LANDSCAPE AS A SUSTANABLE INTERFACE:

Towards a vibrant boundary area in Shenzhen Second Line Pass

Facination

American- Mexican border

Netherland-Belgium border

About Shenzhen

FISH VILLAGE

1979 setting Second-line Pass

gradually demolishing

METROPOLITAN

About Line

84km fence, 16 checkpoints

06/1982 began to build 'Second Line'

03/2002 started lose function for separating

08/1980 established Shenzhen Special Economic Region

03/1985 compelete building 'Second Line'

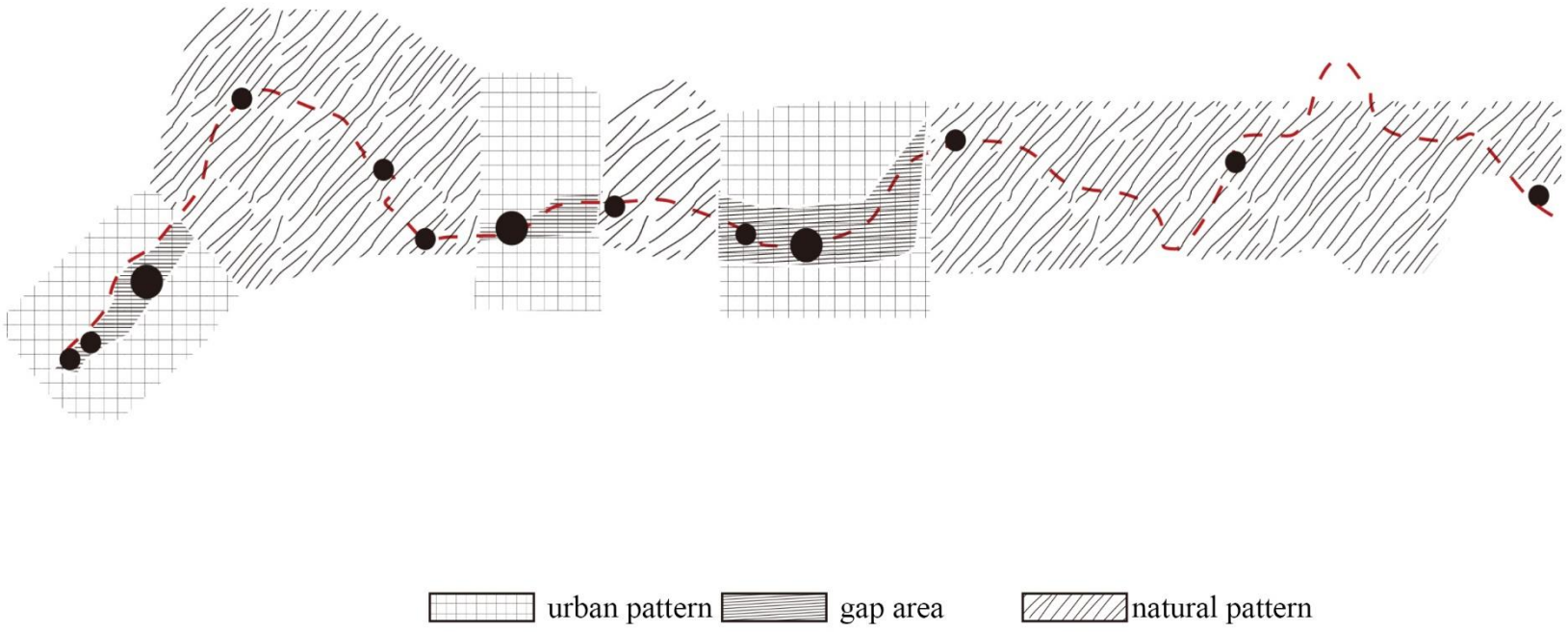
01/07/2010 abolished line's function

Chaotic Environment

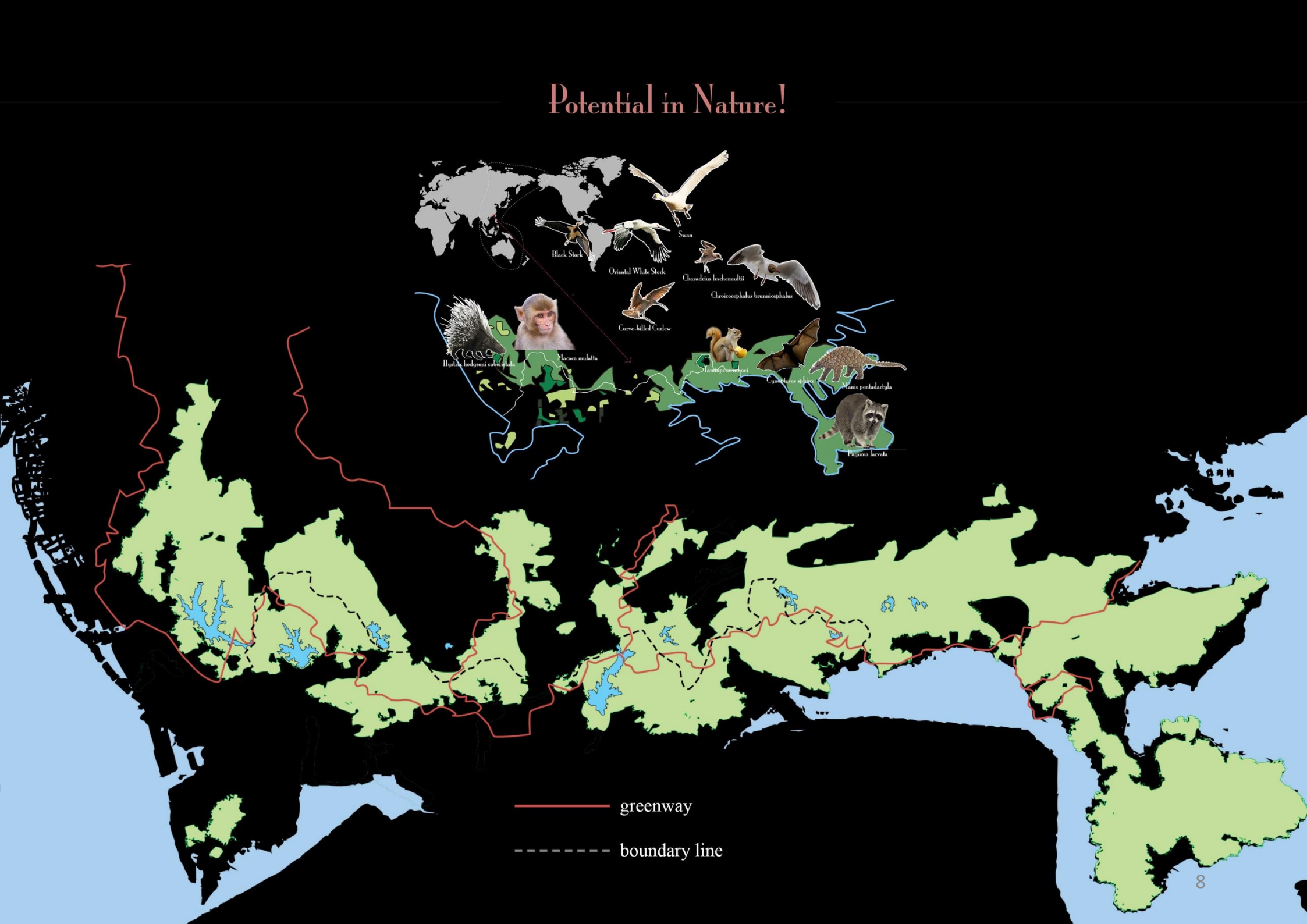
Problem Statement

Due to disorder planning and utterly spontaneous development, the boundary line left behind scattered and depleted landscape structures and large of vacant spaces.

Gaps in Urban, What in Nature?



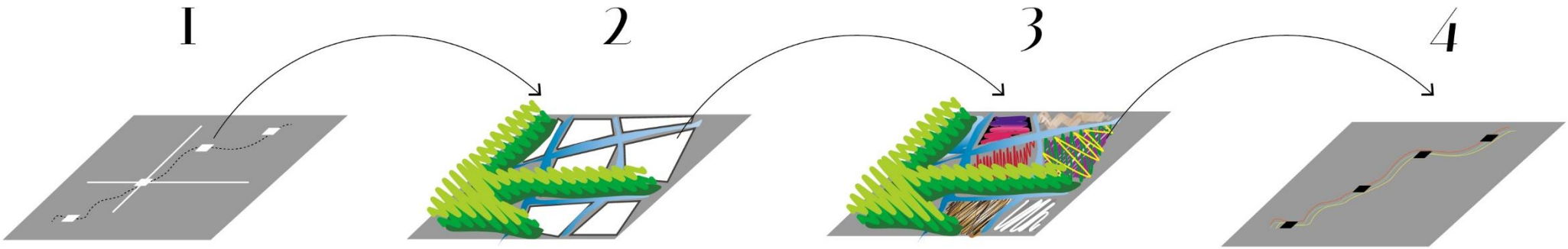
Potential in Nature!



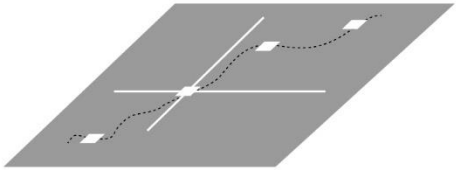
Research Question

How can city and nature be linked sustainably in urban landscape gaps along the boundary area by using regional and local landscape design?

Methodology



Choosing Research Scale

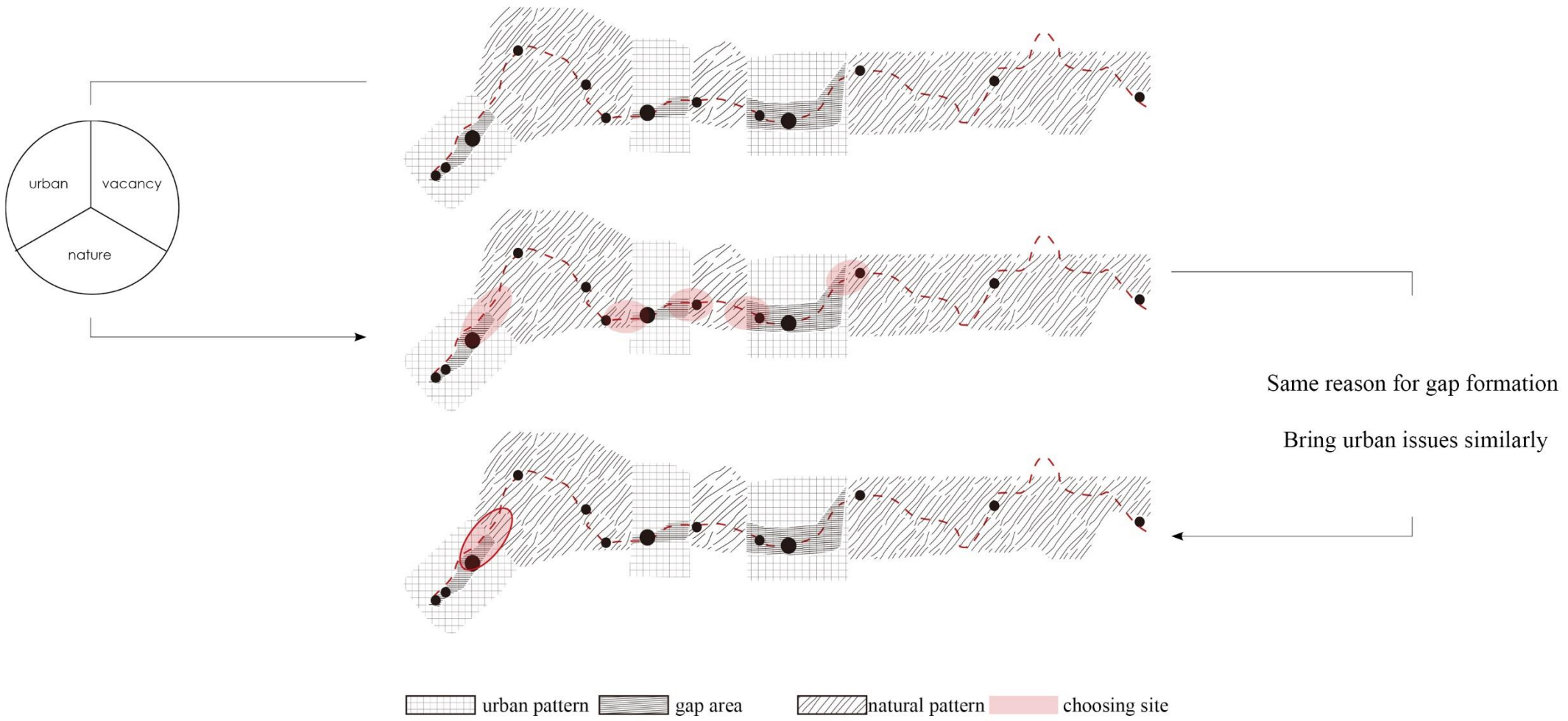


Site selection
regional scale

The landscape is viewed as a scale-continuum. This principle addresses working through the scales as a fundamental basic premise.

-Steffen Nijhuis

Choosing Research Scale



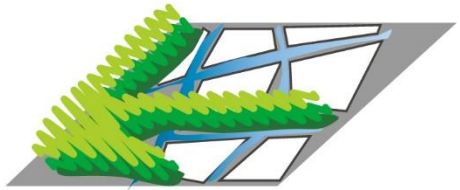
Same reason for gap formation

Bring urban issues similarly

Understanding the Site

6 kiometers

3 kiometers



Framework
gap scale

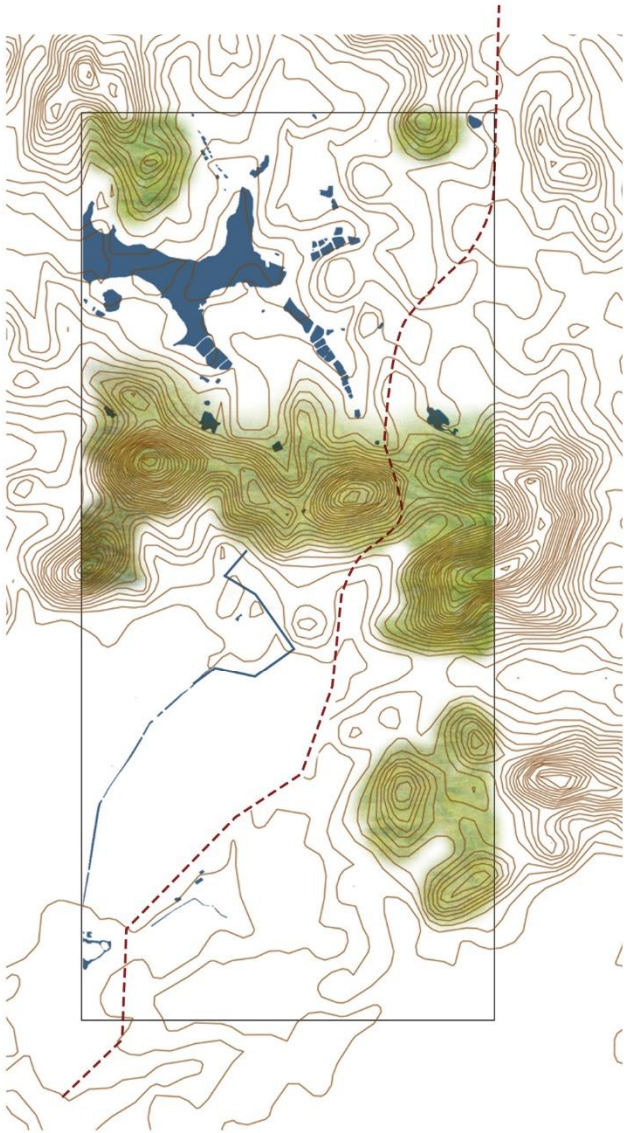
the multi-layer mapping becomes an explicit analytical, interpretative model for better understanding the regional context.

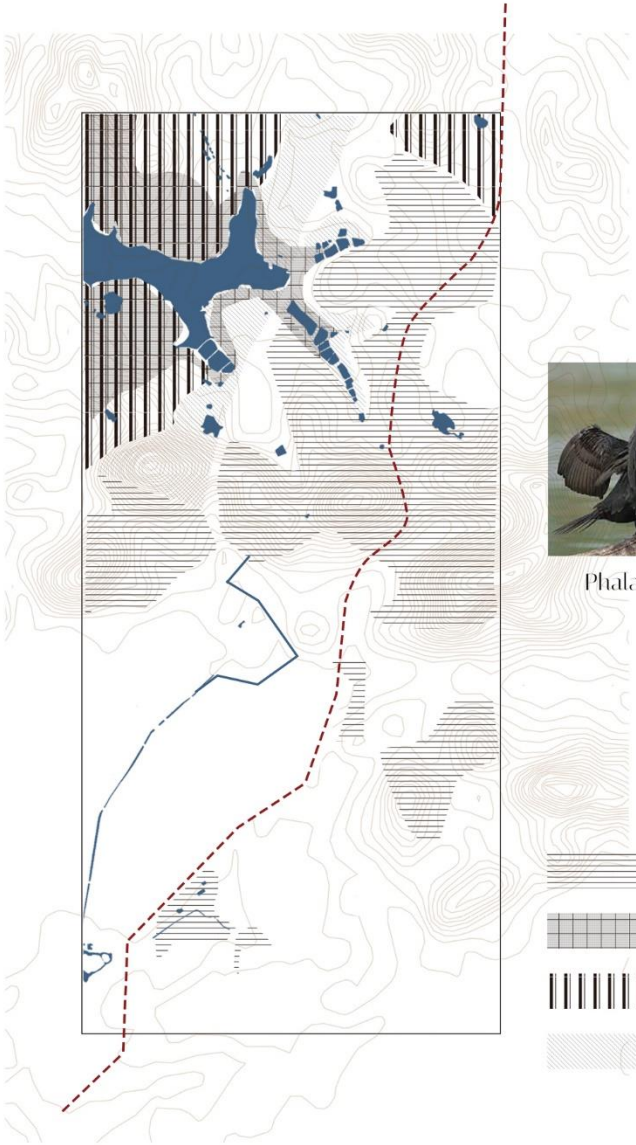
-Ian McHarg

It argues in favor of letting the spatially compelling, systemic nature of the subsoil structure and geography steer the planning of the occupying structure. The object of the plan was to create a new-living landscape in which nature, soil hydrology, and urban/ agriculture development could all go together.

