



CHALMERS
UNIVERSITY OF TECHNOLOGY

In the Quarry:
Architectural Investigations into the Preservation of Spirit

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Summary

Our experience and understanding of our heritage are of great importance when it comes to orienting ourselves with our surroundings. To preserve historical environments is to protect our sense of belonging. However, protection of heritage is not only about architectural restoration or preservation, it can also be achieved through additions and transformations.

This thesis is about catching the spirit of a place through historic, cultural and natural studies. That is, to find a chosen site's essence – the tracks of the past and present that form a human meaning. The studies are made in a phenomenological manner, with Christian Norberg Schulz's theories as a base.

The gained knowledge from a phenomenological site analysis act as the anchor in an architectural design process. The project takes place in a slate stone quarry in southern Bohuslän. This site has held different important functions throughout the centuries. The extracted slate stone from the mountain side have helped build several influential historic buildings, such as two nearby 16th century fortifications. Today, the quarrying is still active, but to a limited extent.

Drawing by hand is the main method in both the preparatory study and the architectural design process. This approach enhances the focus of emotional rather than precise execution of the project.

The aim of this project is to preserve and update a local vernacular tradition while simultaneously transform a purely industrial site to a public, educational and recreational destination. The project investigates and discuss heritage, memory and the spirit of place through architectural actions that in different ways tell stories about the site's specific historical context.

Theory Introduction

The Genius Loci Theme

Genius loci is a roman concept. According to ancient Roman belief every independent being or object has its genius, its guardian spirit. This spirit gives life to people and places and determines their *character or essence*. The Romans experienced their environment as consisting of definite characters. They recognised the importance of coming to terms with the genius of the locality where their life took place.

The human – nature relationship is elemental. Our survival has depended on a good relationship to our environment, in a physical as well as a psychical sense. During the course of history the genius loci has remained a living reality, although it may not have been expressively named as such. Artists and writers have explained the phenomena of everyday life by referring to natural and urban environments.

“It is evident, that the eye is educated by the things it sees from childhood on, and therefore Venetian painters must see everything clearer and with more joy than other people.”

– *Goethe*

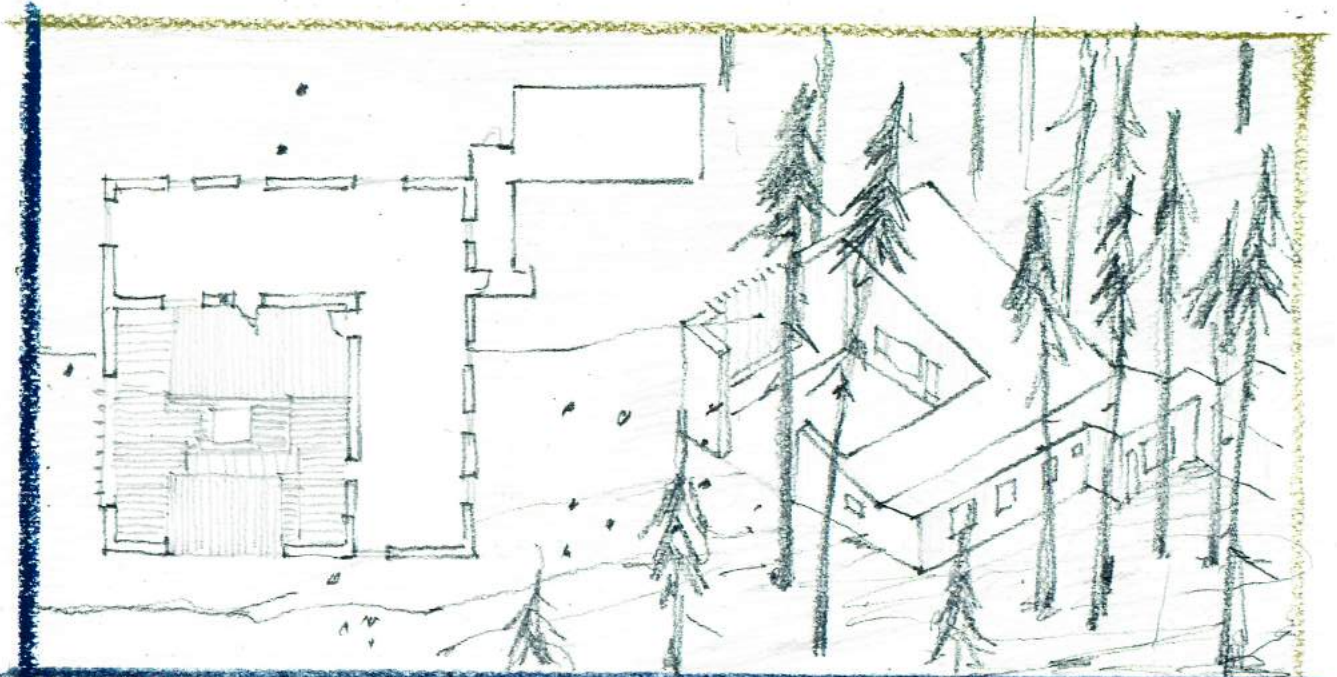


The Phenomenon of Place

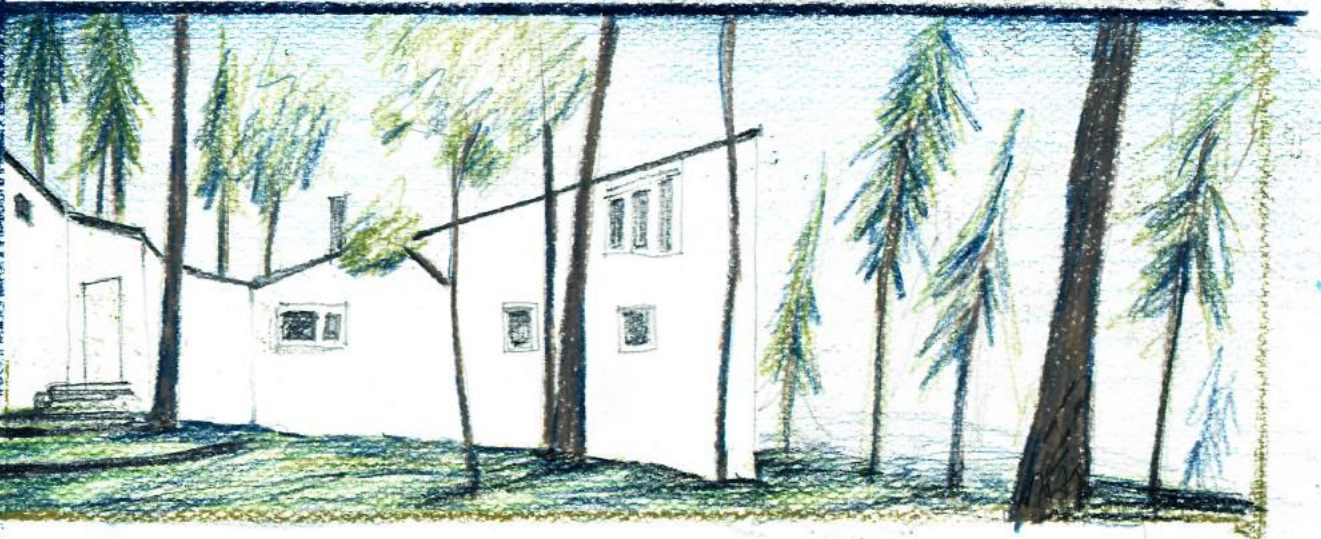
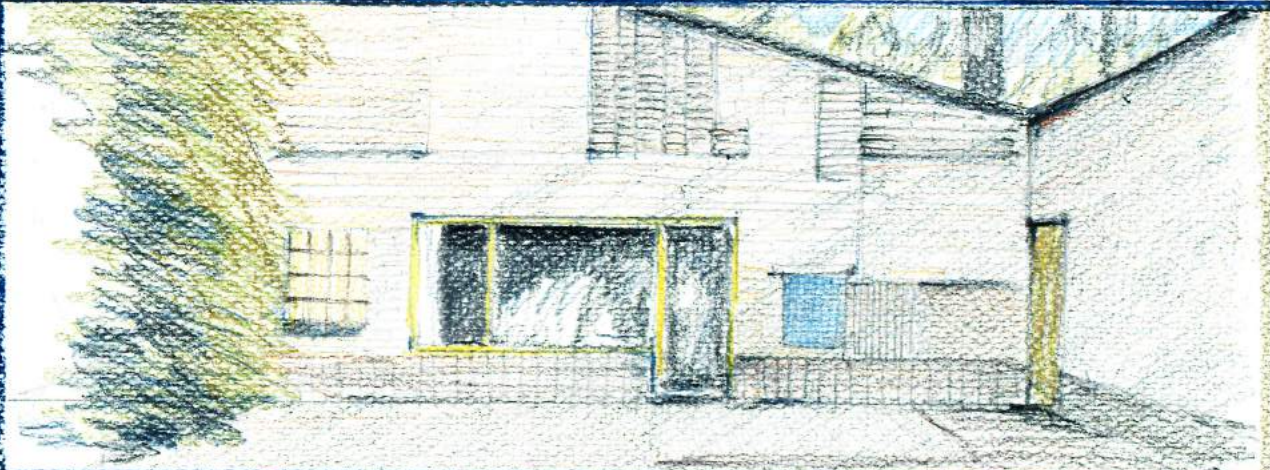
Our world consists of concrete phenomena, physical things. Things such as forests, mountains, water, animals, houses, paintings, industries and furniture. Our world consists of the changing of seasons, the sun, the moon and the stars. These things retain intangible phenomena, such as feelings and memories.

All these things are interrelated in various complex ways. To put it simply, we may say that some phenomena form environments to others. An even simpler term for environment is *place*.

A place is not an abstract location, but a totality made up of physical things with certain colours, textures and meanings. These things create an environmental character, or an atmosphere.



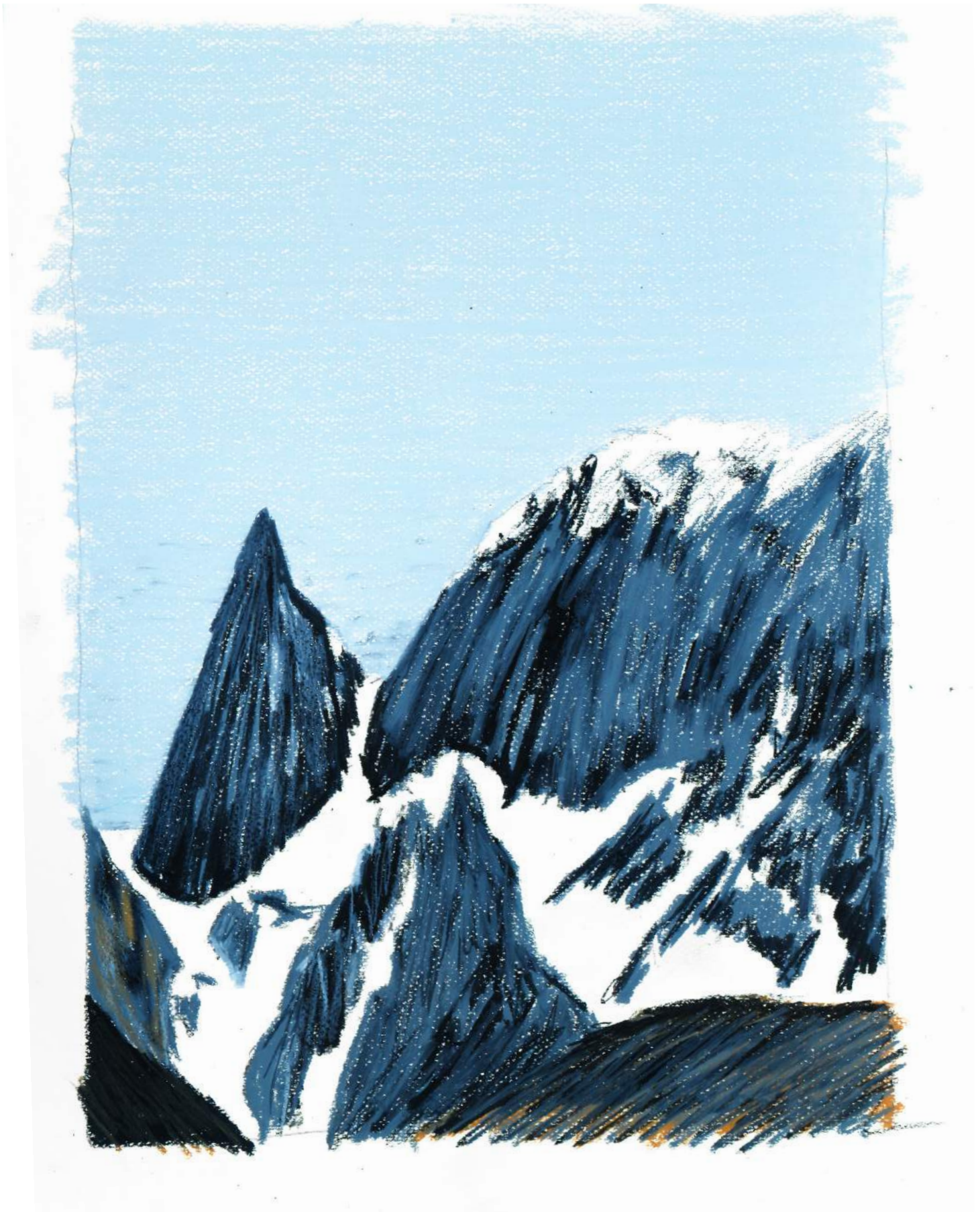
ALVAR AALTO · MUURATSALO · SÄYNÄTSALO · 1953



Heaven and Earth

Perhaps the most basic elements of any place are the heaven and the Earth. In several ancient cultures the creation of the world is understood as a marriage between heaven and Earth, the Earth is where human beings dwell and heaven is the home of gods.

The mountain belongs to the Earth, but it rises towards the sky. Its peak is therefore *close to heaven*, it becomes a meeting point of the two basic elements. Mountains have been of great importance in religious belief as places or centres where cosmic zones are intersected, so called *axis mundis*. The tree holds similar spiritual meanings, as it too, as a living thing, rises from the ground towards the sky.



Vegetation

In all cultures, vegetation in general is seen as the manifestation of life and prosperity. But in some forms it can also be mysterious and frightening.

“We do not have to be long in the woods to experience the rather anxious impression of going deeper and deeper into a limitless world. Soon, if we do not know where we are going we no longer know where we are” – *Bachelard*

However, when the forest is delimited and becomes a grove, it is apprehensive and meaningful. We can then get to know it and define it as a place. The Paradise has in fact been imagined as an enclosed grove or a garden. In the images of Paradise we encounter another basic natural element, water.

In Genesis, God separates the land from the water after creating heaven and Earth, light and darkness. In many cultures, water has been a true symbol for life. In the history of landscape painting we can see the perceived importance of water as a natural element. Fifteenth and sixteenth century painters often placed a river or lake centrally in their pictured ideal landscapes.



Birch forest

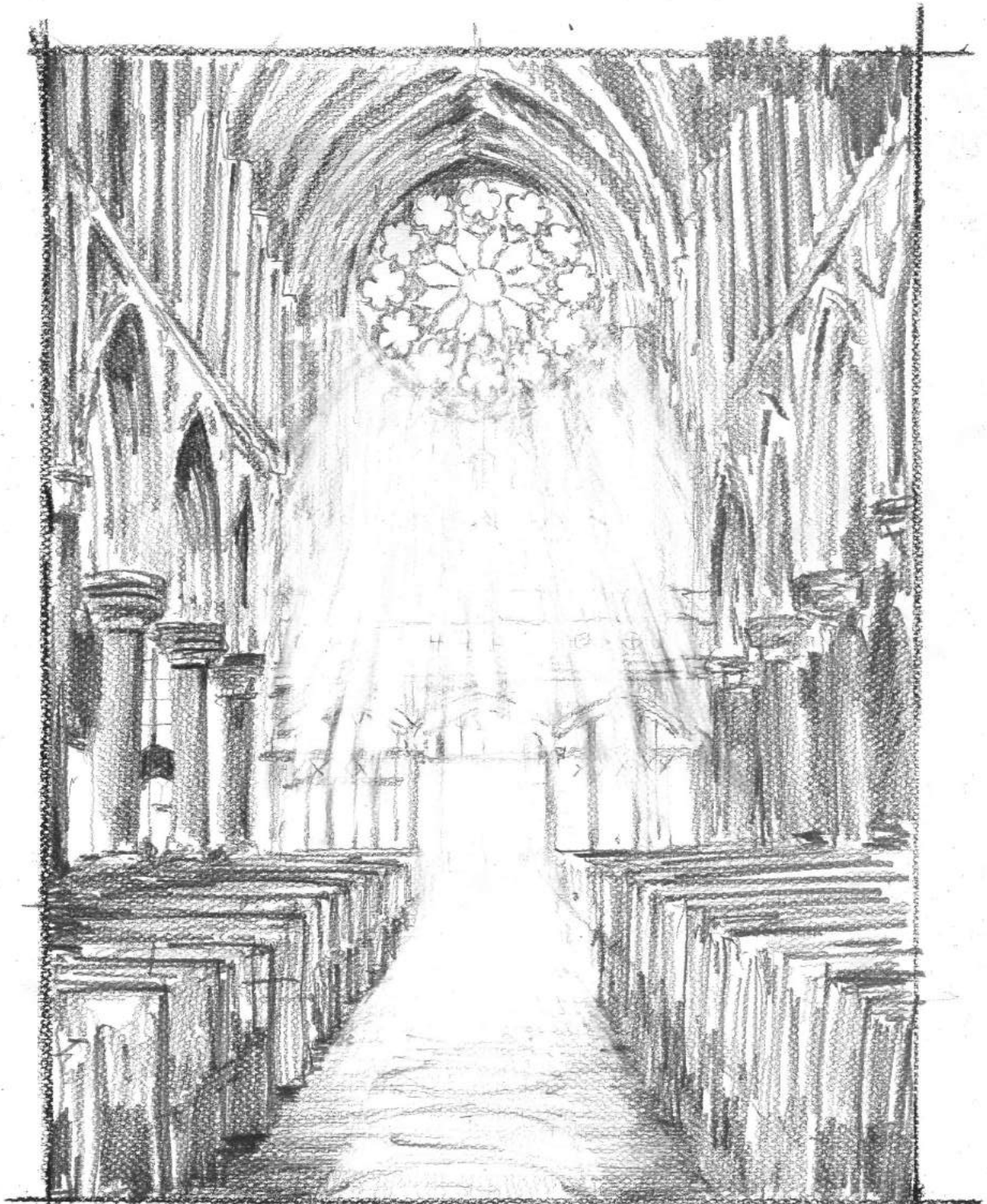
Light

Light is a very central part in cultural history as well as in the character of a place. In greek civilisation light was connected with the god Apollo and perceived as the symbol for artistic and intellectual knowledge. In christianity, light became connected with love and a manifestation of the holy spirit. In Byzantine painting, divine light is pictured as golden halos surrounding the main figures.

“The divine light penetrates the universe according to its dignity”
- *Dante*

Dante’s quote tells us about a fundamental way to look at the world. A view that measures environments and their light, in some kind of divine hierarchy system. In Renaissance painting however, the world is presented by the understanding that God lives in all things. The painters pictured landscapes and situations where everything down to the smallest detail seems fully understood and loved.

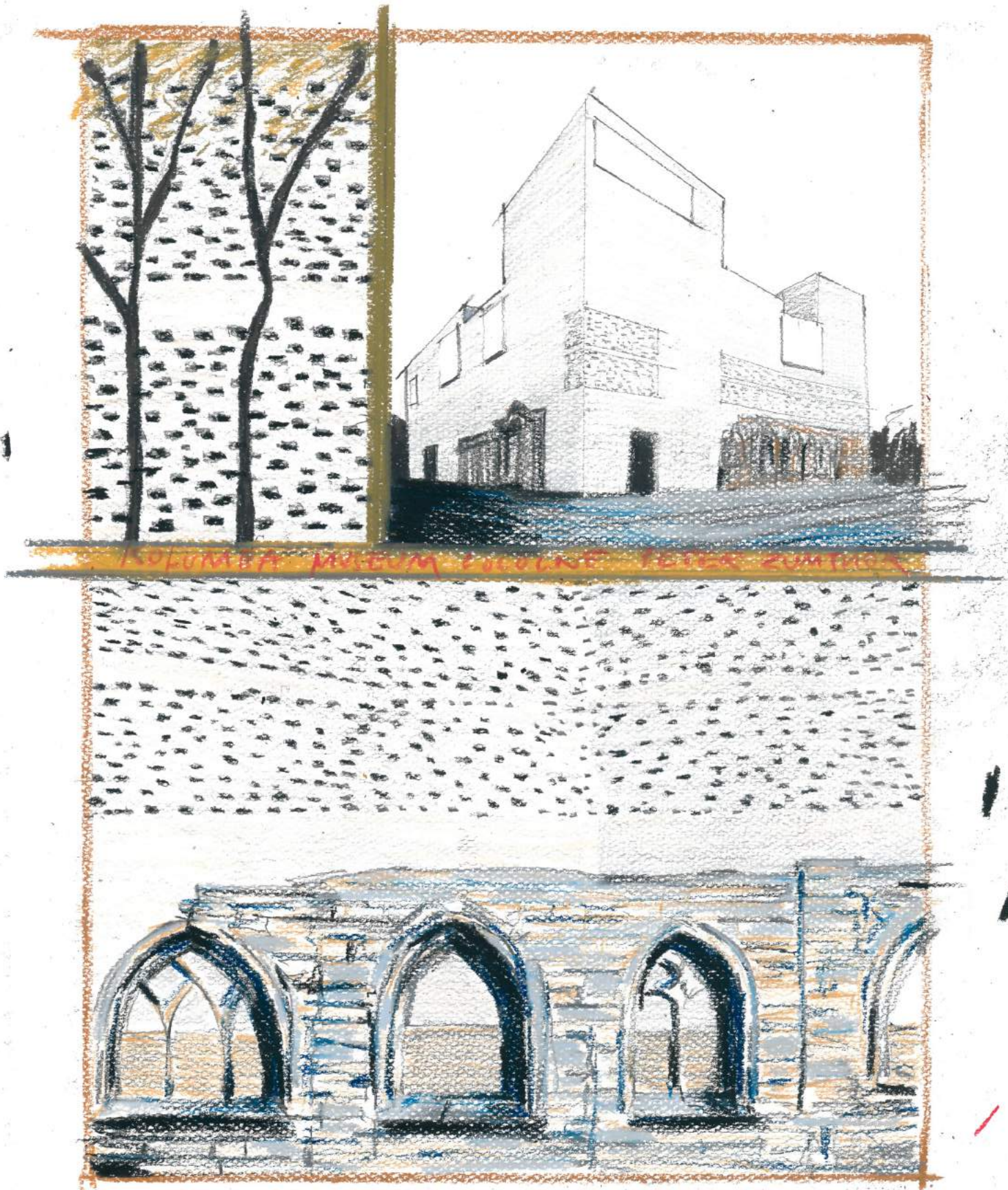
Light is one of the most general natural phenomena but also the least constant. It is ever changing during the day from dusk to dawn. And depending on where we are on Earth the sun shines in different angles towards us. It’s character changes over the seasons and different places plays with light in different ways.



Character

To grasp a character of a place we must ask questions about *how* things are. How is the ground we walk on? How is the sky above over heads? How does a building rest on the ground, and how is it rising towards the sky?

These are of course all subjective matters. We can interpret objects and places in different ways depending on our legacy. However, it is not farfetched to say that many of us also share feelings towards certain things and situations.



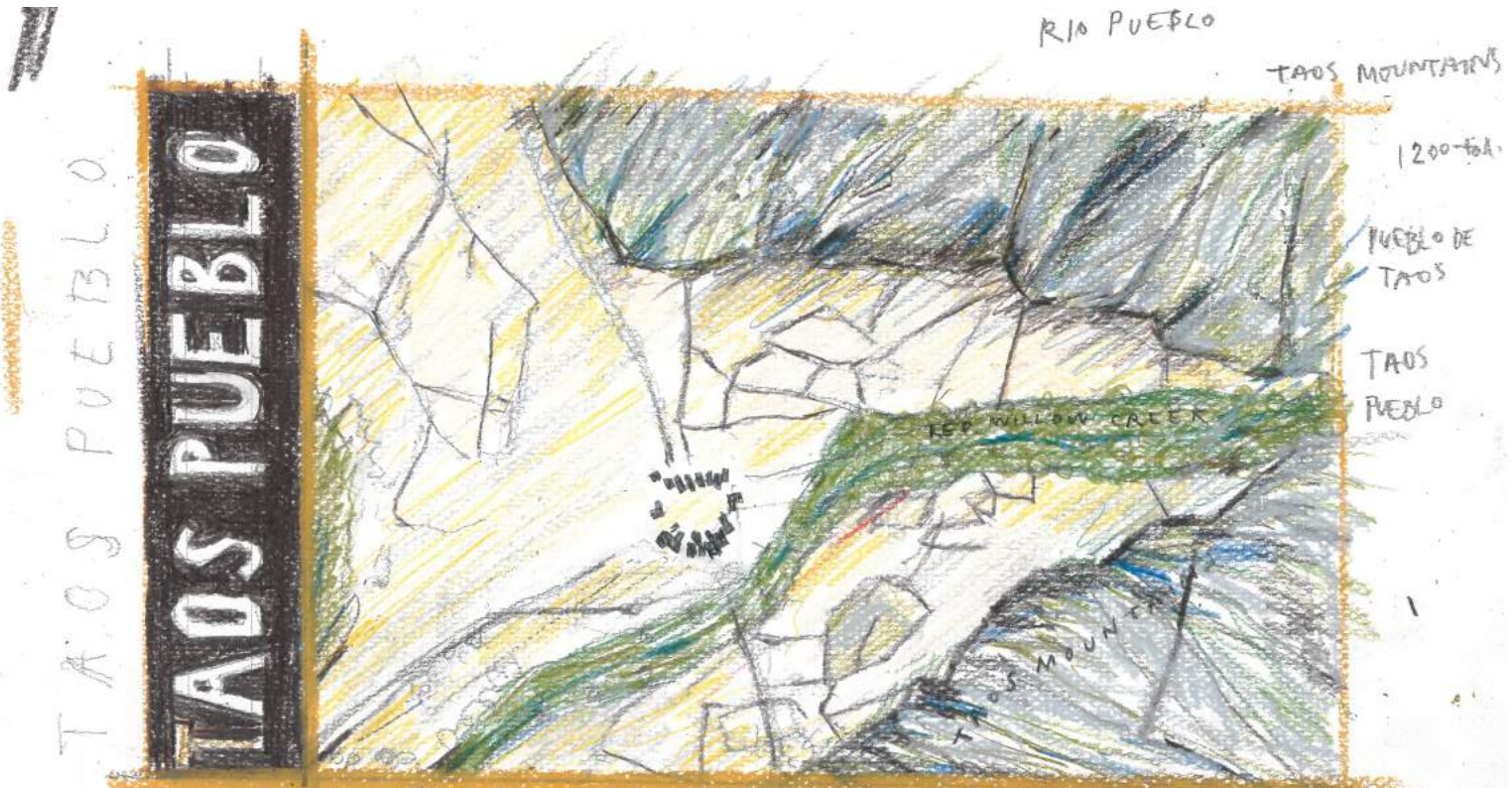
The Structure of Place

Landscape and Settlement

The structure of a place can be described in terms of landscape and settlement, and analysed by means of *space* and *character*. Space denotes the three dimensional organisation, while character denotes the atmosphere of a place.

The general quality of a landscape is its *extension*. The character is determined by how it extends. Surface reliefs create directions and define spaces in the natural environment. The relief can form a friendly, inviting landscape, or the opposite. Further, the landscape surface can be described as fertile or barren.

Human settlements appear as enclosed entities in the landscape. A so called figure - ground relationship where the ground is ever extending and the settlements create protected, meaningful insides. Depending on which scale we are looking at a landscape, this enclosure could be in the size of a city, or a group of tents.



Pueblo de Taos, is an ancient belonging to the Puebloan Native American Tribe

Earth and Sky

Being on Earth implies to be under the sky. Even if the sky is distant and intangible, it has concrete properties and an important characterising function. We often take the sky for granted, because we *know our sky*. It is when we are visiting a new place we can get the notion that the sky is for example *high* or *low*. The sky's effect is basically due to two factors. The constitution of the sky, how its colour and light appear, and how the clouds look and change. Secondly, how the sky relates to the ground. Does the sky and ocean meet and create a complete hemisphere? Or is the sky only visible through dense tree crowns? How does the relation change with the weather?



Pine forest

In their 1990's UK hit *Little Fluffy Clouds*, London electronic music group The Orb samples an interview with artist Rickie Lee Jones, where she reminisces over her childhood's skies.

Interviewer: What were the skies like when you were young?

Jones: They went on forever – They – When I w- We lived in Arizona, and the skies always had little fluffy clouds in 'em, and, uh... they were long... and clear and... there were lots of stars at night. And, uh, when it would rain, it would all turn – it- They were beautiful, the most beautiful skies as a matter of fact. Um, the sunsets were purple and red and yellow and on fire, and the clouds would catch the colours everywhere. That's uh, neat 'cause I used to look at them all the time, when I was little. You don't see that. You might still see them in the desert.

-

The relationship between sky and earth has infinite variations across the globe. The landscape can act as silhouettes with the sky as a simple backdrop, or the two can blend together to a unity.

"There are places where sky and earth seem to have realised a particularly happy marriage." – *Christian Norberg – Schulz*

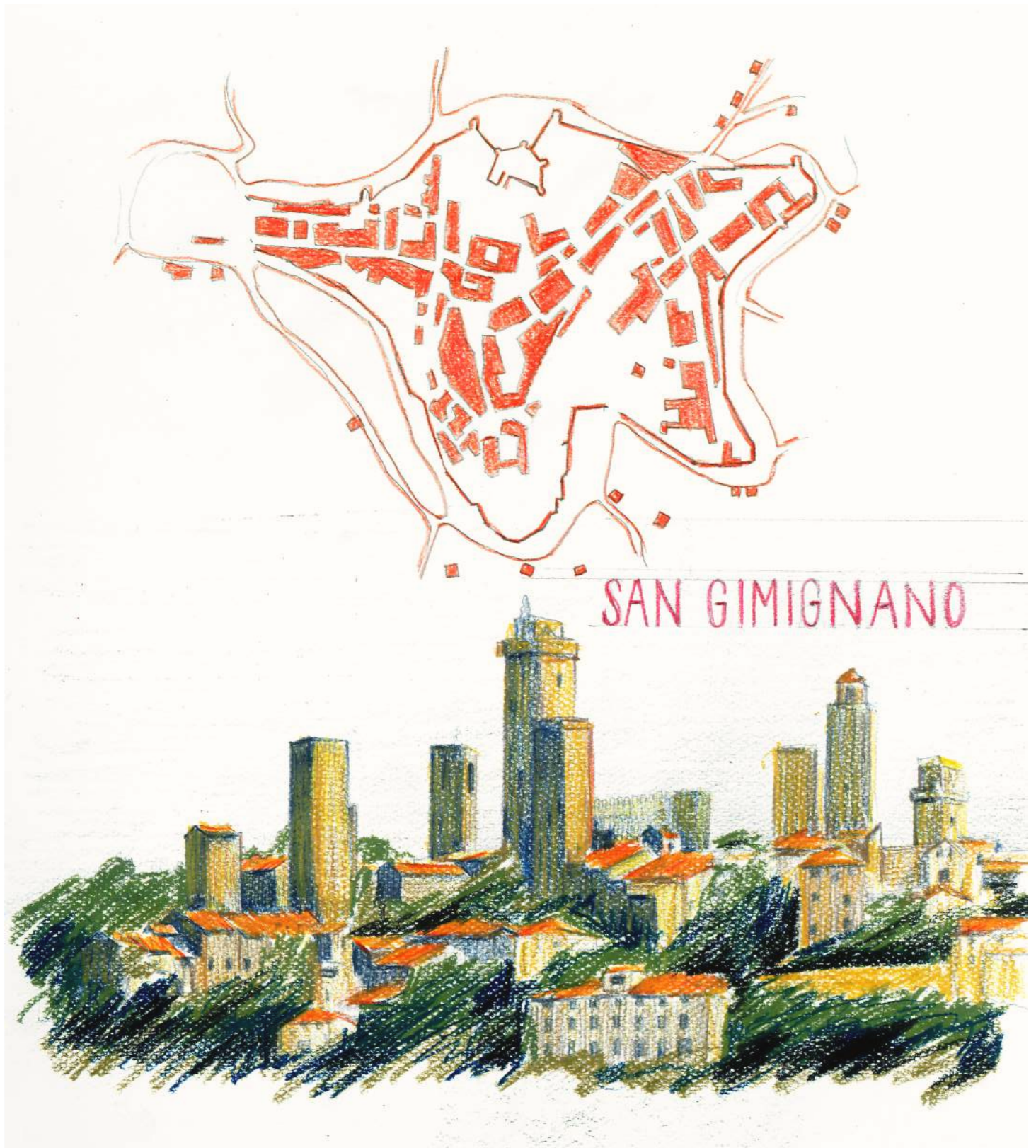


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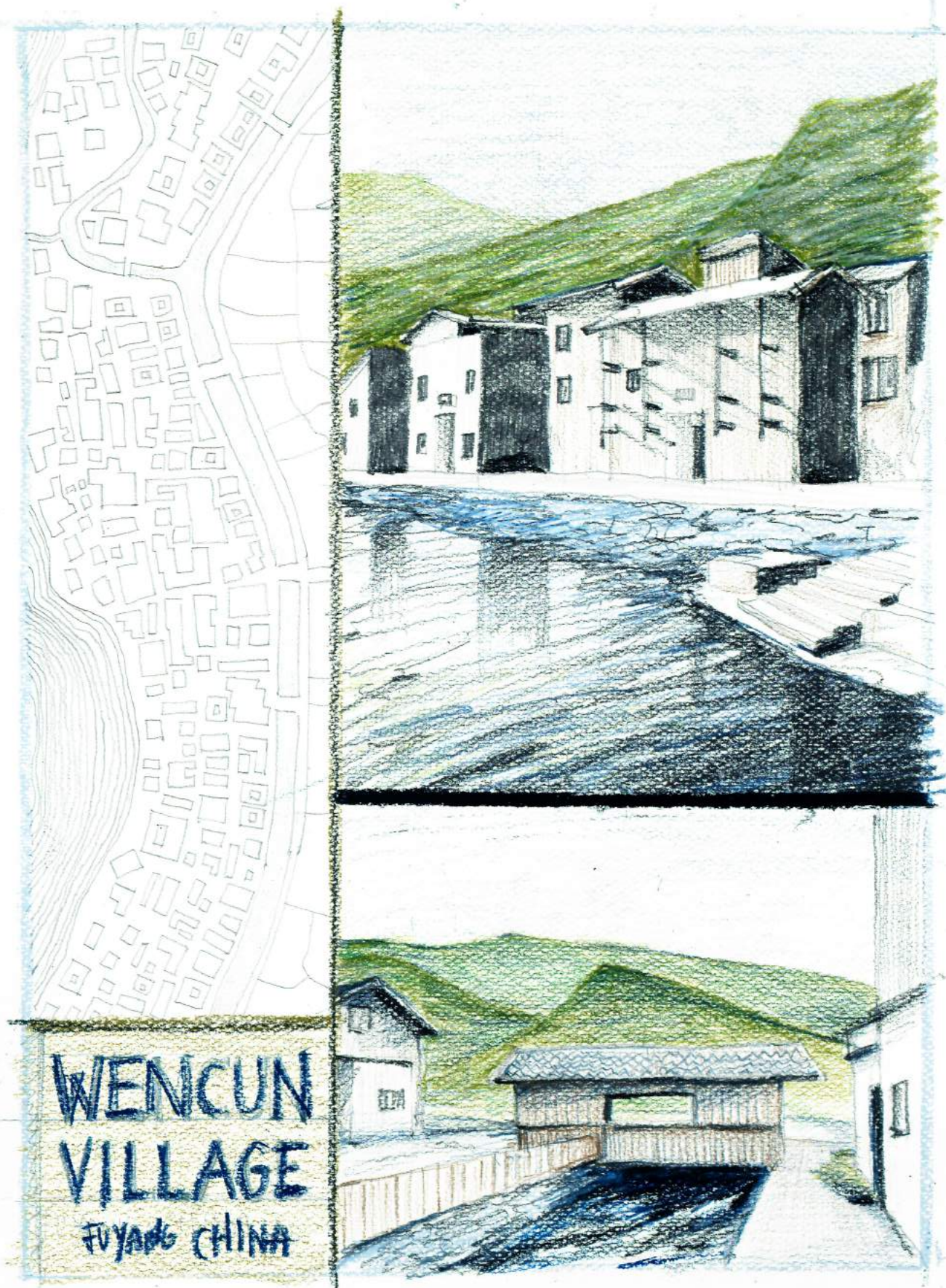
The Purpose of Architecture

The existential purpose of architecture is to make a site become a place. That is to uncover the meanings potentially present in the given environment.

Human built places are related to nature in three basic ways. Firstly, we want to make the natural structure more precise. We want to visualise *our understanding of a natural place*. For example, where nature suggests a delimited space we build an enclosure and where nature indicates a direction we make a path. Secondly we *complement nature of what it is lacking*, by adding functions we find necessary. Finally we symbolise our understandings. We translate our *experienced meaning of a place* into a physical building with a certain character, to make it a part of a certain cultural context, or to separate them.



The structure of a place is not a fixed eternal state. A place will always change, sometimes rapidly, sometimes unnoticed. This does not mean that the *genius loci* necessarily gets lost. Any place owns the capacity of different contents. A place that could only hold one purpose would soon become useless. Any place is also possible to be interpreted in different ways. To protect the *genius loci* is to concretise its essence in ever changing historical contexts.



The Spirit of Place

Orientation and Identification

We have mentioned space and character as terms to help us define places. When we dwell, we are simultaneously located in space and exposed to a certain environmental character. These two functions can be called *orientation and identification*. To truly dwell, *to gain existential foothold*, we need to be able to orientate ourselves, to know where we are. But we also need to *identify ourselves* with our environments.

Although orientation and identification are aspects of one total relationship, they have a certain independence within that totality. In modern society, attention was for a time almost exclusively concentrated on the practical function of orientation whereas identification was left to chance.

An example of this could be a very well planned residential area, where focus has been on developing solutions to infrastructural problems and creating efficient housing. This kind of architecture can look good in numbers, but risks to substitute true dwelling with alienation.



Identification does not necessarily mean to feel at home, it rather means to become friends with a particular environment. For urban people, the friendship with nature is limited, instead they need to identify themselves with the built environment, such as streets and houses. The significance of this phenomena is well described in this short anecdote.

The German born architect Gerhard Kallmann went back to Berlin after the Second World War to visit the house where he grew up. As must be expected in Berlin, the house had disappeared in the bombings. But his alienation was replaced with the feeling of coming home when he saw the pavement of the sidewalk on which he played on as a child.

We add meaning to the content of our world and the content add meaning to us. This exchange is one of the key factors in the concept of the genius loci. Together meanings and memories make up the spirit of a place through its physical objects.



Nordic by Nature

The Nordic nature is characterised by its surface relief which creates mysterious forests and changing landscapes. The sun stands relatively low all year, which makes light cast in infinite ways during the day. The changing clouds also make the light more dynamic. The contrasts in the Nordic nature is further enhanced by the swift changes of the seasons. An incomprehensible world manifests, where surprises belong to the normal order of the day.

The landscape hosts natural forces where impressions and moods play primary roles. This is why the landscape has inspired fairy tales and legends, that are carried still today. The environment brings us back to a distant past which is experienced *emotionally*, rather than understood as documented history. This is an essential part of the Nordic *genius loci*.

“My home is my castle.”

- *Nordic saying*

“Mi casa e su casa (My house is your house).”

- *Spanish saying*



Traditionally, Nordic dwelling has been about approaching nature with empathy. The sense of nature as a dominant and mysterious force makes it impossible to overlook. Nordic dwelling requires direct participation with (instead of abstraction of) nature. However, this participation is not of a very social manner. It rather results in individuals finding their own hiding places in nature.

Of course this participation and empathy takes different shapes in different situations and regions. A danish settlement in a farmland will be different from a norwegian forest cottage. But what's shared is the presence of the natural forces, which makes Nordic dwelling an interaction with its environment.



Hidden cottage in the forest

Site Introduction

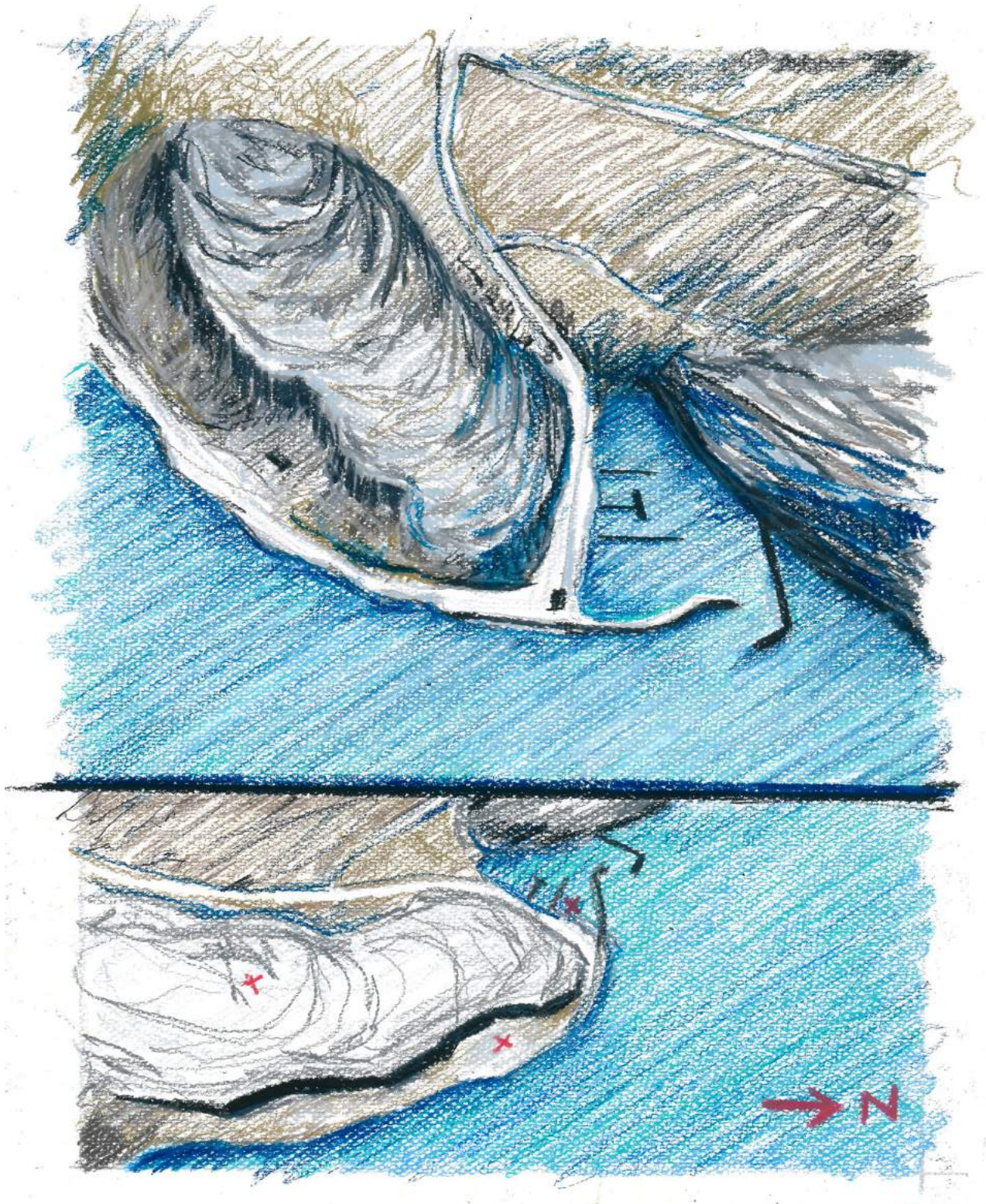
Welcome

Right on the coastline in southern Bohuslän, in the centre of an axis between two important 17th century fortresses, we find a small port and a slate stone quarry. This place is called Tjuvkil and it has a rich history.

The following chapters are an attempt to capture this environment's spirit by describing its natural elements and digging into the layers of history related to the activities that have taken place here.



Tjuvkil as a center with lines stretching toward references that will be brought up in the study





Aerial view and a house on site

The Face of a Landscape

Approaching

Right on the coastline in southern Bohuslän, in the centre of an axis between two important 17th century fortresses, we find a small port and a slate stone quarry. This place is called Tjuvkil and it has a rich history.

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Structures

A road meanders through the inland in the valleys between green mountains. It passes fields and farm houses. Small settlements form enclosures by the hillsides in the extending landscape. After a short while, the views of hills and trees get interrupted by a shimmering light in the distance. Here, by the sea shore we encounter a number of docks with small boats, resting in a protected bay. On the other side of the road there's a mountain. On the other side of that mountain there's a slate stone quarry with a few small modest buildings.

It stands very clear that the landscape dominates and dictates the settlements. The paths stretch where nature allows them to, boats rests where the landscape provides a shelter and the working place of the quarry is forced to be in its exposed, rough location due to nature's geology.



The road ending in Tjuvkil, year 1890

Earth, Sea and Sky

When walking from the docks towards the quarry, you are moving along the shore on a gravel road. The water and the path is separated by boulders, leftover material from the quarrying process. On your right hand side the cliffs are rising steeply from the planar road. In this walk you're leveled with the surface of the sea, below the sky. But when you are turning right and begin to wander upwards into the quarry, you almost get the sense of a shift of gravity.



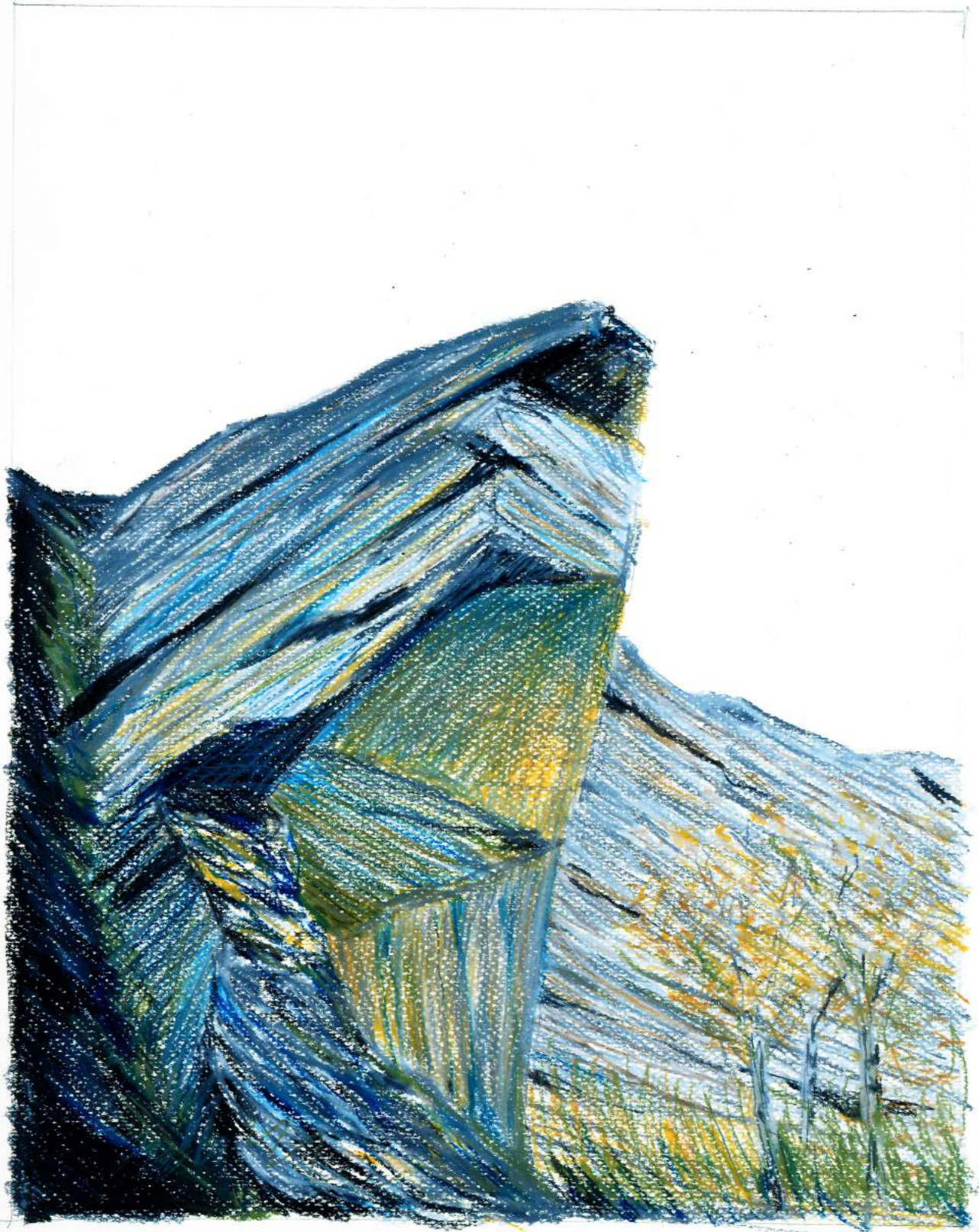
The path from the docks to the quarry

The floor of the quarry is about fifteen meters above the sea surface. This change of altitude have a surprisingly big impact on the experienced relationship between earth, sea and sky. Up here, you are able to see beyond the nearest islands and skerries. The different pieces of land wander away toward the horizon, gradually being concealed by the ocean mist. You can't understand the exact measurements between the islands, but you get a deep feeling of the ocean's vastness. It's like the sky and sea become one from up here.



View from the quarry

From the quarry you have a 180 degree view over this blurred horizon. When you turn, the view is dominated by a very steep, thirty meter high cliff. The rock wall has a slightly concave shape which gathers the place to a sense of protection, even if it is exposed to the natural forces of the sea. The quarry's relationship to the sky shifts when you're facing the mountain. Here the sky acts as a simple backdrop to the dynamic expressions of the carved hillside.



The road ending in Tjuvkil, year 1890

Life

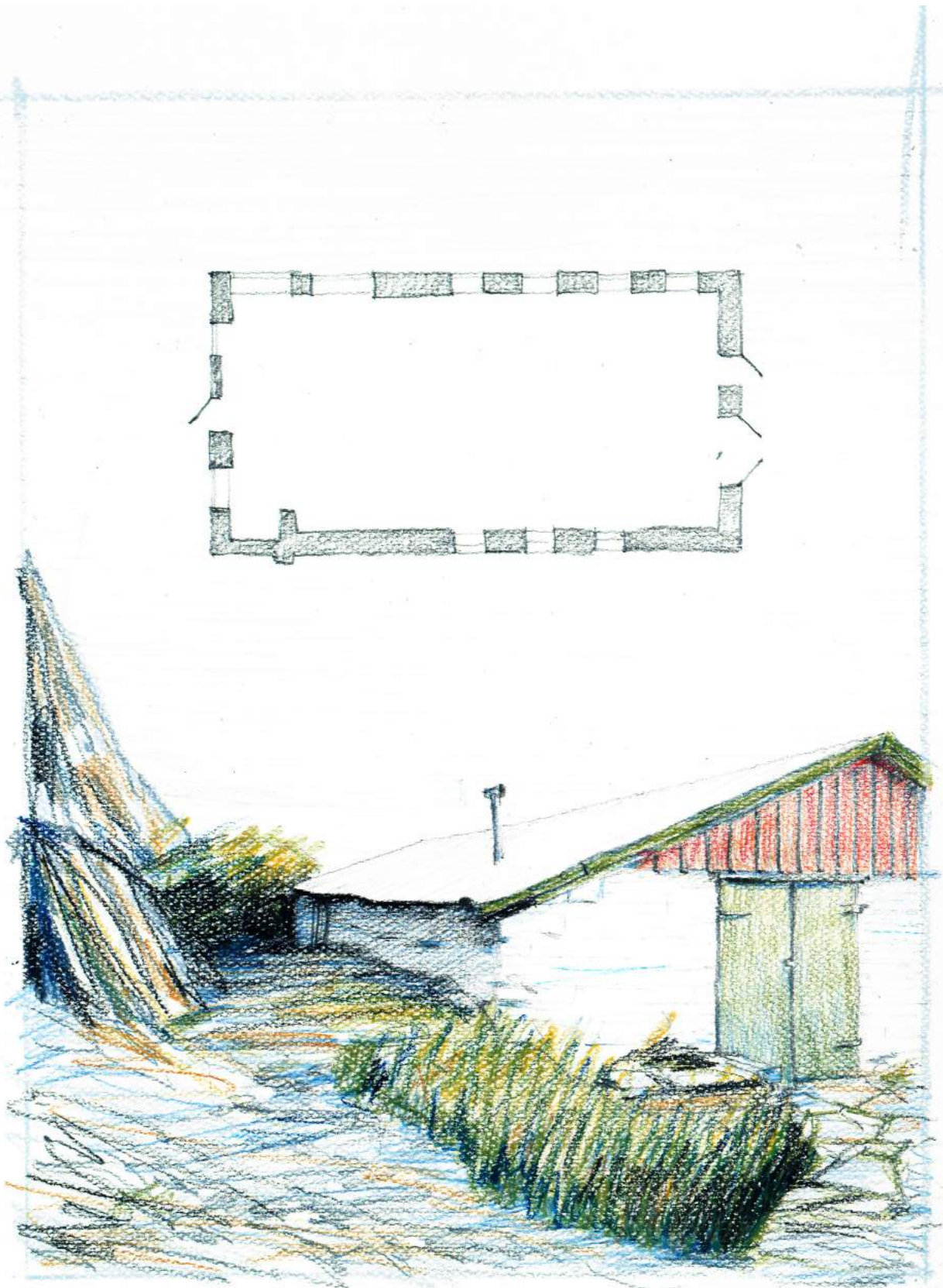
In this harsh, windswept, barren landscape, it's evident that life takes certain shapes. The vegetation here is uniform. Most species couldn't stand this environment. Small clusters of gnarled birches find their place by the foot of the cliff. Yellow colored highgrass meanders through the pebbles covering the ground. Today, the only people here are the stone workers who use the site occasionally, since its resources seldom are extracted.



