



2023, Sarah Planchamp

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project in black
theorethical framing of the project in blue

O

one possible future for
Grande Dixence

architect's role is :

to assemble knowledge to fulfill the needs of others,
to show them how things can be different,
to elaborate a plan to get there
and to find the people and resources that will lead to it

1 following up on the theoretical statement

“With information overload sometimes comes painful enlightenment.”

Pedro Gadanho

There are moments in life, where in the blink of an eye, everything changes.

Suddenly, nothing around you seems familiar, like if you had lost touch with reality.

In those moments, when you look back, everything feels strange. You know you’ve changed when you don’t understand your past thoughts or actions despite having full recollection of them.

And now, you don’t recognise yourself, or your surroundings.

“With information overload sometimes comes painful enlightenment.”

Pedro Gadanhó

This was the last quote of my theoretical statement. 140 pages on how our world is about to fall into pieces, as we start to experiment the consequences of environmental destruction, inequalities, societal lock-ins and energy dilemmas. And it was one of such moments. One where you start doubting everything, because suddenly, everything seems foreign.

When this happens, you have no choice but to find a new way to make sense of the world around you. This new knowledge forces you to rethink your relationship to your surroundings. Imagine the coherent whole in which you are supposed to fit.

The question overshadowing this realization is: what are us engineers and architects supposed to do? What should our role in this new world that is about to emerge be? Because if nothing is sure, one thing is clear: we have a big responsibility towards society, us architects especially.

Why? Firstly, because what we design and build today will be there in the future as most buildings and infrastructures last centuries. If those are present in the future, it will be for better or for worse, a blessing or a curse. The decisions we take today will create either positive resources, that will continue to be useful for our society – or the next civilisation, because our world will experience changes so big, we might not be able to recognise it in the future – or negative resources – places that will have to be taken care of, at a great societal cost. With our day-to-day decisions now, we choose the level of difficulty we'll deal with, and the resources our future selves will have to dedicate to maintaining, using or caring for what we will inherit.

We are supposed to be the thinkers of tomorrow. We are the ones whose job it is to “project” in and for the future, in timescales that can reach decades. We plan ahead, we look into the futures to find our ways. Just as much as we look into the past to find the other half of the answers. It is our duty to ask questions about the tomorrows, even just because our buildings will take an active part in those tomorrows. For better or for worse. If we fail to recognise our incompetence to look into the future today, the only thing we are going to achieve is the deception of future generations.

Secondly, because we are, as actors of the construction industry, responsible for a great deal of environmental damage. What will the future generations think about those who took part in this destruction and the rise of this uncomfortable situation? Because we did...

We extracted resources in astronomical quantities. We “corrected” rivers, plains and marshes. We have plastered huge swaths of landscape with asphalt. We created segregated spaces. We created hypes around unhealthy materials. We heated, cooled, transformed and demolished because what was planned didn’t fit the given conditions. We have gotten high on finding form, but low in finding roots. We have created monsters that will kill us if we cannot repair them: high rises, dams, thermal power plants. We perpetrated the ecocide. Worst of all, we did it willingly, even if it was unknowingly. We thought it would be of utmost importance that a very few people get a say in the process of transformation of our space. We engraved in stone the rules of territorial transformation and material and technology use of the post war era. We gave the construction industry a rigidity that is currently stifling it from within, devaluating the value of the work of the sector.

What happens when all this will be considered a crime, when the environmental war is over and we are charged with ecocide? We’d better be prepared for the accusation...

Thirdly, for our jobs to exist in the future, there needs to be a rather big energy return on energy invested in our society. If the current ratio drops, society has no choice but to give up on the jobs she deemed non-essential. It is not only a question of dollar economics but rather one of fuel economics. Are architects and engineers essential enough to society? If not how will our job change?

“To open up what is possible above all involves imagining past what we are losing to anticipate what might emerge.” [P. Servigne, R. Stevens, and G. Chapelle, Another end of the world is possible: living the collapse (and not merely surviving it). Cambridge: Polity, 2021. p. 121]

Yet somehow the writing of that text was both the source of the questioning and part of the answer for the project. What if an architect’s main ability was to be able to see into the future? What if projecting into / for the future is what we can offer society? What if we should train and share our imagination to make sense of the new surroundings we are experiencing?

2

why imagination?

“We don’t see things as they are; we see them as we are.”

Anaïs Nin

Or as Kant supposedly said: we don’t see things as they are; we see them according to our instruments.

As an architecture student, I am by no means an expert on philosophy, similarly as I am not an expert in all fields mentioned here, and so this parentheses about philosophy will be short. Nevertheless I believe it has important repercussions for the field of architecture and overall for our society, in the wake of the most catastrophic string of events our species has ever experienced. Here is why...

The quotes above pose multiple rather interesting questions. Firstly, and perhaps most obviously, what are the instruments we use to make sense of our reality?

Secondly, how do we use our instruments as a society to function, to communicate and understand our surroundings?

And thirdly, how do we acknowledge and fill in the gap between what is, and what we can grasp from it? How do we make sense of the discrepancy between what our instruments detect and how the world around us works?

Some instruments are easy to acknowledge. Our senses for instance are instruments each and everyone of us uses on a daily basis. As a pretty straightforward example, we see with our eyes, they inform us of our surroundings, and give us a representation of a fragment of reality.

As we culturally acknowledge that most people see, the use of this instrument has been completely integrated into our daily life. It is one of the major components that allow us to function as a society: road signage, images and posts on social networks, rapid evaluation of the “goodness” of people we meet... everything goes through our eyes. So much so that the person whose visual experience is different to the majority of society will have difficulties fully being part of this society. Sight is used widely in our current society as a simple way to reach many people.

At the same time, we know very well the limitations of our sight: you know you don’t know what is behind this sheet of paper, because this sheet is hiding what is there. And yet you know there is something behind it, even though you cannot see it. Maybe you were in a different position before, from where you could see behind, maybe you hear someone speaking on the other side, maybe you just know the world doesn’t disappear behind a bare sheet of paper. Anyways, you are making full use of your other instruments to create a complete understanding, behind the limitations of your sight. And the glue that holds this understanding together is our imagination, connecting the dots.

Sight is a good example of an instrument that is both well understood and widely used, especially because it concerns us all. But there are many others, some of which were even invented and integrated very recently. And as those instruments were imagined and then used to produce new partial perceptions of our world we had to reinvent the way we saw it.

In his talk “Imagination: It’s Not What You Think. It’s How You Think”, Charles Faulkner explains that knowledge comes from something previously imagined, that in turn leads to the reimagination of the world. He uses the example of the telescope, an instrument imagined and subsequently built that allowed Physicists like Newton to see the imperfect surface of the moon. In a world where the “heavens” were seen as perfect, this new knowledge led to a re-imagination of the entire universe in a new imperfect version. He states: “technologies and science advance as our instruments exceed our imaginings. And at that point, it’s time to reimagine the world.”

It is rather easy to see how the telescope lead to a new perspective on our universe, to understand how the microscope changed our vision of biology and illnesses, how navigation tools modified our vision of the planet as America was discovered, how discoveries made on the other side of the world sparked interest in the studies of local systems ... As those instruments and the gathered knowledge spread, new aspects of the world needed to be imagined and then integrated into society. But what about the more recently invented instruments and the knowledge they brought? What about AI? About particle detectors? About climate models?

Even though all of these are interesting, we will focus here on climate models. Why is it that we do not doubt an X-ray image of our broken bone and do doubt climate projections? Why is it that these instruments that brought us an incredible amount of new knowledge – literally allowing us to know the future in advance – have failed to leads us in the past 50 years to a complete re-imagination of our world, one of the scale that the issue at hand requires? Why is the last stage of this process of imagining instruments → creating knowledge → reimagining our whole vision so slow?

It is not like nothing is happening but rather that the timidity of what is happening is alarming. Attempts at re-inventing a universe without endless growth, a universe where limits exist in every direction and every dimension and where change doesn't always lead to a bettering of overall living conditions, are happening everywhere but somehow it has a tendency to stay rather narrow: why for instance are some people in a seemingly educated country like Switzerland still not understanding what environmental change and the other related issues imply? Why do the projections stop in 2100, like it couldn't get worse after? Why do the models and the accumulated knowledge stay on the table of the labs that developed them? Why are other fields so scared to use this data and turn it into a new imagination of our world? Do we really all believe that is a burden climate scientists have to carry on their own?

Luckily for us, in a world of limits, some things are almost illimited, like imagination. Then why is it so cruelly lacking now where we need it? In a world where we cannot afford to test everything but need to make changes, imagination seems like the obvious tool, both to make sense of our surroundings and find ways to live with/in this new state. To make sense of this new world, we need to rethink our relationships to so many aspects of it: to resources, to care, to sharing and commoning... That is if we hope to make it past the ecocide.

Since imagination can serve both of those purposes – translating knowledge in a coherent whole and create room for alternatives – it can be quite scary. It is counterintuitive to our rational mind that something that seems so random could have so much power. Yet as Charles Faulkner states, our rational mind works with phrases, phrases in which each word brings its own imaginary. And so even when we try to think logically with words, we actually are using an important amount of imagination as words recall their bulk of linked ideas and concepts.

The power of imagination is thus threefold:

1. creating room for alternatives
2. translating knowledge in a coherent whole since our perception is limited by our instruments
3. making reality different as we use words to describe it in rational thought processes.

3

repair, care and the future of our buildings

In a world of disruptions and new stories, what is the role we want to give to our buildings? Our infrastructure?

Architecture is part of the new stories we want to tell. And so we have to imagine ways it could be.

There is a reciprocity of architecture and imagination that goes beyond pure artistic creation. On the one hand, architects can be vectors / catalysts of imagination to prepare people/communities for uncertain futures and to reinvent themselves in the face of disruptions. On the other, imagination can help architects to design according to uncertain futures and to reinvent their practice in the face of those disruptions.

This reciprocity is an important tool because it allows for unexpected solutions, which is useful in times where the problem is just as unexpected.

Imagination can help, especially by broadening the range of possibilities from the one that is currently accepted and thinking about issues that would not otherwise be thought of. It is specifically important in architecture and engineering because of the timescale for which buildings and infrastructure are designed and the impact those have on our environnement.

Buildings are elders in a society of constant change. They generally outlast ideas, as ideas shift from generation to generation but buildings essentially stay the same. They might get the usual retrofit from time to time, and some unlucky ones are prescribed with a death sentence.

And yet if one could imagine a building of today living in a new context 40 years from now, what would it look like?

The first instinct is to think about climate change exclusively, and especially in its translation into weather, and wonder if it won't be too hot inside. But what about water, plants, energy? And what about the norms and finances that will regulate the future developments of those buildings? Are there still going to be building codes? Will it be absolutely forbidden to build anything new? Will the rules of our world be very strict and cover all aspects of life or will it be the opposite?

And what about the other issues? About inequalities, if they keep increasing who will even afford to be living in them? And how would they be lived in? What would be the origins of the people living there? From Palikir in Micronesia, Dhaka in Bangladesh, Lusaka in Zambia or New York in the US? Would it be an overwhelming majority of elder people, the last generation where there were multiple kids in each family? Would it be somewhere where having something of one's own does not exist anymore? Will there still be people who will live in those buildings or will they have all left for distant places, maybe more safe?

Even worse, what happens 80 years from now? It even goes beyond all the IPCC model simulations. And maybe more importantly: is the building and infrastructure stock going to be an advantage or a disadvantage for future populations?

