

Project Title	The Field of Enlightenment – Jiading Green Ring Master Plan	Jiading, Shanghai, China
Project Statement	<p>The Green Ring of Jiading, one of Shanghai’s five new towns, is a 40km long green infrastructure circulating around the footprint of its urban areas. Currently a 70 km2 mosaic of groves, agricultural fields, canals and scattered manufacturing parcels, the site presents a significant opportunity to elevate the environmental value of the area, remobilize the disorganized economic resources, and to re-illustrate Jiading’s cultural heritage of education and enlightenment.</p> <p>This master plan takes a comprehensive sustainable approach to tackle this complex and challenging site through three primary strategies, rebuild a robust environment, remap a carbon-efficient system, and reshape the local identity of Jiading. Ecological processes are applied to both existing groves and vacant land to introduce self-sustained near-nature forests. A recycling system integrating organic farming with local dining experiences and waste management takes advantage of the extended canal network to create an economically sustainable scenario inside the ring. To fulfill the cultural needs of Jiading’s 1.9 million residents, an itinerary highlighting historical relics, cultural hotspots, and other educational and recreational programs will integrate a taste of local culture with its unique natural setting. The plan envisioned the future Green Ring as a new format of green infrastructure for Chinese satellite cities.</p>	
Project Narrative	<p>The 2035 Shanghai Master Plan has selected five towns at the city peripheries as future sub-centers, to decentralize the industry and population growth of the metropolis. Jiading New Town anchors the northwestern quarter of the city.</p> <p>One of key planning strategies for the new towns is to build Green Ring, a circular green buffer framing each sub-center. The proposed green ring for Jiading will be 40km long with an area of 70 km2. It is to become a multilayered green infrastructure providing environmental, ecological, and recreational values. It also acts as a part of the larger green network, threading Jiading with central districts of Shanghai.</p> <p><b>A Complex Mosaic</b></p> <p>The site is mapped on the suburban and rural outskirts of Jiading, where is a mosaic of groves, agricultural fields, canal networks, manufacturing parcels, and villages. What is there today renders a gap with the master plan’s vision, posing</p>	

## Project Narrative

both challenges and opportunities.

An outstanding feature of the site is its ubiquitous canal network. Locating in the Yangtze River Delta, Jiading enjoys rich water resources and an intertwining tributary system. After centuries of agricultural practice, the natural water system has been transformed into a robust canal network supporting farming and trading activities, shaping its land pattern.

### *Environmental Values and Issues*

Unlike downtown Jiading where the canal network has conceded to developments, the site has remained an integral canal network, which interweaves with woodlands and agricultural fields giving the Green Ring a unique landscape setting and ample habitats for birds, mammals, amphibians, and aquatic species that are uncommonly seen in Shanghai.

The past decades have witnessed the hardening of the canal banks. Although easier to navigate, the channelized canal suffers from bank erosion, habitat value degradation, and limited flood attenuation ability. Some dead-ended channels also have water quality issues.

The existing forest, which takes 23% of the site and scatters along the ring, mostly consists of a single species, *Cinnamomum camphora*. Although critical tree masses have started to form along the ring, village homesteads and manufacturing parcels have broken up its continuation. The fragmentation and monoculture of existing forest compromises its ecological and environmental value.

### *Disconnection from Jading's Advanced Industries*

Jiading is known for incubating new technologies and enterprises. Cutting-edge industries such as electric automobiles and bio-medications have settled in Jiading attracting the educated intellectuals to work and live there.

These populations pose a great demand for public experiences for where they work and live. As the largest public infrastructure of Jiading, the Green Ring will play a critical role. The programs and events on site today are very limited though, largely impeded by the obsolete manufacturing industries which occupy large land area and pollutes the site. These industrial facilities will continue compromising the site's ecological and recreational values.

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### *A Town of Cultural Heritage*

Being one of the earliest settlements in the area, Jiading's outstanding investment in education and renown cultural celebrities earned it the reputation - Town of Enlightenment. However, in the last decades, its cultural heritage has faded and the focus was put on urbanization and economic transformation.

Although the town recognizes the urgency in celebrating its cultural heritage and identity, the scarcity of cultural carriers has impeded the connection between the history and its population. Lack of cultural resources and public amenities on site also made it hard to cultivate social and cultural capital.

Agricultural field takes over 28% of the existing site. While the scale of the field often limits the industrialization of agriculture, techniques and wisdom in the traditional farming practice have been preserved and inherited, posing an opportunity to celebrate the local farming culture.

### **Design Concept: A Reinterpretation of the Enlightenment Town**

The transformation of the Green Ring is not only an opportunity to reshape the ecological framework and environmental experience of Jiading but also a testimony to celebrate Jiading's heritage of the Enlightenment City. The Jiading Green Ring Master Plan integrates contemporary perspectives of sustainability with Jiading's cultural heritage to reshape its identity as an intellectual place and introduce a network of ecologically sound, economically robust, and culturally rich public experiences.

### **Design Strategies**

#### *1. Rebuild a Robust Environment*

To establish robust and self-sustained near-nature forests in the future, practices such as selective cutting and thinning would relocate some of the existing trees to vacant land, and allow introduction of a variety of native canopy trees, understory trees, and shrubs to the existing mono-cultural woodlands.

Infrastructure, including highways and local roads, separated green spaces along the ring. Ecological infrastructure such as overpasses and underpasses for wildlife is introduced to allow for the movement of animals and ensure the internal and external continuity of the eco-network.



## Project Narrative

The naturalization of the canals is key to resume the bio-diversity of the place. Banks of the water channels that are not identified as Backbone Canals or Shipping Canals, will be replaced with slopes and riparian plant communities, bringing amphibians back to the site.

### *2. Remap a Carbon-Efficient System*

The future Green Ring will be environmentally and economically sustainable. Its agricultural resources and canal infrastructure make it an ideal place to build a low-carbon circulation system at the ring. Agriculture, the supporting industry on site, integrates organic farming with local dining experiences and biomass energy production. The extended canal network transport local food inside the ring, adding resiliency to the food supply chain.

The massive development activities on and around the site leave a substantial volume of construction waste. The reshape of the ring would embed innovative recycling methods into the construction process to benefit the environment and neutralize construction costs.

### *3. Reshape the Local Identity*

With a population of 1.9 million, Jiading is lacking in recreational destinations and cultural facilities.. Less than 5km away from every corner of Jiading, the Green Ring presents a huge opportunity to fulfill the recreational and cultural needs of its residents.

Historical relics and cultural hotspots such as Qian's Ancestral Hall and Malu Art Village, dotted in the diverse landscape of the ring, will be curated into a recreational itinerary integrating the natural experience with a taste of local culture.

The carbon-efficient agricultural system can also contribute to the cultural experience, introducing ecology and low-carbon best practice to the public, illustrating a contemporary picture of the enlightenment of Jiading.

## Three Pivotal Segments

The design composed the ring with six themed segments: the Art Campus, the Grove Campus, the Eco Village, the Wetland, the Smart Field, and the Forest Playground, each accommodating a unique set of programs in their specific landscape settings. Overarching these segments are the Road of Enlightenment and the Path of Sustainability, two



## Project Narrative

trail systems that highlight the cultural and ecological experiences. The Art Campus, the eastern segment of the ring, is home to Jiading's most renowned Malu Grape Garden and cultural hotspots including a series of emerging artists' studios. The design creates a dialogue between the grape gardens and its natural settings to attract both artists and the general public to cultivate a unique cultural settlement.

The Grove Campus, which concentrated reclaimable development land, aims to rebuild a robust environment. Restored near-nature forests with native flora will inhabit existing groves and reclaimed land, making it a Yangtze River Delta Arboretum that grows together with Jiading.

