



# 2024 Chengdu World Horticultural Expo

## Master Planning and Landscape Design



# Project Statement

As the main venue for the 2024 Chengdu World Horticultural Expo, the design team approached the project from both planning and landscape design perspectives. They adhered to the site's original natural topography while creating an urban public space that embodies Chinese environmental aesthetics and the cultural essence of Sichuan.

Additionally, the design strategically accommodates domestic and international exchanges, cultural tourism consumption, urban service amenities, and industry development. Acting as a catalyst for urban events and driven by public landscapes, the design injects new energy and vitality into the city's green development.



# Project Narrative

This project faces the complex challenge of preserving the area's natural features amid its intricate topography and meeting the demands of a major exposition. These demands include effective spatial planning, traffic management, exhibition organization, and event operations. Furthermore, the project must tackle the issue of sustainable utilization after the event, aligning with green, low-carbon, sustainable, open, and shared event management principles. Addressing these challenges is at the forefront of the project's objectives.

As a result, the design starts with five strategies:

## 1. End-to-End Sustainability

Unlike venues built solely for temporary exhibitions, the master plan was developed from the start with a vision for post-event use, focusing on the cultivation and research of flower and plant seedlings, supported by educational programs, recreational tourism, and community services.

## 2. Landscape Ecology and Nature Preservation

The project prioritizes ecological and cultural harmony, inspired by ancient principles advocating for natural integration with the environment.

## 3. Modern Layout with Chinese Garden Narrative

The landscape design employs traditional gardening techniques to shape main pathways that gracefully wind through the extensive landscape, seamlessly integrating with the natural terrain.

## 4. Low Carbon Footprint and Energy Efficiency

To ensure sustainability beyond the exhibition, the design integrates sunlight simulation to judiciously select deciduous species to provide shade, shelter, and cooling, thereby promoting a low-carbon lifestyle while beautifying the park across all seasons.

## 5. Sichuan Characteristic Floriculture

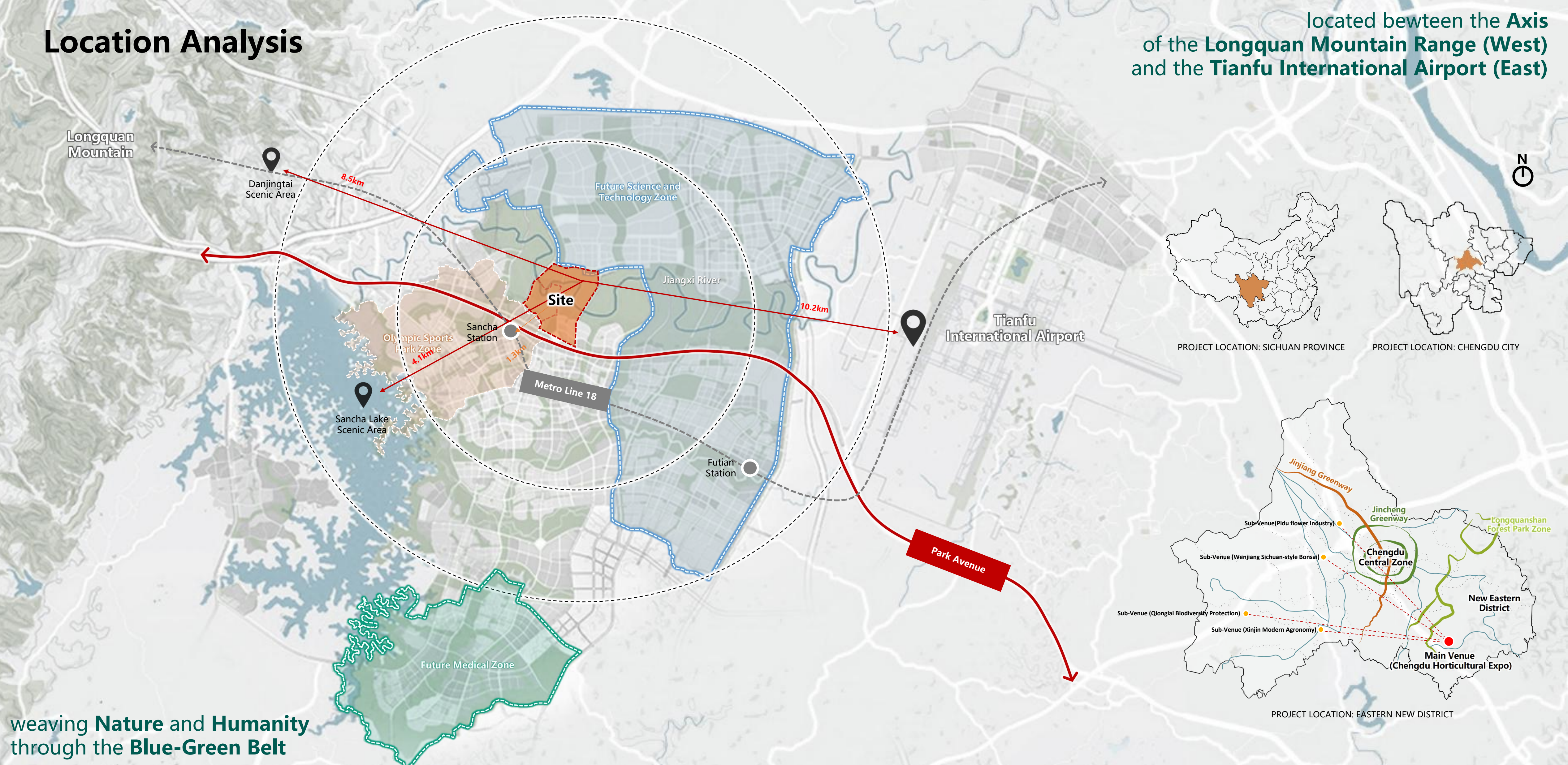
The selection and display of floral plants are centered around native Chengdu species, not only educating visitors on the diverse carbon sequestration capabilities of these plants but also highlighting their diversity and adaptability to different environments.