As of today, the construction industry did not escape the obsession with complexity. What we build, what we transform and maintain is complex, energy consuming, and machinery is difficult to replace with people or animals (or even just less complex technologies than the crane and the CNC). We value labour efficiency over material efficiency. And so our beams have increased in weight so much so that no group of humans would be able to repair it. Our buildings require complex models to be working, so many fluxes they host. They necessitate competent people who were taught how to handle electricity, efforts, water in our slabs, gases in our equipment... Who will repair? Who will care?

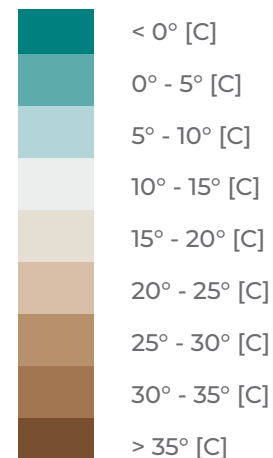
If one assumes that the constructions we create have a life span ranging from fifty to a hundred years, chances are they will experience those disruptions. The question of their role is then: how do they respond to their new environment and socio-economic conditions? And leading to that are numerous smaller questions: how adaptable are they to those changes? Are they strong enough to withstand change but will wither with time as we do not have the energy to repair them? Are they light and fragile but repairable?

