



Landscapes of Extraction

Architectural Processes as Reenactment of a Post-Industrial Site.

Ebba Andersson / Master Thesis 2025

Chalmers School of Architecture / Department of Architecture and Civil Engineering / 2025
Architectural Experimentation / Examiner : Naima Callenberg / Supervisor: Daniel Norell



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ABSTRACT

Stone extraction is a destructive industry which leaves a scarred landscape of irreversible incisions, making it important to consider the treatment of the places it leaves behind. The conventional way of treating these post-industrial landscapes would be to fill the hole in the ground to undo the wrongdoings of the extractive past in an attempt to restore the landscape to a previous state. A move that covers history, memories, and narratives. Trusting nature’s own mechanisms for regeneration, letting nature revive nature.

This thesis provides alternative strategies that do not assume that such a static, ideal state exists. Just like ruins of buildings can carry traces of significant cultural heritage, abandoned sites of extraction are remains of the past of stone quarrying. And just like a ruin can move the imagination of previous stages, these sites carry latent narratives that act as historical foundations from which we can project alternative futures sprung from everyday culture and narratives about the working life of many people.

The thesis explores how architecture can be used to deal with post-industrial landscapes by creatively restoring rather than covering the traces of the site’s former use. Design strategies creating an architectural condition where the past, the present and the future coexist in mutual dialogue. This happens in two ways. First, through investigating and reconstructing the site’s historical layers in representations that index time. And second, through reenacting the process of extracting and working stone through depictions of tools and processes.

The strategies are showcased through the design of a visitors’ center where the process of quarrying stone is reenacted and where the latent stone material of the site functions as building material. Rather than solely exhibiting refined artefacts, the museum creates situations where the extraction and processing of stone can be experienced and linked to the remains of the landscape.

Overall, the thesis examines the legacy of post industrial landscapes by reenacting its former use, while at the same time giving it a new purpose. The program revitalises a post-industrial landscape left abandoned and forgotten, and the architectural process functions as a way to remember its past.

Keywords: *Industrial-Landscape Transformation, Reenacting Architecture Architectural Processes, Stone Extraction, Historical Layers, Heritage.*

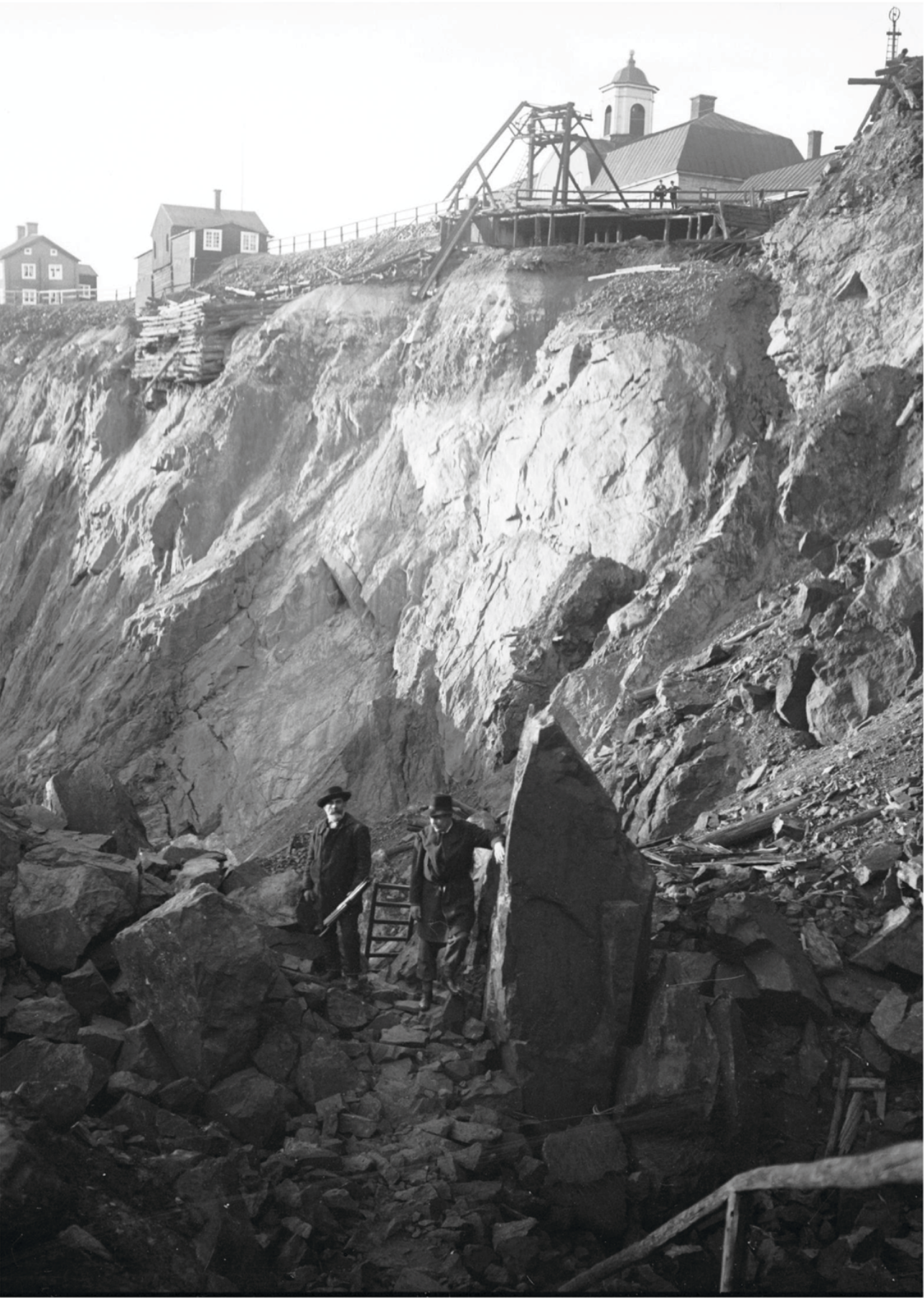


Figure 2. Gruvschakt, Falun, Dalarna. (Upplandsmuseet, 2023).



About the Architect

Ebba Andersson is an architect from Borlänge currently living in Gothenburg, Sweden. She has an educational background from Chalmers University of Technology and the Norwegian University of Science and Technology where she did exchange studies during her master. Her professional background consists of work as a freelance architect as well as internships made at Arkitekterna Krook & Tjäder in Gothenburg and BIG - Bjarke Ingels Group in Copenhagen. She strive for her architecture to be expressive, sharp and grounded in strong storytelling. She believes that the act of formulating architectural narratives guides and motivates the design decisions through convincing arguments. She is attracted by architecture that works with materiality in a honest way and think that architecture created based on the premises of the material in a tectonic way is very inspiring. She always strive for the design process to be full of desire, filled with curiosity and fun.

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This thesis aims to investigate how to engage with post-industrial landscapes through architectural processes and architectural programming. It examines how architecture can be used to highlight rather than to conceal the traces of previous material extraction, creating a condition where the industrial landscape's past, present, and future can coexist in mutual dialogues. The investigation asks the following questions:

How can architecture be used to revitalize post-industrial landscapes left abandoned and forgotten?

How can reenactment be used to commemorate and communicate past extraction processes, labour, and machinery tied to a post-industrial site?

THE THESIS IS ABOUT

- ...Understanding how architecture can be used to deal with human-made landscapes.
- ...Industrial landscape transformation by adding built structures.
- ...Preservation of historical, cultural and memorial heritages.
- ...Revealing narratives.
- ...Industry landscape recovery.
- ...Reenacting Architecture
- ...Using the site as a building material.

THE THESIS WILL TOUCH UPON

- ...Landscape design strategies.
- ...Extraction processes.
- ...Interplay between landscape and building

THE THESIS IS NOT ABOUT

- ...Ecological Sustainability.
- ...Rural Planning in General.
- ...Economy.
- ...Landscape architecture in general.

BACKGROUND

THE PROCESS OF HEALING AS AN ARCHITECTURAL METAPHOR

When describing abandoned industrial landscapes metaphorically as landscape wounds, one refers to the irreversible incisions caused by industrial activity as something in the process of becoming scarred with no possibility of returning to its original state. Anna Storm, author of the book *Post industrial landscape scars* (2014), explores the potential of using scarring as a metaphor and analytic tool to influence the debate on industrial heritage, aiming to highlight the complex and destructive pasts, while also highlighting possible processes of healing (Storm. 2014).

When applying scarring as a metaphor for describing an abandoned industrial landscape, one looks upon the scar as a reminder - a trace of a wound standing for the pains of the past. It is often therefore referred to as something negative, while some scars however can be chosen and therefore positively laden through bodily ornamentations by scarifications as an example.

What contextual and biological scars have in common is that someone is always responsible for the presence of wounds by making certain decisions.

During the process of healing, an open wound gradually transforms into a scab eventually becoming a scar. The scab- process is the first layer of reconstruction creating a protection during the transformation, even if the state when the wound becomes a scar is a deeper reconstruction fusing the past and the present, marking what has been lost and gained into a new state. Unlike a biological wound, a landscape wound is not healed automatically or linearly, the process can require active work or happen in several stages since the metaphorical scar applies healing processes socially, politically and culturally. This transitional phase, where forms and meaning still are unclear, is a border state crucial for understanding the people and the place itself before the healed state is entered (Storm. 2014).



Figure 3. (Baan, Iwan, n.d)

LANDSCAPE RECOVERY - DEFINING NATURE

When talking about landscape recovery or rehabilitation, one assumes that something that has been lost, forgotten or devalued has been found and brought back again. Since the post-industrial landscape has been shaped due to human intentions where the extraction process has caused landscape to be lost, us as architects need to take into consideration whether the landscape should be recalled or not. Extraction industries lead to landscape loss and the rehabilitation process is about regaining qualities, but there is no final condition for the design. Landscapes are never done and are in constant changes which makes it important to keep in mind that the actions implemented today will not remain the same forever (Trieb. M, 1999).

According to Cosgrove.D, Leatherbarrow.D, Wall.A, Et.al, authors of the essay collection *Recovering Landscape: Essays in Contemporary Landscape Architecture* (1999), this continuous landscape recovery and rehabilitation process can be measured by the preservation of memory and culture, the chosen program and the utilities that will lead to activity on the site as well as the consequence for ecology (Cosgrove.D, Leatherbarrow.D, Wall.A, Et.al. 1999). Since landscape rehabilitation comes with consequences for ecology, it is important to take into consideration how much one should trust nature's own mechanisms for recovering landscapes.

One could argue that there is a certain poetry of letting nature revive nature when rehabilitating post industrial landscape, but it could also be considered quite naive and cliché trusting

nature's own mechanisms for rehabilitation of wounded landscapes. This because there is nothing such as *nature*, pure nature does not exist. Luis Callejas, landscape architect and Professor at AHO in Oslo (AHO, 2024) states that what generally is defined as *nature* does not exist, untouched land is very rare since all landscapes are cultural constructions with paths of activity and therefore it is subjective and always depends on which culture that are looking at it (Tandberg, J. J. (2021). Based on the theory of pure nature being nonexistent, one could state that landscapes are not found, they are designed. This naive way of defining nature as something untouched, just because Scandinavia has beautiful landscapes to start with, does not give an alibi of thinking that landscapes is something that is given (Tandberg, J. J. (2021).

In correlation to Callejas argument about pure nature being nonexistent, Ellen Braae, landscape architect and author of the book *"Beauty Redeemed; Recycling post-industrial landscapes"* (2015), refers to the artist Robert Smithson's reverse definition of a landscape ruin and argues that by comparing the output of the man-made process of activity by the output of a natural process such as earthquakes, one look the landscape output beyond the industrial activity and rather as a place possibly created either by human technological control of nature or nature's own mechanisms. This according to Smithson would create a more open minded attitude to the possible landscape outputs where nothing is forbidden and everything is possible (Braae, 2015).

LIFE, DEATH AND REBIRTH OF THE LANDSCAPE

Buildings are often described as having life, and the architect is considered being its creator. As a profession, architects are often invested in the life of the building, but not necessarily so much about other parts of the building's life such as destruction, deterioration, waste and death (Cairns. S, Jacobs.J, 2017). By describing a building as a living organism one can enhance the different stages of the life and the death for a building. When doing so, metaphorical descriptions like surgery, healing and recuperation can be used as a way of describing different stages that a building goes through when becoming scarred to keep staying alive. This also means that buildings that are threatened with death must be reborn or reanimated to enjoy a new life. Architect Arthur Cotton Moore has been reflecting on when building an addition to an already existing building, one could say that this is an act of “an organ transplant” and commonly “the old building wants to reject it”. (Cited in Guggenheim 2011, 23). This may also open up for speculation about if buildings that are being demolished could be considered as murder as well as that if buildings in a very bad state are begging for their end.

What architects do when bringing a new building to life is that they create visions on how it needs to be shaped in order to accommodate the life of the building that the architect has envisioned. As time goes, the building goes through changes in order to keep staying alive, until its original use no longer accommodates the life of the building, and it dies (Cairns. S, Jacobs.J, 2017). This theory of the living process on how a building's life is created and carried out can be adapted for everything that has

been designed: Everything designed has a creator with visions on how it needs to be shaped to suit the life that the designer has planned. The design will get patina and suffer decay along its use until it's no longer usable and dies.

As earlier stated, almost all nature is constructed showing paths of activity which have shaped the landscapes. It is therefore possible to state that landscapes have life, meaning that they also as everything else being alive, at some point will be facing death and therefore needs to go through surgery-, healing- and recuperation processes in order to stay alive longer.

At this moment the industrial landscape lingers between its life and death, and the rehabilitation serves as an initiator for its rebirth. In this case, restoring the landscape lacks a distinct motive since the former purpose of the landscape has died. The aim for its rebirth is therefore to rehabilitate the landscape while preserving its identity, memories and history. The rehabilitation can therefore not be made without dealing with the preservation of the landscape at the same time. As emphasized by Zumthor, architecture can be used as a way of making people aware of the stories that buildings, landscapes and places carry. It can highlight layers of history within those remnants which are physical and real no matter how mysterious, quiet or hidden they appear at first glimpse. Narratives and history are everywhere and it is important to include traces of the past either by integrating, absorbing or overlaying history when adding something new (Lending. M, Zumthor. P, 2018).

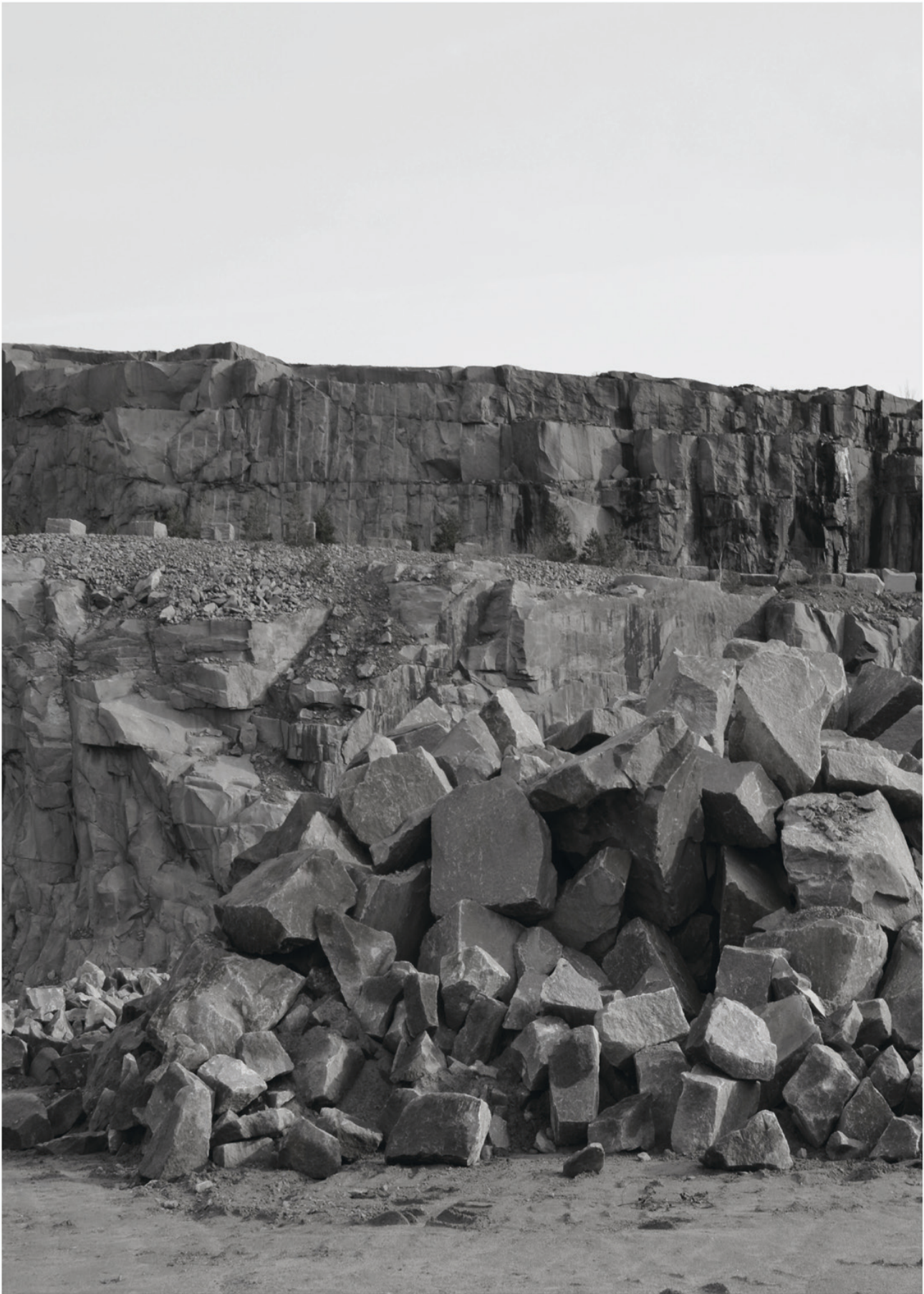
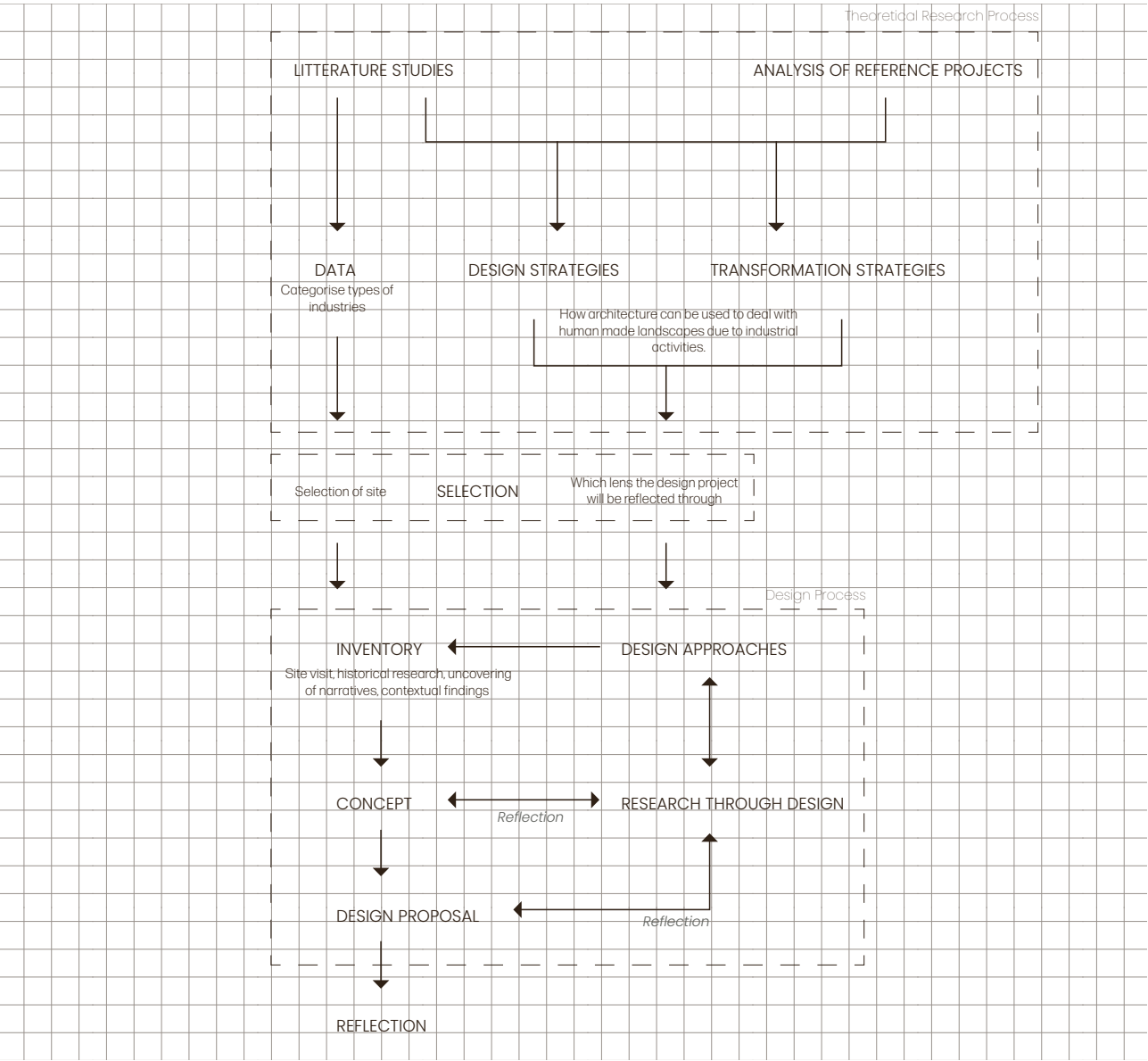


Figure 4. West part of stone quarry in Rixö



Matrix showcasing the design process

METHODOLOGY

DESIGN AND PROCESS DESCRIPTION

The thesis questions have been investigated by designing an industrial visitor center in Rixö, an old stone quarry left abandoned after the industrial activity ended. The process has consisted of an iterative research process where design approaches identified through literature research, studies of reference projects where the relationship between landscape and architecture are being discussed, as well as research of the history and extraction processes of the site. The findings have thereafter been used to guide through which lens the design project will be reflected through, as well as the architectural language of the design proposal.

The process started with a parallel research on design strategies combined with an inventory phase of the industrial landscape in Rixö. The inventory consisted of site visits, historical research and uncovering of narratives and contextual findings which later was synthesized with the design strategies in order to develop the design concept. The aim with embodying the design strategies through designing a visitors' center has been to exemplify how a universal strategy can be implemented by architectural programming in a site specific context, where the chosen program and the design concept will answer for the reactivation of a post-industrial landscape left abandoned and forgotten.

Stone quarries of Bohuslän

How can architecture rehabilitate and recover post-industrial landscapes?

Preserving cultural, historical and memorial heritage

How do we transform while still honoring what the landscape ones have been?

Diving into one quarry to test design strategies

How do we adress a human-made landscape left abandoned and forgotten?

Transforming the stone quarry

How can we use architecture to move on, while still remembering the past?





8 Figure 5. East part of stone quarry in Rixö

THEORY

REENACTING ARCHITECTURE

Architecture is both realistic and fictive. Realistic since architecture gets embodied when it is placed in a physical and real inhabited context, fictive since architecture arises as a reflection of the society in which it is placed. Mies Van de Rohe described architecture as something sprung from "The will of an epoch made into space" which can be interpreted as a result from a reaction of the context its placed in - a result of the psycho-cultural environment combined with economical, political and social conditions of the context. By a delicate interplay between realism and fiction, the great architecture arises, where its simplicity and obviousness is sprung through storytelling. Architecture therefore fictionizes itself before it becomes embodied in reality as something physical and real composed by histories and narratives (Sam, J. 2012).

As Peter Zumthor states, history is everywhere, and architecture can expose layers of history that are embedded in landscapes, buildings, things and places around us (Lending, M, Zumthor. P, 2018). History does not only consist of narratives about the past, but also functions as a source for creativity. In correlation to Zumtorsk' claim about architecture being an

actor to reveal historical layers, Jacob Sam, author of the book *Make it real: Architecture as enactment (2012)*, states that architecture is sprung from compositions of the history and narratives of its context that it is placed in. Sam explains it as a process of architectural reenactment where architects non-chronologically joins and sews history and the narrative of the context together into form, expression, strategies and narratives embodied within a new contemporary addition (Sam, J.2012). By allowing fragments of history to be picked randomly, one also allows different outcomes of future form and expression using the past as a starting point. Through working with contextual history, architects as well create narratives where history is used as an argument for the design decisions. When the building finally is placed in the real context, it becomes part of the rewriting of the context's history and part of the narrative that is spliced into the next architectural addition. The strategy of reinterpreting and reworking what already exists both historically and in the present means that new additions do not appear like aliens to a place, but rather that the design is a product of historical circumstances.