-Dirk Sijmons

geomorpology & diversity





Phalacrocorax

Egretta garzetta

Anser cygnoides

Garrulax canorus

Lutrinae

Trimeresurus

Odorrana

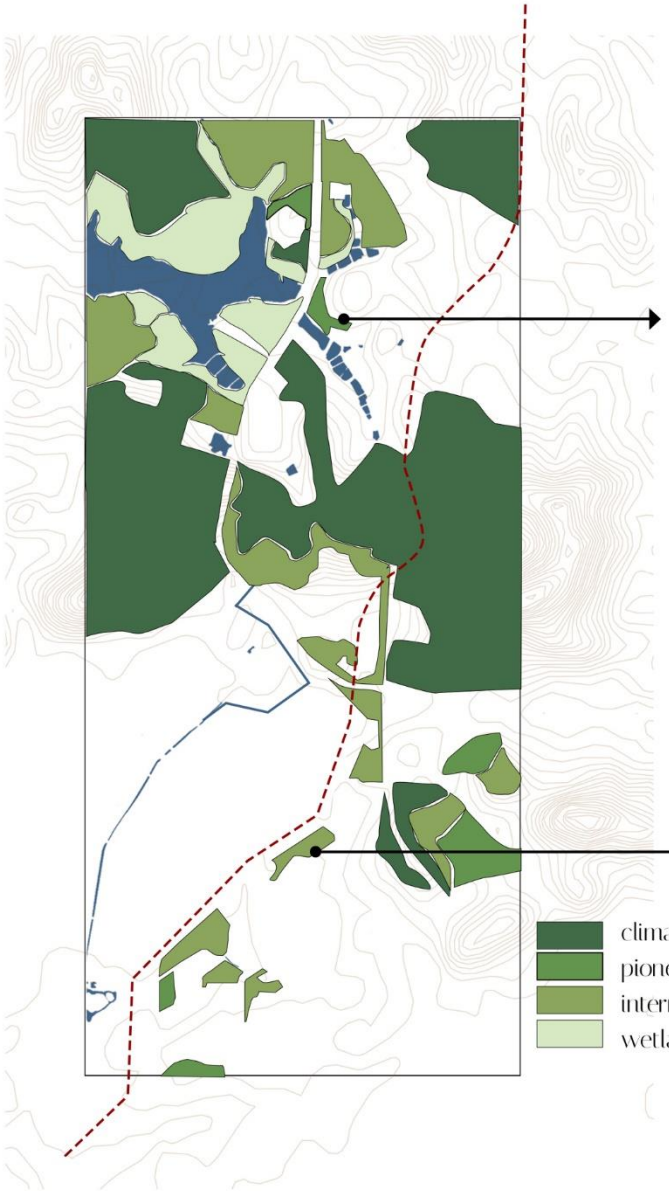
Protect landscape

bird habitat

strict natural reserve

managed resorces protected area

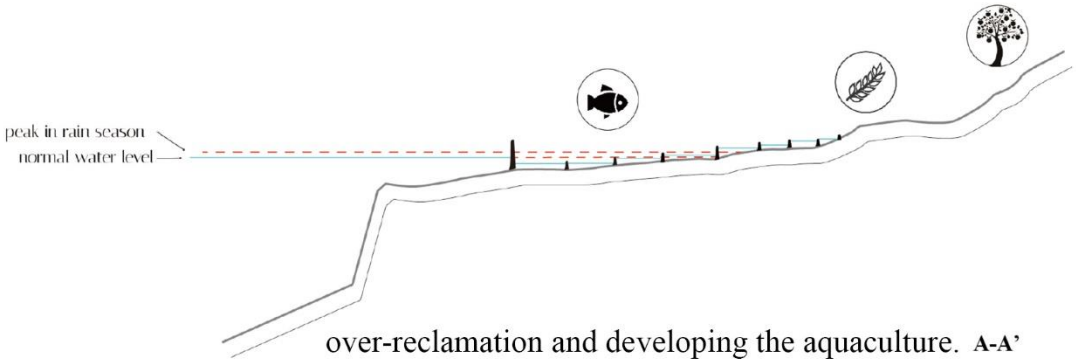
vegetation structure



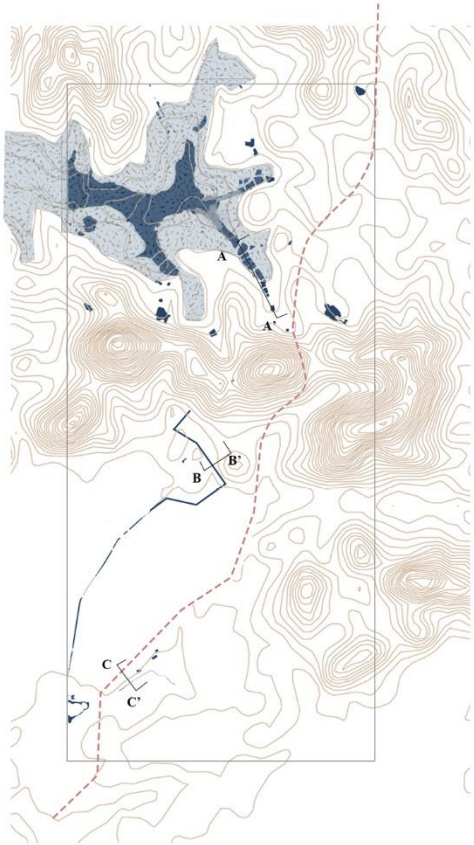
extensive and over-reclaimation break continous ecological system

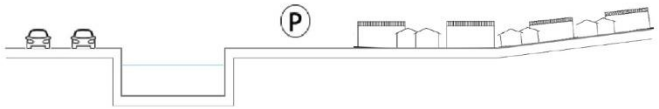
'stepping stone'

hydrology



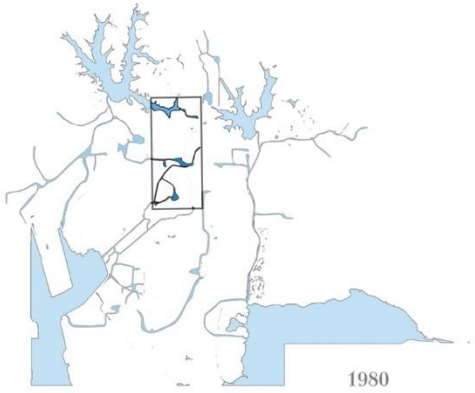
over-reclamation and developing the aquaculture. **A-A'**

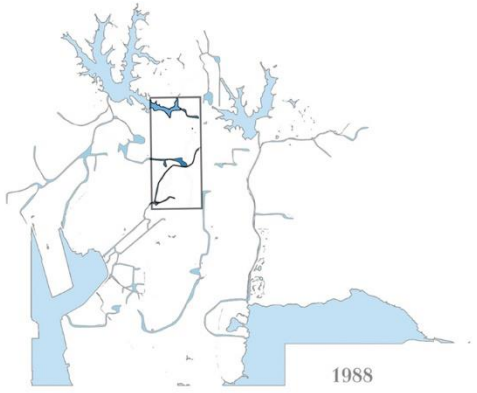


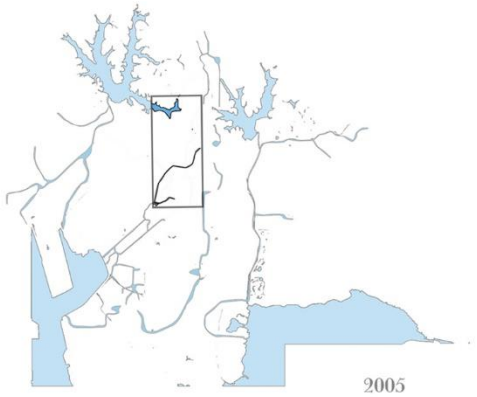


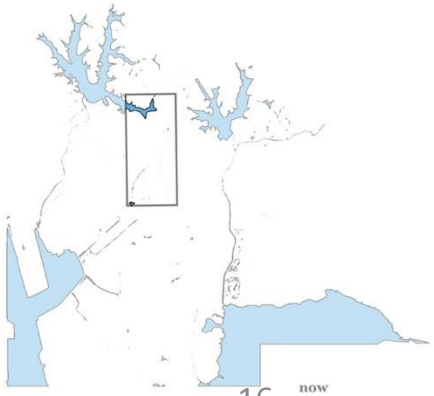
channelisation **B-B'**

without leaving any space for experience water **C-C'**

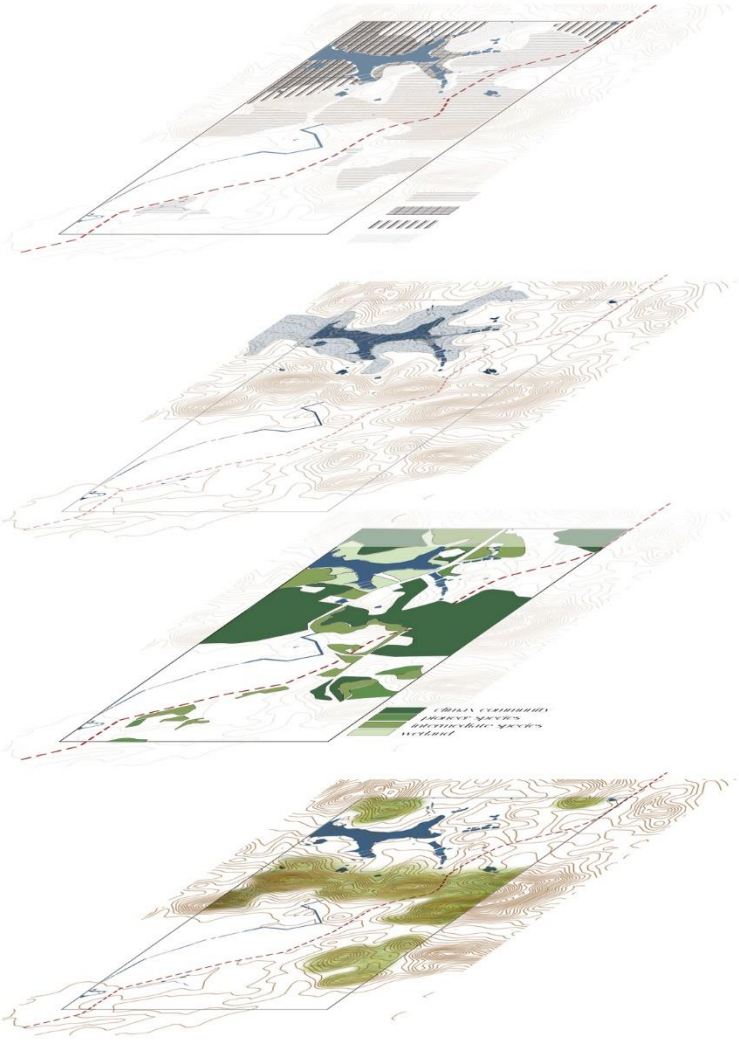


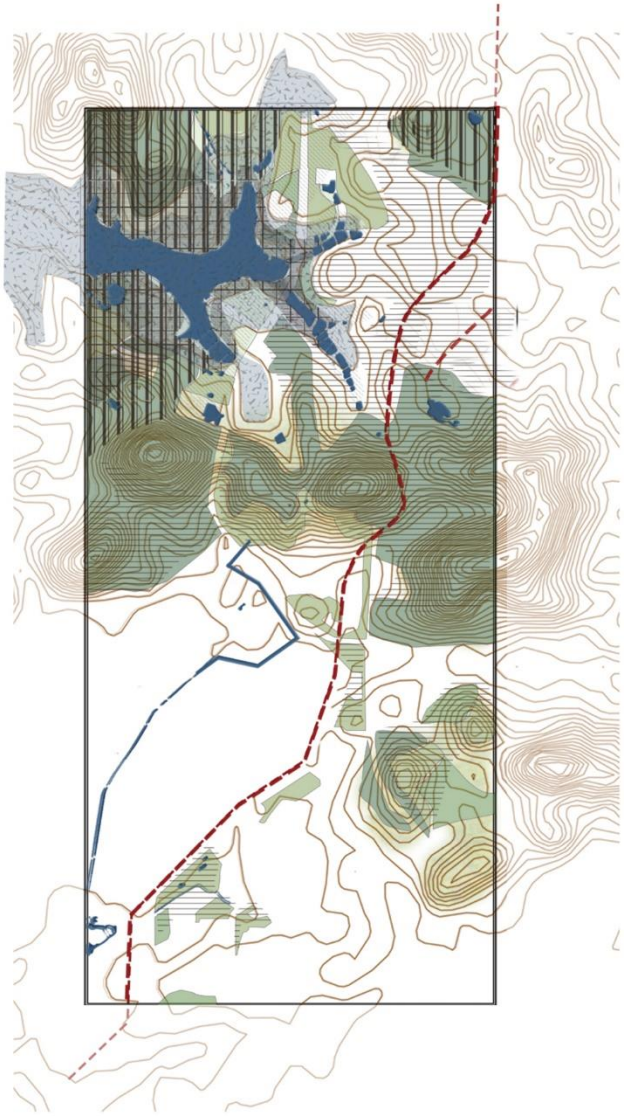






low dynamic conclusion

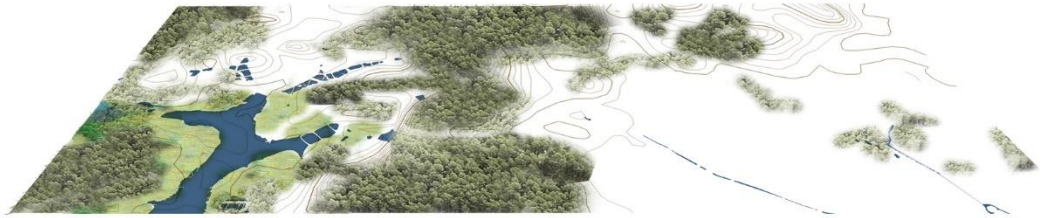




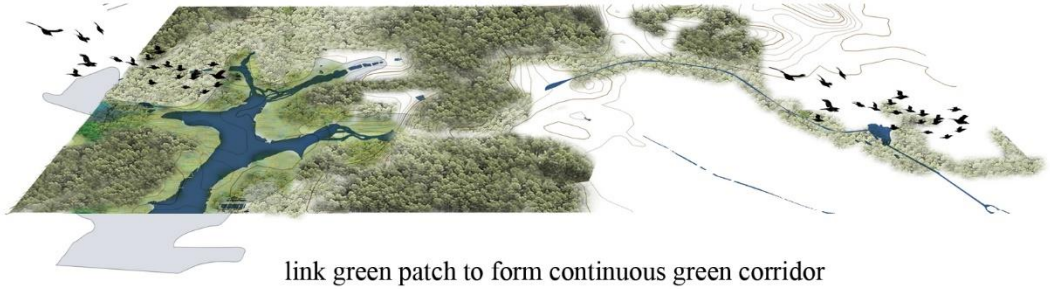
Develop ecological structure

Enhance the hydrological structure

Strategy: Green Wedge

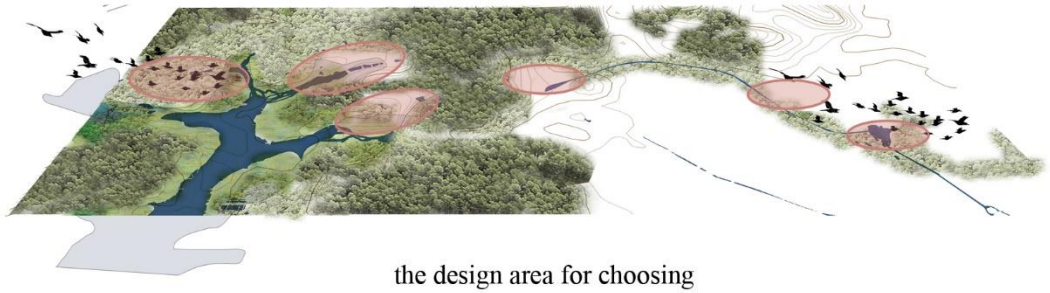


current green patch



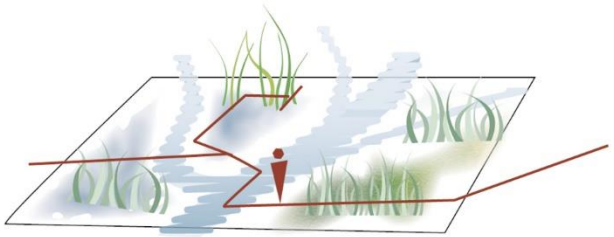
link green patch to form continuous green corridor

