PROJECT BINDER

# A Bamboo Symphony of Ecology, Agriculture, and Recreation

"The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan

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|---|---|
| **Project Address** | **:** Chenghua District, Chengdu, Sichuan Province, China |
| **City & Country** | **:** Chengdu, China |
| **Area (sq.m)** | **:** 115000 (sq.m) |
| **Award Category** | **:** Analysis & Master Planning (Unbuilt Projects) |

## PROJECT STATEMENT

Chengdu is one of the best regions globally for bamboo growth, boasting 556 species and 69,100 km² of bamboo. This has fostered a long-standing bamboo culture encompassing cultivation, utilization, and appreciation. The project is located in the suburbs of Chengdu, one of the last remaining areas with a mixed landscape of native bamboo forests and farmland amidst rapid urban expansion. Its ecological environment urgently needs restoration, and its functions require renewal.

We conducted an in-depth analysis of the unique LinPan system in the Dujiangyan Irrigation Area, characterized by the interwoven traditional canals, bamboo forests, farmlands, and cottages. By extracting the patterns from this traditional layout, we have constructed a Bamboo Cultural Complex that reflects traditional wisdom while accommodating contemporary needs for nature education and agricultural cultural experiences. We aim to reconstruct the ecological landscape by restoring the irrigation canals and optimizing bamboo communities. By restoring the farmland texture and enhancing LinPan integration, we shape a distinctive composite landscape. Furthermore, we create greenway systems and ecological education scenarios to showcase the charm of bamboo culture. Our goal is to develop a complex that not only continues the traditional ecological cycle but also meets the recreational needs of the metropolitan area's suburbs.

# PROJECT NARRATIVE

## 1. Background and challenges

"Bamboo Heaven" is situated in the northern suburbs of Chengdu, Sichuan Province, China. This area is the homeland of giant pandas and the birthplaces of China's agricultural civilizations—the Dujiangyan Irrigation Area. It boasts a complete irrigation canal system and abundant agricultural resources, including vast farmlands, bamboo forests, and farmhouses, exemplifying the unique LinPan landscape of western Sichuan.

Since the late 20th century, Chengdu has rapidly developed into one of the most advanced cities in southwestern China. The rapid urbanization process has led to the drying up of irrigation canals, the demolition of farmhouses, and the destruction of the traditional LinPan system and farmland texture in the suburbs. This has resulted in significant ecological imbalance due to habitat degradation and the evolution of the ecological landscape. The loss of regional cultural carriers and distinct characteristics has led to the disappearance of the original agricultural culture.

As one of the last remaining areas in the suburbs of Chengdu with a native landscape, how can we achieve harmonious development between urban construction and the ecological environment while protecting and restoring the ecology? How can we enhance landscape diversity and appeal without damaging the ecological foundation? How can we ensure the preservation and transmission of regional culture and its unique characteristics, while providing leisure, recreation, and eco-agricultural functions that meet the needs of modern urban life? These are the challenges this project aims to address.

## 2. Analysis and Planning Objectives

The pattern of LinPan has been perpetuated in China for thousands of years. It has always played a vital role in maintaining the ecological environment of the Chengdu Plain. Through extensive literature review and case analysis, we conducted an in-depth study of LinPan, a traditional environmental form in Sichuan, extracting its model as an ecological complex of people, fields, residences, forests, and water in mutual symbiosis. Our goal is to rejuvenate the LinPan model by preserving its idyllic landscape of fertile fields surrounded by dense forests, small bridges, and flowing water.

During a three-month field survey, we systematically investigated the historical scope and current conditions of irrigation canals, buildings, farmlands, and bamboo forests within the project area and summarized the needs of residents to ensure that the updated functions meet their demands.

## 2. Analysis and Planning Objectives

The "Bamboo Heaven" project aims to achieve the following goals through a series of ecological restoration and landscape enhancement measures:

**1.Restoration of Original Ecological Functions:**

We prioritize the restoration of ecological functions to ensure the health and sustainability of the ecosystem. This involves rehabilitating damaged ecosystems and protecting and enhancing biodiversity. Through these measures, we aim to establish a stable and productive ecological foundation to support the entire project.

**2.Reconstruction of the "Bamboo Forest-Irrigation Canal-Farmland" LinPan Landscape:**

We aim to reshape and strengthen the unique LinPan landscape characterized by bamboo forests, irrigation canals, and farmlands. This approach not only pays homage to traditional agricultural landscapes but also protects ecological and cultural values. We will make this landscape the core feature of "Bamboo Heaven," attracting tourists and educating the public.

**3.Implementation of Urban Leisure and Agricultural Education Functions:**

The project will also focus on providing urban leisure and agricultural education functions. We plan to establish demonstration farmlands and interactive experience areas, allowing urban residents to directly participate in agricultural activities, experience farming culture, and enjoy the tranquility and relaxation brought by nature.

# 3. Ecological Pattern Reconstruction

The ecological function is the fundamental role of this project as a large-scale composite ecosystem on the outskirts of the city. We need to optimize it to adapt to the needs of modern times.

**1.Reconnecting the Irrigation Canal System**

In the project, we are committed to restoring and reconnecting the irrigation canal system, a crucial step in restoring ecological functions. By repairing the irrigation canals, we aim to maintain the regional water ecological balance and enhance agricultural irrigation efficiency, providing a stable water source for bamboo forests and farmlands.

**2.Optimizing Bamboo Forest Communities**

Bamboo forests are the soul of "Bamboo Heaven," and optimizing bamboo forest communities is another vital aspect of reconstructing the ecological pattern. By selecting suitable bamboo species, rationally planning the structure of the bamboo forests, and maintaining the natural regeneration capacity of the bamboo forests, we aim to enhance the ecological function and landscape value of the bamboo forests. This will help to build a healthy, stable, and attractive bamboo forest ecosystem.

# 4. Distinctive Landscape Creation

Our goal is to recreate the traditional LinPan landscape of western Sichuan by organically integrating bamboo forests, irrigation canals, farmlands, and buildings, creating a bamboo-centered landscape system.

**1.Restoring Characteristic Farmland Texture**

We are dedicated to restoring and preserving the region's distinctive farmland texture. By reinstating traditional farming practices and irrigation techniques, we aim not only to retain the agricultural history of this land but also to provide visitors with a platform to understand and experience traditional agricultural culture.

**2.Promoting Bamboo-Farmland Integration**

The harmonious coexistence of bamboo forests and farmlands is a hallmark of the LinPan system in western Sichuan. We explore innovative agricultural models that combine bamboo forests with farmlands to create a unique bamboo-farmland landscape. This integration not only enhances the aesthetic value of the landscape but also increases the diversity and stability of the ecosystem, while offering visitors rich farming experiences and opportunities for ecological education.

