

# Regenerative Urban Fabric

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*Landscape Architecture & Urban Design Portfolio  
2021-2025*

*Qi Yang*

# Breathing Water

- Site: Wuhan, China
- Theme: Wetland, Bird, Ecology
- Accademic year: 2023

The project focuses on seeking harmonious coexistence between birds and urban residents through seasonal changes in water levels. The living space of birds is gradually shrinking with urban development. In the wetland environment of modern cities, seeking a larger living space for birds is one of the important means to maintain ecological environment.



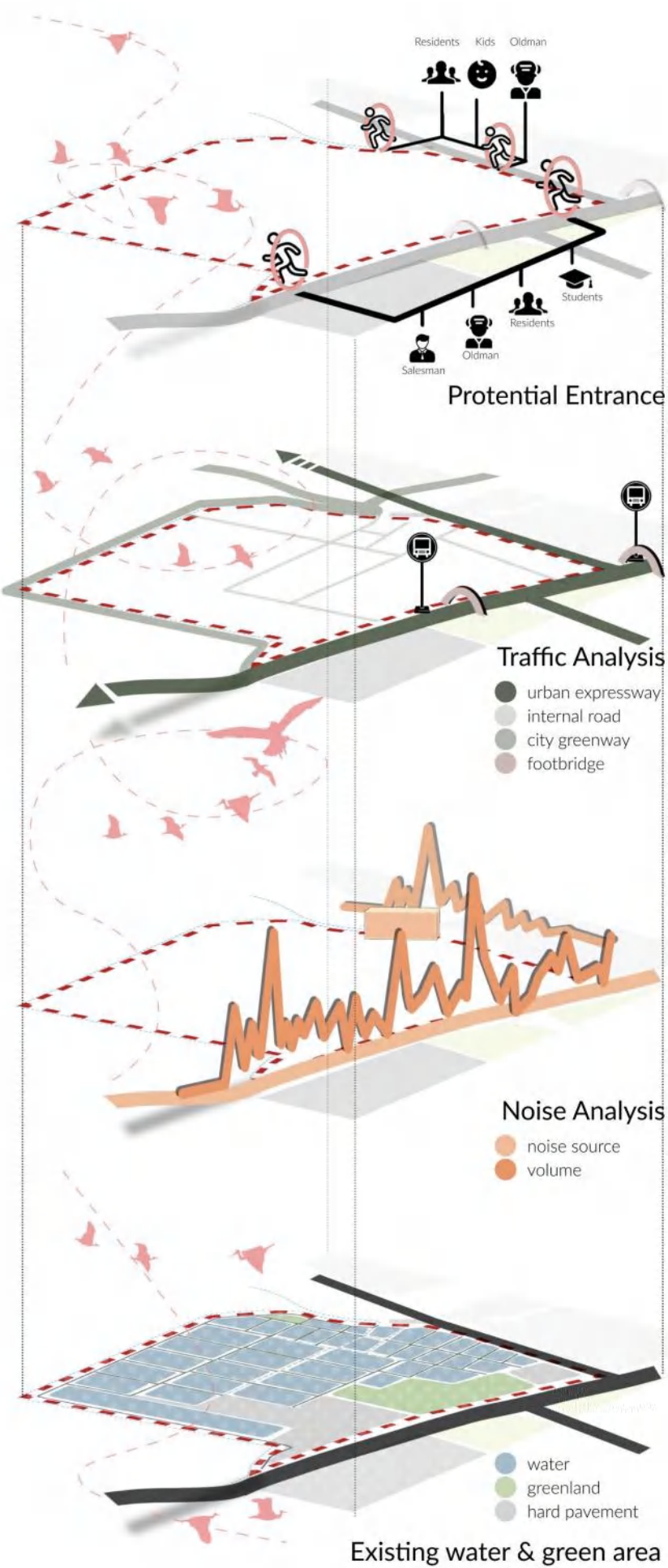


# SITE ANALYSIS

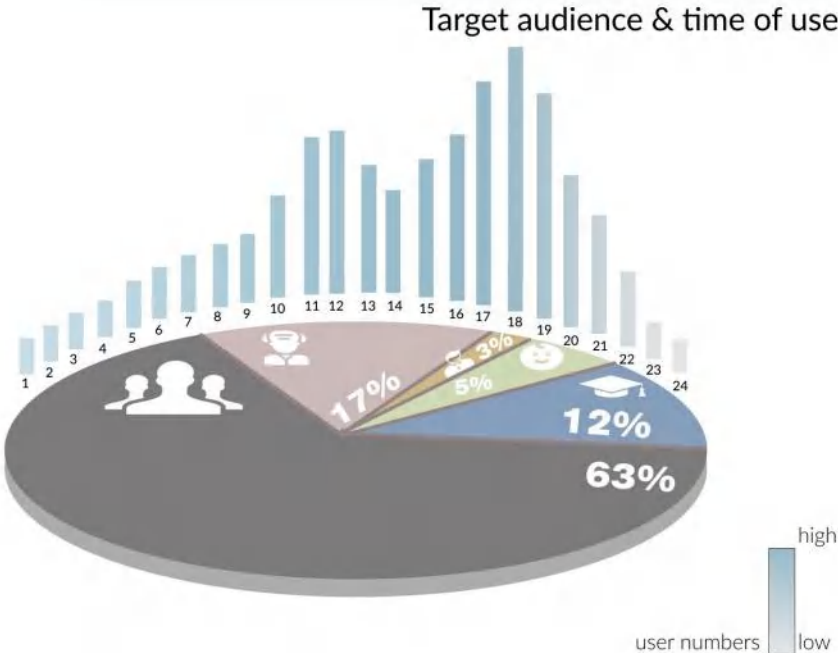
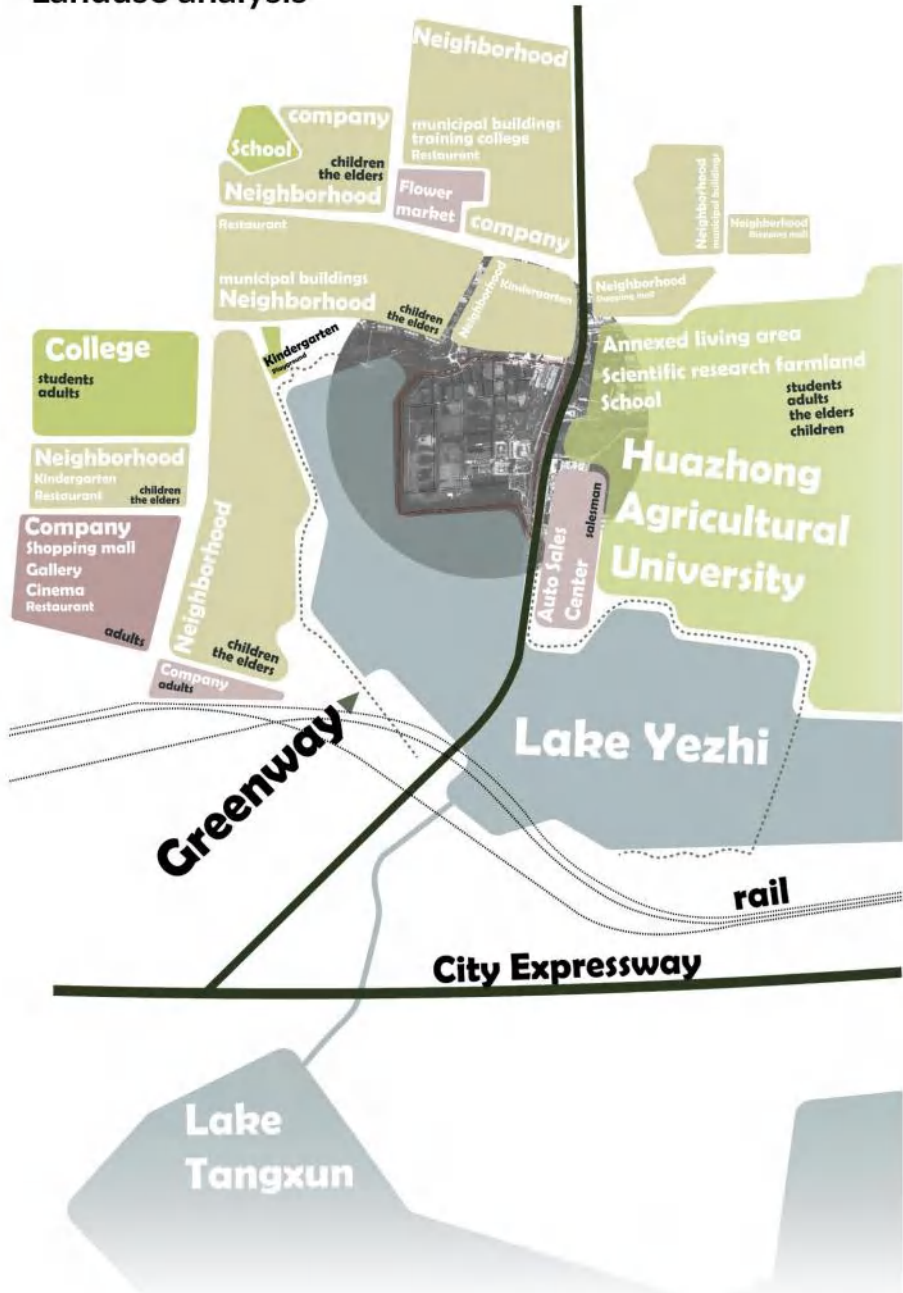
## Site location



## Bird resources



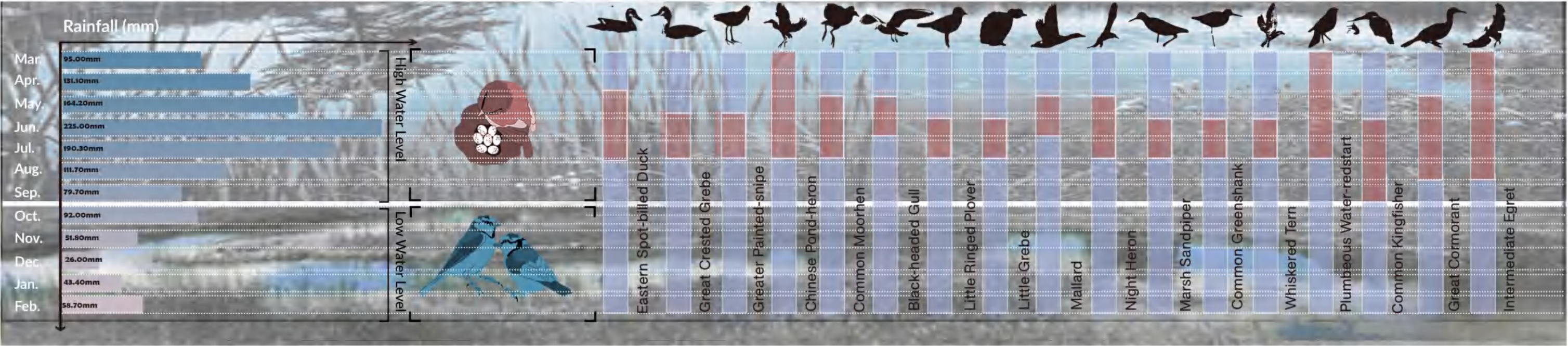
## Landuse analysis



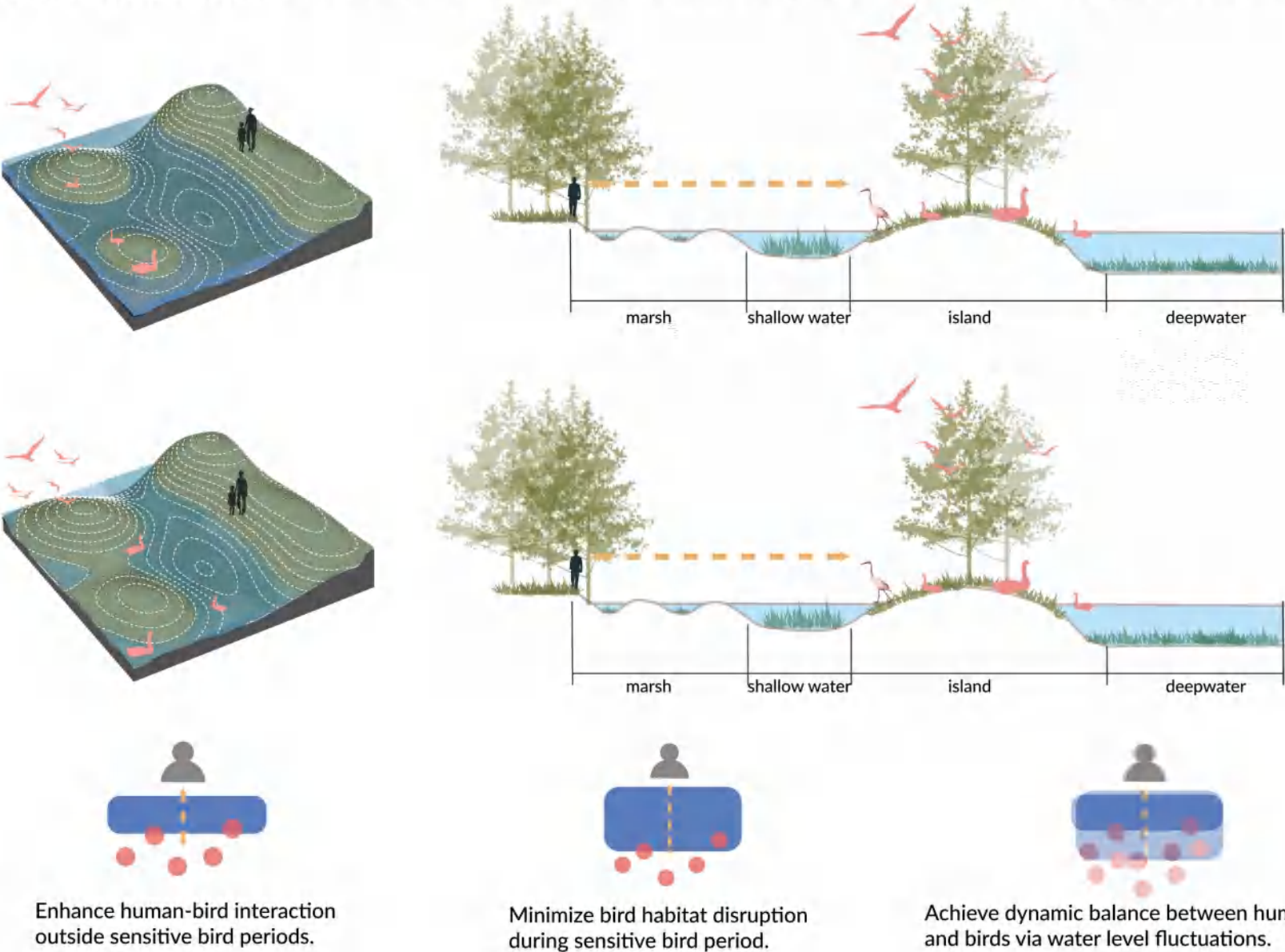


# CONCEPT GENERATION

## Relationship Between Birds Habits & Water Level Changes



**Conclusion:** Sensitive bird periods typically occur in Spring and Summer with higher water levels, while non-sensitive/ active bird periods fall in Autumn and Winter with lower water levels.



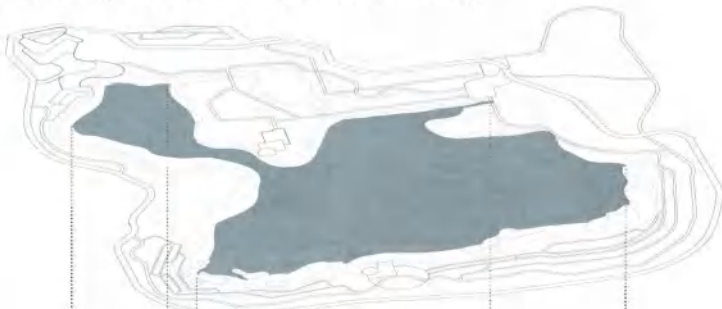
Water level fluctuations are affected by natural rainfall, acting as a mediator between humans and birds to balance the distance between humans and birds. Therefore, the design concept integrates three main roles: birds, humans and water.



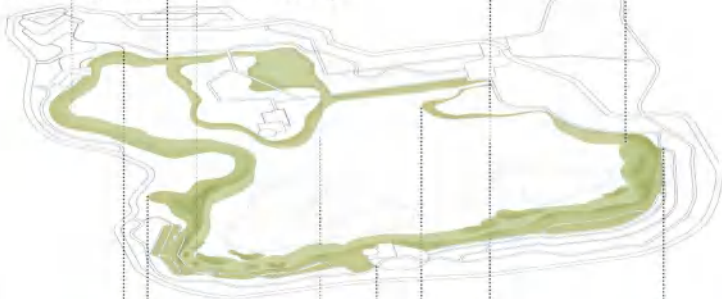
# ILLUSTRATIVE MASTERPLAN



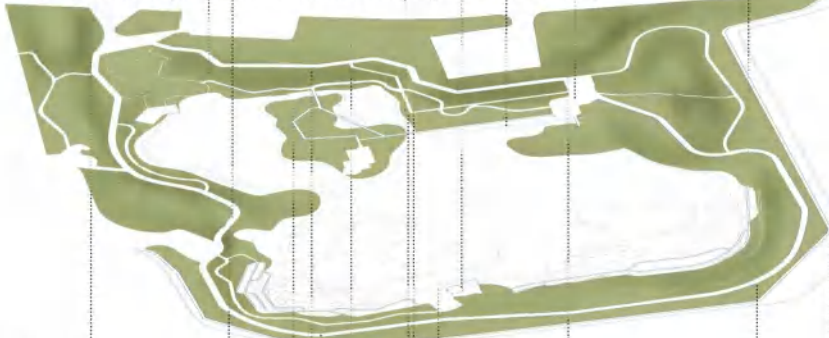
High Sensitivity Area (Eco Preservation Zones)



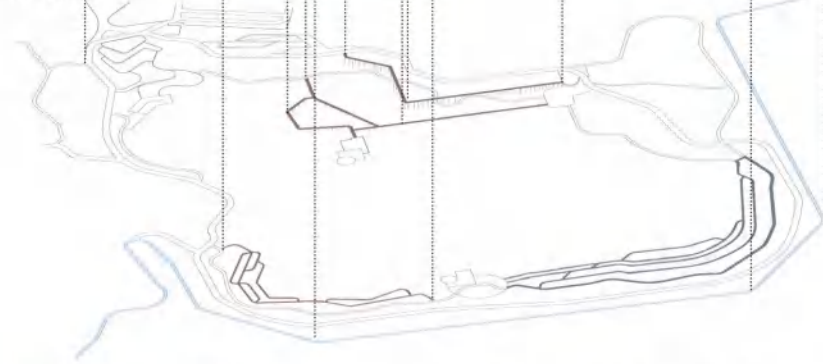
Mid Sensitivity Area (Buffer Zones)



Low Sensitivity Area (Human Activity Distribution)



Circulation



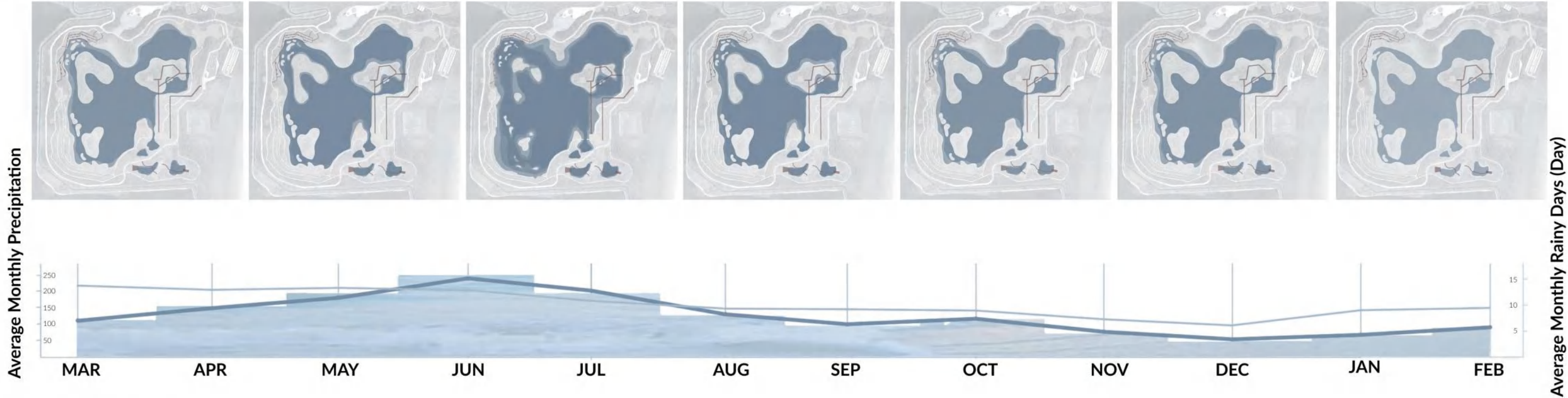
board walk hydrophilic footpath city greenway parkway

- 1.main entrance
- 2.garden
- 3.parking lot
- 4.viewing tower
- 5.aerial boardwalk
- 6.bus station
- 7.hydrophilic platform
- 8.rain garden
- 9.viewing deck
- 10.wetland garden
- 11.viewing tower
- 12.bird watching boardwalk
- 13.children's playground
- 14.hydrophilic lawn
- 15.north entrance
- 16.sport center
- 17.visitor center & bird museum
- 18.north entrance
- 19.main water surface
- 20.secondary water surface
- 21.bird conservation center
- 22.brid habitat
- 23.city greenway
- 24.footbridge
- 25.footbridge



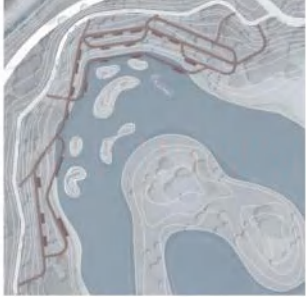
# GRADING & WATER EDGE TREATMENTS

## Variation of Water Level

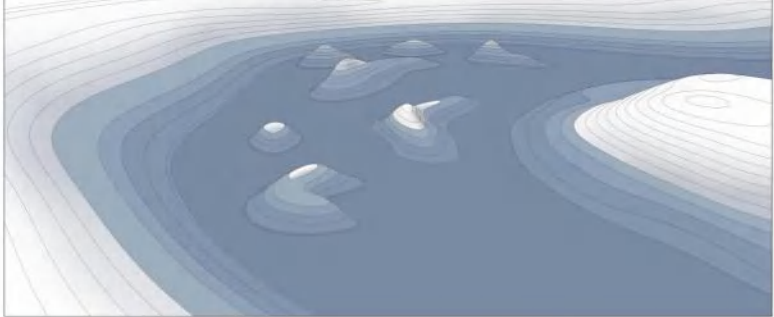


## Water Edge Treatments

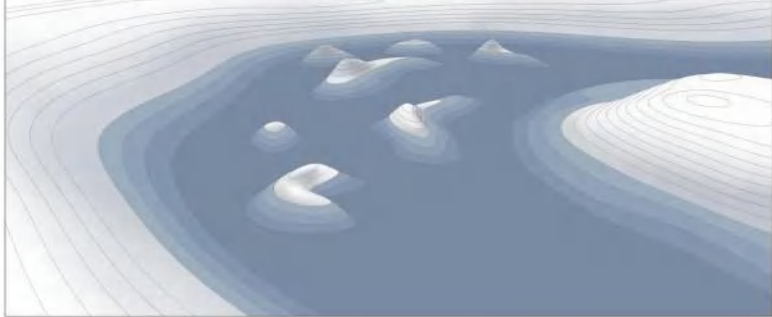
### 1. Ecological Patches



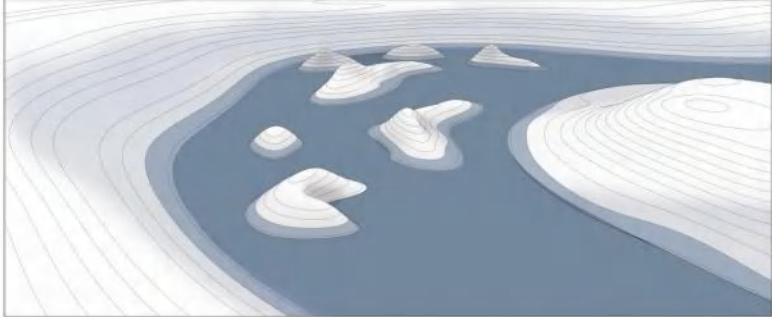
### High Water Level



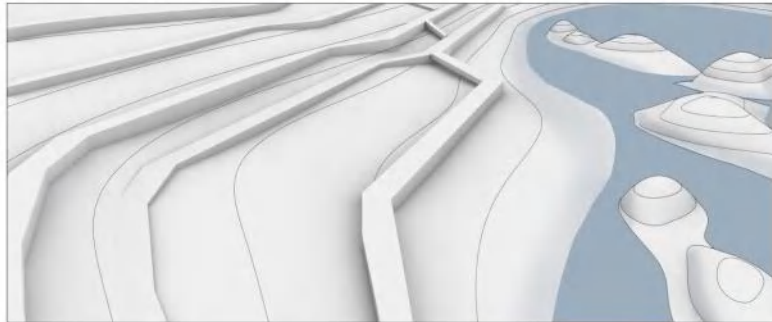
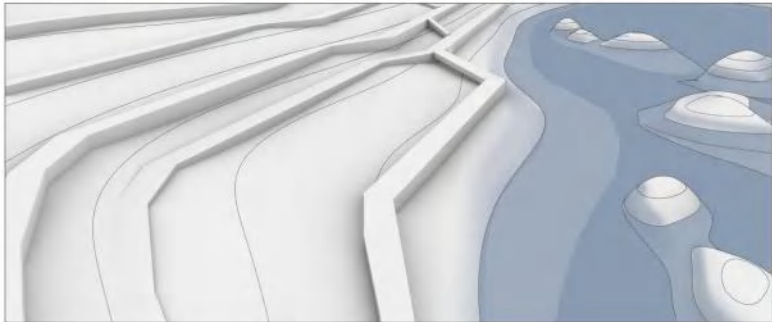
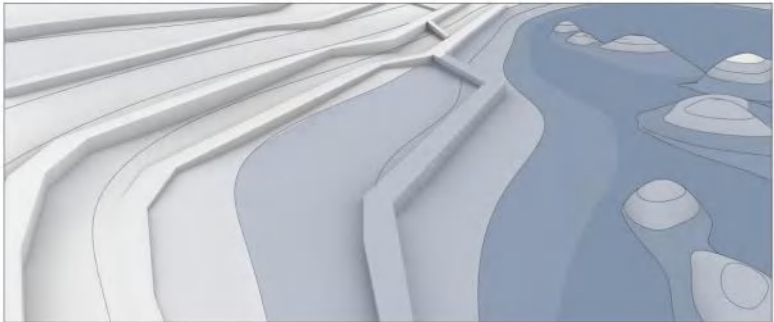
### Mid Water Level



