

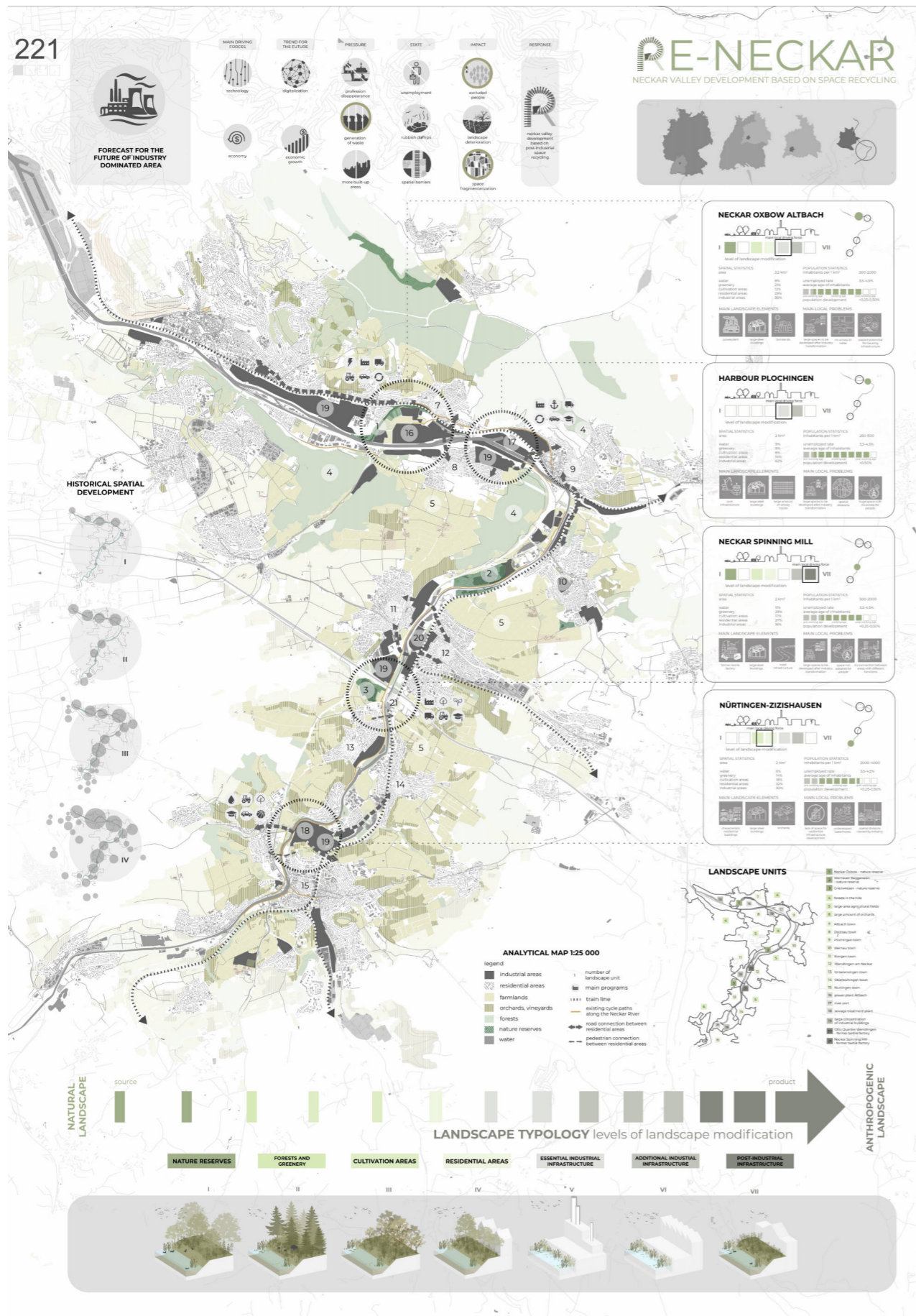
International Student Competition

Neckar Landscape Park
 Re-imagining the Productive City Region

Working Period: October 2022 - January 2023

Winning teams and finalists





First Prize

Gdańsk University of Technology, Poland

Marta Hrycyna, Natalia Fronczek, Marta Kloch,
Liudmila Matsisovich, Szymon Jackowski

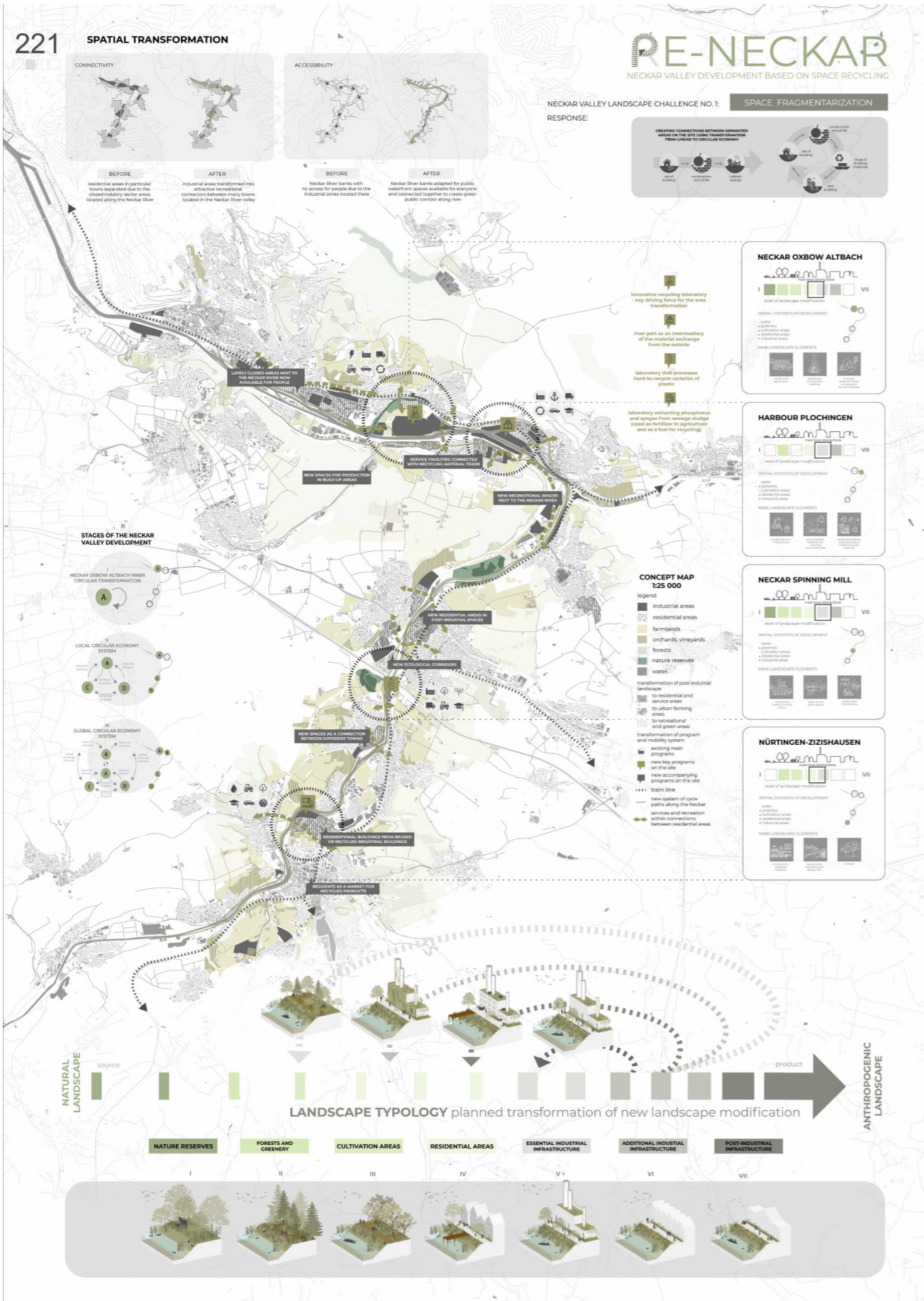
Re-Neckar. Neckar Valley redevelopment based on space recycling

Neckar is a river located in south-western Germany, going through the city of Stuttgart, but most importantly for our project it is going through cities of Altbach, Plochingen, Unterensingen and Wendlingen am Neckar and Nürtingen-Zizishausen. The whole concept of the project is to connect those cities by creating a circular link providing new healthy ideas for people, environment and economy.

Our idea of circular economy concerning all four areas is to create spaces for reusing non-decomposable building waste and creating new ways of using it again as a building material. First area, in which we will go into details later, is going to be an area of laboratories and science work. Moreover, the area will be enriched with new public spaces connected to the science, with an educational aspect. Second area, which is a harbour space, could be developed to become a storehouse for all the waste. The materials could be transported to the area by the train or by the river. The third area could be a part of the science process. Old manufactures could be reused as buildings for chemical and mechanical processes of transforming waste. Last area is going to be expanded and developed from the reused waste.

Coming back to the island near Altbach, the idea for this area is to create laboratories and a science centre from the powerplant building complex. In 50 years, a shift to green energy is very possible. Powerplant will no longer be needed, due to new ways of creating energy. Energy could be produced from wind, sun, water, vegetation or even plastic. Our complex will have its magazine area, laboratories for scientists and a science centre for educational and also fun purposes. Moreover, a conference centre is giving possibilities for other people connected to science to broaden their horizons and learn about new technologies.

On the east of the island there is going to be an area for tourists, where they can find places for sport and cultural activities. In the place of magazine halls we would like to

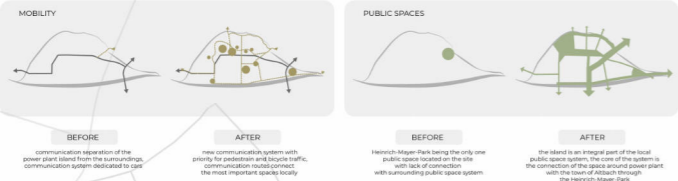


create housing buildings that can also restore canal bank. Between the buildings there are neighbourhood gardens where residents can all together take care of vegetation. This is a way to create bonds between people and place. Lastly, green farming areas and garden plots are preserved and open for people. They are connected to the Heinrich-Mayer Park.

The park and buildings create a view axis that leads to the public space in the area of science centre and longshore promenade. The idea for the business is to create new working places for workers who used to work in the powerplant. Moreover, laboratories focus on the environment and help to preserving it by searching for new ways of reusing building waste. The resources could come from re-built areas near the Neckar river and be for example: concrete, window frames or light bulbs. It is a huge opportunity for science world, environment and local people.

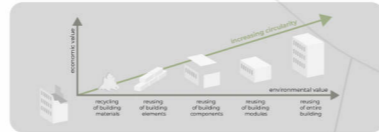
In conclusion, this change would make the area of Neckar river a cradle of circular economy. The complex of laboratories and science centre will bring new life to the beautiful area of the island by Altbach. Also, it will give new opportunities for economical growth of the region.

SPATIAL TRANSFORMATION

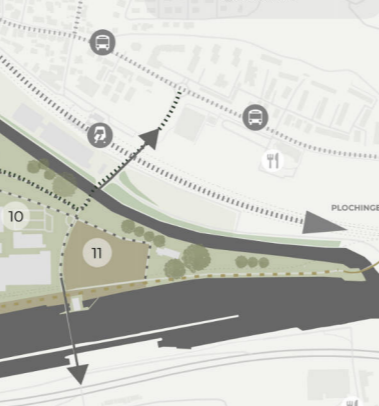
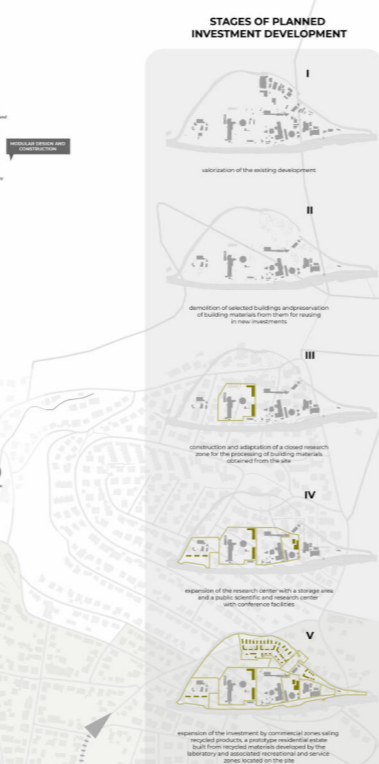


NECKAR VALLEY LANDSCAPE CHALLENGE NO. 2

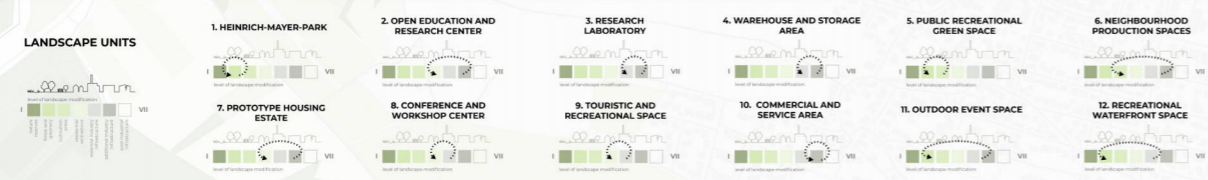
GENERATION OF WASTE



RESPONSE:



MASTERPLAN OF THE NECKAR OXBOW ALTBACH SITE 1:3 000



RE-NECKAR

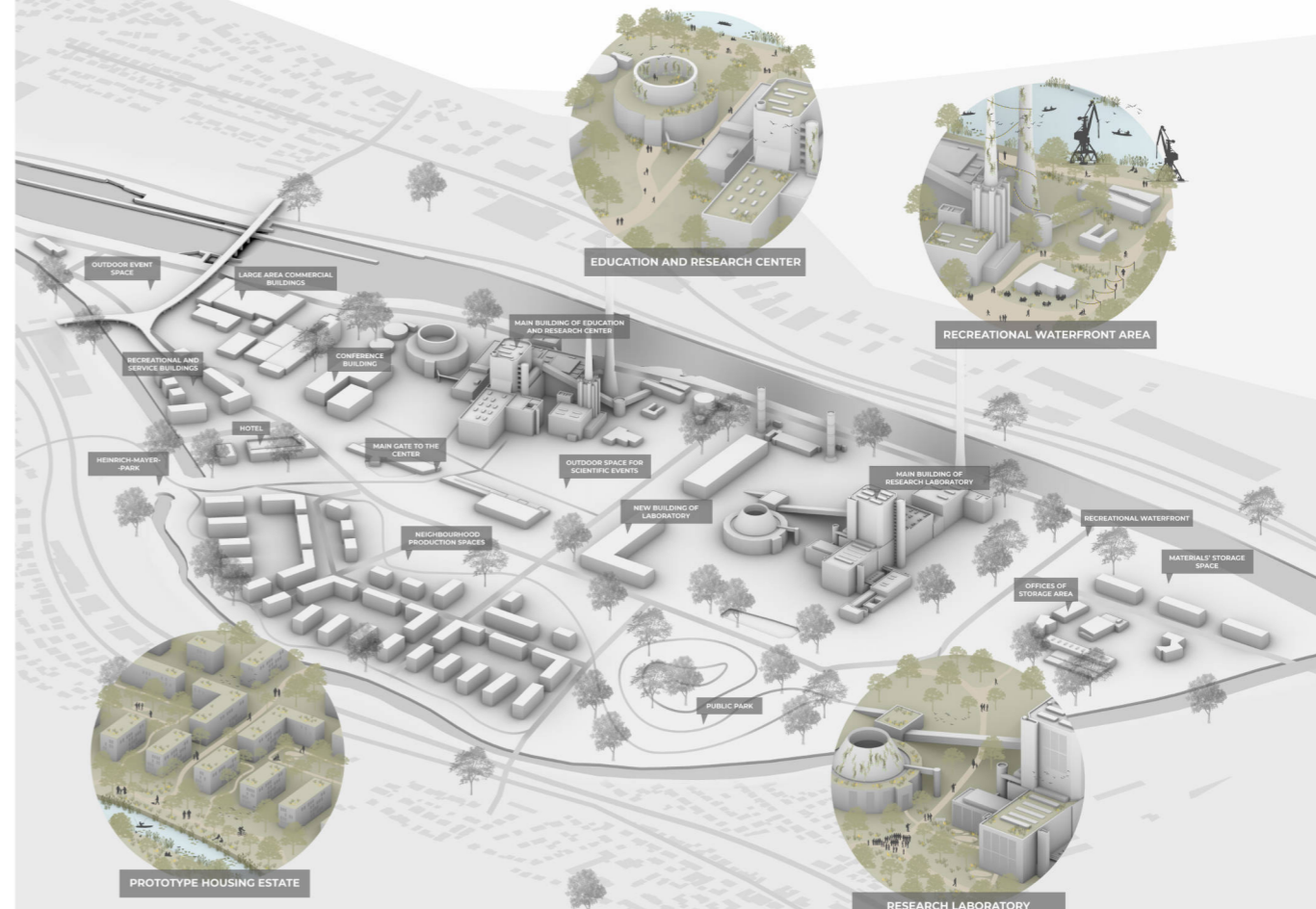
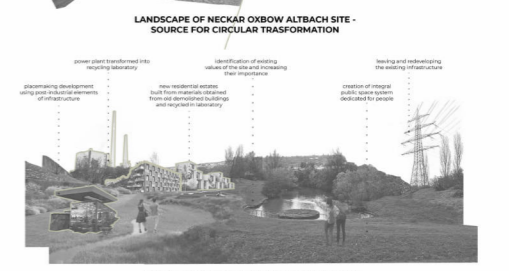
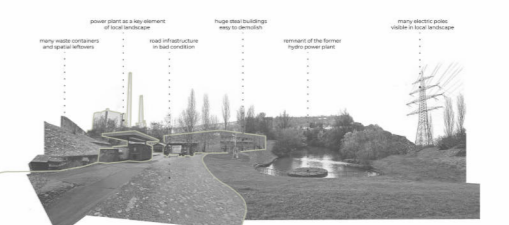
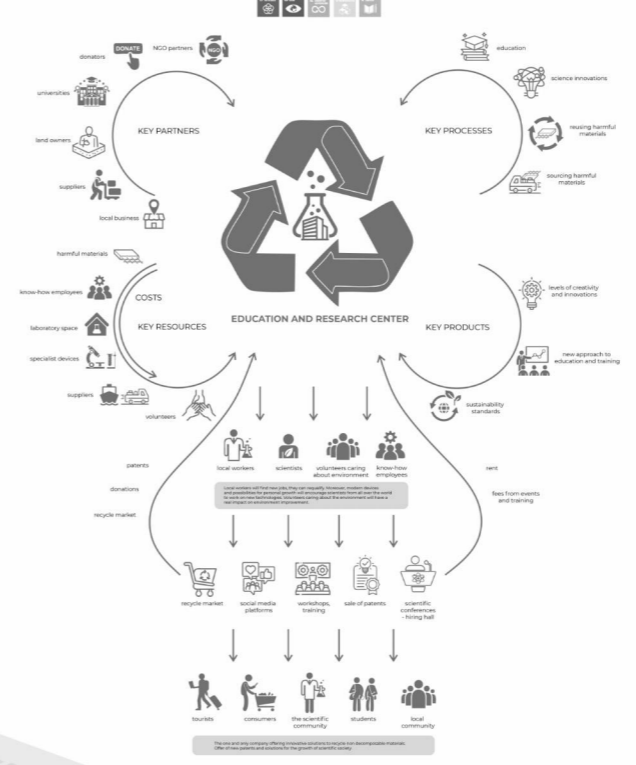
NECKAR VALLEY DEVELOPMENT BASED ON SPACE RECYCLING

RE-NECKAR

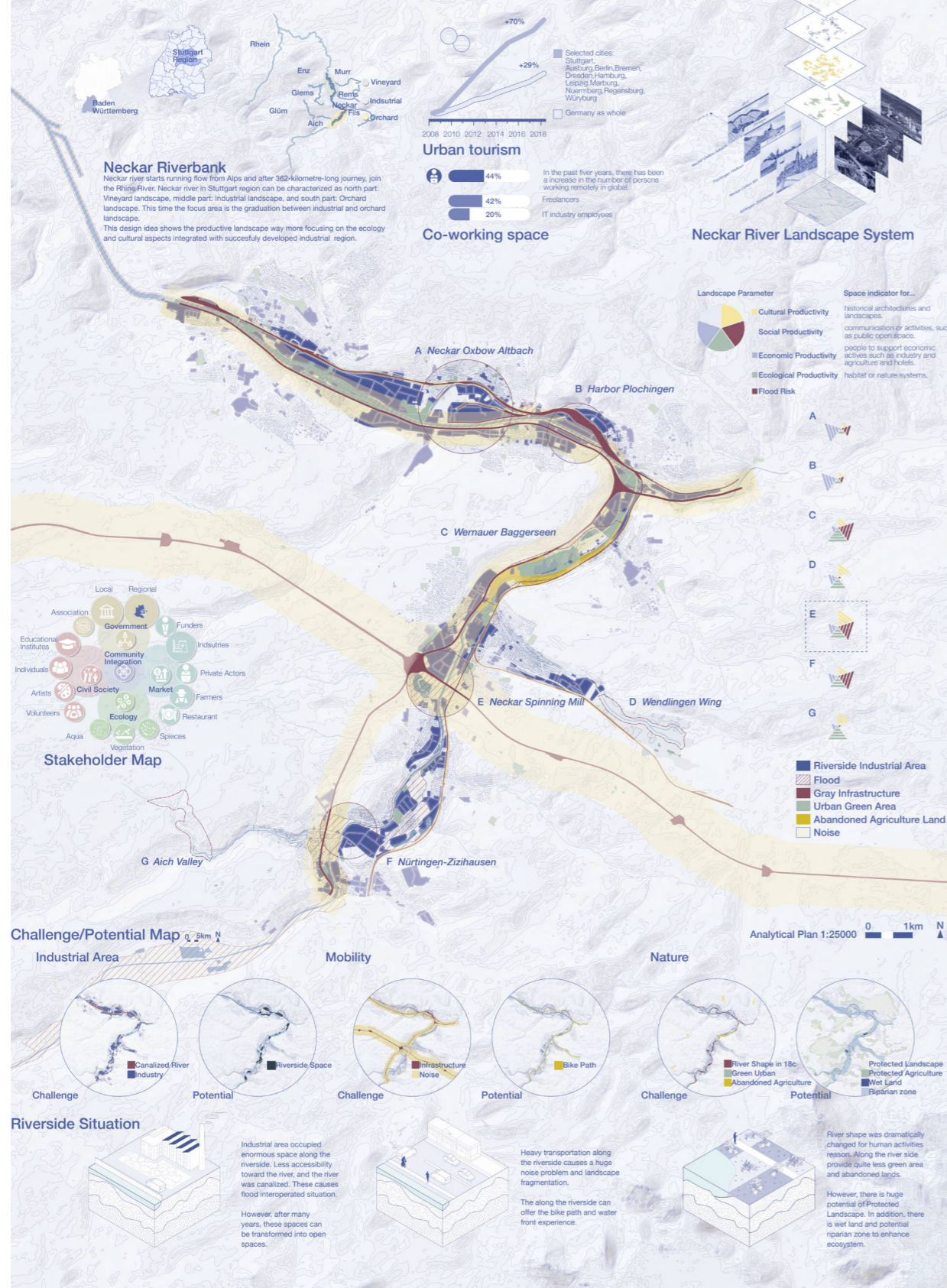
NECKAR VALLEY DEVELOPMENT BASED ON SPACE RECYCLING

NECKAR VALLEY LANDSCAPE CHALLENGE NO. 3

EXCLUDED PEOPLE



Release the Surface



Second Prize

HfWU Nürtingen-Geislingen

HSWT Weihenstephan-Triesdorf, Germany

Yuga Tanaka

Release the surface

The Neckar river in focus area has challenge with intensive industrial land use consume(point), and heavy demand of mobility (line) which cause critical flood risk, and fragmentation of nature connection.

