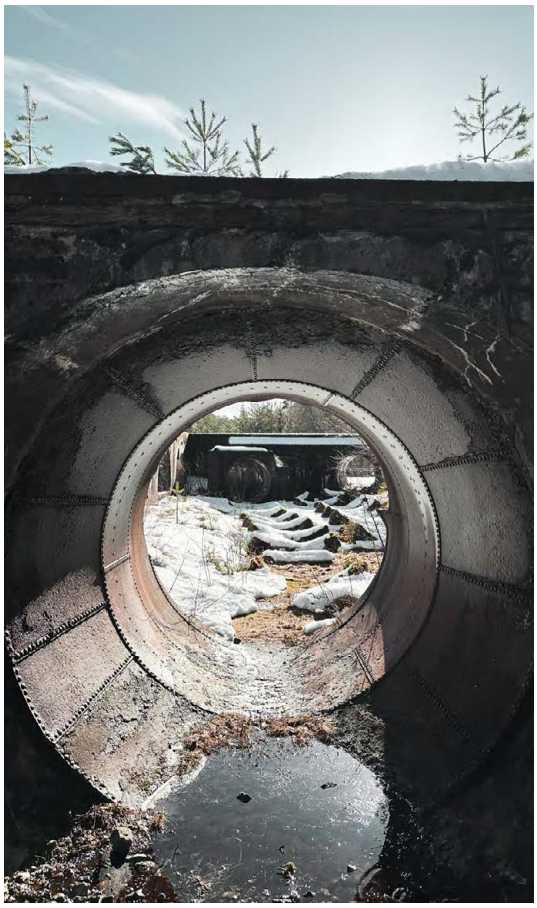
REVIVING THE CURRENT

MASTER THESIS



REVIVING THE CURRENT

THE FUTURE OF KRINGSJÅ KRAFTSTASJON

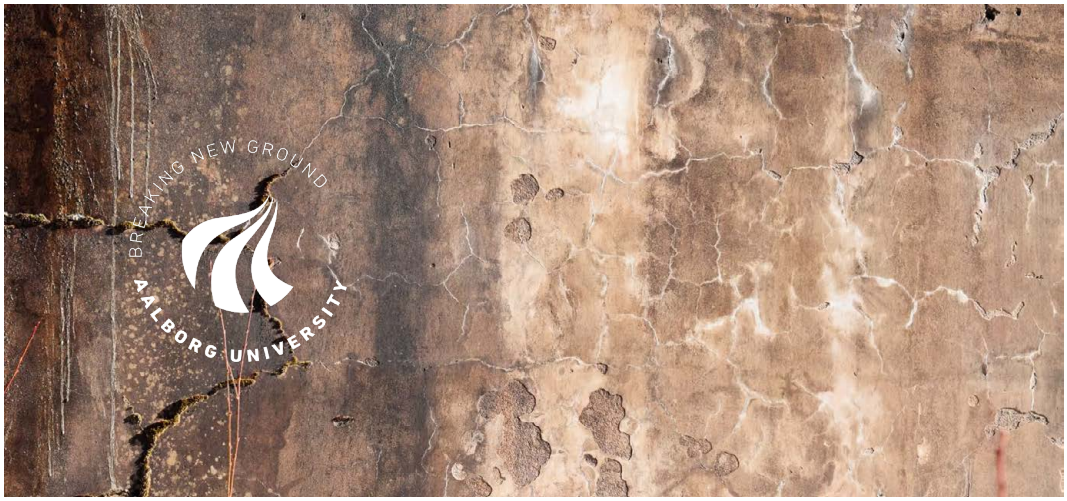


Fig. 001.
Own image:
Ruin surface

01.00 TITLEPAGE

AALBORG UNIVERSITY
DEPARTMENT OF ARCHITECTURE, DESIGN & MEDIA TECHNOLOGY

TITLE	**REVIVING THE CURRENT**
SUBTITLE	THE FUTURE OF KRINGSJÅ KRAFTSTASJON
PRIMARY THEMES	HISTORIC SOCIETY, MENTAL WELL-BEING, THERMAL BATHS, OUTDOOR LIFE, WOOD
PROJECT TYPE	INTERVENTION
DESIGN TYPOLOGY	RETREAT
PROJECT PERIOD	04.02.25 - 02.06.25
GROUP	22
SEMESTER	MSC04
PRIMARY SUPERVISOR	TENNA DOKTOR OLSEN TVEDEBRINK
TECH. SUPERVISOR	JESPER THØGER CHRISTENSEN
PAGES	207
PAGES OF TEXT	067

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01.01 ABSTRACT

REVIVING THE CURRENT
THE FUTURE OF KRINGSJÅ KRAFTSTASJON

This paper explores an architectural intervention at Kringsjå Kraftstasjon in Vennesla, southern Norway—one of the country's earliest hydroelectric power plants, now reduced to a series of seemingly abandoned ruins.

With a consistent focus on local industrial heritage, the paper also engages with broader themes such as Norwegian outdoor life, mental well-being, thermal bathing, accessibility, the use of local wood materials in demanding microclimates, and the enduring power of water—both historically and in contemporary contexts.

The framework for this paper is an imagined architectural competition initiated by the Vennesla municipality, aiming to reinforce the site's identity and promote sustainable visitor management.

The design process presented begins with an outside-in approach, emphasising volume studies, programming, and storytelling. It then transitions to an inside-out approach that prioritises the thermal journey, spatial experience, and challenges of meeting the ground.

One main design challenge throughout the paper was how to work around the existing ruins and, following a series of detailed analyses, the design strategy focused on "adding to enhance", where respect for the ruins remains without the fear of contact.

The paper concludes that the most fitting concept in this context is to reinterpret the meaning of hydropower as a revitalising force for the community, rather than merely a source of energy. This idea is realised through a series of new structures strategically integrated with the ruins of the historical site.

Surrounding smaller volumes accommodate rentable cabins, event spaces, and a floating sauna, while the largest central volume—gently resting in the main ruin—serves both as a thermal bathing facility and a communal cabin for hikers and visitors. This future "Kraftstasjon" is capable of conveying the rich history, attracting wilderness tourism to the area, offering a retreat for individuals with mental health challenges, and seamlessly merging the interests of the many stakeholders at Kringsjå.

01.02 CONTENT

REVIVING THE CURRENT
THE FUTURE OF KRINGSJÅ KRAFTSTASJON

01.03 READING GUIDE

PROJECT STRUCTURE

The following master's thesis report is arranged into six main sections:

01. Preliminary content, which concludes with the problem statement.

02. Project context, including a detailed description of Kringsjå Kraftstasjon, as well as analyses and theories

03. The design process. While the design process is based on the Iterative Design Process – an approach where the design continuously evolves in response to new theoretical or analytical findings – this section is presented in strict chronological order to help convey the process more clearly. Note that various figures have been reworked aesthetically to improve legibility, even though the original design ideas were based on rough sketches.

04. The presentation section, where all graphic material related to the final design proposal is compiled.

05. The final section, where the entire project is summarised through a conclusion and reflection. This section also includes references to theories and figures.

06. Lastly, this section contains all appendix material referenced throughout the report.

While most of the graphic material is created by the study group, references to copyrighted material will also be included in this section.

Throughout the report, context related to design parameters is emphasised by highlighting subconclusions in dark red, making them easier to locate. These will also be supplemented by diagrams visualising the design driver based on the text. The diagram will be a conseptual sketch which later will be subblemented with a text.

This A4 report is designed to be read as two-page spreads in physical format. Some content may be difficult to interpret in digital format, where only one page is visible at a time.

01.04 AI DISCLAIMER

THE USE OF AI IN THE PROJECT

This architectural master's thesis project has for the most part intentionally avoided the use of artificial intelligence (AI) as a design or creative tool throughout the development process. The decision was based on a desire to maintain a hands-on, human-centred approach that emphasises critical thinking, architectural intuition, and well-trained workflows.

The design process has relied on established methods such as site analysis, literature reviews, case studies, iterative model-making, and digital drawing, all carried out using conventional software tools. This approach allowed for a deep engagement with context, materiality, and spatial experience, rather than delegating creative or analytical tasks to AI systems.

AI was used once in the project in "Vision revisited" by creating a prompt and inserting it into an image generator. This was done to initiate the design process and establish a conceptual direction. However, its use was strictly limited to this initial inspiration and did not influence the general development, which remained rooted in traditional, human-centred design methods.

Additionally, AI has been employed in a limited and clearly defined capacity: language support. Specifically, AI has been used to assist with grammar checking and minor language corrections to improve the clarity and readability of the written material. This selective use has ensured that the academic integrity and originality of both the design and research components remain fully authored by the students.

Fig. 002.
Own image:
Turbine shaft

01.05 INTRODUCTION

REVIVING THE CURRENT

On the 15th of July 2024, during a road trip through southern Norway, the main goal of the day was to complete the hike "Tømmerrenna," north of the Vennesla region. While this was quite an experience in itself, the clear highlight of this spontaneous hike was the unexpected discovery of a huge concrete wall with arch-shaped holes, standing remote and silent among rugged rock formations and dense vegetation.

This unique and hidden location had a marvellous atmosphere and gave off the feeling that something significant had happened here. What we had encountered was the remaining main bearing turbine wall of one of the first hydroelectric power plants in Norway: Kringsjå Kraftstasjon. While the large ruin at first appeared to stand alone, it later became evident, that the Kraftstasjon had been the heart of an entire historic settlement, now only visible through the worn-down house foundation ruins that blend into the surrounding landscape. The discovery of this historic area almost immediately became a main subject and key motivator for this architectural master's thesis project: Reviving the Current.

This report conveys the long journey from first stumbling across the site to now presenting a proposal for how to further increase the social value of this already significant place. This is achieved through numerous analyses on multiple scales, a thorough design process following the IDP (Integrated Design Process) model, and, finally, detailed work around graphic material showcasing what is envisioned for the future of Kringsjå Kraftstasjon.

In this project, an initial question was raised: What if "Kraftstasjon"—a term that originally referred to ensuring energy for industry—were reinterpreted as a concept that instead energises citizens? In this context, energising citizens relates to recognising how immersing oneself in thermal baths and being exposed to outdoor life can have a substantial effect on mental well-being.

While this is one of the key themes, the project also explores interventions with ruins, local industrial history, hybrid and keyless architecture, and the use of wood materials in a demanding microclimate.

01.06 VISION

ENVISIONED FUTURE OF KRINGSJÅ KRAFTSTASJON

The future of Kringsjå Kraftstasjon is imagined as a place where industrial heritage, nature, and human well-being converge—quietly powerful, deeply atmospheric, and emotionally resonant. What once was a robust provider of mechanical energy to industry is reawakened as a cultural and experiential generator for the people.

The monumental turbine wall remains a silent witness to the past, now framed by thoughtfully designed interventions that embrace decay and memory. Moss-covered ruins and worn foundations are preserved and reinterpreted, not erased.

This project envisions the intervention of ruins from one of Norway's first hydropower plants and its historical community. Where the current of water for hydro power production has been shut off many decades ago, this project envisions a revival of the current meaning a new way for the water to flow through these historic remains deeply inside the raw woodlands. - A way for the ice cold Otra water to be a key part of a new architectural design merged with the ruin volumes.

With key themes in mind such as mental wellbeing and thermal baths, this project envisions that visitors in the future will end their daily hike in a rentable cabin nearby the power plant, from where they would embark on the second journey of the day: The thermal journey that begins when transitioning through the ruin openings. The new volume is envisioned to stand in clear contract to the worn-down ruins and to continuously be designed to respect both the ruin and surrounding nature while making use of it, thus heightening the value of both. Furthermore, it envisions a subtle reconstruction of the small historic town by using the foundation remains to strategically organise the composition of the cabins to come.

Finally, considering all these aspects, the project envisions an enchanting atmosphere consisting of historic trails, immersive panoramic views, roaring ice cold water currents, ascending hot steam and places for social gatherings unlike anything else.

Kringsjå Kraftstasjon is no longer a site of industrial output—but one of cultural input, social value, and atmospheric depth. It is envisioned as a living testament to transformation: of energy, of place, and of the role architecture plays in shaping human experience.

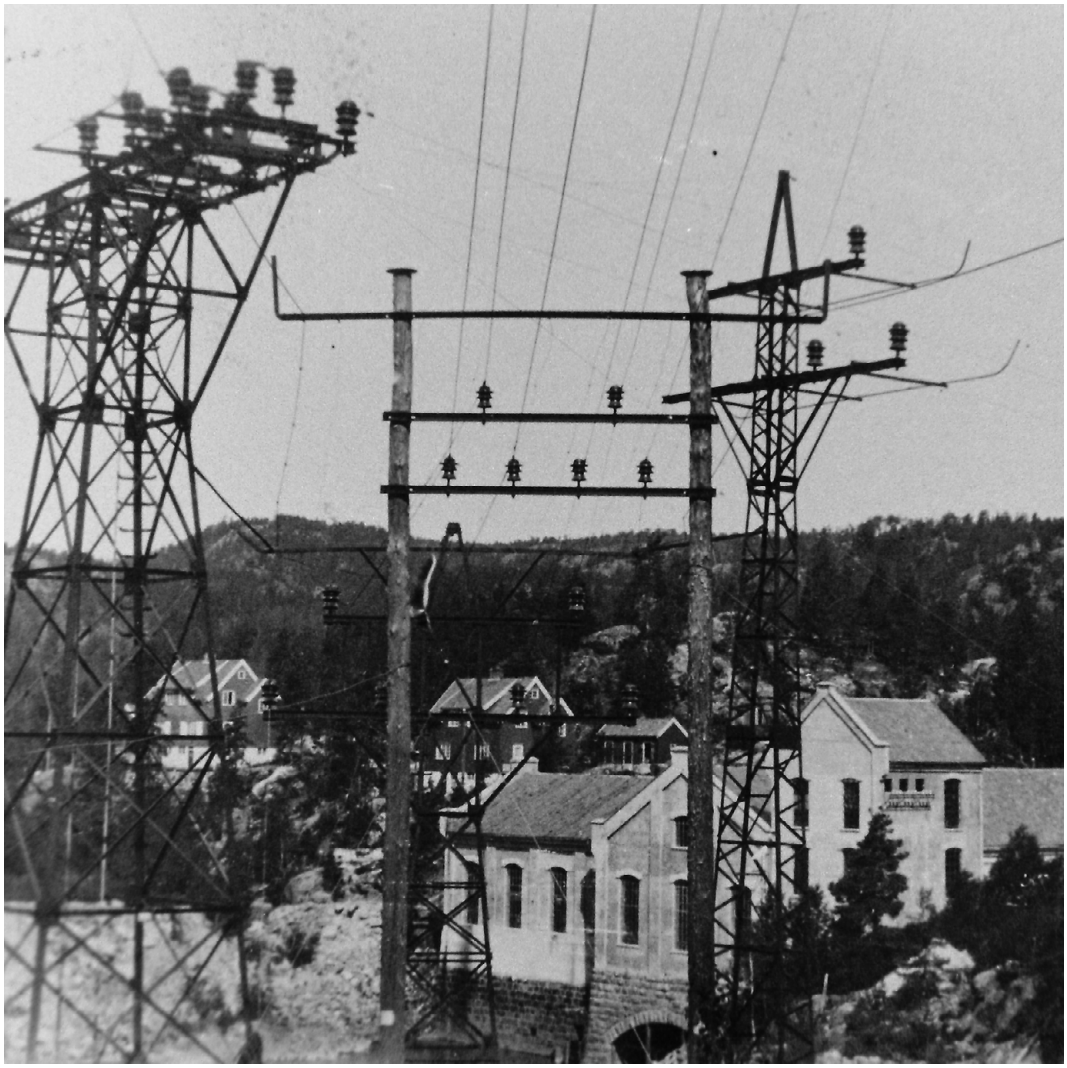


Fig. 003.
Vennesla Historielag:
Kringsjå Kraftstasjon

01.07 STRENGTH OF THE CURRENT

HYDRO POWER IN NORWAY

Vannkraftverk - a hydropower plant - is a term for a facility that utilises water for the production of electrical energy. Steep waterfalls leading to fjords and lowland areas, combined with abundant precipitation, especially along the coast, have created ideal conditions for building hydropower plants in Norway. (snl, 2025)

In 1899, the authorities in Kristiansand allowed one of the first Norwegian hydropower plants to be built, soon to be known as Kringsjå Kraftstasjon.

Closed down many decades later, what remains of this historic society today, and what does the future hold for it?

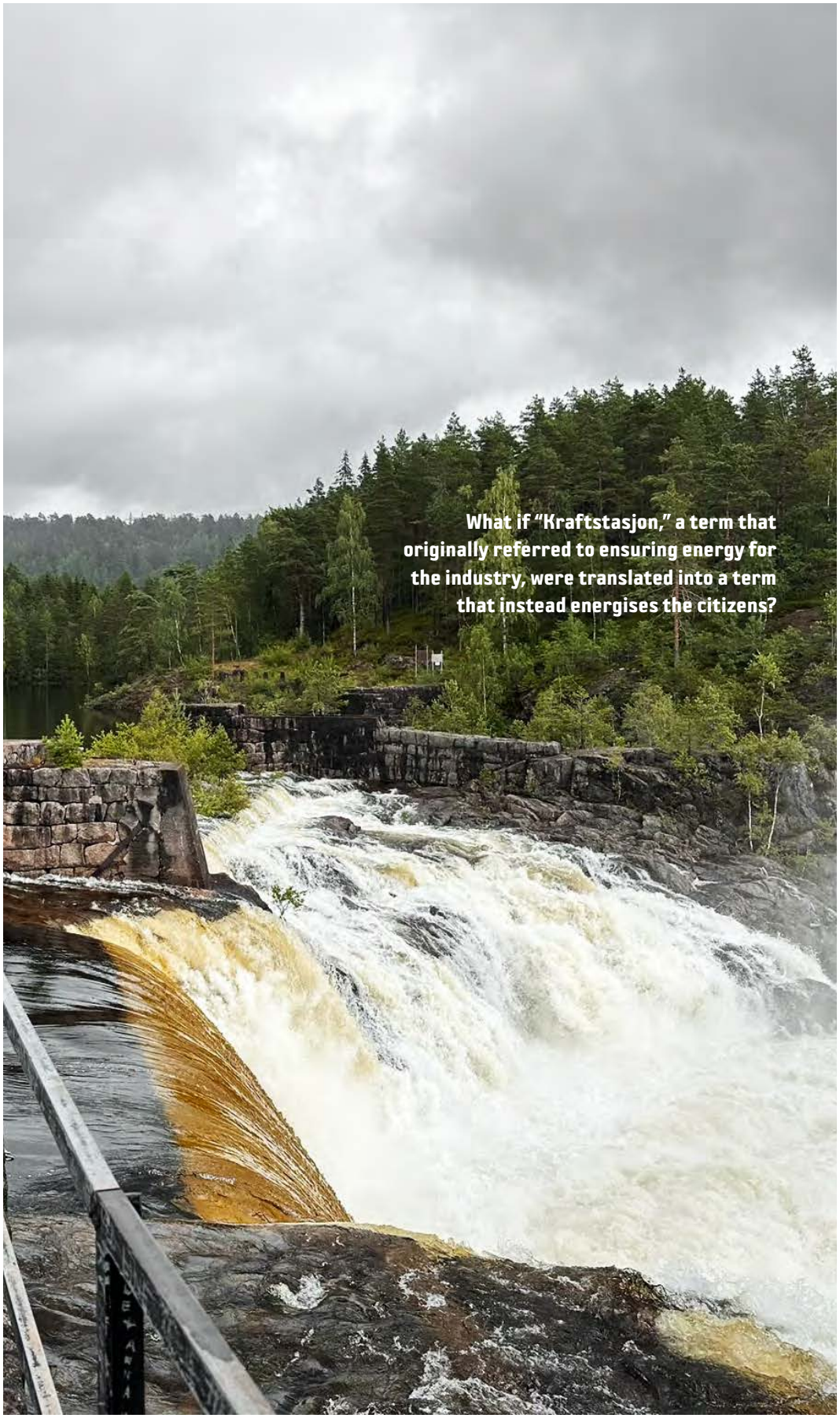


Fig. 004.
Own image:
Otra fall

01.08 ARCHITECTURAL COMPETITION

AN IMAGINED COMPETITION FROM VENNESLA MUNICIPALITY

'Reviving the Current' is a project that unfolds based on an imagined architectural competition lead be Vennesla municipality.

Norway has a long tradition of having to adapt their buildings to a topograhically demanding terrain. In the course of the past couple of years a number of small but noteworthy architectural projects along Norwegian roads - also described as "enhancement sites" - have received national and international attention. (Berre, n.d.)

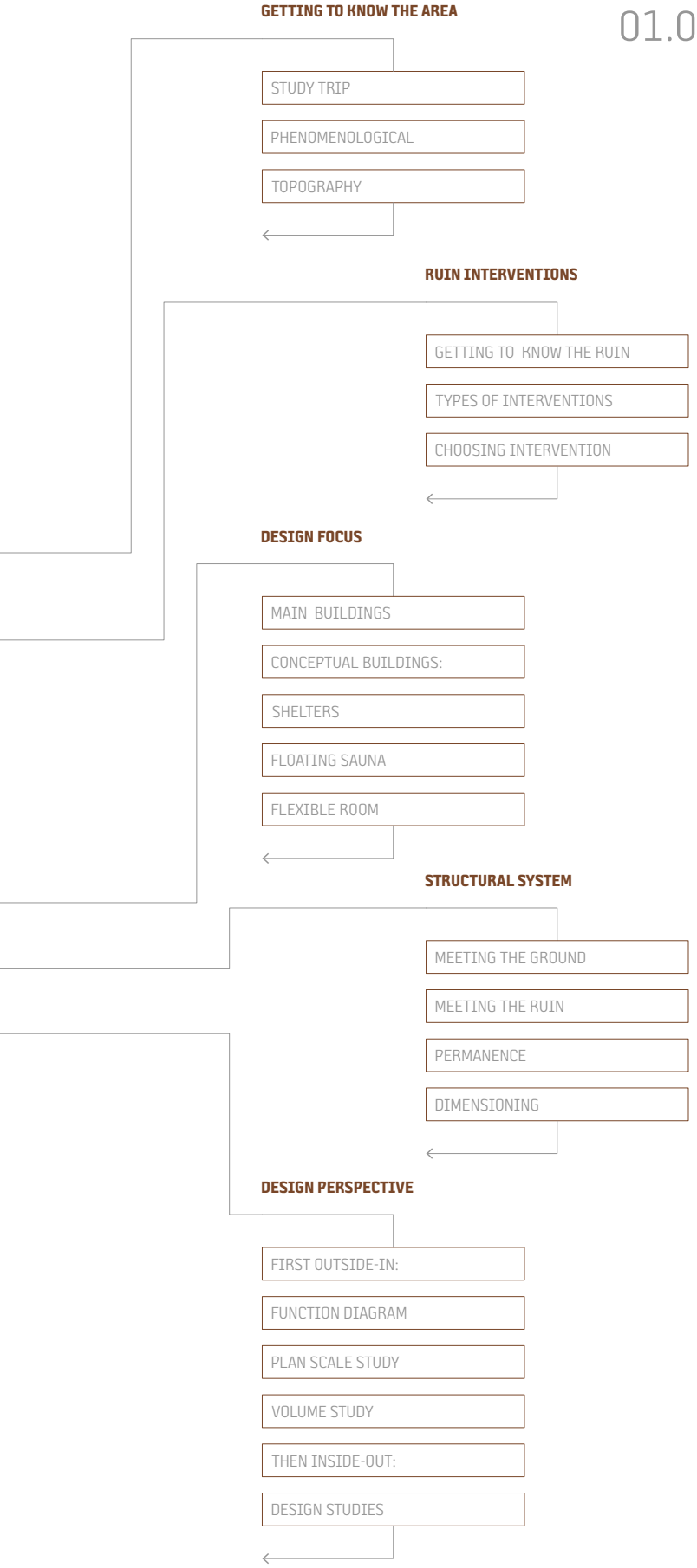
This architectural typology includes functions such as observation platforms, rest areas, campfire grounds and information points. What these projects have in common is the intention of realising a potential of a site that for long has been there, but few has discovered and utilised, thus giving the location a name or rediscovering a historic character. The challenge for the architects lies in seeing the potential, reading the context and strengthening the location's existing signature statement. (Berre, n.d.)

This thesis is based on the imagined architectural competition that revolves around the future visions for the historic remains of one of the first hydropower plants in Norway:

Kringsjå Kraftstasjon.

Fig. 005.
Poster: Competition

Fig. 006.
Diagram:
Approach



01.09 APPROACH

METHODS USED

The following thesis has been developed using the approach illustrated in fig. 006, which is based on the Integrated Design Process (Hansen and Knudstrup, 2005). While the five main project stages are highlighted on the left, the remainder of the figure illustrates the various loops of activities, literature, and tools that the project has engaged with in order to make informed decisions for the project. It is important to note that each of the five project stages includes a feedback loop, indicating the iterative nature of the model.

The initial motivation behind the project arose from unintentionally stumbling across the site. However, the key problems and motivational factors that emerged later are grounded in literature concerning topics such as ruin interventions, thermalism, and local history. Project planning and structuring have been key focuses from the outset. This has been conducted through intensive use of detailed Excel sheets outlining deadlines, task distribution, and report overviews. While the model presents a wide range of tools, the development of the graphic material for Kringsjå Kraftstasjon has relied on a streamlined interplay between three main software programs: Rhino 3D, Adobe Illustrator, and D5 Render – all integrated through Adobe InDesign.

On the right side of the model, five sub-loops have been added to highlight the hierarchy and chronology specific to this design process. One example is the early-stage decision to design the secondary building volumes – including the cabins, the Maskinmester cabin, and the floating sauna – based on the design of the main volume: the power plant transformation. This decision was partly influenced by the overall proportions and scope of the project.

01.10 PROBLEM STATEMENT

REVIVING THE CURRENT

Using **interventions** with locally sourced **materials**, how do we design an architectural **landmark** on **historic** rugged ground of **Kringsjå Kraftstasjon** with a **hybrid** range of **keyless** facilities revolving around Norwegian **outdoor life**, **thermal baths**, **mental wellbeing** and references of the **industrial** past?

INTERVENTIONS: New building structures implementing new functions and facilities.

MATERIALS: Existing material on site as well as locally sources materials from surrounding woods and stone quarries.

LANDMARK: Attractive destination for locals and visiting hikers with historical, cultural and aesthetic significance. Serving as a symbol of place and time.

HISTORIC: The area and structures have previously acted as an important function for both the local and national society.

HYBRID: Implementing functions ensuring efficient utilisation and securing usage throughout the year as well as creating a form of flexibility for needed purposes and events.

KEYLESS: Creating approachable facilities for the user, based on trust where anyone can enter and use them.

OUTDOOR LIFE: Enjoying and using the nearby nature as a mental and physical break from everyday life.

THERMAL BATHS: Functions like thermal baths, saunas and steam rooms creating a holistic function where user through thermal microstress will experience an improved overall wellbeing

MENTAL HEALTH: State of health based on the level of stress in the body influencing the overall wellbeing of a person.

REFERENCES: Either directly highlighting the physical remains of the industrial past of the area or referencing previous functions by implementing these in a symbolic manner.

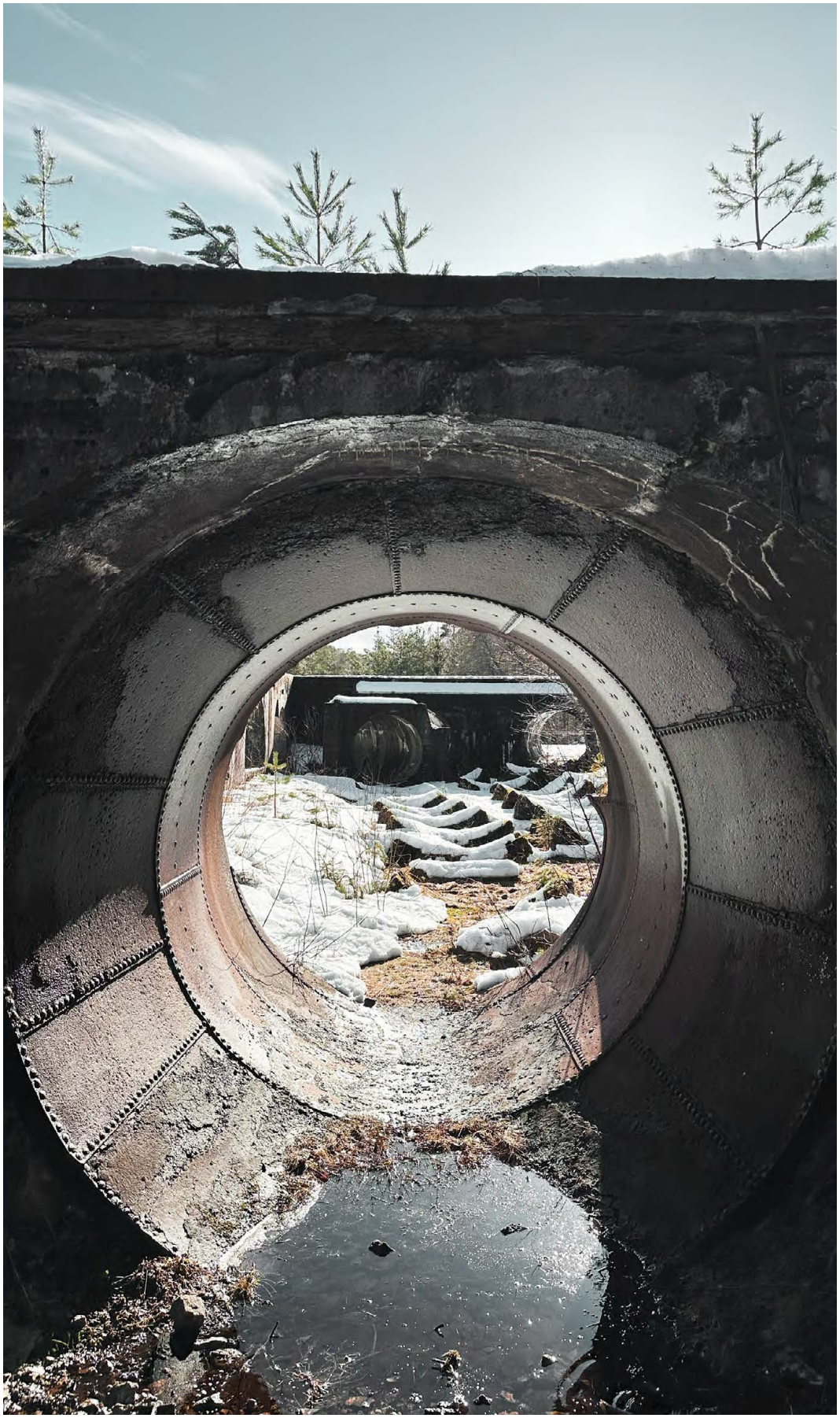


Fig. 007.
Own image:
Turbine shaft

CONTEXT

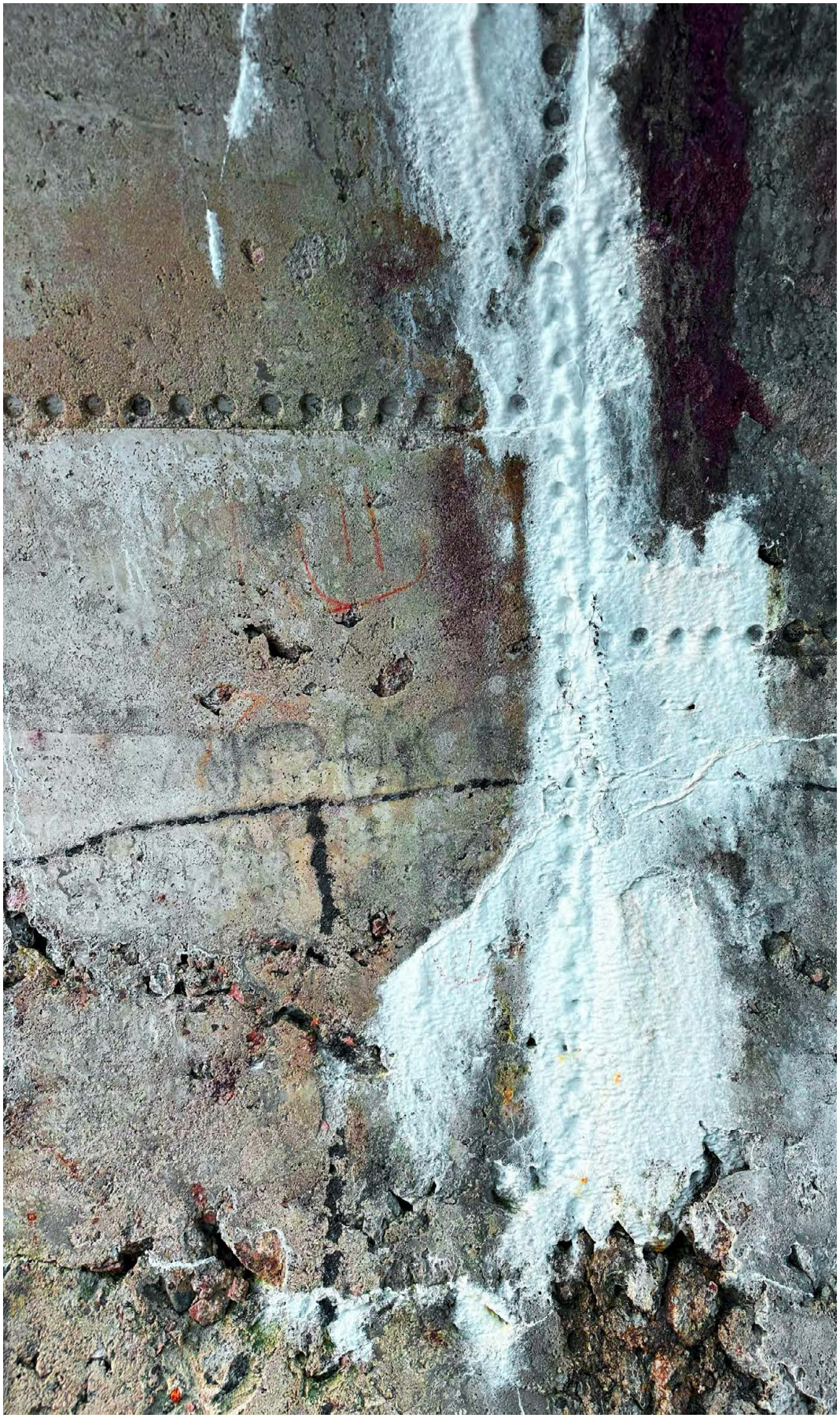


Fig. 008.
Own image:
Close up ruin

02.00 VENNESLA

UNDERSTANDING THE CONTEXT

To create a relevant and site-specific design for Kringsjå Kraftstasjon, it is important to understand the context it belongs to. This includes Vennesla's location, its relationship to outdoor life, its industrial history, and its ongoing development. These themes form the foundation for the design process and help ensure that any new additions support both the site, the history and the people who use it.

02.01 ARRIVAL

FROM AALBORG TO VENNESLA

The municipality of Vennesla, located in the southernmost region of Norway in Agder, was established in 1861 and is situated just a 30-minute drive north of Kristiansand. It is well-connected by public transport, including the "Sørlandsbane" railway, which links Vennesla directly to larger cities such as Stavanger, Kristiansand, and Oslo. The area is also accessible from Sweden and Denmark through a combination of buses, trains, and ferries (fig. 009).

Vennesla defines itself as a green, urban area, with notable attractions like the Otra River, often referred to as the "heart of Vennesla," and scenic hiking routes in the surrounding nature, which will be further explored in "Local Trails" (page 81). Protecting the local environment is a key priority for the municipality, and this consideration is essential when introducing new architectural volumes on site. Recent architectural landmarks, such as the Vennesla library and the new church, highlight the community's demand for modern architecture that serves as a catalyst for cultural development in the area (VisitVennesla, 2020).

With its culture- and nature attractions as well as connection to and from other areas, Vennesla is the perfect destination for outdoor life-users. These should be further encouraged to have Vennesla as a destination on their trips, but it is equally important to remember the locals and include them in the further design process.

Fig. 009.
Mapping:
Arrival

02.02 VENNESLA HISTORY

THE MUNICIPALITY AND SURROUNDINGS

Vennesla takes great pride in its history, which is clearly reflected in its coat of arms –featuring the forest, the Otra River, and the area's industrial heritage.
With over 100 years of experience in hydropower, the municipality has long benefited from the Otra River. Flowing directly through Vennesla, the river played a key role in the town's industrial development by transporting timber and giving power to hydropower plants like Kringsjå Kraftstasjon (VisitVennesla, 2020b).

A central part of Vennesla's industrial history is Hunsfos, a paper factory that worked for more than 125 years. Today, the site has been transformed into a business park with cultural venues and attractions, illustrating the municipality's commitment to reusing and reviving current historic structures (VisitVennesla, 2020b).

Transformations like Hunsfos reflect Vennesla's ambition to preserve its industrial legacy while adapting it for new purposes and future needs.

To fully understand the industrial narrative of Kringsjå Kraftstasjon, the site requires multiple in-depth analyses. Studying Hunsfos as a reference could also support the design process by offering insights into how the municipality has previously approached the transformation of historic industrial sites. This will be further investigated in "Hunsfos Transformation" (page 24).

Fig. 010.
Diagram:
Coat of arms

Fig. 011.
Vest Agder Museet:
Kringsjå concert

02.03 DEVELOPING VENNESLA

INDUSTRIAL HERITAGE AND NATURAL BEAUTY

Vennesla has one of the highest population growth rates in Agder, with over 15.000 residents and an expected increase to more than 16.000 by 2030 (Statistisk sentralbyrå, 2024).

Vennesla is undergoing significant development while prioritising sustainability. Through initiatives like "The Urban Growth Agreement," funding has been provided to municipalities like Vennesla to support environmentally friendly growth without increasing road traffic. This includes improving infrastructure for walking, biking, and public transport, as well as promoting sustainable building methods. (Agder fylkeskommune, 2024)

New architectural landmarks like the Vennesla library and new church reflect a demand for modern architecture as cultural catalysts (VisitVennesla, 2020).

A key cultural initiative is hosting concerts on the Kringsjå concrete plateau. For example, a concert is planned for August 24th this year, aiming to attract people from across the county. The event aligns with the "Year of Outdoor Life" celebration and is designed as a free, family-friendly gathering. These events shape design driver for the area: future buildings must not interfere with the community's ability to gather there.

The municipality encourages hybrid buildings to optimise usage and reduce the need for more construction. Thus, flexible spaces and functions that support year-round use should be implemented. (Vennesla Kommune, 2022)

Vennesla's industrial heritage, natural beauty, transport access, and development funding make it an attractive destination for tourists and residents alike. However, preserving the municipality's existing qualities is essential. By prioritising local community and history, future projects like Kringsjå Kraftstasjon can support development while benefiting both municipality and residents in new and innovative ways.

02.04 HUNSFOS TRANSFORMATION

CASE OF HUNSFOS

Hunsfos, a former paper factory located in Vennesla, was founded in 1886. After 125 years, it was shut down, and 120 people lost their jobs. In 2012, a group of local investors and entrepreneurs bought the factory and began transforming the old industrial area into a modern business district. (Hunsfos, 2024)

The transformation of the building is described as follows:

"Along the way, they have preserved the history, the buildings, and also the culture of the place, which has played such an important role in the development of the village." (Hunsfos, 2024)

As the quote implies, this case should be examined to understand how they worked with a historic building in Vennesla and how it was incorporated into the transformation. It is important to note that this project dealt with existing structures which were almost whole, and the exterior of the building has used the concept of "Aemulatio" mentioned in "Ruin interventions" (page 56) and is therefore pretty much a restoration of the original volume. Therefore, the key takeaway from this case is conceptual.

"The charm lies in the old factory premises! We have simply given them a loving hand and filled them with modern amenities and comfort." (Hunsfos, 2024)

This concept captures how Kringsjå should be worked with as well. The pictures of Hunsfos illustrates what design principles are used to strengthen the narrative of the building.

01 - 02: New elements are added to frame the existing.

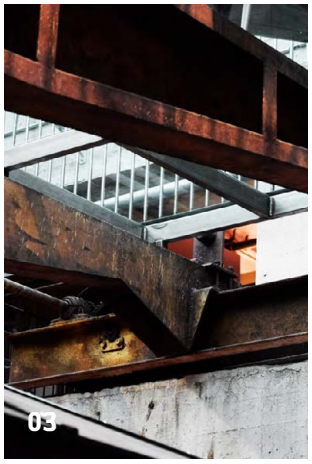
03 - 04: The existing structure is utilised and integrated in new volumes.

05 - 08: Industrial elements are enhanced and highlighted with contrasting elements to tell a story about the building.

Hunsfos is a project by locals to locals and therefore the history of the building is a little more subtle, since locals already know the story. Since Kringsjå Kraftstasjon is a project for both locals and visitors, it is important that the narrative is clear for everyone and should be further emphasised in this project.

(VisitNorway, 2025)
(DNT, 2025)

The design principles from Hunsfos, like contrasting elements to enhance the history and utilising the existing structure, showed simple principles of how a historic building in Vennesla could be transformed, these should be remembered when working with designing the buildings at Kringsjå.



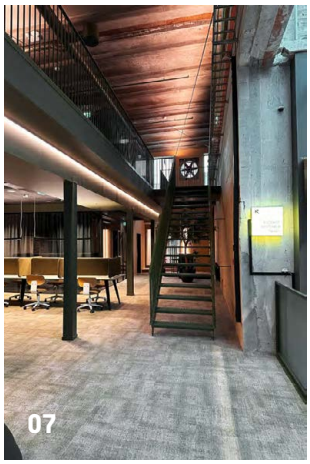


Fig. 012.
Own images:
Hunsfos

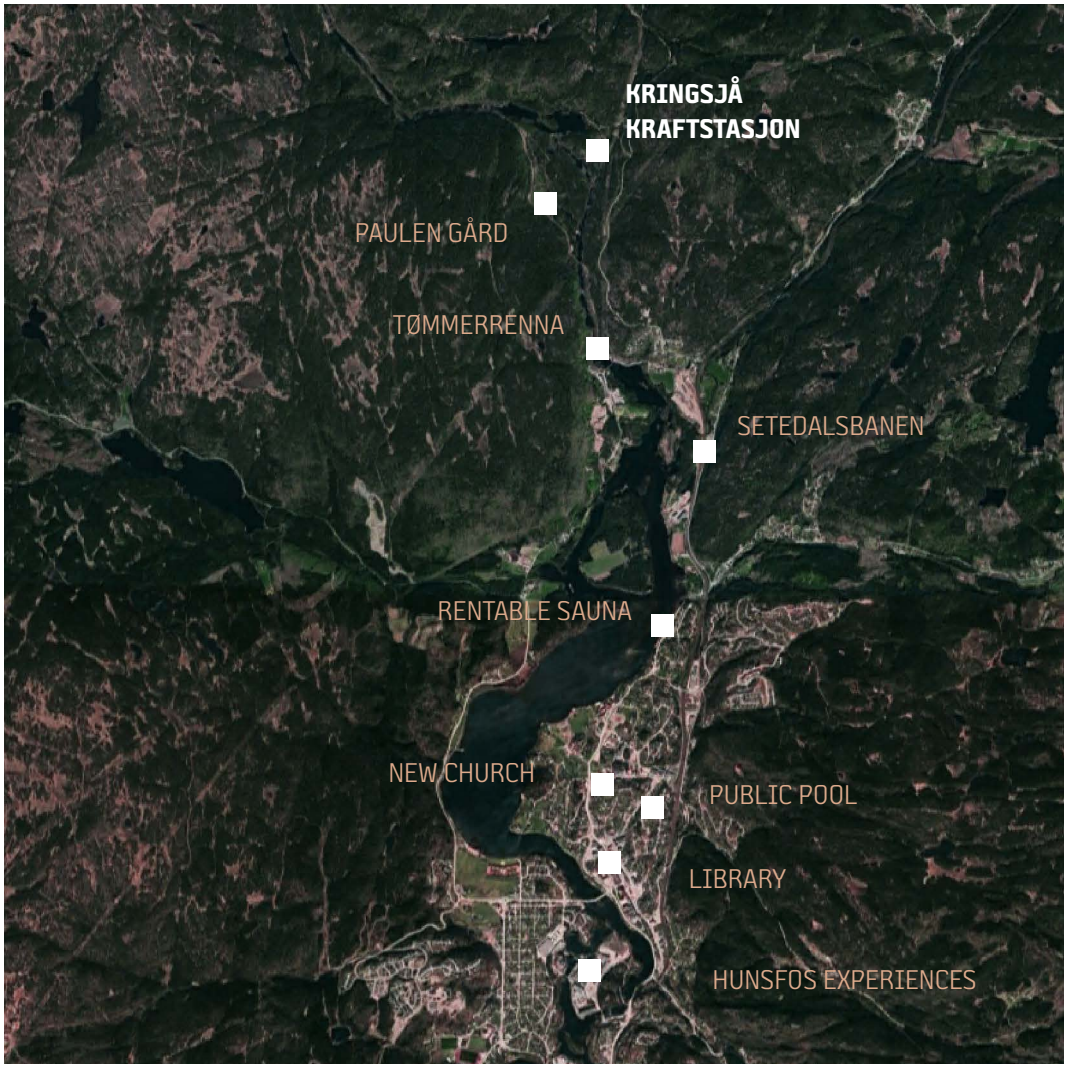


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Fig. 013.
Mapping:
Attractions

02.05 FUNCTIONS AND ATTRACTIONS

ENERGISING VENNESLA

Fig. 013 illustrates the current primary frunctions and attractions in Vennesla municipality and its surroundings. Besides the large range of hikes and adventures, the main cultural attractions consists of the Tømmerrenna, Vennesla Library and Norways oldest museum railway.

