Re-Collection

- Of mine and city

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MPARC - MSS


CHALMERS

Re-

Collection

Of mine and city

Forewords

Kiruna is facing dramatic changes. The active mine, Kiirunavaara, is expanding causing the land to deform. The deformation will soon affect the city center which has led to the decision to move the city eastwards. If you look at the mining company's own prediction they are certain that excavations will continue at least 100 years. If you trace the deformation from their prognosis it does not only affect the current city center but also the planned new one. But the deformation stops at the the new city centers closest neighbour, another mine, abandoned scince late 1970s', closed to the public by a high fence due to danger. If it continues to be closed it will violate one of the main goals that the municipality has set up; "Noone should have to live next door to a fence". In the master thesis "Re-Collection" I aim to provide a solution that secures access to this area, not only breaching the barrier of the fence but also highlighting a similar deformation landscape as the one affecting the city on the other side of the city and also highlighting the main identity of Kiruna, "the mining-city". Kiruna has several buildings of high cultural value with details carrying strong identities. What will happen to these structural memories when the deformation affects them? In the master thesis "Re-Collection" the aim is to use the area of the Tuolluvaara mine as a transit zone for these structural memories affected by the deformation. The example used in the master thesis are details from the city hall, one of the first buildings affected. The proposal of the master thesis is to open up the area, securing access to the man made landscape by an elevated path. Throughout the path pavilions are suggested that highlights certain features of the landscape. Into every single pavilion a detail from the city hall is incorporated, using them in a different way and in a different context than the original. The old mining structures are made into a visitors center, focusing on the mining industry and the moving city. Methods used are landscape mapping and creating sequence through storytelling. This is carried out under the overall concept of memory, both physical and theoretical. The thesis wants to highlight the discussion about what counts as cultural heritage. Practically the thesis could be a tool in the process of deciding what to do with these kind of areas and how to relate to the irreversable deformation the structures of Kiruna are facing.

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Eveyday life
Johanna Molin

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Part 1

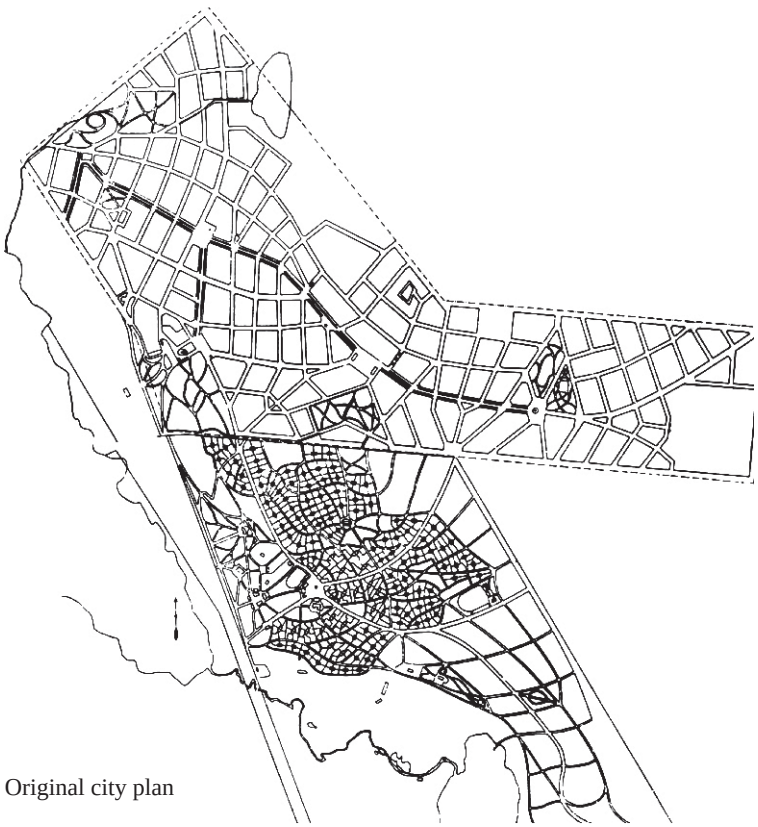
Kiruna - An introduction

There are several examples of small societies loosing their only economic life nerv through globalization, centralization, or loss of natural resources. Sweden is no excption. All around the country factories are abandoned, industries shut down and quarries yawning nakedly. The result of this is usually depopulation and local economic catastrophy. Far in the northern part of Sweden, the mining town of Kiruna is still going strong. From being threatened in the late part of the 20th century due to energy crisis and minerals decreasing in value to once again blossoming due to higher demands of iron ore from growing Asian markets, the mines are expanding. And not only in terms of value, expanding literally. The mining company LKAB (Luossavaara Kiirunavaara Aktiebolag) decided in 2004 to dig down to a new main level (-1365m) cuasing the land to deform accelerating. The problem is that the deformation will hit the absolute center of the town in a few decades. When striked by the choice of keeping the city structure with all the material and immaterial memories that comes with it or loosing the by far greatest economic factor, the choice was in the end relativley simple. The city has to move. This shows how important the mining industry is to the community of Kiruna. What would happen if it dissappeared? The city is now faced with the enormous task of developing, transforming and actually moving a city. A lot of cultural environments will be severly altered. The new center will be re-located to the north-east and an architectural competition has handled how this could be executed. In all these termoil and planning there are factors left behind. The city is not only surrounded by one mine, Kiirunavaara, the active one. There are two others contributing significantly to the cityscape. These two mines are Luossavaara and Tuollavaara. They were once a part of the life nerv of Kiruna but are now more or less forgotten. Tuolluvaara will be the new centers closes neighbour. But as it seems at this moment, it will act as a central perifery. Could these areas, once a few of the most important areas to the community, be taken in consideration when creating the new Kiruna. Could you transform these modern ruins and consider the memories of the mines and create a new strength for the future.

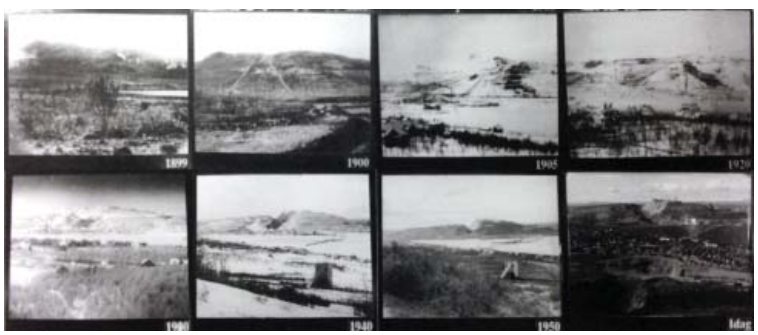
Deformation prognosis

History

The knowledge about iron ore situated in the vecinity of Kiirunavaara is dated back as long as the 17th century. But it wasn't until the technology of transportation and enrichment had caugth up that real mining started. The older use of the area was dedicated to raindeer herding, hunting and fishing, Sami traditions. When the mine was established and transportation was made possible by railway between Kiruna and Narvik in Norway, settlements started to arise. Both the mining company and the railway company planned their own areas. But to avoid the shanty settlements you could see in older mining areas close to Kiruna the first manager for the mines, Hjalmar Lundbohm, started to plan for a complementary town. This town should be designed according to the best standards of the time. It would be a model city. The result came to be a town with a plan that followed the terrain and with clear inspiration from the garden city movement. Hjalmar Lundbohm hired the most prominent architects and engineers of the time. The town grew and became a municipality in 1909. At that time the mining company financed some public buidlings to be erected such as the chuch. In 1948 Kiruna got the city status which is visualized by the city hall, designed by Artur von Schmalensee in 1963. Kiruna experienced an economic boom during the postwar years and the mining company expanded. New areas were built. As in many other parts of Sweden the central parts of the city were sanitized, demolished and replaced with modern buildings. At this time Ralph Erskine is involved with the design of some buildings, among them "kv Ortdrivaren". In 1974 the mining company LKAB bought the rivaling mine Tuolluvaara but found that the ore was almost empty or very hard to excavate.
During the years after the energy crisis and the decline of demand for iron ore the mining company abandoned the Luossavaara and Tuolluvaara mines due to low profitability. During the last decade the increased demand for iron ore from growing Asian economies has created a new boom for Kiruna which led to the announcement in 2004 of digging a new main level in the Kiirunavaara mine. The effect being the moving of the city center.



Original city plan

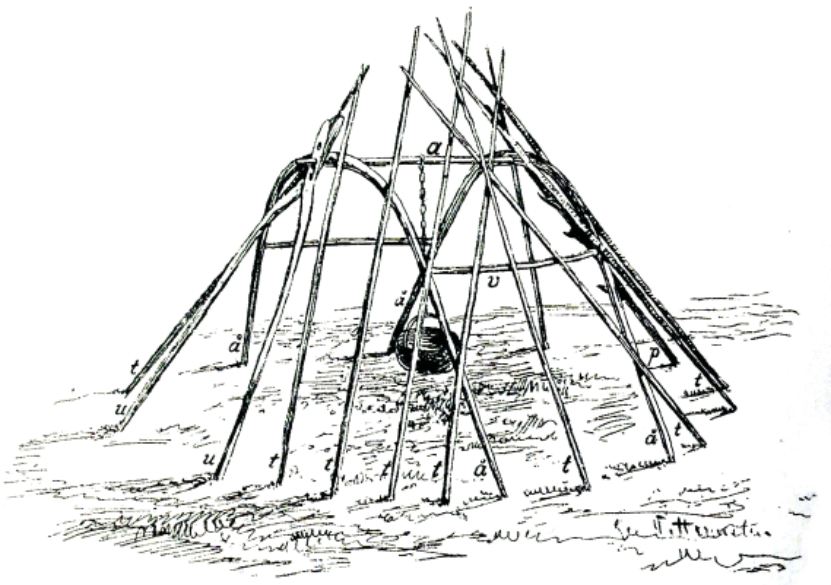


Kiirunavaara mountain 1899 - Present day

Culture

Kiruna is a konglomerate of different thoughts, people and ideologies. It is a cultural landscape with a long history beginning with the Sami traditions. But today the cultural landscape also incorporates Swedish and Finnish traditions. Its modern traditions begins with the mining and the development of the model town. The municipality usually emphasizes that the cultural history of Kiruna is split into three directions. One is the Sami traditions, the second is the settler traditions and the third is the miner- and navvy traditions.

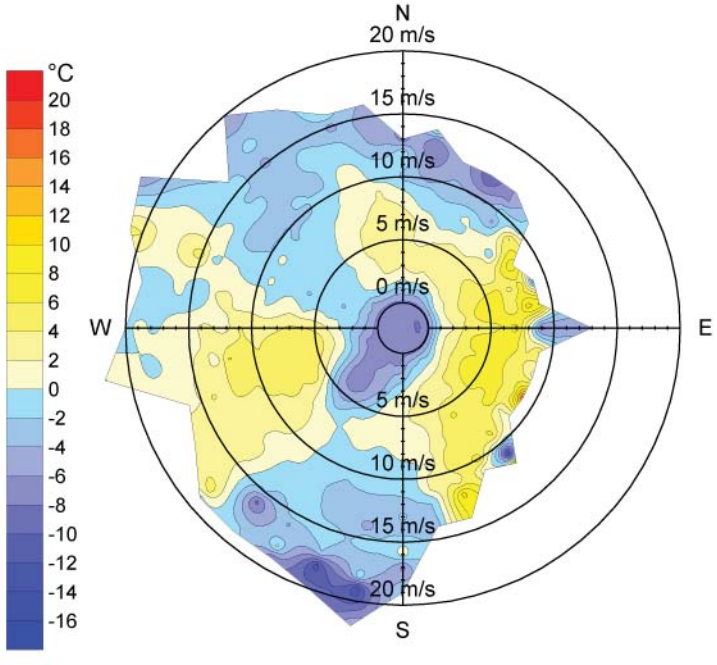
When the mining came into buisness the area like mentioned above was not virgin soil. It had been used for generations by the Sami people. A Sami camp was esatblished by Luossajärvi with all that comes with it.
The Sami traditions are often connected to nature. Their main occupations closely integrated to raindeer industry as well as to hunting and fishing. When it comes to building culture their structures are often connected to their nomadic lives which requires lightweight structures that are easily mounted and that leaves little impact on nature. Although one can argue that the Sami traditions has little impact on nature, their most important occupation, the raindeer industry, plays in itself a directed impact on nature.

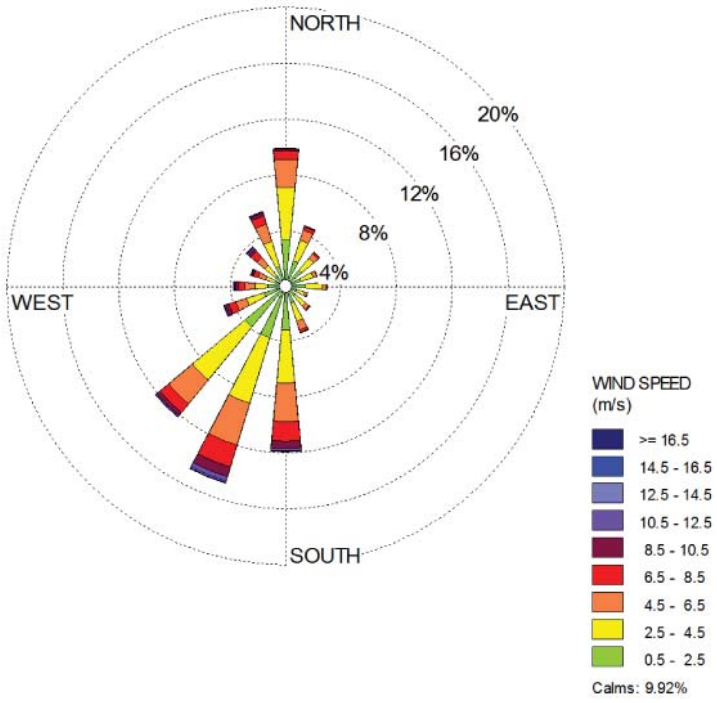


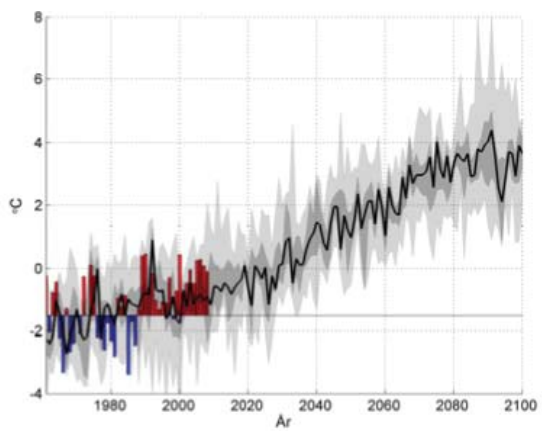
Träställningen till en lappkåta

Climate

The local climate in Kiruna can be characterized as relatively complex. This is partly because of the complex topography and the large difference in temperature during the year. Kiruna is located in an arctic climate which means having temperatures that are relatively low which places heavy demand on the vegetation. Arctic climate also means average temepratures below 10 degrees celsius during the whole year. Due to the gulf stream Kiruna has an average temperature of a little higher than the average arctic climate. Heavy snowing may occur and together with the high windage can cause drifted snow. Particularly when the percipitation comes in the form of dry snow at low temperatures. Heavy winds are mainly coming from south-west. The winds coming straight from south are relatively cold as opposed to the ones coming straight from west which are significantly warmer. An opening towards west is, considering this data, better than an opening towards south. These nothern altitudes growing condistions are characterized by long days with low temperature during the the short growing season. Although the significantly long days the intensity of the light and the amount of light radiated on to ground is lower in the north than the south because of lower sun inclination. Calculations and predictions for the development towards the end of this century indicates that the average temperature will rise 4-6 degrees celsius with the most dramatic rise during the winter months. The percipication will also rise with 15-50% towards the end of the century. Heavy raining can be expected with the higest rise during the current rainiest days of the year. The amount of snow will decrease and the time the snow covers the ground will decrease with approximately a month. The milder climate leads to a longer growing season. The end of the growing season will come later. The need for heating during the year will decrease although the need for cooling may rise a little. According to the researchers the milder climate of the future could be postive for Kiruna specially with the lower need for heating. A negative aspect could be the expected rise in percipication and intensive raining which might come to affect water drainage etc.



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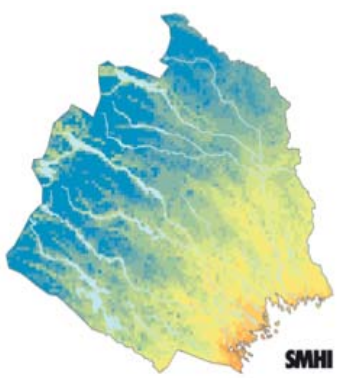
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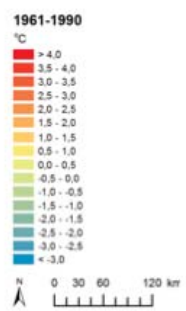
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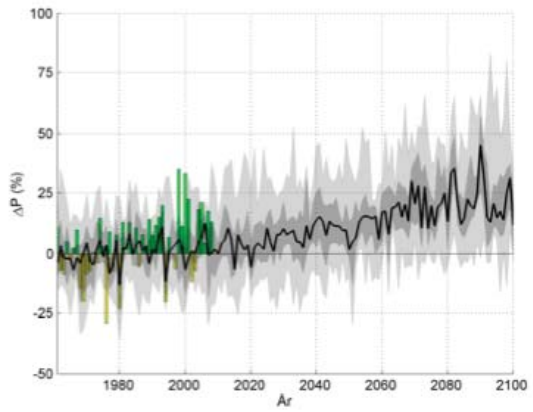
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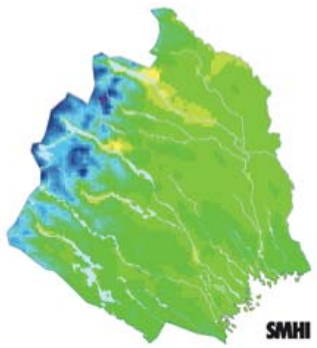
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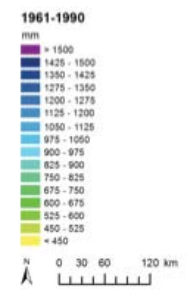
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Conclusions Part 1

The fact that the city has to transform and partially move is an extreme event taking place.
The reason for the tranformation, the mines, are not only the primary cause to the very existence of the city but also its main economic generator.
The municipality has decided to explore a center establishment in north east, and as by chance it's closest neighbour will be the abandoned mine in the mountain of Tuolluvaara. An architectural competiton is taking place right now (november 2012). The purpose of the competition is to visualize the future center development. In the report for the competition and many other reports the mining site with the extremely close vecinity to the planned center hasn't been taken in consideration.
Kiruna has traditions even before the city and the mining came into existence. The area was then dedicated to raindeer herding, fishing and hunting, parts of the Sami traditions. These traditions are closely linked to nature and is based on leaving very little traces of intervention in nature, basically the total opposite of what has been done by the mining in the area.
The city was designed as a model town, both in plan and with the highest standards in housing, education and service.
The pre-mining cultures is something that the municipality thinks important to emphasize. These traditions are mainy the Sami traditions, the settler traditions and miner- and navvy traditions.
The city and area is an area of high contrasts in climate, light and temperature.

Aspects to take into consideration:

- Moving equals dealing with material and immaterial memories
- The central perifery
- Intervention with nature
- Contrasts

Part 2

Conceptions of Kiruna
The mines
The site -Touolluvaara
Conclusions Part 2

Conceptions of Kiruna

Kiruna is a city that stands before a wide transformation due to defomation risks caused by the mine digging to a new main level to excavate iron ore. The built environment in Kiruna is classed as cultural heritage of national interest.
Three strong images of Kiruna has been identified. These are “Kiruna the mining city”, “Kiruna the model city” and the most rescent identity is “Kiruna the moving city”. The different images defines different identities for the city, athough intervining . They are also connected to different cultural material and immaterial heritage and memories that might be taken in consideration when the city is transforming. These must be considered together when defining Kiruna as a city.

“Kiruna the mining city”
Kiruna is highly associated with being a mining town. The history of the city is usually described as an effect of the mining industry establishing. The fact that the city has to move is a direct effect of the mine expanding. This undoubtfully enhances the importance of the mine. The manifestation of this conception, except for the significant precense of the mines, the smoke, quarries and headframes, is largely the city in symbiosis with the mine.

“Kiruna the model city”
When the city was to be built the intentions from the first manager, Hjalmar Lundbohm, was to design a model town with a plan that followed the topography and provided excellent housing and buildings and spaces of highest standard. Incorporated in the model city conecption was also highest standard of education and service.
The conception of Kiruna as a model town is not only a historical conception but one which is brought up again in the plans for the new city establishment. When the city is transforming the municipality wants to pass on the ideas of Lundbohm but translate them into modern times.
The conception of Kiruna as the model town is quite abstract. It is both historical and futuristic but is manifested in a couple of buildings; the church, Hjalmar Lundbohm-gården, the city hall

and older wooden houses. In this conception is also a comparison with another mining community - Malmberget incorporated. Malmberget was, during the establishment of Kiruna, a shanty town and considered a bad example of what could happen if the developments weren't controlled. The conception of Kiruna as a model town is by all means a historical reference but highly present in the minds of the citizens.

"Kiruna the moving city"
The conception of Kiruna as the moving city has it's origin in a press release in 2004 by the municipality announcing that the city has to move because of expansion of the mines. The formualation "to move" has gotten much attention.
Another fomulation, maybe closer to the truth, has been "transformation", although it haven't gotten the same impact as "to move", and hasn't got the same exceptional nuance.
By claiming that they are moving a city the interest from architects, city planners and other professionals have grown rapidly. But more importantly the identity as a moving city has generated a lot of interest from tourists that now comes to the city not only because of the nature, the mines but also because of this extraordinary phenomenon.
The expression to move is very dramatic and a lot of people wonder why something haven't happend yet. But the municipality tries to mediate that a transformation of this kind takes time and that the center of Kiruna wont be affected by the deformations until approximately 30 years which gives the transformation time.
To the people of Kiruna the physical moving of serveral buildings is taken for granted while the municpality speaks about moving a few houses physically and instead document other buildings.
A clash of mindset when moving is the preservation of material memories and the preservation of immaterial memories. One example can be how to move a model city?

The mines

Kiirunavaara

The mine is situated to west of the city and is present almost wherever you go. The body of ore extends straight through the mountain and the mine ecavations started as a quarry. Therefore most part of the mountain is today disposed of and plateaus of granite extends down the sides of the mountain.

During the 50s the quarries became too large and the slopes too steep and therefore they gradually went over to underground excavation and in 1962 the quarry mining stopped completely. Kiirunavaara is the only mine in Kiruna that still operates today. The body of ore in the mountain is considered to be the largest in the world. It is formed as a diagonally placed disc that extends partially under the city center. When the mining company now digs to a new main level they will affect the portions underneath the city which cuases deformations in the landmass above. The consequence of this is the moving of the city.

Kiirunavaara

Luossavaara

The mountain and the old mine is in direct contact with the city of Kiruna.

The quarry mining started in 1919 but gradually went over to underground mining until the closing of the mine in 1969. Until 1984 the mine was used for research purposes for the development of large scale mining techniques below ground. The mine has been abandoned from 1984 until present day. The head frames were in bad conditions and are now torn down. The shafts and galleries under ground are plugged. Today the dramatic quarry and deformations of the landscapes are what bear witness to the mining. At the west slopes a ski resort is established and on the southern slopes housing is planned.

Luossavaara

Tuolluvaara

A third iron ore mine was established four kilometers to the east, at Tuolluvaara, by the independent company TGA (Tuolluvaara Gruvaktiebolag) at the same time as the Kiirunavaara mine. Close to the Tuolluvaara mine a small community grew up, without the same strategic planning as for the town of Kiruna. The iron ore in the Tuolluvaara mine had less phosphorus which meant it required less enrichment before using it. The excavations were primarily done by sublevel caving in the quarry. The lowest level for carrying out the ore was at 500m below ground.

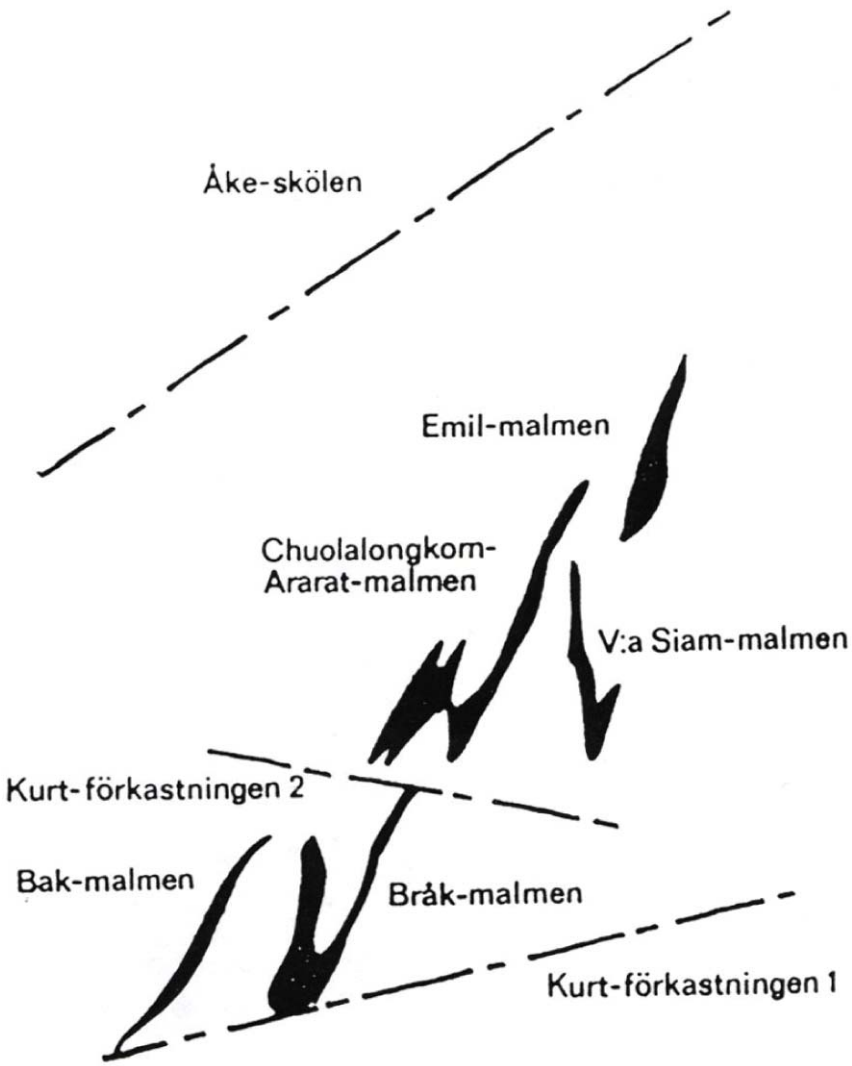
The head frames are still standing and the round head frame is one of the highest in Sweden. LKAB bought TGA in 1974 and but the mine was closed down shortly after partly because of the low amount of ore left in the mine and partly because of the energy crisis. Today the shafts are filled with water, the lichens are abandoned and the area north made into a golf course.

Tuolluvaara

The site - Tuolluvaara

Tuolluvaara is situated four kilometers to the east of Kiruna city center. It was once a separate community that grew up around the Tuolluvaara mine.
The current planning strategy for the transformation of the city, and the area that the international architectural competition in handeling is situated in the extreme vecinity to the west of the mine which will define the area around the mine as a “central perifery” if nothing is done to the site.
Around the mine the very unsusal existence (for Kiruna) of forest is present. Inside the forest the old quarry is situated and stretches up along the side of the low mountain of Tuolluvaara.
At the foot and the end of the quarry the head frames are situated along with some other buildings. The buildings are intact.
Mining has taken place both above and under gorund. Just before WWI the mining underground started. The main shaft dug 70 meters down in the ground. On top of the shaft a head frame was built for transportation of ore and personel. The new head frame was built around the steel skeleton of the old one.
Until the 40’s the community arount the mine was only a small colony. Some sort of town wasn’t to speak of.
Unitl weel into the 50’s the ore was transported to the railway station on cabelway because of the abscence of train tracks to Tuolluvaara.
After WWII the mining at Tuolluvaara was booming. Almost all of the ore was exported. The two head frames that still stands today were built during this time. Both in concrete 76m high and one 52m high. At this time a real townshipstarted to be built.
During the 60’s the schaft reached it’s lowest point, 550m below ground. And at this time the drilling showed less quantities of ore. In 1974 LKAB bought the Tuolluvaara mine.
Although there was still iron ore left in the mountain LKAB shut the mine down, some buildings were dismantled and the area has stood abandoned since. Where mining could develop today, a golf course is situated.

What makes the area interesting is not only the fact that it will be the new centers closest neighbour and that quarry, buidlings and shafts are intact but also the fact that development, transformation or preservation of the mine is rarley discussed in reports. Therefore the area becomes even more charged. There are already structures on site and rests of human intervention in the landscape. This together with the heritage and importance of the mines should be grounds enough to explore the possibilites of the area.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Chuolalongkorn-
Ararat-malmen
V:a Siam-malmen
Kurt-förkastningen 2
Bak-malmen
Bråk-malmen
Kurt-förkastningen 1

Conclusions Part 2

Kiruna is a city with many overlapping identities. It’s the image of being a mining town, the heritage of the model city and the new identity as being the city that will move. These identities are not only clichés and notions from visiting people but images that are confirmed by the population itself.
These images are both something that will be emphasized by the transformation itself but are also images that are problematic when dealing with material and immaterial memories.
The three mines have played important roles in the city’s development.
One is still operating and is the worlds biggest undeground mining site. One abandoned and is slowly transforming after having many structures tied to the mine being dismantled.
One is abondoned but with suctures intact and will be the new center’s closest neighbour. This is the Tuolluvaara mine. Perhaps not with as dramatic landscape interventions as the other ones but highly interesting in other ways. Not least the low level of presence in debate and reports.
The Tuolluvaara mine has it’s own history but follows the history of Kiruna closely and is during the 70s incorporated into LKABs sphere.

Apsects to take into consideration
- Overlapping identities
- Industrial and urban material and immaterial memories
- Decaying modern ruins
- Human landscape versus nature

Part 3

Landscape
Landscape mapping
Structures under ground
Structures above ground

Landscape

A large portion of the landscape in the area is man made. The mining in quarries has left large pits that creates a dramatic landscape with a wide span of characters. There is quite a contrast between the nature touched by man and the untouched nature. The man made landscape is bare and rough with exposed stone and rubble as evidence of the former use. The untouched nature is covered by low forest vegetation. This in itself creates clear spatial differences.
One issue that you have to take in consideration when dealing with this landscape is that it is classed as a dangerous environment. The foundations of the landscape is very fragile. The groundcover of the area is made up by backfill consisting of rubble, crushed rock and sandy silty moraine.
When laying foundation to structures it is recommended to do it on moraine after stripping it of backfill.