Moving beyond its initial emphasis on achieving international-level horticultural production and refining gardening techniques, the 2024 Chengdu Horticultural Expo has embraced a design strategy that seamlessly integrates both temporary and sustainable elements. This approach effectively tackles the challenge of repurposing large exhibition spaces after events conclude.



# Location Analysis

located bewteen the **Axis**  
of the **Longquan Mountain Range (West)**  
and the **Tianfu International Airport (East)**



weaving **Nature** and **Humanity**  
through the **Blue-Green Belt**



# Site Analysis

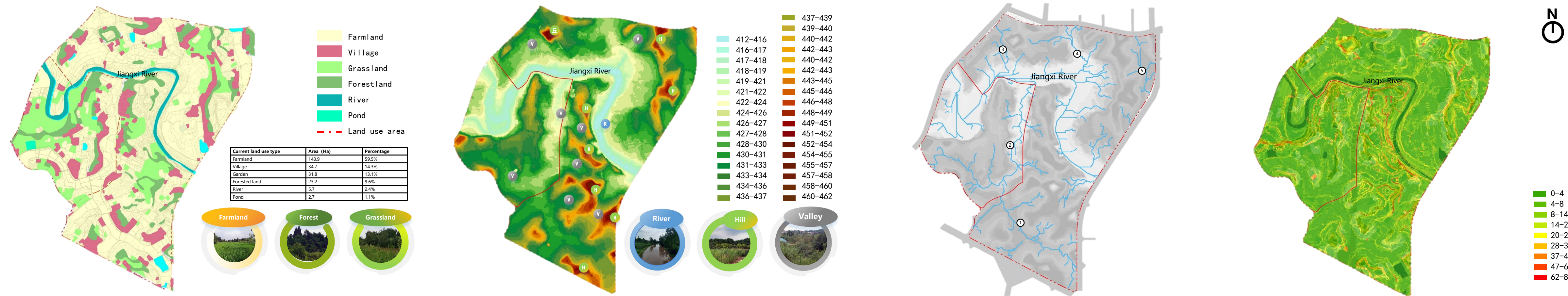
The project is situated in Chengdu's eastern new district, bordered by Tianfu International Airport on the east and the Longquan Mountains on the west. Spanning 242 hectares, the landscape is marked by gently rolling hills and valleys, with an elevation variance reaching up to 50 meters. The Jiangxi River, a tributary of the Tuo River, winds its way through this picturesque terrain, dotted with valley farmlands and dense mountain forests, evoking images of a classic Sichuan pastoral painting.

