REL22 Reinventing Energy Landscapes

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REL22
reinventing
energy landscapes

International IDEA League
Summer School | Hambach

18.08.22 | 27.08.22

Organized and hosted by RWTH Aachen University
Silvia Beretta, Veronika Stützel, Katharina Christenn, Amrita Kaur Slatch

In cooperation with Neuland Hambach
Matti Wirth

In cooperation with TU Delft
Laura Cipriani

In cooperation with Politecnico di Milano
Antonio Longo, Chiara Geroldi

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Starting cooperation
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REL22 was an international summer school program launched by the Institute of Landscape Architecture of RWTH Aachen University (Prof. Frank Lohrberg, Silvia Beretta) together with the Master's Programme in „Landscape Architecture and Landscape Heritage" of Politecnico di Milano (Prof. Antonio Longo) and the Master's Programme in "Landscape Architecture" of TU Delft (Prof. Laura Cipriani). The aim was to formulate useful and stimulating visions that can inspire local stakeholders involved in the landscape transformation of the Rhenish Lignite District, in particular around the Hambach open pit mine.
For this reason, the two municipalities principally concerned (Kerpen-Buir and Morschenich) were actively involved from the early conception of the summer school, together with Neuland Hambach, a joint venture of the six municipalities surrounding the mine, which envisages the area's reclamation.

The program was funded by IDEA League.

Context
a future green heart in the middle of Europe

The summer school engaged participants in an international, multidisciplinary setting with a specific focus on the structural change (Strukturwandel) taking place in the Rhenish District (Rheinisches Revier), the largest open-cast lignite mining area in Europe, located in the German region of North Rhine Westphalia.

Here, for more than a century, vast areas of the landscape have been "turned upside-down" to extract brown coal at large scale, thereby sacrificing pre-existing rural landscape patterns, established villages, natural habitats and some of the most fertile soils in Germany. These far-reaching spatial restructuring processes have been occurring up to the present day, primarily as the result of lignite mining and subsequent land restoration and they have led to major changes in the landscape mosaic. The Rhenish District, with its three active open pits, yields roughly half of German brown coal production. The coal phase-out process initiated in Germany, as in other European countries, will strongly affect the area over the next two decades and will open up new pathways for its economy, its territorial development and the daily life of its inhabitants.

In this respect, current global debates on the sustainability agenda can be considered within the context of a huge living laboratory within the region. This involves multiple local, political and economic actors, working together with different research institutions. The economic and territorial transformation process which has been initiated requires a move from fossil-based value chains to bio-based and circular ones. Furthermore, these transformations will potentially serve as an example to other European regions.

The landscape area of the Rhenish District lies between the very dynamic urban region along the Rhine (with Cologne, Düsseldorf and Bonn) and the neighbouring cities of Aachen and Mönchengladbach. Significant population growth is expected here in the coming years and three artificial lakes are to be created following the end of open-cast mining operations. This provides a unique opportunity to create a new, positive image for the former mining area, thus establishing a new role for it within an extended urban region. The ambition is to create a new „green heart", in the middle of one of the most industrialized and densely inhabited parts of Europe. To achieve this, it will be necessary to develop new multifunctional and productive landscapes. These must be capable of delivering ecosystem services alongside inhabitation/settlement, renewable energy, agriculture/forestry and to establish a network of sustainable recreational activities focused around the newly created lakes.

REL22 was an international student design workshop, where visions of potential new landscapes were produced, assessed and discussed with local stakeholders. Through a more holistic approach, technical and economic issues were considered together with ecological and cultural ones. This process integrated the disciplines of landscape architecture and planning with other sectors.

Challenges
around Hambach open cast mine

The summer school focused upon the southern edge of the largest of the three active open-pit mines, Tagebau Hambach. Mining started here in 1978 and it occupies most of the area that once belonged to the forest bearing the same name. A total area of 85 km2 was originally designated from the government of North Rhine-Westphalia for lignite mining in Hambach. However the new german climate policy, combined with the virulent protests by civil society initiatives and international environmental groups, have led to a reduction in excavation plans in order to save the last remains of forest, located just south of the mine.

These protests have become, more generally, a symbol of resistance against lignite mining, coal-fired power generation and the associated climate pollution, casting an international media spotlight on this otherwise unremarkable corner of Germany. Thanks to the „Leading Decision: New Perspectives for the Rhenish Lignite Region“ issued in March 2021 by NRW, not only a part of the forest but also one of the villages destined for demolition has been spared from mining.

The last quarry operations are proceeding here along a northerly to southerly axis and are leaving behind a completely altered topography as a legacy. About 0.3 Km3 of soil is being removed here annually. By the end of the coal mining process in 2029, coal and soil with a volume of about 18 km³ will have been extracted.

Sophienhöhe (302m), the spoil mound created with waste materials from the excavation, is one of the highest artificial hills in the world. Lake Hambach, the artificial lake that is planned to occupy the hole produced during the mining of lignite, is envisaged to cover an extent of about 4.000 Ha and have a depth of 400 m. It will potentially be the deepest and (by volume) the second largest lake in Germany after Lake Constance.

Design tasks
during the on-site workshop

Filling of the open pit is expected to take several decades.

Studies for using both solar and wind energy and the gigantic water volume of the lake as an electricity storage facility have been carried out. In addition to the technical and economic challenges that the construction of such facilities presents, the question of how to design the infrastructure within the landscape remains unresolved.

Beyond energy alone, a shift in thinking from monofunctional visions to multifunctional ones is required. Moreover, concepts for the cultural revitalization of ephemeral landscapes after mining are urgently needed. The process must forge a positive new identity for this region as a whole, which has previously been exploited by linear economies.

The design task therefore was to reinvent energy landscapes that combine in a “harmonious way” energy production, new settlements and traditional and innovative uses of biomass with the production of ecosystem services.
Ideally, in a hundred years´ time, they should be considered by future generations as being valuable “cultural landscapes” i.e. landscapes in which it is desirable to live, to work and to spend leisure time.

This challenge precisely was tackled by the international group of students, experts and lecturers during the REL22 design workshop.

Unfolding

Introductory Webinar
19.05.22

The first part of the programme was held in a digital format. In an intensive, one-day webinar the participants got to know more about each other and about their complex design task. There were preliminary lectures delivered by University professors, from the participating Institutes and local stakeholders who provided an overview on the “status quo” on future challenges regarding the ongoing spatial-physical transformations of the site and also its socio-economical dimension.

Thematic Dossiers

Students were asked to prepare “in-depth” dossiers on particular thematic aspects to be used as a shared basis for work during the on-site workshops.

Webinar Program

9.30 Welcome & Opening
Prof. Frank Lohrberg | RWTH Aachen
Prof. Norbert Kloeters | BDLA

10.10 Creating Heritage Landscapes for tomorrow
Prof. Antonio Longo, Prof. Chiara Geroldi | Politecnico di Milano

10.30 Landscapes of crisis and opportunity
Prof. Laura Cipriani | TU Delft

10.50 First visions for Hambach
Matti Wirth | Neuland Hambach

11.20 Shaped by open pit mining: heritage and future of Kerpen
Ina Marie Breuer | Kerpen Municipality

11.40 Morschenich: a village waiting for its future
Lennart Schminnes | Merzenich Municipality

12.00 Landscape and Energy: designing transformations
Jasper Hugtenburg | H+N+S landscape architects

12.30 - 14.00 Lunch Break

14.00 Meeting & Working
Introduction to the Summer School and preliminary assignment
Silvia Beretta | RWTH Aachen

15.00 Technical and operational framework in Hambach
Christian Eling | RWE

2/
a transdisciplinary experience

working with landscape and people

© Team 2

On-site Design Workshop
18.08.22 | 27.08.22

The On-site Design Workshop was the core of the summer school. It took place for a span of nine days, where all the participants lived together in the village of Buir, located just a few kilometres far away from the still active open cast mining site of Hambach.

The days were characterized by field trips, brainstorming and group discussions, drafting of projects, reviews and internal presentations. The work was distributed in groups consisting of participants from different backgrounds and disciplines.

The resulting design proposals were presented to the local stakeholders in a public event at the end of the workshop.

Workshop Program

18.08 Welcome & Organisation

16.00 Arriving at the Old Train Station of Buir
and getting to the guesthauses

18.00 First meeting

19.30 Dinner

19.08 Exchange knowledge

9.00 Meeting at the Old Train Station
Thematic Dossiers presentations by the teams
Input lectures: Best practicies and case studies

12.30 Self organized lunch and
first on-site explorations in teams

18.00 Meeting and discussion
19.30 Dinner

20./25.08 Working Days & Explorations

8.00 Breafast at the Old Train Station

9.00 Working in teams and with the tutors
Futher self-organized on-site explorations

(on 22.08)
Visit to the open cast mine of Hambach with RWE

19.30 Dinner

23.08 In-Between Review

9.30 Old Train Station (breakfast from 8.00)
Review of the design projects toghether with local stakeholders

12.30 Quick lunch

Free time for Extras

26.08 Public Presentation & Farewell

10.00 Old Train Station (breakfast from 8.00)
Public presentation of the projects and open discussion with local stakeholders

12.30 Farewell Aperitivo

15.00 Cleaning up

20.00 Self-organized dinner

27.08 Breakfast & Goodbyes

Site visits

Dr. Eling, from RWE Power, gudied the participants and lecturers through the Mine and the recultivation area. It was a one a kind experience to witness the scale of the pit and the operational working of the extraction process. The participants ventured on thier own discovering the landscape through woods, farmlands and abandoned villages on the E-bikes.

At work

© Silvia Beretta


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Both tools of hand sketching and computer graphics were used in the designs process.
There were also many moments of discussion within the groups, alternating with long, laborious silences.

Design reviews with tutors and stakeholders

Tutors engaged in intensive and detailed design discussions with the teams. During the Mid-term review the participants got an oppurtunity to interact one on one with the stakeholders, giving them the much needed insight.

Interactive sessions


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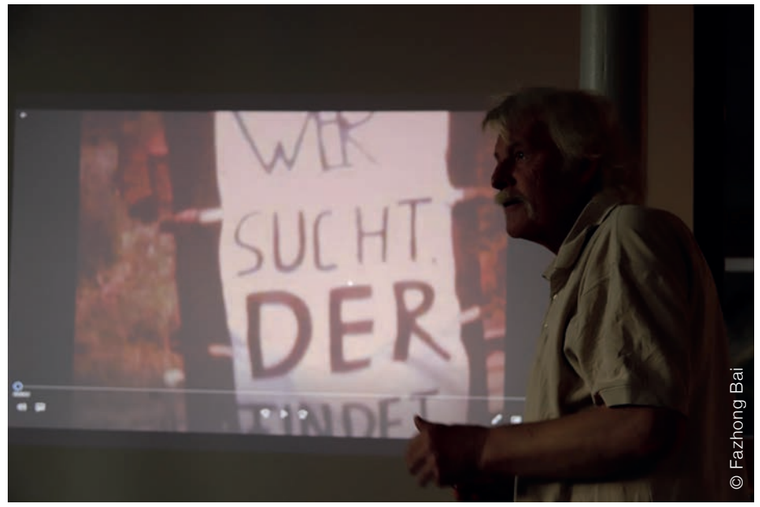

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Antje Grothus (left), German environmentalist and politician (Alliance 90/The Greens) and member of the state parliament of North Rhine-Westphalia, was invited to interact with the participants and give insight into the aspirations of the community.
John Cremer (above), head of Railraod Tracks Studio where the workshop was facilitated, showcased a music video he directed around the mining region in the ´70s highlighting the damage done to the environment at that time.

Other interactive sessions

Participants after the mid-term review explored the city of Aachen and vibed within the RWTH Aachen University atmosphere.

Final presentation


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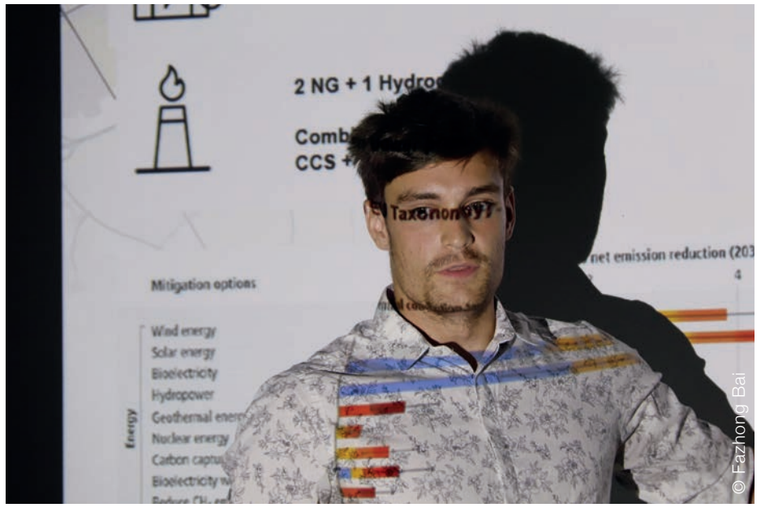

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Final presentation

The summer school concluded with the presentations by the students of their design visions for the future landscape around Hambach. Among the attenders were representatives from: Municipality of Kerpen- Buir and Merzenich, local association Buirer für Buir, intercommunal development agency Neuland Hambach, RWE Power, HNS Architects, BDLA (national association for Landscape Architecture).
Stakeholders participated enthusiastically on the final day showing great interest in the presented projects and offering insights for further discussion. Prof. Eric Luitens form TU Delft and the *REL22* tutors gave to each group a positive feedback.

© Silvia Beretta

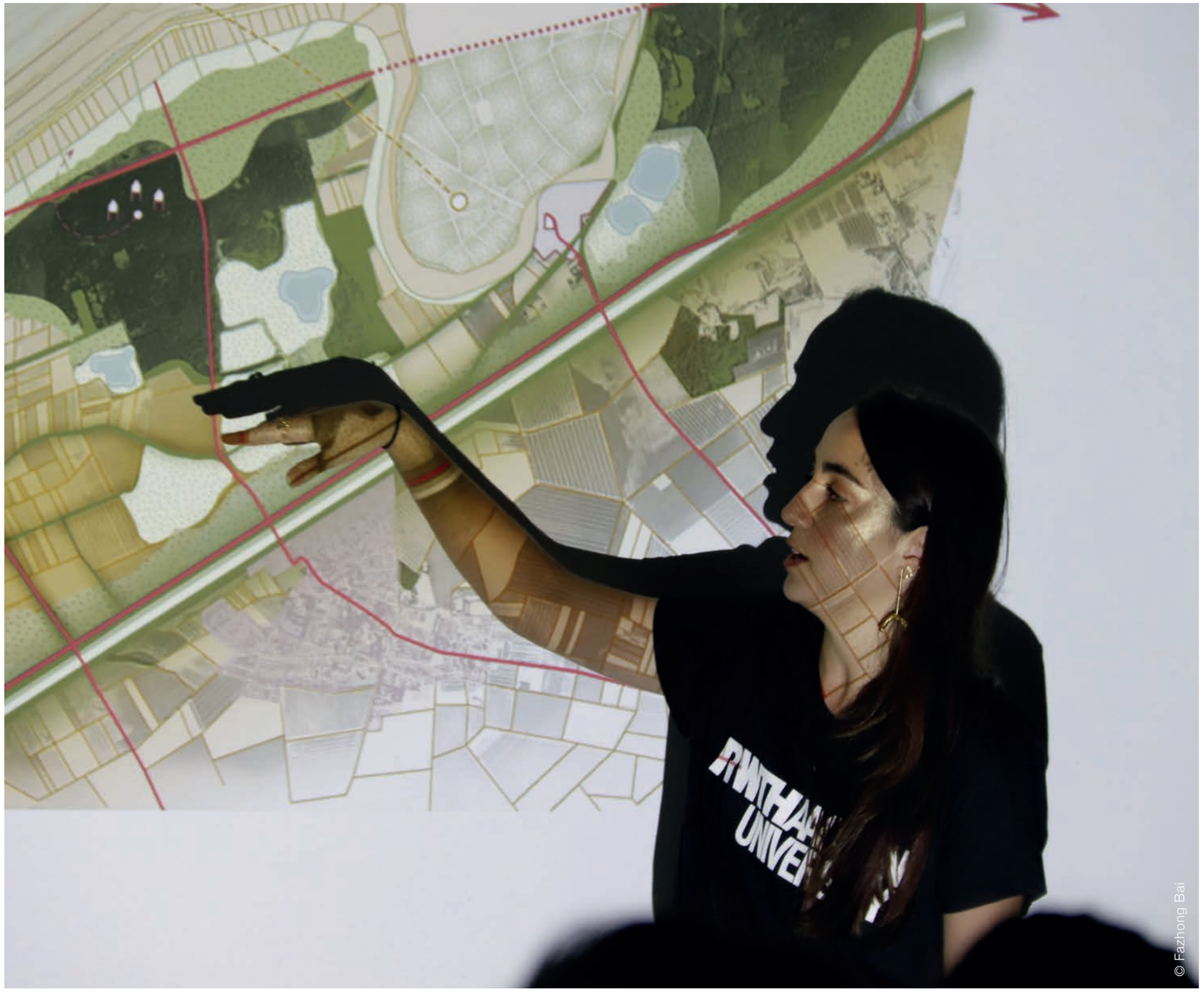
Outcomes

The workshop brought together young minds from the field of Architecture, Landscape Architecture, Urban Planning and Engineering to provide innovative ideas rooted in a common landscape vision for a sustainable Lake based context. The students, from as many as 14 different nationalities, were organised into five interdisciplinary teams.

The work in teams led by the tutors during the workshop was stimulated by discussion rounds with the stakeholders, often representing groups with different opinions and goals. This achieves on one hand the didactic purpose of developing a greater critical sense in the students. On the other hand, the workshop was also meant to serve as an opportunity for a positive exchange of ideas amonge different representatives using the project as a tool bringing opposing points of view closer together.

The design results developed by the five teams were presented as alternative variants that attempt to deepen the spatial and processual dimension of possible landscape changes and emphasise the ecological, aesthetic and socio-economic aspects. With time horizon ranging till the filling of the lake, the project attempts to provide an immediate response to the residents´ demands for the re-appropriationn of the area. At the same time, the proposed visions aim to create a new productive landscape that is not only ecologically but also economically sustainable in the long term.

Bringing together different Design and Planning cultures and different approaches to large scale landscape transformation from different countries hepled to find innovative solutions for the Rhenish District. In addition, the participants were confronted with highly topical issues and they will be able to draw a wealth of knowledge from this experience that can also be applied, back at „home“, to their respective geographical context.

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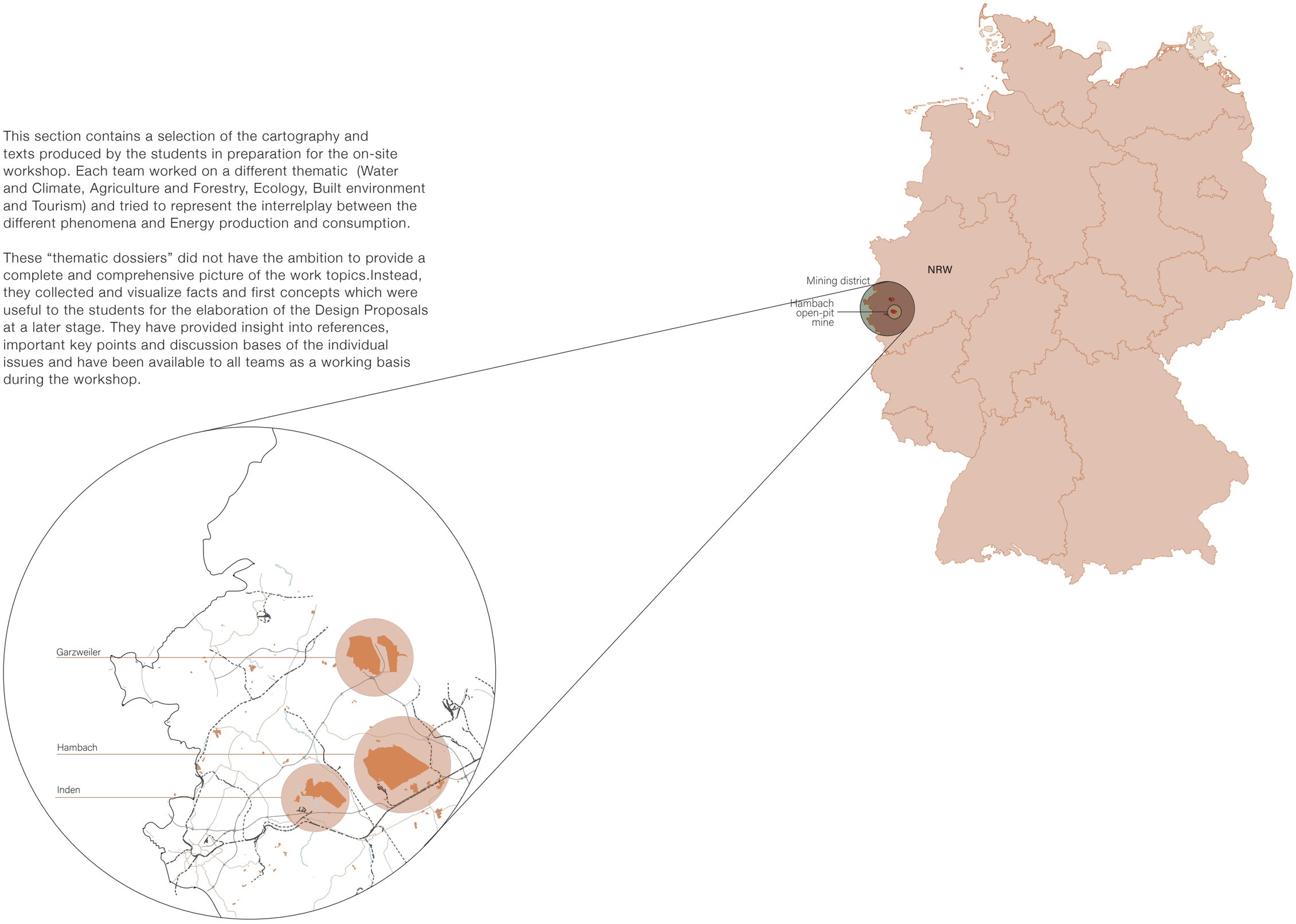
This section contains a selection of the cartography and texts produced by the students in preparation for the on-site workshop. Each team worked on a different thematic (Water and Climate, Agriculture and Forestry, Ecology, Built environment and Tourism) and tried to represent the interrelplay between the different phenomena and Energy production and consumption.