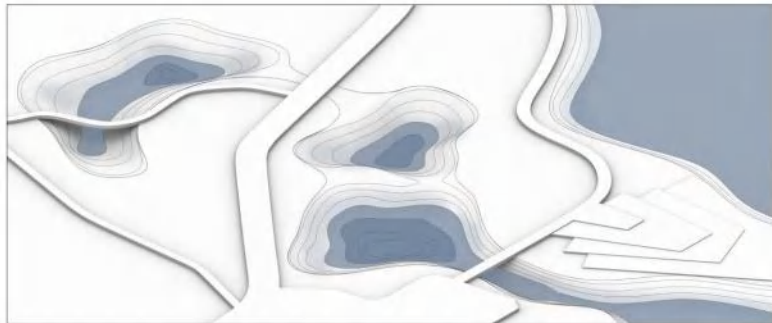
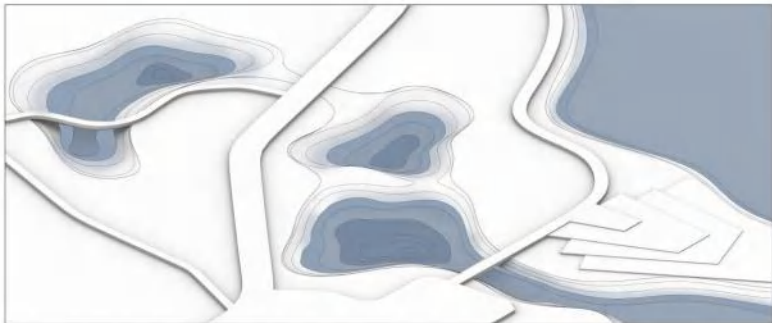
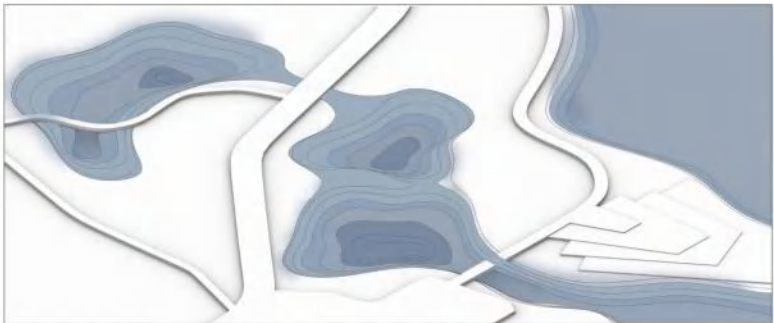
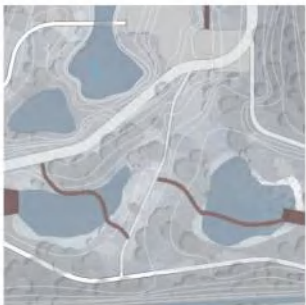
### Low Water Level



### 2. Terraced Revetment



### 3. Rainwater Purification Ponds





# HABITAT REBUILDING



Habitat Type 1



*Phragmites australis* (Reed)



*Acorus calamus* (Sweet Flag)



*Salix babylonica* (Weeping Willow)



Dawn Redwood  
(*Metasequoia glyptostroboides*)

Waterfront Trail  
of  
metasequoia forest



Habitat Type 3



*Phragmites australis* (Reed)



*Acorus calamus* (Sweet Flag)



*Morus alba* (mulberry)



*Osmanthus* (laurel)

Hydrophilic shallow



Habitat Type 2



*Pontederia cordata* (Pickerel Weed)



Dawn Redwood  
(*Metasequoia glyptostroboides*)



*Iris versicolor* (Purple Flag Iris)



*Nymphoides peltatum* (Yellow Floating Heart)

Wetland purification  
zone



Habitat Type 4



*Phragmites australis* (Reed)



*Nymphoides peltata*

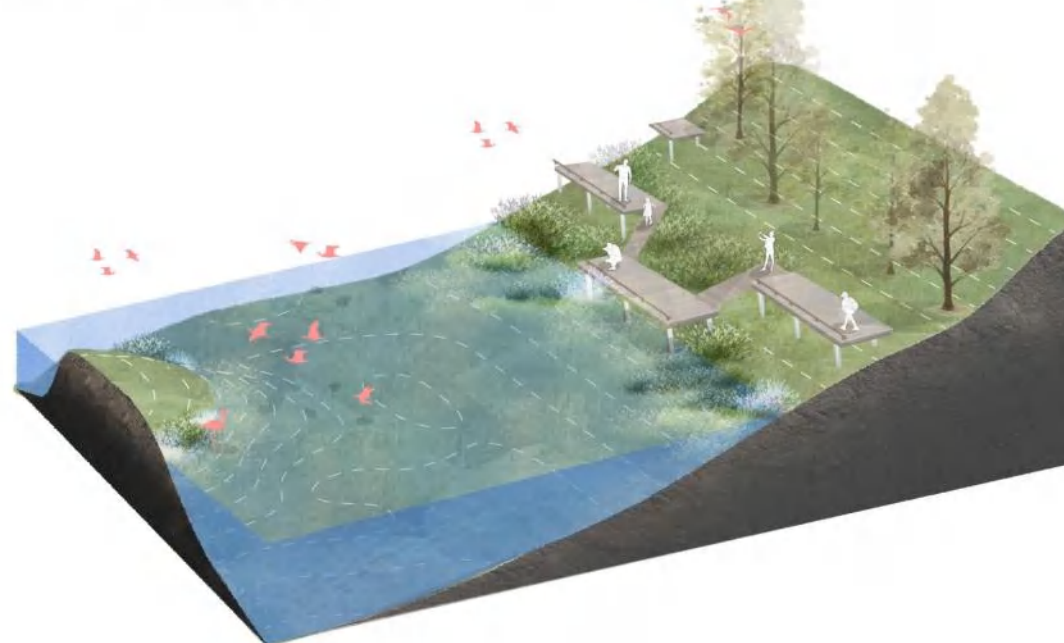


*canna*



*Nelumbo* (lutos)

Bird watching trail





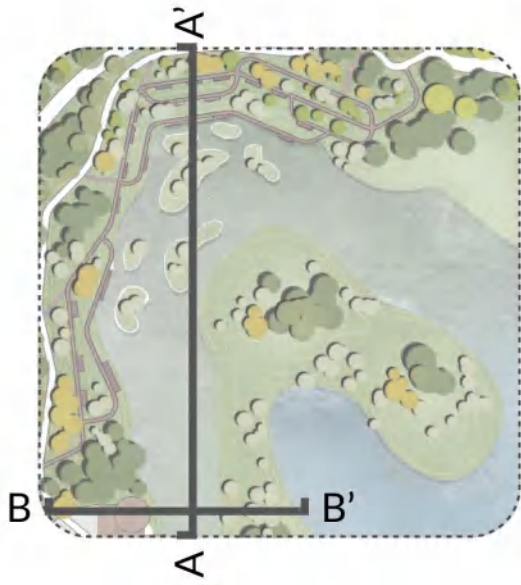
# SECTIONS & RENDER



section A-A'

horizontal scale 0 2 10m

vertical scale 0 1 5m



section B-B'

horizontal scale 0 3 15m

vertical scale 0 3 6m





# REVIVE TEA

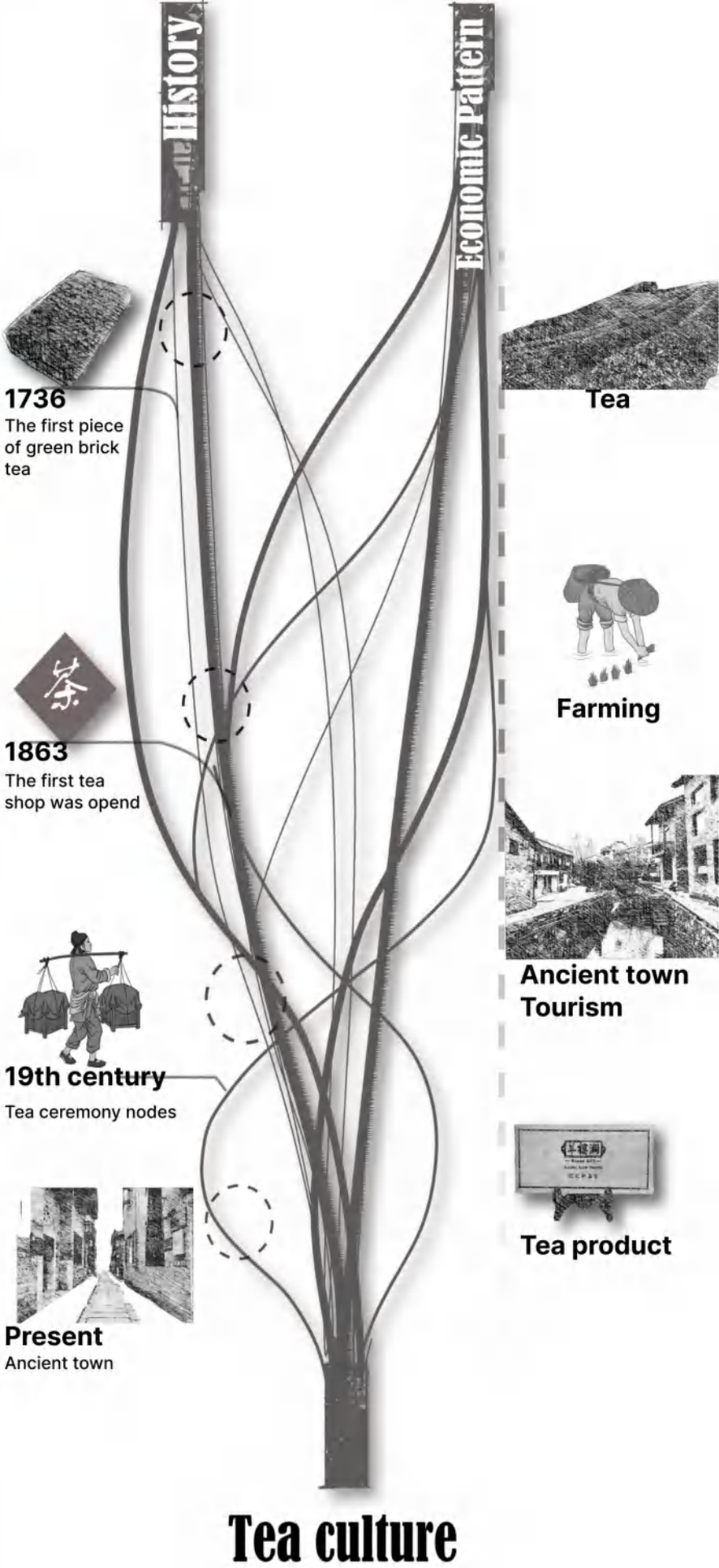
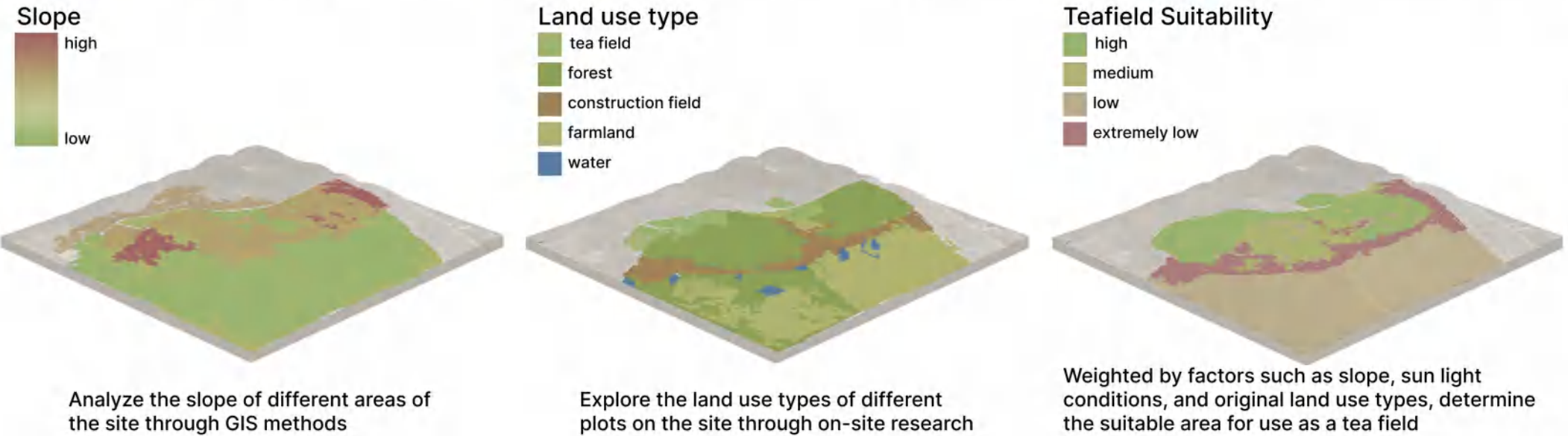
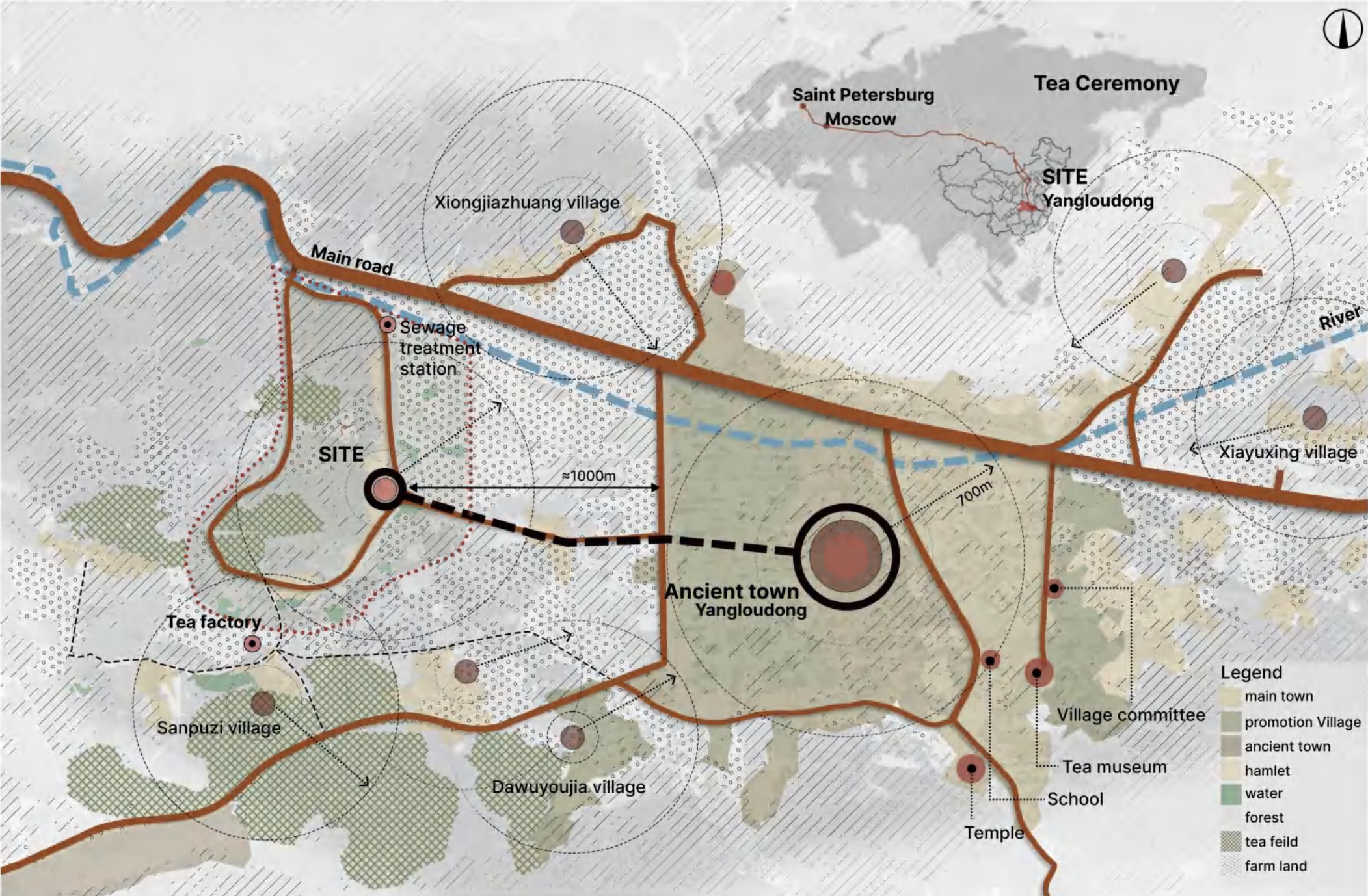
- Site: Chibi, China
- Theme: Industry, Rural revitalization, Intangible Cultural Heritage
- Accademic year: 2024

The project focuses on a small town in central inland China, Chibi City, which as one of the important nodes of the Tea Ceremony, preserves a large amount of historical memory. Site selection and design renovation around the ancient town, attempting to promote the revival of local industries and economic development through landscape means. While seeking the path of industrial revitalization, the project also focuses on the inheritance and development of local culture.



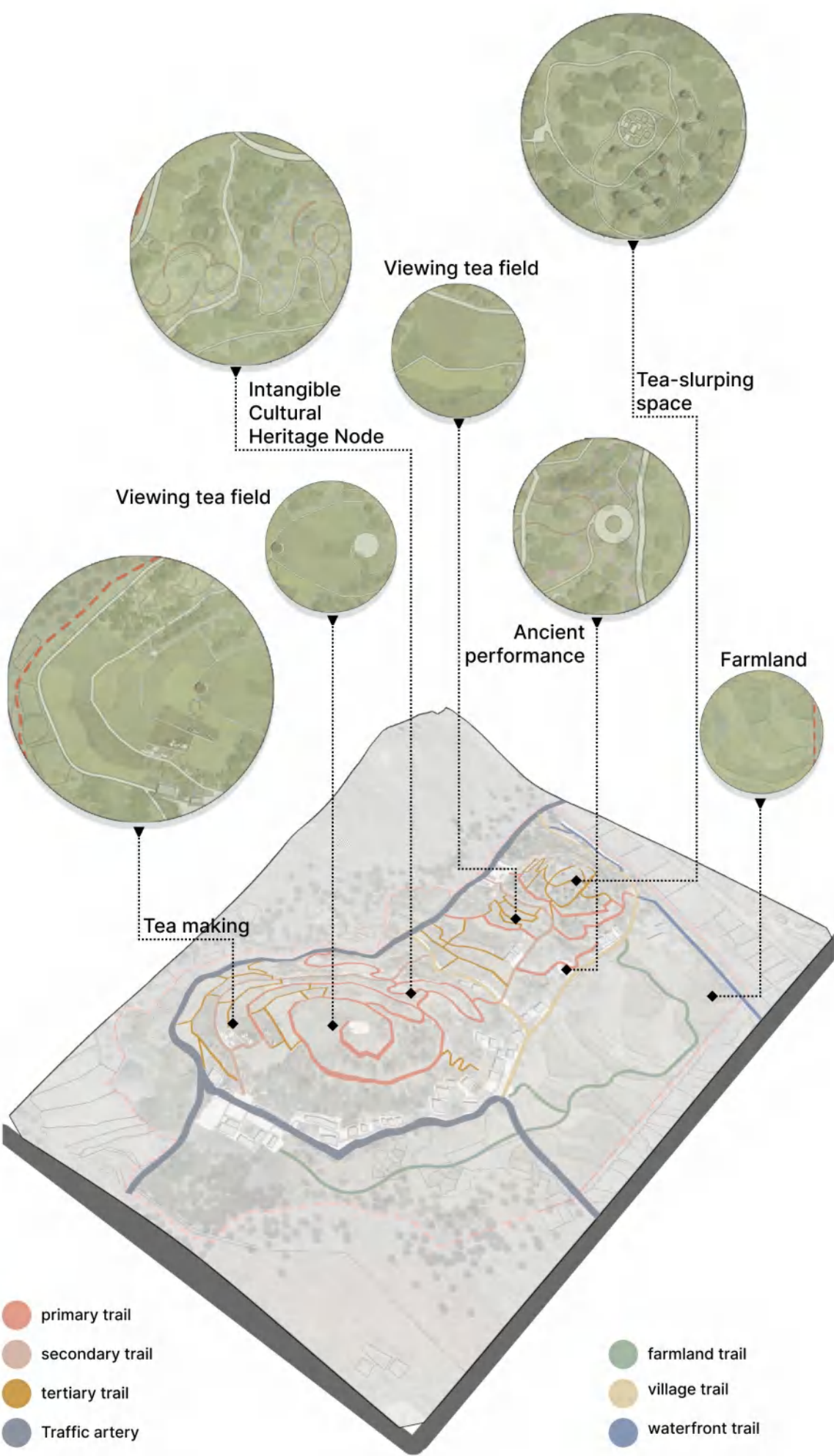


SITE ANALYSIS





MASTERPLAN

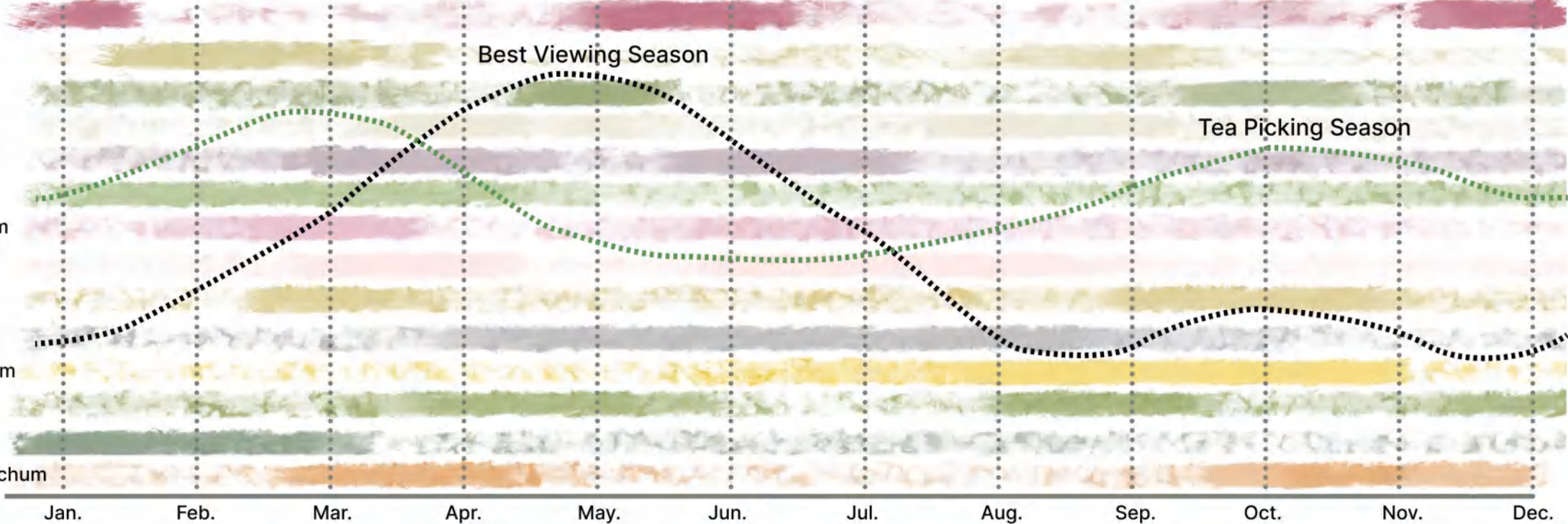




VEGETATION PLANNING



- Chinese pulm
- Cymbidium
- Bamboo
- Pear blossom
- Apricot
- Willow
- Cherry blossom
- Peach
- Fragrans
- Mulberry
- Chrysanthemum
- Camphor tree
- Pine
- Taxodium distichum



**Chinese plum**  
*Prunus mume Siebold & Zucc.*

Using area: Intangible cultural heritage landscape node

Reason: As a traditional Chinese flower, it collaborate with nodes to create spring and winter festival landscapes.

**Cymbidium**  
*Cymbidium spp.*

Using area: Intangible cultural heritage landscape node

Reason: As a traditional Chinese flower, it collaborate with nodes to create a landscape close to one's sight.

**Bamboo**  
*Bambusoideae*

Using area: Hillside, mountaintops

Reason: As a large amount of vegetation originally present on the site, it creates a serene and peaceful atmosphere on the mountaintops.

**Pear Blossom**  
*Pyrus spp.*

Using area: Surrounding farmland

Reason: As a large amount of vegetation originally present on the site, it has been preserved as part of the site landscape close to farmland.

