DESIGN WORKSHOP

Future scenarios for the alps without snow

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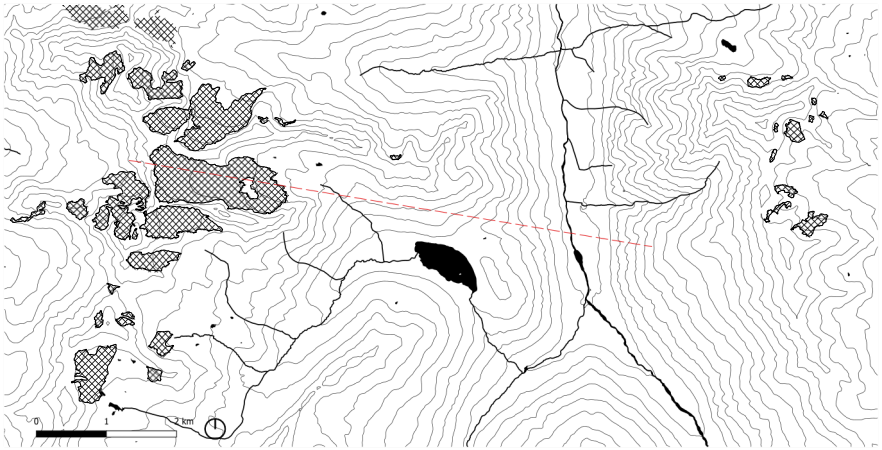
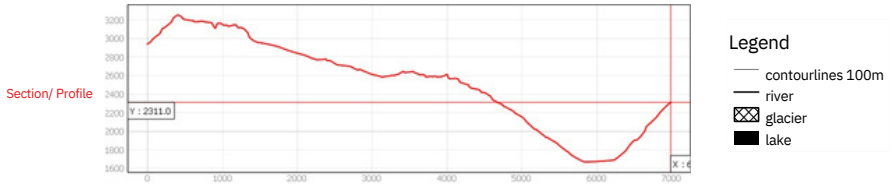
THE ALPS WITHOUT GLACIERS

MANIFESTO

Humanity is facing a historically transformative future that will bring irreversible changes to life on Earth. As the climate warms, nature is being reshaped, with consequences for all living organisms. In alpine environments, this impact is particularly noticeable as glaciers will gradually melt. This will have significant consequences, as these glaciers serve as major freshwater reservoirs. The alpine villages, located in mountain valleys, will need to manage large volumes of water that will no longer be retained on the mountaintops but will instead flow freely down the mountainsides. This surge of water will drastically alter the landscape and life in these villages. Ski tourism, which is the primary source of employment for the villages, will decline significantly. In this time of uncertainty, we must be able to envision a future that is drastically different and be prepared for every scenario. However, we are not without agency. It is within our power to influence the future we want to see.
So we want to take concrete action with NBS buildings and conservation measures, but we also want to make people aware of the changes in the landscape and encourage reflection through interactive interventions.

The map shows the surface water and ice areas in our study area. It provides information on altitude differences and indicates flat areas that could be considered as future reservoirs.

