

Adaptive water-management systems



Country /City

University / School

Academic year

Title of the project

Authors

Switzerland / Zurich

ETH Zurich

2021 - 2022

Aqua Leni

Silvan Burkard, Luzia Rohrer



TECHNICAL DOSSIER

Title of the project	Aqua Leni
Authors	Silvan Burkard, Luzia Rohrer
Title of the course	amplitude, climate-change adaptation of water infrastructures
Academic year	2021 - 2022
Teaching Staff	Martina Voser, Coralie Berchtold, Yann Junod, Sofia Prifti
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University / School	ETH Zurich



" Adaptive water-management systems "

The Great Moss region in the Swiss Plateau is struggling with an increasing water shortage in agriculture. At the same time, mudflows occur after short, heavy rainfalls, causing damages to villages, along the streams, at the foot of the Jura mountain range. The „Aqua Leni“ project addresses these two conditions, implementing water and soil as the main design tools. Through a system of retention and storage, rainwater is slowed down from the catchment areas and flows gently until it reaches the fields, where it can be used for irrigation, reducing the extreme amplitude between drought and flooding. Furthermore, the design of a functional water management system chain emphasises the value of water and addresses this force of nature in a new, celebratory, way. The limestone layers of the Jura, the moraine material from the last ice age and the stream debris cones at the foot of the slope form the three basic rock substrates that the streams came across. The nodes, which include protection, retention and storage, are located at the transitions of the geological layers. In-between the nodes, linear systems are developed, allowing the water to reach the fields in controlled quantities and at regular intervals. The interventions are constructed with earth dams, that visibly and experientially highlight the importance of the geological subsoil on the water flow.

For further information

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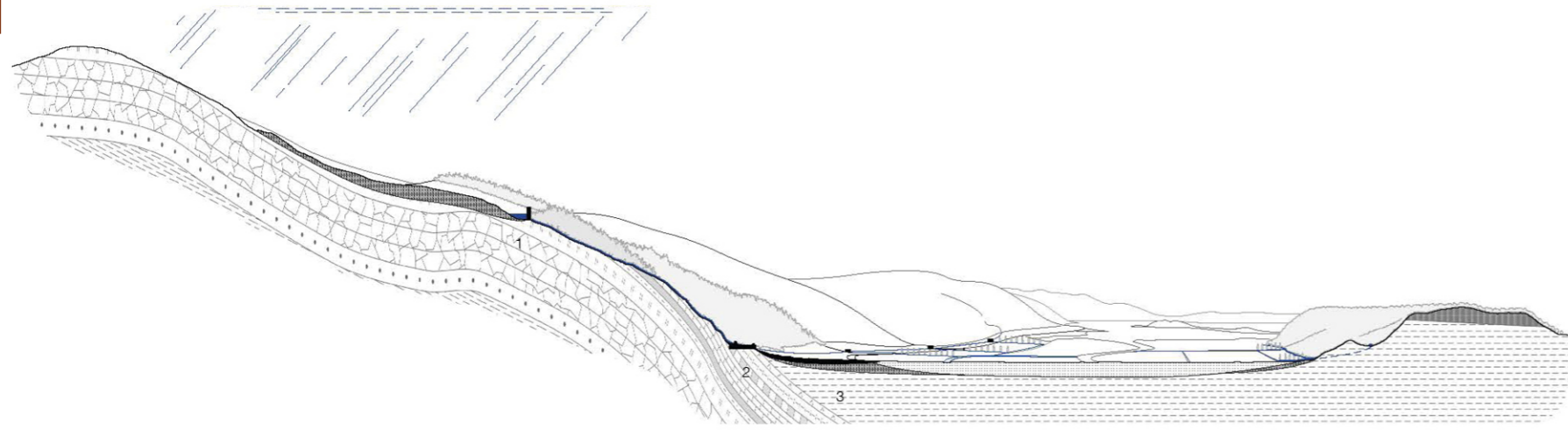
COAC - Colegi oficial d'Arquitectes de Catalunya

