

01

Introduction



What kind of city do we live in?

Zwischenstadt









Rural area?

Urban area?

In-between City

Zwischenstadt

An anonymous space with no visual quality

This 800 sq. km large settlement area . . . is essentially fully developed. It is a Zwischenstadt, which does not correspond to our ordinary image of the city and our yearning for an intact landscape. With the weak growth potential of the time ahead of us, this settlement structure can no longer be reconfigured. We must assume that it is a given and develop its hidden qualities.'

Karl Ganser

head of the IBA Emscher Park



We must assume that it is a given and develop its hidden qualities.



What's the hidden qualities?
How to develop?

Internationale Bauausstellungen



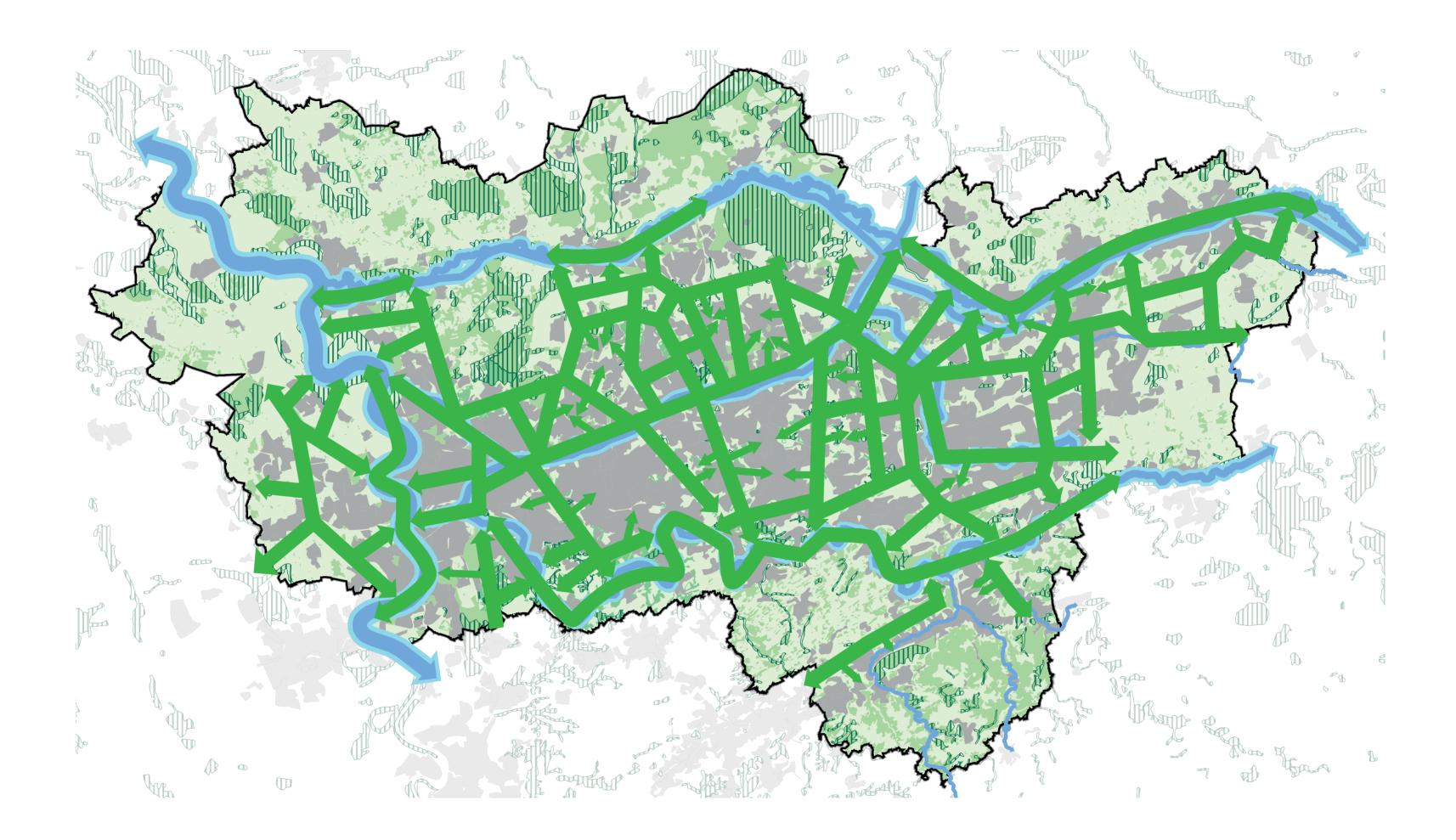








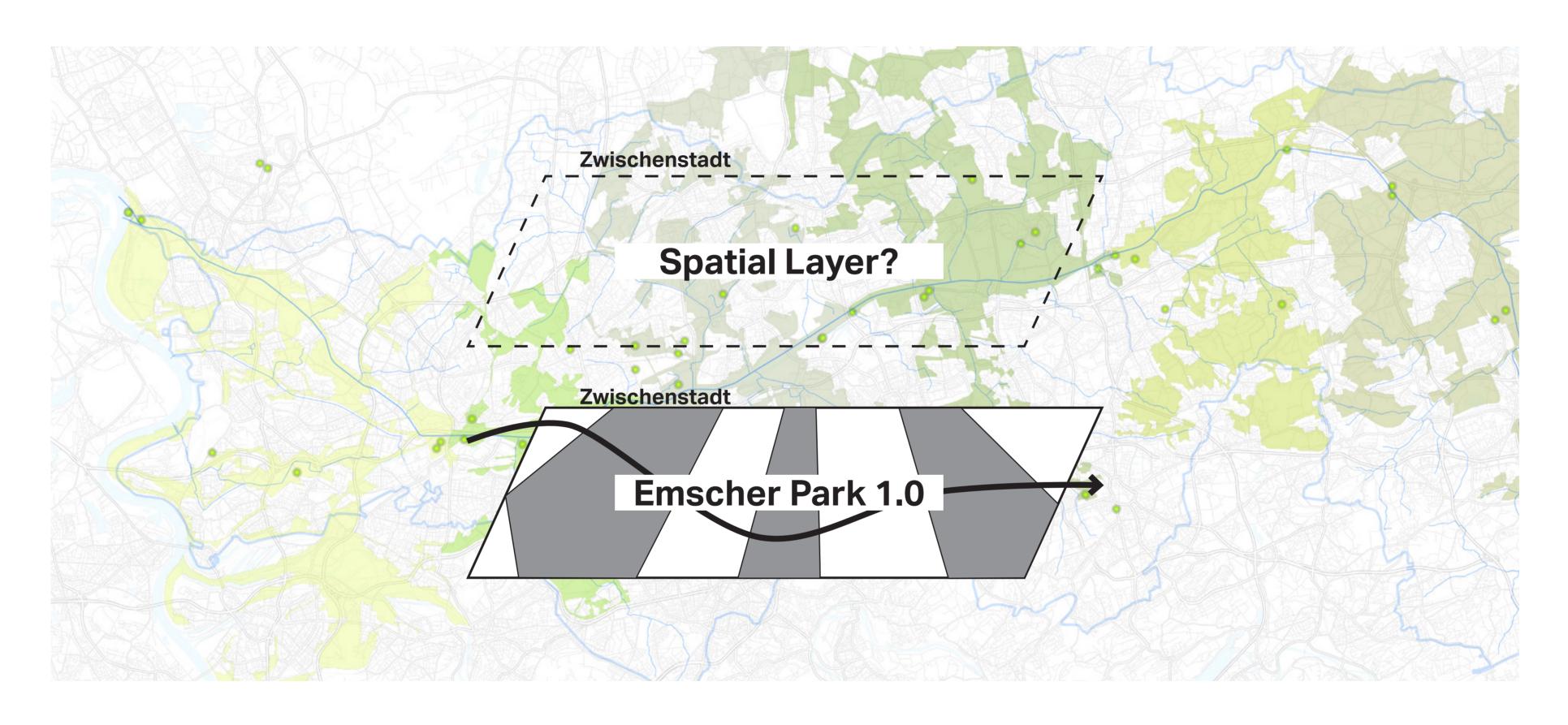




Green Blue Grid

Systemic Landscape

How to describe the spatial layer?

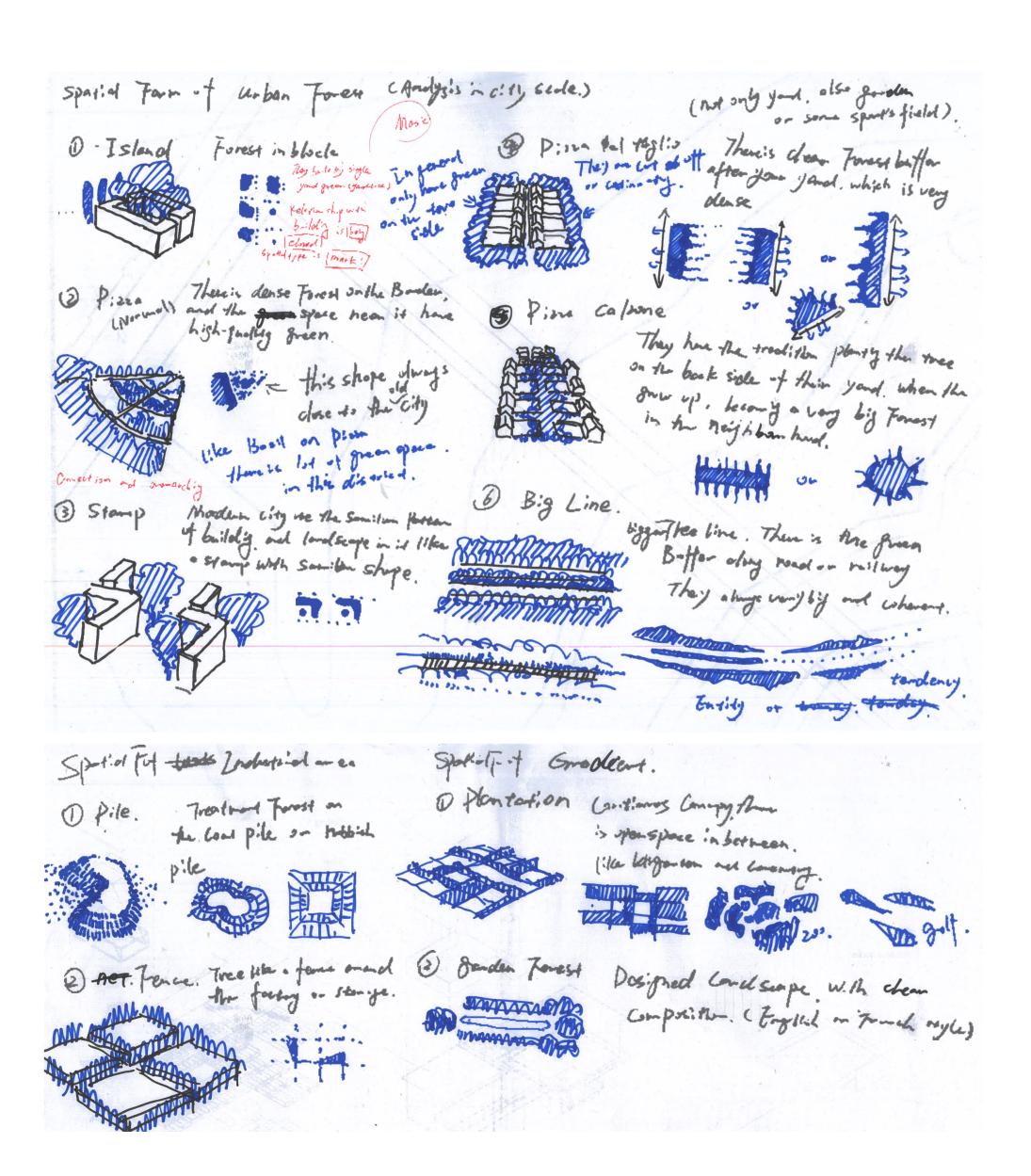


What's beyond systemic landscape?

What we are missing?

What are concepts to describe the morphology of in-between regional landscapes?

Urban Forestry



de Wit and van der Velde: How Trees Shape Urban Spaces



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How Trees Shape Urban Spaces: Multiplicity and Differentiation of the Urban Forest Viewed from a Visual-Spatial Perspective

By Saskia Irene de Wit, MSc, PhD, and John René Timothy van der Velde, MLA, PhD

Abstract. Background: The field of urban forestry encompasses many dimensions, of which that of visual-spatial perception, addressing the spatial relationship between city and trees, has received little attention. Analyzing the urban forest from a visual-spatial perspective is needed to understand relationships between different components as well as site-specific qualities. Methods: Tree configurations describe the relationship between form and space, determined by the relative disposition of the trees which result from an interaction between design and the development over time. Based on field observations, with the city of Delft in the Netherlands as a case study, 35 generic tree configuration types have been defined. With this "vocabulary," specific tree configurations and their relations are researched, describing the urban forest from an eyelevel perspective as an essential level on which the spatiality of the urban forest can be understood. Results: Unraveling the urban forest components by comparing two emblematic ensembles of tree configurations allows an understanding of their heterogeneity as well as their coherence and dynamics. Conclusions: The relationship of the tree vocabulary with the specific location exposes their role as an ordering structure and a carrier of the identity of Delft, and their differentiation and site-specific qualities, revealing a composition of wooded areas each with their own characteristics, shows both urban and forested areas as equivalent components of an urban forest mosaic. This differentiation can be used as a tool for strengthening relations between the different components as well as diversity and heterogeneity in urban forests.

INTRODUCTION

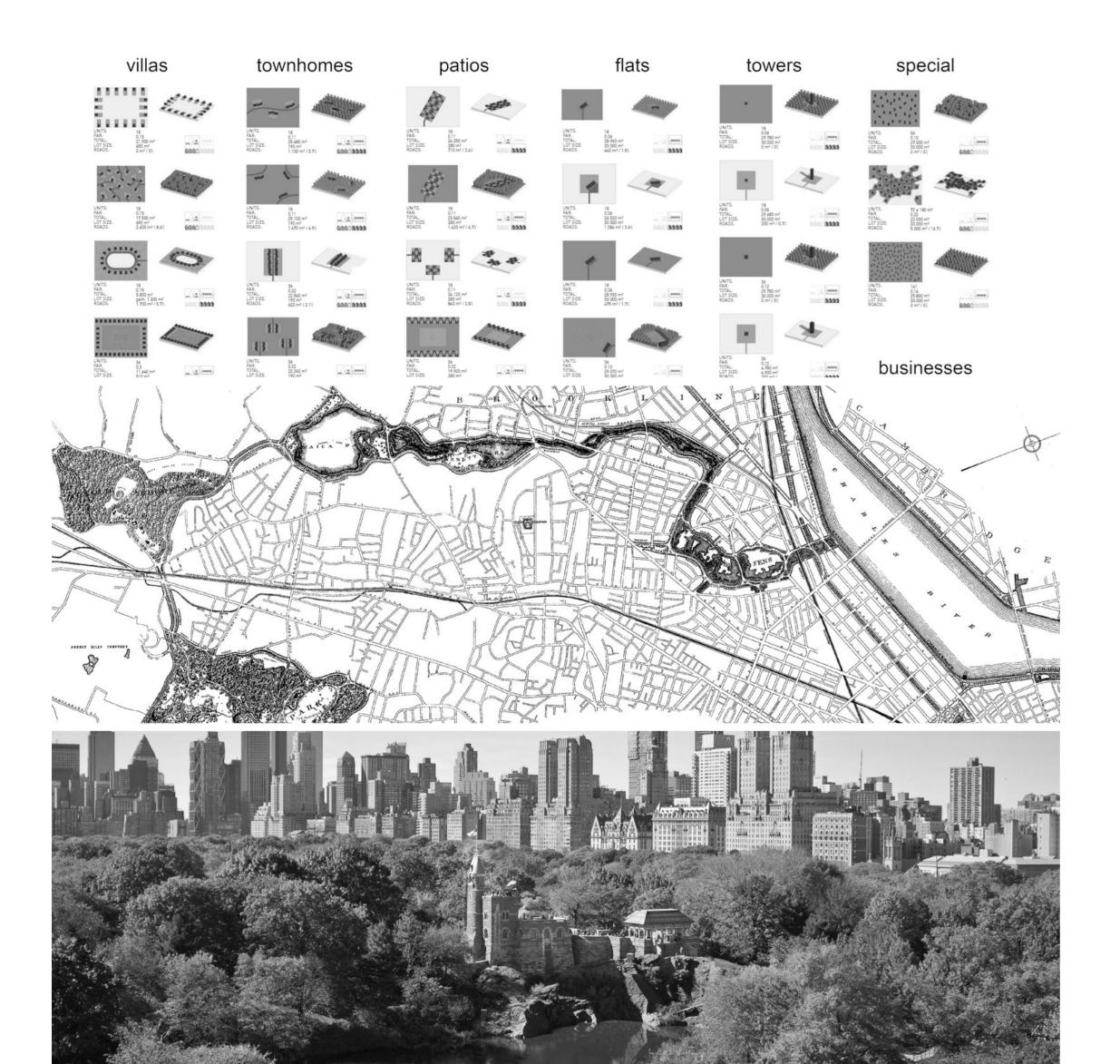
Keywords. Site Specificity; Tree Configurations; Tree Vocabulary; Visual-Spatial Characteristics.

Trees in the urban realm create spaces for people to live and act, move, admire, work and play. The mosaic of these spaces, and the way they are formed by different species, different configurations, and structures of trees in relation to infrastructure, water, subsoil, and buildings, conveys the diverse experiential, ecological, and functional qualities of what we might call the urban forest. The way these spaces are perceived has many facets, ranging from the physicalvisual (dimensions, proportions, structure, texture, transparency) to the ephemeral (atmospheric and symbolical). A specific focus on the visual-spatial perception, the urban forest as seen from a human eye-level perspective, can inform our understanding of the urban forest and its relations to city and landscape, and might reveal the durable role of the urban forest in creating orientation, identity, and structure.

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Such an interaction between humans and wooded spaces can only be site-specific, given that tree species, planting types and wooded structures cannot be separated from the place where they stand, with the specific, associated realm of experience. To analyze the urban forest as such we introduce the notion of a "tree language," a notion that was first coined by landscape architect Frank de Josselin de Jong (2009). Just like every language, a tree language has a vocabulary—the generic, or repetitive, formal components-that allows us to understand and communicate the existing "wooded narratives" of urban environments and to maintain, transform and expand them in relation to what is already there. Such a vocabulary can be considered at different scales: morphological types of tree species, tree configurations and ensembles (coming together of multiple configurations forming a whole, a unified or interrelated group), and wooded structures.

Introduction Explore Test



The Landscape Form of the Metropolis

René van der Velde and Saskia de Wit

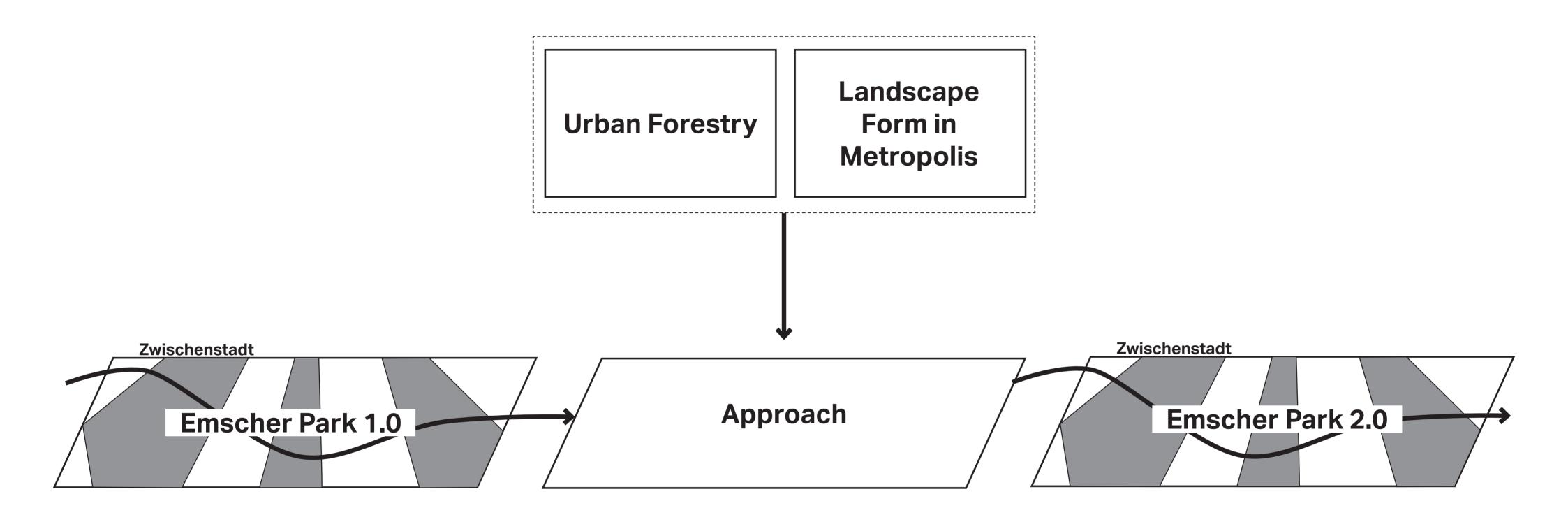
Much of what contemporary urban form is today, exceeds the comprehension of the conventional urbanism and architectural repertoire. The distinctive physical characteristics of the city and its districts have been replaced by an urbanised field made up of indistinct, fragmented territories. The spatial character of these urban fields clashes with ideas of harmony, co-operation and order to be found in traditional urban models. Through the lens of the Metropolis however, much of what is not clear about this new urban condition can be qualified. The metropolis is an unstable, dynamic environment in which elements of the contemporary city re-array themselves in an urban-landscape system. Ordering, composing and acting in this system places a new responsibility on landscape. To what extent landscape, in the sense of the permanent underlying substructure, or visual, physical and conceptual open space and as a conceptual and instrumental 'vehicle' of nature, has a bearing on the elaboration of the metropolitan repertoire is the broader field of inquiry of the research programme of Landscape Architecture in Delft. The overall intention of the research is qualitative; it is guided by primary objectives of the spatial design disciplines: the understanding, definition and development of spatial quality. The aim is to distil instruments from both the landscape 'lens' and the underlying landscape itself, in order to replace or add to the classical understanding of city form, given its increasing shortcomings in dealing with the contemporary spatial problematique.

In this paper the dissection of the landscape-

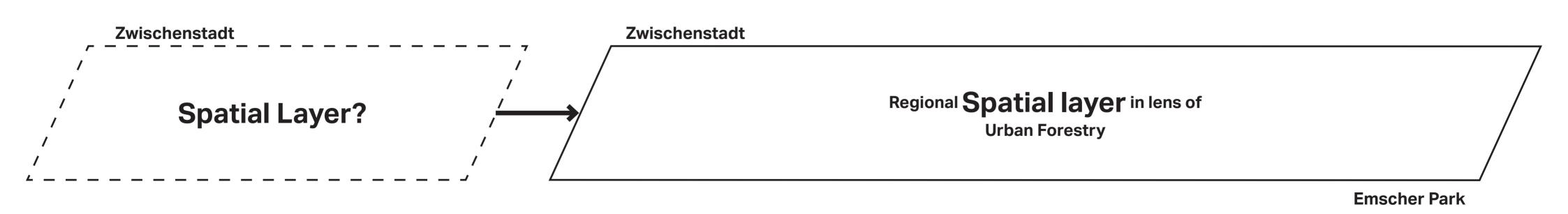
FOOTPRINT Metropolitan Form, Autumn 2009, pp. 55-79

architectonic treatment or 'action' and the discovery of archetypes derived from landscape-architectonic practice are explored. A first step in reaching an alternative metropolitan repertoire is the redefining of landscape-architectonic archetypes for metropolitan transformations in abstracted spatial terms, removed from scale, programme and meaning. In 1995 Clemens Steenbergen, Wouter Reh en Peter de Zeeuw laid down a tentative theory in order to describe new urban territories in abstract terms, reducing contemporary urbanisation patterns to points, lines and planes. This resulted in three basic forms: the flow landscape, the plantation and the landscape theatre.1 The potential of this theory for the contemporary metropolis is significant, but its elaboration and testing has to date received little attention. In this paper we intend to scrutinise these basic forms and place them in the perspective of the development and discourse of the metropolis.

Viewing urban history from a landscape-architectural point of view we can define a sequence of moments from which the archetypes for these basic forms are derived. Studying the successive stages we can discern four conditions for the development of a comprehensive urban-landscape system in a formal and spatial sense. In the metropolis the different stages, conditions and forms will usually overlap in space and time, as a result of which combinations and confrontations of landscape-forming forces that give a special dynamic to the metropolitan landscape architecture can be generated. Placed in an historical perspective, the development of the

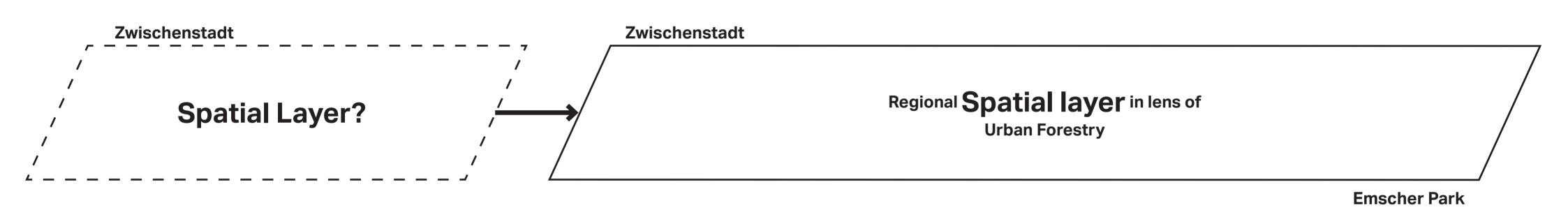






Introduction Explore Test

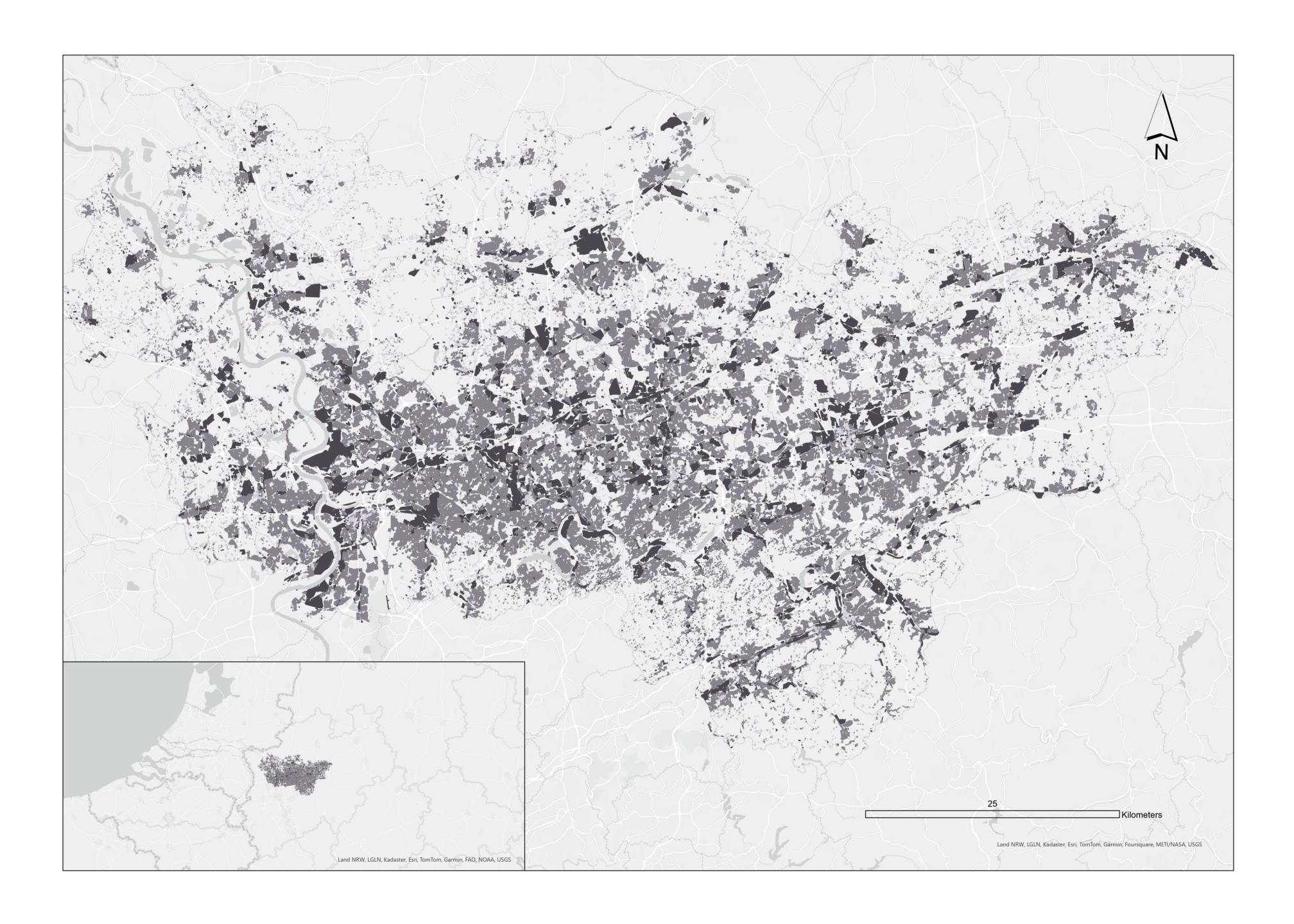
What's the next generation of Emscher Park?



