

THROUGH LAKE AND SWAMP: URBANIZATION PROCESS OF BAIYANGDIAN WETLAND

AN ADAPTIVE WETLAND PRODUCTION TRANSFORMATION

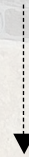
Yueqi Zhang 5564611



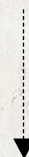
CHAPTER 1

CONTEXT

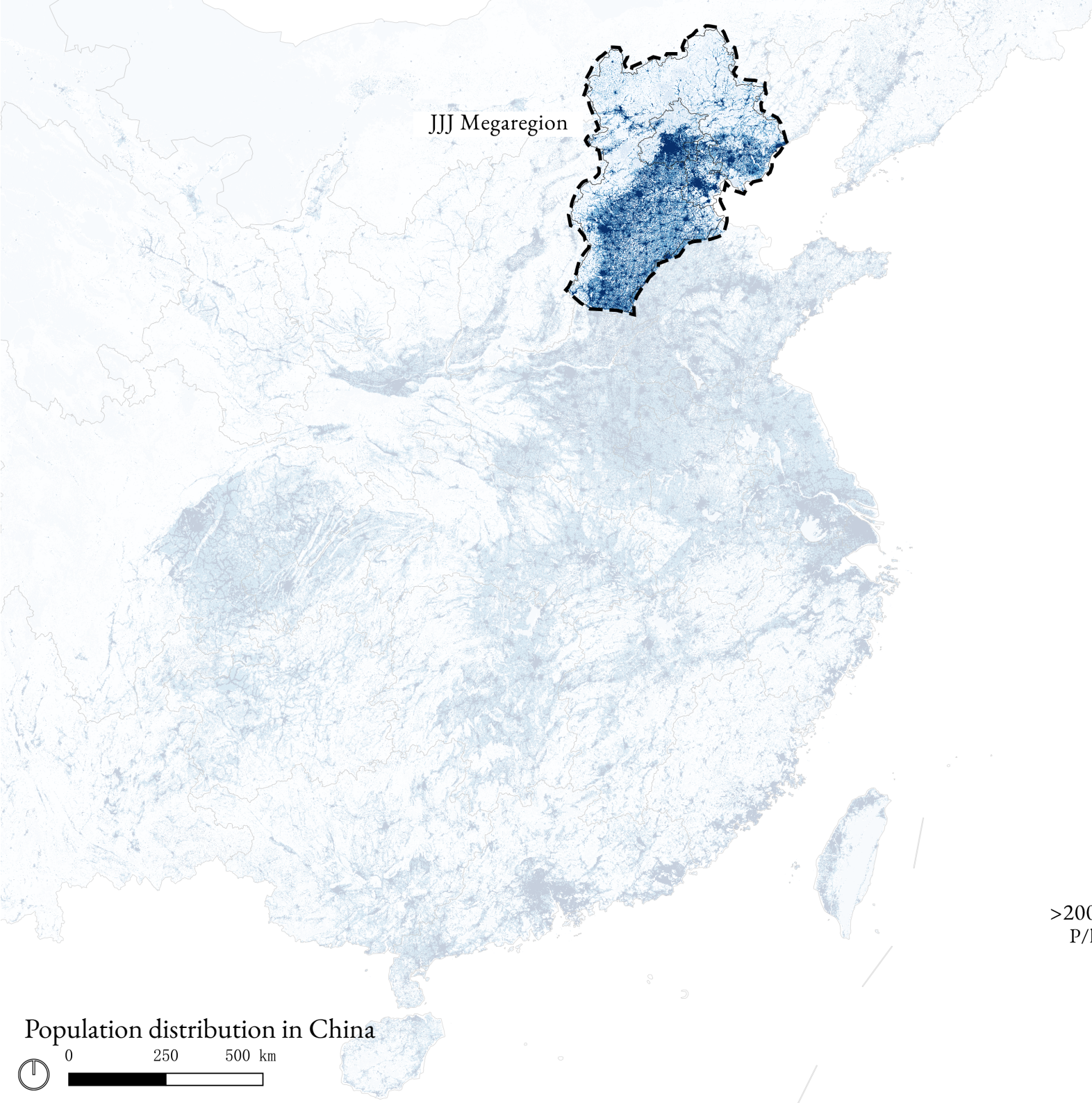
Problematization



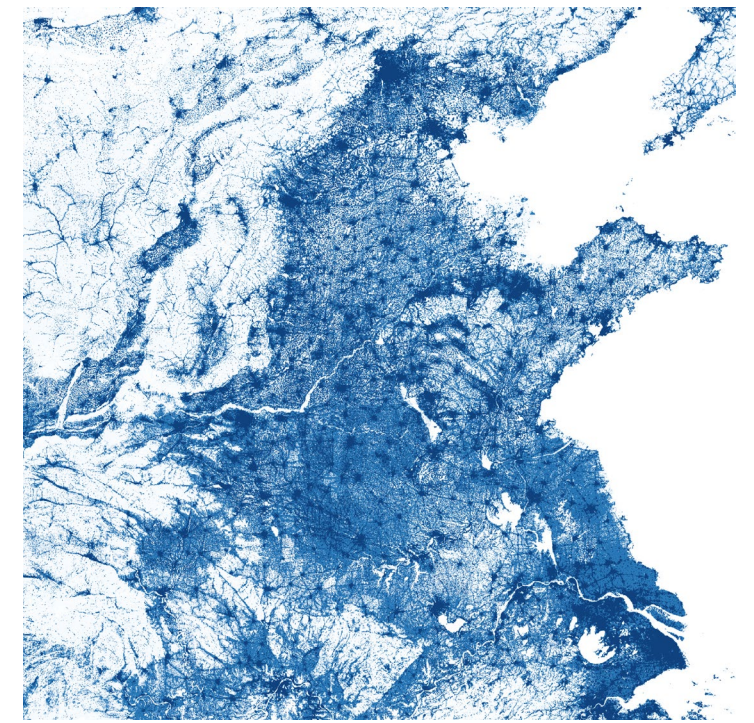
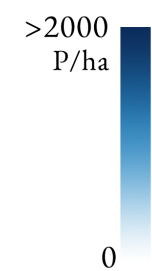
Research question



Research path



JJJ Megaregion



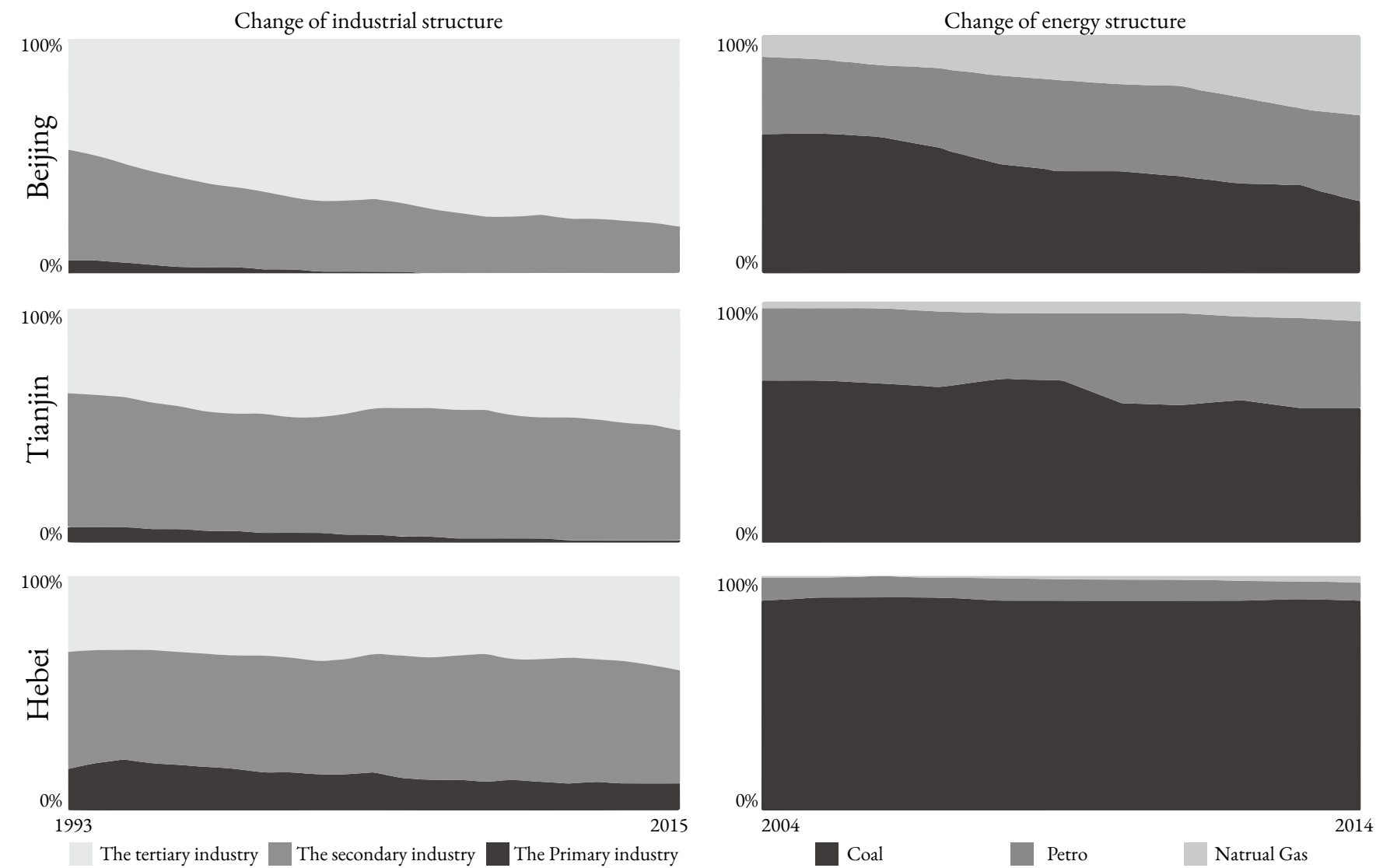
China, "*Zhongyuan*" ("Central plain") Area



West Europe

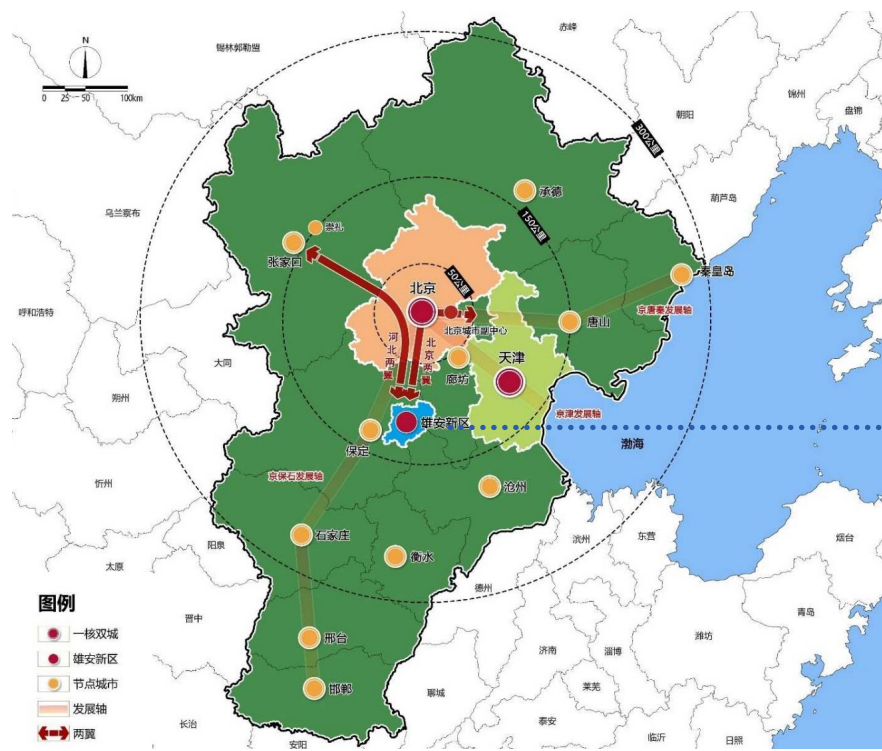
Source: Landsan dataset, 2020

Problem Field



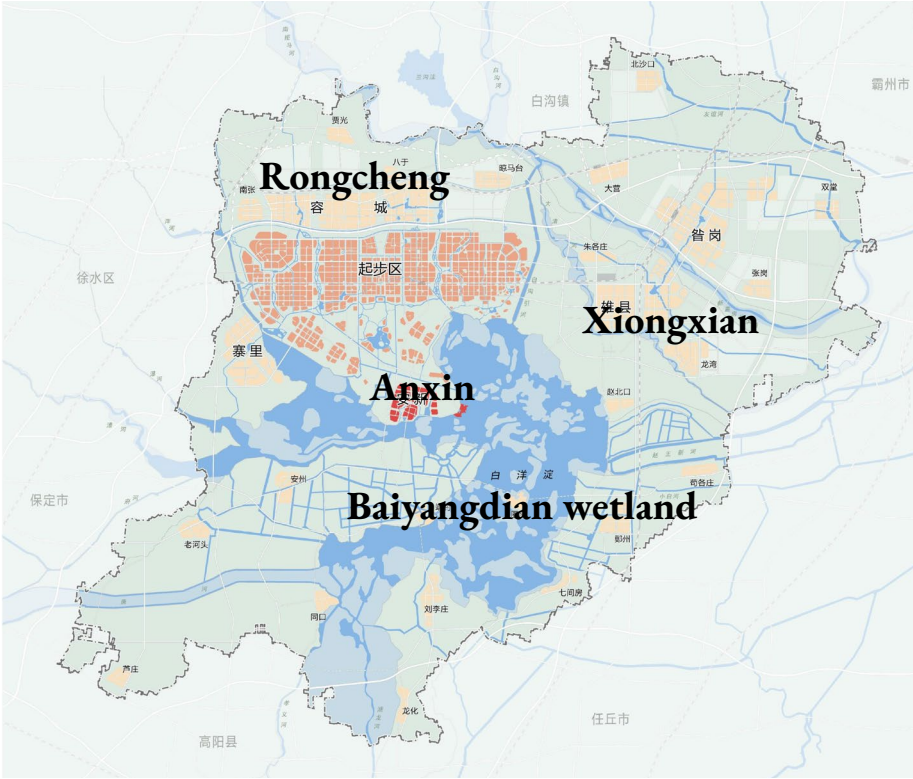
Source: Wu Yan.(2017).

The plan of Xiong'an: Steering the intergration



Overview of JJJ megeregion intergration plan

Plan of Xiong'an New Area. Source: Government information opening platform



Plan of Xiong'an New Area

Source: Government information opening platformhttp://www.xiongan.gov.cn/2021-07/15/c_1211241124.htm

Aim:

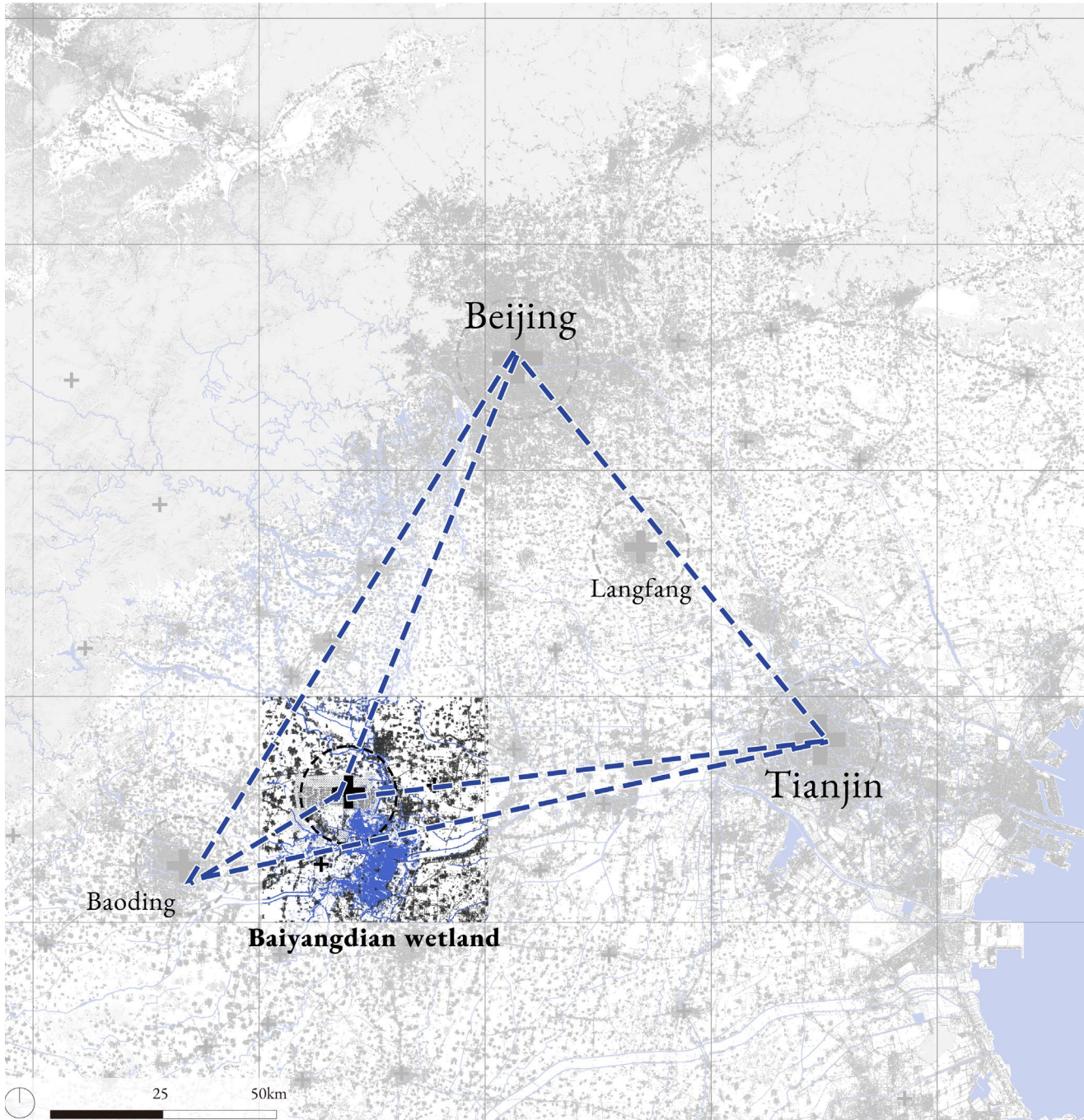
Undertaking the relocation of non-capital functions in Beijing,
identifying industrial development priorities,
creating global innovation hubs,
improving the spatial distribution of industries

Baiyangdian wetland: Productive landscape

REED

FISHERY





HOW CAN THE **PRODUCTIVE WATER LANDSCAPE** OF BAIYANGDIAN **BE ADAPTED** TO THE RAPID **URBANIZATION** PROCESSES?

What is the water productive landscape in Baiyangdian area?