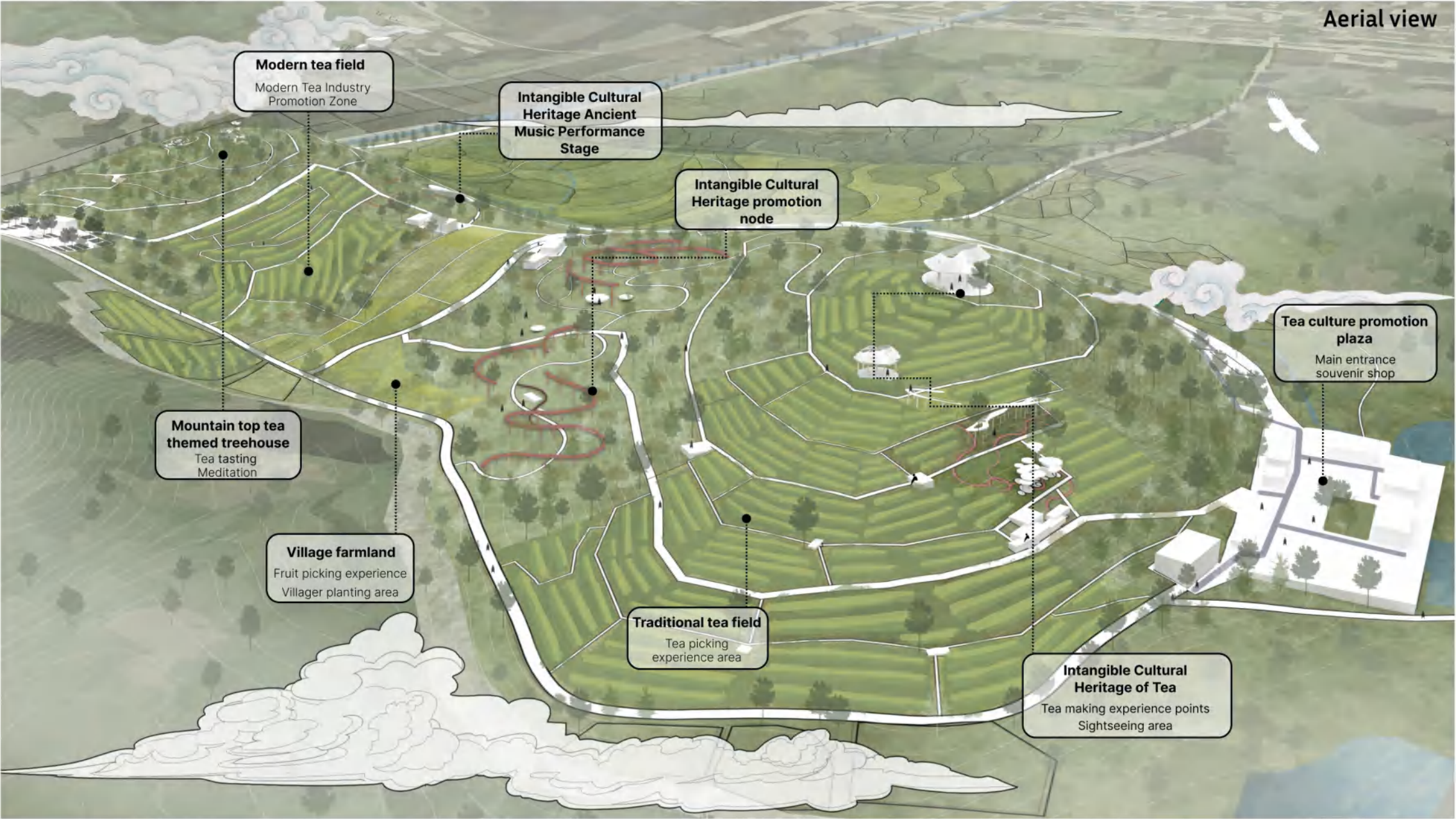
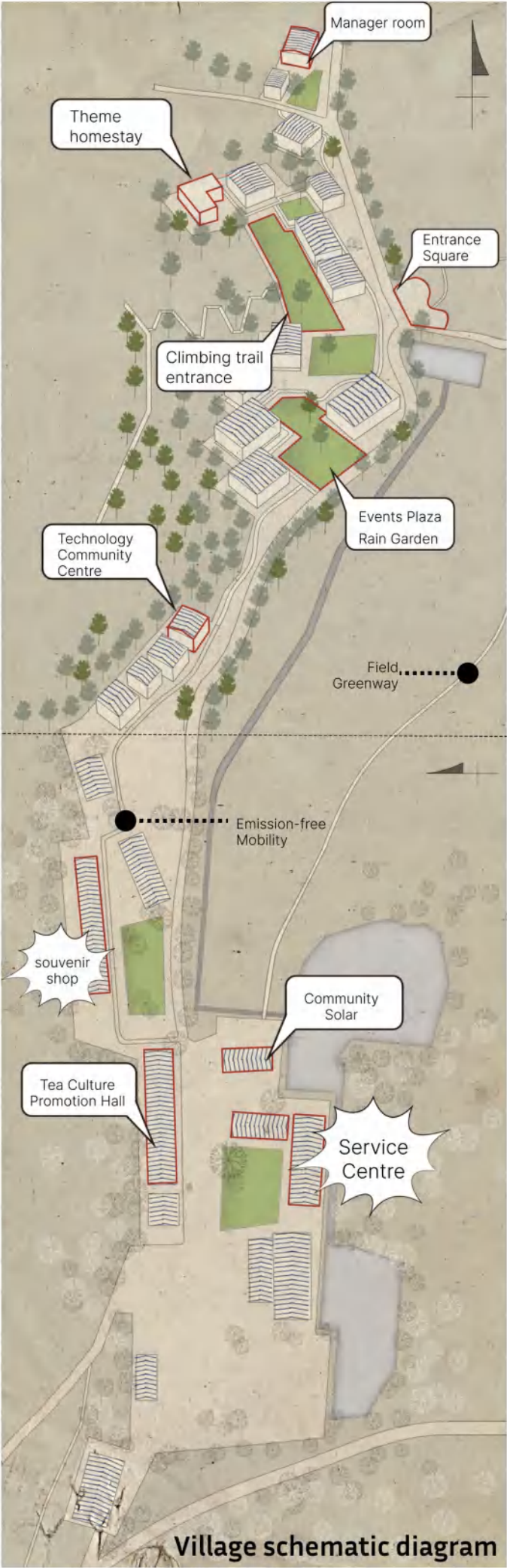
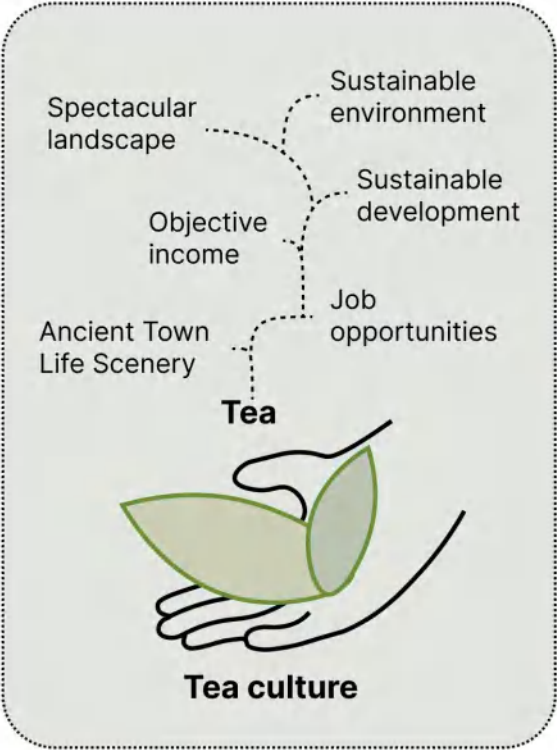
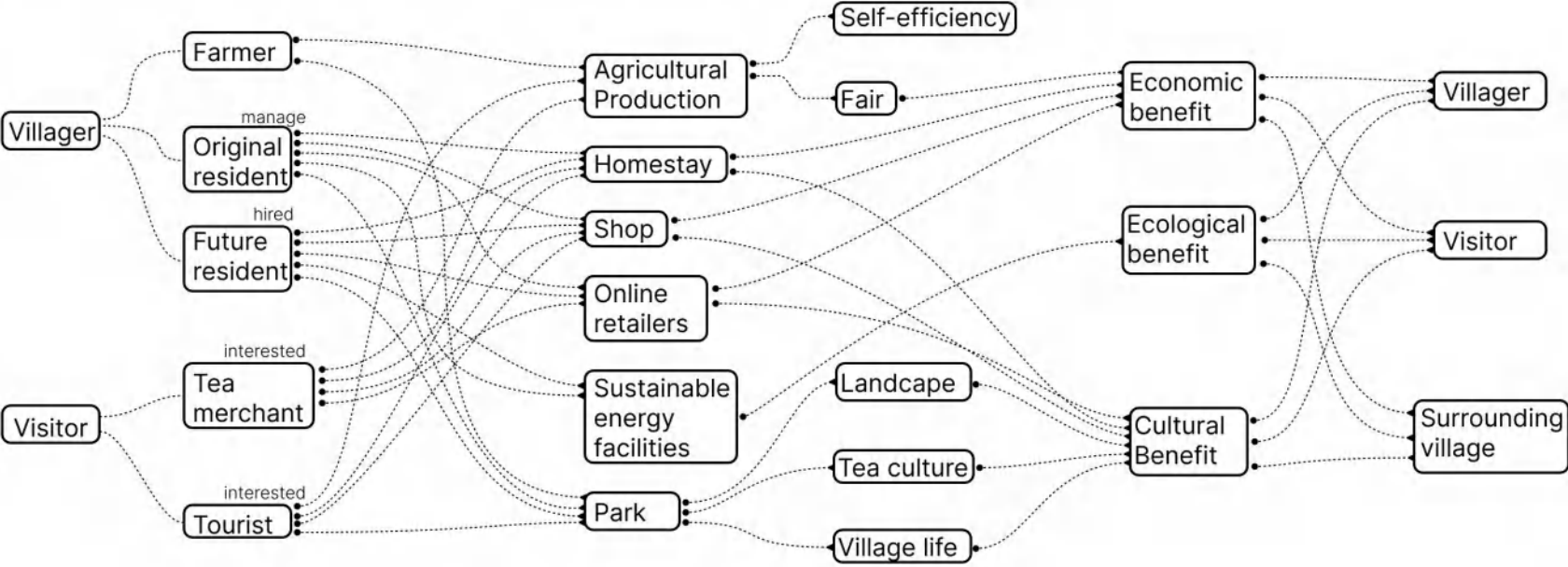
**Apricot**  
*Prunus armeniaca L.*

Using area: Village

Reason: The plants planted by villagers in their own courtyards extend from the walls onto the road, becoming a part of the public landscape.

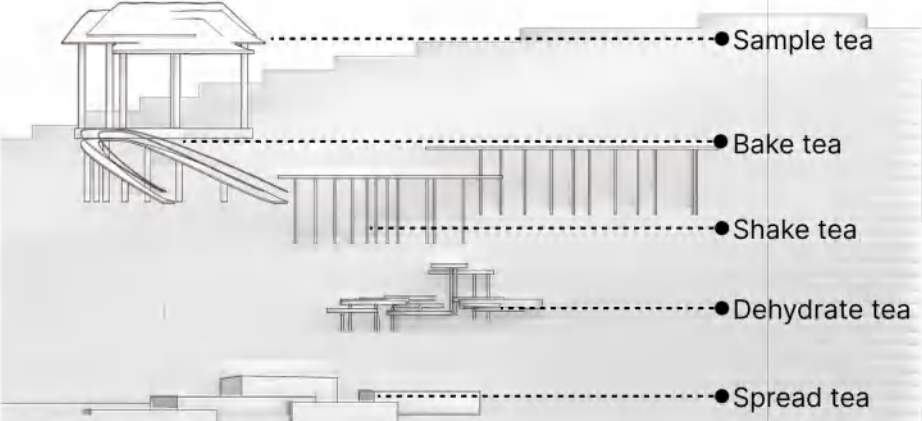


# INDUSTRY TRANSFORMATION



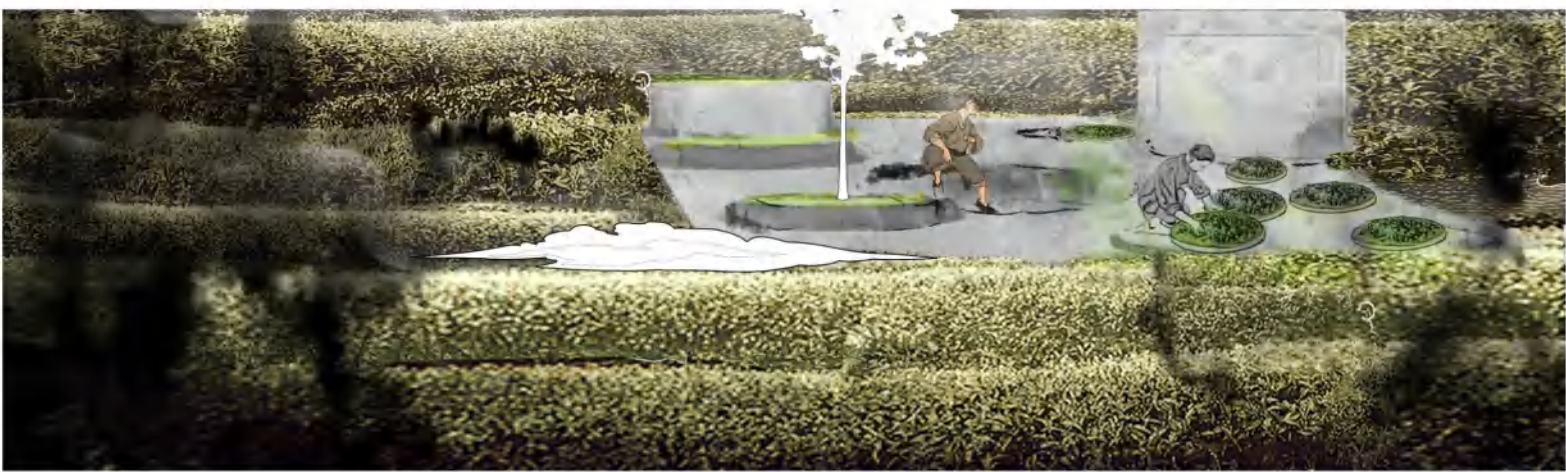
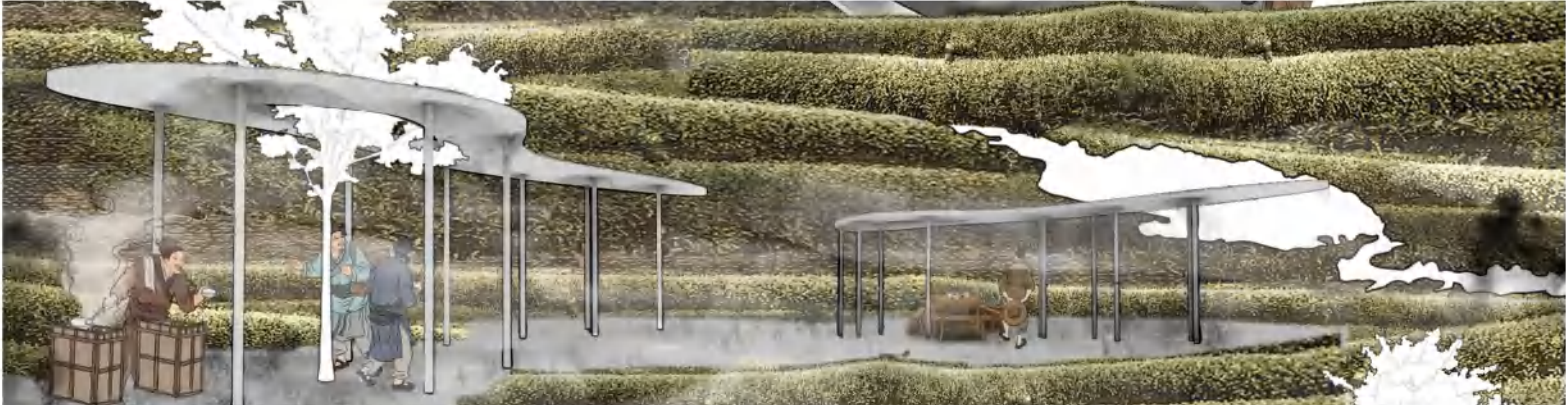
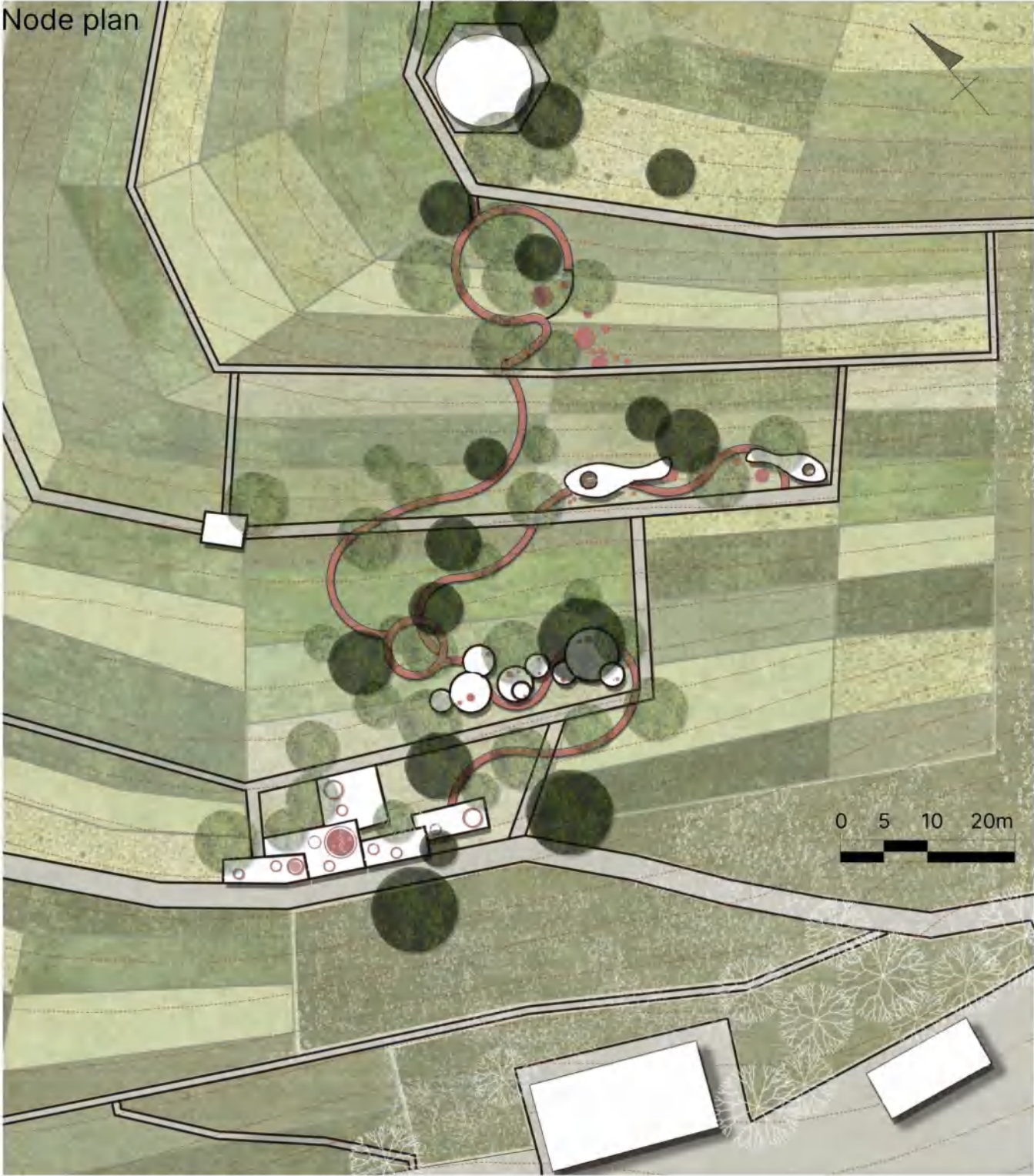


Site location



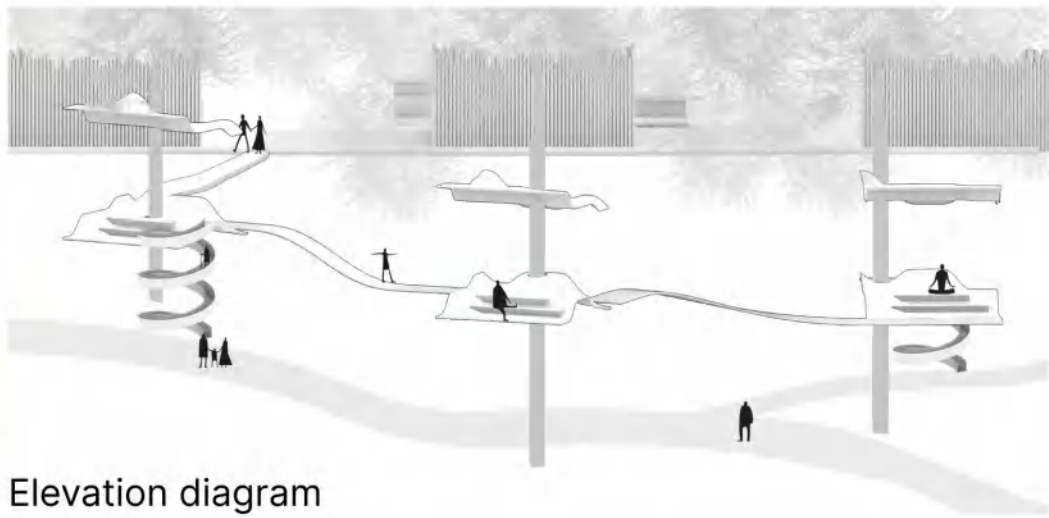
Tea theme diagram

Node plan



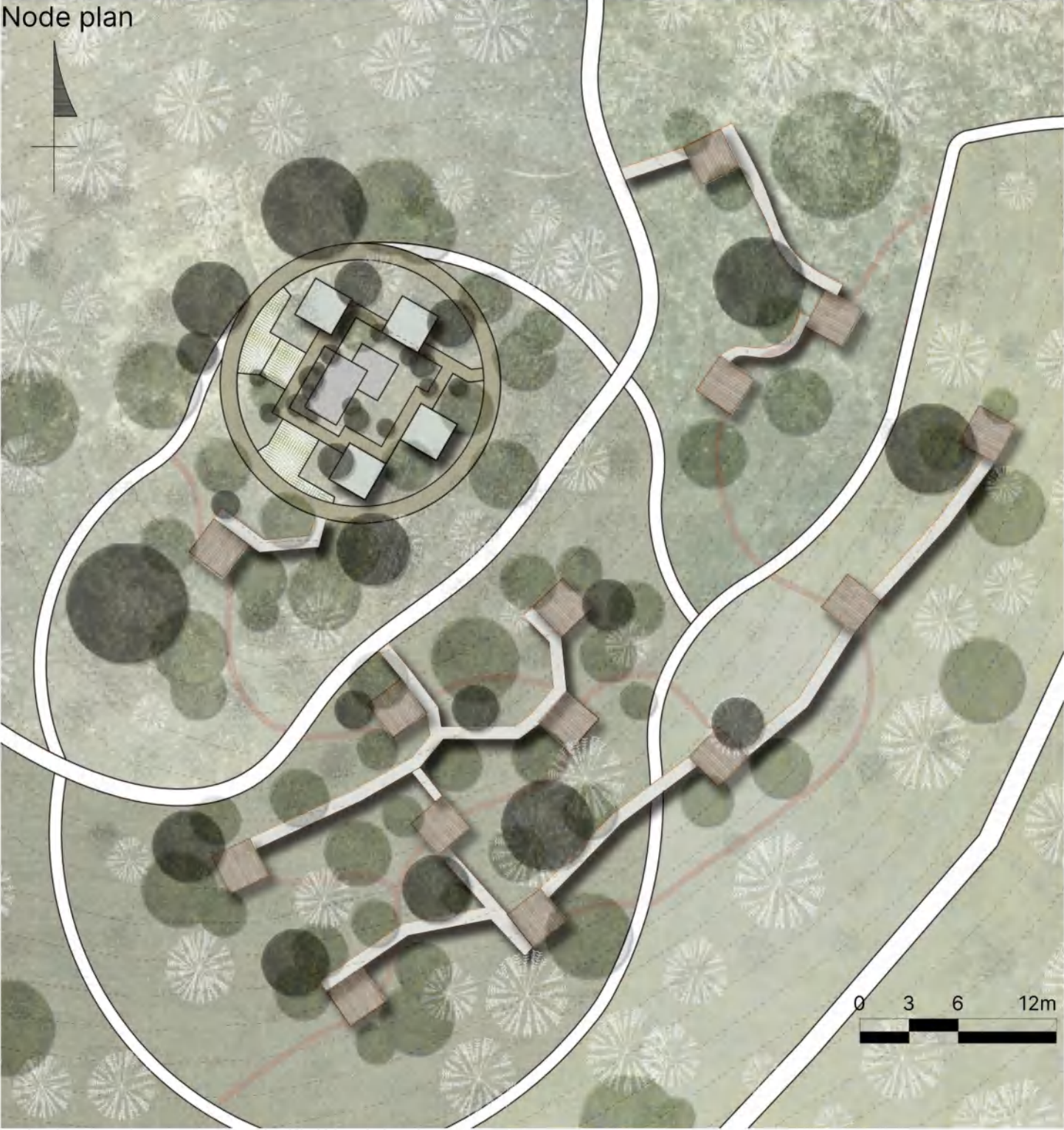


Site location



Elevation diagram

Node plan



Tea tree house

Meditation with bamboo





# Future Shrinking Cities

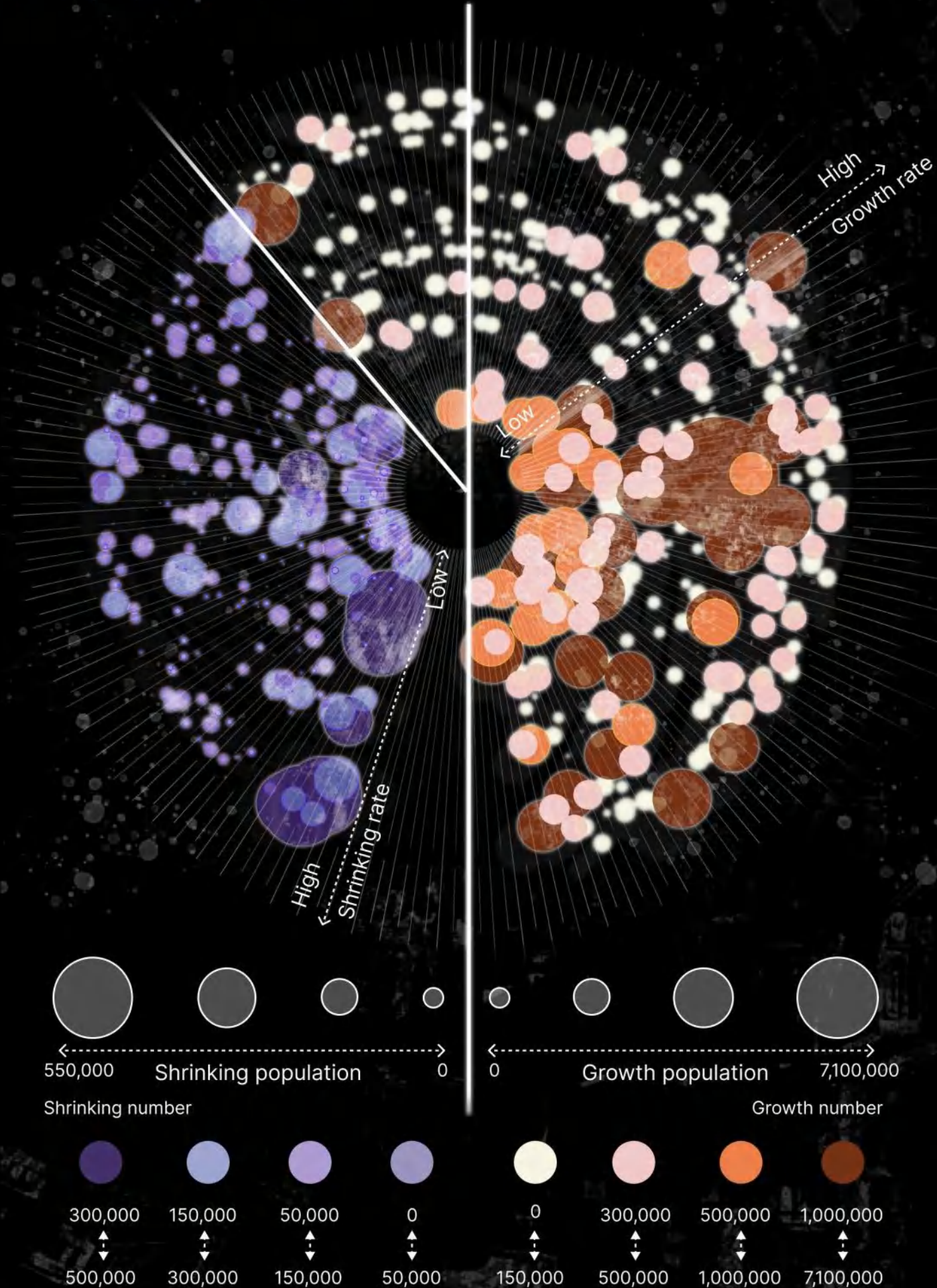
- Site: Anshan, China
- Theme: street renovation
- Accademic year: 2024

In the era of rapid development in China, there are also a large number of rapidly shrinking cities facing economic, social, and other problems. This project aims to take typical shrinking cities in Northeast China as an example, and attempt to address the problems caused by urban shrinkage by redesign urban street corner and public spaces and formulating policies.





