

# NODES

Developing sustainable tourism in Bengtsfors

DESIGNING SPACES FOR SYMBIOSIS  
BETWEEN LOCALS, VISITORS AND NATURE



# NODES

## Developing sustainable tourism in Bengtsfors

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SUSTAINABLE DEVELOPEMENT IN A LOCAL  
CONTEXT

## ABSTRACT

The project Nodes is about finding a strategy on how to obtain sustainable tourism in Bengtsfors, by contributing to positive changes without exploiting existing local qualities.

We have developed two nodes on an identified main path of activities following the canal and draisine rail, exemplifying how stops along the way can contribute to symbiosis between locals, visitors and nature.

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BENGTSFORS

AN INTRODUCTION TO BENGTSFORS

Bengtsfors is a municipality consisting of mostly rural areas and a few small towns and settlements, and has a long industrial history. Canals and railways for industrial transport; remains from the past hundred years’ industrialization; are present throughout the landscape.

During the past few decades, Bengtsfors has experienced a lower influx of new inhabitants, all while more people are moving out, which has led to a decreasing, ageing population. As production moved away from the municipality, job opportunities and tax incomes were lost and people started to emigrate to bigger cities. The beautiful nature and landscape of Dalsland with its lakes, hills and valleys have instead become a place for people to visit, and tourism has become a growing source of income in Bengtsfors, creating jobs and having a great potential to aid Bengtsfors economically.



## AIM

Our aim has been to, with Allemansrätten in mind, find a strategy on how to obtain sustainable tourism in Bengtsfors without exploiting or impacting existing local qualities in a negative way, but rather contributing to positive changes.

Since tourism is a big part of the municipal source of income, and seeing how the trend "staycation" - traveling and exploring areas in your periphery - is growing, an opportunity arises to develop this new tourism towards people not only experiencing a place, but learning about sustainability and actively contributing to the development of economic, social and environmental sustainability.

Having future developments of housing on the shoreline protection areas in mind is important to be able to plan for spaces that will preserve the identity and soul of the area. With growing privatisation, developments of public spaces are important to be included in the vision.

There is a need to spread out the existing concentrated inflow of visitors during the summer to different seasons for a more resilient tourism, by promoting other activities and adding nodes.

## METHOD

Our method for this project has been to research and then decide on what sustainable tourism is for us. The research has been conducted by interviewing people working actively with the subject, finding examples of communities in rural areas who have worked towards achieving sustainable tourism, and by interviewing local actors to find out their future aspiration and needs.

It has also been important to identify the reason behind why people decide to visit a place, and to then strengthen and protect what makes a place desirable.

To allow for a more resilient, sustainable tourism in the municipality, a part of our method has been to strengthen the identity of a path around the draisine track and Dalslands canal, and adding new nodes along it. With the aim of focusing on other seasons, inflow of visitors can be spread out during other seasons.

As to not take on a huge planning project, we have chosen two nodes to show examples on how rather small scale interventions can have a large positive impact on the community, nature and tourism, without competing with existing activities.

The reason we chose to have a common concept with a couple of rather smaller nodes, instead of one bigger building, was firstly for economic reasons, as the nodes can easily be repurposed if not often used.

Secondly, we wanted the project to benefit people all over the municipality, and since the two suggested nodes are placed in different areas of Bengtsfors, the project becomes more accessible.

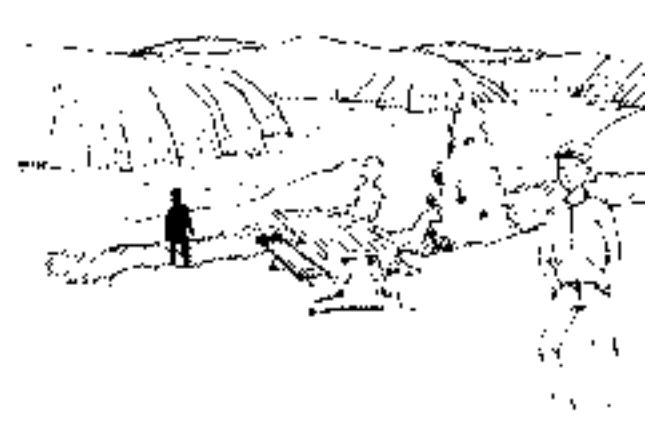
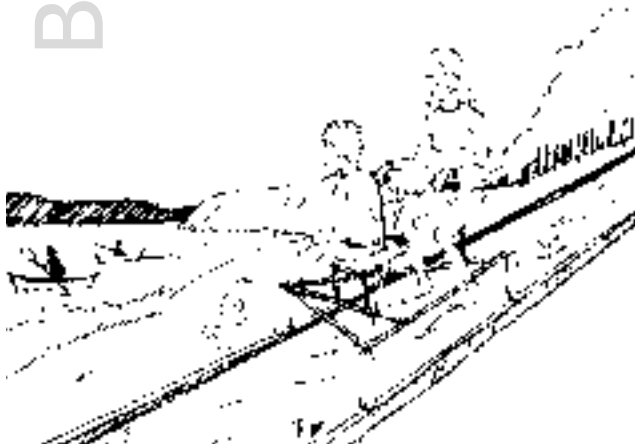
Thirdly, since enjoying the outdoors and nature is such a big part of spending time in Bengtsfors, we did not want to challenge this tradition and so, people can visit different nodes as resting stops whilst hiking, travelling on the draisine track, or canoe paddling.



# TOURISM IN BENGTSFORS

People come from all over to Bengtsfors to enjoy outdoor activities such as hiking, canoeing and cycling up the draisine track while enjoying the beautiful scenery, with especially many Germans, Dutch, and other Swedes travelling here.

Areas around Lennartsfors, Kroksfors and Gustavsfors are starting to experience some exploitation from tourism, as they are getting crowded by canoers as the number of camp spots are not enough, leaving tourists disappointed.



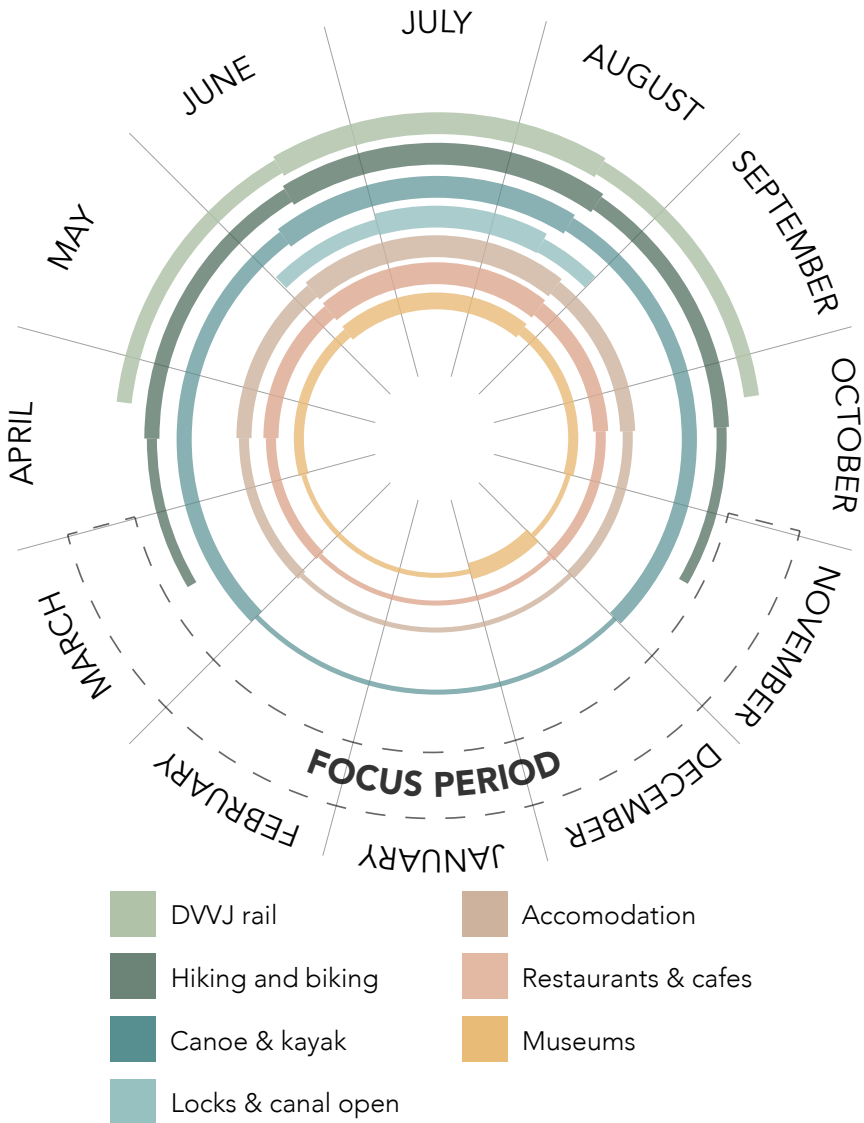
Nodes

Nodes

# SEASONALITY OF ACTIVITIES

Visitors primarily come from late spring to early autumn, with July and the first half of August being peak season, during which the Dalsland canal locks in Bengtsfors are open for six weeks. Most tourist attractions are closed during a large part of the year and can therefore not benefit the inhabitants during colder months. Indoor activities for visitors and residents are few, with the candy factory and the straw museum being the only key players. As an employee within Bengtsfors' tourist sector put it; "There's not bloody much to do in Bengtsfors in bad weather".

There is a need to find activities to attract not only more tourists, but also other target groups, outside of the summer season, since most can not be expected to visit more than once a year.



# TOURIST PATH

The hiking tracks, Dalsland canal and the draisine track follow common paths and form a tourist trail of sorts, from Bengtsfors in the south, going north through Kråkviken and Gustavsfors and further on up to Årjäng.

Legend

- ▲ Accomodation
- Canoe departure points
- Lakes and canal
- Draisine railway (DWWJ)
- - - Train railway (DWWJ)
- Hiking paths
- New nodes



# THE DRAISINE TRACK

Playing a major role in Bengtsfors’ tourist industry, the draisine track is a unique and popular way for visitors to experience the municipality, and is sometimes even used by residents. The old industrial train tracks between Bengtsfors and Årjäng have been repurposed to serve as a way to travel through the landscape while enjoying nature.

Draisines move slower than ordinary bikes. The track takes about 5 - 6 hours to travel in each direction, as the draisines, with Bengtsfors being the only point where you can rent draisines. The majority make the trip in a day, and many take a break, with Kråkviken being a favoured stop to rest and have some fika. Most users only cycle the draisine one way, south to north, and travel back to Bengtfors through other modes of transportation, with packages combining draisine and canoe renting being popular. Families with children represent a large part of the draisine renters, and just like many tourist attractions in Bengtsfors, the draisines are used by many Germans, Dutch and Swedes.

The track and its draisines are owned by the municipality through a company, Dal Västra Värmlands Järnväg (DWWJ), and daily operations and maintenance are thereby funded by taxes. During peak season, all of the 51 single-, as well as the 12 tandem bikes, are typically in use every day. During spring and autumn, the weather usually dictates how many people decide to use the track, with about 10-15 draisines a day being rented, according to DWWJ.