These conditions have been happened by intensive and rapid urban development. The main idea to improve this situation, is to design the landscape in a long-term process.

The proposal is to release the surface so that the vegetation succession start and grow which provide for spices ecology and people recreational and nature experience. To achieve the strong productivity of Ecology / Cultural / Economy/ Social/ Economic/ Water management, we propose the three main green structure which is green hotspot, green corridor, and landscape typology to animate the identity of landscape and livable space for all living things.

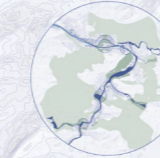
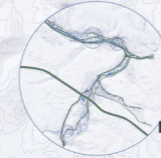
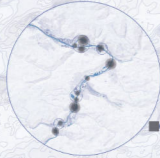
In detail focus area is named as Neckarspinnerei Landscape Park, which people can observe the variety type of vegetation succession, depending on soil, sunlight, use of function, that is nature disturbance and human-caused disturbance. The landscape in growing in time will increase people's sense of place and habitat productivity.

Neckarspinnerrei, historical industrial architecture, is the core platform for community activities for individuals, government, economic sectors. While the vegetation succession process, community interaction will develop together step by step. The community-landscape interaction though the process is the strategy keeping the sense of place responsibility.

The moment the surface is released, the landscape dynamics will start developing. The landscape in process will enhance the landscape productivity in this Neckar river system.

Release the Surface

Concept Idea 0.5km N



- Urban Farming
- Extended Agriculture
- Urban Park
- Nature Experience
- Waterfront Park
- Naturalized Riverside
- Protect Riverside
- Historic Regain

Landscape Typology



- Green Network
- Wet land
- Green Corridor
- Open hot spot



Riverside Situation

Industrial Area

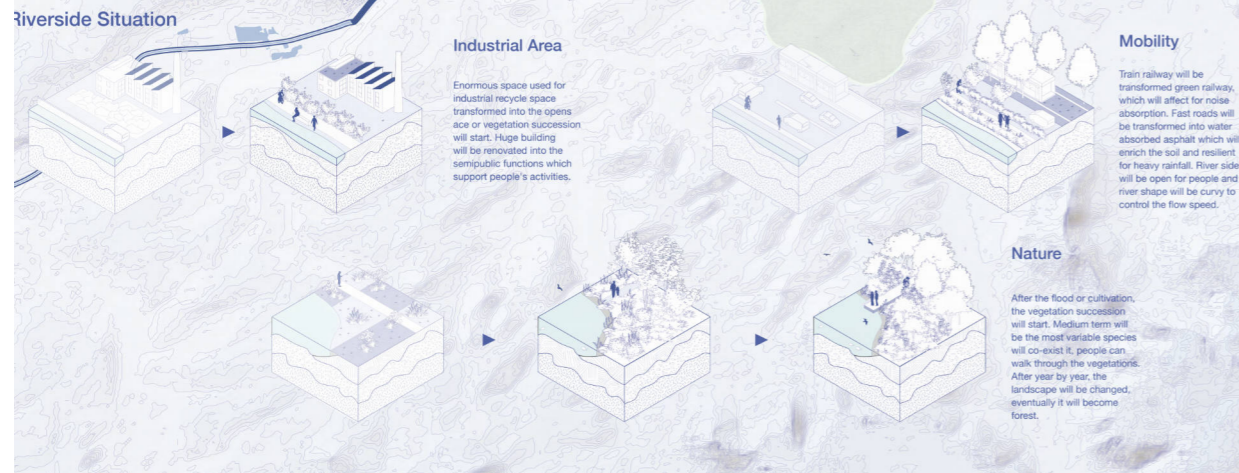
Enormous space used for industrial recycle space transformed into the open space or vegetation succession will start. Huge building will be renovated into the semipublic functions which support people's activities.

Mobility

Train railway will be transformed green railway, which will affect for noise absorption. Fast roads will be transformed into water absorbed asphalt which will enrich the soil and resilient for heavy rainfall. River side will be open for people and river shape will be curvy to control the flow speed.

Nature

After the flood or cultivation, the vegetation succession will start. Medium term will be the most variable species will co-exist if people can walk through the vegetation. After year by year, the landscape will be changed, eventually it will become forest.



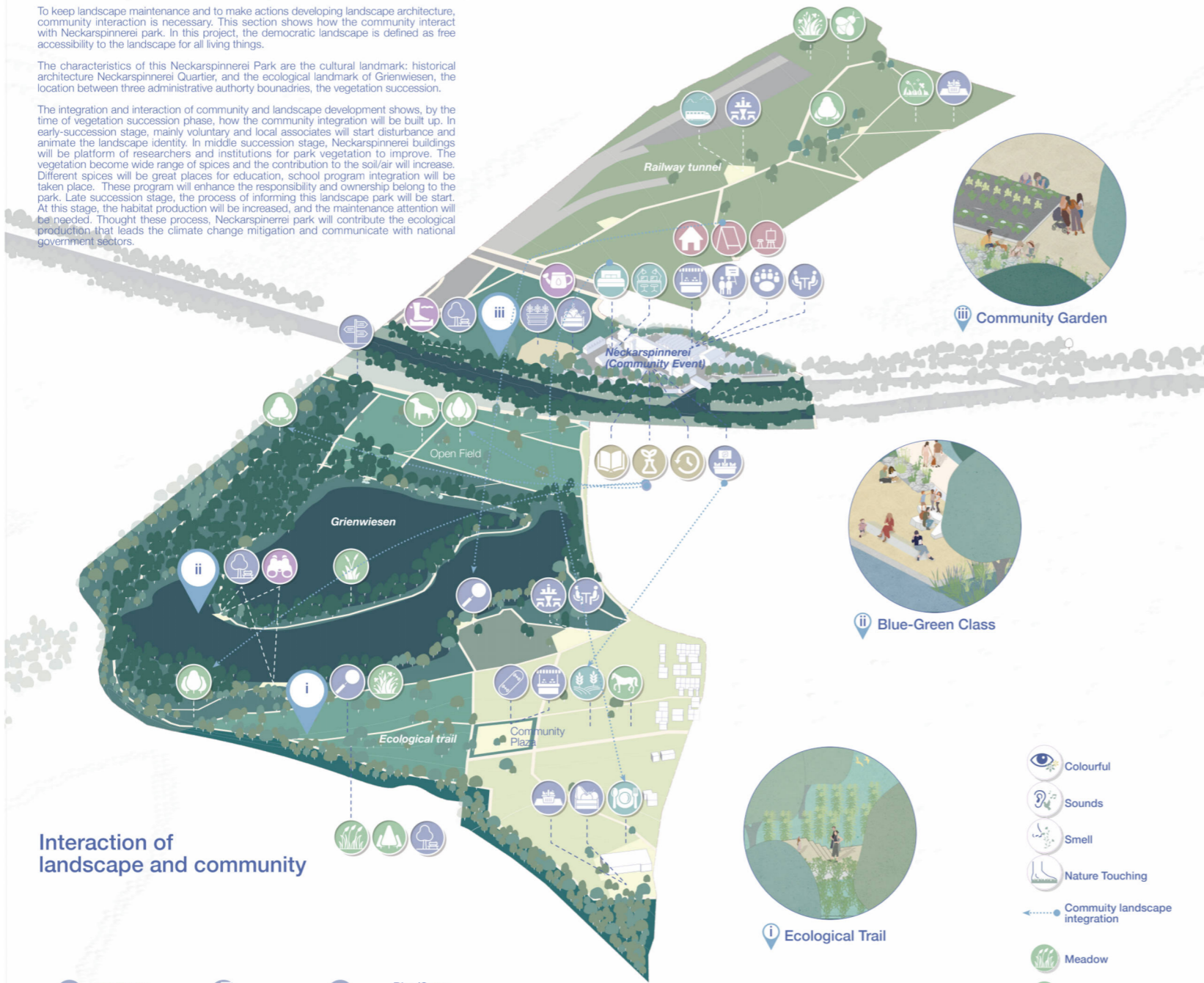
Release the Surface

Landscape Interaction

To keep landscape maintenance and to make actions developing landscape architecture, community interaction is necessary. This section shows how the community interact with Neckarspinnerei park. In this project, the democratic landscape is defined as free accessibility to the landscape for all living things.

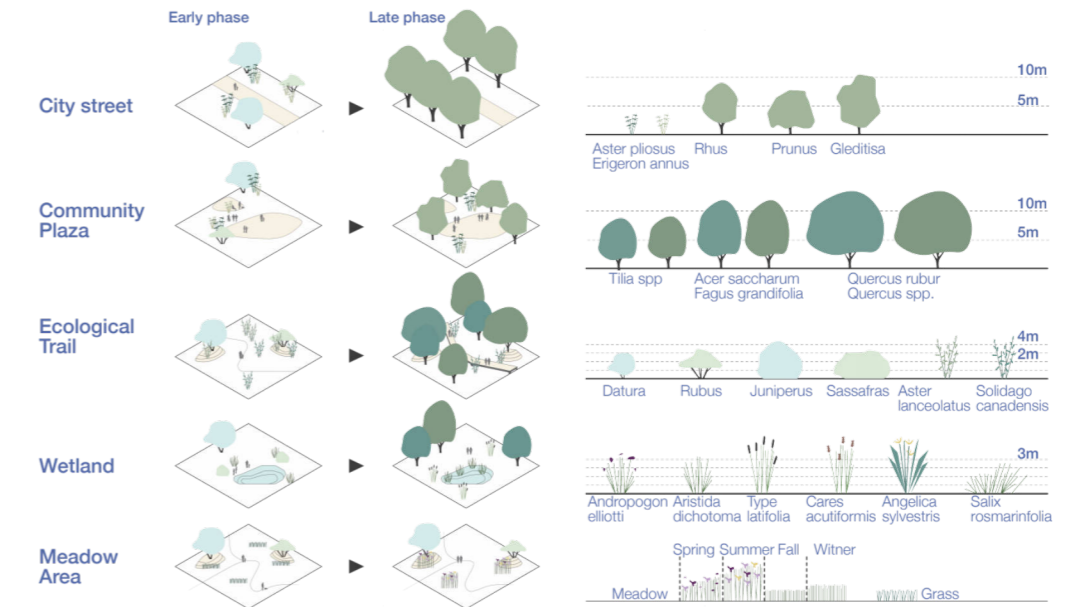
The characteristics of this Neckarspinnerei Park are the cultural landmark: historical architecture Neckarspinnerei Quarter, and the ecological landmark of Grienwiesen, the location between three administrative authority boundaries, the vegetation succession.

The integration and interaction of community and landscape development shows, by the time of vegetation succession phase, how the community integration will be built up. In early-succession stage, mainly voluntary and local associates will start disturbance and animate the landscape identity. In middle succession stage, Neckarspinnerei buildings will be platform of researchers and institutions for park vegetation to improve. The vegetation become wide range of species and the contribution to the soil/air will increase. Different species will be great places for education, school program integration will be taken place. These program will enhance the responsibility and ownership belong to the park. Late succession stage, the process of informing this landscape park will be start. At this stage, the habitat production will be increased, and the maintenance attention will be needed. Thought these process, Neckarspinnerei park will contribute the ecological production that leads the climate change mitigation and communicate with national government sectors.

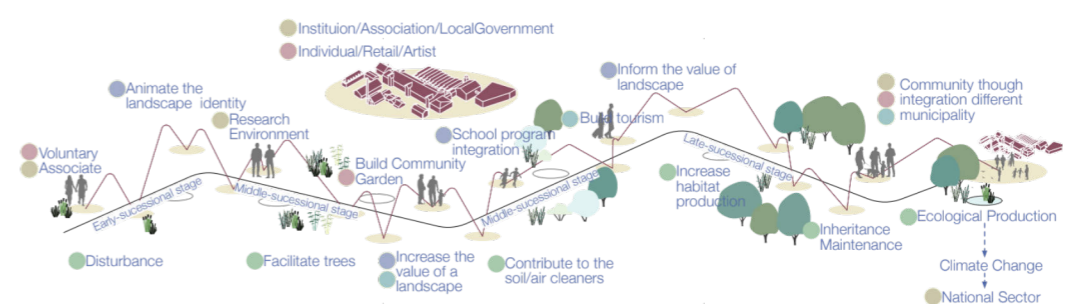


Interaction of landscape and community

- Community Interaction
- Spatial Experience
- Government
- Private
- Economic
- Ecological
- Learning
- Meeting point
- Rest point
- Regional Signboard
- Experiment Farm
- Market
- Blue/Green classroom
- Café meeting
- Picnic table/area
- Skateboard
- Observation point
- Experiment Institute
- Water experice
- Archive
- Historical Tradition
- Art studio
- House
- Exhibition
- Short stay
- Co-working space
- Agriculture field
- Restaurant
- Railway view point
- Meadow
- Aquatic plant
- Habitat hotspot
- Dog run
- Horse Tracking
- Conifer tree
- Deciduous tree



Landscape spatial transformation



Integration and Interaction of community and landscape development

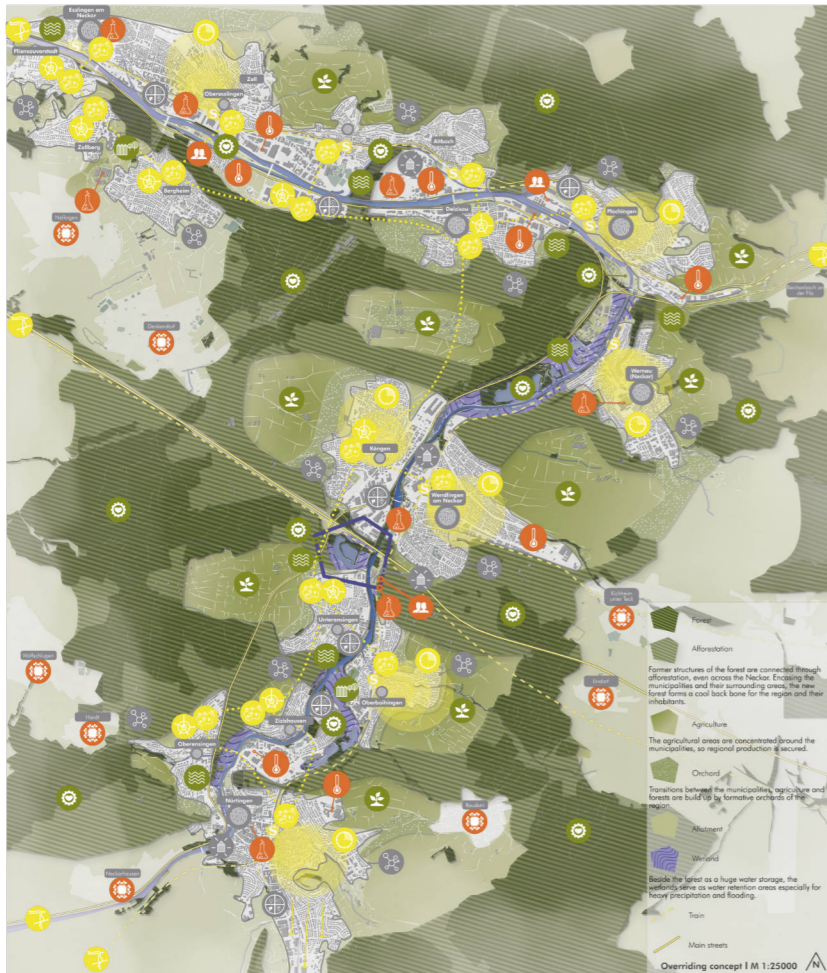


123 SPINNING IDEAS FURTHER at NECKAR LANDSCAPE PARK



LANDSCAPE

- AGRARIHUBS** Green centers | Organic farming | Nature education
- PRODUCTIVE LANDSCAPE** Avoid monoculture and plant new cultures | Create small-sized landscape mosaics | Local products
- WATER LANDSCAPES** Renovation | Develop tourism | Recreation right up the doorstep
- GREEN LABELS** New usage of fallow land | Support biodiversity | Forest conservation



FOUR THEMATIC AREAS AS A FRAMEWORK:

RESIDENCE

- KEEP CLEAR CONTOURS** Restrict growth and spread livable places | Create welcoming spots | Target networking
- STRENGTHEN URBAN CENTERS** Avoid vacancies | Allow temporary use | Strengthen identification | Qualified green spaces
- PRESERVE THE OLD AND USE THE NEW** Recognize inventory as an important resource | Develop landmarks
- SUSTAINABLE RESIDENTIAL AND OPEN SPACE** Promote a mix of uses in the districts

LANDSCAPE

- AGRARIHUBS** Green centers | Organic farming | Nature education
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MOBILITY

- BEING IN REACH** Reachability and movement on different scales
- USAGE OF EXISTING STRUCTURES** Transform existing structures | Climate adaptation | Green paths connect the municipalities
- URBAN MOTORS** Mobility HUBS on roads
- SHUTTLE** Shuttle buses are connecting the municipalities on the left side of the Neckar | Connection to the train stations

WORK

- COOL WORKING** Climate adapted workplaces | Green-blue commercial areas
- PLACES OF INNOVATION** Commercial spaces as thinktanks of the settlements | Pulsing and dynamic creative centers
- TRANSFORMING SPACES** Common process of a socio-ecological urban and open space development
- SMART WORK** Remote work | Extensive digital infrastructure



123 SPINNING IDEAS FURTHER at NECKAR LANDSCAPE PARK



GETTING ALL THREADS TOGETHER

ESTIMATE ECOSYSTEM SERVICES: Due to the impacts of climate change, prolonged droughts and heat waves as well as heavy precipitation and flooding are expected. Therefore, it is necessary to prepare the region for such weather events. This is where ecosystem services become essential. To ensure that the region heats up less and cools down at night, a high amount of greenery and life-sustaining surface area are necessary. This can be achieved by reducing roof and parking areas, greening buildings and planting numerous new shade-providing street trees. In order to be able to reduce the amount of water from precipitation, the creation of natural flood protection is necessary. To achieve this, the concept relies on the reconstruction of forests and wetlands. This has the effect that the soil can absorb and store more water, so that surface runoff is reduced. In addition, the Neckar is given more room in the water corridor.

USE THE OLD IN A FRESH WAY: The area around the Cotton Mill is an important hub for the surrounding localities, where all of the above subjects are combined. The natural spaces that arise bring not only climatic benefits, but also great added value for users. New path connections for pedestrians and cyclists enable the experience of nature on the doorstep. The bridge connects both banks of the Neckar River and the planned quarter extension of the Cotton Mill. There are seating areas that invite for recreation and activity and react flexibly to the water level in their use. Another highlight is the island that can be used for swimming in the Neckar.

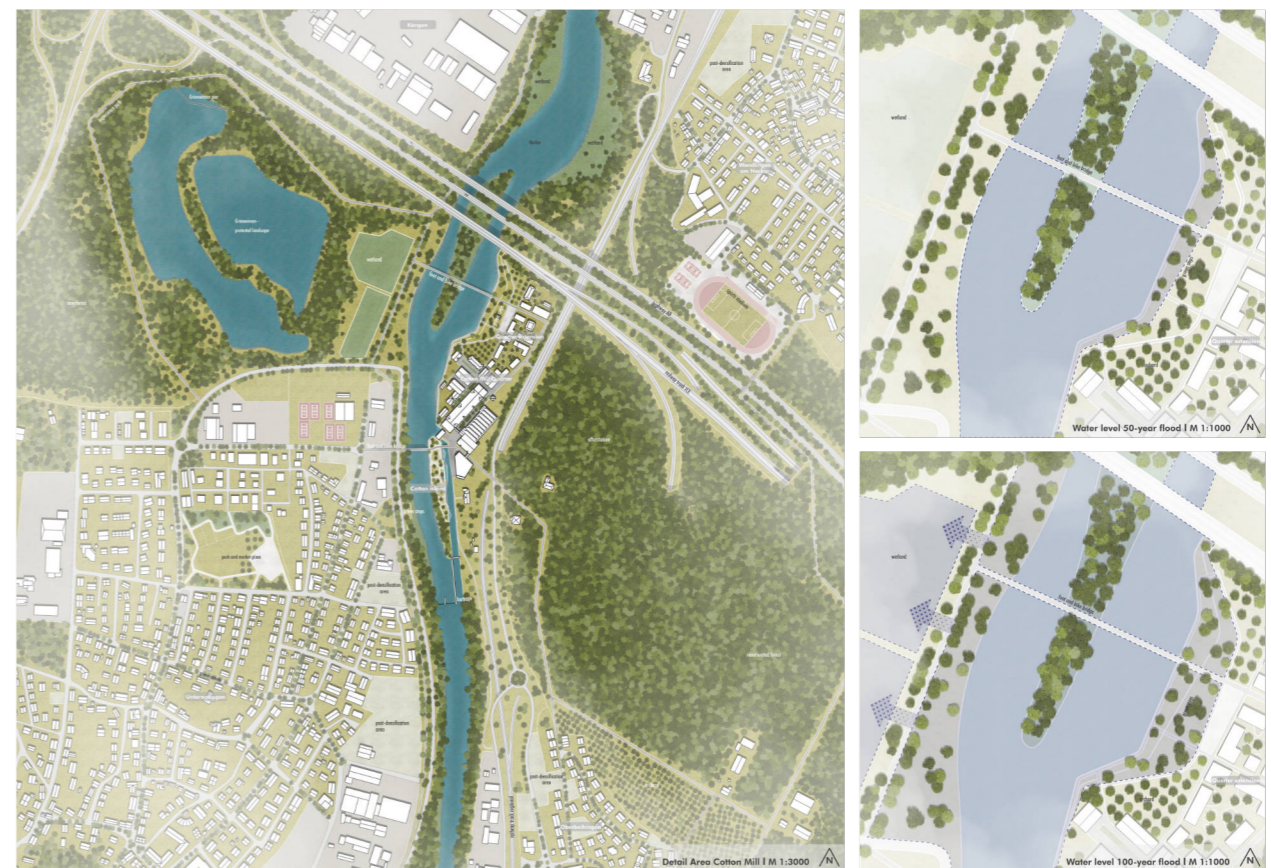
WORKSHOP YARD Whether the bicycle needs to be repaired or a new dining table is to be built, here you will find the necessary tools and expert support for every craft need.

