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A landscape architecture proposal
for a recreational forest in *Eiðar*, Iceland

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Clarification of Contribution

I the undersigned declare that the following thesis is based on my own design and observations and the text written by me and that no part of this work has been submitted in pursuit of a higher degree.

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Abstract

The movement of people from rural areas to urbanized centers has resulted in major lifestyle changes. These new lifestyles include more time spent indoors and increased sedentariness resulting in stress, depression and unhealthy body weight. There has also been an increase in the number of elderly people with limited mobility. Research has shown that outdoor recreation has positive effects on both physical and mental health for all age groups and there is an increasing effort to provide green areas in and around urban centers. However it is not enough to provide green areas, the areas themselves must entice people to spend time there. Research has also shown what types of areas people find appealing and identified the various attributes necessary for guests to gain a range of benefits from their visits.

The area around Eiðar estate in eastern Iceland has the potential for providing a recreational area for a relatively large number of people. There are several attributes making this area uniquely suited for this task. The estate served as a school for many years resulting in a sense of place for many people. The estate was also one of the areas protected in the first half of the 20th century and afforested both by natural regeneration and planting trees. These stands are now old enough and large enough to provide the forest feeling that people are drawn to. There is also a small lake, Húsatjörn that further adds to the area's appeal. At present there is a primitive path system around the lake. However the area was never designed and little maintenance has been carried out through the years. This had led to a decrease in the area's appeal, limited access and in some cases the degradation of sensitive vegetation.

This project entailed creating a design to increase access and appeal to visitors while maintaining the area's integrity and protecting sensitive areas. The design was created by analyzing the landscape and vegetation and incorporating ideas and opinions gleaned from the area's stakeholders. Analysis was done using data from a general survey of the topography and ecology of the area aided by black and white photography. This data was used along with a three dimensional model of the area to identify areas with unique characteristics as well as the flow of the landscape between these areas. Three methods for analysis were combined into a single method for analyzing these aspects of the study area. The project area was then divided into two sub-areas, social and restorative, and further divided into zones. These zones were areas with unique qualities. The zones were analyzed for the presence or absence of those attributes identified in previous research as necessary for providing opportunities for guests to gain either social or restorative benefits. The methods for analyzing the landscape and the attributes of the areas and their zones provided a clear understanding of existing features as well as attributes that needed to be added.

The resulting design for the area depends for the most part on enhancing existing features. Aside from improvements to the path system the designs are not difficult of expensive to implement. The zone designs are also independent and can be carried out as funding becomes available. Zone plans were not therefore presented in detail, but rather as concepts. This was done to provide for flexibility.

The resulting design provides for easy access by people of varying physical abilities and all ages. In the social zones, there are numerous opportunities to for the enjoyment of both nature and the companionship of others. The restorative zones provide opportunities for more solitary experiences for small groups or individuals. The design however does not preclude this area's use by larger groups. Implementation of the design should result in an increase in recreational value while maintaining and improving the integrity of the area's environment.

Keywords: Landscape design, restorative environment, outdoor recreation design, forest recreation, Eiðar, zoning.

Samantekt

Skógrækt á Íslandi á sér stutta sögu eða einungis rúmlega hundrað ár og þótti fólki hún ekki merkileg í fyrstu. Tímarnar hafa breyst og fólk fluttist úr sveitum í bæji þar sem aukna þjónustu var að fá ásamt meiri vinnu. Breytt lífsmynstur með tilheyrandi inniveru og langtíma setu hefur haft í för með sér aukið hreifingarleysi með tilheyrandi streitu, þunglindi og offitu. Sýnt hefur verið óyggjandi fram á að útivera hefur jákvæð áhrif á bæði líkama og sál. Nú, þegar skógar landsins hafa vaxið úr grasi, hefur viðhorf til skóga gjörbreyst frá fyrri tíð. Í dag eru þetta einhver mest sóttu útivistarsvæði landsins.

Eiðar er sögufrægur staður á utanverðu Fljótsdalshéraði. Þar var starfræktur skóli í rúma öld en var lagður niður um aldamótin síðustu. Skólinn lagði kapp á ræktun lands og líðs og voru kjörorð skólans, Mannvit, (knowledge), Manntak (responsibility) og Manngöfgi (integrity). Stórt svæði á Eiðum var friðað til skógverndar og skógræktar um 1930. Þar hefur víðáttumikill, sjálfsáinn birkiskógur vaxið upp auk þess sem ýmsar trjátegundir voru gróðursettar á nokkrum stöðum.

Í kringum Húsatjörn hefur nú vaxið þéttur skógur til áttatíu ára og eru elstu barrtrén orðin rúm sjötíu ára en einungis um tíu metra há og ákaflega frjálslega vaxin. grófgerður göngustígur liggur í kringum tjörnina og þeim sem þarna koma þykir svæðið ómótstæðilega fallegt en að aðgengi og umhirðu sé ábótavant. Ekki hefur verið kostað miklu til við þessi verk á svæðinu.

Þessi ritgerð fjallar um félagslegar og umhverfislegar greiningar á svæðinu og hönnun sem byggir á þeim greiningum. Tekin voru viðtöl við gamla nemendur, ábúendur og fleiri sem tengjast Eiðum. Spurt var um afstöðu þeirra til umhverfisins, eignarhaldsins og fleiri þátta sem þóttu merkilegir.

Svæðið í nágrenni Húsatjarnar ásamt tengingu við skólabyggingarnar var mælt nákvmælega og loftmyndir notaðar við greiningu á landslagi. Svæðinu var skipt í tvö undirsvæði. Í öðru þeirra voru félagslegir þættir hafðir að leiðarljósi við hönnun, en náttúrufar og heilsufarsþættir í hinu. Þeim var síðan skipt í smærri þemasvæði. Þemasvæðin voru síðan metin m.t.t. eiginleika sem voru fyrir og möguleika á úrbótum.

Hönnunin byggir að mestu á því að draga fram þætti sem þegar eru til staðar. Fyrir utan umtalsverða stígagerð eru úrbæturnar ekki dýrar í framkvæmd. Hönnun fyrir hvert þemasvæði er sjálfstæð og því er hægt að hrynda þeim í framkvæmd eftir því sem hentar og fjárveitingar fást til.

Hönnunin bætir aðgengi fólks með mismunangi getu að svæðinu. Félagslegu svæðin bjóða uppá tækifæri til þess að hópar fólks njóti útiveru og samveru á meðan náttúrusvæðin eru hönnuð með þarfir einstaklinga eða smærri hópa í huga. Í framkvæmd ættu þessar tillögur að auka útivistargildi Eiða jafnframt því að bæta þanþol umhverfisins gagnvart aukinni umferð.

Lykilorð: Landslagshönnun, endurnærandi umhverfi, hönnun útivistarsvæða, útivist í skógi, Eiðar, flokkun lands.

Abstrakt

Bevægelsen af mennesker fra landdistrikterne til urbaniserede centre har resulteret i store livsstilsændringer. Disse nye livsstil inkludere mere tid indendørs og øget roligt, stillesiddende liv med tilhørende stress, depression og usunde kropsvægt. Forskning har vist, at friluftsliv har positive effekter på både den fysiske og mentale sundhed for alle aldersgrupper, og der er stigende vilje for at skabe grønne områder i og omkring byerne. Det er dog ikke nok at give grønne områder, de skal være tiltrækkende så folk tilbringer tid der.

Eiðar er en historisk sted i det østlige Island som har potentiale for at skabe et rekreativt område for et relativt stort antal mennesker. Der er adskillige egenskaber, som gør området unikt egnet til denne opgave. Stedet tjente som en skole for mange år som resulteres som en følelsesmæssig sted for mange mennesker. Stedet var også et af de områder som blev beskyttet i den første halvdel af det 20. århundrede og tilplantes med træer både af naturlige regenerering og plantning af træer. Nu er skoven blevet gammel nok og stor nok for at give den fornemmelse som mennesker er tiltrukket af. Der er også en lille sø, Húsatjörn, der bidrager yderligere til områdets appel. På nuværende tidspunkt er der en primitiv stisystem rundt om søen. Men området blev aldrig designet og lidt vedligeholdelse er blevet udført gennem årene. Dette havde ført til et fald i områdets appel, begrænset adgang og i nogle tilfælde nedbrydning af følsom vegetation.

Dette projekt handler om at skabe et design for at øge adgangen og appellere til de besøgende og samtidig opretholde områdets integritet og beskytte følsomme områder. Designet blev skabt ved at analysere landskabet og vegetationen og indsamle ideer og meninger fra områdets interessenter. Analysen blev udført ved hjælp af data fra en undersøgelse af topografi og økologi af området. Disse data blev brugt sammen med en tredimensionel model af området for at identificere områder med unikke egenskaber samt gennemstrømningen af landskabet mellem disse områder. Tre metoder blev kombineret i en enkelt metode for at analysere disse aspekter af det undersøgte område. Projektets område blev derefter opdelt i to delområder, sociale og genoprettende, og yderligere opdelt i zoner. Disse zoner er områder med unikke kvaliteter. Zonerne blev analyseret for tilstedeværelse eller fravær af attributterne identificeret i en tidligere forskning, men de er nødvendige for at skabe muligheder for gæster for at opnå enten sociale eller genoprettende fordele. Metoderne til analyse af landskabet og de attributter af de områder og deres zoner gav en klar forståelse af eksisterende funktioner såvel som attributter, der skulle tilføjes.

Det resulterende design for området, er for det meste afhængig af at forbedre eksisterende funktioner. Bortset fra forbedringer af stisystemet er designet ikke for svært eller for dyrt at gennemføre. Designet af zonerne er også uafhængig og kan gennemføres når råd er til. En detaljeret plan blev derfor ikke præsenteret, men heller som begreber. Dette blev gjort for at sikre fleksibilitet.

Det resulterende design giver nem adgang for personer med forskellige fysiske evner og alle aldre. På de sociale områder, er der talrige muligheder for glæde for både natur og kammeratskab. De genoprettende zoner giver muligheder for mere privat oplevelser for små grupper eller enkeltpersoner. Designet udelukker dog ikke større grupper for at bruge området. Gennemførelse af designet bør resulteres i stigende rekreativ værdi og på det samme tidspunkt bevare og forbedre integriteten af områdets miljø.

Nøgleord: Landskab design, genoprettende miljø, friluftsliv design, skov rekreation, Eiðar, zoneinddeling.

Acknowledgements

This report is the outcome of a long term process that had no actual starting point. I was very young when I first arrived *Eiðar*. I remember a noble atmosphere and wonderful scenery and there was *Húsatjörn* Lake.

Now, more than quarter of a century later, I have somehow managed to write a thesis about the magnificent *Húsatjörn* Lake, but that would not have been possible without the generous help of many people. The need for thanking is tremendous on my behalf and I really appreciate all the help and support I got. Firstly I would like to think both of my main supervisors Richard Hare and Cecil Konijnendijk for being so patient with me. I consider myself really blessed for being under their supervision because before I actually met them, I had heard of their great reputations, both professional and personal. I was situated in Iceland in a full time job and they were in Denmark (most of the time at least) and under those circumstances it went out quite well. There is one person that I wish to thank most, Sherry Lynne Curl. She stood by me during the whole process and encouraged me, informed, guided and so much more. Her knowledge is endless and I tried to receive all her information about recreational forests, communicative planning and much more. All the people that I interviewed have all my best thanks, especially those who I formally interviewed with or without a video camera: Alexander Robertson, Anna Kristín Magnúsdóttir, Charles Ross, Helgi Hallgrímsson, Jóhann Magnússon, Hlynur Halldórsson, Elís Pétursson, Jónas Jóhannson, Stefán Þórarinsson, Sunchana Slamnig and the owner of Eiðar Sigurjón Sighvatsson.

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Introduction

Figure 1: (Previous page.) Overview of the study area as seen from north to south (2011).

Introduction

The focus area for this project is the forest immediately surrounding a lake called *Húsatjörn*. *Húsatjörn* Lake is on the grounds of *Eiðar* estate in eastern Iceland. The estate has a long history and is recorded in the Icelandic sagas dating from the 13th century. For most of its long history *Eiðar* was a farming estate and served as an inn of sorts for travellers. Later a government run school was established on the estate. *Húsatjörn* Lake played an important role in estate life throughout the estate´s history. At first glance, *Húsatjörn* Lake may appear to be quite average for the area. Many lakes are found in the vicinity. There are about 15 lakes within a 5 km. radius from *Húsatjörn* Lake. Long bogs divided by small rocky heaths characterize the area's landscape. What makes *Húsatjörn* Lake unique from the other lakes is two things. These are the area's history and landscape. Both are closely linked to the public's perception of *Eiðar* estate. Today the school that once served eager young people is closed, leaving all those memories behind. People including former students, teachers and employees among others, still go there to recapture memories from "*the good old times*".

Although the school has been closed since 1998, the student housing serves as a summer hotel and is visited by both Icelandic and foreign visitors. The lake and its surroundings provide a perfect area for hotel guests to enjoy a walk in the early morning hours, or in the unique lighting provided by the midnight sun. *Húsatjörn* Lake is also a favoured year round recreational area for local residents.

Regrettably, a design, and strategic management plan for the area was never drawn up and little has been done to improve the area or to protect the area's nature and safeguard the memories of a special place, not only those from the past, but those yet to be made. The lack of a design and/or management plan can have negative effects on recreational areas and their potential to provide users with desired experiences. An extreme case of such effects was reported by Clark and Stankey (1979) where the area around a pristine alpine lake was allowed to develop without a design. This resulted in the area becoming a highly developed campground. Therefore the wilderness experience sought by its early users was no longer available. Another, albeit less dramatic, example of unplanned change is found in *Atlavík* Cove in *Hallormsstaður* National Forest in eastern Iceland. *Atlavík* was once a favoured recreational area of local people. However changes through time resulted in the area being used as a campsite rather than a day-use area. Local people felt out of place in *Atlavík* and were therefore displaced (Curl 2008).

This project entails developing a plan for the area immediately surrounding *Húsatjörn* Lake and the area connecting the lake to the cluster of estate buildings. Because of early fencing, the land is well vegetated in comparison to other farms in the vicinity. Native birch (***Betula pubescens***) and willows (*Salix spp.*) as well as some exotic conifers such as larch, spruce and pine grow quite well. A narrow footpath encircles *Húsatjörn* Lake and connects it to the populated area. It is hoped that the design will rally the estate's owners and stakeholders not only to make improvements, but also through this work to form a solid basis for further improvements both to *Húsatjörn* Lake and its surrounds and to the rest of the estate.