TRACES

EXISTING MOVEMENT WITH  
RECREATIONAL INFRASTRUCTURE



- Draisine rail (DVVJ)
- Railcar (DVVJ)
- Lakes and canal

EXISTING PATHS  
FOR MOVEMENT BY FOOT



- Hiking trails

FUTURE DEVELOPMENT ALONG TRACE



- VÄRME
- BIODIVERSITY HUB
- Potential nodes

We imagine that more nodes will be added and developed along the trace in the future. Which will enhance the identity and contribute to a more resilient tourism in the municipality, and at the same time benefit the local economy, community and inhabitants.

# OPPORTUNITY FOR FUTURE DEVELOPMENT

According to DVVJ and representatives from the municipality, there is both room for improvement and potential for the draisine track. The track is in constant need of removal of vegetation, and its usability fluctuates with weather conditions. Both DVVJ and the municipality have had thoughts about the draisine track as a starting point of future developments:

By adding more resting stops along the track with facilities, the experience could be heightened, with these stops serving as places for activities along the route, as well as providing shelter in bad weather. There are plans for putting a trail for hiking and biking along it and making it easier to change mode of transportation en route could further increase its popularity.

# SWOT ANALYSIS

## Strenghts

Local business engagement  
Community engagement  
Nature and recreation  
Local natural resources

## Opportunities

Growing sustainability awareness  
Sustainable Tourism  
Rurbanisation and digitalisation  
Increase local participation

## Weaknesses

Lack of Services, Education and Activities  
Few possibilities for social interaction  
Homogenic biotope

## Threats

Privatisation of public spaces  
Exploitation from tourism  
climate change

## SUSTAINABLE TOURISM AND BENGTSFORS

In the report about sustainable travelling "Att semestra hållbart?" the authors bring up perceptions of what it could be. **Slow, close, sharing** and **active** are four identified words and guidelines for making tourism less harmful for the world and in a local context.

An **active** vacation could be choosing to stay close to nature and do activities such as biking, hiking and paddling. In Bengtsfors you can rent equipment for doing outdoor activities and experience nature, for example by renting canoes and draisines.

This takes us to the word **sharing**, being able to rent equipment, exchanging housing and making sure buildings are not only available for tourists and during summer. Spaces that can be used all year round by visitors during new seasons and the locals should be implemented.

**Slow** vacations can also be connected to sharing. Because using other modes of transportation than airplanes, travelling by train, bus or car, and preferably together with others, is better for the climate. Longer stays at one location is also a way to make the vacation more environmentally friendly and if

there are more things to do, more people may plan longer trips. A current trend, a reaction to the ongoing pandemic and digitalization, is the possibility to work from home, or anywhere, which have resulted in many people leaving their ordinary lives to stay in their holiday homes in places like Bengtsfors.

Like the trend of summer guests and adults spending more time there and working remotely, there are many possibilities for living and visiting the municipality in a different way. Having more temporary inhabitants, that stay for longer than the usual visitor, could be a way to boost local economy and a new lifestyle close to nature for people returning back home or people without roots in Bengtsfors.

**Close** is about not travelling so far from home, and this year staycationing in your own periphery or country has become a trend because of the pandemic. As the awareness of climate change grows, travelling closer to home might be the future for sustainable tourism. Tourism in Bengtsfors and Sweden might have to redirect aim to new target groups.

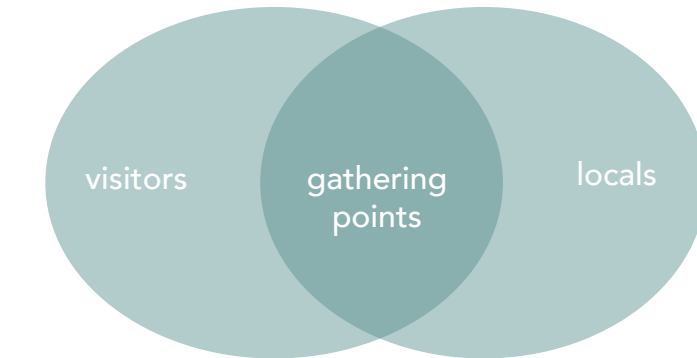
## SUSTAINABLE TOURISM

Sustainable tourism is defined by the World Tourism Organization in the report Making Tourism More Sustainable as "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.". In our project we see the many possibilities for tourism as an opportunity, but it has to be developed without compromising the quality of life for the local inhabitants and eco-systems.

## ALLEMANSRÄTTEN

The Right to Public Access, gives everyone in Sweden freedom to enjoy nature. The Swedish Environmental Protection Agency describes on their webpage how with these rights, there are also obligations to be responsible and careful when spending time in nature. This common responsibility is key and we might even need to update Allemansrätten as society changes, to keep spaces for nature and wildlife to thrive and for people to use recreationally.

## VISITORS AND LOCALS IN SYMBIOSIS



Gustavsfors is an example for a tourism node where the grocery shop and other services are dependent on visitors, especially during the high season in the summer. The village depends on this local shop to be open all year and if it were to close down it would directly negatively affect the tourism. In this situation the visitors and locals are in need of each other, they need to be in symbiosis.

Creating spaces and common grounds that can benefit both in a local context and visitors, without exploiting nature and the life of people, is fundamental for sustainable tourism to be developed.

## DIRECTIONS FOR SUSTAINABLE TOURISM

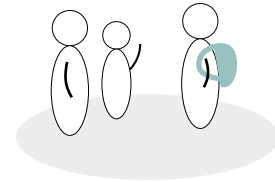
The West Sweden Tourist board launched the initiative Hållbarhetsklivet, that could be translated to “a stride for sustainability” for sustainable tourism in West Sweden with 4 principles to guide and inspire. With other research and discussions among us we originated from the points and made our interpretation of them.



### 1 Minimal impact on the environment

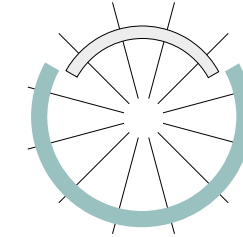
Visiting and exploring Bengtsfors is all about nature and outdoor activities. To keep the scenery as beautiful as possible, tourism needs to be climate friendly and not impact local nature negatively. Built and planned environments for the tourism sector should not exploit the area and buildings should not make a footprint on and disturb the context.

Tourism and visits to Bengtsfors municipality need better communications and infrastructure, so that public transport during the visit and to the municipality is better. More bike and walking trails for the locals and visitors will help the climate and boost health.



### 2 Positive for both locals and visitors

With Allemansrätten in mind the right to be in nature is fundamental for this type of tourism. In many of the settlements in Bengtsfors there are activities available for tourists, as it creates economy it is very valuable. Social aspects of how this can affect the inhabitants of these areas is important to keep in mind, in order for tourism to benefit the locals, not only a few private actors, and also not disturb them too much. Respect and making positive changes for both locals and visitors is key. In a sense, everyone is a visitor in a place, just for different periods of time.



### 3 Distribute visitors evenly throughout the year

Problems from tourism can consist of too many visitors arriving during short periods of time in summer. Finding new seasons for different kinds of visits will result in better economy for the municipality and different businesses.

By getting more visitors, spread throughout the year, harm on nature can be prevented, and also people will be happier about the service and experience. If there are more places to visit and activities to do and spend time doing, people could perhaps stay longer in a place while on vacation, which is a more climate friendly way of tourism.



### 4 More jobs and robust business

If more tourism seasons are developed there are possibilities for growing more businesses and creating more jobs, even all year round jobs. Bengtsfors Municipality as well as other places in similar situations needs to value the tourism sector because the outcome could gain a big income and perhaps more inhabitants.

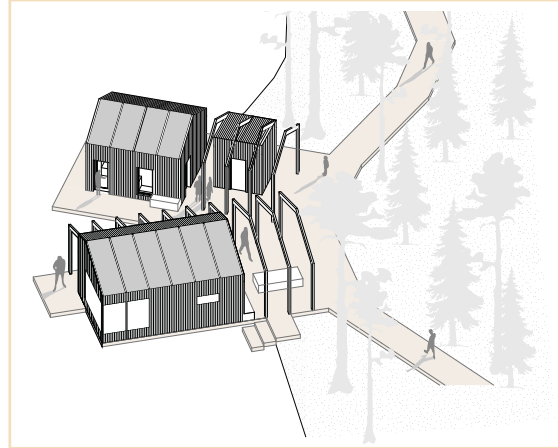


## NODES

We present two of many potential nodes, along the north-south axis between Bengtsfors town and Gustavsfors.

NODE: GUSTAVSFORS

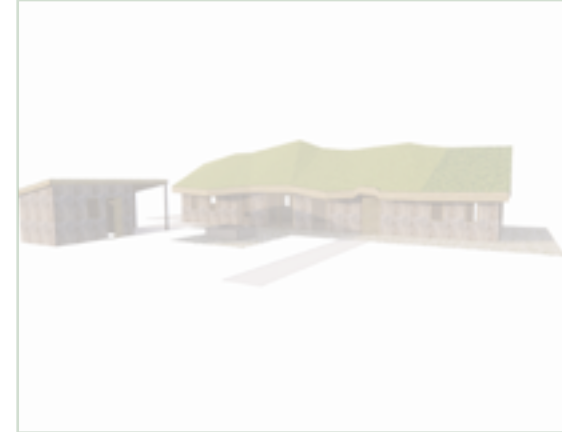
VÄRME public sauna



A **warm** space to gather, for the benefit of the local community

NODE: BENGTSFORS

BIODIVERSITY HUB



Creating space for visitors and inhabitants to learn about, and contribute to, the well being of local ecosystems

NODE: GUSTAVSFORS

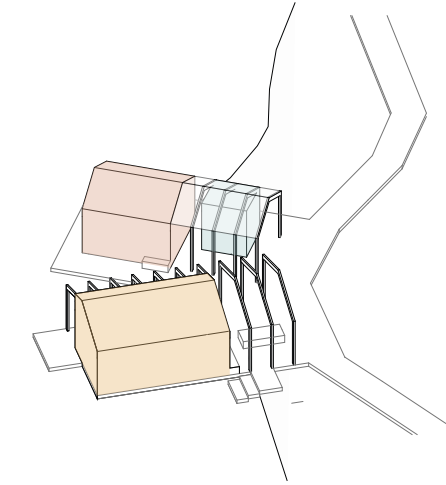
VÄRME

public sauna

A **warm** space to gather, for the benefit of the local community



## VÄRME



“A project with the intention of gathering the locals and visitors while bringing a profit back to the community from tourism could be a good idea. A sauna that is not only a sauna.”



## WHY GUSTAVSFORS?

We chose to place our node in Gustavsfors because of the special atmosphere of the place, value of the location bringing visitors from all over and possibilities for development. Also taking on the challenge of the complexities of a village with a small population and entrepreneurs with different intentions. How can we create a program and space developing sustainable tourism that is good also for the locals, in a community with few that tries to make an effort for togetherness and events.

### LOCATION

Gustavsfors is a small village on the border between the two municipalities Bengtsfors and Årjäng, and between the Västra Götaland region and Värmland region. The draisine railway goes from Bengtsfors town and continues north to Årjäng and halfway Gustavsfors is located, the perfect spot for a pause or change of transportation mode. The Dalslands canal goes through the county and Bengtsfors municipality and by connected lakes you can even travel to Norway by water. Gustavsfors is a connecting node between the draisine railway, the Dalsland canal and a hiking trail. When stopping for a

break or staying for the night, Gustavsfors offers services as an all year round grocery shop and during summer the restaurant and cafe are open for visitors and locals.

