



ZHANGBEI COUNTRY PARK |

IFLA - APR AAPME AWARDS 2024

PROJECT STATEMENT

The design team adheres to the design philosophy of "measuring nature in the urban wilderness, pulsing along the mountains among the beauty of Zhangbei". Through careful analysis of the mountain terrain, a reshaping of the landscape is undertaken to segment the park into three zones respectively for scenic touring, ecological restoration and ecological preservation, establishing a "One Axis - Three Rings" landscape structure comprised of urban wilderness ring, urban parlor ring and mountain knowledge ring. This framework is aimed at creating an urban country park focused primarily on forest recreation, science education, and community leisure, effectively addressing the urban heat island effect. Starting from "prevention-emergency-control," it aims to build multiple landscape fire barriers, establish a forest fire prevention system, and enhance the park's ability to resist forest fires.

PROJECT INFORMATION

PROJECT TITLE: ZHANGBEI COUNTRY PARK

PROJECT LOCATION: SHENZHEN, GUANGDONG PROVINCE

PROJECT AREA: 33.42 HM²

COMPLETION TIME: 2022.09.30

AWARD CATEGORY: HEAT ISLANDS AND FIRE RESISTANCE



PROJECT NARRATIVE

Situated in the Longcheng Subdistrict of Shenzhen's Longgang District, Zhangbei Country Park sits adjacent to the Zhangbei community where to the north lies the Shenhai Expressway and to the east the Baohe Avenue. It stands as one of the ten key feature parks in the central urban ring's pivotal construction, linking crucial points in the southern section as part of the Greater Longgang Central City Green Corridor. The project aims to craft an ecological extension zone in Longgang District, providing a natural social place for the surrounding residents which integrates ecological education into daily life.

CRAFTING

SCULPTING THE WOODLANDS

Aesthetic Beauty of Natural Charms and Unique Landscapes

The design team not only focuses on providing an enchanting wild charm but also introduces a series of vibrant landscape features in the scenic touring area to meet the demands of surrounding residents, offering a distinctive wandering experience in nature.

From the west to the east of the park unveils key leisure facilities including the main entrance cafe, children's activity area, rain garden, forest parlor, mid-mountain panoramic pavilion and mountaintop Cloud Bridge. Each node plays an integral part of sculpting the woodland landscape, shaping a well-defined spatial sequence for visitors. Through a set of strategic maneuvers, the team is dedicated to crafting a "Sculpted Woodlands" vista that integrates natural beauty, human sentiments and artistic elegance, making every visitor discovers their own sanctuary for the soul within this space.

COMPOSITE

FOREST FIRE PREVENTION

Multi-layer Protection, Building a Mountain Forest Firefighting System

Spring is a high-incidence season for forest fires, with 80% of major fires in the past decade occurring between March and June, and human factors accounting for over 86% of these incidents. The design team has approached the solution from "prevention-response-control," constructing the landscape barriers to establish multi-layer protection in mountain forests.

● Establishing an Adaptive Composite Vegetation System:

This involves retaining original superior tree species and avoiding large-scale ecological damage. By increasing planting density and adding a moderate number of new trees, priority is given to fire-resistant species while also considering ecological and aesthetic effects. The vegetation layout adopts a composite form of trees, shrubs, and ground cover plants, forming a rich and layered landscape loop that effectively prevents and blocks the spread of fire.

- **Integrating a Barrier-free Fire Road System with Park Paths:**
The primary fire road connects the main areas of the park and interfaces with secondary fire roads, which in turn connect to internal spaces. Tertiary fire roads are designed as mountain patrol paths.
- **Creating Landscape Nodes with Integrated Firefighting Functions:**
The park features multifunctional landscape nodes such as the 'Lucky Tower' (Fire Lookout Tower), 'Cloud Bridge' (Forestry Monitoring Point), and 'Forest reception hall' (Firefighting Science Education Area). These municipal infrastructures meet the daily recreational needs of citizens while also providing dual functions for forest protection.
- **Distributing Supporting Infrastructure Elements Throughout the Park:**
This includes firefighting material warehouses, fire water ponds, and fire hydrants. Additionally, a multifunctional smart pole management system is employed to enhance risk identification and mitigation. The use of dual-spectrum thermal imaging cameras enables effective dynamic fire monitoring.

LINKAGE

INTEGRATING ECOLOGY AND COMMUNITY

The Precise Incorporation of Transportation System and Hiking Routes

The park is intricately linked to the surrounding community, providing citizens with three convenient hiking routes:

- **The Primary Path System:** Entering through the main entrance onto the primary fire patrol route, citizens can choose to trek or cycle uphill via the accessible hiking

network formed by major and secondary paths.

- **The Secondary Path Network:** Secondary park pathways are established for direct access to key park scenic nodes, offering citizens hiking routes with better convenience.
- **The Hand-made Trail Experience:** Experiential hiking options are created with hand-made trails incorporating natural materials including wooden stakes, rough stones and tree bark. Natural anchor points are arranged on both sides, encouraging citizens to interact with nature through touching, climbing, playing and other ways to enrich the hiking experience.

HARMONY

SAFEGUARDING THE HABITAT

Minimizing Interventions to Nurture the Native Indigene

The design aims to amaze both citizens and tourists with its services to the maximum extent while minimizing interference with the ecological community, achieving a balance between humans and nature. In the scenic touring zone, the design preserves the original mountainous woodland appearance. Through skillful site grading design and the addition of distinctive landscapes, it meets the needs of the surrounding residents and enhances the exploring experience.

For areas with weaker natural processes in the ecological restoration zone, adaptive environmental rehabilitation is implemented using an acupuncture-like approach. Small-scale nodes are organized to alleviate human intervention and to showcase the pristine wilderness grandeur.

With a forest coverage of as high as 96.24%, the design must consider meeting woodland construction requirements while addressing the demands for recreational activities. The HOPE team, in collaboration with the client, applies to utilize the woodland for forestry service facilities as a strategic entry point, ensuring a win-win situation by not altering its original land use as woodland while providing convenience for park construction.

SPECIALIZED DESIGN

NATURE EXPLORATION

Fun Science Signage to Amidst the Woodlands to Cultivate Eco-Scientific Consciousness

Zhangbei Country Park takes science education as its core design philosophy, guiding children of all ages to immerse themselves in the natural learning process through a system of interactive signage. The signage system blends elements of Hakka traditional architecture, drawing color palette from the Qilin Dance, Longgang's intangible cultural heritage. The rain garden gathers rainwater during rainy seasons, creating a wetland landscape while offering a habitat for both fish and bird species. The signage is categorized to convey information about wetland and biodiversity conservation, promoting the public concern for the environment.

In the future, Zhangbei Country Park will persist in its commitment to ecological conservation and environmental education. Through unceasing innovation and improvement attempts, the Park aims to offer an experience of greater diversity and enrichment for community residents and visitors alike. We look forward to this park, with woodlands as stage and ecology as theme, contributing a unique green force to the sustainable development for Longgang area.

SPECIALIZED DESIGN

CLOUD BRIDGE - A SKYWALK BRIDGE

On the southwest side of Zhangbei Country Park at an elevation of approximately 111m, the Cloud Bridge spans a length of about 210 meters. Taking into accounts of aesthetics and experiential aspects, the design incorporates stops for observation and walkways for fast-pass. Selected materials aim to reduce the risk of fire hazards, enhancing sustainability and lifespan of the structure. The Cloud Bridge stands at an ideal location for engaging both the townscape scenery of Longgang Central City and natural knowledge, and it also provides a multi-dimensional spatial experience, blending the interaction of nature, urban environment and human.

TOWER OF BLESSINGS – A MOUNTAINTOP OBSERVATION TOWER

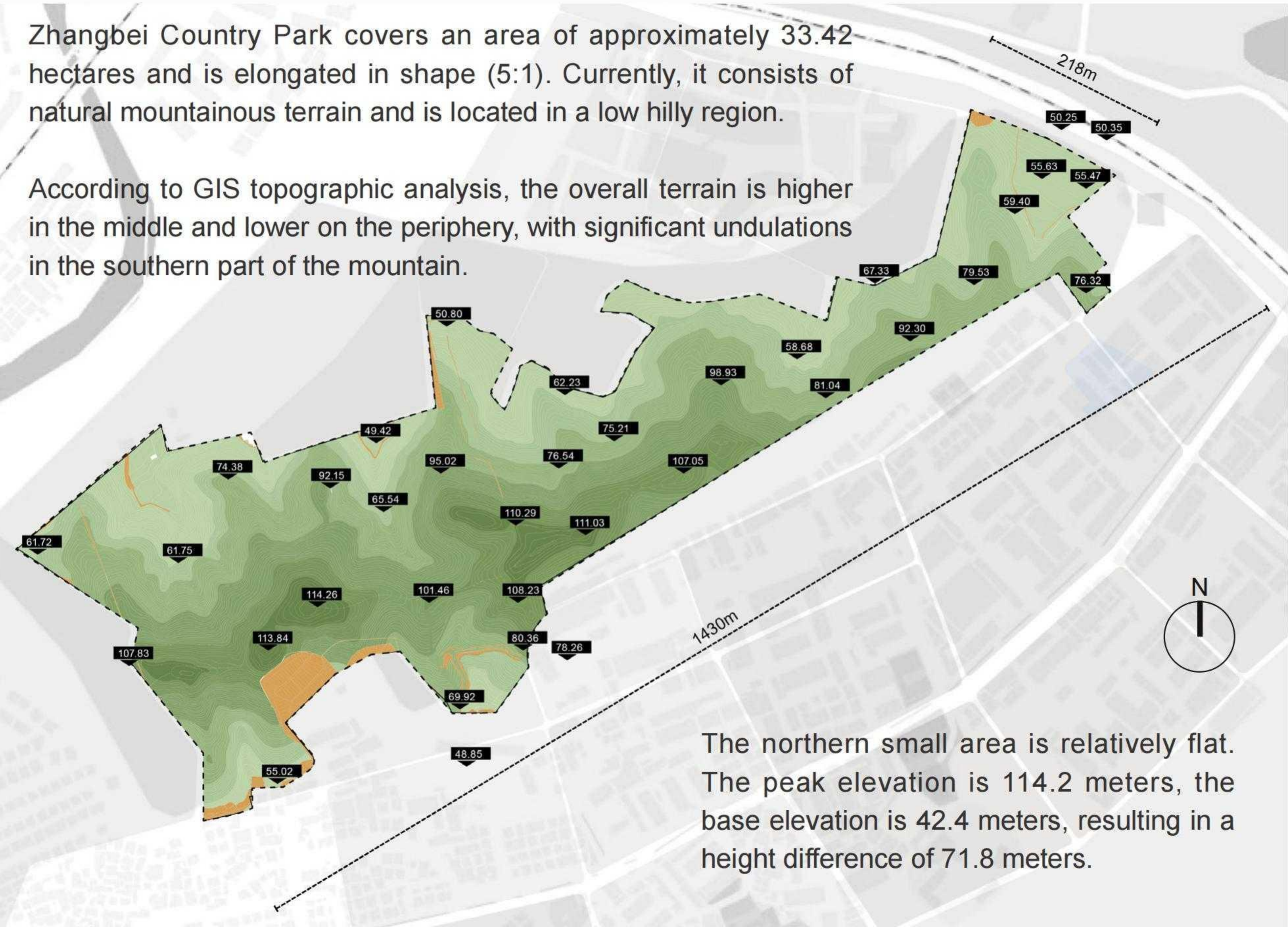
The 12.8-meter-high Observation Tower is situated at the southwest corner of the park, marking the park's pinnacle at approximately 114.2m. Primarily constructed with galvanized steel, the design embodies simplicity while harmonizing with natural aesthetics. A spiral staircase connects each level, allowing individuals to overlook urban landscapes amidst nature and providing opportunities for multi-angle observations of the Longgang region. Serving as a tourism landmark, this Observation Tower seeks to stimulate the development of its local community.