4

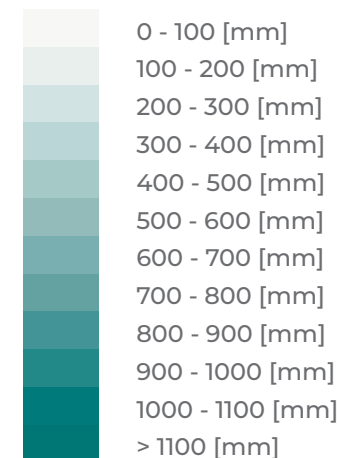
environnemental conditions

1 : 1'000'000

temperature
max at night in july



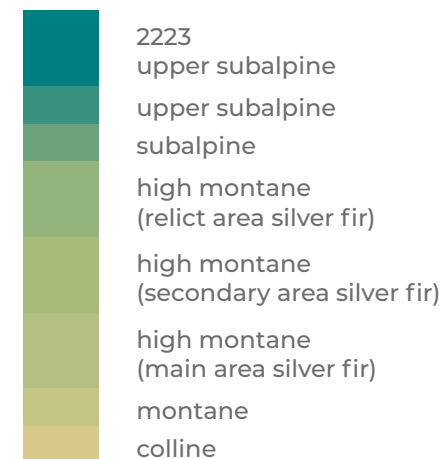
precipitation
total amount summer



population
number of people

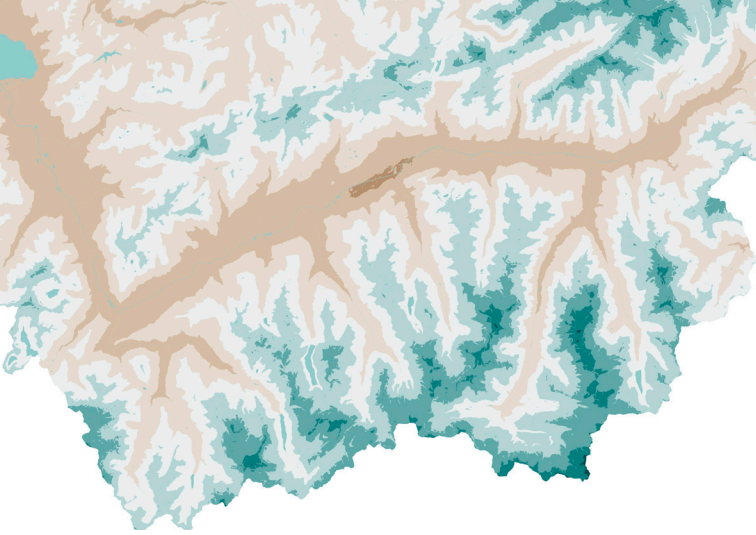


vegetation
type

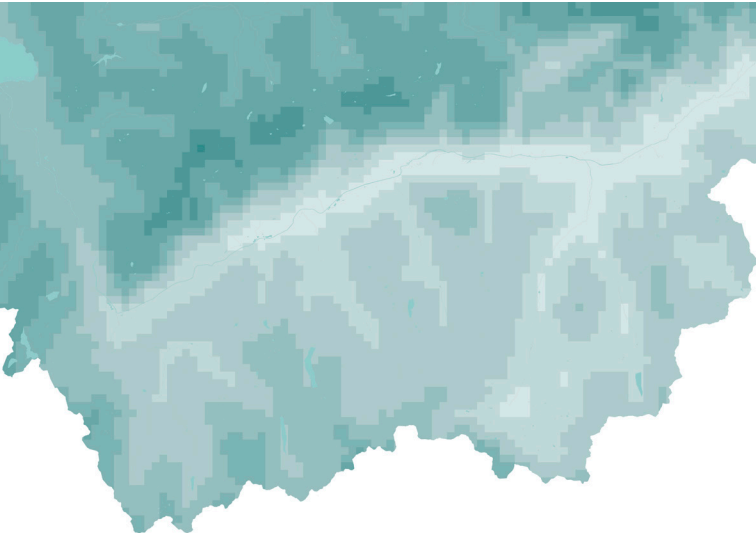


1980

temperature



precipitation

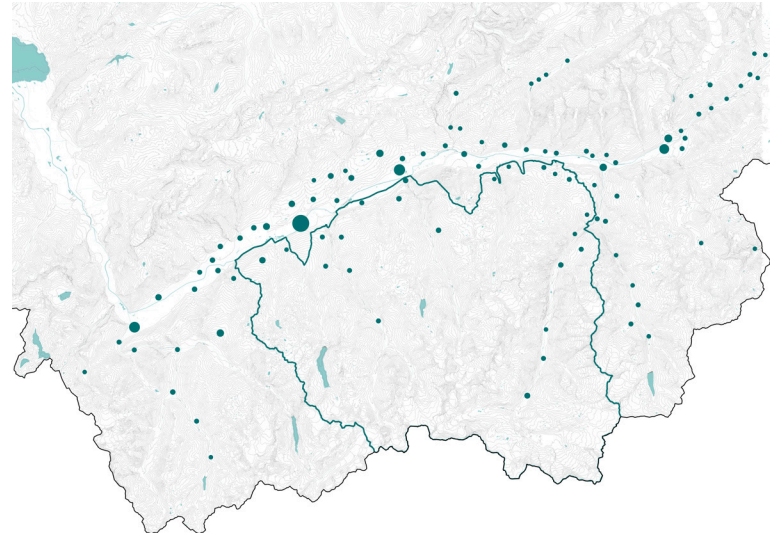


1980

vegetation lines

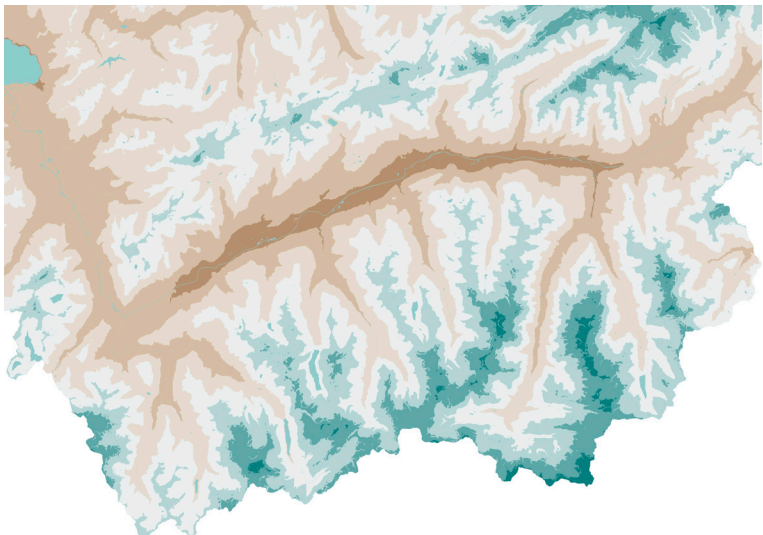


population

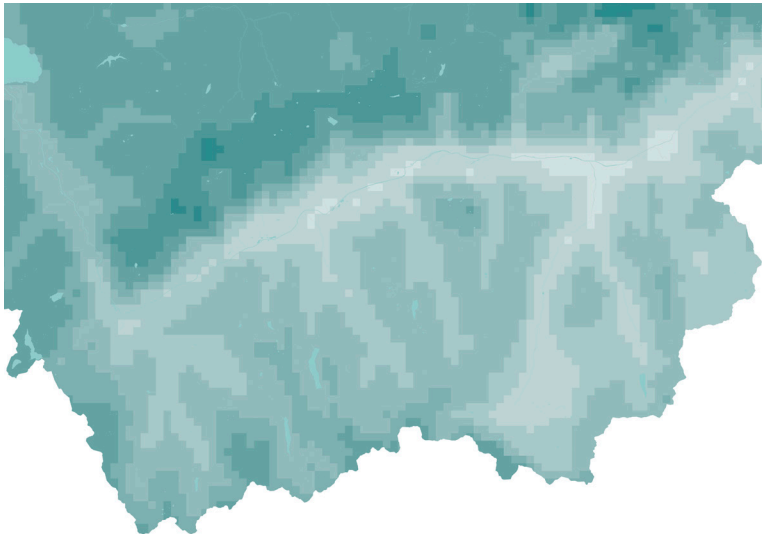


2010

temperature

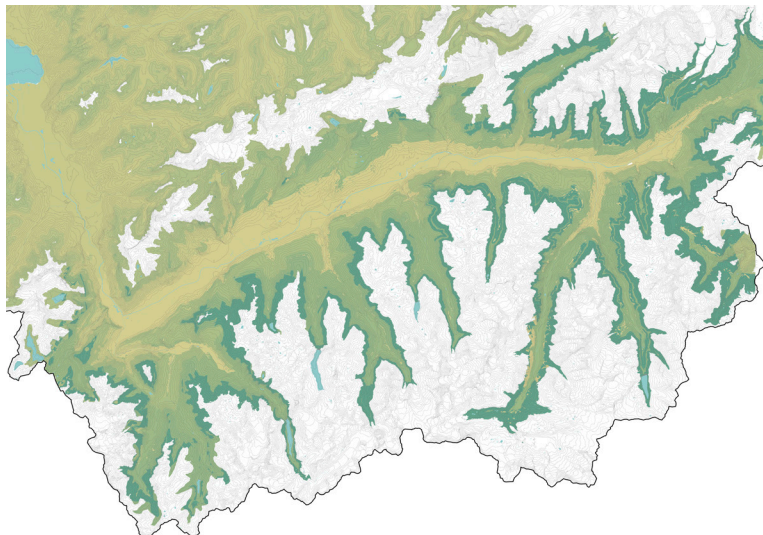


precipitation

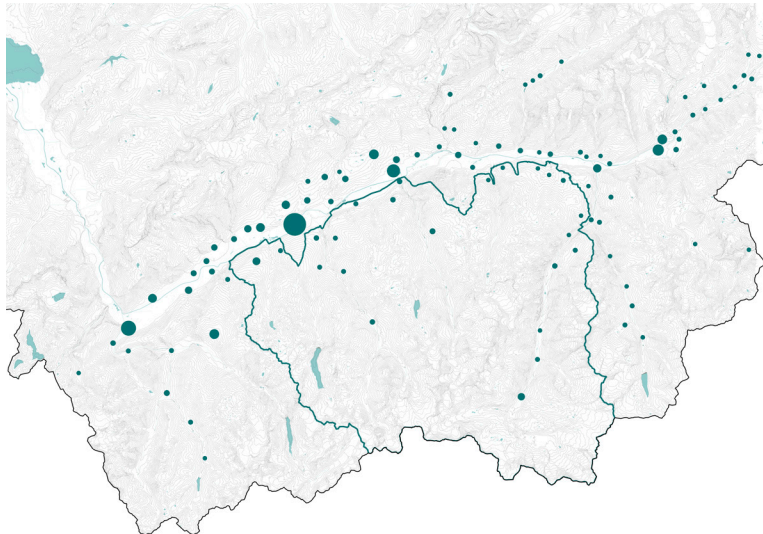


2010

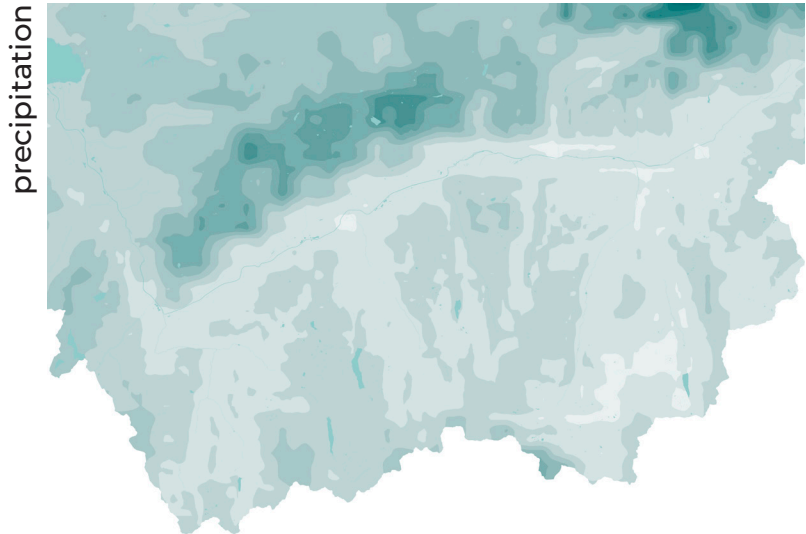
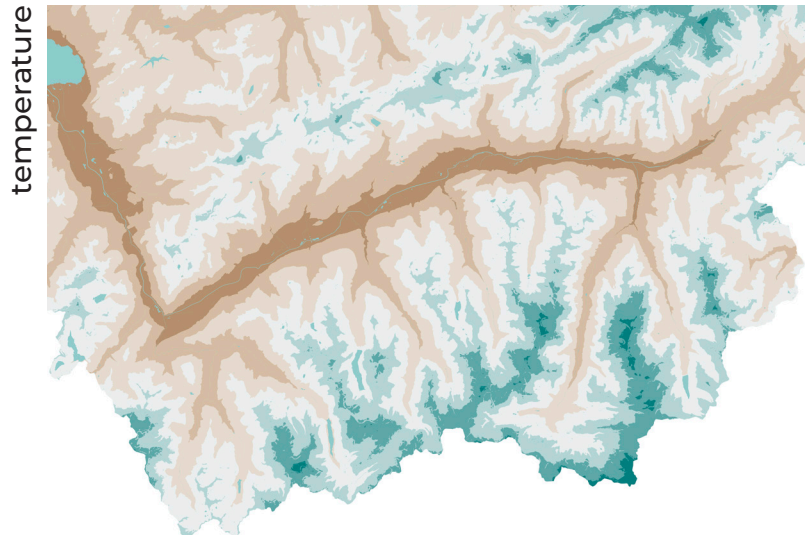
vegetation lines



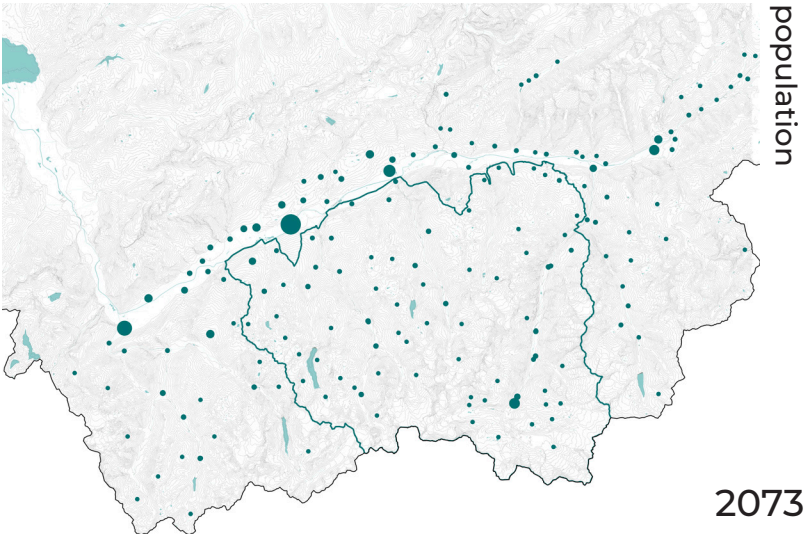
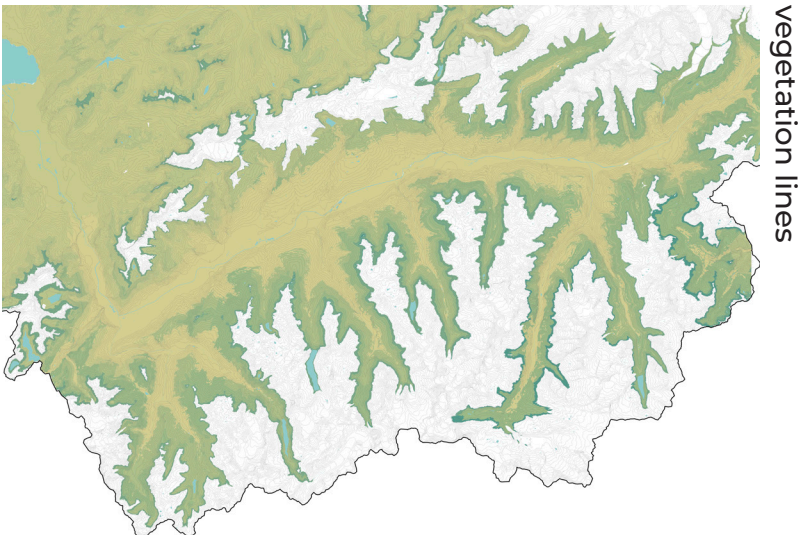
population