A family of ravens nest on a small ledge of the cliff. The species live in mated pairs throughout their lives. Relationships between ravens are often quarrelsome, yet they demonstrate considerable devotion to their families. These intelligent, monochromatic black, big (they have a wingspan of up to 170 centimeters) birds has been a subject of mythology and folklore in many cultures. In Nordic mythology the oldest and wisest god Oden, owns two ravens by the names of Hugin and Munin, translated into Thought and Memory. They act as informers to Oden and travel the lands of both living and dead.



The quarry doesn't provide any shelter from the western winds coming in from the sea. The few houses on the site are dug into the landscape, with low, almost subdued profiles. The constructions are rigid. A utility building is standing just below the quarry. Its 60 centimeter thick walls are built by the slates from the site. The small windows need to be covered when not used due to the heavy wind and rains.

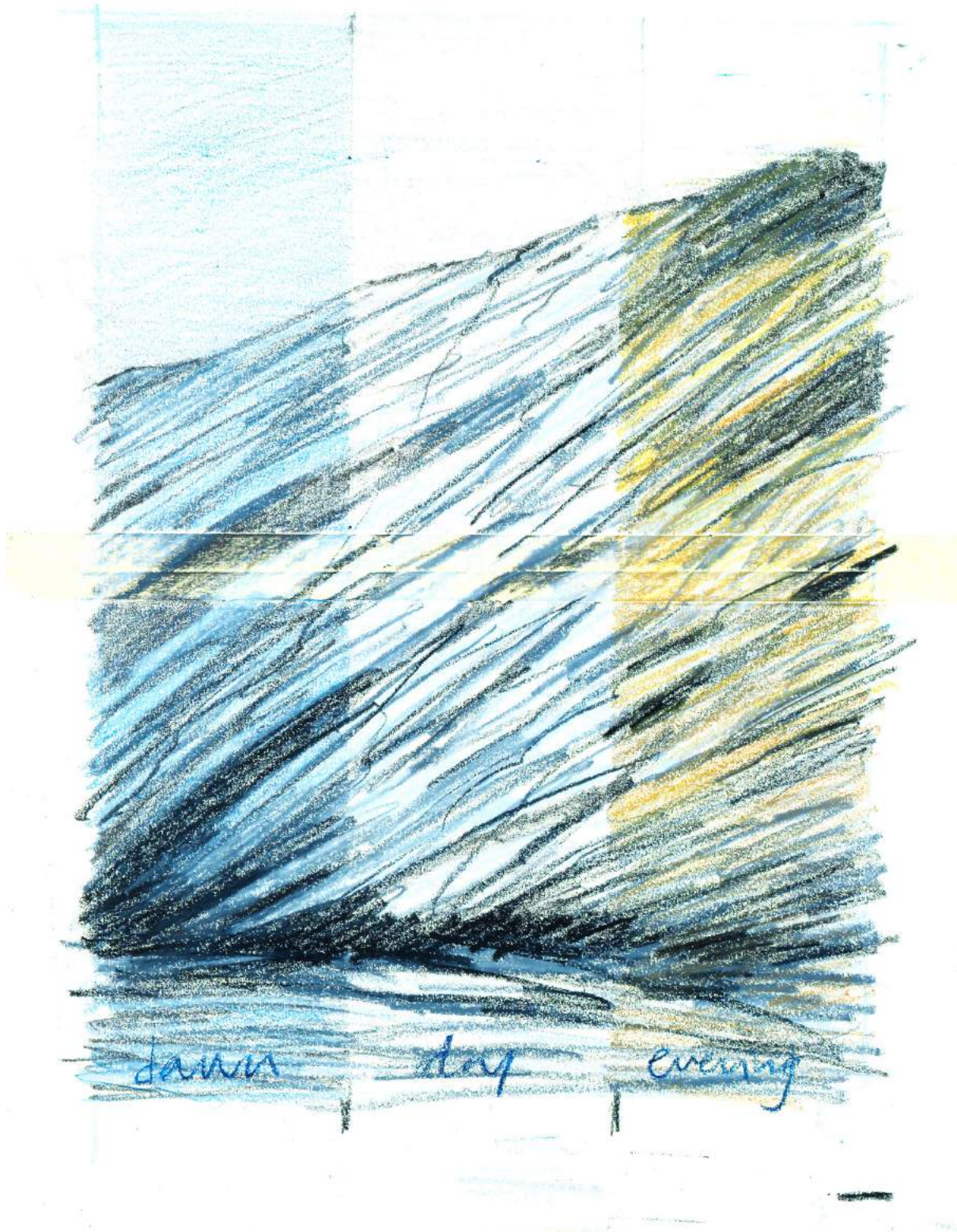


Light

The topography of the hillside shadows the quarry the most hours of the day. In the summer afternoons, when the sun starts to set over the western horizon, its rays shines in. During the winter months, the mountain stops the direct sunlight all day.

However, this fact doesn't mean that this place is experienced as a dark. The openness to the wide horizon renders a lot of reflected light from the sea surface. During the day this create an even and calm illumination of the quarry. When the sun isn't visible in the sky above the horizon, the difference between sea and sky blurs.

Even if the light during the days in the quarry is pleasant, there's something special when the first rays of the sun stretches towards you in the evening. The rays paint the surfaces in saturated hues and the contrast between light and shadow dramatise the textures.

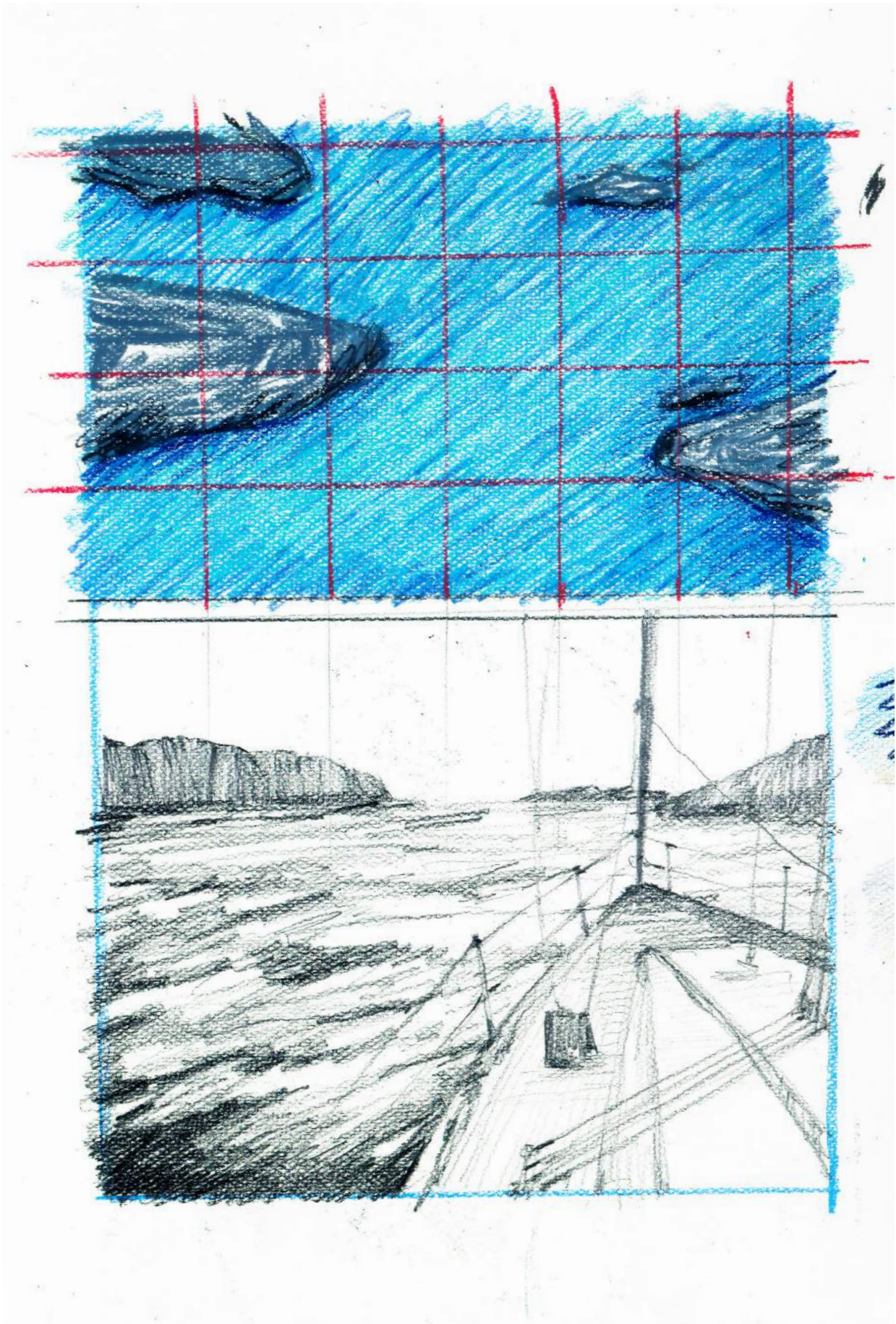


Atmospheres

Sailing from the West

*To really understand Tjuvkil,
one must understand Bohuslän as a whole.*

The most distinctive view of the landscape is offered when sailing in from the west. That experience must resemble the feelings of explorers of ancient times, approaching foreign coasts. The land rises like grey walls from the misty sea surfs. As you get closer, the wall dissolves and the fjords become portals to this peculiar archipelago. Here, you find yourself surrounded by a grave and untamed landscape, an arena for the natural elements. The environmental character helps us remember that this land once belonged to Norway.



Norwegian Heritage / Something Worth Fighting for

In the Treaty of Roskilde year 1658, the Swedish king Karl X Gustaf saw the importance of the new Swedish territory extending to the shores of the west coast. This was among other things manifested by a new fortress on the island Marstrand in southern Bohuslän. This became a very important geographic site for the Swedish defence, and it was attacked in three devastating wars during the following 60 years. Even if Bohuslän has remained Swedish territory in peace since 1719, a certain cultural heritage lives on. The Norwegian nature and culture are found here. Except for the tall mountains in the north, the landscapes mirrors itself in its neighbour. The fishing villages that are scattered along the coast share obvious similarities regardless of national affiliation.

This tells us that Bohuslän holds a character that goes beyond any territorial boundaries. This character is born out of the natural environment. It's about how the natural elements manifest themselves, and how humans relate to them.



Lighthouse and boathouses

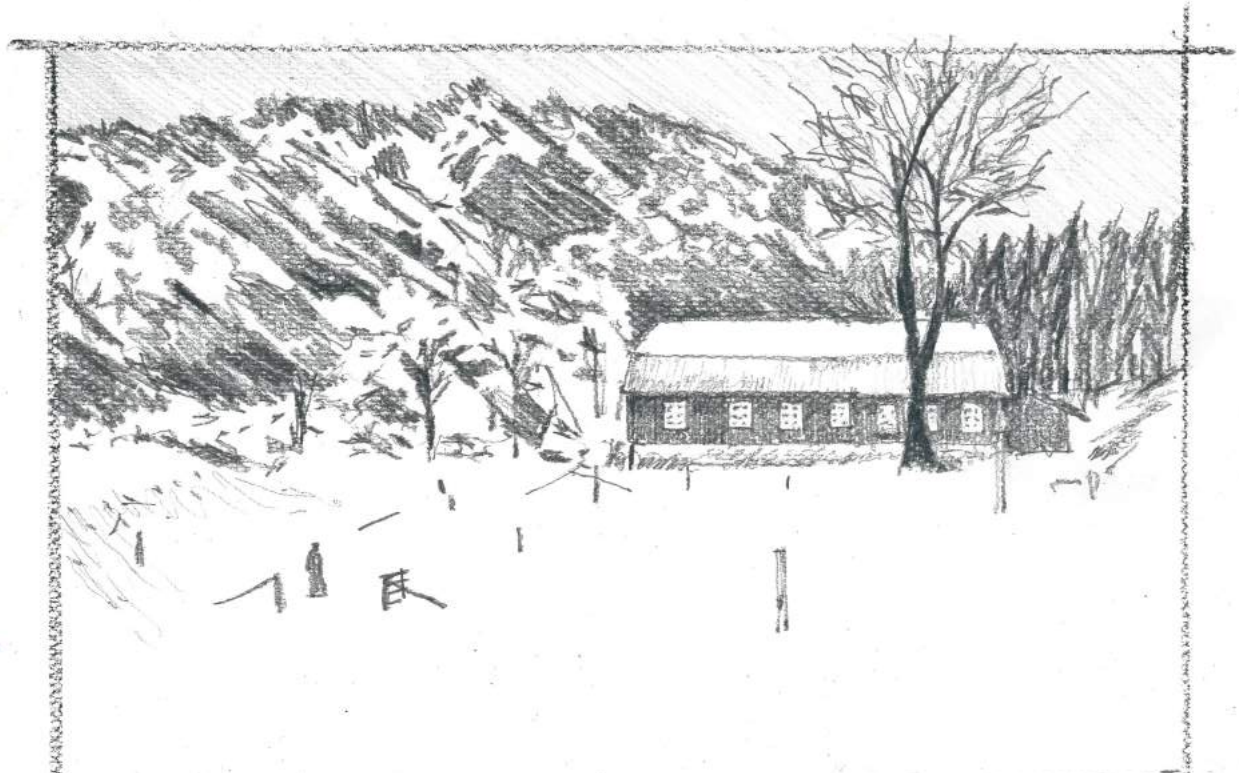
History / Reasons to Dwell

Ten thousands of years ago, when much of today's dry land still was below the surface of the ocean, humans dwelled on the mountains of Bohuslän. As the lonely seabirds out on the skerries they lived a nomadic life along the coast, depending on what the sea was giving.

Later in the bronze age, permanent villages had evolved, and from here we can experience petroglyphs in big numbers. They picture the everyday life through ships, hunters, fishers and working animals.



The farming developed during the iron age. The fields spread out between the cliffs in the fertile landscape that once was the ocean floor. Many of today's settlements are situated in the same places as from this era. In the middle ages the coast became the most important trade and military area. The first shipyards was built along with a number of fortifications.

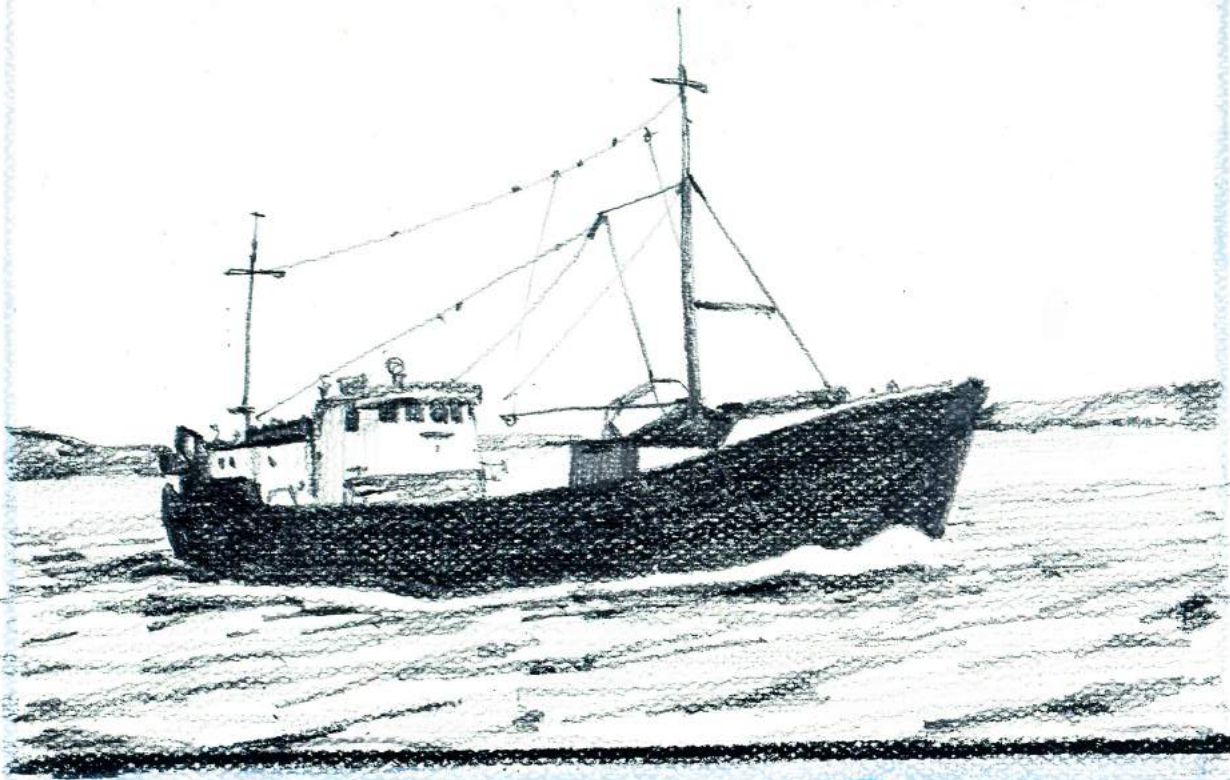


Brattås gård Uddevalla 18th century Major Gabriel Stjernberg

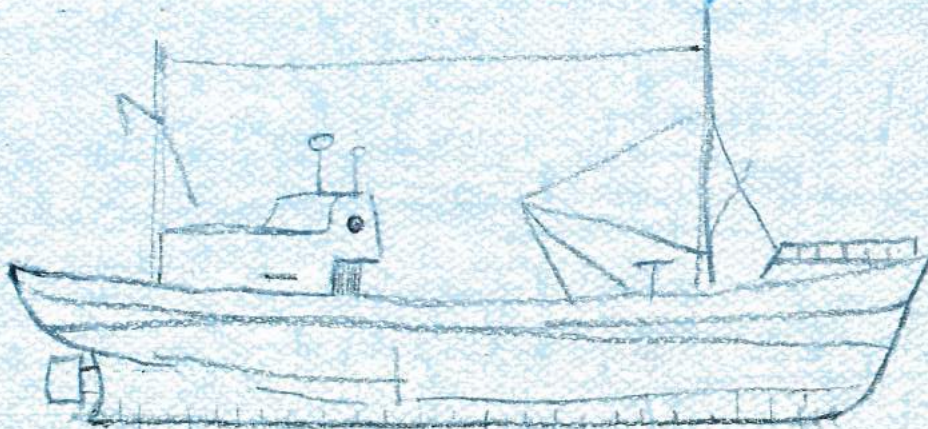


Brattås house, by the foot of a mountain

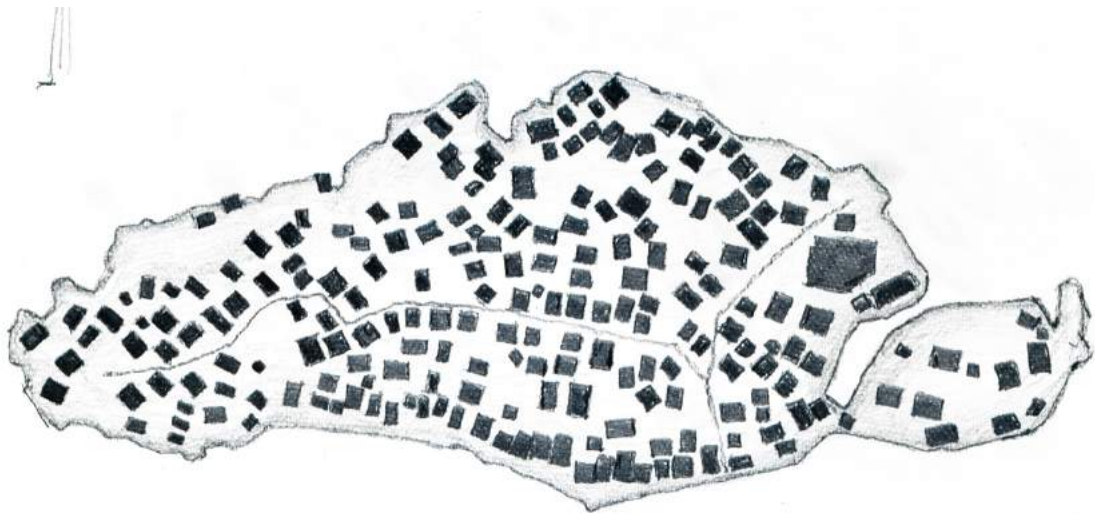
From the 16th century the fishing of herring had a big impact on the dwelling in Bohuslän. It became one of Sweden's biggest exports and the communities along the coast grew rapidly. A rising demand on wood to ships and buildings resulted in a deforestation. This has added to the barren character of the mountain landscapes that we experience still today.



Neptunus



The coastal villages were built where the best natural wind protection was given. The houses were constructed near the harbour, so that people could see the water and the docks from their windows. The harsh climate and the topography didn't allow any big gardens, which is one of the reasons why there wasn't really any private enclosures. The gaps between the houses were used as common working spaces.

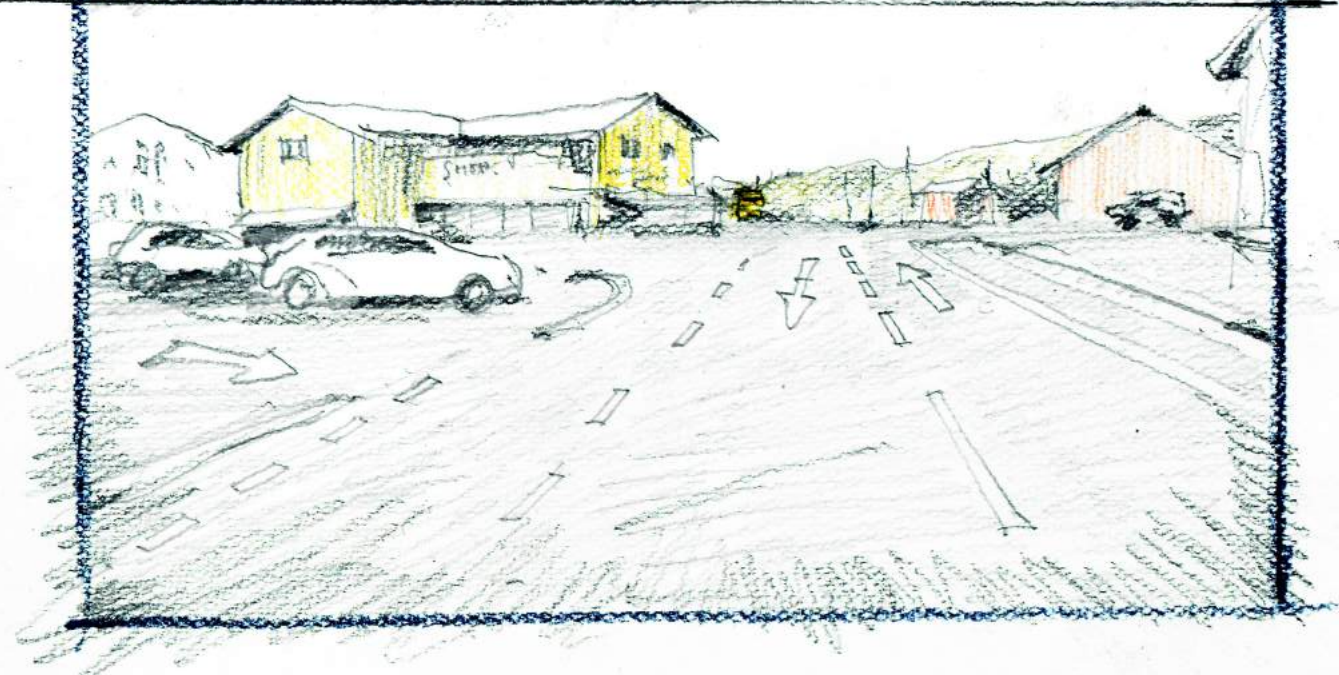
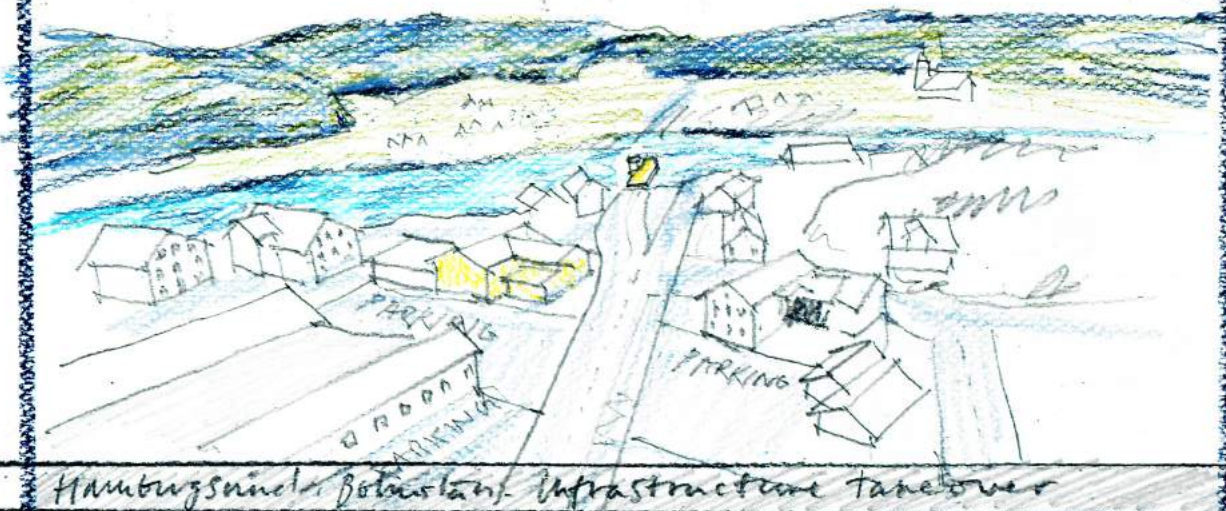


GULLHOLMEN 1925

In the 20th century the fishing got accompanied by the stone industry. This became visible in the architecture through the foundations of new built houses. The first floor was constructed by precise granite blocks. The stone was also used in road constructions. Towards the mid 1900's the fishing had become more of a shipping industry, which demanded new and big industrial areas in the outskirts of the small communities. The residential architecture shifted slightly from decade to decade, but the biggest impact on the environment during the new modern era was the infrastructure development. New wider roads were constructed and parking lots emerged in central areas.



The relationship to the environment changed when it became easier to rework the ground. Originally buildings were constructed by the foot of the cliffs, now residential buildings started to climb up the hills, creating private enclosures in the landscape. Existing architecture by the waterfront has often been modified to a more private character too, by adding fences and other boundaries. This erases the sensation of a continual contact with the water, and the ability to move freely through and among the coastal settlements.



Exported Spirit

So, in this time axis, where does Tjuvkil find its key points? It's uncertain for exactly how long the mountains in the region have been quarried. We know that the slate stone from Tjuvkil was used to a great extent in the construction of the fortresses of Carlsten on Marstrand and Bohus further east on the mainland.

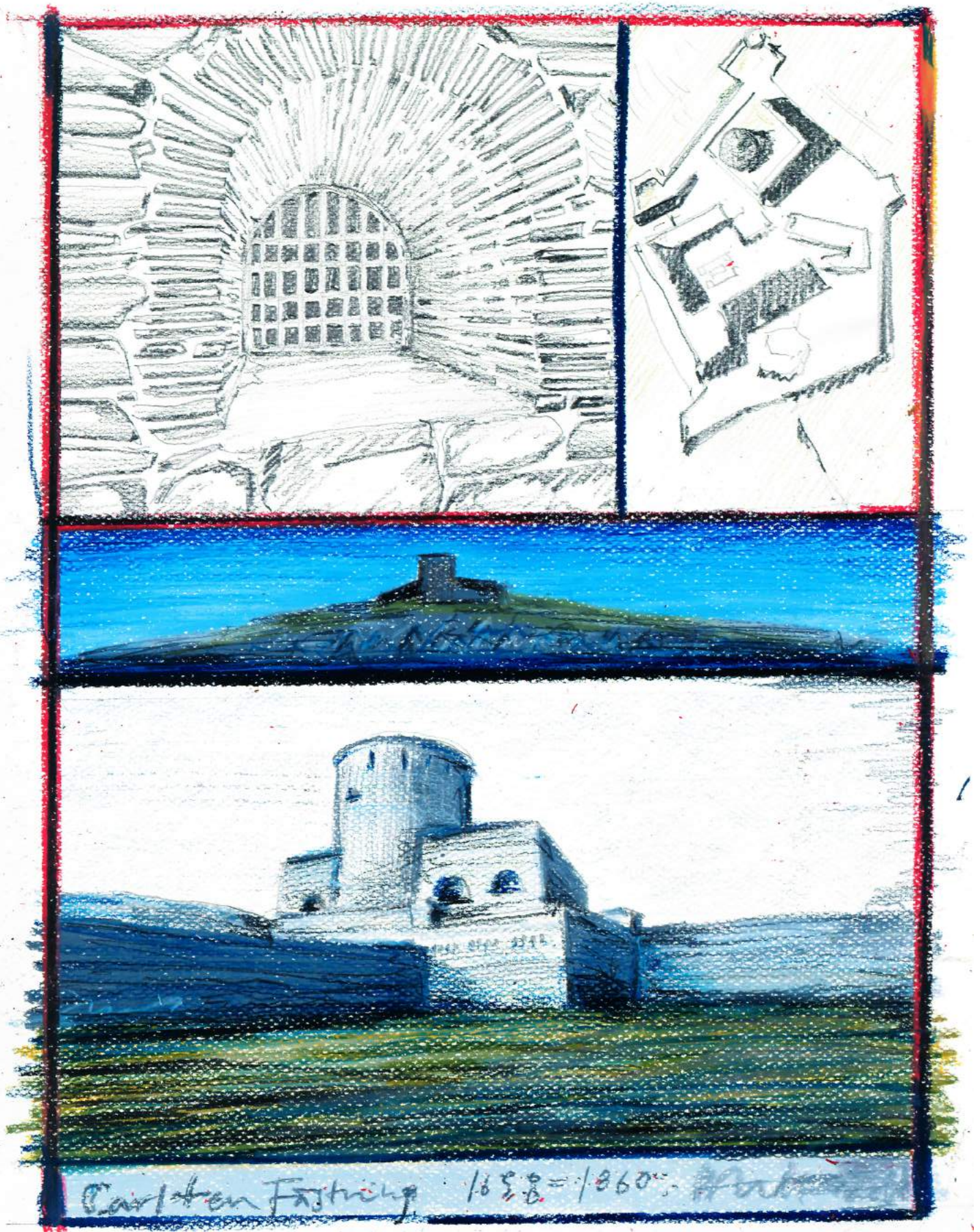


The Fortress of Carlsten

Carlsten is a stone fortress located at Marstrand, close to Tjuvkil. The fortress was built on the orders of King Carl X Gustaf following the Treaty of Roskilde to protect the newly acquired province of Bohuslän from hostile attacks.

The site of Marstrand was chosen because of its location and its access to and ice free port. The fortress was built by inmates sentenced to hard labor between 1658 - 1860, and at its finished state it was seen as one of Europe's strongest fortifications. Carlsten is situated on the island's highest point, making the tower's roof 98 meters above sea level.

As in the fortress of Bohus, the slates from Tjuvkil was used to build openings in the massive granite walls.



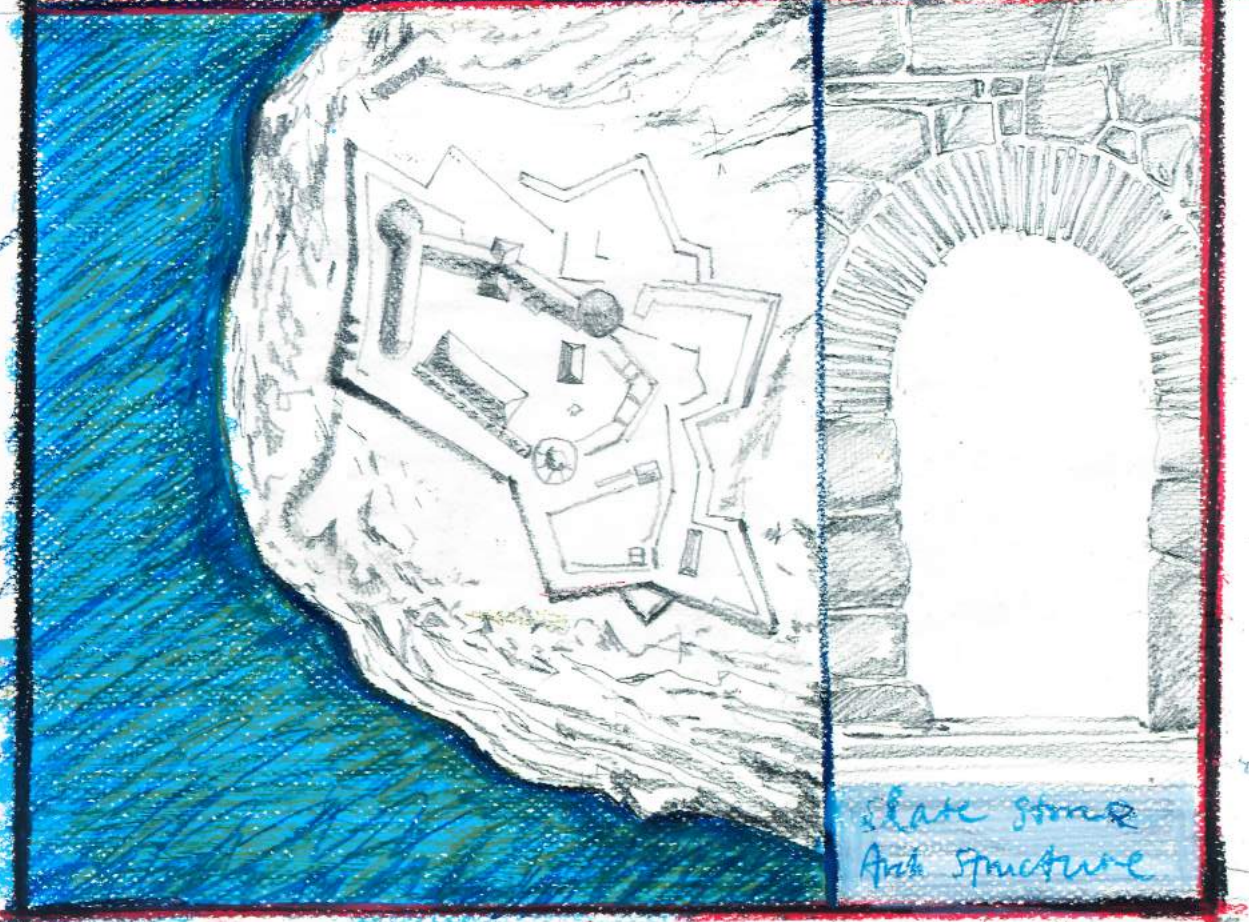
The Fortress of Bohus

The fortress of Bohus is situated north of Gothenburg where the Göta river splits in two. When the construction started in the 1350's this land belonged to Norway. The construction rests on a 50 meter high hillside, surrounded by the river as a natural moat. Bohus withstood sieges over ten times, but it has never been conquered in battle.

In documents from the constructions in the 1600's, Tjuvkil and the quarry's stone is mentioned several times. The slates were mostly used in the construction of arches. This is because of the stone's slim profile, which allows it to be arrayed along a curved line.



~ Bohus Kasting - 1302 - 1783 ~



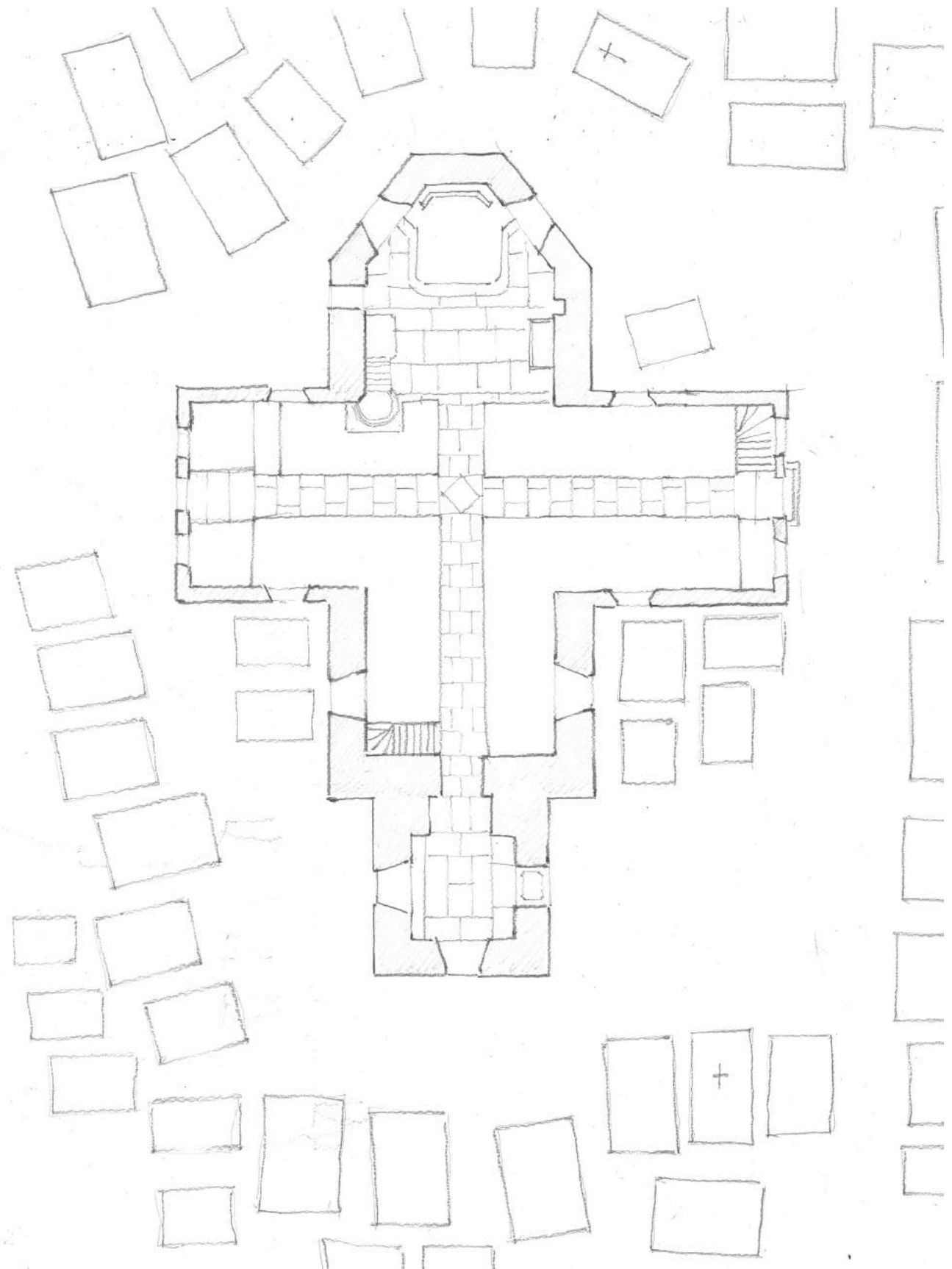
slate stone
Arch Structure

solid - w

The Church of Örgryte

The first traces of the church by Danska Vägen in Örgryte are from the 11th century. This was then a wooden construction which served as the first christian church in the area. Later in the 1250's a roman stone church was constructed on the site, which has been modified several times.

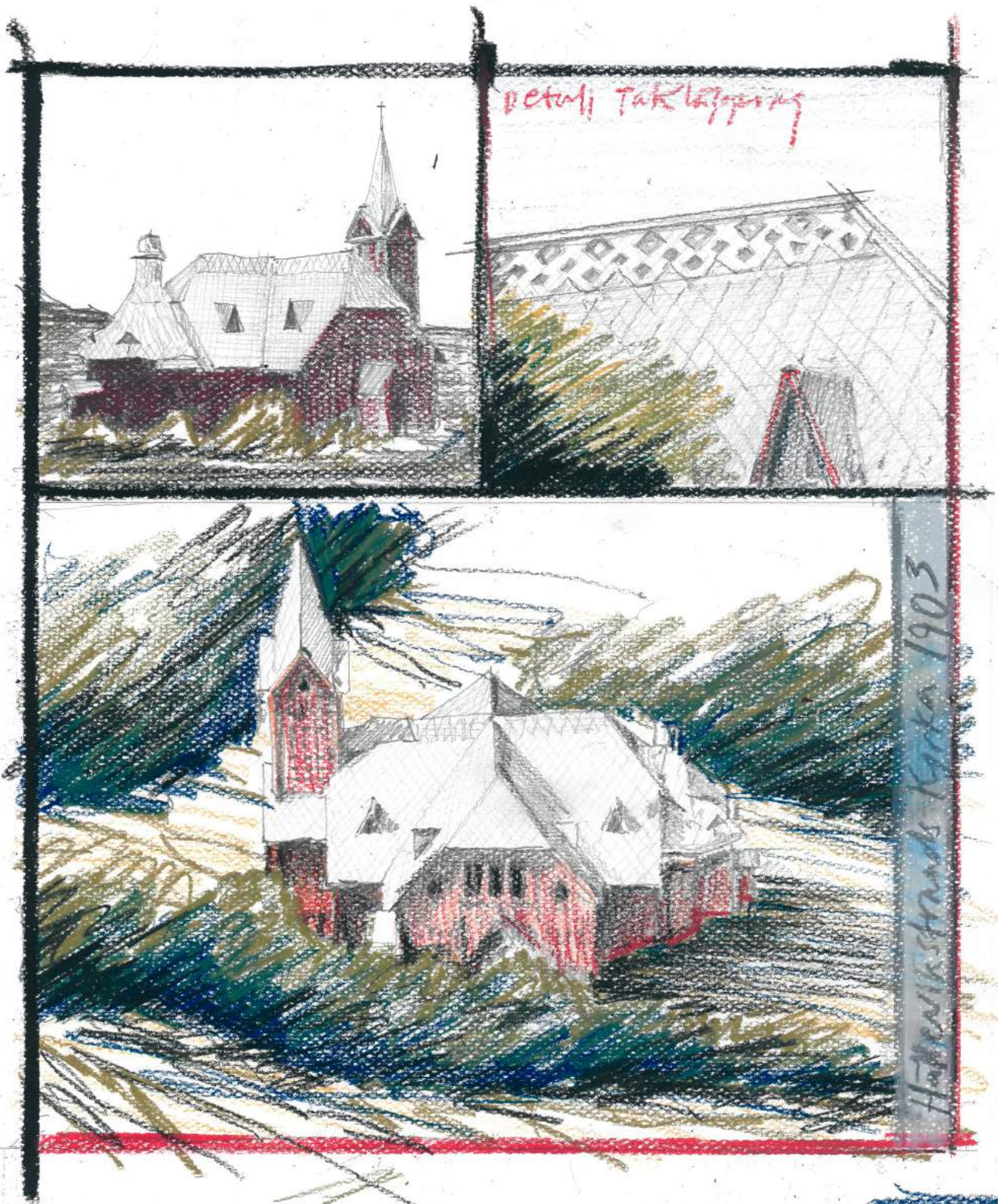
Gothenburg city architect Carlberg did a major extension in the 1700's which included a new church tower. The two transepts were constructed in different stages which resulted in a slight asymmetry of the floor plan. Slate from Tjuvkil lies as the interior flooring, cut to fit a modest but carefully planned pattern.



The Church of Hälleviksstrand

The church is situated by a protected bay on the island of Orust in Bohuslän and was built 1903. The drawings were made by architect Adrian Crispin Peterson who had a very active career. He's the architect responsible for almost 40 churches on the Swedish west coast and several acclaimed buildings in Gothenburg.

The design is typical for its time, it mixes various influences. The set of windows that is arranged around the outer walls resembles Norwegian stave church architecture, as the tower's sharp spire shape echoes expressions from the neo-gothic era. The hipped roof is clad in slate stone. At the ridge there is a pattern made up of slates in different color tones



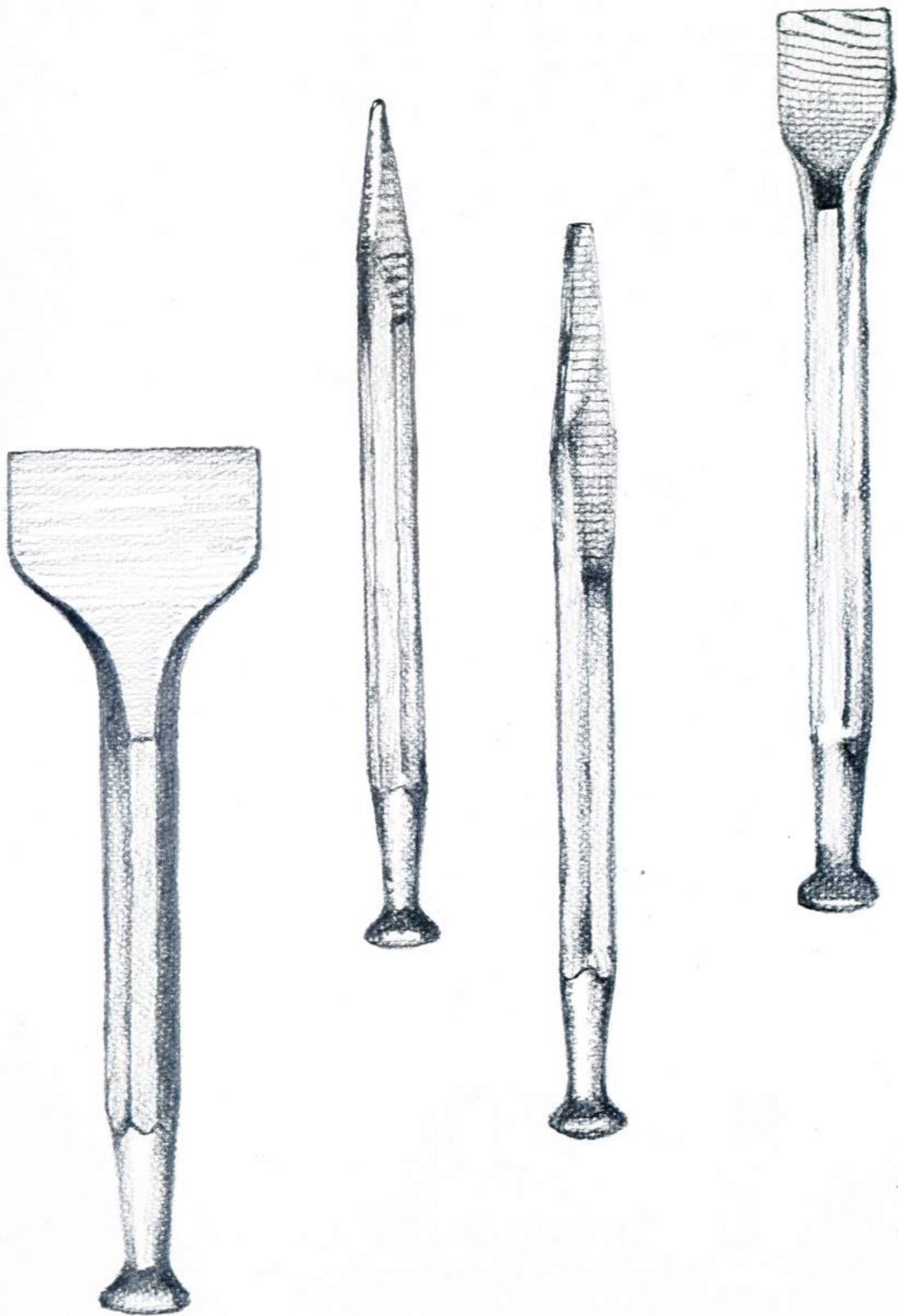
To Shape a Landscape

Slate stone is a metamorphic rock consisting of numerous minerals. It is formed when sedimentary deposits are subjected to extreme pressure. In the metamorphosis the molecules align in perfectly cleaved, broad and thin layers. This attribute of slate is what allows it to split the way it does. The material has proven its durability and sustainability over the centuries. The manufacturing process doesn't normally include any chemicals and the material last for hundreds of years without little or no maintenance.



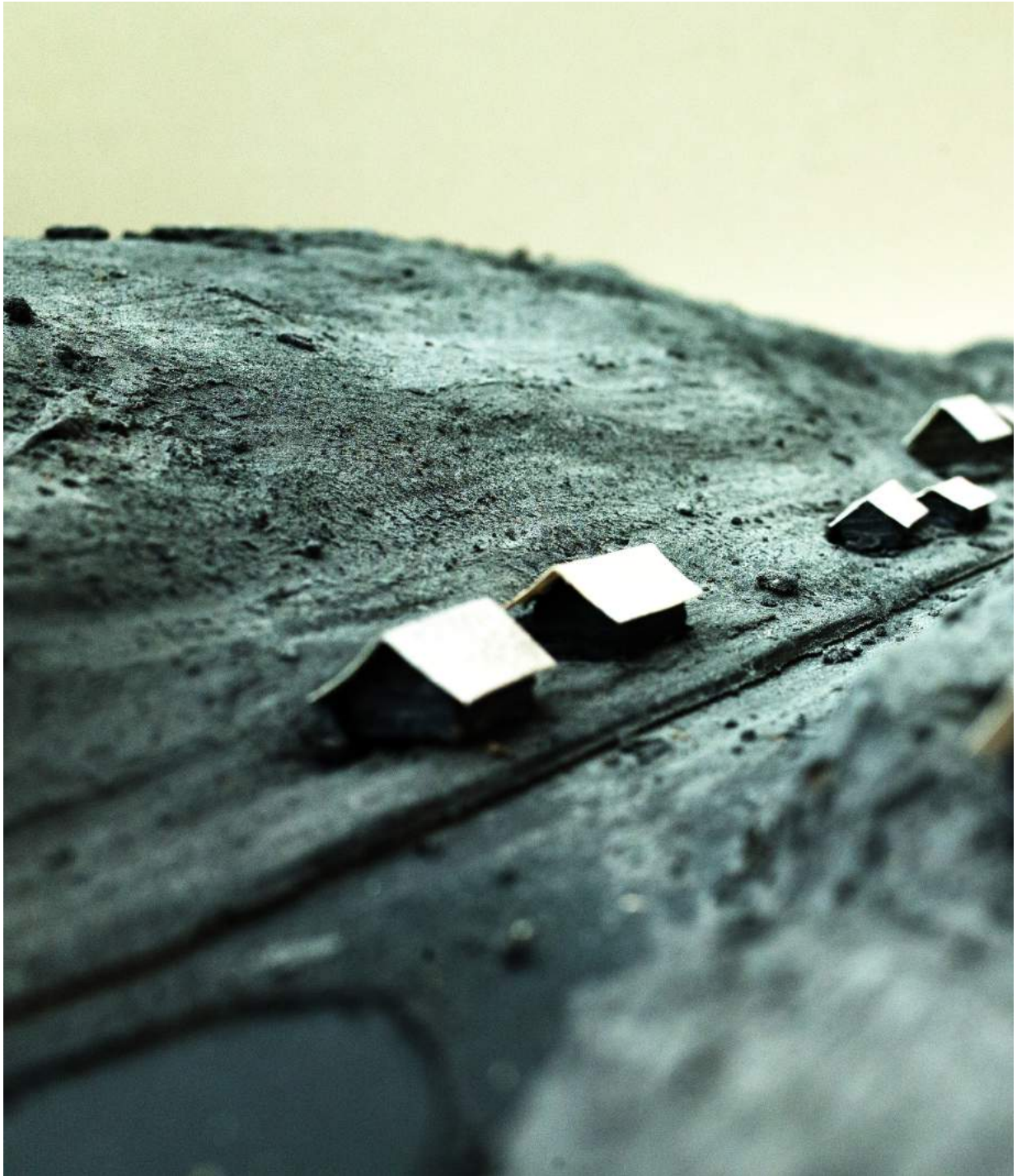
This is a material that needs to be mined with precision. To extract slabs from a cliff, detonation can be used, but it's kept to a minimum in favour of keeping the natural shape and character of the stone as well as reducing material loss. The slabs are then carried by an excavator (by horse in the past) to the manufacturing locality. Here the slabs are cut into more easily managed pieces. After the cutting stage all work is still done by hand. Professional stone workers split the stone down to specific thicknesses. These splitting methods and tools have remained the same for centuries. The split slates are then cut into specific lengths and divided into different categories based on color and thickness.

Needless to say, the working conditions on site may have improved during the centuries, but this has never been easy labour. Tasks performed by the stone workers have been risky and grueling. The lack of safety has led to accidents due to explosives and crushing. The workers' payment was solely based on finished cut slates, which could result in several days of lost labour if something goes wrong in the process.



