



HET GROENE WOOD VAN GOGH NATIONAL PARK I.O.

**Reviviing landscape/agricul-
tural qualities by reclaiming
the power corridors//**

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STUDIO, Urban Theory and

Urban Society 2018-2019

Master of Urbanism -

University of Applied Sciences, Fontys

W. SARTAIN

Assignment//

The 2020 Triennale of Landscape Architecture “High Green. Innovating the Landscape” challenges us to rethink how major economic, social and environmental transitions impact on a specific territory: the area between ‘s-Hertogenbosch, Tilburg and Eindhoven, embedded in Het Groene Woud. Here, complex spatial processes linked to productivity, changing demographics and delicate landscape features, leads us to explore the transitions between landscape and cities. Where contradictions, clashes and opportunities emerge, design can aim for coherence, and the historical patterns of occupation can form a source of inspiration.

Challenge//

Het Groene Woud (in English, The Green Forest) which is currently transitioning into the condition of National Park (acquiring the name of Van Gogh National Park I.O.). This process constitutes the perfect chance to rethink the area and this STUDIO undertakes the challenge proposing to approach it at different scales. The landscape can be characterized as a small-scale pastoral landscape; a landscape where the image is determined by brook valleys and deck-sand banks with shifting sands and fens. The last decades the landscape has been subject to scale enlargement, impoverishment of land use and different large-scale infrastructure and programs are introduced by all kinds of spatial developments. By this the spatial qualities of the landscape are diminished and the coherence between landscape and city for an important part has disappeared; ecological values decrease, cultural and historical values of the landscape are less experi-

enced, the recreational use of rural land grows as do the challenges of a productive agricultural use. Among the challenges that has been preliminary identified are the wish to strengthen the coherence between city and landscape and improve the connections between the two, the creation of healthy living environment, the preservation of the cultural landscape, the sustainability of food chains, the development of new (agricultural) activities combined with the refuncting of old stables, available plots and building aggregates.

The Triennale proposes a series of themes that are to be addressed in specific locations. These are: 1. HIGH TECH - HIGH GREEN, 2. WASHING WATER, 3. MEAT AND FISH, 4. LANDSCRAPERS, 5. PRODUCTIVE NATURE, 6. SUN AND WIND, 7. ADVENTUROUS HERITAGE, 8. GROENSTAD, 9. DATASCAPES, and 10. BLUE ZONES.⁴ The STUDIO acknowledges this thematic proposal as a starting point, but it holds a critical position aiming to explore the site not only introspectively, but in relation to larger territorial processes. This STUDIO proposes to take these processes seriously and to explore its implications at intermediate scales by generating design proposals at the planning and (landscape) architecture level. The aim is to generate prototypical interventions, meaning testing spatial manipulations highly embedded in local conditions that, at the time, imply logics and ways of doing that are critical to the established modus operandi and that can be transferable and retrofitted, as a sort of “manifesto”. To achieve this purpose, the STUDIO is divided into 2 Methodological Steps: Spatial Strategy, for the research area (Assignment Scale 1), Landscape-Architecture-Urban Design, for one city - the plan area (Assignment Scale 2).

Design Proposal//

The urgency of extra land reclamation in Nord-Brabant and the abundance of agricultural land and the conflict of spaces, have triggered my intentions to search deeply on the agricultural sector in the province.

This research have provided me with many other information than agriculture alone, many researchers are proposing to enhance the agricultural qualities in the area in many ways, such as linking the community and reconnect the society with the agricultural sector and production. This could be through urban agriculture projects, exploitation of roofs, and creating agricultural towers or vertical farming. All these could help is solving potential expansion of the need of agricultural sector.

In addition, through my regional analysis on the ecological qualities and infrastructures and density and water management, I have stumbled upon an important neglected element which is the energy corridors that are creating segregation and sharp edges since it paths through most of the important cities and towns in the Kampen area.

As a result, I started to pin through most problematic areas which suffer harsh edges and blocks continuity of nature, agriculture, mobility, and water management. Hence, a set of prototypes where provided as proposal for solving these discontinuity.

Nevertheless, during my investigation, I decided to map the region throughout a morphological study as the historical mapping provides us with evidences about the evolution and development of the landscape through out time and space.

During my research analysis, I have mapped the most critical parts of the urban edges, and created an atlas of power corridors which passes through critical areas which creates a big conflict and reduce the quality of living in the cities and towns.

Furthermore, I started another research on the energy lines, and what are the proposals to solve such conflicts.

Smart Grid, is an important strategy for a resilient areas, where it depends on independent power sources. Therefore, I proposed to shift the power lines into a compact infrastructure system, then changing the power towers from normal to unipolar as part of reducing the footprint of the structures which have bad impact on the ecological qualities.

The focused area which I have proposed a planning is Son & Bruegel area north of Eindhoven city. The area is subjected to scars from current and previous infrastructures, such as Energy grids, canal, highway, urbanization. While the connections to this forest area is also not easy and creates a bottleneck for pedestrians and bikers which in result creates a neglectation of the area. However, there is many important functions in the area such as Old military museum and landscape qualities, such as sand dunes, Heide, bogaje, and water channels and old artifacts of landscapes.

Hence, I also started to map the area in a morphological way, trying to revive the old ecological qualities, links, water and many other important natural qualities which could be highlighted in the area, and reconnect old paths with each other and impose new connections, and facilities that are mentioned in the design process.

Another important factor, is the area reclaimed from the power corridor which is strip of 2 km and 60 m wide which an area of total 120,000 sq m.

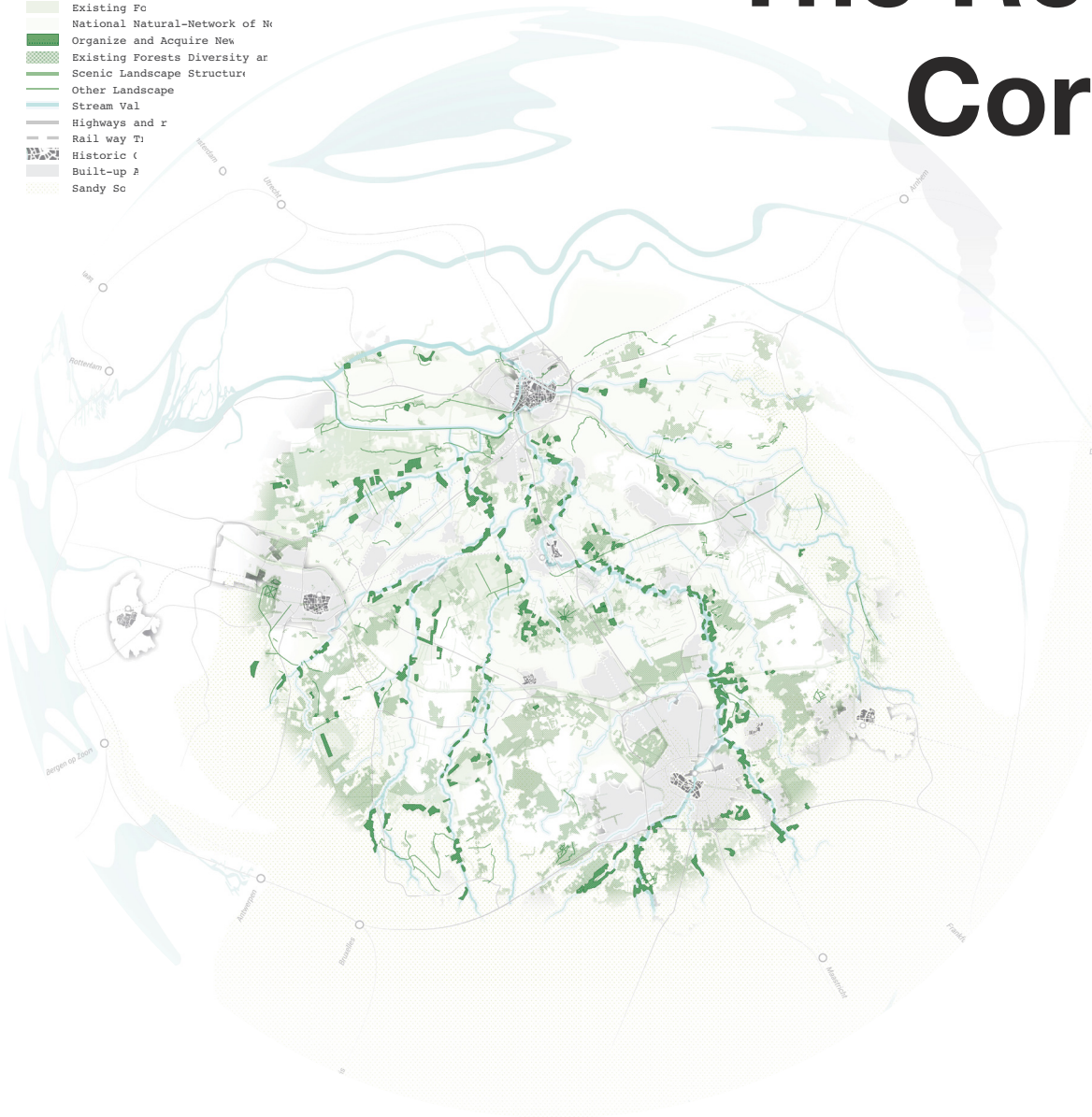
This reclaimed area will work as a hub of activities which serves the natural reserve, and create a junction between the segregated areas which are north of eindhoven, Son & Bruegel, and the agricultural farm land.

Therefore, the strip which will reconnect the natural qualities will also provides activities and services for the area, such as attracting more visitors through introducing agricultural experiences such as trees nurseries, flower plantations,, bike paths, park activities such as watch and light tower, exploiting the concrete bases of the old towers, etc..

At the end, The design is a combination of three main aspects of design, first is to find areas that could be exploited for potential agricultural expansions which creating any conflicts or stress on land usage, second implementing the smart grid system gives as a huge space of land all not only in nord-Brabant but in the whole country, hence creating a new national path that works as connection, recreation, and production. The third force that I worked on is reviving the ecological natural qualities through historical reinvention and morphological studies which reveals the stratification of layers over time which in return will work as a remembrance of the ancient landscape which the area have lost.

The Resilient Corridors Het Groene Woud//

- Existing Forest
- National Natural-Network of N
- Organize and Acquire New
- Existing Forests Diversity ar
- Scenic Landscape Structure
- Other Landscape
- Stream Val
- Highways and r
- Rail way T
- Historic (
- Built-up A
- Sandy Sc



" Smooth Transition of the landscape in the Groene-Woed, and Kampen region in Noord-Brabant. Mapping on different areas will be subjected to many scenarios in order to achieve this smooth transition of the landscape. I have chosen the agricultural sector as a research segment after noticing its huge impact on the area not only economically, environmentally, socially but also on its spatial influence and the huge amount of space that agriculture occupy. This research is to back-up my proposal in order to legitimize any alternative proposals in reallocating agricultural lands in the area. Distressing the land has a huge influence on the natural cycle of the landscape. It will let the earth to rehabilitate and to regenerate its proper natural cycle. And since cities are already dense, yet there are spaces that could be exploited and help in the natural distress on one hand, and help to regenerate and end the segregation that is happening inside the cities on the other. The benefits are wide and various and there is no debate on its legitimacy, yet it will be an amazing results if this could be practically implemented and tested in this area.

This research have provided me with many answers regarding my general topic, first I became familiar with the agricultural culture in Noord Brabant via studying historical events, which are related to socio/economical factors, which made policies to be tested over a century. Second, this paper have

provided me with paper alternative solution of agriculture, its is not only technical alternative but also spatial, which is my concern. The figures on the land usage, and the potential unused spaces in the region have made things more concrete ignorer to achieve this smooth transition. The tested examples in many other countries also backed up my research as an evidence on the legality of Urban Farming and its urgency in many growing cities around the world.

The rapid change in globe, and the exponential evolvement on all levels forces us architects, planers, and policy makers to think about alternative solutions, an unconventional ones. Humanity is in an ongoing trail and error, nothing is fixed or constant. Therefore, a scientific evidences backed up with data would create a wise and mature field of experimentation. Yet, we always tend to go back to our basics, but in different way each time. I personally think urban farming is nothing more than rearranging cities to be like an old authentic village where every member of such communities is an entrepreneur. Self-sufficiency is always sustainable solution, all the developed countries work hard on achieving this.

Contributions of urban agriculture to urban qualities.

According To Randolp Hester's vision for sustainable urbanism in his book Design for Ecological Democracy he summarizes the principles of sustainable urbanism as:

- Increase diversity,
- Integrate parts of urban ecosystems that have been segregated,
- Consider the many and diffused indirect interconnections of urban systems
- Follow the flows and cycles of biological processes,
- Evolve the design from the intrinsic character of the locale,
- Rely on renewable energy and resources,
- Live and design within the natural limits of the bioregion,
- Solve multiple problems with few actions
- Reveal natural processes through design
- Use democratic decision-making processes,
- Co-evolve human development, human habitation and nature to achieve human fulfillment and the restoration of ecosystems. (Hester, 2006).

Although, some cities have set measures for sustainable development based on certain indicators according to Local Agenda or national guidelines. Quality of life indicators are usually related to aspects such as "amount of public green spaces per inhabitant", "public parks" and "recreation areas" and important factors to make the city livable, pleasant and attractive for its citizens. The society needs a holistic approach to the management of the development process, embracing economic, social, cultural and ecological considerations. Landscape is a framework within which this can be done (Roe, 2007).

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Research Statment//

The urgency of coping with future events and planning contingency policies have been escorting policy makers, researchers, urban planers, and economists over the centuries. Today, due to the escalating challenges that societies are facing, there is a need for holistic approaches that could prevent future break-downs on many levels.

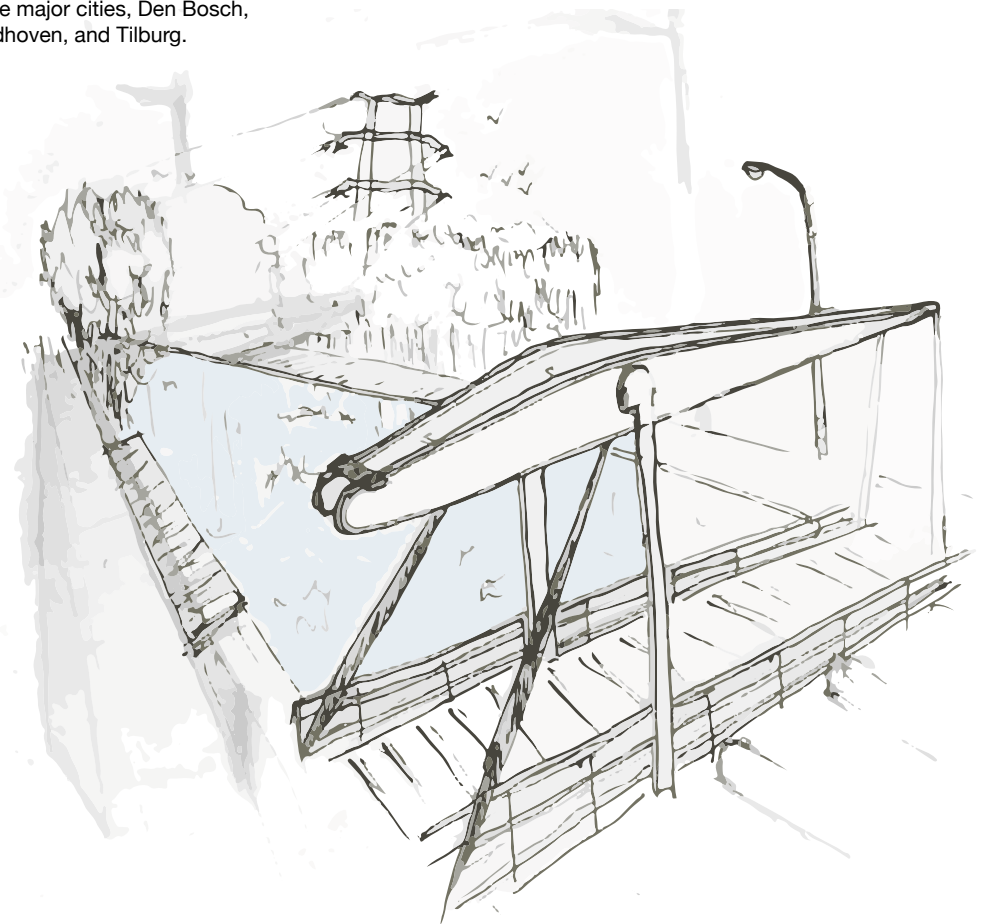
In addition, the butterfly effect has become visible to us clearly, the rise of global warming, economies of scale, and growth in population are effecting all dimensions of the way we live, yet the local "Fire-wall" have failed. Therefore there is a need for a holistic defensive strategies which the rise of urbanization had shaped a new structures in the world urban communities and have led economies, ecologies, environments, energy consuming, agricultural production.

The Netherlands, like many other countries will be effected by all these challenges, as a result many conferences, debates, and policies projections were part of planning contingency plans to prevent any deterioration, Future-Proof plans are being implemented shy-fully. Moreover, many studies and researches have shown the possibility of change, especially with the current technological advancements and digital platforms which could be exploited in many fields.

Being one of the leading countries in agricultural production, and the world second food exporter after the USA, The Netherlands's policy makers should be aware of the future exponential demand on food and other agriculture. Since the problem lays in the scarce land resources and abtrupt grow in Dutch urbanization, yet sometimes unexpectedly. On the other hand, the need to preserve ecologies and

nature, and coping with future water rising levels will also create challenging assurance in the near future. Hence, alternative farming systems arises and should be focused on the cutting edge of economy and society.

I will focus on utilizing urban agriculture as a medium for a spatial smooth transition in agriculture, urbanization, having in mind a minefield of limitations which impose a certain mind-set, as this paper tackles in particular the Noord-Brabant area, focusing on the Groene-Woed & Kampene regions which are surrounded by three major cities, Den Bosch, Eindhoven, and Tilburg.