remove over-cultivation

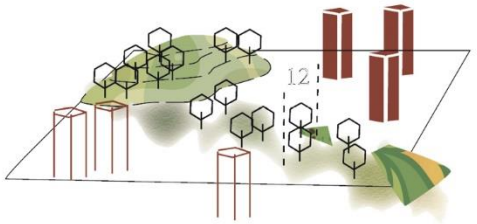


the design area for choosing

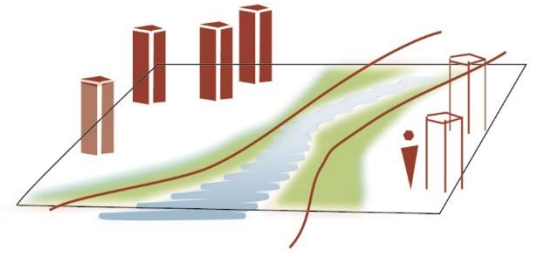
Principle for Green Wedge



retain wetland

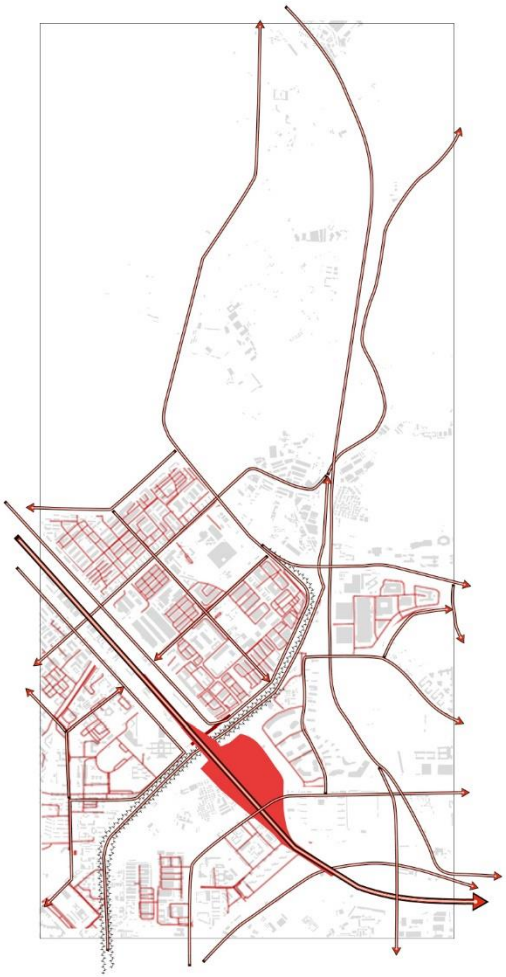


extend habitat in urban area

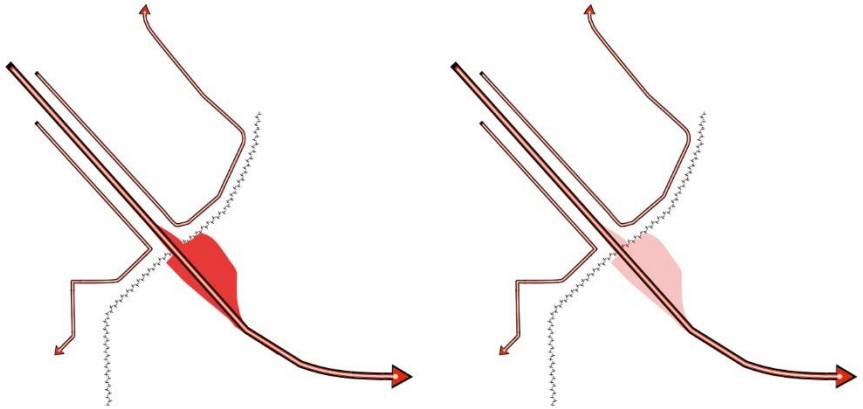


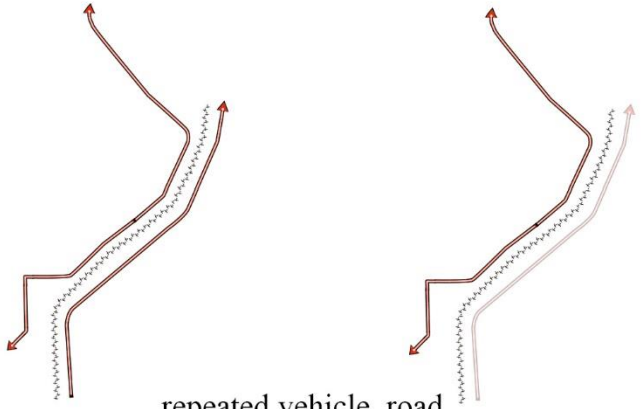
enhance water-edge green open space

fast mobility

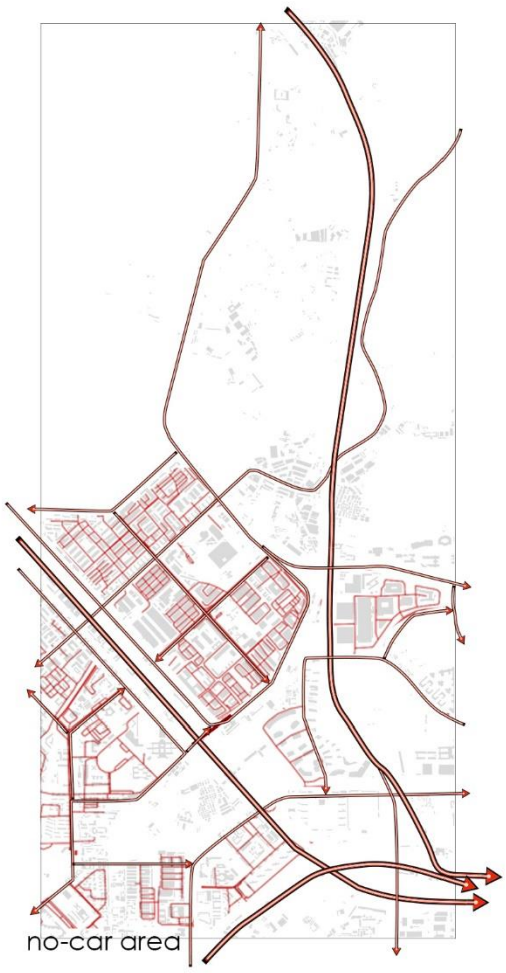


elevated checkpoint and extra space





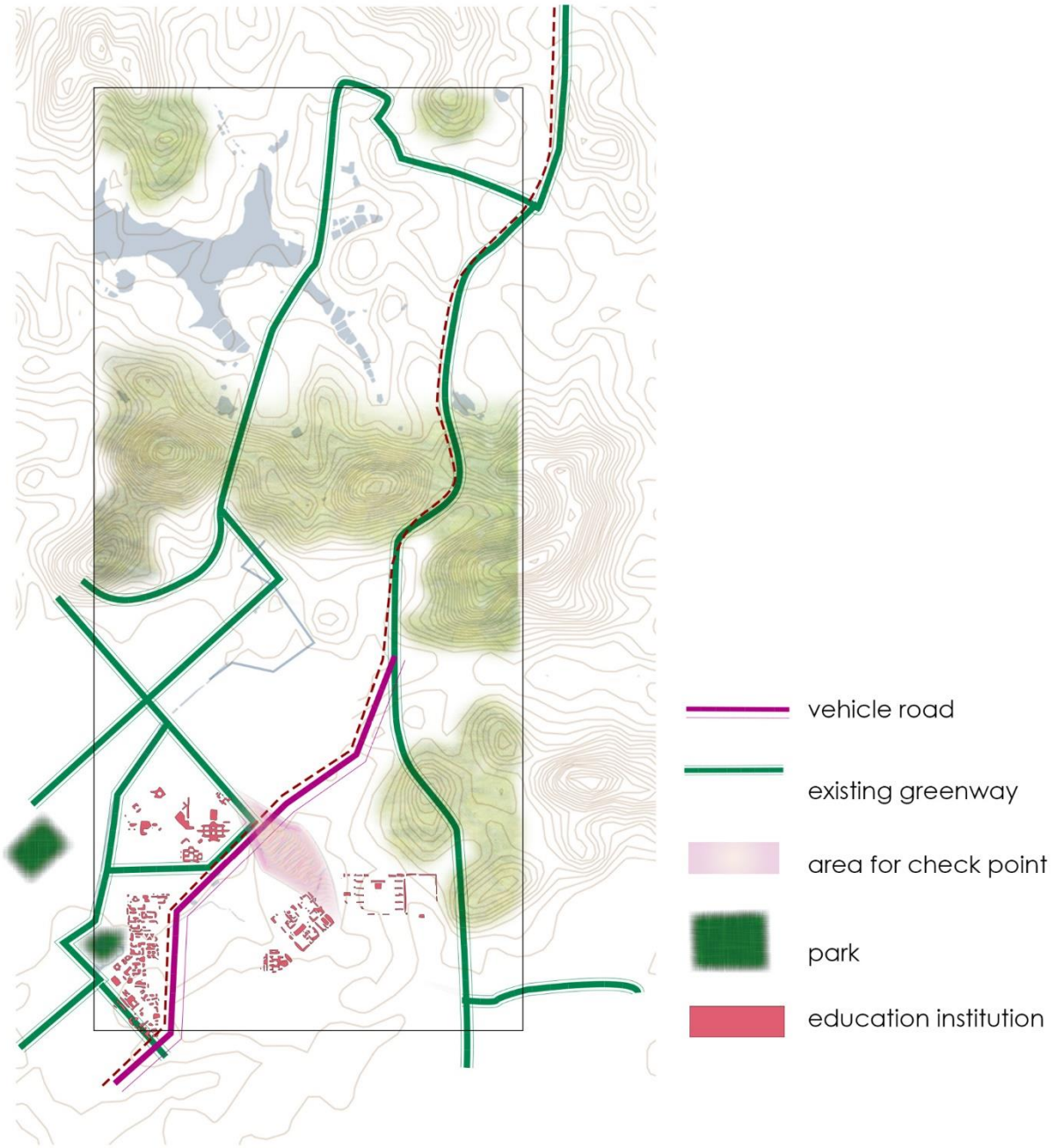
repeated vehicle road



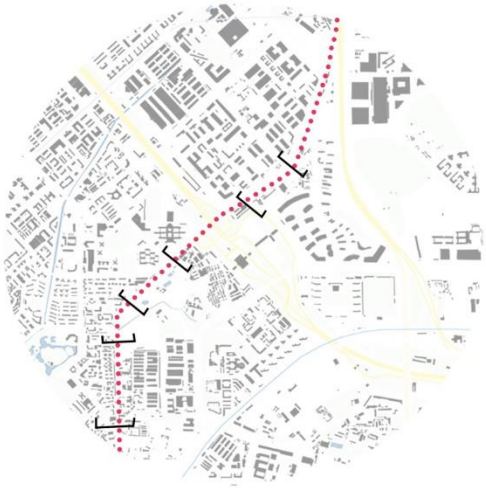
view along the fence

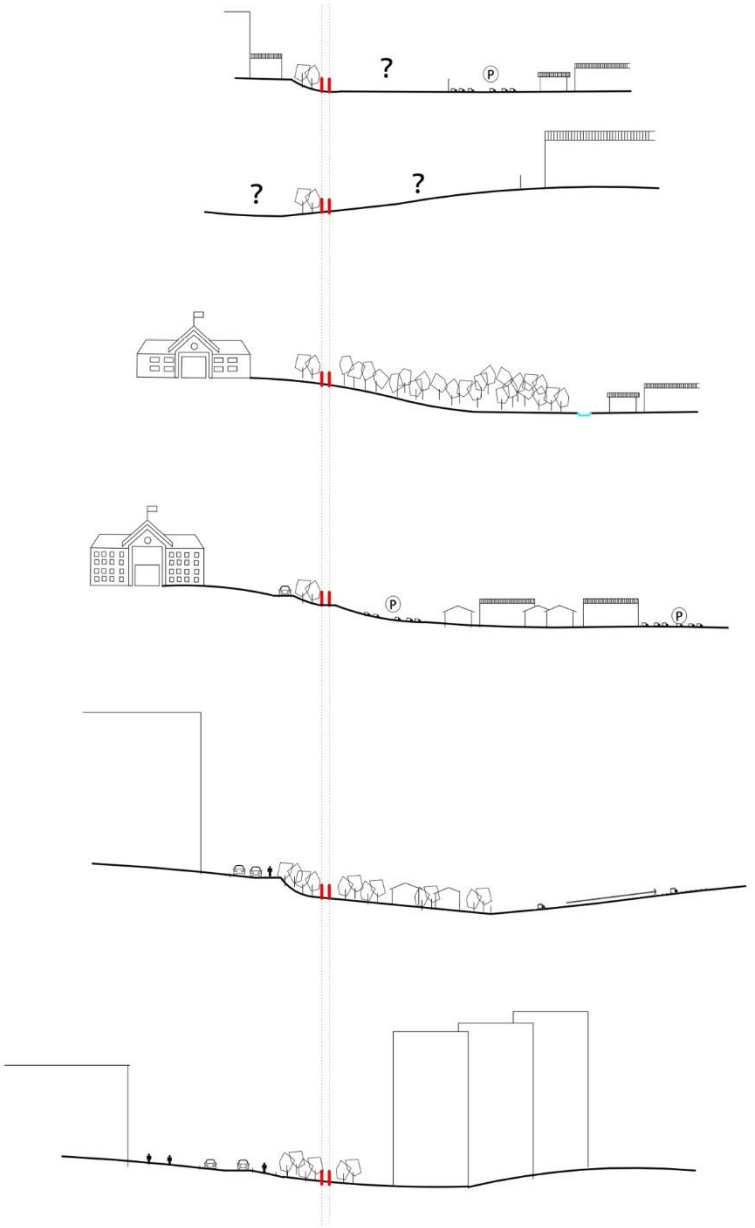
desolate but the witness to see the history

slow mobility

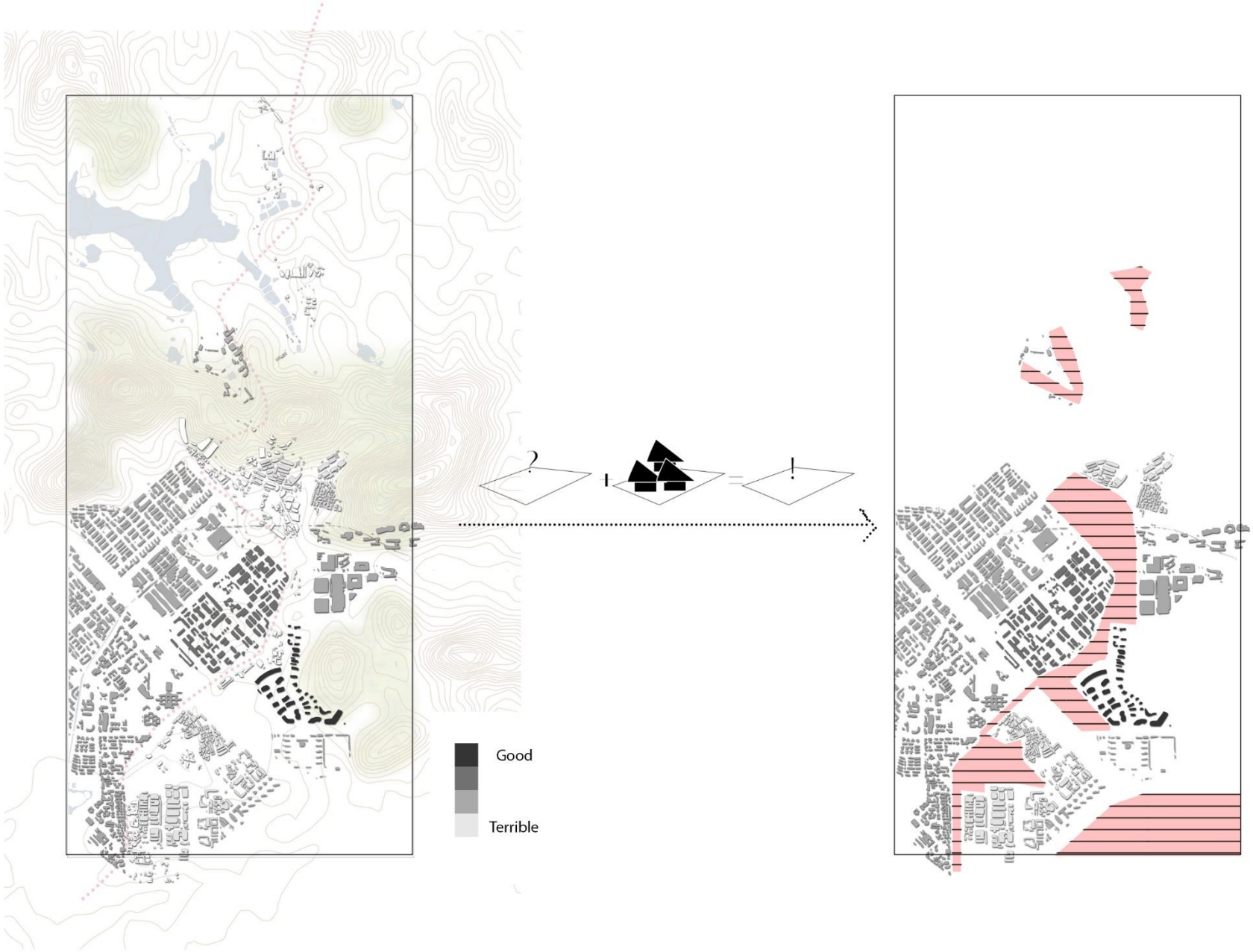


vacant? poor? temporary?

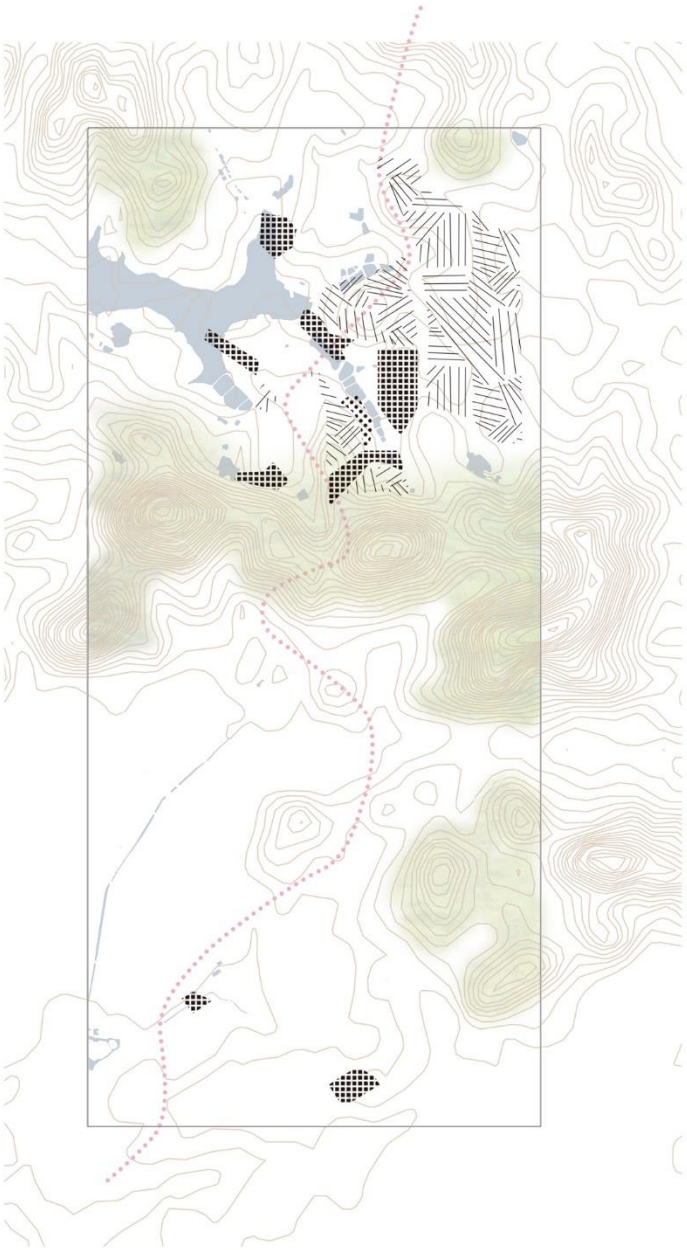




more potential vacancy!



agriculture



farmland

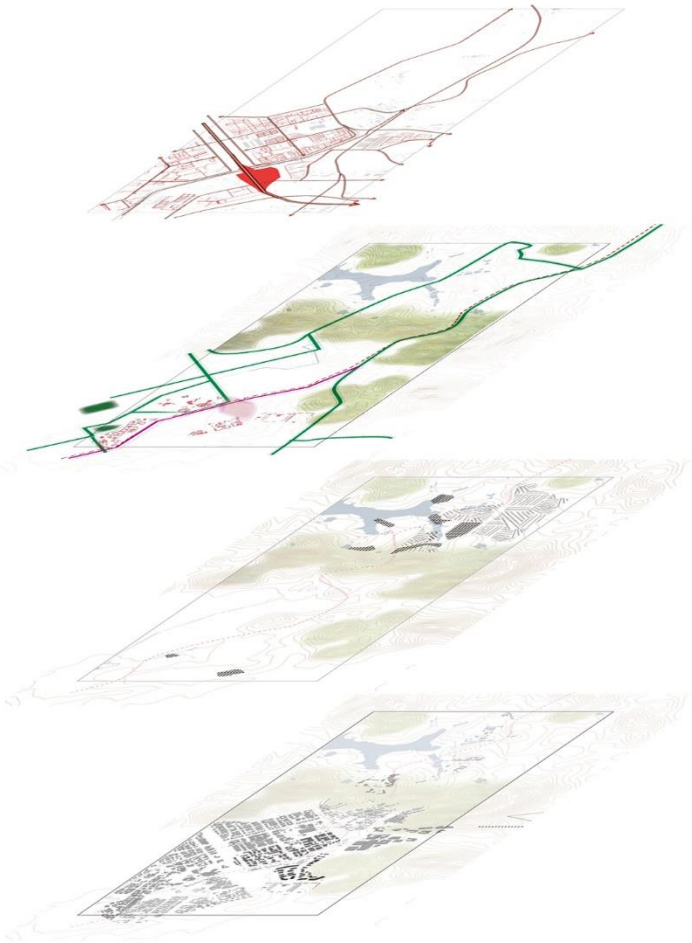
orchard

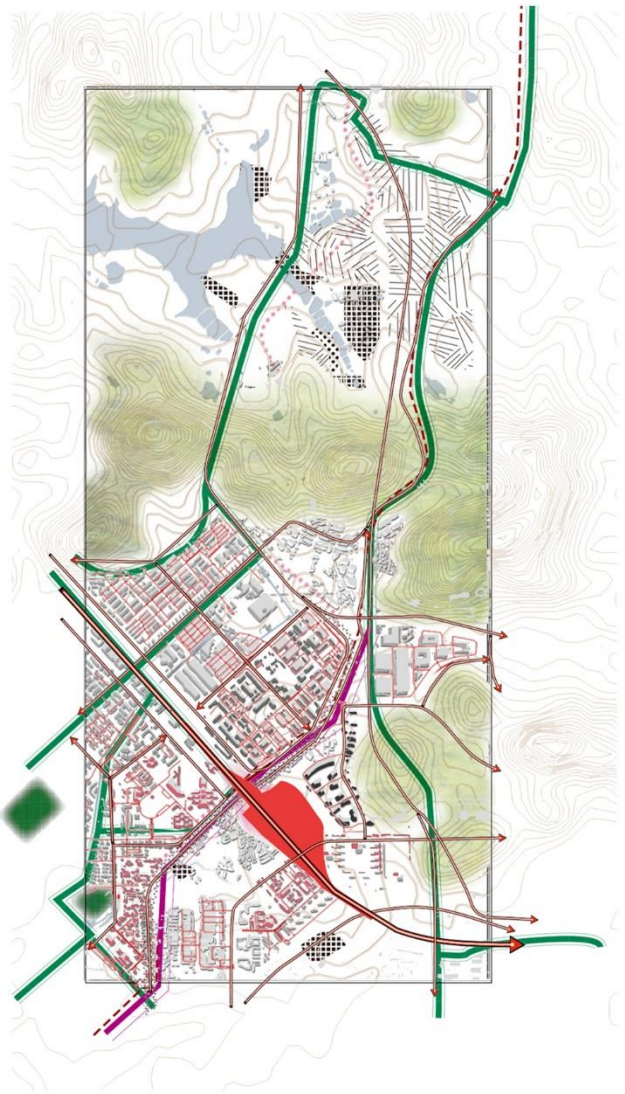
fish pond

'shift farmland to vacancy'