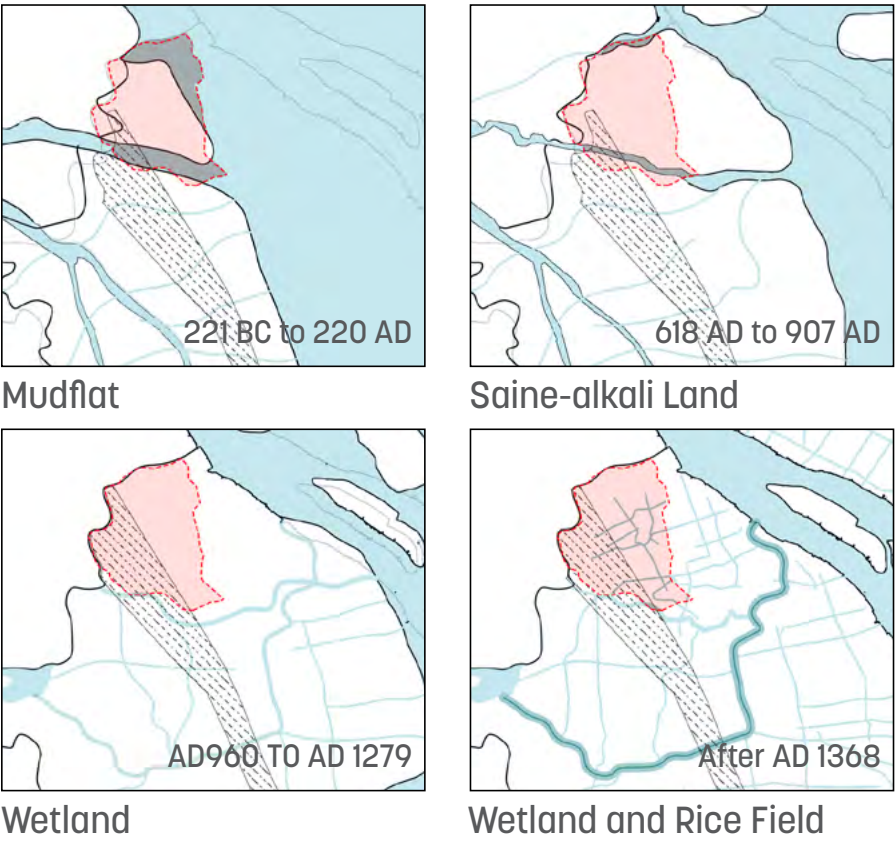
The Eco Village incorporates villager's current lifestyle with sustainable approaches such as organic food production, waste management and the use of renewable energy. It utilizes reclaimable development land to restore forest corridors around the settlement and creates needed public spaces along the canals where trade and social life can take place.

The rest three segments, referred by their names, highlights unique landscape settings or programs based on their specific condition.

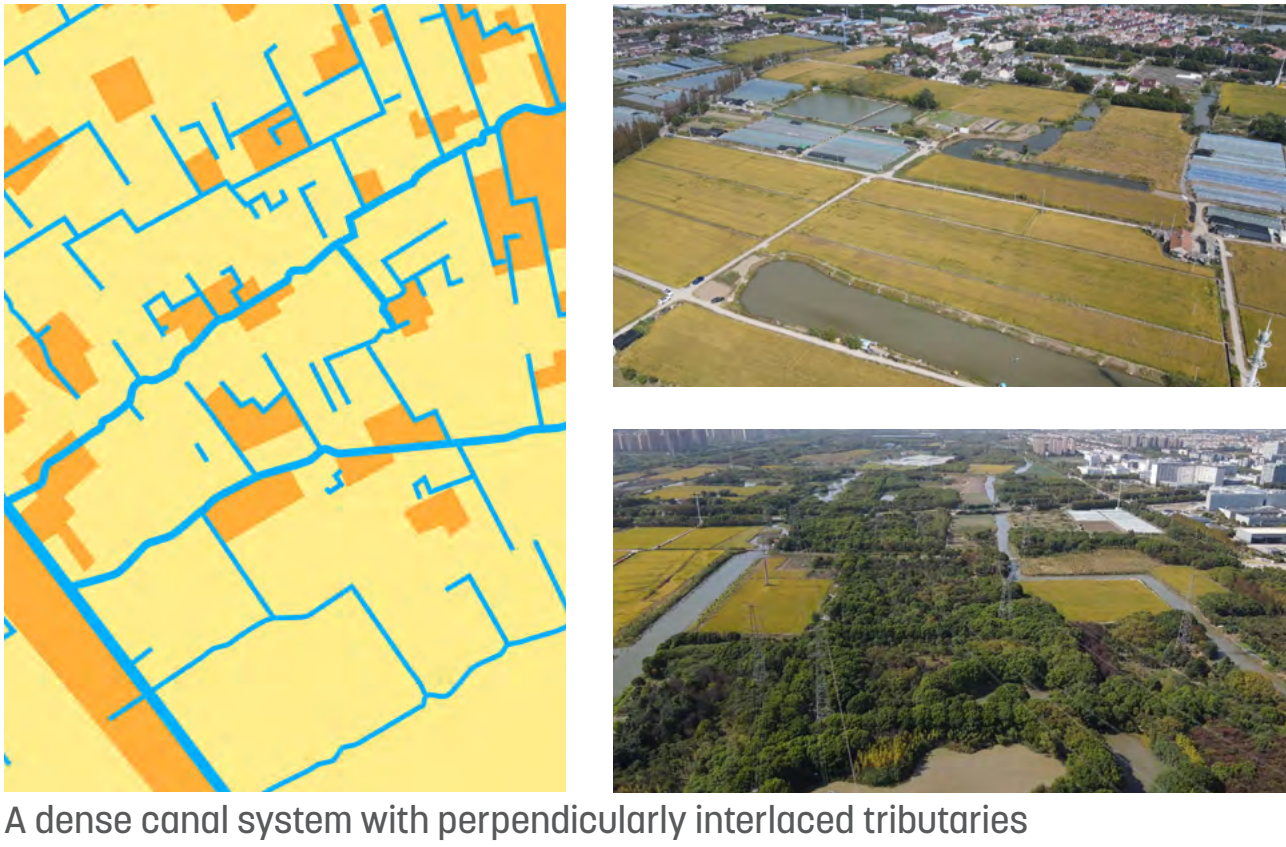
Via the power of an ecologically sustainable environment, an economically sustainable model, and a socially sustainable identity, the master plan envisioned the future Green Ring as a new format of green infrastructure for Chinese satellite cities.