While the Setesdal railway annually carries almost 30.000 passengers, the Tømmerrenna, which passes by Kringsjå Kraftstasjon, is annualy visited by 60.000 tourists making is one of Agder's most popular hikes (Klaussen, 2024). As illustrated, the transformation of the Kraftstajon will take place in close proximity to already established attractions.

Having dived into the attractions in the Agder region, the spa and wellness categori is one that is not highly present.
One example though, as part of a current trend in Norway (see “Thermalist Architecture”, page 74), is a rentable sauna that is located near Vennesla beach.

The municipality wants to make northern Vennesla an adapted hiking area, and according to Petter Omdal, head of the Tømmerrennas Venner foundation, getting a national hiking trail in Agder has been a wish. The article although, also mentions the fact that most tourist propably will not walk the eight kilometer timber chute more than once, meaning that most stays are short term. David Fjågesund of the landscape and architecture company Feste AS also adds to the article in Vennesla Tidende that “a new world opened up” when the timber chute passed by Kringsjå Kraftstasjon, and that this area can be facilitated so that more people can experience it. Fjågesund sees potential in creating experiences that cover not noly the busy summer months but also the cold seasons. (Iveland, 2024).

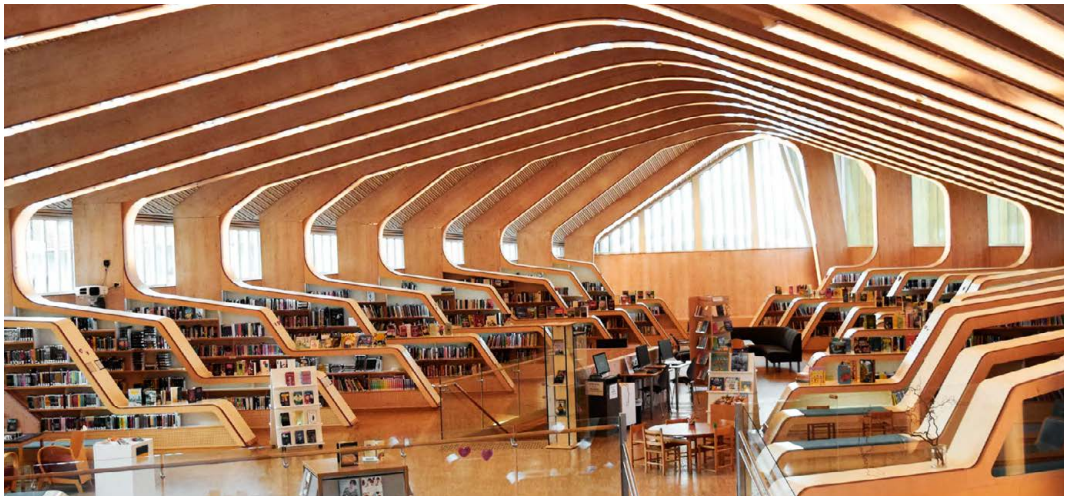


Fig. 014.
Own image:
Vennesla library

Fig. 015.
Facebook:
Vennesla sauna

02.06 3 PROJECT SCALES

VARYING PROJECT PERSPECTIVES

Before diving into the analysis of Kringsjå Kraftstasjon, this section clarifies the three scales at which the project operates.

LARGE SCALE: **SOCIETY**

This perspective encompasses the entire Kringsjå society, including its historic houses and pathways (further elaborated in "Historic society at Kringsjå" (page 47)). The large scale applies, for instance, to site arrival strategies, historical societal analysis, and when planning the paths between functions.

MID SCALE: **RUINS**

This perspective focuses on the ruins spread across the area and at the heart of the society. The mid-scale applies, for example, to the analysis of the historic hydropower plant, considerations on how to meet the ground and ruin, and the hybridity of the future volumes.

SMALL SCALE: **CLOSE-UP**

This perspective examines the detailed characteristics of the main ruin, such as patina, irregularity, and structural integrity. The small scale applies to in-depth ruin analysis, structural connections and materiality considerations.

Fig. 016.
Vennesla Historielag: Kringsjå birdseye

Fig. 017.
Å Energi: Kringsjå today

Fig. 018.
Own image: Ruin patina

Fig. 019.
Own image:
Stallen ruin

Fig. 020.
Own image:
Finding the entry

02.07 EXPERIENCING HISTORY

PHENOMENOLOGICAL INVESTIGATIONS ON SITE

In order to gain a deeper understanding of Kringsjå Kraftstasjon and its surrounding context, a three-day study trip was conducted. The purpose of the visit was to experience the site first-hand, allowing for a spatial, material, and atmospheric understanding of both the ruins, their connections and its landscape.

The study group arrived at the site via two different routes which will be further investigated in "Accessing the site" (page 32). This approach allowed for a comparative experience of the site's arrival sequences, highlighting how different paths influence the perception of the landscape, terrain, and the ruin's presence within it.

Throughout the trip, time was dedicated to walking, documenting, sketching, and discussing. Particular attention was paid to the remaining structures, the topography, and the relationship between built and natural elements. Microclimatic conditions, atmospheres, and soundscapes were also noted to understand how these aspects affect the experience of the site across time.

This study trip formed a key foundation for later design decisions, anchoring the project in physical experience and critical site observation, making it possible for the study group to act as the user.

Fig. 021.
Own images:
Climbing the ruin

03.00 ACCESSING THE SITE

THE TWO PATHS TO KRINGSJÅ KRAFTSTASJON

The path to the site and the experiences along the way influence how the destination is perceived. With Kringsjå Kraftstasjon as the destination, pedestrians have two main paths to choose from: the Tømmerrenna hike (red path), and the gravel road (white path) in the eastern mountains, which starts in Grovane, a small town north of Vennesla.

The two paths are highligted on fig. 023, on which the row of numbers refer to the location of each image presented in the following serial visions.

Before diving into the atmospheric experience of the path itself, this following section describes the history behind the Tømmerrenna.

Fig. 022.
Own image:
Tømmerrenna

1 : 10.000

Fig. 023.
Mapping:
Accessing the site

Fig. 024.
Own image:
Tømmerrenna

03.01 TØMMERRENNA

VENNESLAS HISTORIC TIMBER CHUTE

In the rugged terrain of Vennesla, transporting timber from the forest to the manufacturer is a difficult task, and one solution was using water as the driver. The river, Otra, were used accordingly, but when the Steinfossen hydro plant in Vennesla drained the waterflow for almost a year, a four-kilometer timber chute were constructed for timber transport.

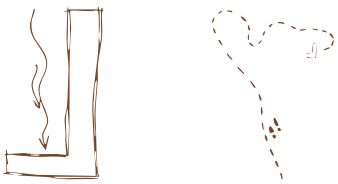
Being one of the longest in northern Europe, the Tømmerrenna allowed timber to flow directly through the forest above bridges and through tunnels.

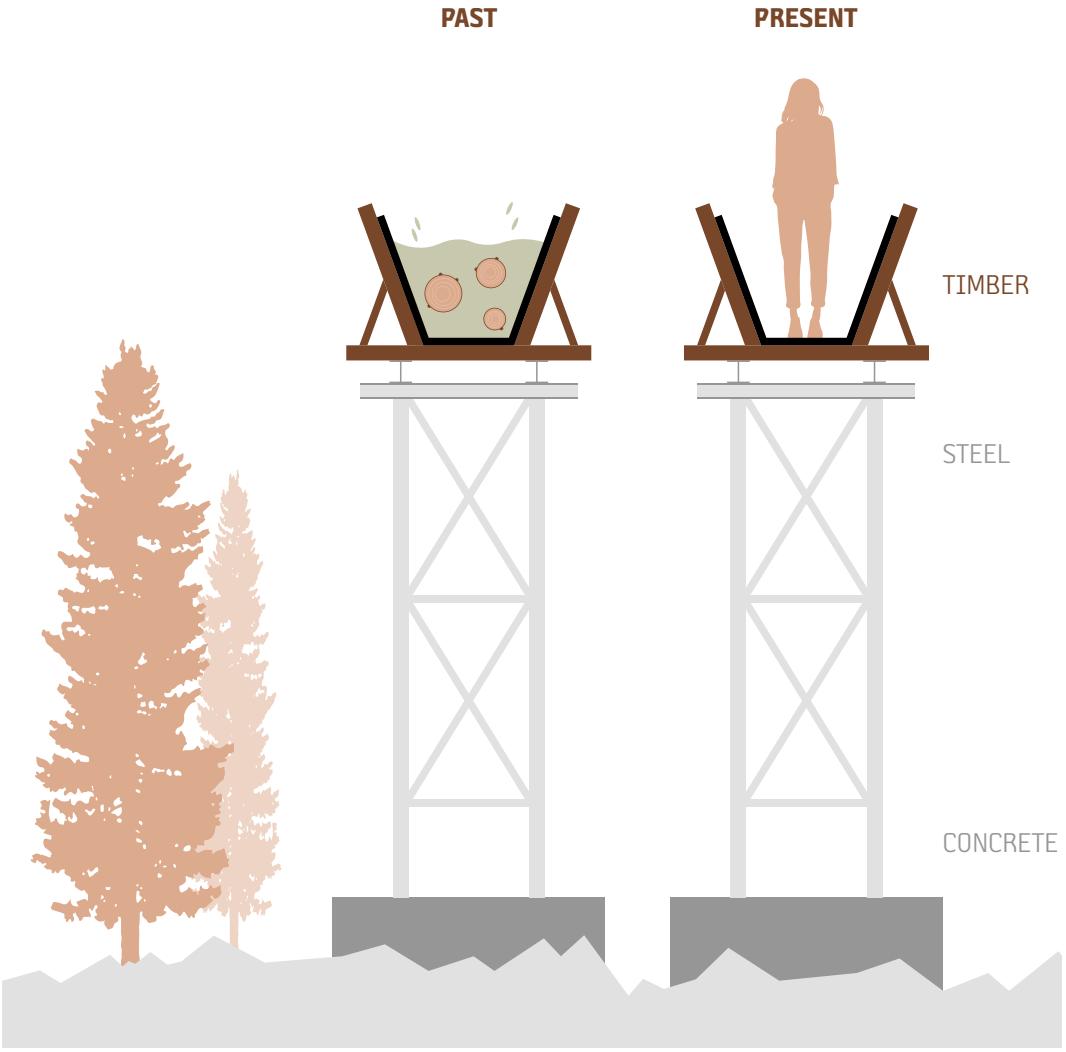
Having been operated in two decades, the timber chute remains today as a cultural landmark where thousands of hikers set foot on the now dried wooden chute. While the walk above and beyond the terrain is a unique experience itself, the side-trips

along the chute also features the Setedal museum railway, the historic Paulen Gård campground, and the ruins of Kringsjå Kraftstasjon. (visitvennesla.no, 2025)

Using the Tømmerrenna in the design could be beneficial for the project. Both implementing the route into the arrival on site as well as using the concept and shape of the chute in the detailing process of the structures. Nudging to the historic industrial past by implementing a chute in the new volume could result in a synergi between past, present and future.

The following serial vision is based on a phenomenological study through the Tømmerrenna path. These observations were made during a study trip to Kringsjå Kraftstasjon in February 2025. Back then, a layer of snow made the walk more challenging but not impossible. On the contrary, the subtle patches of snow along the path made the hike just as enjoyable as during the summer months, and forced the user to slow down the pace. The QR codes below link to live study trip recordings from February.





1 : 50

Fig. 025.
Diagram:
Tømmerrenna

03.03 JOURNEY ONE

PATH 01: TØMMERRENNA

01 The first encounter with the Tømmerrenna is a small, informative starting point by the historic railway of Setesdalsbanen. With a distant view of the opposite cliffside and waterfall, the path leads you a few meters into the terrain before it turns left and lets you step onto the timber chute. The layer of snow on the wooden bed is deeply frozen and easily walkable, and with a departure around noon, the sharp winter sun from the south saturates the surroundings and warms your back along the way north. In contrast to the turbulent Otra stream below, the surrounding forestscape remains completely static, with not a single breeze moving through the trees.

02 As the path leads you closer to the waterfall, the roaring of the Otra intensifies (QR sound recording), and you carefully continue through the timber chute, which through years of wear and tear, has gotten occasional cracks. Having set off in civilisation, the next right turn isolates you from everything man-made except the chute construction itself.

03 The railway bridge, crossing the river, becomes the next milestone on the path, referencing the industrial past of the area, and the roaring of the waterfall fades as you continue along calmer river streams.

04 While bending down and sneaking below the historic stone foundation of the bridge, the acoustics immediately change from the extroverted roar of the Otra to the introverted sounds of hollow wood echoing footsteps and drops of melted snow (QR sound recording).

05 Having passed the small tunnel, the environment becomes more enclosed by pine trees and snowy rock formations, and you spot the next milestone ahead: The first of two suspension bridges along the Tømmerrenna. Being more exposed to falling water than other parts of the wooden structure, this section of the chute has a reddish tone from newly replaced wood soaked in the melted snow, creating a clear contrast between new and old.

06 When standing at the beginning of the suspension bridge, the entire landscape opens up, and the corroded red steel pillars contrast sharply with the clarity of the icy water below.

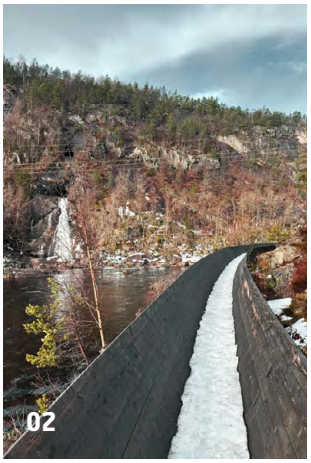
07 Close to one kilometer later, halfway through the hike, a sign for Kringsjå directs you off the chute and up onto the stone dam leading to the power plant.

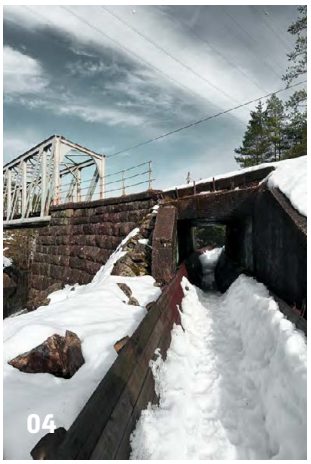
02

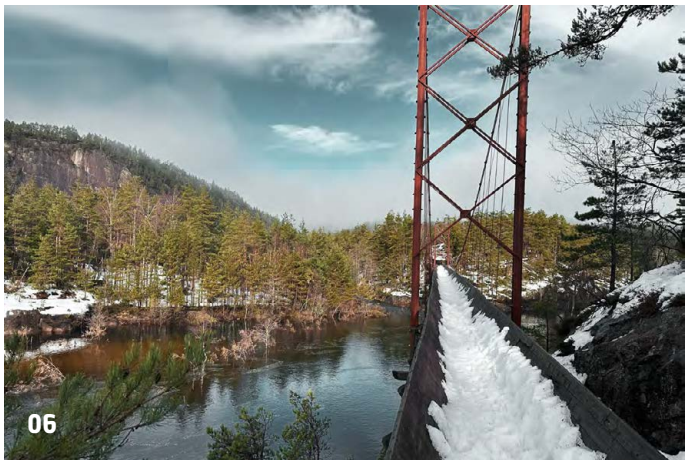
Fig. 026. QR Recording: First waterfall

04

Fig. 027. QR Recording: Tunnel







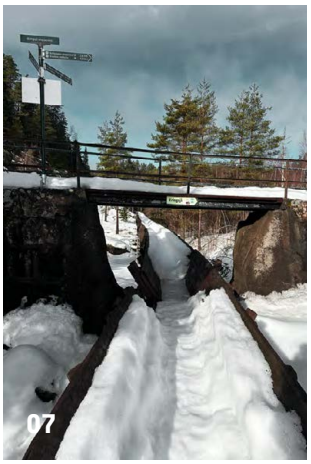


Fig. 028.
Own images:
Tømmerrenna

PATH 01: TØMMERRENNA (CONTINUED)

08 Continuing to balance on the rugged path of mossy stones and snow formations, you slowly approach Kringsjå lake, while occasional display boards with historical exhibitions begin to emerge (QR sound recording).

09 At the end of the dam, you walk by a viewing platform overlooking the largest man-made waterfall in the area, where the roaring of water crashing against the cliffs below is more intense than ever (QR sound recording). A steel staircase, partially hidden by snow, leads you through a small forest and up to the second suspension bridge on the journey.

10 Approaching the bridge that leads to the Kringsjå hill on the other side of the river, anticipation builds as you encounter signs of danger: Sudden rises in water levels and the general risk of walking among cliffs and abandoned industrial ruins. The bridge bounces beneath your feet as you cross, while the Otra river rushes below.

11 Safely back on solid ground, an icy road leads you further into the forest, with a constant view of the large, deeply frozen Kringsjå lake on the left.

12 Anticipation continues to build as the forest path narrows, and while the roar of the waterfall fades behind you, the loud crunching of snow underfoot is replaced by the subtle sound of footsteps on soft, damp spruce needles.

13 Having now encountered the actual Kringsjå area, the path meets the end of the gravel road coming from the east. In contrast to the enclosed forest, you are once again exposed to the sun in this open area, but no sight of the Kraftstasjon itself is yet visible.

14 Continuing the right turn, the sunken path between rocky roadsides leads you uphill towards your destination.

15 On top of the hill, framed by snowy rock formations, fragile birch trees, and the rugged mountainside behind, Kringsjå Kraftstasjon appears on a plateau of deep snow, marking the end of the journey (QR sound recording).

The sequential journey through the rugged, snowy landscape leading to Kringsjå Kraftstasjon shapes the perception of the site long before arrival. The interplay between the dynamic roar of the Otra river, the quiet stillness of the forest, and the shifting spatial qualities of the timber chute offers a sensory-rich experience that heightens anticipation. This layered, immersive approach to the site must inform the architectural design process.

08

Fig. 029. QR Recording: Snow steps

09

Fig. 030. QR Recording: Main waterfall

15

Fig. 031. QR Recording: Arrival


08


09


10


11


12


13


14


15

03.04 JOURNEY TWO

PATH 02: MAIN GRAVEL ROAD

This next serial vision is based on a phenomenological study through the main gravel road in the eastern mountains, which, besides pedestrians, accommodates semi-large vehicles, enabling the delivery of goods and providing access for visitors who are unable to hike. These observations were made during sunset and misty evening hours, which made the search for the power plant even more intense and atmospheric.

01 Starting in the small town of Grovane, north of Vennesla, a winding and vacant gravel road leads you uphill through rocky terrain, with patches of snow and fragile birch trees.

02 As the sun begins to set, a subtle mist rises above the forest, and the path leads you high enough to spot the mountains surrounding you.

03 Framed by two pine trees and partially hidden by the mist, you suddenly pinpoint the waterfall from yesterday's Tømmerenna hike, cascading far away in the distance. While there is still no sign of Kringsjå Kraftstasjon, this sight makes you aware that it can't be far.

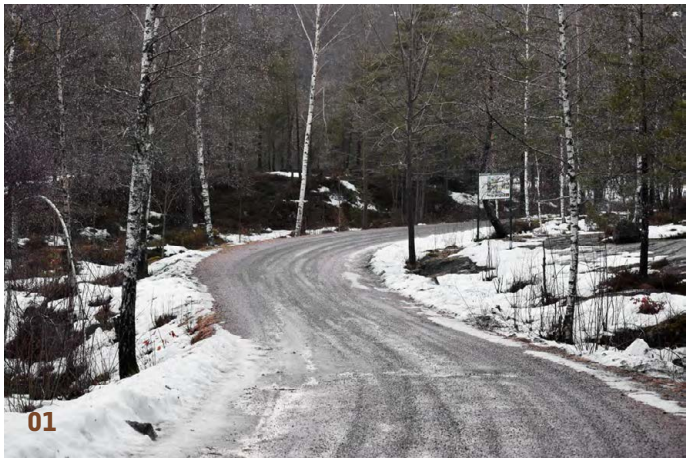
04 Although most of the surroundings consist of untouched, raw nature, many signs of human presence appear along the path, such as powerline towers silently sending electricity to the town – just as they have done since the construction of Kringsjå Kraftstasjon.

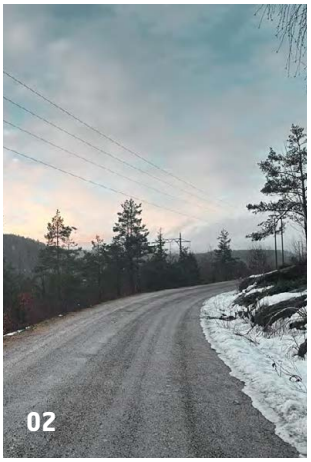
05 One kilometer down the path, the first signs of the Kraftstasjon appear behind a dense layer of pine trees, heightening your anticipation and making you wonder how to actually reach it.

06 Along the final steps downhill on a frozen path, you cross a small bridge where you immediately sense the loudness of the roaring water streams below. This leads you to the road from yesterday, where you know that Kringsjå is right around the corner.

07 Just like the experience the day before, Kringsjå Kraftstasjon finally appears on a plateau of deep snow, marking the end of the journey. Where the first meeting was characterised by sunlight, blue skies, and clarity throughout the valley, this meeting had more of a marvelous and melancholic feel to it, now that the frozen and seemingly neglected ruins were portrayed amongst misty, dark trees with no sign of life.

The dramatic approach to Kringsjå Kraftstasjon shapes how the site should be reimagined architecturally. The winding journey through raw nature, past silent references, and the final descent into the concrete plateau creates a profound sense of arrival. It must be integrated into the design process how to honor both of these pilgrimage-like experiences and how to design spaces that acknowledge both the site's history and its untamed environment. The path itself becomes part of the architecture and a further journey throughout Kringsjå should be investigated.





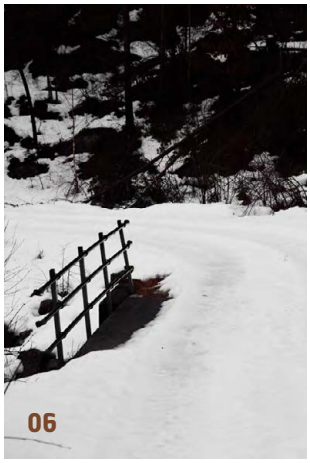


Fig. 032.
Own imagse:
Main gravel road

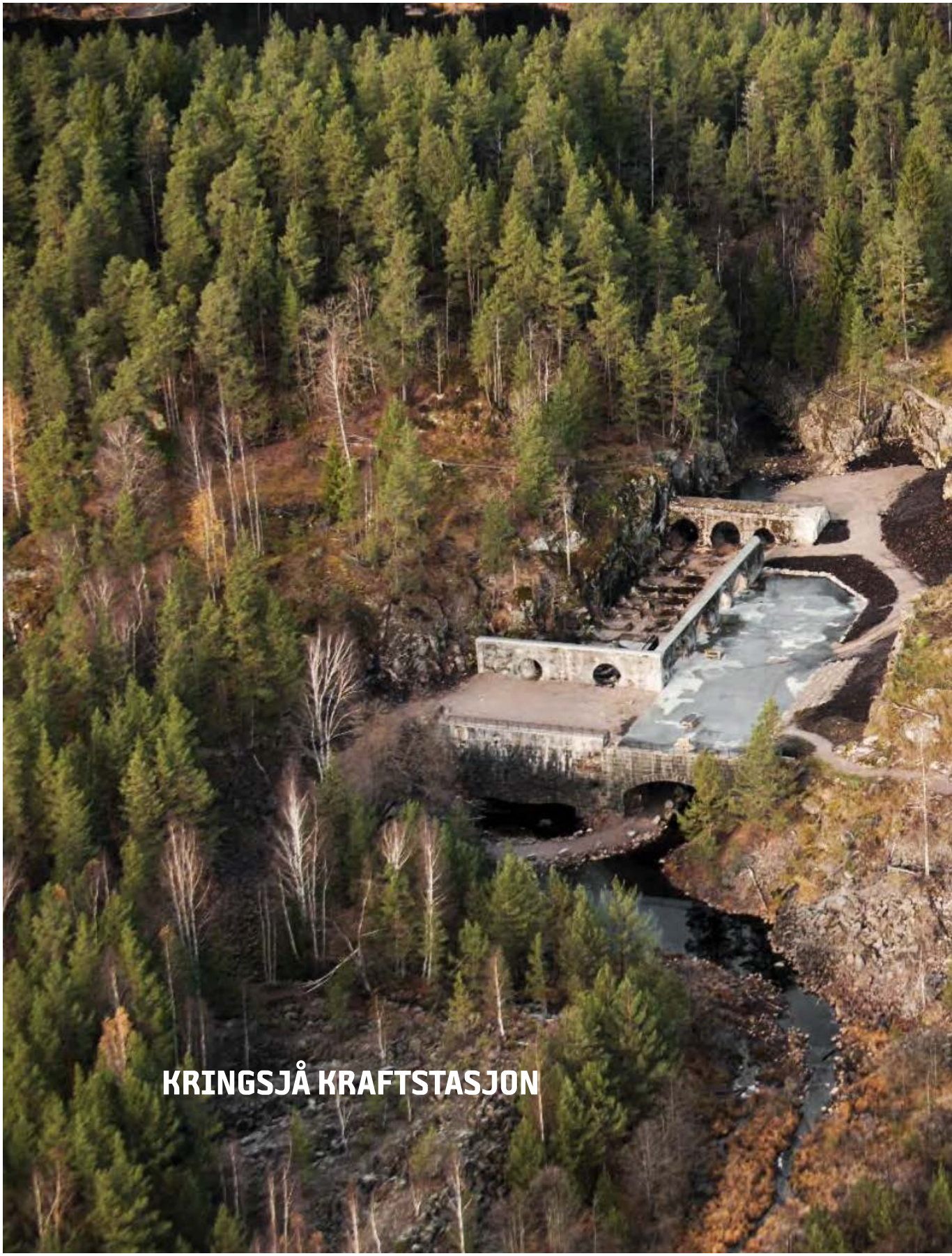

KRINGSJÅ KRAFTSTASJON

Fig. 033:
Å Energi:
Kringsjå Kraftstasjon ruins today

04.00 KRINGSJÅ KRAFTSTASJON

THE HISTORIC HYDRO POWER PLANT IN VENNESLA

"Hydropower, which now flows unused in remote valleys without any value, will undoubtedly in the future be harnessed for the operation of industrial plants, railways, lighting, and metal production."

– Letter to the government from Gunnar Knudsen in 1892 (Translated).

Having arrived on site, standing silently on a large concrete plateau in the middle of a mountainous landscape of roaring rivers, misty coniferous forests, and rugged rock formations, the ruin central to this project was once part of the hydroelectric power station Kringsjå Kraftstasjon.

As one of the first hydroelectric power stations in the region, Kringsjå Kraftstasjon operated from its completion in 1900 until its closure in 1957.

The original structure was built using materials such as a concrete foundation, brick walls, and steel frames supporting the pitched roof. Six individual turbines inside the building were powered by the flow of the Otra river, with the excess water channelled through the floor into a large waterway beneath the stone plateau, eventually returning to the river ("Hydro Power Plant", page 53).

Having looked into whether or not the ruins and the surrounding landscape are listed as worthy of preservation, it was clear that no part of the site is currently protected. However, as mentioned in "Developing Vennesla" (page 23) it is important for the municipality to protect the nature and history. How newly added interventions will be placed on site without ruining the existing landscape and structures will be further investigated in "Meeting the Ground" (page 122).

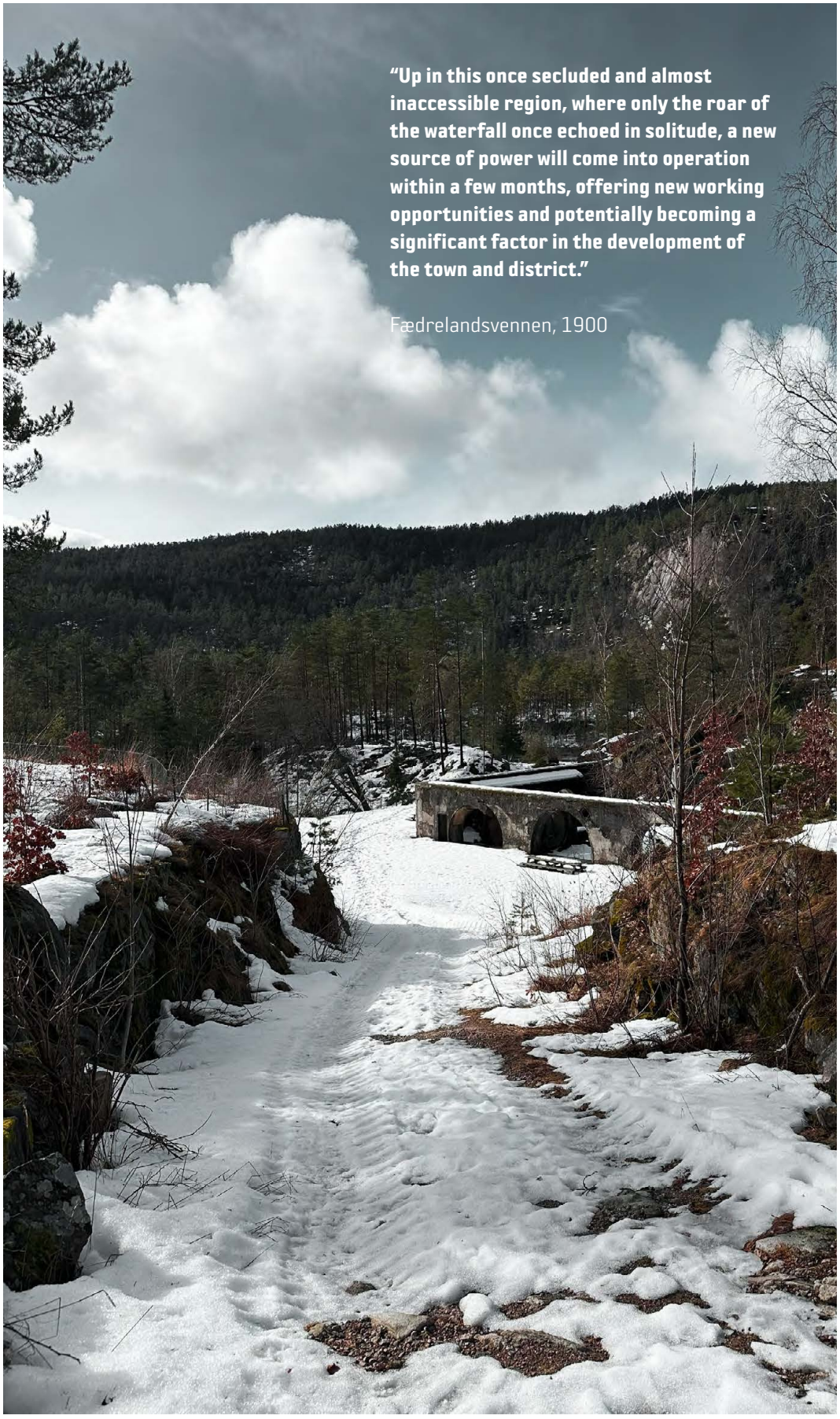


Fig. 034.
Own image:
Kringsjå arrival

04.01 KRINGSJÅ KRAFTSTASJON TIMELINE

FROM 1895 TO 2017

1895 The state bougt half of the waterfall rights at Paulenfossen.

1896 Three businessmen in Kristiansand bought the other half.

1899 Kristiansand allows for Kringsjå Kraftstasjon to be build.

1900 Construction completet by local contractors (150-200 men estimated).

1904 The first extension began.

1905 Regulation of the "byglandsfjord" entailed a larger and more stabil power supply.

1917 Kringsjå school was completed as the society grew.

1957 Kringsjå was closed because of the newer Steinsfossen Kraftwerk and all employees were transfered.

2010 After a drowning accident in 2010, the removal of the remains of the station was discussed.

2013 Fortunately, this did not happen, and in the fall of 2013, a major job securing the concrete deck and the remaining ruins with an amphitheater-style reinforcement occured.

2017 The Kulturminneplan (Cultural Heritage Plan) is enacted and municipality has designated the Kringsjå area as a suitable hiking area, rich in cultural heritage from, among other things, the power plant and the railway.

Fig. 035.
Vennesla Historielag: Kringsjå Kraftstasjon

Fig. 036.
Own image: Inside the ruin

04.02 HISTORIC SOCIETY AT KRINGSJÅ

THE COMMUNITY AND THE FUNCTIONS

After visiting the site, it was discovered that the remains of the society that lived at Kringsjå were more than just the power plant ruins. To communicate the history of this society, it is important to understand how they lived. Therefore, a map of the entire area was necessary to determine what was once there and what still remains (fig. 038). To supplement the map, narrations from the historical society were investigated.

The map shows more than 20 different original structures scattered across the site, highlighting the many functions present in the small community. The bold lines on the structures indicate which remains are still intact and where they are situated. As the mapping illustrates, the structures are spread across the site, telling a story of how each function had its own designated space. To use the facility or visit other inhabitants, one had to embark on a small journey.

"We always stopped to chat with the other residents, and we had a strong sense of community. We always cared about how everyone was doing, both young and old" (Aslaksen et al., 2010)

The space between each building acted as a public space with no programming. It was simply a place where they roamed, enjoyed nature and met up. Life happened just as much between the houses as it did in them.

This public space still exists and should be preserved to respect historic society and to create the same type of space for future users. The historic path of the site is not much different from the ones today. The only difference is the dotted line on the southern part of the site, and this creates a loop all around the site. Maintaining these trails will protect the landscape as well as the history of the site. Therefore, new volumes should not interrupt the flow of these trails, but rather enhance them.

In his project, Allmannajuvet, in Sauda, Norway, the architect Peter Zumthor looked into the historic trails of the Zink mine he was creating a museum for, and by understanding the trails, he understood the history better. He used the historic mining trail as a guideline for the new trail for visitors. Allmannajuvet as a case and its ability to work with both the Norwegian and a historical context will be further investigated later on page 50 and "Three structural cases" (page 124).

Kringsjå Kraftstasjon, a historically significant building, was also part of the larger Kringsjå community, which covered approximately 6.3 hectares.

The complex included:

FOUR HOUSES in a traditional Norwegian style, with stone foundations and white wooden facades. At its peak, the community housed 50–60 people, forming not just a workplace but an entire community of workers' families. The most prominent house, House 01, located next to the power station, was home to the chief engineer.

A SMALL SCHOOL, located within House 03, which operated every other week due to limited teacher availability.

COMMUNITY FACILITIES, such as a blacksmith's workshop, stables, and a carpenter's shop. The area facilitated hard physical labor, both for engineers working with the turbines and for craftsmen in the surrounding workshops.

INDUSTRIAL FACILITIES related to hydropower production, including a transformer house, a dam-hatch house, and intake and outtake tunnels.

Mapping the site reveals both the original and the remaining structures and functions. These should play a role in the further design process to strengthen the historic narrative of the site. Based on the Hunsfos case study on page 24, it is important that the historic references are clear and users from outside of Vennesla understand without extensive background knowledge.

Fig. 037.
Vennesla Historielag
Historic society

1 : 2.500

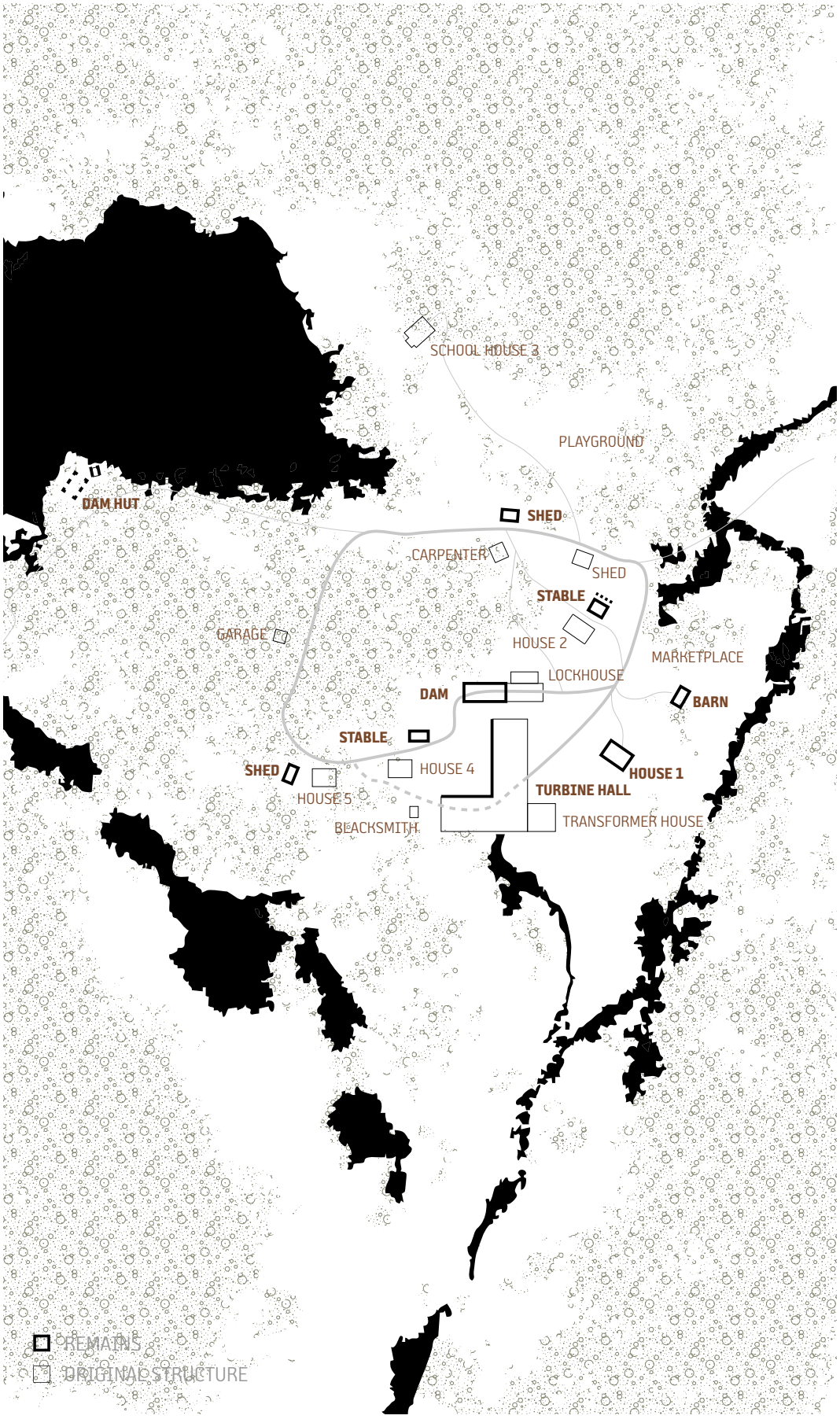


Fig. 038.
Mapping:
Historic society

04.03 ALLMANNAJUVET CASE

CASE OF ALLMANNAJUVET'S INDUSTRIAL PAST AND HISTORIC PATHS

The following section looks at the Allmannajuvet project as an inspiration to the Kringsjå Kraftstasjon design process. What makes Allmannajuvet most comparable to Kringsjå is the communication of the industrial historical past and the integration of wooden constructions on rugged ground.

The project enables an authentic experience of the countryside while sharing a meaningful story about the town's history and its connection to natural resources (Berre, n.d.).

Having been in operation as a zinc mine from 1881 and then through 18 years, three plain buildings today acts as an industrial museum in the small town on top of the Sauda-river in western Norway, acting as a tribute to mining workers. Commissioned in 2002 to design a tourist attraction, Peter Zumthor has carefully distributed facilities such as parking, a cafe and an exhibition between four individual building volumes, choosing which functions strengthen each other and which should be separated (Divisare, 2016).

With all building elements being prefabricated and then assembled on site, the few raw materials mimic the industrial heritage and are clearly exposed to the visitor. For example, it is no coincidence that the simple roof construction is finished with zinc panels

Like a book in a shelf, the interior plywood volume is standing on a deck locked in place by the structural timber frame. The black box also has a dark coating on the inside, mimicking the atmosphere of the mine, and only a few subtle windows let in natural light.

Situated on top of steep rock formations, constructing the foundation for the gallery and café, which required high precision, stands as one of the most challenging construction projects ever carried out in Norway (Visitnorway, n.d.). This structural perspective will be elaborated in "Meeting the ground" (page 122) that revolves around the meeting between building and ground.

While the mines were closed in 1899, the operation was a forerunner of subsequent hydroelectric development and industrialisation in Sauda in Ryfylke (Fjordnorway, n.d.).

What the Allmannajuvet and Kringsjå area has in common prior to transformation is the ruin leftovers in the mountains. Along the main gravel path leading to the Zinc mine, the visitor passes by remains of the historic washery and office building, and using this authentic path has been a significant design element for Zumthor:

"Now when you walk along it from building to building - that's when you start discovering. The new path on the forgotten trail act as a tie-in to the past in the form of movement and moments". (Zumthor and Lending, 2018)

The principle of letting visitors experience the site by walking on the original trails would be a strong tool in strengthening the narrative of Kringsjå Kraftstasjon and should be tested in the design process. Likewise, referencing the history through materials, the structural principles to build on a rugged terrain, and using the structure to narrate the site and its history should be further investigated in the design process.