How can these concepts be used to perceive the particular landscape of the Rhine Ruhr Area?

How can the landscape concept of urban forestry be applied on the regional scale?

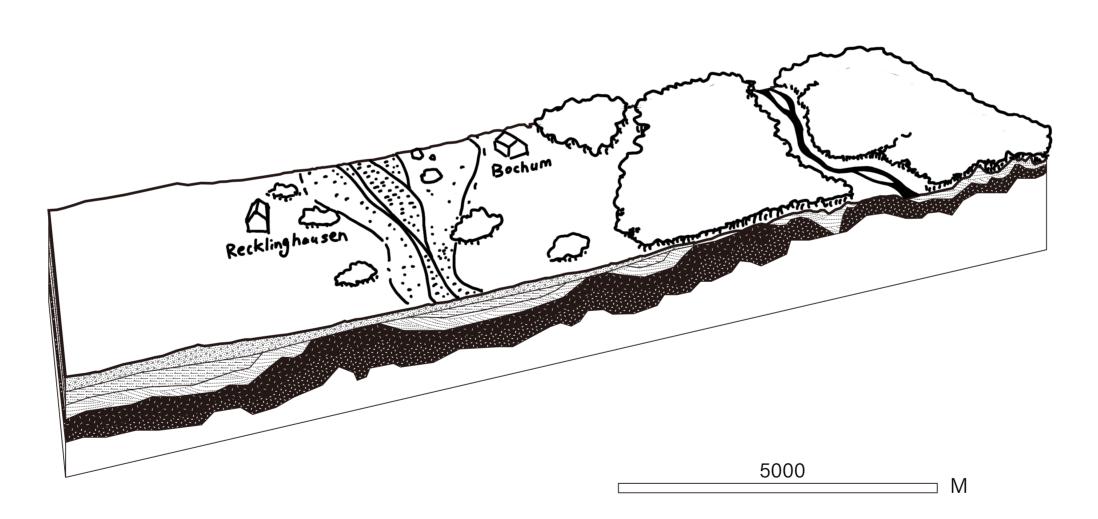
Explore



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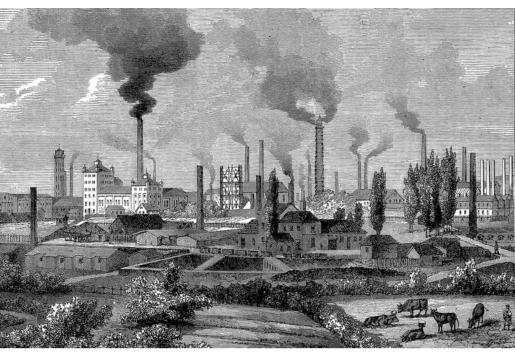


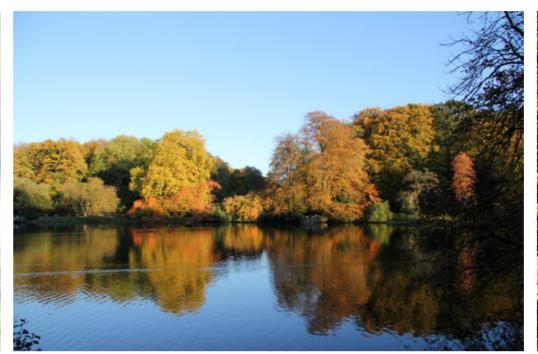




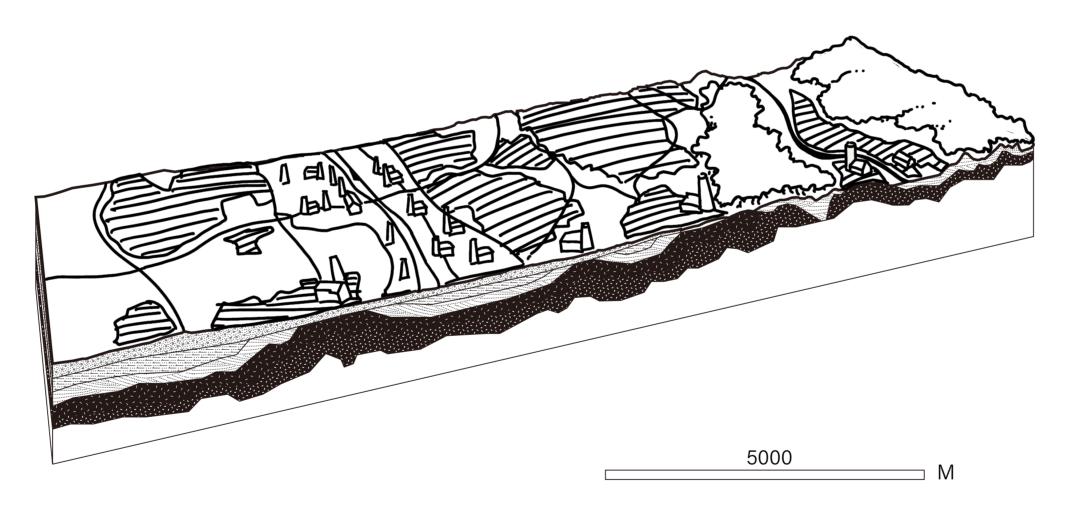
Pre-modern









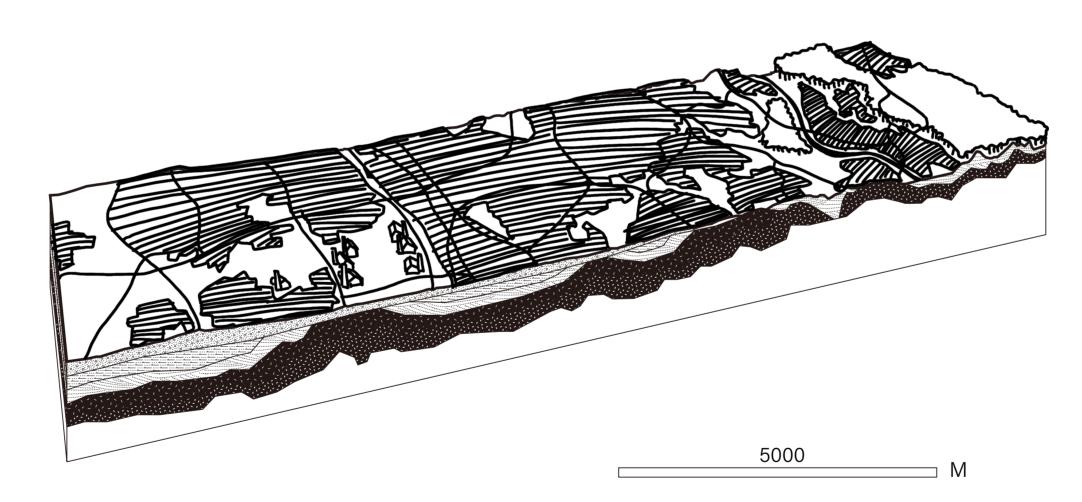


Industrialization

In the past, there used to be a continuous field in front of the residential area of Sobbehof





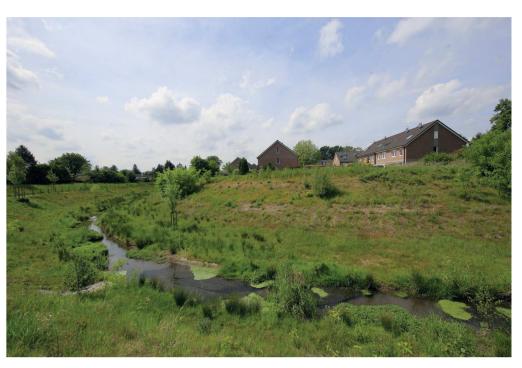


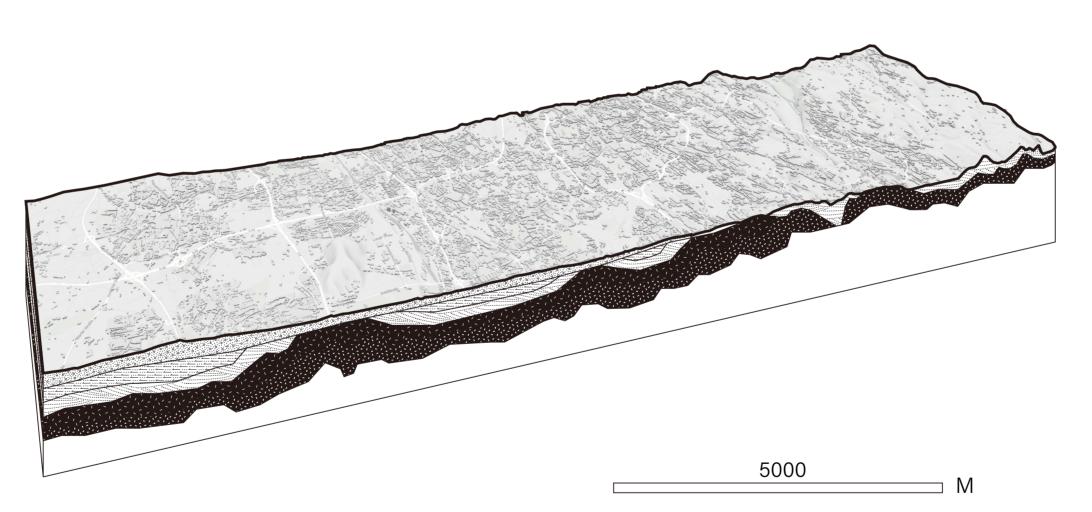
Urbanization











Urban Renewal



Image of industrial heritage

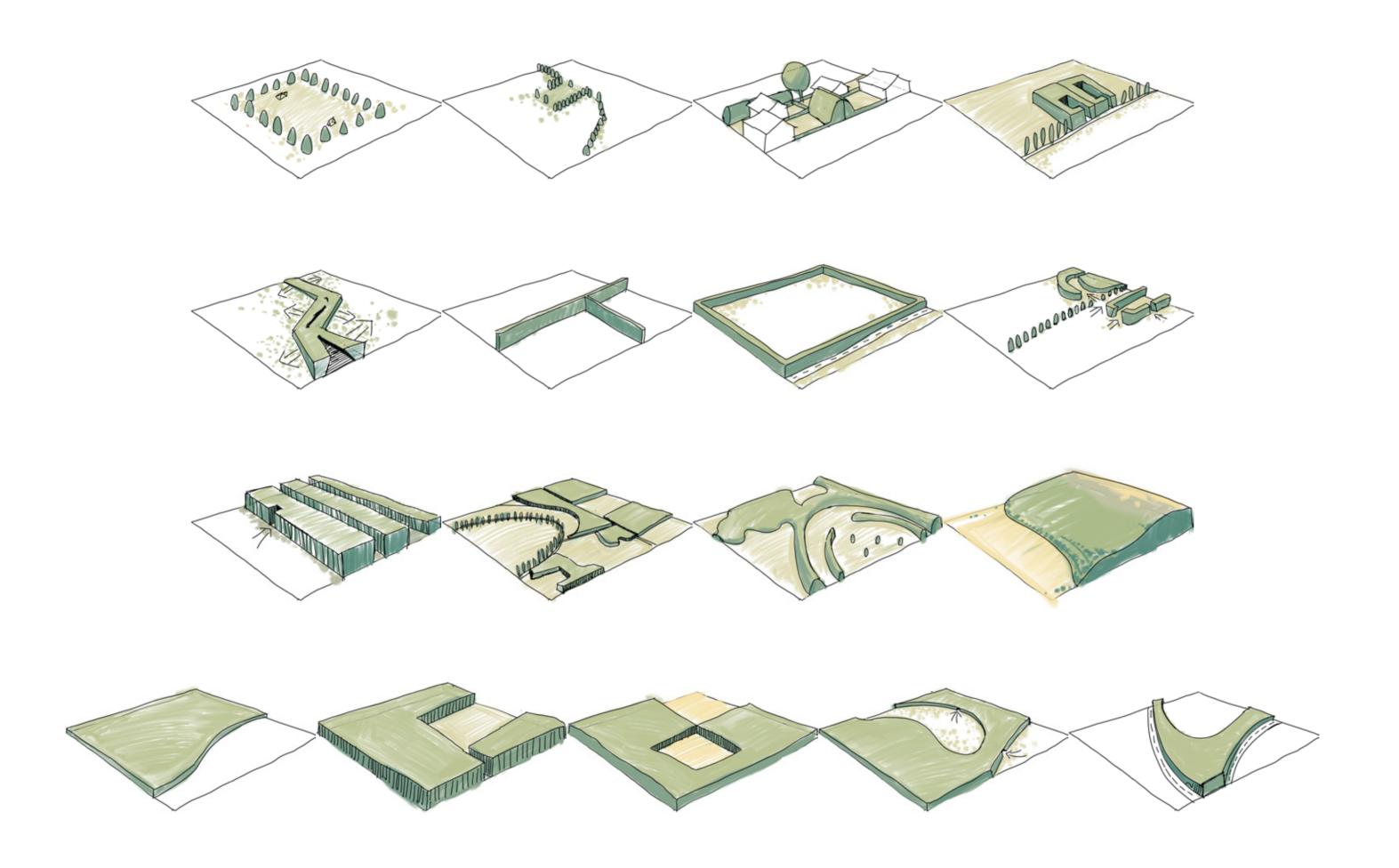
Image of nature

Image of agriculture

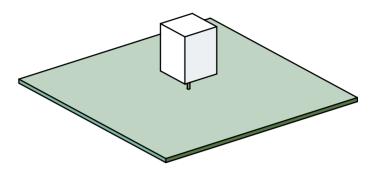
What are concepts to describe the morphology of in-between regional landscapes?

Urban Forestry

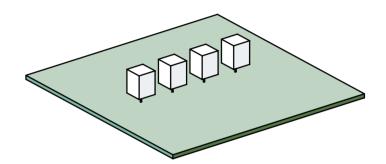
How can the landscape concept of urban forestry be applied on the regional scale?



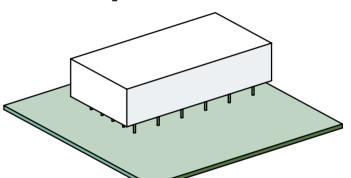
Point



Line

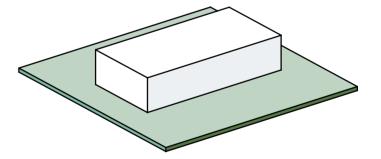


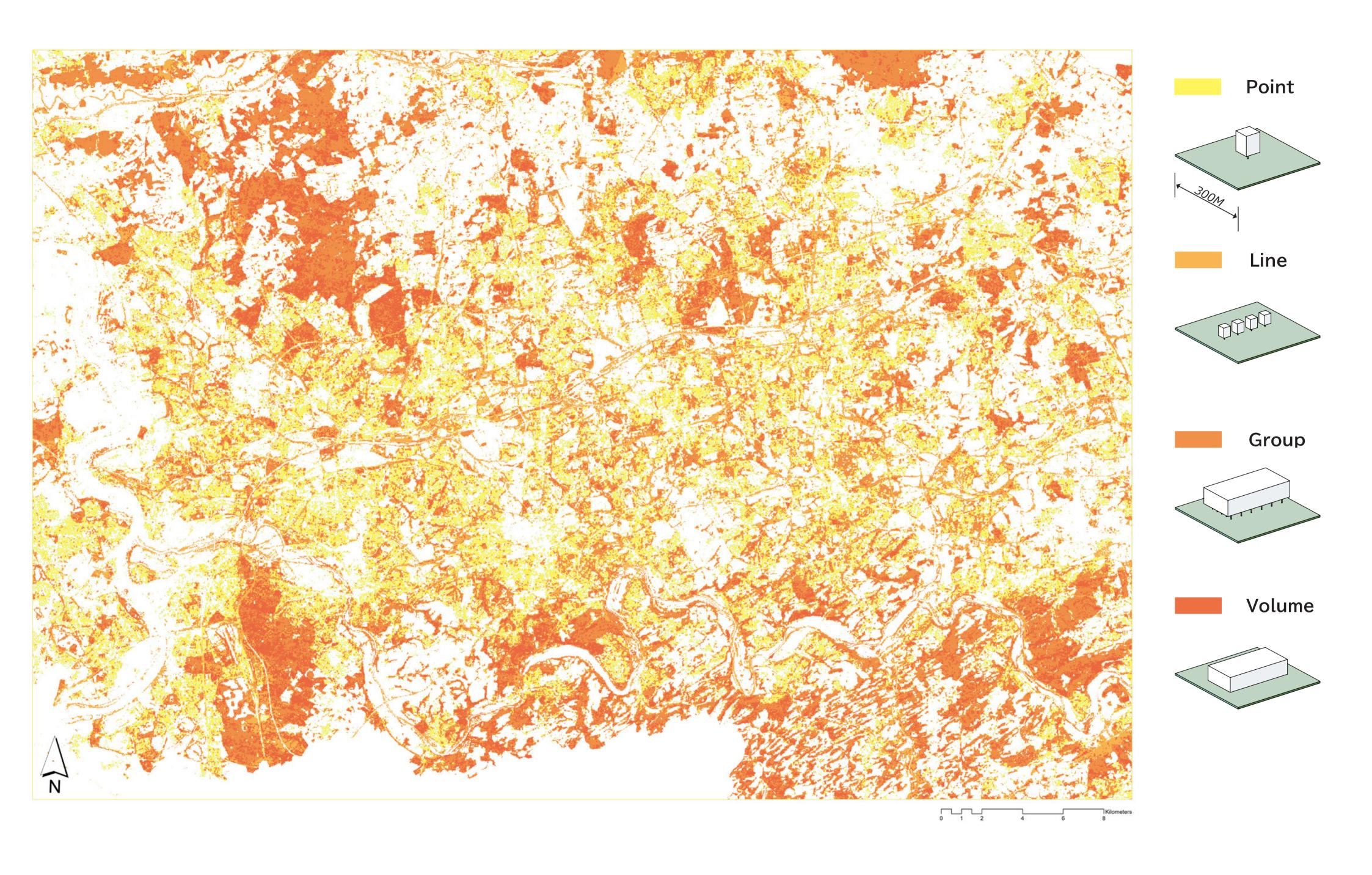
Group



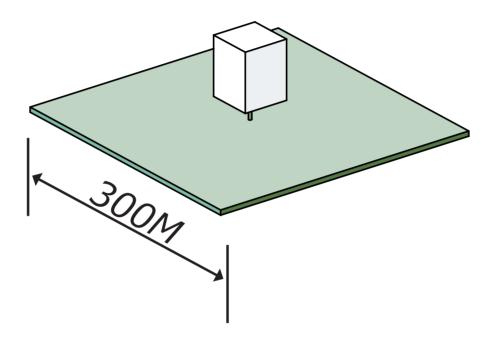
Volume

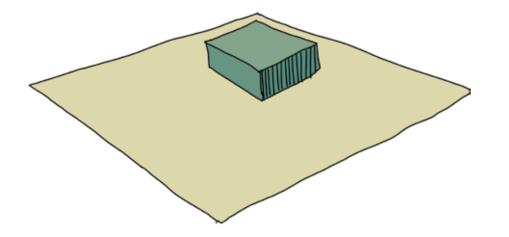
Test



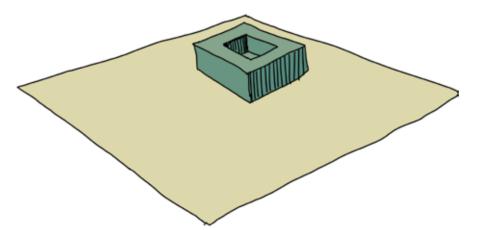


Point Defination

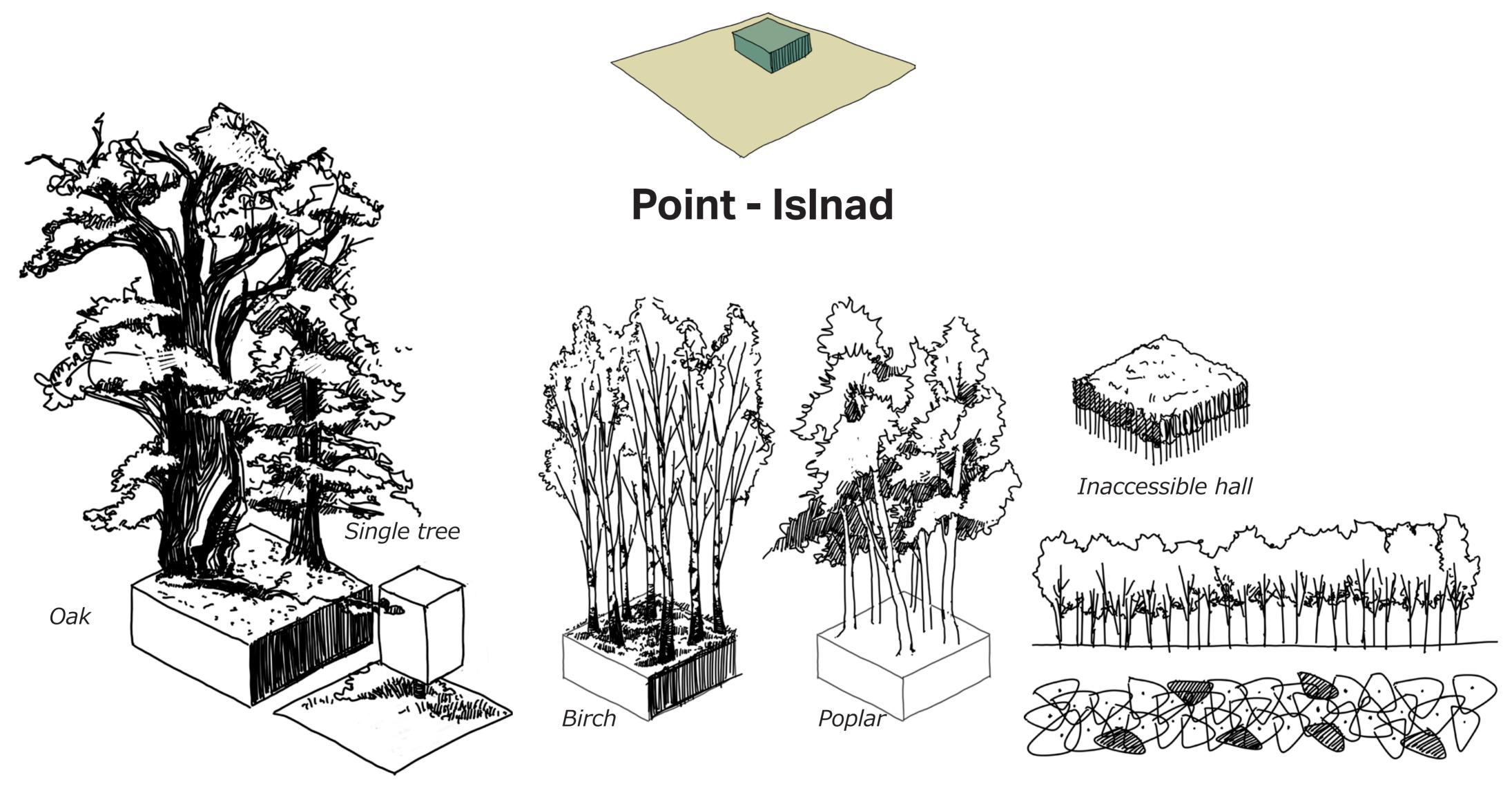




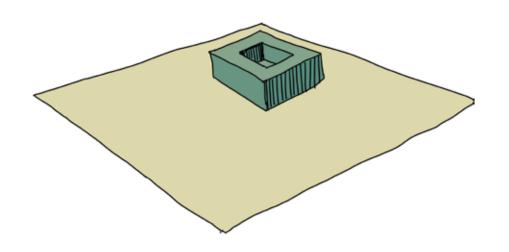
Point - Island



Point - Room

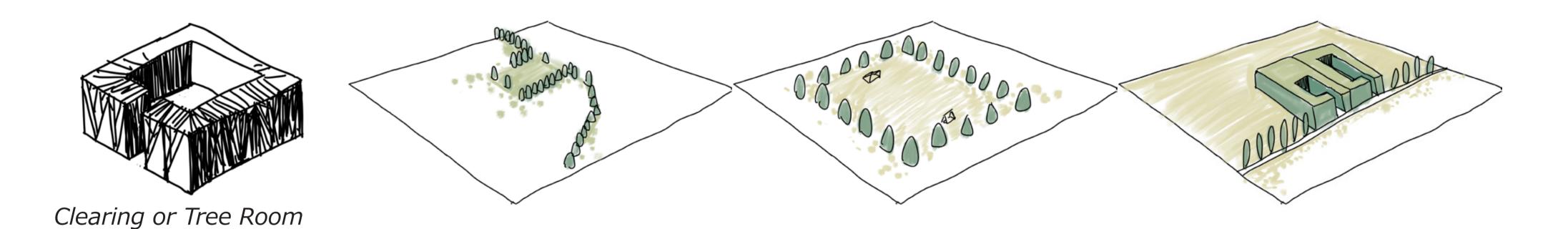


Individual trees and inaccessible small woods in open areas can be considered as island.



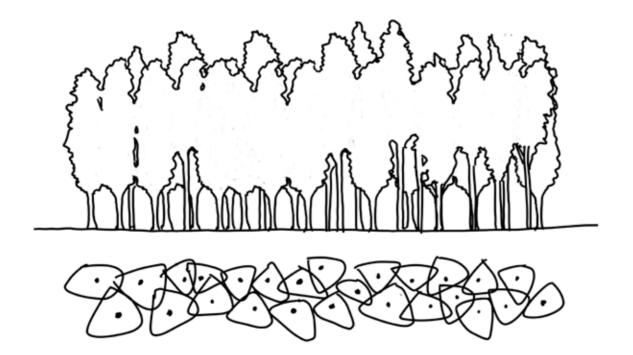
Point - Room

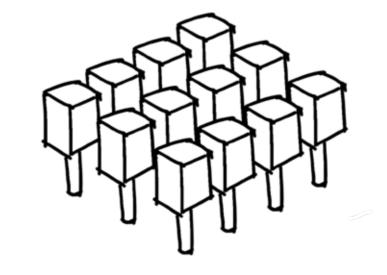
Not only the enclosed forest spaces created by humans can be considered as rooms, like, accessible halls of pillars, shades, grids of trees, etc., these accessible small group of trees can be considered as rooms. So, as long as the point meets the definition of a space that can be POINTed, and at the same time a space that a human being can enter and use it can be defined as a room.









