

REIMAGINE A CITY WITH WILDNESS
Rewilding for the Schijn Valley with a New Riparian Forest Corridor

P5 Presentation
Urban Forestry
Yiwen Wang



Domesticated City



Wild Nature

Common Definition of Rewilding:

The large-scale restoration of ecosystems, which aims to restore natural processes and reduce the human control of landscapes.



Fig.1,2 The Oostvaardersplassen Nature Reserve, photo: Ruben Smit

Can a new interpretation of rewilding be made, in a contemporary urban context?

From Return to the "Wilderness" to Re-establish the "Wildness"

from

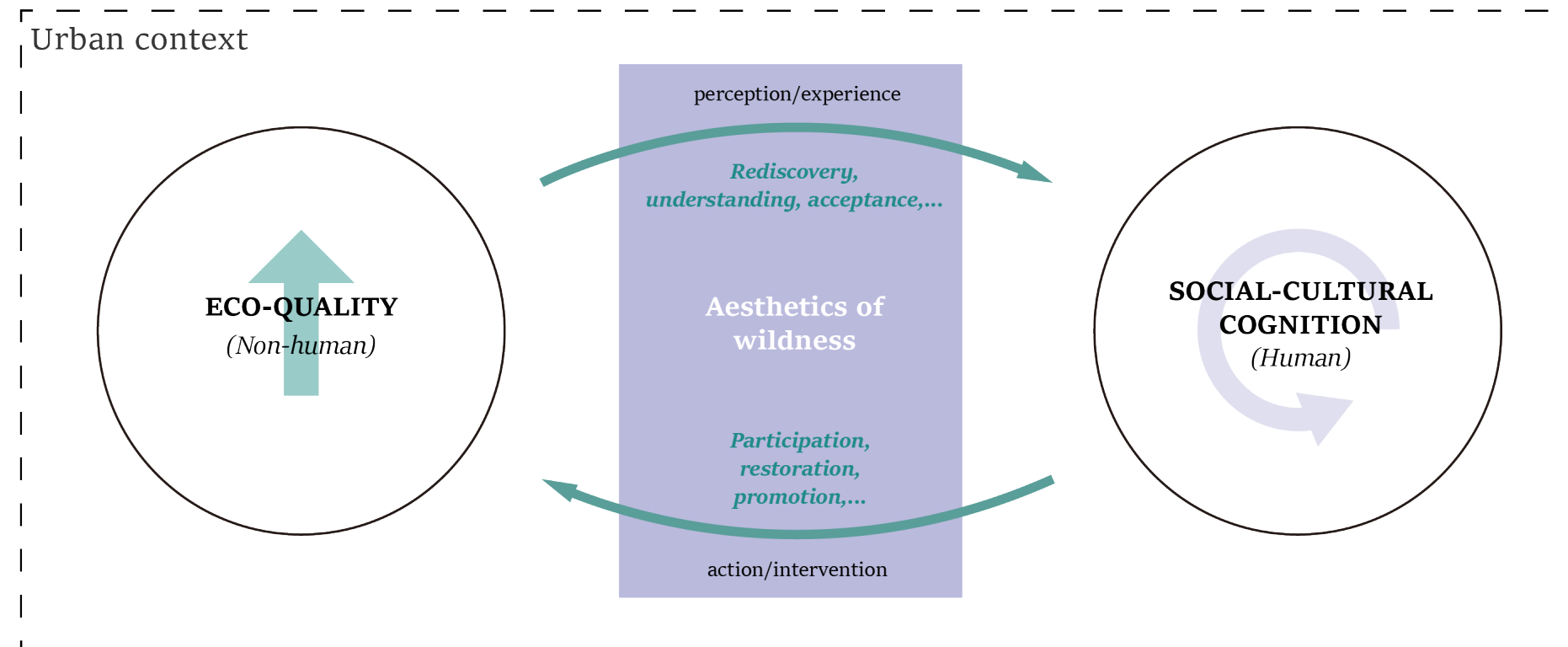
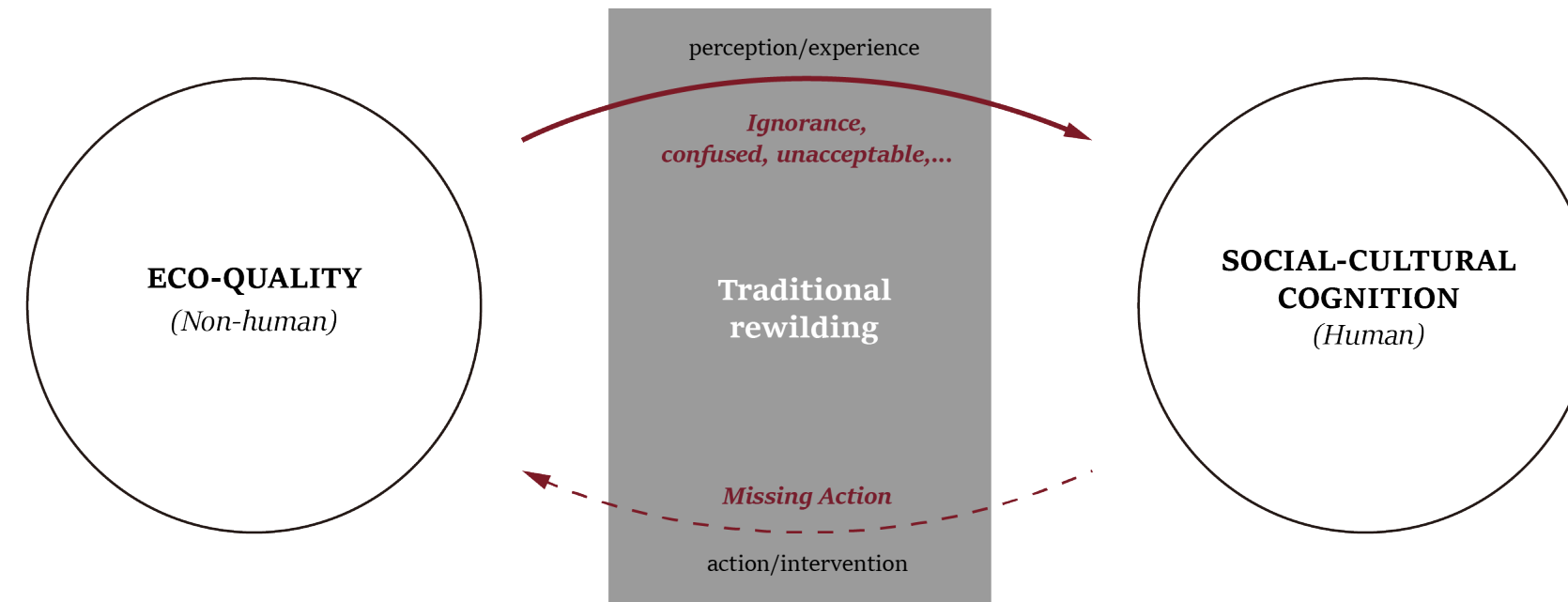
|re| turn

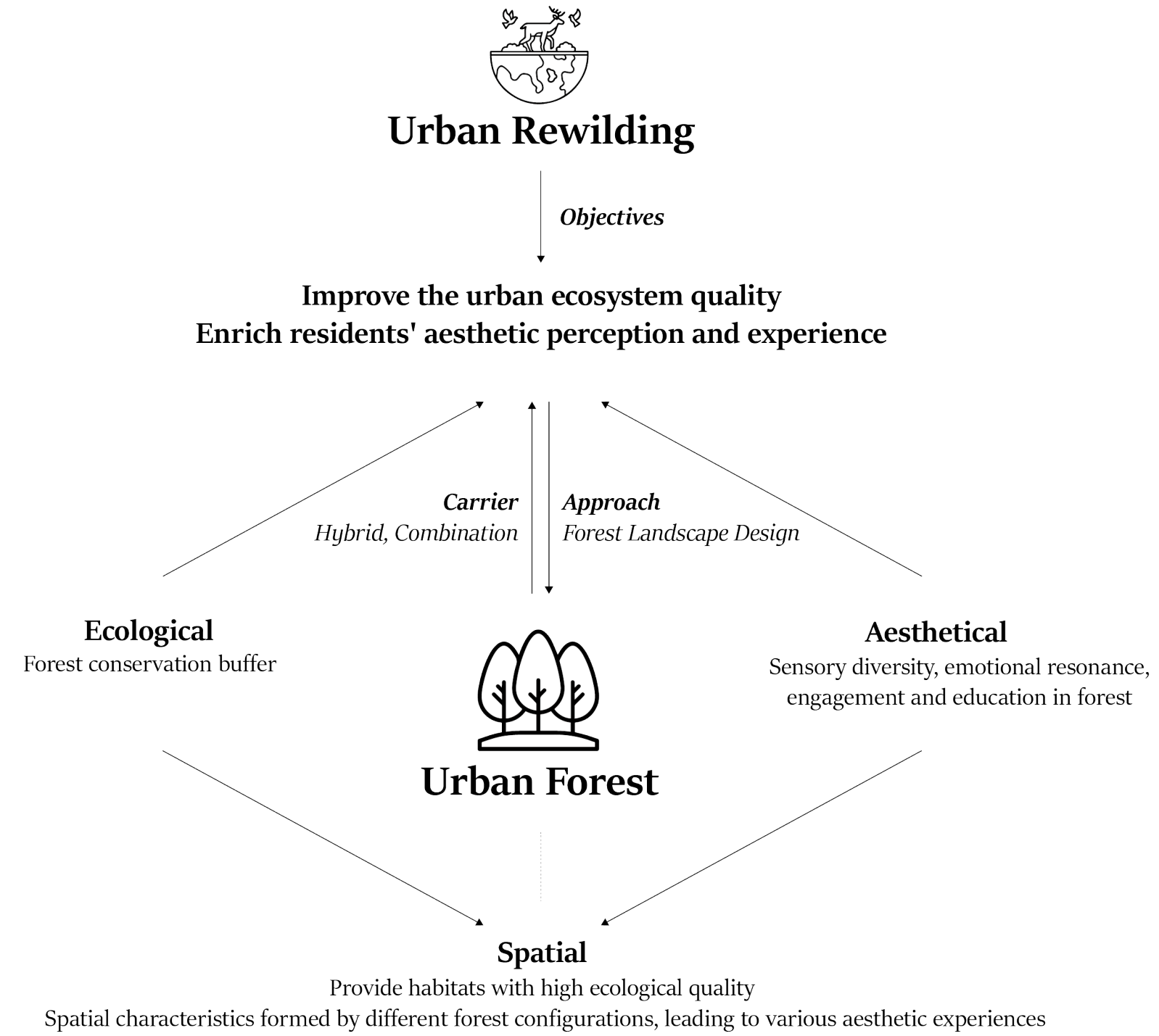
**"pristine" nature;
uncultivated, uninhabited wilderness;
large scale protected areas;
a tract of solitude and savageness**

to

|re| establish

**nature's autonomy in human engaged landscape;
the ability of self-organization and self-renewal;
more spontaneous wildness in daily life;
untamed places reconnect human/non-humans**

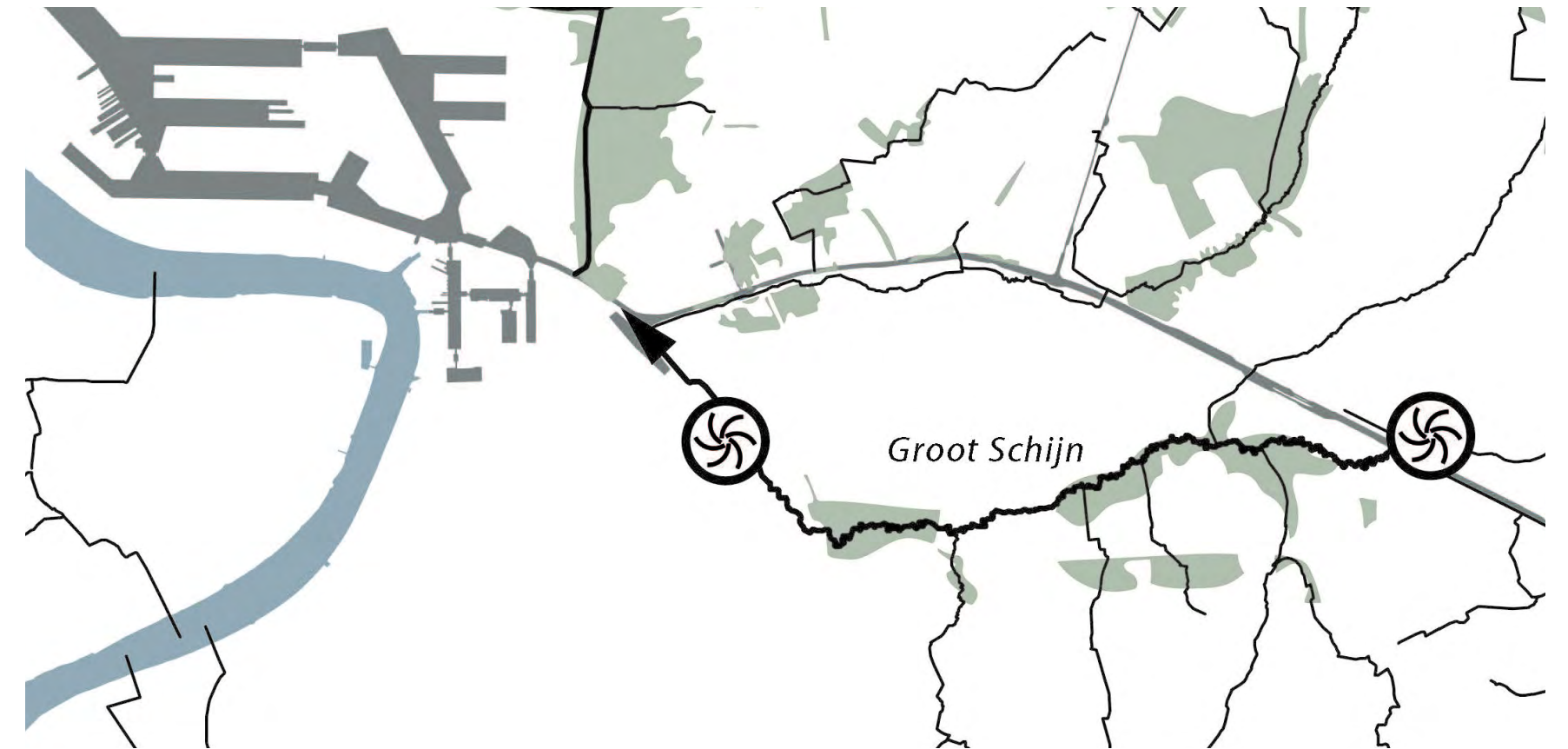




How can rewilding reimagine a better coexistence and reconnection between humans and non-humans in the urban forest?



The Historic Schijn Valley based on the Ferraris map of 1774



Schijn river system and flood risk areas (green). Water from the streams is pumped onto the canal.

Antwerp exemplifies *A sprawling metropolis with series environmental and ecological issues*

Schijn Valley exemplifies *A natural water system disrupted and replaced by the artificial system with increased risk of flooding and water pollution, compressed living space for non-humans*

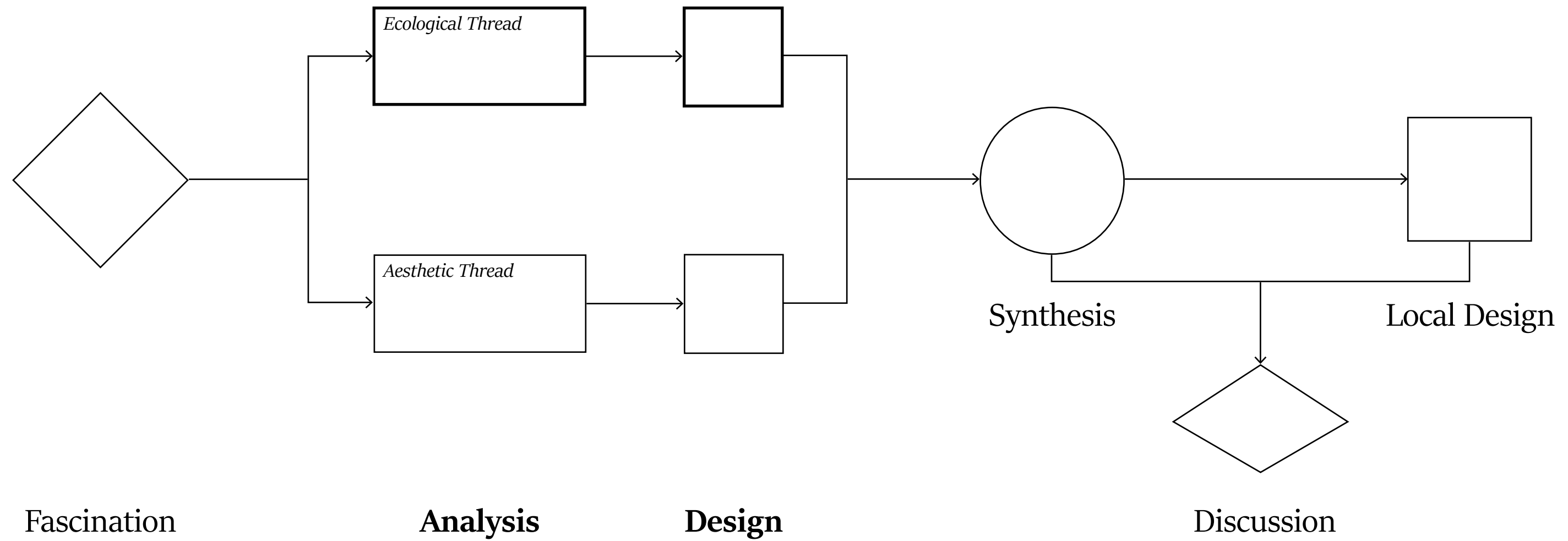


1. INTRODUCTION

Current Situation



*How can the **urban forest** play a role in rebuilding the continuity and integrity of **riparian ecosystems**?*

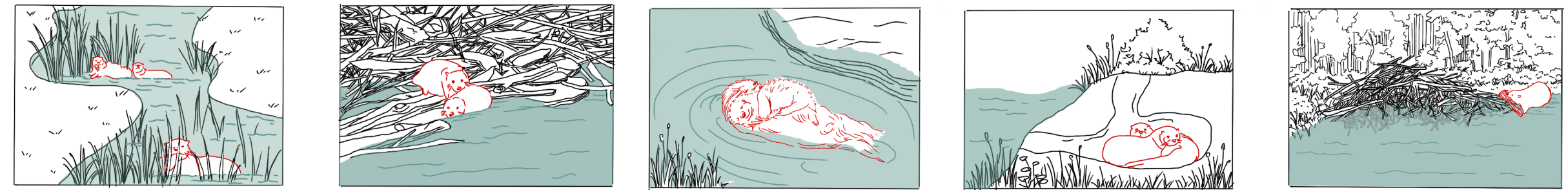
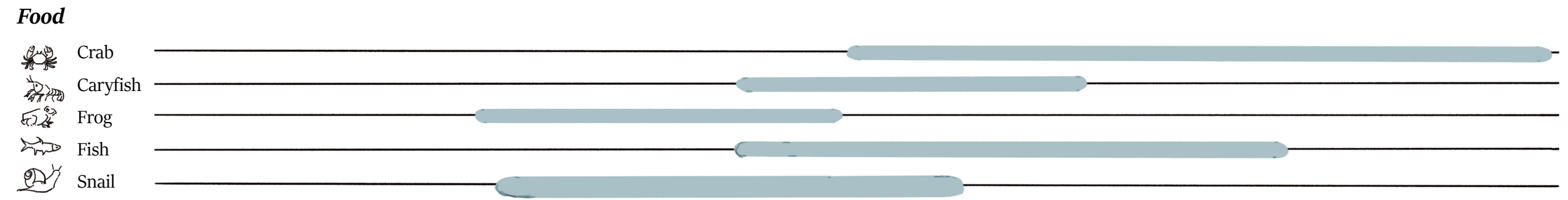
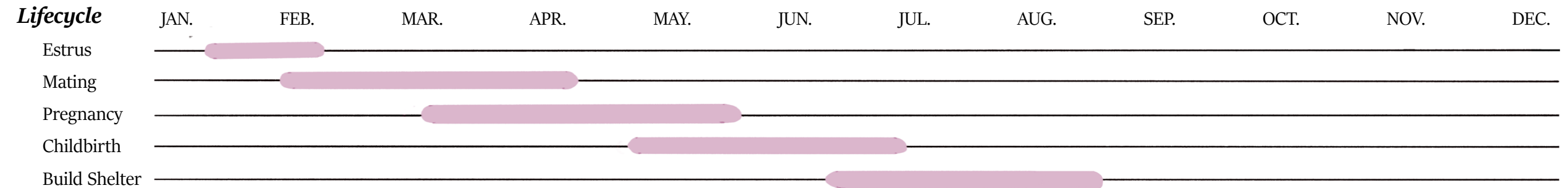