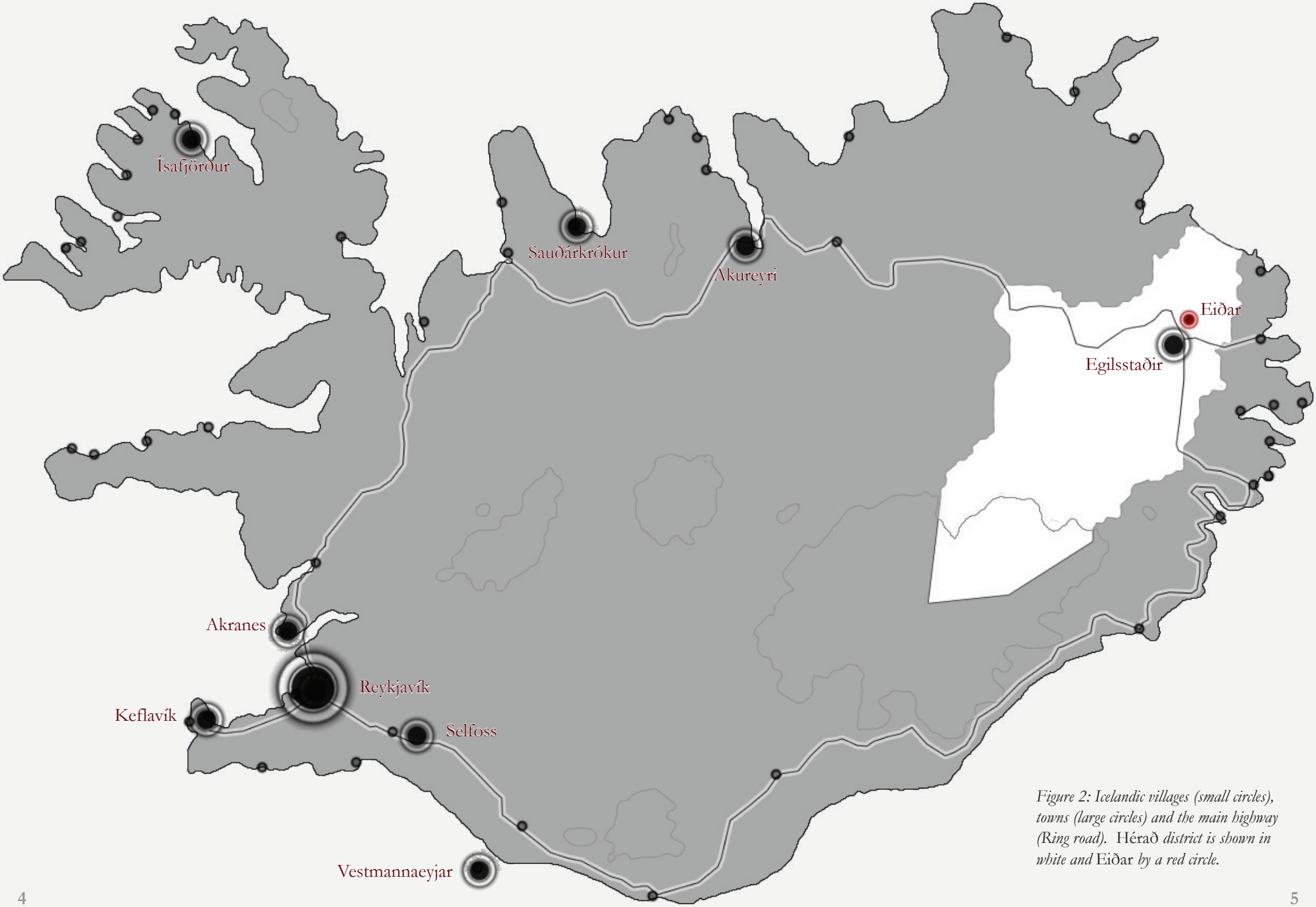


Figure 2: Icelandic villages (small circles), towns (large circles) and the main highway (Ring road). Hérað *district is shown in white and* Eiðar *by a red circle.*



Figure 3: East Iceland, the white area is Hérað. *Shown inside that area are shown the major roads, rivers and lakes.*

Location

The village *Eiðar* is located in east Iceland, in the district of *Fljótsdalshérað*. Collectively *Fljótsdalshérað* district and the smaller neighbouring district of *Fljótsdalshreppur* are known by the name "*Hérað*". Together they form the largest political district in Iceland covering more than 10,000 km^2, or about 1/10 of the total area of Iceland (Statoids 2010). In the centre of *Hérað* is *Egilsstaðir*, the largest village in *Hérað*. *Egilsstaðir* is a relatively newly established village, incorporated in 1945, and has evolved into *Hérað's* major service centre. Before there were several midpoints in *Hérað*, one of the larger and oldest of these was Eiðar (Vigfússon 1997). *Eiðar* is only 12 km. south of *Egilsstaðir*. *Húsatjörn* Lake is situated in *Eiðar* estate, about 200 meters from the main housing area.

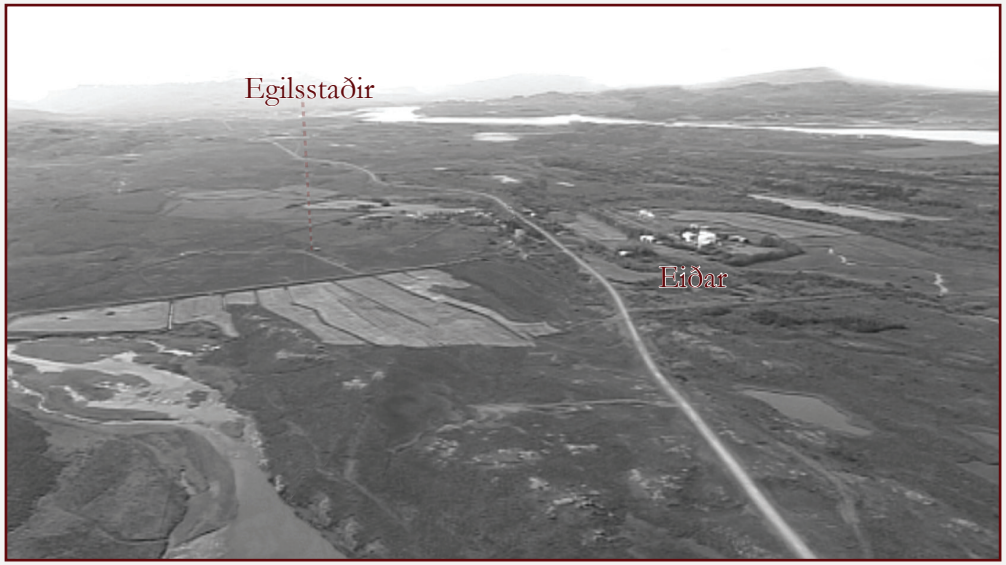


Figure 4: The area around Eiðar *(2011).*



Natural and cultural history

Figure 5: (Previous page.) A solitary dead birch beside Húsatjörn *Lake (Fjölnir Björn Hlynsson 2011).*

Natural and cultural history

Eiðar estate is part of a large conservation area. The conservation area is known for its mosaic landscape of lakes, bogs, forests and historical heritage sites (Hallgrímsson 2010).

Natural history

Over a period of about sixty million years, Iceland was gradually built up by volcanic and geophysical activity. The topography of the island is the result of the combined effects of volcanoes and glaciers. *Eiðar* is no exception. The landscape is a mosaic of basalt ridges and glacial depressions formed into a series of wetlands interspersed between the higher ridges.

When the island was colonized, at least 27% of its area was birch forests (Blöndal and Gunnarsson 1999). Other lowland areas, with the exception of areas adjacent to the glaciers, were well vegetated. The sagas dating from the 12th and 13th centuries mention a great forest at *Eiðar*. However by the beginning of the 19th century, the forest had completely vanished with the exception of one small remnant on an island called *Eiðarhólmi* in the area's largest lake, *Eiðavatn* (Þórarinsson 1983).



Figure 6: Eiðahólmi *Island in* Eiðavatn *Lake. A naturally conserved area with conifers over 100 years old (2011).*

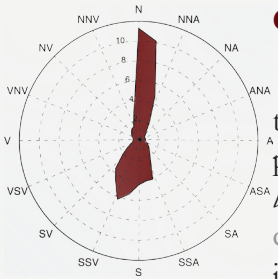


Figure 7: Wind rose showing the average year's wind at Egilsstaðir *airport for 2010 (Veðurstofa Íslands 2010).*

Climate

Hérað´s size and varied topography results in a climate that differs from one area of *Hérað* to another. For example the climate in *Eiðar* is much harsher than that of *Hallormsstaður* National Forest (Þröstur Eysteinsson 2010, pers. comm., August) although the distance between the two areas in only 30 km. (See location on page 6.) This difference is clearly seen on the trees found on the two sites. In 1938-39 sibling larch trees were planted in both areas. The larch in *Hallormsstaður* National Forest was thinned in 2009 and the average height was 22 meters (Skograekt rikisins 2009). The larch in *Eiðar* was measured in 2011 and the average height was only 10 meters. The form of the trees is also quite different. While the trees in *Hallormsstaður* are quite straight, those in *Eiðar* have been sculpted by wind and snow (Alexander Robertson 2010, pers. comm., Sept.). The predominate wind directions in *Eiðar* are from the south and north (see wind-rose) (Veðurstofa Íslands 2010). The precipitation in *Hérað* is considerably lower than that of other parts of Iceland. However this does not have an appreciable effect on tree growth (Þ. Eysteinsson 2010, pers. comm., August). Winter weather is the main contributing factor to damage of the trees and includes frost activity, snow and windstorms (A. Robertson 2010, pers. comm., Sept.).

The weather around *Húsatjörn* Lake is relatively mild. This is especially so during the early morning and late evenings. At these times, the wind is calm and the midnight sun provides special lightening adding to the serenity of the lake. This calm is not found in other areas of *Eiðar* estate. Initially the ridges surrounding the lake provided shelter for the young trees and the specific heat from the lake added to the area's warmth. Through time the trees have grown in number and stature and subsequently increased the area of calm encircling the lake.

Figure 8: Thinning at Guttormslundur *in* Hallormstaður *forest. The trees shown are siblings to the trees at* Eiðar *(Þröstur Eysteinsson 2009).*

Fauna

The most visible animals in *Hérað* and *Eiðar* are common livestock found throughout Iceland. This includes sheep, horses, cattle, dogs and cats. Domesticated animals are found at two of the households on *Eiðar* estate. One of the households has horses that have been rented out during the summer months. The other household has an interesting mixture of animals including a pig, a ram, greylag geese, mallard ducks and an arctic fox.

Among the native mammal species found at *Eiðar* are mice and Arctic fox. There are also feral populations of mink and reindeer. Reindeer were introduced to Iceland in 1771 (Þórisson 2009) and are found today only in eastern Iceland. Reindeer have become an important symbol for the area. For example the horns of the reindeer can be seen in the logo for UÍA (*Ungmenna og íþróttasamband Austurlands*,: The Youth Association of Eastern Iceland). The reindeer are migratory spending the summer months in the highlands and winters in the lowlands.

Figure 9: A horse in a field and two sheep in the forest in the background. Húsatjörn *Lake lies between the field and forest (2009).*





Figure 10: Some geese are tamer than others. In the picture Steinar Logi Ágústsson is chasing one at the nothern end of Húsatjörn *Lake (2010).*

There are numerous bird species at *Eiðar*. Most of these are migratory, however several species are found there year round such as ravens (*Corvus corax*), ptarmigan (*Lagopus mutus*), redpoll (*Carduelis flammea*), snow bunting (*Plectrophenax nivalis*), thrushes (*Turdus iliacus*) and Eurasian wren (*Troglodytes troglodytes*). The most common migratory birds are greylag geese (*Anser anser*), ducks, whooper swans (*Cygnus cygnus*), godwits (*Limosa limosa*), wagtails (*Motacilla alba*) and a pair of red-throated divers (*Gavia stellata*) are occasionally seen on *Húsatjörn* Lake. The last few years a Slavonian greb (*Podiceps auritus*) has made it self at home on the lake, as well as short-eared owls (*Asio flammeus*) in the forest. (Halldór Walter Stefánsson 2011, pers. comm., Sept.).

Fish are found in most of the lakes in *Eiðar* estate including *Húsatjörn*. The most common is Arctic char (*Salvelinus alpinus*).



Figure 11: A bee collecting nectar at Húsatjörn *Lake (2009).*



Figure 12: A larch flower in eary May at Húsatjörn *Lake (Fjölnir Björn Hlynsson 2011).*



Figure 13: Rowan (Sorbus aucuparia) in Húsatjörn *Lake (2011).*

Flora

Only three tree forming species are indigenous to Iceland. These are downy, or mountain birch (*Betula pubescens*), rowan (*Sorbus aucuparia*) and quaking aspen (*Populus tremula*). Both downy birch and rowan are found in the area surrounding *Húsatjörn*. Quaking aspen is rare in Iceland and not found on the estate. Several species of woody scrubs are found in the area including: several species of Salix, bog bilberry (*Vaccinium uliginosum*) and crowberry (*Empetrum nigrum*). Both bog bilberries and crowberries are harvested in the study area.

A survey of the flora of the area was done by the author in 2010.

Many species of fungi flourish in the area. Two types of boletes, brown cap bolete (*Leccinium scabrum*) and larch bolete (*Suillus grevillei*) are harvested by area guests.

The first exotic tree species planted in the area surrounding *Húsatjörn* Lake were 500 larch (*Larix sukaczewi*) planted in the summer of 1939. These were planted in four groups around the lake. During the same summer, 4,000 pines and spruces were planted on the ridge west of the lake. After this it became a tradition at the school for the senior class to plant up to 3,000 additional trees per year in the area (Þórarinsson 1983). Organized tree plantings ended in the 1970´s (Jóhann Gísli Jóhannsson 2011, pers. comm., July).



Figures 14-16: Students planting trees in Eiðar *estate (Picture preserved by* Héraðsskjalasafn Austurlands *1950´s).*

Figure 17: The school at Eiðar *estate in the 1920´s (Owned by Jóhann Magnússon).*



Cultural history

Eiðar estate

Eiðar estate is what is known in Iceland as a settlement estate. Settlement estates are those established at the time of the colonization in the 12th century. Of these, the sagas record *Eiðar* as being one of the larger estates. *Eiðar* remained the largest estate in eastern Iceland until the 20th century. Up to the 20th century, the economy of *Hérað* was based on the production of sheep. In the early years of the 19th century, there were 250 working estates in *Hérað* (Þórarinn Lárusson 2010, pers. comm., March). However with the establishment of the village *Egilsstaðir* in 1947 and the shift from agricultural production towards service provision and production of electricity, the number of farms in *Hérað* decreased. By 2011 the population of *Egilsstaðir* and neigboring village *Fellabær* had grown to 2,700 and the number of active farms in the area had decreased to about 120 (Hagstofa Íslands n.d.).

While the farms are still based on sheep production, from the 1990´s afforestation has become an important aspect of the farming economy. This decrease in *Hérað´s* rural population is reflected in that of *Eiðar*. In 2009 the population of the estate was 34 making it the smallest village in eastern Iceland (Strandir.is 2008), and posed challenges to maintaining services and livability in the settlement.

Until the 1800's, facilities providing higher education were located almost exclusively in the southern part of the country. During the later part of the 19th century, as part of an effort to increase the level of education throughout the country, the government began to locate educational facilities in other regions. As a result of this effort a technical school specializing in agriculture was established on *Eiðar* estate. In his opening speech the school's principal, Father Ásmundur Guðmundsson, said the goals of the school were "*cultivation of the land and its people*" ("*ræktun lands og lýðs*"). In 1919 the curriculum was expanded. The school logo and slogan of the "*Three Ms*" was designed in 1958 by the school's principal, Þórarinn Þórarinsson. The "*Three Ms*" stand for *Mannvit* (Knowledge), *Manntak* (Responsibility) and *Manngöfgi* (Integrity). A grammar school was established at *Eiðar* in 1959.

In 1983, on the 100th anniversary of the school, the school principal, Þorkell Steinar Ellertsson, wrote the following words in a national newsletter describing what the school had done for so many:

"One who has once benefited from your embrace, will never be the same again, yet another and better... *Eiðar* forest is a symbol of the growth and maturation you offered so many..." (Ellertsson 2010, p.50).



Figure 18: Reindeer antlers shown on the logo of the Youth Association of East Iceland.

In 1941 *ÚÍA*, the youth and sports association of eastern Iceland was founded on *Eiðahólm* island. Among other activities, the association sponsored a sports meet for athletes from eastern Iceland. These meets were held in July and lasted over a weekend.

With the exception of the grammar school, classes were closed at *Eiðar* in 1998. The grammar school continued operating until the spring of 2009 when its doors also closed to students. Other roles played by *Eiðar* have gradually been closed or relocated. The annual sports meets were moved to *Egilsstaðir*, even the hydroelectric plant built in 1935 to provide electricity to the estate is no longer functioning.

This does not however mean that there is no activity on *Eiðar* estate. There is a vicarage and church where masses are still held. The church also sponsors a summer camp for children on the estate each summer. The former student housing now serves as a hotel during the summer months. The main school building is the site of plays, concerts and

Figure 19: The radio mast at Eiðar shown on the right of a photograph taken from the farm Ásgeirsstaðir *(2011).*



conventions. The newest addition to the area is a 220 meter tall radio mast. The mast can be seen from most areas of *Hérað* especially at night when its lights blink a rhythmical warning to aircraft and a reminder to *Hérað* of *Eiðar's* continued presence.

It is difficult to find an individual from *Hérað* who was never involved in some way with *Eiðar*. Many people, especially those older than 20 years, have emotional ties to the estate. Many of them spent their teenage years there and experienced some of the best times of their lives on the estate. Many return to *Eiðar* to relive memories while others go there to build new memories. If these experiences are to remain a possibility, it is of the upmost importance that *Eiðar* retains the vibrancy so evident in days gone by.

The municipality of Fljótsdalshérað is interested in reversing the decline of Eiðar estate. During the past few years, many different methods of doing this have been considered. Finally it was decided to use the Finnish village Fiskars as a model and a conference called "The Village" was held in 2009. During the conference it came to light that Fiskars is a small village (150 inhabitants) with an economy that was based almost totally on manufacturing. The manufacturing plant relocated forcing villagers to look for a new economic base. They decided to redefine their village going from manufacturing to a centre for high quality design and handcrafts. A cooperative exchange was set up between Fiskars in Finland and stakeholders from Eiðar. Sigurjón Sighvatsson, one of Eiðar's owners, held a lecture at the conference setting the direction for Þorpið (The Village). The emphasis at Eiðar is similar to that in Fiskars and is based on education in art and design.



Figure 20: Eiðar *school logo in Icelandic.*



Figure 21: Eiðar *school logo in English.*

Preventing decline

Projects to prevent or reverse undesired declines in either urban or rural areas have been going on for years and met with varying degrees of success. The three projects discussed below are examples of successes where communities, of varying sizes, were met with the challenges of redefining the area's major role. Not only do these serve as examples for others, but they provide clues as to what is necessary for such projects to be successful.