LAND USE ANALYSIS

TERRAIN ANALYSIS

CATCHMENT ANALYSIS

SLOPE ANALYSIS

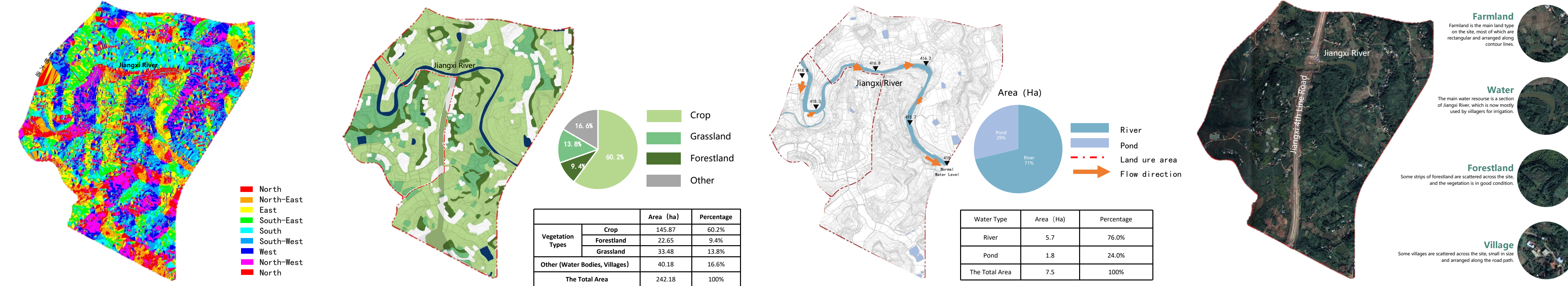


ASPECT ANALYSIS

VEGETATION ANALYSIS

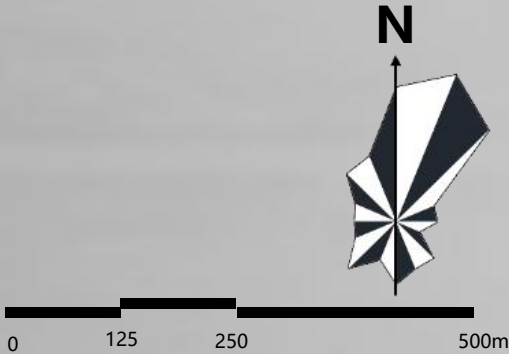
WATER ANALYSIS

SITE TEXTURE ANALYSIS





# Masterplan



- |                                  |  |
|----------------------------------|--|
| 1 Gate #1                        | 22 Crescent Beach                            |
| 2 Comprehensive Service Pavilion | 23 Tianfu Eye                                |
| 3 Flower Field                   | 24 Sichuan Shengjing Garden                  |
| 4 Flower Field Service Station   | 25 Gate #3                                   |
| 5 Expo Axis                      | 26 Botanic Pavilion                          |
| 6 Parking Lot                    | 27 Wuzhou Garden                             |
| 7 Future Theatre                 | 28 International Horticulture Zone           |
| 8 Future Horticulture Zone       | 29 Parking Lot                               |
| 9 Main Pavilion                  | 30 Gate #2                                   |
| 10 Expo Lake                     | 31 Chengdu International Friendship Pavilion |
| 11 Expo Waterfall                | 32 Hibiscus City Featured Street             |
| 12 Chinese Horticulture Zone     | 33 Life Gardening Horticulture Zone          |
| 13 Woven Bamboo Bridge           | 34 Eco Peninsula                             |
| 14 Waterfall Hotel               | 35 Wetland                                   |
| 15 Investment and Display Center | 36 Bird Island                               |
| 16 Tianfu Habitat Pavilion       | 37 Existed Forest Protection Area            |
| 17 Shuchuan Bamboo Garden        | 38 Children's Dream Park                     |
| 18 Tianfu Habitat Zone           | 39 Ecological Conservation Area              |
| 19 Yueyang Bridge                | 40 Gate #4                                   |
| 20 Jinyun Tower                  |  |
| 21 Riverside                     |  |