LOCATION ANALYSIS

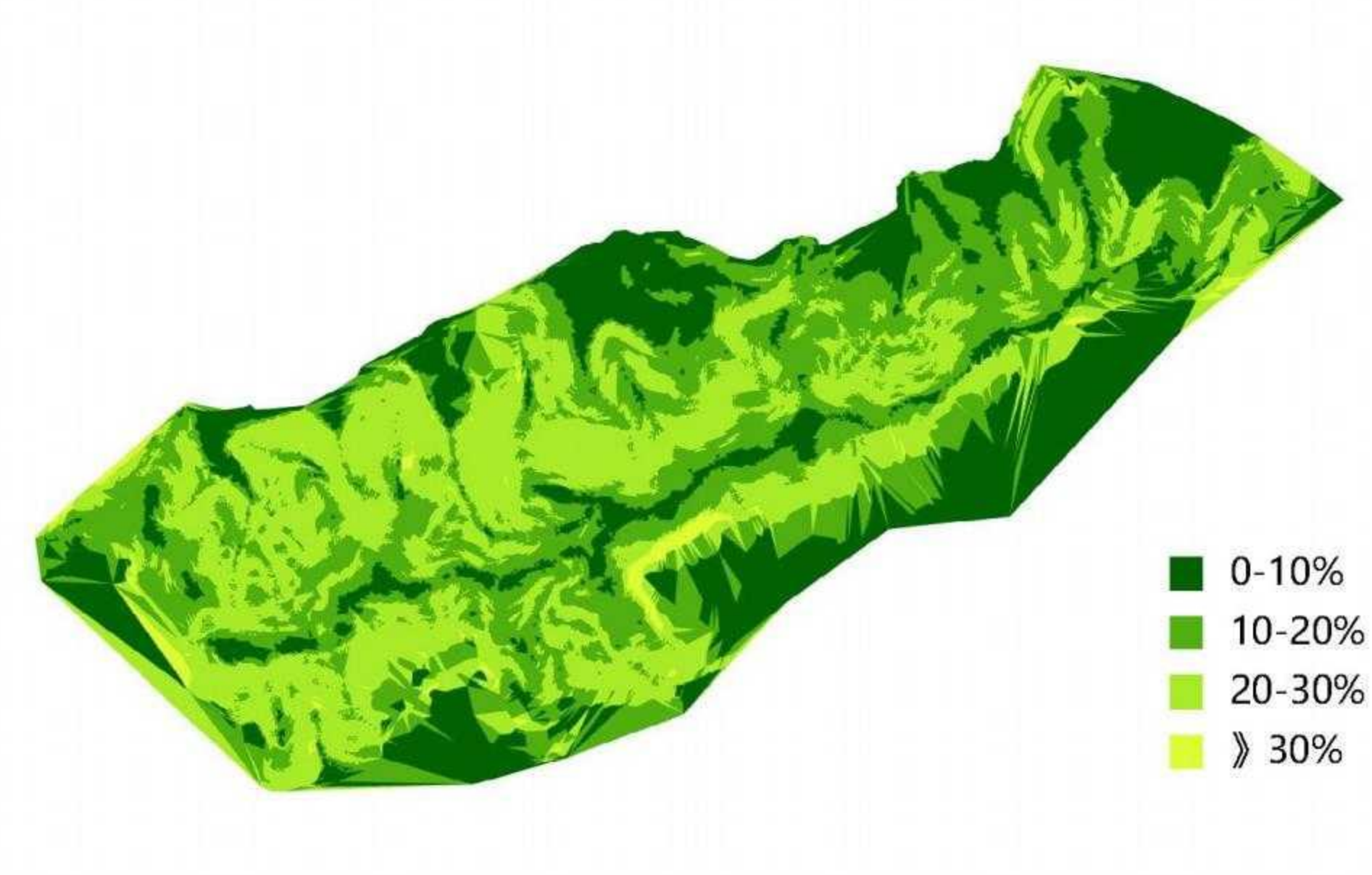


With the advancement of Shenzhen’s “Eastward Expansion Strategy,” Longgang District will become the main axis and backbone supporting the future urban and industrial development of eastern Shenzhen.

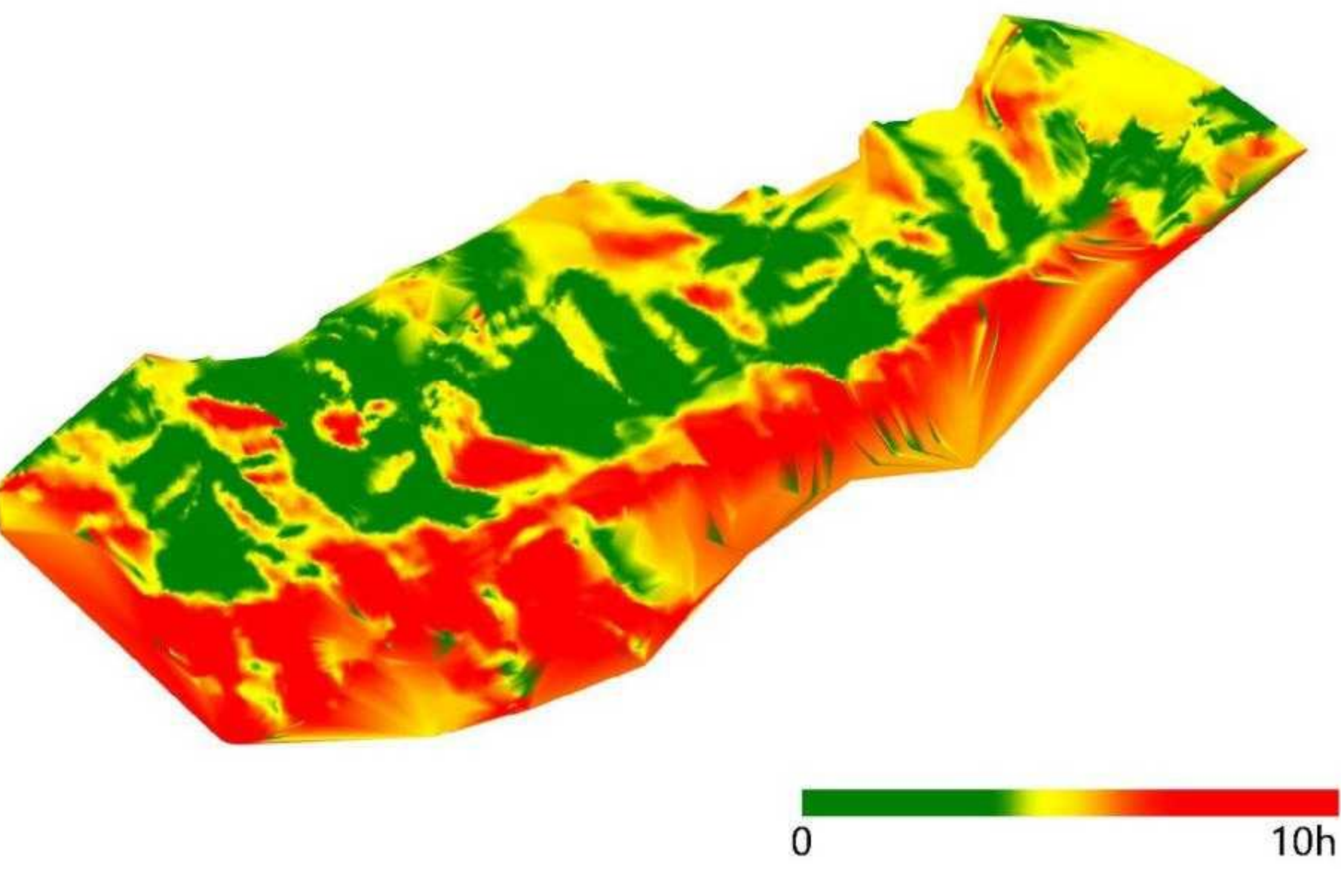
TERRAIN ANALYSIS



SLOPE ANALYSIS



SUNSHINE ANALYSIS

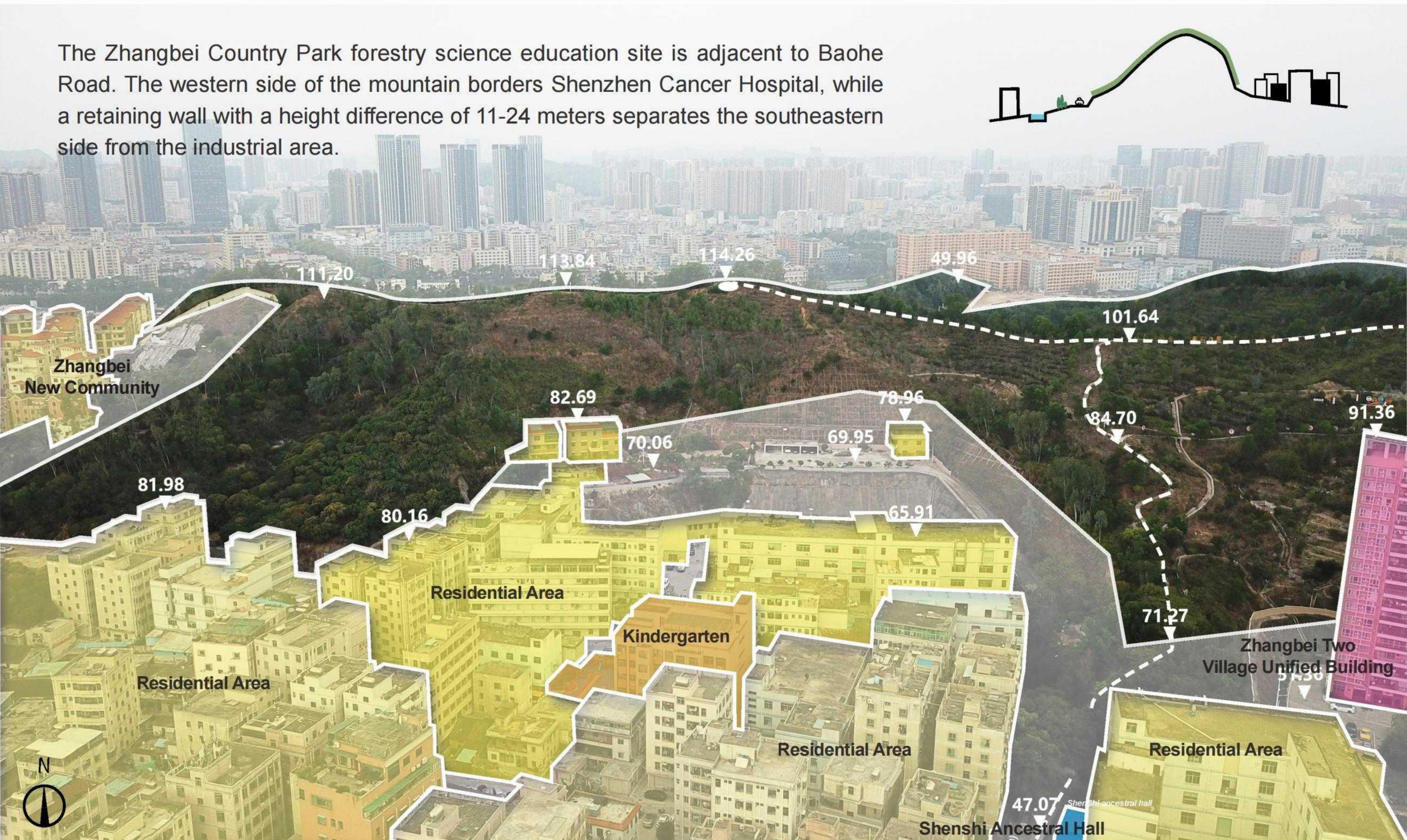
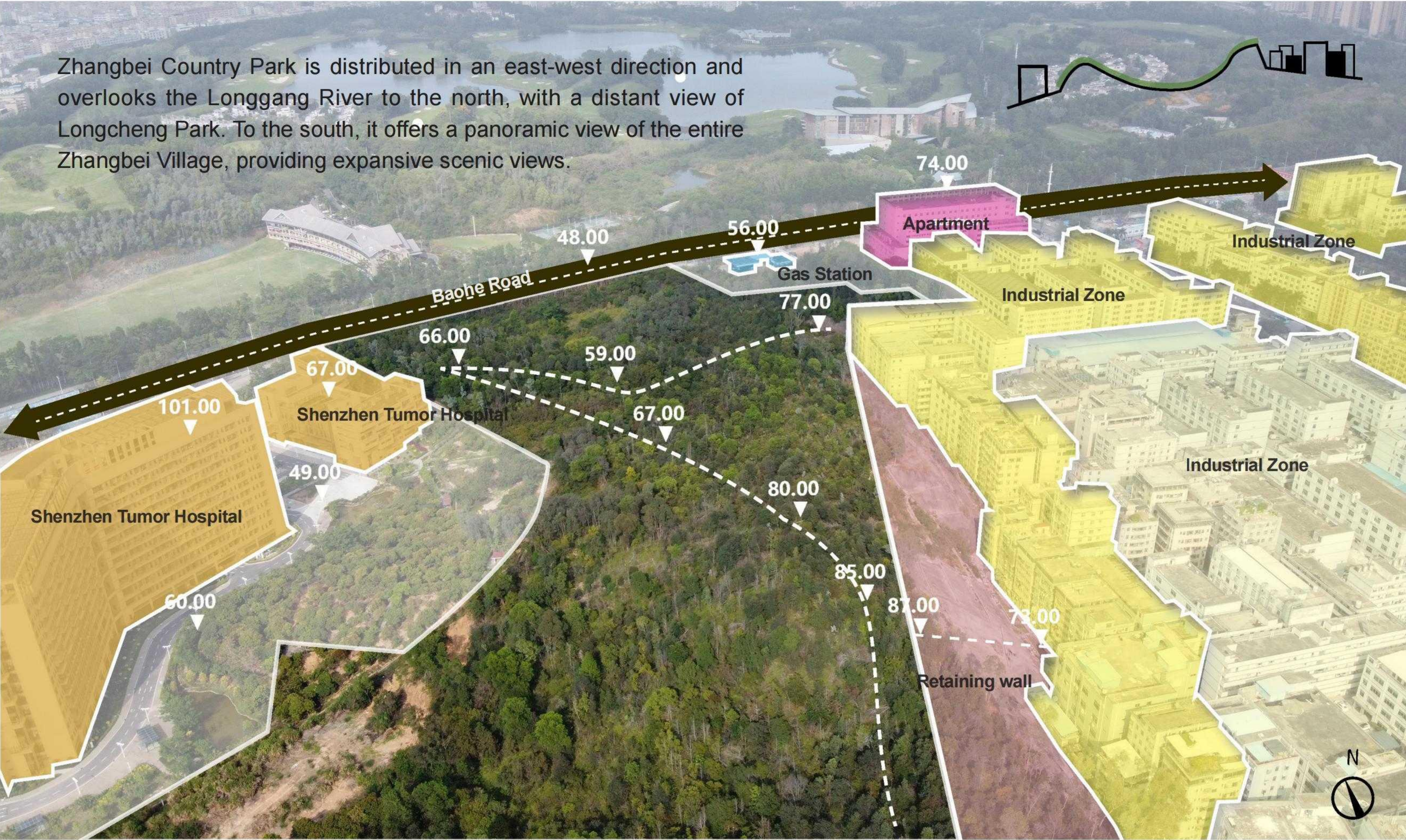


TRAFFIC ANALYSIS



The external transportation channels, rail transit, and hub conditions around the project have been greatly improved.