Figure 22: Carlsberg *tower in Copenhagen (2008).*

Carlsberg brewery was founded in 1847 in a rural area outside of Copenhagen. Since its founding, *Carlsberg* has grown to become one of the world's foremost breweries. The growth of Copenhagen and the city's inclusion of the brewery made it necessary to relocate the brewery to its present location in *Fredericia*, *Jutland*. Traditionally, the brewery's owners have shown great interest in the architecture used at the brewery and its surroundings. In order to prevent a decline of the vacated area, competitions were held for new designs and uses for the existing structures. The winning plans included using these structures for schools, Turkish baths and galleries. The old tower in the area continues to be a prominent landmark and the area's park will retain its former form. These changes will most likely have a positive effect on the market value of local housing (Petersen 2006).



Figure 23: Marzahn-Nord *in a suburb of Berlin (2008).*

After the fall of the Berlin Wall, it became necessary to provide housing for the influx of former East Berliners into West Berlin. Large residential areas such as *Marzahn-Nord* were quickly built. However these areas were for the most part abandoned by 2002 as former East Berliners, especially young people, moved to more attractive areas of Germany. The degree of this trend can best be seen in the age demographics for the area. It is predicted that by the year 2020 at least 25% of the areas residents will be over the age of 65 years. Apartment complexes, industrial buildings and even railway terminals and airports stood empty. Five hundred hectares were then available for redevelopment. Many of these structures were given new roles and others torn down and the sites redeveloped into large green areas to increase the quality of life for local residents and attract new businesses and residents. The success of the effort resulted in Berlin being accepted into UNESCO's "City of Design" network in 1999. Factors decisive in Berlin's inclusion were among others the emphasis on educational facilities for design students and the high level of cooperation between city council members and other policy makers. The importance of this cooperation to the success of the movement is illustrated by the movement's slogan, "*Alliances make use stronger*" (Overmeyer 2007, p.130).

Another example of redevelopment is found in the *Saxony-Anhalt* region of Germany. During the industrial revolution, there was considerable growth in the area; however the area is now in a state of decline. In *Bauhaus*, one of the regions urban areas, a project was set up to reverse this decline. The society is called "International Building Exhibition Urban Redevelopment 2010". It is a cooperative effort of 19 groups in the region. Although each group has unique problems, they work together to design and implement strategies addressing these issues thereby strengthening the region as a whole (Steglich 2010).



Figure 24: Bauhaus *in the* Saxony-Anahalt *region of Germany (2008).*

There is considerable variation in the scope of these projects ranging from relatively small areas such as the *Carlsberg* example to larger geographic areas like *Saxony-Anhalt*. However there are common threads running through all of these projects. Areas in decline and abandoned buildings such as those found in *Marzahn-Nord*, are depressing and can easily stifle any attempts at revitalization. Each of the projects listed countered this tendency by introducing new, fresh ideas for the areas.

There was also a strong emphasis in each on cooperative efforts, "*Alliances make us stronger*" (Overmeyer 2007, pp. 28-30). This factor no doubt helped ensure the success of redevelopment efforts. Another important factor was the attention given to the development of parks and other green spaces. As Gustavsson pointed out in the book, The Dynamic Landscape, "*Healthy towns need effective green-space networks and woodlands; not only to promote the health of human residents, but also to sustain wider biodiversity, promote water and air quality and to regulate climatic extremes*" (2008, p. 184).

Although *Eiðar* is smaller in scope than the areas discussed, there are commonalities in all the areas. Each area had become obsolete and in need of a new function or role in keeping with the changes in society. The empty buildings at *Eiðar* estate are no less depressing than those of *Marzahn-Nord*. It is therefore desirable to reverse the negative evolution of *Eiðar*, as was done in the other areas and create an optimistic attitude towards the area's future.

One of the factors that made the project in *Fiskars*, Finland a success was the beautiful surroundings of the village. Not only did the setting serve to attract people into the area, it also served as a muse to the designers and craftsmen. If the area surrounding *Húsatjörn* is properly designed and maintained not only will its potential as a recreational area be enhanced, but its ability to inspire future artists and designers will also increase.



*Figure 25: Aerial photograph of the study area. The top of the photograph is north (*Loftmynd ehf *2002).*

Húsatjörn **Lake**

Húsatjörn Lake had an important role in life at *Eiðar*. It was the site of many outdoor activities such as swimming competitions, ice-skating, blueberry picking, fishing trips and the tree plantings by the school's senior class men. No doubt it also served as a romantic meeting place. The lake continues to draw visitors for many of the same reasons.

The lake itself is rather small, roughly 500 meters long and somewhat less than 100 meters wide. The lake is close to the estate's housing area. The name *Húsatjörn* comes from the nearby sheep barns. Until the area was fenced, the sheep housed in those barns were free to roam the lake and its surroundings. (Icelanders practice open grazing and it is the responsibility of landowners to fence the sheep out of areas where they are not wanted.) In the summer of 1922, the school principal, Father Ásmundur Guðmundsson, entertained the national director of forestry, Kofoed-Hansen and showed him the area around the lake. At the time, there were very few fences in Iceland intended to protect forests (Blöndal and Gunnarsson 1999). As a result of this visit, *Húsatjörn* Lake was fenced in 1927. The fence was 1,000 meters long and was named "*The fence of Ásmundur*" (*Ásmundargirðing*) in honour of the principal. At the time, the idea of fencing an area to protect or grow a forest was considered odd at the very least. This attitude was expressed very well in a letter written the 9th of August 1927 by a teacher, Guðgeir Jóhannsson when he wrote:

"*Looking over the marsh west along the ridge, there is a brand new fence. It goes around the lake and the Húsatjörn-ridge. It is a forest-fence, of iron-pillars and iron-net. It may look cold. And the iron says to the birch and the willow only three words. They are: "You may grow". The birch and the willow have waited to hear these words for over a thousand years. The seedlings outside the fence can only dream of hearing those words: "You may grow". And if anyone walks there after a generation, then the tall, narrow birch branches will whisper three words: "We have grown"*." (Translation by author)

Icelandic

"*Ef horft er yfir "fitina" vestur um ásana, þá sést þar girðing alveg nýsett. Hún lykur um tjörnina og Húsatjarnarásinn. Það er skógargirðing, járnstólpar og járnnet. Það er ef til vill kuldalegt. Og járnið er stutt í spuna og segir við björk og víði aðeins þrjú orð. Þau eru þessi: "Þið megið vaxa". En einmitt eftir þessum orðum hefur björkin og víðirinn beðið í þúsund ár. –Ef einhverjum hefði verið reikað fram í móinn, þarna af götunni, sem liggur ofan að Lagarfljóti, þá hefur nýgræðingurinn einmitt verið að dreyma þessi orð: "Þið megið vaxa". Og ef einhverjum verður reikað þarna fram í móinn eftir mannsaldur, þá munu háar grannvaxnar bjarkirnar hvíslasat á, einnig þremur orðum: "við höfum vaxið*". (Þórarinsson 1983, p. 202.)

Archaeological sites

There are three known archaeological sites around *Húsatjörn* Lake. One is the ruin of a sheep shed from which *Húsatjörn* (House Lake) draws its name. It is located on the east side of the lake. Another is the remains of a stone fence on the south side of the lake. The ruins are known as *Geitagerði*, Goat-fence. The third, also a stone fence, is on the north side of the lake and is called *Uxagerði*, Ox-fence. Although it was used to house oxen, it was used for sheep (Þórarinsson 1983). During the fieldwork done for this project, a fourth site was located. It appears to be a burial site or a stone fox tramp (Stefán Þórarinsson 2011, pers. comm., July), but has yet to be examined by an archaeologist.

Mystical beings

There is no scientific proof of the existence of "*Hidden people*", elves and trolls, in or around *Húsatjörn* Lake. However almost everyone interviewed during the course of this project is convinced of their existence. "*Hidden people*" have been an important part of Icelandic tradition throughout history and the belief that "*Hidden people*" exist is not uncommon among modern Icelanders. Many rituals accompanying these traditions are still observed. For example, before disturbing a rock formation serving as a home to "*Hidden people*", an intermediary must negotiate an agreement with the resident "*Hidden people*". If an agreement is not possible, the plans calling for the disturbance are often reconsidered. Many people become extremely upset if the homes of "*Hidden people*" are threatened.

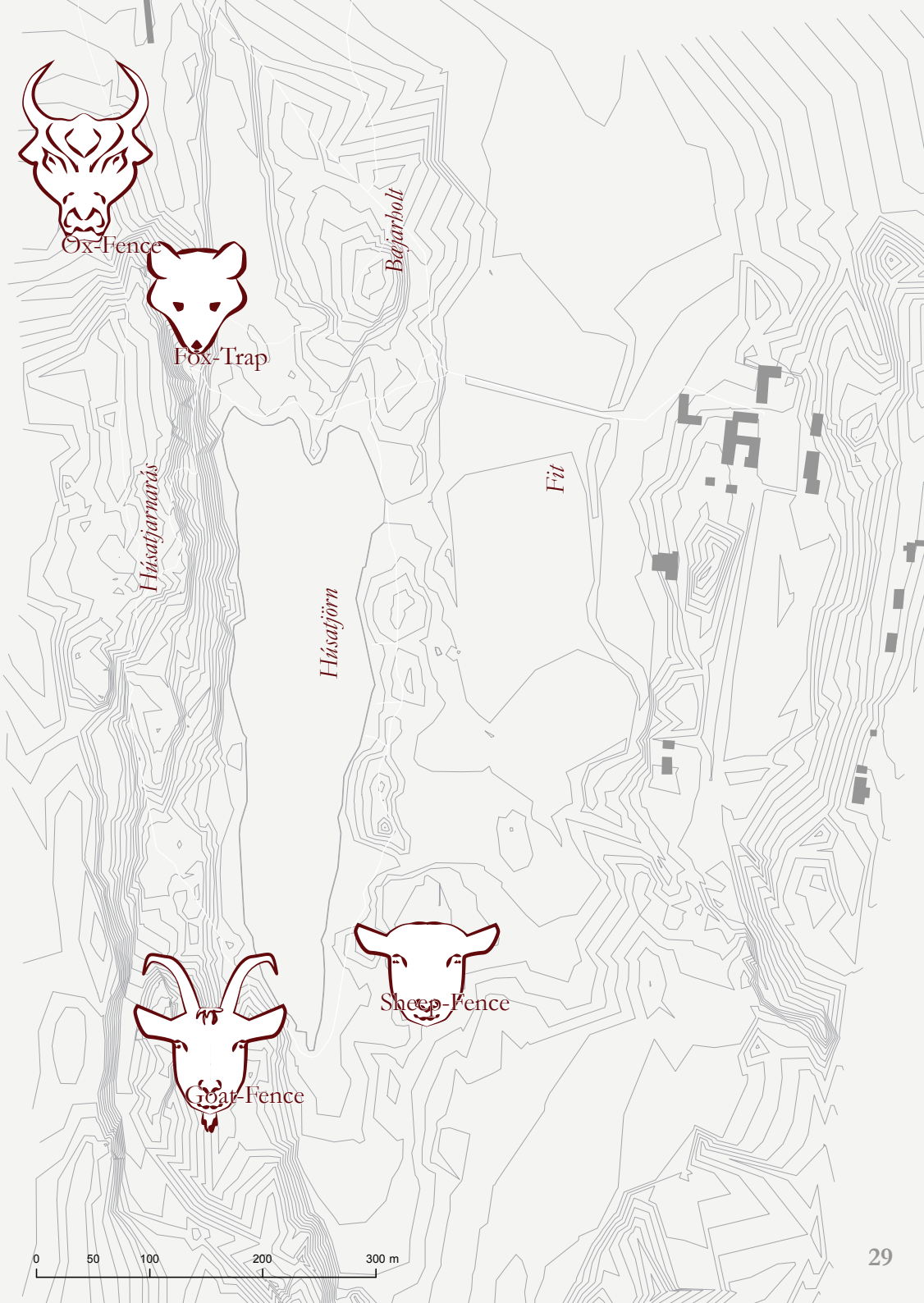


Figure 26: Map of the archaeological sites, identified by the relevant illustrations. These are old place names. Also shown are the current path system (white lines) and elevation lines (grey lines).

Defining the users of *Húsatjörn* Lake



Figure 27: (Previous page.) The lake is attractive for all ages. Shown on the picture is Sigurður Óttar Pálmason, enjoying the area around Húsatjörn *Lake (2011).*

Defining the users of *Húsatjörn* Lake

The sale of *Eiðar* estate did not give the owners free rein of the area. There are special provisions for the supervision as well as access to the area that must be observed. Several other persons have a stake in the estate's future. These, as well as the more casual users, are described below.

The custodians and stakeholders of *Eiðar* estate

The Icelandic government owned *Eiðar* estate while the school was in operation. In 1998 when the school was closed, the government gave *Eiðar* to *Fljótsdalshérað* municipality. In 2001 *Eiðar* estate was sold to a development company called *Eiðar* Incorporated. At present there are two separate groups involved in the development of *Eiðar* estate, the Friends of *Eiðar* consisting largely of former students, and a group from the art community. In the design of *Eiðar* estate and *Húsatjörn* Lake it is necessary to take the desires of both groups into consideration. The importance of doing so was well put by Williams and Stewart (1998) when they wrote: "*To know the politics of an issue, one must know the politics of the place.*" (p. 22). Both of these groups have a vested interest in *Húsatjörn* Lake. By designing this area and then incorporating the cooperative participation of both groups, it may be possible to foster the beginnings of the type of alliance so important to revitalization. It is therefore critical in the design process to include elements attractive to both groups and attempt to prevent possible conflicts.

Eiðar Incorporated is owned by Sigurjón Sighvatsson and Sigurður Gísli Pálmason. They are film producers and large scale investors. Both are deeply concerned with nature and historical preservation and feel the Icelandic government has abused the country's resources for purposes contrary to the welfare of the public. Their visions are clearly evident on the website *www.framtidarlandid.is* (Iceland's Future) (Þorsteinsson 2007). On the website Sighvatsson, one of the owners, wrote of the importance of the land and resources belonging to the people and for their allocation to be decided by the public.



Figure 28: Profile sketch of Sigurjón Sighvatsson (2010).

"*The most precious thing Icelanders have is the land itself. Given a totally transformed world, it is vital for us to stop and reconsider before more power plants are built. Let the penalties paid by other nations be our warning.*" (Translation by author).

Icelandic

„*Dýrmætasta eign okkar Íslendinga er landið sjálft. Í ljósi gerbreyttrar heimsmyndar, er lífsnauðsynlegt fyrir okkur að staldra við áður en lengra er haldið í virkjana- og orkumálum. Látum víti annarra þjóða verða okkur til varnaðar.*" (Þorsteinsson 2007)



Figure 29: Profile sketch of Sigurður Gísli Pálmason (2010).

Sigurjón Sighvatsson had previously invested in the protection of two protected areas, an island and a fjord, and several historically significant buildings. Two of the buildings in *Seyðisfjörður* were reconstructed and a third is underway. The residents of *Seyðisfjörður* are quite pleased with this effort (Björt Sigfinnsdóttir 2011, pers. comm., April). Sigurður Gísli Pálmason constantly stresses the importance of art to the definition of a country. He feels the arts are no less important to a sense of nation than are its currency and language.

Sigurjón and Sigurður saw *Eiðar* as an area of historical importance with the potential of becoming an important centre for the arts. They stressed the fact that there are no quick solutions to the further development of *Eiðar*; the process will be both difficult and time consuming. An architect, Steve Christer owner of the Icelandic firm Studio Granda, was commissioned to develop a master plan for the buildings and their immediate surroundings. This plan consisted of a community of artists and an art school. *Húsatjörn* Lake and its surroundings were defined as *protected area* and therefore not included in these plans (Christer 2008).

The sales agreement between the district government and *Eiðar* Incorporated was signed on the 31st of July in 2001. The agreement itself contains a list of obligations that *Eiðar* Incorporated must fulfil in order to retain ownership of the estate. These obligations concern the maintenance and development of the area as well ensuring the public's continued access to the estate. The agreement extended the custodianship of the estate's forests, begun in 1978, of the Icelandic Forest Service. Article nine of the agreement, stipulates that *Húsatjörn* Lake will be preserved and that it is the duty of the owner to provide footpaths accessing and surrounding the lake for the use of the public (Municipality Austur-Hérað 2001).

Despite the establishment of *Eiðar* Incorporated specifically for the preservation and development of *Eiðar* and the past successes of *Eiðar* Incorporated projects, such as that in *Seyðisfjörður*, the sell of *Eiðar* was controversial and the majority of the public opposed it (Haraldsdóttir 2005).

