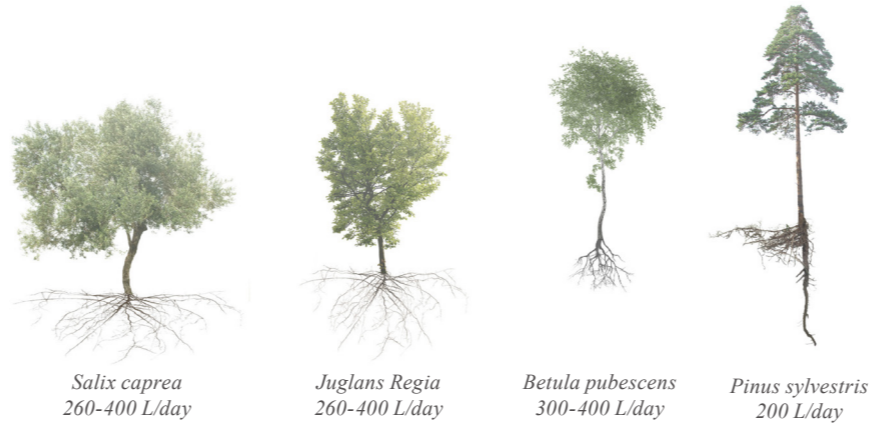




**Out of the Blue**  
A Nature-Based Armature for Urban Development,  
in a rapidly urbanized area, challenged by floodings.



Depending on the species, trees have the capacity of taking up 200 to 1200 liters a day.

Country / City Norway / Oslo  
University / School Oslo School of Architecture and Design  
Academic year 2017  
Title of the project Out of the Blue: A Nature-Based Armature for Urban Development  
Authors Femke Leonie Maria Peters

## TECHNICAL DOSSIER

Title of the project	Out of the Blue: A Nature-Based Armature for Urban Development
Authors	Femke Leonie Maria Peters
Title of the course	Master Diploma Project
Academic year	2017
Teaching Staff	Elisabeth Sjødahl and Sabine Müller
Department/Section/Program of belonging	Institute of Landscape and Urbanism
University/School	Oslo School of Architecture and Design



### Written statement, short description of the project in English, no more than 250 words

This work investigates: How can water and green create opportunities for an urban framework, while improving the city's economical, ecological and social life? The project proposes a nature-based design strategy addressing the urban challenges of flood, fragmentation and underused spaces to provide social connectivity in the Municipality of Lørenskog. A changing climate and a rapid growing city have become highly problematic: Recently occurring heavy rains, causing flooding of the urban fabric.

By taking the watershed with its flows and cycles as base for intervention, the project opens up a new approach towards the existing logics of urban expansion, exploring ecological infrastructure within the wider territory as a place-maker. The vegetation is chosen on the one hand for its spatial qualities, biodiversity and erosion control as well as its capacity of water uptake, often neglected within present hydrological calculations. The present lack of a soft mobility network in this suburban car-based area excludes at present children, elder and people without car from a free, independent displacement possibility. The suburban residual land, connected into a system, reveals possibilities to an alternative soft-mobility network. It links public services and socially important areas within the zonified urbanisation, as well as access to the surrounding natural reserves and high areas of the watershed. These problematics are prototypical for the Eastern suburban area of Oslo and will serve as a spatial spine and conceptual entry point for future urban development as a Nature-Based Armature for Urban Development.