SITE ANALYSIS



MASTER PLAN

- Main Road
- Secondary Road
- Park Lane
- Handmade Footpath

- Scenic Tour Area
- Ecological Restoration Area
- Ecological Protection Area

- Ridge Landscape Axis
- Urban-Rural Ring
- Urban Guest Reception Ring
- Forest Science Education Ring

0 50 100 200



Road Circulation Analysis

Functional Zoning

Landscape Structure



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Main entrance square

Main entrance of the park

Yuepan mountain pass

Entrance of Zhangbei new community

Entrance of Zhangbei community

Parking lot

Rain garden

Children's playground

Health and leisure walk

10 Forest footpath

11 Overlook pavilion

12 Forest reception hall

13 Pattern border

14 Cloud Bridge (Forestry Monitoring Point)

15 Handmade footpath

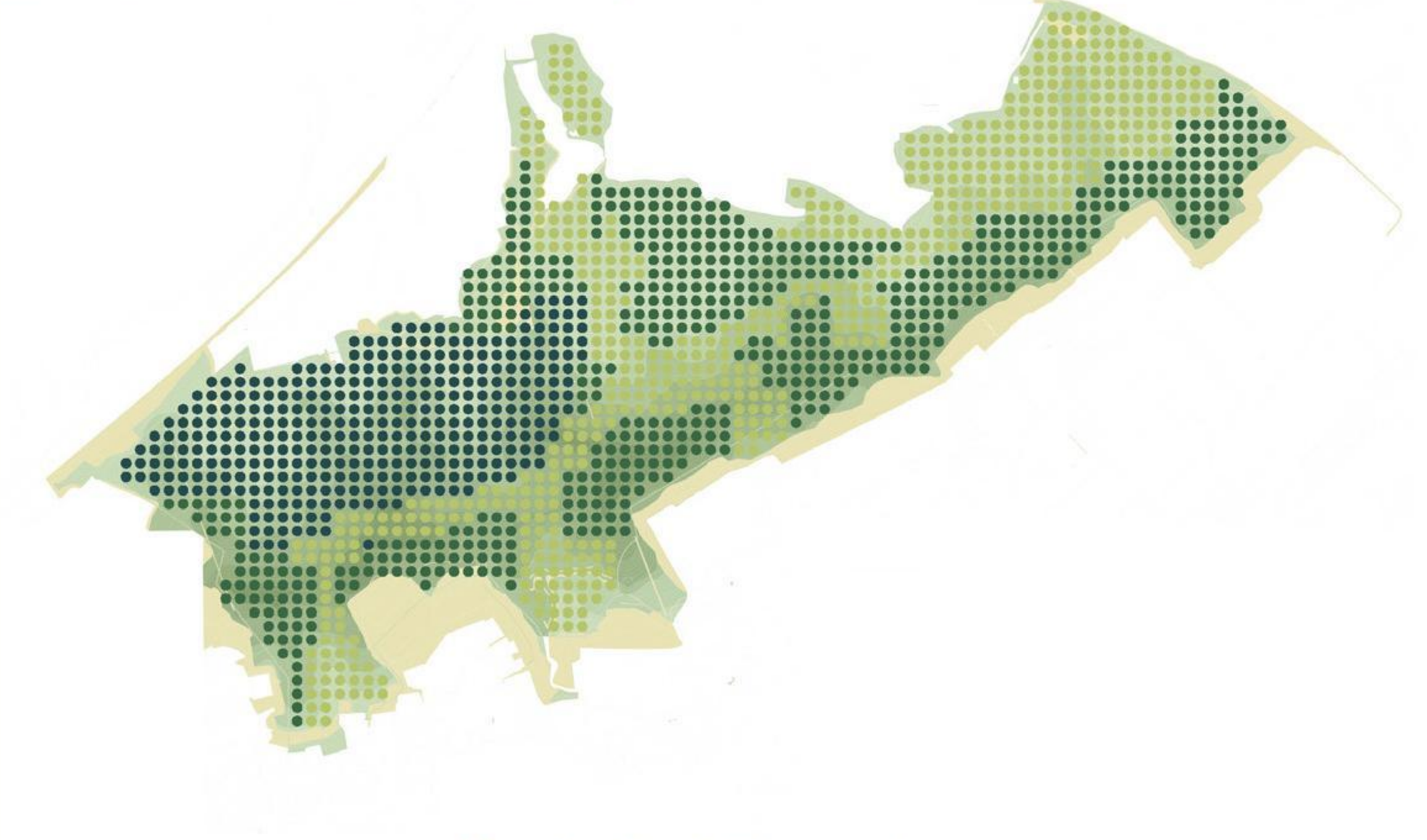
16 Scientific research path

17 Humanities platform

18 Lucky Tower (Fire Lookout Tower)

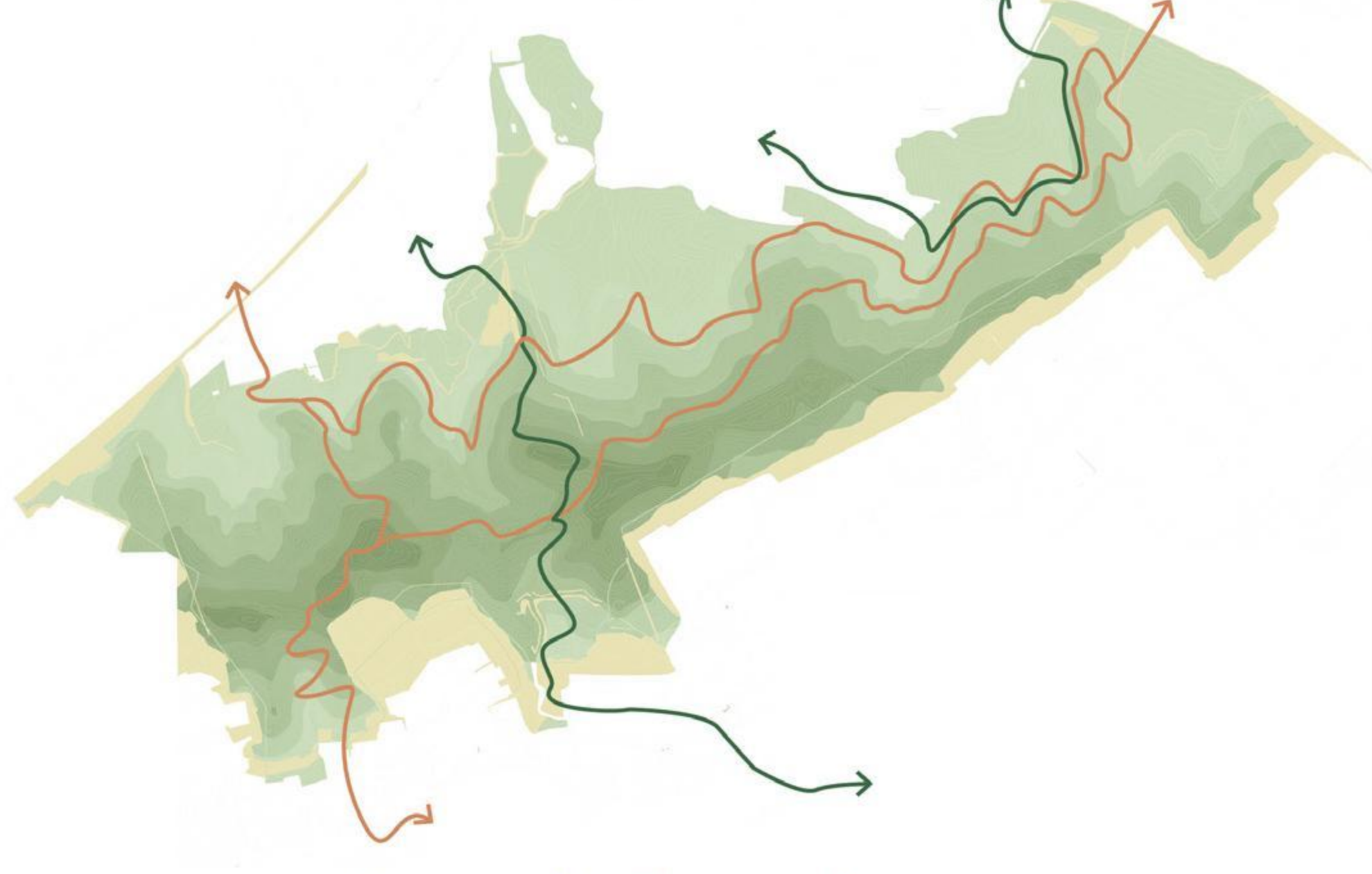


LANDSCAPE STRATEGY



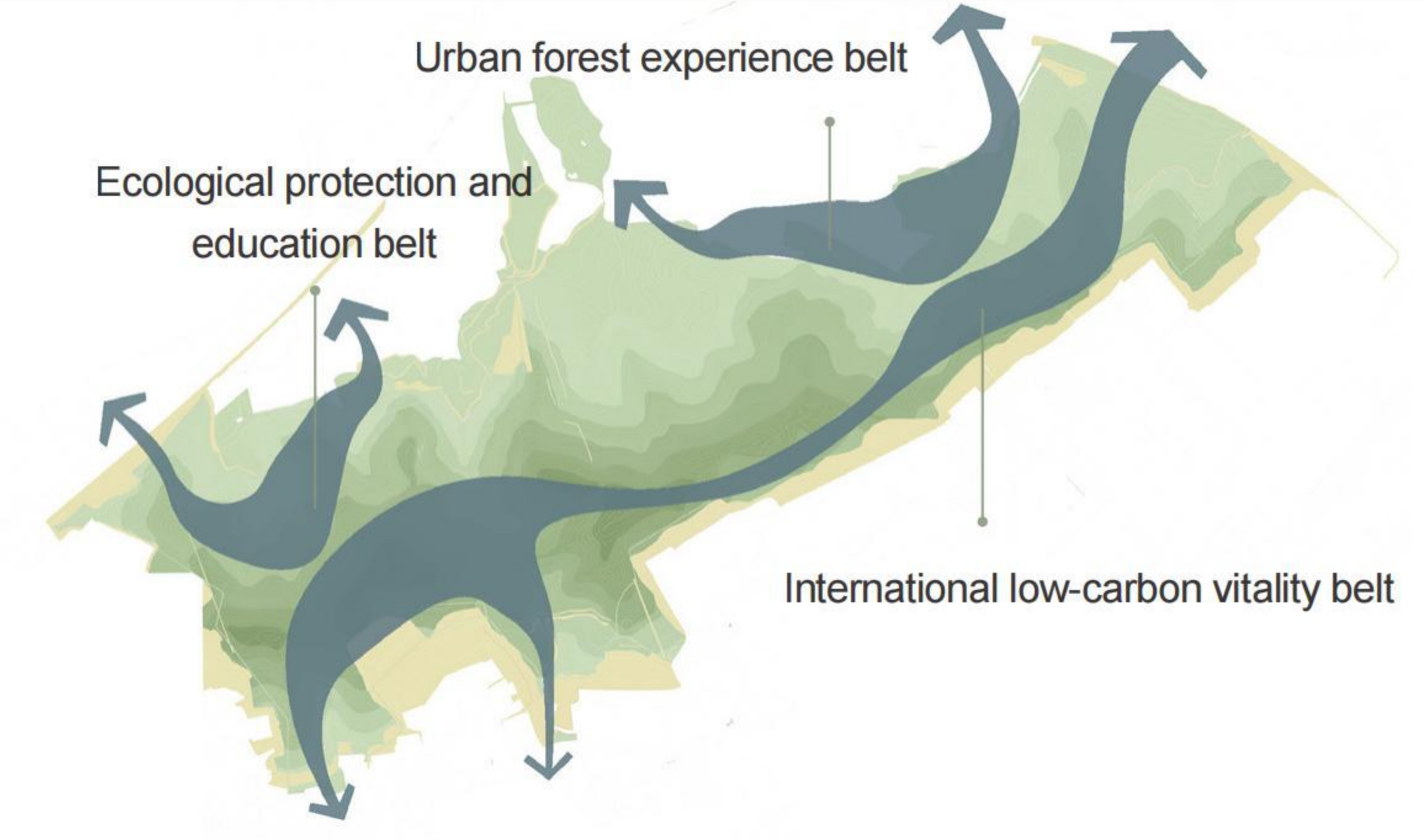
Ecological Extension

Ecological connection and protection



Composite Connection

Urban development and transport links



Block Linkage

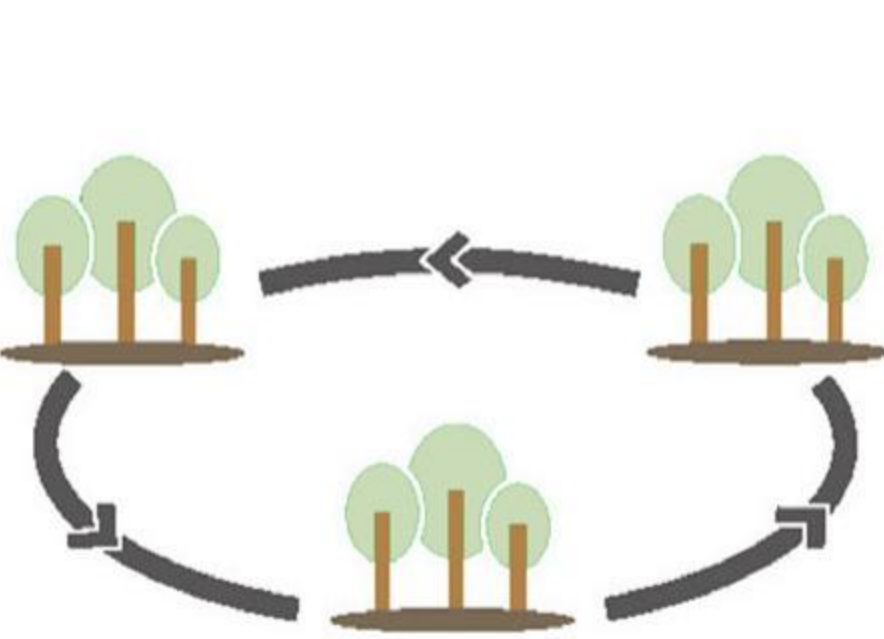
Three characteristic scenic corridors



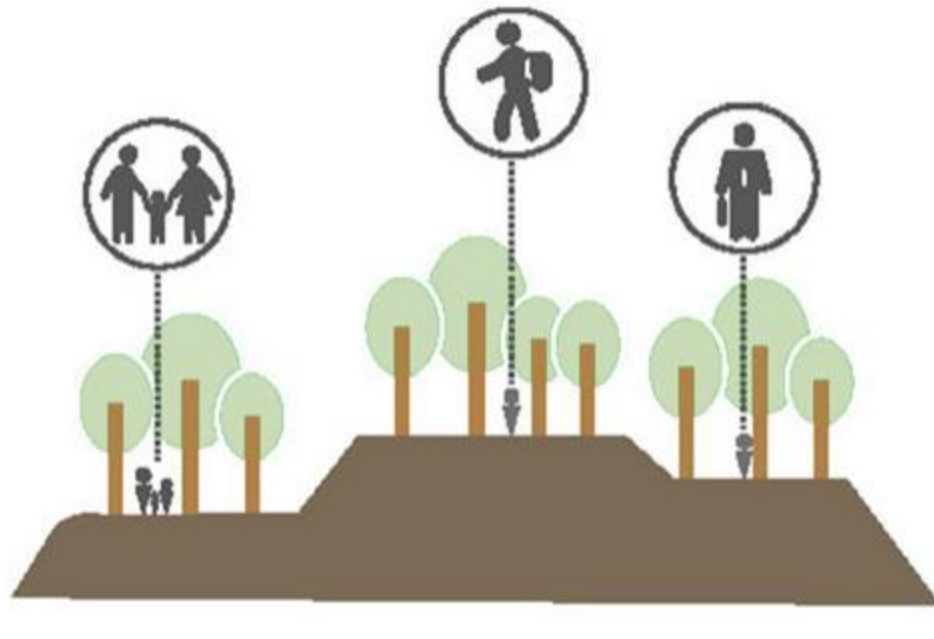
Urban Integration

Visit system and important nodes

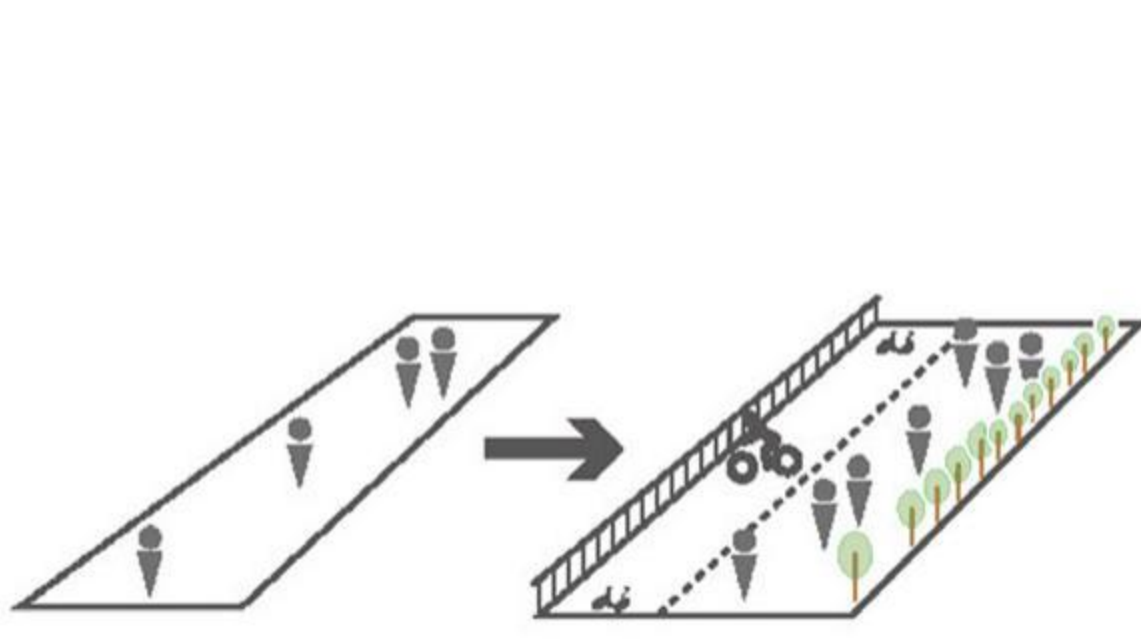
LANDSCAPE MEASURE



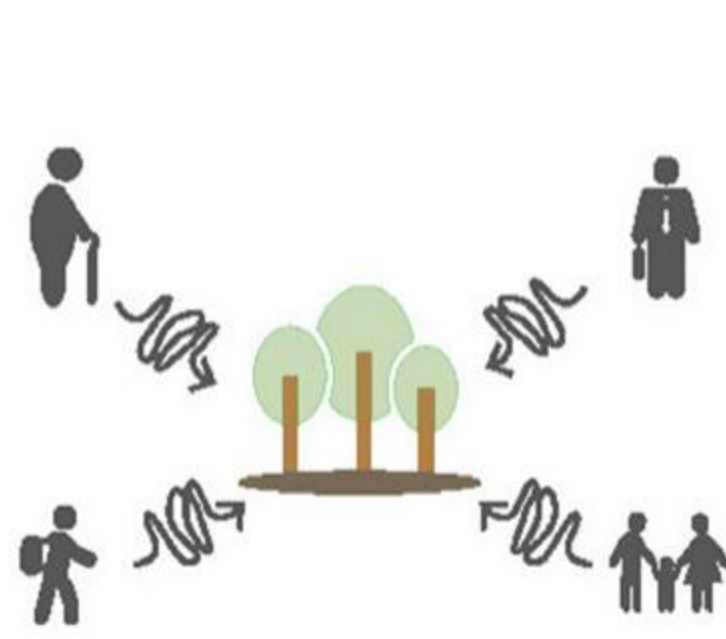
Integrate zhangbei country park with other parks