2085 - RPC 2.6



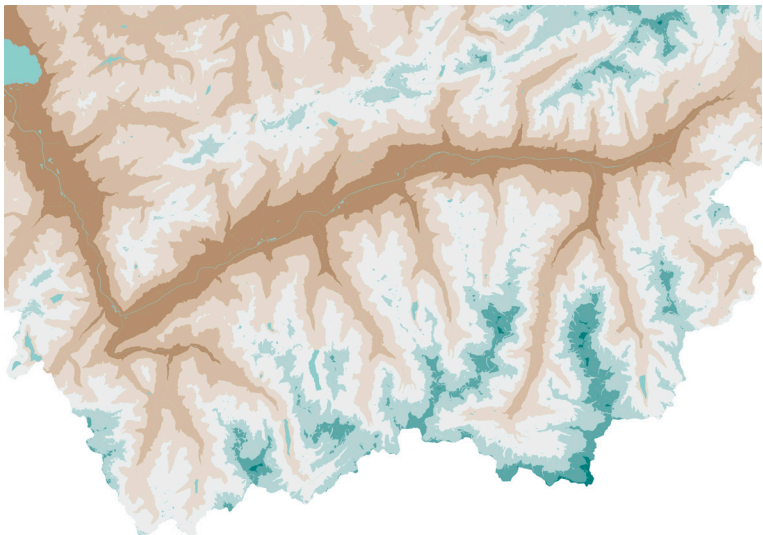
2085 - less dry



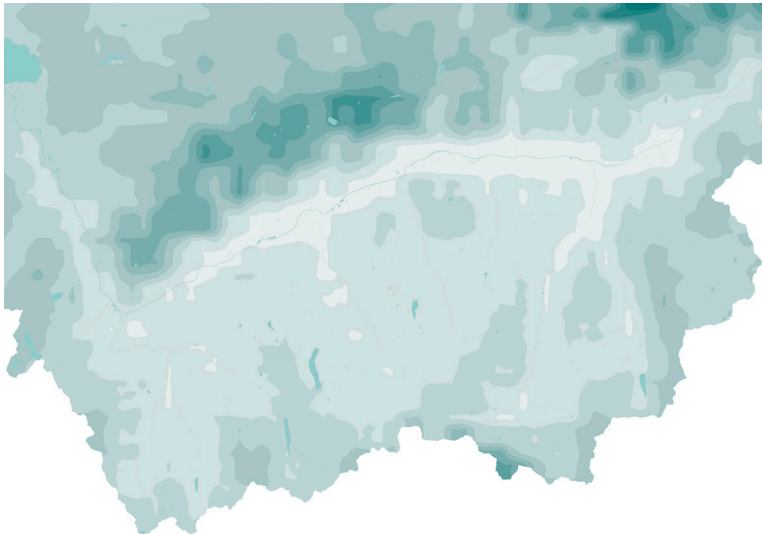
2073

2085 - RPC 4.5

temperature

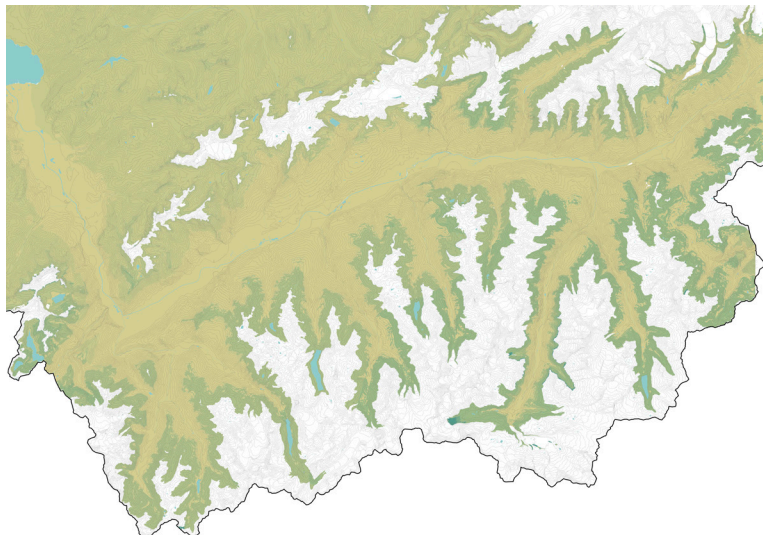


precipitation

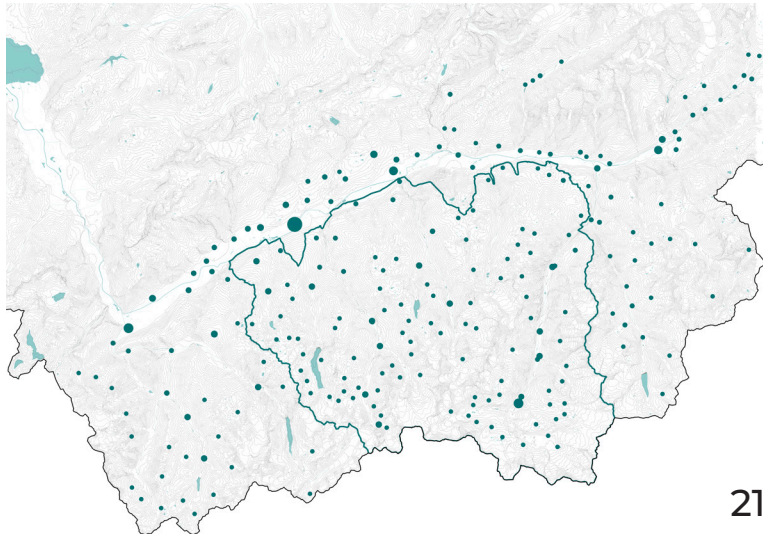


2085 - dry

vegetation lines

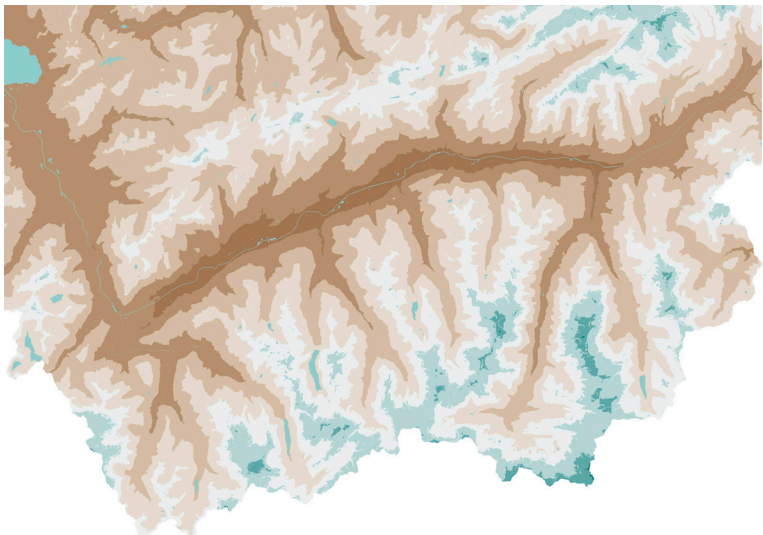


population

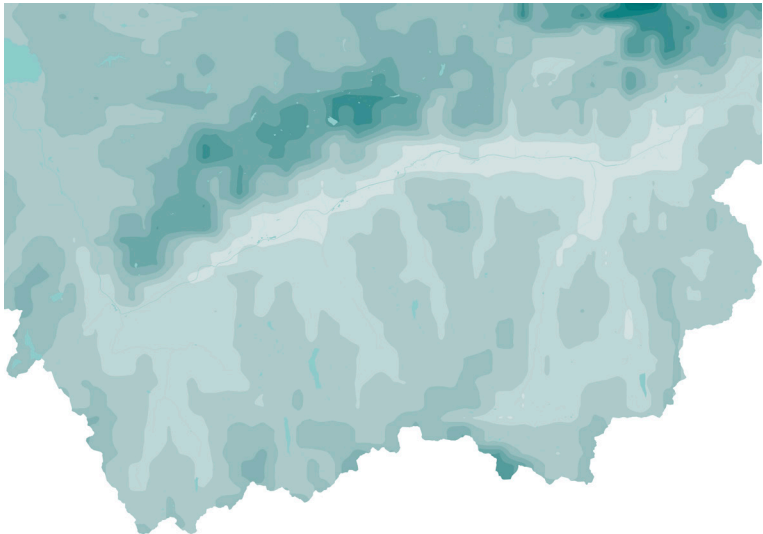


2123

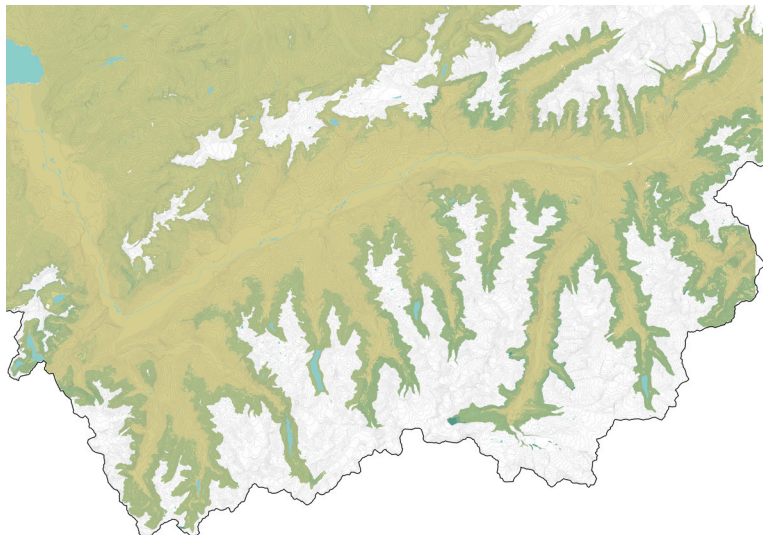
temperature



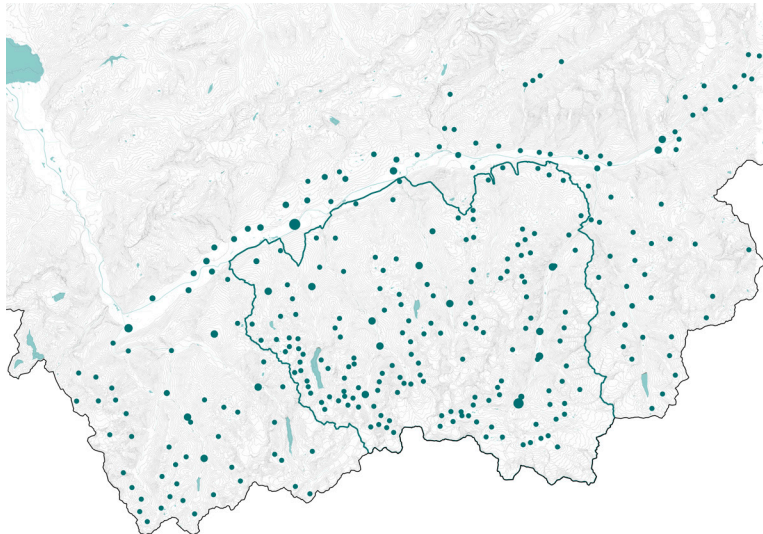
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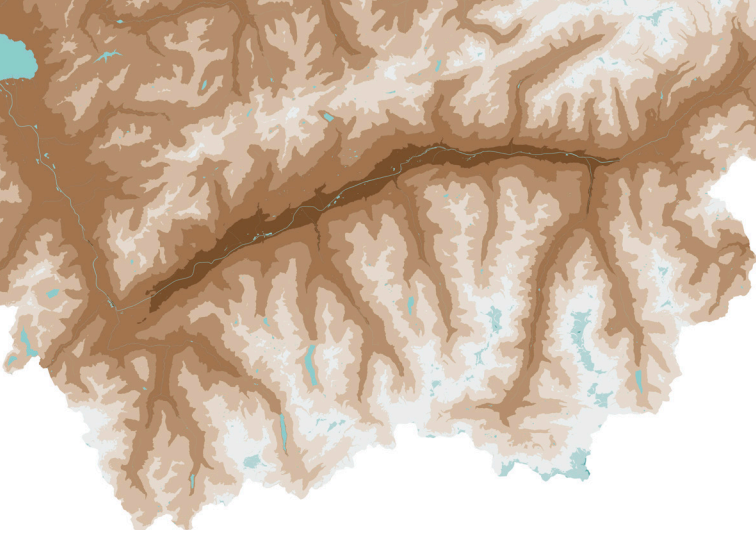
vegetation lines



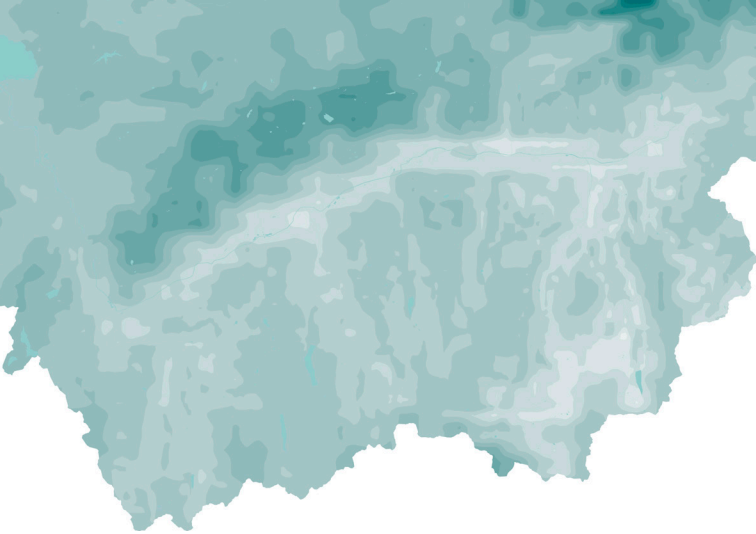
population



temperature



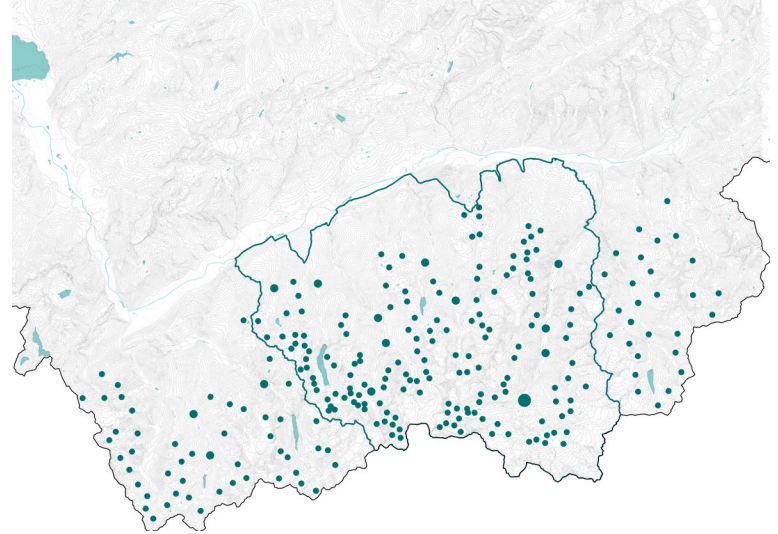
precipitation



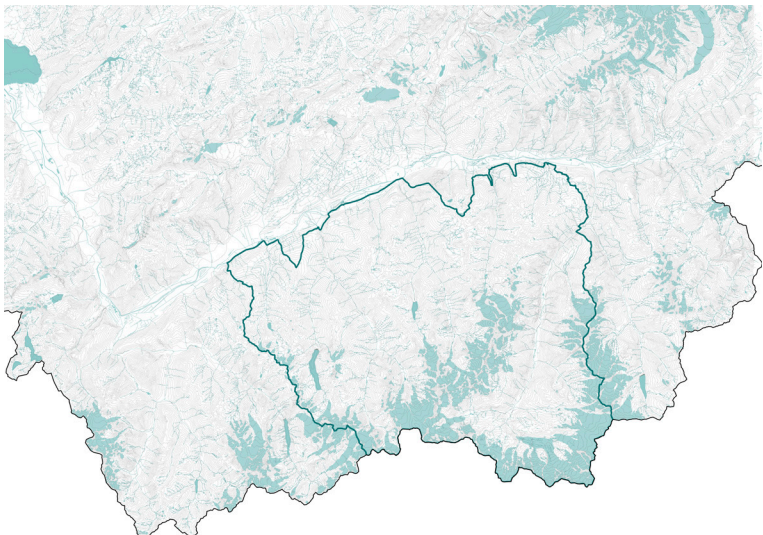
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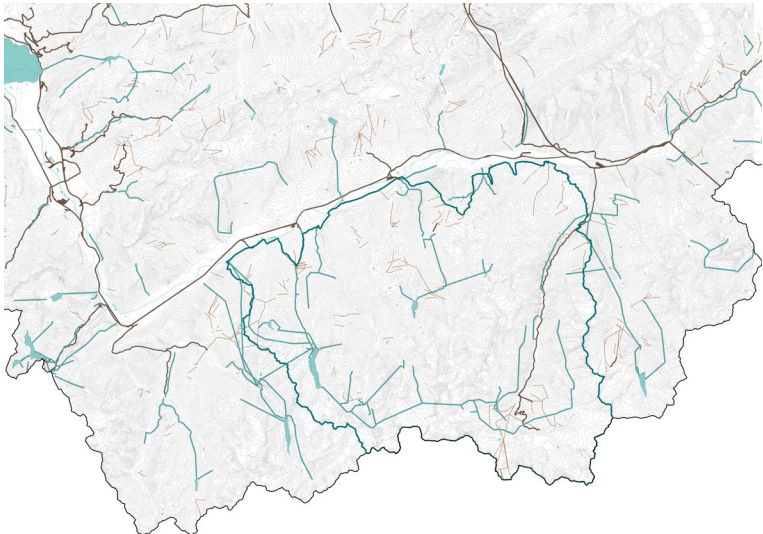
population



