

Project Report

# Forms of Reciprocity

*Raising appreciation for Danish nature*

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Characters: 38 603

*“In the age of the Anthropocene, humanity’s impact on the planet is undeniable. By destruction and even by conservation, all ecological systems are impacted by human action. We are now at a crossroads where we can either continue a narrow view of technology, informed by our distance from Nature, or we can acknowledge that this is just one way and not the only way for humans to live.”*

Julia Watson (2019) Lo-TEK: Design by Radical Indigenism

## Abstract

In light of the significant impact of the anthropocene and the changes to Danish nature, we are looking for new ways of seizing the landscape. The aim of this thesis is to define a symbiotic relationship between three parties; people, the built environment and the Danish landscape. In a time where the perception and the culture around *nature* is shifting, we are searching for forms of reciprocity.

Through the creation of an alternative accommodation lodges in the context of central Jutland, more specifically the lake of Salten Langsø, the architectural structures that are designed in close relation with existing natural phenomena, will inspire a greater enthusiasm towards what, to many Danes may be, the undiscovered landscape of domestic nature. The project aims at encouraging outdoor life and domestic tourism, creating access and raising awareness towards the perhaps underappreciated experience of Danish nature today.

How can we give back Danish nature its appreciation by amplifying existing phenomena?



Figure 1. East side of Salten Langsø and the connecting Salten Å

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## Topicality Staycation

During the ongoing pandemic, our lives have increasingly been lived from home. Within the tight space of our new *home-office*, social distancing and restrictions have created a new pressing need to move outside of the compressed spaces of our apartment buildings. In the context of the city, green pockets and parks are no longer sufficient in providing spaces for ventilation, or cater to the vast number of people using them<sup>1</sup>. We are now turning towards the domestic landscape as a space of recreation, or simply to escape uncertainty and the gloomy reality. When taking into account the current situation of the global pandemic (2021), the future perspective of domestic vacations in Denmark becomes increasingly relevant.

It has become apparent that the aftermath of the situation not only concerns our everyday leisure time, but the long-term effects of the virus will have a massive impact on how we will spend our holidays in the near future. As the coronavirus is dominating public places and transits, affecting the crossing of borders, travel abroad has been put on hold and *staycation* is tourism's new destination<sup>2</sup>. Searching away from the crowdedness of the cities and towards where we will spend our next holiday, the landscape of Denmark seems strangely unfamiliar.



Figure 2 - 5. Salten Langsø and the riversystem of Gudenåen as the new destination of tourism in Denmark, Initial visualisations of tourist moments done by authors

## The Choice Between Primitive Shelter and Luxury Hotel

As the growing interest towards outdoor life develops, there are countless campaigns encouraging people to enter the Danish nature, but close to no initiatives are addressing the lack of outdoor accommodation. Options on places to stay are rather restricted, having to choose between the two opposites of primitive and luxurious. Getting close to nature is not the same as staying in a summer house area, nor is it a weekend at a fancy seaside hotel. Accommodation in the Danish landscape is limited to the choice of a rather primitive shelter, excluding a diversity of people, in particular those who normally don't feel comfortable sleeping on the cold ground. The aspect of security and the notion of privacy is also at stake in the open architectural structure, becoming a breaking point for many female travelers entering the landscape.

Setting foot in nature should not be viewed as an extreme sport, but rather an informal experience, attainable to everyone and in particular the urban citizen. Due to lack of alternatives that complement the outdoor initiatives, **Denmark is in need of alternative accommodation options that encourage the perhaps underappreciated experiences of domestic nature.**

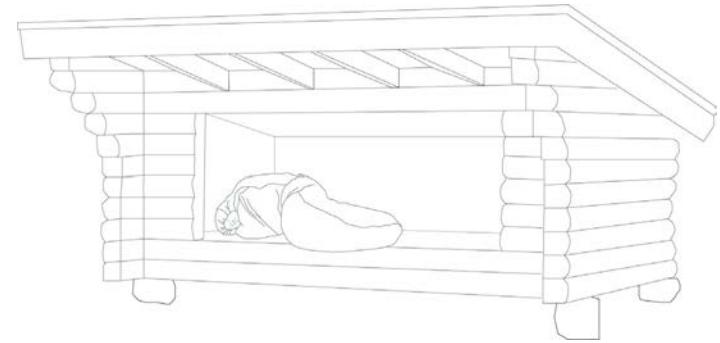


Figure 6 - 7. Initial sketch by authors, Shelters in Gudumkær Plantation, Herning

## Project Framing

### Understanding the Danish Landscape

Over time, ideas of how nature should be defined and treated have taken countless forms. Provoking strong attitudes and differing opinions, humans have favoured some *forms of nature* over others. The different perspectives divide the rather homogeneous Danish society in two, separating farmers from the urban citizens and utilization from preservation. When questioning the use of natural areas there are many conflicts of interests, and to understand the complexity of these it is crucial to take a look at the history of the Danish landscape and how the resources and its value have changed over time.



Figure 8. Restricted nature, Photography from site visit  
by authors

*The Holocene*, represents the most recent interglacial interval of the Quaternary Period, a time that is characterized by the rise of humanity.

*The Anthropocene*, represents the later part of the Holocene epoch, a time that is characterized by humanity's domination over the planet's ecological systems and biogeochemical cycles.

7000BCE /  
1750BCE



### Neolithic Period

A major change in the history of humankind was the settlement of the first farming societies. As the cultivation of land required space, areas of Danish forest were burnt down and replaced by cultivated plants. Animals were kept as livestock and supplemented with gathered and hunted goods. The living situation changed during the period, but the shared characteristics of small-scale, family-based communities remained the same.

1700CE /  
1800CE



### The Danish Agricultural Reform

By the 18th century, Danish farming had evolved into a more organized form of domestication and was an integrated part of the village community. With the agricultural reform *Landboreformen* that was aimed at improving conditions for farmers, the vernacular communities changed dramatically. Both through the increased agricultural production, as well as the merging of farmers land into fewer and bigger plots. Despite these changes, the biggest influence on the landscape in this period was caused by the vast demand for wood. Areas that earlier had been covered by forest, were now left with stumps, projecting from the ground, resulting in massive deforestation.

1800CE /  
1850CE



### The Golden Age

As an artistic period, *Guldalderen* had a great influence on the perception of what Danish nature consisted of. Danish society had established a confidence in its artists and painters, firmly believing that their inspiration only came from the true Danish nature. Through the artistic production and the distribution of paintings in this period, a common agreement of what nature truly looked like, was established. The image of heathlands and meadows, engraved into Danish culture, has rested up until today, even though this natural landscape is the result of decades of human cultivation and is characterised as a cultural landscape.

1850CE /  
1950CE



### Industrialisation

The great changes in the social position and role of agriculture began shifting with the industrial revolution. By the 20th century, the once free range domestication was long gone and livestock was kept inside to increase efficiency. A critical aspect of the agricultural progress was the economic crisis of the 1930's, together with the settlements of the land-gaining projects and the land improvement laws. The projects were authorised and publicly funded, reconstructing agricultural landscapes to enable maximum production capacity and growth. In its totality the legislations caused the draining of nearly 100.000 lakes, fjords and wetlands, areas that today are subjects of nature restoration projects.

1950CE /  
2021CE



### Present Day

Not until the end of the 20th century, Denmark recognised the negative effects on the landscape, as a result of the intensity of agricultural production. It has taken time for the rising concern and the conservation of nature to be directed towards the active protection of nature's biodiversity. The appearance of the Danish landscape is without doubt a result of the intense and heavy cultivation taking place on the land and there is little to nothing that remains untouched.

Figure 9 - 13. History of Danish landscape



## Typologies of Nature

Throughout the past centuries, generations of agricultural farming have influenced the general appreciation for the Danish landscape. As a result of this, we see a shifting understanding of the value of nature, influencing the perception of what nature is and how it should be used. Focusing on the extremities of the matter, one point of view is seeing nature as a purely functional resource, a production material supplying human industries, where man controls the landscape. Contrasting this point of view is the idea leaning towards a sense of self awareness, a nature separated from any human activity.

The latter sees nature as broken and in need of protection from human interaction, while flora and fauna recovers. But the point is that none of these views are particularly preferable. Without an objective description of *nature*, the concept takes form through a subjective spatial perception.

**Nature** discussed in this project is an evolving definition, moving from an industrial orientation and the anthropocene, towards a more symbiotic relationship between people and their experiences with nature.



Figure 14. Collage framing the project context, done by authors

Not conserved

*Nature as production material  
supplying human industries*



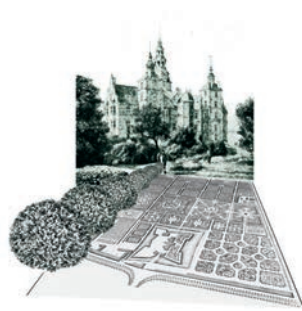
**Agricultural land**

*The systematic and controlled practice  
of cultivating plants and livestock, to  
produce food for humans.*



**Botanical gardens**

*Semi-natural planted space set aside  
for humans to enjoy*



**Parks**

*Semi-natural planted space set aside  
for humans to enjoy*



**Rewilding**

*The environmental conservation and  
ecological restoration of natural en-  
vironments to increas biodiversity.*



**National park**

*The conservation of 'wild nature',  
parks created and protected by  
national governments*



**Untouched forest**

*The environmental conservation and  
regrowing of former forestry by termi-  
nating human interaction and groo-  
ming.*

Conserved

*Nature in need of protection  
from human interaction*

*Nature in a symbiotic relationship with humans*



Figure 15. Diagram showing typologies of nature,  
done by authors

## Lack of Accessibility

The natural areas of Denmark, understood as uncultivated land, covers only a quarter of the total area of the country, and by those are 70 percent of the landscape owned by private actors<sup>3</sup>. Rising concerns towards the limited natural habitats have opened the dialog on how the Danish landscape should be managed and preserved.

As of today, the perception towards building in Danish nature has become a rather political point of view. Accompanying the current anthropocene era is the feeling of guilt connected to the diminishment of natural resources and its biodiversity. One can assume that the legacy of *eco anxiety*, the feeling that one should do more to help “save” the planet, has informed several pro-environmental behaviors such as the establishment of nature conservation unions<sup>4</sup>.