Create different parks purposes according to area/level



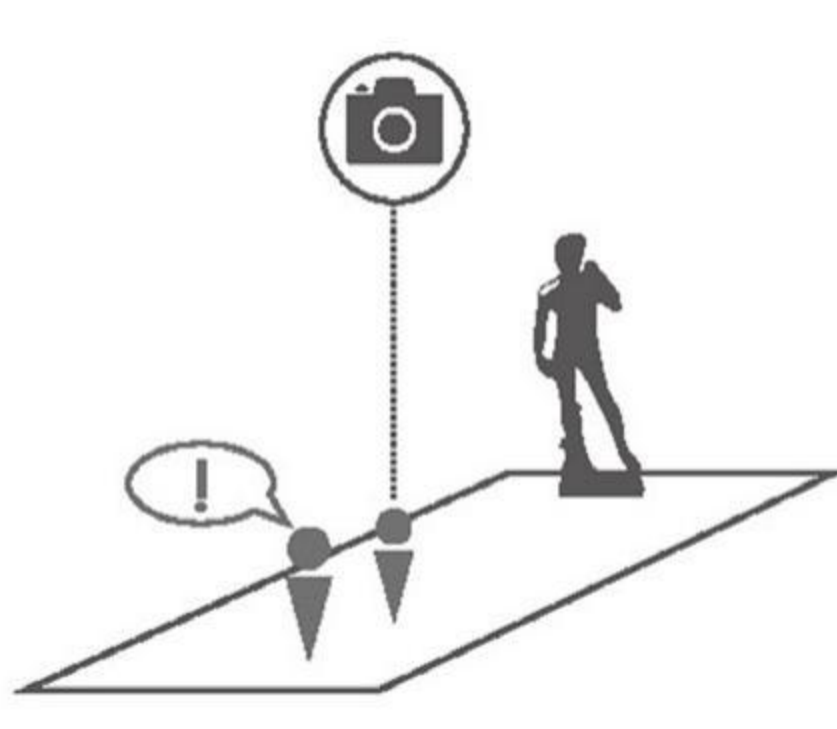
Improve existing circulation



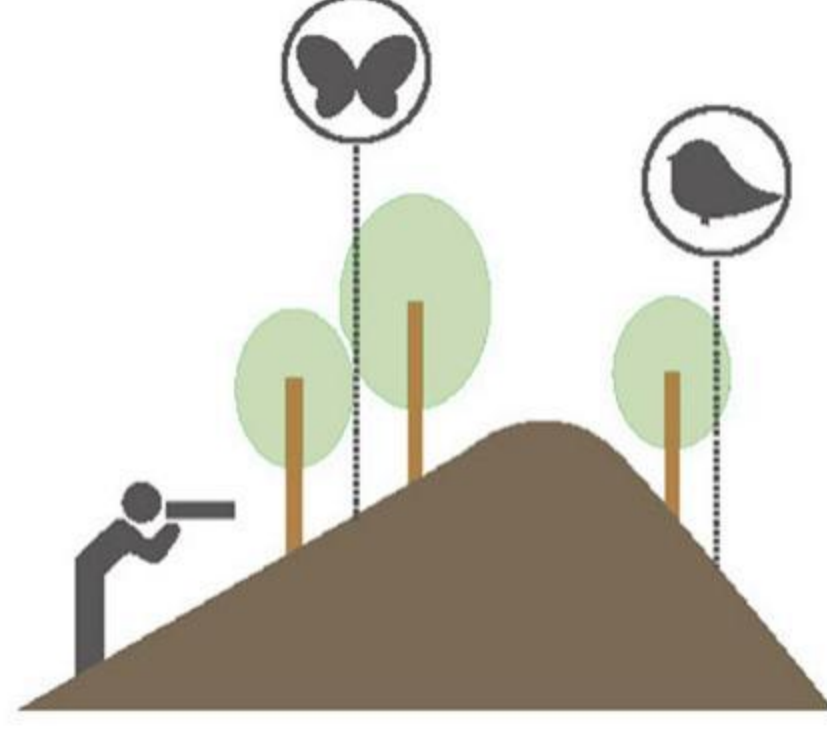
Accessibility



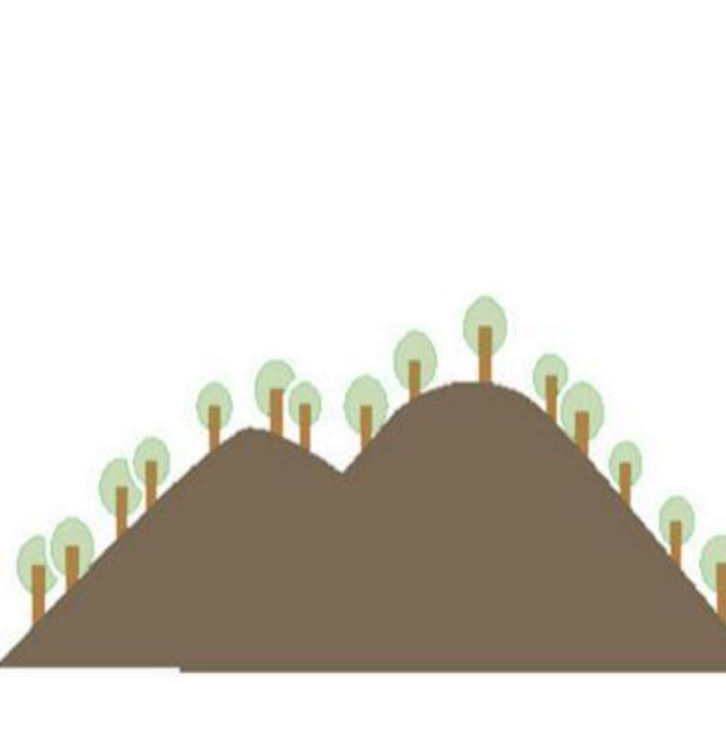
Sustainable construction technology



Create iconic elements for community identity



To educate the visitors about the importance of the natural environment

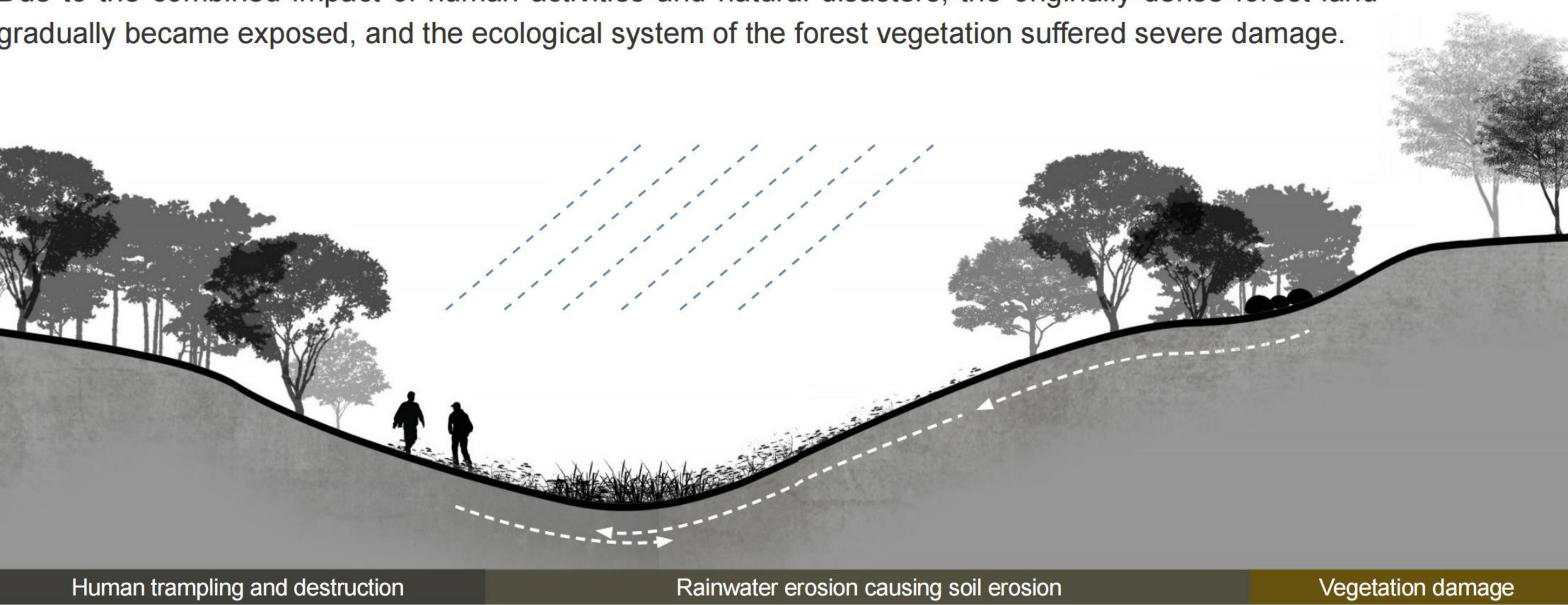


Forest acupuncture, small interventions that improve the experience of nature in the park

RESTORATION OF NATIVE FOREST LANDSCAPE

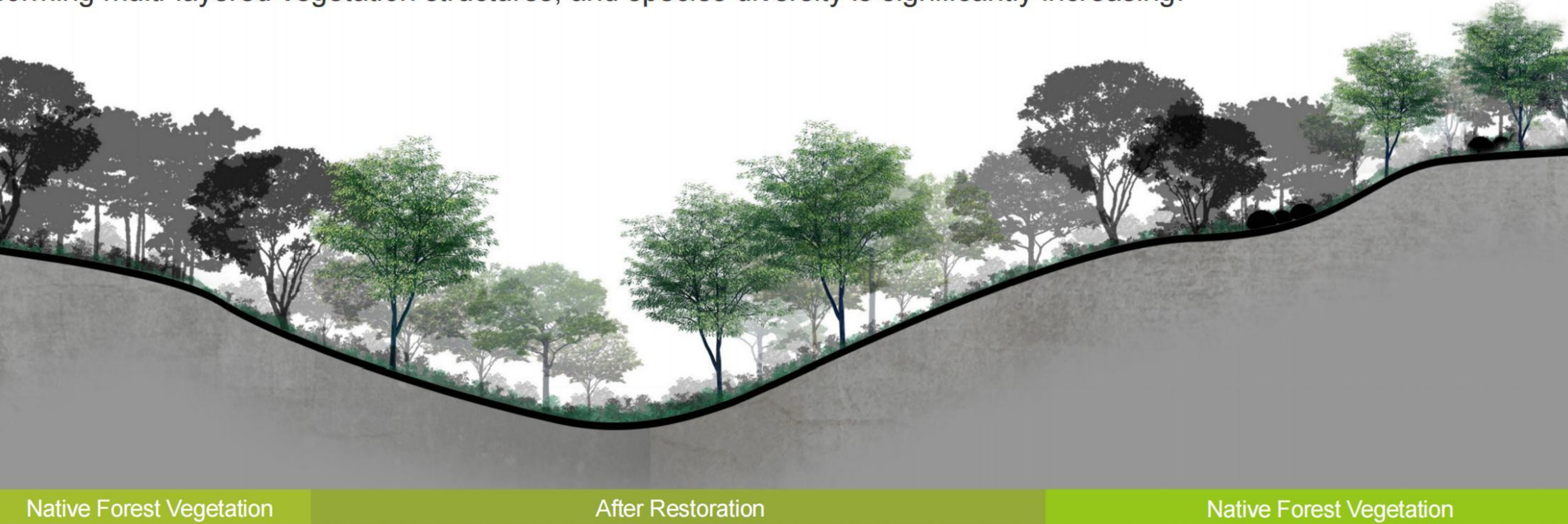
1. Site Conditions (Before Restoration)

Due to the combined impact of human activities and natural disasters, the originally dense forest land gradually became exposed, and the ecological system of the forest vegetation suffered severe damage.

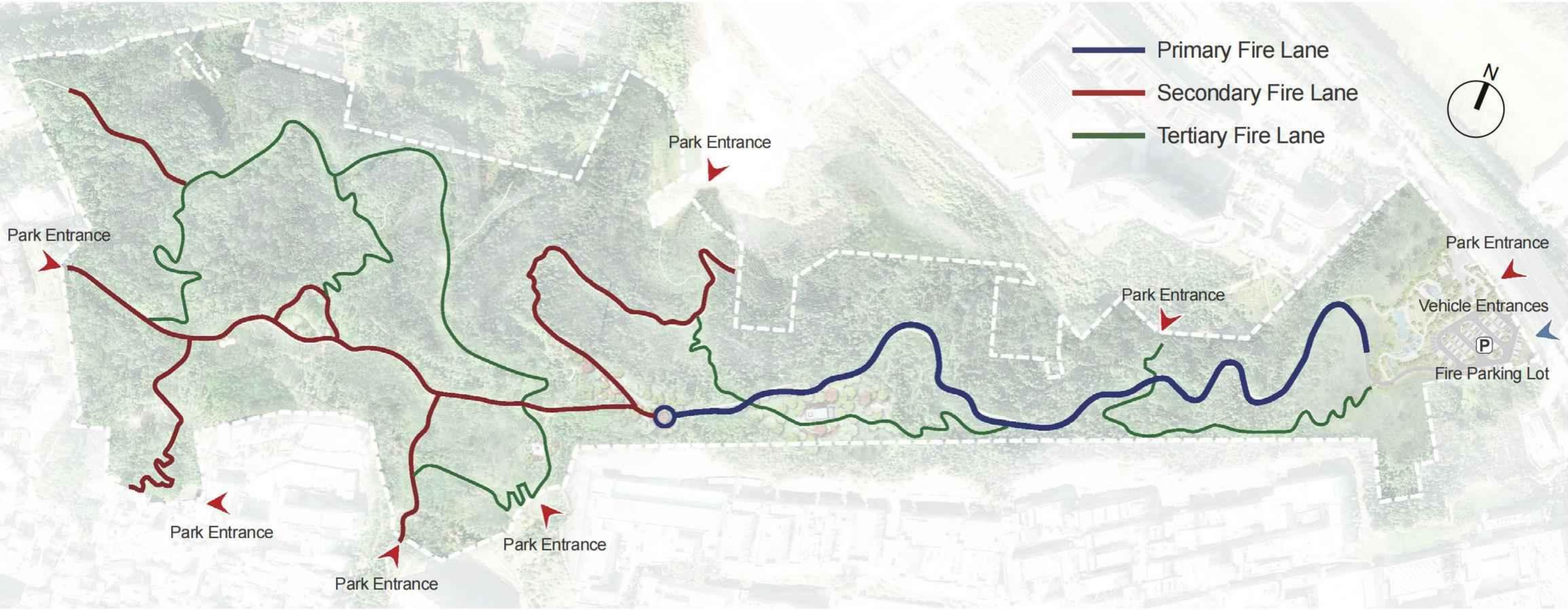


2. Site Conditions (After Restoration)

Through scientific planting and meticulous maintenance measures, forest vegetation is gradually being restored, and the ecosystem is being progressively rebuilt. The newly planted trees are growing vigorously, forming multi-layered vegetation structures, and species diversity is significantly increasing.



THE FOREST FIRE ROAD SYSTEM

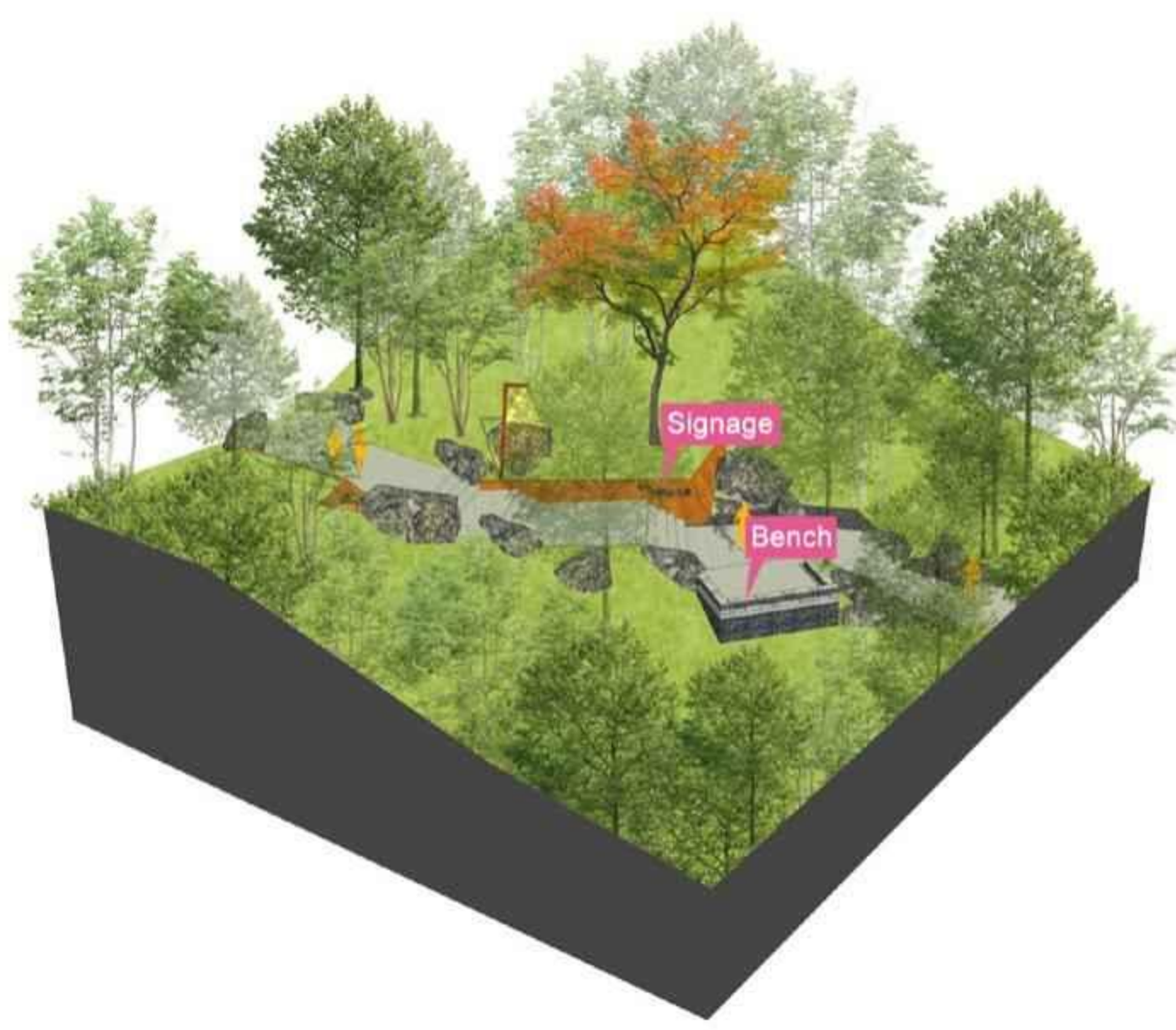


Primary fire lane:
Width 3-4m, connects major areas of the park, for firefighting use, connects with the secondary fire lane.