When mapping the landscapes topographical typologies you find several interesting recurrent features or features that gives the landscape an explicit character. These can be labelled as:

THE PORTAL - A pointy formation hidden from the entrance of the area in the landscape.

THE HALF PIT -A half circle formation in the landscape, a sort of unfisnihed quarry.

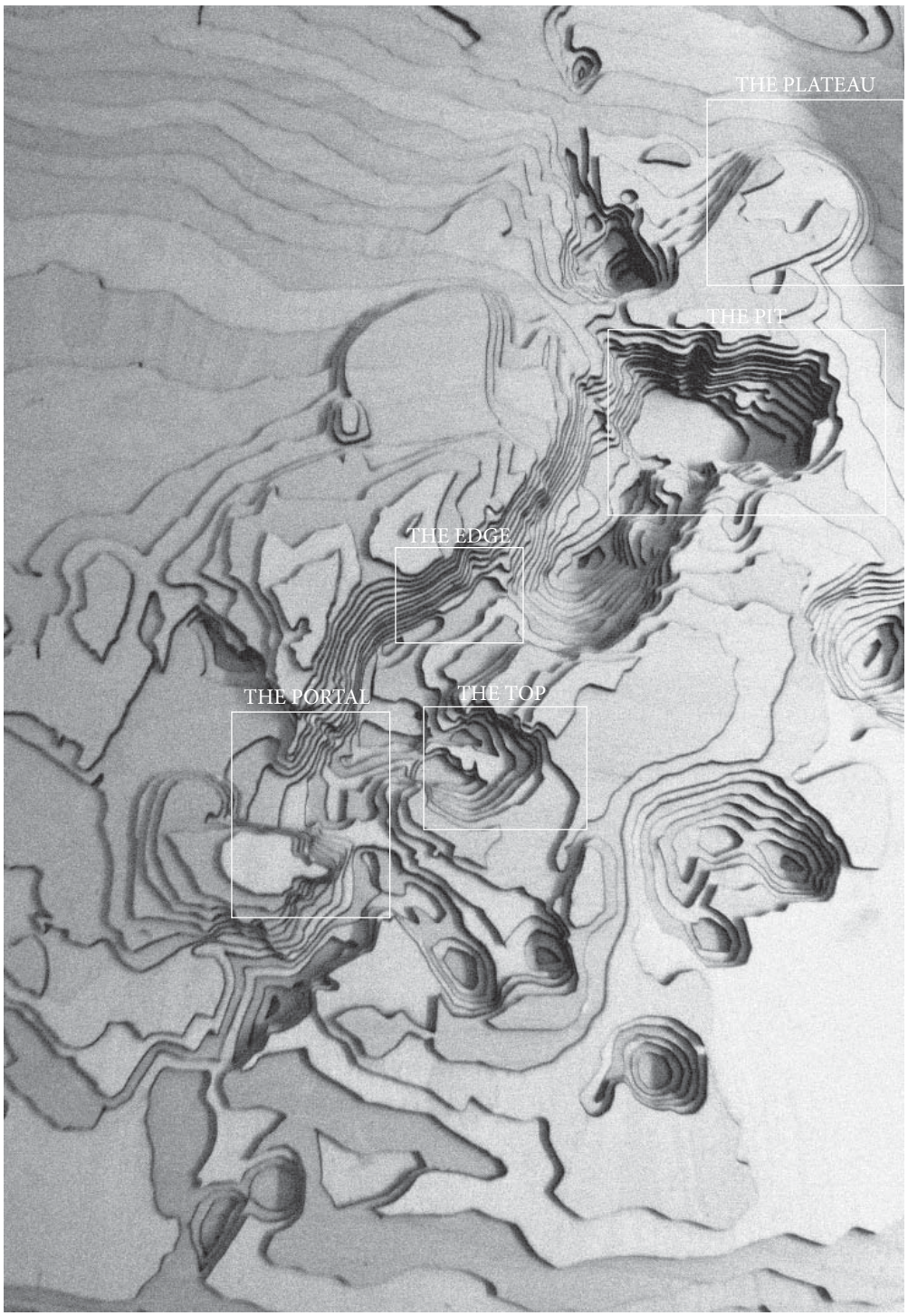
THE PLATEAU- The ecavations from the quarries collected and formed into a flat formation.

THE POT - The quarry, in the bottom filled with water. Surrounded by steep walls.

THE WALL - The steep side of the quarries forming the spatiality of the area.

To understand these typologies better you can try to enhance their characteristics ,interact with their natural possibilities or create emphasis through contrast.

Landscape mapping



The portal

On the boarder between the flat landscape by the headframes and the dramatic mining area, the landscape formation acts as a sort of portal. Marking the entrance to the quarry landscape. On one side you have a hill with a pointy peak and toghether with the hill on the other side, it frames entrance. The side of the hill with the pointy peak is steep and vertical and turns in the direction of the ravine.

Characteristics: Framing, verticalityz

The pit

The half pot is a half circle formation in the landscape. It is in to the vegetated landscape quite different form the border on the other side of the ravine. The movement in the formation is very present and because of its form it is a palpaple and charcterful room in the landscape. It has many directs at the same time.

Characteristics: Curve, many directions, embedded

The plateau

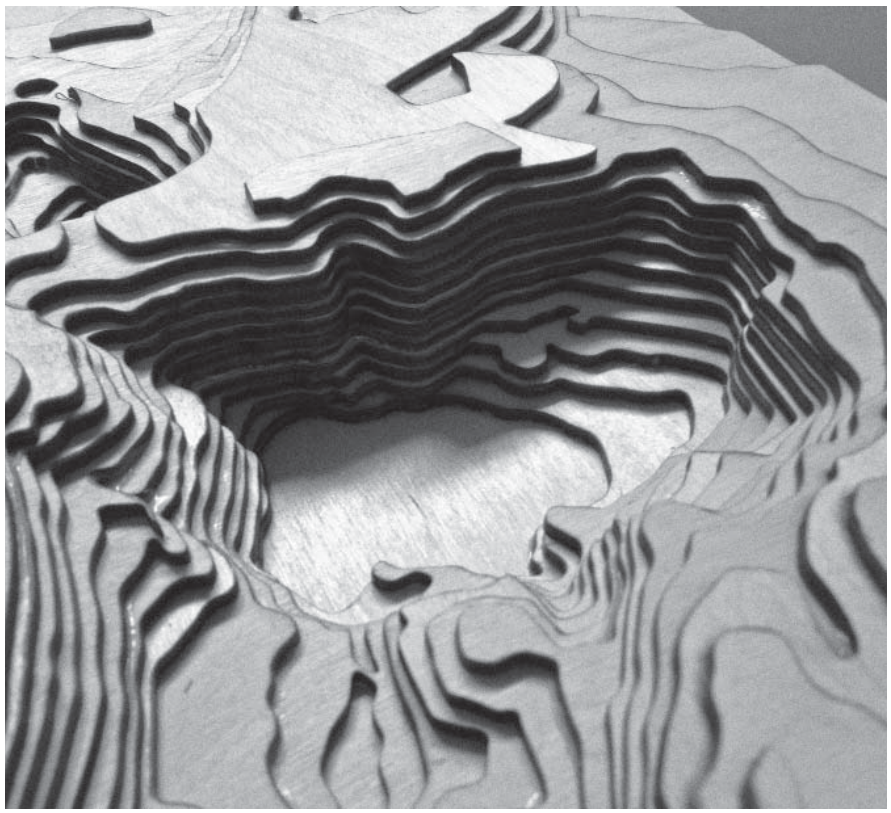
The plateau is a flat formation in the lanscape, made up by the excavations from the quarries. It is revealed almost as a stage sticking up from the low forest making the end end of the mining landscape. It is clearly a man made entity in contrast to the vegetation surrounding it. The flat feature of the plateau is unique in the otherwise ever changing landscape.

Characteristics: Flatness, Border

The pot

The lowest point in the landscape is the water filled bottom of a quarry. It is surrounded by dramatic steep bare walls and becomes the (anti)climax in a wandering down the landscape. It is the “top’s” counterpart. From here you only see a short distance and the sky. Here the natural contrast is not forest vegetation as in the rest of the lanscape but water. The water is collected in the man made

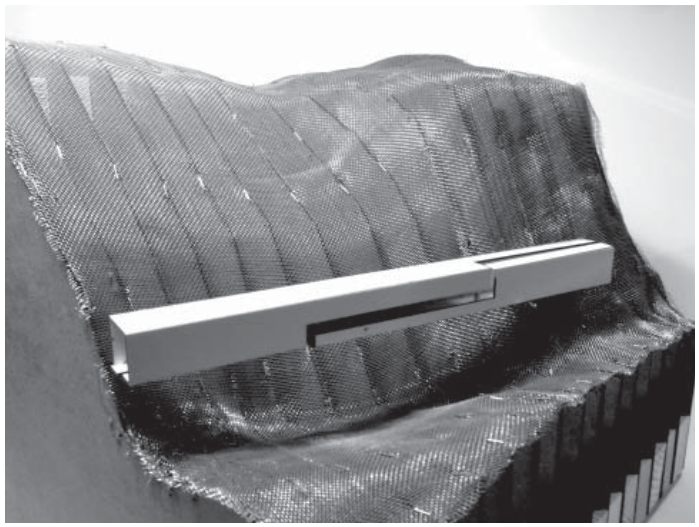
Characteristics: Deepness, Focal point, Defined, Surrounded



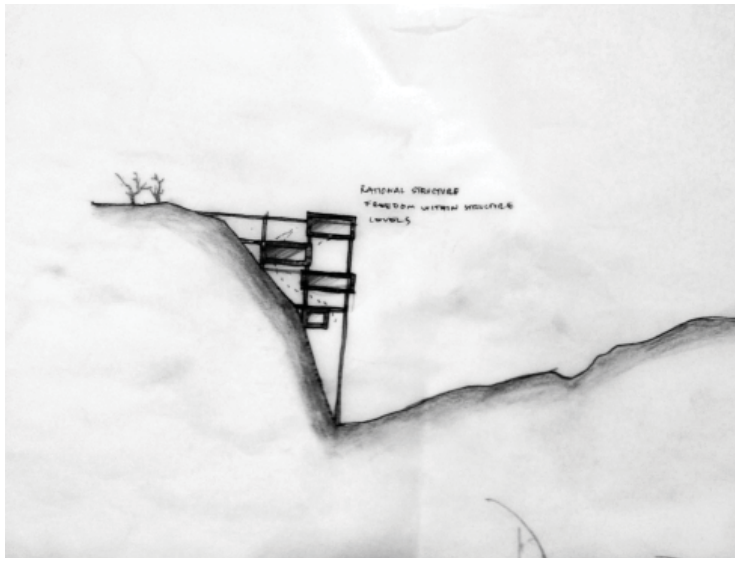
The wall

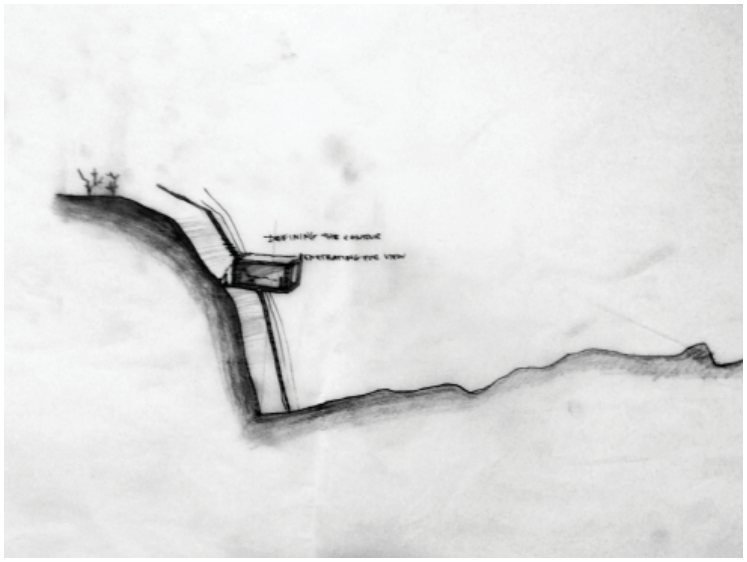
The wall is the steep edge to the north of the mining landscape, exposing the bare stone. It is the dramatic boarder between the man made quarry-landscape and the untouched low natural vegetation. The wall is leading you from the entrance of the landscape all the way to the pit. In a way you can see it as the geological timespan of the area uncovered, although there are no evident sediments. It is facing south-east welcoming the mid-day sun.
The wall is the side of the qurries almost defining the framework of the man made canvas which the mine constitutes.

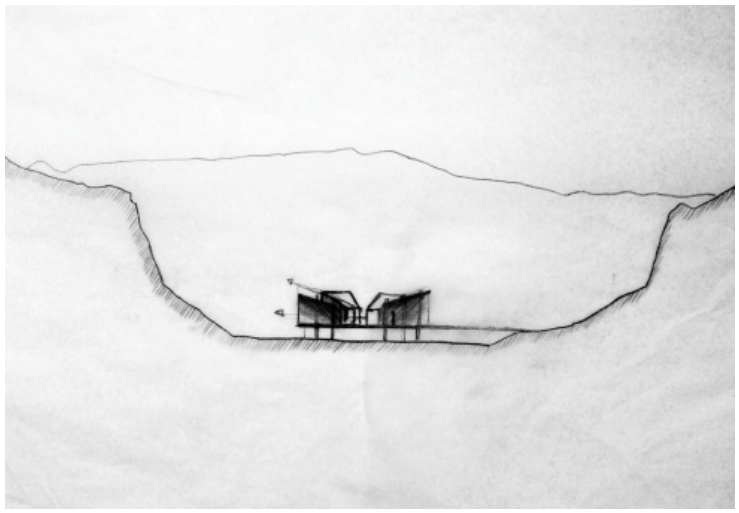
Characteristics: Stretched, Steepness, Guiding

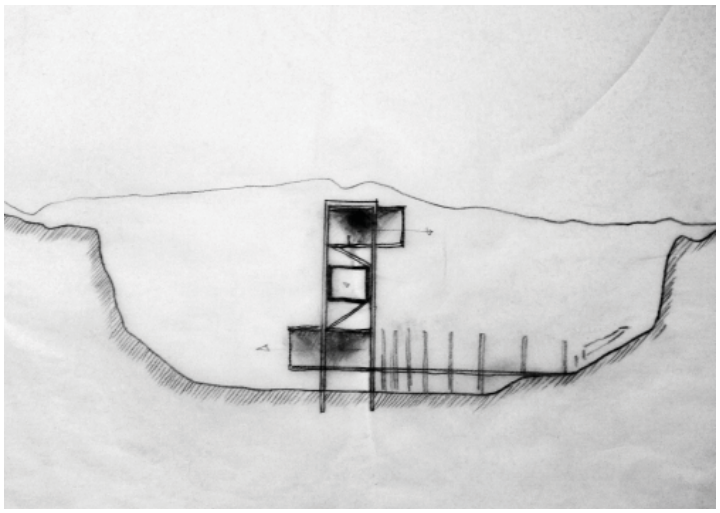


Workshop - Structure in landscape

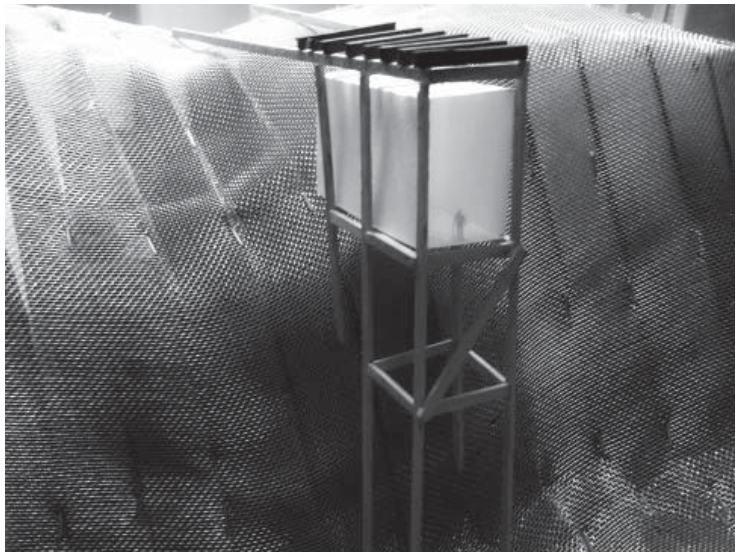


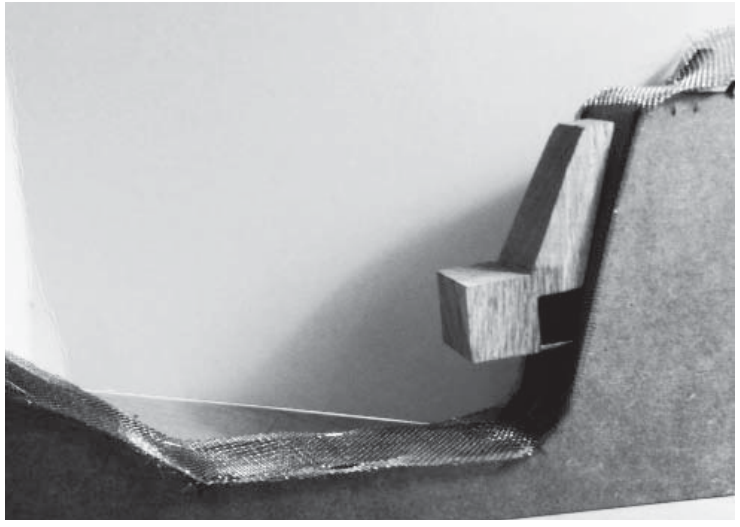






Workshop - Pavilion in landscape





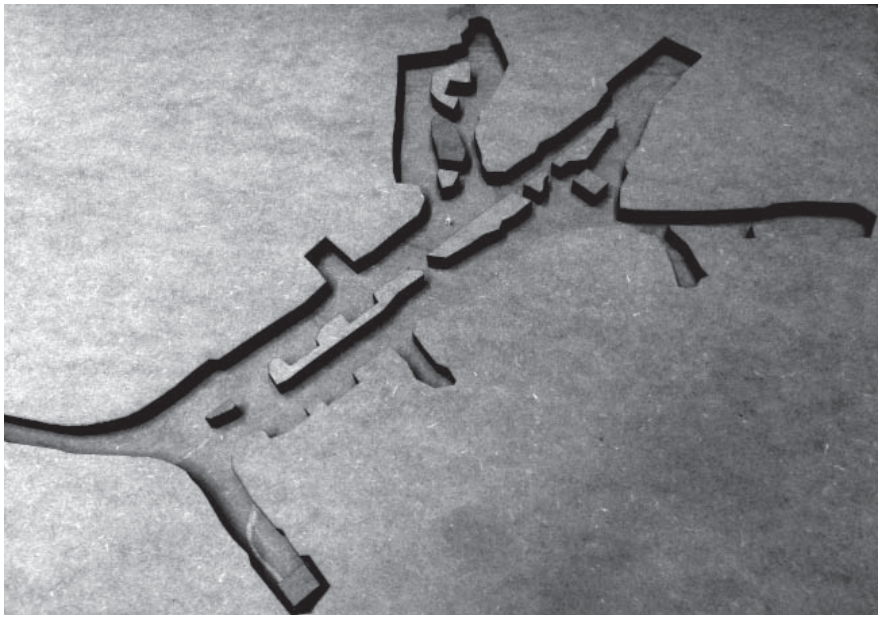
Workshop - Pavilions in landscape

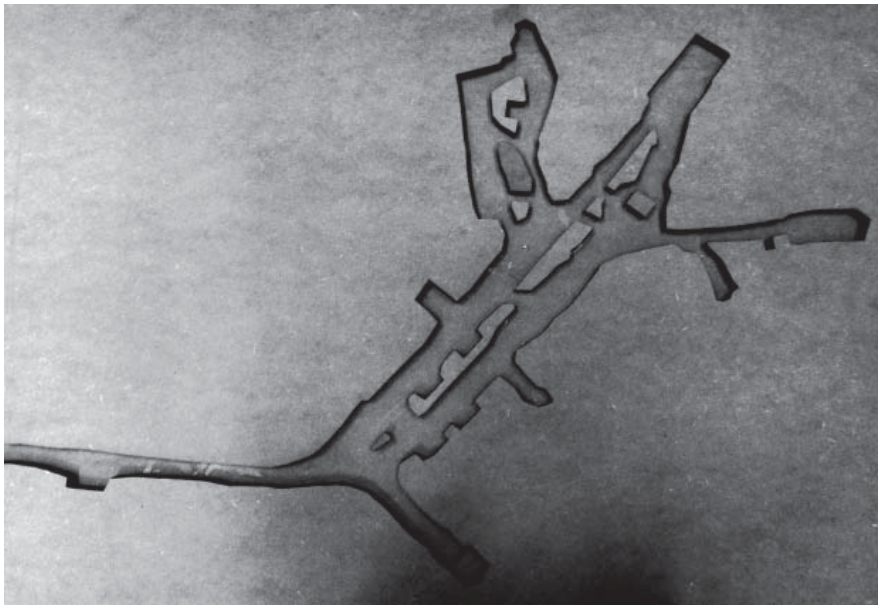
Structures under ground

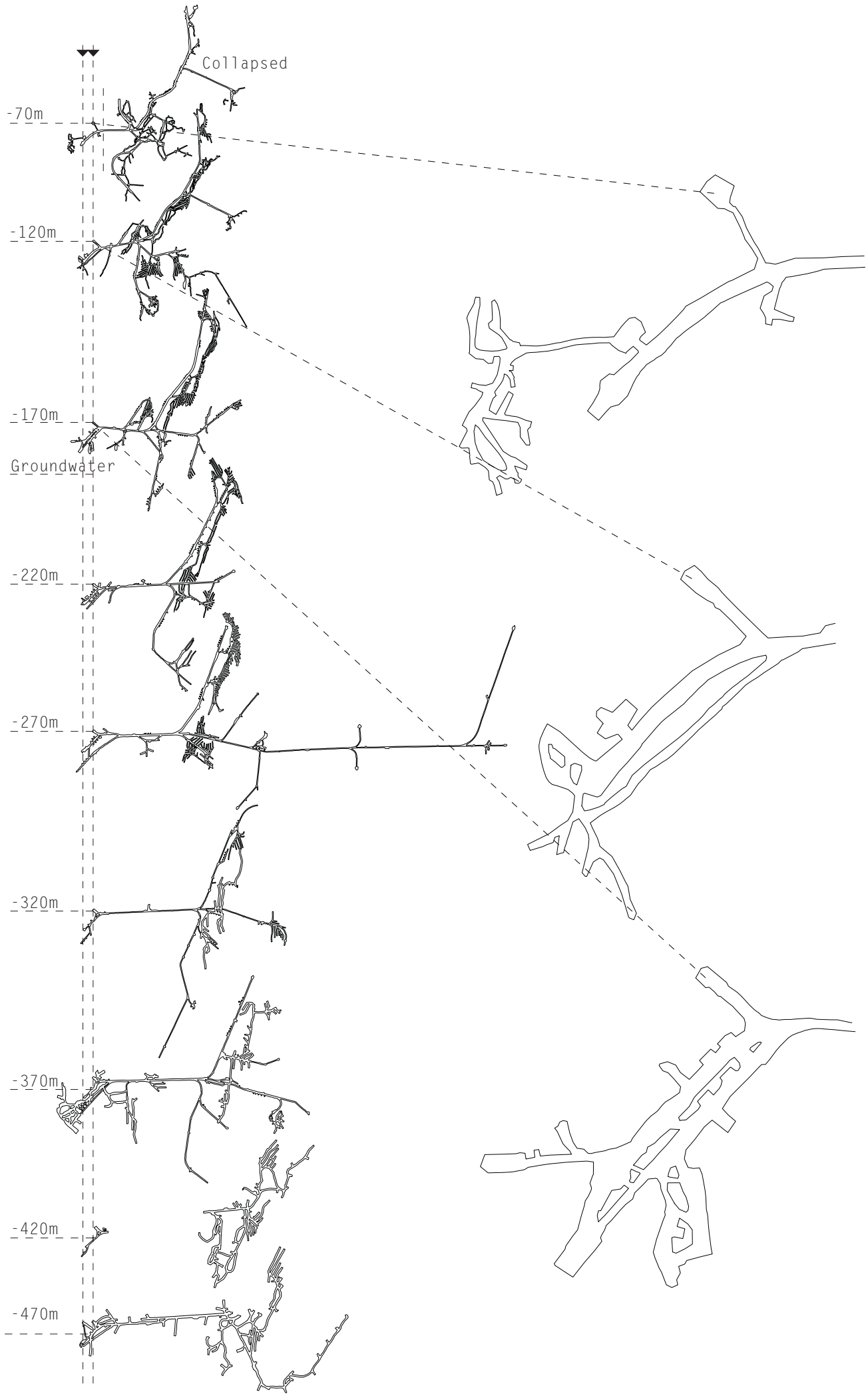
The structures underground are vast and dispersed. They are very deifferent than the structures in the modern active mine of Kiirunavaara, and on planar section they almost seem irrational. The shafts are quite narrow and low but often ends in a bigger spatial volume.

The shafts cover basically the whole area of the Tuolluvaara mine and as deep as 520m below ground level.
The first level below ground has partially collapsed leaving marks in the landscape above. The main mining method was sublevel caving, like in the other mines in Kiruna. The total area of the mines reaches around 180000m2.

Beacuse of the mines' inactive stage since the 1980 most of the volume has been filled with water up to the groundwater level. That means that probably only the three top levels are dry. The water in the rest of the mine could be used for storing heat. If the need for more volume underground should emerge, the effort to pump water out of the shafts would probabably be relatively easy.