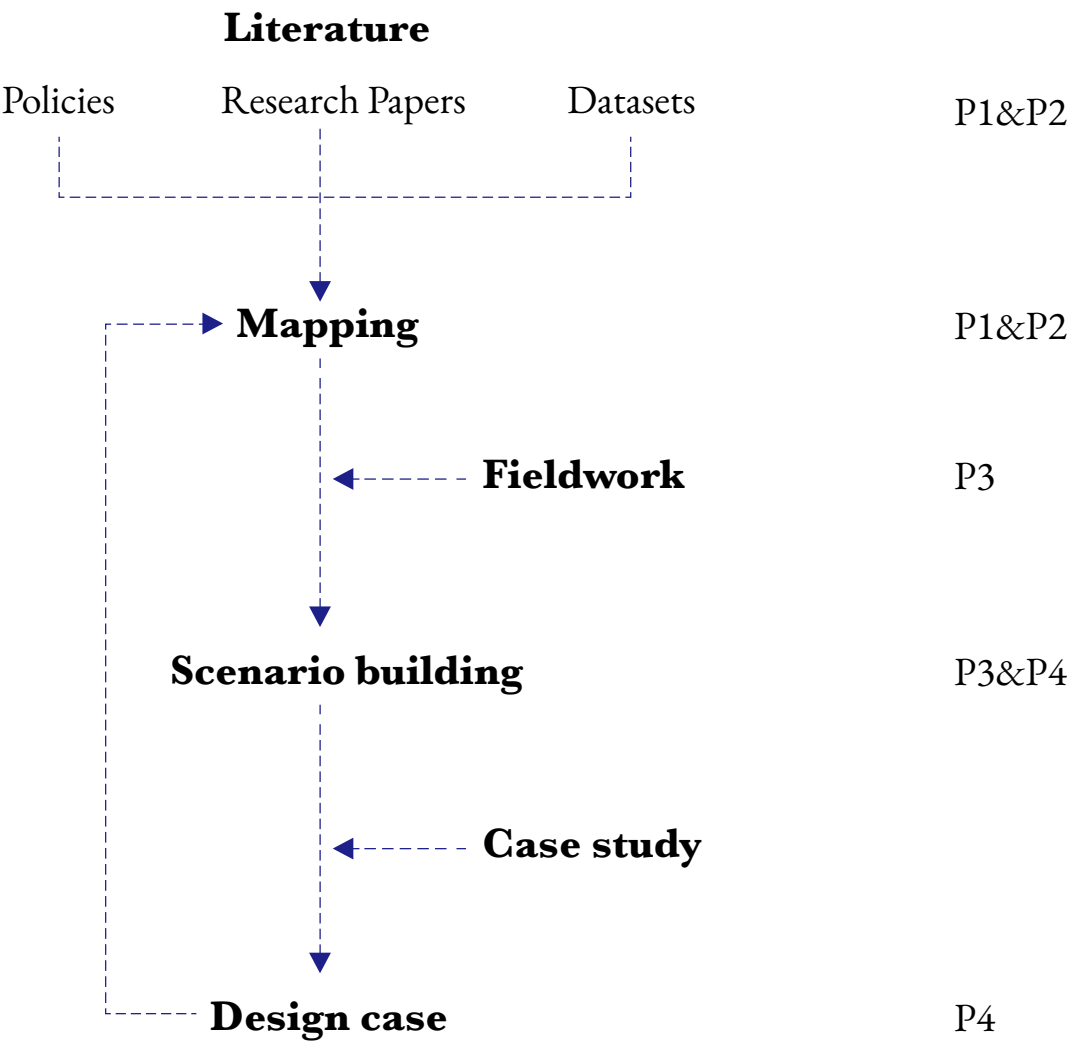
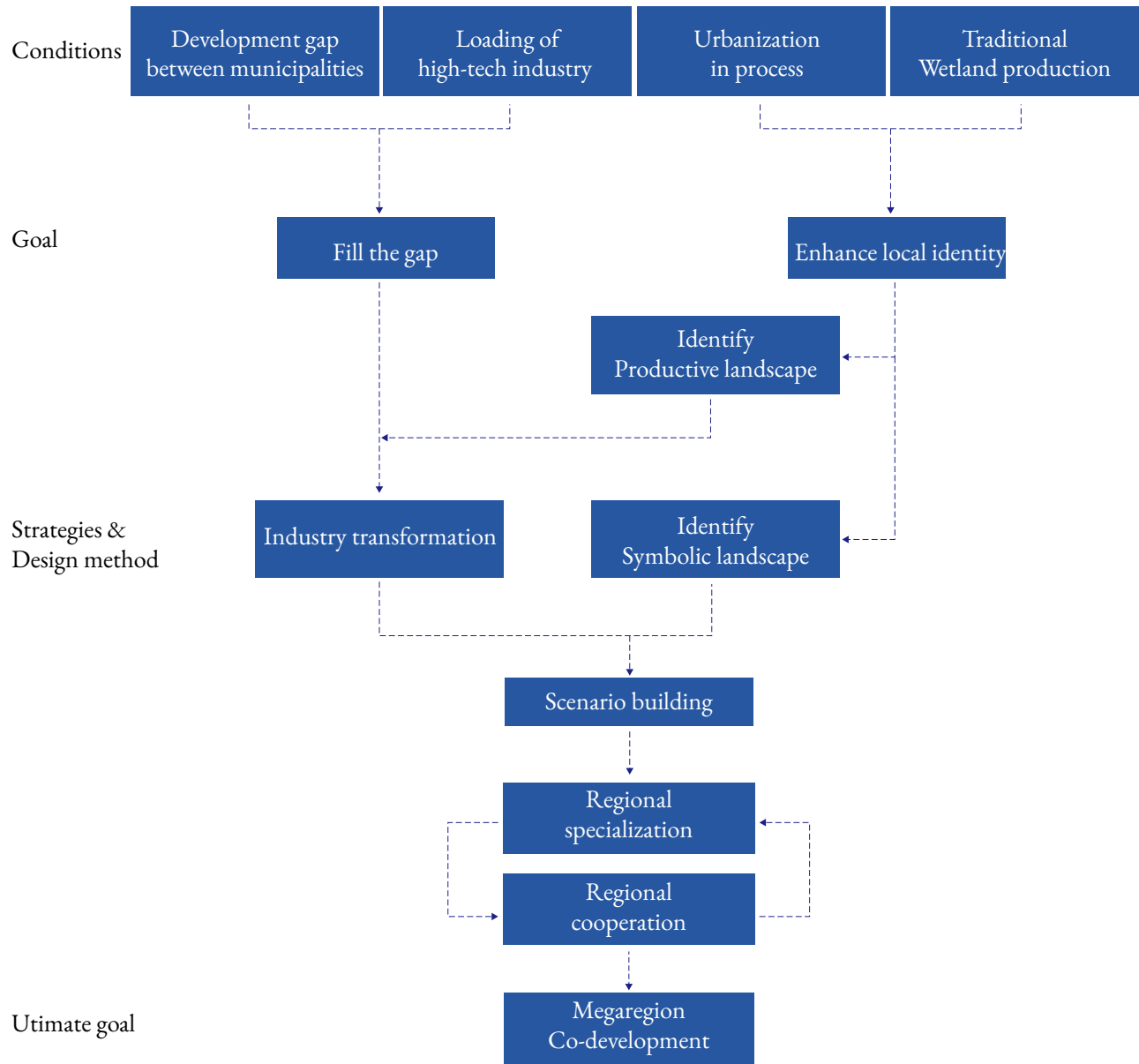
What is the rural socio-economy structure in North China Plain?

What impact will the construction of the Xiong'an New Area have on the current rural development?

What are the envisioned scenarios of agricultural transition in the Baiyangdian wetland area?

How can this transition be adapted to other areas in the Jing-Jin-Ji megaregion?

Conceptual Framework



Defining the scale

China



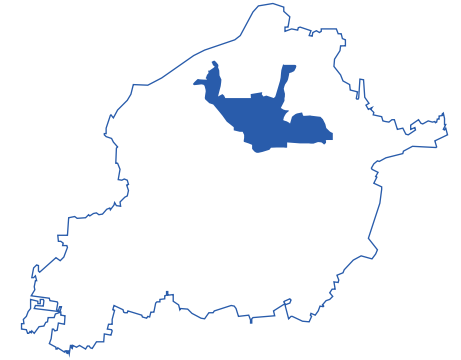
Jing-Jin-Ji megaregion



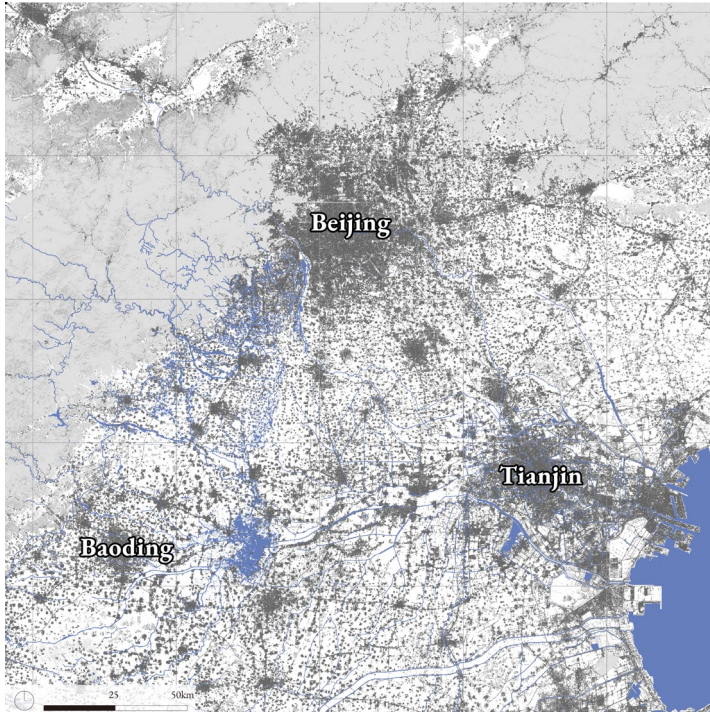
Central area



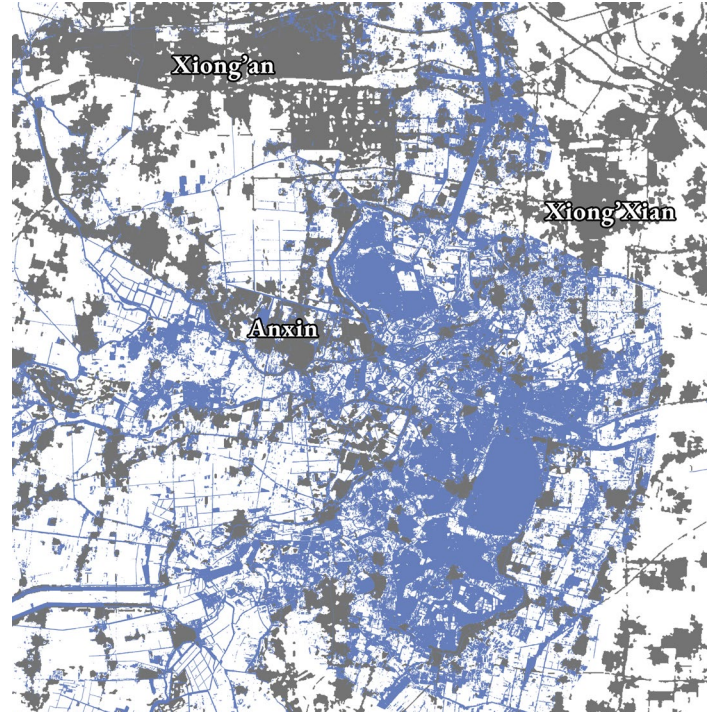
Xiong'an New Area



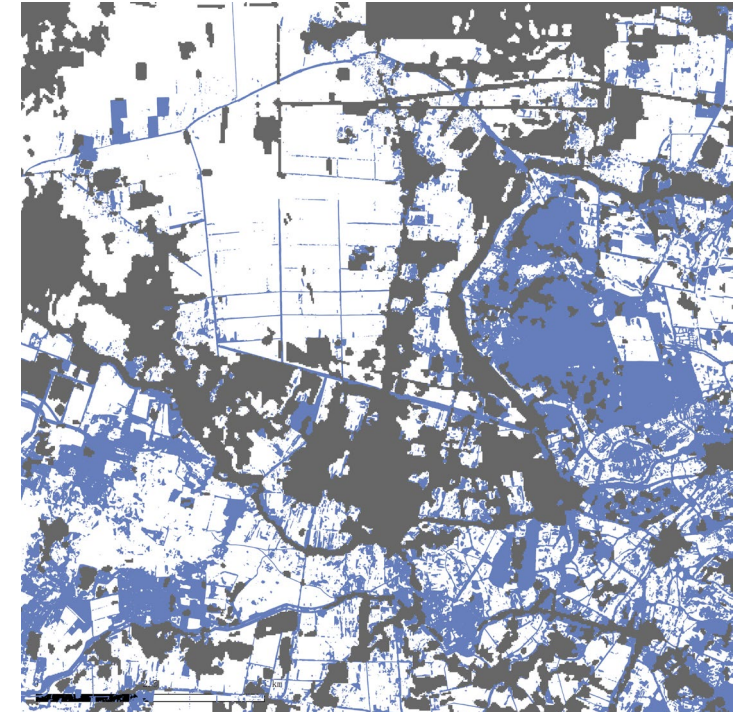
Macro Jing-Jin-Ji megaregion



Meso Baiyangdian wetland



Micro Anxin County



CHAPTER 2

READ THE WETLAND

Wa Dian Settlement



Primary and secondary industry



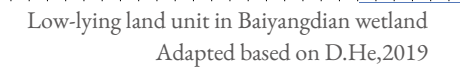
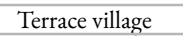
Wetland landscape

Hebei, Baoding, Dazhangzhuang village

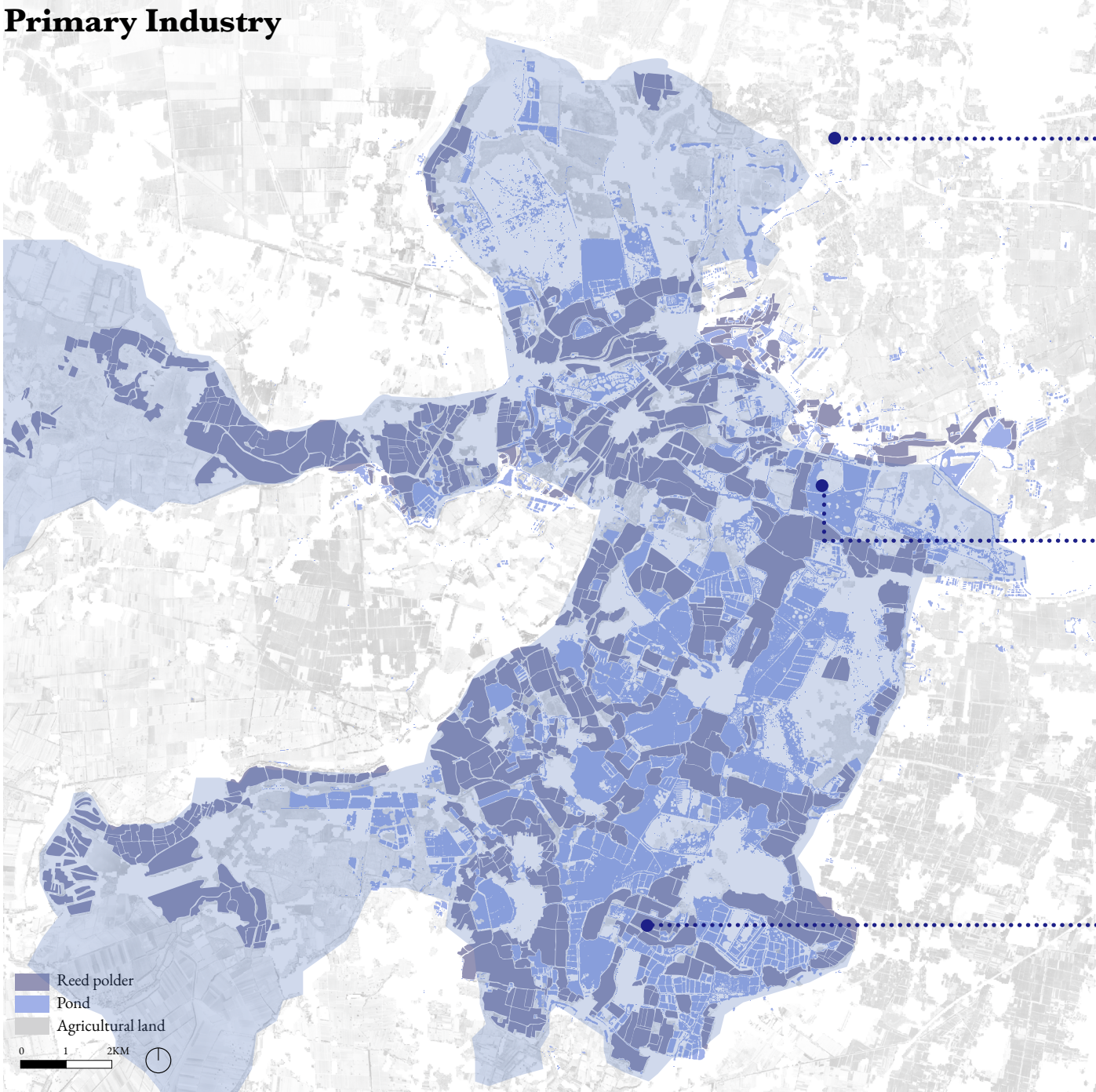
Field trip records

河北省保定市安新县 大张庄村

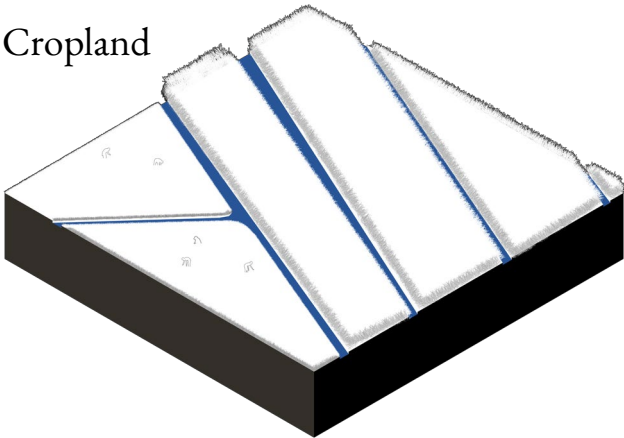
Marsh



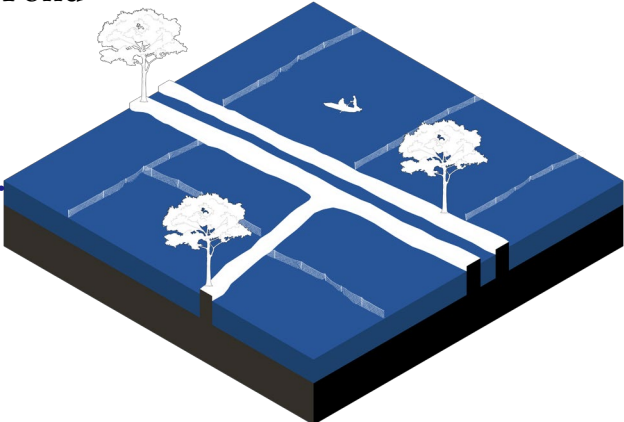
Primary Industry



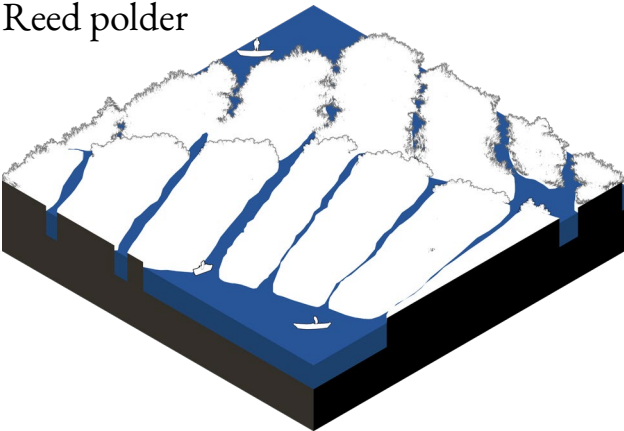
Cropland



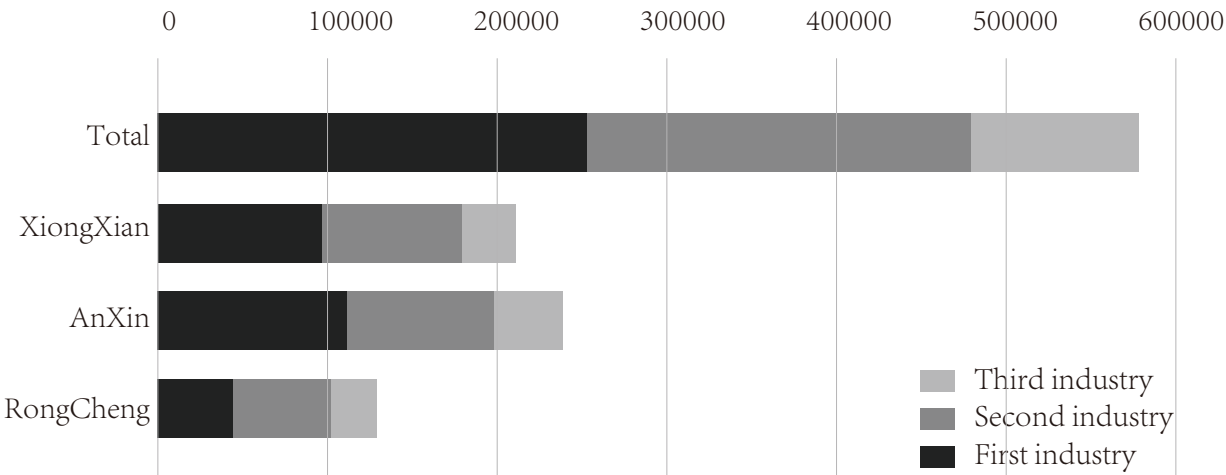
Pond



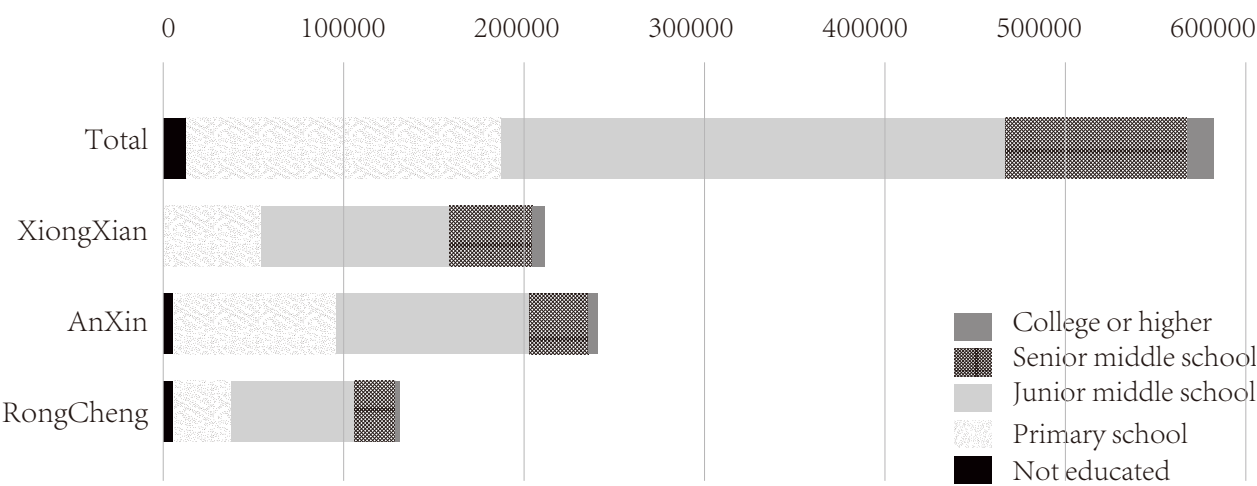
Reed polder



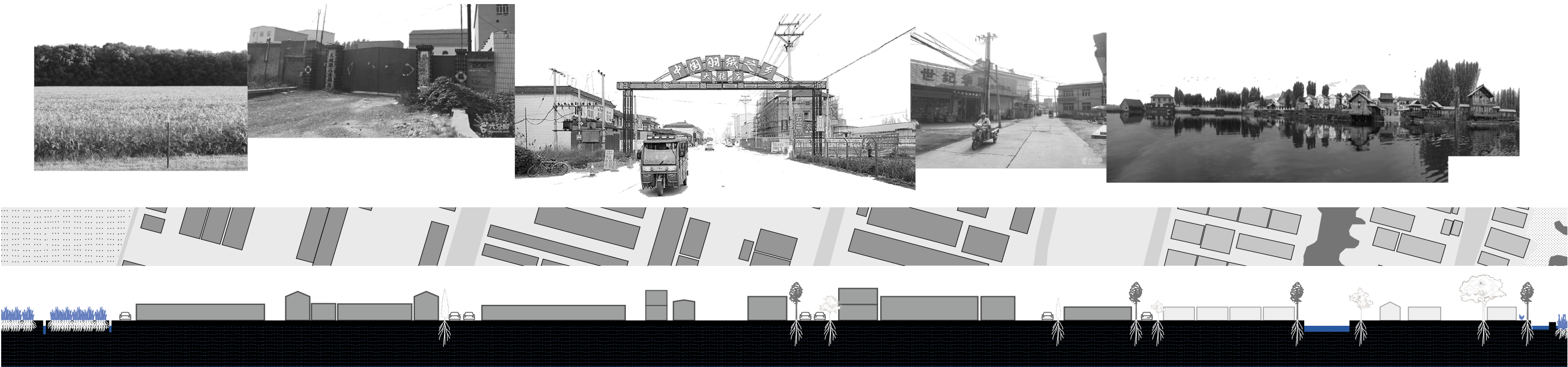
Manufacture and Handicraft



Engagement distribution of rural labour force in different industries(2017)