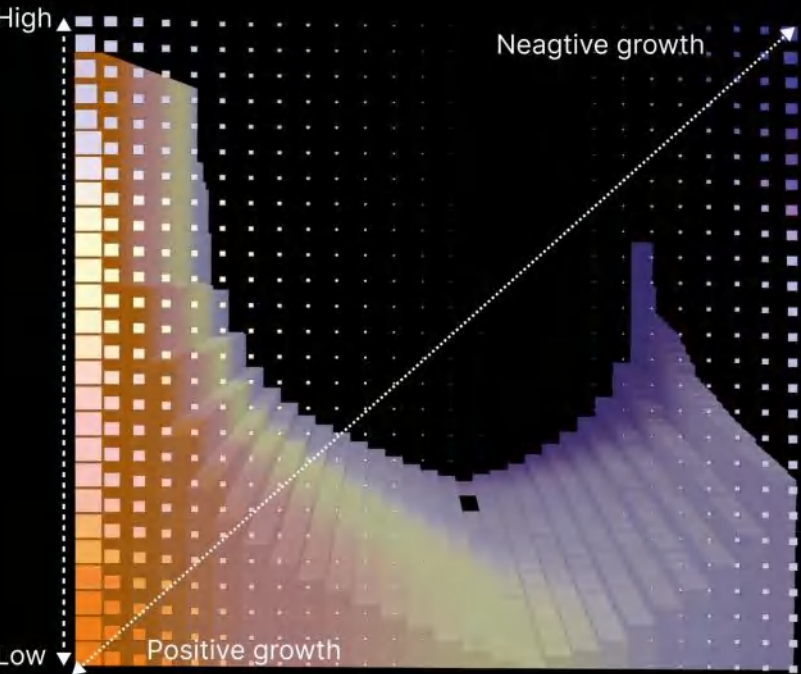
SHRINKING CITY



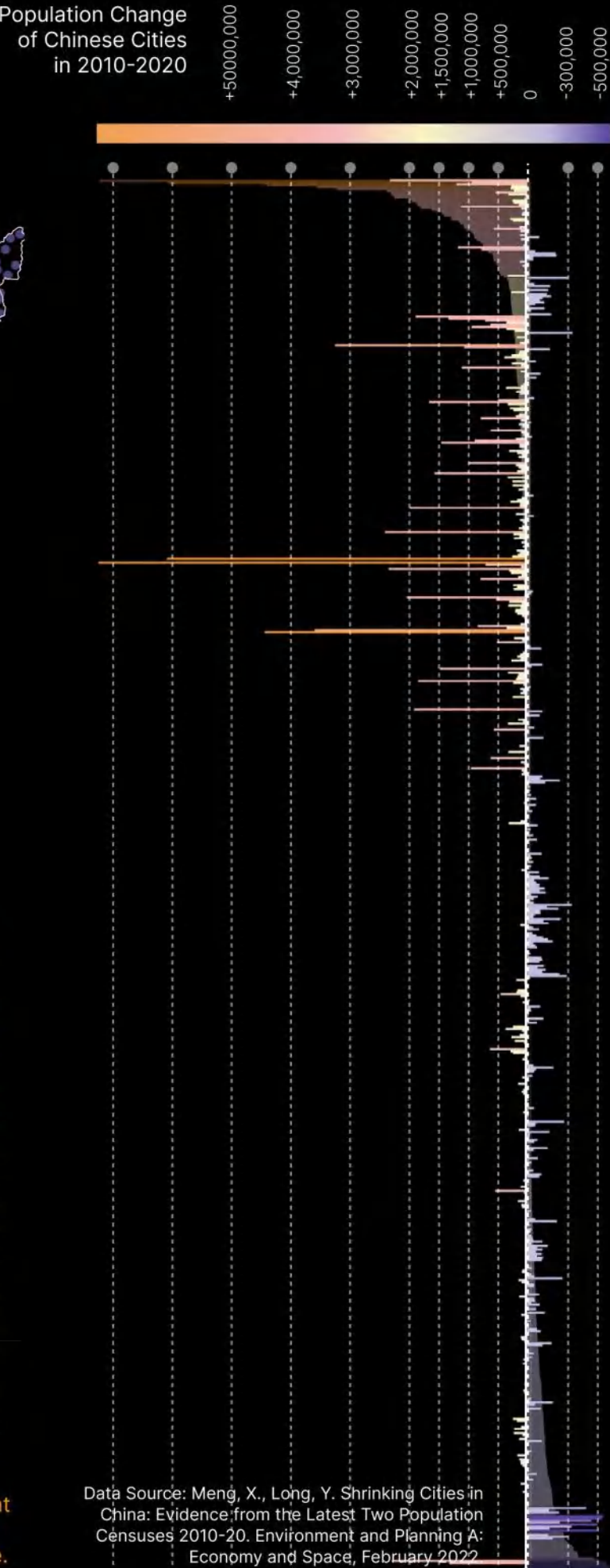
Shrinking Cities in China



Change in population growth rate



Despite the continuous expansion of Chinese cities in recent decades, population data shows that a large number of Chinese cities are currently facing the problem of shrinkage.





# CONCEPT FORMING

Dongbei region

Anshan City

## Land Use Analysis

- industrial use
- mountain
- water
- park

## Commercial Analysis (restaurant density)

- High
- Low
- Key area

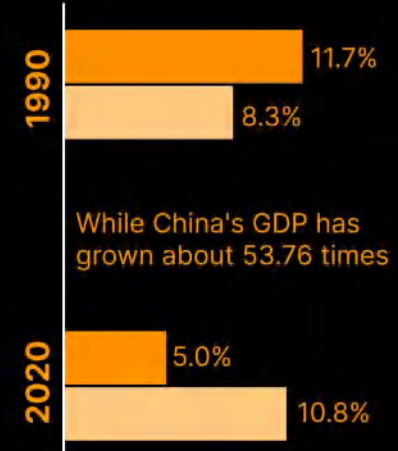
## Dongbei GDP Shrinks vs. A Booming City Over 30 Years



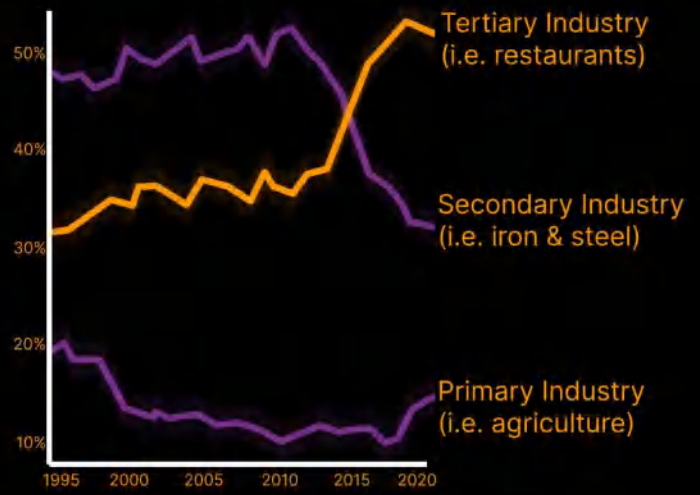
Dongbei region  
(Heilongjiang, Jilin, Liaoning province)



Guangdong province



## Main Sectors of Industry Changes



Cities in northeast part of China has experienced a severe shrinking problem, accompanied by a regional economic downturn and industrial transformation. Though Dongbei's primary and secondary industries are declining, its tertiary sector, especially food and restaurants, is thriving.

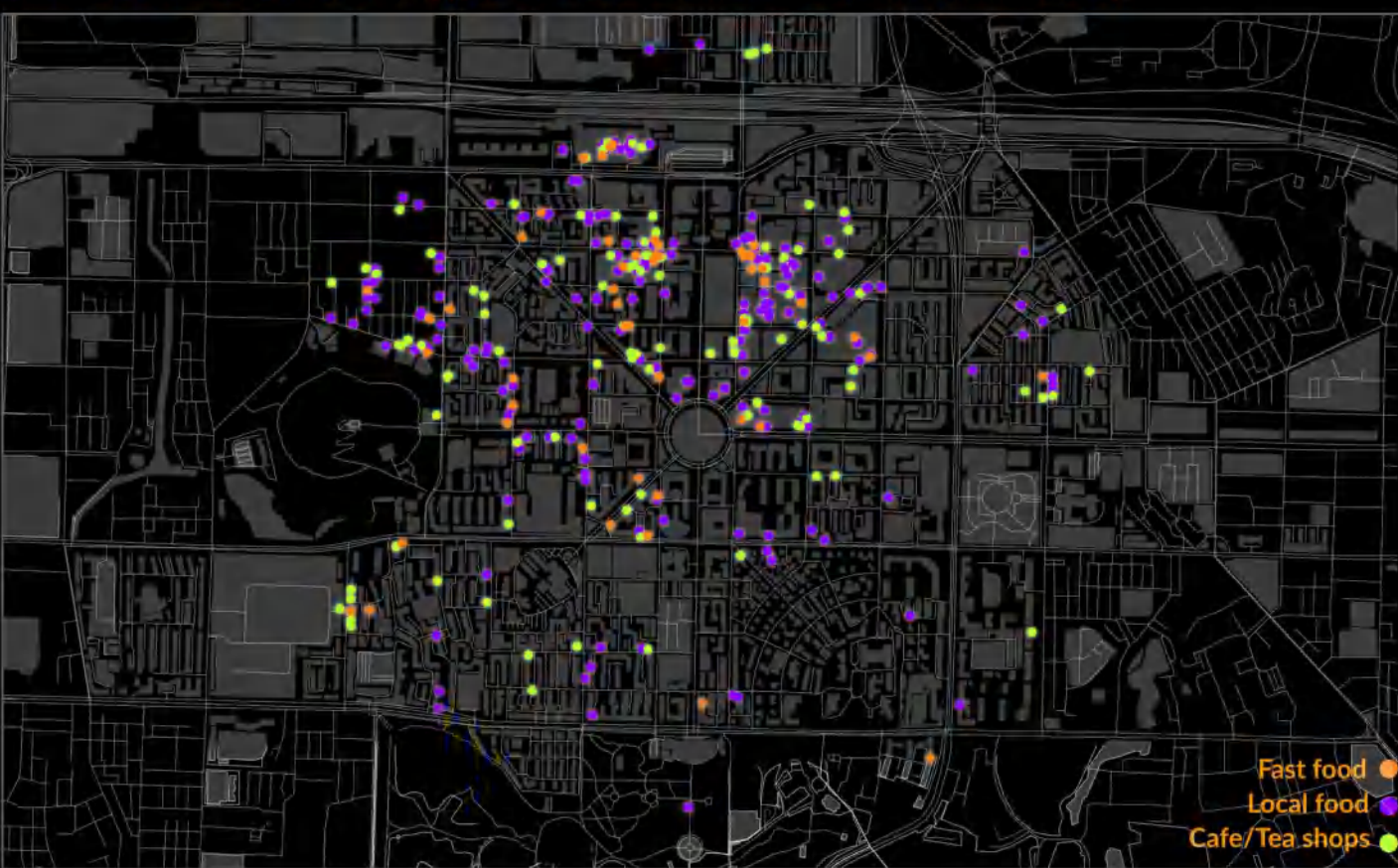


# DINING DYNAMICS & SOCIAL MAPS

## Target Custom for Different Types of Restaurants



## Distribution of Different Types of Restaurants in Central Anshan City



## Popular Routes in Central Anshan City



Description :  
By constructing the shortest path between sightseeings, it is inferred that the path used by the local population is more intensive, so as to analyze the surrounding food and beverage based on this

## Transit Spots (Fast food customer distribution)



Description :  
The distribution of fast food restaurants in the region is characterized by a point distribution

## Neighborhood Gatherings (Local food customer distribution)



Description :  
The distribution of local restaurants is mainly manifested by a large number of clusters

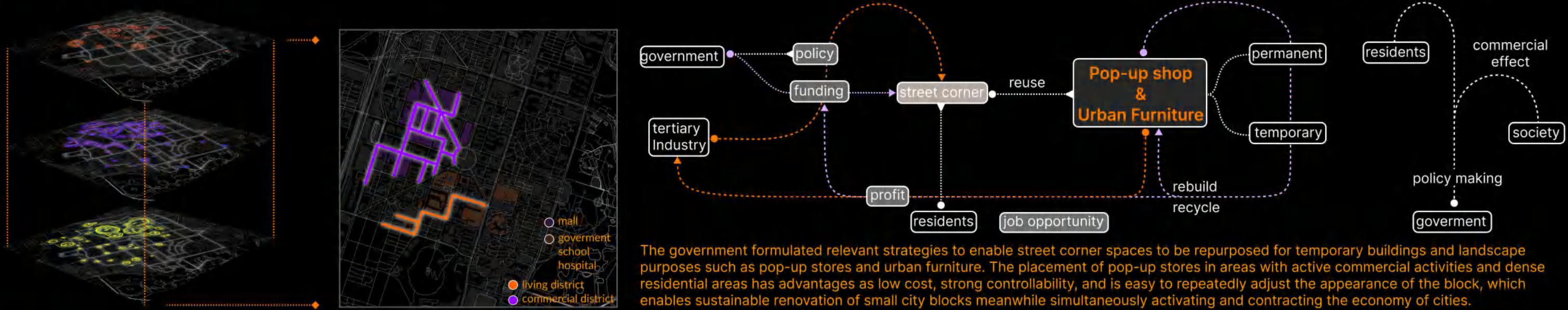
## Social Corners/ Creative Meetups (Cafe/ Tea shop customer distribution)



Description :  
The distribution of cafes and dessert shops is mainly characterized by small gatherings

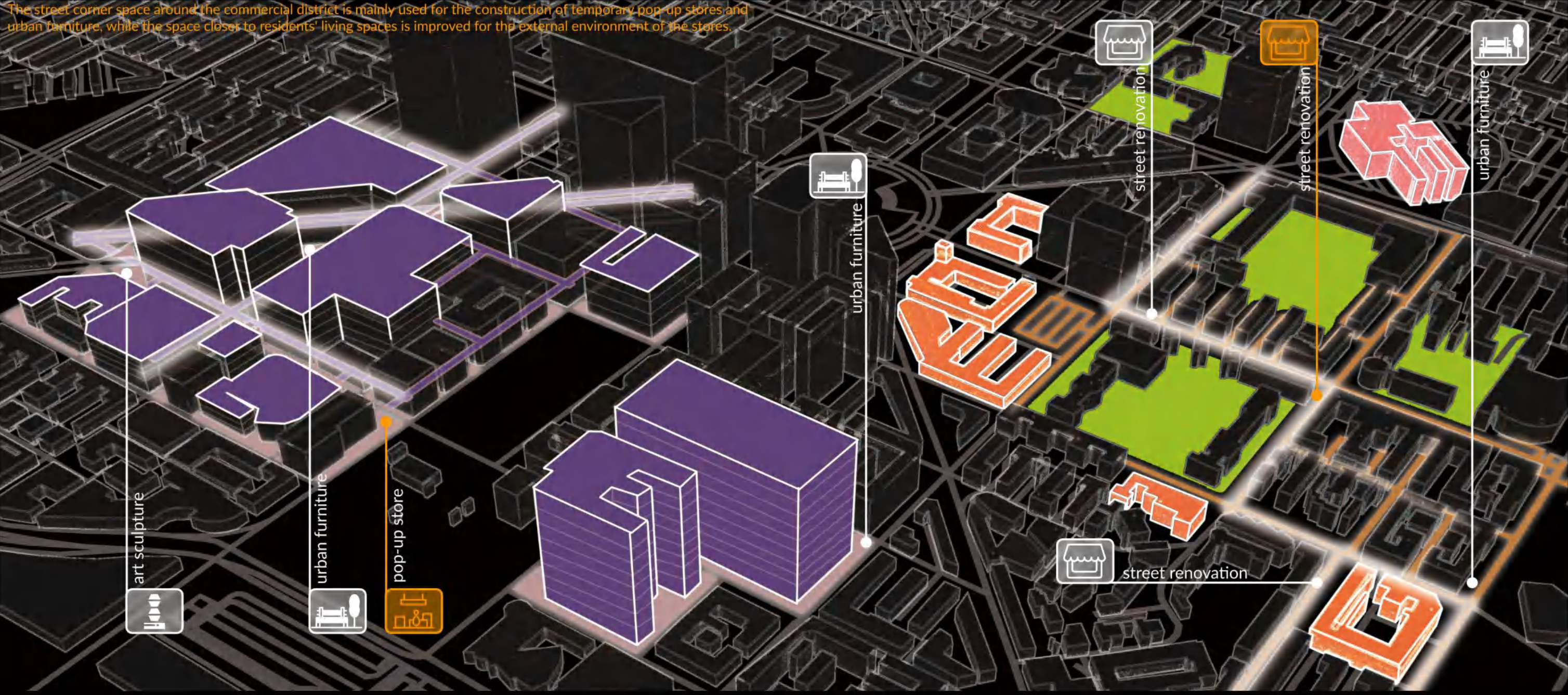


# DESIGN THEORY



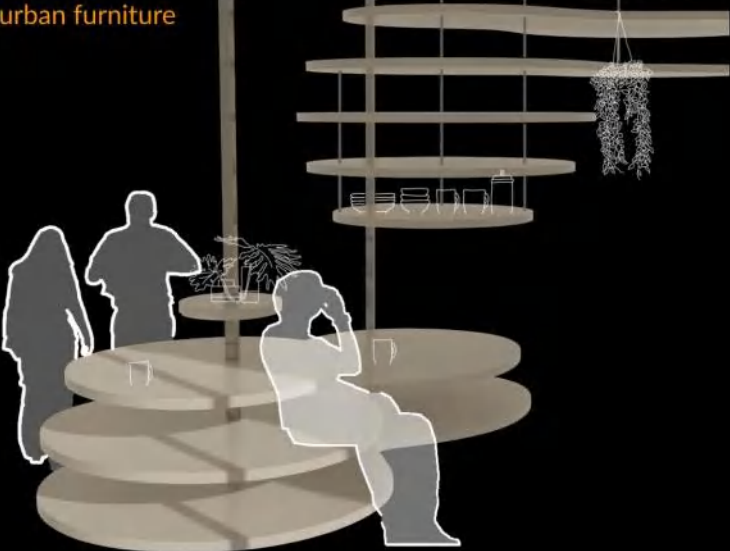
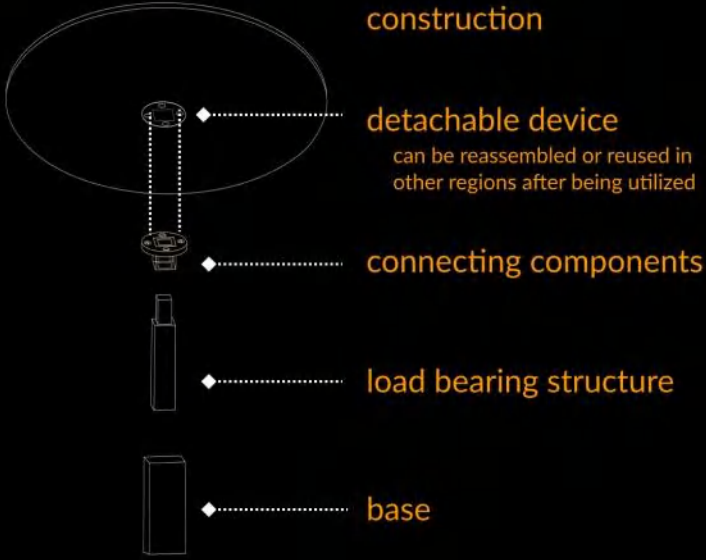
## Transforming nodes

The street corner space around the commercial district is mainly used for the construction of temporary pop-up stores and urban furniture, while the space closer to residents' living spaces is improved for the external environment of the stores.

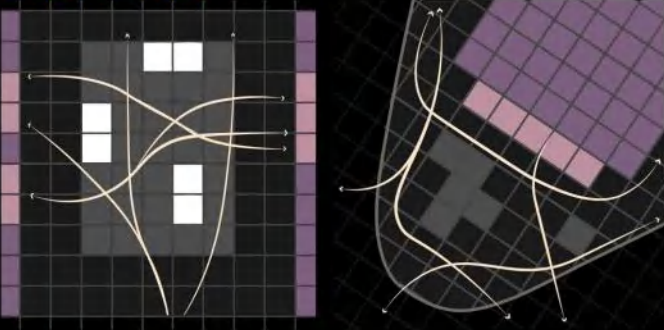




# IMAGINATION OF DESIGN | POP-UP STORE



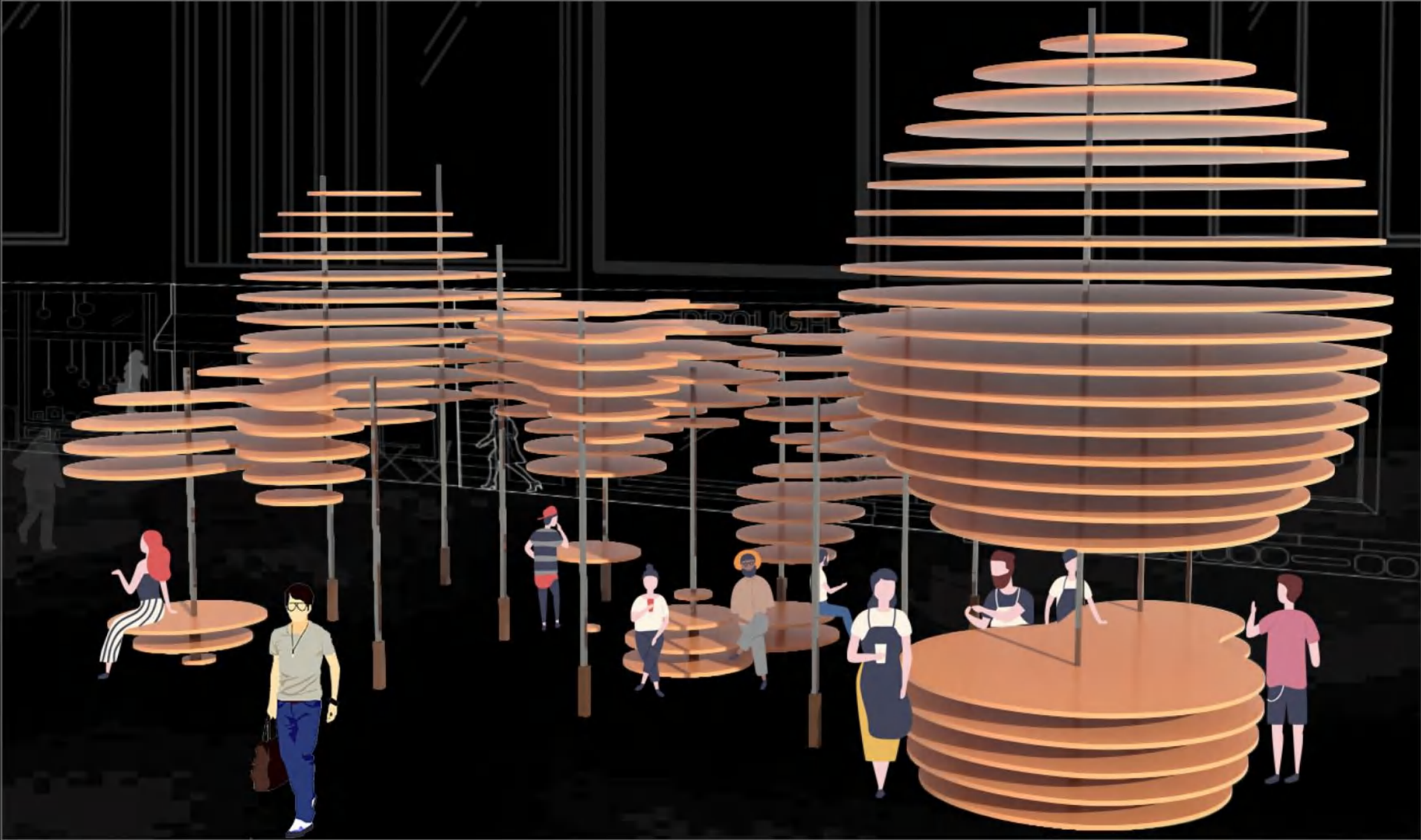
## Classification



- long-term stay area used as pop-up stores or urban furniture
- short-term stay area used as urban furniture
- passage space
- mall
- mall entrance
- possible routes for citizens

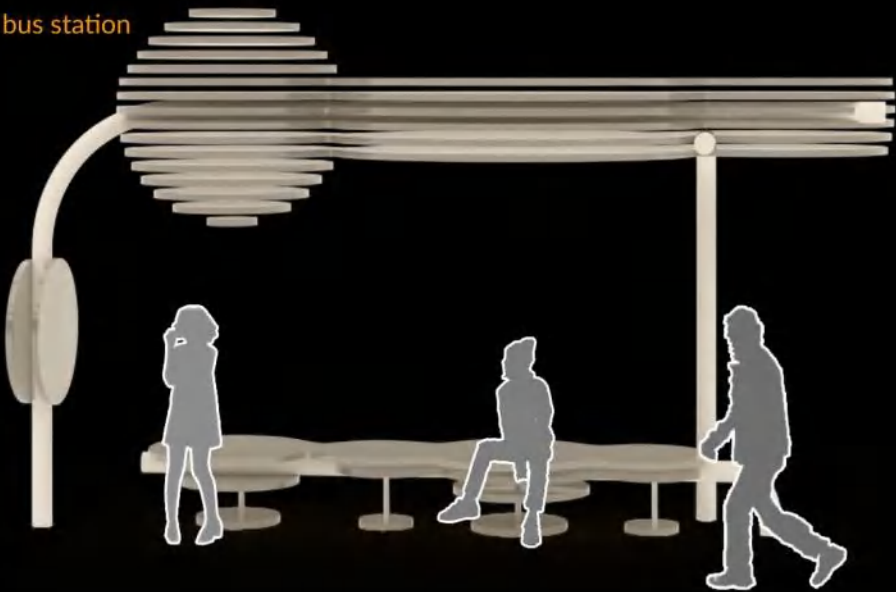
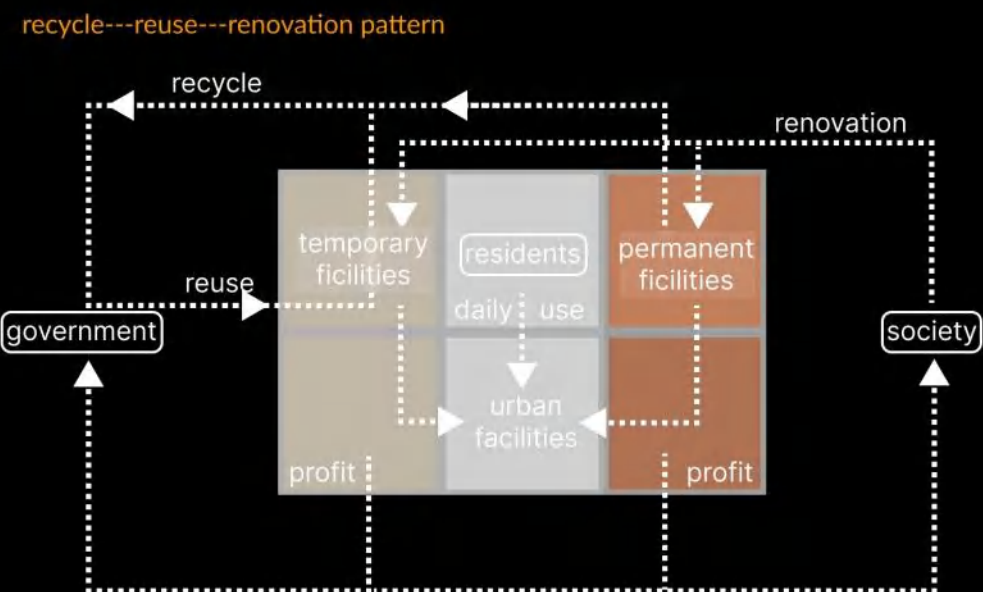
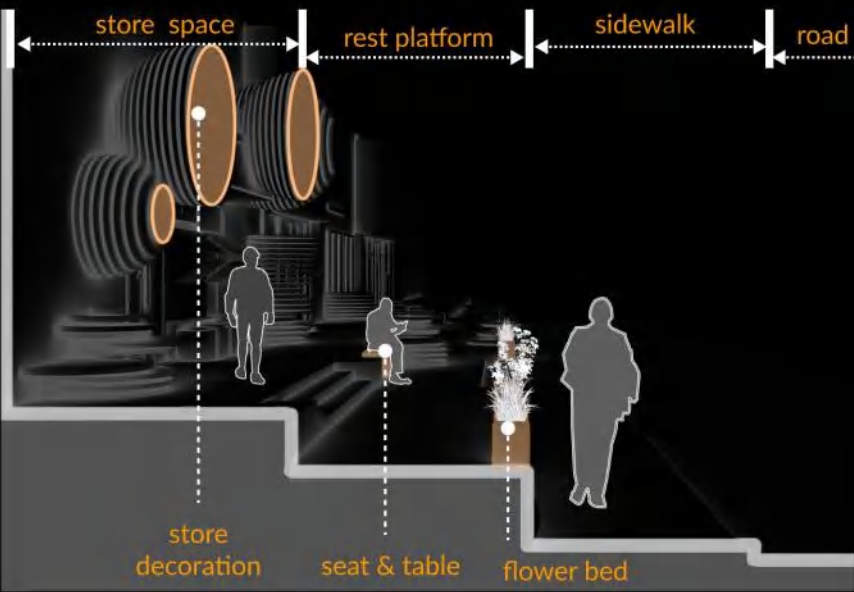
By analyzing the corners of urban blocks, several types of usable spaces are identified. Select plots of land that can be used for long-term stays as pop-up stores or urban furniture for society and government to provide certain living or commercial services to citizens.