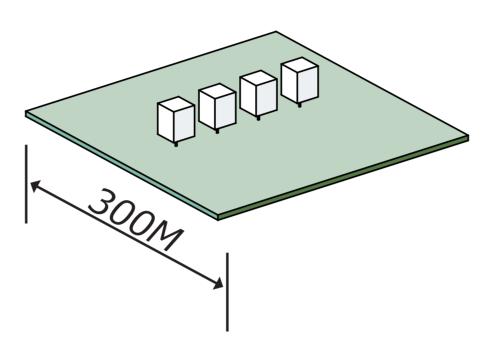


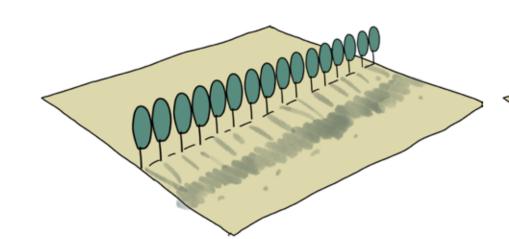
Grid of trees



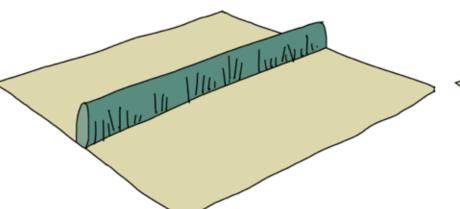
Shade

Line Defination

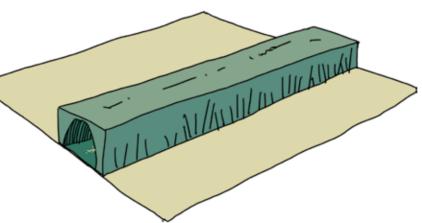




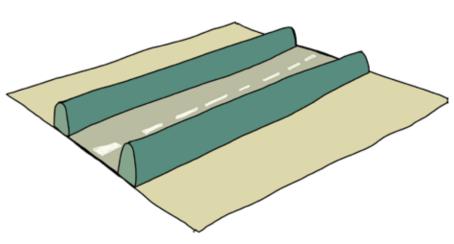
Line Transparent
Fence



Line - Fence

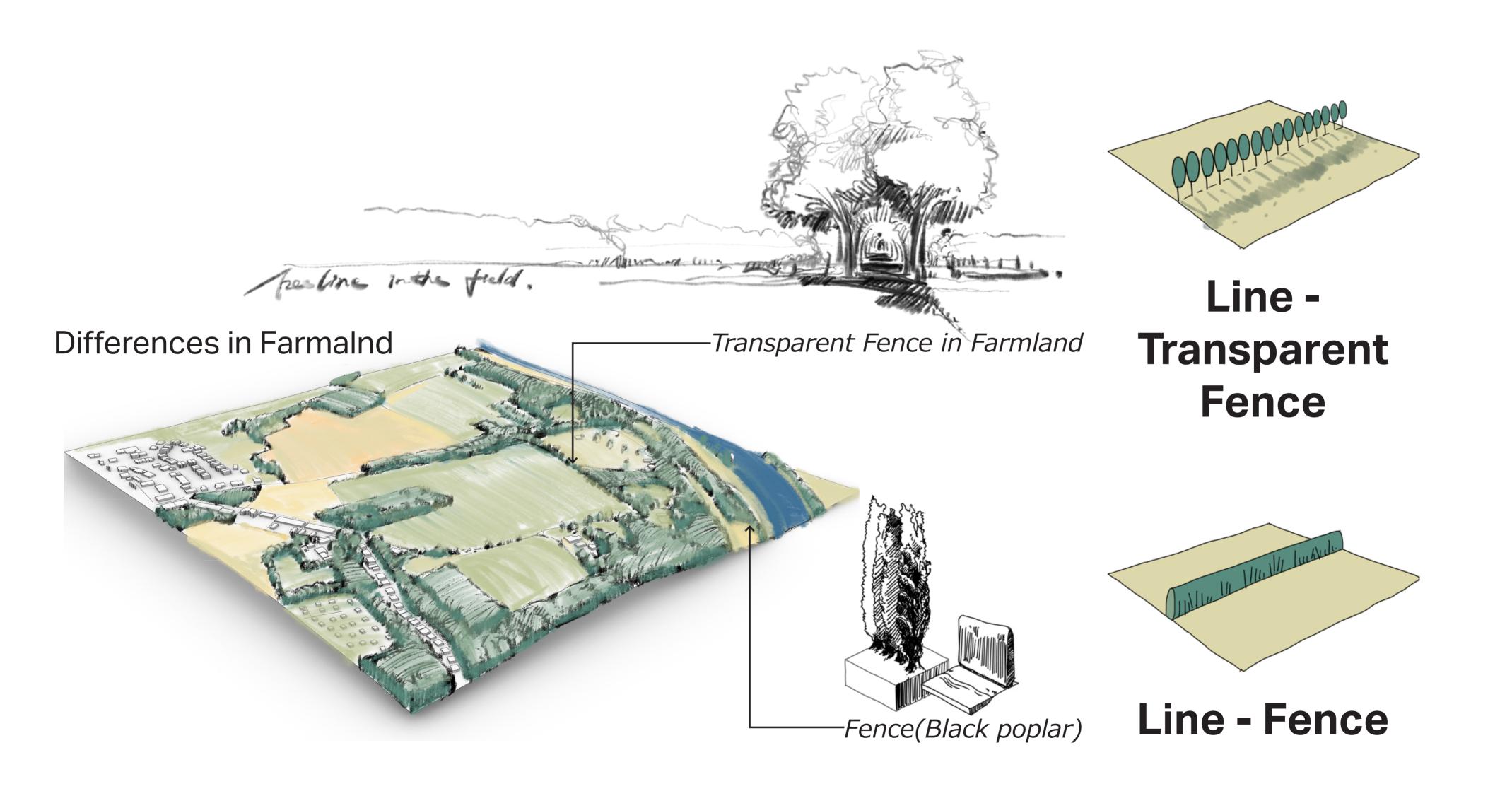


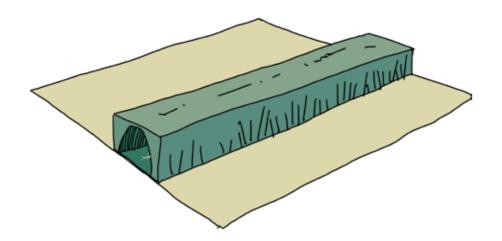
Line - Pipe



Line - BigLine

Test

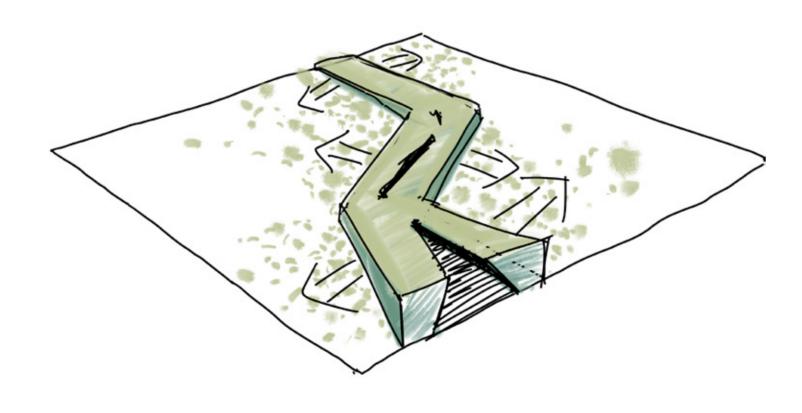




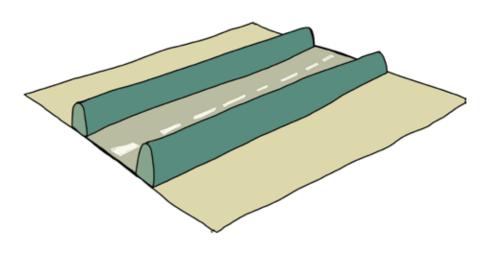
Line - Pipe



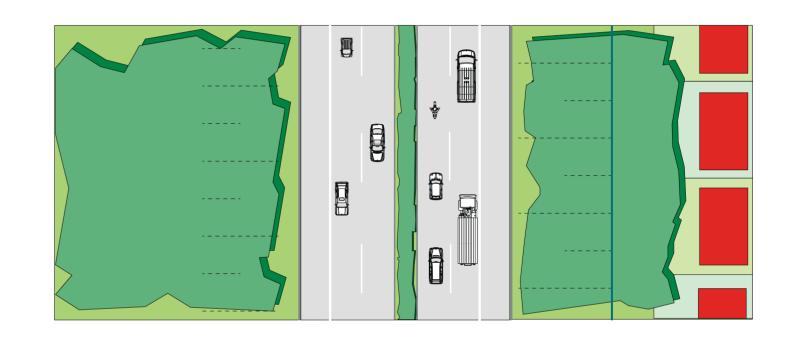
Have roof



Introduction Explore



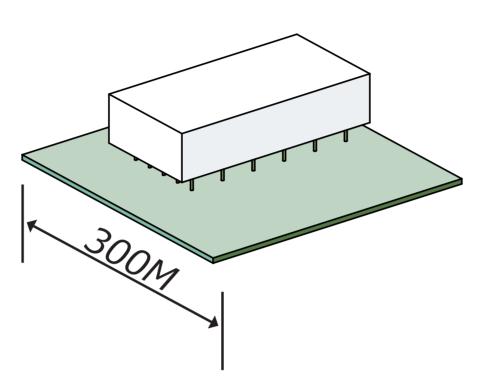
Line - BigLine

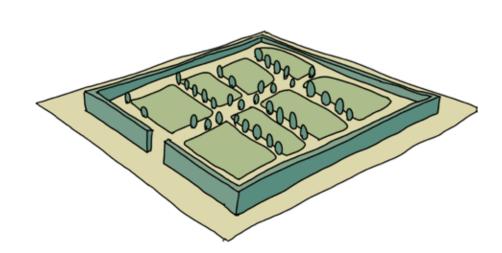




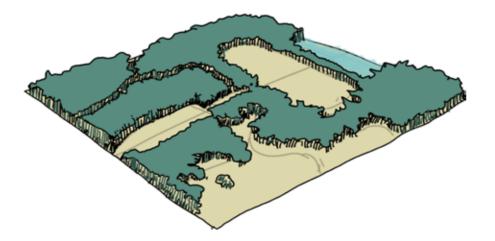


Group Defination

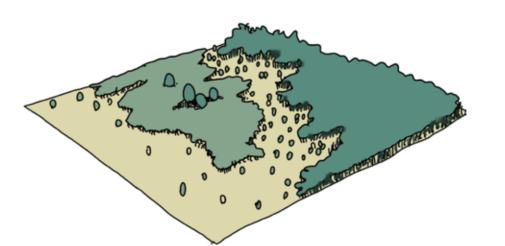




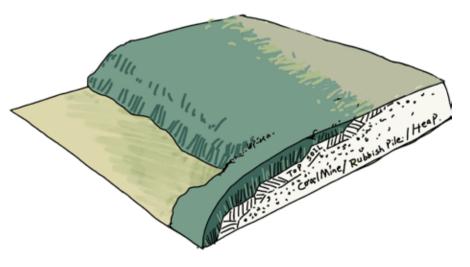
Group-Catalogi



Group-Urban Park

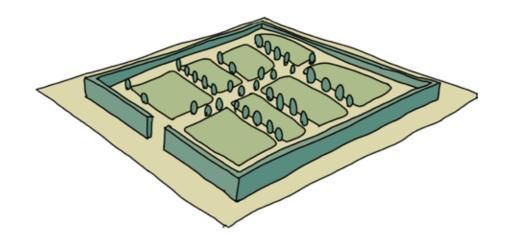


Group-Heath



Group-Heap

Test



Group-Catalogi

Woodlands with continuous canopy with equal sized open spaces between the canopy

Kleingarten

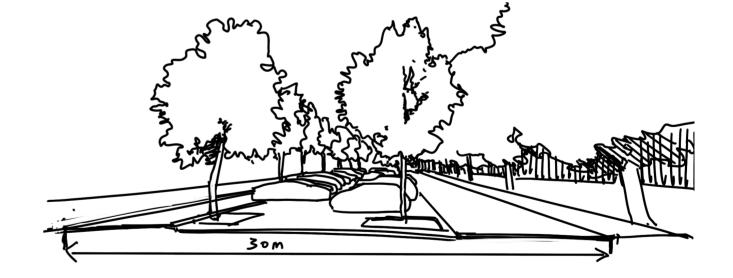


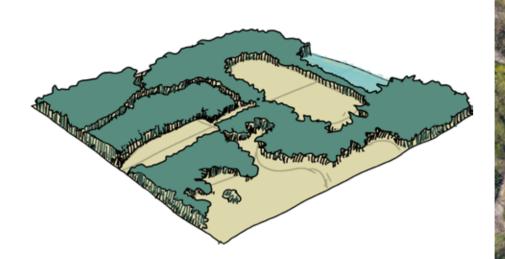
Cemetery



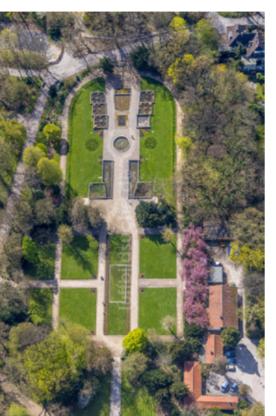
Green parking lot







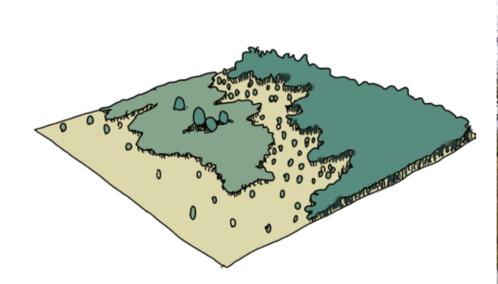
Group-Urban Park







Whatever the era of the park, whatever the compositions. these parks follow specific design principles, use specific compositions, and have clear principles for the plant configurations in them.



Group-Heath

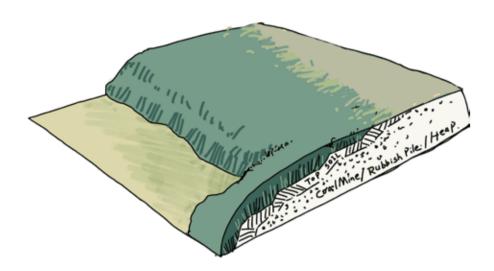




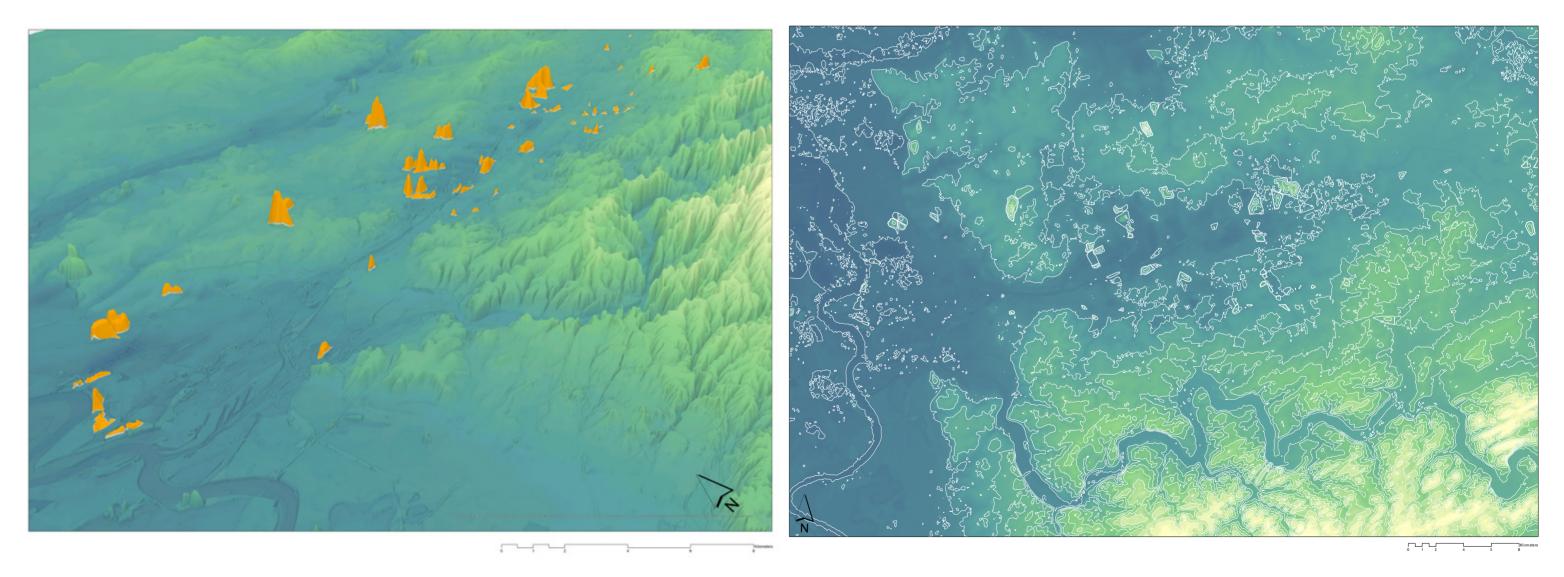


A heath is a habitat formed by shrubs and low woods. The space is experienced as open, but not inviting to enter until it is intervened. These heaths are often coexisting with irregular woods, and if not intervened, can easily be completely overrun by forest.

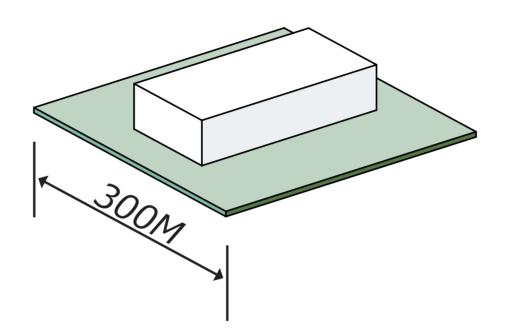


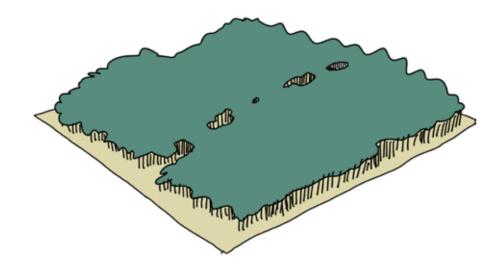


Group-Heap

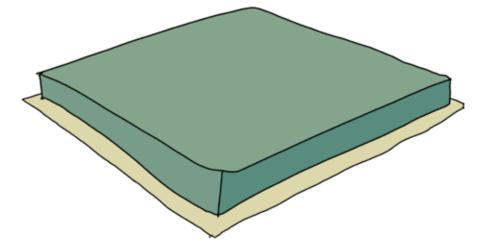


Volume Defination



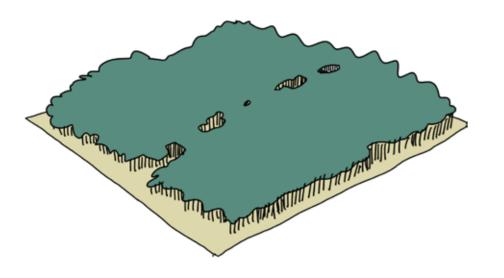


Volume - Urban Forest

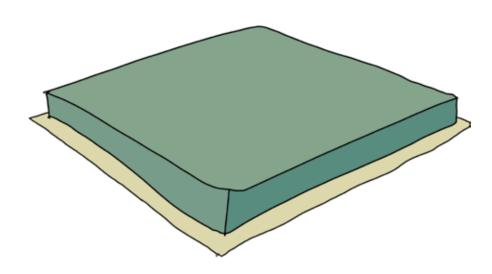


Volume - Entity

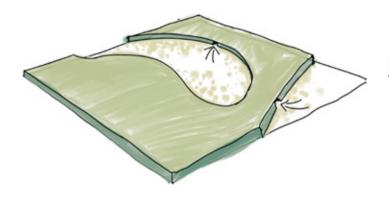
Volume elements are often used as background, or filler, and are often overlooked in terms of experience. Thus most volume can be seen as an inaccessible entity. On an urban scale, today's urban forests are often not designed with specific spatial aspects, but are simply filler for planted forests. Therefore Urban forest is also categorised as a type of Volume.

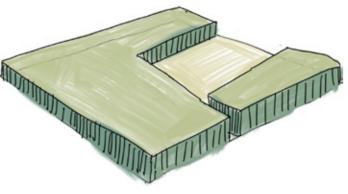


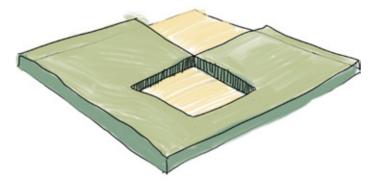
Volume - Urban Forest

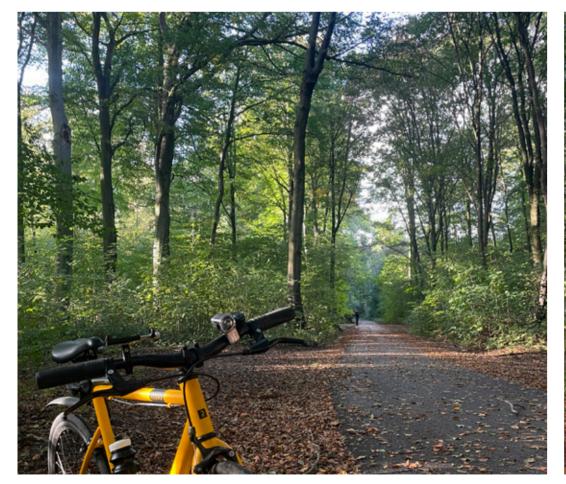


Volume - Entity

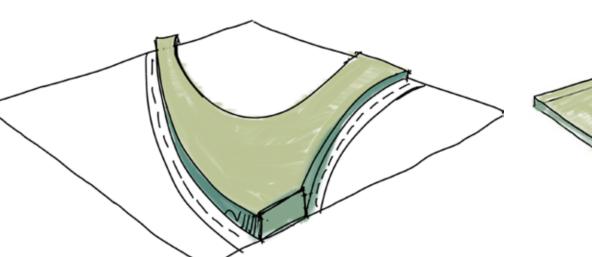


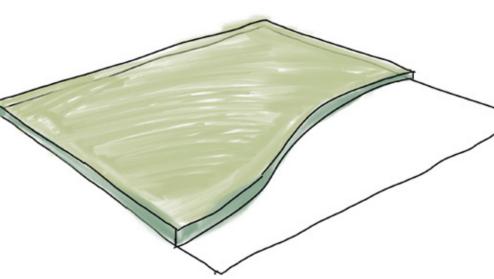










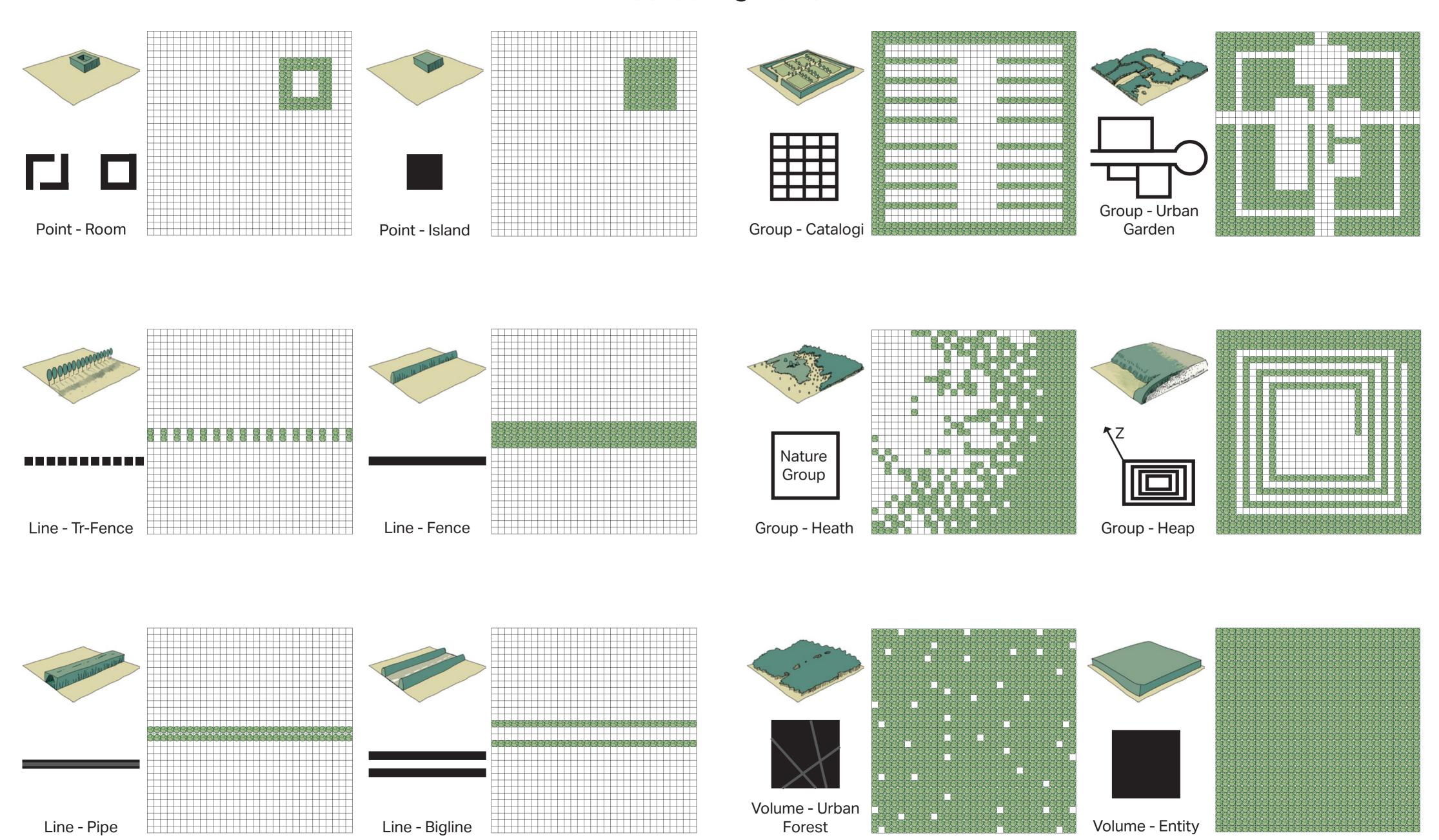


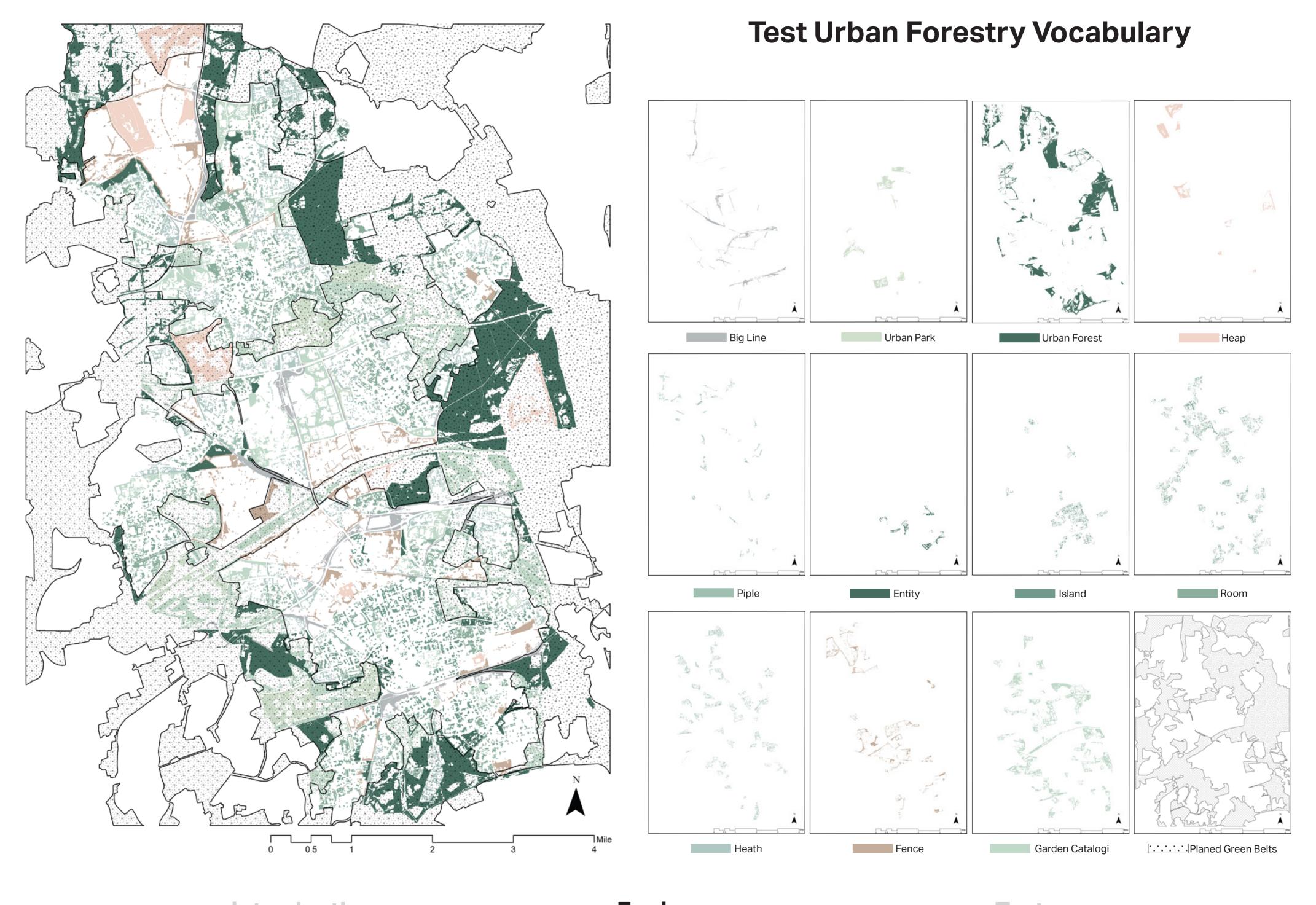
Can in

Can not in

Urban Forestry Vocabulary

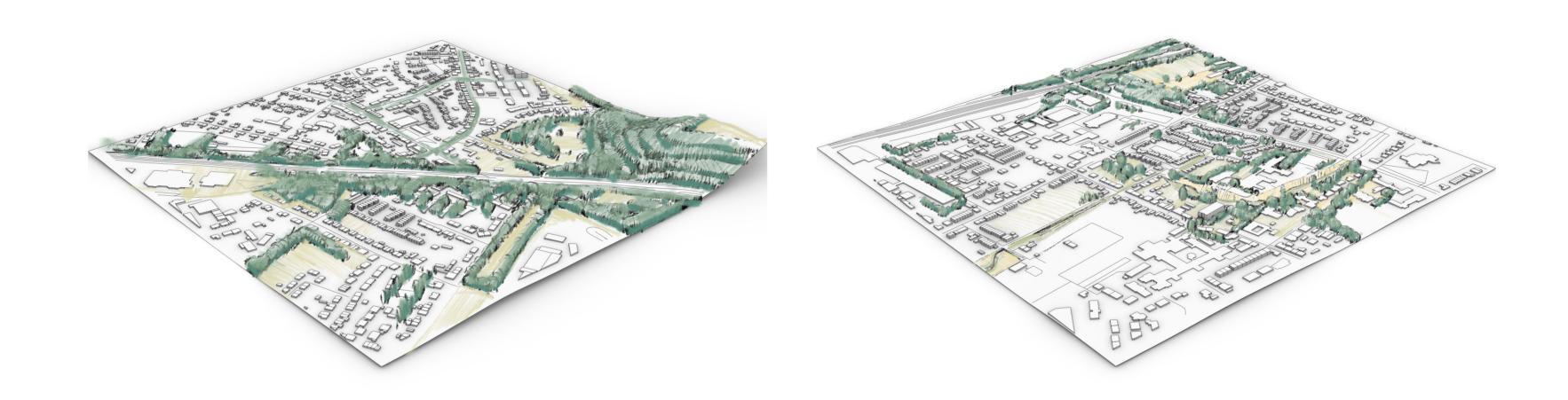
Tree Configuration





How can these concepts be used to perceive the particular landscape of the Rhine Ruhr Area?

