

PRATER Q7

100  
YEAR  
SUCCESSIONAL  
FOREST  
CITY



**Bachelor's Thesis**  
BArch 6 (Geography Landscapes Cities)  
Summerterm  
2018

**The City's Future Natural History -  
At the Beginning and End There Was Prater**

IKA Institut für Kunst und Architektur  
Akademie der bildenden  
Künste, Wien

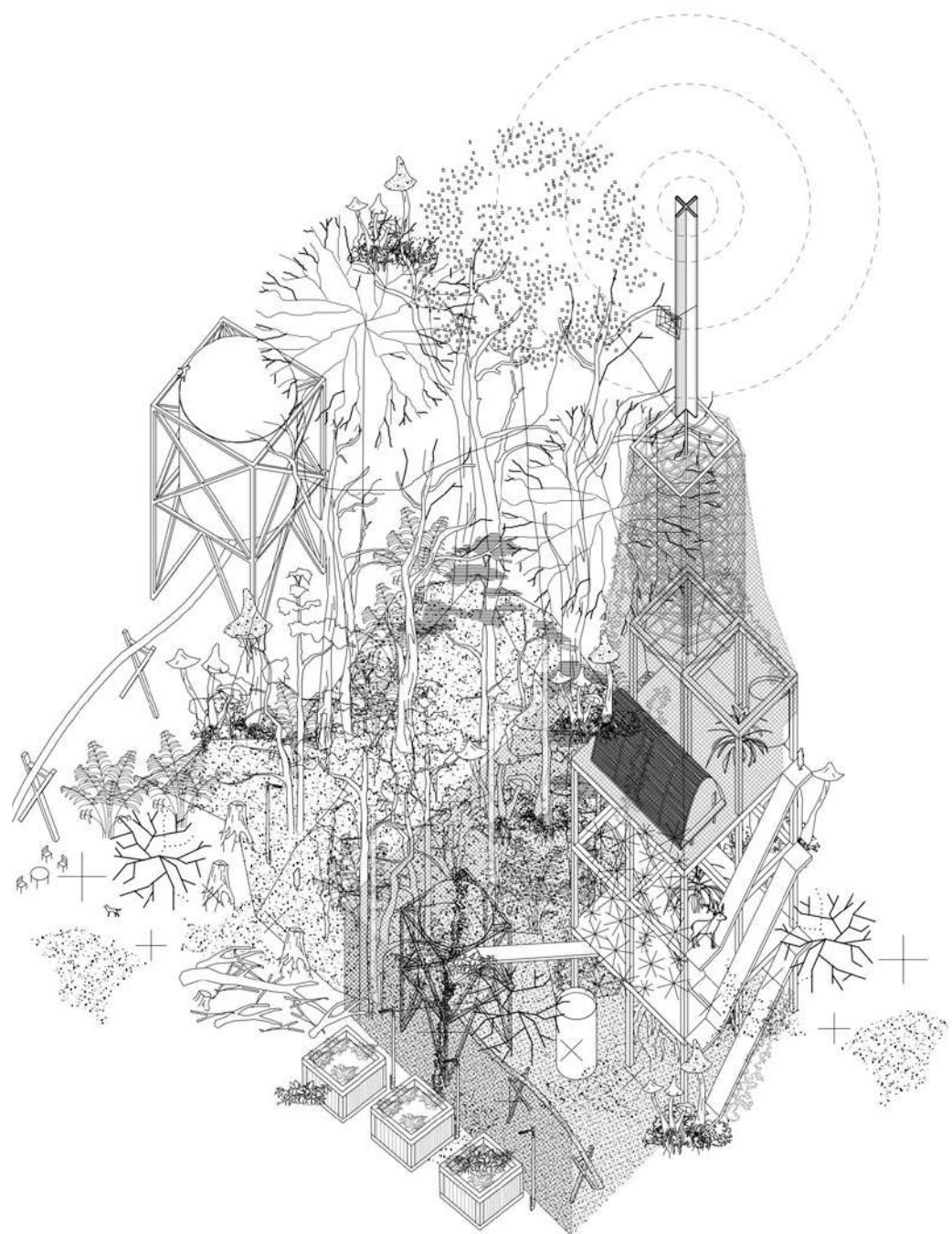
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# THE CITY'S FUTURE NATURAL HISTORY – AT THE BEGINNING AND END THERE WAS PRATER

## STUDIO BRIEF



### A1 PRATER MAPPING (Induction 1)

A drawing selects aspects of reality for our attention You are a scavenger of the present in. Your on-field research enfolds layers of information in a given quadrant of the place. These layers are multiple. They are based on observations of real artefacts as well as on situations you witness there. Furthermore some information is provided by readings and other maps. The given quadrant already contains drawn information in the plan such as paths, difference in the green surfaces (grass, lawn, bushes), perhaps even in the form of management surfaces. Your work is to increase the information by mapping\*\* (by hand and digitally) in the quadrant itself and if necessary with further sketches on extra sheets. You'll increase the quadrant with information that comprises history, ecology, aesthetics, and most importantly use.

IMPORTANT: Through this exploration try to find a specific focus on the traces or aspects of Prater. Your findings should reveal a narrative that tells about this place. Rather than being all comprehensive, be specific and precise, edit down the data of your research.

### 600m x 600m Mapping

1 the mapping of the quadrant should include information that is always based on real things. As an example: the material quality of surfaces in paths, trails, etc.

specific difference in green surfaces (differentiate between lawn, grassland, ground-cover, bush, etc.), and, where possible, between conifers and deciduous trees and plants

the position of relevant plants (large trees, or group of trees, relevant shrubs, ground-cover, grasses. Guess and note the height of the plants.

the use of the park by human and other species: as an example document the position of nests (human and bird made); observe and document the behavior of an animal or human, spend a night camping in the park, etc. observations of artifacts or actions that tell about maintenance and management (as an example: area of composting, pits for composting of leaves, pruned plants, water springs, fallen wood, felled trees, tree trunks, new planting, mounds and all form of edges, construction sites, water controlling structures, etc.)

relationship to neighboring areas of the park: access, continuity of use, boundaries, etc.

make a catalog of drawings for things you discover: certain plants, trees, mineral matter, drawing them in order to show their quality  
other artifacts

2 Map all paths and trails digitally (vector-based drawings / CAD, Illustrator, etc): the conventional ones as well as the informal ones, for faint

that they are. their users might not only be human.

[CAD-lines:

Line 0.5pt (0,18mm): conventional path

Dash-line 0.5pt (0,18mm): informal path (dirt path)

Dot-Line 0.5pt (0,18mm): informal path (light or faint grass path) Line 1.5pt (0,50 mm): building]

### A2 PRATER MAPPING (Induction 2)

Prater IS city. Prater is the most public open space. Through Prater it is possible to understand and document the use of the city, where the realm of inhabitants comprises a larger community of humans, animals, and plants.

1 Transform your quadrant in an axonometric drawing. Based on what you discovered in the quadrant, choose specific areas that are the most interesting, offering a density of artifacts and focus on the information they provide. Research the information finding current references as well as historical.

2 Make a minimum of 4 drawings in a bigger scale (axonometric drawings, oblique projections) Accordingly to your quadrant: continue your mapping of artifacts and situations to larger, more detailed, scales (1:200, 100, 50, 20, 10, etc.). Focus your mapping on the use (current or/and historical) of the space. It is possible that different kinds of use in your mapping overlap, conveying the density, and richness of this urban space. Part of your work is to solve problems of reading and rendering of information data. You may use red line drawings in order to make prominent specific information. Be precise in what you want to communicate and in the way you communicate the information. Take pleasure in your drawings.

### A2 PRATER Cartography Appendix

1:500 Quadrant Plan:

It is helpful to draw a grid of subquadrants (based on a grid of 10mx10m, red), marking in your final plan the places you've selected for the axes, completed with the informal paths and trails you documented./ Axonometric Drawings: oblique projections (45° are also possible)

Line drawings: All drawings (and possibly all diagrams and timelines) are done in pure line drawing / Linienzeichnung. This is valid for vegetation, built structure and people, b/w + red to highlight information./ Surfaces: if necessary they can be filled with invented patterns / hatches / Captions: if necessary you may use text on the drawing: **Minion Pro / medium, 12pt /** Use: You may mix digitalized hand drawings with vector drawings. No symbols./ Photographs: If you need photographs print them on regular paper, black and white End Review: Paper for the final drawings: matt, weight 150gr/qm.

(Studiobrief: Sandra Bartoli, Daniela Herold)



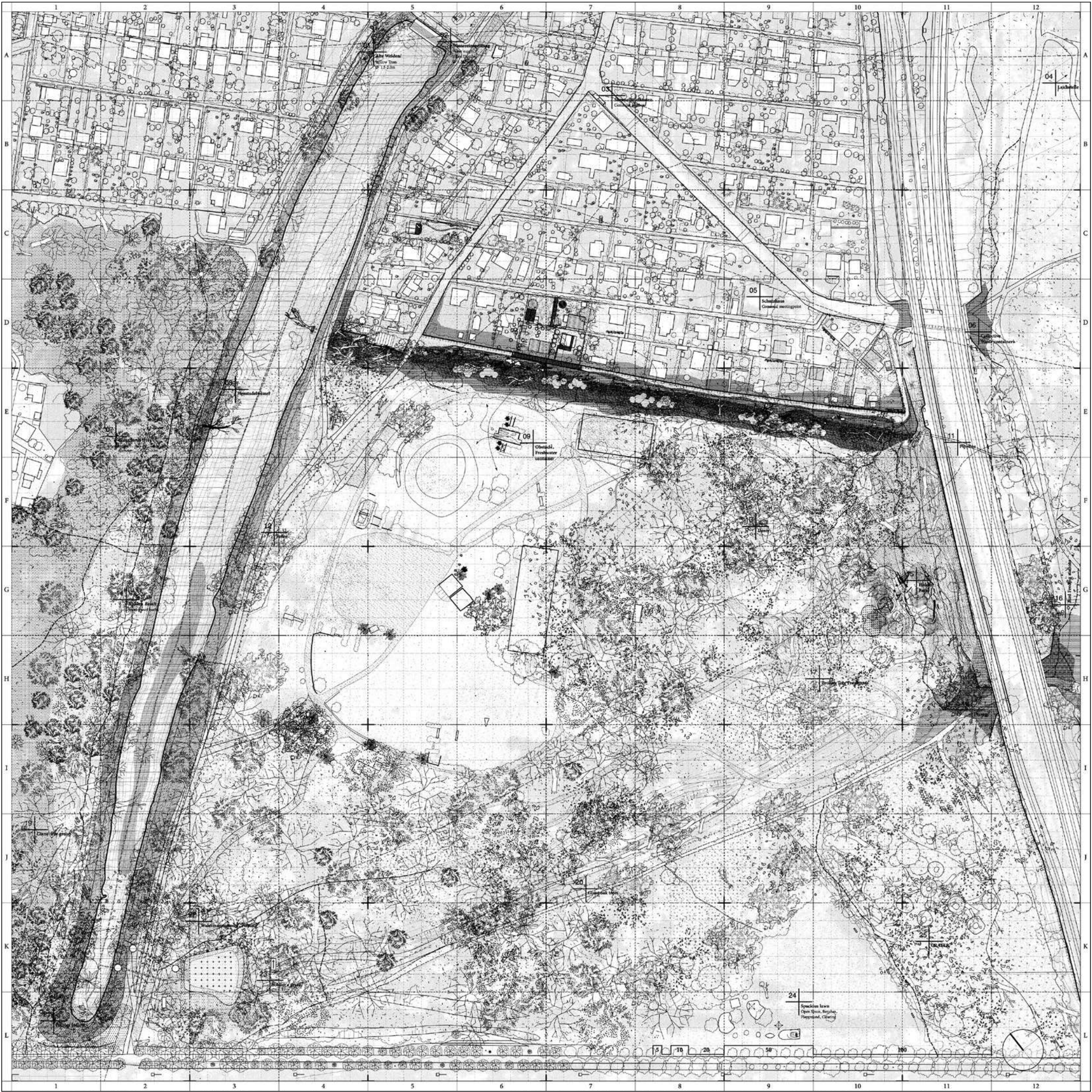
# MAPPING

The mapping section Q7 is located on the south-eastern part of the green Prater, near the Lusthaus. The area is characterized by a central forest area that is demarcated on all sides by different structural elements. In the direction of Praterstern, the Heustadelwasser, an old side river of the Danube, divides the areas on both sides of the main avenue and reaches up inside the area of the allotment garden area, with permanently inhabited houses nowadays.

A trench along the narrow street on the southern side of the "Kleingarten Verein Unteres Heustadlwasser" acts as the border between »wild« and »cultivated« nature and reaches up to a raised railway wall, which breaks through the forest to the south-eastern side. In the centre of the area there is an equestrian facility with several paddocks and obstacles on the so-called Ameiswiese, and bridle paths with obstacles that run through the forest. Since this area is partly fenced it is not clear if it is private or public ground. At the southern Side a meadow with benches an playgrounds closes up to the Hauptallee and has the highest level of human occupation in the inner forest sphere.

The area shows through its versatile uses and topographic conditions, how different levels of habitations in the Prater superimpose and interact. At the fringes, the pressure of usage builds up on the leftover natural areas, while at present especially artificial interventions can open up an ecological niche for certain species. Starting from the researched areas that emerge from a special representation or opposing positions in the quadrant, we created isometric drawings that are meant to represent a particular situation with the collected information:

- 1 GARDEN  
Isolated realms and idealized nature
- 2 FOREST  
Crossing paths in the woods
- 3 WATER  
Life cycles and stagnation

