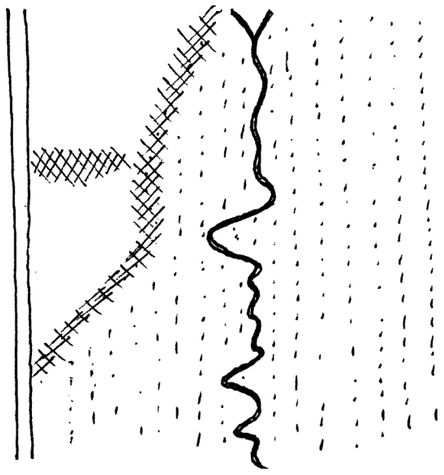
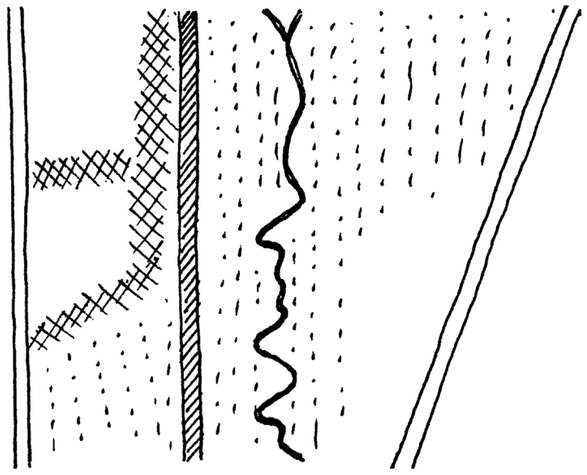
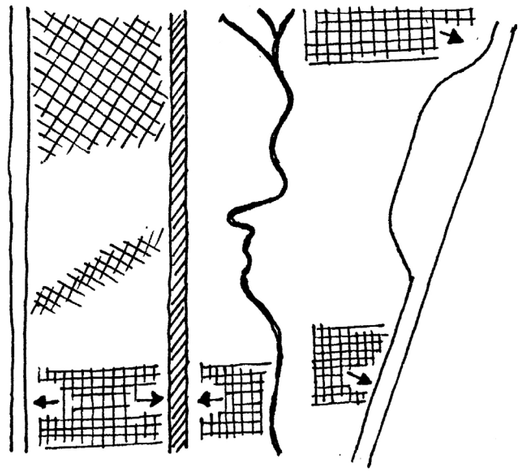
Nowadays, due to climate change, we are witnesses of more and more frequent extreme weather fluctuations. The 100-year floods reappeared every year, and prolonged droughts threaten both the landscape and the cities. Water loses its ability to stay in the site and in times of torrential rains and melting snow after the winter period it overloads our sewer system. Not only for these reasons it is now important to pay attention to water retention in the landscape. The proposal addresses this problem and represents a solution to the wetland.



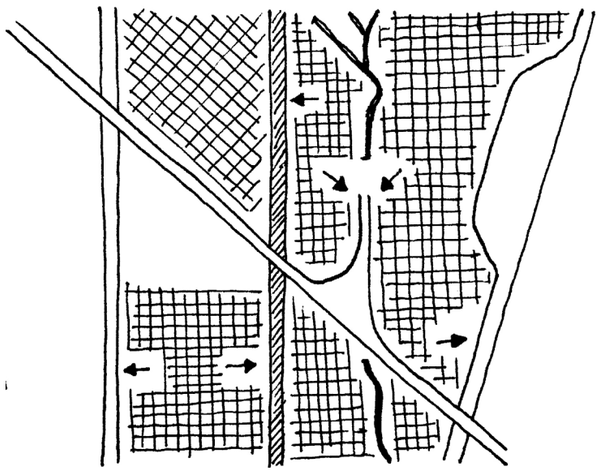
18th century



19th century



20th century



21th century

The river Senne has undergone a significant transformation in recent centuries from a territorial-determining factor to an almost invisible element in the industrial landscape. This change was conditioned by the introduction of large transport infrastructures into the territory – construction of the canal and railway in the 19th century and highway in the 20th century – which was followed by industry that now forms the urban matrix. The Senne itself, as well as the tributary of the Zuunbeek river, was channelled in the length of almost 1 kilometre, which causes flood problems downstream.




Industry is one of the fundamental elements of the city, but nowadays either disappears from the city or causes problems associated with rainwater. In our effort to turn the city into an attractive living and working environment, we have also driven the industry out of the city. The industrial lands are transformed into residential areas or work areas related to the tertiary sector. On the contrary, it is important to keep the industry in the city, especially as incubators for new projects, start-up projects that will support the local economy. Next to the disappearance issue, the industry is always accompanied by a large percentage of impermeable surfaces. The runoff water from these surfaces is simply driven into the sewer system, which overflows from spillovers into Senne and thus pollutes it and threatens the biological quality.




The introduced concept of highway landscape works with spatial opportunities for water and ecological management and at the same time with the unusual aesthetic potential that the combination of a purely technical man-made element with nature offers. The areas around highway are often vacant, inaccessible for human, provide safe space for animals and are highly biologically valuable.

1. Downsizing and elevating of the E19 highway. The entrances and exits are reduced from two to one traffic lane. The outer exit acts as a dike lined with trees. The lifting of the highway guarantees the possibility of free movement and overflow of the river. The bridges are constructed of prefabricated concrete elements.

2. Digging of the soil to the water level of Senne.

3. Daylighting of Senne. The channel of Senne and tributary of Zuunbeek is deconstructed in almost whole length. The new river channel is designed in the way it provides natural dynamic processes. The space under the highway works as buffer zone capturing storm water that could threat the industrial area downstream.

4. Creating the wetland. The wetland is constructed as riparian space for the river. The vegetation change in cross direction depended on the biological value it supposed to create.

“From monofunctional flood plains to submersible landscapes with multiple uses. The area between the flood limit and the river is so designed that, despite naturally occurring periodic flooding it can be used as open space for recreation while serving as a natural habitat for many riparian species at the same time.” Prominski, M., Stokman, A., Zeller, S., Stimberg, D., Voermanek, H., Bajc, K. (2017). River. Space. Design: Planning Strategies, Methods and Projects for Urban Rivers. Birkhauser.