These “thematic dossiers” did not have the ambition to provide a complete and comprehensive picture of the work topics.Instead, they collected and visualize facts and first concepts which were useful to the students for the elaboration of the Design Proposals at a later stage. They have provided insight into references, important key points and discussion bases of the individual issues and have been available to all teams as a working basis during the workshop.



Historical context

1935
Law for Promoting
the Energy Industry

1947
Law n. 75 - US-UK
Control Group
established the
German Coal Mine
Administration

1970
approve the permit
for Hambach Mine

1978
Excavation of the
Hambach mine
began by German
society RWE

1980
Revised the Federal Mining Act,
stipulates the 'compulsory
relinquishment of private property
to mining companies .

The environmental ministry supressed
a study warning of the disastrous
ecological impacts of coal mining in
the region

1989
Germany invest
in wind power

1998
Since '98, the social role of RWE:
the RWE Foundation has
supported disadvantaged
children and provided
educational/PR material,
teaching supplies.

2012,
April, forest defenders
occupied
the neighbouring
Hambacher forest to
stop the migrating mine

State of resettlement of
Manheim Town .

2013
the mining area
begins to expand towards
the southeast.

Start of resettlement of
Morschenich town .
Due to some changes in the
development of the mining
area , Morschenich will
no longer be used
for mining purposes
and remain.

2014
In March, the state government decided
to reduce the production of lignite
by 1.3 billion tons,
thus saving 1,400 people
from having to relocate.

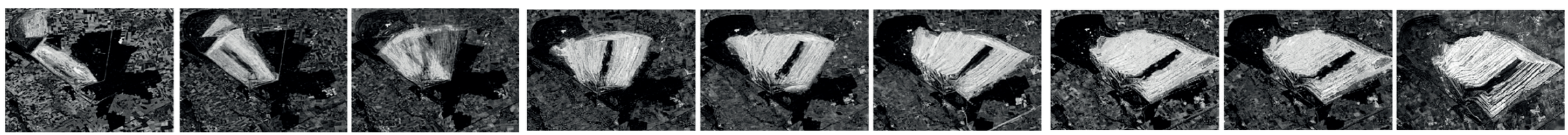
2015
Paris accords on climate

RWE initiated legal action
against 800 activists and
journalists following violent
repression of protest

2016
A new government ,
has stated that it will use
lignite as a bridging technology,
but will honor existing
existing mining permits.

2020
German cabinet
apporve to phase out
coal by 2038

2029
End of coal
extraction



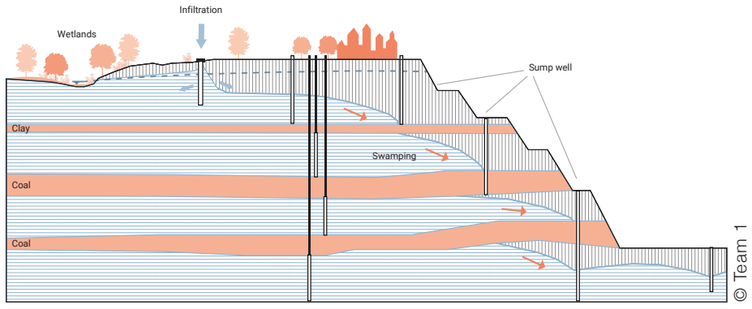
1984 1990 1995 2000 2005 2010 2015 2016 2018

Groundwater

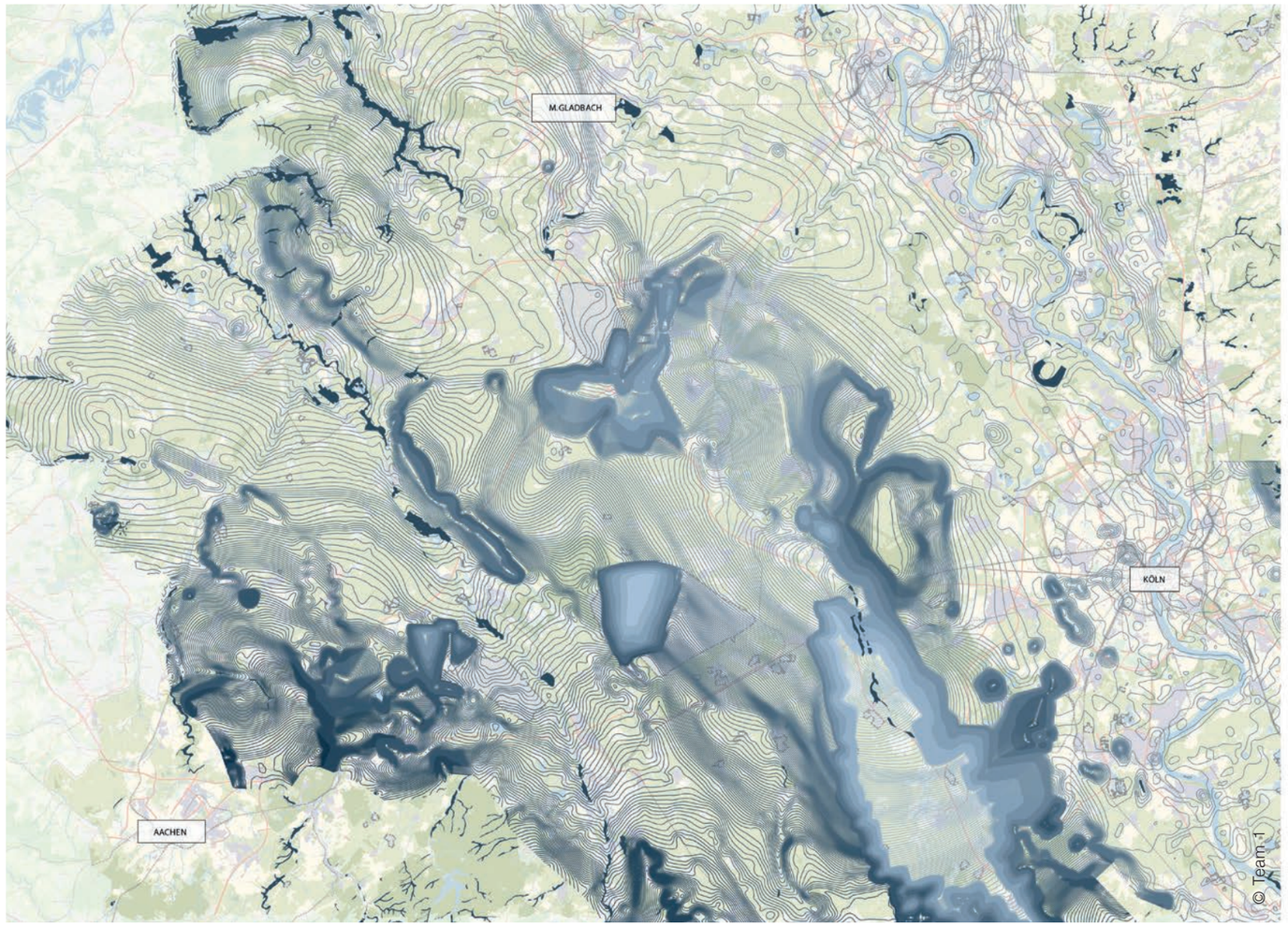
Surface and groundwater systems and its interactions with mining activities are very important to map and understand. The effects of open-pit mines on groundwater conditions are mainly reflected in the shifting of the catchment areas, i.e. in the displacement of the underground groundwater divides, in the mineralization as well as in the hardening of the remaining water.

Currently with the help of hundreds of wells, the mining area of the opencast mines is drained. In ‘Garzweiler‘ the drainage extends to depths of around 230 meters. In the Hambach open pit area, drainage is carried out to the depths of more than 500 meter. In the past, upto 1.4 billion cubic meters of water were sumped annually in this way throughout the lignite mining region; in 2020 the volume was still around 528 million cubic meters.

The permissible pumping volumes were specified in corresponding water law permits.
Permission has been granted for the Hambach open pit mine to sump upto 370 million cubic meters per year. The 2020 sump volumes were 332.49 million cubic meters.



Section along mine edge



Underground water hydrology | regional scale

0 5 15 Km

Surface water

With the early closure of the Hambach open pit mine, RWE Power now sees the need to fill the remaining hole here with Rhine water as early as 2030. For this reason, an extension of the planned pipeline system has been proposed: the 22.4-kilometer-long bundled pipeline from the Rhine water intake point near Dormagen-Rheinfeld to a distribution structure near Frimmersdorf will now comprise three 2.2-meter pipes instead of two 1.4-meter pipes. The subsequent 18.5-kilometer Hambach pipeline would then be continued with two pipes to the Hambach open pit mine.

After the end of opencast mining gigantic residual lakes will remain, which are to be artificially filled with Rhine water by pipeline by the end of the century. According to the original plans, the residual lake of the Hambach open pit mine, for example, would cover an area of 4,000 hectares, with depths of 350 meters and a volume of 4 billion cubic meters of water. The latter corresponds to twice the volume of Lake Chiemsee.

Surface water hydrology | regional scale

0 5 15 Km

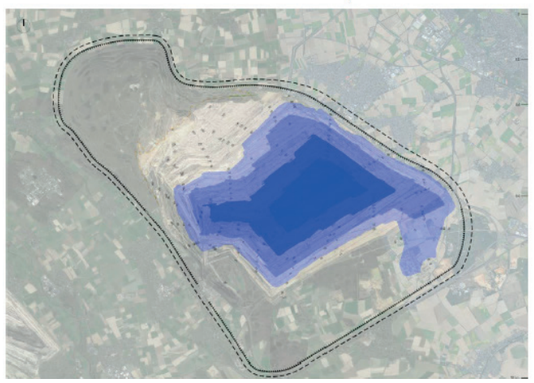
2032|-200m- Hambach end of mining operations

2037|-100m- IBA

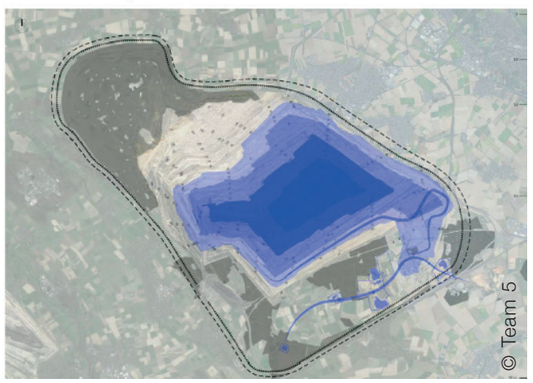
2047| 0m- End of the IBA

2070|+60m- The water surface reaches a height of +60

2072 - Continuous measurement of animal species



2075- Development of the diverse animal communities



Timeline | filling the lake

Forestry

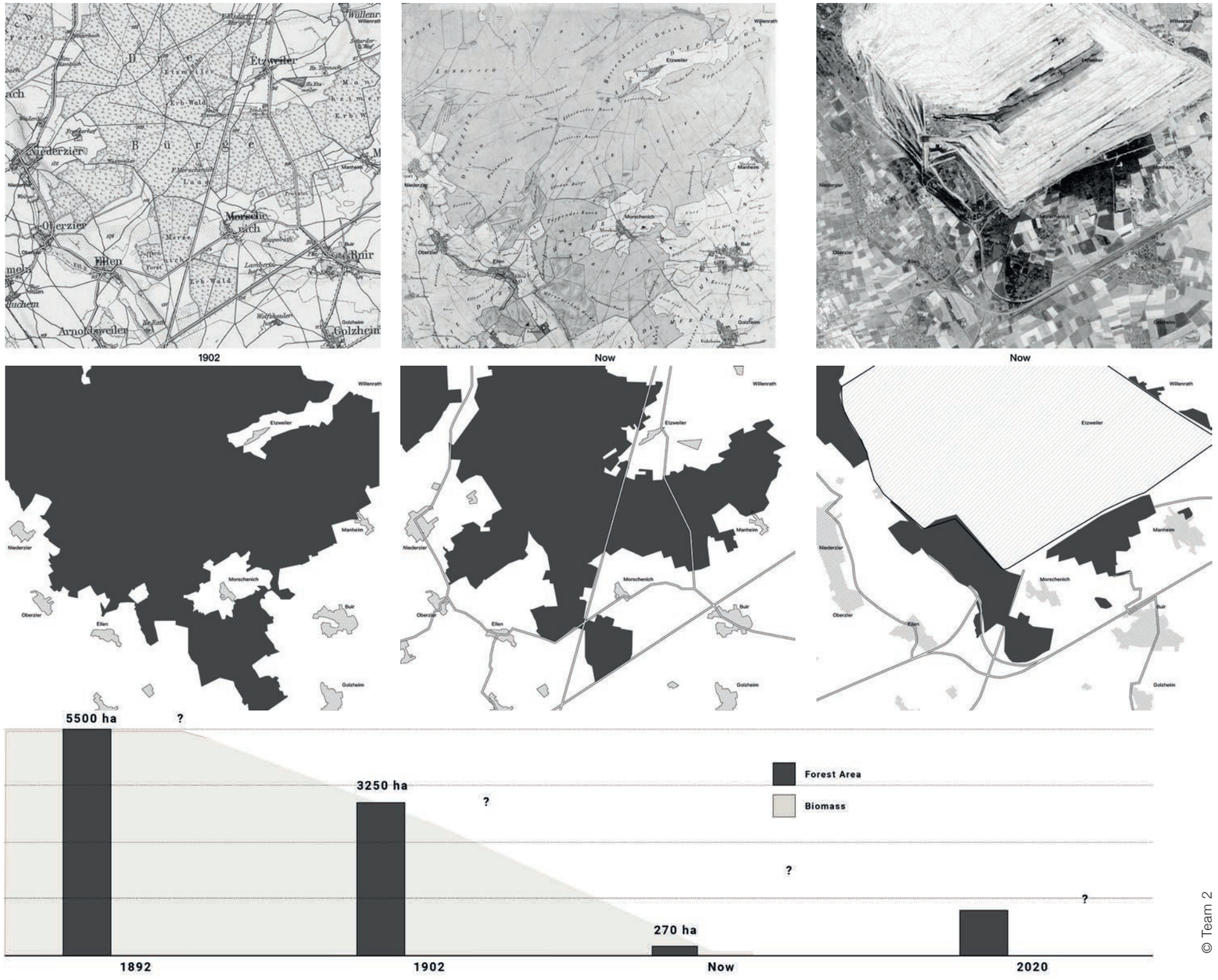
The earliest historical maps date back to 1892, and forests fill almost every corner of the map, and small towns seem insignificant in front of them.The roads between the villages are not smooth, and the forest presents a strong continuity.

The 1902 map clearly shows the impact of the construction of road infrastructure on the forest, which has since been surrounded and cut by roads. The forest was cut into patches.

Since 1978, the German energy company RWE Power has been stripping away the edge of the forest to expand its operation which is already the largest open-pit lignite mine in Europe. Before the mine opened, the 12,000-year-old Hambach Forest was spread over more than 13,000 acres. Today, only 10 percent of the forest's original footprint remains.

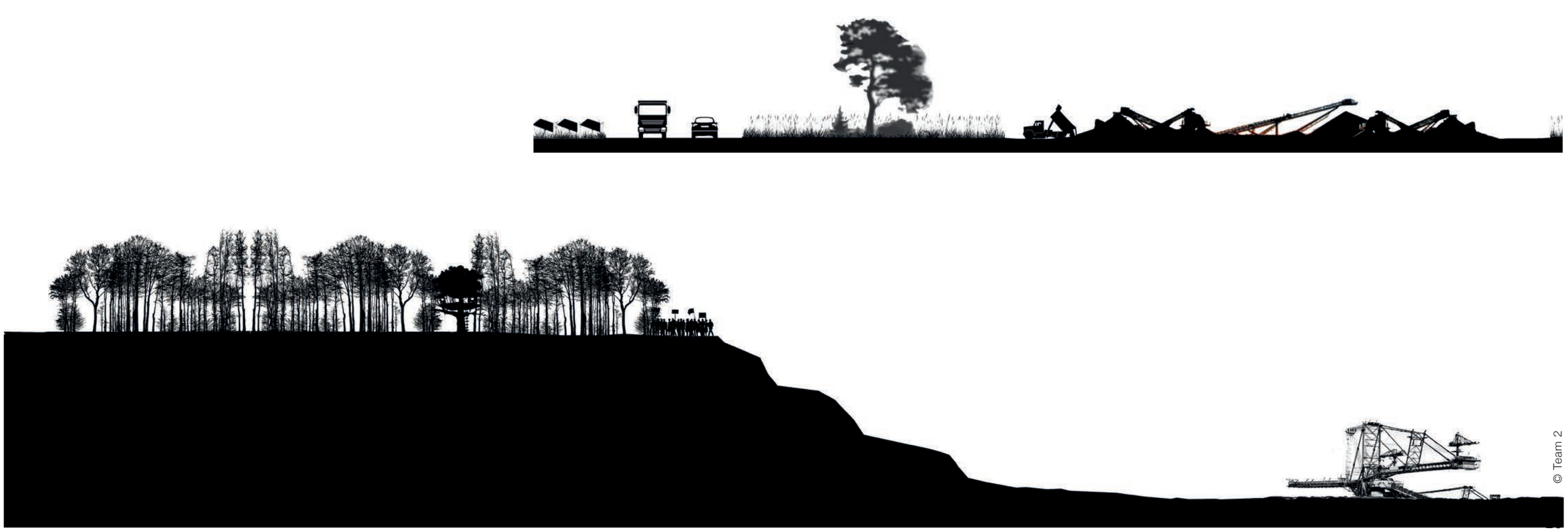
The first phase of recultivation already took place in the eastern part, in the area between Garzweiler mine and the Southern Revier. Several mining-pits have been closed down and new artificial landscape is formed by recultivated elevated mining-dumps, and lakes. The same type of artificial hills has been formed on the northern part of the Hambach mine and several other smaller locations. In contrast to the artificial hills, the three still active open-pits are to become lakes by 2080.

The districts around the former coal-pits will thereby in the following decades become attractive area for new dwelling, work, food and energy production, research and recreation. A multifaceted productive landscape is to appear in the place of a former monoculture production. This is to be achieved by merging different sectors and stakeholders, research and innovation tested in the real world laboratories, turning the region into a model-region for transformation to sustainability.



Timeline | loss of forest cover

Topography



Soil and agriculture

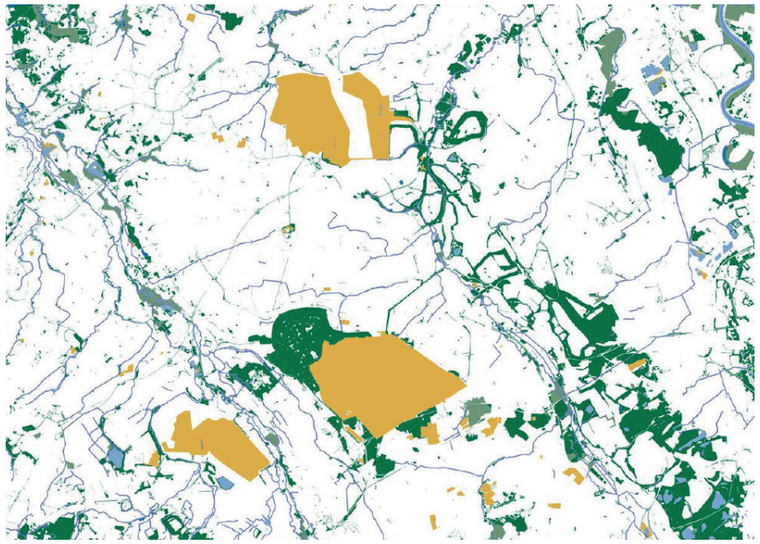
The vast agricultural landscapes of the Jülich-Zülpich Börde are characterized by very fertile loess soils. They were formed from flight sediments of the last Weichselian ice age and are upto seven meters thick. The deep soils in the Börde plain allow high-yield intensive cultivation, especially of cereals, rapeseed and sugar beets. However, the traditional processing in local sugar factories has lost importance due to concentration processes. Due to the liberalization of the European sugar market, the price of sugar has fallen and the future profitability of sugar beet cultivation is questionable. In addition to potatoes, field vegetables such as red cabbage and lettuce are also grown in the Börde and processed locally in canning factories. The flat fields of the Börde convey a sense of vastness that is a characteristic and identity-defining feature of the region. At the same time, the intensification of agriculture also leads to negative effects. Thus, the landscape of the Börde is in large parts extremely poor in structure.
Particularly in the recultivation areas of the follow-up landscape, there is a chance of re-profiling agriculture.

