RIVER TRACING

Providing land for future water events

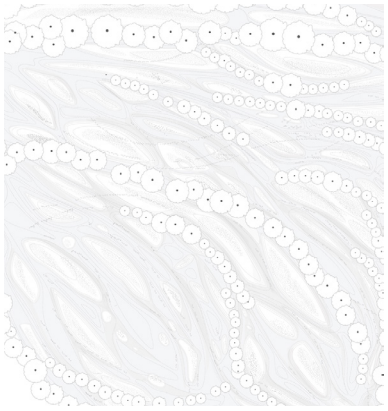
Diploma abstract by Maria Thoner
Oslo School of Architecture and Design

The project proposes an accumulating copperhancing planning of landscape thorugh scales, based on the logic of water and topograhy, to handle flooding and future water events in the riverways of the Norwegian landscapes, raising the question of who has the responsebility for the water and challenging the act of separation of land and water. This seperation"line" has come into sharp focus with proposals of walls, levees, natural defenses, land retirement schemes and recomendations for retreat. These responses raise questions on where this line is drawn, but they also raise questions on the separation that this line facilitates. Is this separation found in nature or does nature follow from its assertion? When people see flood, they see water tragressing this line. (source;inventions of rivers)

Through tracings and drawingtecniques of wateraccumulations the underlying landscape and the logic of the waterflows appears. These interpretations pronounce a landscape which can take the floods, give the water its space and propose a duett and organisation of water and land due to the logic of water.

This becomes a landscae embedded from the present geological and climatic record, ereasing the line seperating land and water, shifting form without eradicate itssaelf: "i will take a form so I can still stand, but not stand in the way".

The goal is to further explore what kind of space this would be, in a speculativ matter, not framed by political graphics but with knowledge of the unavaoidable water demanding its space and place forcing the landscape to restructure, modify and shift attitude.



The power of water of todays climate hase extreme consequenses. With the increasing frequency of flood attributed to climate change, the proposed walls, barriers, natural defenses are no longer capable to separate the water from land

Due to climate change the seasonal moments of the norwegian mountain landscape has shifted, the summers can be very dry and the flood and rainfalls are more extreme. The waterflows accumulate trhough the landscape connecting the riversheds, from the ridge of Norway where the rivers devide to east and west.
The water flow through the watersheds due to the logic of water and topography, raise the question of who has the responsebility of the water. Should the upstream places hold the water to buffer the downstreamplaces?

One of the upstream places that could hold the water is Hemsedal, placed on the "beginning" of the waterflows, on the ridge where the rivers devide to east and west.
Today the landscape of Hemsedal is dominated by skiresorts in the valley sides. The valleyfloor will become a blancet or highway for running water during flood.
The monocultural forests of shallow spruce and pine in the valleysides are sharp cutted due to forestry and skireesorts. The valleyfloor is occupied by settlements and grass-fields which are drainaged former wetlands.
This landscape is not able to hold the water of todays climate; the forest are shopped down, the roots are shallow, the infiltration of water in the valley sides are low, and the valleyfloor becomes a highway for water running through, not holded, but lead away downstream.

Due to digital wateraccumulations of present landscape the waterlevel of the river, Hemsila, can increase 5 m during extreme floods. large amounts of water will run off the valleysides,enter the valleyfloor, and leaving the area in high speed
The geology of the valley hints to a past wet landscape, able to hold water.
An historical organisation of settlements shows the previous organisation of valley, where people placed themself on the edge of the slopes, cultivated the land in their back and looked over the valley floor of wetlands and riverscapes, like an audience on a tribune observing the preformative rivers and waterevents.
There is a thin line between the fear o waterevents and the subleme beauty. Its is defined by the observers dictanse, awareness, and point of view, The facination of water-event appears standing on the edge, in a secure place,like an audience watching the preformative rivers and water entering the scene of the valley floors.

With the memory of the past and knowledge of the future climate events the projects propose a reorganisation of the valley profile of Hemsedal with mixed forests holding water and land in the upper valley, the settlements and farming in the slopes and the flat valleyfloor as space for the floods, as a water(e)scape, where the water enter when its escapes the earth, the rivers and its predicted ways.

What is this water(e)scape and can this space also capture the traces and memory of the watere-vents, so the concious of its extreme presense will remain and not forgotten?

The project explores the water space within an area of the valley floor of Hemsedal proposing an apperance and design
This area has almost no inhabitation, they have settled further up or down in the valley. There is space for the water and its escapes. The fields allong the river of Hemsila are blancets of grass, sometimes covered with water. Some channels from the historical relation between water and agri-cultur, appears. In the upper area of the site, there have been outtake of gravel, creating a mosaic landscape pattern. Downstream Eikredammen is holding the water from Hemsila.