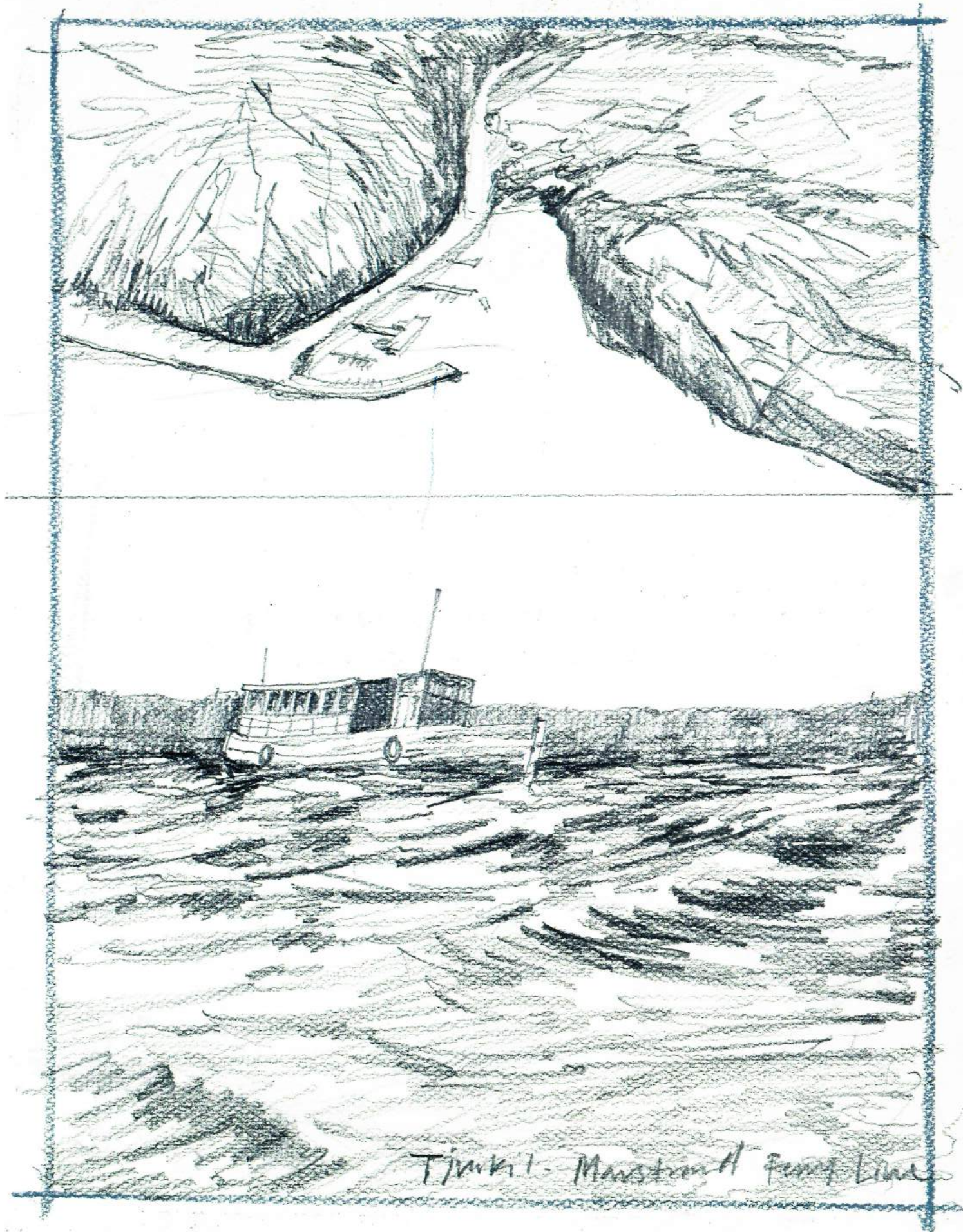
End of the Road

On the top of the mountain that rises from the quarry, lies what is left of a fortification that dates back to the stone age. It is fittingly called The Head of Tjuvkil. Little is known about its history. But it tells us that the view we see from the mountain has been shared with people for thousands of years. The geographic placement is a matter of military defence strategy. This has been a watch post for the mainland, built to defend territory boundaries and withstand attacks. Its relation to the ocean also tells us that this place has been used as a trading and transportation node.



Model view of the road ending by the water

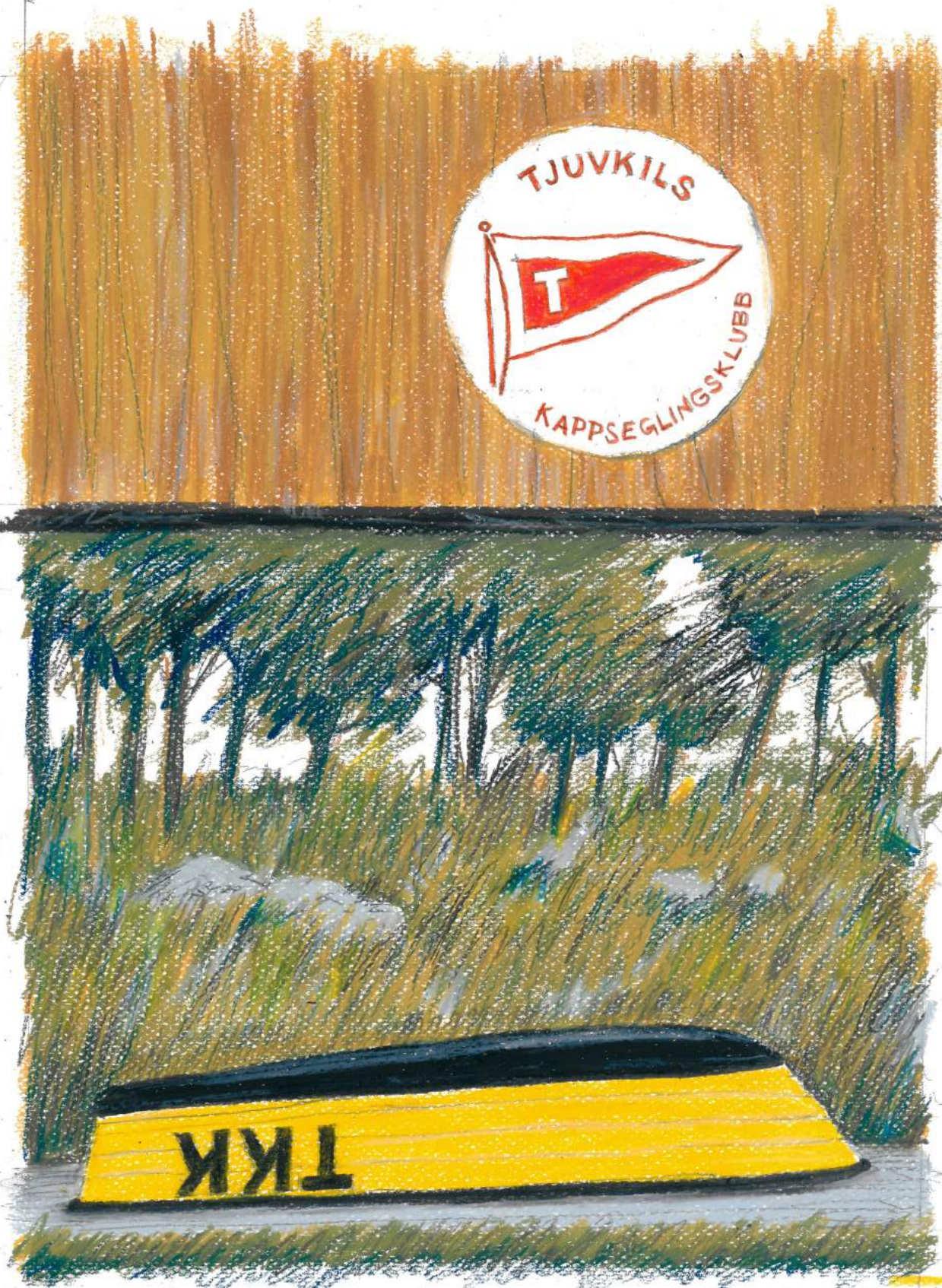
By the south west foot of the mountain, a small niche is formed in the coastline. Today we find a small boat marina here, but this natural shaped harbour has been of bigger importance historically. Even until the 1940's the mainland roads going from east to west in the region ended in Tjuvkil. The harbour acted as a main node in the nautical traffic. Here, all ferris departed to, among others islands, Marstrand.



Genius Loci of Tjuvkil

Eternal Sensations

You don't have to know that Tjuvkil used to be an important harbour for the marine transportation to experience the sensation of the place's topography and its relation between mainland and ocean. Today this place is used as a small boat marina and a recreational sailing club. This is an example of a genius loci that has been remained. The meaning of the place has slightly changed over time, from the viking ages until today, but the basic relation between the natural elements and the humans in those natural elements are eternal. This is, and has been for thousands of years, the threshold between the solid ground and the shifting seas. The vikings' experience of leaving the docks share the feelings of a pair of kids learning how to sail on their own for the first time.



Sticker and boat belonging to Tjuvkil's sailing club

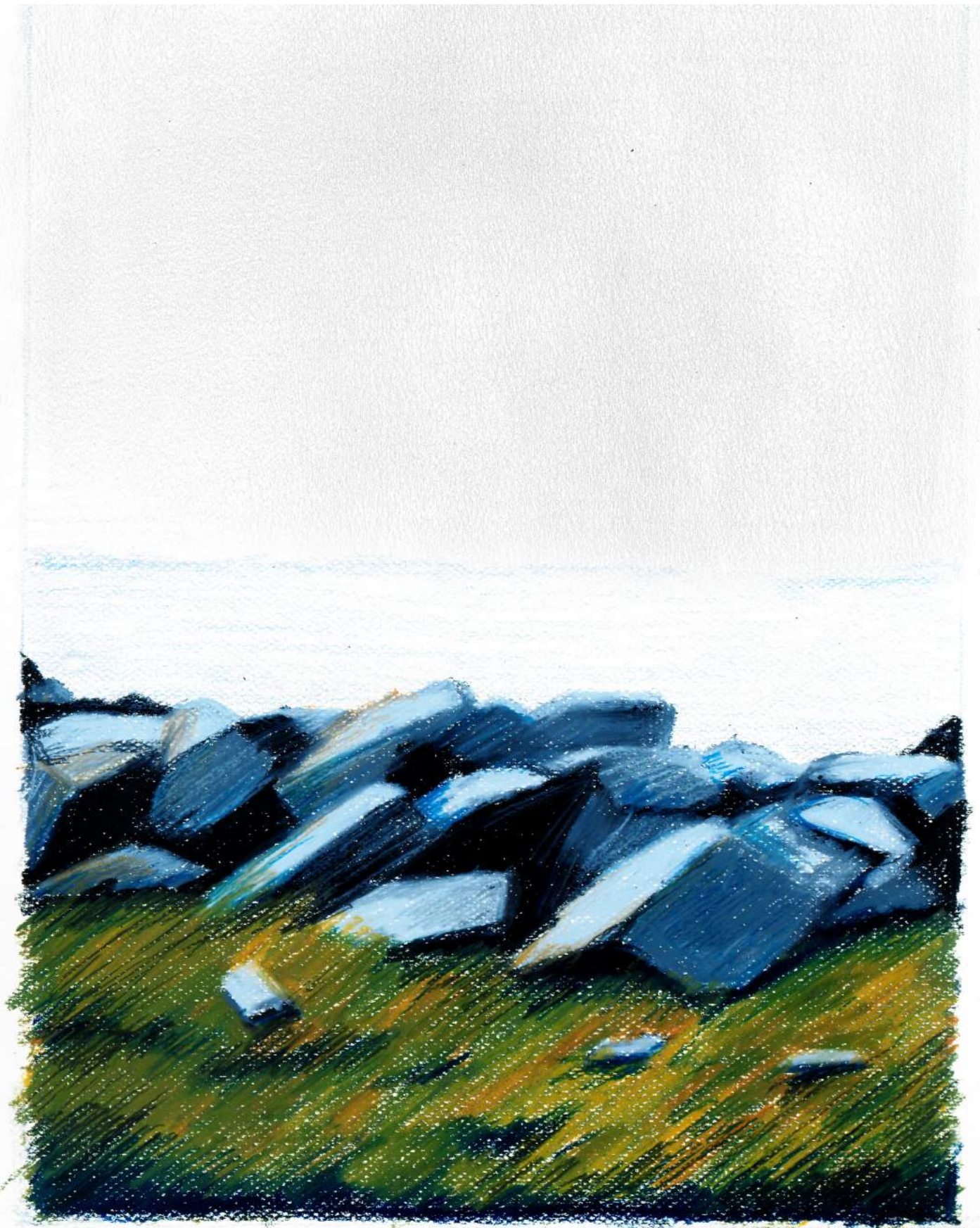
What's Left of History

The quarry makes Tjuvkil particularly interesting. The steep cliffs are obviously natural elements, but they are simultaneously shaped by human. The walls of the mountain stand somewhere between natural and human built environment. The slate stone quarrying process is also the most historically important feature of Tjuvkil. The granite stone industry in the northern part of Bohuslän was very developed and the stone became widely spread in Europe because of its quantity and wide functional range. The slate stone of Tjuvkil however, are of a more unique kind. It has a much more focused function realm, and a much more distinct character. This mountain side has been of importance. When the slate stone was exported to be used in the arches of a fortress or the roofing of a church, parts of the spirit was shipped away too. The spirit of a place is constituted in the physical components that gathers it.

The quarry has helped building characters in other places, which has leaved a negative space in the landscape. *And it is in this void, that the spirit rests.*



On the peaks of the coastal mountains we find stones from monuments and graves. They are now covered in moss and lichens. This landscape and its ancient memories is of a serious and mighty character. It's a land of fairy tales, but not of the childish or cheerful kinds. Stories born out of this nature are better told by the sounds of the wind and the breaking of waves than by human language.



Proposal

Program Overview

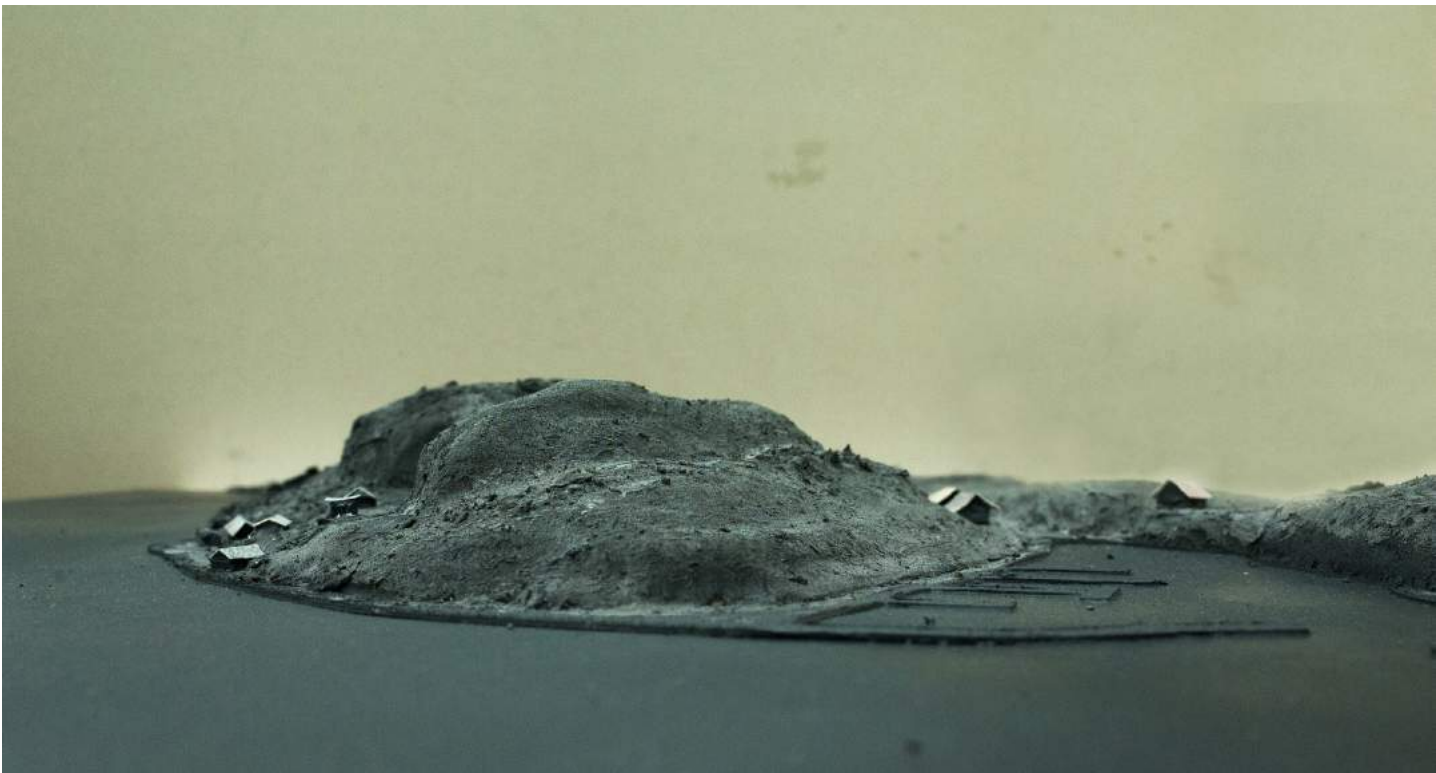
The program both includes updates of the quarrying functions and additions to make the site a public destination.

1. Byssan - existing
2. Saw House - existing
3. Workshop - addition
4. Garage - addition
5. Centre - addition
6. Cabins - addition
7. Public entrance - addition
8. Entrance for stone workers - existing











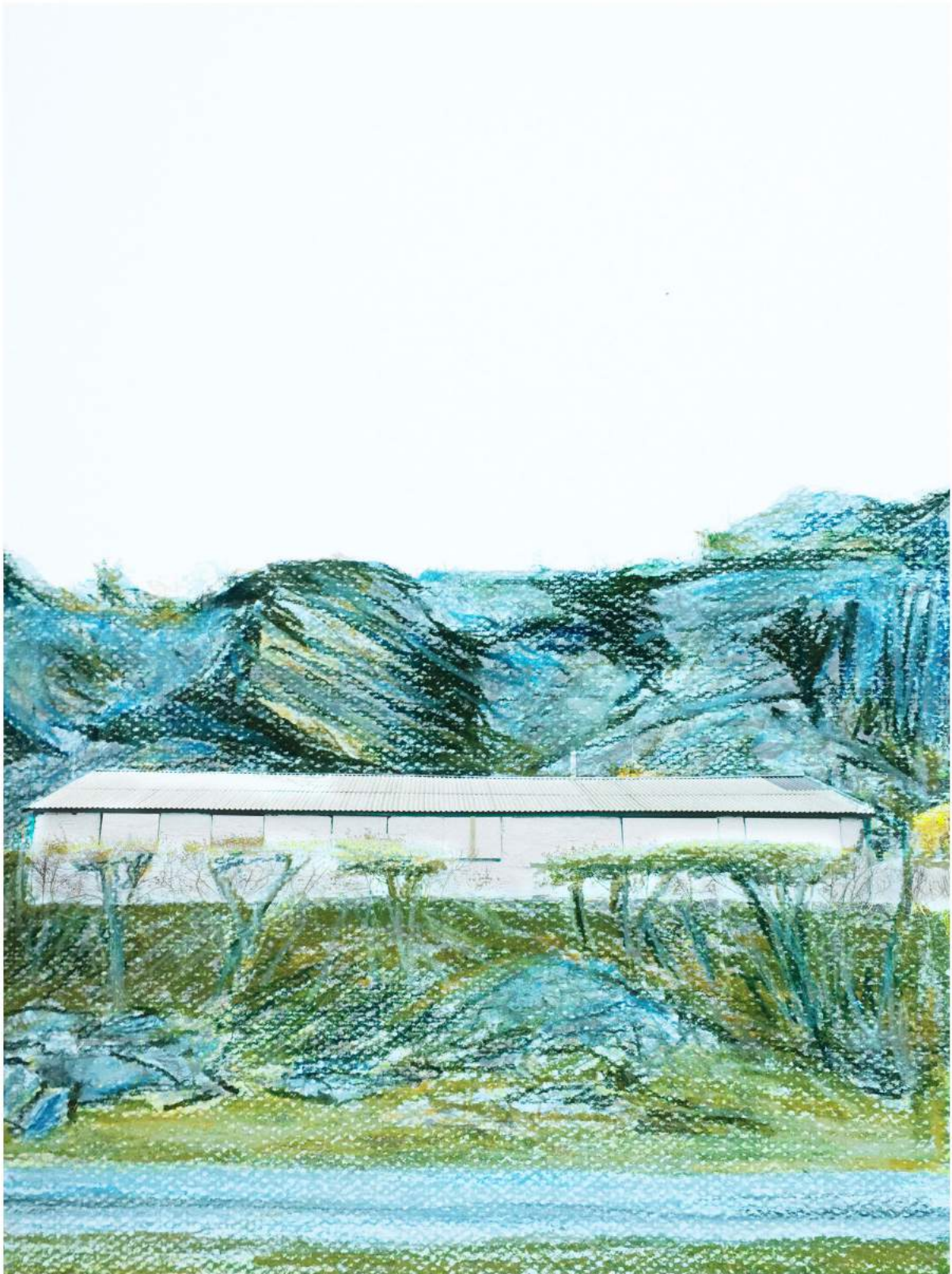


Saw House

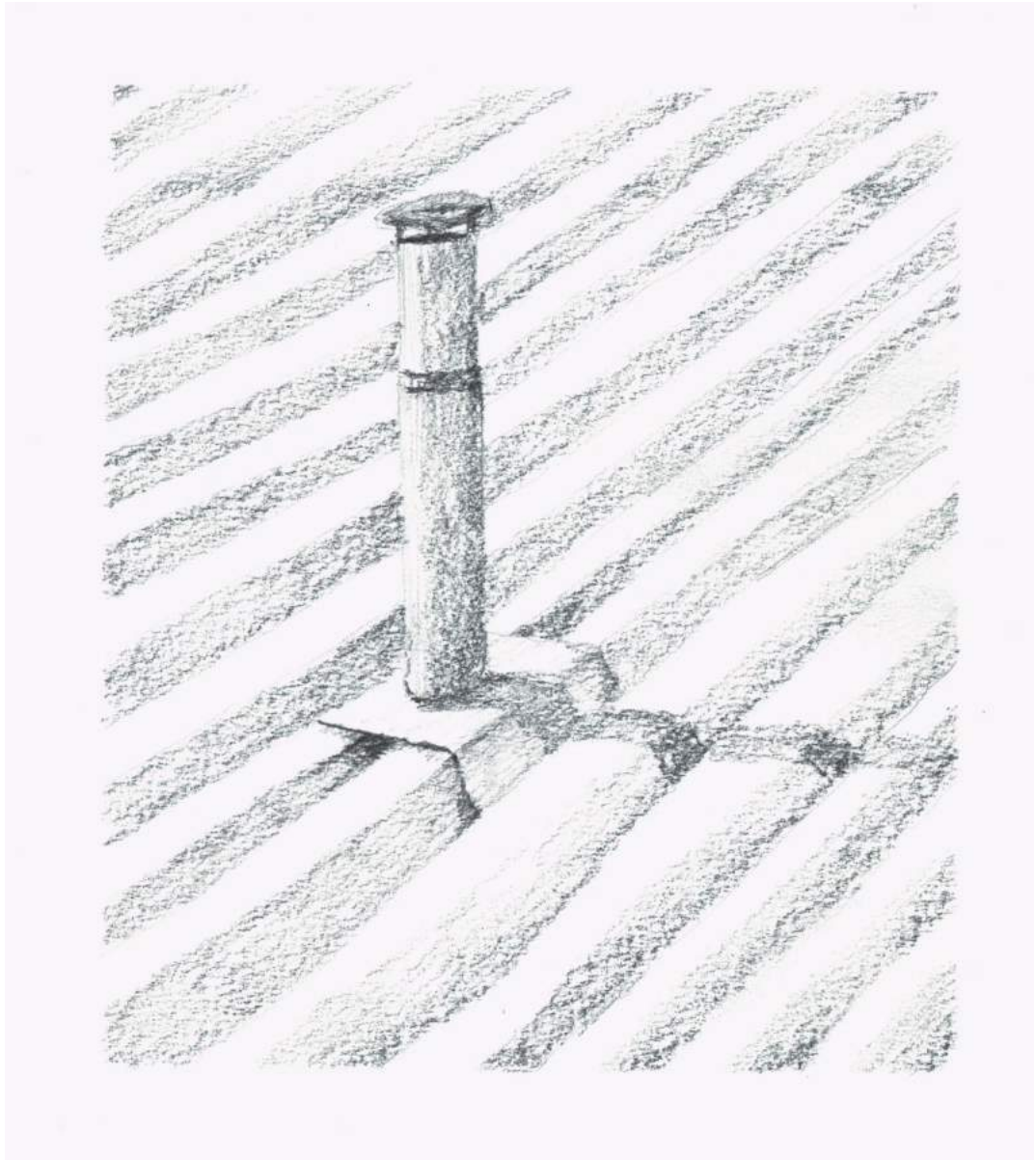
This utilitarian building belongs to the quarry and was built for a stone saw in the 30's. Today it holds various functions for the workers such as workshop space, office and break room.

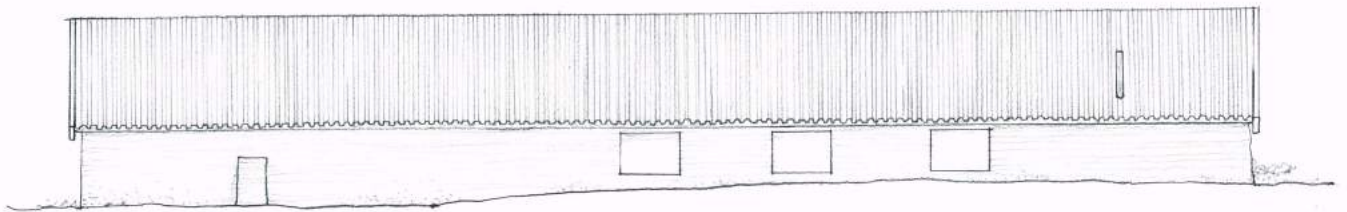
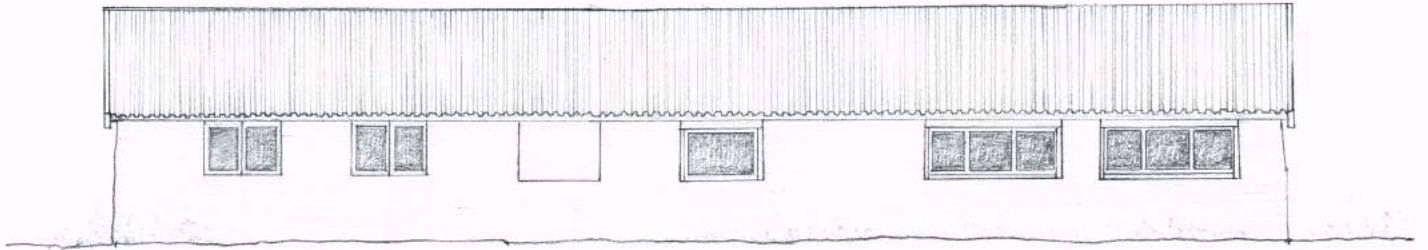
The 600 mm deep outer wall is built by slate stone from the quarry. A corrugated metal roof covers wooden trusses which rest on the massive walls. Wooden details are painted in green.

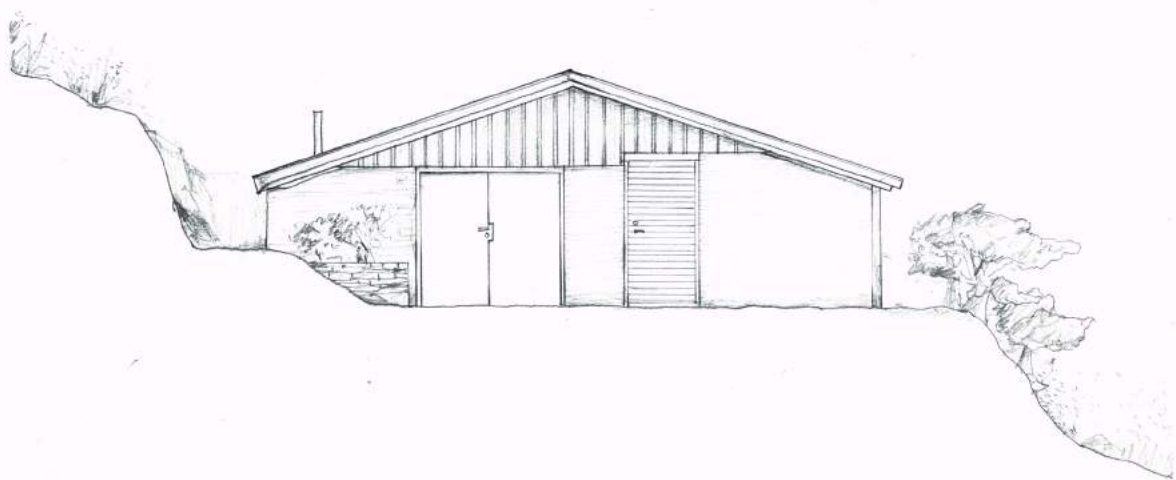
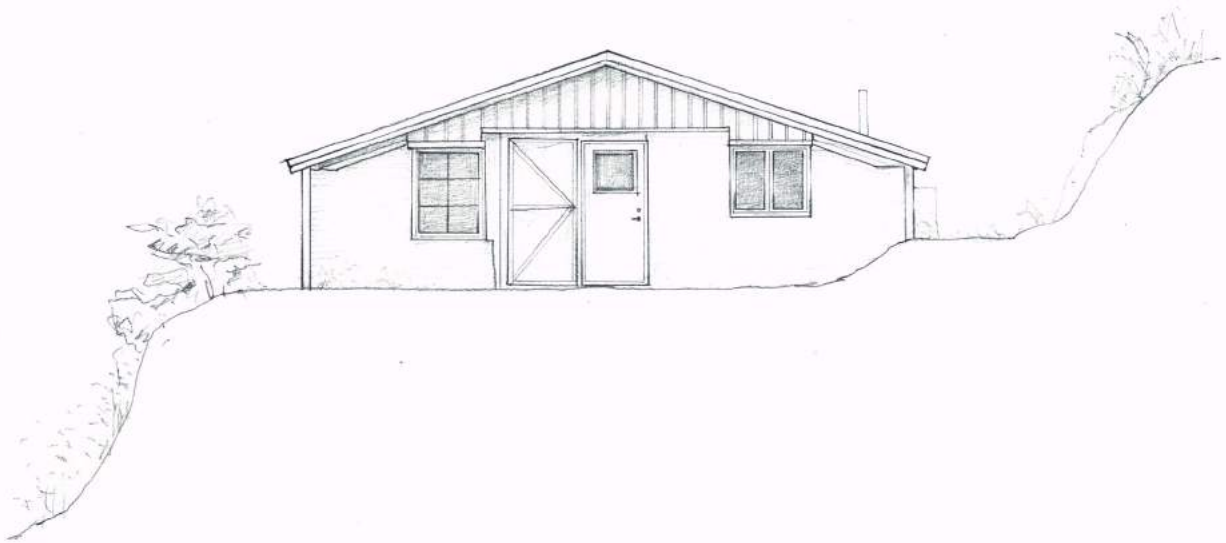
The building is in need of a rigid renovation which includes raising the ceiling height to achieve good working conditions in all spaces. A new building envelope is required. To keep the exterior's impression this is added on the inside of the existing construction.

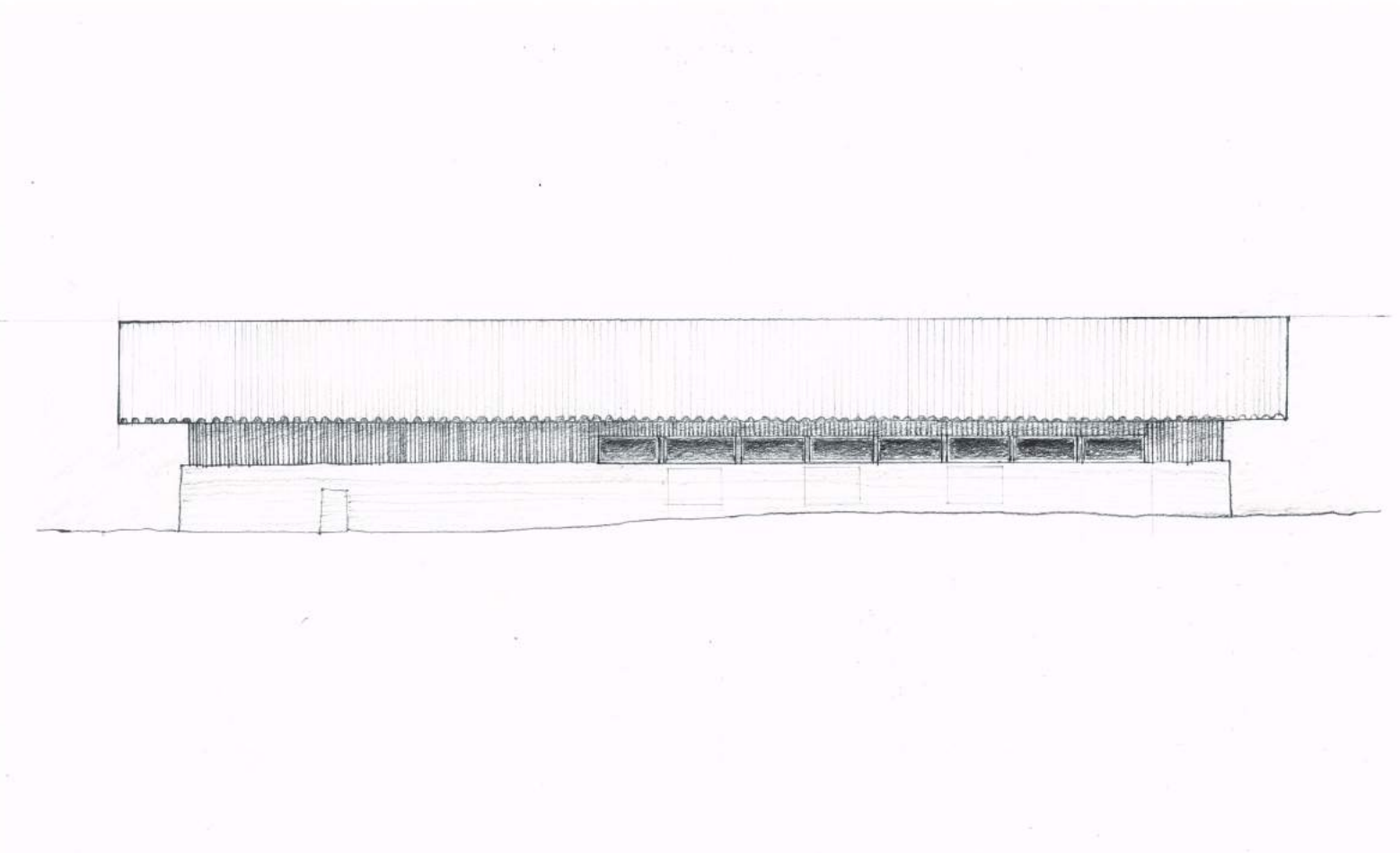
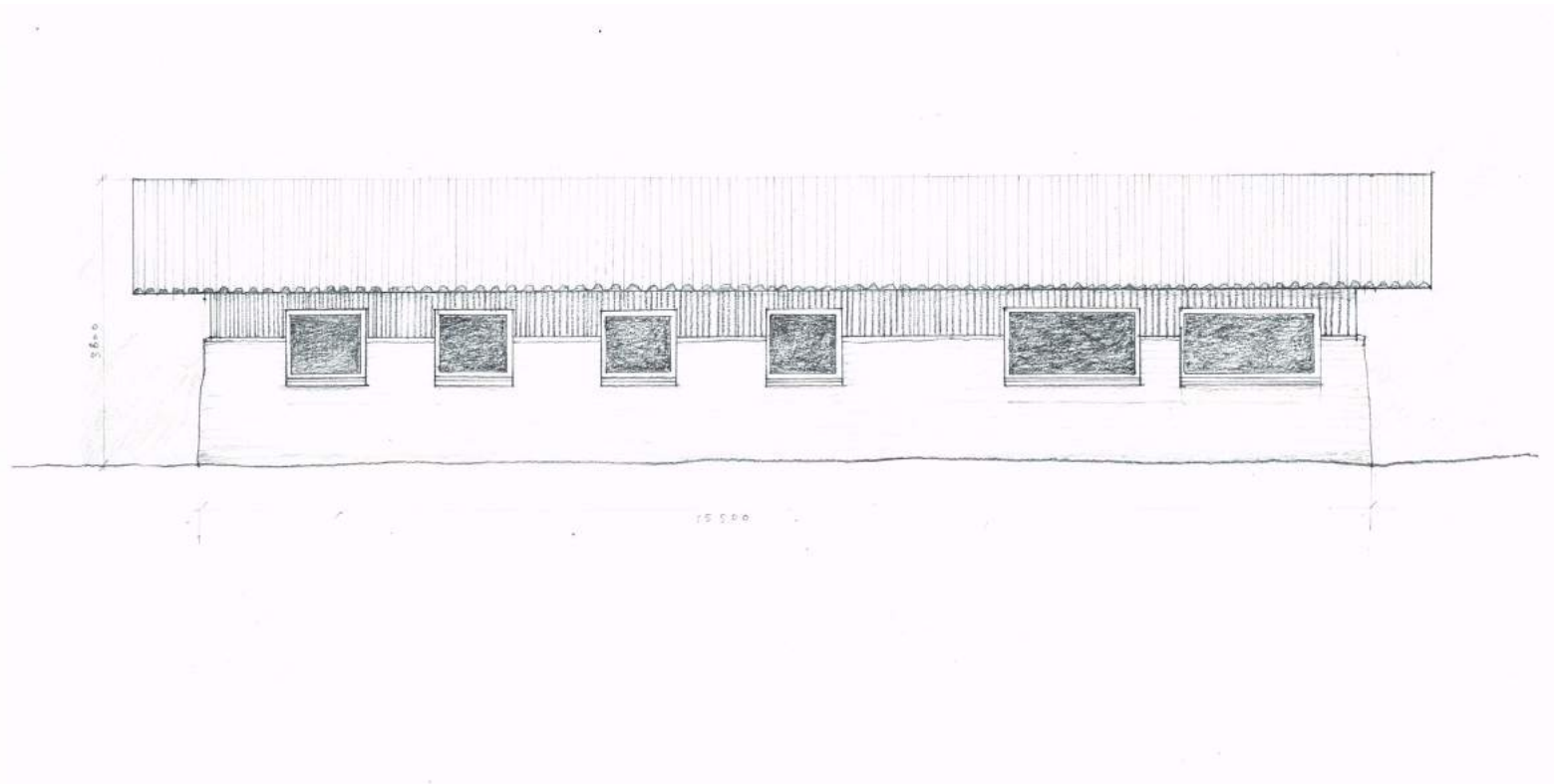


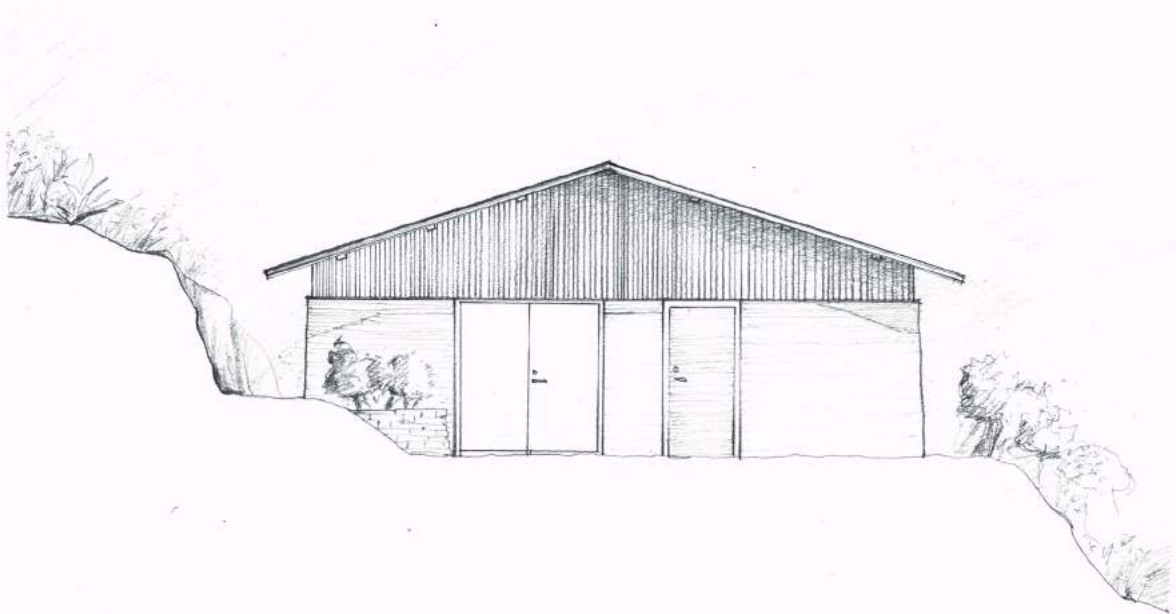
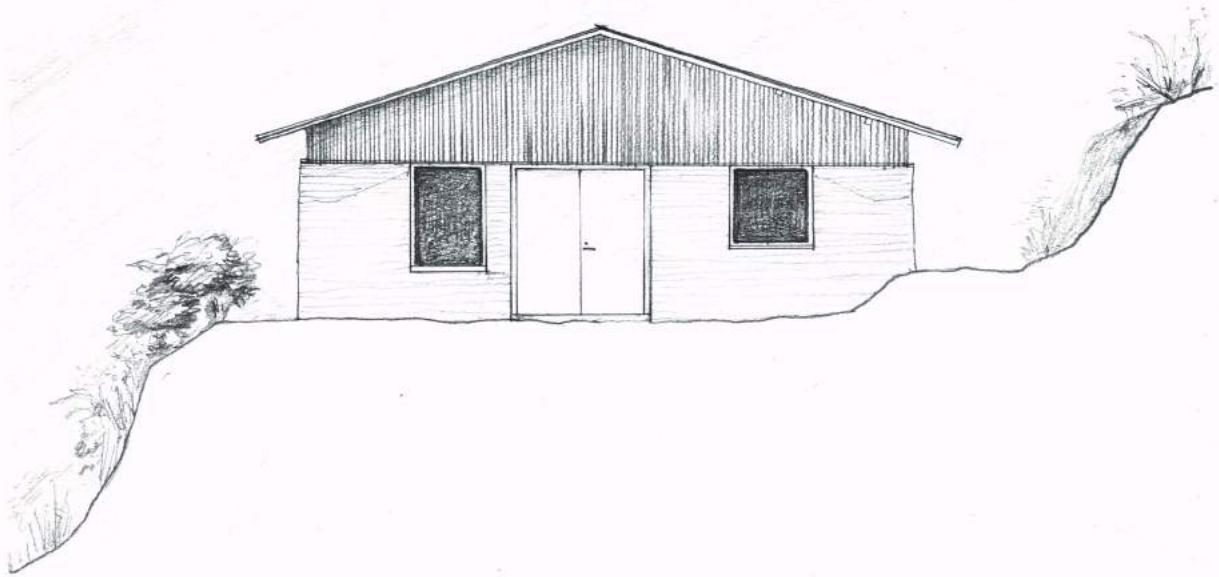


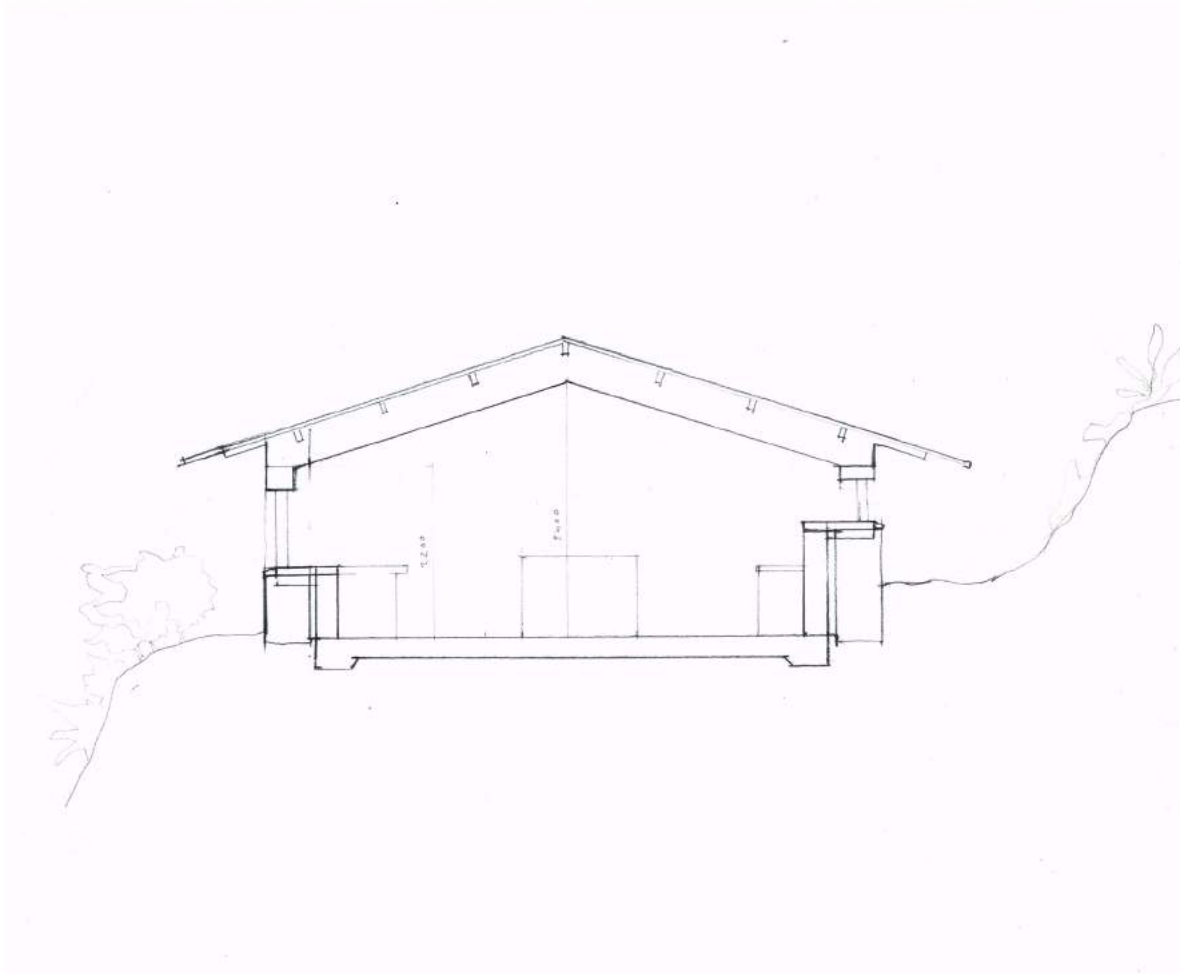


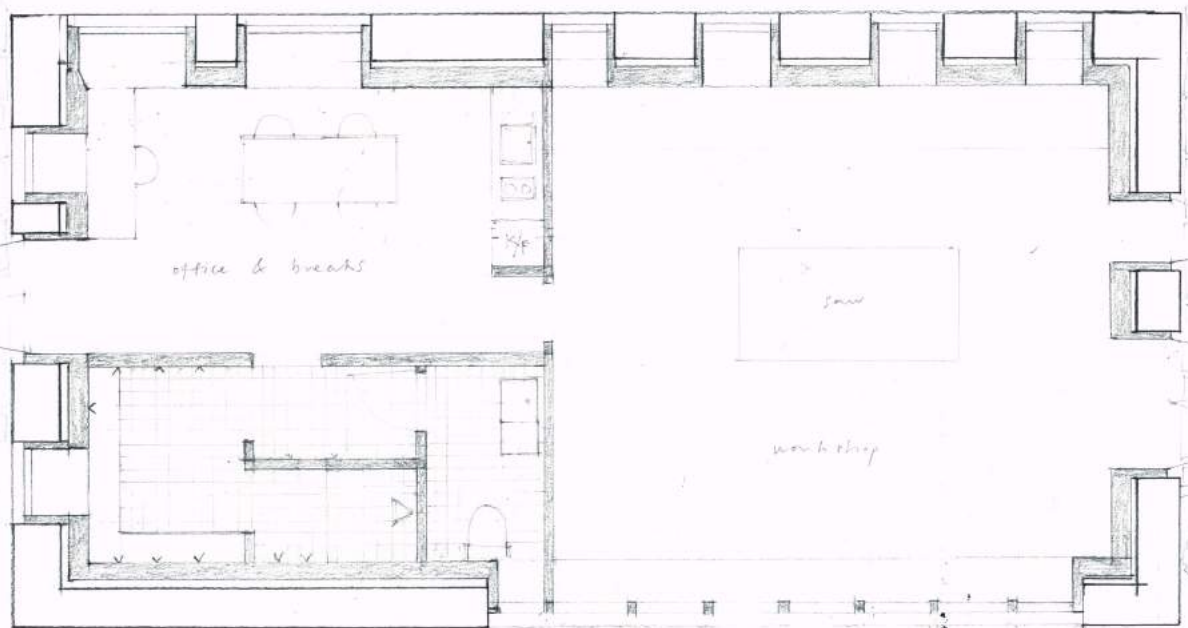




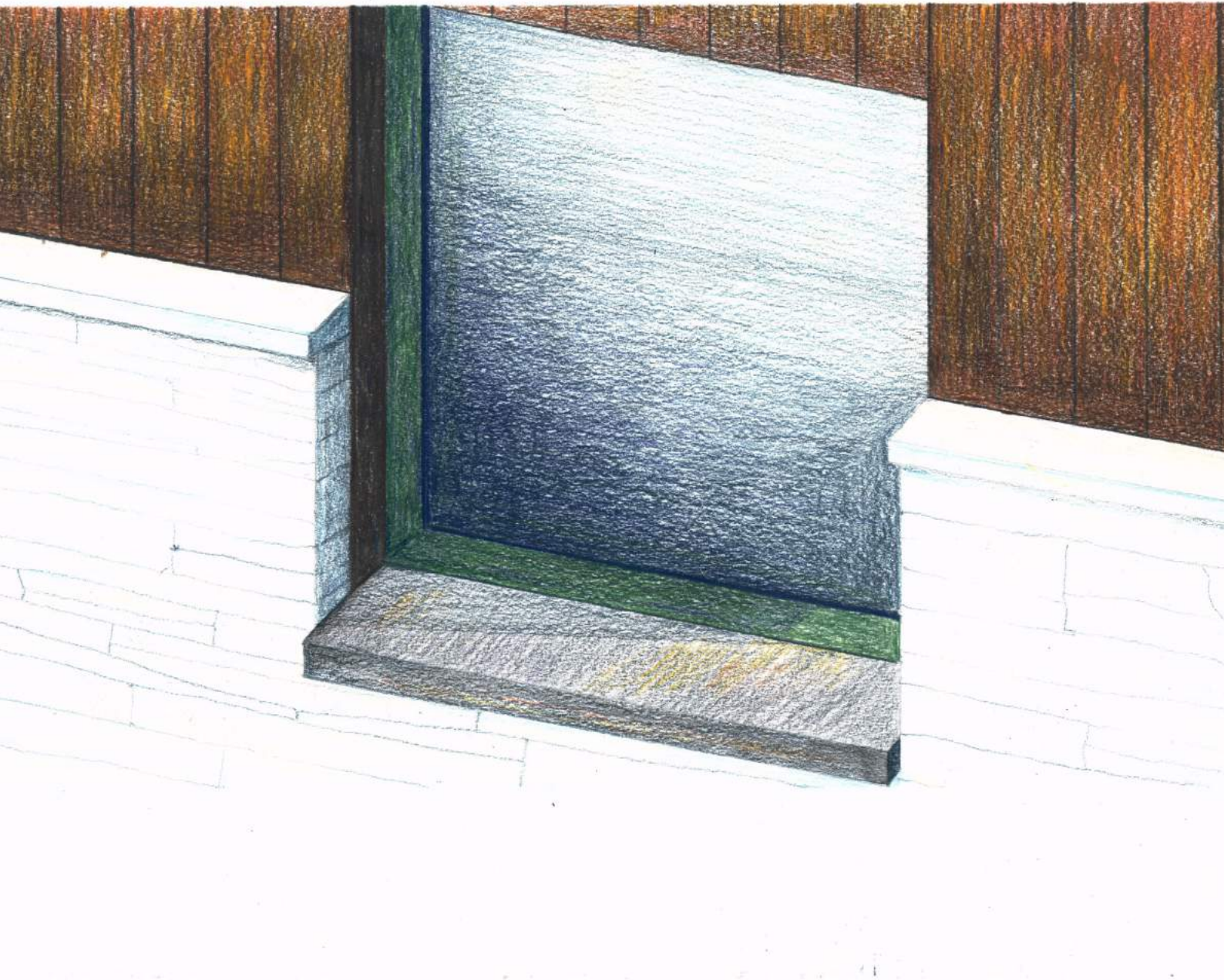














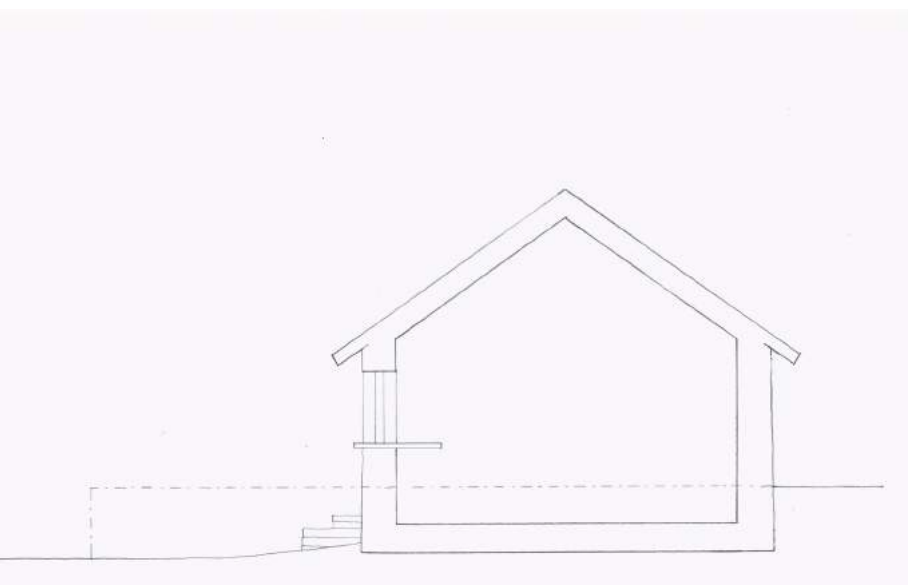


Byssan

This building was originally used as a sleeping space for the stone workers. However, in the last decades it hasn't held any particular function.