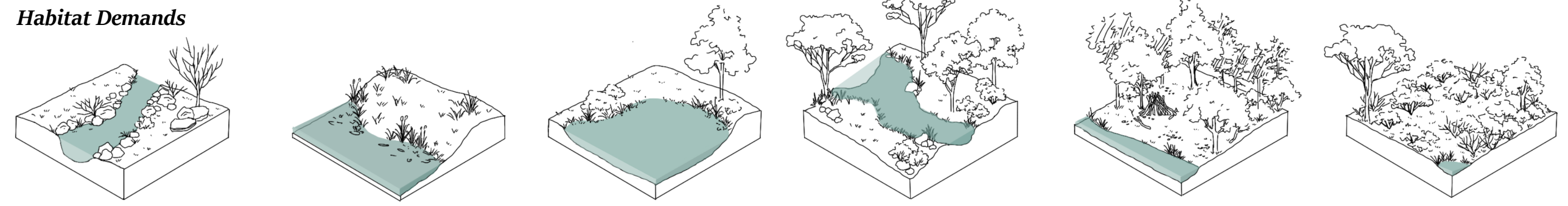
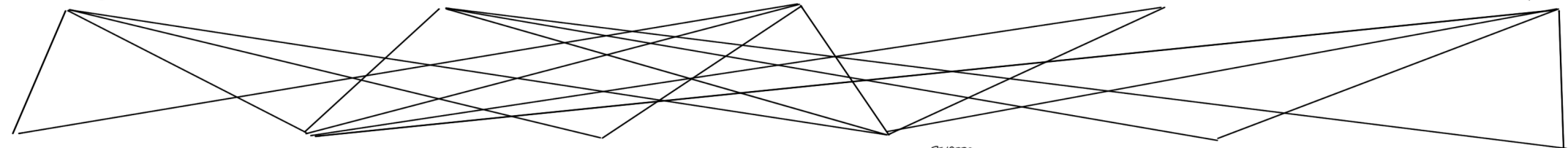
Lutra lutra (Eurasian otter)

A top predator and key component of a rich community of life in aquatic ecosystems

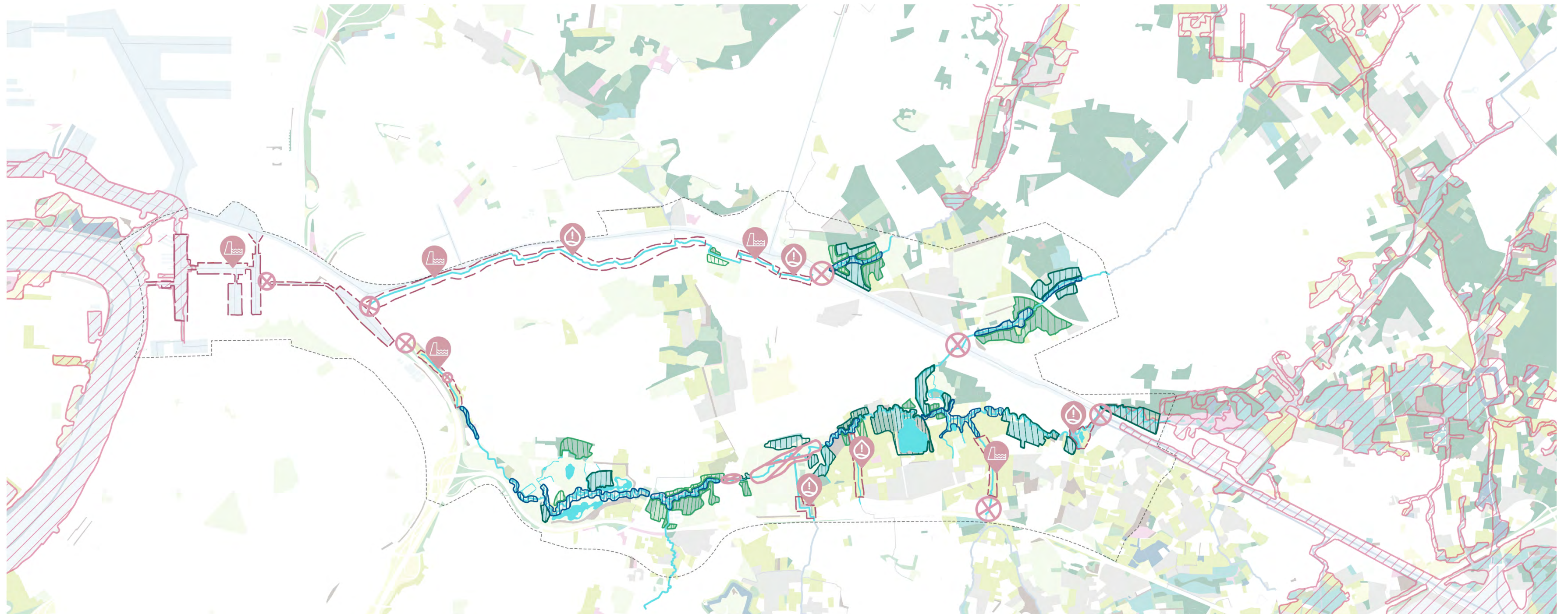
POPULATION: about **10** in Belgium, about **2,000** in Germany



Habits Foraging Mating Childbirth Digging Caves Building Shelter



Slow-moving River & Creeks Swamp & Wetland Lakes Covered Waterbank Riparian Woodlands Thick Shrubs



Water Body

Wet Woodland

Covered Waterbank

Thick Scrub or Woods(≤50m)

Crossing Barriers

Potential Continuous Habitat

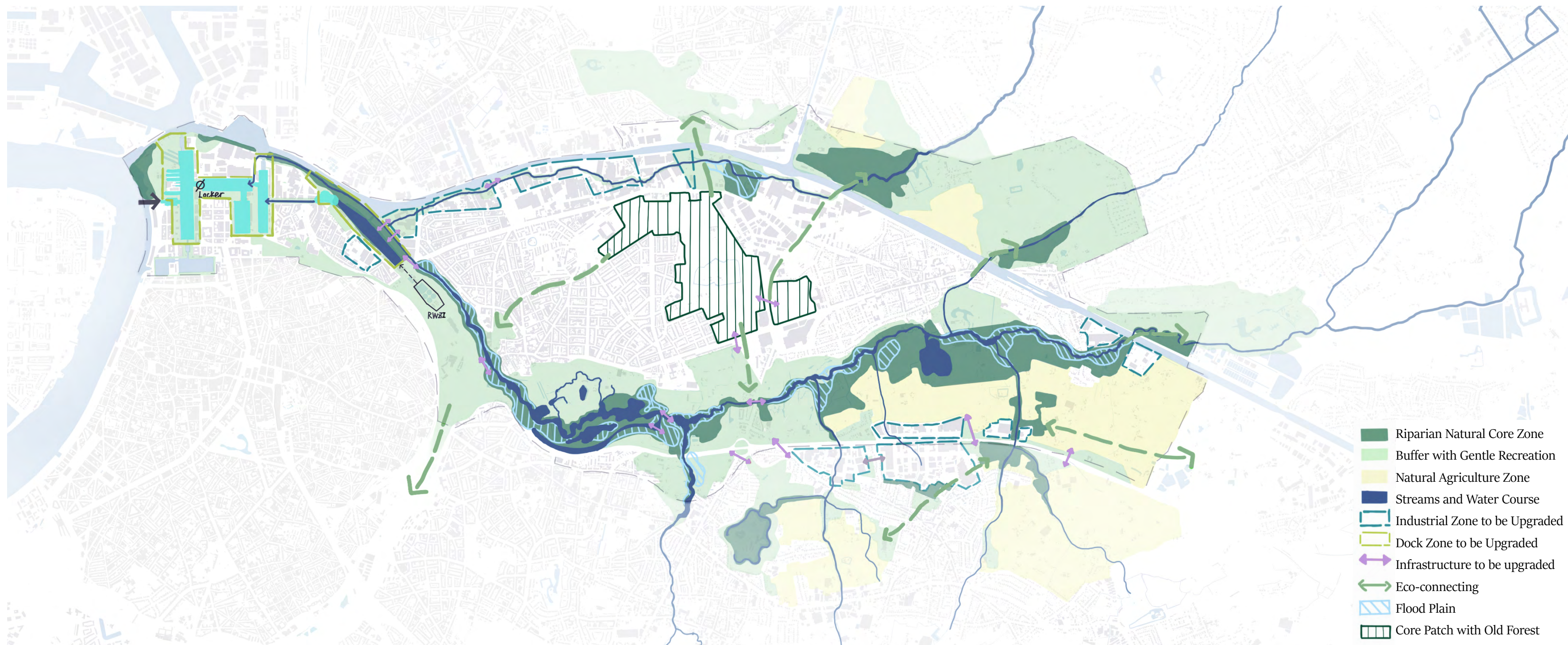
Threats

Poor Water Quality

Riverbed Channelization

2. ECOLOGICAL THREAD

Otter Habitat Mapping



Habitat Continuity:

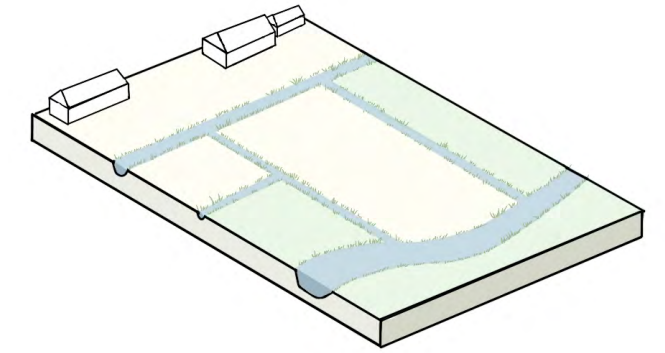
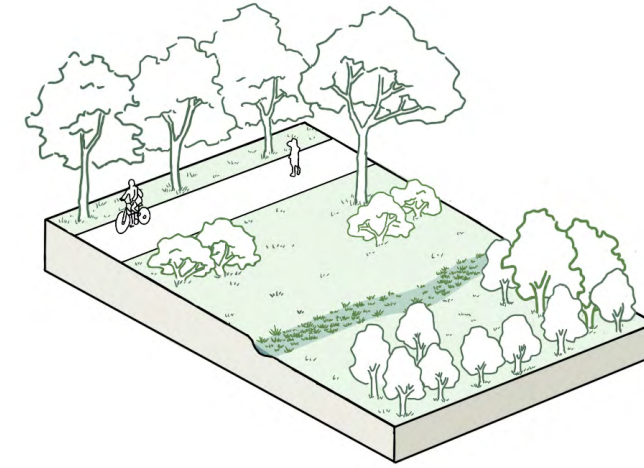
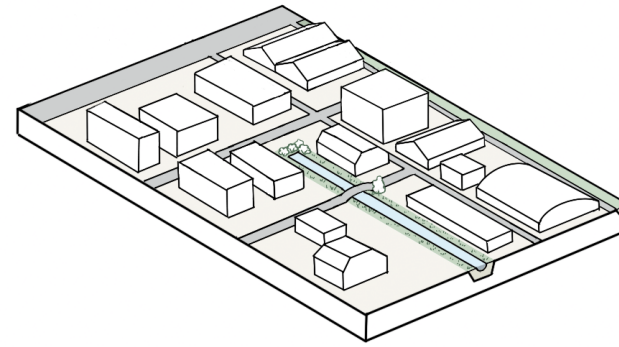
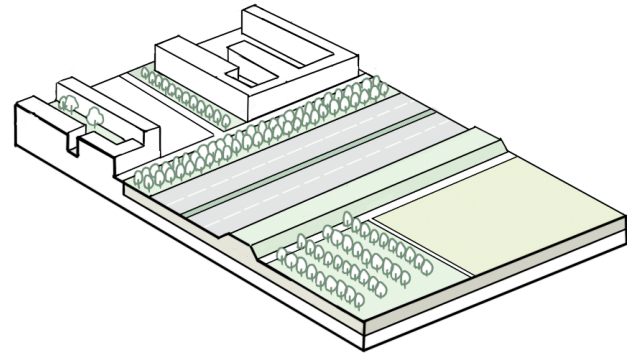
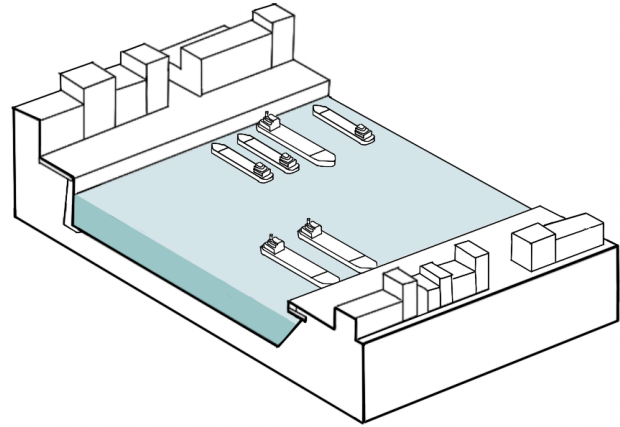
Reconnecting watercourses
Establishing riparian corridors

Ecological Integrity:

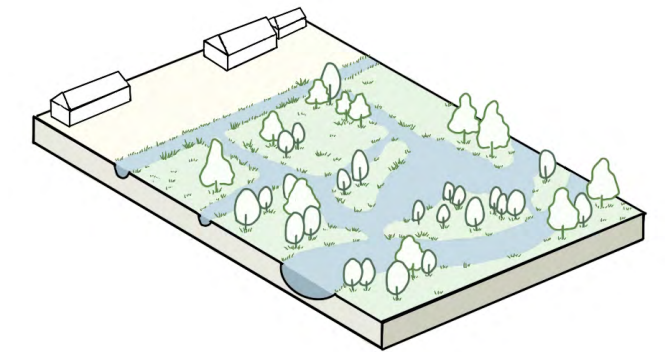
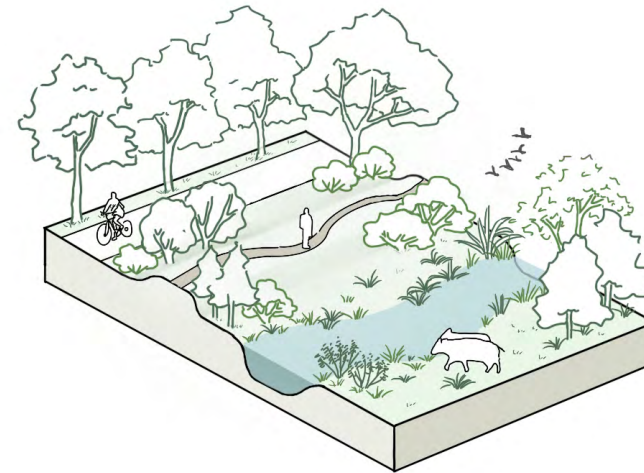
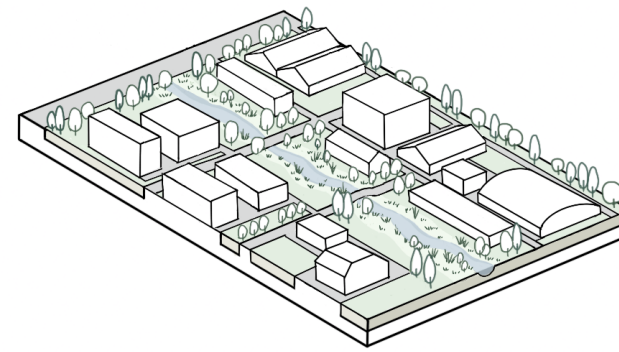
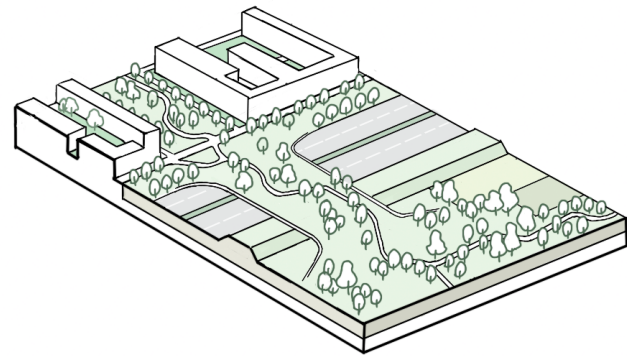
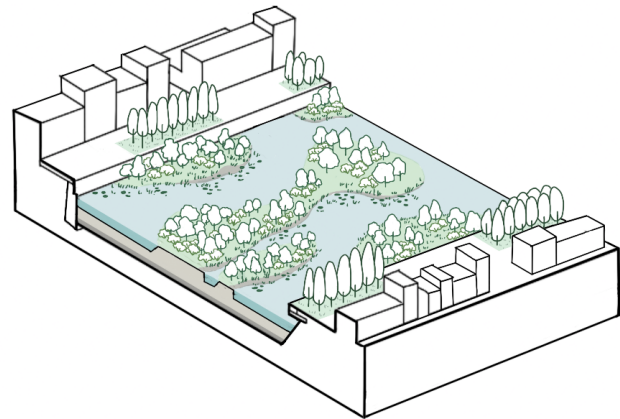
Reconnecting embanked river to floodplains
Developing dynamic gradients
Forming diverse forest habitats

Creating conditions for the development of riparian forests

BEFORE



AFTER



Dock Area:

- Develop natural waterbeds as urban ecological reservoirs

Infrastructure Area:

- Create connections such as eco-bridges and sunken gardens

Industrial Area:

- Restore covered underground ditches to natural streams

Park Area:

- Soil digging and filling operations for water scraping and creating moisture gradients

Agricultural Area:

- Release ditches to allow rivers to meander and form marsh

Restoring the non-humans autonomy



Otters

- Reduce excessive aquatic vegetation growth
- Promote water flow
- Create more ecological niches