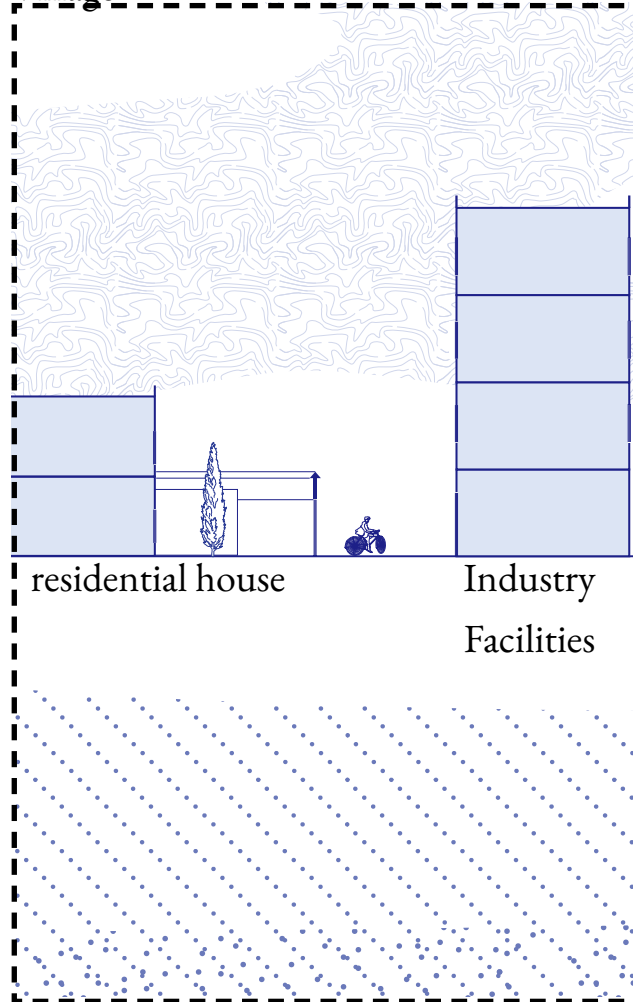
Education level of rural labour force (2017)



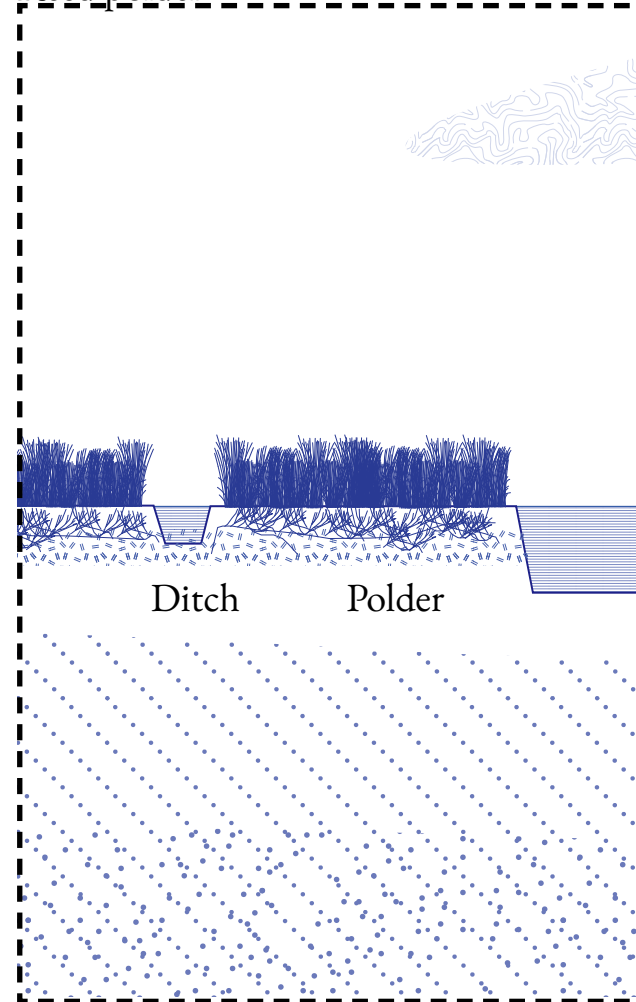
Cropland



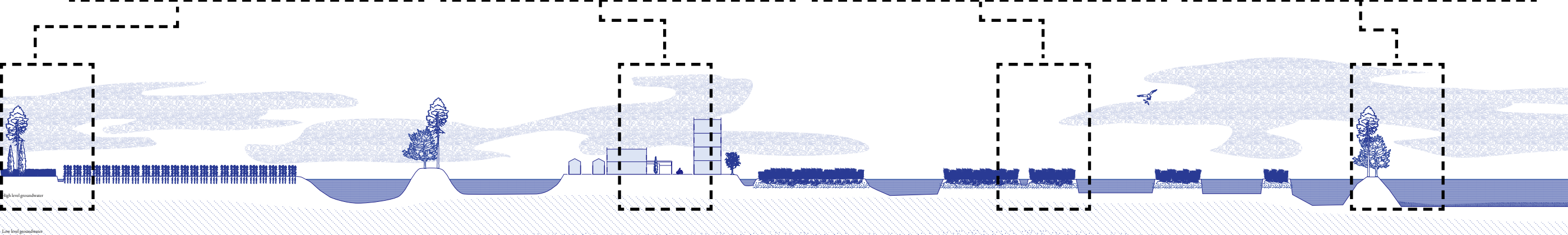
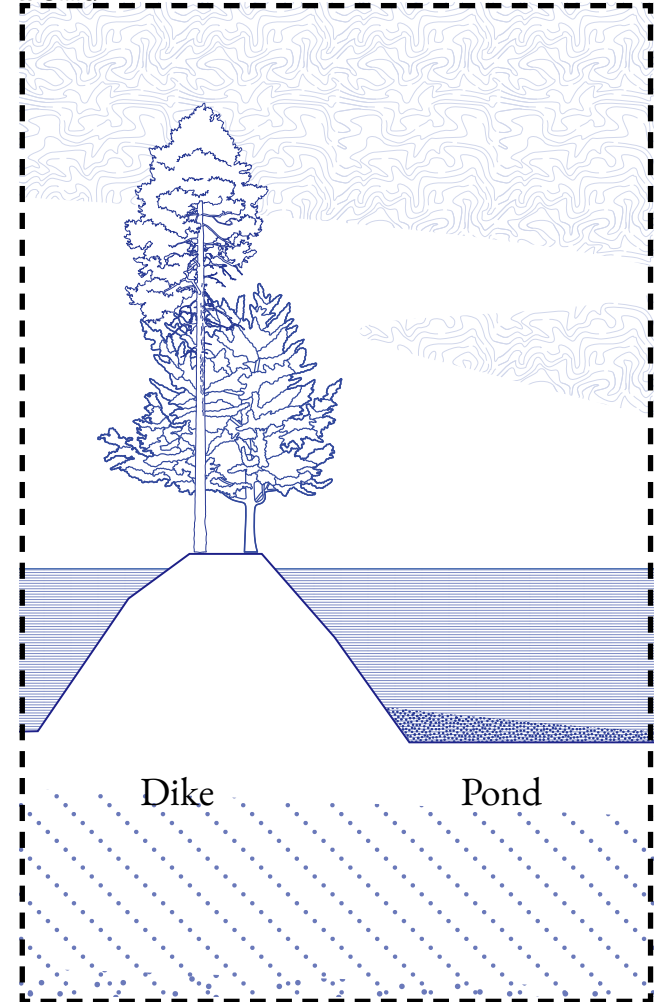
Village



Reed polder

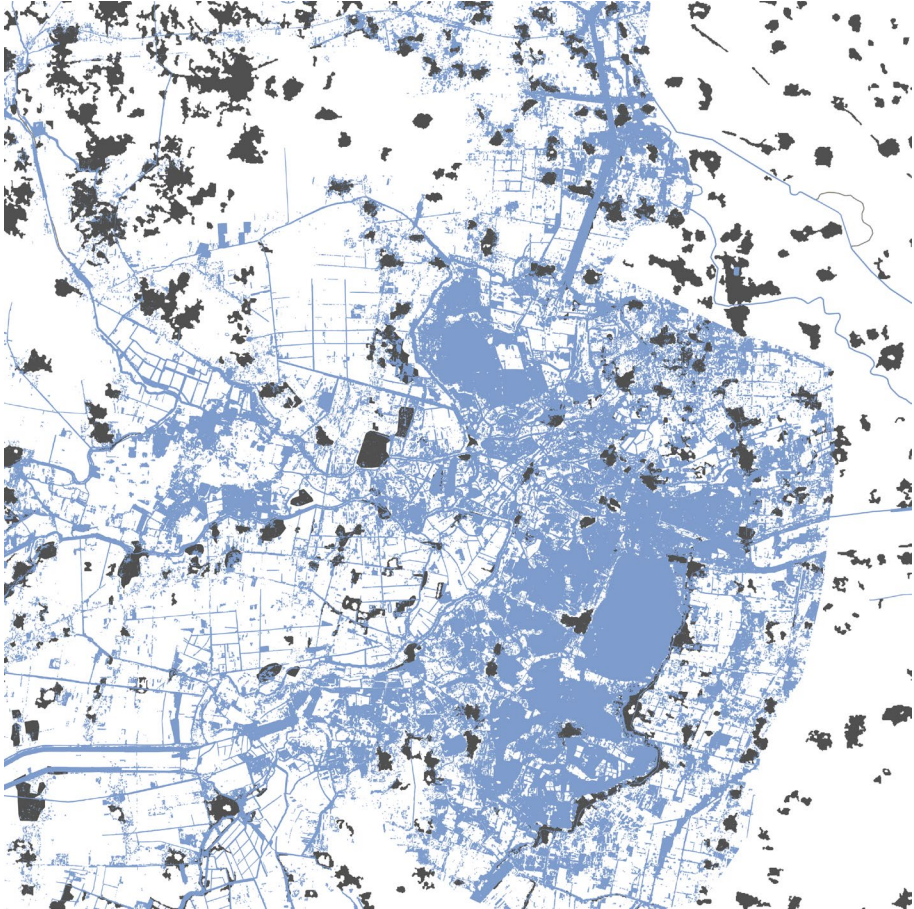


Pond

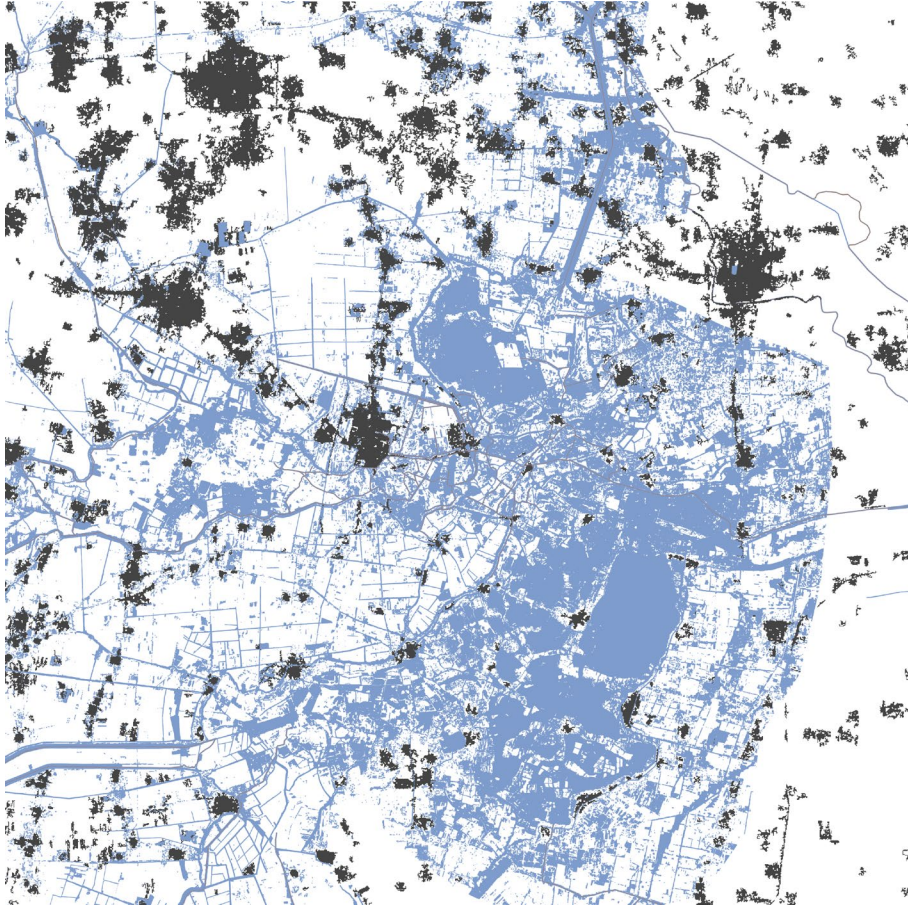


Urban expansion in the past 40 years

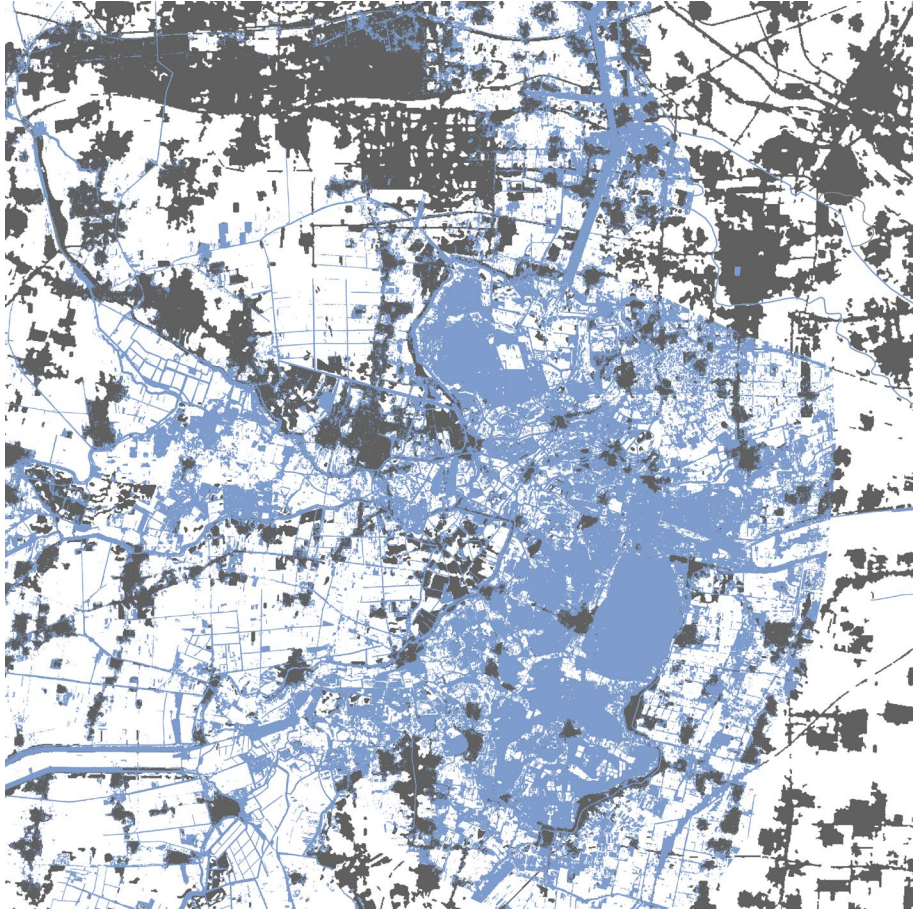
1984



2004



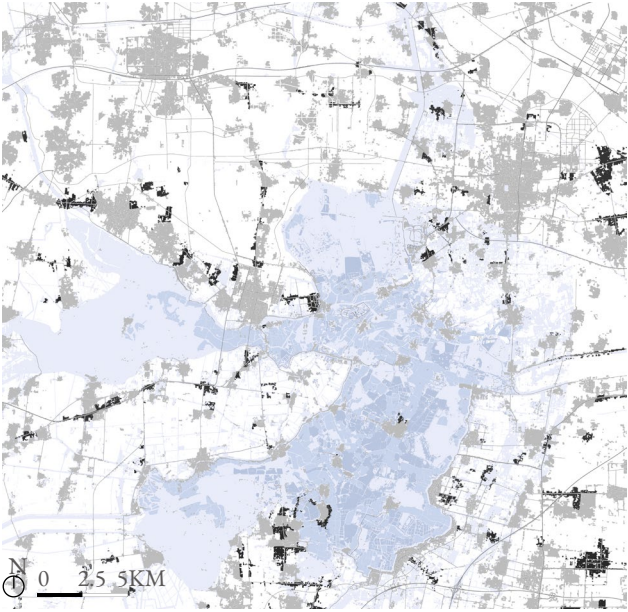
2021



N
0 2.5 5KM

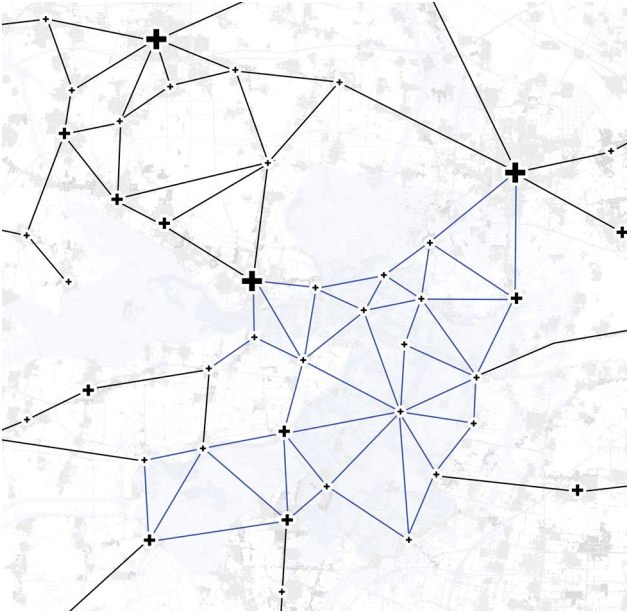
Source: Landsat 8 Dataset, 2019;