How agriculture has played role in changing the dutch economy and society?
Dynamics of Dutch agriculture

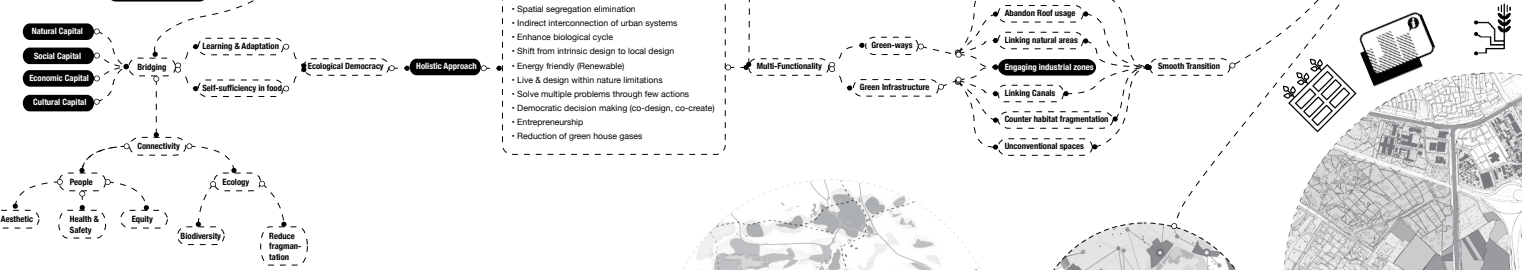
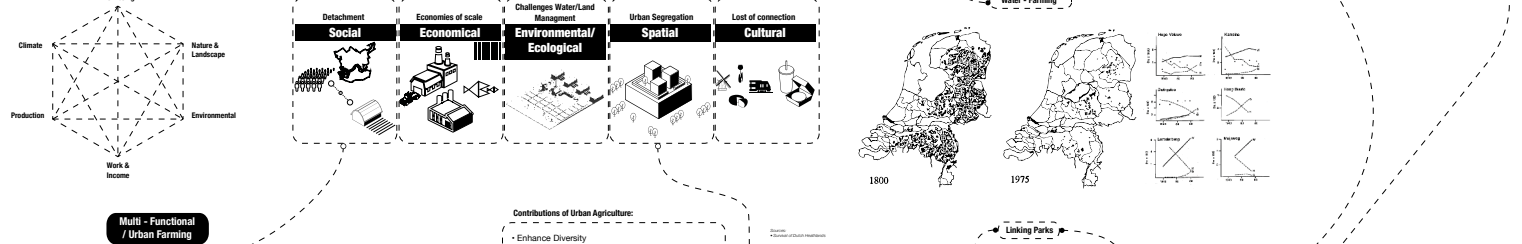
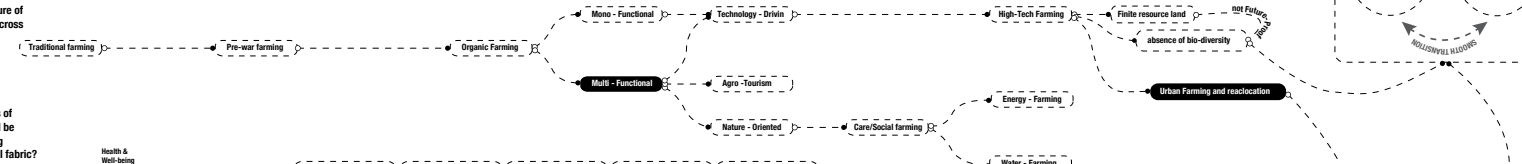
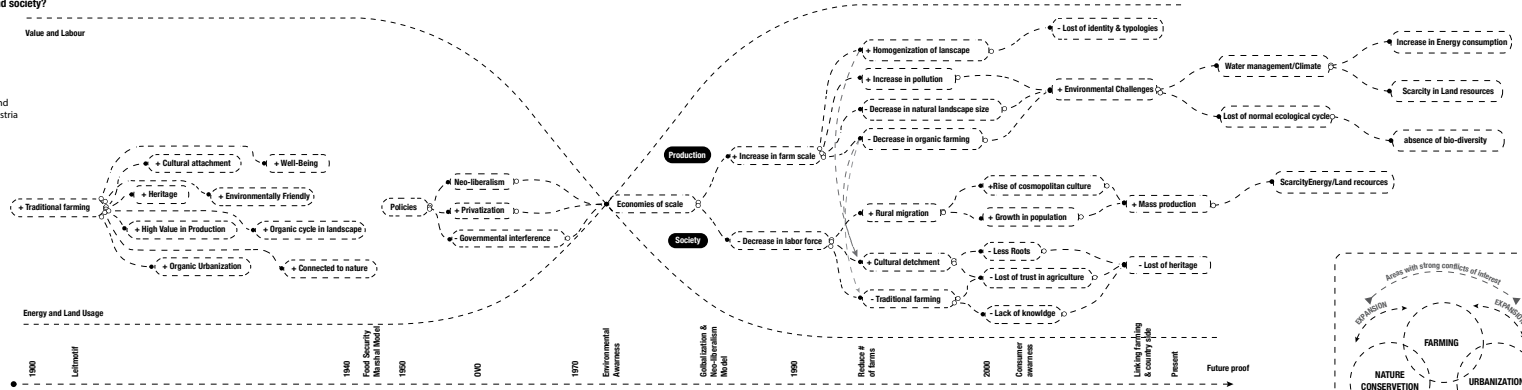
How to utilize urban agriculture and relocate agricultural lands to industrial zones in Eindhoven?

How did policies shape the culture of agriculture in the Netherlands across modern history?

What are the alternative models of usages and visions which could be beneficial to the re-transitioning agriculture into the urban/social fabric?

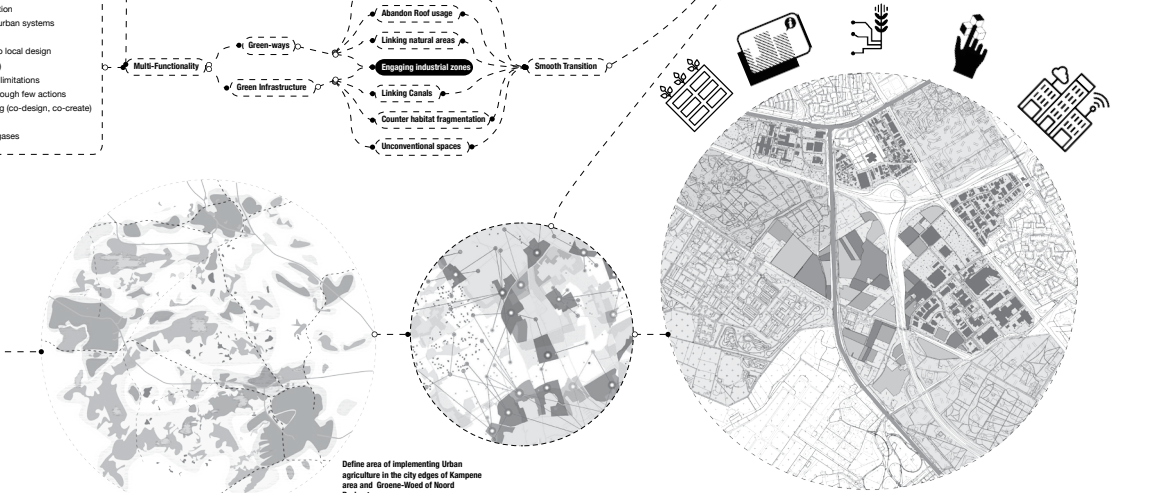
What are the impacts of urban agriculture on the 3 Economy, environment, and equity of concerns?

Research Hypothesis :
How to utilize urban farming and reallocate agriculture into potential spatial qualities in the region of Noord Brabant?
Supervisor: David Dooghe
Written by: MoKabbara



Total vegetable production in Noord Brabant (tons) = percentage of the national horticultural area present in Noord-Brabant x total national vegetable production (tons) / 100

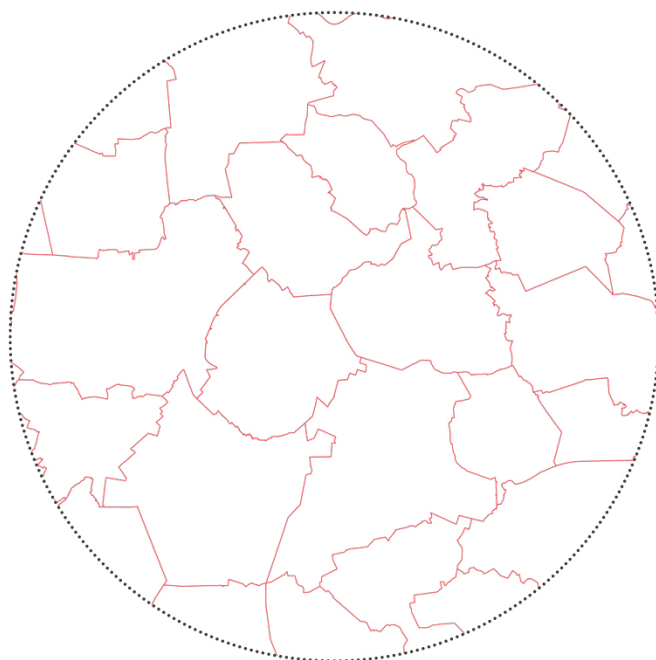
	Area (ha)	Factor	Used area	Production method	Yield t/ha	Products grown (t)
Rooftops	6449	0.05	322	Hydroponics	190	61,263
Parks and gardens	3880	0.2	776	Intensive urban agriculture	60	46,560
Allotment gardens	329	1	329	Conventional urban agriculture	12	3,948
Building sites	5370	0.2	1074	Conventional urban agriculture	12	12,888
Total						124,659



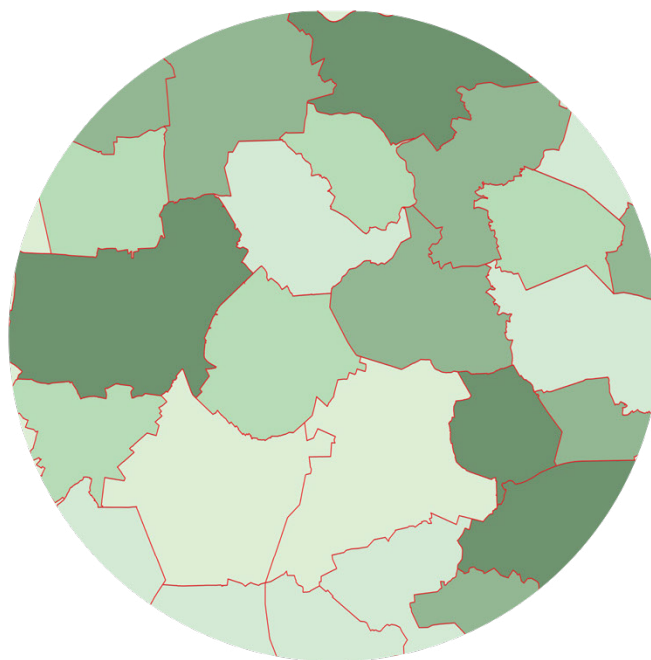
What are the potential technologies that could be utilized in achieving a smooth transition of agriculture into urban context?



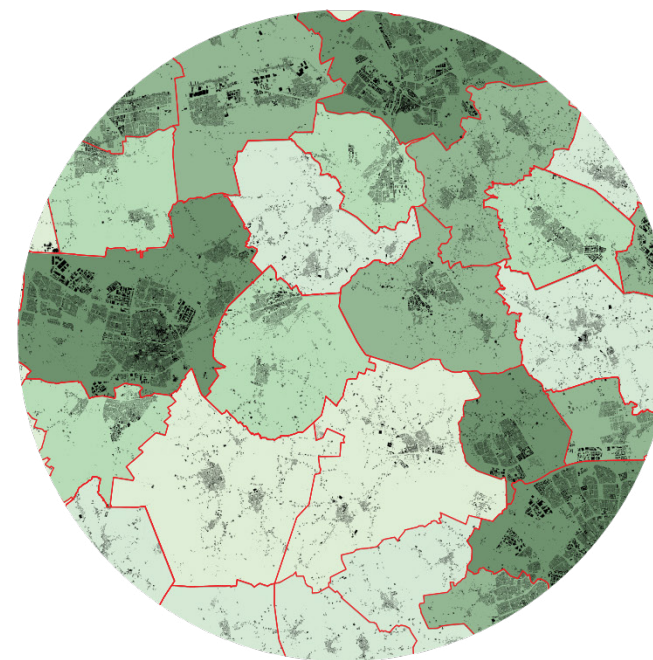
Regional & Local Analysis//



-EDGES-



-DENSITY-

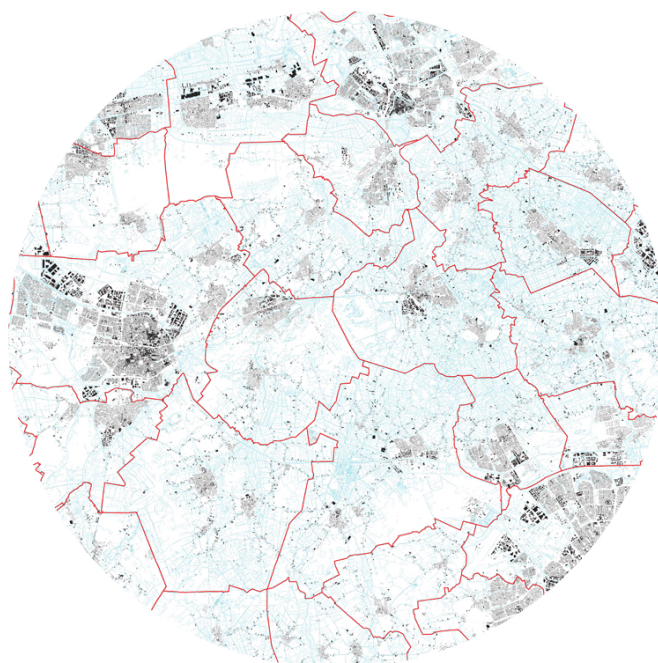


-MASS-

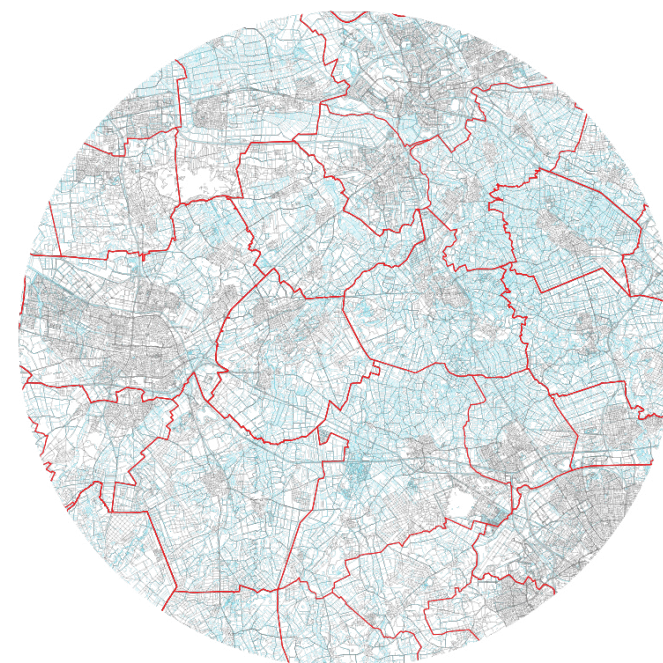
Regional & Local Analysis//



-MOBILITY



-WATER-

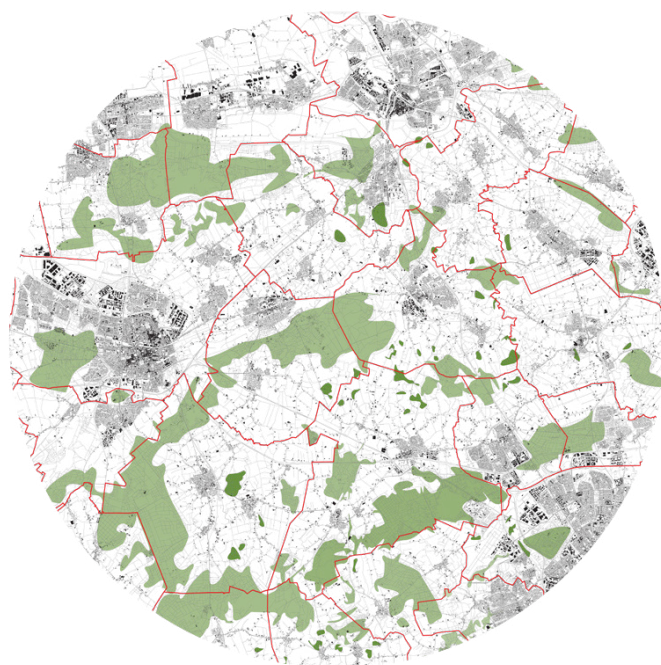


-WATER & MOBILITY-

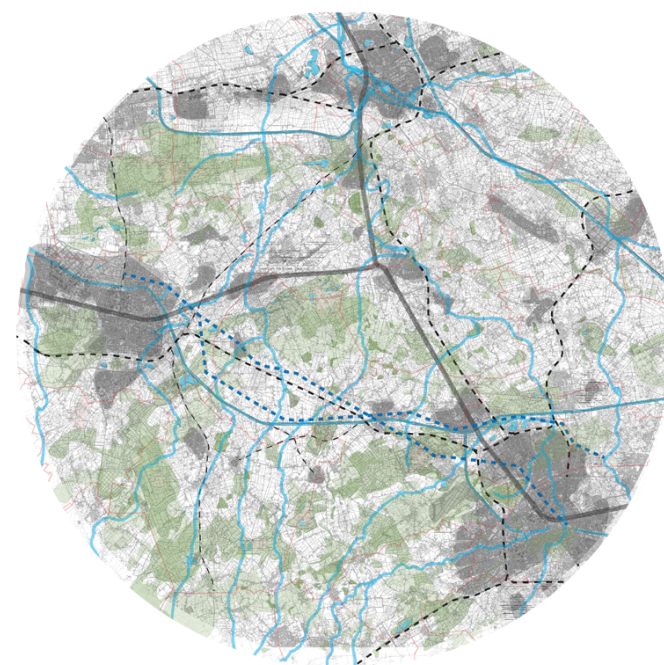
Regional & Local Analysis//



-ENERGY-



-ECOLOGY-

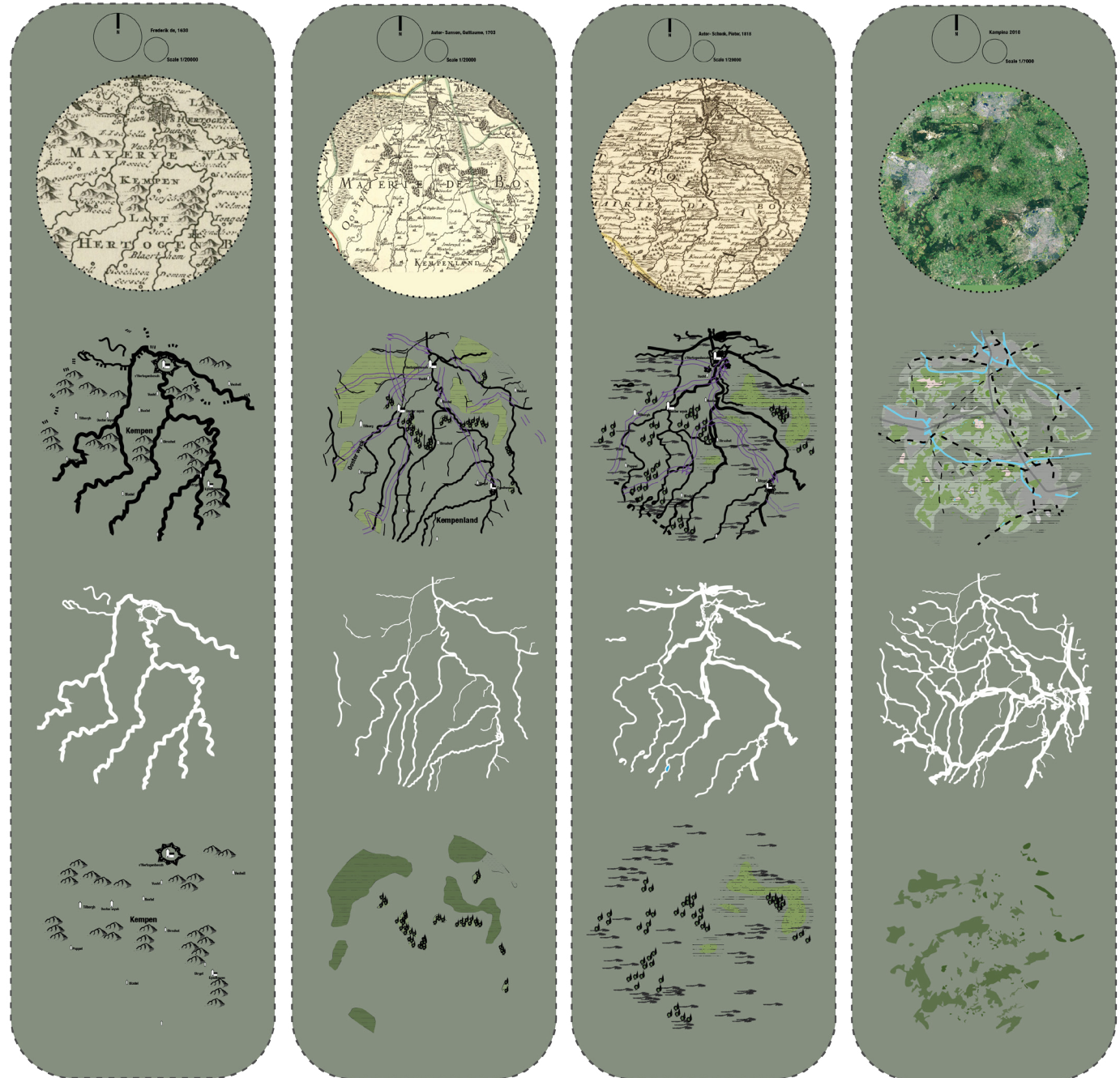


-MATRIX-

Morphology//

HISTORY//

The historical geography of the landscape of a lowland brook valley in the sandy Kempen area (eastern Brabant, Netherlands) shows the interaction of ecological processes and land use, and helps to understand processes in the present landscape. In this location the human influence, especially on the groundwater hydrology, played a major role in the development of the landscape. Levels and flow of different types of groundwater interacted with vegetation development and human interference, to produce landscape patterns. Four main stages have been identified. In the prehistoric period, a natural deciduous forest covered the higher grounds, ombrotrophic peat was formed in the valley, and groundwater was relatively deep. In the medieval stage man settled on the edge of the valley, cleared parts of the forest and dug part of the peat. Groundwater levels were raised, which increased the rate of groundwater discharge and increased the amount of associated lowland peat formation in the valley. This tendency continued in modern times, when the area was completely deforested. Groundwater levels increased further due to decreased evapotranspiration, which gave rise to the use of ponds for fish and for water mills. Finally, in the most recent period the groundwater level has been lowered by extensive artificial drainage, partly on a regional scale. It was concluded that evaluation of historical changes in the landscape help provide landscape planners with a sound idea of the nature of the landscape.





