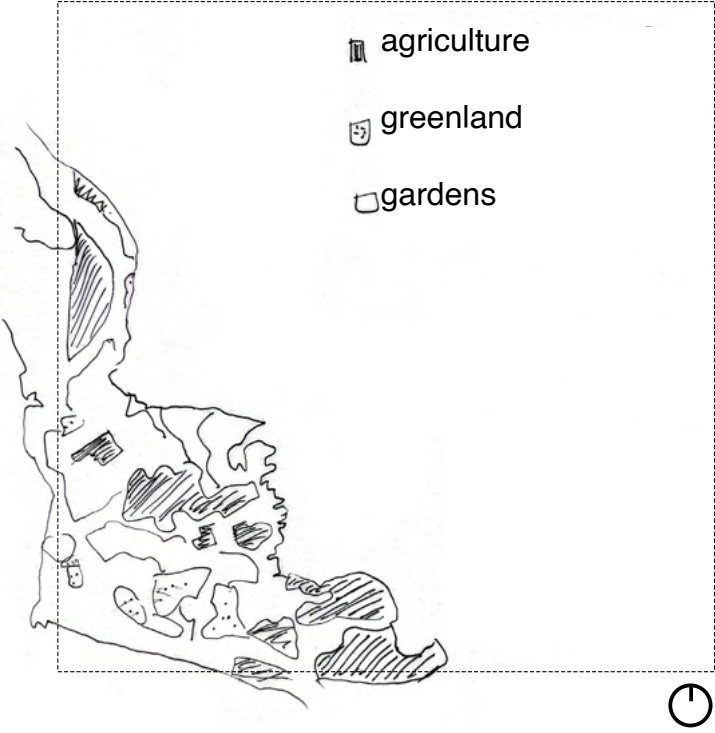
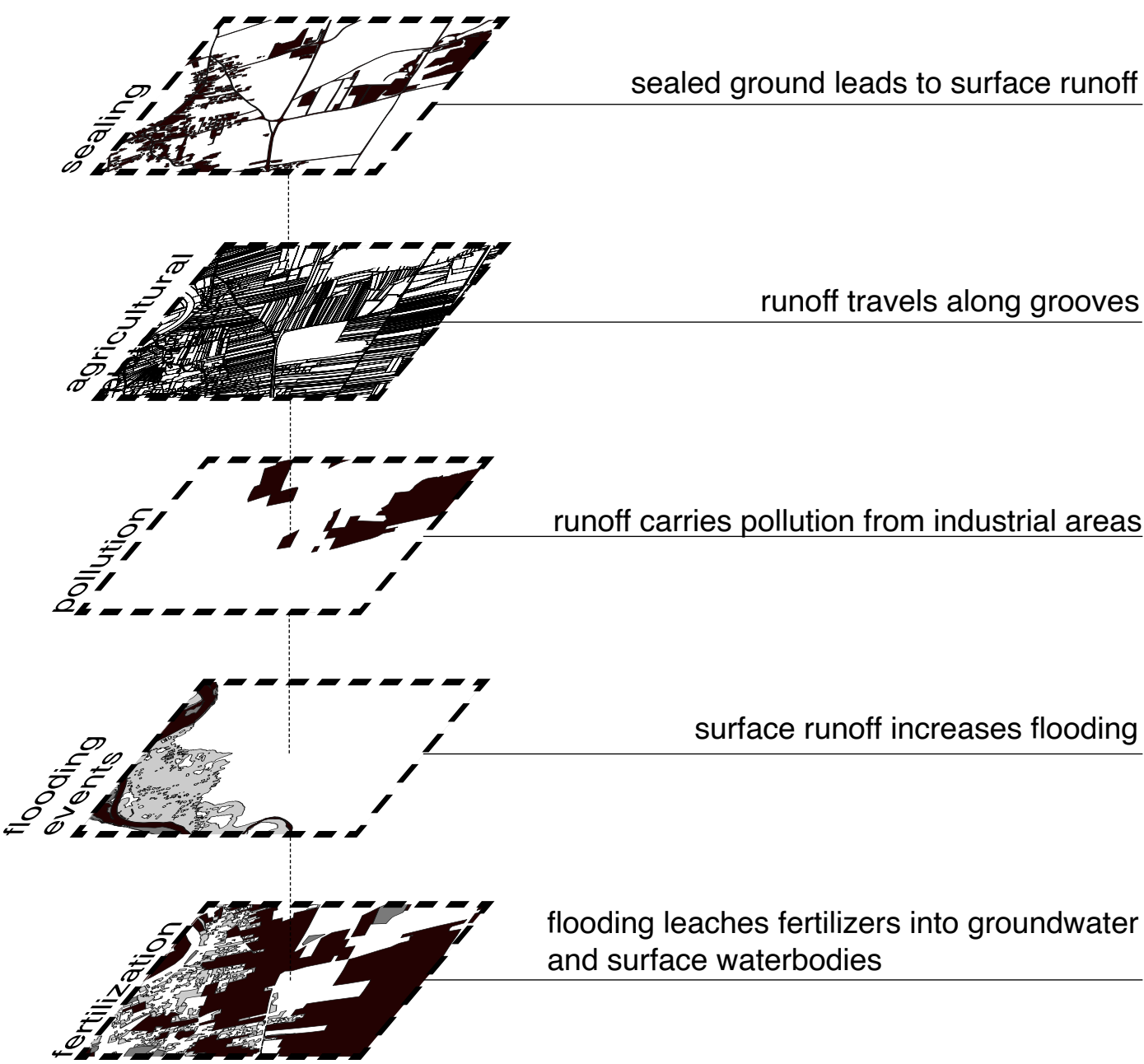






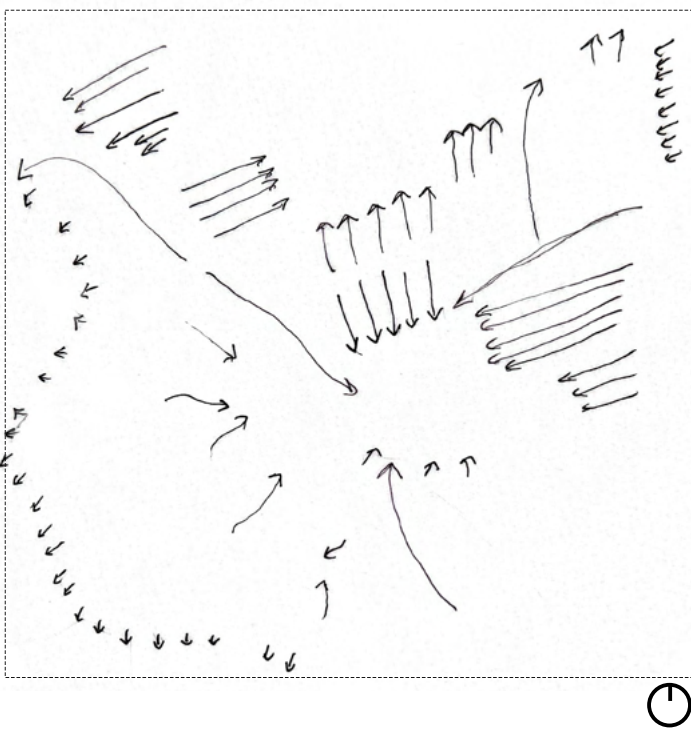
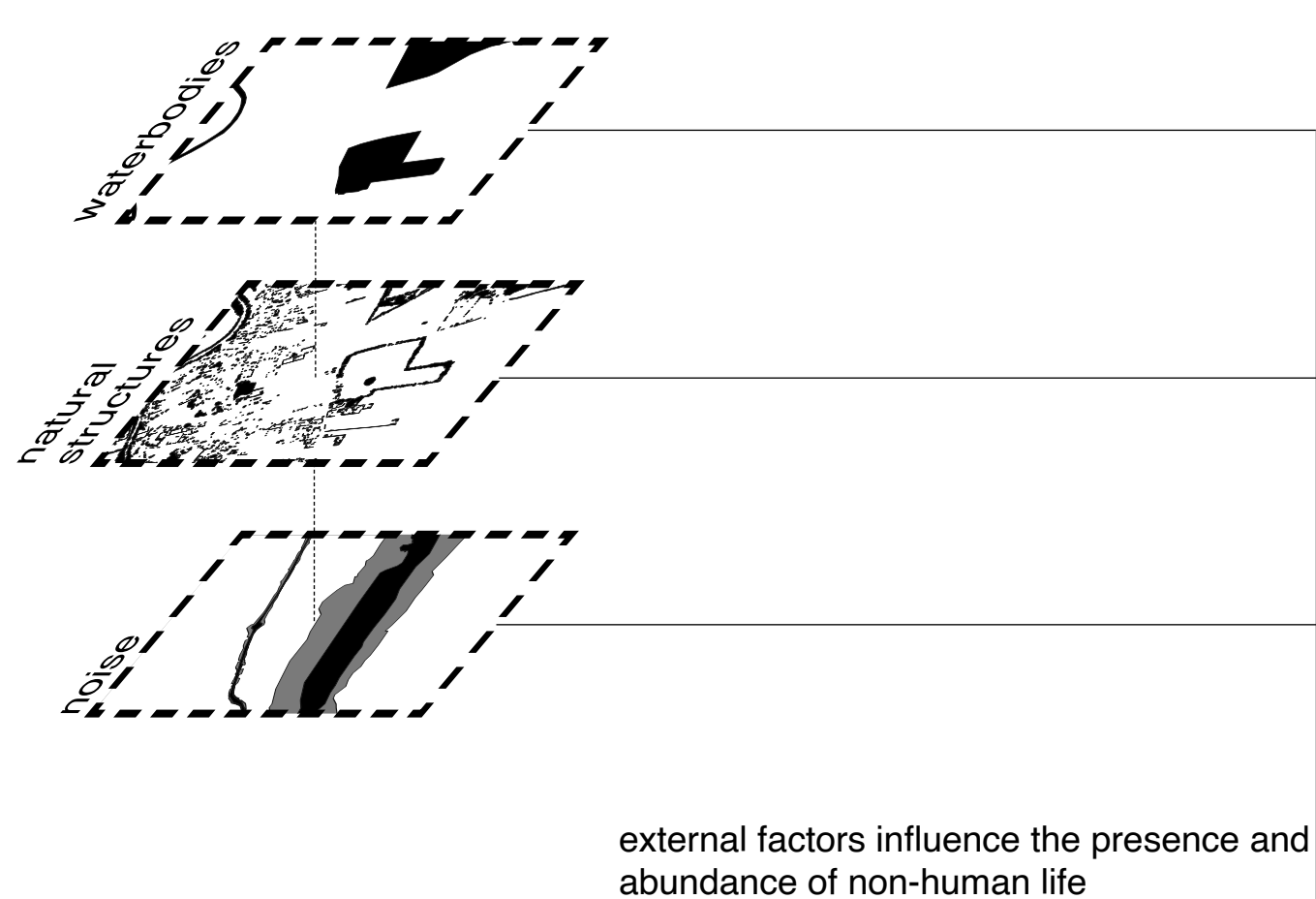
# GROUNDING\_connections