The government selects a certain period of time each year to lease land that can be used as pop-up stores to the society for the promotion of its own brand and industry. At the same time, the government can also carry out activities or operations in these areas with local characteristics as the theme

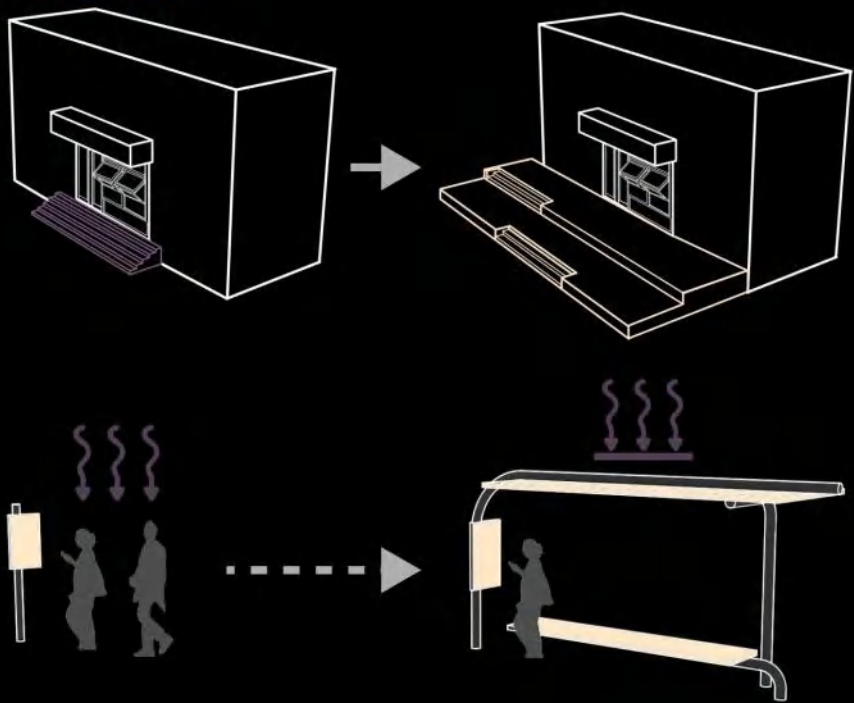




# IMAGINATION OF DESIGN | STREET RENOVATION



## Before/After



Through the recycling of materials, the remaining materials will be used for street renovation and the construction of some infrastructure. Recycling of materials ensures that all materials used for the construction of temporary facilities and pop-up stores are not wasted, but become a part of urban development.

The simple facility structure and alternative building materials ensure the diversity of limited spaces in the city, and such experimental renovations of urban spaces can be continuously updated in the future.





# Historical City Reimagined

- Site: Wuhan, China
- Theme: History, Communication
- Accademic year: 2023——2024

The project focuses on the balance of the relationship between tourists and residents in the old concession area of Wuhan in the context of an aging population and the use of urban public space. Through the renovation of old blocks, the efficiency of space use by different groups of people is strengthened, and the communication between people is promoted, so as to realize the inheritance of cultural memory of the site.



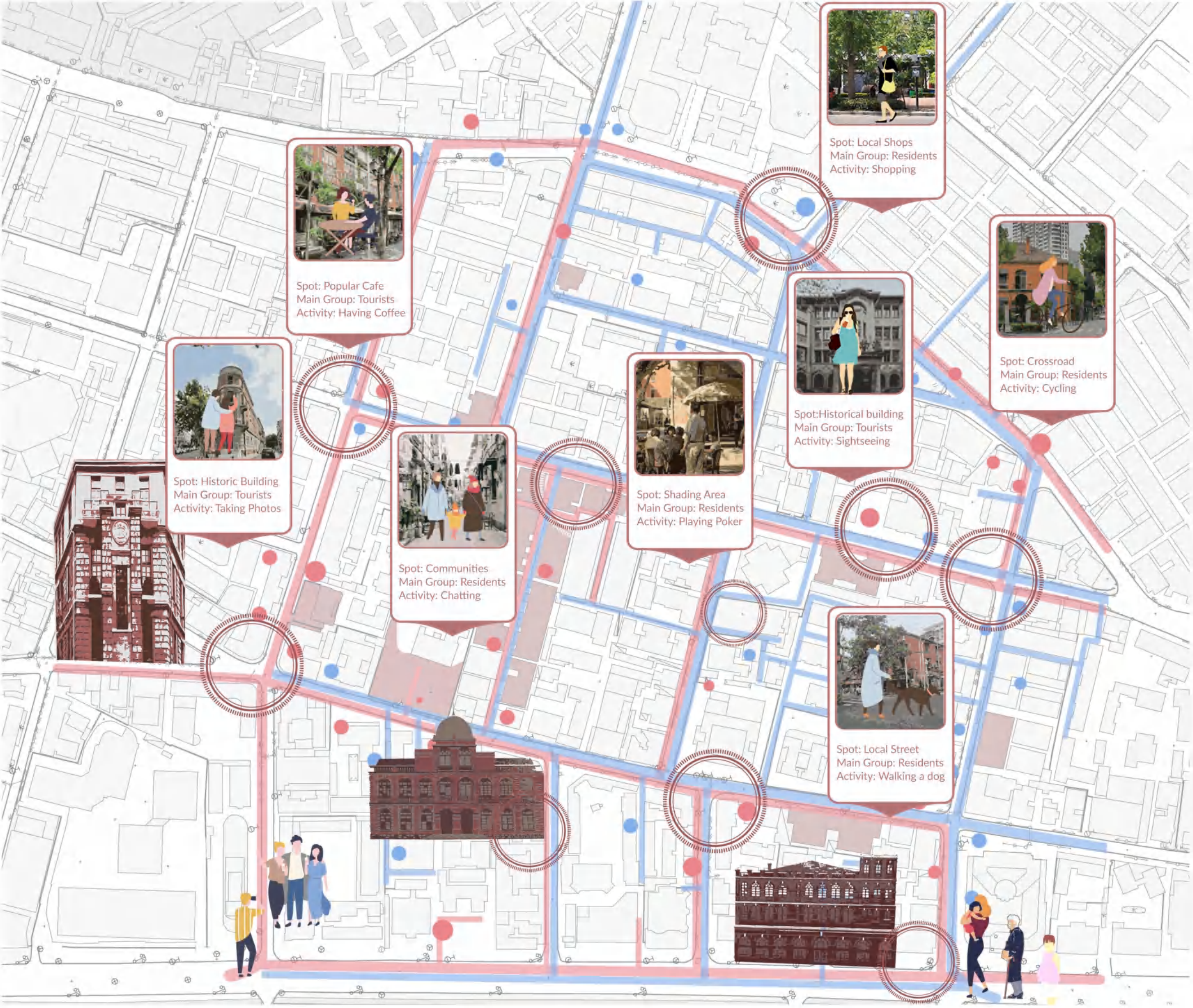


# URBAN NETWORK STRATEGY





# URBAN NETWORK STRATEGY



**Site Hotspots & Routes**  
Residents and tourists have different interests, leading them to take separate routes: tourists flock to famous sites and trendy spots, while residents prefer local community spaces.

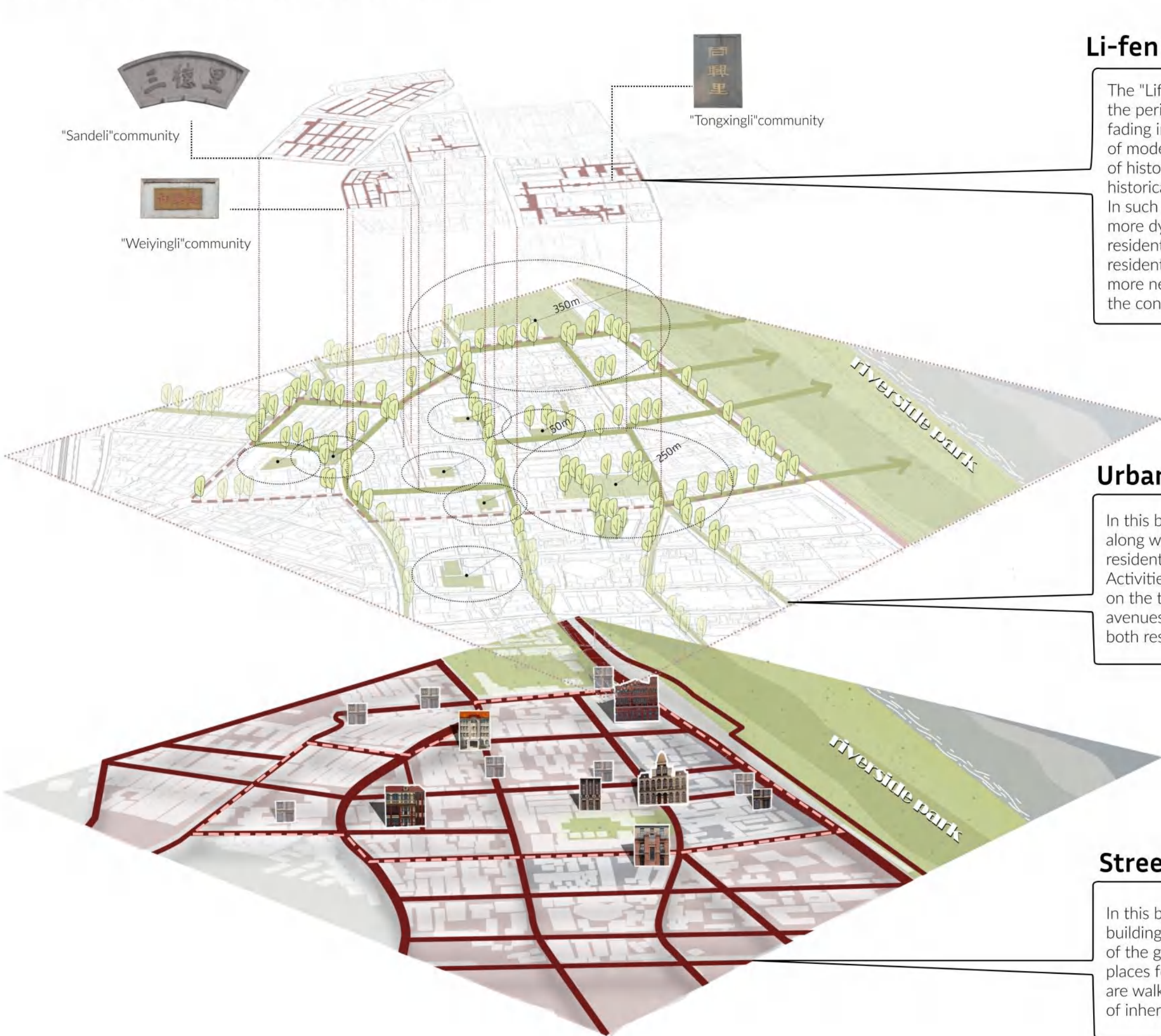
**Question**  
How could two groups get more communications at the same time not to disturb the local residential areas by introducing too much tourism?

**Potential Interventions**  
Other than transforming the existing residential areas into hot spots, the goal is to find the intersections between the two groups routes, then forming the new hot spots welcoming two groups to achieve more communications.

- Residential Spots
- Tourist Spots
- Residential Routes
- Residential Routes
- Potential Interventions (Intersections between Residential Routes and Tourist Routes)
- North



# URBAN NETWORK TYPOLOGIES



## Li-fen Memory

The "Lifen," a unique form of special residential street during the period of the old concessions in Wuhan, is gradually fading in time, becoming less and less able to fit the lifestyle of modern society and disappearing under the rolling wheels of history. Along with it quietly fading away is the precious historical memory about Lifen.

In such a block full of historical memories, I attempt to create more dynamic spaces in the ordinary places where the residents carry out their daily activities. As a result, every resident within it will have a more colorful form of life, and more new blood will pour into this old community to inherit the continuous memory of Lifen.

## Urban Greenway

In this block, a rich greenway slow-traffic system has emerged along with the modernization construction of the city. Urban residents have a higher pursuit for more ecological streets. Activities including cycling and walking are carried out relying on the tree-lined avenues here. At the same time, these avenues will also become important slow-traffic spaces for both residents and tourists.

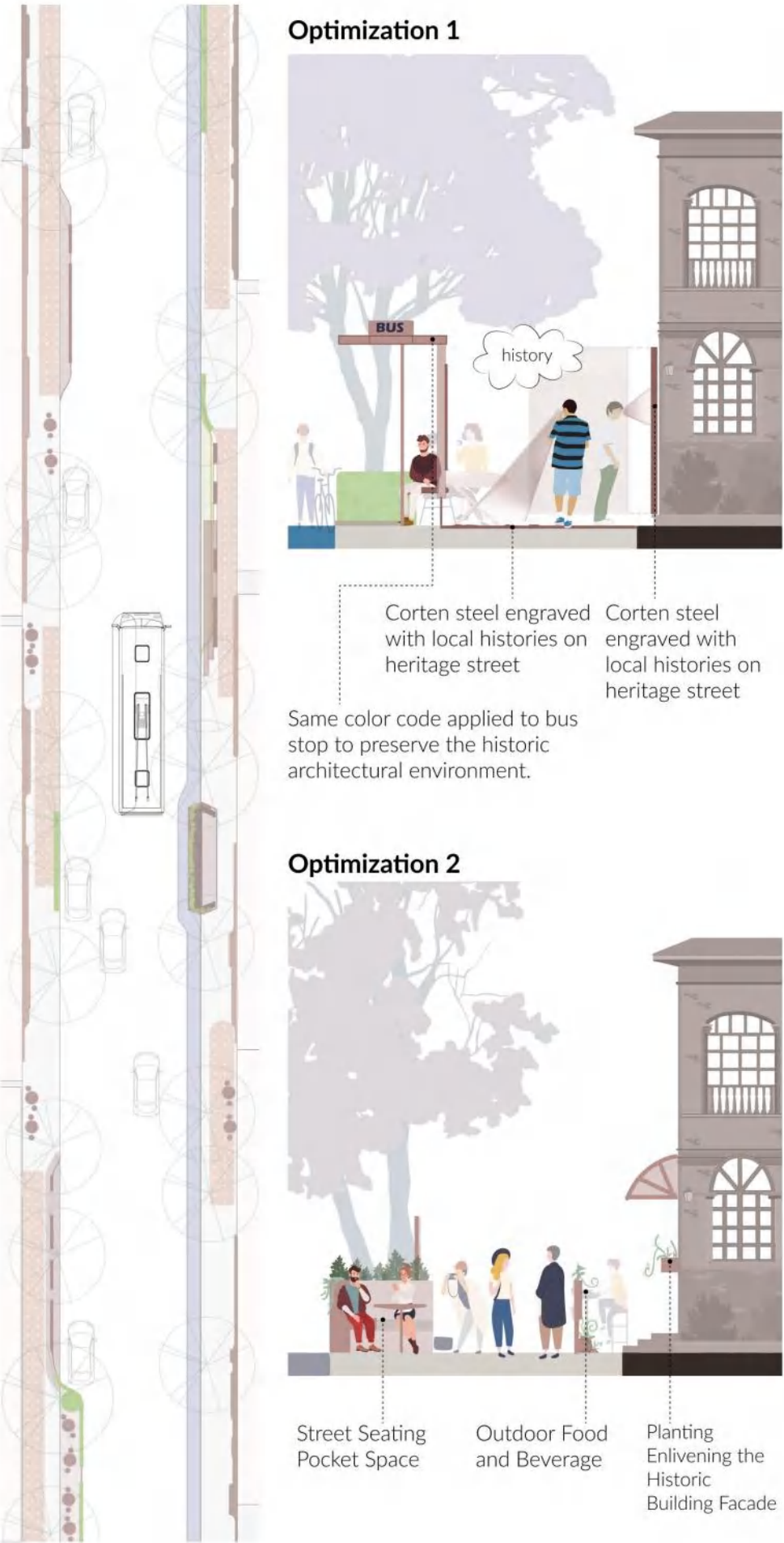
## Street Historic Museum

In this block with a long history, it contains various historical buildings over the past hundred years. Under the renovation of the government, these building complexes have become places for a large number of tourists to visit. While residents are walking in the city, they also shoulder the important task of inheriting the city's history.