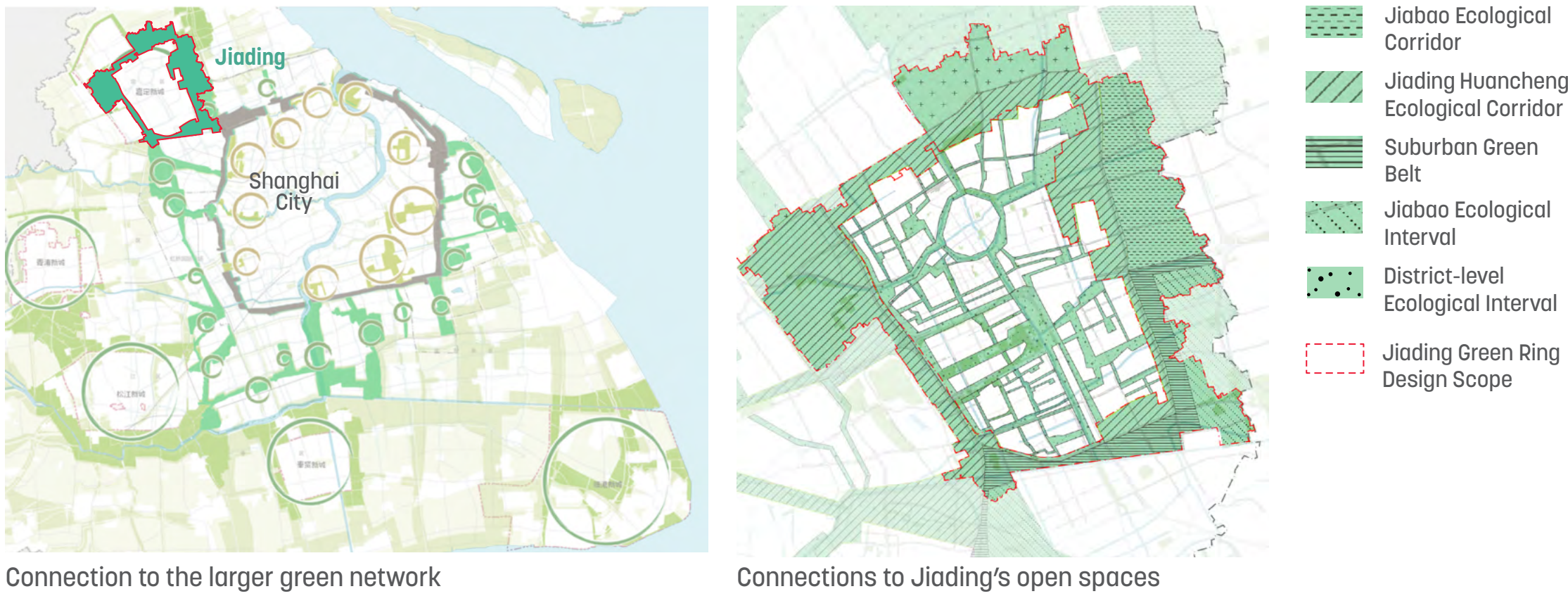
CONTEXT EVOLUTION



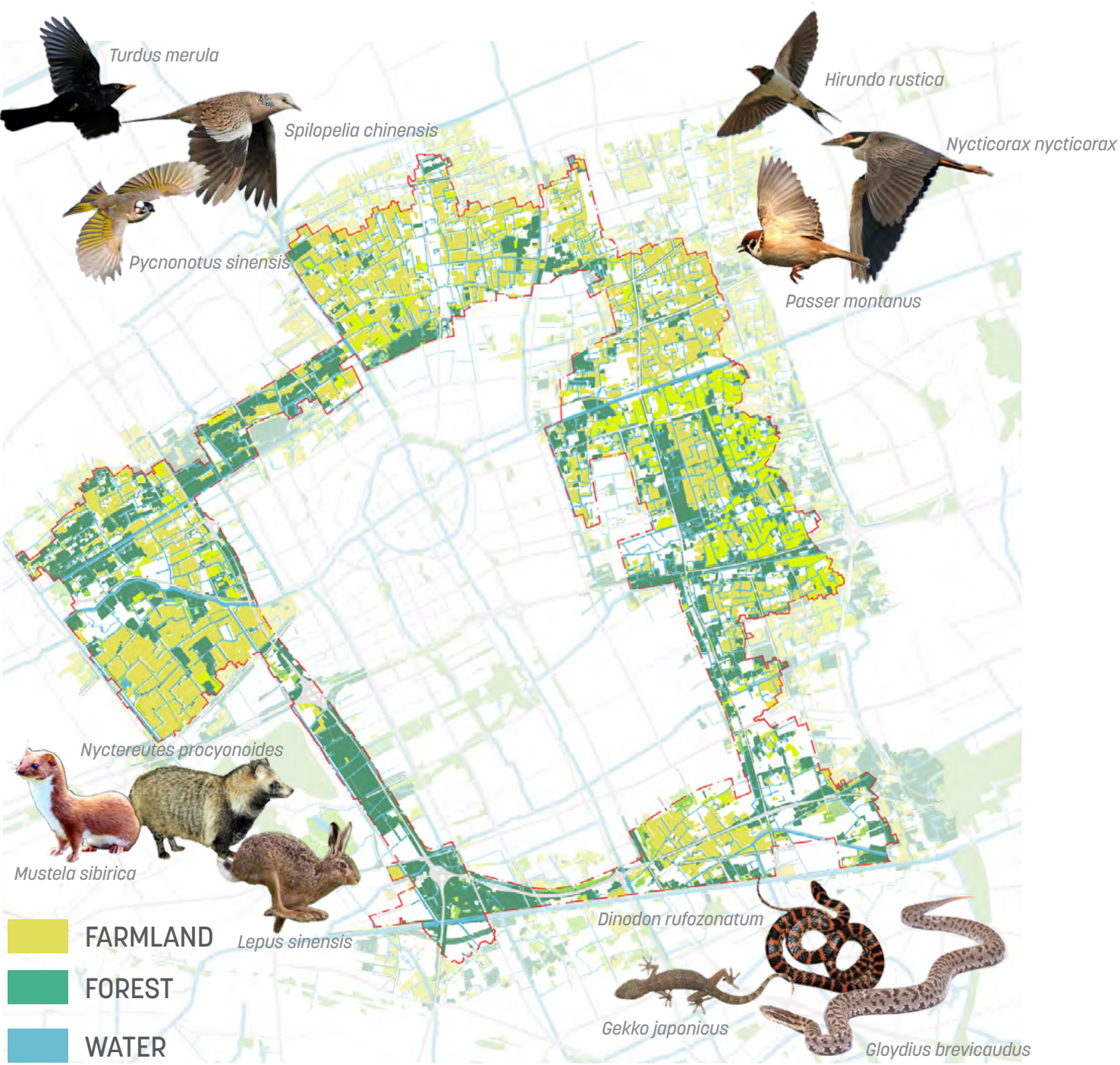
SITE FARBRIC



A KEY COMPONENT OF SHANGHAI’S ECOLOGICAL NETWORK



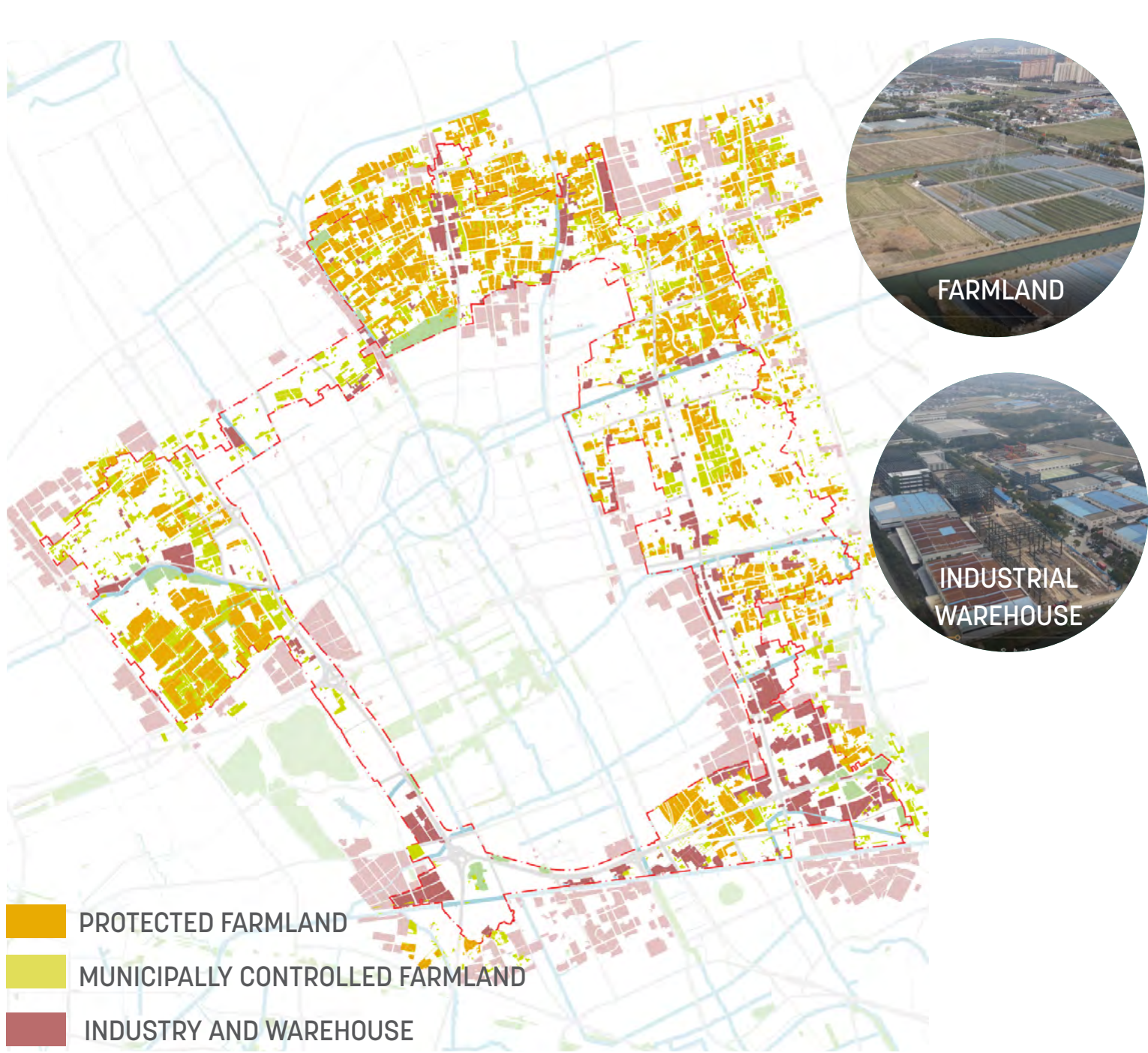