## client\_soil + water

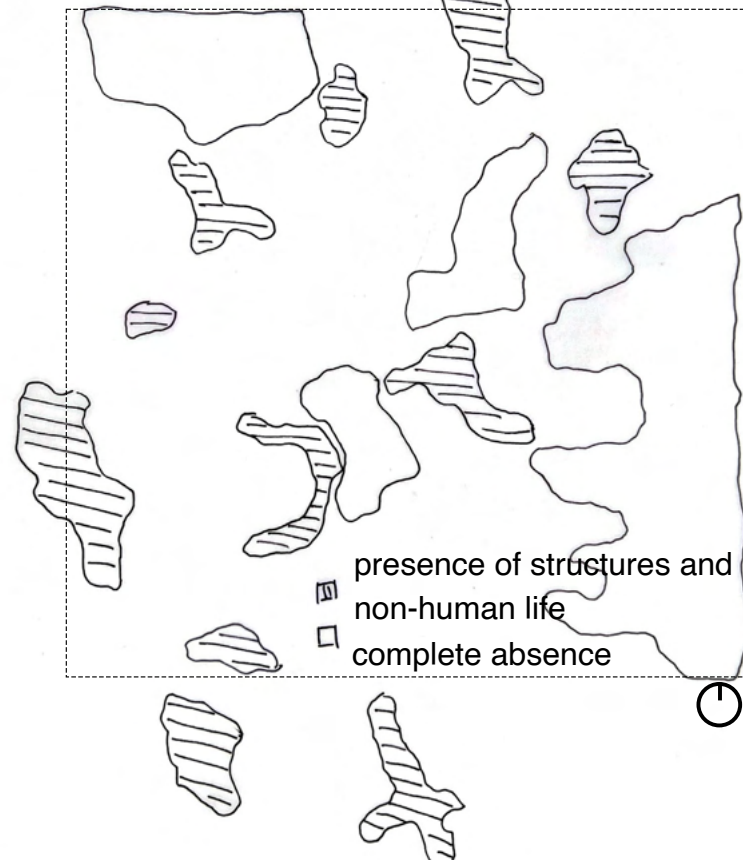


Caused by flooding, fertilizers and pollutions leach into groundwater and rivers.

## client\_non-humans

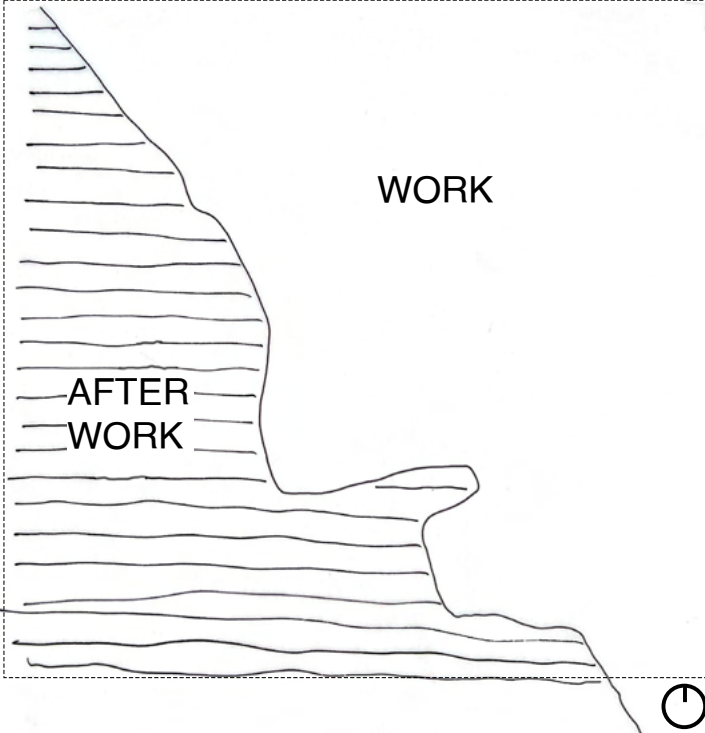
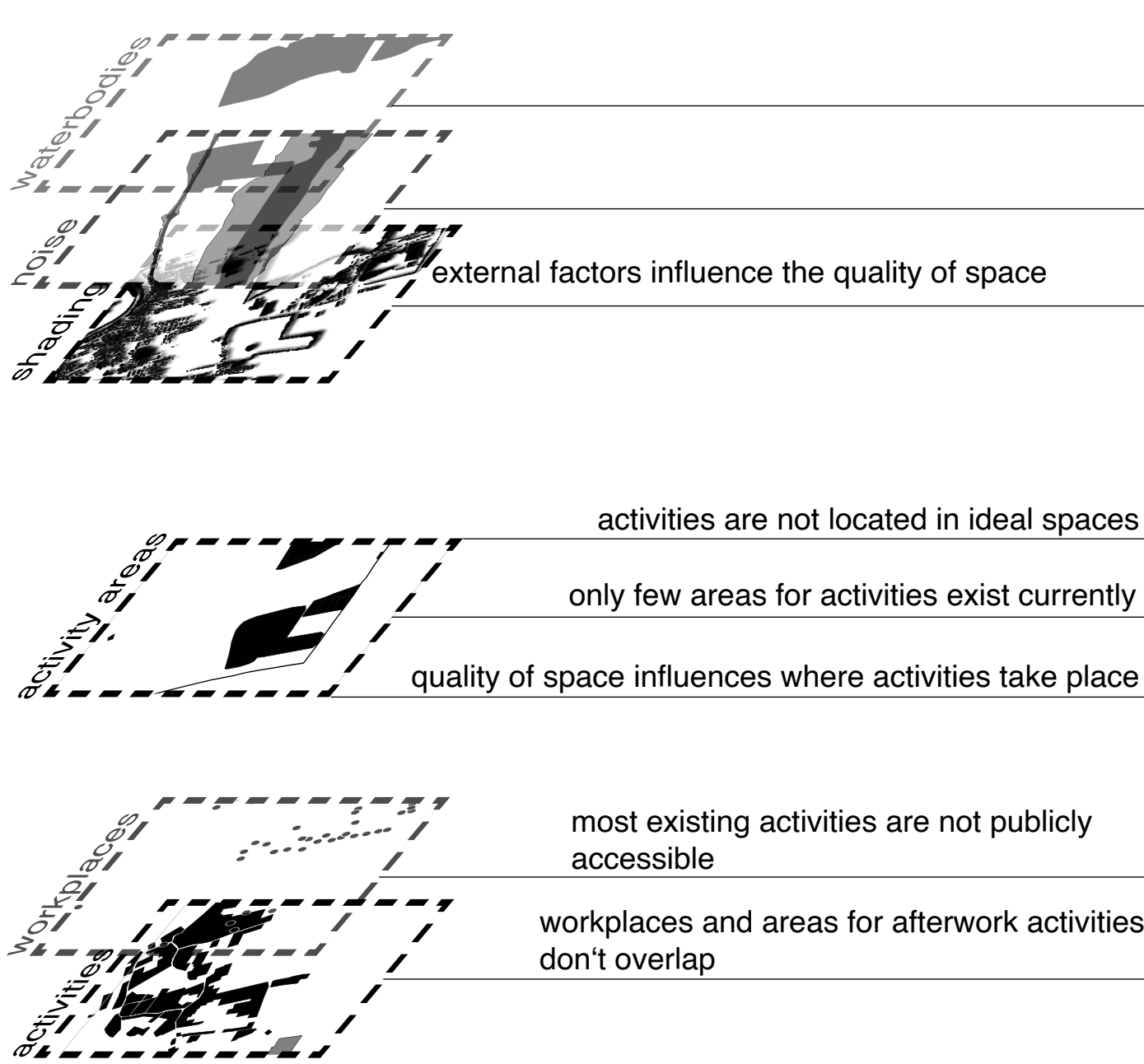


Runoff is following the agricultural grooves and sealed surfaces into waterbodies and unsealed areas.

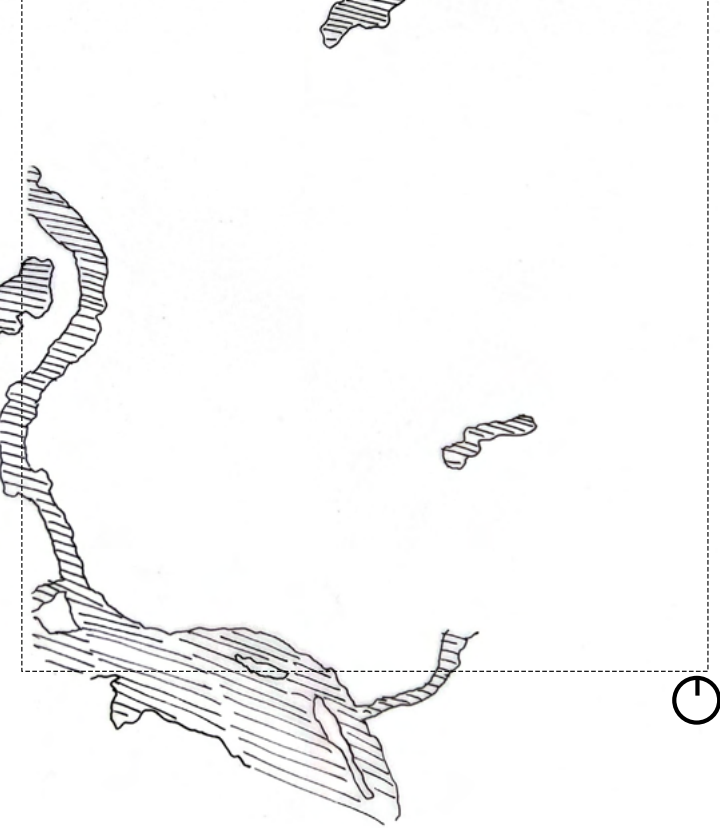


Large areas exist where no vegetative structures and non-human life exist.