As one of the leading organizations of protecting nature in Denmark, the *Danish Society for Nature Conservation* has been the proud executor of many nature conserving legislations since its creation in 1911 and the establishment of the first conservation law in 1917. Through the many legislations, the organisation intends to protect vulnerable natural areas, as well as ensuring access for the Danish citizen. Taking a closer look at the details of the conservations and the values ensured by the organisation, a more critical awareness is adapted. Accompanying the many legislations, regulations on how to behave and where to walk and stay in the Danish landscape is affecting outdoor life negatively.

Due to the strictly guarded nature, the final proposal of this project takes a critical position concerning nature conservation laws, especially when it comes to people’s access to their experiences of the conserved natural environments, posing important questions such as;

**When conserving and protecting nature today, for whom are we really creating value?**

Taking into account the strict regulations, restrictions and criticism towards building in nature has created boundaries for outdoor life to unfold and the possibility for people to experience natural phenomena up close.

Shaping architectural structures in respect and sympathy with the terrain is the solution, creating a symbiotic relationship between the architecture and the landscape, where the built environment is the bridge between man and nature. When we acknowledge nature and understand its value, we take better care of it. Through research and analysis of related projects in the neighboring country, enthusiasm is generated towards establishing architectural structures in the Danish natural context.



Figure 16. **Juvet Landscape Hotel**, a tourist project in Gudbrandsjuvet, Norway, designed by Jensen & Skodvin Architects. The hotel consists of nine lodges spread out in the landscape. An old farm building on site is restored and transformed into an associated restaurant. Despite the location on a nature reserve, conservation authorities gave permission to realize the project, given that there was no use of dynamite or change of terrain during construction work. Each lodge is resting on massive steel rods drilled into the ground, leaving existing topography and vegetation left almost untouched.



Figure 17. **Allmannajuvet Zinc Mine Museum**, a museum located in Sauda, Norway, created by Peter Zumthor. Through the architecture, the museum raises awareness towards the abandoned zinc mines and the events that took place at the end of the 1800s, displaying the strenuous and exposed labor of the workers at that time. The pavilions are built up by exposed beam structures, representing the notion of honesty through its construction, which is reflecting the serene nature of Sauda. A hierarchy between the bearing structure and the spatial core makes the building seem smaller, respecting the surrounding landscape and viewed as a guest on site.

## Forms of Reciprocity

With the philosophy of developing a more symbiotic relationship between humans and nature, the project is turning towards the concept of reciprocity, an ideology of partnership where mutual benefits are exchanged between the different parties, in this case; people, the Danish landscape and the architectural structure enclosing the circle<sup>5</sup>. As the project title implies, *forms of reciprocity* is seen as a catalyst for the Danish traveler to experience the existing natural phenomena of Denmark.

Through the establishment of a series of lodges, we are proposing principles of reciprocity in relation with the design intervention. A fundamental perspective is seeing the architecture as being a guest on site. The structure is showing respect towards the surrounding landscape, elevated from the ground and moving between existing typography. Easily built from a timber-frame structure, the whole building consists of nothing but local wood and with the ideology of being a guest, the architecture can easily be disassembled and reused, leaving no traces behind.

As a vision of encouraging outdoor life, the architecture will amplify existing natural phenomena on site, creating greater access and a closer relation to the landscape. As a whole, it will eventually raise appreciation towards the Danish nature and especially the lake of Salten Langsø.



Figure 18. *Forms of Reciprocity*, explored through collage done by authors

## Context

### Connecting Salten Langsø with Gudenåen

The lake of Salten Langsø is situated in the east part of central Jutland, where the steep landscape of *Søhøjlandet* is marked by the last glacial period and characterised by its many highlands, ravines and lakes. The area contains the largest continuous forest landscape in the country, as well as the highest density of lakes and rivers, forming a biodiverse and unique nature<sup>6</sup>.

Salten Langsø flows out from Gudenåen, the longest river system in Denmark, originating from the city of Tørring and has its expiration in Randers Fjord<sup>7</sup>. The complex river has a long history and culture for outdoor life, in particular kayaking, which has been the foundation for the annual kayak marathon *Tour de Gudenå*, a 70 km kayak run from Silkeborg to Randers. With the solid foundation for outdoor life and facilitated natural experiences along *Søhøjlandet*, one would think the area around Salten Langsø is shaped by this engagement, unfortunately, on the contrary the lake is inaccessible to the public. The properties surrounding Salten Langsø are all privately owned by three family-related landowners managing the lands, making it difficult for people, possible hikers and tourists to access the beautiful lake.

Together with the regulations of the conservation laws addressing how to behave, go and stay in the protected Danish landscape, there are also regulations within private owned properties, concerning no trespassing between sunset and 6 am, meaning camping is forbidden, as well as activities taking place in lakes and rivers, prohibiting swimming, fishing and kayaking<sup>8</sup>. If we wish for a greater awareness and sympathy towards nature and its wildlife, accessibility is the solution, creating knowledge and close relations between man and nature.



Figure 19. *Tour De Gudenå*, 1980

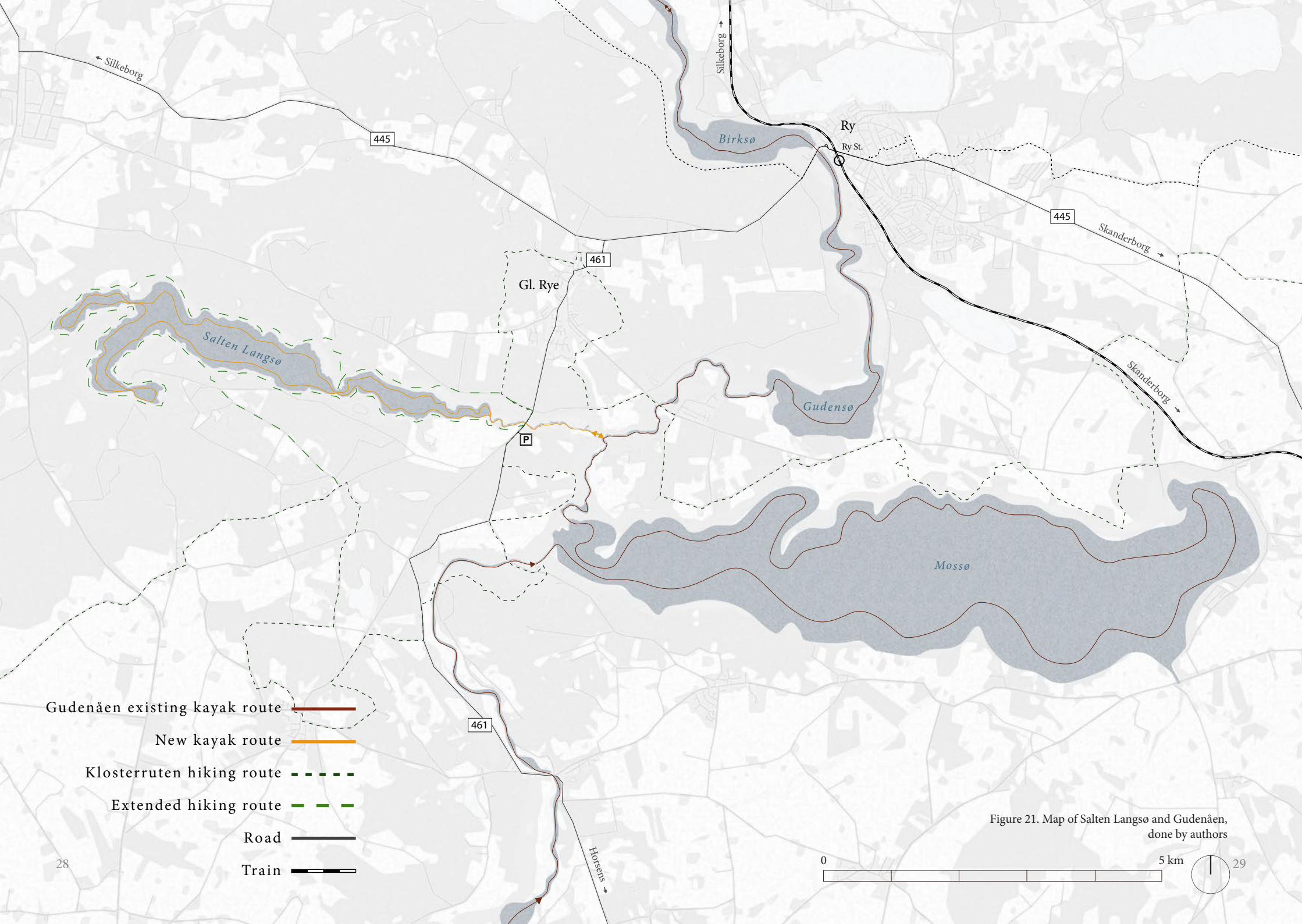
As a strategy of the thesis project, we are opening up Salten Langsø for public use. A proposed action would be to involve *Naturstyrelsen*, the biggest natural manager in Denmark, under the *Ministry of Environment and Food of Denmark*. Together with the nearby landowners, partnership with the agency will be established, giving public access to the lake and the surrounding landscape. The agreement will create frames for a vibrant outdoor life around Salten Langsø and the small river of Salten Å, streaming out into Gudenåen. Along with facilitating public outdoor life, kayaking and other water activities will be enabled.

Another aspect of the strategy will be to extend the famous hiking route *Den Danske Kloster rute*, a tourist and pilgrimage hiking route through Denmark, which passes the area of Salten Langsø. The lake will be an obvious stop and potential outdoor stay for hikers trekking along the route, as it is over 2300 km long.

Through research and registrations on site, outdoor accommodation is rather limited and the closest shelter is located near Gl. Rye town. Lack of places to stay near Salten Langsø makes the location around the lake an obvious choice to establish accommodation lodges for travelers wishing to explore and experience the natural phenomena in the area.