Synthetic conclusion

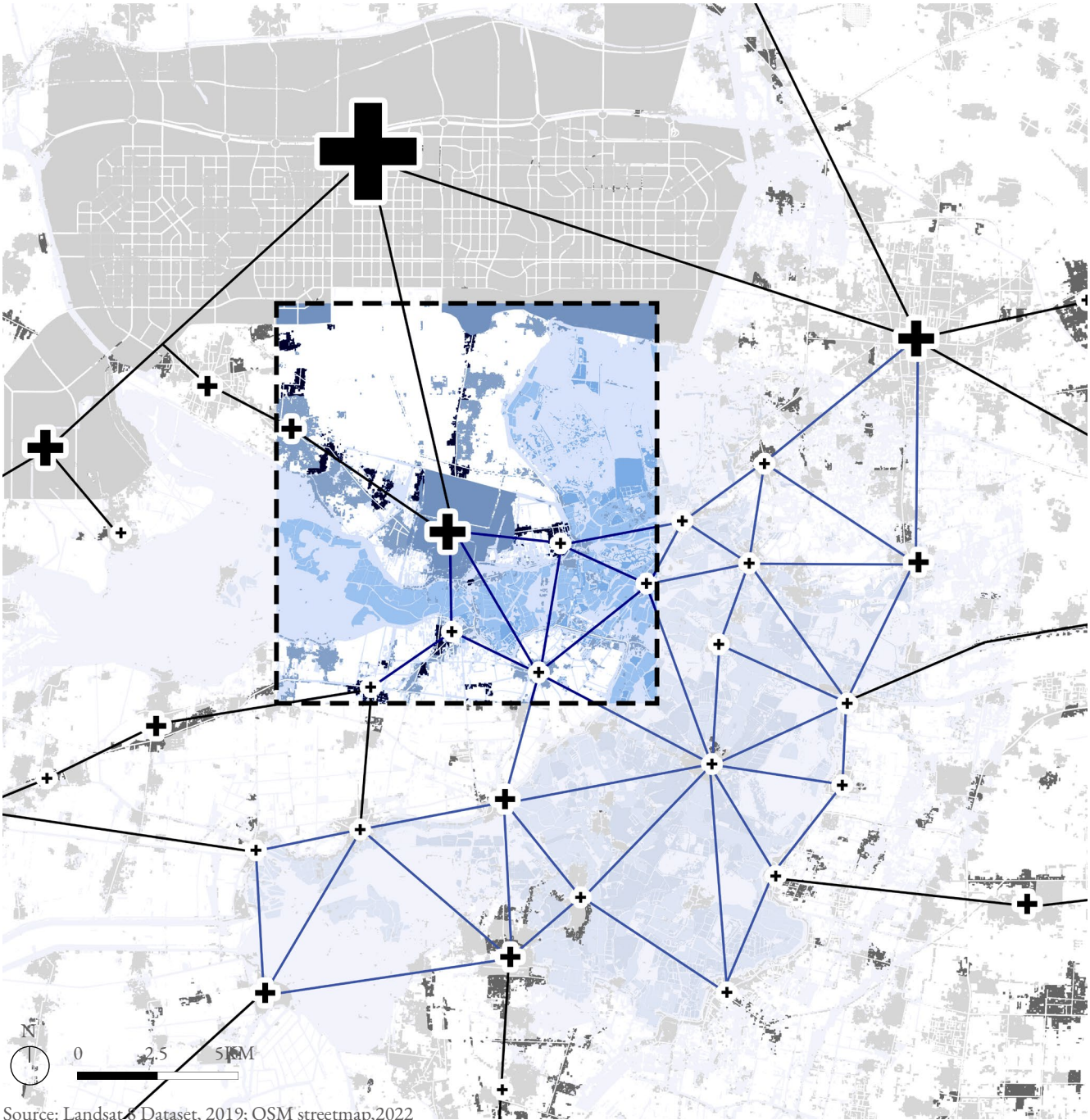


■ Manufacture Agglomeration
■ Built Environment

Source: Landsat 8 Dataset, 2019; OSM streetmap, 2022



✚ Spatial Network
— Wetland Network

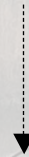


Source: Landsat 8 Dataset, 2019; OSM streetmap, 2022

CHAPTER 3

SCENARIO BUILDING

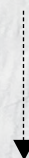
Current factors



Value choice



Extreme scenarios



Comparison

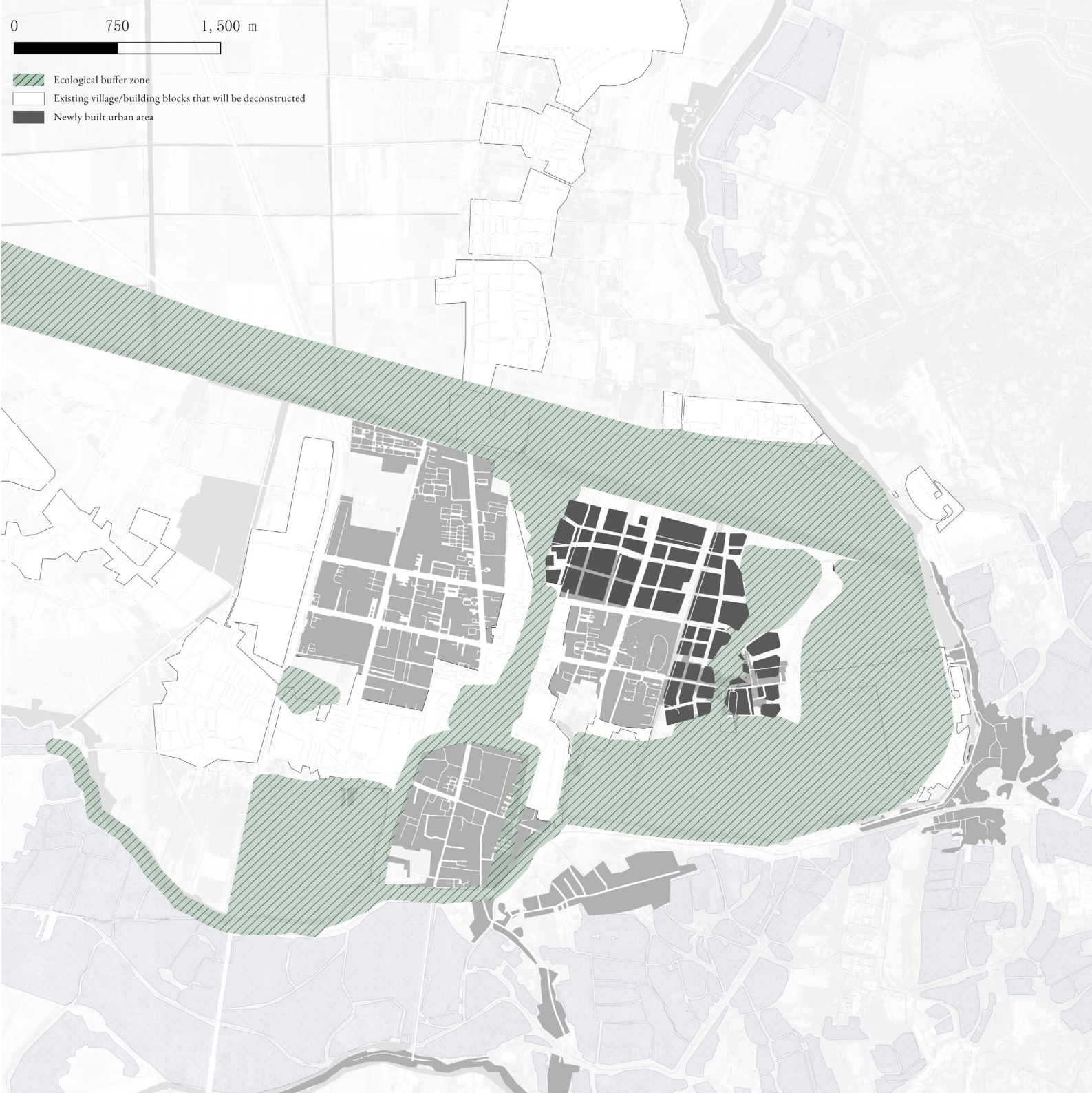
Scenario 0

Current Factors

- Xiong'an New area and JJJ intergration plan
- Labour-intense and polluted enterprises cleared out
- Influx of new immigrants
- Deconstruction and relocation

Possibilities

- Improve of wetland ecological performance
- Recession of primary and secondary industry
- Distingction between different social groups
- Densified city center



What if...

Transformation

we protect the wetland as ecological reserved area?



Crosswinds Marsh Wetland Interpretive Preserve by SmithGroup

we engage the primary industry with other industries?

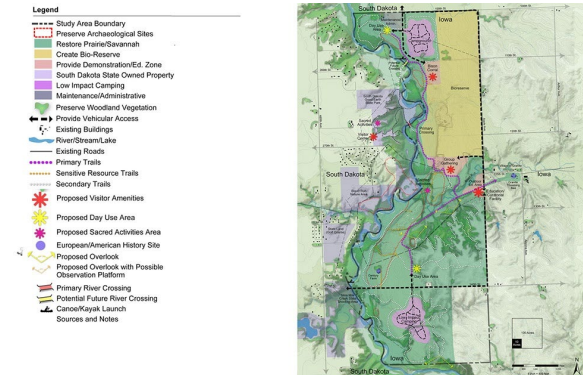


the Echigo-Tsumari Art Field, Japan

Ecology

Production

we protect the landscape as cultural heritage?



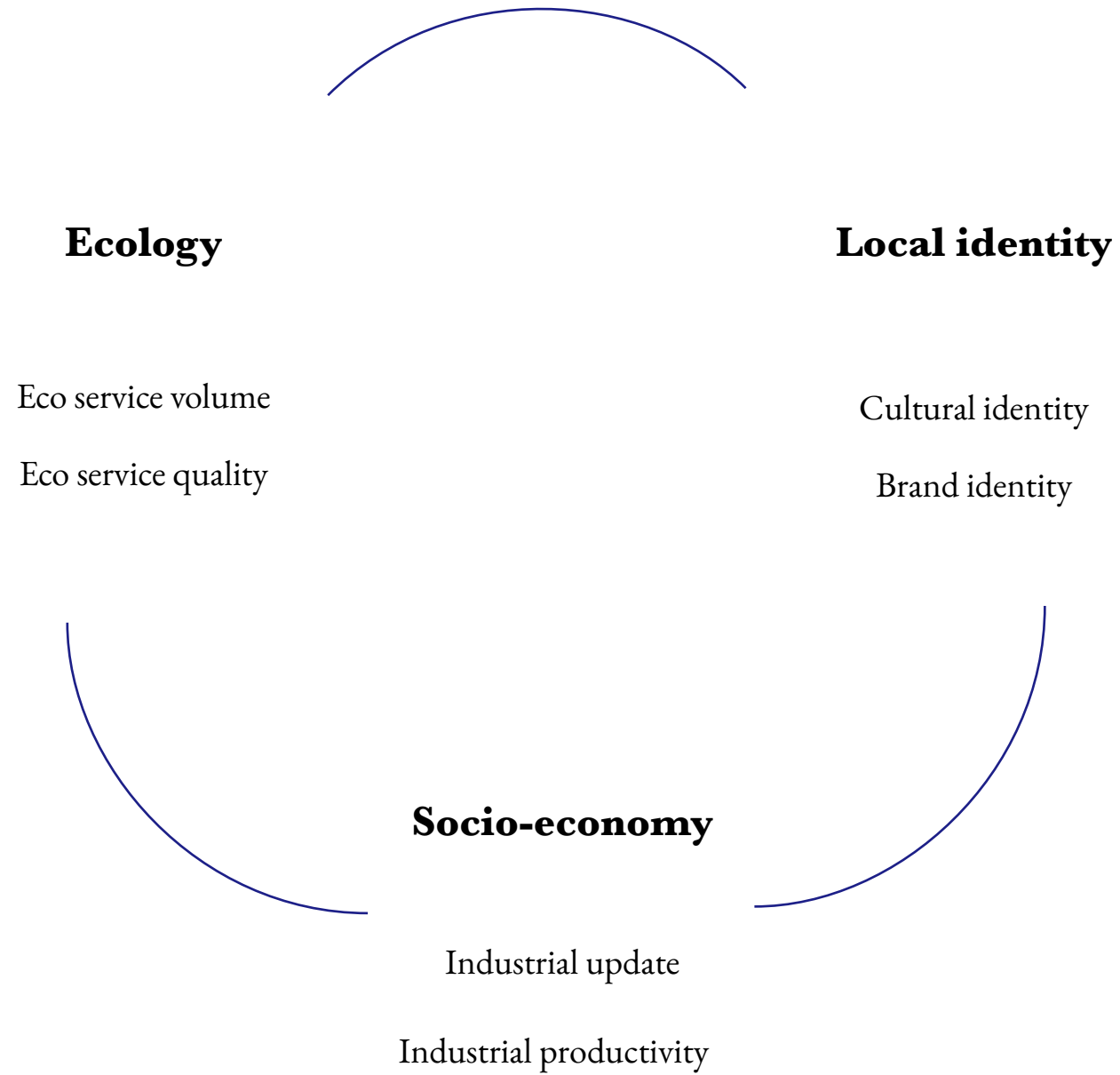
Iowa Blood Run Cultural Landscape Master Plan by Quinn Evans Architects

we keep the primary industry productive?



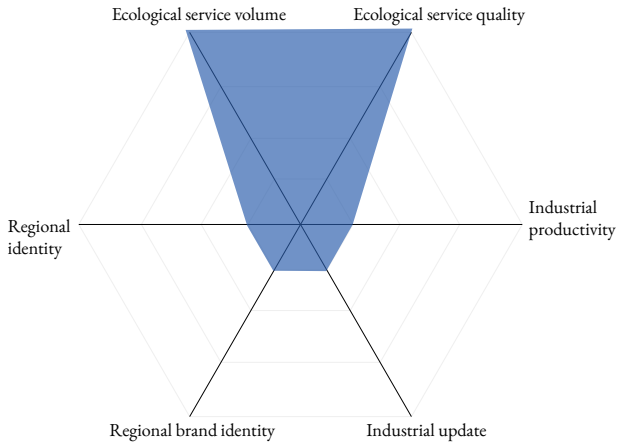
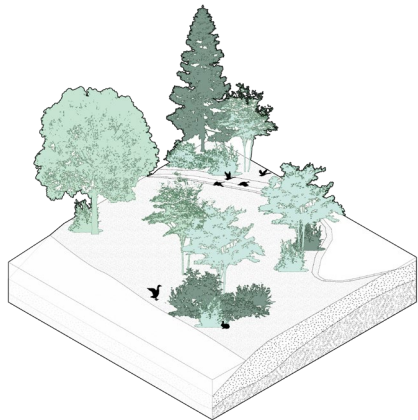
The Recovered Archeological Landscape of Chengtoushan, Hunan province By Turenscape

Preservation

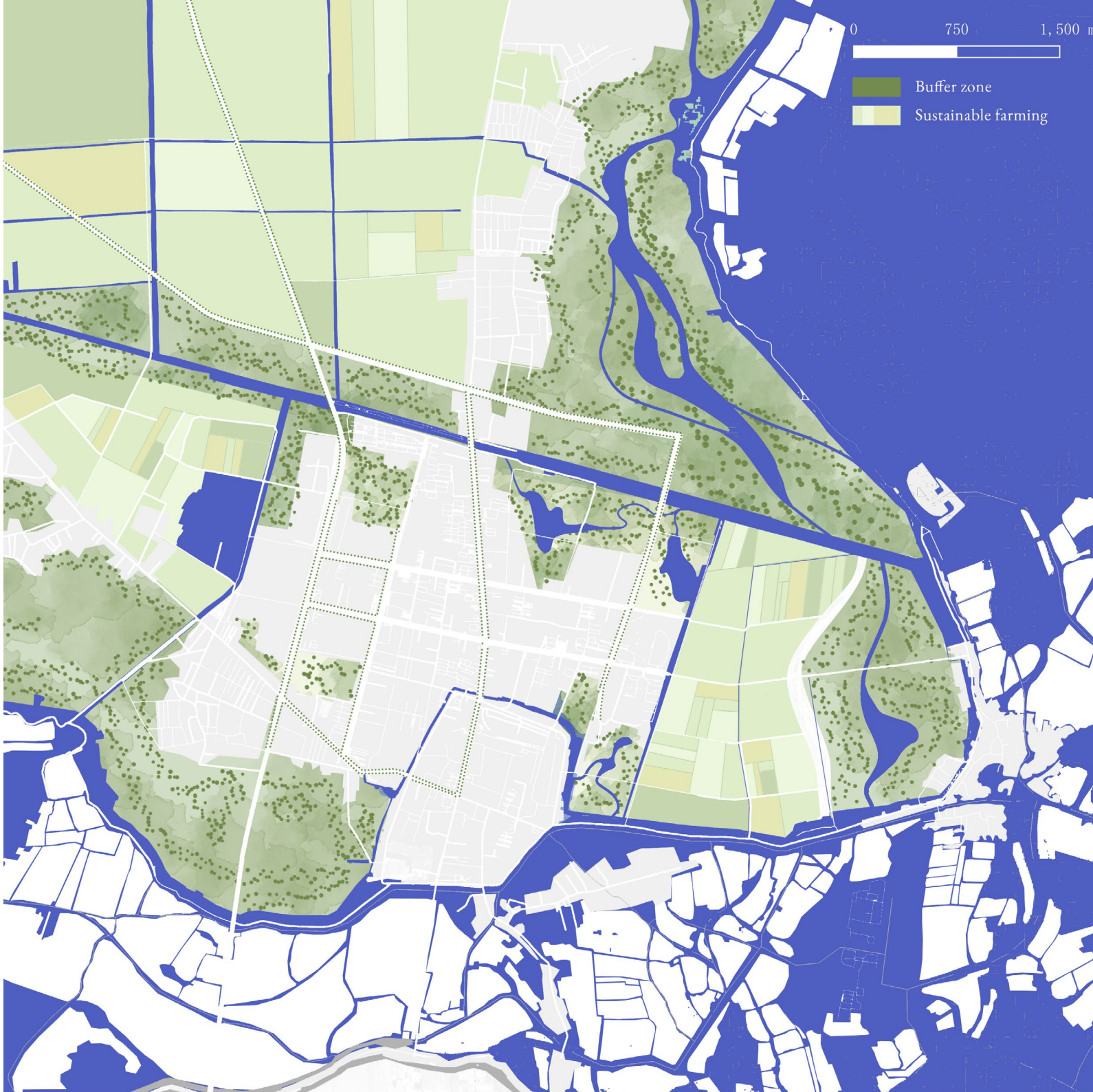
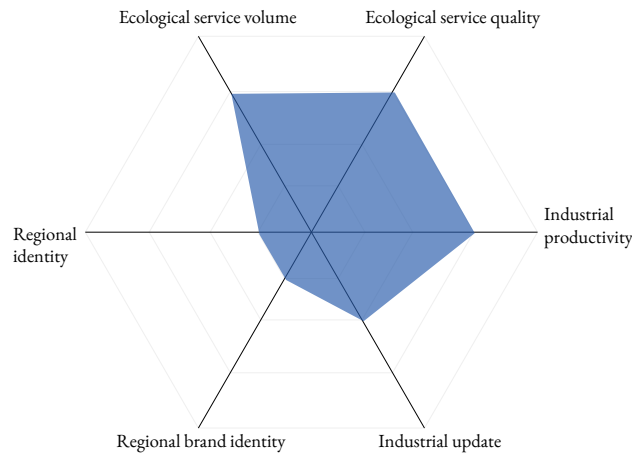
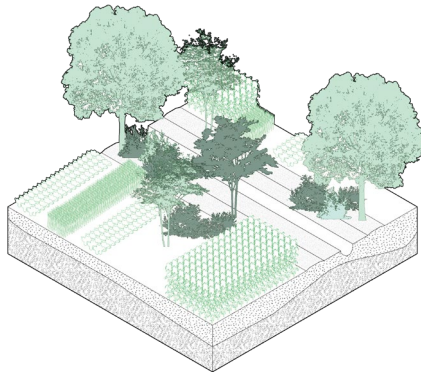