## client\_humans



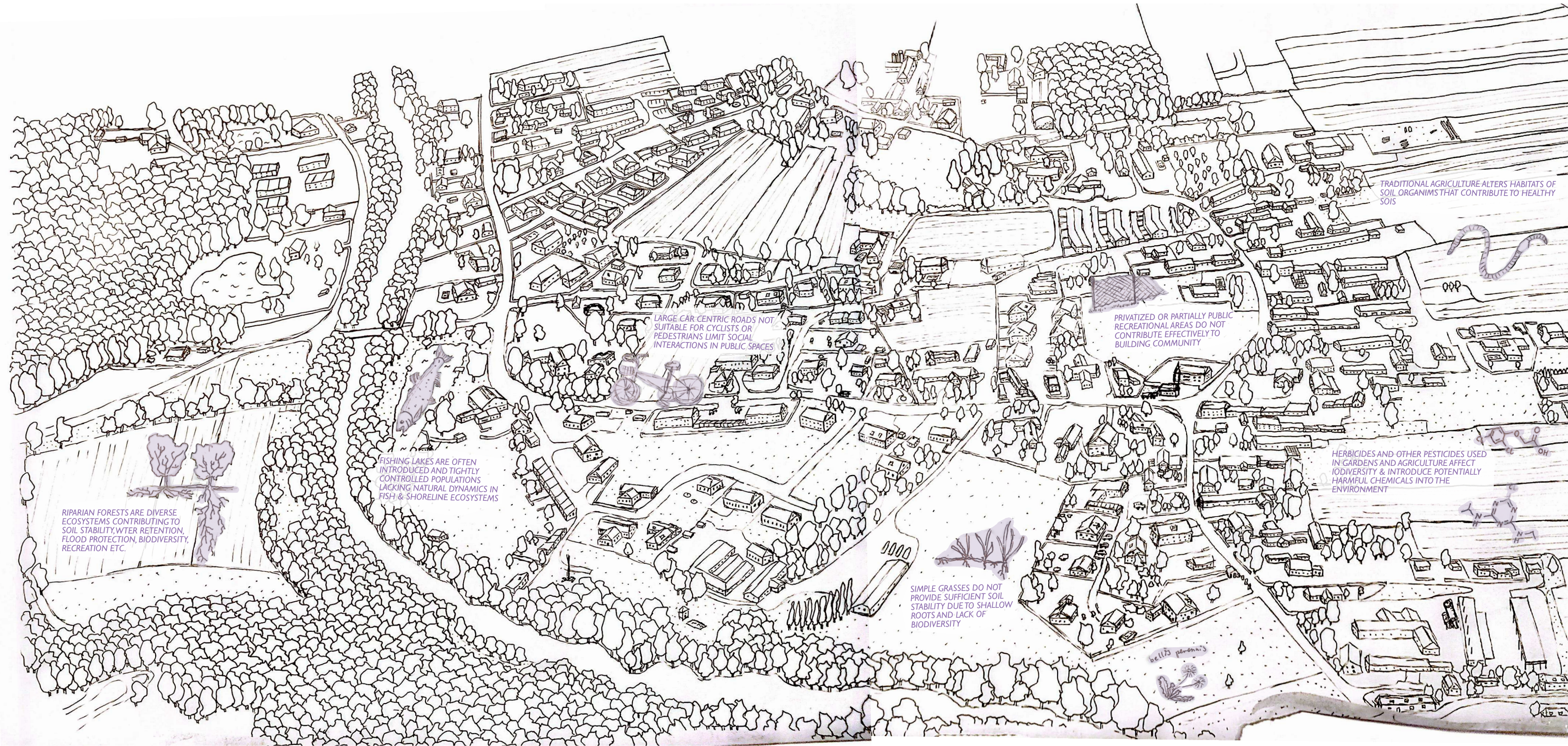
No overlap exists between the areas where people work and areas where people relax and enjoy leisure time.



From our observations we decided to treat the actors of the landscape as our clients, who we would cater to. In our next step we defined the clients 'client\_soil + water', 'client\_non\_humans' and 'client\_humans' were grouped together with the analysis of the area. Each analysis we did was thematically linked to the clients and then the different analysis maps were overlayed. The analysis maps were focused on dichotomies, when overlayed different areas where multiple factors overlapped or clashed were identified as areas of high potential for change. Our findings showed some important themes to address in further steps: nutrient leaching in connection with flooding, contribution of sealed surfaces to surface run-off, lack of habitat structures, lack of connection between work and non-work and lack of recreational spaces.

In order to gain a better understanding of the area an axonometric was drawn which allows for analysis of the spatial structures. An interesting gradient presents itself: going east from the Laßnitz the spatial structures and qualities change slowly until the character of the landscape is entirely different. The area to the west of the Laßnitz has a high structural diversity providing habitats in the riparian forest, with few houses and a bike path for recreation. East of the Laßnitz the peri-urban area starts, with most houses as classical one family house with a fenced in private garden and oftentimes even a pool. Few structures containing apartments dot the area but almost never surpassing two stories.

Sprinkled in between the houses are small agricultural plots which slowly start to increase in size the further east we look. Moving east from the peri-urban area the spatial structure changes and becomes dominated by flat fields, with less trees and houses, with many of these buildings being more modern and flat roofed. Near the lake and the large street buildings start to change in function becoming car show-rooms, storage lockers, small businesses and industry, living spaces no longer dominate. The furthest east we examined the landscape is lacking all structure, only agricultural fields and the occasional power pole with the exception of the small wooded strip around the lake.