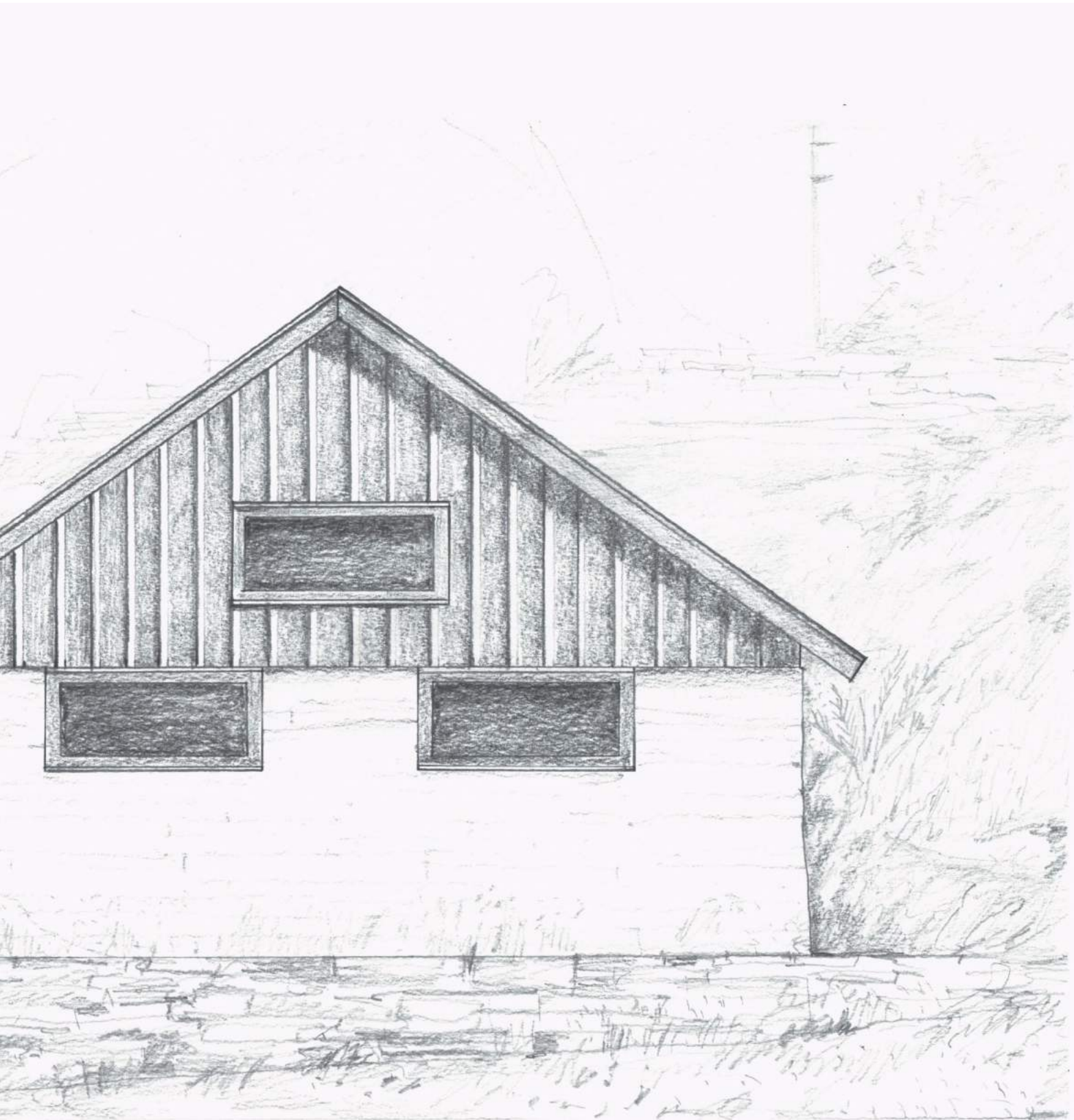
Together with the Saw House, it holds important architectural character linked strongly to the site. The approach in this renovation is conservatory. The constitution of Byssan's appearance act as a strong inspiration and guiding in the designs of the additions presented later.

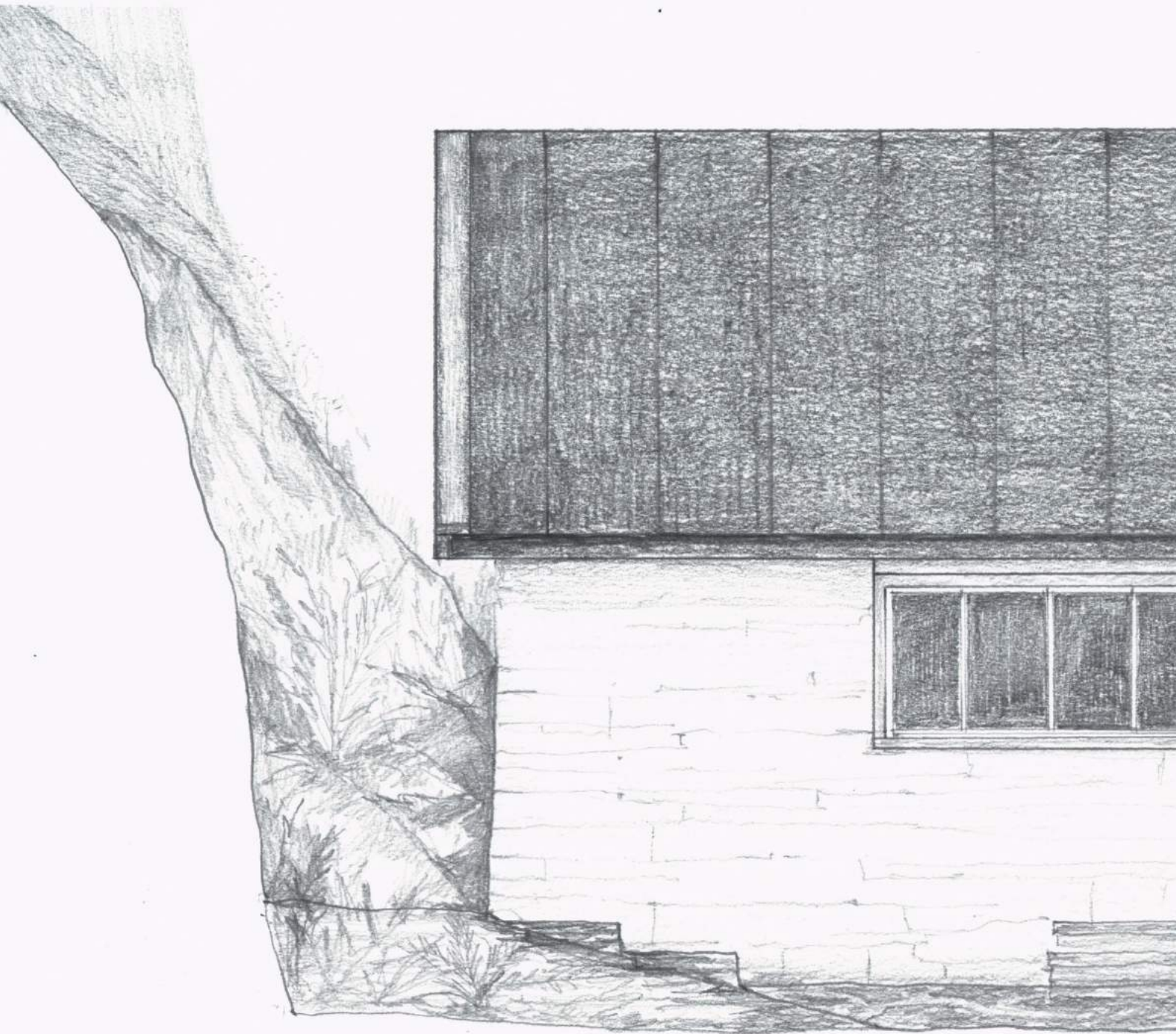
In this program, the building is given a new window opening on its eastern facade to make it function as a small café. Otherwise its impression is preserved.

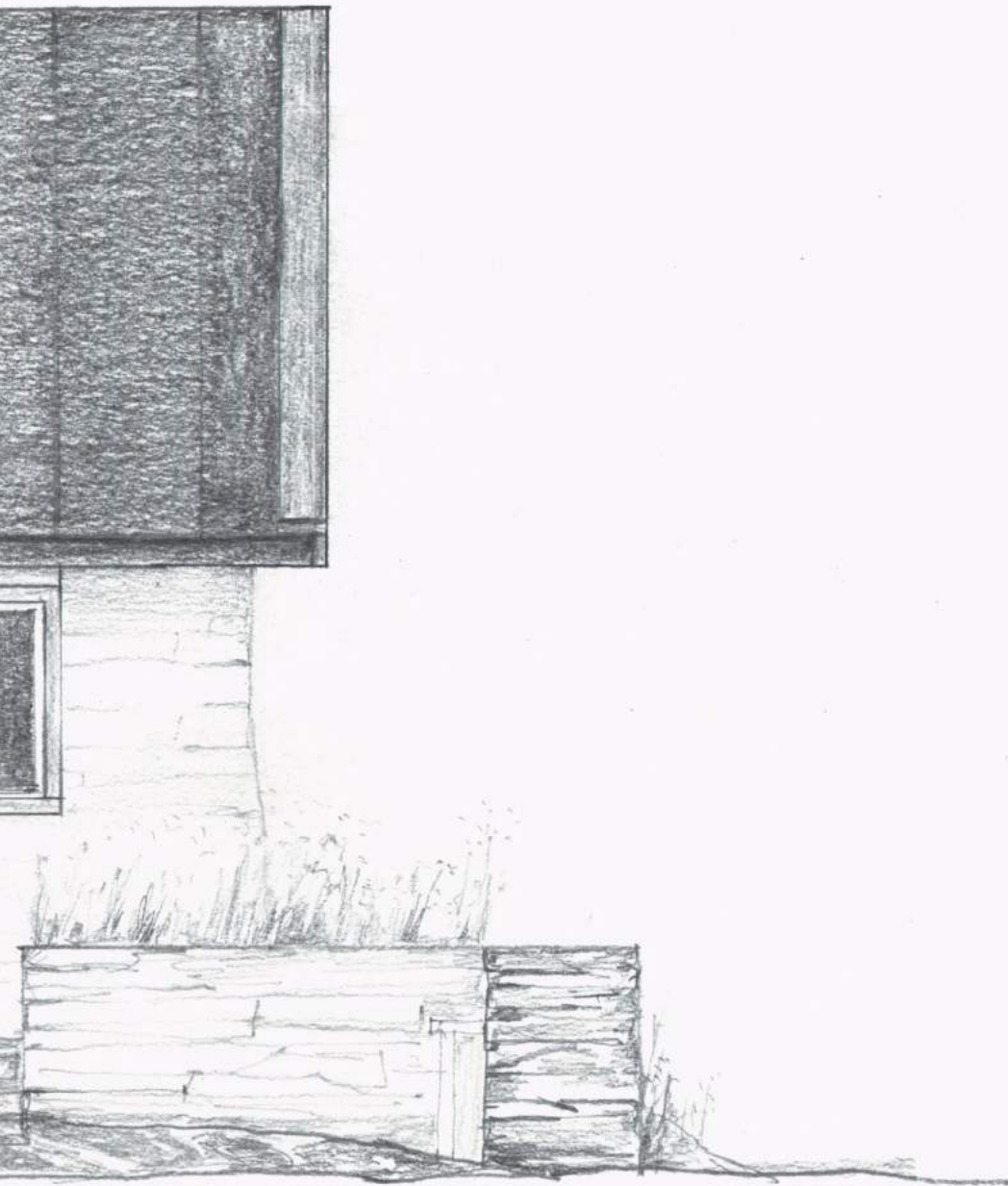


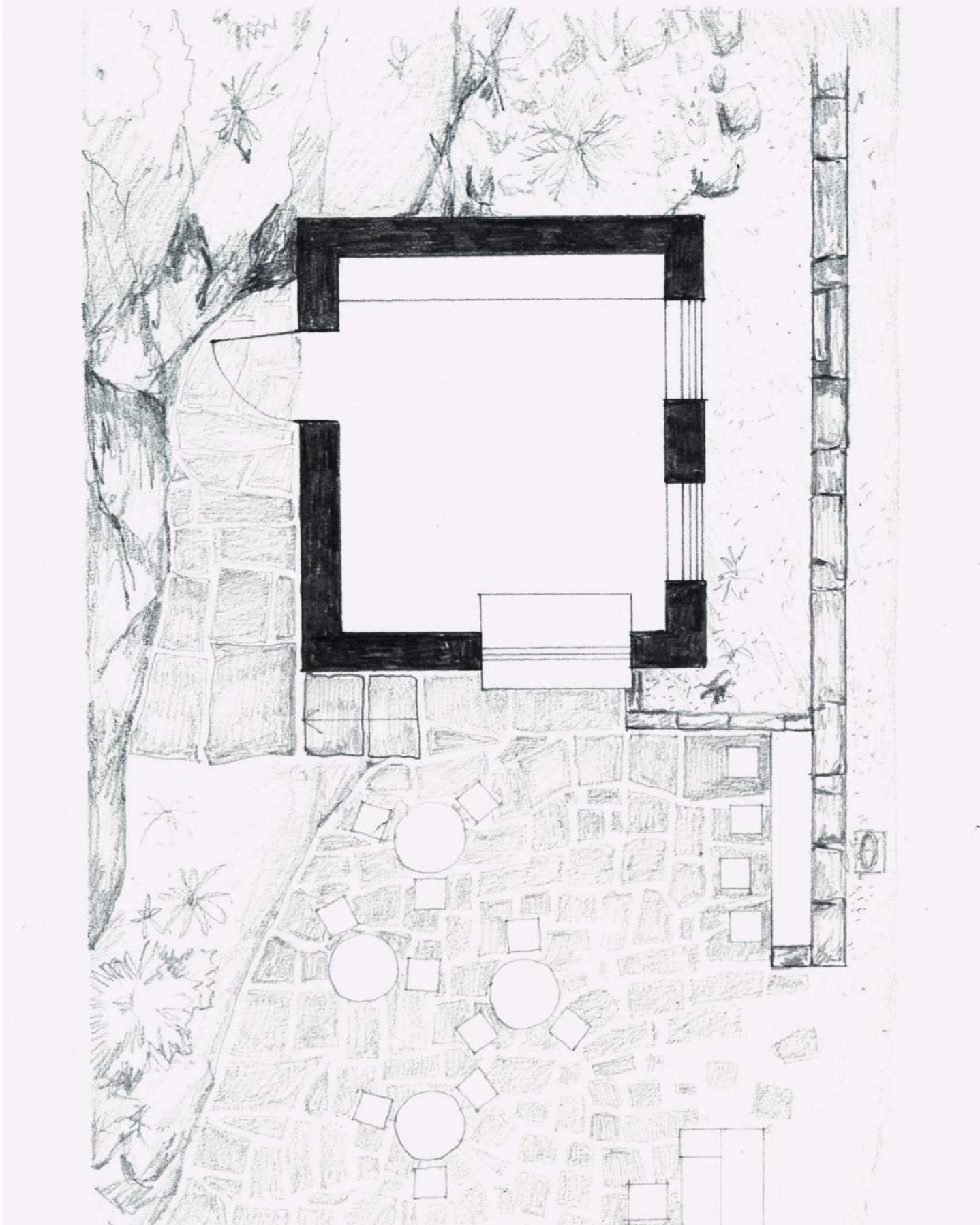
















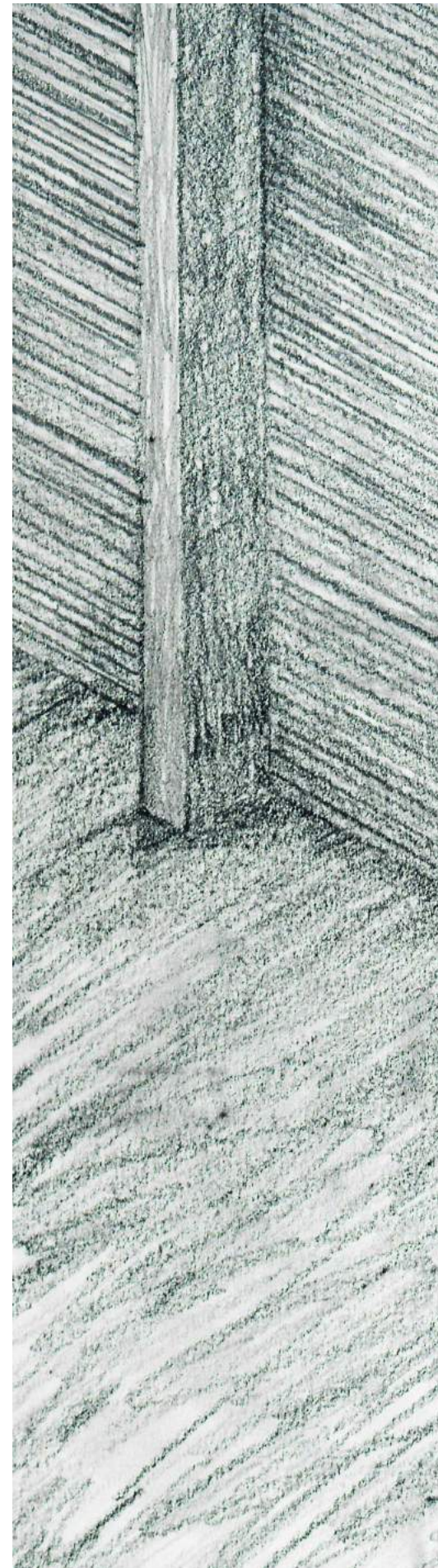


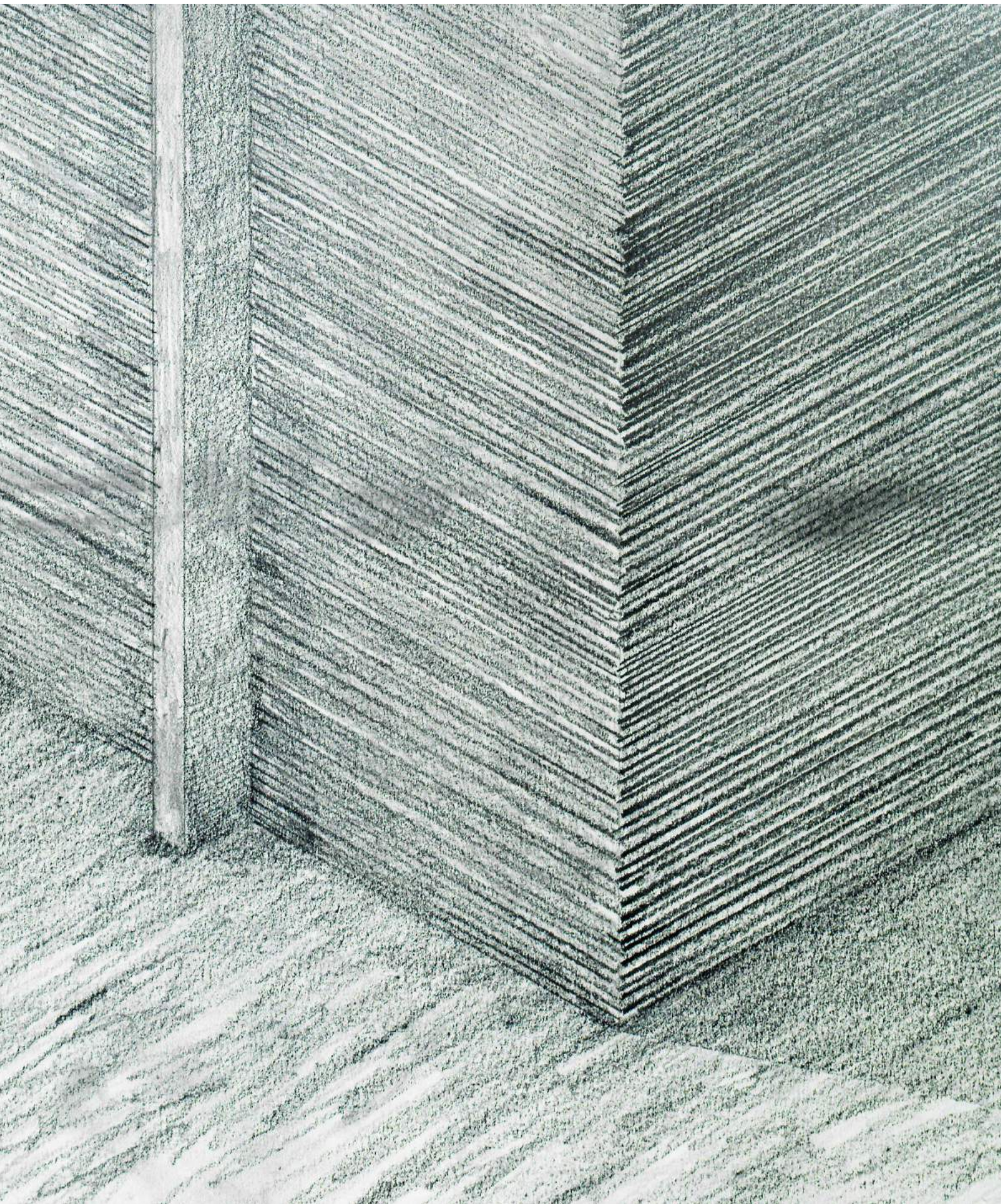
Workshop

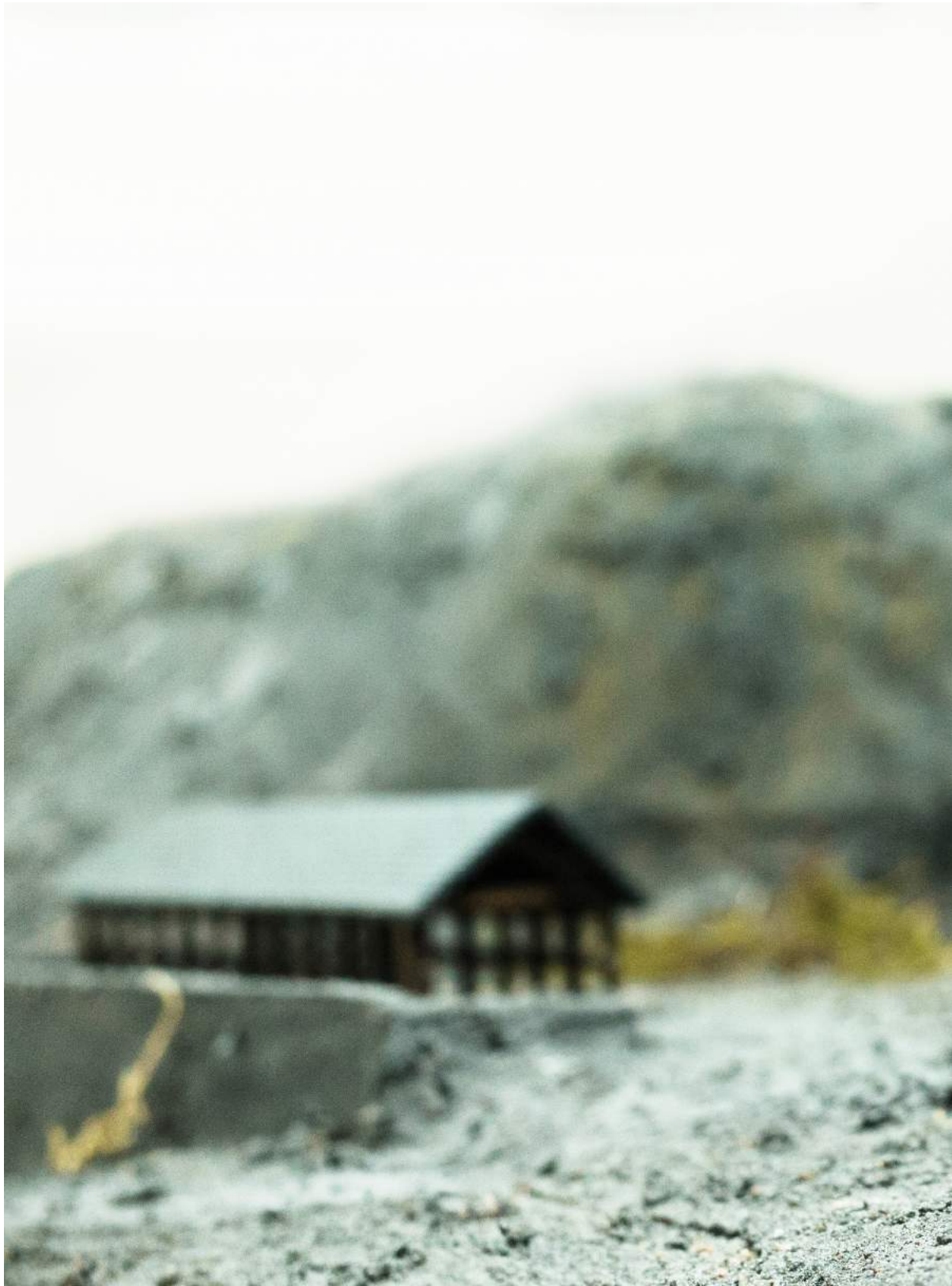
The majority of the work in the quarry takes place outside. This building provides shelter from rain, but it also holds other qualities. Its' facade is structured as a system of work benches and shelves that act as a window between the vernacular tradition and the visitors.

The simple wooden structure with tarred surfaces carries the slate covered roof. Slate stones that are being reworked or stored are also becoming a part of the exterior's impression.

This building takes a very exposed place in possession. As an addition, this kind of position and size are risking to distract from the genius loci. However, this particular building's function can be seen as an extension of the quarry's essence.