shift farmland to vacancy

high dynamic conclusion





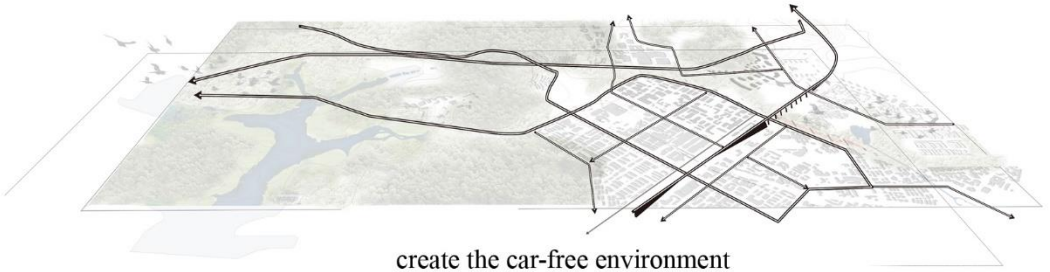
Rearranging transportation system

Embedding culture

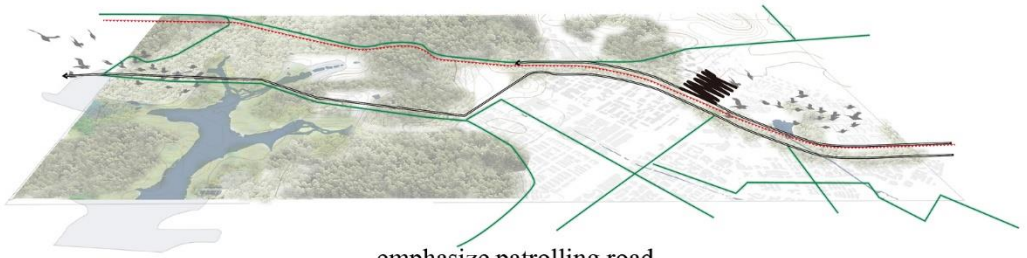
Shifting farmland to potential vacancy

Strategy: Cycling with Culture

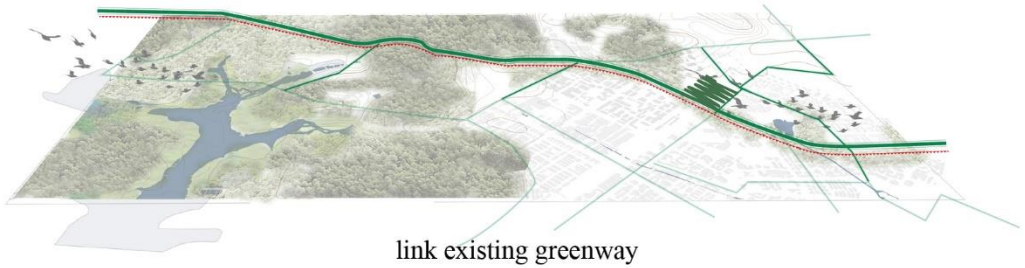
Strategy: Cycling with Culture



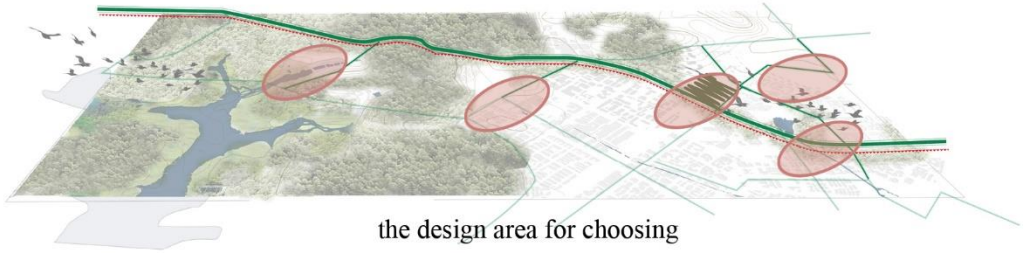
create the car-free environment



emphasize patrolling road

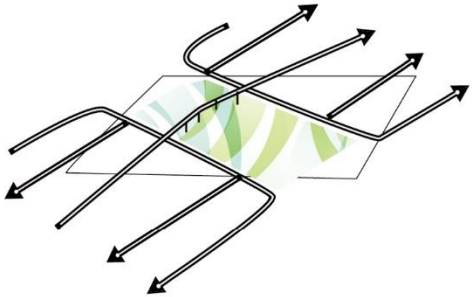


link existing greenway

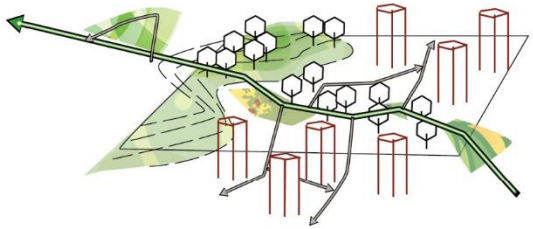


the design area for choosing

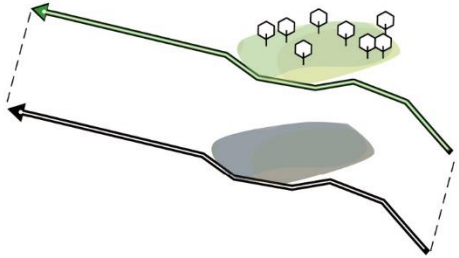
Principle: for Cycling with Culture



divide vehicle and pedestrian road

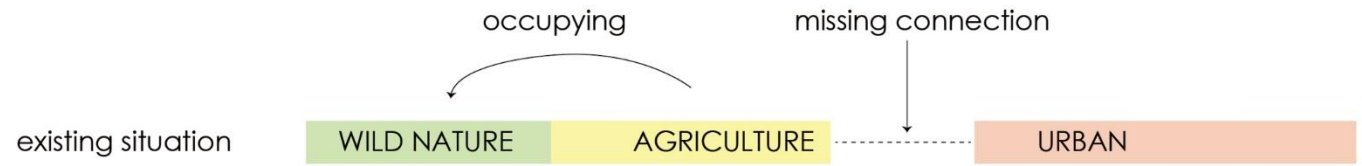


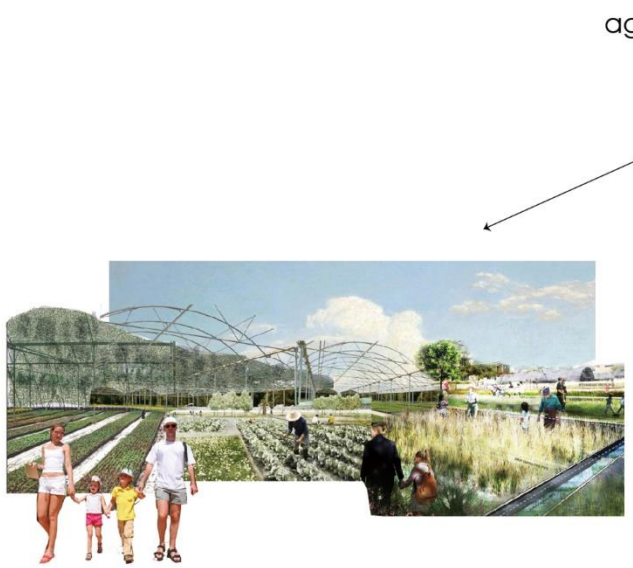
emphasize the thematic route

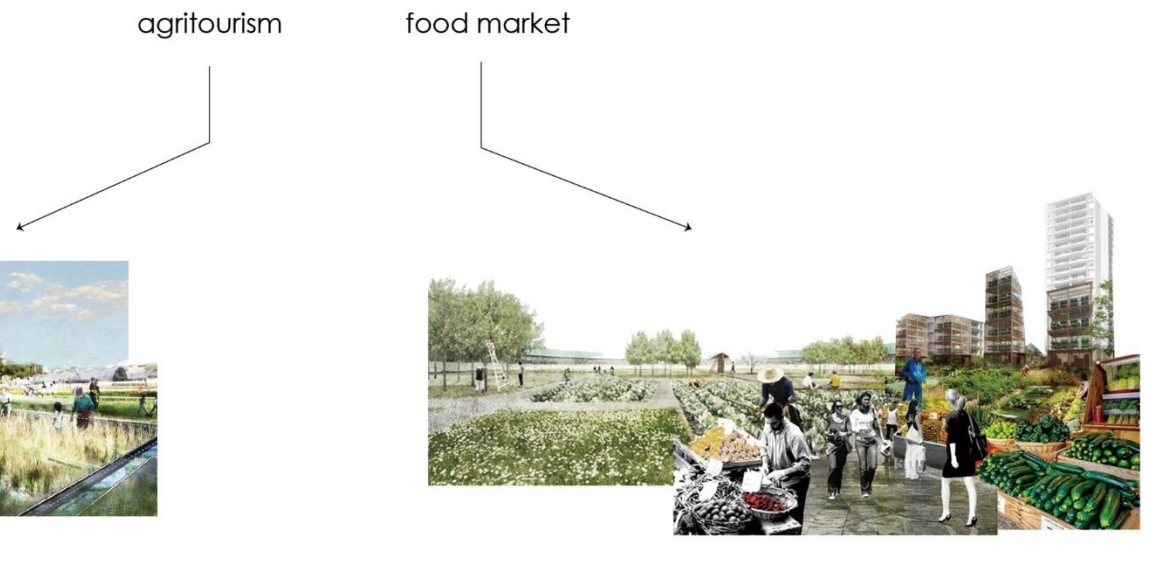


transfer grey infrastructure into green

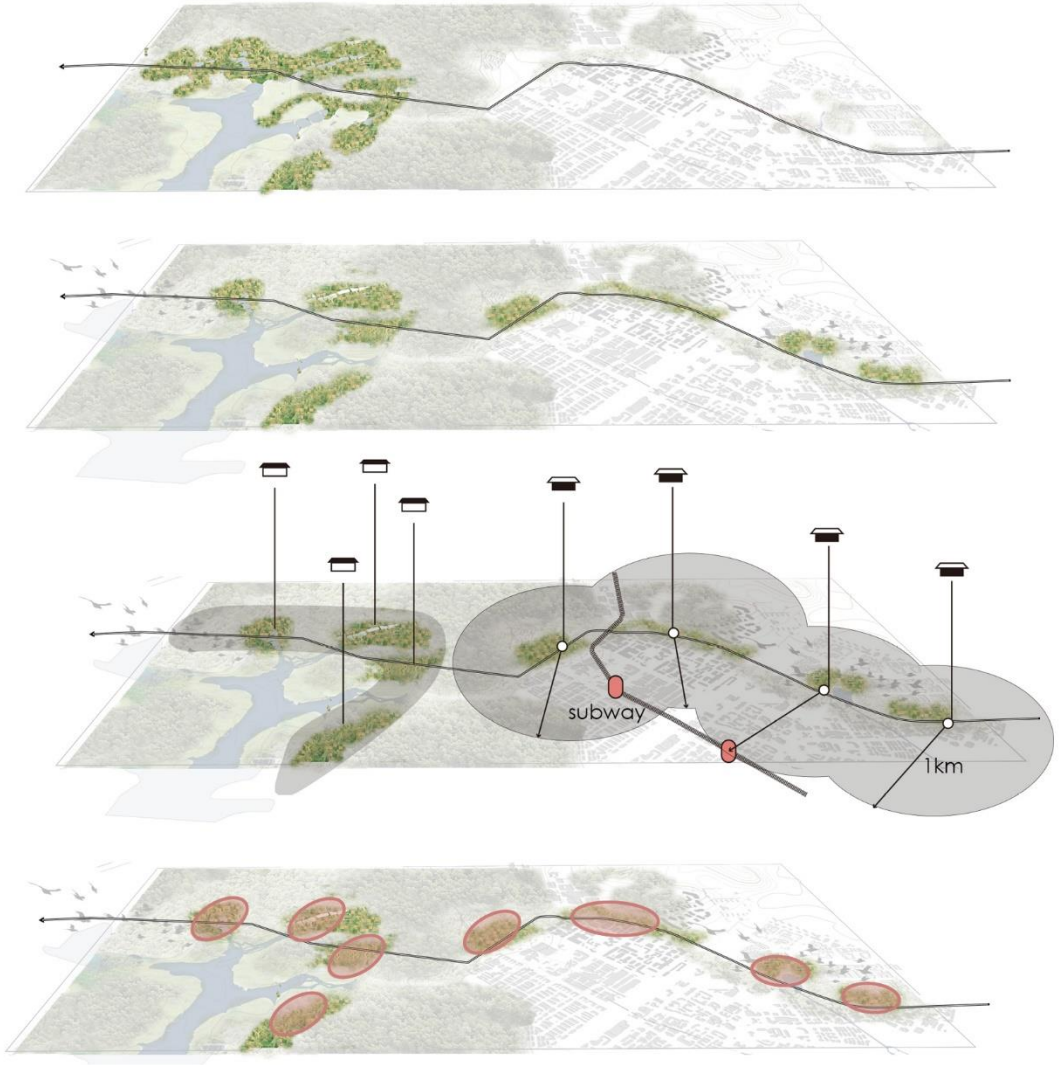
Strategy: Agriculture Revolution







Strategy: Agriculture Revolution



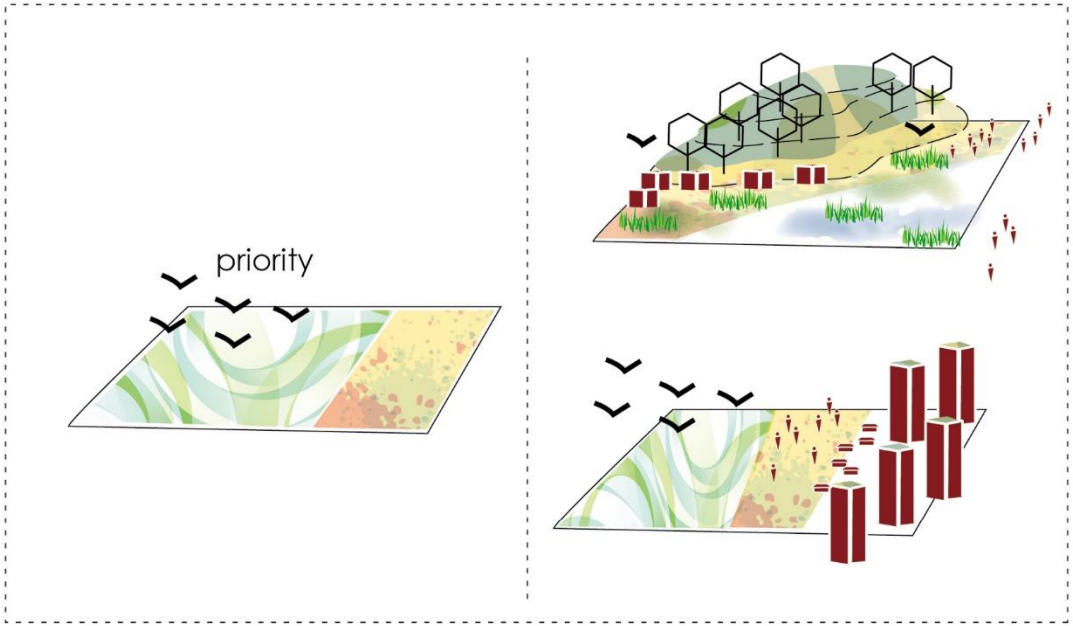
existing cultivated area

shift tthe over-cultivated area into city

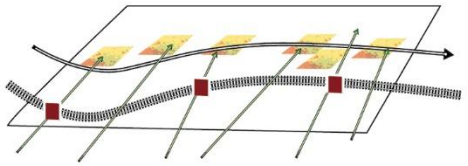
connect food industry with current situation

the design area for choosing

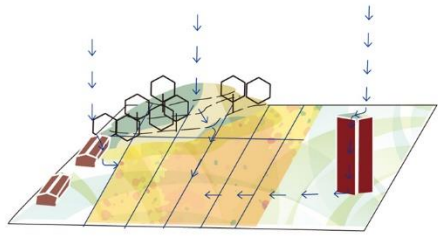
Principle: Agriculture Revolution



give priority for ecological link

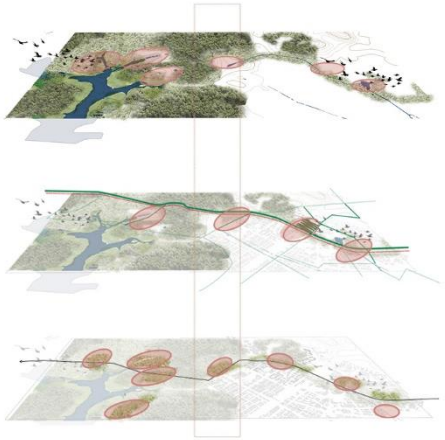


create greenways for neiborhood



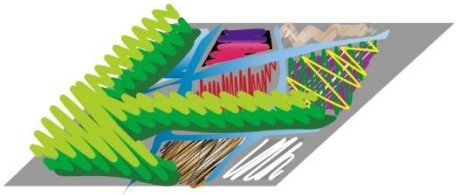
collecting greywater and rainwater for irrigation

Local Scale



Requirement & Site Advantage

Design Application



Sustainable development model
local scale

The three dimensions of sustainable development; economic development, social development, and environmental protection
-Munier