### IDENTITY

The core of Gustavsfors is both a space for changing form of transportation, for example draisine to canoe, meanwhile it has buildings from old industrial history. During summer many visitors come and the place is interesting for many reasons, both the idyllic industry heritage buildings and having one of the canal's locks. There is an interest in developing and working with Gustavsfors from the Västra Götaland region and also Bengtsfors municipality, as the site has potential for activities, business and tourism.

## WHY A SAUNA?

### FOR THE LOCALS

The sauna is a way to strengthen the local community by creating a space on neutral ground to gather and by also introducing a common goal which is stimulating a profit for the village. Furthermore it gives value to a place that has an attractive and popular location, close to the water and the woods, but that is currently not looked after due to the difficulty of accessing it.

By introducing a new activity that focuses on the colder months there will be a more equal distribution of visitors throughout the whole year. This will help local businesses and allow for more people to have the possibility to live and work in Gustavsfors full time.

### FOR VISITORS

With a new type of visitor, the digital nomad, that can stay for longer, due to the possibility to work from a distance, a Sauna will work as a meeting place that connects the visitors and locals integrating them to the community and allowing for a life in symbiosis. The current tourism is built surrounding the outdoor activities

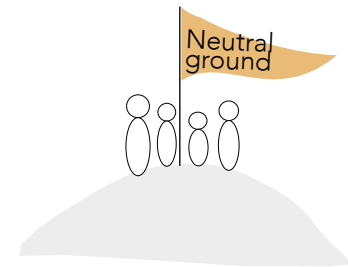
focusing on the nature and scenery that the municipality has to offer. This node allows visitors to stop in Gustavsfors after a day in the outdoors, to take shelter from the rough conditions the weather sometimes offers. The famous Swedish saying "there is no such thing as bad weather only bad clothes", is the mentality the visitors have, but it is therefore even more important to also have a goal for the destination or a nice place to rest.

### HEALTH BENEFITS

During the cold dark winter months it is not unusual that people isolate themselves and go into hibernation. A sauna in connection to nature and with people will help the mental health of the community. Sauna bathing has also proven to have physical benefits. According to a study presented in an article in Uppsala University (Hulth, 2020), sauna baths activate the immune system, hormonal system and at the same time as having a positive effect on the nervous system.

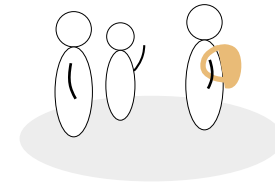
## CONCEPT

### NEUTRAL GROUND



A very popular area with high demand for boat houses might be in the risk of privatisation for development of summer houses, according to suggested LIS-development. The sauna works as a gathering node or a "neutral ground" where everyone has access to the water and nature. The path, sauna and stops along the way is a way to develop more public spaces for locals and visitors.

### LOCALS AND VISITORS



For visitors the sauna is a warm stop after a day in the outdoors. After enjoying nature, hiking, canoeing or traveling with the draisine this is a place to relax. The sauna is also a way to strengthen the local community and perhaps connect with visitors.

### BENEFITS



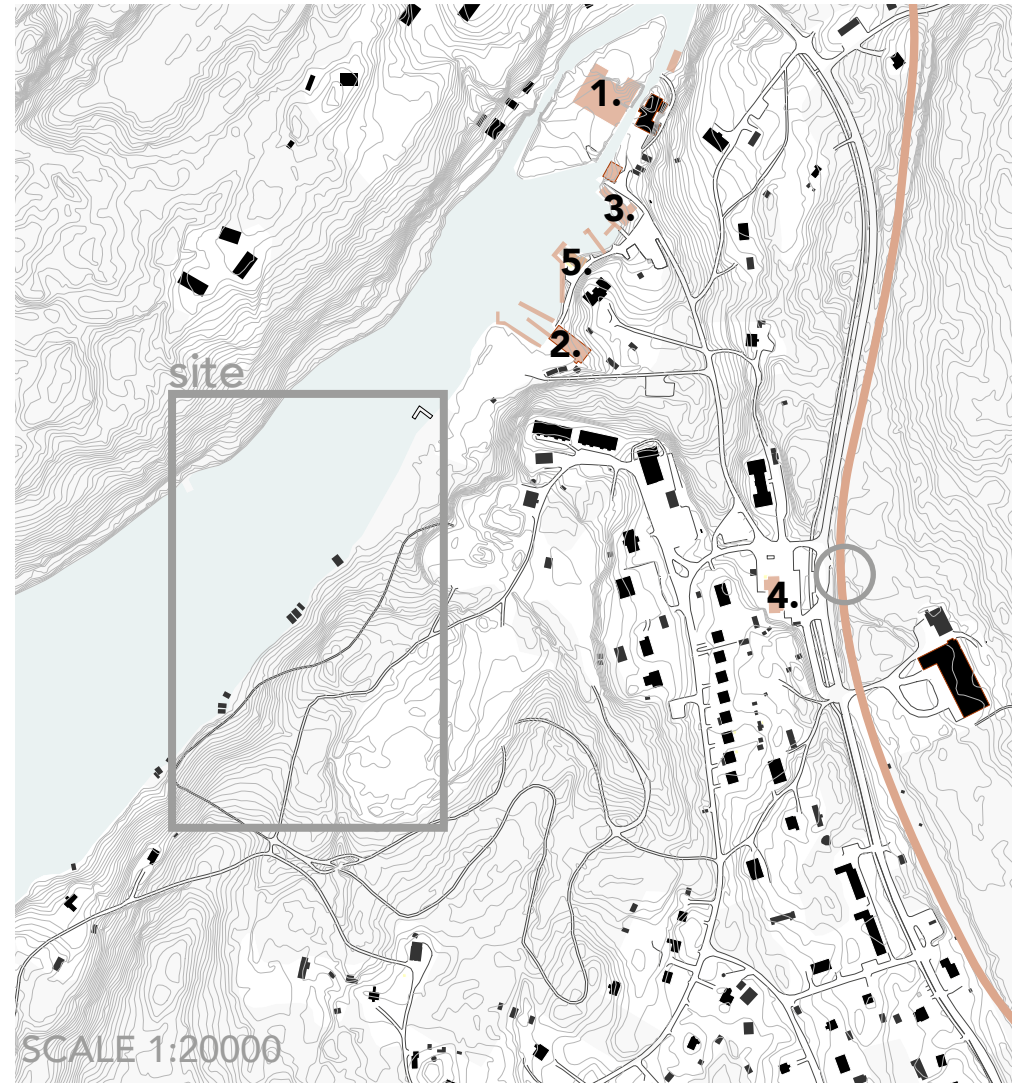
The sauna does not only benefit locals and visitors by creating a meeting place and allowing for extended outdoor activities. Profit from the bookings will go to the local community and they can use it for new developments in Gustavsfors. The local community has the ownership of the sauna and to build it funding from the municipality, region and local actors will be needed. The project will also benefit local businesses by the increased flow of visitors during more seasons.

### INVOLVING LOCAL BUSINESS



The grocery store in Gustavsfors is very important for the quality of life for the people living there. For it to have a future, it needs customers on a regular basis and a way to keep busy during other seasons is by visitors ordering food to the relax room as a part of their sauna visit. It could also be visitors ordering from the restaurant and café in the village which also helps the local businesses thrive. This might also create job opportunities since more small businesses can grow.

## GUSTAVSFORS



SCALE 1:20000

Tourism activity
  Buildings
  Draisine stop

## LOCAL ACTORS

**1. Alcatraz**

Hostel located on the island in the canal. Holds activities and camps in nature for summer visitors. In the middle of two municipalities.

**2. Båtvarvet**

Boatyard workshop for mending boats.

**3. Fiket gamla lanthandeln**

Café and Bed and breakfast in the village centre next to the water. The bed and breakfast has 4-5 rooms with 3 beds in each room

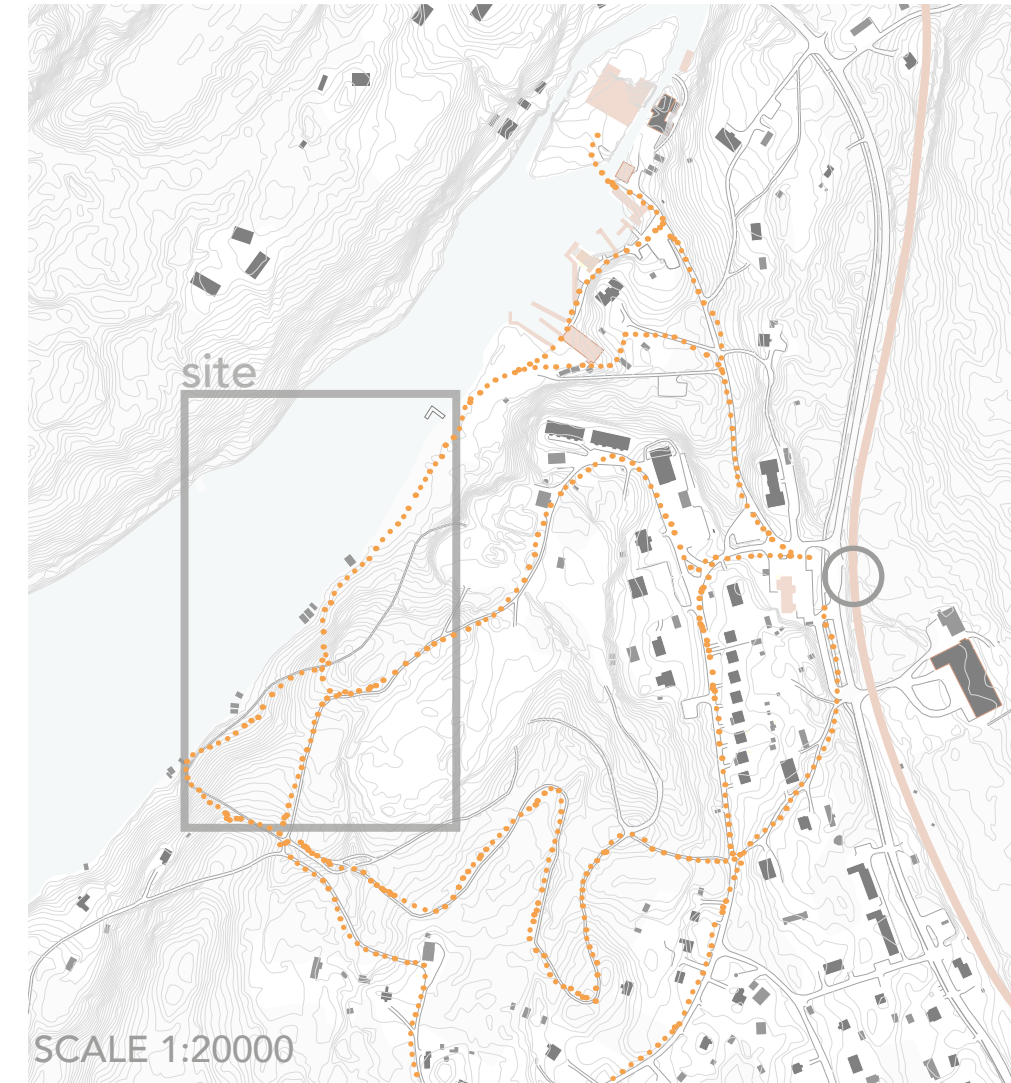
**4. ICA Optimisten**

The local grocery store is close to the main car road and the draisine.