Scenario: nature

Buffer zone



Sustainable farming



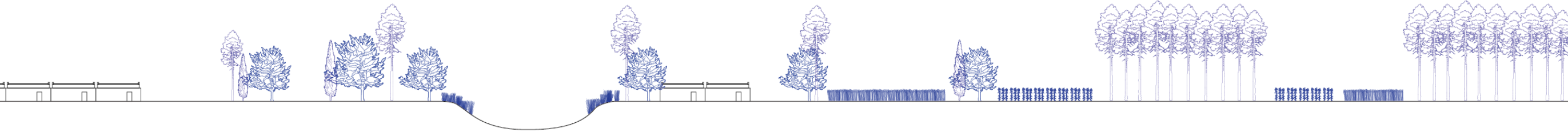
Historical area

New urban residential area



Ditch

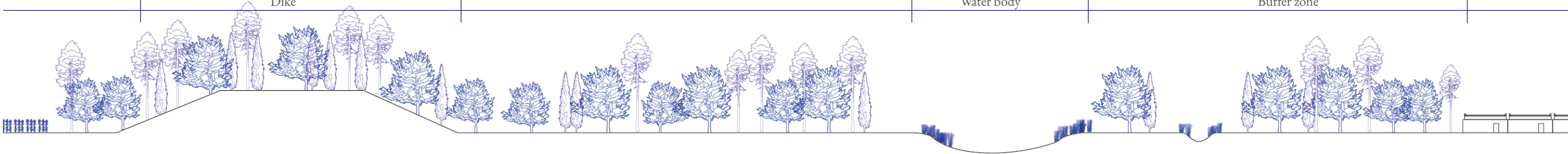
Sustainable farming



Dike

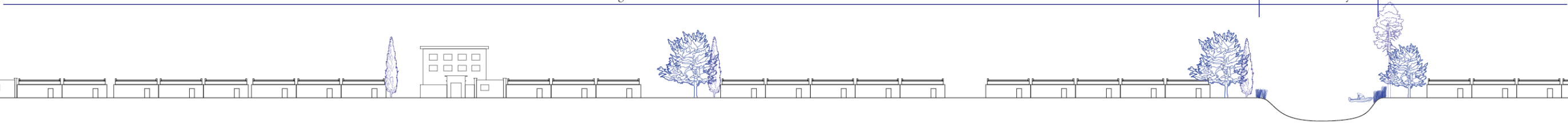
Water body

Buffer zone



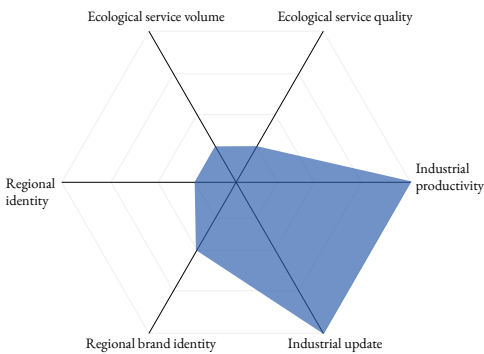
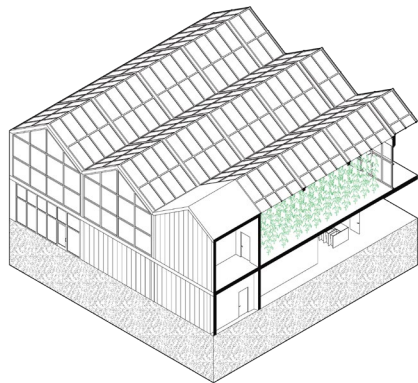
Village Residential house

Waterway

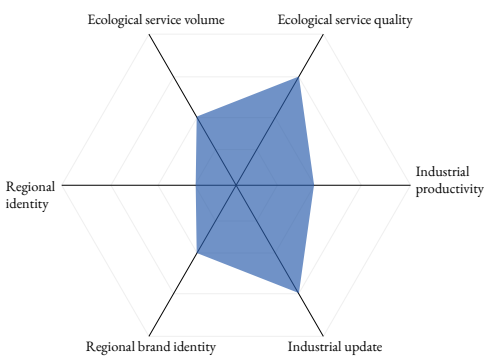
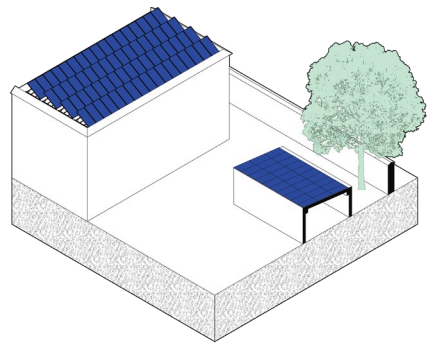


Scenario : production

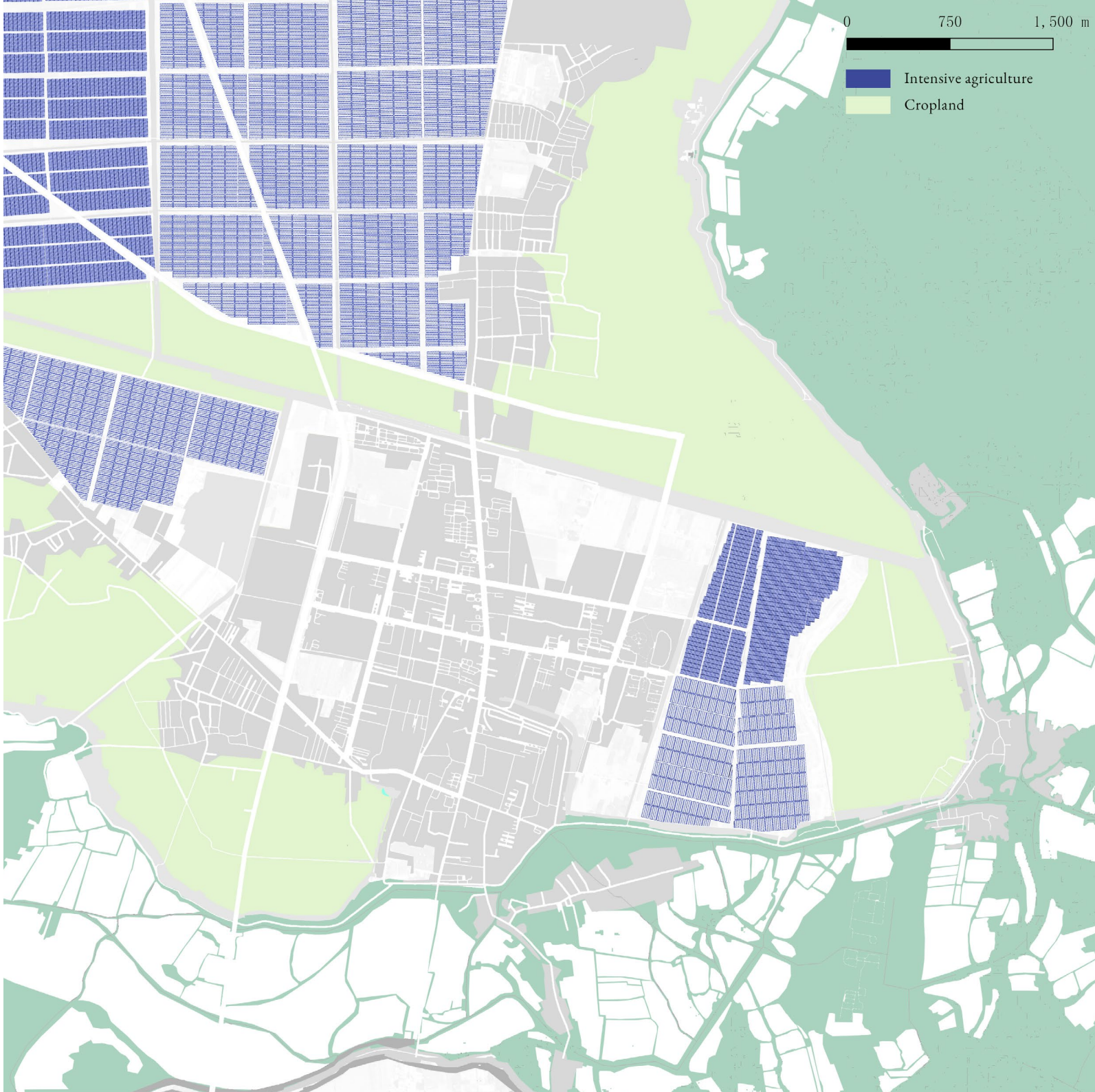
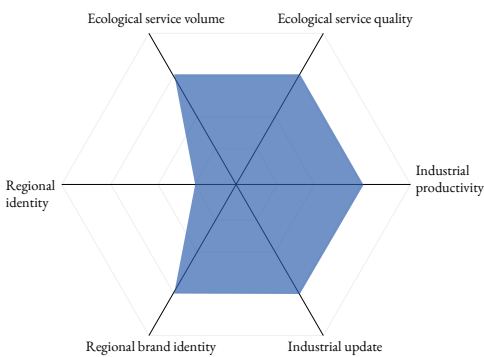
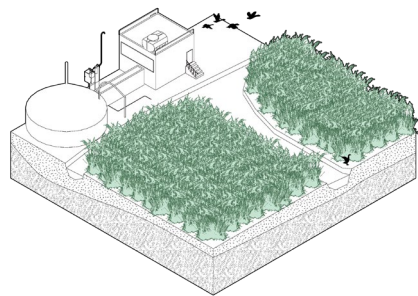
Intensive agriculture



Solar



Biofuel



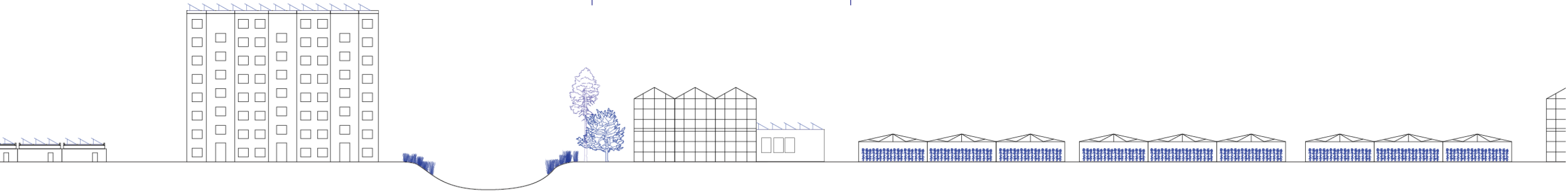
Urban Residential Area



Urban Residential Area

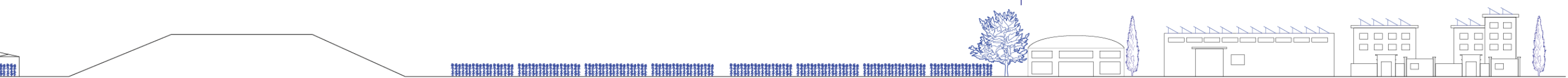
Monitoring centre

Glasshouse



Cropland

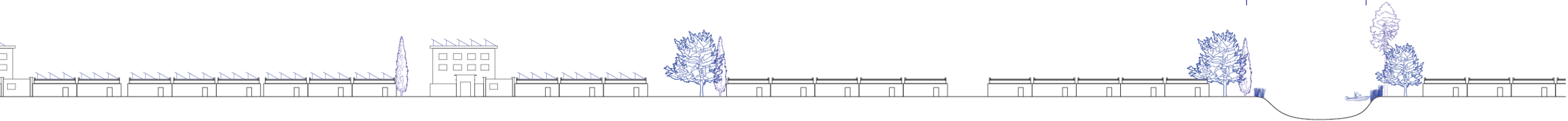
Processing industry



Village Residential house

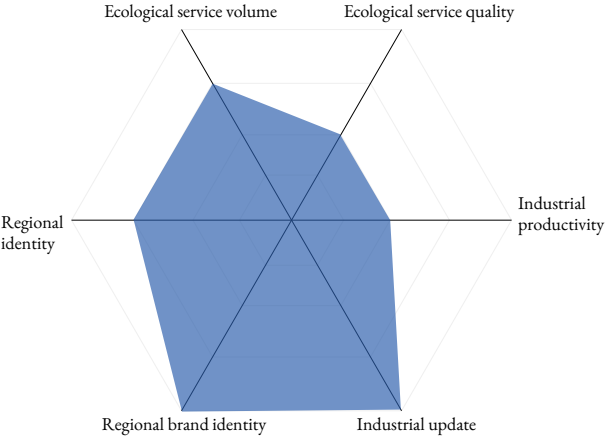
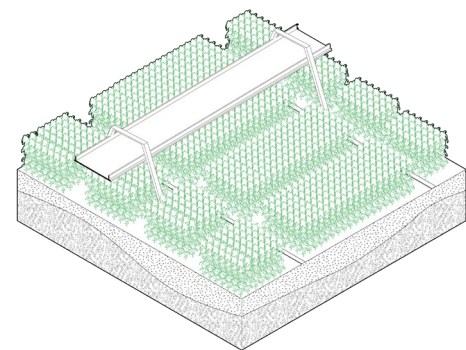
Waterway

Village Residential house

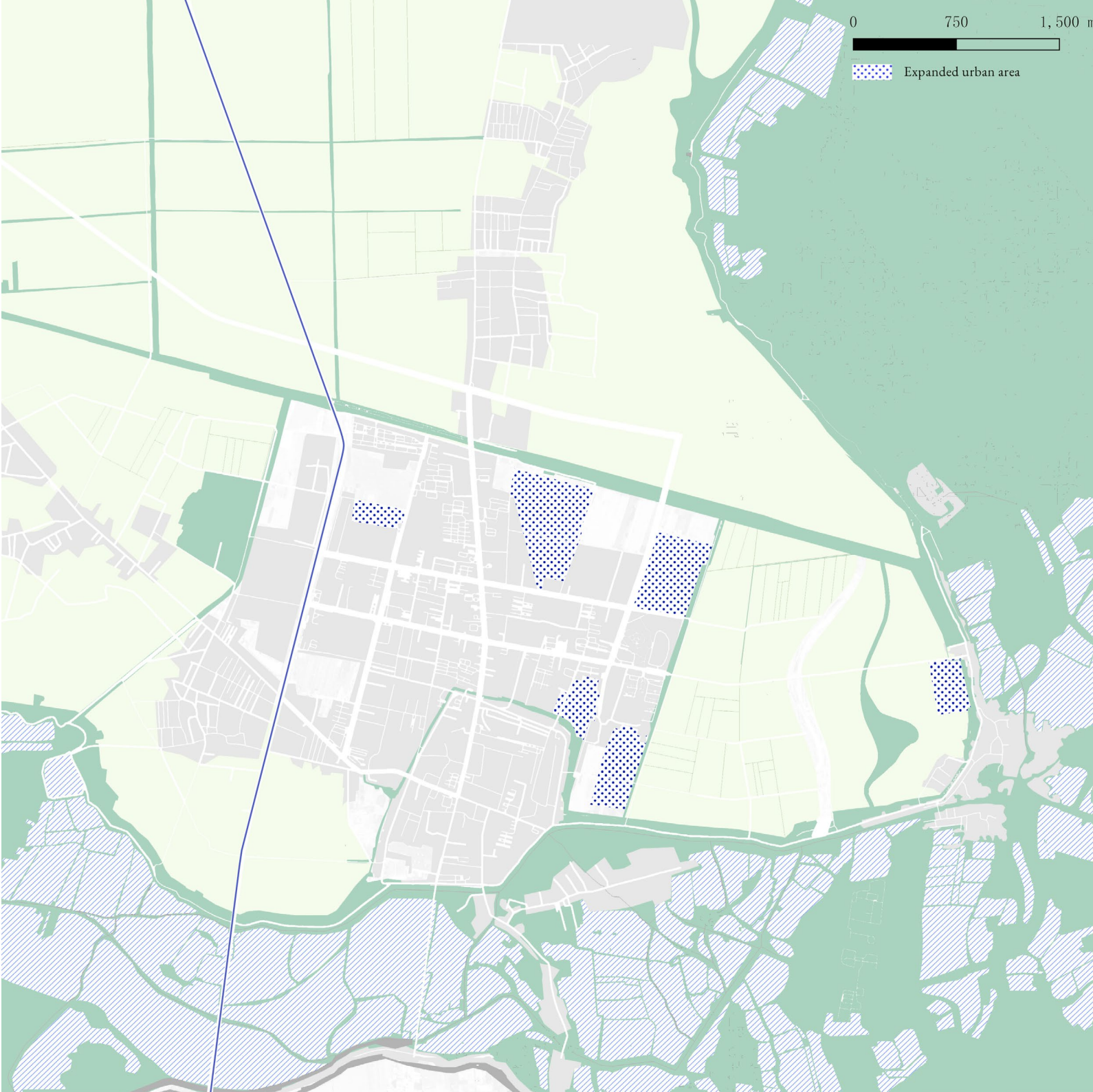
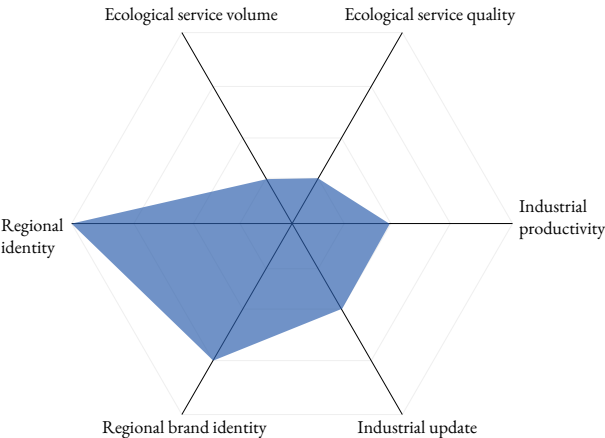
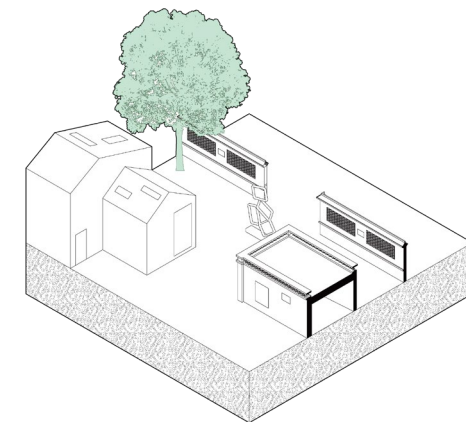


Scenario : transformation

Tourism



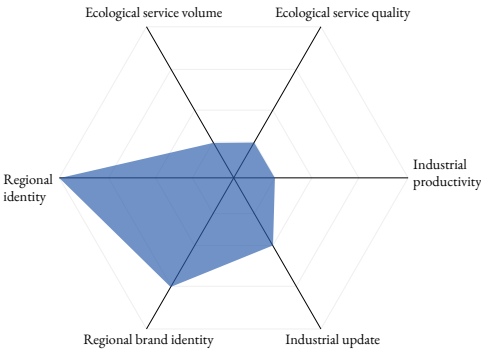
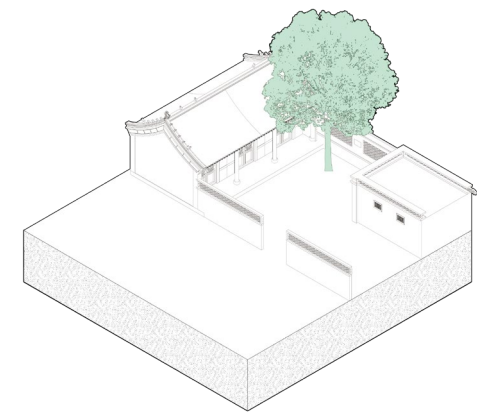
Artecraft hub



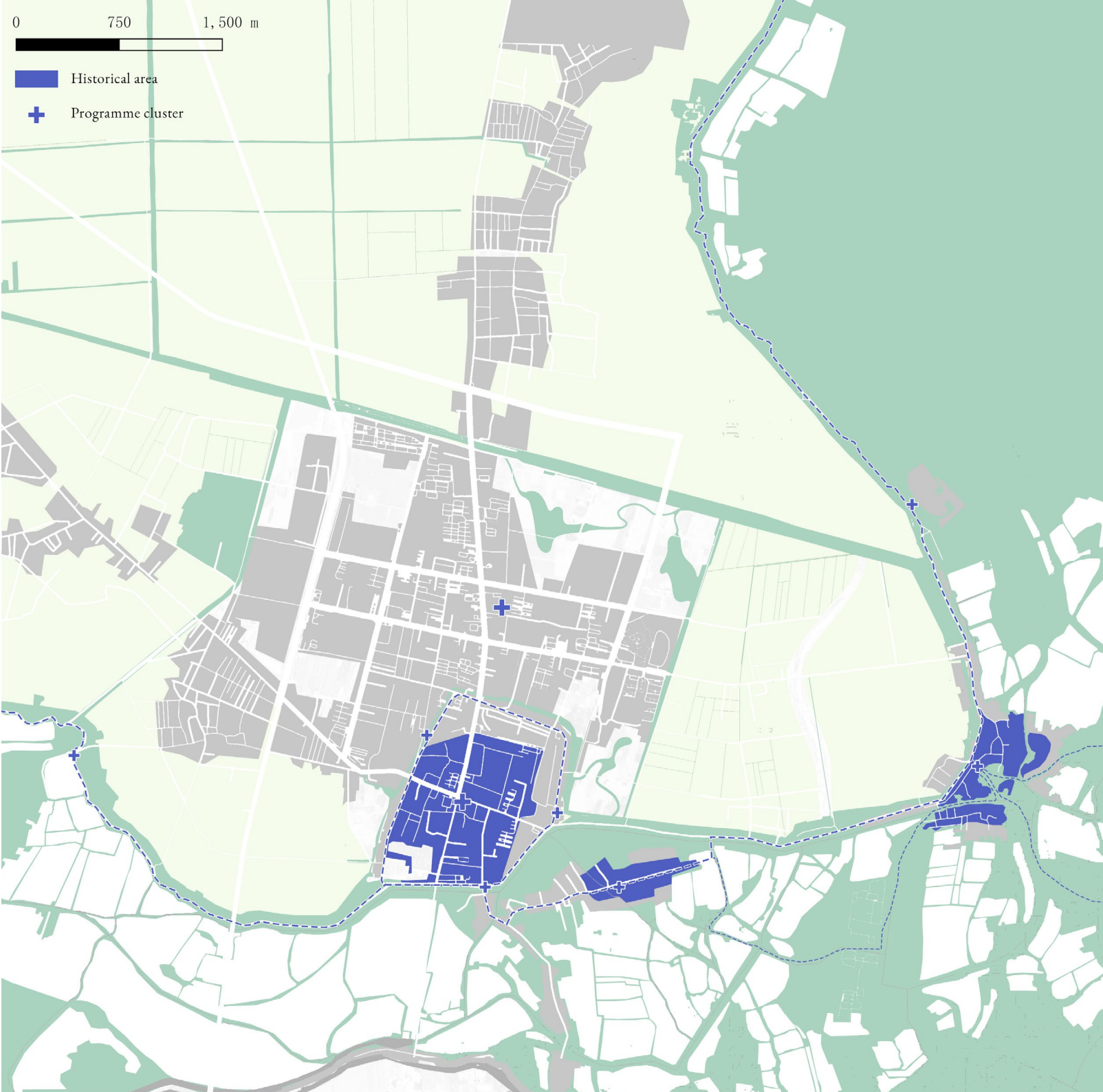
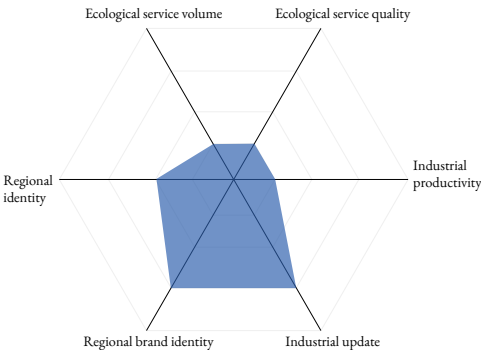
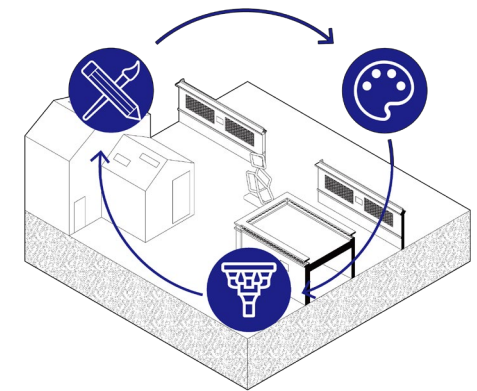