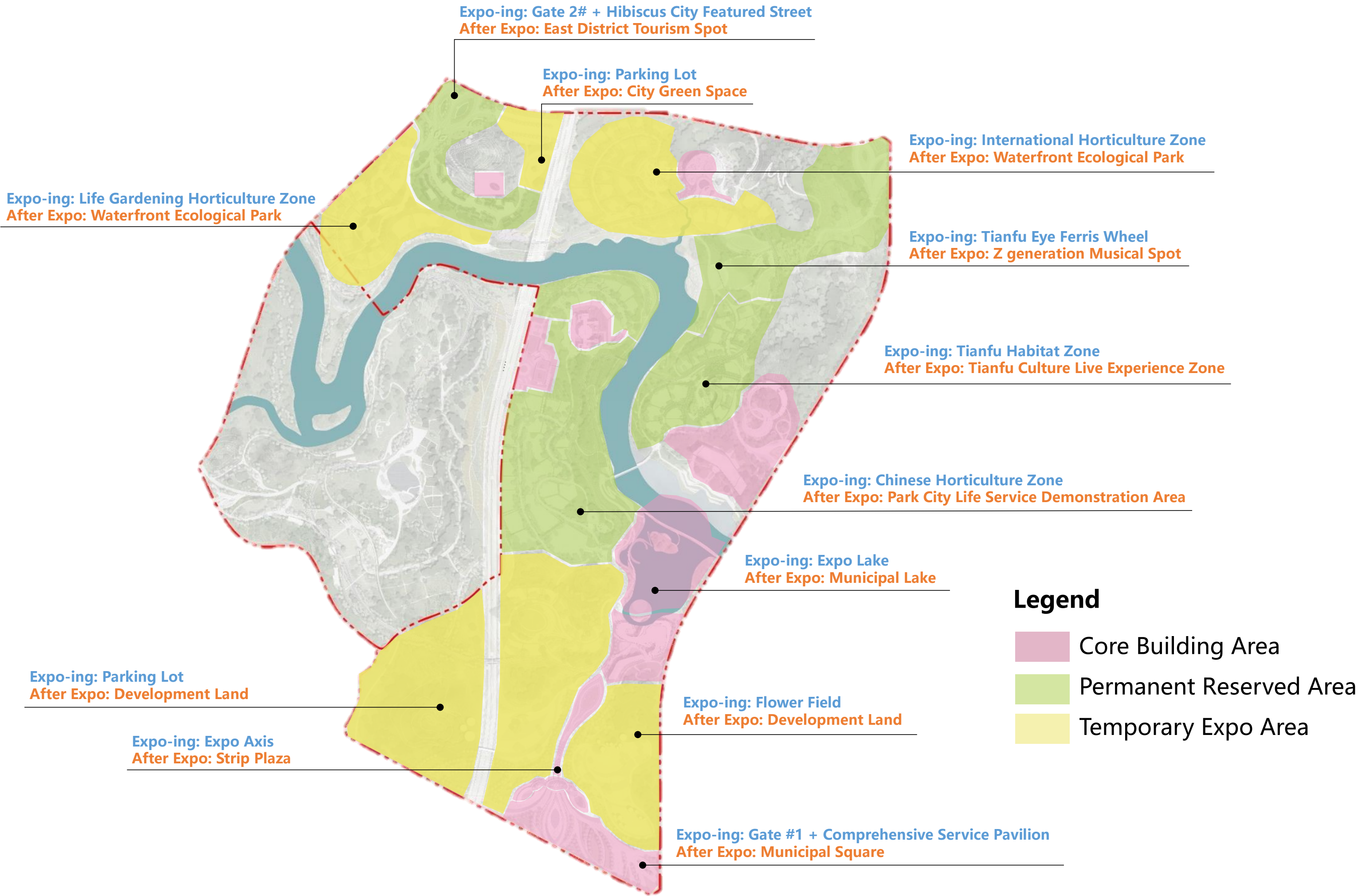
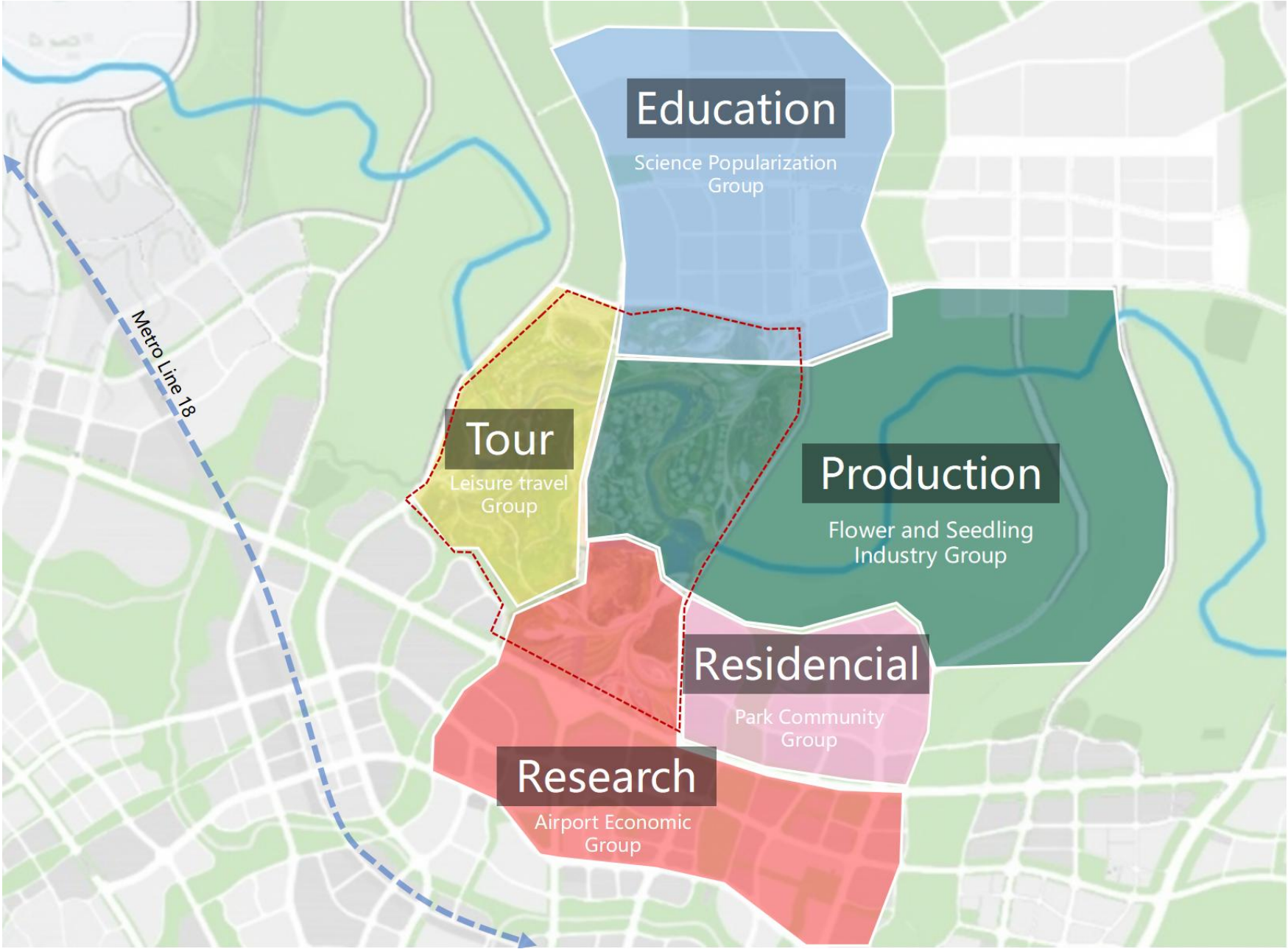


# Design Strategy 1: End-to-End Sustainability

Following the exposition, the site will evolve into a multifunctional complex serving as a hub for production, education, research, tourism, and residential living.

Key facilities, such as the main exhibition hall, will be repurposed into a cultural and arts center for the district, while the botanical greenhouse will be transformed into a center for flower research and science.

The surrounding landscapes will be conserved and redeveloped into a new public park for the city. This forward-thinking approach to planning, which emphasizes ecological considerations for the community after the event, guides the selection of sustainable materials, construction methods, and plant species to reduce waste and energy use.





# Design Strategy 2: Landscape Ecology

The initial phase involved detailed surveys to identify and catalog hundreds of large trees and forest patches, preserving them to establish a verdant backdrop for the exposition. Additionally, the project involves flood management and ecological restoration of water bodies, planting submerged, floating, and emergent aquatic plants, and introducing various fish species to attract insects and birds, thus creating a stable riparian ecosystem.