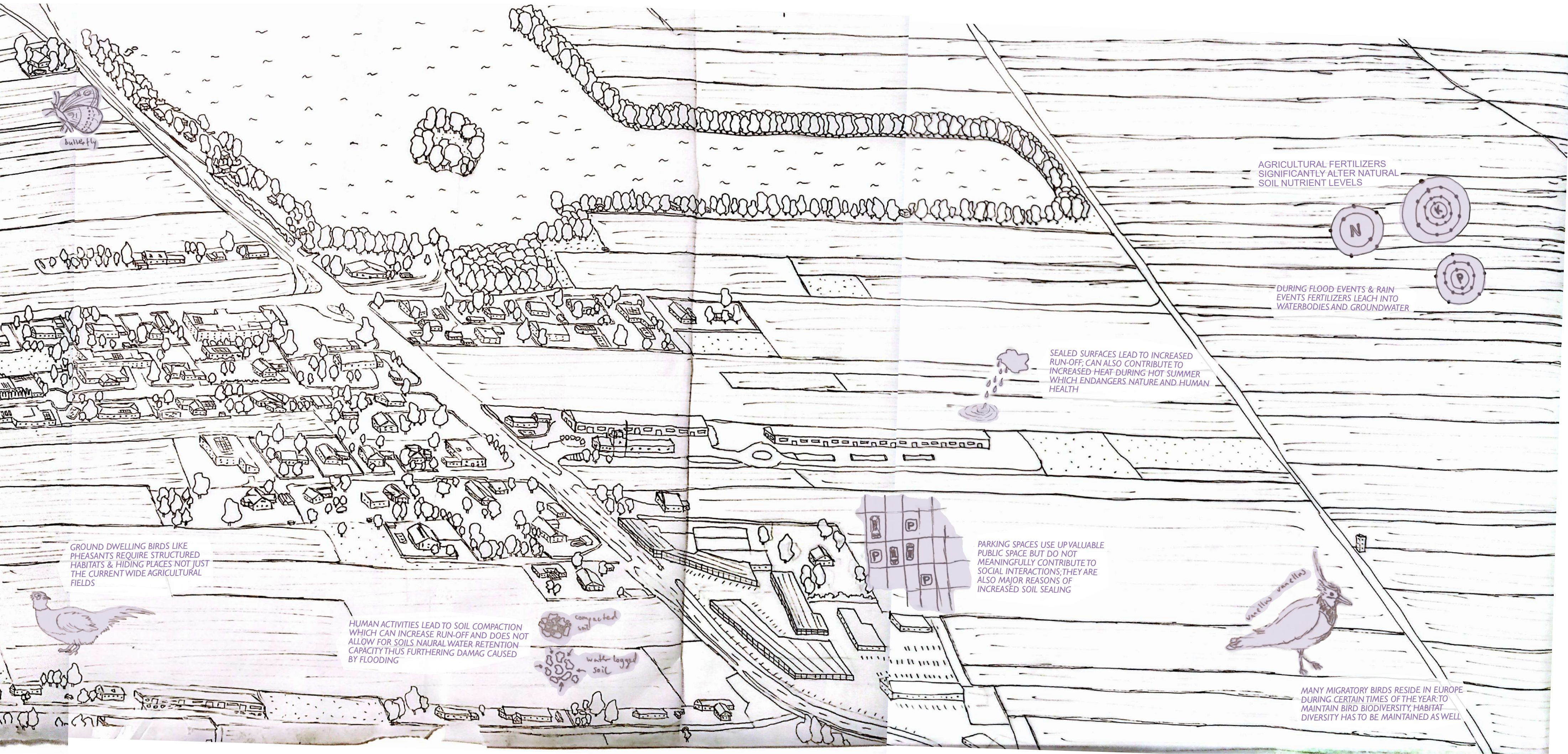
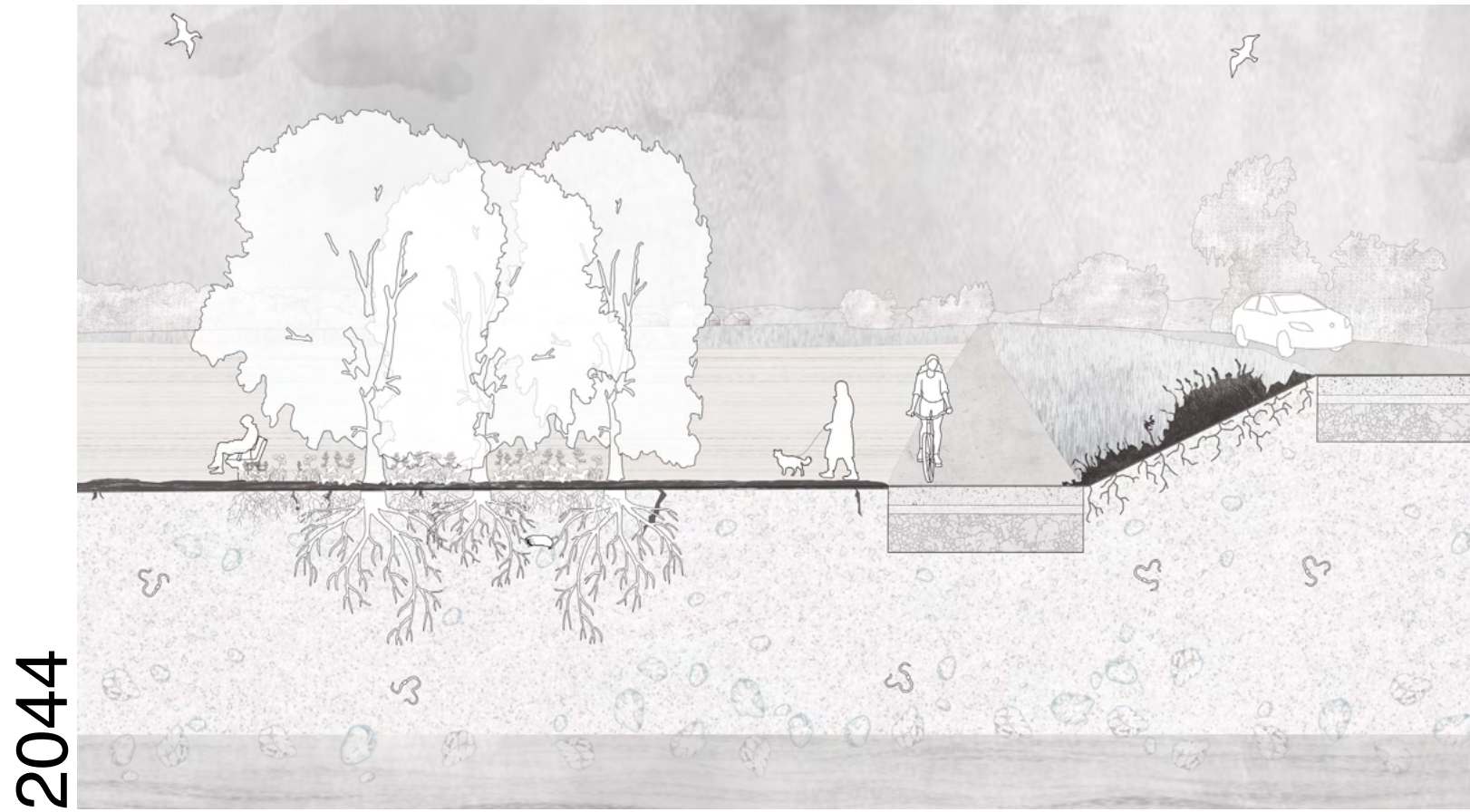
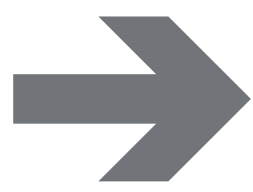
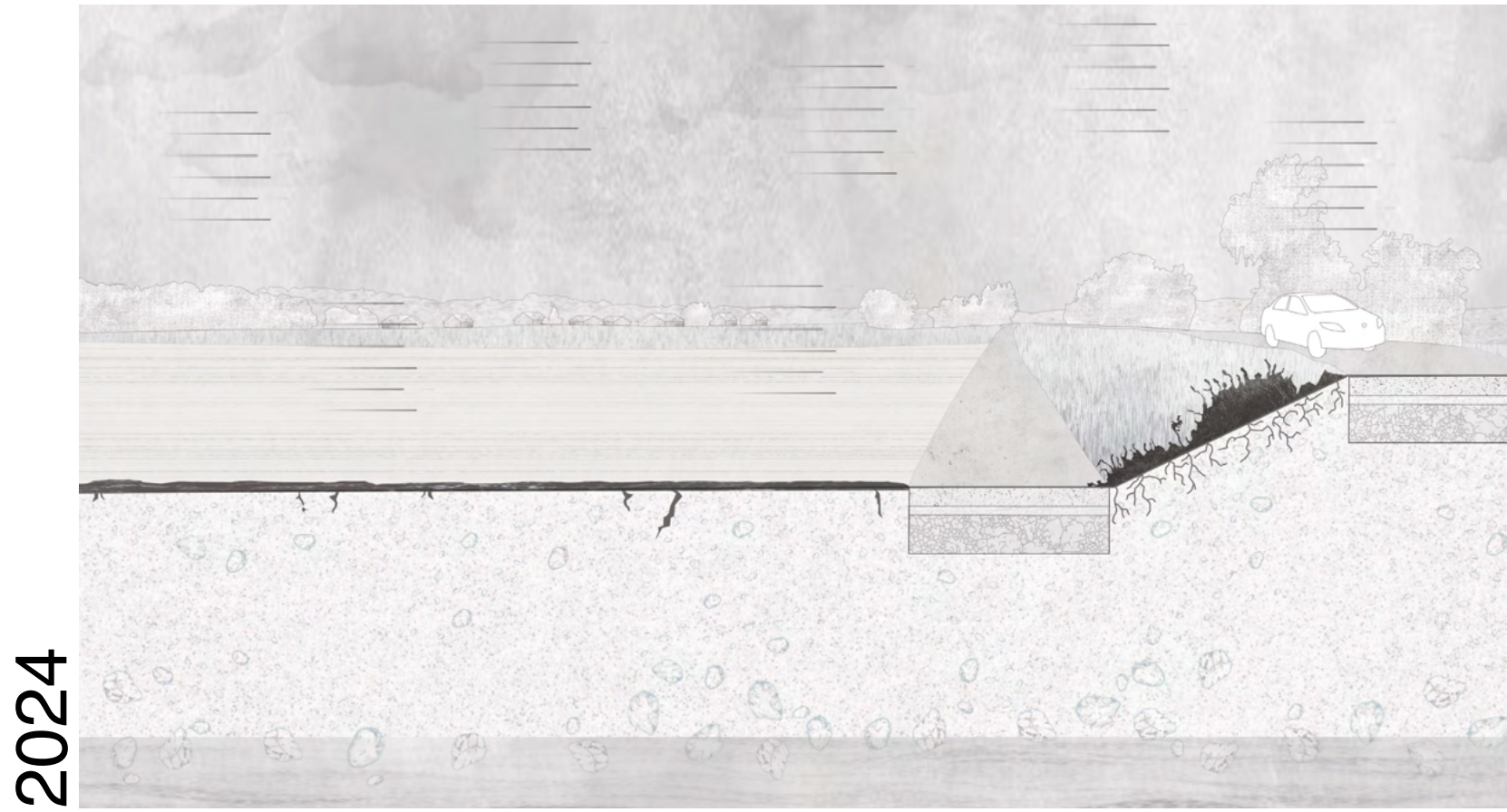
# CALIBRATING\_measures



Landscapes are webs of connections, each element is connected to another. This means all of our clients are also connected, they interact and are affected by each other and their environment. So the measures we have developed are catered to each clients need specifically but we also recognise that many of these measures work together and support each other. In implementing the measures it is important to consider the fact that combining measures allows them to be more effective.