**5. Roynes magasin**

Restaurant in the village centre by the water that is opened weekends during the off season. Sometimes works as a venue for events and a local pub.

## FLOW DIAGRAM



SCALE 1:20000

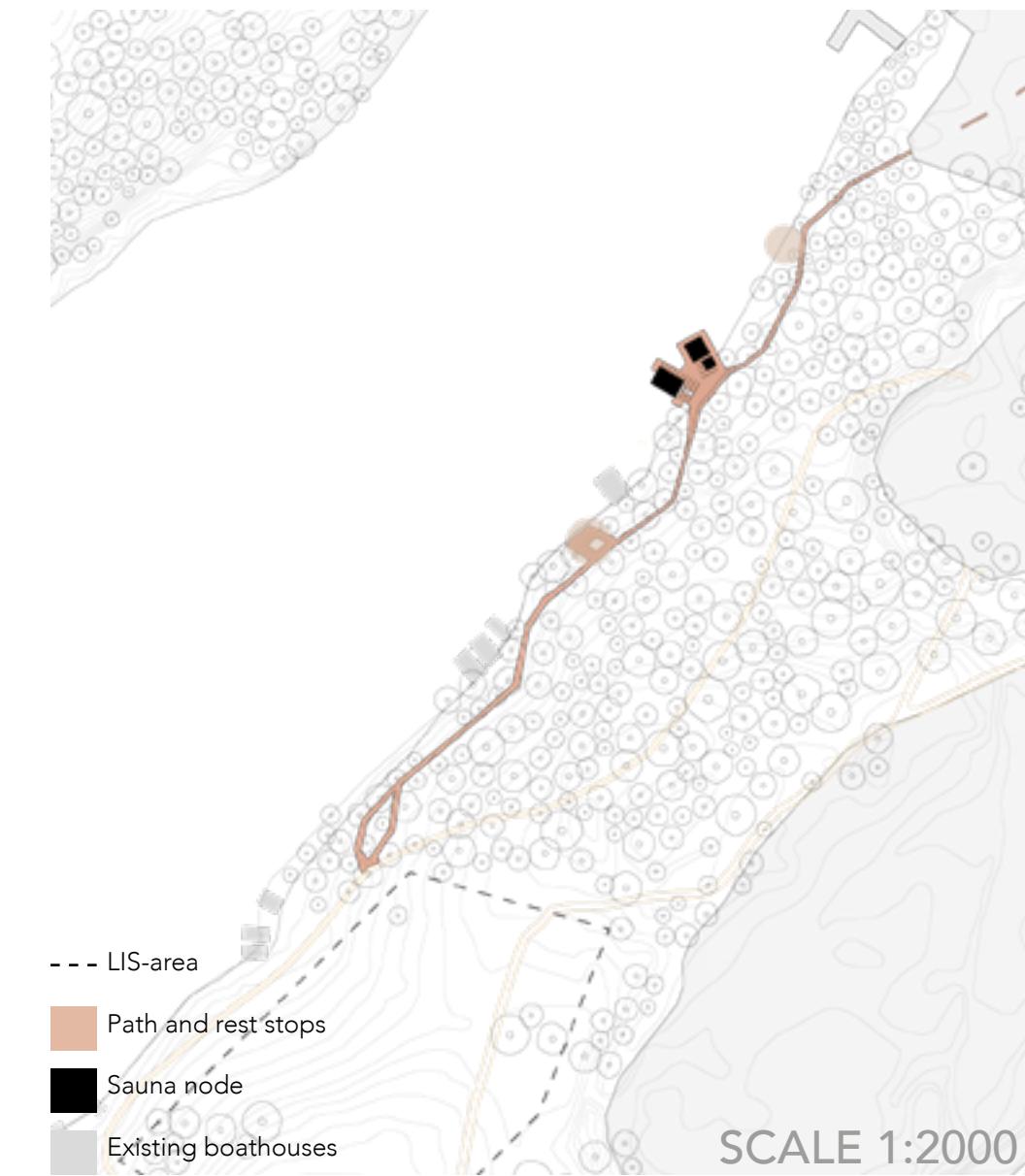
Tourism activity
  Buildings
  Draisine stop
  Flow

The chosen site is located between the residential houses and the area of services, in close connection to the lit-up jogging and walking path. A middle ground intersecting visitors and locals through these natural flows is created. So, the site will be a connector allowing for symbiosis between public and private, as well as its permanent and temporary inhabitants.

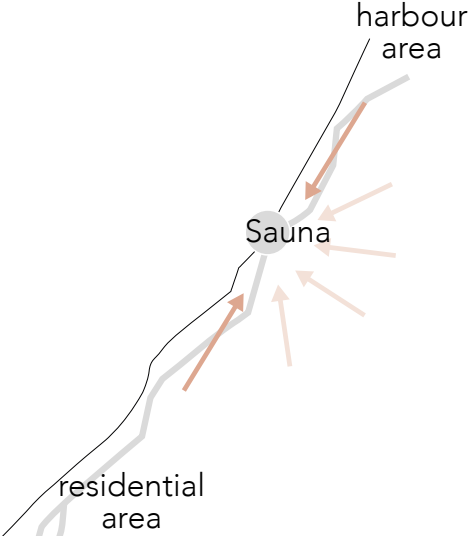
The majority inflow of visitors come from the draisine stop, grocery shop and the harbour area that is considered a popular attraction. The path allows for circular flow between the private housing areas and the commercial centre of Gustavsfors.



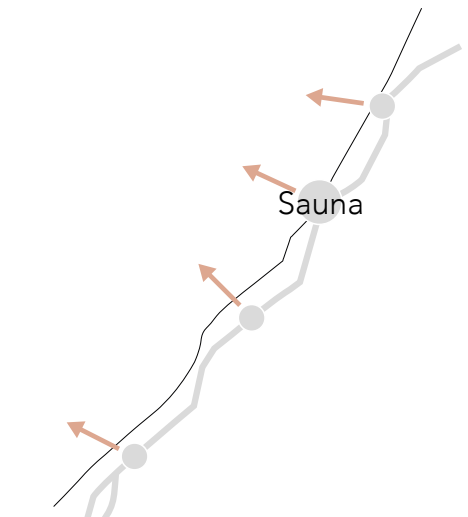
SITE STRATEGY



Connections

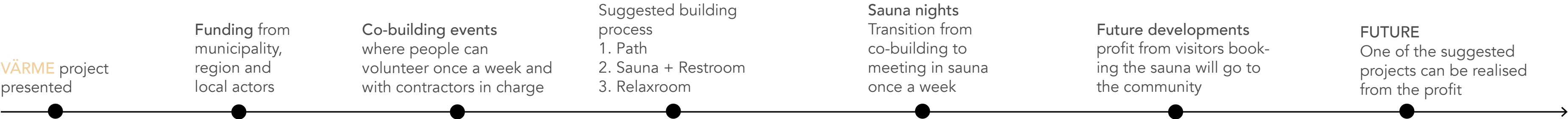


Nodes on path



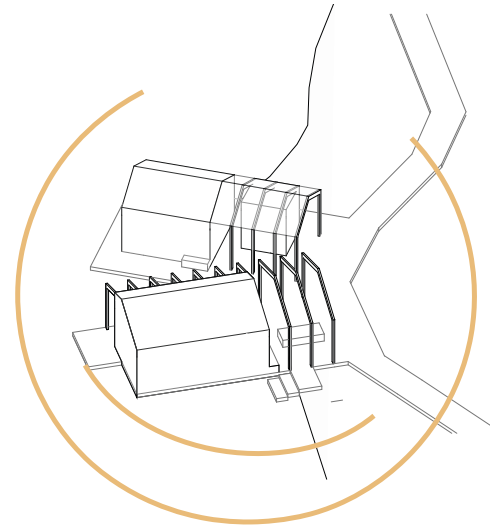
Collage inside sauna

TIMELINE



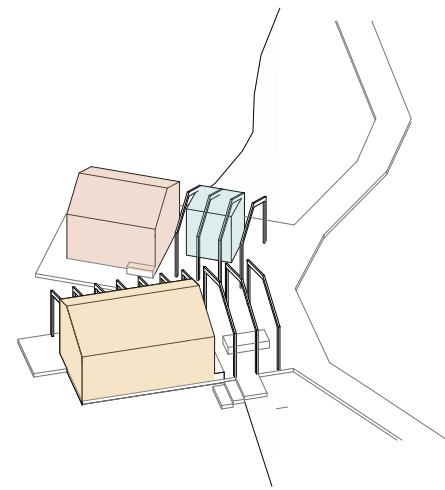
## DESIGN STRATEGY

### SUN PATH



The building is angled to get the evening sun during the darker seasons and sun exposure on the outdoor public space

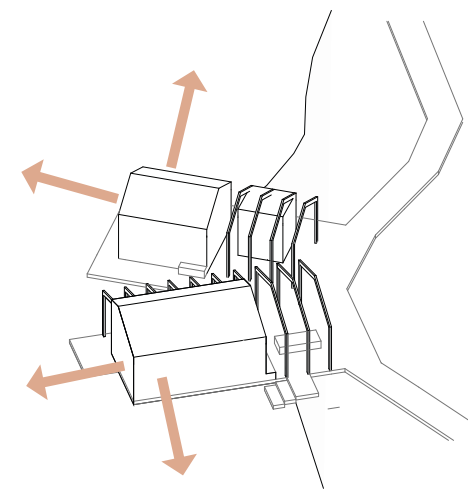
### PROGRAM



■ Sauna  
■ Relax  
■ Public restroom

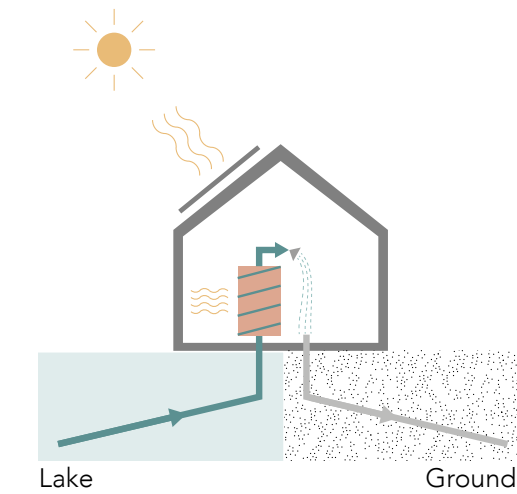
The sauna and the relaxroom can be booked by visitors for a fee and is free for the locals, the public restroom is free and open at all times

### VIEWS



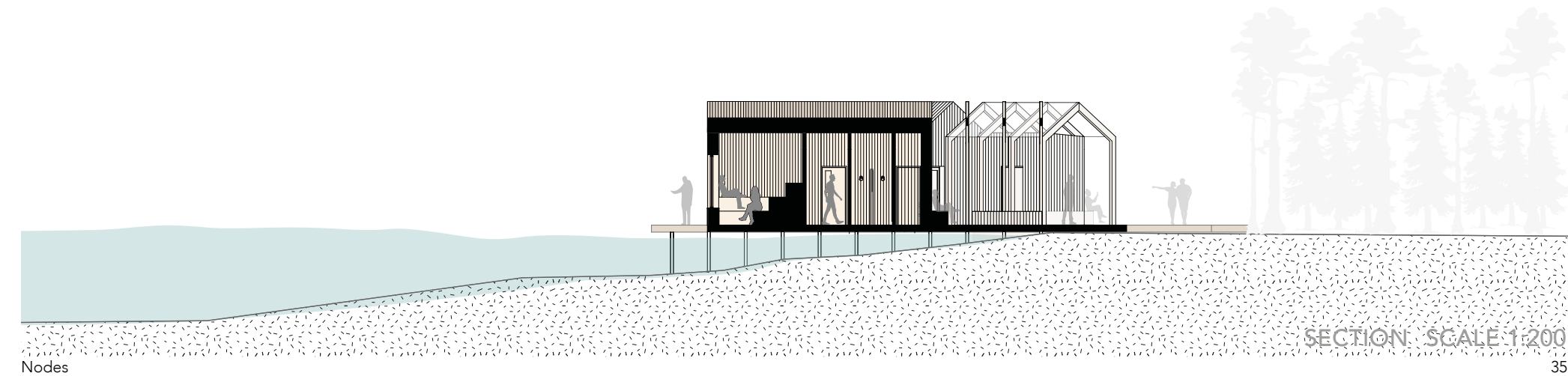
The focused views from the sauna are the sunset in the west and the woods on the other side of the water. From the relax room windows the views are towards the harbour area and out to the lake.