5. Making the newly created highway landscape accessible.

6. Re-purposing of unused industrial building. The new building program is still an industry just focused more on smaller scale – co-working space, space for start-ups projects, education and workshop space.

“Even though they are sometimes useless as a building, the remaining workspaces and structures in the city nevertheless form a stimulating and affordable context for new initiatives and start-ups. By strategically choosing for conservation and re-use, we can strengthen the urban and economic dynamics.” BOZAR – Centre for Fine Arts, Brussels (2016). Good City Has Industry. BOZAR.

7. Creating an artificial hill. Due to the earthworks associated with the opening of the river a lot of soil will be dug. This soil can be deposited on site to form the hill over time. The hill offers views of the newly created landscape as well as on the surrounding.

8. Annotating the pond. The existing pond in the area is a remnant of the meander of the once present river. This fact is visible in the form of an educational board.

Vlezenbeek Anderlecht Forest

Situating the intermediate scale strategy on the larger scale

Jiří Formánek

Water

surface water
channeled river
flood risk
historical river path

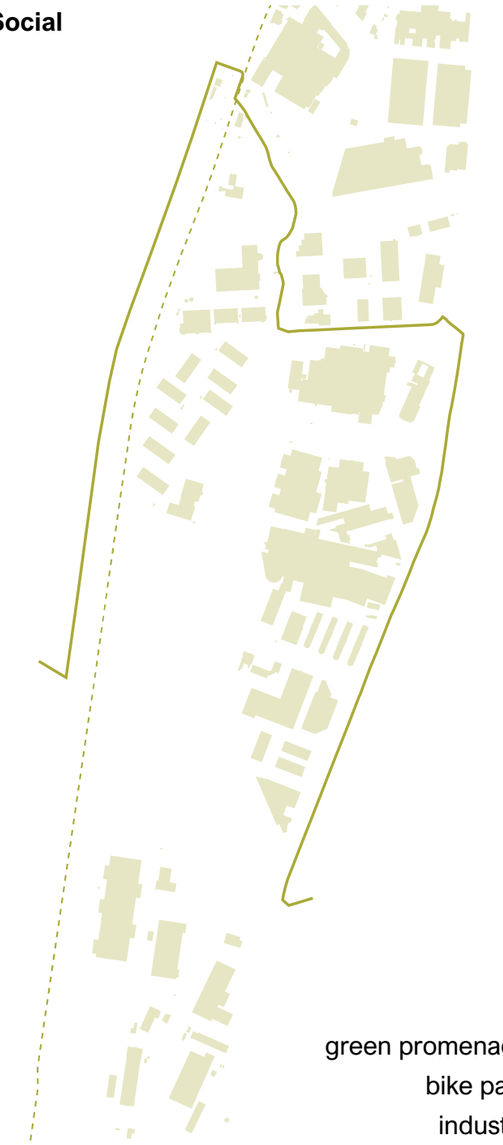
Ecology

permeable surface
biologically valuable

Mobility

highway
railway
industrial boulevard
canal

Social



green promenade
bike path
industry

Existing conditions

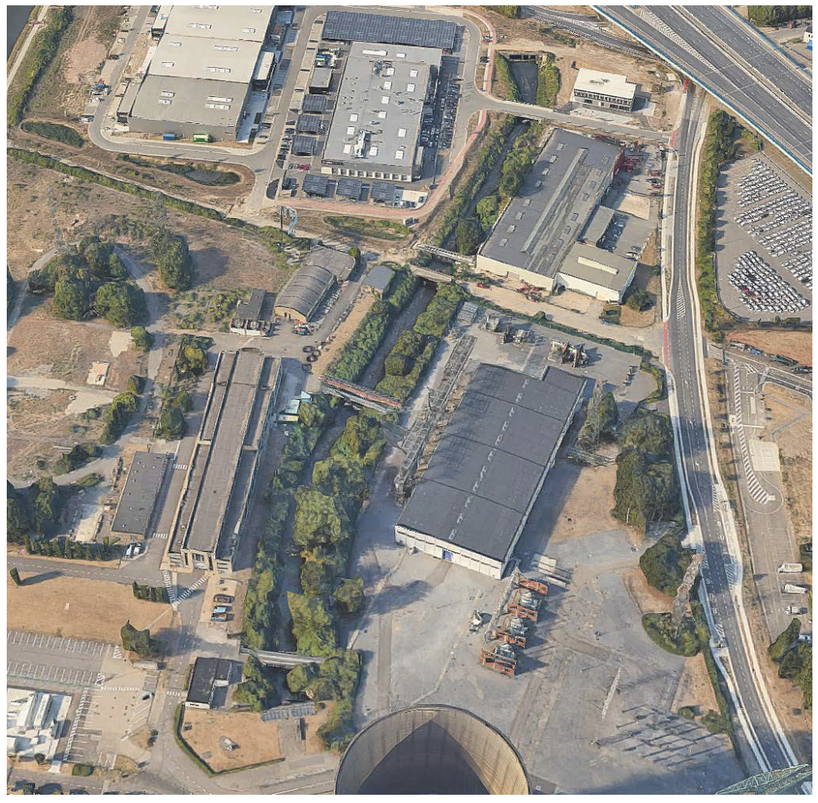
Scale 1:5000

0 100 250 500m

N

Strategy on the intermediate scale

Jiří Formánek



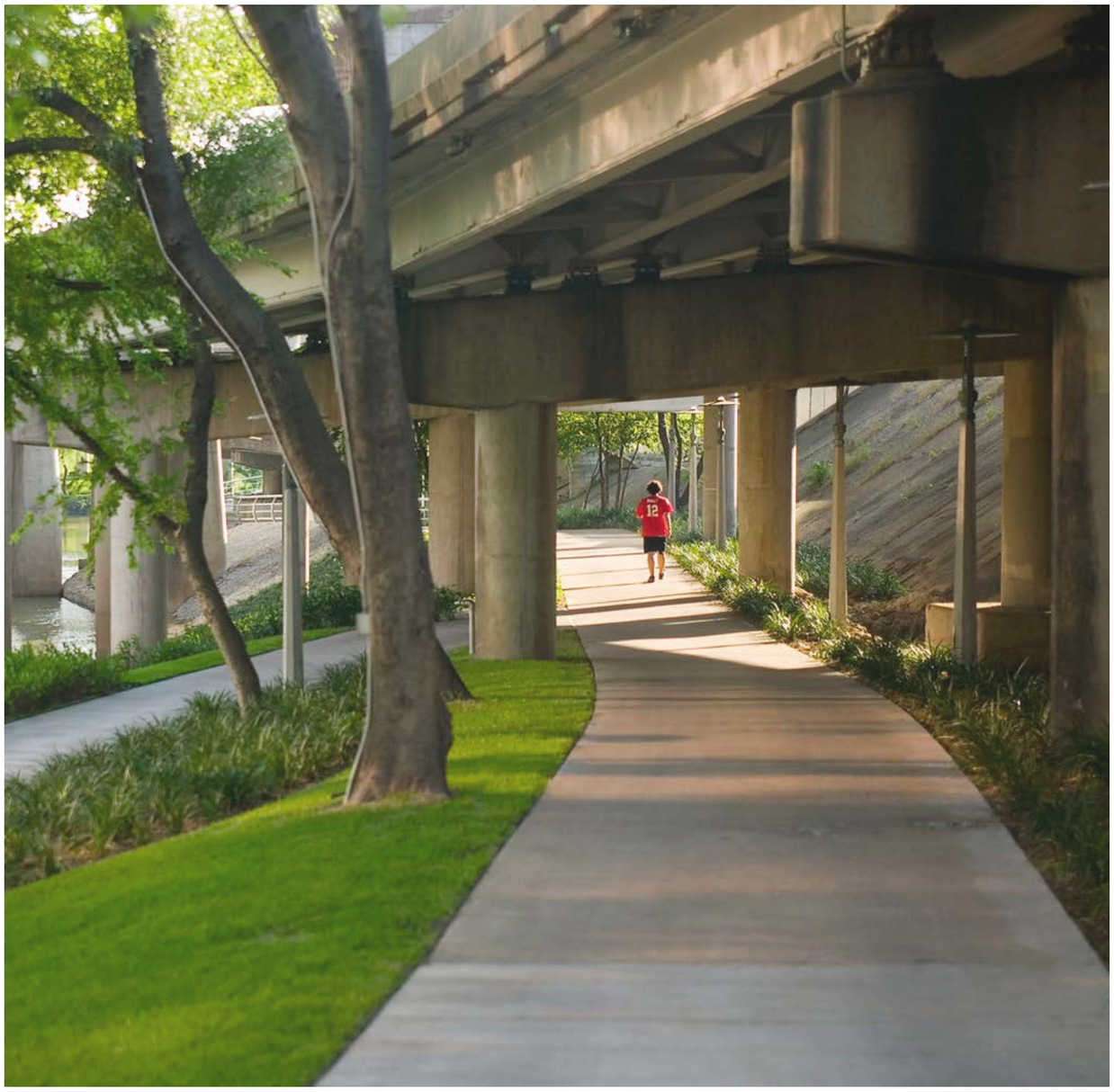
Senne - south

Senne - middle

Senne - north

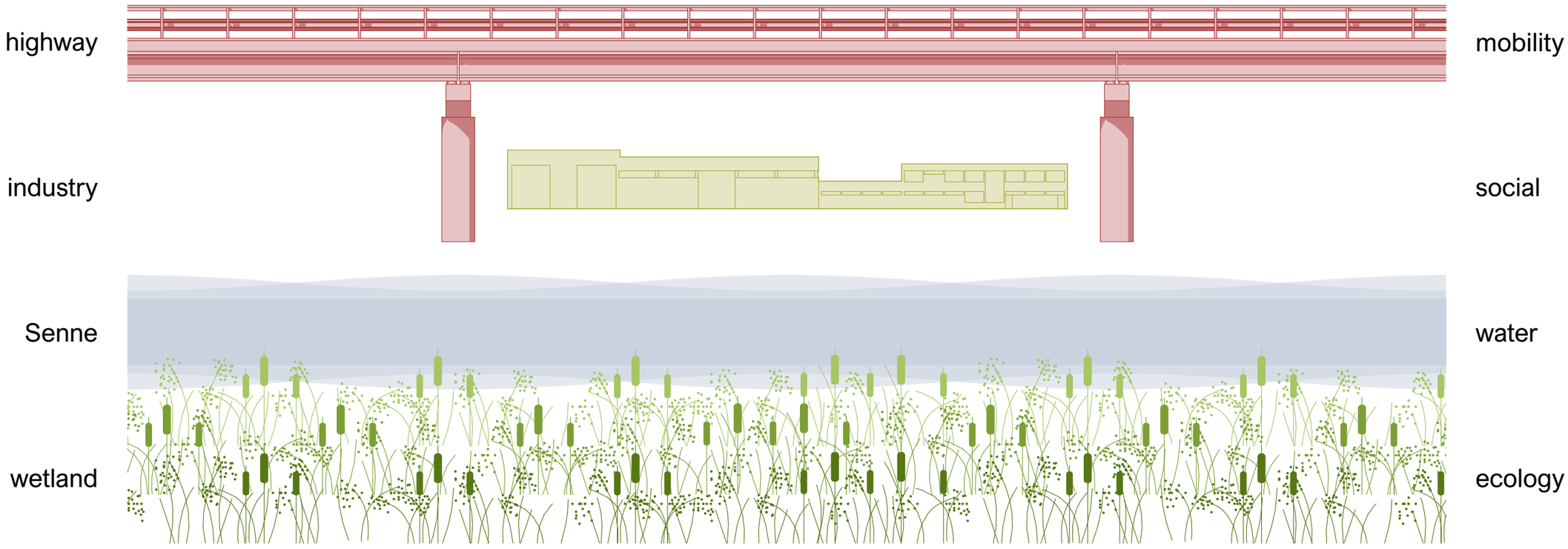
Site pictures of the intermediate scale