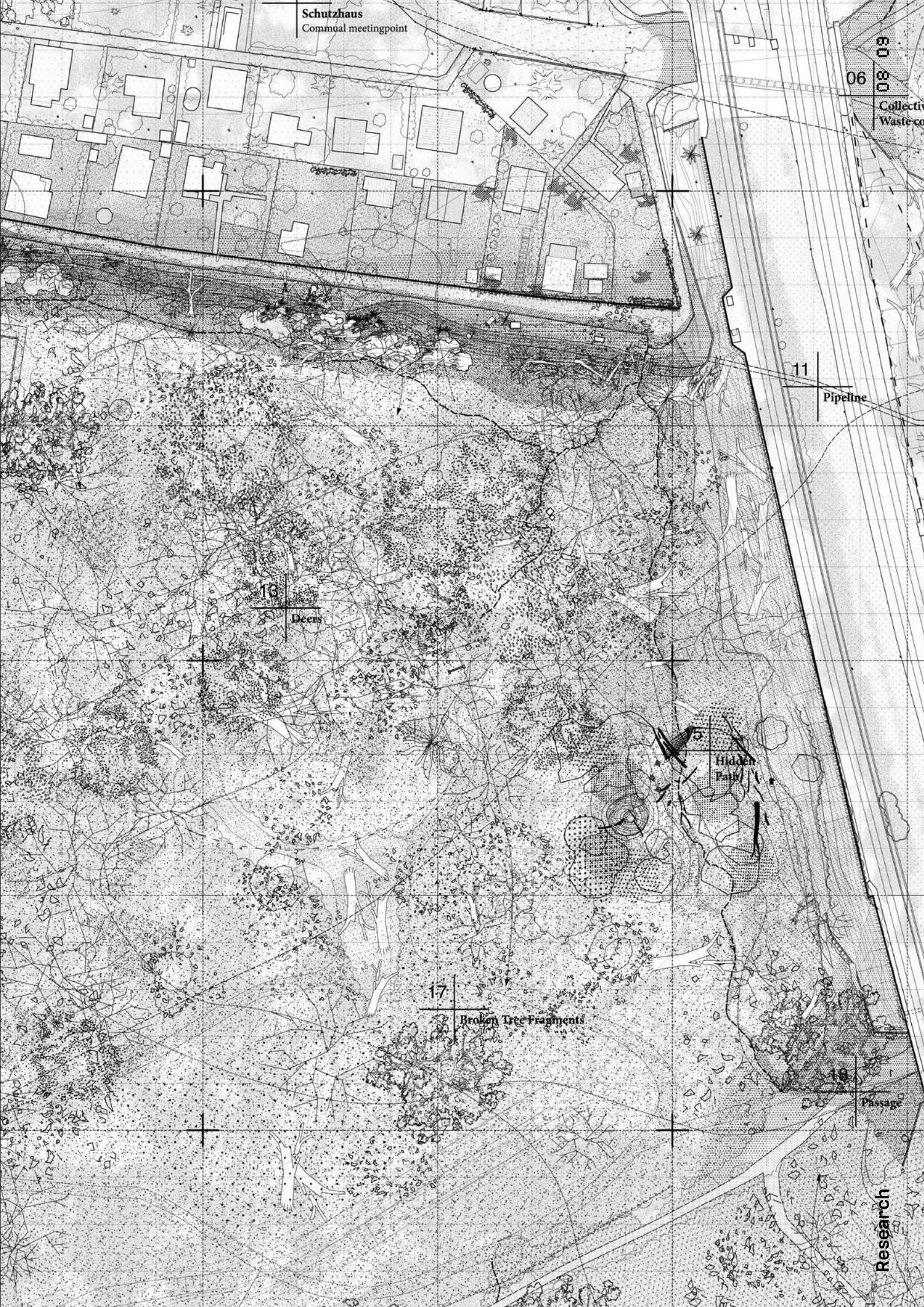




N	Q	Title	Origin	Category	Description / Influence
01	A5	Widow Tree	Natural	Tree	Old Widow Trees with a diameter up to ca. 1.60m, still growing, through their long life, the trees bear witness to an earlier landscape.
02	A5	Water supply Heustadelwasser	Natural/Artificial	Functional structure	Since the Heustadelwasser is cut apart from the Danube and (since the building of Kraftwerk Freudenu 1992-1998) cut of the falling groundwater layer, the water body is connected through a pipe system with Danube water.
03	A7	Communal Mailbox	Artificial	Functional object	The collective mailbox in the centre of the housing area, reveals that the houses still are a more rural kind of living, with a more simple maintenance.
04	A12	Spawning Place	Artificial	Ecological intervention	An artificial sink hole which is partly filled with rain and ground water, gives amphibians a possibility to put their spawn.
05	D9	Schutzhaus	Artificial	Building	"Public" Centre of the gardening area. It still reminds of the time when the area was only characterized by fields and vegetable patches and wooden crates and one had to rely on the house to protect against bad weather.
06		Railway Underpass	Artificial	Space	The area under the rail system is used by the allotment gardeners to store the communal garbage containers.
07	E2	Giant birch trees	Natural	Tree Group	Height: ca. 16.00 m diameter: ca. 1.00m
08	E3	Heustadelwasser	Natural/Artificial	Water/biosphere	Since the Danube regulation and draining of the Praterau in 1875, the former arm of the river becomes a standing water.
09	E6	Obstacle, Spawning Place	Natural/Artificial	Object, Water/biosphere	The obstacles on the horse track are partially water-filled pools. Since these are filled with tap water, some frog species can spawn there better.
10	E8	Fringe Zone	Natural/Artificial	Area, Border	The ditch along the residential area is occupied by the residents and gradually planted and arranged. The ditch develops into a mixture of compost and flowerbed.
11	E11	Pipeline	Artificial	Object, animal use	A drainage pipe below the railway wall is used by animals to reach the adjacent forest
12	D3	Fence	Artificial	Object, Border-	The equestrian centre is fenced off from three sides. In many places, however, the fence is already broken and impermeable. The accessibility is not clear.
13	D9	Animal Domain	Natural	Area, observation	Even at daytime up to 4 young deer can be observed in this certain area, since its the most hidden area. A feeding place is filled in winter.
14	C2	Shore zonev	Natural/Artificial	Area, Soil	The shore area consists of narrow gravel banks, some difficult to access. Popular as a picnic area
15	C11	Hidden Path	Artificial, unplanned	Path	A hidden path meanders along the tracks. The forest is wild and the path is often obstructed by fallen trees
16	C12	Birdhouse	Artificial, legal	il-Artifact	Bird feeding stations can be discovered everywhere in the forest. They are a sign of a direct and conscious intervention in other ecosystems.
17	H10	Fallen trunks	Natural	Natural relict	The forest is criss-crossed by fallen trees that harbour new living environments and return their nutrients to the ground.
18	H11	Passage	Artificial	Building, Space	Width: ca. 10 m Height: ca. 6 m Length: ca. 30m
19	J2	Tree group	Natural	Tree	Three trees tower above the surrounding forest Height: ca. 20.0m diameter: ca. 1.30m
20	J7	Tree group	Natural	Tree	Three healthy Oak trees Height: ca. 15.0m diameter: ca. 1.40m
21	L1	Former River	Artificial	Area, Intervention	The former inflow of the Haustadelwasser, was filled in the course of the Danube regulation and separated from his other arm to close the main avenue.
22	K3	Water management "Neptun"	Artificial	Building, Intervention	Artificial Drainage System Clears the water of the Heustadelwasser in a ecological process. Since the construction of the power plant, the heustadl water is no longer connected to the groundwater, and must again be fed artificially with Danube water. The high phosphorus content should be able to be regulated with the system.
23	K3	Soldier's Crave	Historic	discovered object	During excavations for the Neptune complex, the skeleton and ammunition of a World War II soldier were discovered. This points to the warlike past of the forest as soldiers hid in the rearguard action in the forest.
24	L9	Spacious lawn	Natural/Artificial	Area	The meadow is pushing from the bottom to the forest. Benches, rubbish bins and play equipment refer to a high level of human strain.
25	K11	Bomb craters	Artificial	Historic relict	scattered bomb craters of artillery shelling in the forest, Diameter: ca. 4 - 6m, Depht: ca. 1.80m

[fig. 01] Mapped Sites and artefacts.

[fig. 02] Detail from site mapping,









# 1 GARDEN



## Allotment Garden Division and Colonisation

This drawing sets focus on the spot where the cultivated, the natural and the infrastructural realm come together in a strange environment and define the occupied ground in their particular sense. The neutral view from above reveals a administrative system, which defines certain areas for a certain purpose (like housing area, industrial and agricultural space and protected natural habitats). Yet the division of different surfaces seems to be realized in artificial way at first glance (through building, cultivating natural areas, or prohibition of building construction...).

But in detail there is a constant overlapping of natural and cultural actions that overlay notional boundaries, like property borders and fences. The historical meaning of the allotment gardens, as a space for food production and agricultural practice disappears more and more.

The transformation to a living area embedded in decorative garden leads to a heavily controll over every part of the area. At the transition zone the inhabitants are defending their realm by decorating and colonizing undefind land around the ditch.







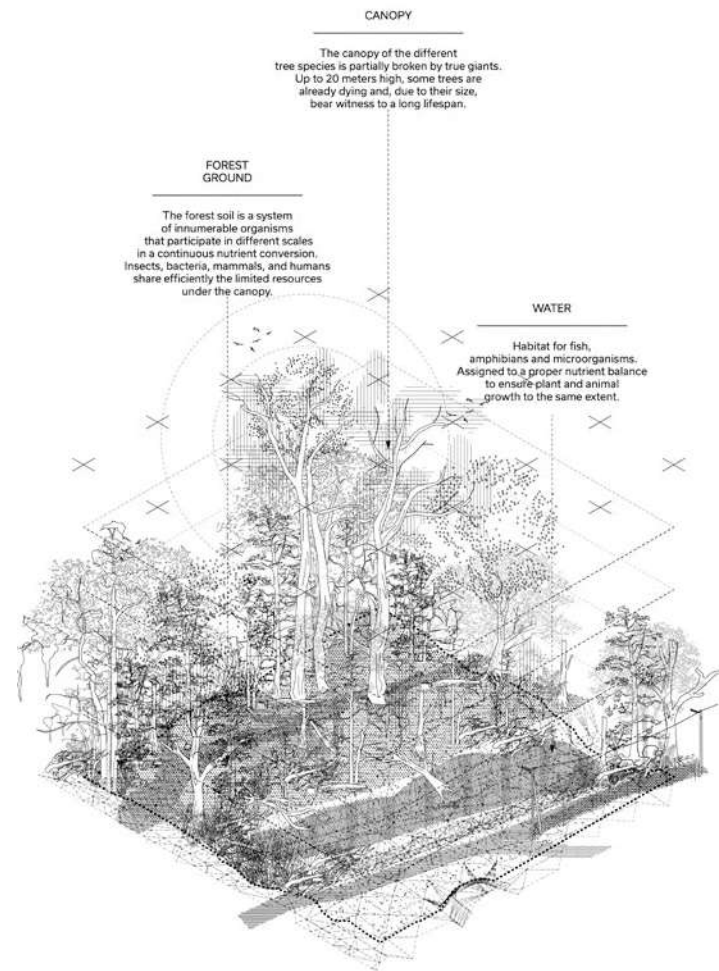
[fig. 05] Detailed view on the allotment garden parcels. Although the formal/legal boundaries control property and responsibilities, the owners transcend their plots and colonise the no man's land of the trench in their sense, while animals ignore the order of the fences and follow their own system of territories. The ditch marks the front-line where wild growth and cultivated plantation collide.

[fig. 06] Detailed View: Relation between house, forest and the in between, the boundaries of private land are being shifted to colonize the fringes of the Prater.





## 2 FOREST



### Hidden Paths Crossing, Hideouts, Bomb craters

The right flank of the area is formed by a railway wall, which divides the forest and protrudes up to 6m above the ground. At this point the wall has been broken by a concrete underpass, making it an important passageway for humans and animals. The city hiking trail and the extension of the riding route lead through the passage. Along the wall, a hidden path meanders through the wilder part of the forest area to the gardens.

The informal path is often obstructed by fallen trees and wild growth and is used by only a few people. Nevertheless, some artefacts reminding of human presence can be discovered along the way. Scattered objects, like metal goods, concrete blocks, rubbish, can be found there as well as birdhouses and feeding stations.

Since this part of the forest is a protected refuge in the bustling Prater area, a small group of deer can be observed there many times. A wooden feeding trough reminds at a time when deer got fed around the Heustadelwasser, which leads to its name.





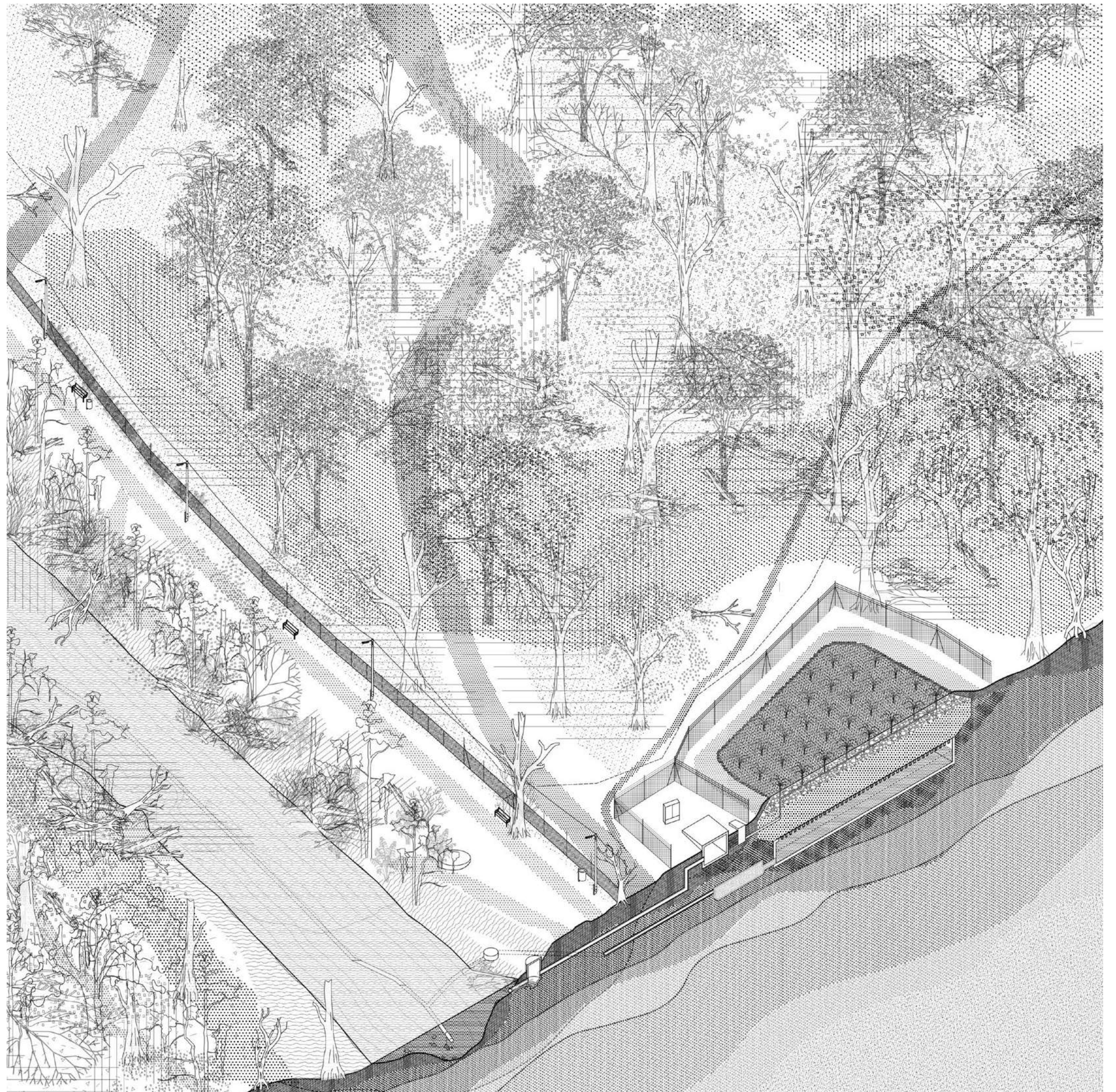
### 3 WATER



#### Heustadelwasser Relict of the old Danube

Due to Danube regulation the Heustadelwasser was separated from the main river. This cut had a major impact in the ecological relations of flora and fauna and the whole appearance of prater. This former arm of the river delta, yet stagnant water, was only connected by ground water, which had been disconnected after the hydro power plant Freudenuau was built in 1998. Without it's annual floods and the higher phosphorous content from the main river the Heustadelwasser is low in oxygen. This oversupply of nutrients causes an increased growth of algae, a decrease of natural habitats for amphibians, a ecological deficit and a higher fish mortality.

In order to remedy such result the Heustadelwasser is filtered by a so- called „Neptun“-facility, which enhances the water-quality through an emission of carbon dioxide, nitrogen and an enrichment of oxygen by irrigation. This water seeps through a layer of sediments and is brought back after the phosphorous amount is decreased. In particularly warm summers the „Naptune“-facility cannot prevent the algae bloom, which also causes unpleasant odours and turbid water.