### SELF SUFFICIENT



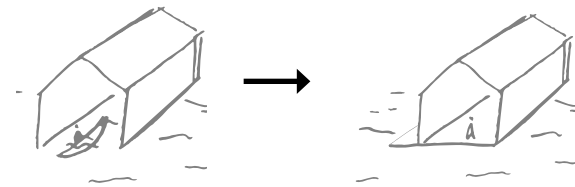
Electricity for heating up the sauna is generated by photovoltaics on the roof, and the spillover heat from the sauna can warm up the water pumped up from the lake for showers and sinks. The greywater gets filtered by the ground naturally and for minimal environmental impact eco-friendly shampoo and soap is provided.

The design and these functions are implemented according to allemansrätten; care for and not harming nature. This system will be educational since visitors will have to be aware of the resources used.

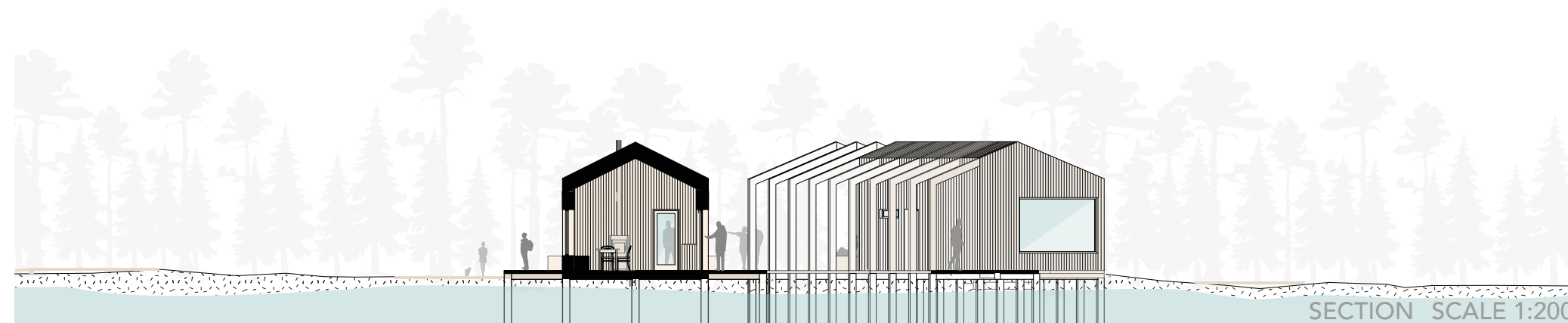
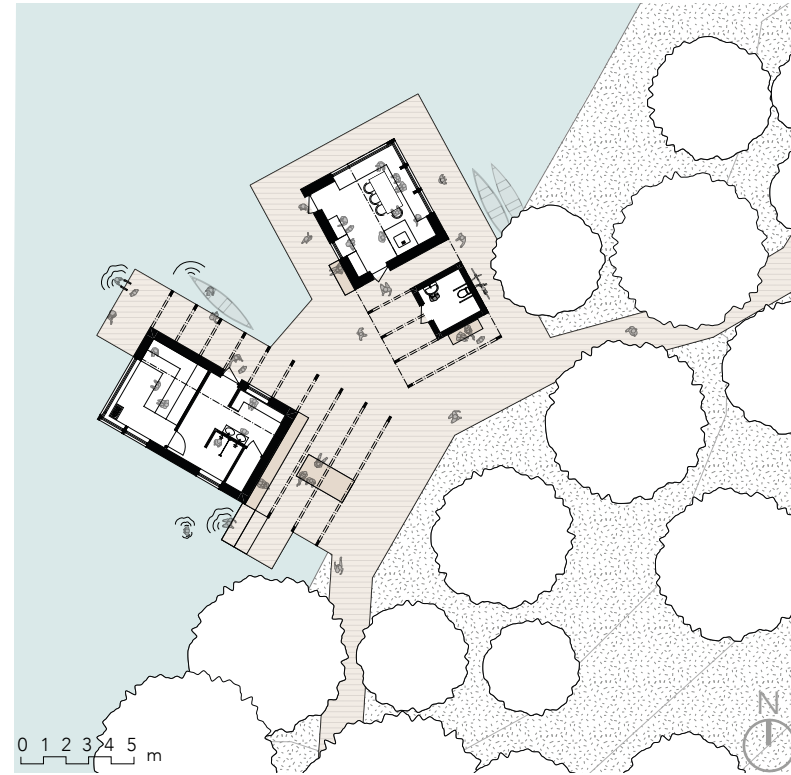


SECTION SCALE 1:200

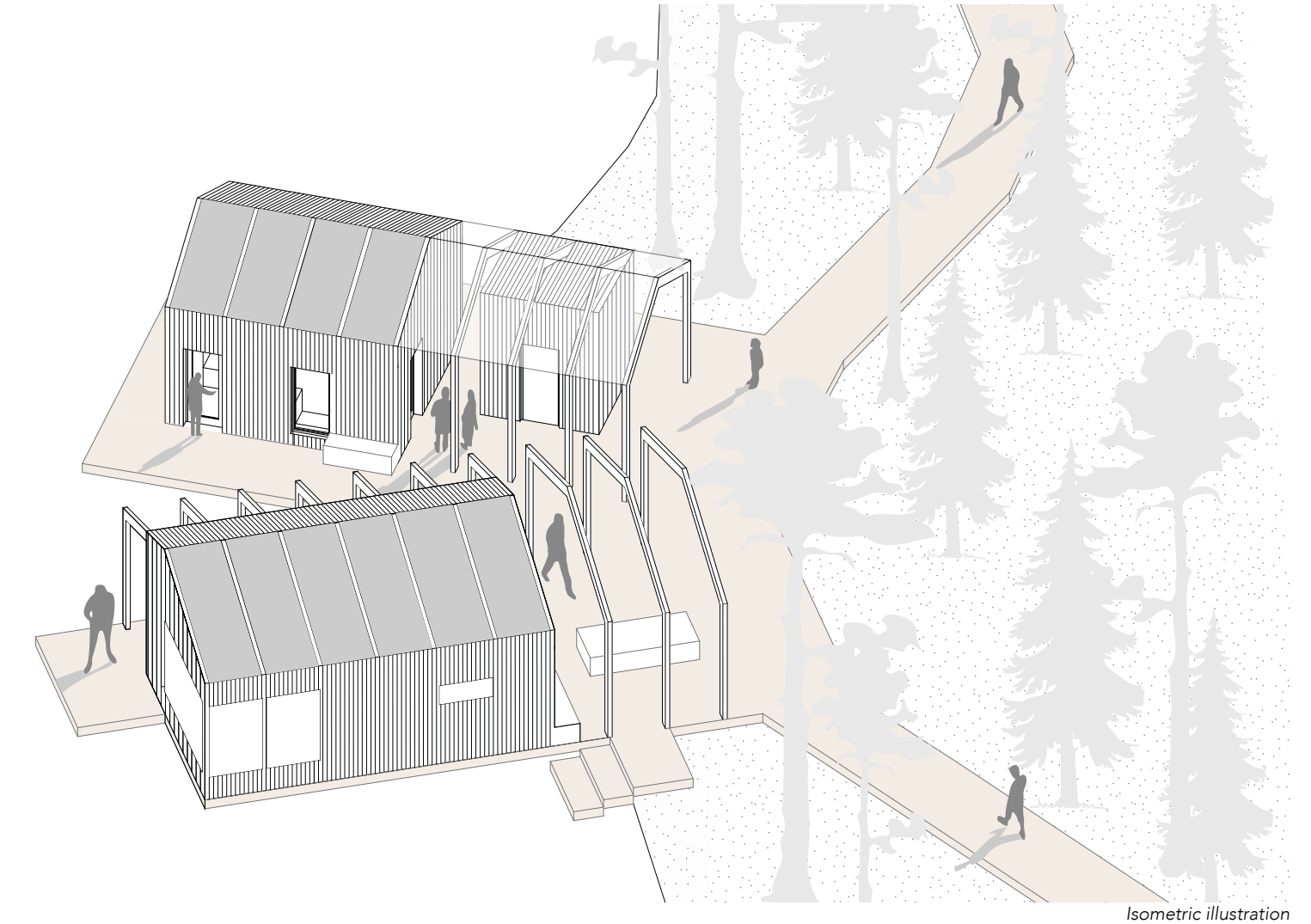
## BUILDING TYPOLOGY



The building typology is inspired by the boathouses in the area but instead of housing boats it gathers people.