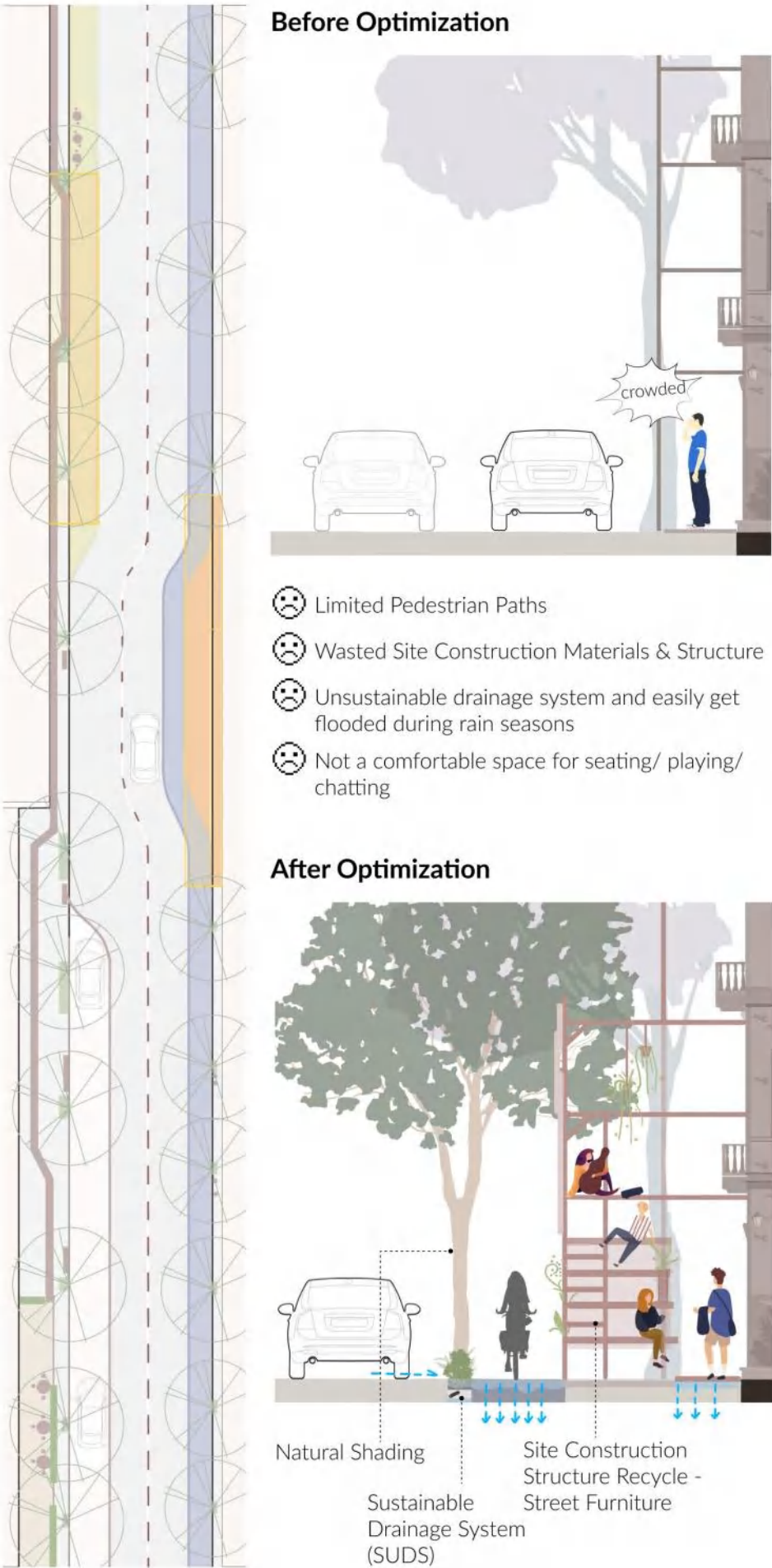


# URBAN NETWORK DESIGN DETAILS

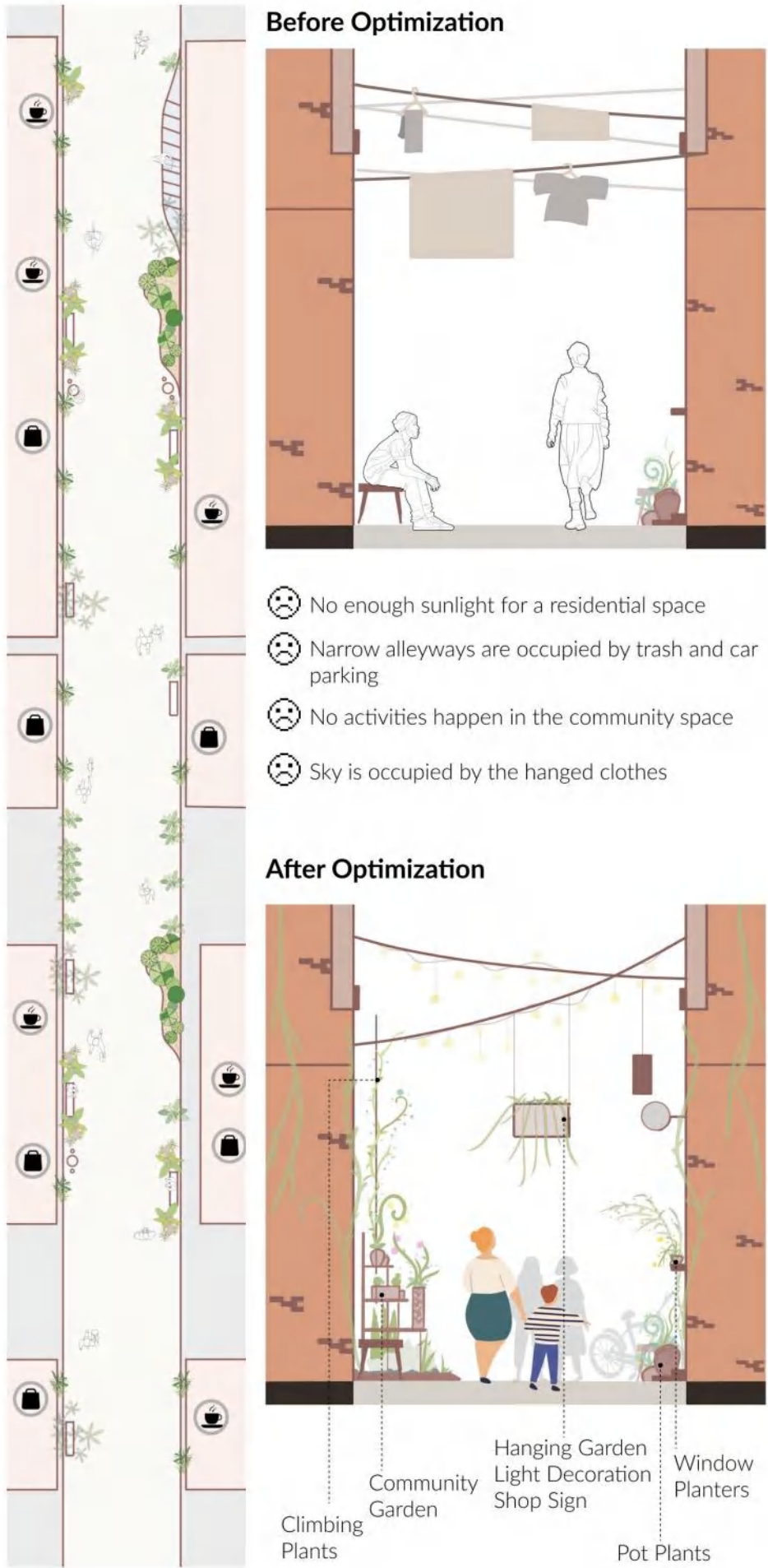
## Type 1 - Street Historic Museum



## Type 2 - Urban Greenway

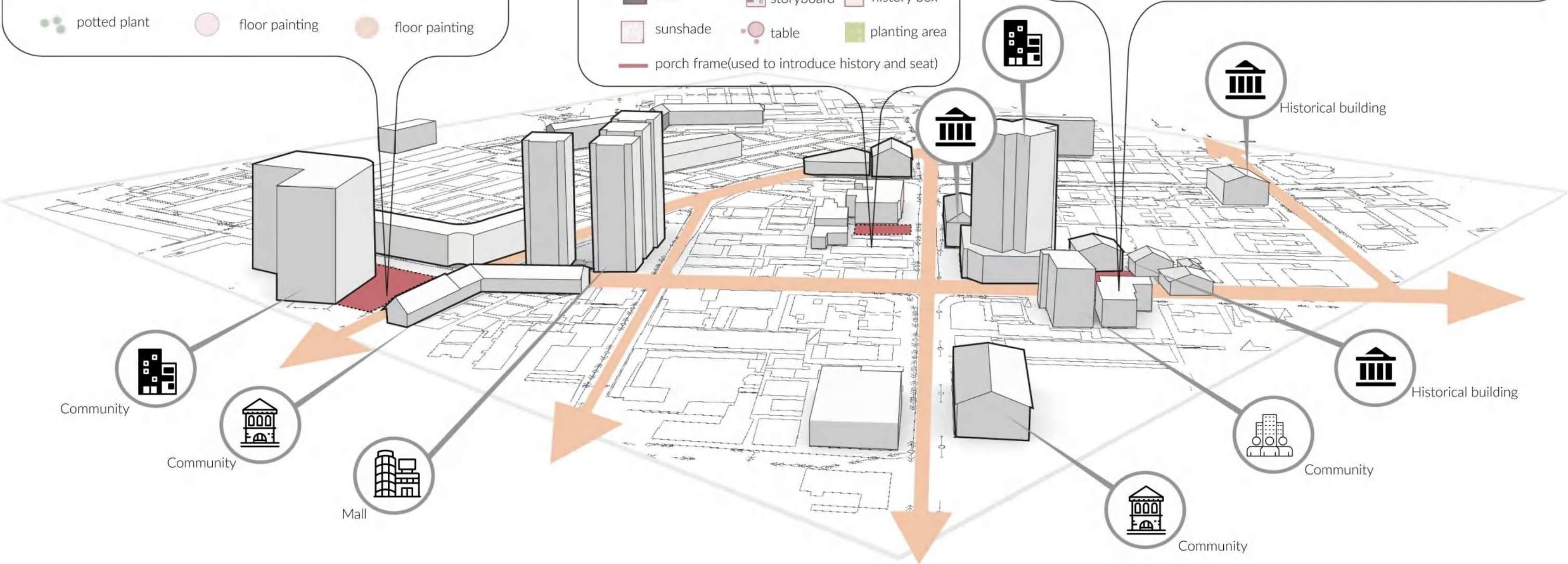
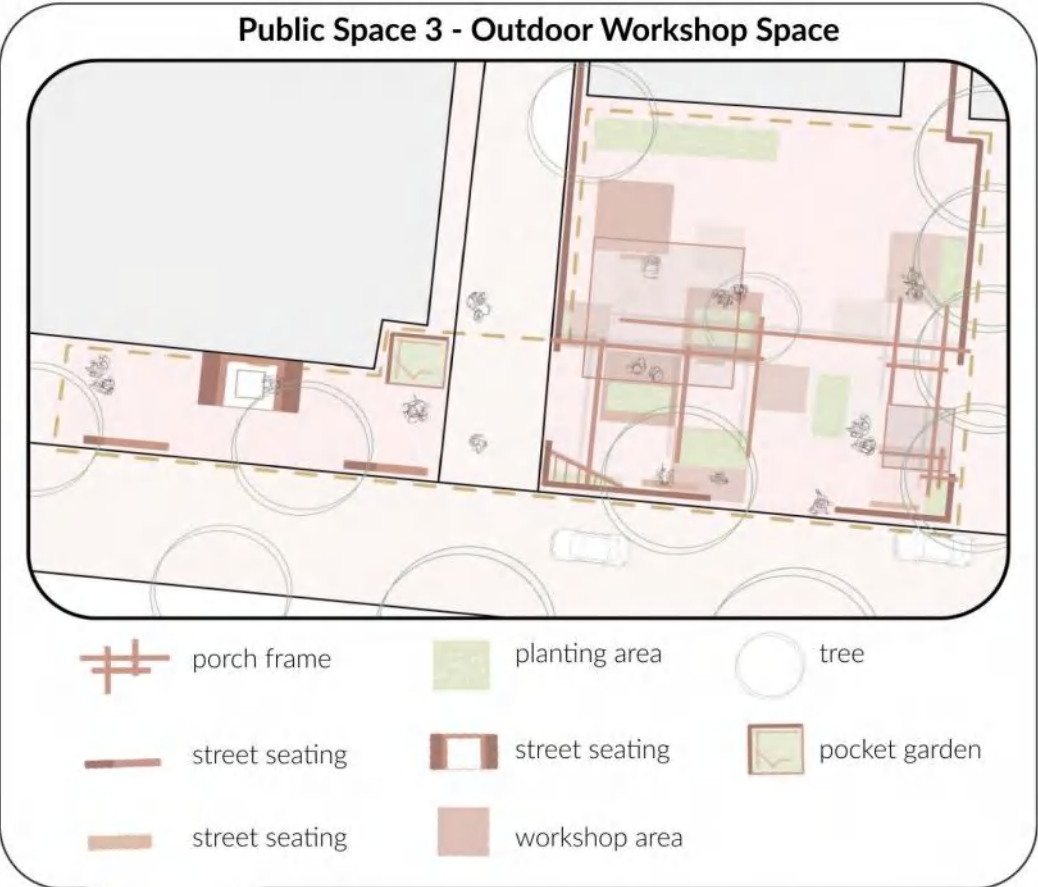
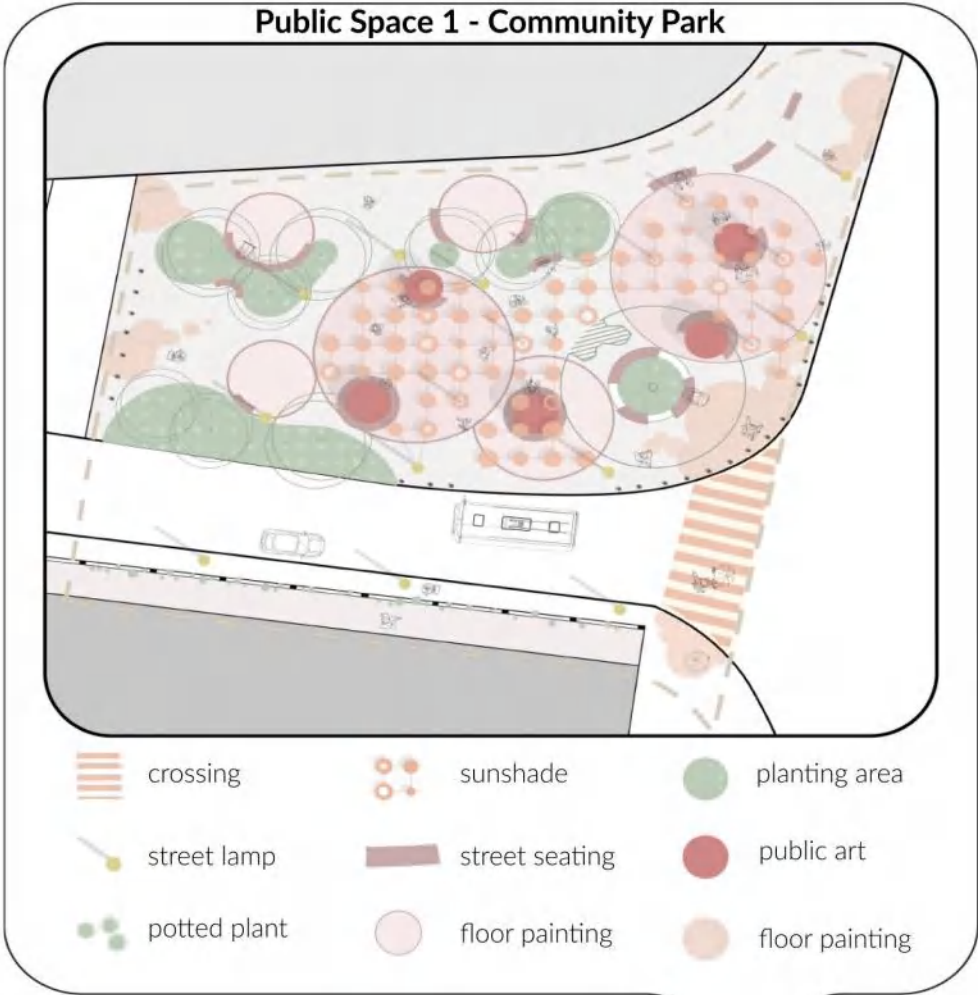


## Type 3 - Li-fen Memory





# NEW PUBLIC SPACE GENERATION

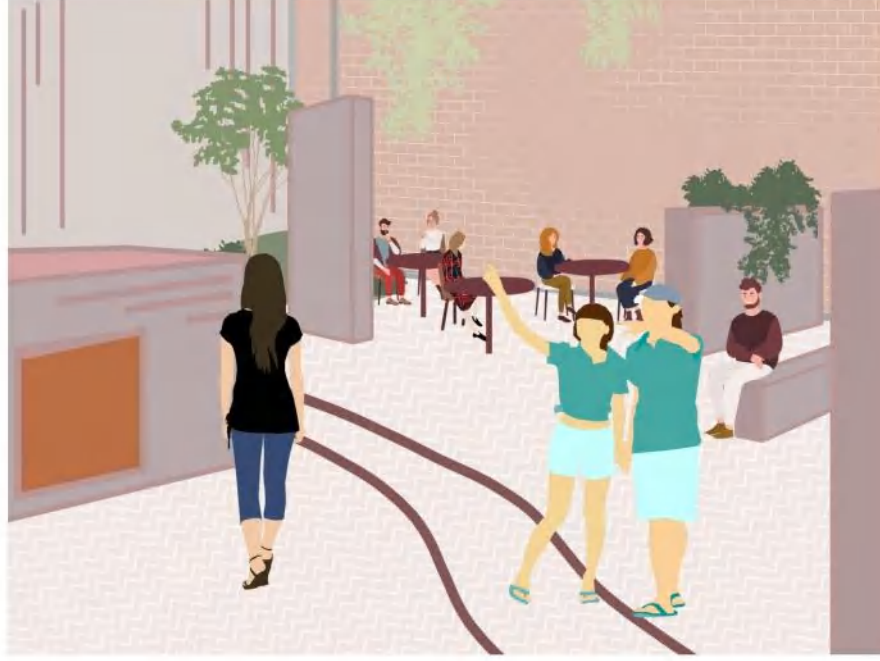




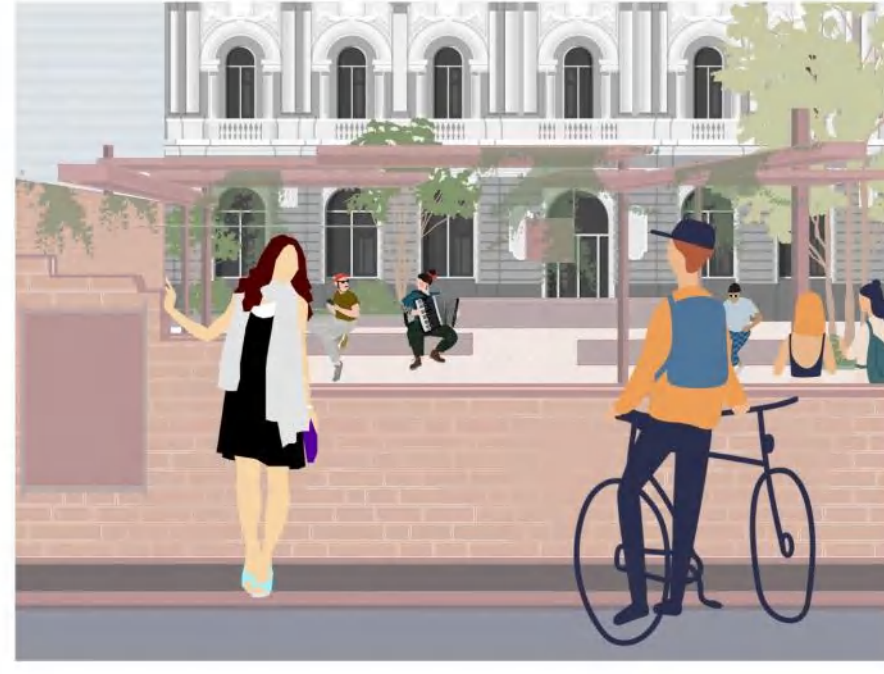
Public Space 1 - Community Park



Public Space 2 - History Plaza



Public Space 3 - Outdoor Workshop Space





# Graduation Project

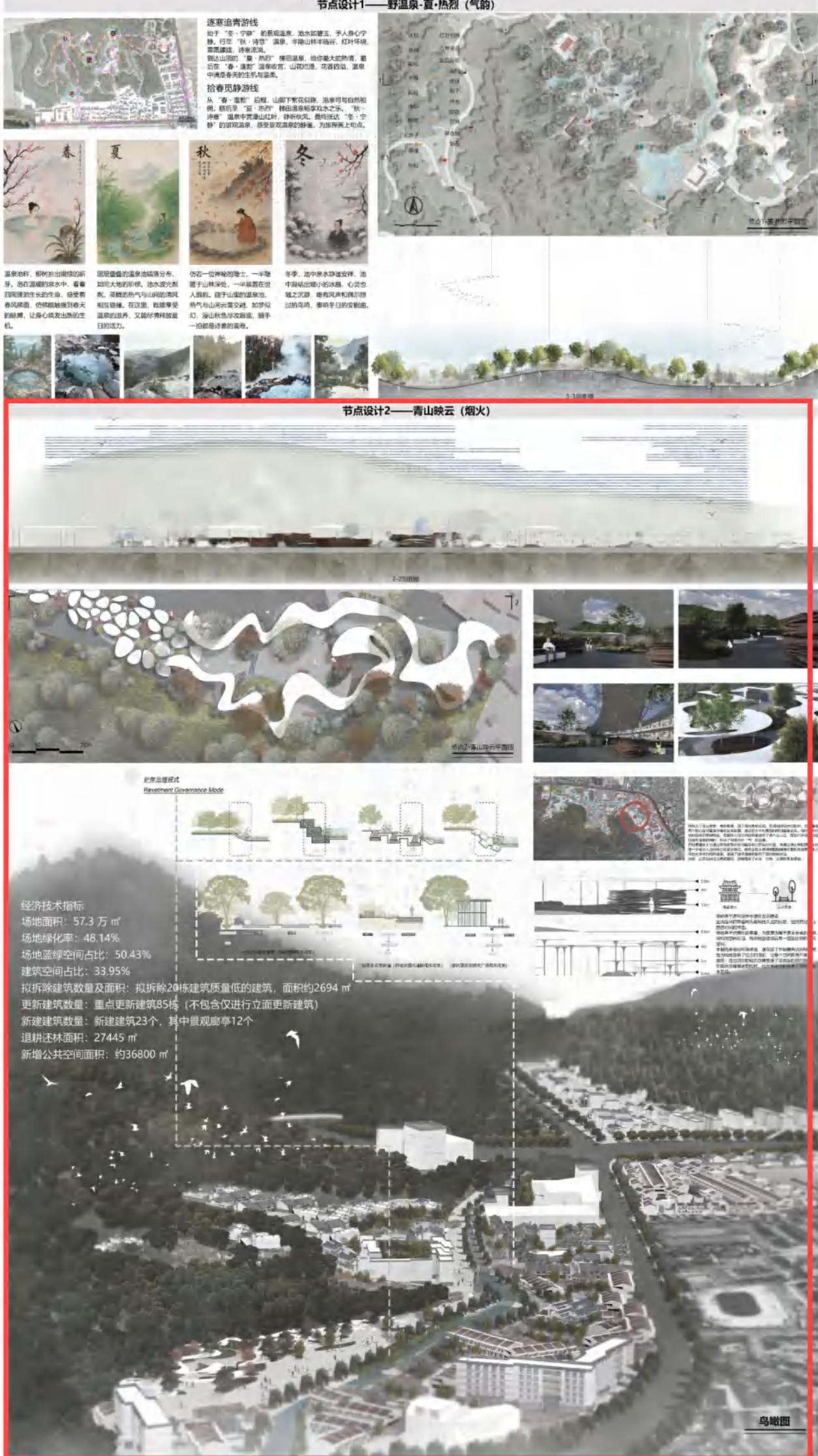
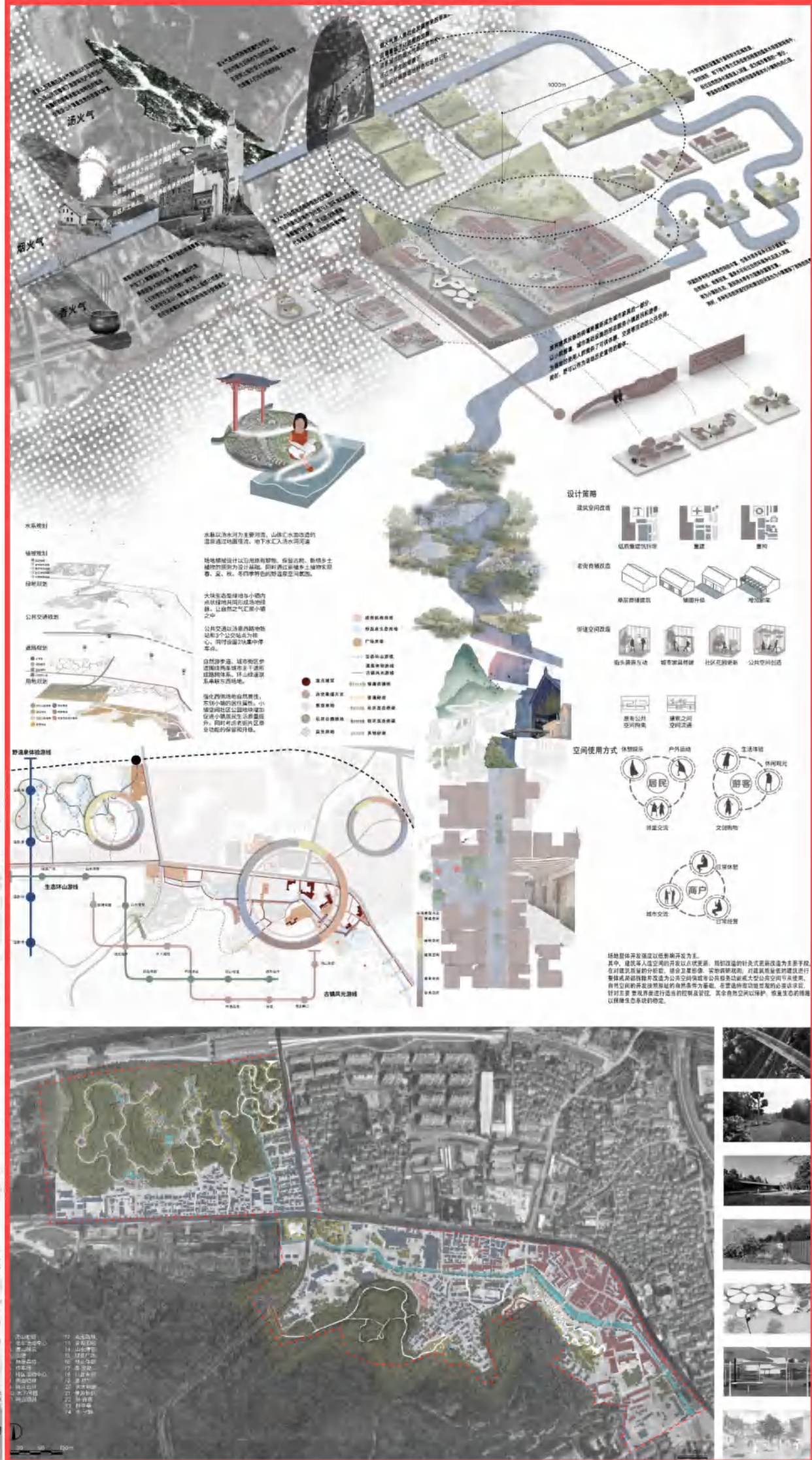
Theme: urban landscape renewal planning and design

Site: Tangshan Northern Foothill area in Nanjing City, Jiangsu Province.

Academic year: 2025

Type: Team project (production of mine is framed)

Based on the current situation of the site's development and the surrounding regional conditions, a transitional plan and design based on the higher-level plan has been made for the landscape of the Tangshan ancient market town area. Through further updating and repairing the planning of this area, the Tangshan town will be revitalized and show the modern vitality of the ancient city.



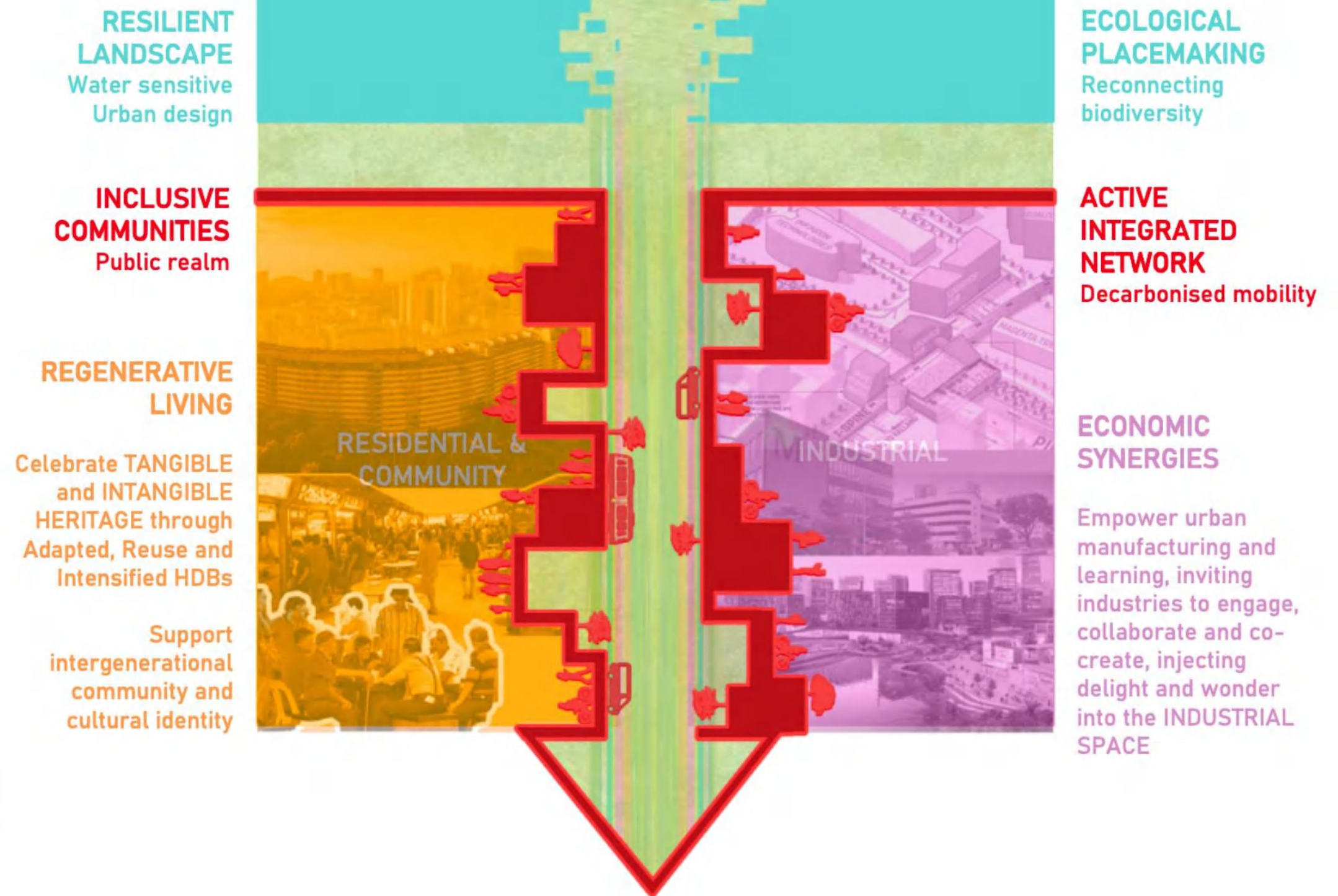


# Living Corridors

- Site: Sungei Whampoa, Singapore
- Theme: Regenerative urban design, Tropical urban design
- Accademic year: 2025
- Type: Team Project (group with 7 people and everyone participate in every stage, final production of mine is framed)

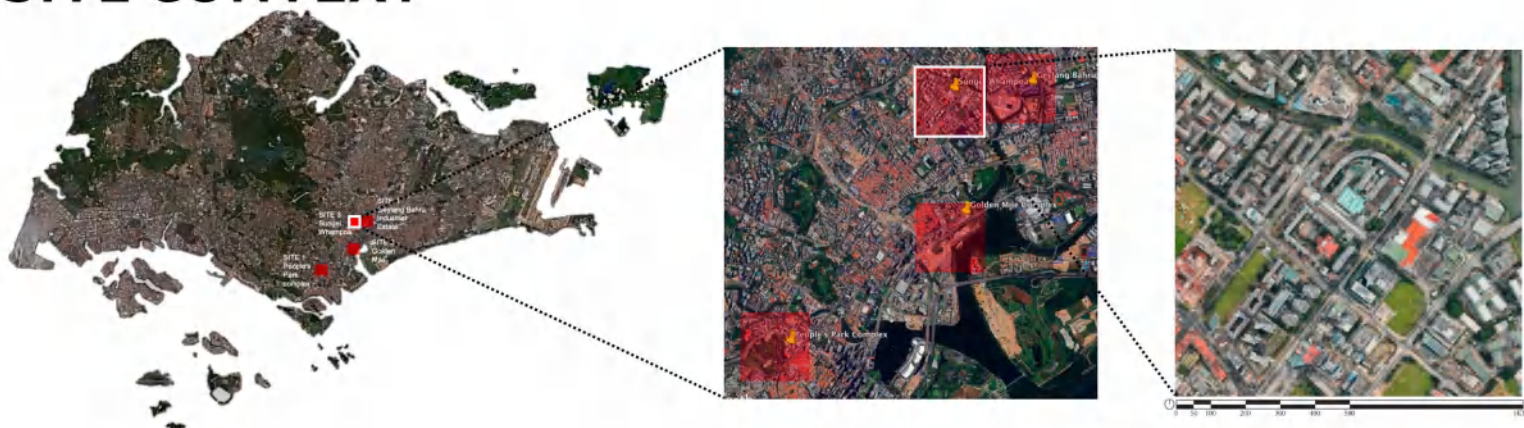
Inspired by the Metabolism movement, envisioning cities as living, growing systems, our barriers instead

- Become a space for ecological placemaking originating from the riverfront, integrating
- Decarbonized mobility with an active public realm, adapting the apparatus from mere housing and industrial activities
- To regenerative living that celebrates community heritage, as well as flexible, economic synergies.

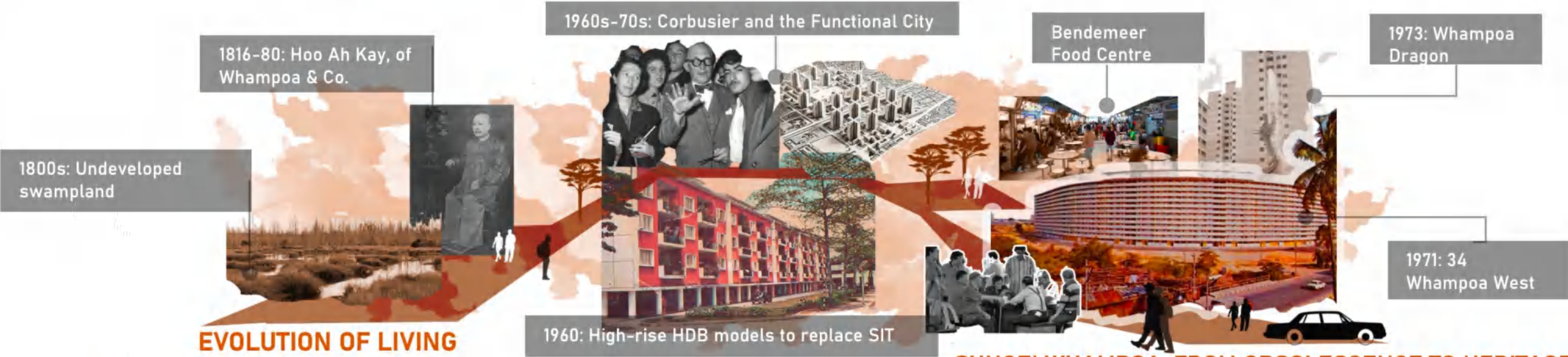




SITE CONTEXT



Transformed from a marshland and plantation zone in the 1960s, to one of Singapore's oldest HDB estates, Sungei Whampoa's identity stems from its diverse housing types—like the iconic 70s residential building typology and the neighbouring JTC industrial zone. However, car-oriented planning divided the site, isolating housing from industry along the Road, dividing communities and economies. This systemic deforestation and development also left the former marshland ecosystem fragmented and flood-prone. Yet, these very divides can transform to bridge the ecology, and answer these questions: Can the Sungei Whampoa be brought from obsolescence to heritage? And can the JTC sector become more than just an industrial zone?