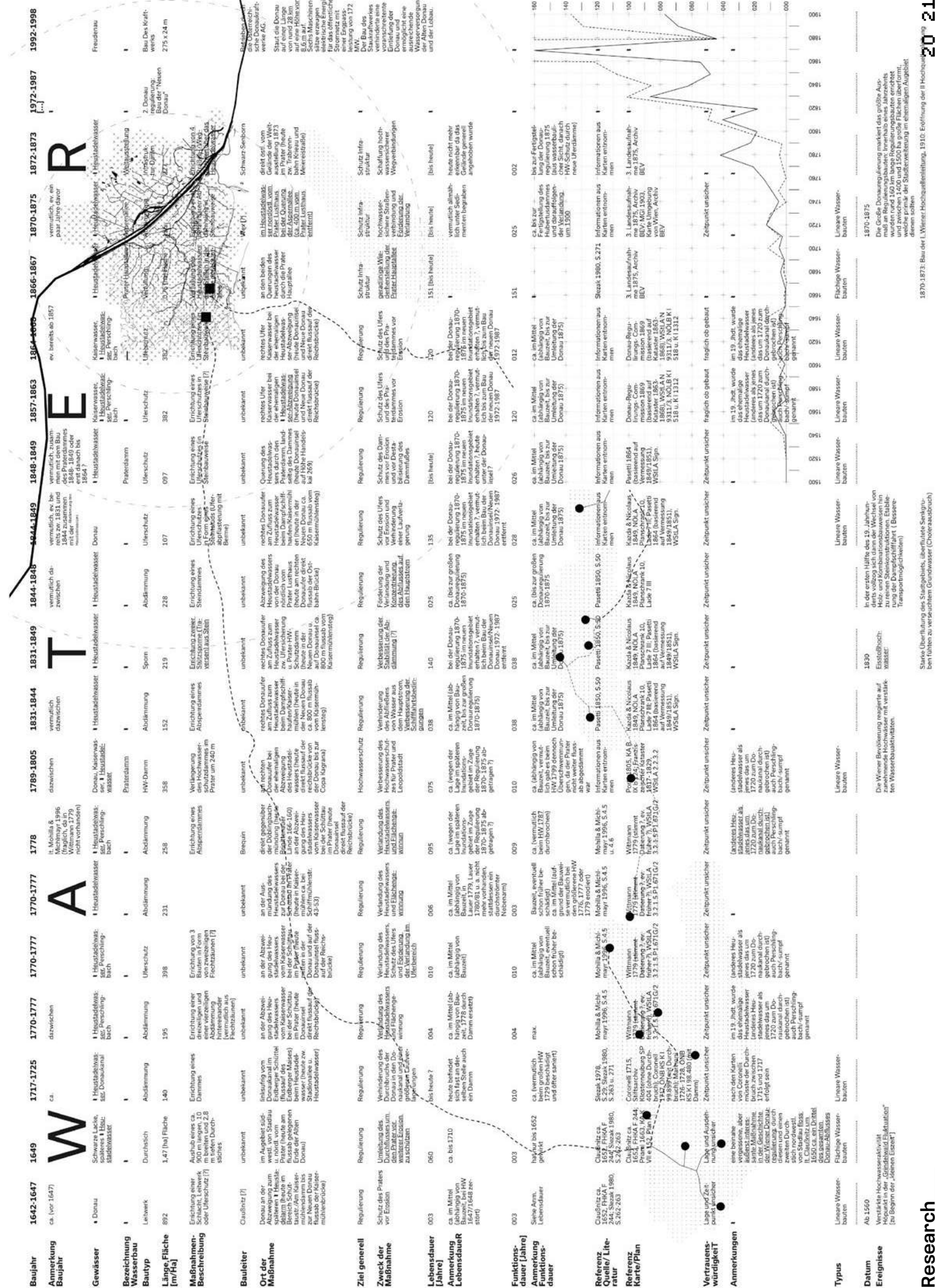
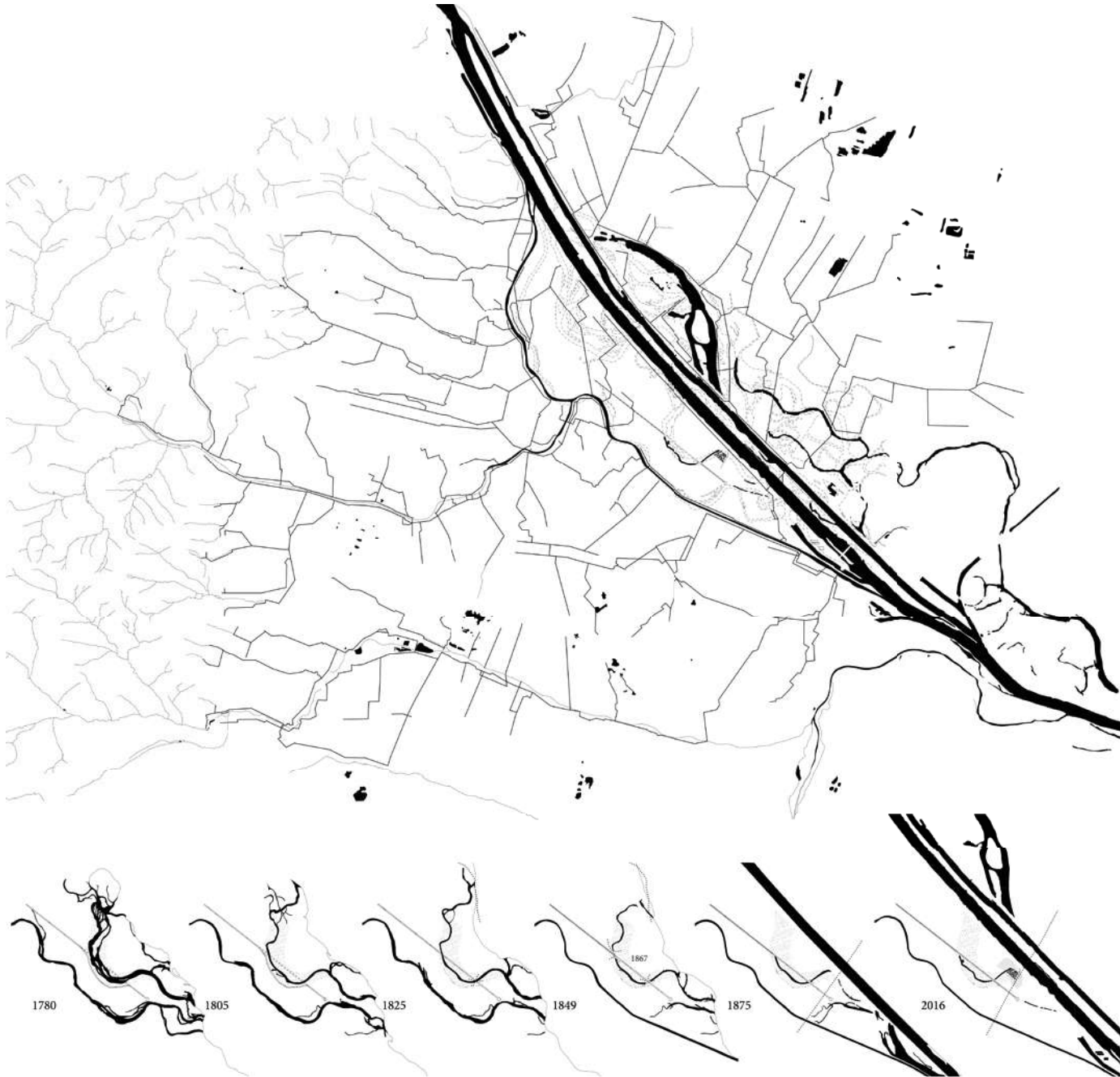




# Transformation of the Prater Landscape and the relation between Water and City

[fig. 07] Danube in the course of time.  
Mapping: Lars Müller  
(Q7 Group Partner)

[fig. 08] Chronological presentation of hydrological engineering works on the Danube that led to the current state of the Prater.

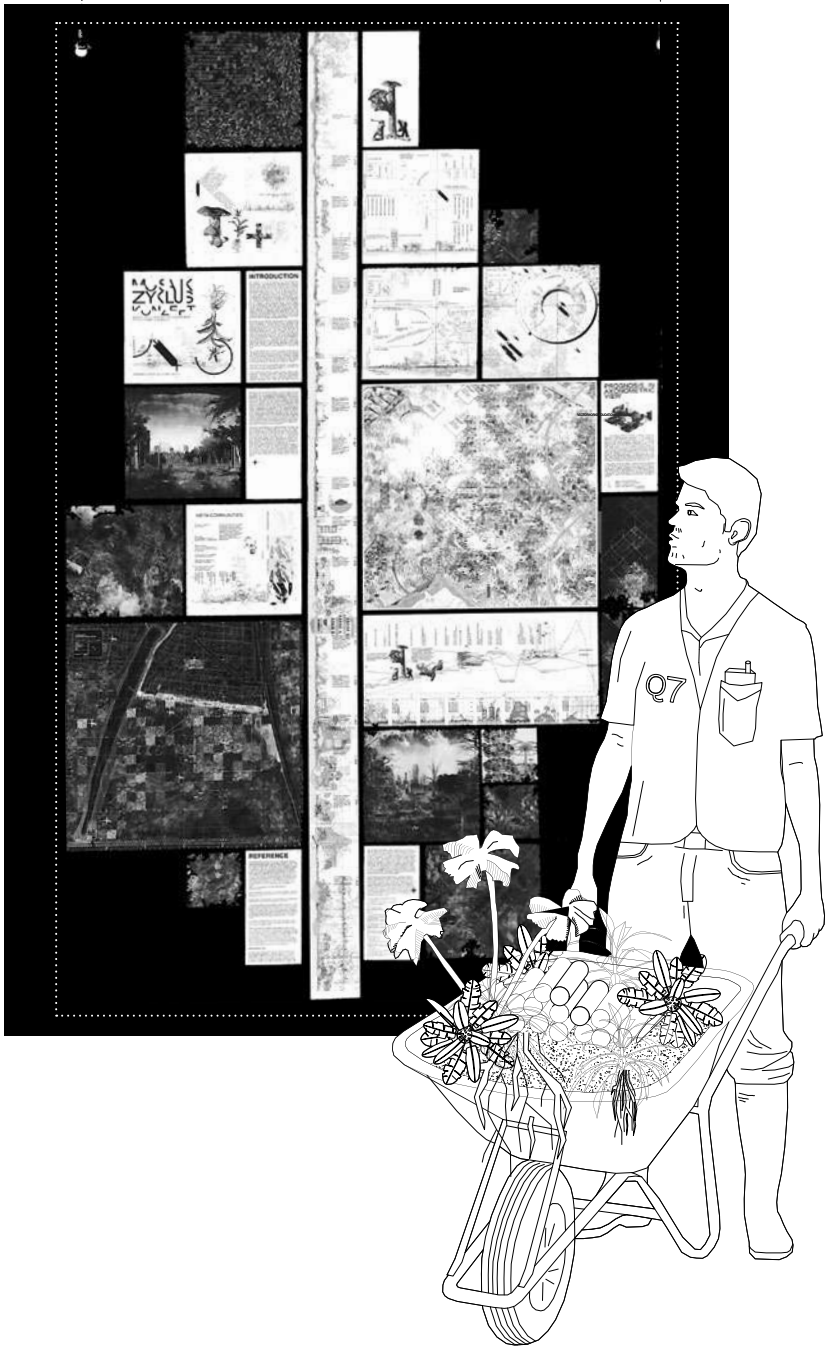




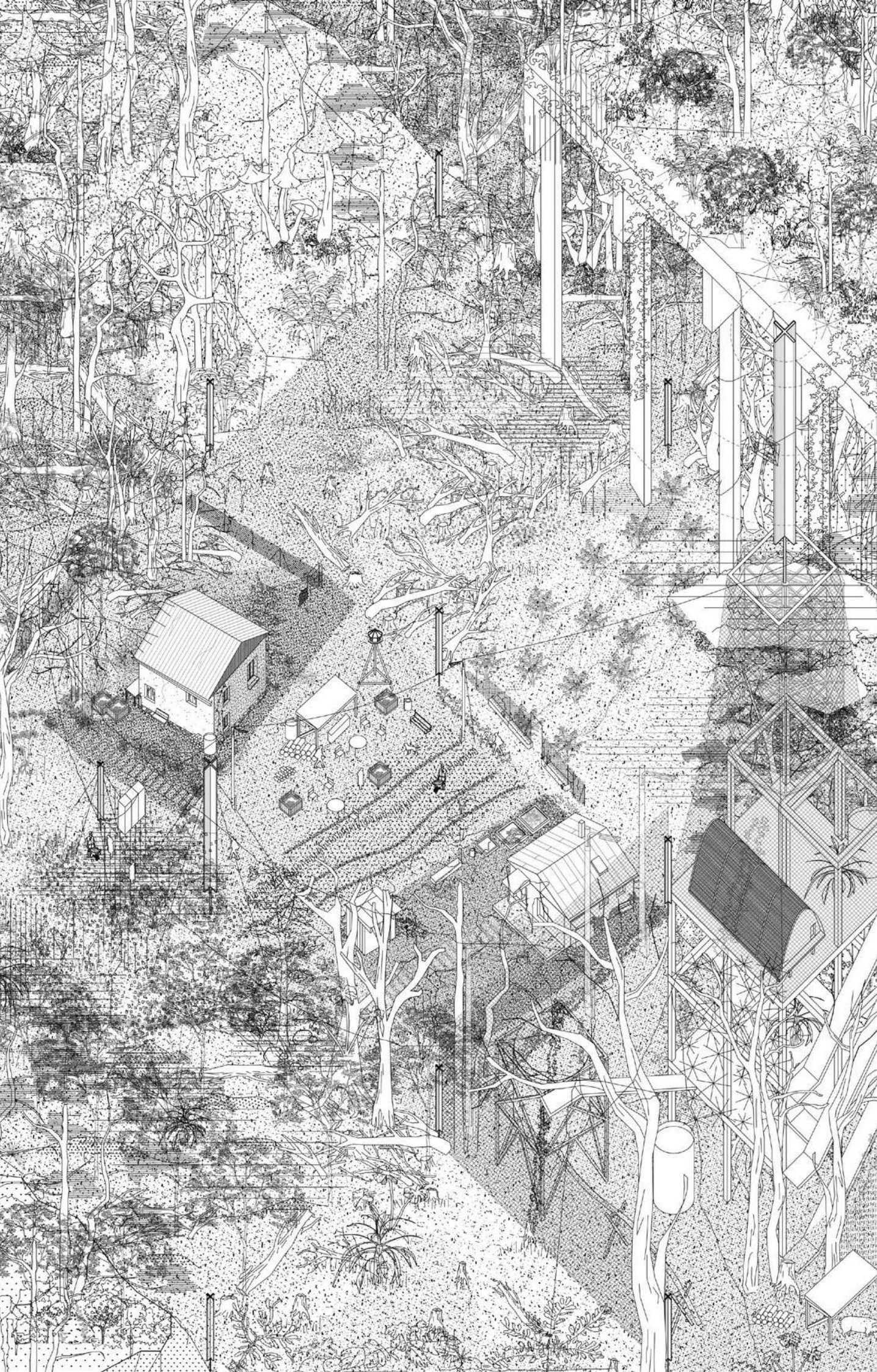




THE EXPERIMENT



[fig. 09] Final presentation  
Layout, Board 1.50x2.50m  
[fig. 10] Life in the mosaic.