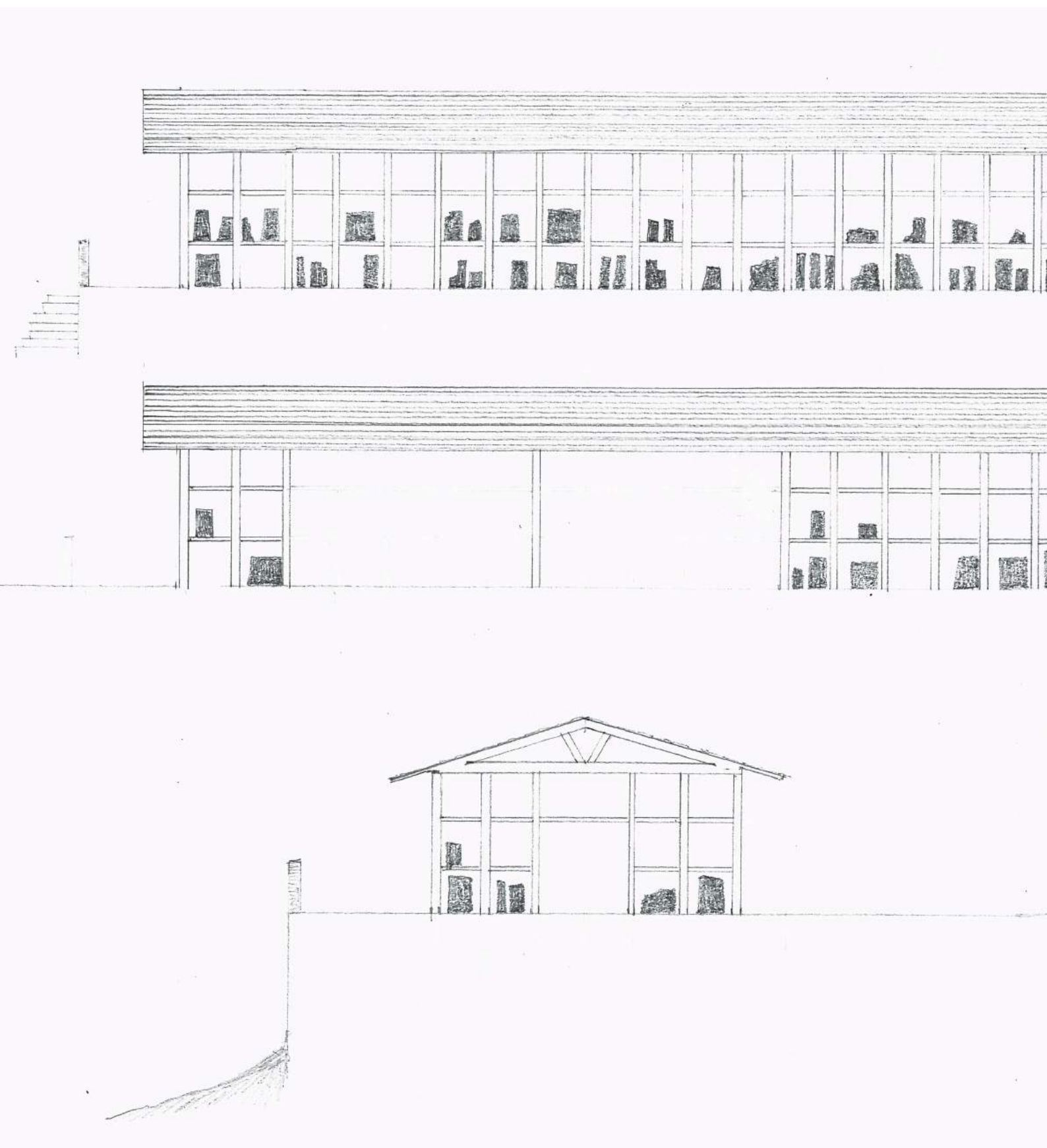


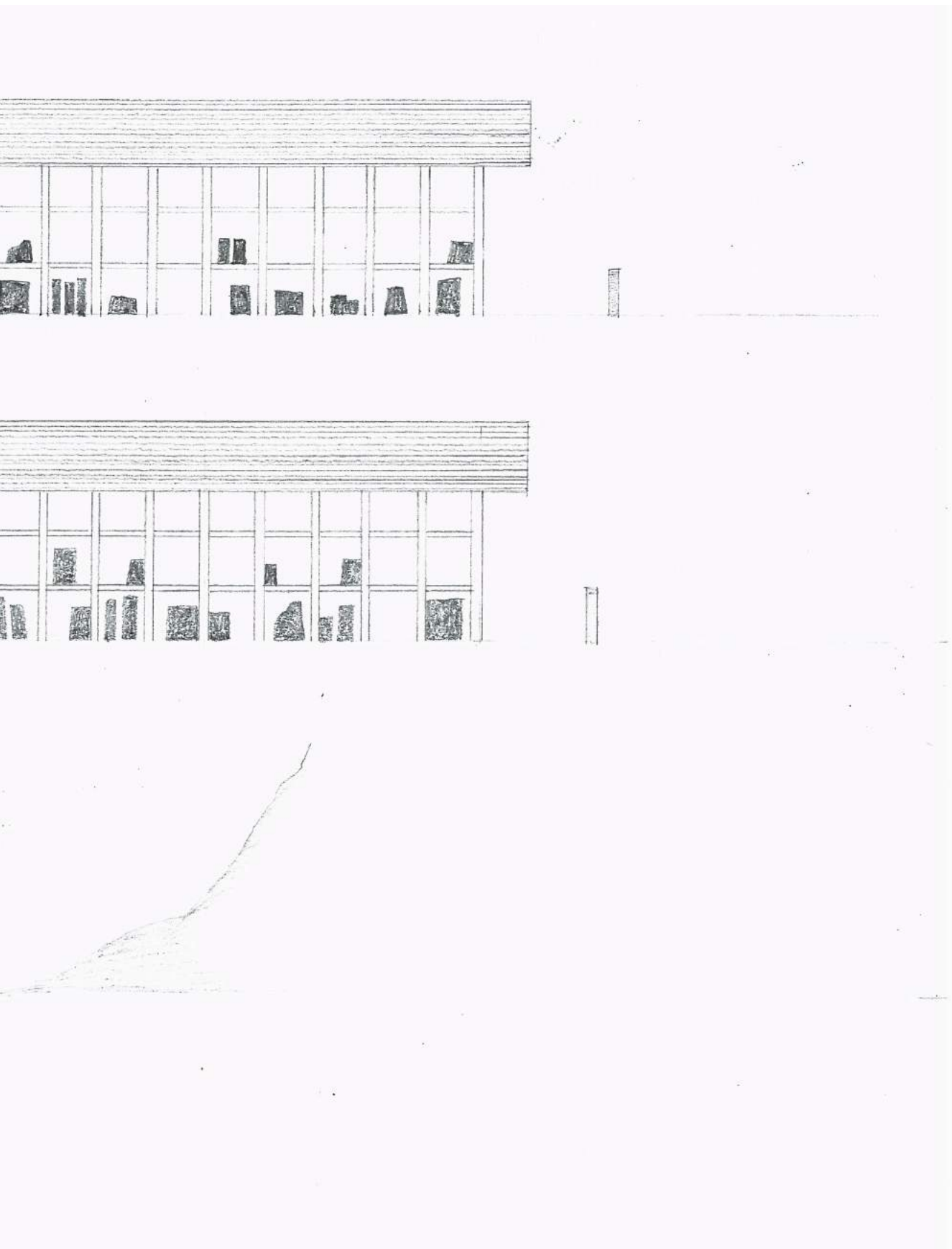


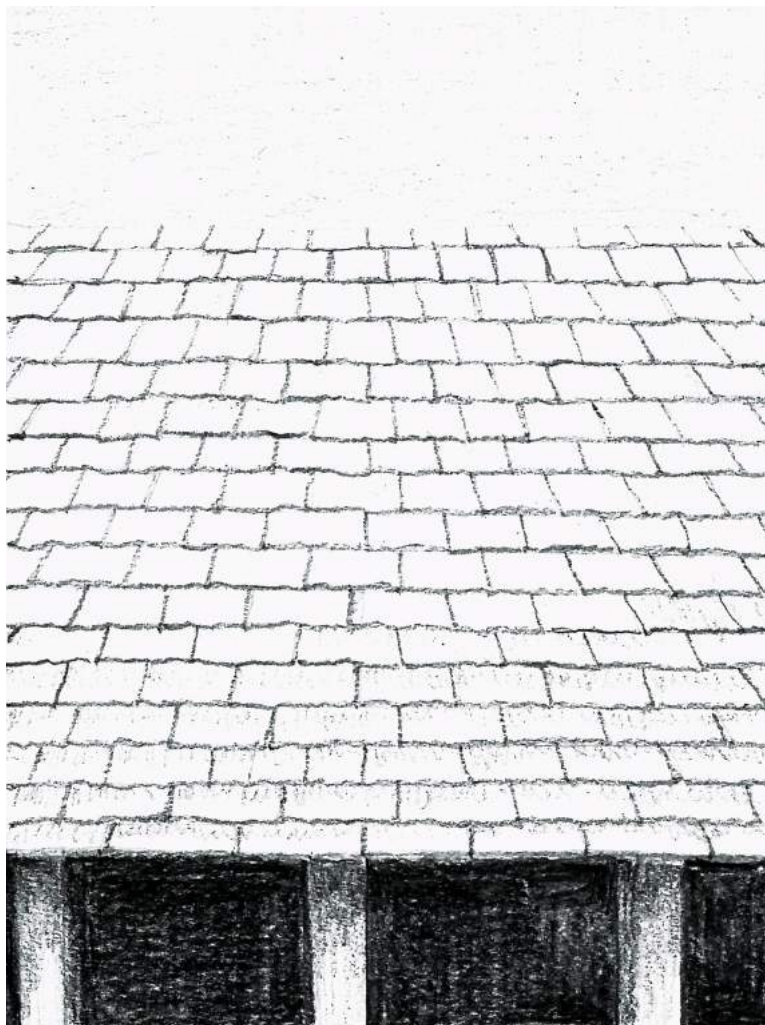


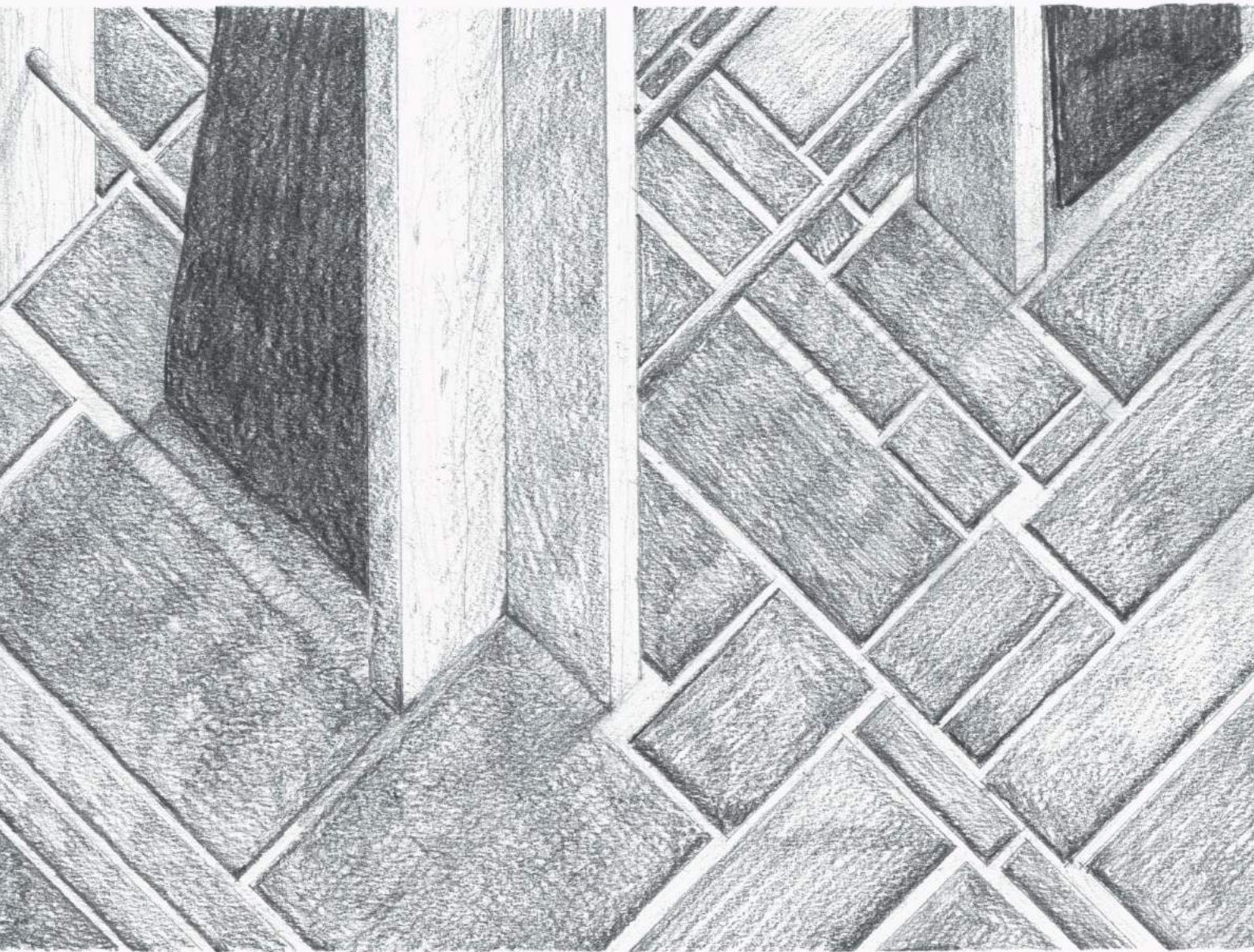


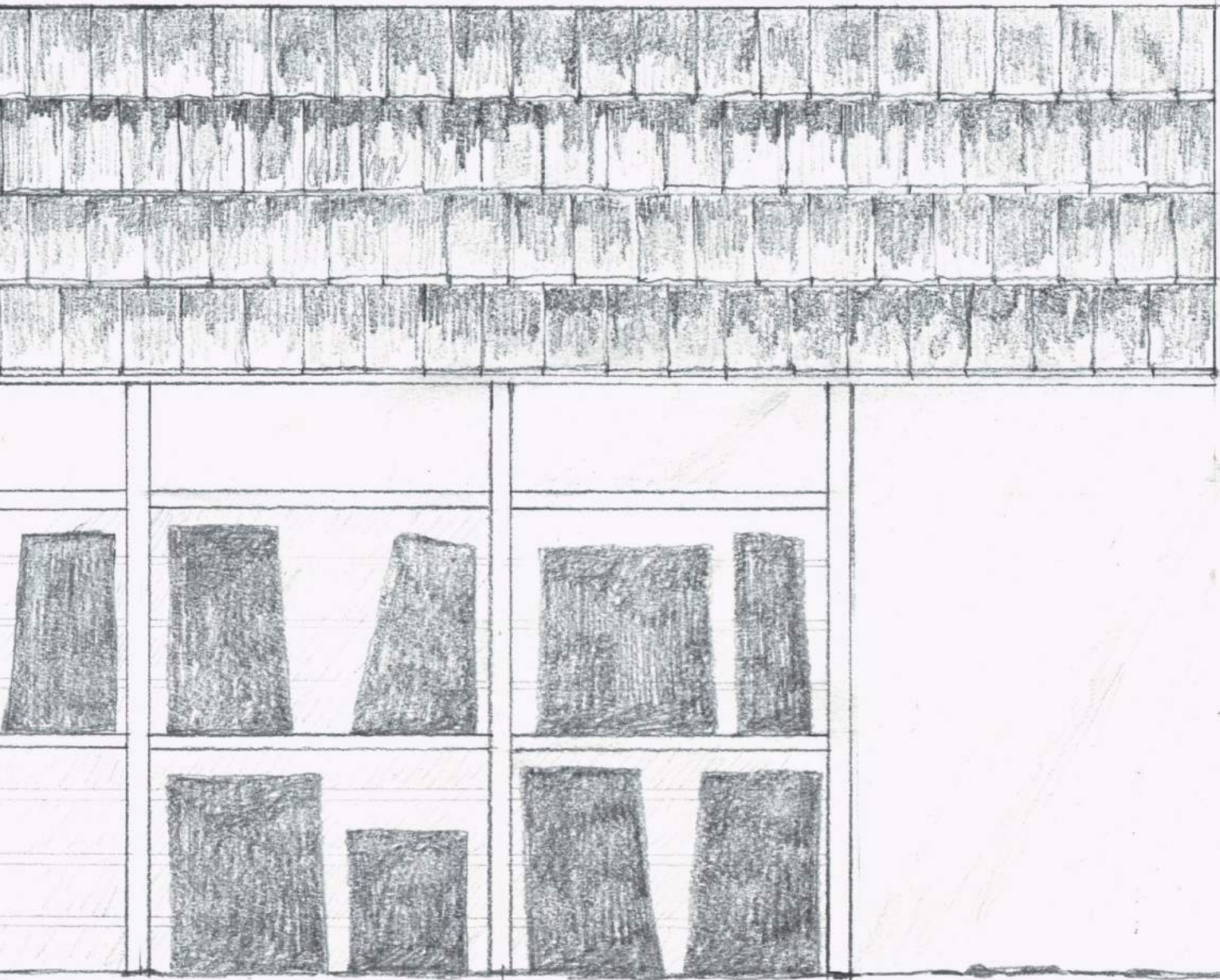


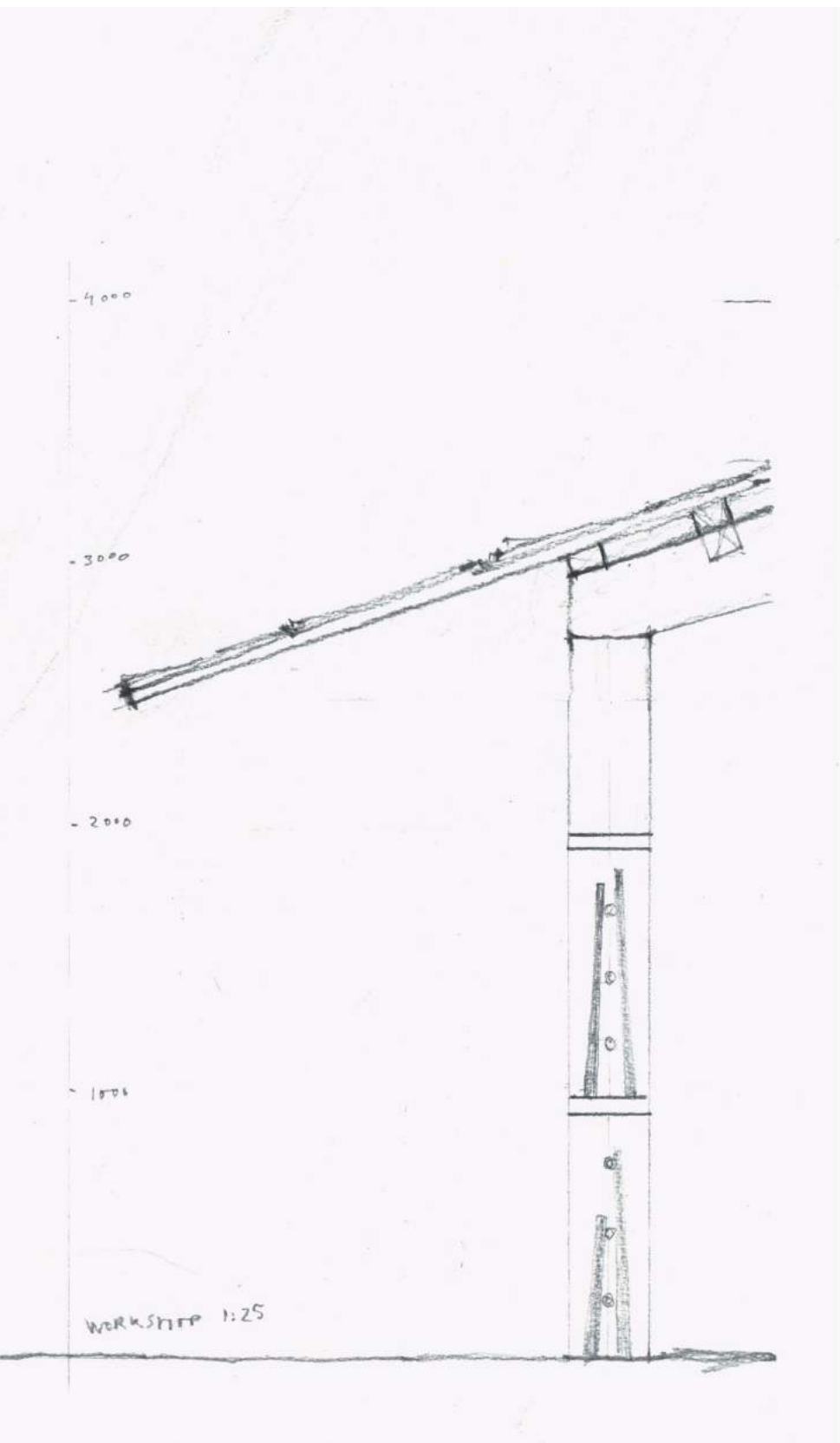






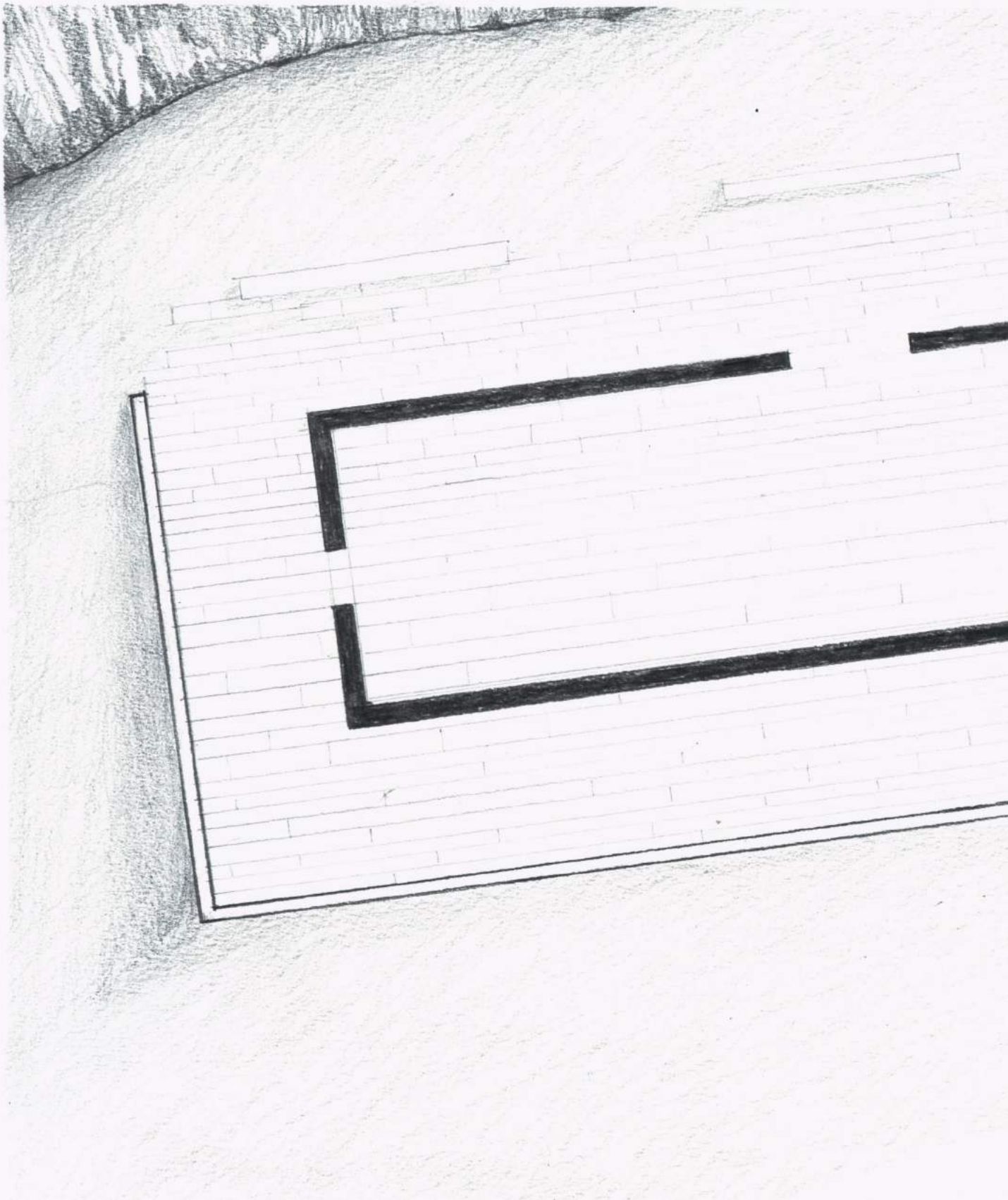


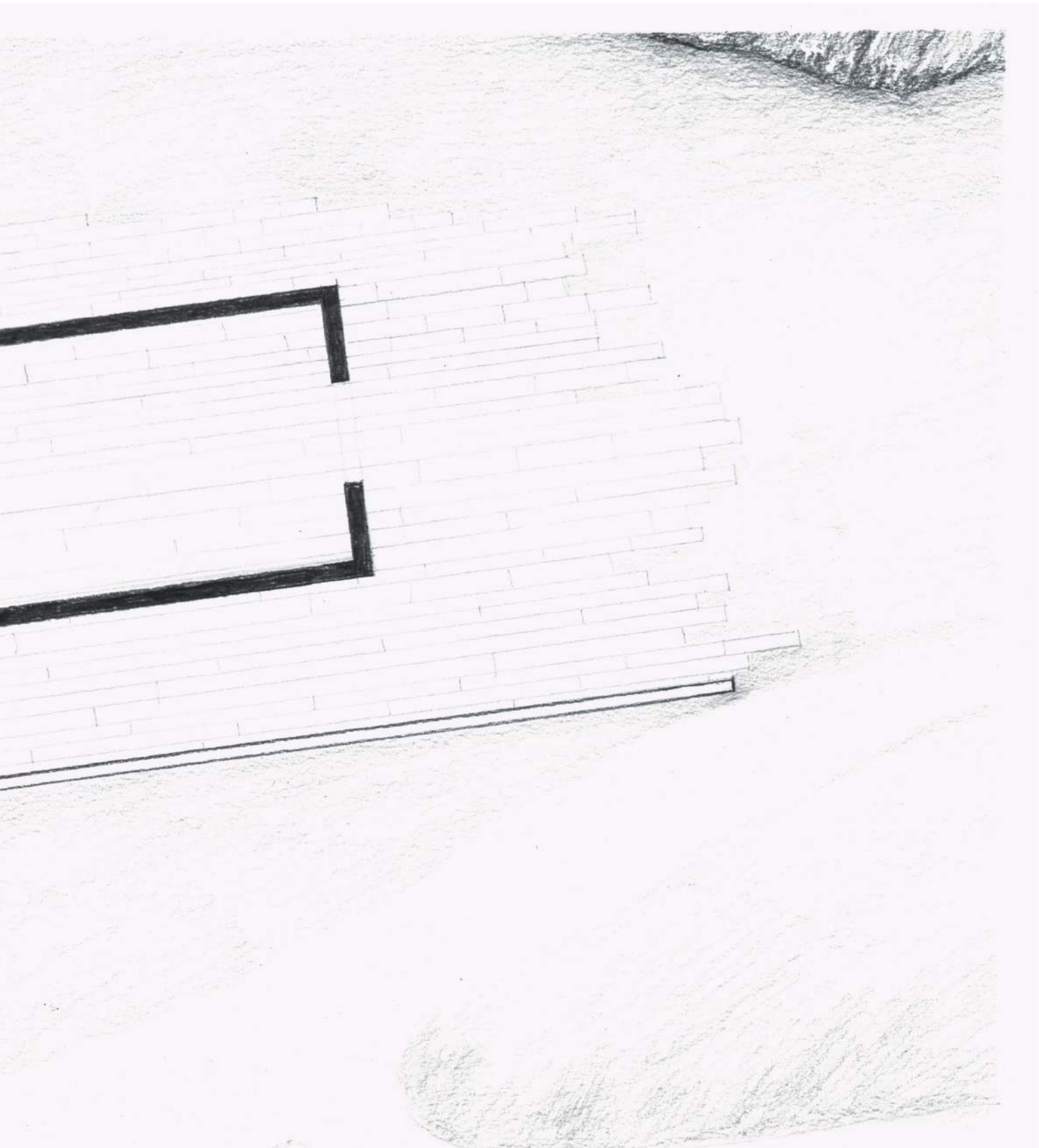


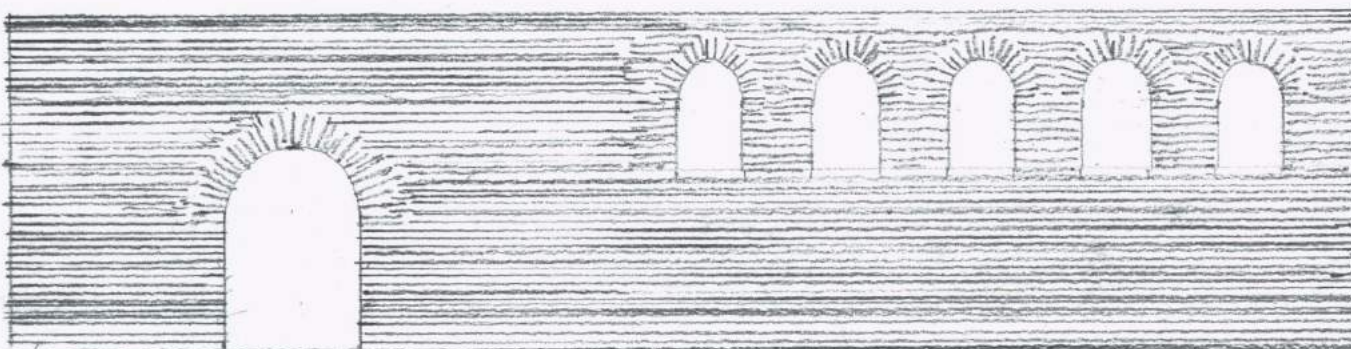


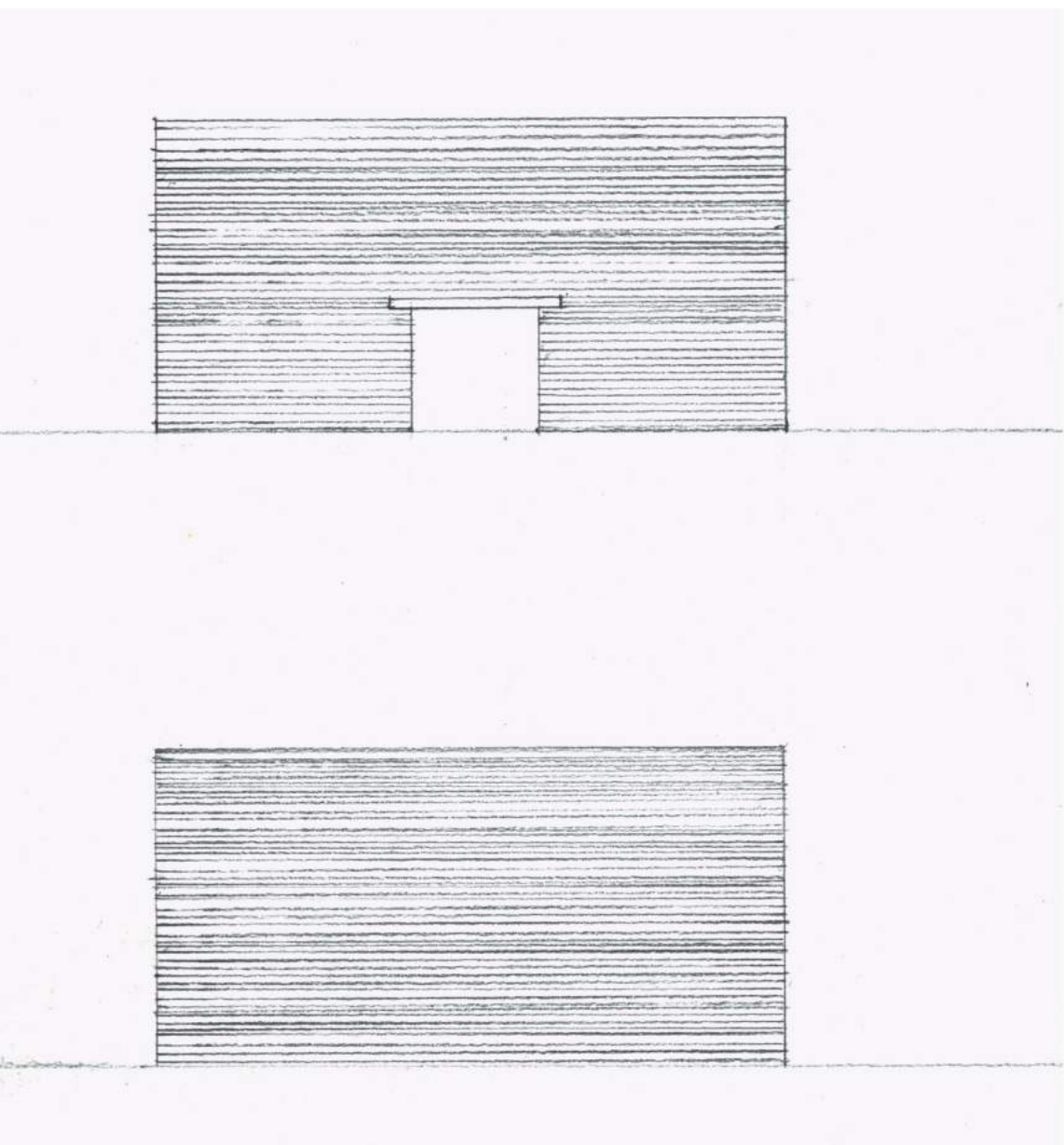


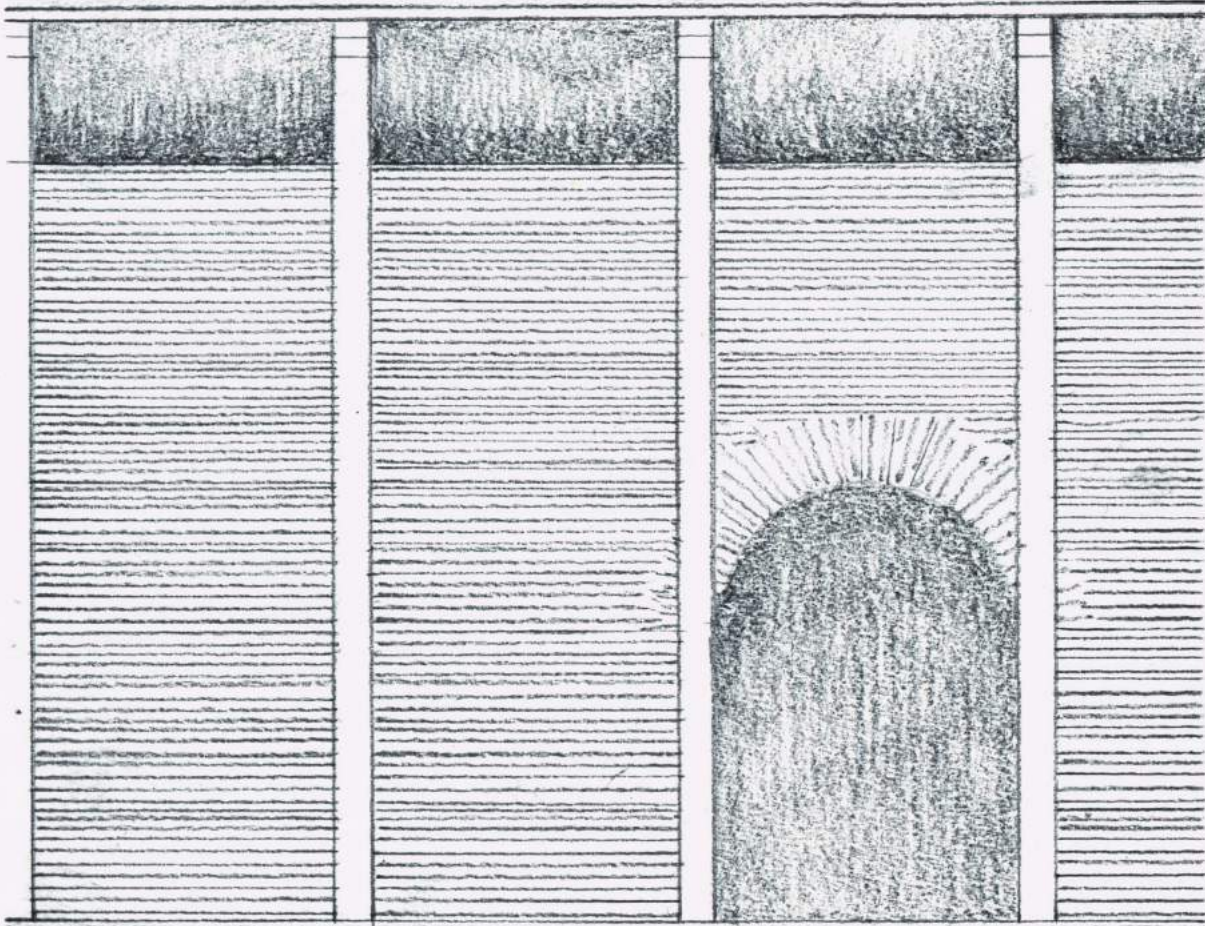


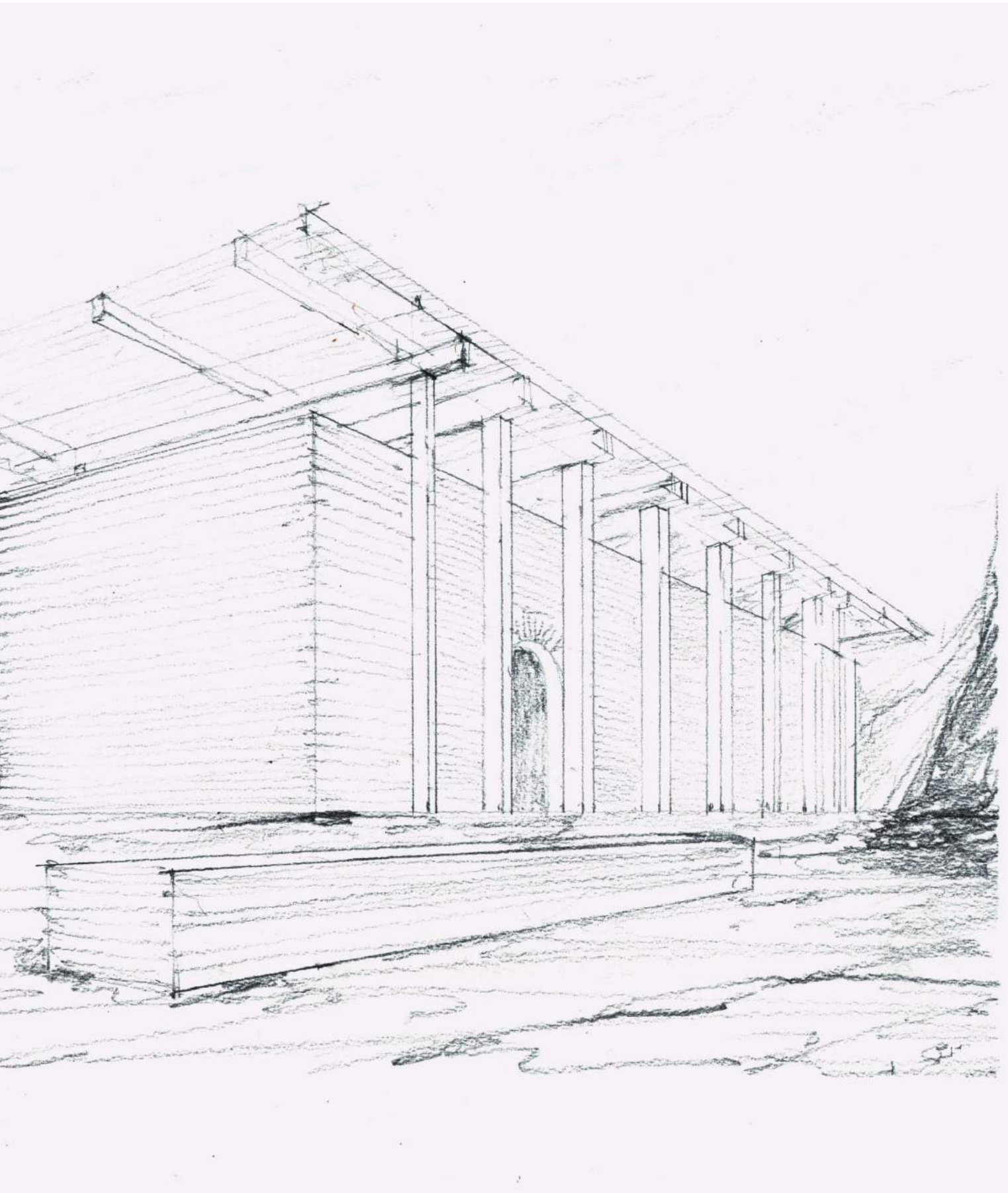


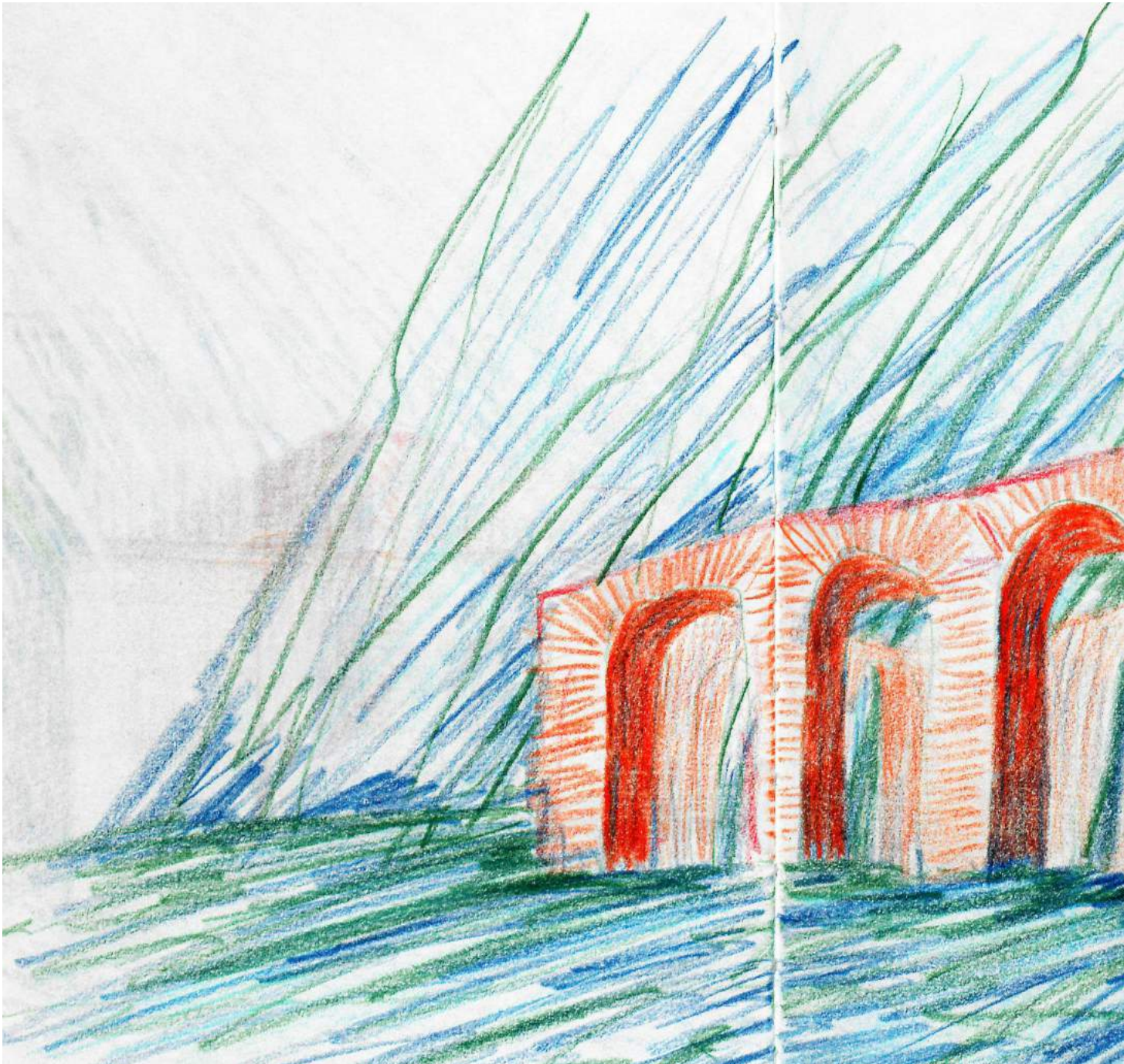




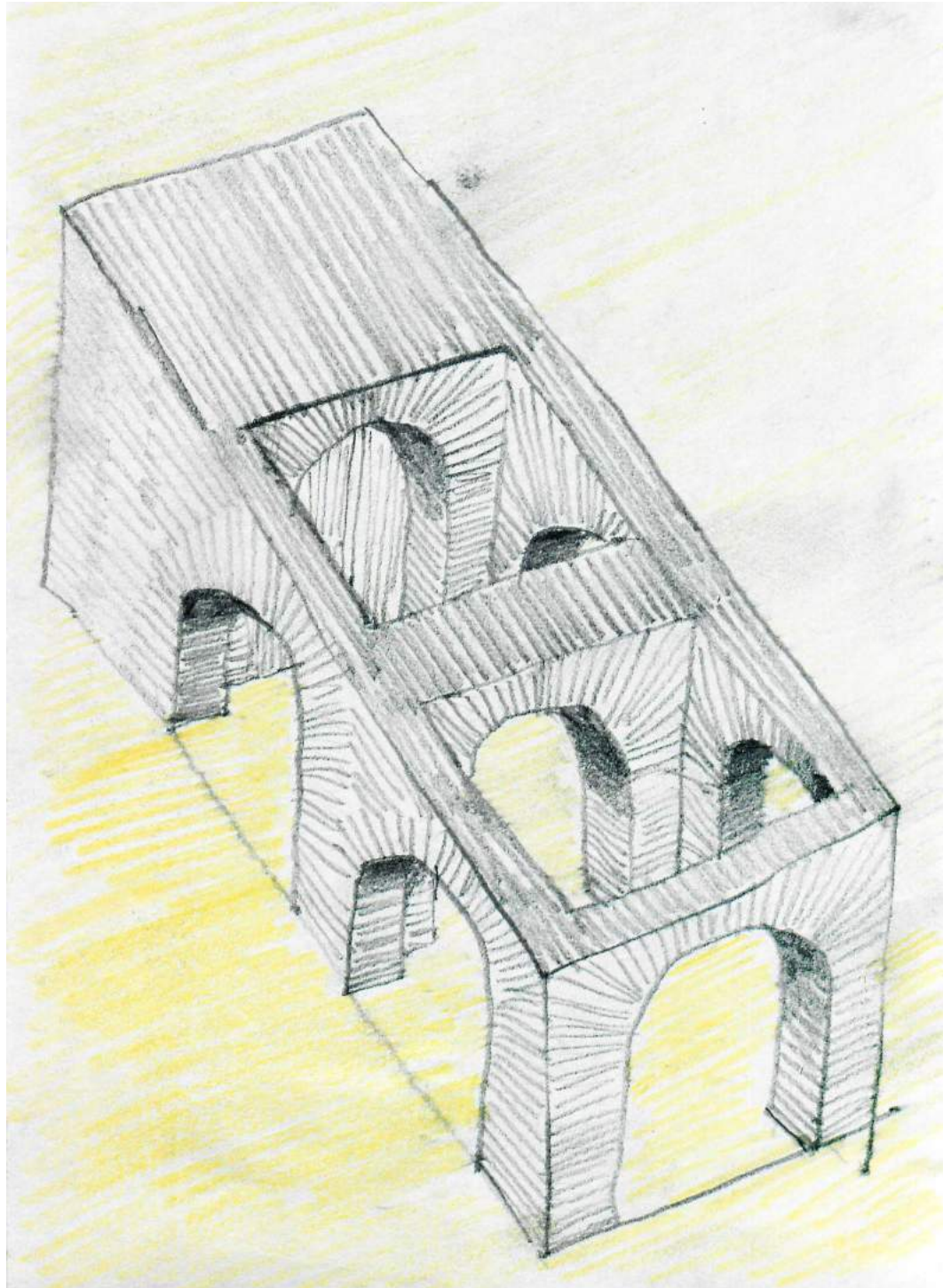


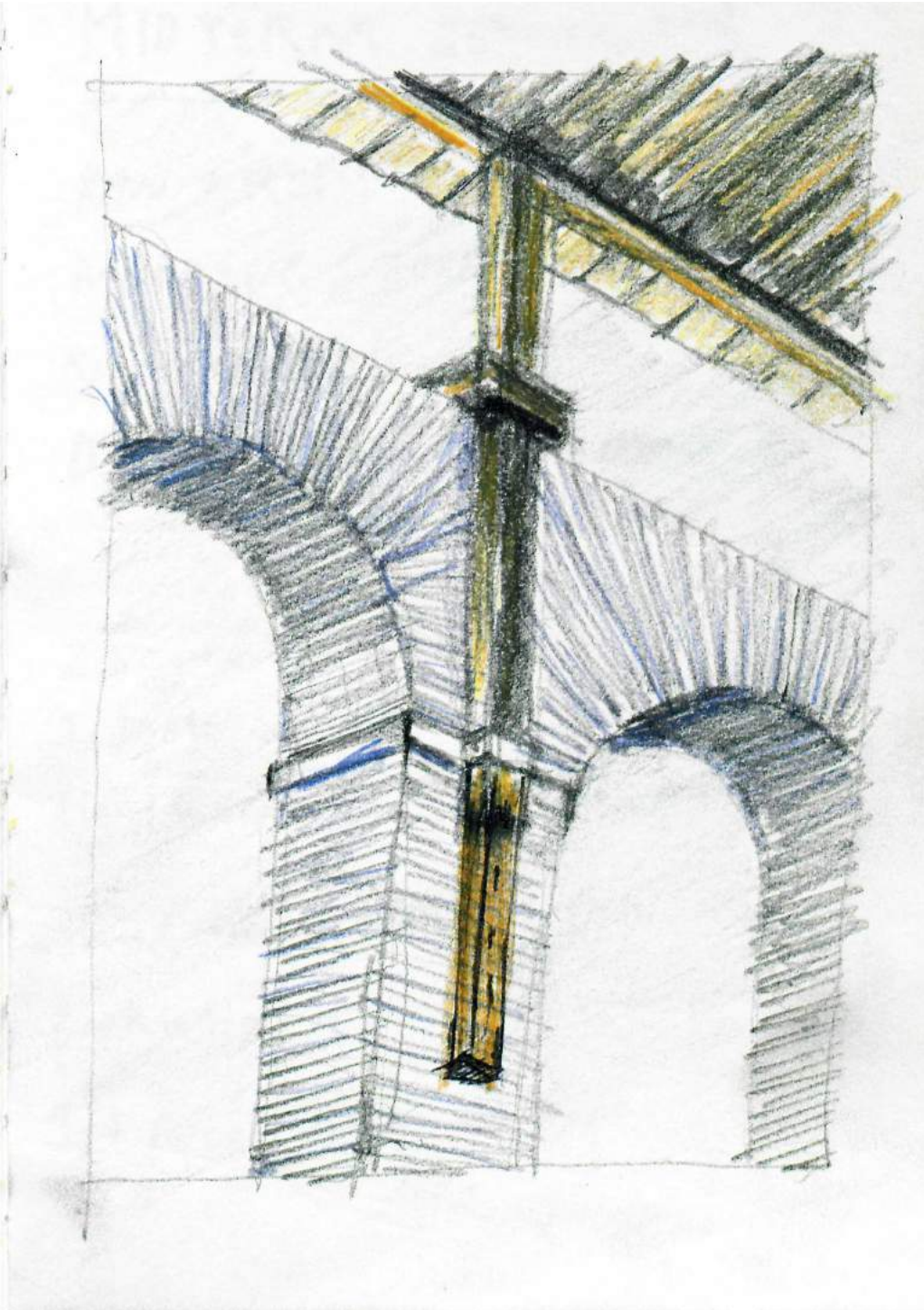


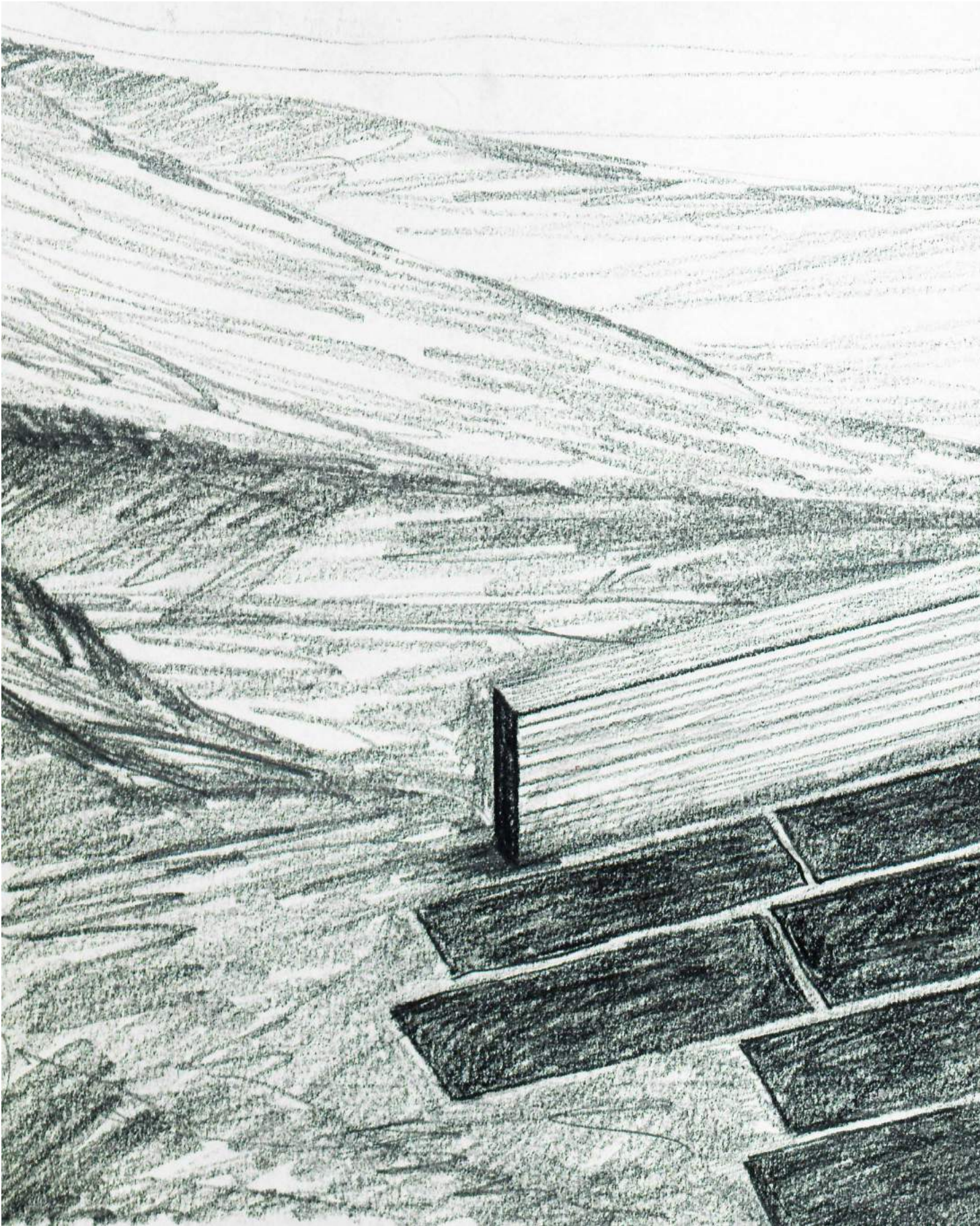


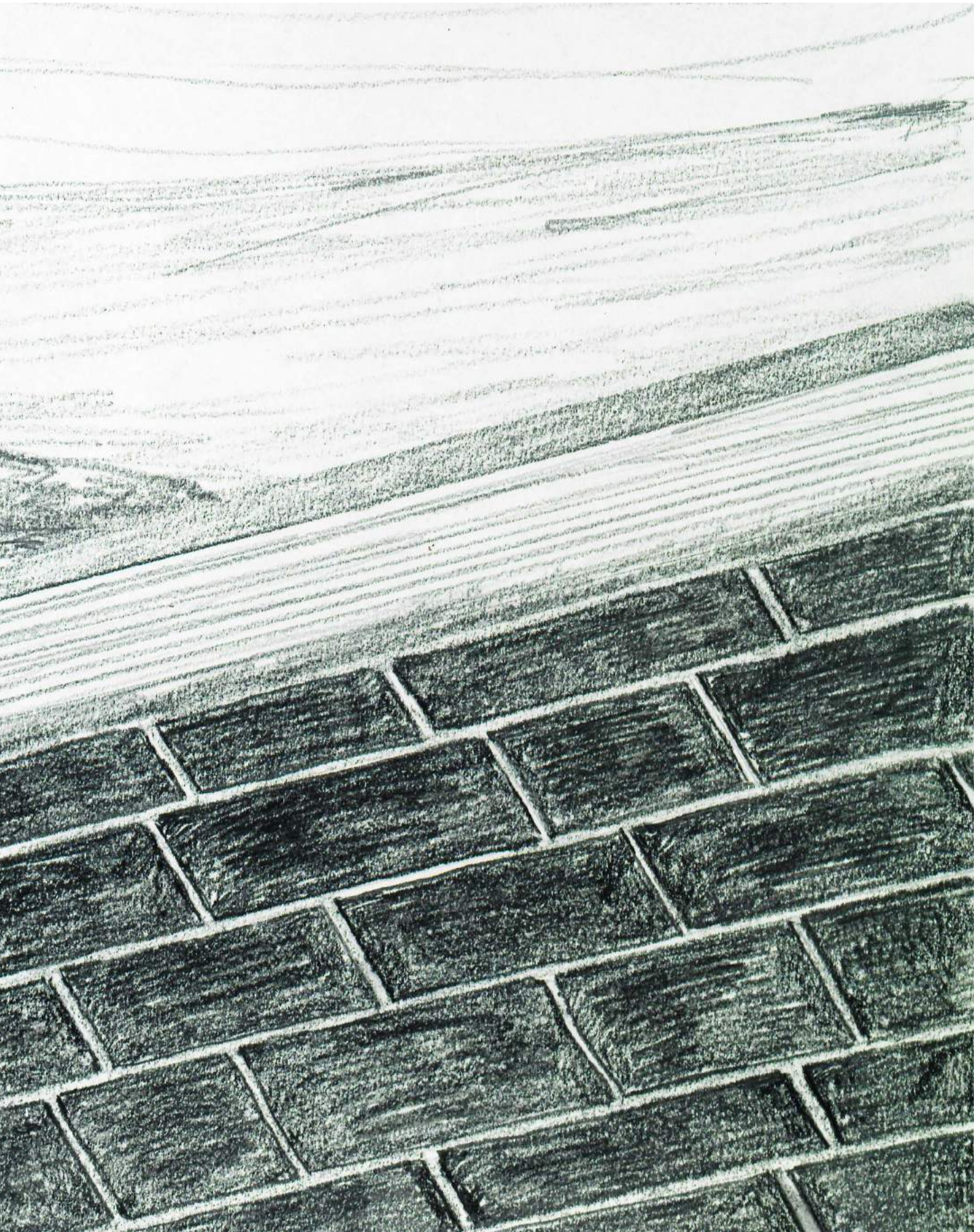




















Centre

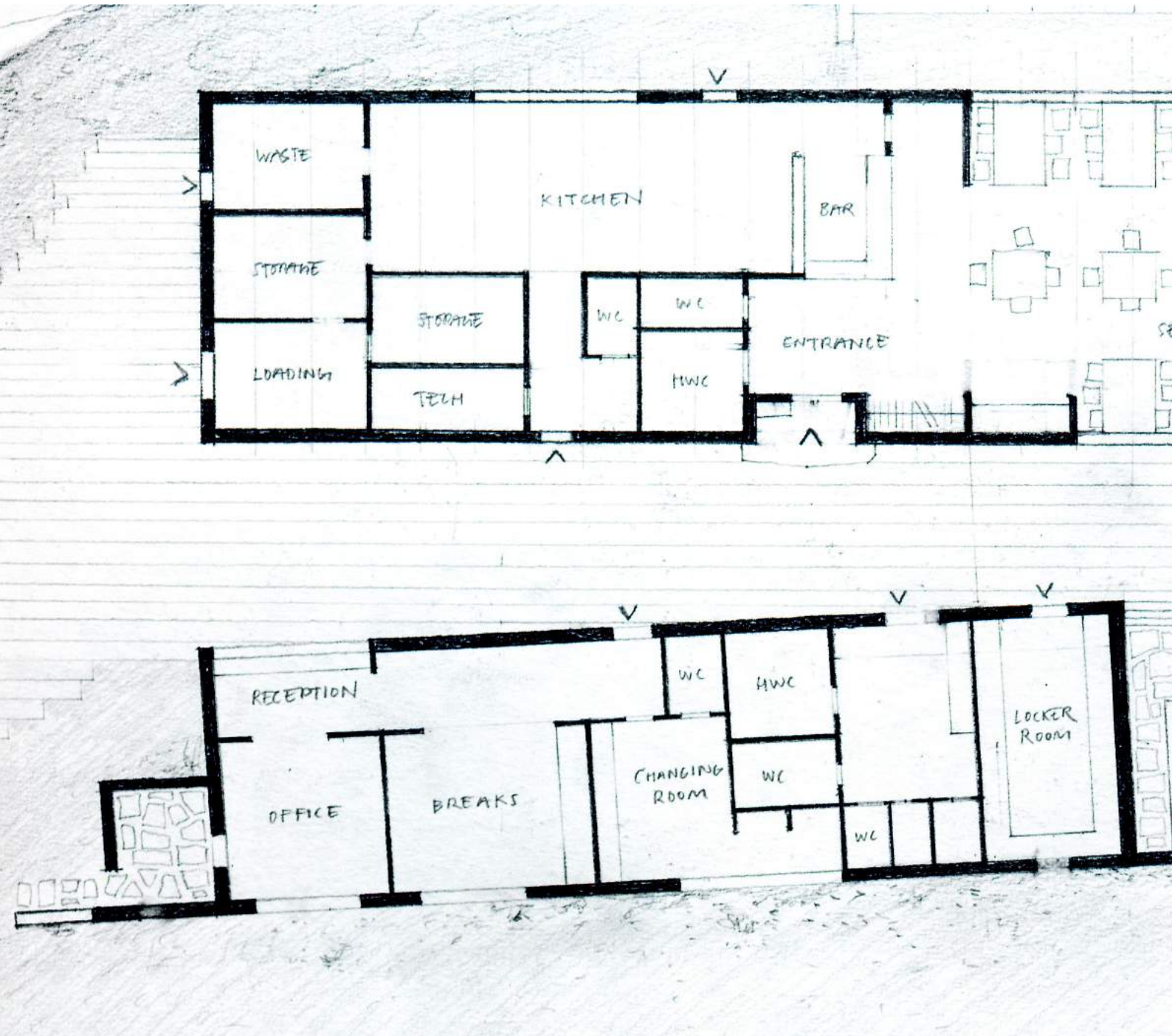
This duo acts as the centre for all the public visitors. It is located close to the quarry to keep a visual contact. The centre holds functions such as restaurant, reception, staff space, toilets and a locker room.

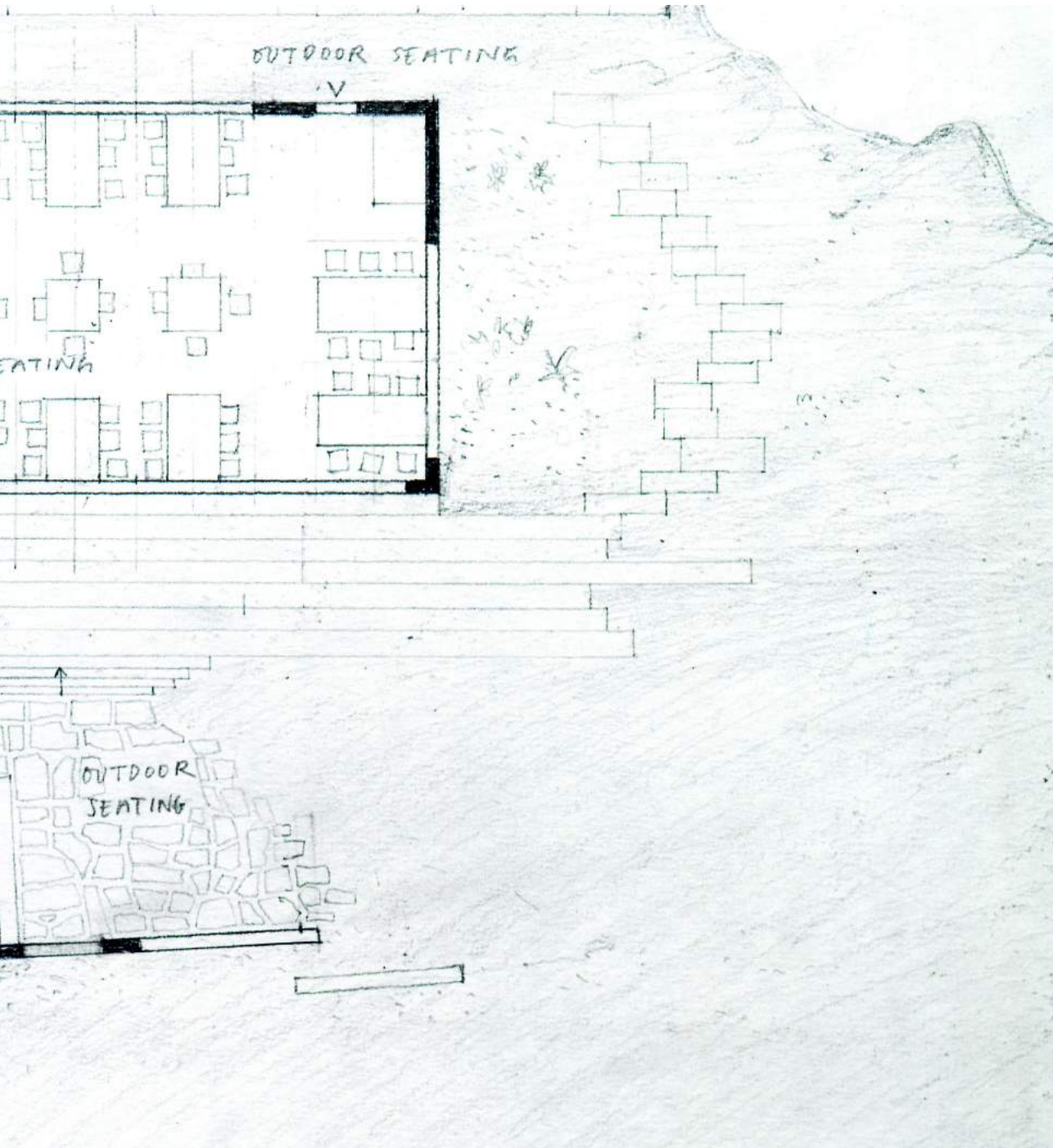
The wooden, barn shaped building with a slate stone roof is partly hidden by a smaller volume which has a stone wall stretching along its' northern facade. This wall has windows openings both to the interior and exterior. The separation of the two volumes create a protected space in between which let the morning and evening sun in.

In contrast to the workshop building, the centre is placed in a more subdued position. This in combination with the covering slate stone wall lets it spread out in size without getting too much attention. The Centre blends in with its' surroundings, nature dominates.