SMART GRID

The Smart Grid represents an unprecedented opportunity to move the energy industry into a new era of reliability, availability, and efficiency that will contribute to our economic and environmental health. During the transition period, it will be critical to carry out testing, technology improvements, consumer education, development of standards and regulations, and information sharing between projects to ensure that the benefits we envision from the Smart Grid become a reality.

The benefits associated with the Smart Grid include:

- More efficient transmission of electricity
- Quicker restoration of electricity after power disturbances
- Reduced operations and management costs for utilities, and

ultimately lower power costs for consumers

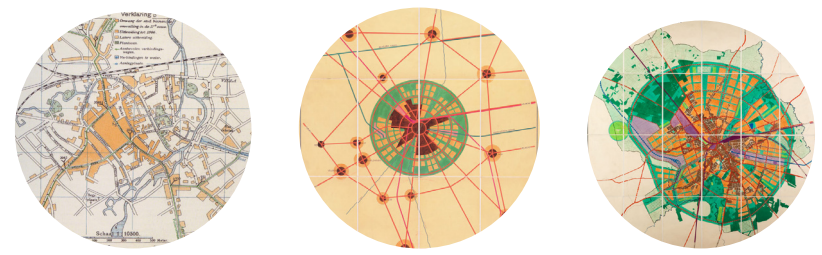
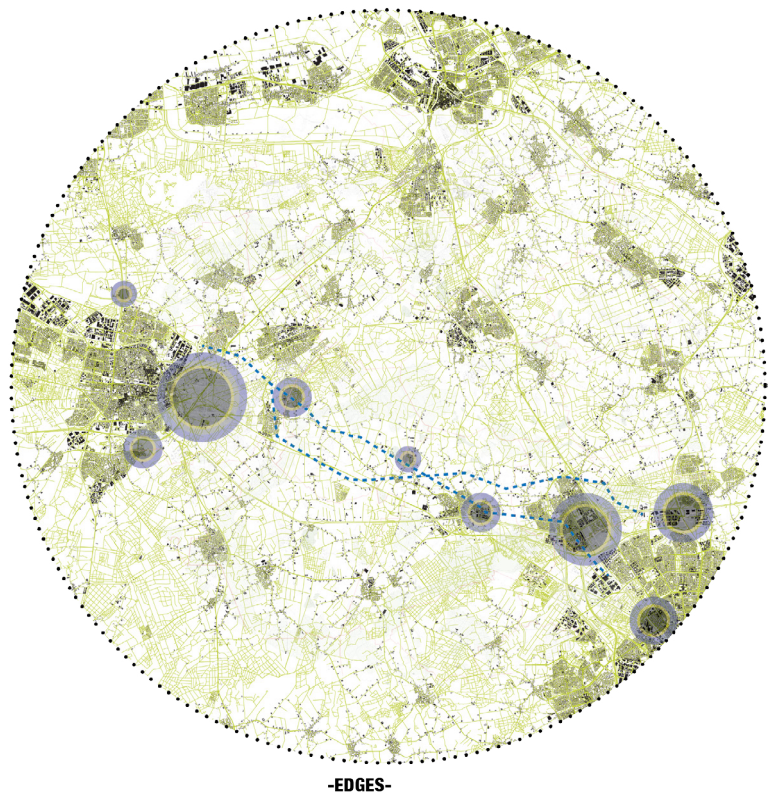
- Reduced peak demand, which will also help lower electricity rates
- Increased integration of large-scale renewable energy systems
- Better integration of customer-owner power generation systems, including renewable energy systems
- Improved security

Today, an electricity disruption such as a blackout can have a domino effect—a series of failures that can affect banking, communications, traffic, and security. This is a particular threat in the winter, when homeowners can be left without heat. A smarter grid will add resiliency to our electric power System and make it better prepared to address emergencies such as

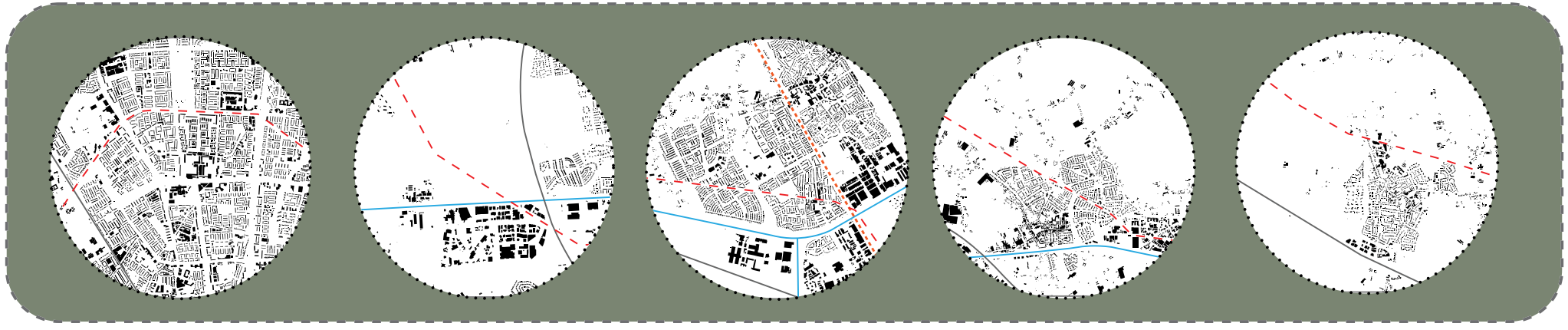
severe storms, earthquakes, large solar flares, and terrorist attacks. Because of its two-way interactive capacity, the Smart Grid will allow for automatic rerouting when equipment fails or outages occur. This will minimize outages and minimize the effects when they do happen. When a power outage occurs, Smart Grid technologies will detect and isolate the outages, containing them before they become large-scale blackouts. The new technologies will also help ensure that electricity recovery resumes quickly and strategically after an emergency—routing electricity to emergency services first, for example. In addition, the Smart Grid will take greater advantage of customer-owned power generators to produce power when it is not available from utilities. By combining these “distributed

generation” resources, a community could keep its health center, police department, traffic lights, phone System, and grocery store operating during emergencies. In addition, the Smart Grid is a way to address an aging energy infrastructure that needs to be upgraded or replaced. It’s a way to address energy efficiency, to bring increased awareness to consumers about the connection between electricity use and the environment. And it’s a way to bring increased national security to our energy System—drawing on greater amounts of home-grown electricity that is more resistant to natural disasters and attack.

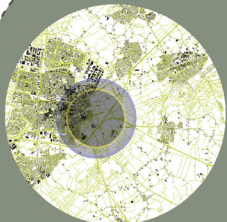
Regional & Local Analysis//



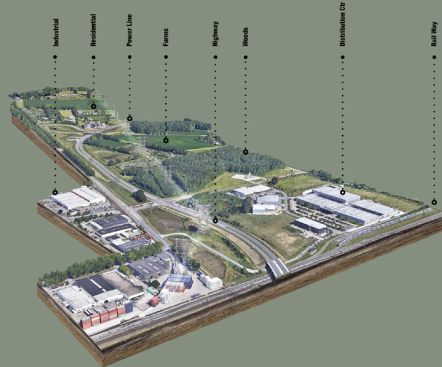
Power Corridors//



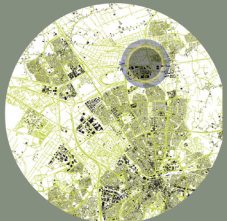
Edges//



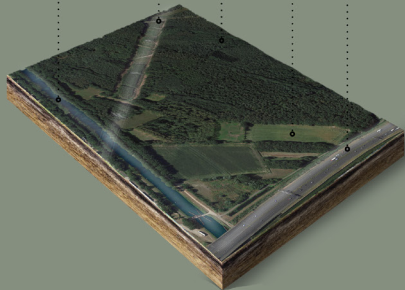
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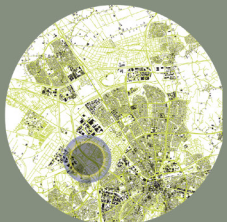
- Industrial
- Industrial
- Power Line
- Forest
- Highway
- Block
- Industrial Cr
- Rail Way



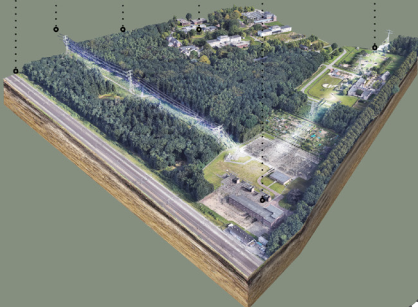
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- Canal
- Power Line
- Woods
- Forest
- Highway



-EINDHOVEN-

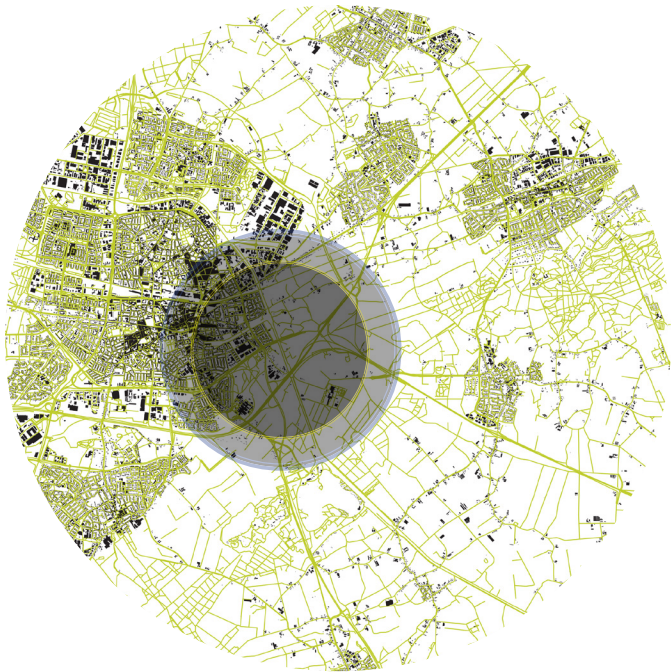


- Railway
- Power Line
- Woods
- Industrial
- Industrial
- Power Line

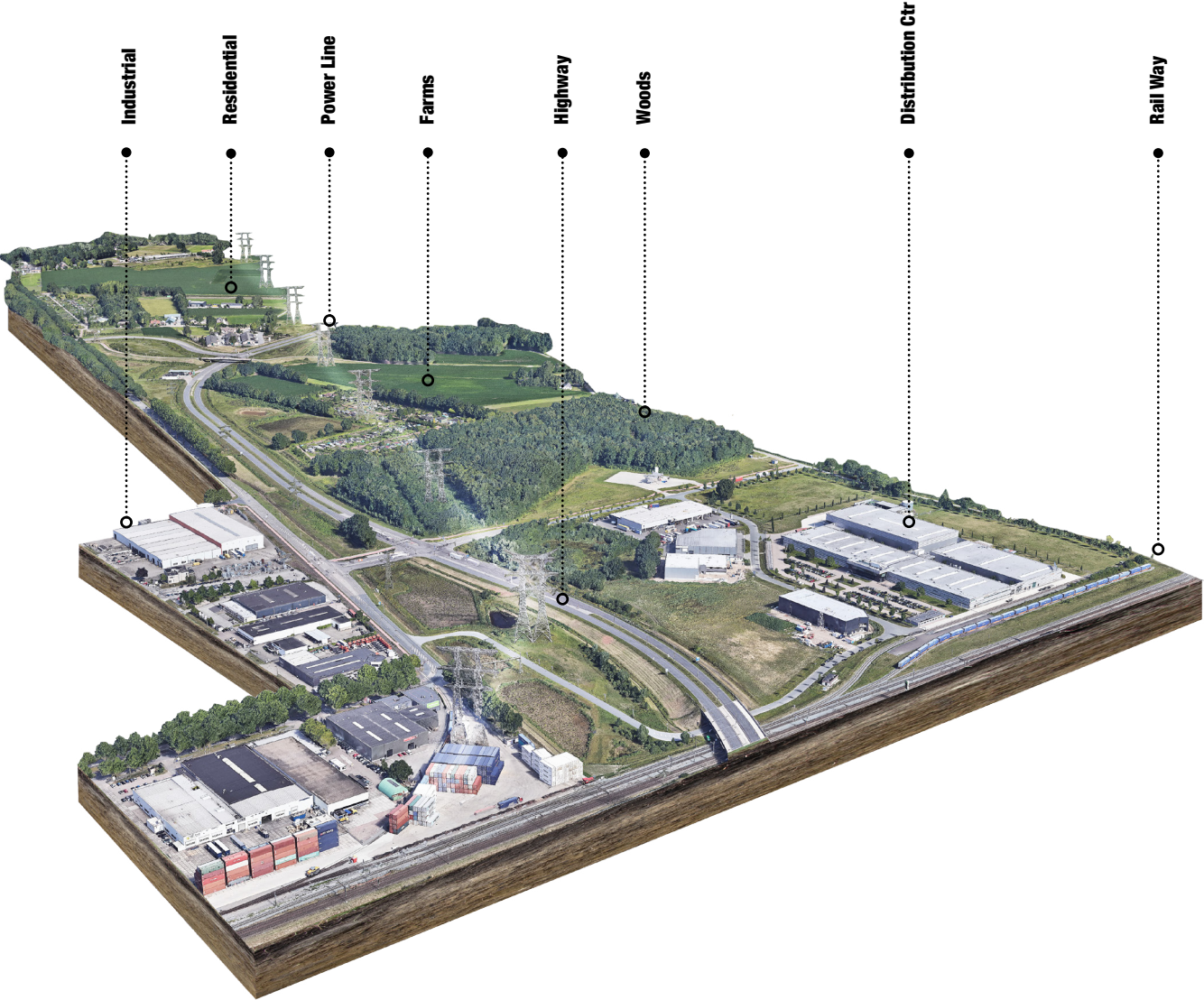
The Landscape power grid development over time//



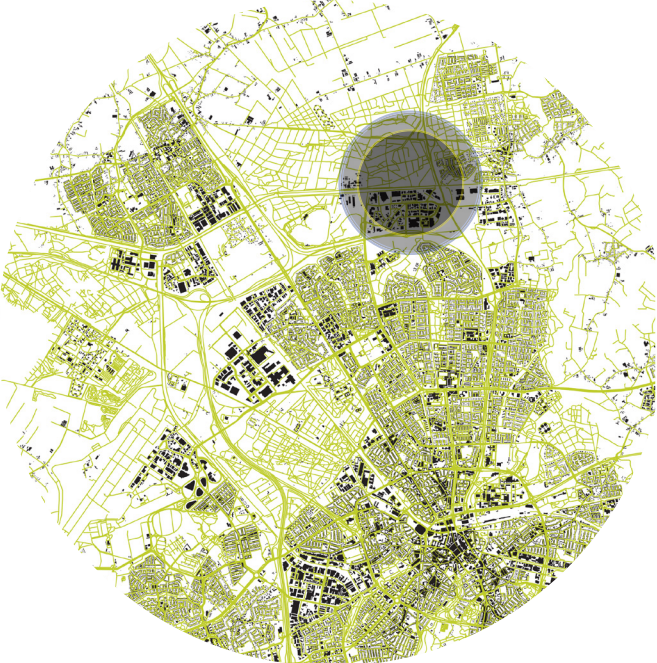
SMOOTHING EDGES//



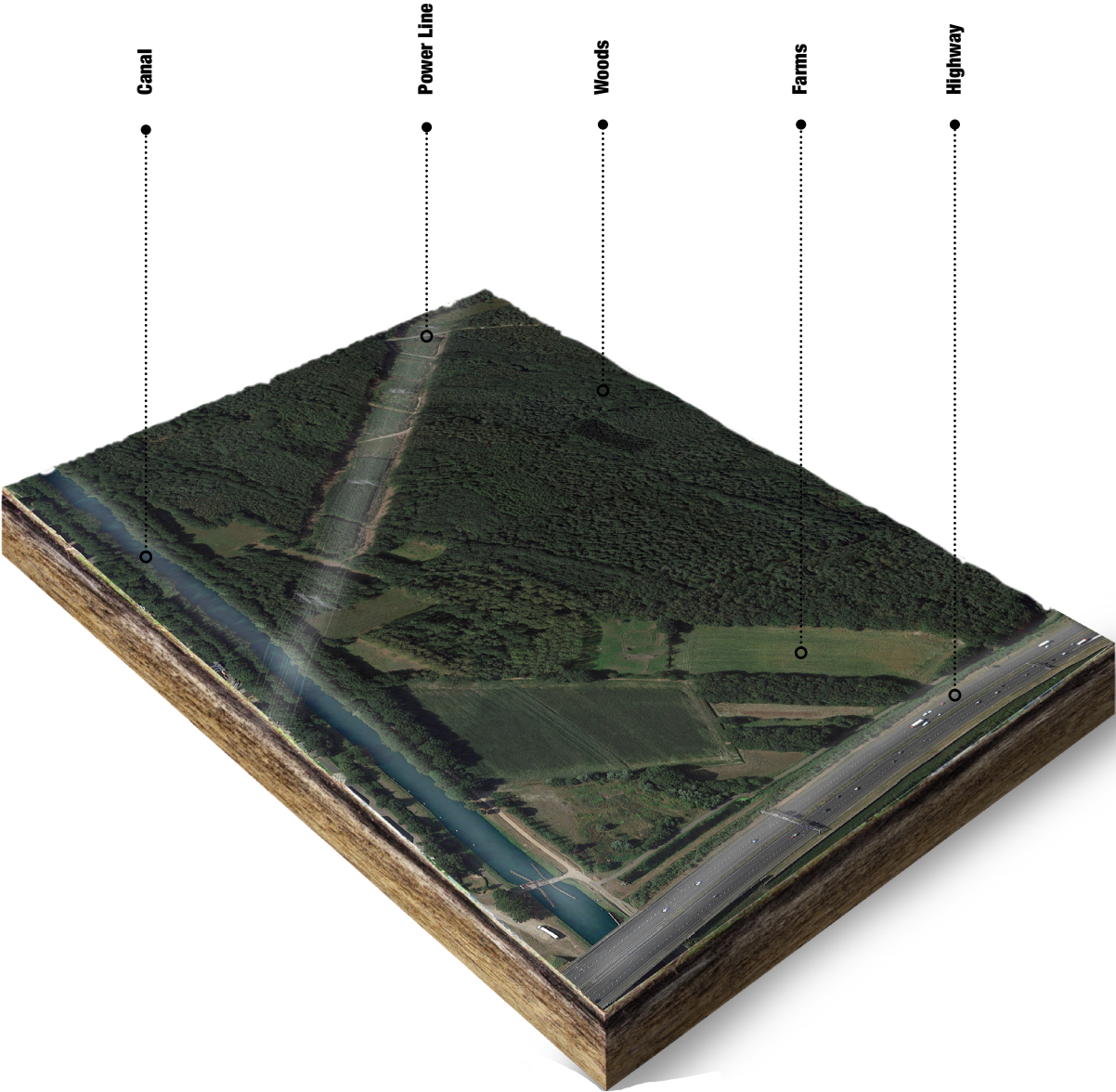
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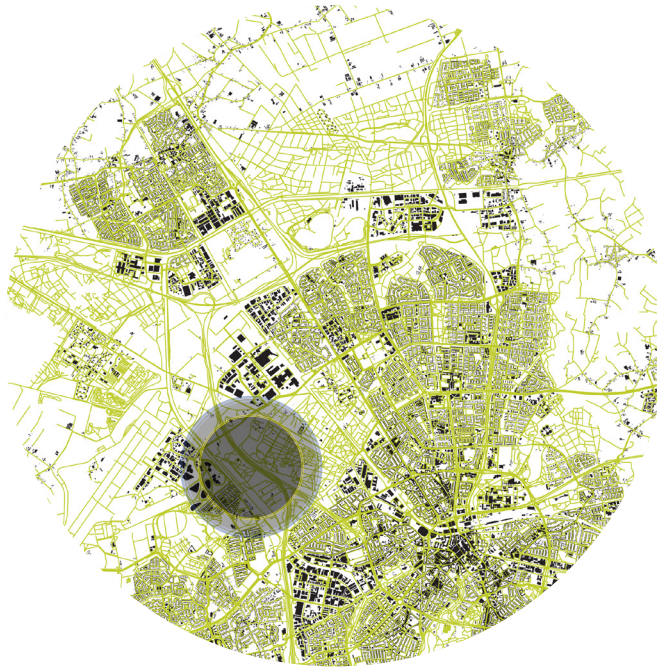