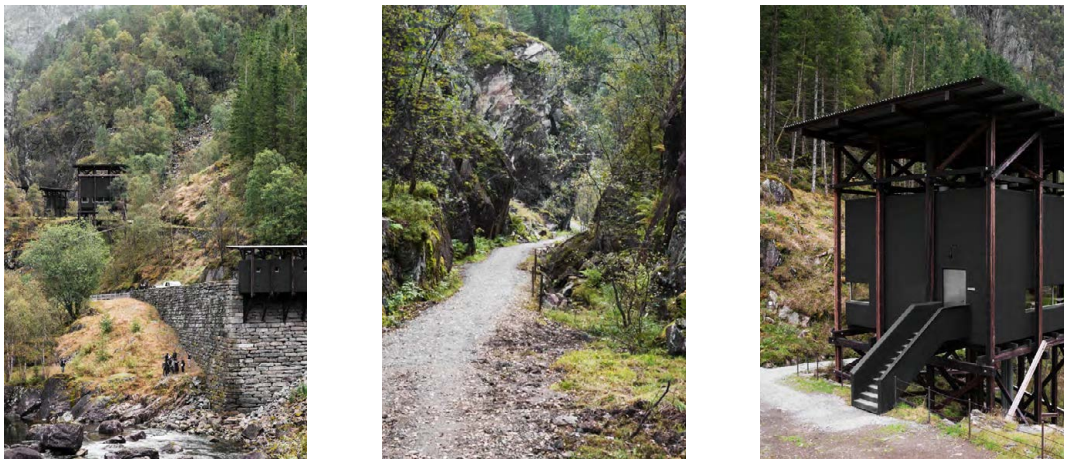


Fig. 039.
Per Berntsen:
Allmannajuvet

1 : 2.500

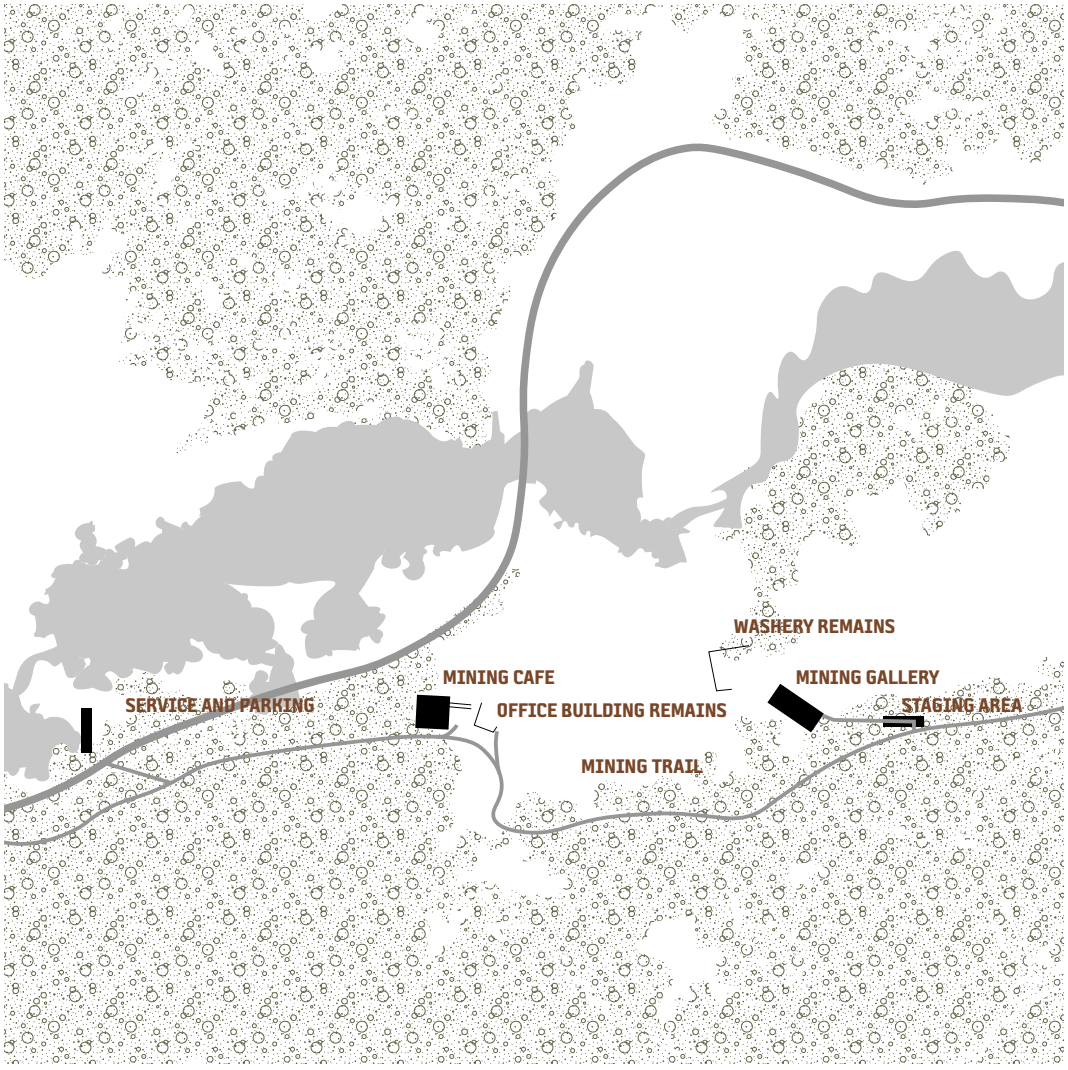


Fig. 040.
Mapping:
Allmannajuvet

1 : 2.500

Fig. 041.
Mapping:
Hydro power plant

04.04 HYDRO POWER PLANT

THE JOURNEY OF THE WATER

In order to understand the different structures of the power plant and integrate the story in the new project, it is important to map out how the Otra was manipulated and utilised in Kringsjå Kraftstasjon.

The map (fig. 041) shows a large dam capable of controlling the water level in the Kringsjå pond. From the river, a small intake tunnel allows water to enter the intake reservoir, where power is accumulated until it can pass through the turbines at high pressure and then re-enter the Otra through the outlet. This is a simple system of water reservoirs, tunnels, gates, and turbines, which supplied power to all of Kristiansand. After large parts of the original structure have been dismantled, it is interesting to investigate what remains there are of the power plant and explore its potential to tell the story of Kringsjå Kraftstasjon. This will be further elaborated in "Getting to know the ruin" (page 60).

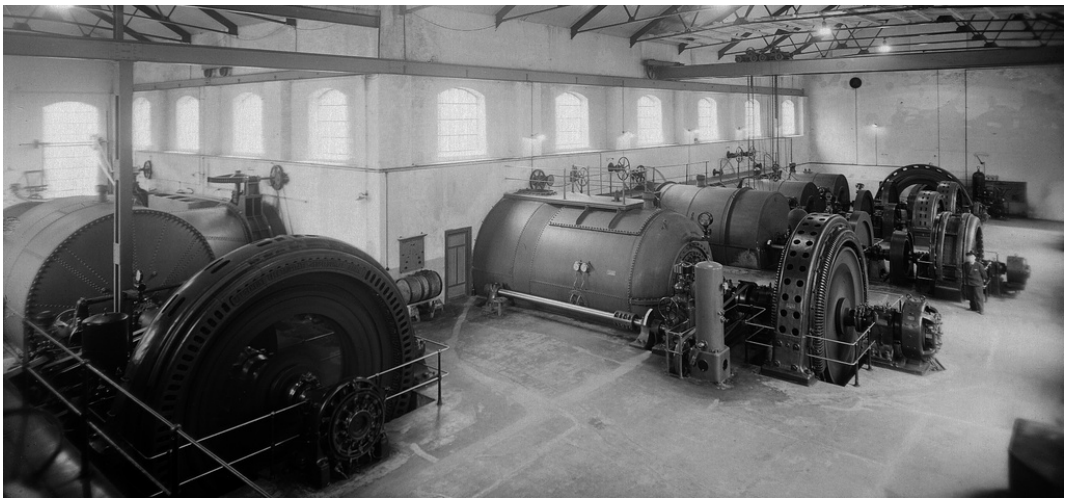


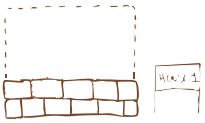
Fig. 042.
Vennesla Historielag:
Hydro power plant

05.00 SOCIETY FOUNDATIONS

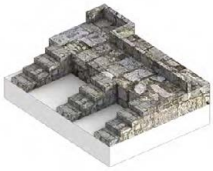
THE NINE RUINS SURROUNDING THE POWER PLANT

After a site visit and mapping the historic volumes, it became clear that ruins from nine original buildings remain, each with a unique shape and narrative. As shown on the map (fig. 044), the ruins are scattered across the site. Ruin 05 is concrete; the rest are granite. These served as foundations and stairs for wooden buildings built above, protecting them from moisture and snow.

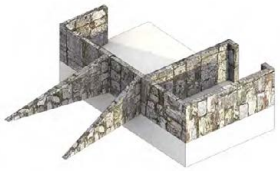
Preserving the ruins and reusing their structural principles would reduce environmental impact at Kringsjå and highlight each building's story. Reusing original names would also ease identification and clarify the narrative.



HOUSE 01 12 x 10.5 m

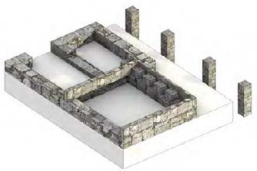


STABLE 7 x 5.4 m

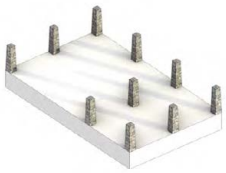


BARN 7 x 4 m

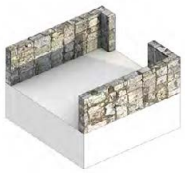
DAM 18 x 8 m



STABLE 8 x 7 m



DAM HUT 10 x 6 m



DAM HUT 3 x 3 m

SHED 4 x 3 m

SHED 3.5 x 9 m

Fig. 043.
Diagram:
Nine ruins

1 : 2.500

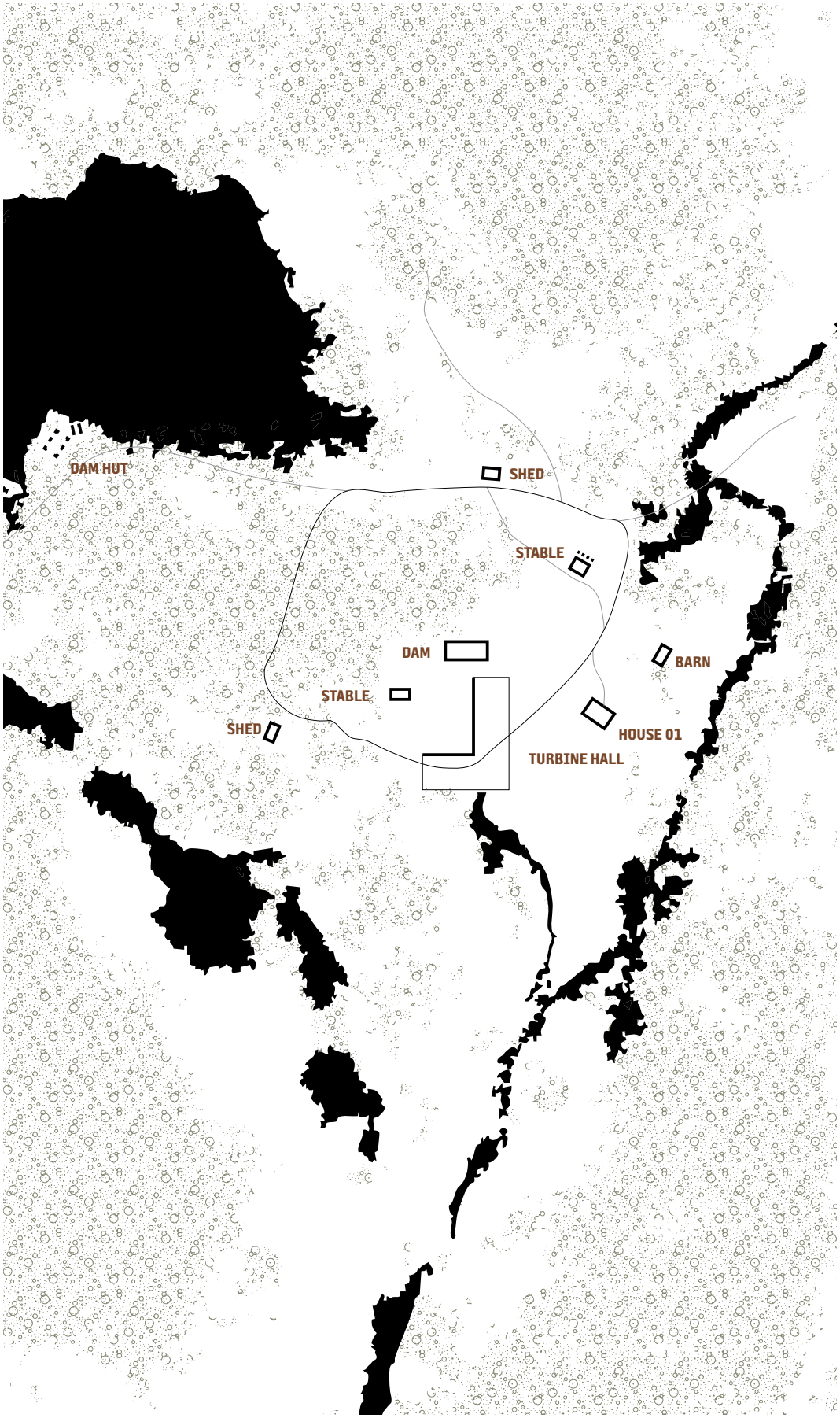


Fig. 044.
Mapping:
All ruins

05.01 RUIN INTERVENTIONS

APPROACHING HISTORIC STRUCTURES

Having functioned as an industrial society with up to 60 inhabitants, the remaining Kringsjå Kraftstasjon merely consist of a concrete plateu, a ruin from main turbine walls and a few stone foundations from wooden houses previously occupied by machine-workers and their families.

While the reasons for choosing this specific site has been described in "Introduction" (page 8), the following section seeks to explore the reasoning behind preservation of the industrial heritage and strategies for adaptive reuse.

Instead of preserving a building's historic fabric in a static state with a fear of intervention, adaptive reuse strategies aims to unlock the full potential of the heritage, possibly with the potential that the site's most significant days still might lie ahead. (Plevoets & Van Cleempoel, 2019)

Perceived as liabilities for decades, countless industrial remains worldwide are now increasingly seen as "assets-in-waiting" meaning assets that have potential to be re-thought into new purposes with or without relation to the industrial history. (Douet, 2013)

In many cases abandoned industrial remains are cleaned up in order to hide their existence. The reasoning behind this choice could be of safety or restoration of previously disrupted nature, but this strategy is suggested to be too hasty: Industrial heritage is a vital aspect of human history and development, offering insights into past economic structures and the working conditions of the time.

They provide an opportunity to consider how resources were used or misused, and reflections on social and economic shifts. (Douet, 2013)

Kringsjå Kraftstasjon is an example of a ruin that represents industrial heritage with a rich history. As one of the first hydropower plants in Norway, Kringsjå Kraftstasjon was the centrepiece of a small community of 60 people, and this industrial milestone remains an integral part of the region's identity to this day.

It is our job to decide on whether these industrial remains should be 1. preserved for the future, 2. reused for tomorrow or 3. left unmanaged for future generations to make choices. In this thesis, the intention is a combination of the three. While the vision, on the one hand, is to preserve the ruins for the future to spread awareness of the rich history, the strategy is also to reuse the ruins in a way that creates new possibilities beneficial for both visitors and the local community.

Definition of value as a prelude to ruin intervention is critical. A TICCIH (The International Committee for the Conservation of the Industrial Heritage) guide, Industrial Heritage Re-Tooled, argues that understanding the values of a historic relic is critical and that these are, just as much, places of memories as they are simple structures with structural and aesthetic qualities.

The guide asks the question; how can industrial ruins be recognised as having aesthetic values rather than being limited only to the story behind their existence?

THREE LANDSCAPES

The guide suggests three ways of categorising the cultural landscape on which these historic events have taken place:

Designed landscapes are park-like and constructed for aesthetic reasons.

Vernacular landscapes are divided into two subcategories: The relic landscape where an industrial activity has come to an end, while its distinguishing features are still visible in material form whether intact or not, and the continuing landscape which retains an active economic and social role in contemporary society.

Associative cultural landscape where the surroundings are significant due to historic associations rather than material cultural evidence.

The entire Kringsjå area remains as a relic landscape, where the industrial activity has been production of electricity through hydro power. Besides the main ruin of the power station itself, the many distinguishing feature consists of rock foundations from nearby houses and sheds as mentioned in "Society Foundations" (page 54). While the area retains a social role with regard to hiking trails and public events, the area no longer retains an active economic role in society.

MONUMENT OR PALIMPSEST

When approaching an industrial relic like the powerstation ruin, the volume can be distinguished between being a monument and a palimpsest. While the monument is constructed by local authorities, the palimpsest on the other hand is a product of social processes, thus authentic. Although the remaining turbine walls appears on site as monuments, especially as the rest of the site has been cleaned for safety purposes, the ruin has no monumental basis. Noteworthy is it that the heyday of a "monument" might appear in the future. (Plevoets & Van Cleempoel, 2019)

In their work, Adaptive Reuse of the Build Heritage, Plevoets and Van Cleempoel describes three strategies for intervening with the existing building stock; Aemulatio, Facadism and Ruination. Note that, while the strategies can be applied also to "ordinary" buildings, this section limits the scope to ruins.

AEMULATIO

Aemulatio refers to working with the division between what is historic and what is newly added and the degree of readability between the two. Three subdivisions of this strategy are the concepts of translation, imitation and aemulation.

As an architectural intervention on the remains of a building, in this case a power station, the first strategy, translation, aims at similarity to the past, which lies close to the act of restoration. This would mean returning to an earlier state, which might be viewed as an inconsiderate approach in terms of potential architectural and functional qualities. Johannes Exner argues that, just like a human's life is formed and influenced by multiple events, so is a building's, which makes it inappropriate to bring a building back to the state of "when it was born". Imitation, when applied, has some of the same restorative tendencies as

translation, but on a more selective basis.

Lastly, aemulation seeks to surpass the original aesthetics and functional qualities with substantial modifications. (Exner, 2010).

RUINATION

Ruination refers to emphasising the "beauty of decay" and the aesthetic qualities of a ruin – a phenomenon that has been perceived in different ways throughout history. Some ruins, as a result of natural decay, due to for example climatic conditions and patination, have been romanticised; other ruins, as a result of human destruction, like demolition, wars or similar, have a less formal character. These ruins might be left to transmit a message or potentially become a monument, depending on how they are dealt with.

Exner argues that if a building holds significance for a group's identity and sense of self, the ruin is still "alive" (Exner, 2010). Regarding terminology, note that a ruin refers to an abandoned object, which, in the case of Kringsjå Kraftstasjon, is not a proper term now that varying social outdoor activities take place among the remaining walls and in nearby shelters (Iveland, 2024). The ruination strategy entails that the adaptive reuse of a ruin can be approached with different degrees of formality. Where formal reuse means planned interventions, informal reuse refers to being user-led, thus spontaneous, short term, and of minimal intervention.

While the current social activities at Kringsjå Kraftstasjon might be planned by authorities, as mentioned in "Vennesla Development" (page 23), the activities themselves are indeed informal and of minimal physical impact on site. There is potential for the municipality to further develop and formalise these activities, increasing attention to the area and highlighting its historical significance.

When talking about the beauty of decay, it is argued that a clean element needs to be added in order to initiate the aesthetic appreciation of the decaying ruin (Plevoets & Van Cleempoel, 2019). Therefore, new additions to the existing ruin should be further investigated in the design process.

FACADISM

While both Aemulatio and Ruination are applicable to the remains of Kringsjå Kraftstasjon, the strategy, Facadism, which covers e.g. new architectural expressions covering old interiors, has limited use without the presence of a historic building with some degree of functionality. Facadism as a term is usually used in the context of urban conservation, where one case could be designing a new facade with characteristics that match the adjacent houses along a street, without necessarily expressing the newly added function behind it. (Plevoets & Van Cleempoel, 2019)

Multiple events have to occur prior to a building becoming a ruin. In the search of terminology, fig. 045 illustrates the nine phases that a building undergoes from genesis to ruin (Exner, 2007). Here Kringsjå Kraftstasjon is defined as a ruin, since there is no way to maintain it back to its original form. This would require larger interventions and would never be exactly the same. Therefore, there is an argument that the interventions on Kringsjå, should have a clear contrast to the ruin, in order to strengthen it's narrative and create an honest story.

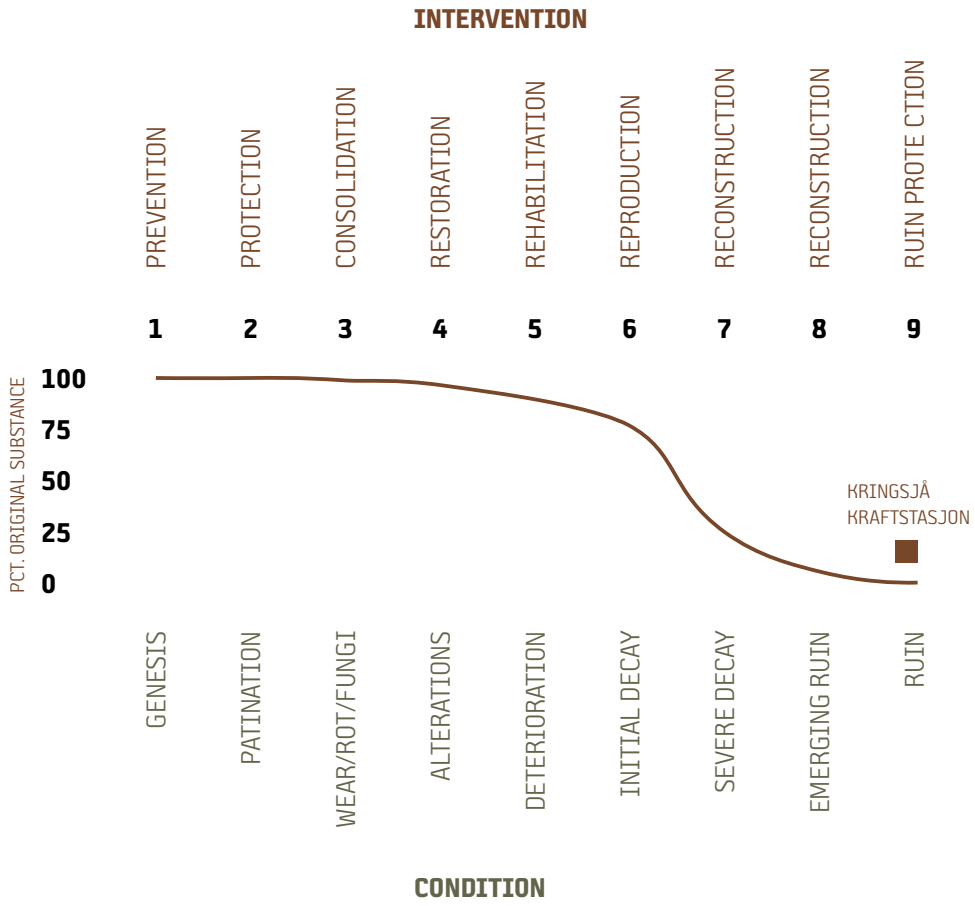


Fig. 045.
Diagram:
Ruination

05.03 GETTING TO KNOW THE RUIN

ORIGINALITY, AUTHENTICITY, IDENTITY AND NARRATIVE

To understand the DNA and history of the ruin of Kringsjå Kraftstasjon it is important to investigate every aspect of the ruin. Here Johannes Exner has created four keys. These can teach us what has happened to the structure and what is left to work with in the further design process. (Exner, 2007)

The four keys are:

ORIGINALITY (origin): defines the realism that the building currently has based on its original form

ATHENTICITY (trustworthiness): the details, construction etc. that tells the story of the building - like patination

IDENTITY (appearance): the look of the building at its current state - gotten through its lifetime.

NARRATIVE (storytelling value): the amount of preserved history of the building, and the story of its life

ORIGINALITY

To understand what is left of the building, you must know what the original structure consisted of. Here historical photographs, maps and a site visit created an overview of how Kringsjå was "born", and what is no longer there.

At first it almost looks like everything has been removed from the existing structure except the concrete structure with arches where the turbines ran through. But looking closer, history is everywhere. The dam that created a reservoir for the water (01), the closed-up tunnel in the rock where the water used to go through (02), the slides where the intake gates allowed water to flow into the penstock pipes (03), the concrete structure that surrounded the pipes and the turbines (04), the closed up holes in the foundations where outlet channels led the water back into the river (05) and even the outlet channels which stands like monuments underneath the ground (06).

Fig. 046.
Own images:
Ruin originality


03


04


05


06

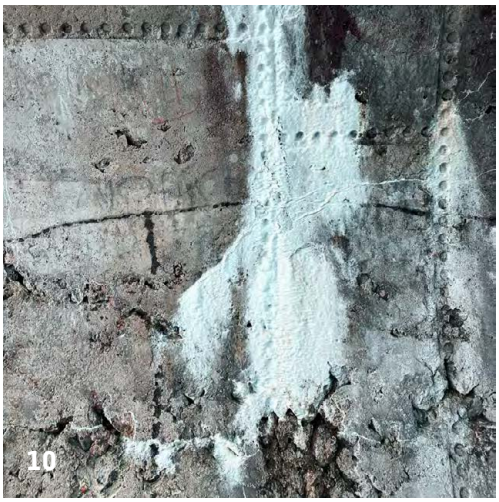


Fig. 047.
Own images:
Ruin up close

AUTHENTICITY

A site visit shows what patination there is on the existing structure and tells a story of a structure that has been affected by the harsh climate for many years. Cracks in the structure (07), rusted metal (08), vegetation growth (09) and even crystals formed by the minerals and water (10). These patinas tell a story about a forgotten society and adds a sense of time and beauty to the industrial historic structures, that should be protected and highlighted in the further design process.

IDENTITY

The authenticity creates what identity the building has at its current state. Today the industrial building that was once a hydro power plant is now a combination of the raw industrial remains and the nature that slowly has taken back the power. The nature has filled in the gaps which were created when the plant was closed and partially torn down. Even though the decay of the overall building is extensive, the overall structural ability of the ruin remains, and it is estimated in this project that the ruin would be able to act as a structural element in a new building.

NARRATIVE

"Today, the Kringsjå power station lies in ruins, and of a construction unlike almost anything else in Southern Norway, only the foundations remain."

(Aslaksen et al., 2010) (Translated).

Kringsjå Kraftstasjon tells the story of a once well-functioning industrial society, where nature and industry lived in symbiosis. The history is still here, but it needs help to tell the story to future visitors preserving the story of what was once there. Where nature has taken back power, it should be allowed to stay. New functions should continue to work with the implementation of the contrasts that already exist and should have a certain permanence in order to ensure that the story of the historic society will continue to be told for many years to come.

Based on Exners four keys, the ruins originality, authenticity, identity and narrative has been investigated. This shows the qualities of the site and emphasises the importance of preserving the integrity and narrative of the ruin. Adding new interventions and structures, should strengthen the authenticity and identity of the site, further elaborating the narrative of Kringsjå Kraftstasjon. How interventions can be done will be further investigated in the following section.

05.04 EIGHT INTERVENTIONS

CASE-BASED CONCEPTS FOR INTERVENTIONS

Having established the value of preserving the ruin's authenticity and identity – and emphasising the narrative through "Getting To Know The Ruin" and "Ruin Interventions" – it is now relevant to explore various types of architectural interventions and how they can influence the design process.

This exploration serves as a conceptual kickstarter for volumetric and design studies in the transformation of Kringsjå. These intervention types are inspired by multiple architectural case studies (see Appendix 01), where the ruin's narrative is enhanced through the introduction of new structures, or spatial strategies. Each concept corresponds to previously defined terms from "Ruin interventions" (page 58).

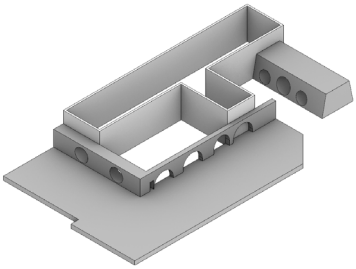
The presented intervention types offer a diverse range of architectural approaches, each shaping the transformation of Kringsjå in different directions. Some strategies focus on minimal physical change while others introduce new elements that interact more boldly with the existing ruin.

In the further design process, it is essential to remember the already established drivers: preserving the current state of the ruin, enhancing the site's narrative, and introducing new functions. These principles should inform which intervention principles suits this project and how they can be applied in a relevant way.

01 ADDING TO ENHANCE

New structures added to support storytelling and atmosphere.
Enhances and mimics the original structure.

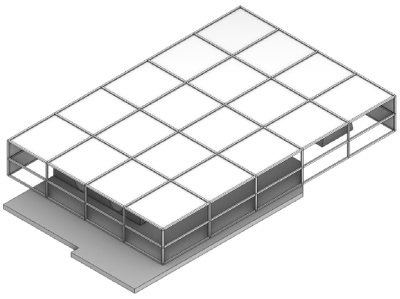
Type: Modified Aemulatio
Case: Aire Ancient Spa – Arkitema



02 COVERING

The ruin is encapsulated to protect it.
Structure narrates the story and encourages spatial journeys.

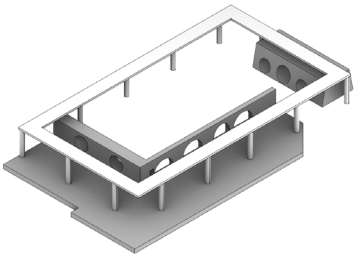
Type: Facadism
Case: Shelter for Roman Archaeological Ruins – Peter Zumthor



03 FRAMING

New volume frames the ruin but does not touch it.
Strengthens the site's narrative.

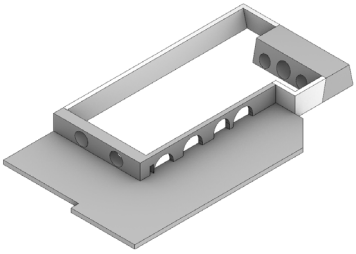
Type: Facadism
Case: New Acropolis Museum – Bernard Tschumi



04 INTEGRATING

Ruin becomes a structural part of the new building.
Minimal intervention enhances the experience of the ruin.

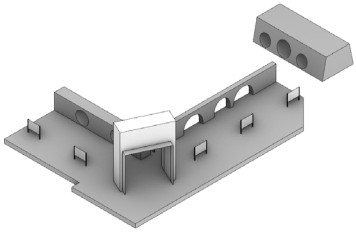
Type: Formal Ruination
Case: Castell de la Tossa – Meritxell Inaraja



05 MUSEUM

Adds framing structures that inform about the ruin.
Creates a curated journey around the site.

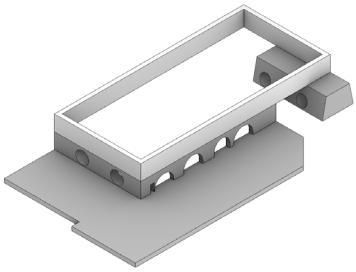
Type: Planned Ruination
Case: Rusty Steel Tower over Roman Ruins – Marte.Marte Architects



06 ON TOP

New volume placed above the ruin.
Requires lightweight materials.
Follows the original building footprint.

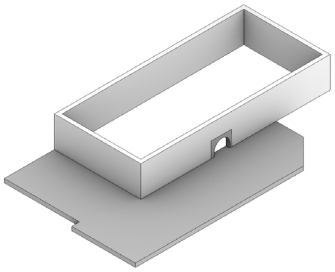
Type: Selective Aemulatio
Case: Koldinghus – Exner



07 PARTIALLY

Very few remnants remain (e.g., floors).
These are staged with minimal intervention.

Type: Minimal Ruination
Case: Saint Rocco Church – Luigi Valente & Mauro Di Bona



08 REINTERPRETING

New design interprets and modernises the original form.
Pays homage to the original while introducing contemporary elements.

Type: Imitating Aemulatio
Case: Neues Museum – David Chipperfield

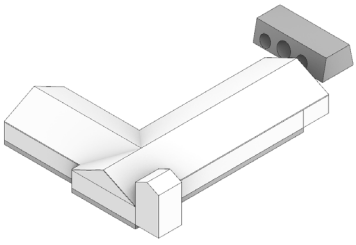
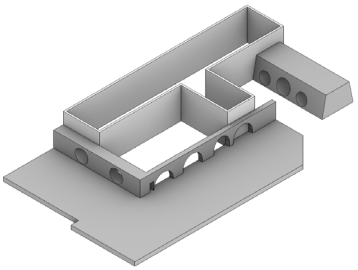


Fig. 048.
Diagrams: Interventions

With presentations of the eight interventions in place, they will now be combined in an evaluation table (fig. 049) based on five different design parameters. As can be seen, the choice has fallen on intervention type 01: "Adding to Enhance." This is partly due to the clear distinction between the new and the old, and partly because of the interplay that can occur between these volumes.



EVALUATION TABLE: INTERVENTION	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**
MINIMAL RUIN IMPACT	3	3	3	2	3	0	0	0
INTEGRATION OF NARRATIVE FUNCTIONS	3	1	0	3	0	3	3	3
MINIMAL IMPACT ON TERRAIN	1	0	2	1	3	3	0	0
INTERPLAY	3	0	0	3	0	3	0	3
CLEAR NEW VS OLD	3	3	3	0	3	2	2	0
TOTAL	**13**	7	8	9	9	11	5	6

Fig. 049.
Evaluation table: Interventions

06.00 MENTAL RUINATION

MENTAL HEALTH IN NORWAY

According to the EU country health profile from 2023, mental health issues are a substantial burden in society and is therefore an important topic when talking architecture, since the built environment also has an impact of our mental state (EU Health Report, 2023).

Being higher than the EU average, one fifth of every Norwegian has experienced mental health disorders in 2019 and this resulted in twenty percent of the total spending of governmental expenses that year. It is estimated that 5 billion euro in productivity losses are due to mental health disorders, which is over a quarter of the total loss. (EU Health Report, 2023)

Considering all Norwegians, Health Metrics and Evaluation (IHME) estimates that eight percent are affected by anxiety, four percent of depression and three percent of substance abuse. When observing depression rates alone, the reports finds that these are related to both income groups and gender, where low-income segment and women are most likely to be afflicted. One factor behind the mental health data is long waiting lists and desolated geographical locations where the availability of treatments is limited and sometimes non existing. In 2023, though it is legally mandated, one in five municipalities did not manage to offer psychologist access. (EU Health Report, 2023)

Pain and depressive symptoms are prevalent among adolescents, influenced by factors like school, performance pressure, and social media. Persistent high expectations—whether self-imposed or from others—can lead to feelings of inadequacy, increasing stress, which in turn may contribute to both pain and depressive symptoms. (Jahre et al., 2024)

A 2021 Norwegian government committee suggested that the public and voluntary sectors improve coordination to boost citizen involvement in their mental health. Additionally, drawing inspiration from Denmark's ABC campaign (Act, Belong, Commit), the government promoted awareness of the benefits of physical activity and nurturing relationships for mental well-being.

According to a 2019 study, healthcare providers in North America and Europe have started prescribing "nature pills," encouraging patients to spend time in nature. Having observed a stress reduction from these experiments, equal opportunities of "nature breaks" should be integrated in the following design process. (Hunter et al., 2019) The actual impact of outdoor life on mental well-being should be further investigated and defined in order to implement it in the design, this will be done in "The Importance of Outdoor Life".

Fig. 050.
Own image:
Outdoor life

06.01 NORWEGIAN OUTDOOR LIFE

THE RIGHT TO ROAM

Being outside is deeply embedded in Norwegian culture. There is even a word for it known across Scandinavia as "friluftsliv", which means outdoor life (Gelter, 1999). Friluftsliv is

"The practice of embracing open-air living and the deep connection with rural areas".

It is estimated that 95-98% of the Norwegian population participate in outdoor life, and around 28% of Norwegian families take trips into nature at least once a week. Recognising the importance of outdoor life, The Norwegian government has even published a document emphasising the importance of access to green spaces (Birkedal Stenquist and Bere, 2024). The Right to Roam, also known as Allemannsretten, allows anyone to experience nature anywhere, even on privately owned land, as long as you leave it as you found it and respect the wilderness. The demographic of who uses outdoor life the most will be further elaborated in "Persona" (page 106).

Despite its strong tradition, studies show that participation in outdoor activities are declining. This could be due to the rise of more expensive and advanced outdoor activities like skiing, kayaking, and mountain biking, which can create inequality in the outdoor community due to their cost and intensity. Although nature itself is free to access, and everyone in Norway has the right to enjoy it, there is a need for affordable and low-intensity outdoor activities to ensure inclusivity within the outdoor community (Birkedal Stenquist and Bere, 2024).

Due to the demand for this type of outdoor activities, it is relevant to look further into what functions and what the effect of these are. This will be further elaborated in the following chapter.

06.02 THE IMPORTANCE OF OUTDOOR LIFE

OUTDOOR LIFE AND MENTAL WELLBEING

Having established that outdoor life is an integrated part of being Norwegian and that there is a demand to make it more accessible for everyone, it is relevant to explore why spending time outside is so beneficial.

As mentioned in "Mental Ruination" (page 68) the importance of mental well-being is becoming increasingly important on a global scale. This is due to the number of mental disabilities having increased by 70% over the last 25 years. The build environment can both be a trigger and a relief in this matter, and it is therefore important to investigate how we can create architecture that first of all stops the decrease in mental health, but more importantly look at healing architecture which repairs the damage that has already been done. (Osama, 2019)

Architects like Peter Zumthor mention the benefits of joining landscape and architecture, and how this can be beneficial for the users. Through healing architecture, it is possible to create a place to "relieve the soul". (Osama, 2019)

It is widely understood that nature benefits both physical and mentally. Back in the 1600s, spas and water in general, was used to relax and relieve the soul, and this practice even dates all the way back to Plato and the antient Greeks, who wrote about their health benefits. (Osama, 2019) (Søberg, 2023)

But why does nature heal, and how long do you need to be in nature for it to influence your mental well-being? Human biology has remained close to unchanged for over 10.000 years, meaning our needs today are the same as the need of the primitive human beings. One of these fundamental needs is sensory stimulation. In urban environments, which are dominated by straight lines, flat surfaces, and smooth areas, not all human senses are stimulated, leading to stress and restlessness (Gelter, 1999). These design elements can create a sense of calm, but in order to create the calm atmosphere, you need contrasting more stimulating elements.

The brain and human senses evolve through exposure to fractal structures, which are rhythmic patterns that never repeat exactly the same, represented everywhere in nature, in landscapes, the rhythm of waves, and the different plants. These natural patterns engage all senses, creating a sense of pleasure in the brain and reducing stress (Gelter, 1999). This means that integrating natural elements into architecture could create a refugium, resulting in a lower level of stress.

The benefits of nature begin as soon as you enter it. Studies show that spending time in nature reduces stress levels in the body by 21% per hour. The greatest reduction occurs within the first 20–30 minutes and continues as long as you remain in nature. Therefore, it is recommended to spend at least 20 minutes in nature once a week to help lower stress levels (Hunter, Gillespie, and Chen, 2019).

Implementing a nature experience with a duration of a minimum of 20 minutes should be investigated in the further design process in order to reduce the stress level most efficiently.

Fig. 051.
Vennesla Historielag:
Historic outdoor life

Due to the decline in people participating in outdoor life, it is very important to make it attractive and approachable for everyone, especially since there are laws like Allemannsretten which allows anyone to enjoy nature.

Integrating nature and natural elements into architecture can offer a valuable refuge from the stressors of everyday life. In the context of this project, designing functions that interact with the surrounding landscape and use nature as an active design element is highly relevant and potentially beneficial. As previously established, the area around Kringsjå is an ideal hiking destination, making it a perfect setting for creating short, restorative nature experiences – such as the 20-minute nature breaks referenced earlier. Moreover, nature should not only be present in isolated moments but play an active and continuous role throughout the entire stay at Kringsjå.

Historic photographs and narrations from the local community in Vennesla (fig. 051) show that the surrounding nature has long been appreciated and used by residents. These cultural, functional and emotional connections to the landscape reinforce the importance of embedding nature into every aspect of the design. Integrating nature is not only a contextual response but a meaningful contribution to the project's overall vision.

06.03 KEYLESS ARCHITECTURE

"ONCE IN NATURE, WE ALL BECOME EQUALS"
(VisitNorway, 2025)

As part of the case studies and the task of determination of functions, inspiration has come from Snøhetta's way of characterising architectural structures as being keyless.

Snøhetta, a Norwegian architecture studio, argues that the purpose of architecture is to enhance our sense of surroundings, identity, and relationship to others and the physical spaces we inhabit (Snøhetta, 2025).

One question arises in this context: How do you get close to a building? One answer is an architectural series called Keyless Structures, which consists of rural shelters in scenic surroundings without a lock. There is a right to roam in all of the Norwegian wilderness, so why shouldn't there be in public architecture? Being either the goal of a hike or a stopping point on a longer journey, these structures are free to use without supervision in all seasons, which creates a sense of connection to the place. It's a virtue of openness and inclusiveness (VisitNorway, 2025).

Two evident cases in this series are the Reindeer Pavilion in Dovrefjell-Sunndalsfjella National Park and the Viewing Tower in Wildschönau, Austria. Where the Reindeer Pavilion serves as an observation platform for wildlife, the Viewing Tower serves as a retreat for alpine skiers.

Both shelters are located near flows of tourism and provide the opportunity to take a break without having to consume anything (Snøhetta, 2025).

Being a keyless structure is not only a question of whether indoor facilities are freely accessible: The opportunity for visitors to walk on top of the building, as seen on the Norwegian House of Opera, designed by Snøhetta in 2007, is another way of creating a feeling of ownership and inclusivity.

Besides the qualities of keyless structures mentioned above, they also entail a sense of ownership, which makes the visitor more protective of the construction (VisitNorway, 2019). Furthermore, when working with stress-mitigating architecture, a quality lies in the fact that one could return from a hike and immediately enter a private cabin for sleeping without direct interactions.

This keyless vision should be integrated into the design process when it comes to distributing functions and determining how they are physically connected. Likewise, creating elements where the user can interact with the structure without physically entering it, could be an interesting way to create a sense of belonging and ownership.

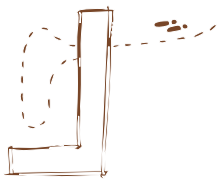


Fig. 052.
Rasmus Hjortshøj:
Reindeer Pavilion

Fig. 053.
Christian Flatscher:
Alpbachtal Tower

06.04 THERMALIST ARCHITECTURE

FLOATING SAUNAS ARE ONE OF NORWAYS "HOTTEST" TRENDS
(Bernthal, 2025)

A floating sauna on a Norwegian fjord offers more than just relaxation–it provides scientifically backed health benefits that improve both physical and mental well-being.

In her book, Thermalist, from 2023, Susanne Søberg suggests that eustress, is one of the best methods for coping with a modern lifestyle characterised by inactivity and temperature neutrality. This physically monotone lifestyle can cause stress which might end up leading to more permanent mental disorders as further elaborated in "Mental Ruination" (page 68).

While most people fear heat and cold because they are mistakenly perceived as dangerous stressors, neurotransmitters in the brain are released during cold and heat stress, leading to a feeling of focus and joy. In a world of stress, anxiety, and depression, cold is a refuge that silences brain noise and overwhelming thoughts.

In Nordic cultures, saunas have long been a sanctuary from harsh winters. The positive mental effects of sauna and cold exposure may be one of the reasons why people in regions with long dark winters, have begun practicing this micro-stress. The current Norwegian trend of constructing floating saunas not only embraces the tradition but elevates it by offering direct access to cold water immersion in the fjord and panoramic views of the scenery. While the saunas can be found near famous rock formations or near popular tourist destinations like Preikestolen in Lysefjorden, high density urban areas have also adopted this trend (Bernthal, 2021).

One leading case in this trend is the Soria Moria sauna floating on the Bandak lake in Telemark. Being part of the art project, Tales of the Waterway, the subtle wooden volume mimics the surrounding mountainsides and the shingle facade is inspired by local techniques. Besides the actual sauna, the volume contains a changing room and a covered seating area, and part of the experience is also the long pontoon walkway that allows the visitor to both cool down before entering the sauna and also to embrace the surroundings (Archdaily, 2025).

The walkway creates a type of journey between two rituals which is an interesting concept to work with in the further design process.

While the cold and warm micro-stress are a great way to find calmness in yourself, the fierce experiences also create an intense experience when shared with others, strengthening our social bonds as the pack animals we are. (Søberg, 2023) Implementing thermal-micro stress into the functions on site, would create a place for users to both personally and socially evolve and relax. Having contrasting elements in a journey or experience is essential as well.

Fig. 054.
Pexels.com:
Soria Moria sauna

06.05 RECHARGING ARCHITECTURE

WELLNESS TOURISM AND THE POWER OF NATURE

When exploring which functions best integrate nature experiences and elements to create healing architecture, wellness tourism emerged as a relevant concept. Wellness tourism typically involves shorter trips of around three days, where the individual's holistic health is the main focus. Relaxation, sensory pleasure, and natural elements are essential components of the wellness experience, and the longer the stay, the greater the mental health benefits (Liao et al., 2023).