# 5. Presentation of Bamboo Culture

We believe that "Bamboo Heaven" should serve recreational purposes and provide space for natural and agricultural education. We aim to further activate the project's advantageous resources through spatial construction and activity planning.

**1.Building a Greenway System**

These greenways will not only connect various scenic spots but also traverse the entire park, providing visitors and residents with a place to get close to nature and enjoy tranquillity. The greenways will use environmentally friendly materials, harmoniously blending with the natural landscape while providing a safe and comfortable walking and cycling experience.

**2.Creating Natural and Agricultural Education Spaces**

We will create a series of natural and agricultural education scenes, such as education centers, demonstration farmlands, interactive exhibitions, etc., to enhance the public's understanding of ecological protection and agricultural culture. Through these educational scenes, we hope to stimulate people's interest in nature and farming, fostering their sense of environmental responsibility.

# 6. Performance

The "Bamboo Heaven" project adopts a diversified development mechanism, adhering to ecological principles and prioritizing ecological protection and biodiversity to ensure the harmonious coexistence of ecological and cultural education functions. The project is expected to achieve the following goals:

**1.Ecological Benefits:**

Through ecological restoration and biodiversity conservation, the project will enhance the region's ecological service functions, improve environmental quality, and provide richer habitats for wildlife. It is anticipated to restore 65% of the irrigation canals, 40% of the farmlands, plant more than 30 species of native plants, and increase high-quality habitats by 120%.

**2.Economic Benefits:**

By developing industries such as ecotourism and leisure agriculture, the project will drive local economic development, create job opportunities, and improve residents' living standards. It is estimated to attract an additional 12,000 visitors per year and increase annual economic income by 18,000,000 CNY.

**3.Cultural Benefits:**

The project will become an important base for nature education and agricultural cultural education in the suburbs of Chengdu, enhancing public, especially youth, awareness of environmental protection and ecological literacy.

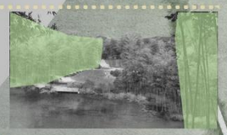
# A Bamboo Symphony of Ecology, Agriculture, and Recreation

01

"The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan


## BAMBOO CULTIVATION

Chengdu is one of the most suitable regions in the world for bamboo growth, boasting 556 species of bamboo and 6,910,000 hectares dedicated to bamboo cultivation.



## BAMBOO ECONOMY

Chengdu is enhancing the economic income of its bamboo industry through initiatives such as "Living Off Bamboo" and "Using Bamboo as a Medium."

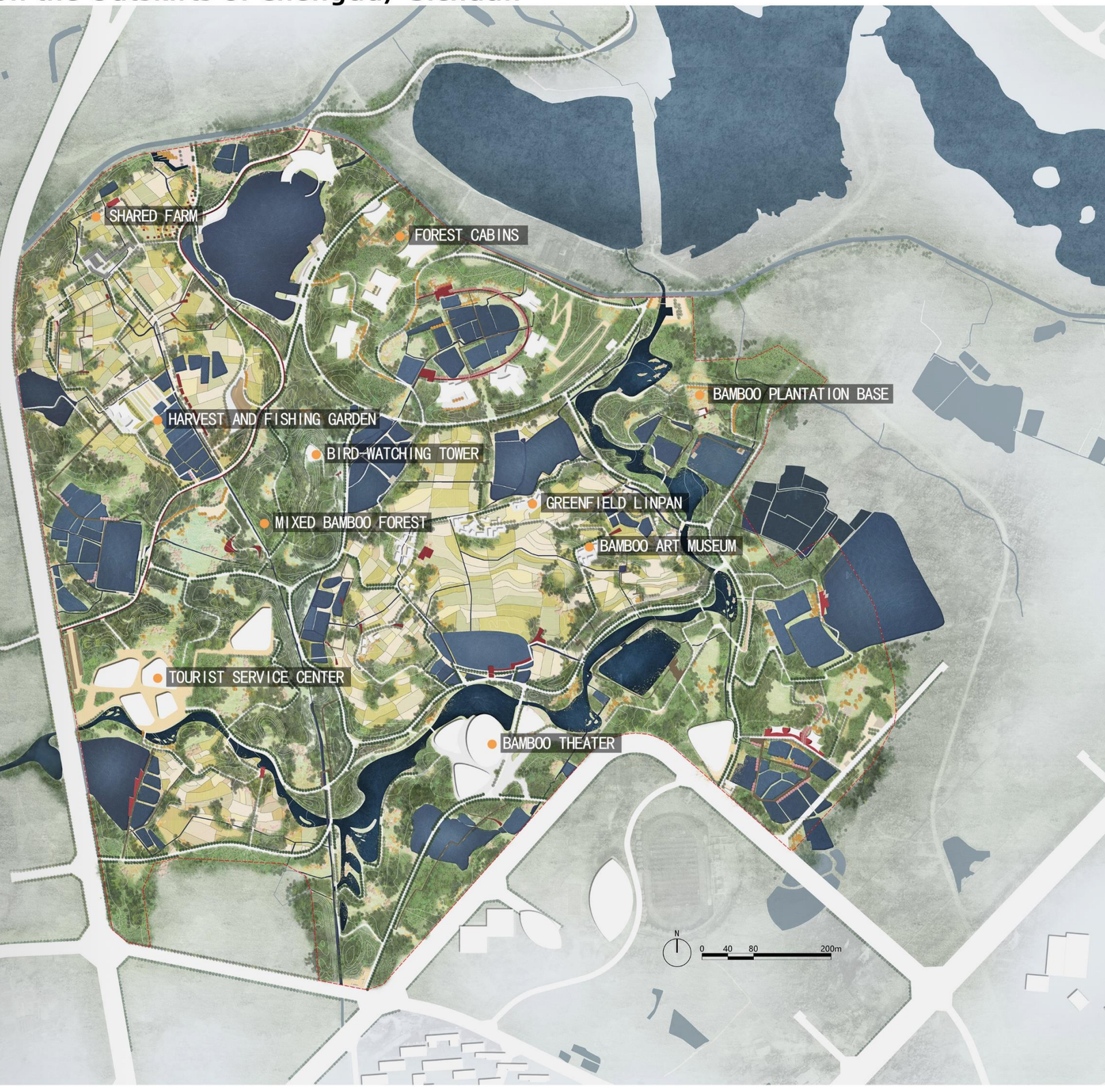
## BAMBOO CULTURE

Chengdu has developed a long-standing culture of bamboo cultivation, utilization, and appreciation. This culture is an integral part of the area's heritage.