Phasing 1_More Potential Space

1 CURRENT SITUATION

2 RETAINED TEXTURE

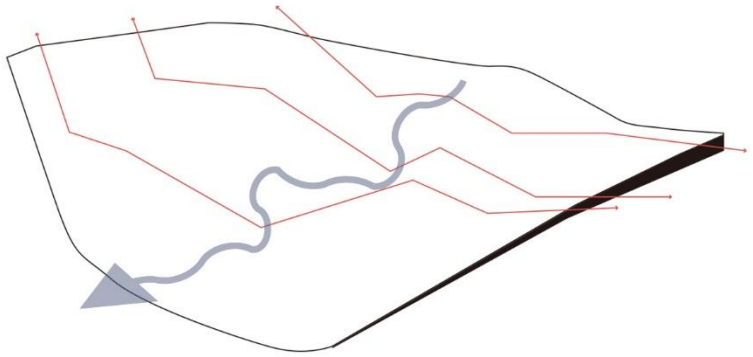
3 INCREMENT OF CONTINUITY

4 FINAL SITUATION

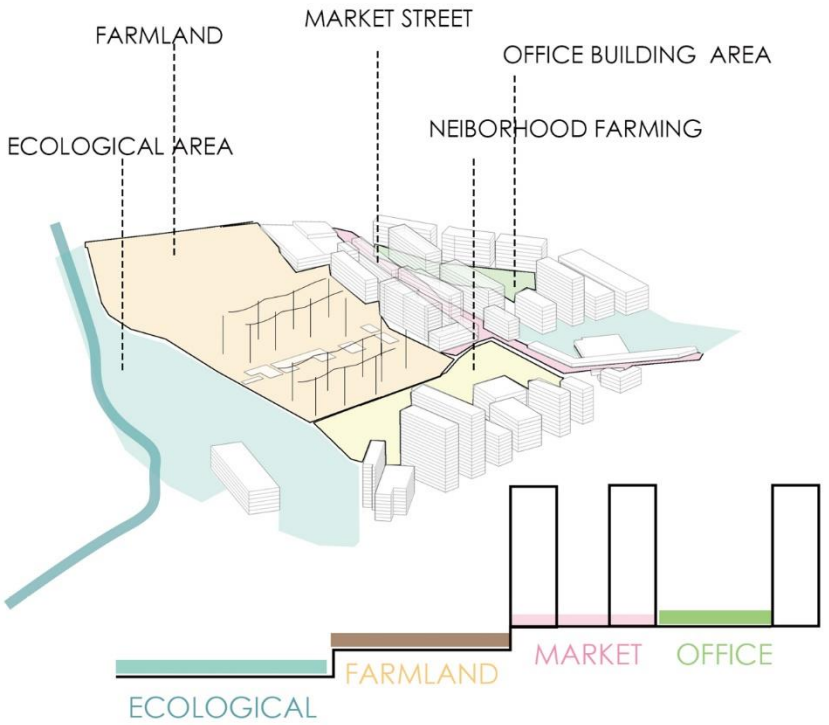
Phasing 2_ Land for Ecology and Farming

SETTING BOUNDARY

-WATER MANAGEMENT



FUNCTION



Phasing 3_Pedestrian-Oriented

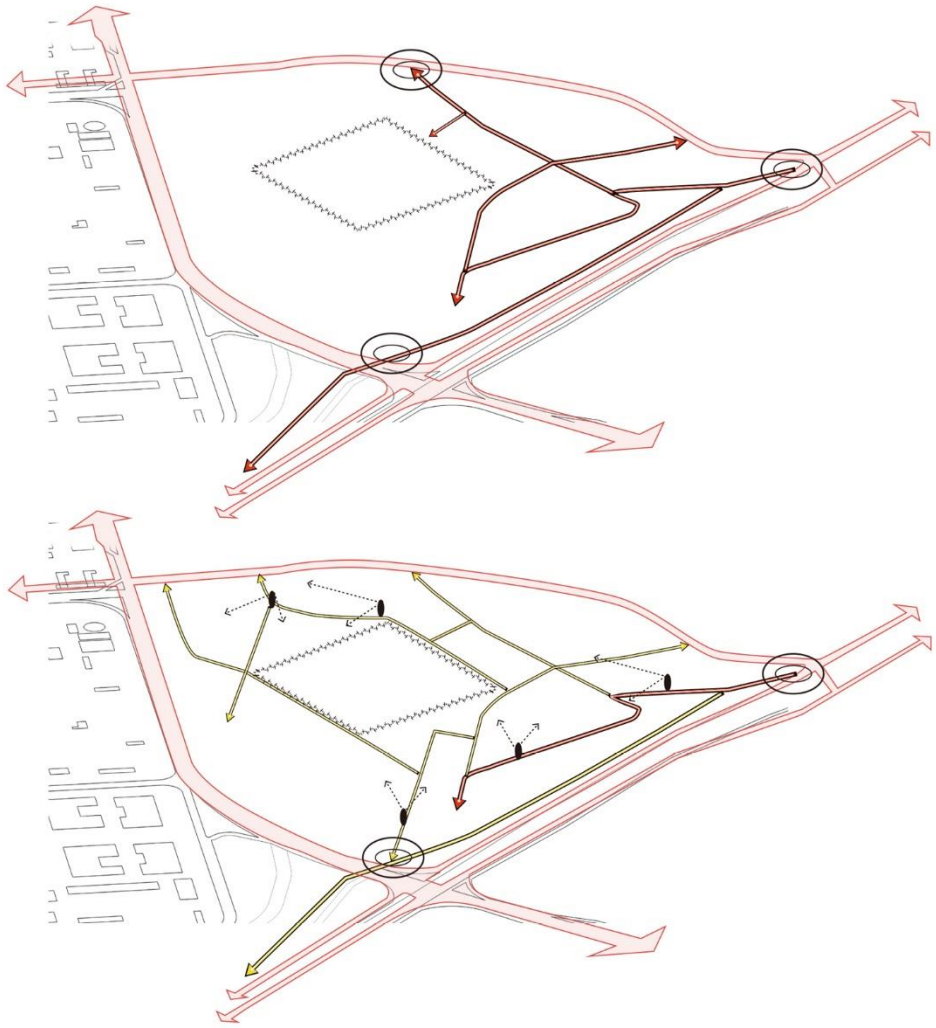
PHYSICAL CONNECTION

-PEDESTRIAN-AND-VEHICLE DIVIDING SYSTEM

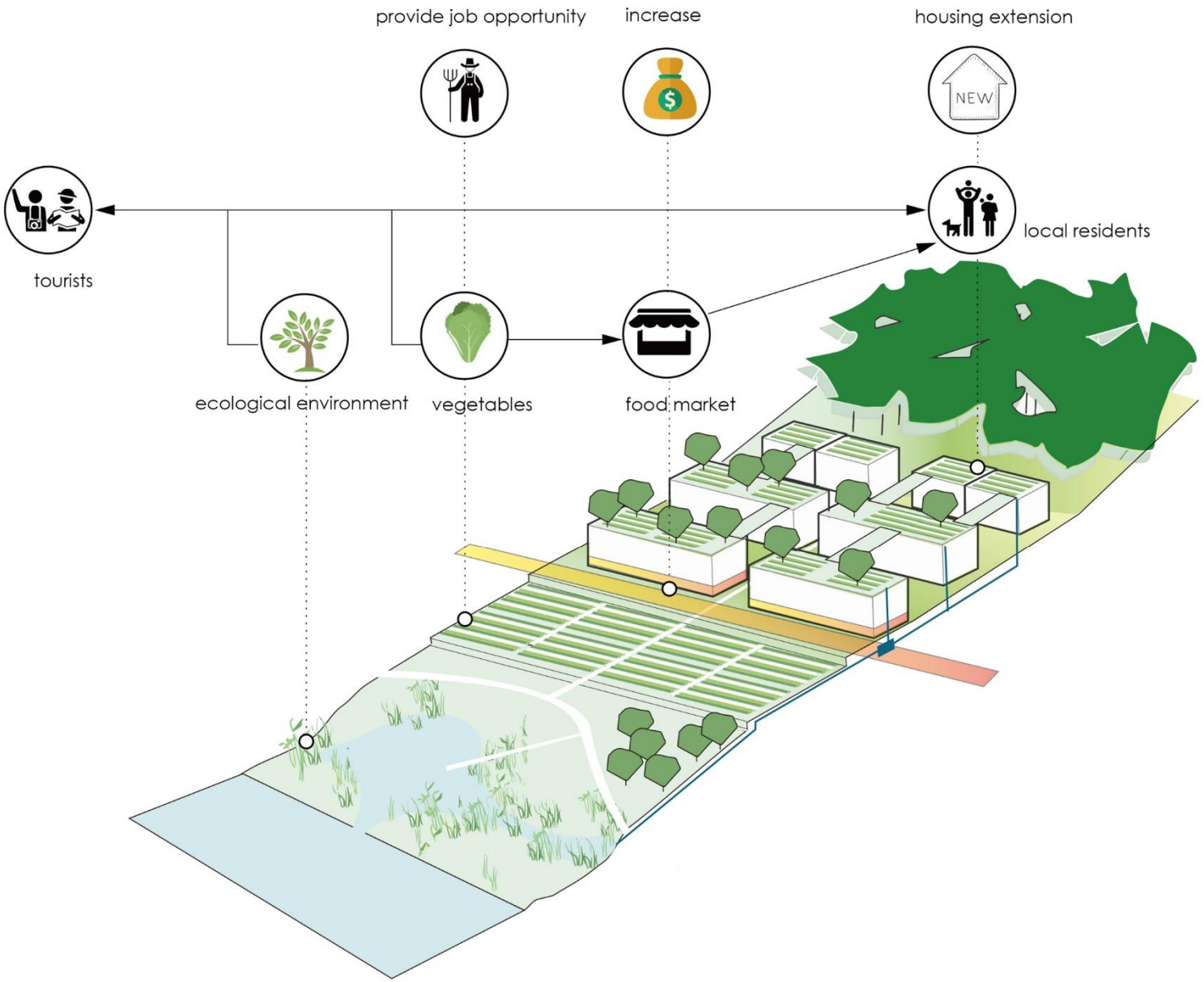
-VIEW CONNECTION

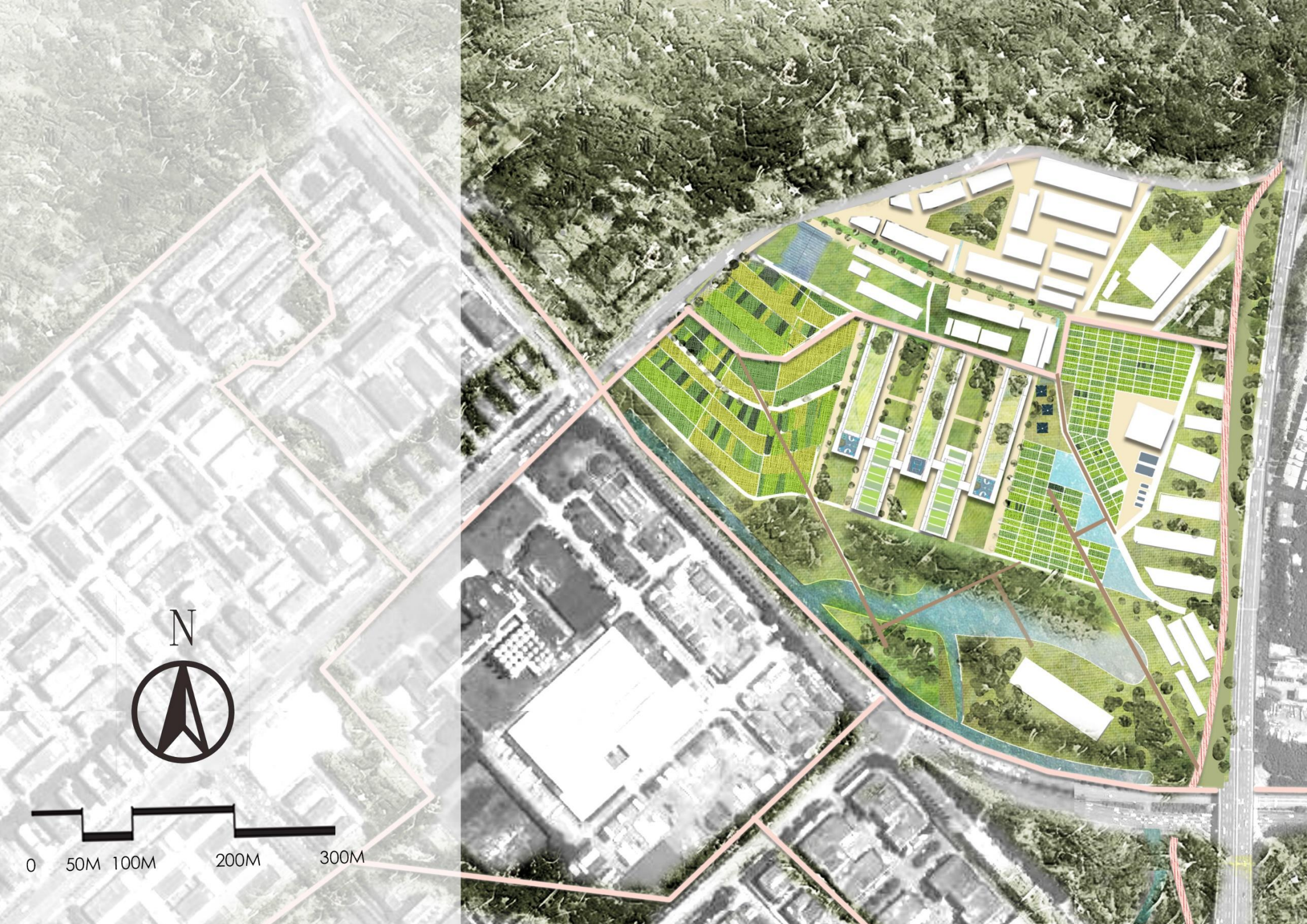
BEFORE

AFTER

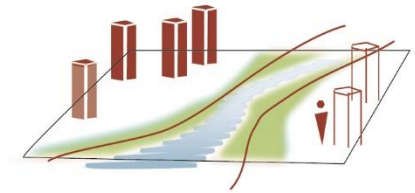