NATURAL RESOURCES



CULTURAL RESOURCES



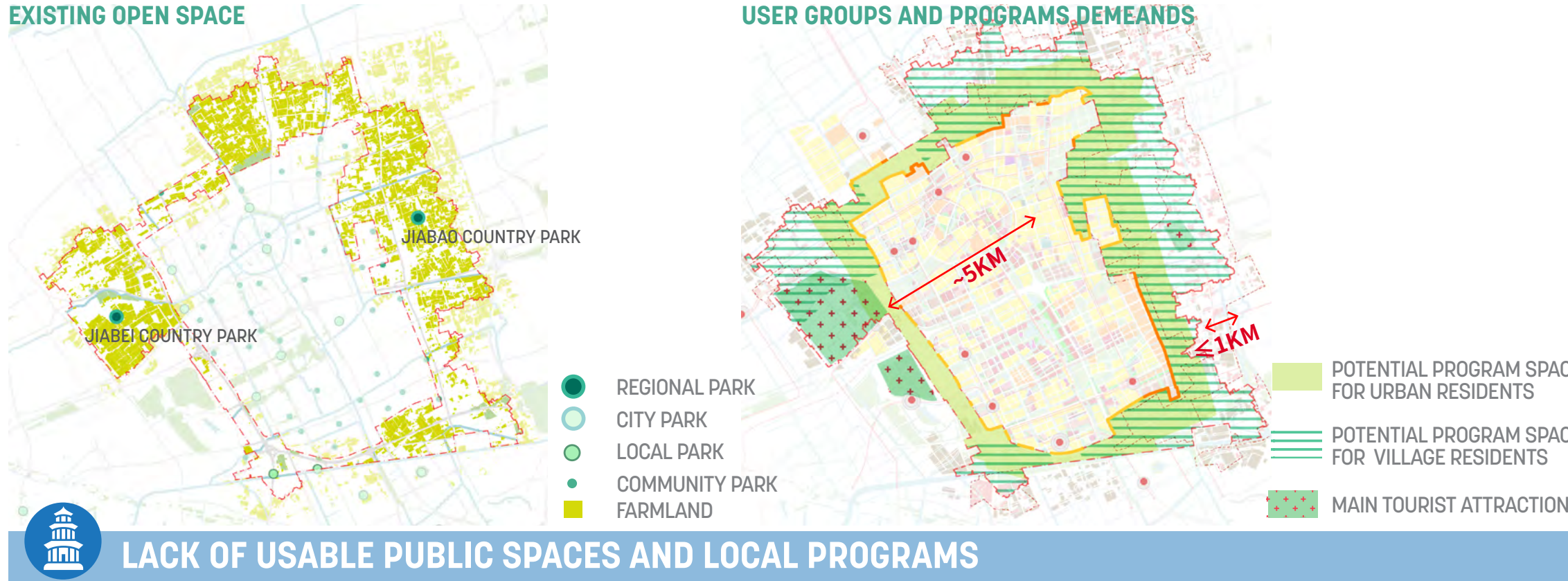
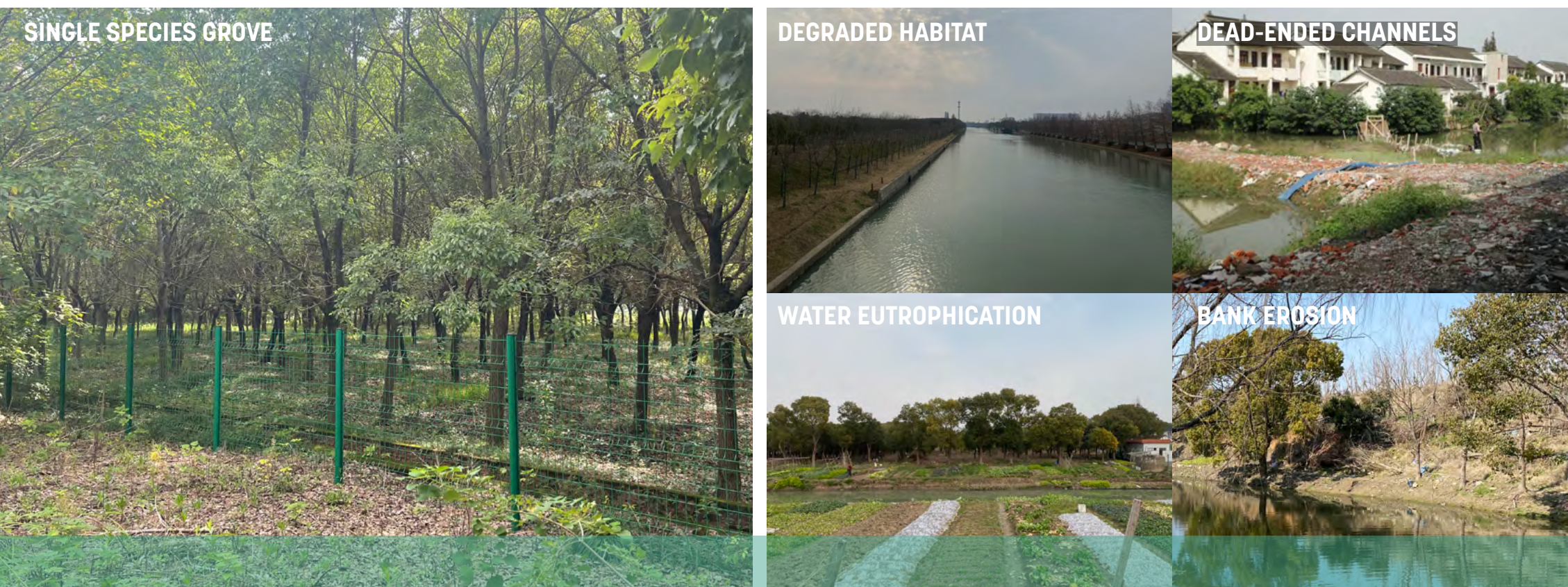
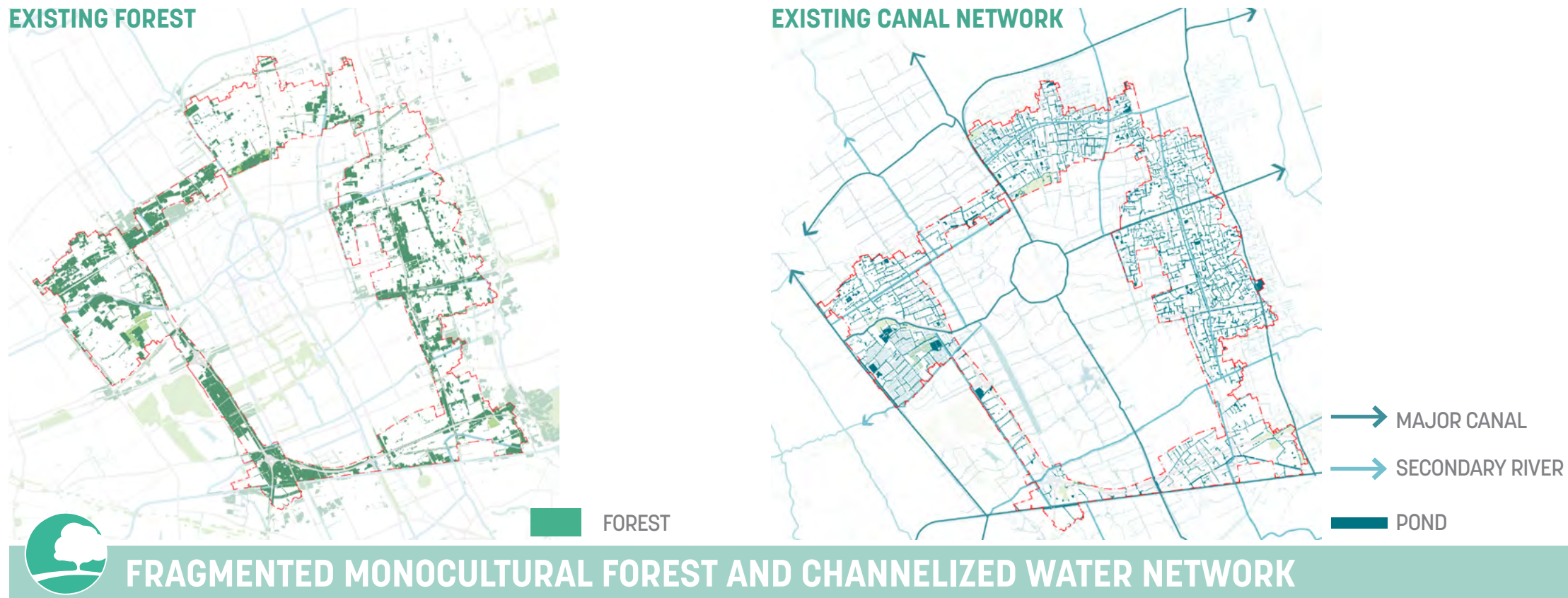
INDUSTRIES