Digital water accumulations of the site revealing the hidden water(e)scapes of the valley floor indicates a landscape where there are no longer existing a river edge and a flood area

tracings of the wateraccumulations becomes a visualitastion of the underlying landscape and proposed siteplan of potential waterflows and escapes if the water were let free from the predicted wayes of the river and into the sorrounding landscape.

the micro topogrphy still speaks about the dynamics of the water and the memory of a wet landscape, the flood distributes these spaces, proposing its space during spring-flood and demand its space during extreme flood and rainfalls.

By extracting the elevations and depressions of the hidden landscape into a digital model, the conversation between land and water becomes more pronunced and hints to a new landscape organisation where the waterflows thorugh time place and conduct the soil. Finding the logicof the water flows, where three spesific flow-radiuses repeats within the landscape
When they collide or almost meet, they leave traces of concaves and convaxes, depressions or alevations
The waterflows reorganisation of soil finds a new duett between land and water, a landscape desigend to take the water, taking a form so it can still stand but not stand in the way, defining areas where the land can be provided and taken by the water, as functional units. When the riverwater raise to a certain level it will flow over its edges, and escape into these.

The waterescapes are inserted within the plots of the pruduction-landscape of Hemsedal. The land between the water can be cultivated and pathced by the farmers of each plot. Today the area is covered with grassfields, this might continue. The patches are proposed due to the work-widht and radius of a typical mower .

On a day of heavy rains the water arrives. From the mountains the water comes as runof into the river, some of it infiltrated in the soil. The ground water is raising and the soil of the valleyfloor is filled with water. The moraines deposists appears as repetative sequences under the surface, becoming ""watergates" with their high infiltrationabilities, tranfering and infiltrating water between the surface and the deepsoil. These watergates appears as gravelbeds.

the reorganisation of land and water pronounce units of different spatial caracters established by the waterflows placement of soil, generating terraces and slopes, depressions and elevations

the meandering landscape of gravelbeds and soilbands holding and infiltrating water. Then cultivate the land in between.

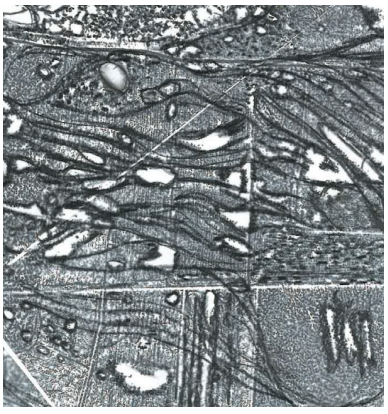
the slopes where the puddles are frequent and the land inbetween appears like very gentle hills

the open grasslands with the sunken wet slope

Meandering tracing of the river echoes

This landscape is echoing the meanderings of the river, pronounced through vegetation, soil and gravel. From far away, up in the hills, the flows and dynamics of the river becomes visible through bands and lines of vegetation and water. When the river escapes is predicted wayes, during heavy rain and srpingflood it enters this stage, fills in the meanderng tracings.

Within this landscape the vegetation lines creates sequences of narrow and open spaces where the meandering almost meet, and where they move apart. The blancet of soil and gravel is created by moving the first layer of soil to the side, revealing the moraine deposits and gravel underneath, appearing as gravel beds. The removed soil is placed aside, becoming soil bands of raw black earth, with cultivationvalue. Then some of these bands will be patched by cultivation. The water will infiltrate through the gravelbeds which becomes watergates between the surfacewater and groundwater. The water also transfer inbetween the gravelbeds. Through this act of moving the topsoil aside the original infaltration abilitites of the landscape is reactivated: The geological record of moraindeposits and gravel from the past and the present climatic record of water events meets in this landscape. The tracing of waterflows, and meandering echos finds a lansdcape were the water can escape the riverbed into the land and further into the deep soil and groundwater through the watergates of gravelbeds. The river as a dynemic element becomes visible and preformative, leaving reminders and traces of its forces and wayes.



The extreme flood arrives

Hits an artefact or obstacle that until now has been quite, a part of the scenary, inserted to withstand the extereme floods, leaving reminders of the power and subleme beauty of water, now its activated.
Preforming as a pier, in water. The forces of water hits into new flows and ways,
The flows will meet, crash into convaxes and concaves, producing, moving and replasing the earth into a new landscape, which after the flood will be remained as traces of the extreme flood.

Then, retracing the land and water(e)scapes, to again finding the logic of the new waterflows, embedded from this new record of a landscape, edited by the floods.