**SMOOTHING
EDGES//**



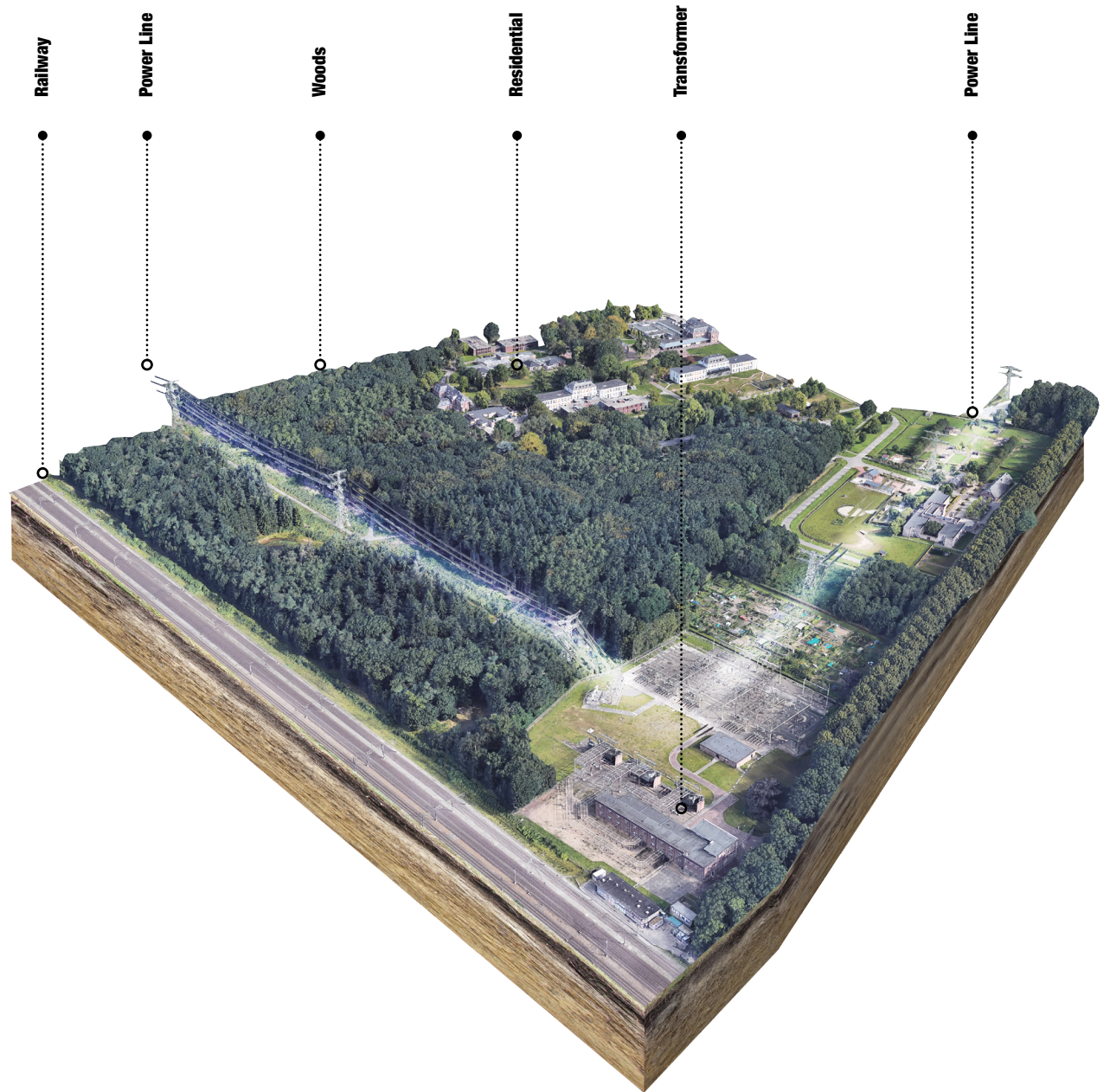
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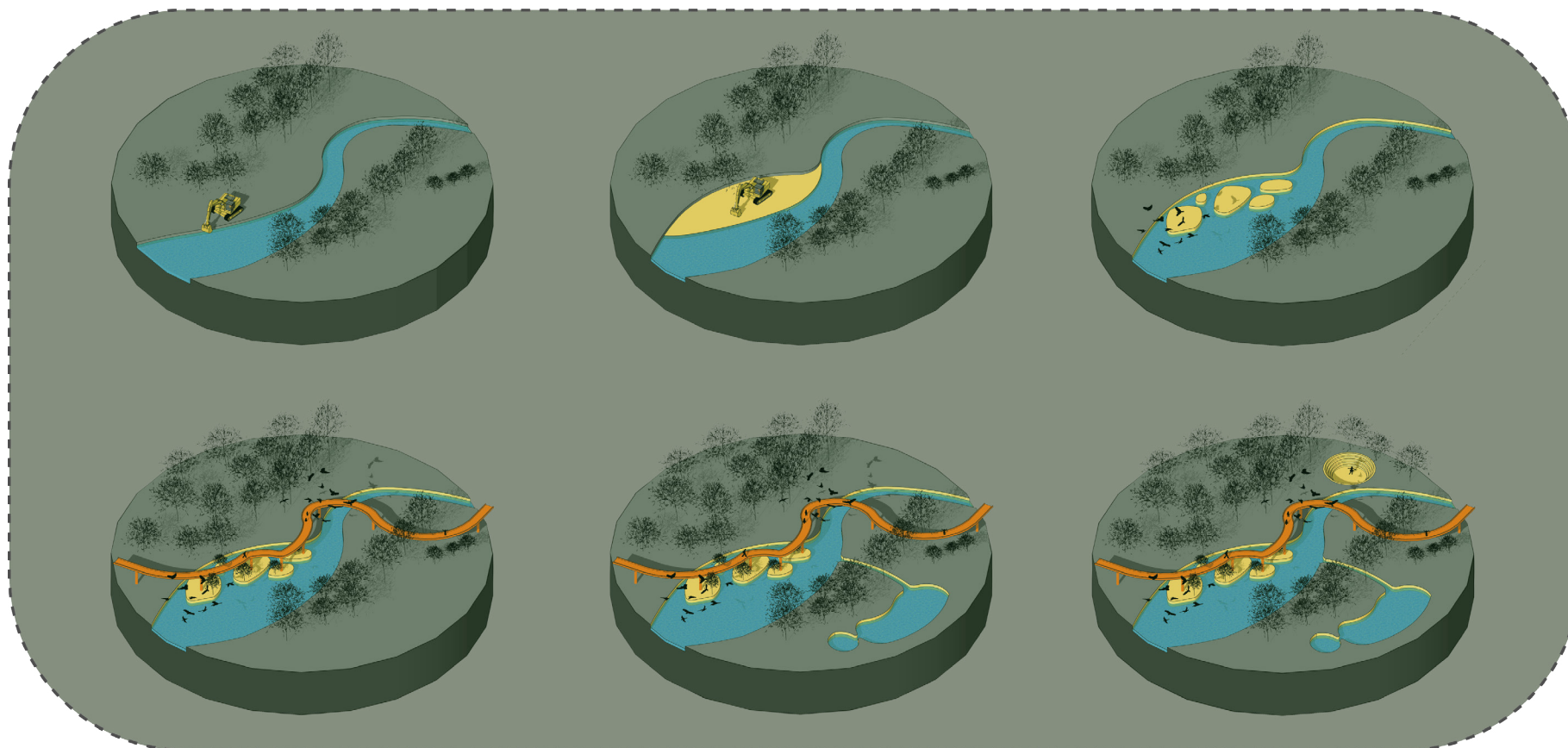


-EINDHOVEN-

SMOOTHING EDGES//



Prototypes & Tools//



1- RIVERS:
Resilient for potential water access.

2- RIVER BANKS:
Expansion and transitional buffering for reviving ecological cycle.

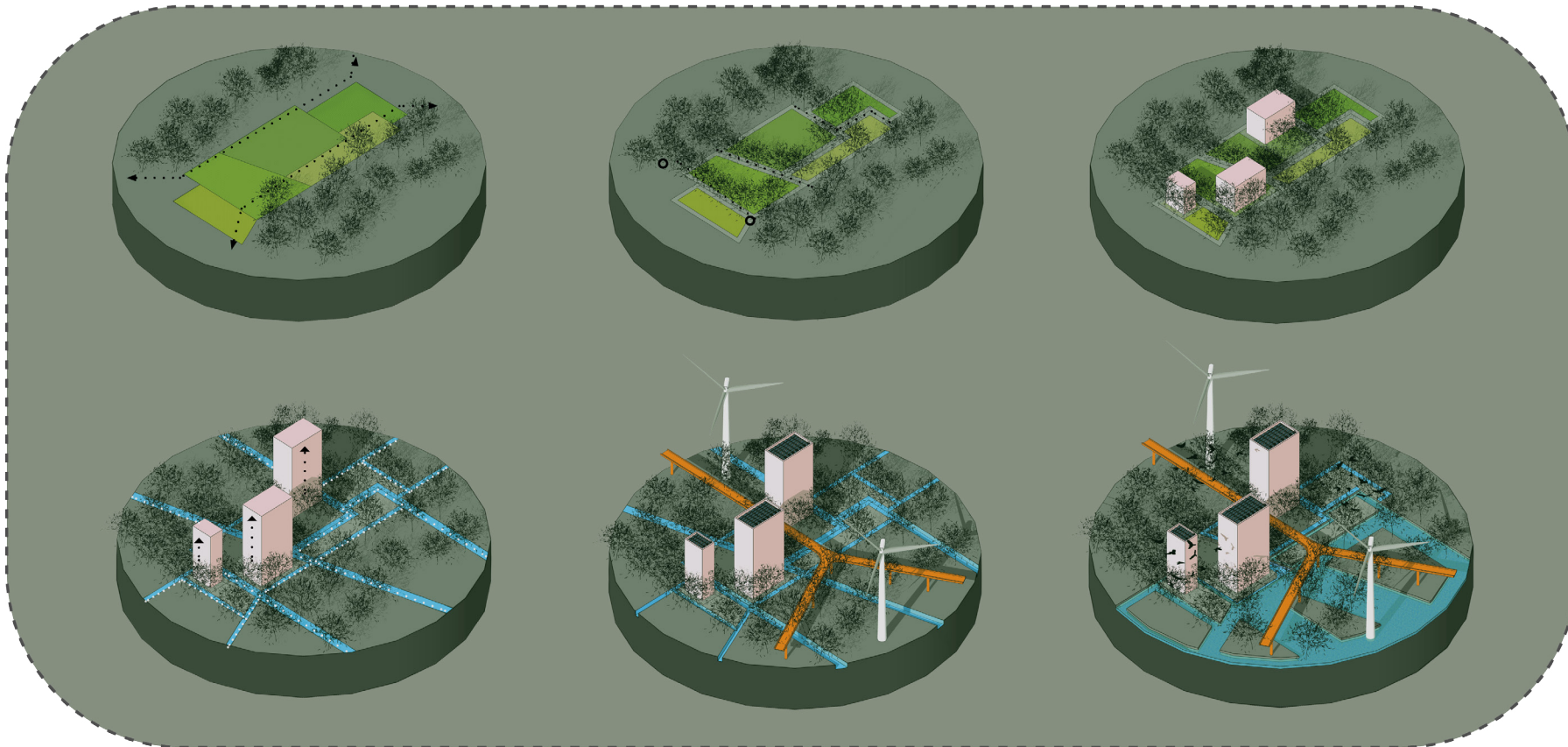
3- RIVER BANKS:
Create low-land and islands for water filtration and better ecologies and control water flow.

4- RIVERS & NETWORKING:
Generate a connection installations such as high bikes lanes in order to connect nature with people.

5- RIVERS & PONDS:
Revive absent water ponds in order to control & collect water.
Also by adding sensors for better observation

6- RIVERS IN NATIONAL PARK:
Introduce smart park features such as amphitheater with sustainable materials, which also could work as water collector.

Prototypes & Tools//



1- AGRICULTURAL EDGES:
Massive agricultural land areas prevent a natural ecological continuity.

2- AGRICULTURAL EDGES:
Create bigger setbacks on farms edges to help natural transitions.

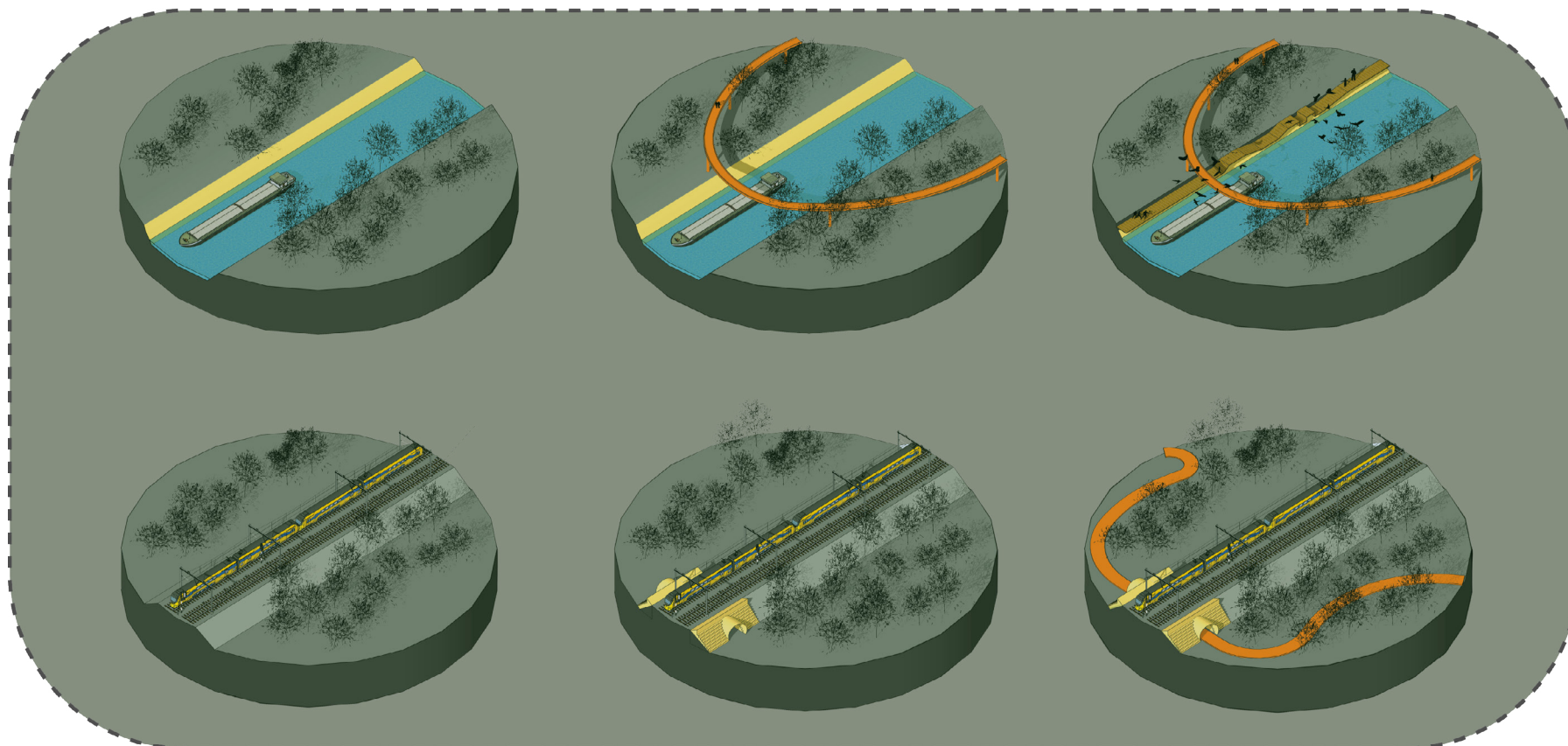
3- VERTICAL FARMING:
Transformation of possible horticultural farms into more sustainable agricultural methods such as vertical farming in order to gain extra space for natural expansion.

4- AGRICULTURE & WATER:
By improving agricultural lands, water play a huge role for resilient natural process. Also through adding sensors for analysis and predictions.

5- AGRICULTURE & ENERGY:
Vertical farm structures could be part in producing energy and food at the same time, while people could have excitability via high bike route.

6- ECOLOGICAL REVIVAL:
In order to revive ecology, agricultural production should be maximized, energy would sufficient and people will have easy access to nature.

Prototypes & Tools//



1- CANALS EDGES:
Canals are major elements in the area which act as a rigid edges and prevent smooth continuity.

2- CANALS & EDGES:
Introduce a cycling path which connects two banks of the canal, which extend towards the city center.

3- CANAL & EDGES:
Exploitation of unused space on the canal edges by applying boardwalks for people, recreational spots and more.

1- RAILWAYS & EDGES:
The railway tracks have certain topographies which also prevent smooth transition of ecology and natural formation in the area.

2- RAILWAYS & EDGES:
By allocating certain spots which could help in smooth connections and uninterrupted connection.

3- RAILWAYS & EDGES:
These connections could also be part of recreational areas as part of national park which cycling path and stage for contemplation.

Smart Energy System//

All around the world the Paris Agreement and local climate goals are putting pressure on energy planning.

“We have to move away from a sole focus on areas like the electricity sector and look at the energy demands of the heating, cooling and transport sectors as well. We have to better connect the different sources and consumption areas – in a smart energy system,” says Brian Vad Mathiesen, Professor of Energy Planning at Aalborg University, Denmark.

This requires planning that combines and optimizes these two factors.

The main recommendation is to electrify the entire Dutch energy system in order to reach the goal of being a fossil-free society by 2050.

“This would, for example, allow surplus wind power to be put into big heating pumps and thus used in the heating system”, explains Anders Dyrelund, District Heating and Energy Planning Specialist.

A smart energy system that relies on fluctuating energy sources such as wind and solar power requires new, flexible energy usage and storage solutions.