Beavers

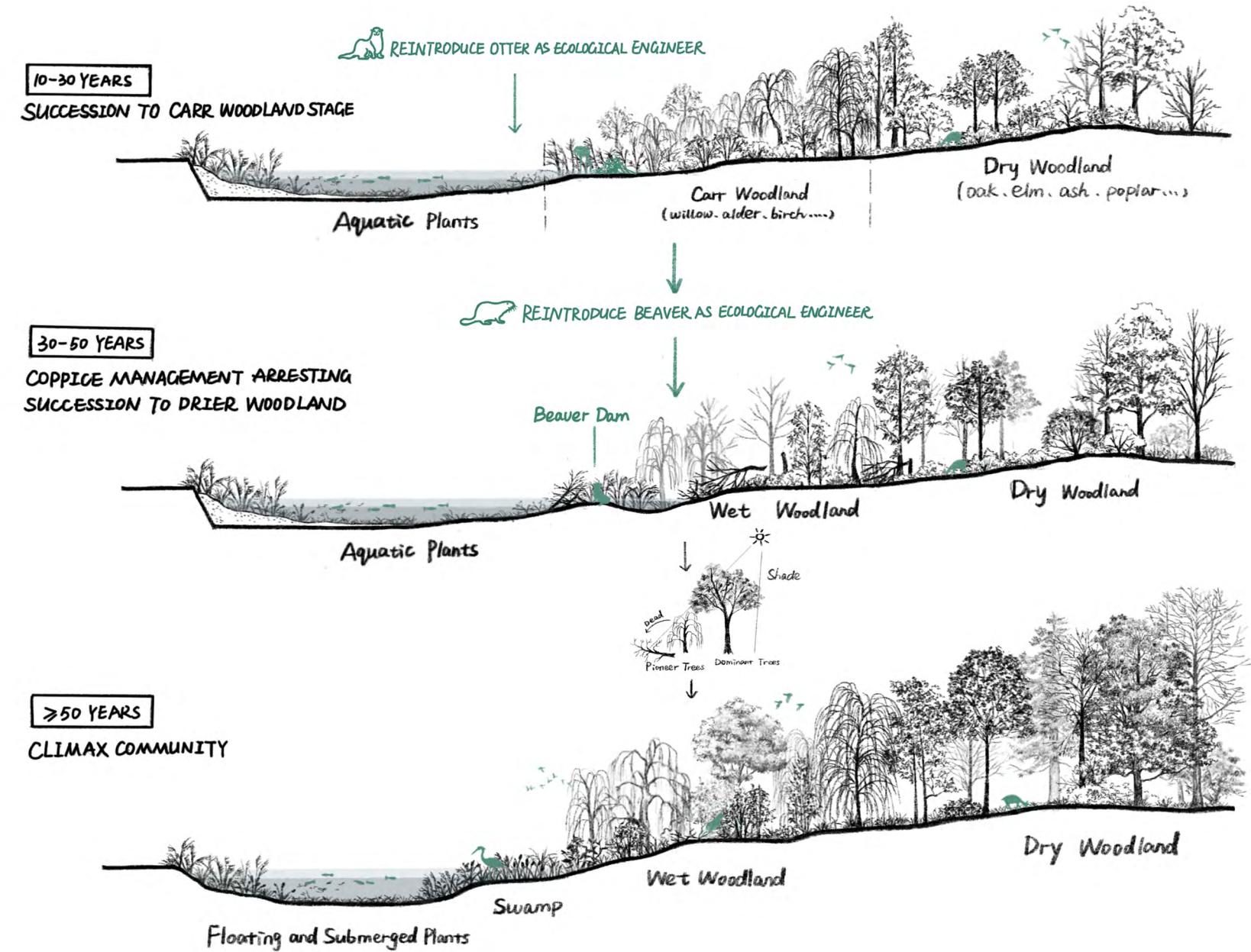
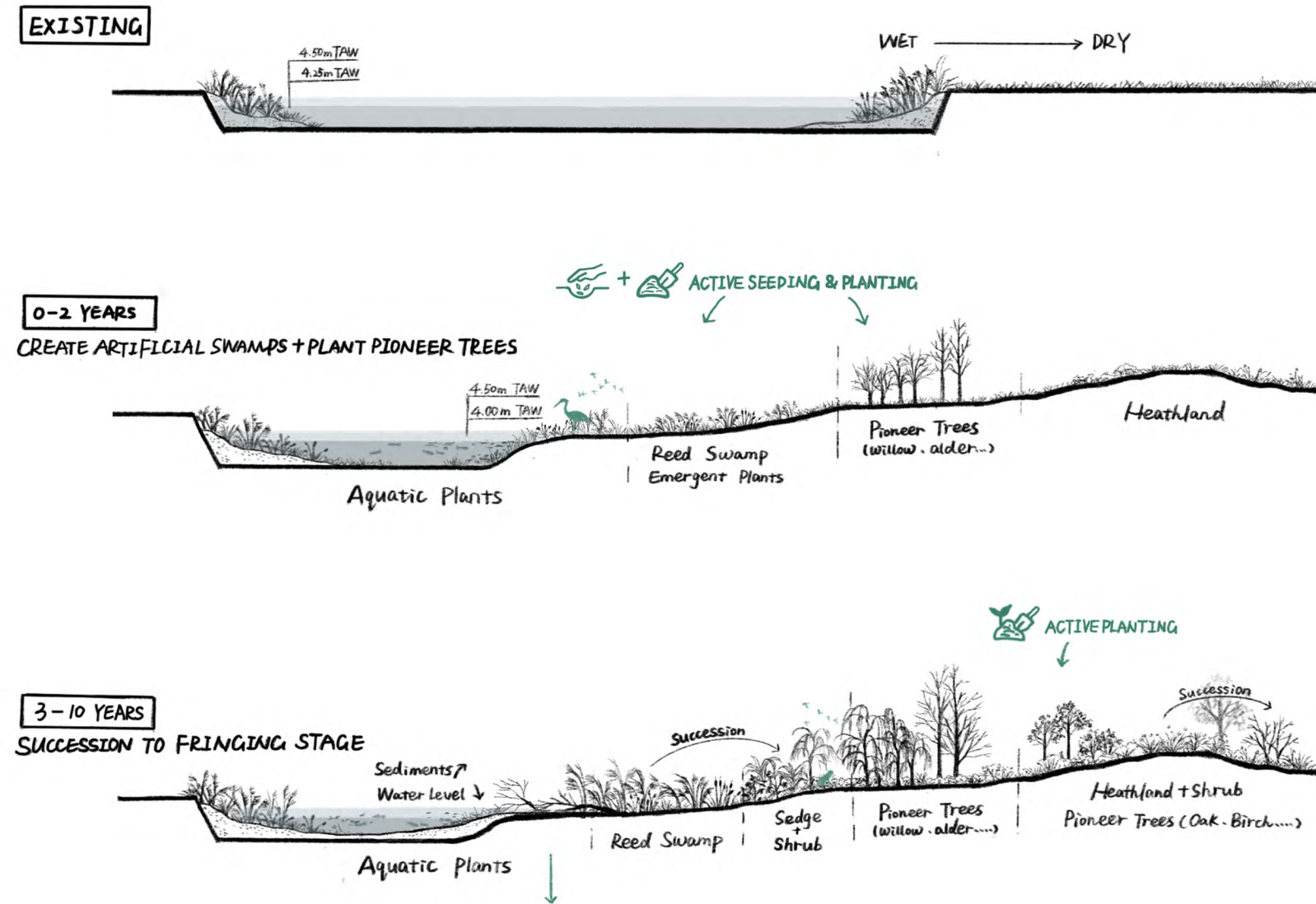
- Build dams, Create reservoirs
- Thinning forest
- Prolonging water retention



Water Buffalo and other Herbivores

- Graze
- Maintain spatial variation of vegetation
- Ensure the reservoir marshes remain connected

Natural succession with limited human intervention

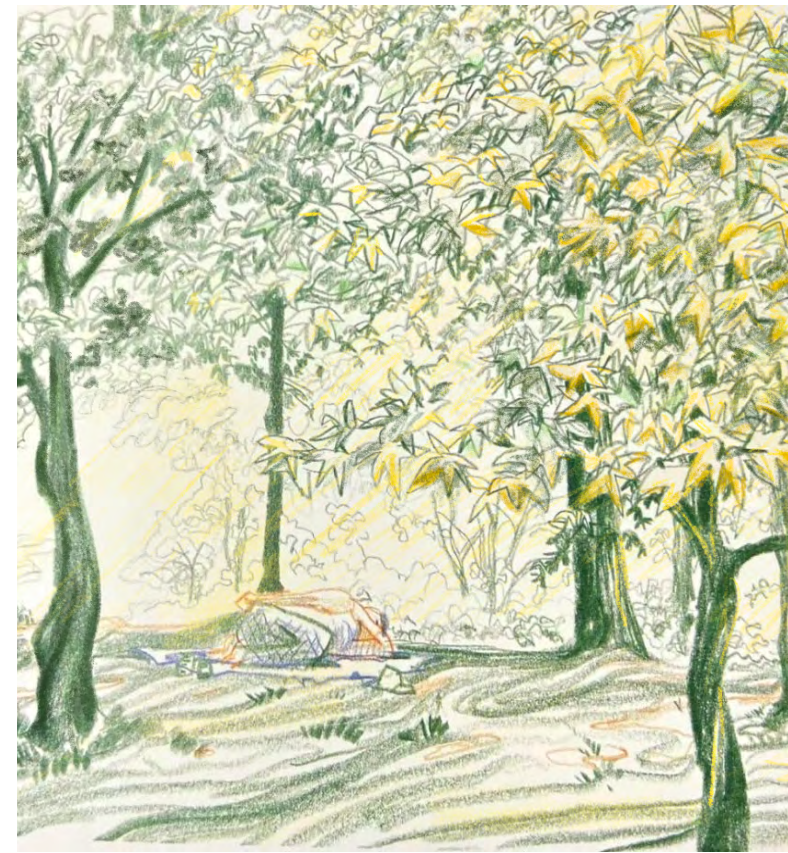


Sublime



- Symbol of autonomy of nature
- Obscure, disharmonic, solid
- Evoke wonder and awe
- Spontaneous landscape

Beautiful



- Symbol of harmonic, safety and unity
- Delicacy, polished, clear, bright
- Blissful feeling of harmony and identity
- Traditional cultural landscape

Interesting



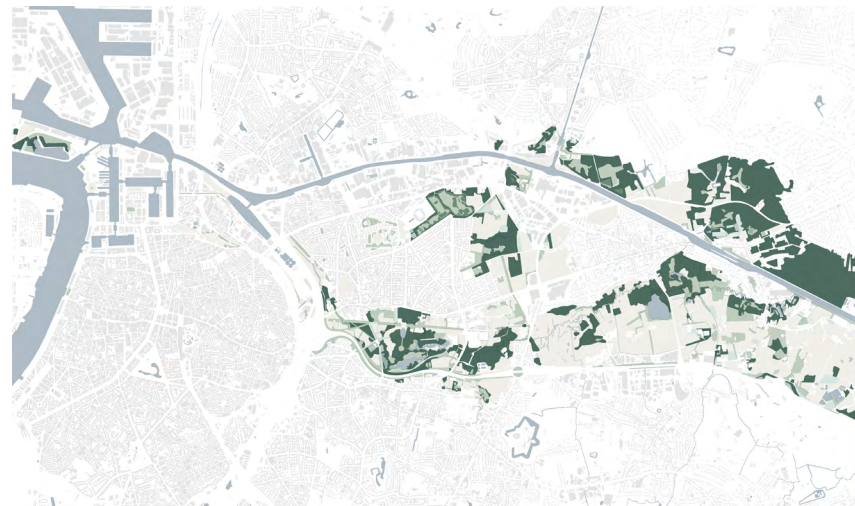
- Symbol of necessary technical progress
- Unsettled, mix of bizarre and usual
- Exciting feeling for uncertainty, process
- Constructing urban-industrial landscape

Plain

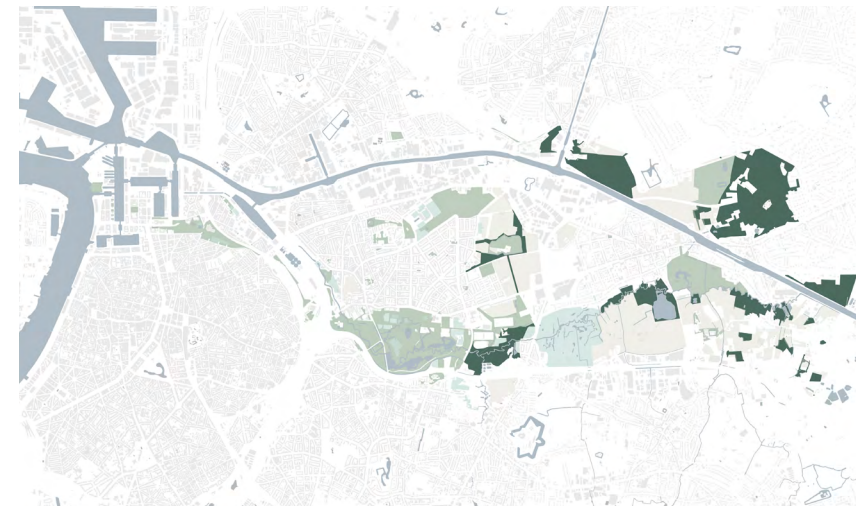


- Symbol of existing usefulness
- Simple, repetitive, homogeneous
- Comforting of the productivity of nature
- Rural functional landscape