FARM YARD The focus is on the production and marketing of regional and seasonal food. Anyone can go shopping here on site, help to garden or hand in locally produced food. There is also the offer to have juice pressed from our own apples. In the public cafeteria, everyone is invited to consume locally produced and organic meals.

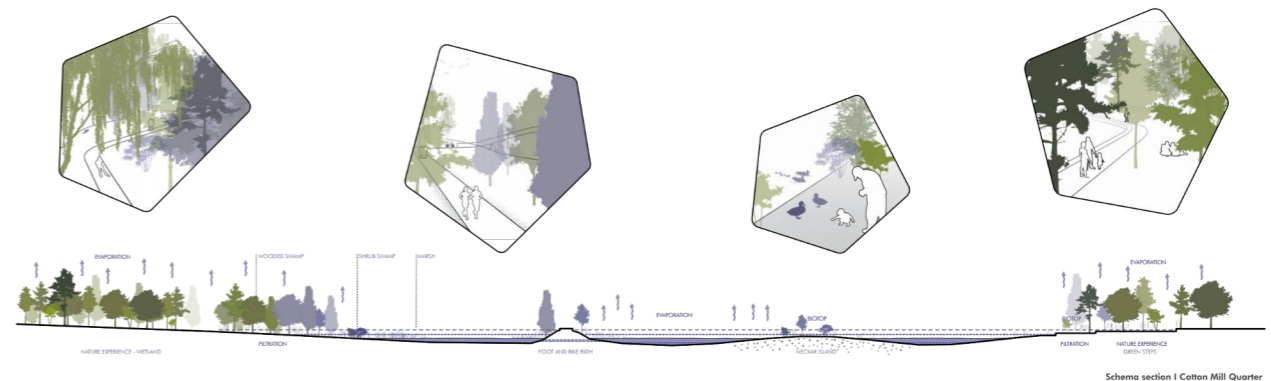
FOREST YARD The dense forest-like planting creates the yard areas on warm days. Hence, this place is optimal for recreation and play especially for children and seniors. Cross-generational living is a benefit for all, whether it's help with groceries or childcare. There are rooms available that can be used free of charge for seminars, birthday parties or dance classes.

GREEN BLUE BELT NECKAR COTTON MILL

Extension of Cotton Mill Quarter



RECOGNIZE AN USE NATURAL FUNCTIONS



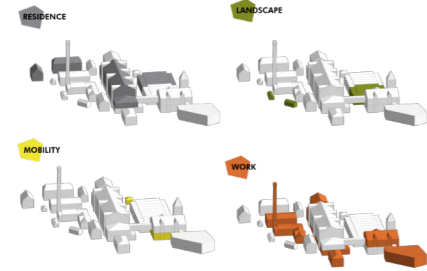
123 SPINNING IDEAS FURTHER at NECKAR LANDSCAPE PARK



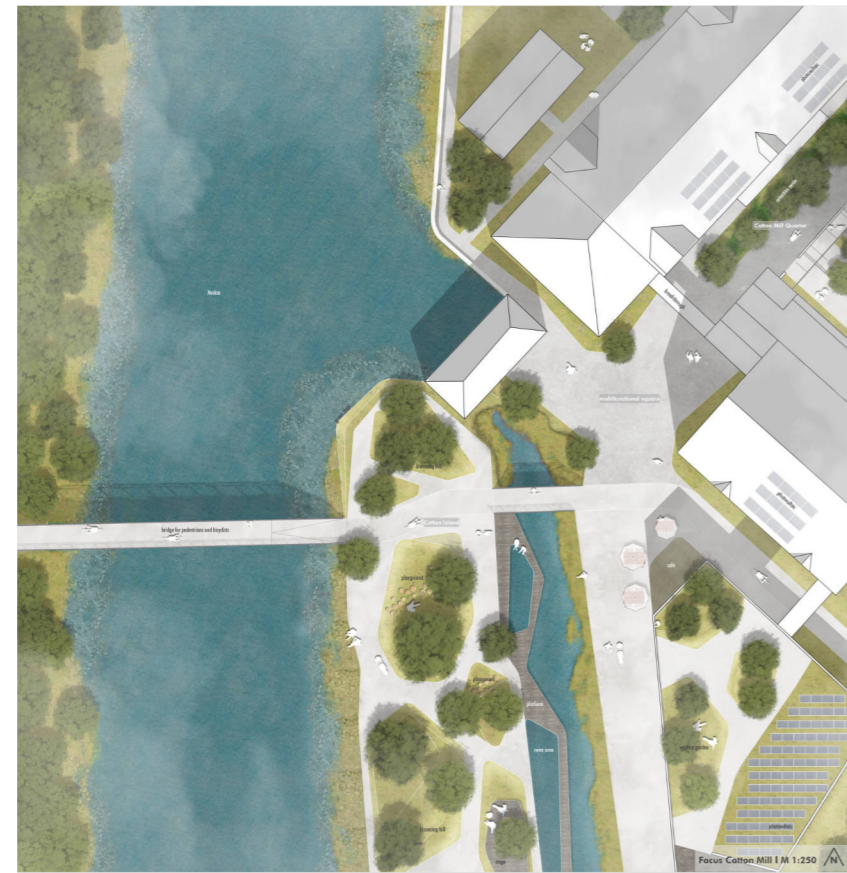
REVITALIZE THE COTTON MILL

THE COTTON MILL AREA AS AN EXPERIMENTAL FIELD: The Cotton Mill site becomes an experimental field and future best practice model. Various fields of action from the four thematic areas are applied on the site. Through temporary projects, new developments can be tested and incorporated into the spatial image together with citizens and expert planners. The changes on the Cotton Mill can be seen from far away. By preserving the factory buildings, an important contribution is being made to the preservation of the industrial and cultural heritage. But how can the Cotton Mill site be used in the future and above all, made accessible to the public? The concept integrates many possible uses and addresses a broad spectrum of users. The urban regeneration creates a self-regulating social structure within the dense existing buildings, which can pursue numerous uses and activities.

MIXED USE: The area of the old Cotton Mill serves as an example quarter for future life within the competition area. Here, the four future themes are applied too. A detailed specification of the individual uses can be found in the illustration within the individual themes.

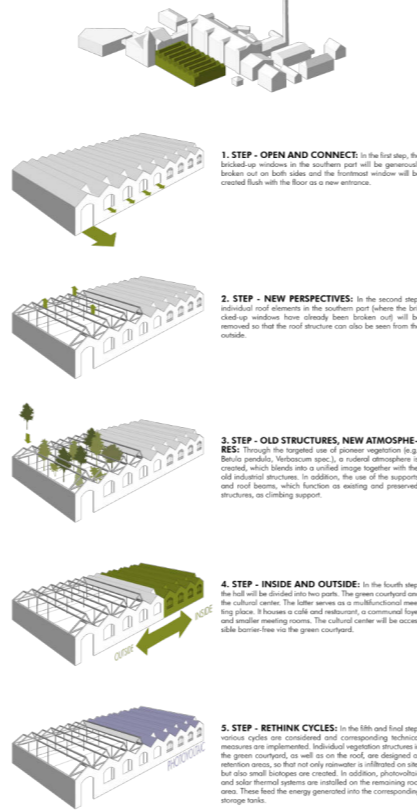


Inside of the Shared Food hall



STEPS OF THE TRANSFORMATION

OLD HALL - NEW USE: The example of the shed roof hall shows how future uses of old industrial relics can be converted. A special focus is on the preservation of as many building structures as possible. The future use of the hall is shown on the basis of five development steps.



RETHINK CYCLES

SOCIAL: In addition to the technical cycles (water, electricity and biomass), the social cycle is an important component for the Cotton Mill neighborhood. The social cycle consists, for example, of smaller projects in the four thematic areas (landscape, living, working, mobility), such as small productive landscapes in the form of community beds and the benefits of vegetation structures. Here, the focus is on microclimatic improvements through shading or evaporation and the experience of nature.

WATER: Increasing extreme rainfalls often temporarily overload the systems of the central stormwater management. To prevent this, decentralized stormwater management is a key component of stormwater management on the Cotton Mill site. This allows water to be stored at the point of origin and infiltrated with a time delay. Decentralized rainwater management can make a small contribution to improving the microclimate through evaporation. Rainwater from roofs, for example, is temporarily stored in cisterns. The collected water can be used to irrigate the green structures, especially in summer. Rainwater that is not discharged into the cisterns can be infiltrated in retention troughs with a time delay. This provides groundwater recharge.

ELECTRICITY: A future increase in sunshine hours is seen as an opportunity and great potential for the Cotton Mill to be more independent with the help of a wide range of technical equipment (photovoltaics, solar thermal). In addition, the generated electricity can be fed into the power grid. Energy generation begins, for example, on the shed roof of the hall. Here photovoltaic and solar thermal systems are installed, which feed the generated heat or electricity into the corresponding storage tanks. The storage tanks are connected to the buildings so that the energy generated can be used or stored directly.

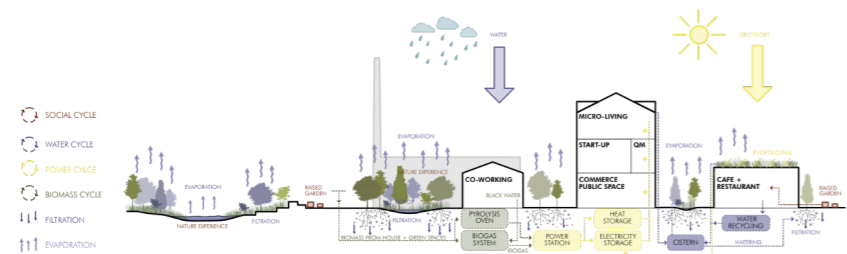
FOOD AND BIOMASS: Any biomass produced, whether from households or green waste, can either be composted or fed into the biogas plant. The latter is fed by black and grey water and passes the energy obtained to the power station, which generates heat or electricity and then feeds it to the appropriate storage facilities. In addition to the biogas system, the biomass can also be used to produce vegetable charcoal. Under very high temperatures and the exclusion of atmospheric oxygen, biomass is converted into plant carbon.

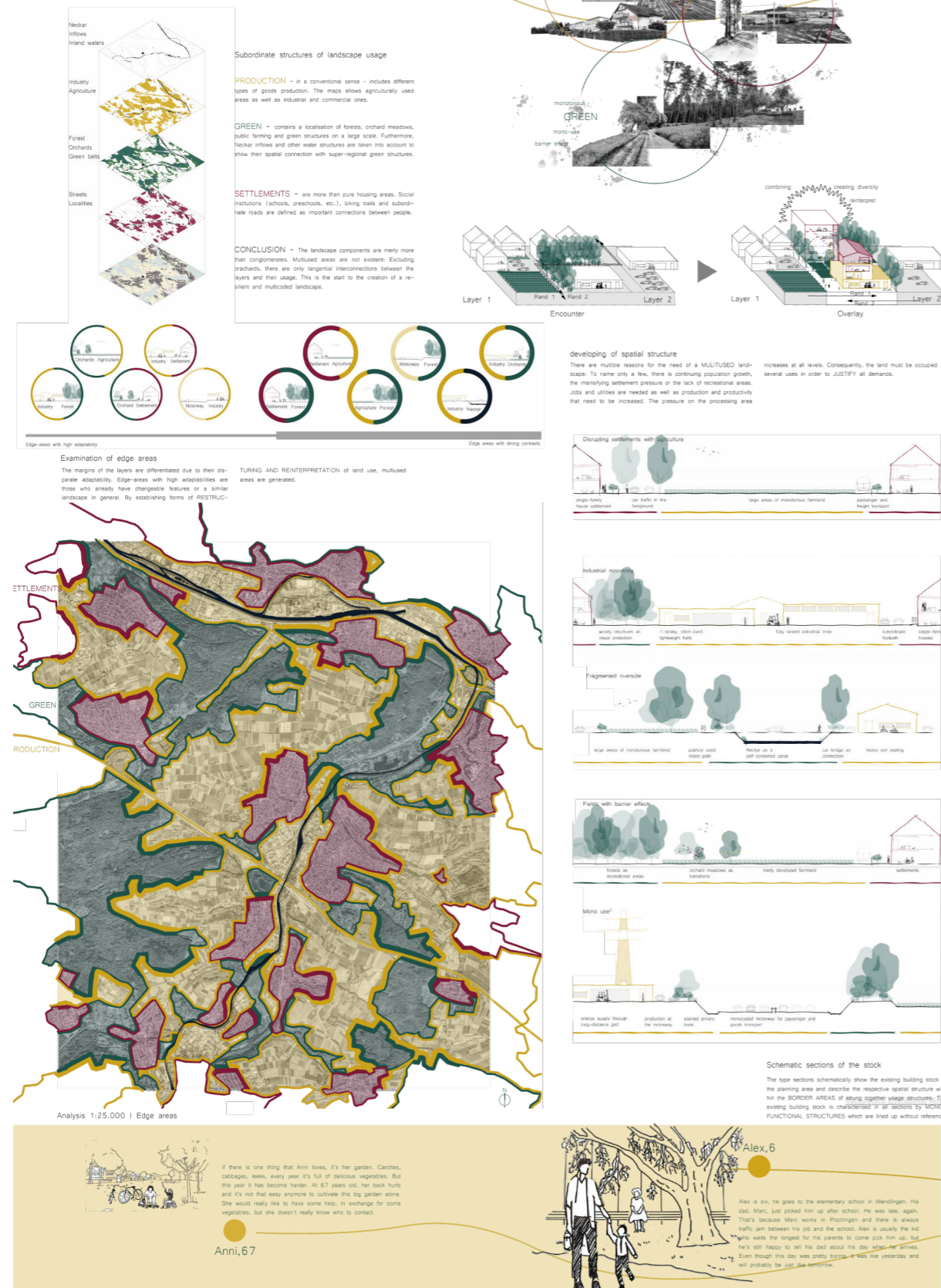
VEGETATION CONCEPT

NATURE AS INSPIRATION: The vegetation concept in the area of the Cotton Mill site and in particular the shed roof hall is predominantly oriented towards a natural appearance, characterized by a pioneer species. These include Salix pendula, which is characterized by a striking and attractive bark and Buddleja davidii, which has a long-lasting flowering period and is thus an important food source for bees and butterflies. The woody plants and shrubs are supplemented by various grasses and perennials. Through the increased use of perennials, for example Verbascum spec., different vegetation patterns are constantly created.

ADAPTED TO THE LOCATION: Especially in shady and wet areas, woody plants and perennials adapted to the site are used. Particularly in the retention areas, plants are used which can cope with both a dry site and a moist site.

USE OF EXISTING STRUCTURES: In addition to ruderal shrubs and perennials, climbing plants are an important design element. Here, the focus is particularly on the existing building structures, such as the supports and the steel girders of the roof construction. These are used as climbing aids and are supplemented by horizontally tensioned nets and wires. On these, the plants entwine themselves over individual sections of the inner courtyard and thus create a natural roof.





Honorable Mention

HSWT Weihenstephan-Triesdorf, Germany

Veronika Ort, Philippine Denies, Rebekka Heeg, Melanie Hofer, Felicia Wasmeier

Connecting Contrasts

In the analysis, three different types of usages come together: green, production and settlements. They do not cross and barely overlap. The concept starts on the margin of functional spaces and offers a solution to the prospective surface pressure caused by space occupancy.

Currently, different limits have a varying adaptation tolerance and therefore differently-sized potential for overlapping uses. The idea is that contrasting usages generate interesting spaces. Since functions overlap, it's possible to connect further usage types unconventionally.

Connecting Contrasts are being joint.

At first the edges are viewed in general sections and then equipped with possible changes in the sense of superimposition. For this, a toolbox is providing elements, which can be applied to the edge-areas. As a longterm development, it has to adapt to current aspects. There are three steps to it: Over the next 10 years, toolbox-elements are being tested and strengthened in five pilot projects. In 20-years time, additional intersections are being initiated in appropriate spots. The superimposition is being developed and individualised.

50 years from now, the development is spreading into the landscape. The concept is carried by the general public in a longterm participation concept. Spatial, it is being embedded in the Neckar-festival, which will establish the "bahn.brechend" festival in the region later on.

On festival grounds between the track area a site of participation is being created in order to celebrate the diversity and connection of the landscape elements. Simultaneously, it is the epicentre for every superimposition and the connecting axis of the region.



PRODUCTIVITY - This layer expands to include all types of productivity, it no longer delegates just agriculture and industry, meaning a pure production of goods, but occupies parts of the settlement, education and recreation landscape. This includes, among others, energy production, EDUCATION and research, agriculture, CREATIVITY, industry, intellectual achievements, production at a broader level and classical trade receive the same value.

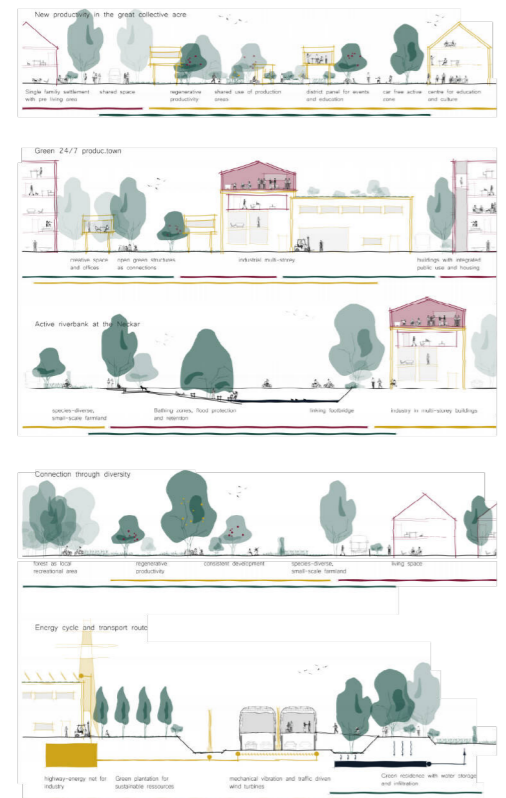
Since these functions overlap, it becomes possible for more areas to be taken into RECREATIONAL USE and to be linked unconventionally to production areas.

HUMAN - The focus lies on the human being as an INDIVIDUAL. The needs regarding everyday life will be adapted to future requirements and circumstances.

RECREATION - Green spaces as RECOVERY SPACES are made ACCESSIBLE for people and are used in a variety of ways. This also includes unconventional areas, such as newly created intermediate areas of fields.

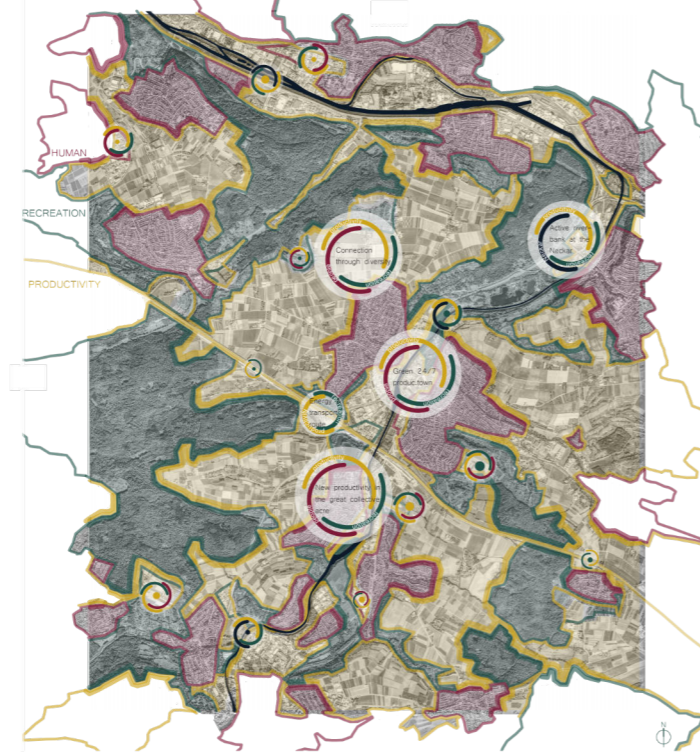
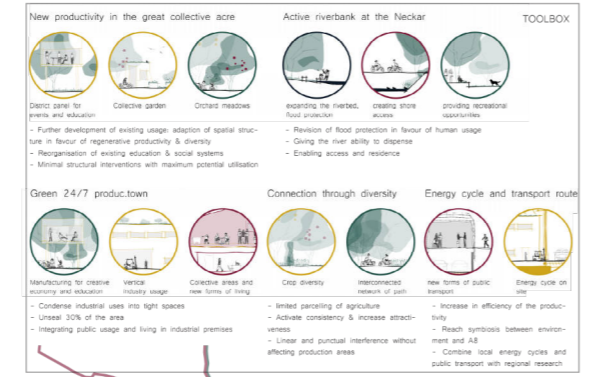
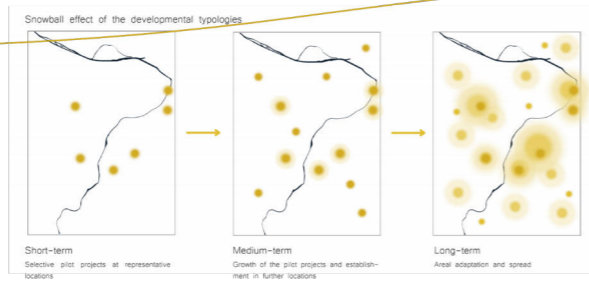
CONNECTING CONTRASTS is based on the overlay of slightly competing usage structures. Already a current trend of land expansion in housing and production areas as to be observed. The concept reinterprets the effect of land consumption. Therefore, existing areas are being reexamined in terms of their USAGE STRUCTURE. The key to the spatial transfer of the concept is the BORDER AREA. Areas, that meet and define the transition of usage borders to monocultured areas, are going to be transition areas rather than toolboxes.