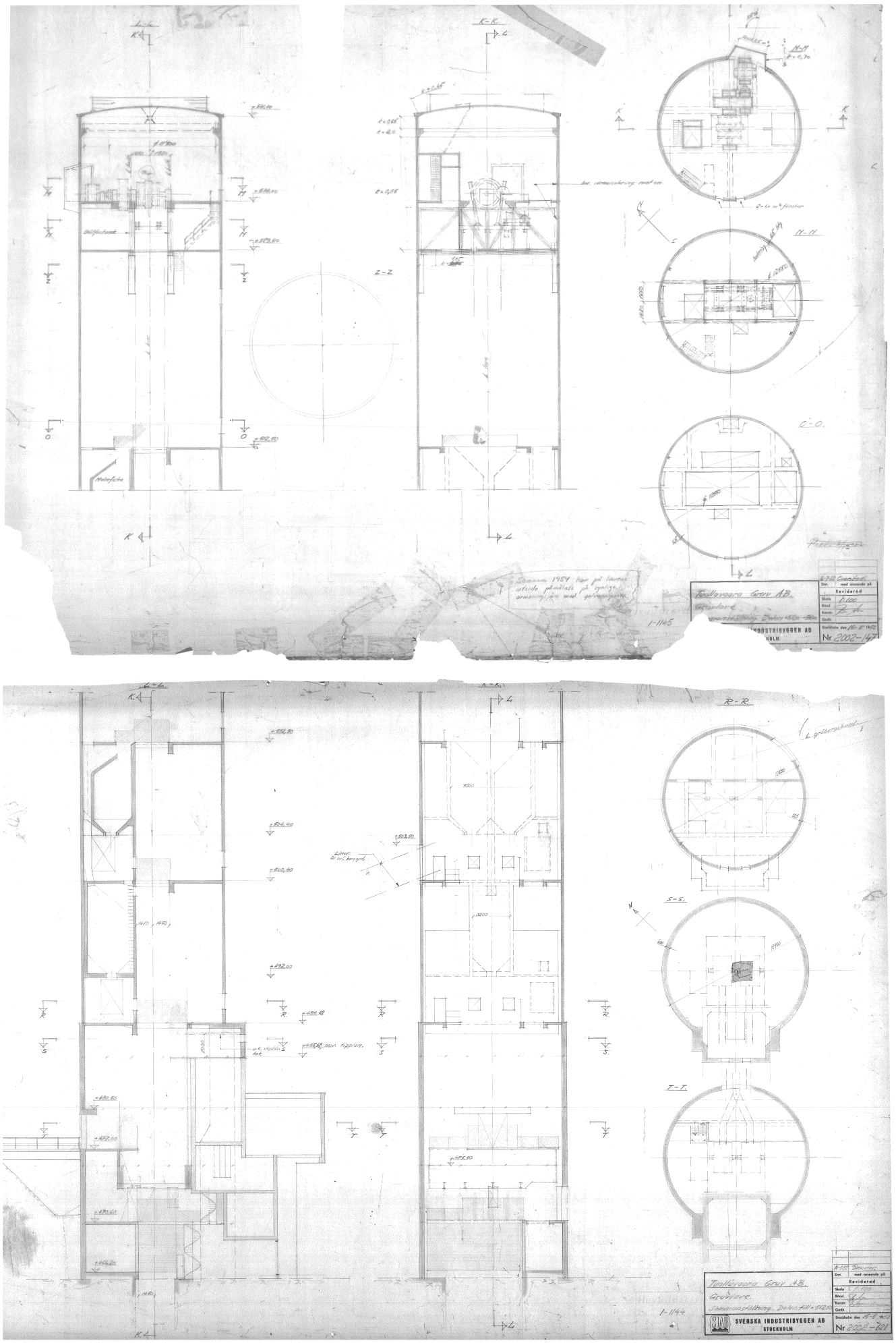




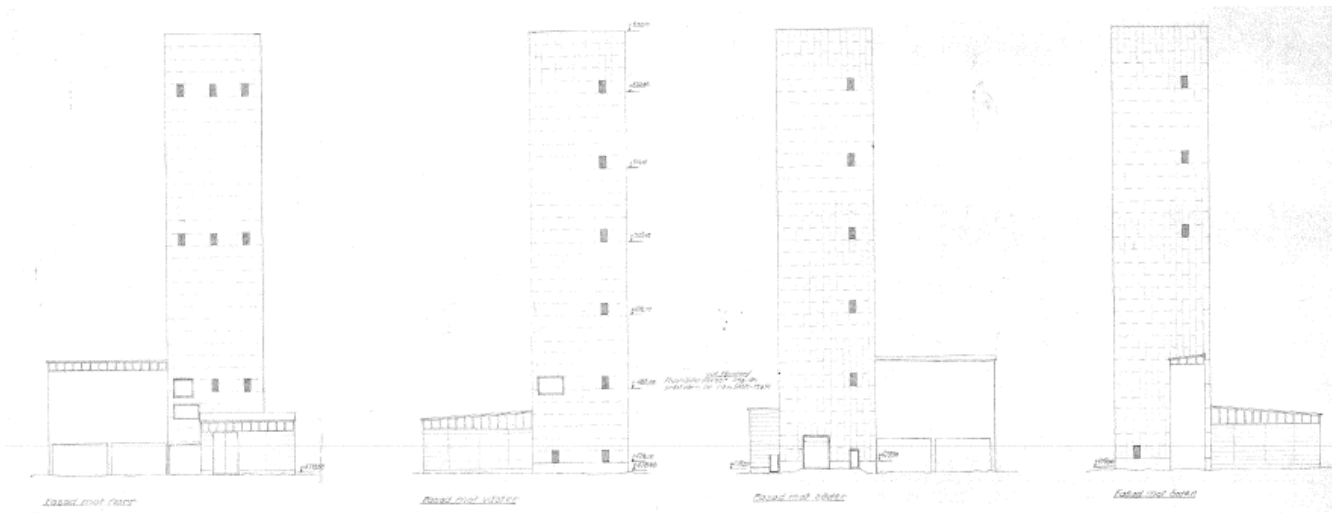

Collapsed
-70m
-120m
-170m
Groundwater
-220m
-270m
-320m
-370m
-420m
-470m

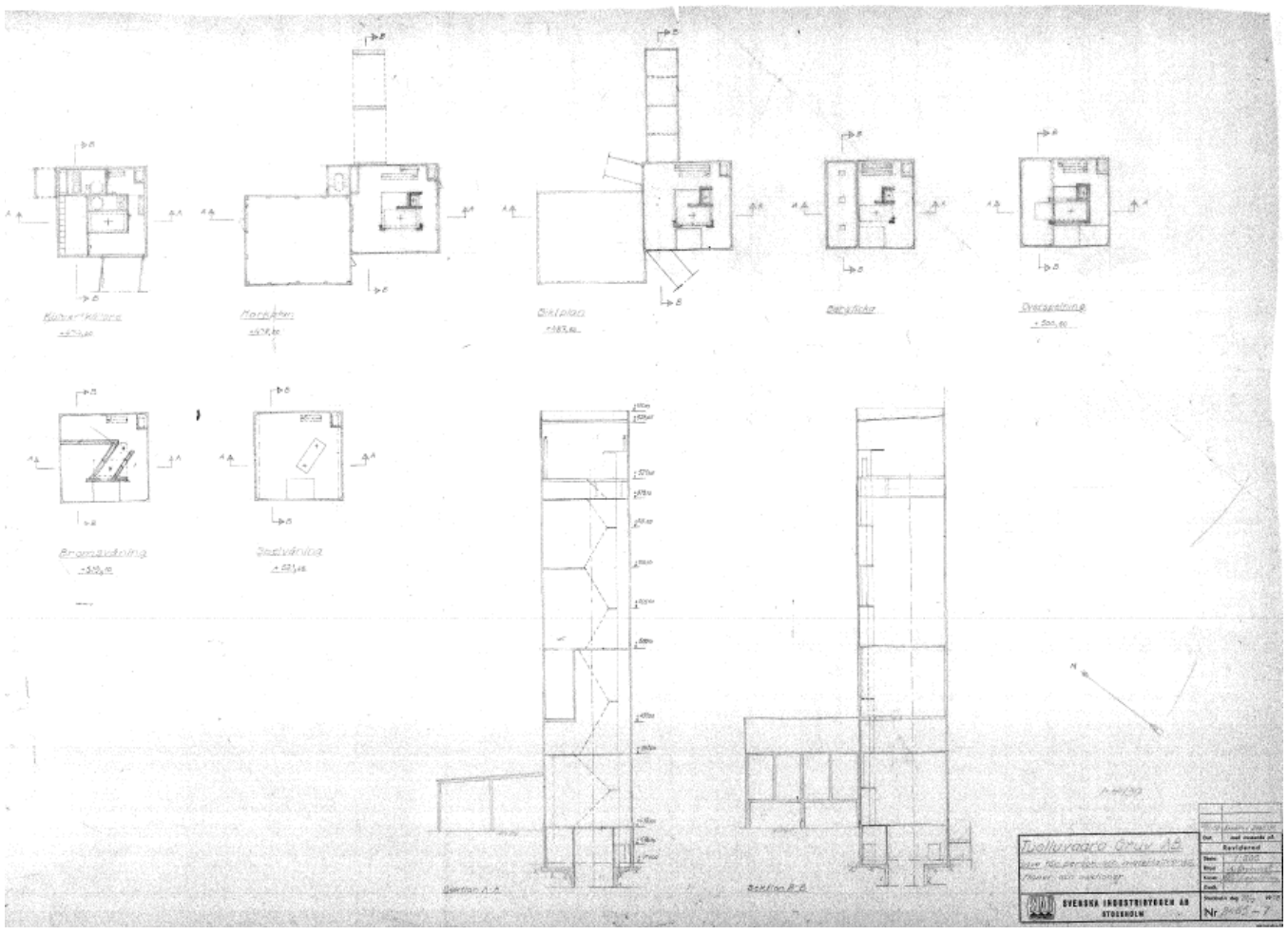
Structures above ground

The structures above ground are mainly the two headframes. Protuding from the landscape they are clear landmarks to the area. The headframes where used as part of the vertical communication down to the mining shafts. The headframes were built in 1952. The cyldindrical is 76 meters high, and is the second tallest in Sweden. The othagonal is 52 meters high.
Although the former use of elevator shafts wich has rendered the strucutres with vertical rooms there are serveral slabs and smaller rooms in the strcutures which permits extended use of these buildings.
The strcutres are made of uninsulated massive concrete.



Drawings of Cylindrical Headframe





Drawings of Orthagonal Headframe

Part 4

Concepts
Conceptual framework
Memory
Casulties of deformation
Sequence
Materials
Conclusions Part 4

Conceptual framework

The themes in Kiruna revolves around the moving city. When moving the concept of memory is constantly present. The concepts of “time” and “temporality” are also dominant. The Kiirunavaara mine is clearly he strongest factor in the city. It predominates almost everything, to the degree that it affects the whole city planning scheme and the everyday lives of the citizens. If you look at the landscapes of these industrial areas it quite clear how very dramatic the human effect has been on the nature. How should we relate to these areas in the future?
The concept of memory is obvious in the project by the use of details and materials from old important buidlings. It is also apparent in highlighting something that has lost it’s use, such as the mine in Tuolluvaara and it’s structures.
The other aspect of memory in this project is perhaps not as obvious. It revolves around how we percieve our spatial world. How does the spatial memory work? How is it connected to our senses?
When working with dramatic landscapes and scenery we are drawn to the spectacular. But when showing everything without focus, our minds have a difficult time to take in and process what we see. If you instead work with directed views, dramatic changes in how we percieve things with our senses, and dividing things in smaller portions our mind can start to cathegorize and order the things we see, hear, smell, feel etc. In the end, when you recall a certain view, surround yourself in a certain acoustic atmosphere or recall a certain detail, you automatically recall the other things that where clustered with it and also the totality.
Another concrete aspect in this project is a comment on the move by questioning both the functions and the aestethics of the temporality versus the irreversible. The city of Kiruna has a great deal of problems at hand due to the irreversibility of the structures in the city. The site at Tuolluvaara is also made by human hand and forever embedded into the landscape. Should we add another layer of irreversbility or should we act on the contrasts to highlight what has been and what is to come?
When working with temporality you can act on a sense of fragility to highlight certain features of the deisgn. As in the wodden stilt frames that holds the path.
The it comes to the execution fo the design proposal it has been paramount that every topographical typeology belongs to itself, every structure that is placed belong to that typology, either enhancing or plating on the contrasts of that particular space. But not necessarily mimicing it. The recurrent theme is instead the path through the landscape. This is the feature that tells holds you hand thorugh the story of the landscape. Every pavilion can be seen a belonging to itslef and even be replaced after a certain amount of time. The pavilions could for example be a reccurent comeptition for architects or artists to design every five years, but they will always have to relate to the path and the wooden stilt frames.

Memory

Introduction

The concept of memory is very evident in Kiruna. When dealing with moving, leaving things behind and restructuring what once was, you cosciously or unconsciolsy recollect. It is also evident in the mine that one was. You concretely see the remains both in structures but also more subtile thorugh the interventions in the landscape. Architecture can be seen as very present in the theories surrounding memory,

J. Ruskin wrote in his book Seven lamps of architecture; “Memories are subject to arbitrary recall through material objects. We may live within architecture and worship without her but we cannot remember without her”.

Shelley Hornstein writes in her book Losing site; “For even as it appears to be solid and permanent, architecture is really only a fragile shell, an illusion of protection against destruction within which we live and build our memories”. And she continues; “What is the relationship between the actual built site and the architecture we imagine or recollect. The tie between memory and architecture is also evident in the theories about recalling speech. In this case to memory mapping. This exercise helps a person to remember a speech through imagening a familiar room or space. Into this room or space you place the different parts of the speech in different parts of the imagined room. Thus the space helps you remember.

Further on this topic Marice Halbach claims that memories are always anchored in spatial frameworks. And Proust was clear that any recuperation of memories could not be willed; rather the only possible means of accessing them was involuntarily through a material object that could serve as a trigger to the past.

Jaques Derrida claims that architecture is not only a built structure but also a manifestation of a happening or an event, nowness (maintenant). Regardless of when it was built it continues to occur.

In one of Plato’s dialogues, Socrates asks Theatheus to imagine the mind as a wax block on which we stamp what we percieve. So long as the imprint remains, we remember and whatever is obliberated we forget. False judgement occurs when we match the wrong memory imrpint with another.

So the thoughts that memory and architecture is closely tied together

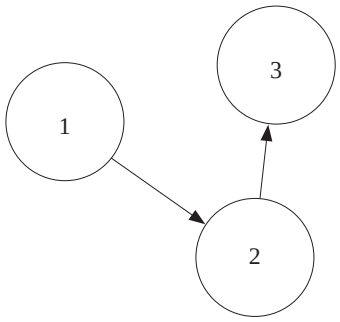
is quite old and anchored. You don’t even have to have been to a certain place to build up memories and images around it. Take a postcard or a photograph for example. When seeing the image you instantly create a spatial vision of that place in you head even though you haven’t actually been there. Or when reading a novel, you yourself create thescenes and spaces in your head from the text you are reading. When you the perhaps see the film based on that particular text you compare the concrete visualization to the created memories you have in you own mind and perhaps the film disappoints you solely because the visions of the spaces you had did not match the the ones you see before you in the film. Likewise we as architects are always dealing with fabulated memories when we design. Of course we refine the designs through the process of image and model making. But we always create visions and spatial memories of what we need to do in our head. This is if not the strongest tool we have, certainly a very important one of which we may or may not be consciously aware of.
When dealing with collecting the memories to a certain place and when dealing with that place itself, can the concept of memory inform the design itself?

Spatial memory
Spatial memory is the part of memory responsible for recording information about one’s environment and its spatial orientation. Spatial memory has representations within working, short-term and long-term memory. Spatial memory is a cognitive process that enables a person to remember different locations as well as spatial relations between objects. Spatial memories are said to form after a person has already gathered and processed sensory information about her or his environment. Spatial memory recall is built upon a hierarchical structure. That is to say that people remember the general layout of a particular space and then “cue target locations” located within that spatial set. A cognitive map is “a mental model of objects’ spatial configuration that permits navigation along optimal path between arbitrary pairs of points.” This mental map is built upon two fundamental bedrocks: layout, also known as route knowledge, and landmark orientation. Layout is potentially the first method of

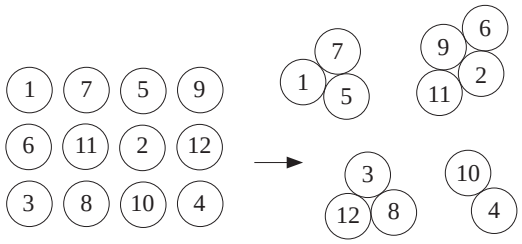
navigation that people learn to utilize; it’s workings reflect our most basic understandings of the world. Boundaries are among the most basic and endemic qualities in the world around us. These boundaries are nothing more than axial lines which are a feature that people are biased towards when relating to space. Clustering shows that people tend to chunk information together according to smaller layouts within a larger cognitive map. Lack of experience in a locale, or simply sheer size, can disorient one’s mental layout, especially in a large and unfamiliar place with lots of overwhelming stimuli. In these environments people are still able to orient themselves, and even find their way around using landmarks. It is fairly clear that people use both the layout of a particular space, as well as the presence of orienting landmarks in order to navigate.

Sensory memory

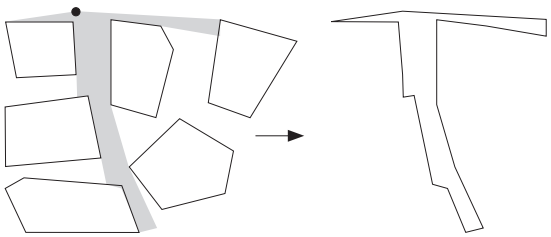
During every moment of an organism’s life, sensory information is being taken in by sensory receptors and processed by the nervous system.The information people received which is stored in sensory memory (SM) is just long enough to be transferred to short-term memory. The three types of SM that have been most extensively studied are iconic (visual), echoic (auditory), and haptic (tactile) memory; however, it is reasonable to assume that each physiological sense has a corresponding memory store. The spatial memory store is based on what the sensory memory collects to create an undertaning of the spaces we are in.



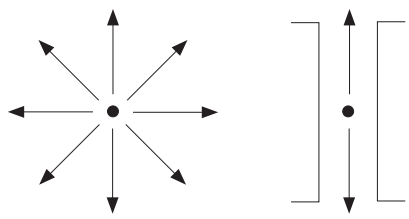
Spatial sequence - Cognitive map - Layout



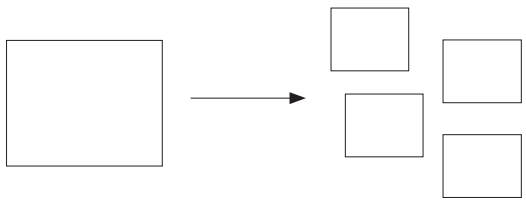
Clustering



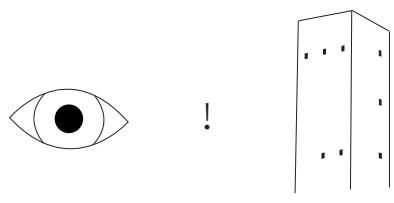
Visual boundries as space - Axial lines



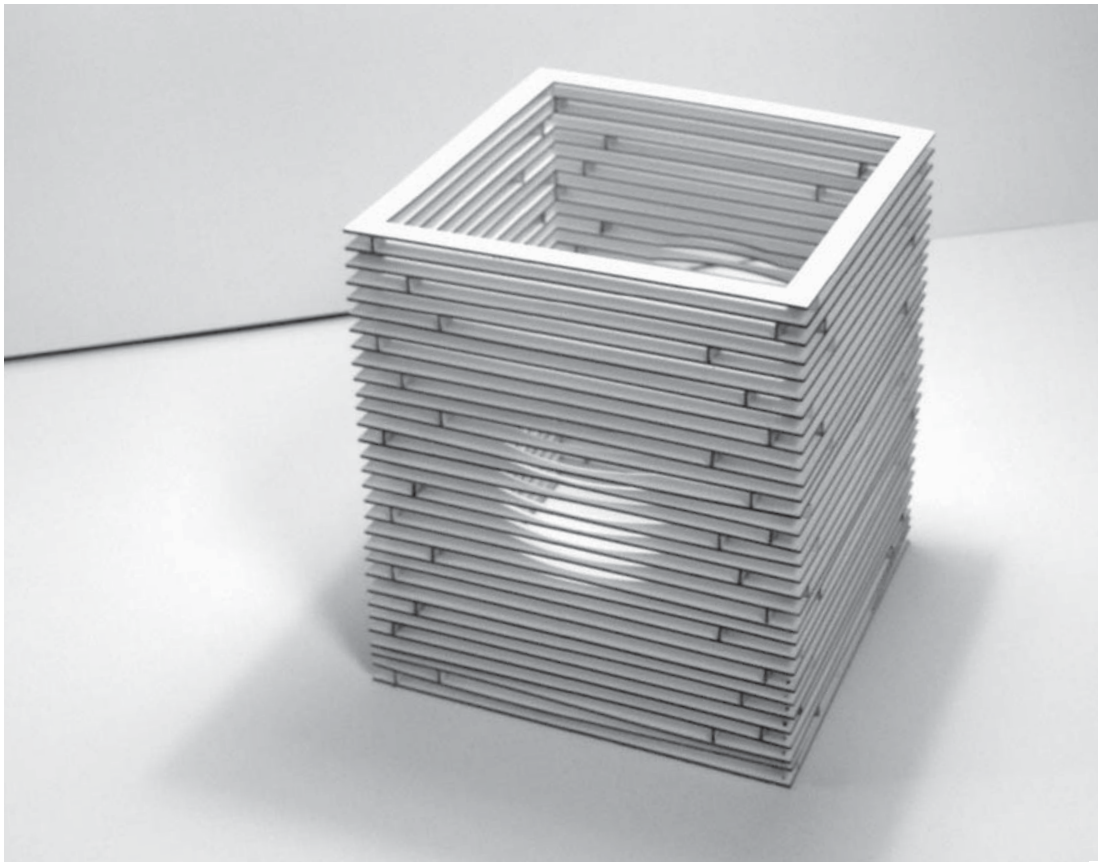
Orientation through space



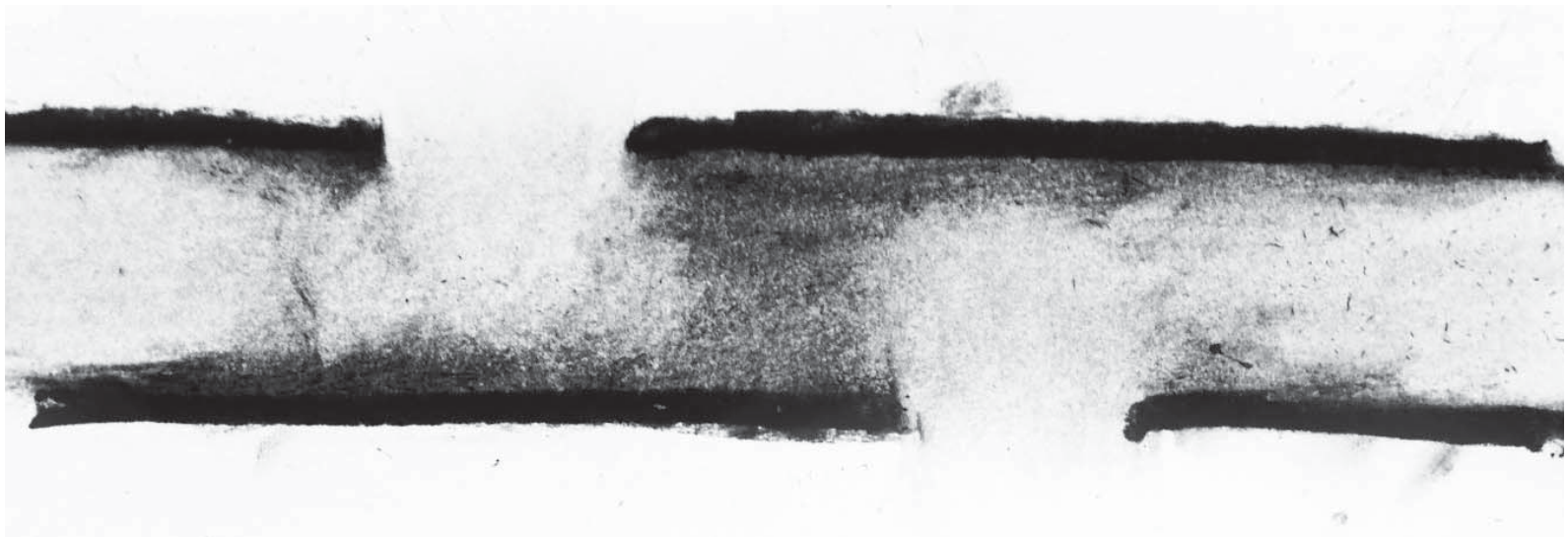
Disorientation - Size of space



Orientation - Form - Landmark



Workshop - Memory in structure



Workshop - Memory through visual experience

Workshop - Memory through visual experience

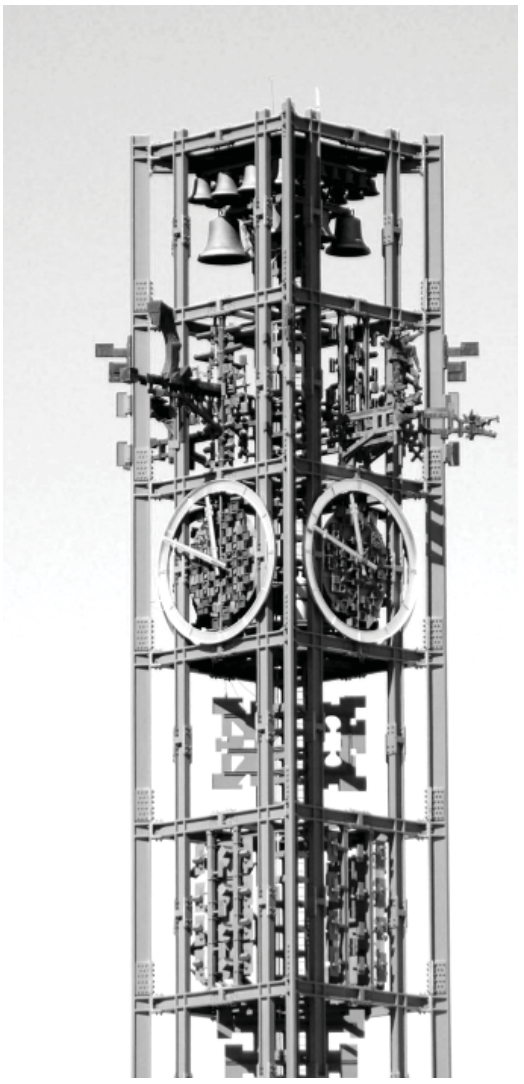
Casualties of deformation

Kiruna is a city with many structures of both high memorial and cultural value both also of high detailing, identity-carrying and of high quality. Of natural causes many of these are close to the Kiirunavaara mine like the city center, and therefore will be affected by the deformation in a not too distant future. What will happen to these structures and the structural memories they carry? One thing is certain, a decision about their future has to be taken soon. Questions arounf context, memory and usability are risen from this soon to come event. Do these structures carry the same identity even if they are moved to another context? Can we look upon them with new eyes and find new qualities and new identities to be carried into the future city of Kiruna? These are the casulties of the deformation. Do we save them as a whole, disect them and put them in a diaspora or do we leave them as modern ruins? Whatever is chosen an active reflection has to be carried out. One of the first structures to be affected i the city hall. A building marking the beginning of Kiruna as a municipality with city-rights. Many events has taken place there that are important to the collective memory of Kiruna. It is also referred to as the living room of Kiruna.

Structures used in Master Theis in red

The city hall

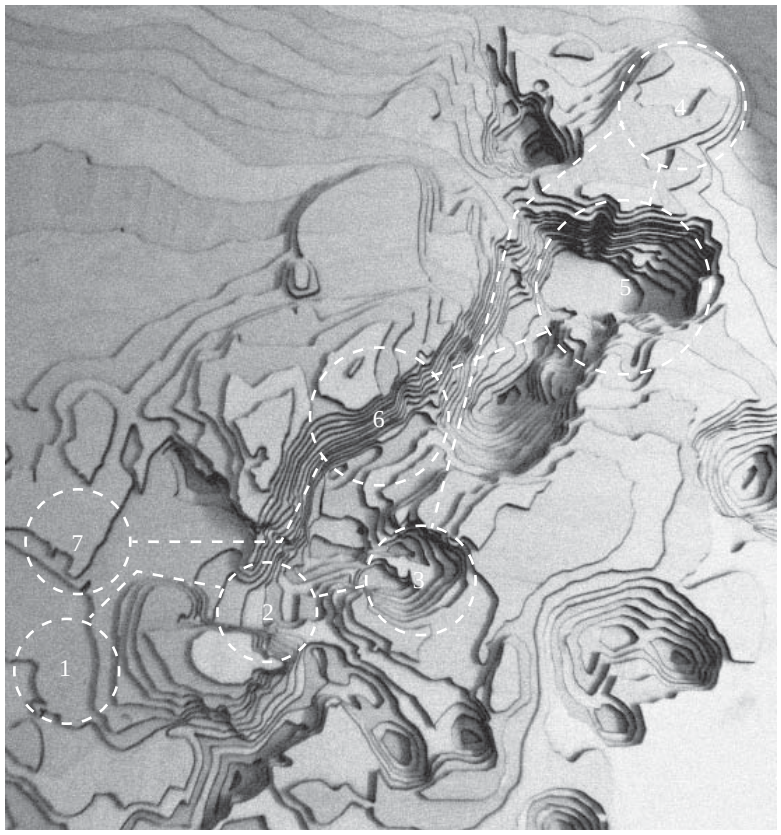
When Kiruna got their city rights in 1948 they had to have a new city hall. A competition was announced and some of the most prominent architects of the time were invited such as Alvar Aalto. The winner was announced in 1958 as Artus von Scmalensee and his proposal “IGLOO”. The building was rected between 1959 and 1962, and was inaugurated in 1963. The decorations and the meodies of the clock-tower were all made of the most prominent artists of the time.
The city hall is placed symbolically between the city and the mine. Although it’s high detiled ornaments it is very much a building of the time. The detials are always made with a type of composition and without routine. They all follow the same module measurements but with varying materials, directions and composition. This creates a bulding with a common denominator but also with a high degree of scaledepth.
In the spring of 2013 a competition is being held about the future city hall. The municipality has chosen to lift the cultural restrictions surrounding the building. The building itself will not be moved as a whole building but participants of the competition are encouraged to use details from the old city hall in ways that corresponds with their concept.
Questions such identity and the context of these details arises. Can you use some of the details to carry the identity of the old building or should you view these structural elements in a new light to see what they are apart from eachother?

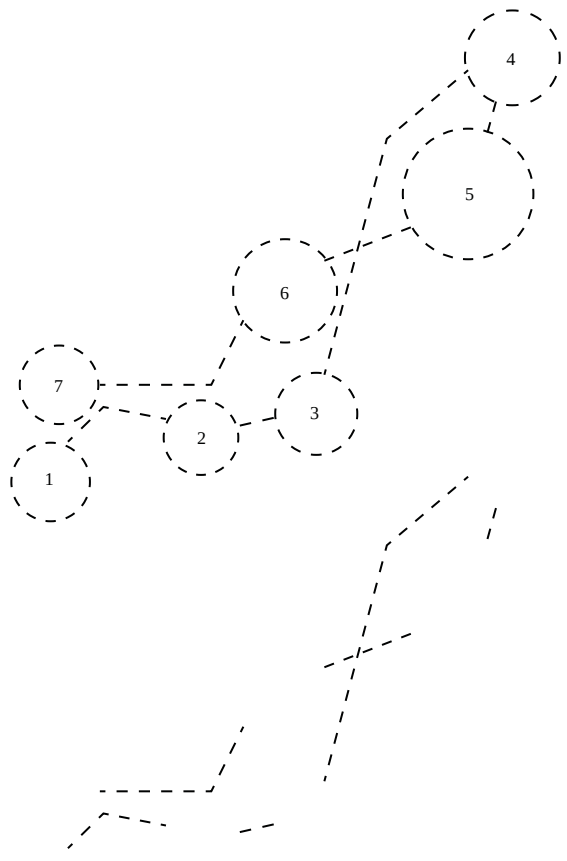


“Bläckhornen”

Between the establishment of the community Kiruna and 1915, the mining company established around 400 workes housing units med large emphasis on architectural ambition. About half of these dwellings came to be called “Bläckhornen” (Ink-bottles) due to their distinctive appearance, and they came to be symbols for the model city Kiruna. These buildings where designed by Gustaf Wickman who placed great emphasis on drawing dwellings for that time measured, extremely high housing standards.
These houses has, with their simple form, coloring and jugend details, become the primary symbols for the mining company city. “Bläckhornen” has through the years been renovated, rebuilt and the areas has been densified. Some buildings has been demolished and yet some burnt down.
The houses are of very high quality and the contruction timbre in good condition.
When it comes to contruction there are very few problems with moving them, as whole entitys or dismanteled. But considering the current plot ratio it could be hard to make sure that they are placed in the same conditions and contexts as before. The question then arises how many should be kept in their current state and what should happen to the structures that are left but still are of good quality?

Sequence





As a tool for understandning the landscape and the structural elements that are put into it, a narrative storytelling is used to visualize how the landscape and the structures could be percieved.

Prologue

I remember the first contact with the place very clearly. You could see the two headframes from far away , announcing the site. They acted as clear landmarks and even if you didn´t know the way there, it wasn’t hard to find.

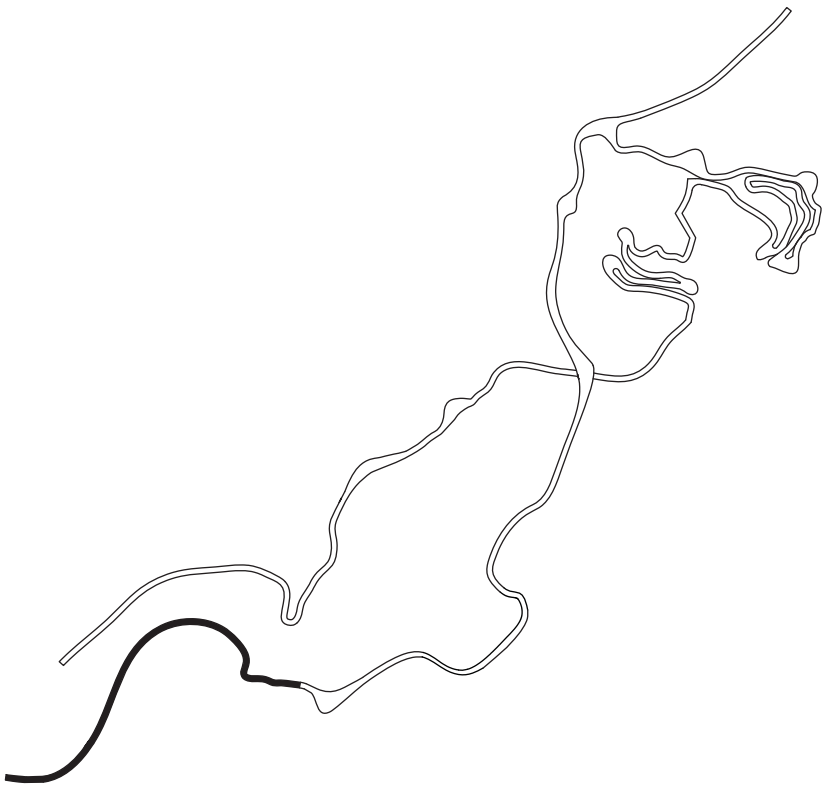
1. The cylindrical headframe

I came to a courtyard of haphazourdous character. The buildings around was mainly of a temporary quality but one thing stood out; the large enctrance to the cylindrical headframe. The exterior of the headframe looked as if it had been untouched for many years but it was clear that the entrance was of new origin and that it was through there I should go.I was greeted by a reception where I was told that I have entered a museum-like area dedicated to the mine and the moving city of Kiruna. They told me that I was going on a journey through the history of the mine and the city.
I found that the headframe I was currently in was dedicated to the mine,
When I continued into the center of the tower I left the warm insulated reception area and was greeted by the volumous concrete space of the open elevator shaft going through the tower. Although the elevator tempted I decided to take the stairs. I can tell you taht seventysix meter of stiars are hard to climb. Luckily there were exhibitions thorughout the tower on every floorplane about the mine and the mining industry. Artefacts, documents etc. The thing that was etched most into my memory though is the contrast between the open exhibition spaces and the small rooms dedicated to library, movies and media. It was very simple but very effective. You go from a hard uninsulated exposed concrete shell of the open volumous exhibition spaces into the smaller, warmer confined rooms insulated and cladded in the softer material of wood. In these rooms it was

clear that you could stay a while, take off you r jacket and read books, watch movies or search the media archive for information about the mine. Even the smell was different. At the top of the headframe I encountered a stunning panorama
facing the mining landscape behind the heradframe. Till space too was handled in the same way as the confined rooms with the exception of the wide glass facade.Afterwards it was told to me that the wooden boards that cladded the smaller spaces were taken from old wooden workers housing blocks affected by the deformation of the former city.