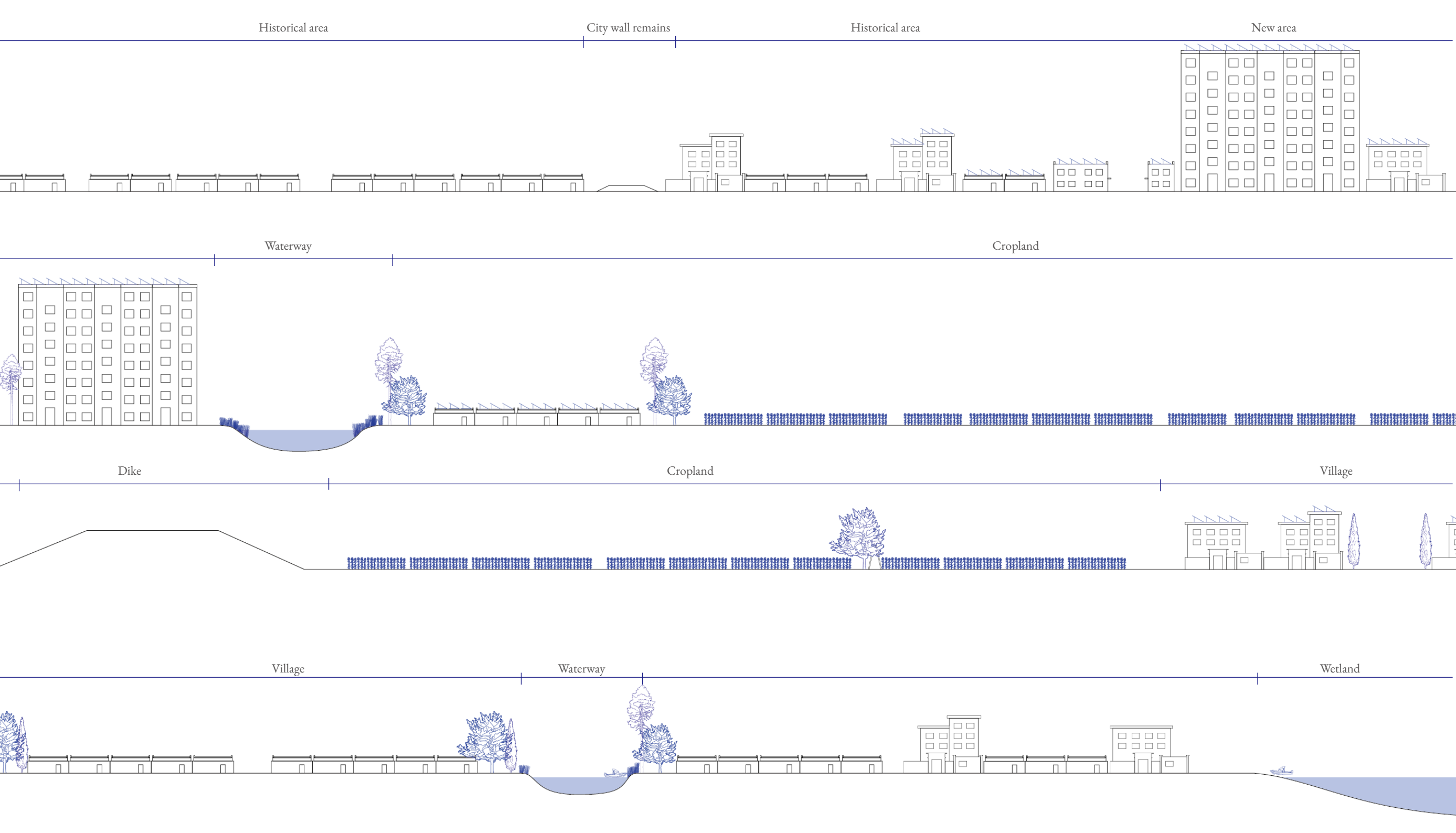
Scenario : Heritage

Repair

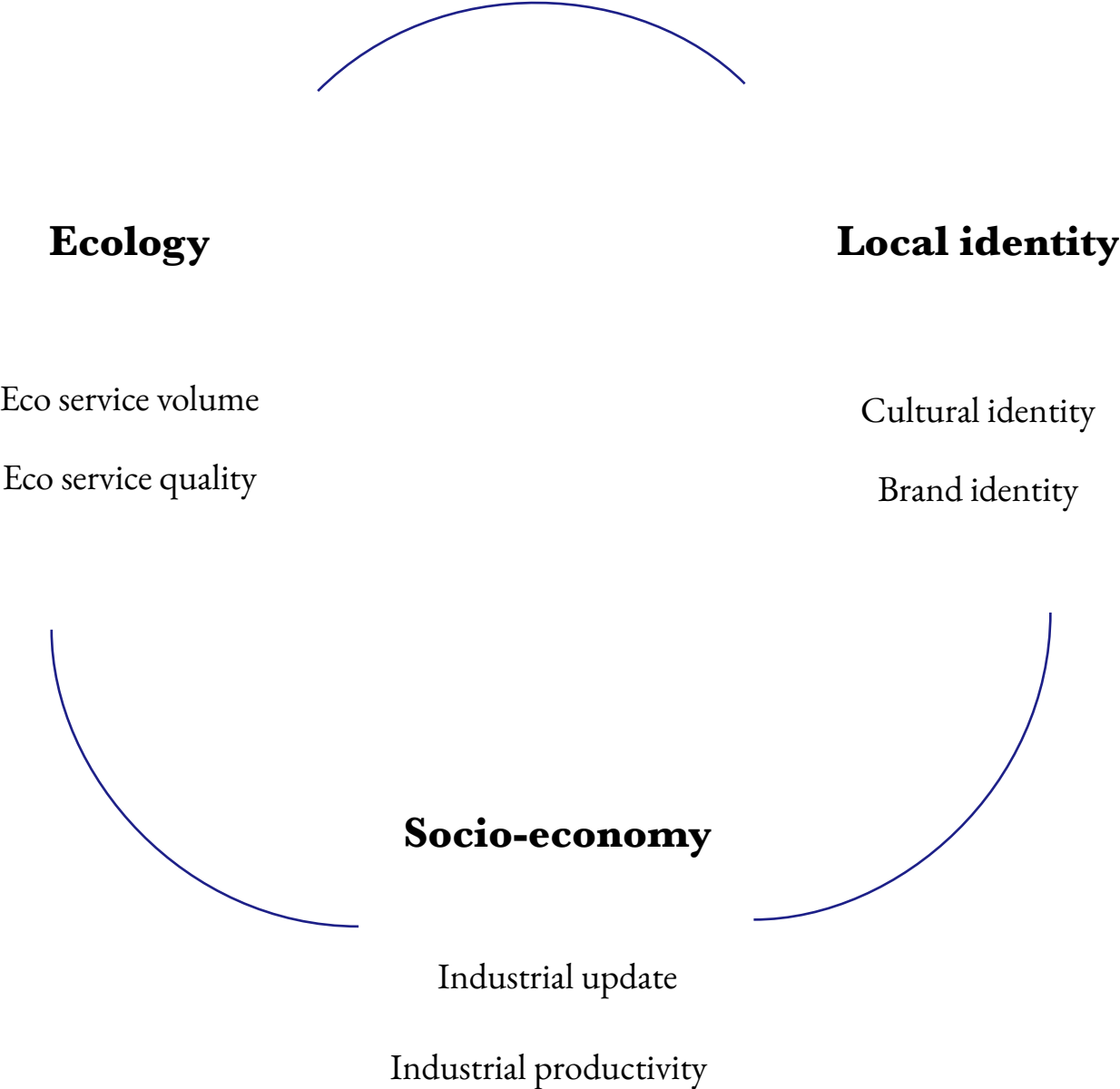


Education programme





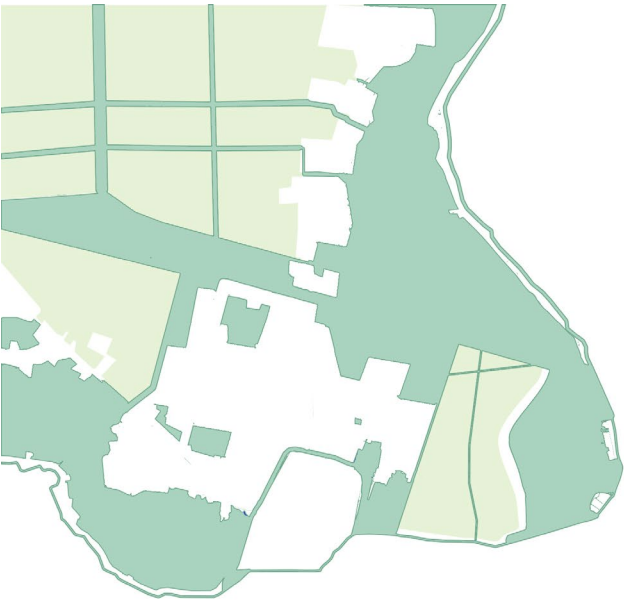
Comparison



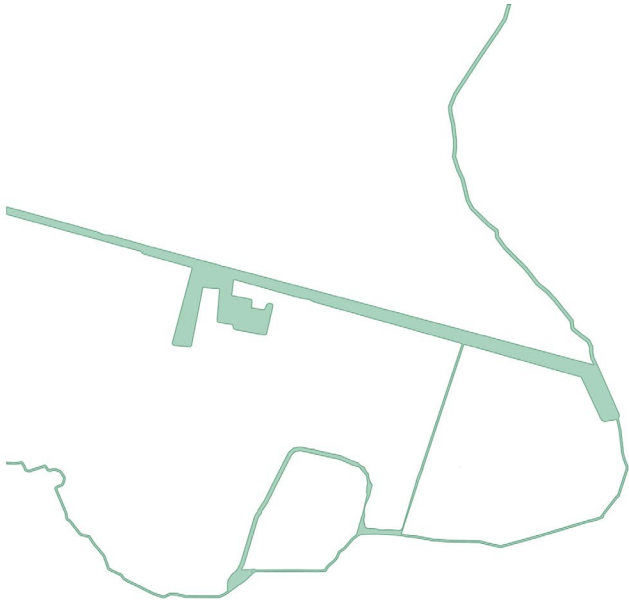
Ecology

Eco service volume

- Fragmentation
- Connectivity



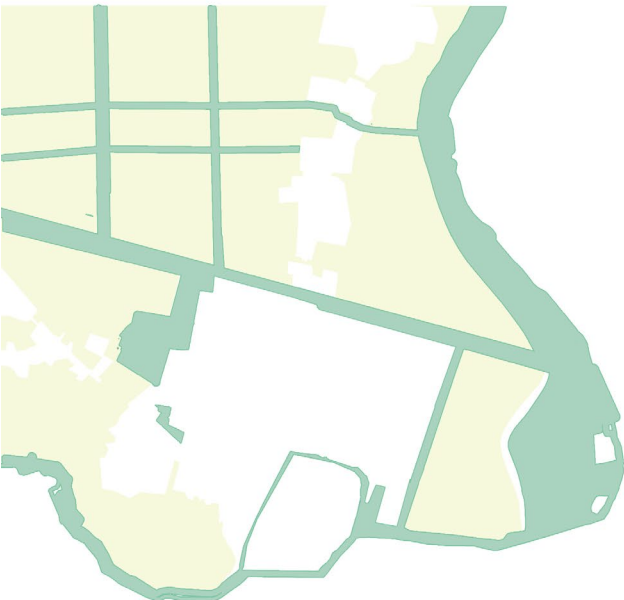
Scenario: Nature



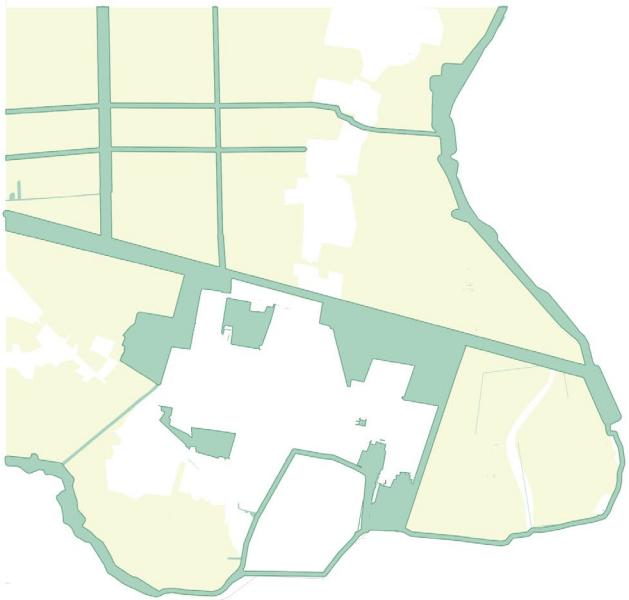
Scenario: Production

Eco service quality

- Wetland
- Sustainable farmland
- Cropland
- Built area



Scenario: Transformation

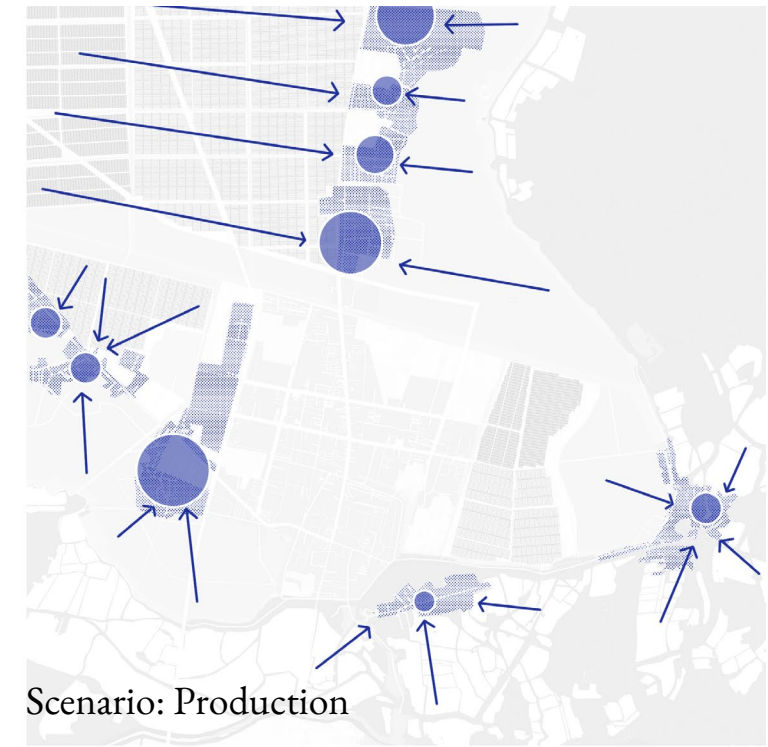
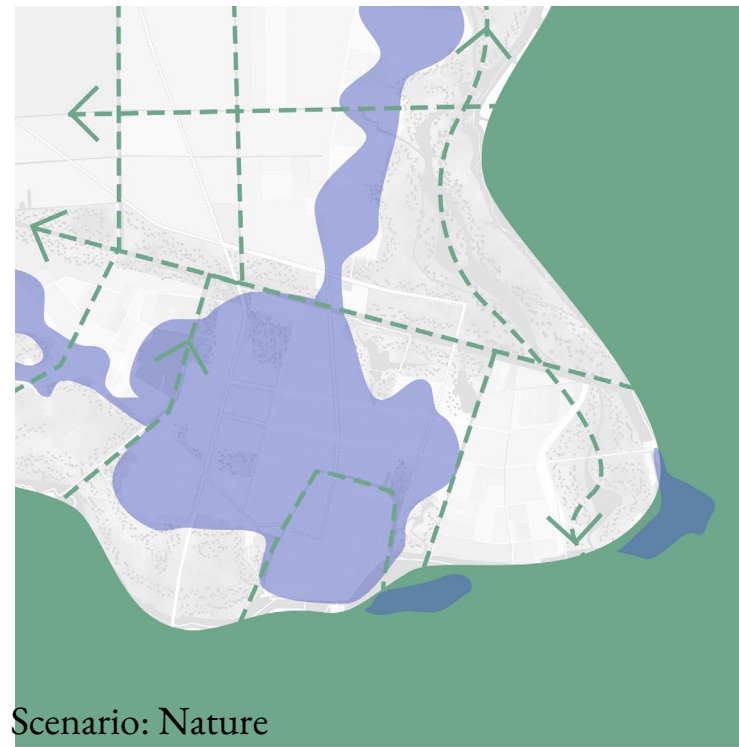


Scenario: Heritage

Socio-economy

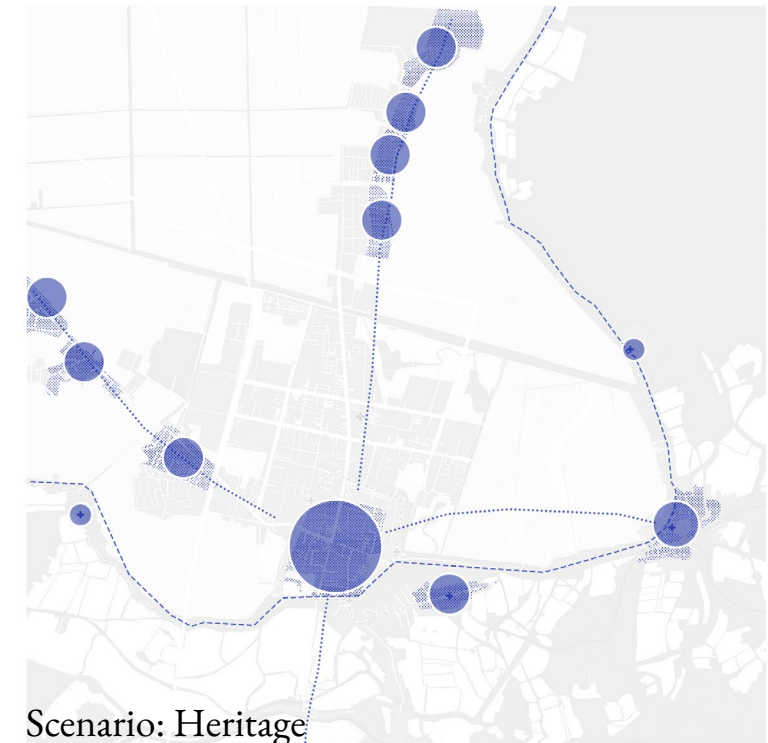
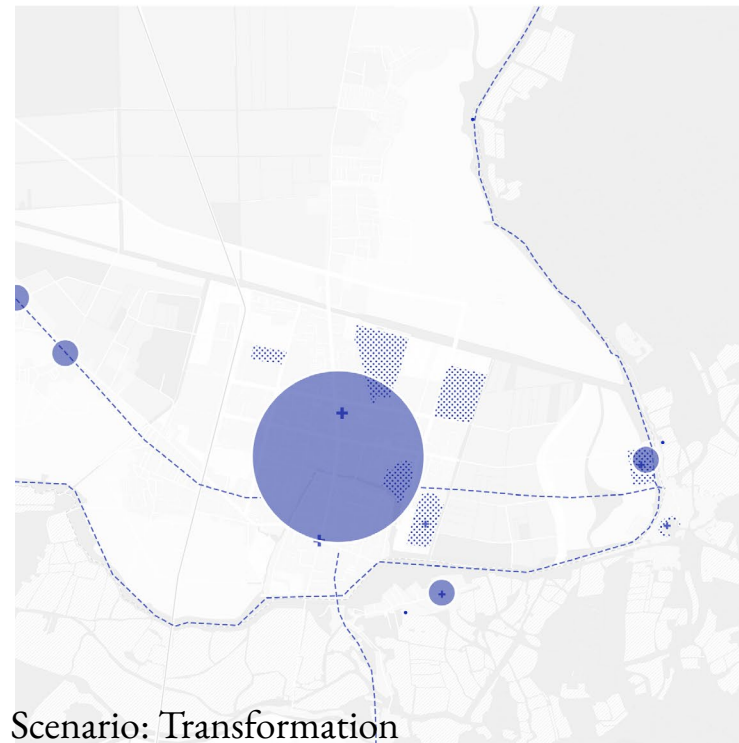
Industrial productivity