Figure 20. Map of Gudenåen, done by authors









- Gudenåen existing kayak route 
- New kayak route 
- Klosterruten hiking route 
- Extended hiking route 
- Road 
- Train 

Figure 21. Map of Salten Langsø and Gudenåen, done by authors





Figure 22. Section through the area of Salten Langsø,  
done by authors



## Hangarhuset

Southeast of Salten Langsø lies the remains of the old airfield *Rye Flyveplads*. The landing field dates back to 1935, when property owner Gunnar Larsen decided to establish his own private airport close to his home<sup>9</sup>. Along with the establishment of the airfield, an associated hangar was constructed, holding airplanes, a waiting room and ticket sales<sup>10</sup>. At the beginning of its history, the airfield was primarily used by Larsen himself, but this quickly changed when daily operations were taken over by the Danish airline *Det Danske Luftfartsselskab*.

A smaller brickhouse was located next to the hangar, dating back to 1898, as one of the many properties to Larsen. It is still unknown what function the brickhouse had at that time, but during the post-war period, the original structure, along with the large hangar burnt down. In the following years, Larsen constructed a new building on top of the old foundation, consisting of load-bearing brick walls and a-framed timber structures underneath a thatched roof. Today, the existing house functions as a vacation home for the family of Larsen, named after the historical hangar building once being there.

Having this vernacular structure located at our chosen site, made it obvious for us to bring it within the intervention of our project, transforming and giving it a new program in connection to the accommodation lodges.

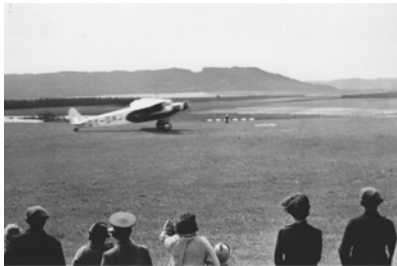


Figure 23. Photography from *Rye Airfield*, 1935

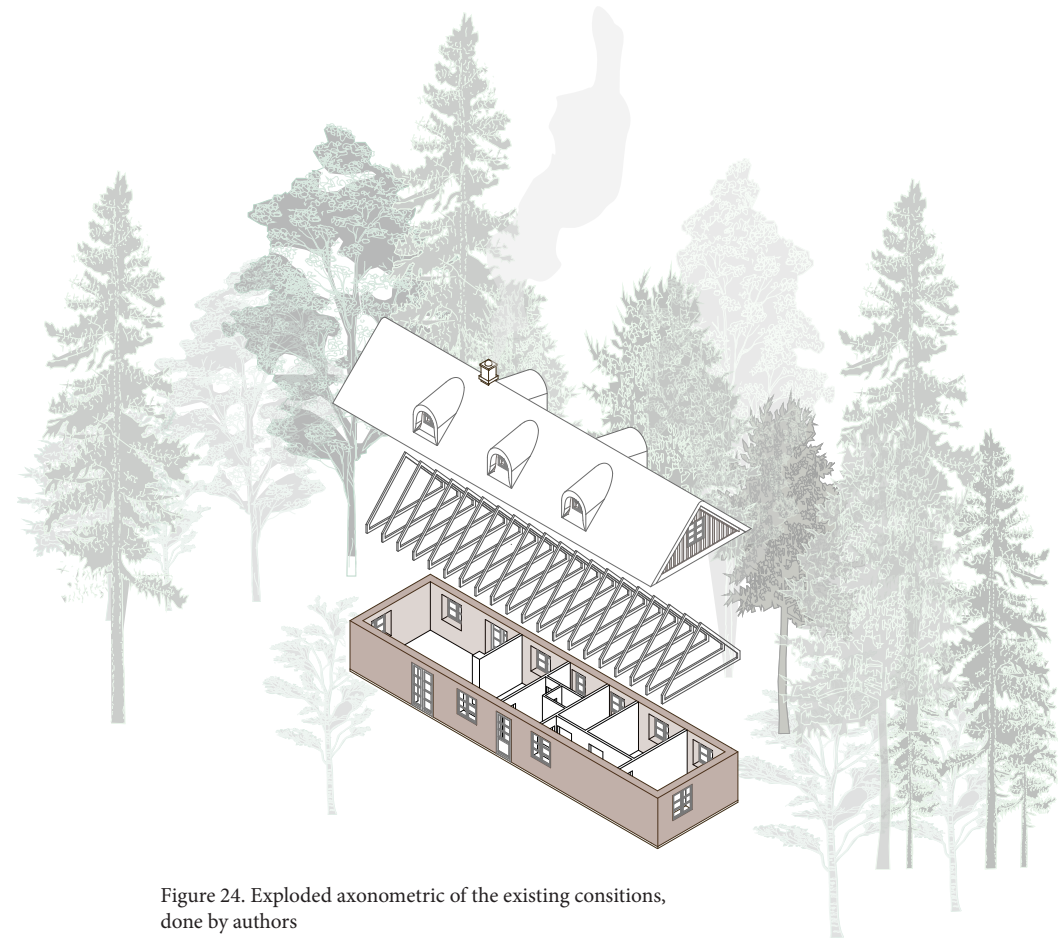


Figure 24. Exploded axonometric of the existing conditions, done by authors



Figure 25. Photography of *Hangarhuset*, by author

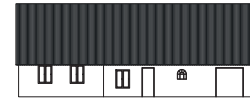
## Mapping and Registrations

From previous site visits, we mapped the journey through the landscape around Salten Langsø, both arriving by car and public transportation, walking most of the distance. Surrounding vegetation, wildlife and natural phenomena as well as existing architecture and activities, have been registered thoroughly through photos and bodily experiences, creating the foundation of our perception of the site. The closest town *Gammel Rye* and neighboring districts all share the same history dating back to the medieval period, and found buildings in the area are characterized by the Danish traditional half-timber structure.

As a recurring concept of the project, the idea of *the journey* has been an important element through the development of the design proposal and its interventions. Registering the arrival at the site, a large section through the landscape was developed, introducing categories of the changing typologies, being placeholders for the different accommodation lodges. The journey originates from the old town of Rye, down the dense forest landscape north of Salten Å where it crosses the characteristic wooden bridge, followed by the journey along the wetland of the riverside, meeting the architecture of *Hangarhuset*, as it moves downhill, towards the scenic lake of Salten Langsø.



Old Stable



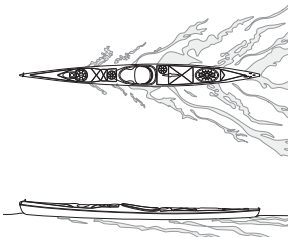
House across the river



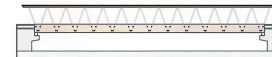
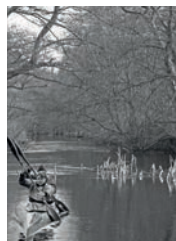
Kayak Launch Dock



Public toilet



Kayaking on Gudenåen



Bridge crossing Salten Å



Local farm house



Hangarhuset



Figure 26 - 41. Initial sketches and photography of site, done by authors

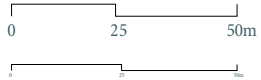


Figure 42. *The Journey*, a series of sections registered through the landscape southeast of Salten Langsø. Mapping of typologies of the nature and the different species, done by authors

## The Experiences

To create outdoor accommodation, we turned towards the fundamental needs when staying outdoors. Being out in the wide nature, far away from society, really changes the human mindset. Away from technology and comfortable frames, one discovers a greater appreciation towards the small, but vital necessities which are usually being taken for granted. Based upon our own experiences from previous site visits, we sketched down some of our observations along the trip; shelter from the weather, heat from a fire, a warm meal before you crawl into your sleeping bag and the long shower after returning from the trip. The empirical notions and experiences of the existing phenomena became the essential foundation for defining our interventions. Through collage, we developed five fundamental experiences.

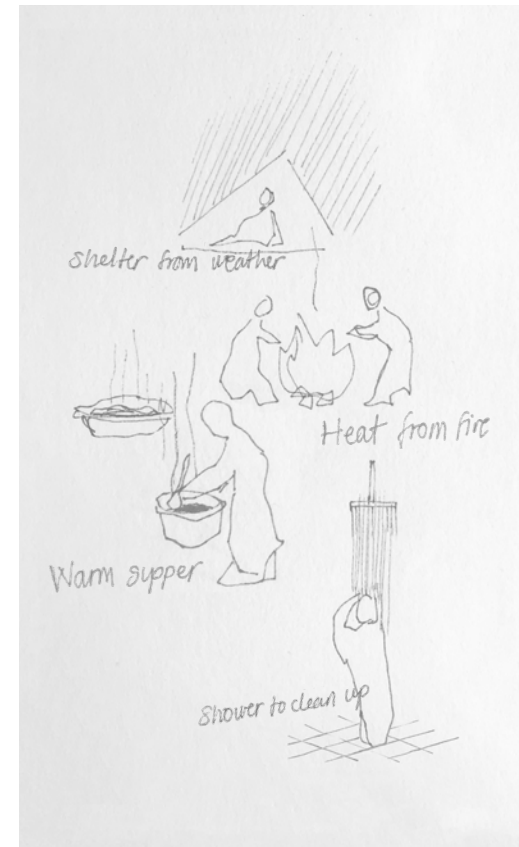


Figure 43. Initial sketches of fundamental needs, done by authors

### The Moment of Return

The familiar sight of the camp that you left behind. The notion of joy and gratefulness for finally arriving at your home for the night.



Figure 44. Fundamental needs, Collage

### The Rest

A place to lay down and rest, without the concerns of the hours of the day. The experience of shelter from a long day of hiking, feeling tired in every inch of ones body.



Figure 45. Fundamental needs, Collage

## The Bath

Regaining heat and cleaning yourself. The sublim ritual of a warm shower washing the tired body.