## Plant Retention Principles

- 1.  $\Phi > 20\text{cm}$
- 2. beautiful tree shape
- 3. good growth
- 4. good landscape effect



Marking method -1



Marking method -2



Koelreuteria paniculata



Camphor



Cypress



Pistacia

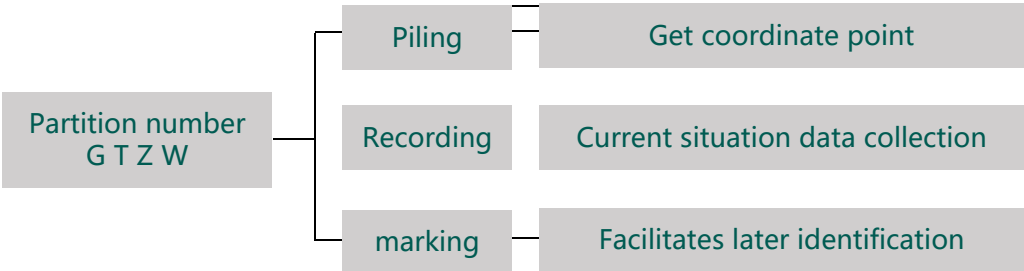


Chinaberry



Maple Poplar

## Plant Mapping Workflow



## Plant Design Principles - Native Tree Species

Zone	Plant Species	Current status photos	Planting strategy
(G) International Zone	Bamboo, hackberry, neem, eucalyptus, cypress, paulownia, maple poplar, walnut, camphor, camphor tree, Chinese toon, Poplar, Choerospondias australis		Focus on the coordination between the background forest and the surrounding exhibition gardens and buildings.
(T) Children's Dream Zone	Osmanthus fragrans, Koelreuteria paniculata, Cinnamomum camphora, Cyclobalanopsis glauca		Using native vegetation as the base and artificial pruning to form a unique landscape.
(Z) Chinese Zone	Maple, bamboo, camphor, chinaberry, willow, Acer octagonalensis, chinaberry, sycamore, camphor, chestnut, hackberry, maple poplar, pistachio, lamp tree, cypress, cypress		Small-scale evergreen plants are interspersed in the exhibition gardens and buildings as background forests.
(W) Future Zone	Cypress, pomelo, bamboo forest, camphor, paper mulberry, maple, willow, cypress, hackberry, Chinese tallow tree		Provides dark tones to highlight the colors of other habitats.