Figure 6. (Ziling, Wang, n.d).

ADAPTIVE REUSE OF INDUSTRIAL LANDSCAPES

Adaptive reuse as a design discipline emerges from a desire of preserving different values which among many can be either architectural, historical, cultural and/or intangible. The interest for the subject of adaptive reuse increased in the aftermath of the French Revolution, where professionals in the workfield of arts became interested in questions of why only individual buildings were considered having a value of preservation and by which methods preservation should be practiced. The increased interest led to an expansion in the field of what was considered having preservation value from only consisting of individual buildings to neighbourhoods, landscapes, urban structures and immaterial heritages, as well as making the methods in which preservation is practiced constantly evolving (Wong, 2017).

In general, the term reuse refers to interventions using the current condition and bringing it into the future (Braae, 2015). Nowadays, there are several different terminologies in the field on how adaptive reuse can be approached and practiced. The different approaches answer for different degrees of preservation and how big of an architectural intervention that can be made on what's already existing. Bie Plevoets and Koenraad van Cleempoel, authors of the book *Adaptive Reuse of Built Heritage; Concepts and Cases of an Emerging Discipline (2019)*, presents different design methods and concepts on how adaptive reuse has been approached by architects in contemporary practice. Plevoets and van Cleempoel states that in the process of reuse, it is necessary to make some transformations of the architectural heritage

where those transformations either could be executed as architectural structural interventions, material maintenance, spatial layout, functional replacements and/or site redevelopment (Plevoets, B, van Cleempoel, K. 2019).

The approaches presented by Plevoets and van Cleempoel fall under various of categories that Liliane Wong presents in her book *Adaptive reuse : extending the lives of buildings (2017)* for how preservation values can be maintained when adaptive reuse is practised. The design approaches can be categorised by strategies of reconstruction, maintenance, adaptation, or relocation, which have different implications of the architectural attitude, as well as the end result (Wong, 2017).

The adaptive reuse approach of the industrial site in this thesis, has been falling under Wong's category of relocation, executed with the approach of on-site-reuse, where material resources existing on site, latent and later to be extracted, have been relocated, modified and used in built structures in new ways. Working with an on-site-reuse transformational approach is materialistically, socially and culturally responsible as well as being sustainable since the more material being used and/or reused of what already exists on site, the less resources need to be added. Working with reuse has also architecturally been proven to be a good source for creativity as it has led to site-specific solutions based on a design approach that can be applied in a broader context for other industrial sites that have suffered from deindustrialisation (Braae, 2015).



Figure 7. Right side of the cathedral ruins in Hamar. (Hakley, 2007).

THE LANDSCAPE AS A RUIN

The post industrial landscape can be identified as a ruin. This is because industrial landscapes, like building ruins, are not created to be remembered. Ruins do not have completeness, they are perceived in a way that reminds them what they are not, they are not a hope, nor something finished, nor an ideal (Cairns. S, Jacobs.J, 2017). The ruins stand as secondary remains created for other purposes that, over time, have been considered containing cultural value (Braae, 2015).

Because of their cultural value, industrial landscapes have become a kind of monument which can be approached in different ways if an architectural transformation would be carried out. There is a gradient of restrictiveness in the design approach depending on to which extent one wishes to preserve the industrial context in its current state.

Ellen Braae, "*Beauty Redeemed; Recycling post-industrial landscapes*" (2015), argues that instead of trying to rebuild or restore what has been lost, the ruin should function as a way to create something new through examining what has been destroyed or broken, that the ruinous condition generates freedom to construct new additions based on the past. She further argues that narratives and ruins are connected in many ways, since ruins carry stories of something lost or destroyed in the real world, narratives carry stories in the world of thought. Narratives like ruins in some way involve endings and creating narratives often involves a process of destroying or changing something, meaning that ruins or narratives involve transformation or change, and by destruction, new

ideas and meanings can be discovered (Braae, 2015). There are several ways of approaching ruins architecturally, Plevoets and van Cleempoel, authors of the book *Adaptive Reuse of the Built Heritage; Concepts and Cases of an Emerging Discipline (2019)*, presents three design attitudes categorized into either treating ruins as monuments, palimpsests or by ruination. By treating landscapes or buildings as a monument, there is acceptance for the use to change, but that the layout and aesthetics are being kept. By treating a context as a palimpsest means that several layers of the context are being shown, uncovering the full story of the context layer by layer, where the uncovering processes can be reconstructed showing traces they leave behind, allowing different narratives to coexist at the same place. The strategy of ruination enhances the ruin as a cultural product of memories and the beauty of decay as something valuable and beautiful. Decay is a never ending process, which makes the effect of time of importance for the design (Plevoets. B. van Cleempoel. K. (2019).

Based on the arguments from previous paragraphs, treating the industrial landscape as a ruin serves as a way to reflect on the site as something incomplete and therefore receptive to transformation. In addition, it encourages a respectful and safeguarding attitude to the remnants of the past. The dual approach of both treating the landscape as something tolerant for change, while safeguarding remnant structures makes it possible to portray multiple narratives embedded in the landscape, allowing them to coexist at the same time.

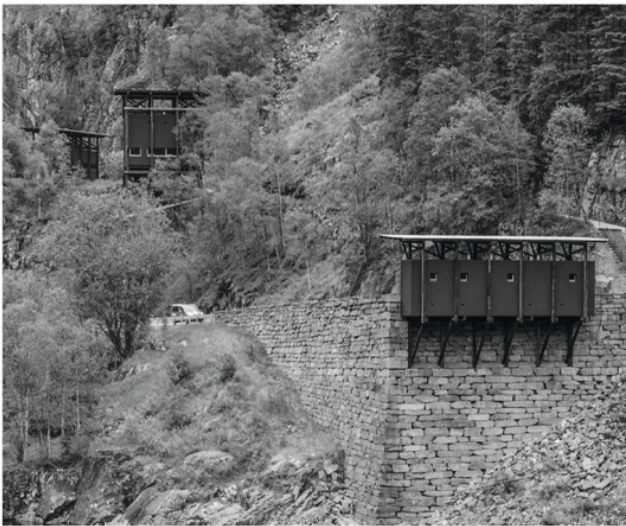
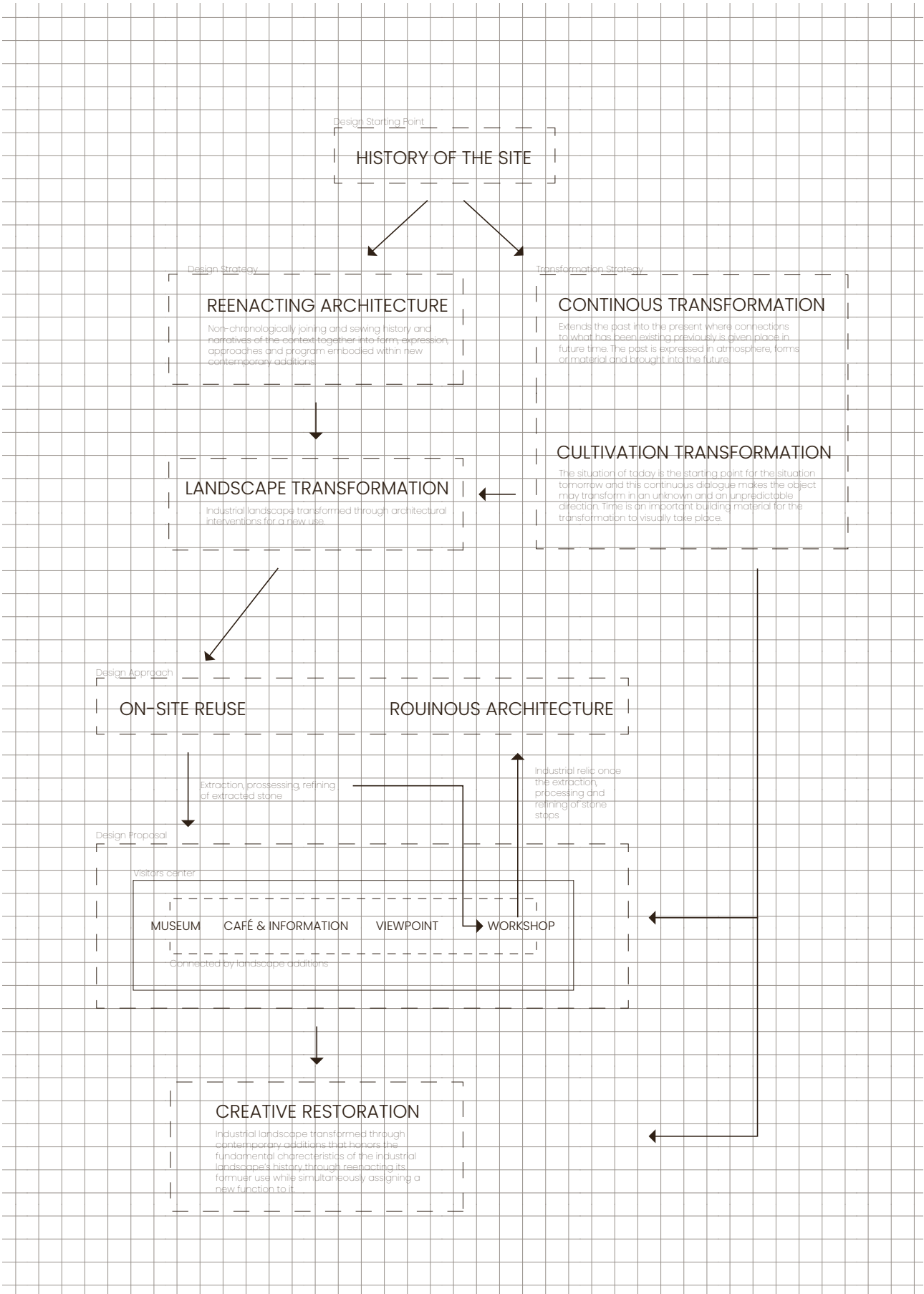


Figure 8. Zinc Mine Museum. (Westvang, 2017). CC BY-NC-ND 2.0

ALLMANNAJUUVET ZINC MINE MUSEUM

Peter Zumthor

The project is relevant due to the design approach, where Zumthor is trying to uncover narratives and feelings that have been stored in the landscape and the place itself through his building design and capture the atmosphere of working in mining industries. By adding the built structures, Zumthor not only adds another layer of history, but also introduces a scale when the buildings are added to the site, meaning that there is a new way of perceiving the landscape when it has something to relate to. Dividing the program into several buildings also makes the walk and space between them part of the experience.



Figure 10. (Soar, Tim, n.d).

15 CLERKENWELL

Studio Group Work

The project is relevant as it uses quarried stone in an interesting way showcasing alternative aesthetic qualities that can be achieved within a well known material. This creates interesting conversations about the interplay of the contrasts between what's old and new, as well as rough and refined.



Figure 9. Swimming Pool Piscinas de Marés Leça da Palmeira by Álvaro Siza. (Gänshirt, 2008)

LEÇA SWIMMING POOL

Alvaro Siza

Siza made the project in a respectful way integrating architecture with the landscape where the project executes as a careful union between nature and architectural additions. The design intervention creates a situation where the man-made creations seamlessly merges with the natural pool formations along the coastline. The way of connecting nature with built additions creates discussions about what's natural and added while still being able to read the man-made structures as contemporary additions, making the project relevant for this thesis.



Figure 11. Punta Pite. (Besomi, 2011). CC BY-NC-ND 2.0

PUNTA PITE

Teresa Moller

The project creates an additional experiential walk that enhances the character on the site in a humble and powerful way. The interventions does not aim for giving directions of movement, but rather function as an additional experience in the landscape, creating a guide only when necessary.



Figure 12. Overview of the west part of Rixö stone quarry.

INVENTORY CHRONOLOGY AND THE LANDSCAPE "AS IT IS"

Using architecture to deal with a wounded post-industrial landscape requires a certain chronology in the inventory process. Christophe Girot, author of the essay *Four Trace Concepts in Landscape Architecture* in the book *Recovering Landscapes: Essays in Contemporary Landscape Architecture* (1999), presents a methodology divided into four categories when approaching a landscape transformation project through a process of *Landing – Grounding – Finding – Founding*. Each one of the categories focuses on gradients of discovery, investigation and implementation. What is important with this strategy is that the process is made in chronological order, and that the attention is centered on what exists on site, even if it is physical traces (stonework, weathered surfaces) or invisible

traces such as narratives. The site has initially been surveyed with an approach being less focused on a possible building program and rather trying to explore possibilities within the site characteristics and hidden narratives.

In addition to surveying the landscape with a chronological strategy, the landscape has been documented "as it is". This term is being discussed by Pratz and is being used to explain current conditions on a site before any design interventions are made (Pratz, 2019). Surveying the site as it is found is a way of documenting its current state as well as trying to understand how the landscape has been affected over time.



PART I - LANDING

The *Landing* is the first meeting with the site and the start of the process of traveling from something unknown to something known (Girot, 1999).

The first chapter consists of representations that showcases documentation from the site visit to Rixö that was carried out in the beginning of the thesis in a move to start the process of understanding the site through landing, grounding and finding. The observations have been documented by reading the site as it is today to try to capture its atmosphere, as well as showcasing how the previous extraction processes has affected the character of the landscape as it is today.

RIXÖ STONE QUARRY

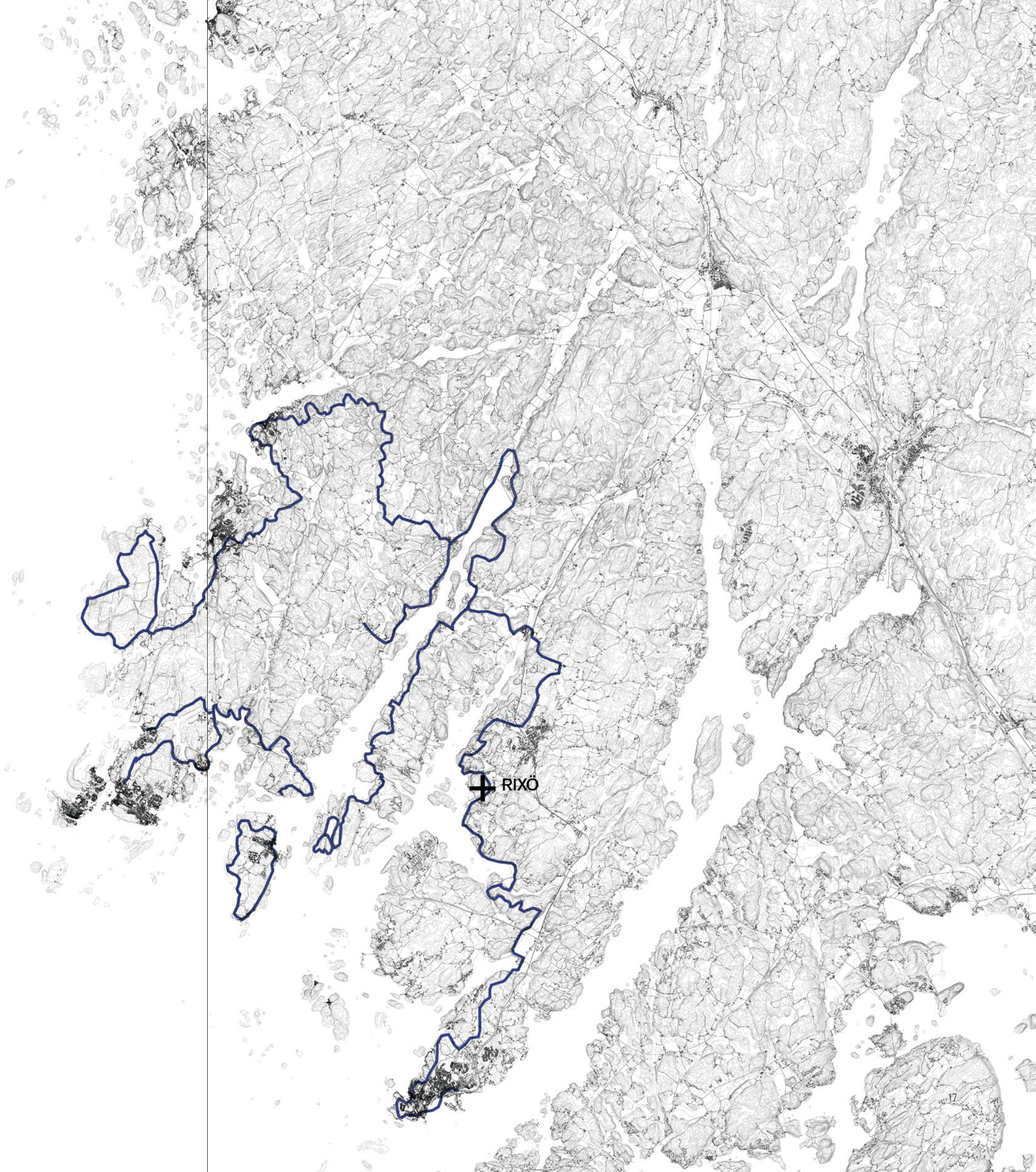
Location: Lysekil Hålländaröd 1:115
Status: Not in operation
Active years: 1875-1964
Type of industry: Stone Quarrying industry
Extraction Product: Granite
Size: Approx. 41 000 sqm

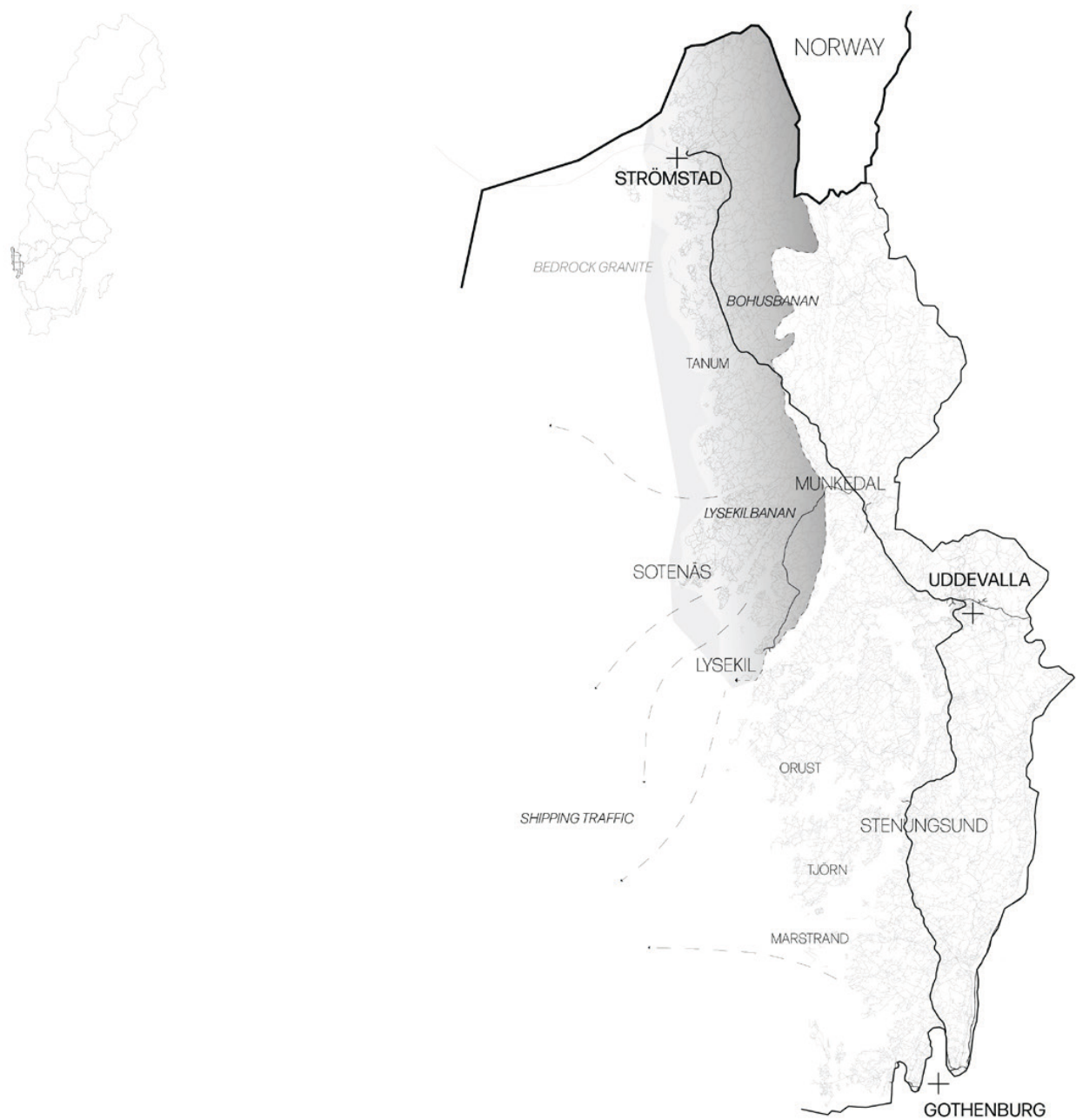
The site chosen for the project implementation is a stone quarry in Rixö. It is an abandoned industrial site with a landscape wound consisting of an extreme and steep topography stereotypical for the remnants of the large stone quarrying industries.

The area has strongly been influenced by the stone cutting industry and traces from its peak period can be observed in various locations within the surrounding communities. There are remnants from stone cutting industries in the closely located municipalities around Rixö, many of them with different signs of care, while the quarry in Rixö has been left abandoned and forgotten. One of Sweden's major hiking trails, Bohusleden, runs through the region consisting of 35 kilometres hiking paths, connecting municipalities and regions all over Bohuslän. The nature reserves, the coast and the regions general historical heritage attracts a lot of tourism which gives the area potential of creating an additional attraction connected to people experiencing the coast of Sweden.



 Bohusleden





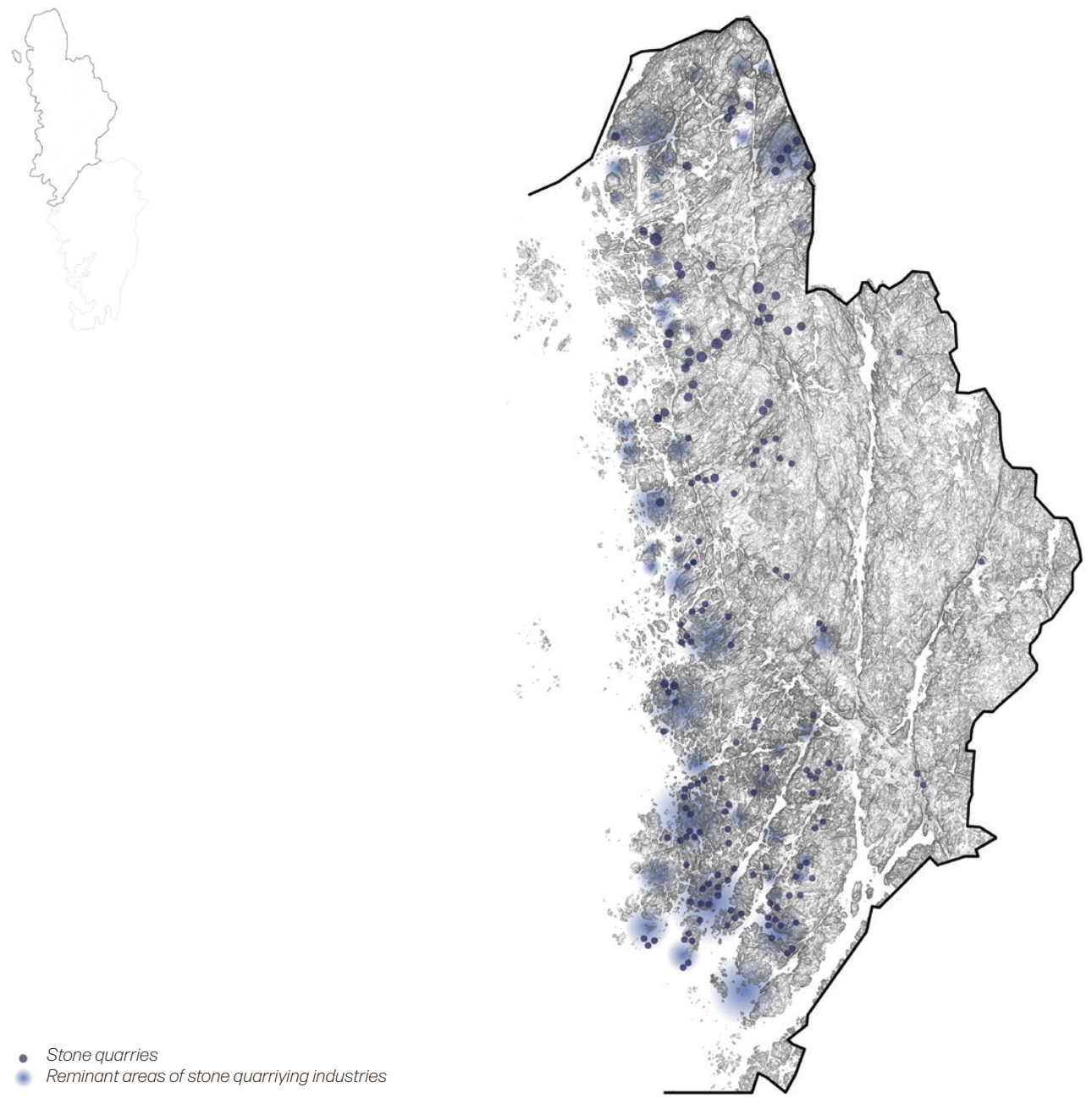
EXTRACTION INDUSTRIES OF BOHUSLÄN

The first indications of industrial quarrying can be traced back to the 18th century and got established in Bohuslän around Malmön, Spjösvik, Hjälmödal and Lysekil. The interest for stone quarrying increased due to military expansions and infrastructural developments of canals and harbors connecting cities across the country (Granitkusten, n.d).