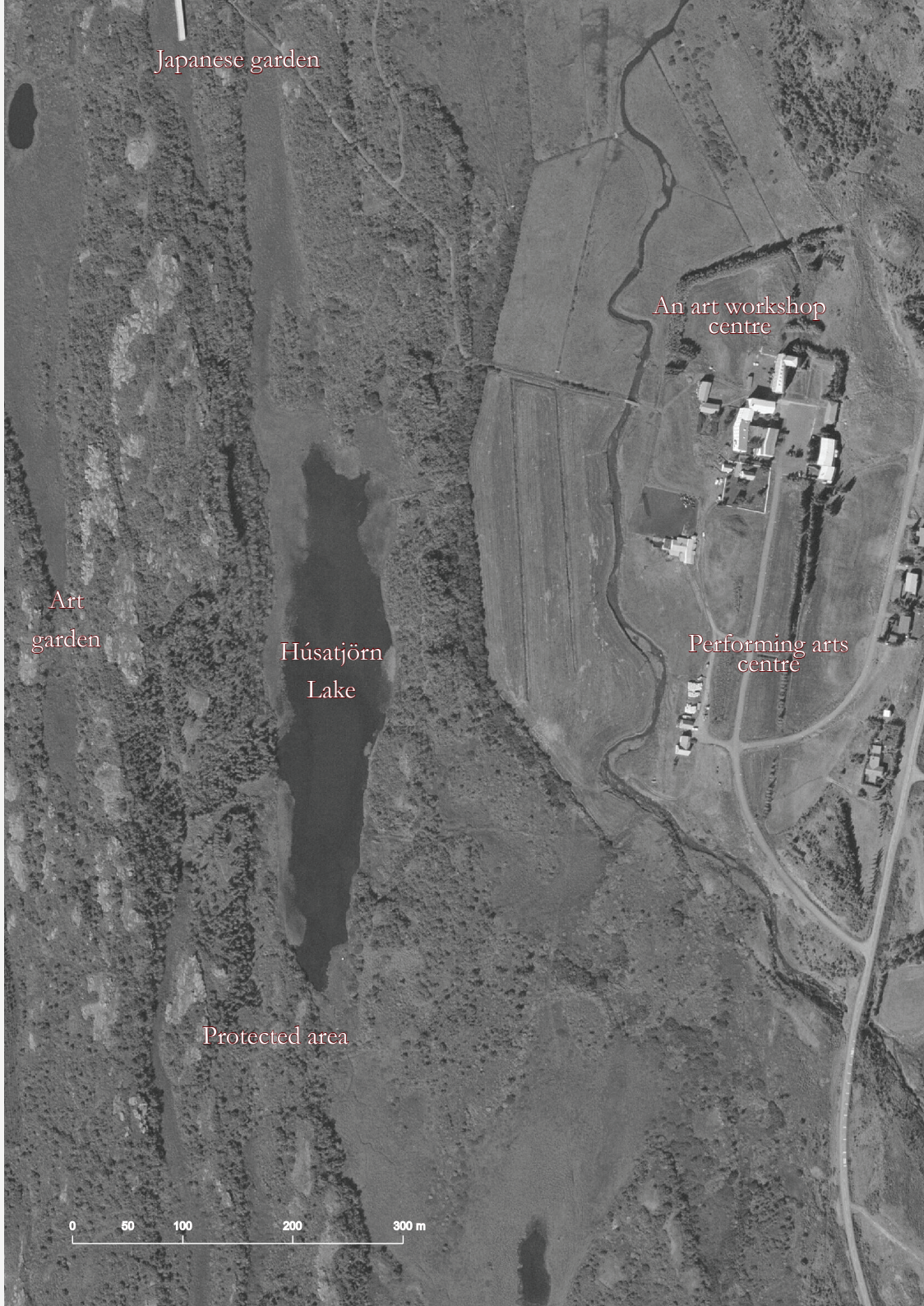


Figure 30: Overview of the study area showing the proposal by Studio Granda from 2008 (Loftmyd ehf. *2002)*.

There were several main areas of contention. One commonly voiced opinion was the selling price of the estate was far too low. The agreed price for the estate was 33,000,000 Icelandic kroner, which was considerably below market value. Sigurjón Sighvatssson attempted to justify this, stating there was no one else willing to invest in the development of the estate. This however was not the case. There was another interested party who had begun negotiations with the district government. This fact is directly related to another objection to the sale. The bid from *Eiðar* Incorporated was not placed until after the deadline for bidding was long over. Perhaps the most important reason for the public's dissatisfaction was the feeling that *Eiðar* estate, an area with a deeply ingrained sense of place for many, was being taken from them. This may in some way be correct, but there are two things that should be taken into consideration. First are the conditions set forth in the sales agreement, specifically those demanding the upkeep and development of the area and continued public access. The second is the fact that with changes in the educational system rendering the school obsolete, it became necessary to find a new role for the estate and under the sales agreement, the new owners are obligated to work with the local government to do so.

Friends of *Eiðar* Association

During the period of 1921-1940 there was an active association called the *Eiðar* Association. When the school closed, this group was reorganized and became known as Friends of *Eiðar*. The group consists of former students and other interested parties. The group was formed to promote the development of the estate. Together with *Eiðar* Incorporated the group opened a museum in one of the former classrooms marking the 115 years *Eiðar* served as an academic institution. It is likely this group will continue its efforts to improve the estate.

Tourists

Tourism is an important part of the Icelandic economy. In 2010 there were 495,000 foreign tourists (Ferðamálastofa 2010). Most of these, about 92%, arrived by flights landing at in the country's largest airport in *Keflavík*. About 3% arrived by a ferry that docks in *Seyðisfjörður* in eastern Iceland and the rest came through *Reykjavík* and *Akureyri* (Ferðamálastofa 2010). Tourism in Iceland is limited almost entirely to the summer months (Ferðamálastofa 2010).

Iceland is small in area and the preferred method of travel for both foreign and domestic tourists is by tour bus or car. There are also some tourists who chose to travel by bicycle. Many tourists go by what is called the Ring road, *Hringvegur*. The Ring road is Iceland's major highway and as its name indicates circles the country. The entire ring is only 1,332 km. long. The most common pattern of travel takes several days to complete the ring. Along the way there are numerous hotels and guest houses similar to the hotel found on *Eiðar* estate.

Research done in *Hallormsstaður* National Forest, in *Hérað*, showed Icelanders have a similar travelling pattern to foreign guests. The main difference being that Icelanders tend to spend their nights in summer cottages or caravans close to urbanized areas, dwelling for longer periods in the same place. The cottages and caravans are used as bases from which day trips to various points of interest are made (Curl 2008). In 2010 *Edda Hotel* in *Eiðar* reported having well over 3,000 guests. Of these 68% were foreigner and 32% Icelandic (Bryngeir Daði Baldursson 2010, pers. comm., July).

In both cases, guests utilized the areas surrounding their accommodations mainly during the early mornings and late evenings. The existence of an attractive area for leisurely walks or other recreational pass times is an important factor when choosing accommodations.

There are additional stakeholders at *Eiðar* estate. The summer hotel and estate residents were already mentioned. To this list must be added horseback riders, a summer music school run by Charles Ross (2011, pers. comm., June), a summer art program for young people, a summer camp for handicapped children (Anna Kristín Magnúsdóttir 2011, pers. comm., July) and local boating enthusiasts.

Considering the diversity of expectations for *Eiðar* estate's future, conflicts are inevitable. However these need not impede progress towards defining *Eiðar's* future role. Figure 31 shows the various user groups and their power for effecting change.

THE POWER/INTEREST GRID

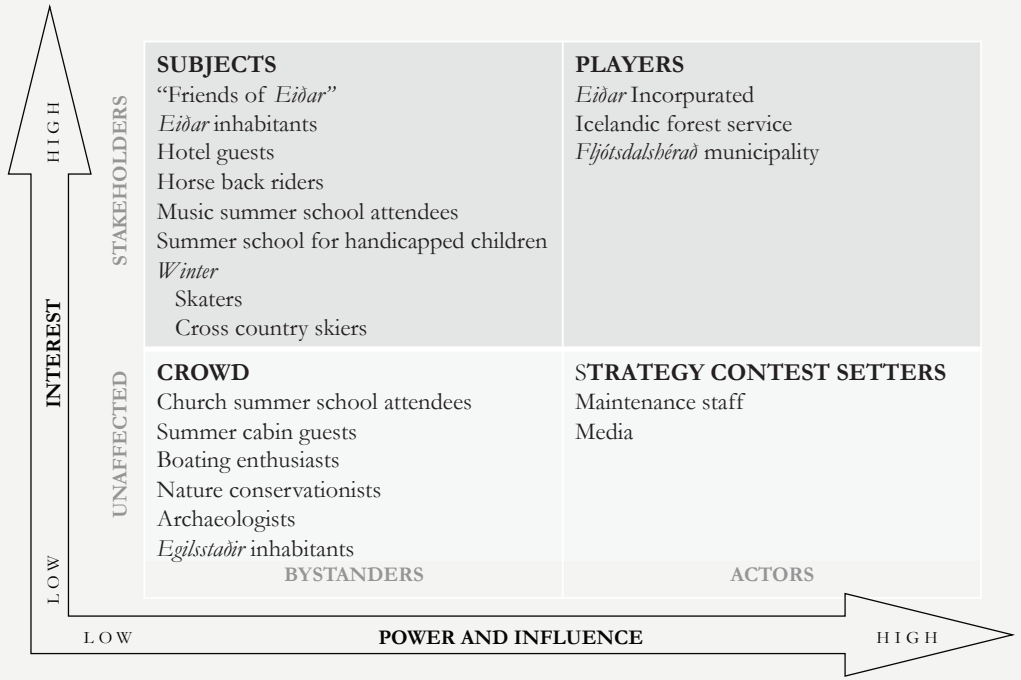
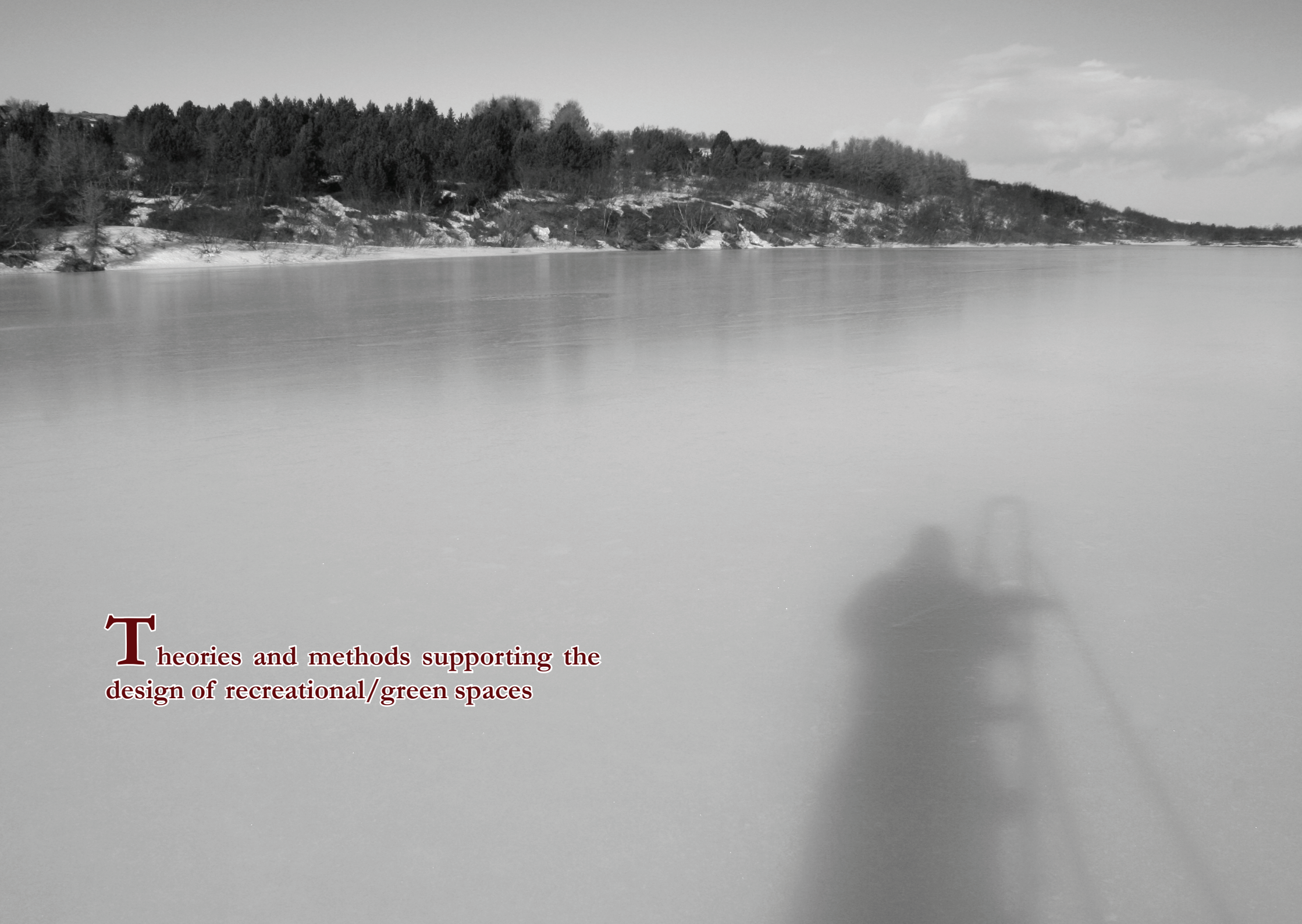


Figure 31: Power and interest grid for the stakeholders of Eiðar estate (based on Eden and Ackermann 1998).



Theories and methods supporting the design of recreational/green spaces

Figure 32: (Previous page.) The author´s shadow mirrored in the ice on Húsatjörn *Lake (2011).*

Theories and methods supporting the design of recreational/green spaces

In any recreational/green space design project, there are several common elements that must be taken into consideration. These include, but are not limited to, the definition of the design area, the natural and cultural characteristics, and last but not least the expectations of the area's stakeholders and both its present and potential users. Since the first attempts to provide green spaces for public use, such as de Alamed de Hércules in Seville 1574 (Azahar sevilla n.d.) Prince's Park near Liverpool in 1842 and Central Park in New York in 1857 (Rosenzweit and Blackmar 1992), many tools and techniques have been added to assist designers that make the planning process more productive. These changes include improved computer programs and photographs, analysis techniques for understanding the physical and natural aspects of the area and a greater understanding of the influence of these factors on the psychological wellbeing of an area's users. The literature in these fields is vast. Below is a brief overview of elements used or that influenced this design project. The overview is divided into sections as they were used in this project. These include: technical aspects, forest landscape analysis, social landscape analysis and planning methods.

Technical Aspects

Use of computerized Geographic Information Systems (GIS)

The term geographic information system (GIS) simply stated is any method by which information pertaining to a specific piece of land is stored (Björn Traustason 2010, pers. comm., Feb.). Work on the development of computerized GIS systems began in the early 1960's. Originally this work was done mainly by cartographers, computer scientists and other physical scientists. However as the software improved and computers became more powerful, scientists and practitioners from a myriad of disciplines became interested in GIS software systems. Since that time there have been huge improvements in this software. Not only were the software and hardware improved, but also the photographs used as a background for much of the work were greatly improved. This enabled the use of GIS for projects dealing with smaller land areas than was possible in the beginning (Coppock & Rhind 1991). The ease with which data can be manipulated and revised within the software allows landscape designers a great deal of freedom and a good overall view of their designs as they work.

Ian L. McHarg (1992) described a typical way in which a landscape designer might use GIS. Each area map consists of various "levels". Each of the levels represents some aspect of the design area for example vegetative type. The various segments on that particular level of the map represent a vegetative type and are digitised into polygons. Those characteristics of the vegetation deemed pertinent to the design are entered as data connected to the appropriate polygon. There can be as many levels as the designer(s) feel necessary to the project. GIS software allows the designer(s) to turn on and off the various levels and make spatial queries. Specific elements of the design itself can be evaluated using the same methods. Combined, this allows the designer to readily "see" various aspects of the design that may otherwise prove difficult to conceptualise (Steiner 2008).

While GIS software is an invaluable tool for manipulating data, and both computer software and various types of photography are important in the visualization of an area or concept, in and of themselves, they are incapable of analysing an area in regard to the human experiences of an area such as scenic value, wonder, relaxation or excitement. These must be analysed by the designer before they can be incorporated into the computer map. Fortunately methods for analysis of natural, physical and human aspects have evolved greatly since the times of early designers. Some of these methods are described in the following text.