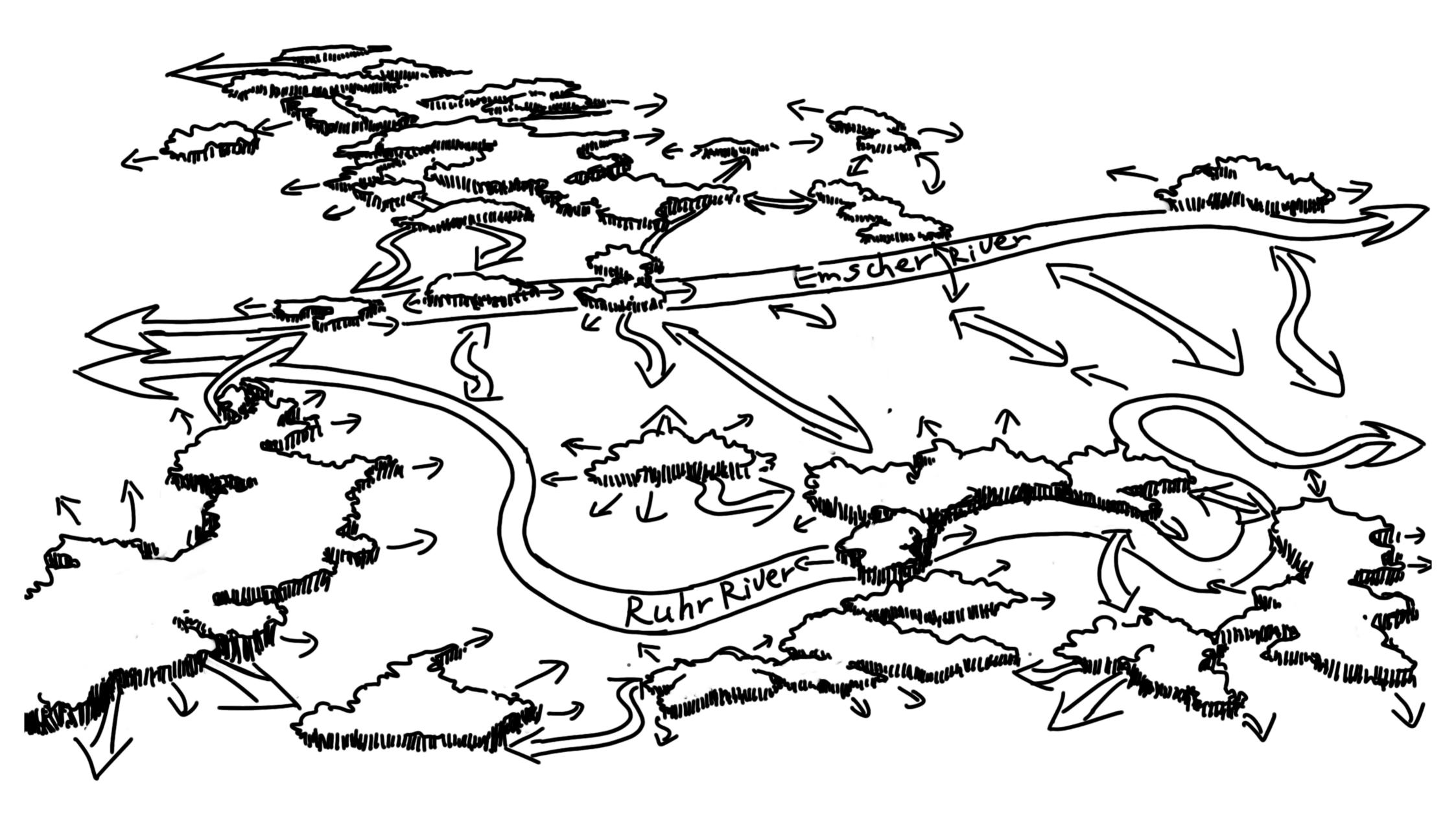
Spatial Problem: Green Fragmentation



Dense Green Way

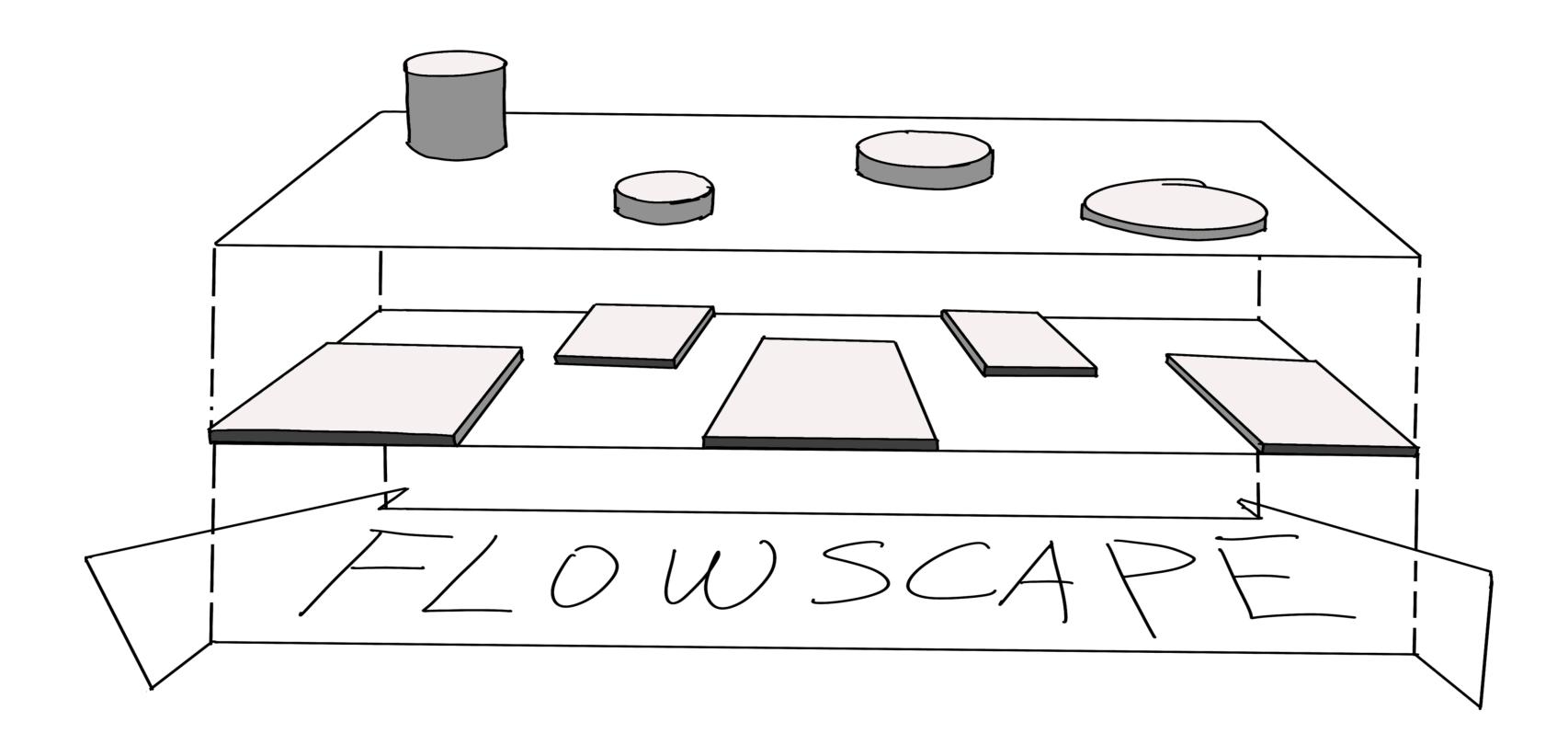
As Dividers

The forest is spread like a fungus colony in the Zwischenstadt.



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Landscape Form in Metropolis



In context of Ruhr Metropolis

Plantation



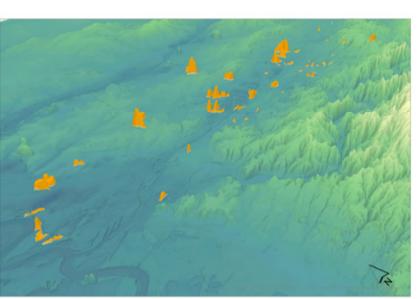
Theatre

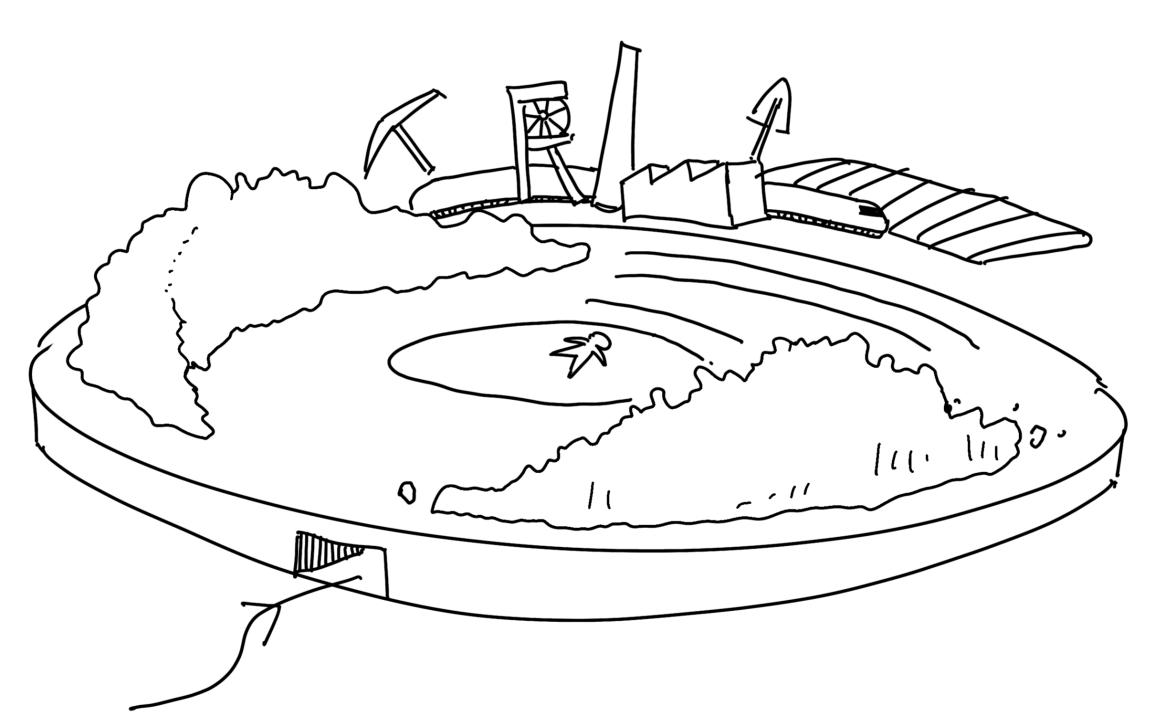






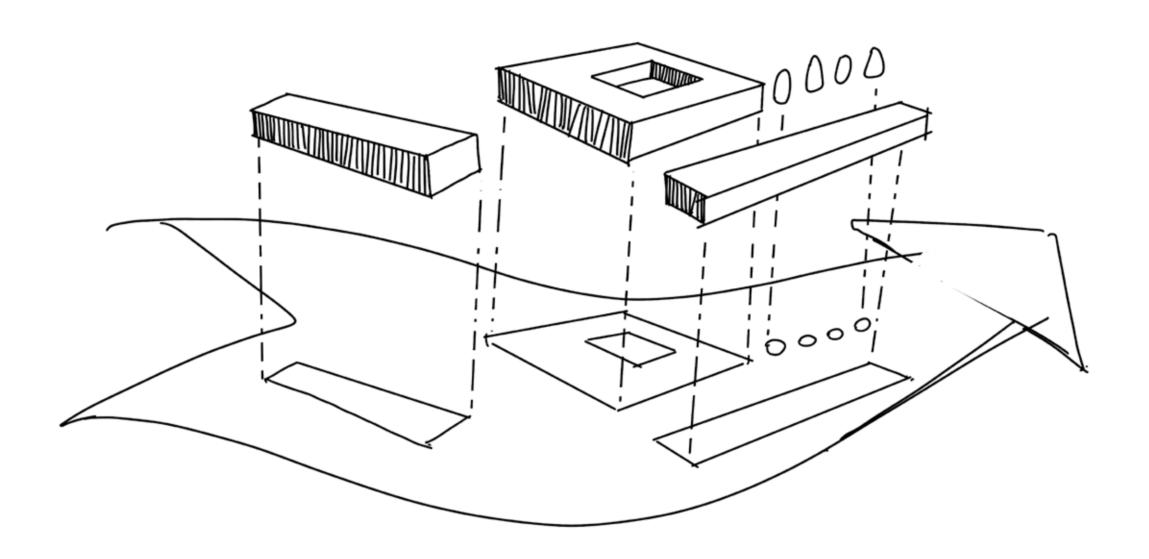






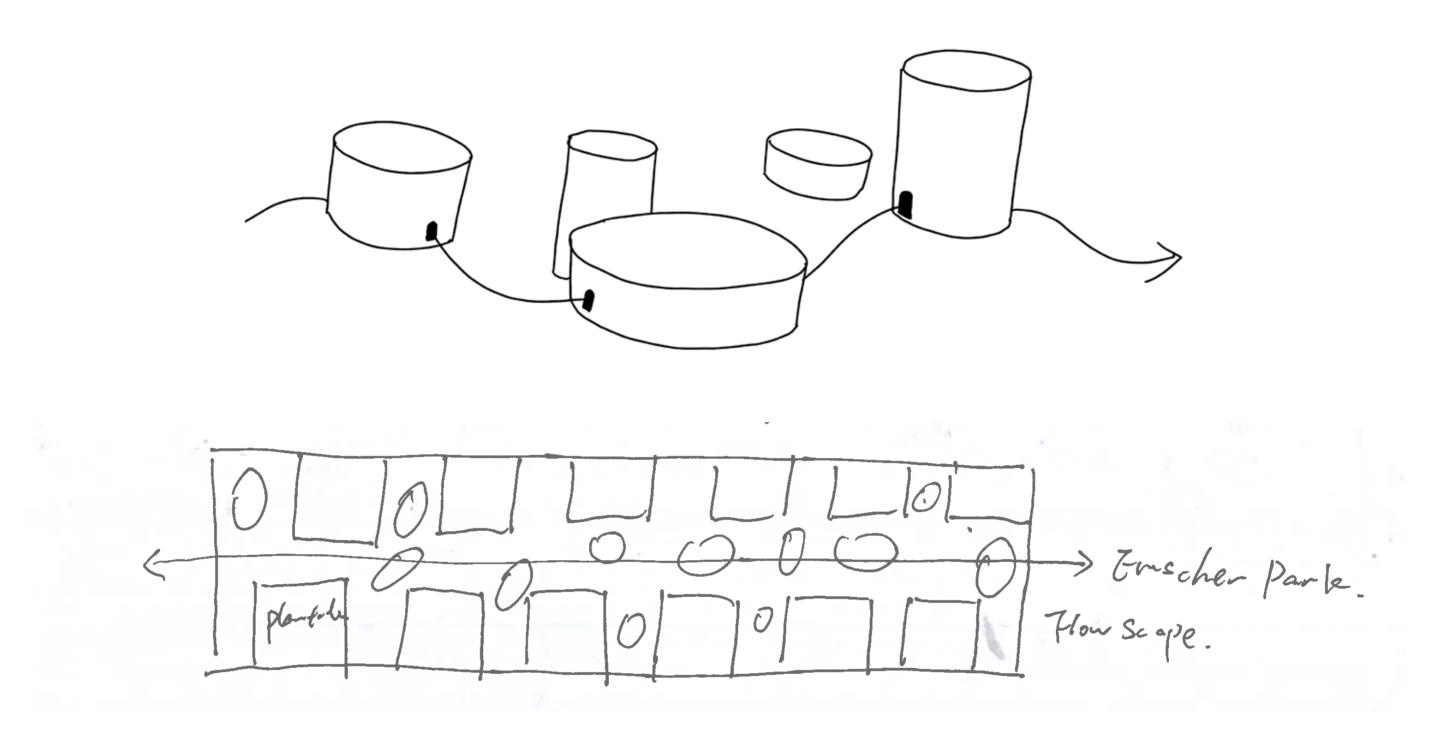
- 1, A Urban Void or An Enclosed space; And Heap (or Land scar).
- 2, Readable land palimpsest (landscape and artwork is translating the genius loci to the public);
 - 3, A recreational, educational ... space with specific function, or it is a destination for visitor.

Flowscape

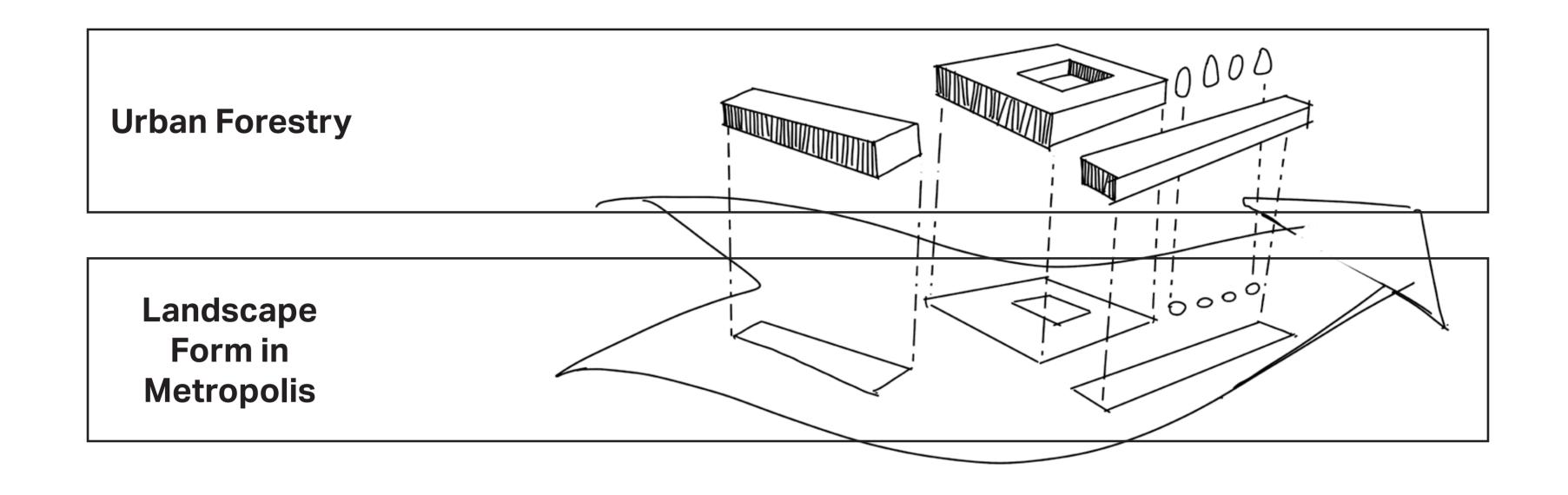




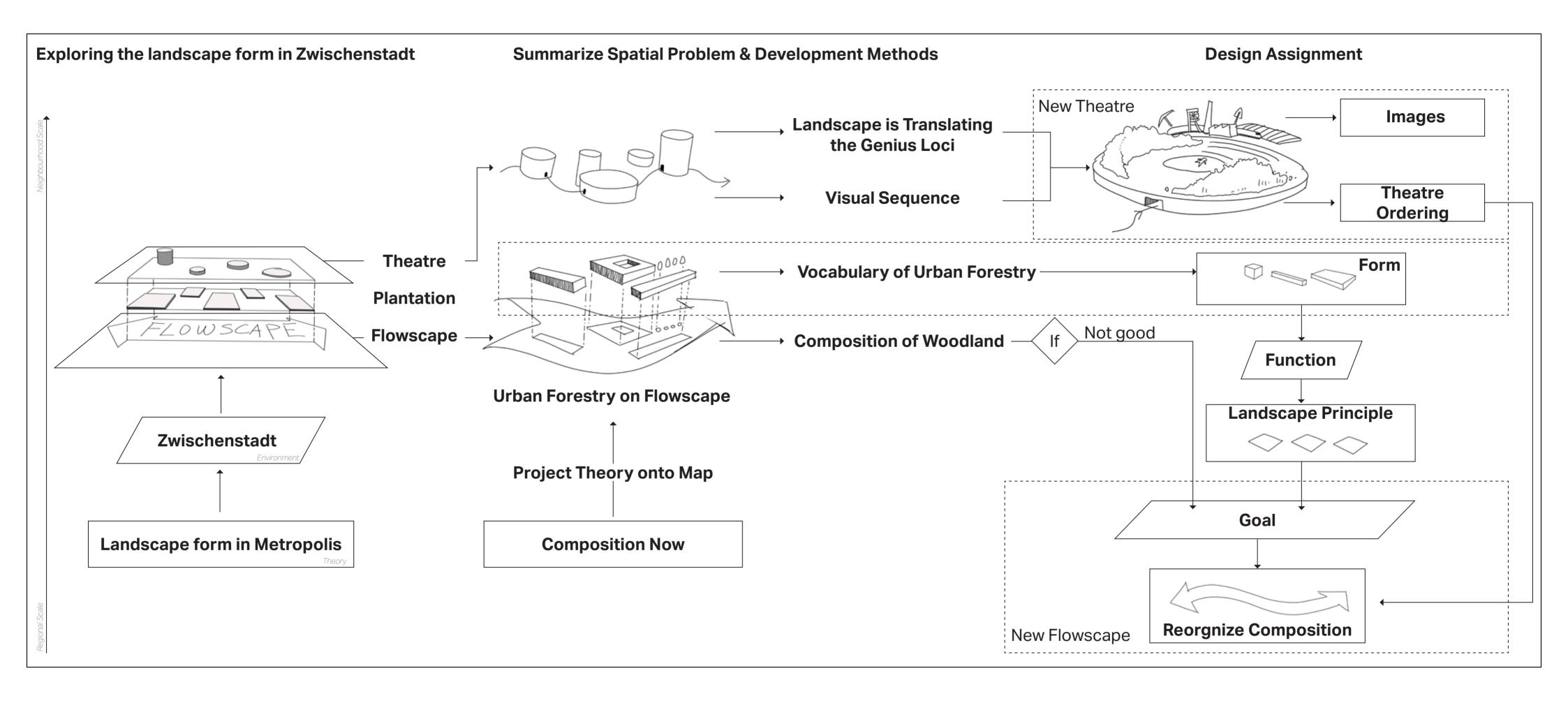
Woodlands are a major component of the regional green belt



Flowscape is a continuous network of landscapes made up of systematic functional networks (e.g. water systems, greenway systems, road systems). In the context of the Ruhr area, Emscher Park and the traditional greenway network is a flowscape, but unlike other urban typologies, where the flowscape has clear boundaries, the plantation and theatre of Zwischenstadt float like an archipelago on the oceanic flowscape, and the flowscape sticks to the plantation and theatre like glue. (Thomas Sieverts, 2003)



How can these landscape concepts be used to shape the future landscape of the Rhine Ruhr Area?