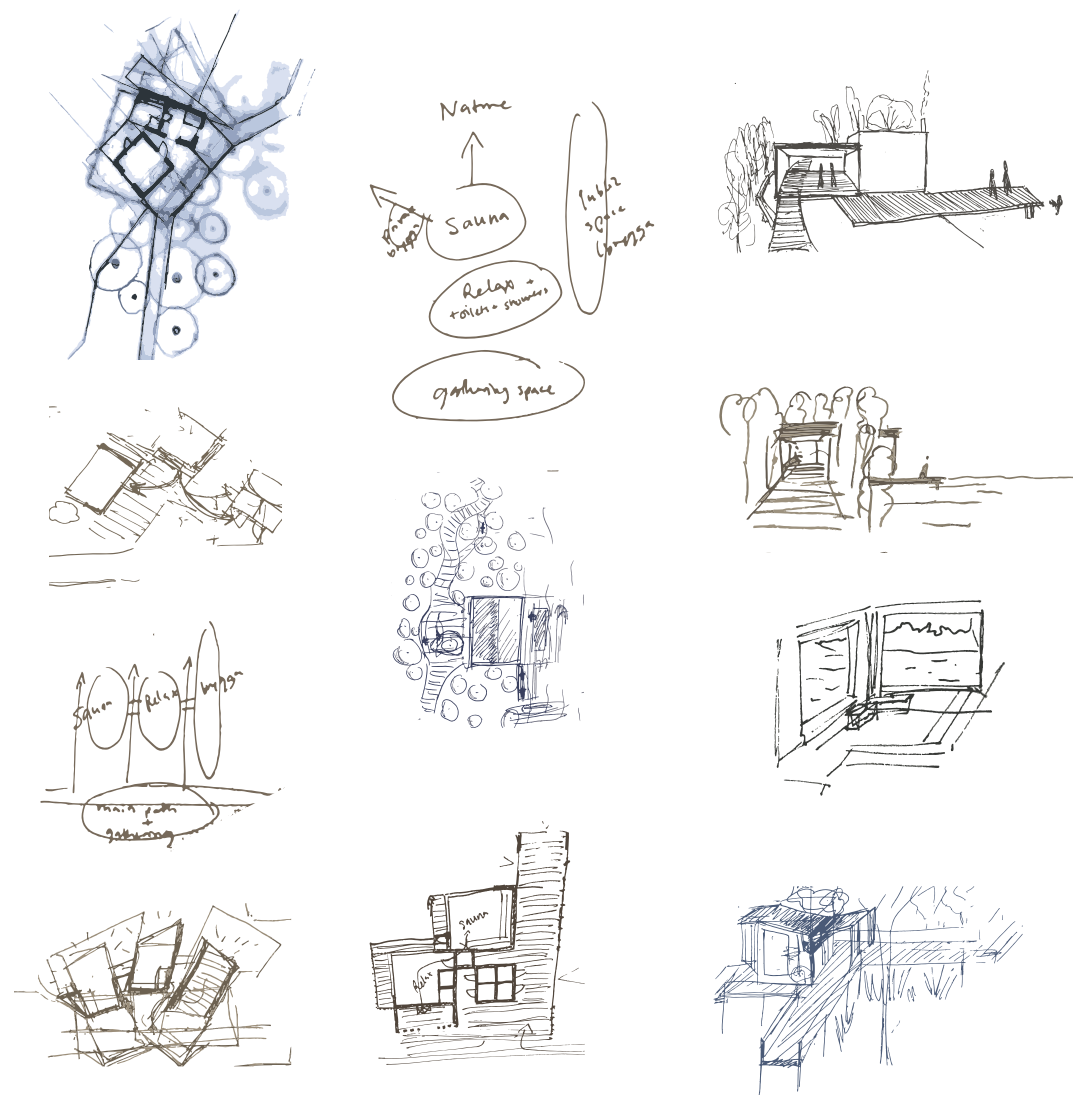
## DESIGN





## DESIGN

## COLLECTED SKETCHES FROM THE PROCESS



When designing, different tools such as sketches, digital 3D-modelling and physical scale models were used. Amongst discussions and thinking about the program, as well as looking at inspiring case studies both for design and functions. Having the environmental impact of and footprint of our project in mind in the process.

Finding a design that is easily built on a shoestring budget, with the surroundings in mind but most importantly designing for the local community was a fun challenge.



## CASE STUDY

## SAUNA

When discussing with Björn about our idea to create a node with a sauna he was positive and said it was a smart strategic thing to build. He gave us multiple successful examples of communities who have done the same thing.

Nössemark also built a sauna for tourists during summer and for the locals to use during the rest of the year. It is an addition to their camping.

## DYRÖN SAUNA

Located on the cliffs of an island called Dyrön. It is booked all year round and has extra services like ordering food and alcohol to the sauna. It has a profit of 0,5 million SEK per year. The money made from the sauna is invested in the community that puts it towards different things, examples are parks, playgrounds and hiking trails. (Ohlén, interview)



Photography of Dyrön's sauna (Dyröns samhällsförening, n.d)



*Illustrative map of Dyrön activities, services, hiking trails and roads (Dyröns samhällsförening, n.d)*



# INTERVIEWS

**Dan Magnusson**  
Construction entrepreneur from outside of Gustavsfors

Dan Magnusson was this autumn selected to be the Gustavsfors responsible for a project by the Västra Götaland region working with maritime service and hospitality business The project is aimed towards places with a small population that are dependent on tourism since that supports the local services as grocery shops and restaurants. The project started in 2018 and so Dan was put in this position late in the process and by march when the project is ending his task is to have talked to the inhabitants of Gustavsfors. To gather ideas and points of views from people, associations and companies on how to make use of tourism and develop the local community.

Dan has throughout the years been involved in the rural development and different associations in Gustavsfors but also in and outside of the municipality. Folkets hus has been an important place for meeting and associations for developing or keeping needed functions in the village. He mentions that earlier important matters have brought people together and strengthened the local community, for example when the school was planned to be closed.

After the school actually was closed down the engagement and spirit to fight for things together faded out, since then concerns were worked on in different directions. He expresses that nowadays it is harder to engage people to together develop the community association and needs for Gustavsfors. While talking to Dan he also mentions the ongoing pandemic of covid-19 as an obstacle for the community and his task, since it restricts the possibilities to gather the locals and talk.

Dan wants to build up the community council and engagement again and sees the importance that the people of Gustavsfors can come together and have their opinions to develop the place in a sustainable way. As opinions and initiatives by separate people and actors go in many different directions he says that a first step is to find a common interest and make a plan for the development for the long run. So that money invested from the region and municipality does not go to waste.

Some thoughts and interests gathered from people and from Dan that could be implemented in Gustavsfors is the need of a new guest jetty on the upper side of the lock in the canal and harbour area that would help the restaurant, café and shop. A new edition of a book about Gustavsfors, an outdoor theatre scene and more events are examples of interests that Dan brings up that the local development group could possibly aim towards. Things that could favour the local and the tourism in the area could be the key to a good future for Gustavsfors.

Dan Magnusson about our sauna project:

**“A project with the intention of gathering the locals and visitors while bringing a profit back to the community from tourism could be a good idea. A sauna that is not only a sauna.”**

# INTERVIEWS

**Björn Ohlén**  
Regional developer at Västra Götaland Region

In the interview with Björn Ohlén he expressed a big interest in working with the village Gustavsfors as it is a very exciting place with a lot of potential. He said and we quote; “A lot of people come to visit this small place”. He especially finds the old buildings on the site very interesting, and finds it nice that they have managed to run a grocery store in a rural area with some support from the region to run their business.

What Björn does as a Regional developer is to sort through the cases the region looks at to find what can be used in different projects and areas. The CLIC-project, for example, is about finding new uses for old buildings and to give them a new sense of value and create something that can generate an economy. Sadly no one took the responsibility and therefore nothing has happened, and it sort of just faded out. Fengersfors on the other hand took the opportunity and people have successfully been working actively on this development.

A project that has been more successful in Gustavsfors is the Maritime Service and Hospitality industry. This is a project for services and stores in rural areas. The local store ICA optimisten is very important for the site since it is necessary to have a local grocery store for it to be an attractive place to live. The grocery stores also get financial support from the region because it is seen as a potential for tourism. The stores generate 60-70% of their income during summer. It also becomes a sort of tourist office for people in autumn for example when other stores are closed, the tourists need the store and the store is dependent on the tourists.

**Local engagement**  
It is hard to find local engagement and to agree in the village but now the people in Gustavsfors have agreed on a contact person responsible for Maritime Service and Hospitality service and his name is Dan Magnusson. What seems to be the problem in the community is that they are divided

in different lanes with separated groups. They have a hard time finding a person who everyone can trust. It is also important for the inhabitants to communicate with each other so they can get together and speak as one voice when contacting the municipality. If everyone gets together there is a bigger chance a development will go through.

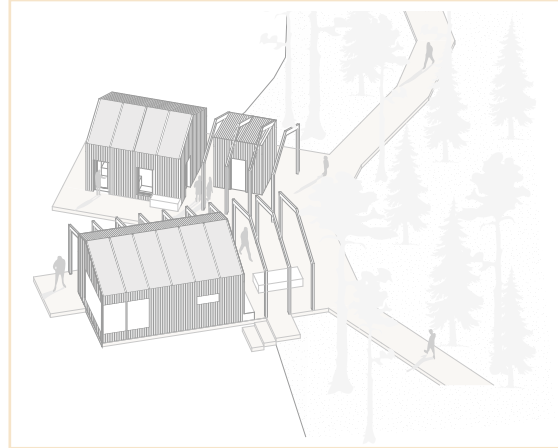
**Future development**  
There are those in other small communities further up the canal that take the boat down to Gustavsfors to shop in the local store, but it is expensive to pay the lock-fee just to get to the other side where the guest harbour is. An idea is to build a new guest harbour on the other side of the locks which would allow for more people to have access to the store and services. That way the community can make a profit from visitors arriving with private boats or canal boats.

## NODES

We present two of many potential nodes, along the north-south axis between Bengtsfors town and Gustavsfors.

NODE: GUSTAVSFORS

VÄRME public sauna



A **warm** space to gather, for the benefit of the local community

NODE: BENGTSFORS

BIODIVERSITY HUB



Creating space for visitors and inhabitants to learn about, and contribute to, the well being of local ecosystems

# BIODIVERSITY HUB

Creating space for visitors and inhabitants to learn about, and contribute to, the well being of local ecosystems

Lisa Jansson



## WHY BIODIVERSITY?

To secure the future wellbeing of ecosystems, is to secure the future of our own species. Native organisms have a specific role to play in them, and are therefore needed. Some are keystone species, meaning whole ecosystems could rely on them. We do not have enough understanding of the delicacy of dependencies and symbioses within ecosystems to elaborate around which species play key parts, and which we could afford to lose.



## BIODIVERSITY IN BENGTSFORS

Bengtsfors' surroundings consist primarily of homogenic spruce forests and farmed lands. Contrary to many Swedes' knowledge, these spruce forests are not native to most parts of the country. Spruce trees have grown in most parts of Sweden for at least a couple of thousand years, but homogeneous spruce forests (defined as consisting of 70 percent spruces or more), were planted further and further south as forestry was industrialised, starting in mid 19th century, conserving only a small amount of our old wildwoods. (Skogssällskapet, 2018)

Spruces sadly create less habitable forests for animals and plantlife, as they cast too much shadow for a lot of vegetation to grow on the forest floor and offer little nutrition themselves. Spruce forests also contribute more to bio acidification than broad leaved trees, and conifers are less fire resistant than hardwood trees. (Skogssällskapet, 2018)

As our climate changes, spruce forests are becoming an even larger problem. Spruces have surface root systems, meaning they do not bind the earth or regulate water influx as well as broad leaved trees. With warmer winters come both an increase of rains, where landslides can occur if the earth is eroding, as well as risks of storms, to which spruces are less resistant. Sweden experienced the latter in 2004, when Hurricane Gudrun left vast areas windthrown. The fallen spruces then affected the environment as water systems were affected by run-off from eroding forest floors. (Wikipedia, 2020)

Spruce forests are also less beneficial to the global climate because of the low albedo of areas they cover and by conifers consuming and binding less carbon dioxide. (Svt, 2018)

Our homogenous forests are not only a problem for the environment, but also a bad insurance for the future, as biodiverse biotopes can withstand changes (climate, pests, diseases etc) better. If one or some out of many species in an area are affected, others might have other traits that make them resistant.

While biodiversity is threatened by deforestation in most areas of the world, Sweden needs to leave room for ecosystems to grow and return to. Both the Swedish Riksdag and EU have observed the problem and have launched initiatives towards reintroductions of deciduous forests, though little change has been made so far. (Sveriges Riksdag)



*Hurricane Gudrun aftermath*  
Source: GP

## BIODIVERSITY AND MAN

Because of human activities, we are witnessing a sixth mass extinction. Threats against biodiversity that humans present are among many; the destruction of habitats, climate change, spreads of invasive species and diseases, overfishing, and environmental toxins and hormones being released into nature.