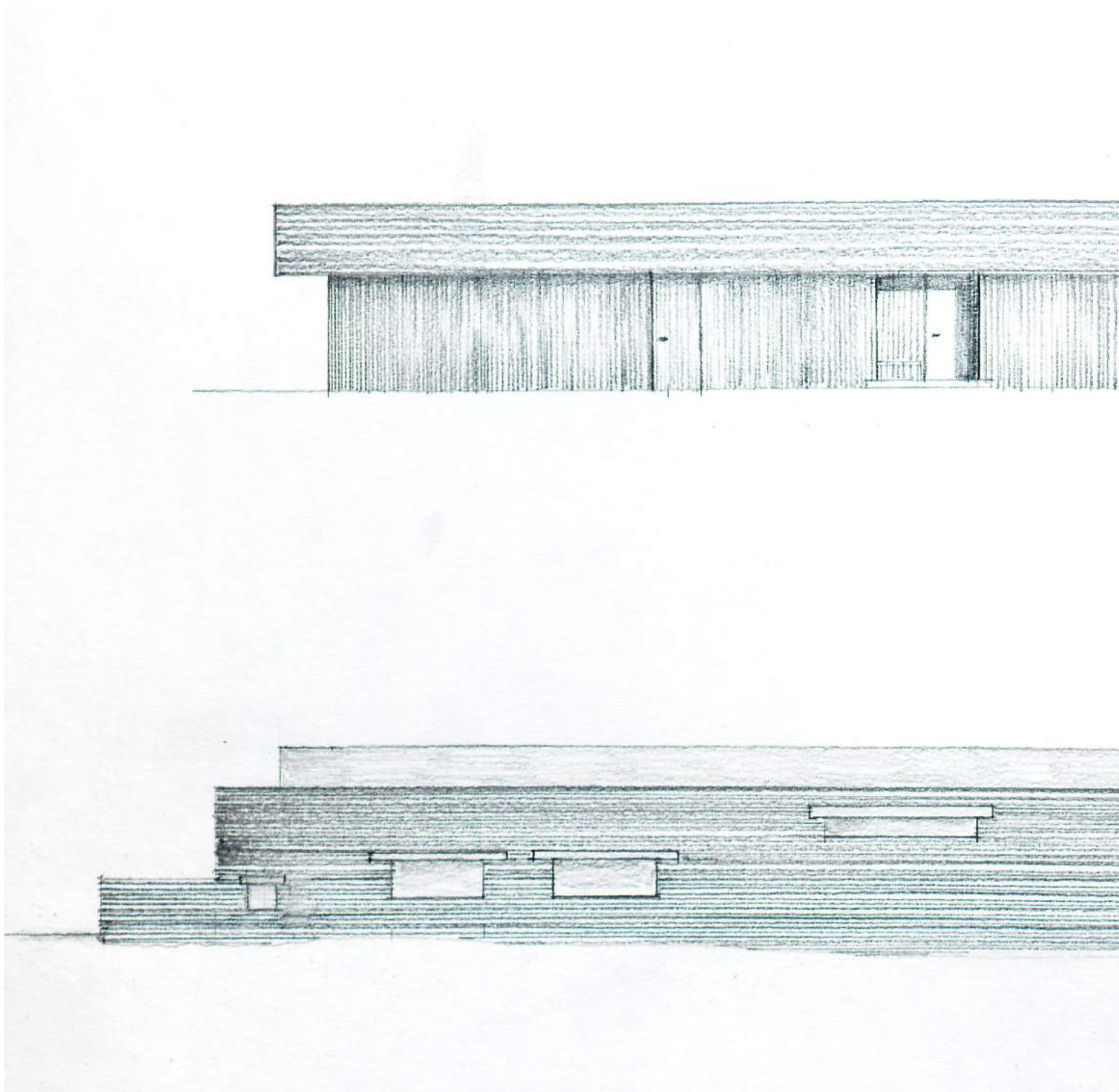


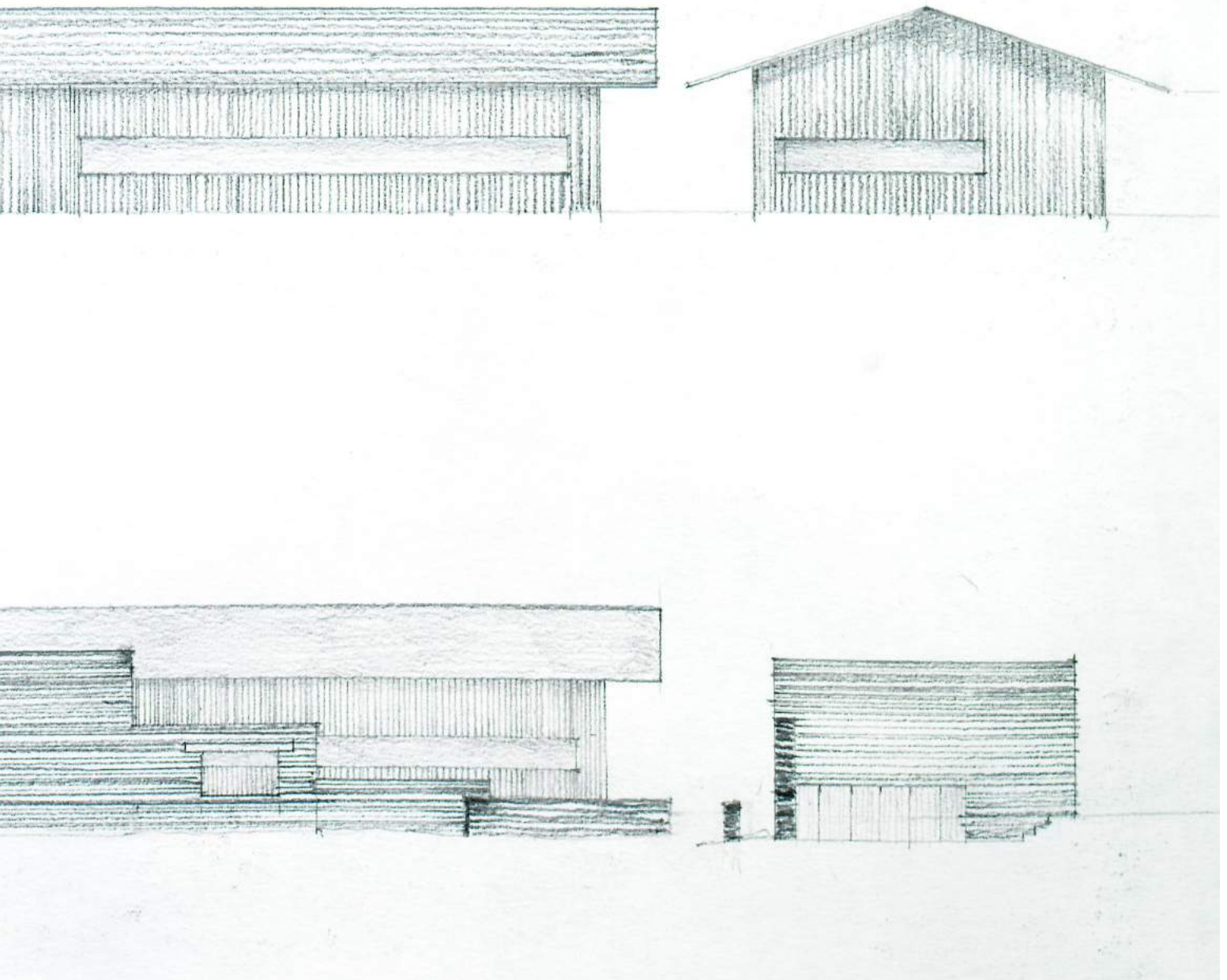


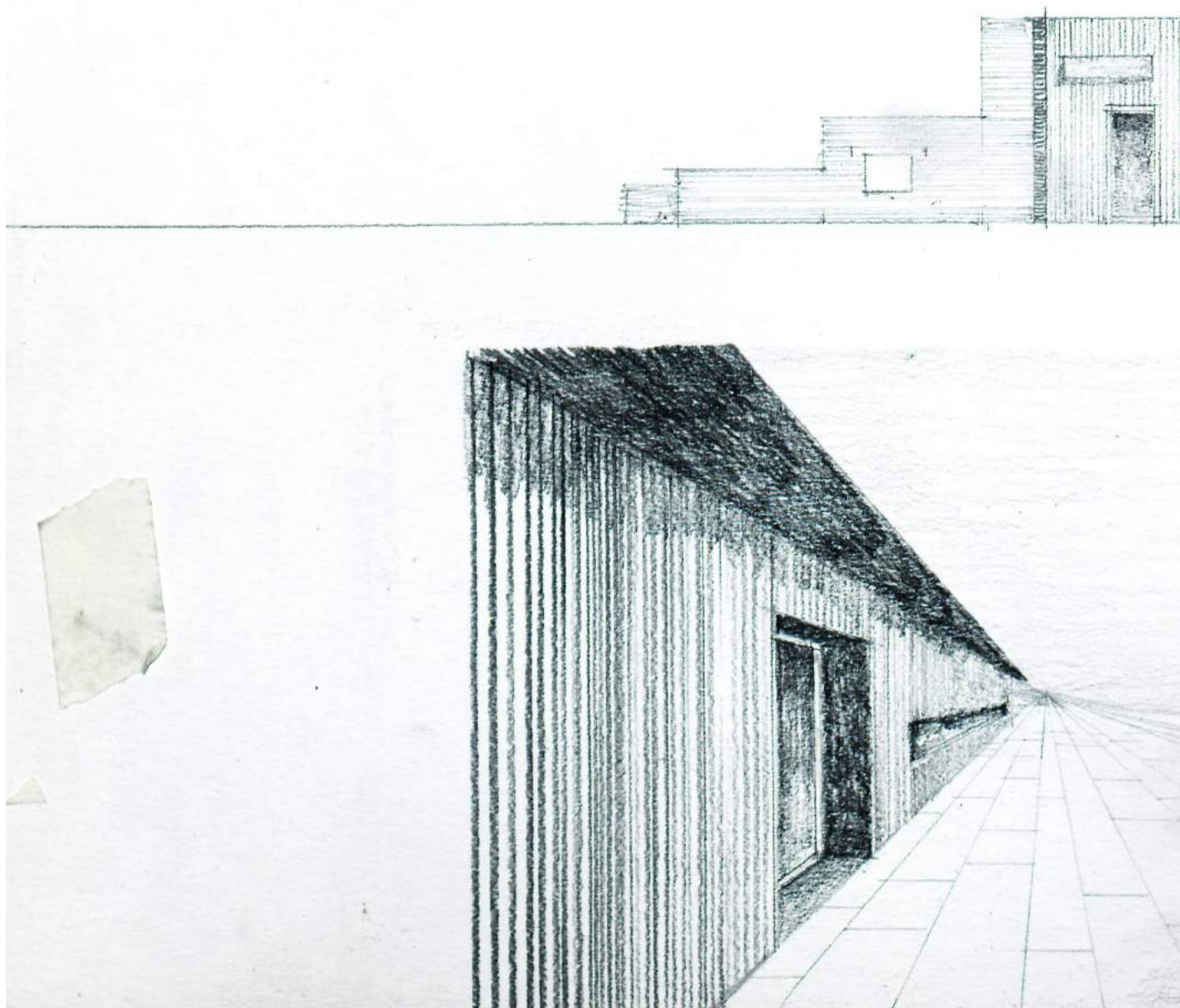


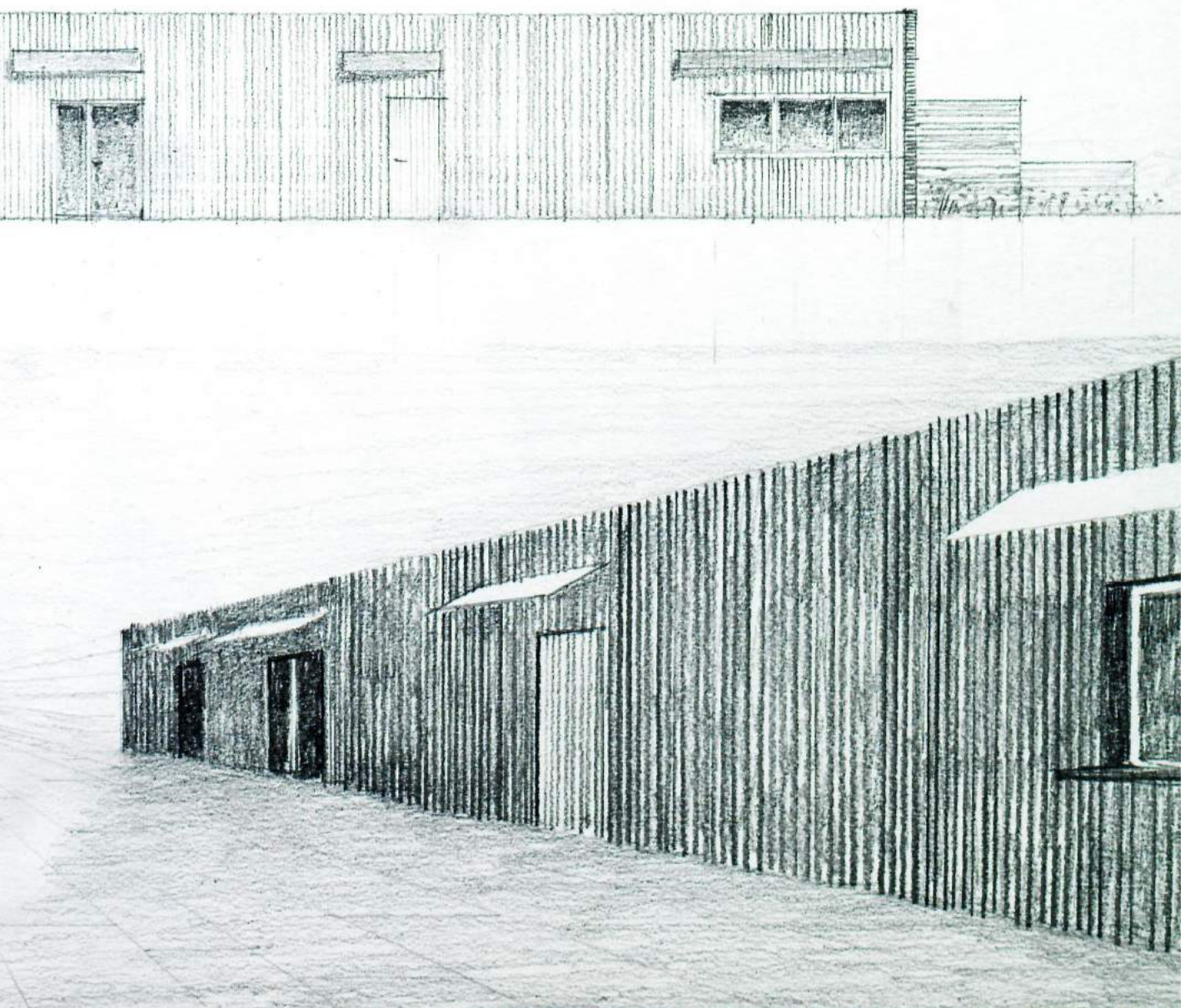






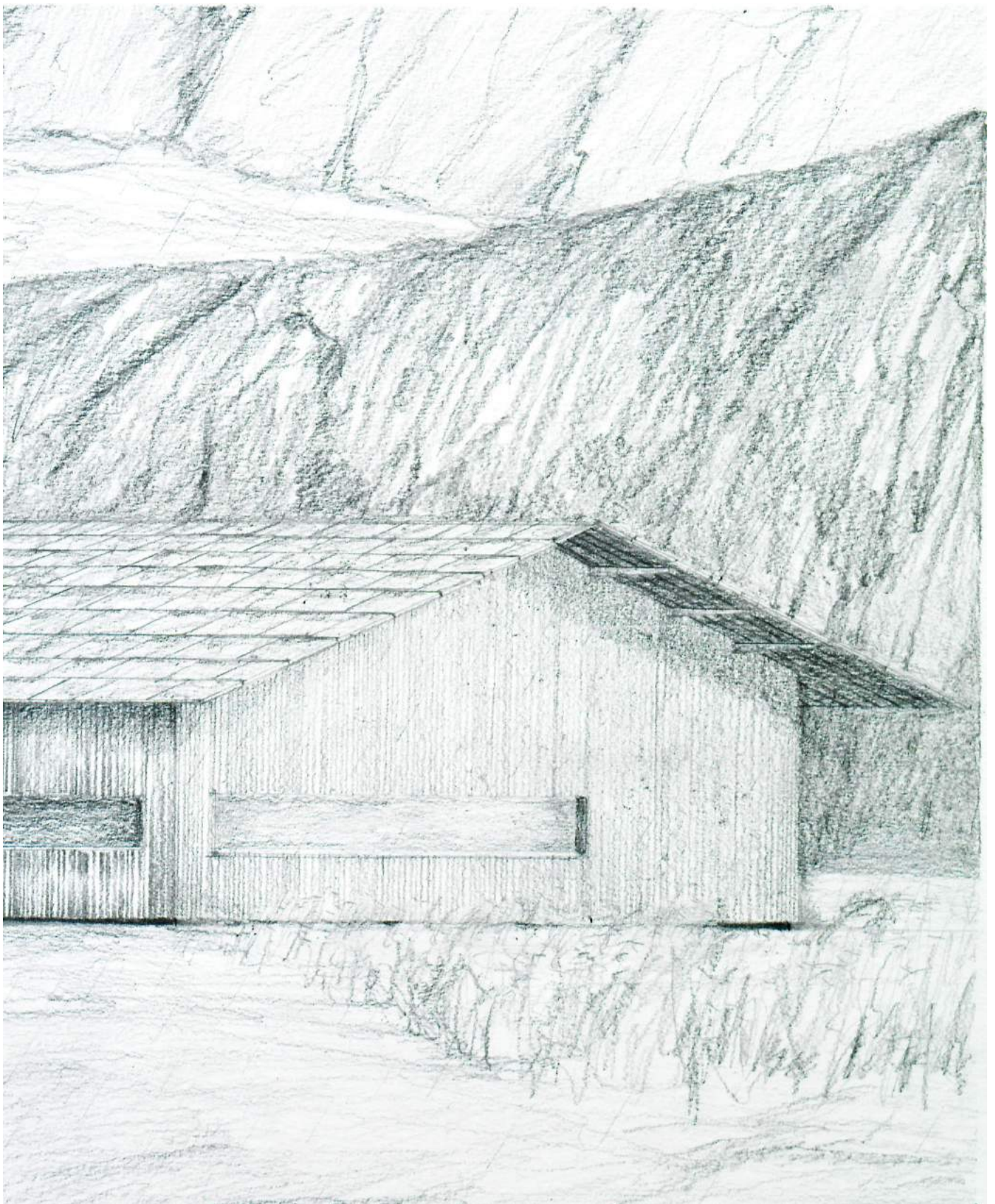


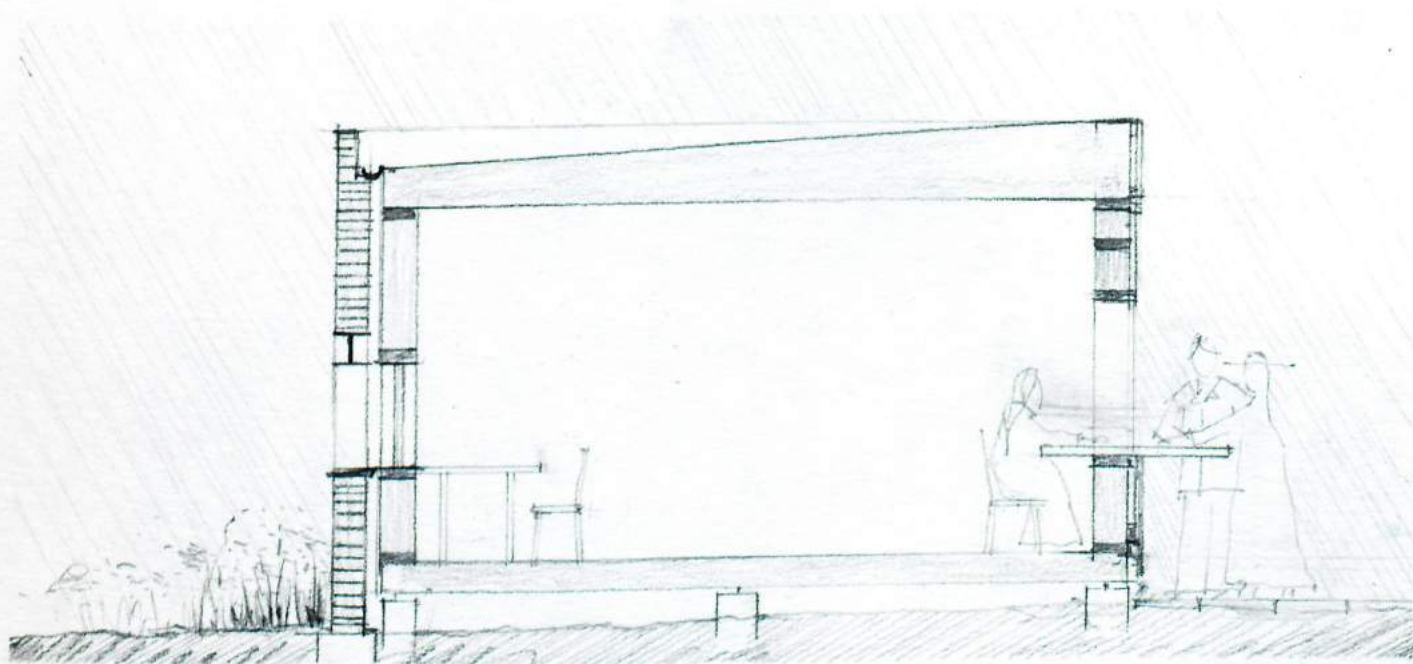
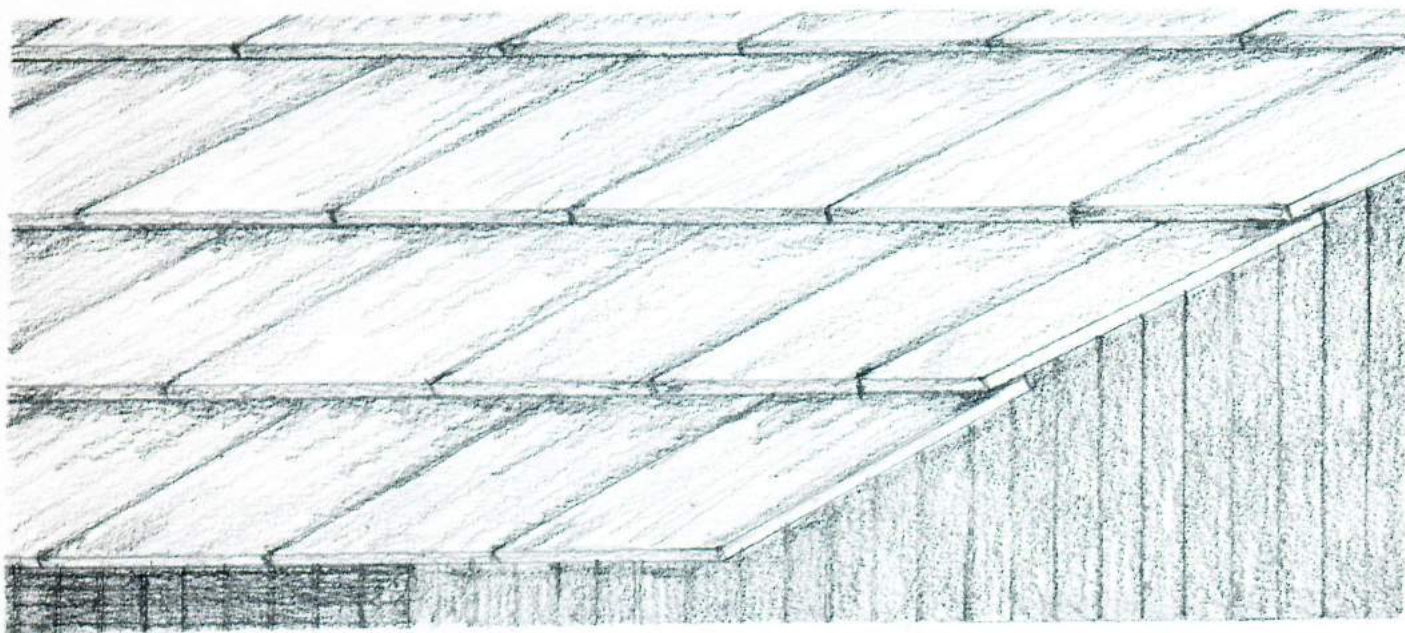


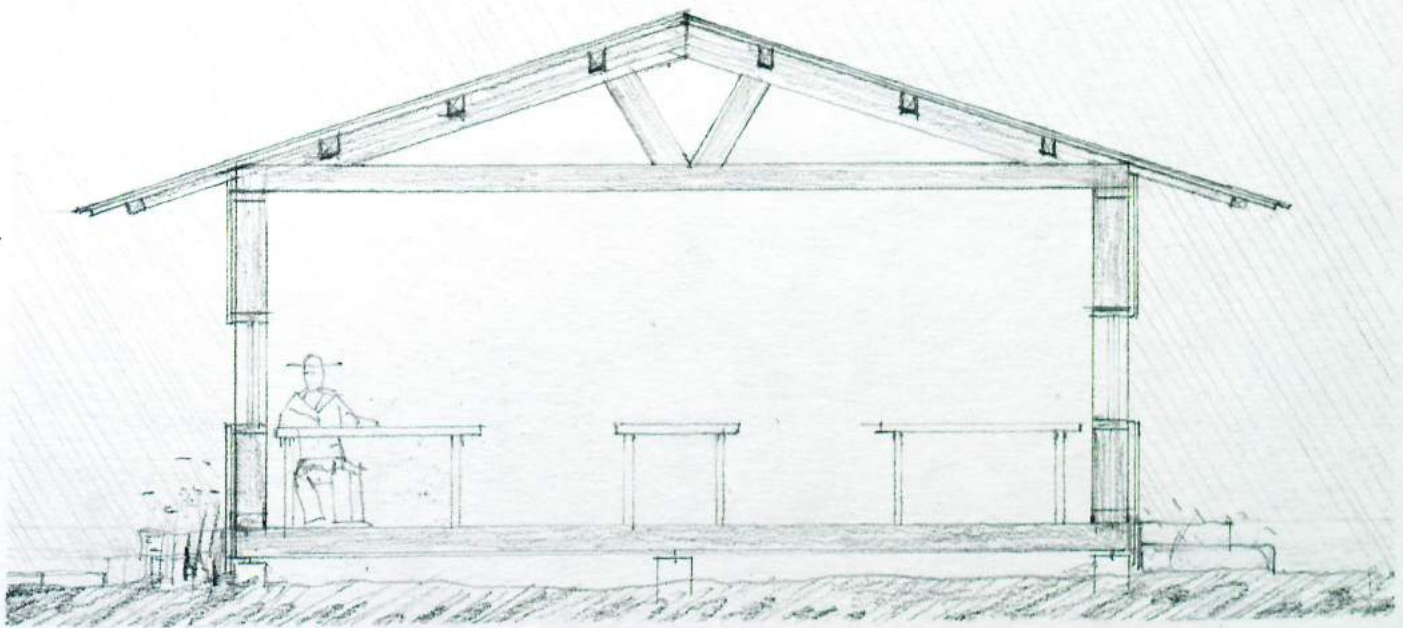
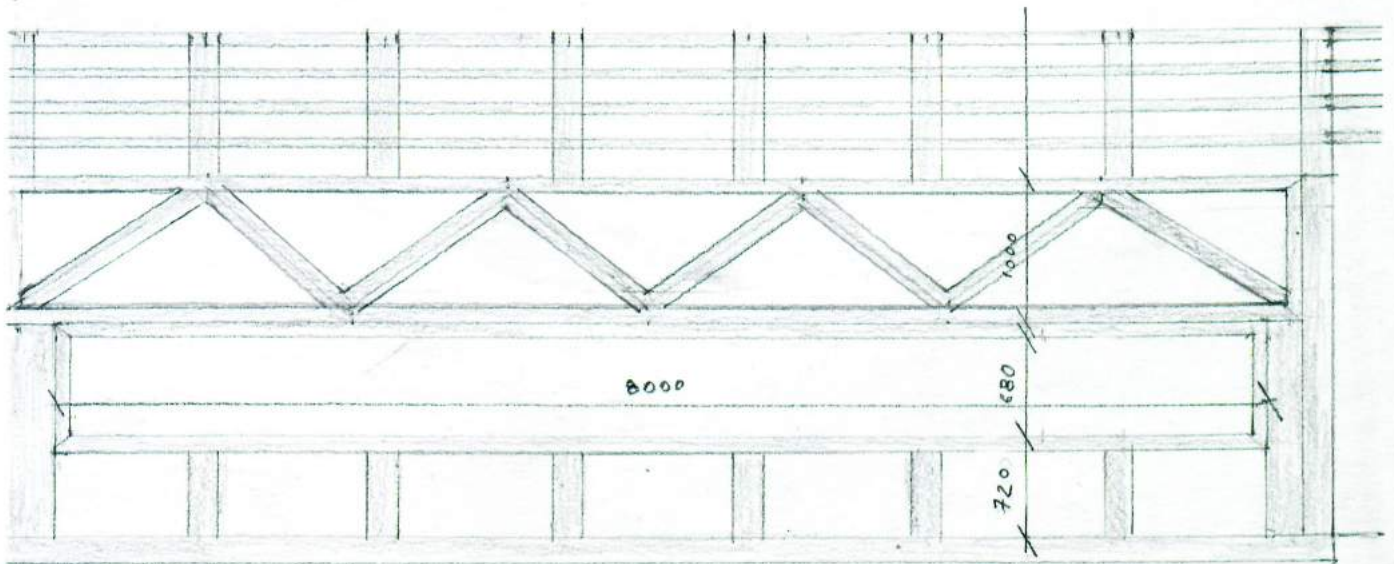


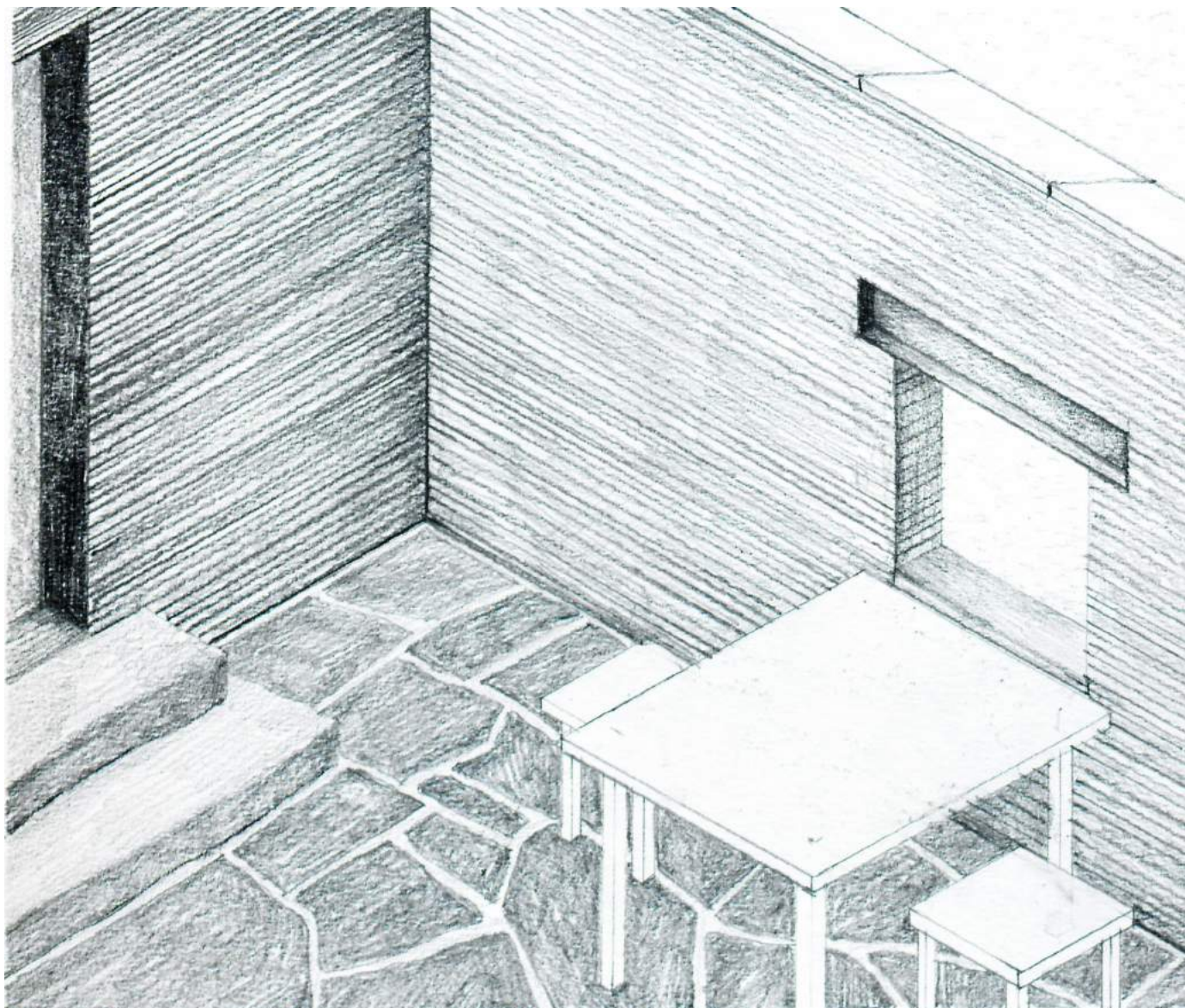
Facade 1:100 and perspective view

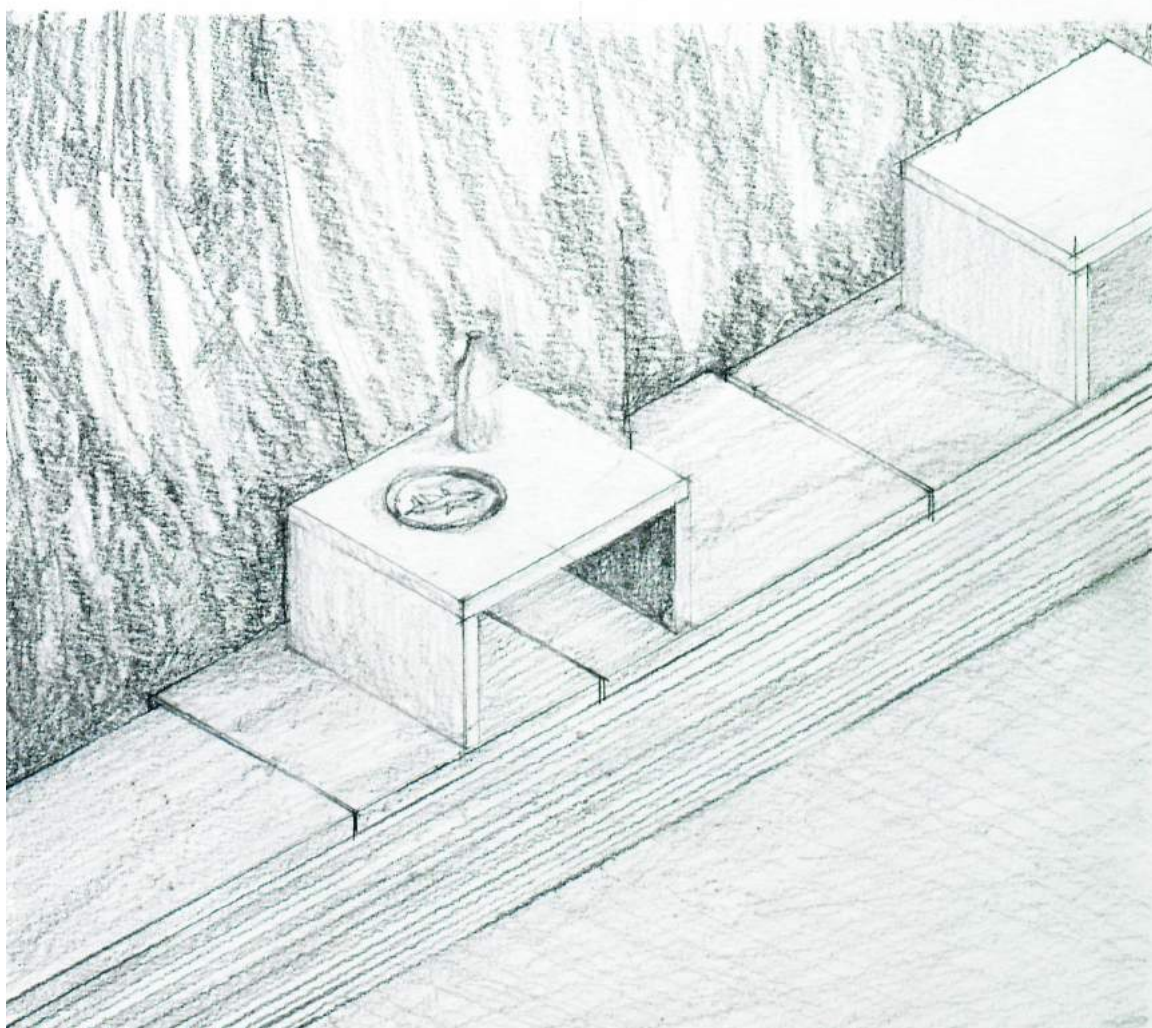








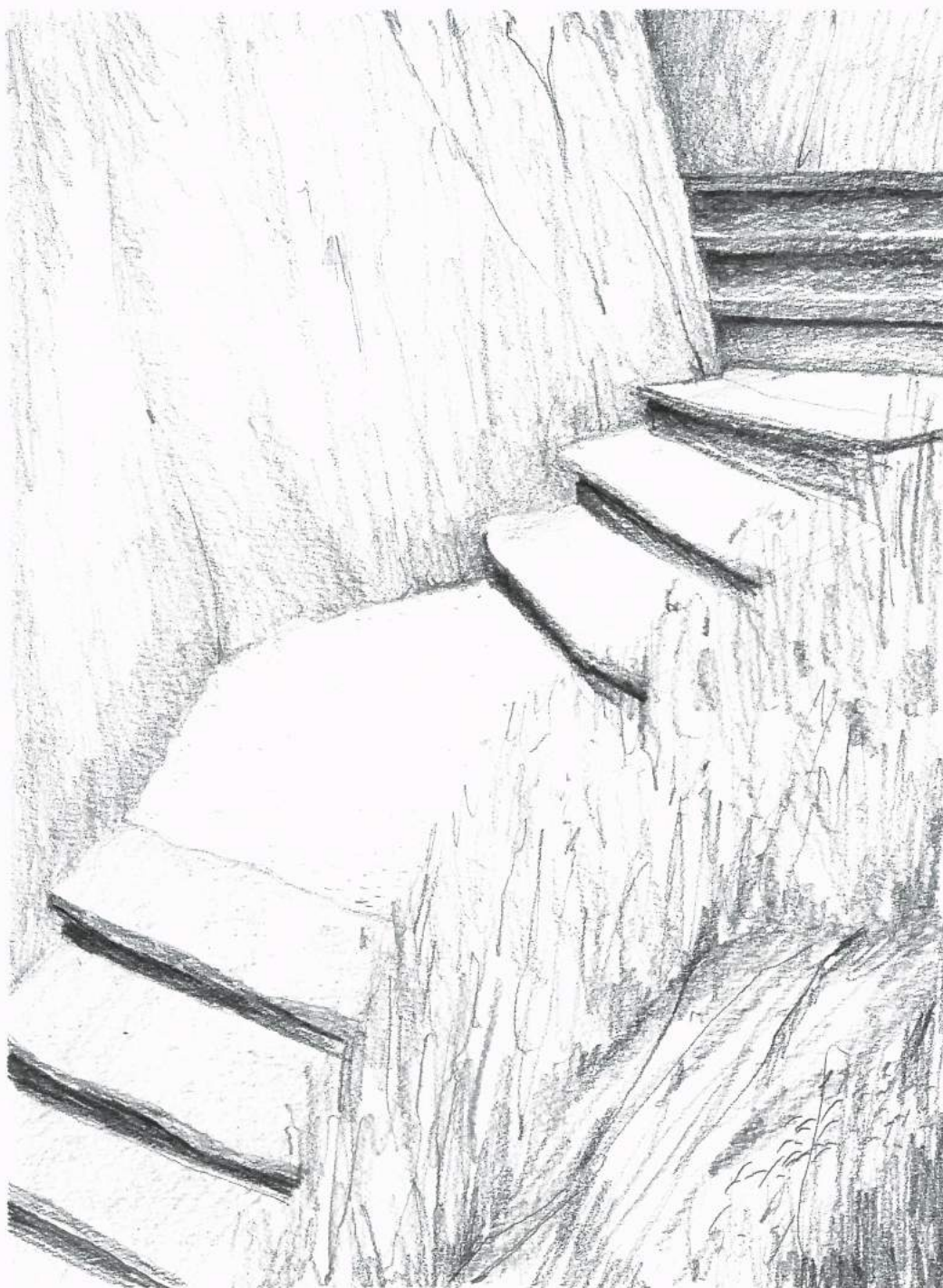


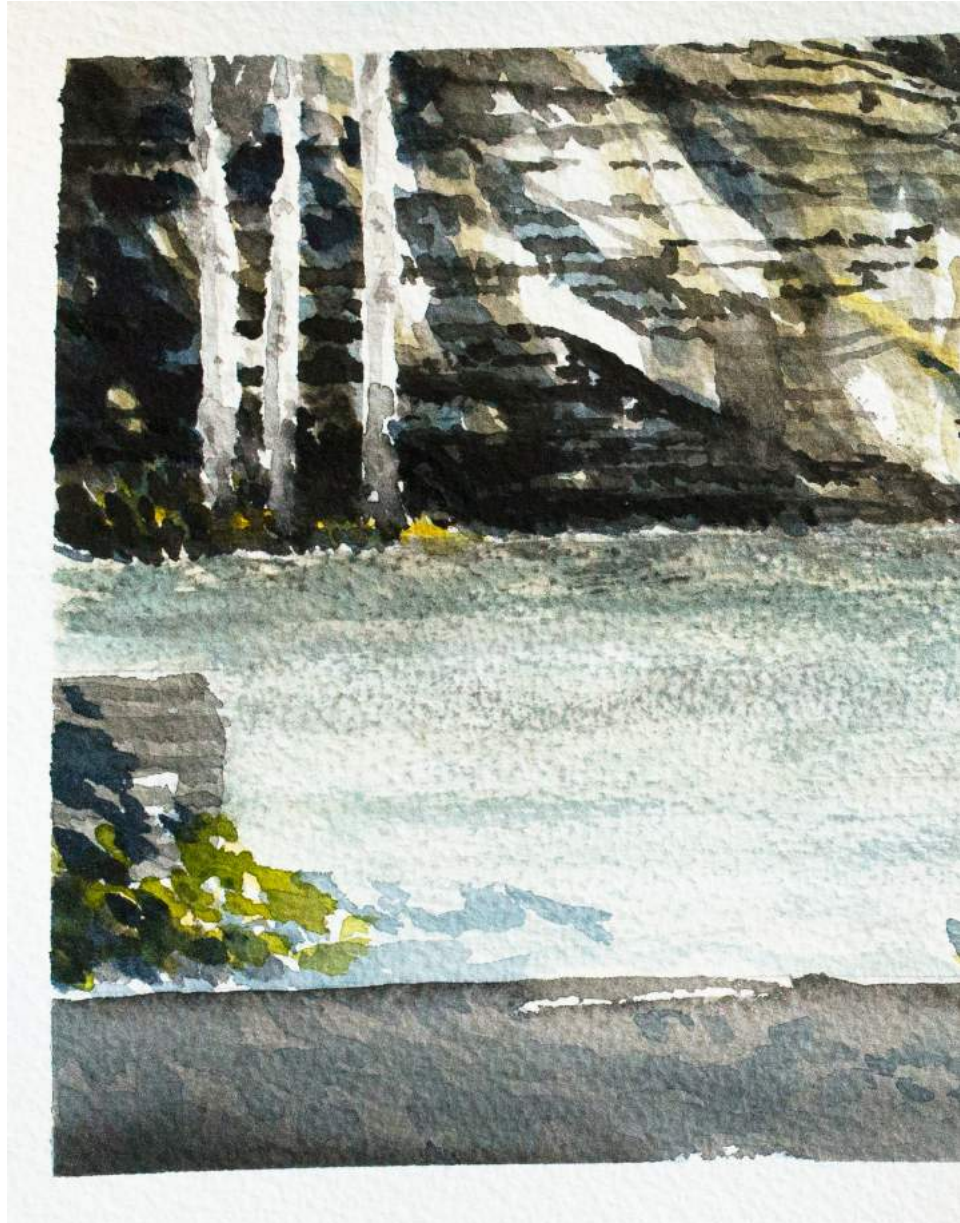


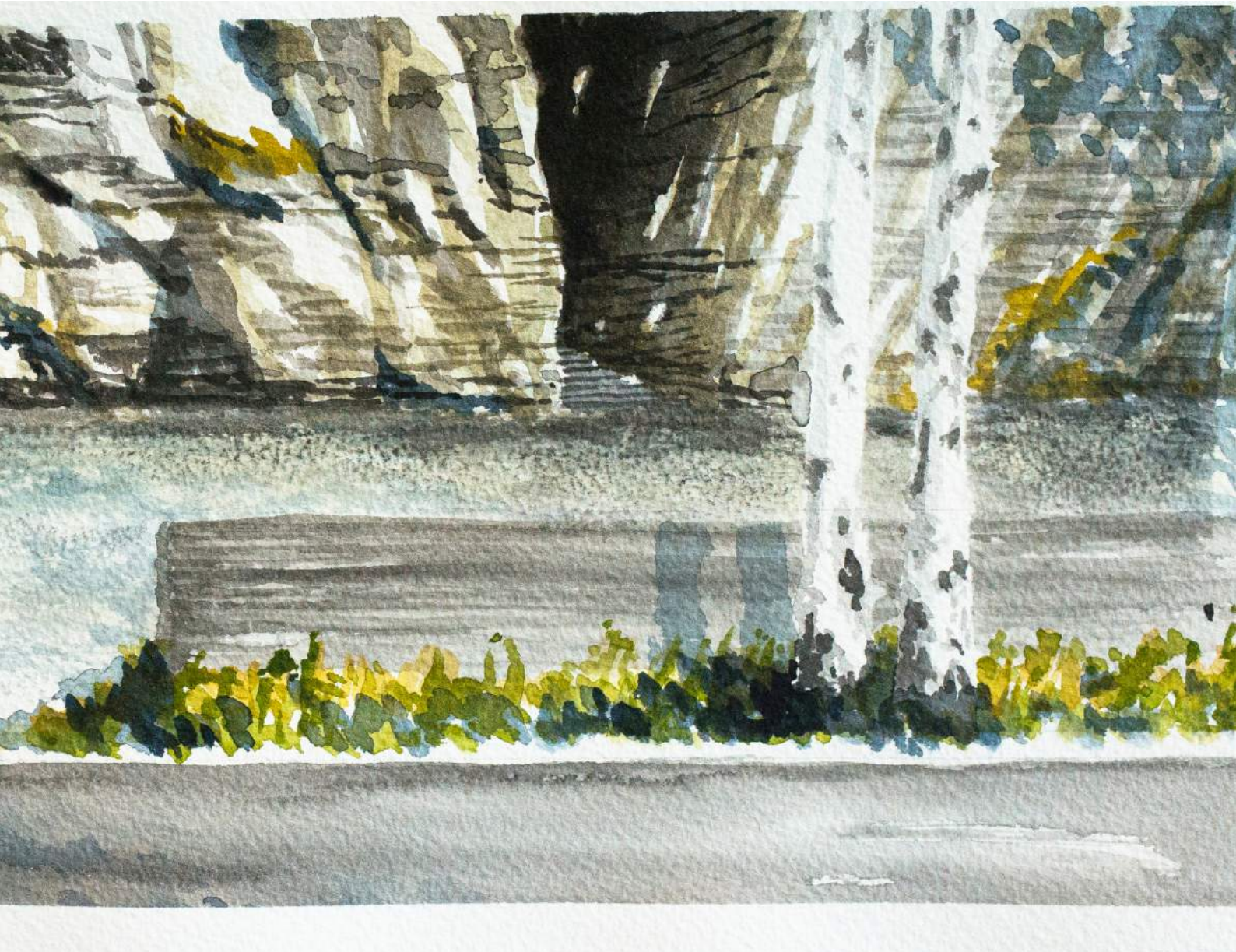
Entrance and Path

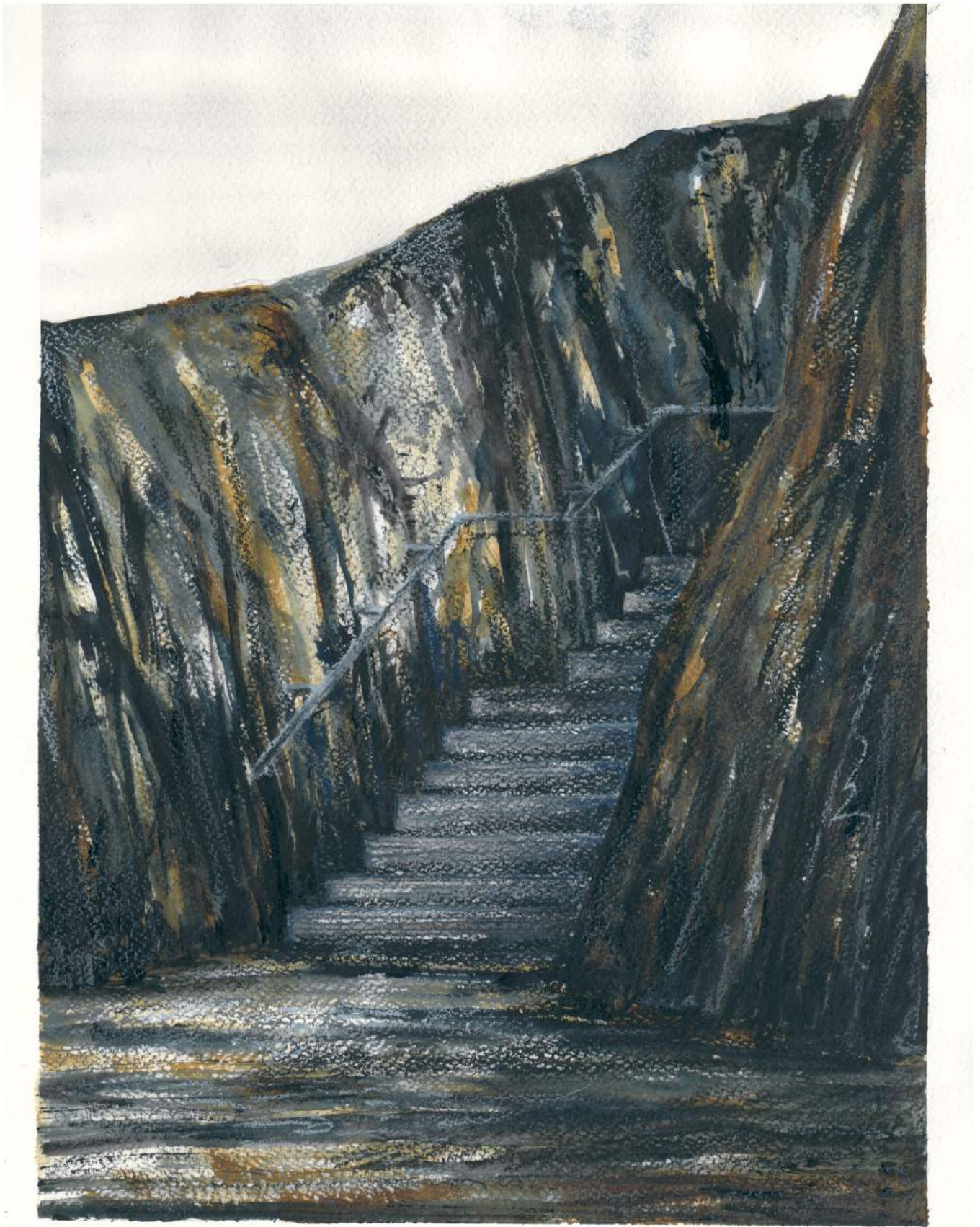
Today, the quarry is approached from a nearby parking space by the docks at the end of the road. The proposal suggests a new parking at a longer distance from the quarry. This makes the visitors gradually entering the site while walking through a planned path. The path will lead the visitors to important places on the site, natural elements as well as historical remains.

Slate stone is used to build stair steps, and green handrails are added when needed. These also function as guideposts. This mountain has been reshaped by humans through centuries due the extraction of slates. So, remodelling parts of it to fit stairs and paths is not as much of an attack as it would be in an untouched natural environment.











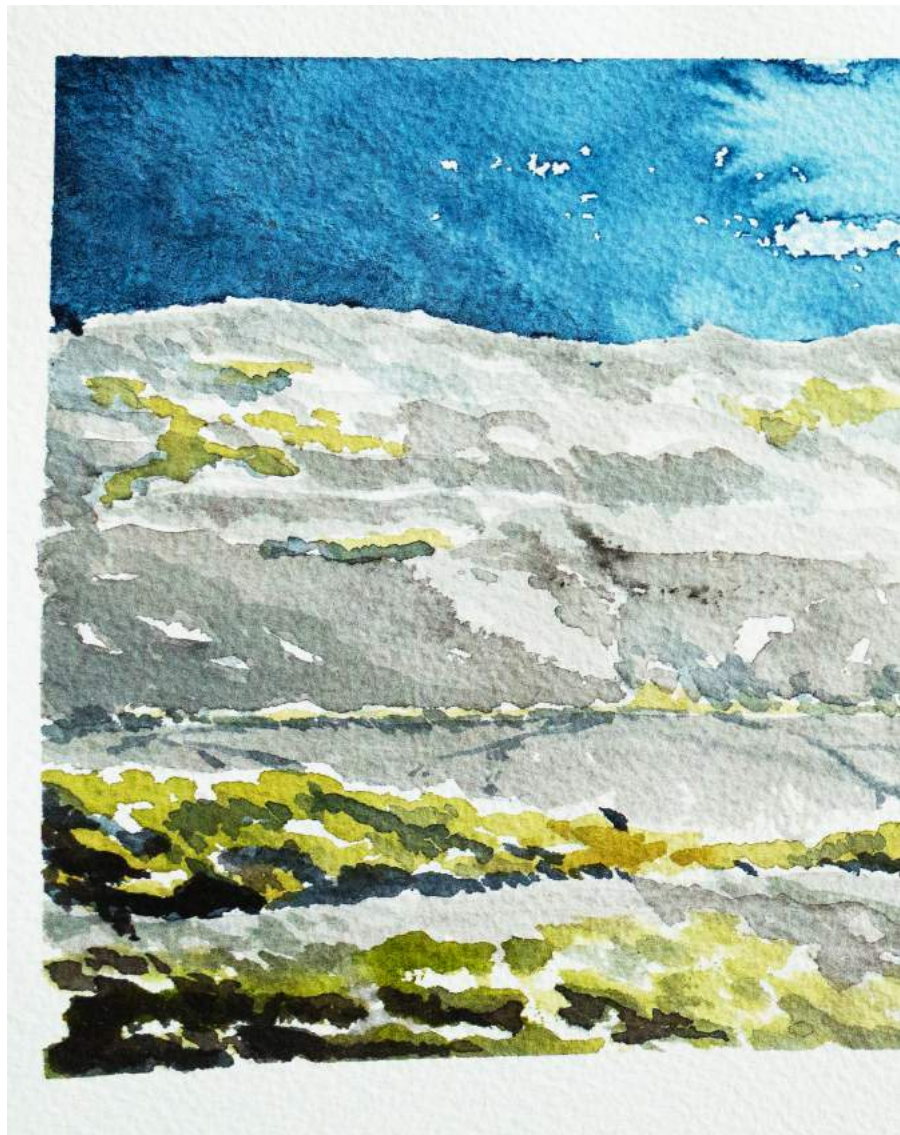
Stair and a slate stone with indicated historical sea levels





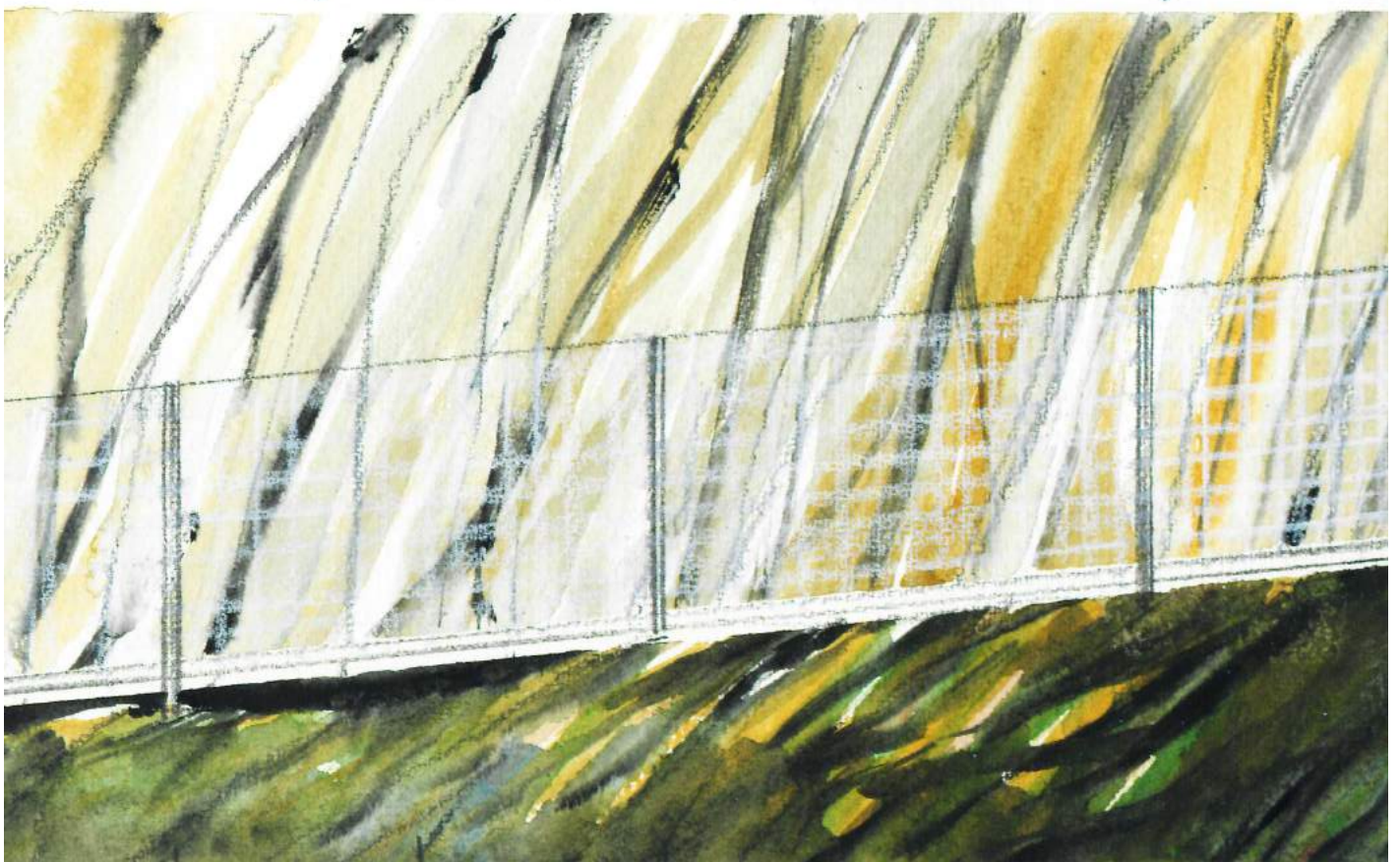


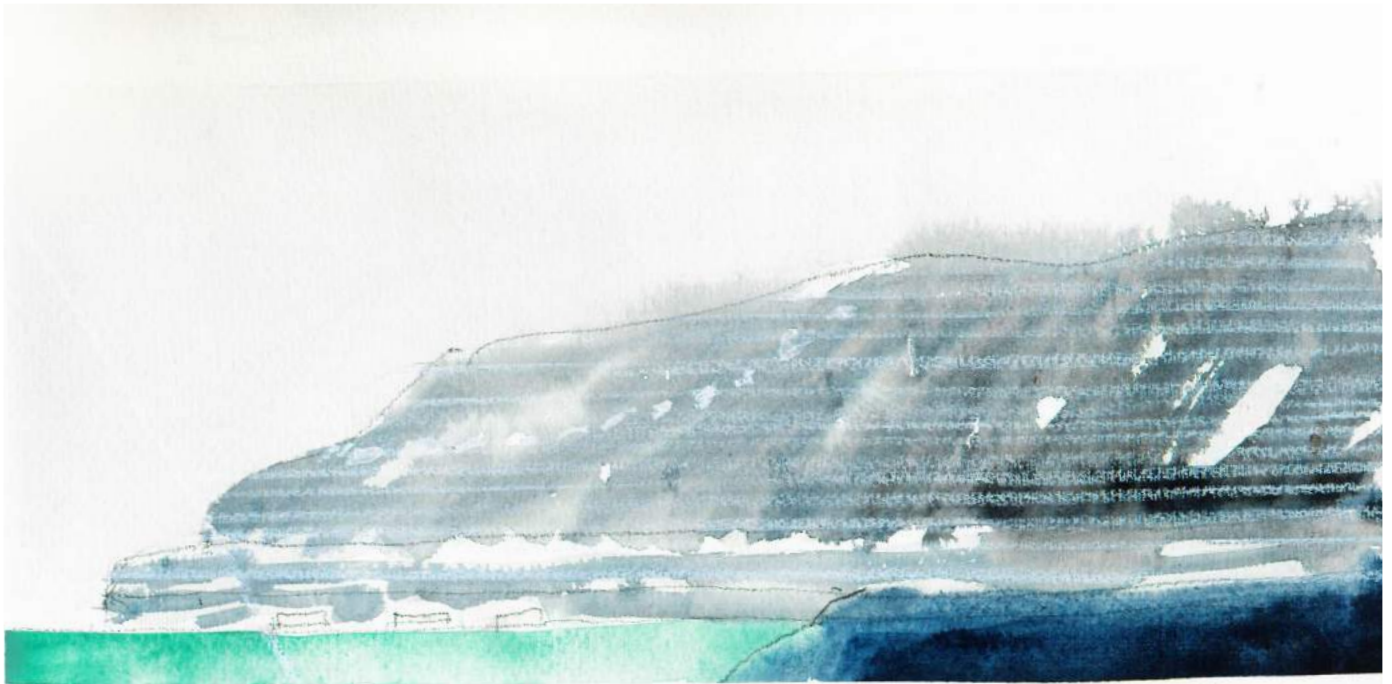






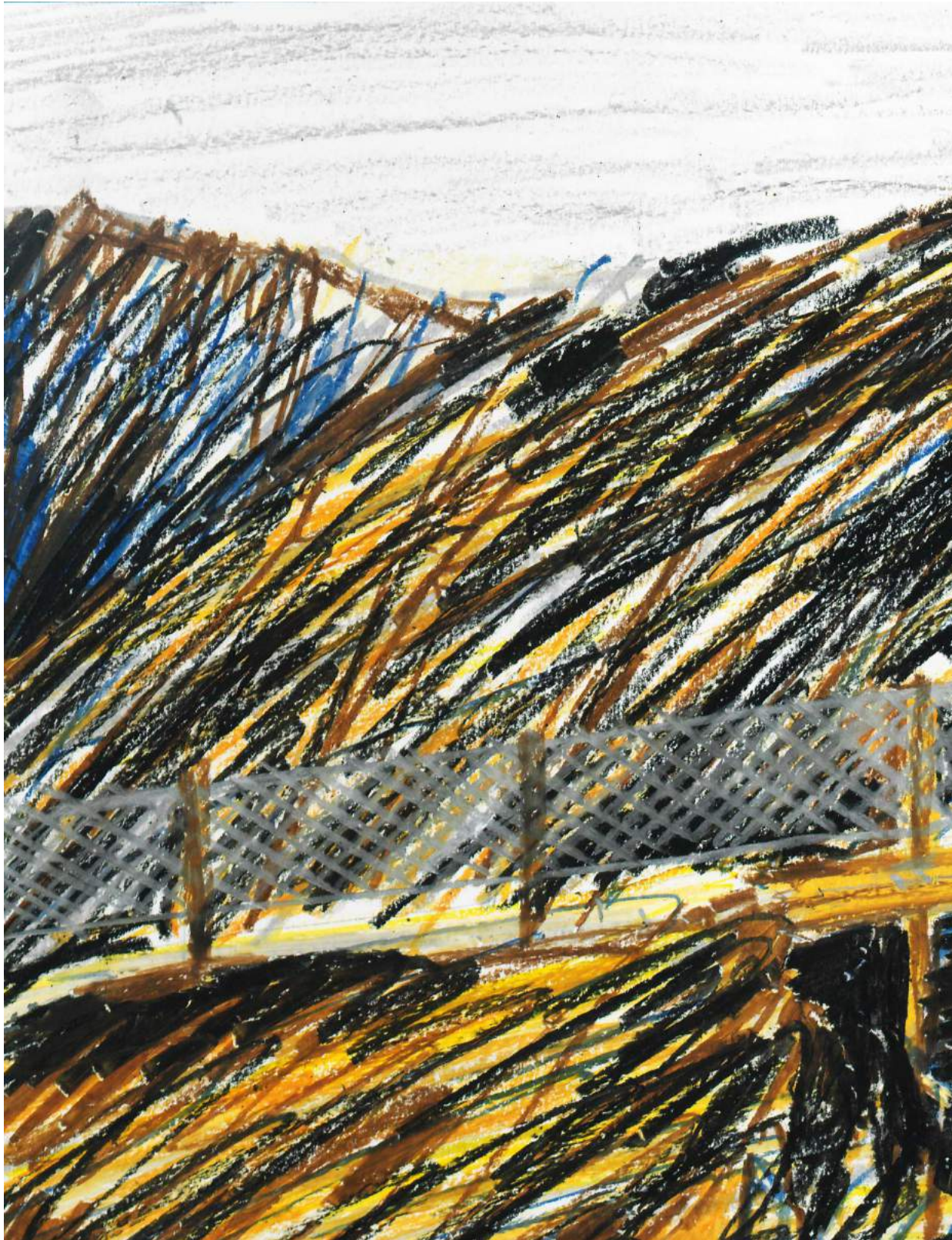
Walking on the top of the mountain



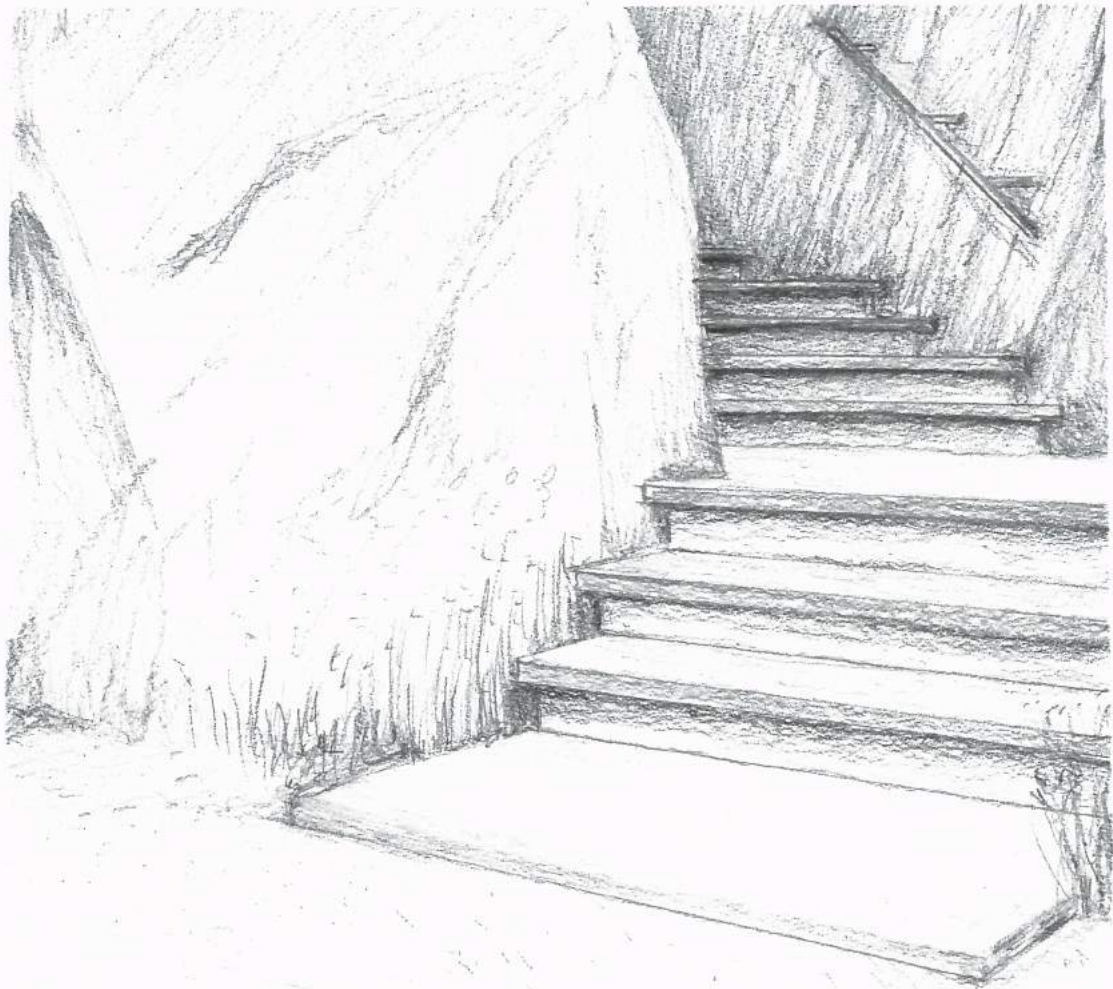


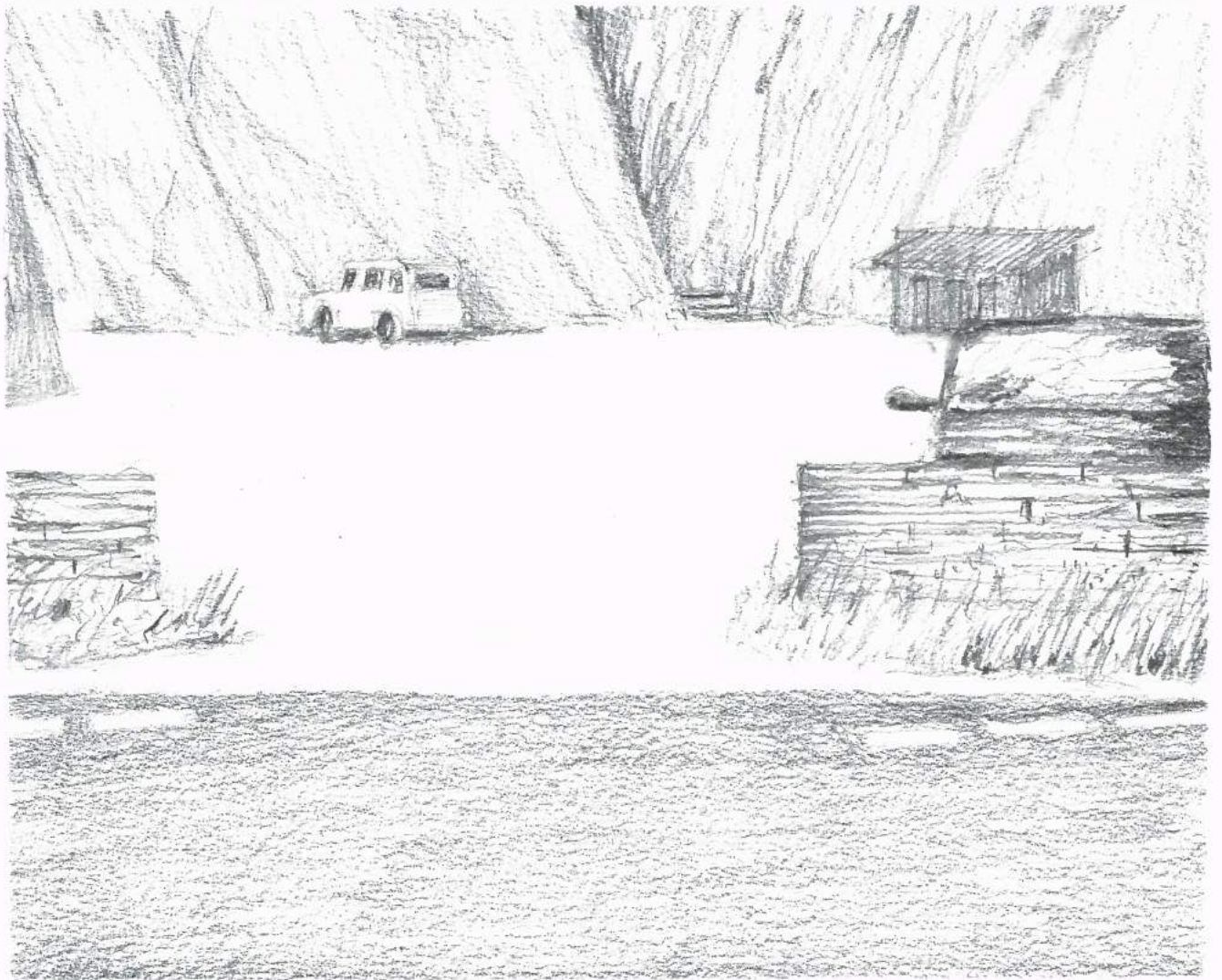
Elevation and Plan drawing (No Scale)