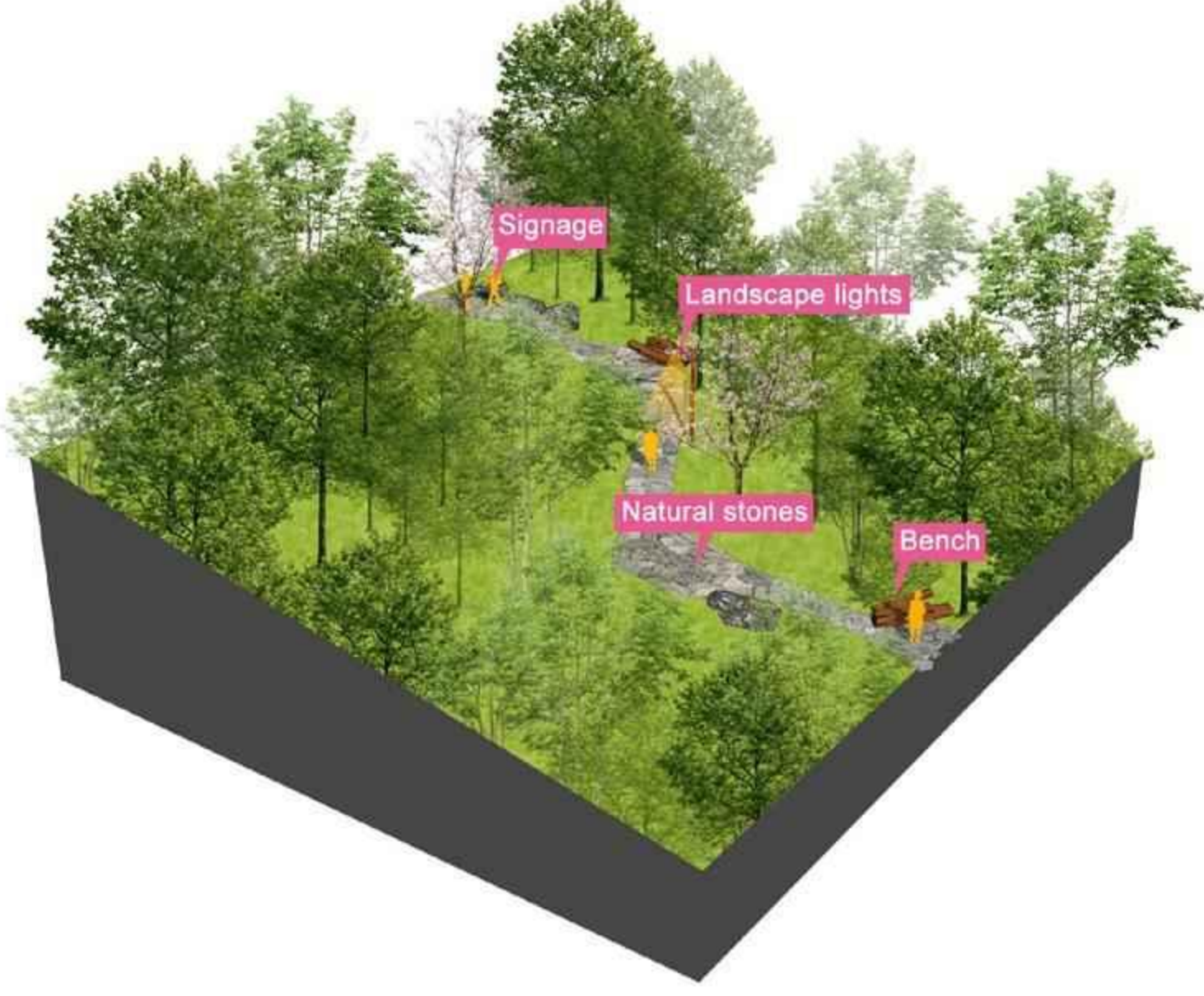
Primary Fire Lane

Secondary fire lane:
Width about 2m, connects internal areas.



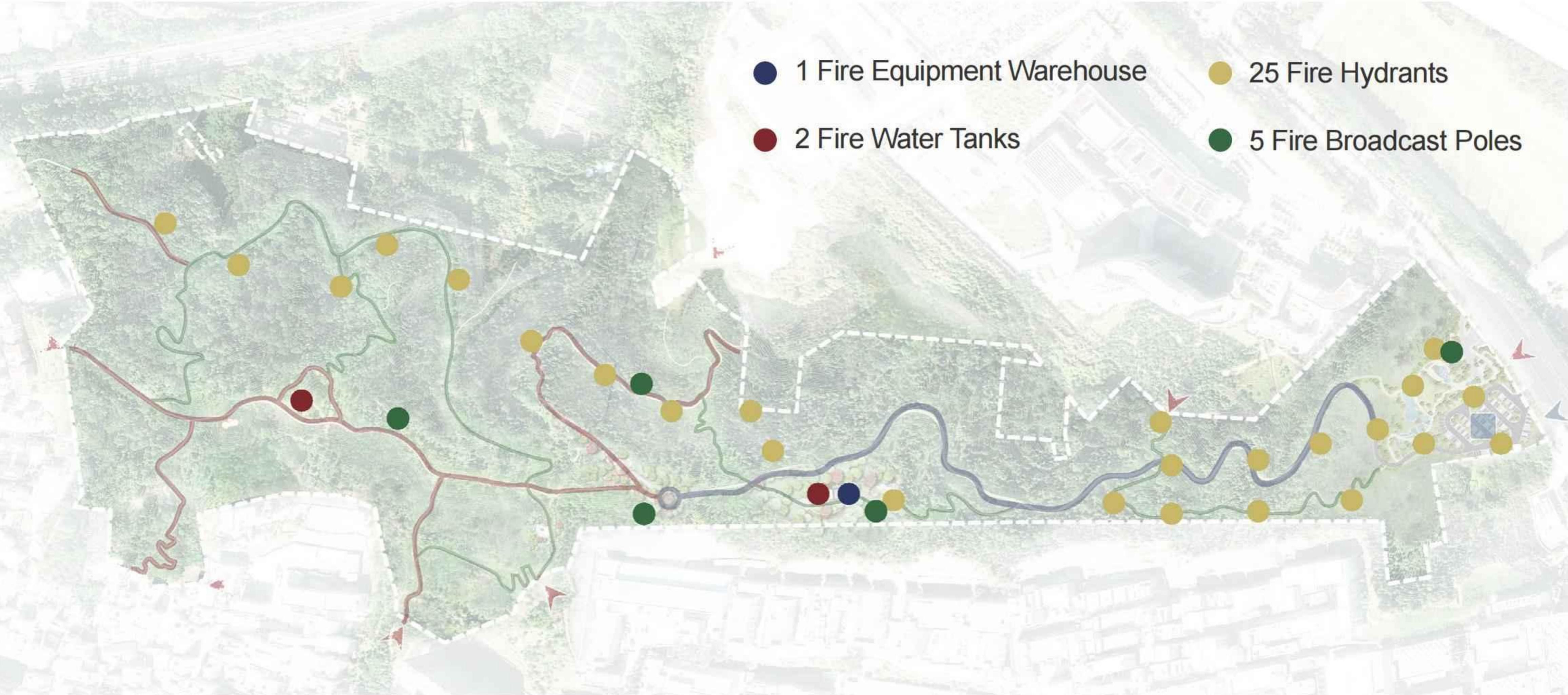
Secondary Fire Lane

Tertiary fire lane:
Width about 1.2m, includes mountain patrol paths.

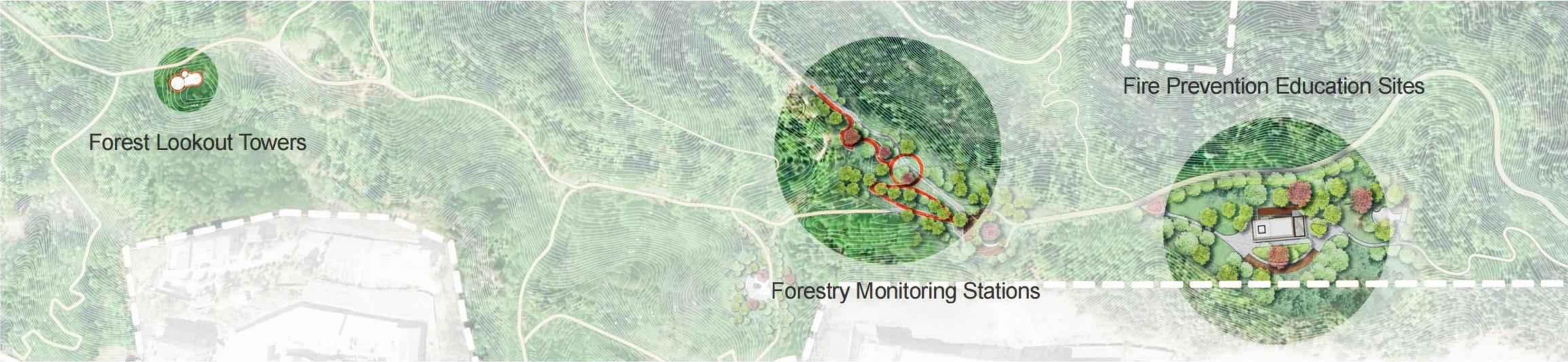


Tertiary Fire Lane

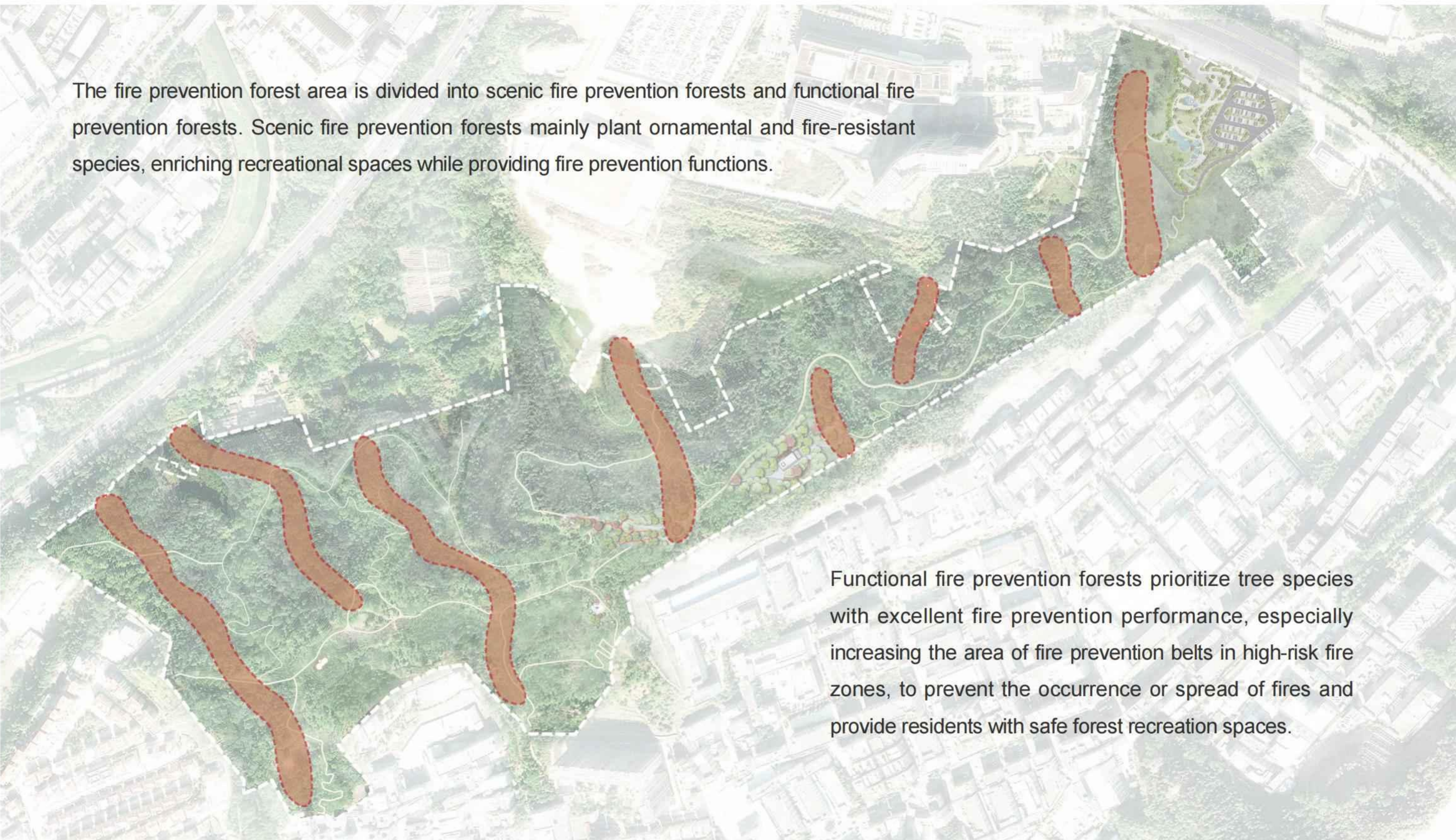
FIRE-FIGHTING INFRASTRUCTURE CONFIGURATION



FOREST FIRE CONTROL NODE DESIGN



FOREST FIRE PREVENTION FOREST DESIGN



Trees

Tree species are selected for their strong fire resistance and distributed along the main ridges, valleys, and peripheral boundaries of the Zhangbei Park, forming a corresponding closed loop.