**RESTORE**
**ECOLOGICAL FUNCTIONS**

**RESHAPE**
**LINPAN LANDSCAPE**

**REALIZE**
**LEISURE AND EDUCATION**




## Master Plan

The project aims to achieve ecological restoration, highlight cultural features, and promote urban leisure education through a series of ecological restoration and landscape enhancement measures.

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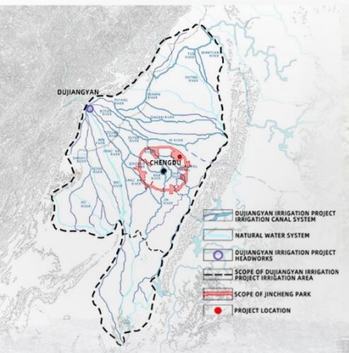
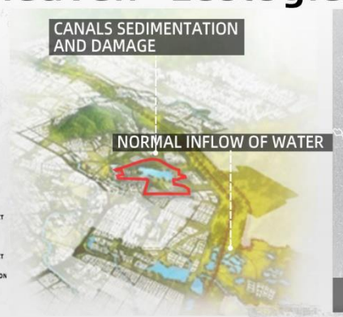
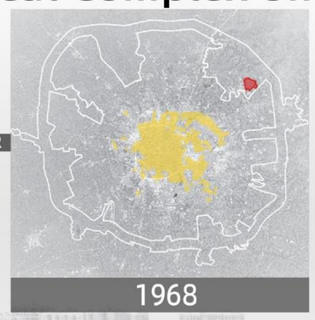
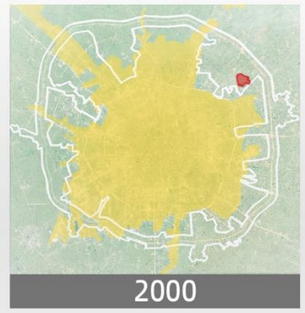
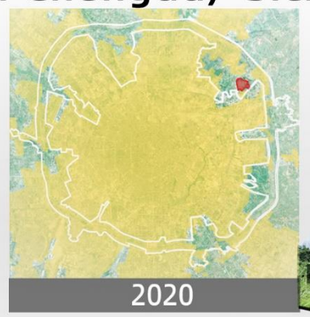
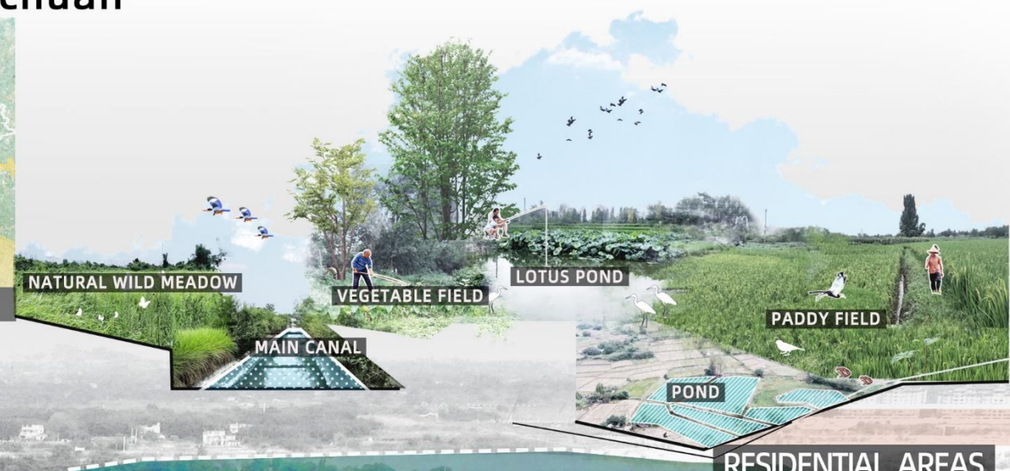



LARGE SCALE POND

SECONDARY FOREST LAND

LOTUS POND

SECONDARY FOREST LAND

MAIN CANAL

RESIDENTIAL BUILDINGS

LOTUS POND

NATURAL WILD MEADOW

MAIN CANAL

## On-site available resources

The project is located in the northern suburbs of Chengdu, Sichuan Province, China, where the irrigation system is complete, and agricultural resources are abundant. It features extensive farmlands and bamboo forests, embodying the unique "LinPan" style.

# A Bamboo Symphony of Ecology, Agriculture, and Recreation



"The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan

## LOW ROAD HARDENING DEGREE

There are only field branch roads and rural roads within the site, with fewer hardened roads.


## TEMPORARY BUILDINGS DISRUPT THE VIEW

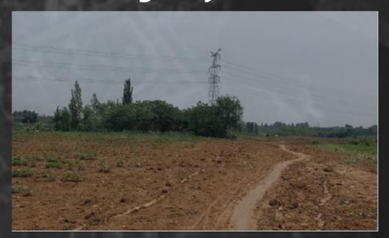
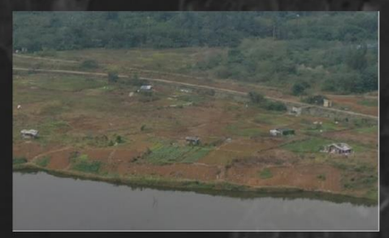
There are numerous temporary structures on the site, which affect the ecological landscape.