2. The portal

I decided to continue the journey and exit the cylinder headframe. I walked out to onto a path elevated from the landscape by wooden stilt frames. almost as they were just pust down carefully and could just as easily be taken up again.
The path led me over a quite flat terrain and past the second, orthagonal headframe. I rounded a hill and suddelnly I was confronted with a portal-like entrance situation. As I walked further the wooden construction frames became more frequent and I could see a pavilion structure sticking out into the portal, soon after the path got covered and tunnel-like with the right hand side exposed to the vertical rock wall. At first I felt a little frustrated, but when I looked further ahead I sae light streaming in from left and from above, announcing that something was happening. When I came up to the origin of the light I looked up and saw light streaming down the side of the rocky wall through chimney-like opening. When I turned to the left a dramatic ravine revealed itself framed by the walls, floor and ceileing of the pavilion. It was when I entered this room that I noticed that the acoustics had changed. From the cave-like echo of the concrete tunnel, to a more damped acoustics. It had to be because of the wood inside the pavilion. An information sign told me that the cassettes on the sides and ceiling was from the inner ceiling of the former city hall. A picture showed me that they were placed far up, inaccessible to the visitors. It was nice to come so close to them here. In their composition they had a clear direction



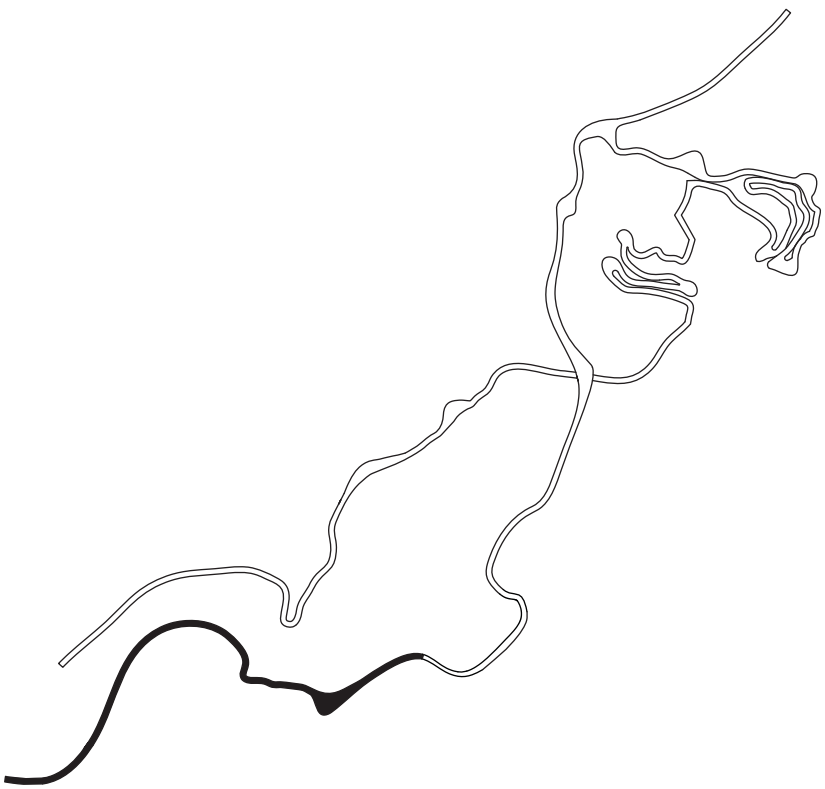
that pointed out through the frame. I walked up to the edge of the pavilion and got a grand view of the landscape I was about to walk into. Further ahead I saw glances of other places that were to come. The exterior of the pavilion was made of a glass like material that looked like larger bricks. Supposedly this was slagstone masonry.

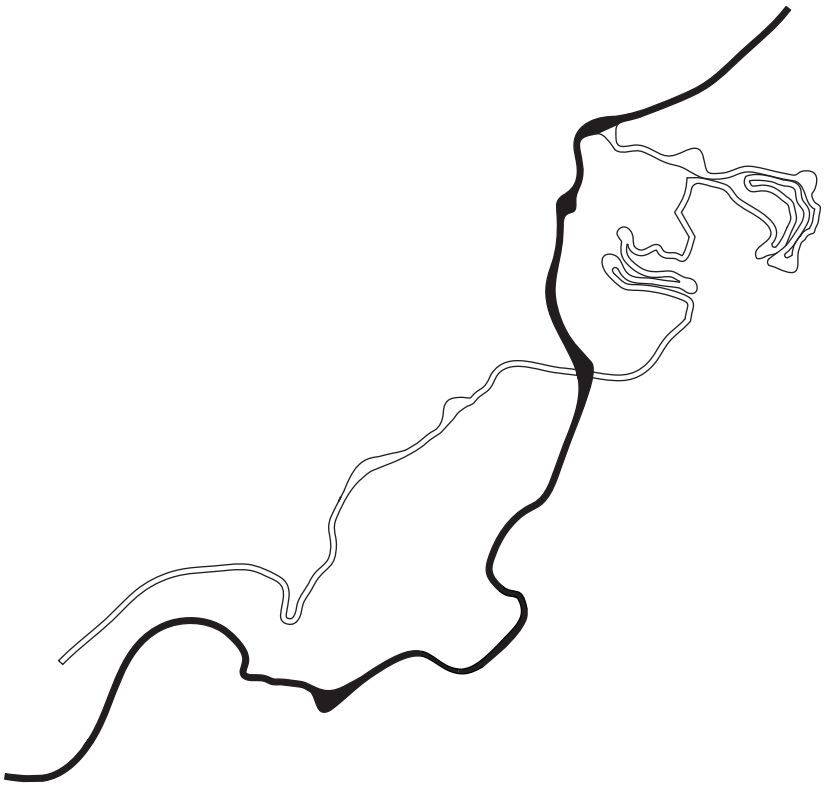
3. The half-pit

I continued walking in the path and as I walked out of the tunnel I walked out about to cross a deformed canyon. It looked a little scary with only a couple of stilts carrying the path over. I walked across and on the other side I entered another kind of tunnel. This one was made up by a raster of wooden planks. You could see light streaming through into the path but you couldn't really see out. When I walked up close to the raster I could see out and when I sat down on the bench that followed the path agains the rocky background I found that I could glance thorugh the raster and the landscape outside revealed itself partially. I continued the path that now turned slowly along with the landscape. The raster followed the turn framing, enhancing and emphasizing the curved movement and formation of the landscape. During this curved turn openings penetrated the rastered wall and framed views towards three different directions, perpendicular to the path. One was facing the conntinuation of the ravine, one was faing the large rock wall on the other side introducing a pavilion that would be encountered further on the path and one facing back to where I came from, the portal and the pavilion that I could only fully understand from this view.

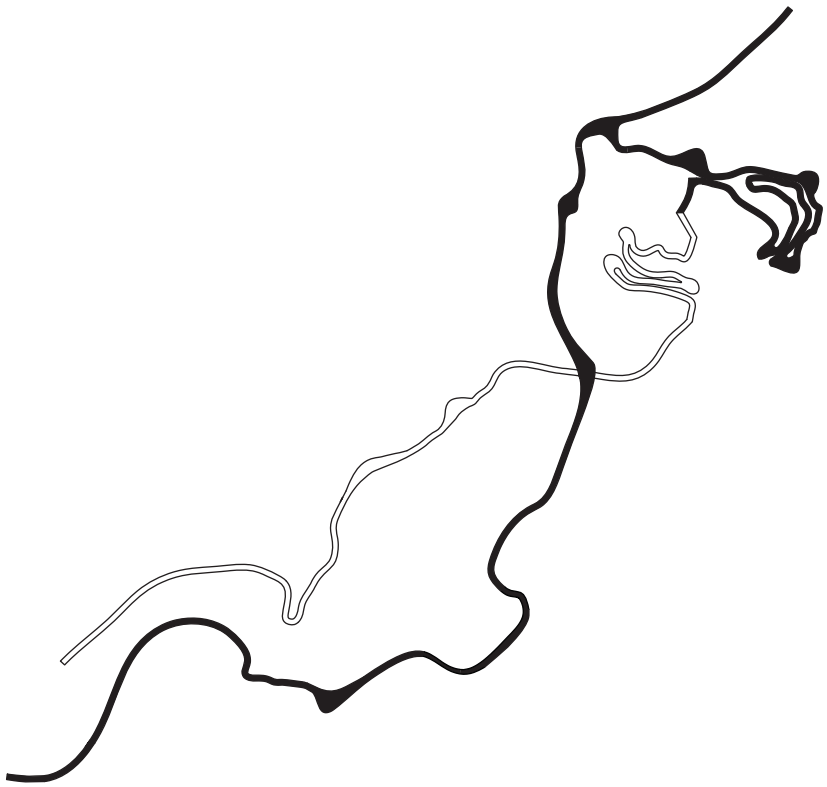
4. The plateau

When the rastered tunnel ended the path led me into a tree vegetation. This was not present at all in the mine-landscape but surrounded the whole area. When the path left the vegetation it carried me, to my surprise, stright out into the deepest part of the ravine. This was very starteling after walking slowly through the vegetation. In the middle of the ravine, the path was broadened





marking this place with a hint that you could slow down for a while. Here you could look back along the ravine, you could look forward to what was coming and you could look down the staggering 40 meters down to the bottom og the ravine. I only dared to stay a short while and the continued tha path.
I had actually noticed it before but when I continued the path on the other side of the ravine the small tower grew more and more significant. Protuding up form a flat plateau mad up of rubble. It was a fascinating contrast, the high formation agaisnt the flat. The wooden contruction frames became more and more frequent until I entered the tower. The first thing that hit me was that a gap was left around the tower that framed the horizon and the never ending landscape that continued att every direction. In the middle of the tower a fascinating metal contruction was placed. It wasn't until further up in the tower that I actually found that it was the old clock-tower from the old city hall that was concealed in this observation tower. It had been placed on the roof of the former city-hall, at a quite distance from the viewers. Then it was looked upon from a distance, now acting as construction for the tower you couldcome close and see the details. The clock still worked. It was when I started the rise up through the tower that I discovered that the walls were made of the same stoned as in the ravine. Kept in gabion walls, the small gaps between the rocks let rays of light inside the tower caught by the clock tower. When climbing higher the walls got less and less dense with stones and more and more light entered the tower.All the way up to the top where the walls ended and the grand view revealed itself. It was clear that this was the end of the mining landscape, you could look out ontothe natural landscape as far as the eyes could see. You could also look back onto the man made landscape where you had walked and even see the two headframes sticking up, the counterparts at the other side of the mining landscape. From here you could easily walk out into the natural landscape filled with lighted tracks for recreational sports, or you could do like I did, and continue the journey through the mining landscape.



5. The pot

Now I turned back, and after a while the path turned left revealing an old quarry. I had seen it from the different viewpoints before but now I saw something placed deep down in the middle of the small pool of water that had gathered at the bottom of the quarry. The path led me along the side of the quarry. At one point it was broadened and you could take an elevator shortcut down to the bottom. I decided to continue along the path that meandered down along the side of the quarry.

The whole time you saw the cross-like structure in the middle of the pot and you instinctly wanted to be in the middle of the quarry. I came down topa point where the elevator had it’s foundation and the path continued out to the middle of the of the pool. The sound from the rubble that filled the path that had grew so familiar during the walk, presented itself in a new way when falling down in the water through a small gap when the shoes kicked them. The sound of the small stoned hitting the watersurface multipled against the rock walls inside the pot, creating a tiny echo from each stine hitting the water.

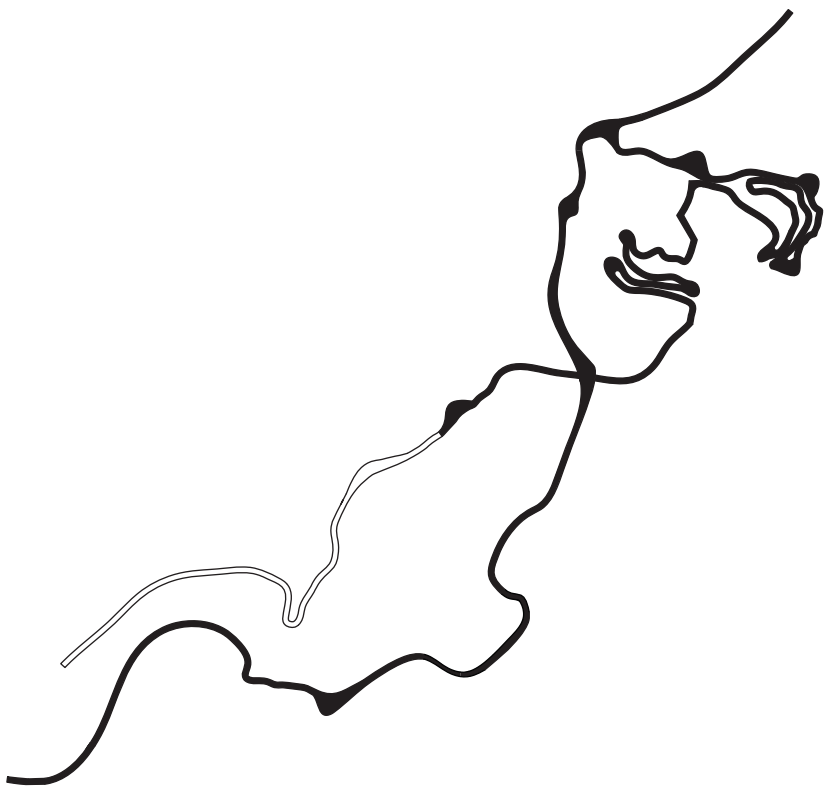
At the end of the path an entrance to the light-grey structure presented itself and I entered. A tall stretched wolume welcomed me. It took in the highness of the walls around. It stretched across the building with glass opening on both sides. As I walked into the building a nother voulme stretching across in another direction reveald itself. This volume was much lower but wider, taking in the water surface fo the pool. Two staris led up to a third volume stretching across in a third direction. This volume was higher than the lowest volume but narrower. It took in the direction of the ravine. When walking up the stairs I encountered a striking formation on the walls and in the ceiling. It was concrete cassettes with a star-like formation emphasizing the direction out through the framed view. I later found that these unique cassettes were yet another type of inner-ceiling from the old city-hall haning over the balconies on the second floor. Then they hihglighted the direction out to the grand hall. Here you encountered them in a different way highlighting the direction out the ravine.

This volume was insulated and heated. There were other people there who were eating their packed lunch or visiting the bathrooms.

One of them told me that I should collect the last pieces of the quarry by stepping out on the terraces. I found them through doors on the second floor and it wasn't unitl then I realized what the person meant. You have to encounter all the directions of the structure to have collected the whole picture of being in the center of the quarry. You can't see it all from only one point. Up on these terraces small stones were kicked out into the water creating the tiny echo I discovered on the path out. I said goodbye to the people eating and continued my journey.

6. The wall

From the other side of the tall volume you once again stepped out into the path carrying you to the other side of the pool. There you walked up the ravine once again through a meandering path and it dawned on me that this was the first time you came in contact with the bottom of the ravine. It was a remarkable landscape, both scary and fascinating at the same time. This was a landscape created by man I remember thinking.
The path now continued under where it before crossed the ravine amd continued on the other side. There the path hung out from the wall taking support from points in the landscape. This side of the ravine was a steep elongated wall. By this time I had figured out that when the wooden contruction frames came accelerating in frequency , yet another pavilion would most likely turn up. And so it did. The railing of the path all of a sudden protuded up becoming a very tall wall. And it was when I walked in middle of this constructed wall and the rock wall that I actually experienced the steepness of the rock wall and the verticality of the room they both created. Through the constructed wall volumes reveald themselves. The same grammar as on the other side of the ravine, one facing back along the ravine and the quarry where I came from, one facing the other side of the ravine framing the pavilion on the other side and one focusing forward towards the portalwhere I was heading once again. When entering these volumes you had to walk by and along two sets of walls. These brick walls had an interesting bond and they had apparently been part of the brick core of the old city hall. There you could mainly walk along the walls, here you were encountered with them by moving through them. After passing these walls the framed views revealed themselves.



7. The orthagonal headframe and archive

I continued my journey along the rock wall. Passing the portal on the other side than before, and continued out on the flat öandscape. The path ended in the prtagonal headframe. I walked inside and found that also this one was kept almost as it was left all these years ago, On the gorundfloor there was batyhrooms and café.
The café was in a volume sticking out from the tower, glaced on both sides. They told me that I had to go up one floor to the auditorium to watch the lecture about the third deformation zone and the next phase of the city move. It would start in a minute. When I came into the auditorium the first thing that hit me was the very high but very narrow volume. I had never encountered such a lecture space before. The second thing was that it was cladded with wood just as the rooms in the cylindrical headframe. When I later walked up through the headframe I took part of an exhibition about the third deformation zone with artefacts, details and documents from that specific area. Exactly like the ther tower this one had enclosed rooms which were insulated and cladded with wood. But the wooden boards in this tower were hotizontal to create another identity to this tower. On the floor furthest up with access with elevator you stepped out into a panorama overlooking the new and old city. There were building cranes as far as the eyes could see. It was interesting to think about that the journey started in the cylindrical headframe with a panorama towards the mining landscape, and ended in the orthagonal headframe turning towards the city.
When walking back to the main entrance in the cyindrical headframe I walked past the above ground archive and study rooms. This part was made up by a transparent corridore with a ramp slowly sloping downhill. From this corridore you could access three volumes. Two of these had documents from the city accessible for research. Here people sat deep down in research. In the third volume there were smaller ot bigger building parts that people were studying. These parts had been taken up from the structural archives that consited of the tranformed mining shafts under ground. The building parts were evaluated whether they should be reused in the same way as their

original context, if they would be reused in a different way or if they should be demounted and be seen upon as recycleable building materials.
It dawned on me now that this was basically what was happening on the journey through the mining landscape. Exhibiting building parts in a new light and context. Wehere they important as details without their original context? The same concept, I realized, was adapted to the path. Was this landscape valuable without it’s former context as a mine.

Epilogue

Now a while after my visit, I am glad that the citizens of Kiruna has access to this area. If not for anything else than for the reason of not having to livew next to a dangorous farea confined with a high fence.
Although the landscape was very interesting when walking through it. The things I remeber most are the situations when everything was not revealed, the situations where I could focus my attention. I also trongly remeber the sounds and the tactile sensations of the reused city hall details.

Sequential studies

Structure

The structures added to the site are the path, the stilts that holds the path and the pavilions. The main element is the path and the stilts that holds it up. It is important that these elemnts constitutes the common thread in the man made landscape. On to this you can place the pavilions so they actually belong to every selected topographic typology instead of the whole landscape.

The path is elevated from the landscape both to make it easy to put it up and take it down, but also to give it a restrained position against the landscape. With that said the form of the path can very well follow and empahsize the landscape itself.
The stilts are made of excess wood from the city. This contrasts the path made of sludge concrete both in the aspect of a living material against a dead but also in the way of a for the eye heavy component carried by a fragile light one.

The path acts as a beam which opens up the possibility of large spans between the stilts. The concept of the stilts is that when approaching a pavilion the stilt frames accelerate getting closer to eachother, more and more emphasizing a tunnel making the lookputpoints more significant. When in the middle of two pavilions, the stilt frames are further apart revealing the landscape as a whole.
The inspiration for the stilt frames could be derived both from the history of the mine, with the ad-hoc wooden contructions above ground, and also the wooden contructions that secures the mine shafts. In their fragility and movability they can also be derived from the nomadic structures of the Sami people.
The path itself is mimicing the hard surface of the bare rock in the mining shafts.

The pavilions are designed with regards to every place it emphasizes and takes it’s inspiration from highlighting, hiding or contrasting certain features of the landscape. To further emphasize the difference of each topographical typology the pavilions themselves are quite different from eachother, although keeping same konceptual features.

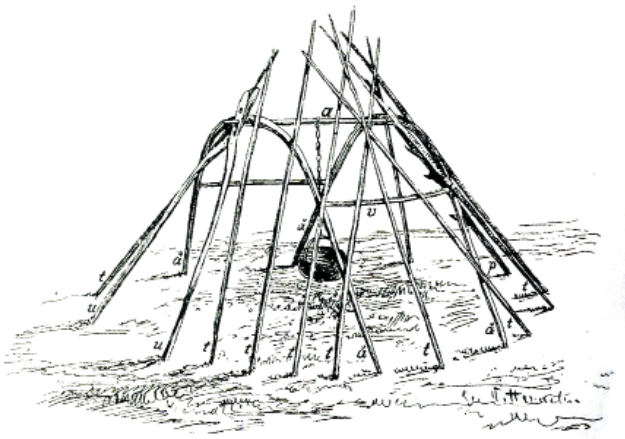
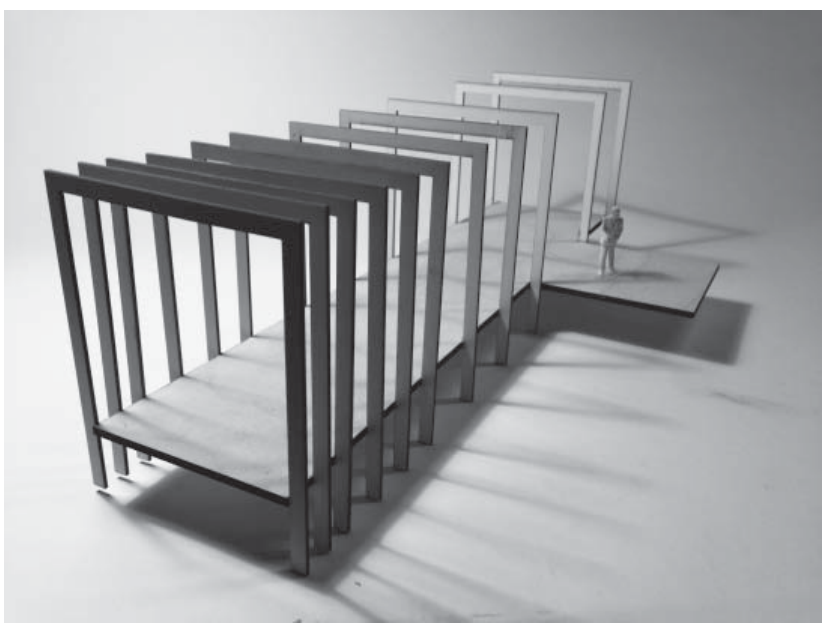
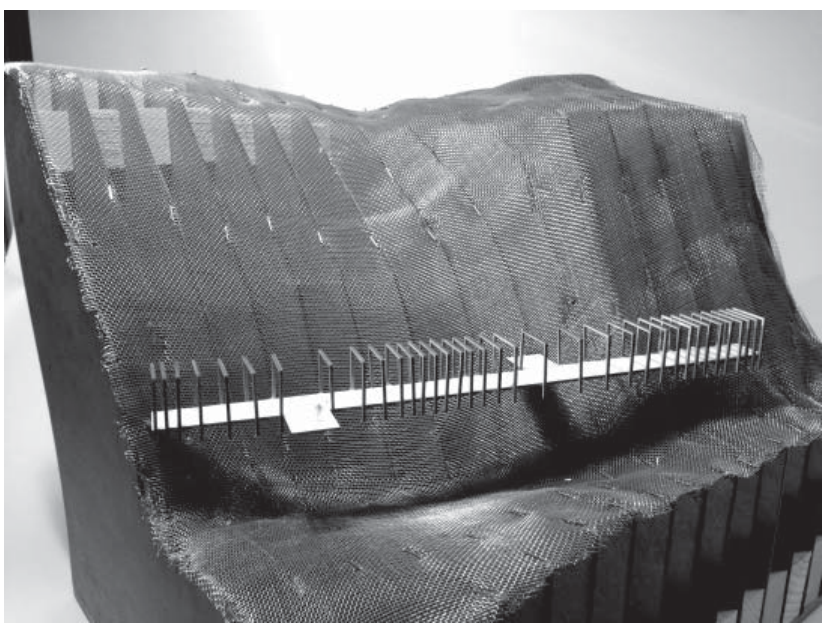


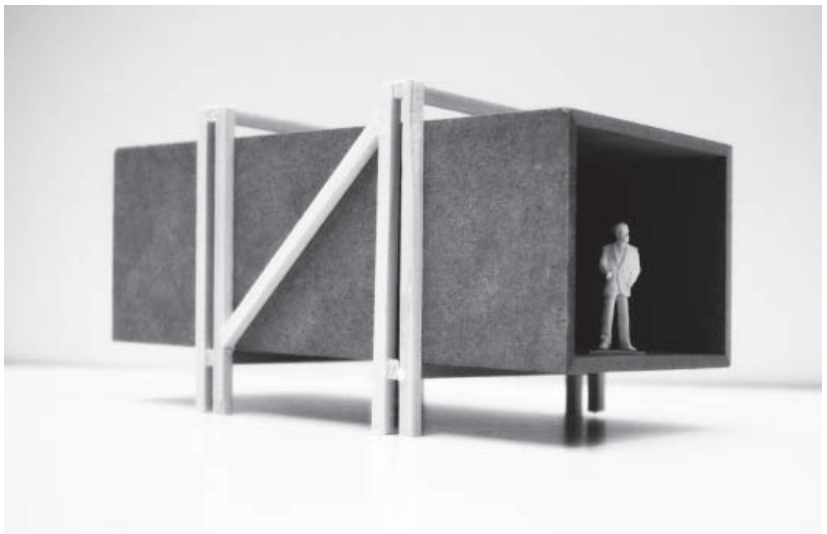
Bild 1. Trästållningen till en lappkåta.

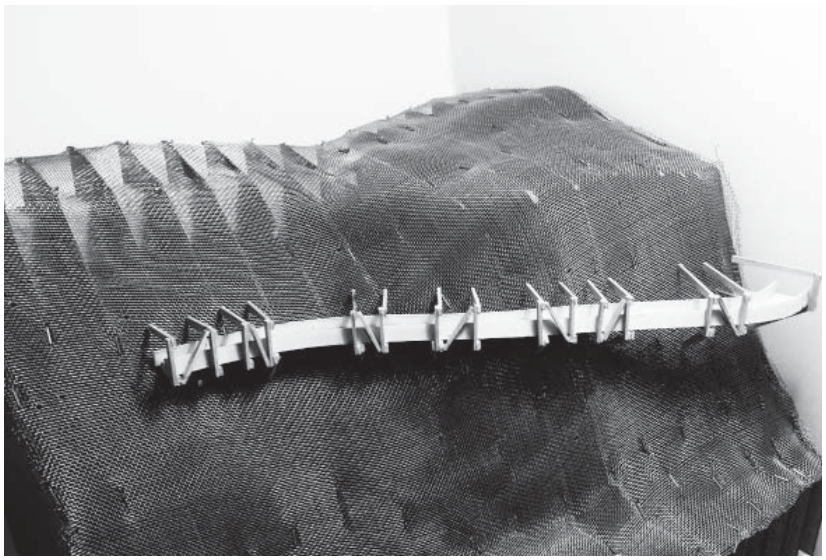
Mining structure above ground

Mining structure under ground







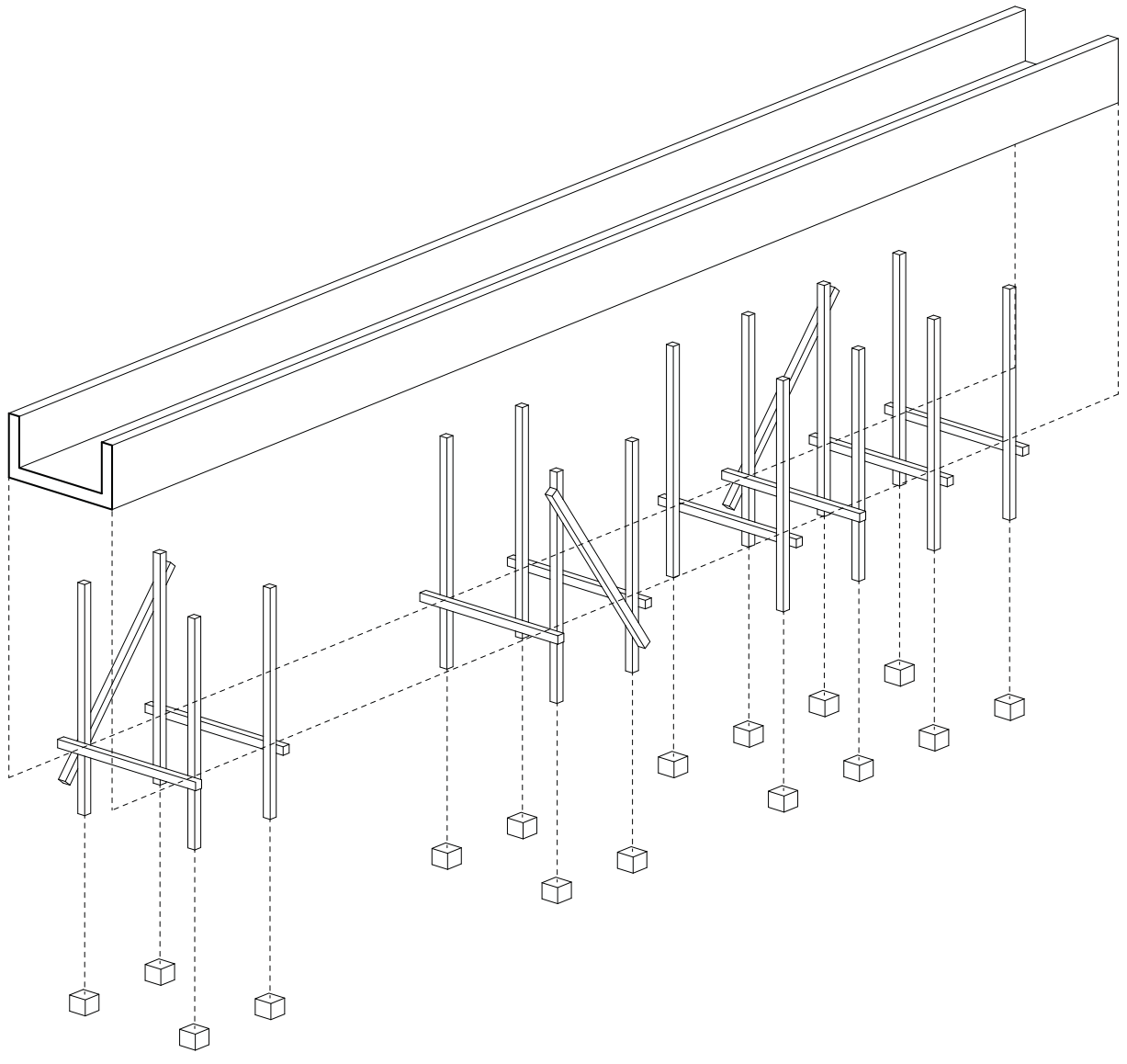


Structural studies

Concrete path

Wooden stilt frames

Foundation



Structural principle

Materials

The materials used that are not recycled from the city will be mainly materials based on waste products from the mining- and steel industries. In that way the production circle is, if not closed, then extended.