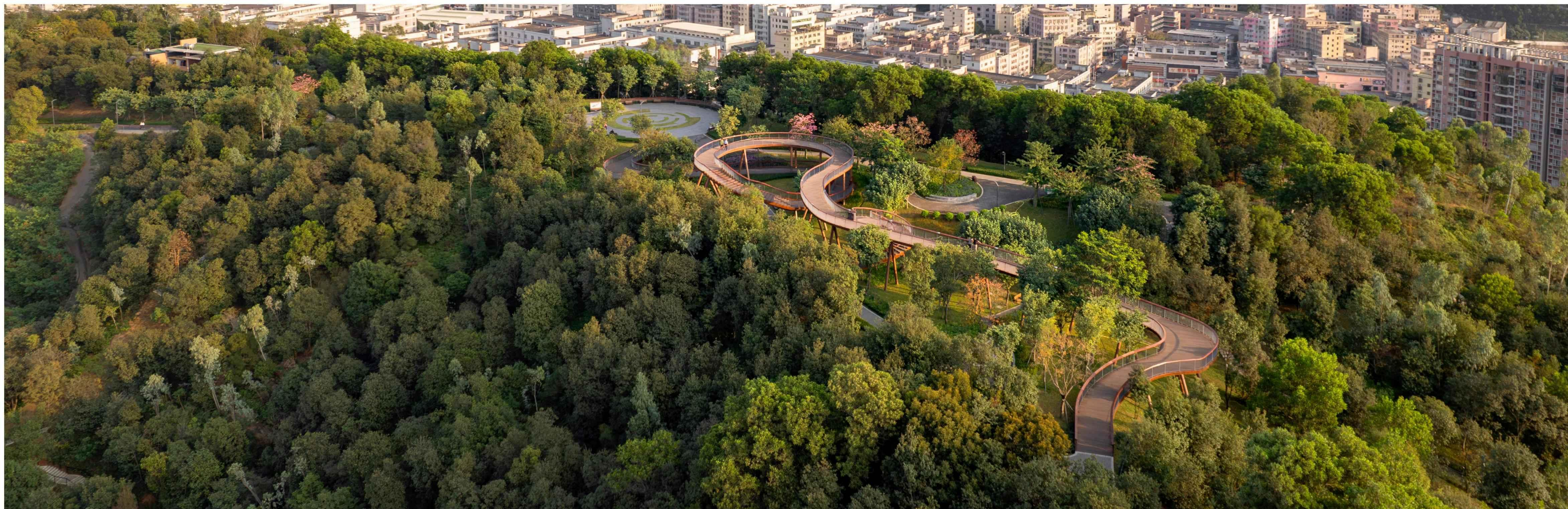
Shrubs

Shrubs: Mix trees and shrubs alternately by plant or by row, ensuring dense foliage from top to bottom within the forest belt.

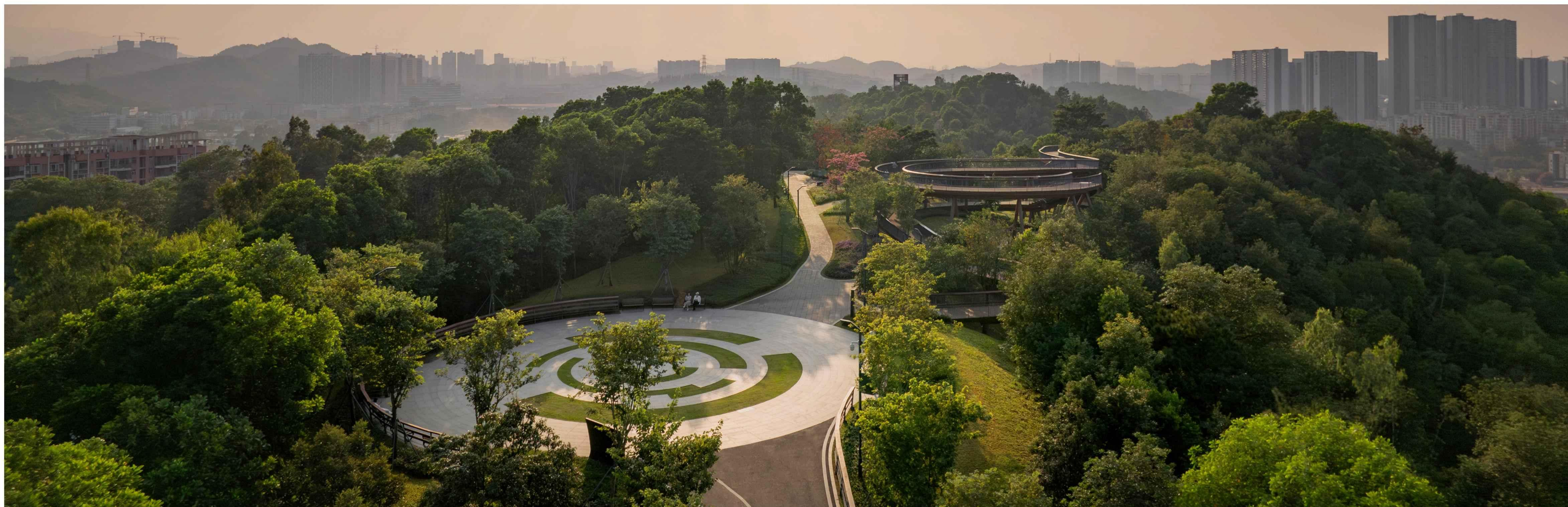
Ground Cover

Ground cover plants should be selected for their shade tolerance, slope protection abilities, and vigorous growth.





▲ Pattern Mirror & Cloud Bridge Bird 'S-Eye View

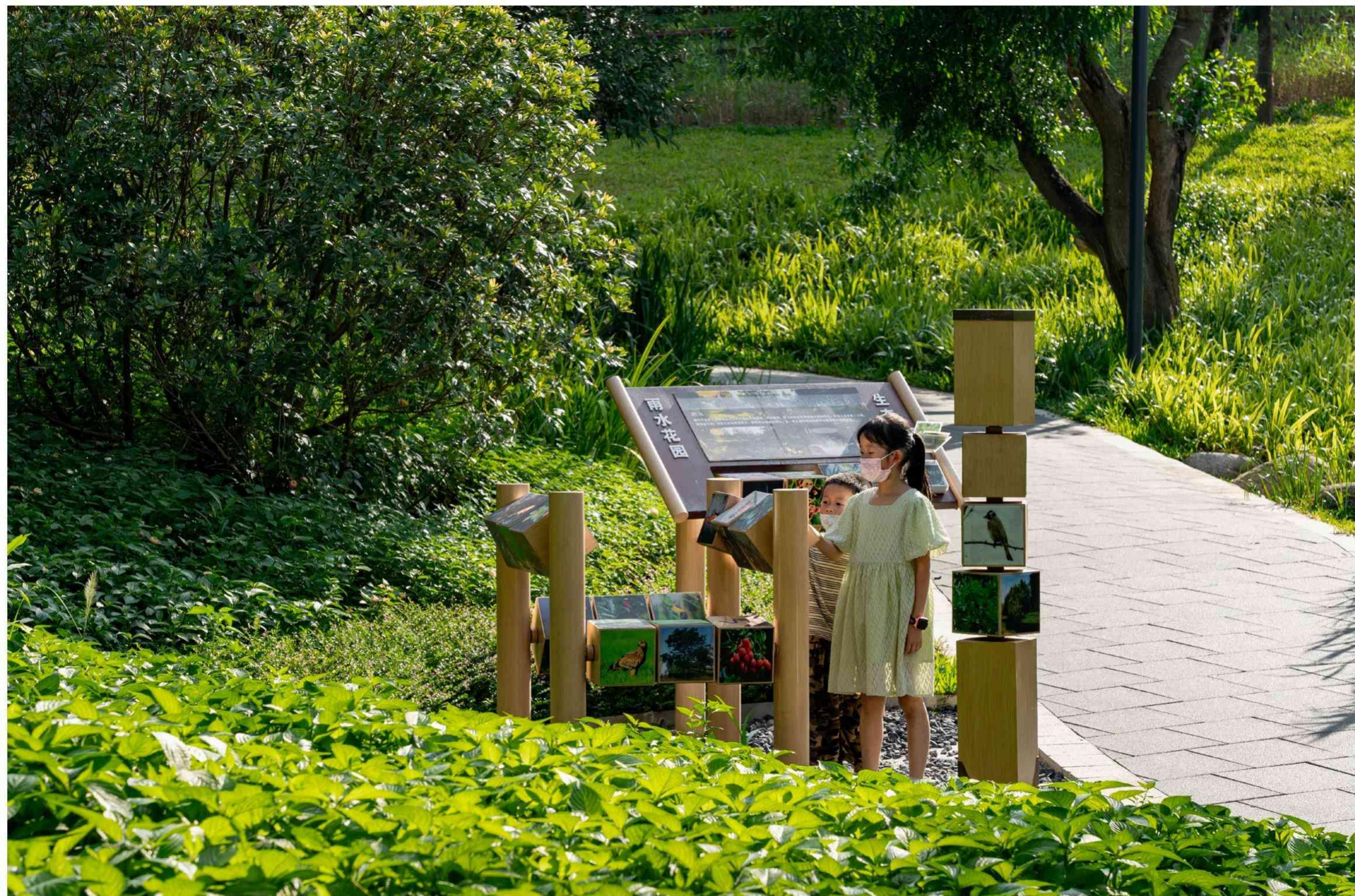


▲ Pattern Mirror & Cloud Bridge Bird 'S-Eye View





▲ Landscape Pavilion



▲ Nature Education Installation



▲ Rain Garden

▼ Cloud Bridge (Forestry Monitoring Point)