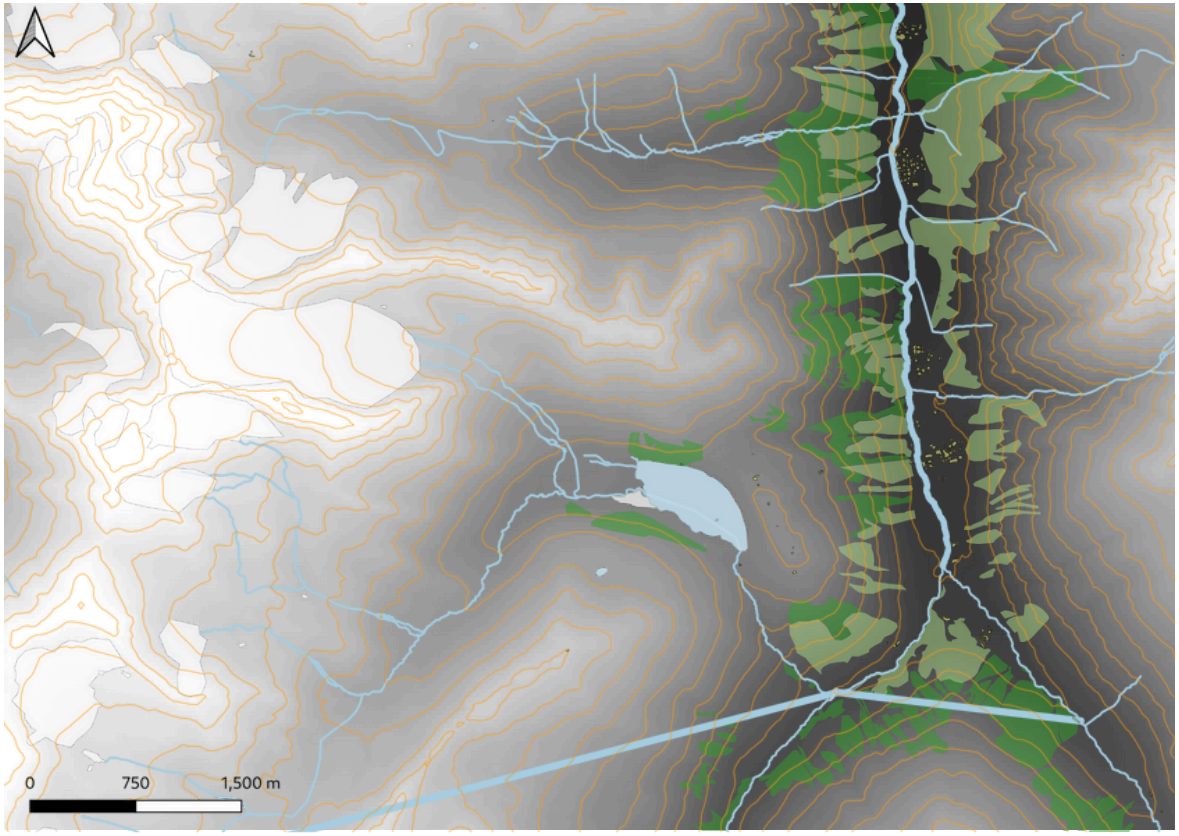




Data source: Bundesamt für Eich- und Vermessungswesen, Digitales Landschaftsmodell - Bodenbedeckung Stichtag 08.04.2022 BEV 2024, www.data.gv.at; Amt der Tiroler Landesregierung, Abteilung Wasserwirtschaft, Fließgewässer, https://data-tiris.opendata.arcgis.com/datasets/tiris::fliessgewaesser-1/about

THE ALPS WITHOUT GLACIERS

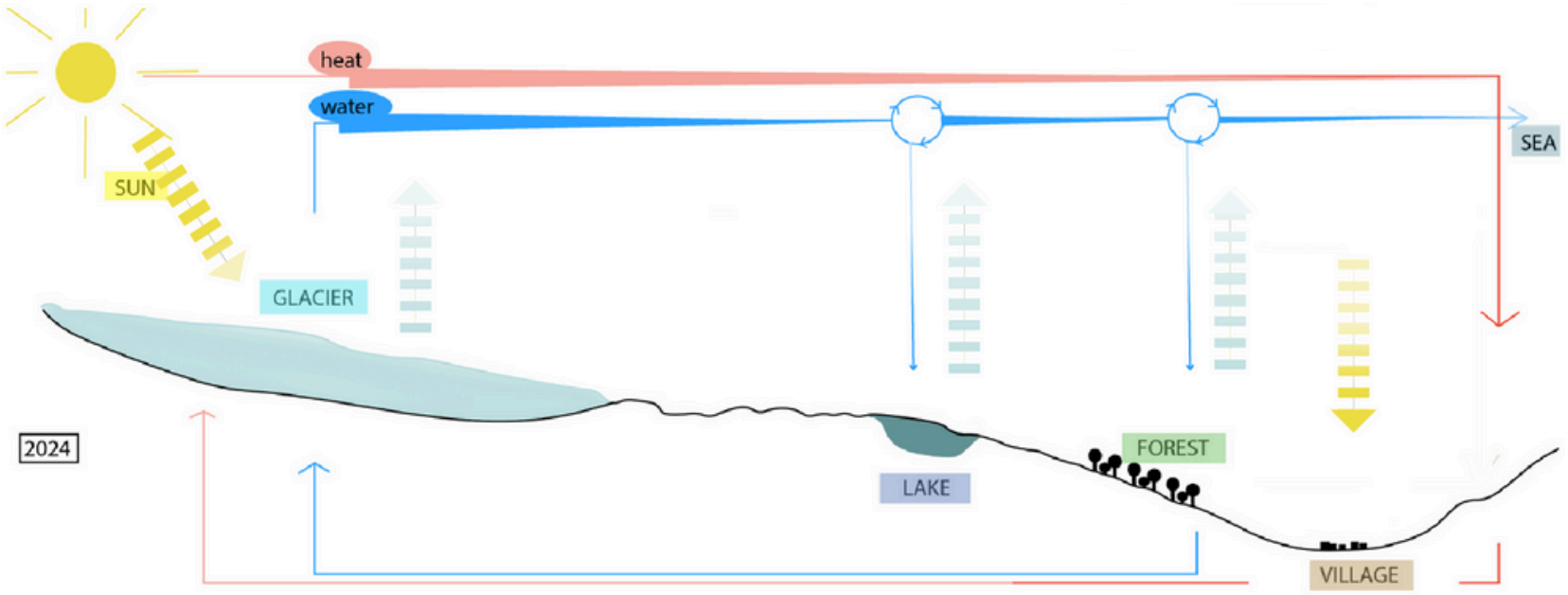
The map shows how a part of Ötztal in the Alps looks today. The orange lines are contour lines, the white areas are glaciers. The dark green areas show lower vegetation and the light green areas show denser forest. The blue areas show freshwater and the yellow areas show the houses in the valley.