Photography as an analytical tool

Photographs are important tools for landscape designers; however there are ways to enhance their inherent abilities. Frederick Steiner (2008) described some of these methods in his article. A commonly used method involves photographing various elements in an area and then asking for the reactions and opinions of area users. This can be done either in person or through the post on an individual or group basis. One of the more interesting methods mentioned in the article entails providing users with a camera and having them take pictures of things that fascinate them in the area. These are then viewed with the designer and the reasons for the users' fascination discussed. This method is interesting because it allows the designer an inroad into the mind's eye of the users.

Another use for photographs is temporal. By comparing older black and white photos with recent black and white photos shot from the same angle with as close to the same lighting as possible, the designer may given an insight into the evolution of an area over time (Treib 2008).

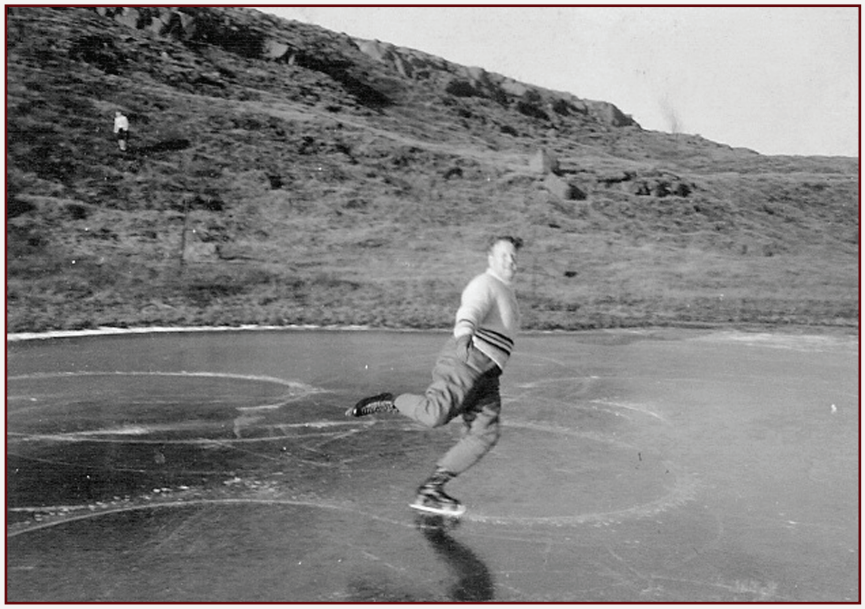


Figure 33: Eiðar school principal Þórarinn skating on Húsatjörn *Lake in 1950 (picture owned by Stefán Þórarinsson, photographer unknown 1950).*

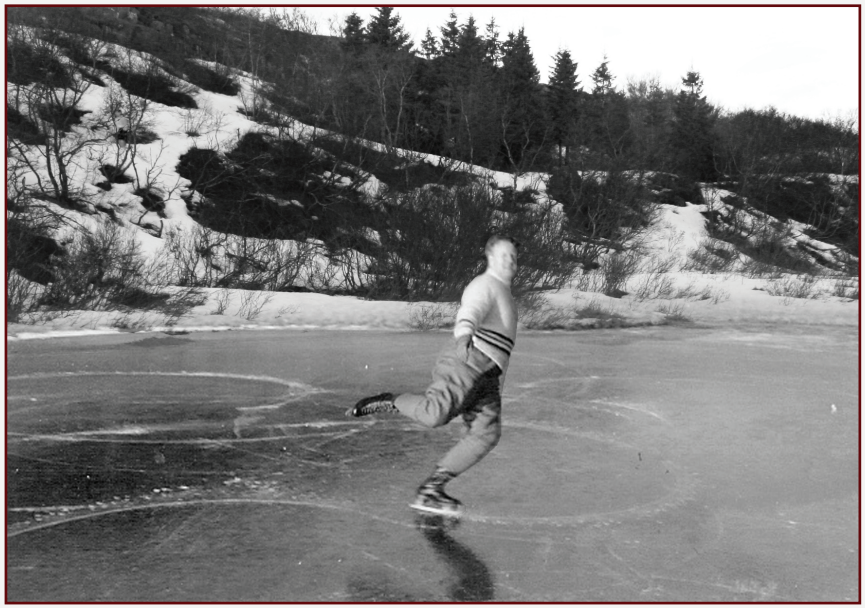


Figure 34: Þórarinn skating on Húsatjörn *Lake, as it would look in 2011 (Unknown, 1950 and author 2010).*

Serial-vision

Serial-vision is a concept introduced by Gordon Cullen in his book, *"The Concise Townscape"* (1971). Serial-vision is used to illustrate viewpoints from a specific direction such as the direction followed by those travelling a footpath. He used photos and sketches to capture viewpoints on the journey from one point to another (Cullen 1971). Jarvis describes the results thusly:

"The essential value of Cullen's approach lays in its uninhibited, personal and expressive response to space. For instance, Cullen mingles aspects of spatial analysis with poetic evocation…Landscape is categorised in order to bring clarity of visible patterns without regard to function on a small scale." (1980, p. 26)

Photographers are capable of greatly influencing finished pictures. For example they can put the lens behind a branch adding a deeper perspective. Photographs can be taken at different times of the day, or year, to capture the image in different lighting or weather conditions.

Photographs are only two-dimensional, the human brain provides the third. However experience of place is not relegated to sight alone. The interaction of the sum of all five senses and the associations made in the mind produces the experience. Therefore additional methods must be used to collect and analyse the missing data.

Forest Landscape Analysis

"Forestry is the science, art, business and practice of conserving and managing forest lands to provide a sustained supply of forest products, forest conditions, or other forest values desired by the forest owner (cf. Ford-Robertson, 1971)." (Kimmins 2004, p. 14.)

The public generally classifies forestry into at most two branches, wood production and conservation (Curl 2008) whereas according to Kimmins forestry is divided into four branches. The first is exploitation, the second administrative, the third ecologically based forestry and lastly social forestry (Kimmins 2004). Foresters manage all kinds of landscapes and landforms for various purposes. These are often public lands managed for multiple uses to such a degree that the main use is difficult to identify without prior knowledge.

Of the management goals identified by Kimmins, social forestry places a greater emphasis on people. Research shows that providing physical and psychological benefits to individuals via well-designed forest parks and recreational areas has a positive influence not only on the individuals themselves, but also the community at large (Curl 2008).

The goal of a forester designing a forest park or other recreational area is to provide an area that is as natural as possible where main the design is nature itself. To achieve that goal, the social forester uses both *"soft"* materials such as plants whereas the use of *"hard"* materials such as bridges, stairs and other noticeably man made elements is severely limited (Hendee and Dawson 2002). This is done to ensure that the experience is derived from nature itself. Landscape architects however, are not restricted to designing exclusively for nature-derived experiences. The lines that may have once been clear between landscape architects and forest planners have become less pronounced as the demand for multipurpose management of most forests has increased (Bell and

Apostol 2008). As urban centres continue to grow, so will the necessity of multipurpose management of urban forests and green spaces.

Forest Types

Woodlands can be divided by any of a number of approaches and subdivided into numerous categories. For example the forest surrounding *Húsatjörn* Lake can be described as a: woodland pasture, coppice woodland, shelterbelt or grove. Each of these can be further divided into layers such as shrub layer and canopy layer. As with any design or management project, the categories used and extent of detail included as divisions depend on the goal(s) of the project.

Bo Larsen divides Danish forests into 94 forest types in his book *"Naturnær Skovdrift"*. Eighteen of the most common types were carefully described by tree species, maintenance protocols, moisture, and soil nutrition and further classified by the value of each component.

Another of the description methods is the sustainablity triangle (dan: bæredygtighedstrekant), where the values for recreation, timber production and biodiversity are rated and the outcome shows the rate of sustainability of the forest stand (Larsen 2005).

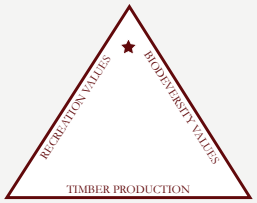


Figure 35: Larsen's sustainability triangle. The area around Húsatjörn *Lake is shown with a star (2005).*

This method is suitable in many forested areas in Iceland, especially those like *Hallormsstaður* forest where the forest must fulfil all three goals. Although *Húsatjörn* Lake has great recreational and biodiversity values, there is little or no timber suitable for sawmills in its forest and it is not considered a timber forest. Therefore Larsen's sustainable triangle is not a relevant tool for *Húsatjörn* Lake. It is more appropriate to design and plan the area with the main value as recreation and for the secondary value of forest reclamation.

Social landscape analysis

All human experiences are based on the interpretation of the stimulation of one or all of the five senses and the associations made by an individual to those stimuli. Therefore there is a large psychological component to any experience. Each individual interprets their experiences of an environment based on their memories, expectations and cultural upbringing. While the designer should take these factors into consideration, it might prove impossible to incorporate them all into an area's design. Therefore, the designer must make a conscious decision regarding which factors to include or omit from their design. In the case of *Húsatjörn*, the users form a relatively homogenous group and problems of this type are minimal. Much research has been done in Europe and North America on the effects of the environment on physical and mental well-being. Not only have these benefits been described, but also those elements and characteristics of the environment that make an area inviting and provide users with a positive experience were identified.

Fears and preferences

One such study done by Kaplan, Kaplan and Ryan discusses methods of manipulating an area to decrease possible fears that prevent individuals from using an area as well as those characteristics most widely preferred. The fears discussed by Kaplan *et al.* are mainly related to animals and other humans that could cause bodily harm (Kaplan *et al.* 1998). This is not an issue for Icelandic users and foreign users are usually aware of the absence of these types of threats in Iceland. There is however a tendency for some Icelanders to become uneasy when surrounded by elements in the environment such as cliffs and tall vegetation. The lack of a relatively clear field of vision makes them fearful of losing their way (S. Curl 2011, pers. comm., July). Therefore the design for *Húsatjörn* Lake should provide for adequate visual access and clearly distinguishable footpaths. The second fear discussed by Kaplan *et al.* (1998) deals with familiarity of place and is very closely related to the first. Therefore any design measures taken to alleviate the first also address the second. The third fear is again closely related to the other two and deals with the possibility of personal harm. Elements in the environment such as vandalism or other destruction caused by humans can increase this fear (Kaplan *et al.* 1998). There is little or no evidence of the destructive actions of people in the area of *Húastjörn* Lake. These last two fear factors do not merit special attention in the design of *Húsatjörn* Lake.

The restorative experience

Kaplan *et al.* go on to list five different preferences for areas. These are coherent areas, smooth ground, mystery, a sense of depth and open spaces. Most of these preferences are already found in the area surrounding *Húsatjörn* Lake. The design plan will be done in a manner that retains and in some instances increases areas containing these preferred attributes. For example the path surfaces nearest the buildings were designed for easy access by older and handicapped persons, and families with small children. Guidelines for meeting this type of design challenge have been developed such as those found in *"Design for Outdoor Recreation"* (Bell 2008).

Many studies have been published regarding the psychological benefits of recreation in natural and semi-natural areas. There are several attributes listed as necessary for an area to provide users with these benefits. The leading work in this area was done by Kaplan (1995). He lists the following attributes as necessary:

- A sense of being away- By this he does not necessary mean physical distance, but rather a change in environment that is different enough from an individual´s day to day environment to produce a feeling of being away.

- Fascination- Fascination is the presence of a stimulus in the environment that can hold attention without causing problem solving thoughts.

- Extent- By extent Kaplan means an area complete unto itself. An area need not be large to be complete.

- Compatibility- Compatibility is the area's ability to allow an individual to perform their desired activity without monitoring their own behaviour or that of others.

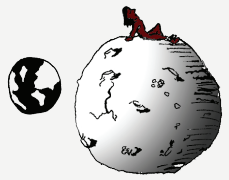


Figure 36: Being away, rather like being on the moon (2011).



Figure 37: Fascination, admiring birds (2011).



Figure 38: Extent, being in a world in and of itself (2011).



Figure 39: Compatibility, being able to read and run at the same time without incident (2011).

Eight Room characteristics

Another study done in *Alnarp*, Sweden, by the Department of Landscape Planning, showed that parks with separate rooms, or demarcated areas with different characters were more popular than those without clearly separated spaces that offer a limited number of experiences for park users. Eight types of rooms were identified, as were the characteristics of each room. The method was used by Stigsdotter and Grahn (2002) to show these differences and the characteristics of each room. This method is very similar to the Recreation Opportunity Spectrum (ROS) developed by Clark and Stankey for assessing the ability of landscapes to provide specific recreational experiences (1979).

Recreation Opportunity Spectrum (ROS)

The Recreation Opportunity Spectrum approach was developed by Clark and Stankey (1979) as a method for categorizing different areas with regard to the type of recreational experiences they are capable of providing as well as offering guidelines for the amount and type of infrastructure that can be used in the area without detracting from the quality of the visitors' experiences. The spectrum as used by Clark and Stankey was designed to include areas ranging from highly improved campgrounds complete with showers and other amenities to wilderness areas where any signs of human works is undesirable. By using the spectrum, it is possible to ascertain what type of experience is available in a given area. Hendee and Dawson have described ROS as a system of macro management (2002) and the method is widely used throughout the world (McCool, Clark and Stankey 2007). An example of the original categories and standards are shown in figure 40 (Hammitt and Cole 1998, pp. 211-2). The standards and categories used in the original ROS system are easily adapted to various land areas, and desired area uses and experiences. An adaptation of ROS is a helpful tool to demonstrate the different characteristics of the area surrounding *Húsatjörn* Lake.

In a national survey done for the Icelandic Forest Service (IMG Gallop 2004) the main benefits sought by visitors to Icelandic forests were restorative and social. The same was found in another study done in 2005 (Curl and Jóhannesdóttir). The characteristics and potential uses of the rooms from Stigsdotter and Grahn (2002) can easily be categorized as capable as falling into one, and in some cases both of these categories. When these are compared to Kaplan's works (1998; 1995), and his criteria for restorative environments as well as reducing possible anxiety in users, a pattern appears that can be used to adapt the ROS system for use in planning an area such as *Húsatjörn* Lake.

The forest and landscape data collected from *Húsatjörn* Lake was analysed using this revised ROS system to show which areas have the greatest potential for being planned and enhanced to provide either restorative, social or learning experiences. The GIS system also aided in detecting possible conflicts between uses and locating fragile areas where special measures are necessary to mitigate negative impacts on the area nature.

Physical Settings	Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Remoteness	3 miles from any interstate, county or BLM system roads or isolated by topography	1 mile from interstate, country or BLM system roads, or isolated by topoftaphy	At least 1/4 mile from interstate or state roads	May include areas within 1 mile of interstate, state, country or BLM roads	No distance criteria	No distance criteria
Minimum size	5,000 acres	2,000 acres	1,000 acres	No size criteria	No size criteria	No size criteria
Evidence of Humans	Essentially unmodified natural environment	Natural setting with some subtle modifications	Natural setting with moderate alternations	Natural setting with easily noticed to dominant modifications	Modified natural setting with dominant modifications continually noticeable	Structurally dominated setting with natural elements subordinate
Social Setting						
User Density	Less than 6 parties encountered per day on trails. Less than 3 parties encountered in camping areas	Less than 15 parties encountered per day on trails. Less than 6 parties encountered in camping areas.	Low to moderate encounters with other parties	Moderate to high frequency of encounter with other parties	High frequency of encounters with other parties	Near constant encounters with other parties
Managerial Setting						
Managerial Presence	Very low level of onside management	Onsite management is present, bur subtle.	Onsite management is present, but subtle	Onsite management is noticeable, but designed to blend with the natural environment.	Onside management is obvious, frequently blending with the natural environment	Onsite management is obvious and numerous

Figure 40: Recreation Opportunity Spectrum (ROS) classifications (British Columbia Land Management Bureau 1998, p. 13).

Visual environmental analysis

Sherlock Holmes: *"My dear Dr. Watson, you have a remarkable talent for observing the obvious"* (A. Robertson 2010, pers. comm.).

Perhaps Dr. Watson used some special technique to observe the obvious, but are things as obvious as they seem?

For most people, eighty-seven percent of their perception of an area is a response to visual stimulation. The remaining thirteen percent of human perception comes from the other four senses (Bell 2010). While elements in the environment such as the surface on which you walk, the berries you just put into your mouth, the fragrance of blooming flowers at the side of the path and the songs of the birds are minor, none the less they are important contributors to the total experience. A literature search showed that this fact has not been lost on researchers and designers.

In the literature however, emphasis is placed almost completely on visual components. Simon Bell (2004) emphasizes the importance of identifying landscape dynamics, the interactions of various elements, and including these in the visual analysis of the landscape. The visual vocabulary is used to graphically depict and explain singular elements in the landscape. Most simply, these elements are represented by points, lines, planes, volume and combinations where different elements meet (Bell 2004). However these are only the basic elements and can give the impression that the landscape is Euclidean and stagnant. More complex and dimensional representations are necessary in the visual vocabulary. These include elements such as texture, lighting and time that in combination produce visual forces or *"movement"* in landscapes. McHarg explained this process well when he wrote:

"If you multiply simplicities, the result is uniformity; the product of complexities is diversity, and so it is found in examining the respective environments." (1992, p. 119).