The industry later spread to the northern Bohuslän from the 1870s due to the establishment of multiple large-scale corporations. Because of the stone industry, lots of small municipalities were created along the coast of Bohuslän because of the dependency of shipping by boat (Östlund, A. 2008). The small municipalities still exist even if most of the stone quarrying industries now are gone, and have gone from

being industrial communities to touristic destinations due to the proximity to the sea and the geographical distance to neighboring larger cities.

In the beginning of the 1880s there were 18 stone quarries operating in Sweden and by the 1900s, the number had increased to 229. Brastad socken, today a part of the municipality of Lysekil, had 60 operating quarries and a growth of population by 35 percent (Granitkusten, n.d). Most of the stone extracted in Bohuslän was shipped abroad, making the industry dependent on exports and sensible for economical cycles. There are still a few active stone quarrying industries in Bohuslän, but most of the stone industries are now located in China or India due to cheaper labor (Granitkusten, n.d).



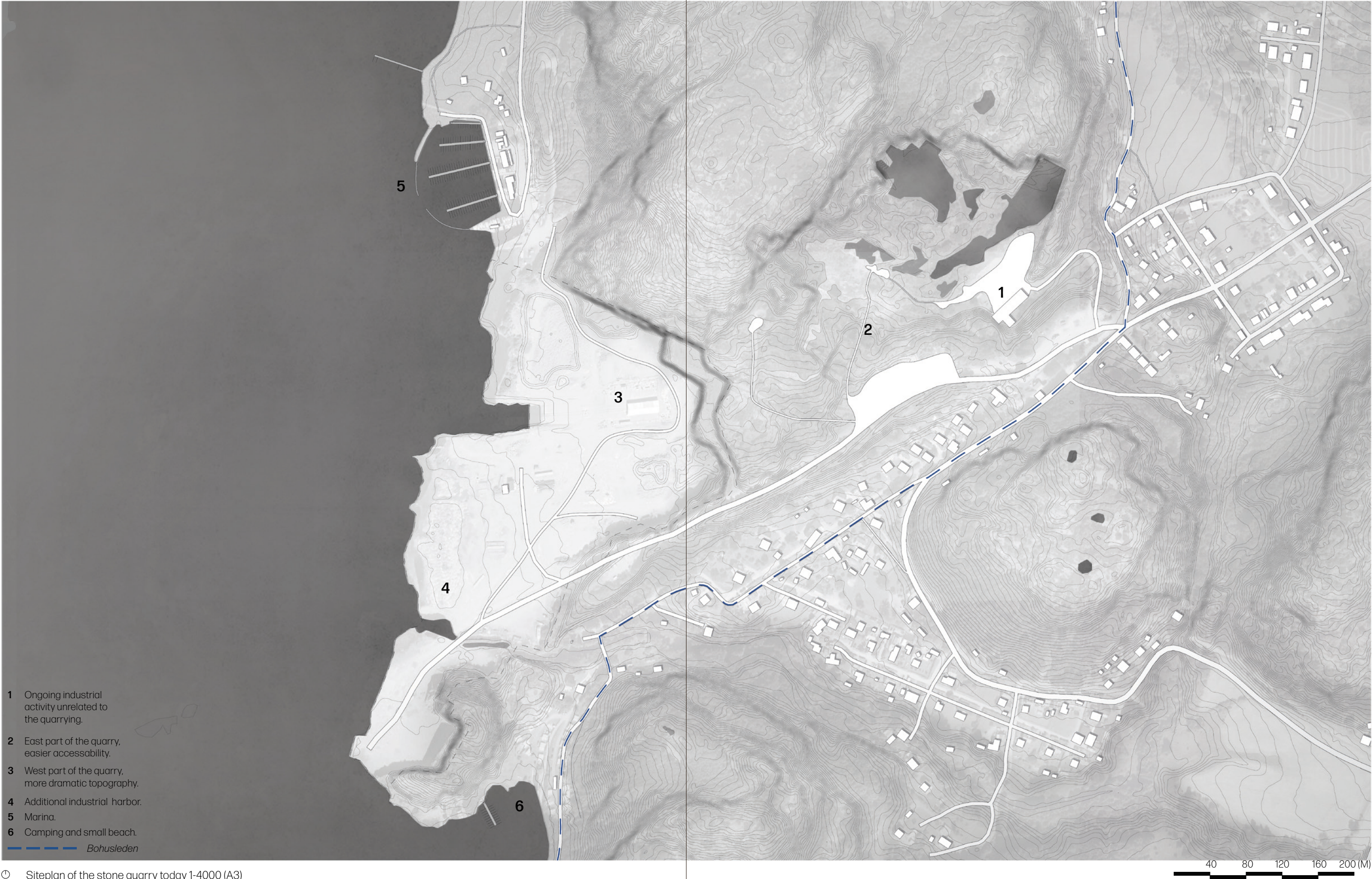
PROTECTION PROGRAM "GRANITKUSTEN"

Many of the surrounding municipalities in Bohuslän have come together through the development project of "Granitkusten", with the ambition of establishing forms for a protection of the stone quarrying industrial cultural heritage in Bohuslän. The aim of establishing "Granitkusten" is to showcase the history of the granite industry in Bohuslän, strengthen the protection of the remains of the industry and raise awareness about the history of the area (Östlund, A. 2008).

The traces from the stone quarrying industry of Bohuslän are showcasing several historical events. From the 19th century until 1930, the industry technically went from a proto-industrial stage to a large-scale industrialization by the transition from small-scale quarries to large-scale quarries (Östlund, A. 2008). Both typologies are left as remnants in Bohuslän carrying different characteristics. What is significant for the small-

scale quarry is that the operation from raw material to final product is done in the quarry itself, which makes the landscape wound in the small quarries showcase the full craftsmanship of the manufacturing process. The large-scale quarries are separating the production processes meaning that the stone is extracted in the quarry and then transported away for further processing. The large-scale quarries do not only showcase different extraction techniques, but also enhance the municipal growth that the industry created with the additional processing buildings related to the industry.

This means that the traces of the industries are not only visible in the industrial- landscapes, but also in the surrounding buildings and the planning of the society in general. The difference is the stories they tell, which are all of importance.



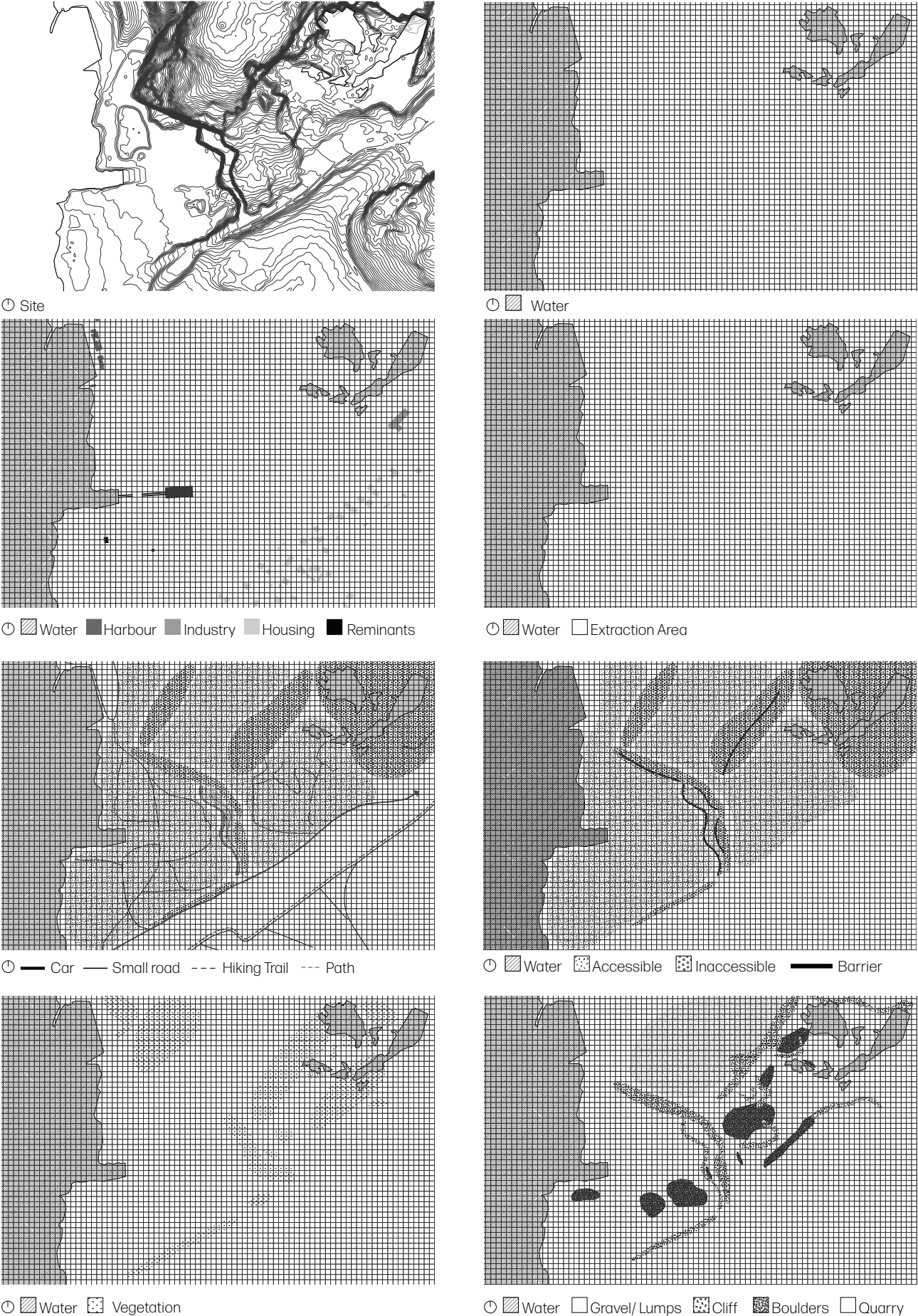
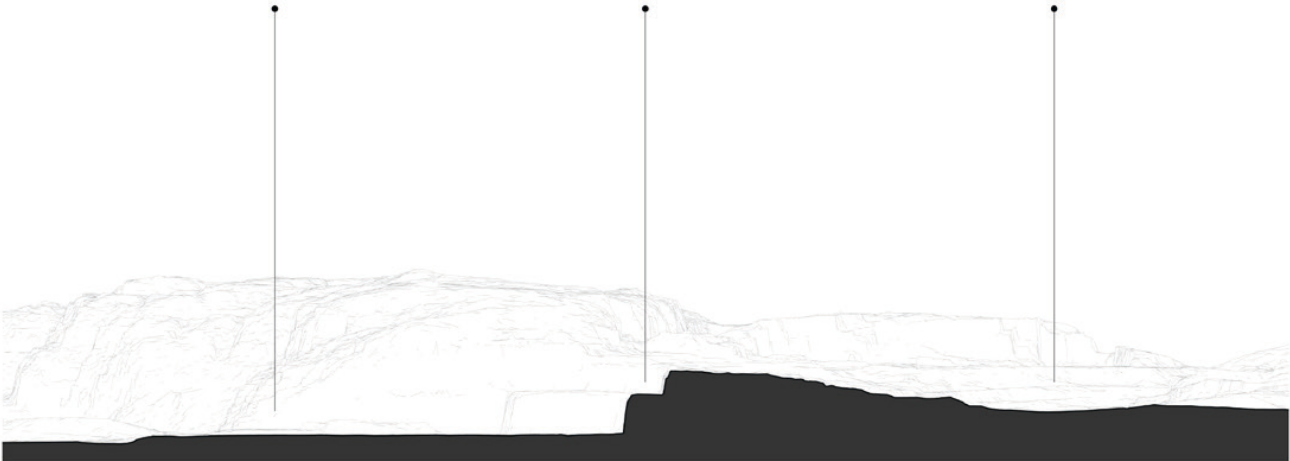
① Siteplan of the stone quarry today 1-4000 (A3)



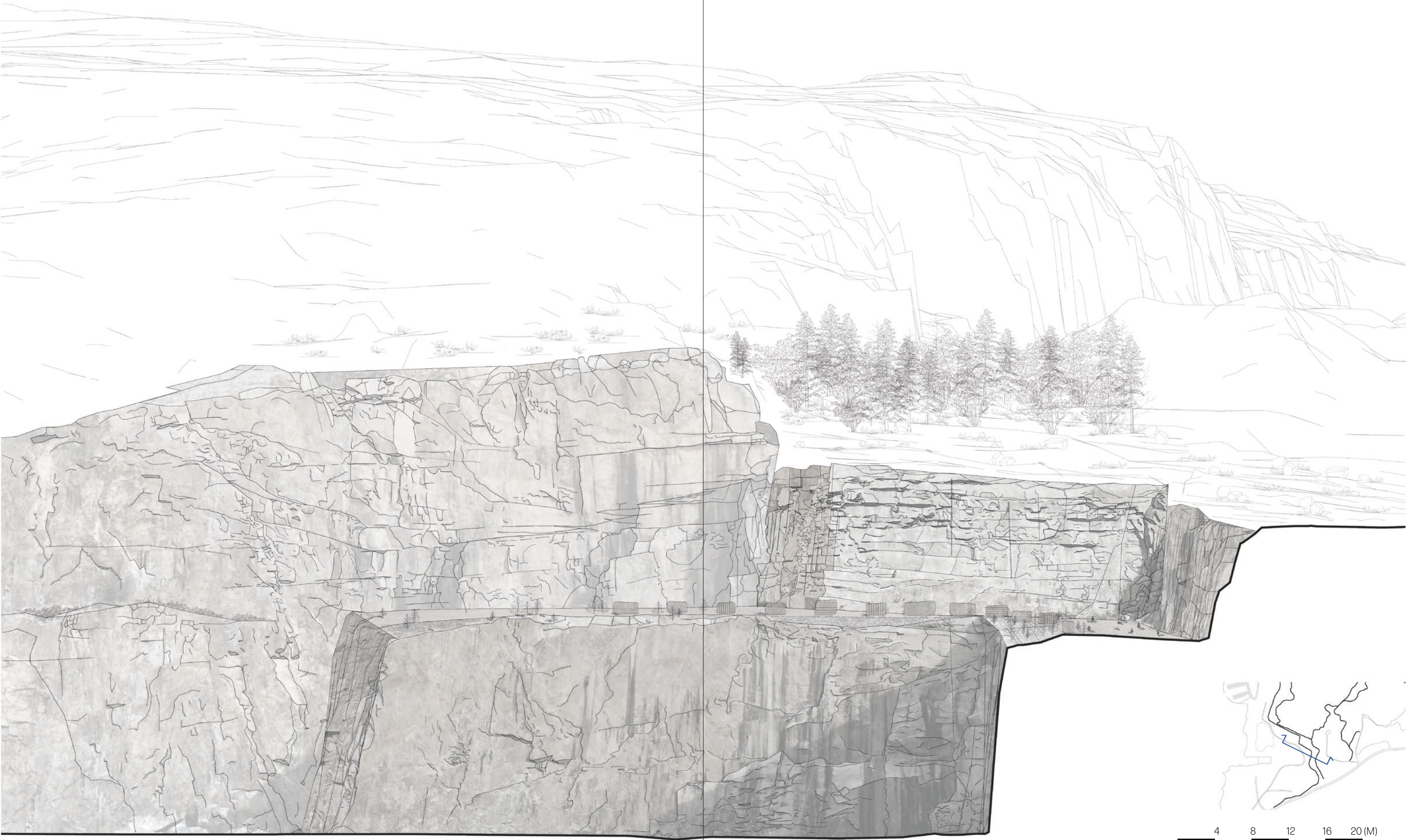
Sequence of walking the lower west part of the landscape

Sequence of walking the west upper part of the landscape

Sequence of walking the east part of the landscape



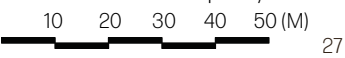
The site was further documented through a zoomed in section to gain further understanding of how the extraction process has shaped the extreme topographic character that the site has today. The drawing describes the nature of the site today, as well as showcasing the process of extraction and how different extraction techniques gives different traces in the stone.





The landscape wounds found in the quarry have been studied in detail and further documented in an unfolded plan, making it possible to highlight different characteristics of the landscape wounds in terms of form, expression and character.

The drawing enhances how the extraction process has shaped the landscape in different ways depending on in which direction of the landscape the stone has been extracted. It enhances that the landscape wounds have different characters depending on where in the landscape stone has been extracted, indicating that some directions of the stone are better suitable to quarry.



The documentation of the landscape wounds in the unfolded plan created a vocabulary of landscape wounds showcasing the different character that the extraction has caused.



The Linear

Caused by a human-made split through a distinct crack with wedges.

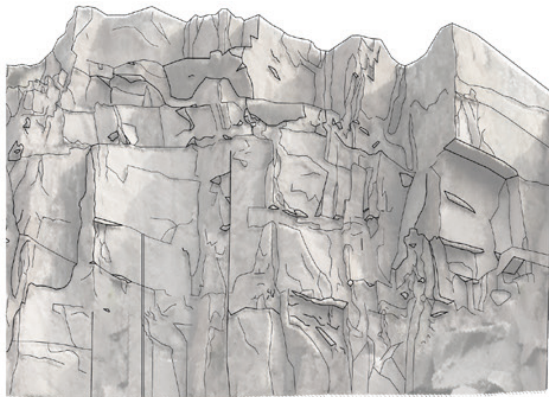
The wound is linear, repeated and expected. Almost a tendencie of being modular.



The Polished

Caused by a wiresaw, mechanically splitted gently but with distinction.

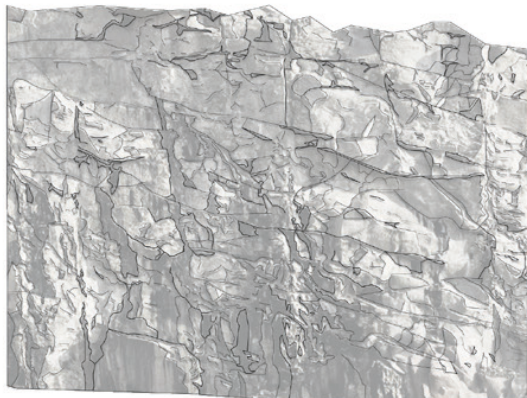
The wound is flat, reminding of a refined finish. The volume is clearly shaped, the wiresaw makes the wound strict and organised.



The Angled

Caused by human force and the orientation of the bedrock forcing the stone to be quarried in a certain direction.

The wound has a repeated direction. It is dramatic, almost baroque with its grand and opulent shapes creating contrasts between light and darkness.



The Leftover

Not an ideal, not wanted and not created on purpose. A consequence of the bedrock composition and nearby extractions.

The wound is stacked, incomplete, non-robust and fragile.

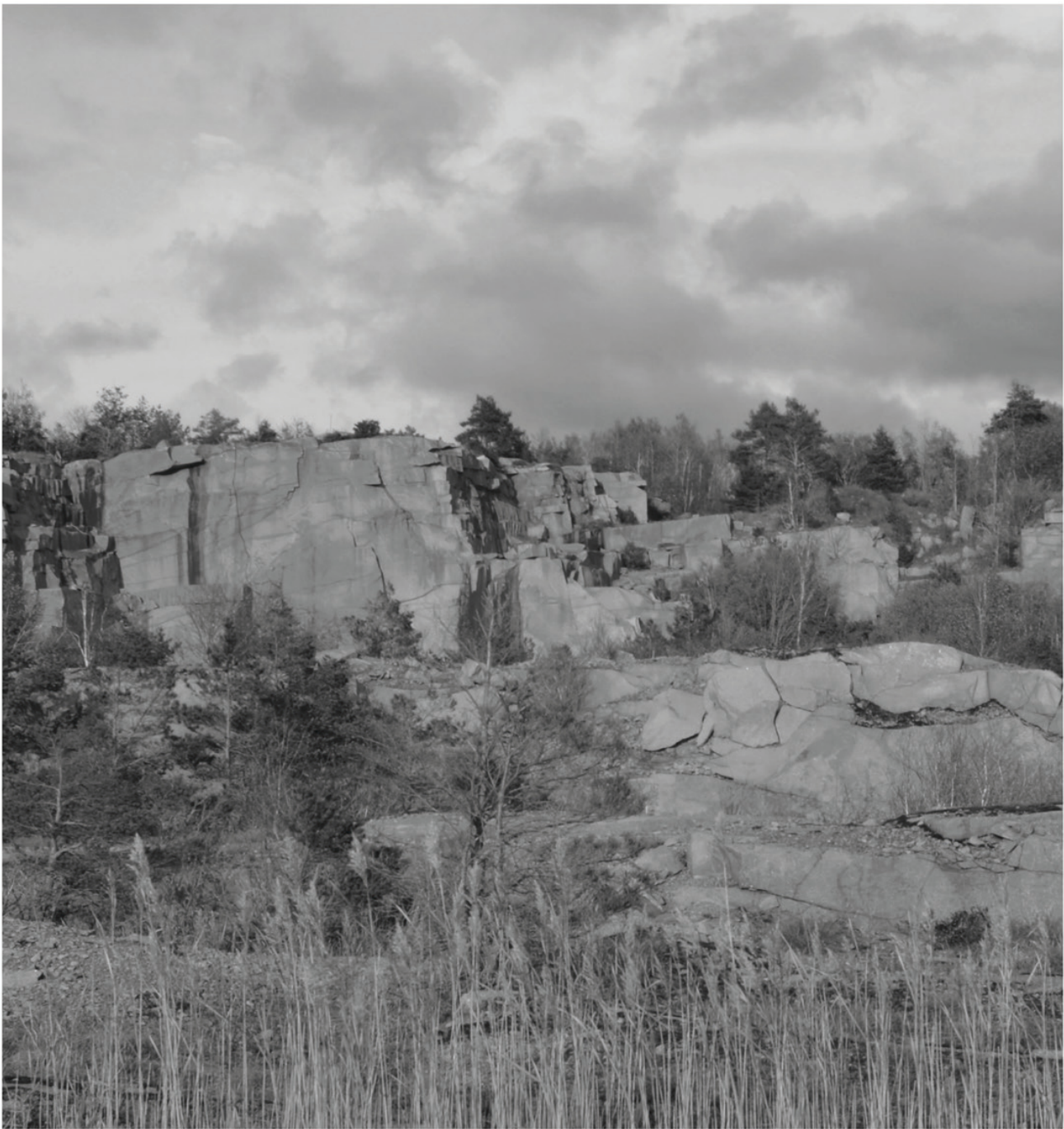
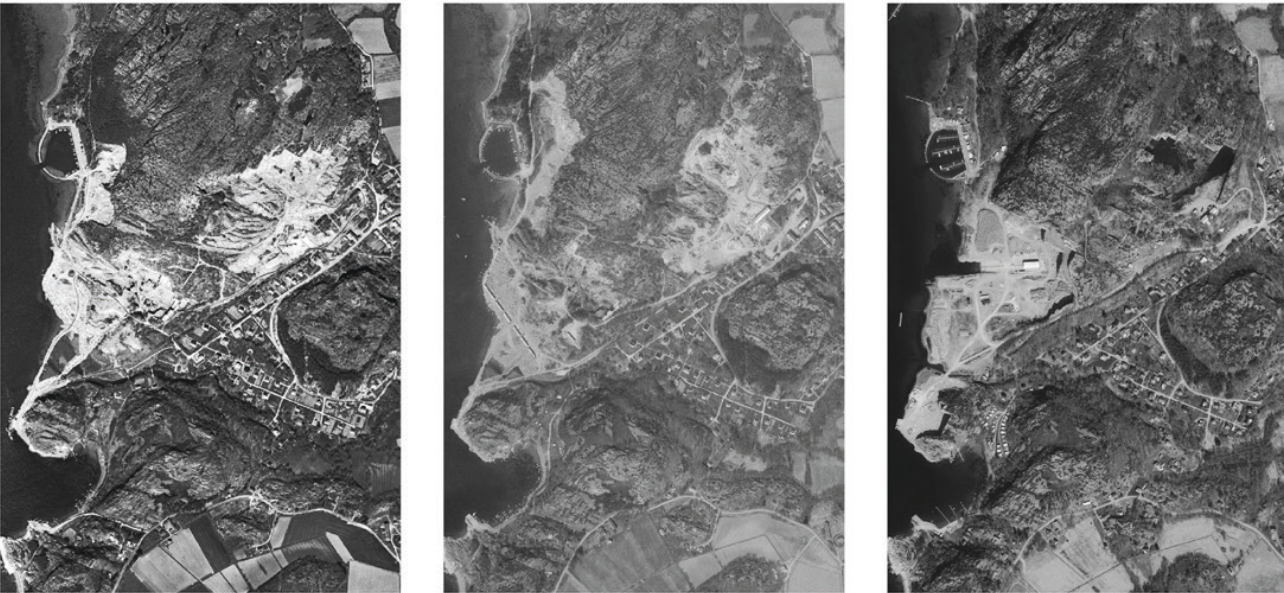


Figure 13. East part of the landscape in Rixö

PART II - GROUNDING

The *Grounding* is about understanding the site and its rootedness (Giro, 1999).