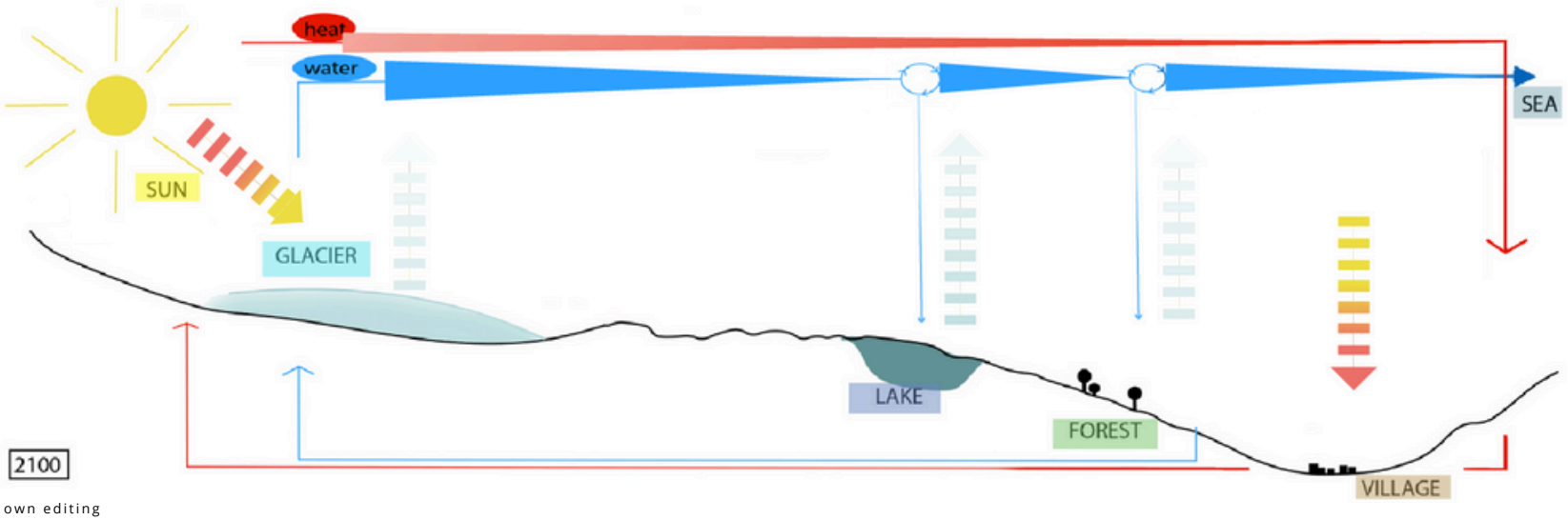


MAP

In the future, these glaciers will melt, which will lead to a large amount of water needing somewhere to go. Therefore, we have assumed different scenarios for what the Ötztal might look like in the future.

ACTOR NETWORK-MAPING





own editing

Glaciers are melting due to the increasing solar radiation. This leads to more water runoff in the mountains. The increase in meltwater leads to more water in lakes and rivers. Some also seeps into the forest. These processes ensure cooling through evaporation. However, the storage capacity of lakes and forests is limited and depends on their size. If the storage capacity is full, all the meltwater flows into the sea, so there is less freshwater and cooling effect in the mountains. This results in warmer temperatures in the air and soil, and a rise in sea level.