# Design Strategy 2: Nature Preservation

## Adapting to Local Conditions

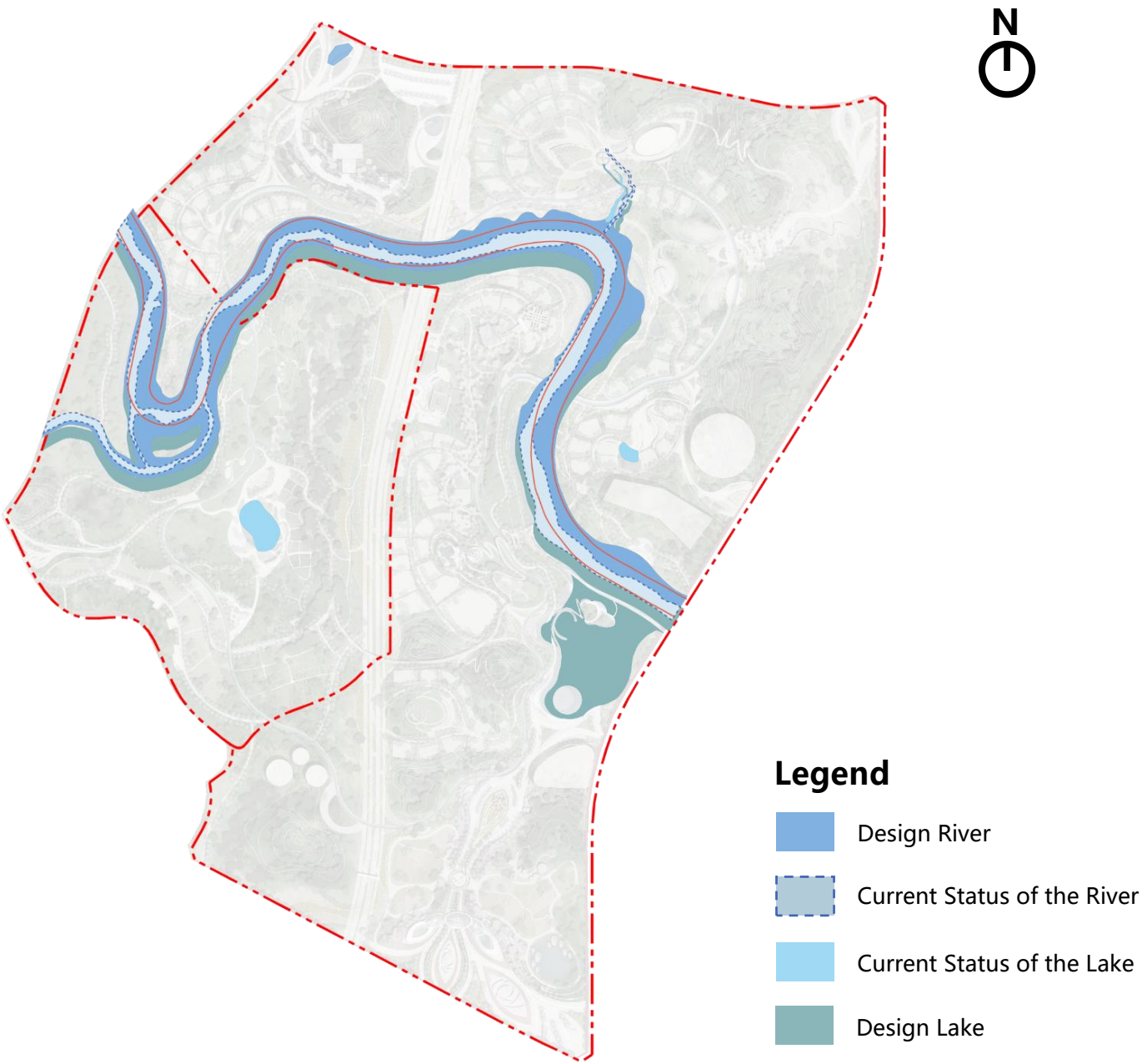
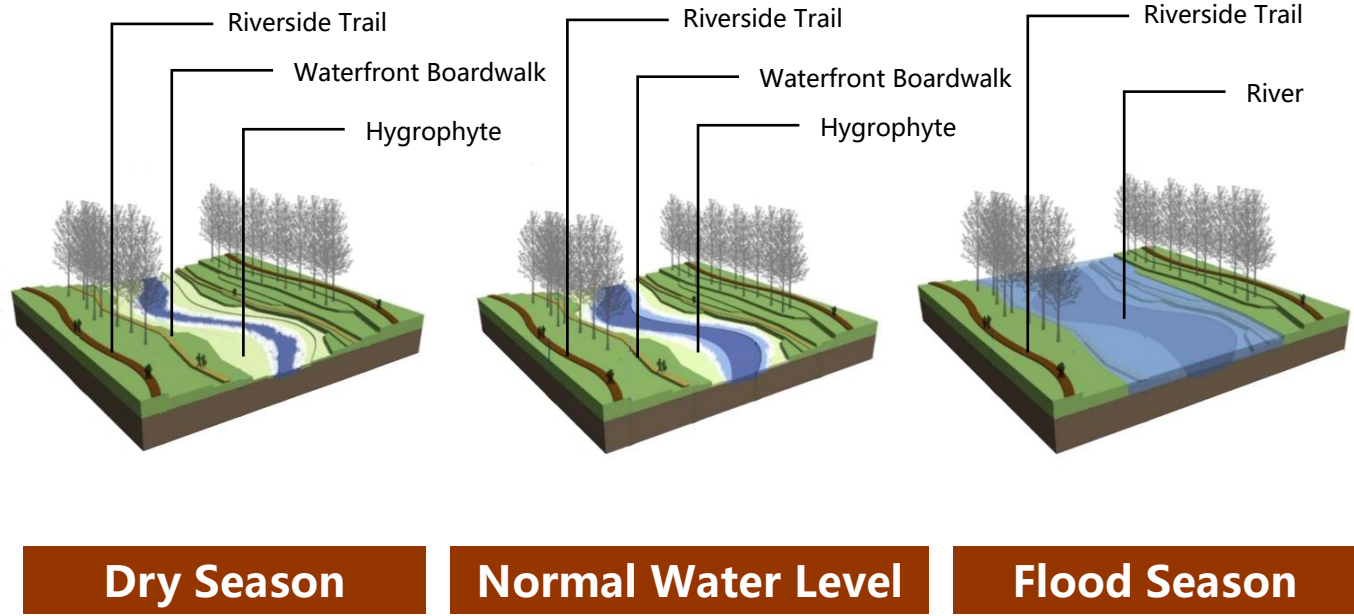
Comprehensive management of river environment: preserve and utilize existing ponds as much as possible, widen the width of Jiang River, and build dams to raise the water level.



## Ecological Water System

“Plant-Animal-Microorganism-Soil” complex effect: relying on the river channel, constructing a waterfront buffer zone, purifying the water body and the environment, and rebuilding the diversity of the biological system.

Range	Area		
About 3.5km Both sides of the river	Water-land transition zone Elevation>419	Shallow water area Elevation 418~419	General water depth area Elevation < 418
	Choose wetland plants with a certain degree of drought tolerance, such as yellow iris, cattail, etc.	All emergent plants can be used, such as Lythrum salicina, reed, etc.	Submerged plants, foxtail algae, etc. can be appropriately configured