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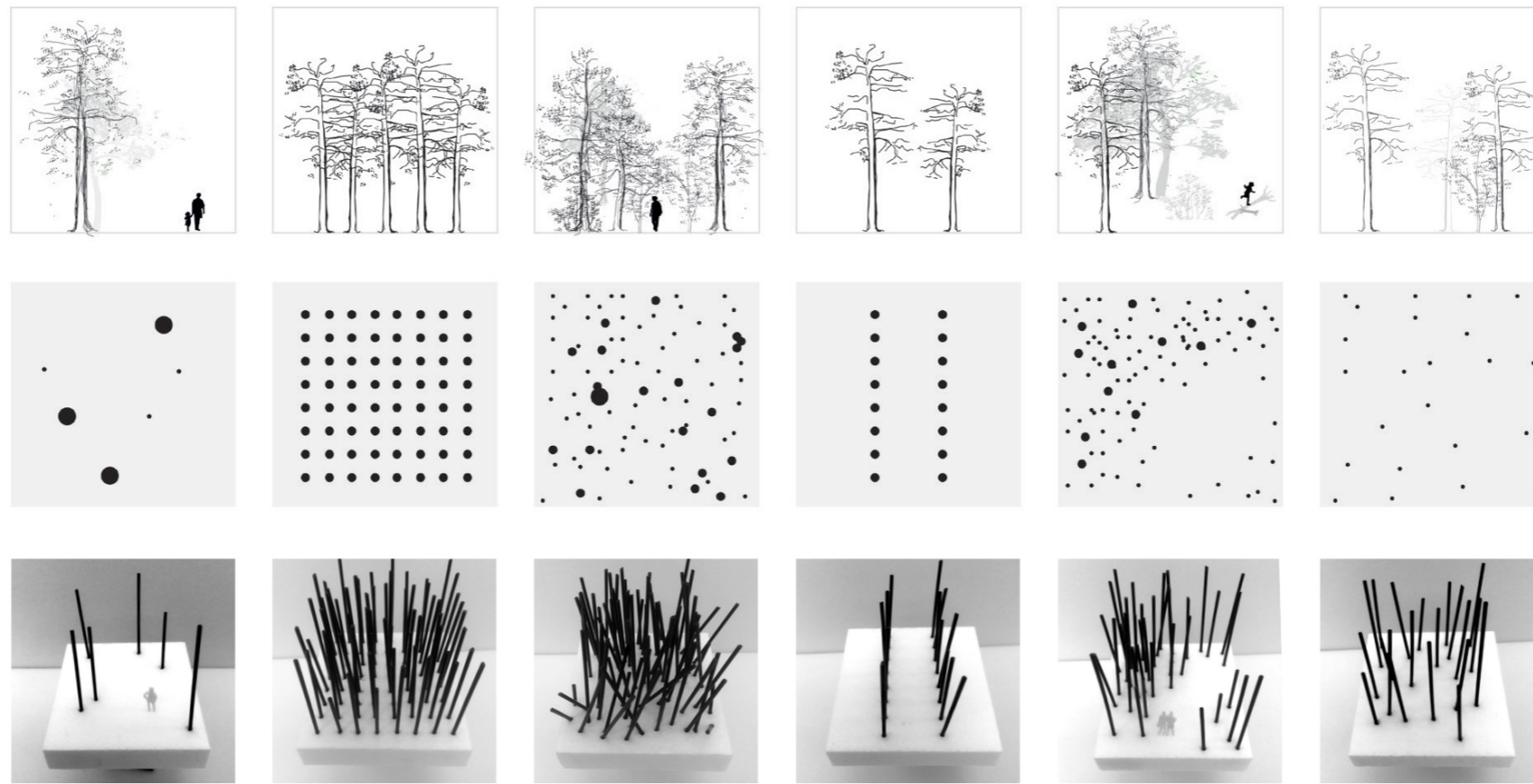
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# CLIMATE CHANGE AGAIN

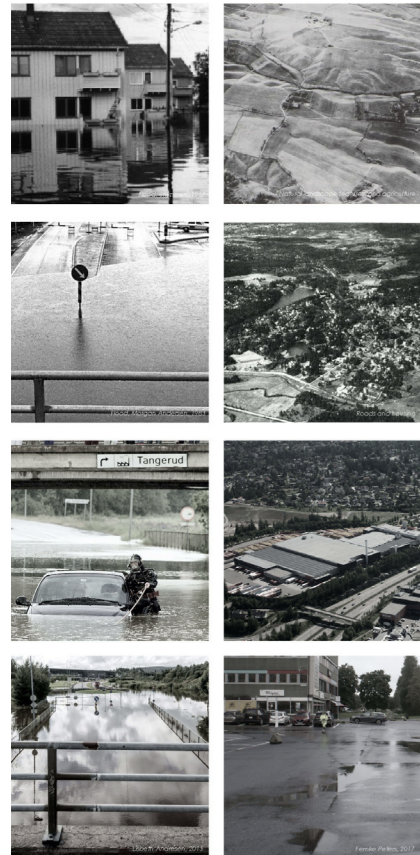
11th International Biennial Landscape Barcelona