Agricultural typologies | regional scale

Biodiversity

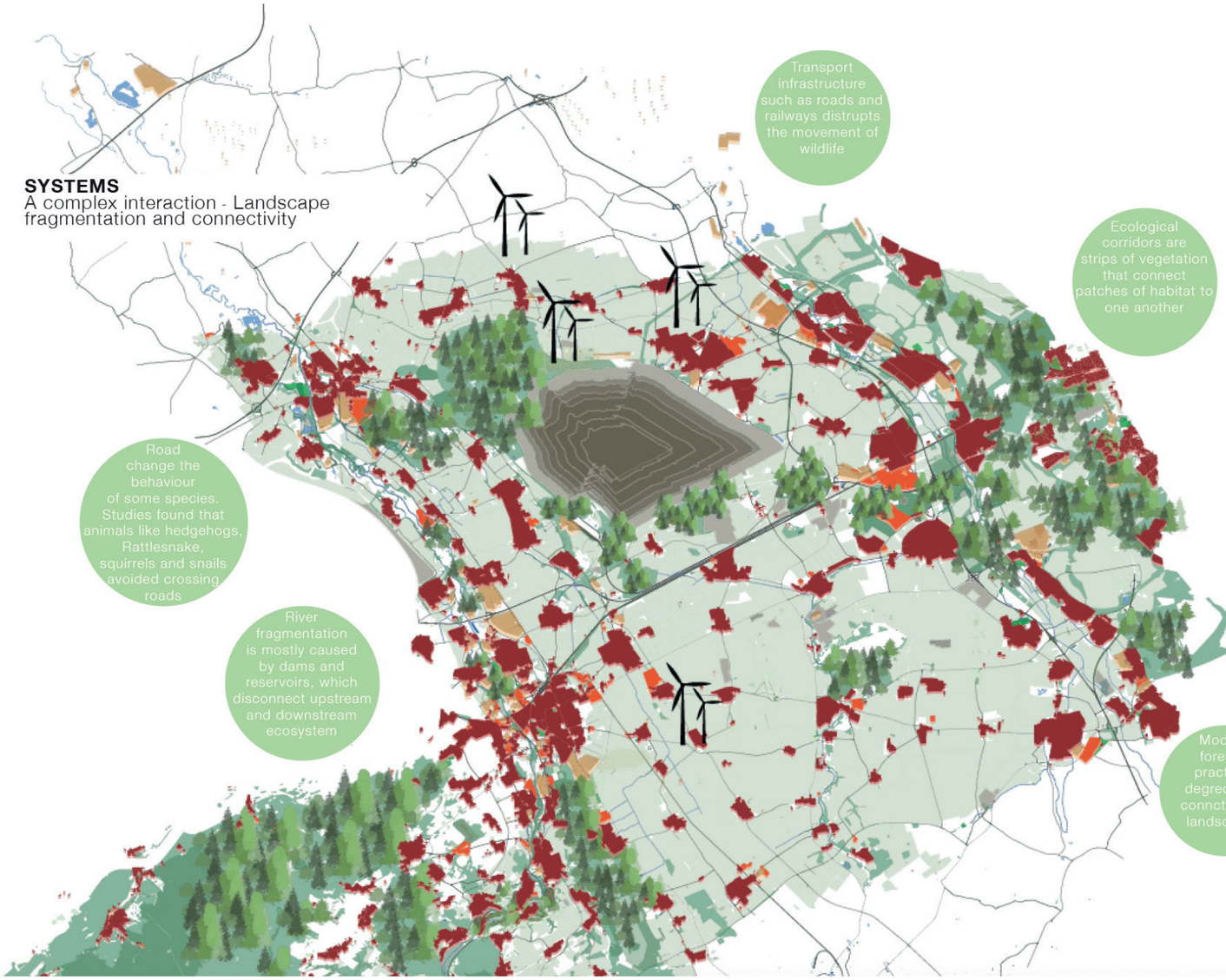
Habitats for animals and plants - such as those provided by copses or water meadows - are lacking over large areas. Soil erosion and, for example, nitrogen inputs are favored by the small distances to the Börde streams. Intensive large-scale agriculture in the Börden offers little structural diversity as a habitat for flora and fauna. Nitrogen inputs from the air, improper maintenance of field margins or their development as field paths, and large field sizes contribute to the disappearance of biodiversity.

The region has a number of forward-looking model projects and research focuses that are testing or researching models of climate-adapted, landconserving and cycle-oriented management options. With this innovative know-how in the region, the farmers, the companies and the good soils, the opencast mining communities have favorable conditions to set themselves up as a model region for cycleoriented agriculture.



Natural features | regional scale

0 5 15 Km



Landscape systems

0 5 15 Km

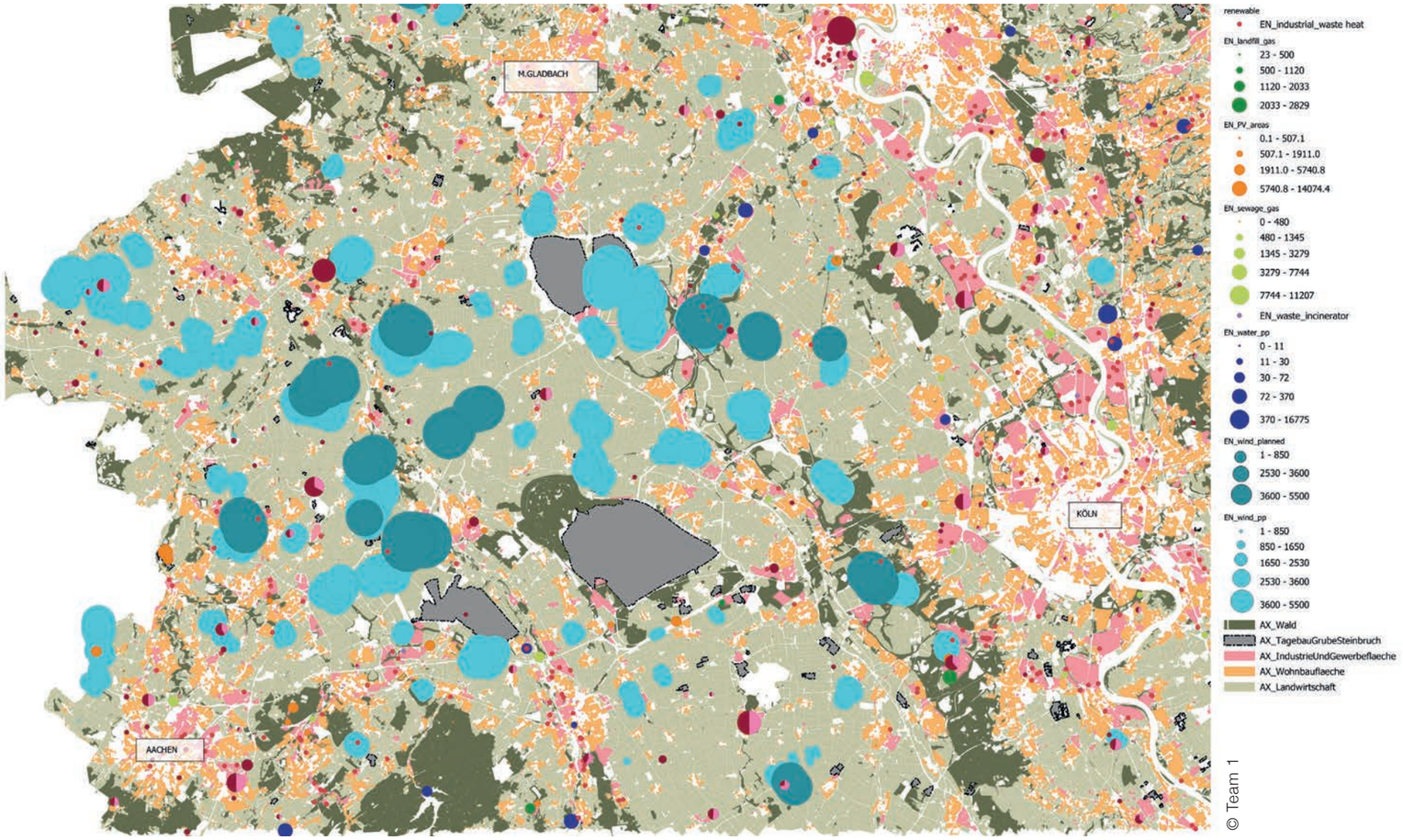
Energy

Renewable energy sites in the form of wind power stations as well as solar power stations, such as solar highways, have been established in recent years. At the same time, open space photovoltaic and wind energy projects such as energy crop cultivation, while reclaimed soils are also rich in nutrients and yields after inter-planting. The cultivation of energy crops or area-wide PV systems are therefore able to take place on less fertile soils in order to avoid competing with agricultural land for use in the future.

There are various players involved in the promotion of the renewable energy industry, for example some municipalities such as the Stadt Kerpen are developing municipal interconnection plans for the expansion of the renewable energy industry and establishing research centres, and RWE Power has also positioned itself as a player in the development and production of renewable energy. In addition, joint projects between farmers and energy suppliers, such as agricultural photovoltaic projects, can explore the possibility of multiple roles for agricultural land.

Renewable energy forms each bring their own siting requirements and spatial impacts. The development of large-scale energy landscapes can also compete with tourism and landscape objectives. In a future orientation of the Hambach opencast mining environment, the suitability of areas, the selection of the production method and the spatial effects of areas of energy production as well as their location in the context of other uses must be taken into account.

Taken together, landscape image, landscape use and energy production are seen as integrated tasks for landscape restoration in Hambach, a trend in the post-mining era. New forms of linking landscape structures, cultural areas as well as the creative integration of places and objects of regenerative energy production could specifically characterize the new energy landscape and establish unique selling points.



Renewable energy source map | regional scale

0 5 15 Km

Built environment

In the early 19th century, this region basically stayed as wild forests and farmlands, and a few small villages already settled there like Burr, Manheim, Morchenich, Ellen, Arnoldsweiler and Etzweiler, which kept growing in the coming two century and now they are the most dense settlements outside the open mining pits.

At the beginning of 20th century, more small villages came into being and around 10% of the forest were occupied for agriculture development. The transportation network there got well developed. Several main roads were built to connect big cities and towns. A tram line and a road went through the mining site today.

Then the current situation is, around 40% of the Hambach forest were scarified for the open lignite mining. More land in the surroundings came into industrial use which arecmainly related to mining industry's logistics, refinement and energy supply. Three villages are forced to move because of the mining. They are Etzweiler, Manheim and Morschenich. Etzweiler had already moved to Elsdor in the 2001 on the north side. The other two were planned to move to the south side and the resettle process is still ongoing.

Settlement typologies | regional scale

0 1 5 Km

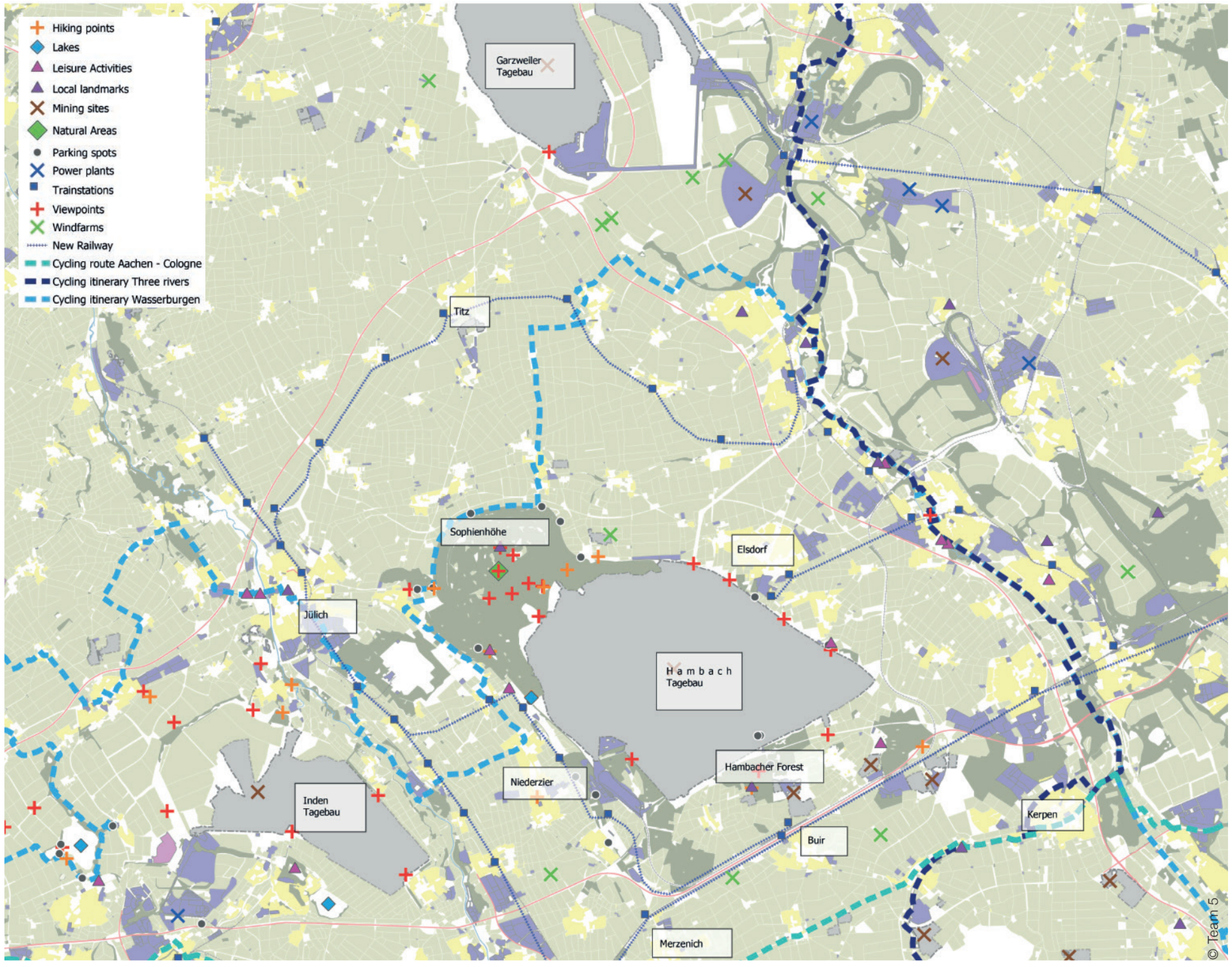
Tourism

With a population of 18 million in 34,084 km2 area, the cities in North Rhine-Westphalia have high tourist attractions for visitors. Although impacted by the coronavirus pandemic, the total number of arrivals and overnight stays rose slightly in 2021. The State Statistical Office of North Rhine Westphalia, IT.NRW, registered 1.5 million arrivals and 2.8 million overnight stays in the city on the Rhine.

In central cities like Düsseldorf, Cologne and Aachen, there are numerous tourist attractions that attract tourists from all over the world. Various infrastructures, as well as hotels and restaurants, are basically concentrated in these core cities. The main historical sites like Cologne Cathedral and Aachen Cathedral are the regional landmarks that shape the cultural identity here.

The future plan of Hambach mine shows that it will be shaped like a cultural-ecological theme park with a big lake. However, what the area has now is a huge mining site with relatively few recreation infrastructures in the nearby lands. At the same time, it does not have the historical and modern appeal like Aachen and Cologne. The starting points are remaining forest and agriculture lands and industrial sites such as power plants and wind farms.

Predictably, during the slow process of converting the mining area into the lake, there will be favorable progress in the local ecology. The development of renewable energy is conducive to shaping the new image of the region. And those former industrial relics can also be preserved as heritage, integrated with the landscape as part of tourism resources in the area.



Important landmarks | regional scale

0 1 5 Km

47
landscape scenarios
open design practices

Although 70% of the earth is covered by water, using it as a design element remains a challenging issue, here especially due to the falling groundwater levels and scarce levels of rainfall. Adding to this, the need to meet energy demands through sustainable energy sources to decarbonise the future makes the problem a multifaceted one. But at the same time, it encourage to find promising solutions that could become the standard for future landscape designs. The objective of our project was to incorporate water as an ecosystem, as a place for recreation and as a center of energy.

In the first stage, the water that is pumped into the hole resembles a waterfall. We proposed green terraces on its slope, combined with agriculture and energy production. In the meantime, Hambacher forest is being reforestarted to connect the green belts. We also established an industrial heritage park with mining machines and we preserved activist's trees houses. They are an important part of the story of this location.

In the second stage, the solar trees are being gradually replaced by a modular system of floating platforms, which not only will supply adjacent villages with electricity, but will also provide a unique water landscape for agricultural and recreational purposes. In a cooperation with Julich research center we extend our solution to next generation heating networks and hydrogen production which are accordingly scaled in proportion to growing populations. Such methods are in line with UN's and Germany's ambitions.

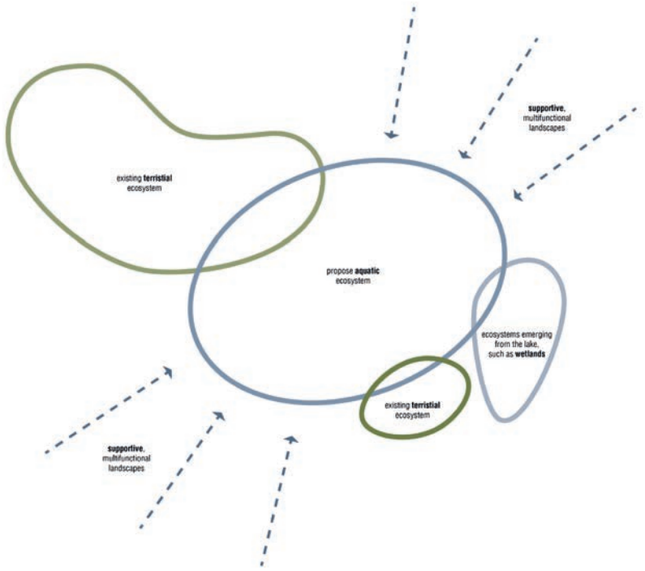
In the final stage, the lake is full and the forest is grown, the modular systems are expanded. Biotopes on the shores of the water body, such as marshes and wetlands ensure biodiversity. Between them, several beaches are located in a way, that citizens of every village can enjoy the access to the water.