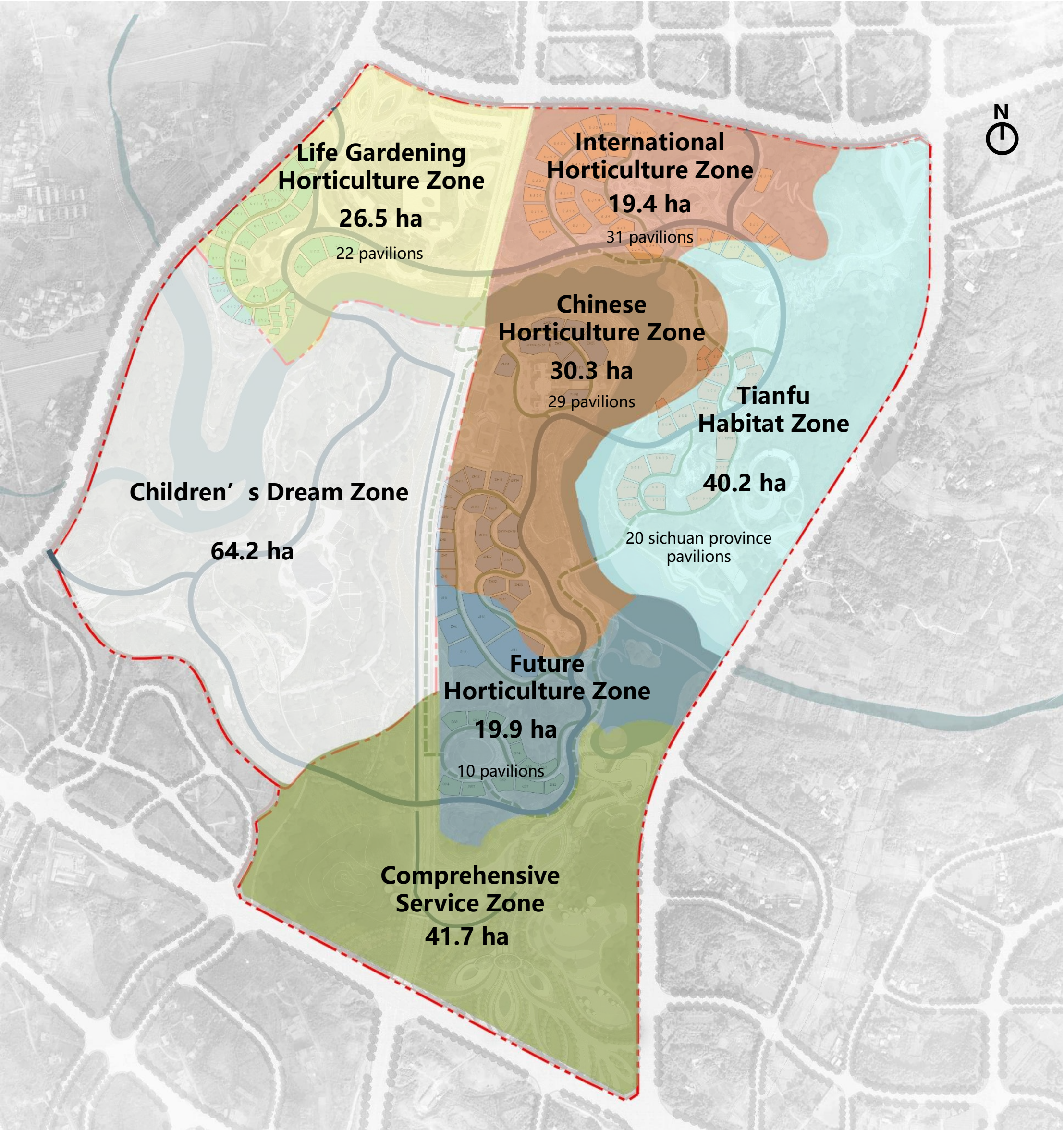
Notably, the site extensively incorporates Low Impact Development (LID) techniques to enhance the water recycling system, including permeable paving, grass swales, dry creeks, recessed green spaces, and green roofs to maintain the water storage capacity of woodlands, grasslands, and wetlands. For instance, the main entrance area alone is expected to collect 2,500 tons of rainwater annually, sufficient for the daily irrigation needs of 2 hectares of green space.



# Design Strategy 3: Modern Layout with Chinese Garden Narrative

To meet the specific requirements of the exposition, the park is organized into seven thematic zones—the Chinese Horticulture, Tianfu Habitat, International Horticulture, Children’ s Dream, Future Horticulture, Comprehensive Service, and Life Gardening Horticulture.

In addition, with strategically placed pavilions, the views mirror the spatial relationships and aesthetic principles in traditional Chinese gardens and create a vibrant and engaging viewing experience.





# Design Strategy 4: Low Carbon Footprint and Energy Efficiency

In response to the Energy-Saving, local materials such as waste slag, bricks and tiles, and red sandstone on the site are recycled to reduce carbon emissions in facade and paving.



Reuse for paving



Reuse for Water Steps



Reuse for Retaining Wall

## Entrance Structure (Gate #2)

Mainly made of plywood, reduced the carbon emissions through modular production and fast construction.