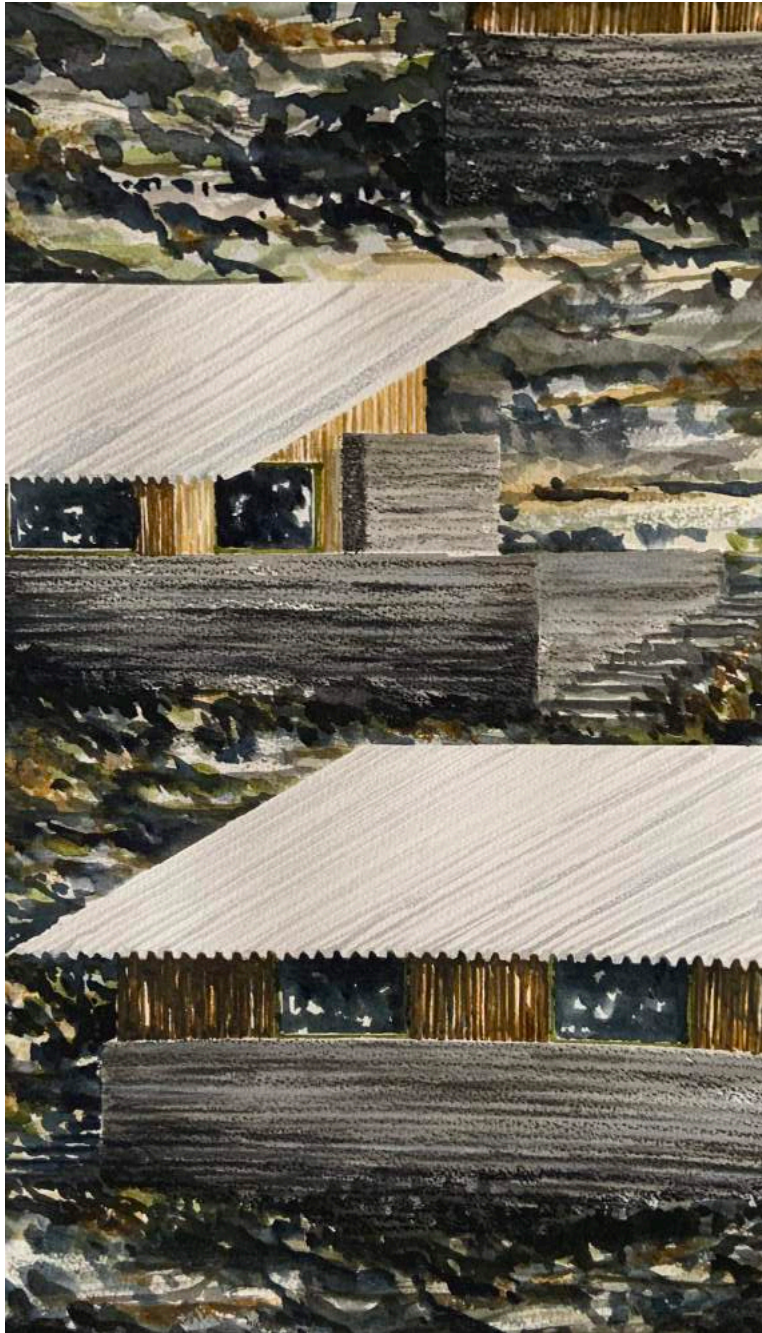




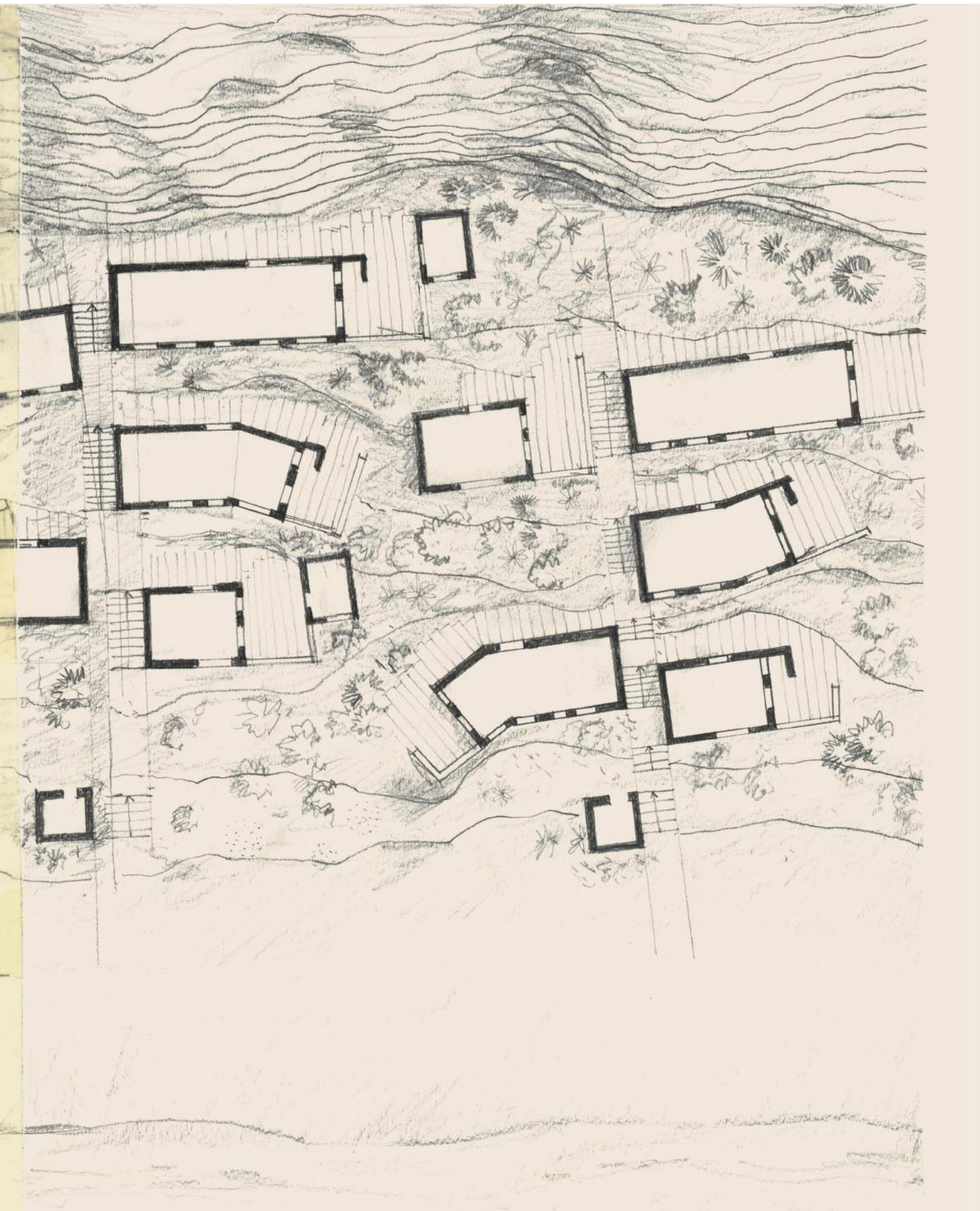
Cabins

A number of cabins in different sizes and standards are added along the waterfront. These will be separated a bit from the centre and the quarry to provide a slightly more private atmosphere. This part of the proposal explores the possibilities for a larger addition to the landscape that still harmonizes with its surroundings. The buildings follow inputs from the existing architecture while still separating themselves from it.



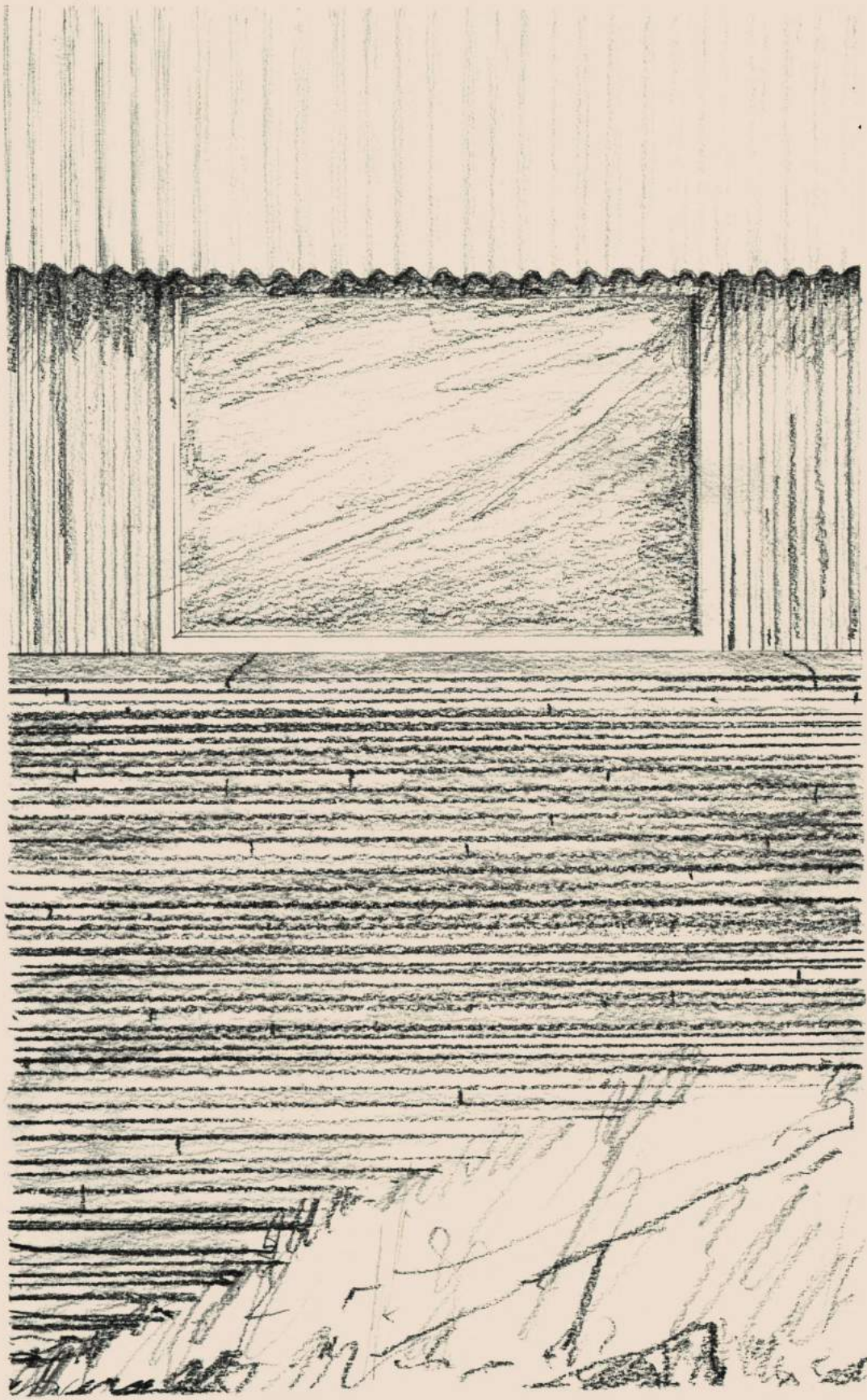


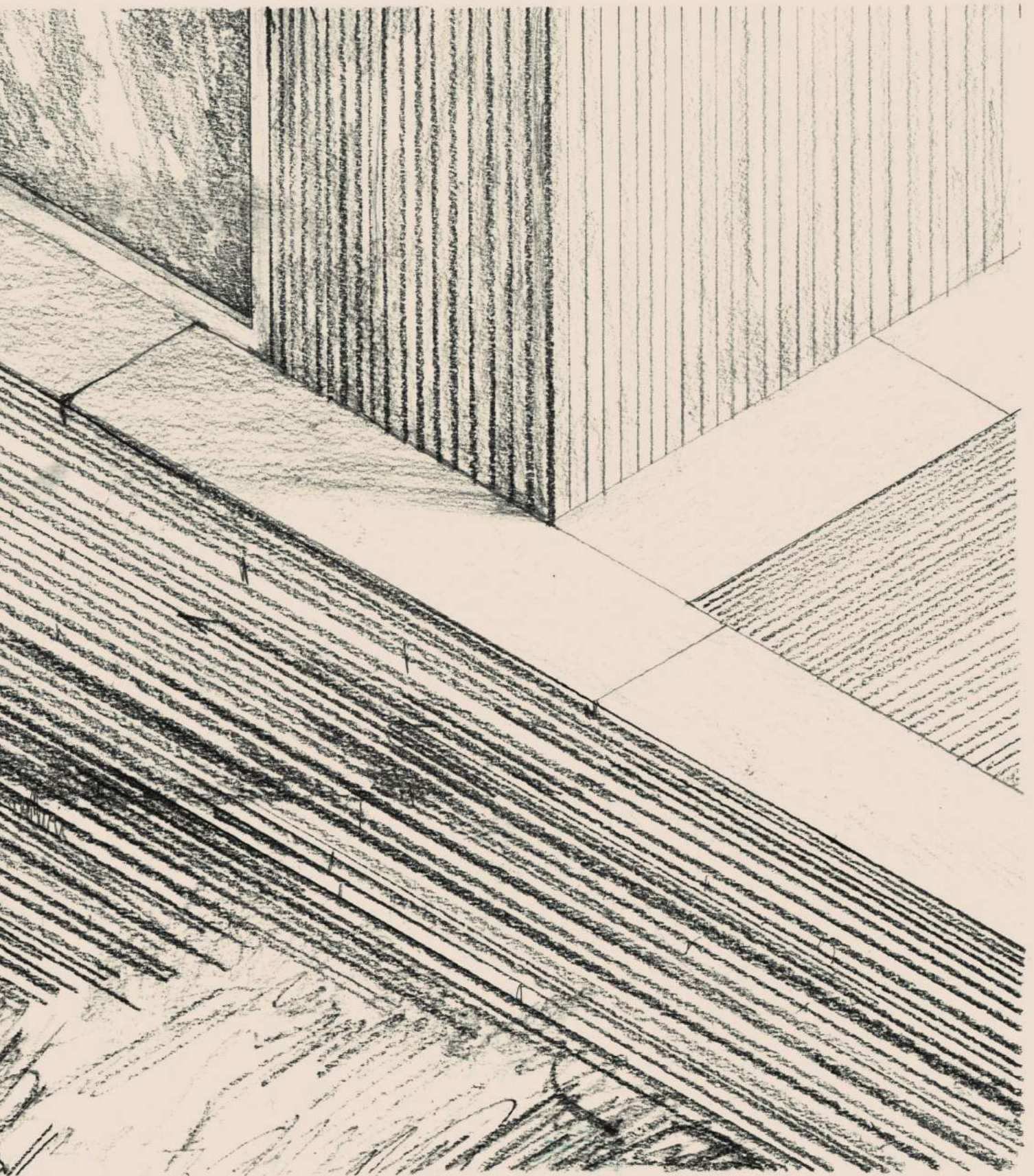


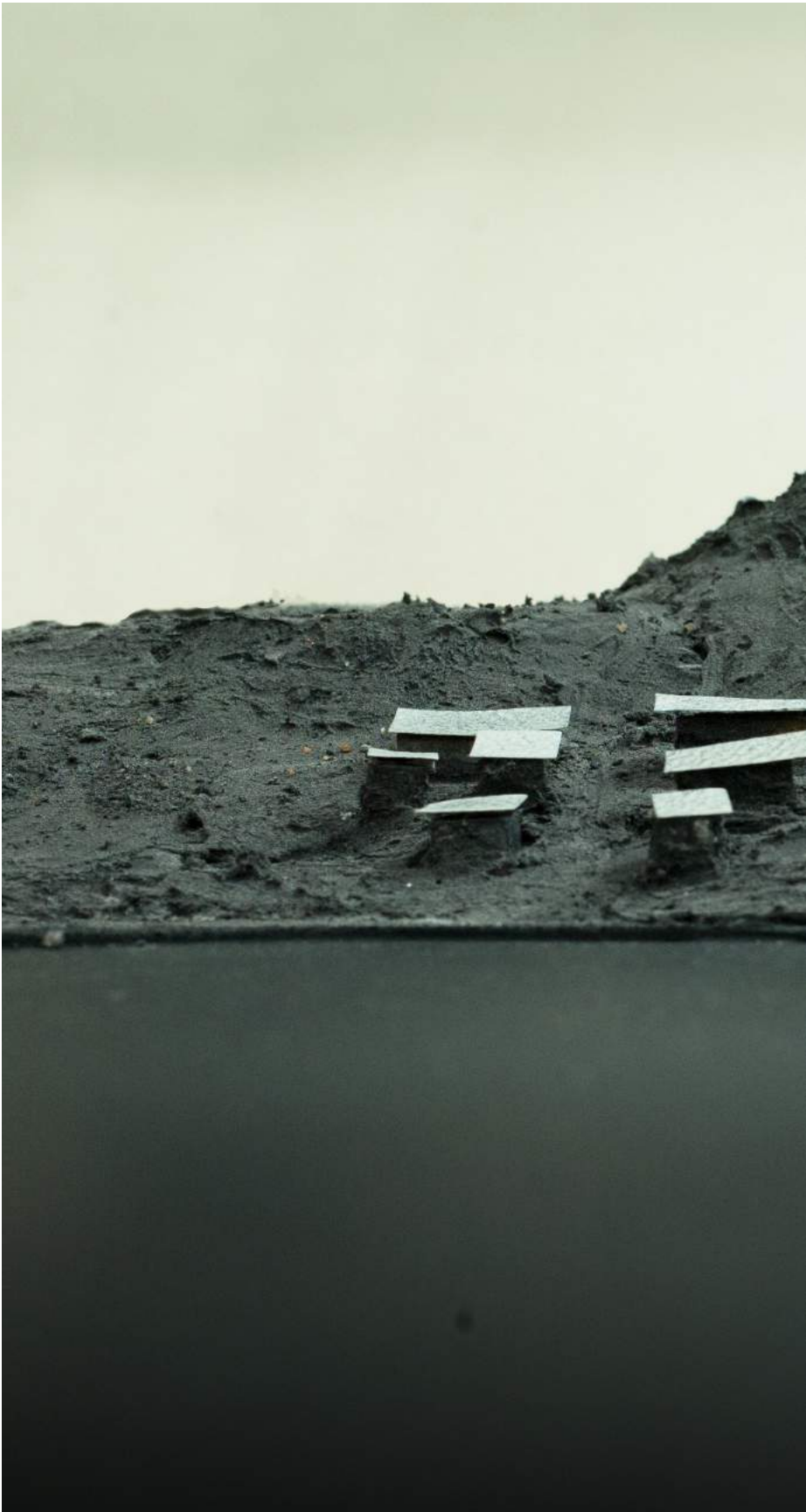




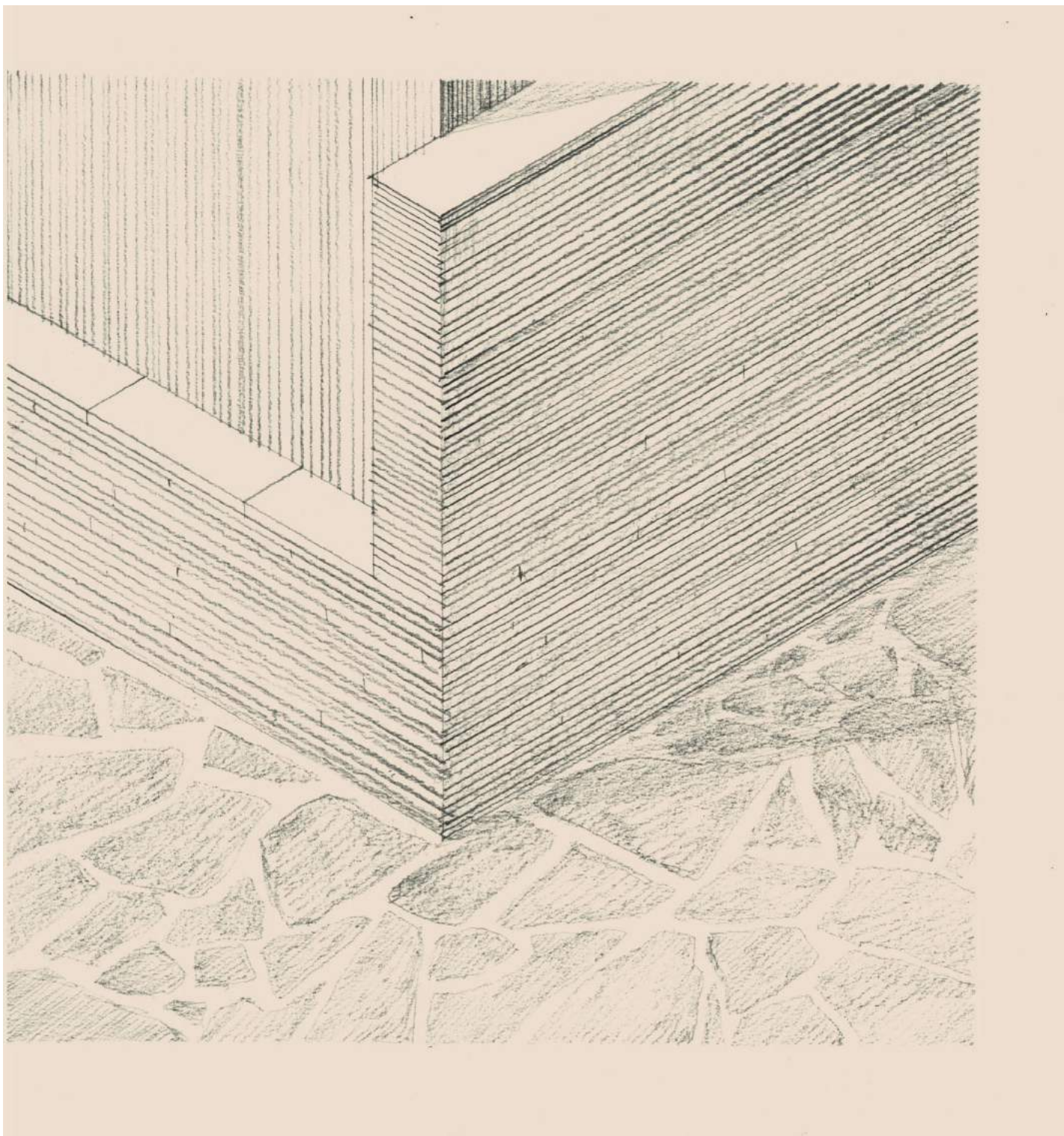


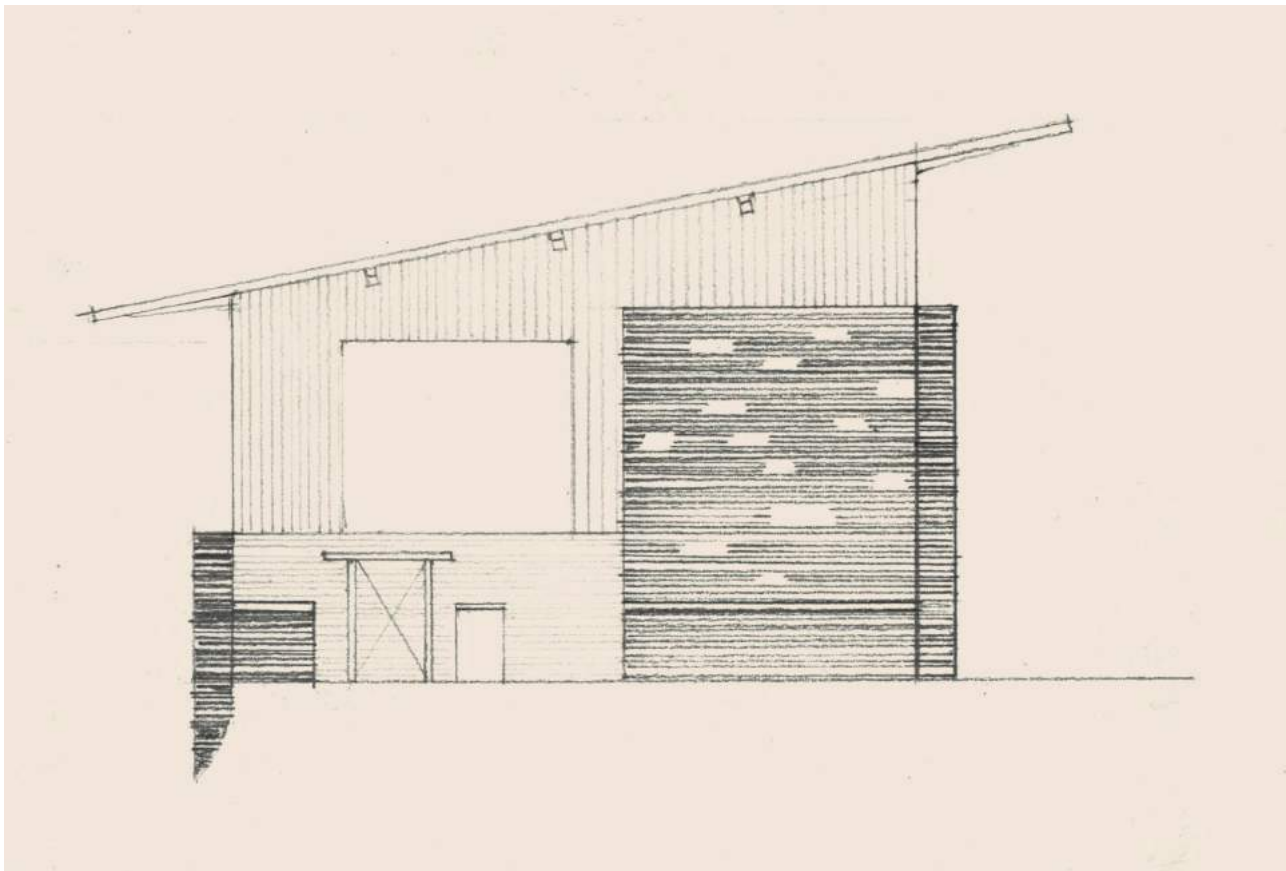










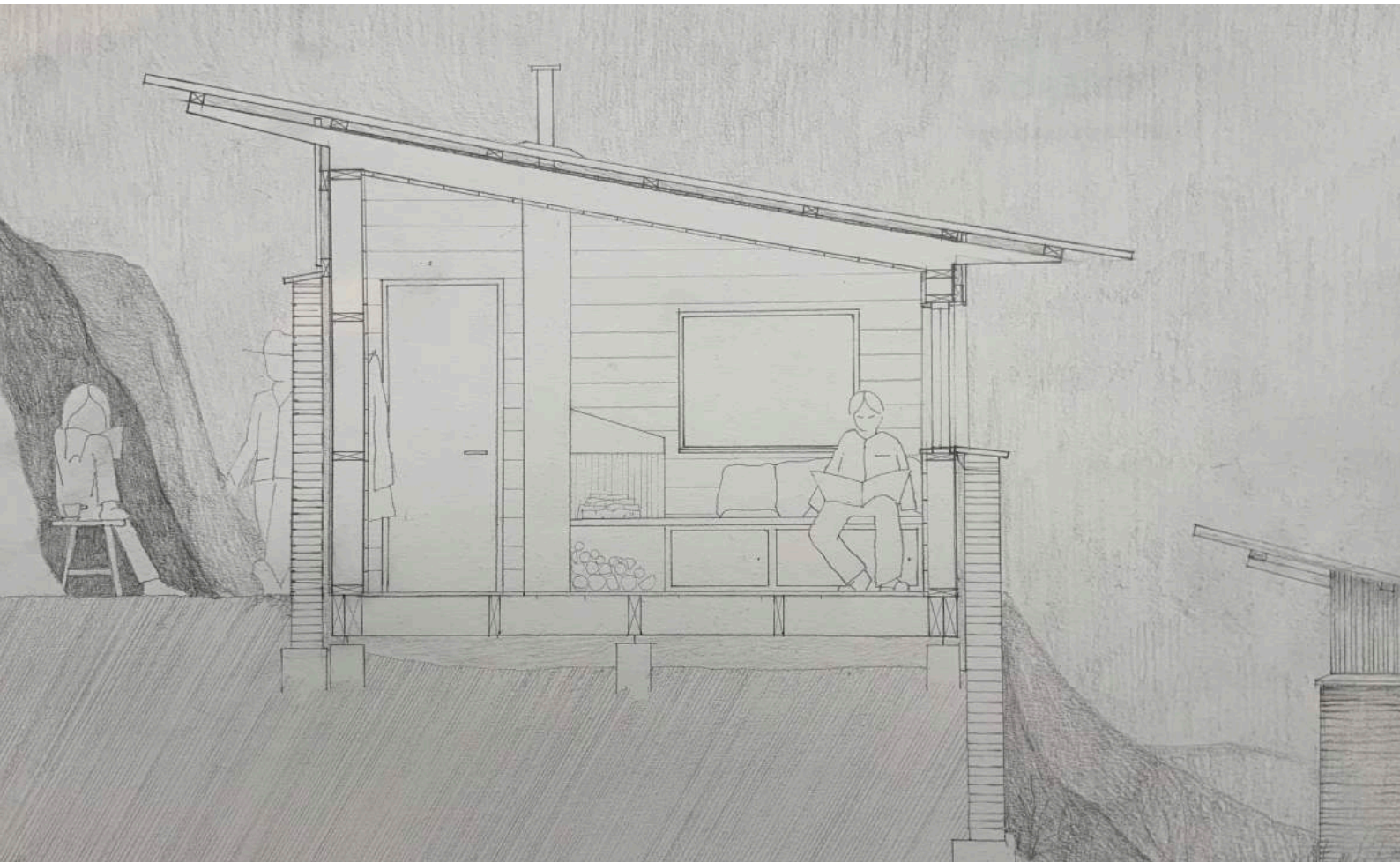


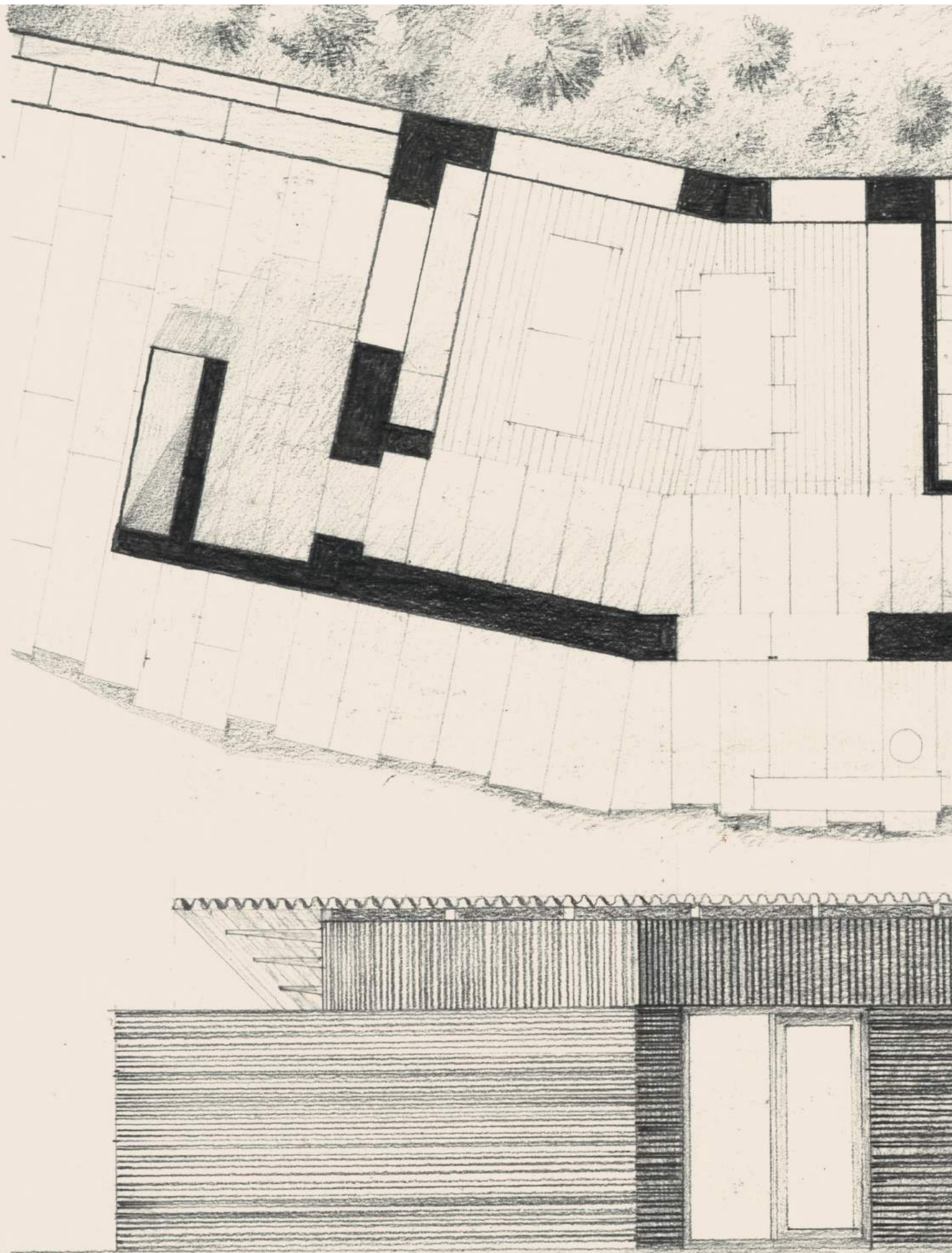


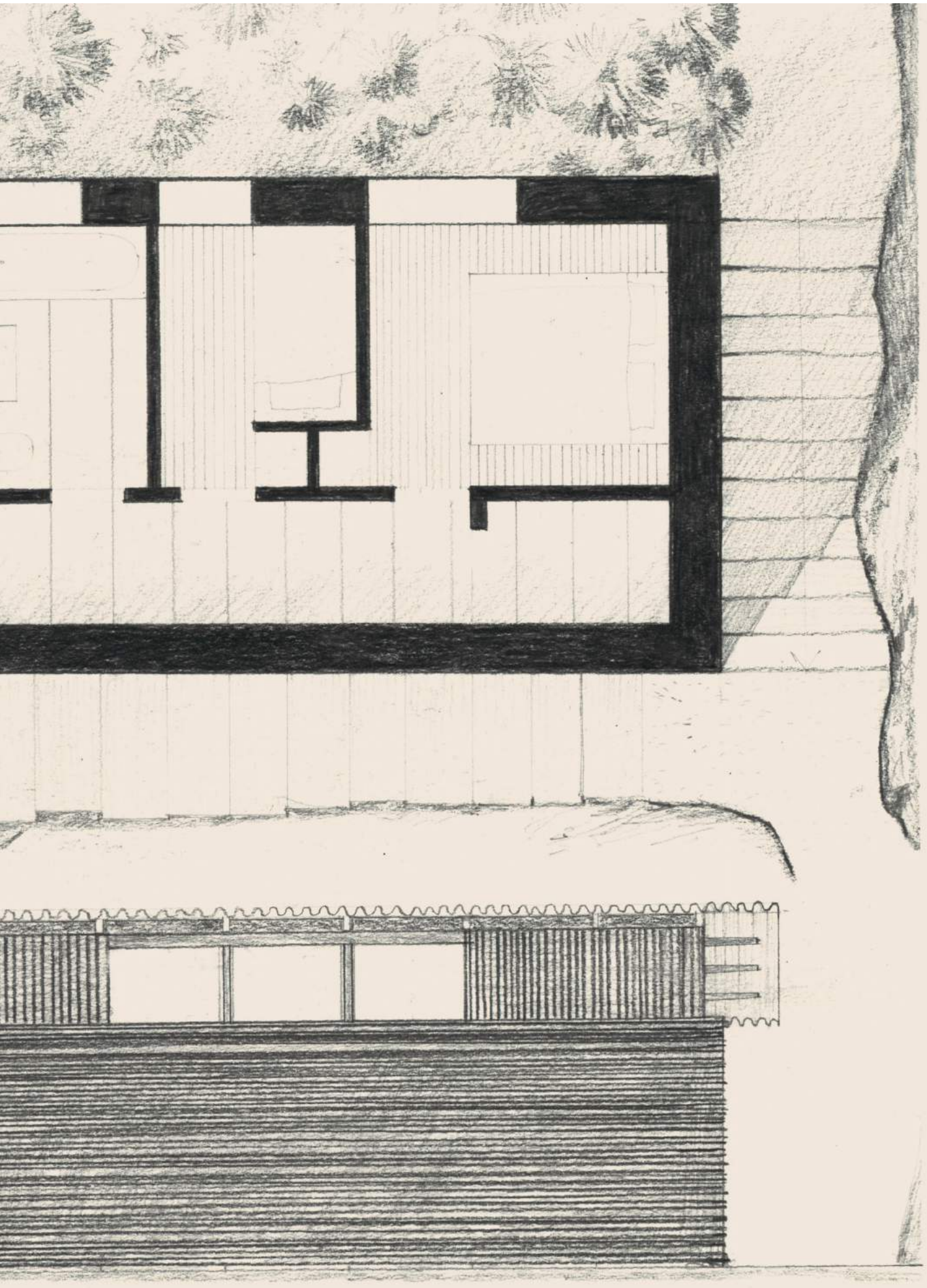




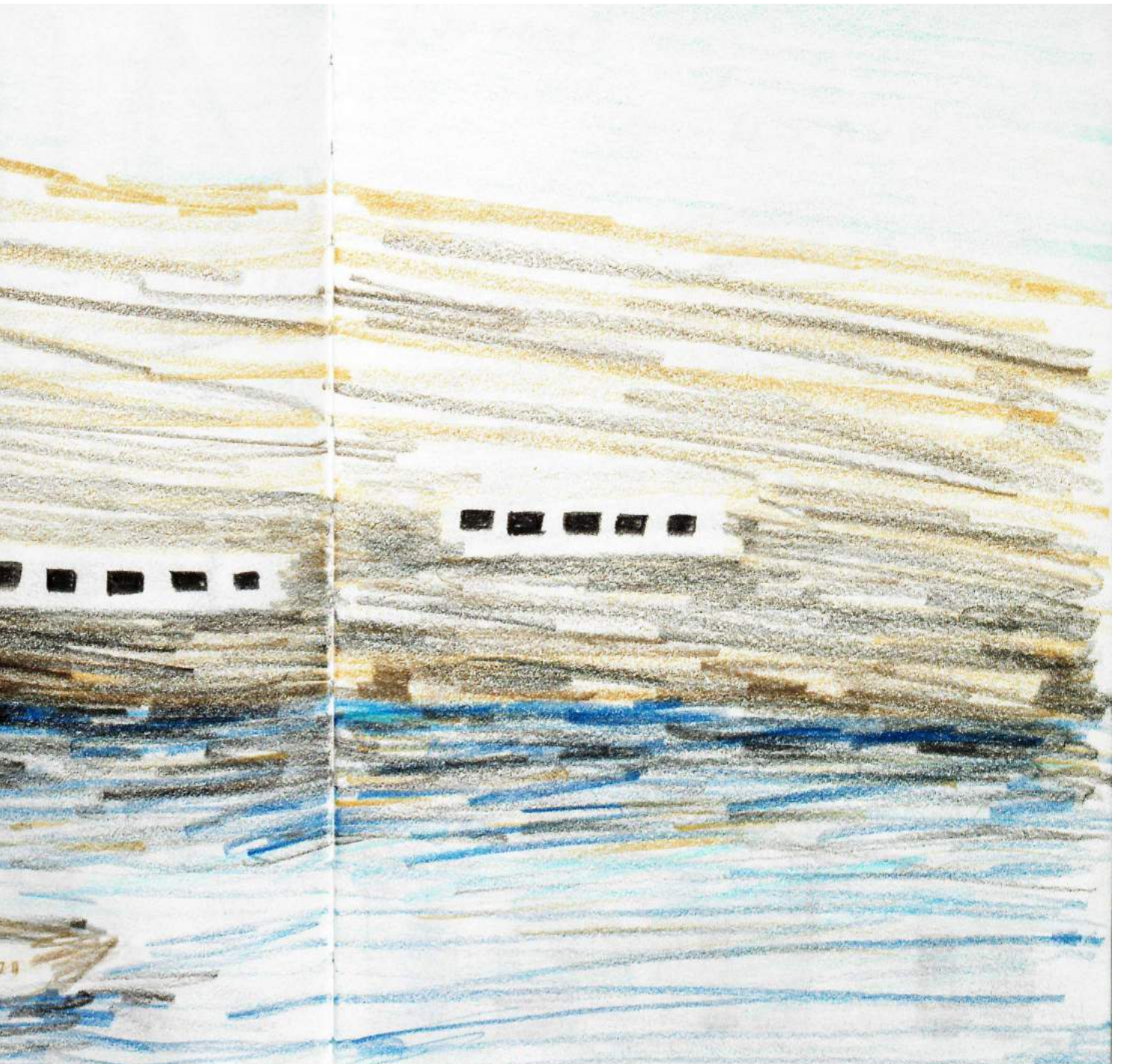
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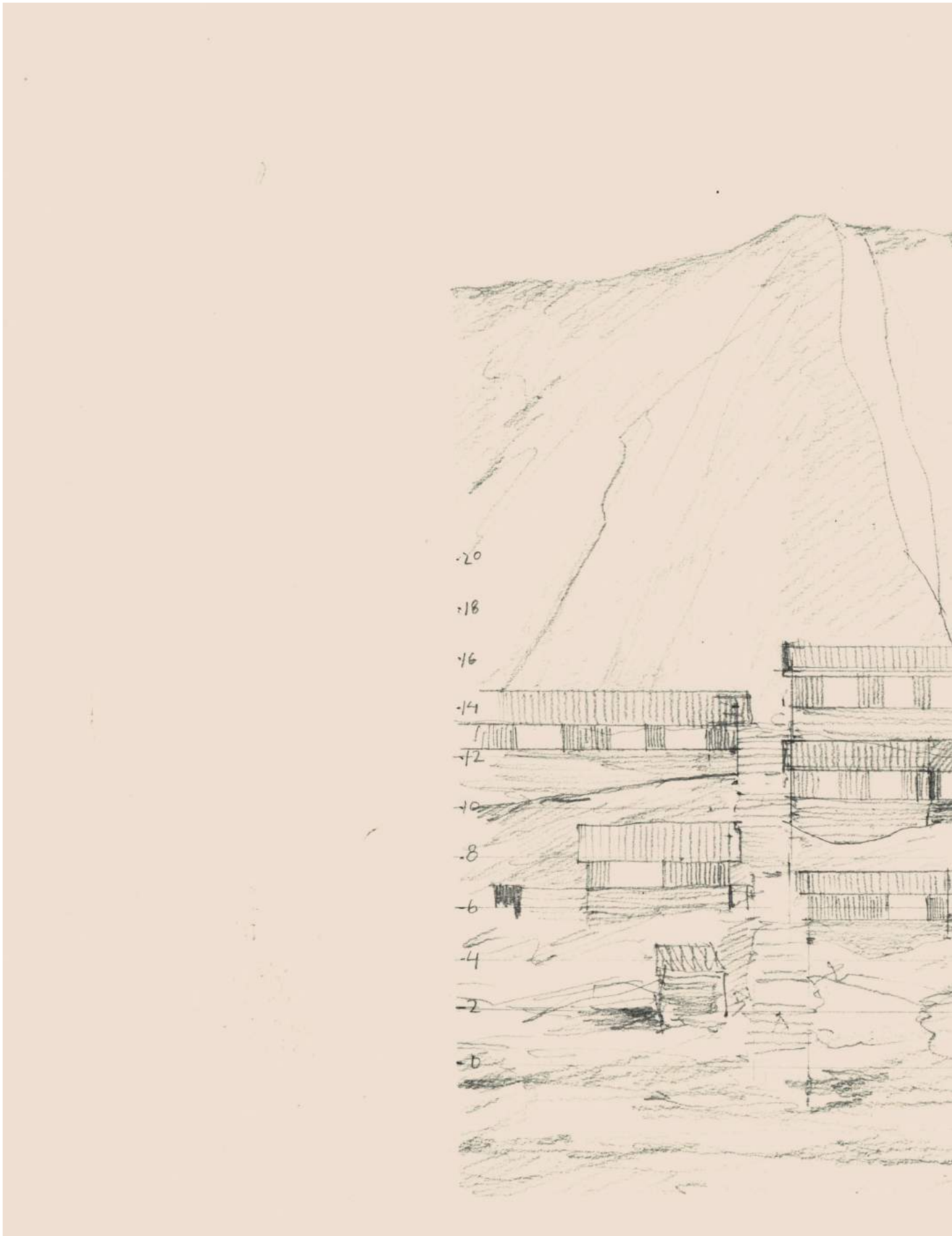