Since the pandemic, tourism and travel have changed significantly. People now tend to invest more in wellness experiences, prioritising leisure activities as a refuge from everyday stress. These types of stays have been shown to provide measurable health benefits, and leisure activities are a crucial element in the design of this typology (Liao et al., 2023). Therefore, incorporating leisure activities is an important addition alongside the thermal activities described in "Thermalist Architecture" (page 74). By combining thermal stressors with relaxing elements, the most effective reduction of cortisol levels in the body can be achieved.

Wellness sites located in forest environments offer even deeper benefits. The body reacts biologically and chemically as soon as it is exposed to these surroundings. The energy from moving water, microorganisms in fungi, and the essence of plants all influence the body, leading to improved overall health; again, the longer the stay, the greater the effect (Liao et al., 2023). As Kringsjå Kraftstasjon is situated in a forest environment with waterfalls and rich vegetation, it already provides a strong foundation for a wellness retreat focused on mental well-being.

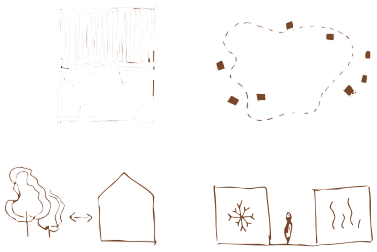
Materials also play an essential role in wellness architecture. They can be used to create specific acoustics, microclimates, and lighting conditions that influence both experience and atmosphere. Natural materials such as rocks and minerals can even emit radiation that affects the body and helps reduce stress (Liao et al., 2023). Using materials with intentional qualities in specific areas can strengthen the desired atmosphere and create an authentic wellness experience with nature as a central element.

To create a truly authentic wellness experience, context is crucial. Local history and resources should be integrated to add character and personality, while also highlighting cultural pride and identity. Culture plays an important role in forming a connection between place and personal well-being (Liao et al., 2023). Therefore, incorporating storytelling related to the site's industrial history would enhance the experience and increase its impact on the user.

Preserving authenticity is also vital to the overall wellness experience. One effective strategy is bottom-up tourism, which is a form of community-based tourism where locals take part in shaping the future of their area (European Commission, n.d.). This ensures that local interests and the economy are prioritised. The type of wellness tourism proposed in this project should directly benefit the local community. Locals should have access to and be able to use the facilities themselves, preventing an imbalance between users and culture.

Fig. 055.
Own image:
Largest Kringsjå Fall

For this reason, implementing a keyless system, as described in "Keyless Architecture" (page 72), would make the facilities more accessible and provide value for both locals and visitors.



For the future design process, it is essential to integrate nature as a central design element – both physically and conceptually. The architecture should create wellness through sensory experiences, natural materials, local storytelling, and accessible leisure activities. The design must prioritise authenticity, create value for both visitors and locals, and ensure that the connection between nature, place, and health remains at the core of the project.

06.06 THERME VALS CASE

STUDYING FLOW, ATMOSPHERE AND FUNCTIONS

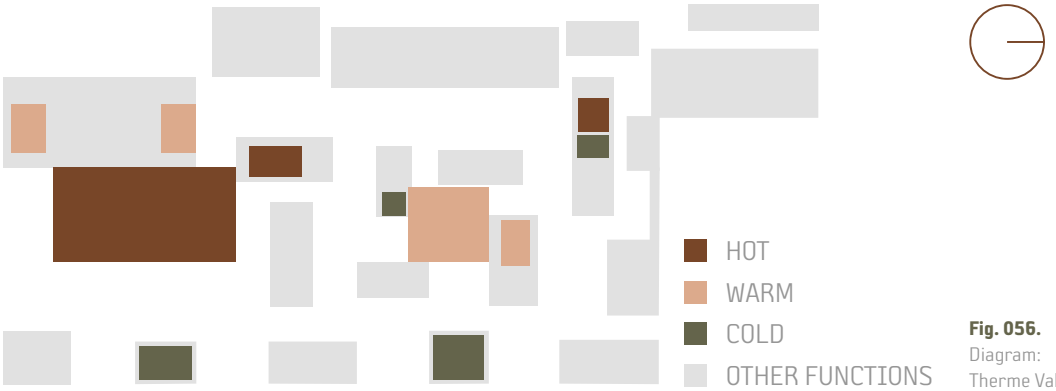


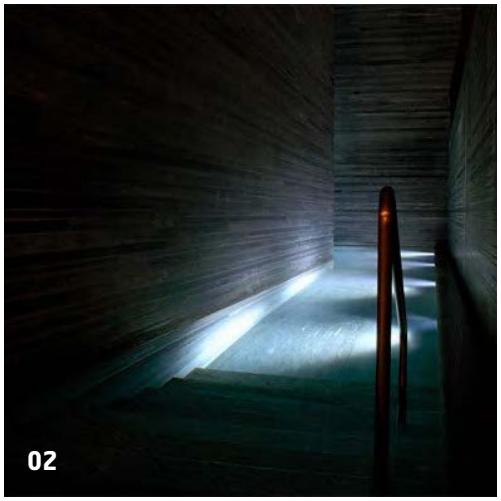
Fig. 056.
Diagram:
Therme Vals plan

Because this project explores the intersection between thermal baths, architecture, and nature, Therme Vals by Peter Zumthor is a relevant case study. The project exemplifies how architecture can create sensory experiences, supporting a journey that promotes well-being. By analysing the spatial strategies, materiality, and sensory tools, valuable insights can be drawn for the future design process.

Peter Zumthor uses nature and its materiality as tools to create atmospheres. In Therme Vals in Switzerland, he employs local materials to craft architecture that becomes an extension of its context (fig. 03, 05). With this approach, the baths are integrated into the site, making them appear as part of the landscape. This creates a more authentic experience and gives the impression that the structure has always belonged to the surroundings (Ryan, 1997).

The project represents a kind of journey, where the user decides how long to remain in different spaces and which rituals to follow, while the architecture subtly guides them (Ryan, 1997). The use of thermal stresses has previously been explored in "Thermalist Architecture" (page 74), so examining how these are implemented in Therme Vals is relevant for developing functions in this project. Fig. 056 shows a simplified plan, categorising thermal spaces as hot, warm, and cold. This highlights how temperature zones are distributed. Placing them in close proximity encourages movement between hot and cold areas, supporting the activities described in the "Thermalist" section (pp. 00). However, when analysing the plan further, it is difficult to understand the intended user journey and how movement is guided. The plan resembles a labyrinth more than a clear route. Therefore, it is essential to develop iterations of the spatial journey to reduce the risk of confusion and stress when visiting the thermal baths at Kringsjå Kraftstasjon.

Zumthor activates the senses through light, shadow, water, and stone. As users move through various rooms, even transitions become part of the experience. Light acts as a guide, shaping intense atmospheres within the volume. The journey may in fact be led by light, narrow passages, and carefully placed elements (fig. 02). Zumthor works with both natural and artificial light to create distinct moods:



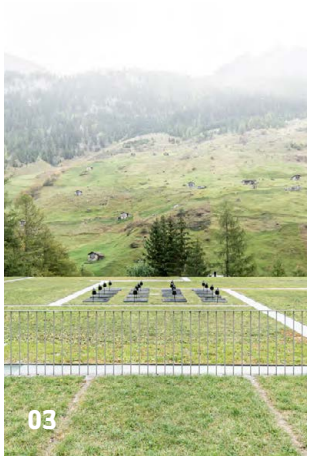


Fig. 057.
flickr.com
Therme Vals

"When designing it is easier for me to think about a space as dark, completely pitch-black, and then allow the light to come in." (Zumthor and Lending, 2018)

The patination of materials also reflects the influence of time. Different elements age differently, as seen in fig. 04, where water from the pool has flowed down the walls, leaving traces that help identify specific functions. Like Therme Vals, Kringsjå Kraftstasjon is in a scenic natural setting. Zumthor frames views throughout the building, making nature part of the interior – almost like artworks (fig. 01). The contrast between closed facades and sudden open views intensifies the experience.

Exploring how views can be shaped and amplified according to function is an important design consideration.

Therme Vals offers many elements that could inspire this project. However, it is important to acknowledge that it is, a prestigious, profit-driven project. While it may serve as a valuable source of inspiration, it should also stand as an example of what this project should avoid becoming. The future Kraftstasjon should be aware of the journey throughout and between the volumes. To enhance the experience, contrasting elements like temperature, light, and materiality should be incorporated. Integrating the context strengthens the narrative and will make the architecture more authentic and site-specific.

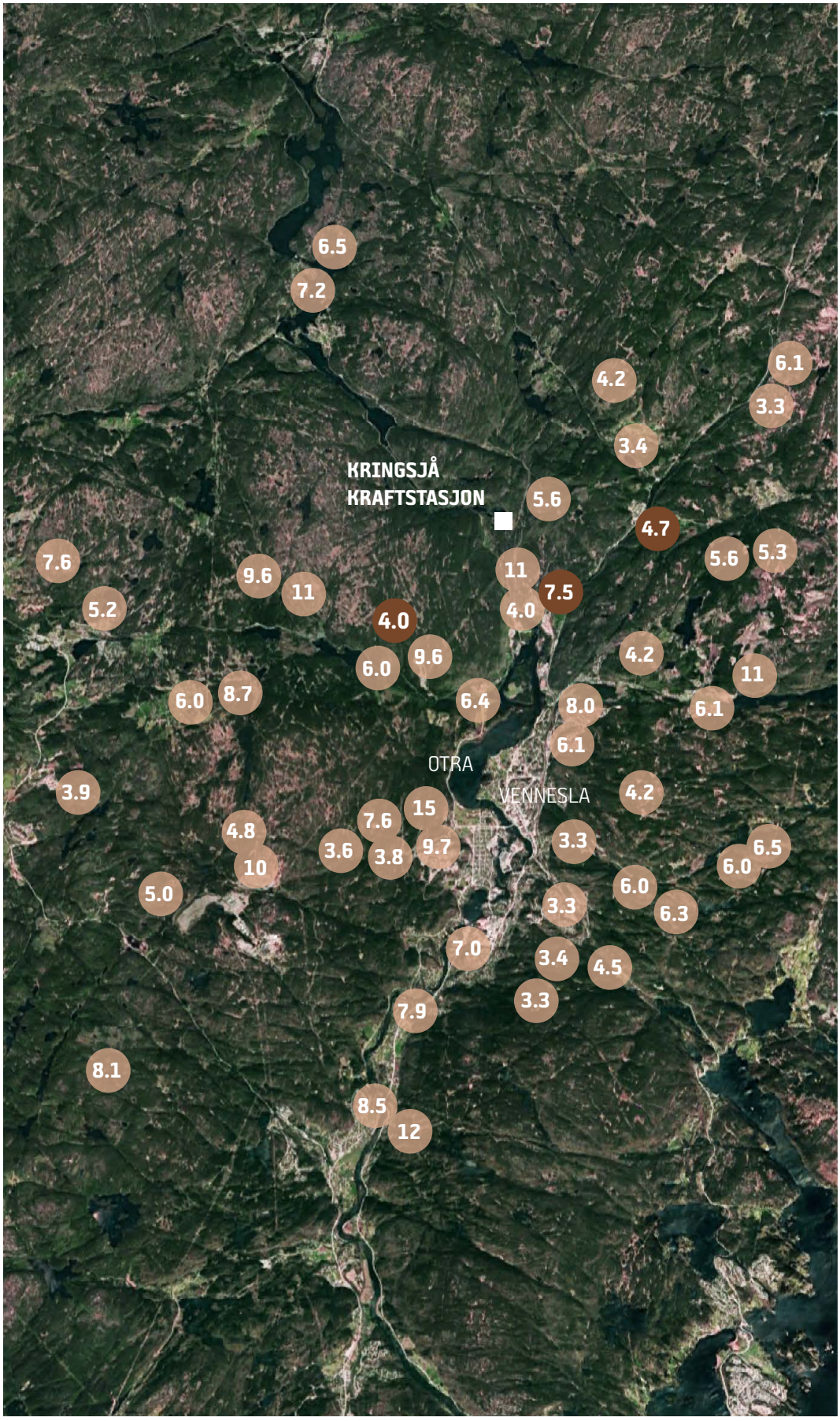


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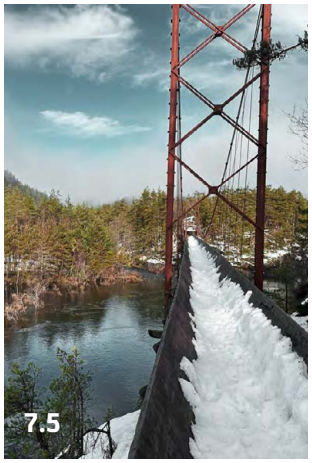
Fig. 058.
Mapping:
Local Trails



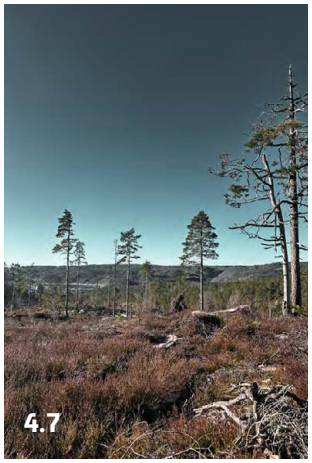


Fig. 059.
Own images:
Selected local trails

07.00 LOCAL TRAILS

RANGE OF LOCAL TRAILS IN VENNESLA REGION

In order to examine how the local outdoor life can be encouraged, the following sections explore the variety of local trails and hikes in the region surrounding the town of Vennesla. This area, known for its rich natural landscapes and accessible wilderness, offers a diverse range of outdoor experiences suitable for hikers of different skill levels. The selection is based on information from outdoor apps and online services. While many more trails exist, fig. 058 highlights those longer than 3 km. Among these, three specific trails have been selected for closer attention. These were chosen not only for their individual characteristics but also because they were explored during the study trip to Kringsjå Kraftstasjon described in “Experiencing History“ (page 30).

The first is a 4km circular trail that leads through highland forests, lakes, and smooth rock formations, ending at one of the Dagshytta – keyless wooden cabins equipped with seating, books, blankets, and a stove.

The second is a 7.5km trail that follows the Tømmerrenna, as described on page 34.

The third is a 4.7 km circular trail through the northern mountains, offering long-distance views and raw, unspoiled nature, including creeks and lakes.

The mapping and documentation of these trails were conducted as part of a broader effort to evaluate the accessibility and variety of outdoor recreation opportunities in the vicinity of Kringsjå Kraftstasjon. These findings confirm that the area offers a well-developed and varied trail network, suitable for both casual walkers and more experienced hikers seeking extended excursions. In the following sections, the scope will shift from the local region to the national level.

Fig. 060.
Mapping:
National trails

07.01 NATIONAL TRAILS

BEING PART OF A LARGER NETWORK

Having just dived into the numerous relatively small local hikes surrounding the Vennesla region, this section zooms out and maps the network of national Norwegian hikes. These can be divided into two categories: the shorter, widely known scenic hikes–typically with a single natural phenomenon as the end goal–and the longer hiking adventures, where the journey itself is the primary experience.

The scenic hikes make up a large part of the Norwegian tourism industry and consist of single-day hikes such as Trolltunga, Preikestolen, Kjerag, Fosseråsa, Besseggen, and Rødøyløva (the first national tourist trail), varying from 1.5 to 27 km (fig. 061). Most of these are accessible to untrained visitors and are characterised by symbolic natural features, such as unique rock formations.

The more adventurous hikes typically involve a team with a guide and are intended for those who have trained and prepared for the challenge. Based on trails listed by DNT (Den Norske Turistforening), some of these hikes cover around 200km, such as Omveien, Saga, and Ryger, while a trail like Massiv extends up to 350km. Additionally, one continuous trail has been mapped, cutting through Norway from south to north along 2,713km.

One of the visions behind this project is to connect the future Kringsjå Kraftstasjon to the surrounding hiking networks. A 17 km hiking trail from Kristiansand to Vennesla already exists, and by following a path on the western side of the Otra, hikers can reach Kringsjå. Eventually, additional trails could be linked, making it the final destination of an extended hiking journey.

Fig. 061.
Mapping:
National trails

Fig. 062.
Å Energi:
Kringsjå today

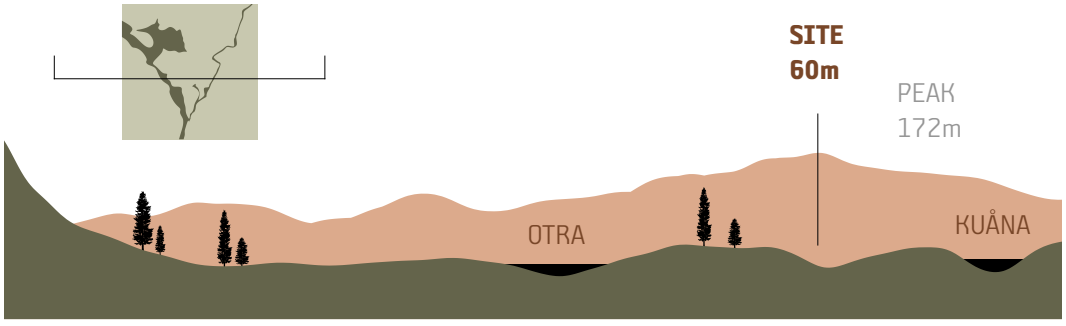


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Fig. 063.
Section:
Topography WE

07.02 TOPOGRAPHY

PEAKS AND VALLEYS SURROUNDING KRINGSJÅ

The topography of the land surrounding Kringsjå Kraftstasjon is characterised by small-scale mountains and valleys. As seen from above in fig. 062, the surface mainly consists of rugged rock formations covered by moss, shrubs, birch, and various coniferous trees, with exceptions being the numerous water ponds formed by river overflow. When observing the site from south to north (fig. 063), the mountains in the background rise to a peak of 172 metres above sea level, while the western mountains (fig. 062) reach up to 268 metres. The flat concrete plateau below the Kringsjå ruins is surrounded by steep stone cliffs, and the plateau itself is situated at an elevation of 58 metres above sea level.

Even though the power station is positioned between two peaks, the terrain further declines, and ensures that water will not gather on site, however, the newly added structures should guide and withstand the runoff from the surrounding peaks.

An upcoming design process task will be to integrate this challenging terrain as a key element of the future kraftstasjon–both in terms of aesthetic features, such as framing views of nearby rock formations and distant mountains, and technical features, such as utilising the existing rock formations to provide structural advantages and overcome its challenges like water.

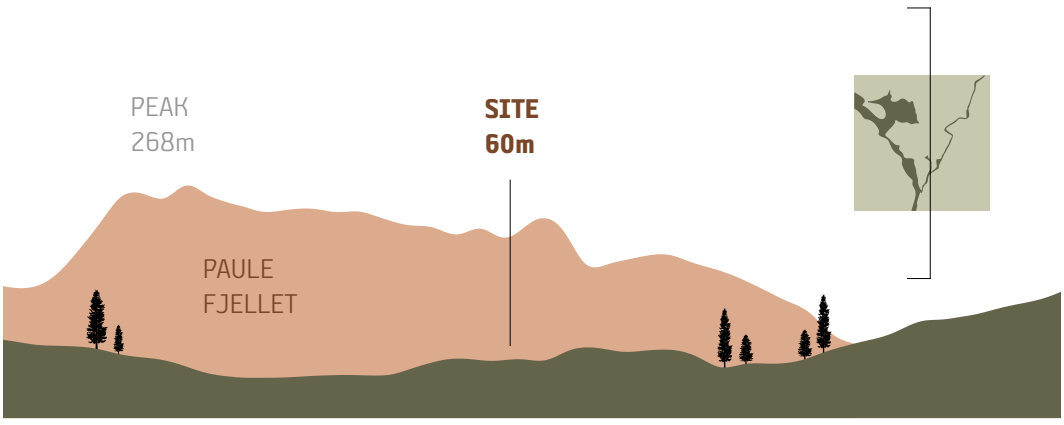

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Fig. 064.
Section:
Topography SN

08.00 MICRO CLIMATE: PRECIPITATION

PERCIPITATION THROUGHOUT THE YEAR

Vennesla, experiences a maritime climate with significant precipitation throughout the year. The wetter season spans from late August to early February, with October being the wettest month, averaging 182mm of rainfall, occurring on two out of three days. Conversely, April is the driest month, averaging 66mm of rainfall (fig 065). Snowfall occurs primarily in winter months, with January and December experiencing the highest snowfall, averaging 115 mm, typically spread across 7-8 days (fig 066). (CBE Clima Tool, 2025)

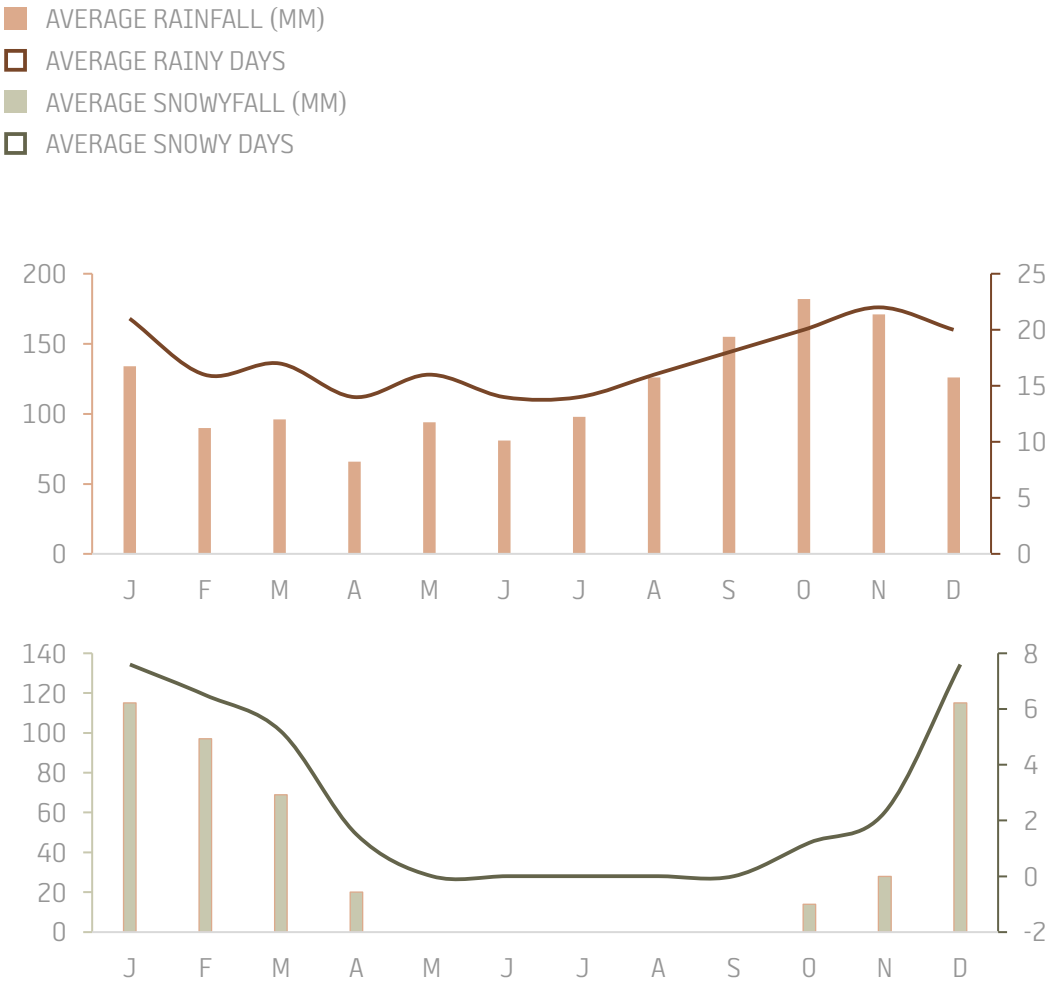


Fig. 065. Diagram: Rainfall

Fig. 066. Diagram: Snowfall

08.01 MICRO CLIMATE: OTRA

OTRA RIVER FLOW DYNAMICS

Consisting of 249 streams, the vast and complex river system, Otra, is the reason for Kringsjå Kraftstasjon's existence.

The Otra River, the largest in southern Norway, drains approximately 4.000 sq km. of forest and alpine uplands, with the basin underlain by siliceous bedrock. Its long, narrow catchment stretches from north to south, emptying into the North Sea at Kristiansand.

Approximately 40% of the basin's drainage area has been altered for electricity production, with 52 water bodies classified as "heavily modified" due to hydropower development.

Analysing flow statistics from 2013, the Otra has a mean water flow of 146 m3/s. 90% of the time. The flow remains above 70 m3/s, while only exceeding 277 m3/s 5% of the time. Notably, the minimum legal flow required by hydropower companies is set at 50 m3/s.

Due to climate change, runoff in the Otra basin is expected to rise over the next 90 years, with an increase in winter runoff and a decrease in summer runoff.

In the upcoming design process, consideration will be given to the potential increase in Kringsjå lake's depth over time, which may impact architectural implementations (Freshwatertools.eu, 2025).

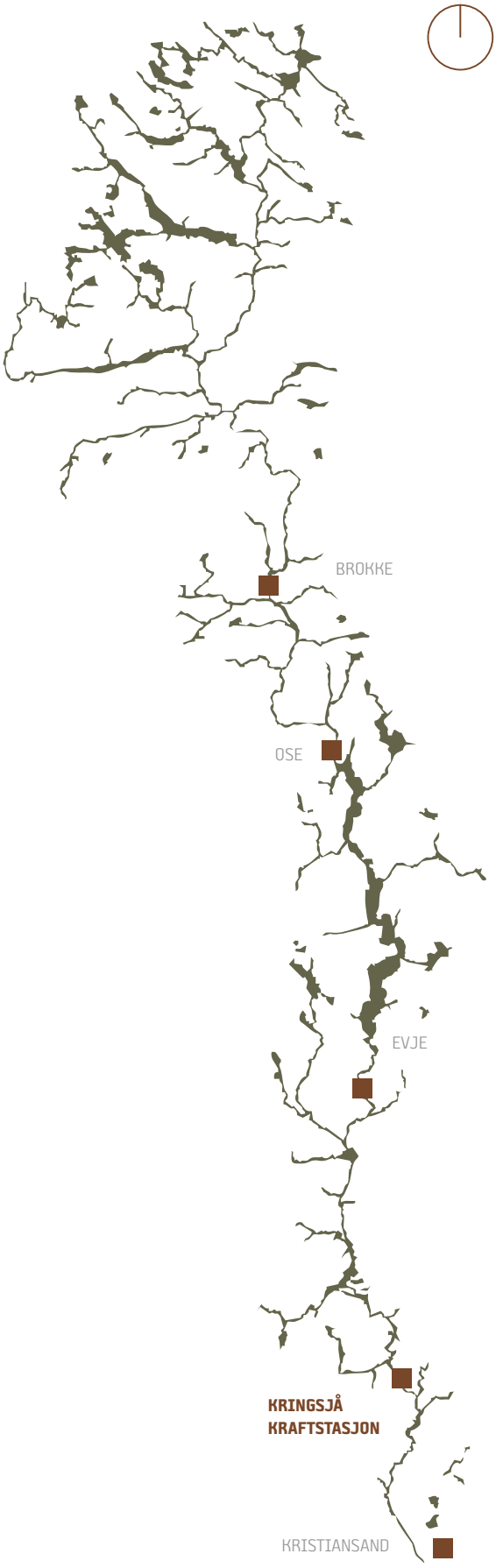


Fig. 067.
Diagram:
Otra network

08.02 MICRO CLIMATE: SUN

DIRECT SUNLIGHT THROUGHOUT THE YEAR AND CLOUD COVER DYNAMICS

Fig. 068 illustrates the sun path during the summer and winter solstices. At noon, the sun reaches a maximum altitude of 55.3 degrees in summer, while during the winter solstice, it only rises to 8.5 degrees. This results in up to 18 hours and 19 minutes of daylight in summer and just 6 hours and 30 minutes during the darkest winter days. Notably, Kringsjå Kraftstasjon is situated among small mountains, further reducing the hours of direct daylight in winter. As shown in fig. 069, cloud cover correlates with sunlight availability. During warmer months, cloud cover is below range about one-third of the time, whereas in colder months, cloud cover is above range approximately two-thirds of the time. (CBE Clima Tool, 2025)

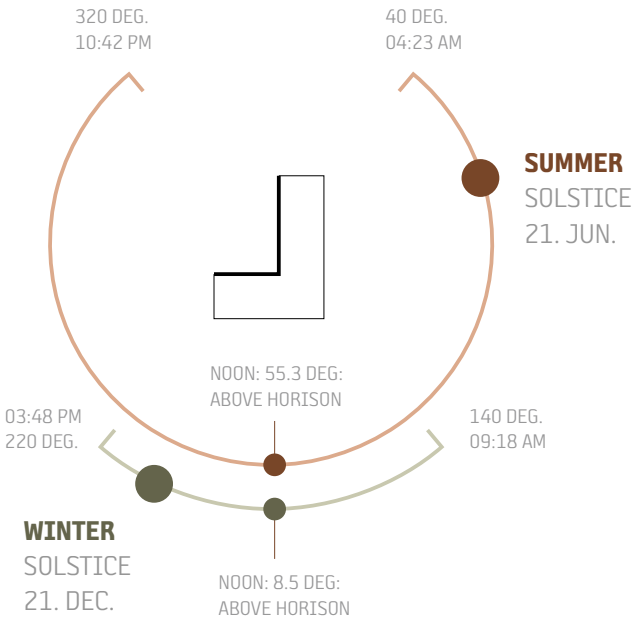


Fig. 068. Diagram: Sun path

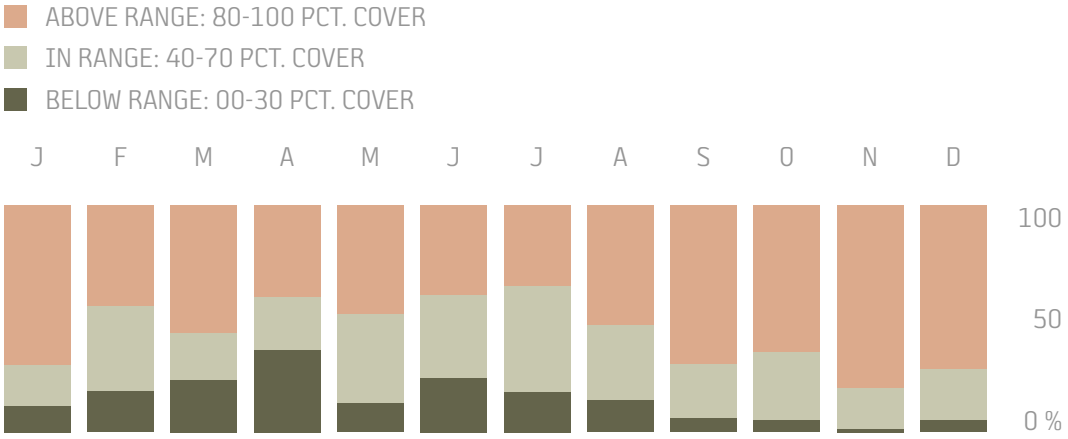


Fig. 069. Diagram: Cloud cover

08.03 MICRO CLIMATE: WIND

AVERAGE WIND CONDITIONS AND THERMAL STRESS THROUGHOUT THE YEAR

Situated among small mountains and dense coniferous forest, the wind conditions at Kringsjå Kraftstasjon are milder compared to areas along Norway's western coast. The primary wind direction throughout the year ranges between northwest and southwest, which results in even gentler wind conditions on-site, as an overgrown hill provides shelter from westerly winds (fig. 070). At peak hours – occurring only 0.42% of the time – wind speeds can reach 7.9–10.7 m/s. Thermal stress factors vary throughout the year, with conditions ranging from mild to strong cold stress, except during the warmer months when thermal neutrality is most common (fig. 071). However, between November and March, there can be days when weather conditions cause very strong cold stress. (CBE Clima Tool, 2025)

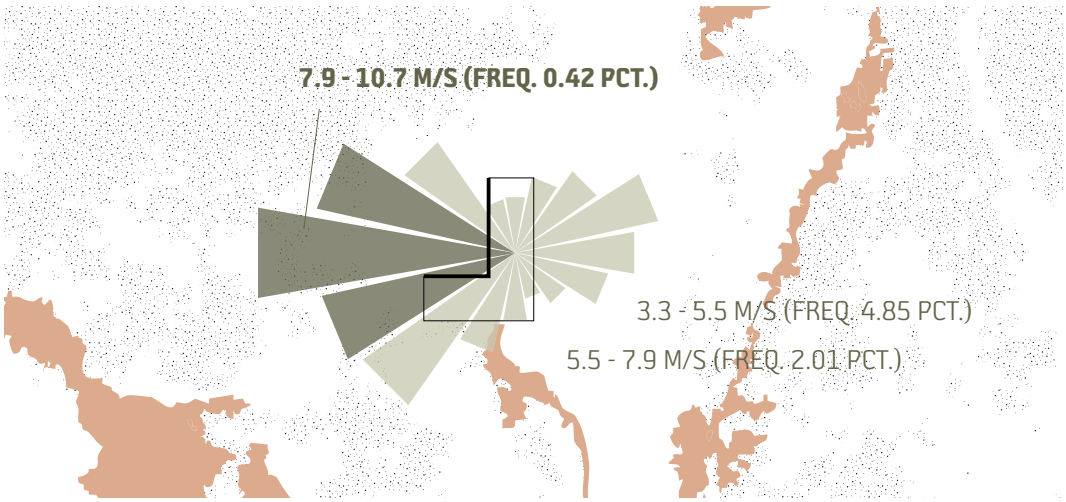


Fig. 070.
Diagram:
Wind rose

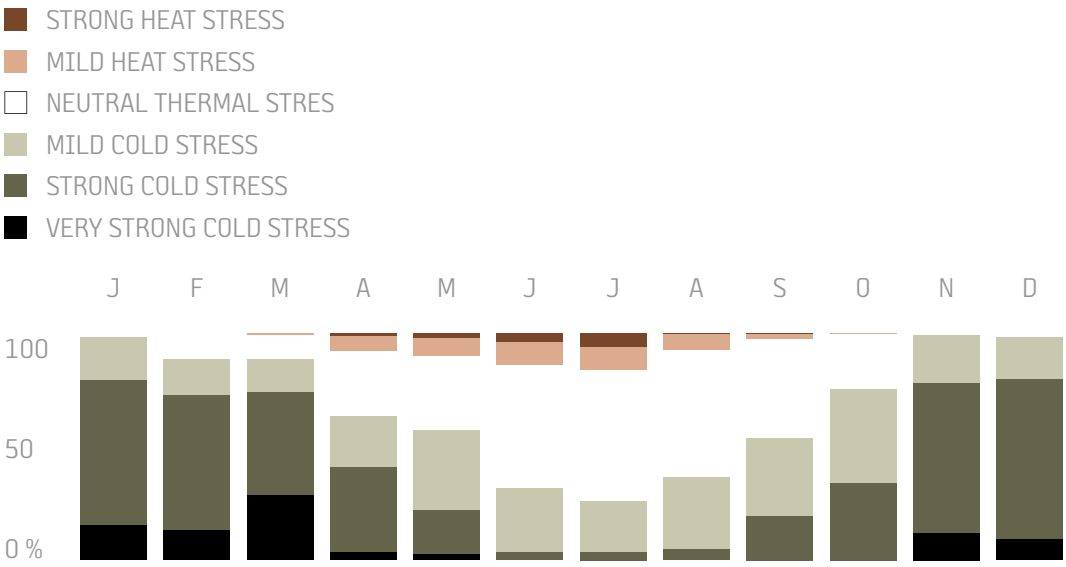


Fig. 071.
Diagram:
Thermal stress

08.04 MICRO CLIMATE: INTEGRATION

INTEGRATING ENVIRONMENTAL FACTORS IN THE DESIGN PROCESS

In designing the future Kringsjå Kraftstasjon, it is essential to integrate these local environmental conditions - precipitation, Otra dynamics, sun and wind - to ensure resilient and contextually responsive architecture.

The region's high and persistent precipitation, especially from late summer to early winter, calls for robust drainage systems, water diverting roofs, and facades that prevent water infiltration. Snow accumulation during winter months also necessitates structural considerations for roof load.

Limited winter daylight, with the sun peaking at only 8.5 degrees, combined with frequent cloud cover, highlights the need for optimised building orientation and window placement to capture as much natural light as possible. Solar access strategies, such as reflective surfaces or light wells, can help mitigate the reduced daylight hours, especially in shadowed areas due to surrounding mountains.

Sheltered wind conditions lessen the need for extensive wind protection; however, occasional cold stress and peak gusts still necessitate strategic placement of outdoor spaces. Wind studies can guide the layout of these areas to improve comfort during windy periods.

Finally, the dynamic flow of the Otra River, influenced by hydropower operations and climate change, must be considered when implementing constructions near the lake plane. Flexible, adaptive design elements that account for potential lake level rise and fluctuating water flows will future-proof the site against long-term environmental shifts.

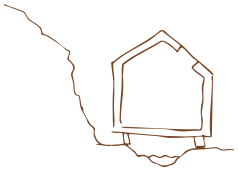


Fig. 072.
Own image:
Warning

Fig. 073.
Own image:
Tømmerrenna

09.00 NORWEGIAN WOOD CULTURE

"WOOD IS OUR LIVING ARCHIVE"
(Visitnorway, 2025)

Covering 75 percent of all Norwegian land, the forests play an important role in their cultural history. From the Viking age and centuries ahead, no life would have found place in the rocky terrains without the existence of wood. The material is almost eternal if treated correctly, which can be confirmed by the presence of many wooden stave churches, some dating back almost a thousand years. (Visitnorway, 2025)

Norway is the only region in Europe with an unbroken tradition of wooden construction, where this heritage continues to evolve through new applications and innovative architecture (Berre, n.d).

The craftmanship behind the constructions, that initially had to do without metal equipment, remains today as part of contemporary Norwegian wood architecture.

In recent years, engineers are discovering new ways of utilising the material – on one hand because of its versatility, renewability and flexibility, and on the other because of it being a key component in the green building transition. More importantly though - related to this project framework - because of the aesthetic properties; Connection to nature, tactility, scent, acoustics, calmness and quality of life (Visitnorway, 2025).

These aspects are further elaborated in the following section.

09.01 WOOD

"WOOD BRINGS US CLOSER TO NATURE"
(Visitnorway, 2025)

For most of human history, people lived closely connected to nature. Only recently, in geological terms, we have moved into urban environments, spending most hours behind synthetic building envelopes and climate-controlled environments. Given this long history, it's unsurprising that modern disconnection from nature may have negative effects, while exposure to nature brings benefits (Mayer, et. al., 2008).

Page 70, dealing with the importance of outdoor life, refers to studies suggesting that it has both physical and mental benefits to spend time outside. Building on top of these observations, this section clarifies how some health benefits can occur from inside the building and how the use of a natural material like wood as main material is significant in this regard.

In the build environment, wood can be said to fulfil both technical and aesthetic duties. Structural advantages refer to flexibility and strength to weight ratio, and aesthetic qualities refers to the promotion of well-being of building occupants (Abbasnejad, et. al., 2024).

AESTHETIC

Recent scientific research highlights a strong link between space and health (Güler, et al., 2024). Wood as an architectural material has aesthetic properties such as connection to nature, tactility, scent, acoustics, calmness and quality of life (Visitnorway, 2025). These properties will be elaborated in the following:

WELL-BEING

Textures of wood, among other biophilic implementations in architecture, has both physiological and psychological benefits including lower blood pressure, heart rates and stress levels (Kremer, 2024).

Numerous studies have examined the physiological and psychological effects of incorporating wood in interior spaces. One study with 729 participants found that those living in log-framed houses were more likely to report a state of well-being compared to residents of lightweight-framed or masonry/ concrete houses (Güler, et al., 2024).

TACTILITY

When observed or touched by the occupant, the natural and tactile material triggers a sense of warmth and authenticity, generating a connection to nature (Abbasnejad, et. al., 2024). Studies have found that touching wood surfaces, in this case white oak, more frequently caused a feeling of comfort and relaxation compared to e.g. steel (Güler, et al., 2024).

The rise in blood pressure caused by contact with materials like metals and acrylic is significantly influenced by the material's temperature, also referred to as the conductivity . Wood, however, should be preferred, particularly in interior spaces, as it does not increase blood pressure, whether it is cold or at room temperature (Güler, et al., 2024).

VISUALS

The human perception of room temperature relates to the colours of the given surroundings, and studies has indicated that interiors with a high proportion of wood, which is characterised by yellow and brown tones, were commonly perceived as warm and calming (Güler, et al., 2024).

Fig. 074.
Own image:
Wooden shelter

Additionally, wood surfaces have the ability to absorb ultraviolet light rather than reflecting it, making it more gentle for the human eye to observe. Besides the visual factors of wood such as colour and light absorption, also the purity of the actual wooden planks has an effect on how one perceives the atmosphere. It is argued, that in Japan, knots in wood are considered flaws and are associated with cheapness, while in contrast, in Europe, knots are highly valued, often described as natural and rustic, and appreciated for its unique character (Fell, 2010).

AIR QUALITY

Being a hygroscopic material, the timber elements in the building can exchange moisture with its surroundings, thus functioning as a natural air exchanger capable of maintaining a healthy humidity level and thermal setting (Abbasnejad, et. al., 2024).

SCENT

Compared to synthetic materials, wooden surfaces, depending on its degree of treatment, can be measured to have an emission of organic compound which entails a fragrant stimulus (Kumpulainen, 2024). This stimulus affects how closely connected to nature one feels, thereby influencing psychological well-being.

INNATE PERCEPTIONS

Lastly, while the mentioned factors are based on immediate sensual experiences, a study suggest that people instinctively associate wood environments with health, with wooden rooms often described as warm, relaxing, restful, natural, and inviting. With its origin being a living organism, wood has a special connection to humans as a building material, and just like humans, wood is a material in constant change (Bejder, 2012).

TECHNICAL

Besides the structural versatility and strength to weight ratio, wood has many other technical advantages compared to traditional construction methods:

COSTS

Disadvantages of building with e.g. CLT are often costs and lacking experience, but using Moholt Timber Towers by MDH Arkitekter as a case – a Norwegian newly build studio accommodation constructed primarily with CLT – results displayed that the costs of wooden materials were lower than compared to traditional stone materials. While the prefabricated timber elements might be more expensive than those of stone, the construction efficiency is one of the factors that lower overall construction costs. It is at

the same time noteworthy that when public demand for wooden structures increases, the suppliers will obtain the growth needed for investments in more competitive and cost-effective solutions. Additionally, it has to be noted that the plan compositions in studio accommodations have relatively short spans across the small rooms, which makes construction easier and cheaper than in buildings with large open spaces (Lien, et al., 2019).

EMISSIONS

It is no novelty that wooden architecture leaves behind a way lower trail of greenhouse gas emissions compared to traditional construction methods. Referring to the previous case, the use of CLT has lowered CO2 emissions from building materials by 57% (Archdaily, 2025). Architectural materials with high carbon footprints, such as steel, concrete, aluminium, plastic, contribute to emissions, while biomaterials like woodwork contrary to this trend. Wood is a renewable material that can store carbon in structural elements for many decades, and the underlying supply chain generates less CO2 compared to traditional building materials (Güler, et al., 2024).

WORKING CONDITIONS

Besides being sustainable in terms of emissions, the timber constructions entail a social sustainability regarding working conditions, where the amount of unhealthy dust, noise levels and heat is mitigated compared to traditional methods.

LANDMARK

Being aware of the aesthetic and technical potential behind using wood as a main building material, wood is still not a common material in Norwegian cities when it comes to large scale multistorey architecture. A study revealed that the most preferred materials were identical to those already established in the given city such as concrete and steel, despite the fact that 78% of Norwegian housing, mainly one- and two-story houses, primarily consists of wood. The choice of stone materials might be based on factors such as higher status, tradition and climatic durability, at least regarding long-term maintenance. Given the importance of context for consumers, providing information is crucial when introducing a material to a new setting such as multistorey structures. Landmark wooden buildings in cities serve as an effective tool for developers to introduce, educate, and familiarise people with wood in an urban environment (Høibo, et al., 2018).

Wood has an obvious downfall, being water, and since Kringsjå is situated in an environment where water is present everywhere, it is important to investigate implementing another material where wood is challenged. Since stone is mentioned in "Therme Vals case" (page 78), a study should be conducted on what types of stone is present in the nearby area and how it can be implemented in a compatible way.