The study recommends exploiting the already extensive district heating system as a cost-effective means of using and storing electricity, rather than investing in new transmission lines to other regions.

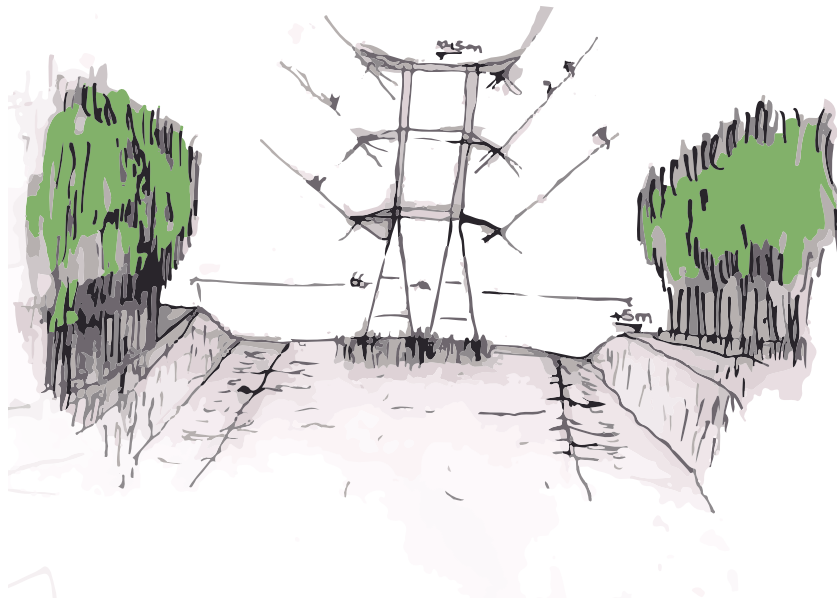
It also recommends that biogas use be expanded as a stabilising factor in the system - a more sustainable and energy-secure solution than steps such as increasing biomass imports.

Carbon-free cities Also at the urban and regional levels, efficient energy management depends on there being a strategy for producing and utilising energy in place.

Capital project opportunities ranged from boilers, biomass projects and lighting to the increased use of waste heat and simultaneous heating and cooling generation, as well as a number of combined heat and power opportunities.



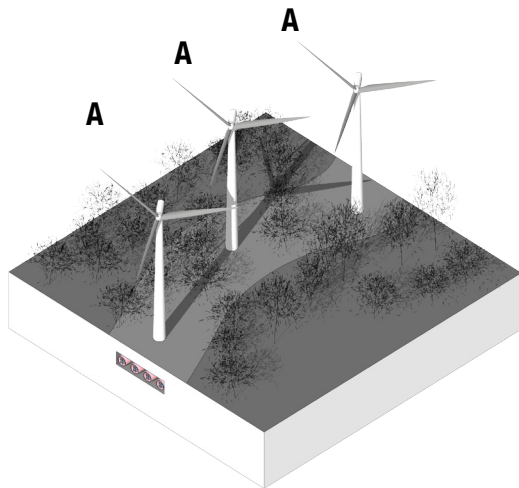
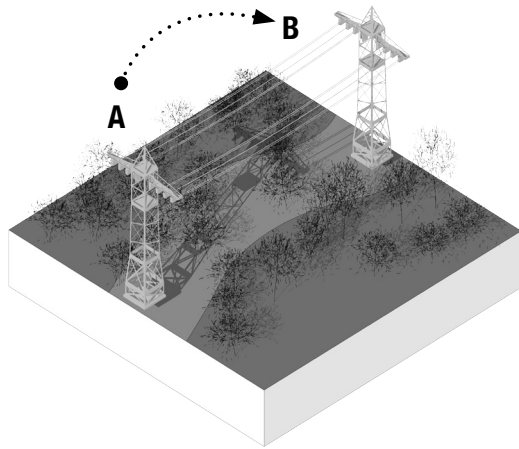
Research//



Design Strategy:

To combine the electricity network with a network of green spaces for nature and leisure in the Groene Bow region and relink two green zones in Eindhoven city.

This is only possible through the introduction of Smart Power Grid System.



Energy production is slowly becoming more sustainable so can it's transportation.

- The land underneath the power grid has the potential to form a coherent ecological network, which is missing nowadays.
- Its potential is to create the largest national park in The Netherlands.
- It will create a resilient regions which could distress the infrastructural system.
- It will provide smooth edges of major cities.

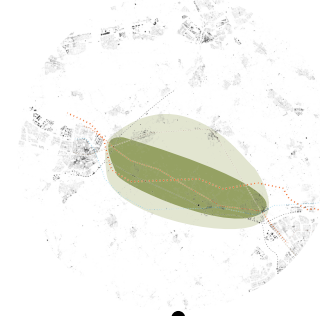
Create a valuable recreational structure:

From local to national:
Green network which is linked to regional green network then a national green network.

LOCAL



REGIONAL



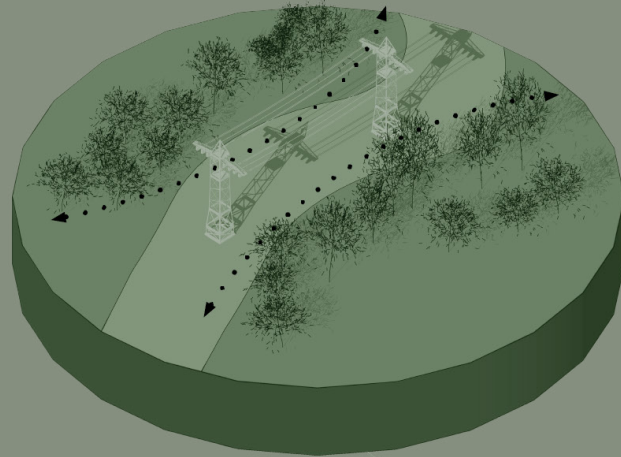
NATIONAL



1- HIGH VOLTAGE:

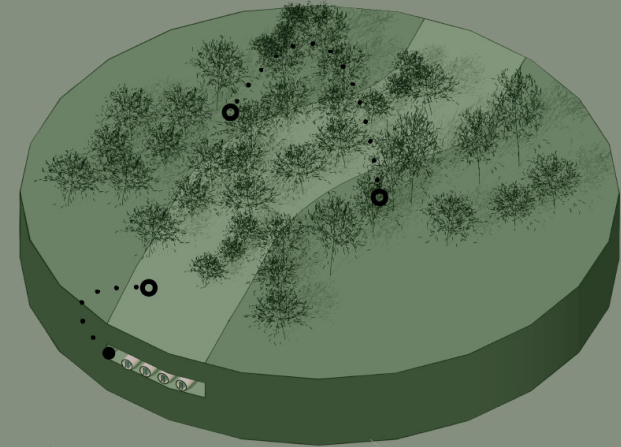
The visual and physical segregation from the power towers are clear.

There is many ways to achieve a smooth transition in such cases.



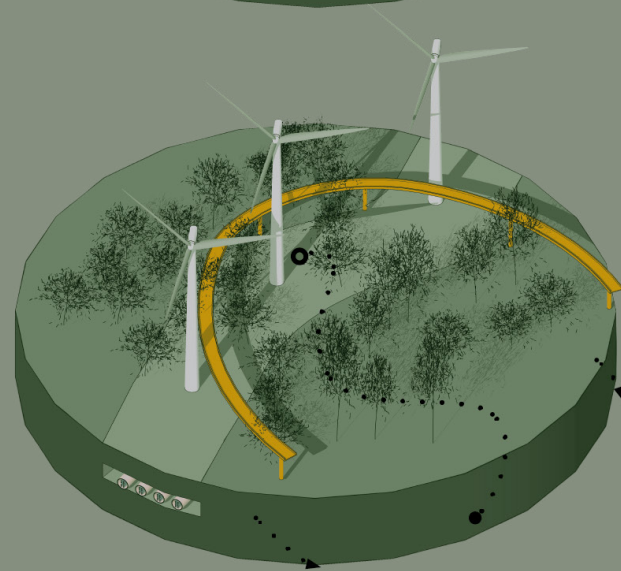
2- HIGH VOLTAGE:

As soon as the cables entering the city edges maybe cables would be embedded as part of infrastructure, it will eliminate harm as well as visual pollution.



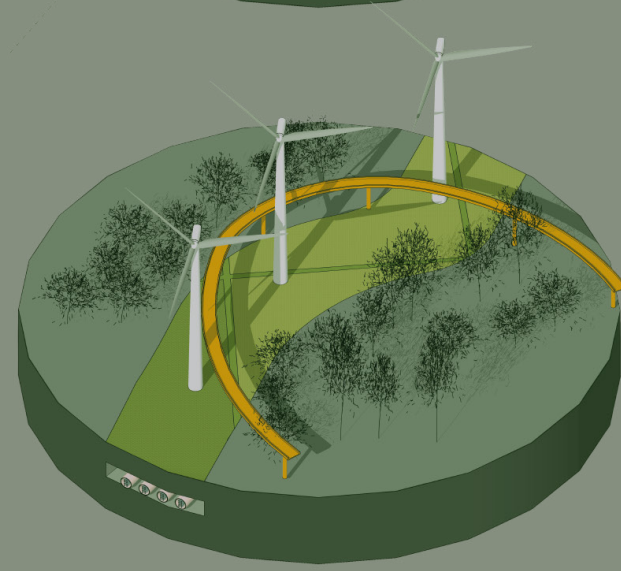
3- WIND TURBINES:

The installation of wind turbines with a bike path could be part of a national park strategy.

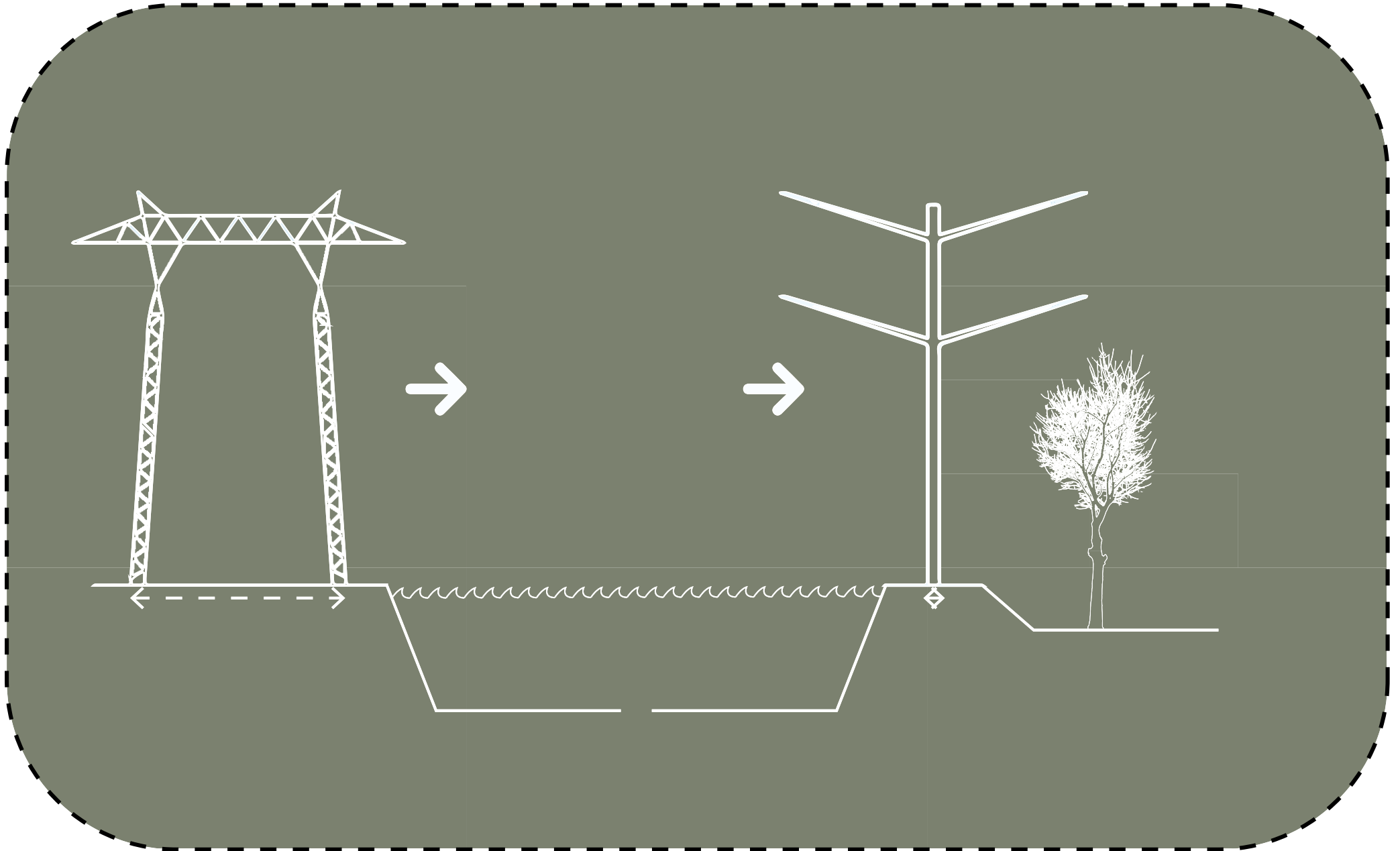


4- TRANSFORMED EDGES:

It is also beneficial to transform spaces underneath old power towers into a promenade which starts in the city heart to the nature.



-Integration of unipole system provides less footprint-



Design Strategy:

Architecture, Urban Design, Landscape Architecture and agriculture could help to maintain and improve ecology.

Link Edges:

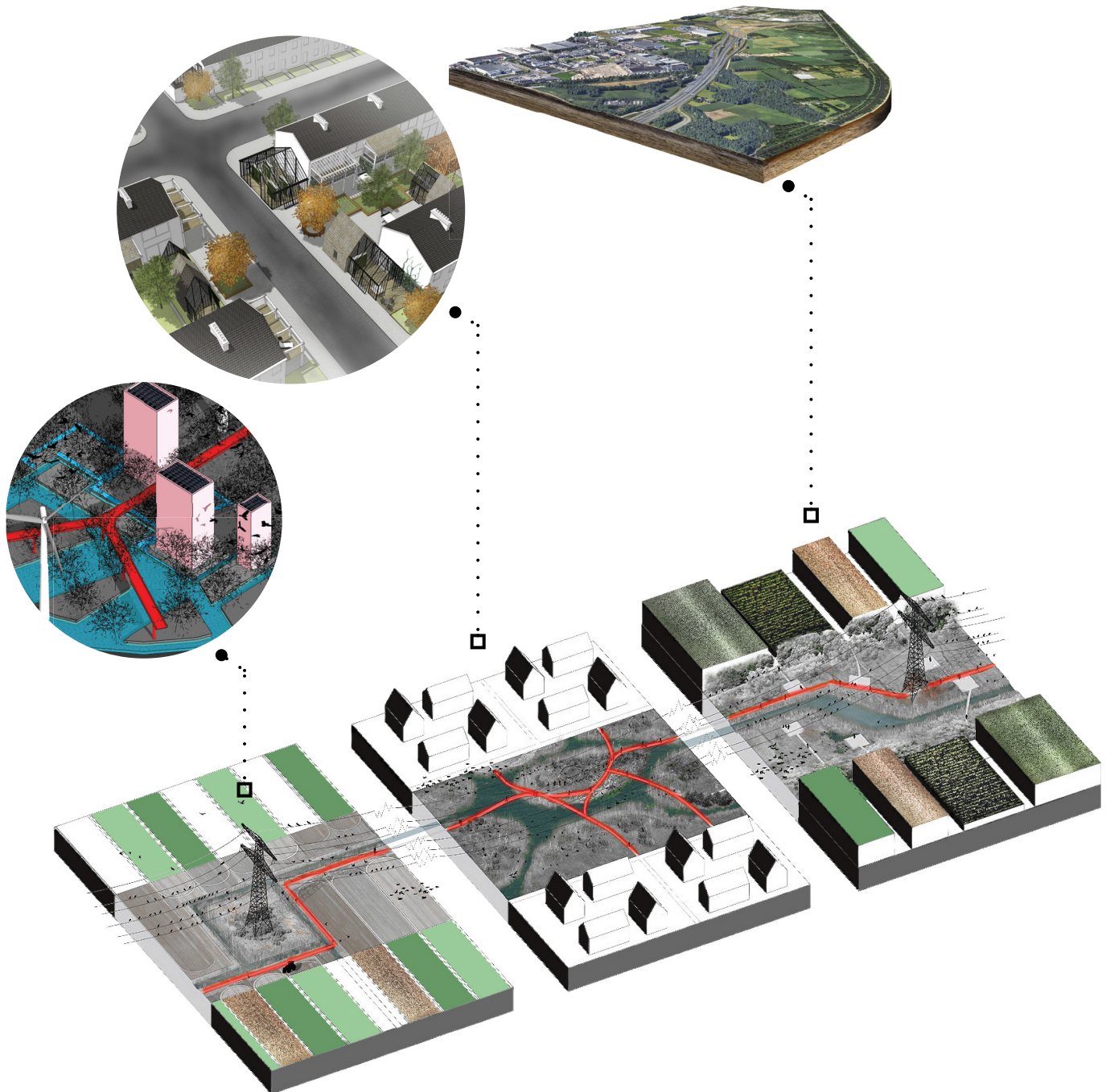
Bring people back to nature through the introduction of nature to the city edges via the Green Paths.

Invest in Spaces:

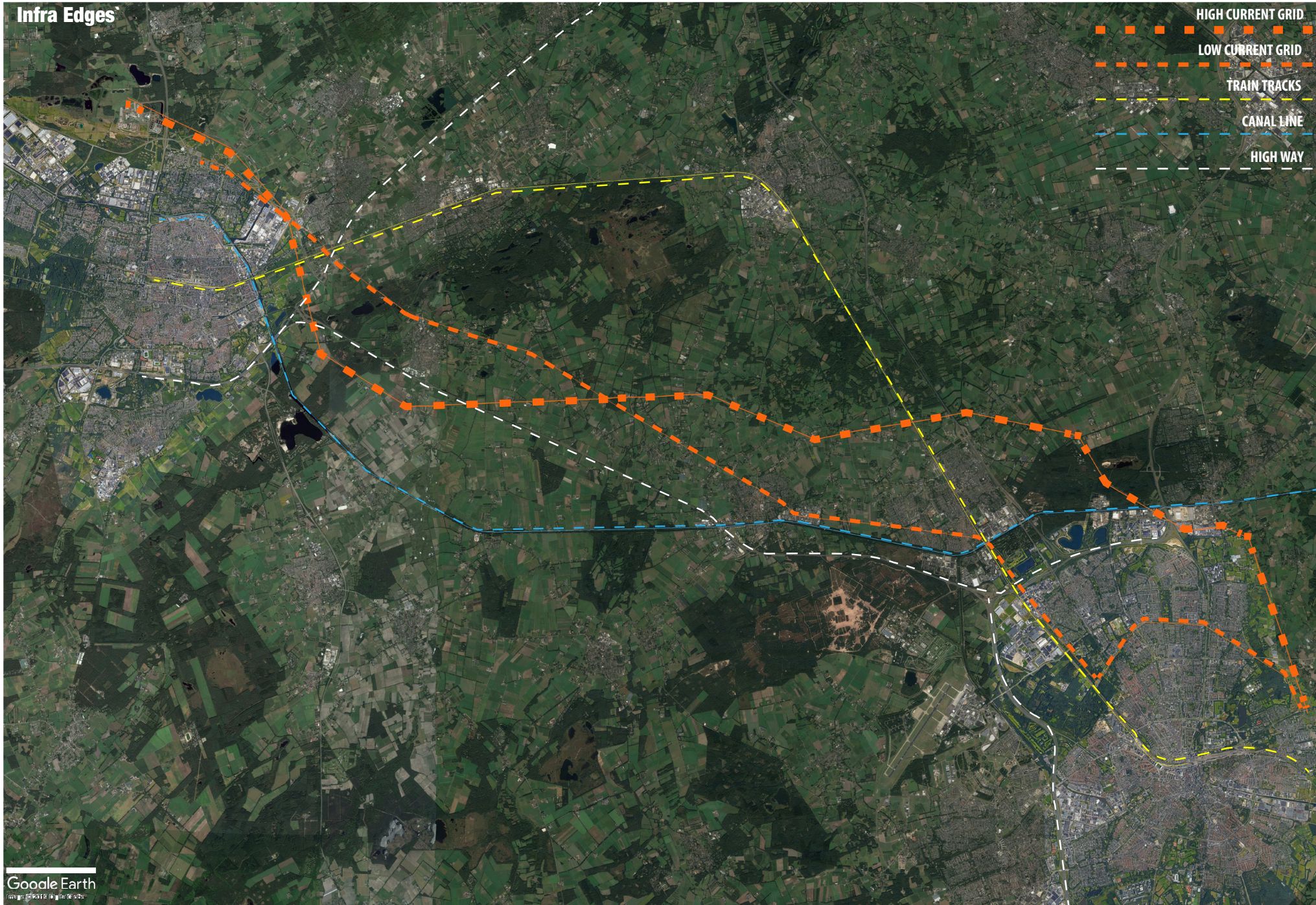
Exploit the spaces occupied by the current energy grid, which covers a huge cubic meter area in the region.