The second chapter presents an exploration of Rixö's industrial history. It highlights both the historical transformation of the landscape, illustrated through representations that index time, as well as an exploration of the industrial activity consisting depictions of tools and processes. This serves as an act of understanding how the landscape has changed over time as well as understanding the everyday life for the people working with quarrying stone.



1960

1975

2022

Images showing how the industrial landscape in Rixö have changed over time, giving an understanding of whether the industry are newly started or have been operating over a long time, as well as how the extraction has expanded during its operating years. It highlights the east part of the quarry as the part when the quarrying started, which in the image from 2022, one can observe that it partly has become water filled.

Photos downloaded from lantmateriet.se/minkarta

RIXÖ BECOMES A STONE INDUSTRIAL MUNICIPALITY

Before the areas around Rixö developed into industrial communities, the communities lived on agriculture having harsh living conditions. In the late 1800s, it was realized that the surrounding mountains were easy to quarry and that the granite was easy to process, which created economic benefits and potential for the municipality since the stone products could be used for building canals, bridges, streets, and houses in Europe in a period of economic growth. The start of the stone industry led to population growth as many people moved to the communities around Brastad to work in the stone quarries and by the late 1920s, over 1,000 people were employed in the quarries, primarily in Rixö (Kjellsson, 2020).

The quarrying industry in Rixö was fully established in 1905 and started as an expansion of Skandinaviska Granit AB's operations in Hjälmedal and later became the largest stone quarry in Scandinavia (Kjellsson, 2020). The industry divided the landscape into two quarries, "fabriksbrottet" where the "knott" factory was located and "Rixö Stenbrott"/"Svartbrottet" to the west (Östlund, 2022). The industry was operating at a large scale until the start of the 1st World War when the demand for paving stone decreased. Skandinaviska Granit had at that time built factory buildings for 50 machines but the industry never

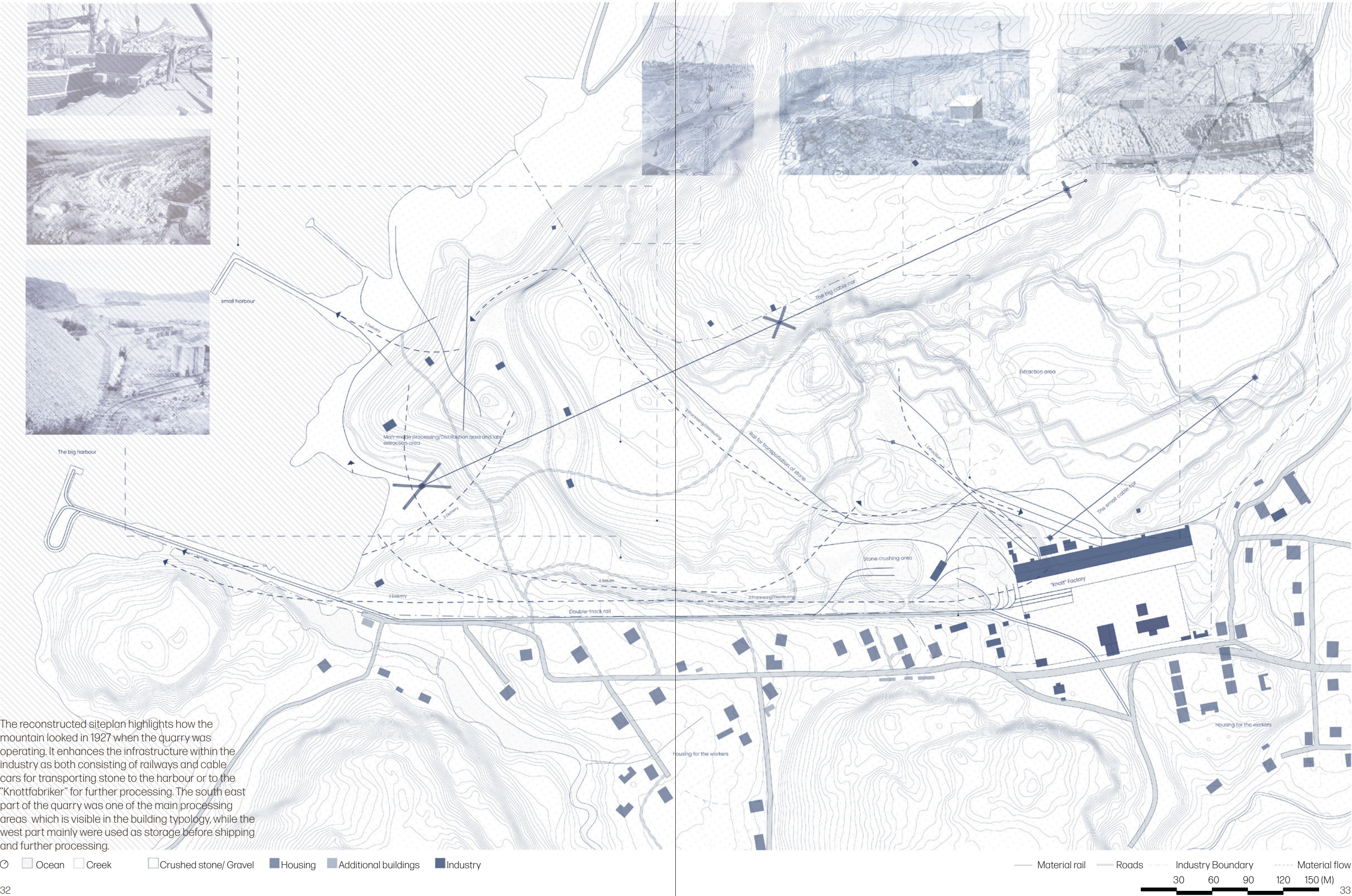
took off at the same level as planned when the world wars were over and the industry therefore slowly decreased (Danielsson, 1997). The stone was primarily quarried in "fabriksbrottet" until after the Second World War. The rock was then fully quarried and the extraction area expanded to "Svartbrottet" as well (Blad, 2020). It was a factory with strong technological ambition and people were scared that the modern extraction technology would replace human labor, which later was proven wrong as the new technology required experience of manual stone quarrying for operating the machines (Granitkusten, n.d.).

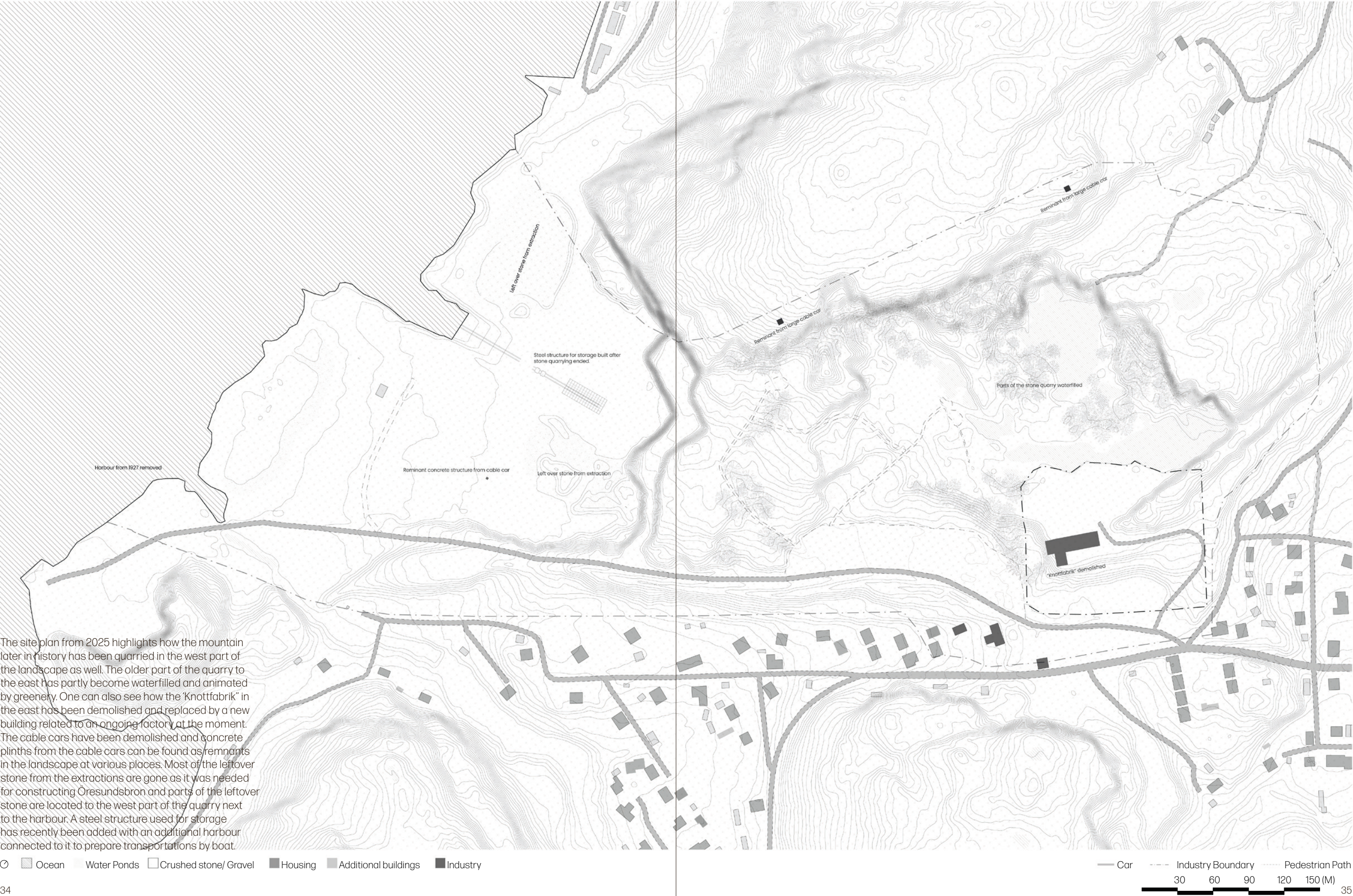
Today the remnants from the large industrial era such as factory buildings, cranes and railways are demolished. Some of the concrete foundations from the big cable car still exist on the site among some of the foundations from the smaller cranes (Blad, 2020). But over all, the landscape is nowadays left shaped, wounded and forgotten. The society around Rixö got established based on the stone quarrying industry and much of the still existing houses around the stone quarry were built during the time when the industry was operating (Östlund, 2022). Many of the housing facilities in the area were built by the companies as housing for the workers and still exist today functioning as private residential units (Blad, 2020).

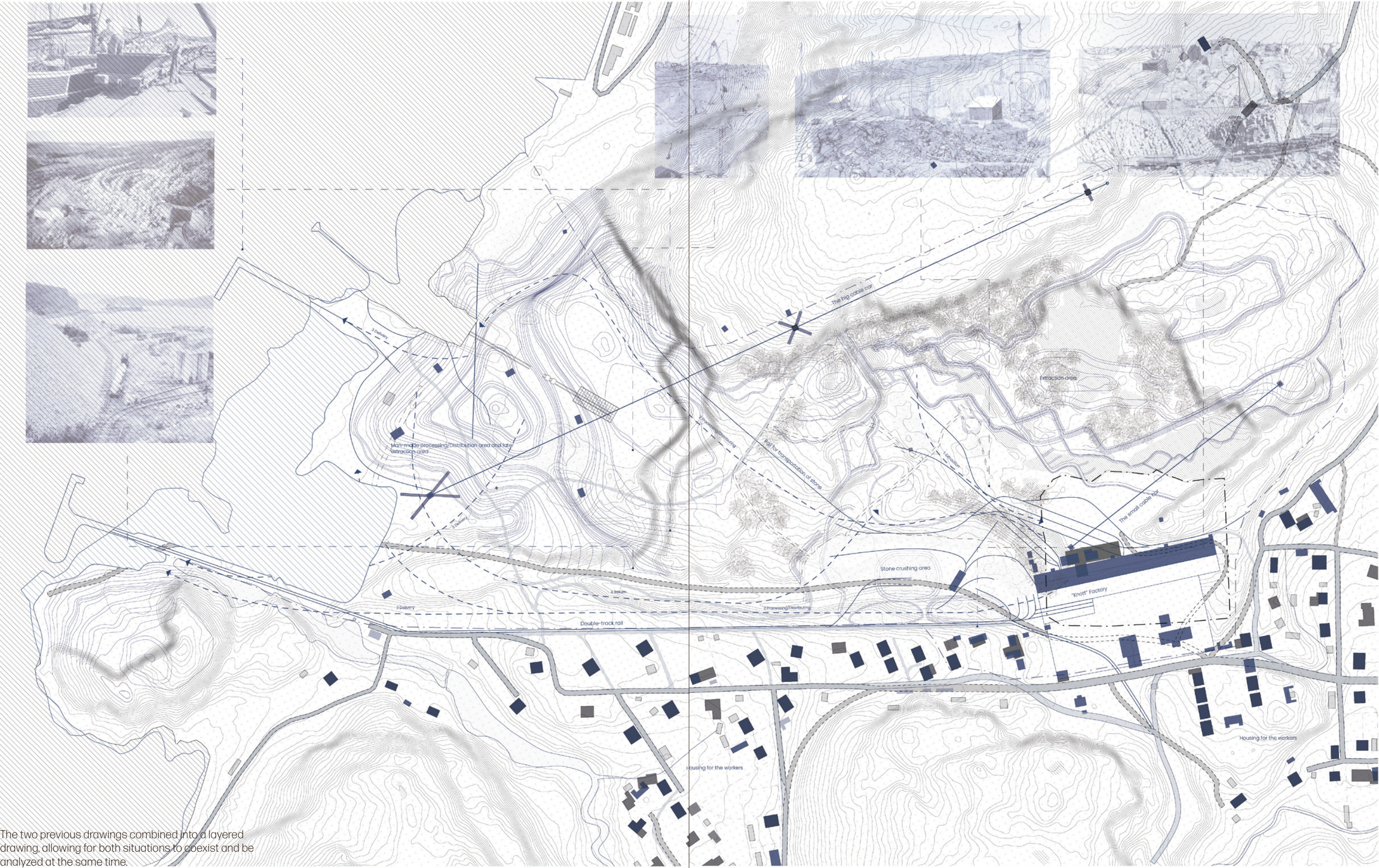


Photo from 1960 over parts of the coastline in Brofjorden of Lysekil. The map highlights where Hjälmedal stone quarry was located before the stone industry in Rixö was operating, as well as where the other nearby quarries, Lahälla and Norrkila are located. Both Rixö and Hjälmedal were a part of Brastad socken, the municipality in its earliest operative years.

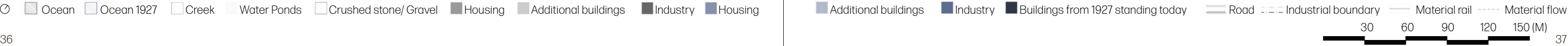
Figure 14. Flyphoto 1960 (Lantmateriet.se).

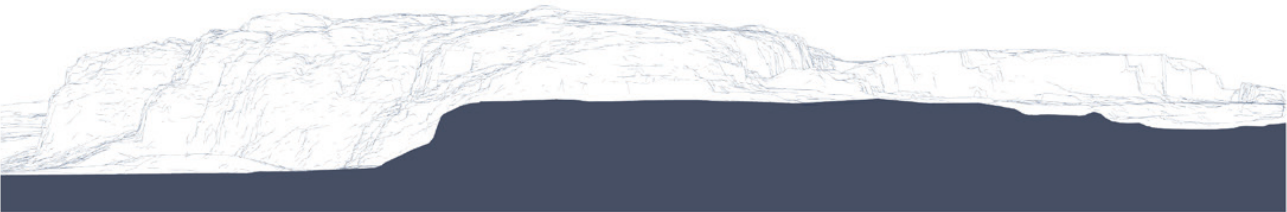




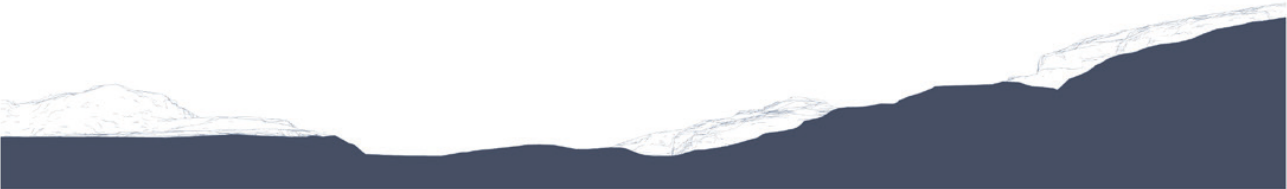


The two previous drawings combined into a layered drawing, allowing for both situations to coexist and be analyzed at the same time.





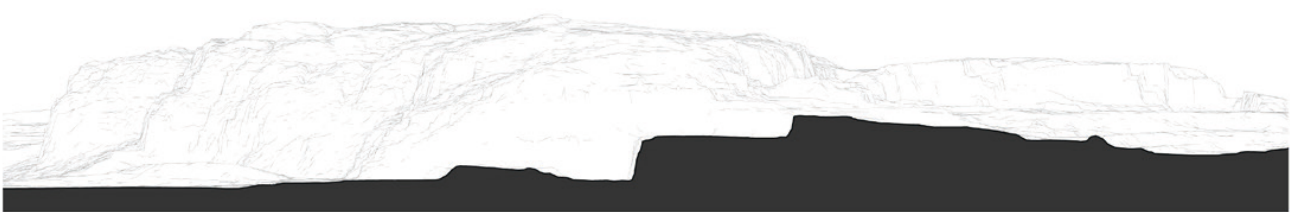
Section A-a



Section B-b



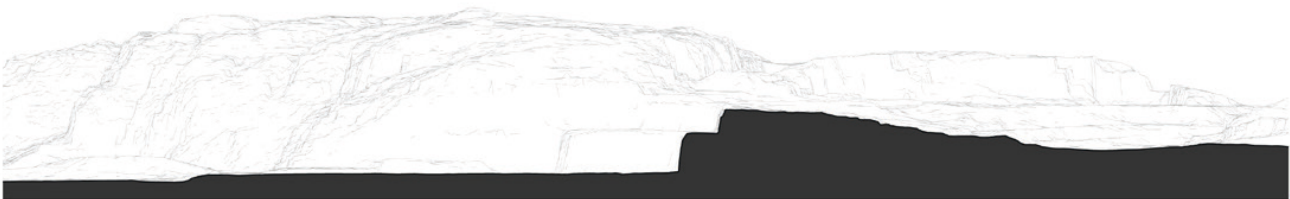
Section C-c



Section A-a



Section B-b



Section C-c



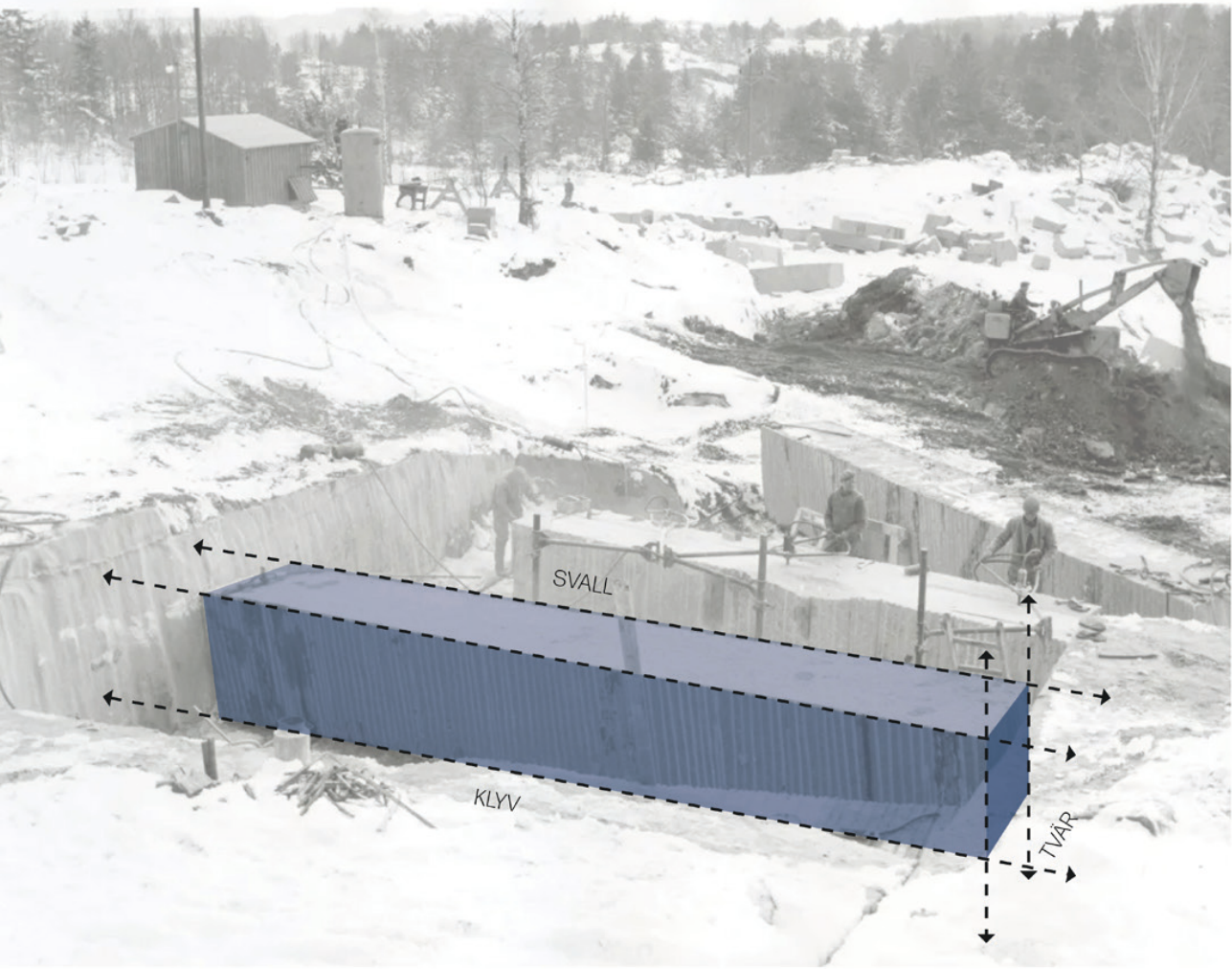
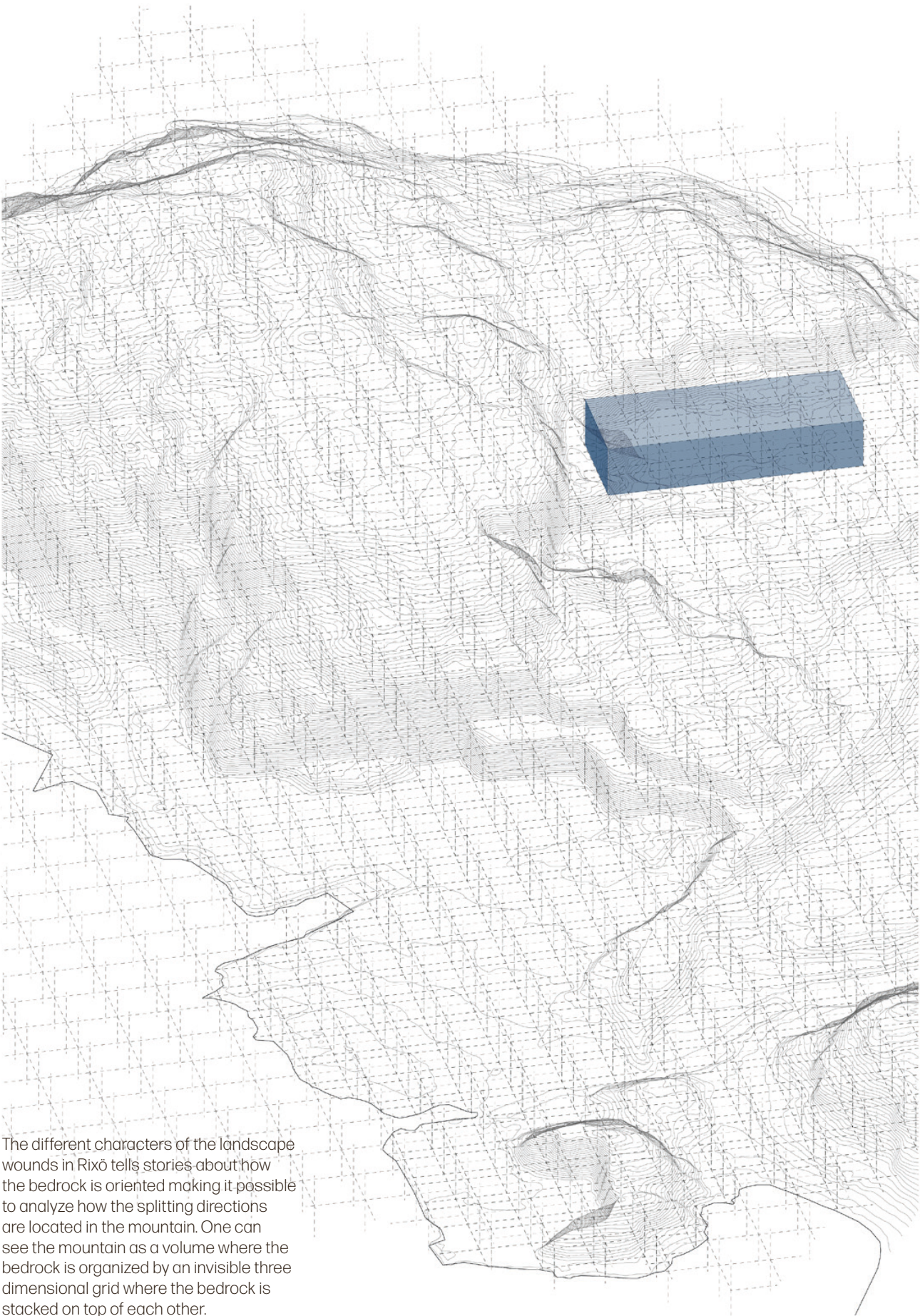


Figure 15. Stenbrott. (Granströms foto, 1950-1959).