The use of wood as a primary material holds strong potential in this project—both for its biophilic and technical benefits. Its aesthetic qualities such as tactility, scent, natural light absorption, and visual warmth contribute positively to mental and physical well-being, aligning with the project's focus on healing architecture. Technically, it offers flexibility, structural performance, and lower emissions, while also improving working conditions during construction. However, wood's vulnerability to water must be addressed—especially considering Kringsjå's wet environment. This calls for further investigation into suitable complementary materials, such as local stone, to ensure long-term durability and contextual integration. Going forward, the design process should explore how to maximise wood's spatial and sensory qualities, while carefully balancing them with robust materials where environmental conditions demand it.

09.01 LOCAL MATERIALS

LOCAL SUPPLY OF WOOD AND STONE MATERIALS

As earlier reflected upon, wood as a material can be challenged in the presence of water and humidity. Since Kringsjå is located in an environment where water is ever-present–through floods, streams, and the generally moist Norwegian climate shaped by rain and snow–it is essential to consider alternative materials, as wood may no longer be a viable option. It has been established in "Recharging Architecture" (page 76) that the typology of this project will be a thermal bath, where water and steam will be present, therefore implementing stone in these functions would be beneficial.

Vennesla municipality states in their municipal plan that they wish to implement wood, but this plan also mentions a wish for the implementation of local material, in this case this will be stone. Therefore, a map of local stone has been made to show the presence of them in the near context, and how they easily can be transported to the site (fig. 75).

As shown on the map, multiple stone varieties are present near the site. Here granite is particularly interesting, since historic literature show that both the dam and the foundations for the houses of Kringsjå was built using granite. (Aslaksen et al., 2010) When looking at traditional building techniques in Norway, stones has been used as foundations to create a barrier between the wet terrain and the wood structure. (Aanensen and Brænne, 1992, page 65-69) The use of this technique can still be seen at the site of Kringsjå Kraftstasjon and is a detail that is wanted to preserve. This concept should be used in the further design process.

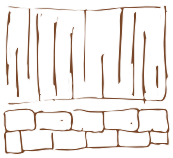


Fig. 075.
Diagram:
Local materials

D E S I G N P R O C E S

Fig. 076.
Own image:
Close up ruin

10.00 VISION REVISITED

THE VISION SEEN THROUGH AI

Having established the contextual framework for the project through cases, literature, and visiting the site, it is now important to revisit the project vision. This serves both to remind the study group of the project's main focus and to establish a clear direction for the design process.

To support this, a prompt was written and inserted into an AI image generator. The resulting images visualise a reimagined historic community, where new structures stand in clear contrast to the old ruins, yet seamlessly fill the gaps that once existed. Water flows through the area once more, reviving the current that once powered the site, while creating a sense of peace and tranquillity at Kringsjå Kraftstasjon.

PROMT

A deeply atmospheric and emotionally resonant architectural site in the raw Norwegian woodland. Moss-covered ruins –stand as monumental relics of the past, including a turbine wall preserved as a central feature. Thoughtfully designed modern structures, made from warm wood and glass, contrast the decaying stone and concrete, respectfully merging with the ruins and surrounding nature. Ice-cold water from the Otra River flows gently through the site, integrated into thermal baths with ascending steam. Panoramic views, forest trails, and quiet shelters suggest a place of reflection, mental well-being, and cultural revival. The atmosphere is quiet, powerful, and poetic–where historic energy meets new forms of human experience and community gathering.

Fig. 077.
deepai.org:
AI vision

Fig. 078.
Own image:
Ruin in July

10.01 MULIGHETSSTUDIE

WHAT THE MUNICIPALITY ENVISIONS

Prior to walking through the design process, it is relevant to highlight that Vennesla Municipality, concurrently with this project, is working on what they call "Sustainable visitor management" for the Tømmerrenna and Kringsjå area. This initiative is based on a study of possibilities published in March 2025, with a focus on creating effective strategies for connections and circular routes. The aim is to establish a logistics system that considers the landscape, nature, local communities, and the overall quality of the visitor experience.

Stakeholders involved in this project include landowners, neighbors, local clubs and associations, Bane Nor, various municipal departments, the county municipality, the Setesdal Railway, and Å Energi.

The area currently lacks essential amenities such as toilets, parking, interpretation of natural and cultural history, experience points, and potentially accommodations and swimming areas. The goal of the proposed initiative at Kringsjå is to provide visitors with an engaging and attractive experience of the area's unique history, communicated through relatively simple architectural interventions. The study also proposes that the large concrete surface outside the ruins could serve as a flexible activity area, adaptable for various events.

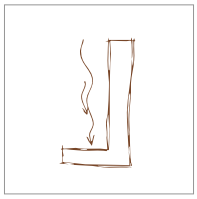
To ensure that visitors can find shelter, prepare food, and take breaks—while also learning about the building's history—a new architectural volume is planned atop one of the housing ruins surrounding the Kraftstasjon.

"It is important to note that this new structure is not intended to be a direct reconstruction of the historic building, but rather a modern interpretation of its history" (translated).

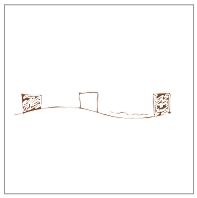
It is worth noting that this document was not available until the final stages of this thesis project, making it more of a design confirmation than a source of inspiration. Architecturally, the two visions are not fully aligned, but the fact that the proposed functions in this project are echoed by the stakeholders only strengthens the overall concept of this thesis. (Mulighetsstudie, 2025)

10.01 DESIGN DRIVERS

REVIVED CREEK THROUGH BUILDING
Tailor form and placement of volume to water flowing through site. Creating a historic reference, a raw nature experience and direction for the journey.



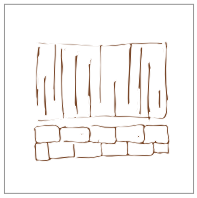
CONTRASTING ELEMENT
Material, light, and spatial contrasts mark transitions and heighten spatial awareness.



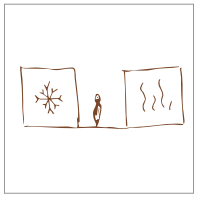
KRINGSJÅ AS A DESTINATION
Adding a function to the society attracts locals and hikers and rewards them upon arrival.

FRAME SURROUNDINGS
Windows and room geometry frame selected views—preserving and amplifying the landscape.

LOCAL NEW MATERIALS
Locally sourced materials join past and present for a collective future.



HOT COLD FUNCTIONS
Programmed thermal variation connects body and environment—stimulating well-being.



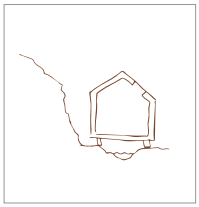
INTERACTING WITH STRUCTURE
Structure becomes both path and frame—moved through, felt, and read as space telling story.

Fig. 079.
Diagrams:
Design drivers

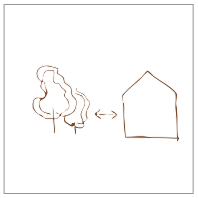
JOURNEY TO AND ON SITE
Using existing trails and routes as well as introducing new, to create multiple journeys.

CONTRASTING MATERIALS / NEW AND OLD
Visible material shifts, celebrate differences in age and texture, making identification easy.

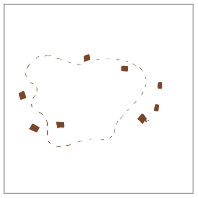
MICROCLIMATE - ROOF, SUNLIGHT, COVERAGE FROM TERRAIN
Roof form, placement, and openings respond to terrain, light, and wind for comfort and quality.



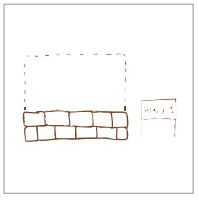
NATURE INSIDE
Nature is drawn inside—physically through material and light, conceptually through atmosphere.



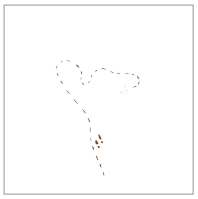
SOCIETY - PRESERVE AND REMEMBER
Design embeds collective memory and cultural significance in the spatial identity.



PRESERVING RUINS
Utilise and elevate existing ruins as active components in new architecture.



TØMMERRENNA
The timber chute informs all details as a metaphor in all scales for movement, guidance, and connection with nature and history.



10.02 INITIAL BRAINSTRORM: FUNCTIONS

WHAT FUNCTIONS TO IMPLEMENT ON SITE?

During the first week back in February, before diving into any detailed analyses, an initial function brainstorm was conducted to narrow the scope of potential uses for the site. One of the key concepts was that the project would revolve around a central hydropower museum, through which the story behind Kringsjå Kraftstasjon and contemporary power plants would emerge. However, ideas like these were quickly set aside as it became increasingly clear what the true motivator was—and what we identified as a pressing national health issue in Norway: mental well-being, particularly among the youth.

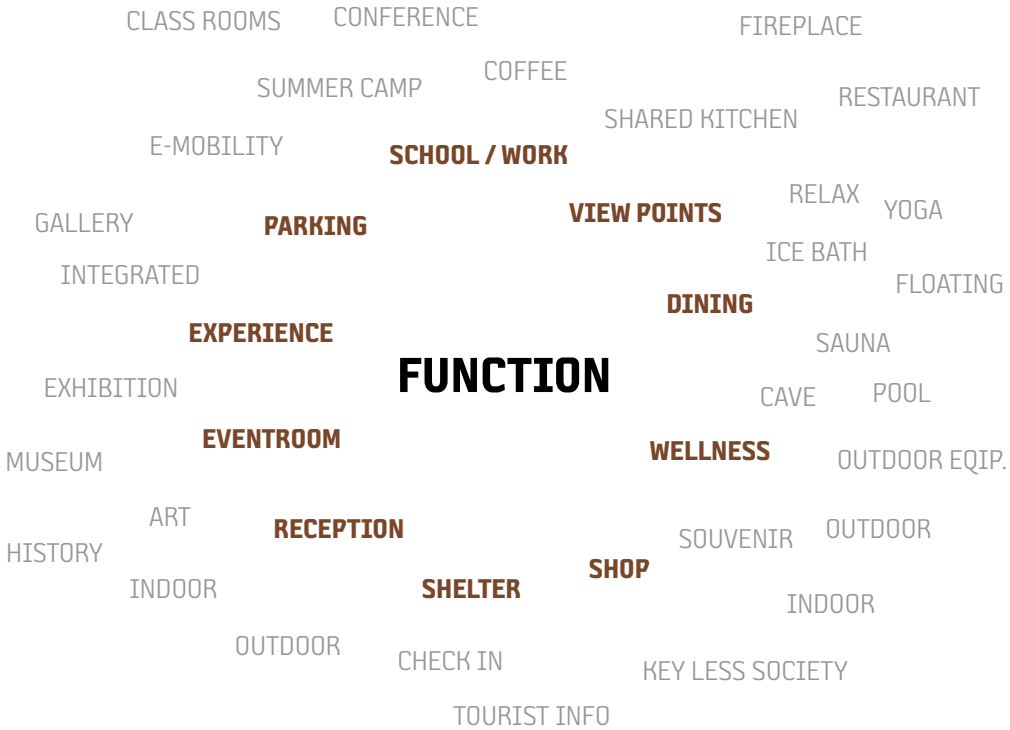


Fig. 080.
Brainstorm: Functions

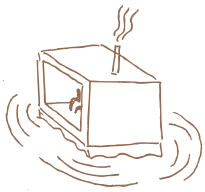
10.03 FUNCTION DIAGRAM

CHOSEN FUNCTIONS AT THE FUTURE KRAFTSTASJON

The following fig. 081 illustrates the six main building sections and their sub-functions such as thermal baths, rentable cabins and public event spaces. Having been through various iterations of these choices, this is a presentation of the final function composition which will be further elaborated in the upcoming room program.

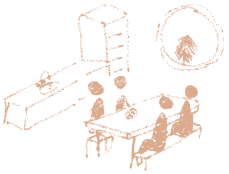
THERMAL BATHS

ENTRY
COLD BATH
COLD ROOM
WARM BATH
HOT TUB
FOREST SAUNA
STEAM ROOM
FOOTBATH
MUTED SAUNA
DAYBEDS
CHANGING ROOMS
TRANSITION ZONES
TOILETS



FLOATING SAUNA

SAUNA
BOARDWALK
LAKE ACCESS
DEPOT
CHANGING ROOM



COMMON

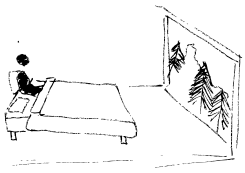
KITCHEN
DINING
LOUNGE
COFFEE STATION
TOILETS
ENTRY
WARDROBE

PRACTICAL

STAFF ROOM
DEPOT
TECHNICAL
CLEANING
LAUNDRY
CAR PARK
DELIVERY ZONE

PUBLIC

AMPHITHEATER
SHORT TERM SHELTER
OUTDOOR LOUNGE
BATHING PIER
TOILETS



RENTABLE CABINS

ENTRY
WARDROBE
BEDROOM
BATHROOM

Fig. 081.
Diagram: Functions

10.04 PERSONA

GETTING TO KNOW THE FUTURE USER

Since this project is expected to have hybrid facilities to utilise the space as much as possible and create a place for locals as well as visitors, it is important to investigate the potential users. Based on literature and statistics three personas were created in order to capture their different personalities and relation to the site.

OUTDOOR LIFE (USER 01)

When looking at outdoor life in Norway, the group of people who participate the most are younger individuals with a high socioeconomic status. This means that people with higher income and education are more likely to engage in outdoor activities, as mentioned in "Norwegian Outdoor Life" (page 69). Statistics show that the higher the income, the more participation in outdoor life–this also includes longer hikes. In 2021, a study showed that 80% of people with a high income had gone on a long hike within the last 12 months, where only 45% of people with a low income had done the same (Dalen and Oppøyen, 2023).

When talking about age, the same study showed that around 70% of individuals aged between 16 and 34 had gone on a longer hike in the past year, making them the age group that uses outdoor life the most.

In outdoor life, gender doesn't seem to play a significant role. When looking at who had participated in outdoor activities in the age group 16–74 during 2021, 94% of men and 89% of women responded that they had, making it clear that both genders, regardless of age, enjoy engaging in outdoor activities (Dalen and Oppøyen, 2023).

The types of outdoor activities that are most popular–regardless of demographics–are hiking (82%) and bathing (61%).

Both activities are free and accessible in most parts of Norway. These should be encouraged and facilitated in the programming of this project. Since Kringsjå is situated in an area with both a river and a lake, as well as multiple hiking trails, integrating these elements into the design would be beneficial for both the project and its context.

VENNESLA

Vennesla is generally a young municipality, with around 60% of the population aged between 18 and 64. The largest age group is 30–34 years old (Statistisk sentralbyrå, 2024). Considering that this age group is among the most active in outdoor life, it suggests that the inhabitants of Vennesla enjoy spending time in nature and frequently engage in activities like hiking and swimming.

The socioeconomic status of Vennesla's population is predominantly middle class. Around 50% have completed upper secondary education (high school or vocational training), while only 4% have attained a longer academic education (university). This corresponds with the employment distribution: the majority work within the commercial and service sector (retail, hospitality, and transport), and the secondary sector (industry, construction, and processing), with 31% employed in the former and 30% in the latter (Statistisk sentralbyrå, 2024).

Having identified the user groups most likely to engage with Kringsjå Kraftstasjon, it is now possible to create personas that clarify different user types, what attracts them, and which functions they are most likely to use. Their stress levels are considered based on socioeconomic status and age, as well as insights from "Mental Ruination" (page

68), where it became clear that mental health issues are getting increasingly worse. This approach will help make the project programming more structured and targeted.

PERSONA 01

A local 25-year-old male who is born and raised in Vennesla. He works at one of the local power plants and earns a little below medium wage. He is an active guy who likes to enjoy nature and participates in outdoor life, but he does not have the money to follow the newest trends. He experiences stress of some sort every day and likes to rewind in nature by going on hikes, swimming in the Otra and using the local saunas. His grandfather worked at Kringsjå Kraftstasjon, and he therefore has a relation to the site, but he would like to learn some more.

PERSONA 02

A local 60-year-old male who has lived his entire life in Vennesla. He has worked as a carpenter and has seen and been a part of the historic development of the area. Due to many years of hard labour, his physical abilities are no longer what they used to be, and he can therefore only go on shorter walks. He lives the simple life and has a low level of stress. He loves to be in nature and has spent many hours in the area around Kringsjå Kraftstasjon. He loves to tell stories about the power plant and the society that used to live there, and he even helped back in the day when the wood houses at Kringsjå were built.

PERSONA 03

A 30-year-old female from Kristiansand. She works in finance and makes a good salary, which makes her a part of the upper-middle-class. However, the busy life makes her stressed, and she use nature to rewind from everyday life. She loves every aspect of outdoor life and enjoys authentic new experiences. She often goes on longer hikes on some of the scenic routes in Norway. She enjoys the combination of nature and architecture coming together. She always reads about the trails she is going on but enjoys learning even more about different sites when she is there. So, even though she doesn't know much about Kringsjå Kraftstasjon she would love to learn about and experience the history.

Based on the statistics presented in previous sections, personas were developed to clarify user needs. These personas highlighted the importance of ensuring that the site is accessible not only to hikers but also to people with limited physical abilities. Some users will see Kringsjå Kraftstasjon as a destination on a longer journey, where they will engage fully with the site's facilities and experiences. Others may visit for short term stays with a specific purpose or event in mind. These facilities and events will be further explored in "Yearwheel" (page 108) to ensure that the project remains attractive and relevant throughout the year. Regardless of the reason for their visit, the site should be easy to access–both physically and socioeconomically.

Fig. 082. Diagram: Personas

10.05 YEAR WHEEL

HYBRIDITY THROUGHOUT THE YEAR

Since Kringsjå Kraftstasjon is expected to become a hybrid volume used all year round, it is important to create an overview of what kind of events and usages is expected to be there. Therefore, a year wheel has been created based on the seasons of the year and what activities are associated to them.

As seen on fig. 083 the hiking and more intense outdoor activities will be primarily in the warmer months, where indoor activities and less intense outdoor activities will be during the colder months. It is interesting to notice that bathing happens all year, and since Kringsjå is situated by the Otra river where the water is in constant movement, the water will never be warm, it is primarily the activities combined with the bathing that changed throughout the year from sunbathing to sauna.

Events like concerts and talks can happen all year and should be able to be facilitated both indoors and outdoors. However, it is important that the noise from an event does not influence the thermal bath experience. Therefore, bath facilities and common areas for all users should be separated in some way.

Based on the daywheel, the functions in the future Kraftstasjon should be able to embrace the diversity in outdoor life throughout the year as well as facilitate both outdoor and indoor events.

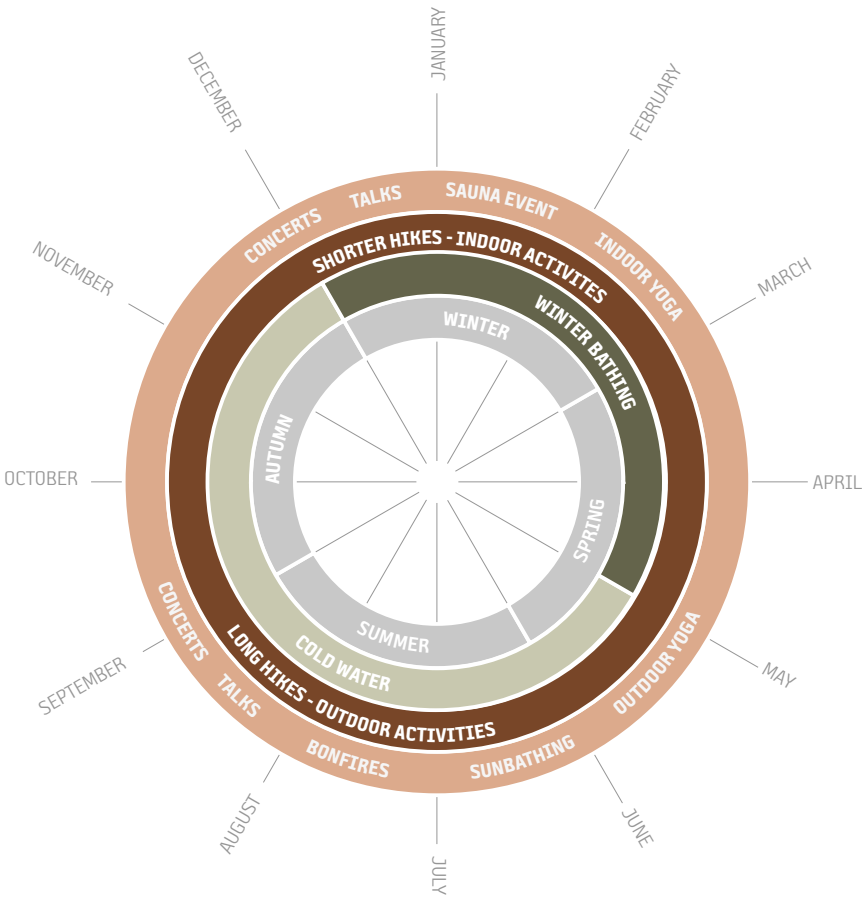


Fig. 083.
Diagram:
Year wheel

10.06 VOLUME DISTRIBUTION

FRAGMENTED OR ONE VOLUME?

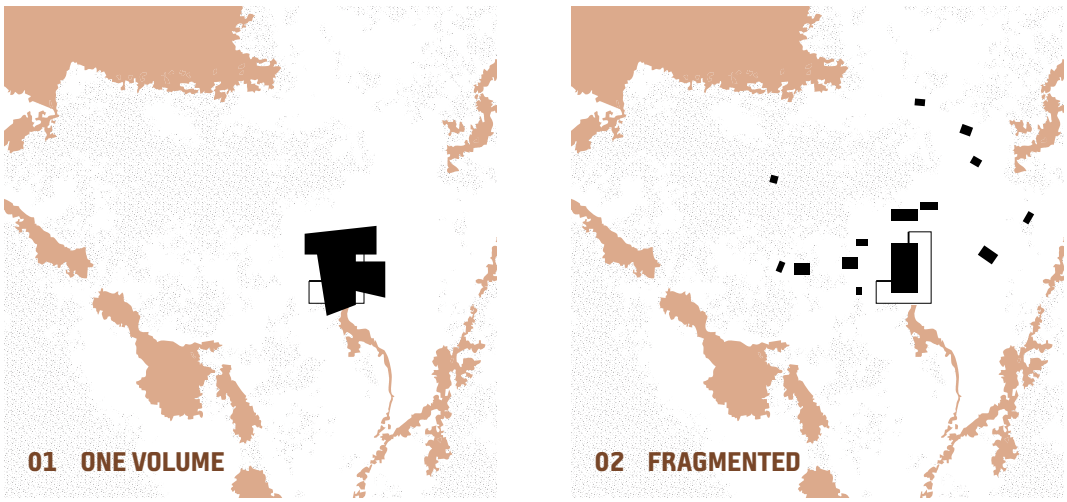


Fig. 084.
Diagram:
Volume distribution

EVALUATION TABL: VOLUME DISTRIBUTION	ONE VOLUME	FRAGMENTED
ABILITY TO MIMIC THE HISTORIC KRINGSJÅ AREA	0	**1**
ABILITY TO INCLUDE TRANSITION ZONES	0	**1**
INDUCING FEELING OF RENTABLE CABIN OWNERSHIP	0	**1**
REDUCED NOISE LEVELS IN CABINS	0	**1**
HEAT LOSS	**1**	0
SPONTANEOUS SOCIAL MEETINGS	**1**	0
TOTAL	2	**4**

Fig. 085.
Evaluation table:
Volume distribution

Having decided on which functions would be present as part of the future Kraftstasjon, one main design task was to decide whether these functions should be integrated in one large volume, or distributed between various smaller building volumes nearby (fig. 084).

This evaluation was completed using an evaluation table (fig. 085), in which some of the main points were ability to mimic the historic Kringsjå area and the feeling of cabin ownership. As the table indicates, the choice fell on the fragmented volume.

10.07 VOLUME STUDY

16 VOLUME ITERATIONS

Being aware of the distribution of volume across the entire Kringsjå area, the scope shifted to a volumetric study focused on the main central building–the future Kraftstasjon.

Initially, to estimate the square meters required for both the thermal baths and the common cabin, a rough 2D plan was developed. This resulted in approximate areas of 250 sqm for the common cabin and 400 sqm for the thermal baths.

With these estimated volumes established, 16 different volumetric iterations were created over the following days (fig. 086). For clarity, the thermal bath volumes are marked in green, and the common cabin in red. As seen in the range of proposals, there was no obvious solution for how the new volumes should physically connect to the existing ruin.

To address this challenge, a set of nine volumetric study parameters was introduced (fig. 088), helping to narrow the many possible directions the design could take. Among the most significant parameters to highlight are: 02. Availability of panoramic southern views for both volumes, 06. No disruption to public events, and 07. Maintaining legibility of the entire ruin.

Fig. 086.
Diagram:
Kraftstasjon ruin

10.08 16 ITERATIONS

RUIN, THERMAL BATH, RUIN

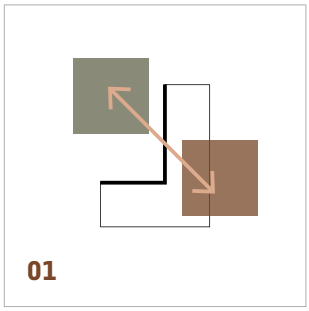
- 250m2 COMMON VOLUME
- 400m2 THERMAL BATH VOLUME
- RUIN

Fig. 087.
Diagram:
Volume study

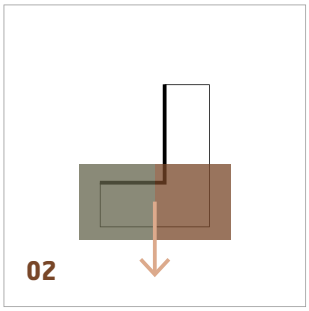
10.09 VOLUME STUDY PARAMETERS

NARROWING DOWN ITERATIONS

PHYSICAL SEPERATION OF THE TWO VOLUMES

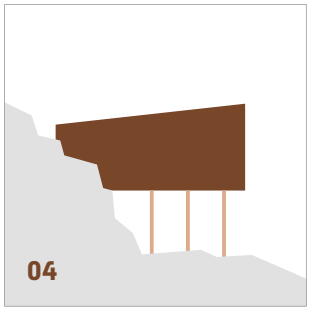


SOUTH PANORAMA ACCESSIBLE TO BOTH

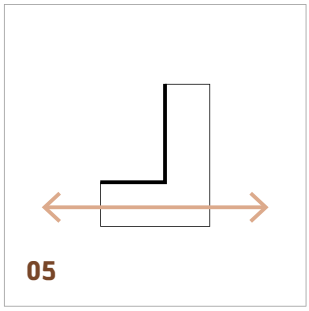


STRUCTURALLY USING THE RUIN

USING THE TERRAIN



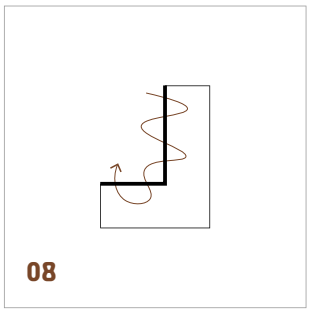
NO CIRCULATION DISRUPTION



NO PUBLIC EVENT DISRUPTION

LEGIBILITY OF THE ENTIRE RUIN

PASSING THROUGH THE ARCHES



ALLOWING WATER TO FLOW

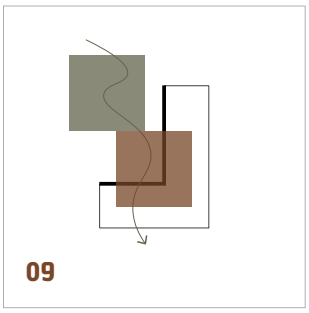


Fig. 088.
Diagrams:
Volume parameters

10.10 6 CHOSEN VOLUMES

EVALUATING SIX VOLUMES

Based on the design parameters, six volume iterations were highlighted (in bold) for their strong overall performance. The next step was to translate the nine parameters into an evaluation table and use it to assess these six volumes in greater detail. While iterations 02 and 03 scored the highest, the following days were dedicated to merging the various strengths into a final volume (fig. 091) that fulfilled as many parameters as possible.

EVALUATION TABLE: 6 POTENTIAL VOLUMES	01	02	03	10	11	12
PHYSICAL SEPERATION OF THE TWO VOLUMES	3	2	1	3	2	2
SOUTH	2	1	2	3	2	3
SYNERGI WITH RUIN	3	3	3	1	3	2
TERRAIN USE	2	2	2	0	1	3
PATH	3	3	3	3	1	3
PUBLIC	3	3	3	3	1	3
LEGIBILITY	3	3	3	2	1	3
ARCHES	1	2	2	0	3	0
WATER	1	3	3	0	3	1
TOTAL	21	**22**	**22**	15	17	20

Fig. 089.
Eval. table:
6 chosen volumes

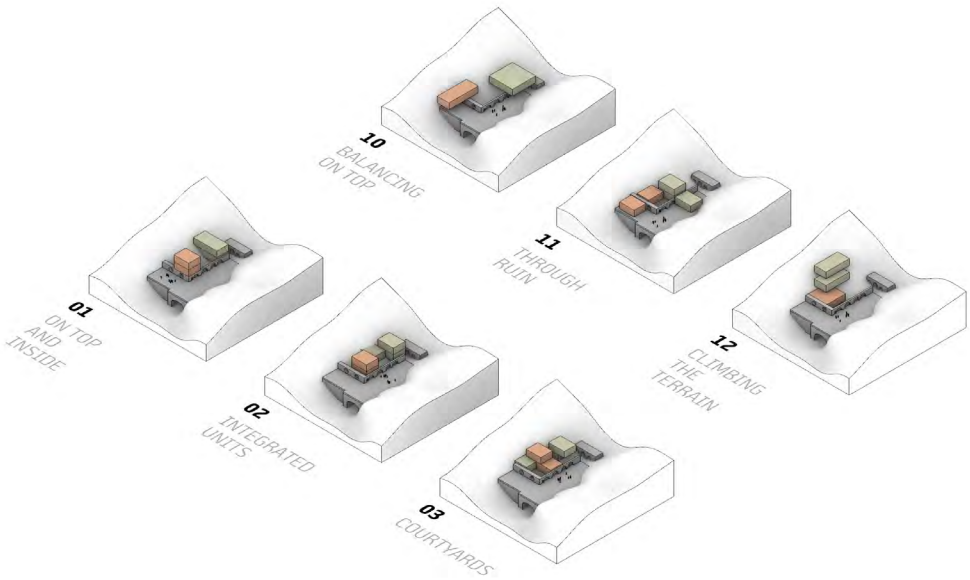


Fig. 090.
Eval. table:
6 chosen volumes

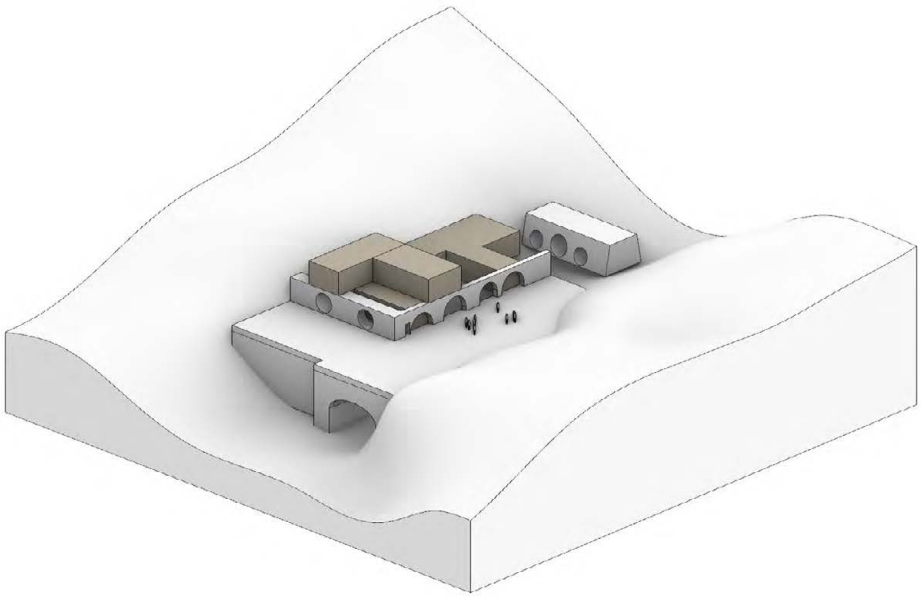


Fig. 091.
Diagram:
Chosen volume

10.11 SKETCHING THE JOURNEY

GUIDED TRANSITIONS BETWEEN THERMAL ZONES

As mentioned throughout the report, creating a journey is one of the key experiences this design aims to offer. In this context, a journey is defined as a hike or walk with multiple stops along the way, each filled with impressions and its own distinct experience. The architecture should guide the user, spark curiosity, and include contrasting elements – much like the hike to the site itself.

Based on the case study of Therme Vals, it became clear that the journey through the thermal bath facilities should be linear and follow a clear sequence. This ensures that the user moves through the space without confusion or stress.

The sketch shown in fig. 092 illustrates a circular flow through the volume, where each room has a single entry and an exit on the opposite side. Furthermore, each room includes a transition zone, extending the journey and enhancing the sense of contrast.

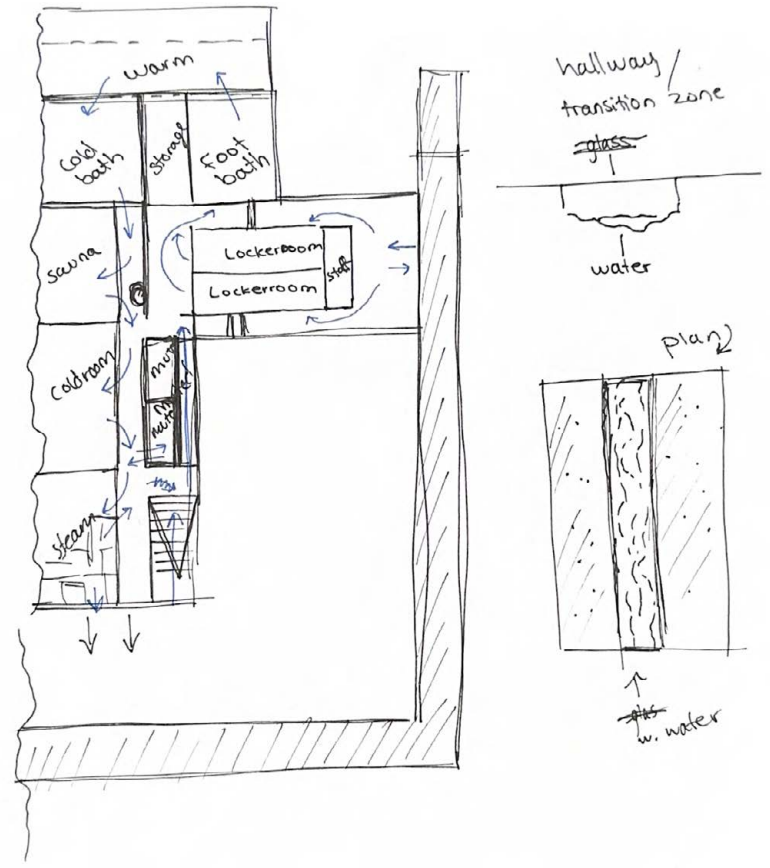


Fig. 092.
Sketch:
Plan journey

10.12 ROOM PROGRAM PART 01

DEFINING ROOMS AND CHARACTERISTICS

PART 01	FUNCTION	AREA
UNITS	DESCRIPTION	Estimated m2
COMMON		
KITCHEN	Common cooking	25
DINING	Common dining	25
LOUNGE	Relaxation + Panorama	50
COFFEE STATION	Coffee station + Vending machines	10
TOILETS	Toilets	25
ENTRY	Entry	10
WARDROBE	Storage of eqipment	5
TOTAL		**150**
THERMAL BATH		
ENTRY	Entry	10
COLD BATH	Thermal cold stress	25
COLD ROOM	Thermal cold stress + Panorama	25
WARM BATH	Thermal heat stress + Relaxation	50
HOT TUB	Thermal heat stress + Relaxation	25
FOREST SAUNA	Thermal heat stress + Relaxation	25
STEAM ROOM	Thermal heat stress + Relaxation	25
FOOTBATH	Thermal heat stress	10
MUTED SAUNA	Relaxation	25
DAYBEDS	Relaxation + Panorama	50
CHANGING ROOMS	Preparing for wellness entry	10
TRANSITION ZONES	Immersive wellness journey	0
TOILETS	Toilet facilities	25
TOTAL		**305**
FLOATING SAUNA		
SAUNA	Thermal heat stress + Panorama	10
BOARDWALK	Thermal cold stress + Panorama	JOURNEY
LAKE ACCESS	Thermal cold stress	10
DEPOT	Storage of eqipment	5
CHANGING ROOM	Preparing for floating sauna entry	5
TOTAL		**30**

ORIENT.	INTERACTION	ENCLOSED	DAYLIGHT	MATERIAL	THERMAL STRESS
N/E/S/W/C	0 - 3	0 - 3	0 - 3		Winter Scenario
S	3	1	1	WOOD	NONE
S/E	3	1	1	WOOD	NONE
S	3	1	3	WOOD	NONE
S	3	1	2	WOOD	NONE
N	0	3	2	WOOD	NONE
S/W	2	1	2	WOOD	NONE
N	1	2	0	WOOD	NONE
E	2	1	2	RUIN	NONE
N	1	0	OUTSIDE	GRANITE	STRONG COLD
W	1	2	0	GRANITE	STRONG COLD
N	1	0	OUTSIDE	GRANITE	STRONG HEAT
S	1	1	2	WOOD	STRONG HEAT
W	1	2	1	WOOD	STRONG HEAT
W	1	3	0	GRANITE	STRONG HEAT
N	1	2	1	WOOD	MILD HEAT
W	0	3	0	GRANITE	STRONG HEAT
S	3	1	3	WOOD	NONE
C	1	1	1	WOOD	NONE
C	1	2	2	WOOD	VARIES
C	0	3	0	WOOD	NONE
N	3	1	2	WOOD	STRONG HEAT
C	3	0	OUTSIDE	WOOD	STRONG COLD
W	2	0	OUTSIDE	WOOD	STRONG COLD
E	0	3	0	WOOD	NONE
E	1	2	1	WOOD	NONE

Fig. 093.
Room program:
Part 1

10.13 ROOM PROGRAM PART 02

DEFINING ROOMS AND CHARACTERISTICS

PART 02	FUNCTION	AREA
UNITS	DESCRIPTION	Estimated m2
SHELTER UNITS		
ENTRY	Entry	2
WARDROBE	Preparing for shelter entry	2
BEDROOM	Sleeping + Being + Panorama	10
BATHROOM	Bathroom	5
TOTAL		**19**
PUBLIC		
AMPHITHEATER	Public outdoor events	0
SHORT TERM SHELTER	Outdoor relaxation	10
OUTDOOR LOUNGE	Outdoor relaxation	50
BATHING PIER	Bathing facilities in Kringsjå lake	25
TOILETS	Toilet facilities	25
TOTAL		**110**
PRACTICAL		
STAFF ROOM	Staff breaks	10
DEPOT	Storage of eqipment	5
TECHNICAL	Technical installations	25
CLEANING	Storage of cleaning eqipment	5
LAUNDRY	Laundry facilities	10
CAR PARK	Car park	-
DELIVERY ZONE	Delivery zone	0
TOTAL		**55**
MASKINMESTER CABIN		
FLEXIBLE ROOM	Events e.g. yoga or celebrations	75
DEPOT	Storage of eqipment	5
TECHNICAL	Technical installations	5
TOILETS	Toilet facilities	25
TOTAL		**110**

ORIENT.	INTERACTION	ENCLOSED	DAYLIGHT	MATERIAL	THERMAL STRESS
N/E/S/W/C	0 - 3	0 - 3	0 - 3		Winter Scenario
UNIQUE	1	2	1	RUIN	NONE
UNIQUE	0	3	0	WOOD	NONE
UNIQUE	0	1	2	WOOD	NONE
UNIQUE	0	2	2	WOOD	NONE
W	3	0	OUTSIDE	RUIN	MILD COLD
S	2	1	OUTSIDE	WOOD	MILD COLD
S	2	0	OUTSIDE	WOOD	MILD COLD
N	3	0	OUTSIDE	WOOD	MILD COLD
C	0	3	1	WOOD	MILD COLD
C	0	3	0	WOOD	NONE
C	0	3	0	WOOD	NONE
C	0	3	0	WOOD	NONE
C	0	3	0	WOOD	NONE
C	0	3	0	WOOD	NONE
C	1	0	OUTSIDE	OUTSIDE	MILD COLD
C	1	0	OUTSIDE	OUTSIDE	MILD COLD
S/W	3	1	3	WOOD	NONE
N	0	3	0	WOOD	NONE
N	0	3	0	WOOD	NONE
N	0	3	1	WOOD	NONE

Fig. 094.
Room program:
Part 2

Fig. 095.
Own image:
Ruin landscape

11.00 MEETING THE GROUND

BUILDING ON RUGGED TERRAIN

The following section explores various methods by which the building structure interacts with the rugged terrain beneath. Norway has a long tradition of having to adapt buildings to topograhically demanding terrain (Berre, n.d). As mentioned in the previous section, Wood (page 93), this material has a notable weakness: water. Since Kringsjå is located in an environment with frequent precipitation and abundant water from streams and humid surfaces, the wooden elements must be carefully integrated.

The area surrounding Kringsjå Kraftstasjon is characterised by large, rough stone formations covered with a thin layer of moss, spruce needles, and fallen branches. Many tree stumps remain among the rocks, as the pine and birch trees above are frequently cut down by local rangers. As a result, the forest density is lower than it would naturally be.

Fig. 096.
Own image:
Local ground

Fig. 097.
Own image:
Local ground

11.01 PEAK & PERMANENCE

THE TIME FRAME BEHIND THE INTERVENTIONS

When exploring the meeting between building and ground, it is important to have the time frame in mind as to not integrating volumes that can't be removed without substantial damage of the terrain. Buildings can be constructed with varying time frames in mind. Some are designed so that they last as long as possible, meaning solid foundations and tough thermal envelopes, and some are designed on a more limited time frame meaning minimal impact on terrain and material use.

This project suggests that the future of Kringsjå Kraftstasjon must be of a long time frame for the following reasons:

NATURAL THERMAL BATHS

The project centers around making raw experiences of outdoor life, thermal stress and calmness available to as many people as possible – trends that most likely will remain for many years, as their benefits for mental health has been proven.

FRAGILE HISTORY

As stated in "Getting to Know the Ruin" (page 60), the history is still here, but it needs help to tell the story to future visitors preserving the story of what was once there. New functions should have a certain permanence in order to ensure that the story of the historic society will continue to be told for many years to come.

PEAK OF SIGNIFICANCE

As suggested "Ruin Interventions" (page 56), instead of preserving a building's historic fabric in a static state with a fear of intervention, these interventions could eventually unlock the full potential of the heritage. Being a brave assumption, the transformation of Kringsjå Kraftstasjon might entail that the site's peak of significance still might be ahead. (Plevoets & Van Cleempoel, 2019)

11.02 THREE STRUCTURAL CASES

NORWEGIAN CASES ON ROUGH TERRAIN

01 ALLMANNAJUVET

One notable architectural example where the interaction with the ground has been a key design driver is Allmannajuvet, designed by Peter Zumthor (fig. 099). See "Allmannajuvet case" (page 50) for further details.

On even steeper rock formations than those found at the Kringsjå area, the technique used to anchor the wooden columns to the ground involved prefabricated steel mountings fixed to the rocks with eight long bolts (fig. 098). The angle of the steel plate can vary depending on the terrain's slope, and a plus-shaped mounting, welded to the plate, is positioned perfectly vertically to connect with the wooden column, which has a corresponding inverse plus-shaped cutout. These columns then becoms part of a complex wooden column-beam-grid with diagonal trusses, on which the main building volume rests. Due to the relatively thin dimensions of the columns, the span between them is kept short.