Distress Critical Areas:

Reduces the tension and the friction of the power grid with the urban expansion.



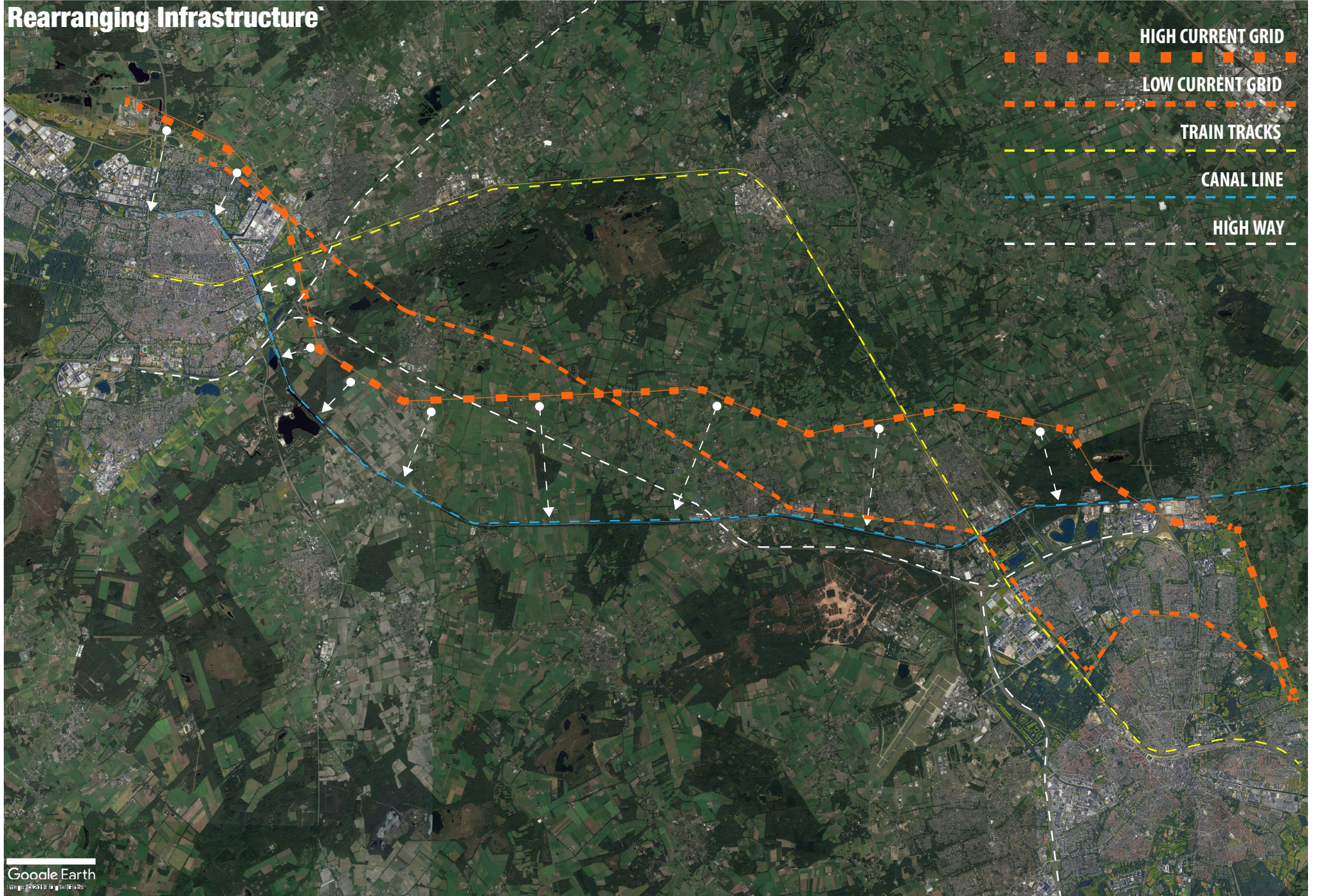
Infra Edges



Areas of Urban Conflict



Rearranging Infrastructure

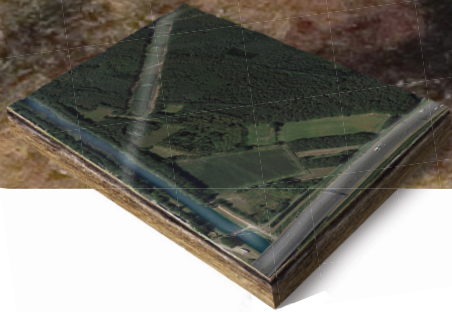


National Green Path

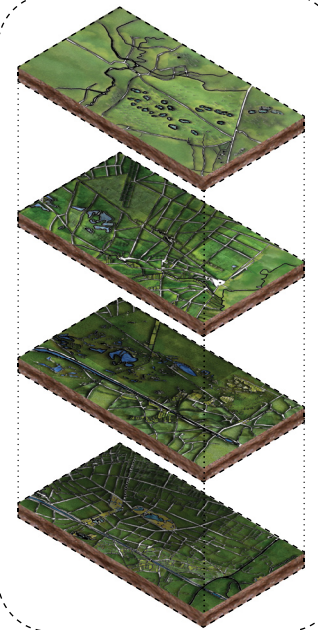


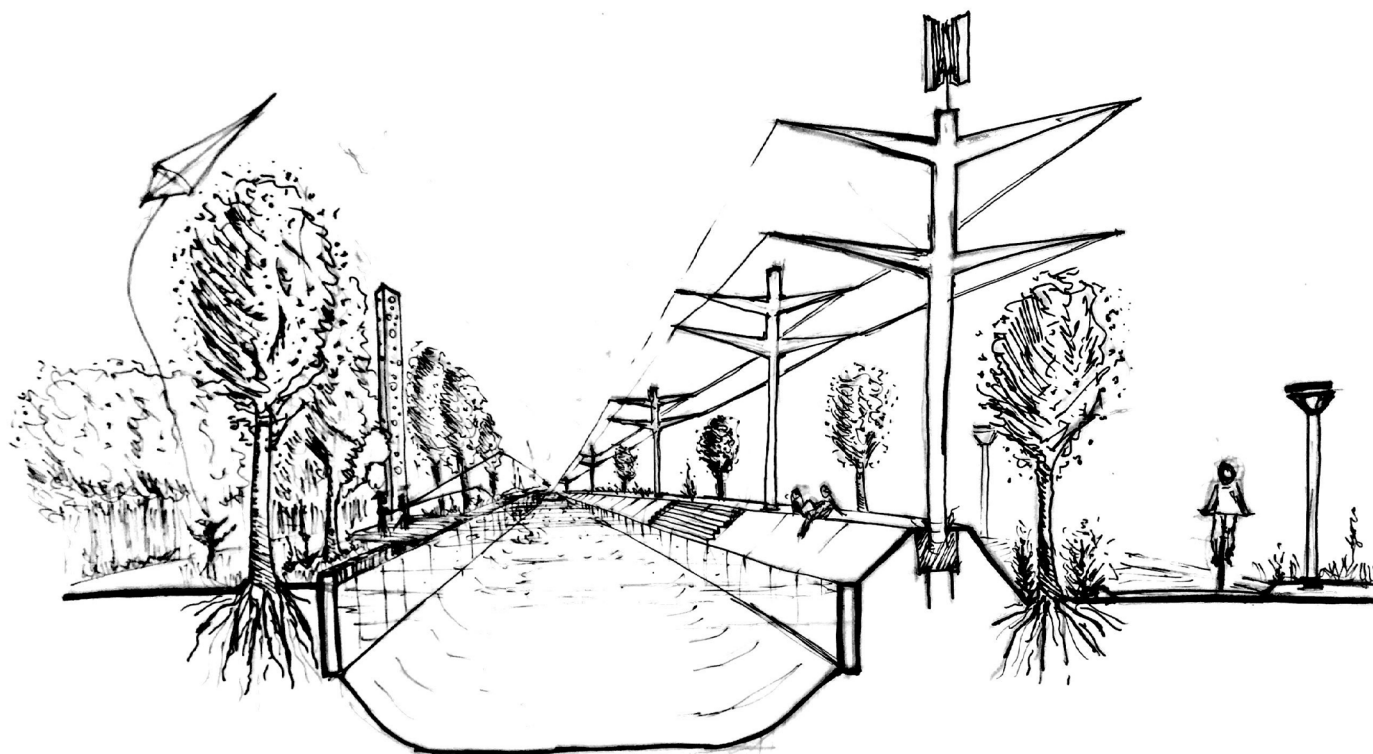
Site **Analysis//**

LANDSCAPE REVIVAL

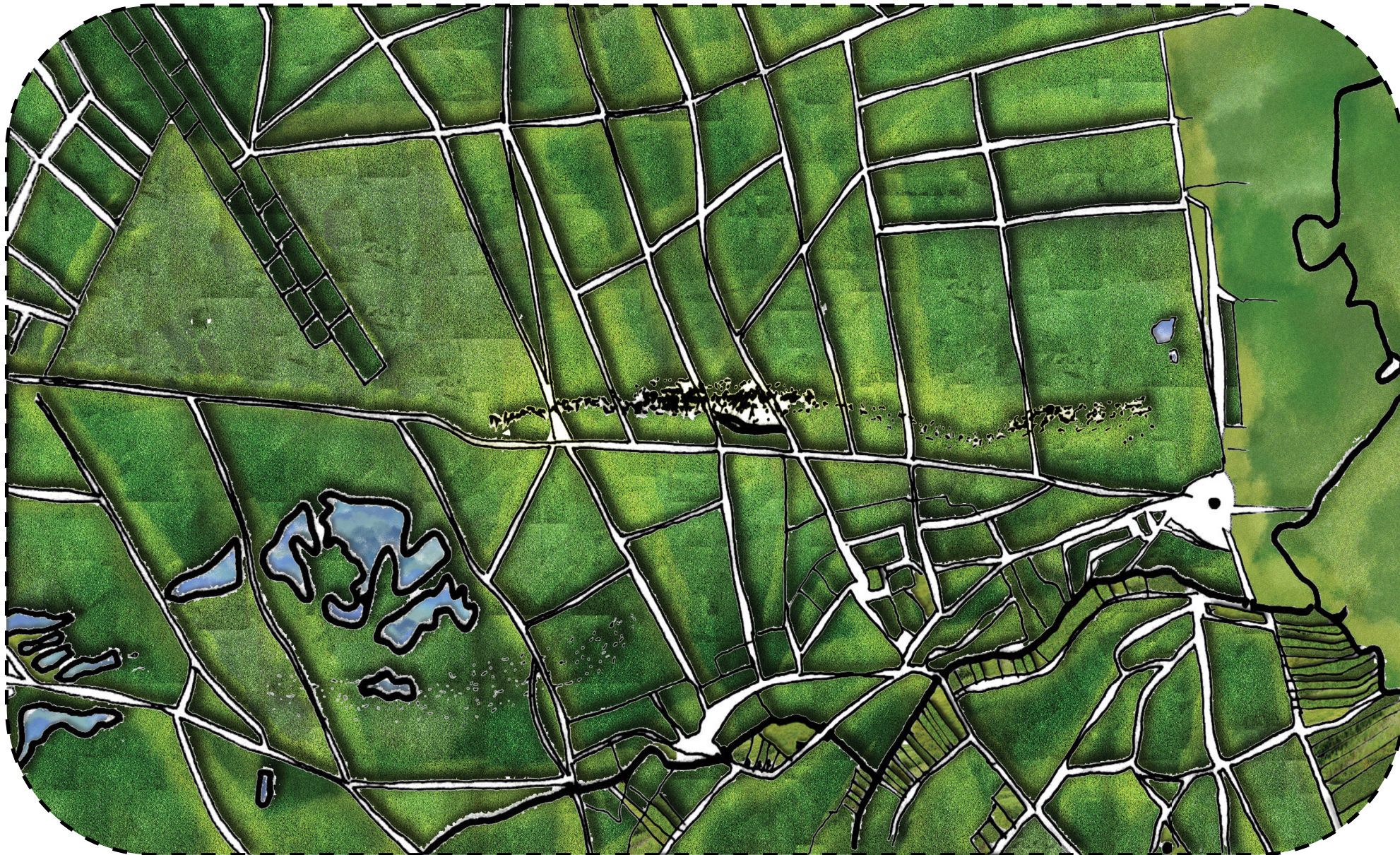


Zon en Brauge-Eindhoven//

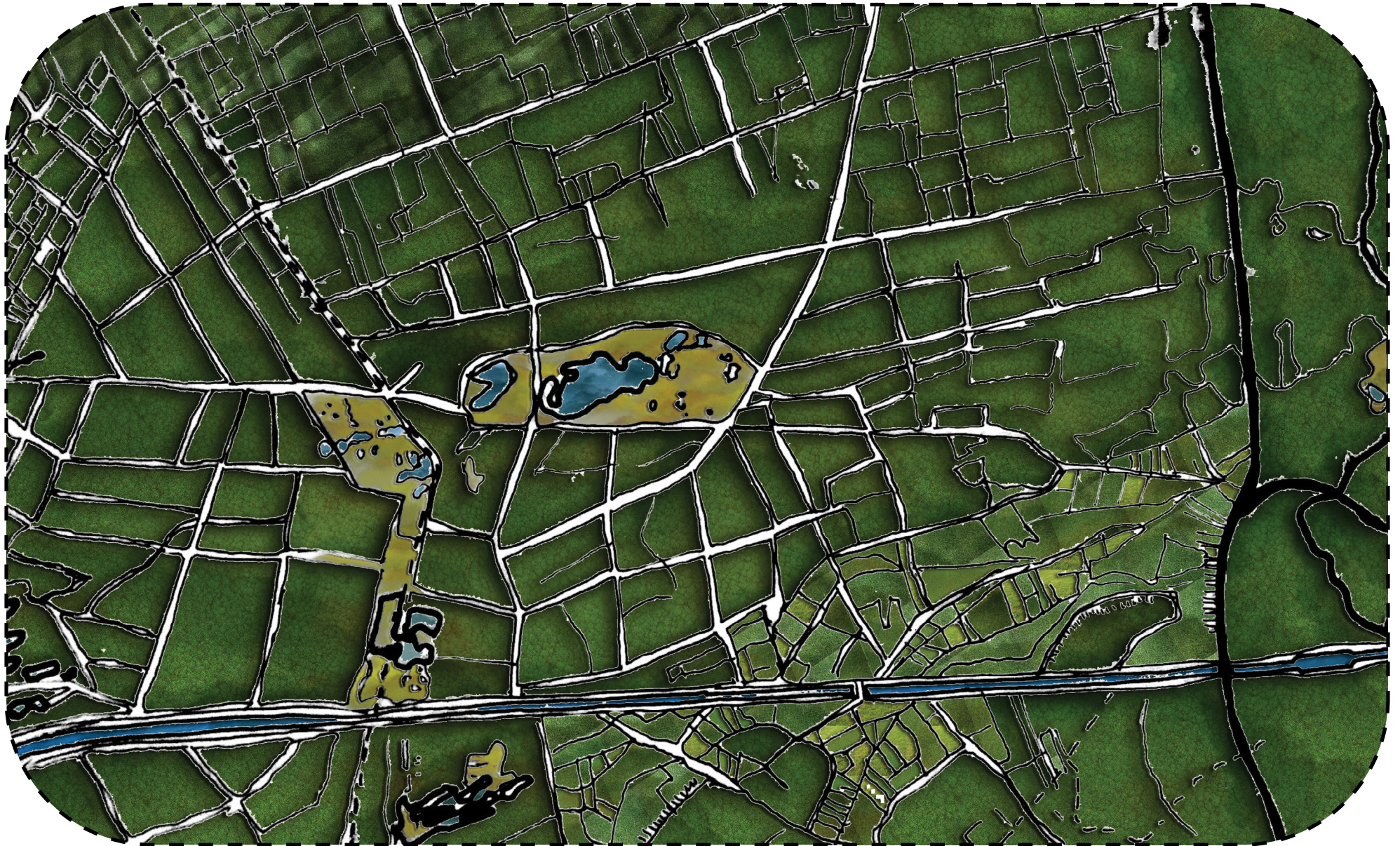


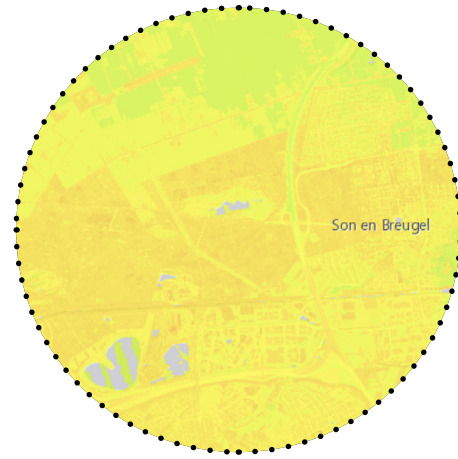
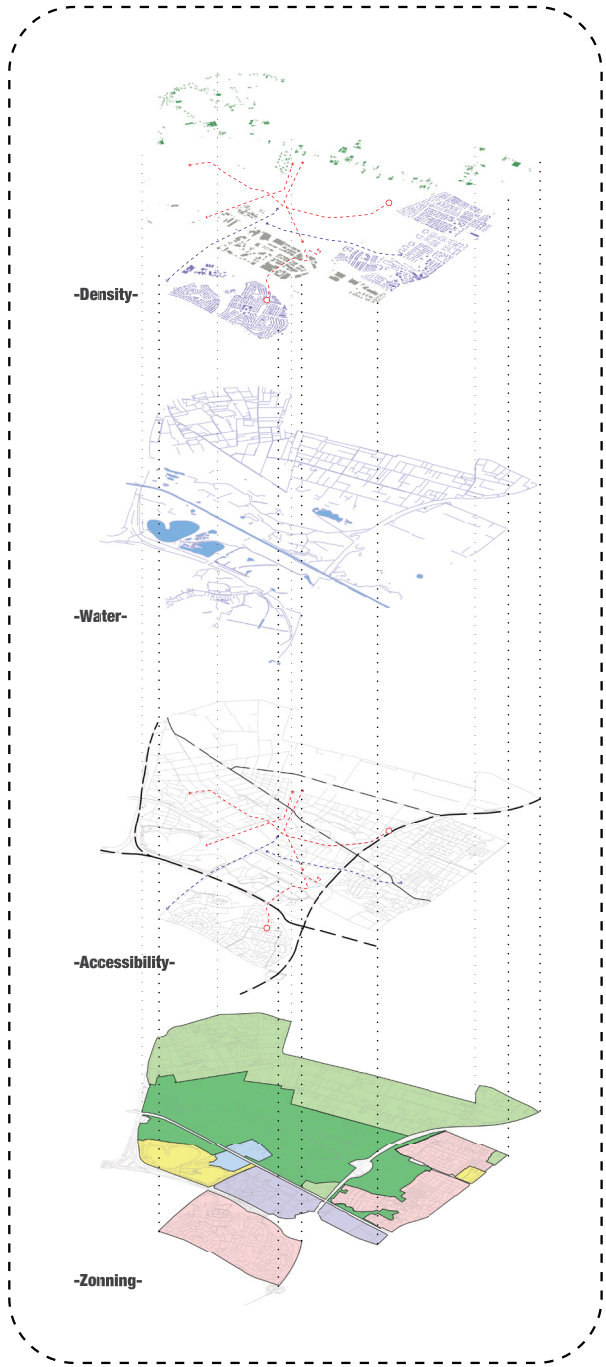