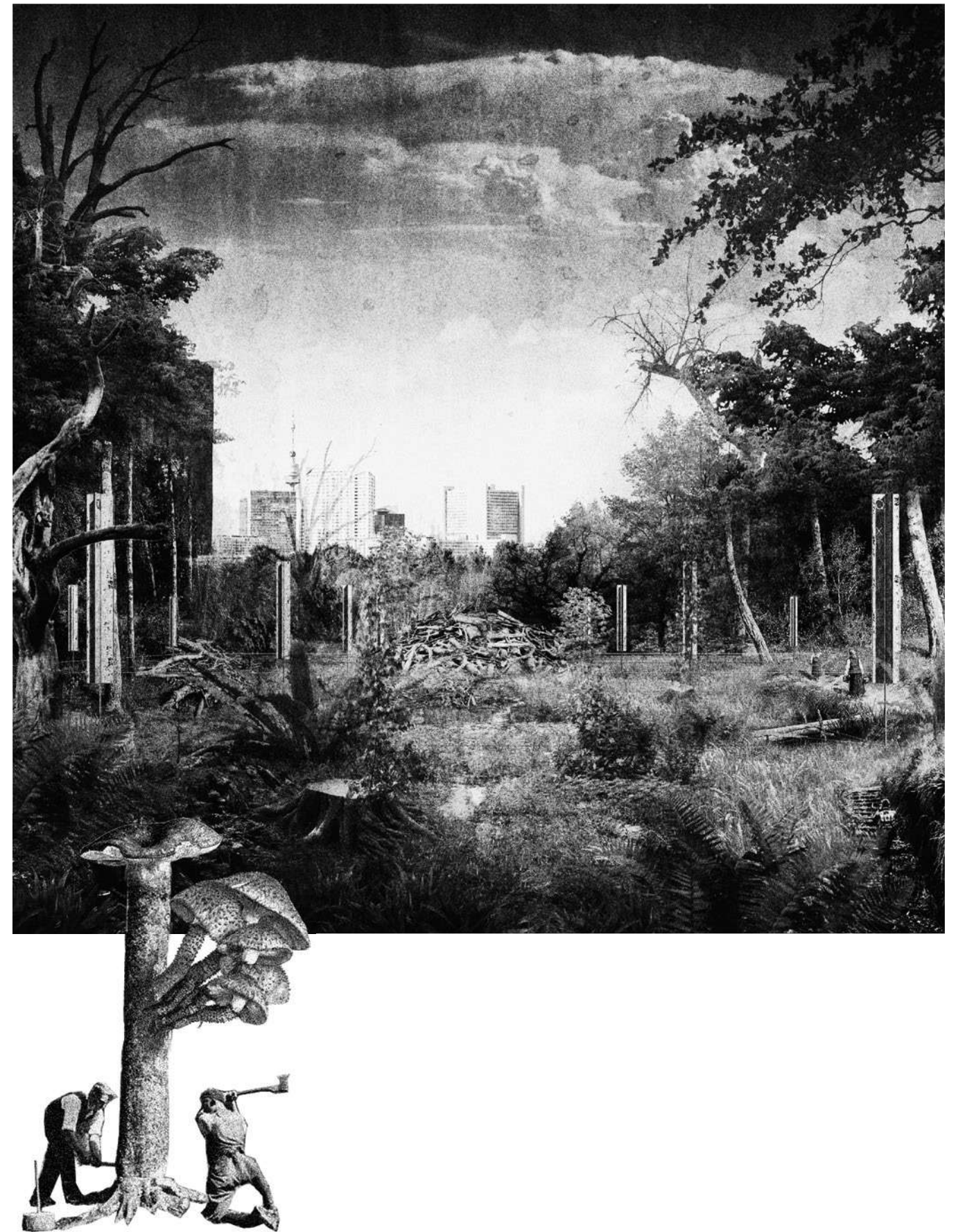




# INTRODUCTION

The quadrant Q7 is a conglomerate of different boundary regions, which in turn map the transition zones between spatially or temporally linked structures and processes. On the one hand, there are the areas of heavy human use and control, on the other hand, the more natural areas, which still remind of the time of the overgrown Prater meadows. Through the growing city, with a steadily increasing demand for building land, infrastructure, recreational areas, etc., one senses here the increasing pressure on the natural areas, which are already today transformed by constant human intervention and administration in an urban system. Here, the structural boundaries, such as the transition between the cultivated allotment estate and the adjoining forest, usually also mark formal and legal changes within the respective areas of impact. Due to the flanking of these border areas, the centre of the quadrant is relatively isolated and thus seems to have little potential for development towards a future structural change and increased biodiversity. Describing the expanding city itself as an ecosystem, as an intertwining of natural and artificial biotopes, one sees on the quadrant, that this interaction is regulated still relatively static, whereby near-natural zones of nature could give way in the long run in favour of economic interests.

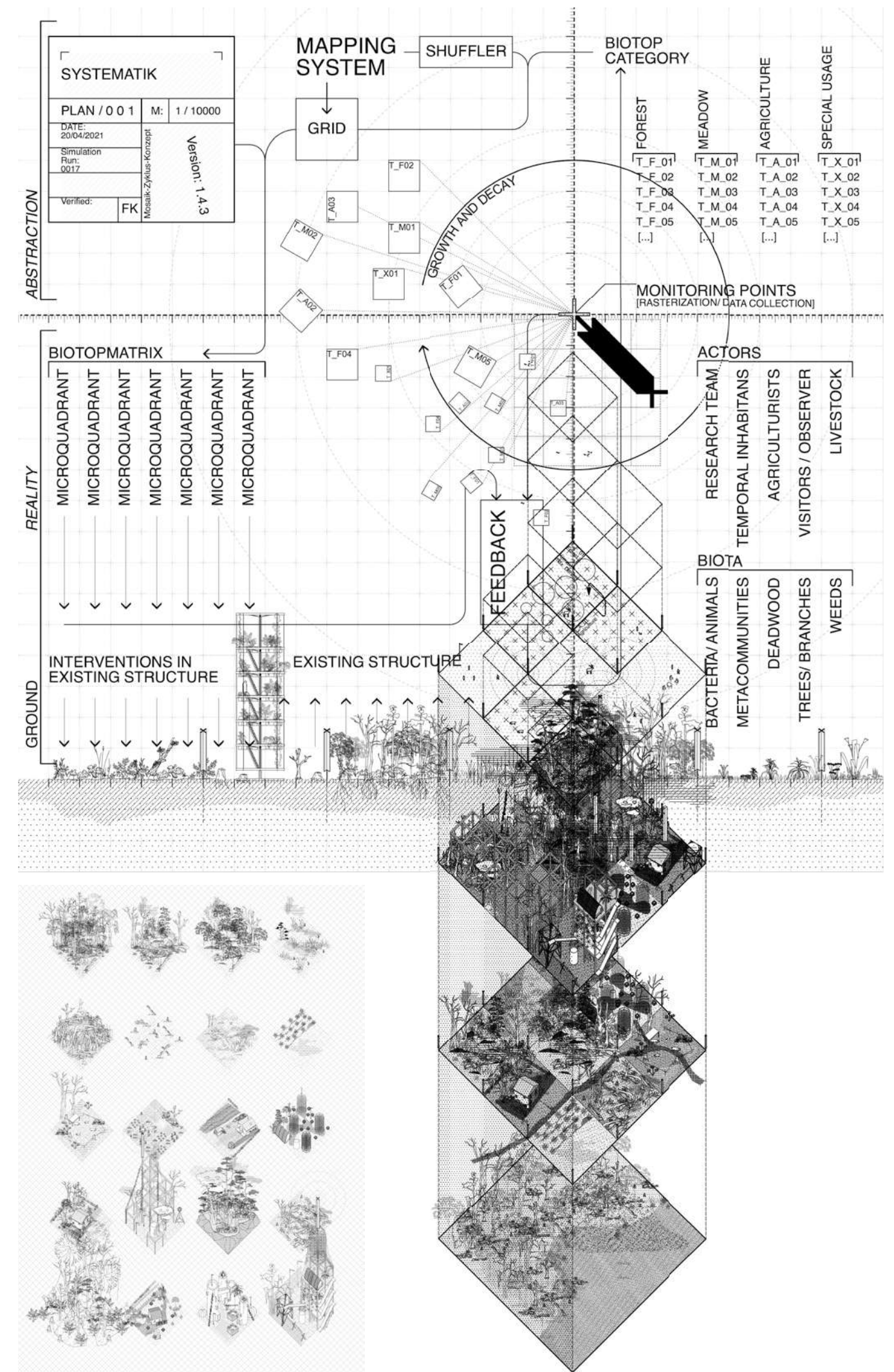
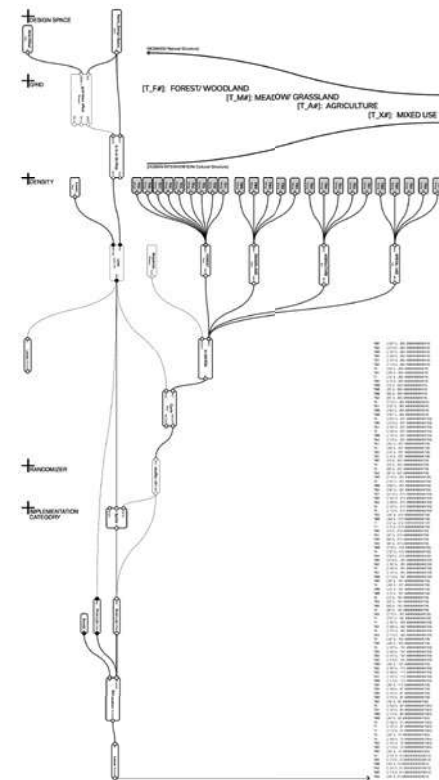
"The city that lived through the centuries was a biotope. To explain this term, it is a place where life of the most varied forms is balanced and maintained in it. This happens under quite specific, though often not easily explicable conditions.[...]"<sup>1</sup> This condition must first be recognized in order to influence the complex interaction between these different biotopes. With regard to the Prater, these investigations and interventions are especially applicable to the natural processes, and the relationship of humans and biota. The project deals with a possible control and permanent restructuring of different biotope types and ecotones. The quadrant assumes the function of an experimental test field in which the temporally parallel development and interaction of different (natural) structural spaces can be investigated. The grid of the area defines a multitude of square zones of 25x25m. By chance,



[fig. 11] Perspective View/  
Possible appearance of  
fragmented landscapes. Each  
field between the measuring  
stations provides a certain  
type of structural elements.



One intention is the dissolution of the rigid territorial boundaries: While in the allotment garden some plots are uninhabited and overgrown with wild weeds, some areas in the former forest area are released for a temporary habitation. The fields exhibit grading of different levels of cultivation in a confined space, with human-initiated processes interacting with naturally occurring phenomena. The experiment also investigates different agricultural cultural methods and cultivation techniques and in particular their possible incorporation into ecological nutrient-cycles. Through the interplay of higher-level principles, such as the rasterization and category assignment, and the uncontrollable appropriation and propagation of various organisms the area becomes an urban natural and cultural landscape. "Ecology does not set a norm; it leads to developments and forms that can not be predicted. [...]"<sup>2</sup> Like a conventional city, the conglomerate consists of fixed spatial structures (groups of trees, meadows, built objects, topography ...) and their superposition with networks, material flows, energy households, and movements. Through the temporal course of territorial integration exist in the future Ecotopia an older and denser inner city and newer, still developing peripheral areas. The larger the structure becomes by additional area implementation, in order to better define individual subsystems of several fields, which in turn form certain circuits.



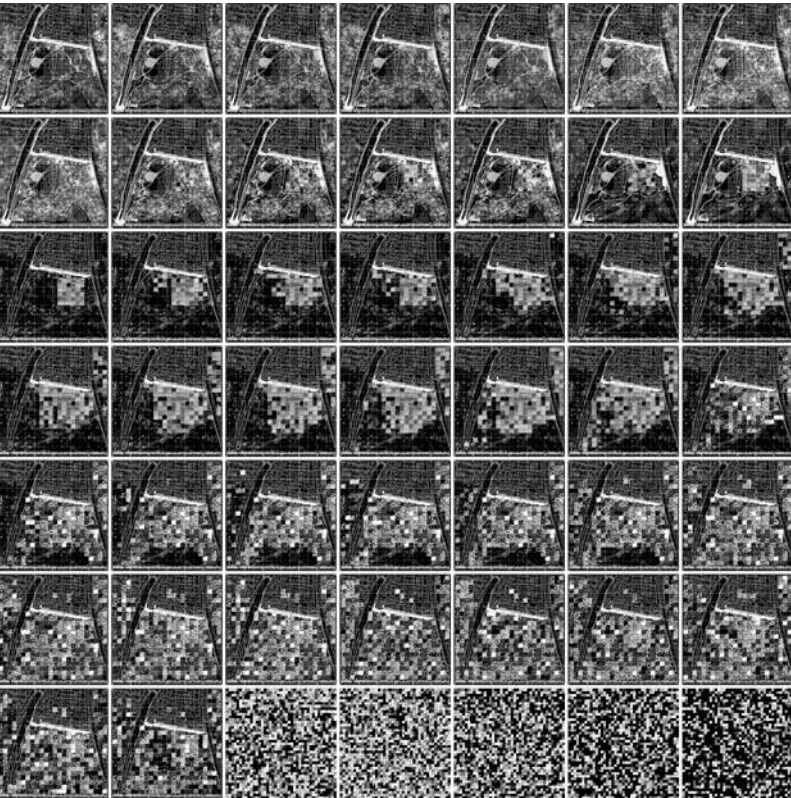


# EXPERIMENTAL SITE PLAN

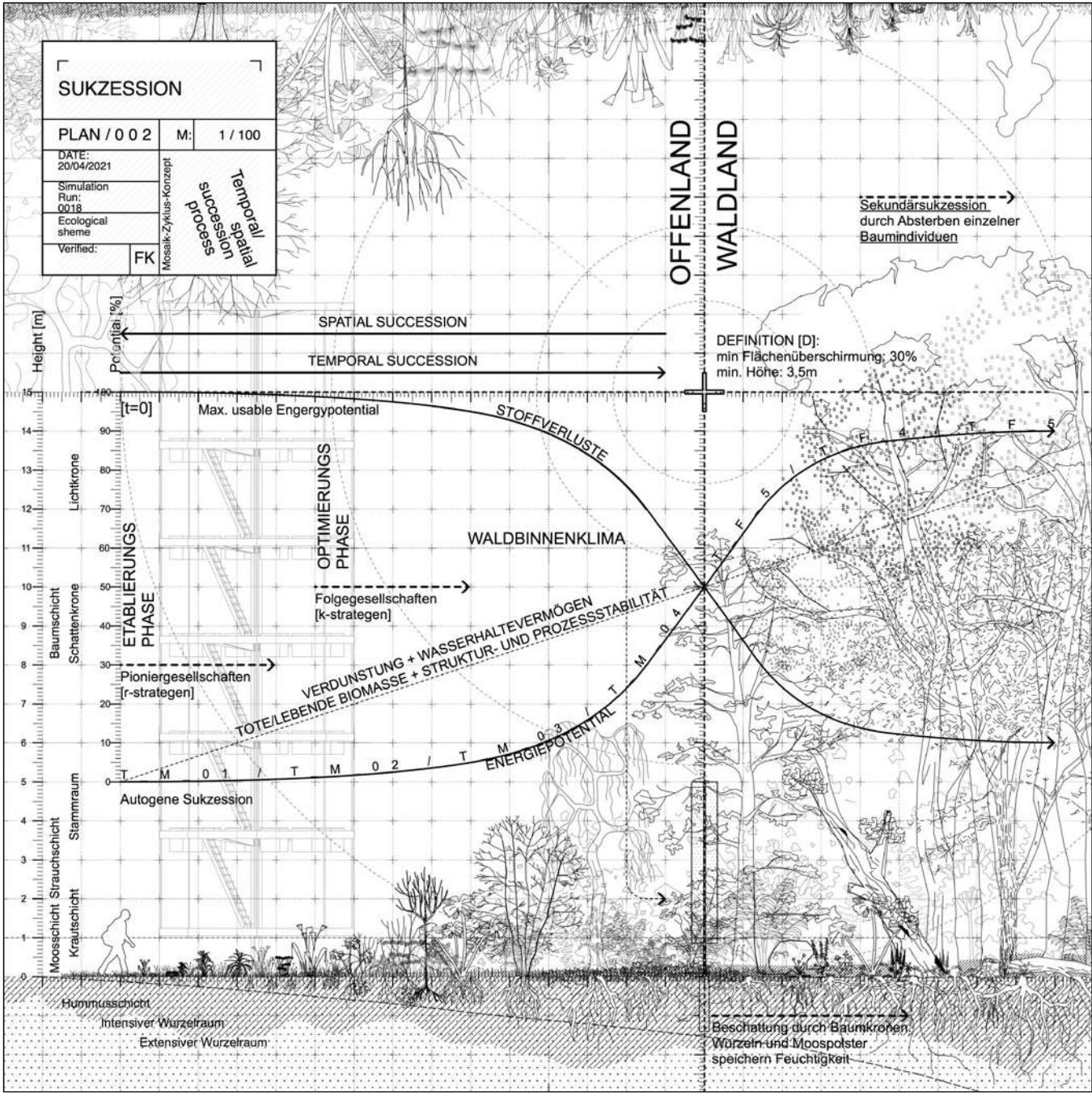
[fig. 14] Single frames of the mapping simulation: First, individual islands are defined in the centre and then expanded outwards.

[fig. 15] Hypothetical representation of a future structure of the Prater quadrant.