JIADING’S HISTORY AND RESOURCES

The Green Ring of Jiading is a 40km long green infrastructure circulating around the footprint of its urban area.





## EXISTING ISSUES

Currently, this 70km<sup>2</sup> site is a mosaic of groves, agricultural fields, canal networks, manufacturing parcels, and villages. What is there today renders a gap with the master plan's vision, posing both challenges and opportunities.



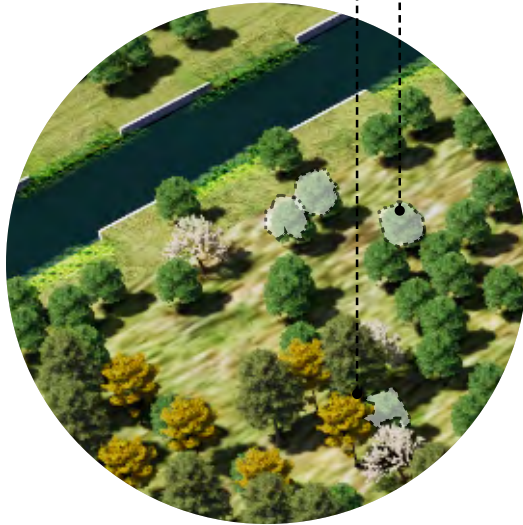
**NATURALIZE THE ENVIRONMENT - FOREST**

Allow introduction of a variety of native canopy trees, understory trees, and shrubs to the existing mono-cultural woodlands.

Selective cutting and thinning would relocate some of the existing trees to vacant land.

Plant pioneer trees

Introduce seedlings of native tree species in the middle and late stages of succession to prepare for the establishment of near-natural forests.



FOREST RESTORATION -EXISTING FOREST PATCHES



FOREST RESTORATION-DEVELOPMENT PARCELS

**NATURALIZE THE ENVIRONMENT-CANAL**

NON-BACKBONE CANAL

NON-BACKBONE CANAL

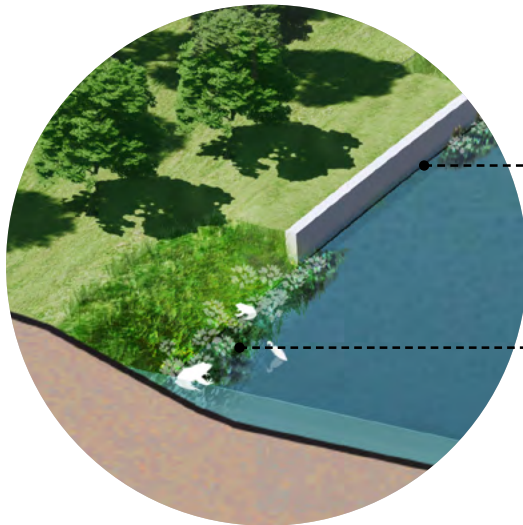


ADD BENTHIC ORGANISMS AND SUBMERGED AQUATIC PLANTS



ADD CONCAVE BANK WETLANDS TO CREATE SHELTER FOR ANIMALS TO NEST

BACKBONE CANAL (SHIPPING)



Keep part of the revetment wall to resist waves caused by sailing

Open part of the revetment wall to form a small wetland providing a habitat for amphibians