Kevin Lynch (1960) described an approach similar to that of Simon Bell when Lynch described city images and their elements. Another method used by Ritter described a method of landscape analysis based on visual and ecological elements (2005). While Bell spoke in broad terms, Ritter described ecology on a landscape scale and Lynch described cities, the theory behind their works is based on the same elements. These elements are shown in Figure 41.

The visual environmental analysis for *Húsatjörn* Lake was based on these three methods. Fundamental viewpoints in *Húsatjörn* Lake were be analysed using the same or similar techniques as Lynch, Bell and Ritter.

Lynch's city elements	Bell's broader approach	Ritter's ecological elements
Landmarks	Points	*Units*
Paths	Lines	*Buffer zones*
Districts	Planes	*Patches*
Edges	Volume	*Boundaries*
Nodes	*Combination of elements*	*Ecotomes*

Figure 41: Three different techniques with five analytical descriptions each (Lynch 1960; Bell 2004 and Ritter 2005).

Public participation

Lawson (2006) points out the frequent existence of a gap between designers and users. The gap is formed when the users are not the clients or when no contact existed between the designer and users. This results in a final design that does not fulfil the wants or needs of the end users. To ensure the utility and attractiveness of a design, the designer must make an effort to involve the users. While this involvement does not entail the users actively drawing designs, their desires must not only be heard and understood by the designer, but including in the final project design. This understanding of the users' desires comes from contact between the two. There are many ways to involve users in the design process ranging from written surveys to in-depth interviews. In the case of *Eiðar* this was particularly important because there are so many people who care deeply about the area.

Planning approaches

As the number of areas designed specifically for use as green/recreational spaces increased, it became increasingly evident that while *"In design, problems may suggest certain features of solutions, but these solutions in turn create new and different problems."* (Lawson 2006, p. 118). This realization resulted in the development of numerous approaches to the design process and the realization that it is often best to apply more than one approach to a project area.

Landscape Laboratories

The concept of landscape laboratories was put forth by Gustavsson (Nielson 2011) and met with great interest in the Nordic countries. This concept is an innovation on classic forestry trail lots planted for the purpose of observing specific characteristics of various trees. By increasing stand size to include various elements of a forest landscape and varying species within the laboratory area, the area provides unique opportunities for long-term observation and experiments. If the desired elements are not found on the site of the laboratory, they can be reproduced to increase the potential for experimentation and observation (Nielson 2011). When such laboratories are located close to hand it promotes their use for other acceptable uses such as education and research (Jensen 2006).

Landscape laboratories located in different areas and designed by different groups will vary, as do the questions of interest. Where many of elements of the landscape laboratory will be transient, there are some elements that must be designed beforehand such as what landscape types and which tree plantings to include as the foundation of the laboratory. For example Jensen suggests four different scenarios pertinent to Nordic questions. These are:

- Monoculture: indigenous tree species to be studied in pure stands containing only one crown layer

- Simple mixtures of 2-3 species: the planting times or growth rates vary to include multiple crown layers

- Mixed plantations with up to 15 tree species and multiple crown layers

- Different planting densities to provide a marked difference in crown cover (2006.)

This concept can be incorporated into green space planning in urban or periurban green spaces. Doing so promotes the area's use not only searchers, but also the public. In cases such as Iceland, and other areas where the forest resource is scarce, it also maximizes the use of the forests. Another potential advantage of placing a landscape laboratory in one of these forests is if these forests are being utilized for long-term experimentation it might prevent the land from being

rezoned for other uses. The landscape laboratory concept is not only an establishing approach; it can also be used in designing and managing an existing forest landscape.

Creative design and management

Creative landscape management is a method where the design itself has neither an actual beginning nor an end. It is a design principle for a dynamic landscape where the only limitations are those of the imagination. Creative management can be totally different from traditional planting, pruning or thinning. There are however two principles that need to be followed. First, it is important that the design overseer has as good knowledge of botany. Second, the designer must have a continuous watchful-management protocol allowing for constant development of the design and has no predetermined outcome in mind. When using creative design, the manager has to be highly attached to the project to promote the implicitly interwoven and delicately structured development of the area. The goal is not only to produce a landscape that is aesthetically pleasing, but one allowing other desirable aspects such as increasing bird and insect life. Another positive outcome is the satisfaction that comes from doing something positive for nature.

Children are excellent creative designers. When children play in a woodland, they often take advantage of existing elements to make shelters/refuges and other constructions for their own enjoyment. Children also make their own path systems and choose favourite trees to climb (Gustavsson 2008). This results in what can be considered creative, dynamic recreational design.

Húsatjörn Lake is in a constant stage of development and creative management after a fashion has been going on since the area was fenced. Students, teachers and others have shaped a primitive path around the lake, tree stands were planted and pruned and some infrastructure was put into place using materials from the forest. In 2007 two volunteers came from *Reykjavík* expressly to work in *Húsatjörn* for few weeks although they had no previous connection to the area, nor were they instructed as to what to do (Gústaf Jarl Viðarson and Sævar Hreiðarsson 2010, pers. comm., Dec.). It is often a positive thing when people want to be involved in a public area. However in some cases it can be harmful and even result in permanent damage. For example if a stand is pruned so heavily that wind more easily gets under the canopy and reduces the shelter in an area. Another example is if the soil is disturbed, rainwater could cause erosion. Very often people's attention is drawn to negative aspects in an area rather than the positive and people are more tolerant of negative aspects, or damage caused by nature then they are by those caused by humans (Whittaker 1992). The existence of a design plan for an area can help prevent actions from being taken in an area that have unintended negative effects on the area and/or its users yet still allow for hands on involvement with the site.

The various methods discussed above are only a few of those available to designers. However these are the ones chosen by the author for use in developing a design for *Húsatjörn* Lake. The following section shows how these were utilized and in some instances combined to analyse and design the project area.



Methodology

Figure 42: (Previous page.) The crane´s bill (Geranium sylvaticum) harmonizes well with the larch (2009).

Methodology

Each recreation/green space is unique having its own physical and natural characteristics that the designer must work with and at times around. Also the expectations and desires of users vary from one area to another. Because of this variation many methods for analysis for the design process have been developed. One of the challenges of designing these spaces is to choose and adapt those methods best suited to meet these challenges. Below is a discussion of how various methods were used to analyze and design the area around *Húsatjörn* Lake.

Demarcating the study area

Húsatjörn Lake is only a small part of *Eiðar* estate. For this project the area immediately surrounding the lake was used as the focus of this project. In 1939 the fenced area was enlarged from the former *"fence of Ásmundur"* from 1927. Inside this fence most of the largest trees on the estate are found as is the lake called *Húsatjörn*, which is considered to be one the most fascinating natural elements in a wide area around *Eiðar*. Although the location of the fence from 1939 is easily traceable, signs of the older fence are harder to find. That fence, the former conservation area, is the boundary of this project.



Figure 43: Likely location of the two former fences for the area. The white dotted line represents the "fence of Ásmundur" from 1927 (Jóhann Magnússon 2011, pers. comm., Dec.) and the dotted line the fence from 1939.

Technical analysis

Various devices and software programs were used to analyse the study area. Several are listed below along with a short description of their uses.

A complete list of the technical equipment used in the project is found in Appendix A.

Slope and Elevation

The *Húsatjörn* Lake area was measured using state of art Global Networking Satellite System (GNSS) technology. The elevation and position points were taken using equipment and computer programs from Trimble™ (Trimble R8, Trimble TSC2 and Trimble Geomatics Office (TGO)) with a measurement accuracy of two centimeters. When the field measurements were completed, the elevation lines were plotted on a scale of one meter in Bentley's Microstation V8i™ to produce a model of the area. The model itself was constructed from Styrofoam™ overlaid on an aerial photograph from *Loftmynd ehf.* The scale of the model was 1:1,800. The resulting model proved invaluable during the analysis and planning processes.

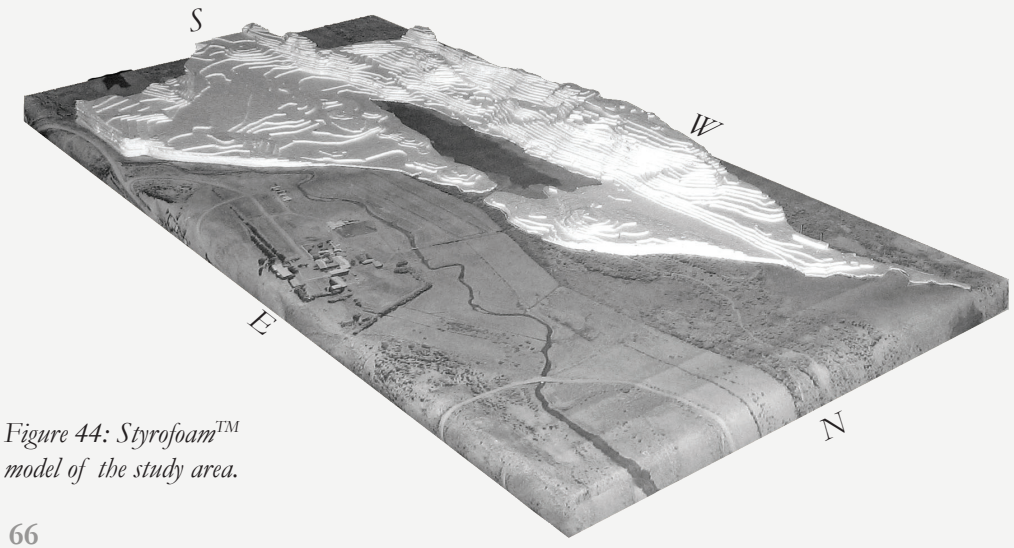


Figure 44: Styrofoam™ model of the study area.

Mapping

Large scale mapping of the area was done using Esri´s ARCMAP 9.3™. The map consisted of the following layers: existing paths, proposed paths, slope, surface water, vegetation type, tree layers, edges openings, archaeological sites and scenic viewpoints. A GPS receiver, type Magellan eXplorist 210™, was used to gather landscape information. The pertinent data were entered into ARCMAP´s™ attributes tables. After digitalizing, each map was graphically handled in Adobe Illustrator CS5™ before it was moved into the layout program Adobe Indesign CS5™ where the report was completed. The interaction between Adobe computer programs was very convenient when it came to altering maps. In some cases Adobe Photoshop CS5™ was used for graphics on the maps.

Photography

Part of the analysis of *Húsatjörn* Lake was done using Gordon Cullen's Serial-Vision method (1971). A total of 112 photographs were taken from the existing footpath. The camera used for the stills was a Canon EOS™ 350 with EFS 18-55mm. lens. This camera was also used for other photographs as well as a Canon Ixus™ 5000 camera (Canon zoom lens 3x 5.8-17.mm. 1:2.8-4.9) for working photos. These working photos were taken using a variety of methods such as several working photos shot from a height of four meters on a trap-ladder. The photography was done in black and white to attain a high level of resolution and provide more definition to the lighting. The photos were for the most part graphically handled in Photoshop™.



Figure 45: Shadow of the trap-ladder used for shooting photographs. Cracks can be seen in the ice under the ladder (2011).

Camcorders were also used during this study. A total of six camcorders were used to film the area and some of the interviews. Other video materials from the author´s archive were used, such those from the conference "*Forestry serving*

urban societies in the Northern Atlantic region" (2009) and various excursion videos.

Visitor counts at *Húsatjörn* Lake

From the 12th of July to the 28th of August 2011 laser counters were used to estimate the number of visitors to the project area. Because the counters have LDS screens, they could only be used during periods with no threat of freezing temperatures. It was therefore not possible to give a total for winter/early spring visitors. SenSource™ produced the counters used. The counters were placed close to the entrance way on either side of the footpath and secured to green housing units to make them as unobtrusive as possible. The number on the counters when they were taken down was 1,794. Although it is not possible to get an exact total of visitors using this method, if the number is divided by two the total is approximately 897 persons over a total of 47 days during the summer.



Figure 46: The laser counters used at Húsatjörn *Lake in the summer of 2010.*



Figure 47: Advertisement for a picnic held in Eiðar by Hotel Edda. The advertisement reads: Picnic at Eiðar Hotel Edda July 28th Departure from the hotel 20:00 Delicious food served in beautiful nature (Hotel Edda, 2010).

Forest Landscape Analysis

The landscape was divided into 21 zones (the lake itself was not considered a zone). These zones were demarcated by vegetation type. Most of the planted conifers were similar in age and character. These were usually zoned together, unless there was something exceptional about a stand. Where the boundaries between zones were unclear, boundaries were determined using vegetative density. This method has been used in other projects such as *Fælledparken* in Copenhagen, Denmark where the tree plantations were categorised into zones ranging from tall tree stands to low open shrubs (Krogh-Lund 2006).

LyBeRitt landscape analysis

LyBeRitt is a combination of the three names; Kevin Lynch, Simon Bell and Eva Ritter who have all described different approaches for reading the landscape. Lynch in cities, Bell in landscape dynamics and Ritter in ecology. Their area´s of emphasis are diverse, but their approach is similar. These are simplified and shown in figure 41 (page 57). Analysing a landscape with an approach like this gives the designer insight into the landscape and provides information that might otherwise go unnoticed. Because that the LyBeRitt landscape approach comes from three angles it is multidisciplinary. This multidisciplinary approach provides a broader picture and may make it easier for various individuals to understand the landscape and it provides them with a common language for expressing design elements. Lynch and Bell analyse the landscape visually meanwhile Ritter analyses the biological interconnections, that most often have a visual affect on the landscape. For example a bog is most often visualised as a plane and the boundaries of a bog can be either a wide or narrow line. On the edge there can be a great forest that is visualised as a heavy mass. A dead tree in that forest can be interrupted as one element or point. All of these elements

together could also be as a mixture of smaller elements. A fallen tree by a stream in a bog would be a combination or node. This example may seem at first somewhat confusing, but when different words share the same meaning the concept becomes clearer when those words are combined and fewer words used in the explanations. The chart in figure 41 (page 57) illustrates how these 15 attributes were adapted into five attributes.

Social Landscape Analysis

Research done among visitors to four Icelandic forests (two rural and two urban) showed visitors came to the areas for two main benefit types. These are restorative and social benefits (Curl 2008). Conflicts can happen between social and restorative groups since the activities and conditions under which their goals can be reached differ ranging from out going, loud happy families, to individuals meditating in the quieting calm of nature. For that reason, it was decided to direct social activities more or less to the same area, and keep the restorative areas separated, although it is not impossible to practice both at the same place when circumstances allow. These two benefit types were emphasized in the analysis and design of *Húsatjörn* Lake. A third benefit type, learning, was added to accommodate the large number of young people using the area during the summer months. The learning points were planned so adults can also gain learning experiences.

When planning an area like *Húsatjörn* Lake, where various elements are already in place and have value to its users, the designer is not faced with a blank canvas, but rather with the challenge of providing for the desired experiences without making changes that detract from the sense of place experienced by users. To do so, careful evaluation of the area was necessary and important existing elements were included in the design. The following method was developed for use in the analysis at *Húsatjörn* Lake.

Earlier in this paper, four different approaches to analysing social landscapes were introduced. These included ROS (Clark and Stankey1979), restorative environments (Kaplan 1995), eight rooms (Stigsdotter and Grahn 2002) and formal and informal interviews. A combination of these approaches was used for analysing the potential of the 21 zones to provide one (or more) of the preferred benefits for users: restorative, social or learning.

The chart used for analysing the zones' potential was developed by the author by combining these approaches and is explained below.

After the area was divided into zones by vegetation type and/or density or exceptional feature(s), the zones were given names. These names were derived from either the ambiance of the area or remarks made by one or more of the interviewees.

Because visitors to *Húsatjörn* Lake are mainly seeking restorative, social and learning benefits, the provision of areas to obtain these benefits are the key goals in the design. As mentioned earlier, *Húsatjörn* Lake was divided into two main areas, restorative and social. Both Kaplan (1995) and Stigsdotter (2002) provide a list of attributes necessary to provide visitors the opportunity to realize these benefits. These attributes were modified and used in analysing the zones of *Húsatjörn* Lake. The process adapted from these studies for use in this project is described below.