TEAM 1

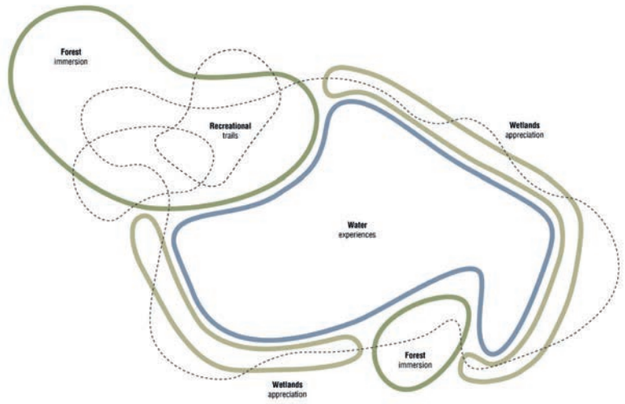
Water for rehabilitation

Alessandra Roccia, Hareesh Poovalagan, Iryna Vakulyk, Katharina Münstermann, Luis Ocampo

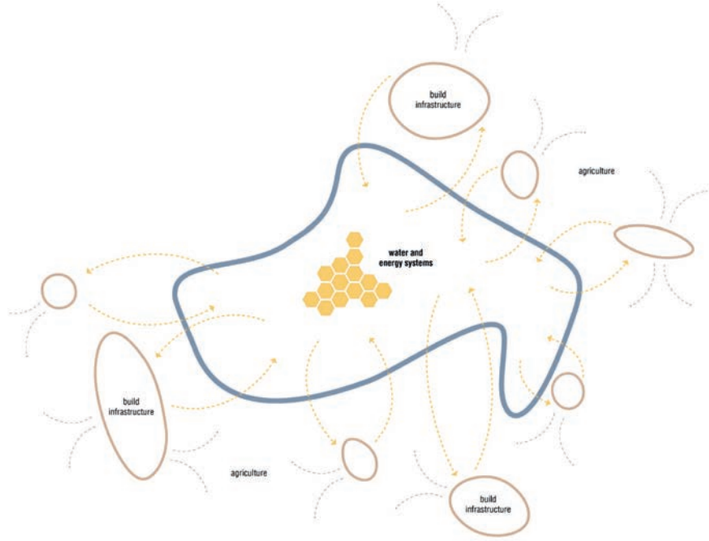
Concept



Water as ecology



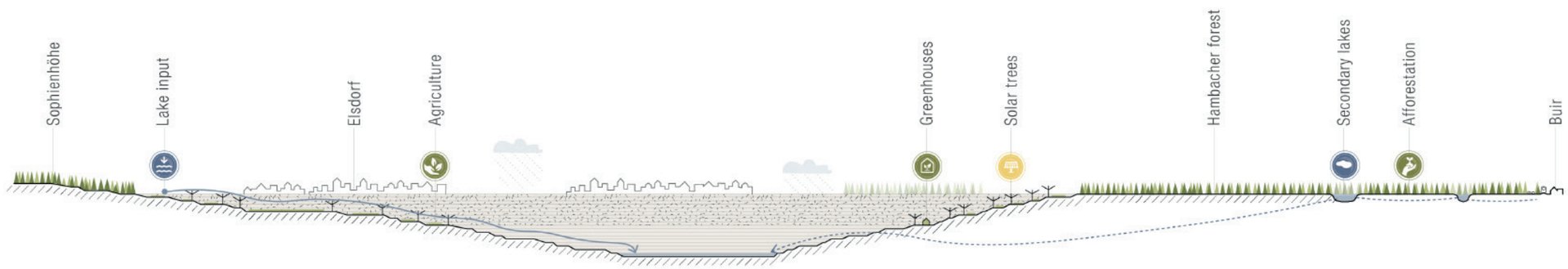
Water as recreation



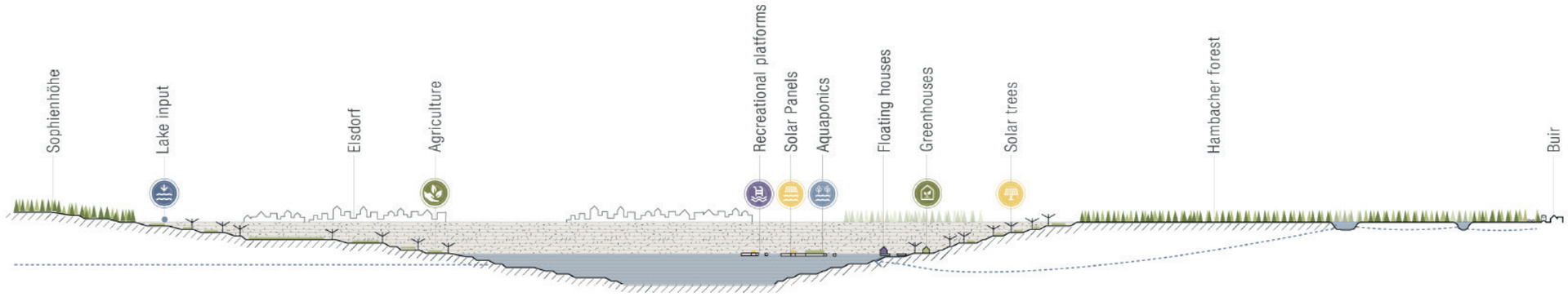
Water as source of energy

Timeline | filling of water in the mine pit

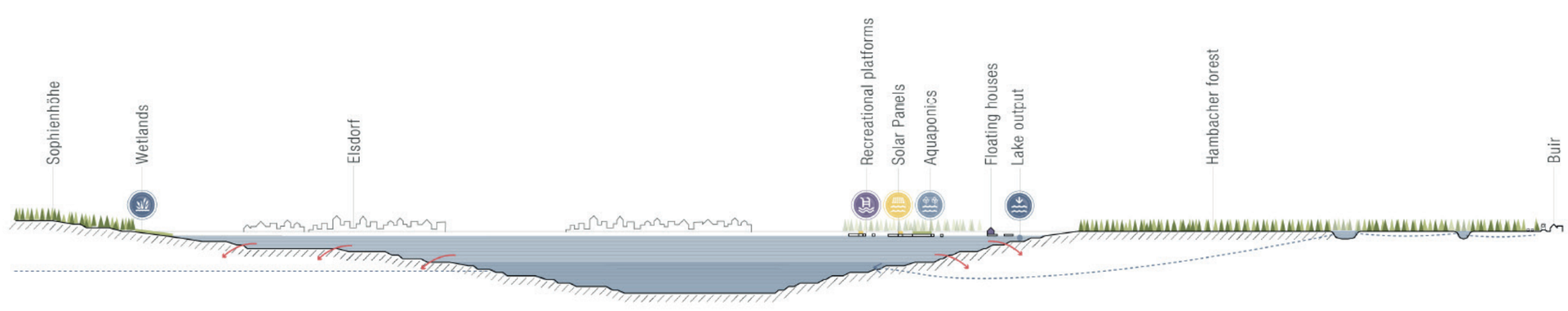
PHASE I
today-2040



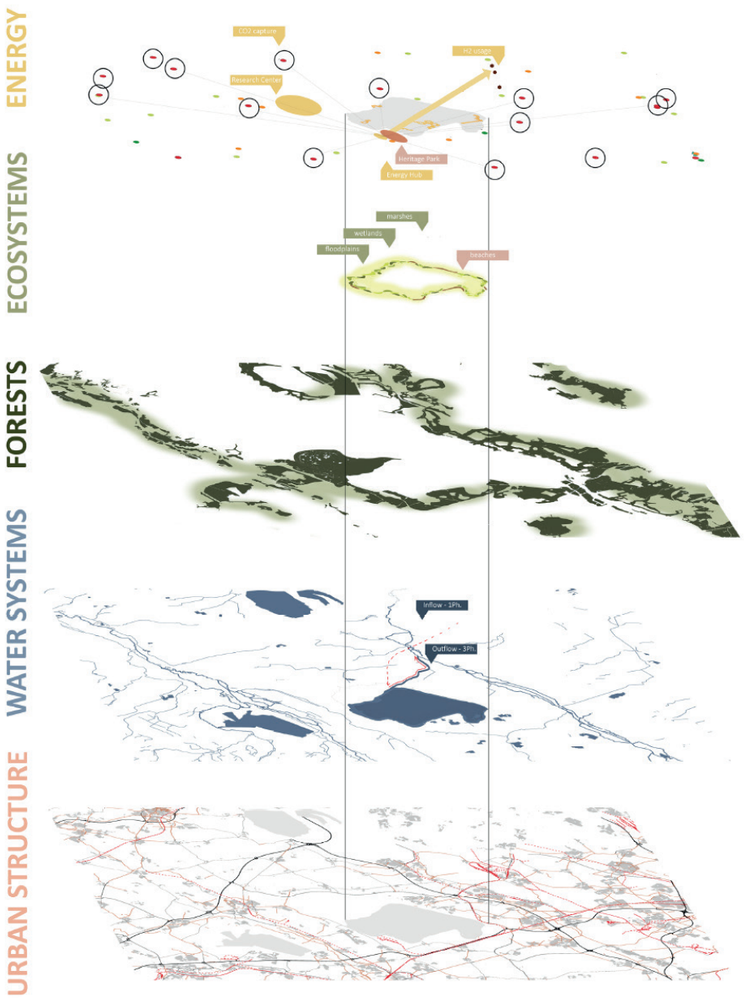
PHASE II
2040



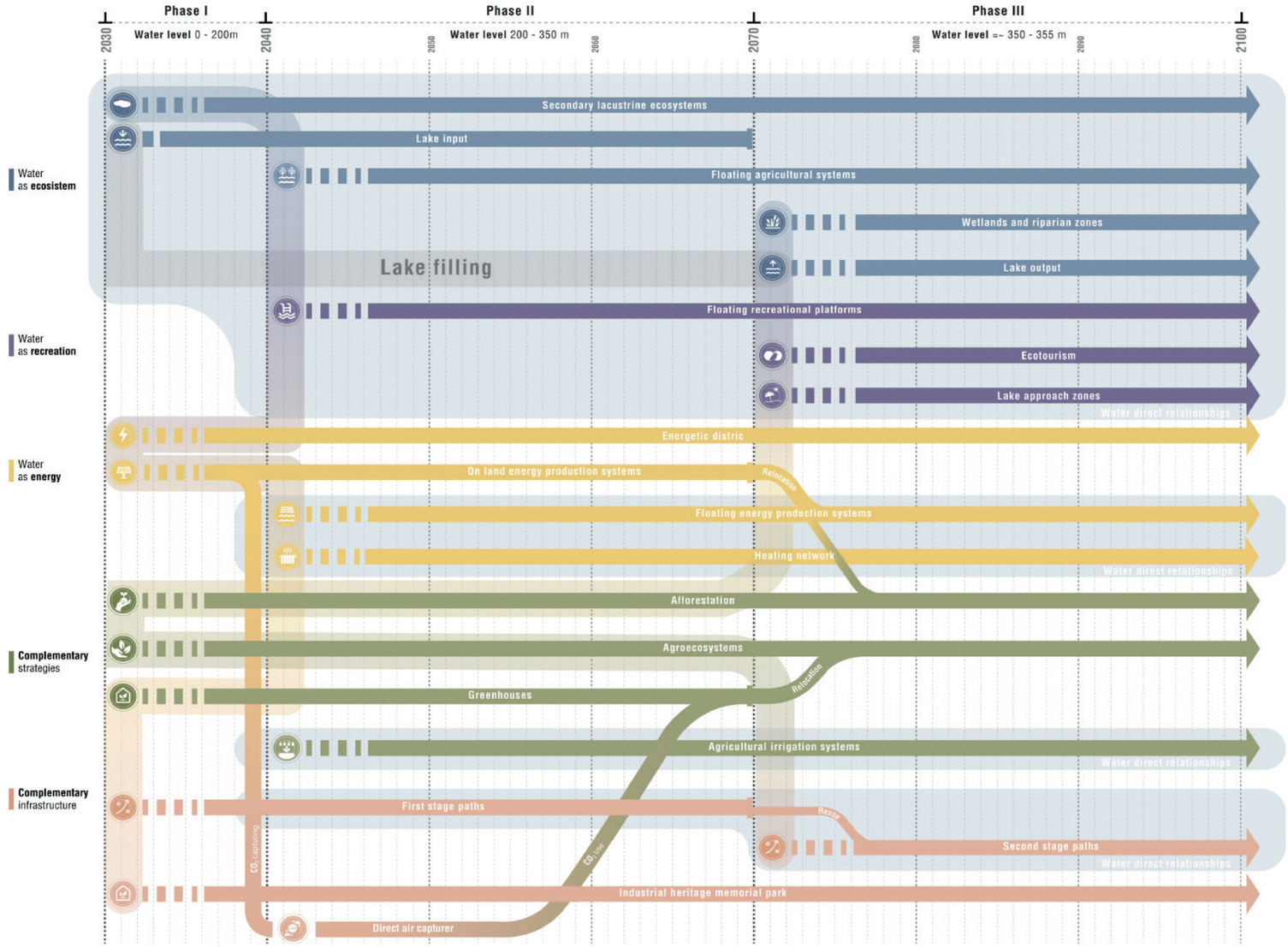
PHASE III
2070



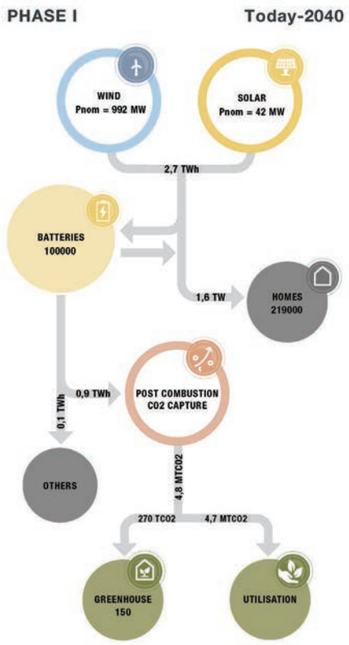
Layer | physical and natural systems

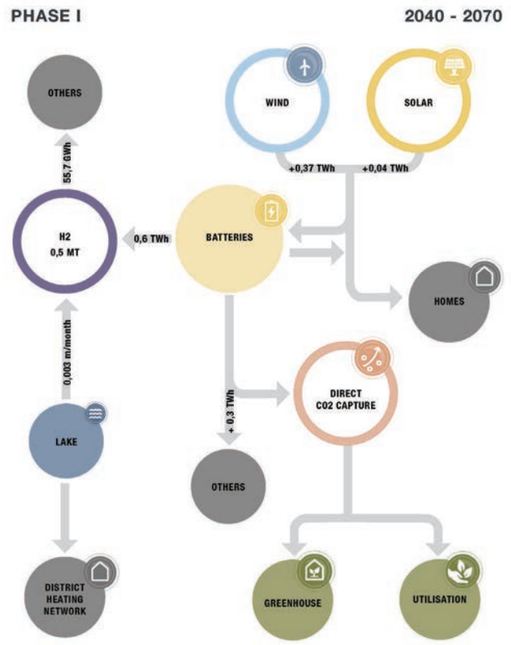


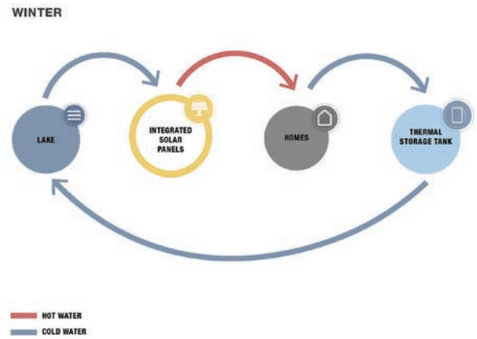
Framework | project timeline



Energy strategy







Process

Present

2030

2040

Masterplan
2070

The mining lignite excavations will terminate in 2029 and the area formerly foreseen for excavation is open for new scenarios. In a few decades, a new lake will meet the existing landscape and erase the impact of the mine. One could say that the whole landscape, including resettled villages, inhabitants and forests, is in motion. The southern side of the mine needs preparation for the new future based on renewable energy and sustainable production. The physical conditions need to be improved for revival of the agricultural practices, combined with energy production; the villages need new inhabitants, people new jobs and a livable and functional environment.

Our mine scale strategy is mine (en)closure: reversing the process of environmental and social degradation. “Burge(r)wald Neu” aims to return the landscape to the nature, sustainable production, and to citizens.

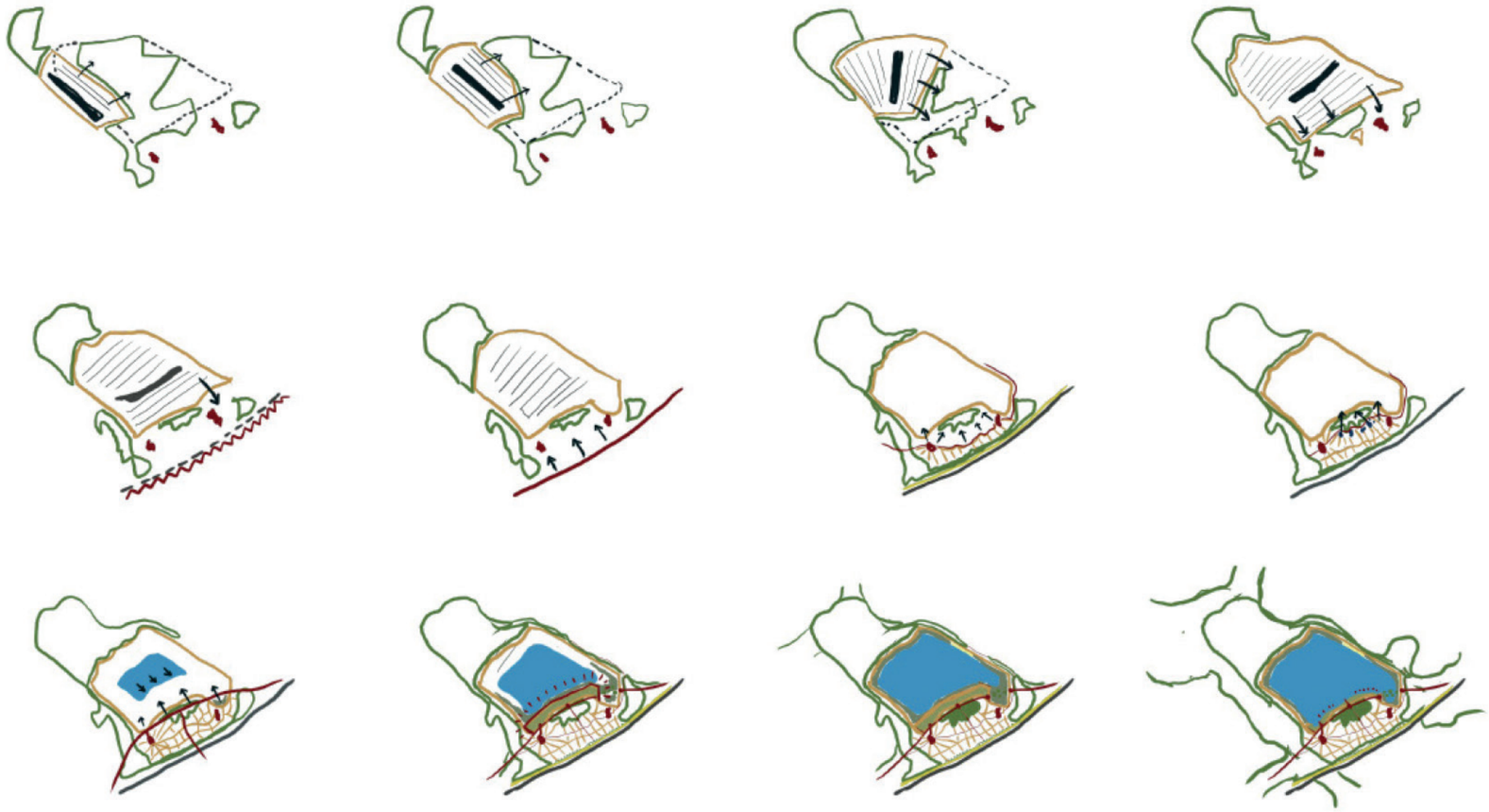
To achieve this we use the tactical lines in the project area.
The first line is the new motorway where the excavations were originally supposed to end; The next line is the road which served as first connection between villages in the area, before the motorway(s) were built; Following, and for the project the most important tactical line is the old motorway, where the Hambach Forest protests took place and stopped further excavations.
The last frontier is the line where the lake is supposed to reach its full volume. In its temporary use the terraces and areas at the fringe of the mine will serve for production of biomass and energy. Tiny stilt-houses approaching the mine-pit will create a connection between the Hambach Forest tree-houses and the future lake, awaiting on the shore the water to come. In the final image, unification of the landscape takes place - the movement of the landscape is reversed, nature and people “conquering” the location again.

TEAM 2 Bürge(r)Wald Neu

Hansen Zhu, Maria Camila Katich, Martijn Bisschops, Tonka Malekovic, Yashar Hosseinzadeh

Concept

The title Bürge(r)wald Neu referres to the resettled villages which have gotten the appendix „Neu“, and he returning of the nature in the area. It is inspired by the
original forest‘s name Bürgewald, as well as by the protests in which the forest became again the „Bürgerwald“.