REVETMENT WALL OPTIMIZATION

**OPTIMIZE THE CONTINUITY OF ECO-NETWORK**



- WALKWAY UNDER VIADUCTS
- WALKWAY ALONG RIVERS
- LEVEL CROSSING
- UPPER BRIDGE



DIVERSIFY PLANTING AT WATER BANK



LAYER THE GREENHOUSE STRUCTURE TO CREATE POTENTIAL HABITAT

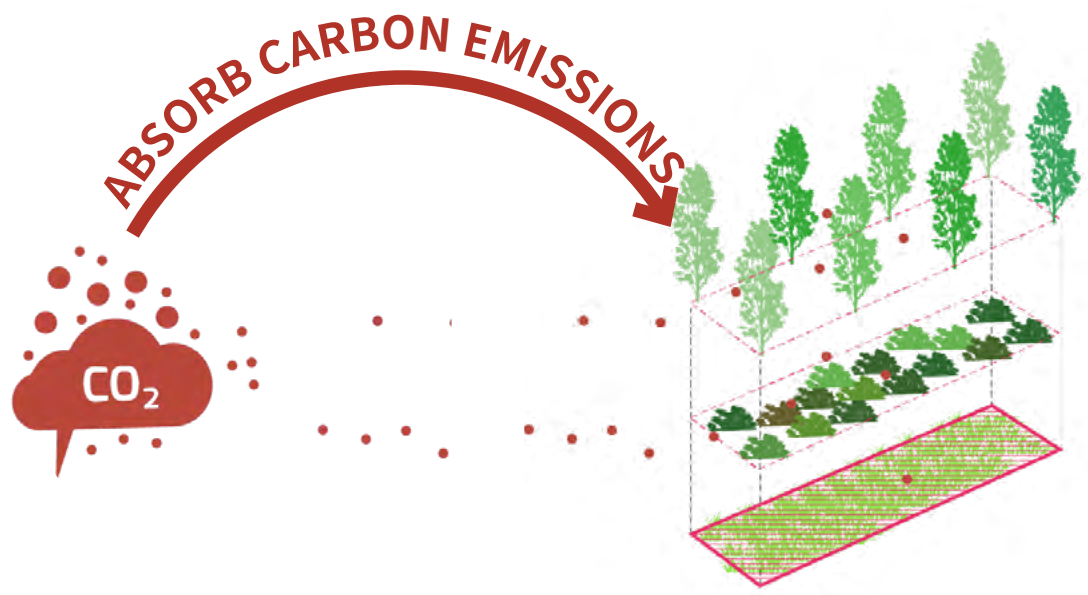


OPEN GRAPE GREENHOUSES TO PROVIDE HABITAT FOR INSECTS AND BIRDS

**CARBON SINK CALCULATION**

TOTAL CARBON ABSORPTION	160,272 TON/YR
EQUIVALENT TO THE CARBON EMISSION	2.12 MILION PEOPLE
EQUIVALENT TO THE PROPORTION	40% OF JIADING POPULATION

\*Calculated based on China's per capita carbon dioxide emissions of 7.56 tons/yr



**IMPROVE THE HABITAT VALUE**

**STRATEGY 1: REBUILD A ROBUST ENVIRONMENT**

To rebuild a robust and self-sustained environment, the strategy increases continuity of the eco-network and restores near-nature forest, naturalizing the canals and resuming the bio-diversity of the place







PROMOTING ECO VILLIAGE SYSTEM

FARM WASTE RECYCLING



GREEN MANURE FACTORIES RECYCLE STRAW TO MAKE BIOCHAR CARBON FOR USE AS FERTILIZER.

ECO VILLAGE EXHIBITION CENTER



THE VILLAGE LIVING ROOM IS MAINTAINED BY THE VILLAGERS AND ACTS AS A GATHERING PLACE FOR NEIGHBORS.

PROMOTE THE USE OF CLEAN & REUSEABLE ENERGY



RETAIN SOME OF THE FACTORY STRUCTURE, WITH THE FURNITURE AND SHADE SHEDS TO PROVIDE A PLACE FOR REST

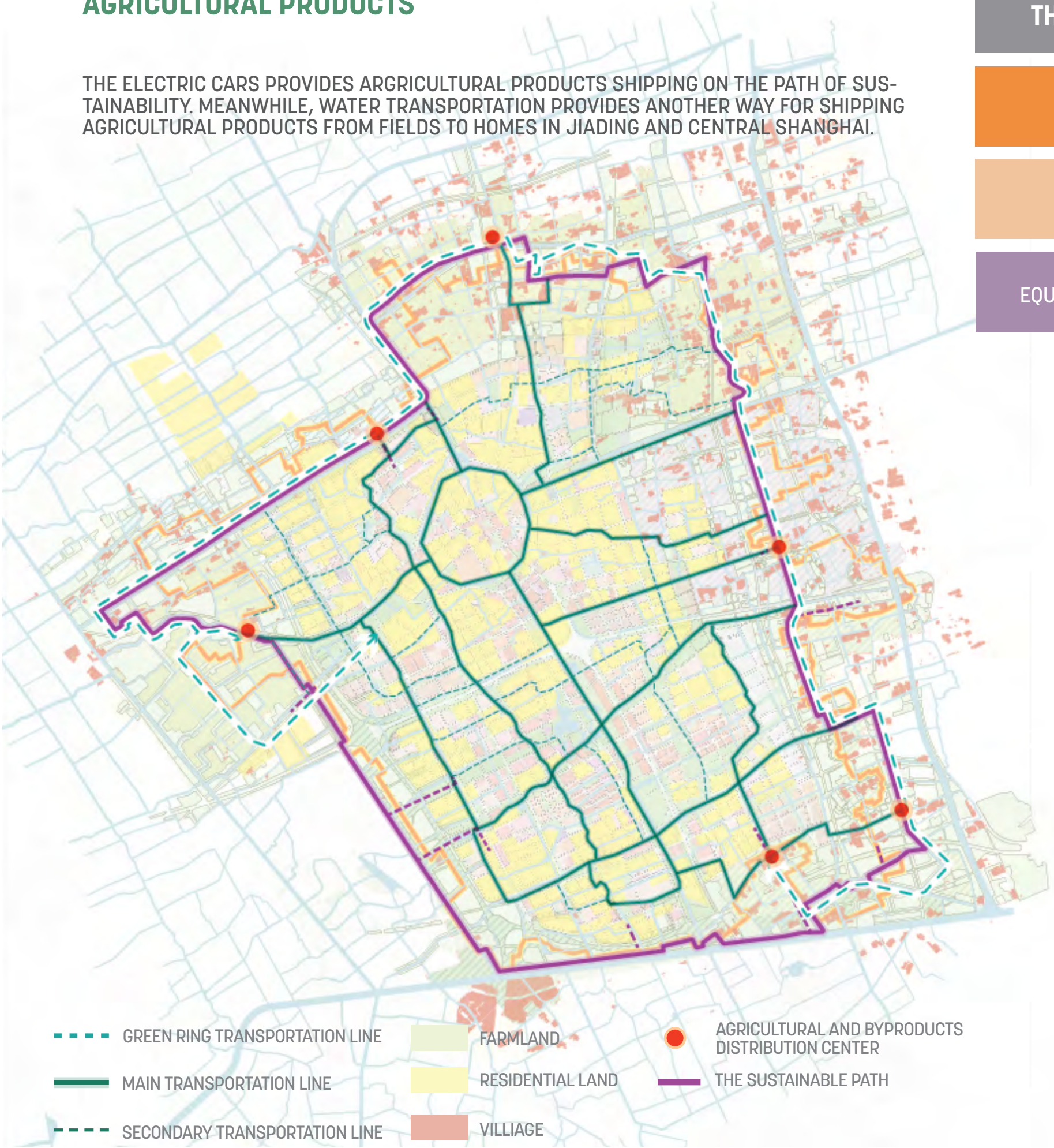
ORGANIC FARMING & LOCAL FOOD SUPPLY



THE PIERS SERVE AS COLLECTION POINTS FOR ORGANIC VEGETABLES AND REGULAR TRANSPORTATION TO THE COOPERATIVE COMMUNITIES IN JIADING AND CENTRAL SHANGHAI

THE ELECTRIC WATER TRANSPORTATION LINE FOR AGRICULTURAL PRODUCTS

THE ELECTRIC CARS PROVIDES ARGRICULTURAL PRODUCTS SHIPPING ON THE PATH OF SUSTAINABILITY. MEANWHILE, WATER TRANSPORTATION PROVIDES ANOTHER WAY FOR SHIPPING AGRICULTURAL PRODUCTS FROM FIELDS TO HOMES IN JIADING AND CENTRAL SHANGHAI.