SUNGEI WHAMPOA: FROM OBSOLESCENCE TO HERITAGE?



POTENTIAL: USING THE DISCONNECTORS TO BRIDGE TO DISCONNECTED

LINK ECOLOGY AND MOBILITY

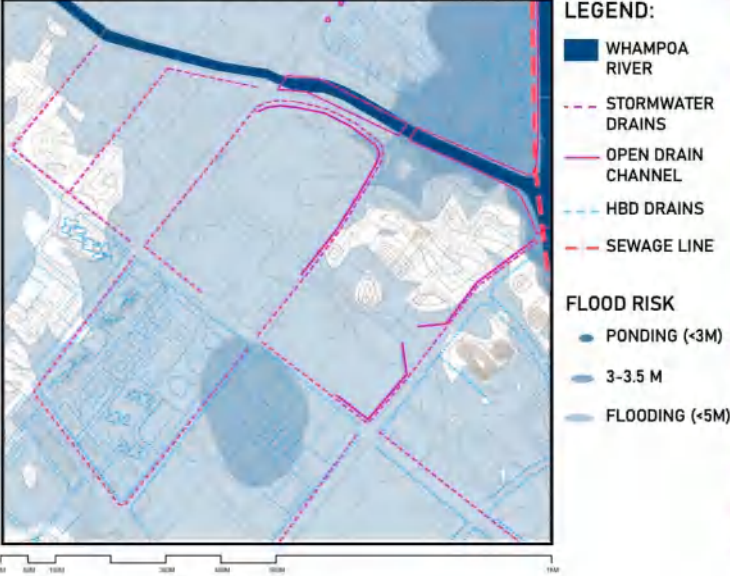


MORE THAN JUST A PLACE TO WORK?

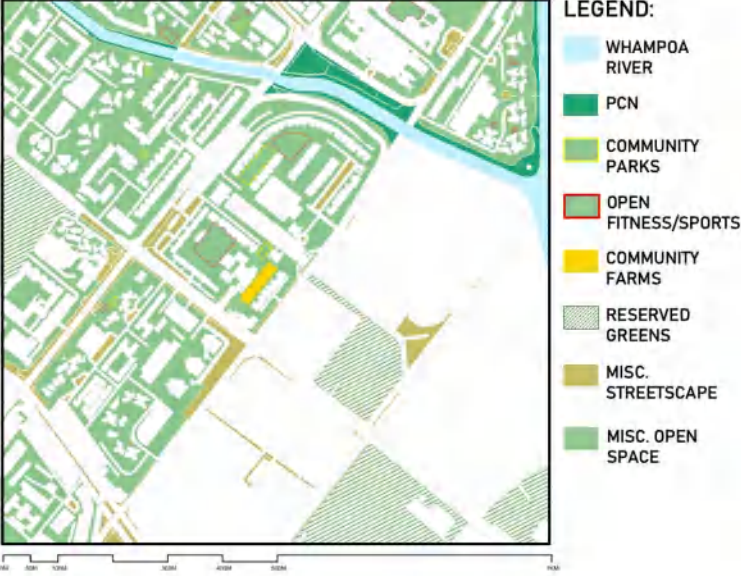


# SITE ANALYSIS

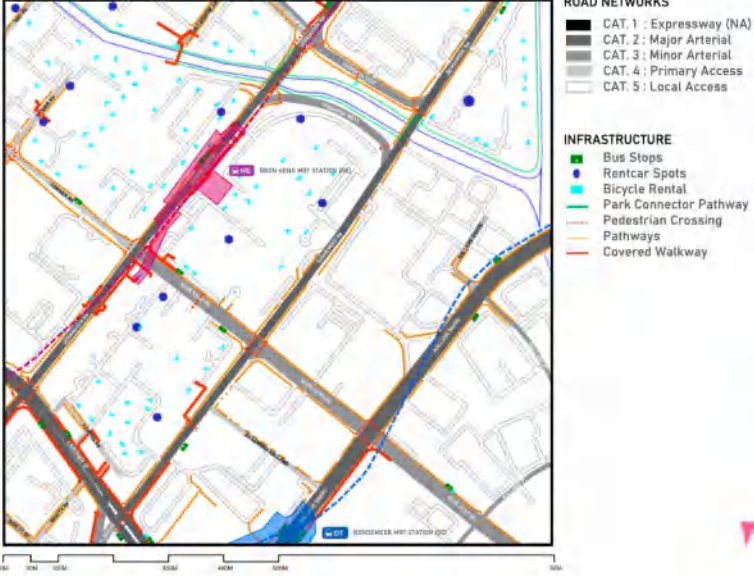
## CLIMATE RISKS



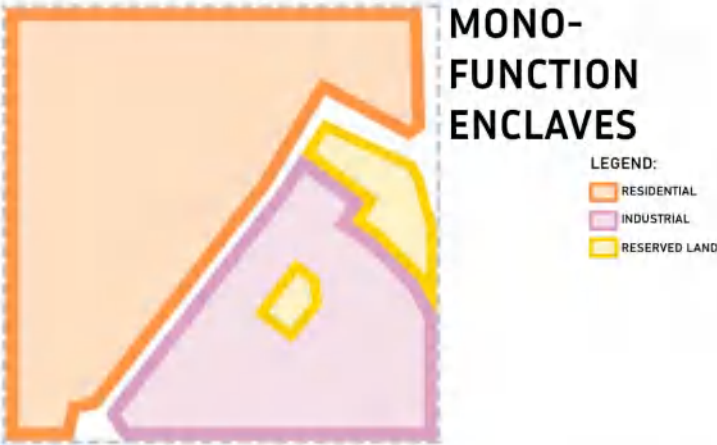
## ECOLOGICAL NETWORK



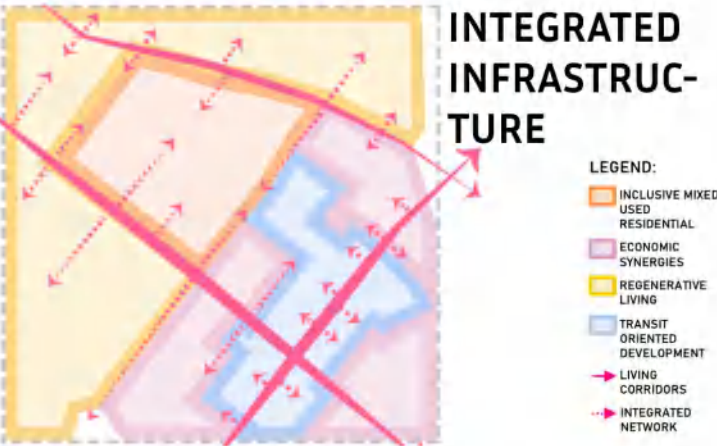
## MOBILITY CONDITION



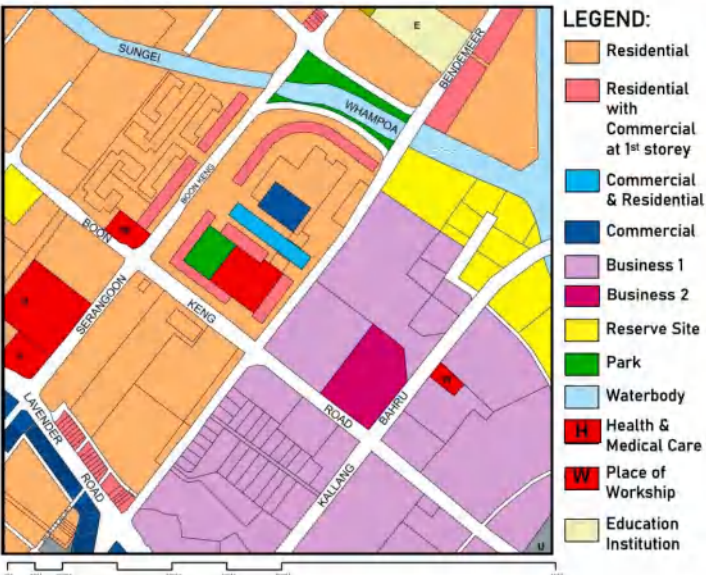
## MONO-FUNCTION ENCLAVES



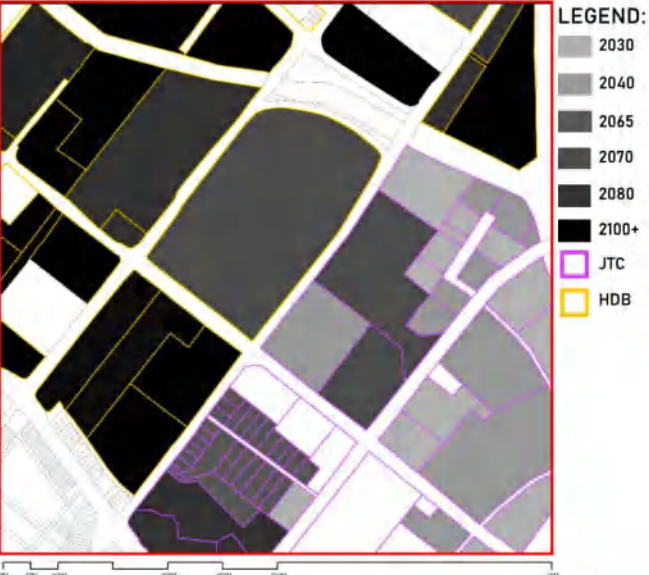
## INTEGRATED INFRASTRUCTURE



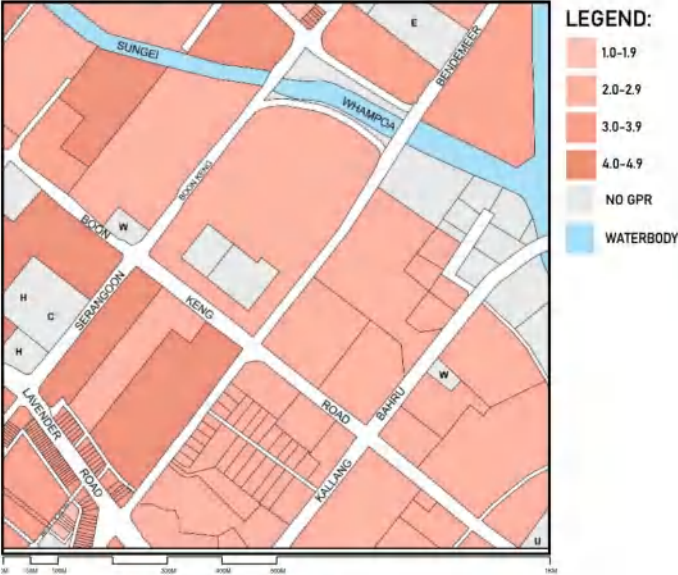
## LAND USE



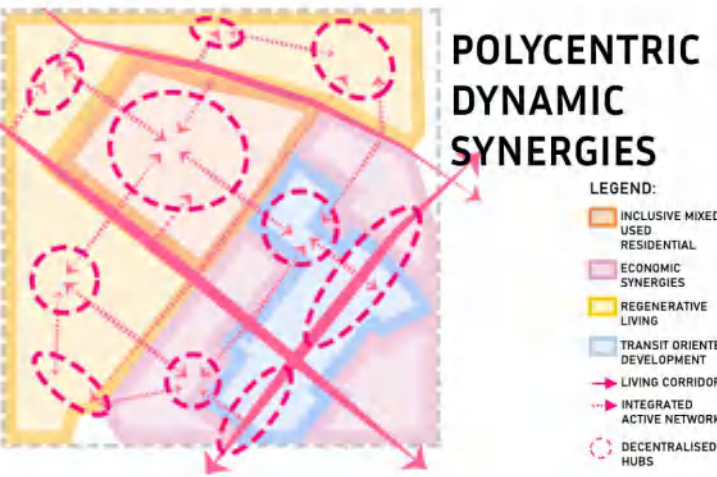
## LAND LEASE



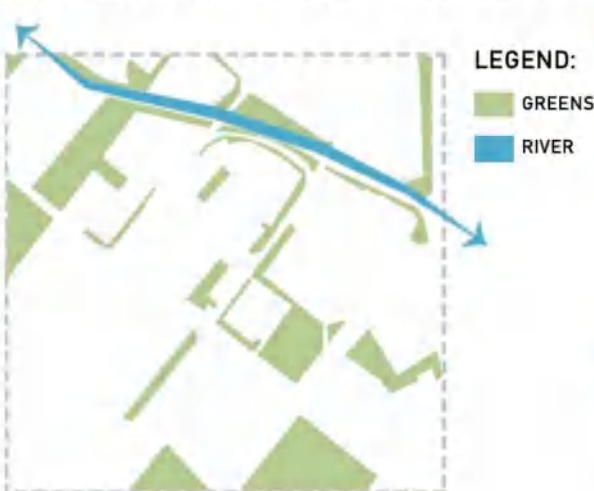
## PLOT RATIO



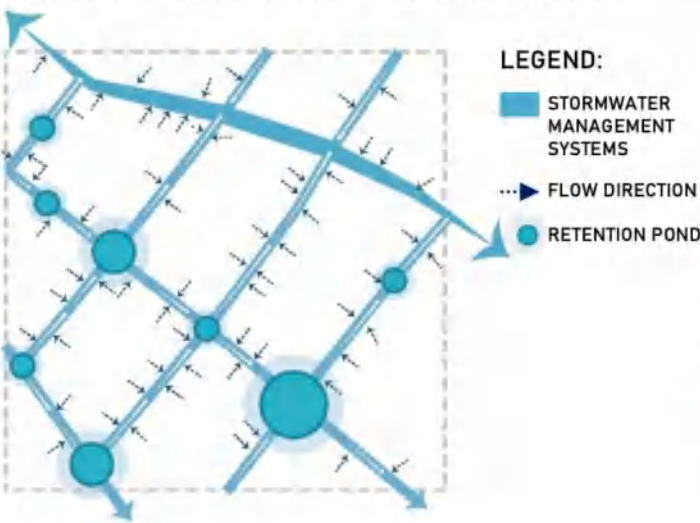
## POLYCENTRIC DYNAMIC SYNERGIES



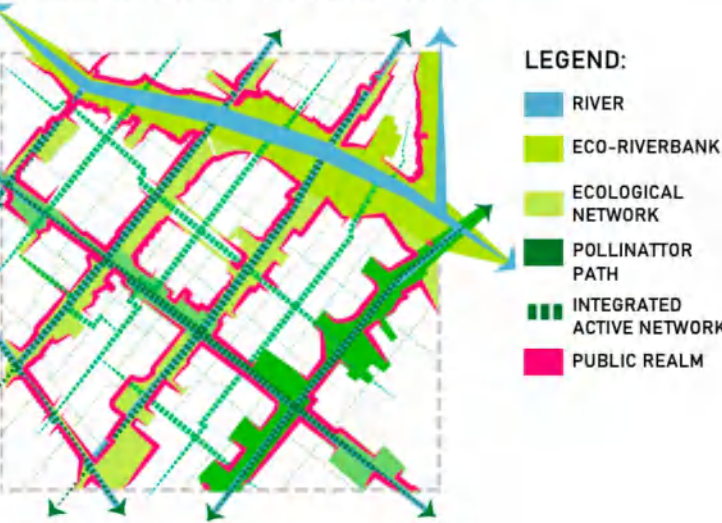
## FRAGMENTED GREEN AND BLUE



## WATER-SENSITIVE URBAN DESIGN



## ECOLOGICAL PLACEMAKING



Concepts elaborating a multi-system armature addressing ecology, mobility and communities.

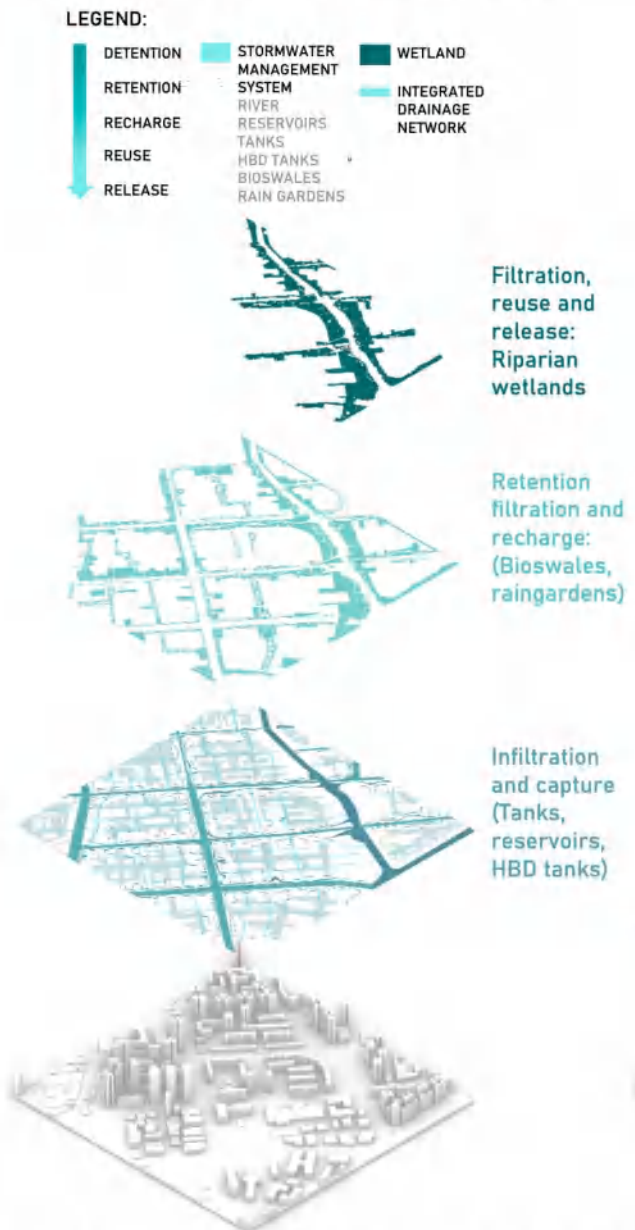
Through water-sensitive urban design, transforming into an integrated stormwater management system and an integrated network that fosters biodiversity, climate and community resilience.

The same axes connect various spaces and user groups in our segregated site, by identifying potential urban catalysts and fostering inclusive communities and economic synergies.

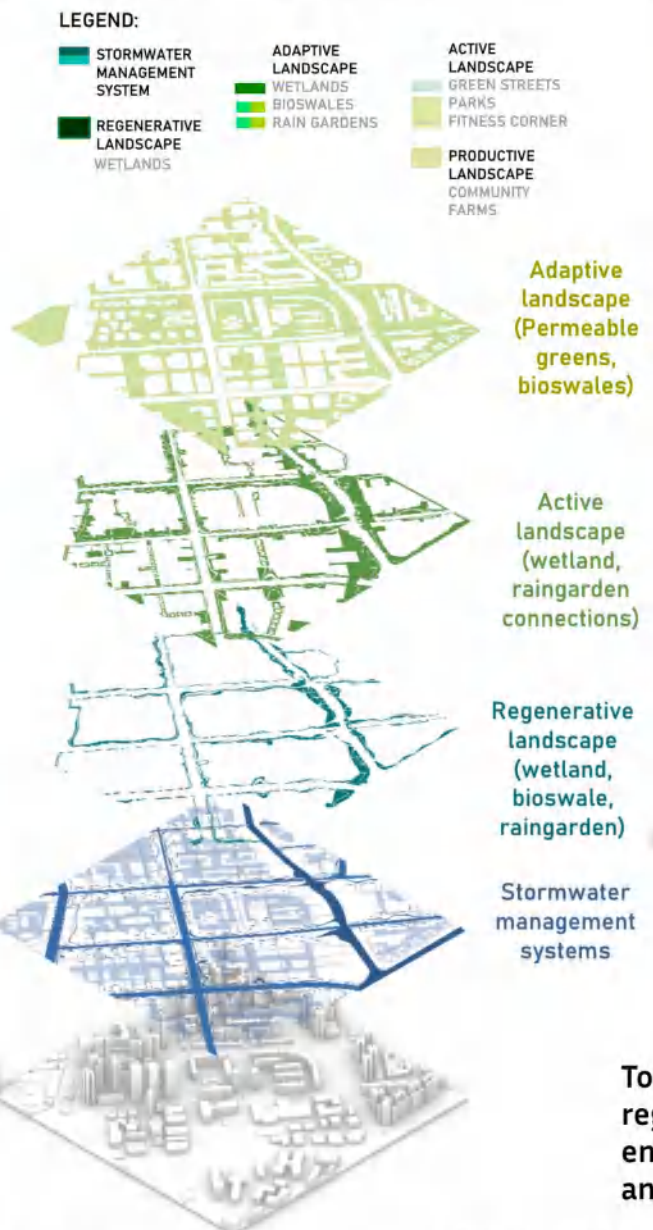


# DESIGN STRATEGY - URBAN ARMATURE

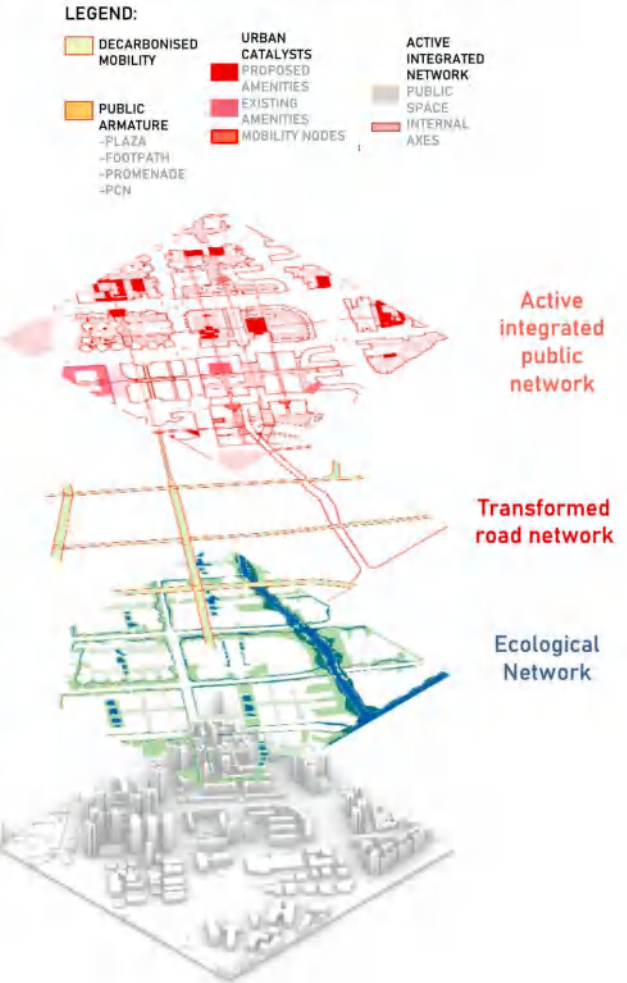
## STORMWATER MANAGEMENT



## ECOLOGICAL NETWORK

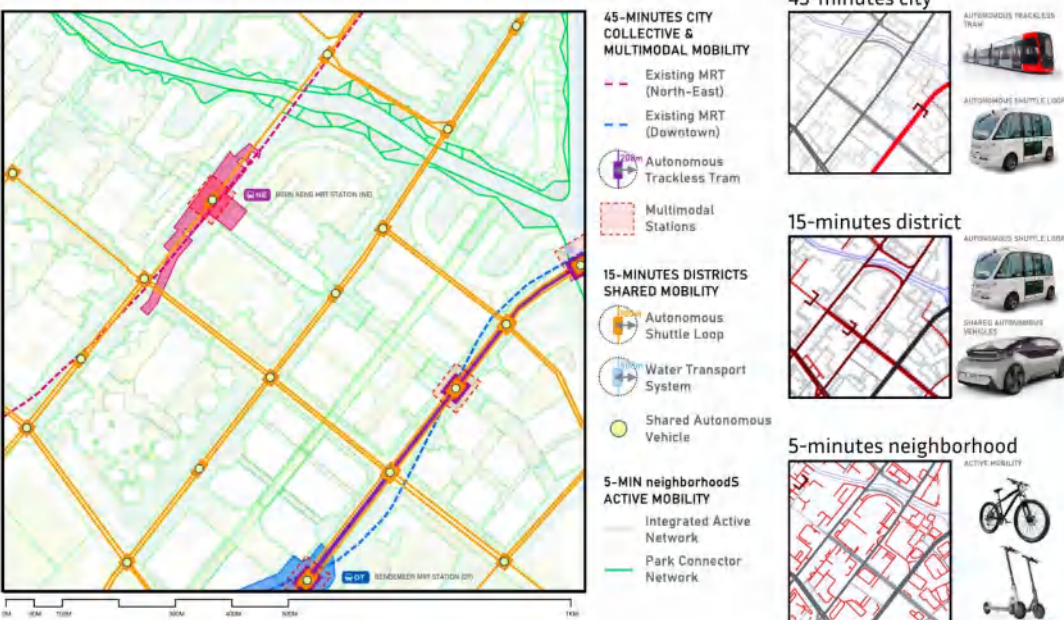


## ECOLOGICAL PLACEMAKING

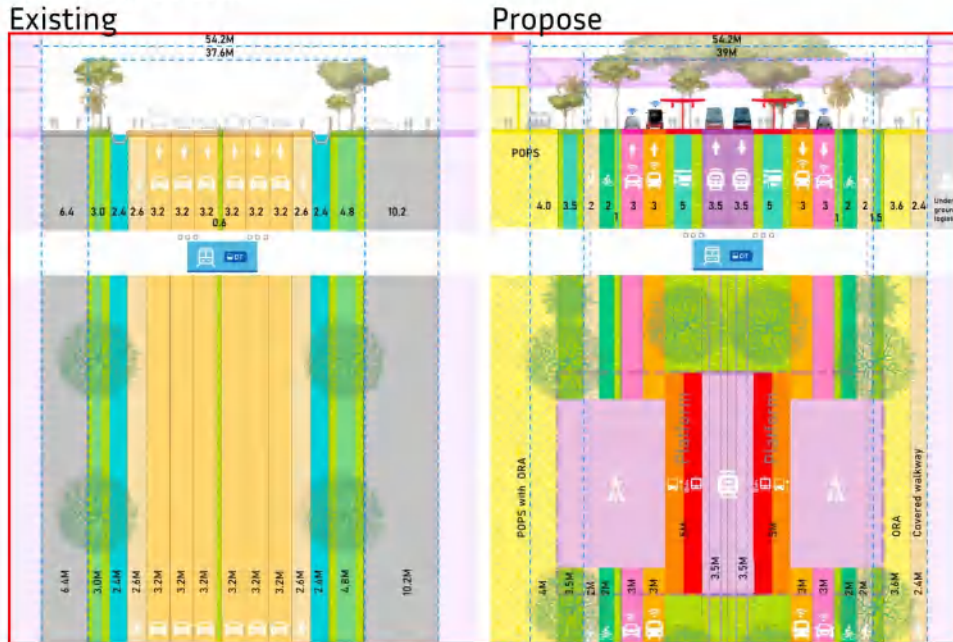


To promote a decarbonized, car-lite and regenerative city, a strong urban design strategy emphasis integrated urban armature is formed and ties the urban fabric together.