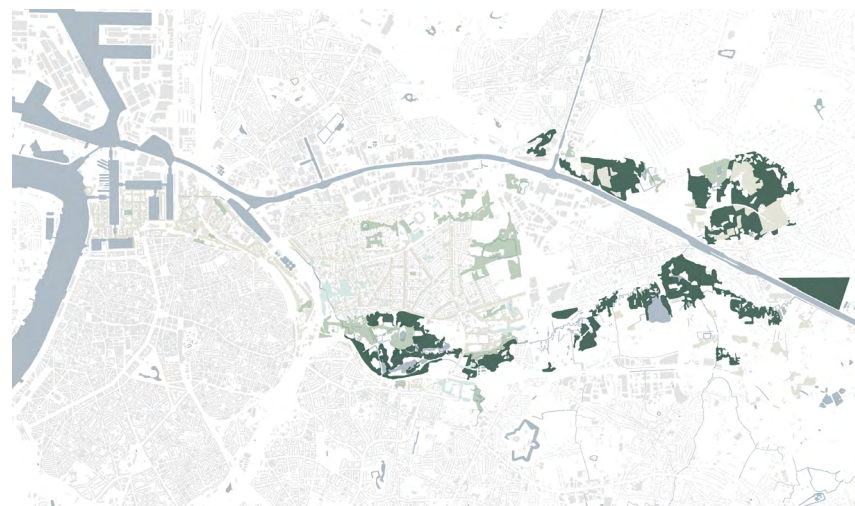
Gradient of wildness



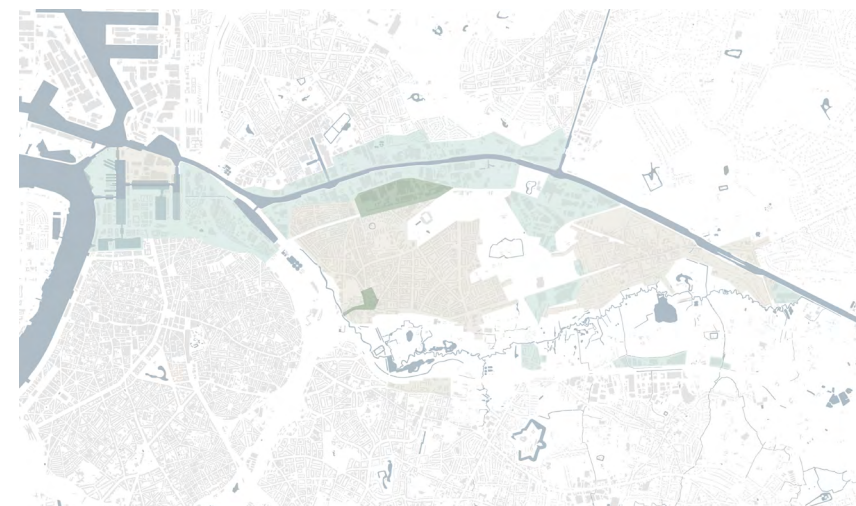
Type of Plant Space



Green Use and Accessibility



Type of woodscape



Urban Space and Function



Overlapped Aesthetic Map

Plain

Interesting

Beautiful

Sublime

3. AESTHETIC THREAD

Layered Aesthetic Evaluation based on Aesthetic Cognition Categories



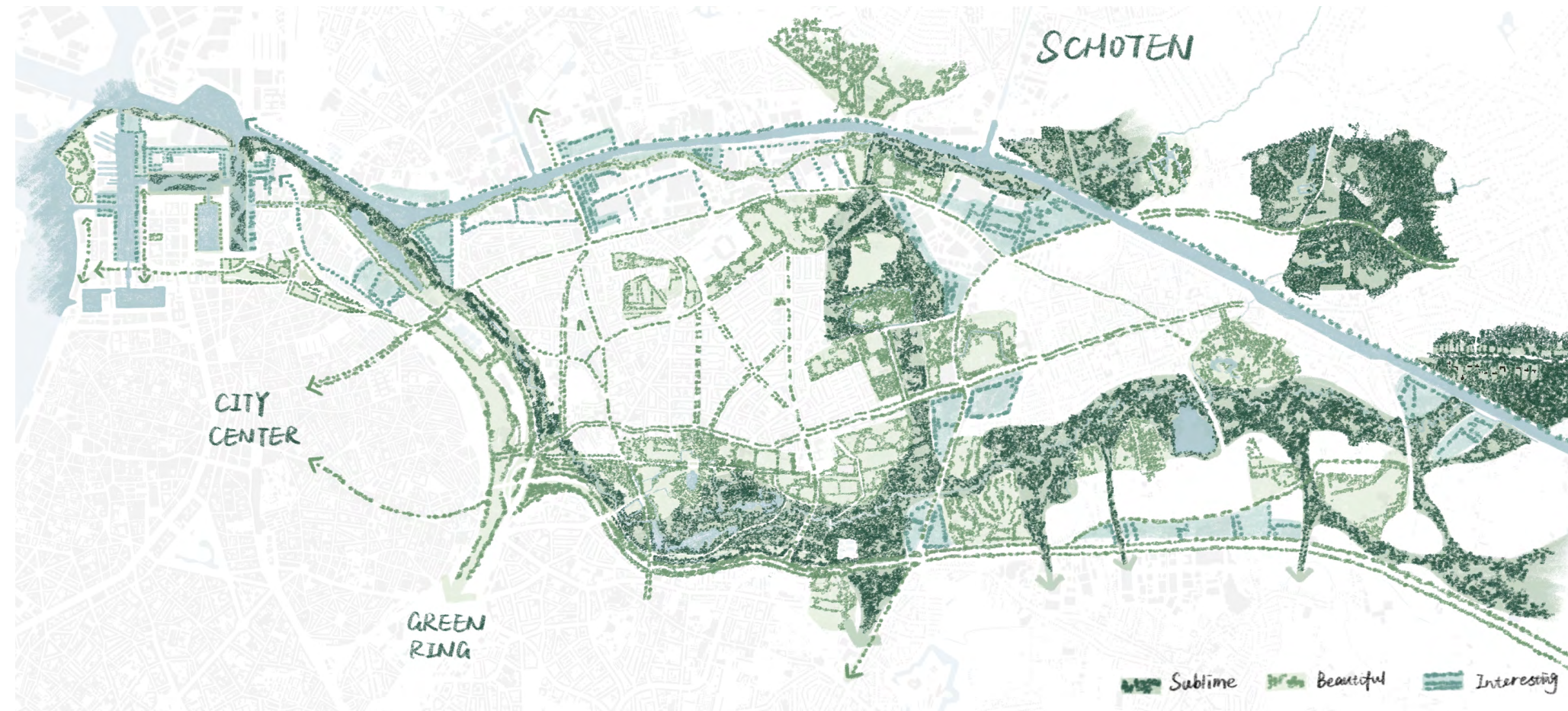
3. AESTHETIC THREAD

Aesthetic Experience during Drifting

Psychogeographic Map



Aesthetic Network Vision



3. AESTHETIC THREAD

More Coherent and Diversed Aesthetic Experiences

Sublime

Beautiful

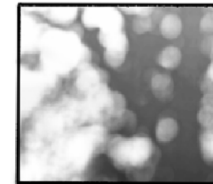
Interesting

Plain

Light & shadow



Gloomy



Bright, Dappled



Grey, Stright

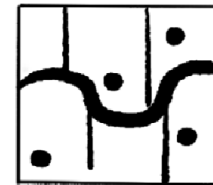


Faint

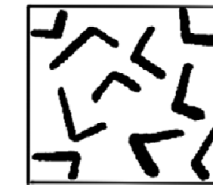
Order



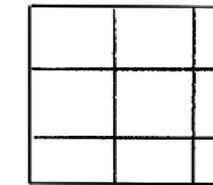
Disharmonic



Rhythmic, Balanced
Well choreographed
Artificial organic



Unsettled,
Organized chaos

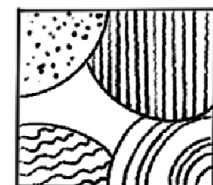


Coarse-meshed

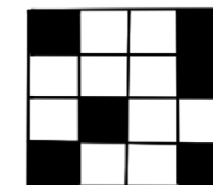
Diversity



Complex



Diverse



Mixed, Static



Homogeneous,
Intensive

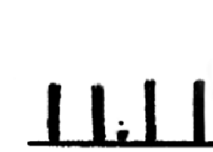
*Enclosure
Threshold*



$L/H \geq 1$,
Enclosed, Low transparency,
Narrow, Thick threshold



$1/3 < L/H < 1$,
Roomy, Relatively open
Permeable



$1/3 < L/H < 1$,
Semi-open, Limited by
technical elements



$L/H < 1/6$,
Open, Concise
engineering structures

Texture



Rough, Thick



Delicate, Smooth,
Polished



Metallic, Incoherent

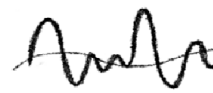


Smooth

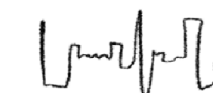
Sound



Fierce, Mysterious



Gentle, Melodious



Mechanical, Fantastic

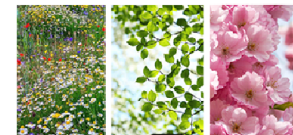


Quiet

Smell



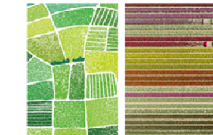
Moss, Rocks,
Running water,
Mud, Wood



Flowers, Grass,
Sunshine, Leaves,
Breeze

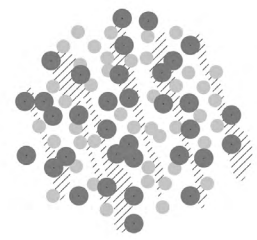


Metal, Glass, Steel

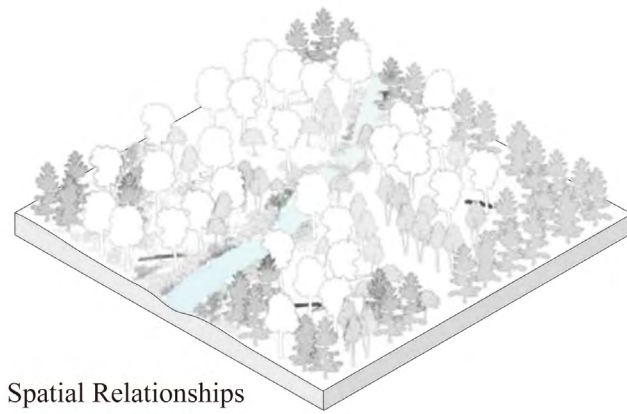


Odorless

Sublime Multi-layered Riparian Forest

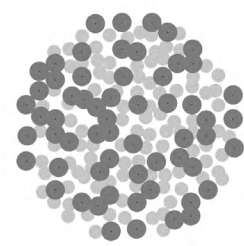


Planting: Under Story

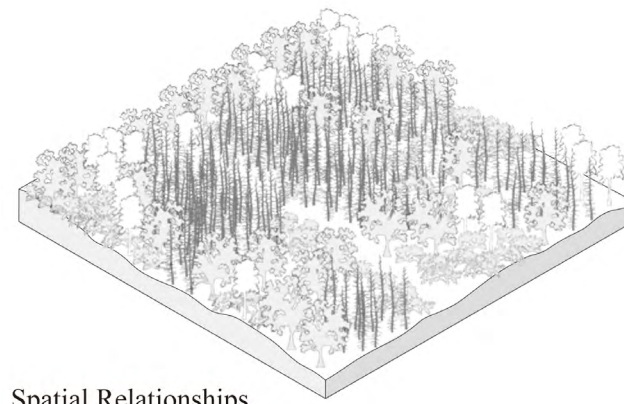


Spatial Relationships

Sublime Impenetrable Forest

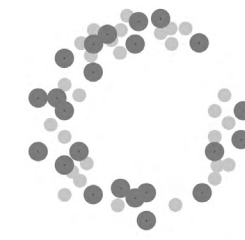


Planting: Condensed

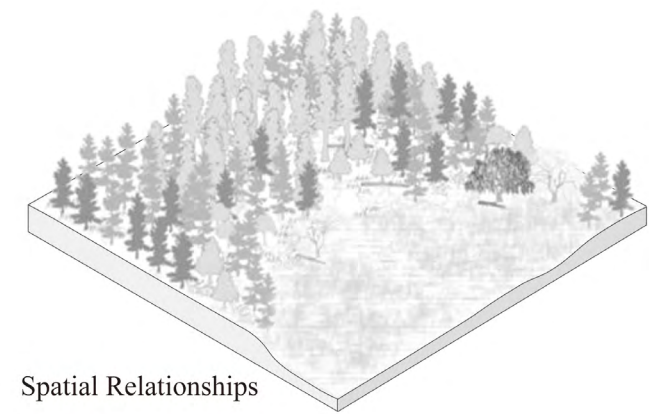


Spatial Relationships

Sublime Edge Forest



Planting: Edge



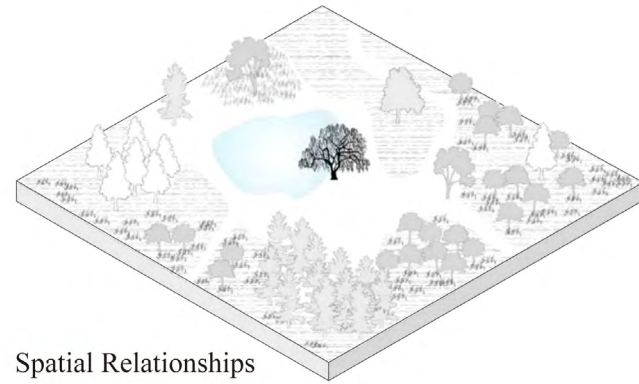
Spatial Relationships



Beautiful Open Riparian Forest



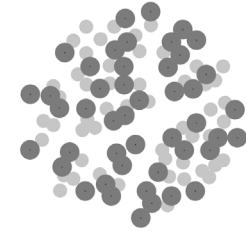
Planting: Open



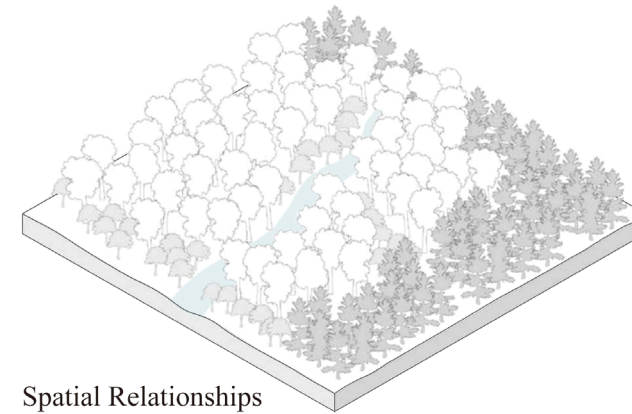
Spatial Relationships



Beautiful Enclosed Canopy Riparian Forest



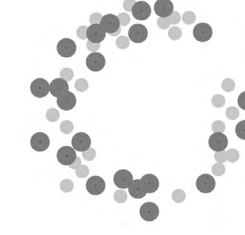
Planting: Random Grid
Split by Paths



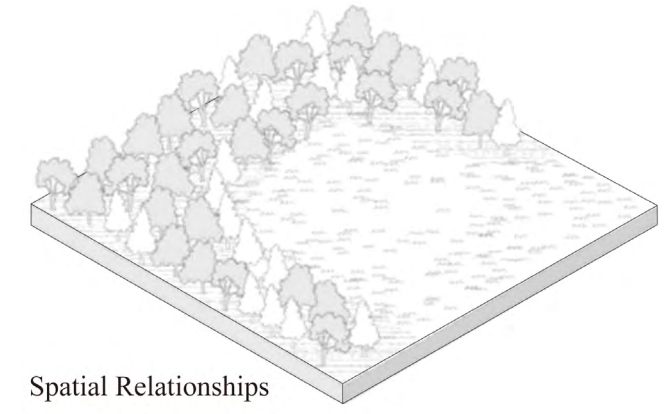
Spatial Relationships



Beautiful Edge Forest



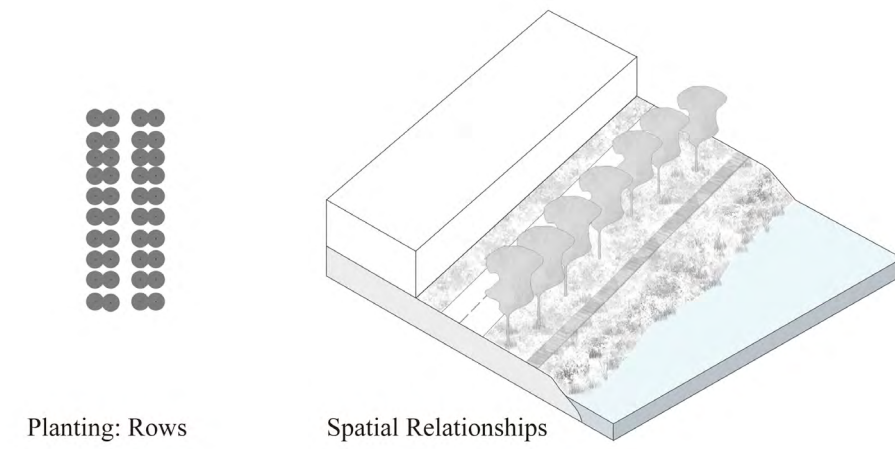
Planting: Edge



Spatial Relationships

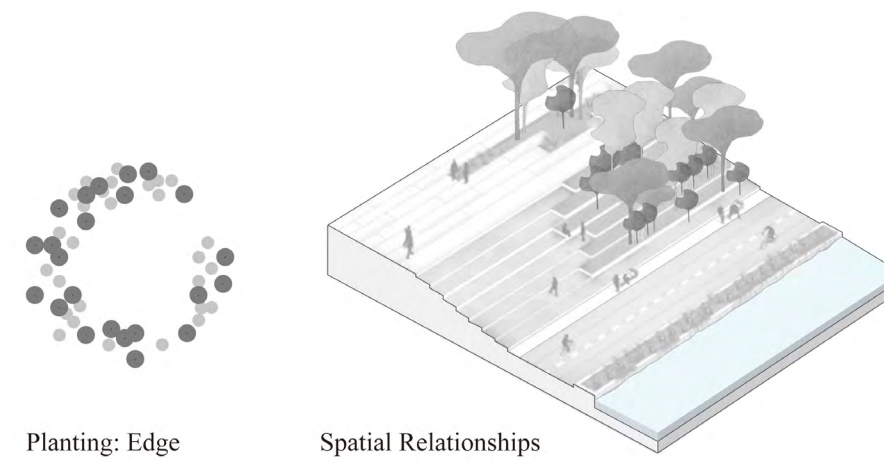


Interesting Linear Forest

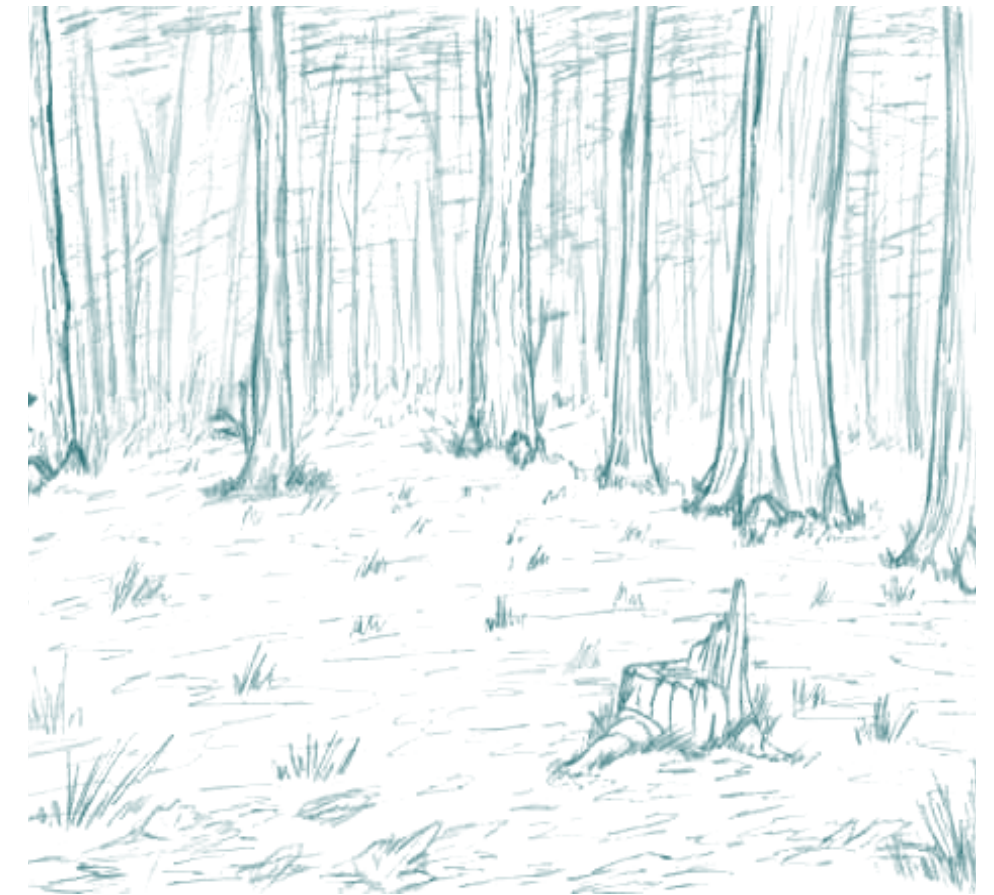
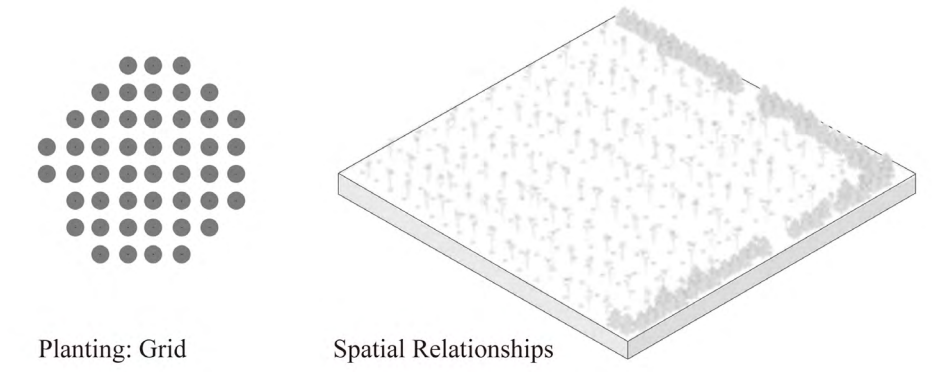