ABOUT GRANITE

There are many techniques that can be used when extracting stone from the solid bedrock. The most suitable method depends on which type of stone the bedrock consists of, the natural splitting directions as well as the intended result since the extraction affects how the stone needs to be further processed (Arvidsson, 2024). Granite can either be coarse-grained or fine-grained consisting of the minerals mica, quartz, and feldspar, evenly distributed in the bedrock, and the color can vary from gray to red. The bedrocks consisting of granite are structured by horizontal slabs and the blocks that get extracted have three splitting directions. How these directions are oriented is based on how the grains are arranged in the mass, which affects how the rock tends to fracture (Nilsson, 2020). "Svallen" is the direction that splits the easiest located horizontally. The second easiest direction to split is "Klyven", in a vertical direction and perpendicular towards "Klyven" is the hardest direction for splitting, "Tvären" (Arvidsson, 2024).



The different characters of the landscape wounds in Rixö tells stories about how the bedrock is oriented making it possible to analyze how the splitting directions are located in the mountain. One can see the mountain as a volume where the bedrock is organized by an invisible three dimensional grid where the bedrock is stacked on top of each other.



Figure 16. Rixö Stenbrott 1966. (Fredh, 1966).
Figure 17. Stenbrott. (Granströms foto, 1950-1959).
Figure 18. Röken Stiger från en sprängladdning som lossat ett stenblock från berget. (Evers, nd).

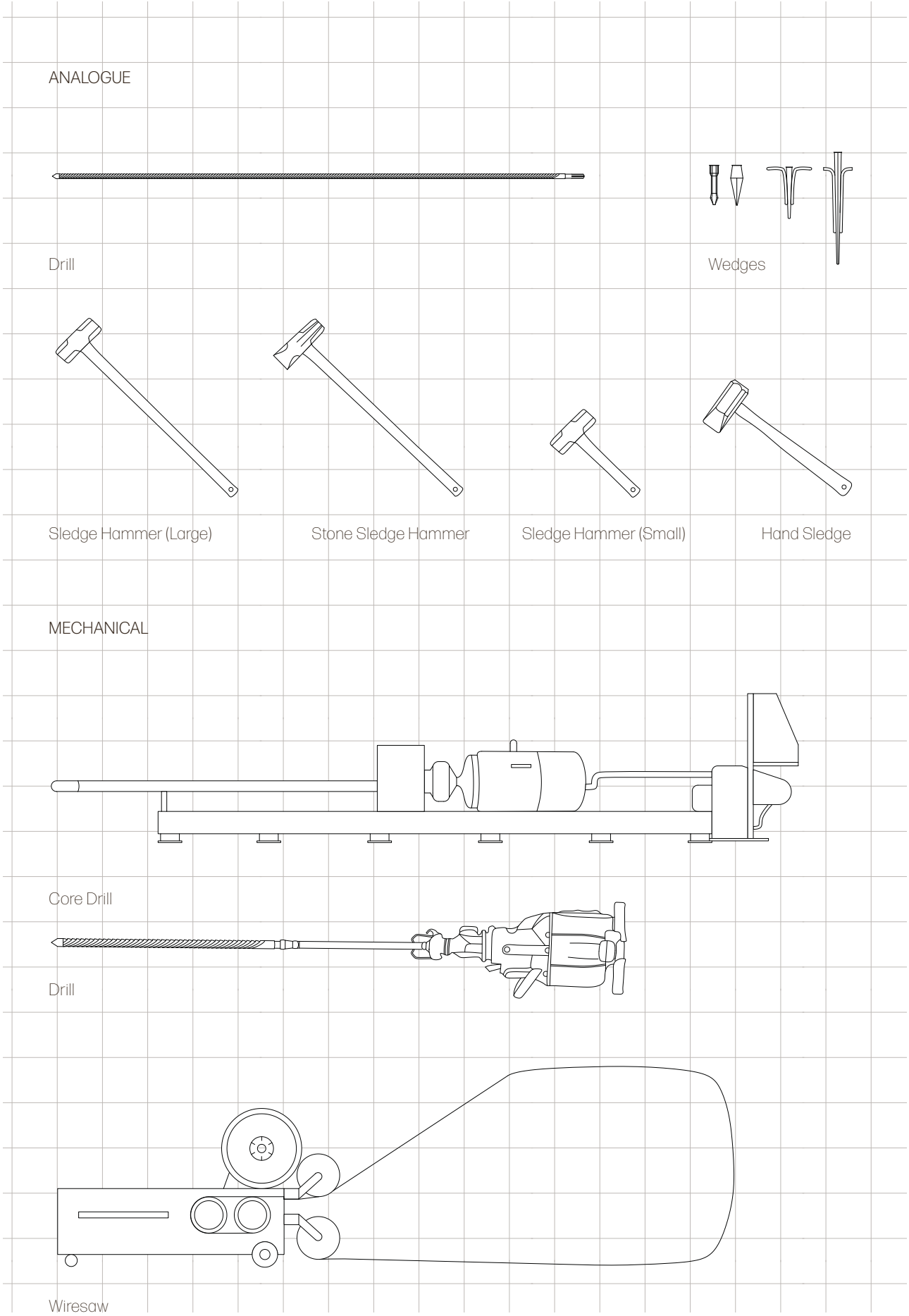
EXTRACTING STONE

A traditional way of extracting stone that still is practiced today is made by controlling the cut by drilling sporadically holes. This is a method that has been practiced in Rixö and in history it was a method with techniques and tools that were quite impractical and inappropriate.

The stone quarrying process was firstly analogue involving tools such as hammers, sledgehammers, chisels, drills, wedges, and bars of various types (Nilsson, 2020). Extracting one block involved one person holding and rotating the drill while two other persons struck the drill with sledgehammers. The holes should be at least one meter deep and made with a distance of 0.5 meters between them (Ambjörnsson, Et.al. 2020). To ensure that the stone would be splitted in the right direction, rifles were struck before blasting with gunpowder. The block was then extracted by inserting

long iron bars into the drilled holes before being transported for further processing (Svidén, 2008).

Over time, the process of extracting stone blocks gradually began to involve mechanical tools. The pneumatic drill was revolutionary when it was introduced, and in more recent times, the cutting torch and diamond saw has also been of great significance as it has been able to replace the method of drilling, wedging, and blasting (Nilsson, 2020). When using a diamond saw, two holes are drilled that meet up in the bedrock before inserting a diamond wire connected to a wire saw, resulting in a clear and patternless cut (Arvidsson, 2024). The mechanical tools made it of less importance for the stonemasons to fully know how the splitting directions in the bedrock are oriented, however it was still valuable knowledge to extract as clean cutted blocks as possible (Nilsson, 2020).



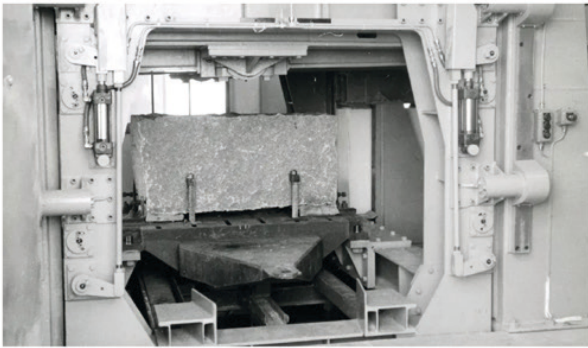


Figure 19. Rixö knottfabrik. (unknown photographer, 1938).
Figure 20. Installation av H-såg. (unknown photographer, 1959).
Figure 21. En man borrar i ett granitblock för att klyva det, i fickan har han en tumstock. (Evers, n.d).
Figure 22. Kilar slås ner i ett stenblock för att klyva det. (Evers, n.d).
Figure 23. Ett stenblock klyvs längs borrhålen genom att kilar slås ner i borrhålen. (Evers, n.d).

PROCESSING STONE

In the large quarries, the stone was extracted in big blocks and then transported away for further processing to desired dimensions. Once the stone was quarried, it was further processed either by using hand tools similar to the once used when extracting the stone block or by using machines. At first in the stone quarrying industrial era, the processing of the stone was practiced using hand tools, but was at later stages done mechanically in "Knottfabriker".

The factory buildings were equipped with splitting machines consisting of drop hammers that splitted the stone more easily. The use of the machines in "Knottfabriker" could possibly have replaced the process of using hammers and wedges, but the machines generated a lot of waste, reducing the amount of finished product that could be produced, which therefore never fully replaced the analogue craftsmanship making those methods dominant (Svidén, 2008).

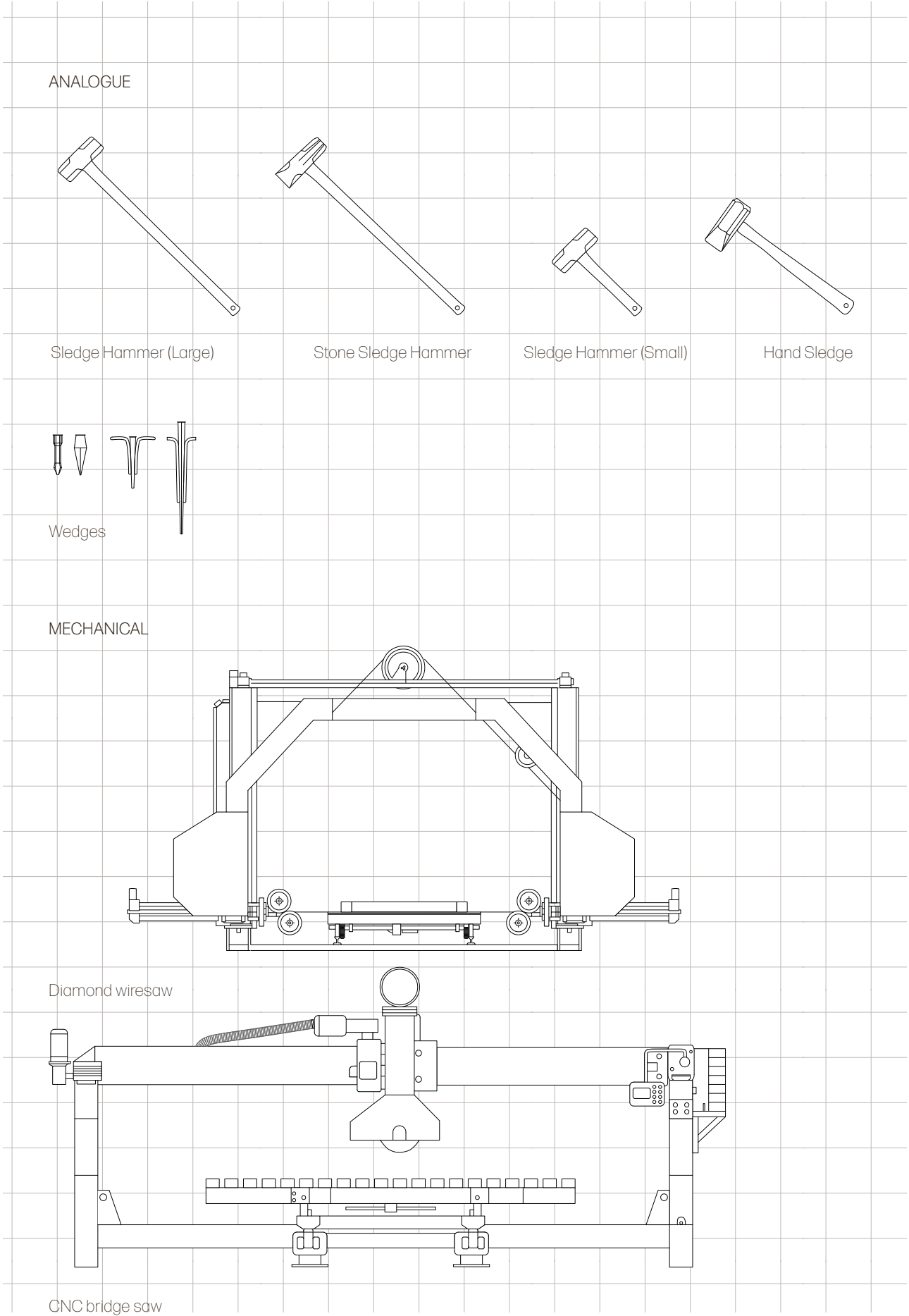




Figure 24. Sågning av stenskiva. (Evers, n.d).



Figure 25. En stenskiva ligger på tre slitna träribbor något sprutas ner på stenskivan från ett rör, troligen någon form av blästring. (Evers, n.d).



Figure 26. Slipning av stenblock (Evers, n.d).

REFINING STONE

After processing the stone block into desired dimensions, the stone can be treated with different finishes if the rough appearance created by processing the stone is not desirable.

By using a grinding machine, the stone gets honed and given a surface with different roughnesses, or even polished to a shiny and reflective finish.

In addition to treating the stone with grinding machines, the stone can be flamed while being cooled with water, resulting in

a smooth layer covered with rough crystals. The material can then be brushed creating depth or shine.

By processing stone through all stages of extraction, processing and refining, a variety of stone products can be created with different expressions that can be either structural or cladding elements. By using different methods and tools, the stone gets different surfaces which affects its aesthetic appearance while being used in built structures (Stencentrum, n.d.).

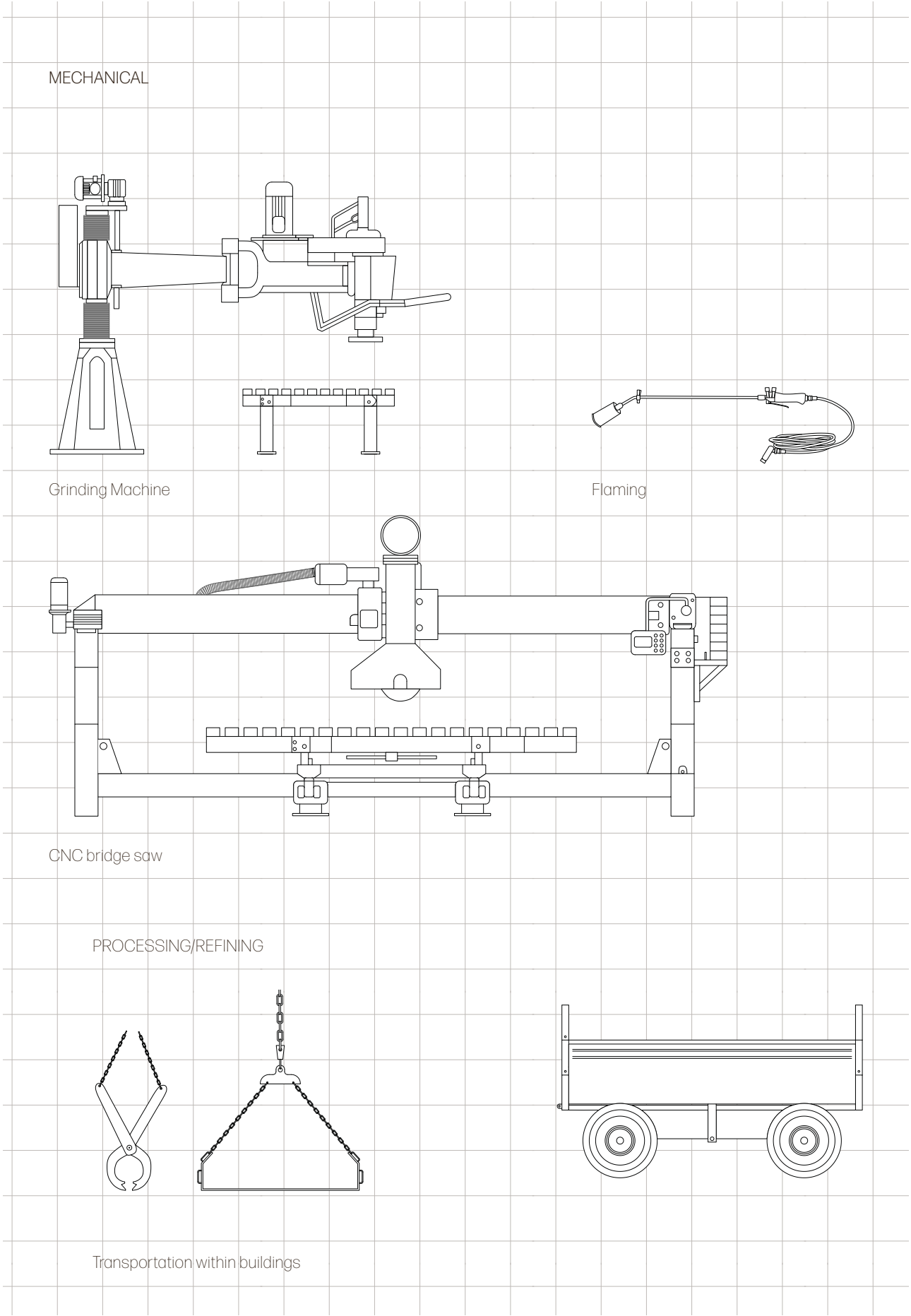




Figure 27. Vy över Rixö samhälle och stenbrott. (Börjesson-Eld, 1925-1935).
Figure 28. Stenbrott på Rixö. (Unknown photographer, 1930-1939).
Figure 29. Bohuslän. Rixö. (Lundgren, 1935 - 1950).

TRANSPORTING STONE

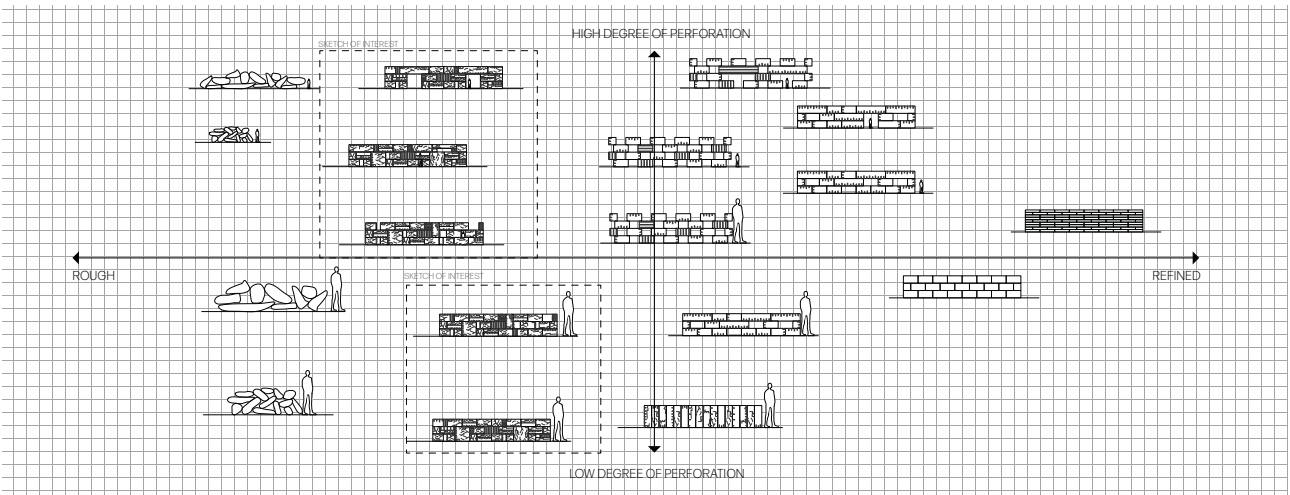
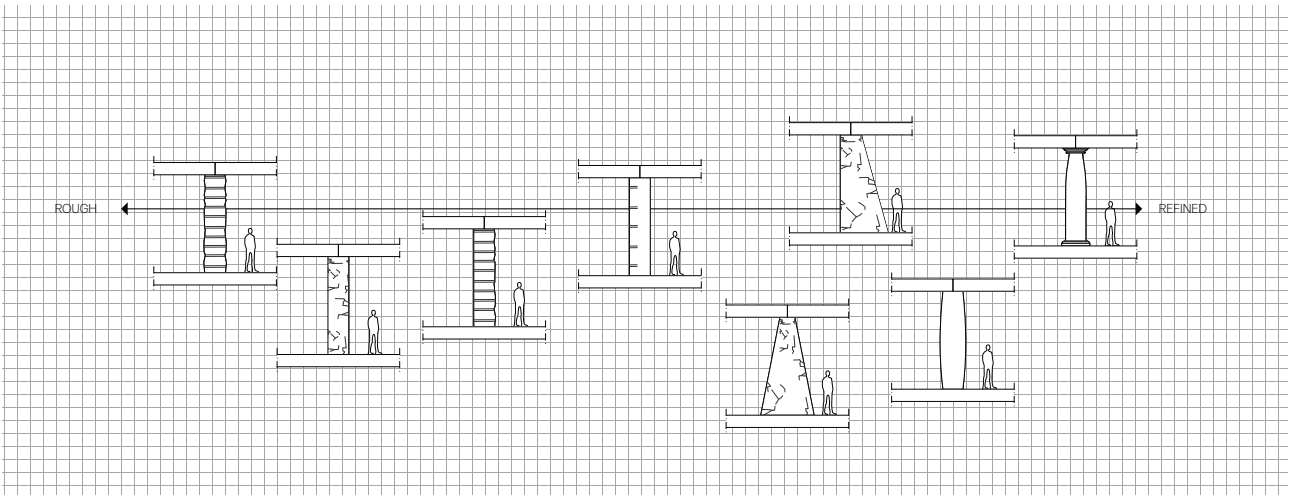
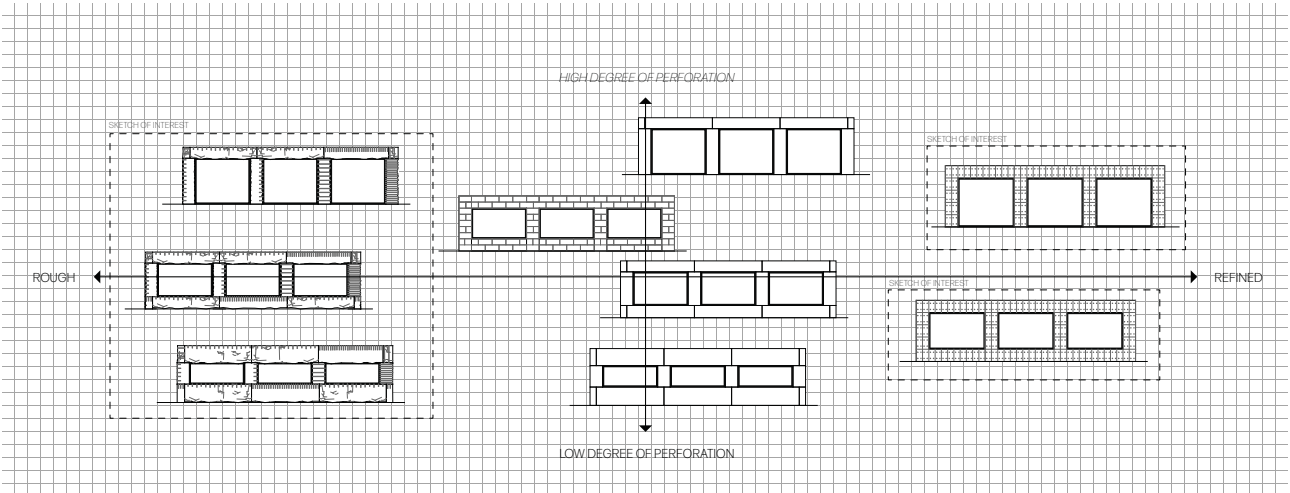
As mentioned in earlier paragraphs, what is generally known for the large quarries is that the stone was extracted at one place and then transported away from the extraction area for further processing in nearby factory buildings, meaning that one could analyze the landscape of Rixö as a consequence of extraction at the east part of the context and that the stone was further developed and shipped away in the west part of the context (Granitkusten, n.d.).