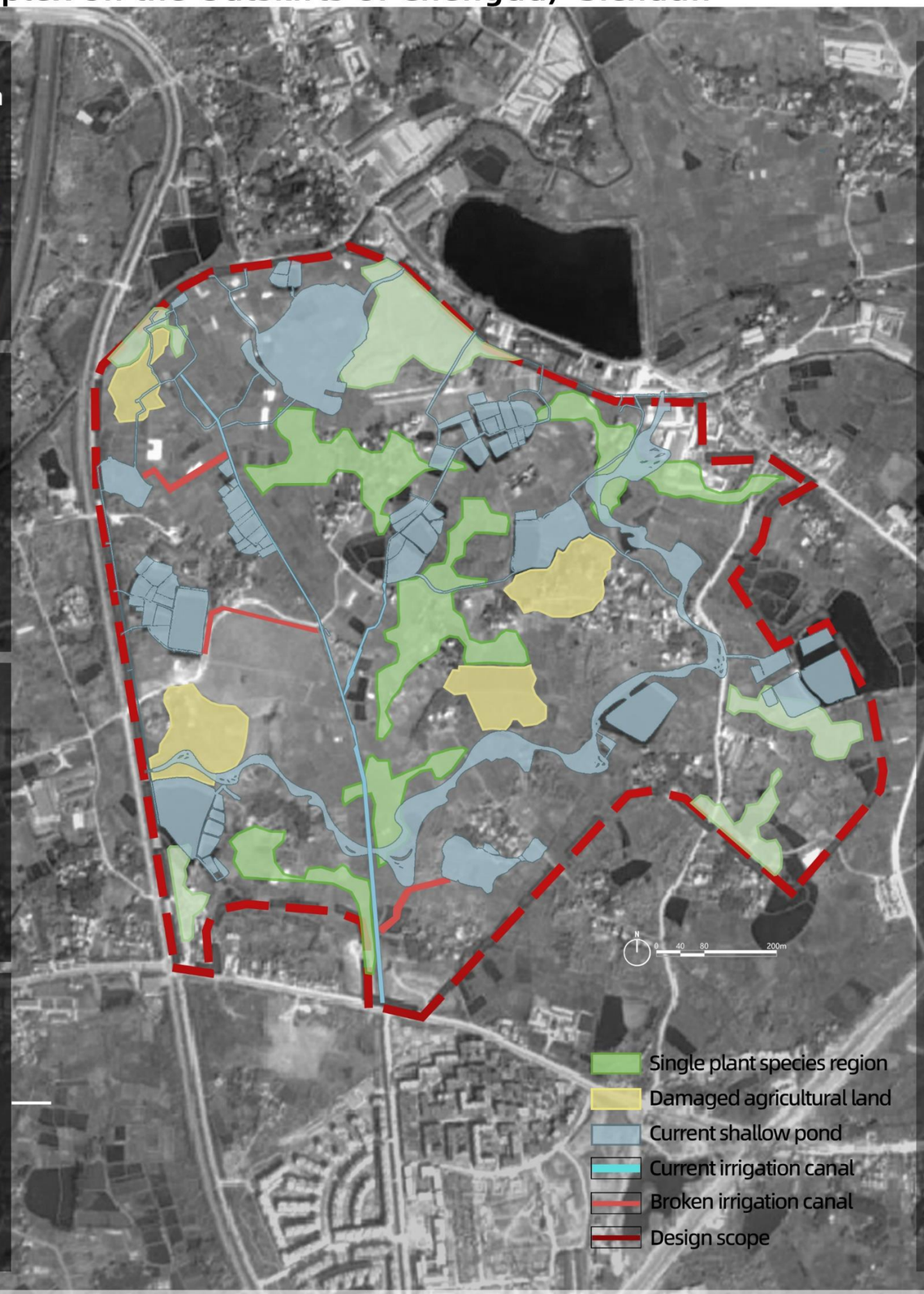

## IRRIGATION CANALS ARE BROKEN

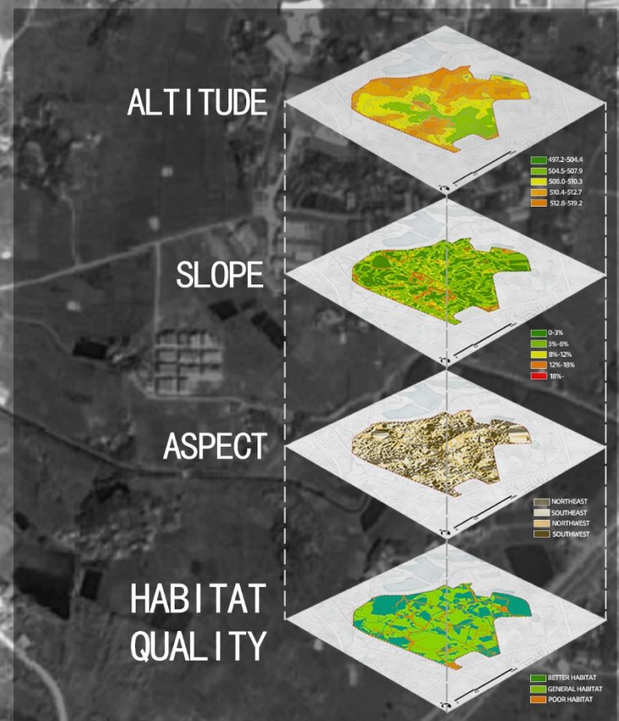
Irrigation canals within the site have experienced breaks, and the irrigation system is incomplete.


## LARGE AREAS OF EXPOSED LAND

There are extensive bare patches of land on the site that urgently need to be addressed.




## Existing challenges

The irrigation canals have dried up, and the traditional "LinPan" system and the texture of farmlands have been damaged; the ecological pattern has evolved, and the habitats have degraded, severely affecting the regional ecological balance; the regional cultural characteristics have been severely lost.

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## RESEARCH & ANALYSIS

EXTRACT THE "LINPAN" PATTERN

SCIENTIFIC DATA ANALYSIS

## PLANNING OBJECTIVES

A comprehensive entity that can sustain traditional ecological cycles and cater to the leisure demands of metropolitan suburbs

- Restore ecological functions
- Reshape LinPan landscape
- Realize leisure and education

## ECOLOGICAL & LANDSCAPE STRATEGIES

- Ecological Pattern Reconstruction
  - Reconnecting the Irrigation Canal System
  - Optimizing Bamboo Forest Communities
- Distinctive Landscape Creation
  - Restoring Characteristic Farmland Texture
  - Promoting Bamboo-Farmland Integration
- Presentation of Bamboo Culture
  - Building a Greenway System
  - Creating Natural and Agricultural Education Spaces

FARMLAND AND BAMBOO FORESTS — RECREATIONAL ROUTE — FARMLAND — POND

### ECOLOGICAL PATTERN RECONSTRUCTION

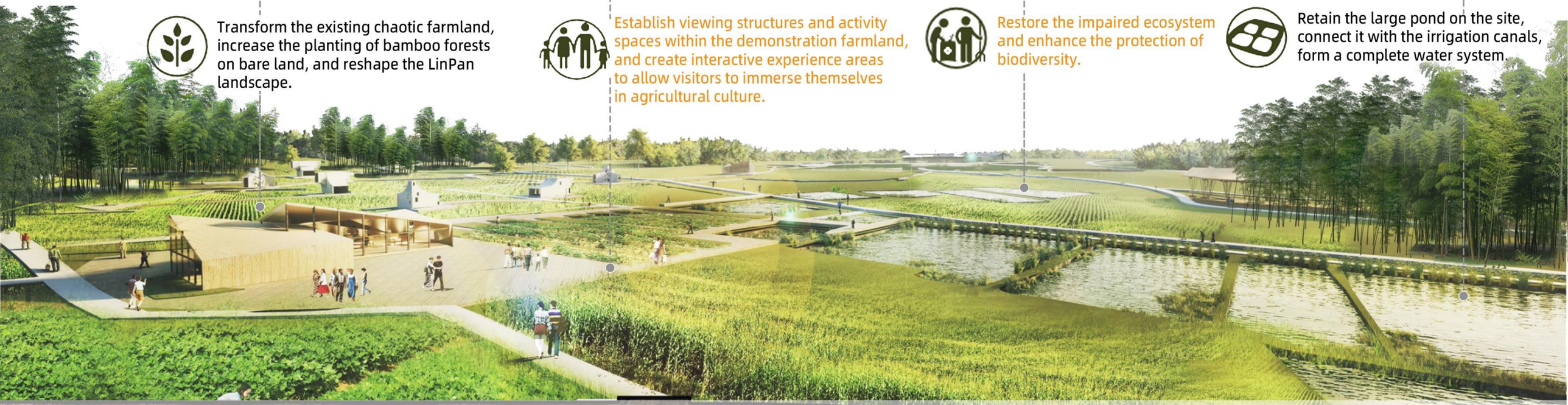
Transform the existing chaotic farmland, increase the planting of bamboo forests on bare land, and reshape the LinPan landscape.