by i.banh Instagram @i.banh_art

Interesting Edge Forest

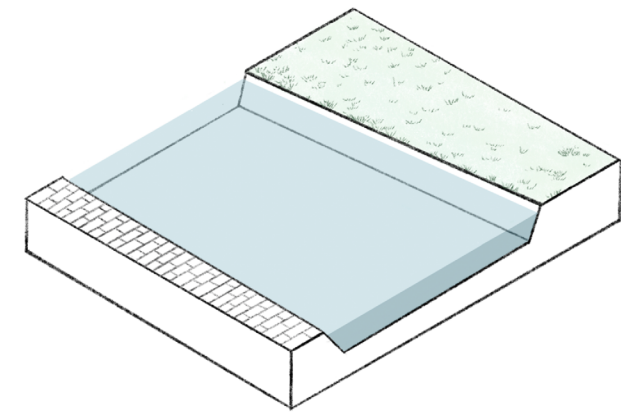


Interesting Cleared Forest

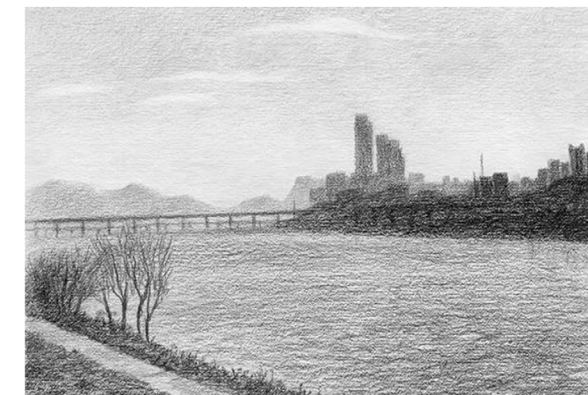


by Nezumi Works on Deviant Art

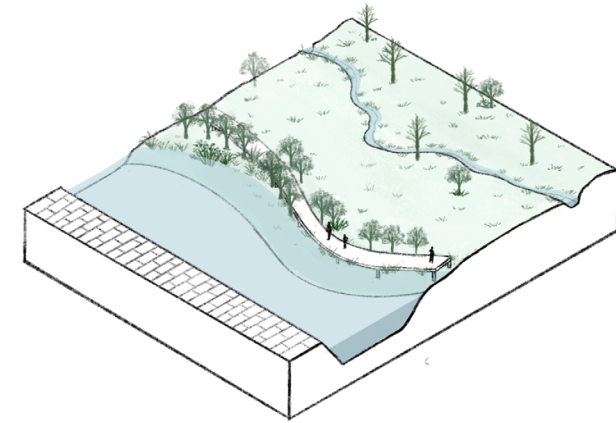
EXISTING



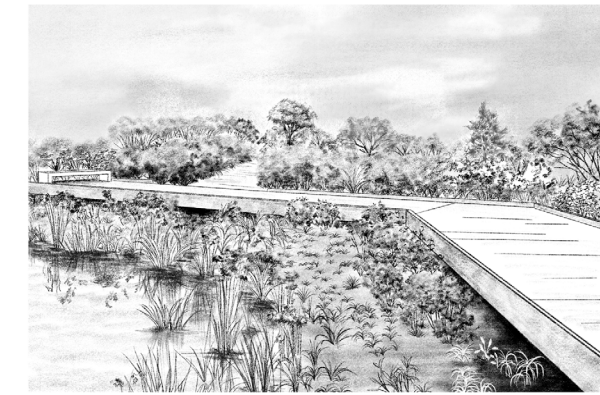
PLAIN



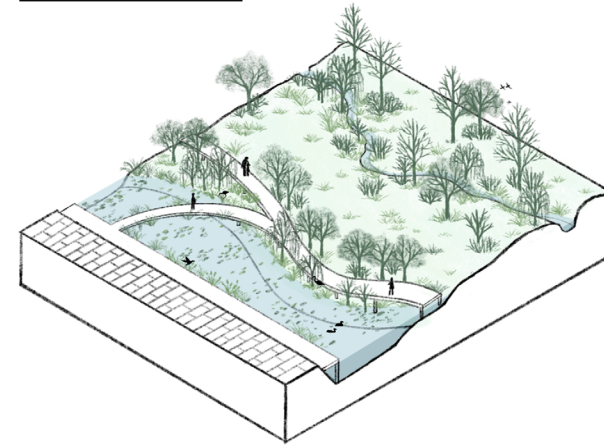
0-2 YEARS



PLAIN



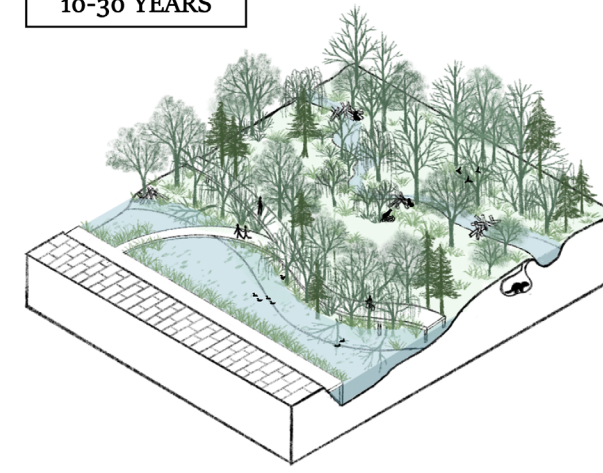
3-10 YEARS



BEAUTIFUL



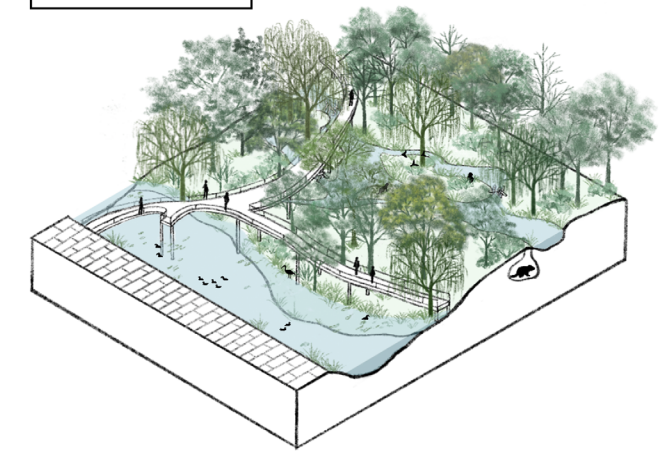
10-30 YEARS



SUBLIME



≥50 YEARS



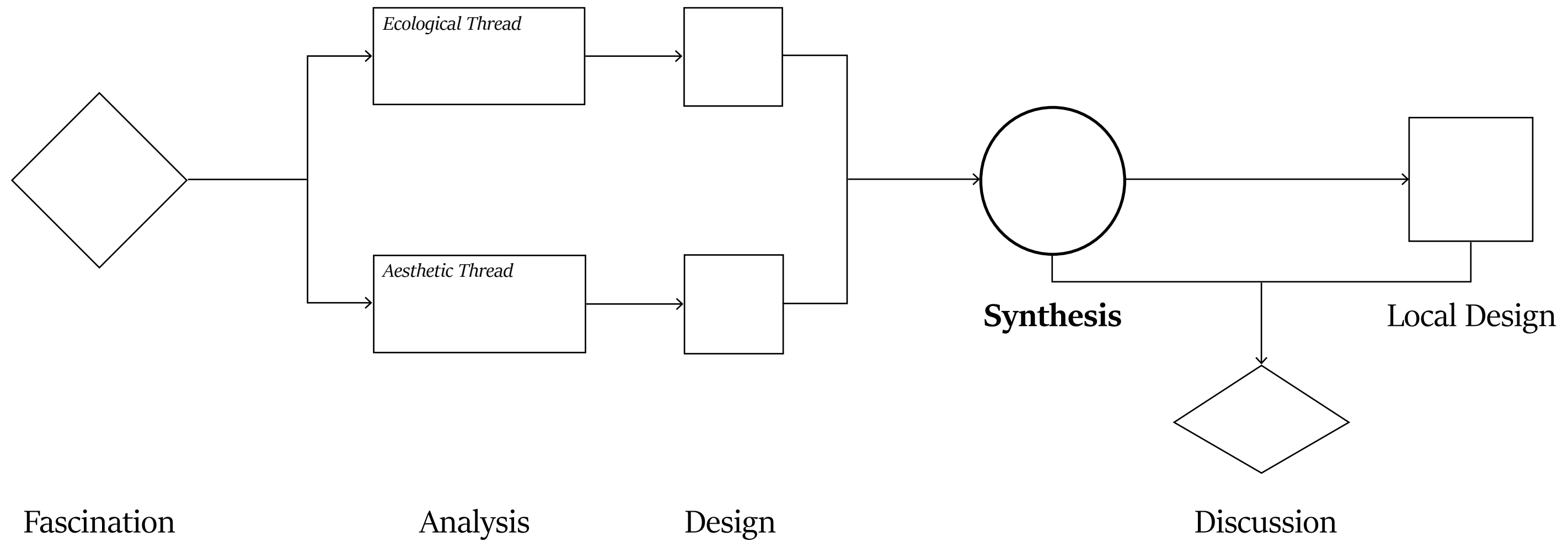
SUBLIME



4. AESTHETIC THREAD

Dynamic Development of Aesthetic Experience

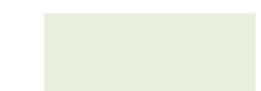

*How can ecological restoration and wild aesthetic experience be **spatially integrated** in an urban riparian corridor design?*








Synergies

 + 
 High ecological quality
 More spontaneous develop
 Sublime experience of awe for nature

 + 
 Certain ecological value with gentle recreation
 More active planning and management
 Beautiful experience with comforting in nature

 Low-impact Infrastrues
 Eco-bridge, Tree-bridge

Conflicts

 + 
 Industrial/Dock/Infrastructure Area

 + 
 Park/Agricultural areas



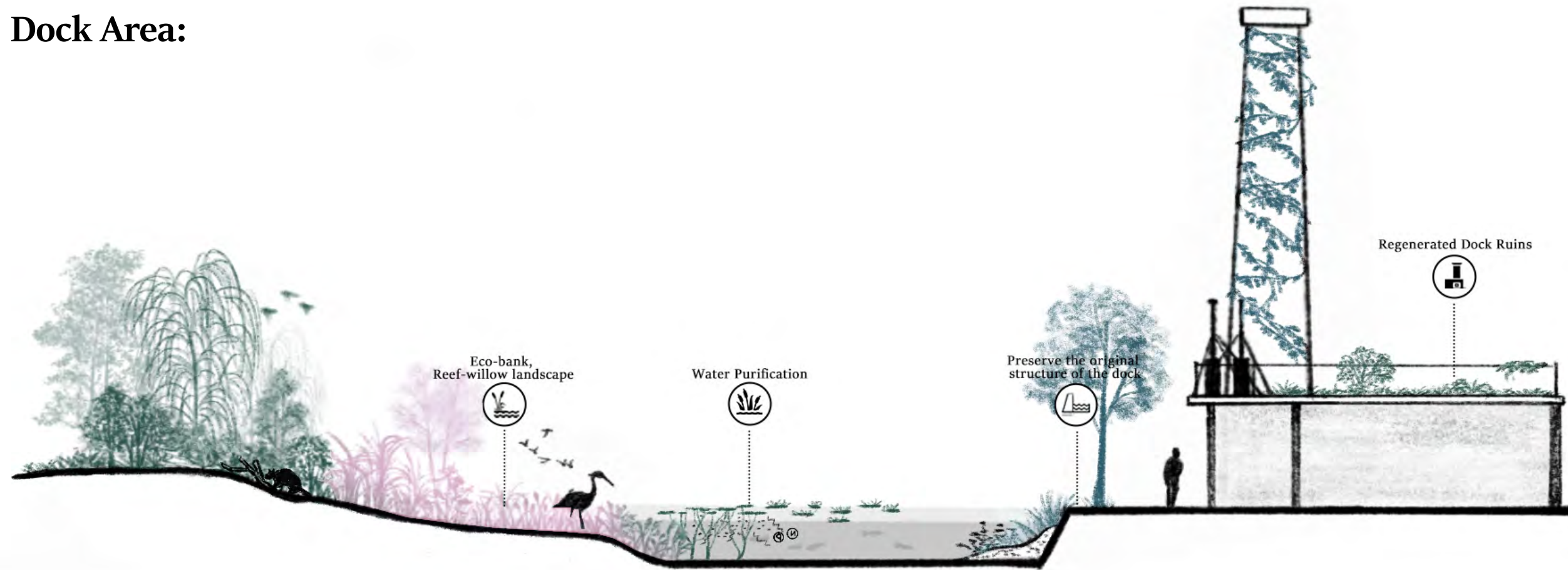
Ecological Core Zone

+



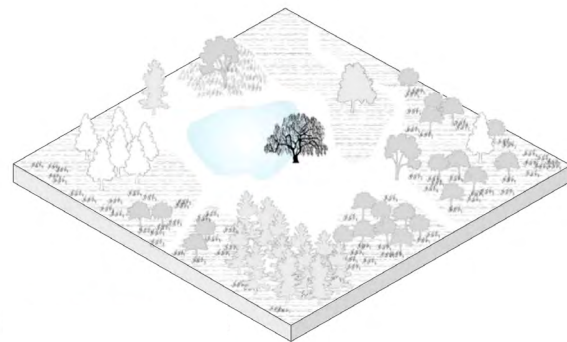
Interesting Aesthetic Experience

Dock Area:

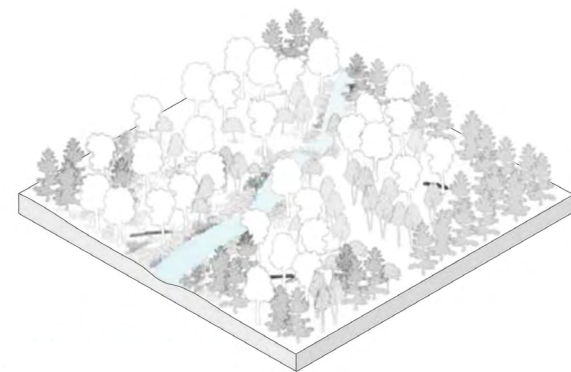


- New riverbeds develop and vegetate
- Maintain the geometric patterns of the old dock
- Regenerated dock ruins serve as a place of memory, mix of interesting and sublime

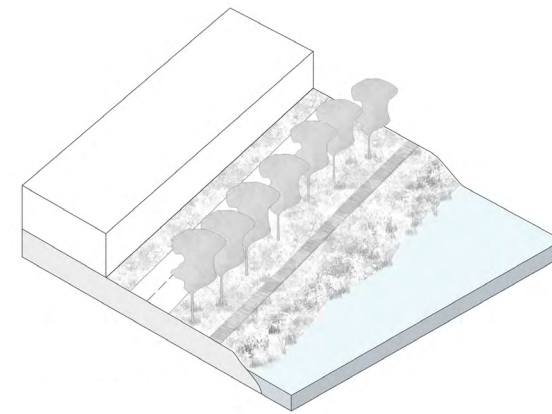
Main Applied Forest Prototypes:



● Beautiful Open Riparian Forest



● Sublime Multi-layered Riparian Forest

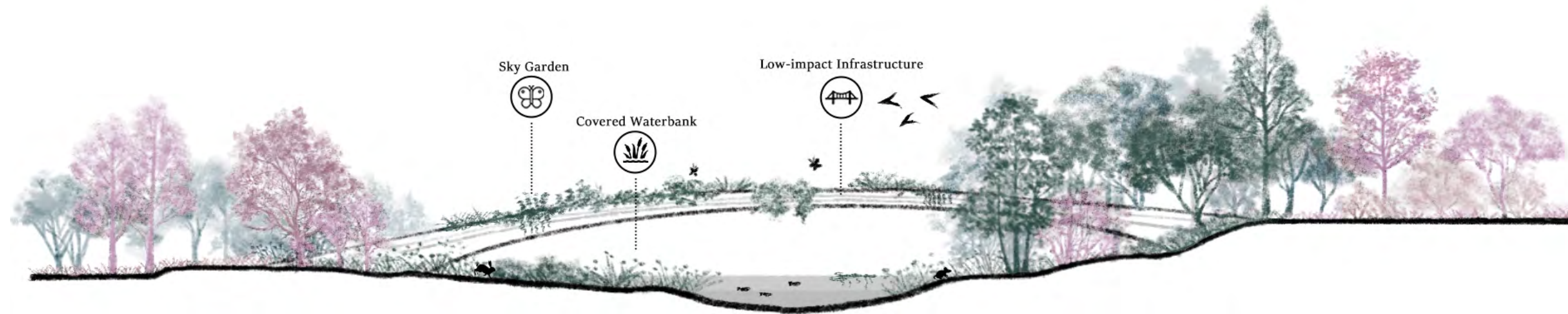


● Interesting Linear Forest

4. SYNTHESIS

Specific Transformation Strategies

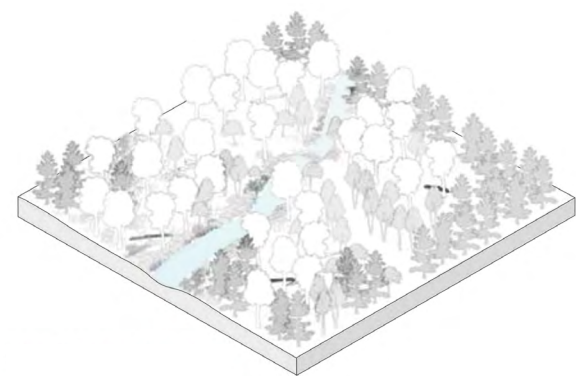
Infrastructure Areas



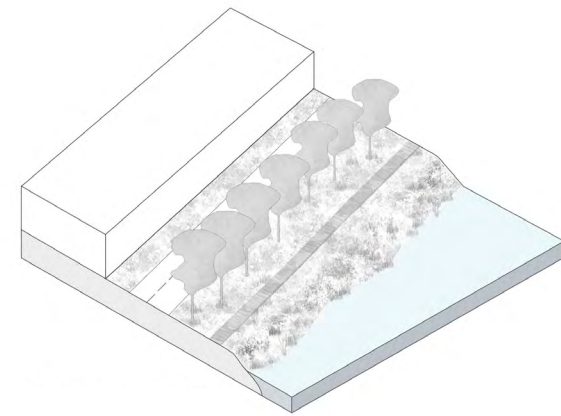
- Low impact infrastructure, secondary forest restoration
- Clear lines or boundaries between rough, wilder patches of green
- Technology, habitats on high-rise facilities, sky gardens



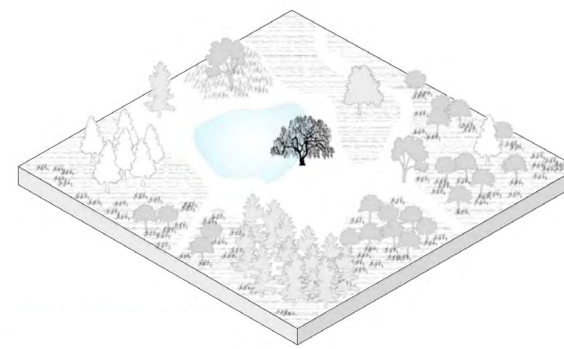
Main Applied Forest Prototypes:



● Sublime Multi-layered Riparian Forest



● Interesting Linear Forest

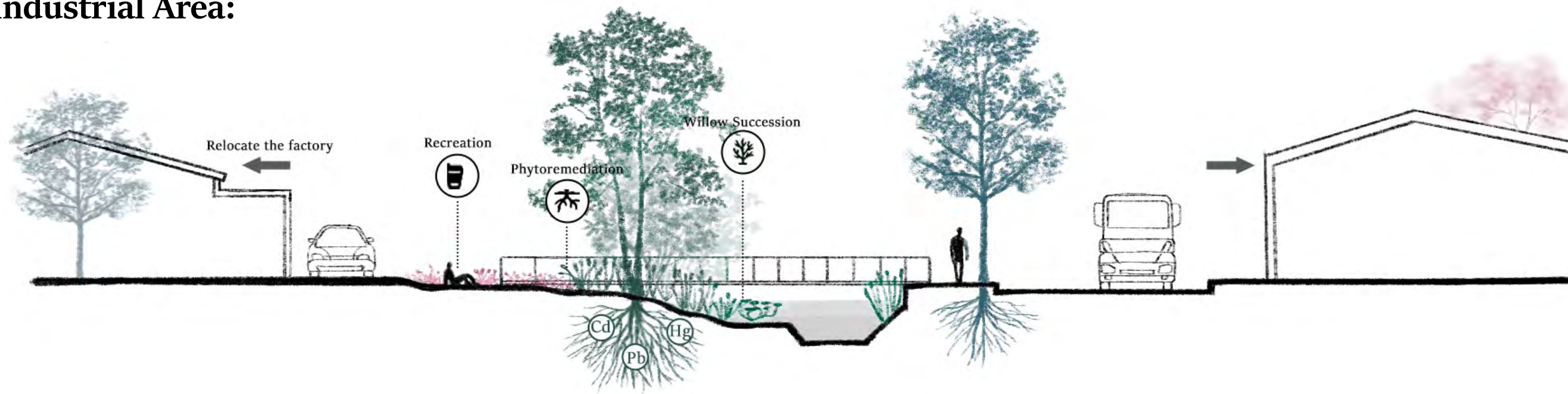


● Beautiful Open Riparian Forest

4. SYNTHESIS

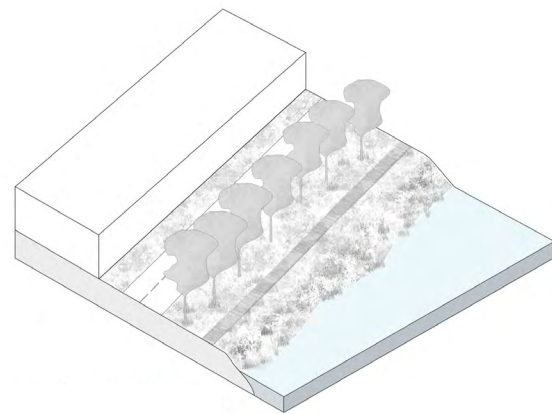
Specific Transformation Strategies

Industrial Area:

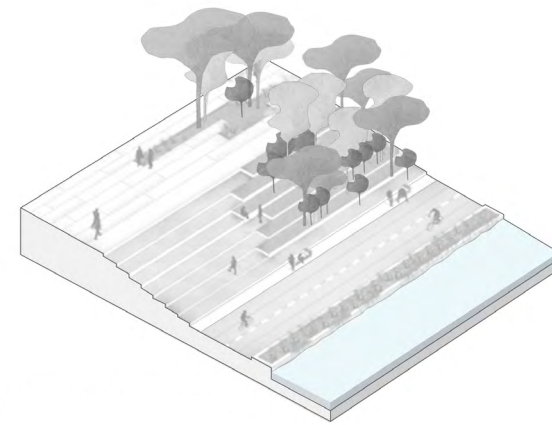


- Create room for natural river flow, foster ecological growth
- Allow the willow forest succession for phytoremediation of pollution, and demonstrate ecological service benefits
- Steep bank on the side of the road, more space is created on the shallow bank for rest and recreation
- Hybrids of interesting and sublime experience