Waste rocks

From the mining industry the main reidue product is waste rock from the excavations. These rocks hasn’t any particular attributes that could be useful in construction. insulation etc. The main strenght is that there are a huge amoint of this material. They could be used as fillings in gabion walls or if smaller as ballast in concrete.

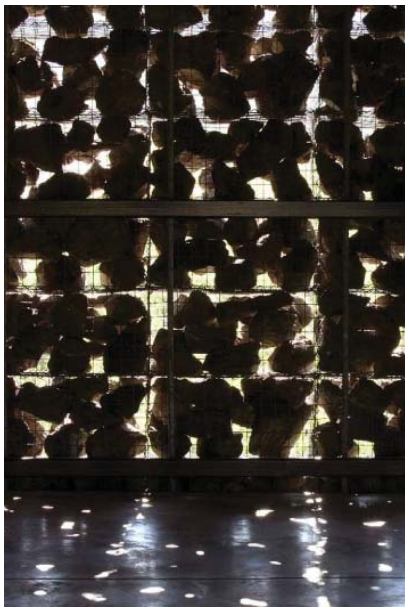
Slag

Slag is a non-metallic material that occurs as residue product from the ore smelting process. Slag is often a combination of metal oxides and silicon dioxide.If the slag is left to solidify it gets a vitreous appearance. Ancient uses of this materials extends from jewelry to ceramics, and “Slag-glass”. Traditional use of slag is to place it in forms before it solidifies to cast stones for masonry.Modern uses are, among others, mixture with portland cement for conrete production. Concrete containing ground granulated slag develops strength over a longer period, leading to reduced permeability and better durability. Since the unit volume of Portland cement is reduced, this concrete is less vulnerable to alkali-silica and sulfate attack. It is also has less density leading to less weight per volume. This concrete is often used in constructions that demands high durability such as bridges etc.The slag can also be used to create fibers used as an insulation material named slag wool.

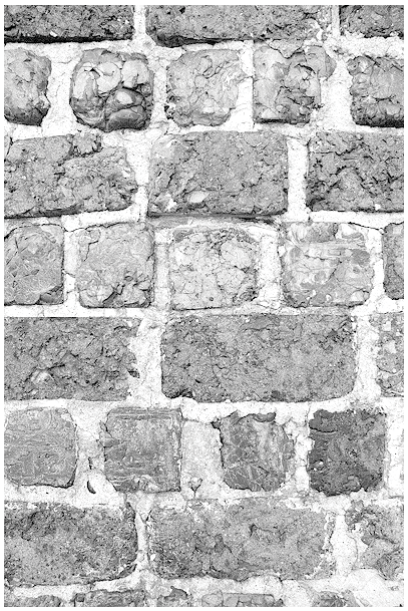
Sludge

Many steel based products undergoes a pickling process at any stage of the production circle. Pickling is when the steel surface is cleaned from oxides etc. At the bottom of the pickling tank the solids are collected and dissolved into sludge. When neutralizing this sludge, the result is metalhydroxide sludge. This sludge is often reintroduced into the production process but new processes through electrocoagulation makes it possible to dry the sludge and use it as material for bricks and tiles. Tests of this has been done with metalhydroxide sludge as residual product from textile industry. To make the bricks and tiles the sludge is heated to a high temperature. At this temeprature organic matter is totally destroyed and is responsible for the high porosity of the microstructure it gains. This porosity, although affects the mechanical resistance, gives the ceramic piece interesting properties such as low weight, and thermal and acoustic insulation.

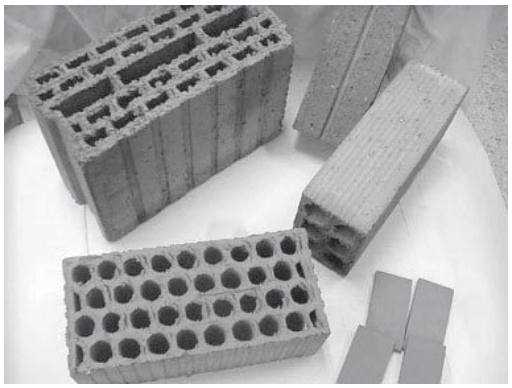
Slag cement based concrete (GGBFS)



Gabion walls off rock waste



Slagstone

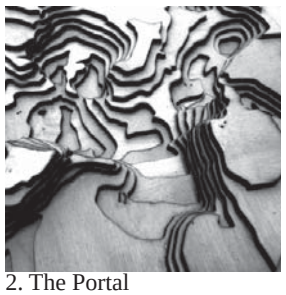


Brick and tiles of dried burnt sludge

Part 5

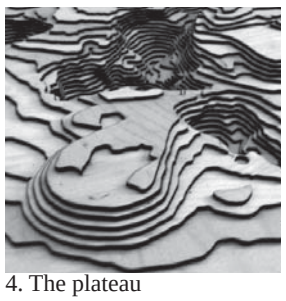
Design proposal

Design proposal



2. The Portal

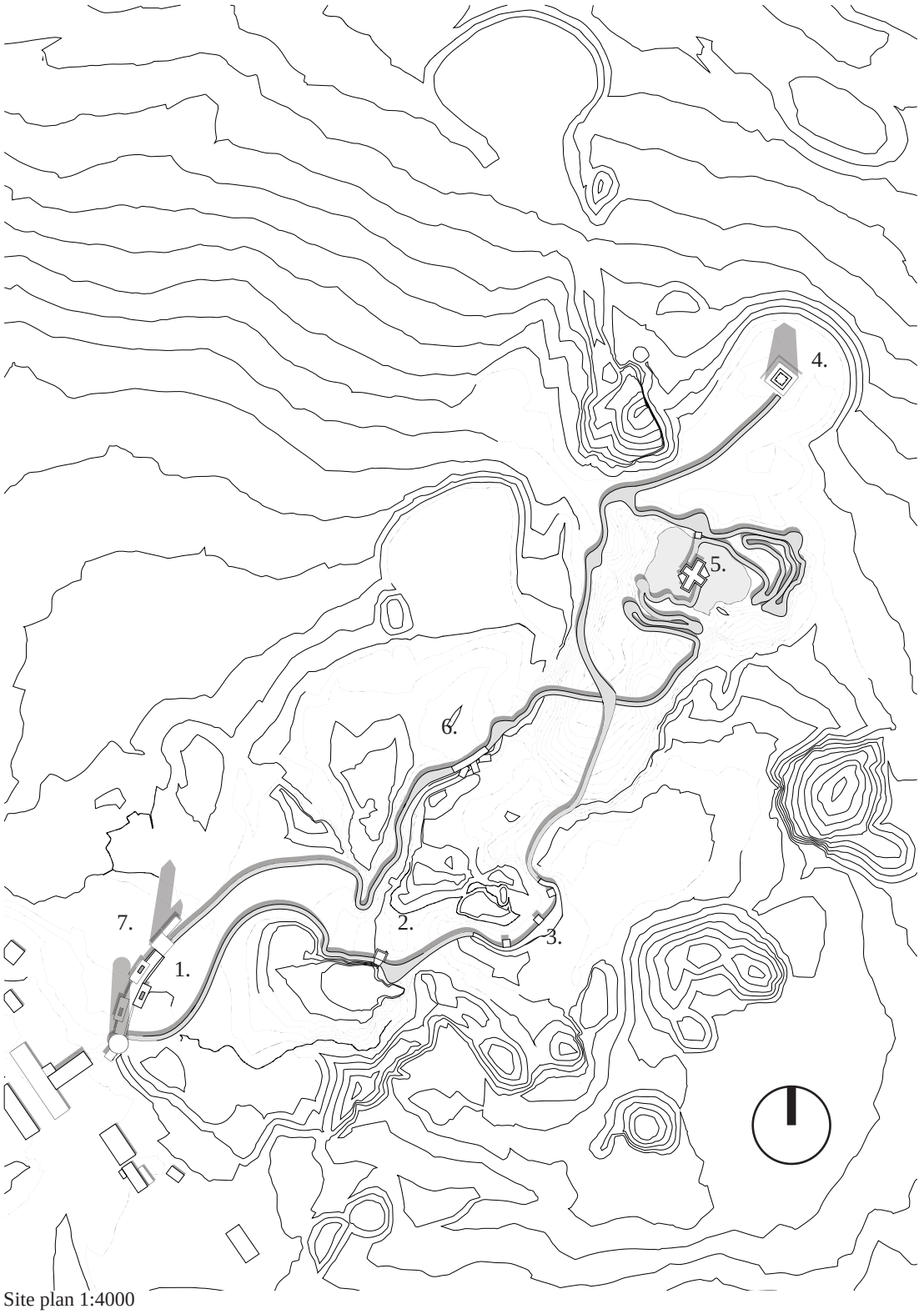
3. The pit



4. The plateau

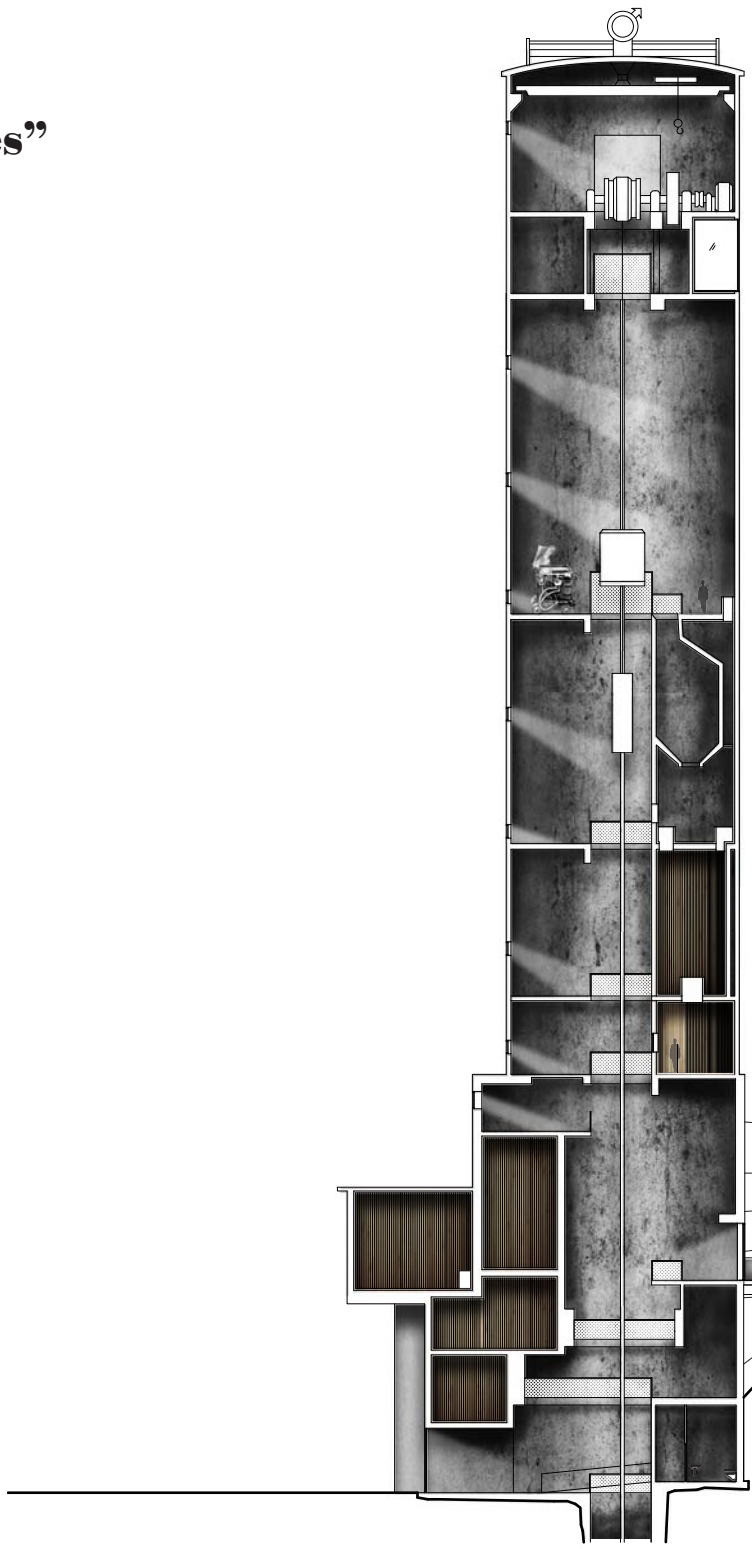
5. The pot

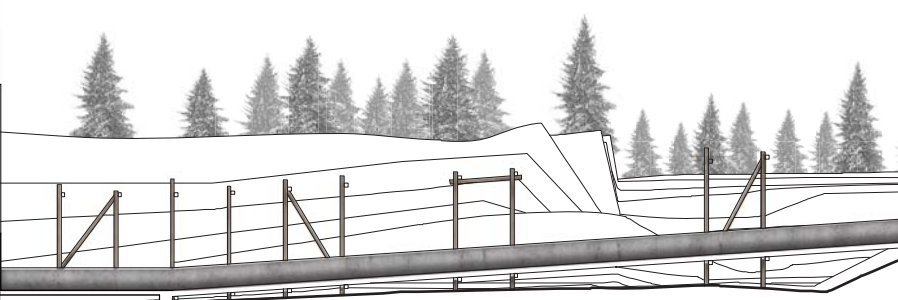
6. The wall

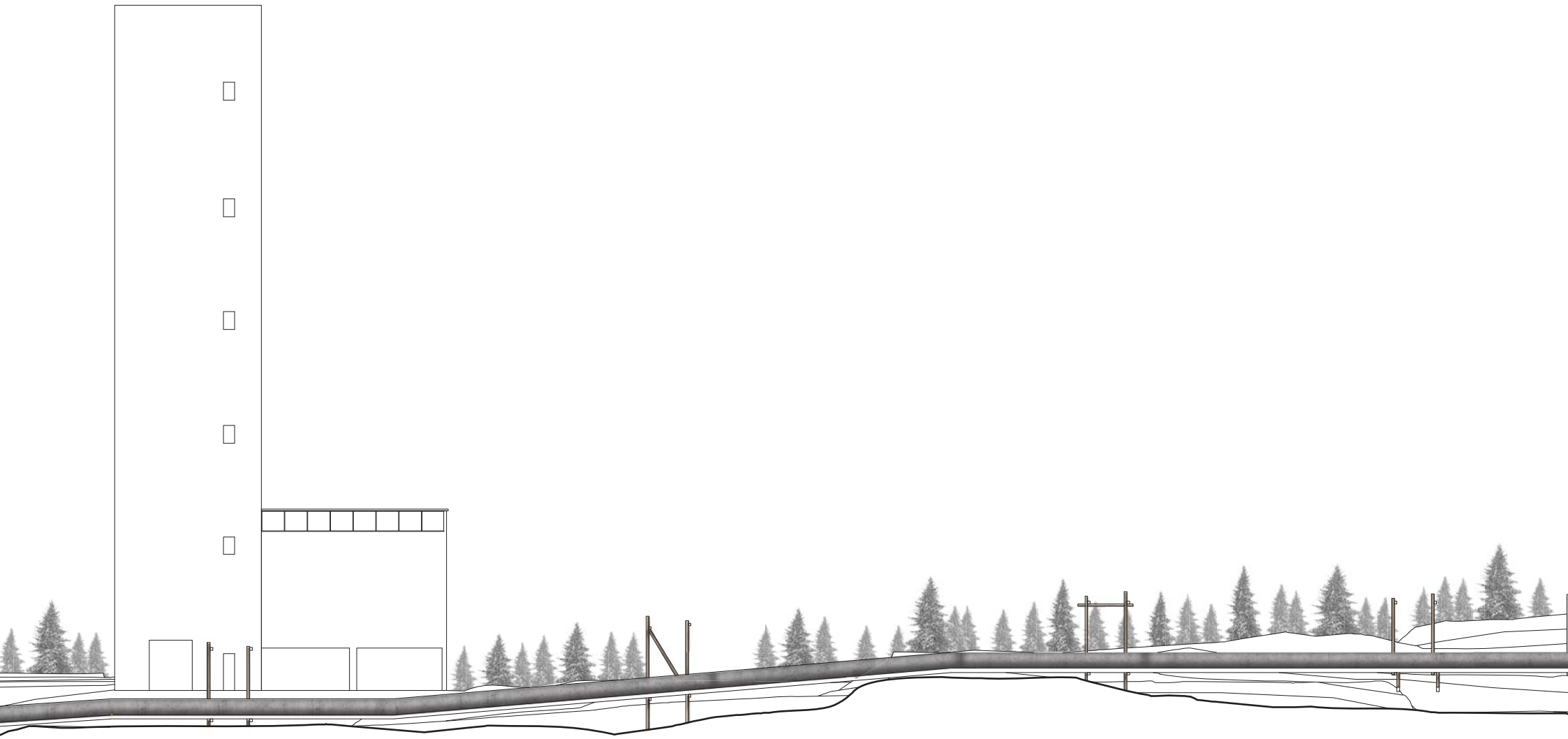


Site plan 1:4000

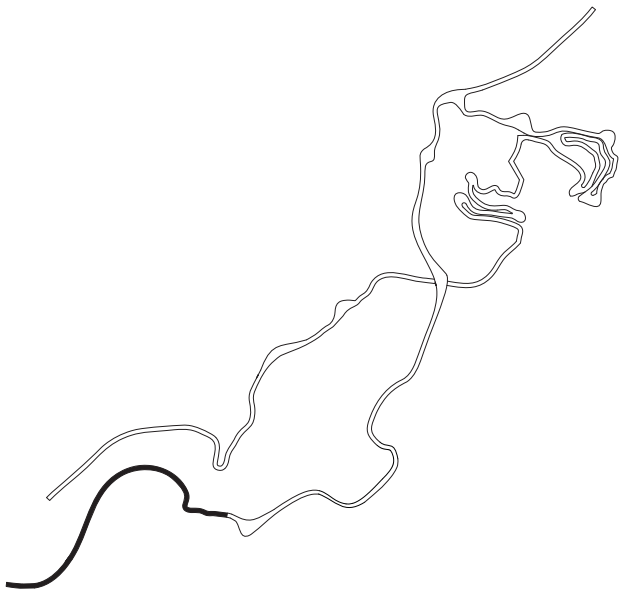
“The headframes”

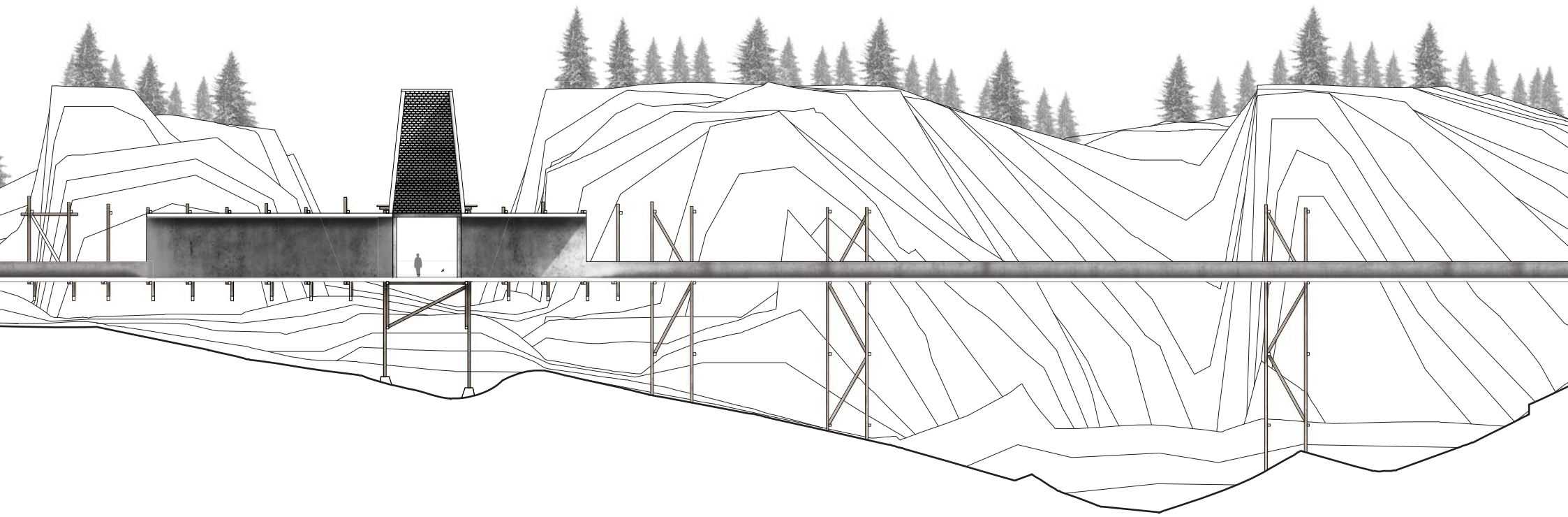




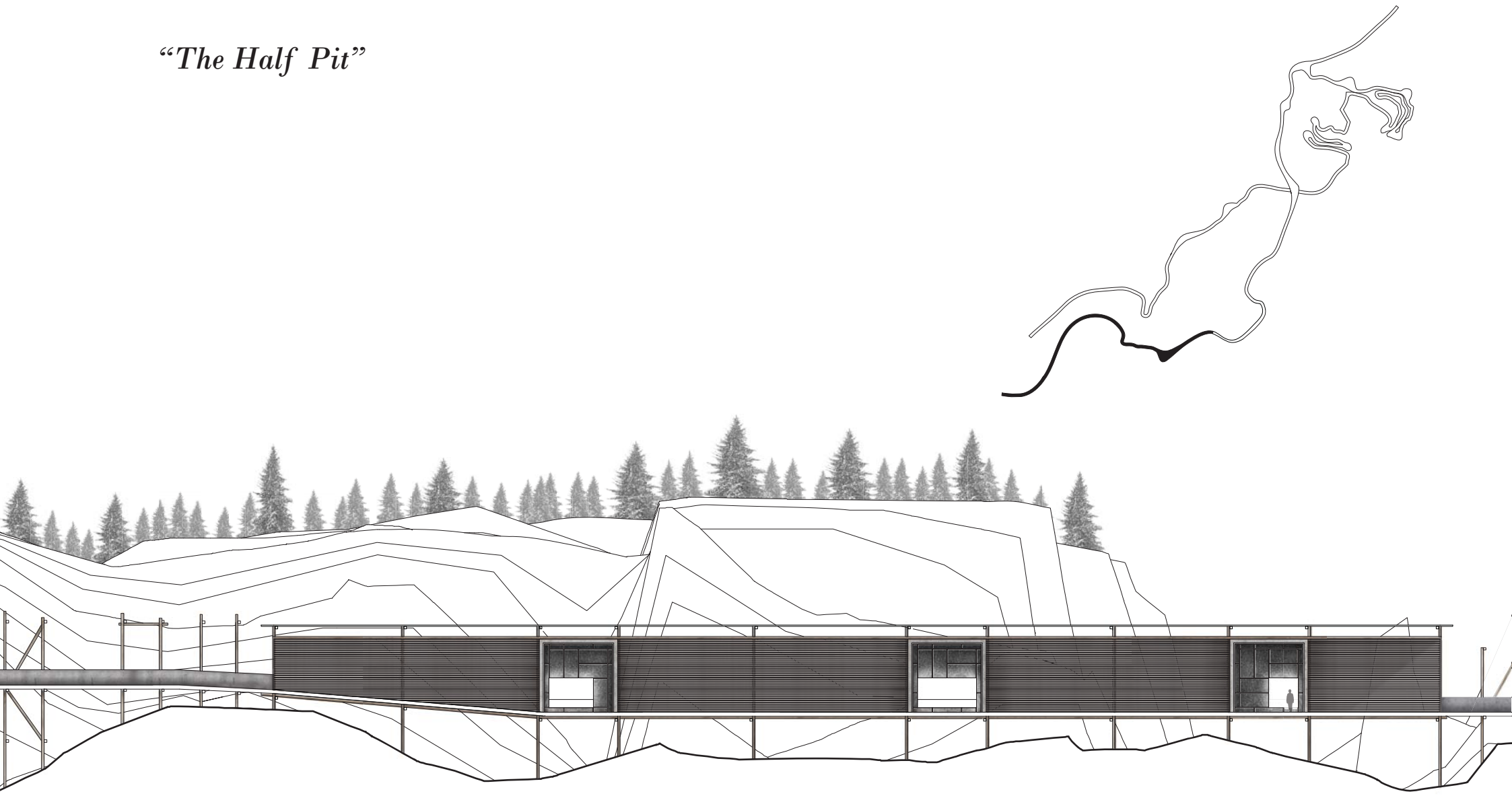


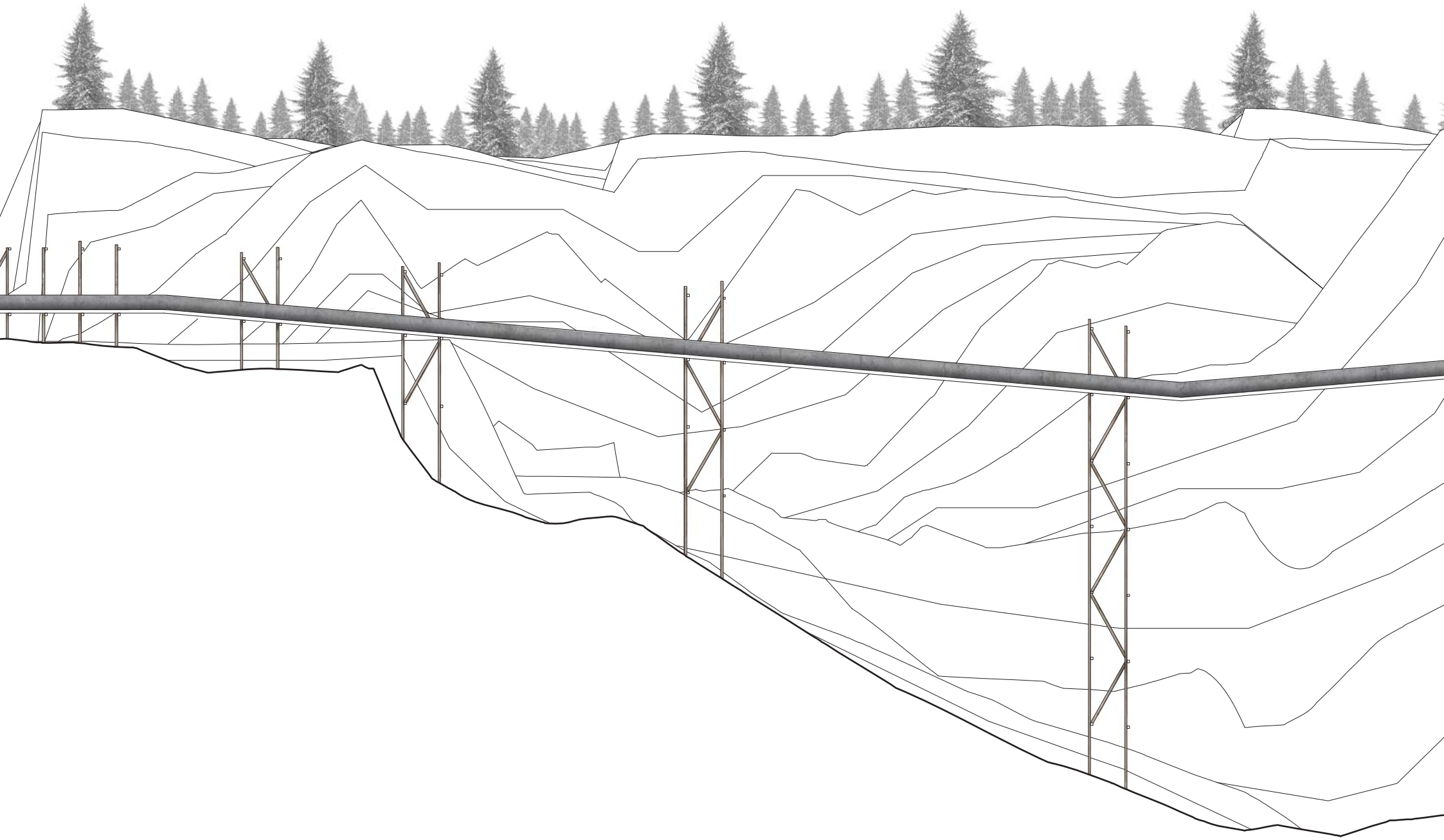
“The Portal”