Figure 48: The area can be divided into a Restorative landscape for individuals and a Social landscape for groups. The illustration shows how such a division is relevant for Húsatjörn *Lake.*

An important function of the benefit map was to determine if and where potential areas of conflict were found. For example, when a zone with potential for restorative use was directly adjacent to a social zone. There were few areas of potential conflicts located on the benefits map. Potential conflicts in an area were then analysed. Attention was given to time and season of use. This was done to represent the real potential for conflict. Although the designed use for two adjacent areas may seem at first to be conflictive, it is possible that because of use occurring for example at different times of the year, there is in reality little or no danger of conflict. For example an area designed to provide opportunities for bird watching requiring quiet might be located near an area intended as a venue for social use were a high noise level is expected. However, much of the bird watching occurs in early spring during the early hours of the morning or late in the evening. The social area may see its peak usage time during late summer or afternoons. Therefore the real potential for conflict is either non-existent or minimal. The chart used to analyse *Húsatjörn* Lake is found in appendix B.

Figure 49: This illustration shows the Restorative and Social areas for Húsatjörn *Lake. The Restorative area is shown in black, Social in red and areas with high potential for learning opportunities are marked with stars.*

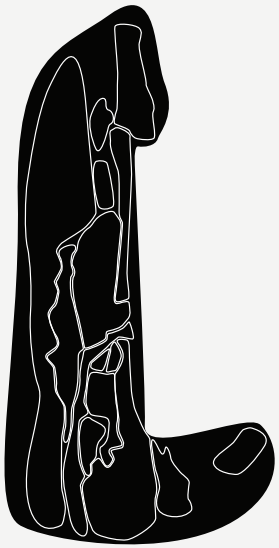


Figure 50: Restorative area at Húsatjörn *Lake.*

Formula for Restorative Environments.

In order to analyse the Restorative areas the desired function for the area was determined by prior use, comments from the interviews, unique features (natural and/or historical) pertinent to the zone in the best judgment of the author. The restorative area was divided into 15 zones.

Kaplan identified four attributes necessary for an area to provide its users with the opportunity to achieve restorative benefits (1995). These are: being away, fascination, extent and compatibility. Each zone in the restorative area around *Húsatjörn* Lake was analysed for its potential to fulfill these requirements. A clear way of describing the currant existence of Kaplan's attributes was to use smiley faces. When Kaplan's attributes were tested in a zone the results were for example:

Being away = ☺ (the feeling exists)

Fascination = ☹ (the feeling does not exist)

Extent = 😐 (the feeling almost exists)

Compatibility = ☺ (the feeling does exist)

When the attribute did not exist or was only partially present, a description of the cause was included. "Fascination" might have been described "Lack of maintenance". These factors and the measures needed to improve the situation were included in the design.

Formula for Social Environments

The Social area was divided into six zones (One was in three seperate parts.) and each analyzed using the same smiley-face method as the zones in the Restorative area.

In order to analyse the Social areas, the desired function for the area was determined by prior use, comments from the interviews, unique features (natural and/or historical) of the zone in the best judgment of the author. The method for analysing each zone with regard to design requirements was developed by combining attributes from Stigsdotter and Grahn (2002) with those from the interviews, attributes found in the various literatures and by the author. The following is a description of the way the list of attributes was developed.

In the eight room analysis described by Stigsdotter and Grahn each room is characterized by a series of attributes providing the users a specific experience (2002). The total number of attributes in this approach is 36. These 36 attributes were set on the x-axis of an Excel™ table and the six zones in the social area on the y-axis. The presence or absence of each of the 36 attributes was evaluated by the author. Of these 36 attributes, 9 were relevant to the Social area in *Húsatjörn* Lake. Based on the similarity of these nine attributes, they were combined resulting in three. These are: Accessibility, Coherency and Forest feeling. These attributes along with additional attributes taken from the interviews as well as those deemed desirable by the author were used to analyse the zones. The attributes were analysed by placing the names of the zones and the relevant attributes on the y-axis and the current situation and proposed solution were placed on the x-axis. The same smiley-face method used in the restorative analyses was used here. Figure 52, on the following page, shows an example of the finished chart.

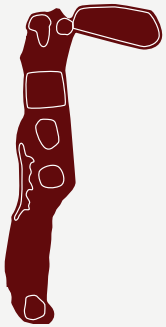


Figure 51: Social area at Húsatjörn *Lake.*

Formula for Learning Environments

Guests to *Eiðar* come from many places, belong to many generations, and have different interests, therefore it is not possible to guide guests through any specific agenda during their visit. There are however many opportunities for learning at *Eiðar* estate, as well as at *Húsatjörn* Lake.

Public participation

"The traditional image of the designer establishing a personal relationship with a client/user is grossly misleading." (Lawson 2006, p. 85).

In order to gain a better understanding of the existing uses of *Húsatjörn* Lake and gauge what types of changes the users of the areas would like to see, and to hear the opinions of various professional planners, a series of interviews were conducted. These were for the most part informal interviews, some were taped on a camcorder, but most of the time they were informal. These interviews took place both on site and off, depending on the preference of the person(s) being interviewed. Responses not recorded on camera were written for later use. In total 19 interviews of this type were conducted.

Attribute name	Current situation	Solution
Shelter from wind 	The area is inside a dense forest.	Although it is not necessary, cutting dead branches would make the zone more pleasant.
Access 	The path is only for walking single file.	Making the path wider 1.8 to 2.5 m. and using gravel on the surface the path meets the requirements for this zone.
Place to sit down 	There is no bench, not even a large stone to sit on.	This can be fixed by adding a bench built with materials that harmonize with the area.

Figure 52: An example of the analysis and design problem chart for the Social area of the Húsatjörn *Lake.*

Informal Public Workshop

As part of this study, an informal public workshop was arranged by the local horticultural society. The workshop was advertised in the local paper two weeks prior to the event. The workshop was planned to attract persons who had not been interviewed and might represent underrepresented groups with varied interests. After the meeting of the horticultural society, the group was led around *Húsatjörn* Lake. During the walk near the "goat fence" on the south side of the lake, the group planted seedlings. The seedlings were of Rocky Mountain fir (*Abies lasiocarpa*) and goat willow (*Salix caprea*). The trees were planted to bring the group together and stress the fact that the area is not completely formed, but rather that work there continues. During the walk, several interviews were taken using a camcorder. Special attention was also given to the conversations held during the walk. After the group returned from the walk, refreshments were served and the group was asked for comments and suggestions. Comments made during the walk and also during the workshop session were written down directly after the workshop was finished.



Figure 53: Two generations, Daníel Friðrik Björgvinsson (on the left) and Pétur Elísson (on the right) combine forces to plant trees at Húsatjörn *Lake (Björgvin Steinar Friðrisson 2011).*

The comments from the interviewees as well as attributes required for providing social and restorative benefits to the users of *Húsatjörn* Lake were incorporated into the area's design. The photographs and model were used throughout the design process to ensure the continuity or flow of the area as a whole was not compromised during the design process. The following section provides a description of the project area as whole, individual zones, the design for each and the modifications to existing elements and any new elements necessary to fulfill the design purpose.



Analysis

Figure 54: (Previous page.) Guests at Húsatjörn *look at* Eiðavatn *to the north. The piece of modernart* "Macy´s" *is on the right (October, 2011).*

Analysis

Several methods of analysis were used in this project. The various methods were described in the previous chapters. They include:

- Forest landscape, such as **Serial vision** and **LyBeRitt**.

- Social landscape, such as restorative areas and social areas and their attributes.

- Public participation, such as interviews and workshops

This chapter describes how these were used in the design process.

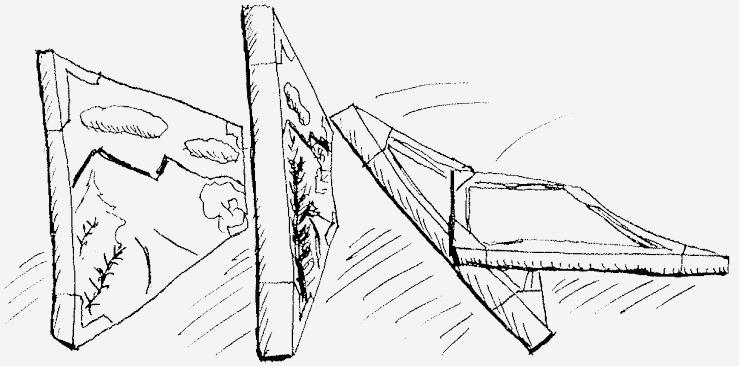


Figure 55: Illustration of the function of Serial vision (2011).



Figure 56: Illustration of the function of LyBeRitt (2011).

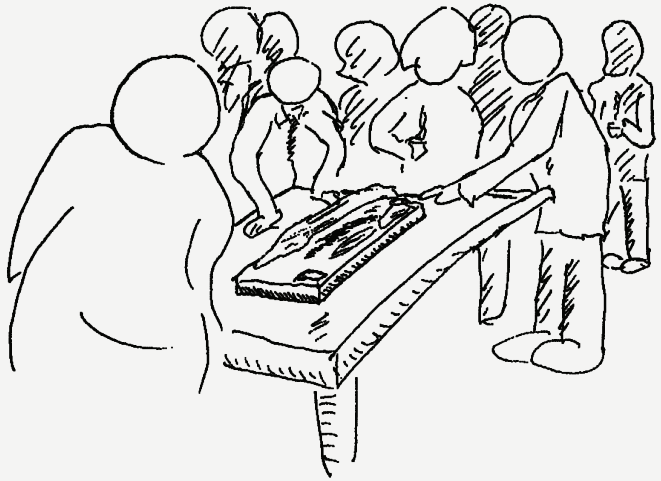


Figure 57: Illustration of the function of public participation (2011).

Serial vision

It takes about half an hour to walk from the housing area, around *Húsatjörn* Lake and back. The experience varies between individuals although the vision is consistent, differing only by season.

A series of photographs was taken from the main walking path on the 9th of August 2010 at approximately 18:00 hours. The photos were taken in sequential order and show the viewpoints as experienced by the visitor.

The total number of photos in this Serial vision is 112. The series of photos is explained on the next pages, with 14 photos on each page.

Visitors have a tendency to walk the track along the *Húsatjörn* Lake with the lake on their right side and therefore the photos were shot using the same pattern. The position of each photo was shot using a set strategy. After one photo was shot, the following photo was shot in the frame of the previous one. The angle of the following photo can be visualized from the red frame on the previous one, making the photos easier to trace.

Photos

On the right page on each opening there are 14 photos. These should be read from the top, side left hand and then from the top right as this symbol 14 demonstrates. When a photo is numbered 23, it refers to the text with same number on the left page.

Text

On the left page is a explanatory text of the photos on the right. Not all of the photos are explained, but those numbered in the text 15, are also numbered in the photo and on the following maps.

Maps

On the left page is a map with elevation lines and the housing area near *Húsatjörn* Lake. On these maps the "serial vision" can be traced.

Spread around the lake are 112 symbols shaped like a camera. These symbols are the position where each photo was taken.

When the symbols are colored red they are explained on that particular opening, if a symbol is marked with a number, it is explained in detail in the text.

If the symbol is gray with a red outline it was explained earlier.

The series began at the parking lot ① between the two largest buildings and the viewpoint faced the estate woodland. After leaving the housing area, visitors encounter an old bridge spanning a small stream ⑥, *Eiðarlækur*. During most of the year the stream carries very little water; however during the spring thaw the amount of water increases dramatically.

The visitor then traverses an uneven 200 meter trail that also serves as a riding trail. This section of the trail is straight and unsheltered. For most visitors this is the most unattractive part of the journey. The only point of interest is the occasional presence of curious horses grazing in the adjoining pasture. At the end of this section the visitor finds an old cement fencepost ⑨. The post is a remnant of the old fence once encircling a large part of *Eiðar* estate. At this point the path diverges ⑪. Here the path narrows and visitors must walk single file. There is a small sign directing those walking to the left and into the forest. There the visitor encounters the first stand of trees. This is a stand of larch with an average height of 10 meters and one of the oldest stands ⑭ in the forest. Here the larches show signs of the continued efforts of humans manifested by their pruned branches.

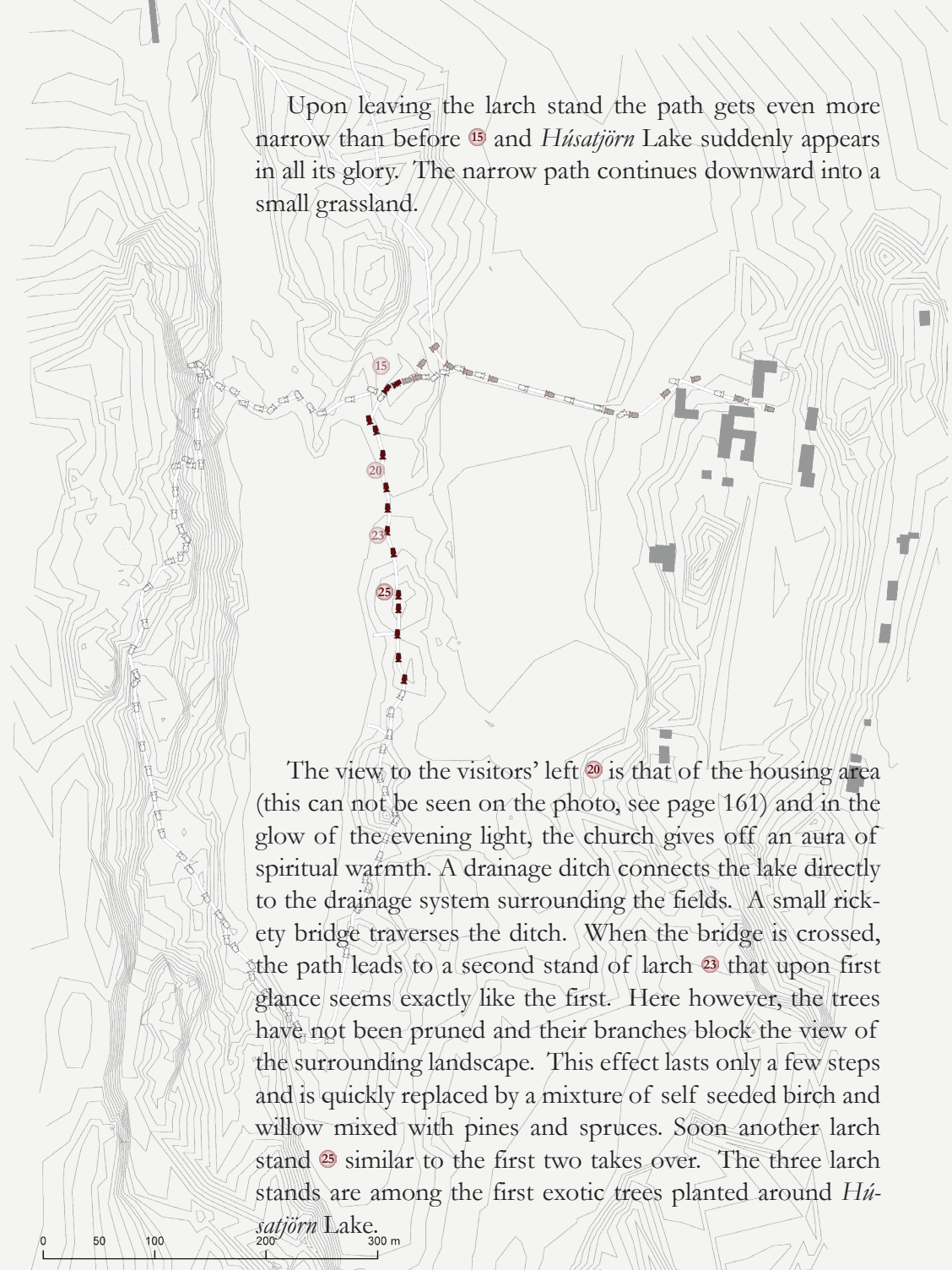
0 50 100 200 300 m



Figure 58: (Previous page.) Serial vision map 1 of 8.

Figures 59-73: Photographs 1-14 of the Serial vision (2010).

Upon leaving the larch stand the path gets even more narrow than before 15 and *Húsatjörn* Lake suddenly appears in all its glory. The narrow path continues downward into a small grassland.



The view to the visitors' left 20 is that of the housing area (this can not be seen on the photo, see page 161) and in the glow of the evening light, the church gives off an aura of spiritual warmth. A drainage ditch connects the lake directly to the drainage system surrounding the fields. A small rickety bridge traverses the ditch. When the bridge is crossed, the path leads to a second stand of larch 23 that upon first glance seems exactly like the first. Here however, the trees have not been pruned and their branches block the view of the surrounding landscape. This effect lasts only a few steps and is quickly replaced by a mixture of self seeded birch and willow mixed with pines and spruces. Soon another larch stand 25 similar to the first two takes over. The three larch stands are among the first exotic trees planted around *Húsatjörn* Lake.