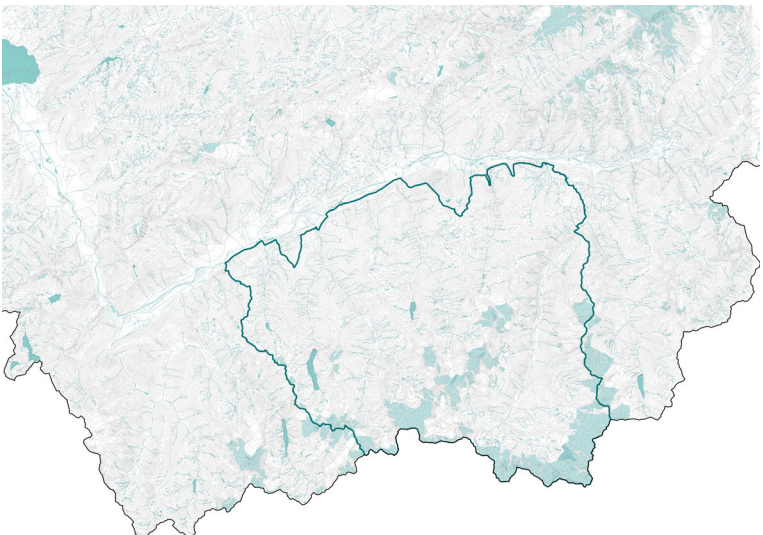
water and ice



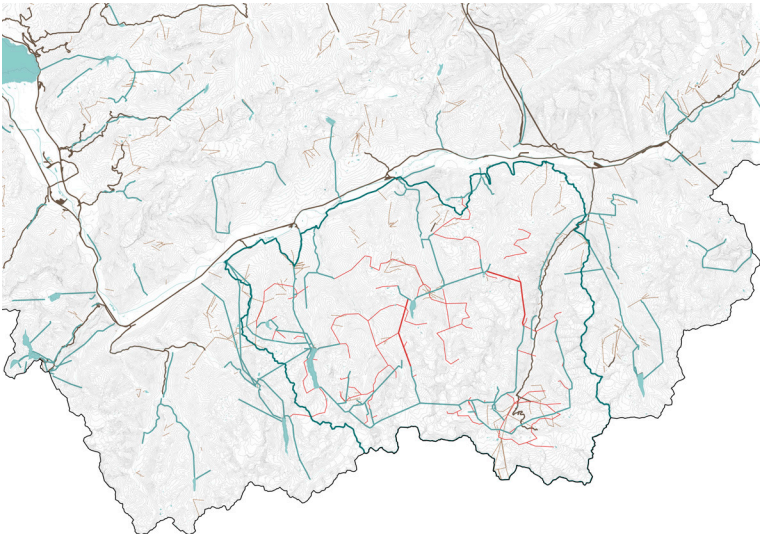
mobility infrastructure



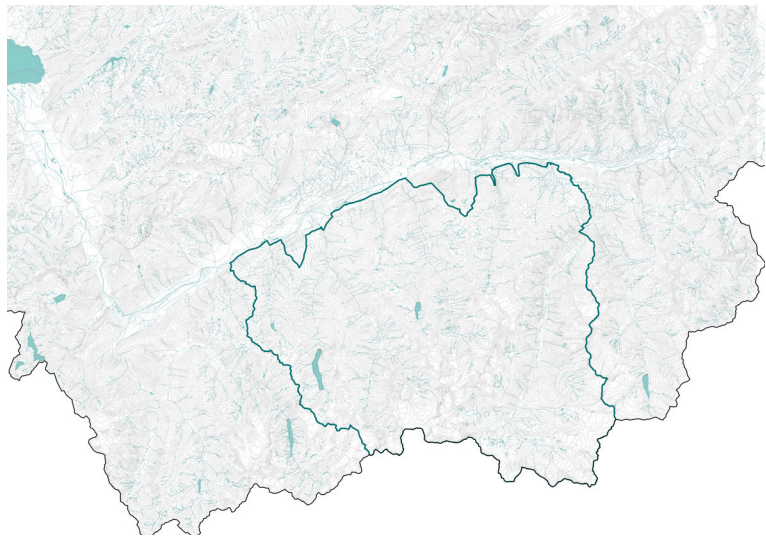
water and ice



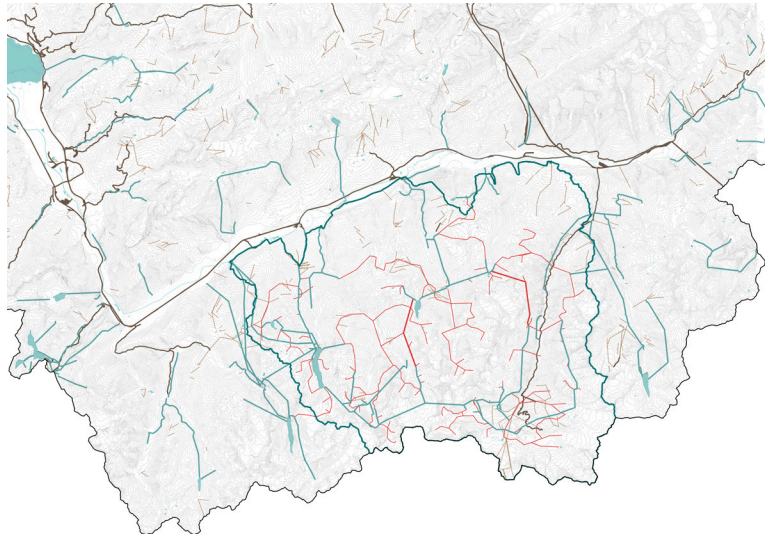
mobility infrastructure



water and ice



mobility infrastructure



5

methodology and ground assumptions

And so how do you, as an architect, use imagination and projecting skills to make sense of the new instruments we have, the knowledge they created, in a newly imagined coherent world?

This posed questions of methodology first: as architects, we are used to imagining a response to a given context, may it or not be really representative of the situation. Usually we indeed simplify certain aspects which in turn results in an imagined context, but rarely do we imagine the whole context itself.

The methodology chosen was simple: define a set of main assumptions and add derived assumptions from there, until the context created is sufficiently complex to design its environment and the way people would live all the way to drawing a building responding to those assumptions.

1. Temperature rises of about 6°C

year round in the southern alp range of the Wallis.

A scenario relatively close to a linear development of the RCP 4.5 - intermediary – scenario.

2. Precipitations become more erratic

with bigger extremes, even though the total yearly yield stay relatively stable – a rather optimistic assumption.

3. There are still people around in similar amount to today

a very optimistic assumption as by such a temperature change overall, the most plausible scenario would be that life has stopped in the area.

Those three starting points are assumed to have the following consequences:

- **Potential rise of the treeline of about 800-1000m over the course of 200 years.**

The temperature and precipitation would enable the treeline to rise, yet other factors like soil formation, seed dispersal and illnesses could prevent this from happening.

- **Complete disappearance of glaciers by 2223.**

Glacial melt has multiple consequences:

1. The newly exposed sediments are a threat to the water retention lakes and especially the Lac des Dix.
2. With the absence of ice melt water in the summer, the extremes in precipitation are felt more strongly, especially droughts.
3. The melt leads to an even more dangerous transitory phase of high waters, glacial lake outbursts and land/rockslides. This is even worsened by permafrost thaw.

- **Shift in crop yield timescales.**

With the changes in temperature, precipitations and the related events (disease spread, forest fires, droughts, insects spread, invasive species spread...), the species currently thriving in an area have trouble surviving. This leads for a time to short growing periods until complete disappearance or migration.

- **Impossibility to live in the Rhone valley during summer.**
As temperature rise, the climate in the Rhone valley becomes more and more dangerous especially due to flooding risks and major droughts risks.
- **Critical importance of lakes and water retention device.**
In order to both level the extreme events and insure the creation of protective forests and subsistence crop fields, as well as electric production and chemical processes, water storage and management take up an imperative place in society.
- **Hydroelectric power becomes the critically needed local energy source.**
There are very few other sources of energy available in the area and so the existing infrastructure becomes decisive for energy supply. No coal, no oil, no gas are available and wood and biofuels are extremely limited as the formation of protective forests and subsistence crops requires the trees and plants to not be cut down for fuel.
- **As energy becomes less and less available, always less goods are available.**
A worldwide central organisation organises the distribution of the few goods that travel around. Those are obtained at high cost and each area produces a little amount of goods that they can export in order to afford those.

6

ethnography of the walliser society in 2223

history

It is rather complicated to estimate the time forward from which the mountain stewards of the Wallis southern slopes began to identify as an independent group. But it might be argued and is commonly referred to as having its origins in 2023. In June 2023, a federal votation of the at the time so called Helvetic Confederation - current Wallis, Flatland, Lakes, and parts of the Free Jura - began to spread the spirit of an independent society that would manage its resources on its own. The object - a climate law - was accepted by the population, but by the time it had come to be voted upon, the initial idea had been so skimmed, it hardly even made sense anymore for the people living in the mountains of Wallis and who were experience first hand the changes.

That year, the +1°C global had also been reached, with dramatic temperatures in the Northern Atlantic ocean. Simultaneously, the effects of the debt, lack of education for children and of sense of community for the adults - accumulated following the Covid pandemic - as well as the overall anxiety and polarization of the discourses around war, security, individualism and flamed the need for action in the population. It was also the year it became more and more present in public discourse that the war in Ukraine was not happening because of an ideological macho, but because that territory was going to provide for the people of Russia. It is now generally accepted that it was the first environmental war.

From that point forward, the people of nowadays stewards of the mountains of Southern Wallis strived for independence: of their own country who was failing them, still believing in the powerful hand of economic freedom - and of the rest of the planet as much as possible. Change happened slowly, over the course of a decade, until a new path had been determined.

A few decades later, a global AI driven dispatch system - GDC - using current climate modelisation techniques and climate scientist global organizational system, was launched. It started to organize the flux of goods around the world in always smaller quantities until the transport industry fell back within planetary limits. The initiators of the stewards groupment had already long thought about what the area could bring to the world, and at the time, as Swiss as they were, had decided to use the already existing infrastructure to provide medication to the rest of the world. As chemicals were doomed to become always more difficult to get access to, as energy started to lack, it was decided that much energy would be spent on saving as many endangered plant species as possible and develop systems to use plant extract for all medication preparation. This lead in 2034 to the creation of the first mega institute of the area: the ALPINE - Alternative Lab for Production In Natural Environments.