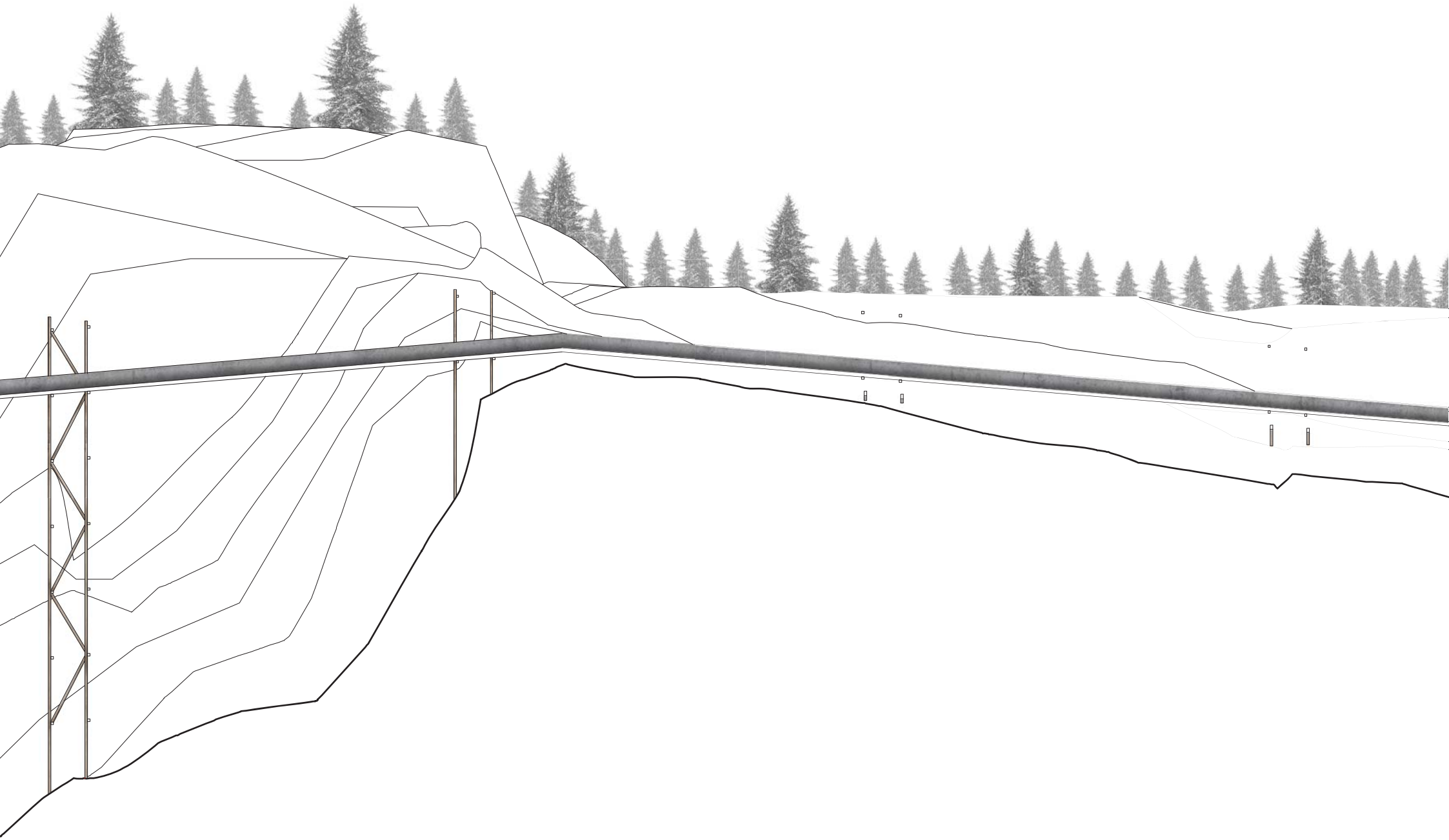


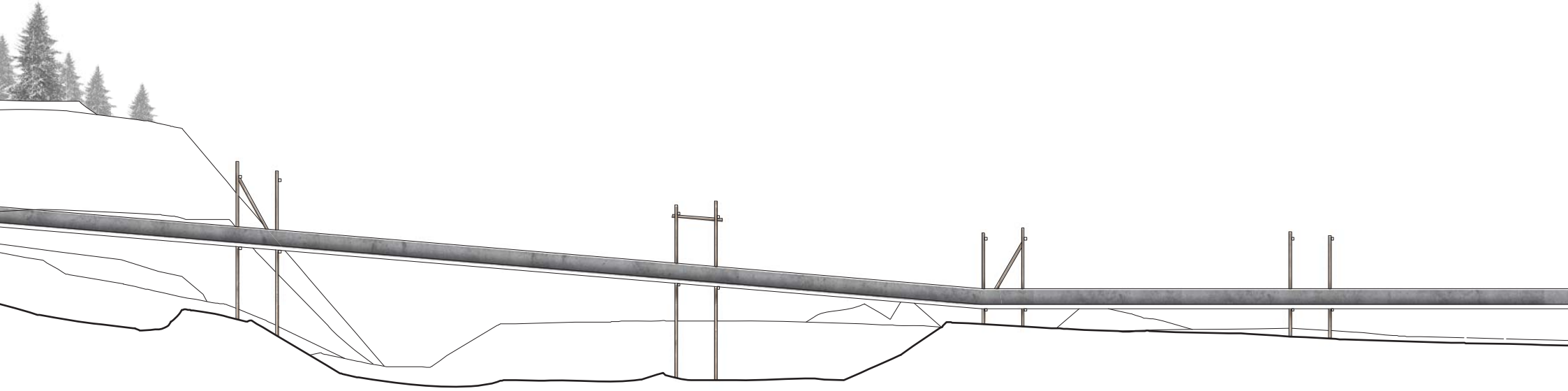


"The Half Pit"

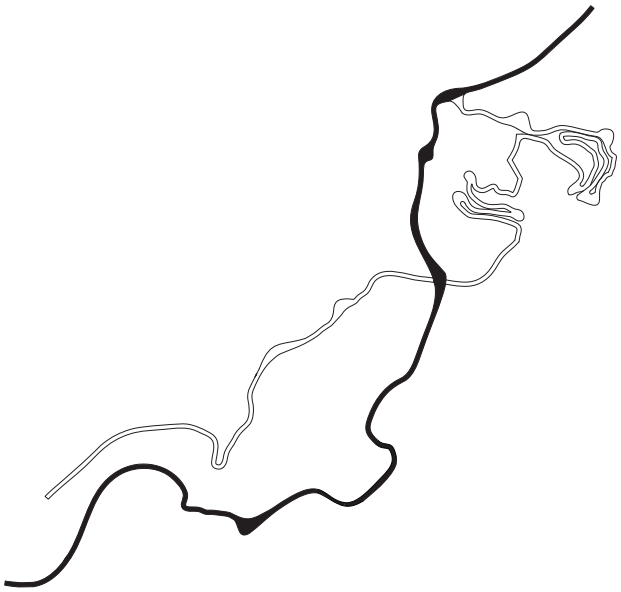


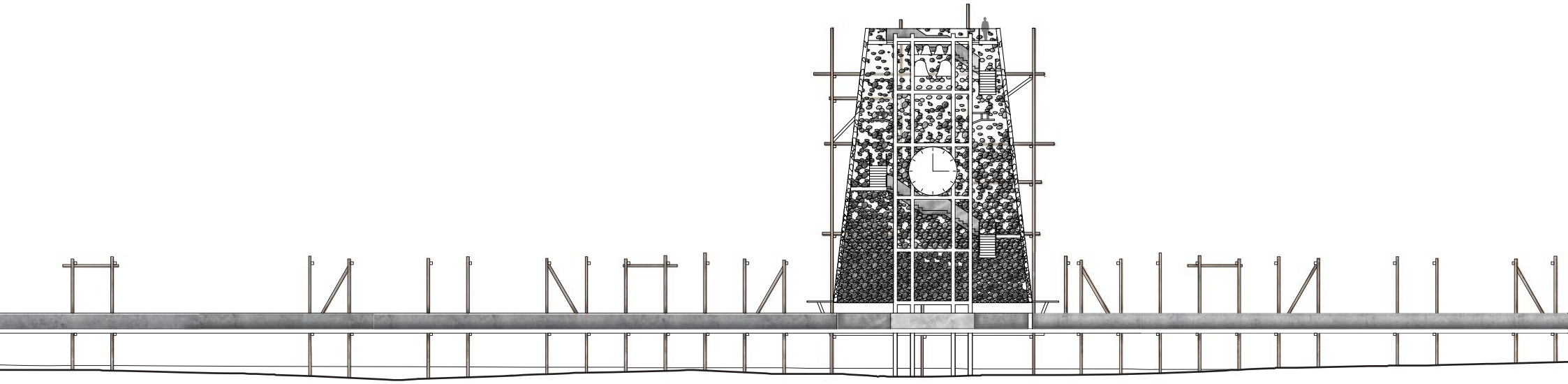


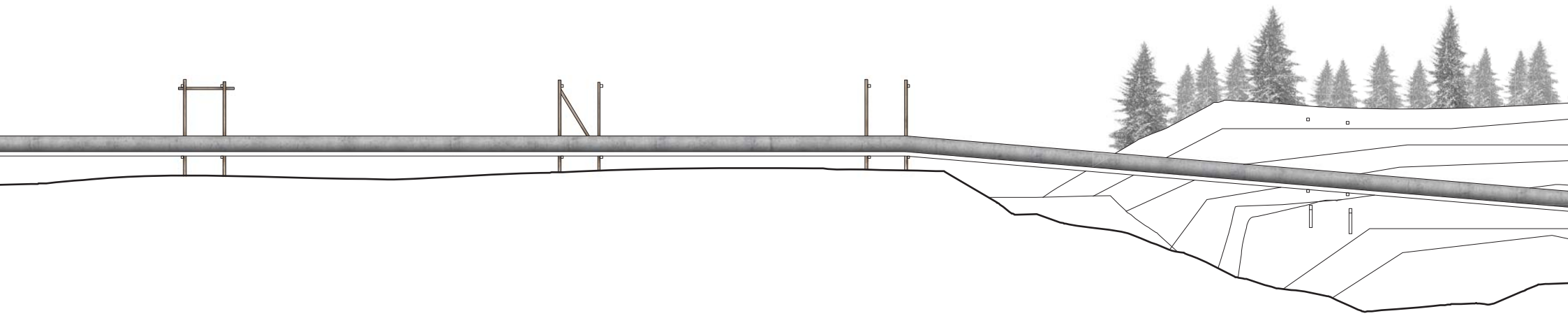


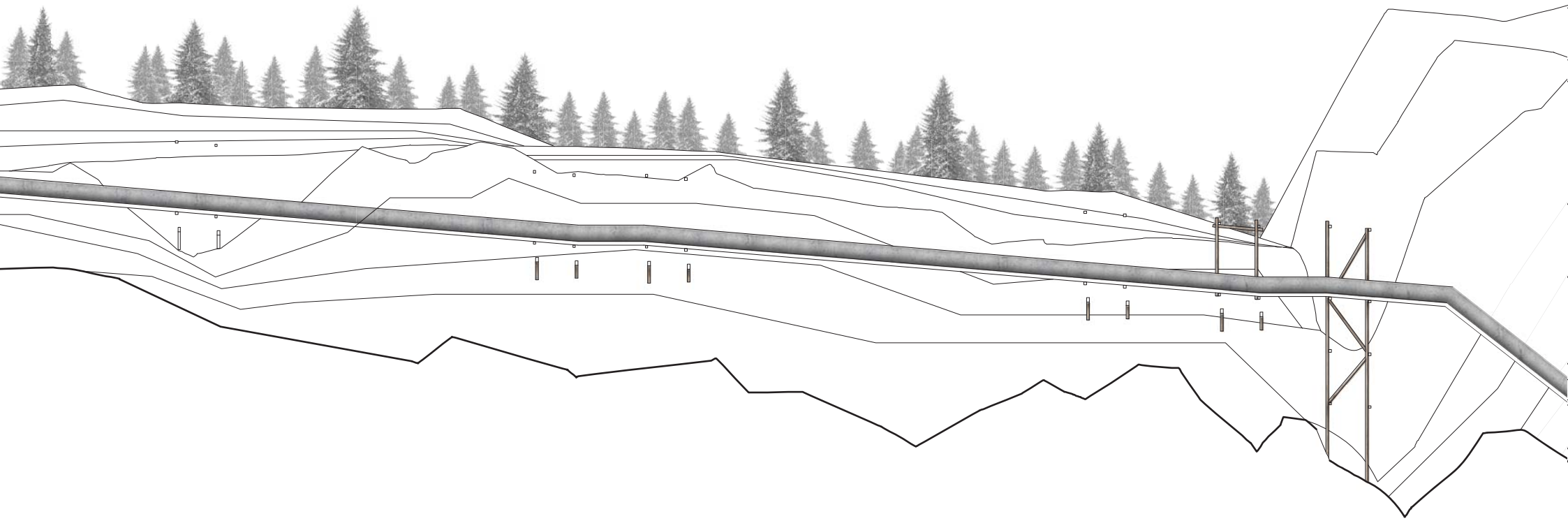


“The Plateau”

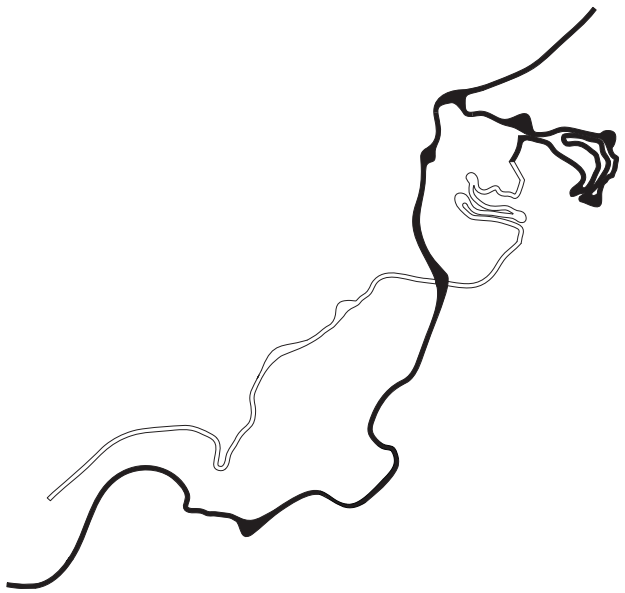


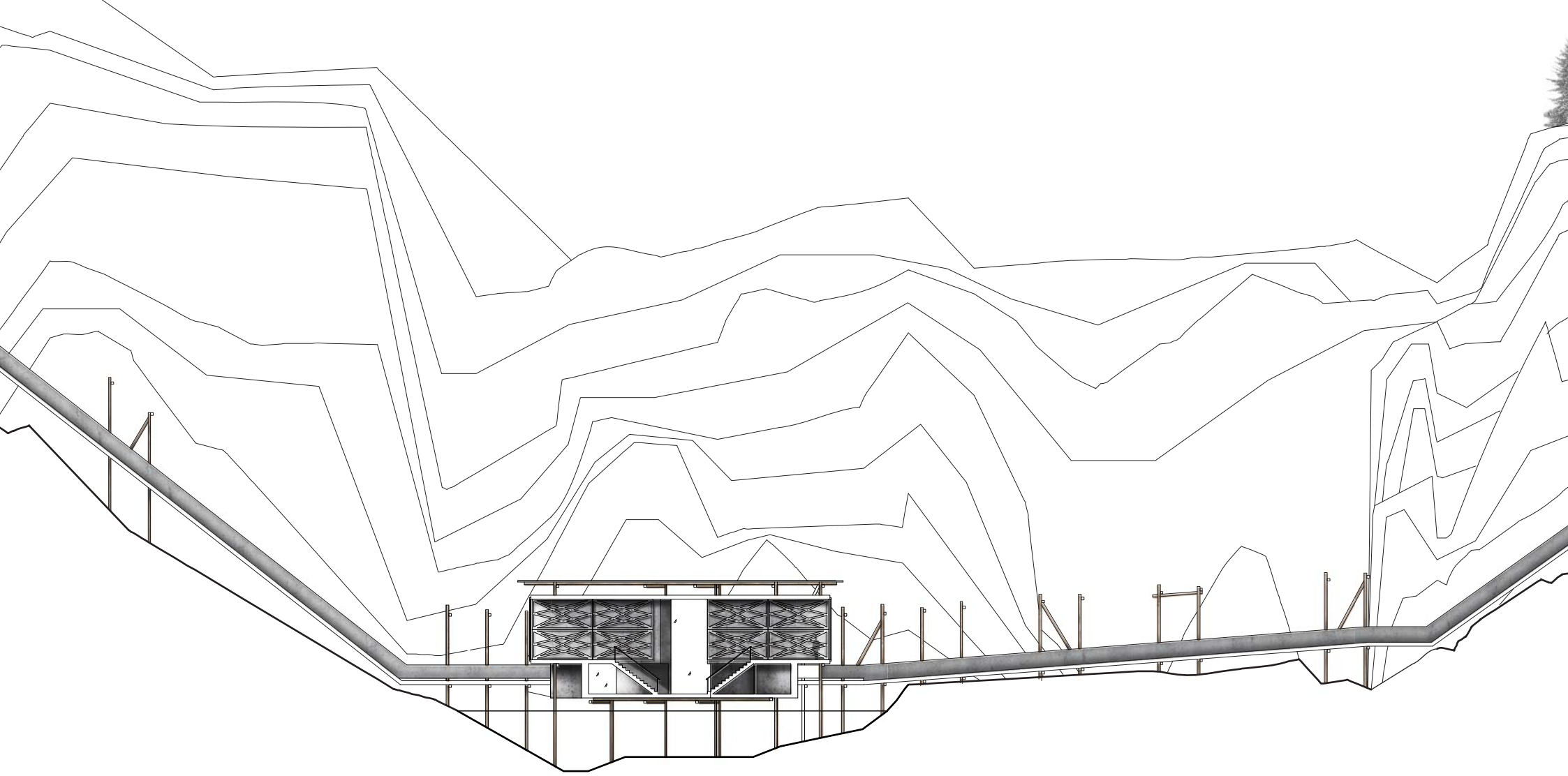


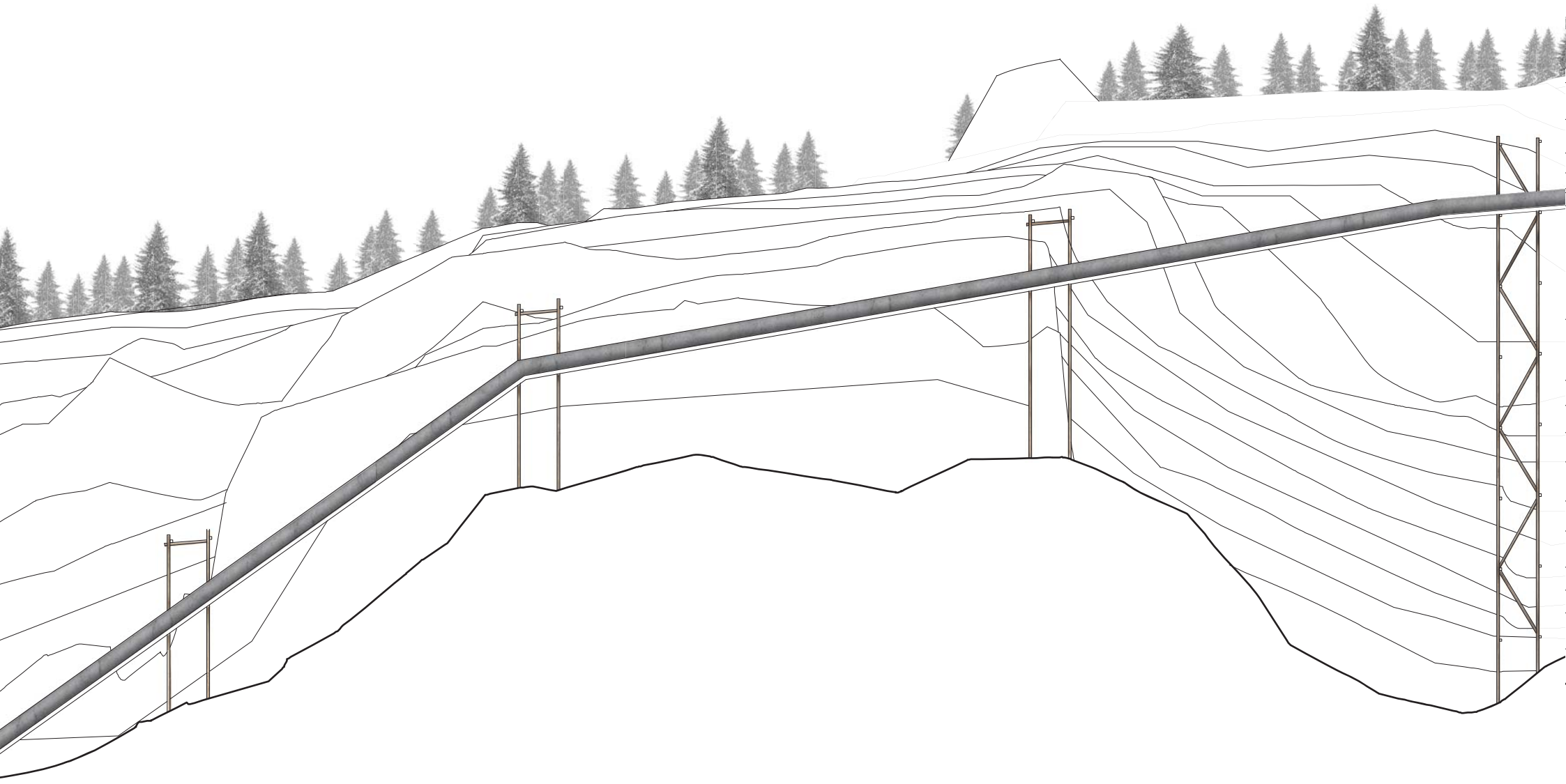


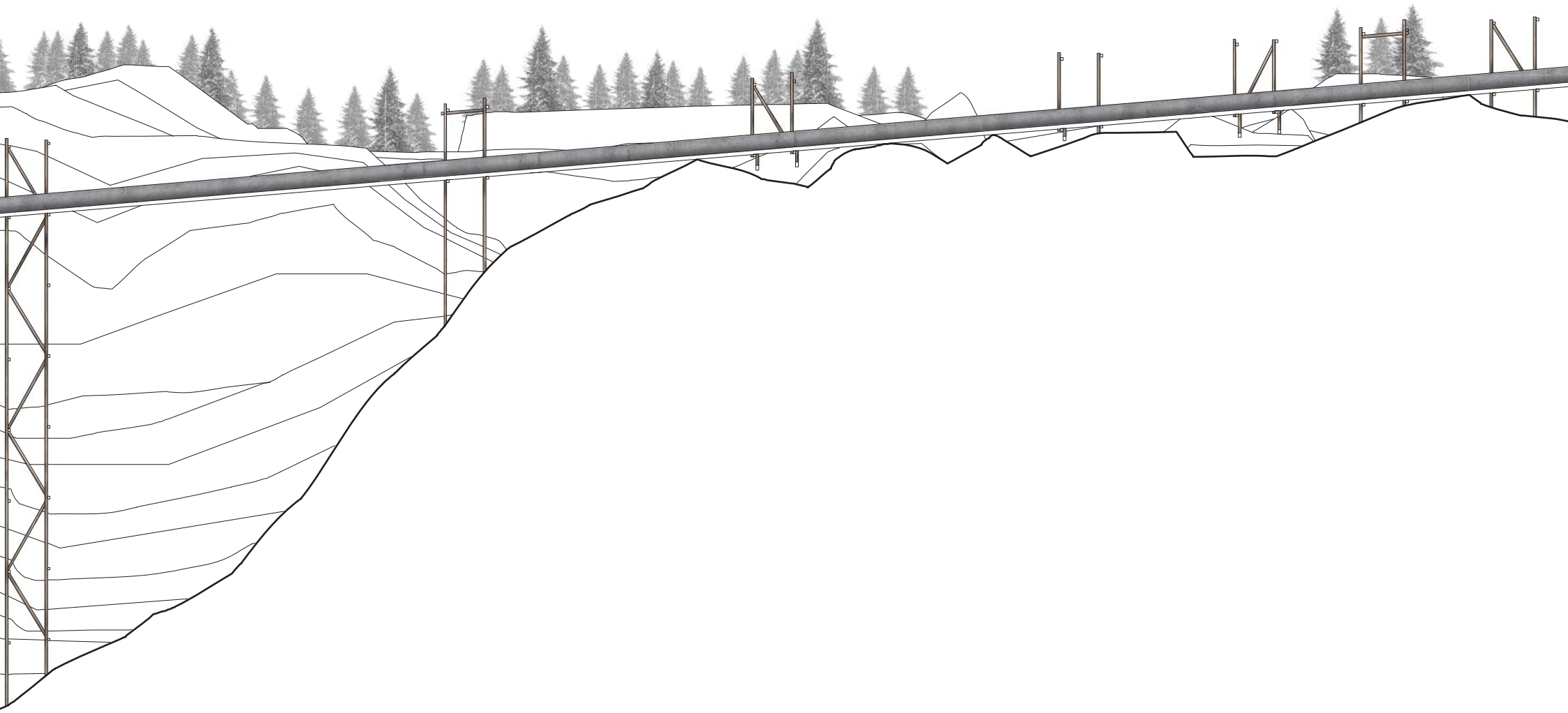


“The Pot”

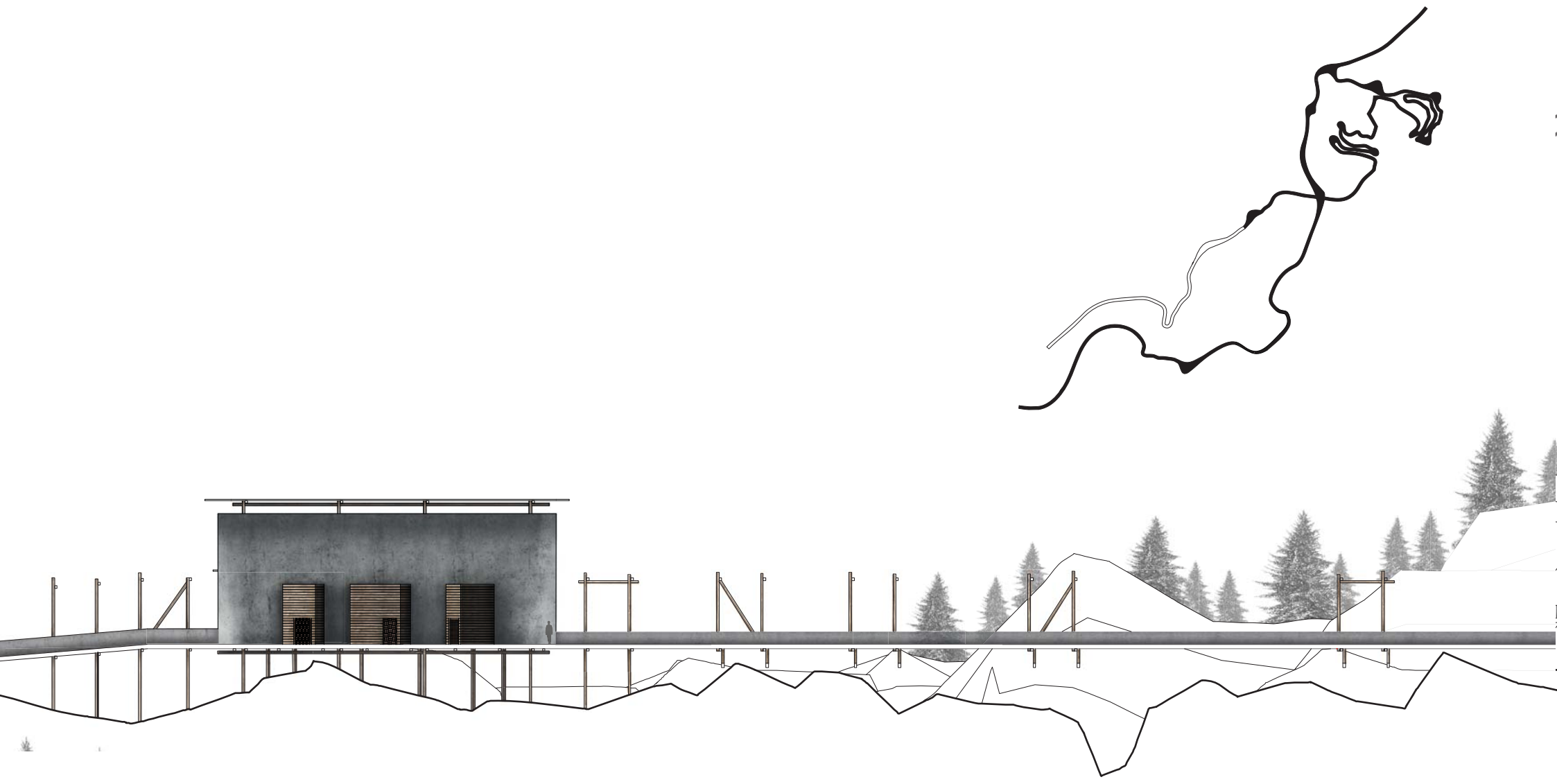


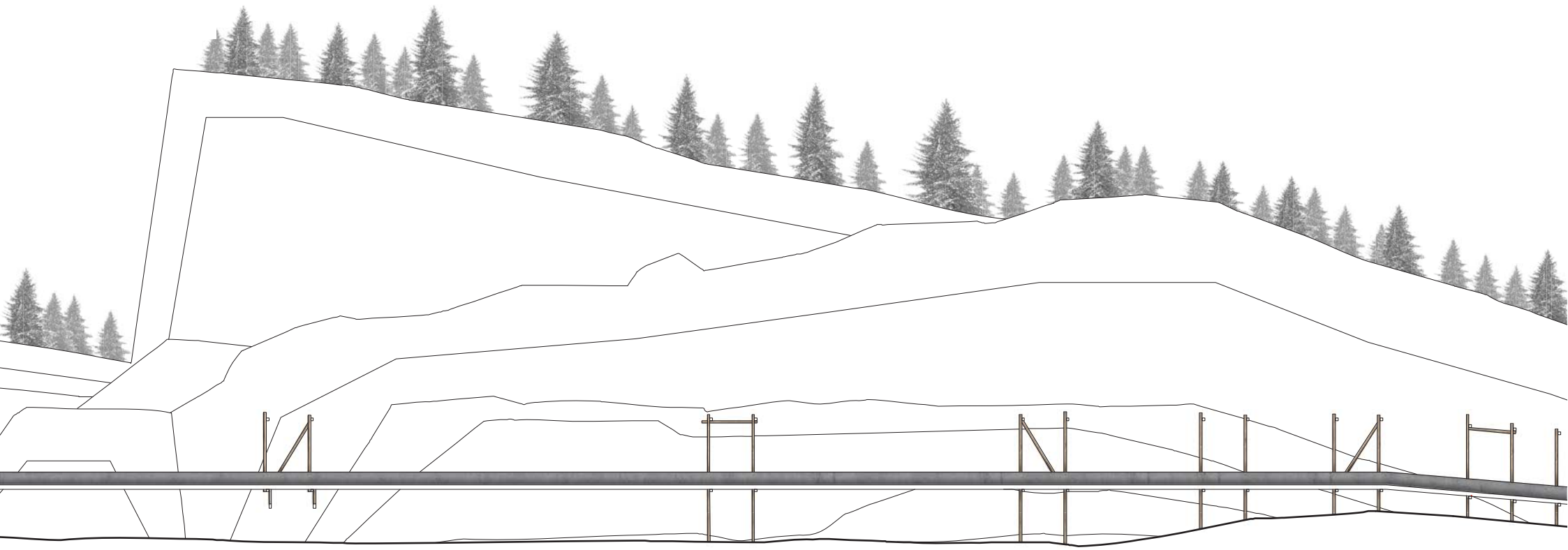




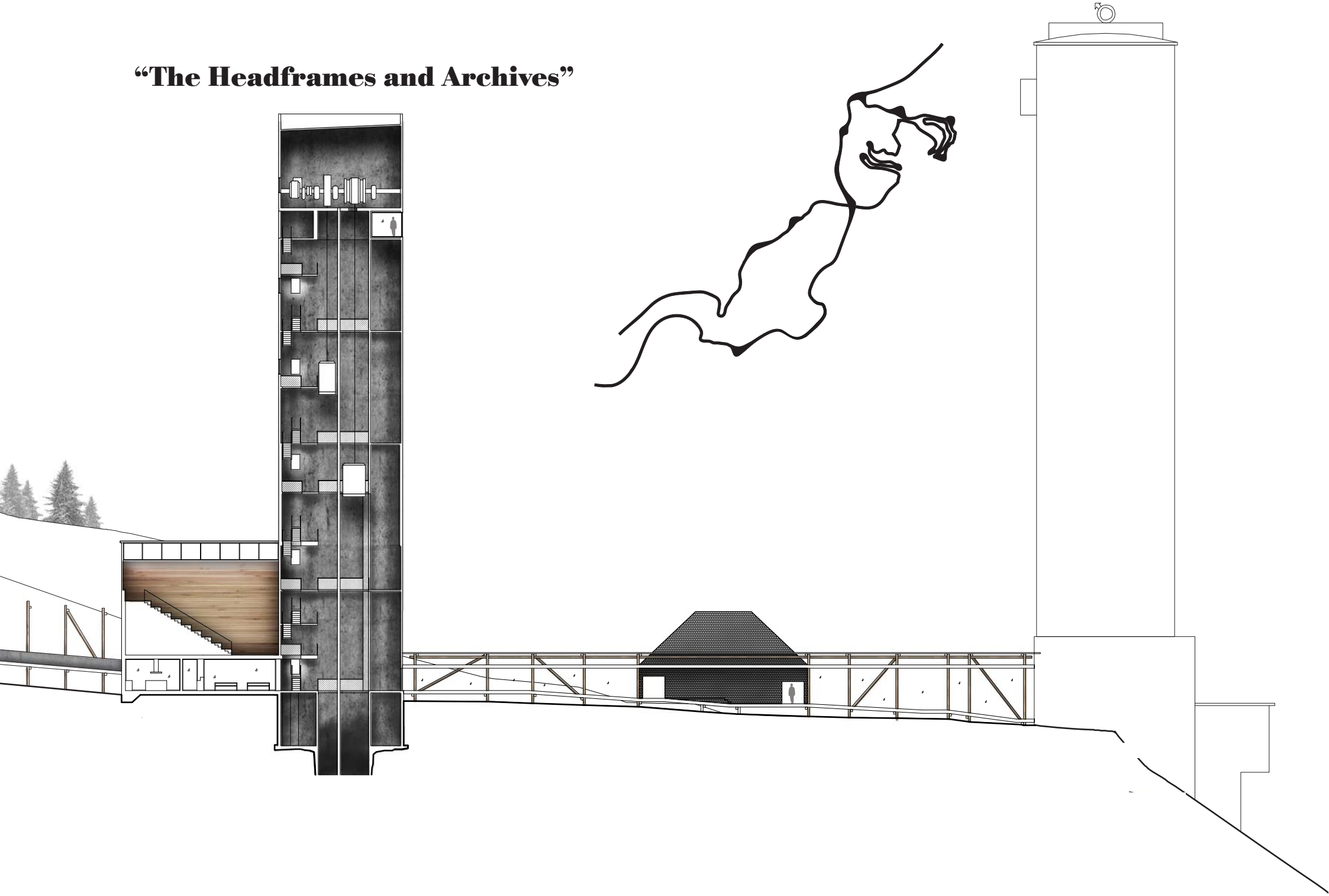


“The Wall”