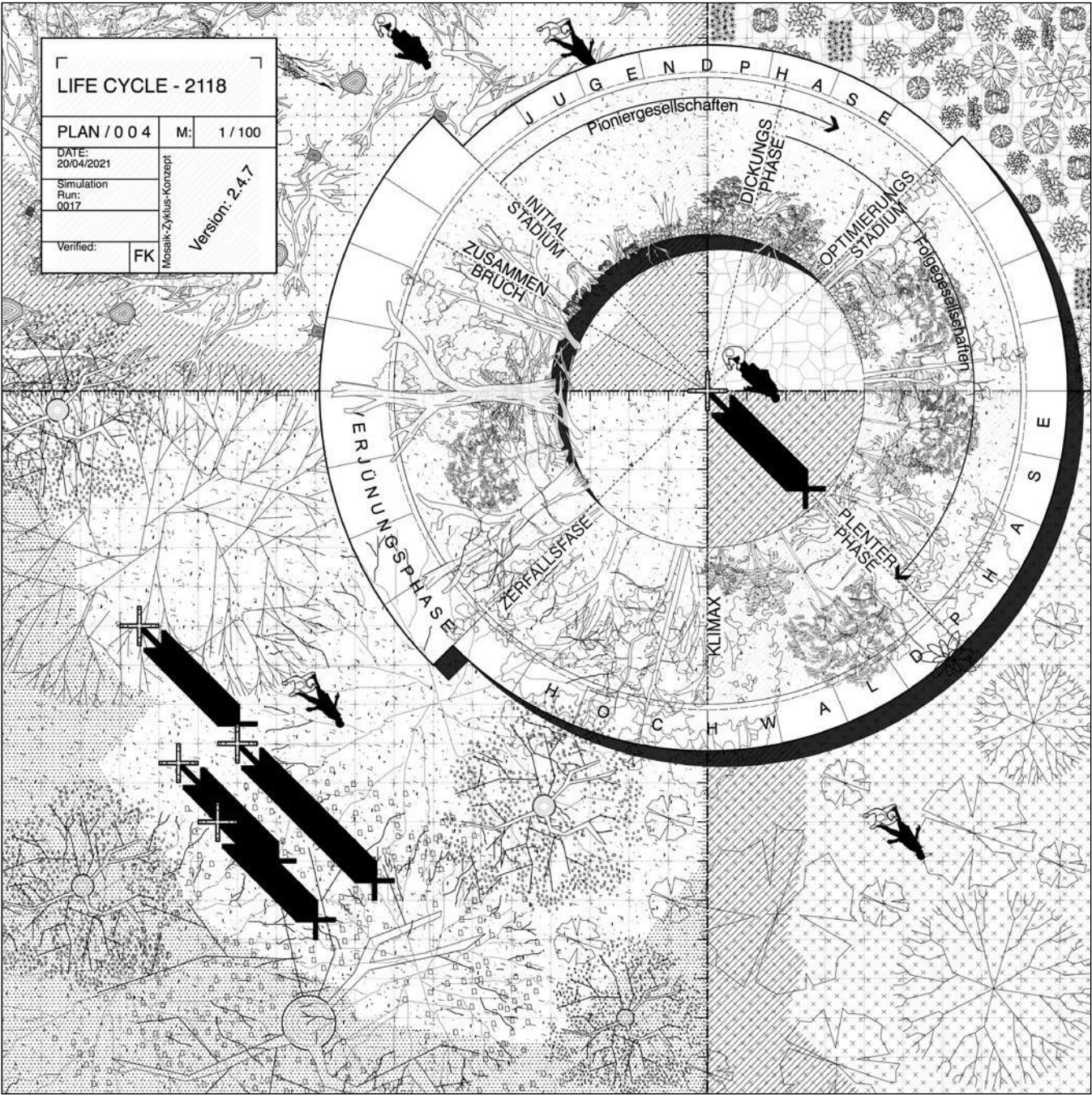
Video der Simulation ansehen (click to open link)



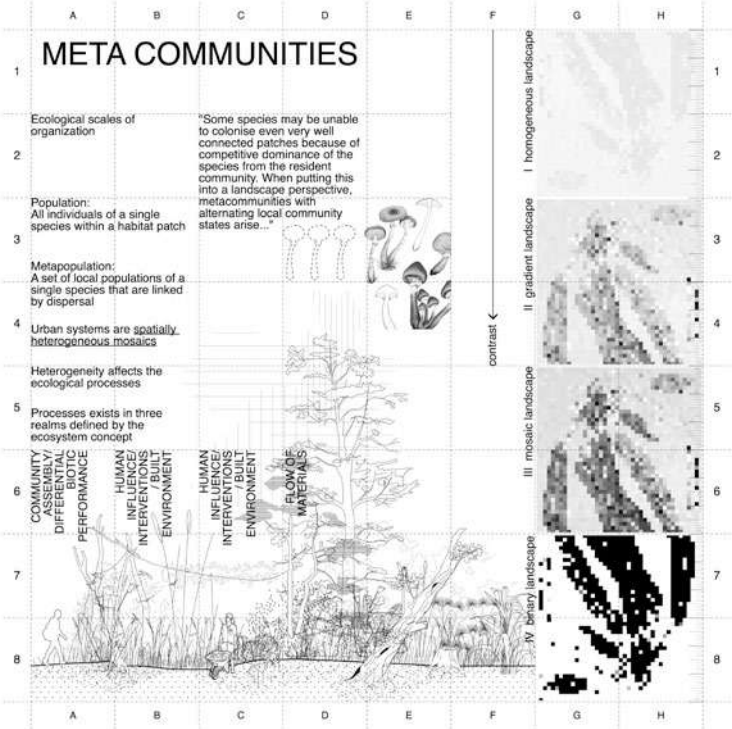




[fig. 16] Succession in section



[fig. 17] Forest stages in the life cycle

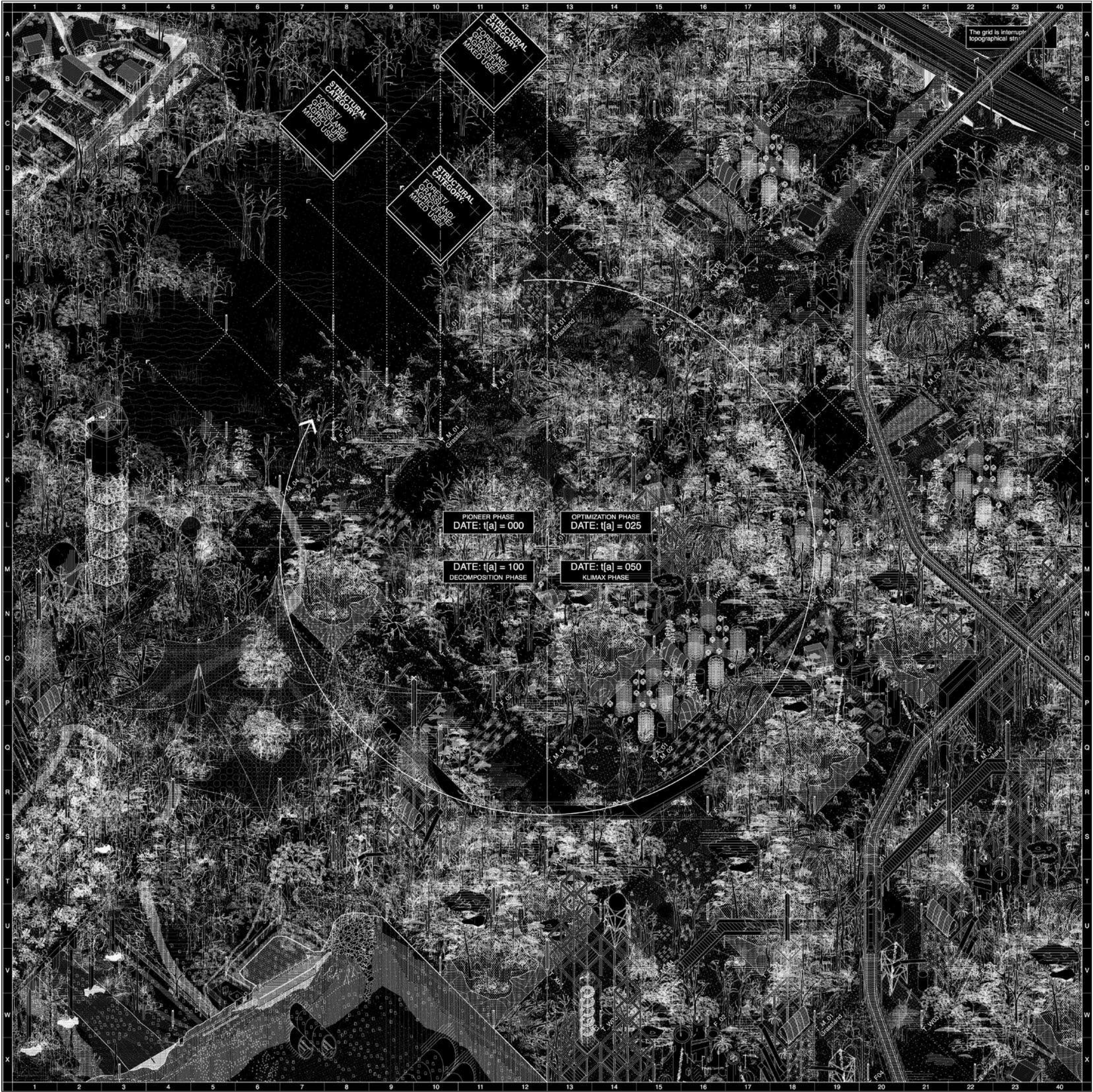




# PROGNOSIS IN AXONOMETRIC VIEW

Axonometric patterns simulate a possible structural appearance of different biotope typologies. In their random arrangement, the fragmented landscape can be represented, which, like the built city, contains different functions in different locations. Due to the concentrated juxtaposition of the patches, various border areas and transition zones are created in a confined space, which in turn are populated by specific species as autonomous ecotones. „High reproductive rates enable species to quickly build up populations in transient patches thus yielding many new dispersers. The dispersal ability of a species as well as efficient dispersal vectors both are necessary for the colonisation of newly emerging habitats in dynamic landscapes. However, there may be strong interactions between the temporal spectra and spatial correlation of the disturbance regime and the life history of a species (Amarasekare & Possingham, 2001).“

In the course of time, the organic structure types are extended by anthropogenic structures and agricultural topographies resulting in an increasing overlapping and networking of different functional and usage requirements. The drawing shows four different time frames of the experiment, from the implementation of the system on the existing site to the autonomous growth and symbiosis of natural and artificial structures and processes in the end.







PIONEER PHASE  
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OPTIMIZATION PHASE  
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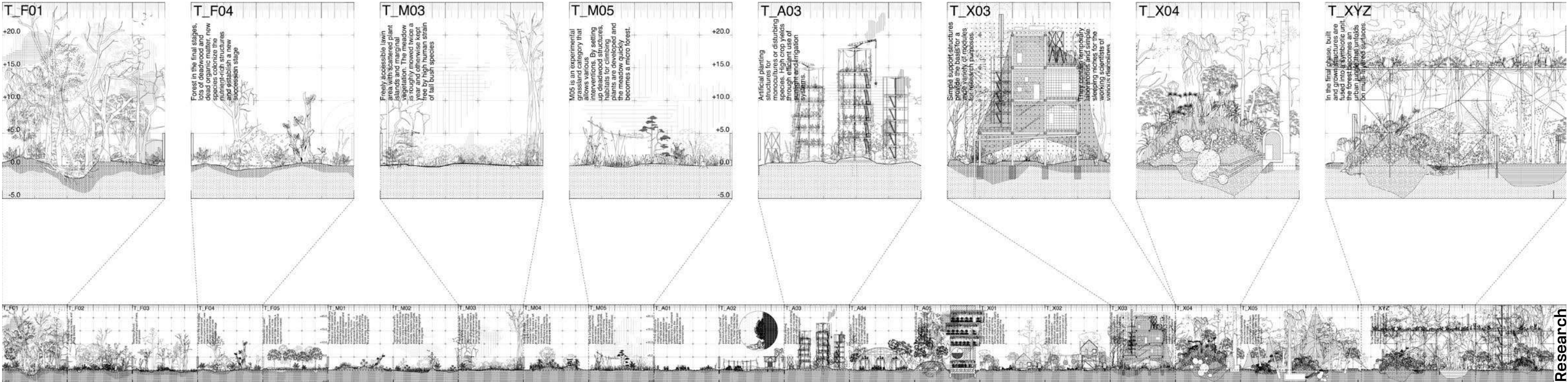
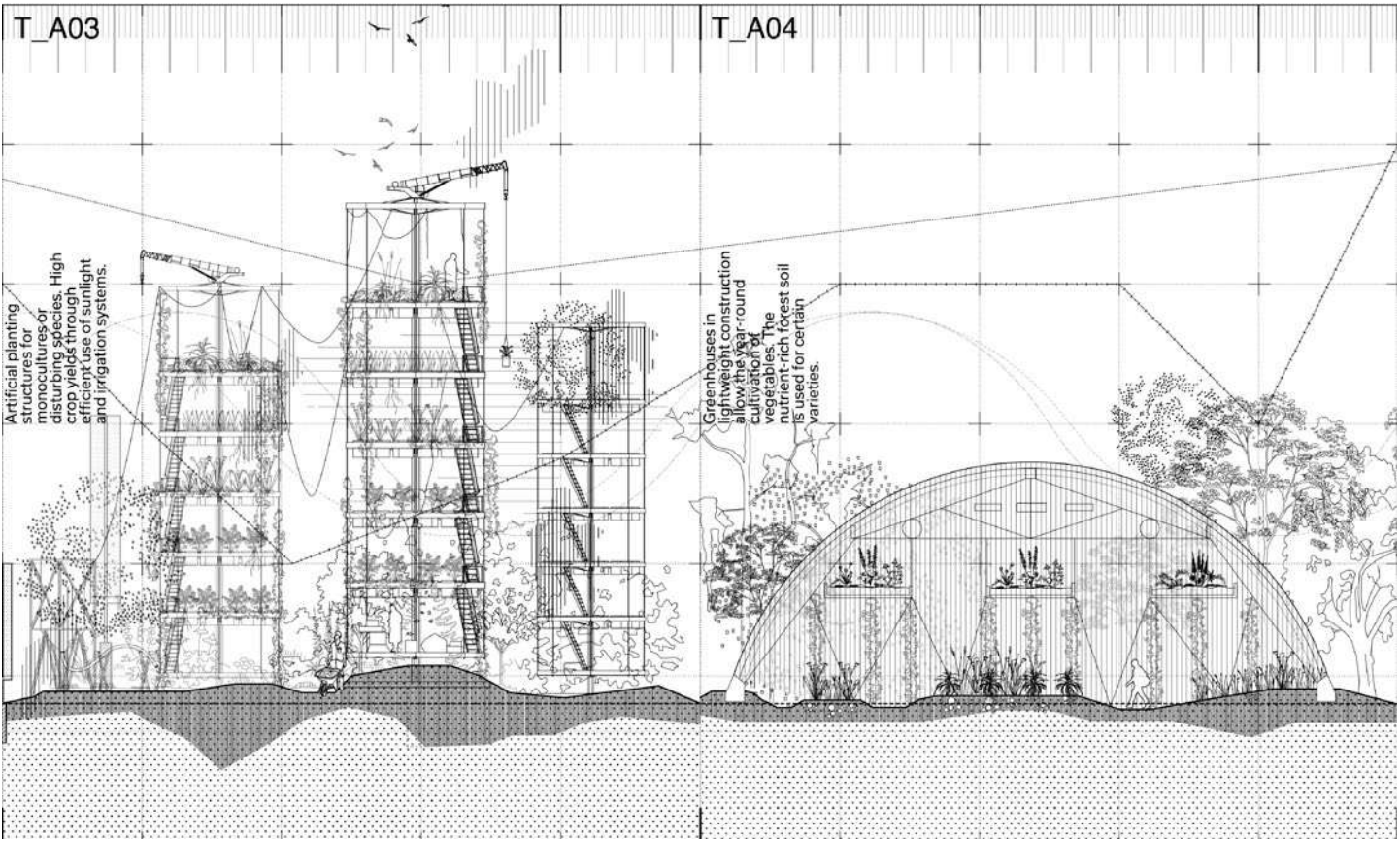
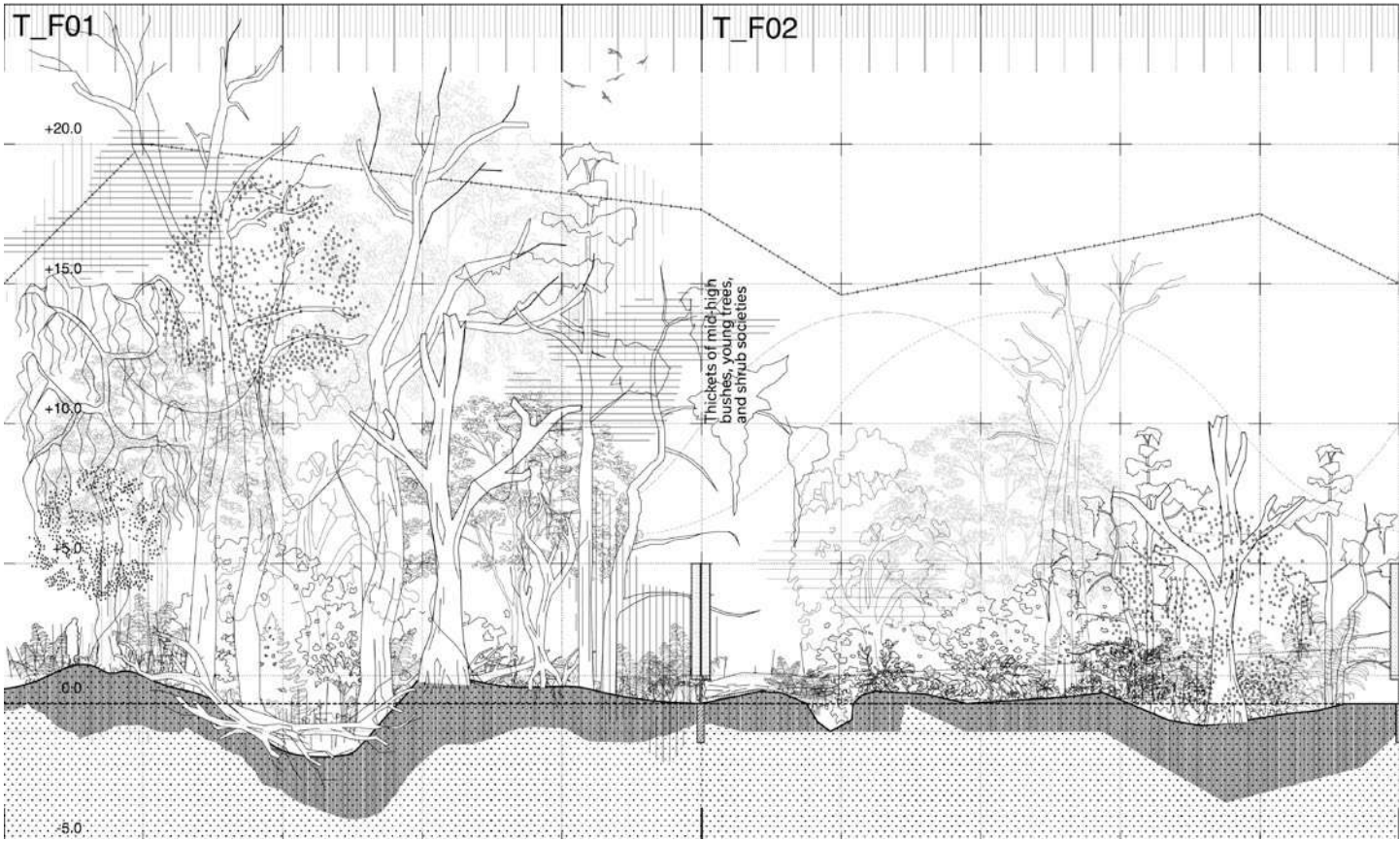
DATE: t[a] = 100  
DECOMPOSITION PHASE