Barcelona September 2020  
SCHOOL PRIZE



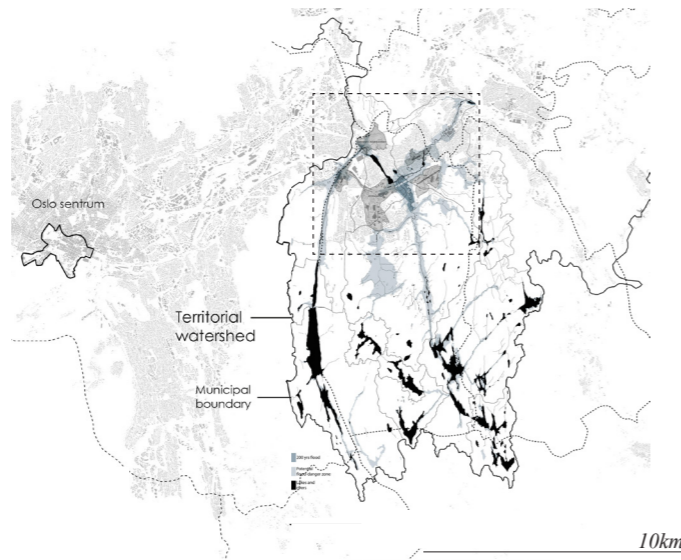
The armature of trees have a water take up capacity as well as it creates a language of orientation, atmosphere and new commons for the inhabitants.