The second came 2 years later and was the successor of Grande Dixence SA, the water and electricity management system.

habitat: geography, climate

For the habitat of the stewards of the mountains of Southern Wallis, please refer to the chapters 4 and 7 to 10 as they describe the climatic and living condition of the society in greater depth.

technology, material culture and subsistence

The Swiss society, ancestor of the stewards of the mountains of Southern Wallis was a rather wealthy and extremely protected social group: the State was fending for its people like in few other places around the world. This state of comfort lead to curses and blessings for the following society.

On the one hand, a strong relationship with high end and constantly evolving very developed technology - like the at the time so common "natel" or "PC" - had been established. Every inhabitant was using it daily and the state cared to make it rather safe. this lead to an abundance of high tech material to be brought from around the world and high end skills to be developed within the population. As the society slowly shifted towards a more local system, those technologies stayed, just in reduced amounts to insure their long term use and because the technologies they depended upon was lacking: electricity and connectivity. It was thus very useful for all villages to be connected with each other and with the global dispatch center - GDC. Usually those systems are accessible to everyone in the common house.

For their subsistence, other technologies became of utmost importance: welding, metal and electronic repairing for maintaining the carefully preserved technologies. As well as strong knowledge in geology, water systems, medicine soil biology and plant biology to enable crop production, forestry, endangered plant species preservation for medication components and the overall production of those.

This led the area to become an example in the area of healthy ecosystem management and natural production - here again one can see the remains of the Swiss influence of striving for exemplarity, that costed the country so much time as it was spent on perfection, not action.

For subsistence, and as the Rhone valley became more and more unlivable in the summer, the stewards began to move around on a yearly cycle of transhumance, like their ancestors did. They would spend the winter down in the valley, in existing houses and use the infrastructure - for example the ex-Lonza factories - to produce the medications, repair the material used in the summer, do research, send the kids to school, and basically work as normally as possible like their ancestors did prior to 2023.

In the summer, they would move upwards in areas of altitude ranging from 1500m to 3000m elevation and do their natural service time there: taking care of the mountains that were protecting them and of each other. They bring cattle with them from the valley to take part in the regeneration of soils in a giant yearly move. This period is one of community,

as people live in strongly interconnected small communities, sleeping at 8 in dorms and working all day together and with their surroundings. It is also the period during which most rites and feasts are celebrated.

Their main goal in the summer is to protect the mountain and their livelihoods. As such they spend most energy in creating terraces that will allow for soil formation, protective forests and crops growth, reduced sedimentation of the dams and rivers and CO2 storage in the soil, as well as managing these systems. Their housing is part of the infrastructure, as it hosts the irrigation system and serves as a terrace as well. Completely underground, the houses are made to be safe as mountains became very dangerous over time.

social structure

In this society, it was decided by votation that decisions would be taken with as many people as possible having a say in it. Shared Governance became the rule in every village and representatives of each village would meet for broader decisions twice a year in the winter. The structure is more communal than familial, with family members sometimes sent to different villages in the summer according to their wants and the needs of the society.

Although there is a village coordinator, the most honoured people are electrical engineers and electricians. As this is the only source of local energy, it earned a strong place in society, allowing for connection with the outside world and machinery use for the protection of the land.

The rupture between planners and doers got dismantled especially in the fields of engineering over time, which resulted with a high status in society for everyone who could handle electricity.

The knowledge of electrical experts as well as environmental and biological experts being so important for the society's survival, the ALPINE and Grande Dixence, where most experts are working took over a major part of the decisions. Energy and environment are so vital to the population that it is no wonder, and yet it is quite surprising that the people would think they are free to choose under shared governance when such powers are in the equation. Clearly the engineers have a more important voice in the discussion, similarly to the voice liberals had previously in public discourse.

language

As immigration of people and crops from the rest of the world happened the culture and language of the society changed drastically. Currently the area uses a mix of French and English with multiple South American words both from Spanish and precolonial languages as plants from the Andes were imported en masse to provide for the society at higher altitudes and with poorer soils.

rites

The major rites are definitely the Inalp and Disalp: the movement towards the mountains and back in the plain at the end of the summer. Both times are an occasion of meeting together and sharing goods and stories.

The year is also marked for young adults by the early departure in autumn with the electrical and hydrological experts to travel along the entire infrastructure and close the water ways accordingly to the needed parameters. At the end of this initiation, all meet in the Maya collector, a giant underground water storage system, empty at this time of year and seen as the sacred place among all infrastructures of the area. Access is otherwise completely forbidden because of the risk of flooding it presents. This marks the coming of age of the team of young stewards. It is forbidden for the stranger to know what happens there, but they leave for 4 days until coming back to their communities. It certainly seems like this milestone is of utmost importance and an event looked upon very favourably by the community as it marks an important stage in their lives. A stage driven by the powers of water, electricity and the fear inducing strength of the mountains. This stage is the time to learn about respect, which they then carry with them all live long.

7

infrastructure of the mountains

1 : 1'000'000

water collection system of the dam
location of projected interventions

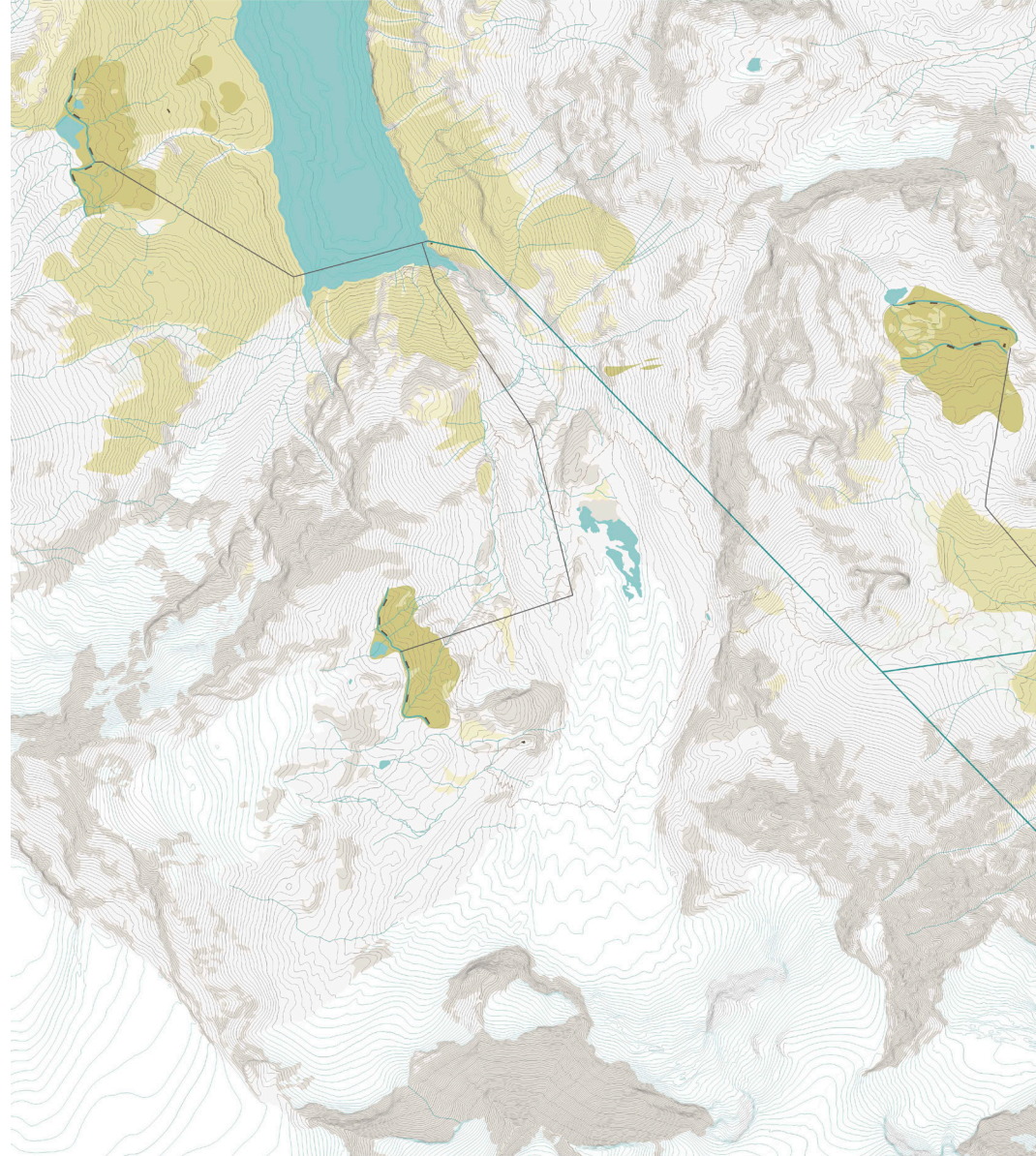
- new village - 2223
- existing village - 2023
becoming small town - 2223
- existing water collection galleries - 2023
- train lines - 2023
- new water collection galleries + transport lines - 2223
- cable car lines - 2223