The transportation within the industrial area was firstly made by horses, but since it was tiring for the horses it was later replaced by cranes, rail or cable cars and at last handled by trucks. In Rixö, a cable car was built in 1923 spanning between "Fabriksbrottet" and down to "Svartsjöbrottet" (Svidén, 2008). The large cableway was built to eventually mine the entire mountain and possibly start to extract stone in Busberget as well, an attempt that failed and further led to the cable car being demolished (Nilsson, 2020).

After the stone had been processed and refined, it was loaded into carts attached to an iron cable transporting the stone

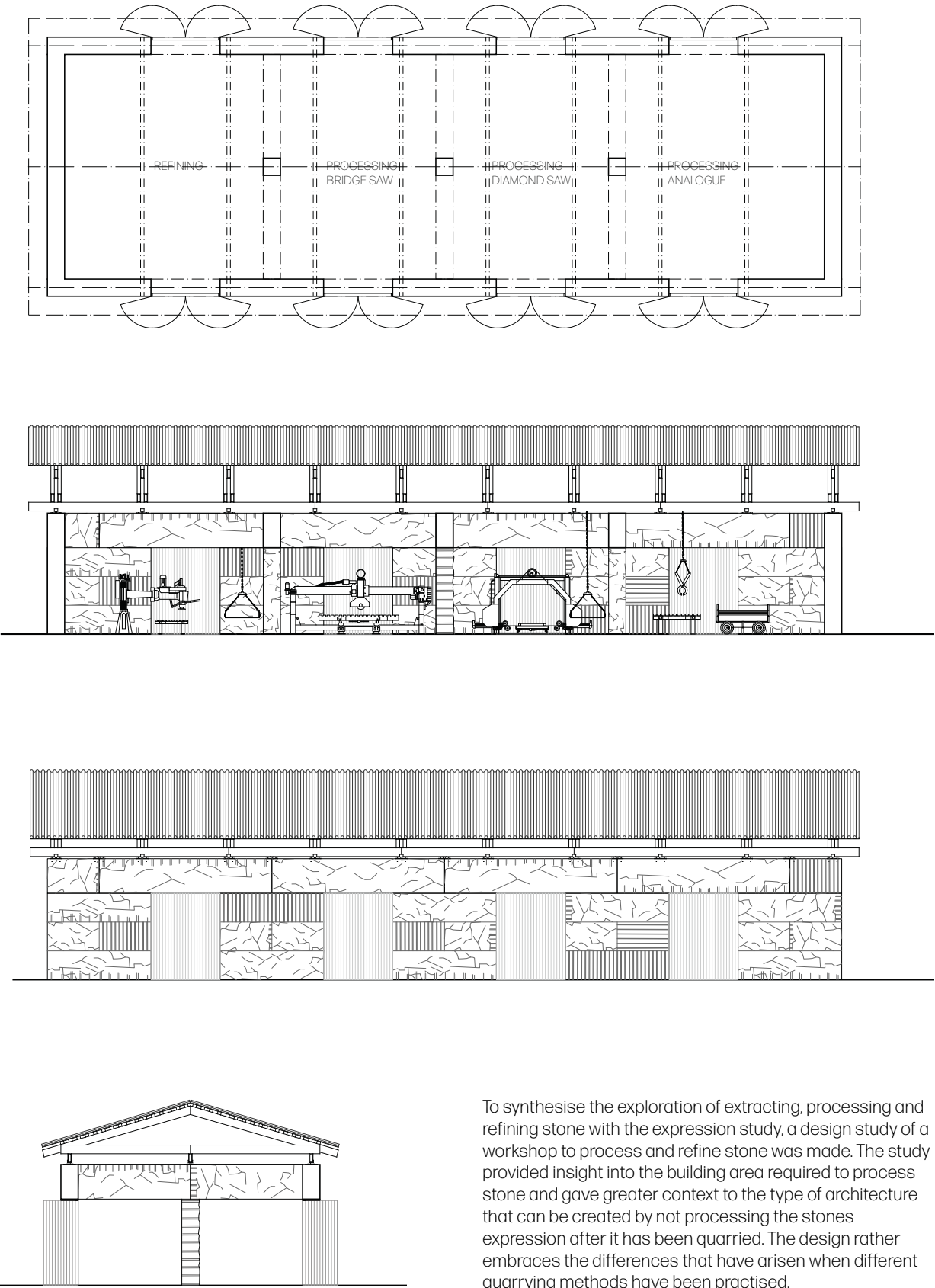
down to the harbour for distribution and loading. At the area for distribution, the stone was manually loaded into new carts, which were then connected and transported to the dock by locomotive. The route that was used by the locomotive was built from movable rails, allowing the route to be adjusted (Ambjörnsson, Et.al. 2020).

It was advantageous if the stone industry was located near water, as the finished products could then be transported by boat. There were two harbors in Rixö, one where the marina is located today and one was a "railmarina" where wagons of stones could be transported on a rail down to the water and tipped into the boats either by using a crane or by hand (Ambjörnsson, Et.al. 2020). The stone was then further transported to other locations within the country or alternatively exported abroad to countries such as Denmark, Germany, the Netherlands, and even Argentina (Nilsson, 2020). When Bohusbanan was built, some of the shipping could be done by train as well (Svidén, 2008).



As an extension of the study of quarrying, processing and refining stone through depictions of tools, an exploration of the different expressions in relation to space and objects was made. The expression study was done on some selected elements that could be included in an architectural intervention and has been categorised in a matrix positioning the explorations depending on the degree of processing of the stone.

The study created further interest in the expressions where stones showing traces of different extraction methods have been assembled into one unity and was something that was brought into the design interventions.



To synthesise the exploration of extracting, processing and refining stone with the expression study, a design study of a workshop to process and refine stone was made. The study provided insight into the building area required to process stone and gave greater context to the type of architecture that can be created by not processing the stones expression after it has been quarried. The design rather embraces the differences that have arisen when different quarrying methods have been practised.



"I would like the buildings I make to say: "I understand something about what is around me." I don't want them to give the impression of being aliens, of having nothing to do with what is already there."

Peter Zumthor

PART III - FINDING

The *Finding* is what was discovered when trying to understand the site (Giot, 1999).

The following chapter summarizes the most important findings that has been synthetizised into the conceptual basis of the design. The findings have pointed out the architectural direction when designing the visitors' center. The chapter covers two parts, firstly presenting the architectural language, and secondly the overall design strategy.

THE LAST EXTRACTIONS

The industrial landscape in Rixö is process-based, created through the consequence of craft and time. The design of the visitors' center is aiming for unifying those extremes through architectural processes that creatively highlight rather than conceal the traces of the site's industrial life.

Through one final act of extraction, the architecture reenacts the landscape's former use and revives the cultural heritage while giving the landscape a new purpose, where the design arises from an on-site reuse approach where the latent material of the site functions as a building material.

The process of constructing the architecture turns the building process itself into a narrative generating a holistic understanding of the quarrying process that spans from when the stone is quarried, processed and refined to what is left of the landscape after the quarrying has taken place, in comparison to conventional museums when only the refined objects are being exposed. Reenacting the landscapes former use serves as a way to revive the cultural heritage while giving the landscape a new purpose, where both the architectural process and program functions as a way to remember its past.

Each architectural intervention manifests as a point of interest in the landscape—designed as a situation for pause and exploration. Although they are separated spatially, they are unified by a common architectural language: by being subordinate to the process and consequences of stone extraction.

HISTORICAL LOGIC

By situating the architecture where the continuation of extraction would have seemed natural.

GEOLOGICAL LOGIC SUBORDINATING THE INVISIBLE GRID

The void created by the act of extraction aligns with the orientation of the site's bedrock, allowing the architecture to respond in a subordinated way to the invisible, three-dimensional geological grid.

ARCHETYPES

The architecture relates to the void by extraction in different ways. All with the intention of spatially taking responsibility of the spaces that the architectural process generates. The architecture relate to the void either by volumes of stone being placed:

Inside

Beside

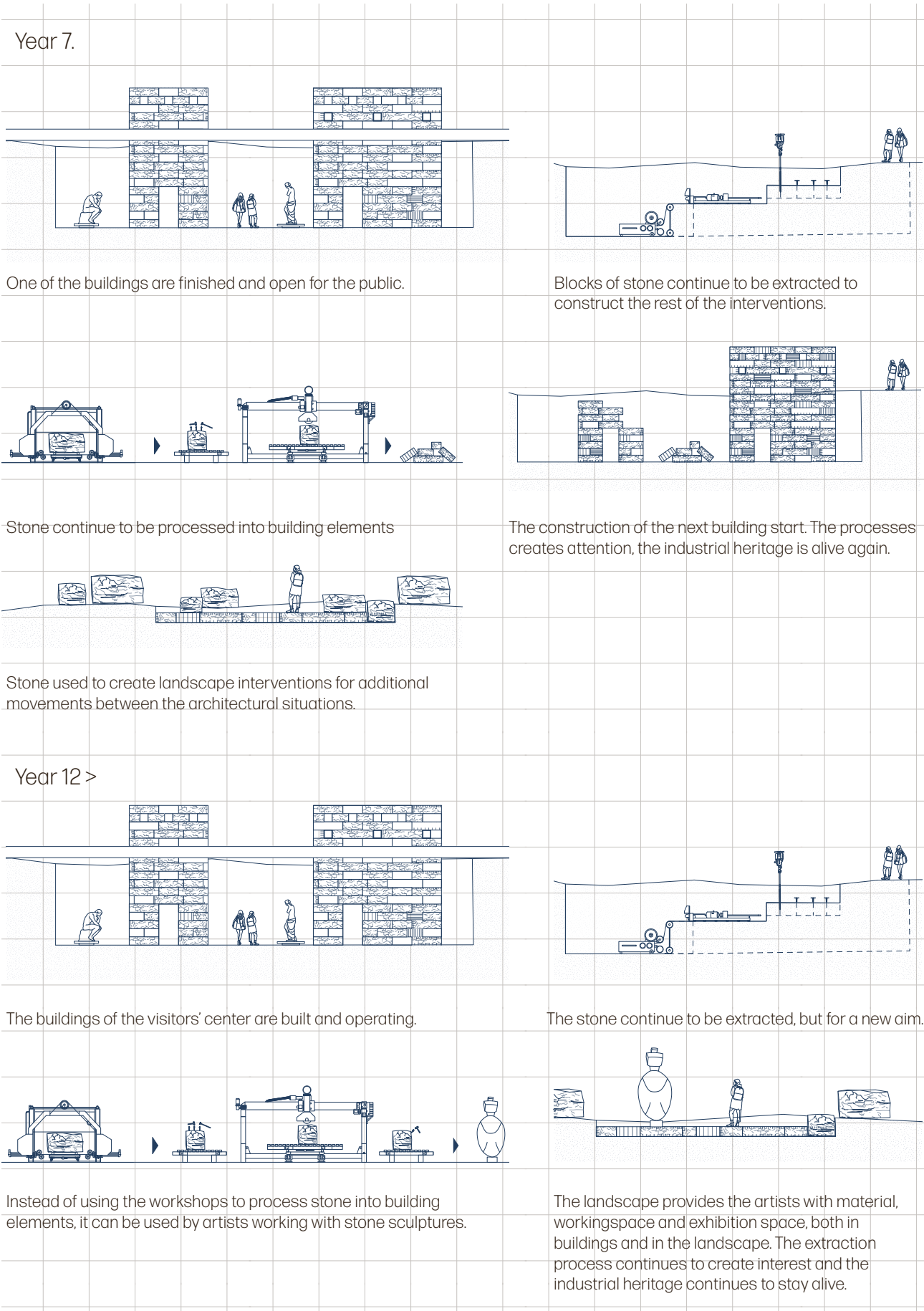
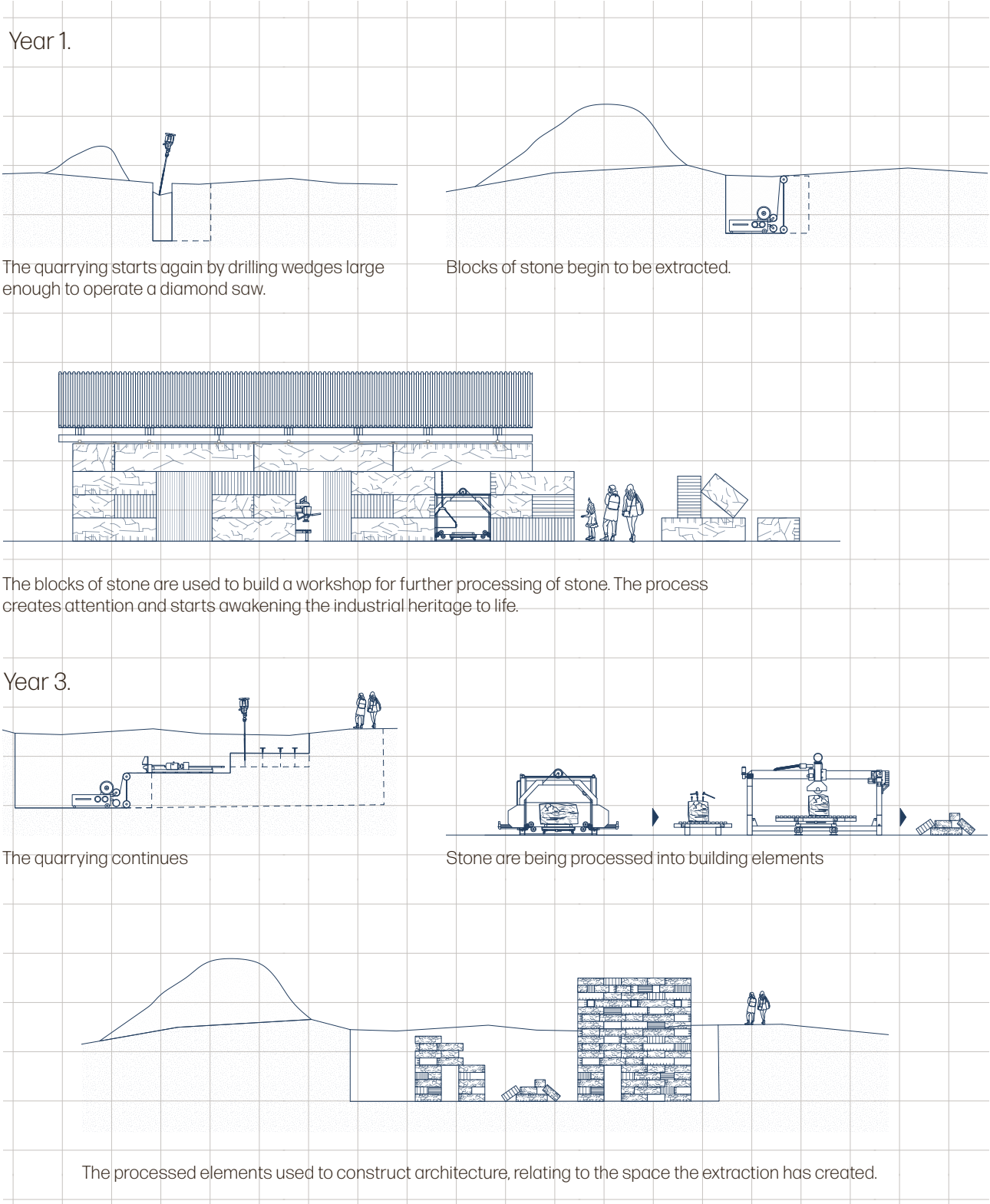
Making it capsuled, inhabited and spatially programmed

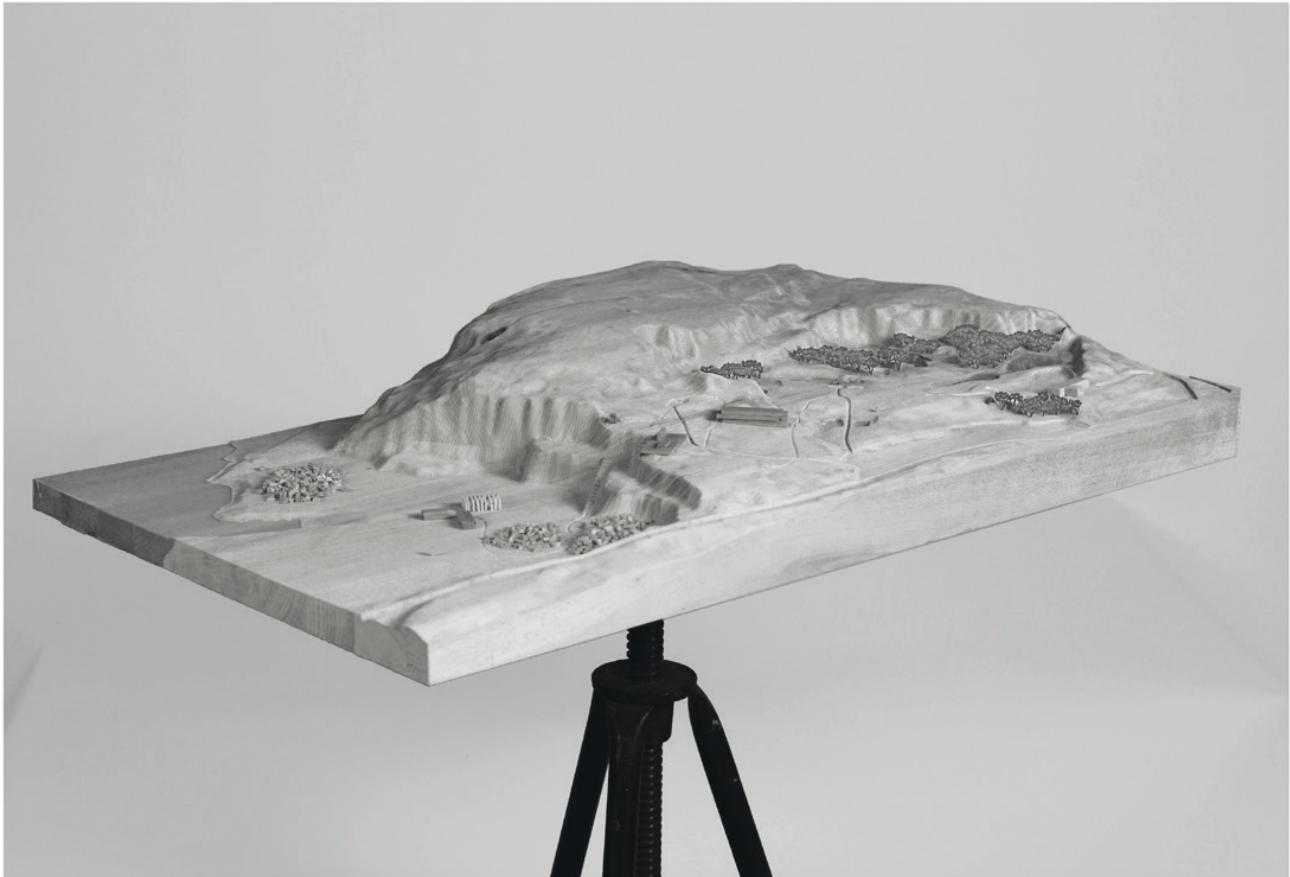
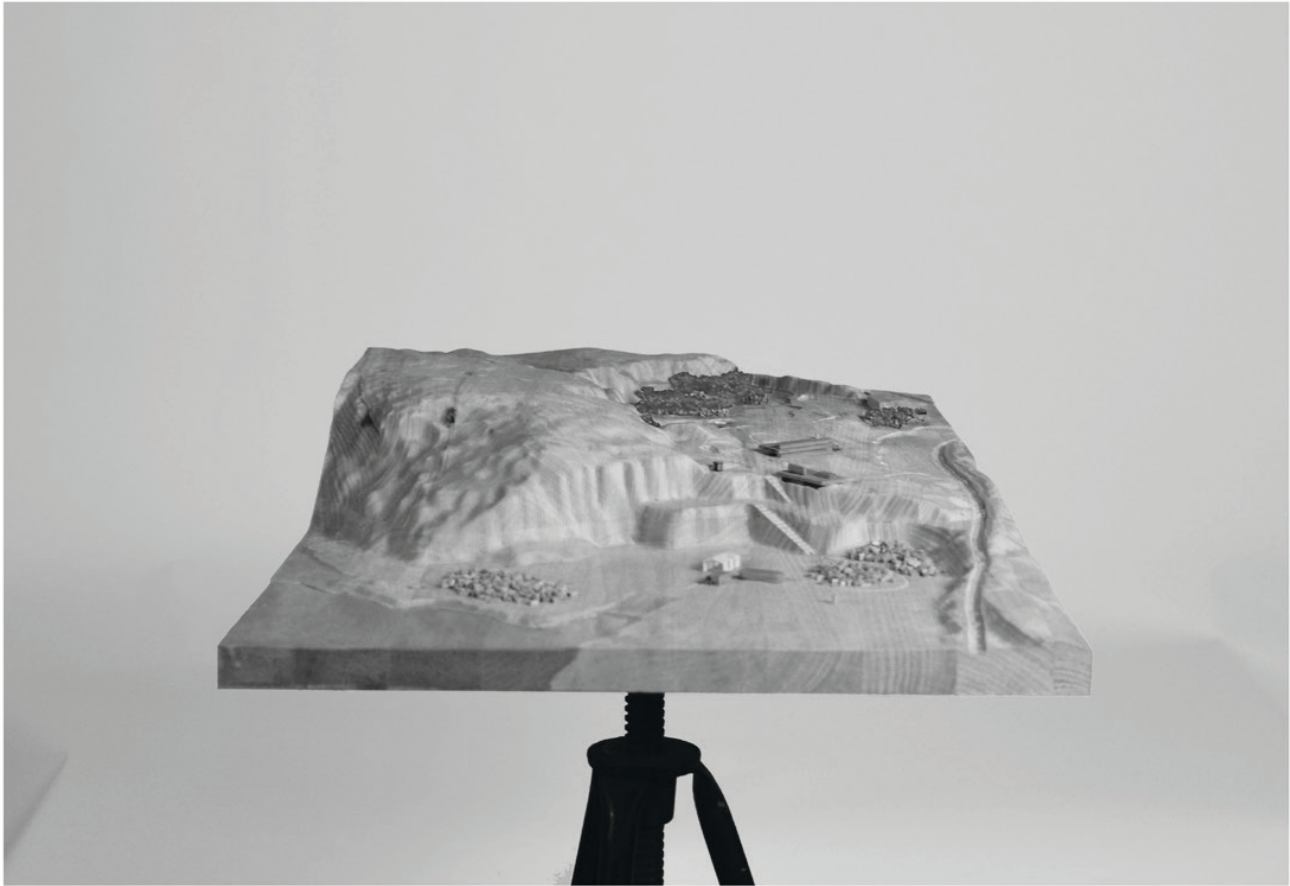
Making it exposed while being spatially and architecturally programmed.

PROTECTIVENESS TOWARDS REMINANT STRUCTURES

The industrial remnants from the landscapes active past are approached with a sense of care and preservation, honoring the histories and narratives embedded within them, creating situations that enables multiple layers of history to coexist at the same time.