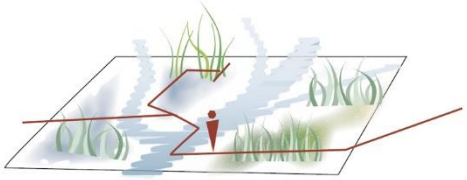
Phasing 4_Sustainable Possibilities

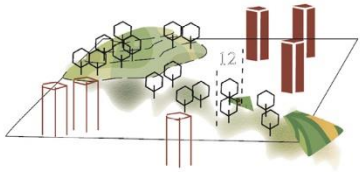


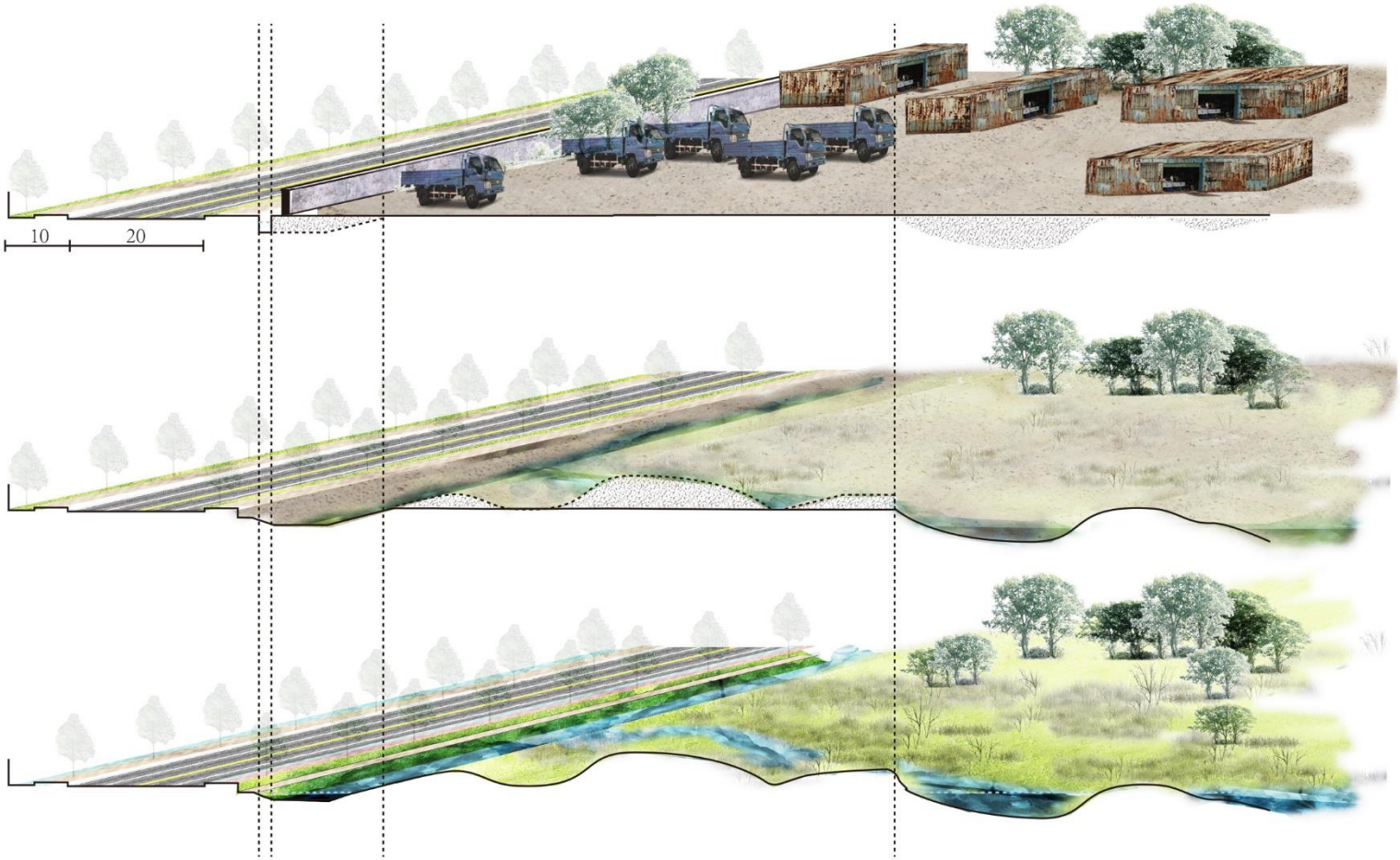

N
0
50M
100M
200M
300M

Ecological Phasing

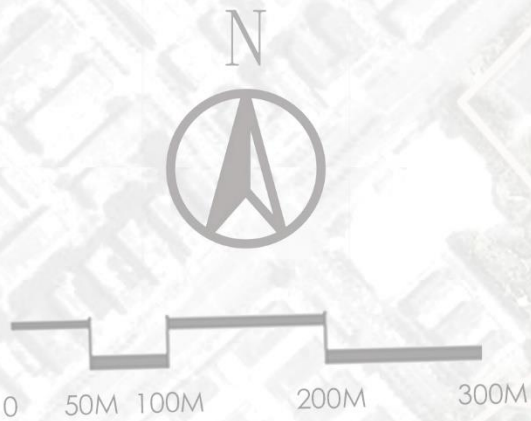




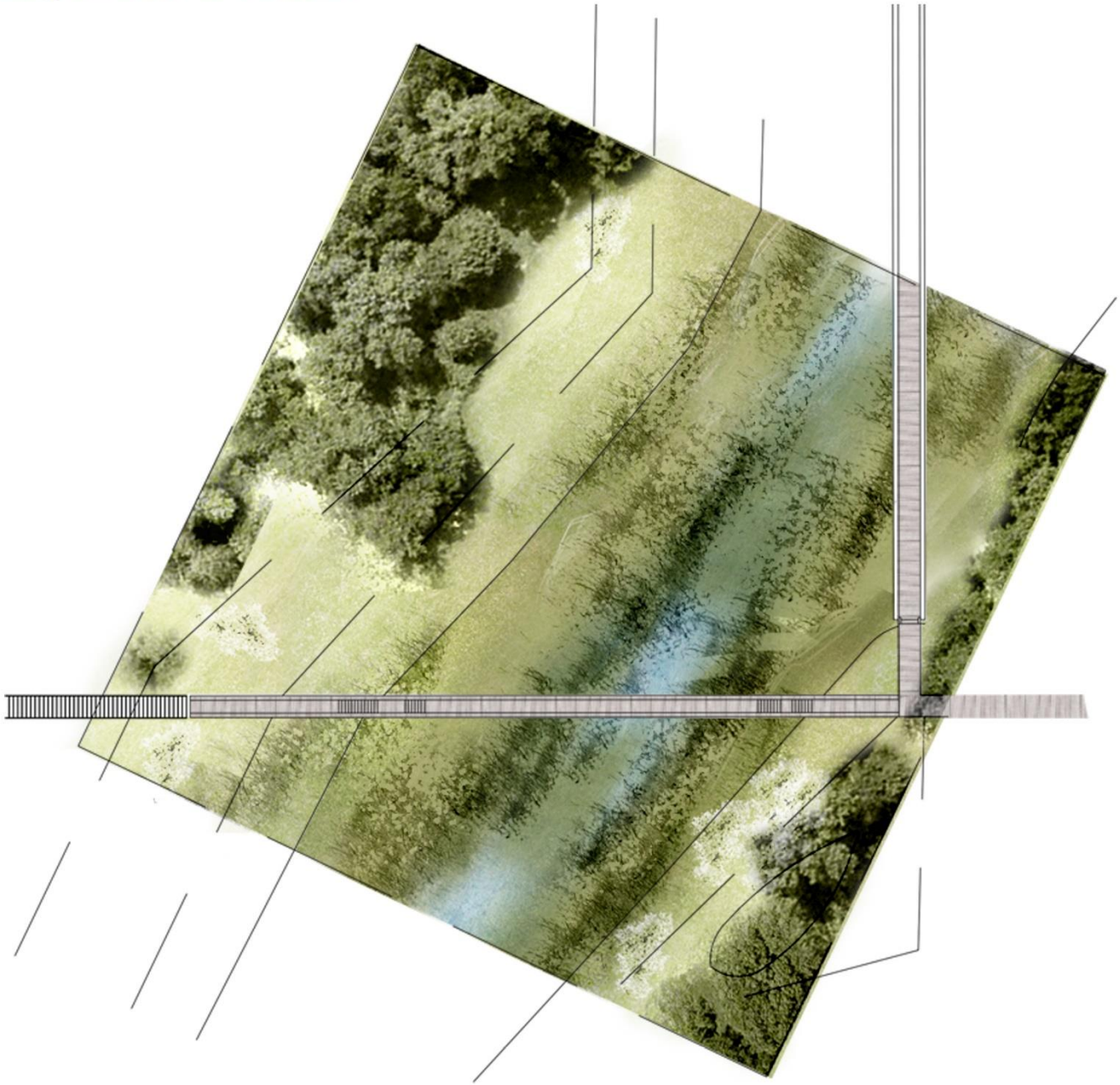




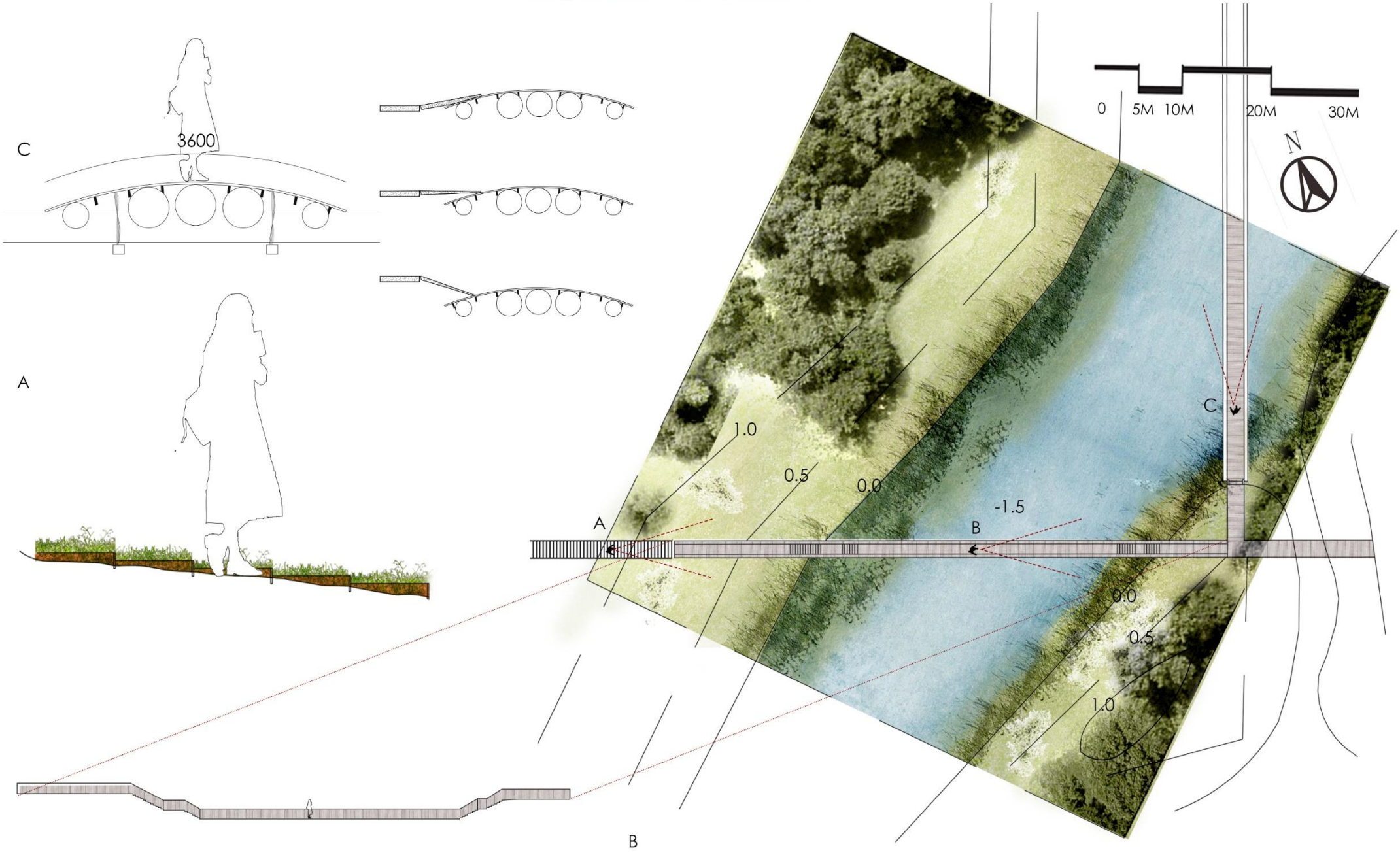
Ecology



Experience to Nature

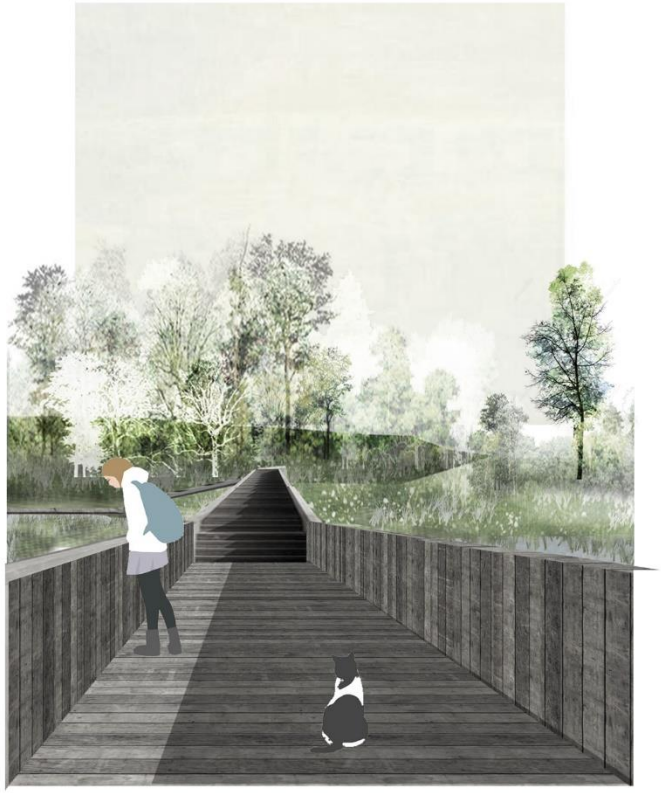


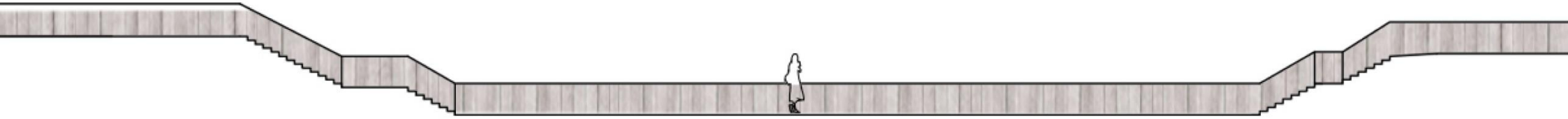
Experience to Nature



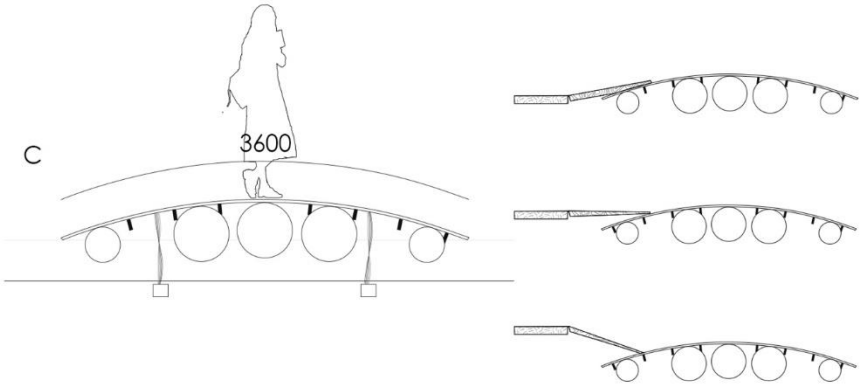
Perceive the Dynamic

Perceive the Dynamic