### ECOLOGICAL VALUE TRANSFORMATION

Establish viewing structures and activity spaces within the demonstration farmland, and create interactive experience areas to allow visitors to immerse themselves in agricultural culture.

Restore the impaired ecosystem and enhance the protection of biodiversity.

Retain the large pond on the site, connect it with the irrigation canals, form a complete water system.



**Framework** The project through three major strategies of ecological pattern reconstruction, characteristic landscape shaping, and bamboo culture exhibition, aims to create a bamboo cultural complex that continues the cycle and meets the leisure needs of the traditional suburban areas.

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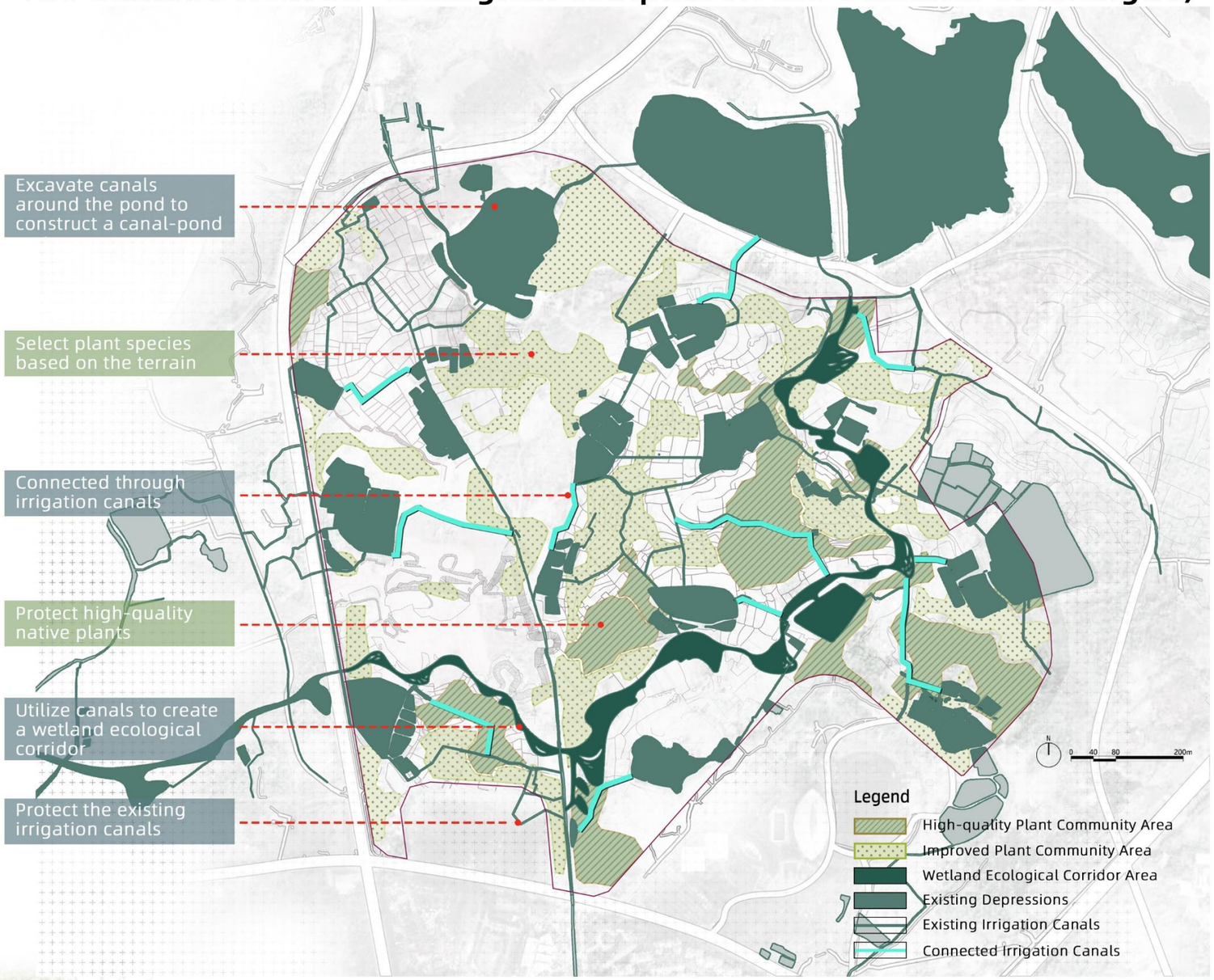
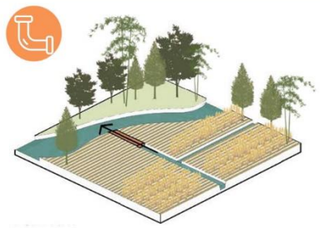
05

## "The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan

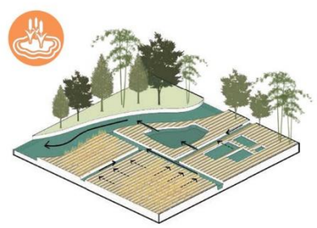



## Reconnect the irrigation system

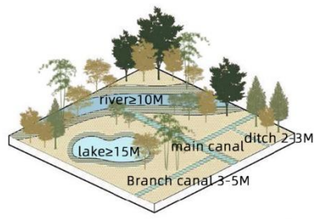


Maintain and dredge the water network canal system

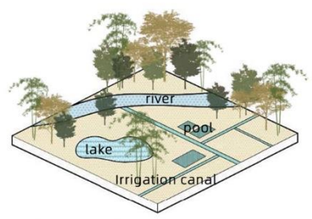
Landscape reuse of historic irrigation canal facilities