**Climate change**      **Rapid urban growth**

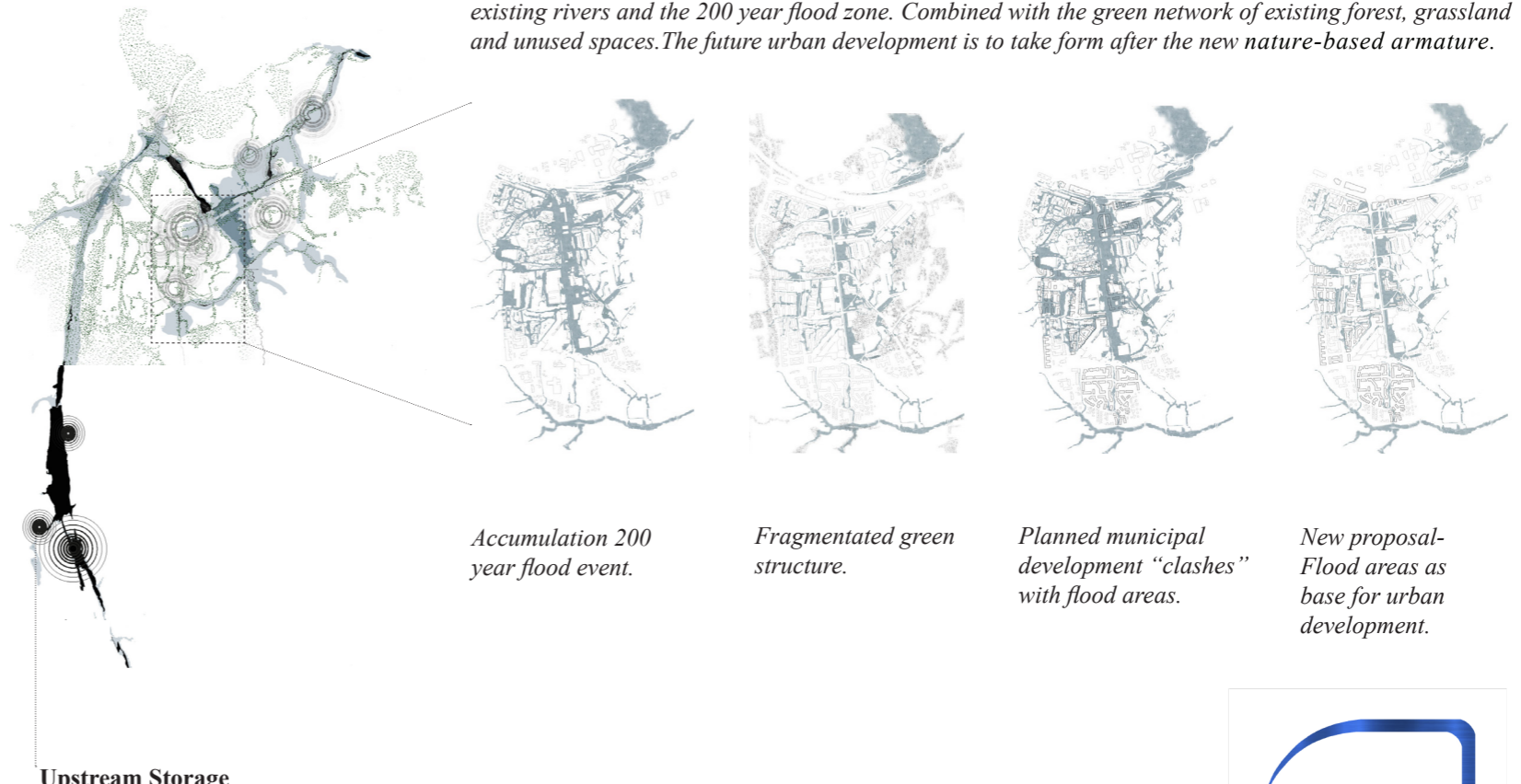


The Municipality of Lørenskog has gone through a time of rapid urban growth and climate change with increasing precipitation events. This resulting in two challenges: Underused residual spaces and the problem of flooding of the urban fabric.

1960  
1980  
2000  
2020



The suburban area of Lørenskog is located along the motorway between Oslo and the Airport to the North. The blue on the map shows the 200 years flooding areas, which is in conflict with infrastructure and urban development.



**Downstream Strategy:** A blue and green network strategy is proposed. Where the blue consists out of existing rivers and the 200 year flood zone. Combined with the green network of existing forest, grassland and unused spaces. The future urban development is to take form after the new nature-based armature.