These places, due to their different usage claims, provide spaces with a level of DIVERSITY that makes them lively and interesting. According to the title 'Connecting Contrast' a place, where CONTRASTS meet and IDENTITY emerges, is developed. The vision is to create accessible, multiplexed spaces that initiate an improved livability and an exciting, appealing landscape in the Neckar region. People are enabled to live at the same spot where they unwind and work.

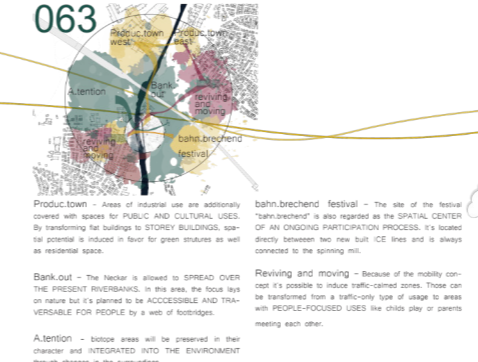
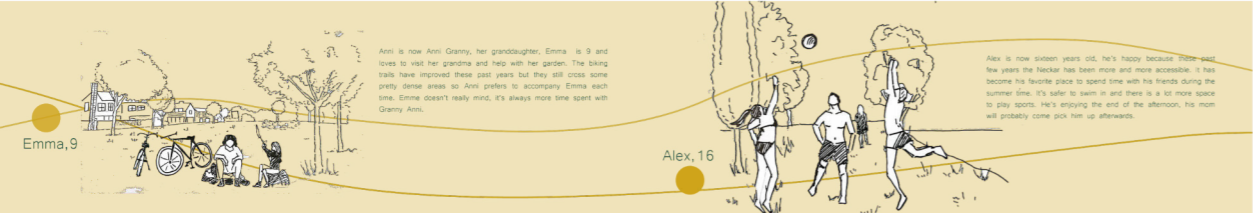


Schematic sections of the development typologies

Based on selected locations, PRINCIPLES OF OVERLAPPING USAGE are explained. These types demonstrate the transformation of areas, which CONNECT the layers meeting each other and enable versatile use. They represent the functions that are superimposed and the way they might look on various projects. The typologies of the sections are INDIVIDUALIZED during the implementation depending on the situation and adapted to the places. An exemplary application of this construction kit is shown by the following design of the existing area.



Concept 1:25.000 | Medium-term level of development

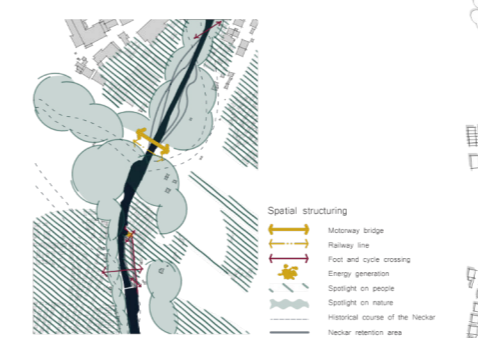


Product.town - Areas of industrial use are occasionally covered with spaces for PUBLIC AND CULTURAL USES. By transforming the buildings to STOREY BUILDINGS, social potential is included in favor for green structures as well as residential spaces.

bahn.brechen festival - The site of the festival "bahn.brechen" is also regarded as the SPATIAL CENTER OF AN ONGOING PARTICIPATION PROCESS. It's located directly between two new built ICE lines and is always connected to the spinning mill.

Bank-OUT - The Neckar is allowed to SPREAD OVER THE PRESENT RIVERBANKS. In this area, the focus lies on nature but it's planned to be ACCESSIBLE AND TRAVERSABLE FOR PEOPLE by a web of footpaths.

A.tention - Isotope areas will be preserved in their character and INTEGRATED INTO THE ENVIRONMENT through changes in the surroundings.



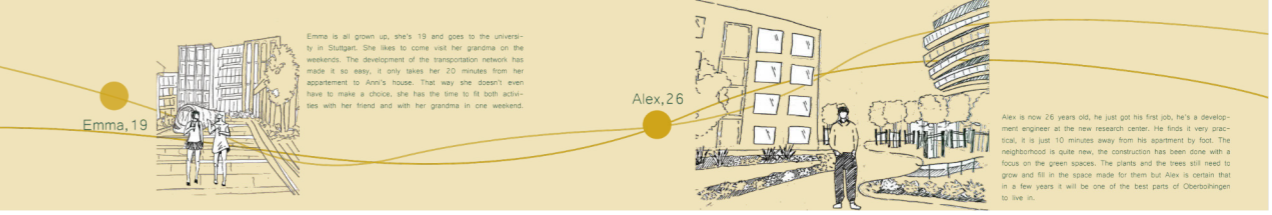
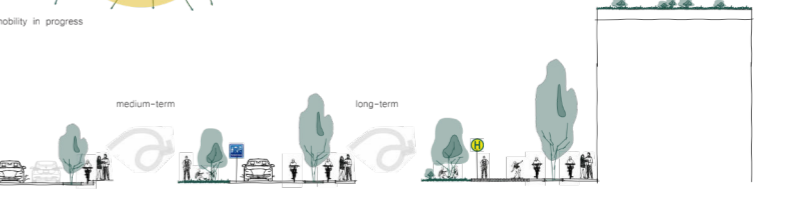
Detailing area 1:2500 | Transfer and individualization

From large into small scale

According to the larger concept, the existing borders of the existing area are transformed by linear, punctual or even more extensive interventions. This way, the concept is followed and the tools shown in the sections can SPREAD INDIVIDUALLY AND GIVE ADAPTED ANSWERS TO THE LOCAL SITUATION.

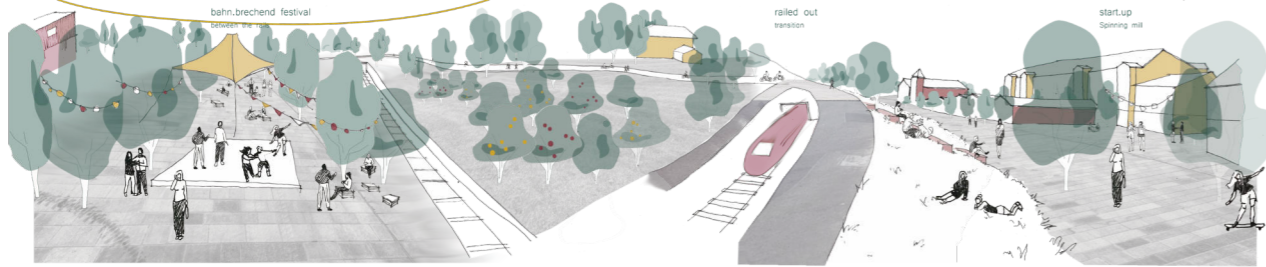
From a traffic-only-use to a zone of social interaction

The structure of the future mobility divides up to three zones, oriented on the DISTANCE TO COVER AND REACT WITH SUITABLE VEHICLES - The shorter the distance, the smaller and more individual the vehicle - in short-distance area the residential area or city centers the general space is EQUALLY SHARED by pedestrians, bicycles and cargo bikes for Transportation. These areas are free of cars and regarded as GREEN SPACES FOR RESIDENCE OR ENCOUNTERS. Thereby, the quality of life and the amount of social interaction is increased. The extended distances from town can be compensated by more complex but public vehicles. As mobility hubs people can change from their short-distance vehicle of choice to car-sharing, taxi or shuttle. In order to manage short-regional distances, the mobility concept uses the already existing infrastructure of highways, but the main focus lies on a lot of people at once instead of focusing on individuals. Trolley-buses, shared cars or trolleybuses are more productive and sustainable alternatives that can reduce the volume of traffic significantly.



063 Connecting Contrasts

Analysis
Concept
Detail
Libero



Punctual overlay of the edge areas

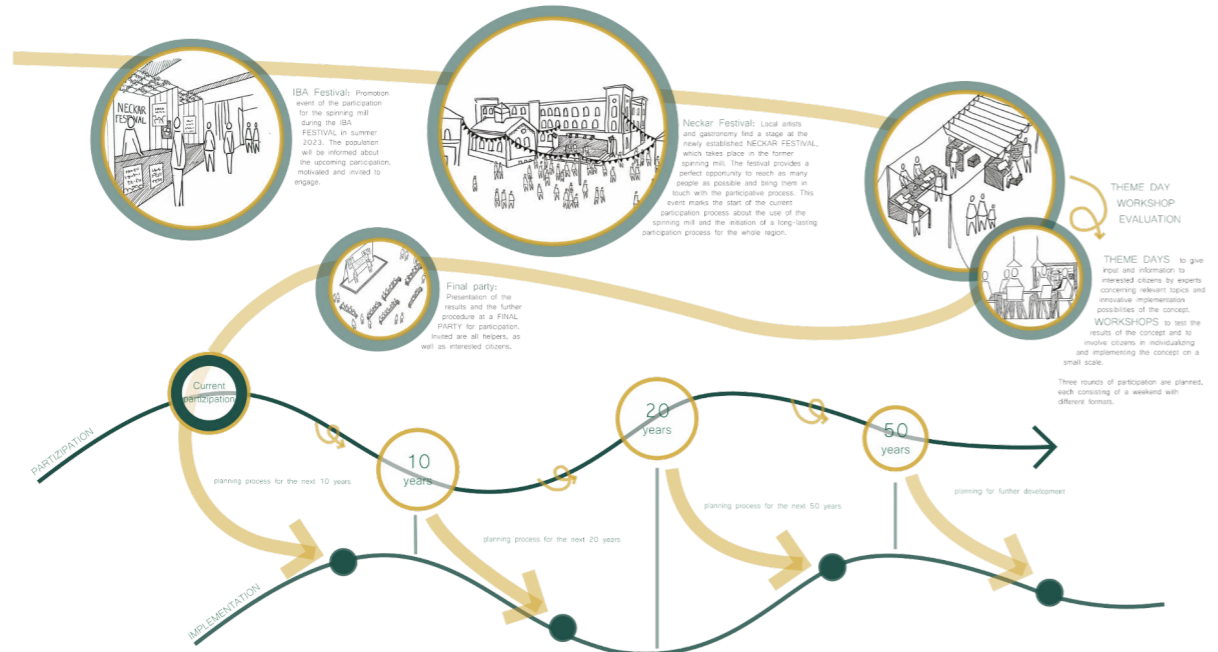


Open-Space-Programme Spinning Mill and Festival

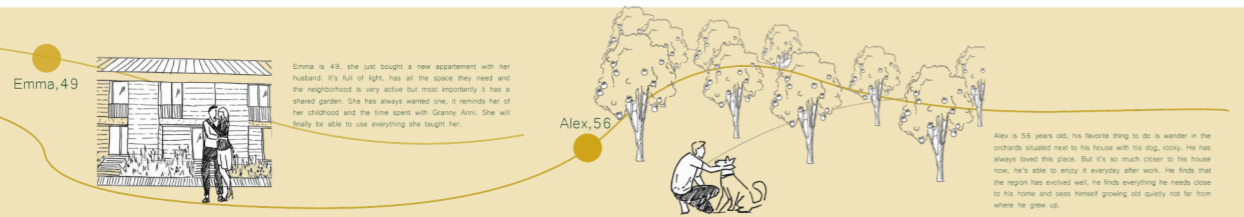
The spinning mill represents the centre of our new productivity - versatile use with different functions generates RESILIENCE AND VARIETY. By conferring different types of professions - just like science, culture and arts - in the nearby built offices, we give them space to FEEL INSPIRED and to benefit from each other. Buildings in the north of housing areas in combination with promenades along Necker and unique green structures connect the new productivity with everyday life and recreational use. In its function as an established festival location with a connection to the BAHN.BRECHENEND festival, the former cotton spinning mill becomes a GUIDELINE for democratic regional development and a hub for long-term participation as a driving force for concept implementation.

Democratic landscape design - in the existing area at the Spinning mill, participation is started on a small scale during the IBA and future participation is spatially located in the bahn.brechenend festival. On a large scale, PARTICIPATION starts with the transfer of the overarching concept to the small scale. The dissemination of the concept with the further location of the cuts and their individual addition to the topics happens through the citizens on site. People recognize potentials on their own doorstep and are encouraged to implement the proposed measures to equivalent places in the surrounding area. The desired participatory output thus lies concretely in two things: Further, SELF-DESIGNED INITIAL POINTS of the concept idea, as well as suggestions for locally appropriate INDIVIDUALIZATION OF THE SCHEMATA. To keep participation going, CONTROL MECHANISMS constantly record how well citizens are still involved in the implementation process and when the next round of participation needs to be launched.

Due to the building site there is no stock to be considered at this place. As a matter of fact the concept is designed for dealing with stock situations. Therefore the place is dealt with a different approach. To take the new function as well as the spatial situation seriously, it is important to connect the site with the context between the rails and with the Spinning Mill. Spatially the concept is centered at the COFFEE whereas in terms of content the importance of the PARTICIPATION is emphasized and spatially located in the 'bahn.brechenend' Festival.



Participatory process at two levels



The following 7 projects reached the final evaluation round. This round was already at a significantly high quality level.

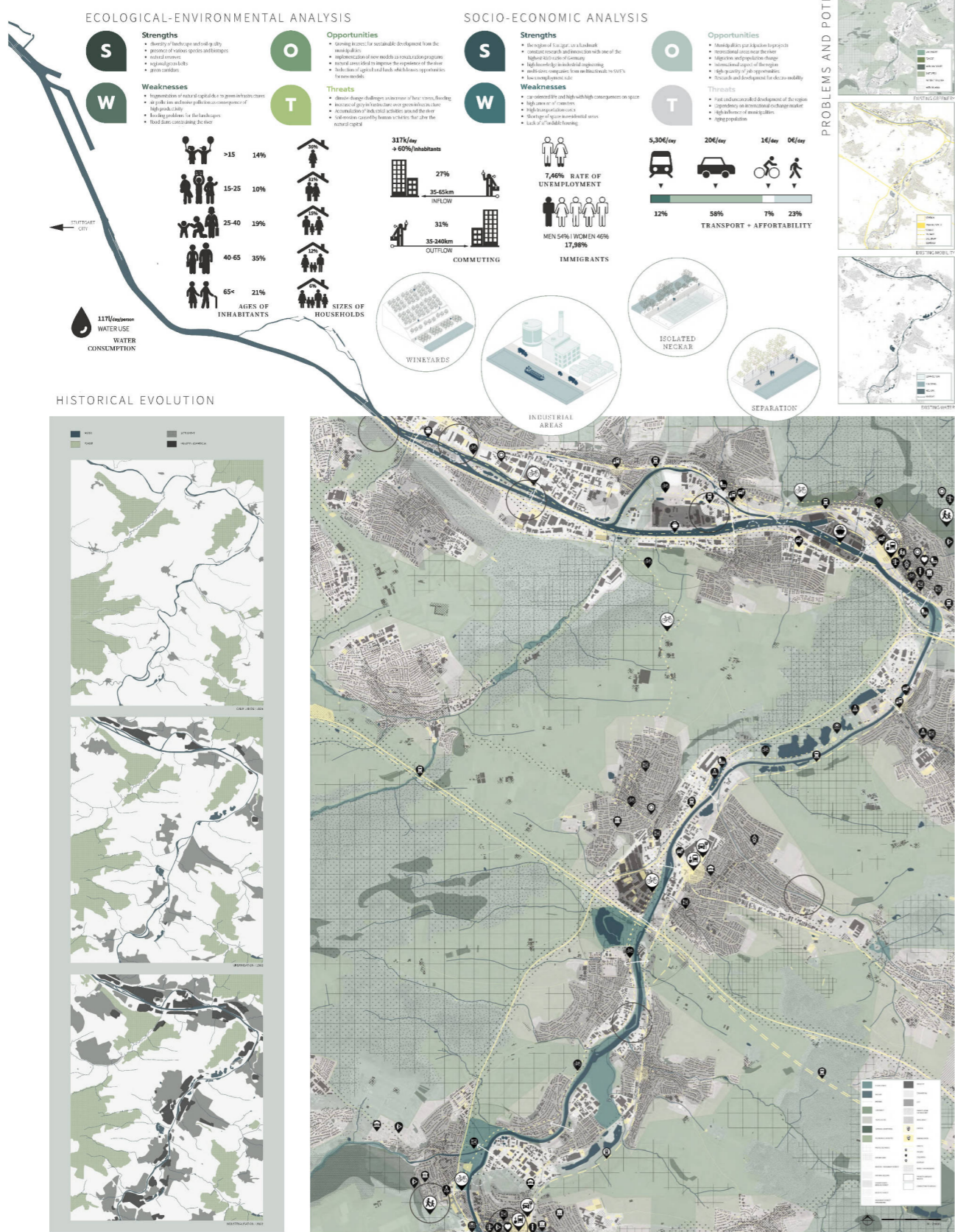
In total, we received 52 valid proposals out of which 25 were considered in the second evaluation round.

We aim at presenting all projects at least digitally and in different formats on site during the IBA'27 Festival and the Landscape Forum Stuttgart Region.

We will make all projects available online!



COEXISTING IN THE NECKAR LANDSCAPE PARK



Final Evaluation Round

La Sapienza University Rome, Italy

Judith Leppert, ERASMUS Student University of Stuttgart, DE

Natacha Englebergt, ERASMUS Student ULB Brussels, BE

Clara Christiaens, ERASMUS Student ULB Brussels, BE

Stitching Together

The stitching concept of the landscape refers to the first form of the industrialization of the Neckar, the textile industry. Industrialization has shaped the Neckar river landscape. Whereas it used to appear as a calm and unified landscape, it is nowadays a fragmented landscape that needs to be stitched together. In addition to the fast industrialization, the inhabitants of the region are facing other barriers such as heavy commuting roads and railways preventing them to connect. The integration's problem is a real challenge the Stuttgart region is facing.

The proposed revitalization process starts with the identification of the centers or potential centers of the fragments. Based on the ability of the textile to unify, new enjoyable ways of commuting are used as the threads that reconnect the fragments by linking their centers.

The stitching paths aim to enhance the red thread of history by reactivating the river, reconnecting historical, cultural, recreational and natural areas and enhancing the river's initial appearance. The creation of a friendly environment for pedestrians and cyclists combined with a developed public transport network aim to incentivize a transition to low mobility. The stitching mobility network aims to reconcile the isolated communities and landscapes.

New functions punctuate the stitching network and requalify the centers. Nature based solutions that are beneficial from an economic, social as well as ecological and environmental point of view are used to stitch together the fragments and revitalize the river landscape. The stitching tools around the new recreational paths help fighting climate change while offering a new unified identity to the landscape and to the people.

The green infrastructure plan includes infiltration areas, carbon forests, floodable parks, renewable energy zones,... Urban beaches and floodable parks ensure the protection of

Final Evaluation Round

La Sapienza University Rome, Italy

Nur Sultan Karaman, Lamiya Garayeva, Haydar Akyol

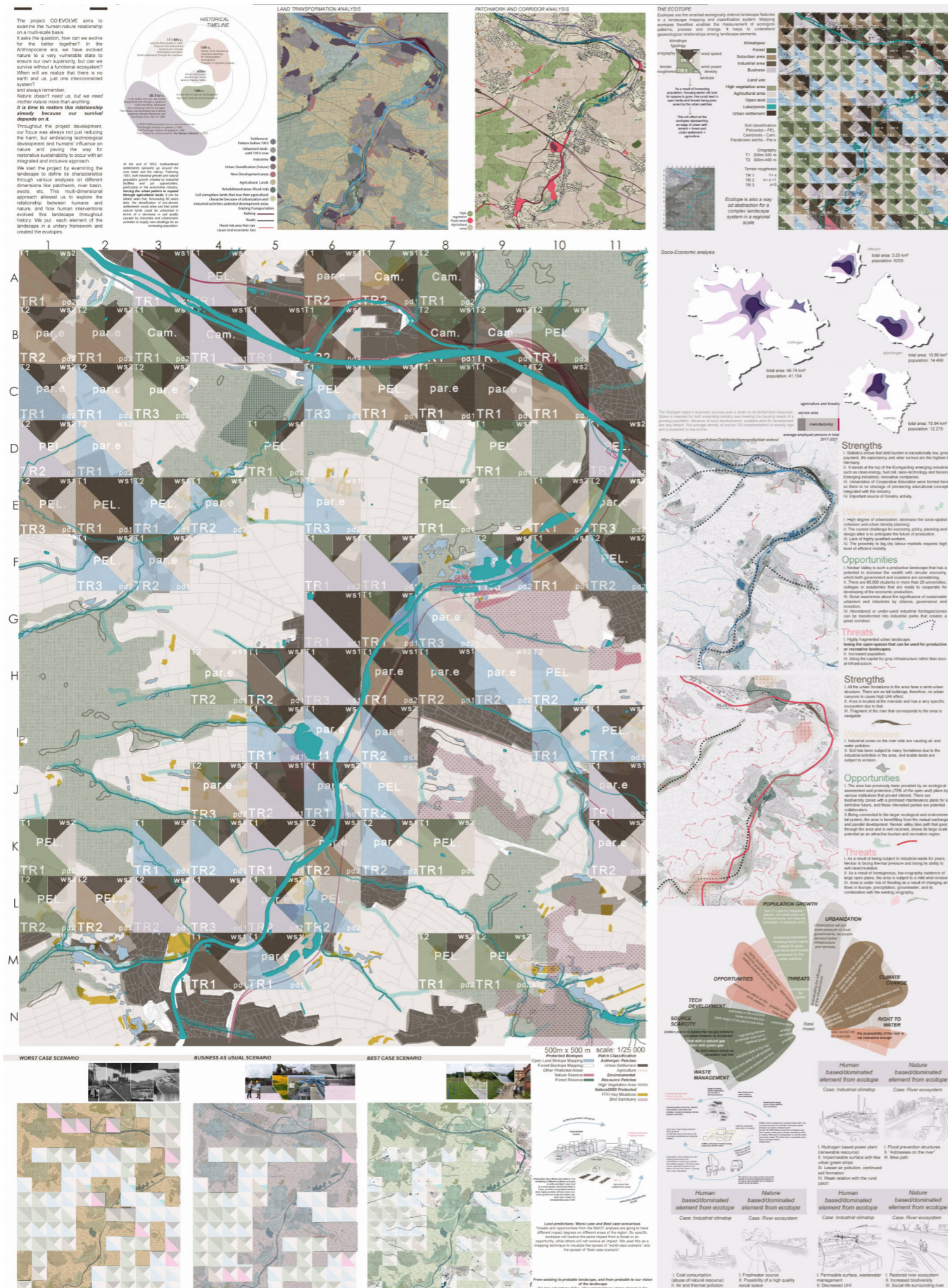
Positive Anthropocene

The project aims to examine the human-nature relationship on a multi-scale basis. It asks the question, how can we evolve for the better together? In the Anthropocene era, we have transformed nature into a very vulnerable state to ensure our own superiority, but can we survive without a functional ecosystem? There is no earth and us, just one interconnected system. And we should always remember that nature doesn't need us, but we need mother nature more than anything.