## Tingzhu Service Station (Tianfu Habitat Zone)

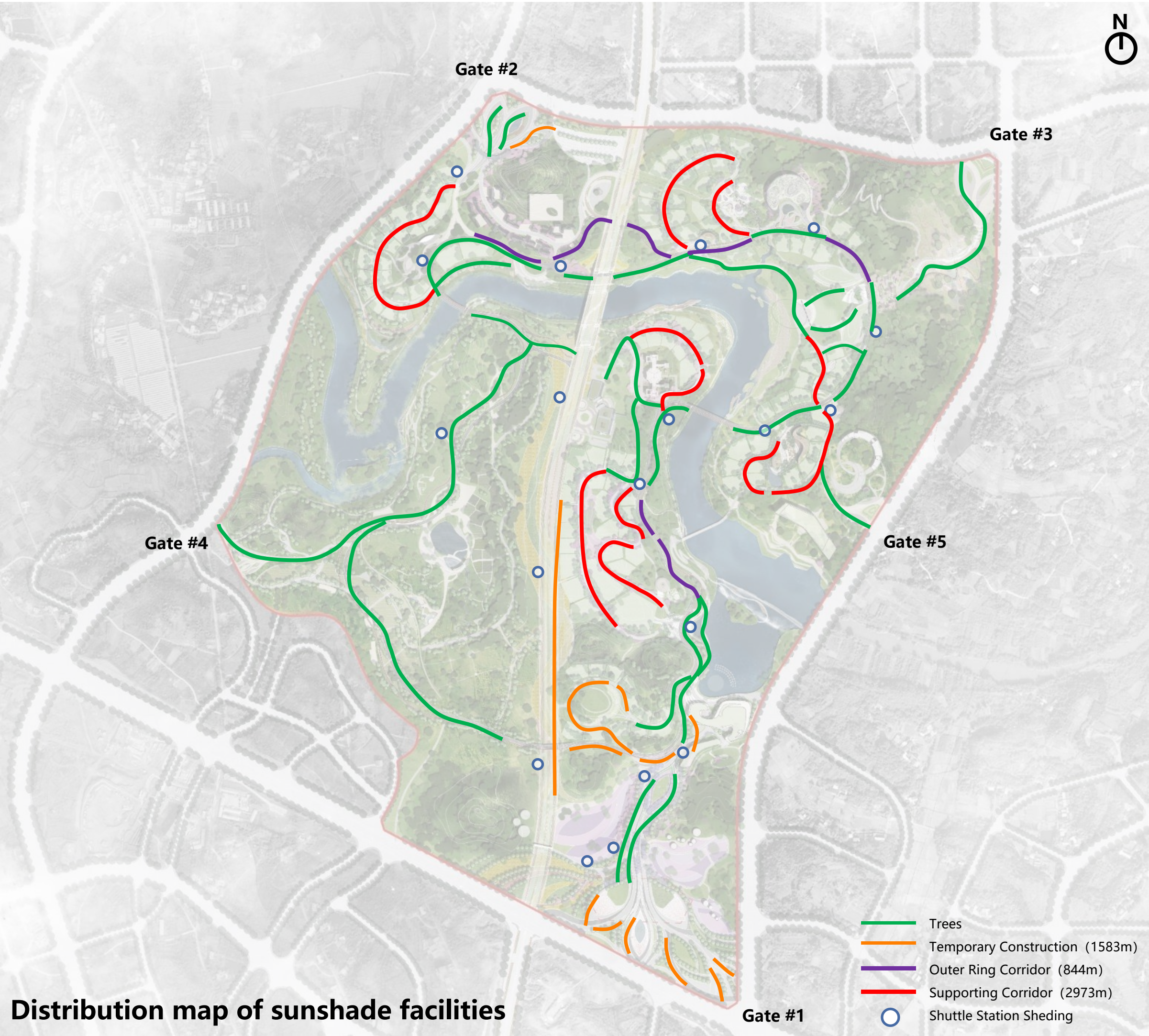
Used low-carbon structures such as bamboo steel, thatched roofs, and rammed earth walls, combined with traditional construction techniques and craftsmanship to achieve ultra-low carbon emissions





# Design Strategy 4: Low Carbon Footprint and Energy Efficiency

The design incorporates integrated seating and "mist forest" modules that provide shade, shelter, and cooling, thereby promoting a low-carbon lifestyle.



Distribution map of sunshade facilities



# Design Strategy 5: Sichuan Characteristic Floriculture



Deutzia rubens



Clerodendrum bungei



Viola philippica



Davidia involucrata



Mussaenda pubescens



Saussurea costus



Cornus controversa



Lycoris aurea



Phoebe zhennan



Acer catalpifolium



Camptotheca acuminata



Michelia macclurei

Zone	Planting strategy	Plant Species (type)
Jiangxi River Ecological Belt	Mainly use water-weather plants and riparian area plants.	Acer truncatum, Baldcypress, Metasequoia, Weeping willow, Hibiscus, Phragmites arundinaceae, Buddlejia grandiflora, Salix babylonica
Future Zone	Combining new and colorful plants.	Alum root (4-10), golden moss, Mexican sage (5-9), sunflower glory days (7-8), iris (6-7), petunia (4-8), golden baby daylily (6-9), yellow iris (6-9)
Chinese Zone	Use native plants to create the charm of Sichuan culture.	Bamboo, Chinese lantern tree (5-6), peony (5), hollyhock (6-8), hibiscus (7-10), hibiscus (6-9) bonsai (crape myrtle, privet, osmanthus, loropetalum)
International Zone	A collection of unique plants from various countries.	Lily (4-6), rose, hibiscus (6-8), dahlia (6-12), agapanthus (7-8), Araucaria, late-flowering tulip (4-5)
Children's Dream Zone	Use aromatic plants and combine with activities such as family picking to create a pastoral image.	Osmanthus fragrans (9-10), Sophora japonica (5-6), Gardenia jasminoides (5-7), White jasmine (4-9), Paulownia purpureogenum (4-5), Lavender (6-9), Verbena officinalis (6-9)