In order to turn this negative trend around, we need to stop our negative impacts on ecosystems, and then try to restore those that have been damaged.



*Deforestation of the Amazon forest  
Source: Livesience*

## STRATEGIES FOR BIODIVERSITY

There are different ways you can take to restore ecosystems to aid the reintroduction of native species. The return to biodiversity is usually a long process, and the end result is not always predictable.

Sometimes, the introduction of an alien species can actually have benefits to a local ecosystem. The species chosen must not pose a threat of becoming invasive.

In an example outside Stockholm, by lake Fysingen, water buffaloes have been introduced in a project aiming towards preserving and expanding wetlands. By grazing on coarser plants and cropping vegetation closer to the ground, they have been successful, and species of aquatic birds have returned to the area. (Länsstyrelsen)



*Water buffaloes by lake Fysingen  
Source: Länsstyrelsen*

## NATURAL TRANSITIONS

Cutovers seldomly create pleasant milieus, and can disrupt animal life. Therefore, the chosen approach in this node is to make a gradual shift, all while letting people observe and contribute to the positive changes.

Different animals can be used and kept during different stages in processes. Goats and sheep can be used as a natural way to clear out forests without damaging lands. They feed on unwanted brushwood and by gerding larger trees they can aid the gradual clearing of spruces as well. After they have cleared out an area, new tree species can be planted by participants. They are sociable animals that are cheap and easy to keep, and can roam free or be herded. The animals can also help clear the areas around the draisine track, which is the biggest maintenance costs for the track today. (Modern Farmer)

There are already possibilities to hire different farm animals, meaning you can temporarily or permanently return them should the node not be in use all year round. The chosen breeds could preferably be native Swedish breeds, of which many face the risk of extinction.



*Ringbarking or girdling (man-made)*  
Source: Allt om trädgård

## CHALLENGES AND NEW PERSPECTIVES

As with many environmental issues, there are conflicts of interests regarding biodiverse forestry. Land owners might have concerns about possible decreasing profits, and employees within the forestry sector may fear losing their jobs. In order to benefit the inhabitants of Bengtsfors, the biodiversity project will include aspects that have both educational and monetary values.

Using traditional methods, the node is a step towards a future with diverse woodlands not only used for forestry, but utilized in other ways to bring in revenue. Many Swedish farmers have joined the hospitality industry by starting cafés, renting out cottages etc, as could land owners of forested areas.

## CONCEPT

Travellers can set up tents around the main building, which has a kitchen and other heated facilities, allowing people to stay outdoors for a larger part of the year, prolonging the outdoors tourist season. The main area of the building can be utilized for many purposes, and some functions are available at all times, that makes the site available as a resting stop for passer byers.

At the hub, inhabitants and tourists can learn about challenges and participate in experiments and processes to diversify the forests of Bengtsfors, by helping clear out areas, reintroducing more broad leaved trees and studying and protecting vulnerable species. The node is a starting point for a more biodiverse forest in Bengtsfors, but its prime goal is to educate and activate the public by participation.

Inspired by other projects where school children have been able to learn from and help scientists in their work to put eco systems back in balance, the schools of Bengtsfors can use the node as a common place for field trips, where the students can learn and contribute to the change.



*Students of Kilboskolan helpingin clear out lake Viggjön  
Source: Expressen*

## ECONOMIC MODEL

The node should be municipally owned so that revenue can benefit Bengtfors inhabitants and be free to use in education. Revenue can be accumulated from different sources, one of which being campers paying admittance fees to get access to the indoors during their stay, as well as ticket sales for some lectures and events. As the node has an educational value, funds can be applied for on a regional and state level.

Tourists who stay at the node have the responsibility to keep their allocated areas up to keep, with assistance from volunteers and educators who also show how to, and help, take care of the animals. Thus, the node is not reliant on having paid full-time employees. If justified and needed, local youth can be hired (seasonally, part or full time), creating job opportunities for a largely unemployed group in Bengtsfors.

Should the project be regarded as too big of an investment, there is a possibility of excluding the kitchen when building the longhouse and later adding it as an extension of the main building. If successful, more buildings with functions such as a café for visitors could be added in the clearing. Glamping huts or tents could also be added in the surrounding area, making for an even more comfortable stay, further prolonging the outdoors staying tourist season.



## LOCATION

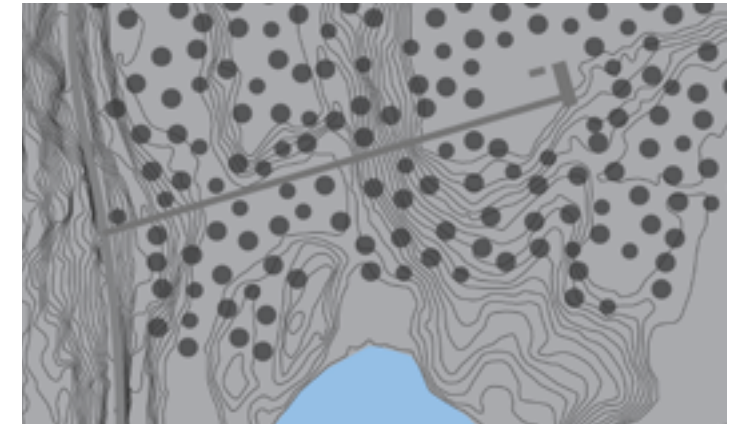
As the ongoing pandemic has hindered trips to Bengtsfors, an exact location has not been able to be chosen on site. Rather than focusing on an exact geographical position, some required qualities and placement in relation to the draisine track and Bengtsfors have been highlighted. The suggested location is preliminary, and could be changed if research on site would result in the finding of a better spot.

The presented location, near the draisine track, is close enough to central Bengtsfors to bike, and within the proximity of a bus stop, but far away enough to have room to grow without tourists disturbing social functions in the town. The terrain is less rugged than many other areas close to Bengtsfors, and it is mostly covered in homogenous spruce forests, thus making a good starting point for a change towards a more diverse forest. At the lake close by in the south, visitors can enjoy a swim and experiments on aquatic life and ecosystems can take place.



## THE NODE

As you travel on or hike by the draisine track, a straight path - a corridor of sorts - will guide you about 200 metres into the forest, where you can see the light in a clearing, and are met straight forward by a building reminiscent of a longhouse. Inspired by bronze and iron age settlements, the longhouse serves as a main building with facilities, while those who wish to stay there do so in tents or perhaps future treehouse inspired huts in the surrounding forest.

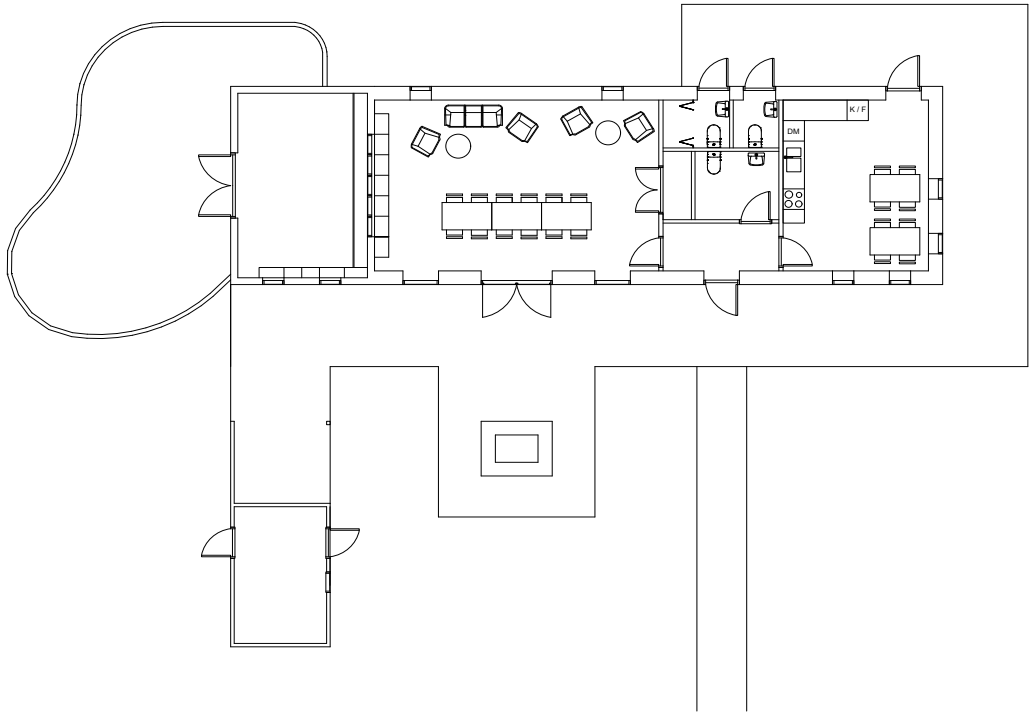


*The path from the draisine track to the node*

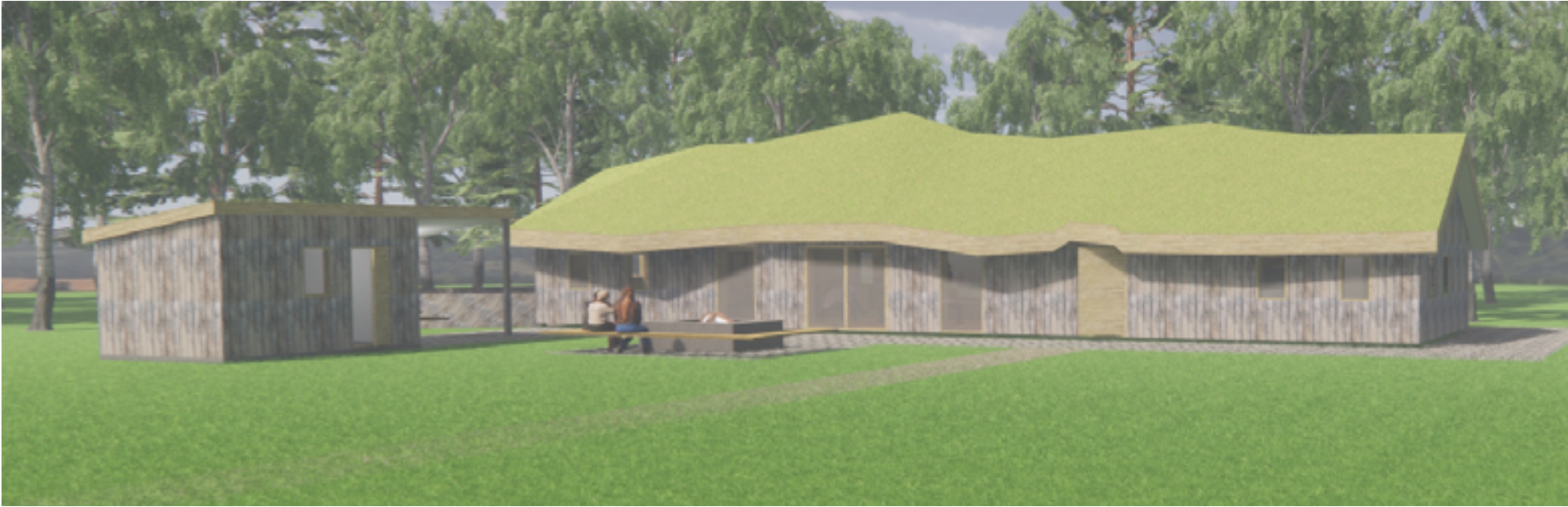


# THE LONGHOUSE

The longhouse contains a stable with room for up to 15 adult goats and/or sheep, a kitchen, toilets and a shower, and an interchangeable common room that can be utilized as a lecture hall, a room for making experiments and as a leisure room for tourists at night.