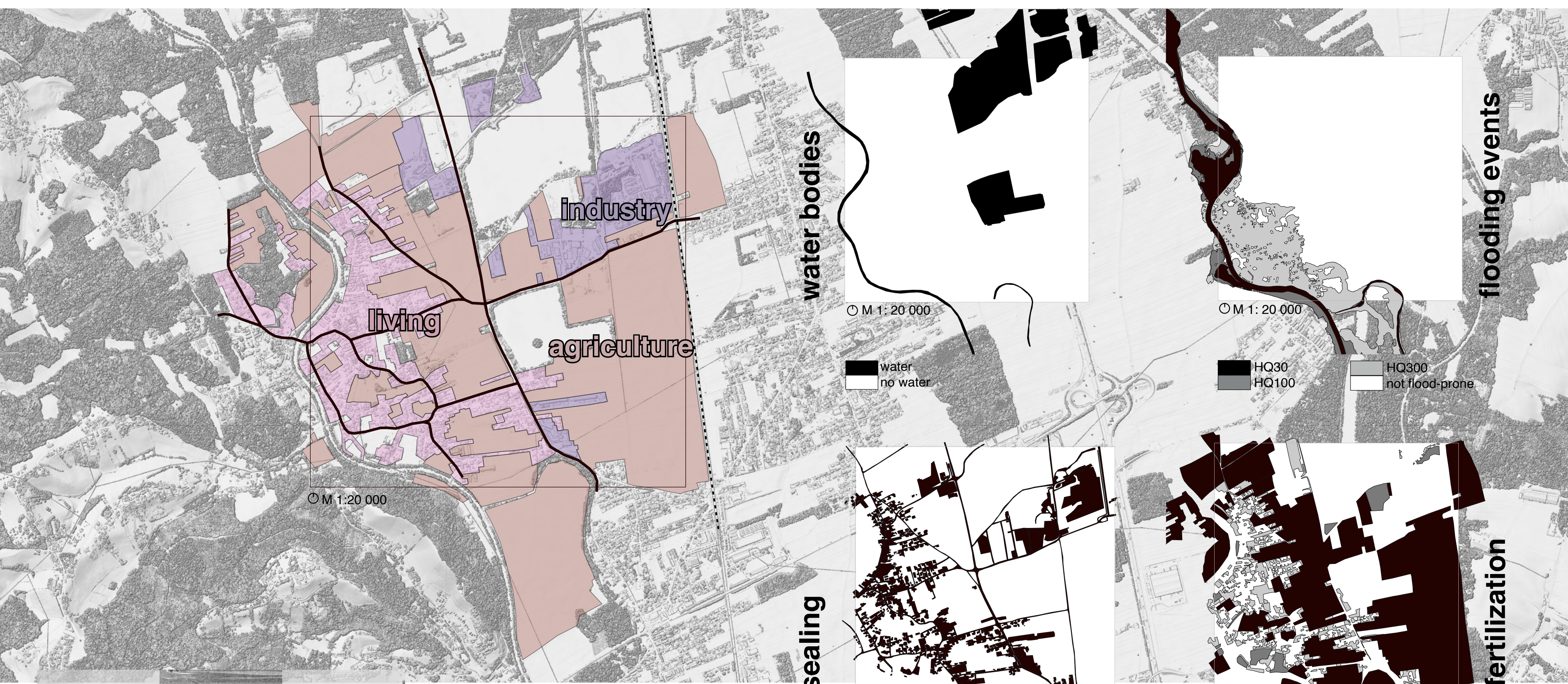
| Phytoremediation aids            | Phytoremediation plants  |                        |   |
|----------------------------------|--------------------------|------------------------|---|
| Natural                          | <i>Salix</i>             | <i>Brassica juncea</i> | <i>Lonicera japonica</i>                |
| Biochar, composted sewage sludge | Cu, Cd, Zn               | Se, P, Cd, Pb          | Na+                                     |
| chemical                         | <i>Helianthus annuus</i> | <i>Pelargonium</i>     | <i>Rubus fruticosus</i>                 |
| EDTA, EGTA                       | Cu, Zn, Pb, Hg, As, Cd   | Cd, Pb                 | polycyclic aromatic hydrocarbons (PAHs) |
| microbial                        | <i>Solanum nigrum</i>    | <i>Cucurbita</i>       | <i>Populus</i>                          |
| PGPR, PGPE                       | Cu, Zn, Cd               | POPs,                  | Cu, Cd,                                 |

One of our measures focuses on planting hedgerows in agricultural fields to provide much needed habitats. Phytoremediation can be effectively combined with this measure as it helps with balancing soil nutrient contents and is useful in dealing with high nutrient loads from agriculture, pollution from industry as well as pollution from traffic. We developed a plant atlas which highlights the most important plants for phytoremediation of the area, each of them deal with a set of polluting elements. In addition to the plants a set of phytoremediation aids is also listed, which if implemented aid in the work the plants are doing. The plant atlas can also be used when choosing any other vegetation to plant in the area.