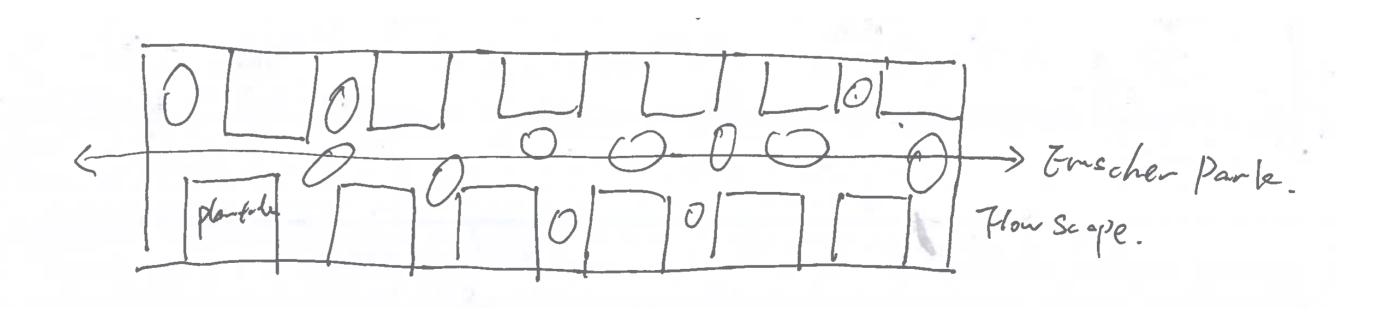


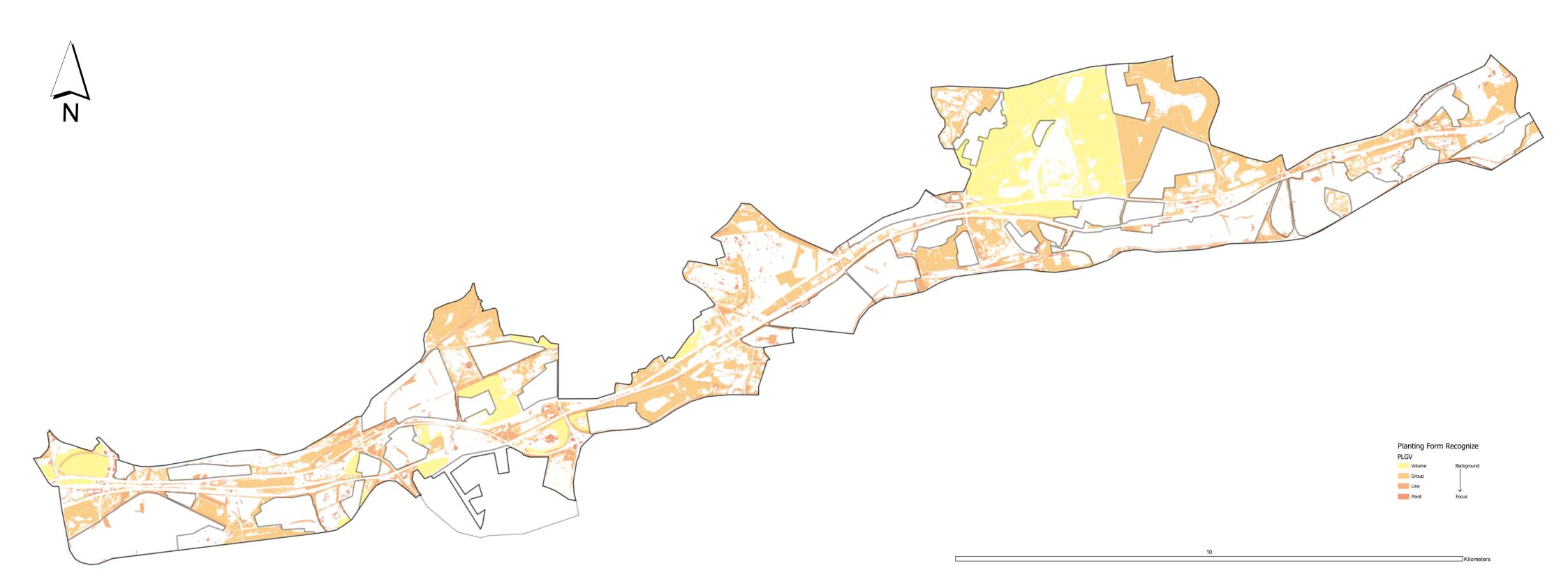
Test

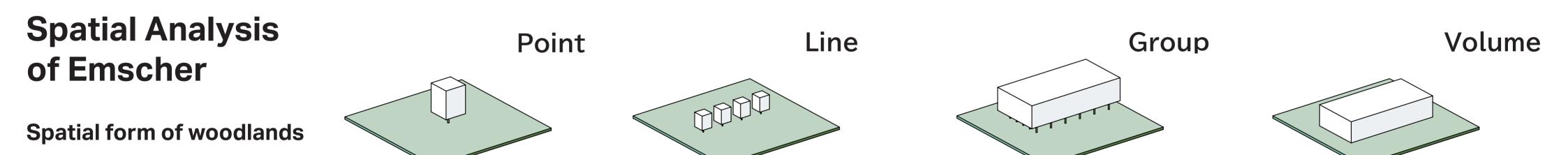


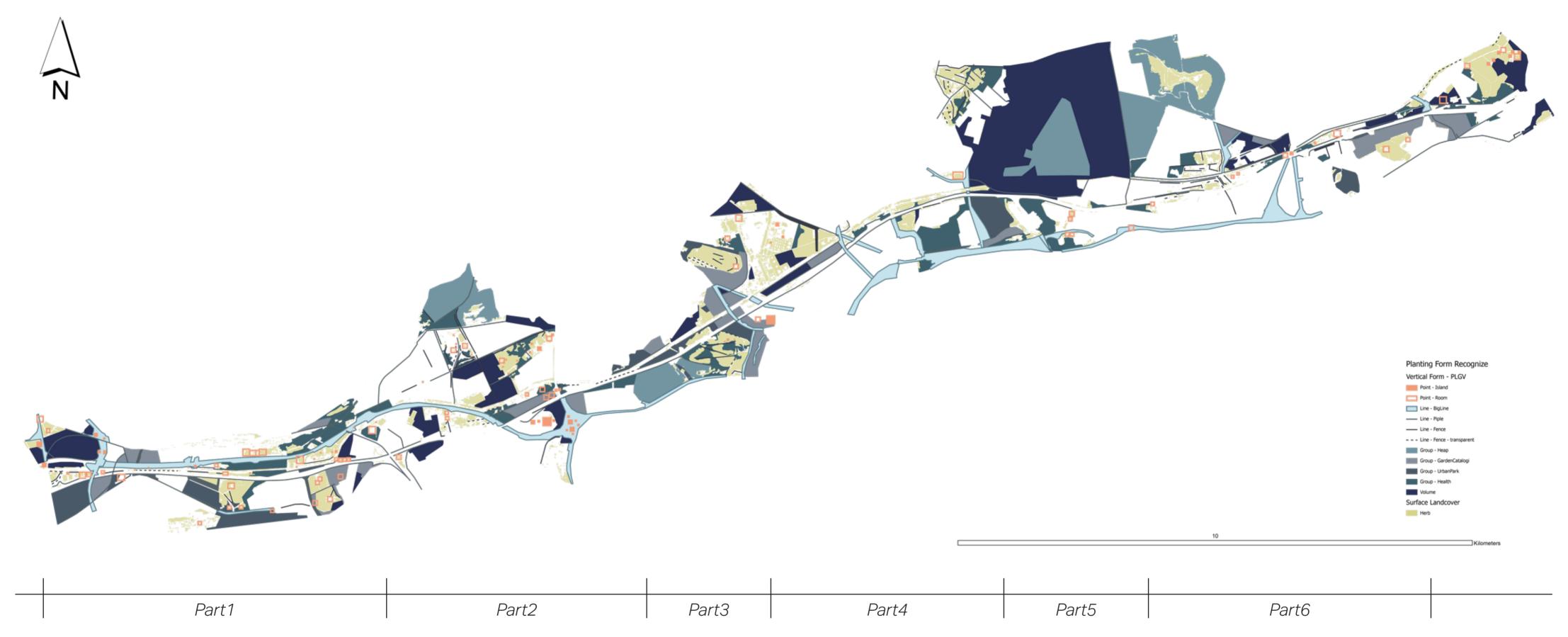
Spatial Analysis of Emscher

Spatial Land Defination



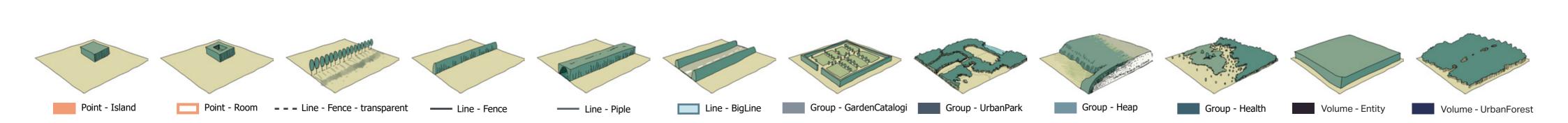


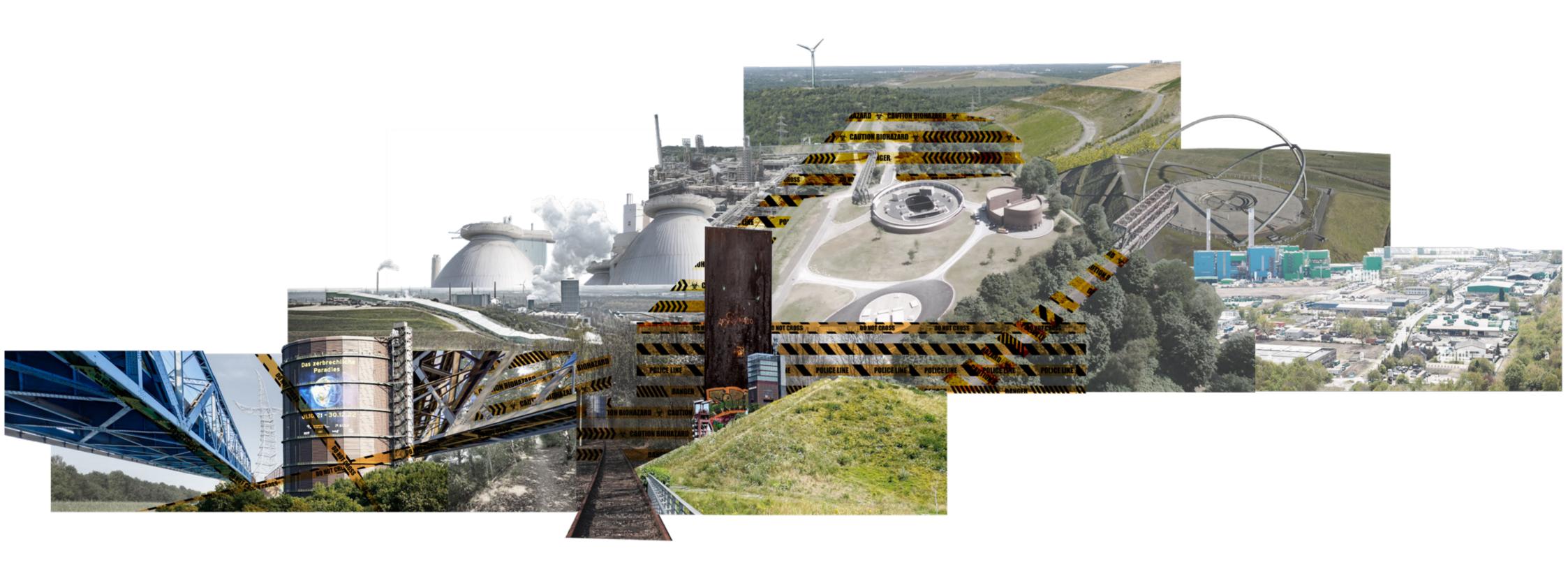




Spatial Analysis of **Emscher**

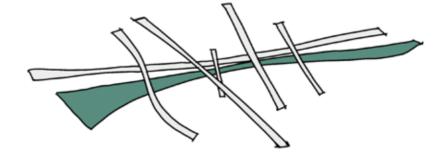
Woodland Composition in Flowscape



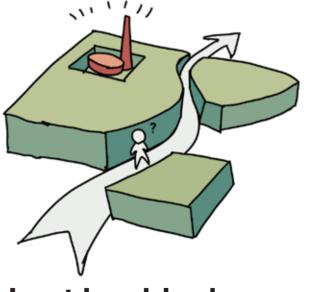


Spatial Problem of Emscher

Visual and Spatial Problem after analysis



Fragmented by infrastructure



Lost in a block maze



Lost in the pipe

Open Space

Picresequence

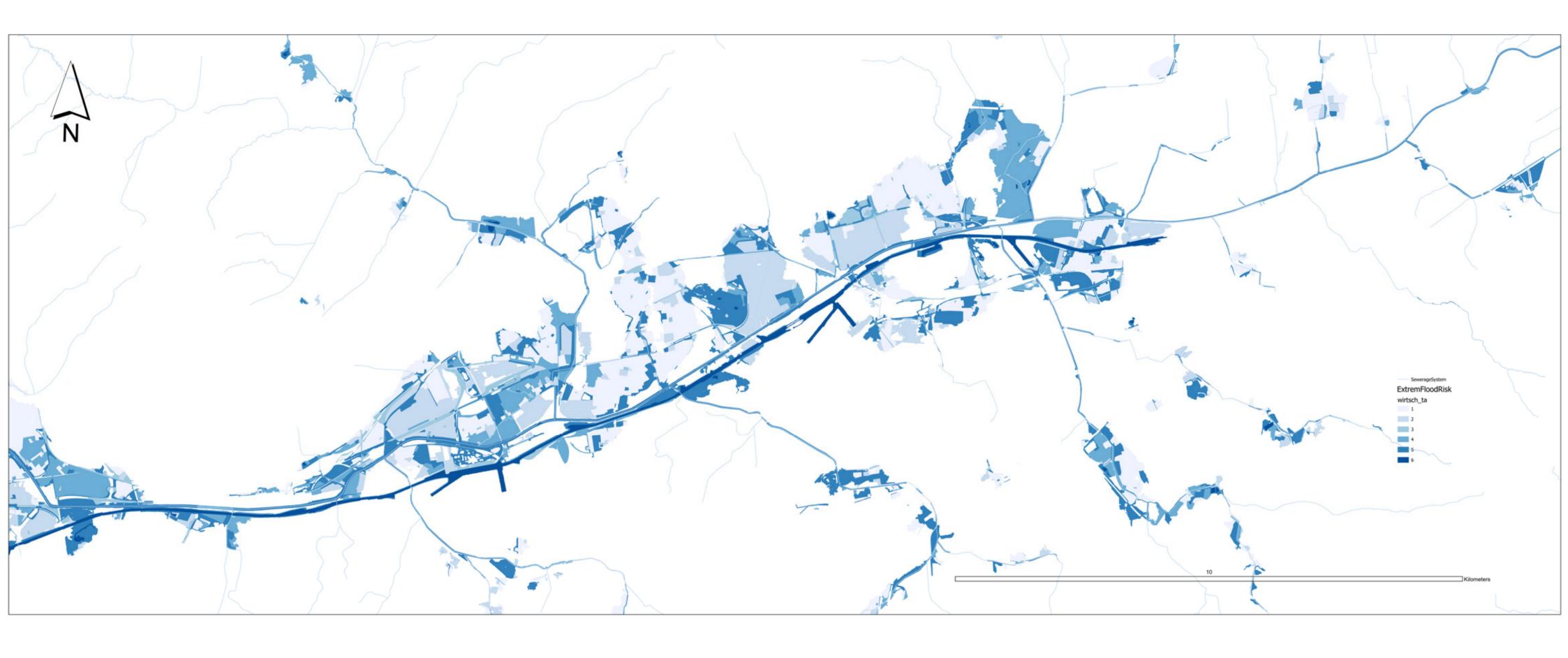
An Industrial

Squence

Designed Urban Forest

Function gives more possibilities to form

Landscape interventions to face specific problems



Analysis of Water Management Issue

Flood Risk Analysis Map of Emscher





Water managment plan in Gelsenkirchen



Strategy of Water Magement

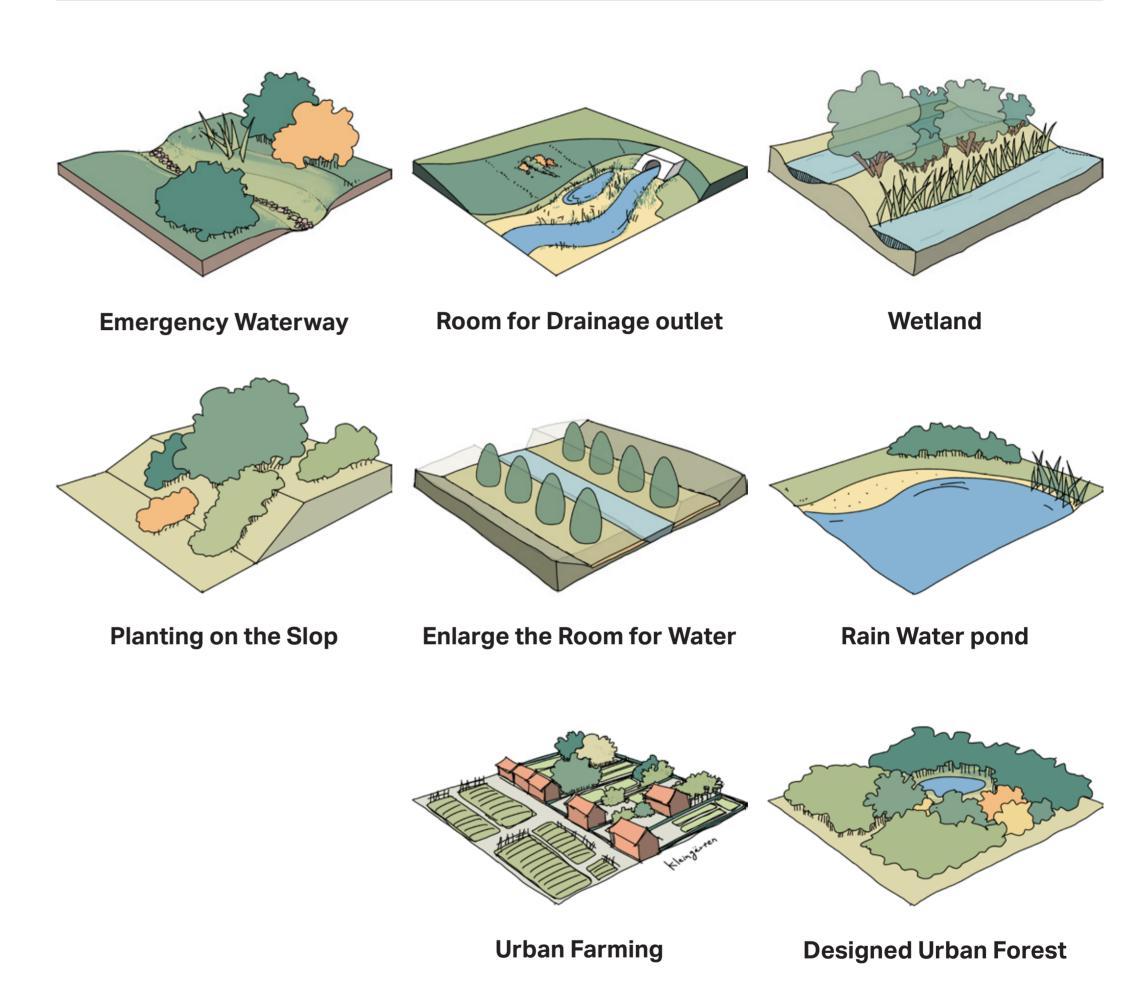
According to Handbuch Stadtklima from NRW

Problem Solution A. Extreme Precipitation Reduce the erosion (Rough surfaces slow down runoff) Soil Erosion Planting on the slope Repid, large Infiltration Surface surface runoff **Urban Ponding** Rain water Storage **Emergency waterway Drainage system Emergency waterway** Over load Room for water (Floodable plain) Water level of canal is higer than dike (Pumping is not work) Room for Drainage outlet Room for water (Floodable plain) **Flooding Risk** Second dike system B. Dry Season Artificial recharge through infiltration of excess groundwater from the polder areas **Urban farming (Root penetration)** Urban planting (Rood penetration) **Ground water problem** Rain water storage Permeable surface **Ground water Protection Pressure on water supply** Rain water storage

Depending on the problem and the solution, we can get rich landscape principles and different spatial forms, which can be applied to our design.

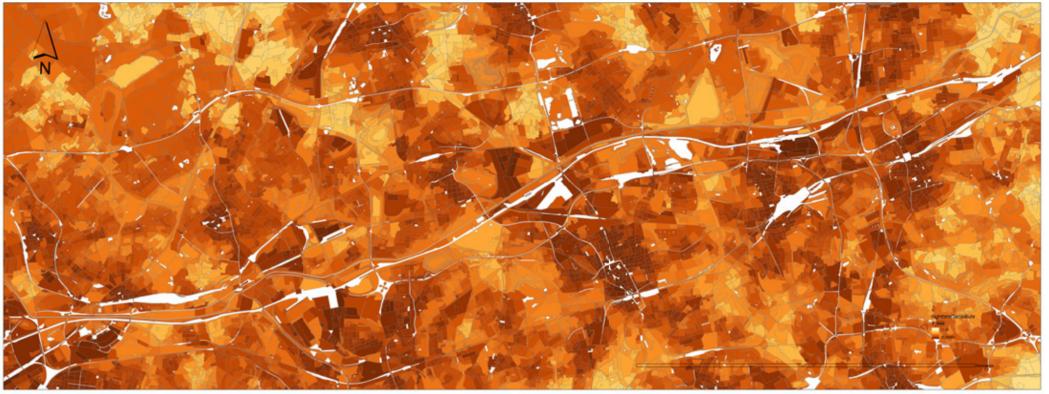
Landscape Principle

Line Volume



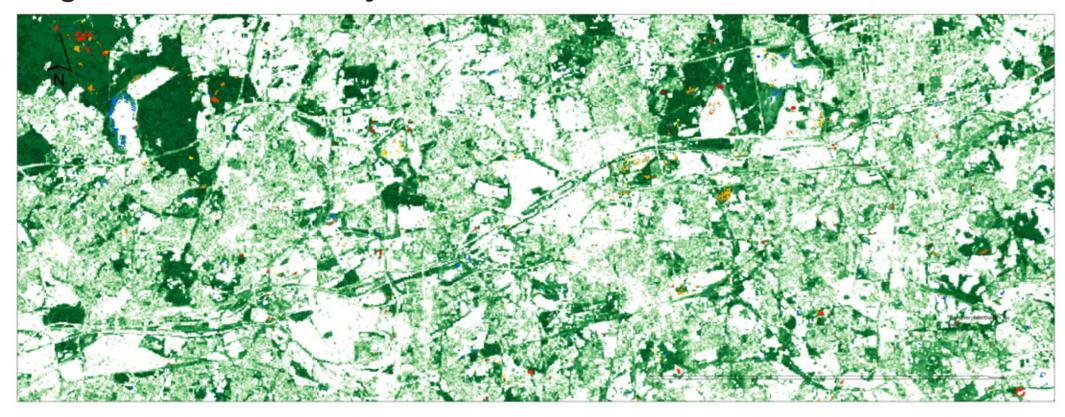
4H Temperature in Emscher area

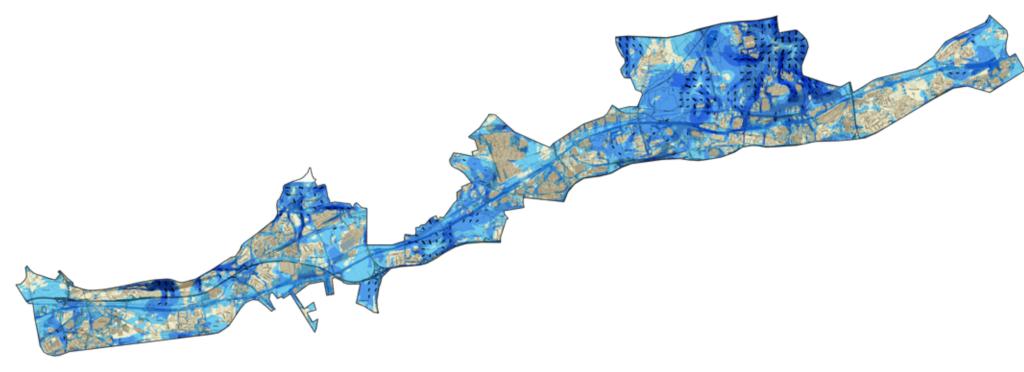




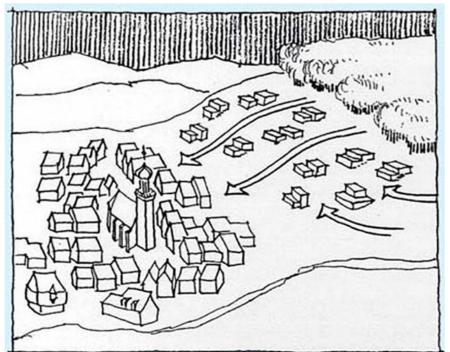
Fragmented, Low density Urban Green

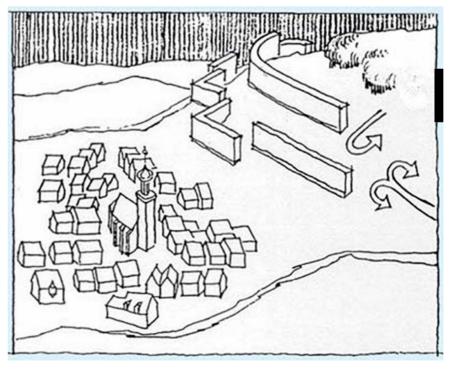
Poor Ventilation and Less cold air generator

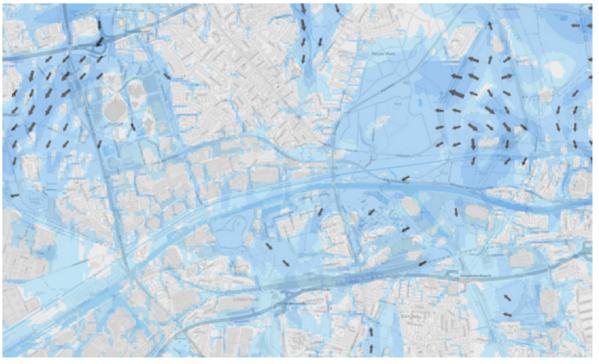








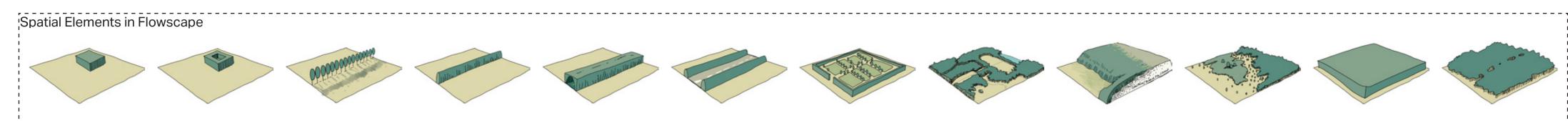


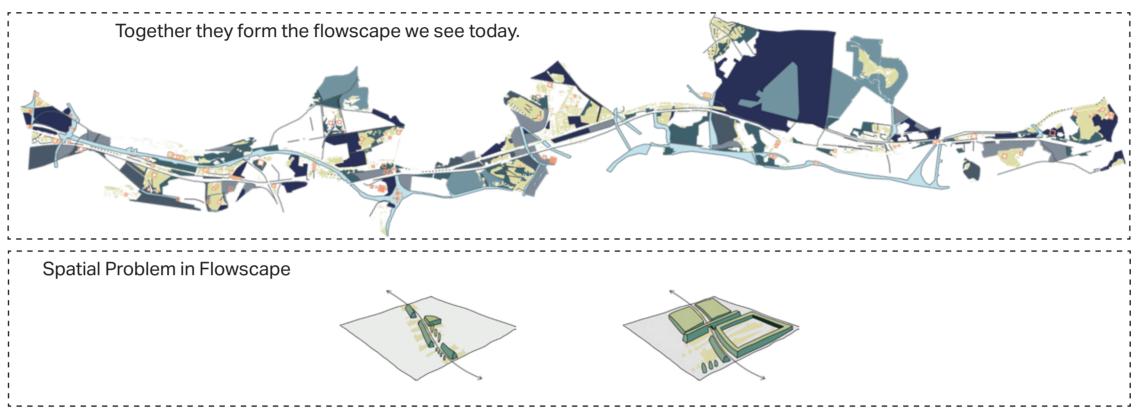


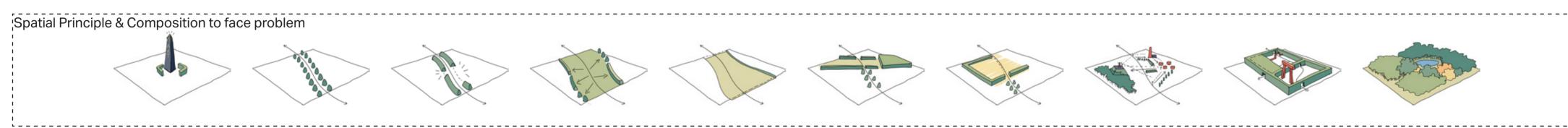
Strategy of Cooling System

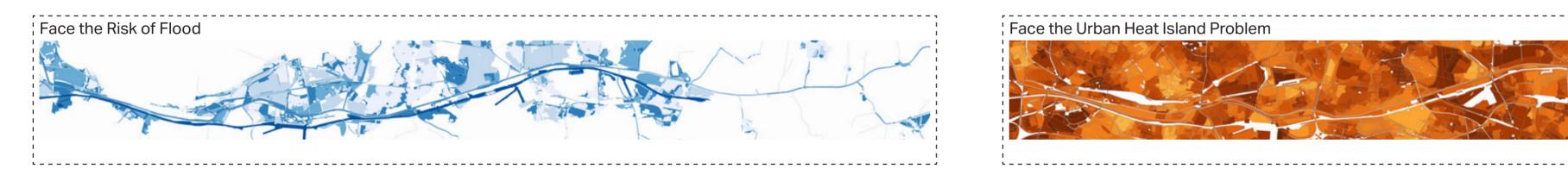
Problem		Solution	Landscape Principle		Volume
Heat Stress	Low rate of Vegetation	More Urban park More Street green Green Roof			
	High Density/Sealing Rate	Green Surface Protect Fresh air area Open water space Limite Land consumption More Open space			
Low permeability Hard Surface		Urban farming (Root penetration) Urban planting (Rood penetration) Water surface Rain water storage		Urban Farming	Urban Planting Shade
		Permeable surface	Air Filter	Water Surface	Oasis
Poor Ventilation		Unlocking the cooling potential of forests and heaps More Wind way (open) Keep Slopes free Fresh air filter	Seneral Marian M	0000 Desired Russian Pile Heap	
Low Cold Win Generate at n		Unlocking the cooling potential of forests and heaps More Wind way (open)	Wind Way	Heap as Generator	Wind Collect