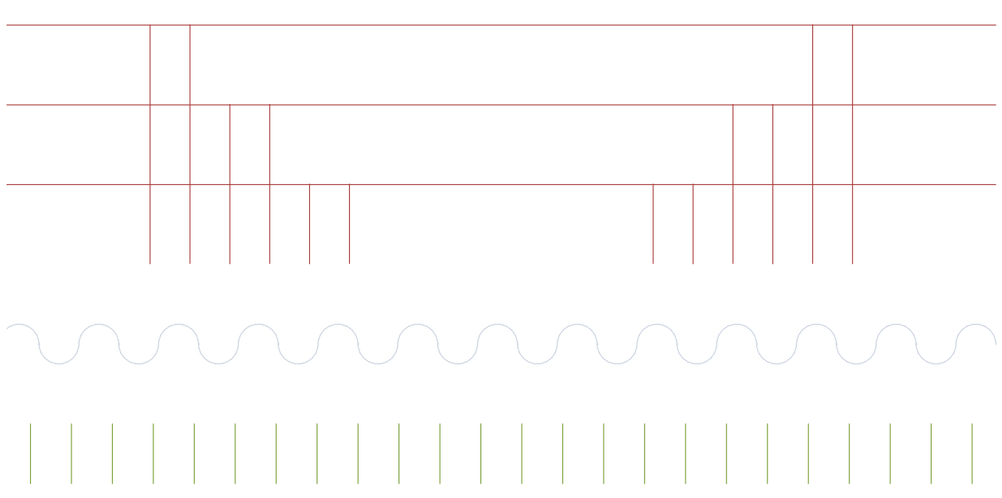
Jiří Formánek



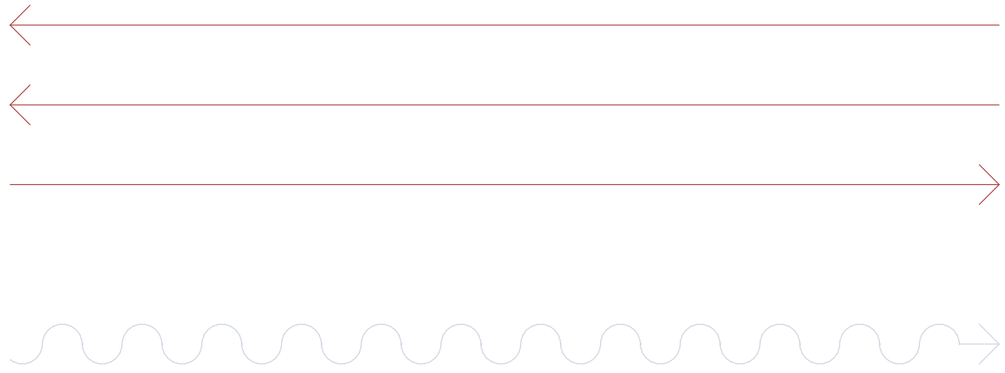
Reference - SWA Group, Buffalo Bayou Promenade

Jiří Formánek





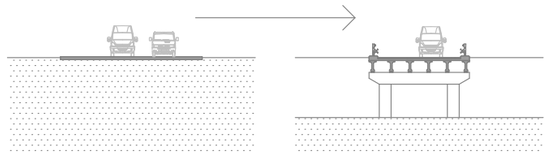
horizontality and verticality



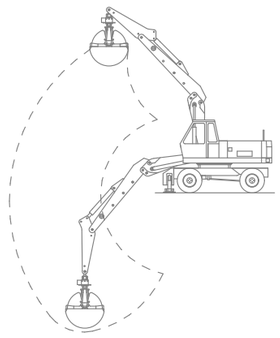
slow and fast movement

Diagram intermediate scale

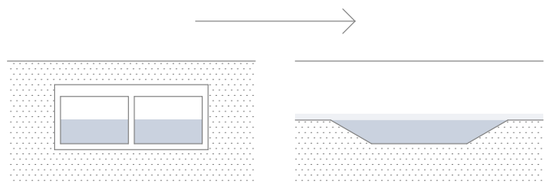
JIŘÍ FORMÁNEK



Downsizing and elevating of the E19 highway.

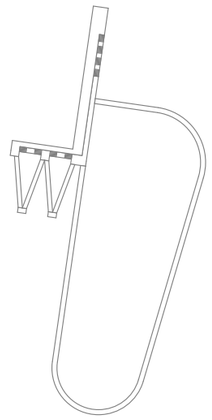


Digging of the soil to the water level of Senne.

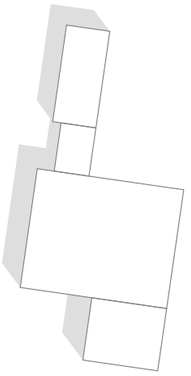


Daylighting of Senne.

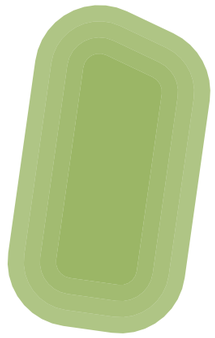
Creating the wetland.



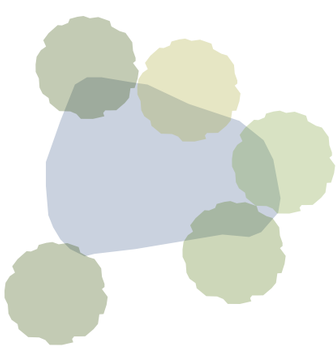
Making the newly created highway landscape accessible.



Re-purposing of unused industrial building.



Creating an artificial hill.



Annotating the pond.