Throughout the project development, our focus was always on not just reducing the harm, but paving the way for restorative sustainability to occur with an integrated and inclusive approach. We start the project by examining the landscape to define its characteristics through various analyses on different dimensions like patchwork, river basin, swots, etc.

This multi-dimensional approach allowed us to explore the relationship between humans and nature, and how human interventions evolved this landscape throughout history. We put each element of the landscape in a unitary framework and we created the ecotopes. Afterward, we move into different scales of this relationship to create a system where we can see the “missing” aspects of these relationships that prevent them from being circular; mutually beneficial.

From this point, we can compose a site specific NBS (nature-based solutions) to implement in the landscape to generate the “missing aspect”. Additionally, we take advantage of the previously approved initiatives on the landscape and build our vision from a probable landscape with the additional cross-cutting strategies that would support the existing plans for the area





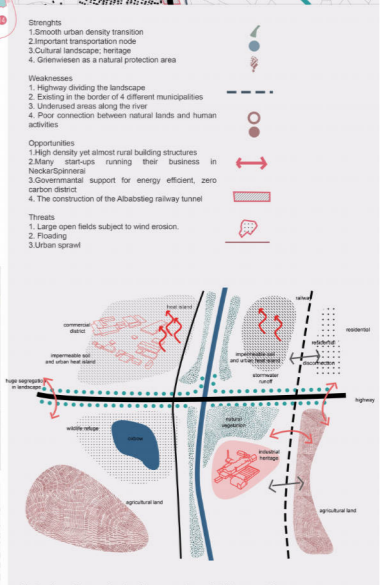
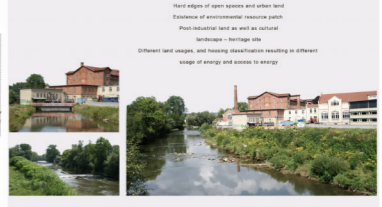
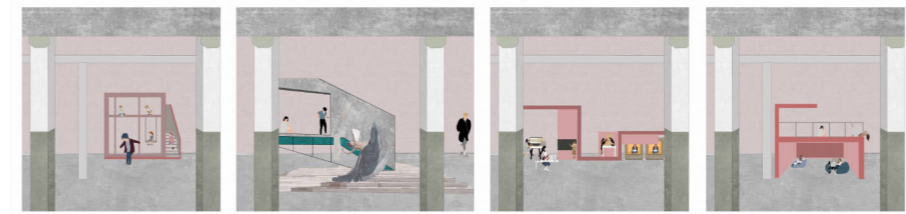
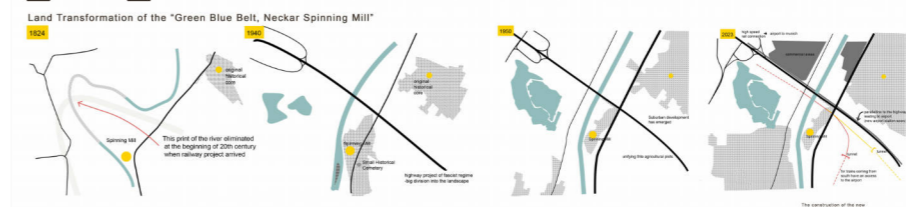
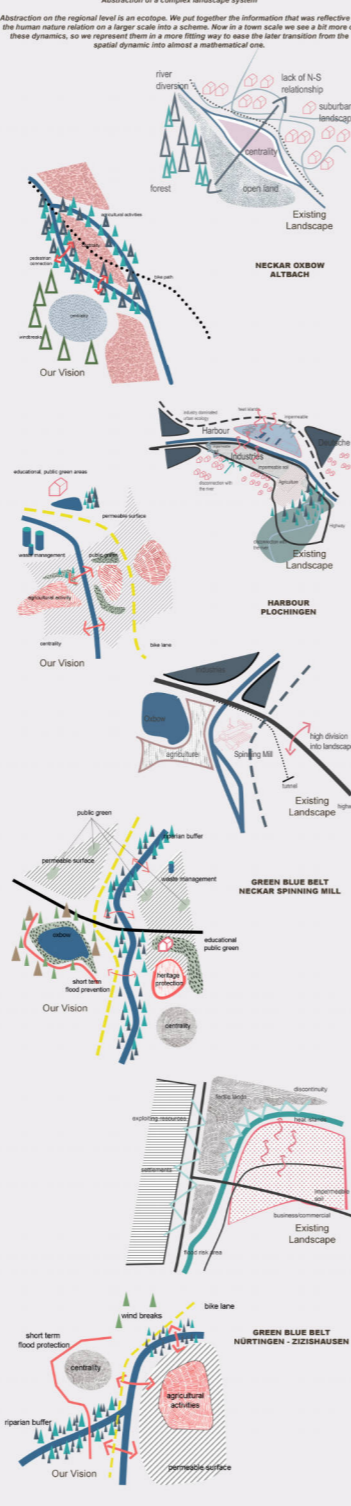
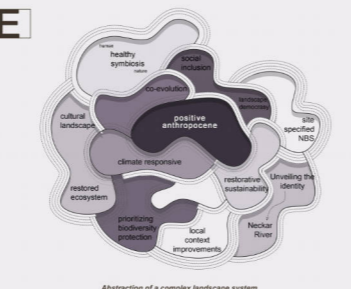
We are taking advantage of strong interest on enhancing the area and its capabilities, and we are building our vision for the area from the "top-down (business as usual)" landscape.

1st we address the threats that does not have a corresponding opportunity. This is how we form our primary objectives.

2nd we address the threats that are all have a single corresponding opportunity and/or require supporting initiatives for prevention. This is how we form our supporting objectives.



- Improve Risk Management**
Reduce pollution
New infrastructure for accessibility for all
Flood protection measurement
Wind erosion initiatives
Water erosion initiatives
Preventing further soil sealing (leftover spaces, urban farming)
Innovative agricultural practices
- Reduce fragmentation (Urban/rural divide)**
Creating a collaborative interface between agricultural and urban sectors
Cultural activity spaces=urban gardens
Bring agricultural practices to urban and industrial lands
Improve productivity=recycling gain
Successful implementation of sustainable mobility practices
Reduce car dependence=reduce environmental impacts
- Increase social inclusivity**
Organizing collaborative projects, like workshops that would require bringing people with different skillsets together.
"Collaborative Urban Farming" program that will be elaborated on the 4th entry is an example to such projects.
New quality public spaces, specifically public spaces around the river side, that is also accessible to everyone
Improved accessibility: establishing a landscape democracy to ensure a cohesive social life in the region
Educational, collaborative public activity spaces, as in botanical gardens, or natural parks
- Heritage conservation initiatives**
Built heritage as in the building of the Neckar spinning mill and its surrounding district. Possible actions for a physical heritage: restoration, renovation, enhancement
Natural heritage as in Oxbow river transforming into a lake
New quality public spaces: Promotion, enhancement, safeguard
Cultural Landscape of the region as the urban form and practices left as marks of big cultural changes in the region. The industrial landscape and the harbor. Actions are: promotion, conservation, enhancement
- Primary Objectives**
New quality public space
Bike lane
Increased pedestrian mobility
Waste management
Innovative agriculture
Collaborative working
Agricultural center
Educational, collaborative public green
Urban agricultural practices
Flood risk prevention
Wind erosion prevention
Permeable surface
Water erosion prevention
- Supporting Objectives**
High-density Urban Settlement
Low-density Urban Settlement
Agricultural Lands
Forest
Water Elements
Cultural landscape
Natural heritage
Built heritage
- Conservation Initiatives**
Cultural landscape
Natural heritage
Built heritage
- Cross-cutting Objectives**



- LEGEND**
Agricultural Land
Forest
Lake
Sensory Garden
Urban Park
Permeable Soil
Semi-intensive Green Roof
Riparian Buffer
Filter Strips
Cultural Heritage Site
Railway
- Solutions guide**
- | | |
|--|----------------------------------|
| Resource recovery | Heritage Conservation |
| AES - Alternative energy systems | R - Restoration |
| RS - Renewable source | P - Promotion |
| Mred - Microclimates to reduce energy demand | E - Enhancement |
| UF - Urban forest | PH - Protection |
| We - Water elements | CM - Collaborative Management |
| St - Street trees | CC - Cultural Center |
| | PRF - Protecting Regional Flora |
| | RF - Re-defined Functions |
| | PG - Productive Garden |
| | A - Accessibility for all |
| Waste management/water rehabilitation | Risk Management |
| VGP - Vegetated grid pavement | GB - Green belt |
| Sigr - Semi-intensive green roof | W - Windbreaks |
| Bsw - Bio swale | UF - Urban forest |
| LUP - Large Urban Parks | RB - Riparian buffer |
| UPG - Urban Pocket Gardens | SI - Soil improvement techniques |
| ST - Street Trees | B - Biochar |
| RB - Riparian Buffer | F - Floodplain |
| | DV - Detention vault |
| | EC - Erosion control |
| Storm water/Rainwater management | Cross-cutting strategies |
| VGP - Vegetated grid pavement | UF - Urban farming |
| Bsw - Bio swale | WmSt - Weekly market |
| FS - Filter Strips | Seasonal festivals |
| DP - Detention Pond | W - Workshops |
| RH - Rainwater Harvesting | |

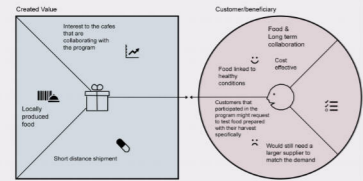
Creating a collaborative interface between agricultural and urban sectors
"Collaborative Urban Farming" project



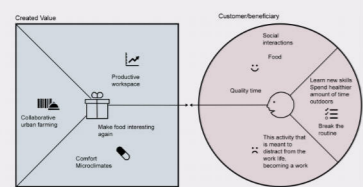
Value Proposition



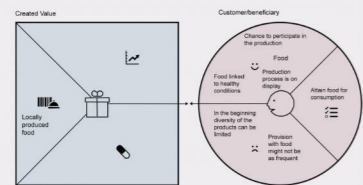
Long term relationship; customer is a cafe/restaurant



Co-creation with the customer; customer is a participant of the Urban farming program



Impersonal relationship; customer is an individual shopping from farmers market



WEEKLY FARMER'S MARKET



ORGANIC FOOD COURTS

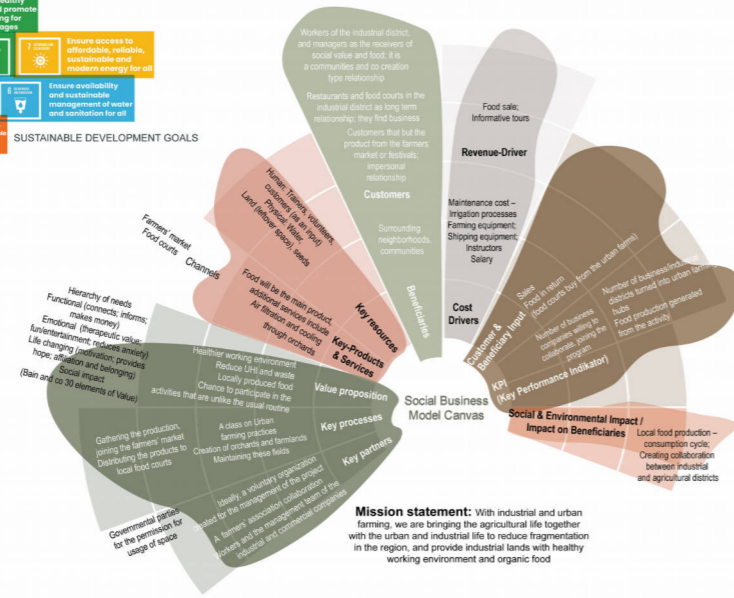
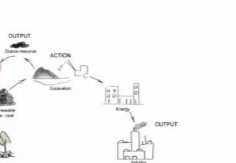
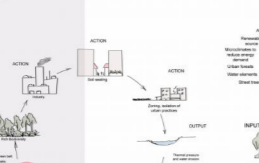
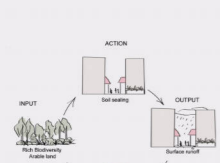


PRODUCT READY FOR HARVEST



SHIPMENT OF THE PRODUCT

SEASONAL AGRICULTURAL FESTIVALS



BUSINESS DISTRICT



USUAL DAY IN THE OFFICE



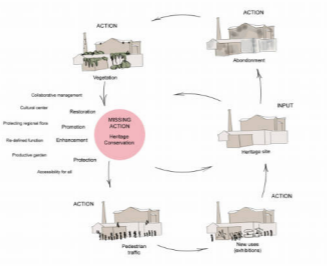
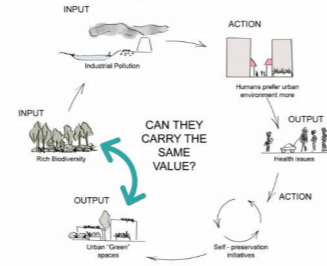
START OF URBAN FARMING WORKSHOPS

REFRESHING BREAK



Design approach

Following the concept "Positive Anthropocene" we developed a framework for the design stage. We draw the relationship of human-nature interactions, and aim to bring them into a closed circle. We identify the specific action required to close the circle, and apply the required, place specific NBS.



077 FUTURE - LAB OUR VISION

RESEARCH MAPPING

Our vision fundamentally questions the structure of the landscape along the Neckar (industry - areas for nature and people). For us, it was important to consistently relocate the productive axes along the Neckar River to the A8 highway, as we see less added value for nature and people here. This opens large areas along the Neckar River that support and make feasible our goals of expansion of renewable energies, expansion of sustainable mobility, creation of large natural areas, creation of connectors and vertical city expansion. This can immensely increase the accessibility of the river and the experience of the entire landscape along the Neckar.

LOCATION

KNEE OF THE NECKAR

CONFLICTS

AIMS

Final Evaluation Round

HSWT Weihenstephan-Triesdorf

Maximilian Kaufmann, Jakob Brause, Moritz Bader, Sebastian Fischer, Florian Benjamin

Future Lab

Our vision fundamentally questions the structure of the landscape along the Neckar (industry - areas for nature and people) in order to minimize the ever-increasing pressure on the Neckar. For us, it was important to relocate the productive axes along the Neckar River that had emerged from the analysis by consistently clearing and consequently claiming land and relocating them to the A8 highway.

The primary goals are to increase the accessibility of the Neckar River, to contain motorized individual traffic, and to encourage vertical expansion of cities. This vision should be viewed as a Real World Experiment for the entire region. In the individual areas, eight subordinate Living Labs (our ideas) are thus created, in which the goals of the vision can be realized in different ways. In the process, the vacated buildings are to be made attractive for future user groups through conversion, which is shown in detail on poster 3 for the Hafen magnifying glass area (our harbour).

The current character and identity of the respective loupe areas should be entirely preserved and further developed - made fit for the future. The entire Real Labor is a lengthy process that must be financially subsidized by higher-level partners. However, the people of the region are to be involved in the project primarily through a participation process tailored to the Living Labs in order to be able to contribute ideas and create acceptance as well as motivation for the restructuring (our activation)

URBAN SPACE EVOLUTION

155,000 people in the district of Esslingen

1930

389,000

1966

480,000

1989

534,000

2022

PRODUCTIVE NECKAR

As our analyses show, the project area around the Neckar River has changed significantly over the past 100 years. The population density has increased extremely and the banks of the Neckar have largely developed into industrial sites. Due to main-road barriers, such as railroad traffic and highway, the area is also still heavily intersected and very small in size. However, due to the many wooded areas, protected landscape areas, and last but not least, the once picturesque Neckar River, the area actually offers so much potential for more than just monotonous industrial sites with residential areas cut through. In addition, the charts still show that more and more young people are moving away and the population in the area is getting older. In our vision, we are addressing all of these problems and trying to make a lasting change in the area in the future.

POPULATION DATA in the district of Esslingen

I. Population evolution

II. Population migration

III. Population projection

IV. Shuttle traffic

ANALYTICAL MAPS

I. Potential industry conversion

II. Public transport and shuttle traffic

III. Nature and water protected areas

IV. Self-sufficiency areas, orchards

V. Physical barriers to accessibility

077 FUTURE - LAB OUR IDEAS

REAL WORLD EXPERIMENT

The basic idea of restructuring only works through consistent clearing and consistent zoning of land. This idea should be considered a Real-World Experiment for the entire region. In the individual areas, eight subordinate living labs are created in which the goals of the vision can be realized in different ways. The areas demonstrate a clearly separate character and identity that must be preserved, reorganized, and developed in the future. The relationship to the historical and existing use must never be lost - conversion instead of demolition is the motto. All Living Labs are to be seen as a lengthy process supported by different sub-goals.

A subordinate mobility concept serves as a supplement to the idea and ensures the feasibility and networking of the companies and the population. Mobility hubs adjacent to urban developments are to manage incoming individual traffic and connect passenger traffic to the new industrial sites and existing cities by means of public transportation and an extensively developed bicycle network. This connection is secured by the Connection Points. In the process, mobilized individual transport will be greatly reduced and completely banned from the cities and the newly emerging industrial locations.

In order to avoid receding the problems of increasing land sealing and the unattractive quality of use of existing industrial sites to the highway, the new industrial sites should develop further in their structure and utility function. Social facilities for workers, green corridors and large-scale recreational areas transform a purely industrial settlement into a sustainable, productive and attractive working neighbourhood.

MOBILITY CONCEPT
 I. Mobility connections in the industrial buildings blocks
 II. Mobility connections in the city buildings blocks

PRODUCTIVE NECKAR
 High pressure to use the Neckar
 High real attraction
 High public traffic
 High land use to industry

PRODUCTIVE HIGHWAY
 Expansion of productive industry
 Creation of green corridors
 Expansion of renewable energy

EXPERIENCEABLE NECKAR

The free-up areas along the Neckar offer the population more access to the Neckar again. The industry has found a new location on the highway and therefore no longer represents a direct disturbance factor for many residential areas. Each Living Lab respects its own character, in which existing structures are preserved. However, the deficits in the Living Labs are being addressed and changed. The natural areas in the project area were previously obstructed by barriers in such a way that people and animals could not easily move from one green space to another. This is also taken into account in our concept. In the case of obstructed natural areas where there is no visible barrier, but the proximity to nature is missing, green structures are used in such a way that the natural areas are connected.

INDUSTRIAL LIVING
 Formerly this district is a residential industrial area where industry used to be located. In the future, the industrial buildings will be converted into residential buildings. The new living spaces will be created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

RESSURECTED INDUSTRY
 The numerous resources used in the conversion will give all kinds of "industrial building blocks". These blocks have a special character in terms of their structure and their location. The new living spaces are created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

PRODUCTIVE GREENWAY
 The highway will change its appearance considerably. The so far multi-lane highway will be converted into a greenway. The greenway will be a multi-functional space for recreation, sports and leisure. The greenway will be a multi-functional space for recreation, sports and leisure. The greenway will be a multi-functional space for recreation, sports and leisure.

ENERGY PARK
 Due to the sustainability of the power plant from 1985 and the associated impact of an area, there is the possibility of creating a high-quality residential area next to the Neckar. The history of the power plant will remain visible through preservation of industrial space and cultural heritage. The new living spaces will be created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

TIMELESS HARBOUR
 Our concept for the future of the harbour is to maintain and use the character of a harbour. Characteristic elements such as stone quays will be preserved in the future. The history of the power plant will remain visible through preservation of industrial space and cultural heritage. The new living spaces will be created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

ART & CULTURE VENUE
 The substructure of the opening will be enhanced by history and industry in the past the area was a place of productivity and for that reason people. In our concept we want to keep the old buildings and the characteristic character of this place. In the future the old buildings are home of culture, art and creative events. The new living spaces will be created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

GREEN CITY
 The new green district of Nürtingen will take on the character of a traditional urban landscape. The new living spaces will be created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

RECREATION JUNGLE
 The existing green belt between Ditzingen and Unterriemling is to be further developed into a leisure and recreation area through a comprehensive concept. The new living spaces will be created in a way that they are suitable for living and working. The result is an attractive residential area with an industrial character right next to the Neckar.

077 FUTURE - LAB OUR HARBOUR

LIVING-LAB PLOCHINGEN

LOCATION
 Neckar
 2027

NECKAR TRANSFORMATION
 1985
 2027

CARGO SHIPPING HARBOUR
 scuffly
 Dockyard
 container
 separated
 transport / transport
 noisy

TIMELESS HARBOUR
 Experience the Neckar
 open GreenSpaces
 green permeable
 multifunctional containers
 buildings reuse
 rough industrial character

The buildings will be transformed into offices and residences and will contain future forms of housing as well as services such as the IT or research sectors. The outdoor facilities with different storage, loading and transport functions retain their identity and are made accessible and experienceable for users. A marketplace (blockade) clamps an event location (Dachwerk), temporary container settlements, several recreational facilities (Clapark, Deuka Tower, DayVia Tower) as well as ecological green areas for nature conservation are being created. Likewise, the Neckar River will be made accessible and experienceable through stepped facades.

The functionality of the mobility concept (connection Mobility Hub - Connection Points) as well as path hierarchies for pedestrians and cyclists are also evident through concrete location. In addition, water calls are conceivable for networking in the navigable areas of the Real-World Experiment.

By linking existing, developed, and newly integrated structures, an attractive mixed-use neighbourhood can be created for existing and future residents and residents of the surrounding communities.