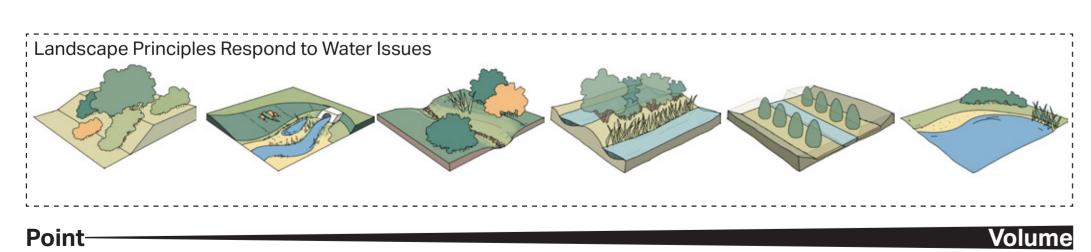
Frame

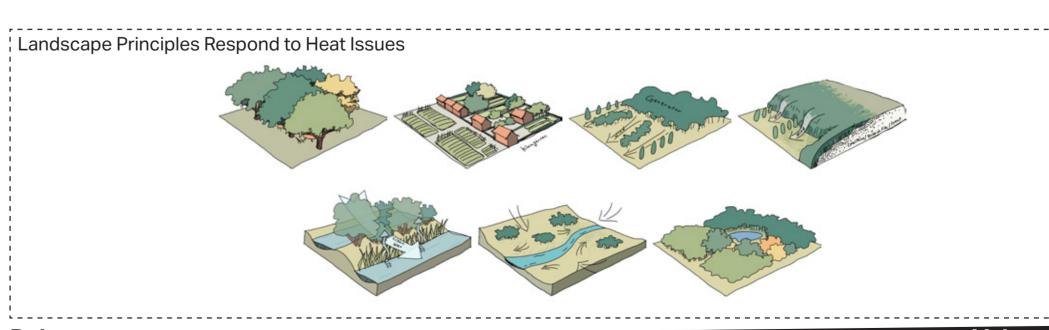


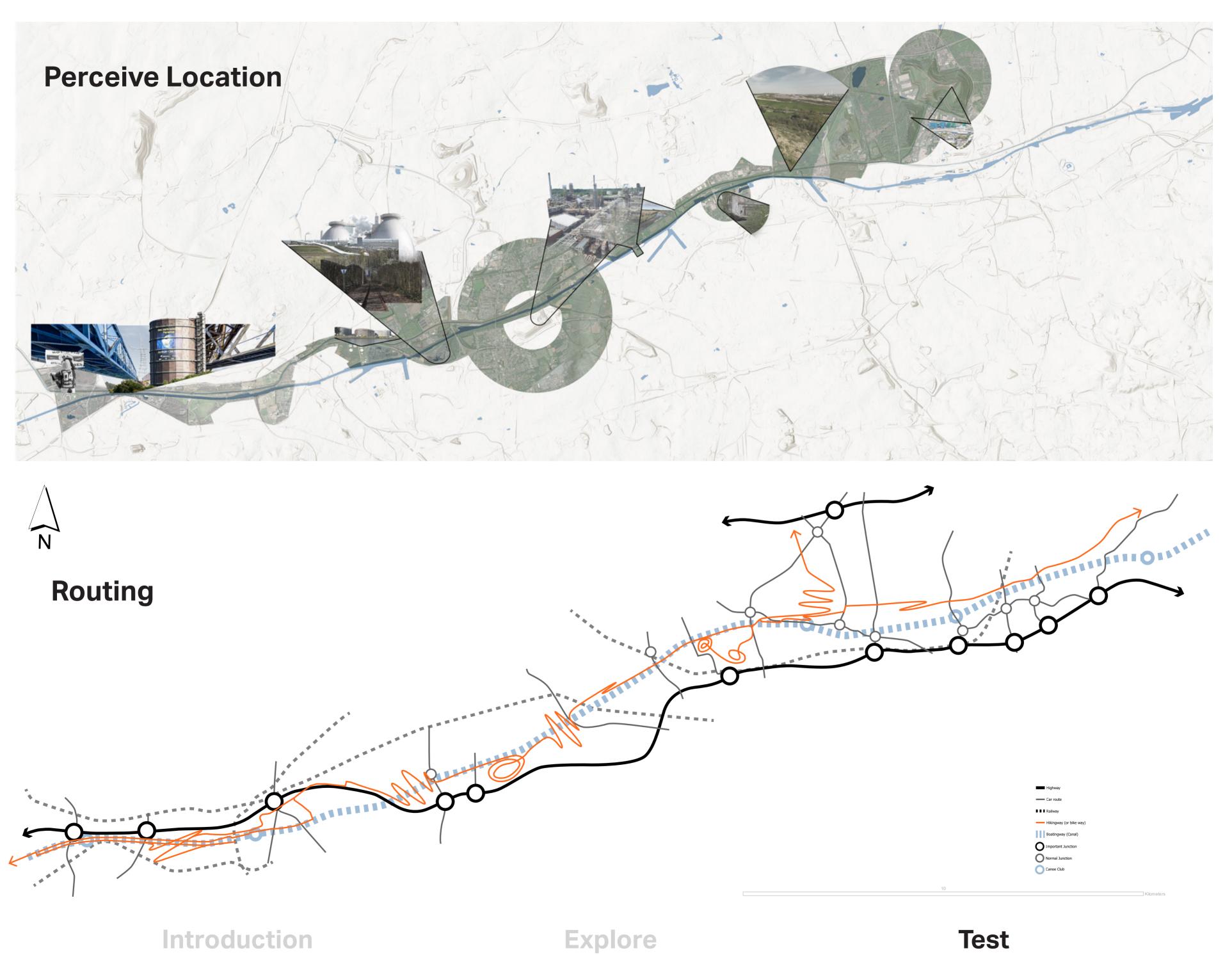


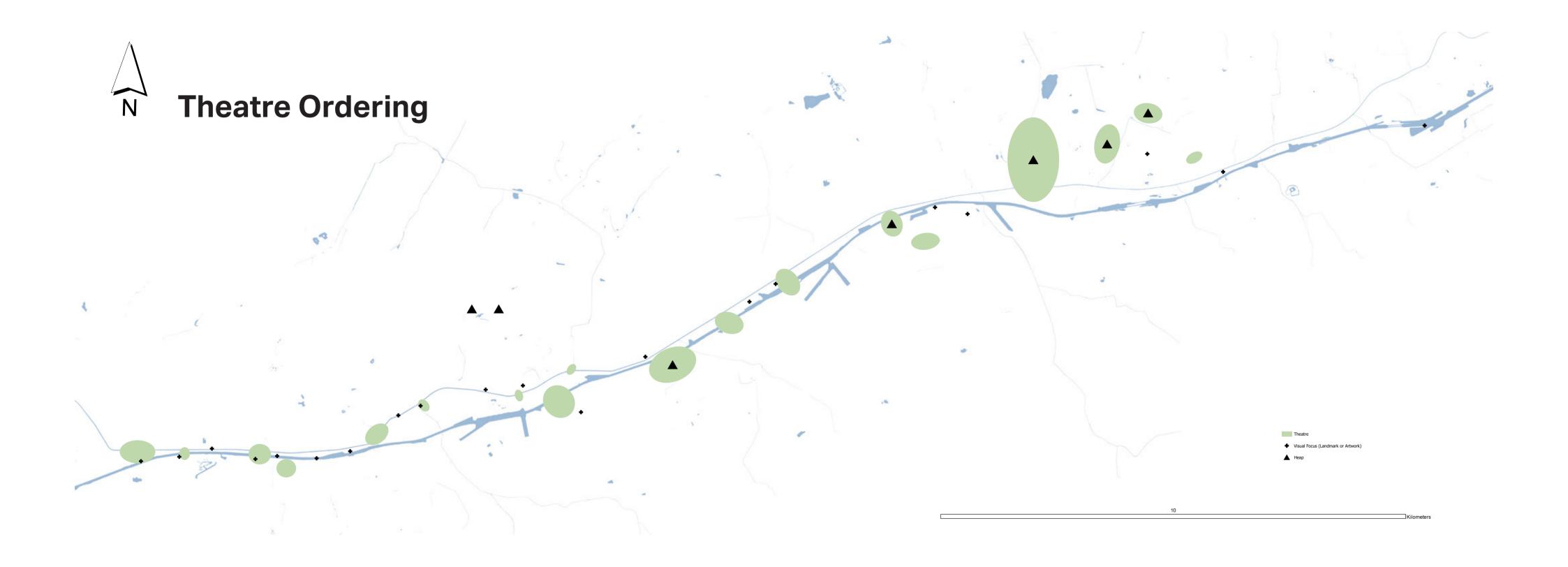








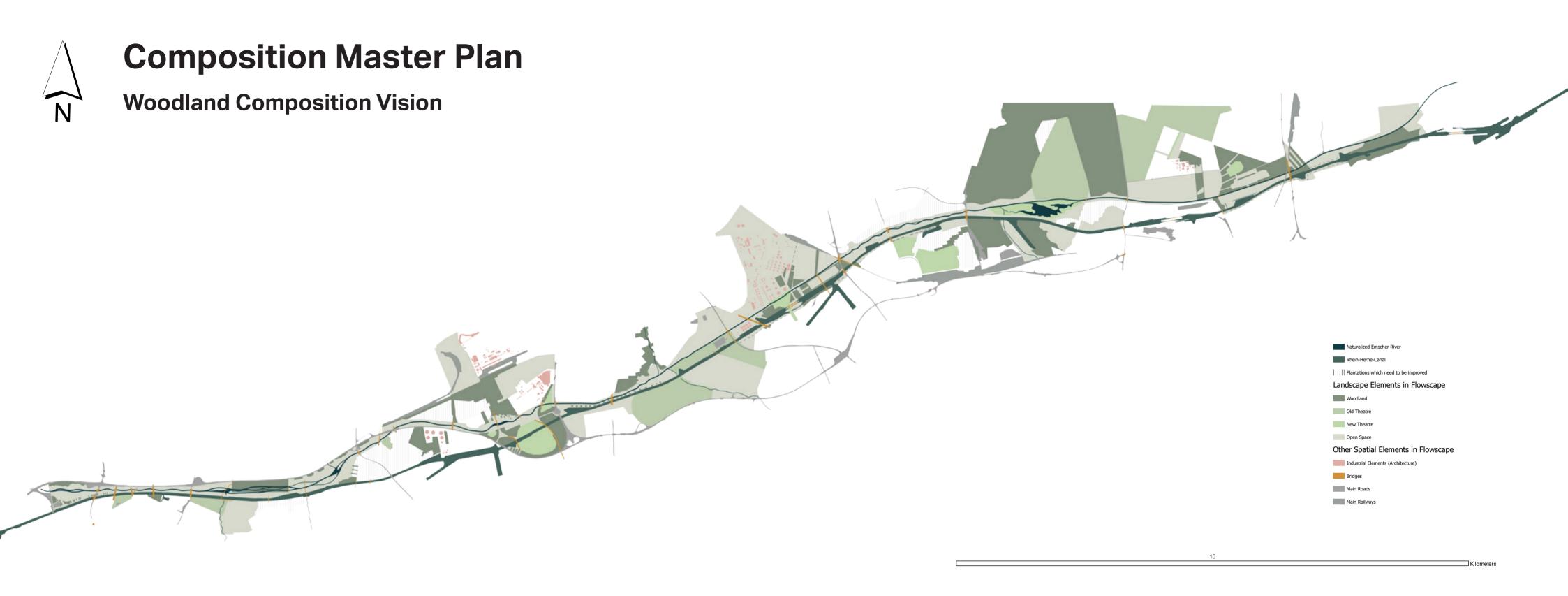


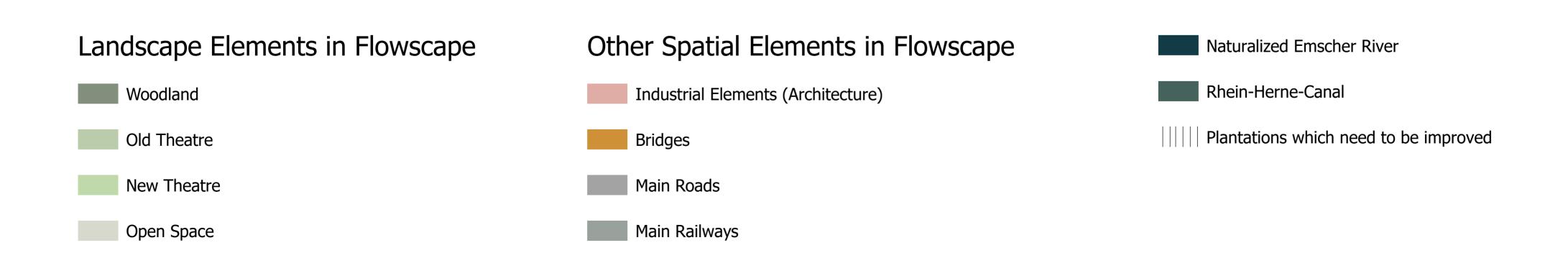


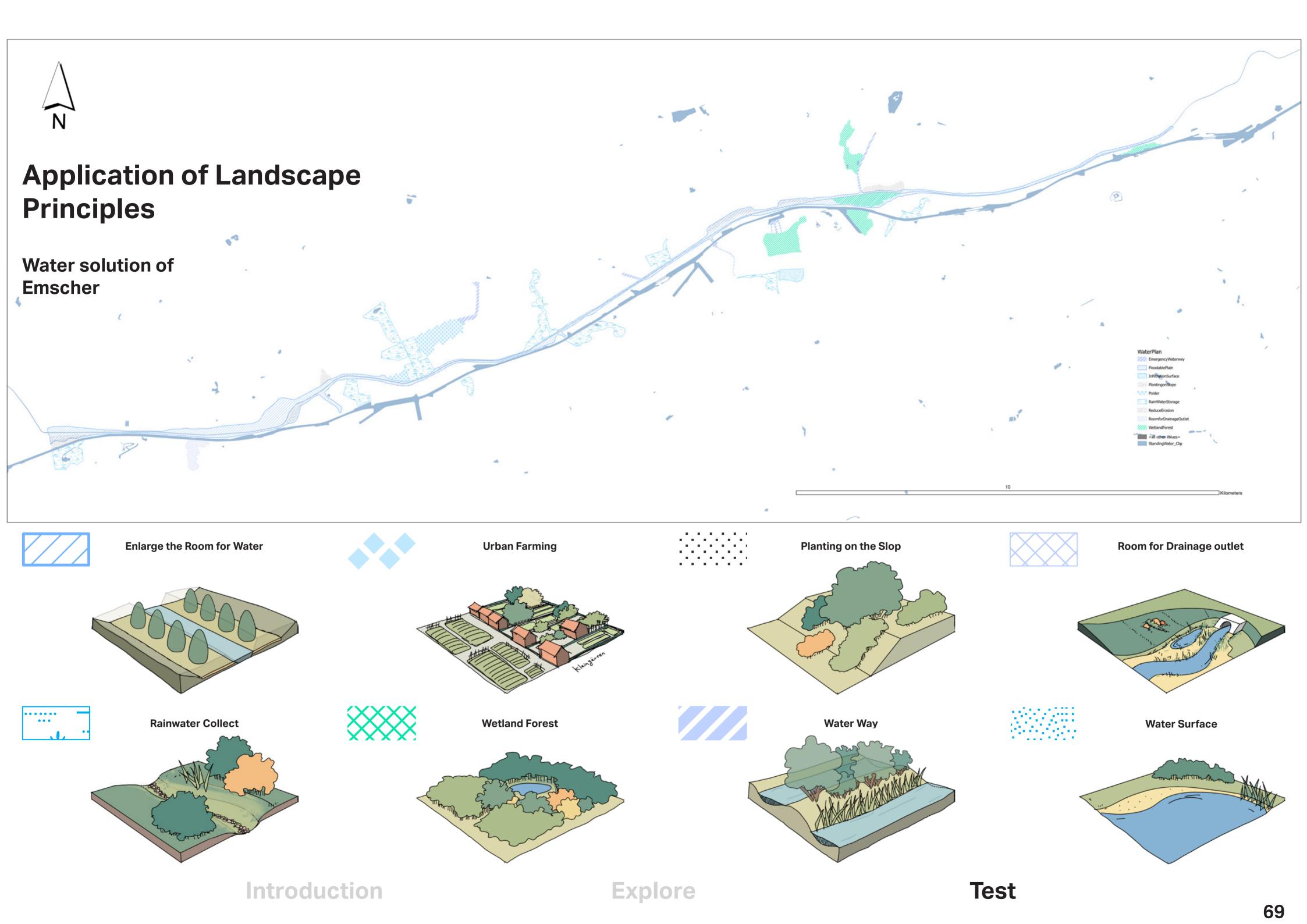


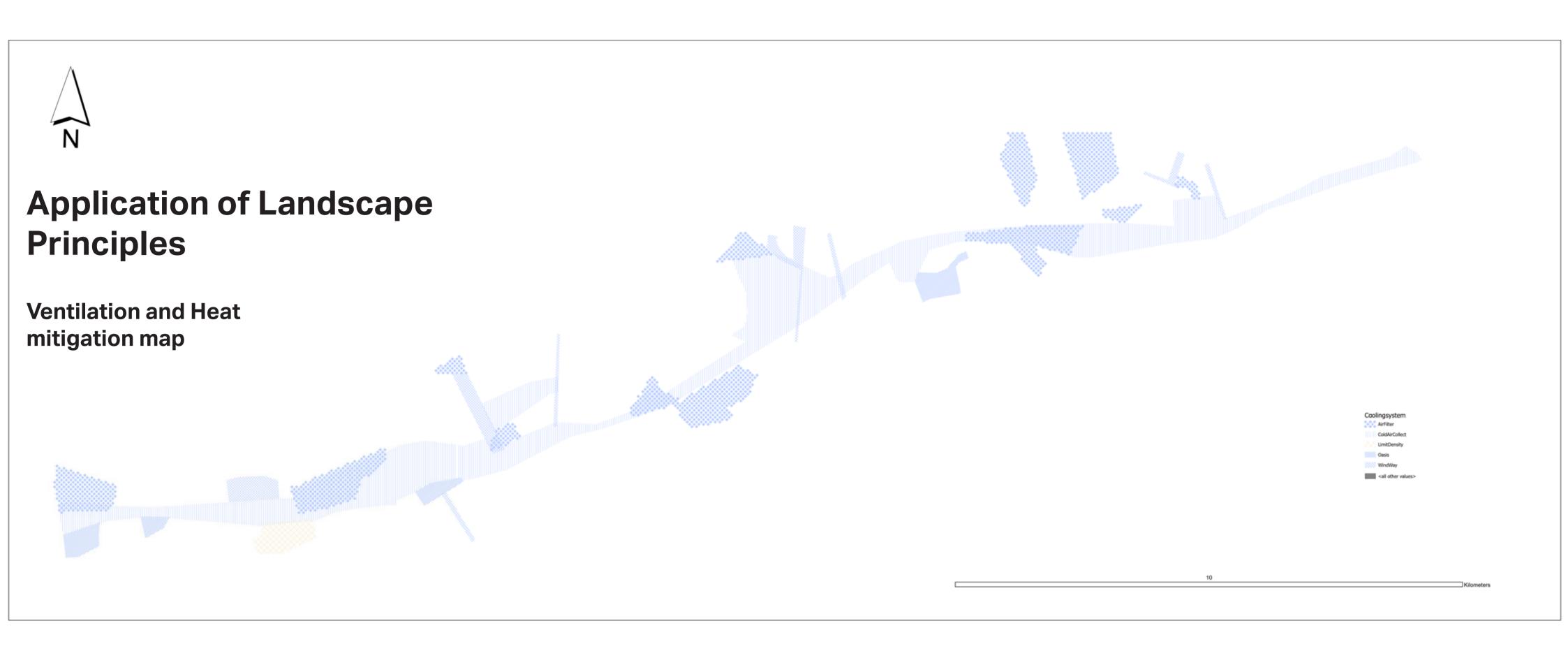


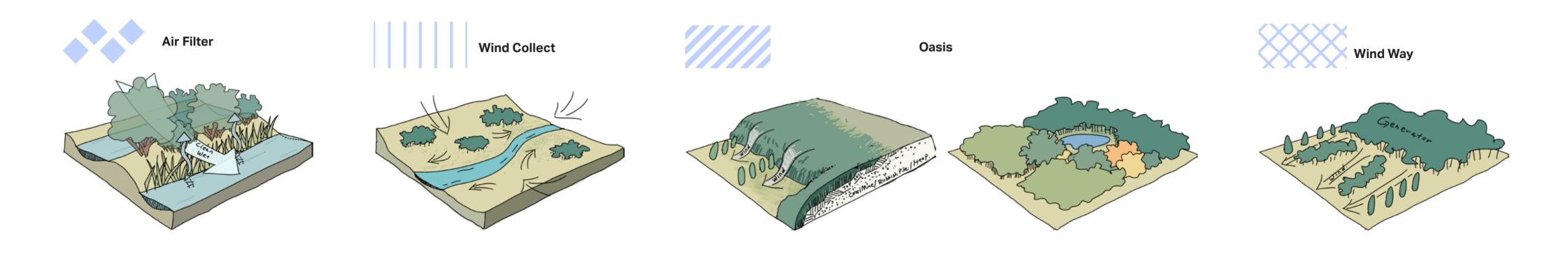
Introduction Explore Test



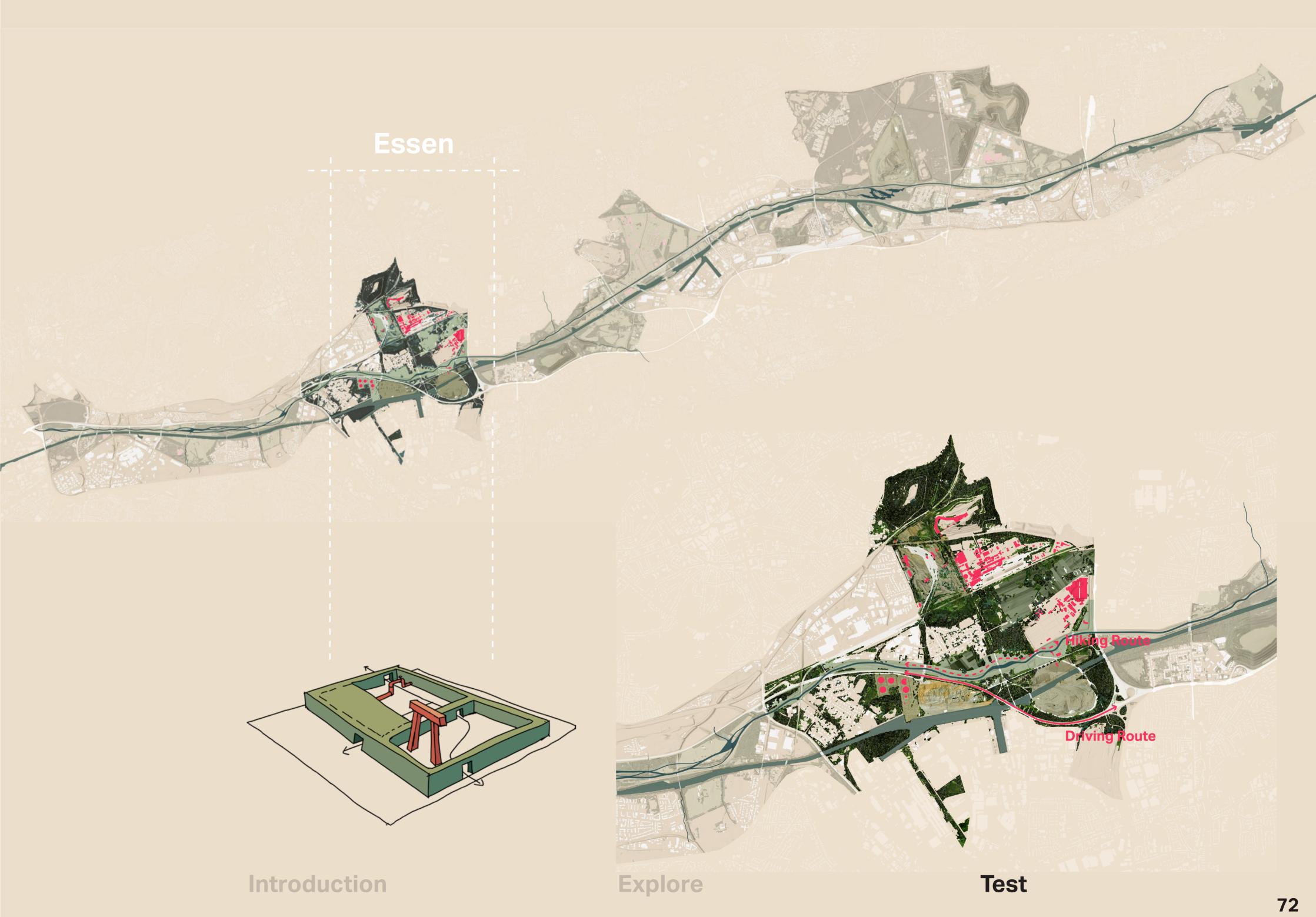


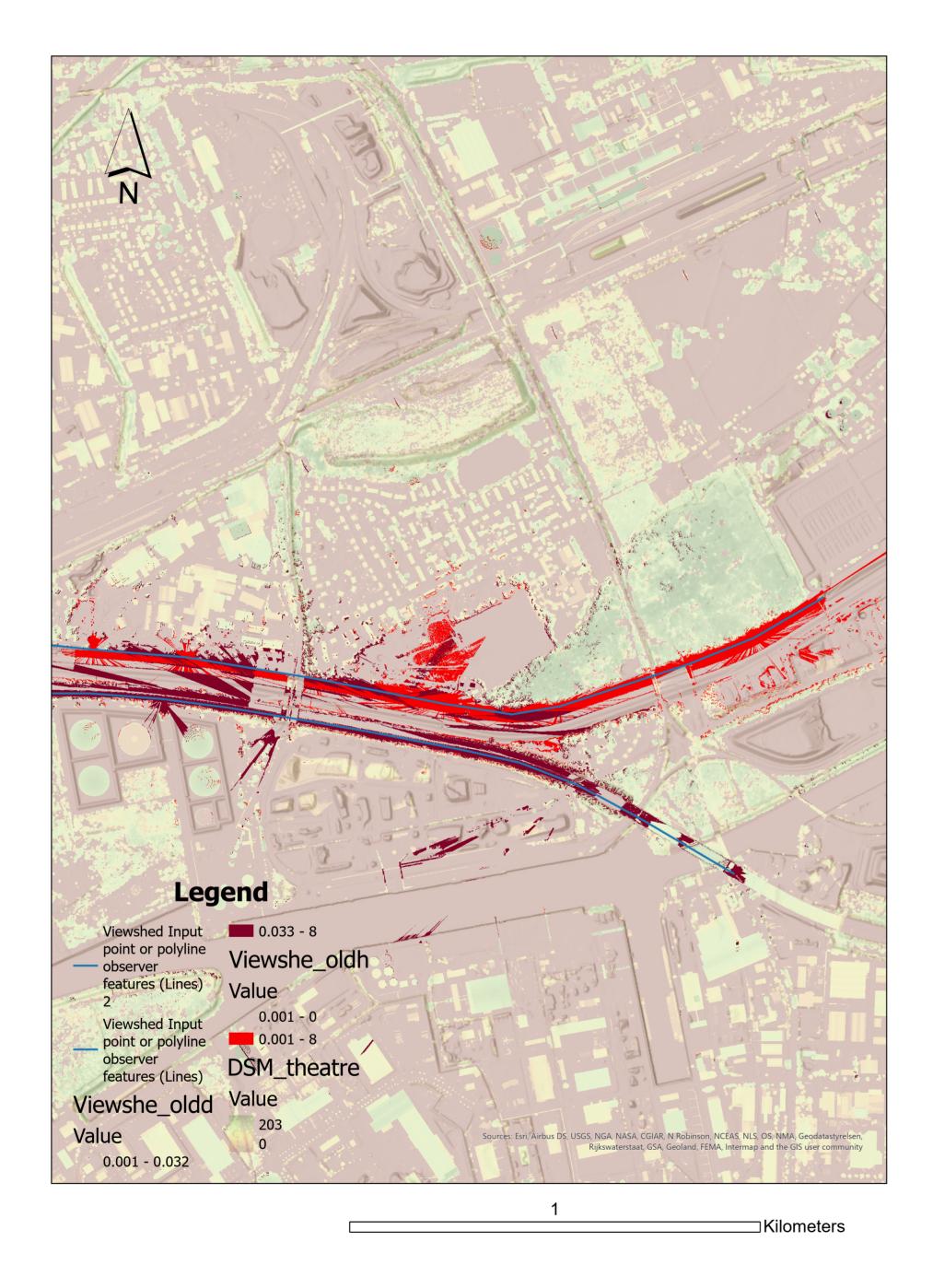


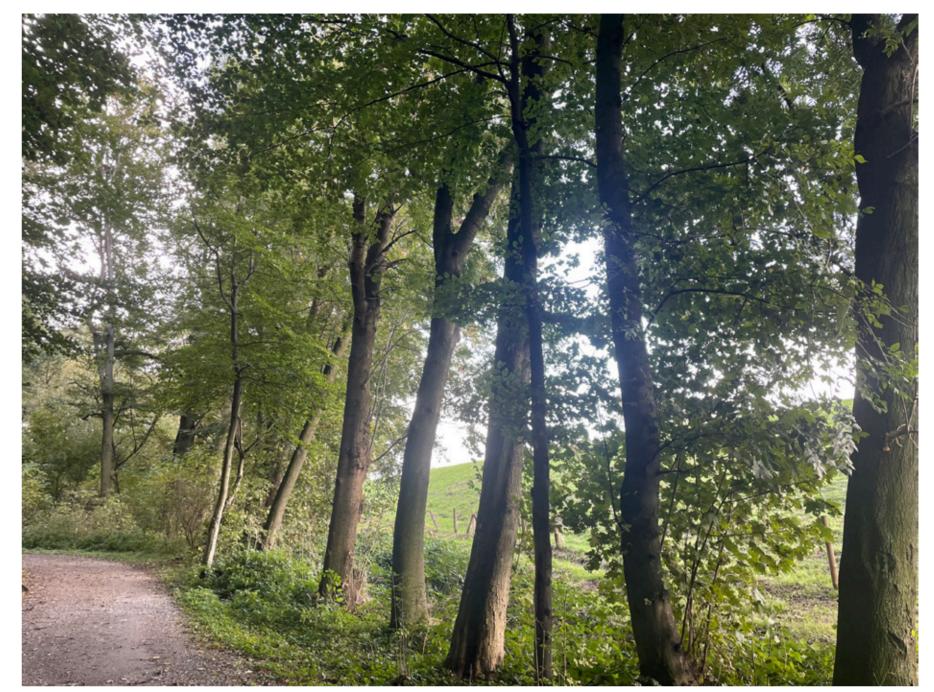






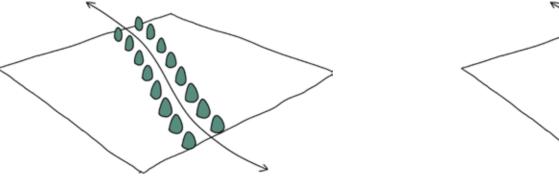


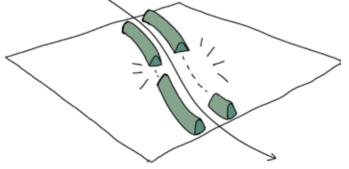




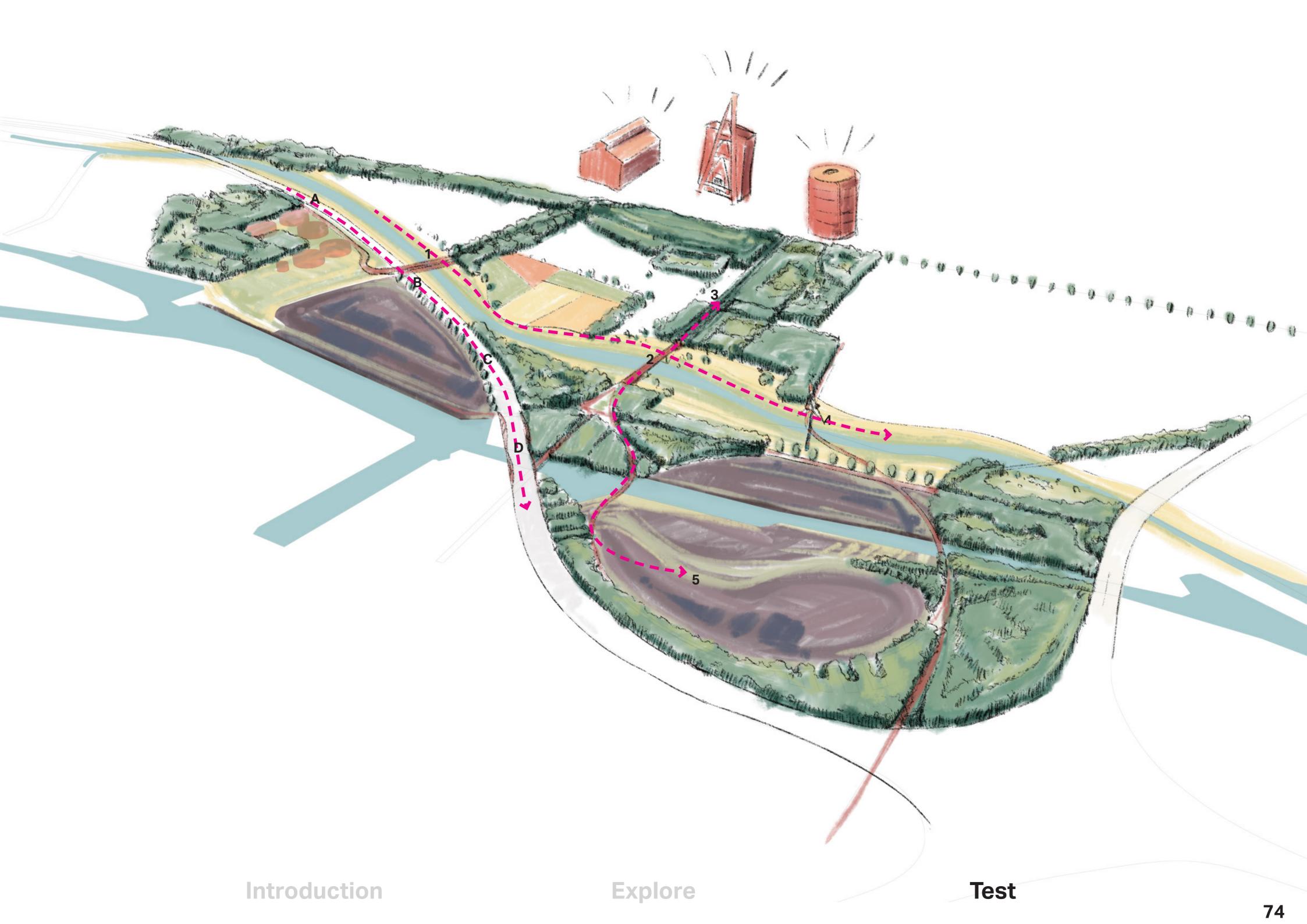
Picture taken while passed by

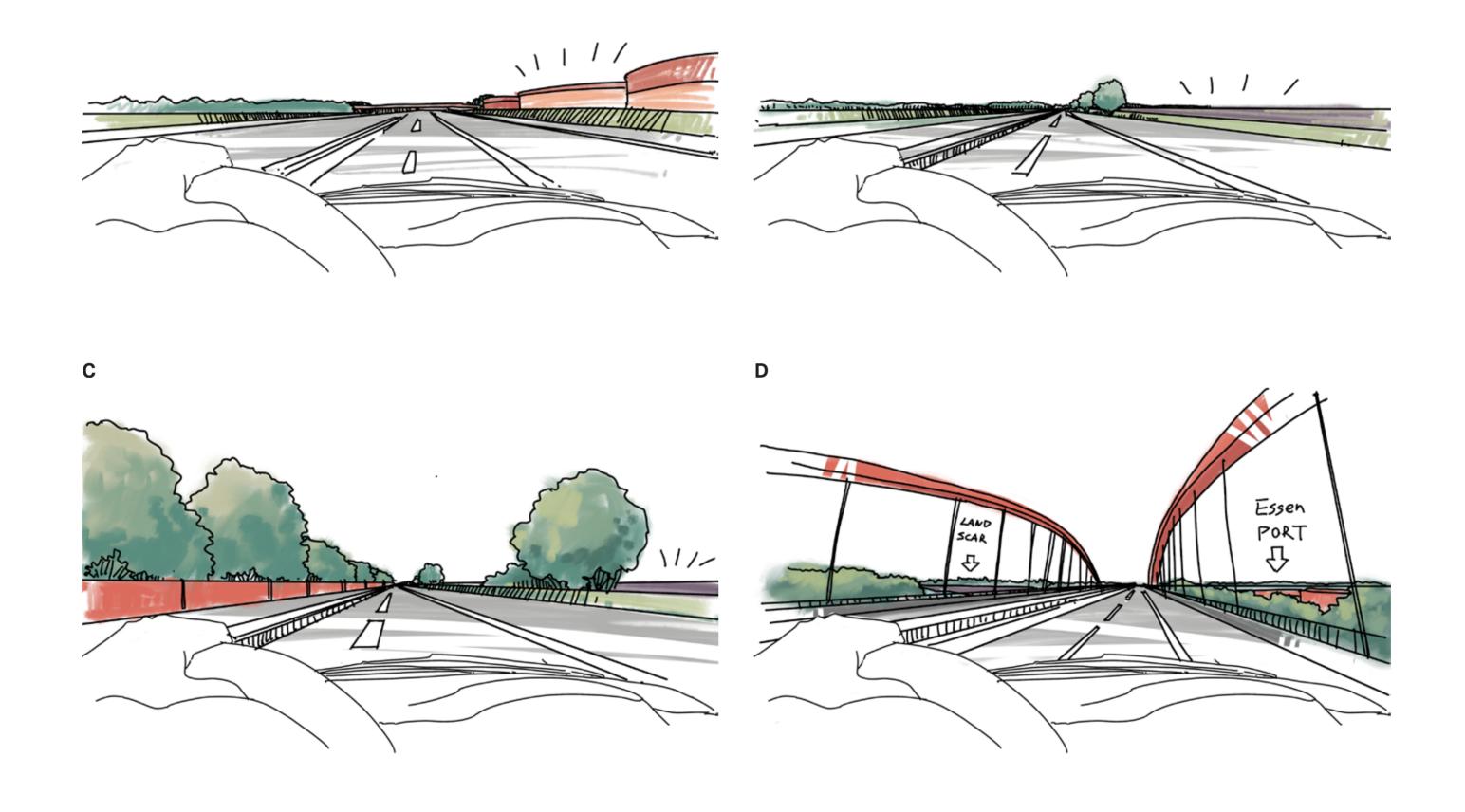
The biggest problem in Essen from the aspect of the visual experience is that many industrial facilities cannot be observed if the Emscher valley is used as a tour route; the A42 road through the Ruhr area also hinders the perception of the area because of the dense woods (line-big line).





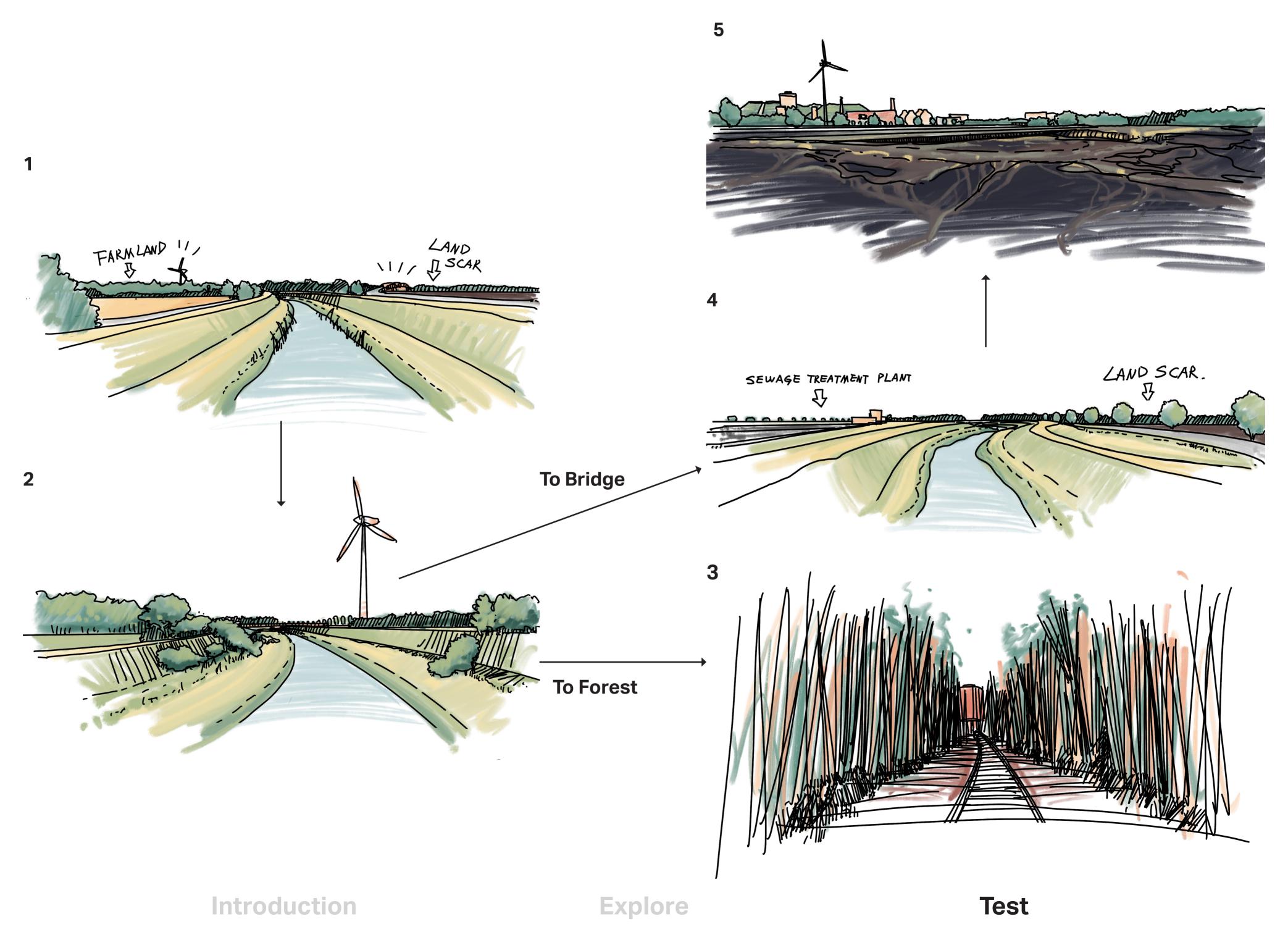
Facing these problems, break part of the big line and increase the planting interval are the planting principles to be observed in this section of Flowscape.

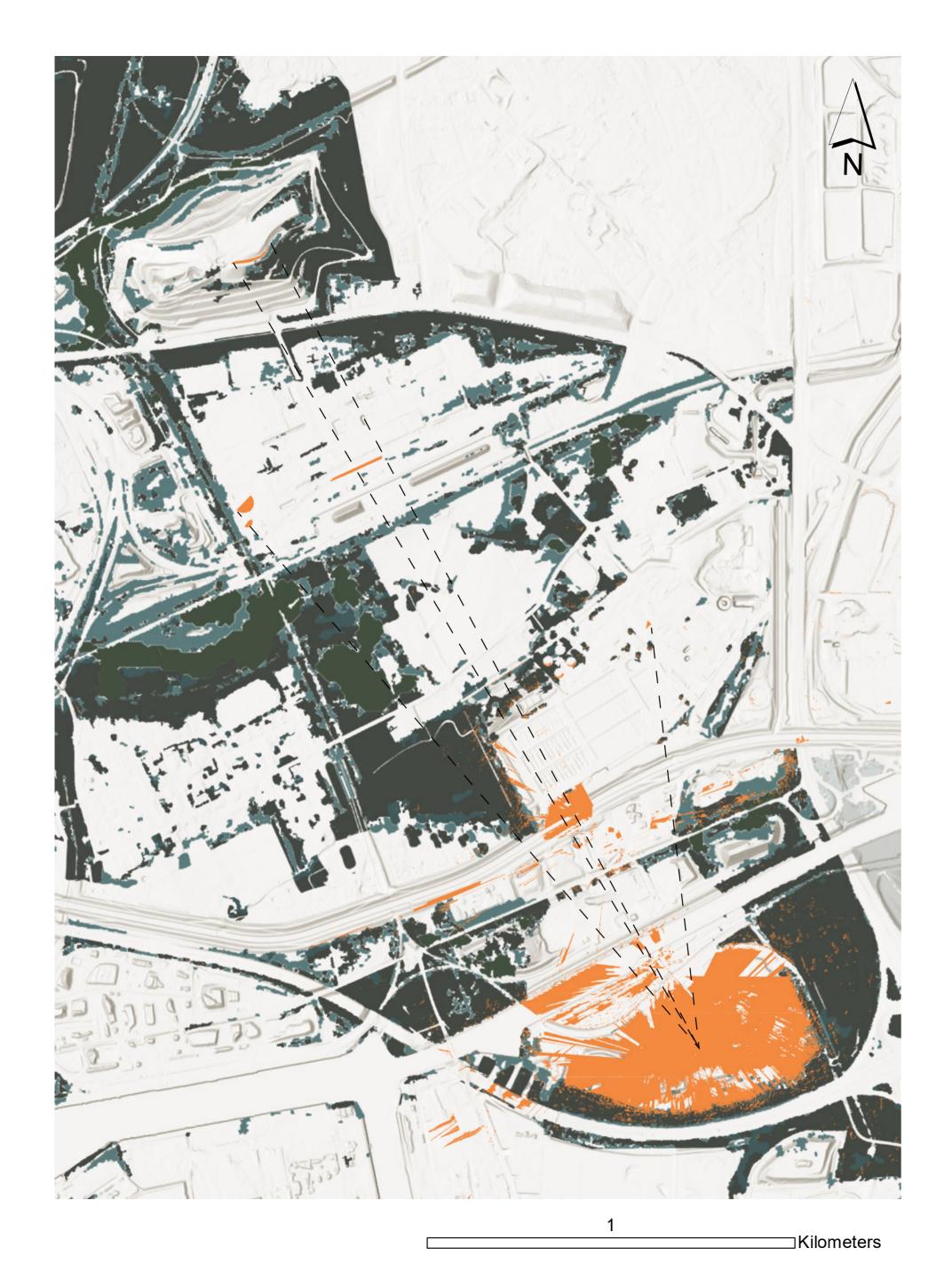




The apparent motion of objects can become a delight in itself.

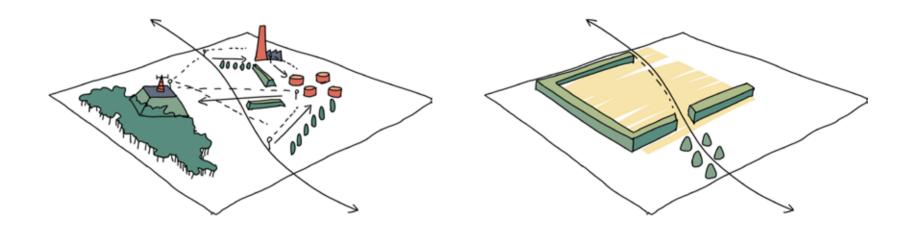
75





Theatre in Essen

This theatre is an important observation point for all the significant industrial facilities north of Essen. Interestingly, it is not a heap far above the surface, nor a man-made tower, but a huge, abandoned brownfield site. In itself this polluted brownfield site is a unique geomorphological destination with a unique landscape. The Northern Industrial Estate is showcased by cutting down the trees that block the view and planting trees to match.