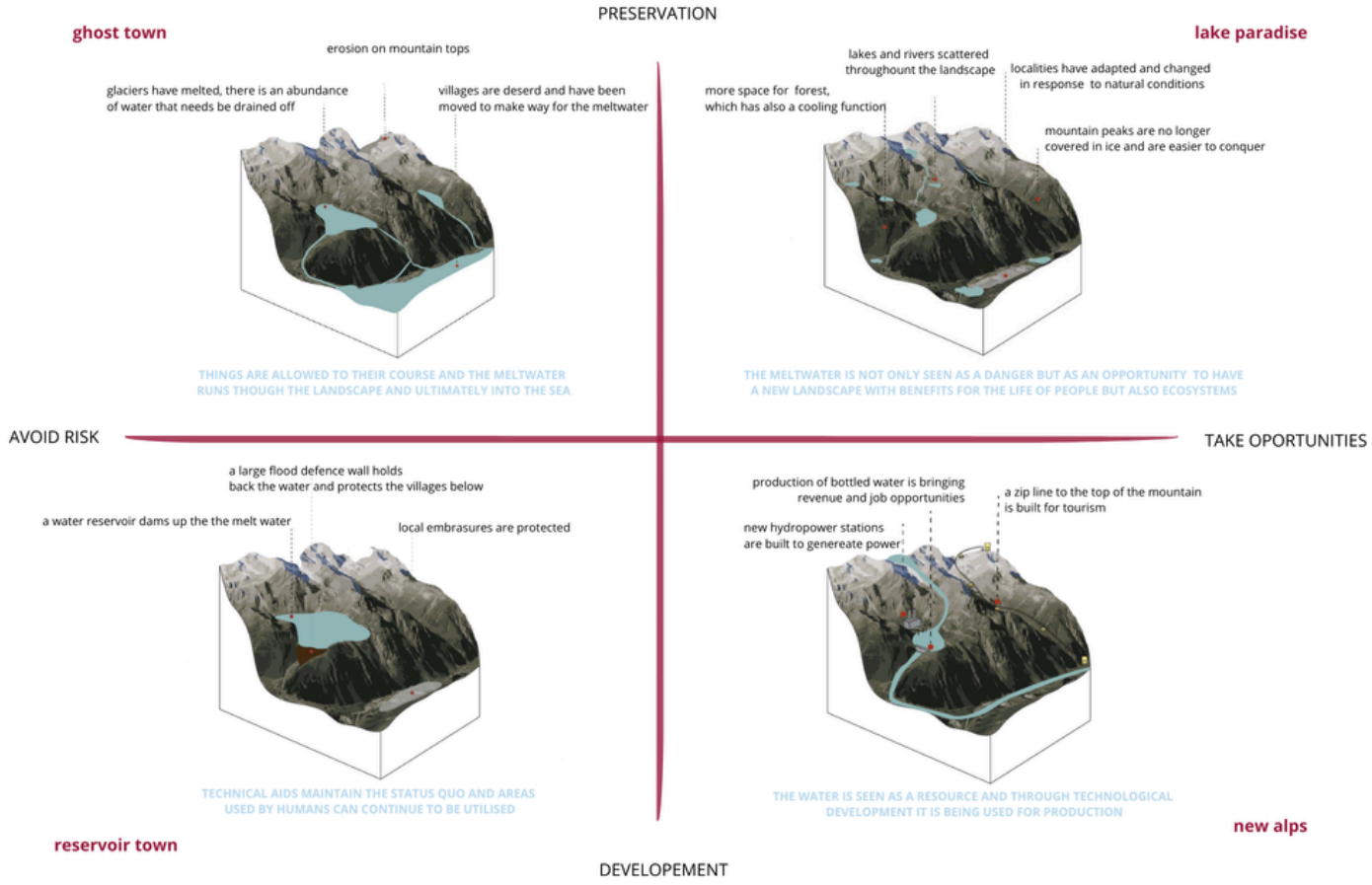
THE SCENARIOS

Ghost Town: In this scenario, we allow the water from the glaciers to flow freely down the valley. We avoid the risk of people being harmed by floods and thus allow them to move.

Reservoir town: In this scenario, we create a barrier that creates a water reservoir. This means that the village does not have to move.

Lake paradise: In this scenario, we create lakes in different parts of the mountains. This spreads the water out over the mountain without affecting the village. In addition, more lakes can attract tourism and create a new aquatic ecosystem.

New alps: In this scenario, we allow more water to flow in the Alpine community, but also utilise it by generating locally produced electricity for the village.



own editing on google earth image

AVOID RISK AND PRESERVE

GHOST TOWN

There is a lot of water in the valley and the villages had to be abandoned and are now in other places. Melt water runs out of the valley and eventually into the sea. The natural process is allowed to take its course without intervention

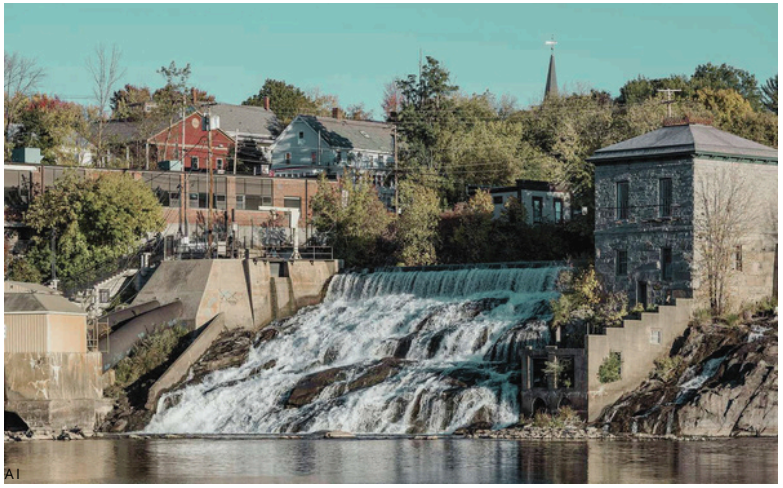
OPPORTUNITY AND PRESERVE

LAKE PARADISE

Melt water brought more water to places further down, places were created where the water was stored and a new landscape was created, with many lakes and rivers. This also influences the growth of forests, so there are more vegetation areas and forests. This also has a cooling effect on the environment.

AVOID RISK AND DEVELOP

RESERVOIR TOWN



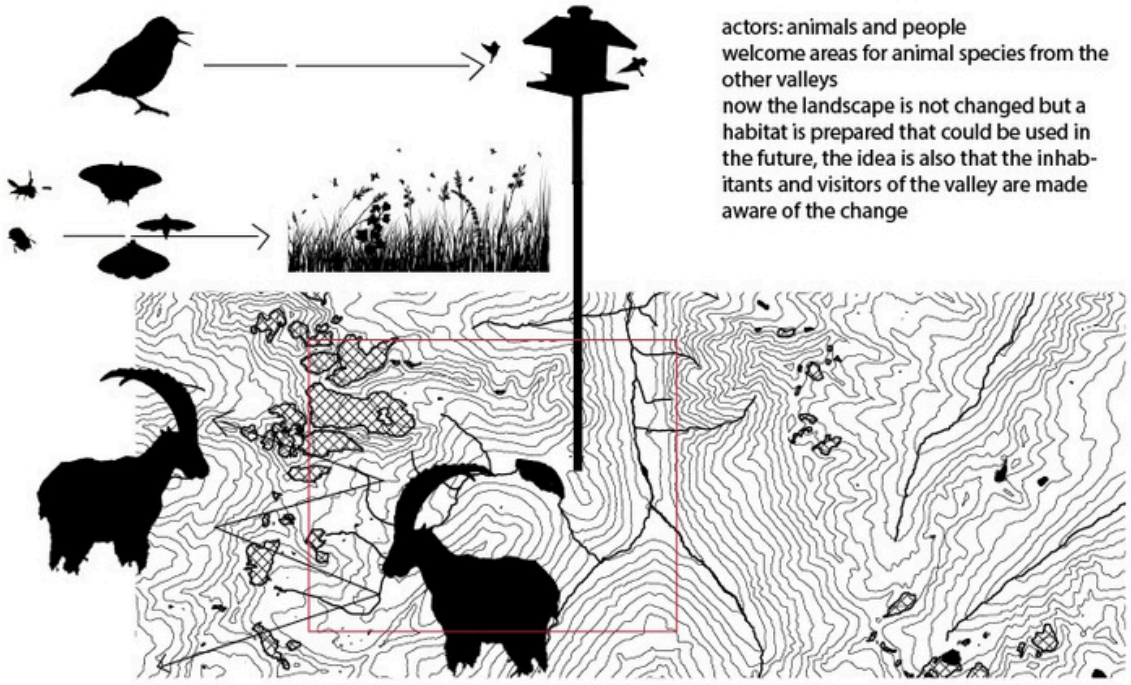
The water coming from the glaciers is seen as a danger, so large protection structures are built. Interventions are made in nature to enable people to continue their lives as they are used to. The risk of flodding the valley is avoided, but no new opportunities are created, resulting in high unemployment.