-Primary and secondary productivity



Industrial update

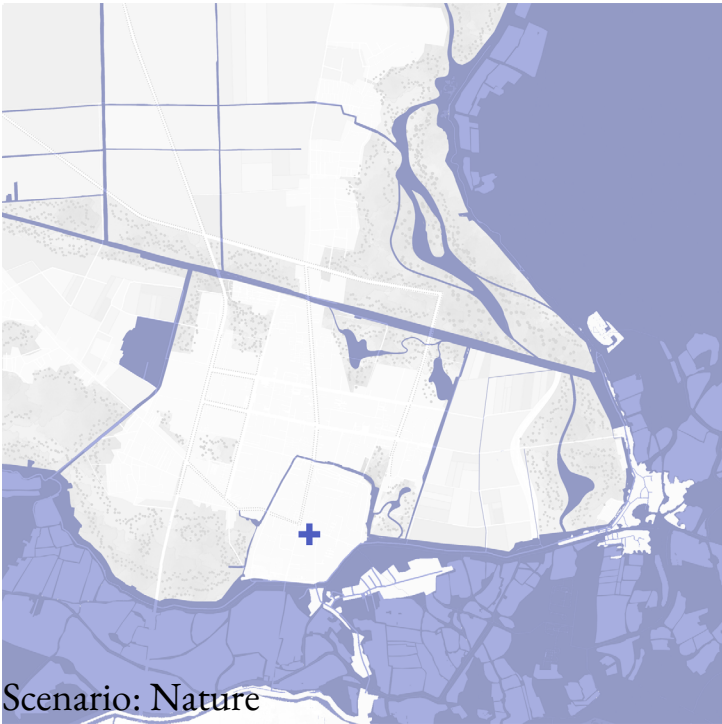
- An adaptable and composite industrial sturcture



Local identity

Cultural identity

- the identity of a region
- the regional consciousness of residents



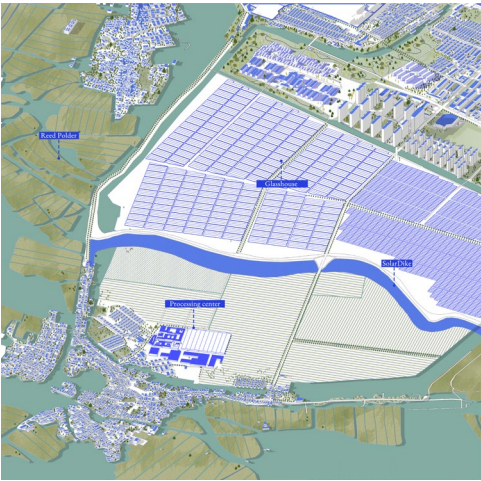
Brand identity

- Maximization of the cultural brand in strategy developing
- Consistence of local planning with regional planning.



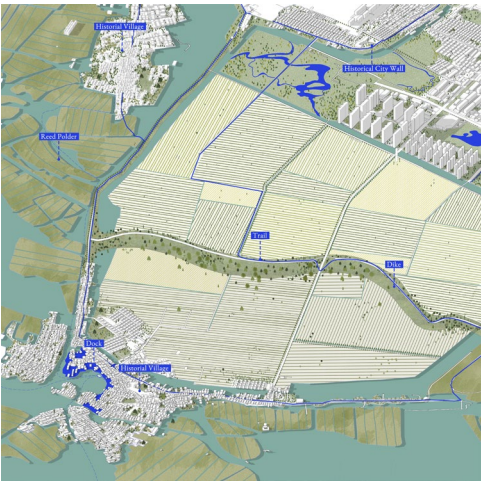
Choice

Transformation



Ecology

Production



Preservation

CHAPTER 4

STRATEGIC DESIGN

Strategy Assessment



Principles

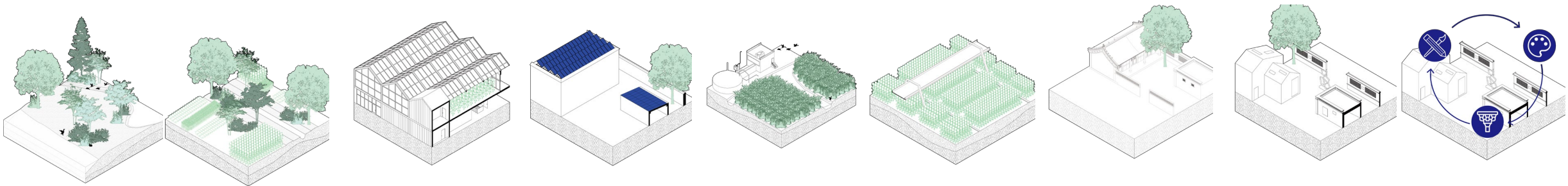


Strategic map



Design case

Strategy assessment



Buffer zone

Sustainable farming

Intensive agriculture

Solar

Biofuel

Tourism

Artecraft hub

Heritage Repairing

Education programme

Eco service

Volume



Quality



Socio-economy

Industrial productivity



Industrial update



Local Identity

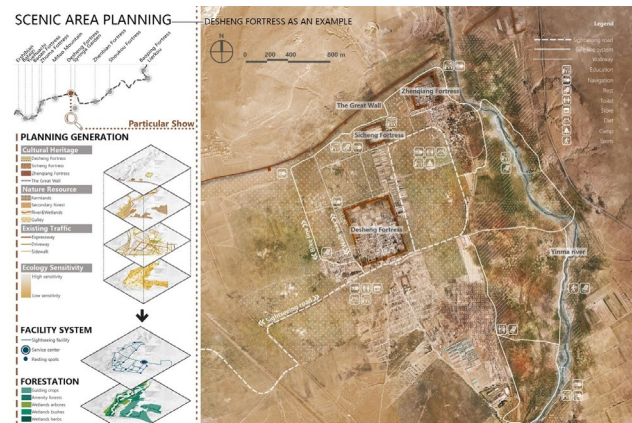
Cultural Identity



Brand identity



Case study



Datong Ancient Great Wall Cultural Heritage Corridor in Shanxi Province, China, BLLA and Beijing Forestry University

Heritage repairment

+

Ecological restoration



The Recovered Archeological Landscape of Chengtoushan, Hunan province, Turenscape

Ecological restoration

+

Agricultural restoration



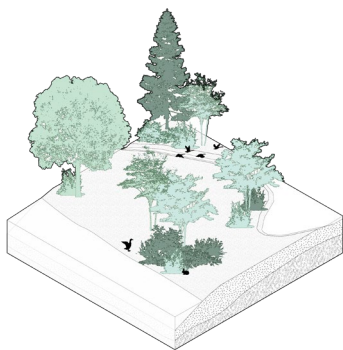
the Echigo-Tsumari Art Field, Japan, Fram Kitagawa

Art intergration

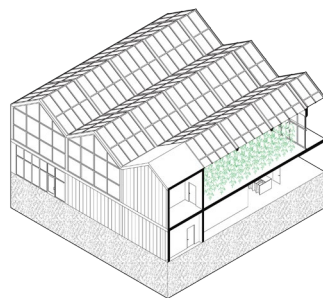
+

Tourism

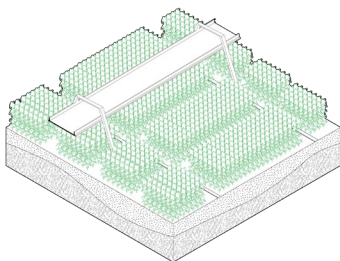
Principle



Buffer zone

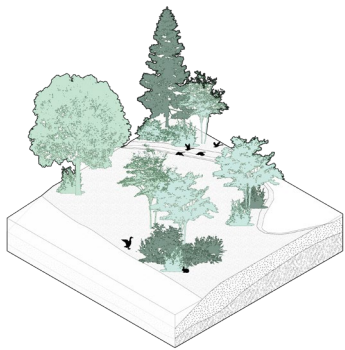


Intensive agriculture

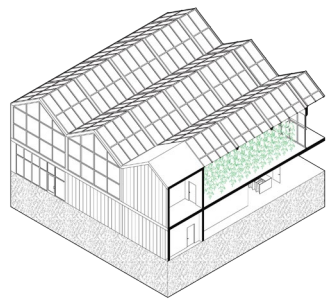


Tourism

Principle



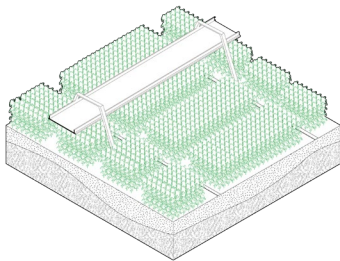
Buffer zone



+Sustainable farming

+Biofuel

Intensive agriculture

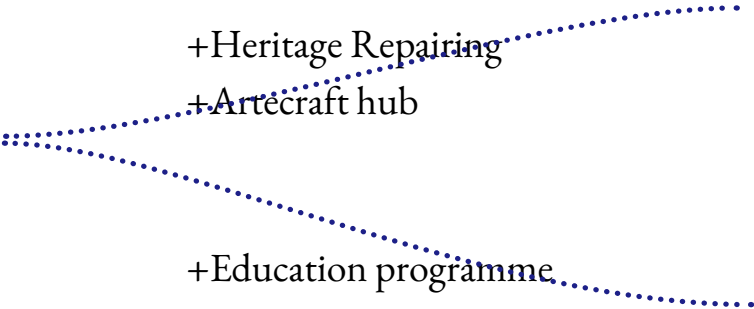


+Heritage Repairing

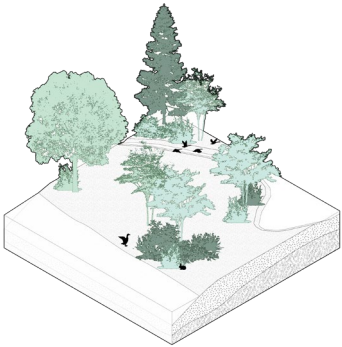
+Artecraft hub

+Education programme

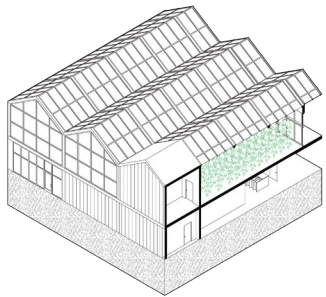
Tourism



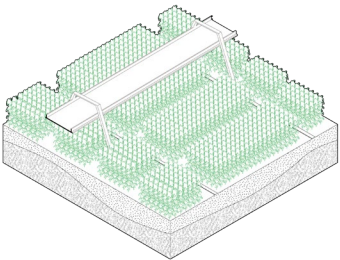
Principle



Buffer zone



Intensive agriculture



Tourism

+Sustainable farming

+Biofuel

+Heritage Repairing

+Artecraft hub

+Education programme

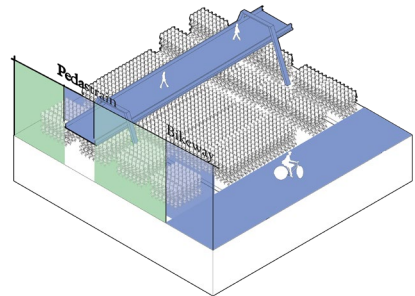
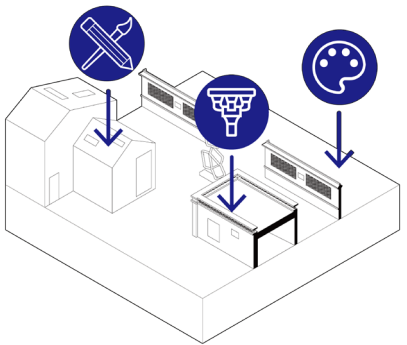
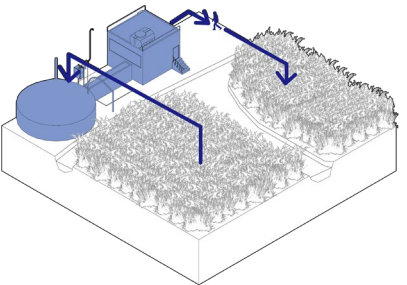
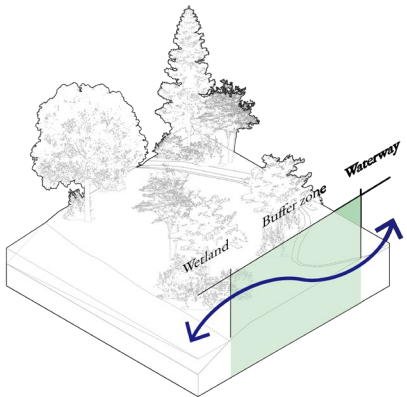
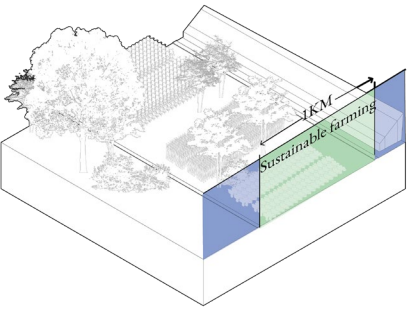
Set buffer zone along all the main waterway and the edge of wetland

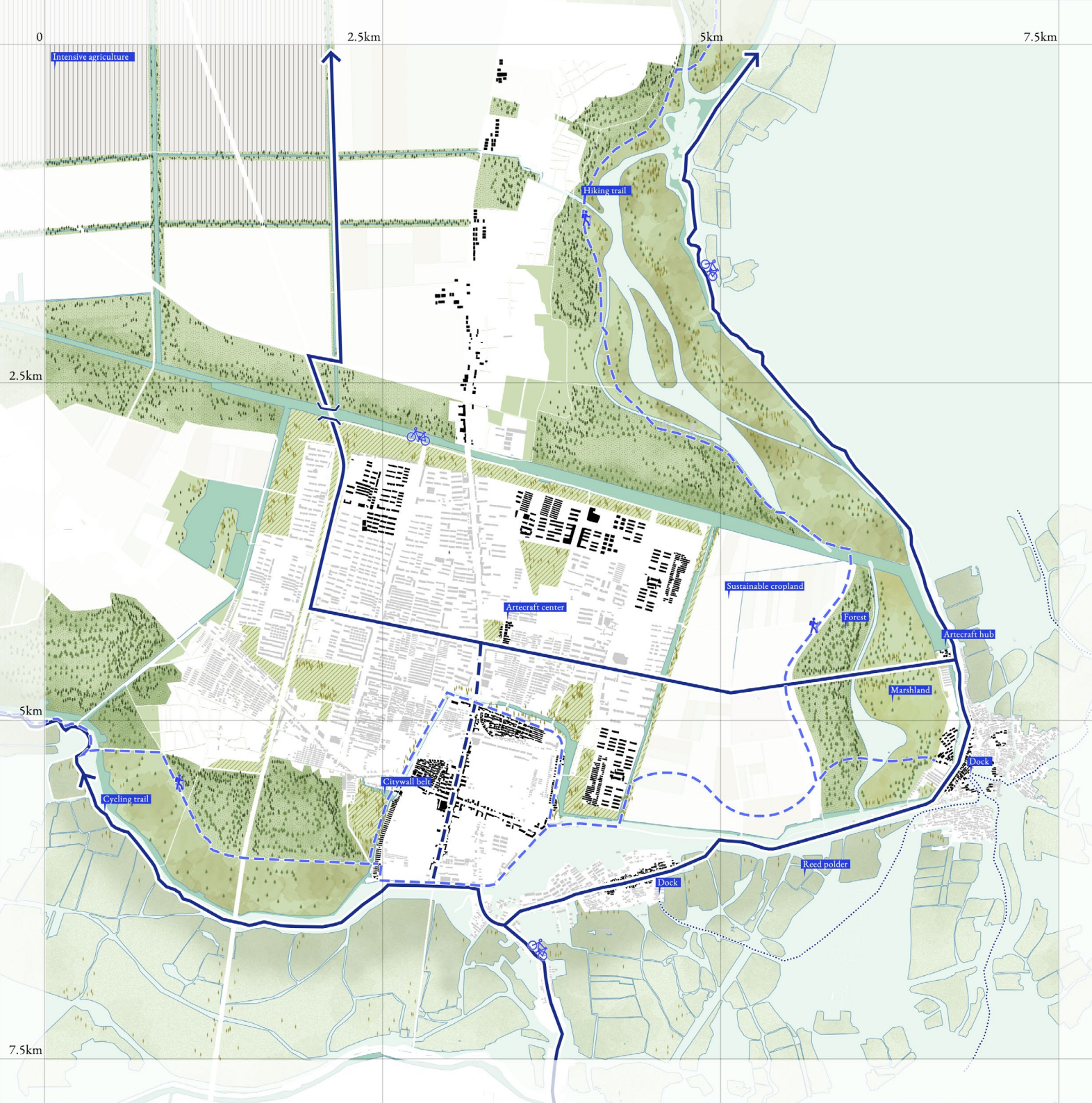
Intensive agriculture should be restrict at least 1KM away from buffer zone. The in-between area will become sustainable farming area.

Biofuel plants should be build in each village to encoruge residents to maintain the reed polder

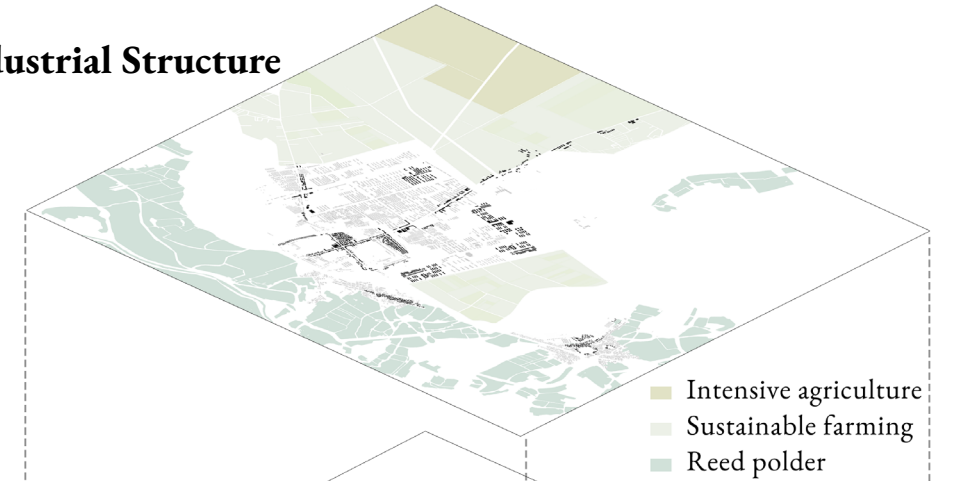
Selected heritage center should be protected as a district. Education programme and Artecrafft hub will be attached to the selected heritage district

Low mobility travelling system and public transportation should be enhanced to increase the accesiblity for all groups of people.