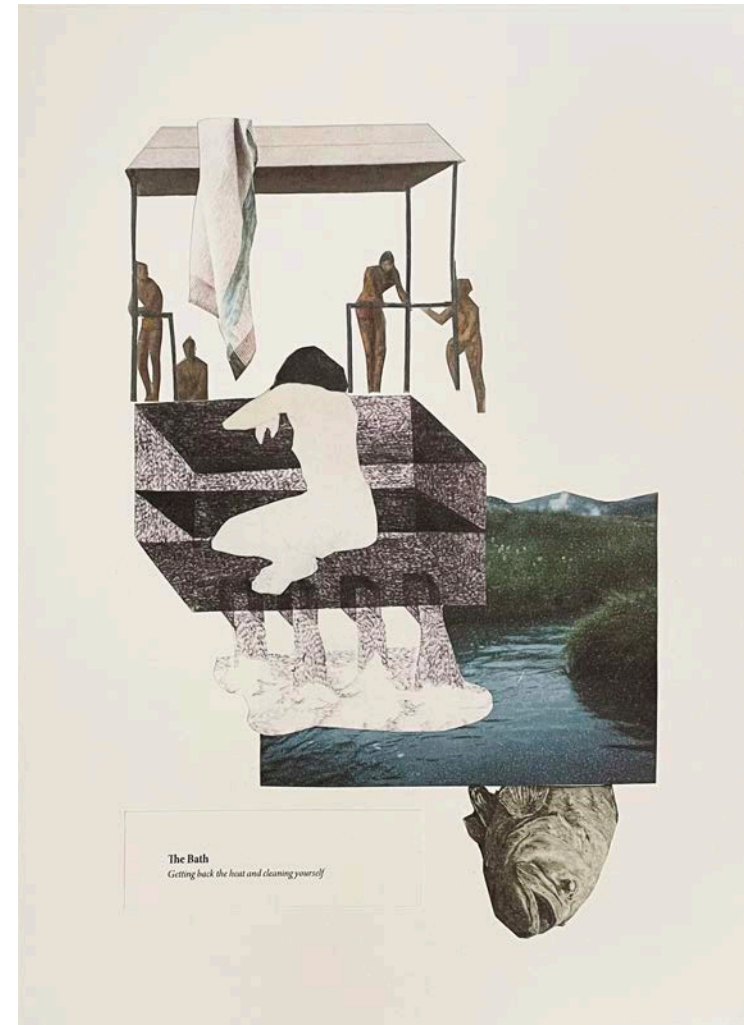


Figure 46. Fundamental needs, Collage

## The Supper

The warm meal being prepared at the end of the day. After a long day of activities, the body slowly softens while enjoying every bite and sip of the evening meal.



Figure 47. Fundamental need, Collage



### The Fire

A heating source at the center of the camp, drawing people together. The moment of twilight where the great fire is lit and hikers gather around as equals, sharing stories and experiences.



Figure 48. Fundamental needs, Collage

## Accommodation Lodges

Based on the fundamental needs investigated, the different experiences became the outline of the programs taking place within the accommodation lodges. Five sleeping lodges are spread out in the terrain along the river of Salten Å and the following forest landscape, carefully positioned in relation with particular natural phenomena found on site. A bath and sauna lodge is situated out on the lake, with an extended continuous path connecting the lodges, leading guests and travelers out on the scenic Salten Langsø. The existing building at site becomes the house of arrival where guests are registered and receive information. In the evening it becomes a social space for people to come together and enjoy a meal in the whimsical atmosphere. The path connecting the accommodation creates the backbone of the intervention, being the key element creating the much needed accessibility.

The architecture follows a common construction principle based on research of vernacular half-timber structures. Furthermore, each lodge will have a site-specific and unique design in relation to the surrounding landscape, emphasizing the relationship of reciprocity between the human body, the landscape and the architecture.

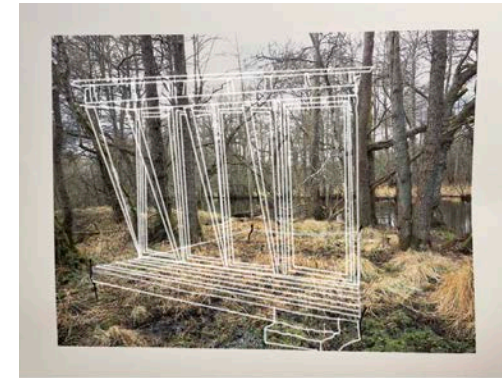


Figure 49 - 51. Initial sketches of accommodation lodges, based from a thread laid down in the landscape, which started a dialogue with the site and its surroundings. Done by authors



Figure 52. Intervention proposed through the *Grand Drawing*, showing the accommodation lodges and the transformed *Hangarhuset*, all being connected by the path moving through the landscape.

## The Path

Defined as *The Moment of Return*, the path is the first architectural structure you meet. By the bridge crossing Salten Å, the starting point of the journey is following the path through wetland and hilly terrain. As a strategy, the path will continue in various spans around Salten Langsø, where the terrain is challenging for hiking, creating accessibility to the lake and its surrounding landscape. In the area southeast of Salten Langsø, where the intervention lodges are spread out in the landscape, the path functions as a continuing passage between the accommodations, leading travelers towards the different lodges and experiences of natural phenomena. Raised on poles, the path is elevated from the ground, allowing surrounding nature to thrive and unfold, without unnecessary tearing of the terrain. In terms of existing wildlife, the structure functions as shelter from weather and possible predators.



Figure 53. The path situated in the landscape, Visualisation done by authors

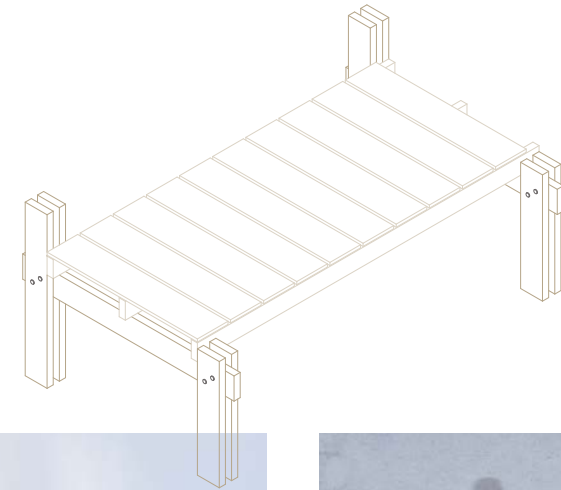


Figure 54 - 56. Visualisations and sketches exploring the shape of the path and its bearing screw foundations. Done by authors

## Hangarhuset

Defined as *The Supper & The Fire*, the existing building of *Hangarhuset* lies on the top of the hill, glazing over the scenic Salten Langsø. The brickhouse functions as the place of arrival, containing an informal reception where travelers can check in for their pre-booked lodge. Information about hiking routes, kayak rentals and other outdoor activities can be found here, as well as the different facilities to enjoy while staying at the lodge.

Through the high-season during summer, a host will stay in the house, refilling the pantry with provisions, cleaning common rooms, changing sheets in the sleeping lodges and generally taking care of the facilities. During low-season the guests will have a more independent stay, but with the possibility of contacting the host. Throughout the day it functions as a welcome desk for arriving travelers and in the evening the space fills up with hungry guests, ready to prepare easily-cooked meals from the provision storage where canned and dried food can be bought. In the social but informal open space, the dinner is consumed around the big table, fitting everyone. A fireplace is centered in the middle of the building, drawing people around the burning fire into the late hours of the night.

As a key strategy of the building, window-openings are extended and new ones created, letting more light into the space. The leftover bricks are then reused in the construction of the fireplace centered in the building as well as the foundation of the ovens placed in the sleeping lodges and the sauna, being a repetitive element in the intervention.

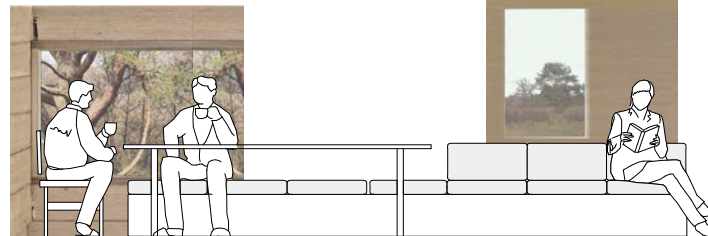


Figure 57. Initial sketches of the interior spaces and furnitures, done by authors



Figure 58 - 59. Axonometric illustration of the fireplace, done by authors

## Sleeping Lodges

Defined as *The Rest*, five sleeping lodges are placed out in the landscape, either located by the riverside along Salten Å or in the forest landscape on the hillside. Each lodge is designed from a common principle, but adapted to the site-specific landscape, shaping them differently. Three of the lodges can accommodate two guests, while the two remains can accommodate four guests. Following the path leading you to the lodge, the journey continues inside and through the interior space of the architecture and out in the other end of the lodge, where you face the exterior and the beautiful landscape. The structure has a strong relationship between the interior and the exterior, drawing the eye of the guest towards intriguing views and perspectives outside. The window-openings are framing existing natural phenomena from different positions within the space.

A small kitchenette is provided in the lodges, making it possible for guests who prefer a private atmosphere, to prepare small meals and hot drinks. Close to a seating niche, a wood-burning oven is centered in the space to provide heating, if desired.