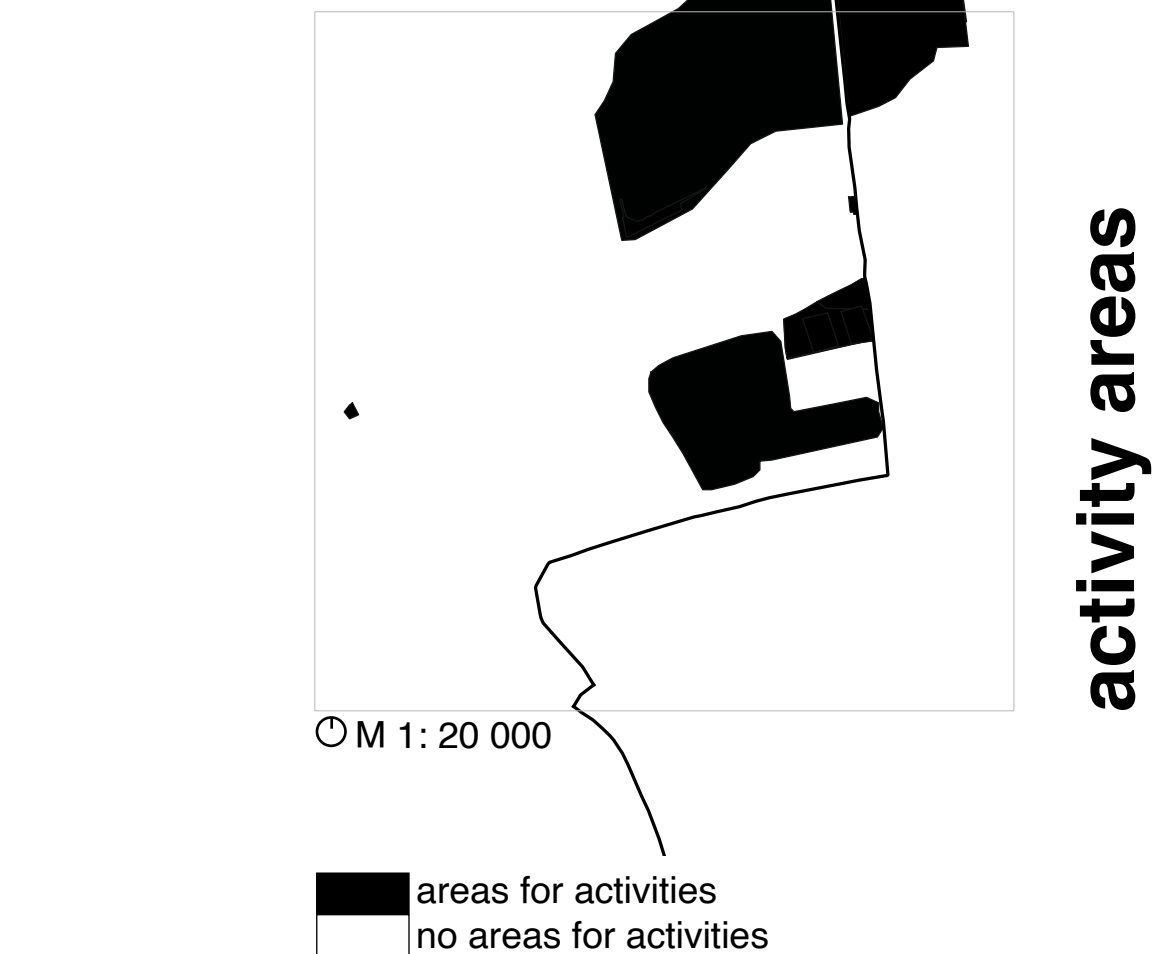
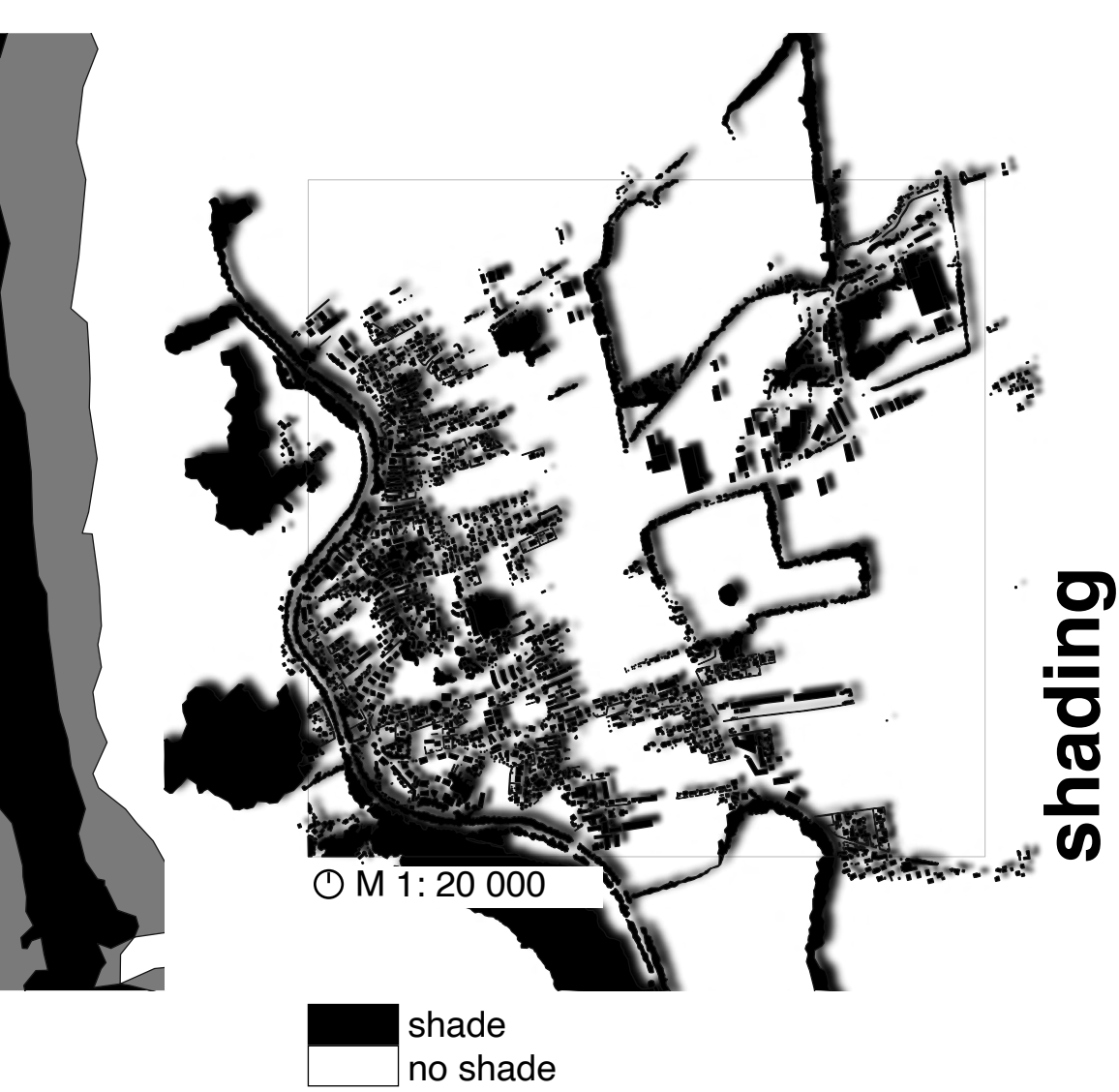
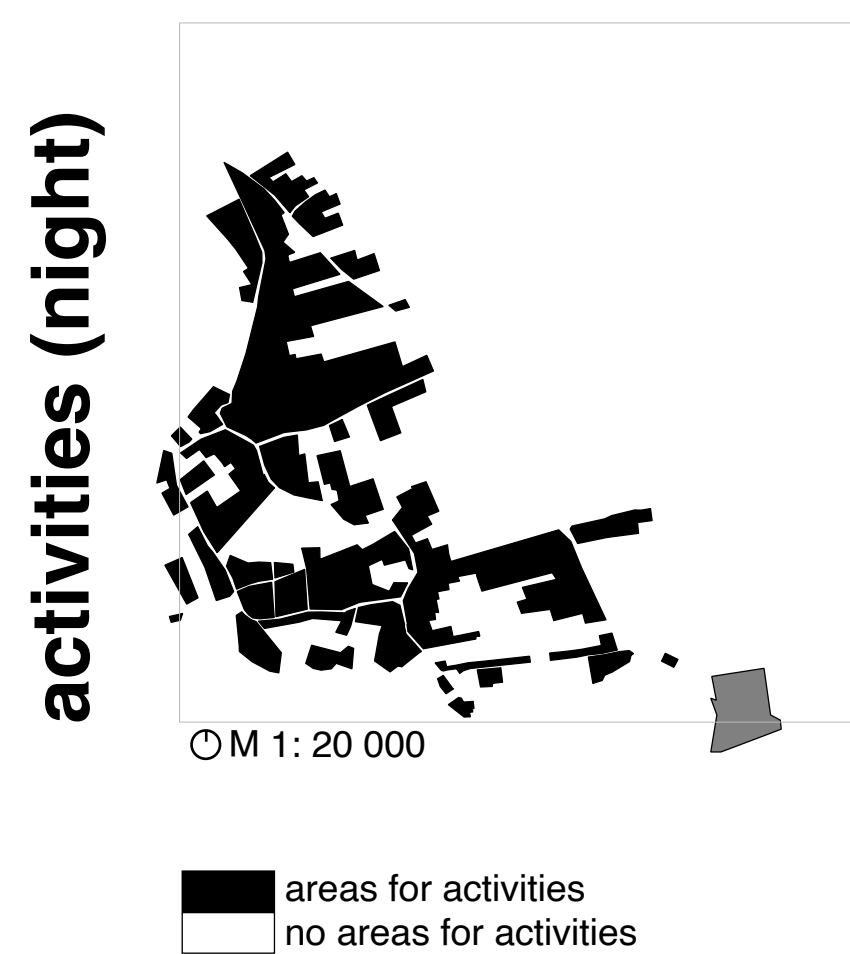
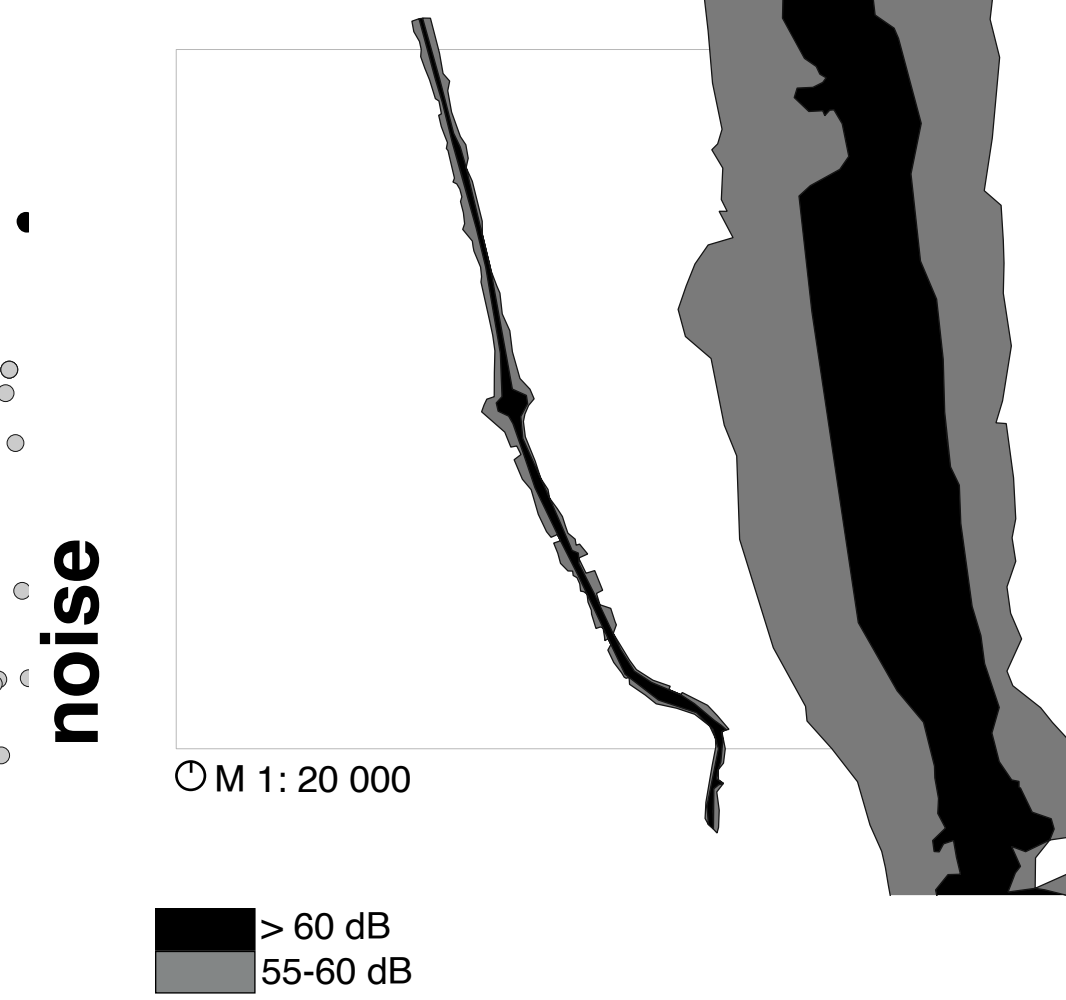
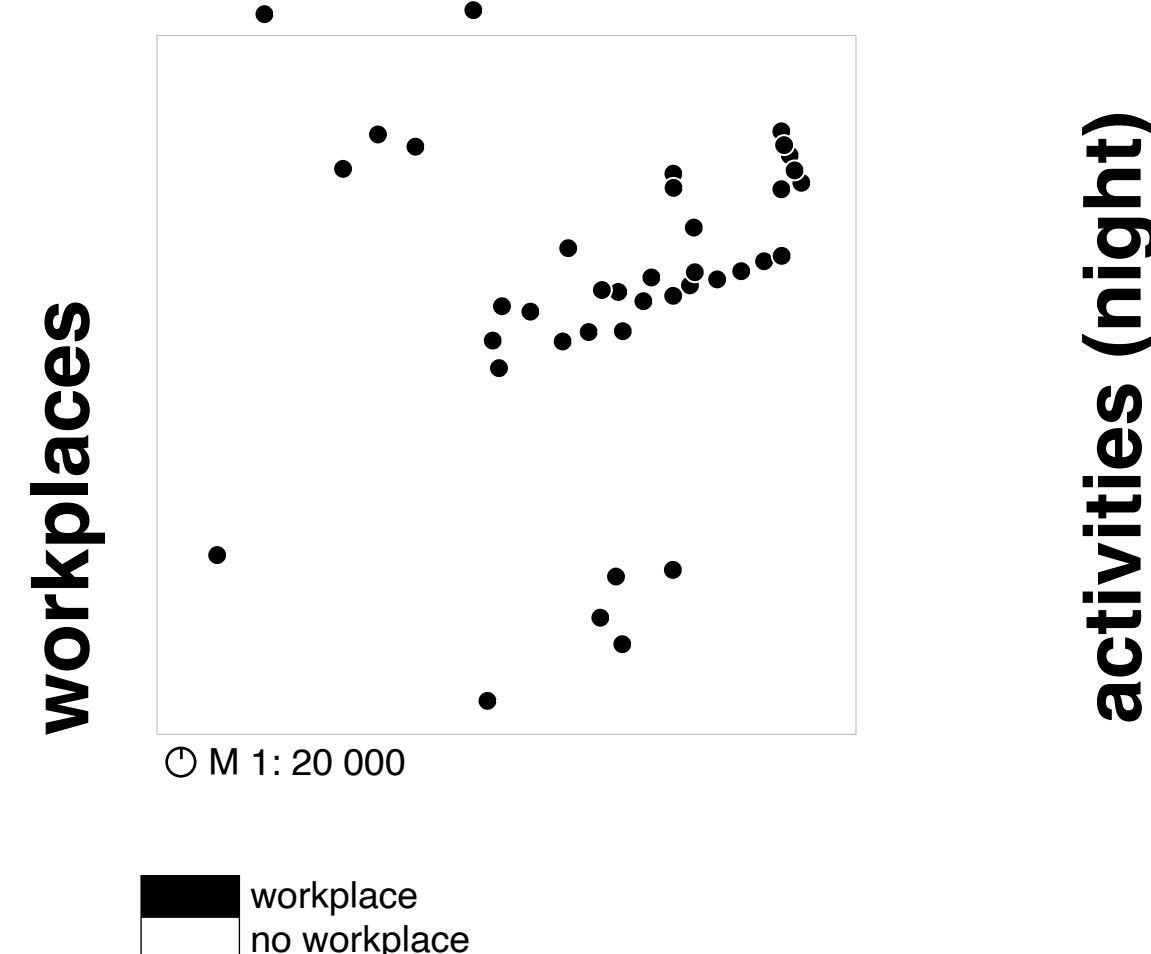
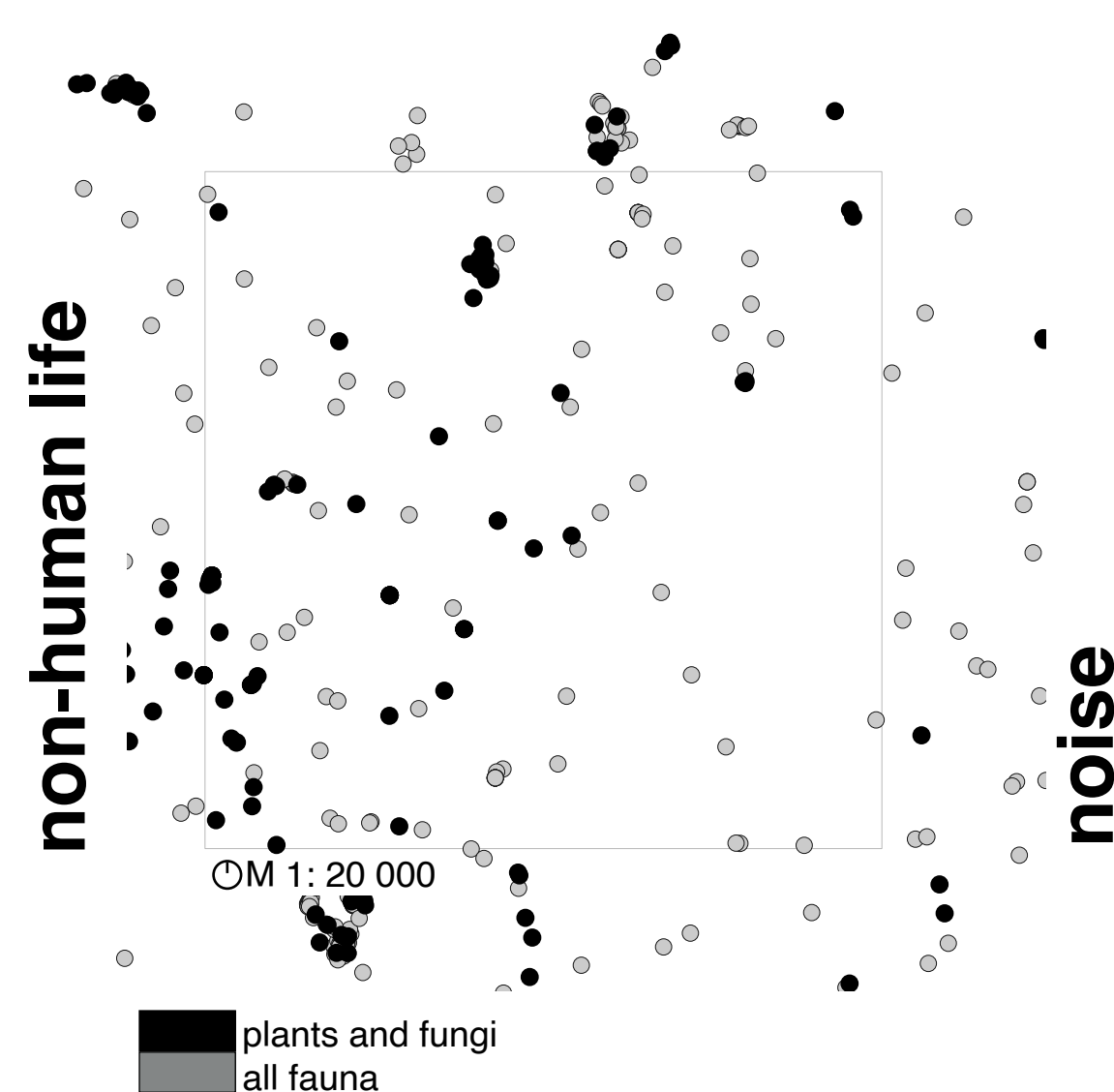