OPPORTUNITY AND DEVELOP

NEW ALPS

Meltwater is seen as a product that can be utilised efficiently for production and brings positive effects in the near future. In this scenario new structures are developed and the meltwater is used to produce electricity and drinking water.

PROCESS



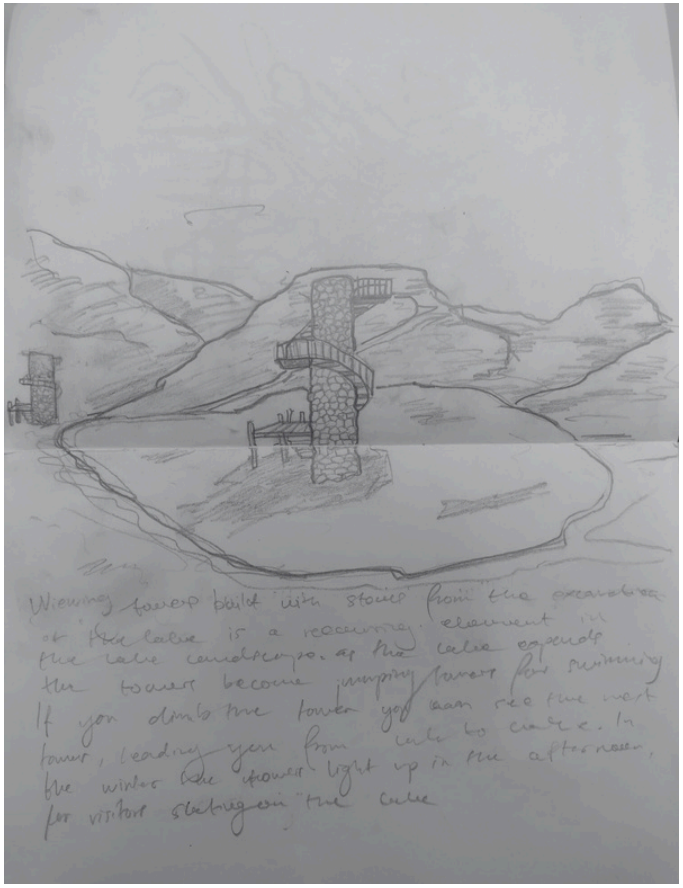
PREPARING FOR MIGRATION

by Sonia

Bird houses and meadows provide habitats for new species coming to the area, after the glacier is no longer an insurmountable obstacle.