Intervention
Scale 1:5000

0 100 250 500m

N

Precision of elements of the intermediate scale

Jiří Formánek

ZOOM 1:2500

Existing conditions

Scale 1:5000

0 100 250 500m

N

Situating the specific intervention on the drawing of the intermediate scale

Jiří Formánek

E19

industrial building

park

Site pictures of the intervention

Jiří Formánek

Montage

Jiří Formánek

Existing conditions

Intervention

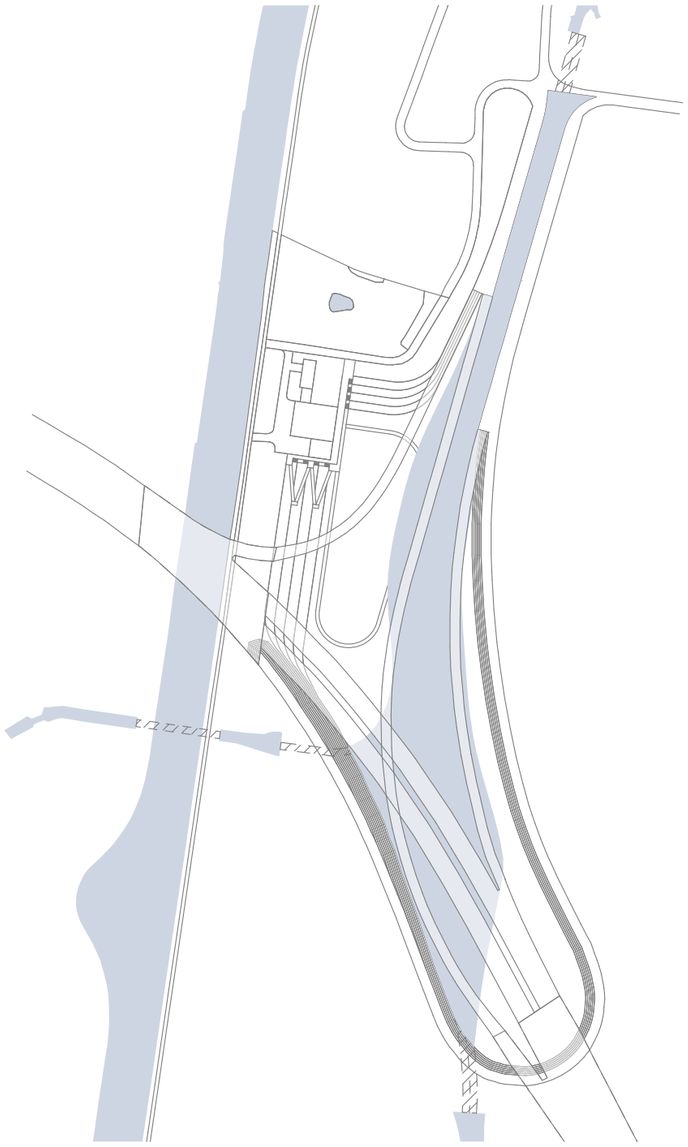
Scale 1:2500