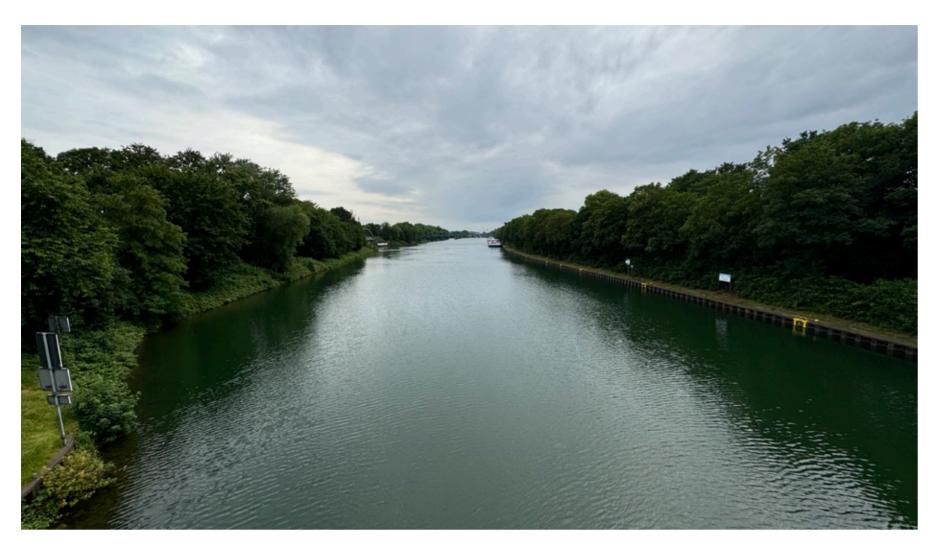


The sightline design is used as a basis for opening up the closed block forest to show industrial features to the visitor in order to achieve the design goals.



Introduction Explore Test

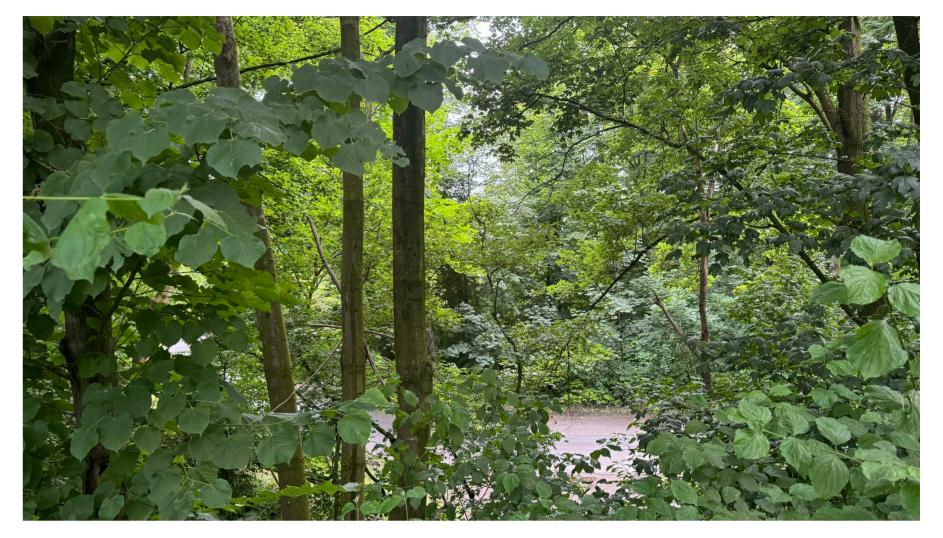




1, Volume of woodland in Gelsenkirchen



2, Path along the canal, like go through the pipe, can not perceive the environment

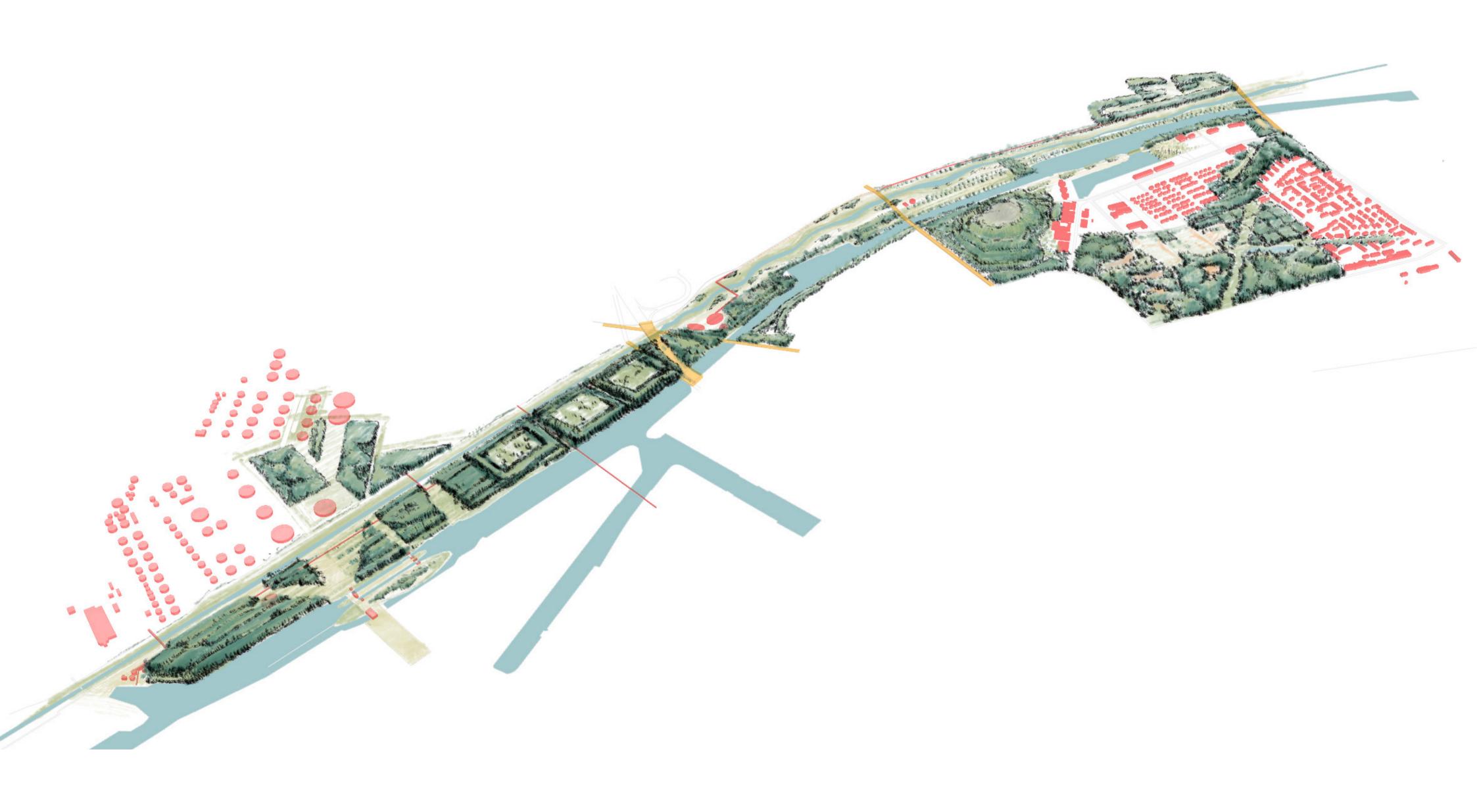


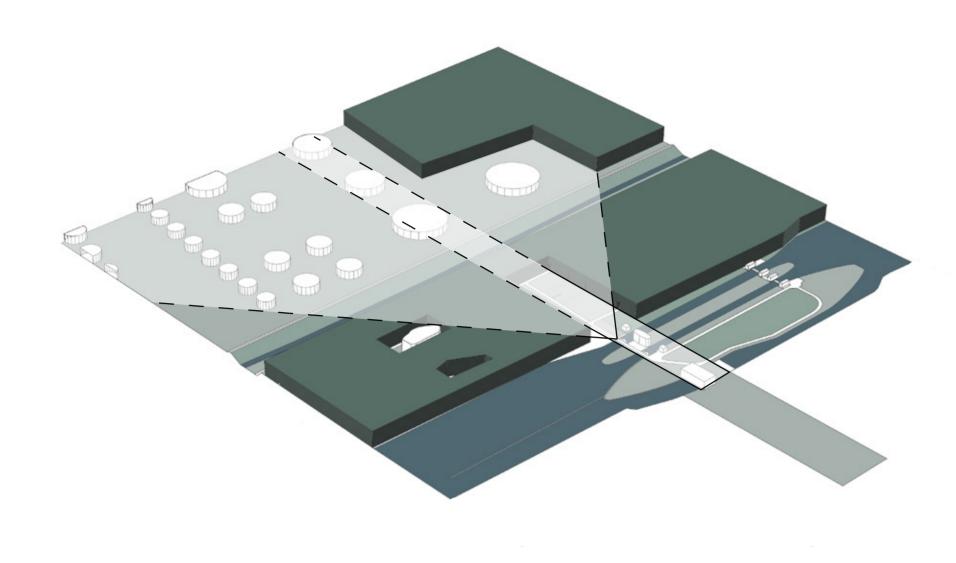
3, The pipe itself can not be perceived

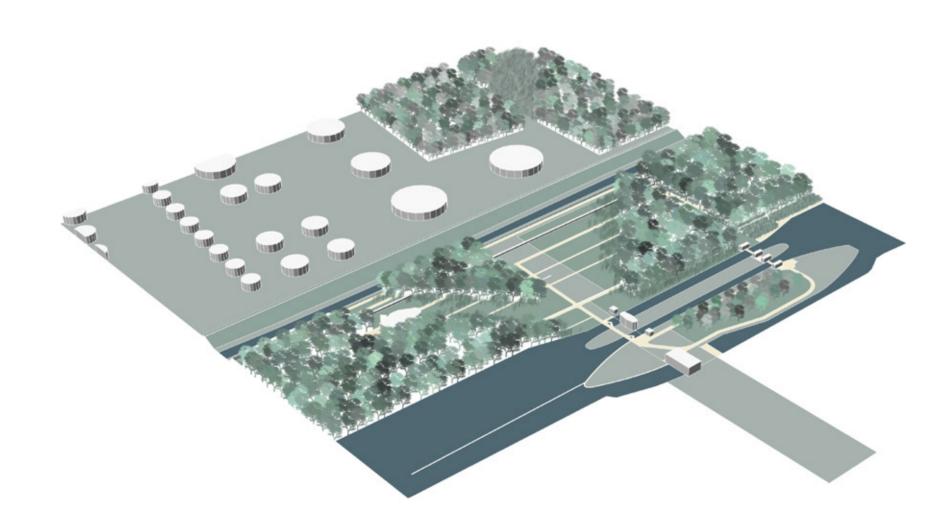
The Emscher river in the Gelsenkirchen section is divided by dense woods, which makes it impossible to perceive the waterways on both sides even from the Emscher island in the centre. As shown in Figure 1, the canal is surrounded by dense woods on both sides, resulting in the north and south banks (pedestrians as observers) and the waterway itself (ships as observers) being separate from each other, whatever the direction of view. Even in the case of a factory next to the river, such a dense forest can completely block the view of its observation.

The cyclist who travelled through it was even more easily getting bored, with a whole 2,000 metres of unchanged forest pipe, no river in sight, no buildings, and the occasional un-signposted road junction. This was one of the most disappointing sections of the expedition for me, and without double-checking the GPS, a cyclist could easily miss the entire city (as I experienced). Other than being able to observe the new city of Bismarck, the rider does not get a sense of any regional identity. This is for cyclists travelling east-west, but for cyclists travelling north-south, they won't even notice this boring greenway.

It is therefore important to base landscape interventions in the Gelsenkirchen section of the Emscher river on visual experience.