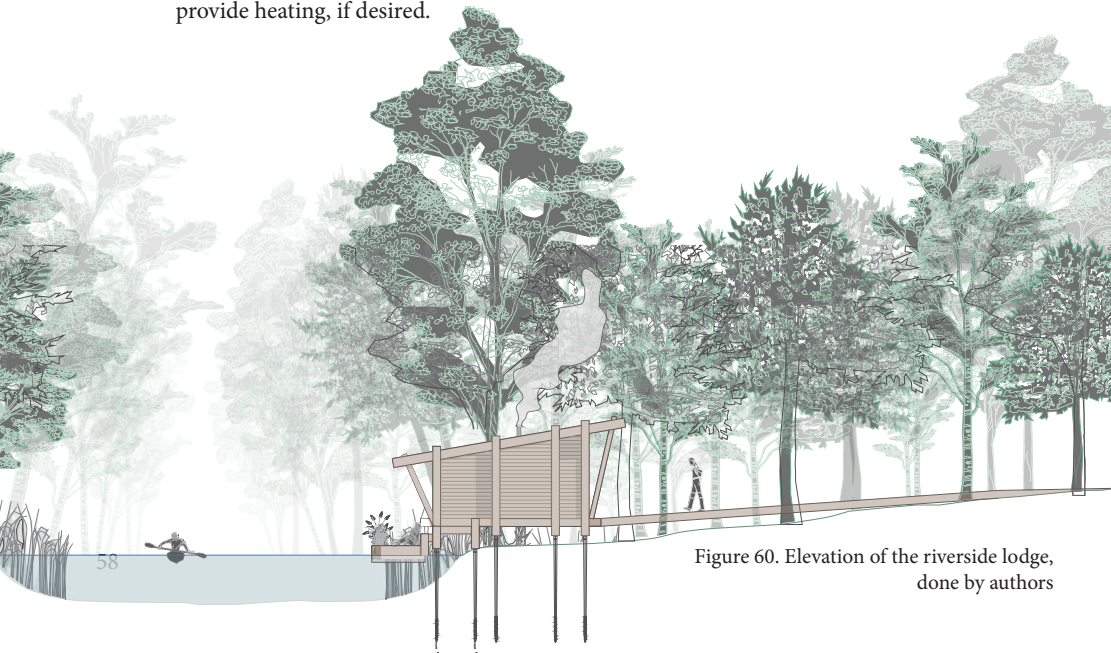


Figure 60. Elevation of the riverside lodge, done by authors

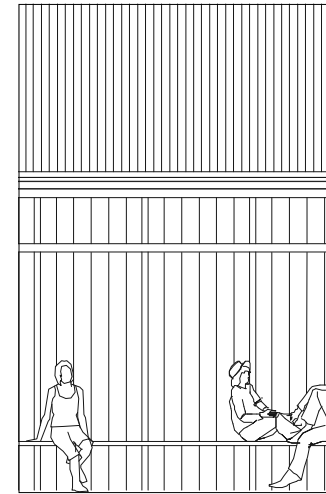


Figure 61. Initial sketch of facade and exterior space, done by authors

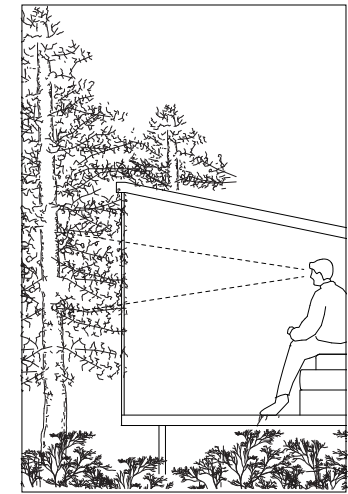


Figure 62. Initial sketch exploring the power of the window-niche, done by authors

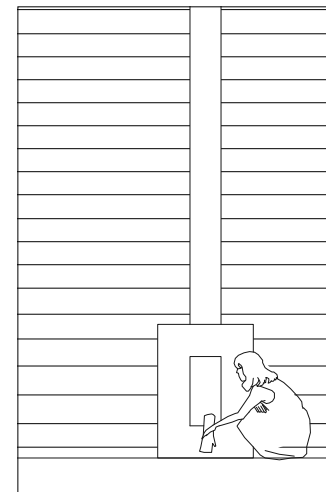


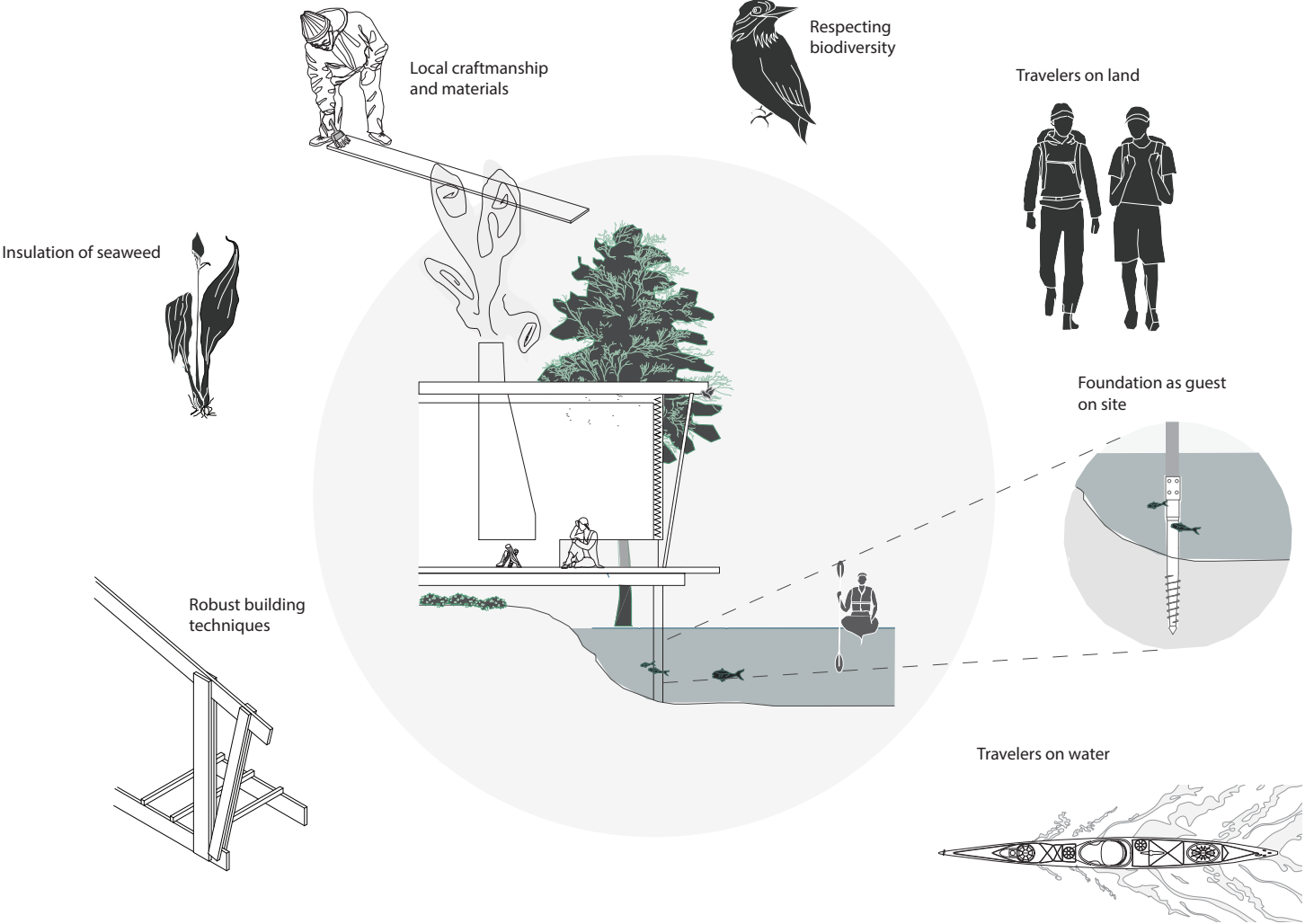
Figure 63. Initial sketch of the situation of the fireplace, done by authors



Figure 64. Facade study through model photo and visualisation, done by authors

Based on the concept of reciprocity, the design of the lodges pay attention to the surrounding landscape, biodiversity and animal life as the architecture is elevated from the ground, creating access for travelers, arriving from land or on water. The construction is built by local craftspeople, with local materials and an insulation consisting of seaweed from Gudenåen.

Figure 65. The diagram shows the different aspects of the design, constituting forms of reciprocity.



## Bath & Sauna

Defined as *The Bath*, a shower and toilet lodge with a connecting sauna is situated in a distance to the other sleeping lodges, near the lakeside among trees and wetland. The journey of the path is playful as it moves between the structures. As the guests are guided towards the lake, the landscape opens up as a surprise when turning the corner of the shower lodge. An informal passage captures the scenic lake, framing the floating sauna out on the water.

Positioned in relation to the sun, the shower lodge is absorbing sunlight, penetrating a translucent window which is framing the space of the bath. With surrounding trees casting shadow on the glass, the atmosphere within the space creates the sense of being outdoors.

Continuing the journey, an extruded path leading out onto the lake is connecting the shower lodge with the floating sauna. A deck encircling the structure makes up a fine bathing jetty and a kayak launch dock. The sauna is heated by a central oven filled with stones. A ritual of the space is to bring water from the lake and pour it over the hot stones for further steam. Having two levels of seating, a large window is positioned opposite, overlooking the quiet lake.

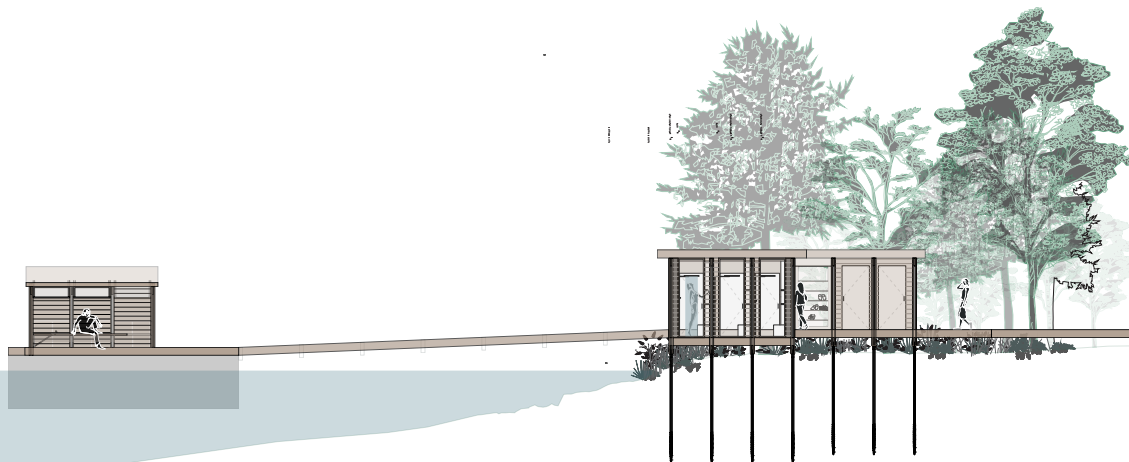


Figure 66. Elevation of the shower lodge and sauna, done by authors

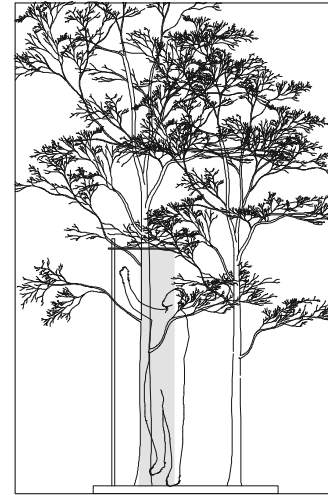


Figure 67. Initial sketch exploring the notion of an outdoor bath, done by authors