0 50 100 250m

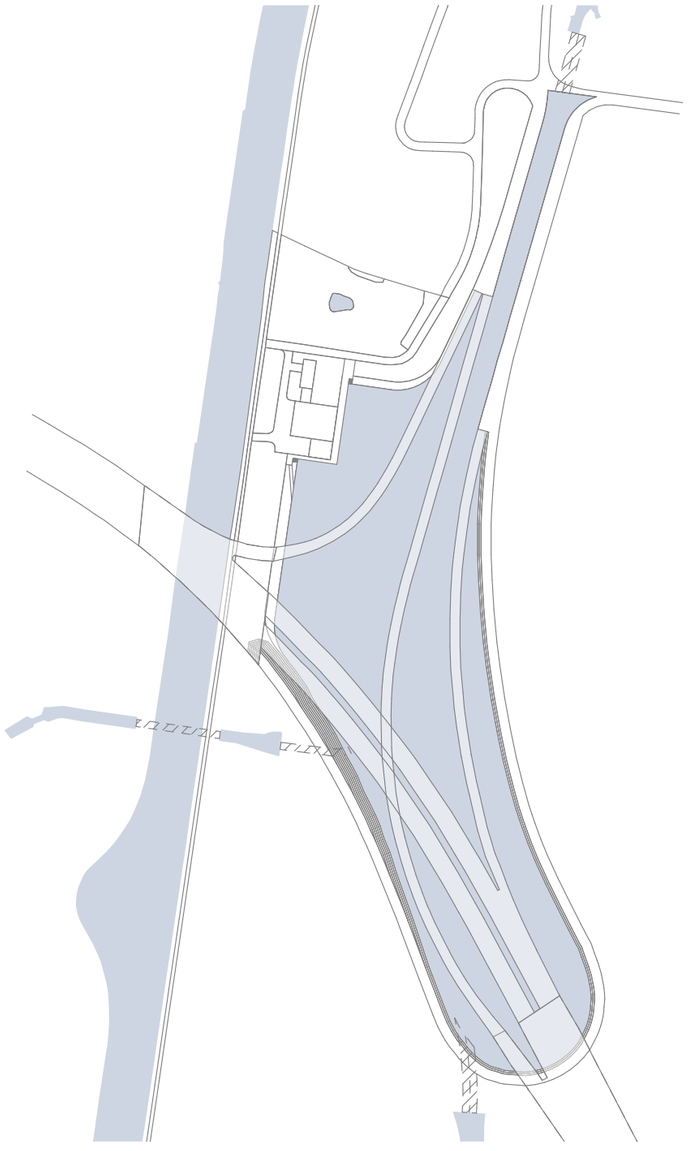
N

Zoom plan

Jiří Formánek



Regular flood



Exceptional flood

business park

existing park

artificial hill

existing pond

repurposed industrial building

elevated pathway

existing highway bridge

wetland

daylighted river

elevated highway E19

existing highway bridge

La Senne

Zuunbeek

Canal Brussels-Charleroi

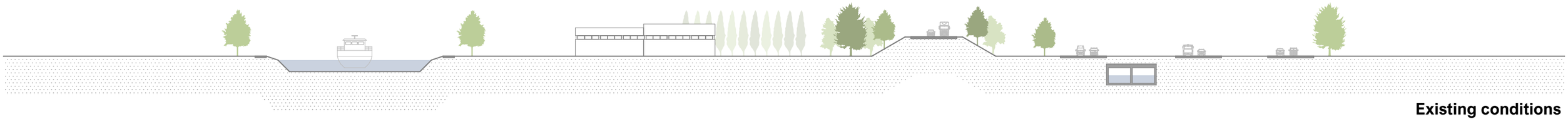
Intervention

Scale 1:2500 0 50 100 250m