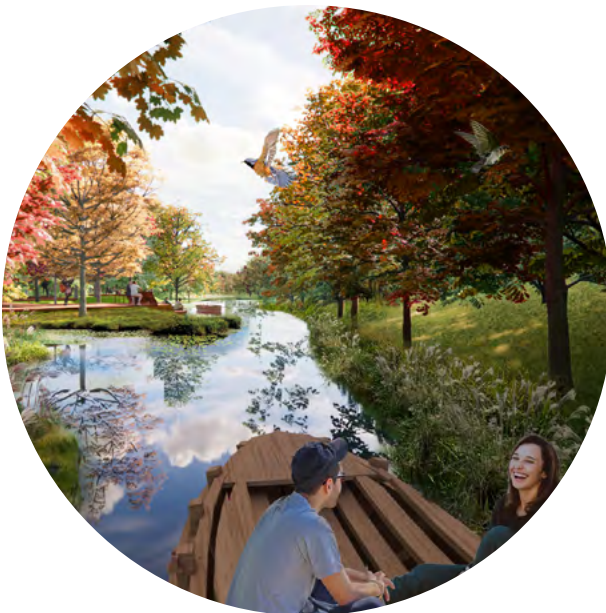


THE WATER TRANSPORTATION LINE FOR AGRICULTURAL PRODUCTS

ANNUAL GRAIN PRODUCTION AT GREEN RING (TON/YR)	16 MILLION
SERVING PEOPLE	144 MILION
EQUIVALENT TO THE PROPORTION OF JIADING POPULATION	13%

\*data from "2020 Jiading District Grain Production Target" and "Industry Information Network"

A SHARED ELECTRIC TRANSPORTATION SERVICE TO MOVE BOTH GOODS AND PEOPLE



THE WATER TRANSPORTATION PROVIDES ANOTHER LOW-CARBON WAY FOR RECREATION AND LOCAL FOOD SUPPLY

STRATEGY 2: REMAP A CARBON-EFFICIENT SYSTEM

Agriculture, the supporting industry on site, integrates organic farming with local dining experiences and biomass energy production. The extended canal network transport local food inside the ring, adding resiliency to the food supply chain.



THEMED RECREATIONAL ROUTES ILLUSTRATING  
A CONTEMPORARY PICTURE OF "ENLIGHTENMENT"

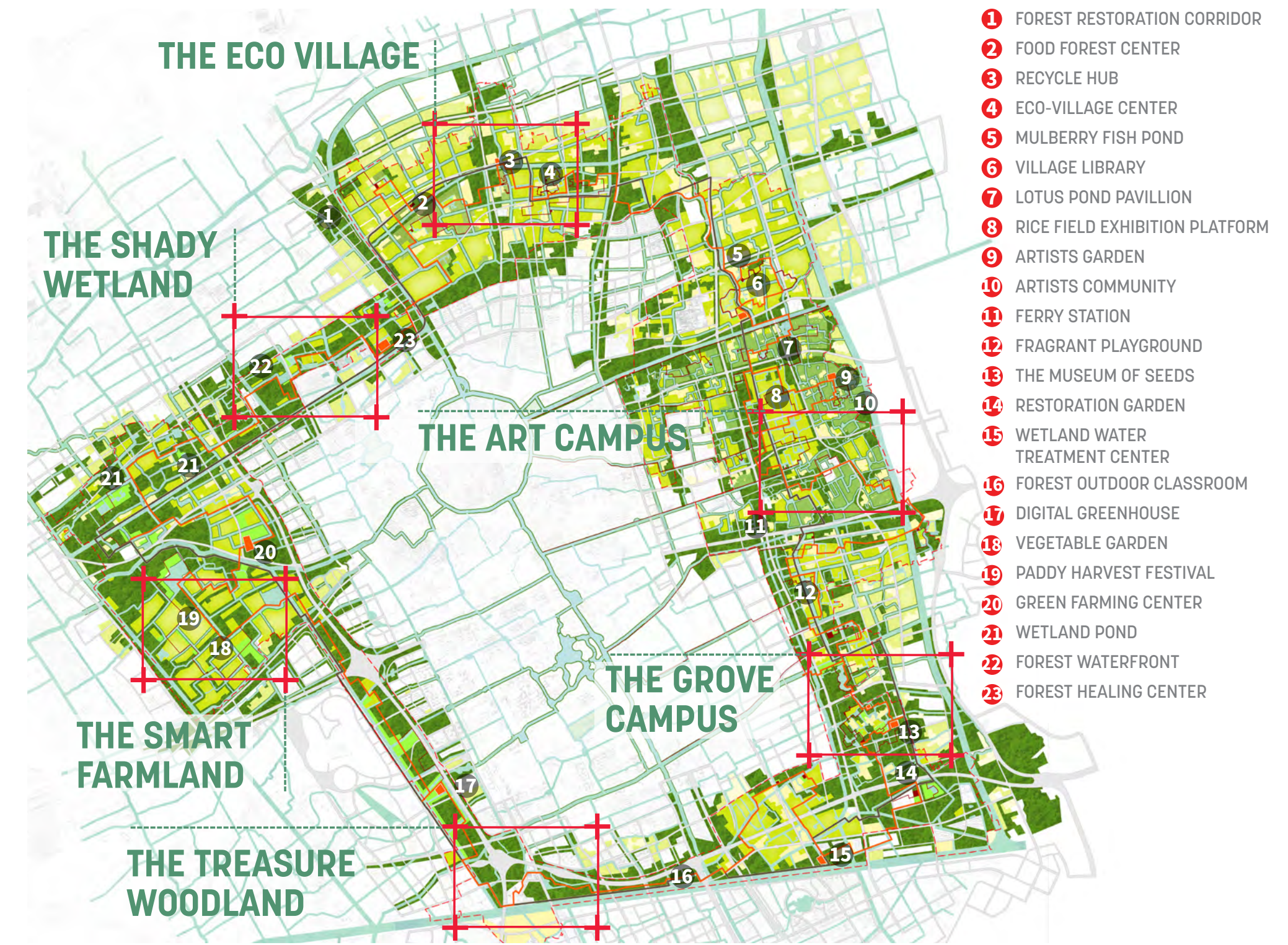


A RECREATIONAL ITINERARY INTEGRATING THE NATURAL EXPERIENCE WITH A TASTE OF LOCAL CULTURE

### STRATEGY 3: RESHAPE THE LOCAL IDENTITY

Historical relics and cultural hotspots such as Qian's Ancestral Hall and Malu Art Village, dotted in the diverse landscape of the ring, will be curated into a recreational itinerary integrating the natural experience with a taste of local culture.





## A REINTERPRETATION OF THE ENLIGHTENMENT CITY

The Master Plan integrates contemporary sustainability perspectives with Jiading's cultural heritage to reshape its identity as an intellectual place and introduce a network of ecologically sound, economically robust, and culturally rich public experiences.