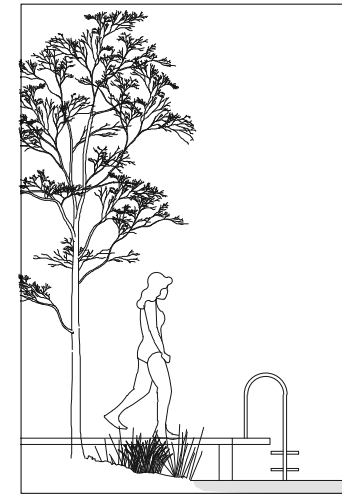


Figure 68. Initial sketch of accessibility to the lake, done by authors

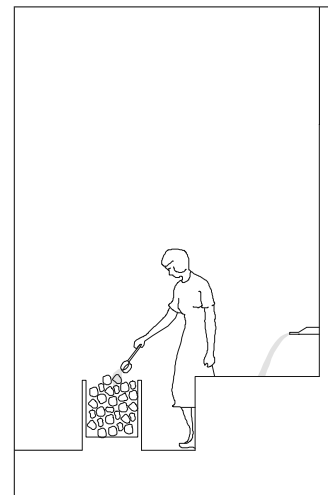


Figure 69. Initial sketch of the ritual within the sauna, done by authors



Figure 70. Model photo and visualization of interior perspective, done by authors



## Method & Approach

### Materiality

When it comes to the symbiotic relationship between nature and architecture, choices of material matter. Each decision in the architectural process produces its own environmental impact, understanding how to reduce these consequences are essential in ensuring long-term sustainability. In this matter, wood became an obvious choice, as the great building material of both the future and the past.

The forestry around *Søhøjlandet* has a long tradition and history dating back to the 17th century, and as a bigger forest strategy, *Silkeborg Forestry Council* are working to secure local species and promote the use of native trees as a preferred building material, providing a local anchor. As a common tree species in the area of *Søhøjlandet*, the conifers has a long history as building material and with its qualities of strength and durability, the common forest pine and spruce would be a suitable choice of material in terms of constructing the accommodation lodges.

The quality of material is of importance when designing for a greener future and the same is true for the method of *how to build*. By involving a local forestry and construction company, the building process of the architectural structures will create labor within the local community as well as a decent craftsmanship performed by competent craftspeople with knowledge of traditional building techniques

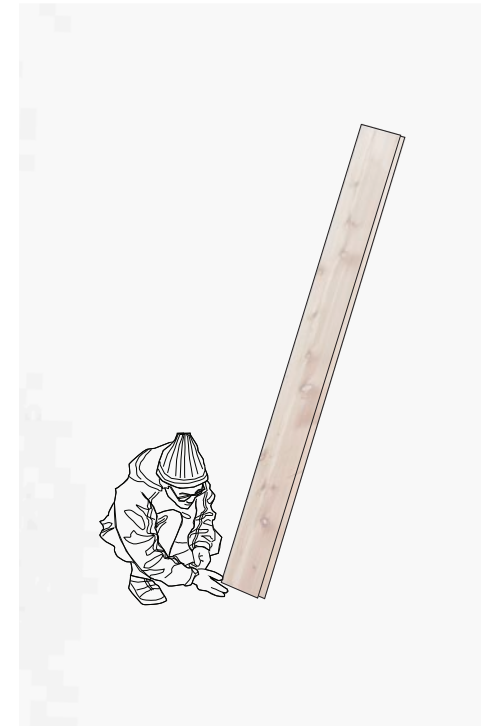


Figure 71. Sketch done by authors

## Building Techniques

The registrations of existing buildings at site are characterized by the vernacular half-timber structure. The rhythm of these wooden elements establish a clear hierarchy between the layers of the building and the logical use of material gives an honest and informing message, that from start has influenced our own design. Where the vernacular architecture and its construction tells the story of the forces in play, our own intervention sees a new spatial potential within the construction, where load-bearing beams and wooden panels relate closely to the human body and the experience of a space.

Reinterpreting the traditional building technique is a tool used to include the surrounding nature. Challenging the threshold between architecture that creates shelter for people and a structure that facilitates nature on site, is increasing affiliation awareness towards the landscape.

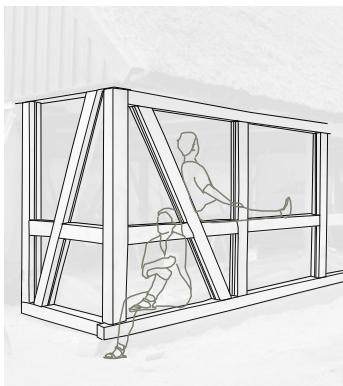


Figure 72 - 73. Sketches done by author

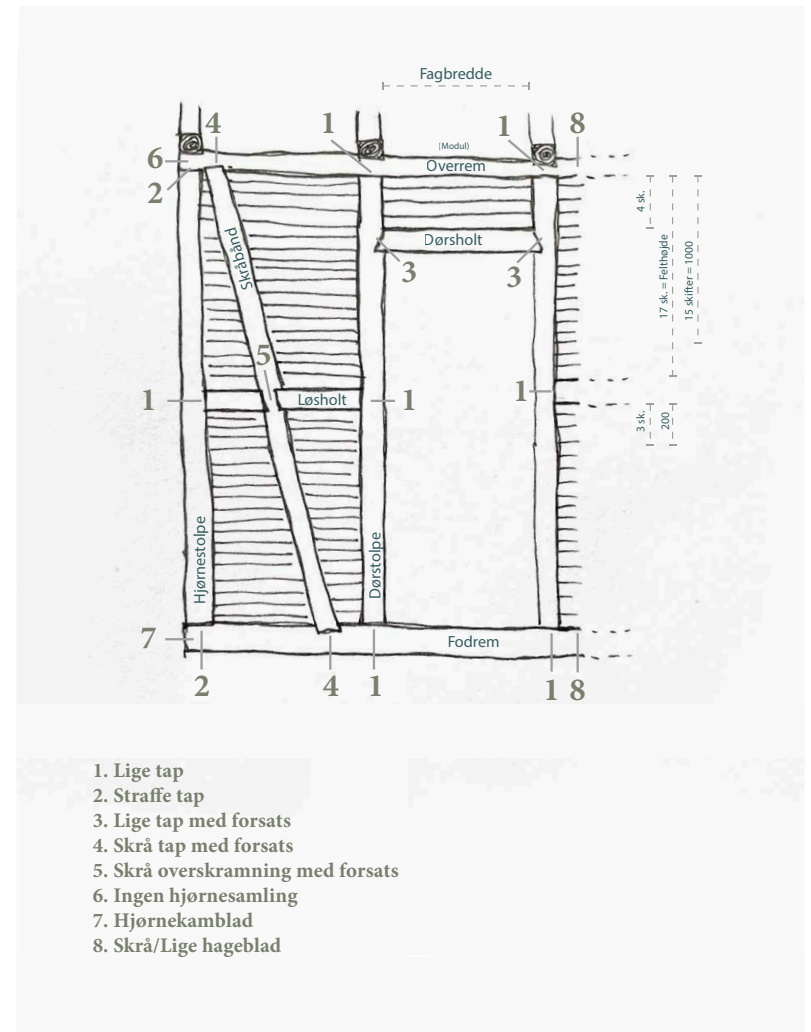
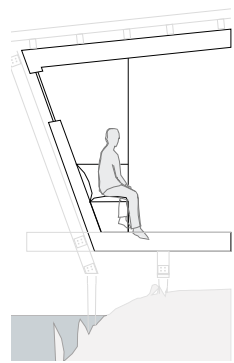
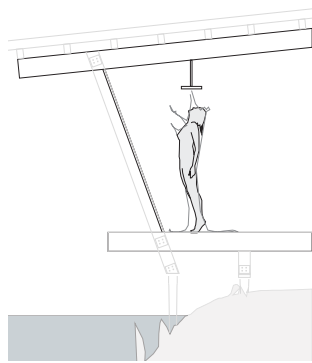


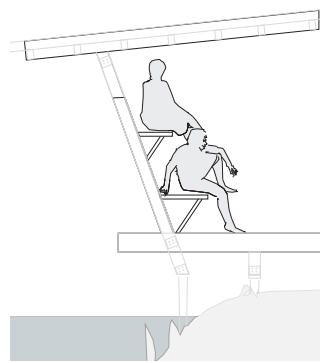
Figure 74. Study of traditional half-timber construction



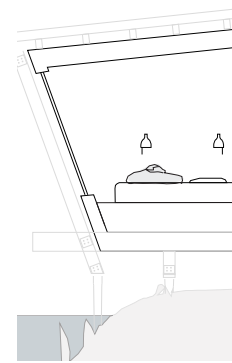
Seating niche



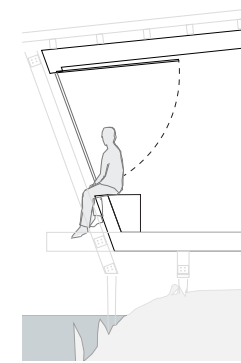
Shower niche



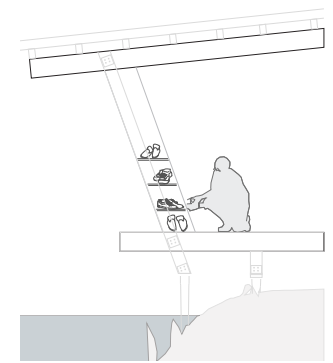
Sauna niche



Sleeping niche



Outdoor seating niche



Shelves niche

Figure 75 - 80. Section study exploring different ways of engaging with the angled structure, done by authors



Figure 81 - 84. Model studies of facade typologies and expressions, inspired by traditional vernacular construction principles, done by authors