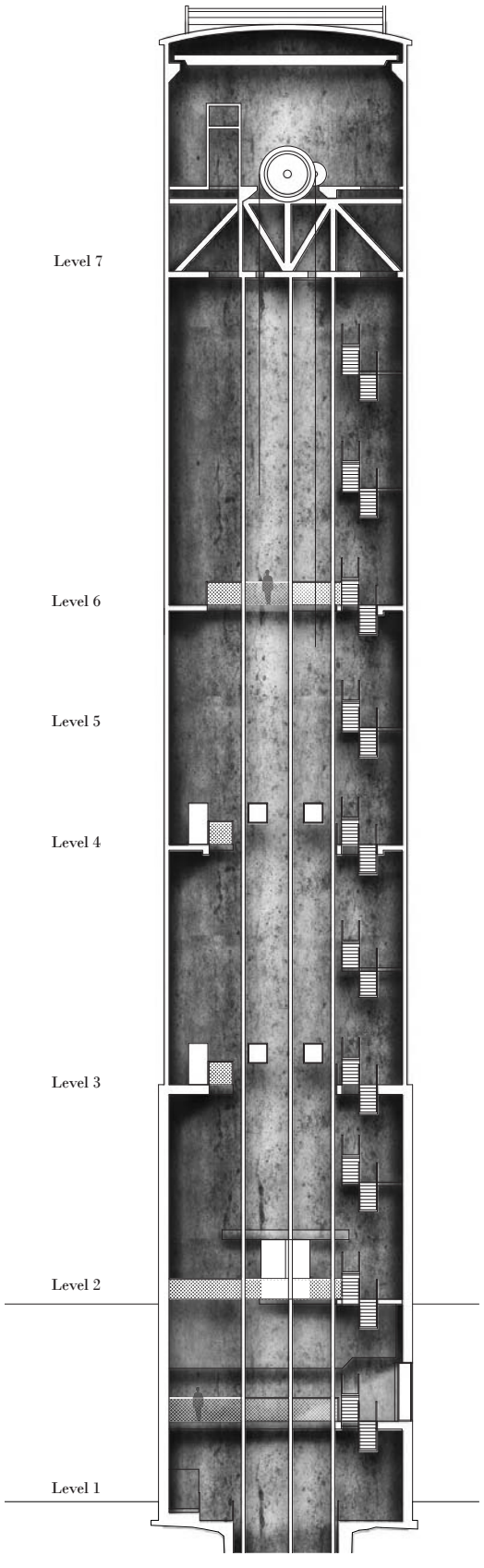


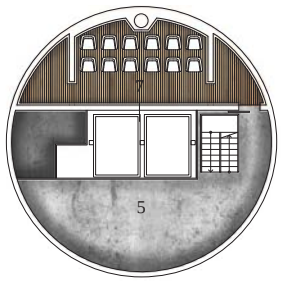


“The Headframes and Archives”



“The Cylindrical Headframe”





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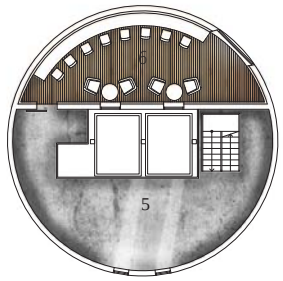

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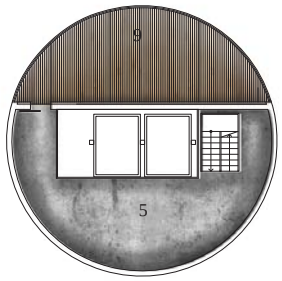

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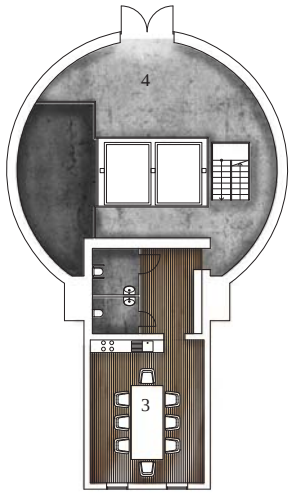

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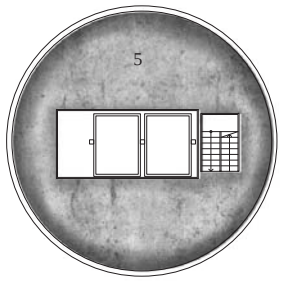

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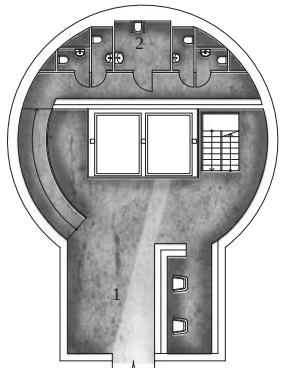
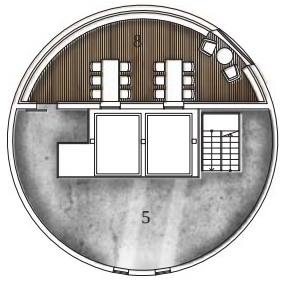


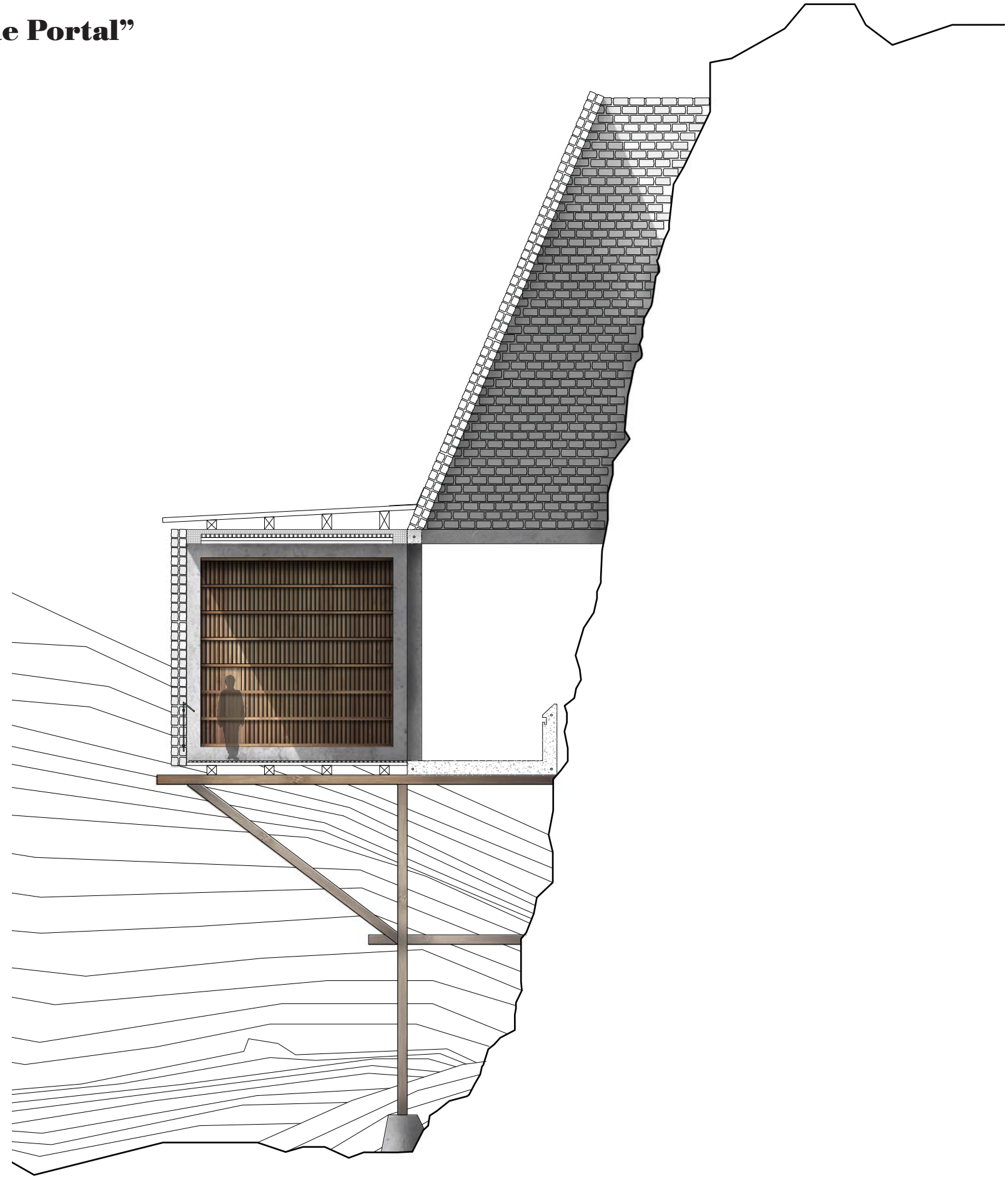
Level 1



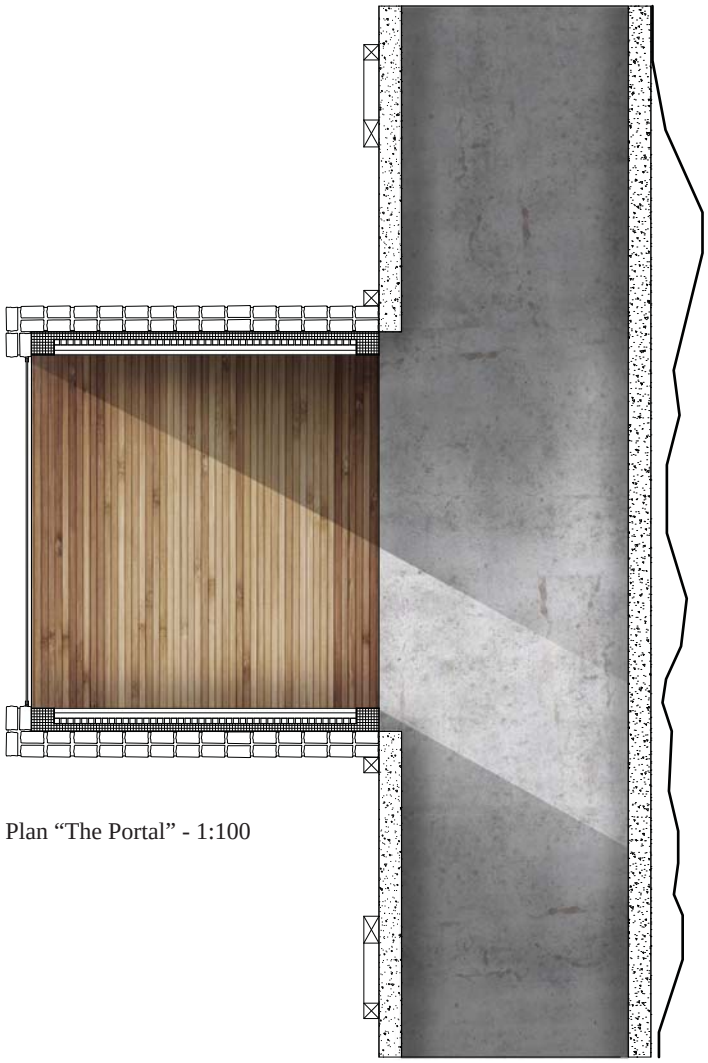
Level 5

1. RECEPTION
2. TOILETS
3. STAFF ROOM
4. FOYER
5. EXHIBITIONS
6. MEDIA ROOM
7. FILM ROOM
8. LIBRARY
9. PANORAMA

“The Portal”



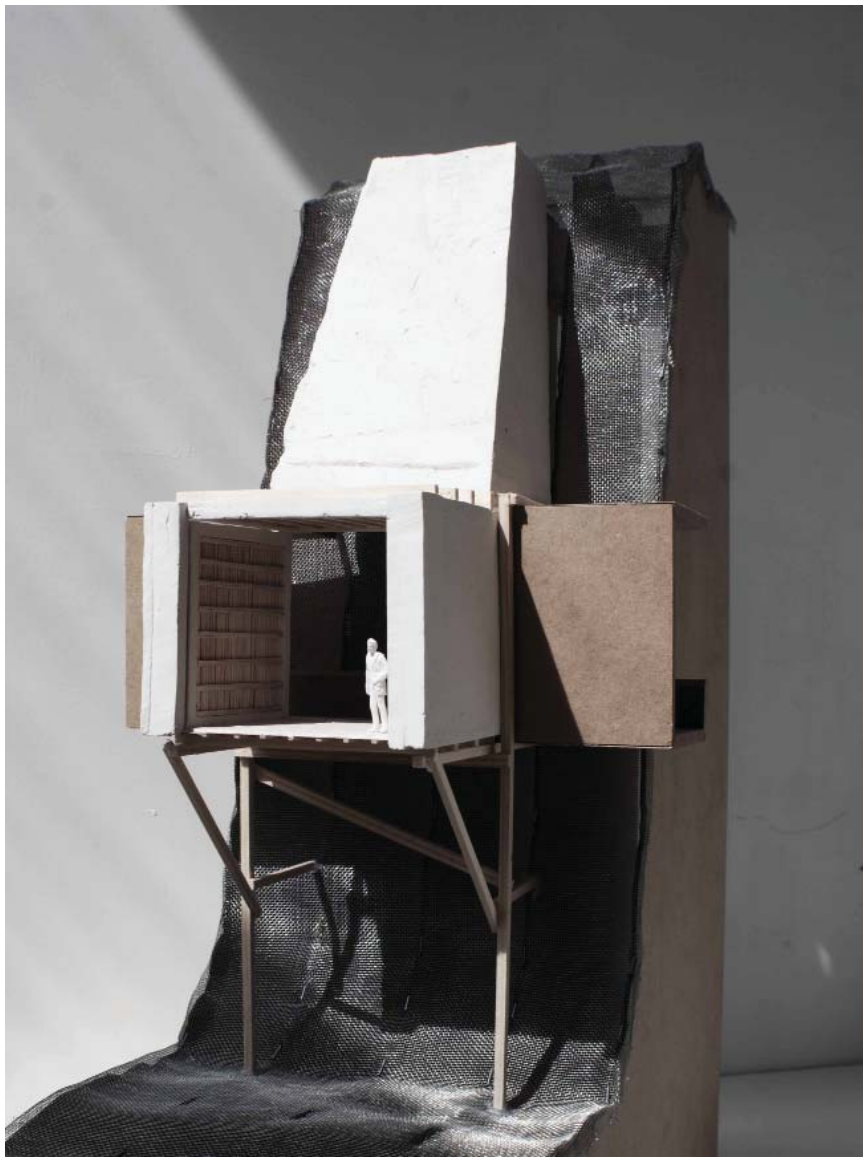
Section “The Portal” - 1:100



Plan “The Portal” - 1:100

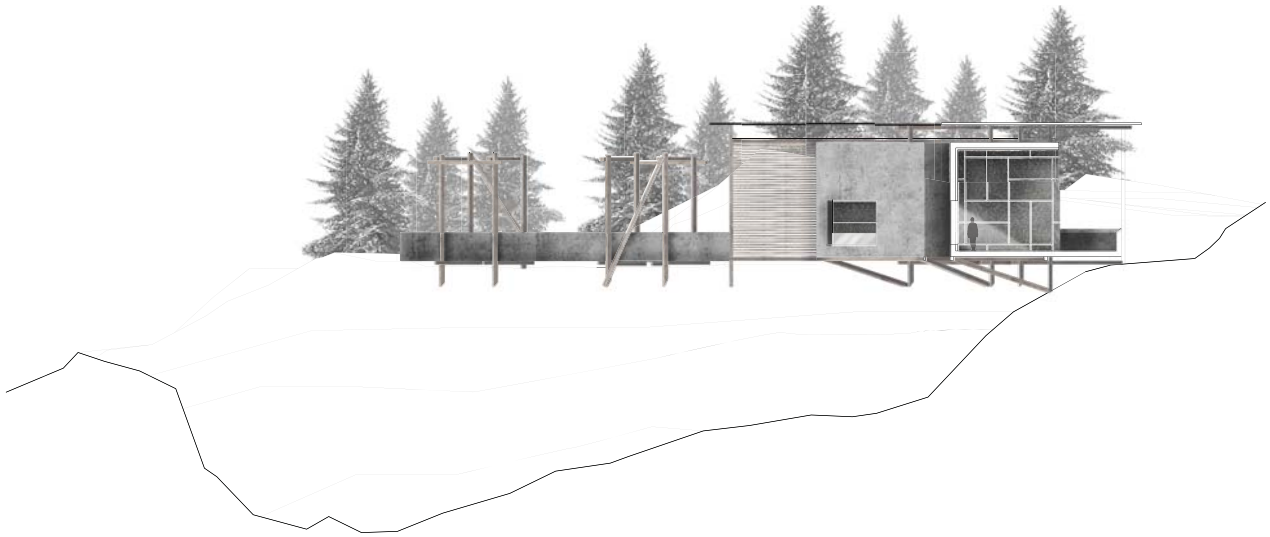
Perspective “The Portal” - Towards gorge

Inner roof in City hall used in pavilion

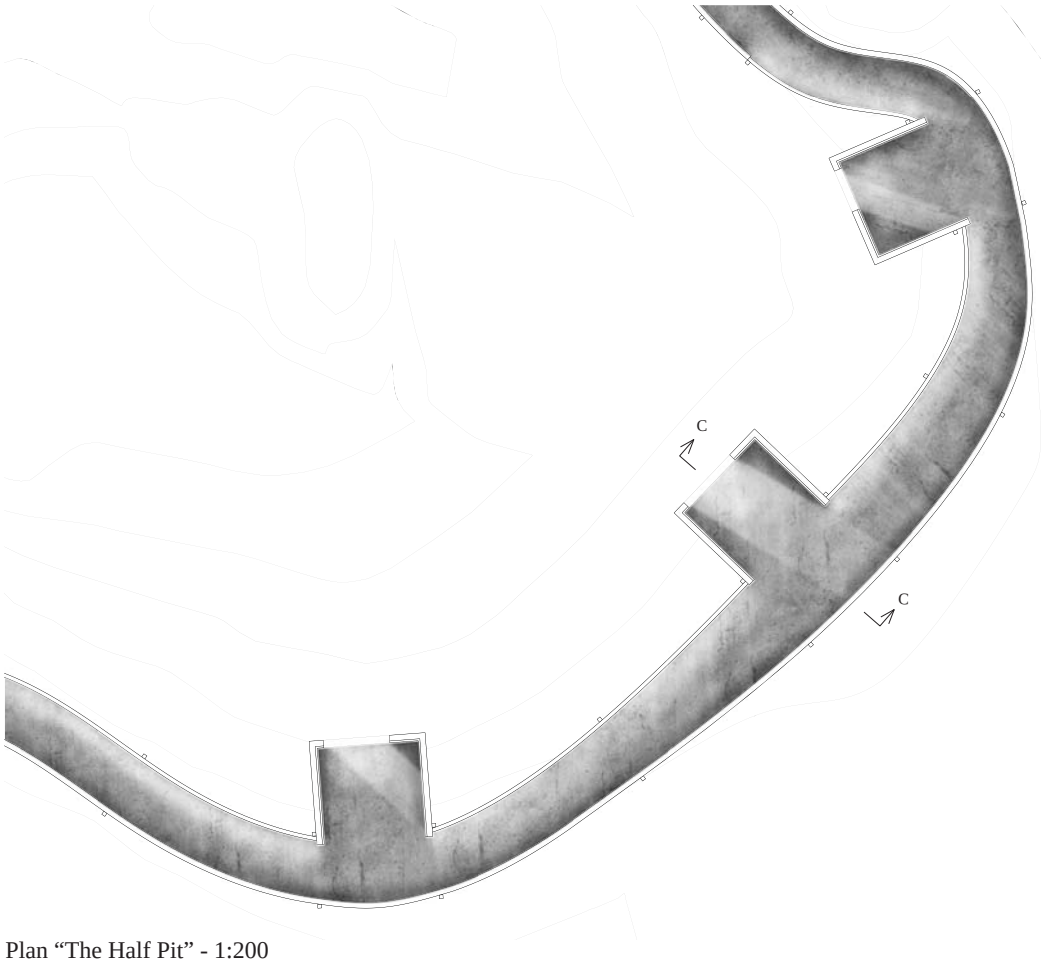


Model “The Portal” - 1:50

“The Half Pit”



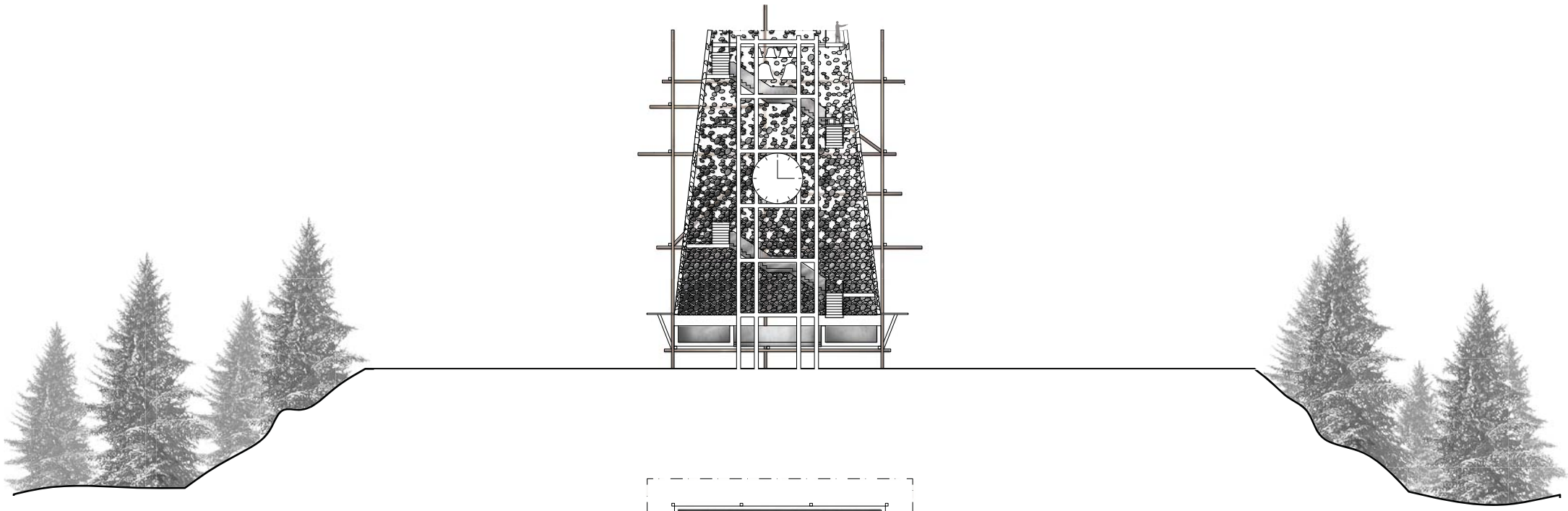
Section “The Half Pit” - 1:200



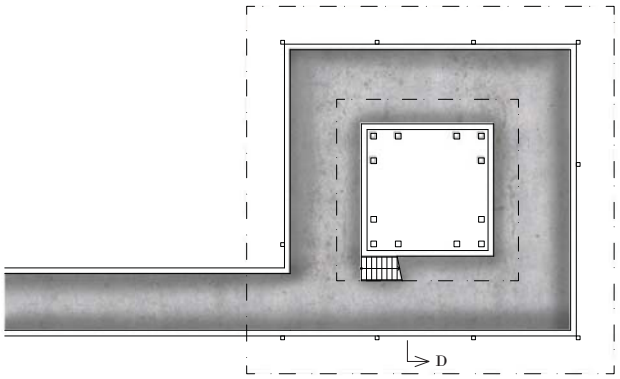
Plan “The Half Pit” - 1:200

View towards gorge - The half pit

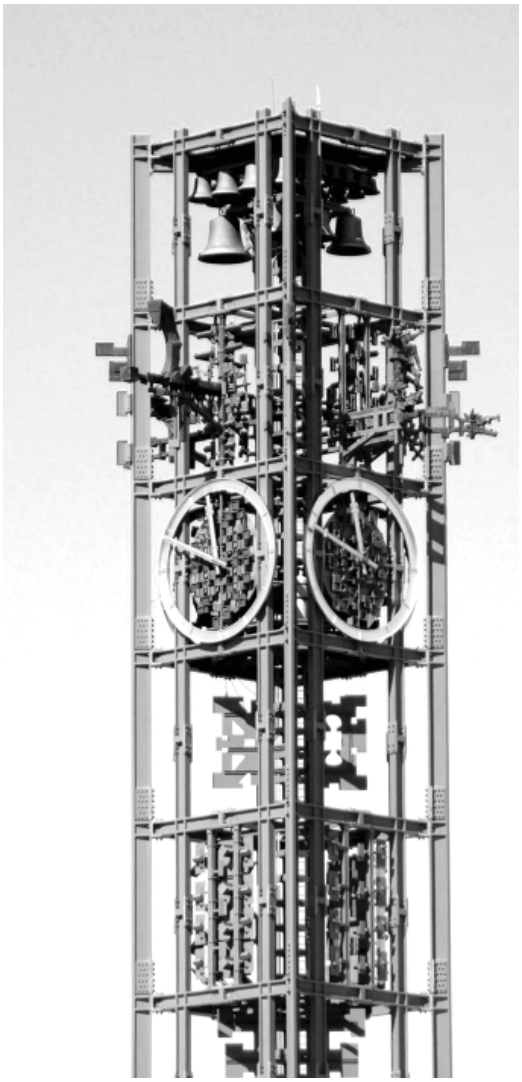
“The Plateau”