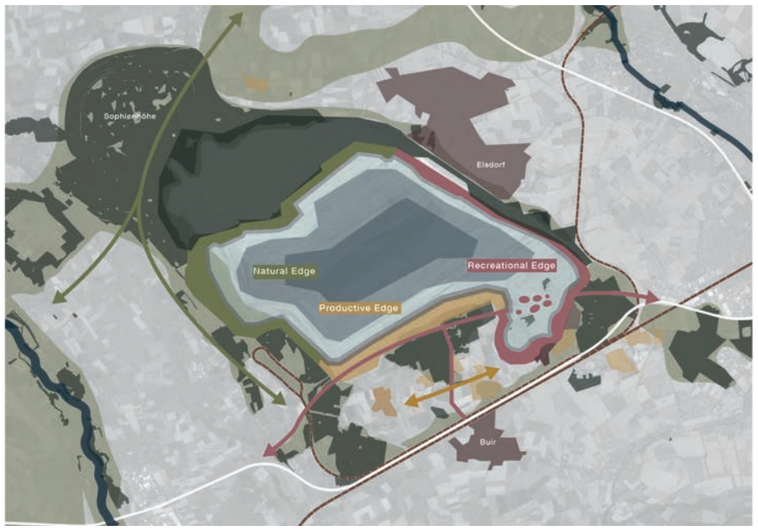
Regional strategy

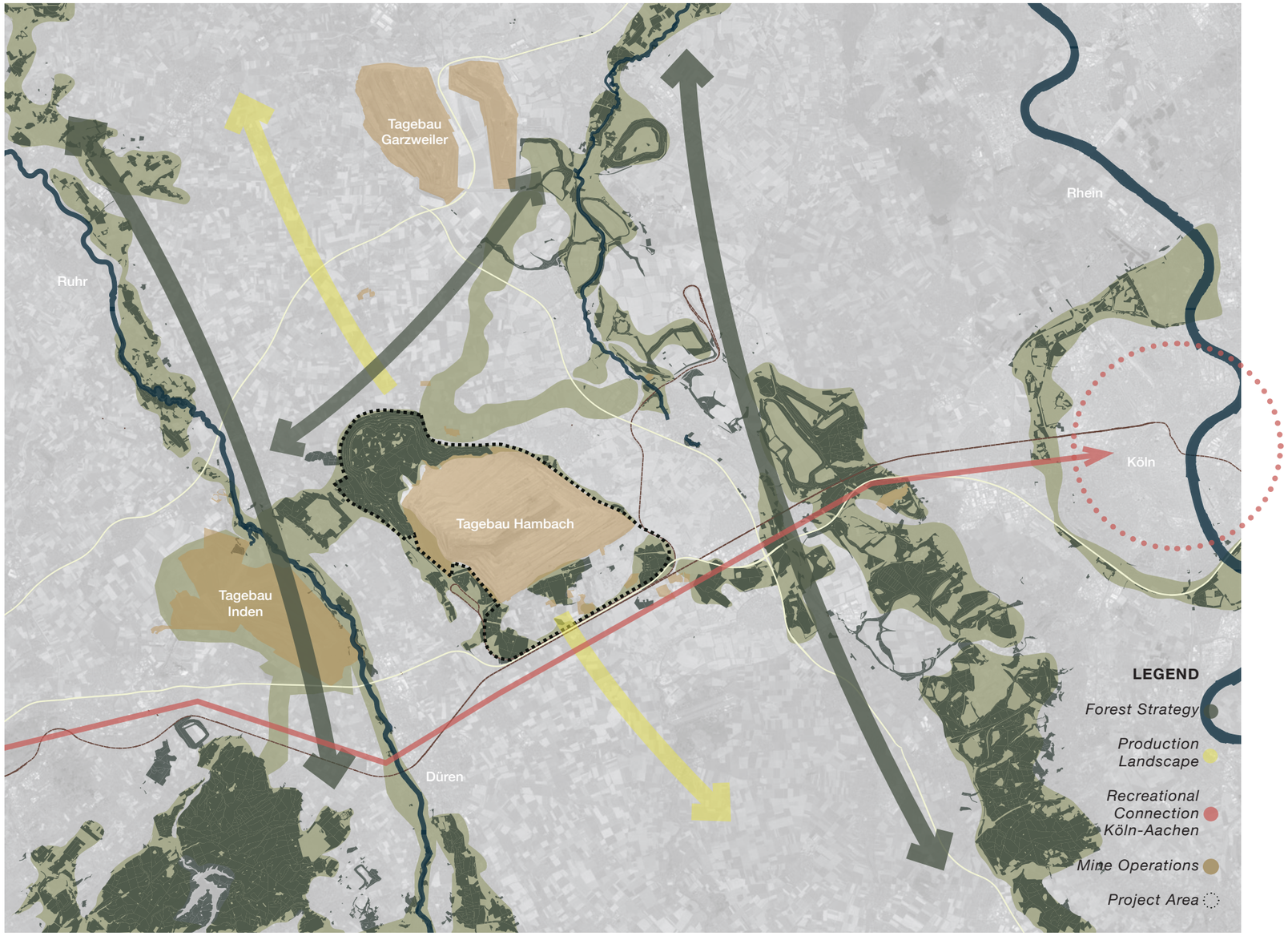
At the regional scale, improvement of ecological qualities, new forestation and habitat corridors are needed

Sophienhöhe, the artificial hill made of mining dump appears as the biggest forest in the north of the mine. This could possibly act as a connection between the Ruhr and Rhein valleys, furthermore as the connection to the Garzweiler and Inden mine areas.

The area between A2 highway and Hambach forest can recover as a productive landscape, extending to the east and the west. Industrial relics in west and east can provide attractive recreation areas.

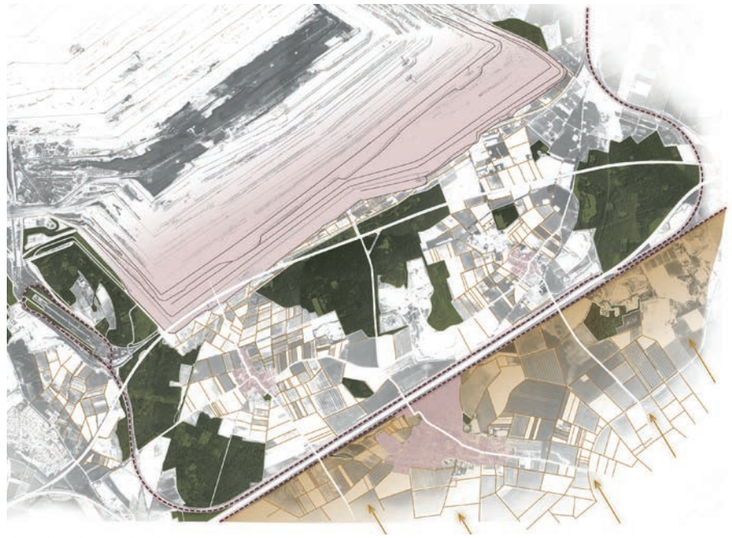
In the future, the productive multifunctional landscape can also assure energy and food security in the area, and provide and produce cultural and social capital. The landscape is being returned to the nature and to people-citizens (Bürger).



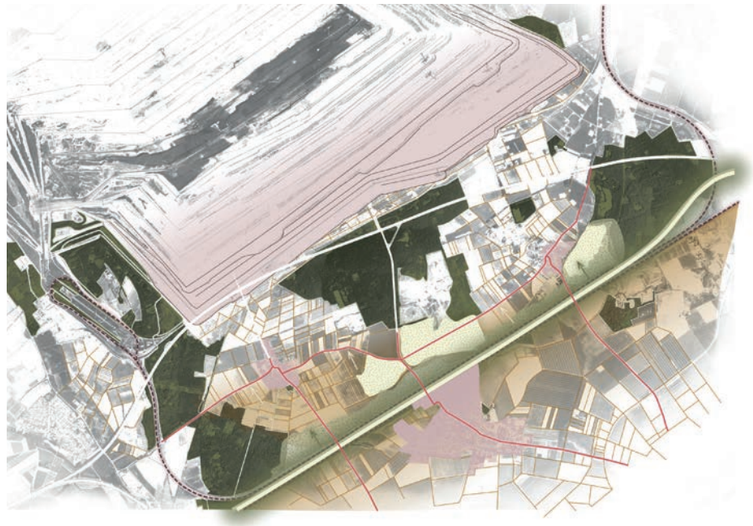


Design layers

Forest of resistance

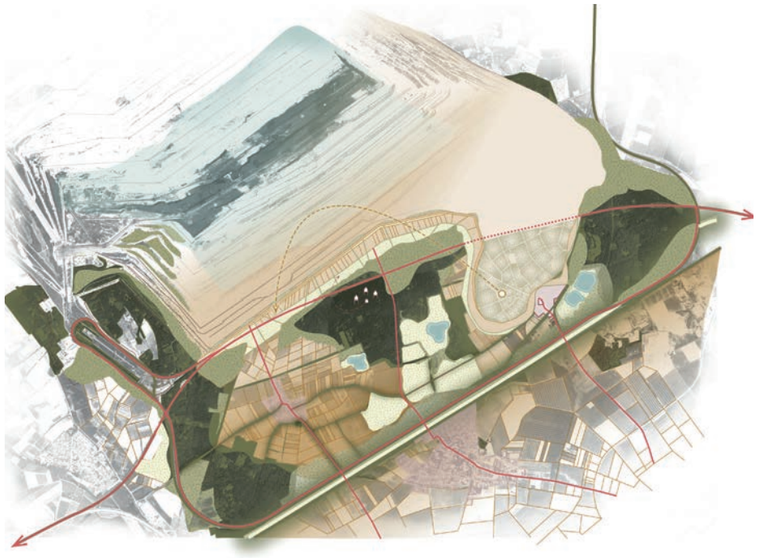


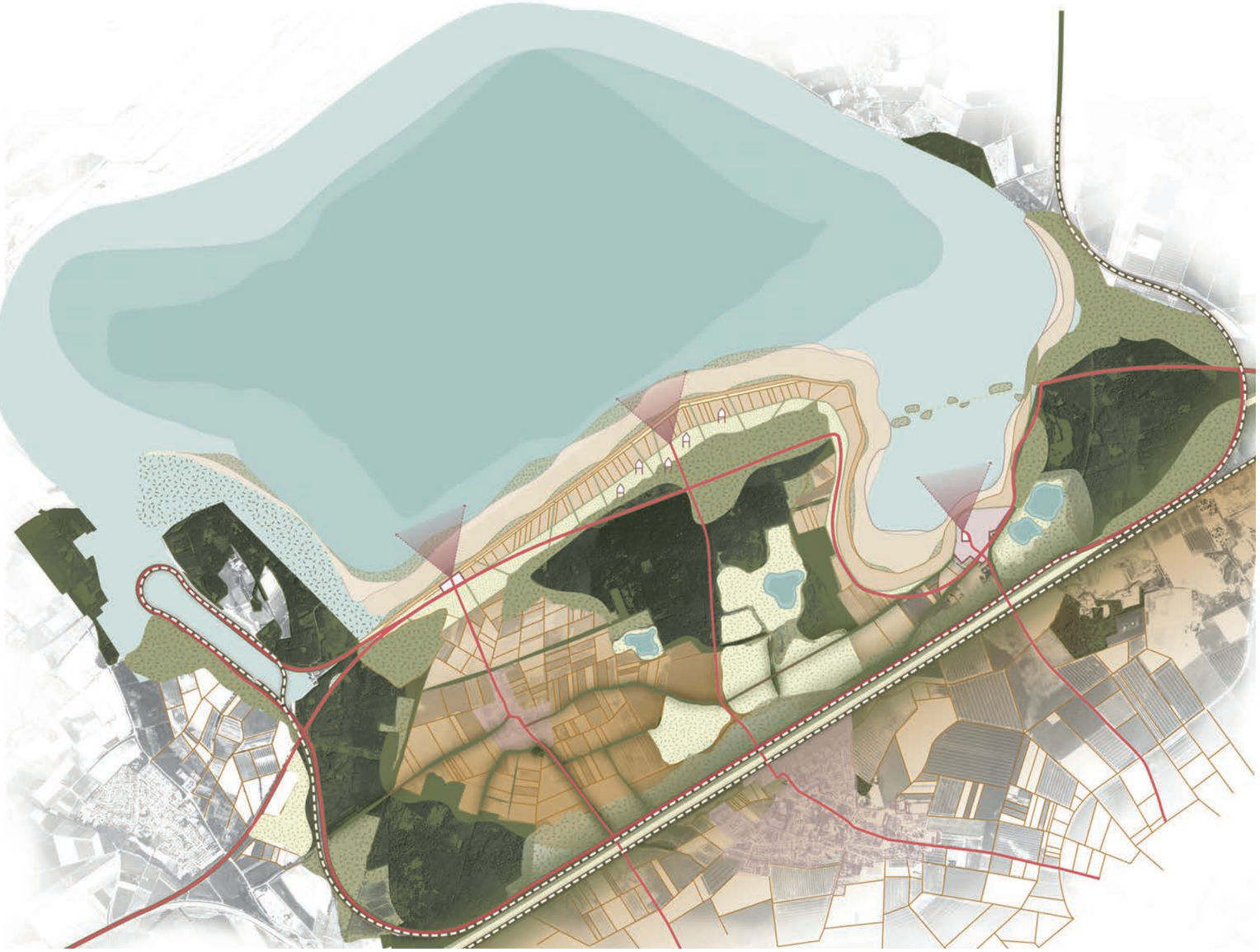
Agricultural character



Mobility infrastrcuture | tactile

Masterplan





Scenario 1

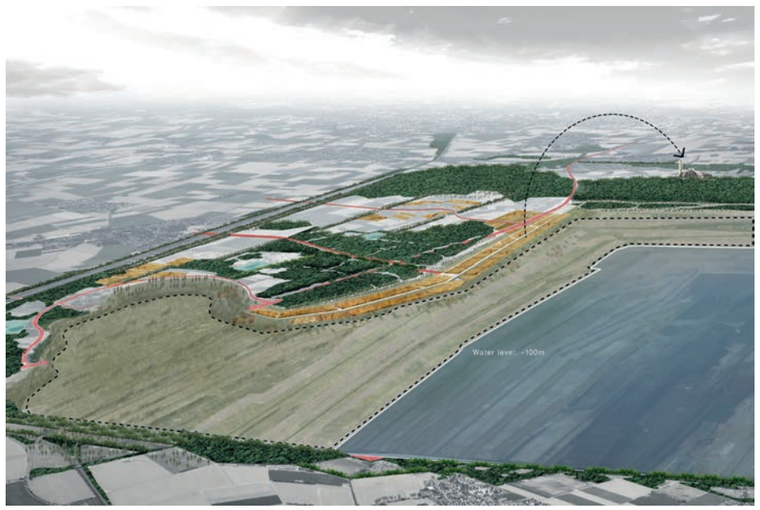
Ideally the line of excavation would stopped at the old motorway. The structure of the Manheim village would be kept in terms of streets and the church, and the plots would be used for agricultural and social activities in the following manner:
First ring: Community gardens and green educational and public spaces with the church as a community center.
Second ring: Allotments and rental fields.
Third ring: More intensive agriculture for food and biomass production combined with PVs and windmills. Field-strips with agroforestry would connect field-structure with the the existing forests.

Scenario 2

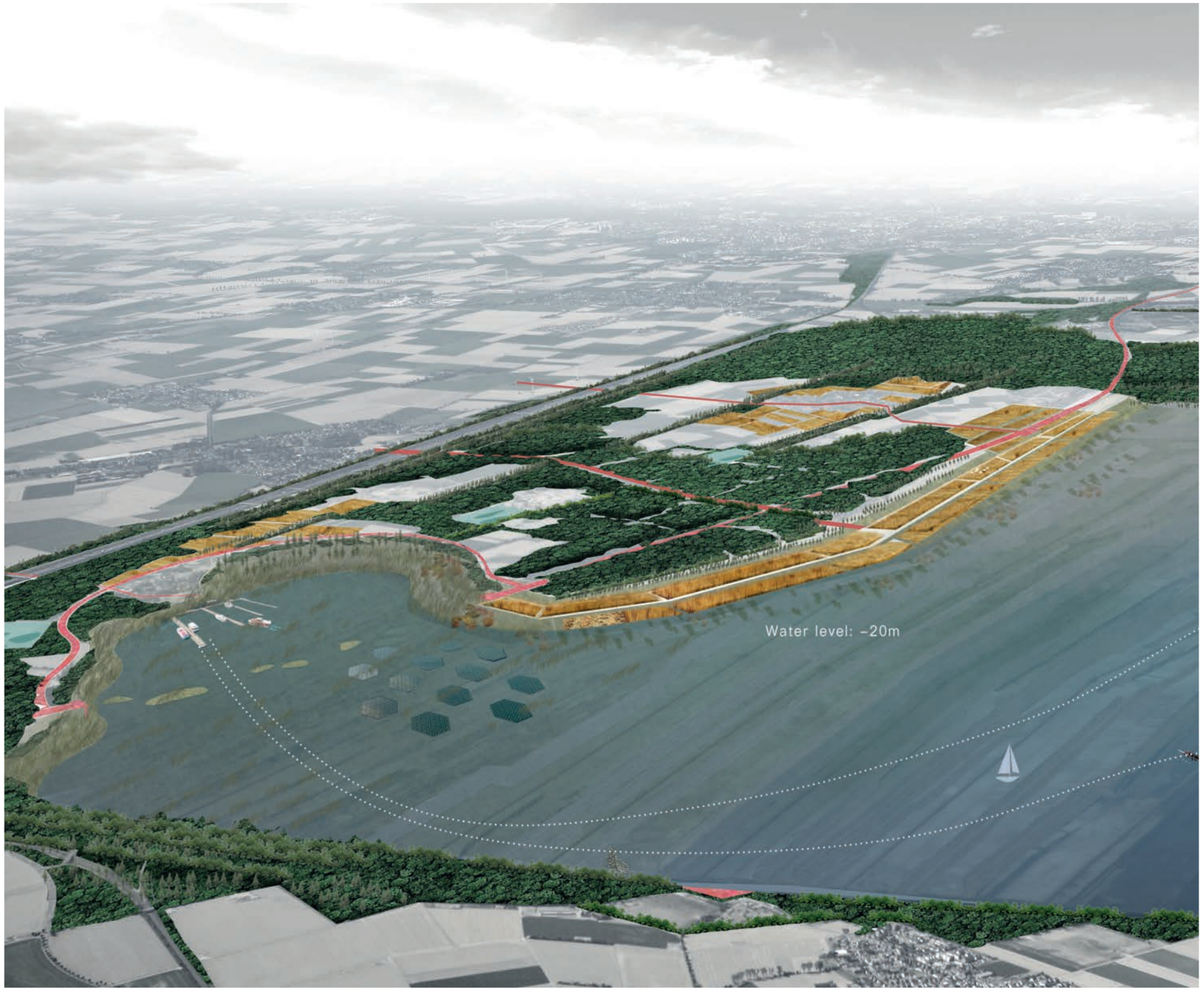
If the less ideal version where excavations take place, the bay is to be filled with water in the very last phase - 2070 or even 2080. This means that 30-50 years the area will be available for temporary use. For this time-span we propose a productive experience park in which biomass production is combined with PVs, and the visitors can enter and walk the area. Similarly to the scenario 1, the pathways in the bay would trace the streets-outline of the demolished village, adjoined by the information boards/system along the way, keeping therefore the memory of the place.

Process

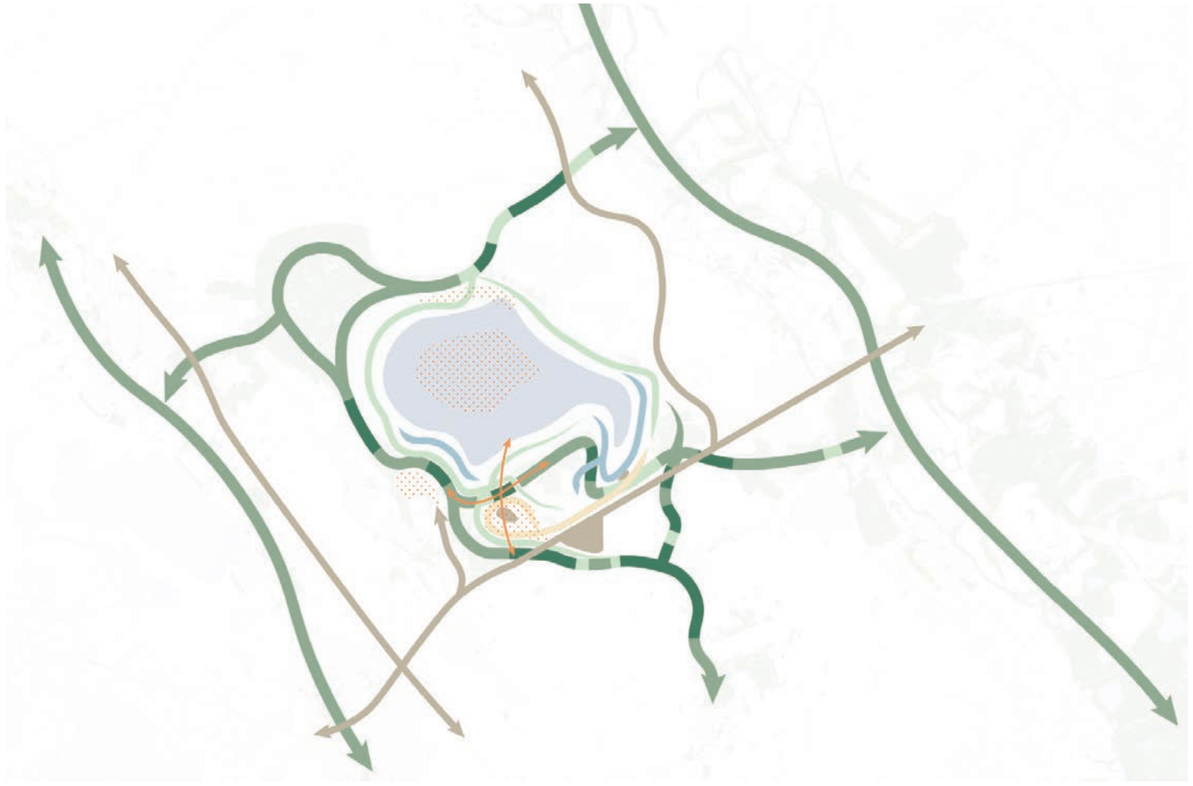
2030

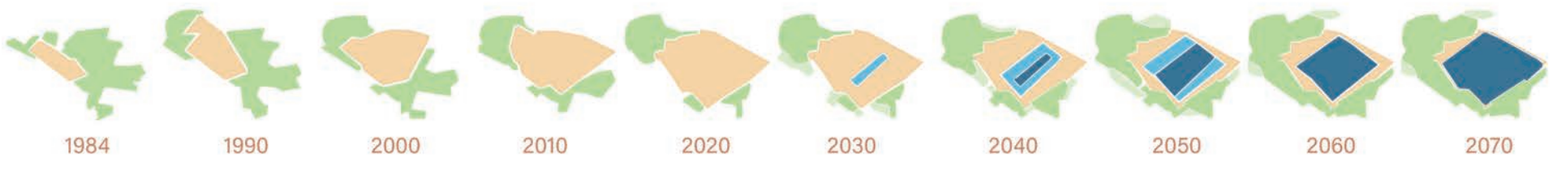


2040



2070





Through the Hambach mine the landscape of the area has been exploited for several decades to obtain energy through the extraction of lignite.