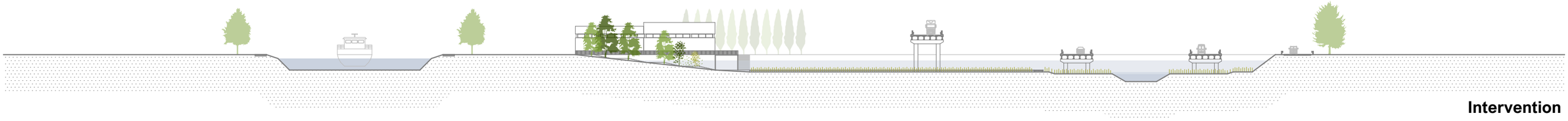
N

Zoom plan

Jiří Formánek



Existing conditions



Intervention

Scale 1:1000 0 25 50 100m

Zoom section 1:1000

Jiří Formánek

swamp rabbit

grey heron

duck

frog

trout

red alder

sweet -pepper bush

cattails

yellow iris flower

pickerelweed

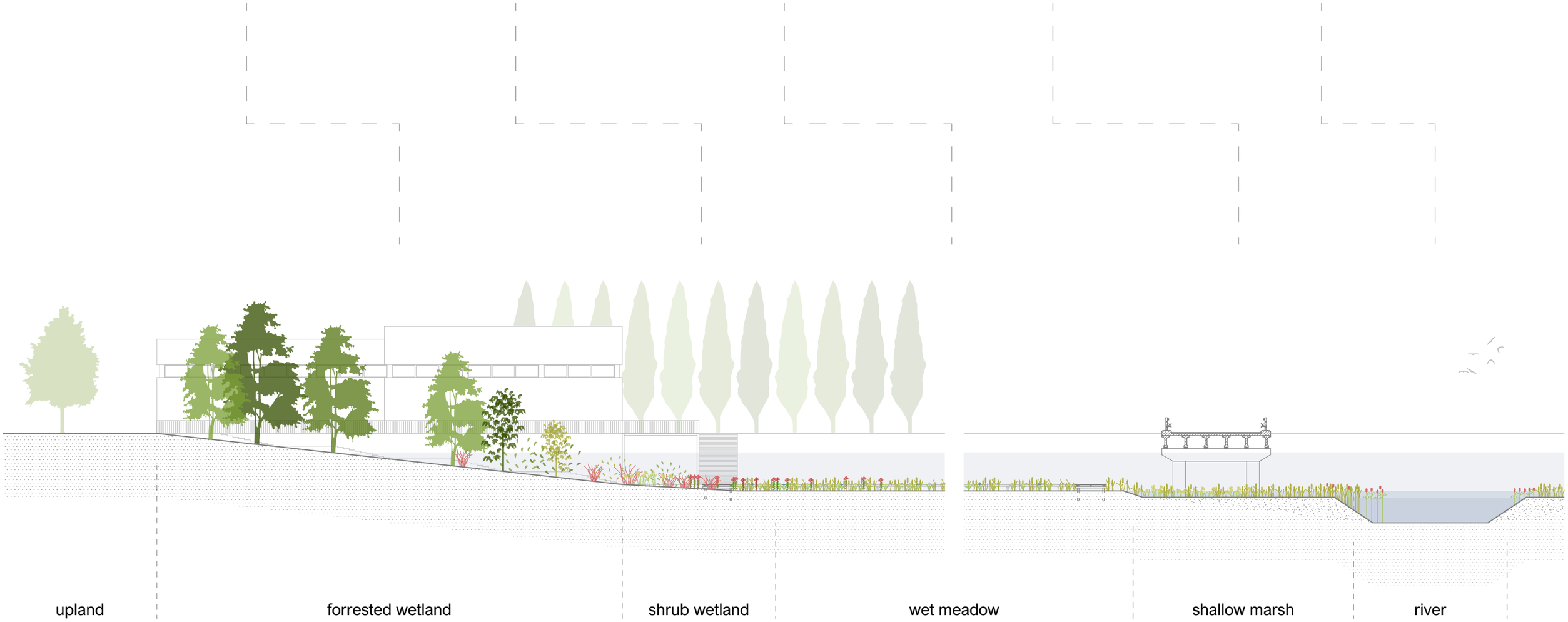
silver birch

red osier dogwood

joe pye weed

soft stem bulrush

wild water celery



Intervention
Scale 1:300 0 5 100 30m