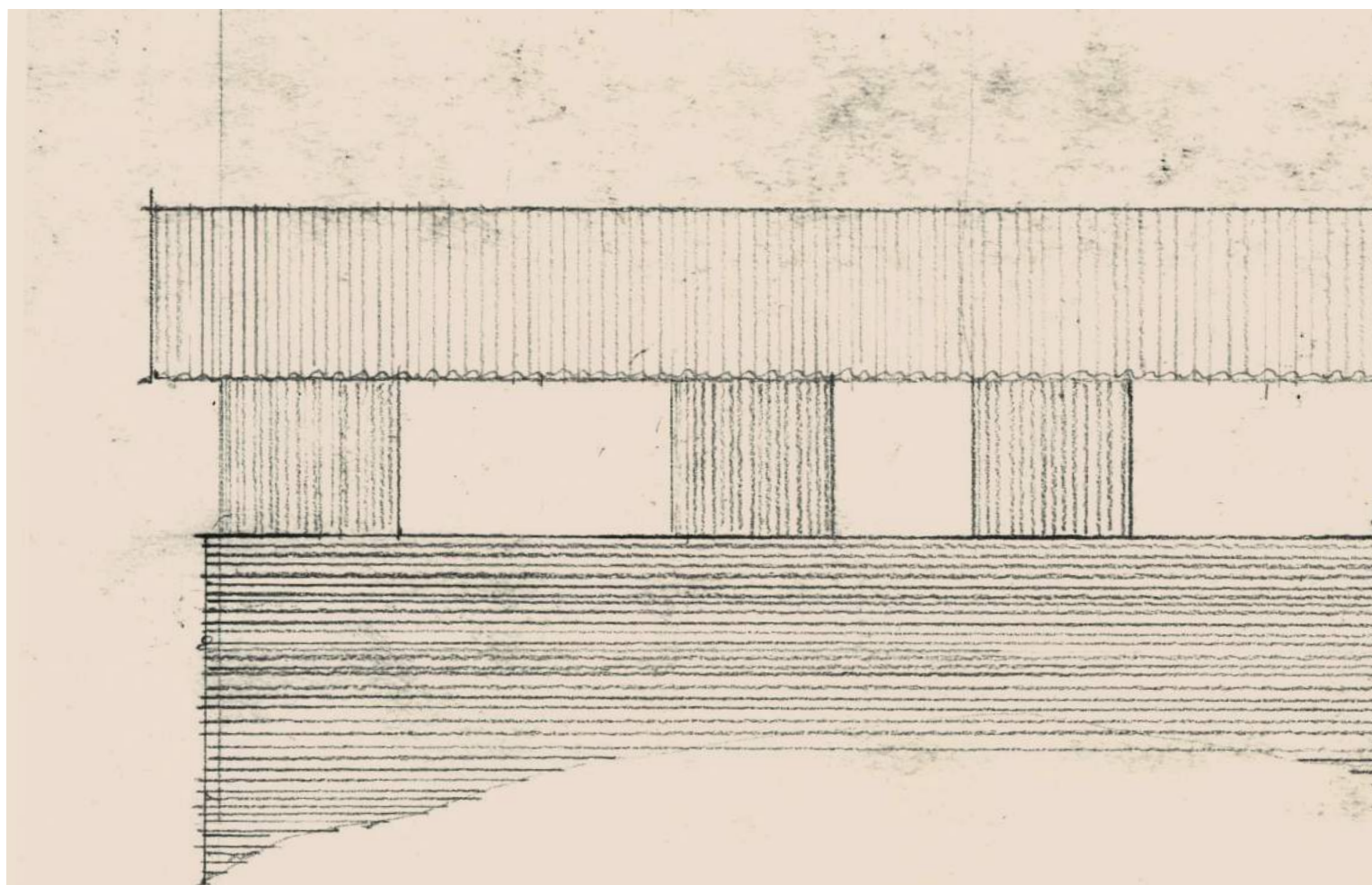


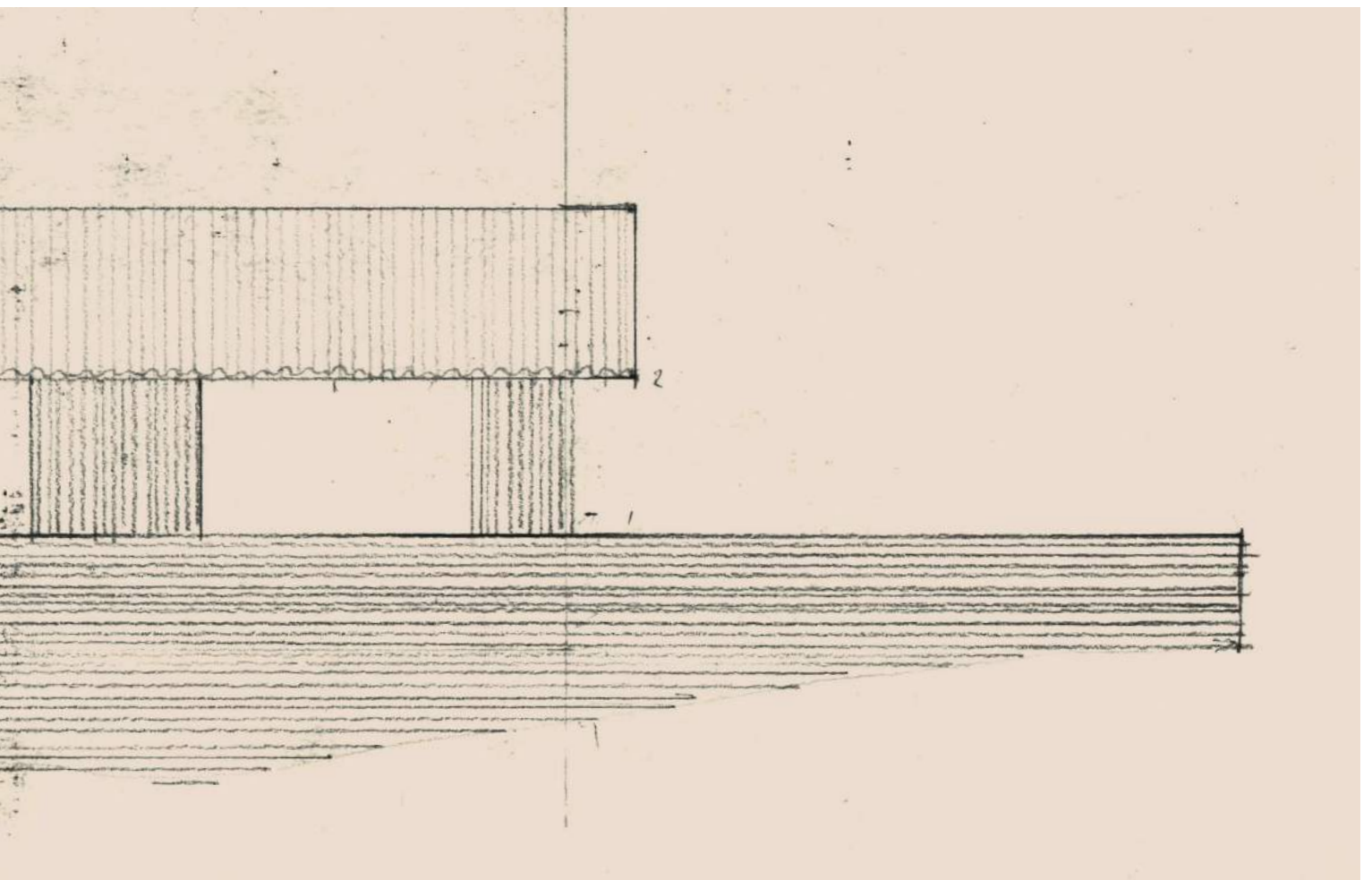


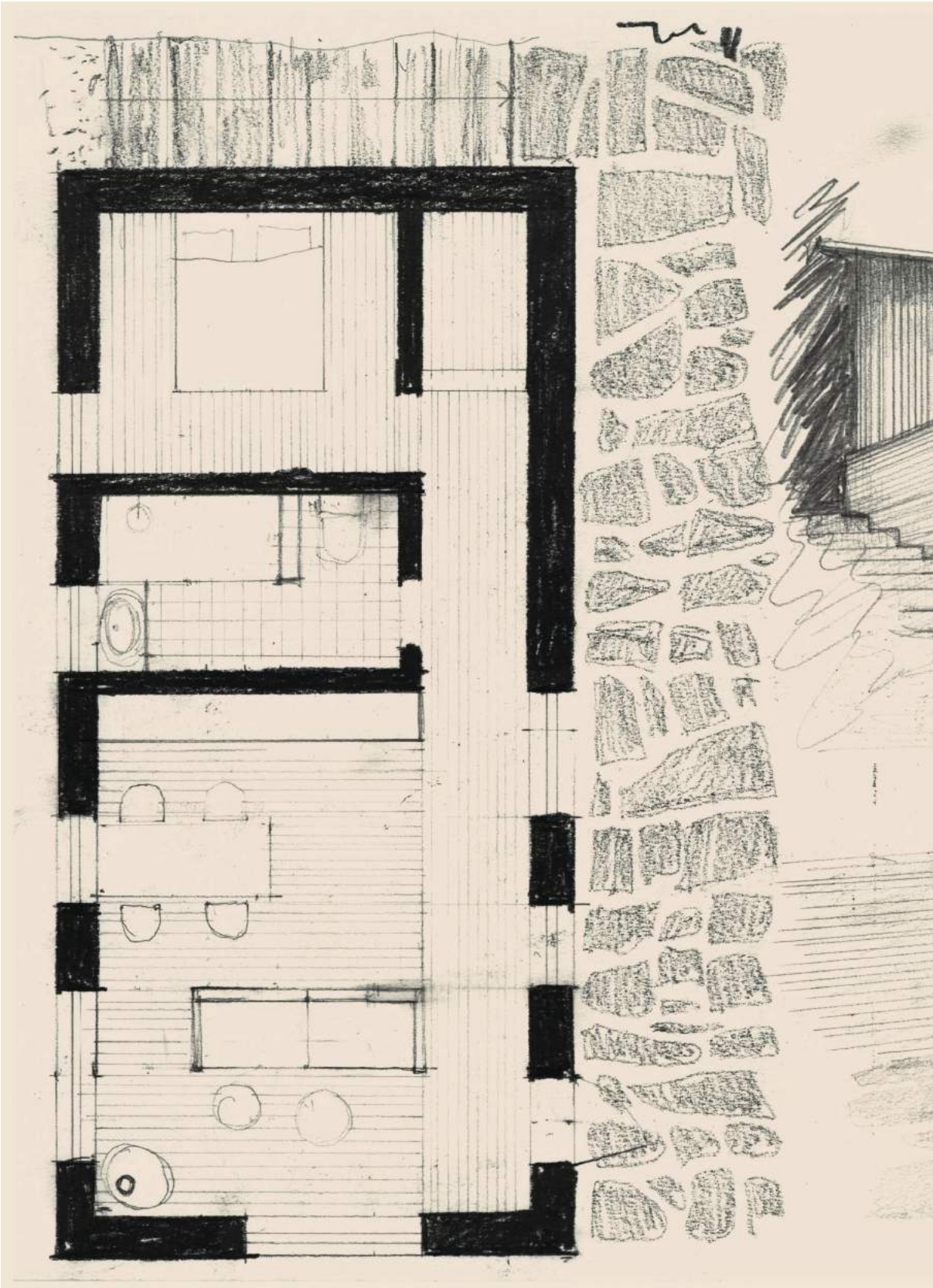


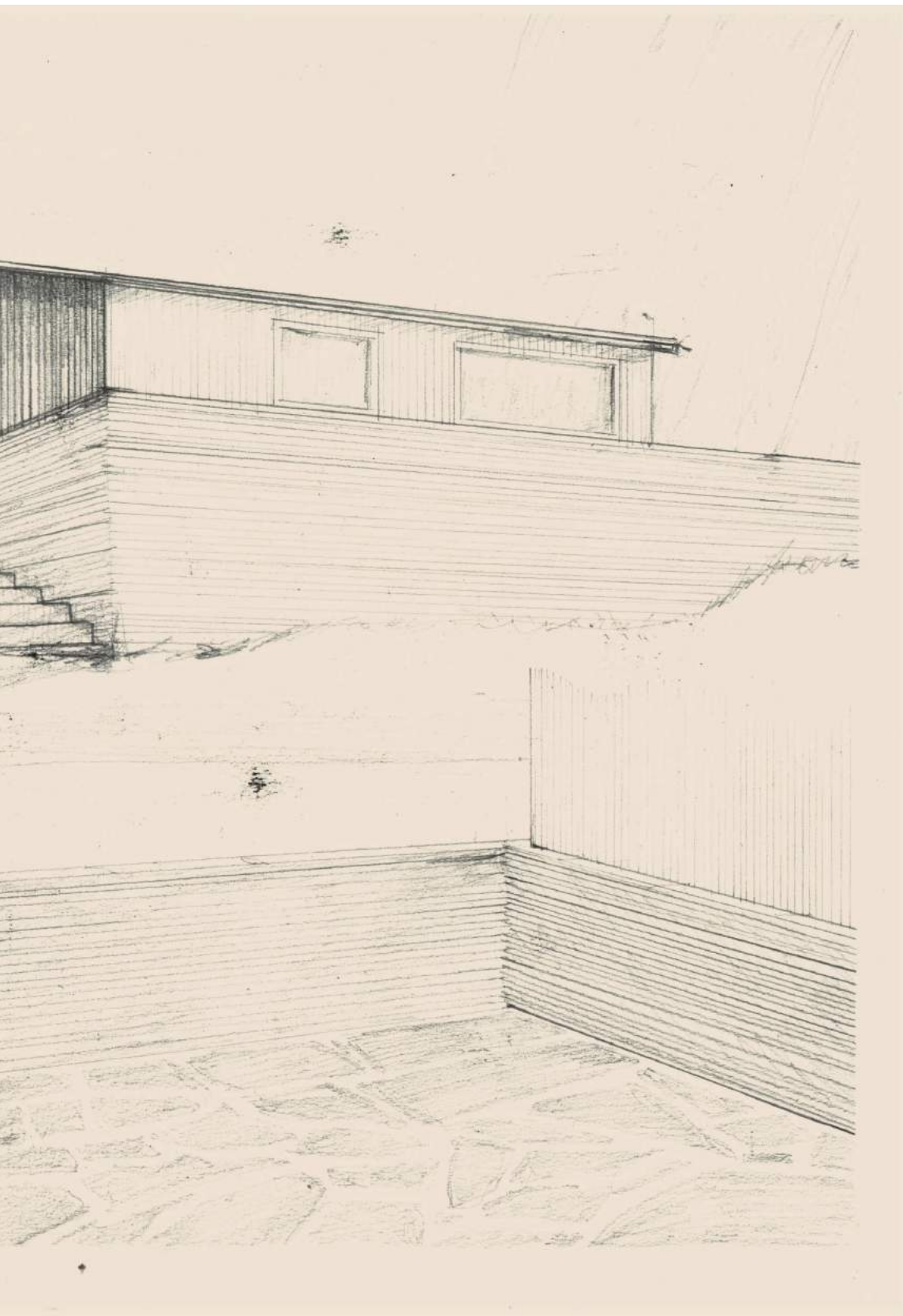


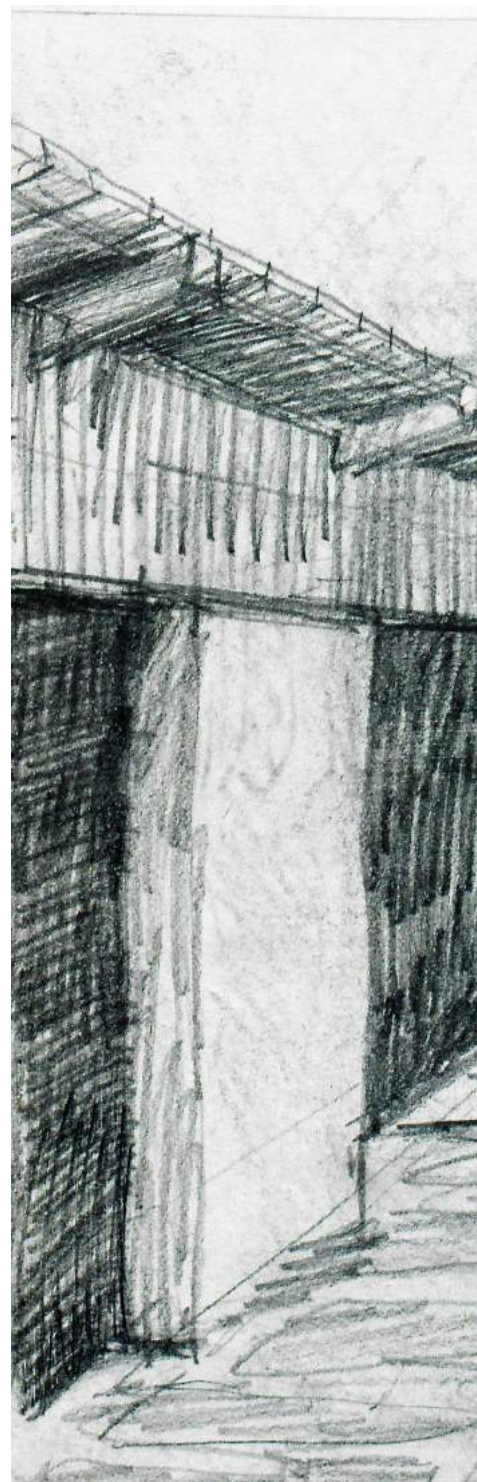


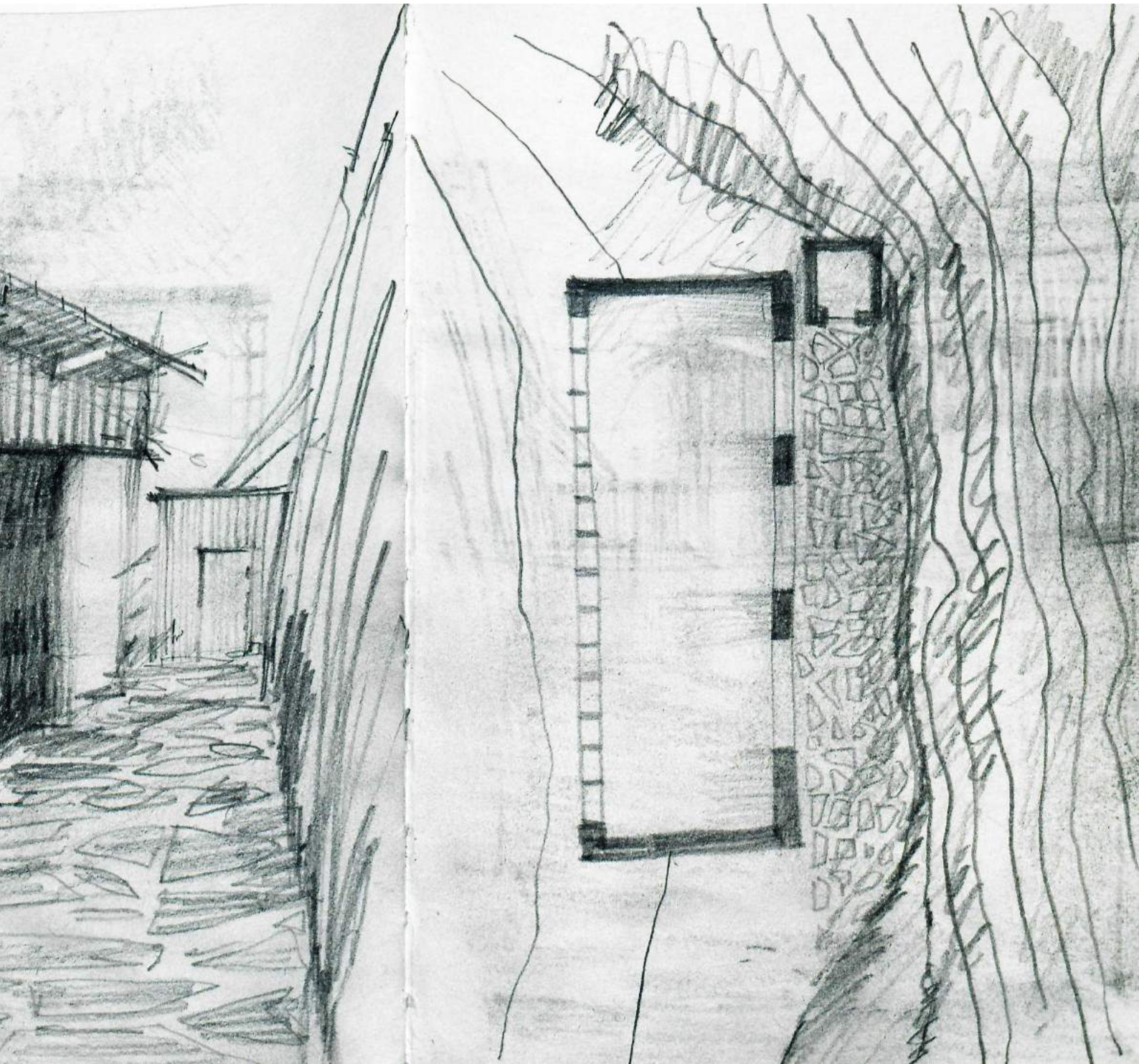


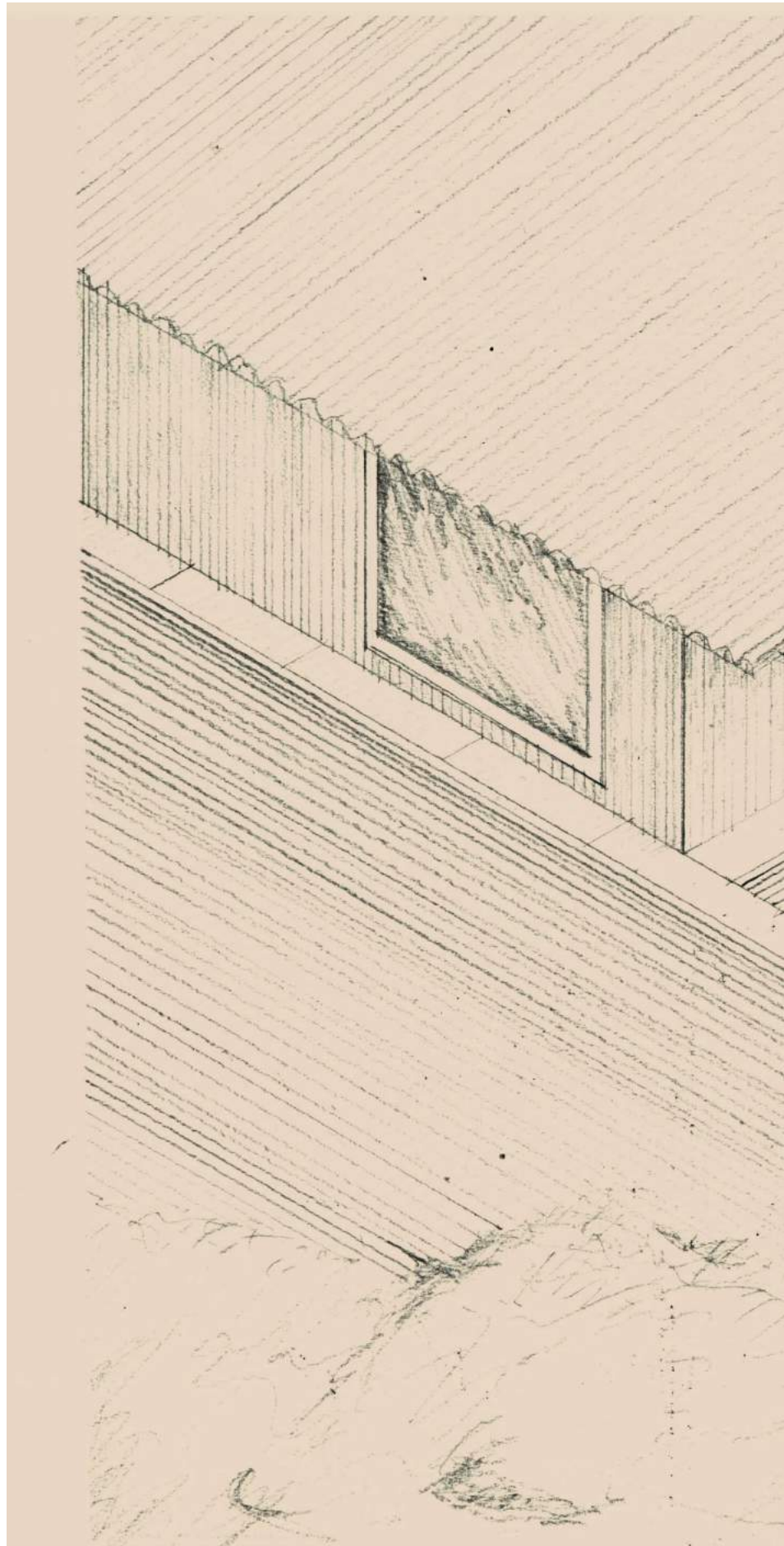


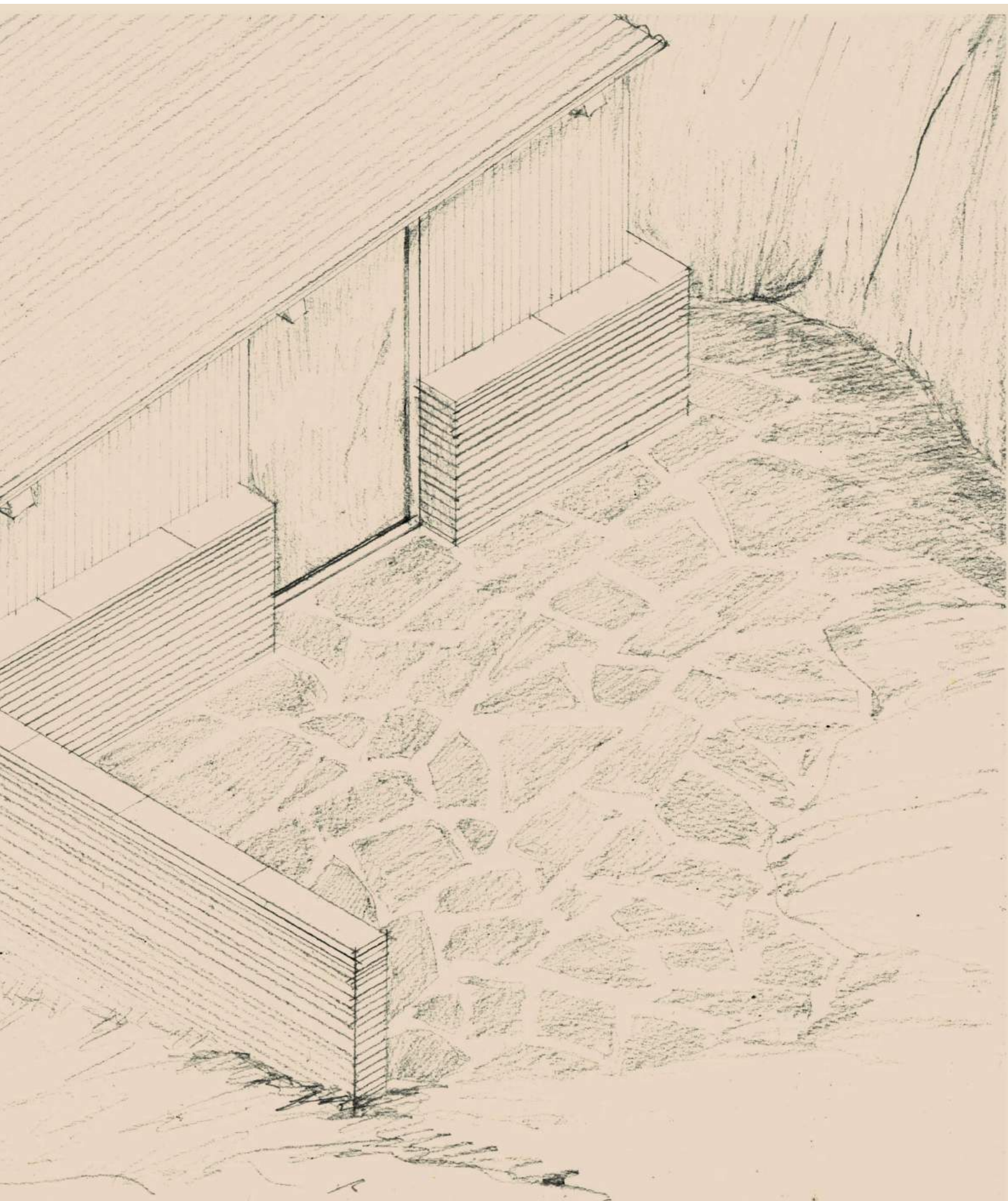


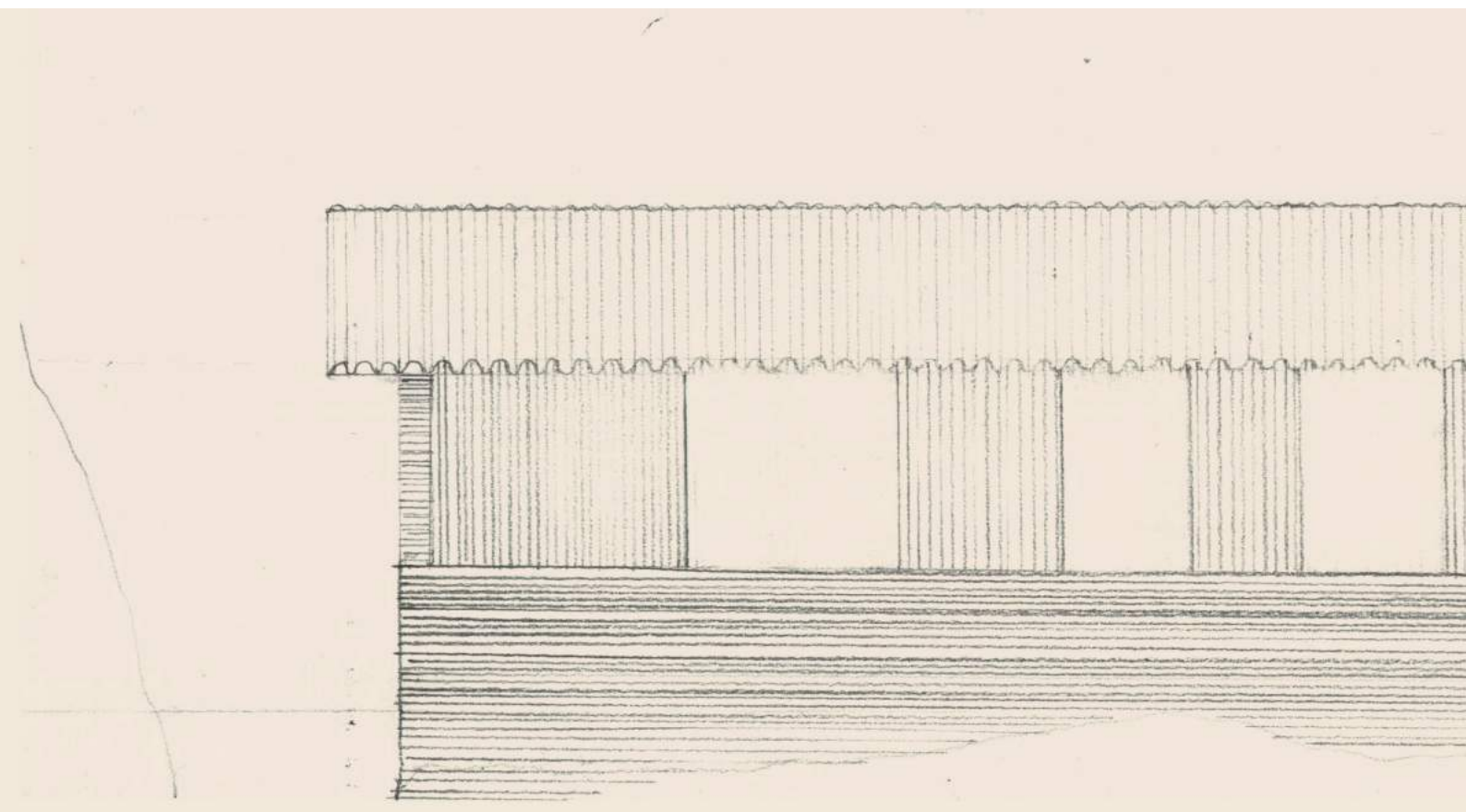


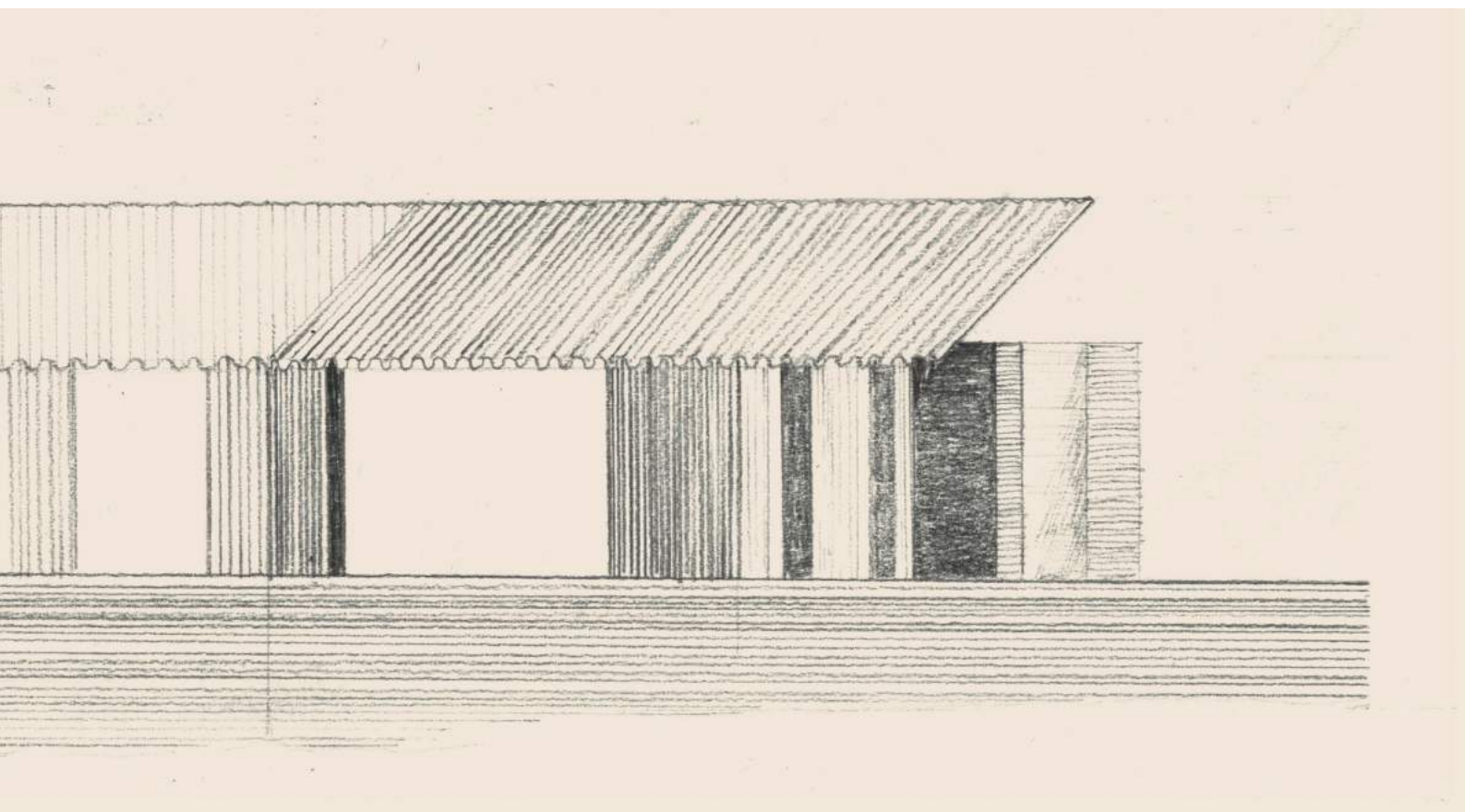


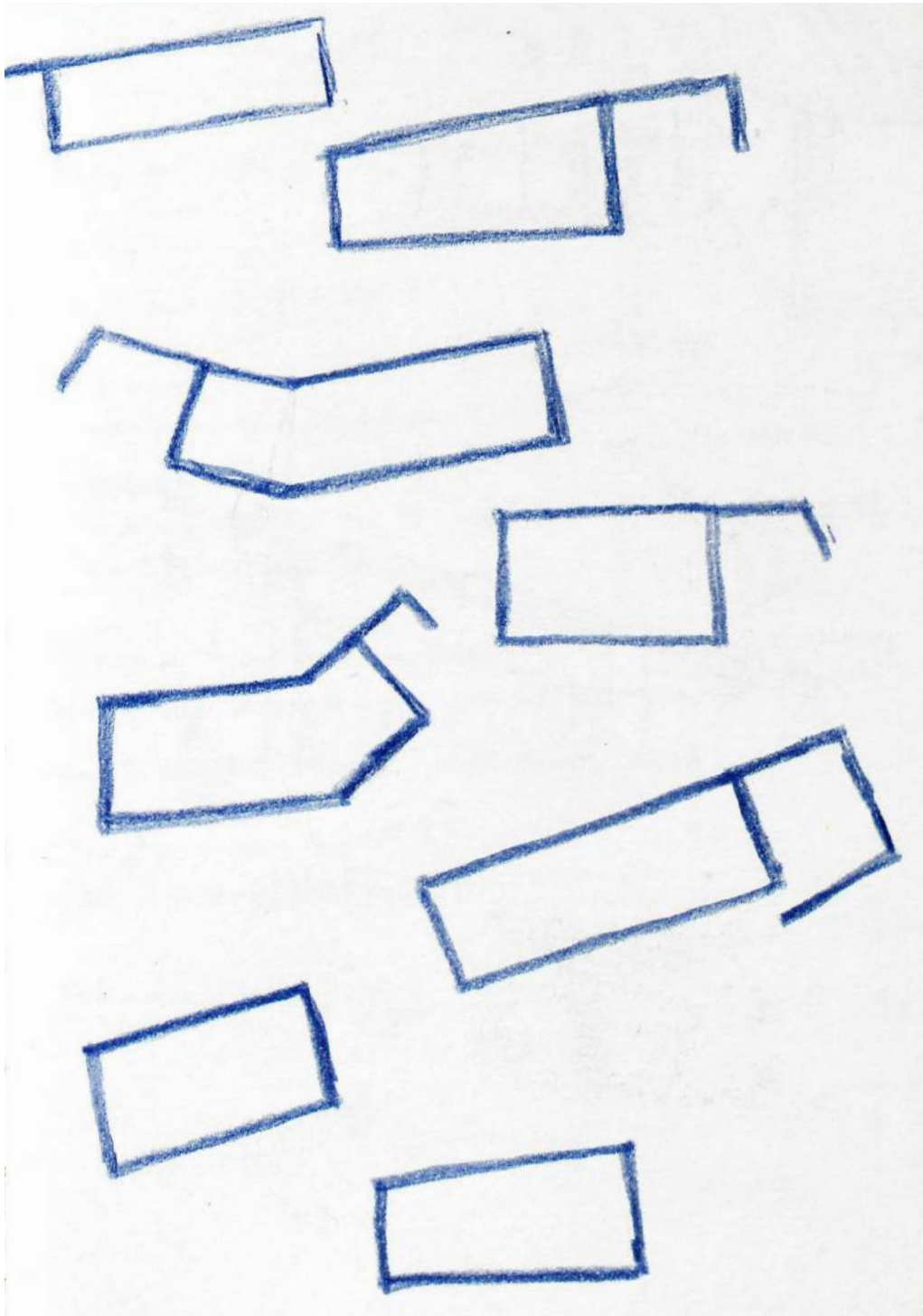


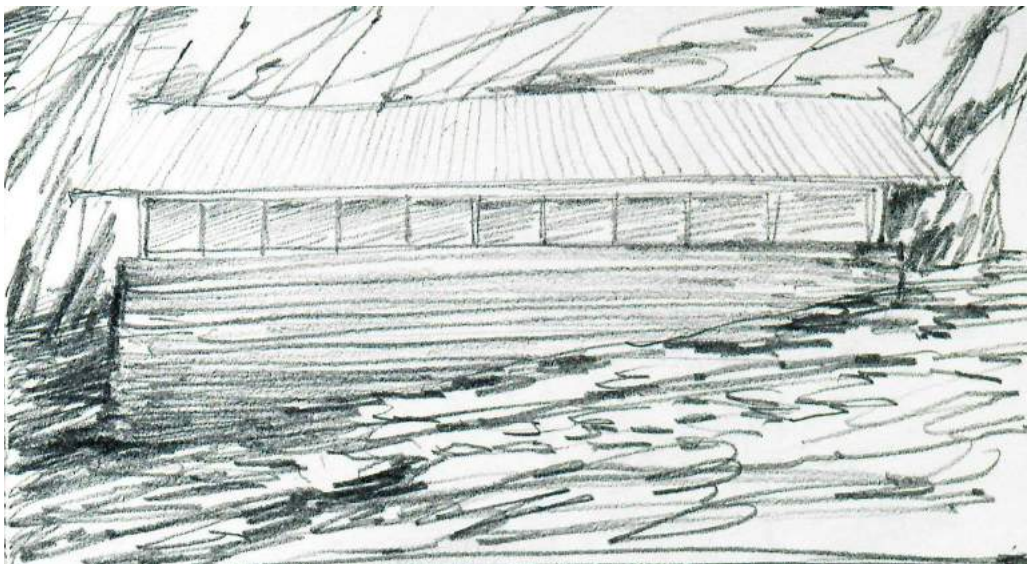


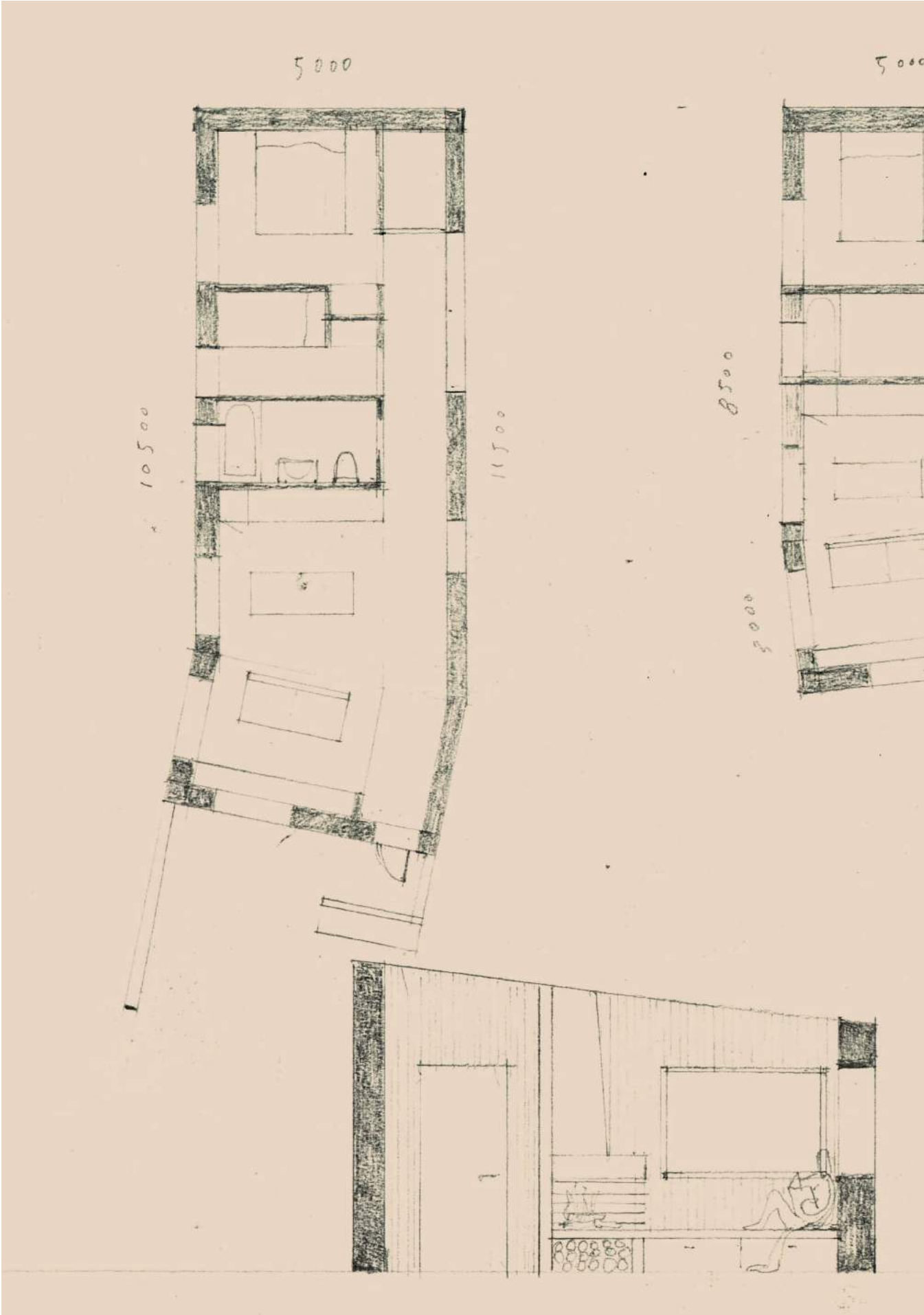






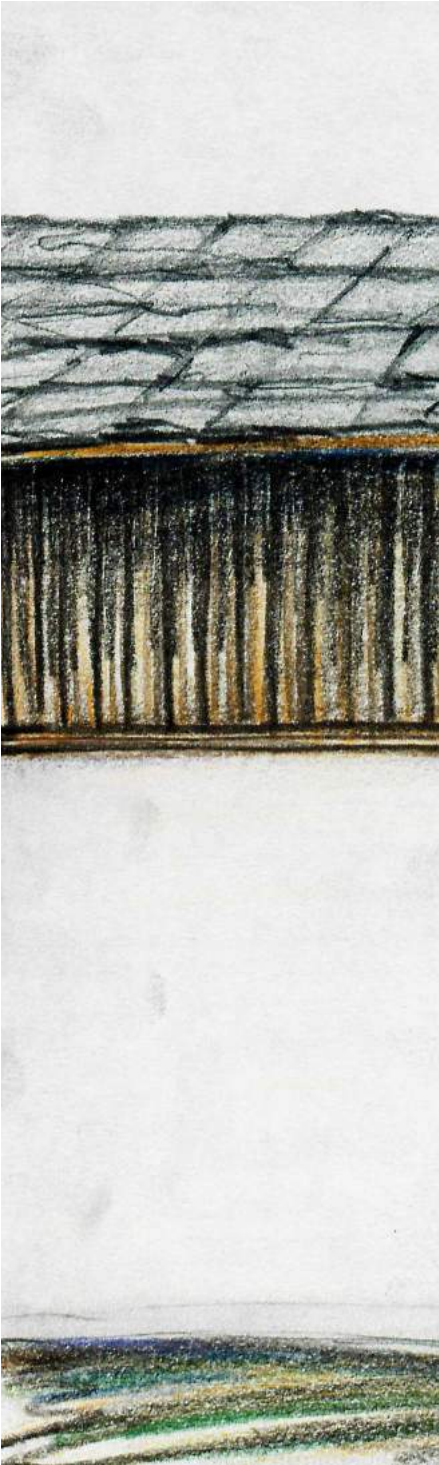


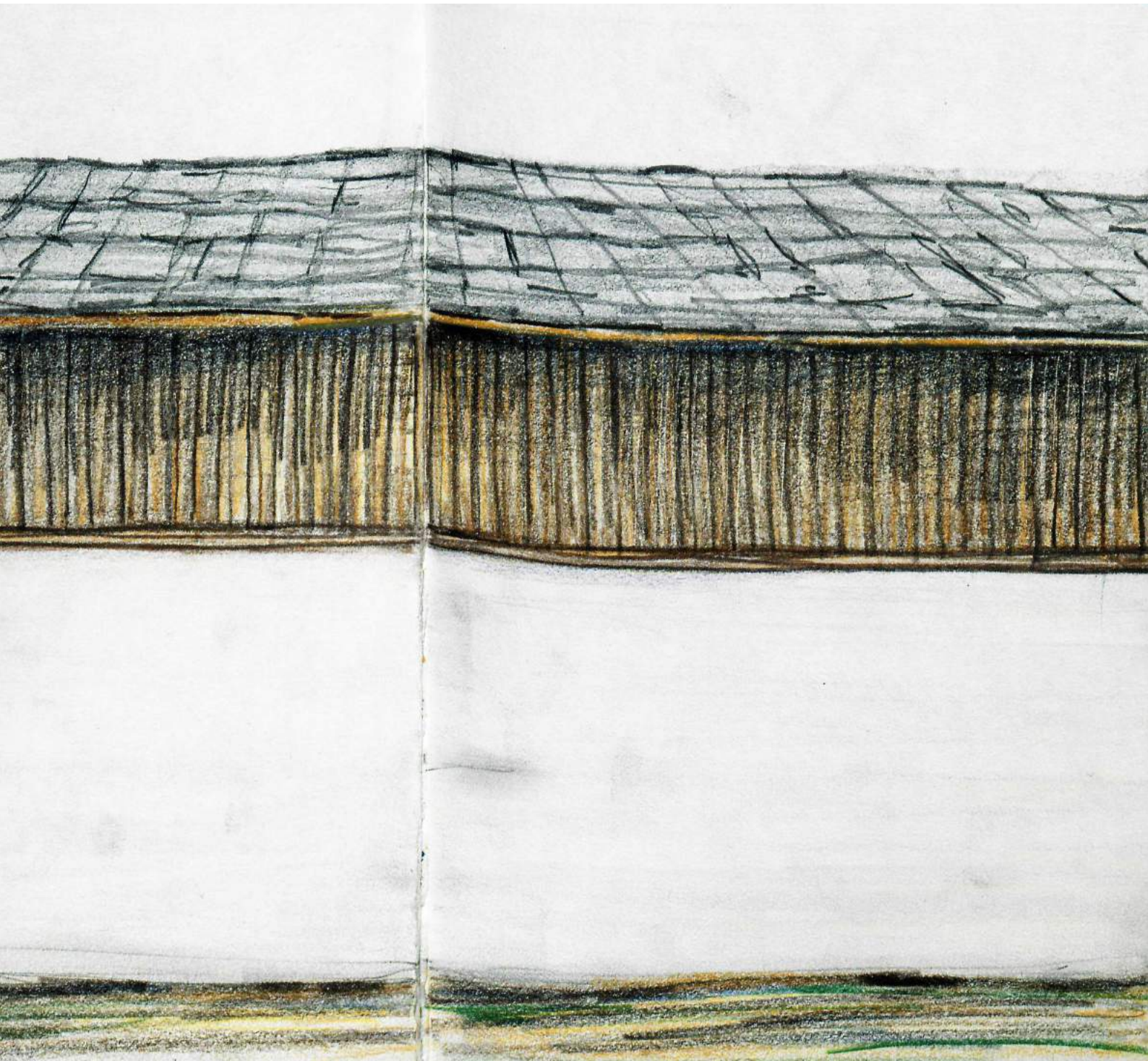




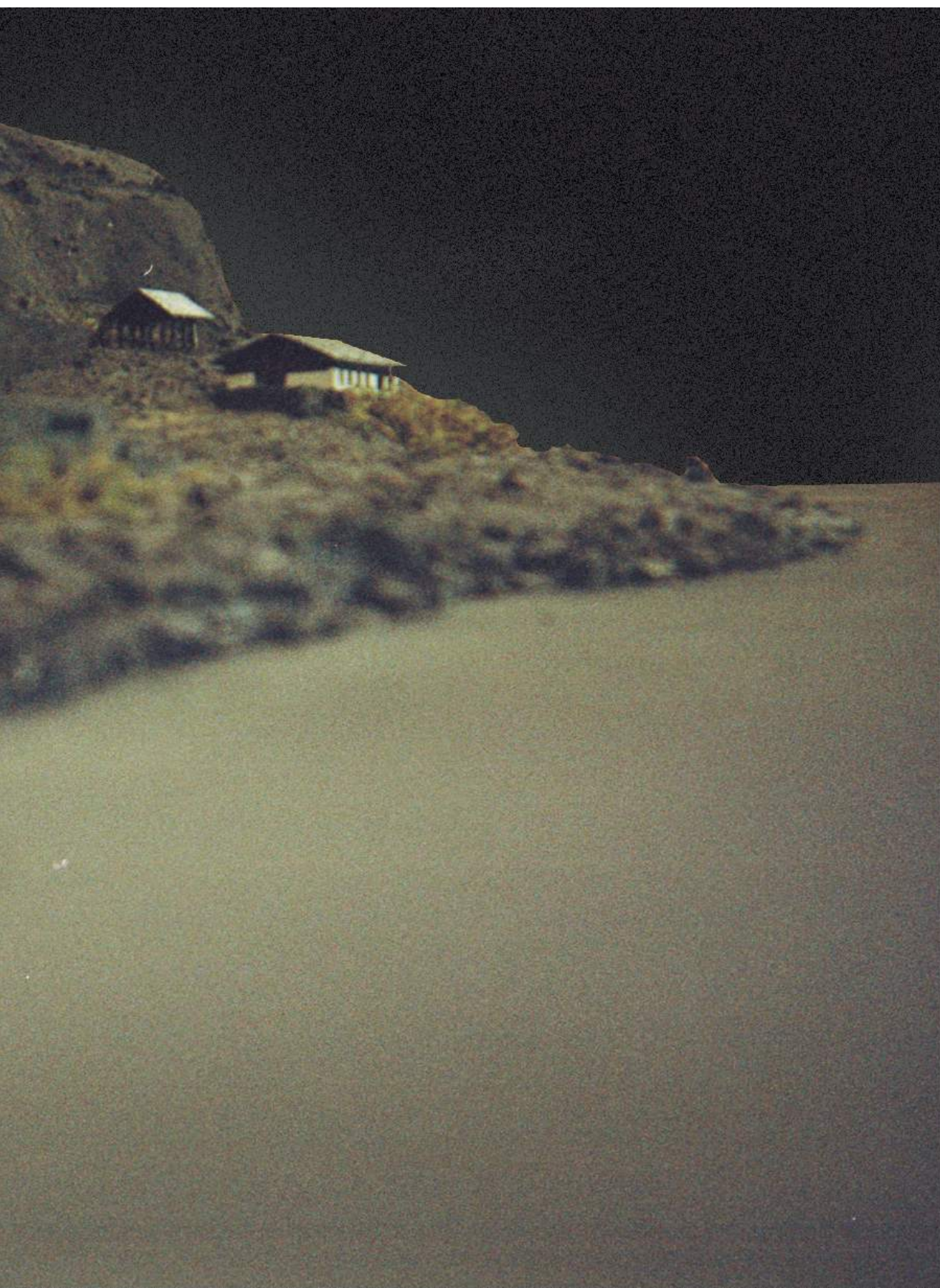
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CHALMERS
UNIVERSITY OF TECHNOLOGY

In the Quarry:
Architectural Investigations into the Preservation of Spirit

Teodor Losman Nädele

Examiner: Kia Bengtsson Ekström
Supervisor: Oscar Carlsson
Direction: Transformation & Conservation

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Chalmers University of Technology