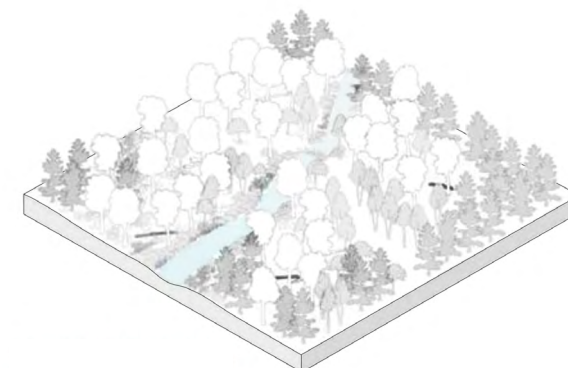
Main Applied Forest Prototypes:



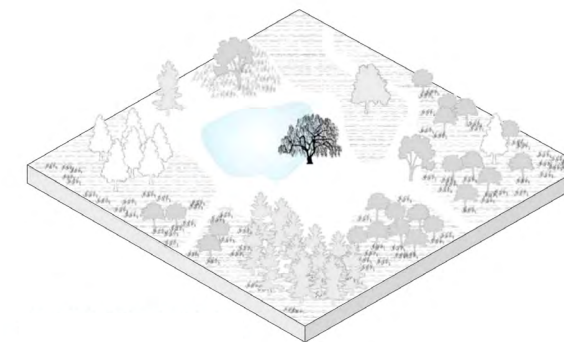
● Interesting Linear Forest



● Interesting Edge Forest



● Sublime Multi-layered Riparian Forest



● Beautiful Open Riparian Forest

4. SYNTHESIS

Specific Transformation Strategies



Ecological Core Zone

+



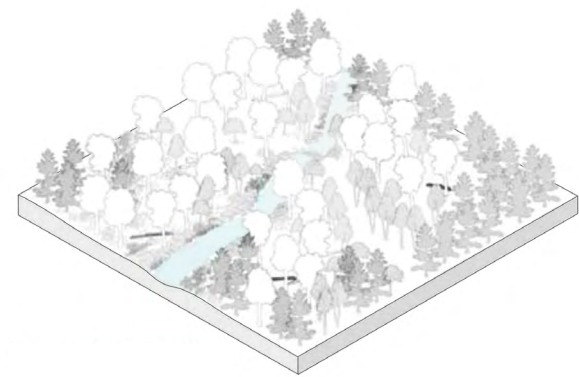
Beautiful Aesthetic Experience

Agricultural Area

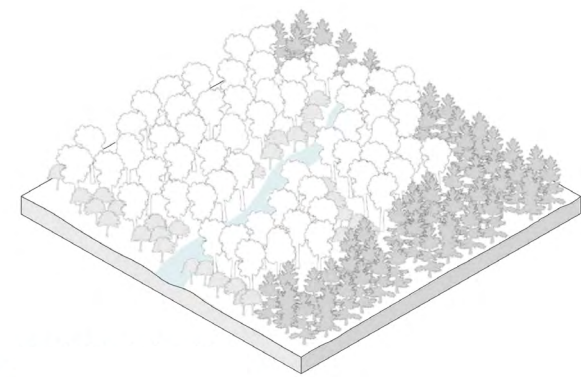


- Ditches become meandering rivers and marshes
- Dense Productive woodland with peaceful field scenery
- Water-resistant trees like bald cypresses and dawn redwoods, creating a deep and tranquil atmosphere

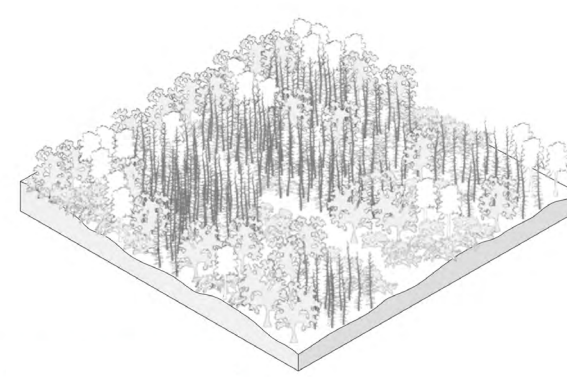
Main Applied Forest Prototypes:



● Sublime Multi-layered Riparian Forest



● Beautiful Enclosed Canopy Riparian Forest

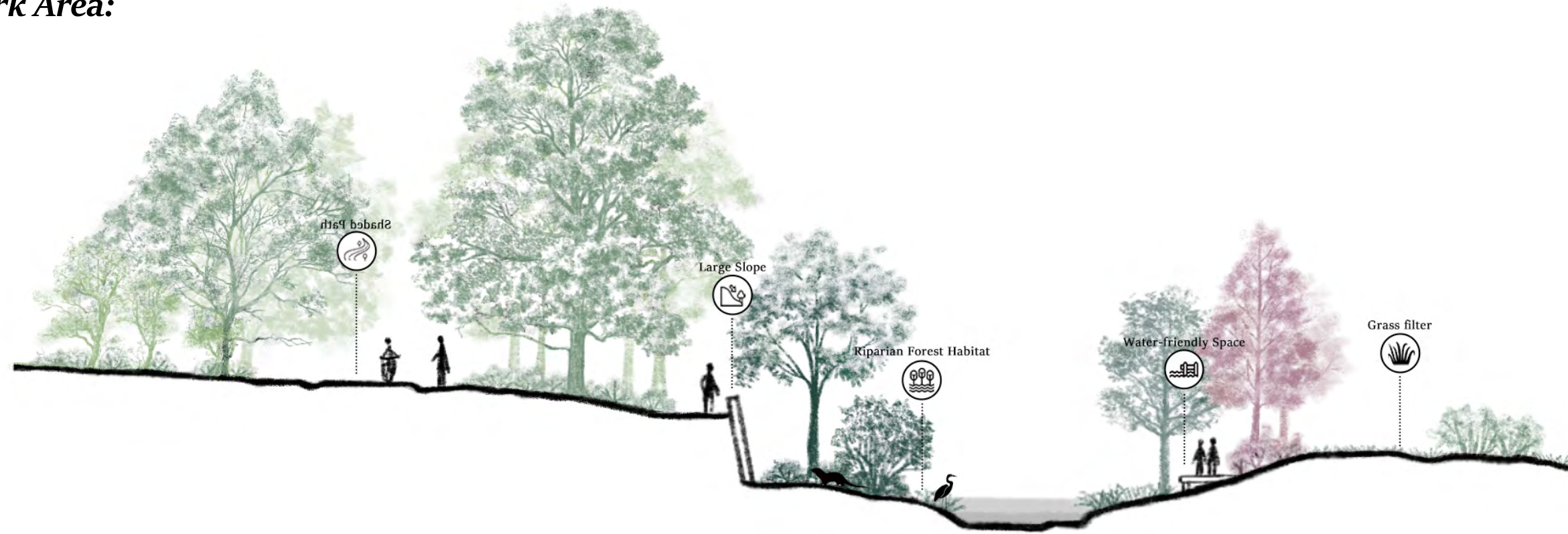


● Sublime Impenetrable Forest

4. SYNTHESIS

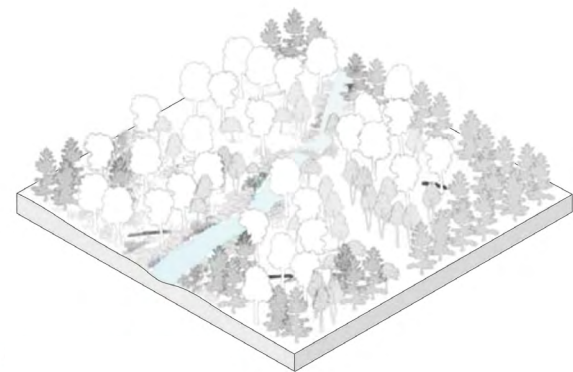
Specific Transformation Strategies

Park Area:

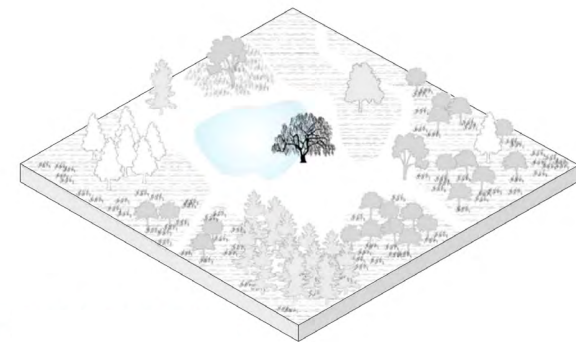


- High, steep slopes and dense undergrowth form natural barriers, protect habitat from disturbance
- Low-impact water-friendly platform and elevated pathway, foster safe interactions
- Hybrids of beautiful and sublime experience

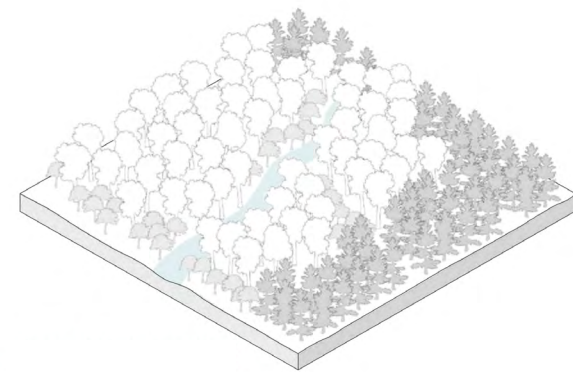
Main Applied Forest Prototypes:



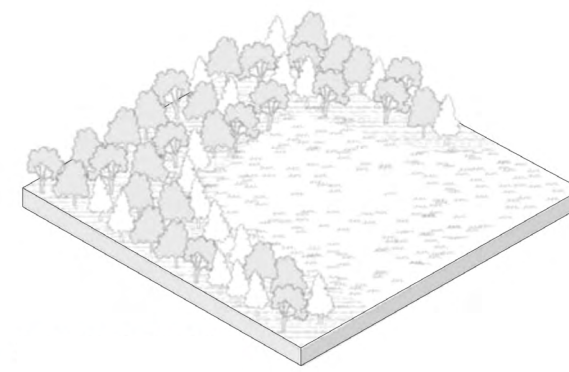
Sublime Multi-layered Riparian Forest



● Beautiful Open Riparian Forest



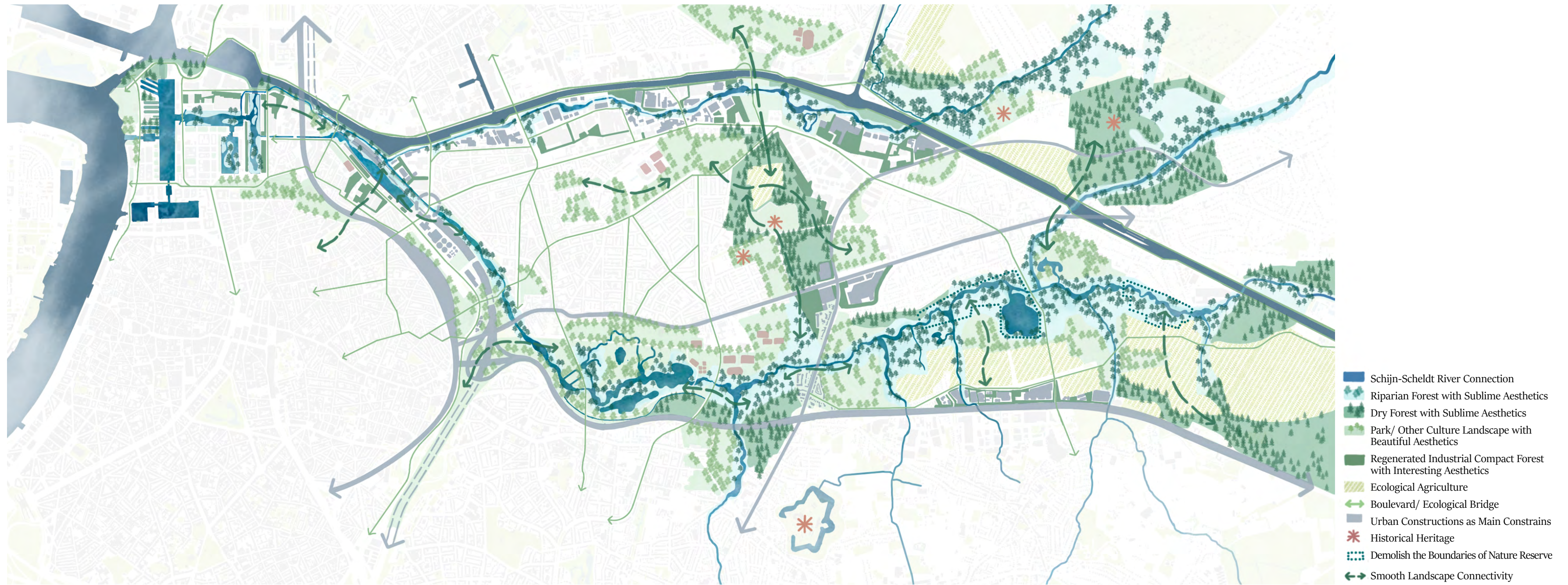
● Beautiful Enclosed Canopy Forest



● Beautiful Edge Forest

4. SYNTHESIS

Specific Transformation Strategies



- Riparian forest corridors with sublime experience wedge into the city center, link lakes, parks and wetlands to the Scheldt River.
- Maintain cultural landscapes's beautiful characteristics, as a ecological buffer with function of gentle recreation and natural education
- The interesting forest mainly at industrial park to enrich the urban landscape.
- Utilizing different spatial compositions of the forest and street trees to create coherent landscape transitions.

4. SYNTHESIS

The Integrated Structural Vision





4. SYNTHESIS

Sequential Experiences along the Forest Corridor



😊

ZZZ

I'M HIDING BEHIND THE FOREST

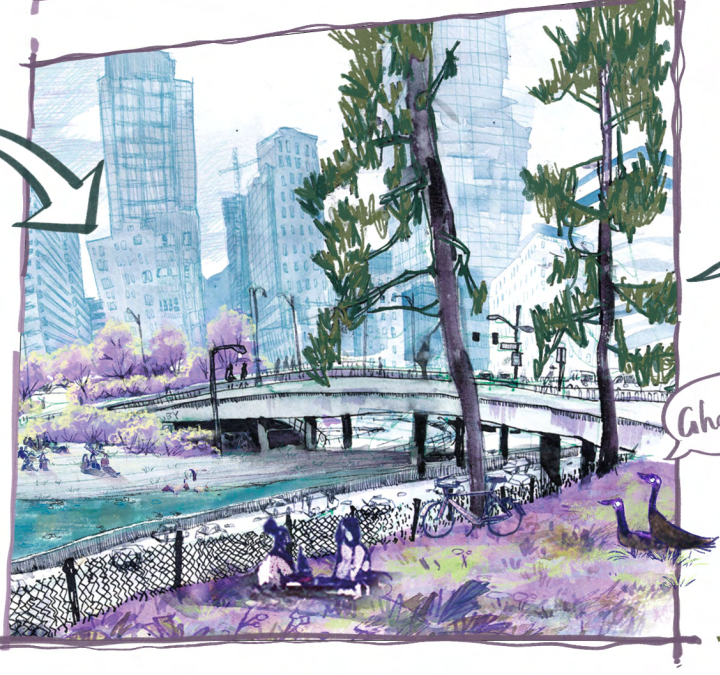
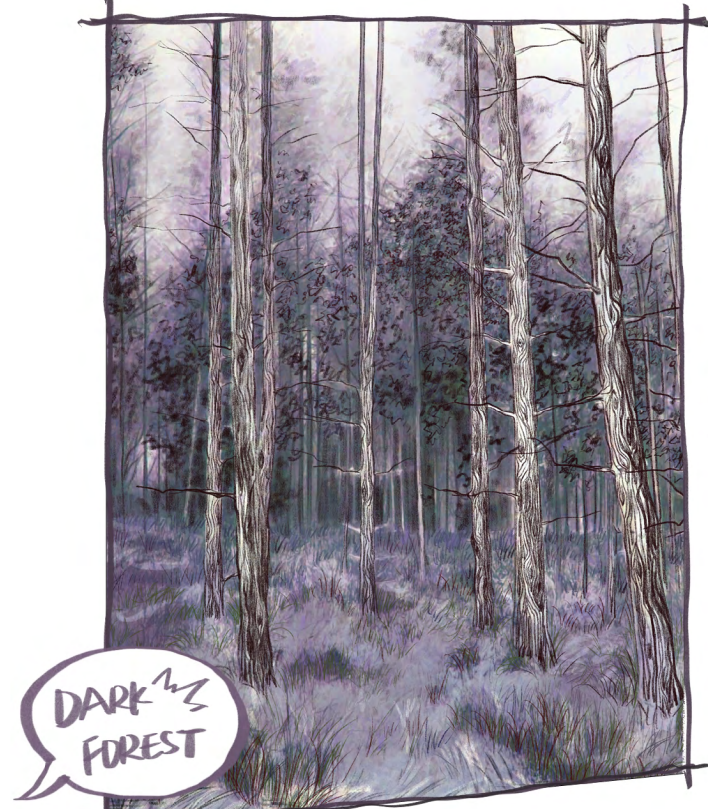
Hi~

WOW DEER!

