paying Tribute to the Nature

We created a double-skin facade, imitating the animal skin that is “camouflaged”. The simple basic units are superimposed and rotated to form a rich facade vocabulary. The facade guarantees the necessary brightness and comfort of the interior.

The museum and the depot are unified together to form an integrated Binhai Avenue interface.

The structure of the slab is a composite system of steel frame and GRC lightweight concrete slab. The surface of the building is made of screen-printed glass, which is friendly to birds while protecting the exhibits.

The roof garden of the building is open to the public, forming an aerial coastal trail, and also a quiet oasis in the hustle and bustle of the city.



+ Is Museum Enough?

How will we experience in a natural museum? Like walking a dense mangrove forest, in Shenzhen Mangrove Museum, both adults and children will experience the ever-changing and sustainable development of natural stories. Units of various scales can be flexibly combined to meet the spatial needs of different exhibitions.

Rooted in the whole ecological process of mangroves, Shenzhen Mangrove Museum was determined to compose the story of a natural family under the intertwined nature in the design. We hope to build a mangrove museum with a solid foundation, with continuous development of solid specimen collection management, habitat management, sci-

entific research and education, etc., With systematic professional capacity, all things in nature can be smoothly translated into human culture.

The museum's design focuses on the general public and professionals, covering all age groups and accessible to various subjects, repositioning activities for the museum, building a self-contained exhibition language, and finally the continuous development of the top design and scientific research capabilities is completed.



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MLA+ works on urban planning, landscape design, architecture and consultancy projects globally with more than 25 years of experience and a total staff of 100+ employees in Rotterdam, London, St Petersburg, Berlin, Shenzhen and Shanghai.

Through a vast variety of projects, MLA+ has built the knowledge and capacity needed to work in increasingly complex urban environments while maintaining a versatile and innovative approach to the challenges of tomorrow.

In a world of fast, drastic, and sometimes unpredictable changes, we facilitate processes for our clients - this is the plus we bring into projects.

Partners

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