ANALYTICAL MAPS

I. Axis
II. Original Neckar
III. Buildings uses
IV. Space utilisation
V. Space utilisation

STEP I - 2032
 Connections and building functions

STEP II - 2052
 Connections and building functions

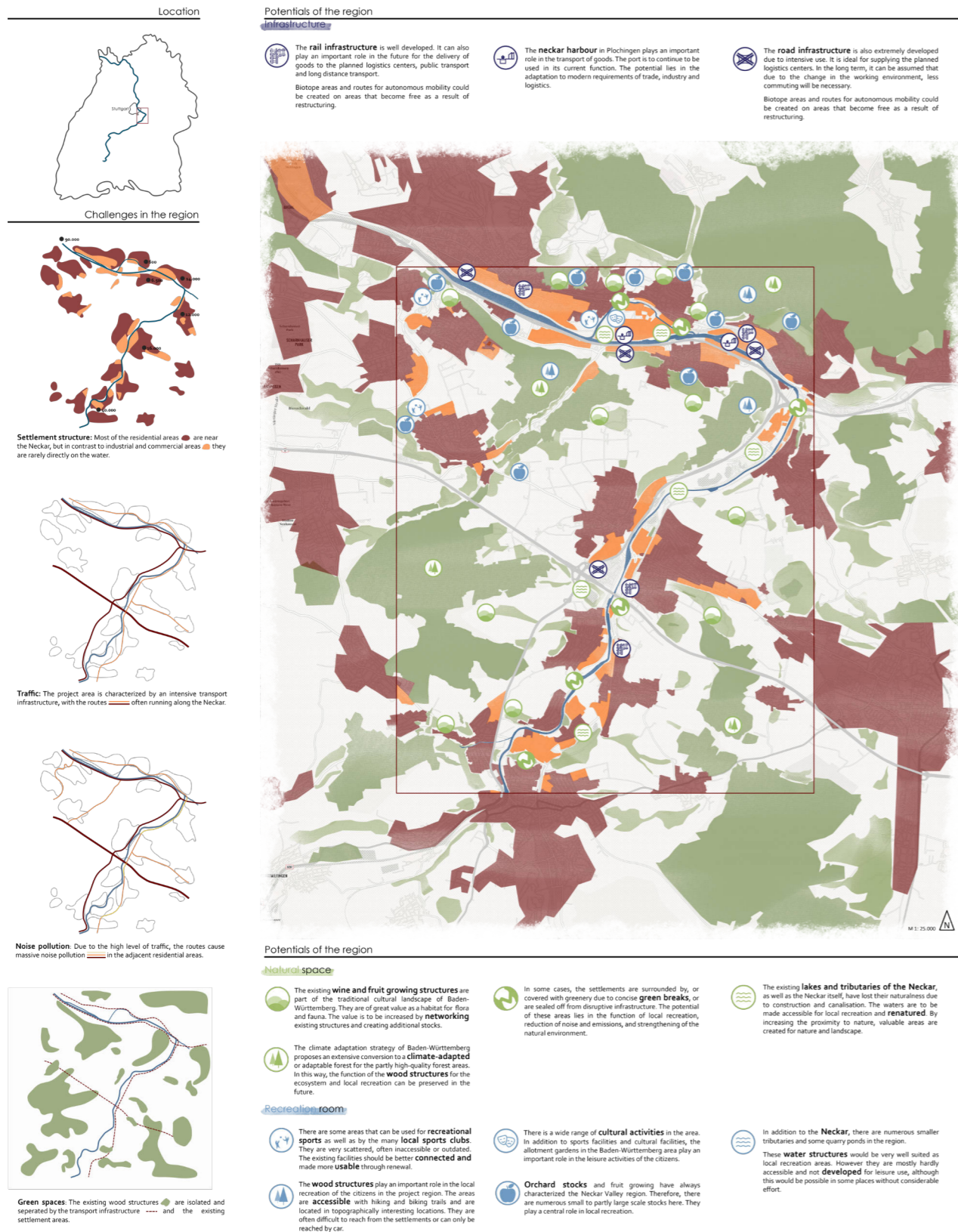
INDUSTRIAL BUILDINGS CONVERSION
 Co-Working Spaces
 Multi-Generational Living

STEP III - 2072

2072

LEGEND

- Main usage working
- Leisure
- Pedestrian / Cycle route
- Bus route
- Boat taxi
- Bike highway
- Multi-generation living
- Mobility connection
- Event location
- Marketplace
- Park
- Skatepark
- Climbing on tanks & other sports
- Outdoor activities
- Water activities
- Connection Point
- Mobility Hub



Final Evaluation Round

HSWT Weihenstephan-Triesdorf

Dominik Zitzmann, Sebastian Heindl, Jakob Neef, Korbinian Nickl, Tobias Pauleit

Productive Mobility

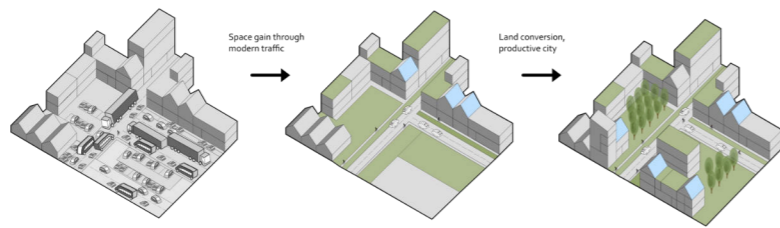
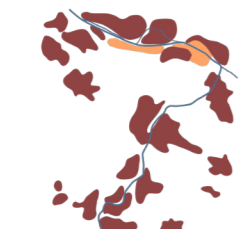
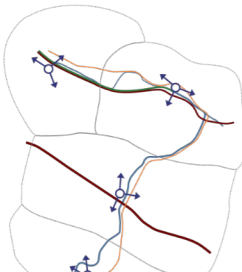
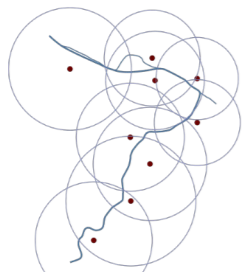
The greater Stuttgart area is characterized by a densely developed road and rail infrastructure. Due to the topography, the traffic roads are often located directly on the Neckar. The concept includes a comprehensive restructuring of traffic. A route is to be built along the Neckar, which will directly connect towns and local recreation areas. They are used for individual traffic and are driven at a lower speed of up to a maximum of 30 km/h. Goods will only be delivered to four planned logistics centers. From here, the goods are distributed autonomously to all consumers with small vehicles, so that heavy traffic does not have to drive to settlements. In the future, traffic will be autonomous, more efficient and space-saving. The street areas can be smaller and a larger part of the parking spaces will be eliminated. A strong gain in area can therefore be assumed.

Industrial and commercial areas are also often located directly on the Neckar.

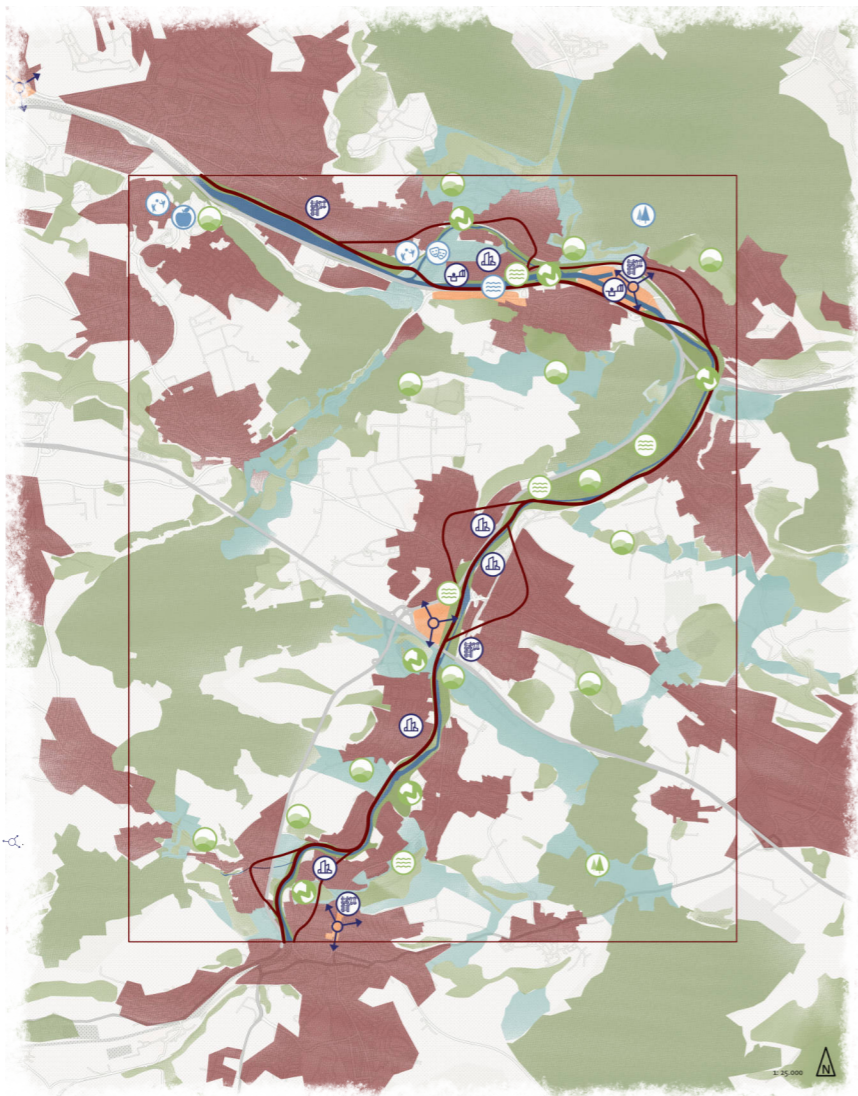
Therefore, heavy industry and disruptive trades should be combined in purely industrial areas as far as possible away from settlements and the course of the river.

Some trades, such as logistics companies, will also no longer be necessary due to the logistics centers. The logistics centers function as central warehouses for all goods. Logistics service provider ensures that the goods are distributed to all consumers.

Concept blocks



The greater Stuttgart area is characterized by industry, commerce and transport. It is burdened like no other in Germany. Due to limited space and difficult topographical terrain, there is an extremely dense infrastructure along the Neckar. Through a restructuring of traffic and also through the relocation and elimination of industrial areas, large areas along the Neckar are free from disruptive use and can be converted for the purposes of nature conservation, local recreation and modern settlement construction in combination with nearby jobs.



Recreation space

In general, when developing local recreation areas, the aim should be better accessibility and experience.

- The great potential of meadow orchards can be increased by linking existing structures with each other in order to achieve continuity for flora and fauna. New areas are to be created in a climate-resilient and natural way.
- For the preservation of existing areas, the owners should be trained in professional maintenance.
- Wood structures have to be rebuilt and adapted to climate change in order to maintain their recreational value. The conversion takes place in state, private and municipal forests under the guidance and supervision of the responsible forest departments.
- In order to increase the potential of the existing bodies of water for local recreation, the quality of stay must be improved in addition to accessibility. In the course of this, riverbank renaturation can take place and the water quality can be improved.
- The project area already has a wide range of leisure and cultural activities. The facilities are often poorly connected. The aim should be good accessibility by bicycle, foot and public transport, as well as the creation of new offers. These should be versatile and as close as possible to residential areas and workplaces.
- The existing sports facilities must be protected and expanded. Where densification takes place and the population increases as a result, the supply must also increase. The main goal is to provide new, high-quality and easily accessible sports areas.

Economic area

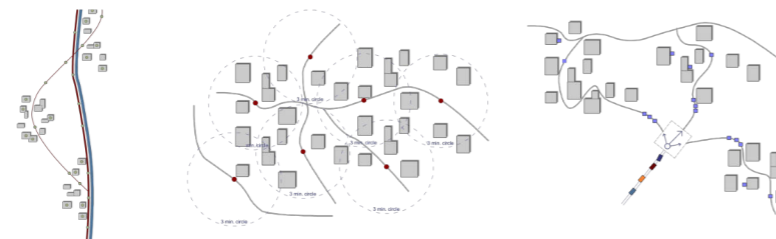
- Four large logistics centers are planned to bundle the delivery of goods by truck and freight train to individual locations. All goods for private individuals, trade, industry, commerce and services are to be delivered to these centers and temporarily stored there. From here, the goods are transported autonomously and efficiently to all consumers as required. They are in a logistically sensible location on the railway and motorway routes.
- A model settlement for modern living and working under the motto "productive city" is to be created in the newly created area. The planned traffic concept is also included in the new design.
- In order to meet the modern requirements as a port, it has to be converted to autonomous goods delivery.
- The well developed road network also has the potential to be used to supply the planned logistics centers in the future. Therefore the transport network must be designed for autonomous traffic so that deliveries can be made more efficiently. As part of the conversion, it is expected that the space requirement will decrease and areas that will be freed up are available for the creation of new green structures.
- The existing railways should also continue to be used for the delivery of goods. In the future, the need for space will also decrease. Open spaces are ideal for creating high-quality biotopes and expanding the bicycle and footpath network.

Natural space

- A good landscape increases the quality of stay, living and leisure time. Its protection must be taken into account in future construction work of any kind.
- The appearance of the landscape will also be improved through the expansion of the existing natural areas.
- Wherever possible, existing green structures should be connected with each other by new green structures. In many places this is not possible because the existing transport infrastructure forms a barrier. If possible, these barriers should be removed.
- The potential of water bodies is to be massively increased. Renaturations improve the function as a habitat. Natural, flat riverbanks increase the water retention effect. The flood plain also offers a valuable

Elements for future mobility

- 1. Mobility route
- 2. Autonomous public transport
- 3. Logistic centers



The main mobility route runs along the Neckar. From here it connects town centers and local recreation areas with each other. It is intended for individual traffic at low

The vehicles of the future public transport will work autonomously and be smaller than conventional buses. Therefore, the need of street and parking areas will be smaller. They are constantly moving on the streets and can therefore be called up at any time within a few minutes.

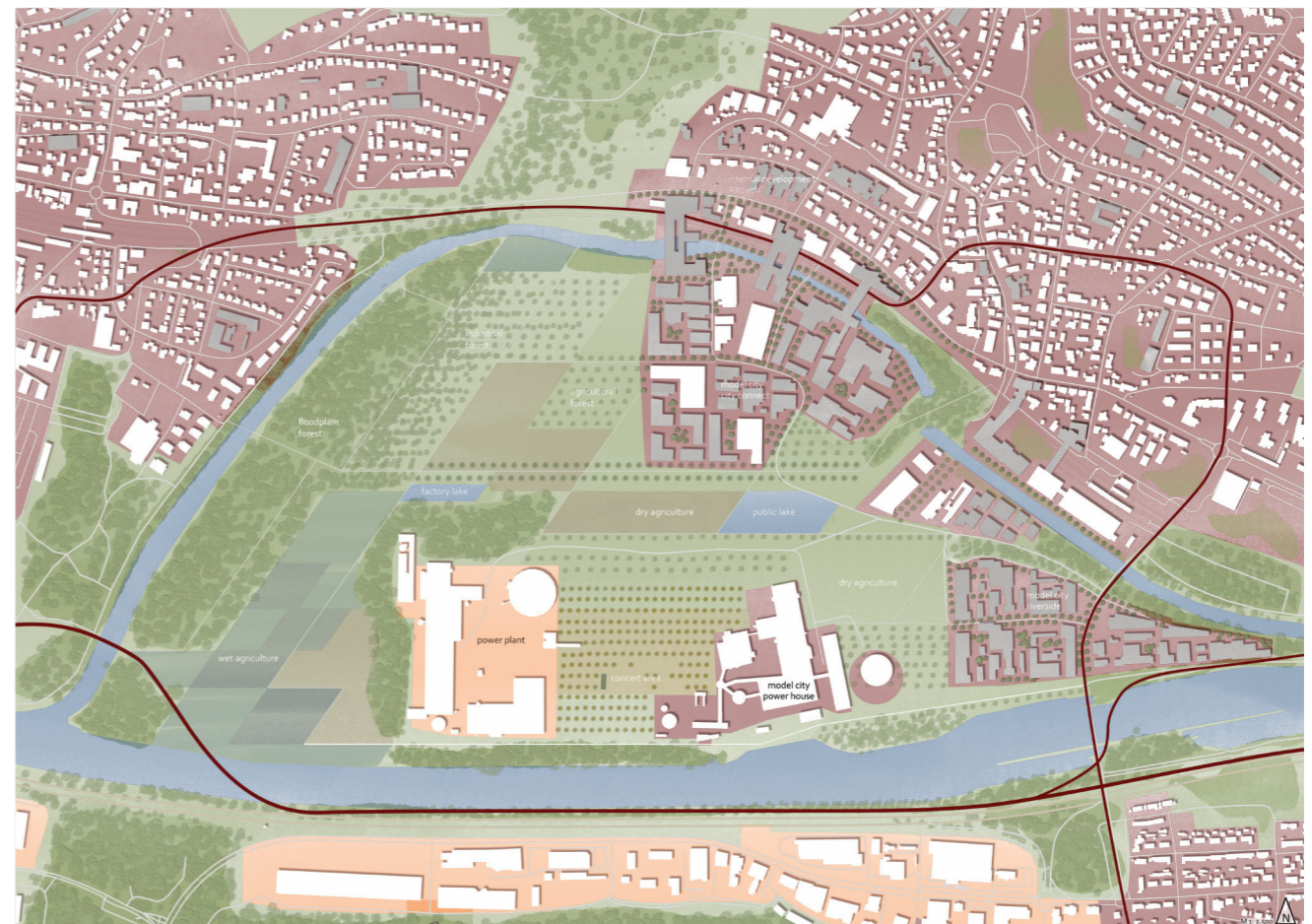
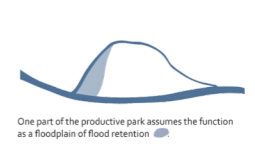
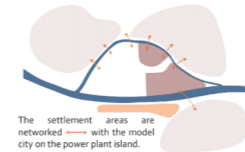
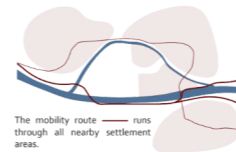
All goods are delivered by heavy traffic to the logistics centers in the project area. From here they are delivered with smaller vehicles to all consumers if required. In this way, streets in settlements remain free of heavy traffic and distribution becomes more efficient at the same time.

Concept

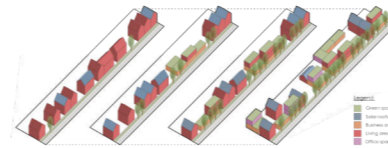
Location



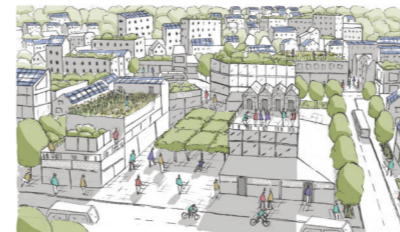
Concept blocks



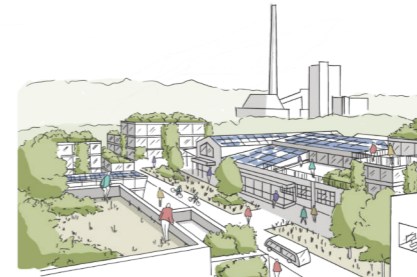
Internal city development



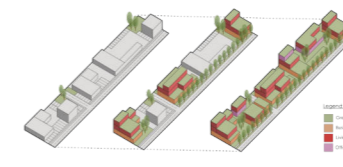
In the existing settlement areas, there will be an expansion towards autonomous public transport. In addition, the core areas will be connected to the mobility route in order to better network them in the future via private transport.



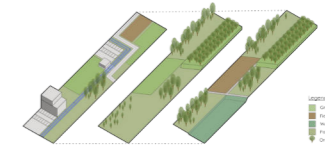
Model city



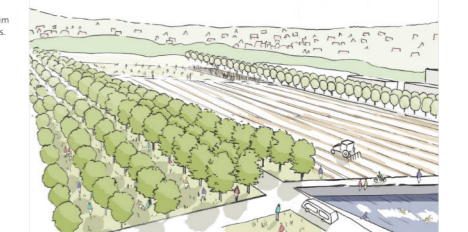
In the newly created area, a model city is to be created under the motto "productive city". The aim is a multifunctional mix of living, working, cultural and leisure activities, as well as green spaces.



Productive park



In addition to being used for food production, the entire park can be used for sports, leisure and local recreation.



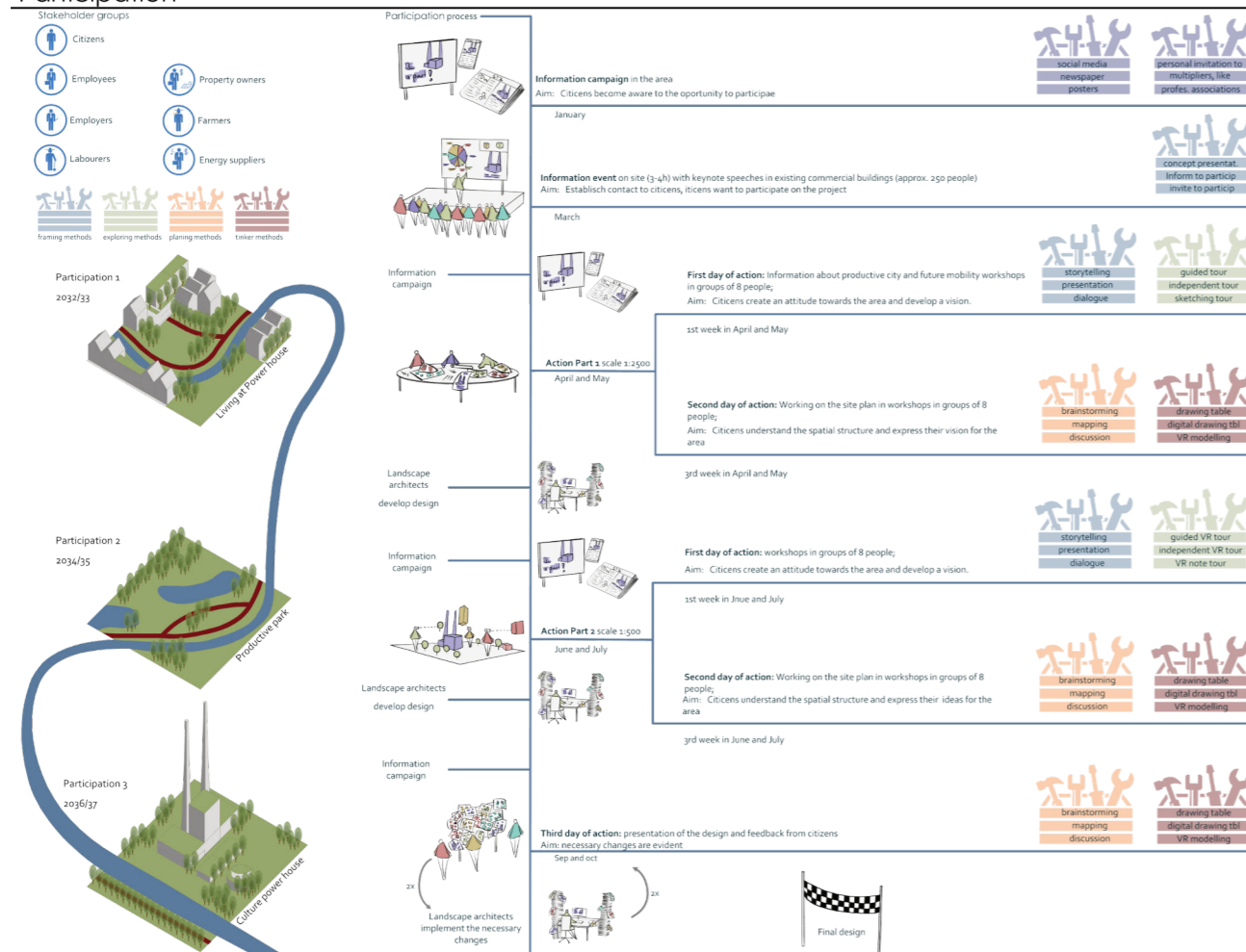


The restructuring of the commercial areas also ensures a large gain in space within towns and along the Neckar.