## EXIHIBITION GARDEN



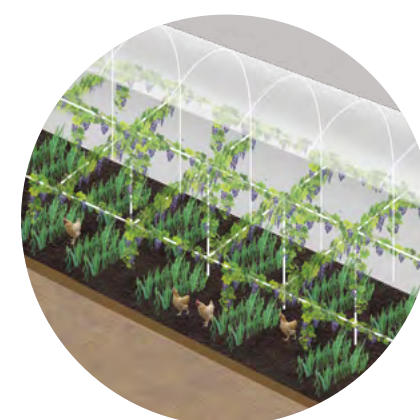
RECYCLE FARM WASTE TO MAKE PAPER & CREATIVE HANDMADE PRODUCTS



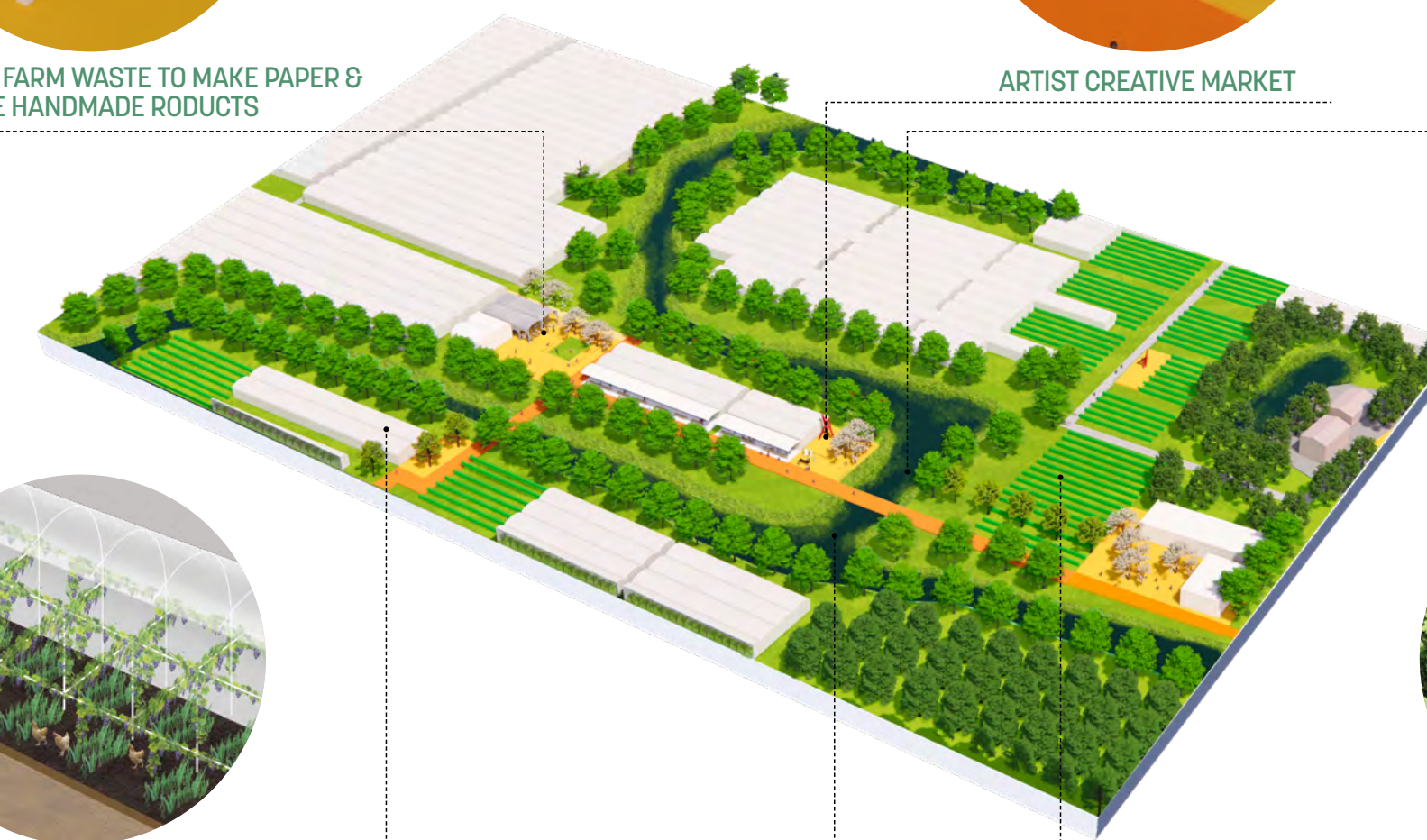
ARTIST CREATIVE MARKET



ENHANCE AQUATIC HABITATS VALUE



MIX GRAPE WITH OTHER AGRICULTURE PRODUCTS



IMPROVE WATER QUALITY



RESTORE SITE HABITAT VALUE



- ① CHILDREN'S ART EDUCATION WORKSHOP
- ② HUB
- ③ ARTISTS' MARKET
- ④ ARTISTS' STUDIO
- ⑤ EXHIBITION GARDEN
- ⑥ ARTISTS COMMUNITY

- ⑦ VINEYARD ART ROAD
- ⑧ ISLAND & LOTUS POND
- ⑨ EXISTING VILLAGE
- ⑩ ACTIVITY SPACE
- ⑪ ENTRANCE FROM BAOSHAN DISTRICT



## THE ART CAMPUS

The design creates a dialogue between the grape gardens and its natural settings to attract both artists and the general public to cultivate a unique cultural settlement.





- |  |  |
|--|--|
| ① NEAR NATURE FOREST IN RESTORATION          | ⑪ WETLAND GARDEN                       |
| ② LANDFORMS (BUILT WITH CONSTRUCTION WASTES) | ⑫ CONCRETE GARDEN                      |
| ③ WETLAND IN RESTORATION                     | ⑬ FOUR SEASON GARDEN                   |
| ④ NATURAL CLASSROOM                          | ⑭ PLAYGROUND                           |
| ⑤ OBSERVATION PLATFORM                       | ⑮ SPORTS FIELD                         |
| ⑥ AMPHITHEATER/ACTIVITY LAWN                 | ⑯ THE ENLIGHTMENT ROAD                 |
| ⑦ COMMUNITY ACTIVITY CENTER                  | ⑰ THE SUSTAINABLE PATH                 |
| ⑧ ACTIVITY LAWN                              | ⑱ PRIMARY SCHOOL                       |
| ⑨ COMMUNITY PERFORMANCE STAGE                | ⑲ ACTIVITY CENTER FOR SENIOR VILLAGERS |
| ⑩ NATURAL LIBRARY                            |  |



# THE GROVE CAMPUS

Restored near-nature forests with native flora will inhabit existing groves and reclaimed land, making it a Yangtze River Delta Arboretum that grows together with Jiading.





- 1 RESTORED FOREST
- 2 FAMILY VEGI GARDEN
- 3 RICEFIELD MAZE PLAYGROUND
- 4 IN-FIELD NATURE CLASSROOM
- 5 OBSERVATION TOWER
- 6 LOTUS POND
- 7 FLOWER TREE PLAZA
- 8 WATERFRONT PLATFORM
- 9 DOCK
- 10 RICEFIELD BOARDWALK
- 11 PATH
- 12 VILLAGE SPICE GARDEN
- 13 BACKYARD EDIBLE PLANT GARDEN
- 14 ECO-VILLAGE CENTER
- 15 LEISURE PLAZA
- 16 PEDESTRAIN BRIDGE
- 17 PARKING LOT
- 18 THE ENLIGHTMENT ROAD
- 19 THE SUSTAINABLE PATH



# THE ECO VILLAGE

The Eco Village incorporates villager’s current lifestyle with sustainable approaches such as organic food production, waste management and the use of renewable energy.