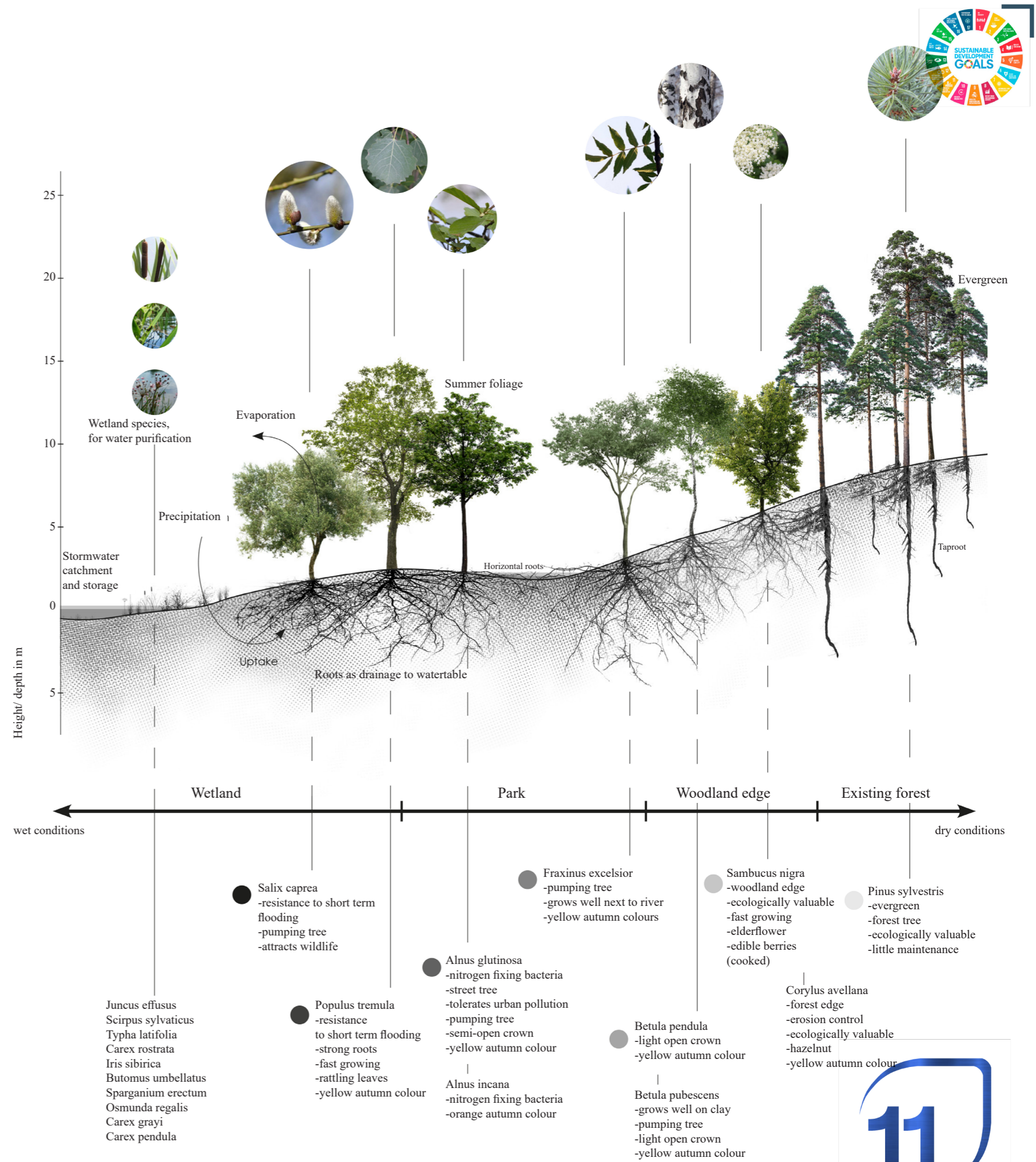
**Upstream Storage**

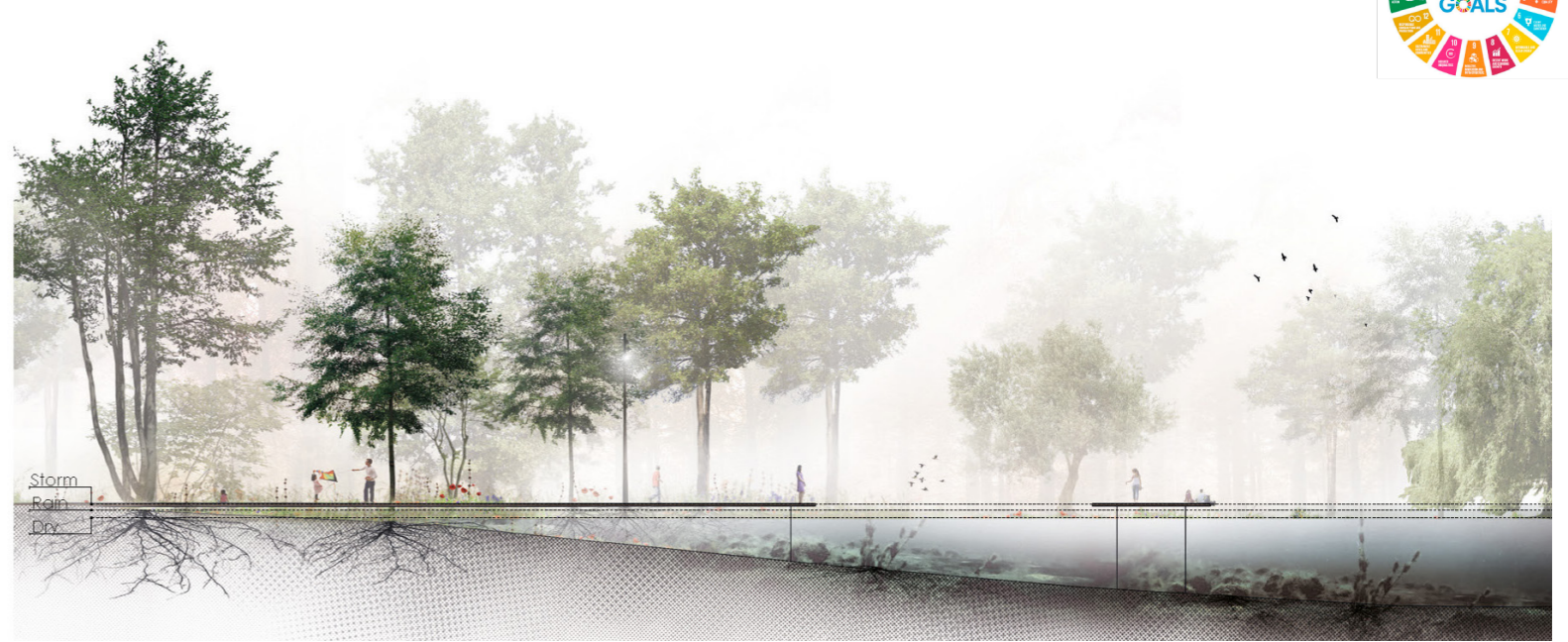
During longer rain periods, the water comes from the mountains because of the impermeability of bedrock. To deal with the overall problem of flooding, the water will be stored with natural dams and widening of the river up-streams.