Within the framework of inner development and densification, a mix of uses is ensured in the settlement areas. Multifunctionality is achieved by locating jobs, (energy) production, housing, leisure activities and local recreation close to each other. The number of commuters is falling, commutes are becoming shorter and the quality of life is improving. Autonomous public transport ensures good and efficient accessibility. The areas gained through the restructuring of traffic and trade are used for densification, greening and buildings for modern living and working.

On the power plant island, a model city will be created in the space gained, which will demonstrate the mixing of the most diverse forms of use, as well as a modern way of living. The model city serves as a model for internal development. The layout of the model city and the inner development of existing settlement areas reflect a modern understanding of a sustainable and productive city

Participation



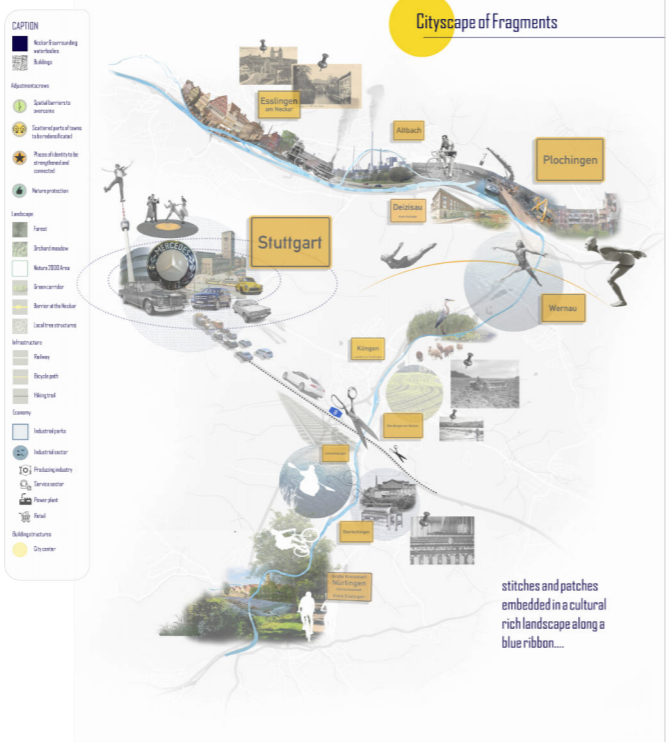
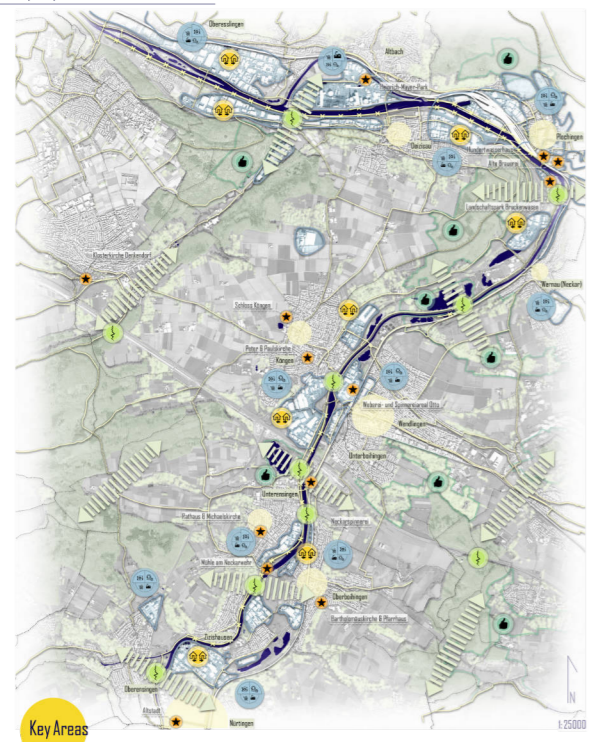


Repowering the Neckar landscape & Producing new symbiotic urbanity

Analysis plan

MORE THAN SUBURBIA
a region tied in symbiotic strings of the Stuttgart region

Included in the rich Neckar valley and with its topography of the Neckar Basin with its rich natural and cultural capital, the Neckar landscape region from Stuttgart to Ludwigsburg makes an unique historical, cultural identity and rich natural capital. Behind the natural capital, economic strength and productivity define through the underlying story of the Neckar landscape. The Region is not a random strip of the Stuttgart Region. Location, its characteristics is a strong identity.



Key Areas

THE PRODUCTIVE LANDSCAPE nature capital and waterstreams of potential

ECONOMIC ROOTS a region tied in symbiotic strings of the Stuttgart region

CITY SYMBIOSIS a strong spatial connection of cities

REPOWER the Region in its natural heritage

CITYSYMBIOSIS

ANALYSIS: Future Impacts

CLIMATE CHANGE: REDUCING POLLUTION

FUTURE CHALLENGES

EFFICIENCY & DENSIFICATION

ENERGY TRANSITION Switch to renewable energy to reduce CO2 emissions

DIGITALISATION & DIVERSIFICATION

NEW BRANCHES OF ECONOMY From traditional industry to knowledge-intensive businesses

LIVING New housing requirements with flexible infrastructure

MOBILITY REVOLUTION Changing infrastructure from car-oriented to people-oriented and electric

...PRODUCING A NEW SUSTAINABLE URBANITY

REPOWER
Landscape
Symbiosis
Transformation
Energy Street
Symbio
Experience
Green
Democratic
Mobility

Final Evaluation Round

Hochschule Geisenheim University

Annika Jeschek, Anahita Hartmann, Kiara Pape, Michael Senck

Future Factory

Our concept of Future Factory – metaphorically referring to the industrial identity of the region - considers the landscape as a complex and dynamic product of diverse processes, that are intertwined like gears in a factory. Central gears that fuel and shape the landscape are not only its ecological capital, but also the community of the urban population, its economic capital, and the cultural heritage.

The Repowering of the Region can only be successful through a dynamic development of all aspects:

Living: For a sustainable development of the city the main aim is to build on the existing, condense and stop the extension of its outlines.

Working: The future of economy will be shaped by new knowledge intensive work fields and a hybrid digitalisation. Working hubs and a network to connect are necessary.

Landscape: Connecting the green is the key to a spatial symbiosis of the region & future conservation of biodiversity.

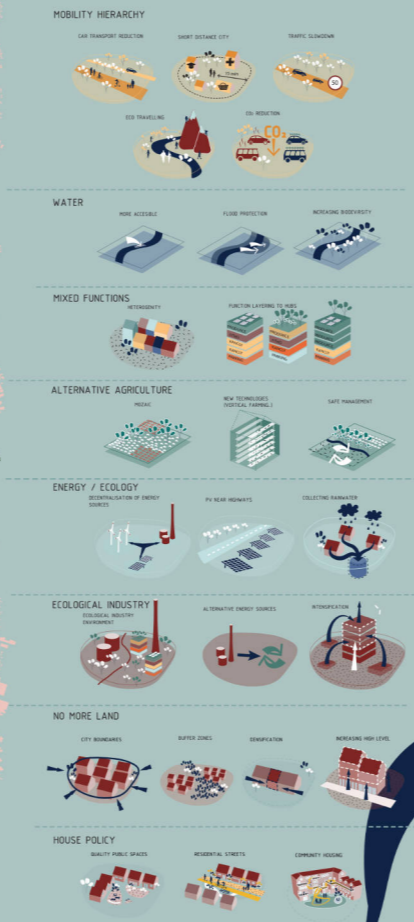
Cultural heritage: Taking responsibility for the cultural and economic heritage of the region while carefully transforming the existing substance.

NECKAR NORTHWEST – a social city in-between nature and industry

As a model for a new sustainable living that intertwines the four gears of Future Factory, the island district of Altbach/ Deizisau is developed as a model district for a sustainable Neckar Region: where living, working and an experience of nature are closely connected - an autonomous city in a region where everything is in close reach.



NECKAR : FACTORY OF LIFE SITE PLAN 1:25000



PRINCIPLES

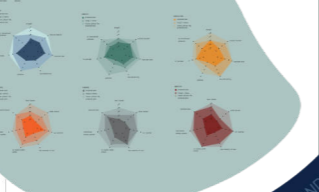
The design presents the river as the source of life, providing the framework for all other design decisions. It is guided by the open infrastructure and the separation of industrial and residential zones. The landscape is intended to be sustainable and able to breathe freely. All the same, it is intended to be a place where people can find their own space to flourish, so it can be absorbed into the landscape and stay off-site. The design is intended to be a place where people can find their own space to flourish, so it can be absorbed into the landscape and stay off-site.

LEGEND

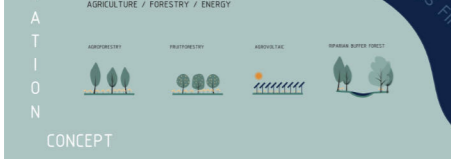
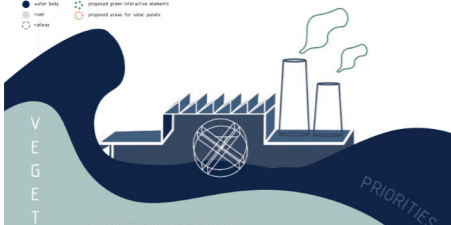
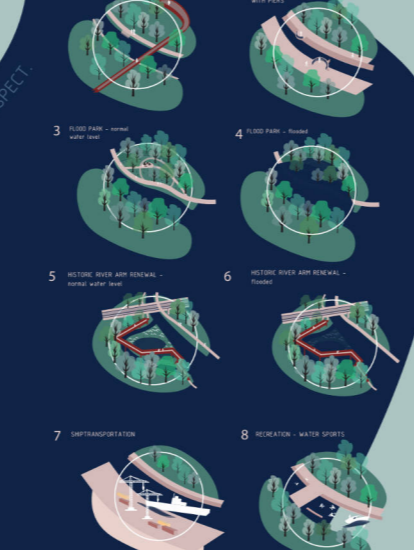
- existing industry
- existing forest
- gardens
- proposed buildings
- proposed technical background
- proposed permeable paved surface
- proposed pedestrian paths
- proposed footbridge above ground level
- car road
- proposed cycling path

Water is driving force of all nature.
Leonardo da Vinci

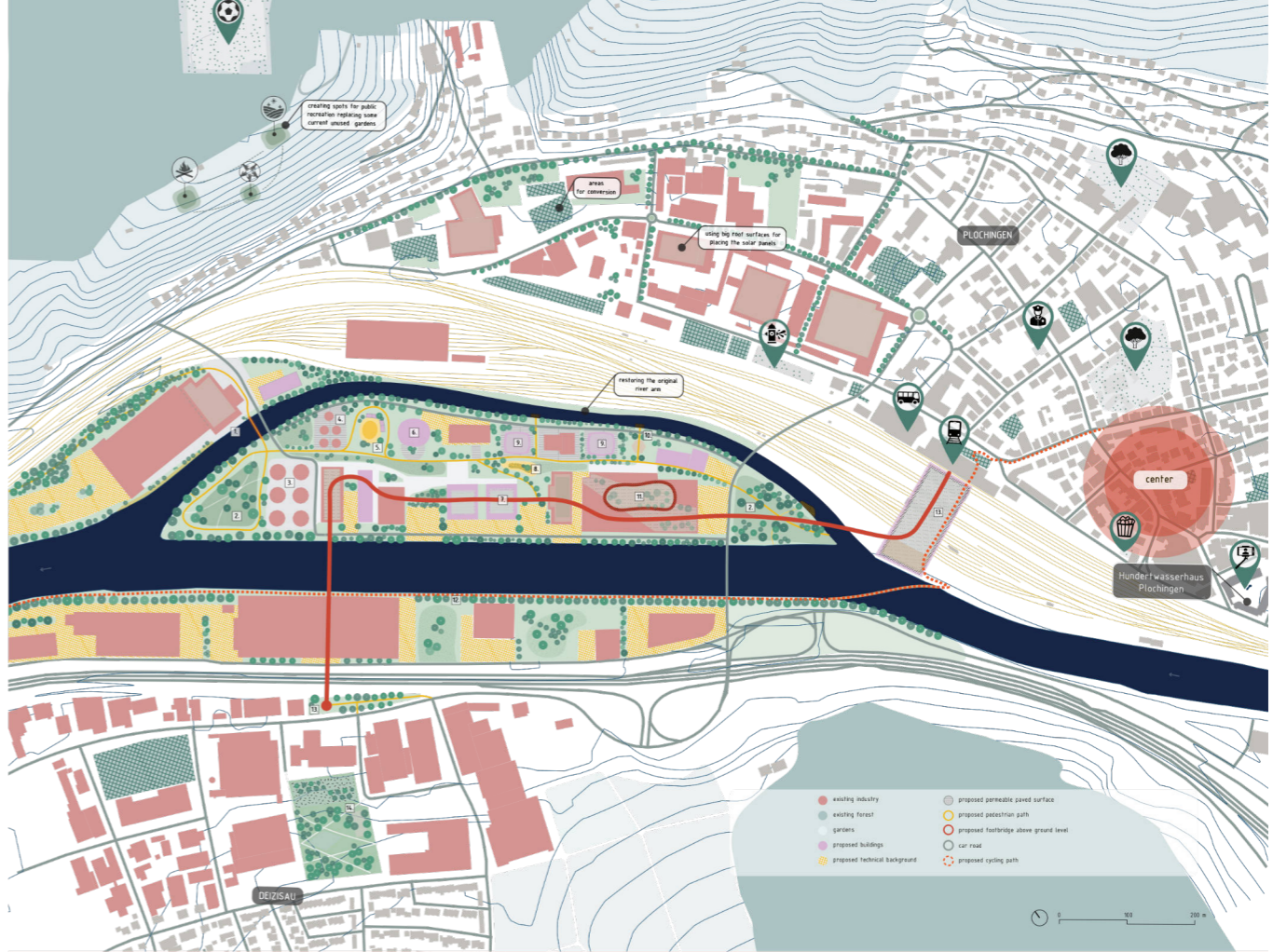
SPIDER SCHEMES



RIVER + LIFE SCHEMES

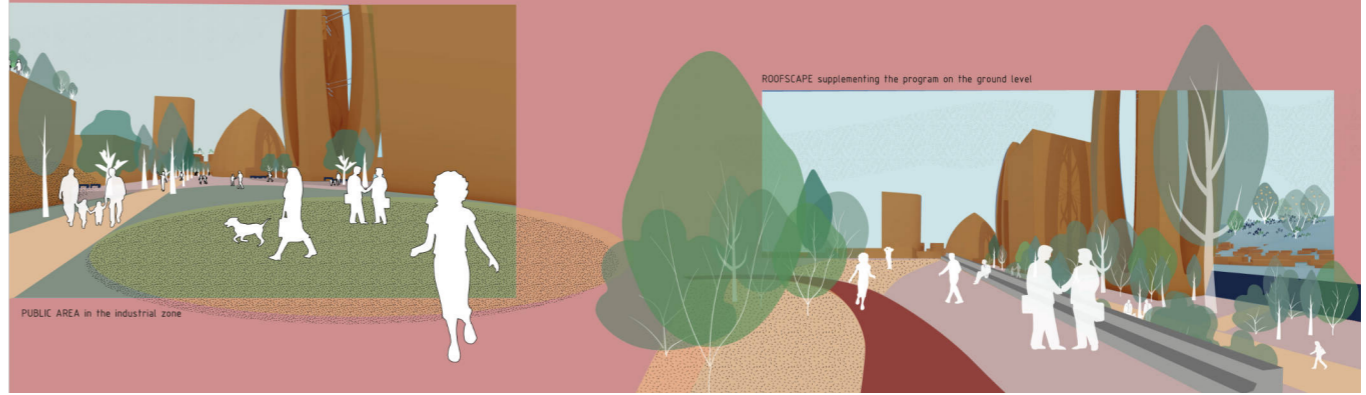


Neckar : Factory of life



- RESTORED BANK OF THE RIVER NECKAR offers many opportunities, such as water sports. Part of the existing industrial building is transformed into Water Sports Centre.
- Since the use of industry space is made more efficient by moving part of the production to the upper floors, there is created space for POCKET PARKS which cool down the warm microclimate.
- Part of the industry is left for current use, with the buildings being ECOLOGISED by the use of new technologies. The industry is served by an access road for cars separated from the pedestrian route.
- Cylindrical fuel tanks are transformed into a CLIMBING CENTER and EDUCATIONAL CENTERS for the public.
- THE MEET POINT serves as a small square for the public, where it is possible to have a coffee or watch a movie in the summer cinema while walking around the island.
- Proposed lines with porous roof serves as the vertical FOOD PRODUCTION HUB and is a showcase of the modern trends in farming.
- The proposed RED FOOTBRIDGE links the entire area and creates connection between all of the offered road programs.
- Freely accessible area for kids as an ENTERTAINMENT ZONE.
- MULTIFLOOR BUILDINGS with narrow platform are connecting various purposes such as parking infrastructure, open office space, insect farming etc.
- RIVERSIDE ACCESS with little paths.
- The important part of our design is creating a MULTIFUNCTIONAL ROOFSCAPE that could supplement the already raised ground level area. One of the most significant elements is a running track.
- The embankment of proposed footbridge CONNECTING PLOCHINGEN AND DEISAU.
- Farming land is recreated as PUBLIC GREEN SPACE offering a picnic area or a place for community farming.

Industrialized areas have always been evasive of wide public access, but perhaps we reached a point where we should sacrifice less space for concrete or asphalt surfaces in favor of widely accessible and enjoyable landscape. Our design takes this as the priority, along with underlining the importance of industry itself through letting people find themselves surrounded by it - and giving them opportunity to soak in the atmosphere of these areas.



Group
169 Riverscape Renaissance
The story of a disconnected landscape, Analysis

Introducing the challenges

The Neckar valley, in the south-western German state of Baden-Württemberg, has been lively since the beginning of time, with the river Neckar providing water and enabling life. The river and its water system have connected the forests, the meadows, and the people. However, in recent years, the river, the landscape, and its inhabitants have become **disconnected**. Nowadays, the valley landscape seems divided due to the development of the industry and towns, which created **harsh borders and impermeable barriers**.

Apart from sprawling settlements, the valley is threatened by climate change, erosion, water pollution, reduced water buffer capacity and decreasing biodiversity. Furthermore, as of now the area is still dependent on **fossil fuels**, only having a few hydro-power stations and a small amount of solar power stations. For the landscape to become a fully functioning system again, the natural as well as the main issue need to be **reconnected** and principles of **sustainability and self-sufficiency** should be applied.

Fragmentation of green areas

The gaps separating the key green corridors are still significant despite efforts to reduce them. The two main spatial factors that divide the green corridors to the areas are transport, infrastructure, settlements and industry along the river.

Flood prone in urban areas

Flooding will be a bigger issue in the future due to frequent downpours. Small floods will occur every 10 years and large floods every 50 years on average. This could have catastrophic consequences unless addressed accordingly.

Groundwater availability and pollution in agricultural land

The groundwater supply for agricultural land in the area is either low or fluctuating, which could mean water shortage in the future. In certain parts agriculture overlaps with water protection areas, which could cause water pollution.

Water and wind erosion on arable land

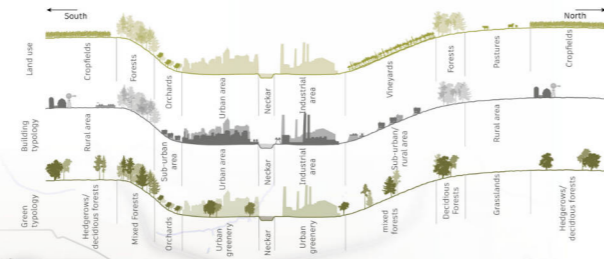
Erosion is mostly present on large fields and slopes. Water and wind erosion will become more problematic in the future, due to severe weather conditions.

Disconnection between land and river

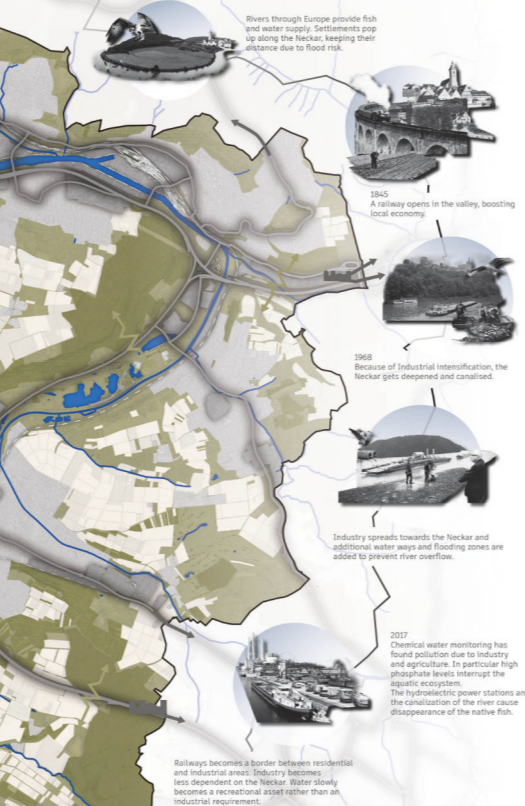
The landscape around the river is largely visually detached from the river. The reason for this fragmentation is often a major road or railway but sometimes also a wide strip of trees.