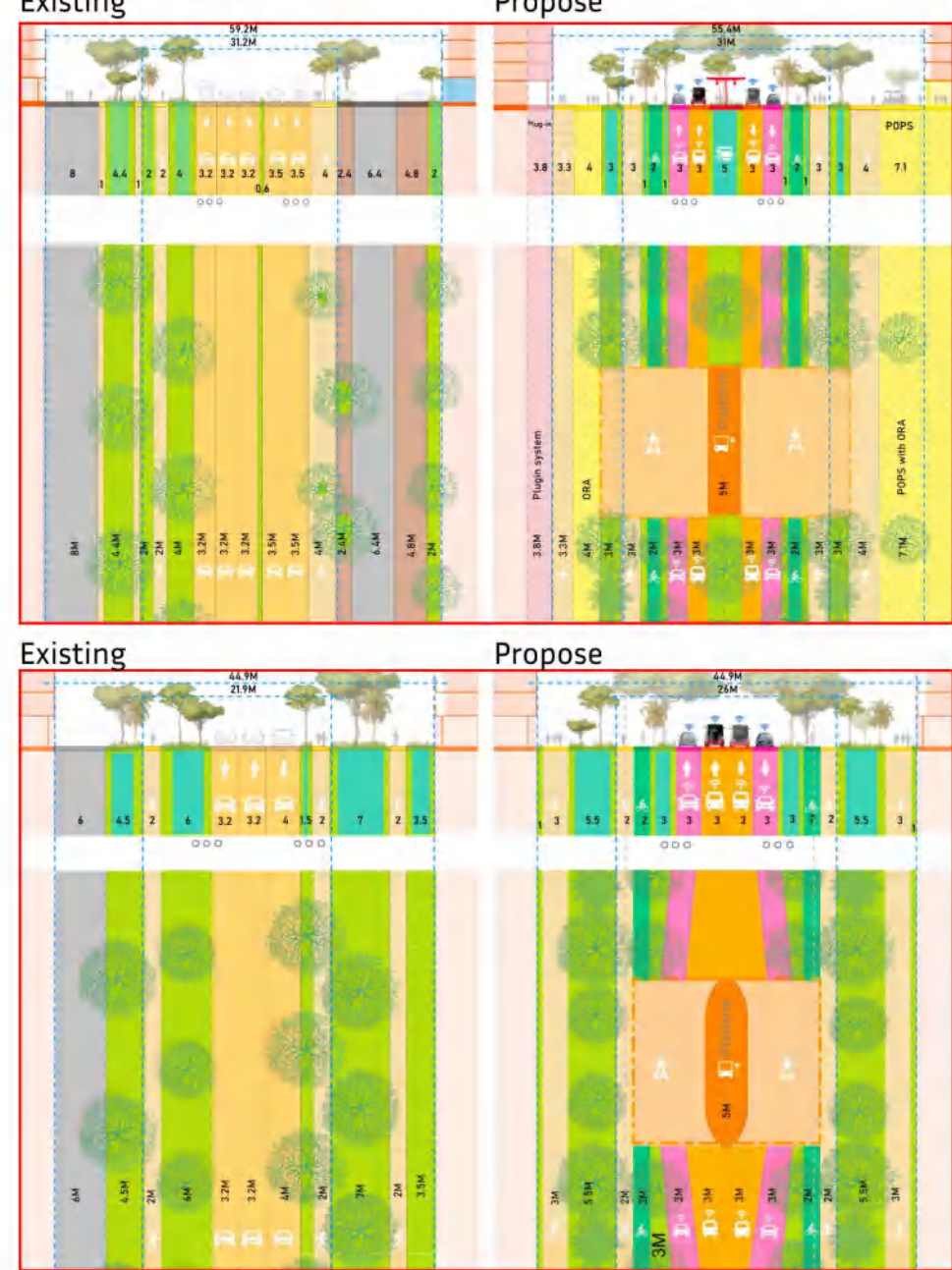
## DECARBONISED MULTI-MODAL MOBILITY



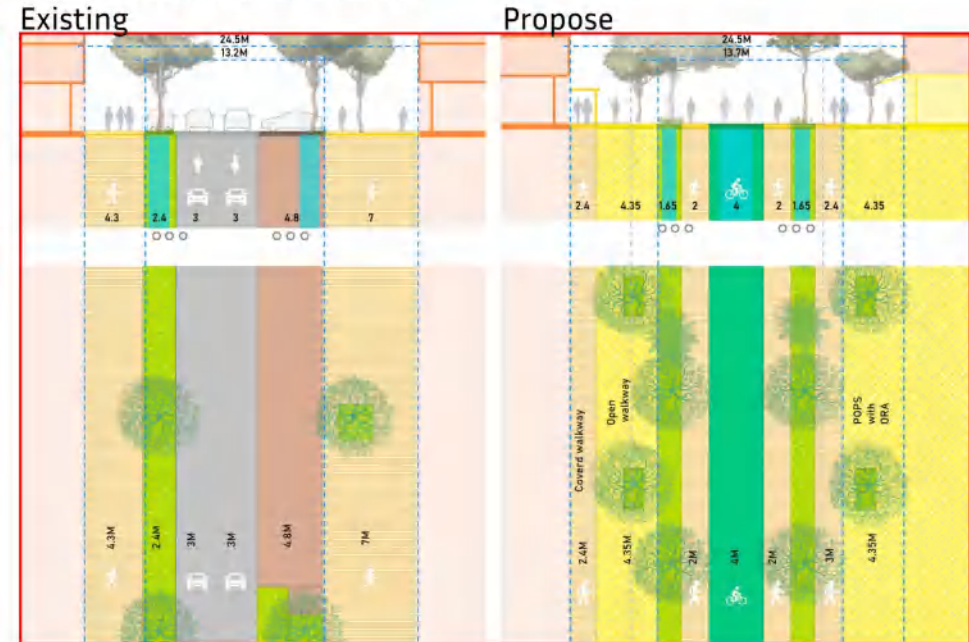
## 45-MINUTES CITY



## 15-MINUTES DISTRICT



## 5-MINUTES NEIGHBORHOOD





DESIGN STRATEGY - URBAN APPARATUS

2050 MASTERPLAN

2075 MASTERPLAN



URBAN DESIGN GUIDELINE



- LEGEND**

Connectivity

  - Wind corridor & cross ventilation
  - Axial landscape composition
  - Publicness composition
  - Ecological courtyard
  - Proposed amenities
  - Existing amenities
- LEGEND**

  - Residential
  - Commercial
  - Business 0
  - Waterbody
  - Education institution
  - To be redeveloped
  - To be developed
- LEGEND**

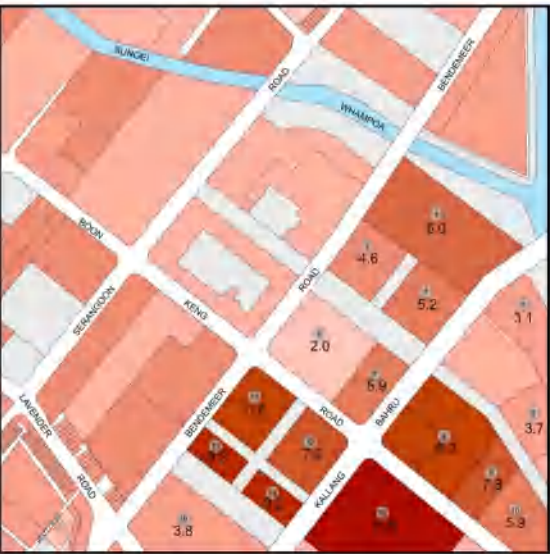
  - Edge condition
  - Ecology setback
  - Riverfront setback
  - Commercial continuity
  - Building alignment
  - Accessibility Porosity
  - Internal distribution
  - POPS
  - Mobility

LAND USE



- LEGEND**
- Residential
  - Commercial
  - Commercial & residential
  - Park
  - Business 0
  - Health & medical care
  - Education institution
  - Place for worship
  - Amenities
  - Residential with commercial at 1st story

PLOT RATIO 2050



Plot	PA / m²	POP	GFA / m²	GPR	Plot	PA / m²	POP	GFA / m²	GPR	Plot	PA / m²	POP	GFA / m²	GPR
1	45,363	5,022	273,495	6.0	6	21,611	0	42,026	1.94	11	12,722	578	109,220	8.6
2	14,820	828	45,942	3.1	7	10,175	317	59,896	5.9	12	12,739	514	97,176	7.6
3	11,421	278	52,420	4.6	8	26,283	1113	210,269	8.0	13	5,440	265	50,048	9.2
4	12,515	346	65,405	5.2	9	8,445	357	67,497	7.8	14	5,453	265	50,168	9.2
5	8,257	159	30,212	3.7	10	12,610	394	74,542	5.9	15	33,147	1,495	148,428	14.6
					16	36,800	2,273	73,423	3.8					

PLOT RATIO 2075



Plot	PA / m²	POP	GFA / m²	GPR	Plot	PA / m²	POP	GFA / m²	GPR	Plot	PA / m²	POP	GFA / m²	GPR
1	40,305	5,304	212,207	5.2	6	12,623	708	56,803	4.5					
2	47,961	5,925	239,806	5.0	7	6,185	2,014	53,728	8.7					
3	17,931	2,922	113,496	6.3	8	26,542	2,506	122,042	3.9					
4	8,099	2,160	61,230	7.5										
5	18,457	1,421	48,366	3.2										

- LEGEND**
- 1.0-1.9
  - 2.0-2.9
  - 3.0-3.9
  - 4.0-4.9
  - 5.0-5.9
  - 6.0-6.9
  - 7.0-7.9
  - 8.0-8.9
  - 9.0-9.9
  - >10
  - No GPR
  - River

BUILDING STRATEGY

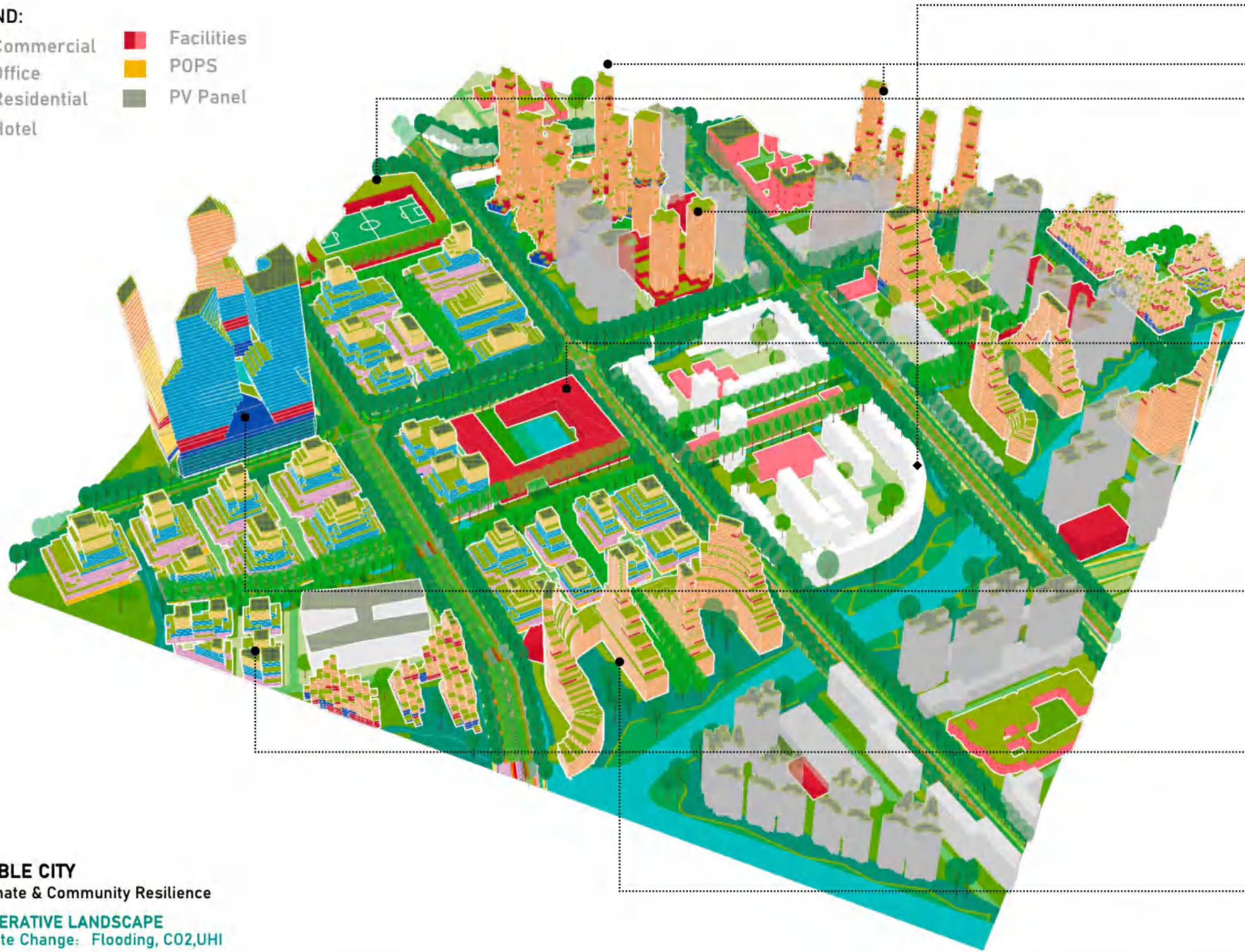


- LEGEND**
- Residential
  - Commercial
  - Business 0
  - Waterbody
  - Education institution
  - To be redeveloped
  - To be developed



## LEGEND:

- |   |   |
|---|---|
| <span style="color: blue;">■</span> Commercial    | <span style="color: red;">■</span> Facilities |
| <span style="color: blue;">■</span> Office        | <span style="color: orange;">■</span> POPS    |
| <span style="color: orange;">■</span> Residential | <span style="color: grey;">■</span> PV Panel  |
| <span style="color: yellow;">■</span> Hotel       |   |



- **Whampoa 34**  
Iconic 70s HDB building, site memory & spirit
- **Our bendemeer hub**  
Community center supporting sport, retail, co-working and public facility
- **Intergeneration kampong**  
Living space provides a future with increasing life expectancy, while also supporting intergenerational care facilities
- **R&D museum**  
Shared and collaborative spaces for idea-sharing; spatial testing
- **Oasis habitat**  
Community-centred services and facilities in court-yard system, integrating with nature & wind corridor.
- **Multimodal-eco TOD**  
A high-density vertical engine, integrating transit connectivity with an ecological podium to seamlessly connect the public realm with private functions
- **Living lab - productive city**  
Acting as a "hinge" connecting business, cultural, and industrial nodes, and fostering a resilient environment for a new generation of innovators
- **Landscape ascent**  
Stepped landscape residences for elevated living immersed in nature by the waterfront
- **Waterfront eco-hill**  
Integrating human scale porosity within high density, through pixelated green pockets scattered across the built surface

## LIVEABLE CITY

for Climate & Community Resilience

### REGENERATIVE LANDSCAPE

– Climate Change: Flooding, CO2, UHI

- Storm Water Management
- Wetlands / Nature Based Solution
- Green & Blue Integrated System  
– Bioswale / Rain Garden etc.

### ADAPTIVE LANDSCAPE – Nature integration

- Oasis Courtyard
- Surface Transformation into Permeable Surface

### ACTIVE LANDSCAPE

– Connectivity through Green & Nature Path

- 3D Green Connectivity  
– Trees alignment / Green Paths
- Sport and Leisure Activities

## LOVABLE CITY

Neighbourhood Identity & Place Making

### BE KEPT/ADAPTE & REUSE

- Heritage
- Adapt & Reuse (Tower HDB)
- Kept (Condo)

### COMMUNITY FACILITIES

- Existing Community Facilities
- Proposed Community Facilities

### MULTISCALE FACILITIES

- Hospital
- Our Bendemeer Hub
- Art & Industry Museum
- Intergenerational Kampong

### NEW HABITAT

- Oasis Habitat

## MAGNETIC CITY

Economic Synergy, Productive Neighborhood, Intergeneration of entrepreneurs, innovators working at the intersection of manufacturing, design & research,

### MOBILITY

- 45-mins City: Collective & Multimodal Mobility  
– MRT / Autonomous Trackless Tram / Multimodal Stations
- 15-mins Districts: Shared Mobility  
– Autonomous Shuttle Loop/Shared Autonomous Vehicle
- 5-mins Neighborhood: Active Mobility  
– Integrated Active Network/PCN

### MULTIMODAL ECO-TOD

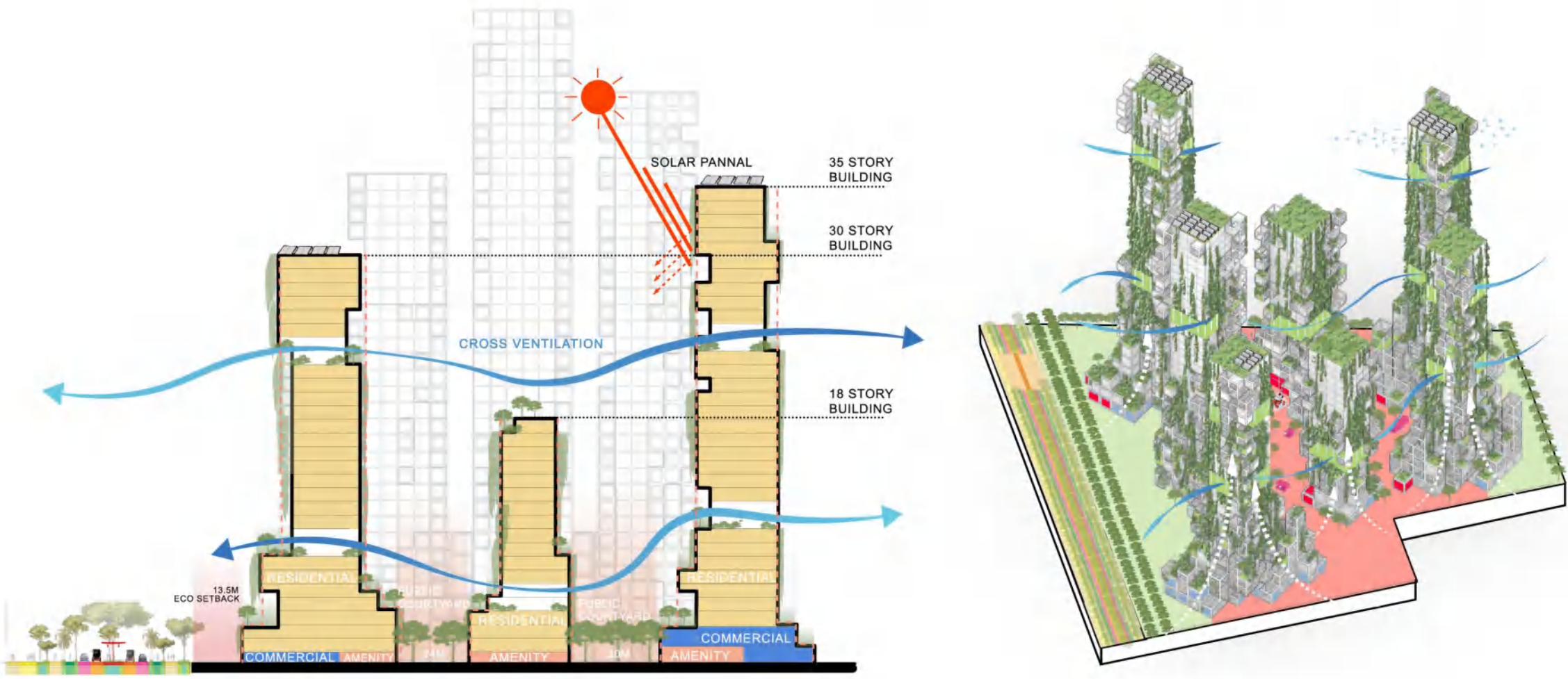
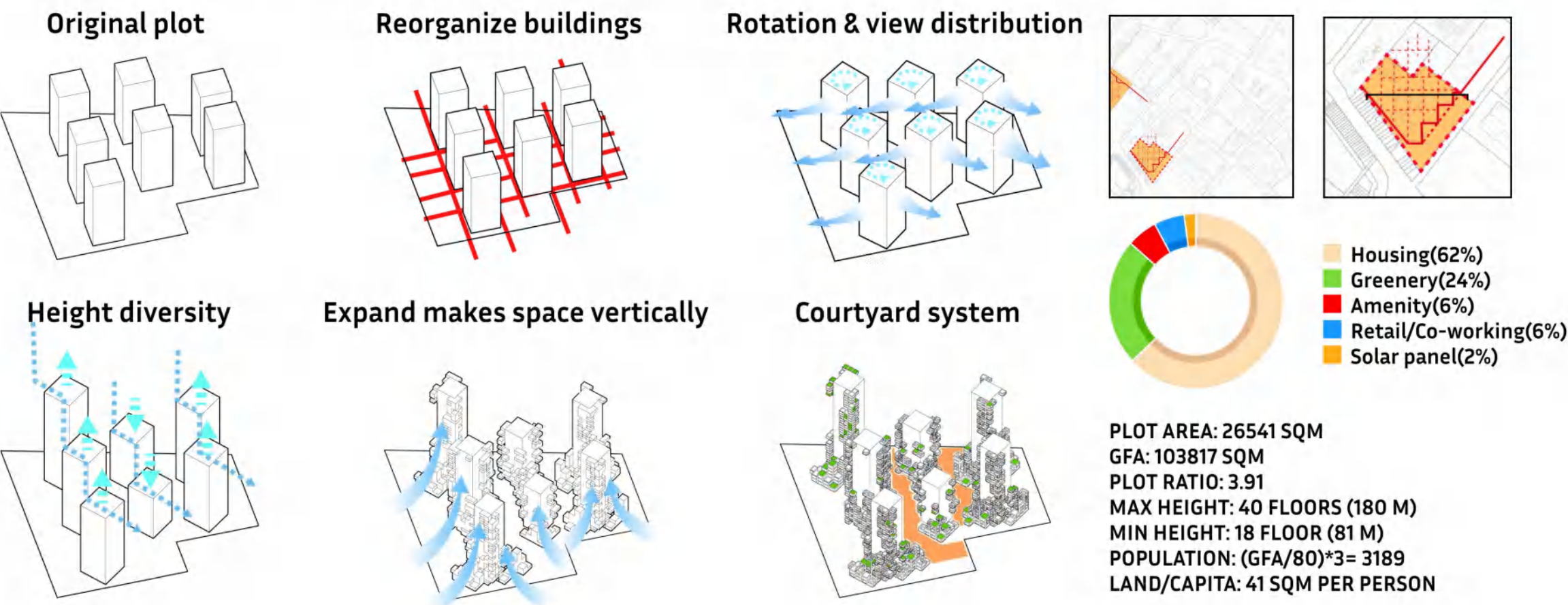
### LIVING LAB

### RESIDENTIAL DEVELOPMENT (PRIVATE)



# BUILDING TYPOLOGY - Oasis habitat

PIXELATED GRADATION | WIND POROSITY | MUTI-ANGLE VIEW



## Perspective (using AI)





# **OTHER WORKS**





# Photography



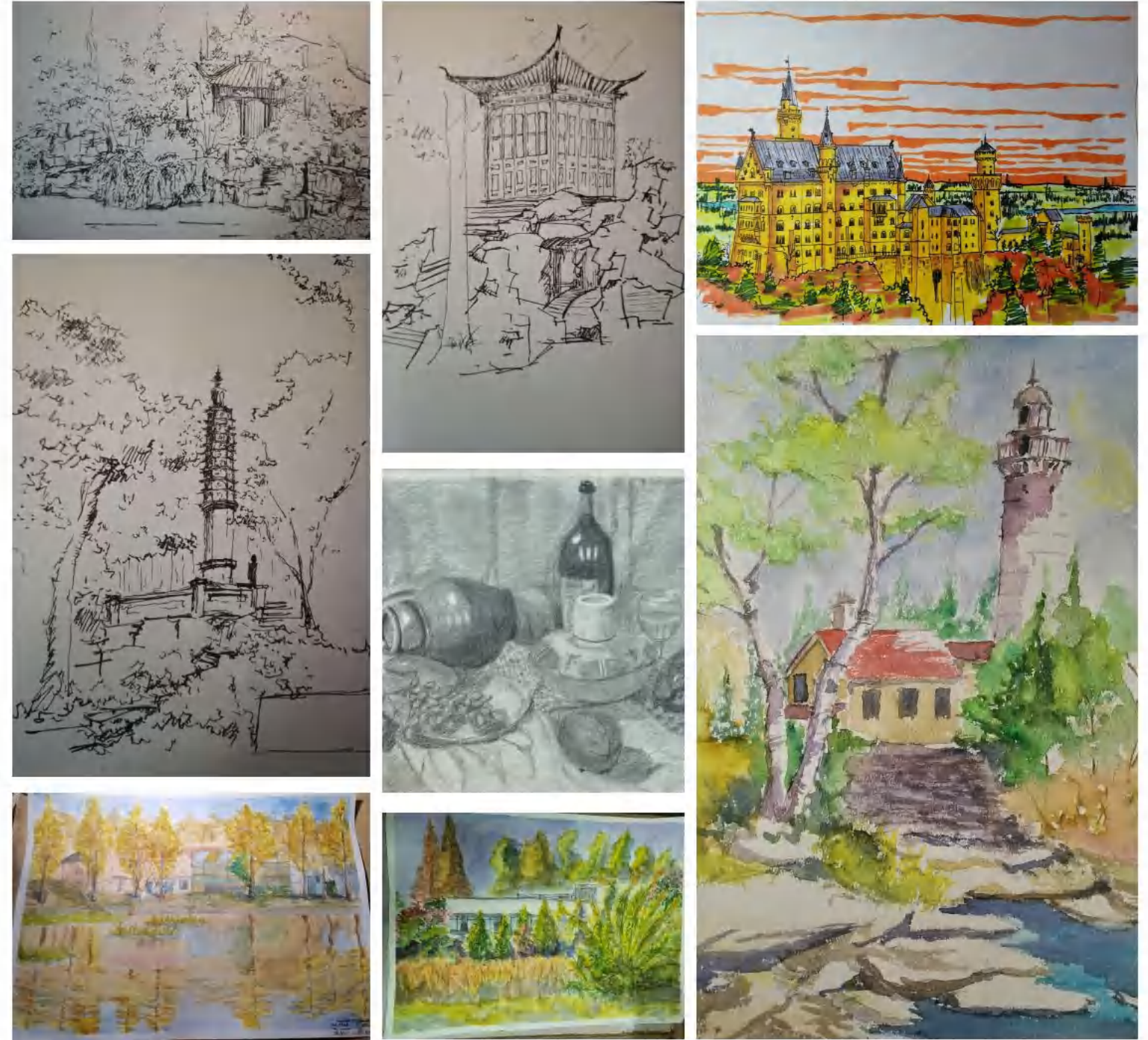
# Modle making



# Garden building



# Paintings



# Ikebana