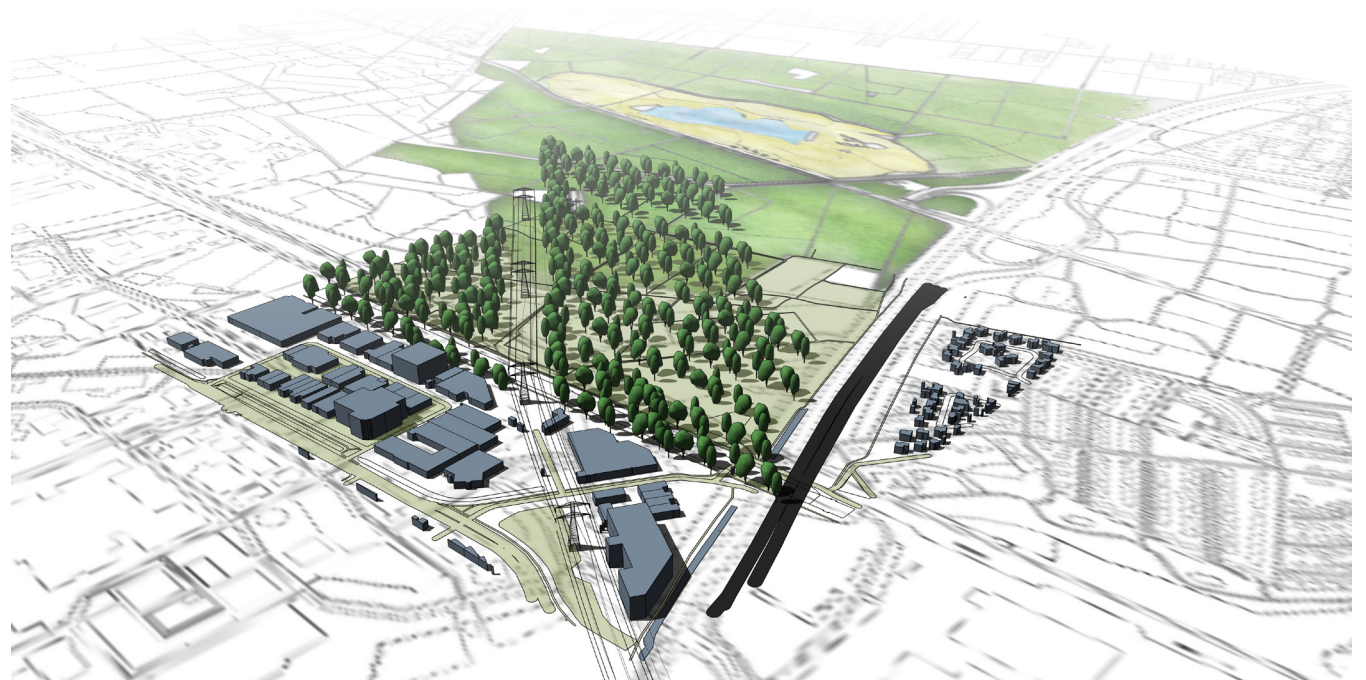




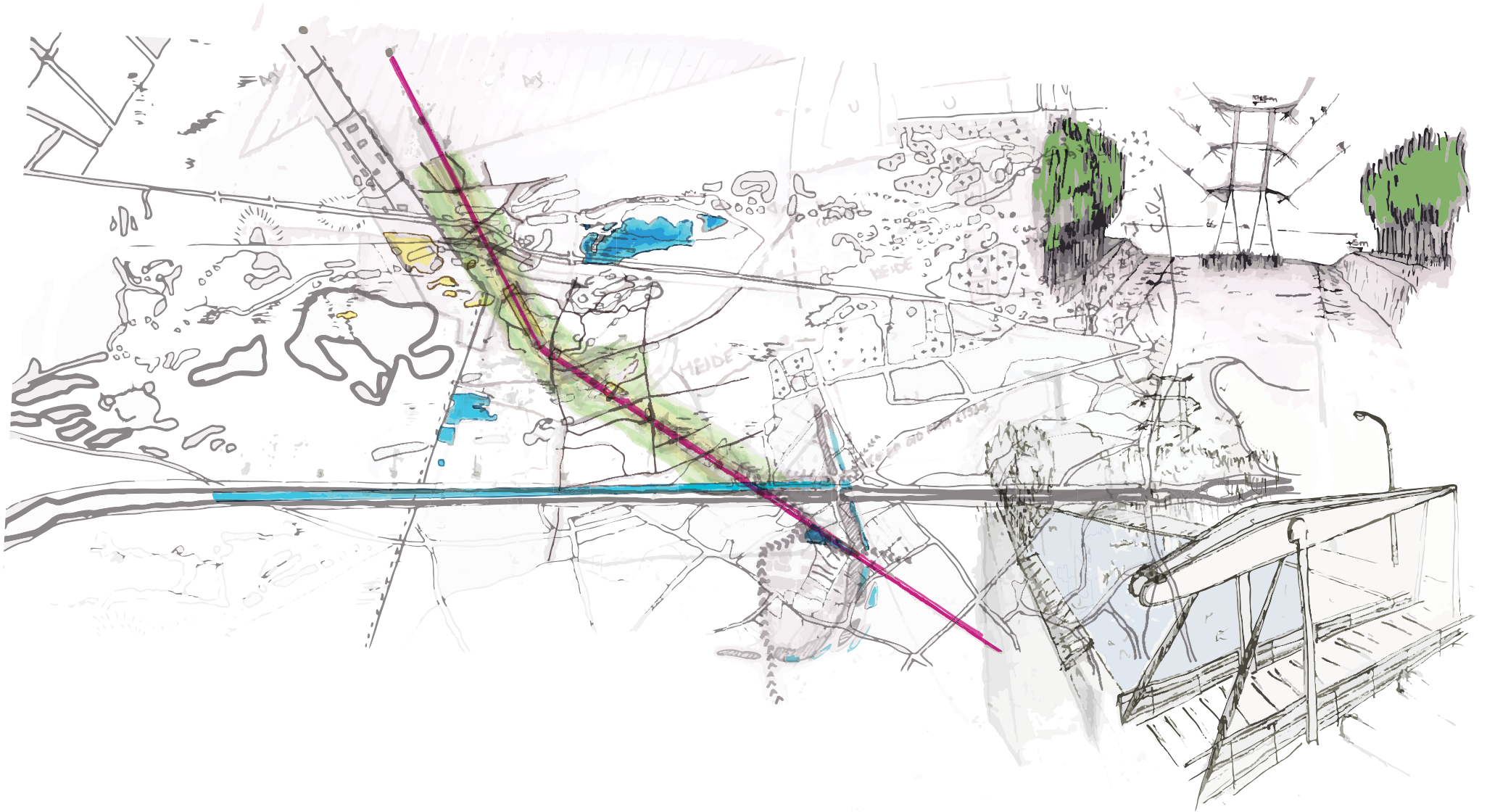




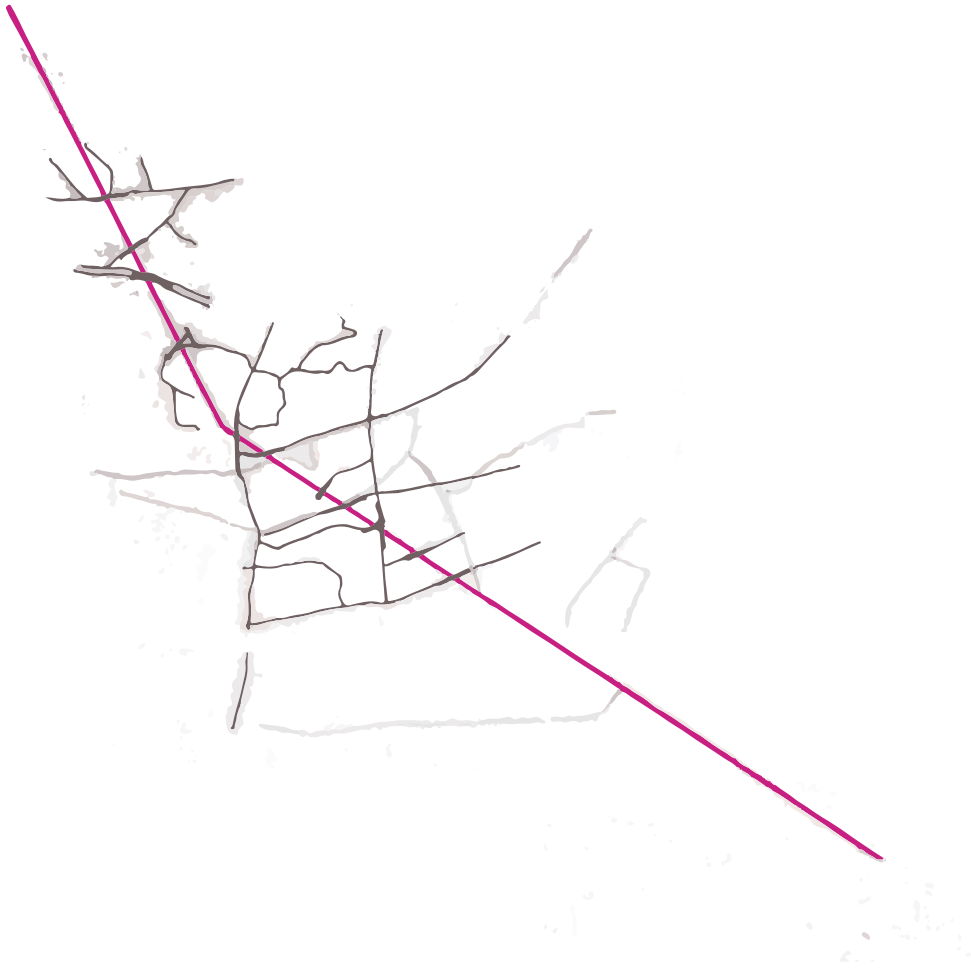
-Altitude-



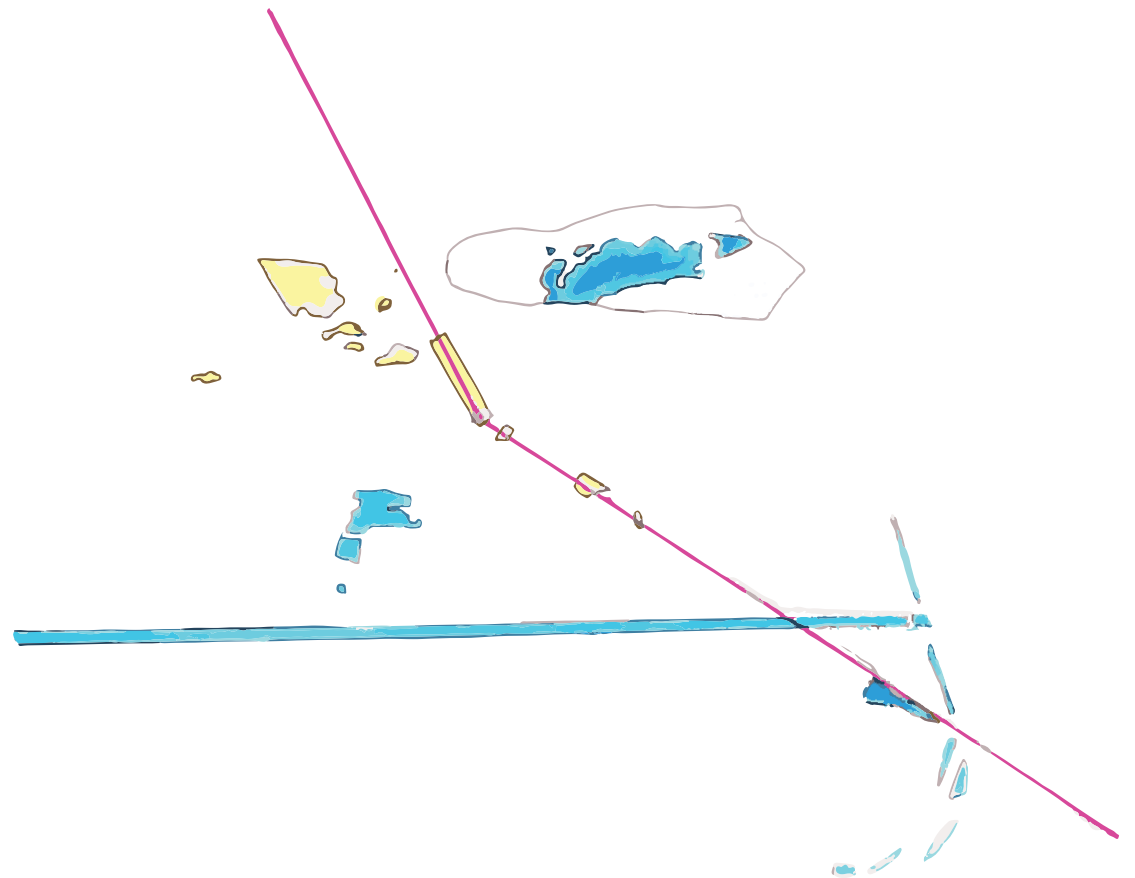
-Design process-



-Reconnecting Pathes-



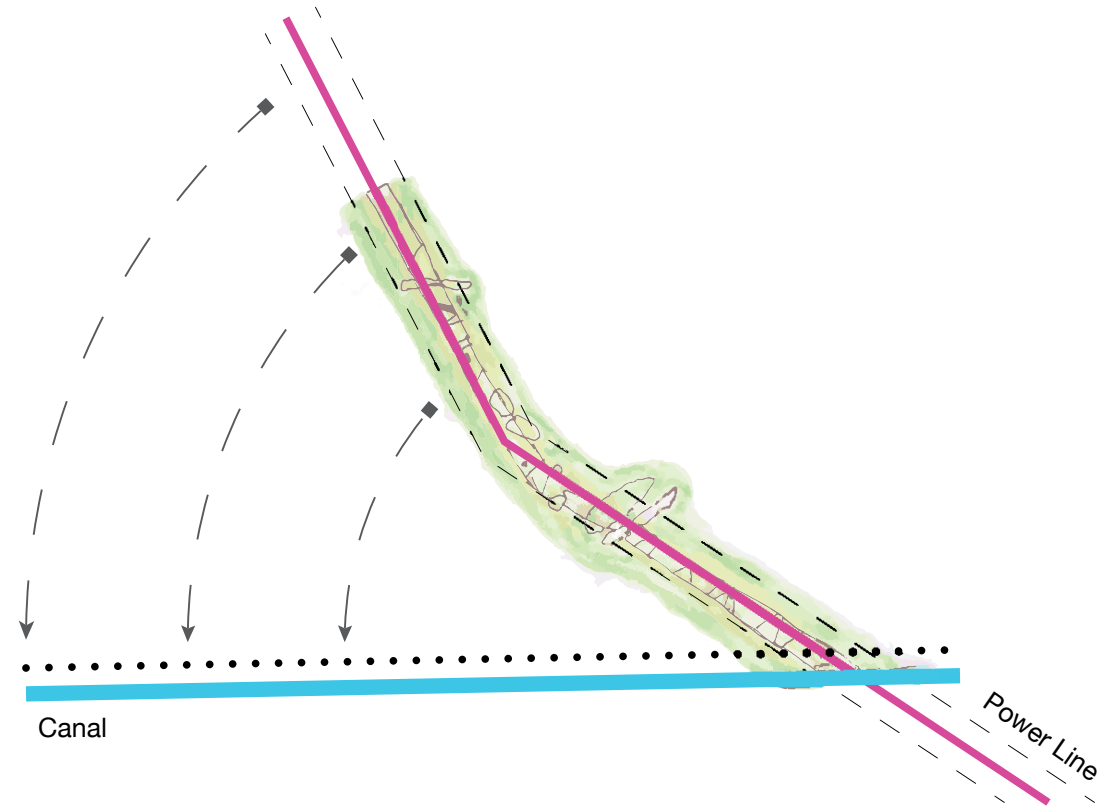
-Current water/sand locations-



-Spatial organization and functional distribution of reclaimed land-

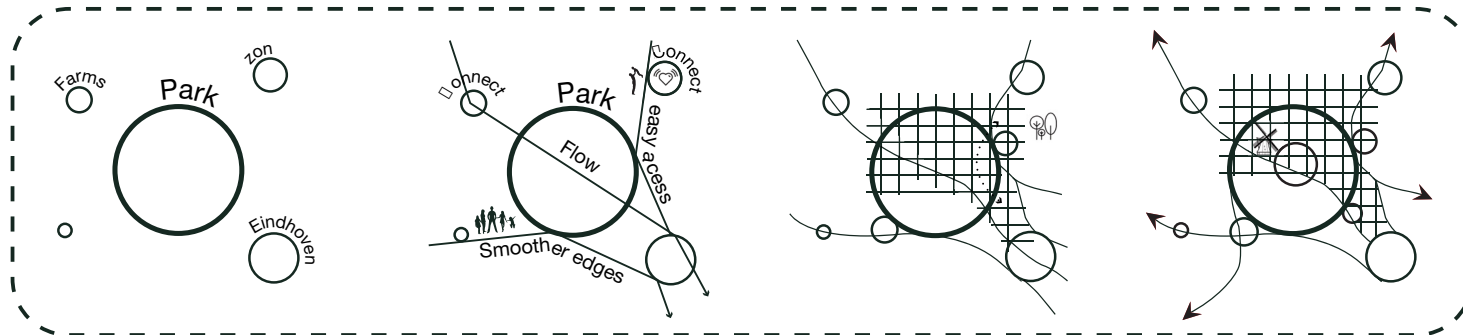


-Land Reclamation-

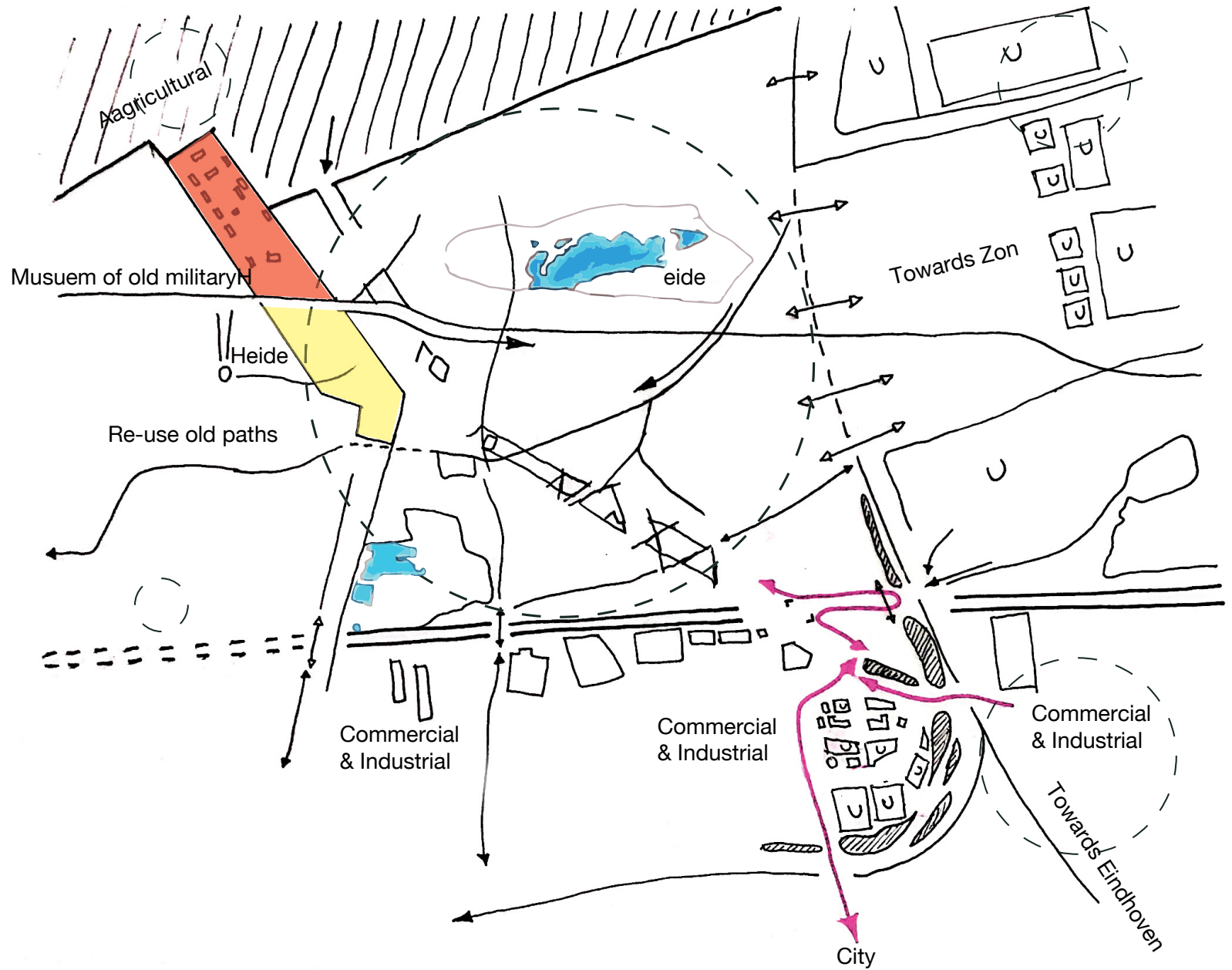




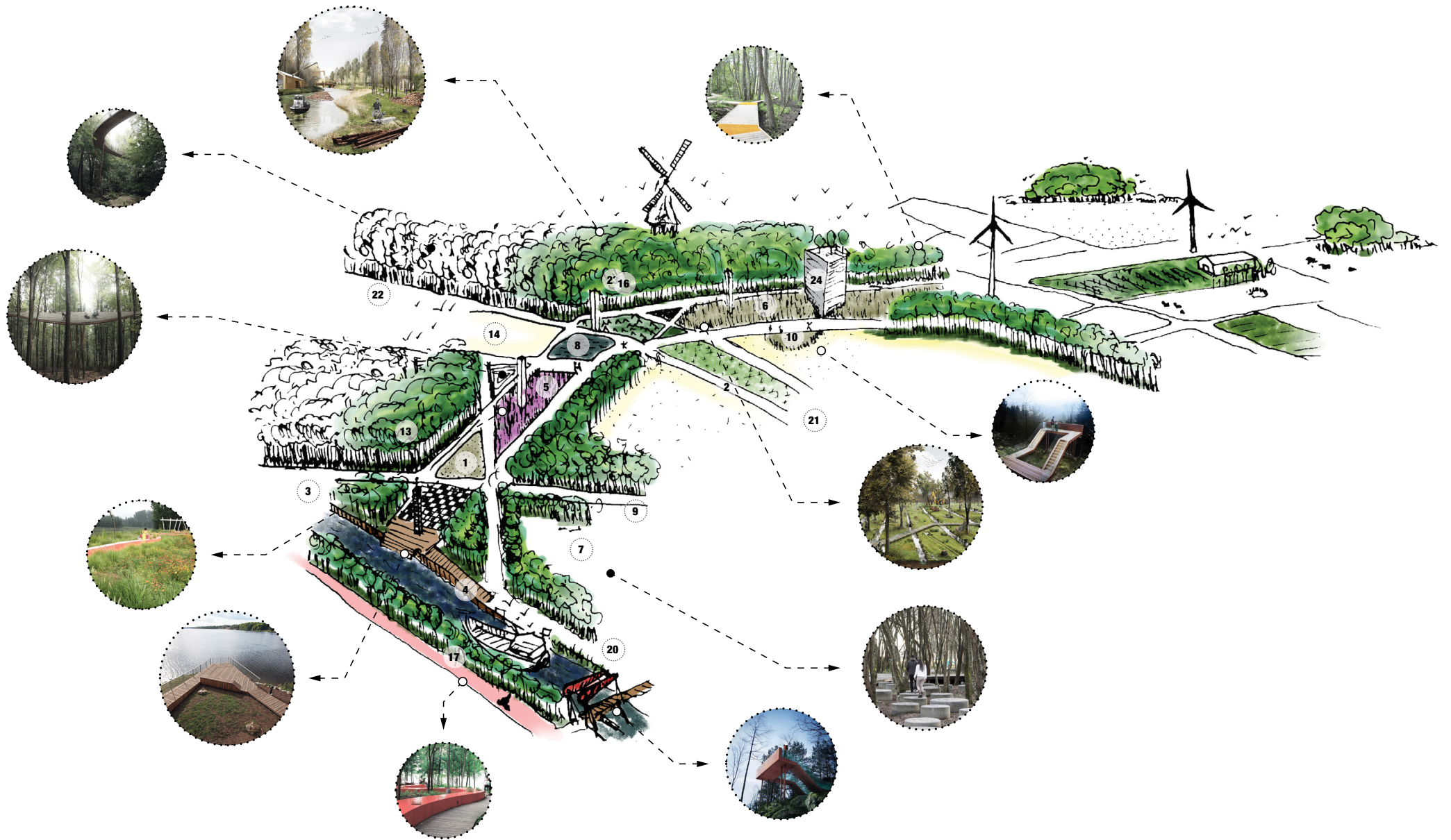
-Design Analysis Diagrams-



-Mobility Flow Study-



Program & Spatial Organization//



Program & Spatial Organization//

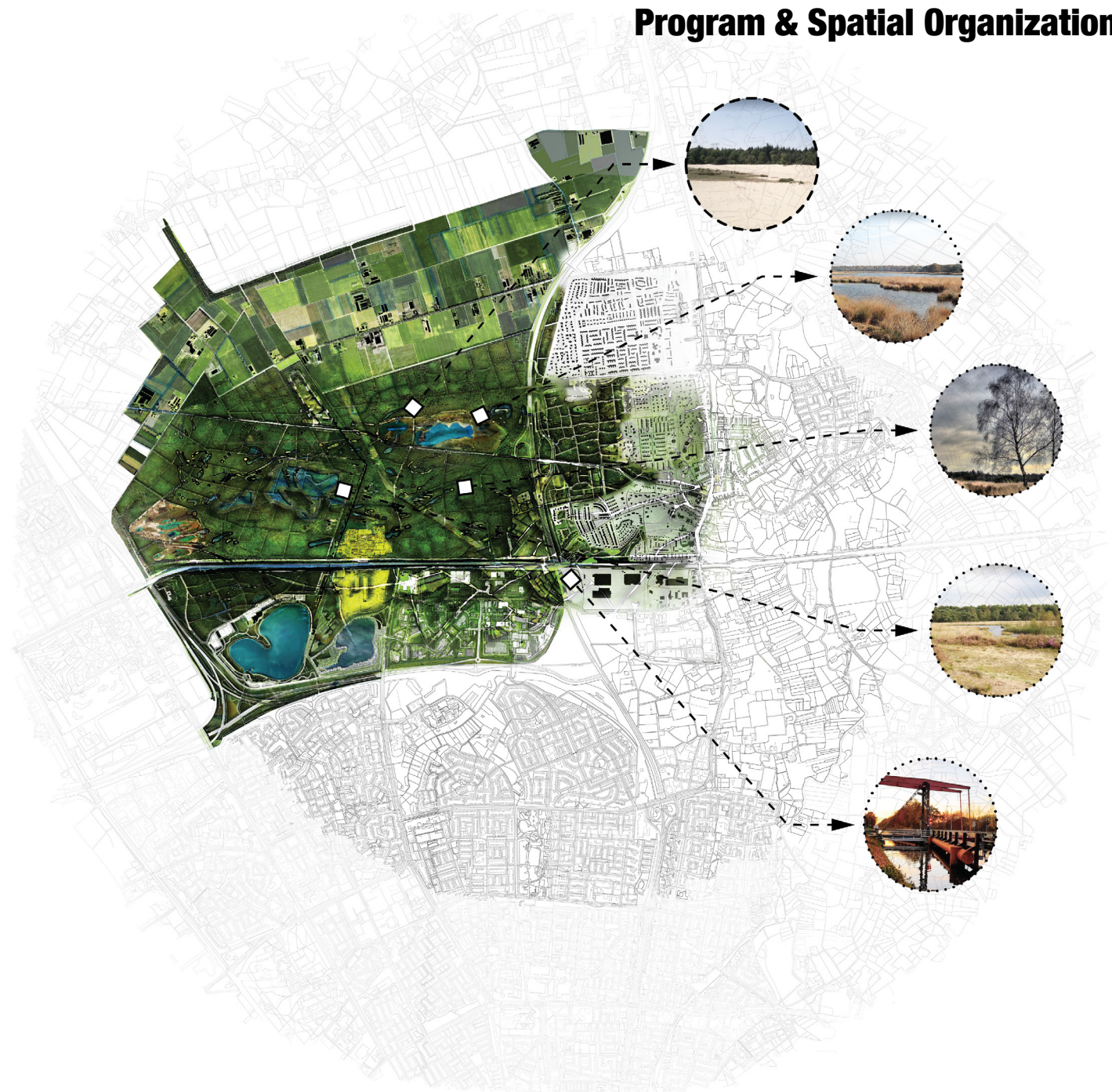
List of activities//

- 1- Agri-square
- 2- Path of recreation and sightseeing
- 3- Path of fieldworking and exercising
- 4- Path of fishing and hiking