THE STONE TOWERS

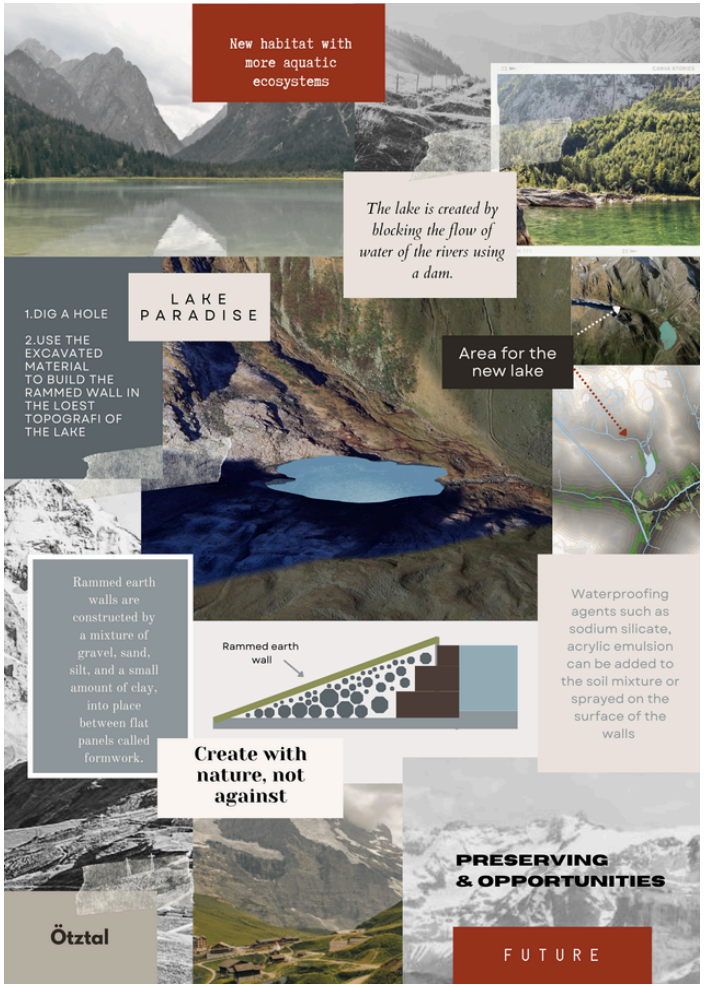
by Lärka



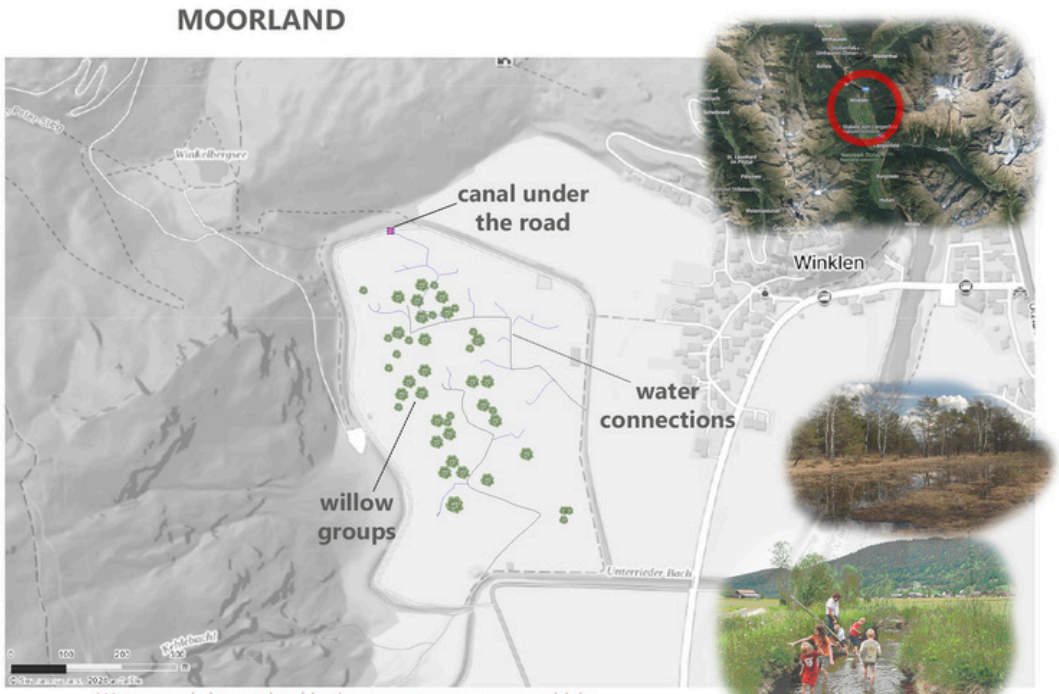
Stone towers are built from material from building the new lakes, bringing attention to the lakes as recreational spaces and serves as a reminder of the transformed landscape.

HOW TO BUILD A LAKE

by Sandra



The process of creating a new lake.



Water needs be retained in the current open spaces which have the potencial to utilise the moors as a element important aquatic habitat in the landscape

MOORLAND

by Norbert

Moorland parks manages the excess of water in the valley.

(www.bergfex.at, www.moor-ausflug.at, maps: www.sk.mapy.cz)