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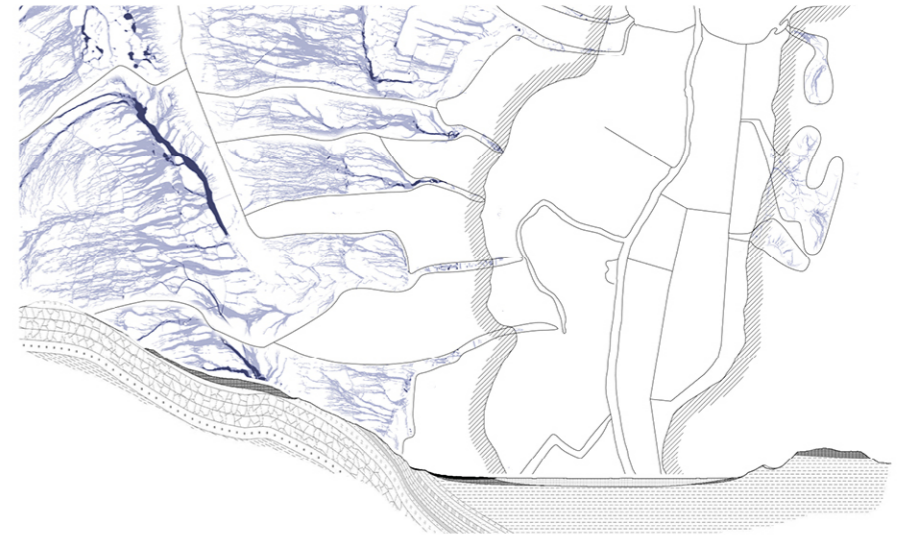
SCHOOL PRIZE



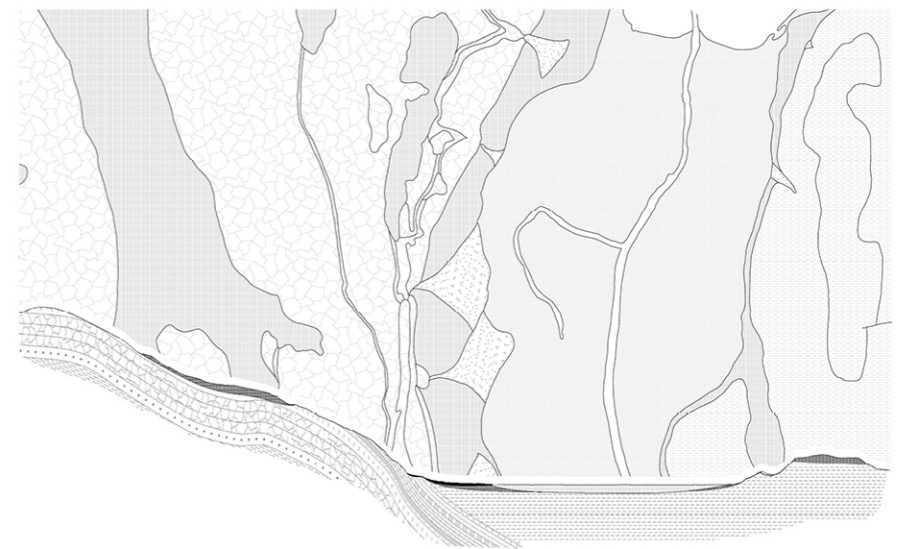
Systemic perspective section across the valley