# REVEALING\_dichotomies



North of the city Leibnitz lies an area split into three parts: the living area, agriculture and industry. A landscape shaped by its past, layers and years of human interventions, is now facing the pressure of an expanding Leibnitz and our changing climate.

Biking through the area, we observed the different parts of this city section and found many spots that were intriguing, places that had promised to be able to adapt to new challenges. Our observations were recorded with photographs representative of the area. Further analyzing the area with maps centered on different themes we noticed, the place was place shaped by dichotomies. Very lush and vegetated areas contrasted by vast agricultural fields, loud traffic contrasted by quiet and bird-song. It became clear that we would have to make sure to integrate these contrasting elements with each other and integrate the three areas of living, agriculture and industry harmoniously. In addition, we believe it is important to think of all actors of a landscape, as we often view the world from a solely human perspective. That is not the way forward. That is why our mission became to cater to all actors, humans, plants, animals, soil and water equally, and devise measures that all will benefit from.





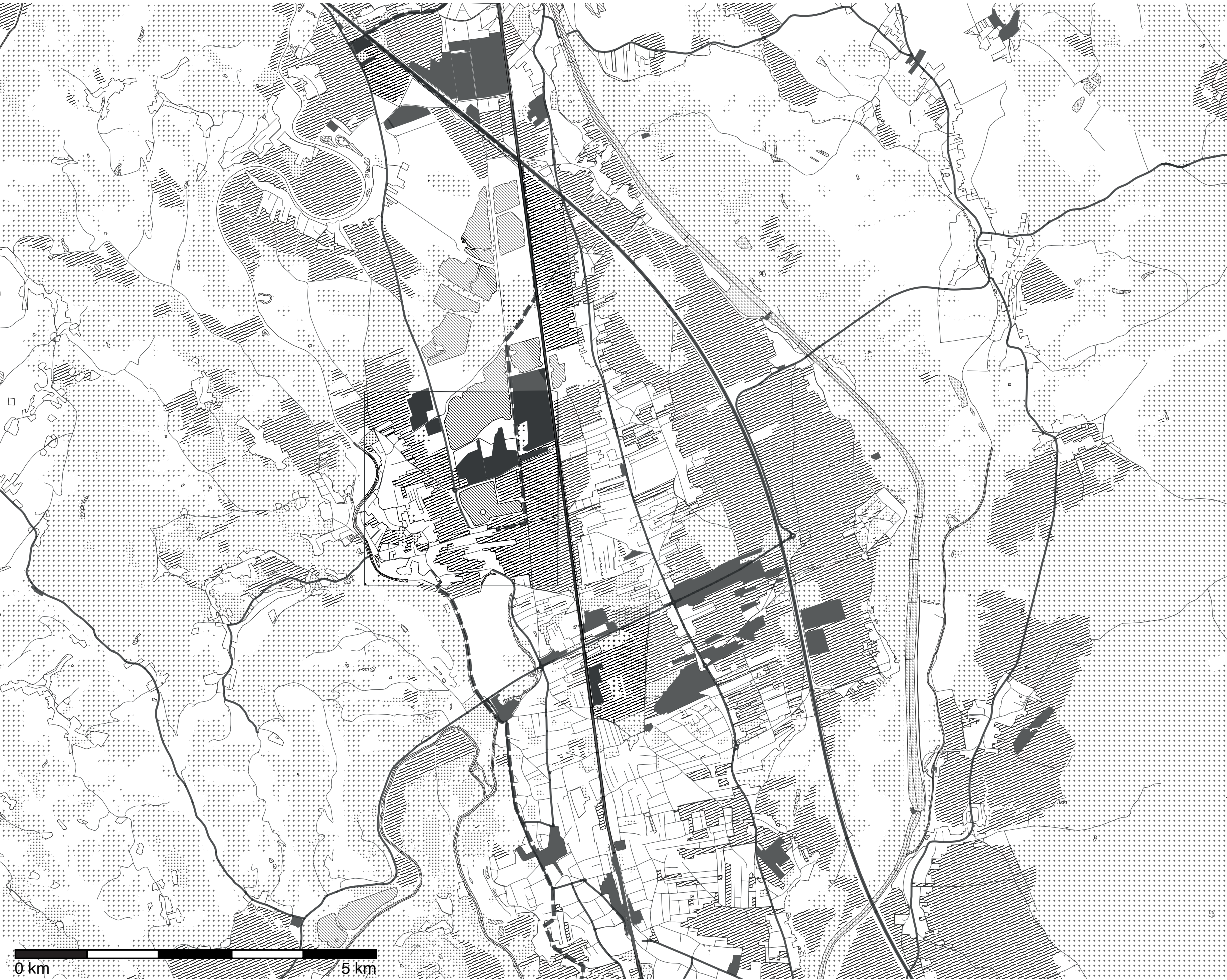
# SETTLING\_change



0 M 1:10 000

- Intervention zones
- Flooded recreational spaces
- Hedgerows
- Contact zones

Through the analysis work we established a number of measures to implement. In the next step places were chosen within the area where the measures can be implemented. The map shows these places and creates a web of connections between different measures in order to truly affect an area and bring lasting changes. Our interventions span across spatial structures and bring the area together as a whole, to create a community for all of our clients. Depending on the needs of the specific location different measures were implemented, for example some small access roads have been desealed to allow infiltration, while other roads have remained sealed but have added bike lanes and sidewalks.