Section “The Plateau” - 1:200

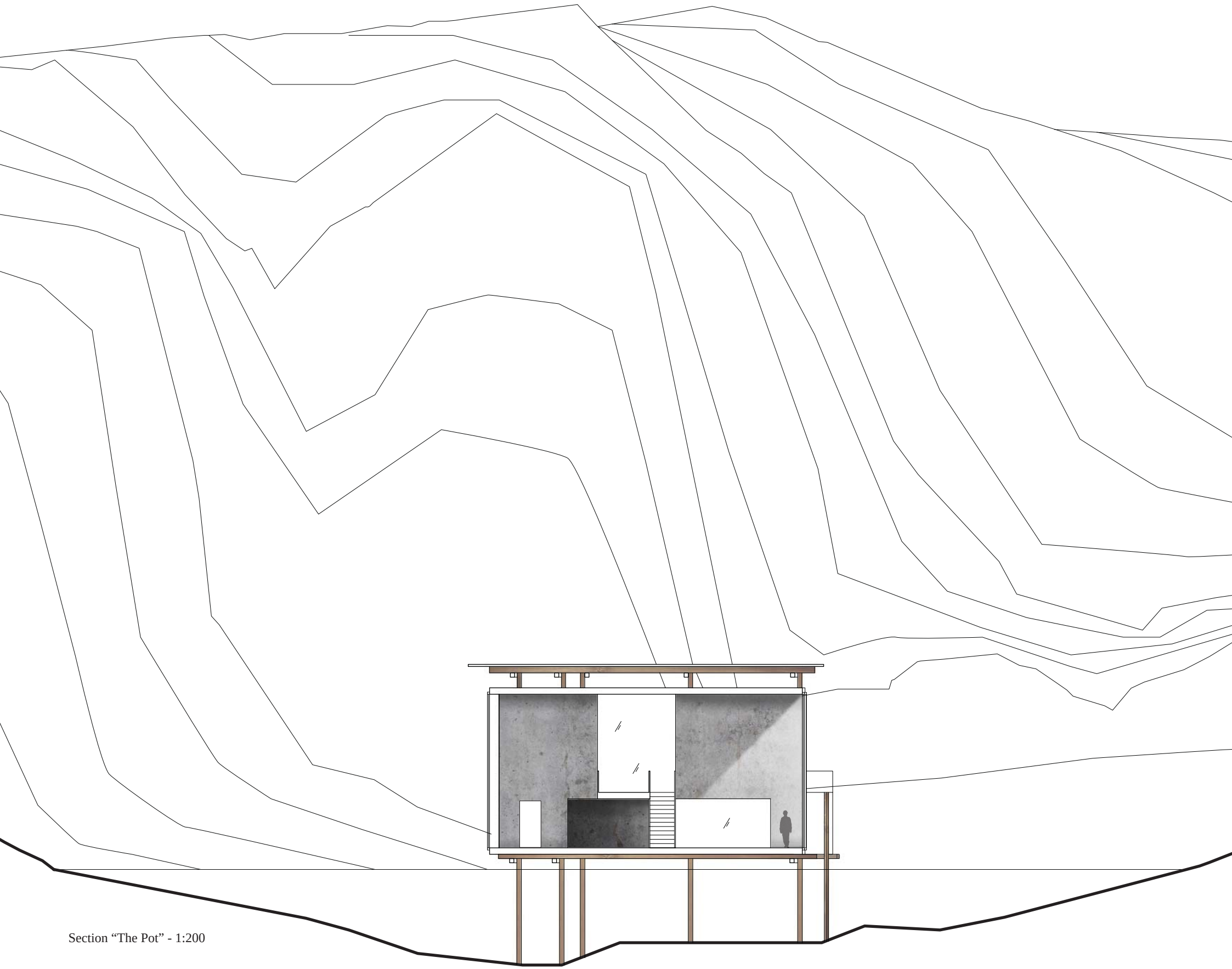


Plan “The Plateau” - 1:200

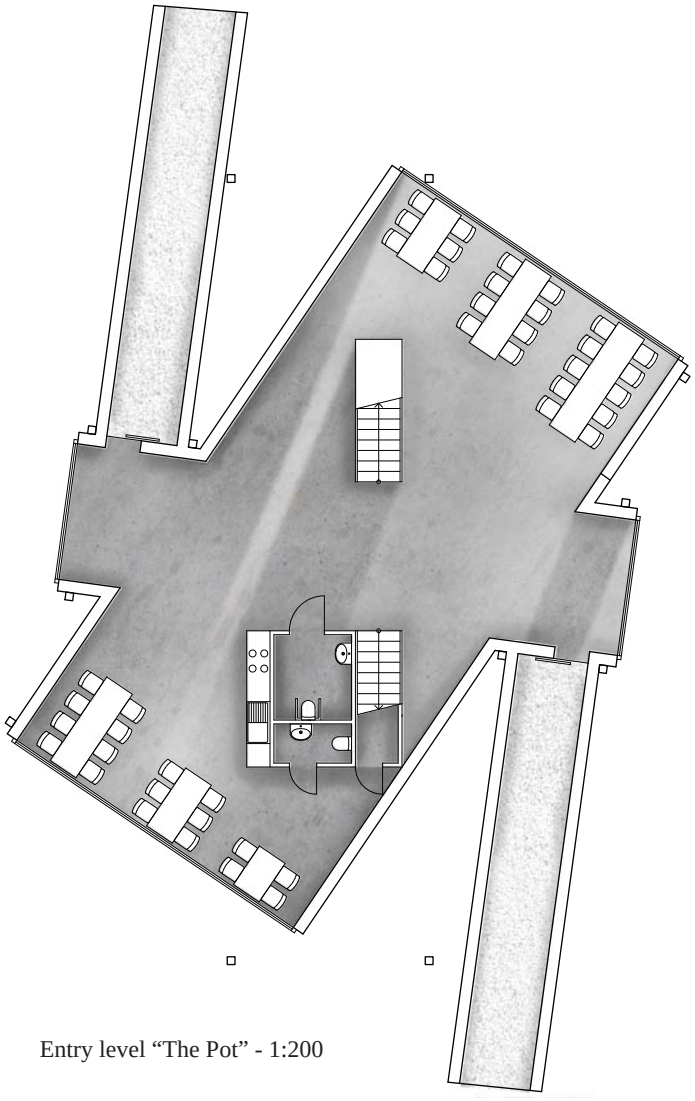


Clock tower from City hall used in pavilion

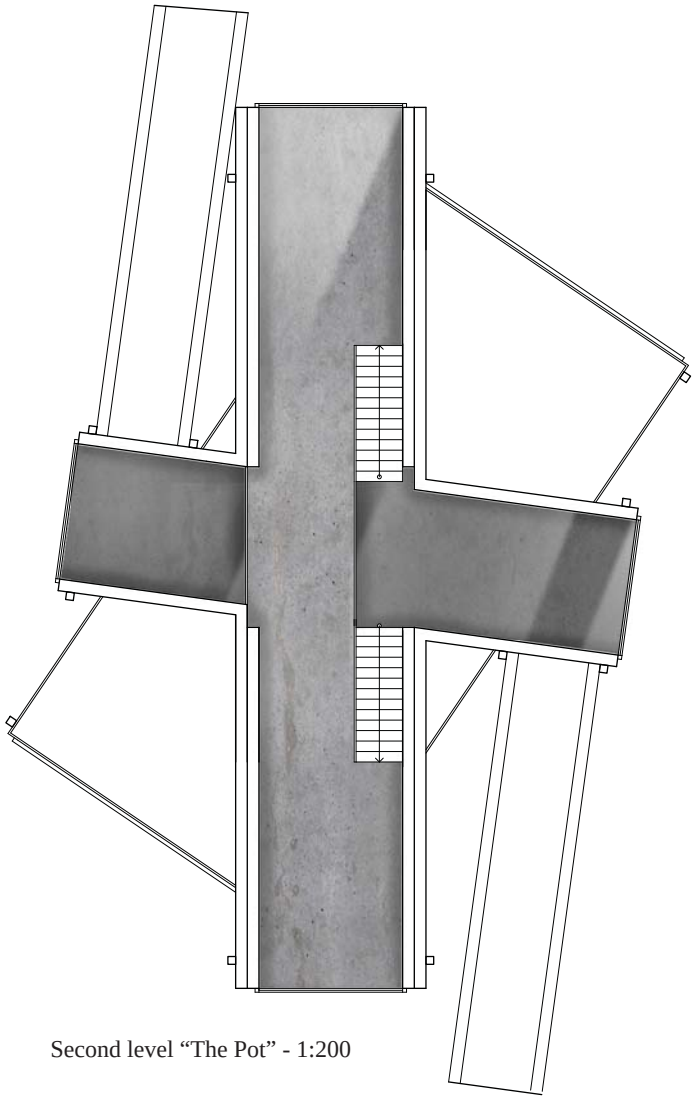
“The Pot”



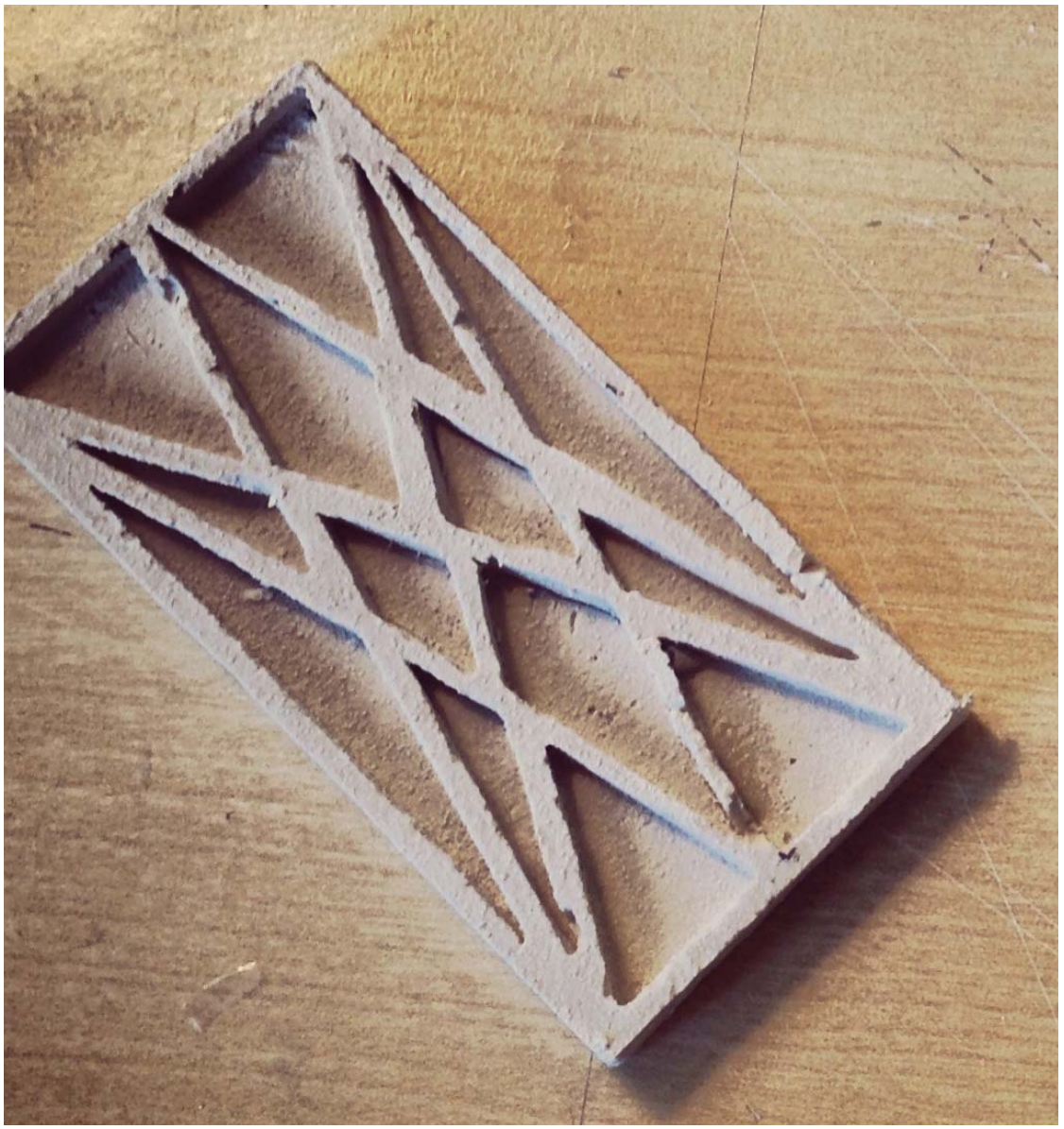
Section “The Pot” - 1:200



Entry level “The Pot” - 1:200



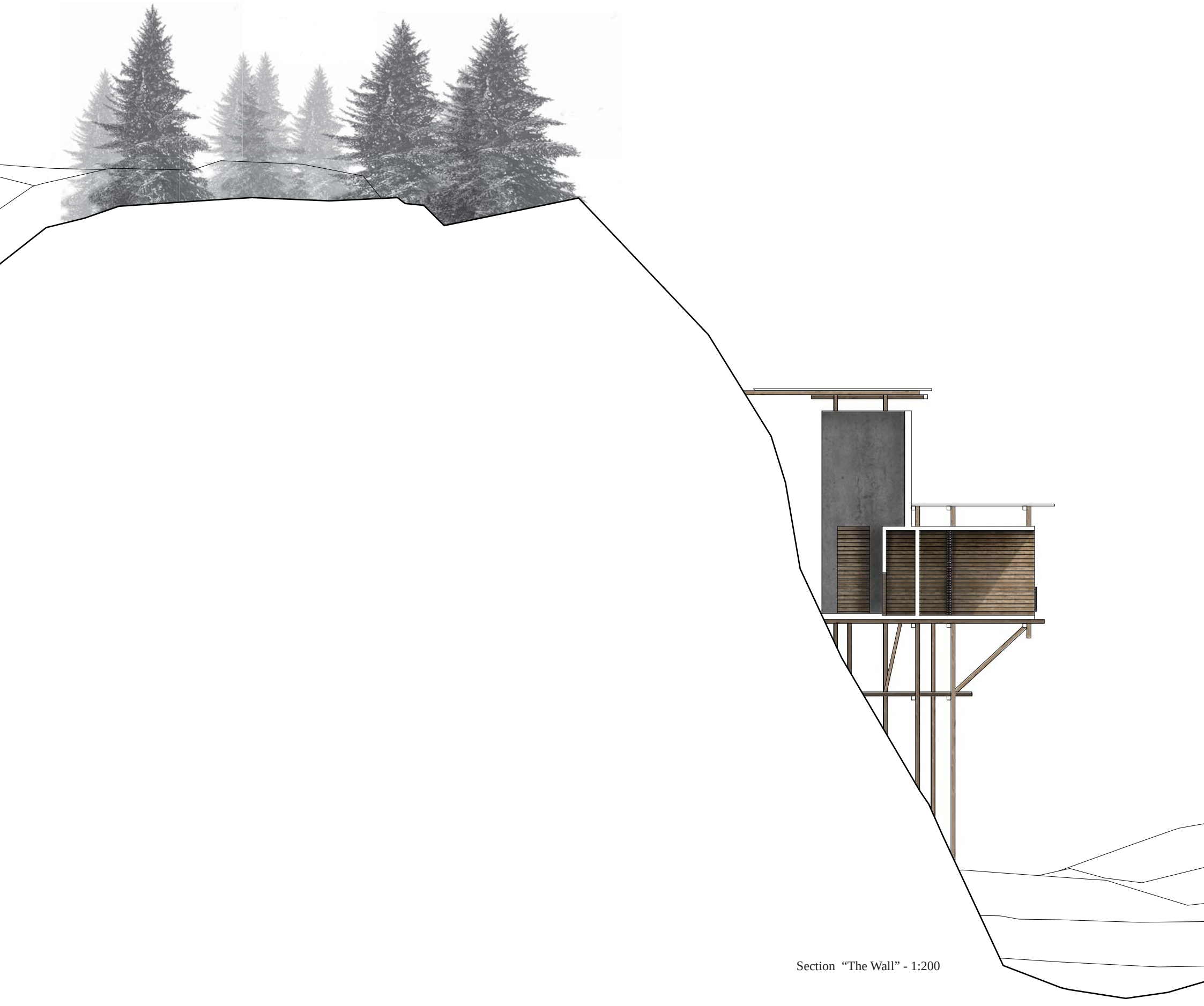
Second level “The Pot” - 1:200



Model of detail - 1:50. Inner roof from City hall used in pavilion.

Perspective “The Pot” - Towards gorge

“The Wall”



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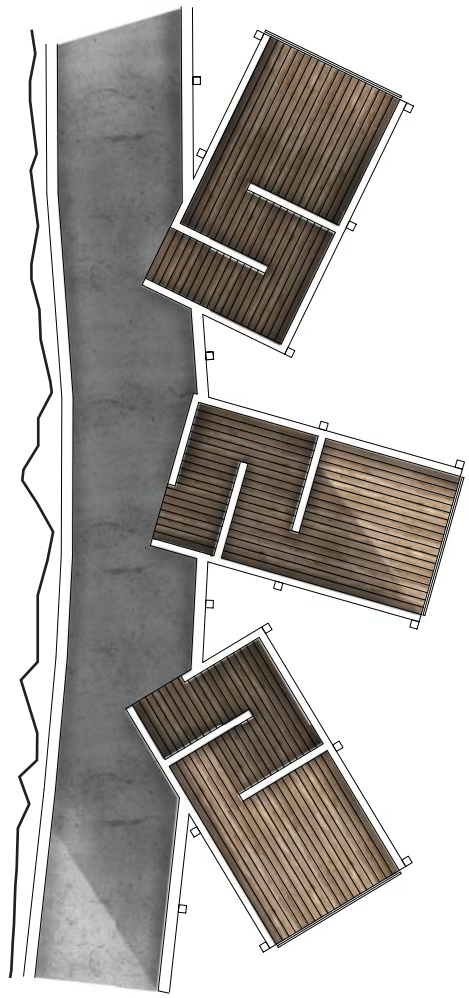
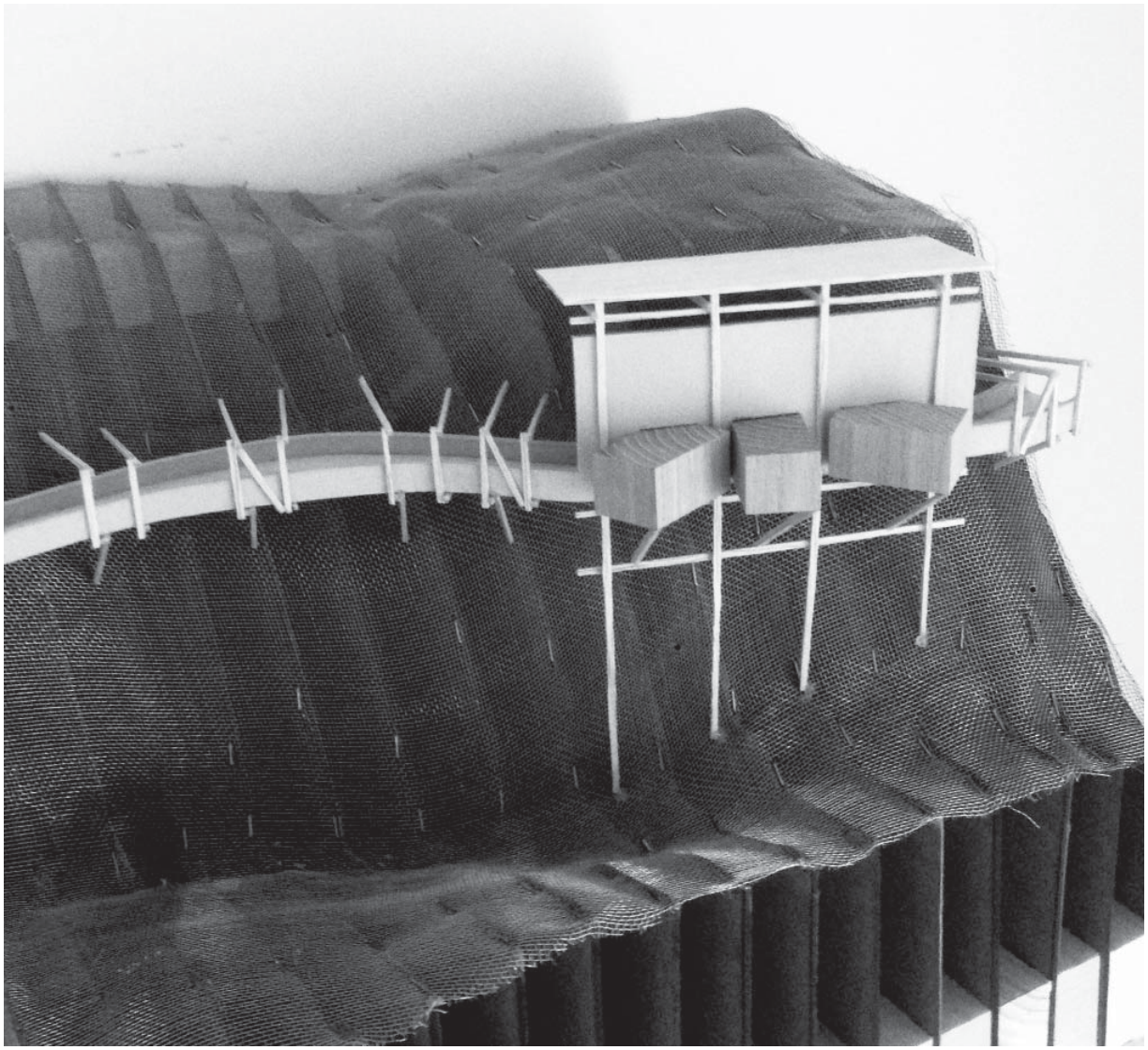


Section “The Wall” - 1:200

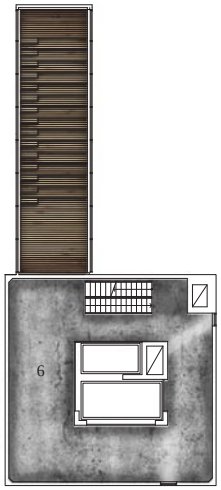


Model “The Wall” - 1:200

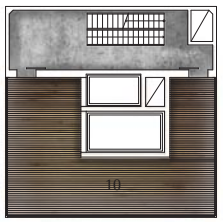
Perspective “The Wall” - Along path

Brick wall from city hall used in pavilion

“The Orthagonal Headframe”



LEVEL 2



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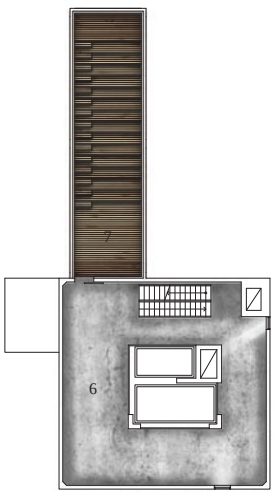

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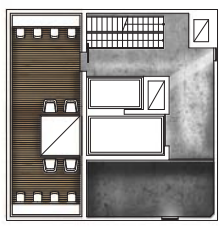

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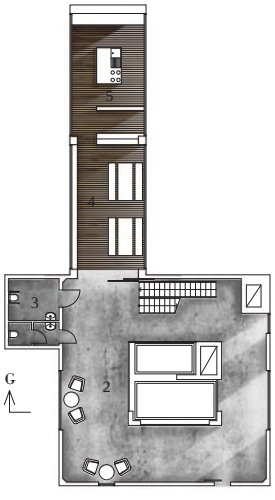

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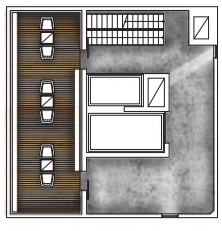

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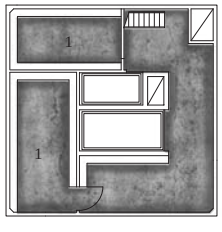

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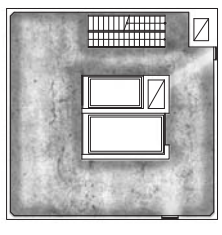
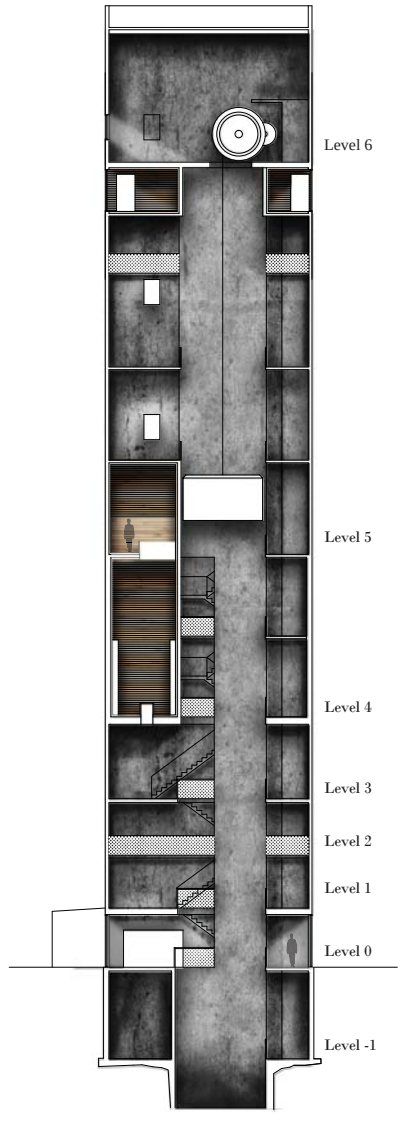


LEVEL 3

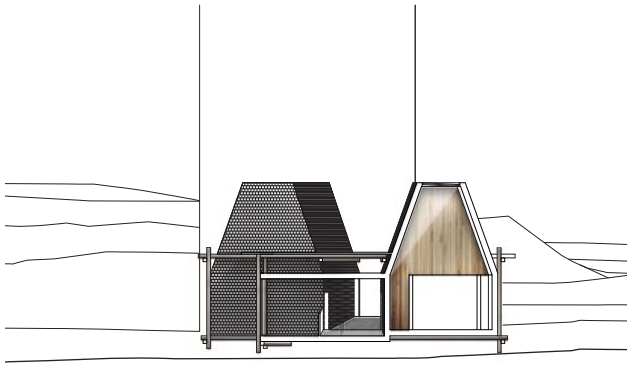
PLANS 1:200



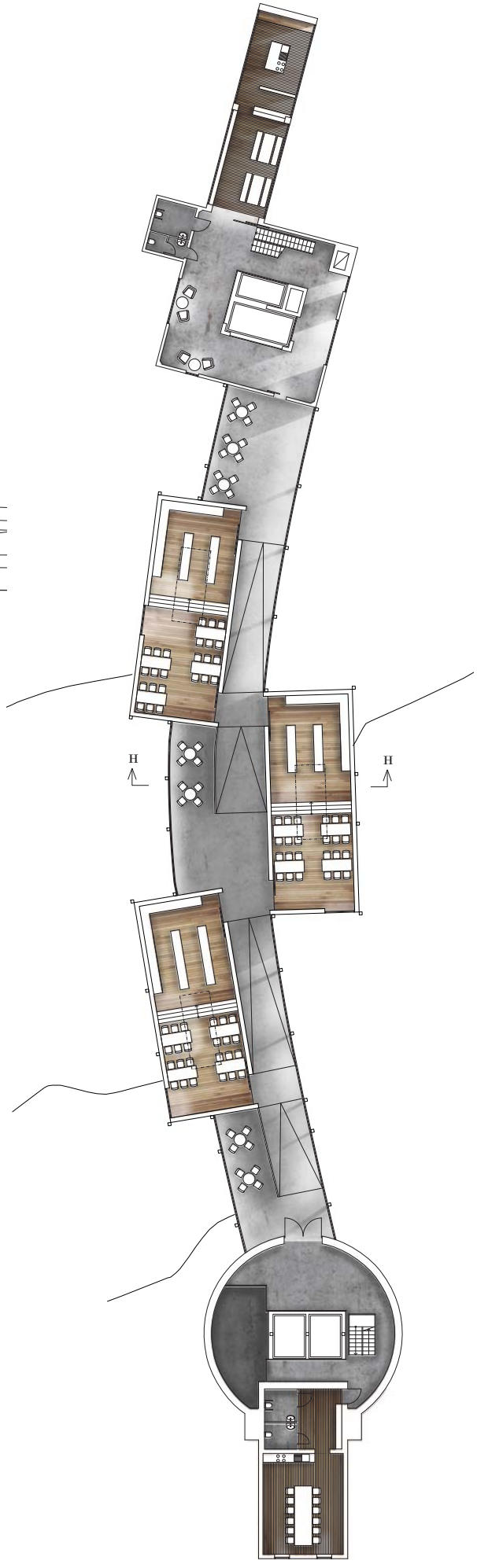
SECTION G-G 1:200

1. STORAGE
2. FOYER
3. TOILETS
4. CAFÉ
5. KITCHEN
6. EXHIBITIONS
7. AUDITORIUM
8. LIBRARY
9. MEDIA ROOM
10.PANORAMA

“The Archives”



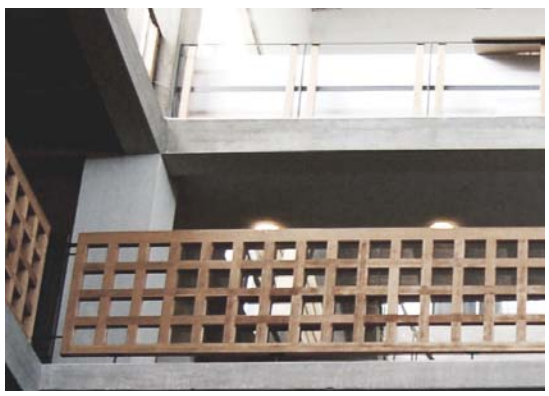
Section “Archives - 1:200



Plan “Archives - 1:200

VIEW

Perspective “Archives” - View along path



Railing from City hall used in buildings.

Part 6

Conclusion

The master thesis Re-Collection has been a deep dive into the urban situation of Kiruna. They are facing the overwhelming task of dealing with the consequences of the deformation. The suggestion of this proposal is to actively investigate what could be done with the structures that holds strong identity for the city and the collective memory. When dealing with the issue of heritage do we have to be sentimental? The master thesis Re-Collection has also been an investigation into how we perceive these industrial areas. There is a concrete problem for the municipality with the closed off area. They are dealing with the deformation zone on the other side of the city trying to avoid fences, but in reality they are moving to a similar situation. Can you find strengths in these man made landscapes when the former use is gone? Can you look upon them with eyes we would a natural reserve for example? There is iron ore almost everywhere in these regions. If you look upon the development of this business it is most likely to expand heavily. In the future we will probably be facing similar situations in close vicinity to urban areas. The focus in this master thesis has been to not just see this area as a problem, but on the contrary look upon it as an important industrial heritage, an interesting man made landscape and functional structures that can be transformed or developed.

Thoughts about memory has pervaded the project. The project tries to argue that it is important to know how we perceive space and how we store the information that leads to memory recall. Spatial memory is closely tied to architecture. If we actively have these thoughts in mind our perception about the spaces we move around might be facilitated. It does not only apply to people with cognitive disabilities but people in general. Specially when you are designing spaces that actively wants to focus on certain features. It does not only have to be the visual, it is important to know how the spatial memory works and how our brains perceive our surroundings. The concrete design proposal is actively choosing to handle the path as the main common theme. This is something that you could establish quite easily. The construction of the path in the proposal has to be elaborated more to be convincing but the main design theme with the fragility of the construction and the heaviness of the concrete path is something

that could be very effectful in the landscape. That every pavilion is different is a conscious choice. It is an attempt to enhance every topographical typologies' difference from each other and to contrast or enhance features of that particular place. It is also a thought that if the project is realized, every pavilion will be designed by a different artist or architect with the consequence of the pavilions probably being very different form each-other. The headframes came into the project quite late because of lack of drawings but they have great potential. The thesis proposes a delicate development of them into museums or visitors center. It tries to argue that the spaces should be shown the way they are and they are strongest as spatial experience the way they are left. To enhance to rough, hard, volumous spaces the project tries to establish contrast by simple act of adding a new material and a new climactic situation in the small confined spaces. If taking this project further it is important to have a convincing structural scheme over the path and pavilions, and more details around every certain place in the landscape. But furthermost the structures below ground has great potential and should be elaborated more.

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