REFLECTIONS

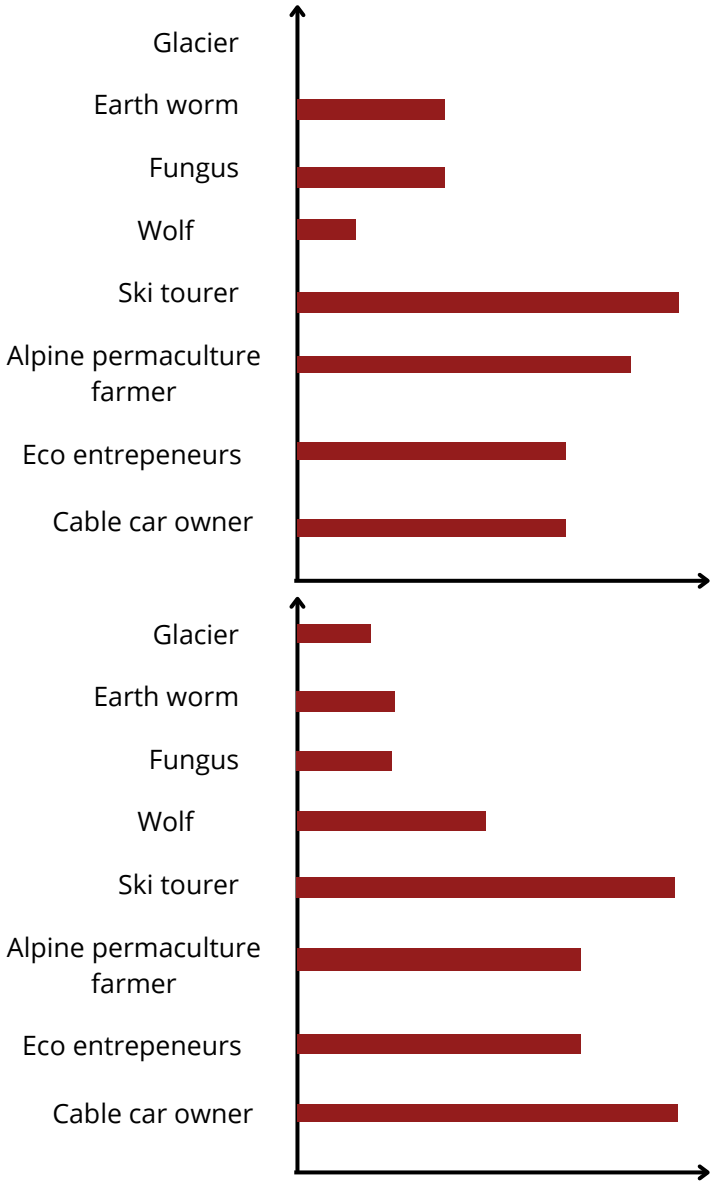
BY SANDRA

In this course, I have learned to communicate various future scenarios through visualization. I have also recognized that, regardless of our intention to design for a broader audience, our personal interests inevitably influence the designs we choose to create. While it is important for us as architects to develop a unique design perspective, it is equally crucial to remember that our interpretations are subjective. We must strive to broaden our perspectives to avoid overlooking elements that may have significant implications for others.

Exploring different communication methods has helped me understand what is effective and what is not. For example, conveying an idea becomes easier when adding pictures.

A positive aspect of the course was the opportunity to practice developing quick, informative, yet easy design solutions for future scenarios in the Alps. It became clear how different approaches can impact the design outcome. In my group, we had a relatively realistic approach to the scenarios, while another group chose to envision a future outside conventional boundaries. Nevertheless, all scenarios sparked engaging discussions about whom we are designing for.

It was therefore valuable to assume a role with a clear, focused interest, allowing us to adopt a more objective approach in reasoning about the future. A shared conclusion was that, ultimately, humanity remains at the center, despite the diverse interests of different individuals.



BY LÄRKA

This course has given new perspectives on planning for an uncertain future. I enjoyed the course because of the fast pace and focus on ideas, allowing for imagination and solution oriented thinking. Because even if we need to put efforts into preventing and reversing climate change we likely also have to prepare ourselves for scenarios where the environments we know are drastically changed and how to make the best of that situation.

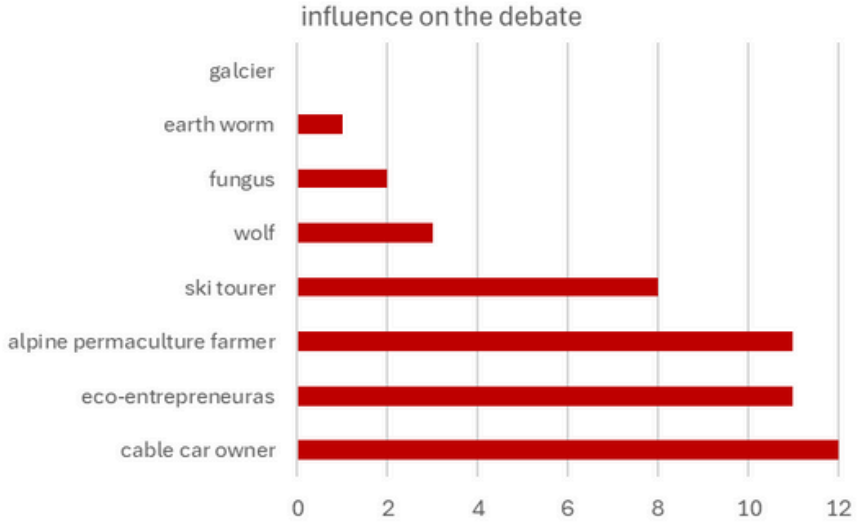
The course introduced some basic concepts that allowed us to develop our ideas. It would have been interesting to have a more detailed background information about likely prognoses for the alps, as it felt a lot like a guessing game at times.

I think the final discussion was interesting, with the role play and different points of view, allowing us to expand and not only think about human perspective or our own opinions. I think ultimately all that we do is for the human use, but it is also important to shift the perspective. In the discussion I think non humans had a large impact in the discussion, since they were in majority when the human characters disagreed, and especially in comparison to the impact they would usually have in a discussion. Among the human characters they were quite focused on entrepreneurship, which makes sense also because the people that live there also need to work to support themselves. I think the ski related characters were important since even if they tended to be interpreted as conservative, they are the people currently living in the village.