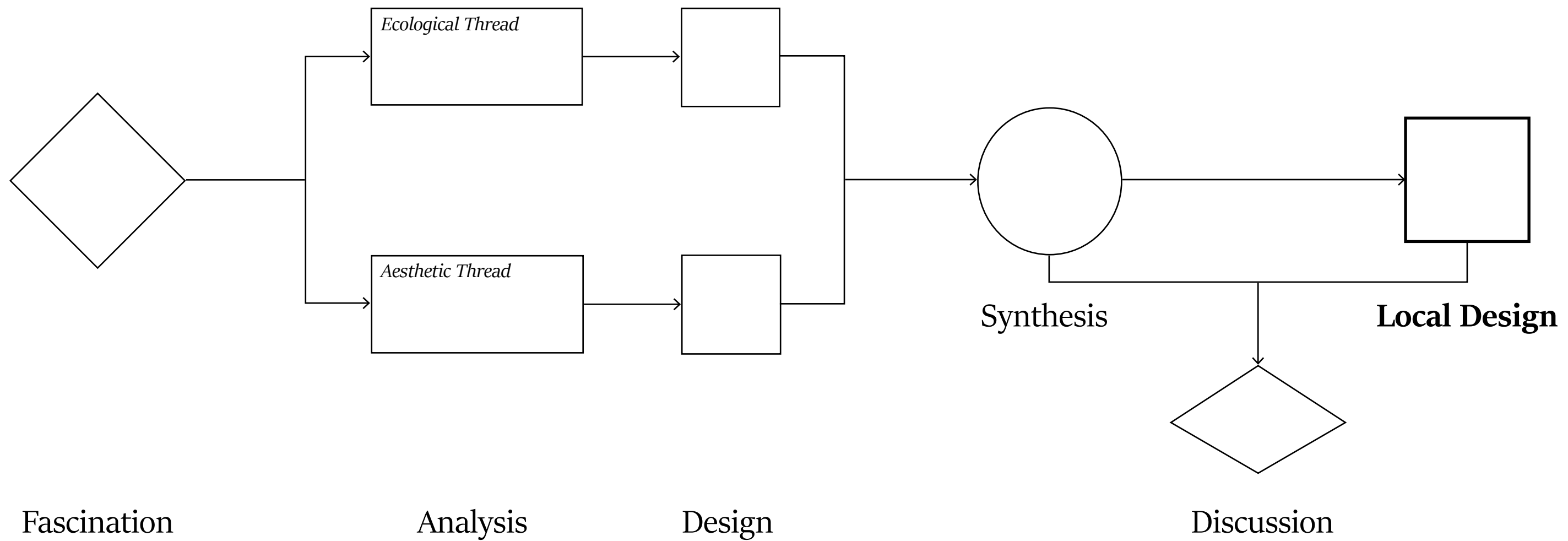


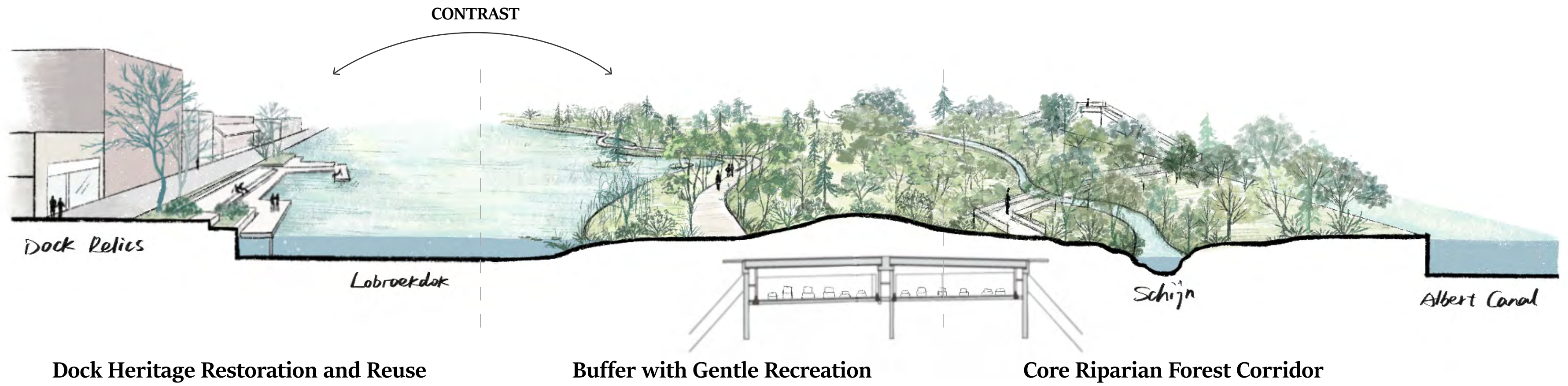
4. SYNTHESIS

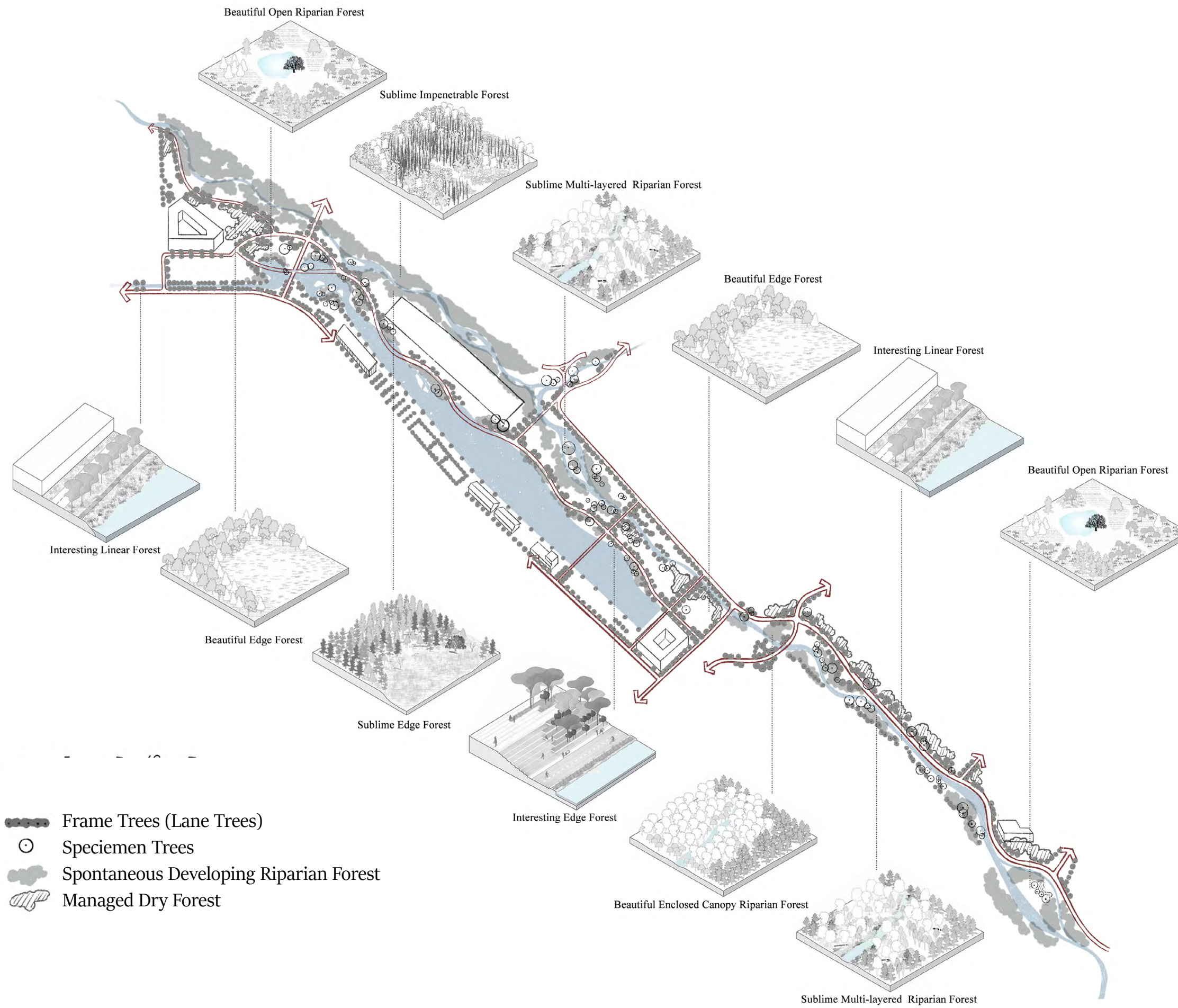
Sequential Experiences along the Forest Corridor



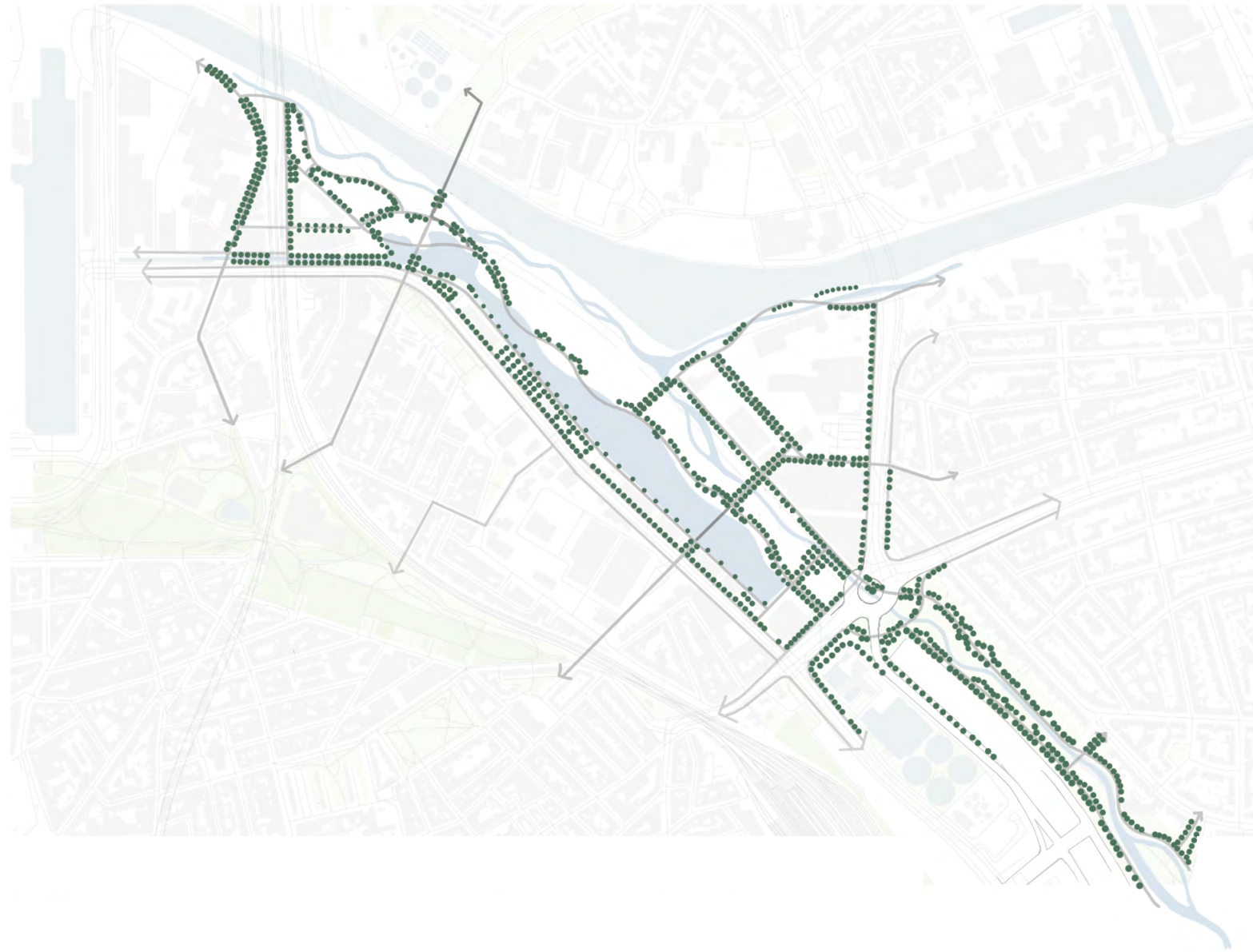
*How can ecological restoration and wild aesthetic experience be **spatially integrated** in an urban riparian corridor design?*







Plant Frame Trees



Native Lane Trees + Specimen Trees

Forest Structure

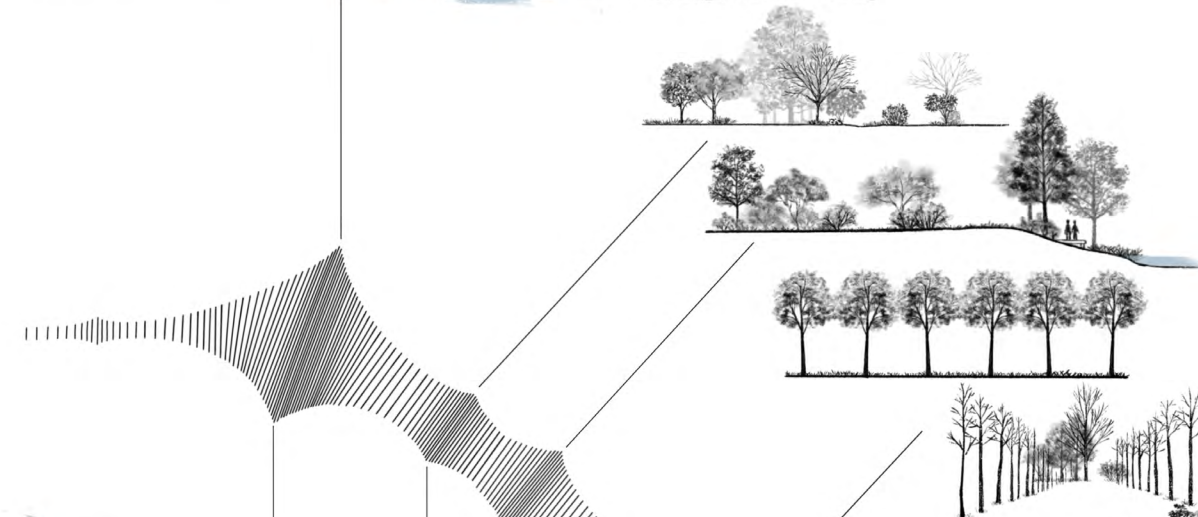


Frame trees set boundaries, allowing spontaneous growth


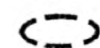




Tree Landscape

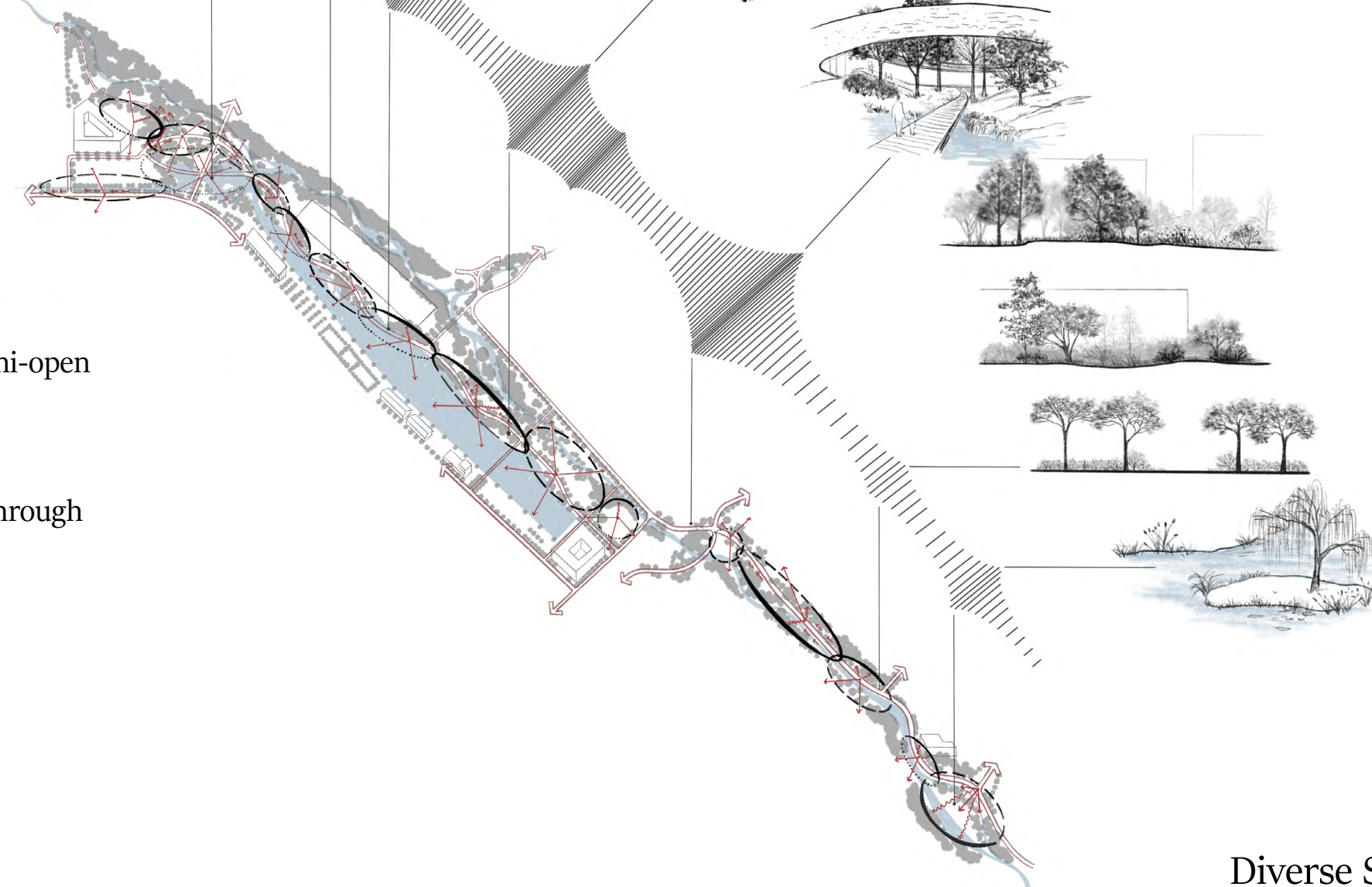


Tempo of Attention



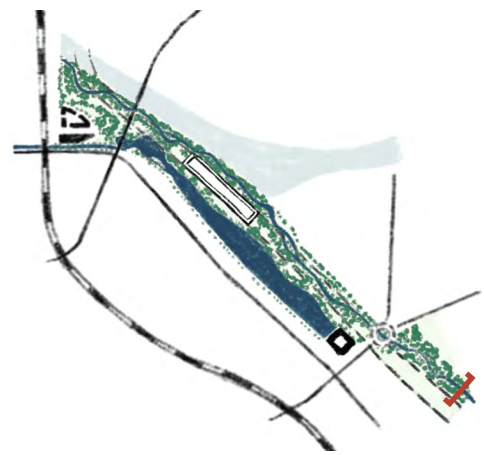
Tree Space and View

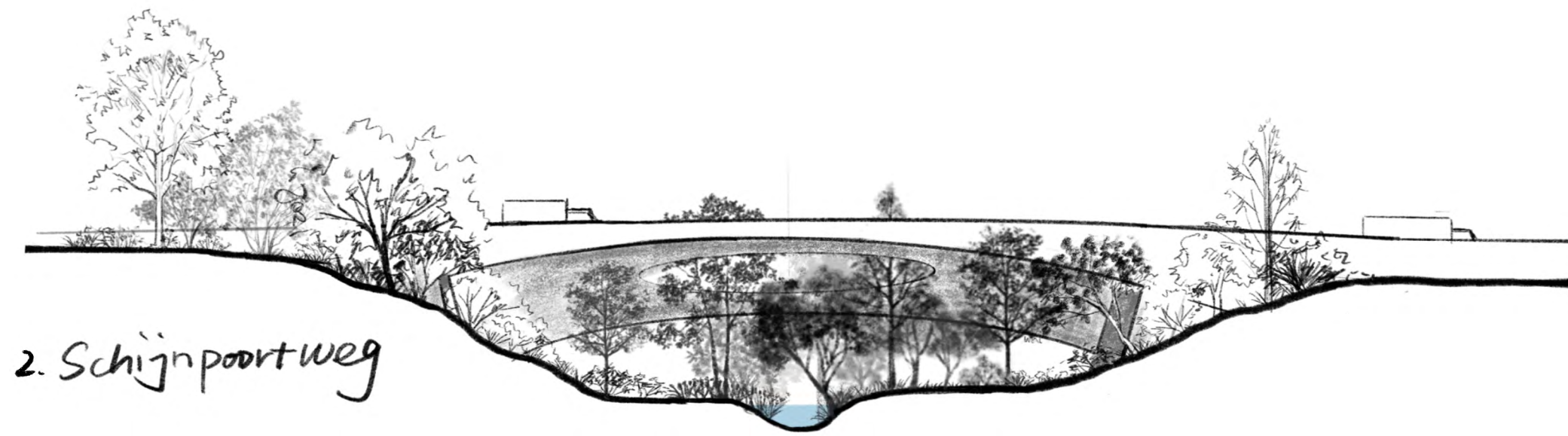
-  Tree Wall, Enclosed Space
-  Penetrable Threshold, Semi-open
-  Open Space
-  Looking Through
-  Obstructed View
-  Channel Space, Moving Through