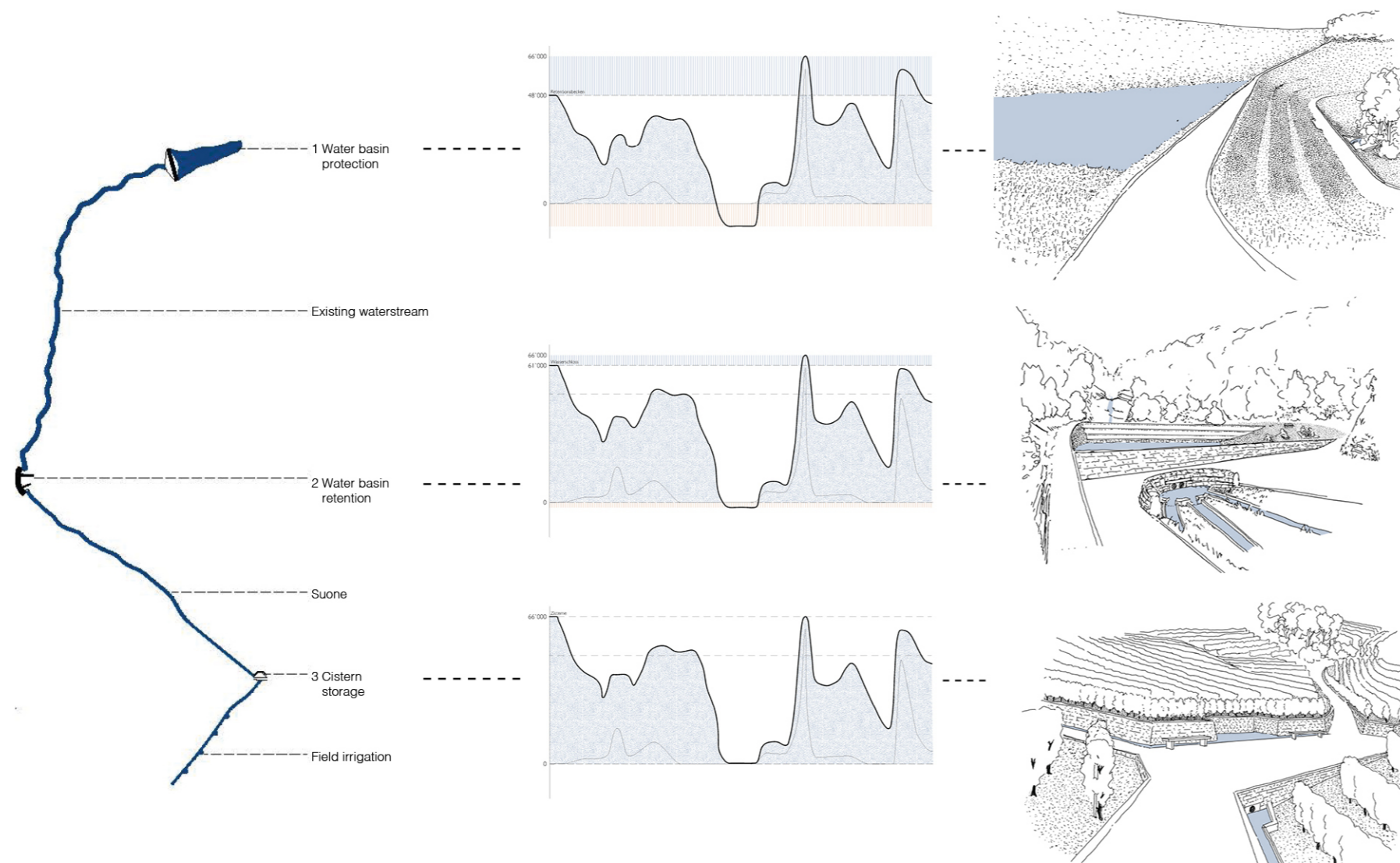
Site observations _ locating different scapes and atmospheres