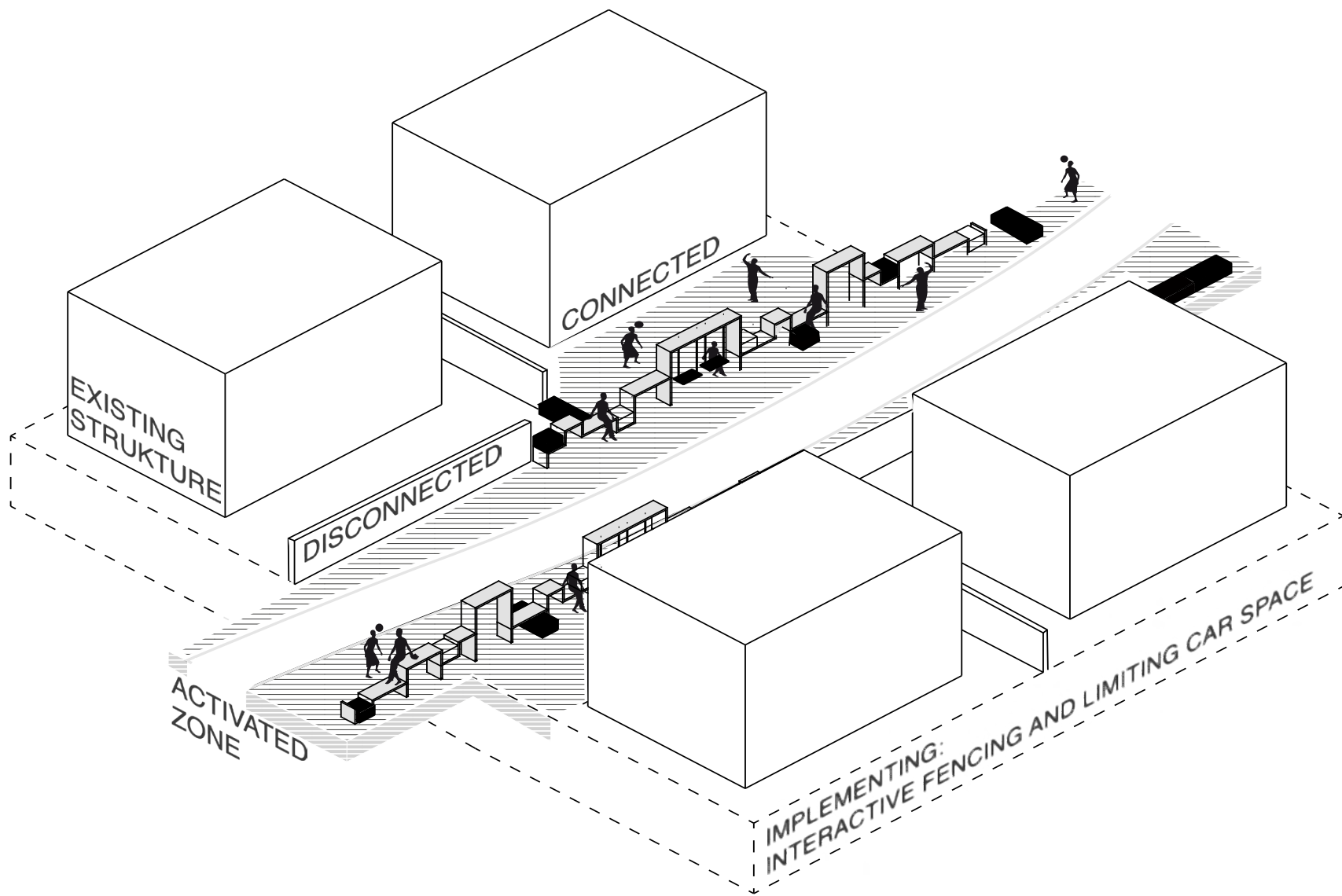


- Sealed
- Forrest
- Agricultural Plots
- Water Bodies
- Industrial Area
- Bike Path
- Railway/Highway Barriers
- Street

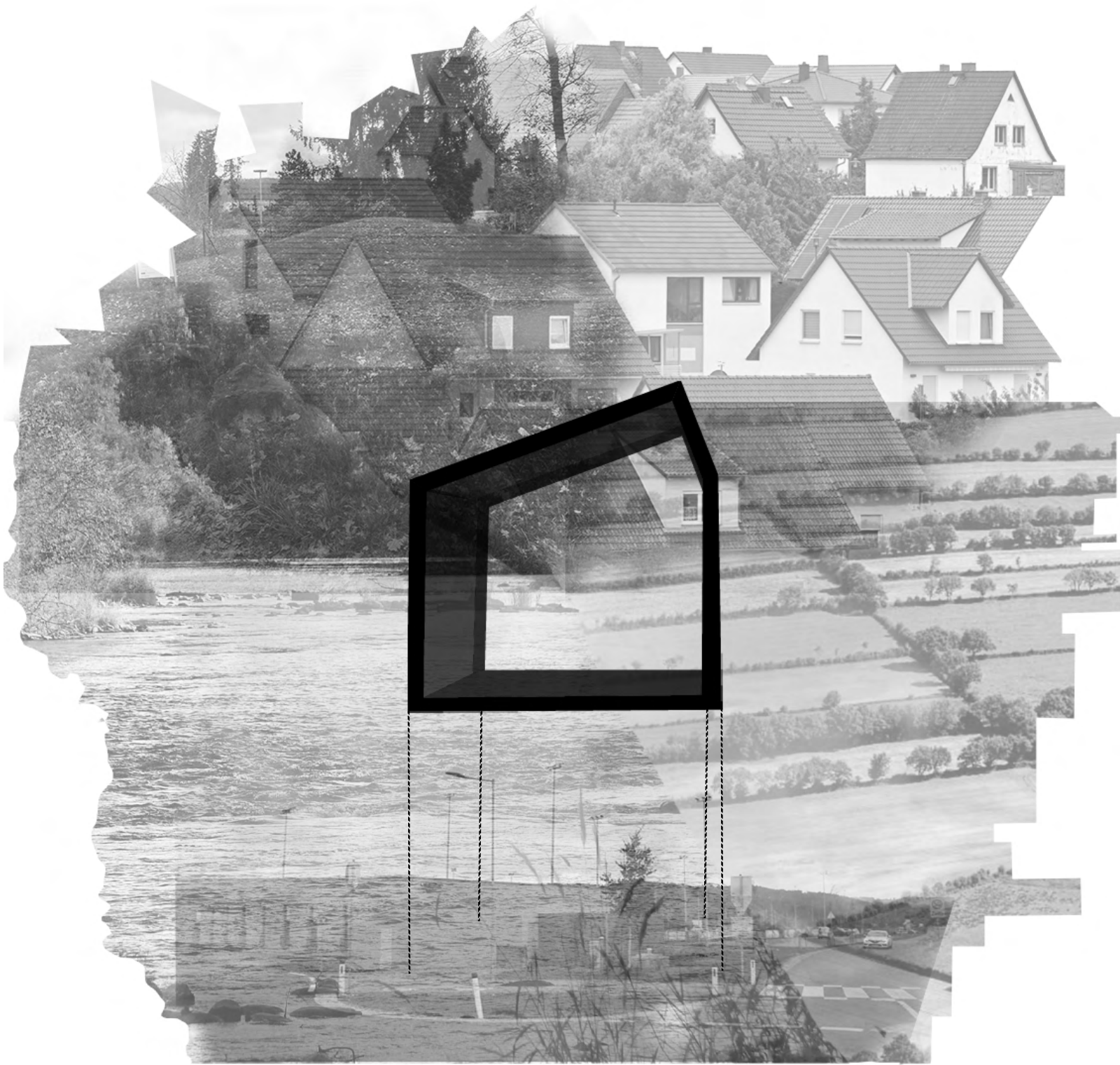
Our mission of connecting clients and creating spaces that take all their diverse needs into account is grounded in our own area we examined. However, the aim is to create a number of measures that can function as a hand-book. From this, ideas should be taken and used in surrounding areas. Within all our ideas and proposed changes high flexibility is given so any new combination of measures can easily be used. For this map we zoomed out of our area and looked at suitable areas in the wider region which could be the first stepping stone through which these ideas could spread.

All across austria similar areas facing the same challenges exist, but especially in this wider region as Leibnitz as a whole is one of the few smaller cities that is facing a major influx of new inhabitants. This is why planning these areas is so crucial to ensure a good quality of life for all participants/elements of the landscape.

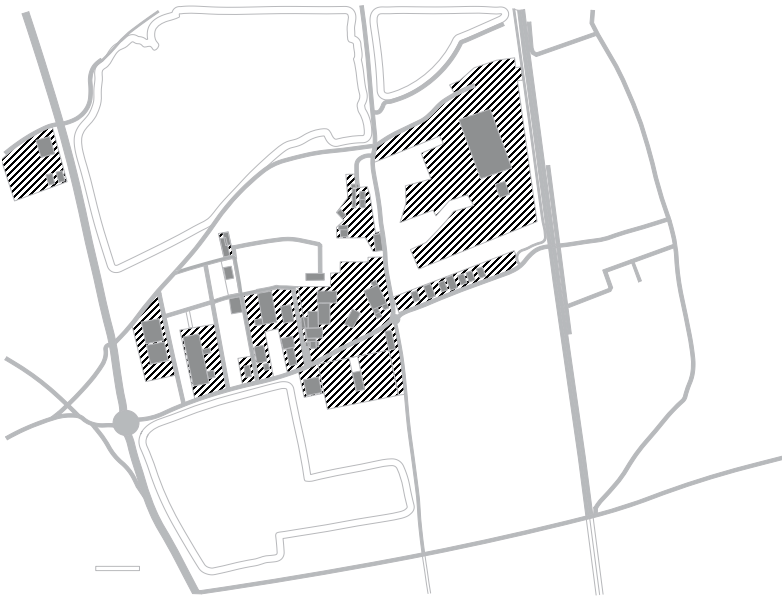
## creation of contact zones



Fences delimit territory but they also hamper social interaction and create hard lines of division. Stronger communities can be forged and connections between the public space and private space can be created by implementing interactive modular fencing which allows people to interact with one another. These daily social interactions are vital to our well being. Our design for the fences includes play elements, sitting areas for people to rest on their way or to stop for a chat and can provide shelter from rain. Due to the design it makes a place people normally just pass through an area of interest. It activates the landscape of the street. This type of fencing can be used anywhere and can be adapted and assembled in way to respond to the needs of the community, for example provide more play areas for children.



Multifunctional roofed spaces, located in different landscapes in the area, are functioning as models for innovations, recreational spaces and contact areas. Those spaces can be used for small concerts, pop-ups, gardening and other community projects. Also, there will be information and events about water quality in the Laßnitz, new ways of implementing solar panels. Most importantly, they will serve as space to meet other people and relax.



1\_existing structure



2\_spaces for parking removed



3\_streets removed



3\_new order

Industrial areas typically consist of one storey buildings or large two storey halls which take up significant space and seal many square meters of soil. Instead of each business owning separate buildings stacking buildings on top of each other frees up valuable soil as well as limits the number of access roads that are necessary.