DATE: t[a] = 050  
KLIMAX PHASE



SECTIONS

[fig. 18] Section of the different field types (Forest, Meadow, Water, Agriculture, City) aligned in a row. Original Printed length ca. 240cm.





The system is implemented in the area of first intervention fields are assigned by the respective interventions.

Shortly after the development of a new area, biodiversity decreases for a short time (through drastic interventions in existing biotopes) and then increases even more through a variety of structures and a process of succession.

### INITIALS PHASE

- DATA COLLECTION
- FEEDBACK
- IMPROVED ALGORITHM
- INITIAL FARMING AREAS

### INITIALS PHASE III

- 50-100 PERMANENT INHABITANTS

### INITIALS PHASE IV

- INFRASTRUCTURAL PROJECTS
- FIRST HIGHRISE STRUCTURES (50M)
- DIVERSITY PEAK
- 300-500 PERMANENT INHABITANTS

### HIGH EXCHANGE WITH URBAN NEIGHBORHOOD

- NEW SITES ARE IMPLEMENTED
- SPATIALLY DIVIDED NETWORKS OF MOSAIC SYSTEMS

### DIFFERENT DEVELOPMENT STAGES OF THE ACTIVATED AREAS

- COMPLETE NEW SPECIES
- INCREASE OF ORGANIC MATTER PRODUCTION

### BIODIVERSITY BIOMASS

**PHASE I**

**PHASE II**

**PHASE III**

**PHASE IV**

**PHASE V**

**PHASE VI**

**PHASE VII**

**PHASE VIII**

**PHASE IX Site 1**

**PHASE IX Site 2**

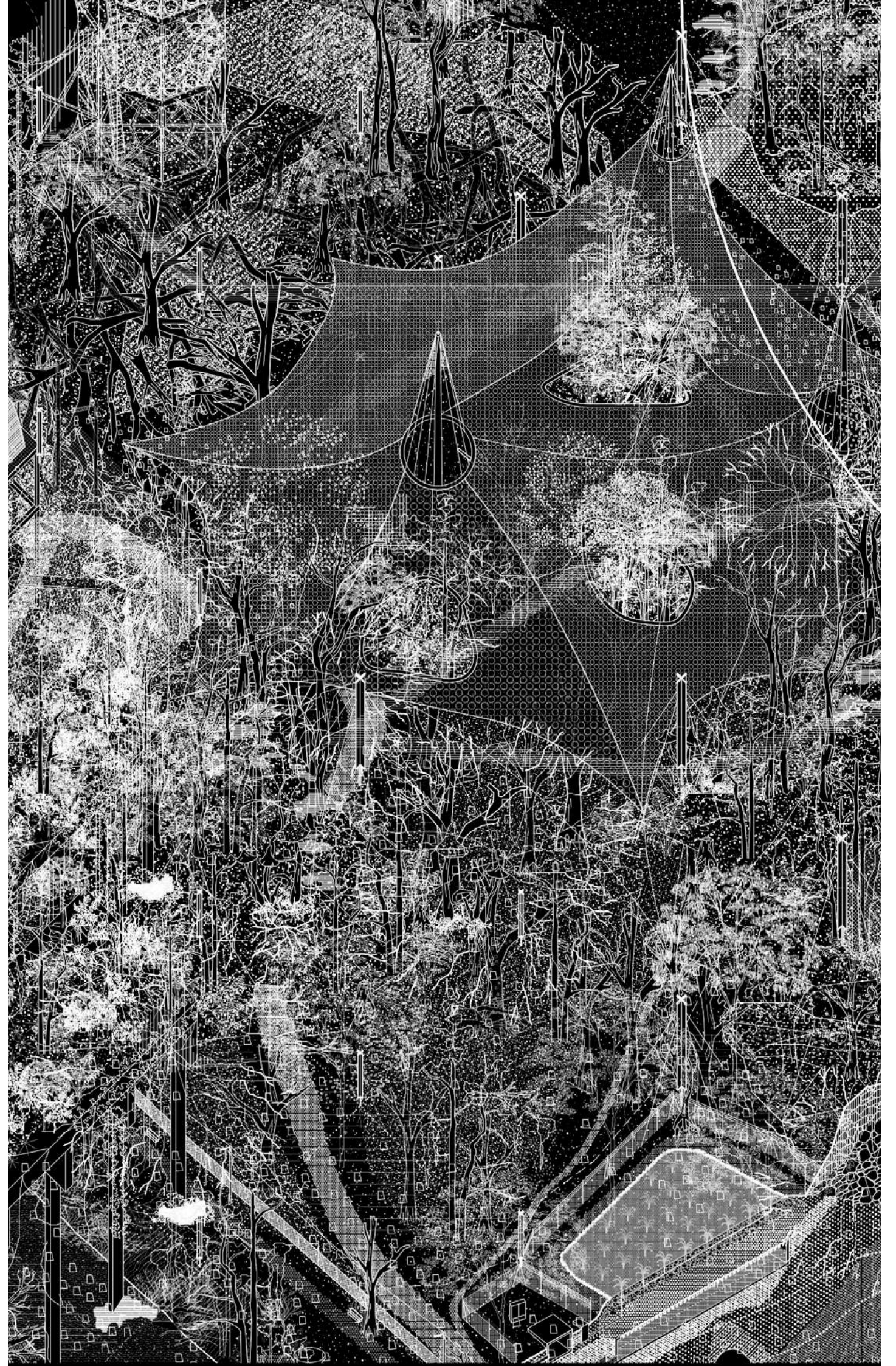
**PHASE X**

**PHASE XI**

**PHASE XII**

**PHASE XIII**

[fig. 20] Axonometric  
Prognosis: Forest tent,  
overgrown platform,  
water treatment plant

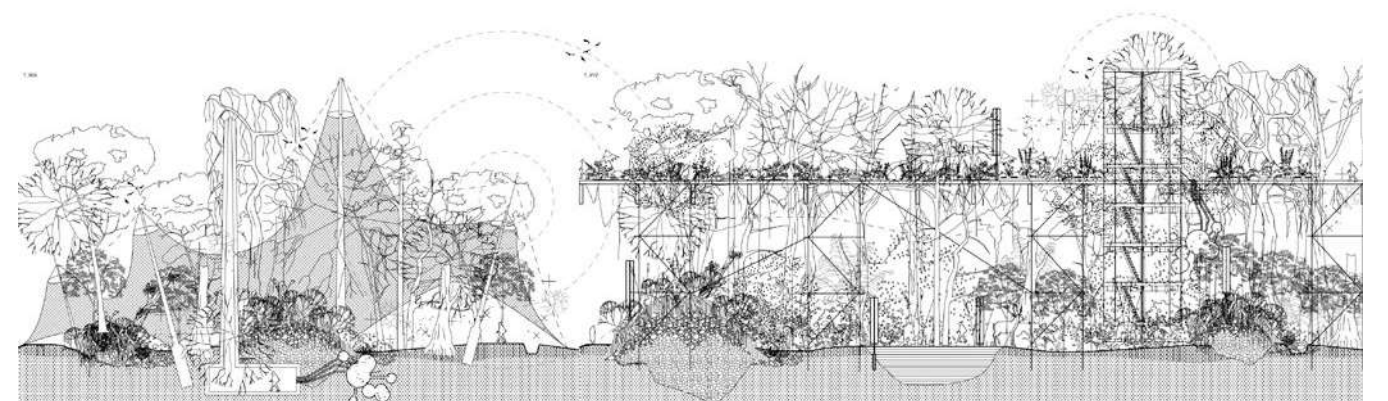
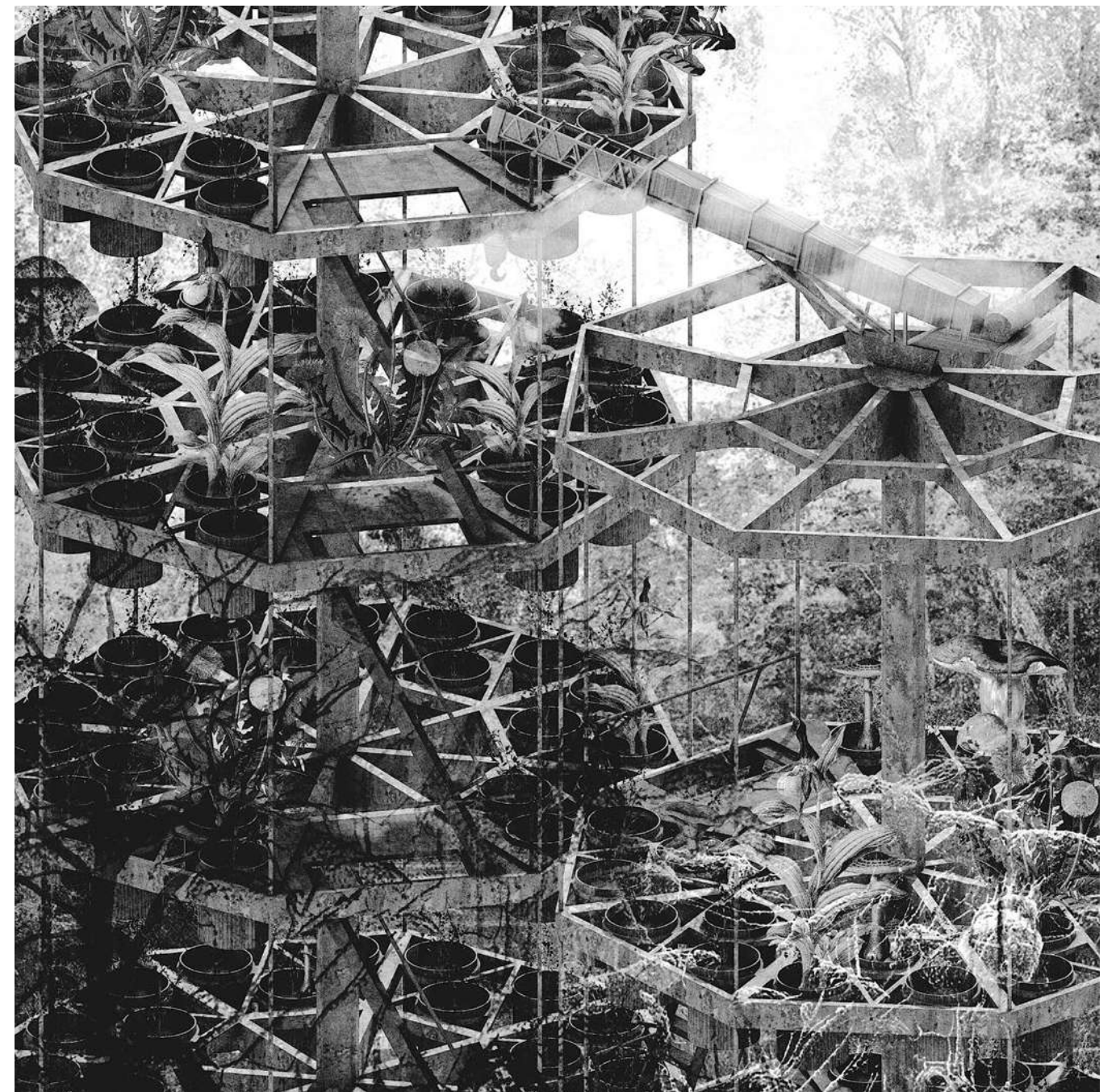






[fig. 21] Agricultural Experiments on a cleared field. City Skyline in the background. Rendering, Collage.