- 5- Flower nursery
- 6- Farmland

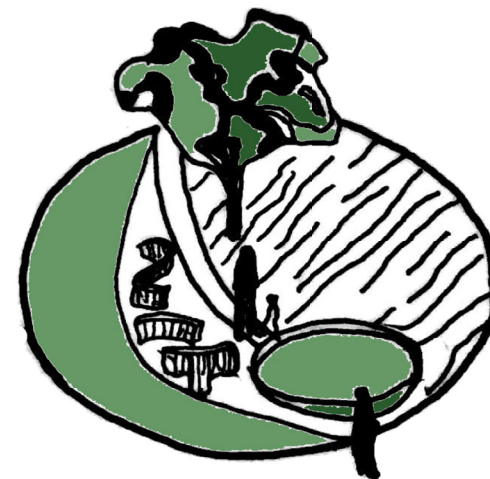
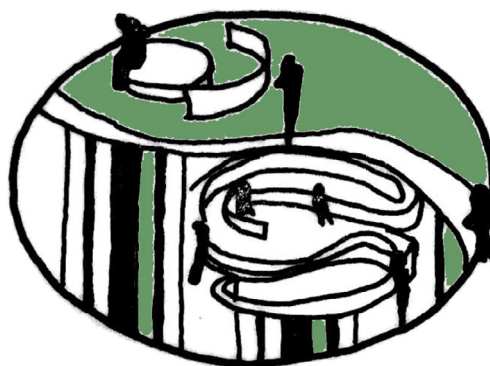
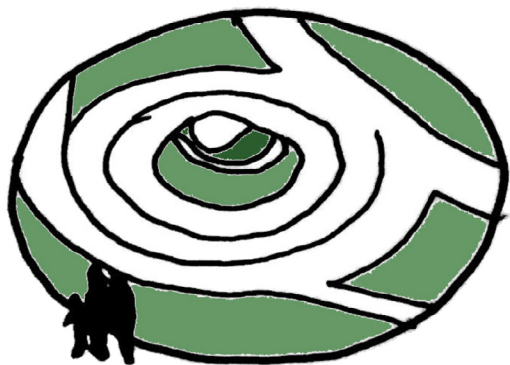
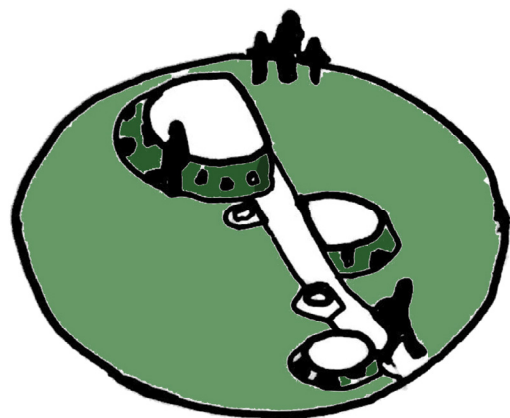
- 7- Fruit forests
- 8- Fishing island
- 9- Jogging path
- 10- Bige Hill
- 11- Heide hill
- 12- Tourist center

- 13- Light house
- 14- Agri-market
- 15- Fishing Center
- 16- Tea house
- 17- Main parking lot
- 18- Minor parking lot

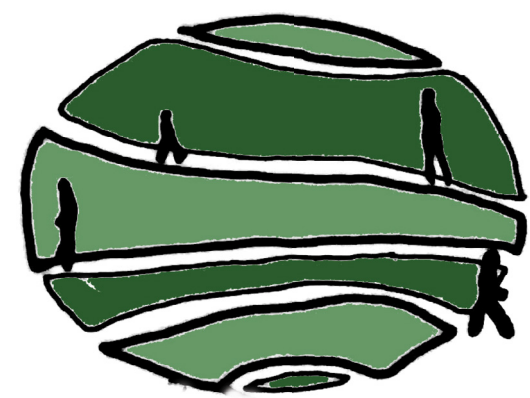
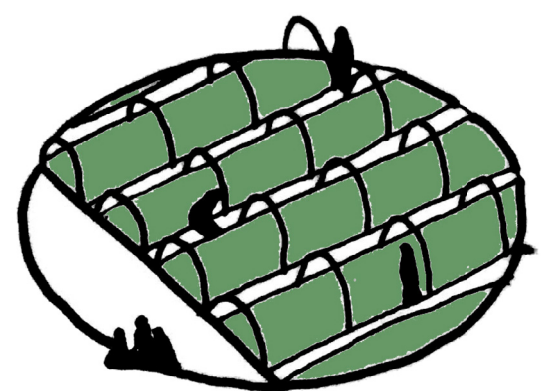
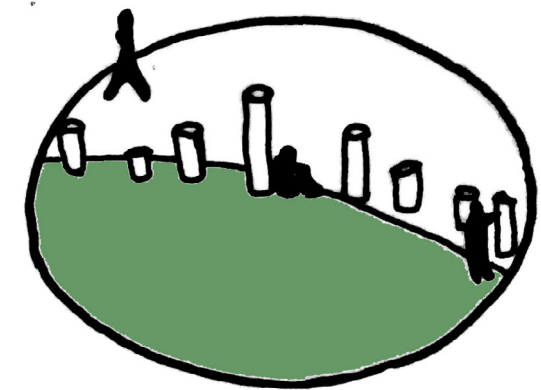
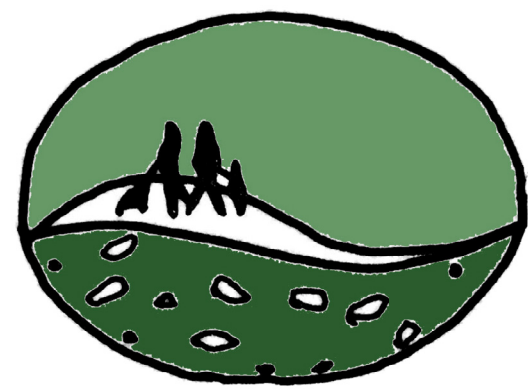
- 19- Green tracks
- 20- Main entrance
- 21- Second entrance
- 22- Entrance vehicles
- 23- Observatory tower
- 24- Agri-tower

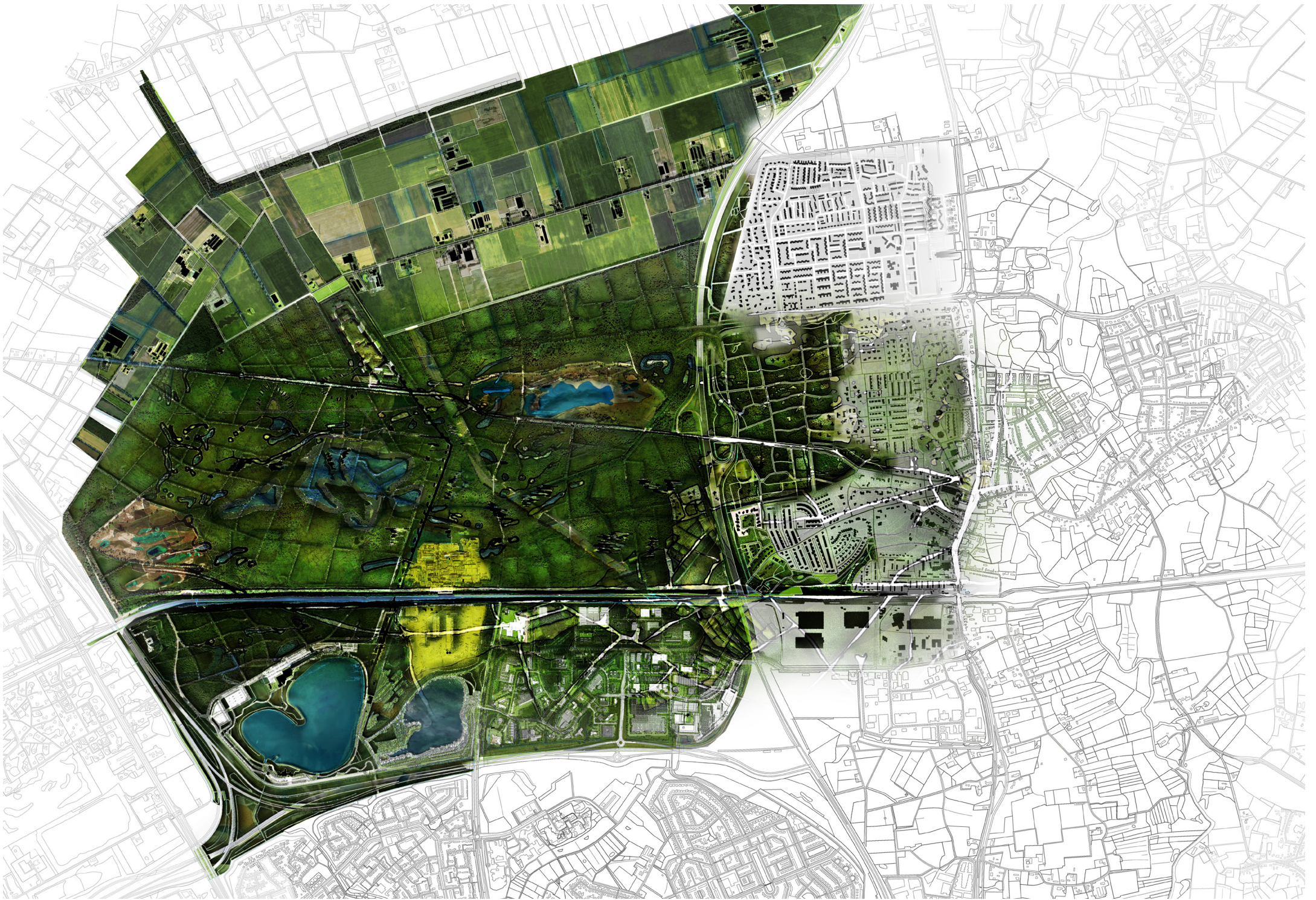


**Proposed
Activities//**



**Proposed
Activities//**





Thank you!