The design strategy for constructing the architecture of the visitors' center emphasizes the architectural process as an element of importance for the implementation and conceptual narrative. As the process is important for constructing the visitors' center, time also becomes of importance, meaning that the experience of the visitor centre will vary depending on when in time the visitors experience the landscape, as the extraction for constructing the architecture makes the landscape constantly changing.





THE LAST EXTRACTIONS

PART IV, FOUNDING - THE PROJECTS

All previous phases will be synthesized in the Founding moment into a transformation of the site. This founding can be conservative and refer to something previous on site, or innovative where something new is imported (Giot, 1999).

- 1. Parking area / Bus stop area
- 2. Possible sculpture park
- 3. Café & Information Center
- 4. Museum
- 5. Viewpoint
- 6. Landscape interventions to guide movements
- 7. Target places for observing remnants
- 8. Workshops for processing stone



PROJECT 01. THE MUSEUM

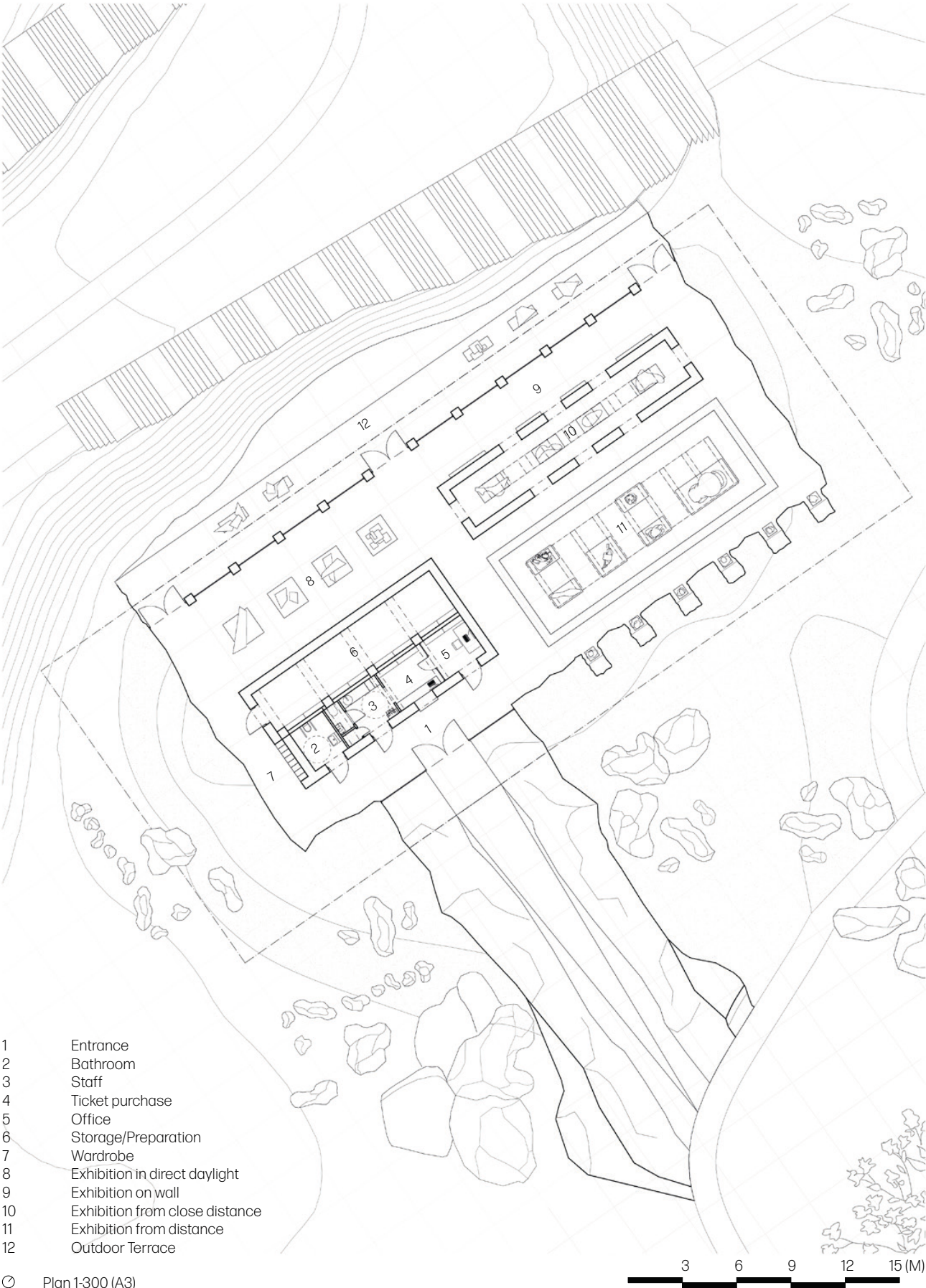
The Museum relates to its space of extraction by capsuling the void, making it programmed and inhabited. It consists of a large roof resting between two mountain tops, created by the extraction, supported by two massive volumes of stone and one facade towards the view of the fjord.

The horizontal form harmoniously integrates with the industrial landscape in a humble way, giving the building a landscape-like character allowing the vertical drama of the landscape to be a dominant characteristic, while still introducing a new and unexpected architectural element.

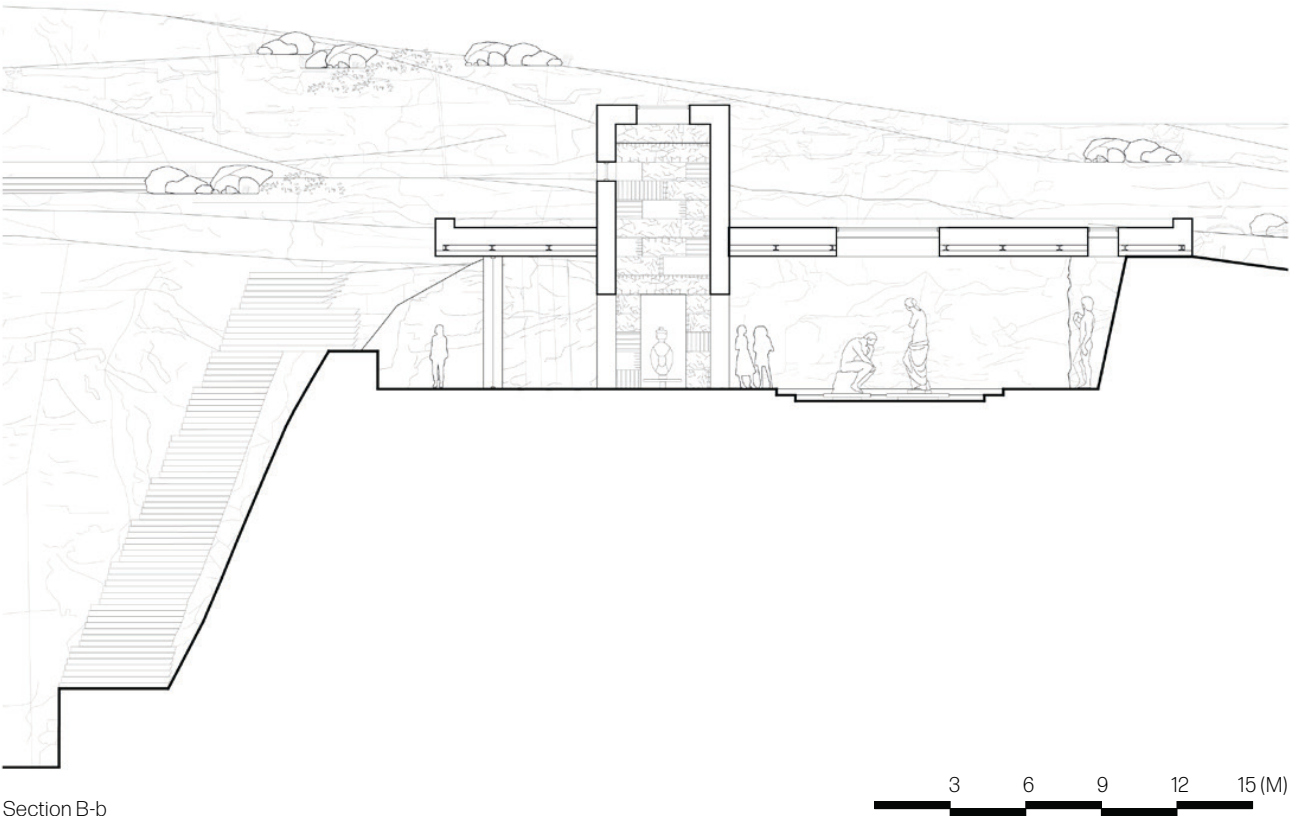
As you walk towards the building, a distinct cut in the bedrock is guiding you towards the entrance. As you enter the building one, the museum captures the interplay between rough and refined as well as light and darkness, where light is used to direct the attention to defined views, rather than as a general element in the space. The massive stone volumes are introduced as an element adding a different dramatic spatial experience where the relation to the space in between them is what defines the experience of the museum being capsuled by the robustness of stone in a varied way.

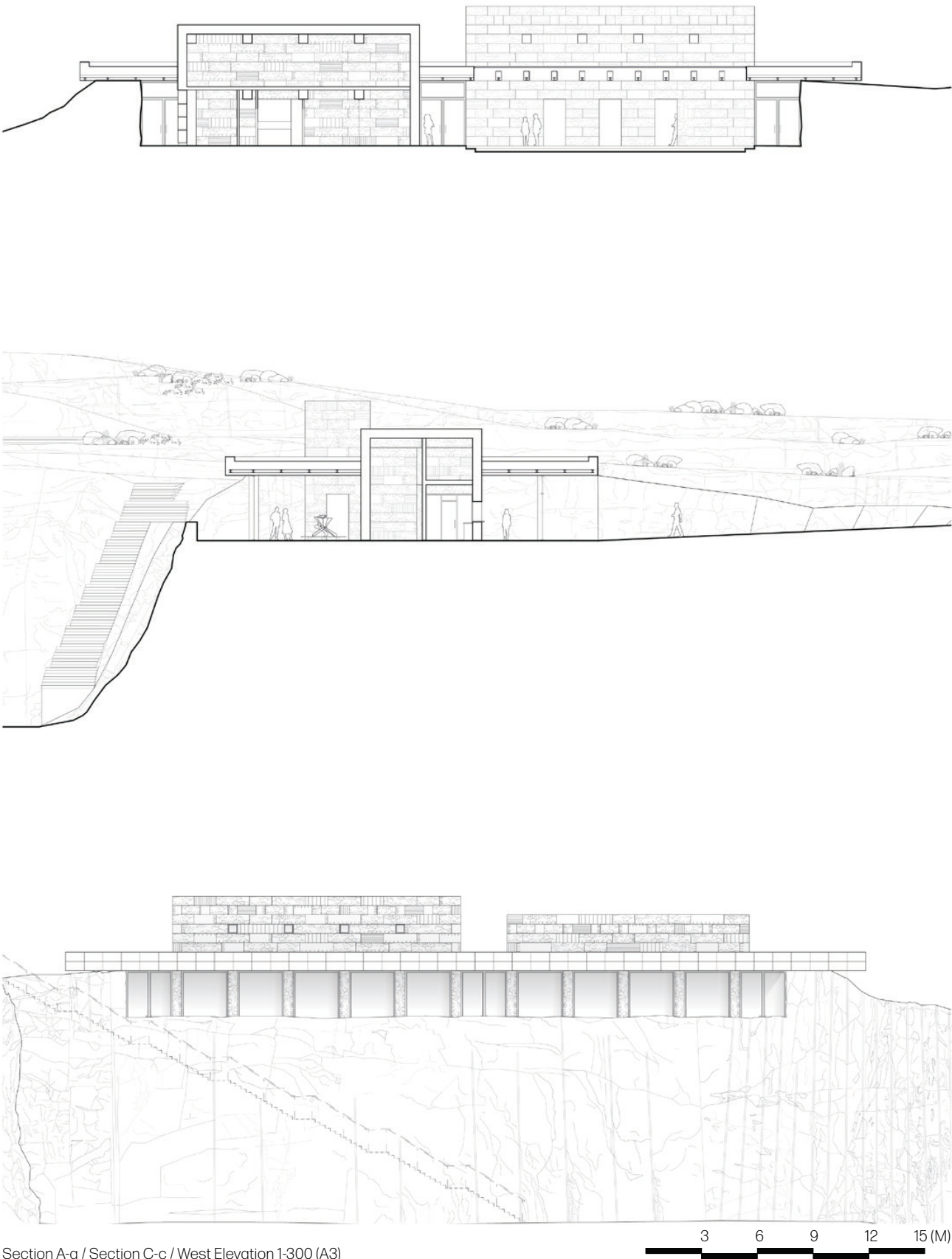


Render Exhibition Space



Render Exhibition Space





Model Museum Scale 1:200 Solid Wood

PROJECT 02. THE CAFÉ & INFORMATION CENTER

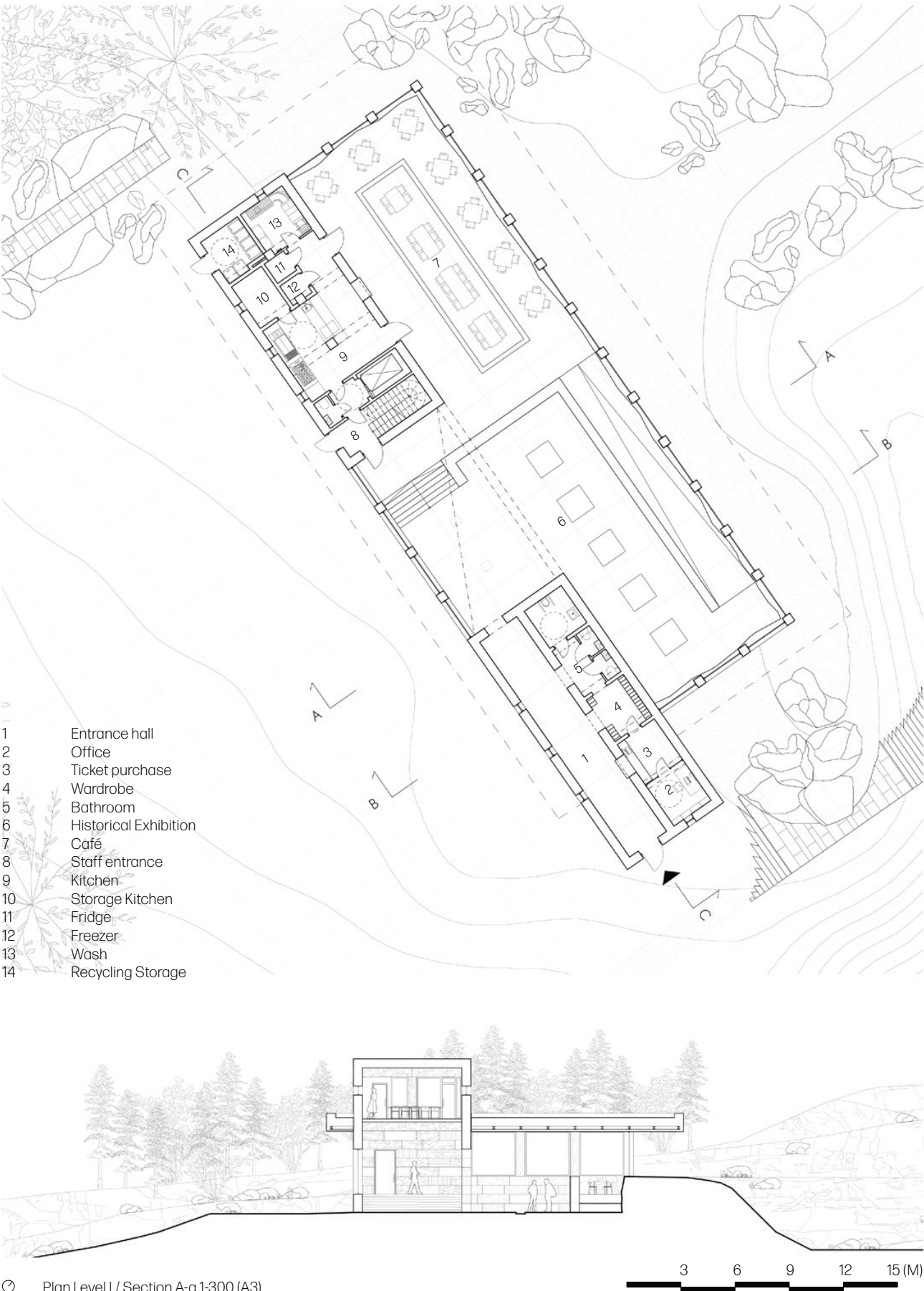
The building relates to its space of extraction by a massive volume of stone being placed to the side of its void, making the atmosphere of the void a main part of the building. Due to the vertical appearance of the stone volume placed beside the void of extraction, the café becomes more noticeable in the landscape in comparison to the museum but appears as a humble addition as the horizontality of the capsuling roof makes the building integrate with the landscape in a respectful way. The void of extraction becomes enclosed by a large horizontal roof resting on stone columns towards the east and supported by the stone volume towards the west.

The café and information center is entered through the stone volume by an enclosed and vertically dramatic space. Once walking the entrance, the space opens up and allows the sun to light the main space where the open atmosphere creates views towards the old quarry in the east, and the new quarry towards the west. The main spaces are lowered into the void in various levels making the spaces integrate with the void in different ways. The historic exhibition located 2 meters down in the void makes the walls defining the space create an enclosed space affected by a subdued light, while the cafe located 1 meter down in the void creates a feeling of protectiveness while still maintaining the views towards the quarry.

The way of making the void define the boundaries of the main spaces and how the spaces in the are interacting with the void is what defines the main experience of the spaces in the café.



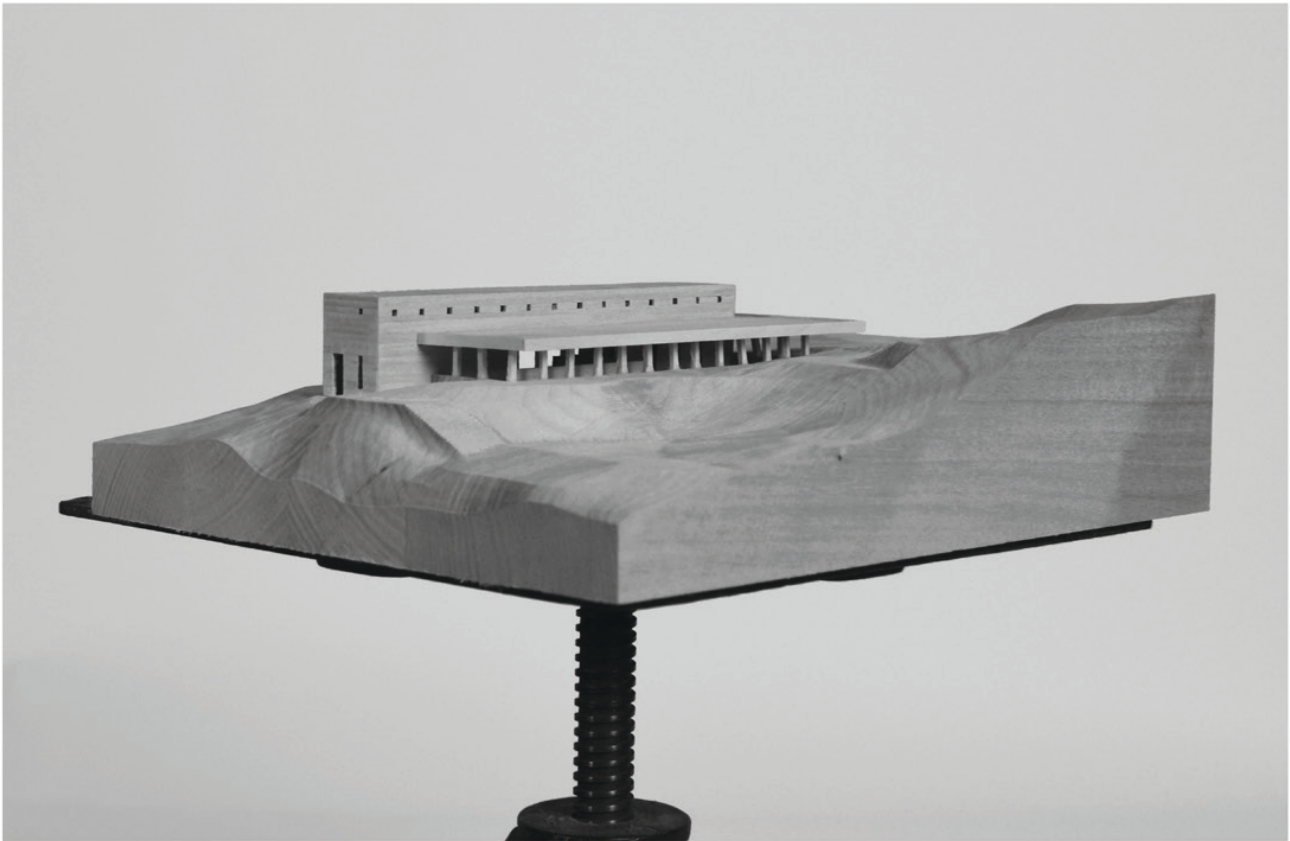
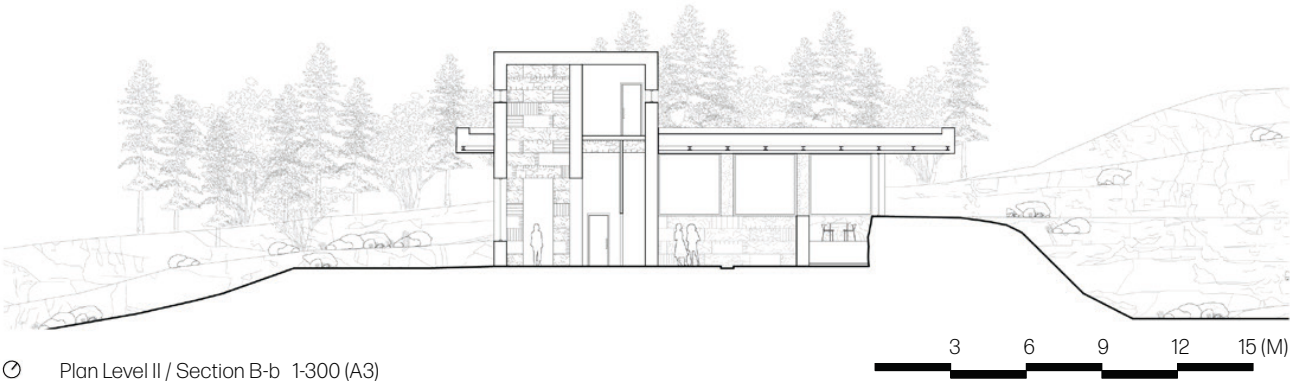
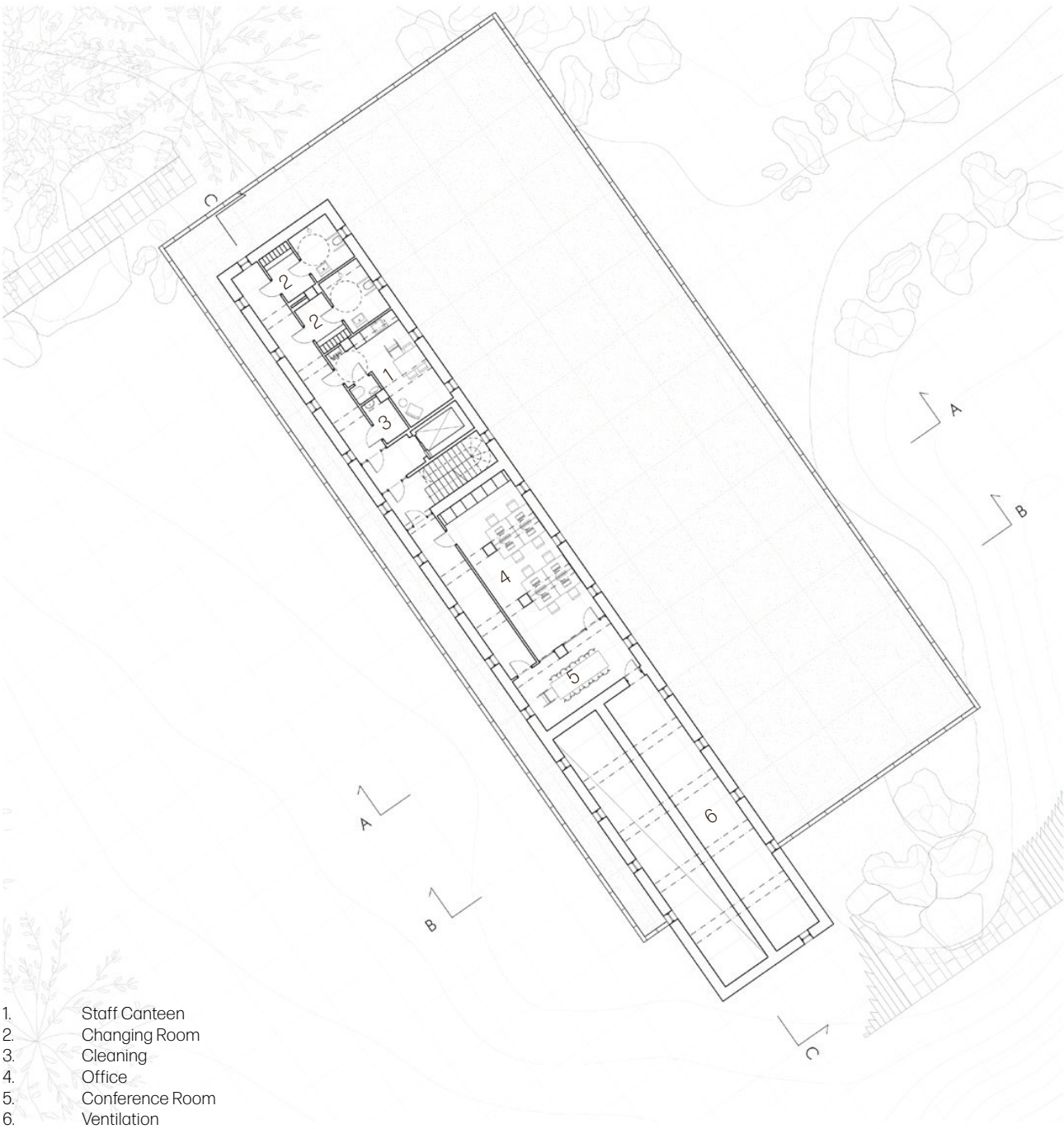
Render Entrance Situation