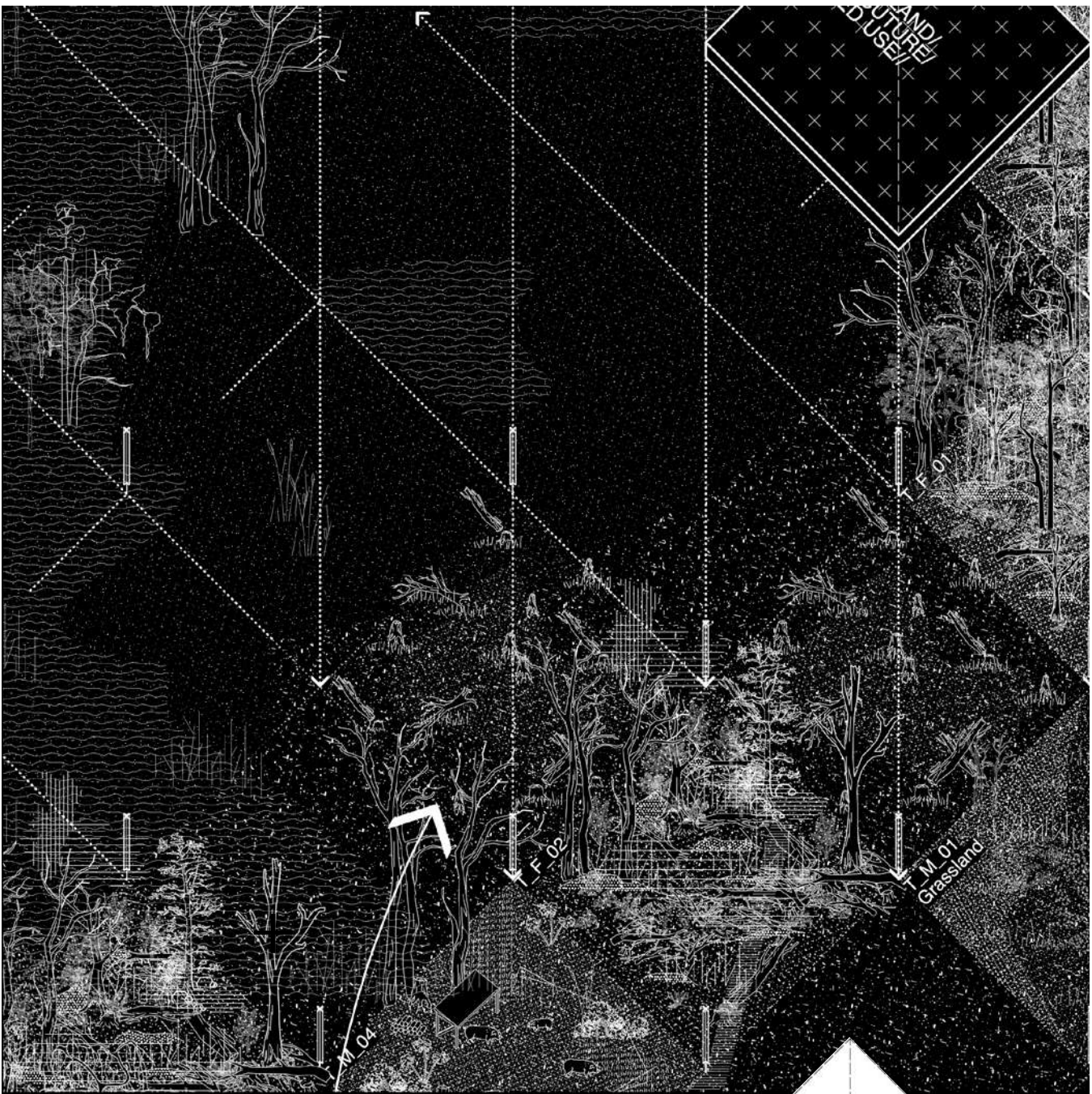
[fig. 22] Prototype for Plant towers. Rendering, Collage.







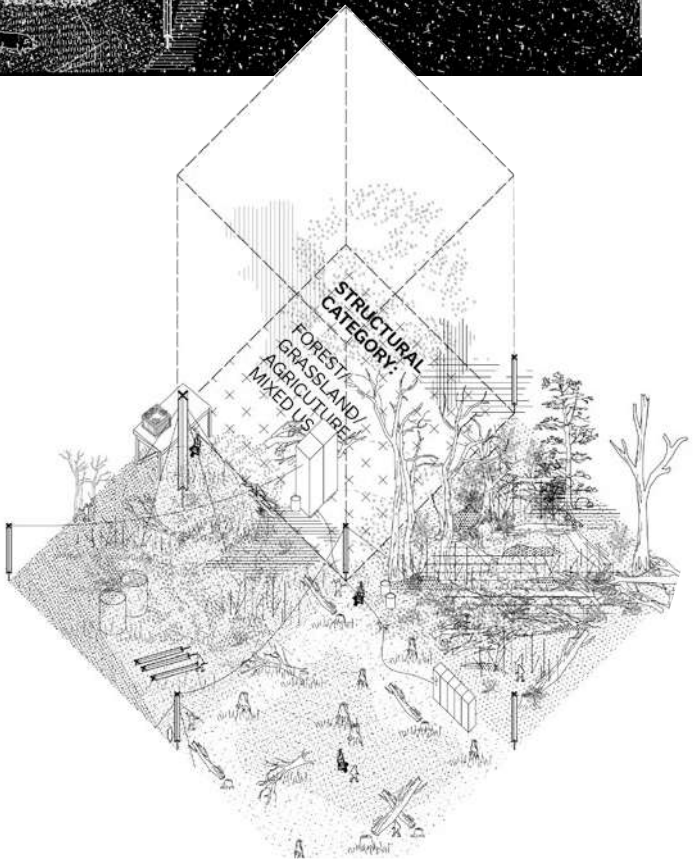
# PHASES



## t[a] = 001 Pioneer phase

At the beginning of the experiment, the landscape is in its present state, with the sparse forest area and meadow areas in between. As a first action, the quadrant is measured and rastered into 25x25 m fields. At the corner points, the cross-shaped measuring stations are gradually set up. A first simulation is started for the core area to assign their respective categories to the fields.

For phase 01, only the grassland and forest categories are activated to ensure a gentle transition to a mosaic landscape. After the fields have been assigned a certain category by random algorithm, they begin to implement the respective rules and structural measures. Trees are felled, forest soil removed and the deadwood collected in certain fields. Already in the first year, this intervention creates a new landscape, as the changed location factors (light, soil, nutrients, ...) can establish a new flora and fauna.

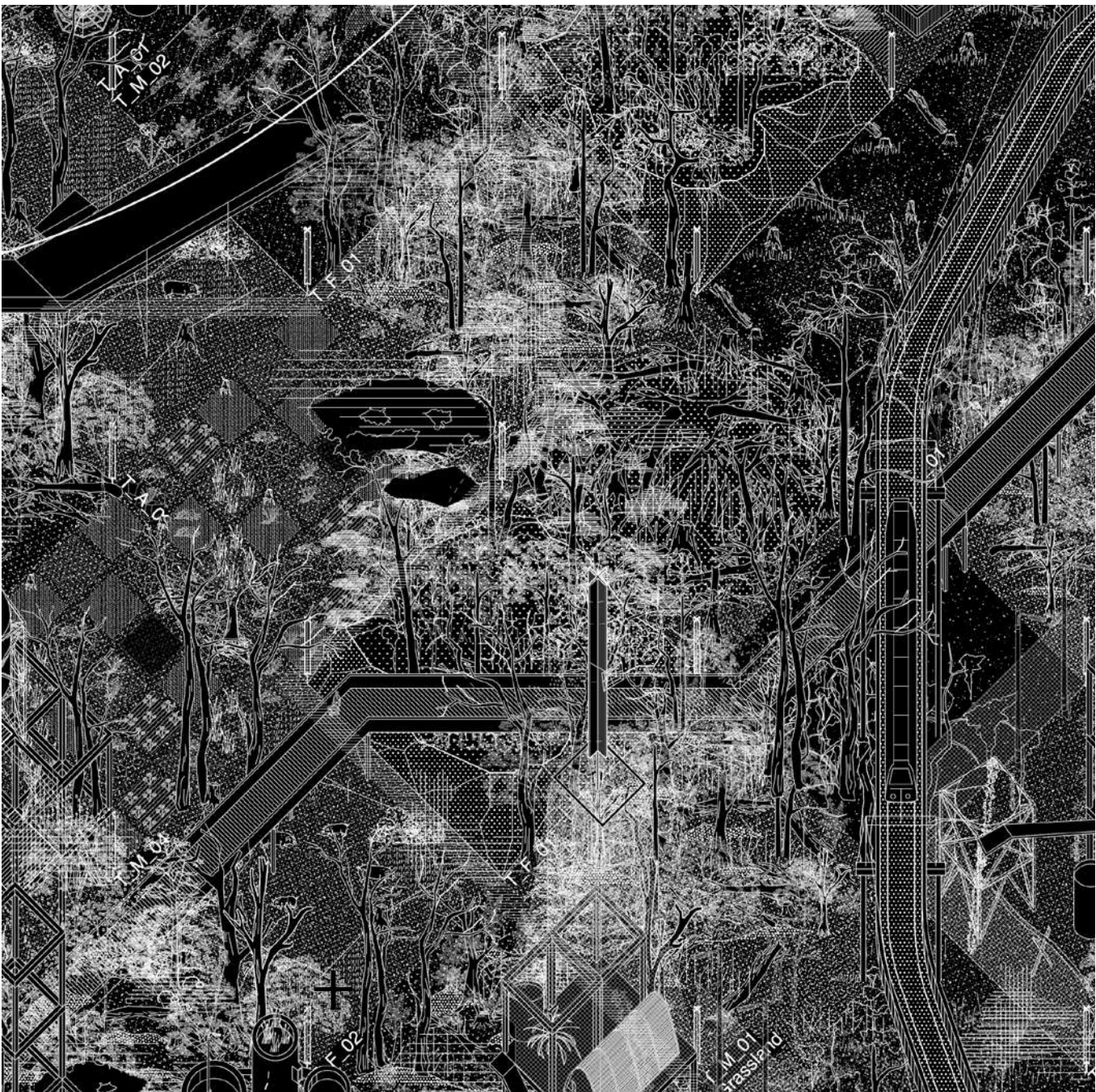
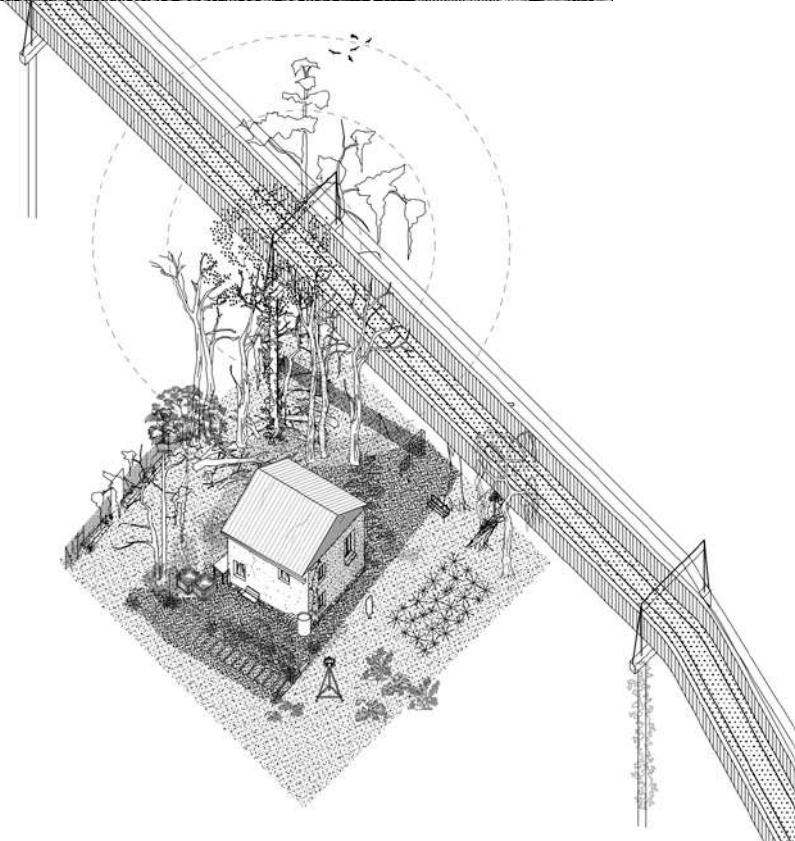






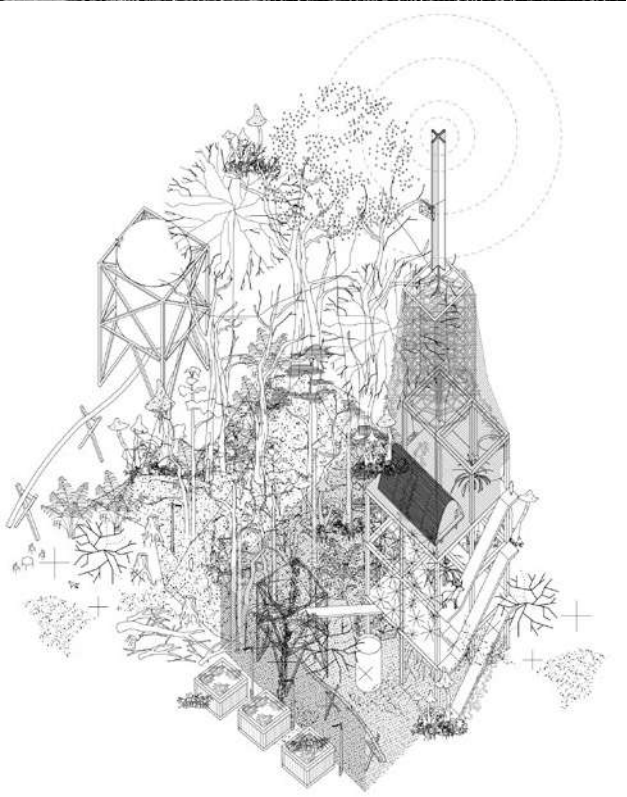
t[a] = 020  
Pioneer phase

The establishment phase has already been completed. This means that after the initial interventions, such as clear cutting and other structural measures, have affected the respective fields. A new vegetation conquers the former forest. Since the activation of certain test fields for the agricultural categories at t = 05, different cultivation methods have been established and the inhabitants of the farms have implemented a civilizational network. Novel elevated railways stretch over the old track systems and connect the area with the city center.

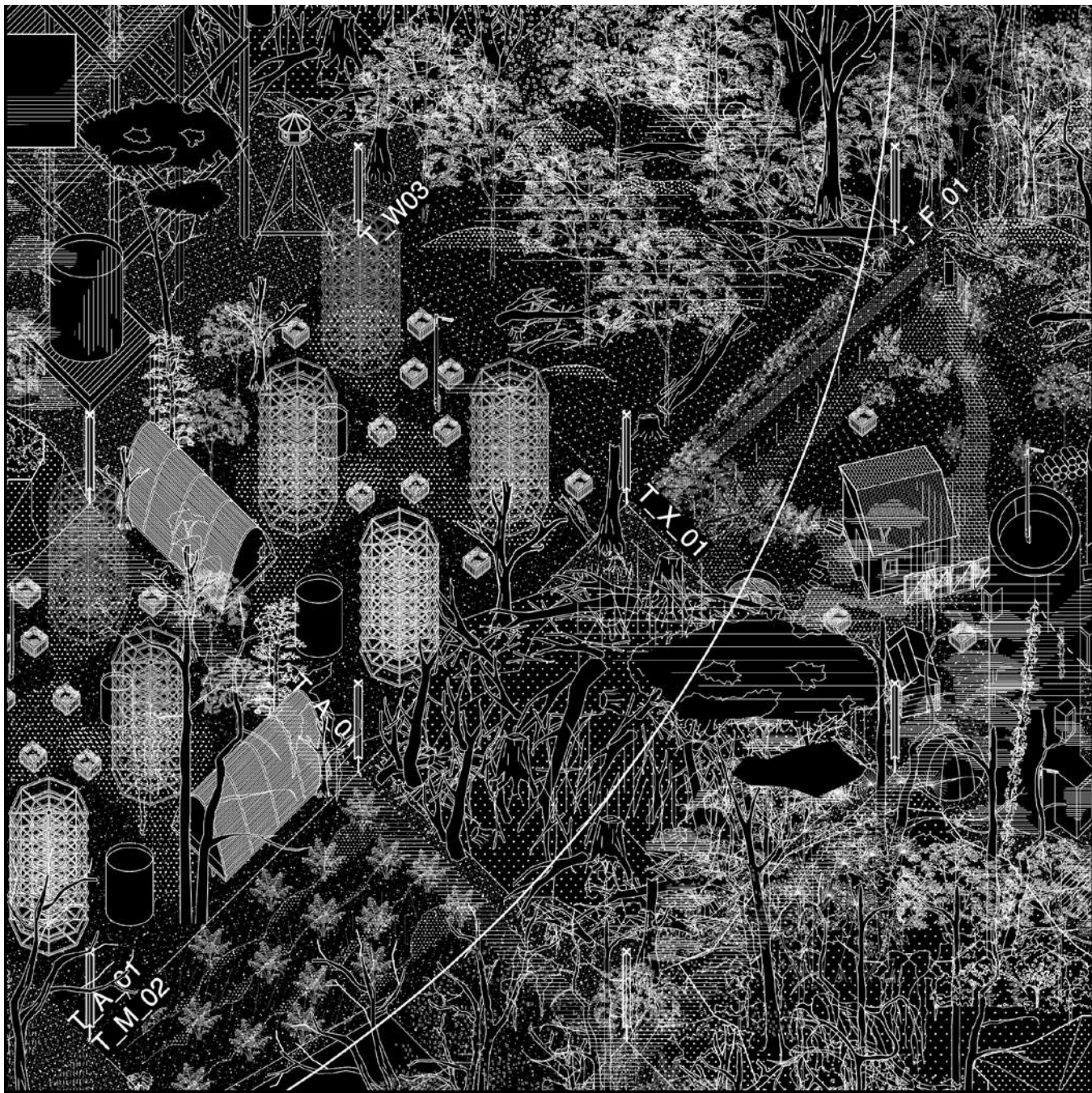


t[a] = 040  
optimization phase

At the beginning of the experiment, the landscape is in its present state, with the sparse forest area and meadow areas in between. As a first action, the quadrant is measured and subdivided into 25x2 m fields. At the corner points, the cross-shaped measuring stations are gradually set up. A first simulation is started for the core area to assign their respective categories to the fields. For phase 01, only the grassland and for est categories are activated to ensure a gentle transition to a mosaic landscape. After the fields have been assigned a certain category by random algorithm, they begin to implement the respective rules and structural measures. Trees are felled, forest soil removed and the deadwood collected in certain fields. Already in the first year, this intervention creates a new landscape, as the changed location factors (light, soil, nutrients, ...) can establish a new flora and fauna.