Zoom - wetland

Jiří Formánek

offices
classes
meeting rooms

workshop space

canal

industry

terrace

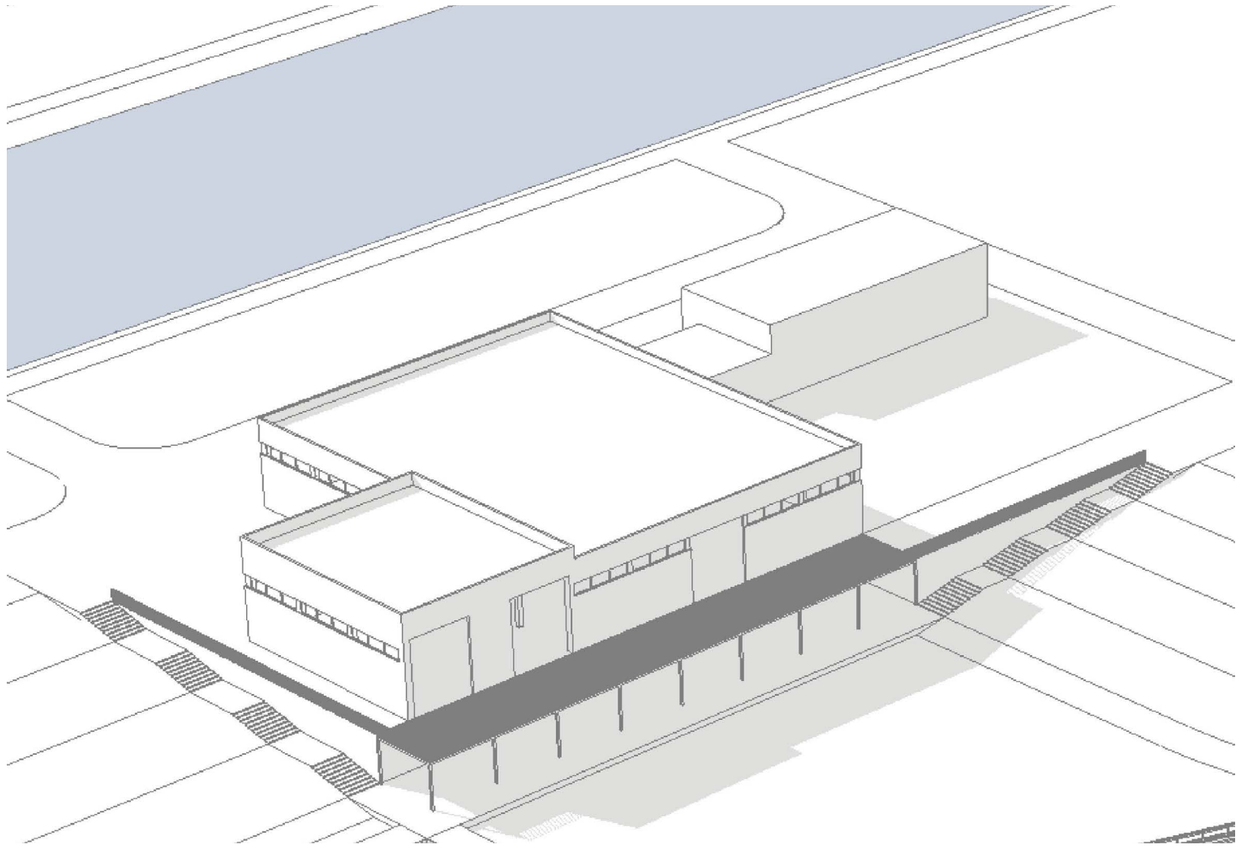
wetland

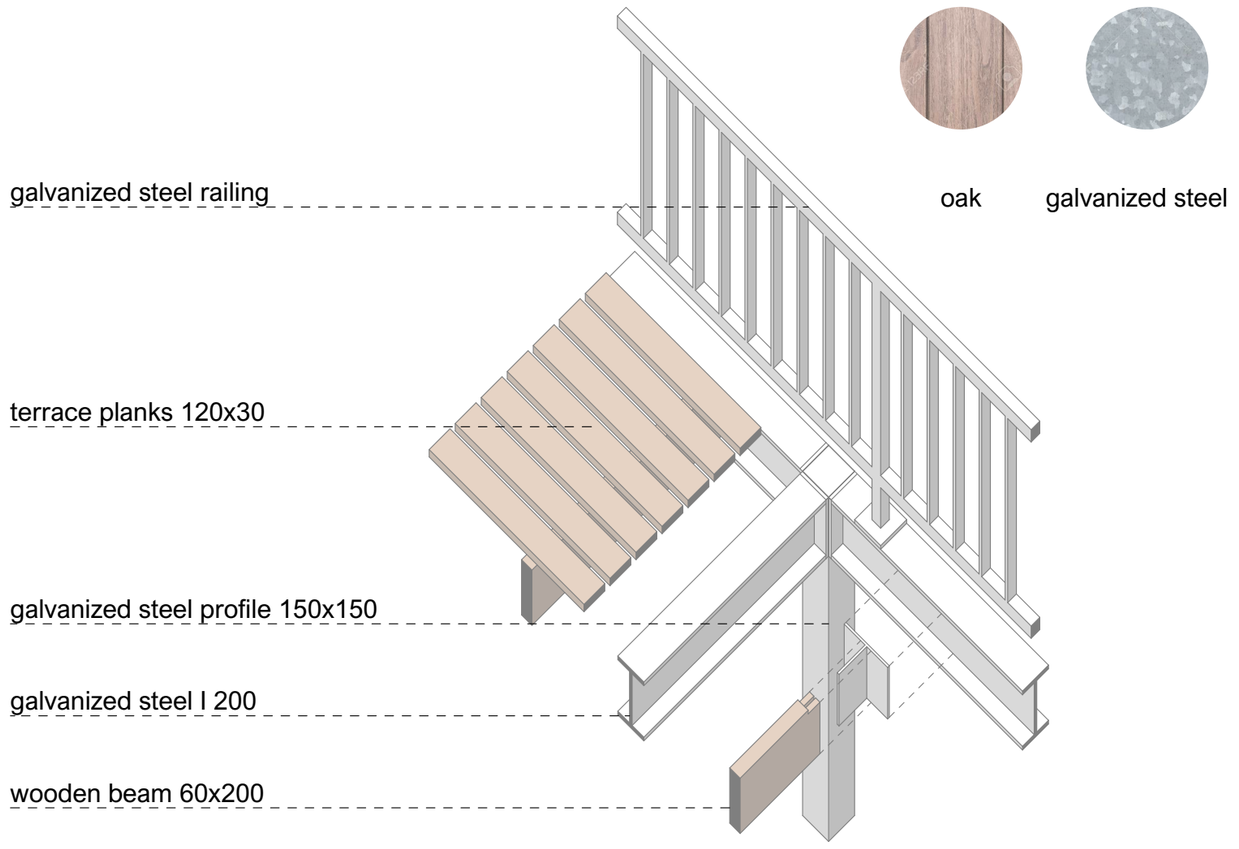
Intervention

Scale 1:300 0 5 100 30m

Zoom - industry

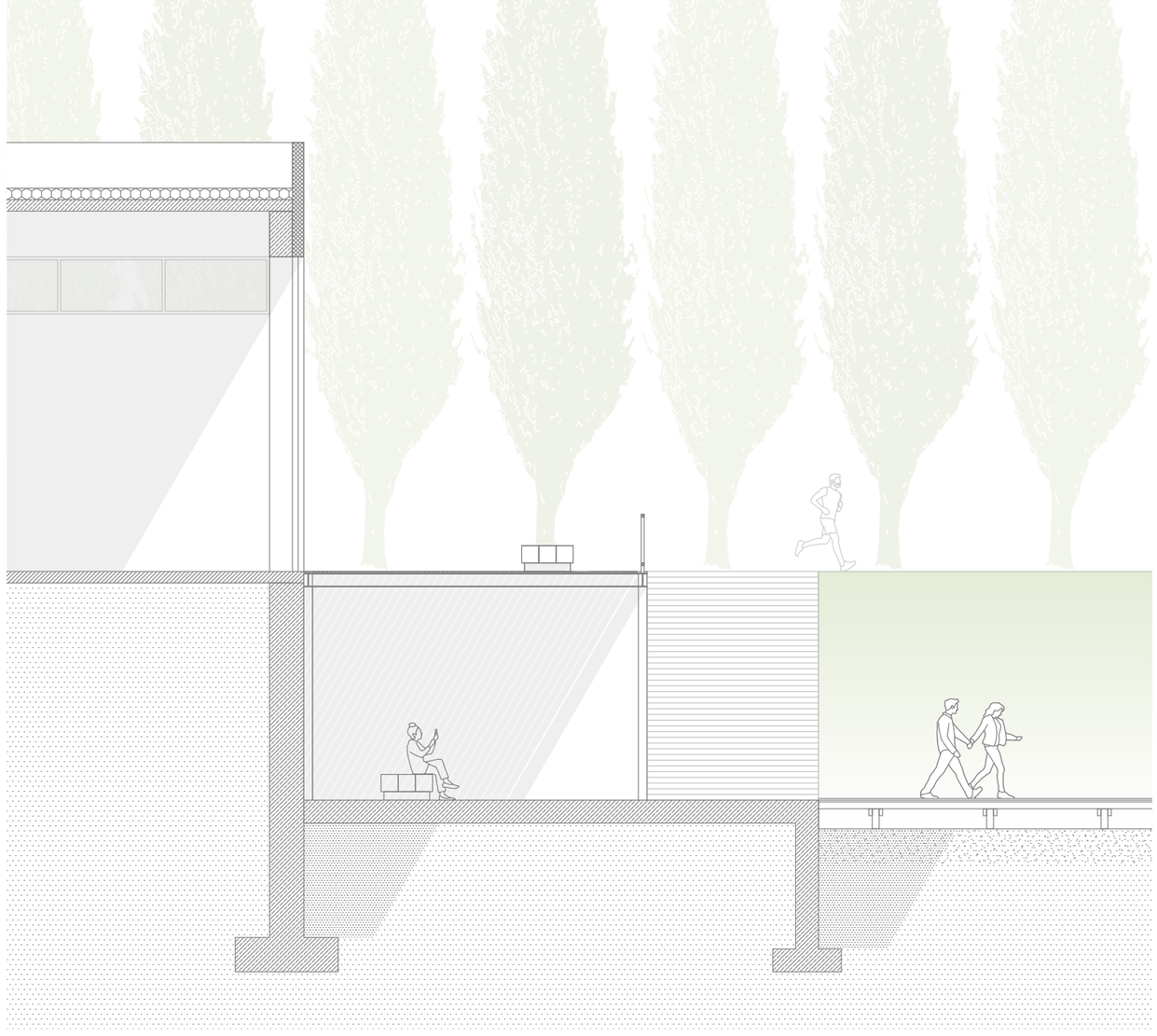
Jiří Formánek



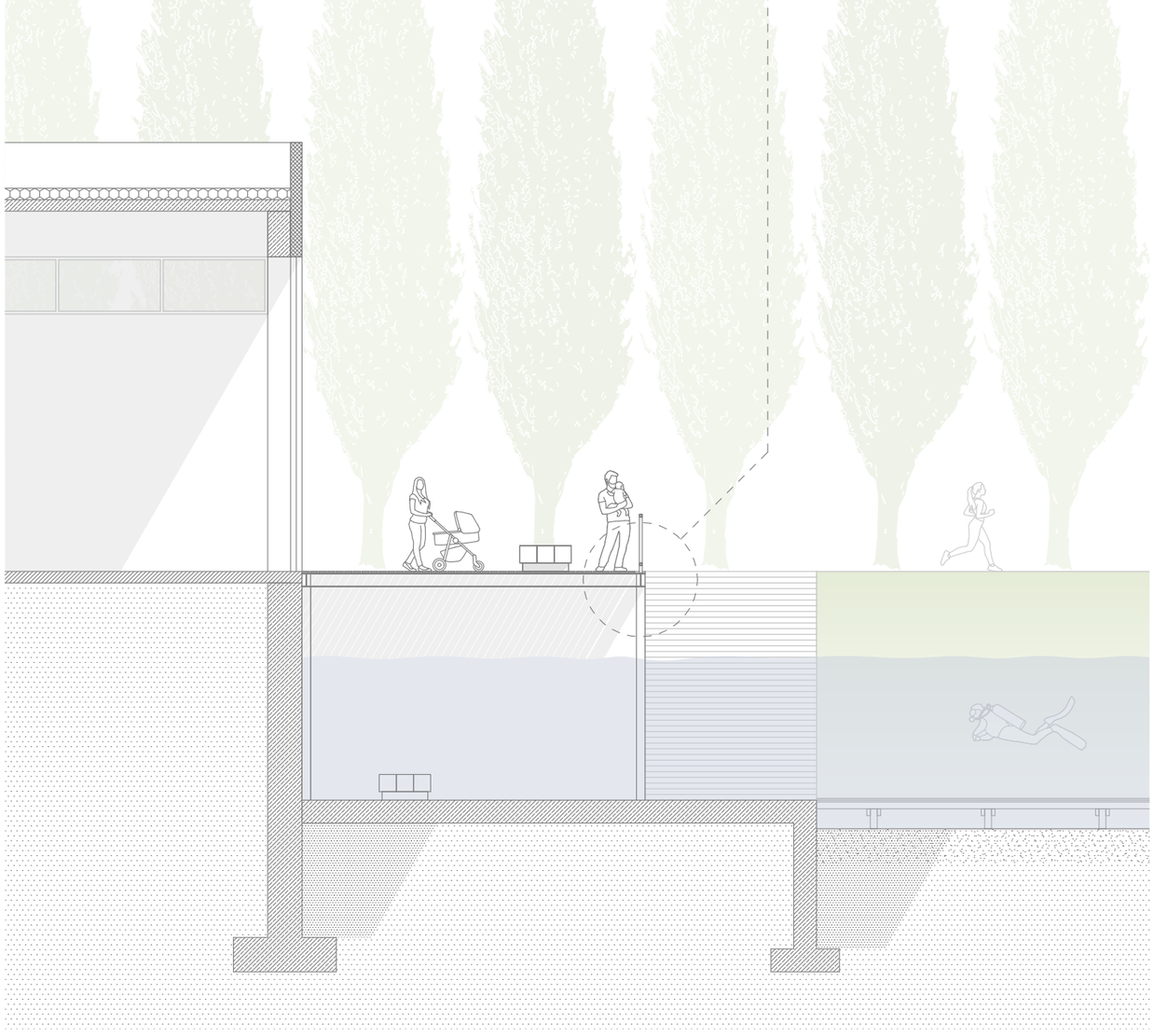


oak

galvanized steel



Normal



During floods

Scale 1:100 0 2.5 5 10m

Architectural detail - terrace

Jiří Formánek