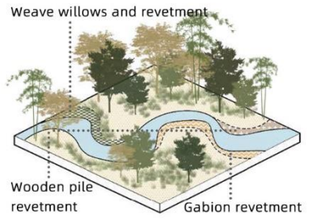
Establish a multi-pond sponge system




Delimit the protection scope of water network ecological corridors

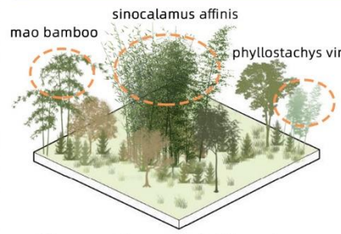



Classified treatment water system unit

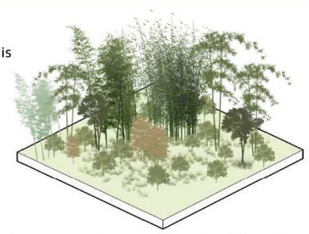



Take ecological measures to restore the natural revetment

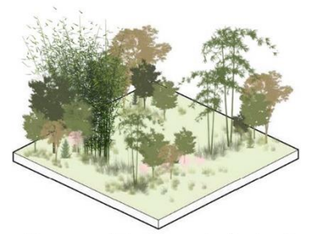
## Optimize the bamboo plant community



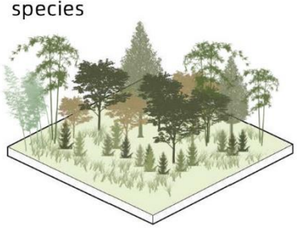

Choose the special bamboo species



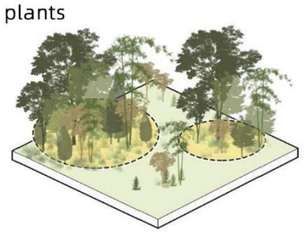
Bamboo is matched with other plants



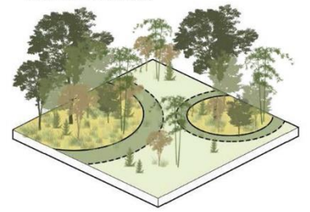
Reasonable layout of plant communities



Reconstructing plant community highlights landscape features



Identify and protect high-quality patches and vegetation



Construct community ecological protection zone


## Restoration of ecological function

The project aims to create a water network ecological corridor by reconnecting the existing irrigation channel system and to restore the ecological function of the forest system by replanting native plants to establish new stable plant communities.

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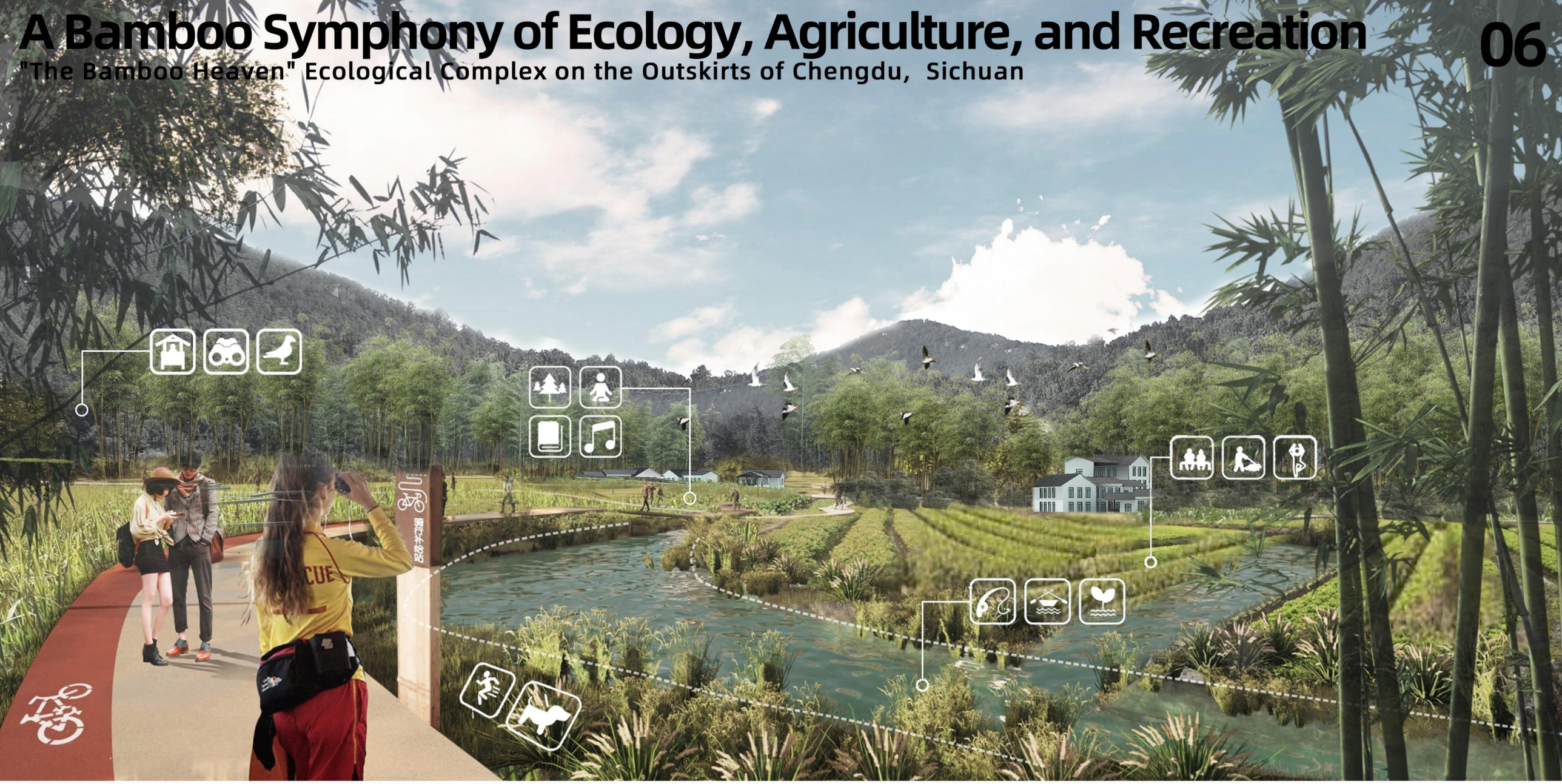


# A Bamboo Symphony of Ecology, Agriculture, and Recreation

07

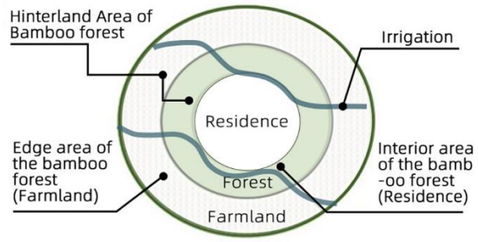
## "The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan



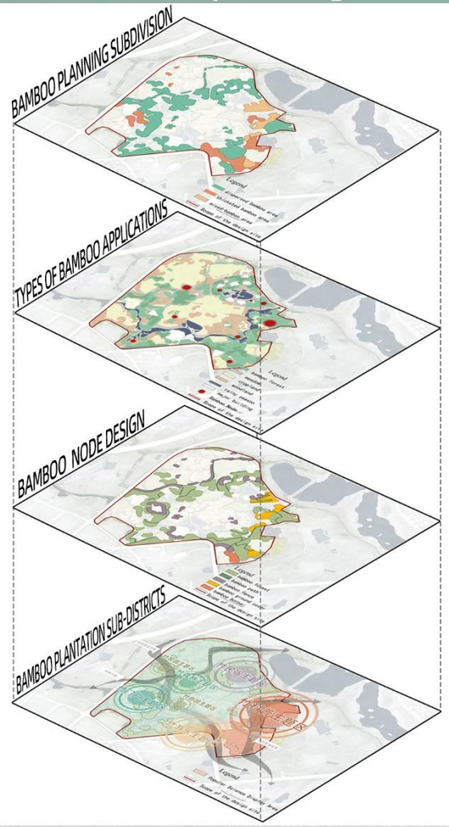





## The traditional LinPan pattern




## Bamboo forest planning



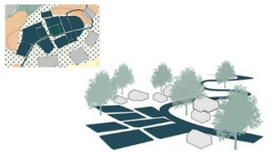

## The new LinPan pattern

**Bamboo Forest-W ater Mosaic**

Minimal human interv -ention ensures the pr -otection of water and bamboo forests.

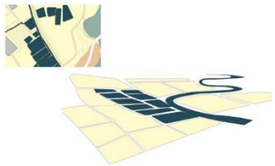
**Bamboo Water-F orest-Building M osaic**

The integration of arch -itecture with bamboo forests and water can enhance the vitality.



**Bamboo Water-F armland Mosaic**

Water ensures the eco -logical structural stab -ility of the fields.

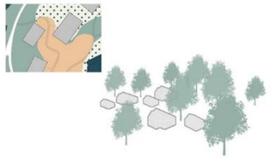


**Bamboo Water-F armland-Forest Mosaic**

Complex mosaic struct -ures can form areas with the richest biodiv -ersity.

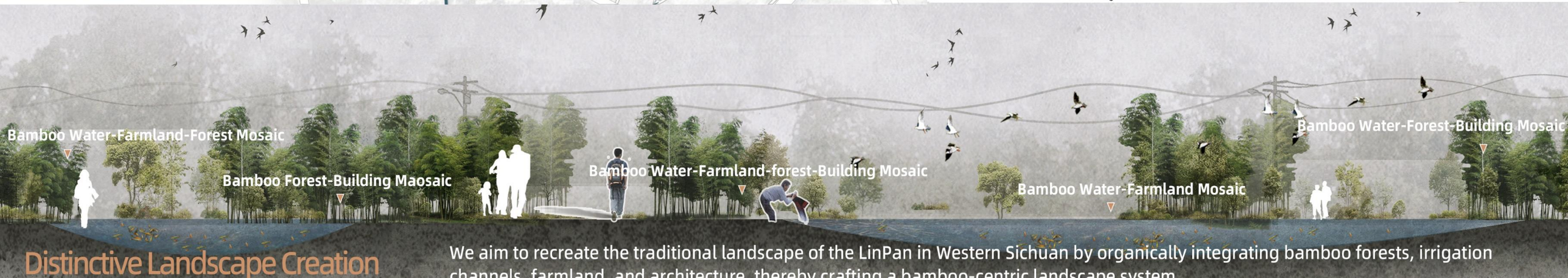
**Bamboo Forest-Building Mosaic**

Bamboo forests can f -orm enclosed spaces, defining the scope of activities and viewing interfaces.



**Bamboo Water-F armland-forest-Building Mosaic**

Bamboo forests and fa -rmlands can mitigate the impact of human on the ecosystem.




## Distinctive Landscape Creation

We aim to recreate the traditional landscape of the LinPan in Western Sichuan by organically integrating bamboo forests, irrigation channels, farmland, and architecture, thereby crafting a bamboo-centric landscape system.