The goal of this project is to restore the natural flows of the surrounding environment in the 50 years following the closure of the mine expected in 2030, with the establishment of a semi-artificial landscape governed by an interconnection between energy, ecology and human presence in the area.

This was based on the idea of energy as a channeling flow that uses flora and human activity as a storage tool for energy, while humans and local fauna exploit their potential whenever possible.

The use of hydrogen as energy storage, thanks to the lake water and the energy of the sun, allows life and research activities for a future carbon neutral by 2050. The local flora is used as a carbon capture technology and storage (CCS), also for the search for new biotypes suitable for the function. Man is connected to the environment of the area through cycle paths to allow sustainable mobility without affecting the landscape. Local fauna will have the opportunity to return to their habitat through links that allow their flow even beyond the barriers built by man in the current era. In addition to the expansion of forests, new biotopes such as grasslands, extensive agricultural landscapes, xeriscapes and wetlands are being created, restoring and creating new habitats for flora and fauna.

All this will happen gradually, passing from a landscape that is now falling into disuse, to a green landscape, thanks to reforestation and rich in innovation.

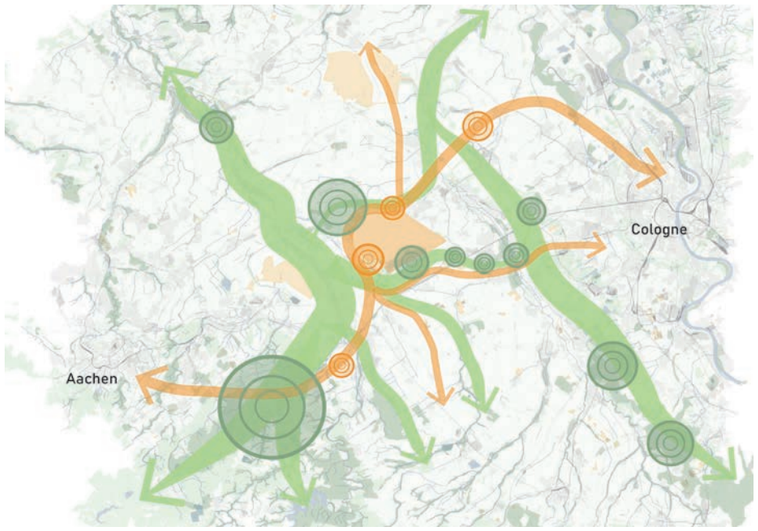
TEAM 3 Hambach Flows

Camillo Colli, Chiara Introzzi, Katharina Schäfer, Motez Amayreh, Sophia Tasseron, Xiaohan Li

Concept

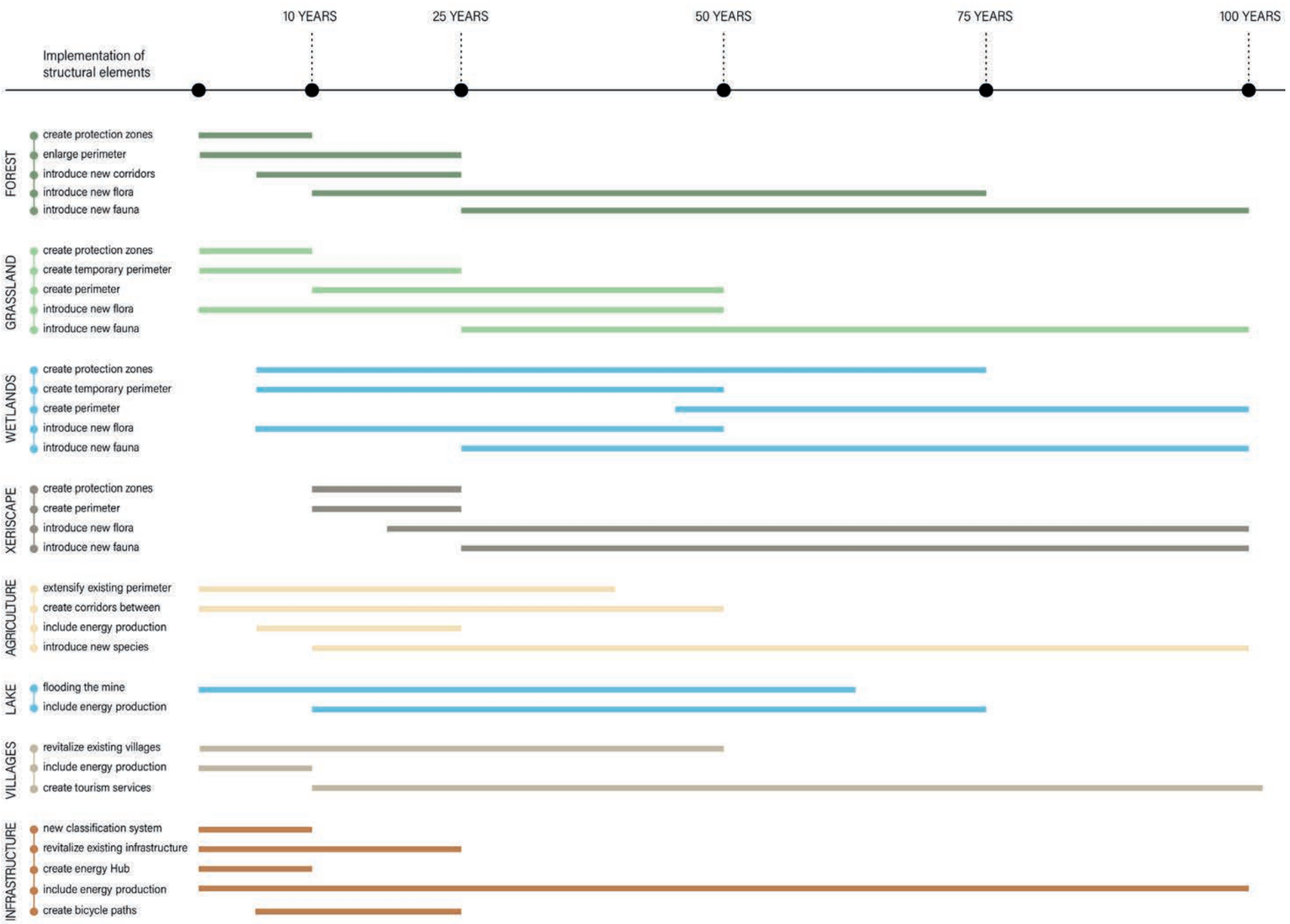
Moving from old energy landscape with forestry and coal mine towards more sustainable energy landscape with green energy implementations with ecology and recreation representing different flows if energy and storing carbon dioxide.

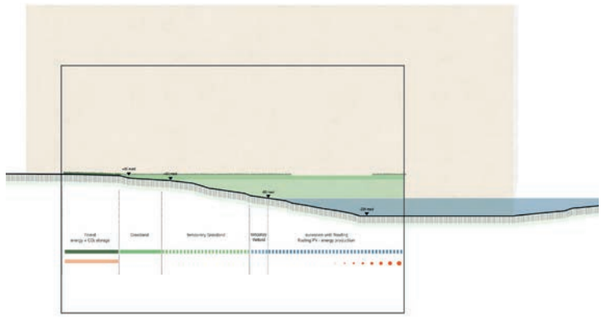
On the regional scale the most important flows of energy and nature of the design are shown. This serves as the backbone of the ecological energetic network of the hambach mine area. Existing biodiverse hotspots and biotopes worthy of protection are connected through the additation of a variety of biotopes. The energy flow can be stored and produced around the area, which can be used in the villages and cities nearby, such as Aachen and Cologne. The energy is stored in energy hotspots.

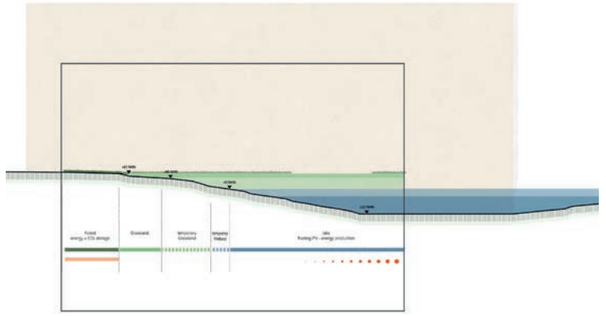


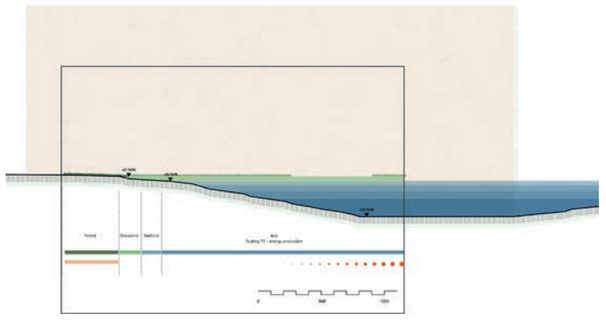
Regional strategy

Framework | project timeline



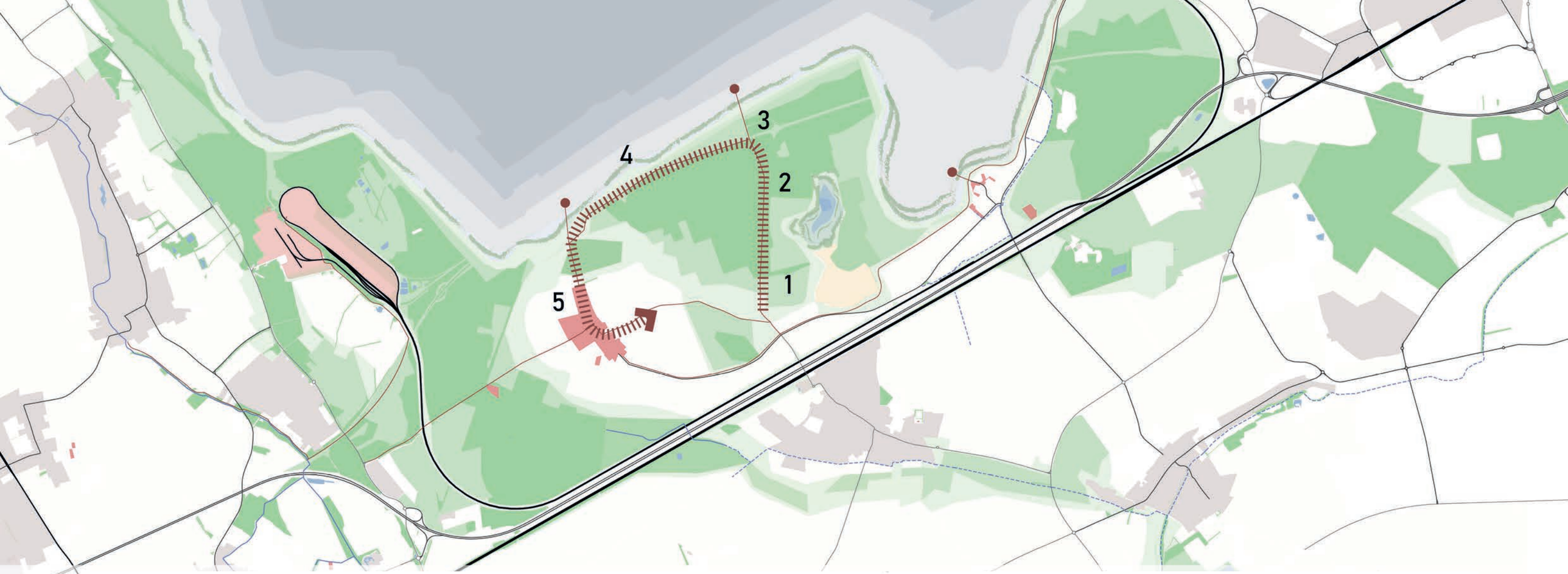







View point
Temporary
Artificial
Wetlands
Temporary artificial
wetlands
Hambach Forest
Dock
Research center
View point
Manheim
Wetlands
PV panels
Energy storage
Plant
Hydrogen
Electrolysers
Morschenich
Dryland
Agricultural lands
Trees corridors

Masterplan



Vision

- Built Environment As Heritage And Memorial
- Use Of The Existing Network Of Connections
- Bio Agricultural Community

The opening of the Hambach open pit mine has taken the territory away from the people living in the region. We strongly believe that after the closure of the mine and the coming of the lake, this place should finally go back to its inhabitants. In this sense, we envision a lake community, a community organized around districts which work as trigger points for the reactivation of the region. Examples of these trigger hubs are a research center innovation district and a memorial park for the demolished villages. The lake community is based on one motto: “one heritage, one future”.

The heritage is not only meant to be the memory of the mine with its excavations, but also the Hambach forest, which has a strong cultural and symbolic importance. In terms of system scale landscape, this heritage is visible in the shape of the edges of the lake, which try to follow the traces of the excavation sites and of the demolished villages fields, but also in the conservation and strengthening of the forest.

The future is mainly meant as a truly new and innovative energy landscape with increased local connectivity. The pit area contributed to the isolation of the inhabited settlements and coal, the main source of energy harvested in the region, will disappear. In the future, the settlements around the lake will be interconnected again through a capillary slow mobility network. At the same time, the new land made available by the slopes of the pit hole will be used for creating new recreational spaces for reappropriating the space to the people and for renewable energy production. Renewable energy production will happen according to innovative techniques and experimental approaches, such as combined photovoltaic agriculture and algaculture.

With such an approach, it will be possible to partially replace the coal and contribute to the local community electricity demand. Such energy production will be based on temporary solar panels and extensive agriculture of crops which can be used for biofuel production (like sugar beet and corn). This approach is foreseen as particularly successful especially considering that it could be easily scaled up to a regional scale so that the region could turn into a nationally relevant innovative biofuel energy hub.

TEAM 4 The Lake Community

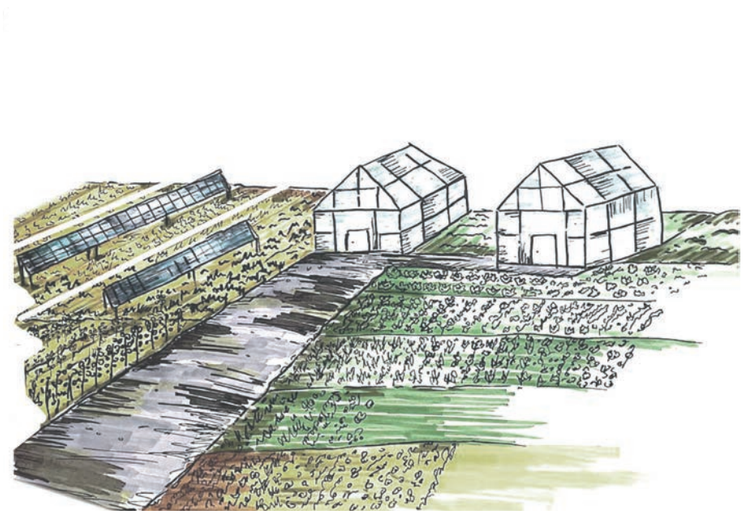
Fazhong Bai, Jiayi Zhang, Laura C. Parra, Matteo Grasso, Sevde Erdogan, Mahsa Amiri

Strategies

Exploring the lake edges and reuse of existing infrastructure
Conservation of the forest and green bioeconomy as an opportunity

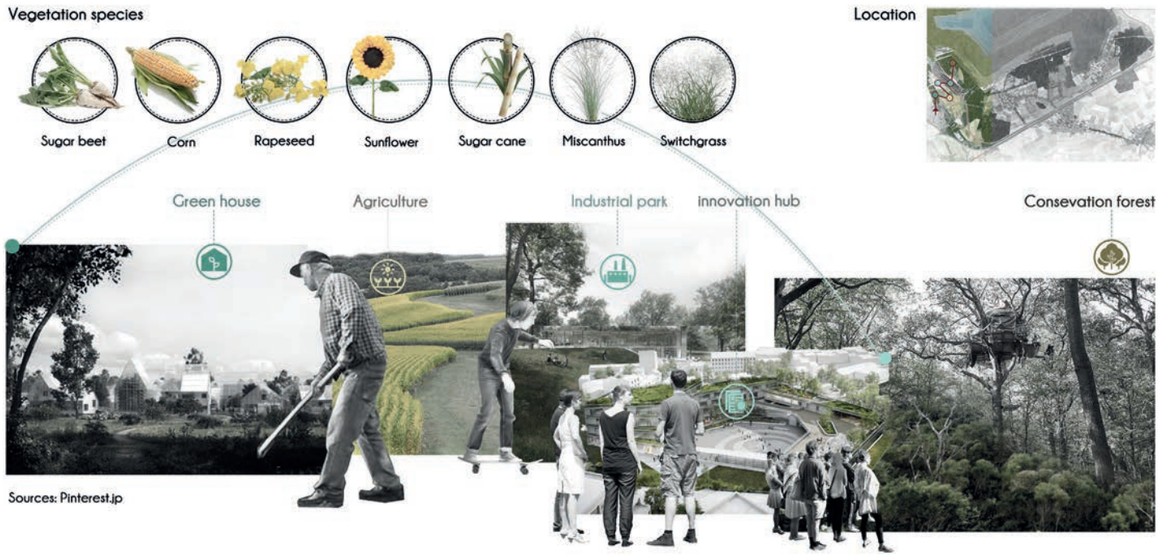
- Terraces reminding the patches of the mine
- Visually impacting recreational areas
- Re-forestation of mine slopes with terraces
- Biodiverse dynamic nature

- Creation of buffer zones
- Recreational and protected zones
- Green corridors

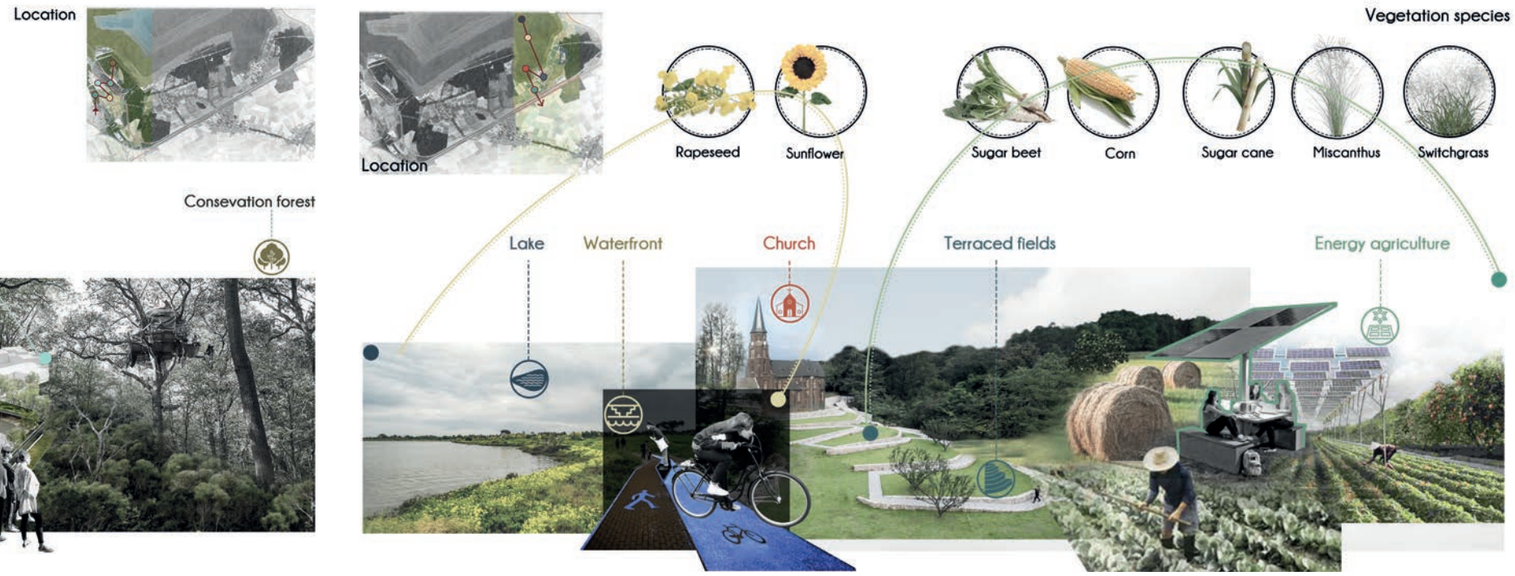


- Agriculture combined to pv
- Sustainable agriculture for energy
- Innovative and experimental agriculture