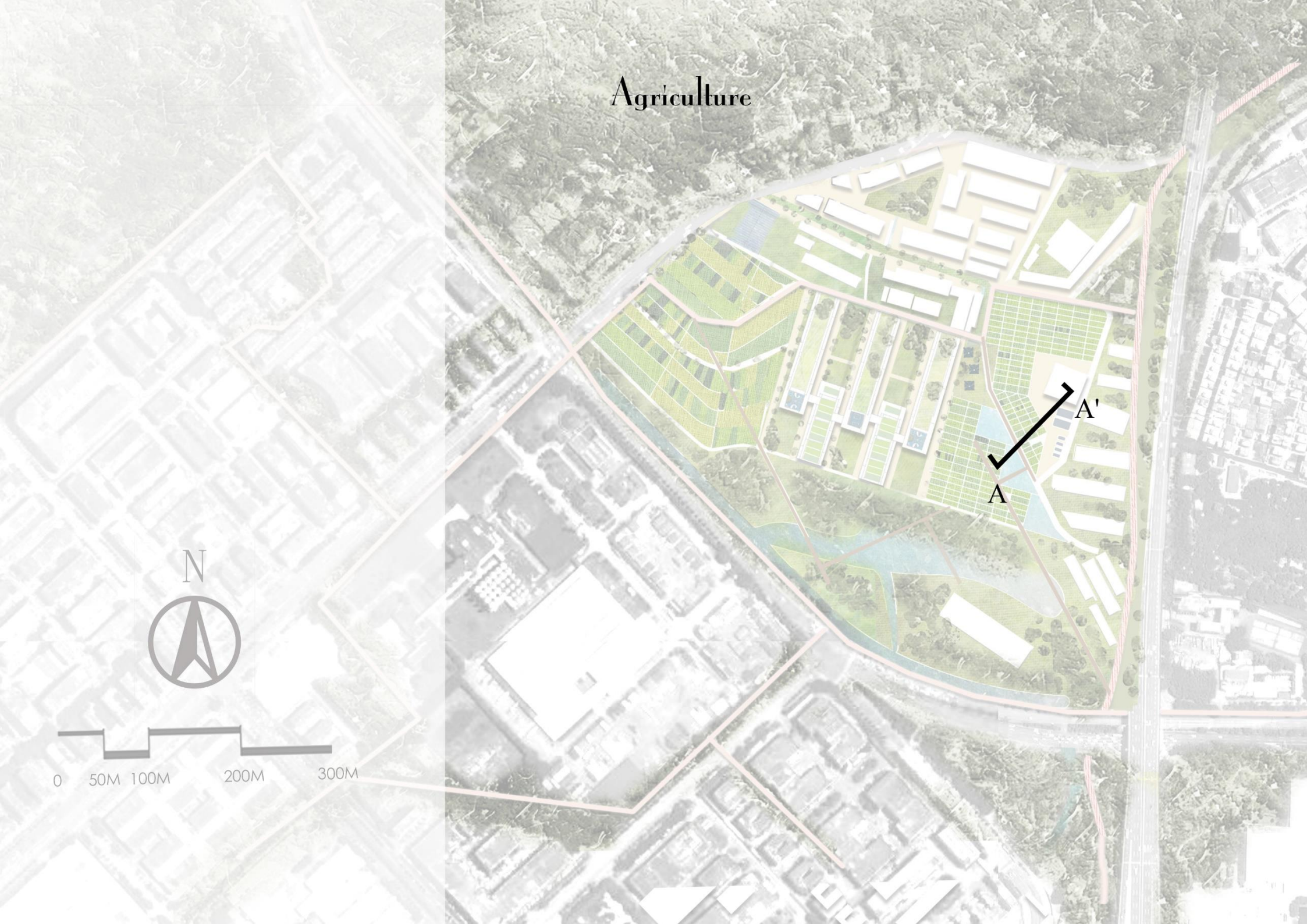




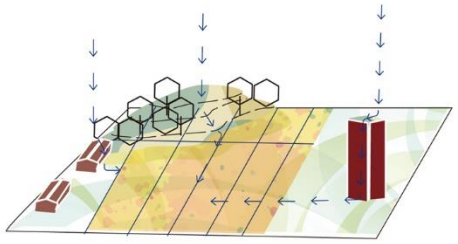
Perceive the Dynamic

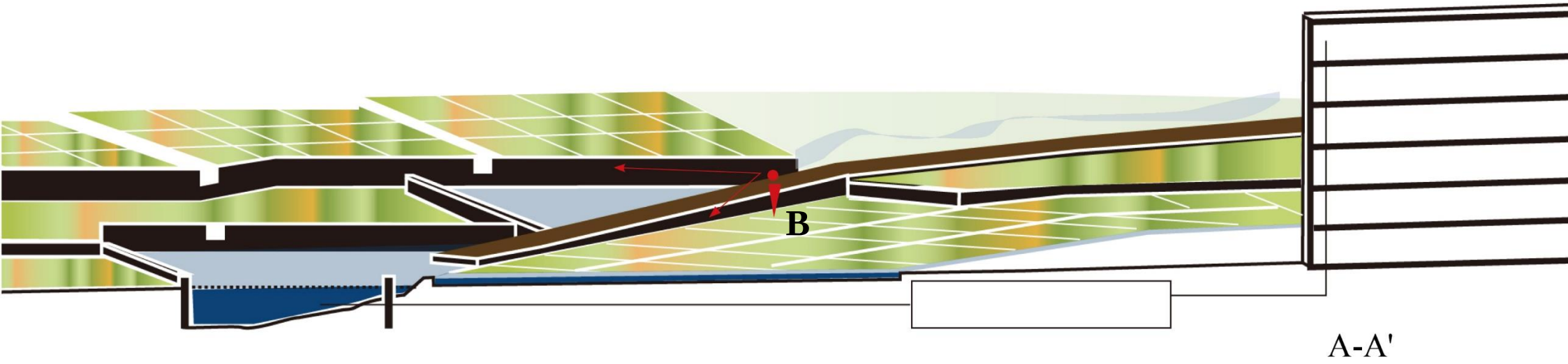


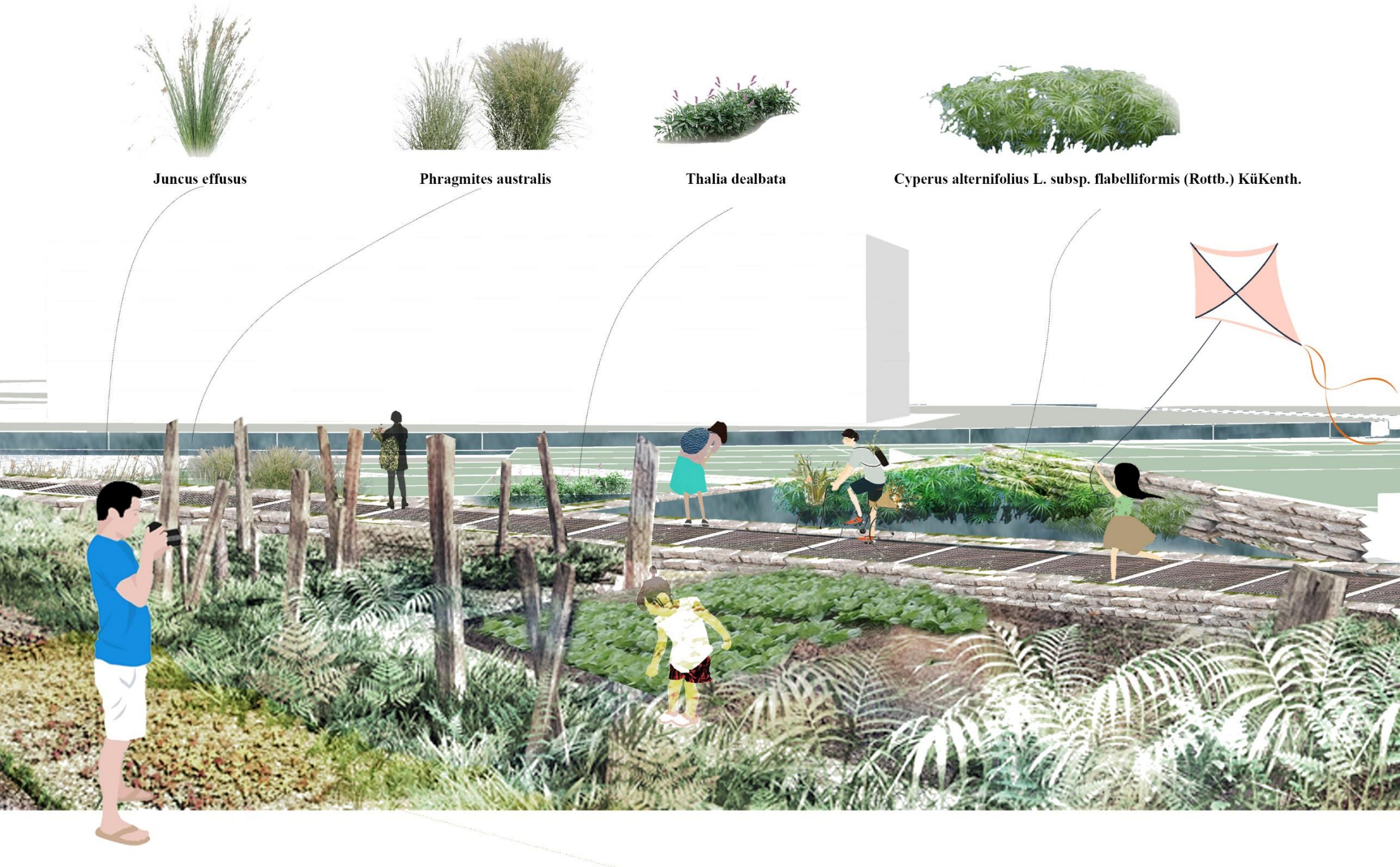
Agriculture

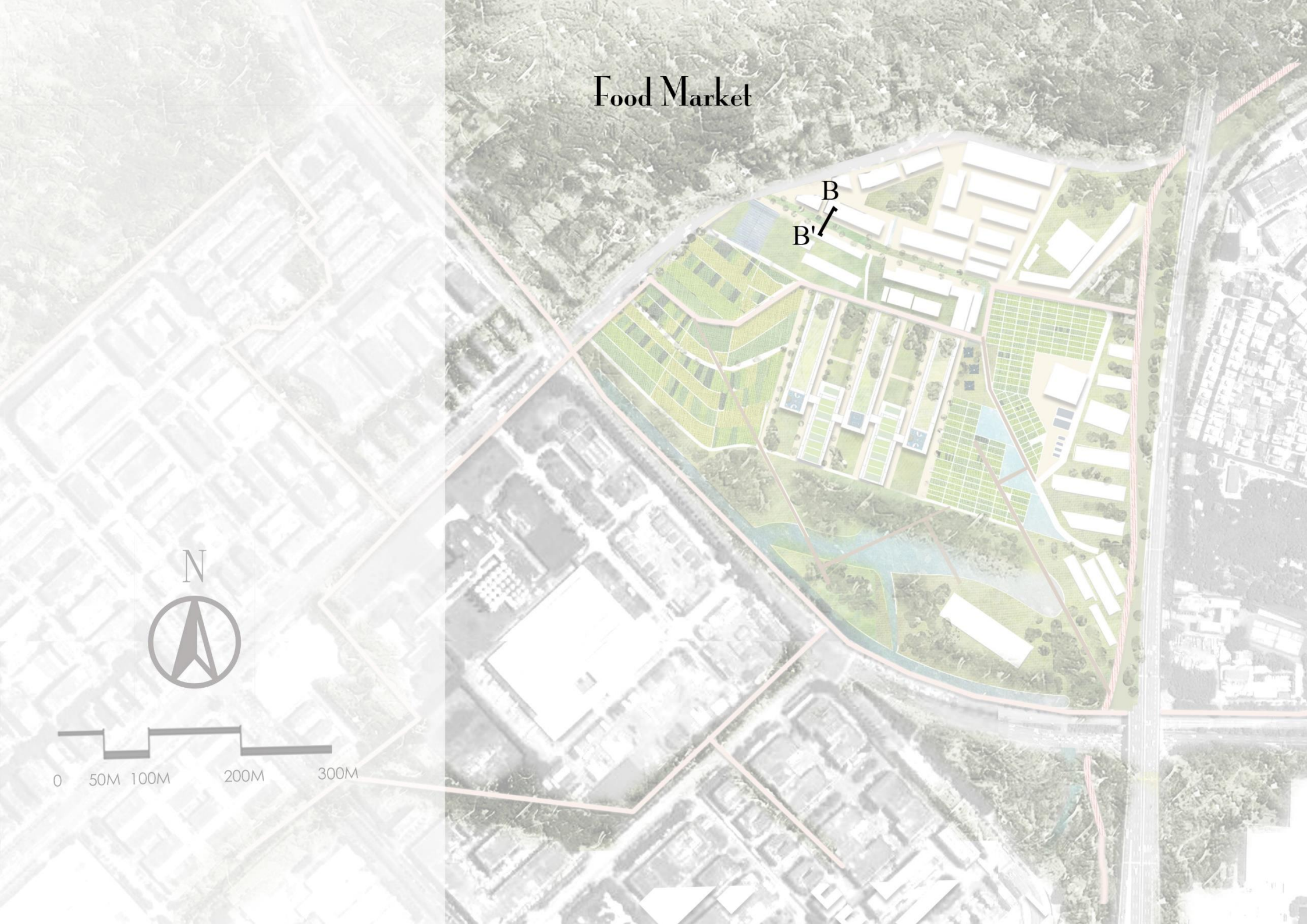


Collecting Water for Irrigation

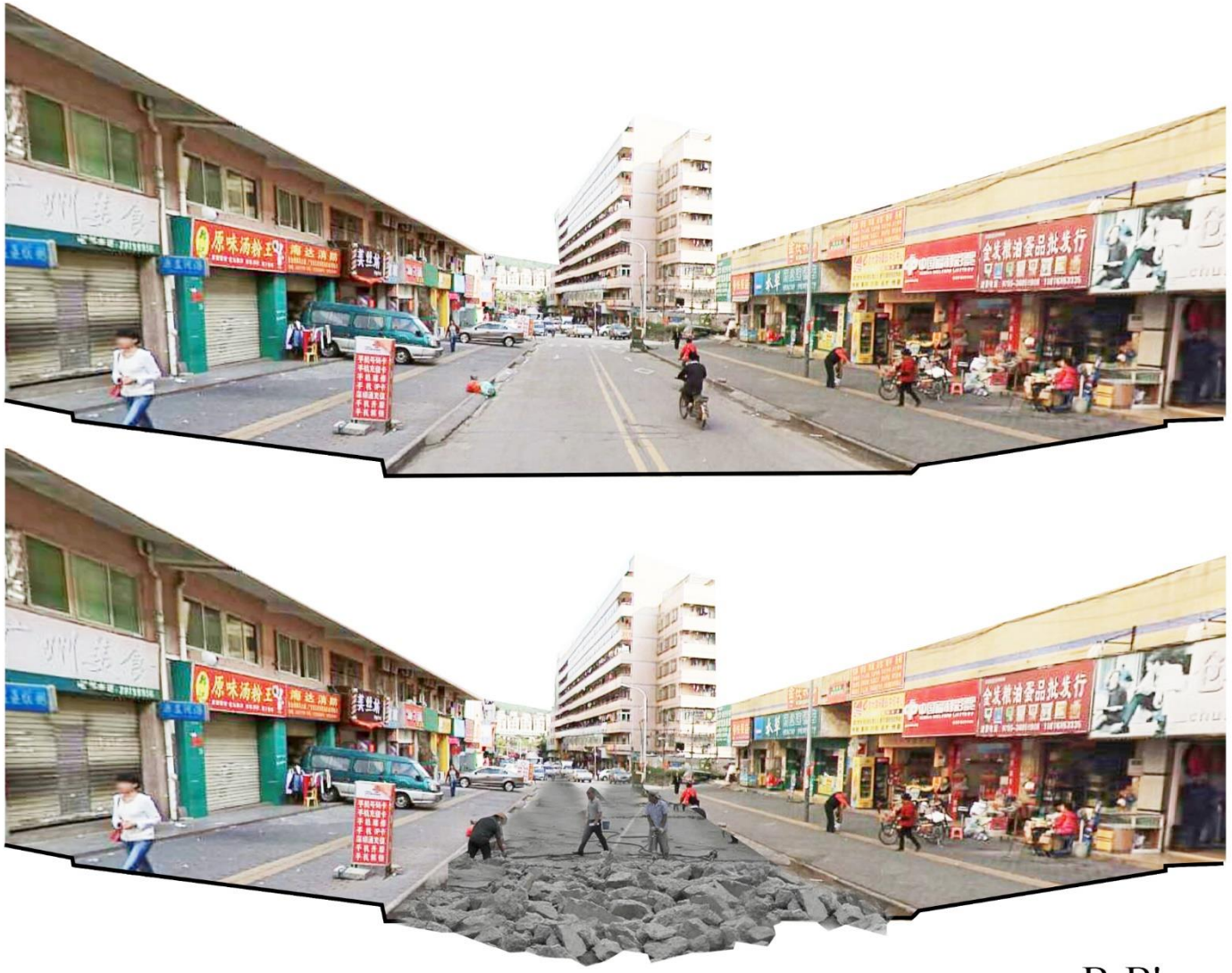





Juncus effusus
Phragmites australis
Thalia dealbata
Cyperus alternifolius L. subsp. flabelliformis (Rottb.) KüKenth.


Food Market
B
B'
N
0
50M
100M
200M
300M

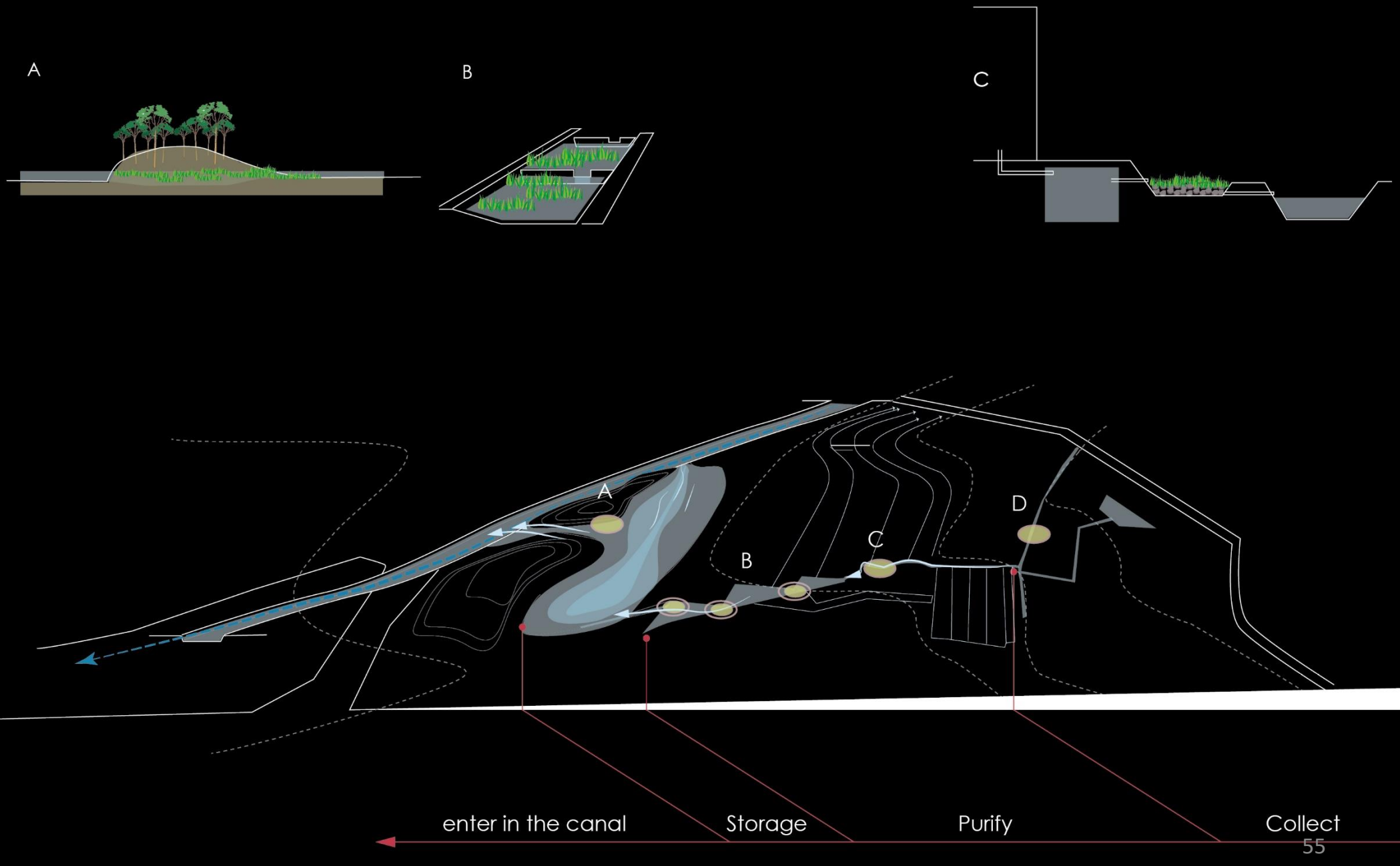
Food Market



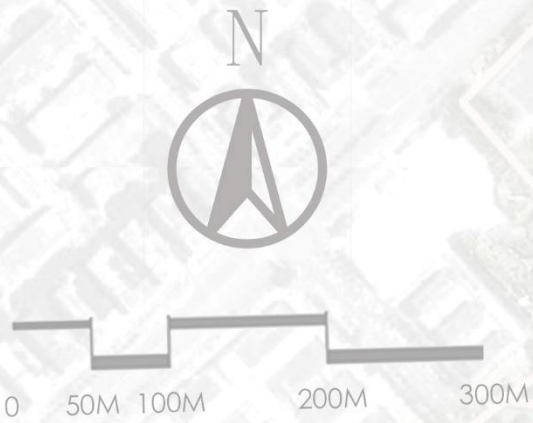
B-B'