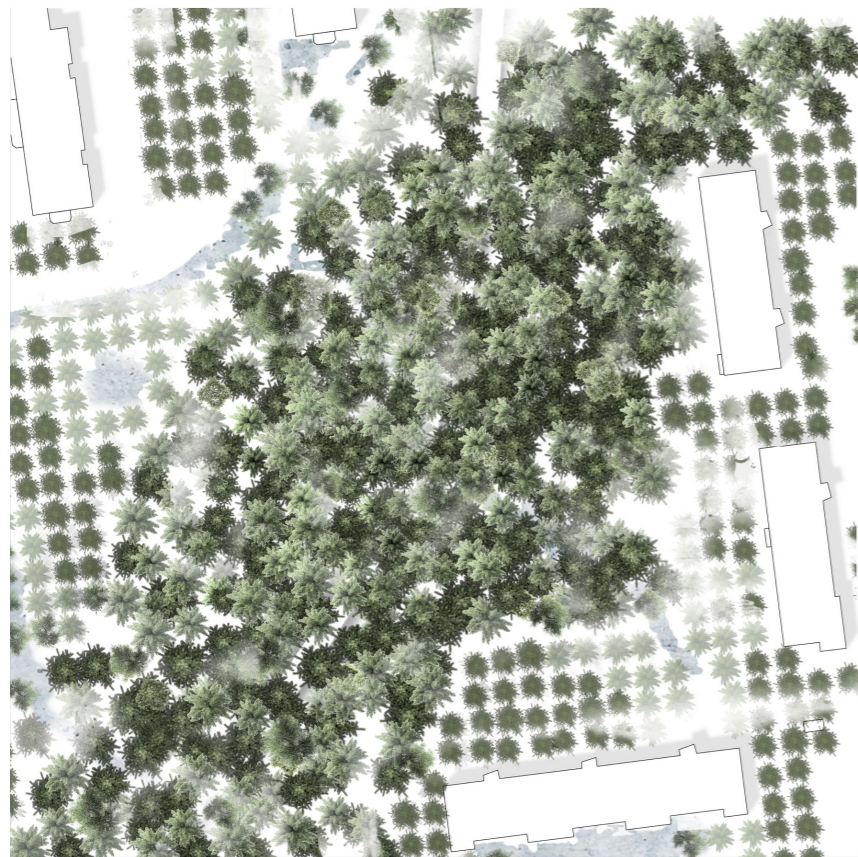


Proposed tree network to uptake water and improve public space in the center of Lørenskog.