Typical spatial typology

These sections on the right side represent typical spatial typology of the Neckar valley. They demonstrate that the closer to the river we get, the denser the settlements are. Agricultural and green belts are therefore mostly located on the slopes and hillsides.



Development over time



Rivers through Europe provide fish and water supply. Settlements pop up along the Neckar, keeping their distance due to flood risk.

1845 A railway opens in the valley, boosting local economy.

1968 Because of industrial intensification, the Neckar gets deepened and canalized.

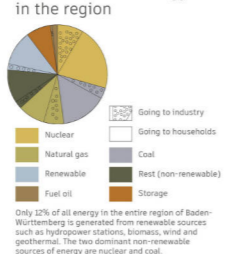
Industry spreads towards the Neckar and additional water ways and flooding zones are added to prevent river overflows.

2017 Chemical water monitoring has found pollution due to industry and agriculture. In particular high phosphate levels interrupt the aquatic ecosystem. The hydroelectric power stations and the canalization of the river cause disappearance of the native fish.

Railways becomes a barrier between residential and industrial areas. Industry becomes less dependent on the Neckar. Water slowly becomes a recreational asset rather than an industrial requirement.



Non-renewable energy in the region



Challenges concluded

- Find renewable alternatives for energy production.
- Efficiently utilize potential for renewable energy production.
- Implement measures to allow migration of fish.
- Minimize soil erosion to prevent nutrient run off and water pollution.
- Improve green infrastructure.
- Create space for river to overflow.
- Care for the Neckar-tributaries.
- Make Neckar river a prominent feature of the landscape.
- Improve water quality in the river.

Final Evaluation Round

Van Hall Larenstein University Velp and Breda University of Applied Sciences, The Netherlands and Agricultural University of Nitra, Slovakia

Souraya van Helmond, Hylke Vonk, Margaréta Baňasová, Tara Murk, Dean Lahaije, Jenna van Gemert, Iki van Koningsbrugge,

Riverscape Renaissance

The goal of our design is to achieve a gradual revival of the river landscape through thoughtful interventions across three fields: Energy, Land Management and most importantly, Water System. It is water that ties the whole valley together, therefore regenerating the Neckar and its tributaries means transforming the riverscape as a whole.

First, we strive to create more space for fluctuating water levels, which will provide new landscapes along the Neckar for socializing, production and for biodiversity. The areas at the river will eventually become multi-functional, supplying space for living, working, leisure and wildlife. Our next step is to rejuvenate and expand the creeks and thus form a strong green-blue infrastructure across the urban and agricultural areas.

We also suggest sustainable water management practices to improve the quality of aquatic habitats, which will make the river safe to swim and to fish in. To tackle the energy problem, we propose changes in infrastructure and urban planning to reduce energy consumption, as well as several options for local renewable energy sources, mainly agrovoltatics and biomass production making the region largely self-sufficient.

Our design also proposes revised land management that combines diverse agricultural practices and extensive green corridors to address soil degradation, uneven rainfall distribution and growing demand for food. The solutions in our design will make the riverscape productive, accessible and attractive, while also restoring the Neckar River to its rightful place as the lead aspect of the landscape.

169 Riverscape Renaissance

Bringing the Neckar riverscape together, Master plan

The revival

We based our design around three pillars: **Energy, Land management and most importantly, Water system.** Focusing on these three aspects will accomplish a gradual **revival of the Riverscape.**

Within Energy, we are looking at satisfying the growing local demand **without adverse effect on the environment.** Generating renewable energy will be the key to achieving a **productive landscape.** Proposed sources of energy include solar power, hydropower and biomass.

The most extensive pillar is Land Management. It includes agriculture, where we want to **boost food production, improve soil quality and enhance biodiversity.** Hand in hand with agriculture comes ecology as it involves restoring and improving existing habitats, but also creating new ones. Land Management also includes **urban development and infrastructure,** where we are striving for a more convenient, people-friendly design.

The most significant pillar is the Water System, since water is involved in **every other aspect of the design.** Our approach revolves around improving water quality, creating **space for the river** and making water more **accessible** to both wildlife and people.

People have **lost touch with water** and the land, therefore our goal is to create a landscape that people will care about once again. We want to achieve this through **restoring connections and creating multifunctional spaces.** Restoring connections involves creating physical links such as green and blue infrastructure, but also breaking down barriers. Wherever direct access is not possible, we are attempting for a **visual connection** and for a feeling of **undivided space.**

A truly connected space is multifunctional as it brings together numerous activities and **naturally draws in visitors** - both humans and wildlife. This is manifested uphill in the farmlands where food and energy production, biodiversity and recreation come hand in hand. The same goes for towns in the valley, because they **bring together** living and working environment, space for leisure as well as valuable habitats.

Water, the driver of rebirth

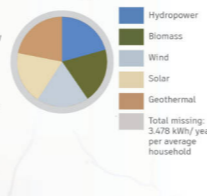
The story of water starts **uphill** under the trees, where springs emerge to the surface and begin their journey through the **Riverscape.** First they **flow** over the farmlands where water is an essential ingredient for a **successful harvest.** After leaving the fields behind, springs enter the urban landscape, where they provide a **cool refuge from the busy towns** and bring nature into people's everyday lives.

They are now just a small distance away from their destination. The River Neckar, where water is free to expand, move around and is the focal point, the **backbone of the region.**

Through revitalizing the tributaries and the river itself, we shall bring about a **Renaissance of the whole Riverscape,** because the water system connects everything from the highlands to the wetlands and creates an amazing landscape along the way for us to **experience and enjoy.**

Energy in the future

- New industry
- Biomass
- Agrovoltaics
- Multi-use
- Hydropower station



Solutions for disconnection between land and river

- Relocate infrastructure and change priorities to give space to new functions like city beaches.
- Move infrastructure into tunnels. Creating space for leisure and people on ground level.
- Move infrastructure slightly down for visual connections with the water.
- Turn the big infrastructure into bicycle paths and use the remaining space for nature.
- Lift infrastructure up to create more space for flooding areas.
- Thinning down trees to restore a visual connection.
- Create city beaches instead of trees for new flood zones.
- Move industry to give more space to nature and recreation.

- Intensive agriculture
- Extensive agriculture
- Agroforestry
- Green bufferzones
- Urban living at the creeks
- Living in and along wetlands
- Mixed-use urban area
- Urban beaches
- Wetlands
- Local infrastructure (like bike lanes)
- River and creeks
- Green gateways
- Urban environment
- Existing forest
- Green corridors

Solutions

- Industry is scaled down and powered by renewable energy only. It no longer crosses the river.
- Local biomass stations provide heating and hot water for whole neighborhoods.
- Agrovoltaics provide locally sourced solar energy combined with crop production.
- Agroforestry combines a hybrid green infrastructure with a productive landscape.
- Compact living saves valuable outdoor areas for more public space.
- Variations in landscape create resilient habitats and exciting scenery.
- Adding bike infrastructure gives more transport options and battles car dependency.
- Urban multi-use areas combine living, working and leisure in one landscape.
- Resilient creek structure forms ecological corridors and cools down urban areas.
- Gateways from the creeks uphill to urban areas create connection with the Neckar and its valley.
- Hydropower stations generate renewable energy. Flexibility in use changes fish habitats and winter energy production.
- Fish bypasses allow fish migration, even though a hydropower plant is operating in the same stream.
- A place for leisure at the waterfront and wetlands to enjoy the surrounding nature.
- Wetlands create space for diverse fauna and flora, improve water quality and form attractive landscapes.
- Properly filtered sewage systems to improve water quality in the river.
- Rainwater retention ponds for irrigation to overcome dry spells.

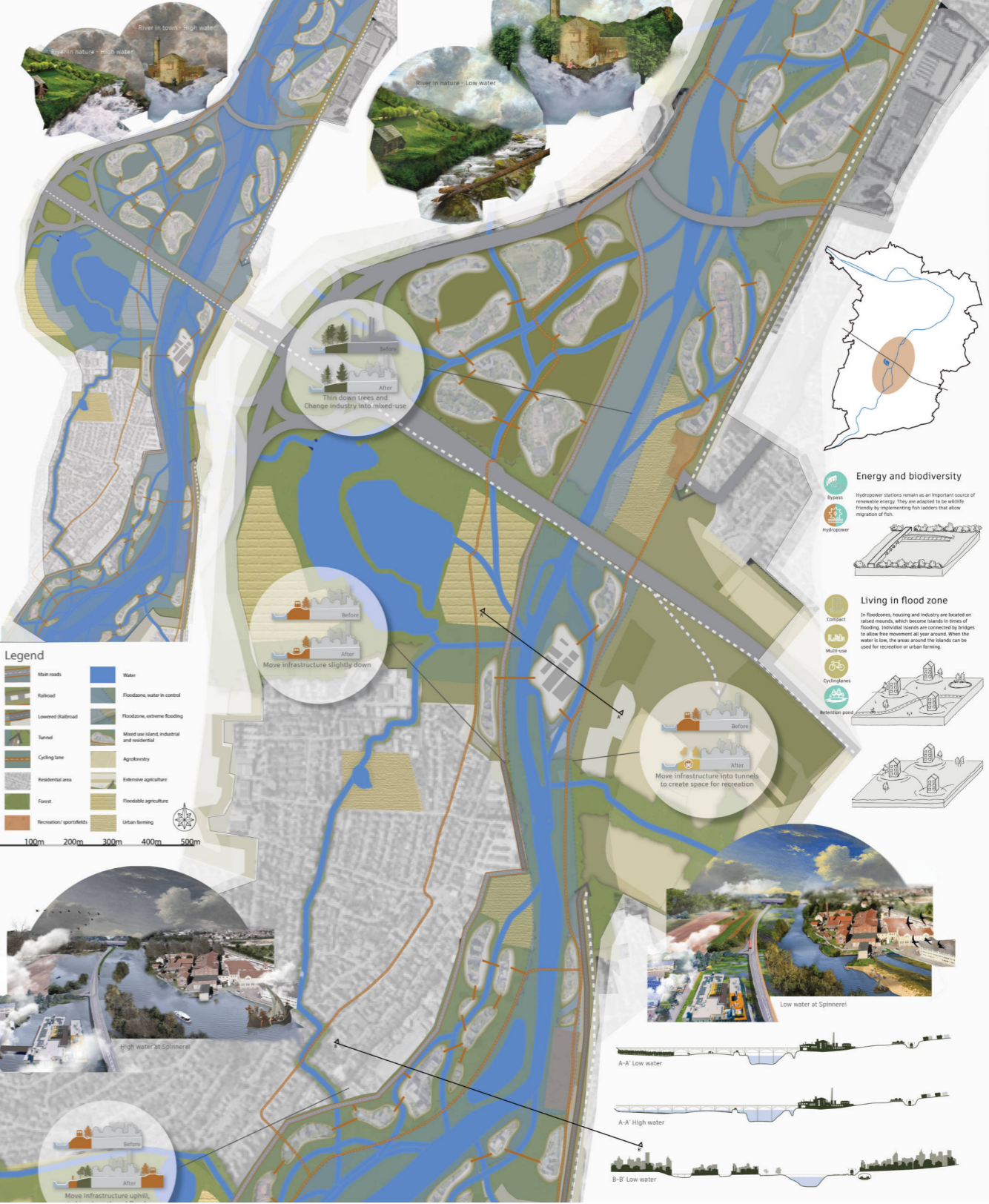


169 Riverscape Renaissance

The Neckar in Depth, Elaboration

Fluctuating river

We have chosen to elaborate on the area surrounding the **Neckar Spinnerei**, since it represents the center of the Neckar valley. This is where the rebirth, the **Renaissance of the landscape begins.** We have redesigned both the lowlands and the upland, however our **focus is on the river system.** Its **fluctuating water levels** are a significant influence on how the landscape looks and provides the opportunity to create a second chance for **connection between people and nature.**



- Energy and biodiversity**
Hydropower stations remain as an important source of renewable energy. They are adapted to be wildlife friendly by implementing fish ladders that allow migration of fish.
- Living in flood zone**
In flood zones, housing and industry are located on raised mounds, which become islands in times of flooding. Individual islands are connected by bridges to allow free movement of people around. When the water is low, the areas around the islands can be used for recreation or other farming.



169 Riverscape Renaissance

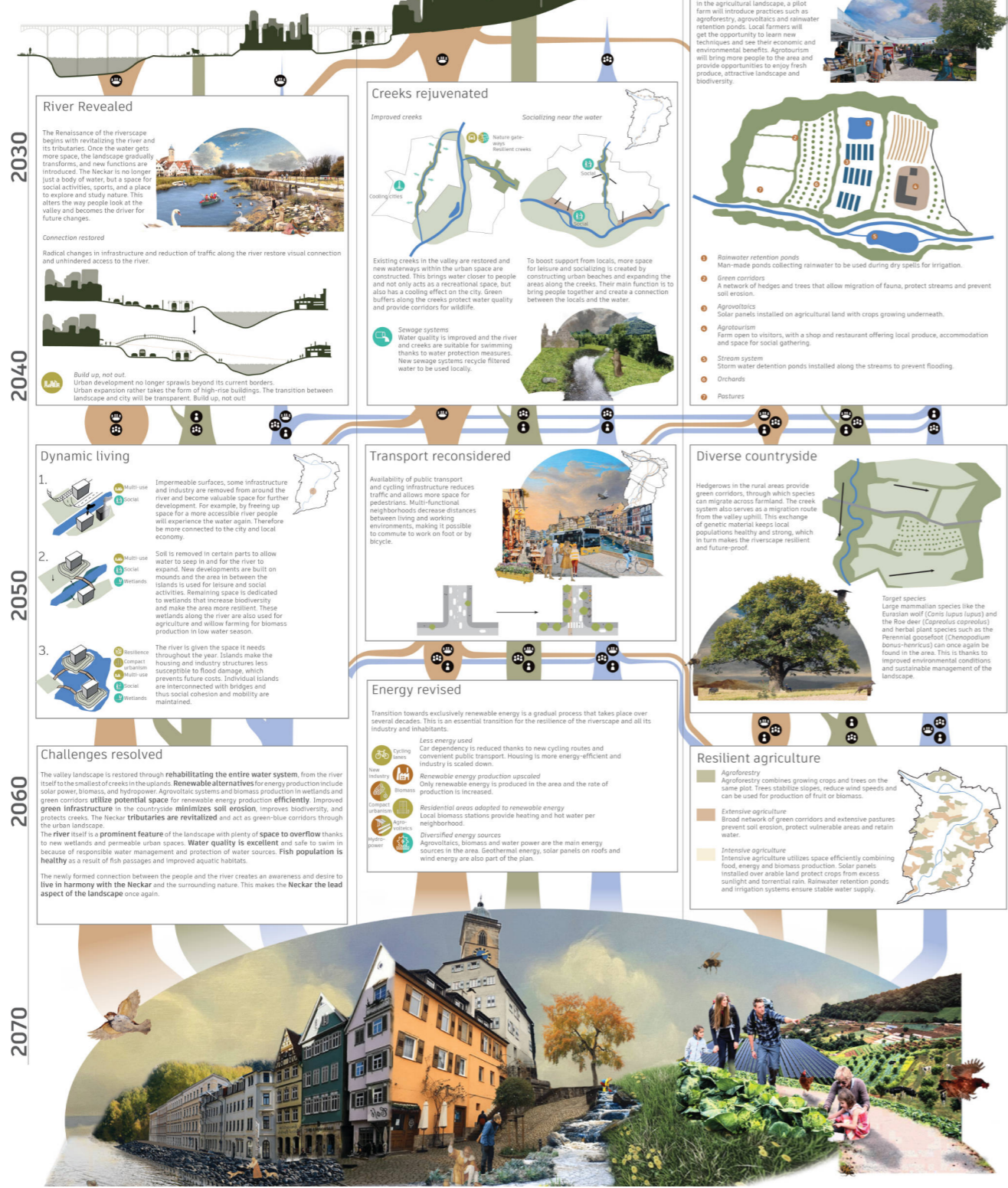
Neckar's next chapter, Strategy

Resolution

Our vision for the renaissance of the Neckar valley cannot be implemented all at once. Therefore, we propose a **timeline**, which introduces the major design moves **step by step** over the next 50 years. The steps are distributed over three main areas, namely the **river valley, the towns and hillsides** and the **rural areas uphill**. The timeline also functions as a graph, in which the **investors, costs and benefits** of the project are illustrated over the years. The costs and benefits include **economic profit, ecological gain** and the **participation** of the stakeholders. The first part is a visualization of the **ideal riverscape**.

Legend

- Economy
- Ecology
- Participation
- Personal involvement and small business
- Corporations and NGOs
- Governmental organisations (Local, regional, national and European)
- Investment
- Profit
- Reinvestment
- Channeling



2030 River Revealed

The Renaissance of the riverscape begins with revitalizing the river and its tributaries. Once the water gets more space, the landscape gradually transforms, and new functions are introduced. The Neckar is no longer just a body of water, but a space for social activities, sports, and a place to explore and study nature. This alters the way people look at the valley and becomes the driver for future changes.

2040 Connection restored

Radical changes in infrastructure and reduction of traffic along the river restore visual connection and unhindered access to the river.

Build up, not out.
Urban development no longer sprawls beyond its current borders. Urban expansion rather takes the form of high-rise buildings. The transition between landscape and city will be transparent. Build up, not out!

2040 Creeks rejuvenated

Improved creeks
Existing creeks in the valley are restored and new waterways within the urban space are constructed. This brings water closer to people and not only acts as a recreational space, but also has a cooling effect on the city. Green buffers along the creeks protect water quality and provide corridors for wildlife.

Sewage systems
Water quality is improved and the river and creeks are suitable for swimming thanks to water protection measures. New sewage systems recycle filtered water to be used locally.

Socializing near the water
To boost support from locals, more space for leisure and socializing is created by constructing urban beaches and expanding the areas along the creeks. Their main function is to bring people together and create a connection between the locals and the water.

Rural landscape regenerated

To allow locals get used to changes in the agricultural landscape, a pilot farm will introduce practices such as agroforestry, agrovoltaics and rainwater retention ponds. Local farmers will get the opportunity to learn new techniques and see their economic and environmental benefits. Agritourism will bring more people to the area and provide opportunities to enjoy fresh produce, attractive landscape and biodiversity.

- Rainwater retention ponds
- Man-made ponds collecting rainwater to be used during dry spells for irrigation.
- Green corridors
- A network of hedges and trees that allow migration of fauna, protect streams and prevent soil erosion.
- Agrovoltaics
- Solar panels installed on agricultural land with crops growing underneath.
- Agrotourism
- Farm open to visitors, with a shop and restaurant offering local produce, accommodation and space for social gathering.
- Stream system
- Storm water detention ponds installed along the streams to prevent flooding.
- Orchards
- Pastures

2050 Dynamic living

- Impermeable surfaces, some infrastructure and industry are removed from around the river and become valuable space for further development. For example, by freeing up space for a more accessible river people will experience the water again. Therefore be more connected to the city and local economy.
- Soil is removed in certain parts to allow water to seep in and for the river to expand. New developments are built on mounds and the area in between the islands is used for leisure and social activities. Remaining space is dedicated to wetlands that increase biodiversity and make the area more resilient. These wetlands along the river are also used for agriculture and willow farming for biomass production in low water season.
- The river is given the space it needs throughout the year. Islands make the housing and industry structures less susceptible to flood damage, which prevents future costs. Individual islands are interconnected with bridges and thus social cohesion and mobility are maintained.

2050 Transport reconsidered

Availability of public transport and cycling infrastructure reduces traffic and allows more space for pedestrians. Multi-functional neighborhoods decrease distances between living and working environments, making it possible to commute to work on foot or by bicycle.

Diverse countryside

Hedgerows in the rural areas provide green corridors, through which species can migrate across farmland. The creek system also serves as a migration route from the valley uphill. This exchange of genetic material keeps local populations healthy and strong, which in turn makes the riverscape resilient and future-proof.

Target species
Large mammalian species like the European roe deer (*Capreolus capreolus*) and the Roe deer (*Capreolus capreolus*) and herbal plant species such as the Perennial goosefoot (*Chenopodium bonus-henricus*) can once again be found in the area. This is thanks to improved environmental conditions and sustainable management of the landscape.

2060 Challenges resolved

The valley landscape is restored through **rehabilitating the entire water system**. From the river itself to the smallest of creeks in the uplands. **Renewable alternatives** for energy production include solar power, biomass, and hydropower. Agrovoltaic systems and biomass production in wetlands and green corridors **utilize potential space** for renewable energy production **efficiently**. Improved **green infrastructure** in the countryside **minimizes soil erosion**, improves biodiversity, and protects creeks. The Neckar **tributaries are revitalized** and act as green-blue corridors through the urban landscape.

The river itself is a **prominent feature of the landscape** with plenty of **space to overflow** thanks to new wetlands and permeable urban spaces. **Water quality is excellent** and safe to swim in because of responsible water management and protection of water sources. **Fish population is healthy** as a result of fish passages and improved aquatic habitats.

The newly formed connection between the people and the river creates an awareness and desire to **live in harmony with the Neckar** and the surrounding nature. This makes the **Neckar the lead aspect of the landscape** once again.

2060 Energy revised

Transition towards exclusively renewable energy is a gradual process that takes place over several decades. This is an essential transition for the resilience of the riverscape and all its industry and inhabitants.

Less energy used
Car dependency is reduced thanks to new cycling routes and convenient public transport. Housing is more energy-efficient and industry is scaled down.

Renewable energy production upscaled
Only renewable energy is produced in the area and the rate of production is increased.

Residential areas adapted to renewable energy
Local biomass stations provide heating and hot water per neighborhood.

Diversified energy sources
Agrovoltaics, biomass and water power are the main energy sources in the area. Geothermal energy, solar panels on roofs and wind energy are also part of the plan.

Resilient agriculture

- Agroforestry
- Agroforestry combines growing crops and trees on the same plot. Trees stabilize slopes, reduce wind speeds and can be used for production of fruit or biomass.
- Extensive agriculture
- Broad network of green corridors and extensive pastures prevent soil erosion, protect vulnerable areas and retain water.
- Intensive agriculture
- Intensive agriculture utilizes space efficiently combining food, energy and biomass production. Solar panels installed over arable land protect crops from excess sunlight and torrential rain. Rainwater retention ponds and irrigation systems ensure stable water supply.