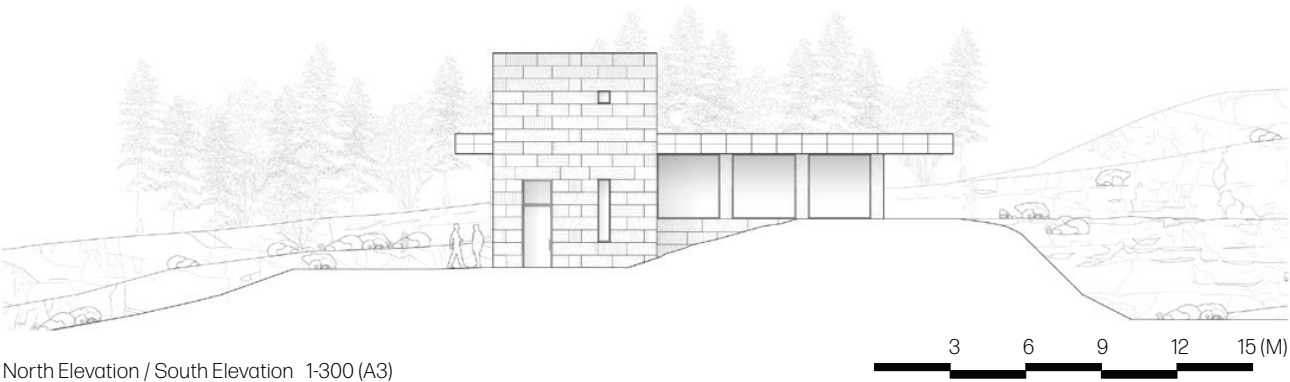
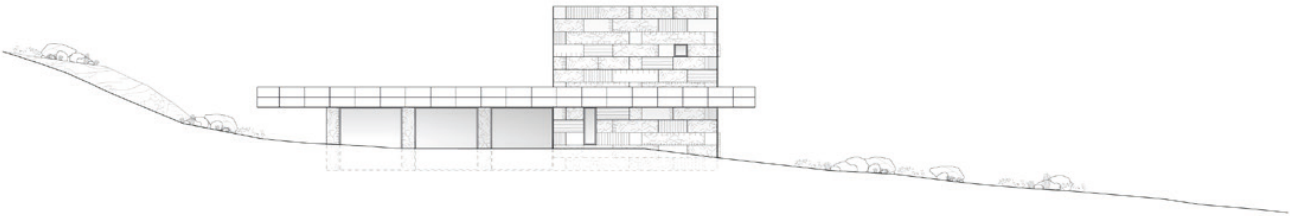
Plan Level I / Section A-a 1-300 (A3)

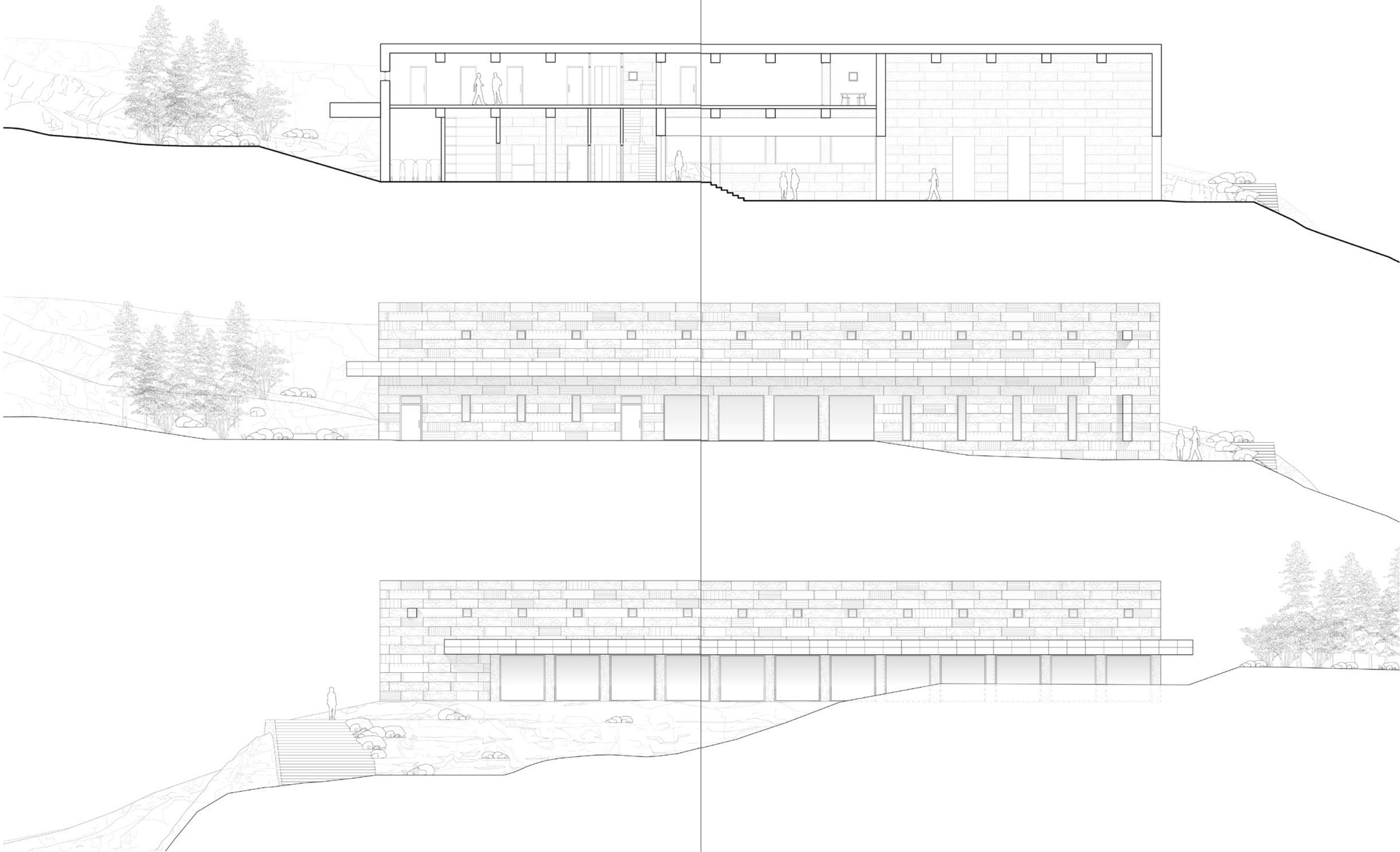


Render Information Area / Render Café



Model Café 1-200 Solid Wood

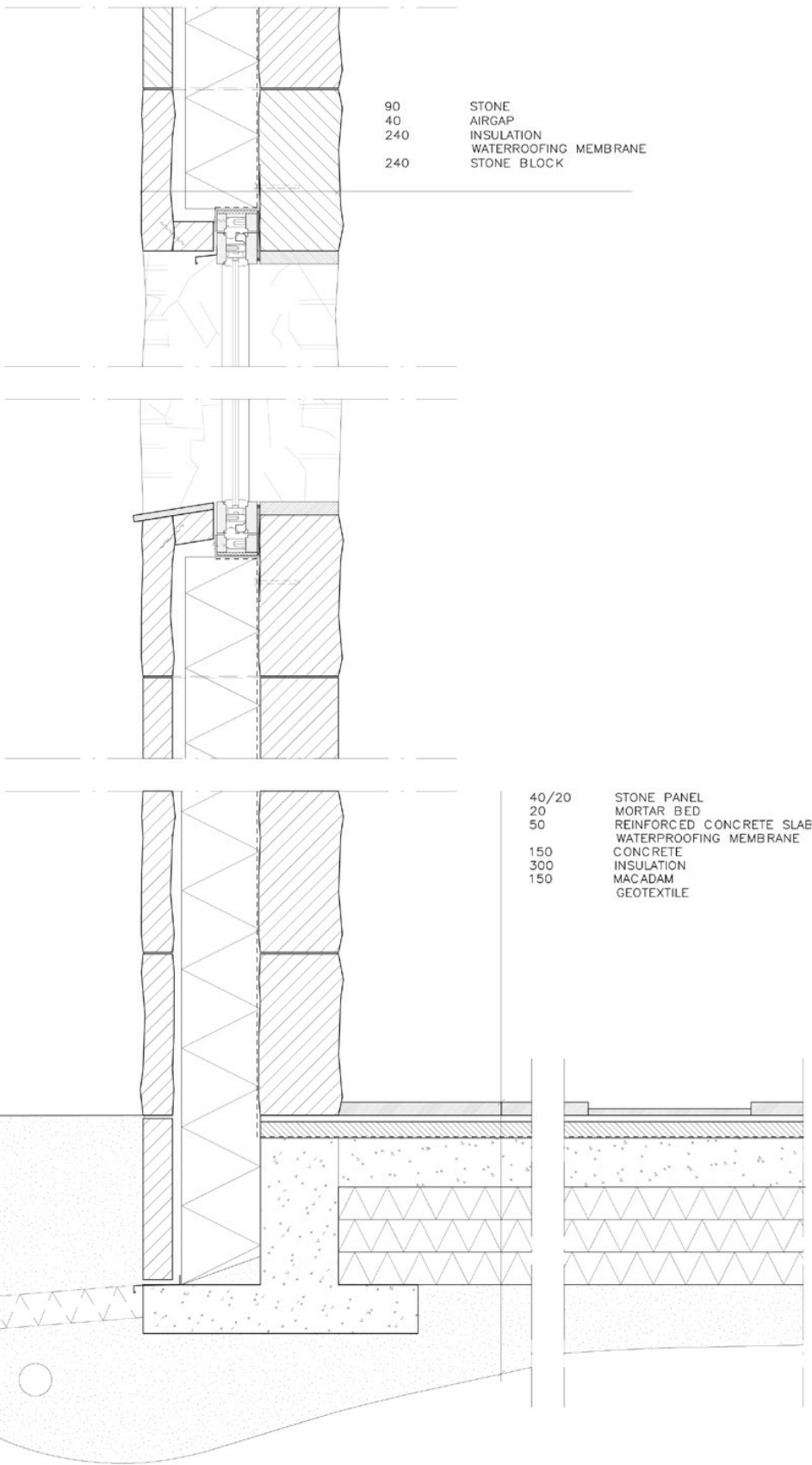




Section C-c / West Elevation / East Elevation 1:300 (A3)

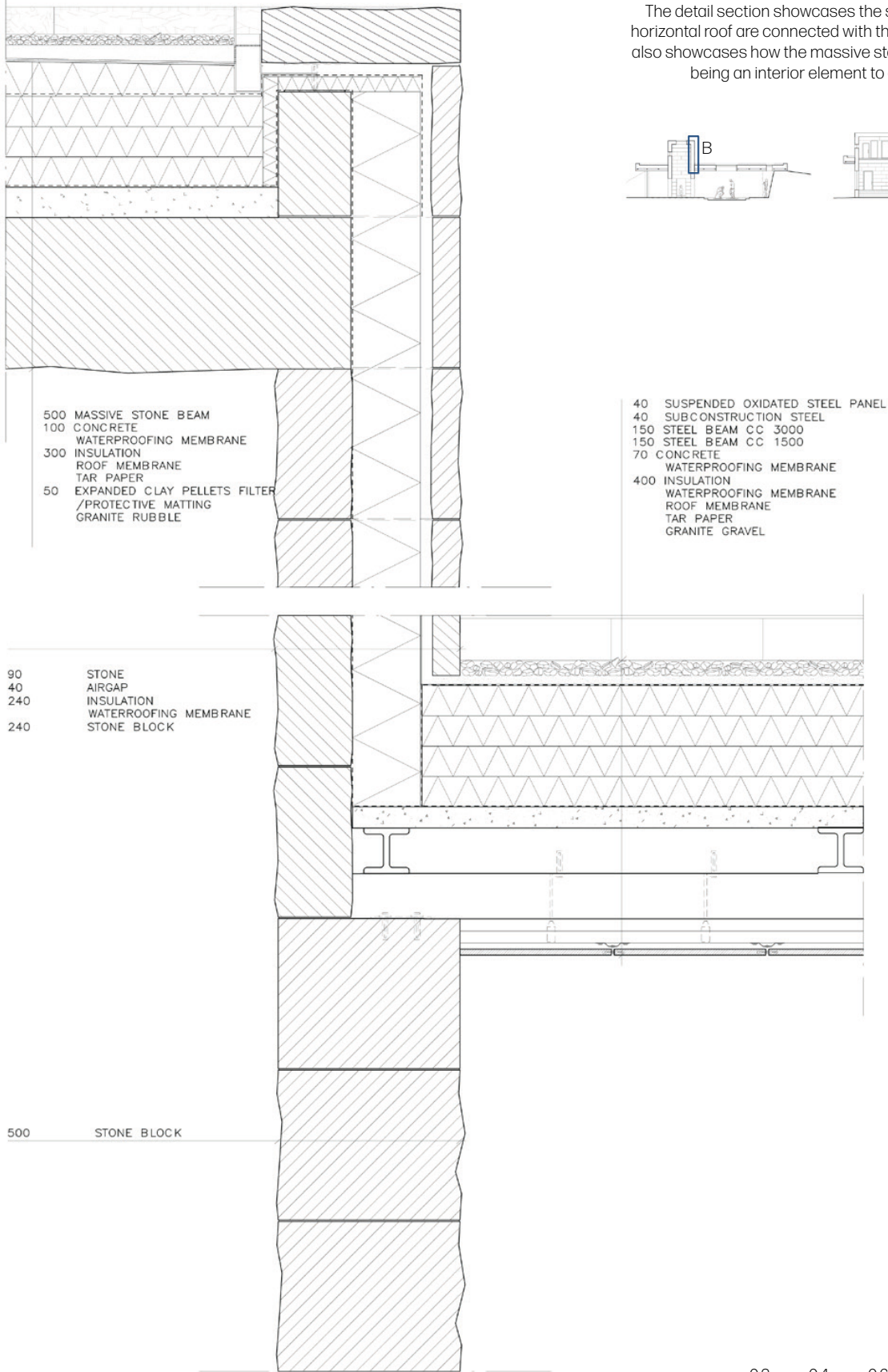
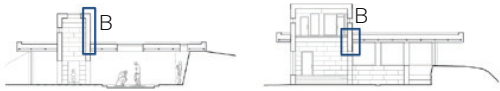


The detail showcases the strategy of how the facade of the stone volume of the café are constructed, as well as how the window are integrated in the wall to create a massive expression.



Detail section (A) of construction strategy 1-20 (A3)

The detail section showcases the strategy of how the horizontal roof are connected with the stone volumes. It also showcases how the massive stone wall goes from being an interior element to a facade structure.



Detail section (B) of construction strategy 1-20 (A3)



PROJECT 03. THE VIEWPOINT

The viewpoint is not designed by relating to a space from extraction, but rather honors the invisible three dimensional grid of the bedrock. The design is sprung from two separate grids either being volumetrically based or outline-based coexisting at the same time to create its form and space, where their coexistence strengthens the geological three dimensional grid being fictive.

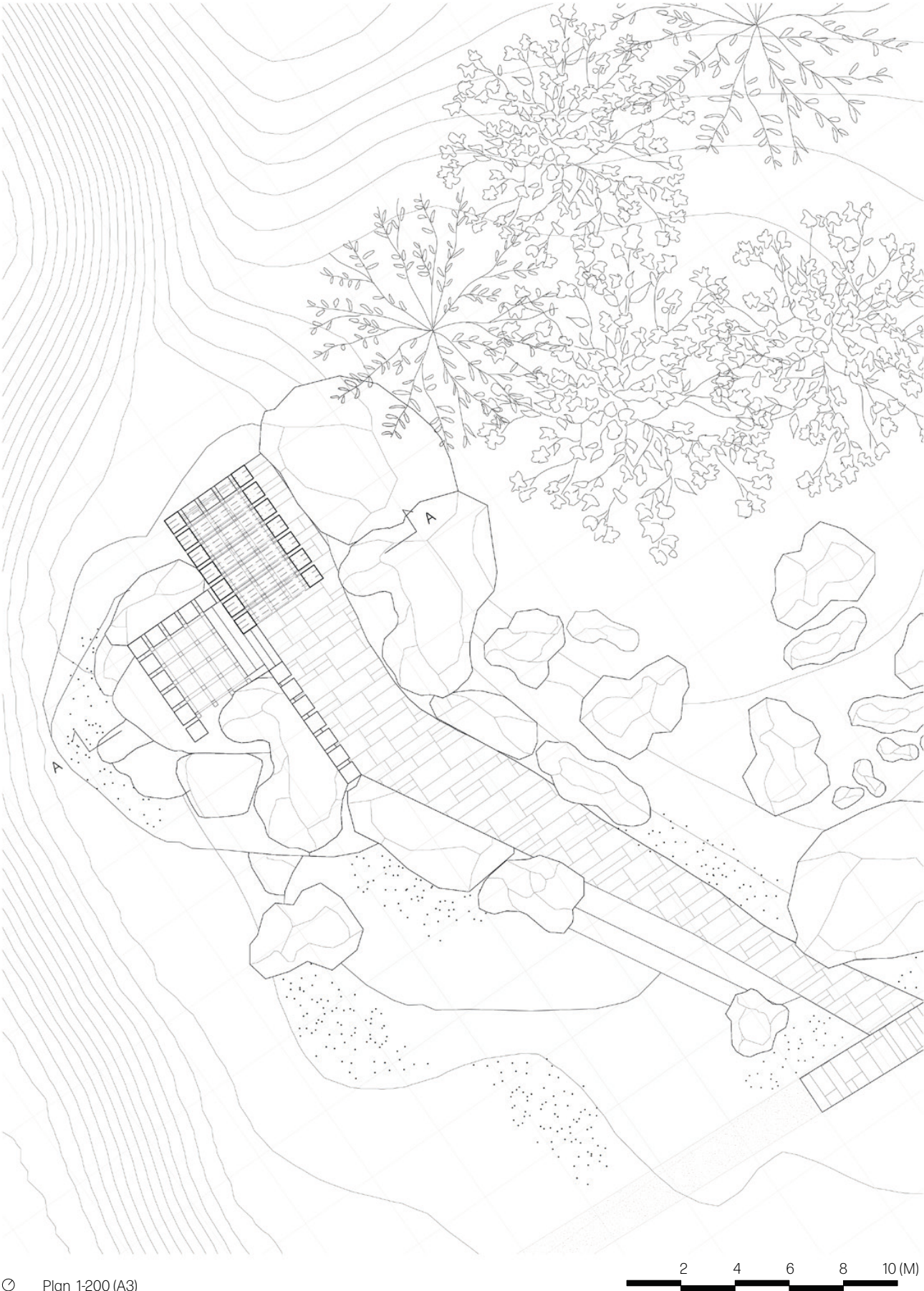
The larger grid defines the boundaries of the intervention. Stone columns have been placed to fulfill the boundary of the viewpoint and later removed to create space.

As columns have been removed, the footprint of the column remains visible, making the grid noticeable in other ways than through the presence of the columns. The perpendicular spatial organisation allows multiple views in the quarry to be observed.

The additional grid marks the outline of the space created by the footprints and stone columns, creating an additional pattern to the expression of the ground, where the grids coexisting in the same space strengthens the grid being fictive as its dimensions never are set.



Render arrival situation of the viewpoint / Render of enclosed viewpoint



Plan 1-200 (A3)



South Elevation / Section A-a 1-300 (A3)

DISCUSSION

The thesis explores how architecture can be used to engage with post-industrial landscapes by answering the questions: ‘How can architecture be used to revitalize post-industrial landscapes left abandoned and forgotten?’ and ‘How can reenactment be used to commemorate and communicate past extraction processes, labour, and machinery tied to a post-industrial site?’. The questions are explored through alternative architectural strategies that creatively reveal rather than cover the traces of the site’s former use. The thesis explores a stone quarry in Rixö by researching its history of stone extraction, as well as by reconstructing the site’s historical layers in architectural representations that index time. The questions are investigated through the design of a visitors’ center where the process of extracting stone is reenacted, generating an on-site reuse approach where the latent material of the site functions as building material.

The project proposal is presented through architectural drawings supported by renders and physical models and is based on the process of reenacting stone extraction but is striving to be site-specific. The design takes cues from the historical and industrial investigation of the site, as well as from project-based references that discuss the relationship between landscape and architecture, as well as between extraction, processing, and construction.

The thesis is a critique of approaches of “rewildening” that rely on natural processes to revive nature as a method of engaging with post-industrial landscapes. However, the design proposal and the architectural processes have not been dealing with whether natural elements should be allowed to animate the landscape or whether natural processes such as soil accumulation or plant growth should be deliberately kept outside the boundaries of the site of the thesis. Further research could therefore also address how architecture could, to a certain extent, deliberately prevent nature from entering and animating the industrial landscape as time passes by.

The method of surveying the site through representations that index time, as well as surveying the industrial activity by researching the extracted material, gave an insight into the history of the site, as well as functioning as a way to uncover hidden narratives from which different futures could be imagined. Considering the landscape as a ruin became a

way to reflect on the site as something that is incomplete and therefore tolerant for changes, as well as giving a protective and respectful attitude to the artifacts left on site from the time when the industry still was active. The use of history and the protective attitude towards the industrial remnants was turned into dynamic narratives that guided the design, making it possible to portray different stories that are embedded within the context and make them coexist.

The thesis has not only consisted of designing the buildings that are one part of the visitor’s centre and how they relate to the negative space that results from the extraction of the stone needed for the buildings to be constructed. Part of the thesis has also been to explore design strategies that do not assume that there is a static, ideal condition that predates the industrial use of the site, as landscapes are constantly evolving. The design strategy gives the architectural process great importance for the implementation and the conceptual weight and narrative of the project. The process of constructing the architecture of the visitor centre creates a holistic understanding of the quarrying process that spans from when the stone is quarried and processed to what remains in the landscape after the quarrying has taken place. This strategy creates a contemporary project that respects the characteristics of the industrial landscape that once has been by reenacting its former use. Reconnecting to the research questions; the implementation process of the visitor center becomes a way to revive the cultural heritage by reenacting the quarry’s former use while giving the industrial landscape a new purpose, where the process itself and the program functions as a way to remember its past.

As the extraction process is important for the project implementation, time is also of importance. One can therefore reflect on whether it is possible for the project to reach a final stage where the visitor centre can be considered “finished”, or if it never can or should be finished. As the extraction process is linked to the construction of the buildings, observing the extraction process is also part of visitors’ experience of the visitors center. One can speculate on how the visitor’s centre would change if the extraction process ended, or, on the other hand, if it never ended. Further research could therefore touch upon how architecture would continue to relate to the negative space that the extraction process continuously creates.



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All other figures, unless otherwise stated, were produced by the author.

AI APPENDIX

AI has been used to explain literature with simple words when literature has been difficult to understand, as well as a tool to exemplify what the literature means when metaphorical expressions and parables have been used. The output has thereafter been used as a base for understanding the text before being referred by the author with own words.