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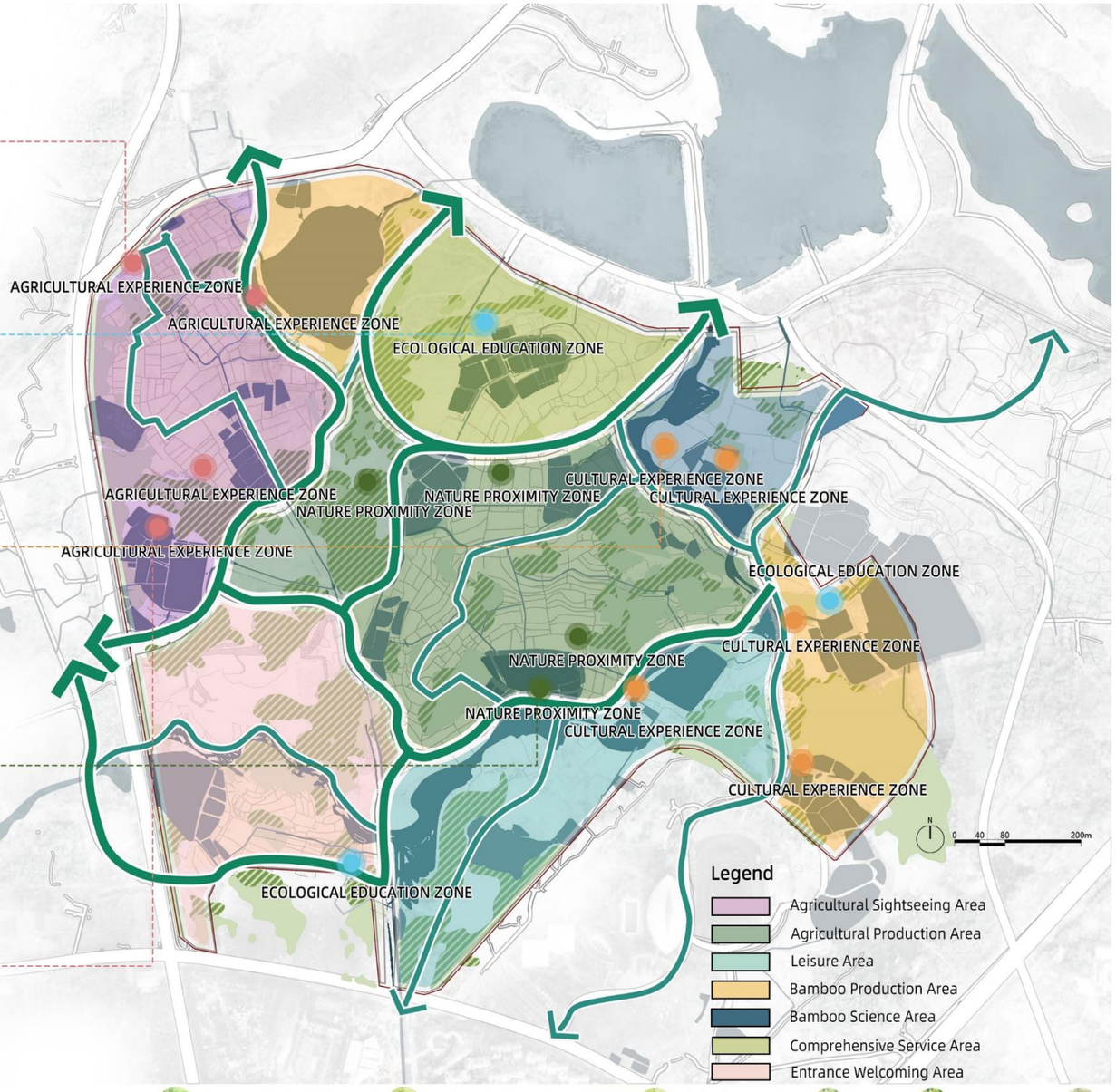
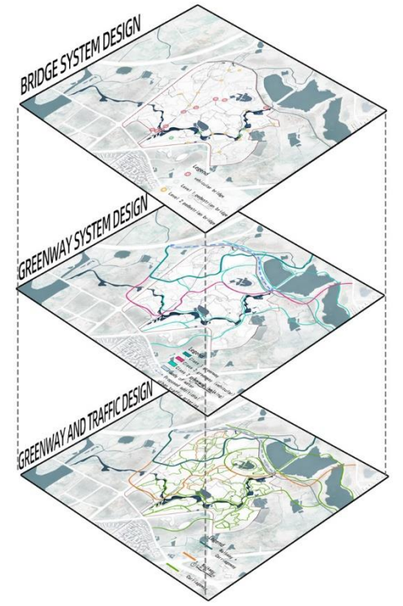



## Public Activities Planning

- Innovation and Devel -opment Category
  - Community-Supported Agriculture (CSA)
  - Farmland Leasing
  - Human Settlement Science Popularization
- Tourism Experience Category
  - Five Senses Experience
  - Bamboo Structure Garden Festival
  - Bamboo industry
- Leisure and Entertain -ment Category
  - Lotus Pond Fishing
  - Lotus Viewing
  - Orchard picking
  - Forest Wellness
- Traditional Culture Experience Category
  - Traditional Homestay
  - Linpan Hotel
  - Lakeside Dining

## Slow Traffic System




## Slow Traffic System Renovation

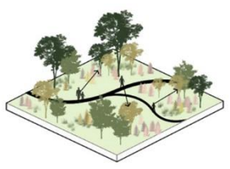
Preserve the Existing Goo -d Road Structure

Preserve and Utilize Access -ibility Facilities

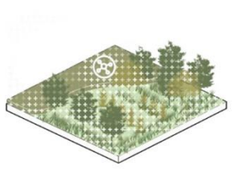
Respect and Protect the Exi -sting Farmland and Water

Classification and Treatment of Steep Slope Protection

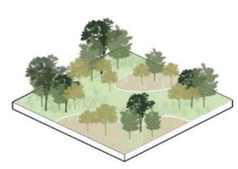
Clarify Visible Objects Alo -ng the Route



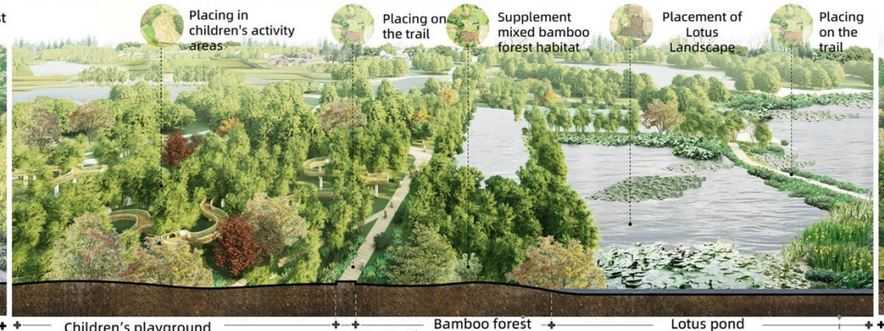
Optimize the Visual Corridor Landscape Along the Route

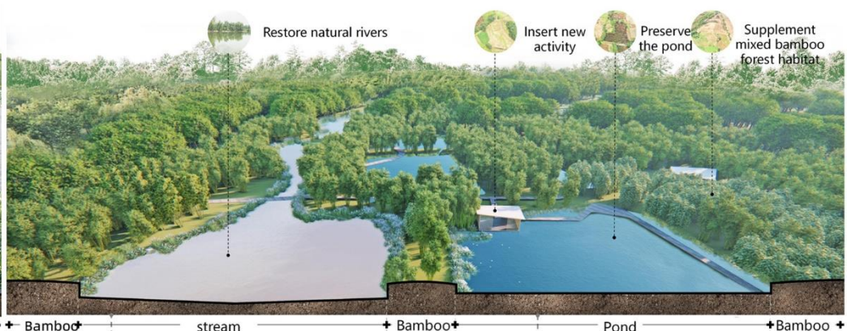


Address and Control Pollut -ion Along the Roadside



Supplement Vegetation Along the Roadside


## Presentation of Bamboo Culture

We believe that "Bamboo Heaven" should not only fulfill recreational functions but also provide spaces for natural and agricultural educa-tion. By creating spaces and planning activities, we aim to further leverage the project's advantageous resources.

# A Bamboo Symphony of Ecology, Agriculture, and Recreation



## "The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan




# A Bamboo Symphony of Ecology, Agriculture, and Recreation



"The Bamboo Heaven" Ecological Complex on the Outskirts of Chengdu, Sichuan

It is expected to restore **65%** of the irrigation canals, **40%** of the farmland, plant more than **30** species of native plants, and increase the quality of habitats by **120%**.

It is expected to increase the number of tourists by **12,000** people/year and raise economic income by **18,000,000** CNY

The project will become an important base for **nature** and **agricultural education** in the suburbs of Chengdu, raising the environmental awareness and ecological literacy of the public, especially among young people.