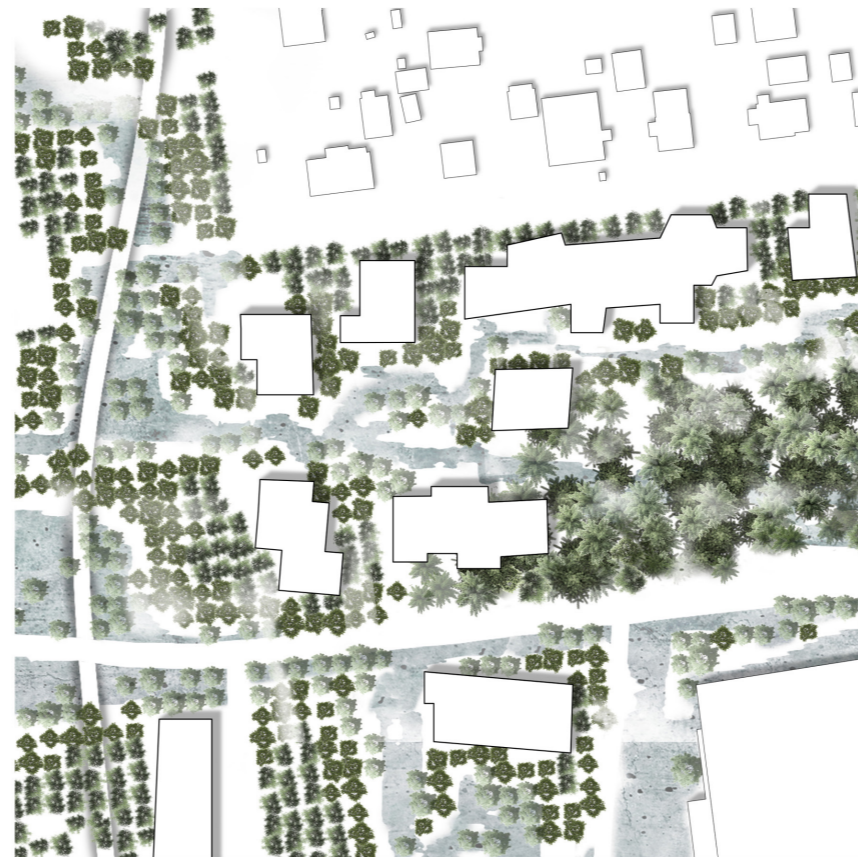




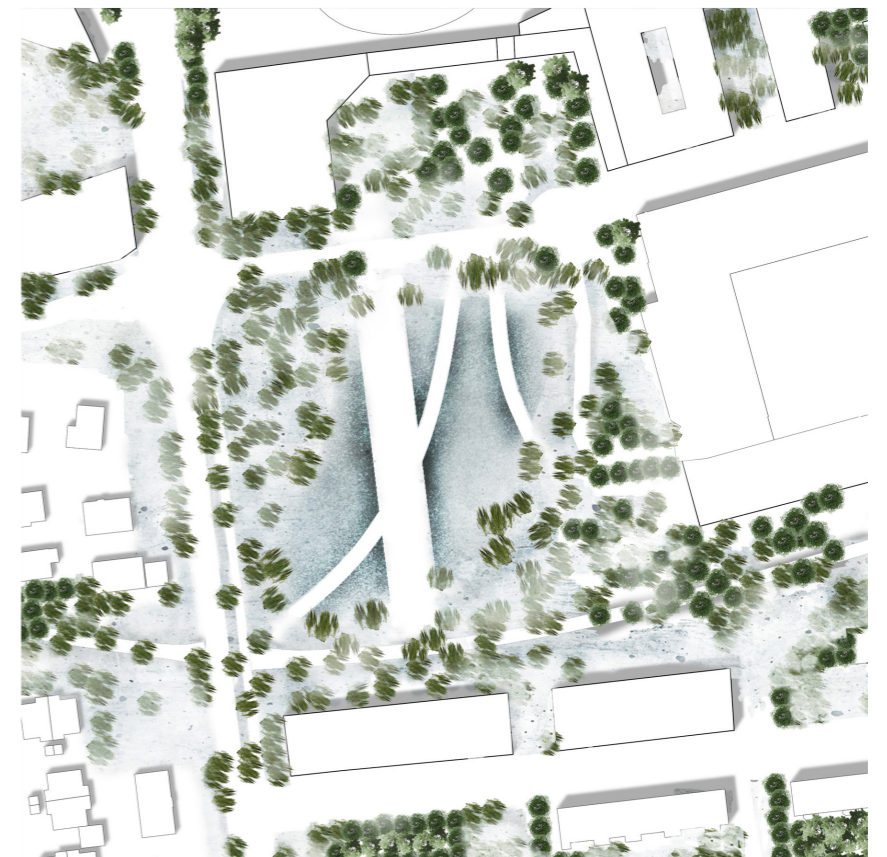
The new network created by the union of residual and underused areas, will adapt to flood as well as help to mecure the fast growing areas into habitats. With a focus on social hubs, it will result into quality of public space and social connectivity.



Forest



Residential area



City center

Opening up based on amount of water