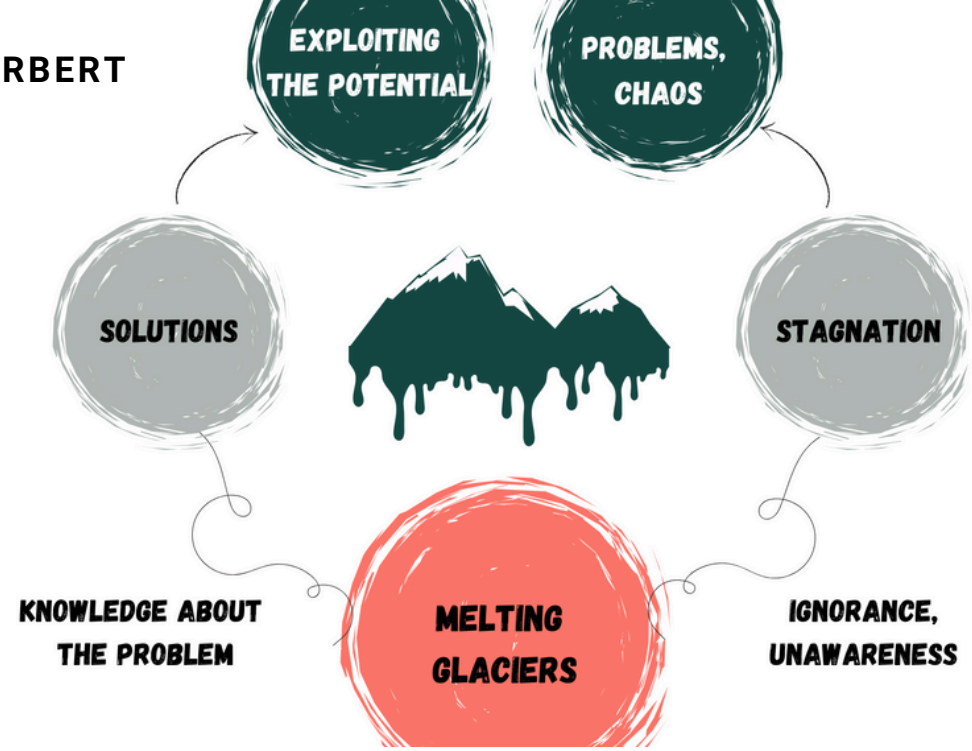
BY SONIA

The tasks in the course was very inspiring because they showed me a new way of developing an idea, e.g. using the information we collected in GIS for planning.
I found it exciting to abstract the topics and make them concrete again. There was little time to deal with the tasks and it would have been good to concentrate exclusively on the workshop, so the week was very intensive for me. It was also the first course for me where networked thinking was required. I think there was a lot of input that I can still use later.

I think human figures generally had more to say in the discussion. Figures who were easy to form an opinion about had an advantage. Figures who have a clear opinion that others can categorise well were able to convince others better than those who have a more complex opinion, because there is not enough time in the discussion to argue an opinion well.
The personal character of the characters also plays a role in how they introduce and assert themselves in the discussion.
In the end, I found that the cable car owner always played a prominent role, and also connected with the other human characters. The wolf also had a good position because he was able to explain well what he needed. The smaller and more abstract characters, on the other hand, had the most difficult position. However, I found that the Mihorryza mushroom had an easier ride than the Earthworm. It was interesting that the glacier had hardly any weight, even though the whole discussion centred around it and it takes up most of the physical space in reality.



BY NORBERT



THE DESIGN WORSHOP GAVE ME A STRONG INPUT TO THINK ABOUT THE REAL PROBLEM OF MELTING GLACIERS ON OUR CONTINENT. IN GENERAL, THE ENVIRONMENTAL PROBLEM OF MELTING GLACIERS AT THE NORTH POLE IS MORE WIDELY PRESENTED IN SOCIETY, WHEREAS IT IS MUCH MORE ACCEPTABLE FOR UNDERSTANDING TO REFLECT ON THE CHANGES IN OUR VICINITY THAT WE CAN REALISTICALLY INFLUENCE.

I THINK IT IS IMPORTANT NOT TO PUT PRESSURE ON PEOPLE WITH BELIEFS THAT ARE MORE OR LESS IMPULSIVE, AS THIS CREATES CHAOS IN SOCIETY. THE FIRST PRIORITY IS TO INFORM ABOUT CHANGES AND ACTIVITIES THAT CAN AFFECT THE VERY LIFE OF THE GLACIERS IN THE PEAKS OF THE ALPS AND OTHER MOUNTAIN RANGES IN THE WORLD BY OUR ACTIONS.

WE NEED TO PREPARE FOR SITUATIONS AND ADAPT TO THE CHANGES THAT MAY OCCUR AS A RESULT OF CHANGES IN THE VOLUME OF GLACIERS. THIS APPLIES NOT ONLY TO PEOPLE WHO ACTUALLY LIVE IN THE VICINITY, IN THE BASINS OF THE ALPS, BUT ALSO IN THE FLOODPLAINS OF THE LARGER RIVERS IN THE LOWLANDS, WHICH ARE ALSO AFFECTED BY THE ISSUE OF MELTING DURING FLOODS. WE NEED TO LOOK FOR POTENTIALS TO EXPLOIT THESE CHANGES IN OUR ENVIRONMENT.

BY STARTING THE COURSE, I PERSONALLY DO NOT CONSIDER OUR KNOWLEDGE OF THE POSSIBILITIES ABOUT THE CURRENT HAPPENINGS OF MELTING GLACIERS TO BE SUFFICIENT, THUS I PERSONALLY DO NOT THINK THAT WE HAVE CONTRIBUTED ANYTHING TO THE POSITIVE TRANSFORMATION OF OUR ENVIRONMENT DURING THE COURSE. HOWEVER, THE COURSE HAS ENRICHED ME TO THINK MORE DEEPLY ABOUT THE ISSUE AND THE NEED TO FIND OUR POSITION IN THE POSSIBILITIES OF INFLUENCING OUR CLIMATE.

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SOURCES

Moorland:

Picture1:
https://www.bergfex.at/sommer/bizau/highlights/66111barfussweg/#images-highlight.6611-6

Picture2:
https://www.moor-ausflug.at/ibmer-moor/

maps:
https://sk.mapy.cz/zakladni?q=winklen&source=osm&id=676155&ds=2&x=10.9410584&y=47.0973471&z=14

https://sk.mapy.cz/letecka?q=winklen&source=osm&id=676155&ds=2&x=10.9445346&y=47.0993775&z=15