02 TUNGESTØLEN

Designed by Snøhetta in 2015, Tungestølen Hiking Cabin is a series of tourist cabins set in a dramatic mountainous landscape. Open to the public during the summer and autumn months, the cabins serve as an ideal base for experienced hikers exploring local glaciers with guided groups, as well as for families with young children seeking shorter, easier hikes in the surrounding area. (ArchDaily, 2025)

To withstand strong wind loads, Tungestølen is anchored to the ground using square-shaped concrete foundations, from which round concrete columns rise to varying heights before connecting to the building volume. (fig. 100) Due to the large dimensions of the columns, the span between them is approximately five meters.

03 FLEINVÆR REFUGIUM

As an artist residency situated in the remote archipelago of Fleinvær in northern Norway, this refugium consists of a series of volumes, each serving a distinct function, such as cabins, workspaces, and a sauna. The architecture is guided by an important principle of minimal intervention in the natural environment. The project's limited contact with the ground allows the buildings to be removed without causing significant harm to the surrounding landscape. (ArchDaily, 2025)

To reduce impact on the terrain, some of the refugium units are supported by a single column anchored to a concrete foundation (fig. 102). This structural approach ensures that the buildings can be easily removed while maintaining full visibility beneath them when walking along the area's pathways.

Fig. 098.
Diagram:
Allmannajuvet

Fig. 099.
Per Berntsen:
Allmannajuvet

Fig. 100.
Diagram:
Tungestølen

Fig. 101.
Jan M. Lillebø:
Tungestølen

Fig. 102.
Diagram:
Fleinvær

Fig. 103.
Kathrine Sørgård:
Fleinvær refugium

11.03 WOOD COLUMN ITERATIONS

SIX WOOD COLUMN ITERATIONS

Drawing inspiration from these three cases, fig. 105 illustrates how this has lead to even more design proposals. Based on findings in "Wood" (page 93), it has been chosen to continue working with wood as the main material. Using the evaluation table below (fig. 104), iteration 02 will be carried forward in the design process, as it received the highest score based on parameters such as minimal impact, seamless integration, and workability. Additionally, as will be revealed later in the design process, this iteration with a U-shape mounted on the wooden column aligns with the system that supports the building itself.

EVALUATION TABLE: MEETING THE GROUND	01	02	03	04	05	06
MINIMAL IMPACT	2	2	2	1	1	1
FIXED TO GROUND	3	1	1	3	1	1
SEAMLESS INTEGRATED	2	3	3	0	1	1
LEGIBILITY	3	2	1	3	2	1
SIMPLICITY (BOLTS)	3	1	2	3	1	2
MINIMAL WATER AND DUST TRAPS	3	1	3	2	0	2
SHRINKAGE + WORKABILITY	3	1	3	3	1	3
TOTAL	16	10	**12**	**12**	6	8

Fig. 104.
Evaluation table:
Meeting the ground

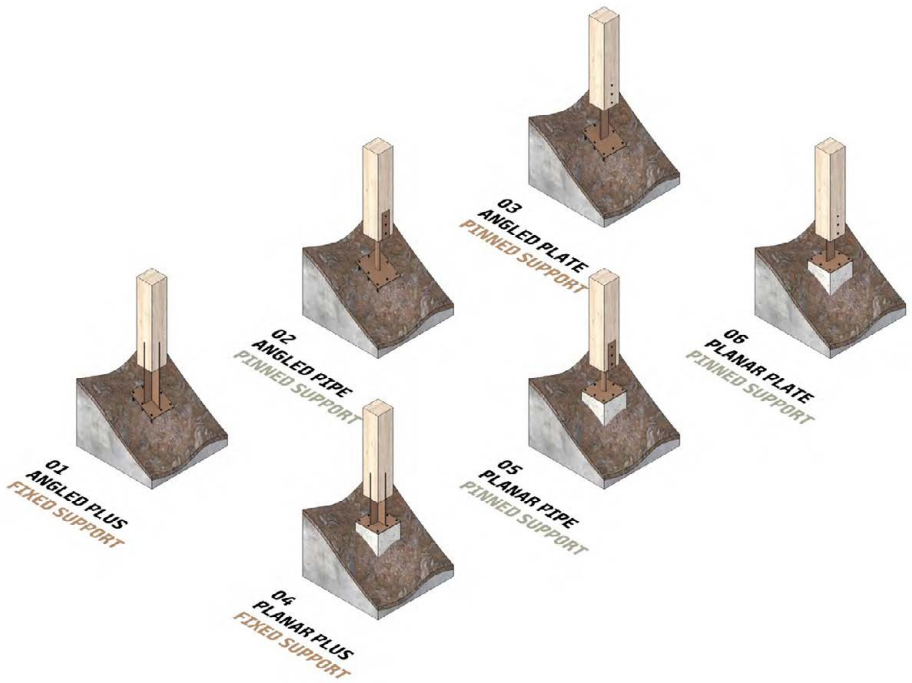


Fig. 105.
Diagrams:
Meeting the ground

11.04 MEETING THE RUIN

SHIFTING FROM GROUND TO RUIN SURFACES

Along with design investigations that focus on the local ground characteristics, this section will additionally focus on how to structurally meet the remains of Kringsjå Kraftstasjon, based on previous studies on the intervention on ruins. As mentioned in "Getting to Know the Ruin" (page 107), the overall structural ability of the ruin remains, and it is estimated in this project that the ruin would be able to act as a structural element when integrating new building volumes. Regarding the large concrete walls of the ruin, the interesting factor is that structural elements can be applied both vertically on top of the walls and horisontally using wall-sides for structural loads.

Vertically meeting the ruin means attaching structural elements to the top surface of the concrete wall. Using wood as the main structural material, fig. 107 illustrates six varying design iterations on this meeting. The 1x1 meter concrete block on which the columns are fixed refers to the 1 meter depth of the actual ruin.

Horisontally meeting the ruin means attaching structural elements to the side surfaces of the concrete wall (fig. 108).

Fig. 106.
Own image:
Ruin

11.05 VERTICALLY AND HORISONTALLY

FIXING STRUCTURAL ELEMENTS TO THE RUIN

While iterations were developed for both horisontal and vertical proposals, it was later determined that as little impact as possible should be made on the ruin itself. With this in mind, iterations 04 and 05 (fig. 108) were selected, as they transfer loads directly to the ground and use the ruin only as fixation points. Aesthetically, when viewed from outside the ruin, the volume gives the impression of respectfully hovering above it.

With a clear direction for the volume and the underlying structure, the following sections focus on smaller, individual design studies– beginning with how the visitor arrives at the thermal bath entrance.

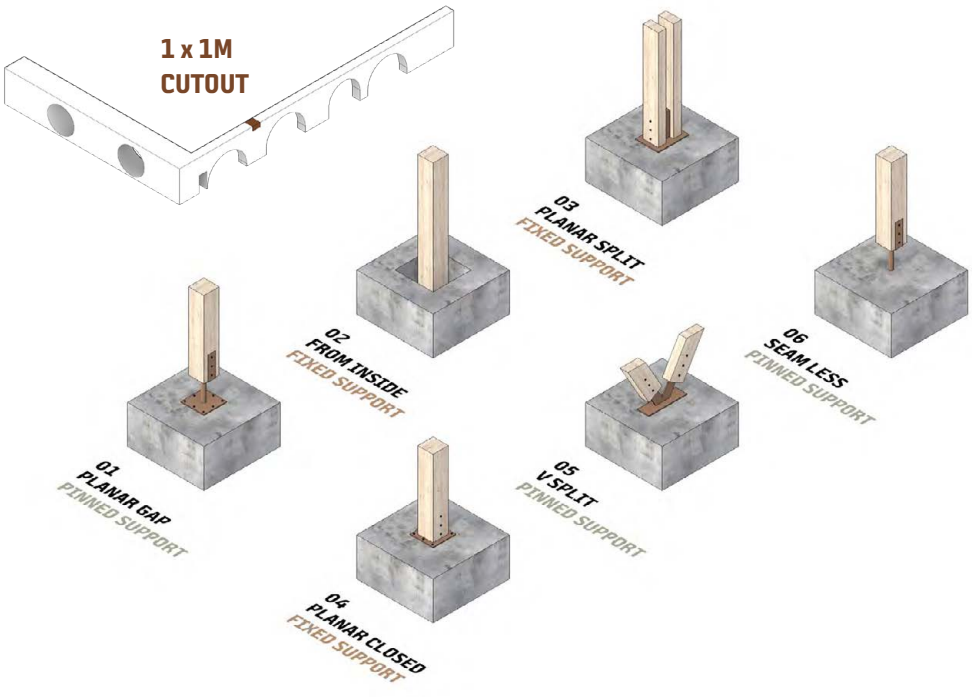


Fig. 107.
Diagrams:
Meeting the ruin (V)

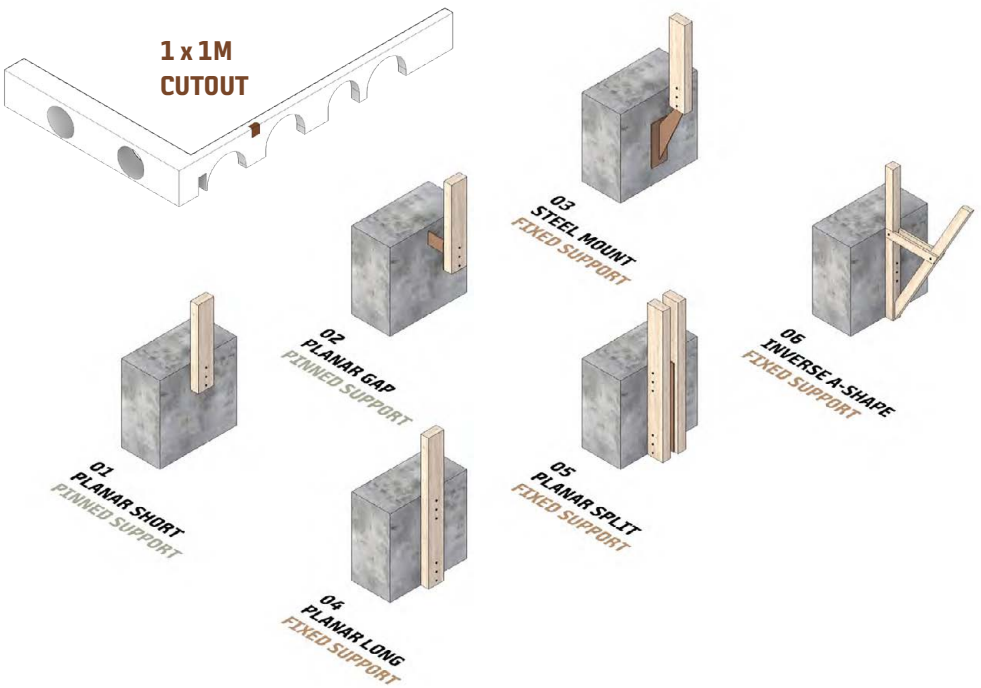


Fig. 108.
Diagrams:
Meeting the ruin (H)

12.00 CHOSEN DESIGN STUDIES

15 INDIVIDUAL DESIGN STUDIES

The following pages present a series of selected design studies, each with outcomes that are clearly reflected in the final design proposal. Some key architectural design choices have been omitted from the main report, but they remain important for understanding the overall design process and will be described below.

The ground floor building volume is raised one meter above the terrain. The reason for this elevation is explained in the previous section “Meeting the Ground”. The one-meter height was also chosen to allow a seamless transition beneath the concrete arches of the ruin and within the thermal bath zone.

The two cantilevers on the first-floor building volume hover 200mm above the ruin wall. This height was carefully selected to protect the wooden structure from the moist surfaces of the ruin and to create the visual impression that the building is being supported by the ruin.

The design studies included in the following section are:

01 THERMAL BATH ARRIVAL

02 SHAPING THE ROOF

03 GREEN ROOF CONSIDERATIONS

04 SHAPING THE CANTILEVER

05 SHAPING THE WINDOWS

06 DISTRIBUTING THE WINDOWS

07 ROCK WALL INTEGRATION

08 SHAPING THE CREEK

09 FACADE LAMELLA CHARACTER

10 THERMAL SEATING COMPOSITION

11 MEETING THE VOLUME

12 SECURING WATER DRAINAGE

13 EXTERIOR RUIN CIRCULATION

14 RUIN COURTYARD COLUMNS

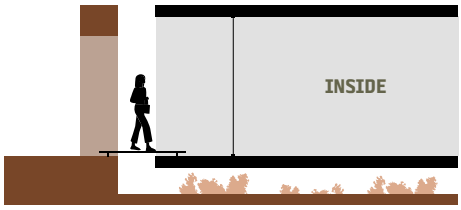
15 STATIC SIMULATIONS

12.01 THERMAL BATH ARRIVAL

DESIGN STUDY 01

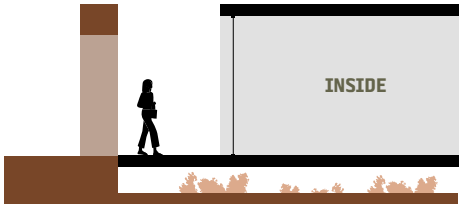
Being the first of many specific design studies, these three iterations (fig. 109) explore how the thermal bath volume meets the visitor and how the building connects to the ruin through which the visitor must pass.

Iteration 01 has been chosen as it respects the ruin by maintaining a slight distance, protects the wood materials from direct contact with the moist ruin surfaces, and leads the visitor on a journey across a bridge that clearly marks a transition from old to new. The bridge, as a symbol, also carries many references to the journey one must undertake to find Kringsjå Kraftstasjon.



01 BRIDGE + COVERED PATIO

02 ENCLOSED



03 OPEN PATIO

1 : 200

Fig. 109.
Diagrams: Arrival

12.02 SHAPING THE ROOF

DESIGN STUDY 02

Next, the scale shifts from an entry detail to the overall roof shape of the volumes. The six iterations explore tilted roofs, flat roofs, and pitched roofs that mimic the shape of the original Kraftstasjon, such as in iteration 03.

Iteration 01 has been chosen because it follows the slope of the terrain behind, allowing it to blend more seamlessly into the landscape. Aesthetically, compared to iteration 05, it also respects the ruin more by remaining visually subordinate–hiding behind the wall rather than overpowering it. Other reasons include the contrast created by its clean geometry against the historic arch cutouts of the ruin, as well as the greater flexibility in interior plan layouts.

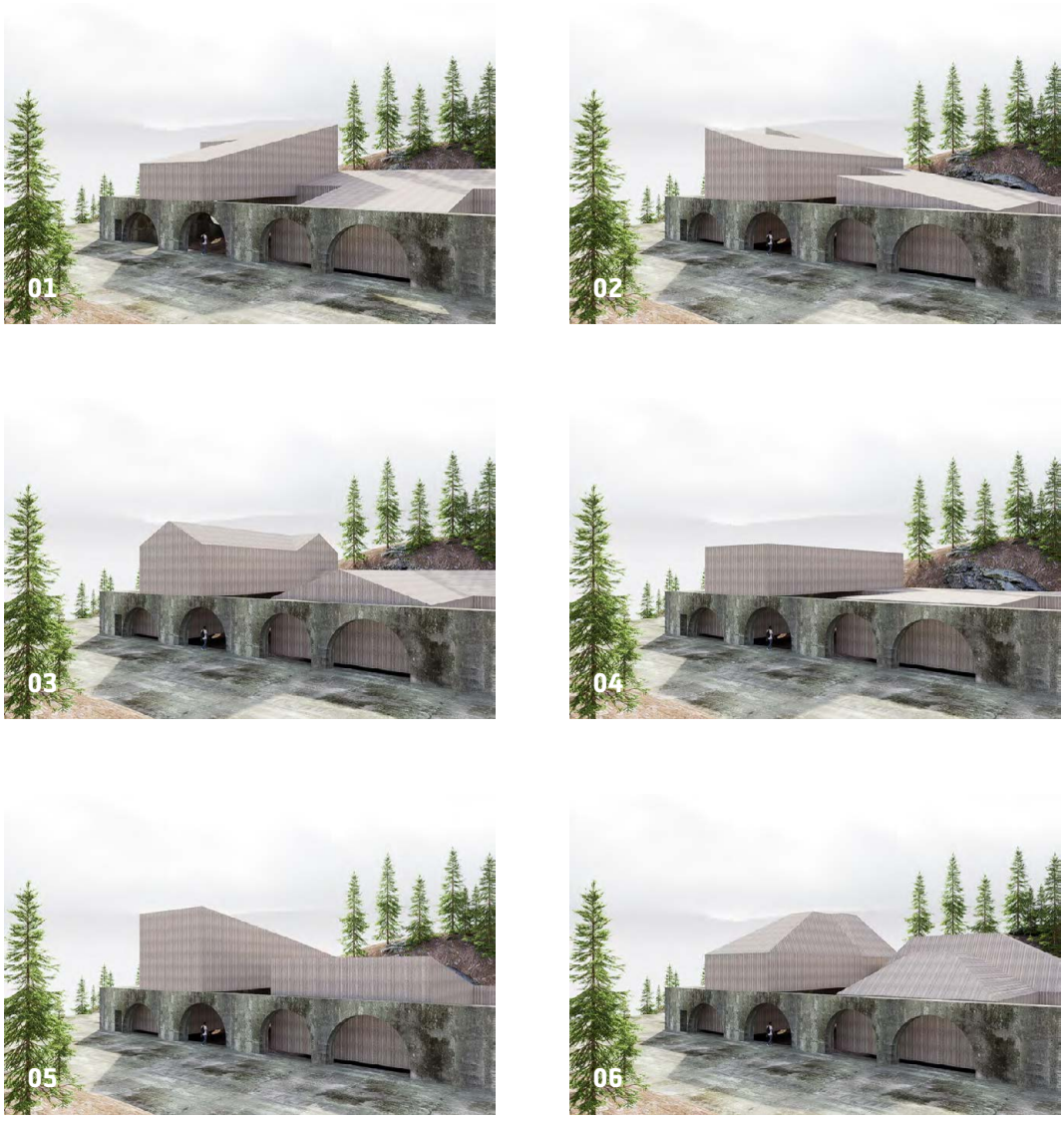


Fig. 110.
Visualisations: Shaping the roof

12.03 GREEN ROOF CONSIDERATIONS

DESIGN STUDY 03

Having narrowed down the scope of a potential roof volume, the following page visualises the design impact of implementing a green roof with local vegetation. As seen in fig. 112, the green roof helps the volume appear more integrated behind the ruin, particularly at ground floor level.

In addition to its visual benefits, the green roof contributes environmentally by capturing rainwater, reducing runoff, and supporting natural insulation. The use of local vegetation also promotes biodiversity and helps the building blend more harmoniously into the surrounding landscape.

Fig. 111.
Visualisation:
Standart roof

Fig. 112.
Visualisation:
Green roof

12.04 SHAPING THE CANTILEVER

DESIGN STUDY 04

This next section deals with the design of the east-side cantilevered volume and how it meets the ruin wall below. The iterations explore two main strategies: pulling back to create a recessed patio (left side) or aligning the new volume flush with the ruin wall.

Iteration 02B has been chosen for several reasons. The sharp contrast between the new structure and the existing ruin emphasises the architectural dialogue between past and present. By not encroaching on the historic wall, the design respects the original boundaries of the ruin. A necessary air gap between the structures further reinforces this separation, both functionally and visually. Additionally, the chosen window placement allows visitors to stand at the edge even in cold seasons, offering framed views while being sheltered inside.

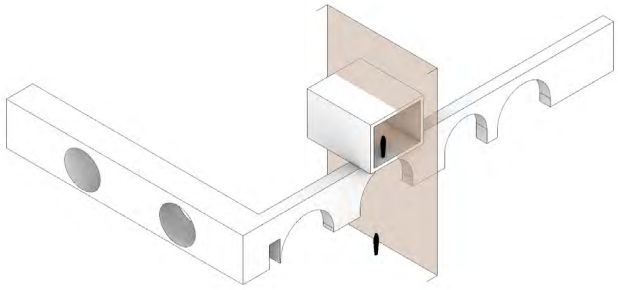
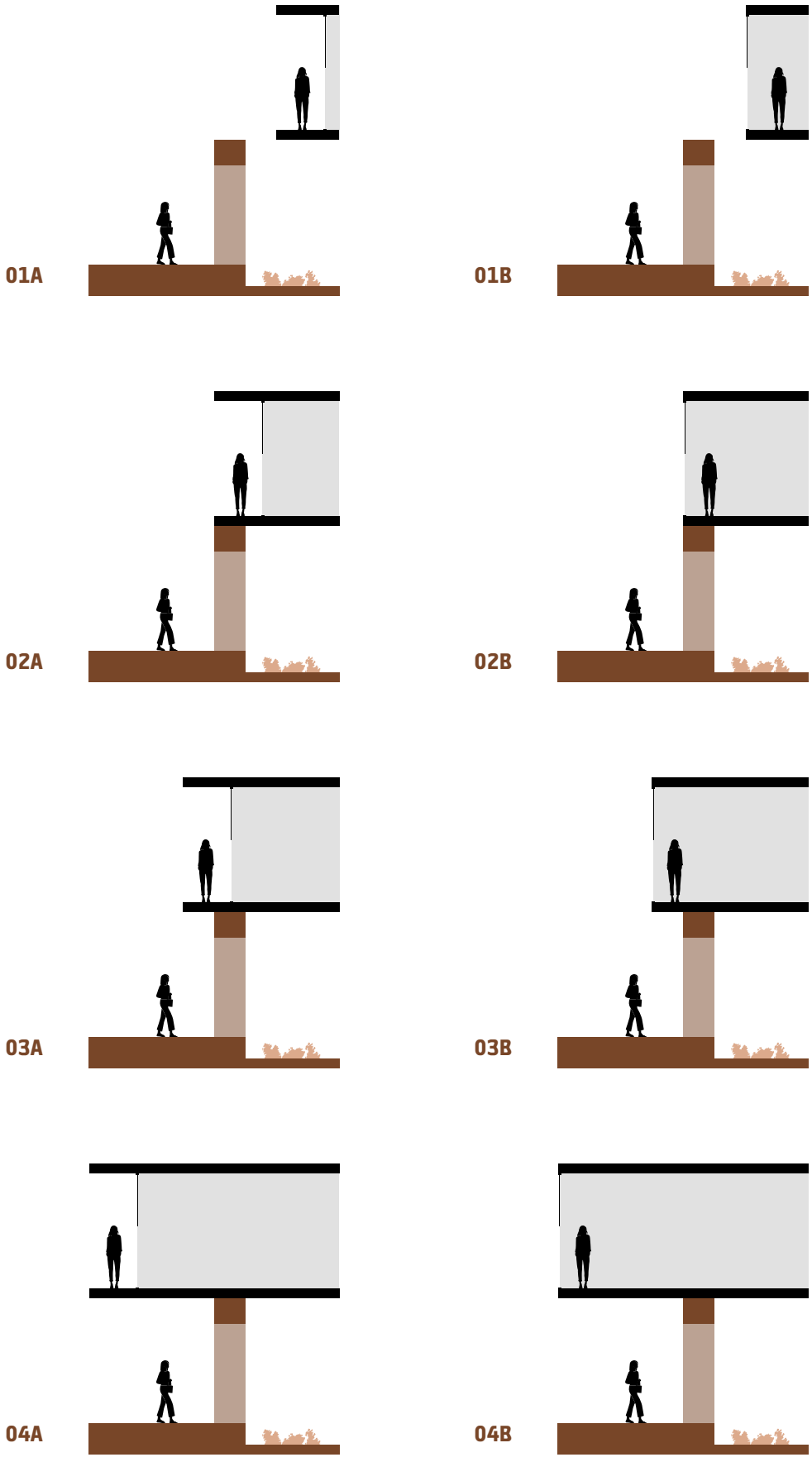


Fig. 113.
Diagram:
Section cut



1 : 200

Fig. 114.
Diagrams:
Cantilever

12.05 SHAPING THE WINDOWS

DESIGN STUDY 05

From the cantilever, the perspective now shifts to the shaping of the windows in the volume. The six geometric iterations (fig. 115) are not intended as final elevation design proposals, but rather as experiments exploring different shapes of window cutouts.

Iterations 01, 02, and 04 have been selected for further development. Iteration 01 features a panoramic window that brings the surrounding nature into the interior, enhancing the visitor's connection to the landscape. Iteration 02 introduces arched openings, which function as access points and clearly echo the historic arches of the existing structure. Iteration 04 uses a circular shape to frame specific exterior elements while also referencing the circular cutouts found in the ruin.

Together, these three shapes offer a varied yet coherent architectural language that ties the new volume to both its natural and historical context. The six iterations are seen from an eye-level perspective on the following page.

01

02

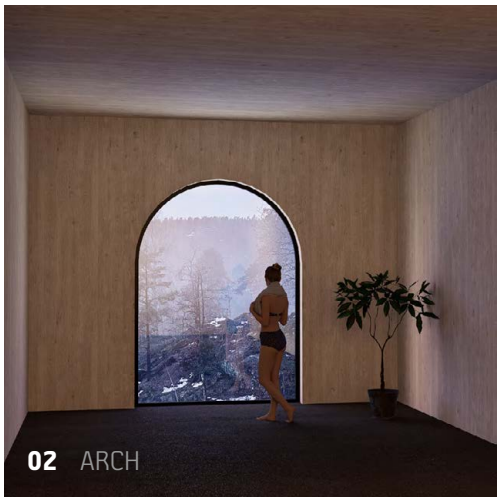
03

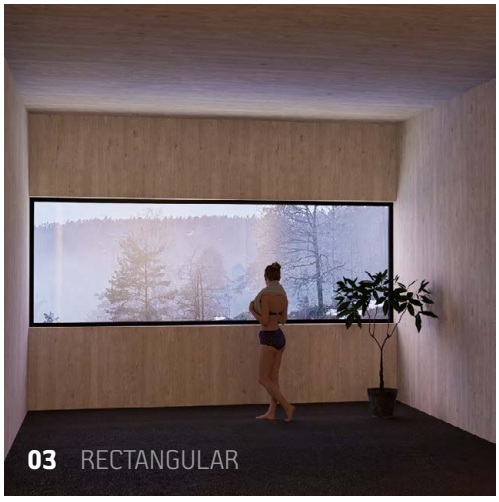
04

05

06

Fig. 115.
Diagrams: Windows





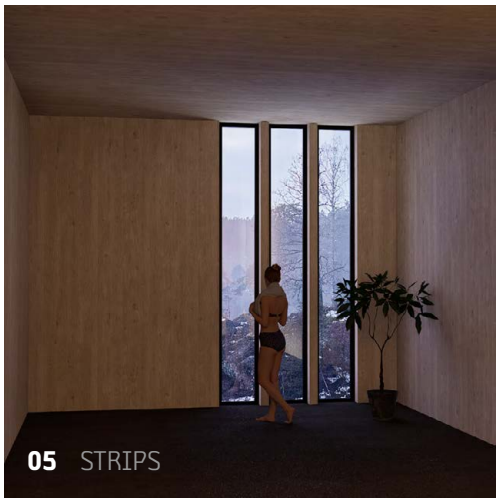


Fig. 116.
Visualisations: Windows

12.06 DISTRIBUTING THE WINDOWS

DESIGN STUDY 06

With the shape of the windows in mind, this spread merges the selected window types with the current plan composition. The three window forms will be referred to as arch-shaped access points, circular framing windows, and panoramic openings.

Each window type is strategically placed to enhance the spatial experience. Circular windows are positioned at the ends of hallways, creating a sense of tension and curiosity–acting as visual "portals" along the visitor's journey. Panoramic windows are located in areas where visitors are seated or in closer contact with nature, reinforcing the connection between inside and outside. Skylights are used in more enclosed spaces such as changing rooms and the muted sauna, where side windows are not possible, allowing natural light to enter from above while maintaining privacy and tranquility.

- ARCH ACCESS POINTS
- CIRCULAR FRAMING WINDOWS
- PANORAMA WINDOWS
- PANORAMA GLASS ON ROCKS
- CIRCULAR SKYLIGHTS

1 : 200

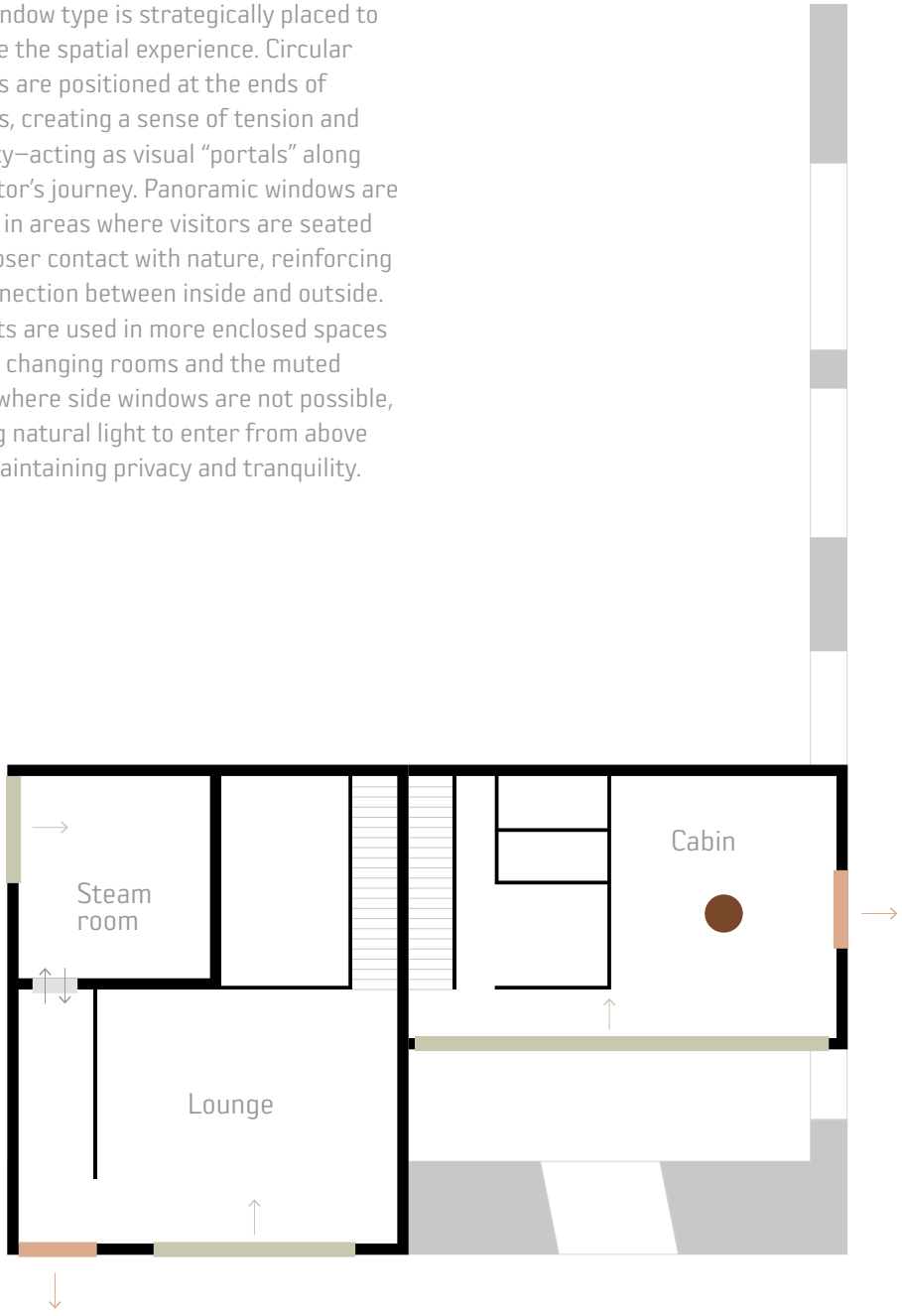


Fig. 117.
Diagram:
Window distr. 01

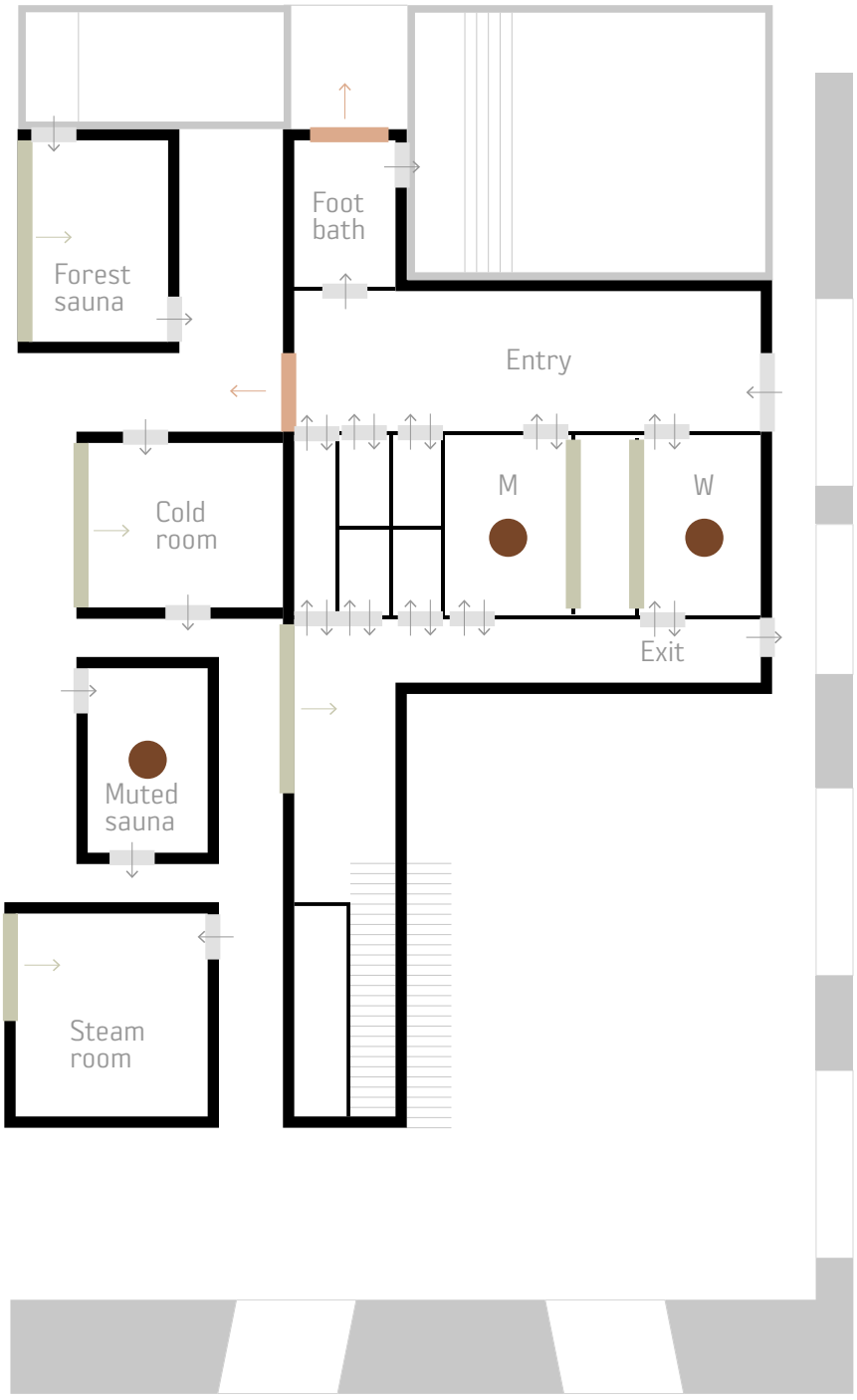
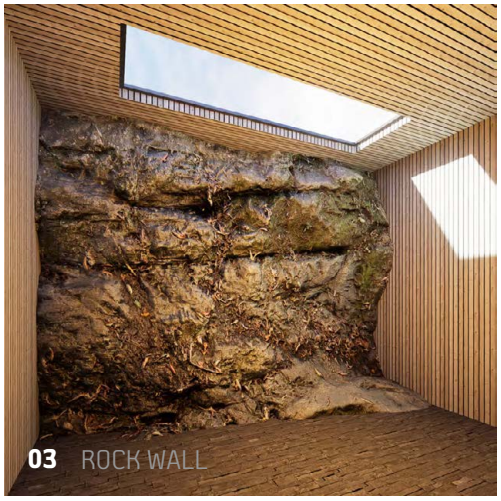


Fig. 118.
Diagram:
Window distr. 02



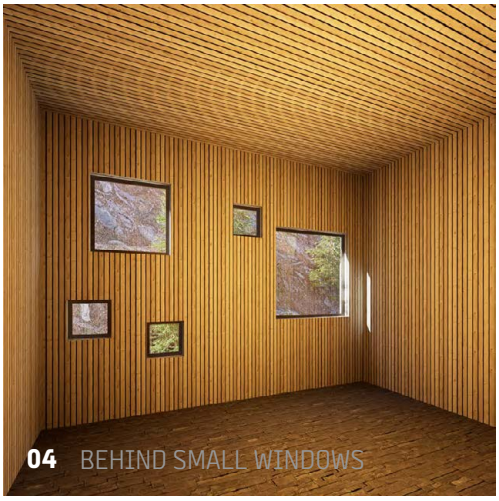


Fig. 119.
Visualisations: Rock wall

12.07 ROCK WALL INTEGRATION

DESIGN STUDY 07

Leaving the window design behind for now, this study explores how the existing exterior rock formations could be integrated into the interior design of the thermal baths. Iteration 02 has been chosen. Although iterations 01 and 03 offer strong raw aesthetic qualities, they present significant design challenges in terms of merging the wooden structure with the irregular rock surfaces.

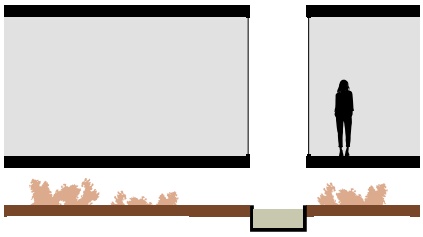
12.08 SHAPING THE CREEK

DESIGN STUDY 08

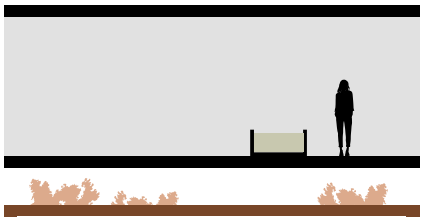
This design study once again shifts the perspective to a section through the thermal bath volume on the ground floor, exploring design iterations on how to integrate a creek through the building.

Iteration 01 has been chosen as this solution best mimics a natural creek, is physically separated from the wooden materials, and requires minimal use of granite.

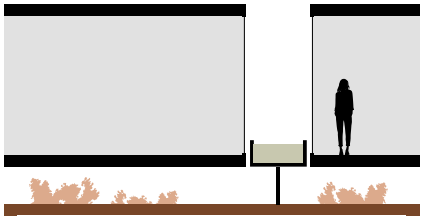
Iteration 02 was dismissed due to the technical challenges of running water through the interior of a wooden structure, which raises concerns about durability and maintenance. Iteration 03 was found to feel too artificial, lacking the natural qualities and spontaneity of a real creek. Iteration 04 was ruled out as it would require an excessive amount of material to construct the elevated granite plateau, making it both resource-intensive and less contextually sensitive.



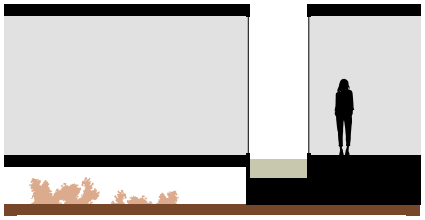
01 NATURAL INTEGRATION



02 INDOOR CREEK



03 RAISED CREEK



04 RAISED PLATEAU

1 : 200

Fig. 120. Diagrams: Creek

12.09 FACADE LAMELLA CHARACTER

DESIGN STUDY 09

Next, this design section compares four types of wooden lamella for the building facade. While they may appear similar at first glance, the materials differ in terms of lamella length, width, tone, and the presence of knots.

Iteration 03 has been chosen as it offers a clean, minimalistic contrast to the surface of the ruin, while the high number of knots adds a raw, natural character that blends into the context of both the ruin and the surrounding landscape.

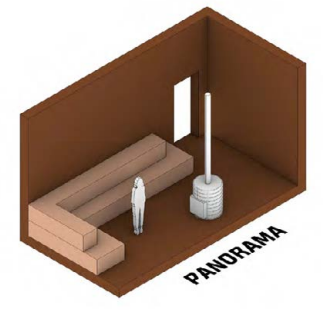
Fig. 121.
Visualisations: Facade lamella

12.10 THERMAL SEATING COMPOSITIONS

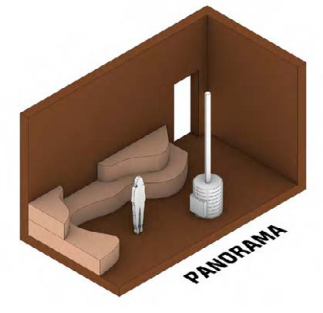
DESIGN STUDY 10

Moving from exterior to interior design studies, these five proposals explore how seating should be arranged in the various thermal bath chambers.

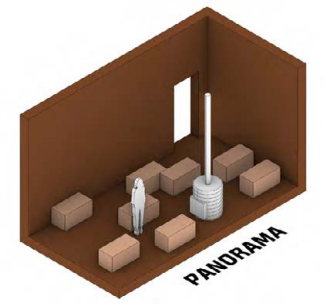
A combination of Basic and Rugged has been chosen, as it encourages all participants to face the same direction—toward the panoramic window and the rock formations—while also offering a playful, cave-like quality where each visitor defines their own seat.



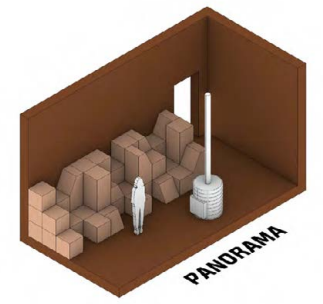
BASIC



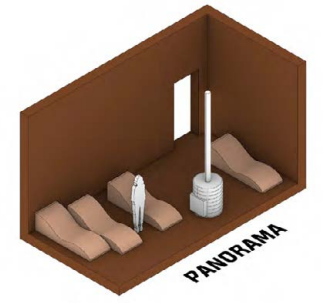
ORGANIC



ISLANDS



RUGGED



LOUNGE

Fig. 122.
Diagrams:
Thermal seating

12.11 MEETING THE VOLUME

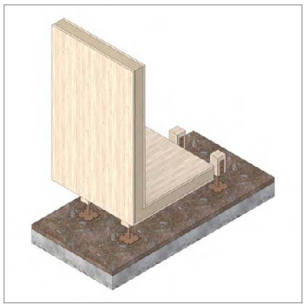
DESIGN STUDY 11

The following section builds on the previous "Meeting the ground" design studies, focusing on how the chosen ground columns expand into a structural system that supports the building volume. Note that the key difference between iteration 04 and 05 is that the column in 05 includes a 400mm gap, whereas the column in 04 is flush with the wall.

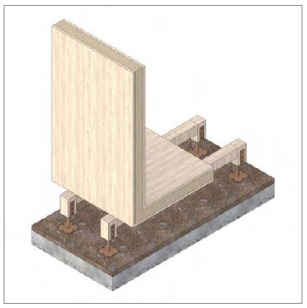
Frame no. 03 has been chosen due to its resemblance to a steel water pipe held in place by U-shaped concrete frames, similar to those found at Kringsjå Kraftstasjon. The geometry also echoes the structure of the tømmerrenna (page 34). Iterations like 04 and 05 have been set aside, as the extensive use of timber surrounding the volume serves only an aesthetic purpose, without contributing structurally.