Visions



Green innovation hub



The inhabitants heritage

Masterplan

Dynamic Terraces

Viewpoint

Inhabitant Heritage Path

INHABITANTS HERITAGE HUB

Demolished Village Memorial

Church

Innovative agriculture

Hambach Forest

GREEN INNOVATION HUB

Gate of the lake

Recreational Forest

BIOAGRICULTURE HUB

Experimental biofuel farms

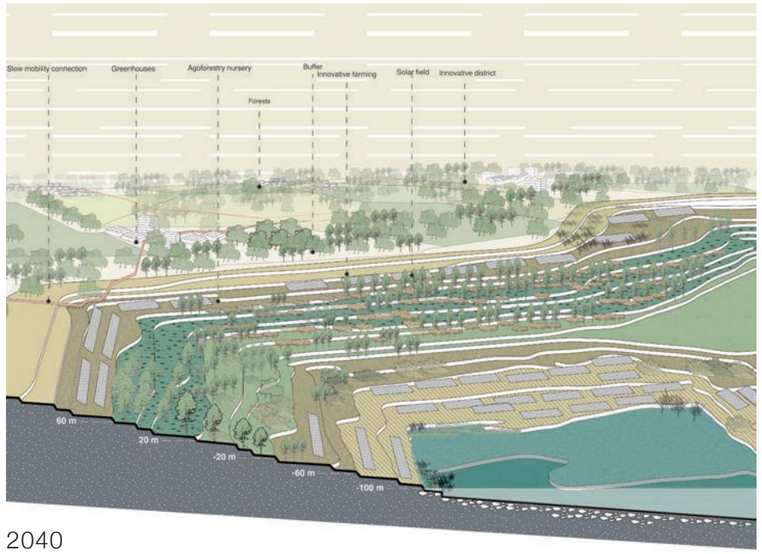
MORSCENICH

Bioagriculture

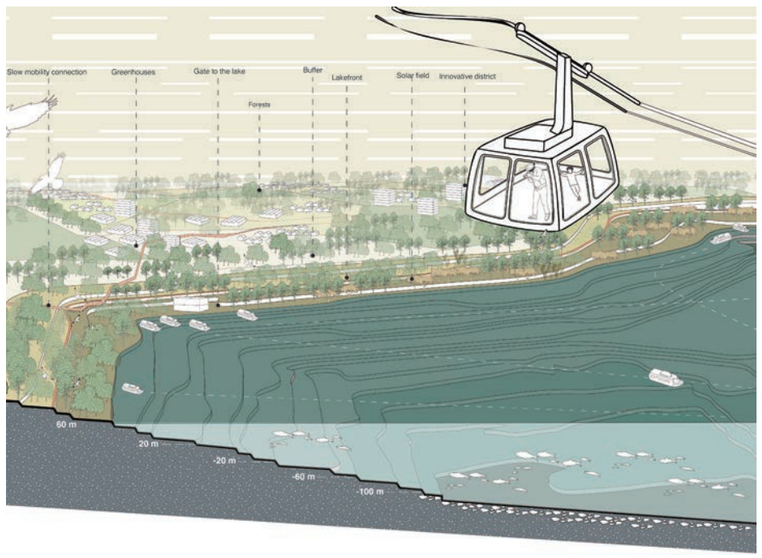
BUIR

NIEDERZIER

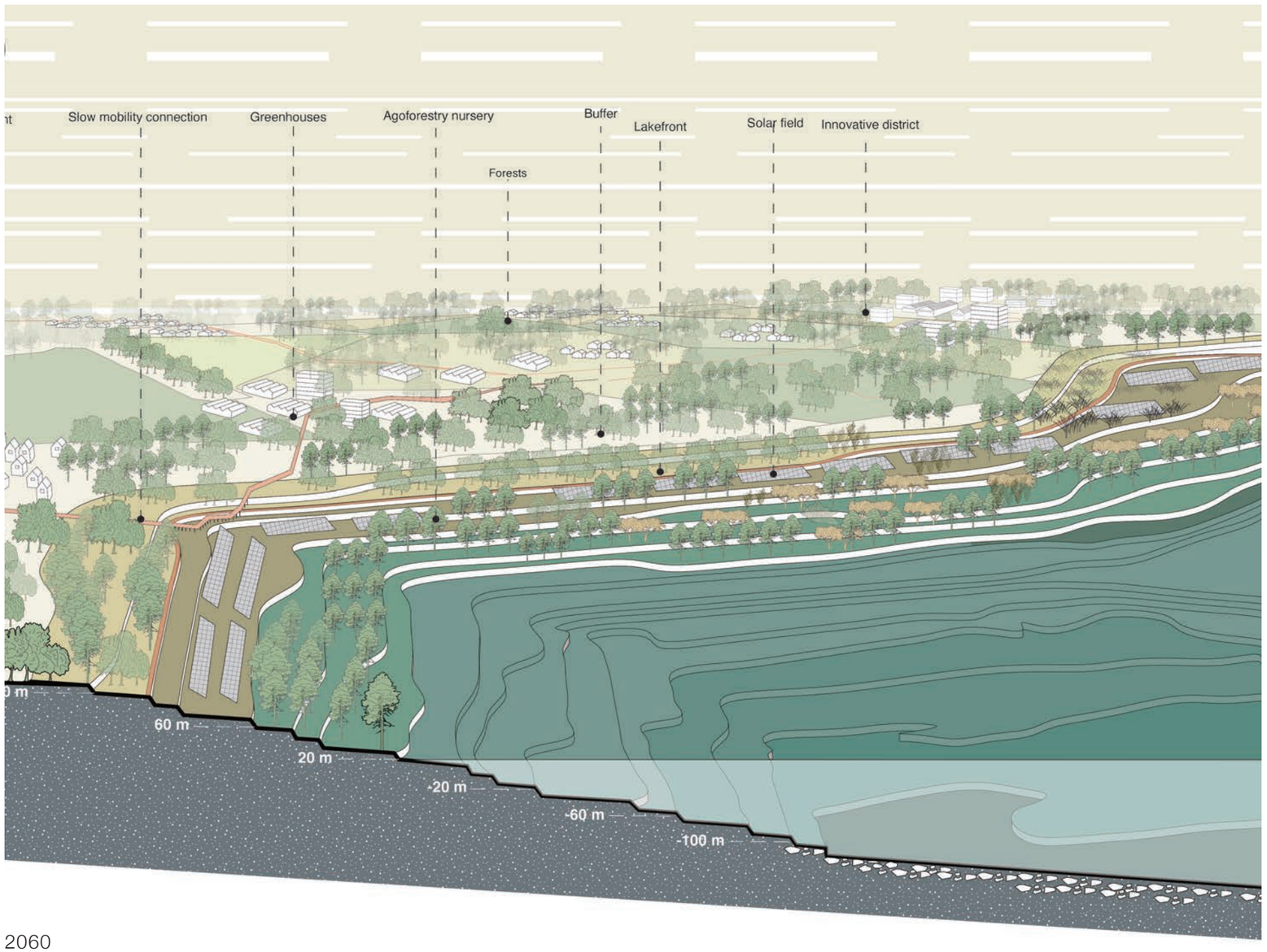
Process



2040



2080



2060

The future Hambach Lake will be filled from three water sources: groundwater, the pipeline from the Rhine River, and precipitation. It is expected that after 15 years it will rapidly reach sea level while a slower constant flow will reach the +65m level. The entire process will take about 45 years. On the other side, evapotranspiration will cause a water volume decrease of the collected water inside the mine. Since the groundwater pressure, rainfall, and evapotranspiration is beyond human control, a constant low-rate inflow from the Rhine River will be needed even after reaching the elevation of +65m. Furthermore, since the water level will change dynamically during these 45 years, the living zone for animals and other species will also be changing, and it must be redesigned continuously.

This scenario, an initial site visit, and the analysis carried out during a preliminary phase, allowed us to develop a spatial strategy working with the identified site's assets through immediate actions that can start transforming it. We propose a unique environment and experience that serves as the mine and future lake's strategic front. We desire to bring back life to the site, through fauna, flora, and humans.

Among the main interventions are the construction of a dam that will enable partially flooding Manheim's future gulf, near its iconic church as the lake's symbol and a living archive that actively document the territory. Morschenich will become an agro-social park for innovative forms of agriculture and land tenancy to be showcased during IBTA (2037-2047). The landscape will be transformed through a series of biotopes in the lakes of the smaller gravel pits, new forests, and wetlands that could be visited through cycling and pedestrian itineraries that start at the Buir's train station and that reaches the inside of the mine through a cantilevered bridge.

TEAM 5 Minescapes

Amely Jesinghaus, Anežka Vonášková, Antonio Salvador, Mir Ahmad Mohammadi, Weicheng Li

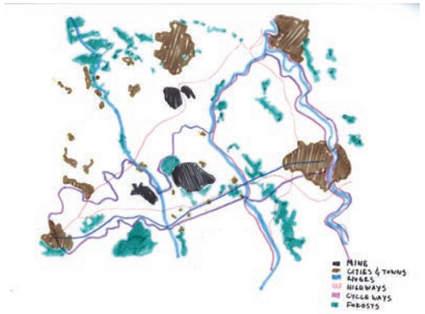
Concept

Currently is difficult to get closer and grasp the scale and the complexity of the mining operation, so we want to defy this and the borders and mining process' brutality. We want to set the ground for the future development, but to allow the locals to be part of this everchanging landscape.

The proposal, inspired by our visit and the identified assets, sets a series of actions that aim at producing a choreography of ecosystems and activities. A unique environment and experience that serves as the strategic entrance and the "face" of the mining site and the future lake is envisioned.

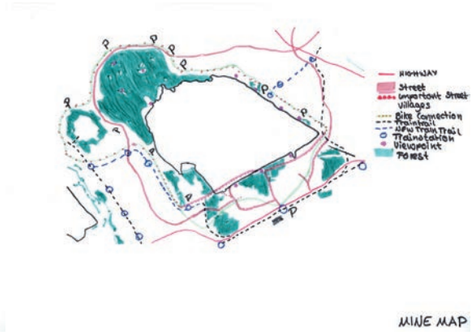
Among the main interventions are the construction of a dam that will enable partially flooding the lake and making Manheim and its iconic church the symbol of the new Hambach Lake. Manheim could be transformed into a cultural hub and a living archive that stores and actively document the territory. The town of Morschenich will become an inhabited town focusing on innovative forms of agriculture and land tenancy through multi-scale agriculture.

Both will become the living labs for IBTA in 2037-2047. The landscape will be transformed through a series of carefully designed biotopes in the smaller mining areas, new forests, wetlands that could be visited through cycling and pedestrian itineraries that start at the Buir's train station and that reaches the inside of the mine through a cantilevered bridge.

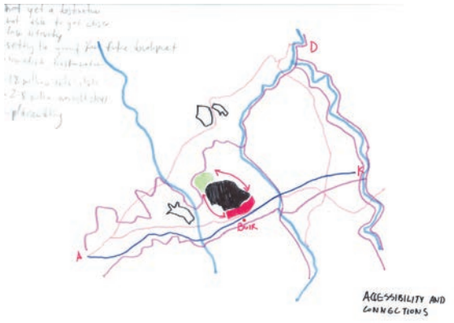


Proximity

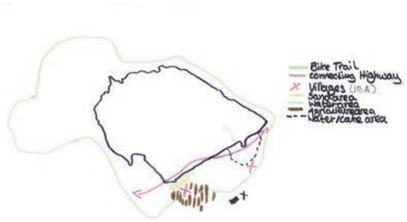
Green-blue corridor



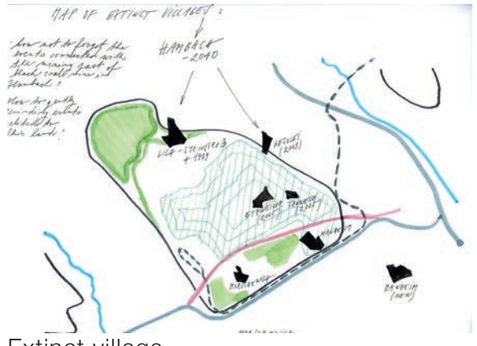
Services around the mine



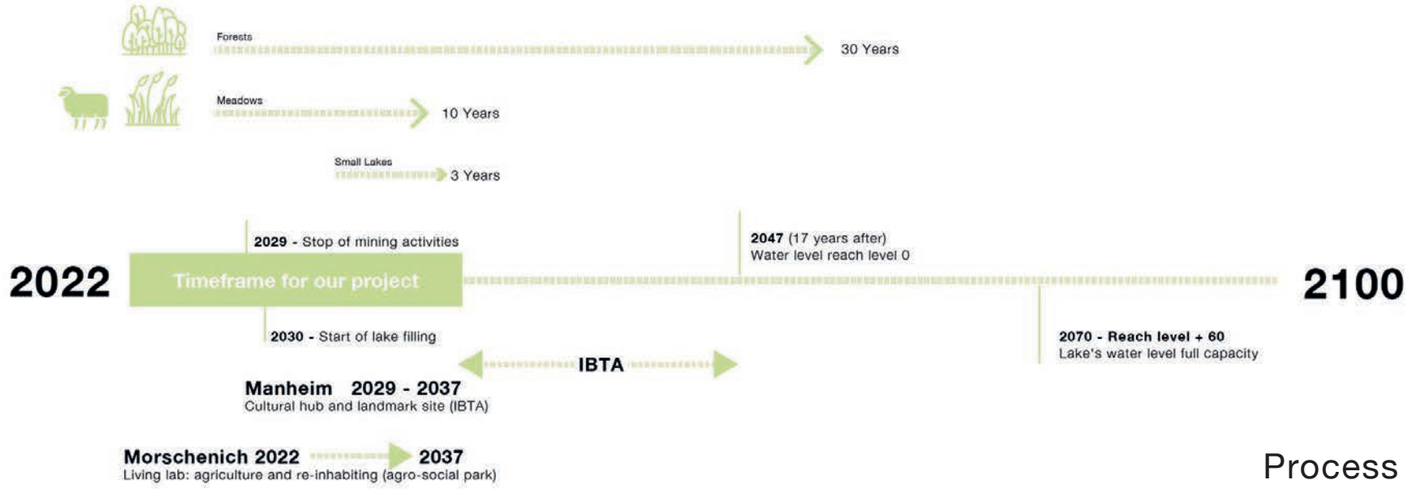
Accesibility and connections



Important landmarks



Extinct village



Process

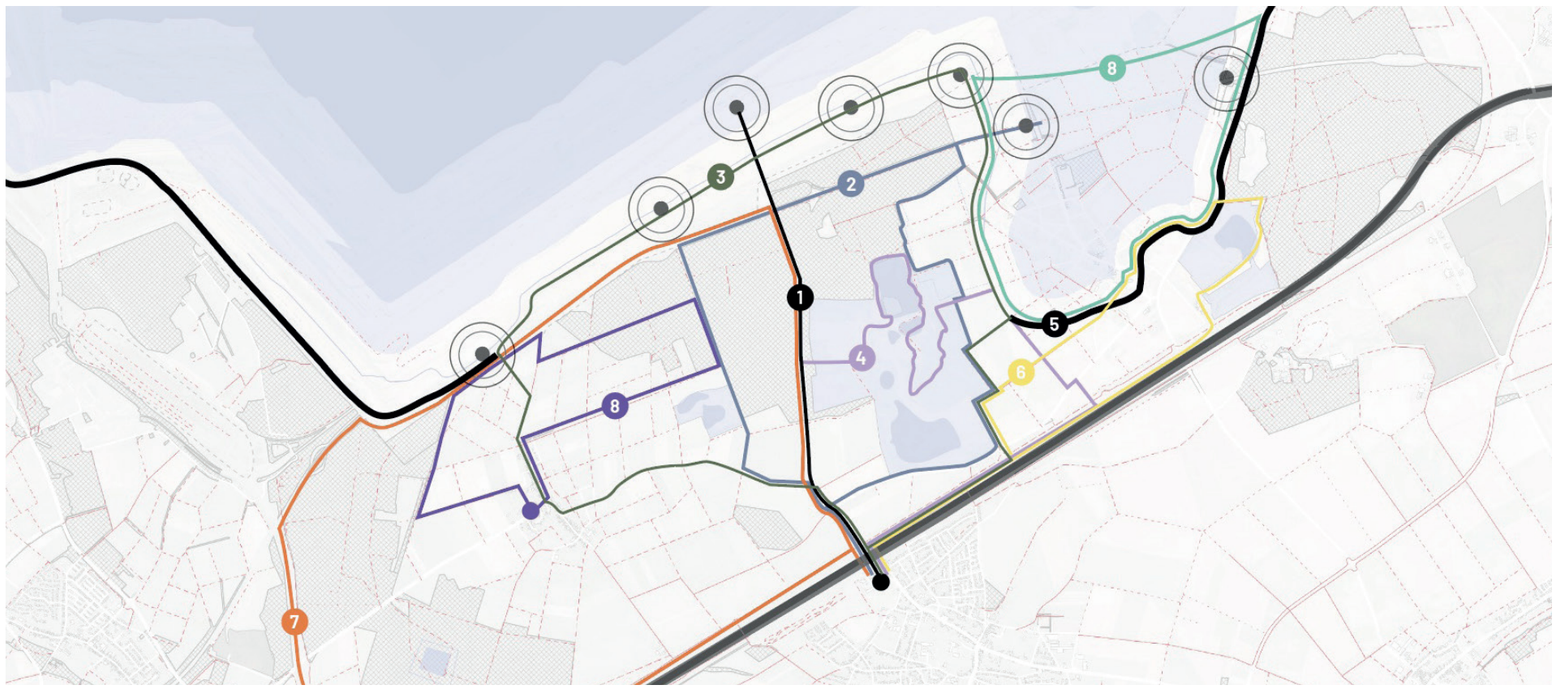
Strategy

Mosaic of landscapes

- Cattle grazing
- Forest
- Village
- Meadow
- Lake for Manheim
- Agriculture landscape
- New Forestry
- Wetforest
- Meadows
- Wetland
- Orchards
- Hambacher Forst

New pathways

1. The road to the mine
2. „Sightseeing“ walk
3. Road around the coal mine
4. A walk through the water landscape
5. Path around the entire lake
6. Mannheim route
7. Morschenich route
8. A journey „Across the water“



1. Cultural centre Buir
2. Water surface - rainwater
3. Agricultural landscape
4. Morschenich beach
5. Hambacher Forst
6. Old Highway
   (outdoor gallery of the history of Hambach landscape)
7. Former quarry
8. Wetland
9. Source channel
10. Meinheim church!
11. Flooded quarry/ suitable for swimming
12. Footbridge (As a relic of the old highway)

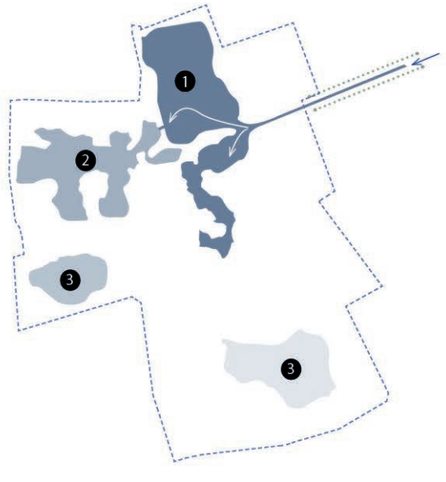
!&. New Dam

Design | detail area

Wetland design

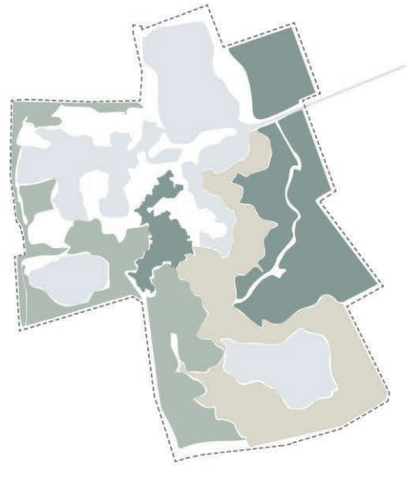
One of the important projects for the creation of water areas adjacent to the future lake is the construction
of a water channel. Thanks to this architectural element, it will be possible to fill this territory within the first two years. The water channel should be lined with trees on both sides. The entire area of wetlands has 1.37 km2. We place three types of water features in this space. The first category is deep reservoirs, which in a situation of full deep lakes will
allow people to swim there. Lakes of the second category are about 1-1.4 meters deep. The last category is lakes filled with rainwater that can dry and flood during the season.