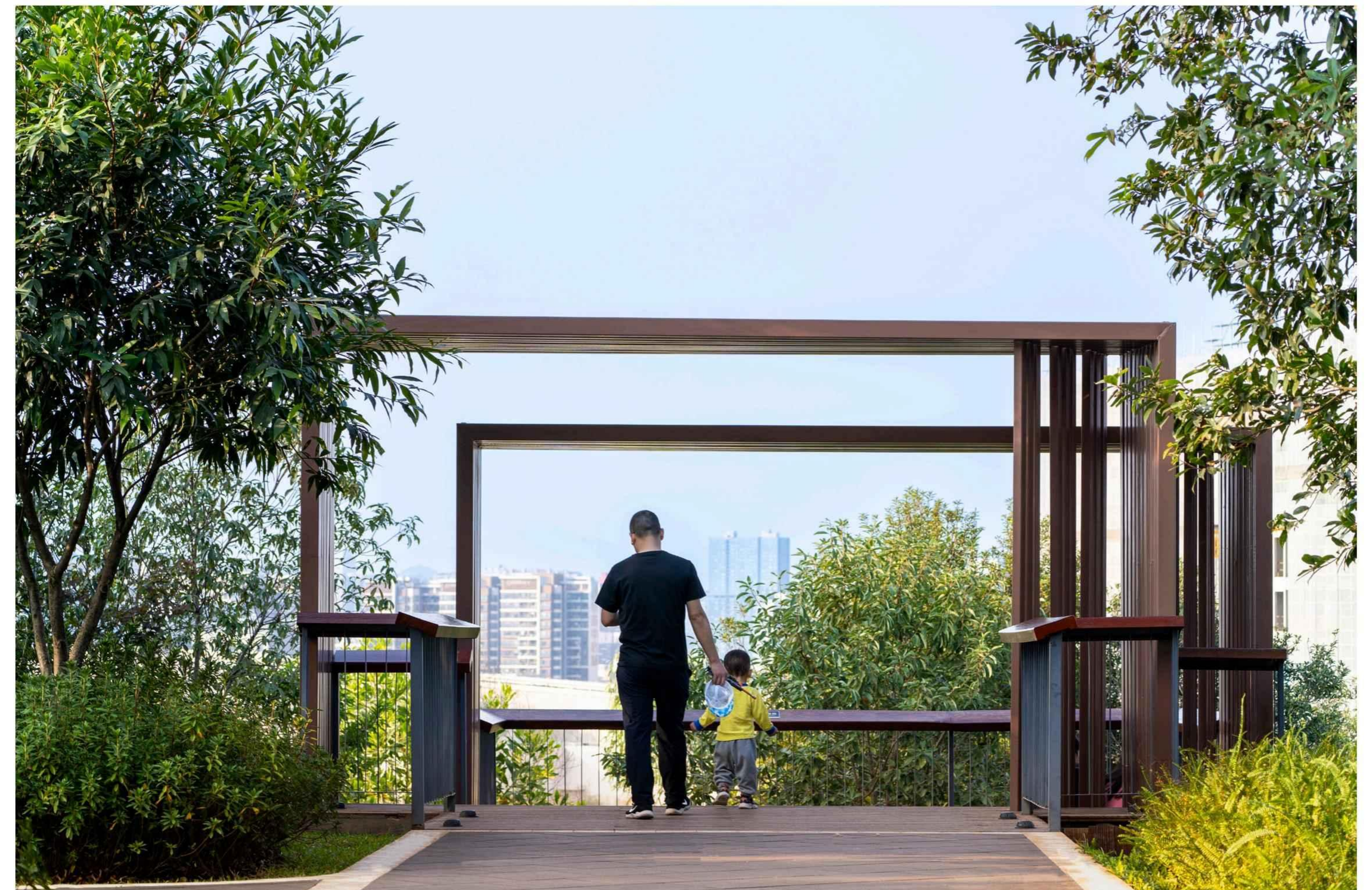




▲ Cloud Bridge

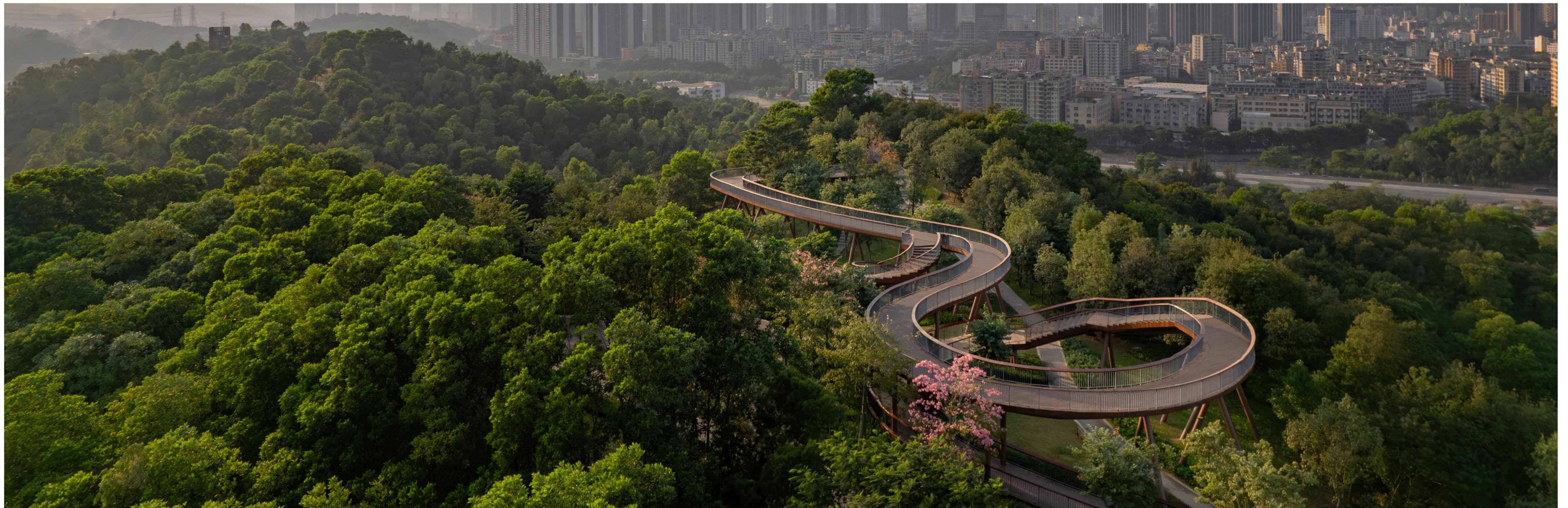


▲ Mountain Road



▲ Overlook Pavilion





▲ Cloud Bridge aerial view



▲ Cloud Bridge

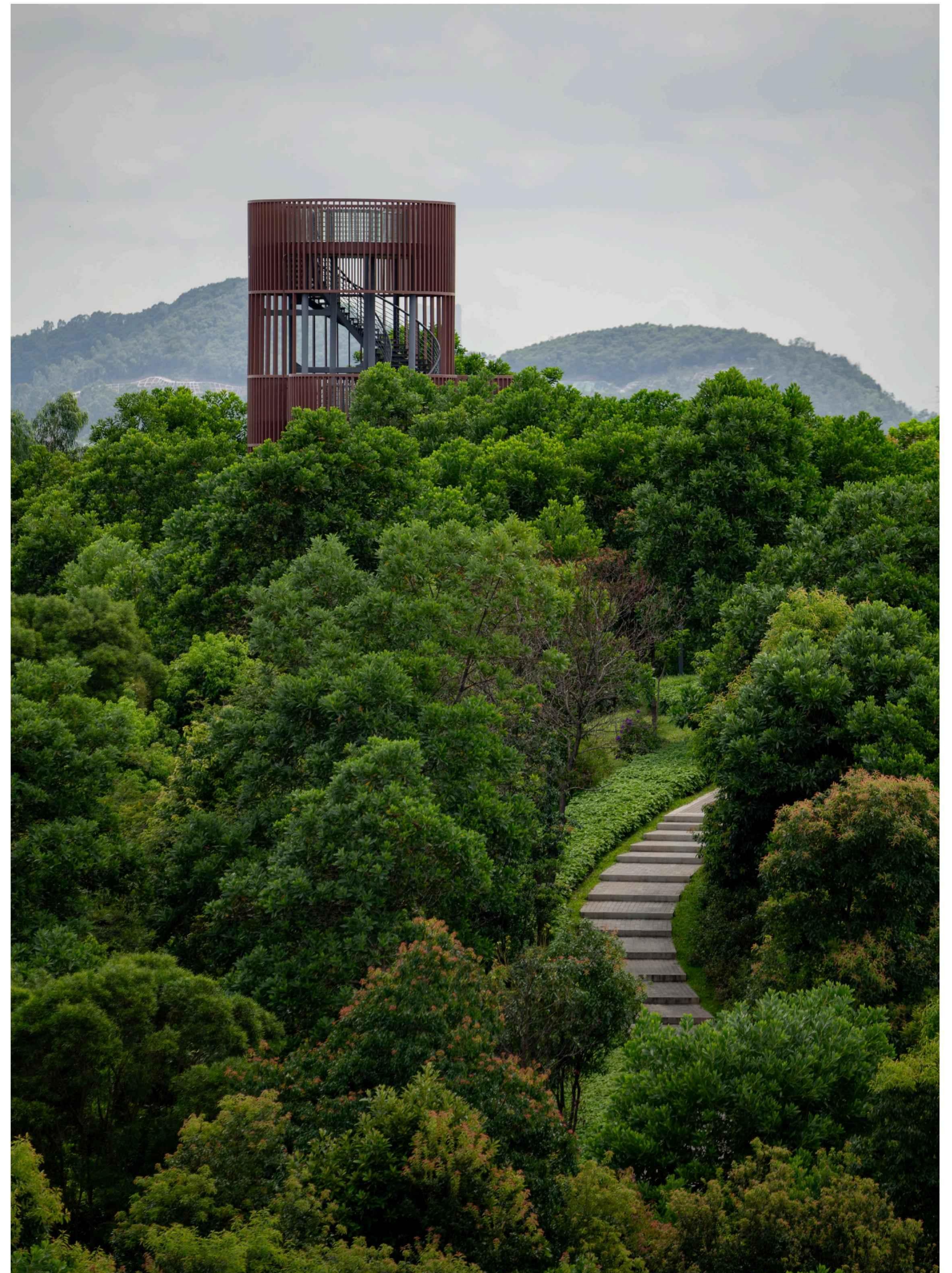


▲ Cloud Bridge

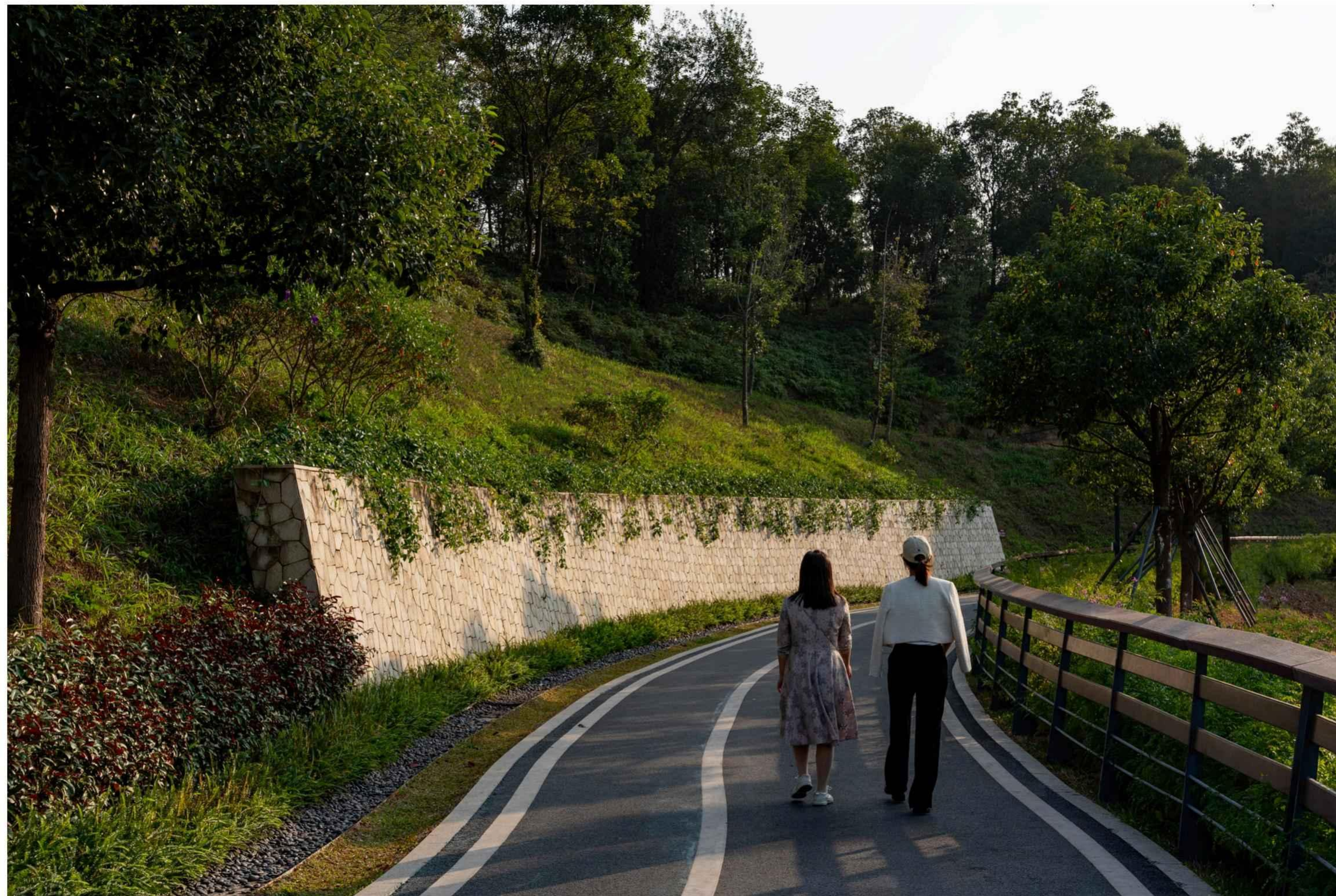




▲ Cloud Bridge Lawn



▲ Lucky Tower (Fire Lookout Tower)



▲ Mountain Road



▲ Mountain Road



▲ Forest Reception Hall



▲ Mountain Trails