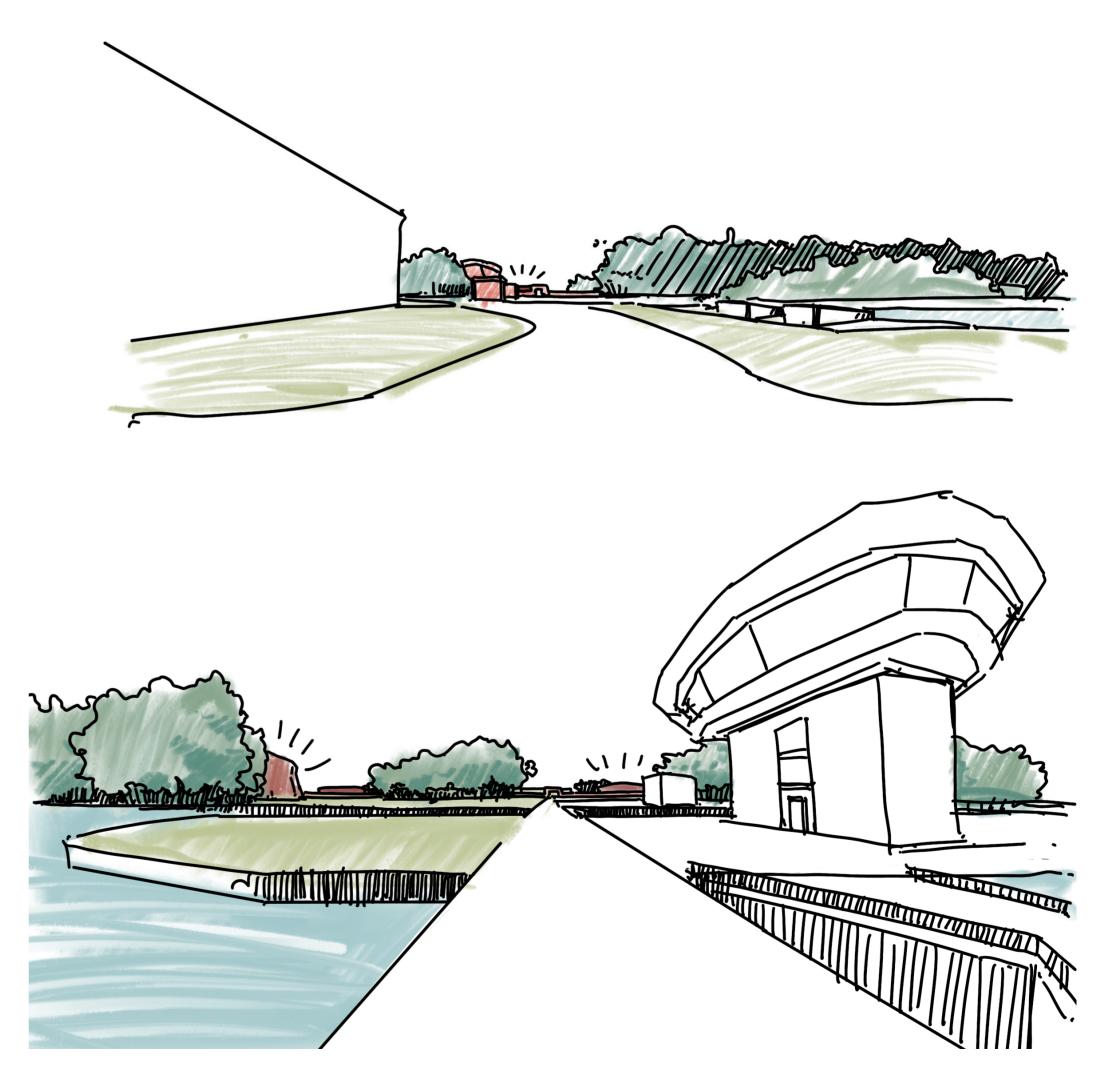


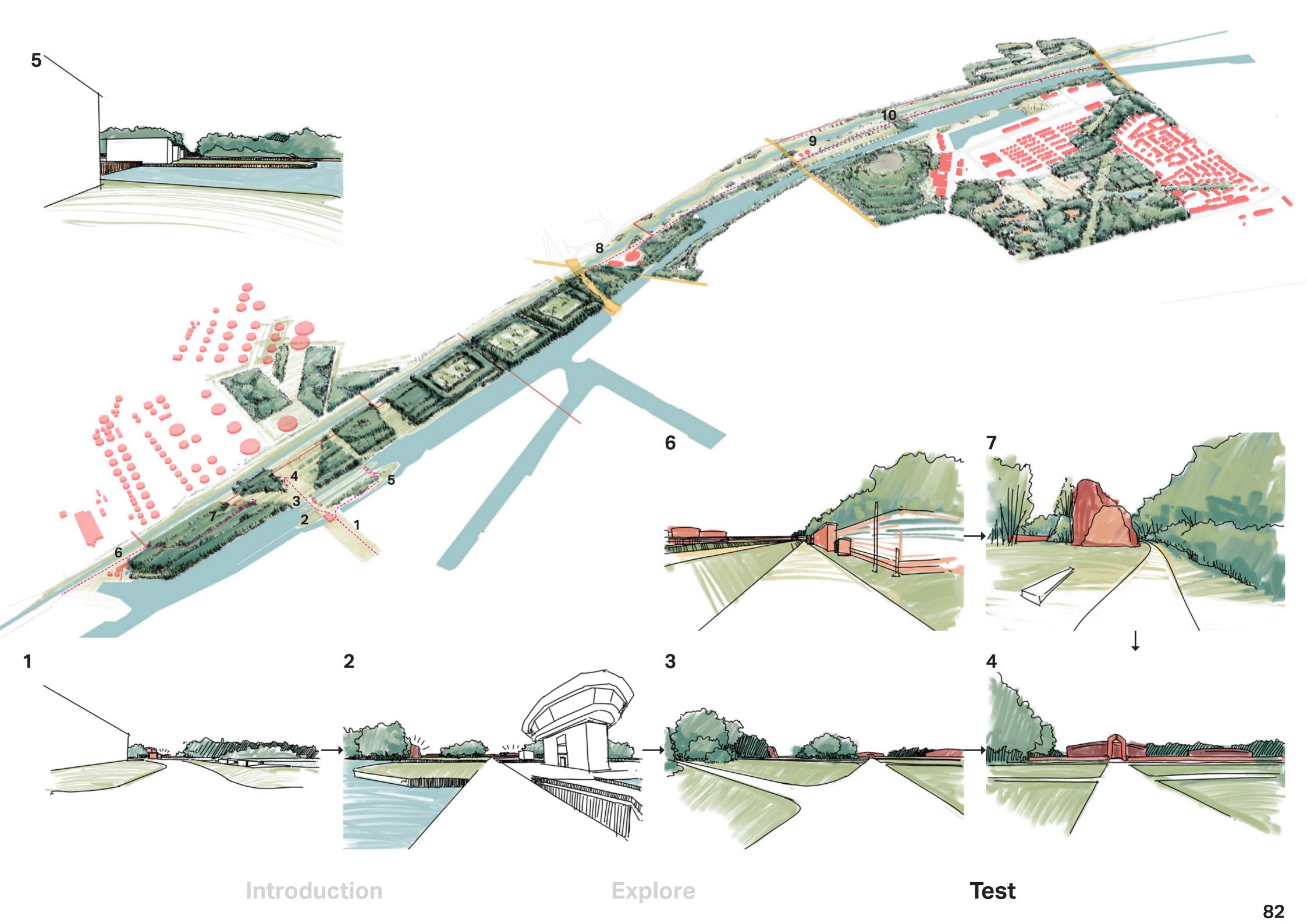


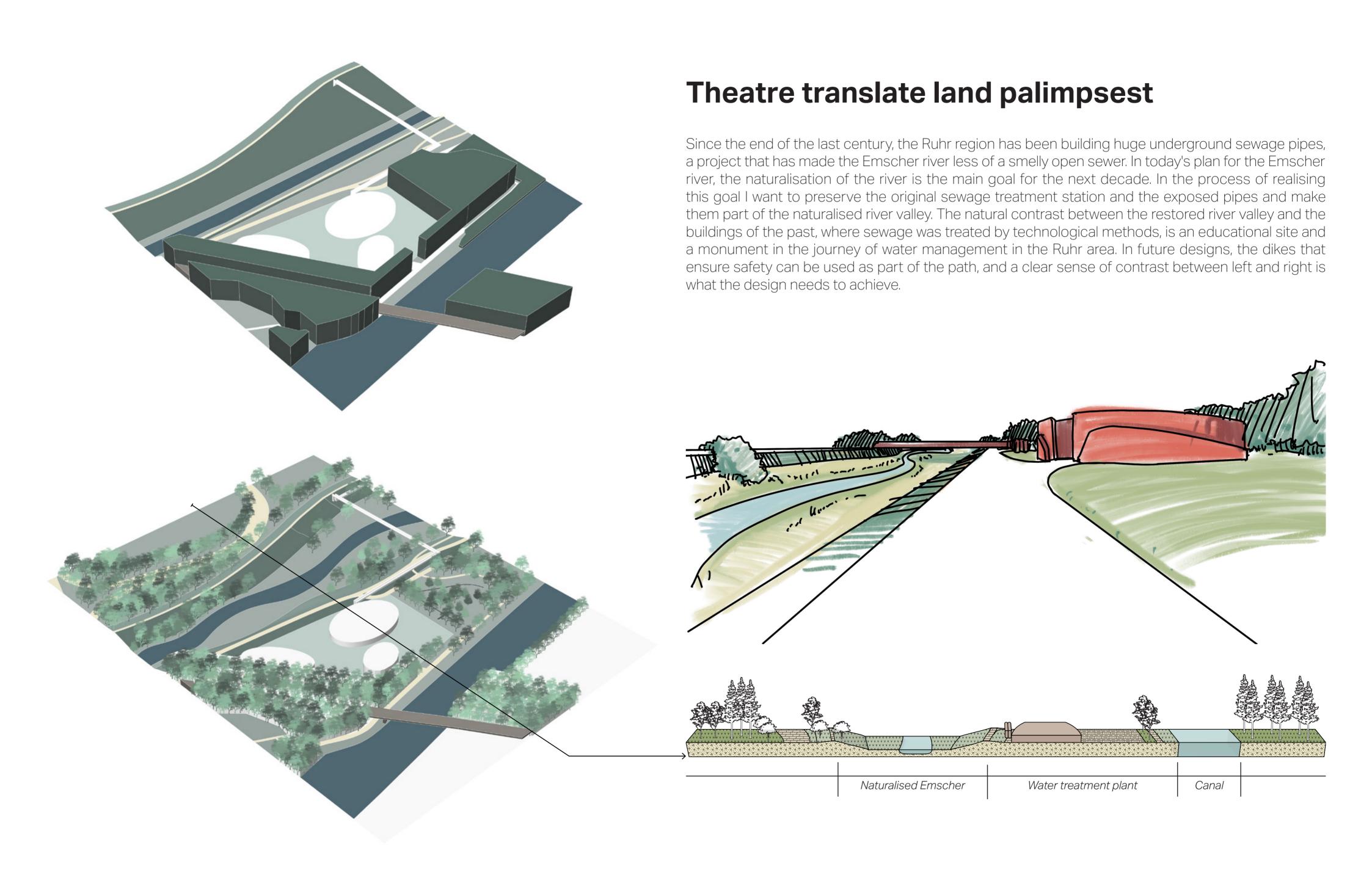


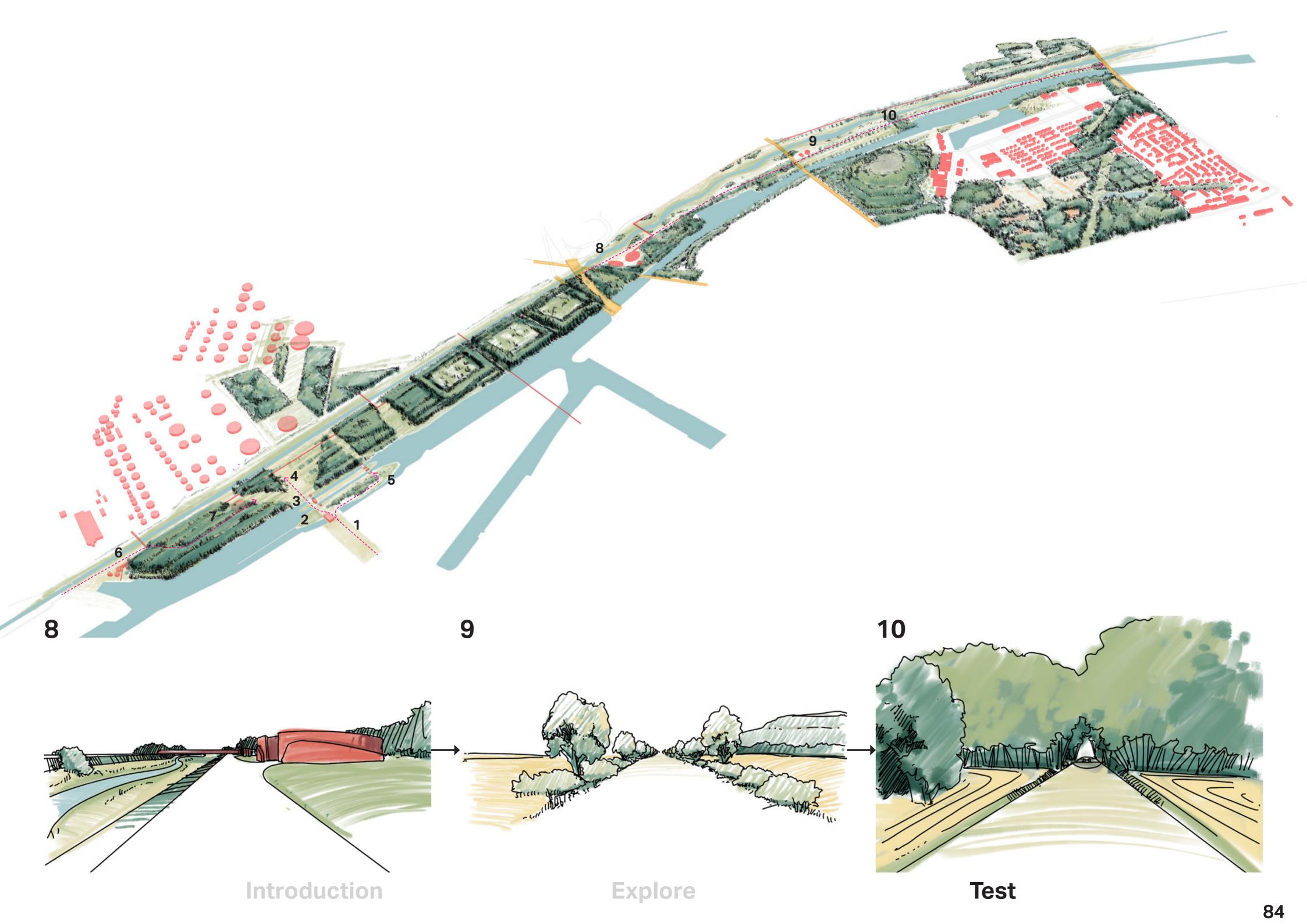
Theatre guides visual line

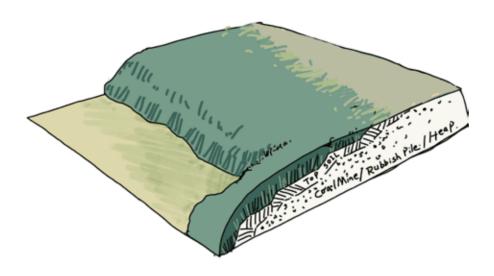
Today, the largest power plant still in operation in the Ruhr area, with a large amount of green space on the site, is located in Gelsenkirchen, next to the Emscher river, a great industrial facility that deserves to be proudly displayed. The design uses the locks of the canal, the point of intersection of land and water transport, as a starting point (and thus a viewing point), and directs the view through planting to help the visitor observe the plant from a distance. At the same time, the monolithic artwork (designed by OLAF NICOLAI, DOUGLAS GORDON & MOGWAI), which is hidden in the dense forest, is presented to the outside world. In order to maintain the atmosphere of the artwork, the line of sight was designed in such a way that the boulder is not completely exposed, but only partially.



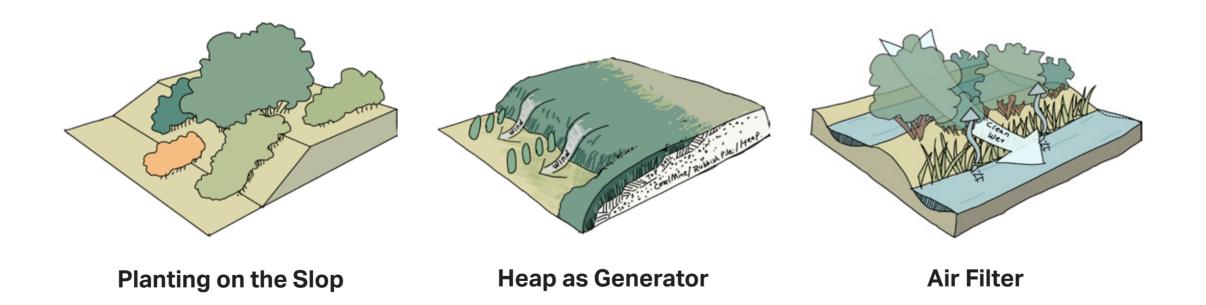






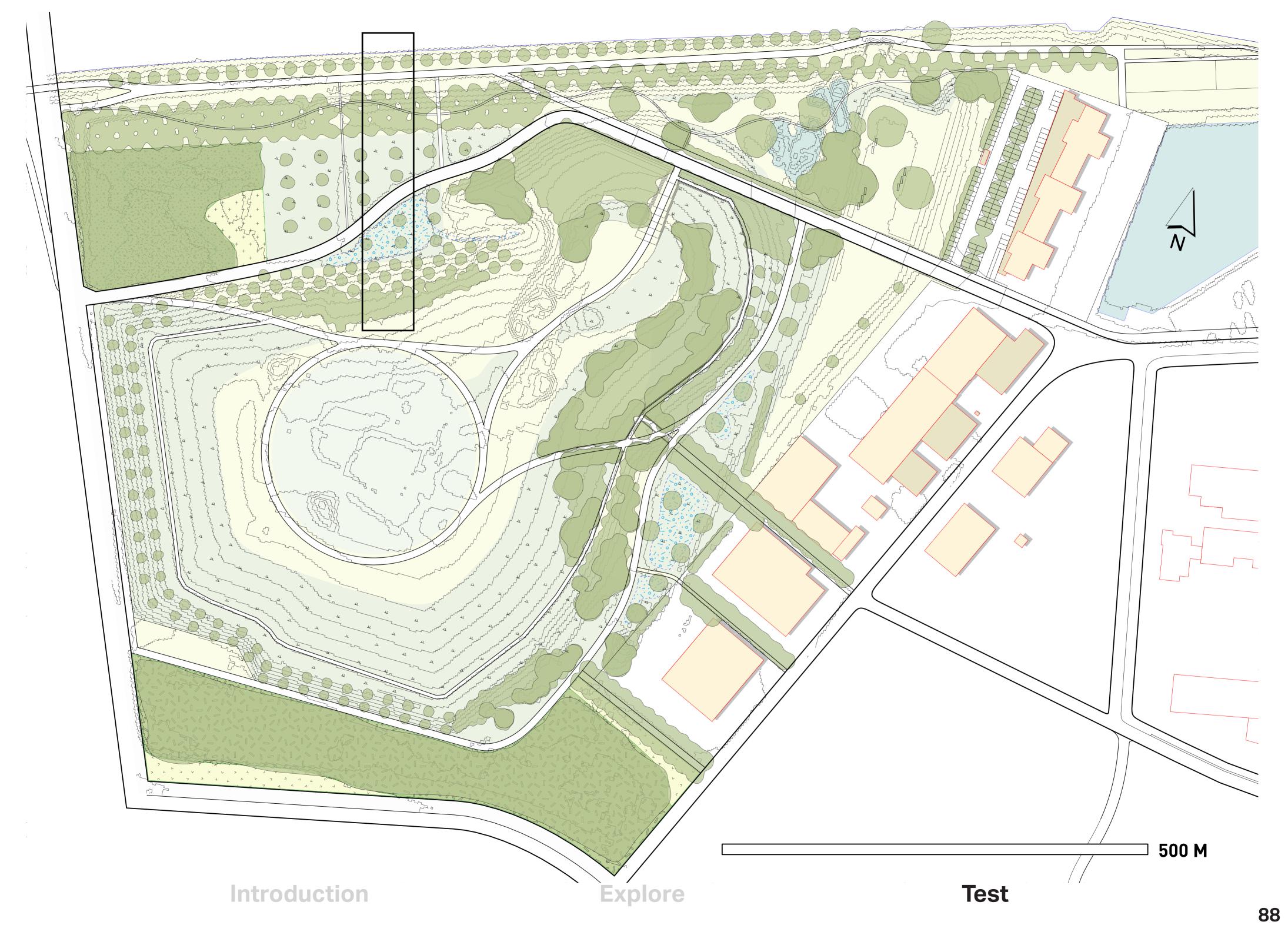


Group-Heap

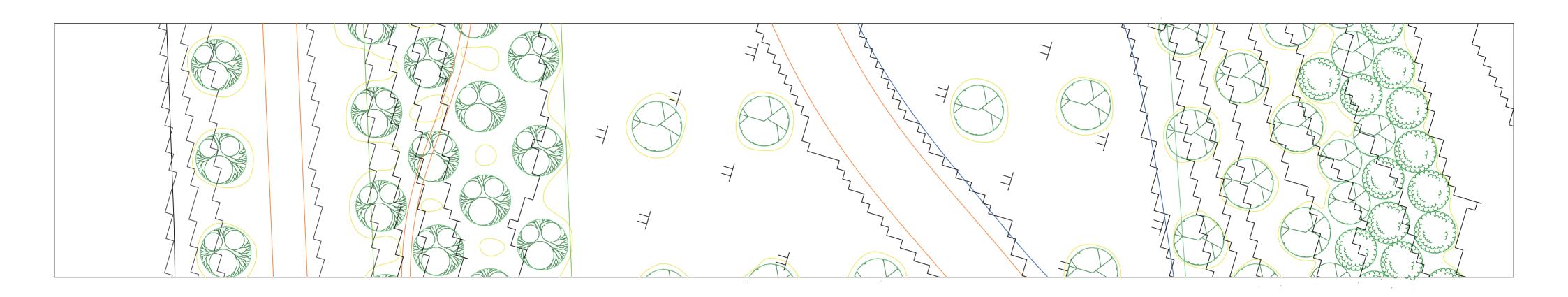


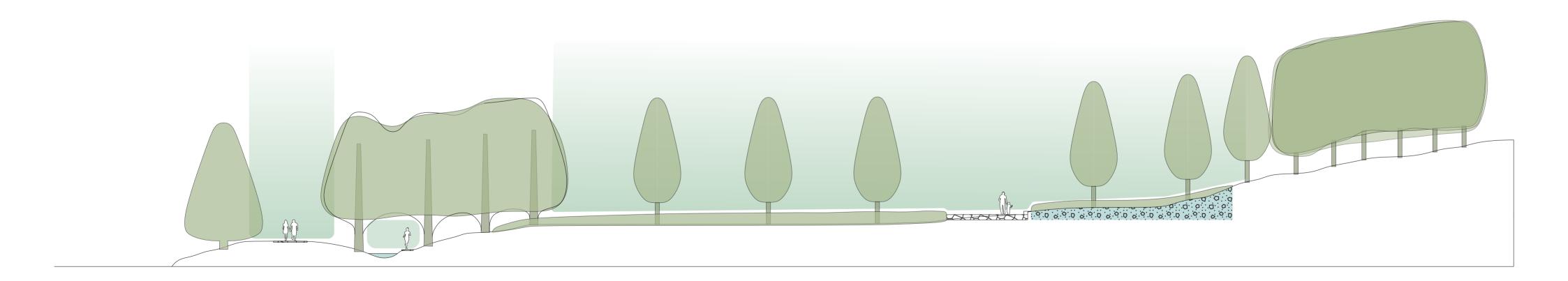


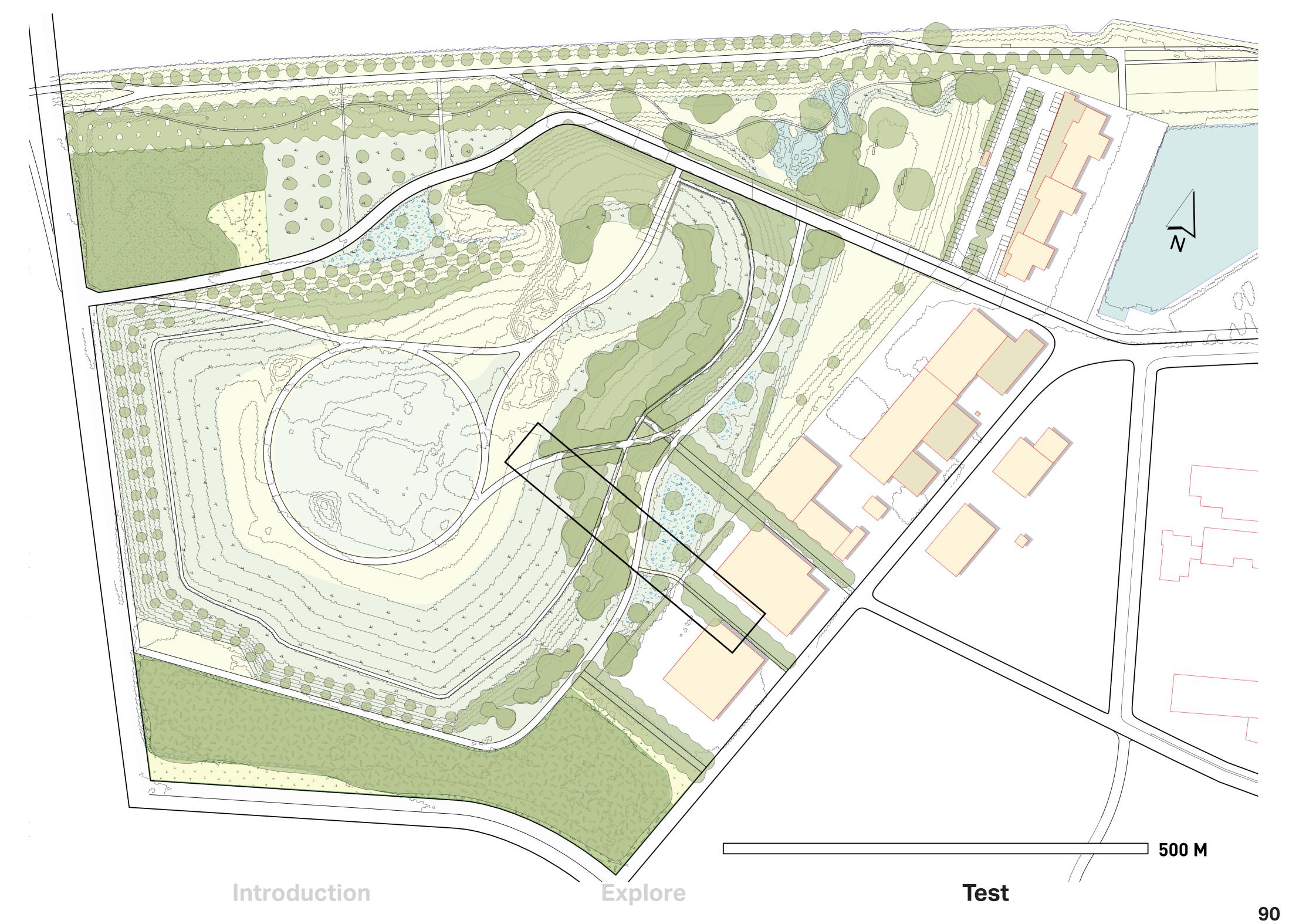




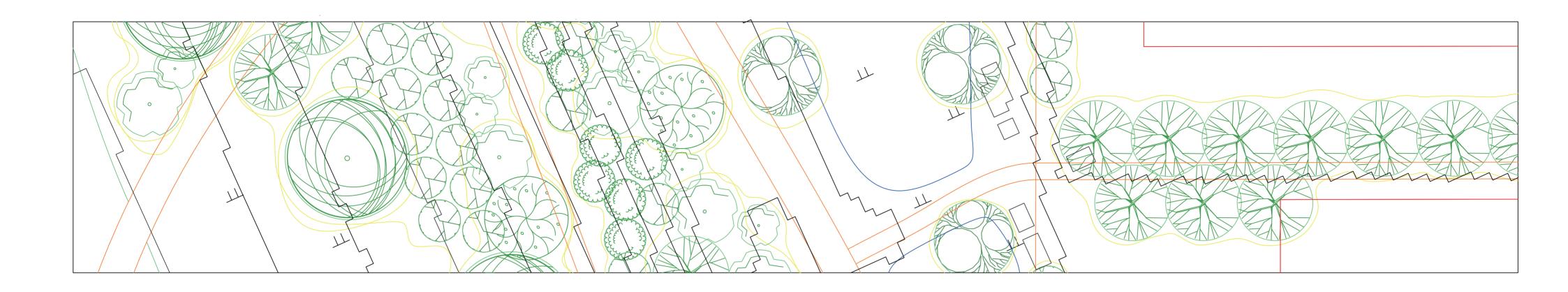
Theatre meet Flowscape

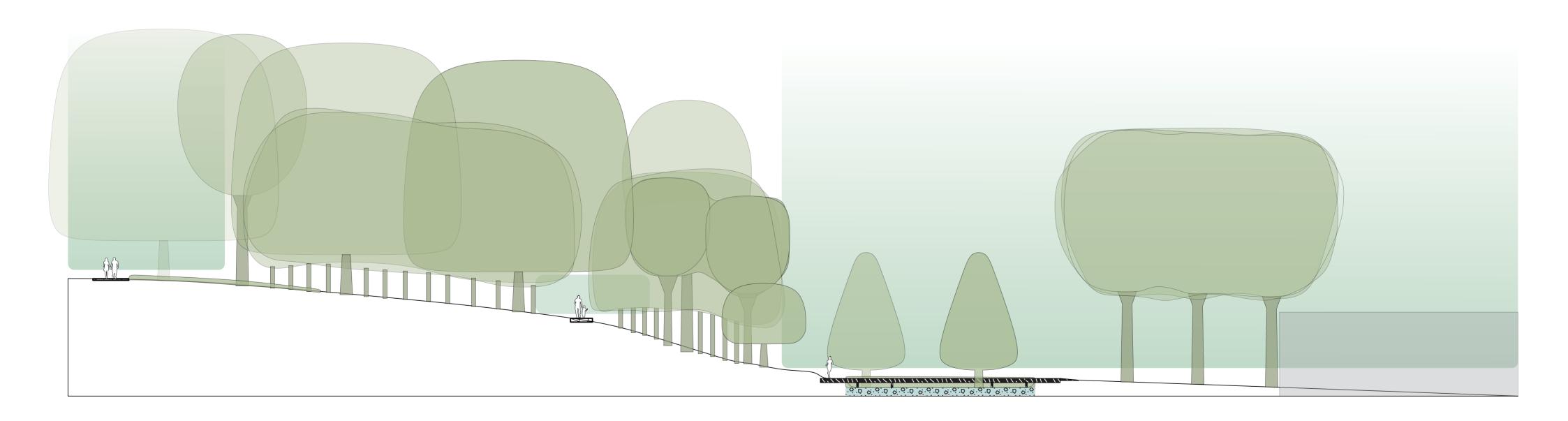






Theatre meet Plantation





Research Questions:

How can the landscape concept of urban forestry be used to shape the future landscape of the Rhine Ruhr Area?

What does Zwischenstadt needed spatially? Is it a move towards to 'connected patchwork'? How my approach achieves a different connection?

What's different from current spatially landscape interventions? (What I have added in Emscher Park?)

Function of Regional Green Belts (Flowscape)

Important connecting function due to the need to safeguard contiguous open spaces in the conurbation of the association area.

From Landesplanungsgesetz (LPIG)

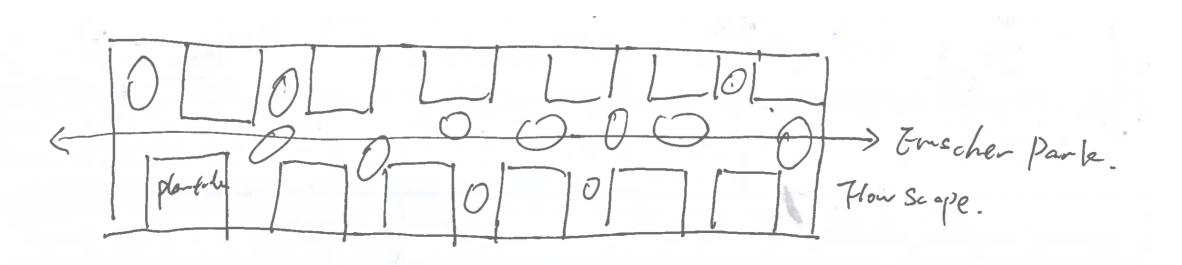






Rethinking the connection from a human perspective

More concerned with how people perceive the landscape







Theatre

Flowscape

For theatre, my project explains the relationship between theatre and flowscape, emphasising how they are linked together.

For flowscape, my project emphasises what the focus is, and is more clear about what should be perceived on the flowscape.