Water managemment
Principle of water filling (2032)



1 lake for swimming (4m deep)
2 shallow lake (1,4m deep)
3 rainwater ponds (can dry out over time)

Land use
Vegetation, tipology, phytosociology

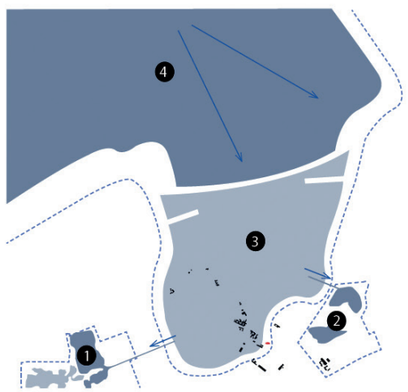


water
low vegetation (shrubs, grasses, herbs)
drought tolerant plants
forest

Recreational features and paths network
Paths, points of views, design elements

1 bird observatory
2 animal observatory in the forest
3 toilets with terrace for a natural swimming pool
4 stop in the forest with an educational trail
view points

Water managemment
Principle of water filling (2032)



1 Filled after 2 years
2 Filled after 5 years
3 Filled after 10 years
4 Filled after 40 years

Land use
Vegetation, tipology, phytosociology

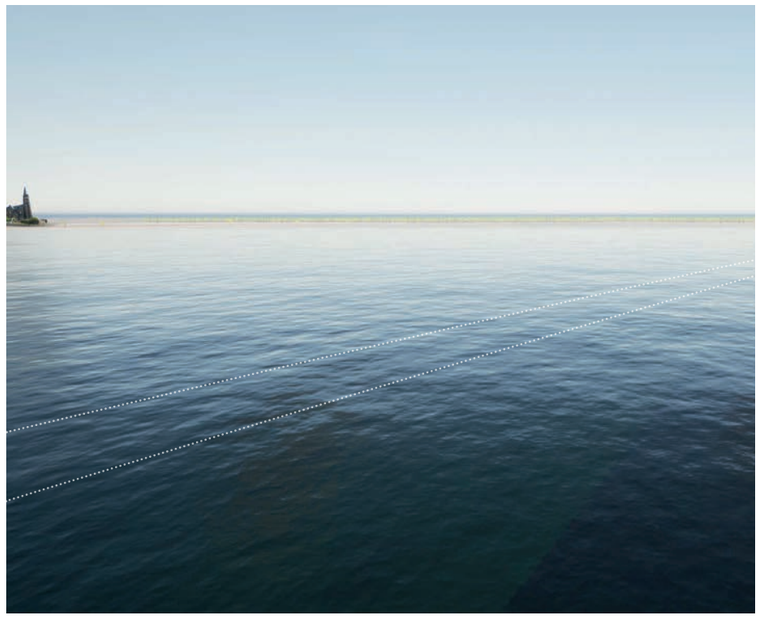
Water
Lower vegetation shrubs/grasses
Landscape that changes over time
Forest
Orchard
Wetlands

Recreational features and paths network
Paths, points of views, design elements

1 Morschenich Church
2 Old Highway A4
3 wooden deck with view point visual connection
4 Dam
View points

Dam design

As one of the architectural elements, which we place in the place of the disappeared highway connection, there is a footbridge. It draws attention to the defunct links of the landscape that have been severed. We work with this phenomenon and recall this lost lineage. The visitor reaches
the surface of the water, but the footbridge does not continue. WHY? We are trying to find a new connection to complete the new Hambach landscape. Even for these reasons, we build up a new Dam.



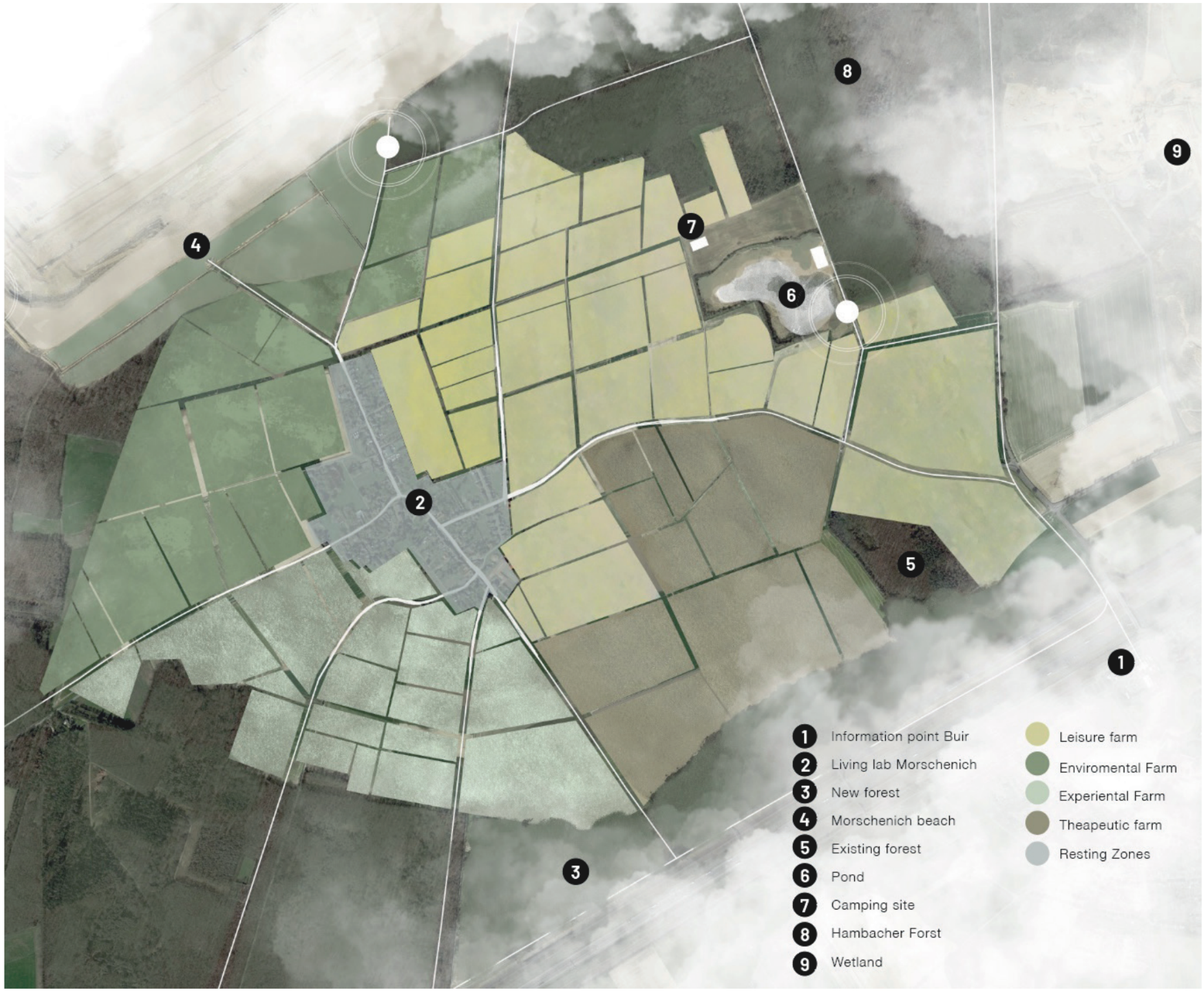
The design of the dam.

Design | detail area

Experimental farms

Enable small scale commercial farming in the areas surrounding Morschenich with a variety of crops that could be sold in the proposed market. The farms should attempt at testing and researching innovative methods that include agroforestry activities at the edge of the agricultural zone, integrate energy production and offer additional touristic and educational activities. Available farming area: aproximately 350 ha.

To reinhabit Morschenich through a living lab for multi-scale agriculture, community inhabiting, and land tenancy, given that RWE is the sole owner this could enable testing ideas.The objective is that by 2037, this living lab can showcase some of its initial results at the IBTA. At the same time, we aim that Morschenich becomes an agro-hub for local products and for spaces to practice collective farming opened to residents of the nearby towns and that offers visitors the opportunity to get closer to farming through tourism and educational activities.



5/
a drop in the min(d)escape

constructing *a* landscape thinking

In the middle of Europe‘s largest landscape construction site

By Silvia Beretta

For at least a decade now, and for some decades to come, formal and informal planning processes, design competitions, academic exercises, participatory workshops and much more have overlapped on the territory of the Rhenish mining area. It is not the just size of the craters which are still open today that requires such a collective imaginative effort, for the attention of an entire (large) nation such as Germany primarily is drawn to one word: *Strukturwandel*. Literally translated, this term indicates the structural change, first and foremost economic and social, that this region, one of the most populous, productive and wealthy in Europe will have to face in this century. The change is already underway and is irreversible (even if more or less accelerable) and entails, in the first instance, the loss of thousands of jobs linked to lignite production, which will cease by 2030. More generally, this transformation process is confronted with the necessity of guaranteeing the inhabitants of the region between Aachen, Cologne, Düsseldorf and Münchengladbach the present high living standards, even in the future. A standard of living that is not so much or not only threatened by the decision to exit the coal economy, but also by the set of phenomena that led to the decision itself and that go by the name of climate change. Here more than elsewhere, the causes and effects converge and intertwine in a sometimes inextricable way. This is well represented symbolically by the last fragments of the Hambach forest (Bürgewald) tenaciously defended by environmentalists from all over the world, whose habitats have long since been compromised not only by quarrying activities but also by rising temperatures and increasingly prolonged periods of aridity.

But if this change is already taking place, which is to say is inevitable, would it not be enough to leave it to free enterprise, market laws and the ability of natural and human ecosystems to regulate themselves? Perhaps elsewhere, in other places and at other times, that is what would happen. Here, today it is unthinkable, and for two reasons of a different but again deeply

connected nature. The first is a profound need for ‚moral rescue' that characterises German society and identity. Aware that it has contributed more to greenhouse gas emissions than any other European country to date, it wants to show itself capable of converting its production system into a sustainable virtuous model based on circularity. The second concerns a typically pro-active mode of the region's leading classes, which is traditionally entrepreneurial and little inclined to passively undergo probable risk factors and degrowth. These two intertwined factors unleash intellectual energies, animate the debate and as mentioned initially, the proliferation of projects at different levels from civil and academic world to political-decision-making one.

REL22 was conceived to fit into this dynamic with the specific intention of bringing two new ingredients into the collective design process. The first is the view from the outside or from the outsiders; the second is the view on the landscape or rather from the landscape. The support of IDEA League for the initiative has made it possible to involve some of the most prestigious foreign universities in Europe and to create on site a diverse international community of young aspiring designers. If the ‚Hambach issue' with its forest to be saved has attracted in the past young environmental activists from all over the world, it seems only right that the fate of these now ‚reclaimed' areas should be discussed by young people from even very distant backgrounds. The gaze of those who come from completely different contexts is in fact often more capable of bringing fresh ideas free of preconceptions and prejudiced positions.
Among the universities that are part of the IDEA League circuit, we wanted to specifically target Landscape Architecture school students, while leaving the selection call open to Architects, Planners and Engineers. A sustainable *Stukturwandel* indeed will only be possible starting from the (regional) landscape and its total and comprehensive redesign. On the other hand, in the debate, still too often, landscape seems to be blurred, instead productive and residential settlements and energy and mobility infrastructure are emphasised. The strong and evocative image of three large lakes to come and the ecological reconnection of forest remnants have so far formed the only fixed point in the prefiguration of the post-mining landscape of the Rhenish district. A landscape such that it is remembered, is characterised by one of the most fertile soils in Europe with an agricultural

structure that has already been greatly simplified by the post-war industrialisation process. Mining activities and the dislocation and rearrangement of agricultural soils introduced a further extreme simplification in the agricultural patterns, which results in extremely uniform monocultures devoid of natural landscape features. The shift to renewable forms of energy production will then lead to an equally monotonous introduction of wind turbines and photovoltaic panels. The risk that lies ahead is that while waiting for craters to fill up and turn into lakes with recreational facilities capable of triggering local tourism and a significant economic return, the surrounding agricultural landscape will undergo a further transformation by accommodating more technological infrastructures, completely deprived of elements that constitute natural habitats or at least ecological links. These landscapes in essence where *technē* leaves no room for *bíos*, the latter being relegated to forest structures which are often young and of mediocre ecological value. Therefore, a reflection on possible alternatives for this sort of vicious zoning towards models of possible new, integrated and ‚living' landscapes is more necessary than ever. Even the *Internationale Bau- und Technologieausstellung Rheinisches Zukunftsrevier* (IBTA) which is currently being envisaged, despite the title it has given itself, assigns the landscape and its new reorganisation a fundamental role (see the last Memorandum of September 2022).

The projects proposed by the five interdisciplinary teams, led by landscape architecture students, even within the limitations of an academic workshop lasting only a few days, seem to succeed in foreshadowing possible landscape transformation processes in which natural elements, human settlements, technological infrastructures, and agricultural landscapes for biomass and energy production combine harmoniously. Our hope is that they too will be an inspiration for the subsequent planning and implementation phases of the ‚largest landscape construction site in Europe'.

The Geology of Landscapes

Times, rhythms, palimpsests of the Rhenish crater

By Laura Cipriani

For those who want to understand the meaning of the Anthropocene, I suggest stopping at Hambach. The Rhenish crater is one of Europe's largest and deepest open-cast coal mines. Humans have transformed the landscape to the point of giving life to a new geological era. The mine is the symbol of humanity's power over territorial, environmental, and climatic transformations at impressive levels of scale and scope.

This workshop confronted us with five different times of the landscape, with its rhythms and palimpsests: deep geological time, historic time, the rapid anthropogenic time of excavation, the present time of transition towards new forms of energy, and finally, future time with the conversion of the crater into a lake.

Deep geological time is displayed by the stratigraphy of the geologic palimpsests. The vertical excavation in the earth shows the period of marine transgressions in the lower strata. During the late Oligocene and after the middle and late Miocene, this area was covered by peat bogs and humid forests now converted into lignite – the brown gold mainly extracted for energy production.

The historical time of cartographies recounts the landscape changes in the 13,000-acre Hambach Forest, partly transformed into agricultural fields and then eroded by mine excavations.

Anthropocene time starts in the 1970s, with mining activities giving life to the crater. The slow geological rhythms collided with the rapidity of contemporary transformative time. The destruction of villages in the quarry grounds and their relocation to other areas caused an exodus of about 30,000 people. The horizontal topographies of the mine's contour lines narrate its palimpsests in a continuous change, fan-shaped in a succession of fleeting landscapes repeated by the obsessive mechanical procedures of the wheel-excavators. Through land excavation, lignite

extraction, and mine reclamation, forest, soil, and water, are all interdependently altered. To extract the lignite layers, bulldozers cut down the forest, bucket-wheel excavators remove the land, belt conveyor transport it outside the mine to be re-cultivated, and pumps extract the groundwater changing the previous levels.

Then there is the *present time* of transition. It is a transition towards new forms of energy production and new economies as a result of the closure of the mining activities, as well as the socio-economic consequences for those who work and live in these places.

Finally, the *future time* of the *longue durée* envisions that the crater will be converted into a lake by 2100. Water will come from multiple sources: from the river Rhine, which will be diverted by 50 kilometers to reach the mine; from the groundwater that will rise as soon as the pumps are stopped; from the water that will be left in the mine, rather than being pumped out. This long-span infill process will be unpredictable from the point of long-term climatic, environmental, and economic uncertainties – a process that will not be completed for generations.

Based on this premise, the workshop deconstructed the landscape palimpsests and the rhythms that evolve over time. Two main ambitions guided the workshop:

Firstly, the intention was to imagine future scenarios that would stimulate a collective discussion in the present. A scenario is a tool for exploring future conditions of uncertainty and complexity and is constructed on hypothetical reasoning. What happens if new forms of energy replace extractive activities? What if the lake will never be filled due to water shortage due to future climatic change? What if the lake reaches a certain level, rather than the intended one? What if we temporarily occupy the mine slopes? Planning through scenarios means answering the question “what if…?” since there are many and multiple possible futures. Imagining the future and deciding what to do in the present becomes fundamental for the lifetime of these places.

Secondly, the workshop intended to work on constructing “landscape thinking” in the minds of younger generations coming from different disciplinary backgrounds – landscape architecture,

urban planning, energy, and hydraulic engineering; from diverse European university settings – the Netherlands, Germany, Italy, Switzerland; and from different academic levels – master's and PhD degrees. Collective and interdisciplinary working is a way to encourage the construction of transdisciplinary education to tackle today's unprecedented uncertainties and challenges. As in a geological process, I hope the change of practices will take root in the minds and actions of these future professionals.
Not to mention the fact that these generations of young students are probably the only ones entitled to envision the future of this land. They are the ones who, at the end of their lives, might be able to see and testify to how the Hambach mine will be transformed. The time of change starts with them.

A workshop on the Hambach mine, between teaching and research

By Antonio Longo, Chiara Geroldi

Idea League research and project activity was carried out at Hambach in August 2022 in one of the most complex, contested, and troubled territories in Europe. Rheinisches Revier‘s structural changes are part of a centuries-long transformation process that is extraordinary in size and economic significance. The evolution of mining is managed by continuously updated agendas and plans that are strongly influenced by energy and climate change management policies at the national and global levels, by dynamics that are also highly conflicting.
For these reasons, imagining the future of the Hambach mine and its territory was a significant challenge: it involved, on the one hand, controlling and being aware of the limits of the work and, on the other hand, being aware of its potentialities and civic role. Developing a landscape design activity through a short and an intensive course involving professors from three universities and thirty selected master and PhD students from different disciplines demonstrated to be an effective way of carrying out the research. It allowed to observe and learn about the territory and its issues through a narrow time line, and to propose several design scenarios, which are even courageous and distant from what is generally envisaged in the context of landscape restoration of mines and the environmental compensation for the local communities.

Why is landscape design suited to deal with these types of contexts and to this teaching and research approach?

- Because what is seen, heard, and touched is at the basis of the landscape project. That is why it was essential to work on site: in Hambach, on the edge of the large open pit mine crater, near the abandoned villages, and close to the forest occupied by the activists.

- Because the landscape itself acts as a physical evidence of its history, but also helps envision the future projection and imagination. The discussion about the future of the mine involved the community and the public. Even within the time constraints, the direct - albeit brief - discussions with the people involved, from the mining engineers to the inhabitants and the local activists, were a crucial part of the research experience.

- Because of the power of today‘s mining landscape: a deserted and lunar valley of molded lands of every color and shade, flanked by an afforested constructed hill made of mining waste fill. The Hambach mine is an artificial landscape standing in stark contrast to the serene perspective of a large lake produced by the slow filling of the mine. This forced the team to question the relationship between landscape as reality and as imagination. Today a slow man-made catastrophe has produced a unique and extraordinary landscape that is uninhabitable, which has replaced one of the largest and oldest lowland forests in Europe, and has drastically changed the orography of the site. The future is imagined as the landscape of a lake, idyllic and reassuring, which will be permanently formed, but in a long time, probably as long as the life of those who imagine and desire it.

Here, then, is the challenge and meaning of the five projects: the proposals contained in these pages are not intended to offer easy solutions. The landscape projects, consistent with a research-by-design approach, intend to ask questions, generate doubts, and open themes for further research and possible future alternatives, embodying uncertainty and a long-time perspective in their technical language and rhetoric.

Young views on the next landscape

By Matti Wirth

Representing the six municipalities around the closing mine, our collaborative “Neuland Hambach” aims for the societal reclamation of a land surface that covers about 85 km2 of the state of North Rhine-Westphalia. We conceive plans and projects that are dedicated to revalorization. Our vision for Hambach is to re-establish a vital and diverse landscape around the mining lake from 2030 onwards. If our efforts are successful, it will be a landscape of novel kind – for visitors, new and old inhabitants, entrepreneurs, diverse biotopes and intelligent sociotechnical solutions. The goal is to be achieved on either barren or compromised grounds, that have been subject to social controversies. Such a project will require significant resources and require several decades. Design activities, today in focus, will remain necessary with continuous iterations between reflection and pragmatic realignments.

In this context, the REL summer school connected the cognitive power of 30 international students from diverse backgrounds, teachers from three universities and various local stakeholders – in a creative and free environment. As this report shows, the resulting “young views on the next landscape” are proof of high ambitions and commitment. Responding to a wide time-horizon of landscape transformation, all design projects explored possibilities for an ecological, socio-economic and aesthetic re-appropriation of the area and mediated between different land uses and local places.

Thereby, each team envisaged a different cultural landscape. Water was employed at large scope, working as a lever for ecology, floating recreation and agriculture or even hydrogen production on redeveloped grounds. Another team conceived linear relicts in the landscape as “tactical lines”, each resembling a frontier to reconquer the area again with a new landscape mosaic. New flows in the area were targeted by others, to be enabled by reforestation networks, mobility and energy infrastructures including storage hubs. In another view, lake communities would flourish next to a temporarily programmed

lake landscape and include new social hubs for cultural remembrance, research innovation, nature conservation, bio-agriculture and new mobility. I was also stunned by a team that seemed to refrain from the big integrated vision. Instead, strategic interventions were in focus, particularly the components of a first water landscape, that would realize earlier than the final entire lake.
The workshop was a success. Certainly, not every idea may appear feasible. However, this does not reduce the high value of the outcome. The visions by the students serve us as a rich source of inspiration, and some ideas we consider even literally. For example, we are right presently exploring the option of greenhouse production as an intermediate facility.
Moreover, a crucial thought was confirmed by the students. Fossil energy landscapes need to be reinvented quite urgently.. Paralysis by uncertainties within distant futures is not necessary. In areas like Hambach, we can work already on the next landscapes in progress. Let's thereby welcome the young views that are desperately needed!
I would like to express once more my deep compliments for this achievement and big thanks to everyone involved in making the REL summer school. Particularly I wish all the best to the students as future contributors and leaders in a rapidly changing world.

Fazhong Bai

87

biographies

a transdisciplinary group

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