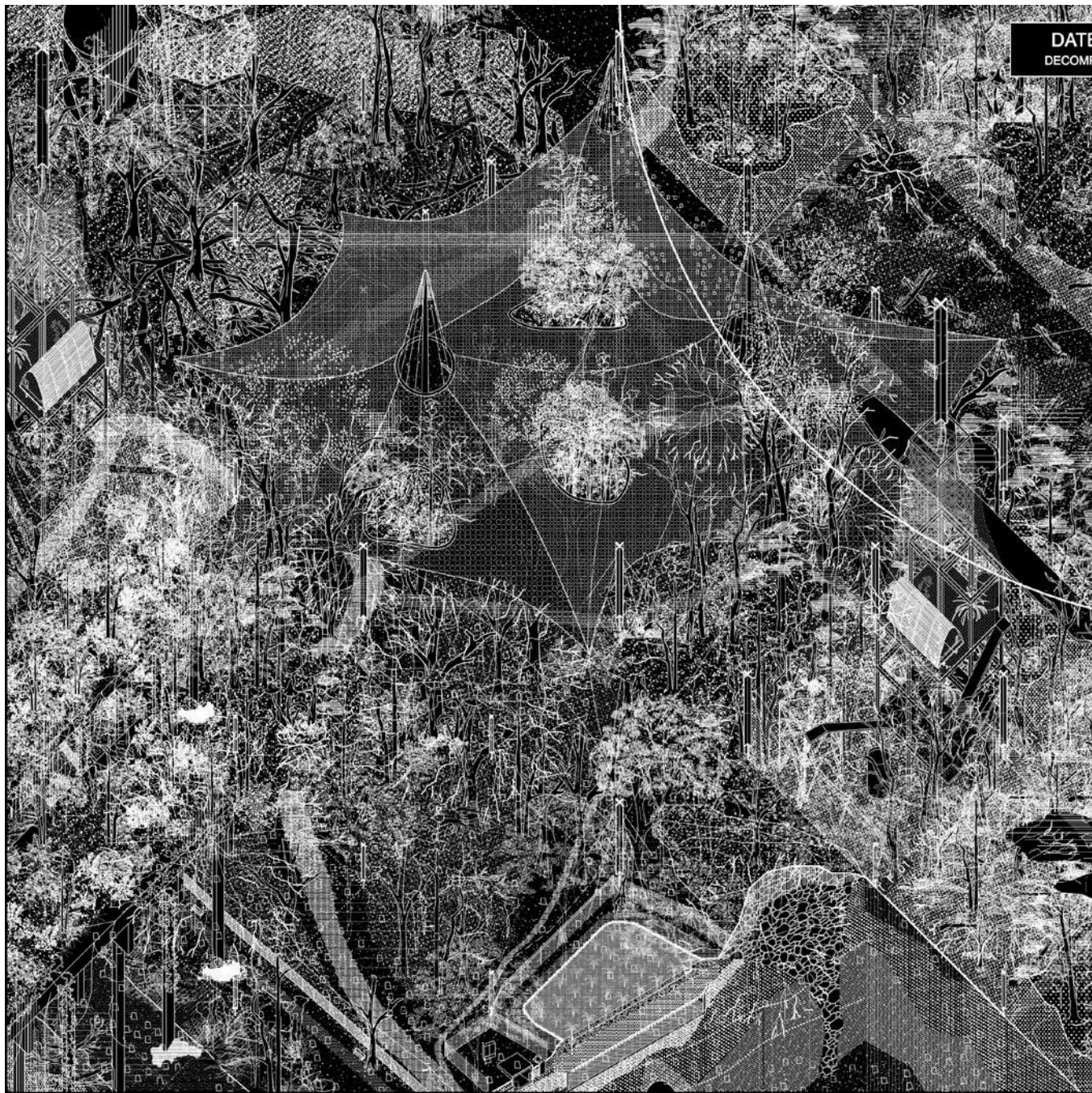
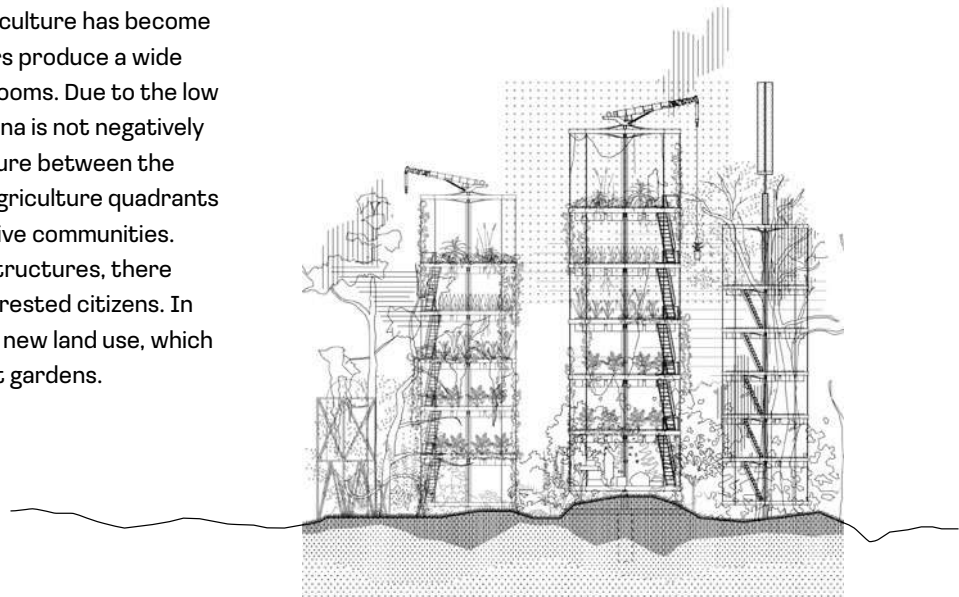






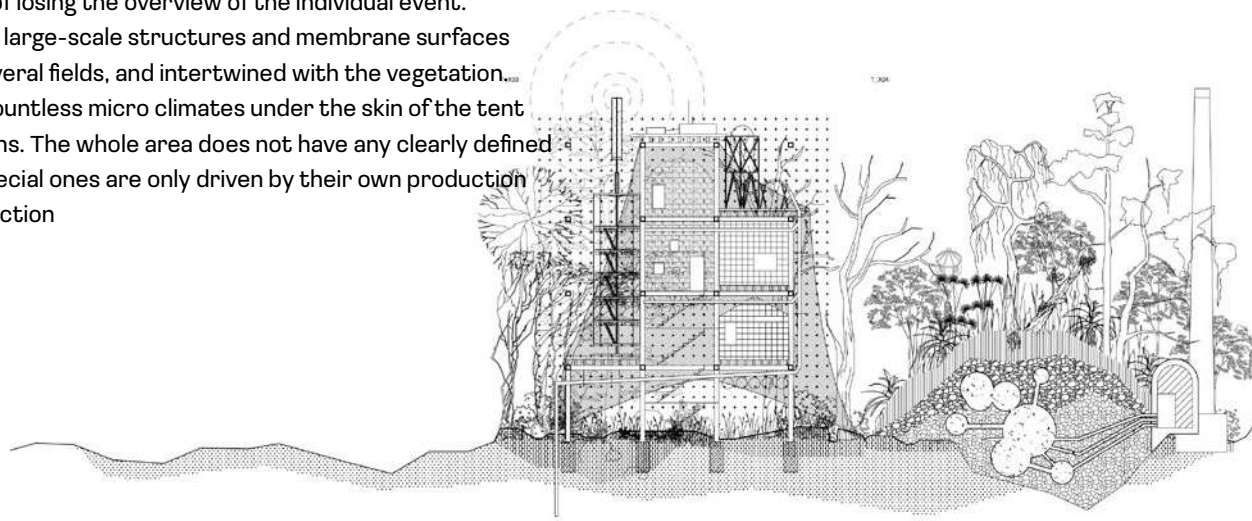
t[a] = 050  
optimization phase

After the early years, a highly developed agriculture has become established. In their peak phase, plant towers produce a wide range of vegetables, fruits, herbs and mushrooms. Due to the low ground impact of the towers, the natural fauna is not negatively affected or displaced, and the natural exposure between the forest quadrants is ensured. The individual agriculture quadrants are inhabited and managed by small alternative communities. In addition to highly specialized cultivation structures, there are still small community gardens run by interested citizens. In addition to pure production, the culture of a new land use, which finds its model in the pre-industrial allotment gardens.



t[a] = 070  
Deconstruction phase/Symbiosis

In the second half of the experiment, the field boundaries increasingly blur. Organisms spread uninhibited, through the complexity of losing the overview of the individual event. The result is large-scale structures and membrane surfaces spanning several fields, and intertwined with the vegetation... There are countless micro climates under the skin of the tent constructions. The whole area does not have any clearly defined goals but special ones are only driven by their own production and reproduction

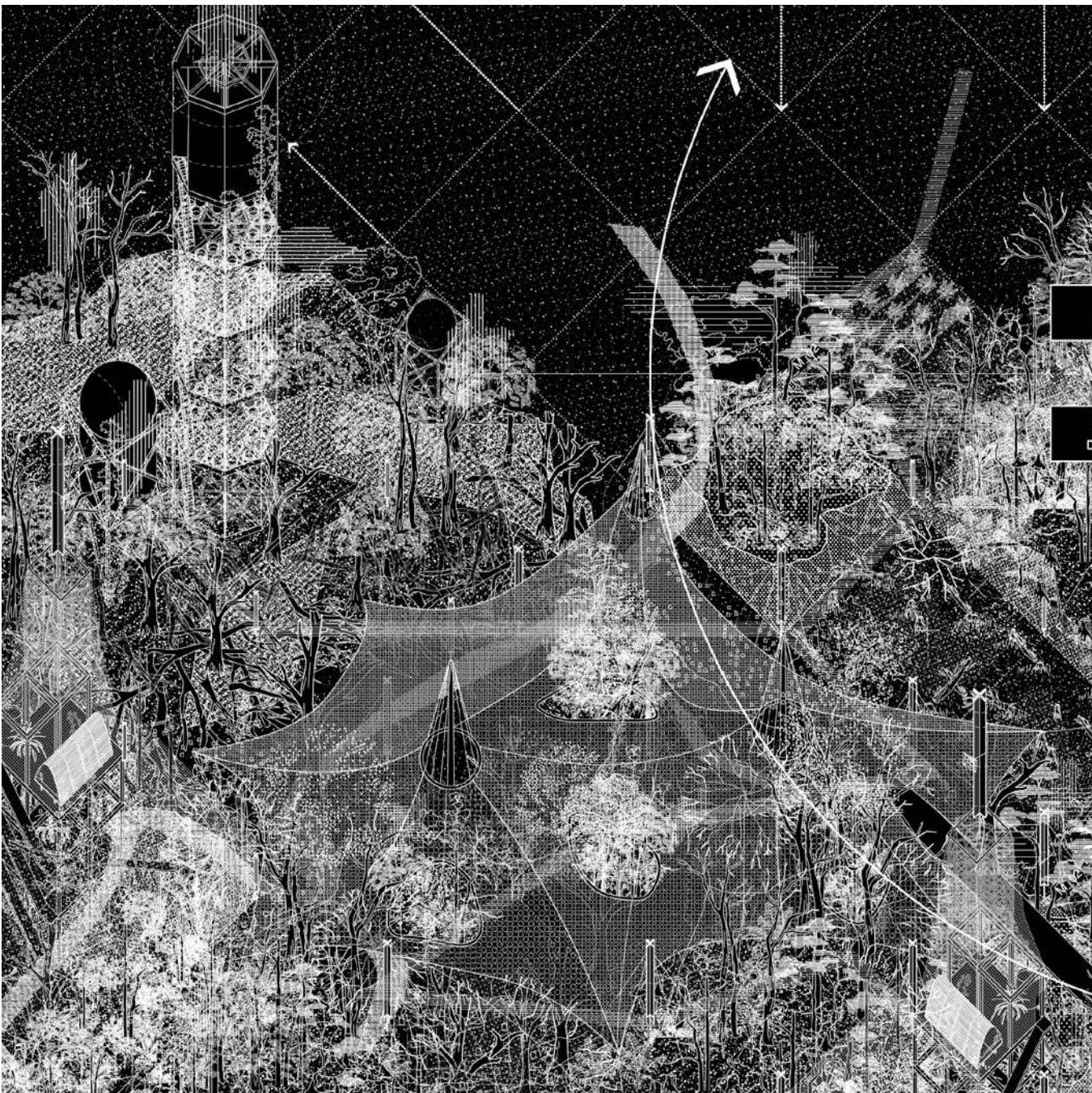
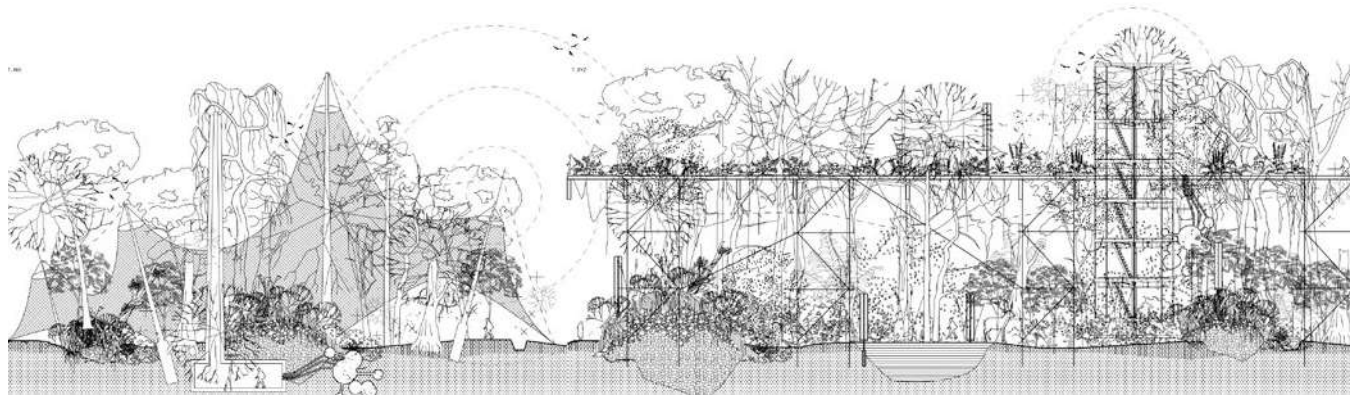






t[a] = 020  
Pioneer/ optimization phase

Platform constructions multiply the forest area and the structural density. The Shady Earth Zone is populated by mosses, ferns, amphibians and vines. The upper platforms are inhabited by light loving species.



t[a] = 100  
Pioneer phase

End of the experiment..What comes next? [...]