Fig. 123. Visualisation: Chosen system

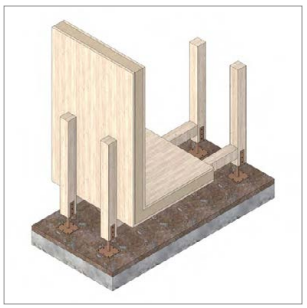
01



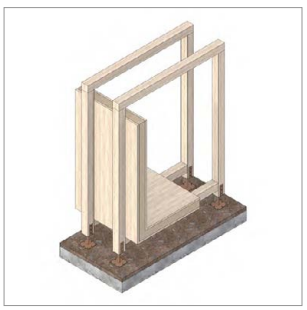
02



03



04



05

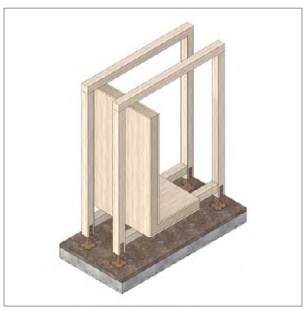


Fig. 124.
Diagrams:
Structural systems

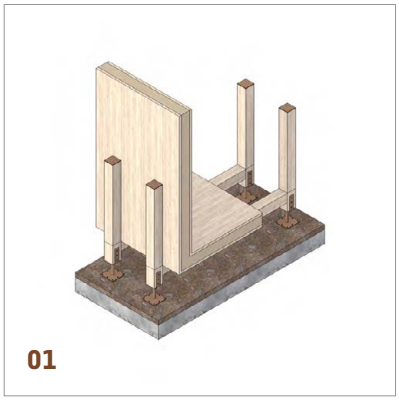
Fig. 125.
Visualisations:
Structural systems

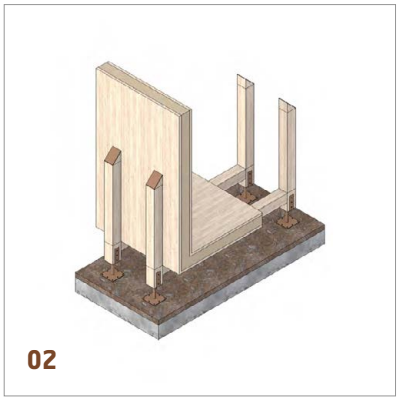
12.12 SECURING WATER DRAINAGE

DESIGN STUDY 12

Closely related to the previous section, these four principles explore how the wooden columns should be shaped to allow precipitation to easily run off the structure.

Iteration 01 has been chosen, as it has the least visible impact on the overall aesthetics of the building. While it may appear as a flat metal plate in fig. 126, the plate is mounted at a slight angle to ensure that rain and snow do not accumulate.





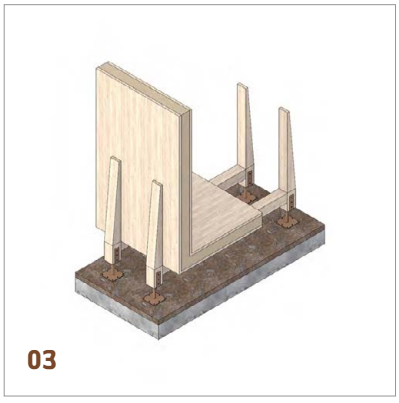


Fig. 126.
Diagrams:
Water drainage

12.13 EXTERIOR RUIN CIRCULATION

DESIGN STUDY 13

Shifting the perspective to a top view, four iterations have been made on how visitors should be guided around the courtyard behind the ruin. Note that the thick red lines represent 1-meter raised wooden paths, positioned at the same height as the buildings.

Iteration 04 has been chosen, as the raised paths in other iterations are too restrictive for visitors, limiting their ability to freely explore the area. The need for artificial paths, like the one seen in iteration 03, is deemed redundant on this natural rocky floor, which already allows for pedestrian access.

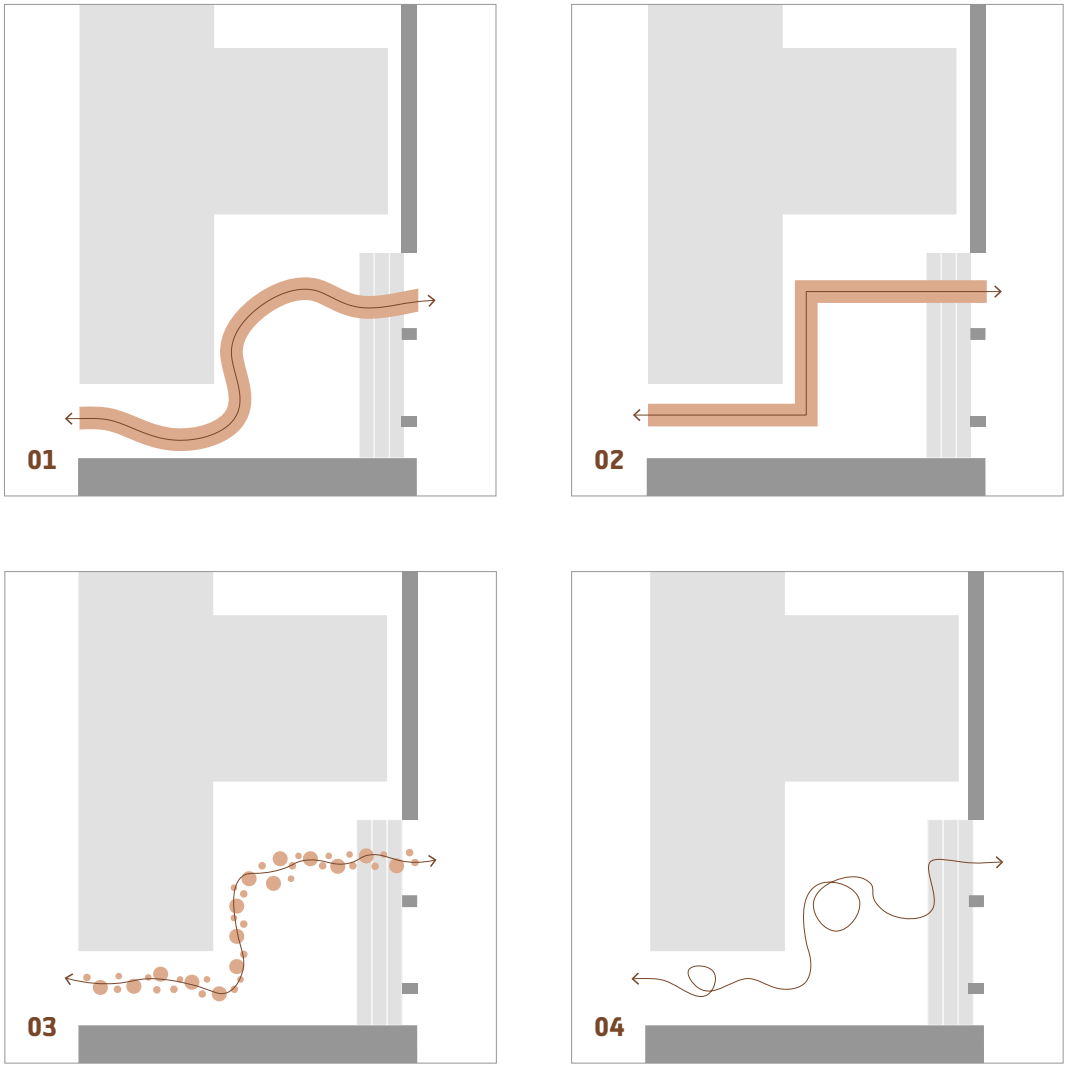


Fig. 127. Diagrams: Circulation

12.14 RUIN COURTYARD COLUMNS

DESIGN STUDY 14

Lastly, in this series of chosen design studies, this section explores the meeting between the hovering common cabin and the ruin courtyard below.

Iteration 04 has been chosen, as two columns fit symmetrically between the arch openings, and the top structure bearing the volume aligns with the structure selected on page 144. Proposal 01 was rejected due to its excessive impact on the ruin wall, and using only one column, as shown in iteration 02, would require an overly large cross-section compared to those used in the ground floor structure. This assuption is based on static simulations presented in the following section.

Fig. 128. Visualisations: Courtyard

12.15 PARAMETRIC COLUMN CALCULATION

DESIGN STUDY 15

Lastly, in this series of chosen design studies, this section explores the meeting between the hovering common cabin and the ruin courtyard below.

Iteration 04 has been chosen, as two columns fit symmetrically between the arch openings, and the top structure bearing the volume aligns with the structure selected on the previous page. Proposal 01 was rejected due to its excessive impact on the ruin wall, and using only one column, as shown in iteration 02, would require an overly large cross-section compared to those used in the ground floor structure. This assumption is based on static simulations presented in the following section.

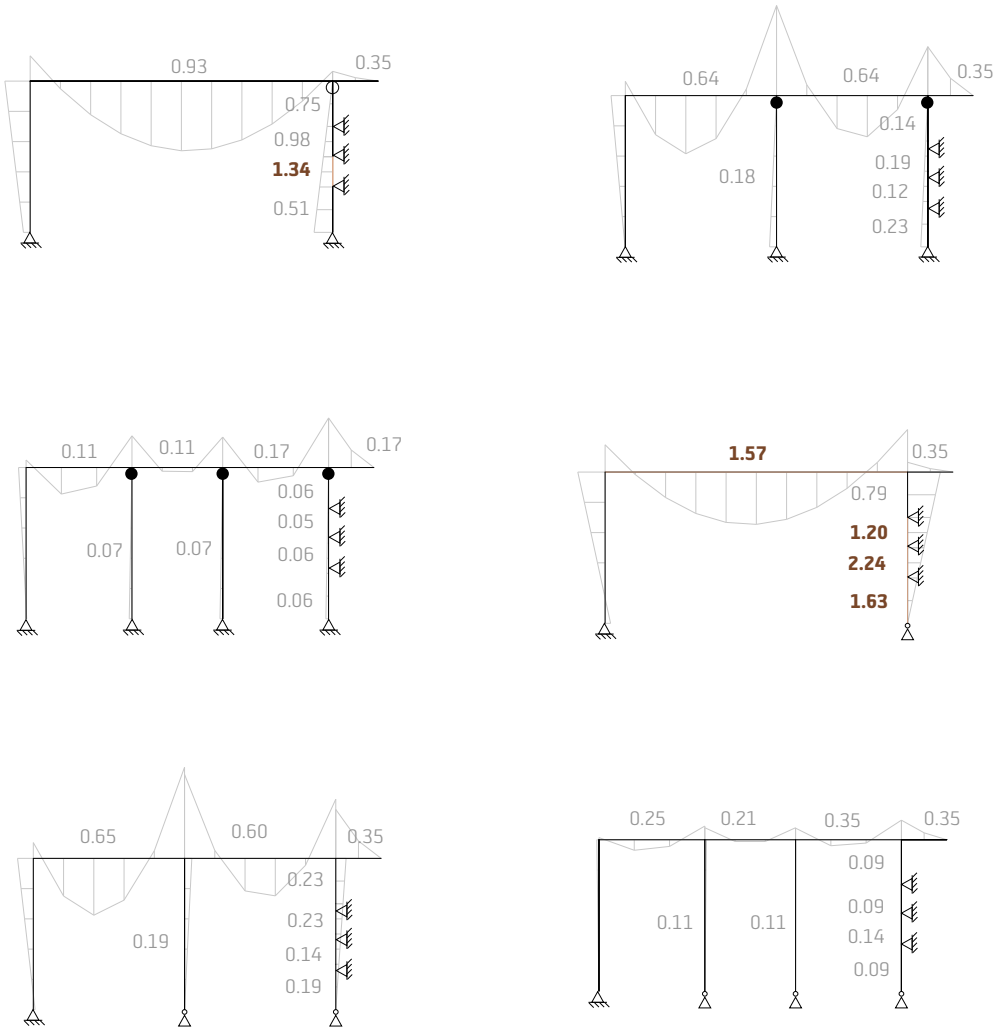


Fig. 129.
Diagrams:
Free body diagrams

Fig. 130.
Visualisations: Courtyard

DESIGN STUDY 15 CONTINUED

To determine the placement, dimensions, and rhythm of the structural system, a simulation was carried out in Karamba, focusing on the most critical part: the large cantilever housing the common cabin. This volume rests on the ground floor and extends 12 metres outward, hovering just 20 centimetres above the ruin. As the building was not intended to rest on the ruin itself, a system of beams and columns had to be developed.

Three structural options were tested, using 300x300 mm columns and 300x400 mm beams. The simulation concluded that a more frequent column placement with a more slender expression was preferable. Therefore, the final solution places three 200x200 mm columns in the courtyard, supporting 200x300 mm beams. This establishes a clear structural rhythm that echoes throughout the rest of the building.

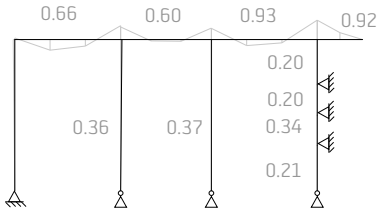


Fig. 131.
Diagram:
Free body diagram

Fig. 132.
Visualisation:
Courtyard

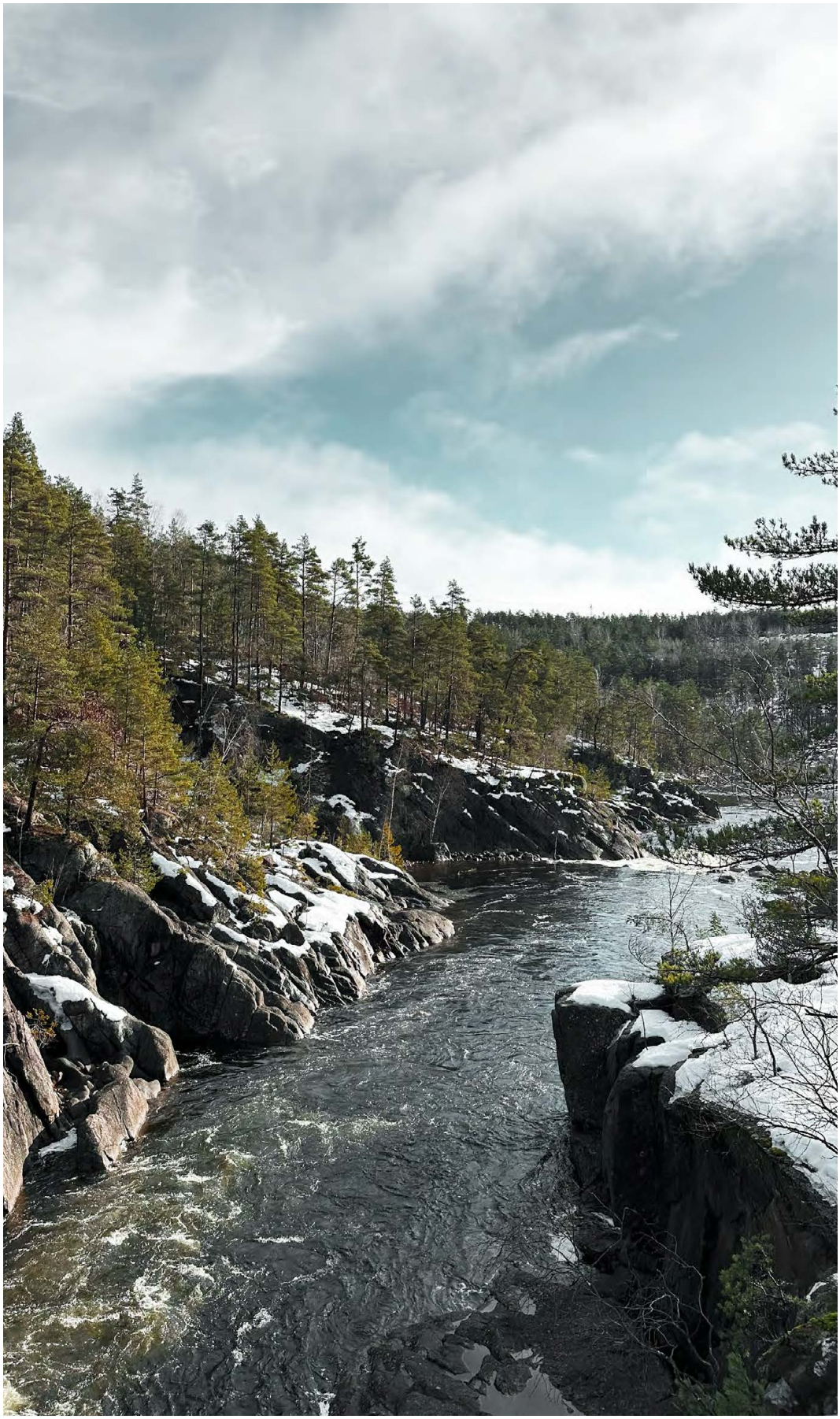


Fig. 133.
Own image:
Main Otra fall

PRESENTATION

Fig. 134.
Visualisation:
Thermal baths

13.00 THE FUTURE KRAFTSTASJON

REVIVING THE CURRENT

This is the Future Kraftstasjon – a place to recharge, relax, and experience nature and history. A refuge away from everyday life, where locals and visitors from far away can come together to experience the solitary outdoor life. No longer producing electricity, the station now channels energy through nature and the body. Here, water becomes the central force, shifting between hot and cold to awaken and restore. Surrounded by raw stone and filtered light, visitors are invited into a retreat where time slows down and the past quietly shapes the present.

Fig. 135.
Isometric model:
Future Kraftstasjon

13.01 CONCEPT

RUIN, CURRENT, KRAFTSTASJON

The concept is shaped by the meeting of ruin, current, and Kraftstasjon – three forces in quiet dialogue. The ruin stands first: a raw, silent witness, bearing the weight of time, industry, and the community that once thrived here. Water follows – carving paths, softening edges, and breathing movement into the stillness. It flows through the site, referencing the industrial past while shaping the journey through different atmospheres and experiences. The new architecture emerges last, positioned and formed by the flow of water and the presence of the ruin – Framing, supporting, and extending the story. History here is not left behind, but reawakened by Reviving the Current, restoring the spirit of Kringsjå Kraftstasjon.

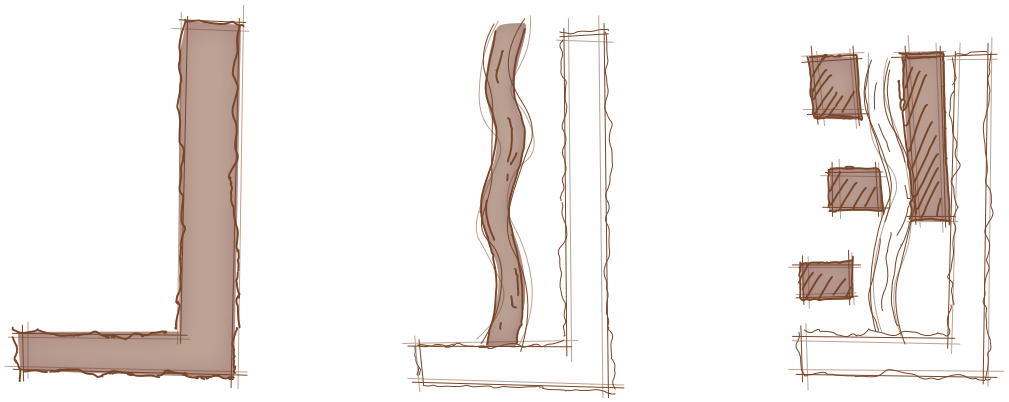


Fig. 136. Diagrams: Concept

01

KRINGSJÅ KRAFTSTASJON RUIN

02

REVIVING THE CURRENT

03

THE FUTURE KRAFTSTASJON

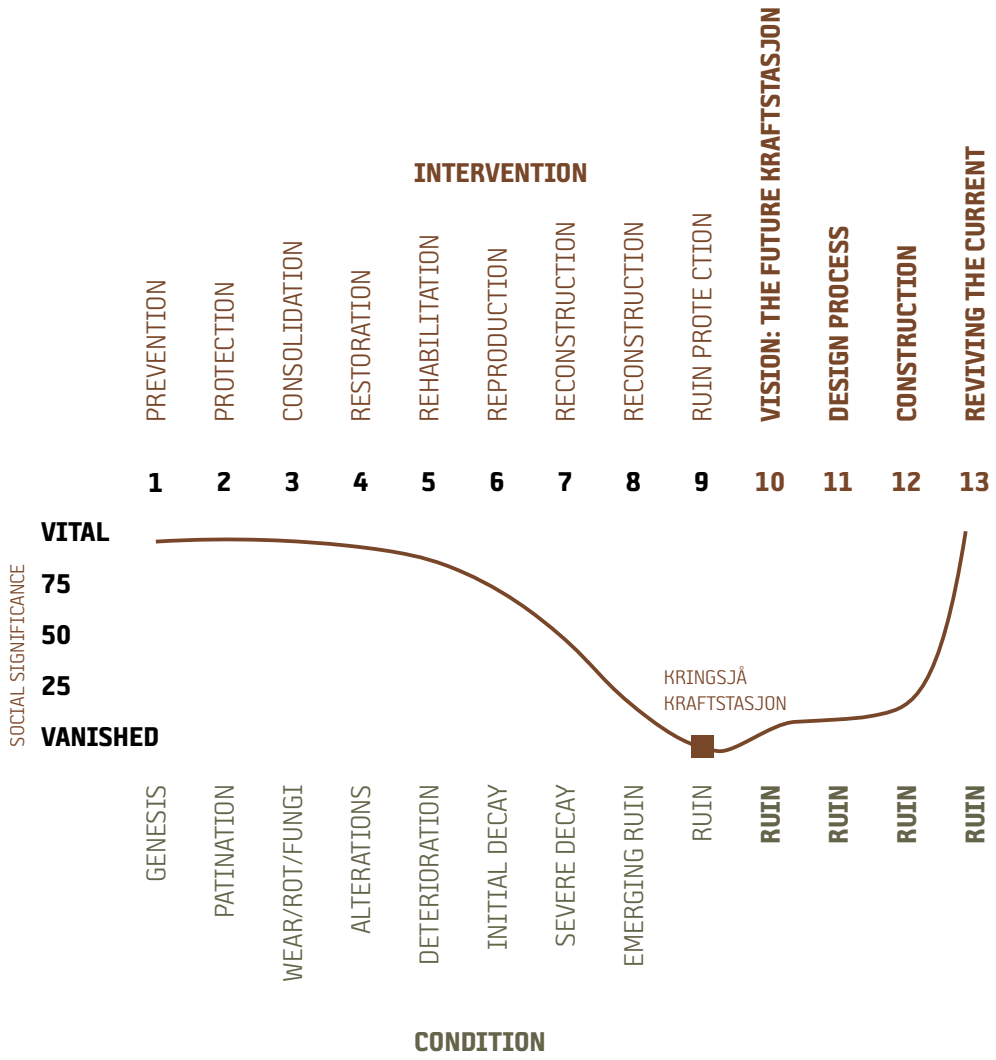
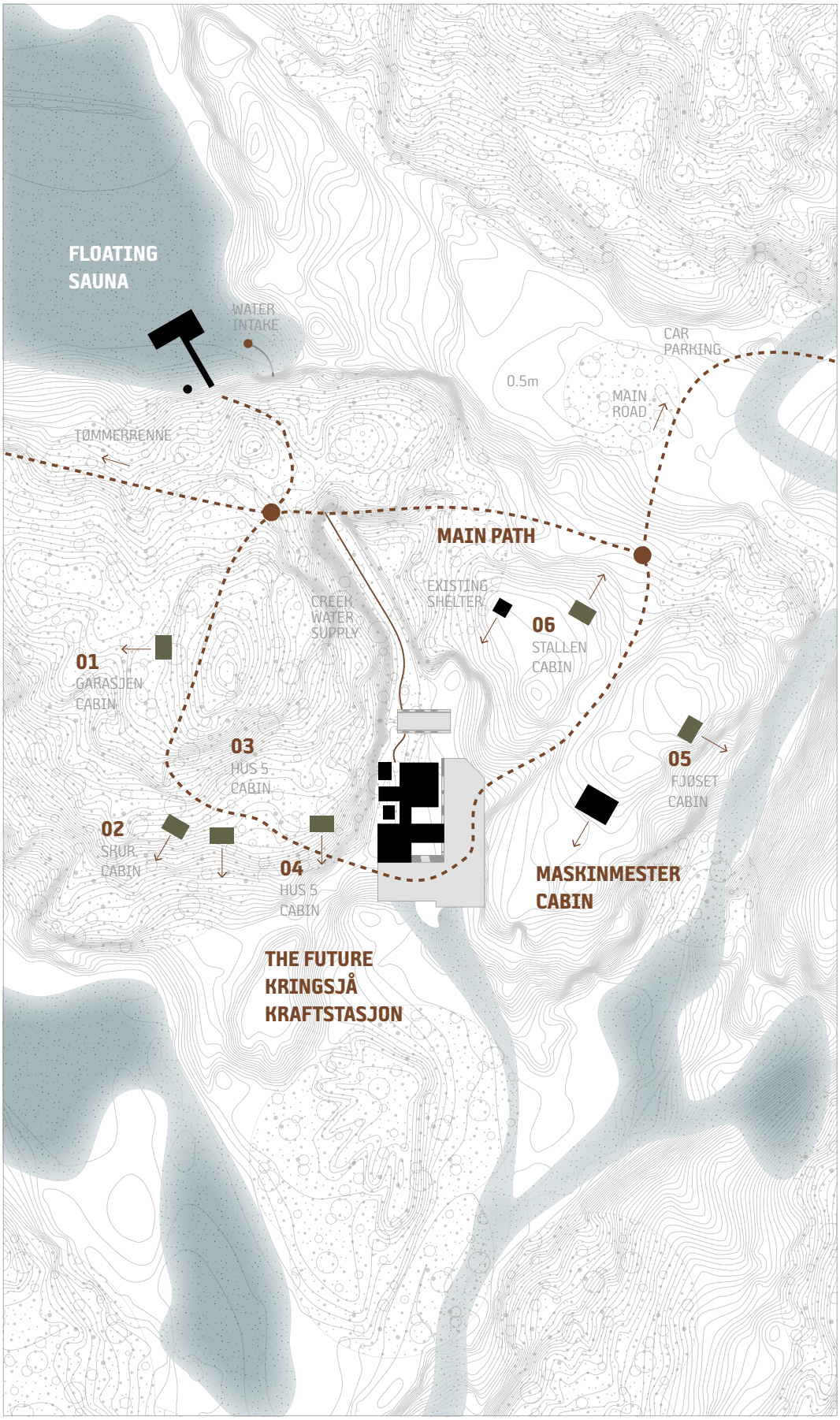


Fig. 137.
Diagram:
Ruination extended

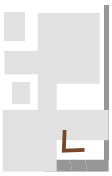


1 : 2000

Fig. 138.
Plan:
Master plan

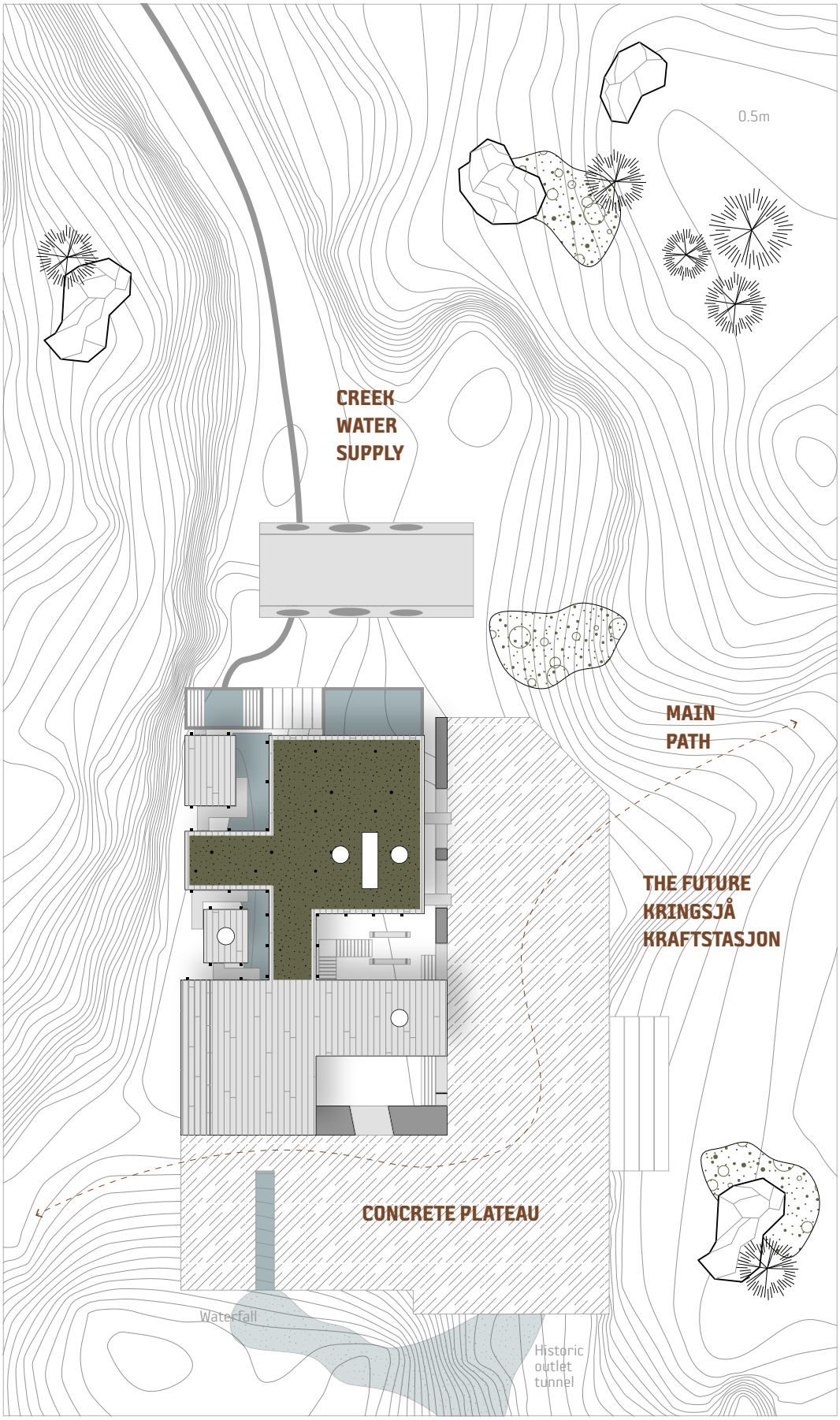
Fig. 139.
Visualisation:
Courtyard

13.02 KRAFTSTASJON MASTER PLAN



NATURE, SOCIETY AND COEXISTING

Arrival happens slowly – along the historic trails once walked by the workers and families of the power station's community. Small building volumes appear gently between the trees, greeting visitors without demanding attention. Nature is still in control here. It shapes the paths, frames the views, and decides how the area evolves. Ruins, vegetation, and architecture coexist in quiet synergy – not competing, but growing together. This is not a site to be claimed, but one to move with, to listen to, and to inhabit with care.



1 : 500

Fig. 140.
Plan:
Situation plan

Fig. 141.
Visualisation:
Front view

13.03 KRAFTSTASJON SITUATION PLAN

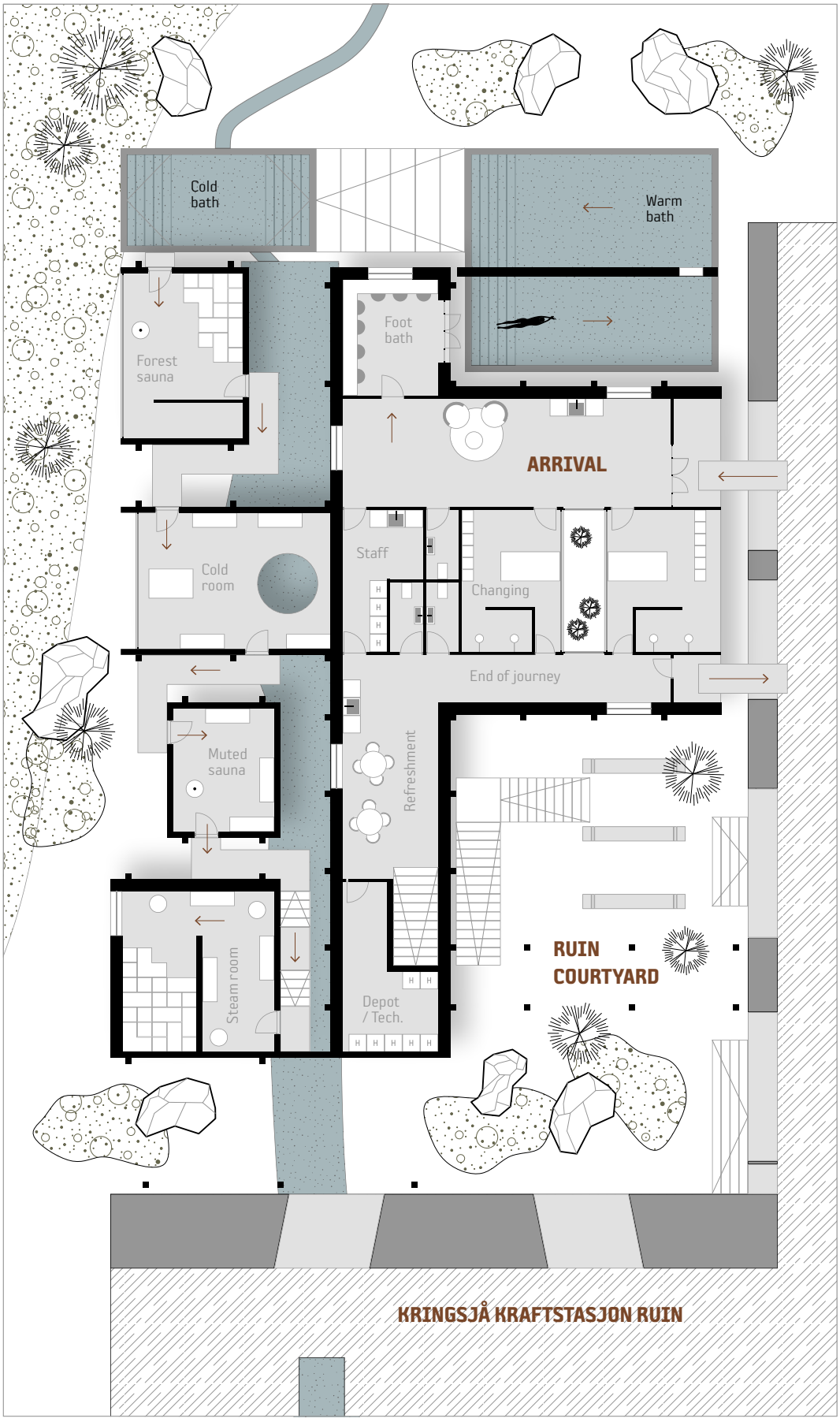
CARRIED BY THE INDUSTRIAL REMAINS [440 SQM.]

Nested between rocky hills and resting on the concrete plateau where water once again flows through, Kringsjå Kraftstasjon lies as a gentle giant overlooking the landscape. Its open window facade offers glimpses of the life unfolding within, while the contrast between ruin, wood, and steel forms a balanced and grounded expression. The sloping roof echoes the terrain, allowing the building to settle naturally into its surroundings. Parts of the roof are covered in vegetation, softening the transition between building and landscape. In a wet climate, the green roof offers both aesthetic and practical benefits – aiding in rainwater retention, improving insulation, and reinforcing the building's bond with its natural context.

Fig. 142.
Visualisation: Plateau

Fig. 143.
Visualisation:
Warm bath view

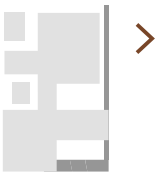
The ruin weaves through the project like a quiet narrator – guiding movement, marking transitions, and adding depth to every encounter. It is never static. At times, new structures rise around it, gently framing its surfaces and voids. Elsewhere, the ruin itself becomes the frame – offering glimpses of sky, rock, or water through broken walls and open edges. It acts as both passage and pause, as sculpture and structure. Along the journey, it reminds visitors of what was, while giving shape to what is becoming.



1 : 200

Fig. 144.
Plan:
Kraftstasjon level 00

Fig. 145.
Visualisation:
Thermal bath entry



13.04 KRAFTSTASJON PLAN LEVEL 00

THERMAL JOURNEY [270 SQM.]

Stepping through one of the arches in the ruin – once the gateway for turbines powering a society – you leave the outside world behind. As the doors close, silence settles around you. The thermal journey begins.

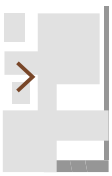
You move through a carefully curated sequence of thermal experiences: cold and warm baths, saunas, a cold room, and a steam room – each space designed with its own unique atmosphere. Materials, light, scent, and temperature shift subtly from one to the next, shaping the mood and deepening the sensory journey.

Between them, outdoor boardwalks act as transition zones. Here, the surrounding climate becomes part of the ritual – soaking you in rain, warming you with sun, or cooling you with snow, while the creek runs by reminding you of the sense of time and the history of this place.

Fig. 146.
Visualisation:
Warm bath interior

Flow, materiality and light guide you through the structure. There is no need to navigate – each area has a single entry and exit, gently leading you forward and marking each transition with intention.

The journey culminates in the steam room, where double-height ceilings and dense mist envelop you. Gradually you accent to the first floor, steam getting thicker, hotter and the room getting darker, until you see a glimpse of light causing a release from the tension.



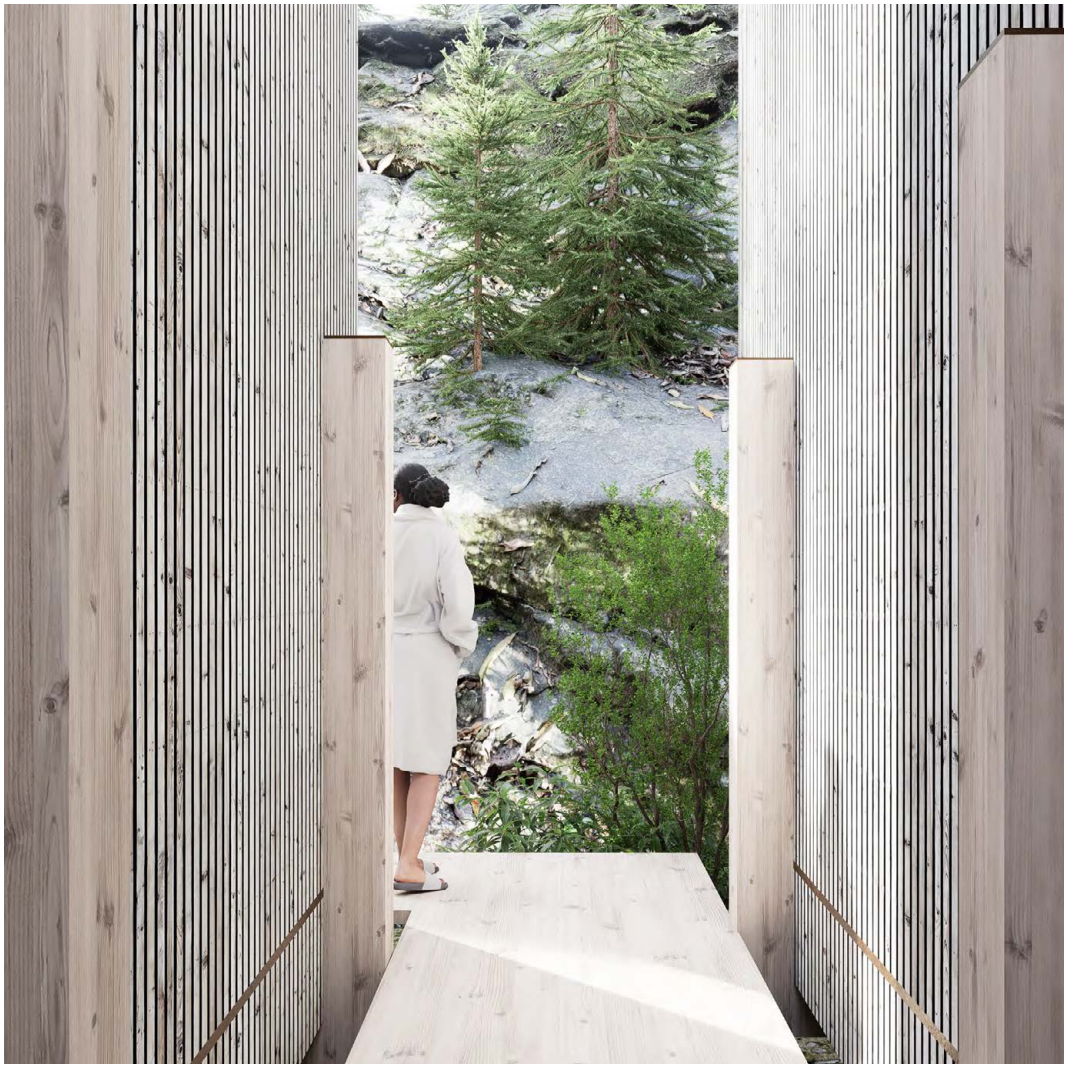
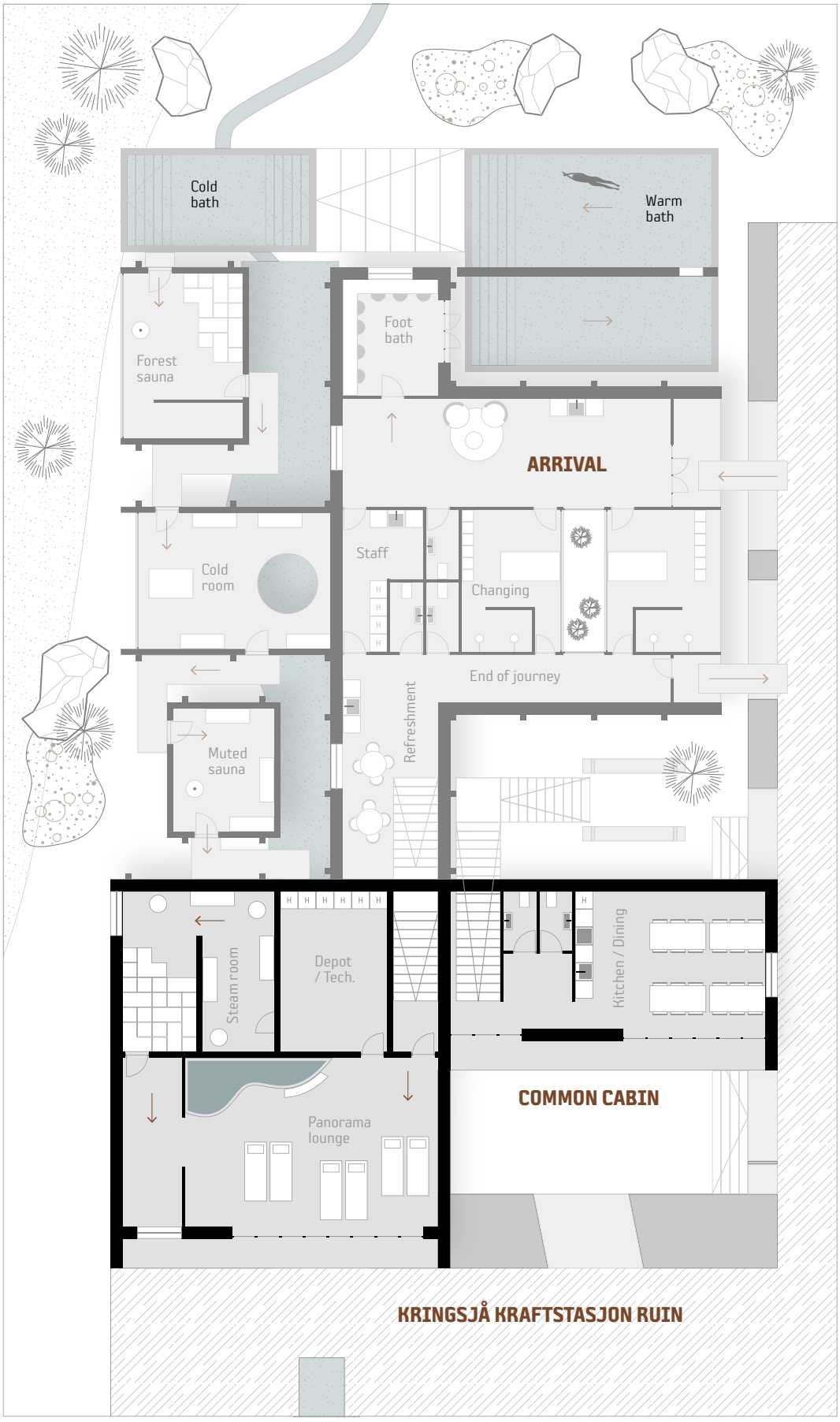


Fig. 147.
Visualisation:
Thermal journey



1 : 200

Fig. 148.
Plan:
Kraftstasjon level 01

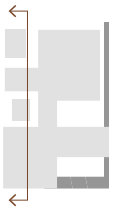
Fig. 149.
Visualisation:
Panorama lounge

13.05 KRAFTSTASJON PLAN LEVEL 01

THE END OF THE JOURNEY [170 SQM.]