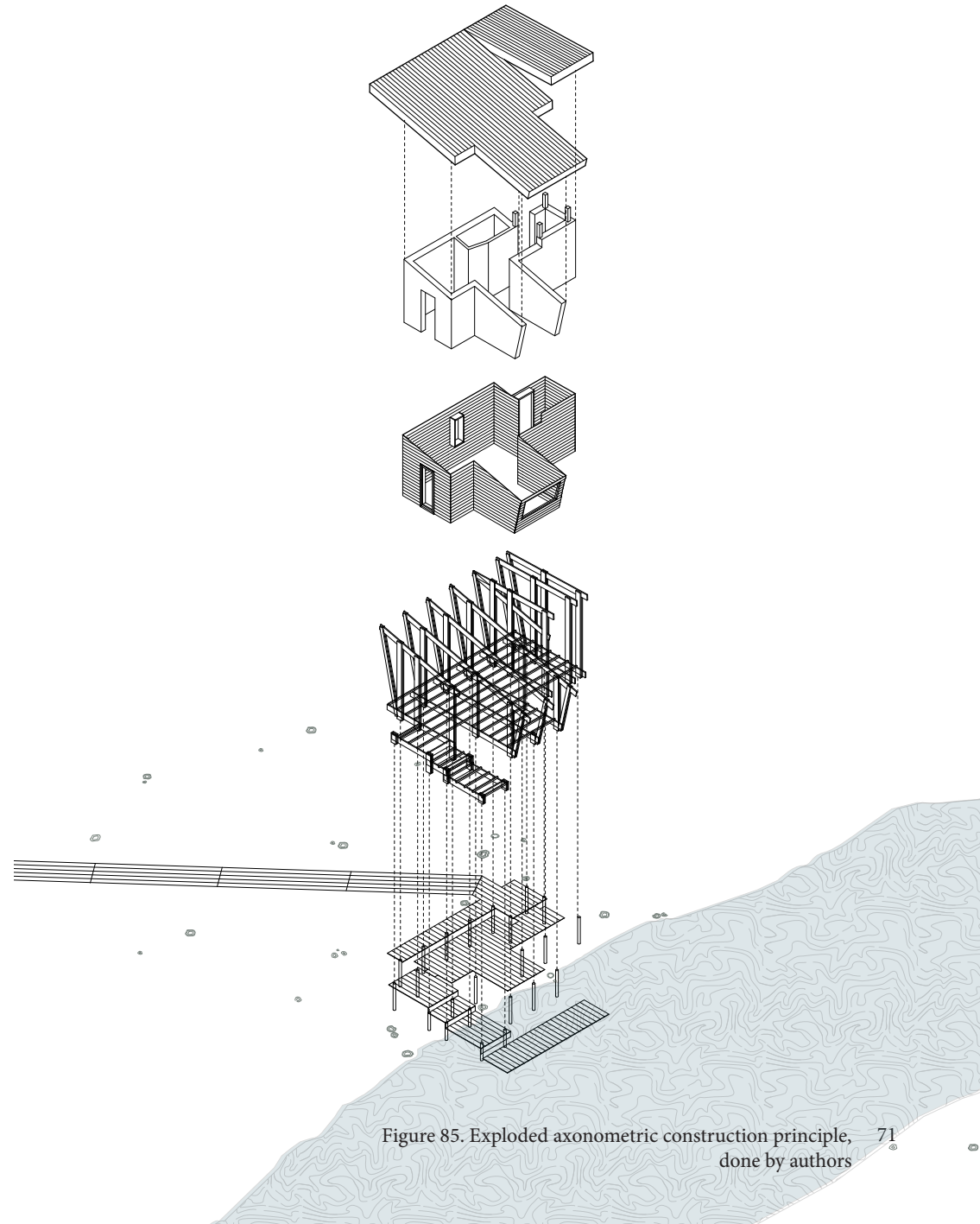


Figure 85. Exploded axonometric construction principle, done by authors

## Guest on Site

With the philosophy of seeing our intervention as the *guest* on site, the concept of temporality is indispensable to the final proposal, where the success of the construction is measured by its capacity to be removed, without leaving any traces. By using steel screw foundations, the lodges can easily be constructed on site as well as disassembled. The foundations are drilled gently into the terrain, sparing the surrounding vegetation from construction work, as a standard concrete foundation would do by excavating the ground. Made from 75% recycled metal, the screw foundation has the quality of being a sustainable choice considering the economical and time efficient aspect. Due to the lightweight steel, the screws can quickly be installed in the landscape and in terms of durability, it works great in a context of wetlands<sup>13</sup>.

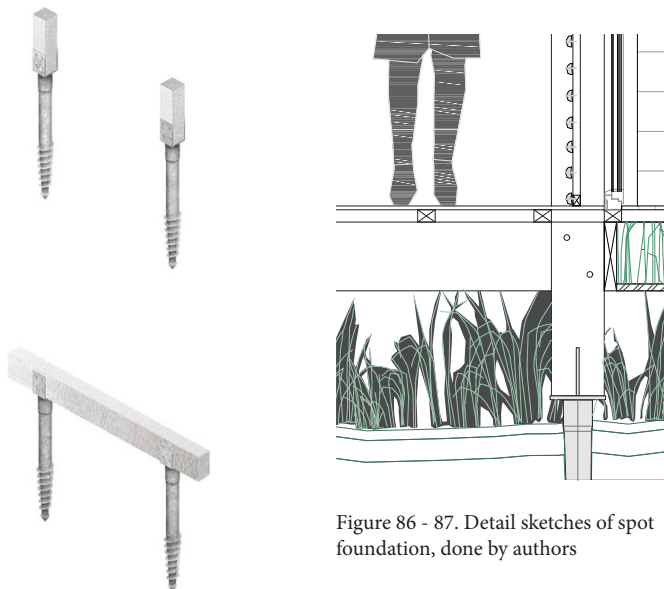


Figure 86 - 87. Detail sketches of spot foundation, done by authors

## Wooden Treatments

Through investigations on different treatments and finishes, wood tar became an intriguing but obvious choice to work with when using timber as a construction material, considering wind and harsh weather tearing on the facade.

Wood tar has been used for surface treatments since ancient times, primarily protecting the woodwork on buildings, ships and tools. Traditional Danish half-timbered buildings have a long history of tar treatments. Unfortunately, wood tar is often confused with coal tar, which emerged in the 1870s as a waste product from gasworks. The finish came out quite dense and hard, causing rot underneath the thick layer. Coal tar was therefore mistakenly used on half-timbered structures in Denmark during that time period. Since the product is toxic and contaminating, the production was closed down in 1996<sup>14</sup>.

In this project, we are using the nordic pine wood tar, a natural product produced by heating the wood slowly until it seeps out oils and resins. The light brown liquid is the product of wood tar and a great treatment giving the wood *conditioner*, making it more resistant towards harsh weather and UV radiations from sunlight<sup>15</sup>.

Through investigations of different layers and pigments in the wood tar, we became intrigued by the natural look. How it creates a hint of warmth in its color would be interesting to use on the exterior facade. As for the pigment colored samples, details of the interior furnishment in the lodges could perhaps be investigated further.

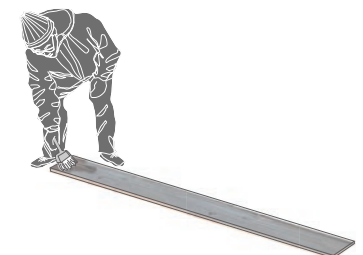


Figure 88 - 89. Wood tar samples and sketch, done by authors

## Experimental Insulation

Over the last 10 years, the river system of Gudenåen has flooded more frequently. The issue has to do with the rapid growth of water plants in the river, making the water run slower, leading to rising waters. As a strategy to defeat this, *Grødeskæring* has been established, a crop cutting of seaweed in the river system of Gudenåen done by *Gudenaacentralen*<sup>16</sup>. Every year the organisation is cutting approximately 20 tons of crop, all being considered as waste material and discarded. This huge amount of water plants should be seen as an experimental reused bio material if prepared in the correct way.

Reflecting upon this, we intend to use the waste product of the seaweed as insulation within the structure of the accommodation lodges. In relation with the concept of reciprocity, an aspect of the mutual benefit would therefore be to reuse the overgrowing of seaweed close to Salten Langsø as a building material.

Intrigued by the technique of using dried and compressed seaweed as cladding and insulation, the research project of the architectural student at Copenhagen School of Design and Technology, Kathryn Larsen, have interpreted this technique, developing seaweed thatch panels by using traditional methods of vernacular thatched roofs. Through her research of the developed material, the project discovered some great qualities of the dried seaweed, of which being naturally fireproof, resistant towards rot and sustainable in terms of a carbon negative footprint<sup>17</sup>.



Figure 90. *Grødeskæring* in Gudenåen



Figure 91. Seaweed thatch panels by Kathryn Larsen

## Proposal Statement

*Forms of Reciprocity* are interpreted as the catalyst for the symbiotic relationship between people, the Danish landscape and the architecture. Regarding the delicate subject matter of *building in nature*, the project intends to challenge the critical perception of this, showcasing a new and sympathetic way of constructing architecture within the Danish landscape. The project is reintegrating nature and architecture as one joint culture, where the architecture is the tool facilitating human interplay with nature in a humble and respectful way, within the context of Salten Langsø.

Through the creation of a new alternative outdoor accommodation, natural areas where agriculture and privately owned lands are dominating the landscape, accessibility is proposed as a key strategy, encouraging enthusiasm towards outdoor life, especially in regards to the urban citizen, conceivably feeling estranged outside the city context. The project aims at creating hospitality for the majority, developing a diverse and shared outdoor life dressed by safe frameworks and comfort, attainable for everyone.

In a time of pandemic, the search away from uncertainty and the gloomy reality becomes even more relevant when designing new outdoor lodges, being the stepping stone towards a greater culture for outdoor life as well as public health. Domestic travel is tourism's new destination and availability throughout the year will give people the opportunity to discover and experience the beauty of the different seasons within the Danish nature. Through the built environment, a closer and intimate connection between people and the surrounding forest, lakes and rivers on site, will provoke new perspectives through the eyes of the traveler.

### UN-Goals

In relation to the Sustainable Development Goals, the project focuses on creating a built environment that protects a vulnerable landscape and its biodiversity through architectural structures that guides travelers in an enduring way.