Food Market

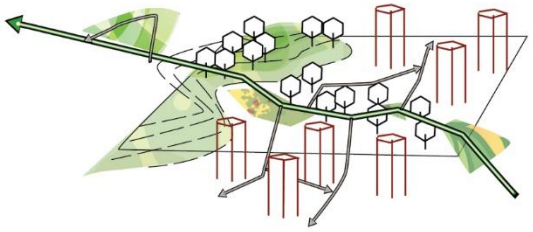
Water in Various Landuse

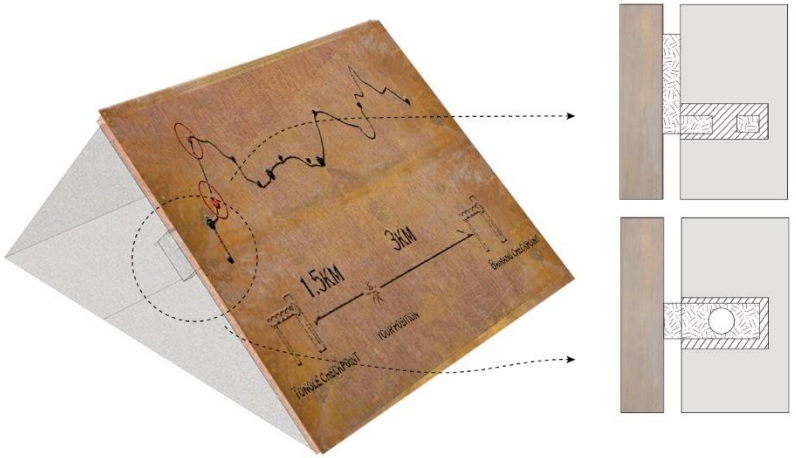


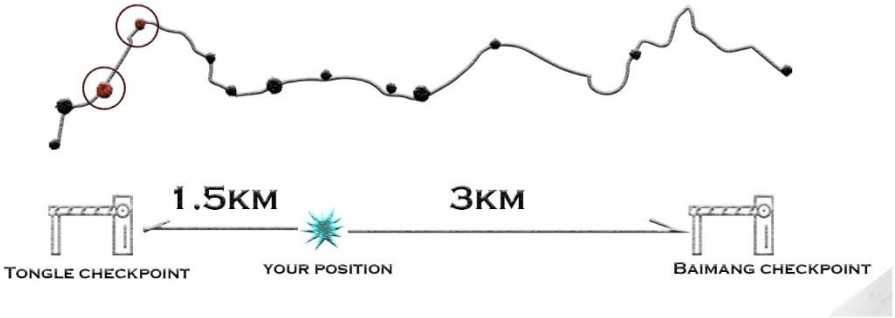
Cycling with Culture



Cycling with Culture

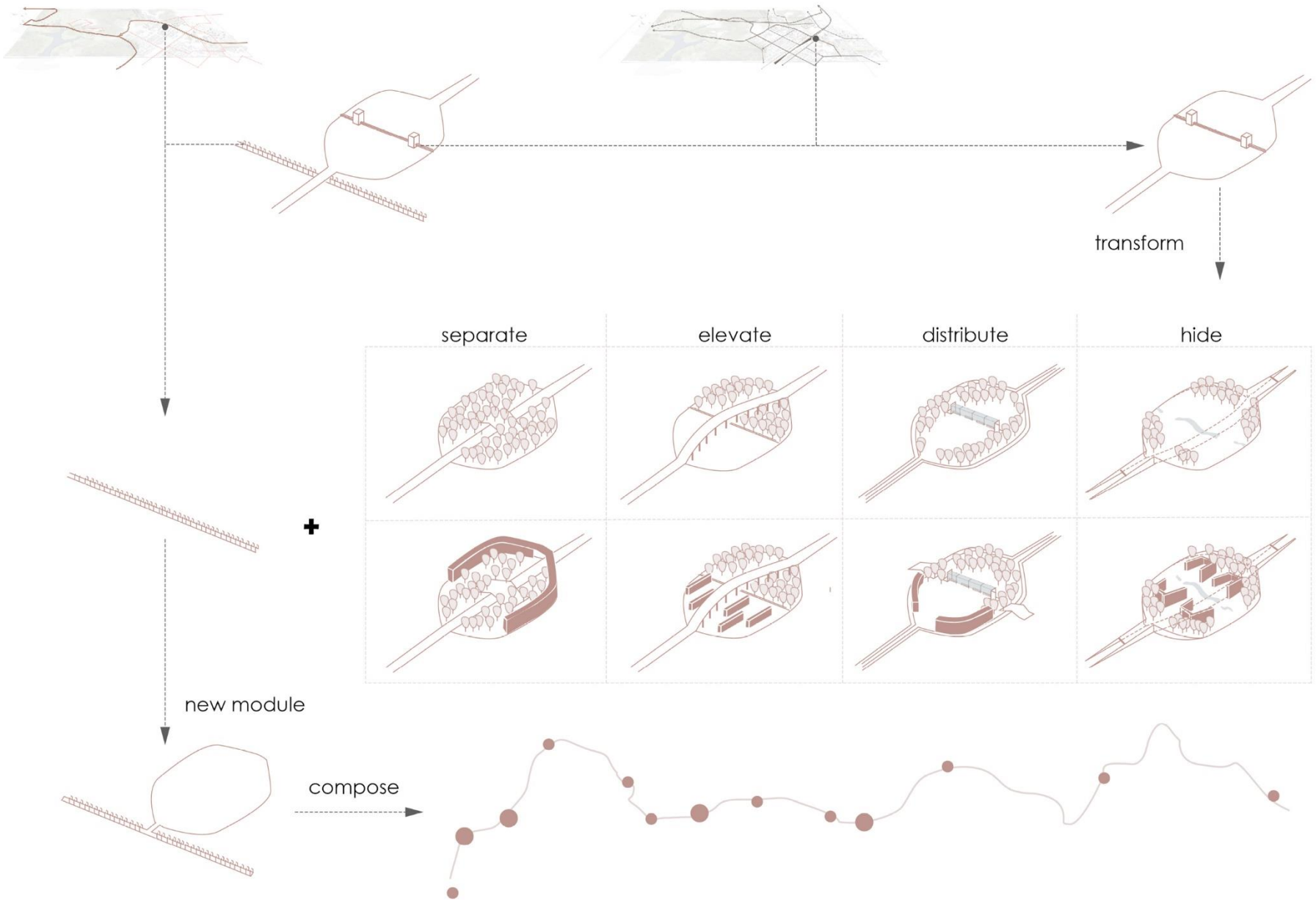




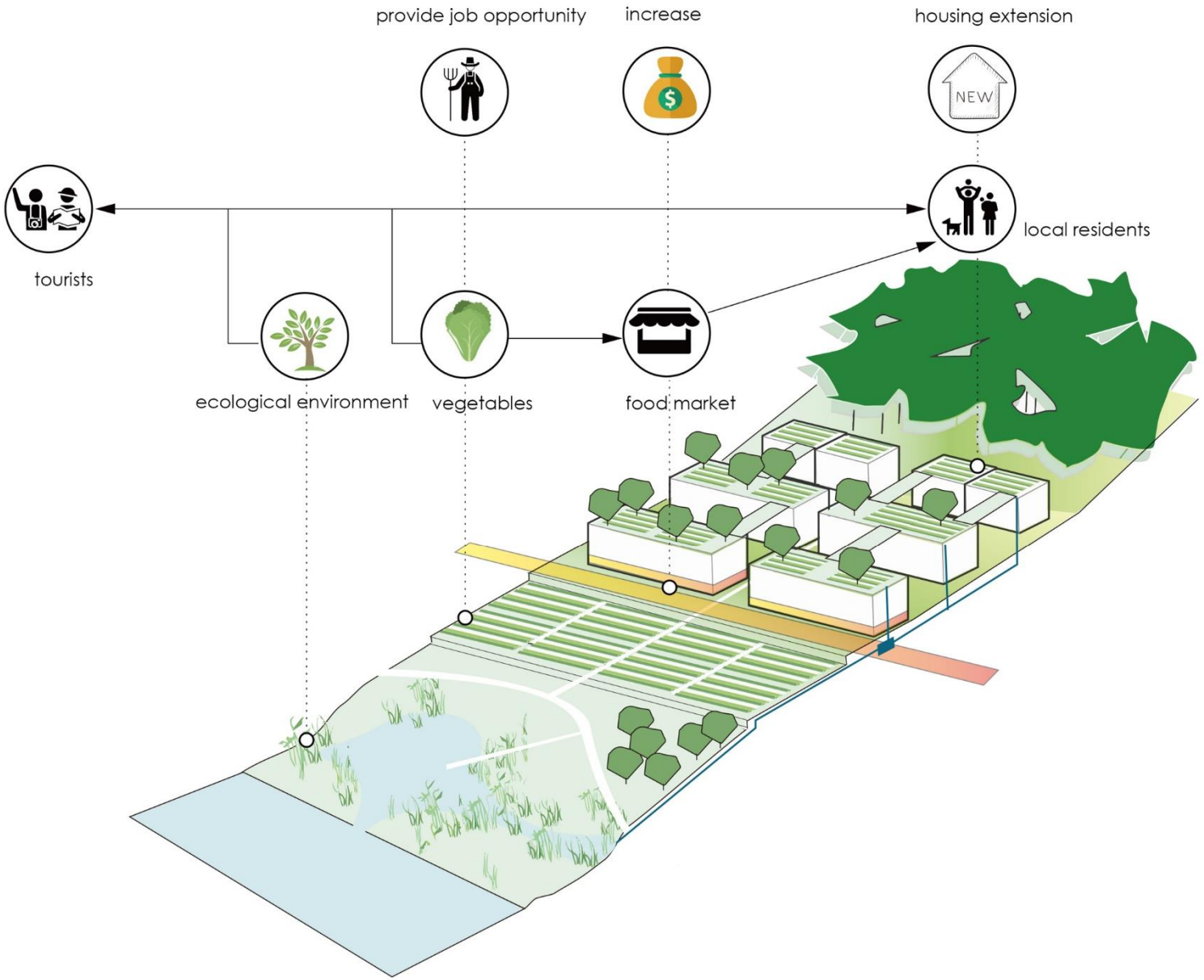


Cycling with Culture

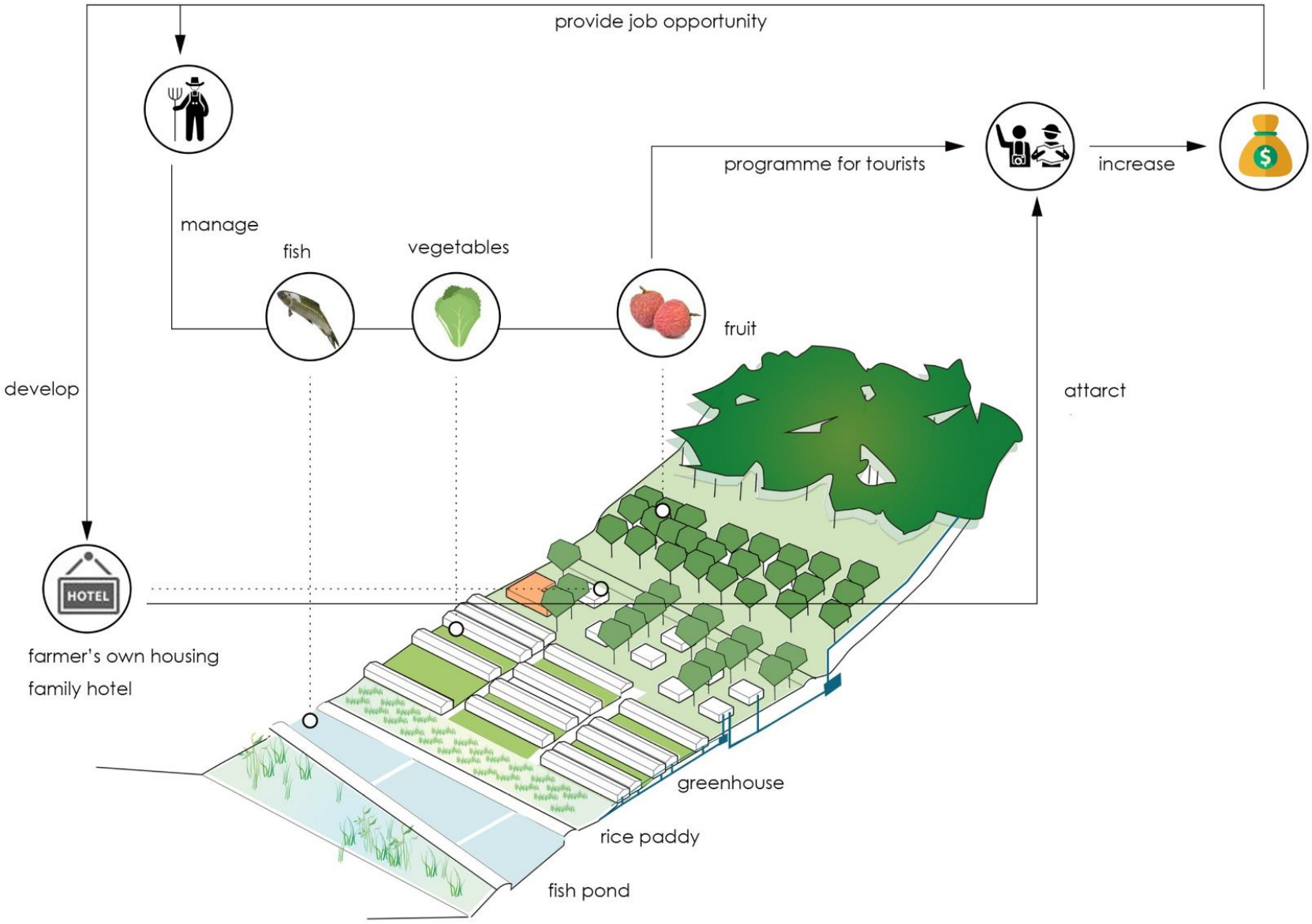
Cycling with Culture

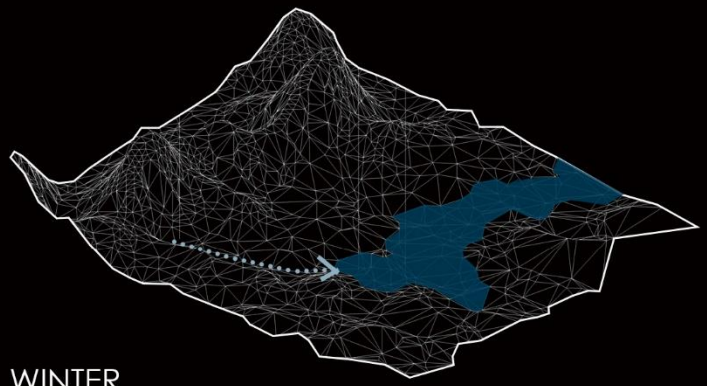


Reflection

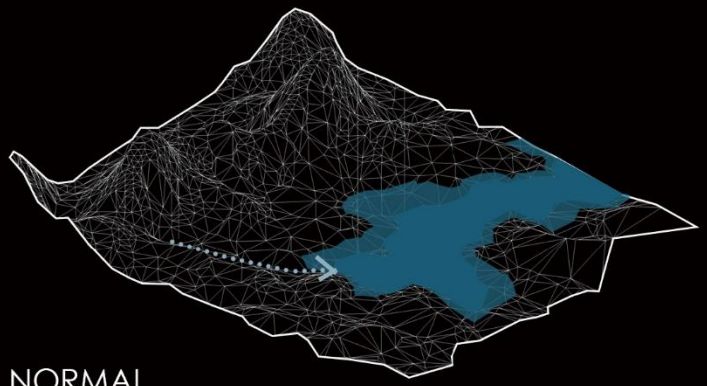

provide job opportunity
increase
housing extension
NEW
tourists
local residents
ecological environment
vegetables
food market

Reflection

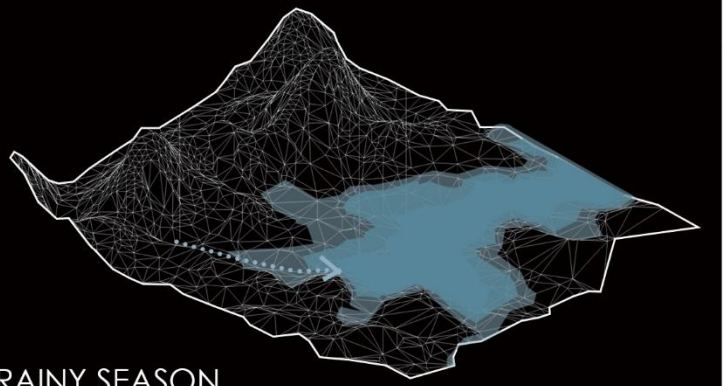

provide job opportunity
programme for tourists
increase
manage
fish
vegetables
fruit
develop
attarct
HOTEL
farmer's own housing
family hotel
greenhouse
rice paddy
fish pond



WINTER



NORMAL

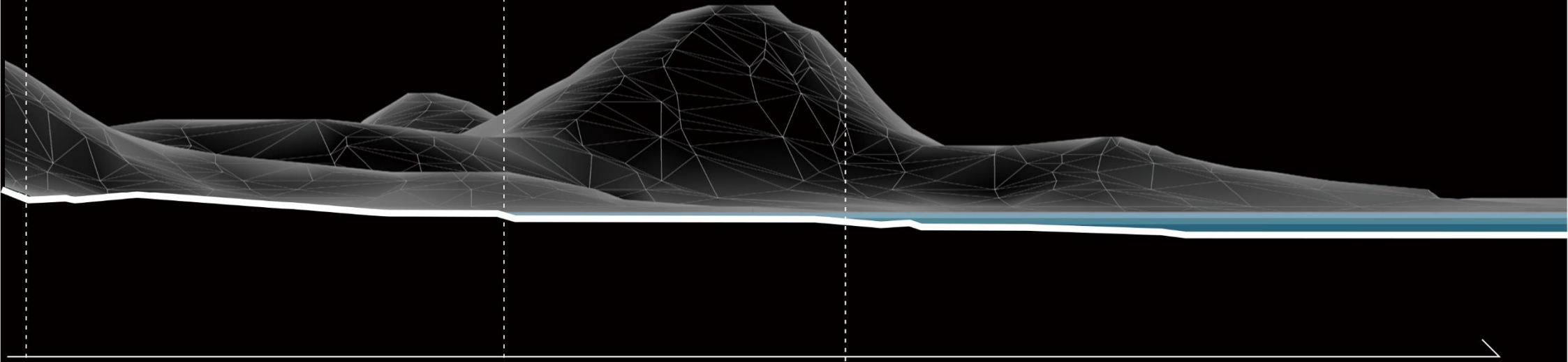


RAINY SEASON

PRODUCTIVE AREA

FLOODING AREA

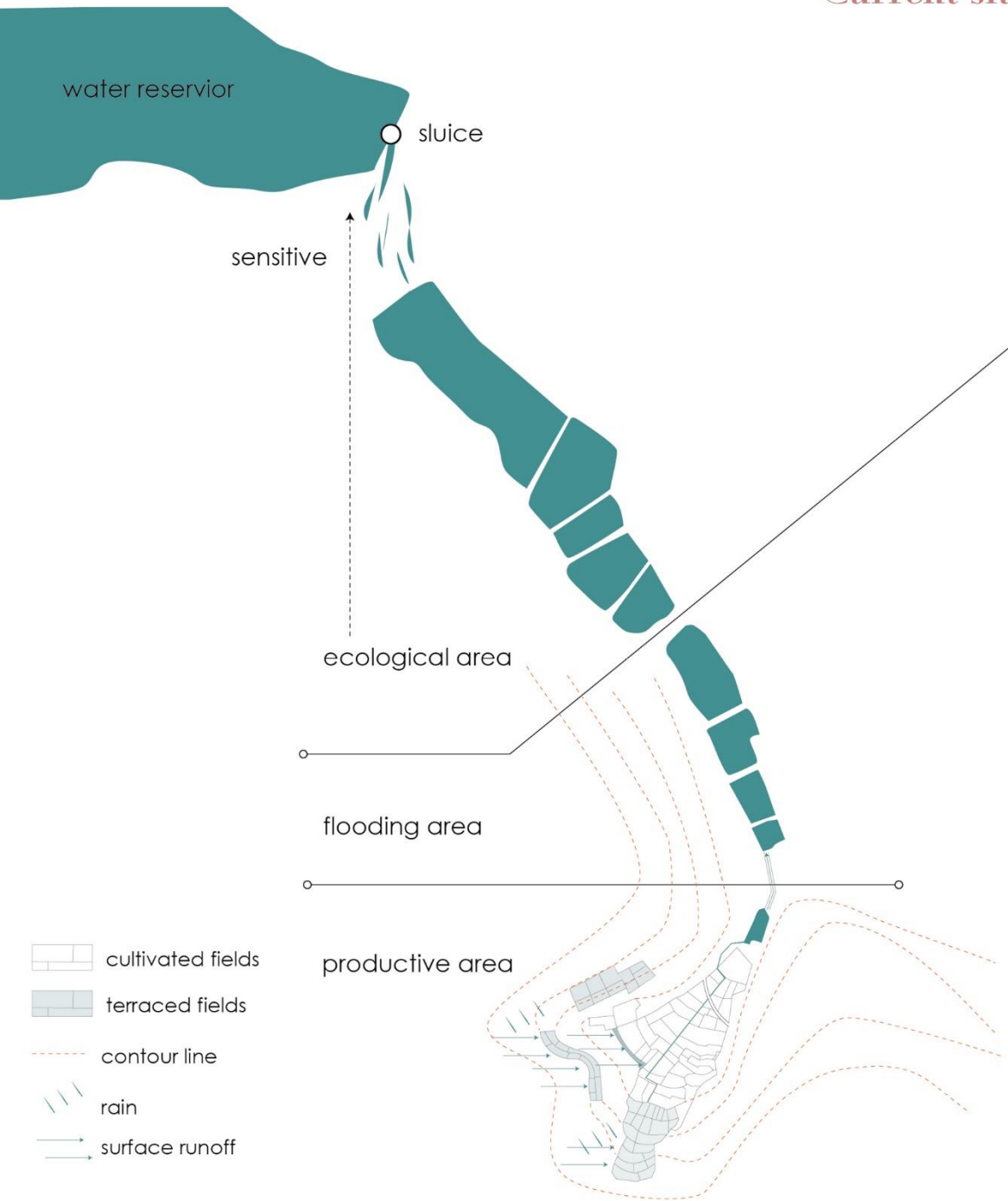
WATER RESERVIOR



PRODUCTIVE

SENSITIVE

Current situation



current situation

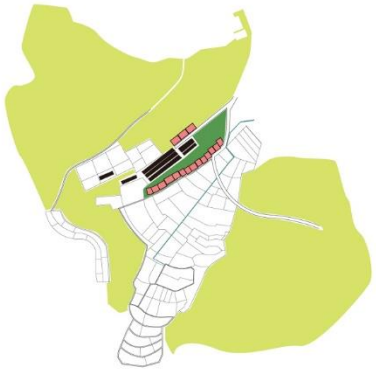
orchard
left to nature
farmhouse
vacant area
cultivated fields
greenhouse

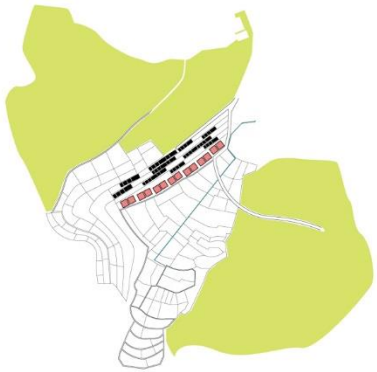
Phasing

current situation | 1 year | 3 year | 5 year

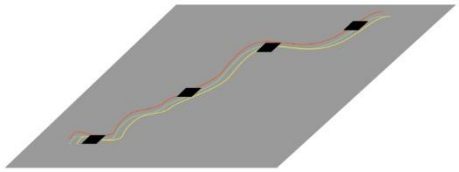
orchard
left to nature
new house
temporary farmhouse
vacant area
cultivated fields
community park
greenhouse

First-Step Intervention





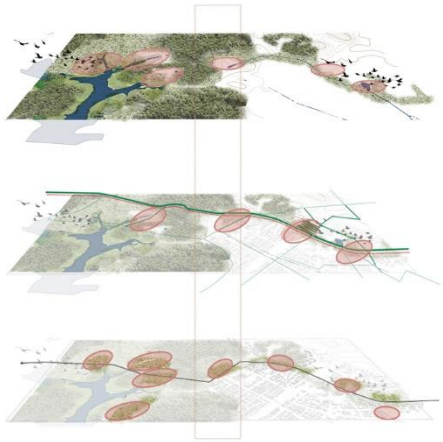
Conclusion



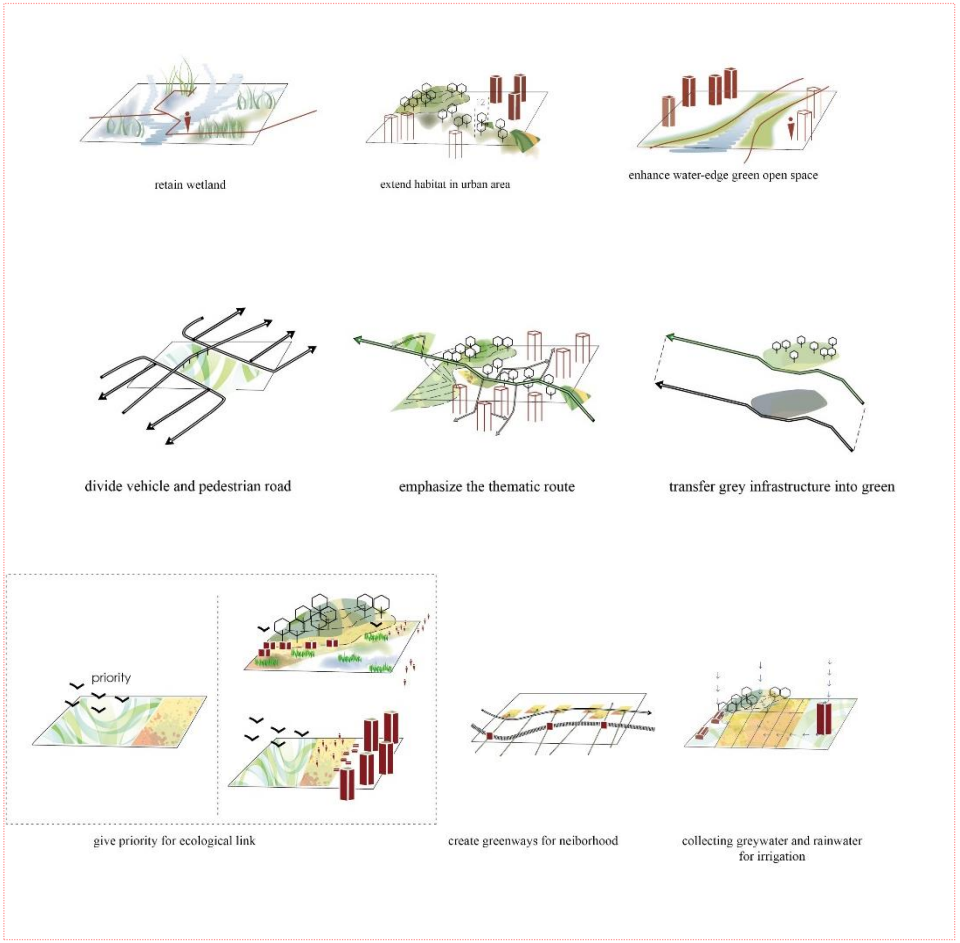
Flowscape
regional scale

Conclusion

Gap Scale



Design Principles

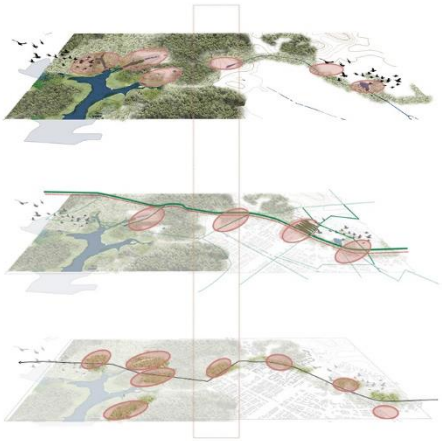


Local Scale

Conclusion

Regional Scale

Gap Scale



LANDSCAPE AS A SUSTANABLE INTERFACE:

Towards a vibrant boundary area in Shenzhen Second Line Pass