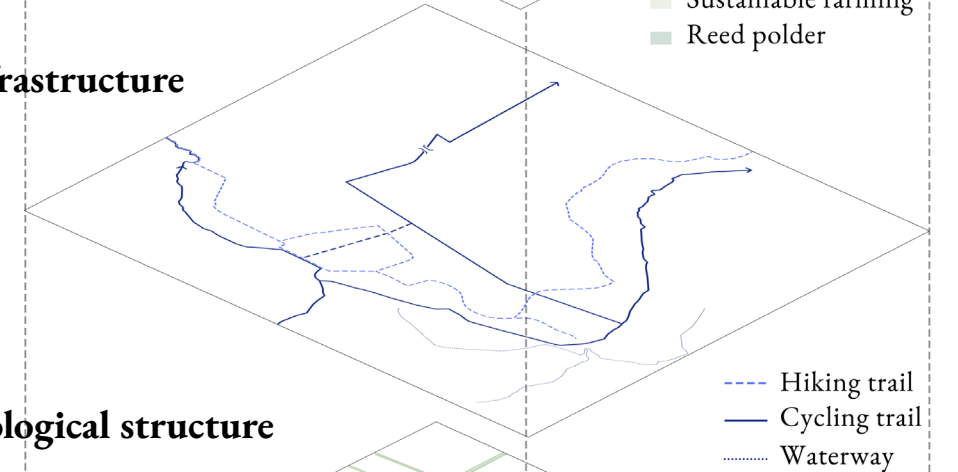




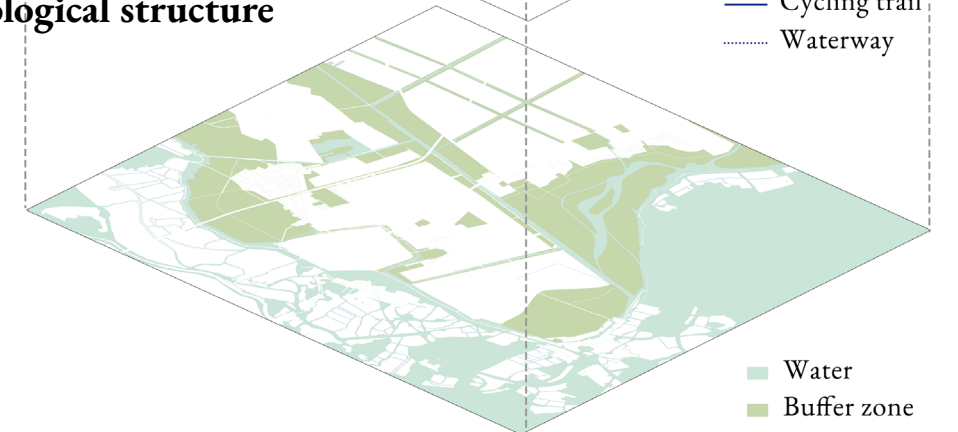
Industrial Structure



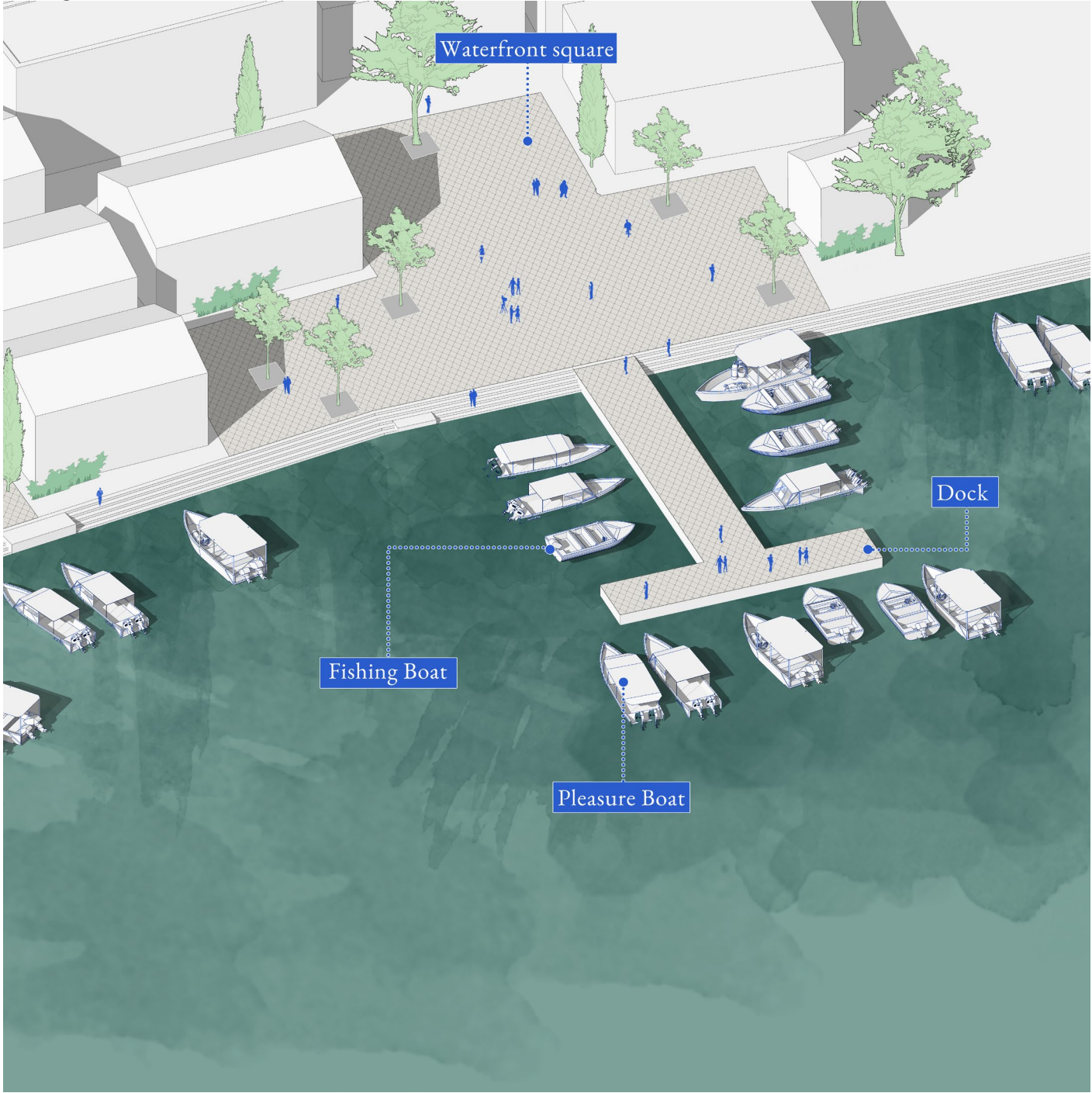
Infrastructure

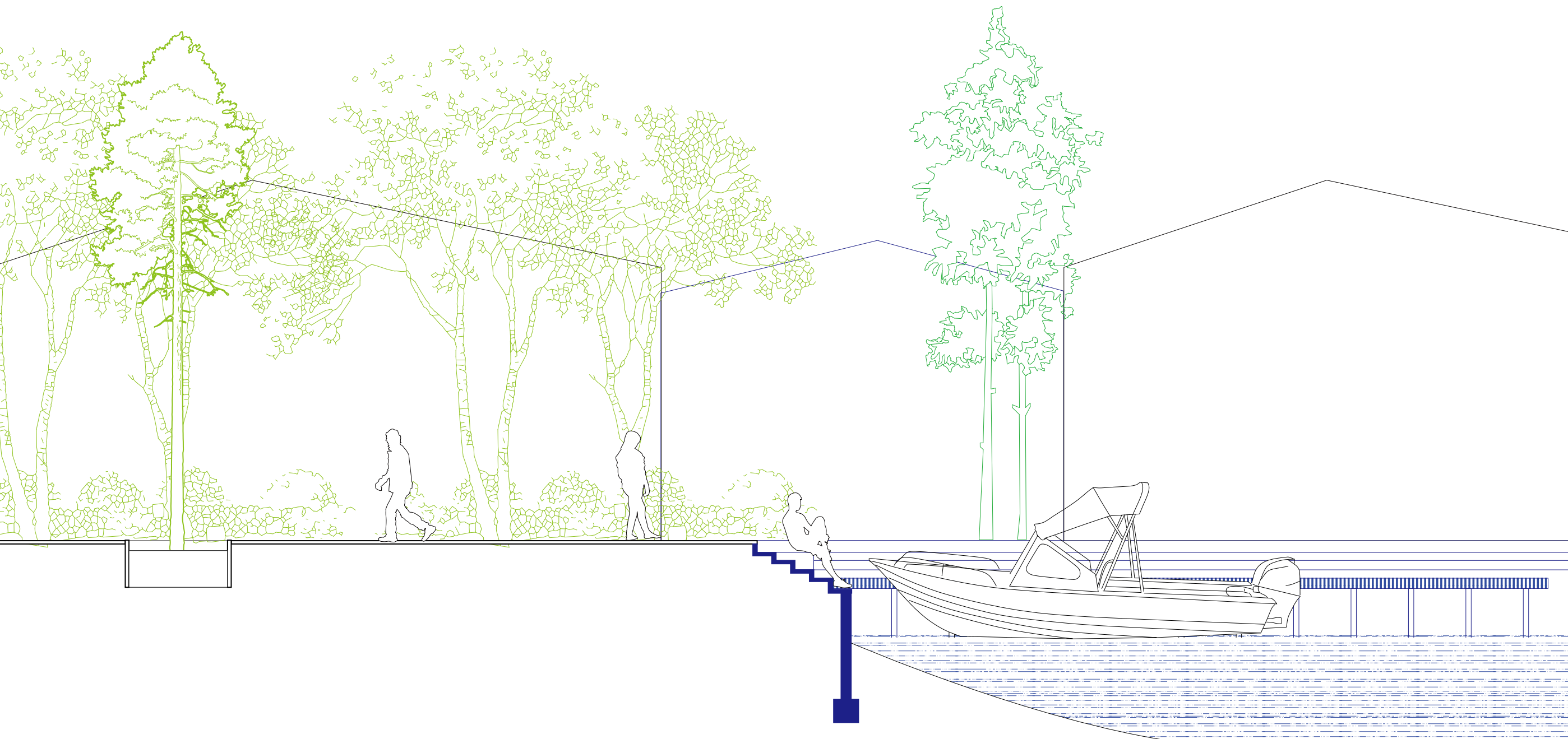


Ecological structure

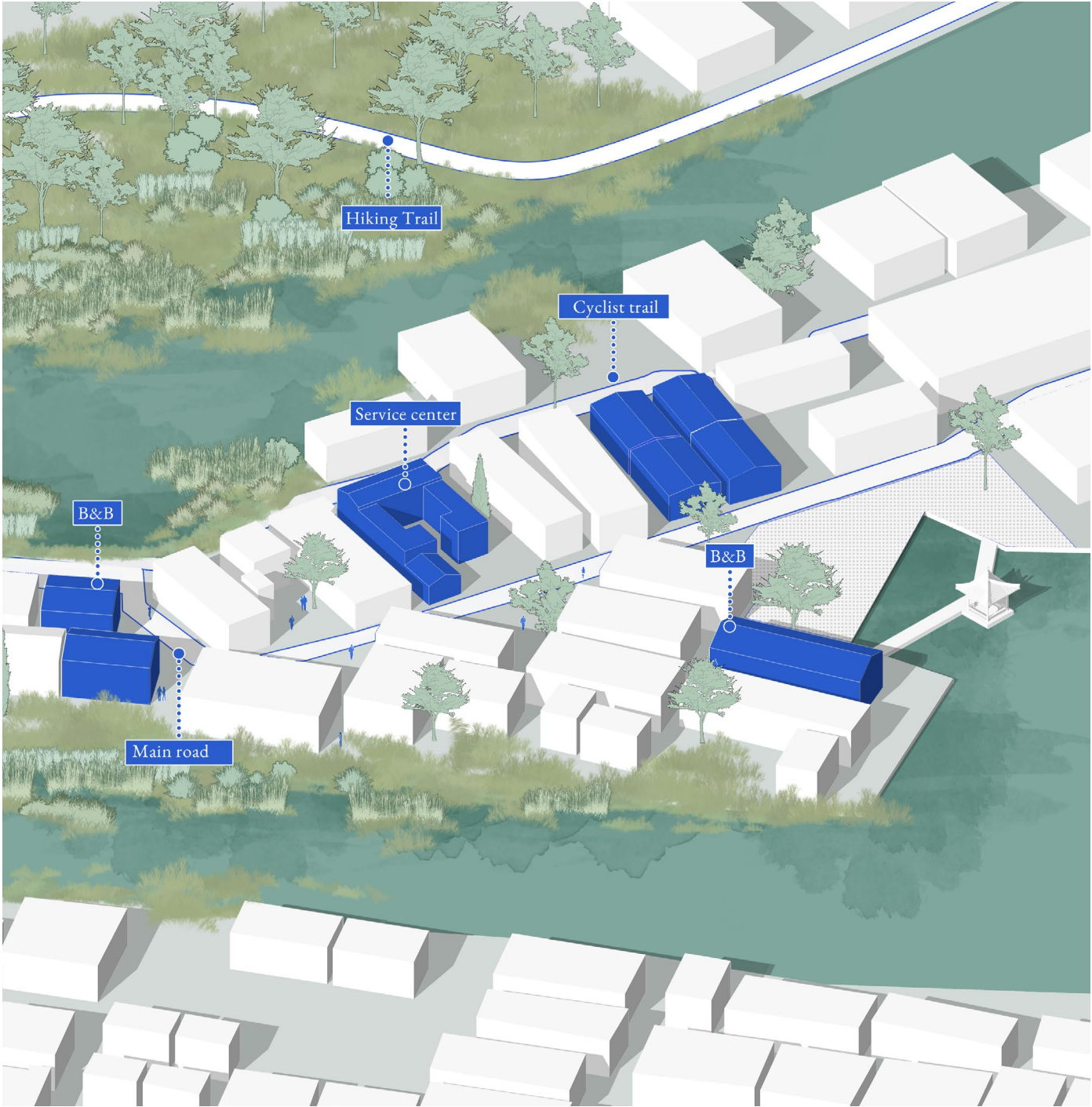


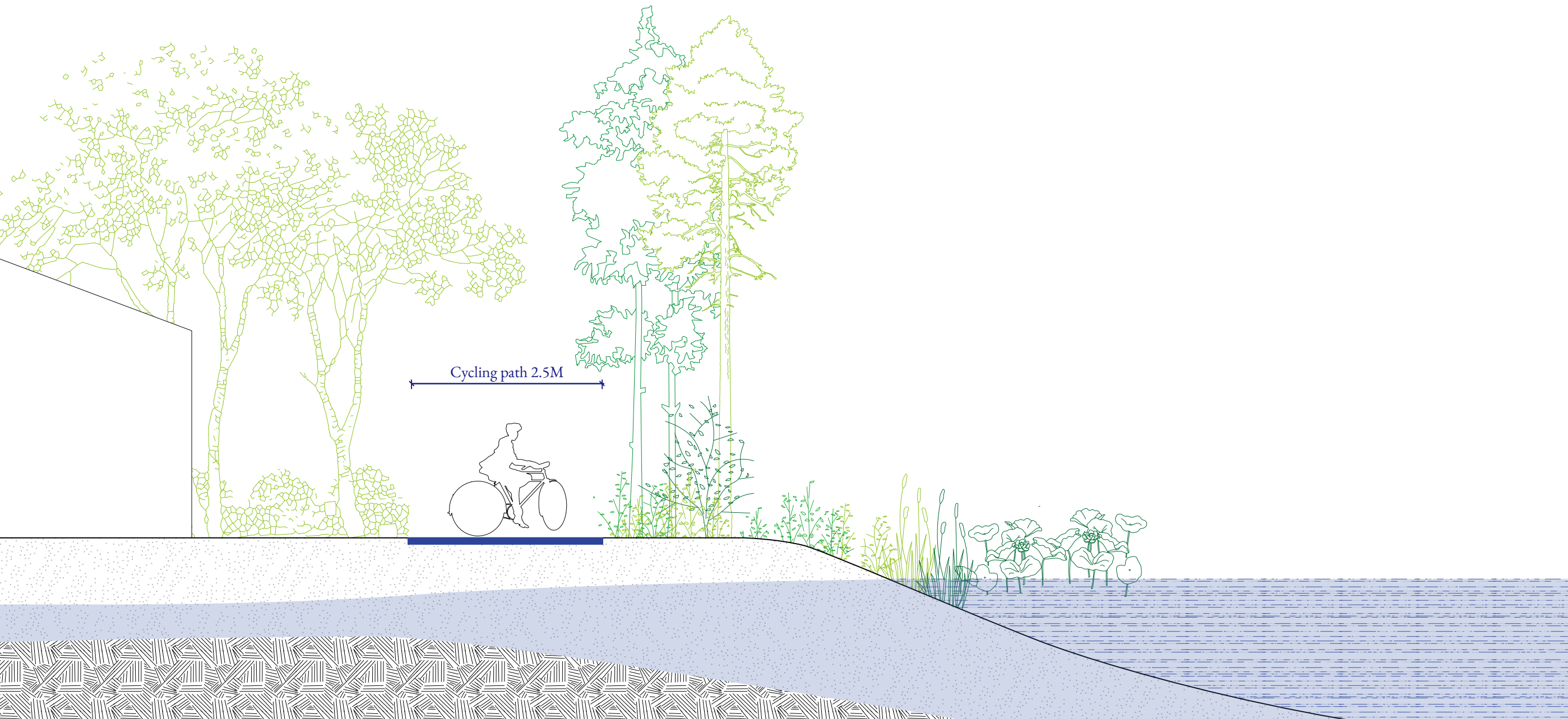
Design case: Dock





Design case: Trail





The background image shows a traditional Chinese courtyard with a central pond. Several small boats are docked along the right side of the pond. The courtyard is surrounded by brick walls and traditional buildings. The scene is captured in a slightly desaturated, vintage style. The text is overlaid on the upper half of the image.

CHAPTER 5

CONCLUSION&REFLECTION

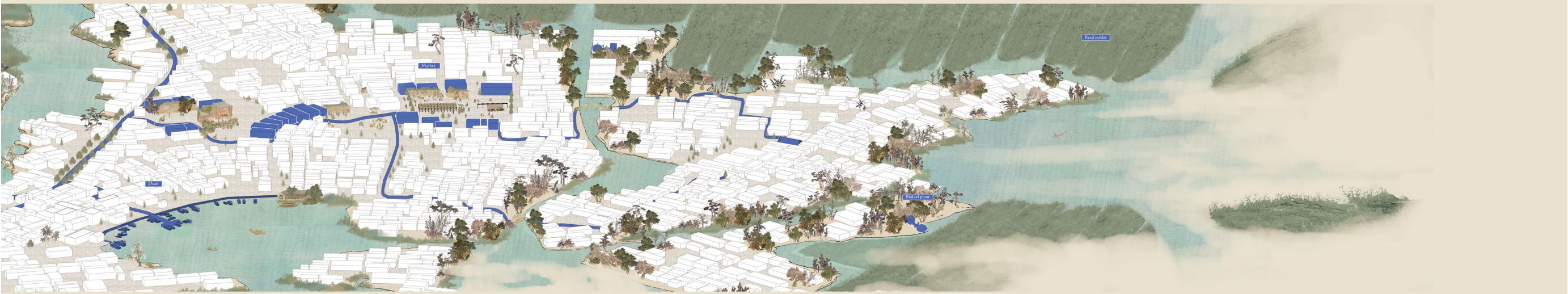
Conclusion

Reflection

Appendix

Visualizing the vision



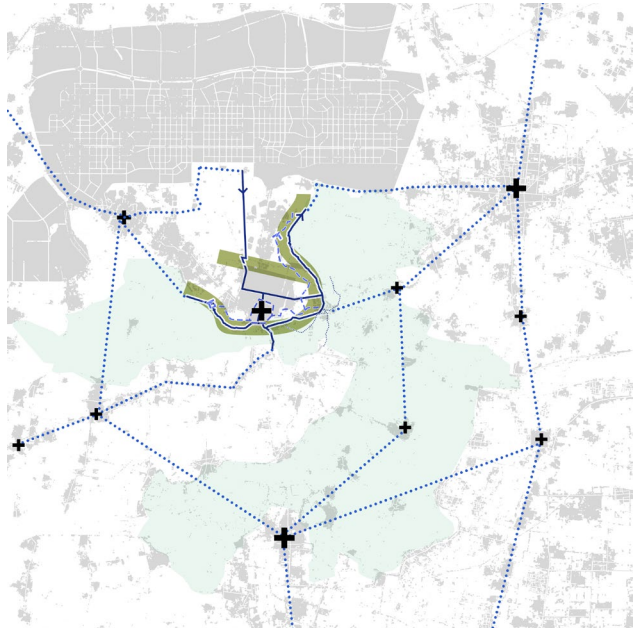


Reflection

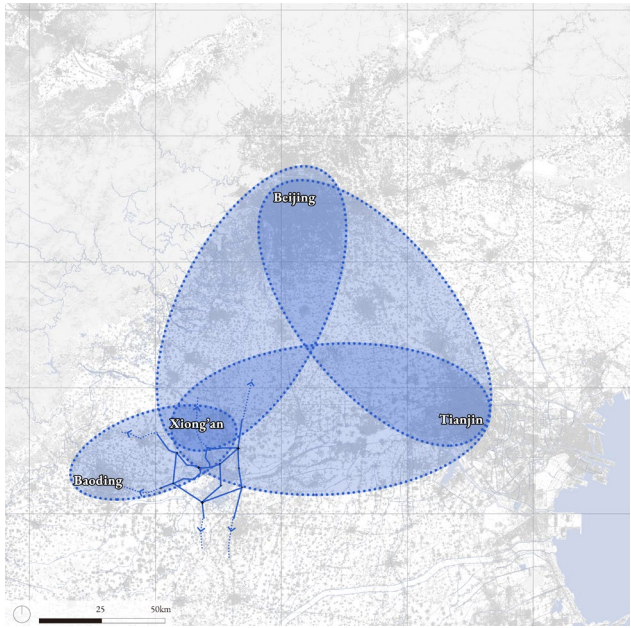
Micro Anxin County



Meso Baiyangdian wetland



Macro Jing-Jin-Ji megaregion



Appendix



Bibiography

Chinese reference:

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Collage reference:

- 仇英[明]–清明上河图 辽宁省博物馆藏
- 冯宁[清]–仿杨大章宋院本金陵图卷 私人
- 陈枚[清]–清院本清明上河图卷 台北故宫博物院藏
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