In need of reducing the ecological footprint, sustainable and eco-labelled materials are used in the intervention. The construction of the architecture shows respect and sympathy towards the landscape, leaving no scars behind.

In relation to economic growth, the project is helping support tourism in the local community close by, as well as giving local craftsmanship labor during the processes of construction work.

Spending time outside in nature is shown to have a positive influence on personal health and quality. An outdoor life accessible for all, secures physical wellbeing to a majority of people, in a time where gyms and arranged sports are no longer an option, due to the current pandemic.

## Reflections

The project is rooted in a subject matter that touches us both personally and with knowledge of an accessible and open outdoor life culture from our own experiences in Norway, a great drive and motivation have shaped the project. In prospect of the proposed project, the concept could potentially be seen not only as a site-specific accommodation, but a rather generic strategy to ensure accessible experiences of Danish nature, adapted to the site and its existing natural phenomena.

The project is much influenced by our close collaboration throughout the thesis. Working together as an architecture student and design student have shaped the project in depth from two different perspectives, Emilie seeing the project from inside and out and Sunniva as opposite, seeing it from the outside and in. Our constant dialogue has created a common language in the design, where each little detail is discussed thoroughly. The scale of the project is also reflecting our collaboration, being investigated in depth both zoomed out as a strategy of a generic design as well as the detail of a site-specific architecture adapted to surrounding nature. This shift in scale and the relationship between the architecture and the landscape, and the design and the human body has been essential in the creation of our *forms of reciprocity*.

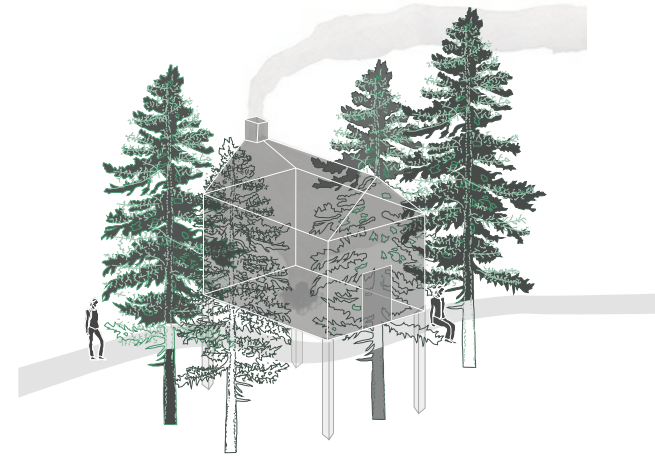


Figure 92. Conceptual sketch, done by authors



## Bibliography

- ArchDaily, (2016) *Allmannajuvet Zinc Mine Museum / Peter Zumthor*, Retrieved 29.03.21 from <https://www.archdaily.com/796345/allmannajuvet-zinc-mine-museum-peter-zumthor>> ISSN 0719-8884
- ArchDaily, (2008) *Juvet Landscape Hotel / Jensen & Skodvin Architects* Retrieved 18.04.21 from <https://www.archdaily.com/8600/juvet-landscape-hotel-jsa>> ISSN 0719-8884
- Born, Riyan & de Groot, Wouter. (2009) *The Authenticity of Nature: An Exploration of Lay People's Interpretations in the Netherlands* (Retrieved 04.02.21 from [https://www.researchgate.net/publication/227110260\\_The\\_Authenticity\\_of\\_Nature\\_An\\_Exploration\\_of\\_Lay\\_People's\\_Interpretations\\_in\\_the\\_Netherlands](https://www.researchgate.net/publication/227110260_The_Authenticity_of_Nature_An_Exploration_of_Lay_People's_Interpretations_in_the_Netherlands))
- Dudley, N. (2011) *Authenticity in Nature: Making Choices about the Naturalness of Ecosystems*, Retrieved 04.02.21 from <https://www.routledge.com/Authenticity-in-Nature-Making-Choices-about-the-Naturalness-of-Ecosystems/Dudley/p/book/9781844078363>
- Giblett, R. & Ebrary, Inc. (2011) *People and places of nature and culture*, Bristol: Intellect.
- Hansen, J. (2018) *Pilgrimsture i Danmark*
- Hansen, K. (2011) *Folk & fortællinger fra det tabte land*, Bind 1.
- Haraway, D. (2016) *Staying with the Trouble, Making Kin in the Chthulucene*.
- Landskap (2020) *Mere end #baredanmark*, Arkitektur, 8, 5-64.
- Larsen, G. (2006) *Naturen I Danmark*, Geologien.
- Larsen, J. (2017) *The Living Archive and the Sublime Nature of the Anthropocene*. UPLand (Napoli), 2(2), 223-238.
- Piesik, S. (2017) HABITAT, *Vernacular Architecture for a Changing Planet*.
- Protection Measures (n.d.) *Ecological Economics*, 157, 301-311.
- Rasmussen, T. G. (2017) *Vandreture i Danmark*
- Roncken, P., Stremke, S., & Paulissen, M. (2011). Landscape machines: *Productive nature and the future sublime*. *Journal of Landscape Architecture* (Wageningen, Netherlands), 6(1), 68-81.
- Stupak, N., Sanders, J., & Heinrich, B. (2019) *The Role of Farmers' Understanding of Nature in Shaping their Uptake of Nature*

## Endnotes

- <sup>1</sup> Altuntas, F., & Gok, M. (2021) *The effect of COVID-19 pandemic on domestic tourism: A DEMATEL method analysis on quarantine decisions*. *International Journal of Hospitality Management*, 92, 102719
- <sup>2</sup> Tetyana Kalna-Dubinyuk. (2020) *INTERACTIVE CONSULTING SYSTEMS FOR THE DEVELOPMENT OF DOMESTIC TOURISM*, *Modern Management Review*, XXV(3), 7-15.
- <sup>3</sup> Danmarks Naturfredningsforening (n.d.) *Urørt Skov*, Retrieved 09.02.21 from <https://www.dn.dk/vi-arbejder-for/skov/urort-skov/>
- <sup>4</sup> Kim-Pong, T. (2019) *Anthropomorphism of Nature, Environmental Guilt, and Pro-Environmental Behavior*. *Sustainability* (Basel, Switzerland), 11(19), 5430.
- <sup>5</sup> Dictionary (n.d.) *Reciprocity*, <https://www.dictionary.com/browse/reciprocity>
- <sup>6</sup> WikiSilkeborg (2015) *Søhøjlandet*, Retrieved 08.02.21 from <http://wikisilkeborg.dk/index.php/S%C3%B8h%C3%B8jlandet>
- <sup>7</sup> Ry Kanofart (n.d.) *Gudenåen*, Retrieved 18.03.21 from <https://www.kanoferie.dk/kort-over-gudenaen/>
- <sup>8</sup> Naturstyrelsen (n.d.) *Regler i naturen*, Retrieved 02.02.21 from <https://naturstyrelsen.dk/naturoplevelser/regler-i-naturen/>
- <sup>9</sup> Skanderborg Leksikon (n.d.) *Gl. Rye Flyveplads*, Retrieved 09.02.21 from [http://www.skanderborgleksikon.dk/index.php/Gl.\\_Rye\\_Flyveplads](http://www.skanderborgleksikon.dk/index.php/Gl._Rye_Flyveplads)
- <sup>10</sup> (incl.)
- <sup>11</sup> (incl.)
- <sup>12</sup> Naturstyrelsen Søhøjlandet (2014) *Dansk Skovforenings Ekskursion*, Retrieved 09.02.21 from [https://www.skovforeningen.dk/media/ekskursionsforer\\_2014.pdf](https://www.skovforeningen.dk/media/ekskursionsforer_2014.pdf)
- <sup>13</sup> Krinner (n.d.) *Skruefundament*, Retrieved 20.03.21 from <https://www.krinner.io/da/fundering/skruefundament/>
- <sup>14</sup> Vadstrup, S. (2010) *Maling med Træbjærev og Træbjærefarve*, Retrieved 18.04.21 from [https://www.bygningsbevaring.dk/uploads/files/anvisninger/14-ANVISN\\_Traetjaere.pdf](https://www.bygningsbevaring.dk/uploads/files/anvisninger/14-ANVISN_Traetjaere.pdf)
- <sup>15</sup> Linoliebutikken (n.d.) *Træbehandling gennem århundreder*, Retrieved 27.04.21 from <https://www.linoliebutikken.dk/collections/hvad-er-traetjaere>
- <sup>16</sup> Silkeborg Municipality (n.d.) *Gudenåen og oversvømmelser*, Retrieved 25.04.21 from <https://silkeborg.dk/Borger/Natur/Vandloeb-og-soeer/Gudenaen>
- <sup>17</sup> Buckley, S. (2020) *Seaweed as Insulation? Architecture & Design*, Retrieved 02.05.21 from <https://www.architectureanddesign.com.au/news/seaweed-as-insulation>

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Figure 1. DinGeo (n.d.) Retrieved 19.05.21 from <https://www.dingeo.dk/adresse/8660-skanderborg/ryhule-25/foto/>

Figure 7. VisitHerning (n.d.) Retrieved 05.02.21 from <https://www.visitherning.dk/herning/se-og-oplevelse/gudumkaer-shelterplads-gdk607481>

Figure 16. DanPreston (n.d.) Retrieved 20.05.21 from <https://danpreston.com.au/photography/juvet-landscapae-hotel/>

Figure 17. ArchDaily (29.09.16) Retrieved 29.03.21 from <https://www.archdaily.com/796345/allmannajuvet-zinc-mine-museum-peter-zumthor>

Figure 19. Arkivdk, Leif Tychsen (1980-1989) Retrieved 15.05.21 from <https://arkiv.dk/vis/2827713>

Figure 22. Arkivdk (n.d.) Retrieved 01.02.21 from <https://arkiv.dk/vis/3743566>

Figure 90. Norddjurs Kommune (06.02.19) Retrieved 19.05.21 from <https://www.norddjurs.dk/borger/natur-og-miljoe/vand/vandloeb/vandloebsvedligeholdelse/vedligeholdelse-af-offentlige-vandloeb>

Figure 91. ArchDaily (27.08.20) Retrieved 19.05.21 from <https://www.archdaily.com/946337/seaweed-as-cladding-combining-old-traditions-with-new-tech>

Remaining figures done by authors



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