Floor plan



View of the longhouse from southwest

The surrounding outdoors is utilized as a place for education and recreation when the weather allows, and the animals roam free around the building and its surrounding landscape. Windows towards the stable creates a connection between the animals and people indoors.

In front of a pair of glass doors in the common room, a large fire pit is placed, and a shed for tools and materials for experiments extends towards the main building creating a wind shelter, making the node available as a resting stop and campsite for passer byers during closing hours.

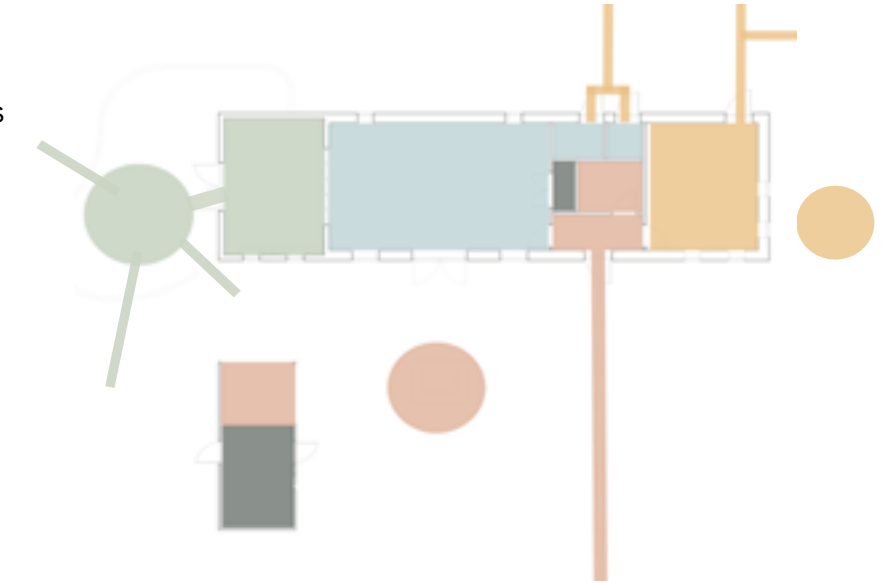
By the draisine track, enough room is made to park draisine cycles and bikes, enticing people to stop and follow the path. The possibility of using the restroom and charging your phone all year round will be additions to attract more people to pop by, and signs informing about biodiversity will educate visitors of the ongoing operations even if the rest of the building is closed off.



*View of the stable from the commonroom*

Those who stay in the area have exclusive access to the kitchen and can thereby access the building from the back. A private patio in the south lets those staying have a meal in the sun without being disturbed by other visitors.

The possibility of visiting at all hours lets the building serve the public at all times, creating more value for residents.



# MATERIALS

As the longhouse faces southwest, it optimizes sunlight, and the materials used are to a large extent produced locally. Spruce trees taken down to make the clearing or to leave room for other flora only need to dry for a few months to be used for outdoors and indoors panelling. Iron vitriol is applied to the outside panel to make it more resistant to rot, and thereby lasting longer.

The framework is made of certified KL-wood, and the roof is covered in moss, controlling rainwater, and having a local connection to Bengtsfors, where grass covered roofs can be found on old farm buildings. The fence of the animal enclosure is constructed with stakes and poles of spruce, taken from site.

# NODES

CONCLUSION, REFLECTION AND REFERENCES

# CONCLUSION AND REFLECTION

We have chosen to focus on sustainable tourism by looking out for locals and nature, and letting visitors participate, along with inhabitants, for a future in Bengtsfors with a richer social life and a more sustainable environment.

We have also chosen to strengthen the identity of Bengtsfors as a travel destination around the draisine track and Dalslands kanal. These aspects are what we feel are the most unique of what Bengtsfors has to offer, and to stand out in the competition for visitors, these have therefore been highlighted. We believe a strong identity will bring awareness about Bengtsfors among travellers, and to decide to visit a place, you must first know about it.

Concentrating visitors to a common main path leaves room for locals’ activities and nature, and creating incentives for people to visit during other times of the year than summer, creates less stress on municipal functions and wildlife. Our proposed project takes these very things in mind, by providing activities that do not solely focus on the warmer months of the year. Being able to enjoy a warm sauna during the colder months, or have the opportunity to stay in nature whilst

having access to heated facilities create **slow** activities, making it possible to stay longer in Bengtsfors.

The activities are meant to complement each other, and our envision is for more nodes to be added to the path along the draisine track and Dalslands kanal, bringing even more things to do for visitors and inhabitants. This would allow for a more resilient sustainable tourism in the municipality, and further strengthen the identity of the draisine-canal path, as new nodes focused on other seasons of the year are added. More activities can also bring in more revenue to benefit the economy and community in the long run.

We believe that through our proposal, tourism can also contribute to sustainability on a larger scale, by visitors engaging and learning about sustainable methods, and bringing and implementing newfound knowledge back home. The project could raise awareness about what tourism and sustainability could be, by providing alternative ideas of what the role of a visitor is. By being invited to participate in social activities and projects towards sustainability with locals, our hope is that those visiting Bengtsfors can

find similar opportunities in their own local environment.

As a result of the ongoing pandemic, a new type of travelling, where people stay for longer in one place, has created new possibilities for the future but also a risk of a disconnect between locals and their environment. Creating spaces where inhabitants and visitors can gather and connect with each other, could be a way to bridge this gap. Visitors might later become permanent residents as technology develops and interest in the area grows. The benefits of a smaller community and closeness to nature will be possible for more people.

There are also possibilities of further development of nodes that can bring people and companies that create more job opportunities in Bengtsfors. If people move from cities to rural areas the risk of overpopulated cities with bad air quality and inequalities decreases.

There is a risk that if the nodes are both too popular or too little in use, the project could have a negative impact on Bengtsfors. If the nodes are overused, there is a risk of not getting an even distribution of visitors and disturbing the soul of the place. If the project is not successful in

bringing visitors to Bengtsfors and the buildings are unused, they will not bring in enough revenue.

Perhaps flexibility of use could benefit the lifecycle of the buildings after what we have planned for them. Since the interventions are small scale they could be repurposed in a scenario where the aim fails and the nodes are not profitable. Even if it is not our hope or plan for these community projects to fail, the biodiversity hub could be used as a private cottage or a society building, and the sauna could be sold to a private actor. So the environmental impact from construction is not made in vain.

There are many ways to develop sustainable tourism, we have presented two examples of how you could take tourism from bad to less bad, to actually contributing to sustainability. We hope we have created incentives for tourists to stay longer in Bengtsfors instead of travelling from place to place, for Swedes to travel locally, and enabled visitors to make a positive impact in Bengtsfors.

NODES

Bradley, K., Kamb, A., Larsson, J., Nässén, J., Svenfelt, Å and Thorson, M. (2019). *Att semestra hållbart? En kartläggning av vad hållbart semestrande kan innebära*. Mistra Sustainable Consumption, Rapport 1:3. Stockholm: KTH. <https://www.sustainableconsumption.se/wp-content/uploads/sites/34/2019/03/Att-semestra-hallbart-En-kartlaggning-av-vad-hallbart-semestrande-kan-innebara.pdf>

Swedish Environmental Protection Agency. (n.d.) *This is Permitted*. <http://www.swedishepa.se/Enjoying-nature/The-Right-of-Public-Access/This-is-permitted/> (retrieved 2020-11-05)

United Nations Environment Programme and World Tourism Organisation (2005). *Making Tourism More Sustainable: A Guide for Policy Makers*. (UNEP and WTO). <http://www.unep.fr/shared/publications/pdf/DTIx0592xPA-TourismPolicyEN.pdf>

West Sweden Tourist Board (2020). *Hållbarhetsklivet*. <https://hallbarhetsklivet.se> (Retrieved 2020-12-08)

VÄRME

Hulth, A. (2020-11-09). Numerous health benefits to sauna bathing. <https://www.uu.se/en/news-media/news/article/?id=15488&typ=artikel>

IMAGE SOURCES

From: Dyröns samhällsförening. (n.d) [Photography] <https://www.dyron.se/se-gora/bastu/>

From: Dyröns Samhällsförening. (n.d) [Map] <https://www.dyron.se>

BIODIVERSITY HUB

Länsstyrelsen (2020) Betande vattenbufflar ska främja biologisk mångfald vid sjön Fysingen. <https://www.lansstyrelsen.se/stockholm/om-oss/pressrum/nyheter/nyheter---stockholm/2020-05-15-betande-vattenbufflar-ska-framja-biologisk-mangfald-vid-sjon-fysingen.html>

REFERENCE LIST

BIODIVERSITY HUB

Modern farmer (2019) How to Use Goats and Sheep to Clear Brush. <https://modernfarmer.com/2019/06/how-to-use-goats-and-sheep-to-clear-brush/>

Skogssällskapet (2018) Skogens konung – så blev granen störst och starkast i skogen. <https://www.skogssallskapet.se/kunskapsbank/artiklar/2018-05-30-skogens-konung---sa-blev-granen-storst-och-starkast-i-skogen.html>

Skogssällskapet (2018) Blandskogen viktig för naturvården. <https://www.skogssallskapet.se/kunskapsbank/artiklar/2017-10-05-blandskogen-viktig-for-naturvarden.html>

Sveriges Riksdag (2006) Återplanteringsstöd för lövskog  
Skriftlig fråga 2005/06:855 av Nordmark, Gunnar (fp)  
[https://www.riksdagen.se/sv/dokument-lagar/dokument/skriftlig-fraga/aterplanteringsstod-for-lovskog\\_GT11855](https://www.riksdagen.se/sv/dokument-lagar/dokument/skriftlig-fraga/aterplanteringsstod-for-lovskog_GT11855)

Svt (2016) Barrträd dåliga för klimatet  
<https://www.svt.se/nyheter/vetenskap/barrtrad-daliga-for-klimatet>

Wikipedia (2020) Stormen Gudrun. [https://sv.wikipedia.org/wiki/Orkanen\\_Gudrun](https://sv.wikipedia.org/wiki/Orkanen_Gudrun)

IMAGE SOURCES

Deforestation of the Amazon: <https://www.livescience.com/27692-deforestation.html>

Water buffaloes: <https://www.lansstyrelsen.se/stockholm/om-oss/pressrum/nyheter/nyheter---stockholm/2020-05-15-betande-vattenbufflar-ska-framja-biologisk-mangfald-vid-sjon-fysingen.html>

Ring Barking:<https://www.alltomtradgard.se/tradgard/tradgardsskotsel/ringbarka-trad/>

School Children at lake Viggsjön: <https://www.expressen.se/nyheter/klimat/har-raddar-eleverna-sjon-fran-algblomning-/>

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Interviews:  
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Dan Magnusson  
DWJ

# NODES

Developing sustainable tourism in Bengtsfors