1. Park Het Schijn

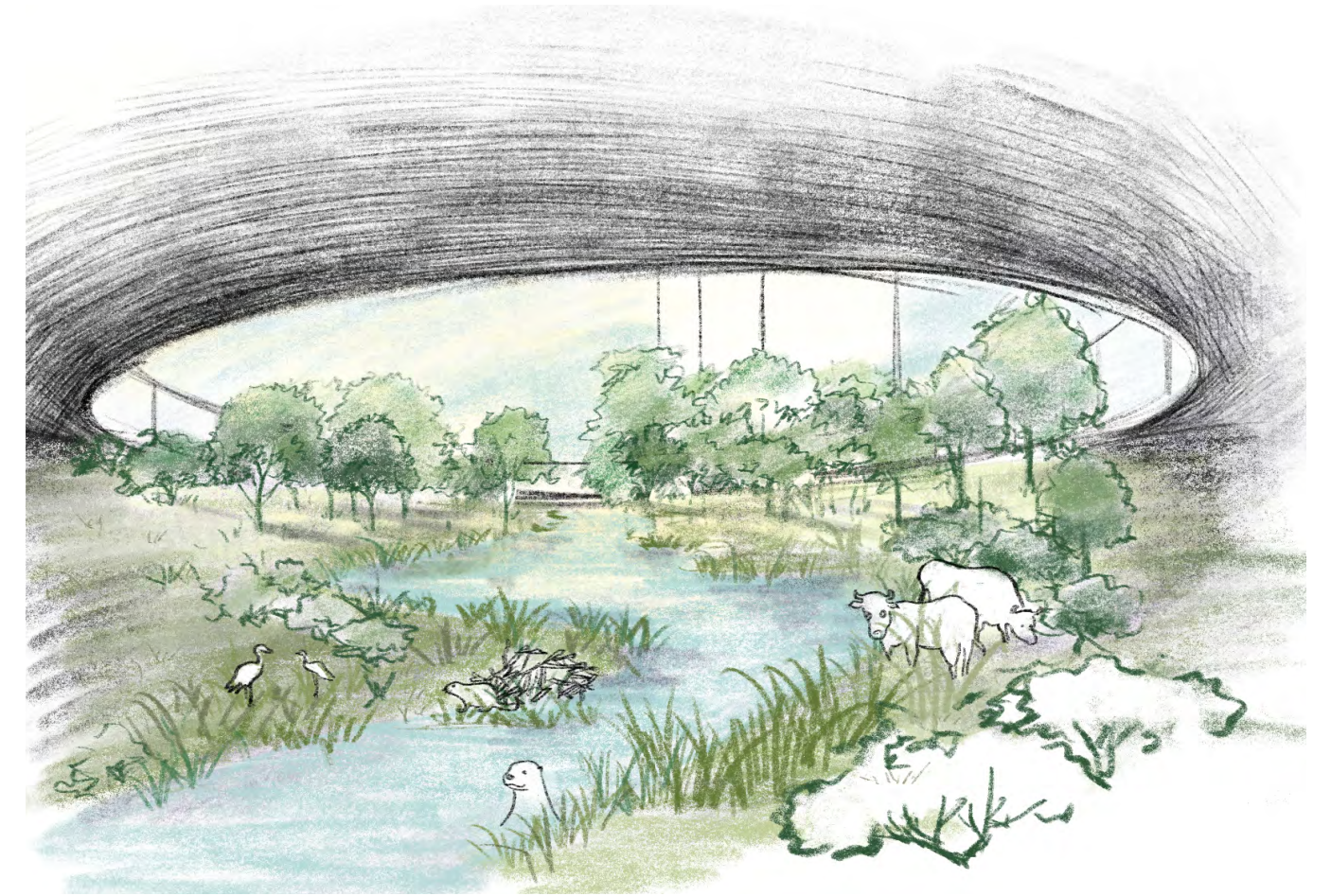




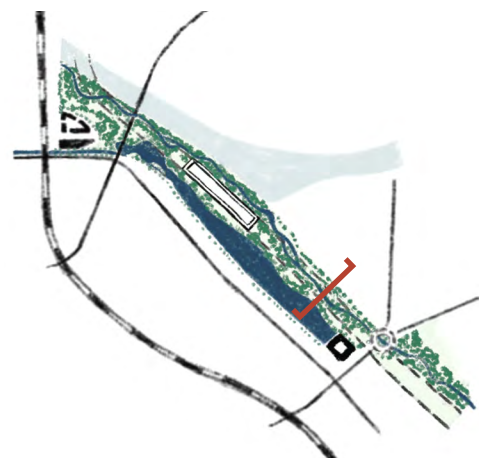
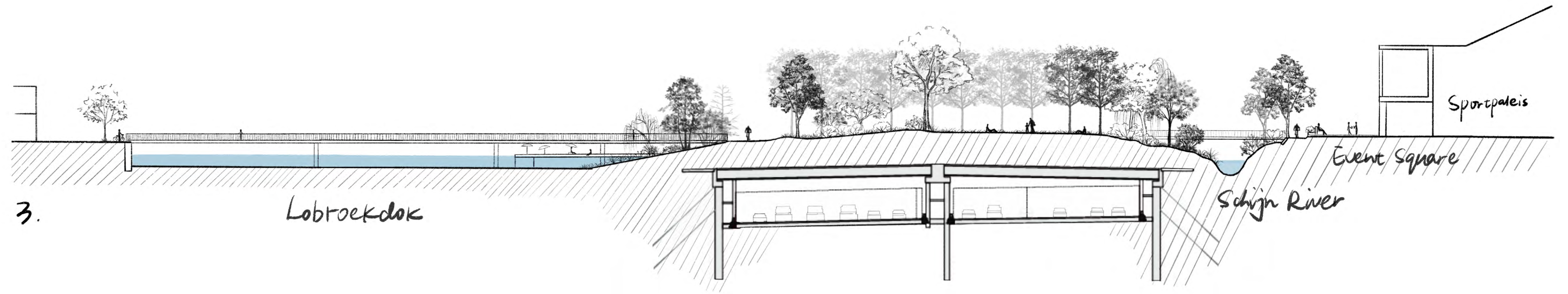
2. Schijnpoortweg

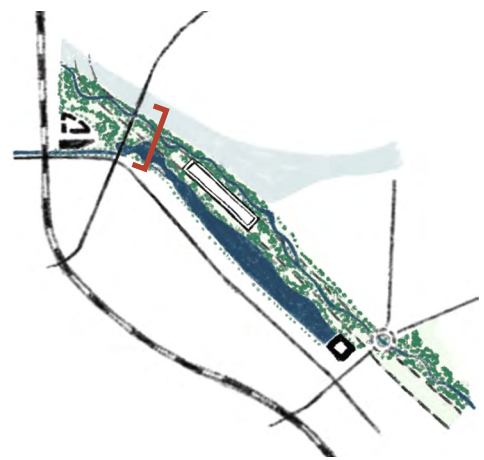
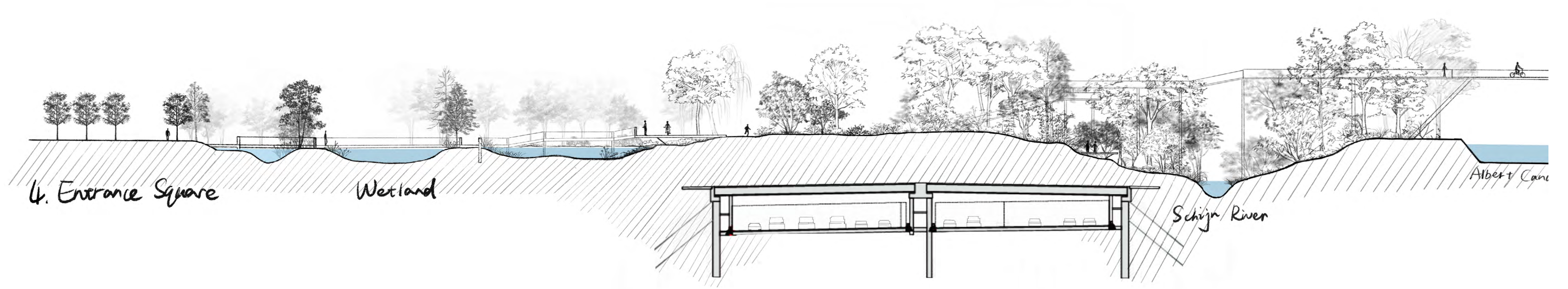


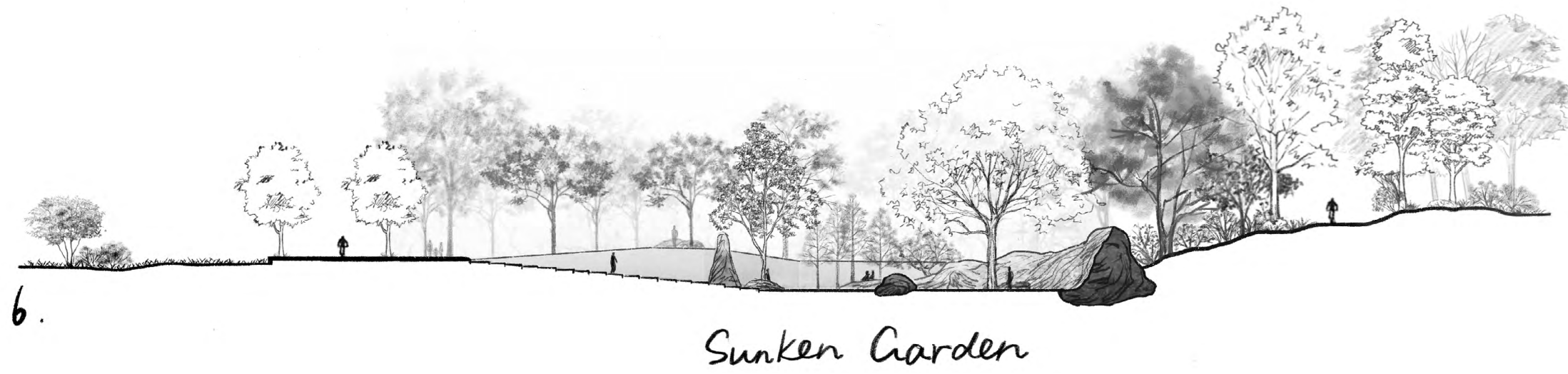
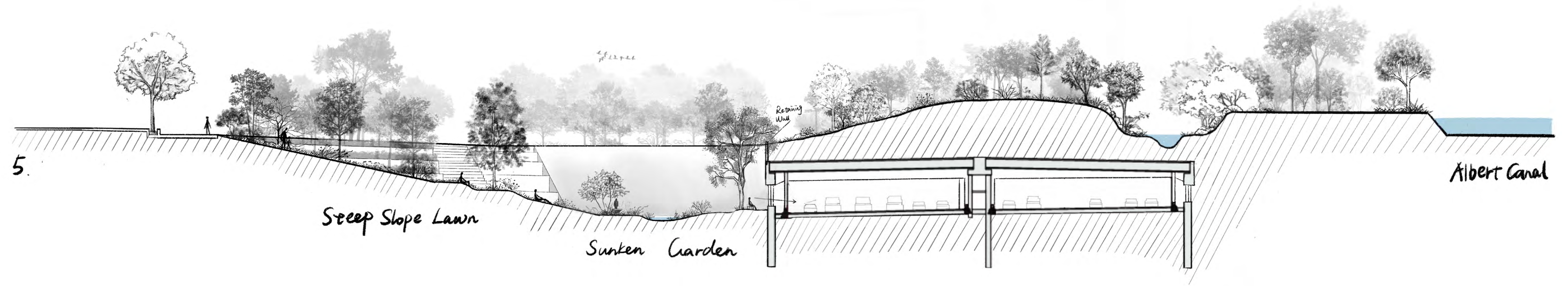
5. LOCAL DESIGN



Landscape Sequence



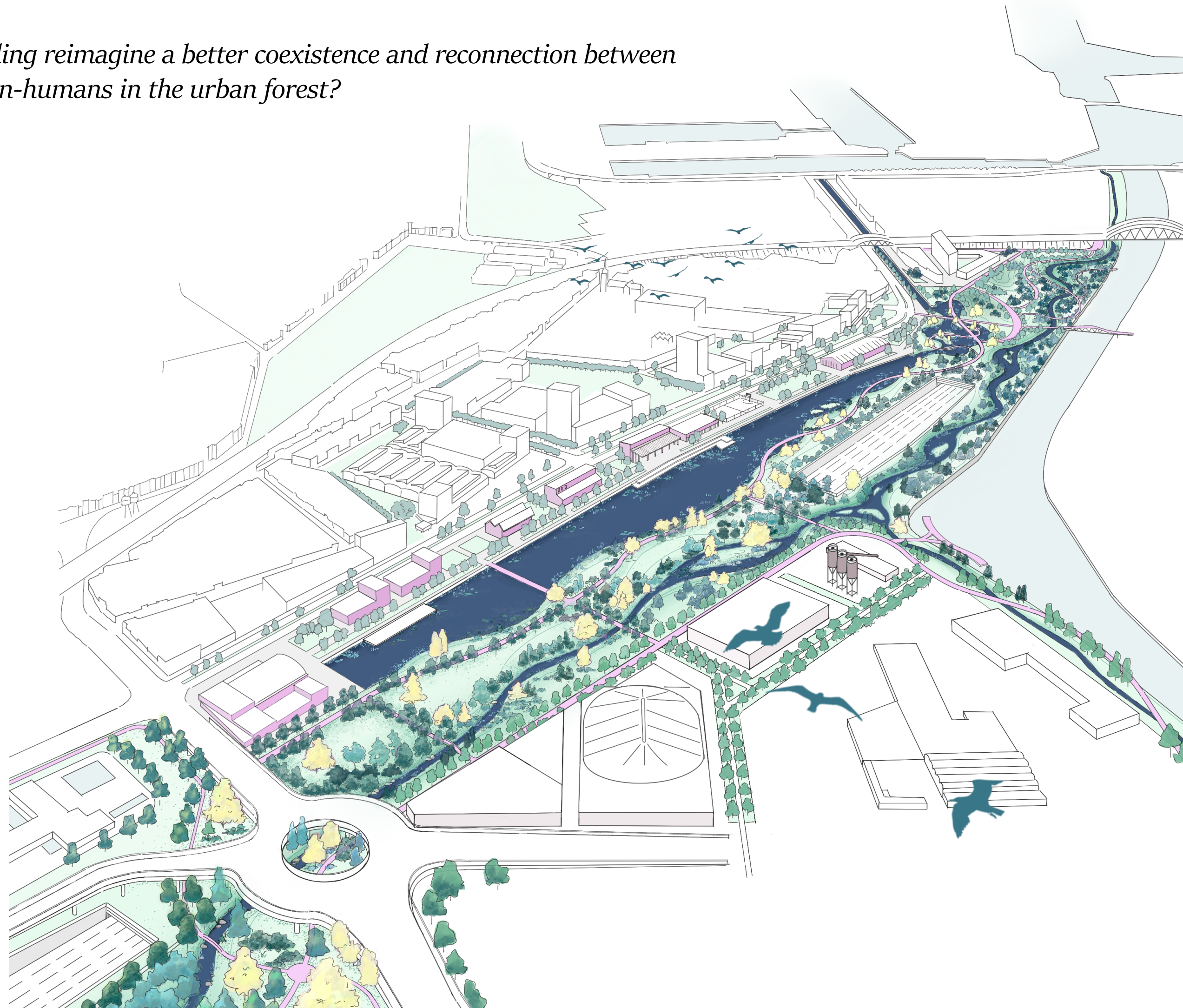


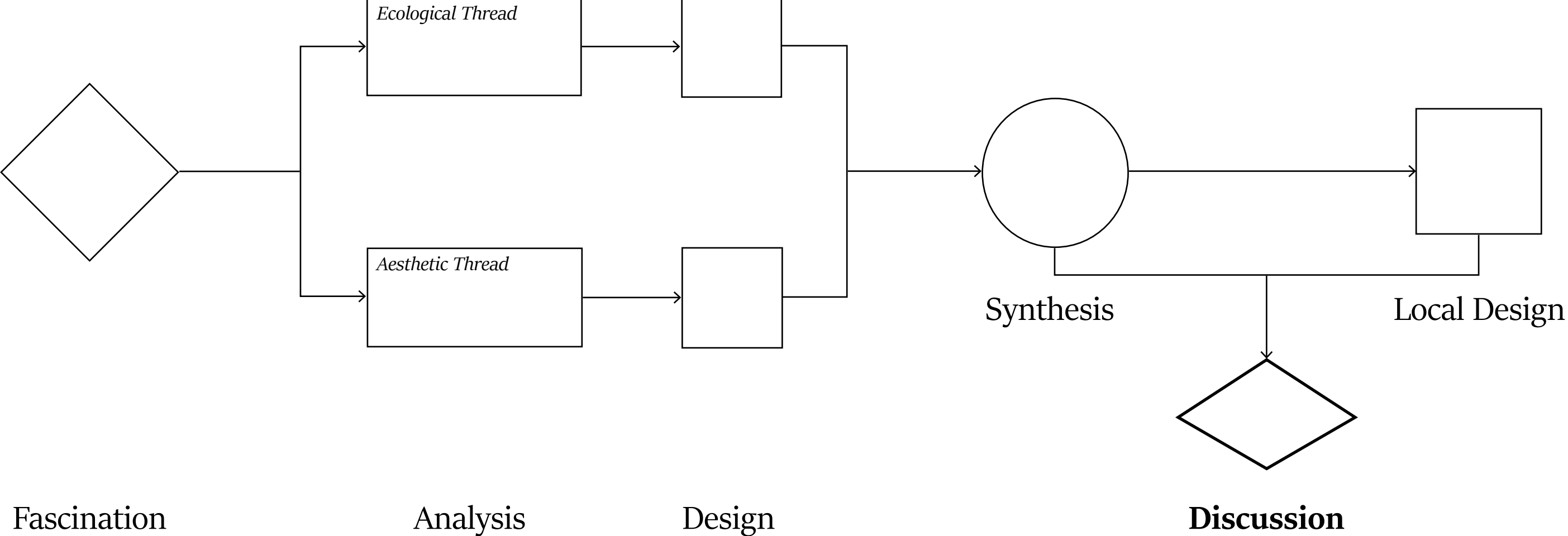


5. LOCAL DESIGN

Landscape Sequence

How can rewilding reimagine a better coexistence and reconnection between humans and non-humans in the urban forest?





How can rewilding reimagine a better coexistence and reconnection between humans and non-humans in the urban forest?

Inclusive Approach:

Integrated ecology and aesthetic experience, considering the interests of both humans and non-humans.

Urban Forests as Key Tools:

Support urban ecosystem sustainability, improve residents' quality of life.

A robust tool to create impressive space, contrasting with controlled areas.

Permeable and resilient forest boundaries promotes interaction between human and non-human systems.

Temporal Dynamics:

The development of forests, water, cities, humans, and non-humans is dynamic and requires a long-term view.

The goal of rewilding can be achieved in stages.

Bottom-up, Place-based Development:

The conflict between humans and non-humans needs to be specifically addressed.

Total rewilding can lead to new homogenization, and erase cultural and functional attributes.

Social Connection:

Demonstrate the benefits of ecological services.

Need for more public participation.

Reflection of the New Aesthetic Categories

Role:

- Tool for enhance public understanding and acceptance
- Tool to make the aesthetic principle of wildness be operationalized in landscape analysis and design

Limitaion:

- Sensory Limitation:

Focuses mainly on visual aspects, with little attention to auditory and olfactory perceptions.

- Scale Challenge:

Aesthetic features are situational and place-based, making it difficult to accurately describe or capture them at a regional scale.

- Design Compromise:

The development of " Beautiful" as one of the strategy, may lead to certain compromises in rewilding

- Public Perception:

Understanding of aesthetics is influenced by social and cultural contexts. Community participation is essential to develop a localized aesthetic system.

Transferability in the Urban Rewilding Research and Practice

- **Goal Species Habitat Restoration**

Adaptation: Other key species, habitats lost to urbanization

Limitation: Emphasis on riparian ecosystems

- **The New Aesthetic Categories**

Adaptation: Help public perceive and understand wild aesthetics

Limitation: Local culture and social development

- **Urban Forest Tool Box**

Adaptation: Create unique experiences using forest prototypes

Limitation: Tied to specific aesthetics