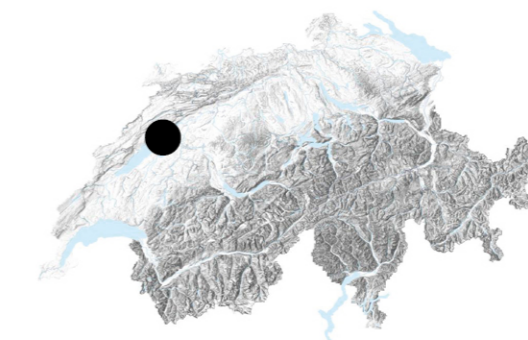
Surface water runoff



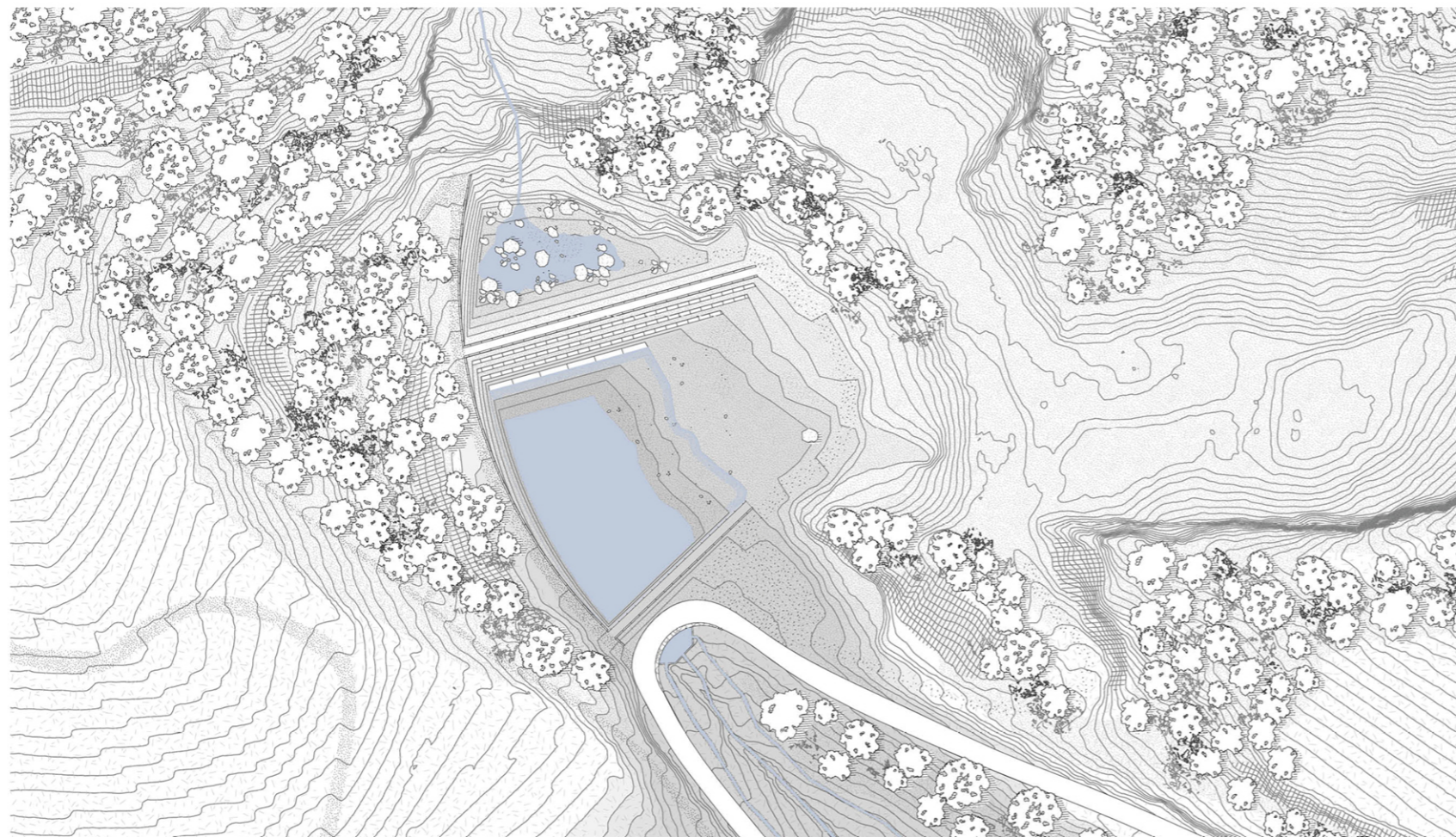
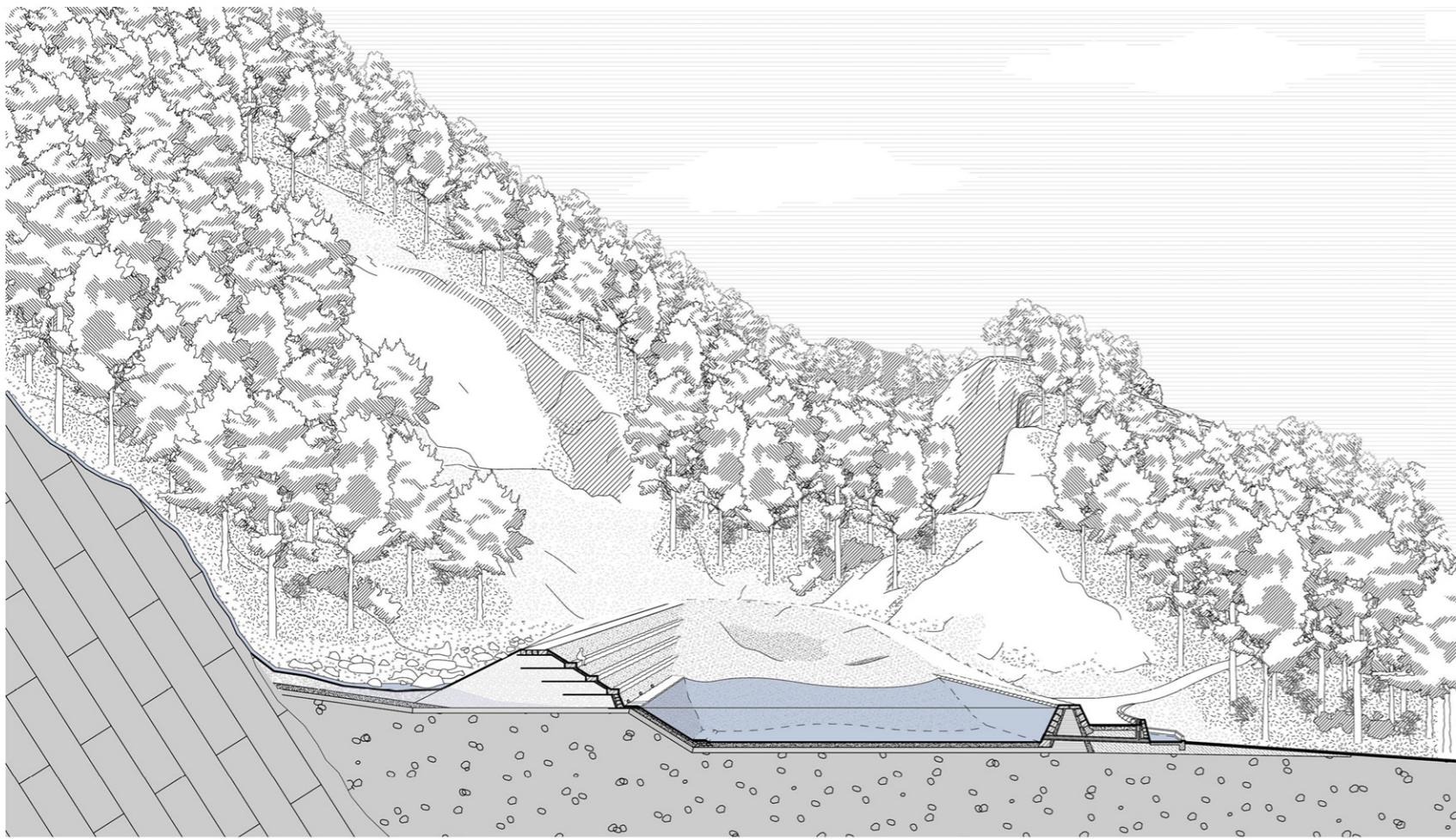
Geology of the valley



The proposed watersystem _ locations, water quantities before and after and spatial qualities



Seeland _ climate-change adaptation of water infrastructures



Plan and perspective section of the water basin _ type 2 retention



The various water elements create different spatial correlations