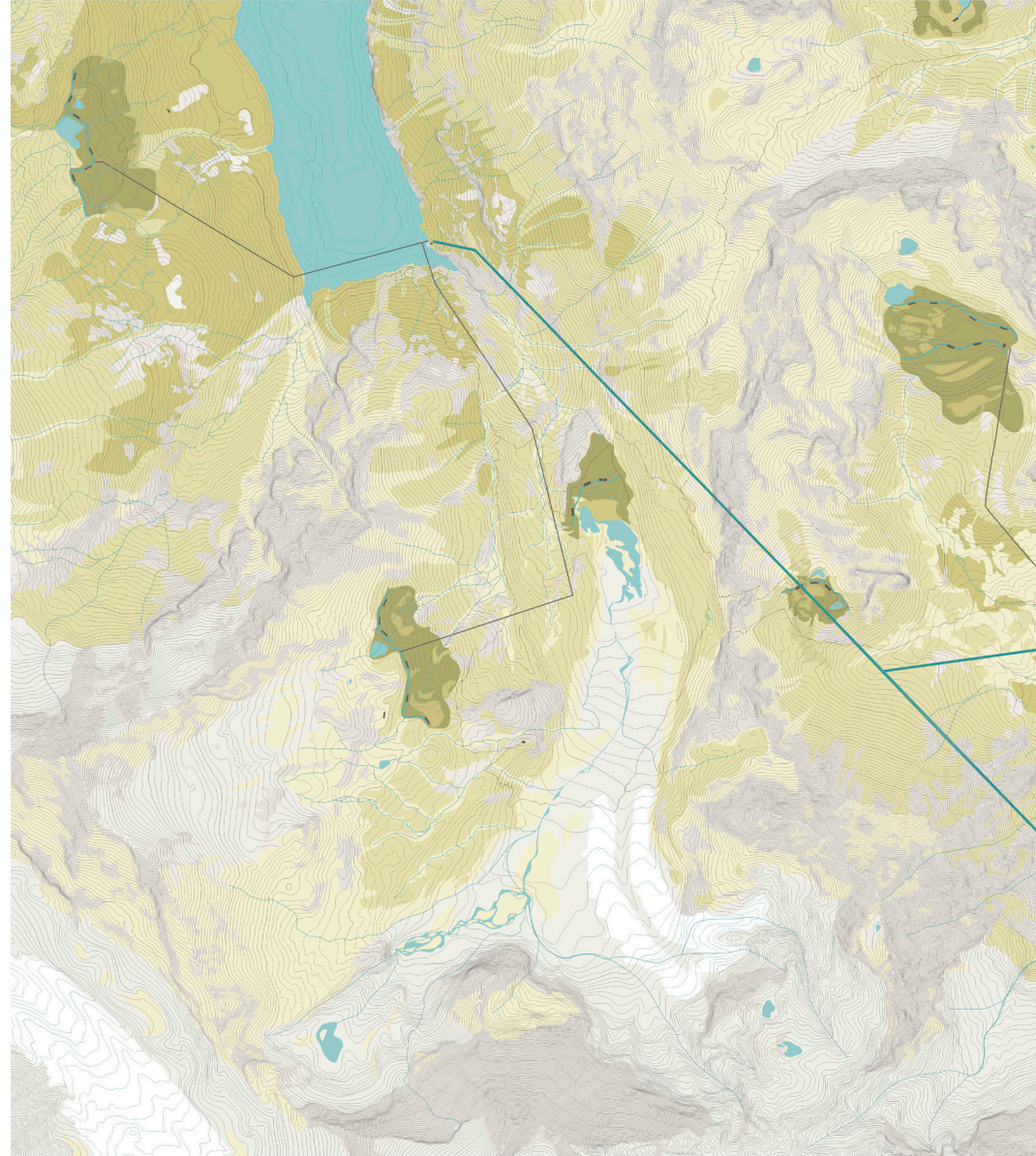


8

regional evolution

1:40'000



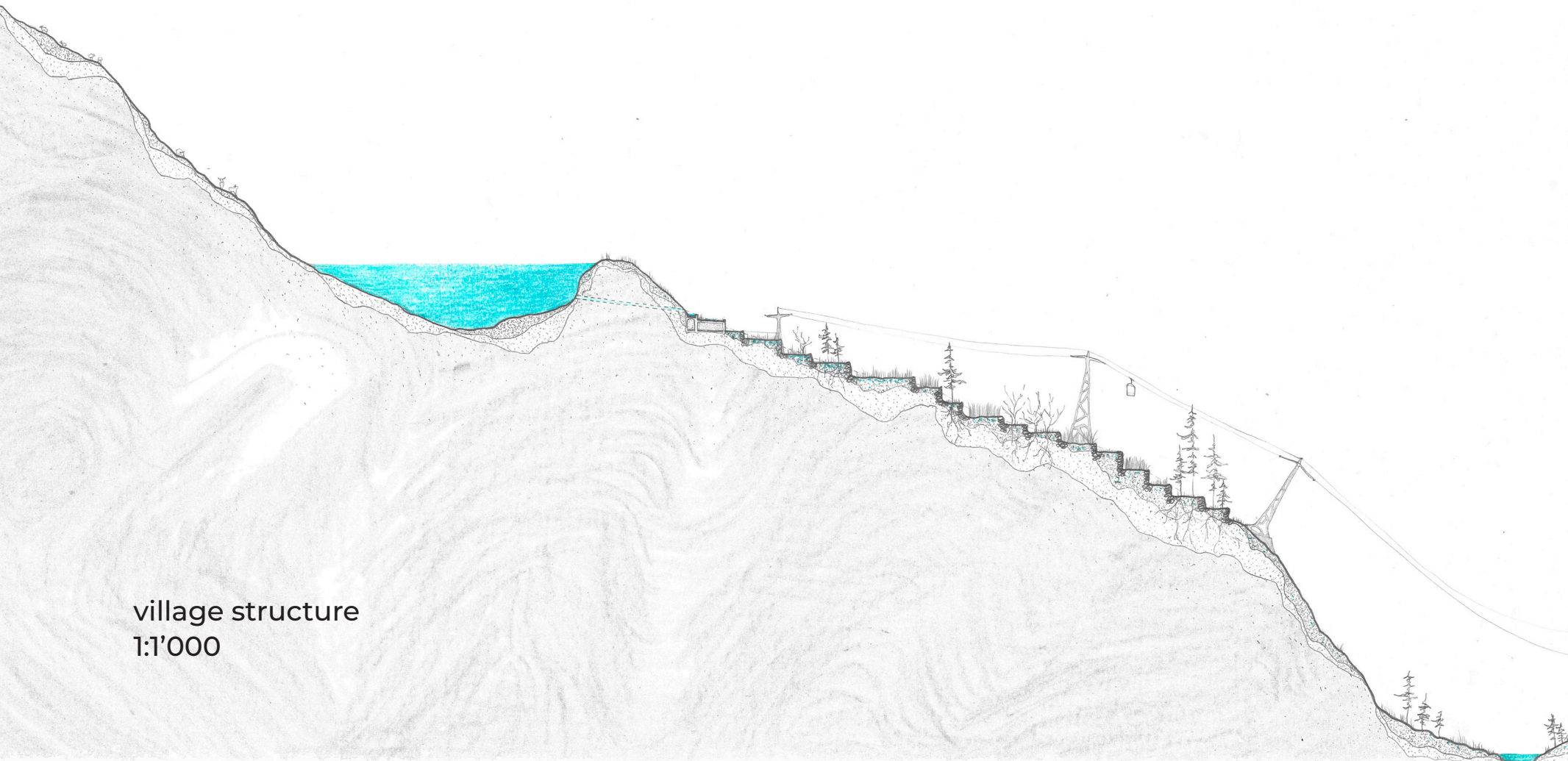




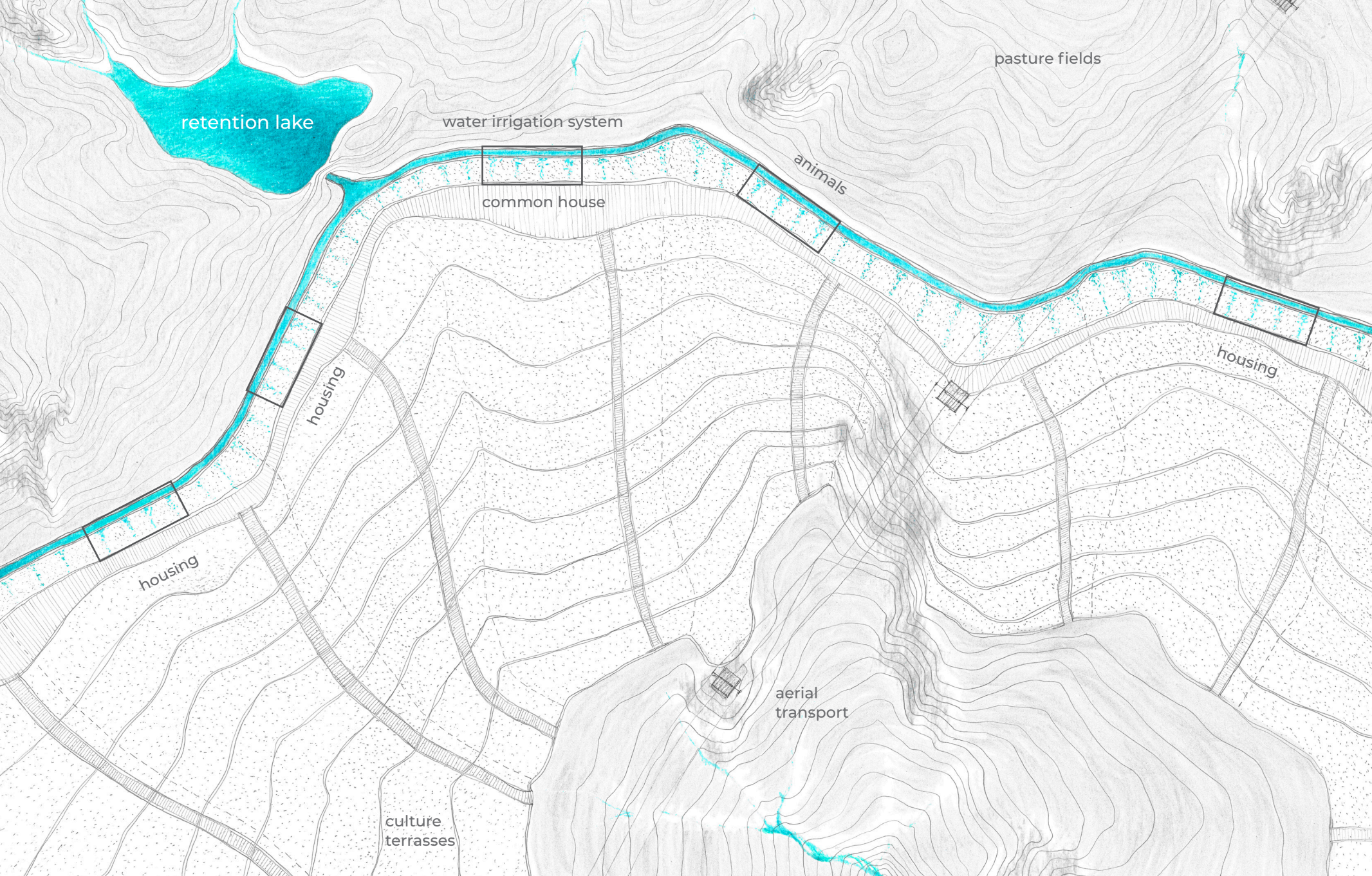
9

living in the mountains

The buildings of the future seem to require a robustness that is made of both the flexibility of the tent, and simultaneously the protective strength of the castle.



village structure
1:1'000



retention lake

water irrigation system

pasture fields

common house

animals

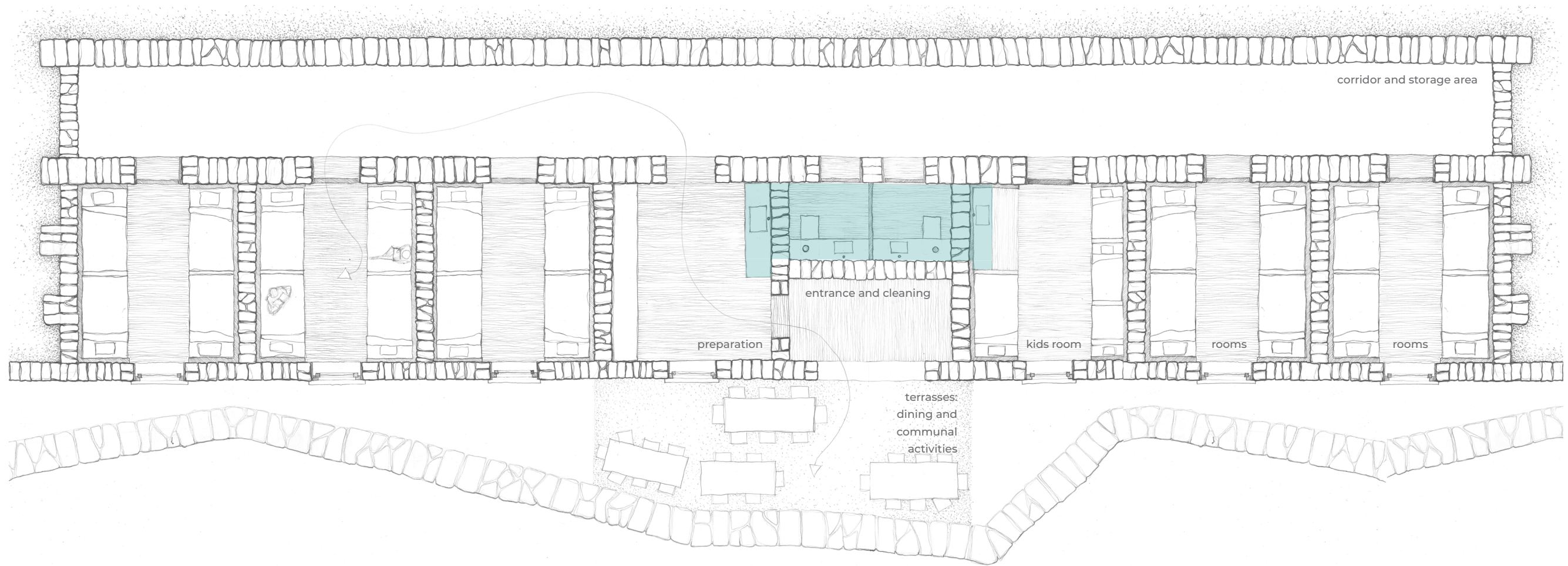
housing

housing

housing

aerial transport

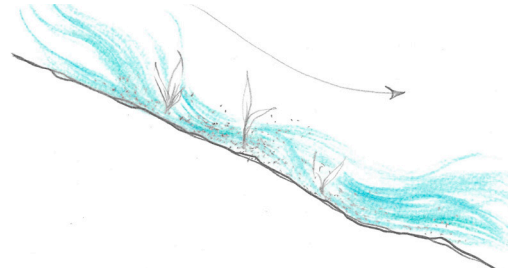
culture terrasses



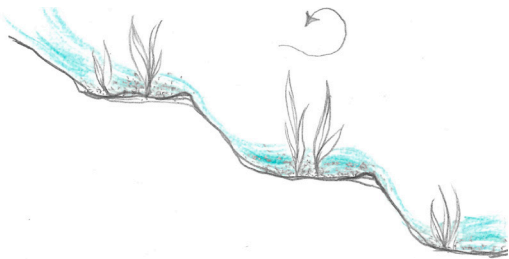
collective housing
1:100

protection of soil
with terrasses

steep slope:
sediments, soil, water
flushed when rain
occurs



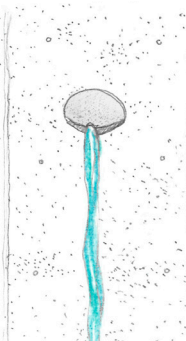
terrasses:
sediments, soil, water,
seeds stays when rain
occurs