Arriving at the first floor, you enter the Panorama Lounge – the final pause in the thermal journey. Here, time slows completely. Whether sinking into the warmth of the jacuzzi or resting in a lounge chair, you are invited to stay as long as you like.

In front of you, the forest stretches endlessly – a vast, uninterrupted landscape of stillness and solitude. The view is immersive, meditative, and humbling. For a moment, it feels as though you've left society behind. Only the silhouette of distant electrical posts, carrying energy back to the world beyond, quietly reminds you of its presence.



13.06 SECTION 1 : 300

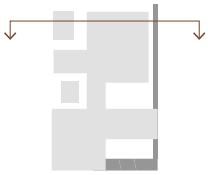
THE FUTURE KRAFTSTASJON SEEN FROM EAST

The architecture unfolds in a clear rhythm – a sequence of distinct volumes, each separated by short outdoor walks. These transitions expose the body to shifting weather, light, and atmosphere, heightening the sensory journey.

The entire structure is lifted one meter above ground, allowing the creek to pass through uninterrupted. Originating in the Kringsjå lake and then arriving in the cold bath, the water flows beneath the building, under the ruin, and continues its path over the cliff's edge. This continuous movement connects each space – a subtle yet powerful reminder of nature's presence and the site's original force.

Fig. 150.
Section:
S-N

13.07 SECTION 1 : 300



THE FUTURE KRAFTSTASJON SEEN FROM NORTH

The steep, rocky hill becomes both foundation and framework. The volumes anchor directly into the terrain, allowing the architecture to grow from the landscape itself. The solid rock not only carries the building, but also supports the baths and channels the creek.

Water is carefully guided through the site, but never fully tamed. It moves across stone, gathers in quiet baths, and flows onward with a natural rhythm. Here, the boundary between built and natural blurs, and the hillside becomes an active part of the experience – holding, shaping, and guiding the journey.

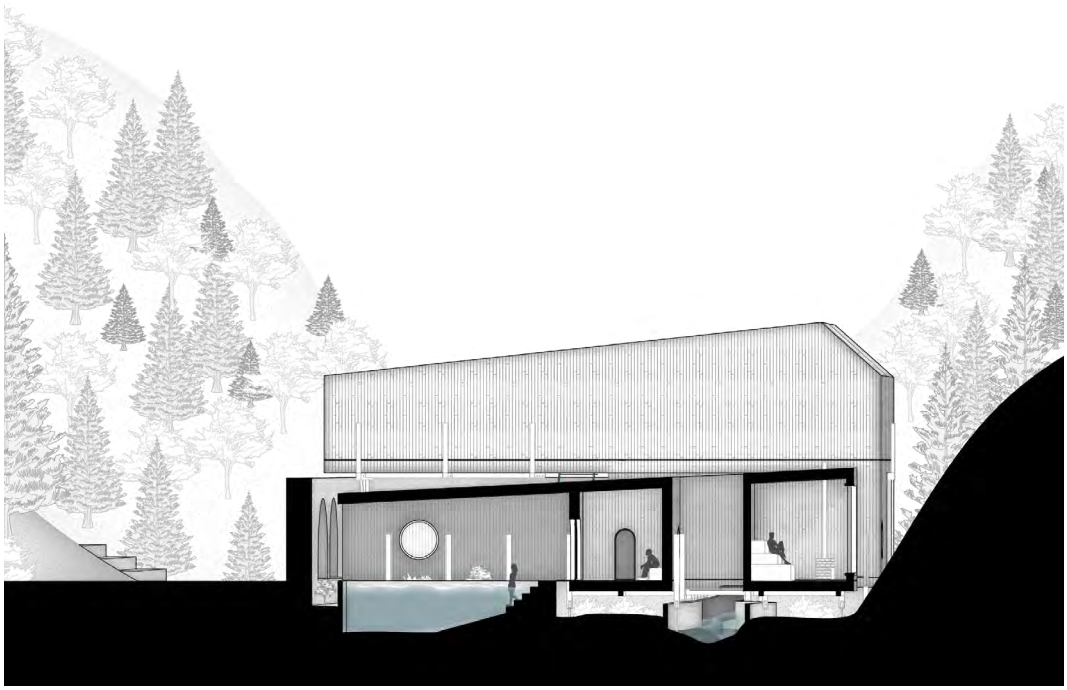


Fig. 151. Section: E-W

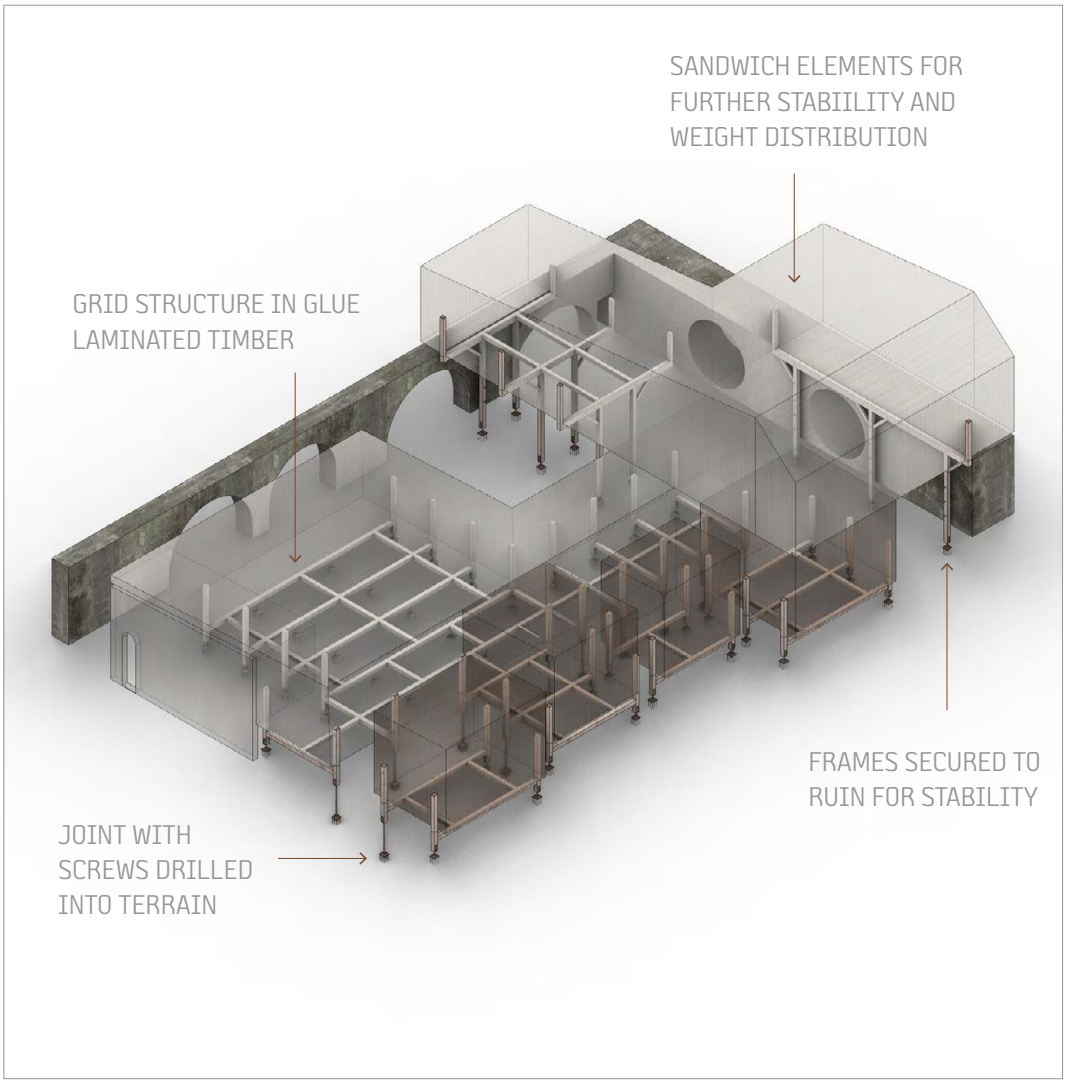


Fig. 152.
Diagram:
Structural sytem

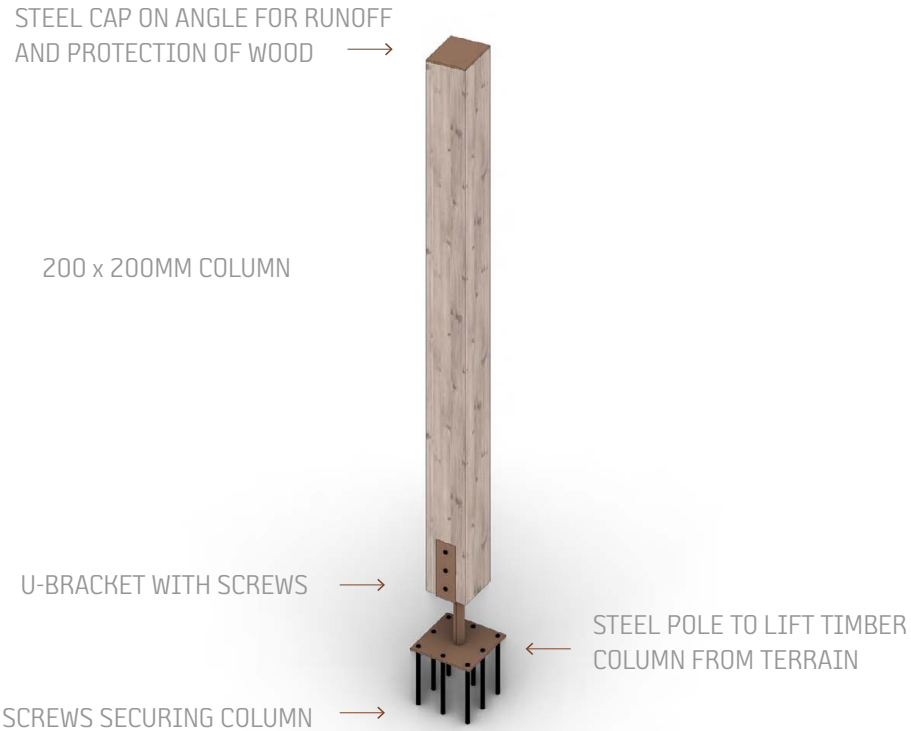
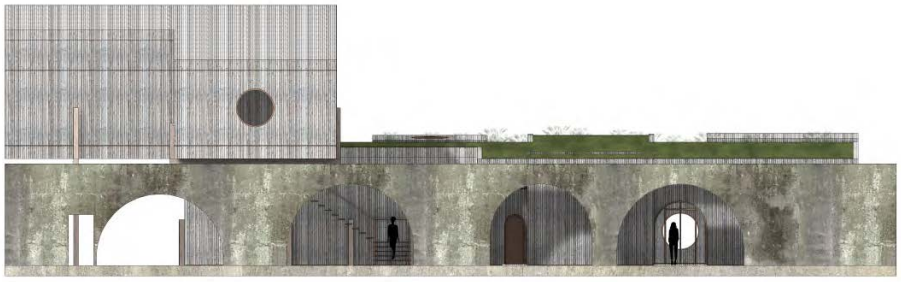


Fig. 153.
Diagram:
Column design

13.08 STRUCTURAL SYSTEM

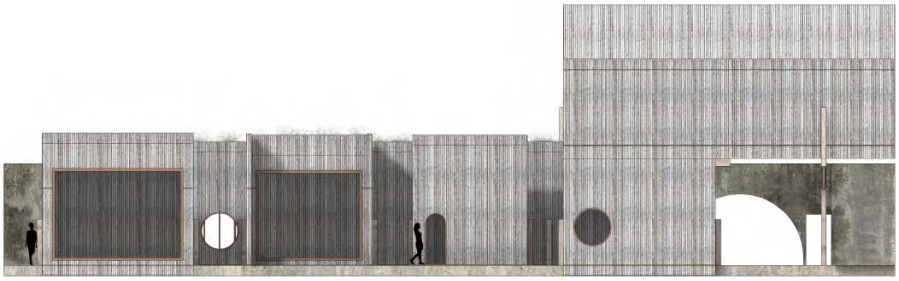
STRUCTURE AND NARRATIVE

Nested within a grid structure, the volumes recall the historical waterpipes that once powered the area. The primary structure consists of 200x200mm glue-laminated timber columns mounted in U-bracket joints, which are anchored into the terrain and easily adaptable to the shifting topography. A slender steel pole lifts each wooden column slightly above the ground, protecting it from direct contact with moisture and extending its longevity. Each column is further shielded from the elements by a steel cap and a subtle angle that ensures rainwater runoff. Wooden beams span between the columns, raising the building one meter above the terrain and 20 cm above the ruin, while contributing to its overall stability. The simple structural system creates a tectonic element to the overall narrative of the project.



EAST ELEVATION

Fig. 154.
Elevation:
East



WEST ELEVATION

Fig. 155.
Elevation:
West

13.09 FOUR ELEVATIONS 1 : 300

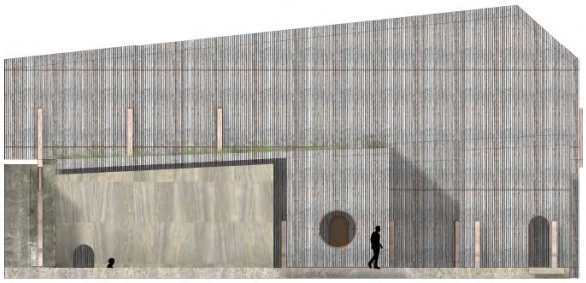


Fig. 156.
Elevation:
North

NORTH ELEVATION

Fig. 157.
Elevation:
South

SOUTH ELEVATION

Fig. 158.
Visualisation:
Rentable cabin

14.00

THREE CONCEPTUAL DESIGNS

Building on the design principles established in the previous volume, three conceptual designs have been developed. These serve as a foundation for the future transformation and expansion of the Kringsjå area.

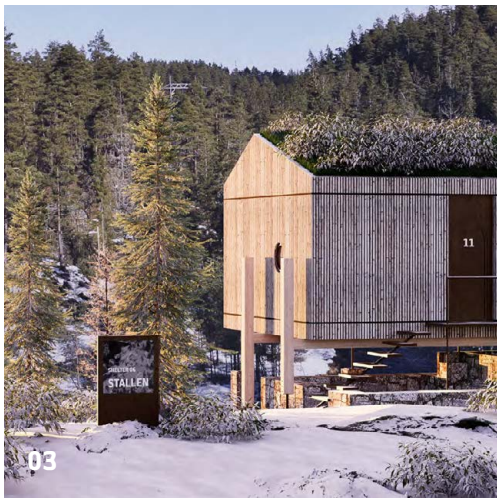
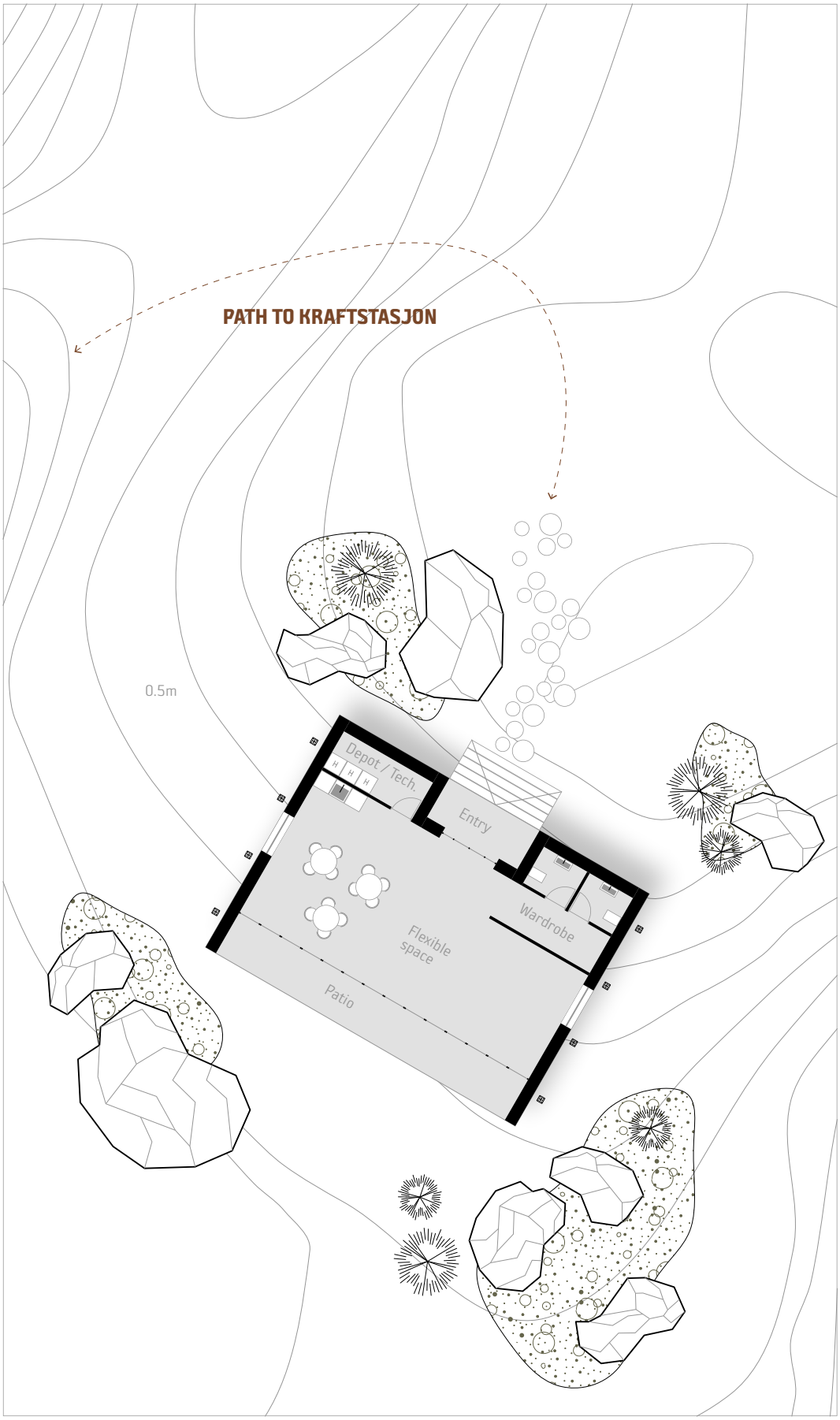


Fig. 159.
Visualisations:
Conceptual designs



1 : 200

Fig. 160.
Plan:
Maskinmester cabin

Fig. 161.
Visualisation:
Maskinmester cabin

14.01 MASKINMESTER CABIN

FLEXIBLE EVENT SPACE [80 SQM.]

Positioned lightly on top of the hill, this smaller volume offers a flexible space for year-round activities – from yoga sessions to talks and community events. Entering from the back, you are met with a striking, framed panoramic view of the surrounding landscape. The structure hovers just above the ruin from the old machine engineer's house, allowing the past to breathe while quietly hinting at the house that once stood here.

Fig. 162.
Diagram:
Maskinmester ruin

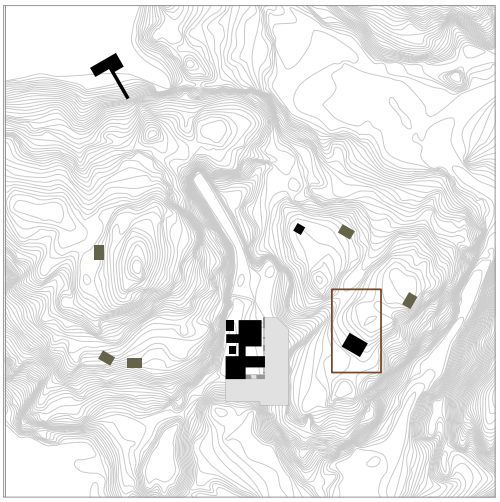
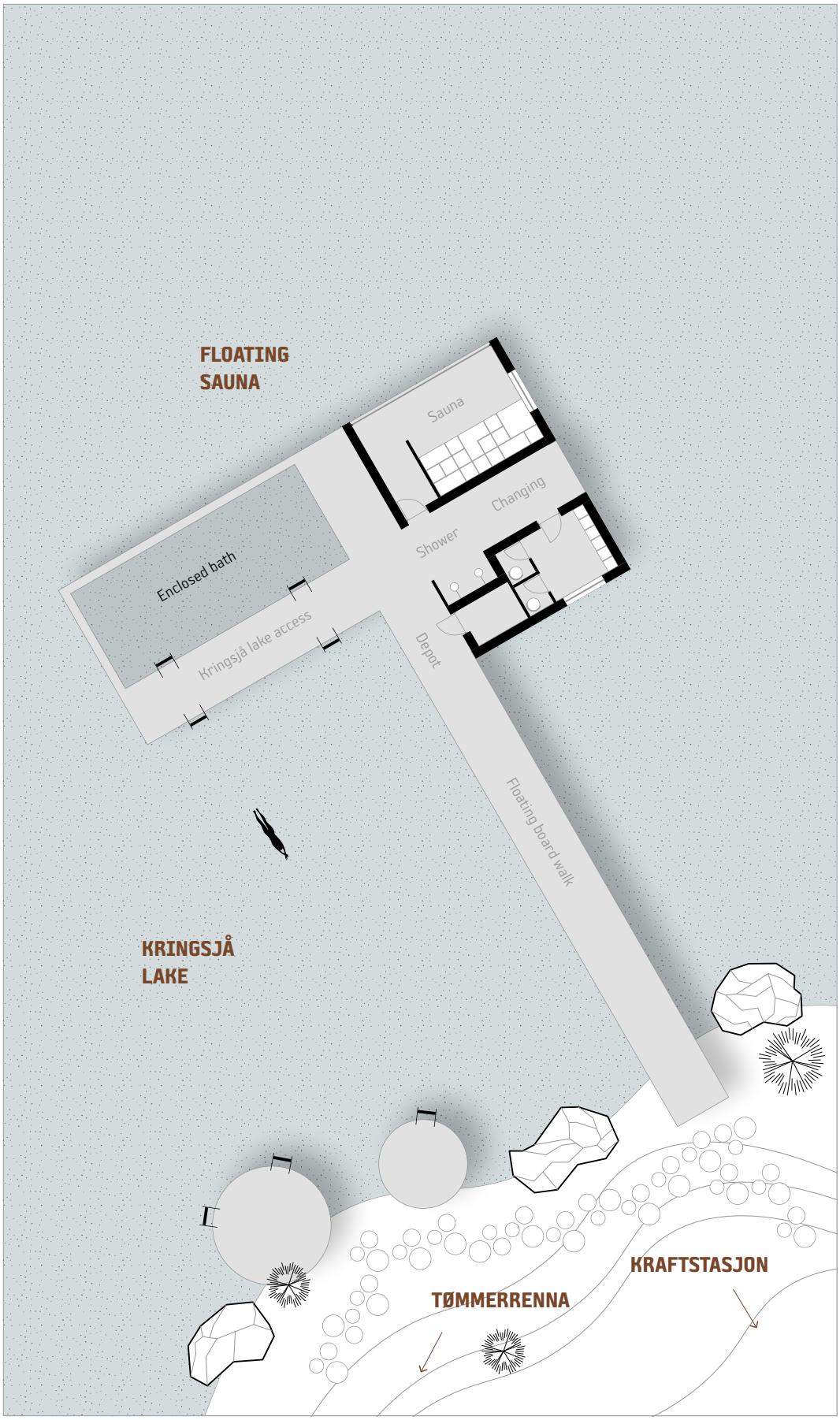


Fig. 163.
Map:
Plan cutout



1 : 200

Fig. 164.
Plan:
Floating sauna

Fig. 165.
Visualisation:
Floating sauna

14.02 FLOATING SAUNA

THE COMPACT THERMAL EXPERIENCE [25 SQM.]

Floating gently on the surface of Kringsjå Lake, this sauna welcomes visitors arriving from the Tømmerrenna hike gesturing that they have arrived at their destination. Offering a more compact thermal experience, it invites you to alternate between swimming and a sauna with a panoramic view of the lake and surrounding forrest. The boardwalk leading out to the sauna becomes a quiet journey, guiding you across the water and offering new perspectives on the landscape before you step inside to unwind.

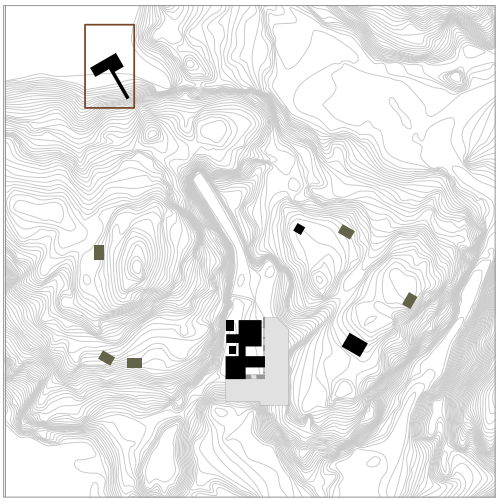


Fig. 166.
Map:
Plan cutout

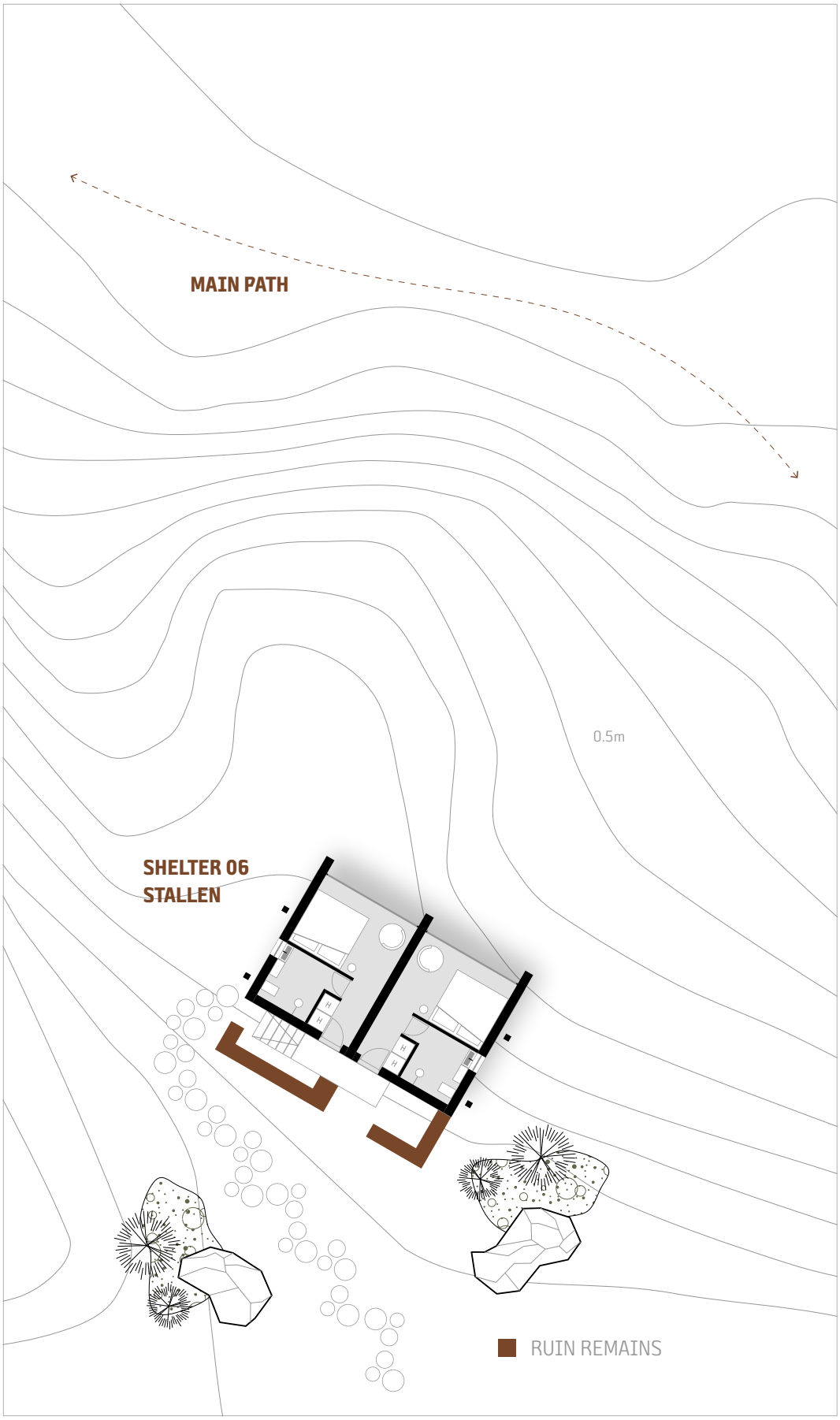


Fig. 167.
Plan:
Rentable cabin

Fig. 168.
Visualisation:
Rentable cabin

14.03 RENTABLE CABIN

TWO OUT OF TWELVE RENTABLE CABINS [15 / 180 SQM.]

Positioned on top of the old stable ruin, this cabin is one of six rentable retreats scattered across the site (12 rooms in total). Shielded from the community by a closed facade, it offers a private escape – a place to withdraw, reflect, and wake up to uninterrupted views of the surrounding landscape. The interior is kept minimal, drawing attention back to nature outside and gently encouraging guests to reconnect with the land and explore history and the thermal experiences beyond the doorstep.

Fig. 169.
Diagram:
Stallen ruin

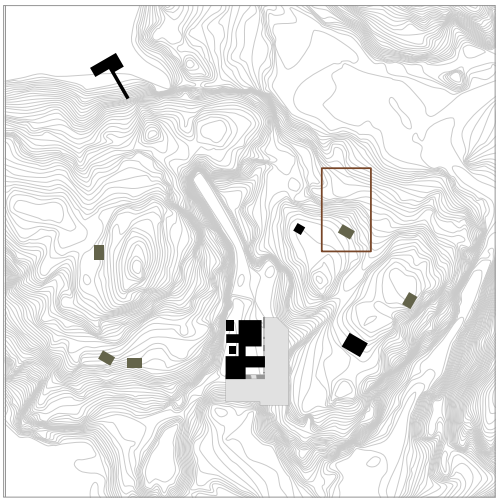


Fig. 170.
Map:
Plan cutout

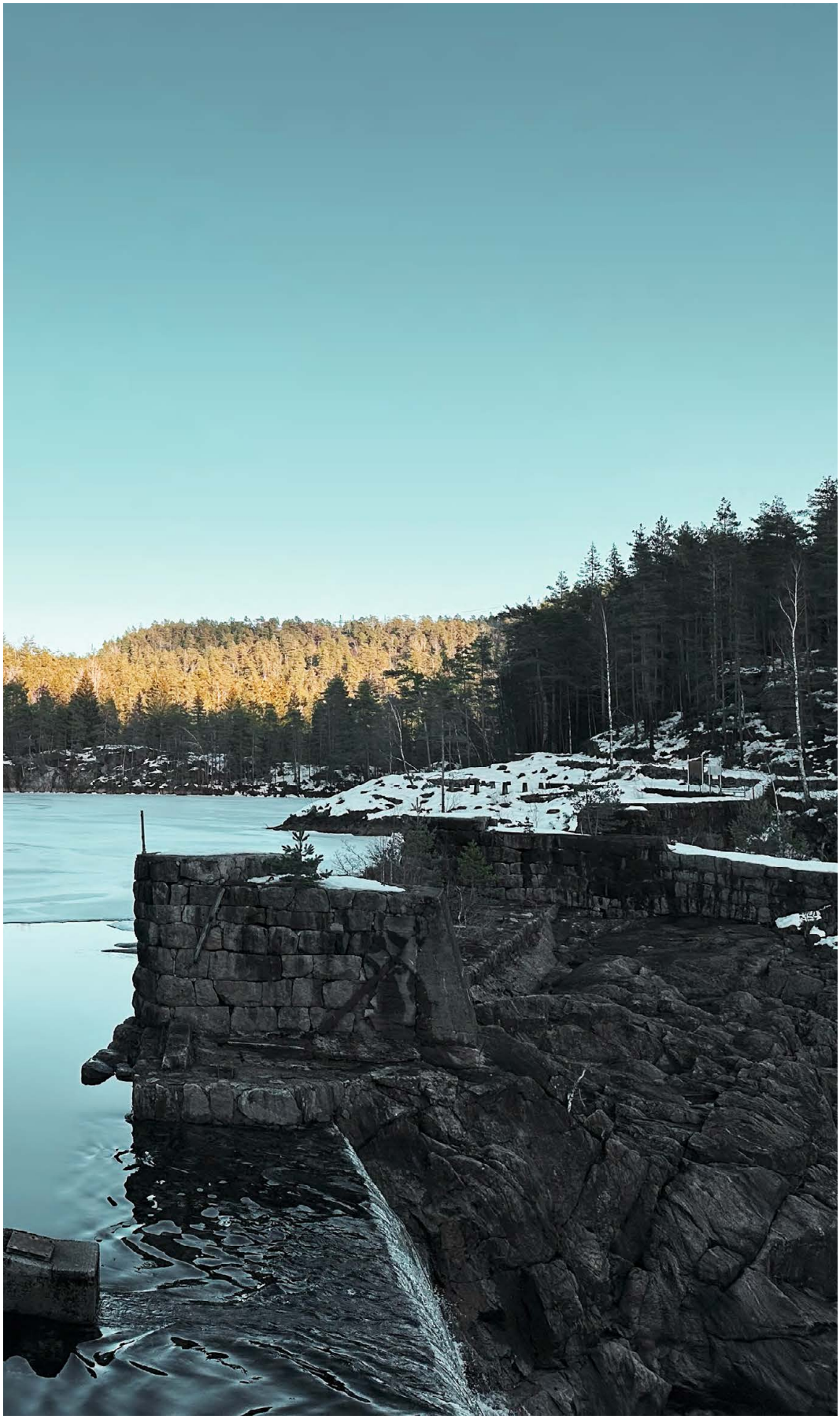


Fig. 171.
Own image:
Frozen Kringsjå lake

CONCLUSION

15.00 CONCLUSION

SUMMARISING THE PROJECT

This thesis departures in the powerful presence of Kringsjå Kraftstasjon –an abandoned relic of early Norwegian hydropower, discovered by chance yet impossible to ignore. What initially appeared as a silent concrete structure in the woods revealed itself as the heart of a lost industrial community, full of untapped spatial and cultural potential.

Through the conceptual framework of Reviving the Current, the project reimagines the meaning of energy in an architectural context. Here, energy is emotional, social, and sensory. The current is revived not in turbines, but through movement, atmosphere, and human connection. The journey begins with a hike through the wild Norwegian landscape, continues through the openings of the ruin, and culminates in a journey through different thermal experiences. This dual journey is central to the spatial narrative.

The architectural response is shaped by the principle of adding to enhance: a careful insertion of new volumes that highlight, rather than overshadow, the ruin. By embracing both the decay and the material honesty of the site, the project allows the past to remain visible, while offering new functions for the future. The largest intervention–a thermal bathing facility and common cabin–rests within the ruin's monumental walls, while smaller volumes around the site provide rentable cabins, flexible spaces and a floating sauna. Together, these elements form a cohesive composition that supports mental well-being, outdoor life, and sustainable visitor management in a historic context for locals and visitiors.

The future Kraftstasjon proposed in this thesis is a catalyst. It becomes a cultural generator–redefining the relationship between people and place, industry and identity. Through architecture, Kringsjå transforms from a forgotten society into a meaningful landmark that speaks to both individual retreats and values the community.

Ultimately, this project suggests that the true power of architecture lies in its ability to reconnect with history, with nature, and with ourselves. In doing so, Kringsjå becomes a new kind of Kraftstasjon– energising not machines, but people.

Fig. 172.
Visualisation:
Welcome

15.01 REFLECTION

REVIVING THE CURRENT - IN RETROSPECT

PROJECT SCALE BALANCE

As outlined in the introduction, the project involves two main components: the central building, The Future Kraftstasjon, and the smaller conceptual volumes. Throughout the development process, there has been a continuous balancing act between achieving a high level of detail in the thermal baths and in the overall design of the new Kringsjå area. Ultimately, the decision was made to prioritise the surrounding volumes, which – due to project deadlines and resource limitations – meant that the level of detail in the main building could have been higher.

LIMITED TOPOGRAPHY

The project is based on 0.5-meter contour lines obtained from Scalgo.com, which served as the foundation for modeling the terrain. One of the key challenges throughout the process has been the integration of various natural and built elements – including ruins, buildings, vegetation, large rock formations, and streams – into a coherent 3D model. Due to the complexity and irregularity of these elements, incorporating them accurately posed both technical and representational difficulties. As a result, minor inconsistencies may appear in some of the graphical materials.

VISUALISING TRANSITIONS

In connection with the previous point, one of the graphic challenges in the project was visualising transitions between different buildings – for example, the passage from the thermal baths to one of the rental cabins. While time could have been allocated for this work, doing so would have further shortened an already compact design process.

EYE-HEIGHT VOLUME STUDIES

The design process was partly based on a volume study that diagrammatically presents 16 iterations in isometric view. Like several of the other design studies, these iterations could also have been explored from eye level, which would have made the spatial atmosphere more accessible and easier to interpret.

SEEMINGLY FLUENT DESIGN PROCESS

As outlined in the "Approach" (page 15), the process is presented in a structured and linear way, which might give the impression of a smooth journey from A to Z. In reality, the process was long and complex, involving many iterations that were not included in the report. Several of the illustrated studies were also refined afterward to enhance legibility.

WINDOWS ON LEVEL ONE

During the transition from design to visual presentation, it became evident that more time could have been dedicated to refining the window placement on the first floor, particularly around the Common Cabin. On the north side, for instance, windows are largely absent, despite the potential for attractive north-facing views over the vegetated roofs of the thermal baths and toward the ravine that feeds the Creek.

ROOF AND PRECIPITATION

The earlier-mentioned issue of detailing also extends to the roof construction. The next step in the design process would have been to address rainwater management, such as integrating concealed gutters into the architecture.

DAYLIGHT SIMULATIONS

In relation to this, future steps should include daylight simulations to evaluate the current design. This is especially relevant for the upper floor, where large panoramic windows face south – making it important to assess indoor thermal comfort during peak daylight hours.

LOCAL MATERIALS

Another aspect of detailing concerns the use of local materials, which has been a guiding principle from the beginning of the project. While the selected materials align with this vision, the next step would be to identify specific suppliers and request material samples and Environmental Product Declarations (EPDs) for the Life Cycle Assessment (LCA).

VISUALISING EVENTS

From the outset, the project has acknowledged that large-scale events have taken place – and will continue to take place – on the Kringsjå plateau. This vision is embedded in the final design, but the visualisations feature very few people. In future renderings, it would be exciting to portray the interaction between the new building and large crowds, highlighting the site's public potential.

TURBINE SELF SUFFICIENCY

One study, which was later set aside, explored the possibility of powering the new Kraftstasjon with a local water turbine. This would make sense with the reactivation of the original water flow and would fit symbolically with the project's overall theme. Additionally, it could serve as an educational element, demonstrating how hydropower was once generated – and how it can still serve as a sustainable energy source today.

TRAIL NETWORK

Looking ahead, it would be valuable to map how The Future Kraftstasjon connects to local and national hiking trail networks. Regardless of current trail accessibility, Kringsjå offers a natural and symbolic endpoint for a long hike – a place to recharge both physically and mentally.

MOTIVATION

As this reflection illustrates, there are no major components of the project that one would fundamentally change in retrospect. Although the initial spark of motivation came after the first visit to Kringsjå Kraftstasjon, both the commitment to and relevance of the project have only grown stronger throughout the process of developing this thesis.

Fig. 173.
Own image:
Smiling ruin

16.00 REFERENCES

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16.01 FIGURES

LIST OF ALL PROJECT FIGURES

16.02 FIGURE REFERENCES

PROJECT FIGURES WITH ONLINE SOURCES

Fig. 003.
Vennesla Historielag:
Kringsjå Kraftstasjon
Link: https://www.venneslahistorielag.org/bilder/17/kringsja-ryknes

Fig. 011.
Vest Agder Museet:
Kringsjå konsert
Link: https://www.vestagdermuseet.no/side/2/?s=kringsj%C3%A5&submit=S%C3%B8k

Fig. 016.
Vennesla Historielag:
Kringsjå birdseye
Link: https://www.venneslahistorielag.org/bilder/17/kringsja-ryknes?page=5

Fig. 017.
Å Energi:
Kringsjå today
Link: https://www.fvn.no/nyheter/lokalt/i/wJ1kP/aapner-historisk-kraftstasjon-for-folket

Fig. 033.
Å Energi:
Kringsjå Kraftstasjon ruins today
Link: https://www.fvn.no/nyheter/lokalt/i/wJ1kP/aapner-historisk-kraftstasjon-for-folket

Fig. 035.
Vennesla Historielag:
Kringsjå Kraftstasjon
Link: https://www.venneslahistorielag.org/bilder/17/kringsja-ryknes

Fig. 037.
Vennesla Historielag:
Historic society
Link: https://www.venneslahistorielag.org/bilder/17/kringsja-ryknes

Fig. 039.
Per Berntsen, via ArchDaily:
Allmannajuvet
Link: https://www.archdaily.com/796345/allmannajuvet-zinc-mine-museum-peter-zumthor?ad_source=search&ad_medium=projects_tab

Fig. 042.
Vennesla Historielag:
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Fig. 051.
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Rasmus Hjortshøj, via Divisare:
Reindeer Pavilion
Link: https://divisare.com/projects/349236-snohetta-rasmus-hjortshoj-coast-tverrfjellhytta-norwegian-wild-reindeer-pavilion

Fig. 053.
Christian Flatscher, via ArchDaily:
Alpbachtal Viewing Tower
Link: https://www.archdaily.com/999028/top-of-alpbachtal-viewing-tower-snohetta

Fig. 054.
Pexels.com:
Soria Moria Sauna
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Fig. 057.
Flickr.com:
Therme Vals
Link: https://www.flickr.com/photos/archi-dose/albums/72157634919665050/

Fig. 077.
Deepai.org:
AI Vision
Link: https://deepai.org/machine-learning-model/text2img

Fig. 099.
Per Berntsen, via ArchDaily:
Allmannajuvet
Link: https://www.archdaily.com/796345/allmannajuvet-zinc-mine-museum-peter-zumthor?ad_source=search&ad_medium=projects_tab

Fig. 101.
Jan Lillebo, via ArchDaily:
Tungestølen
Link: https://www.archdaily.com/942033/tungestolen-hiking-cabin-snohetta

Fig. 103.
Kathrine Sørgård, via Architizer:
Fleinvær Refugium
Link: https://architizer.com/projects/fleinvaer-refugium/

Fig. 174.
Own image:
Team on site

APPENDIX

Fig. 175.
Own image:
Kringsjå outlet

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THESIS TITLE PAGE

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Title of the thesis: **Reviving the Current** The Future of Kringsjå Kraftstasjon
Supervisor´s name: Tenna Doktor Olsen Tvedebrink
Submission date/year: 02.06.2025
Is the project confidential? **Yes** ☐ **No** ☒
External collaboration* **Yes** ☐ **No** ☒
External collaboration partner (name of company/organization):
Contact at external collaboration partner (title, name og email):

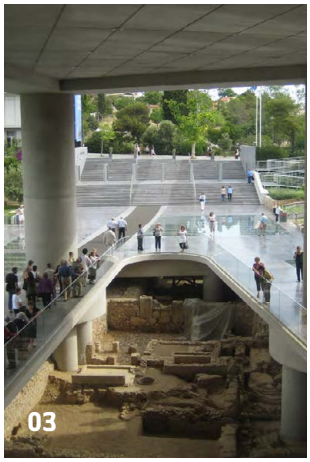
What is an external collaboration? Read more here.

17.00 APPENDIX 01

RUINATION MOODBOARD


01


02


03


04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08

MASTER THESIS

REVIVING THE CURRENT

THE FUTURE OF KRINGSJÅ KRAFTSTASJON