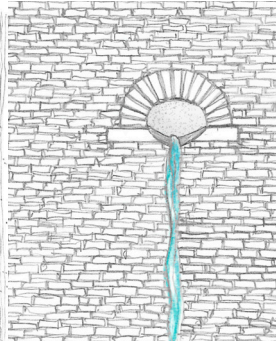
materiality according to availability
working in full compression only



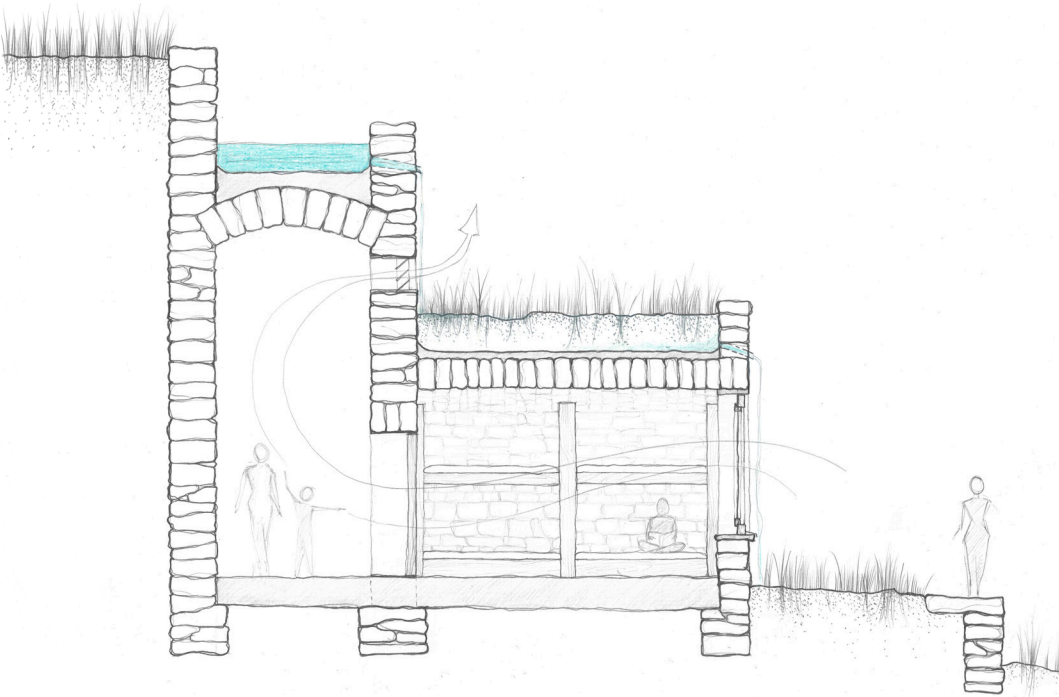
carved stone

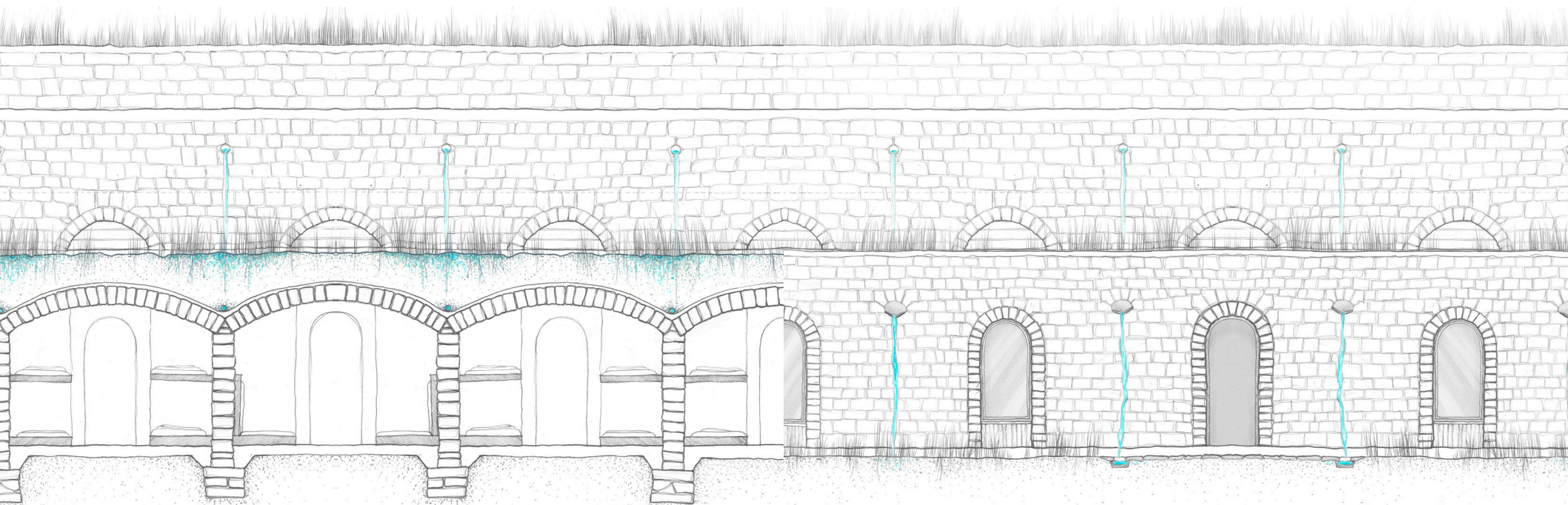


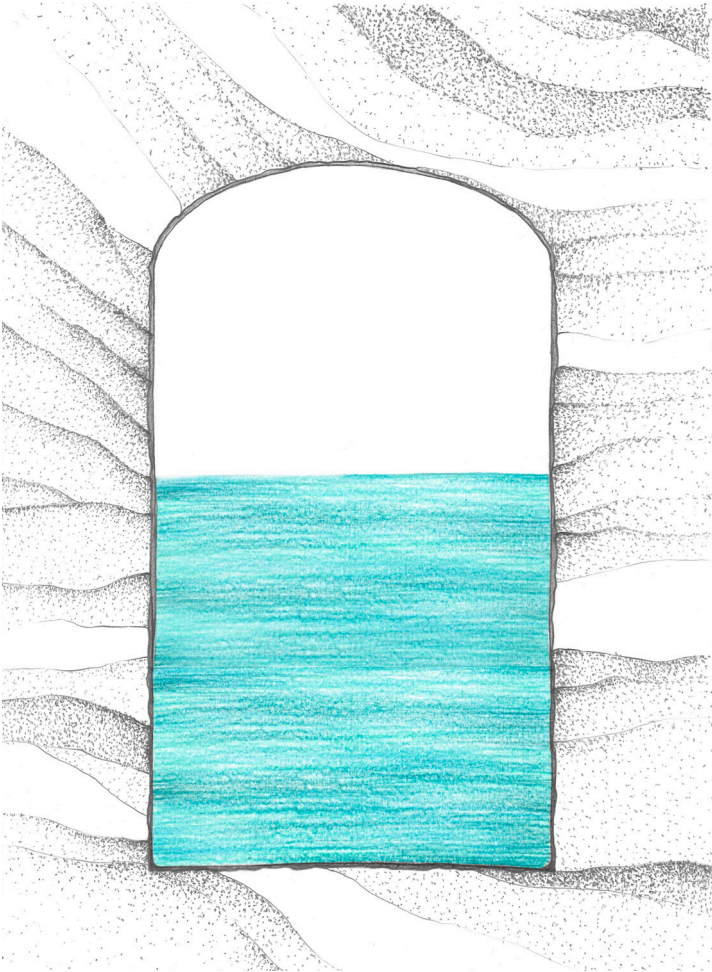
unreinforced
concrete



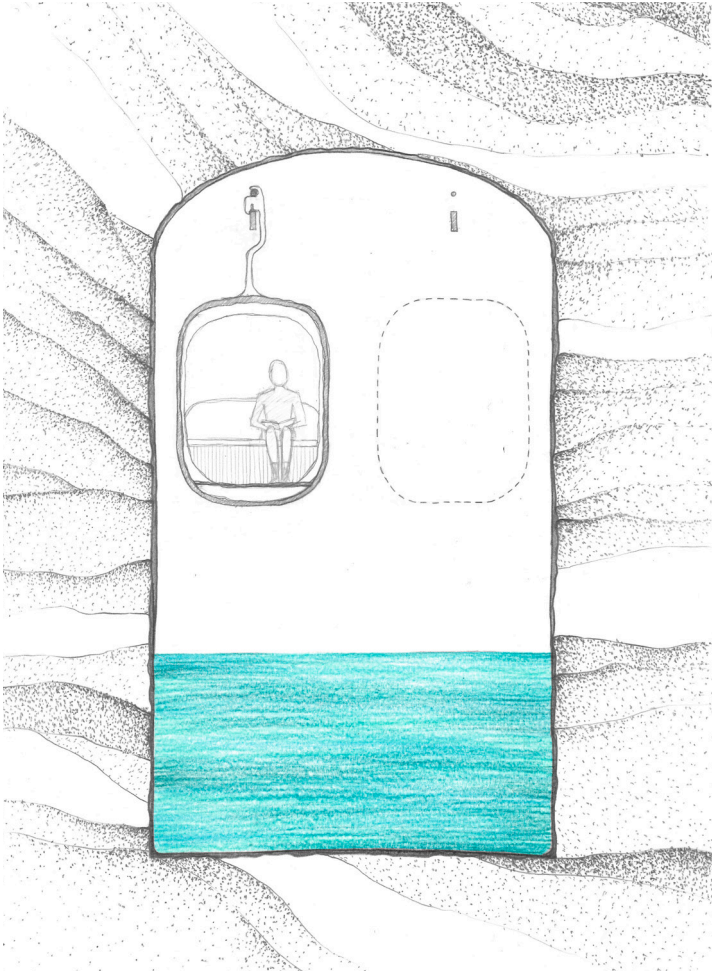
bricks







transportation
1:100



suspended cabins travel within the water galleries at low water level and connect villages via aerial lines

10

Grande Dixence 2223
flow, resistance and
care

What we need is not a bridge to renewables: it is a bridge to care.
To care for people and our hosting world, so that we can make
the relevant changes en masse and in dignity.