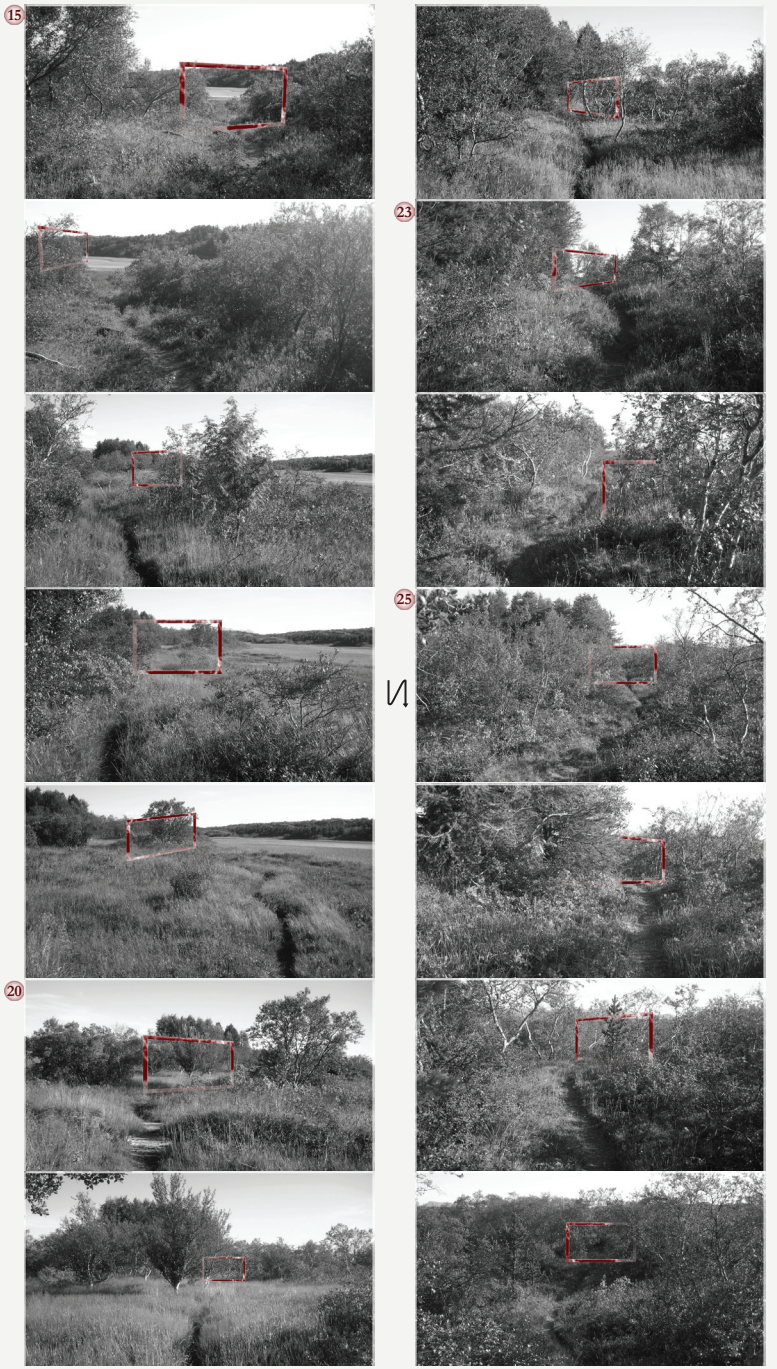
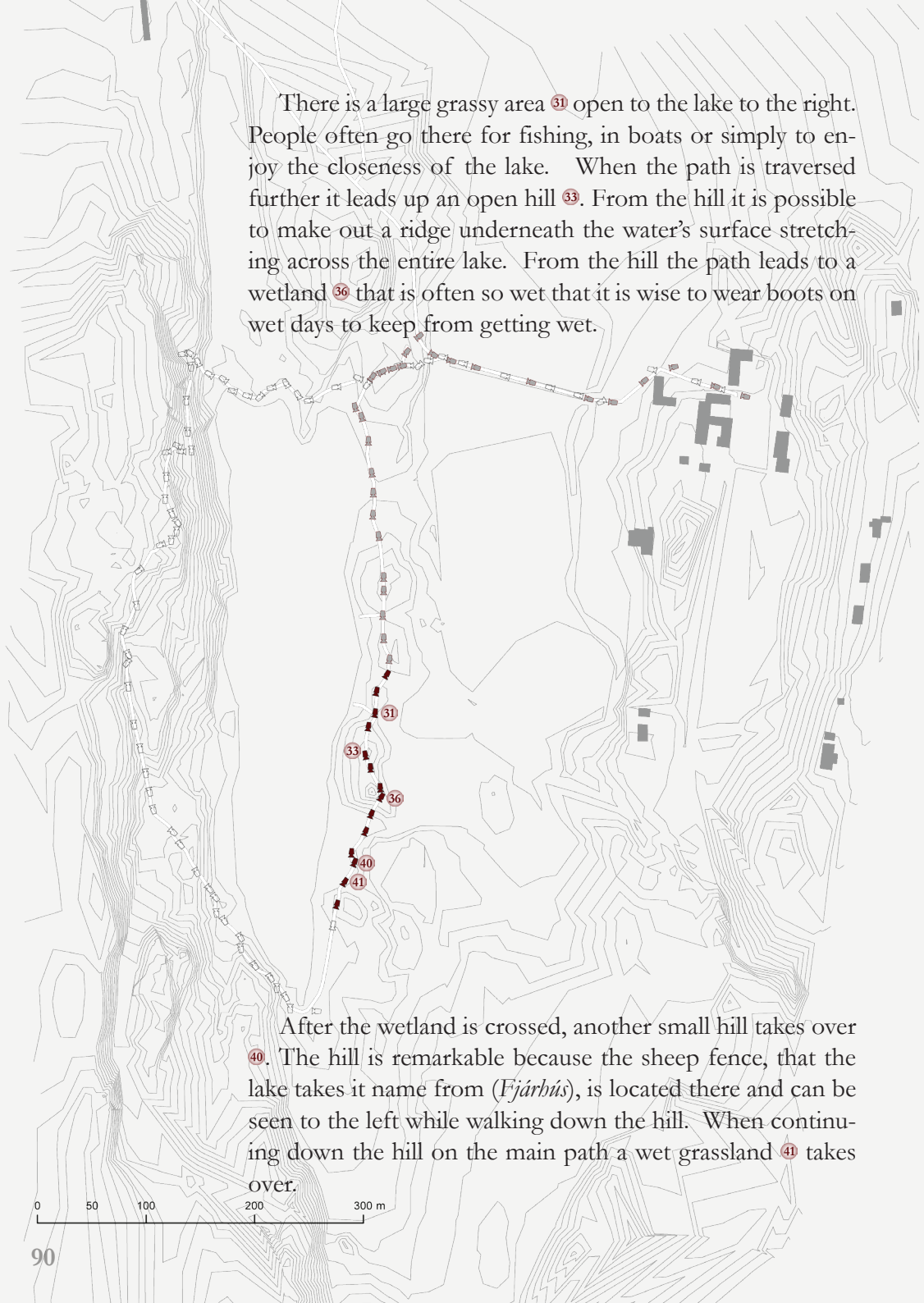


Figure 74: (Previous page.) Serial vision map 2 of 8.

Figures 75-89: Photographs 15-28 of the Serial vision (2010).

There is a large grassy area 31 open to the lake to the right. People often go there for fishing, in boats or simply to enjoy the closeness of the lake. When the path is traversed further it leads up an open hill 33. From the hill it is possible to make out a ridge underneath the water's surface stretching across the entire lake. From the hill the path leads to a wetland 36 that is often so wet that it is wise to wear boots on wet days to keep from getting wet.



After the wetland is crossed, another small hill takes over 40. The hill is remarkable because the sheep fence, that the lake takes it name from (*Fjárhús*), is located there and can be seen to the left while walking down the hill. When continuing down the hill on the main path a wet grassland 41 takes over.



Figure 90: (Previous page.) Serial vision map 3 of 8.

Figures 91-105: Photographs 29-42 of the Serial vision (2010).

After few meters into the wet grassland the path turns west running beside the lake. A small roughly build bridge lies over a natural ditch 44 connected to a large bog. After crossing the bridge the path goes upwards. At the top of the slope there is a wide view 47 over the lake to the north. Visitors often like to stop there for few seconds before they head further and continue into the conifer forest 50 .

On the right is a dense larch stand 51 that some might consider mysterious. A few steps further, passing a little hill, a mixed forest dominated by pines 53 takes over. A patch of self seeded pine 55 can be found on this hill, the tallest only about half a meter. As the path continues more patches of self seeded pines are found.



Figure 106: (Previous page.) Serial vision map 4 of 8.

Figures 107-121: Photographs 43-56 of Serial vision (2010).

Most of the area's larger conifers 58 are located along this section of the path. These are intermixed with a few birches. The trees are only about 10 metes tall and only a few are well formed.

When the pine forest is crossed, one has reached the highest part 68 of the existing path system. There is a crossroad towards the cliffs on the path, but it is not normally used by visitors. They usually prefer to follow the path around the lake 70 .

0 50 100 200 300 m

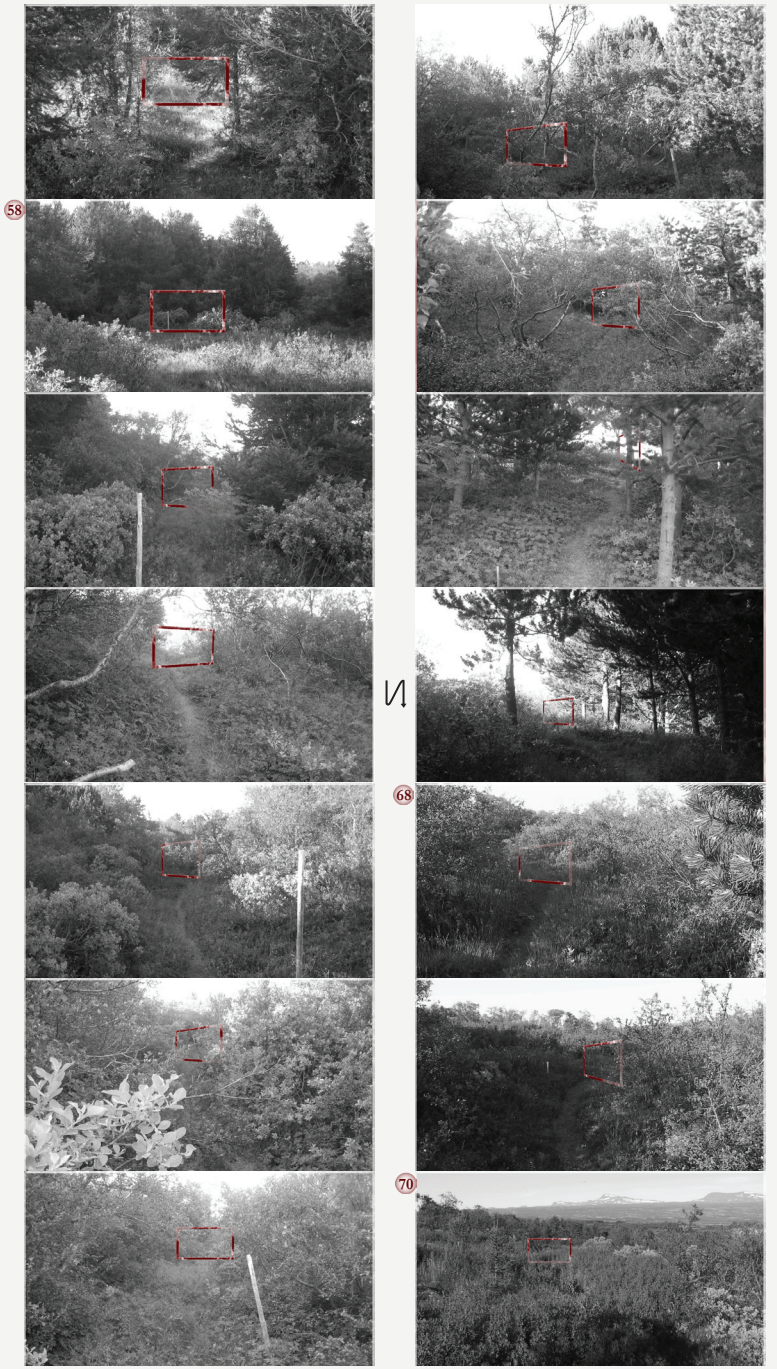


Figure 122: (Previous page.) Serial vision map 5 of 8.

Figures 123-137: Photographs 57-70 of Serial vision (2010).

A spectacular view spot 72 is located on the edge of one of the cliffs. There is a small bench to sit on and relax a bit. From there a mountain can be seen in the east, the housing area of *Eibar* to the right, as well as nearby farms and the lake in all its glory. From that particular viewpoint the path lies along the ridge 74 and down into an exotic forest 76 again. Turning left from the path a larch alley appears 79. The alley is pruned like a tunnel, but unfortunately it leads to a dead-end, forcing one to walk back the same way.

The path slopes a little towards the lake on one side and one is conscience of how steep the cliff is. A small spruce stand 82 is situated on and under a nearby cliff. Although the view is not so great from there, there is a bench where it is pleasant to sit and feel the presence of the wildlife and experience the area's spirituality. From there the path lies down a very steep slope. A rough stairway was build there in 2007 to make access easier. The stairway 84 is relatively good considering the materials used. It is accessible to the majority of people, although it might be risky for elderly people, especially in wet weather.

0 50 100 200 300 m

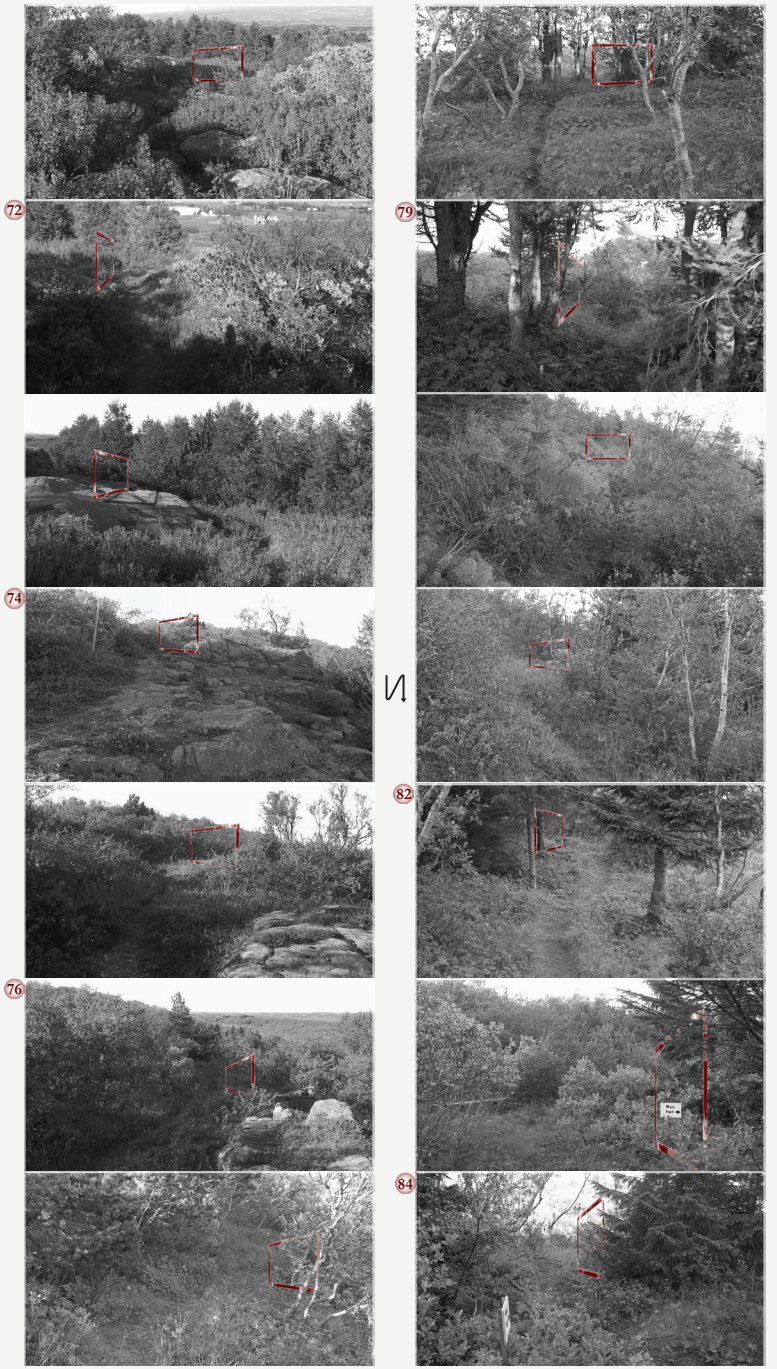
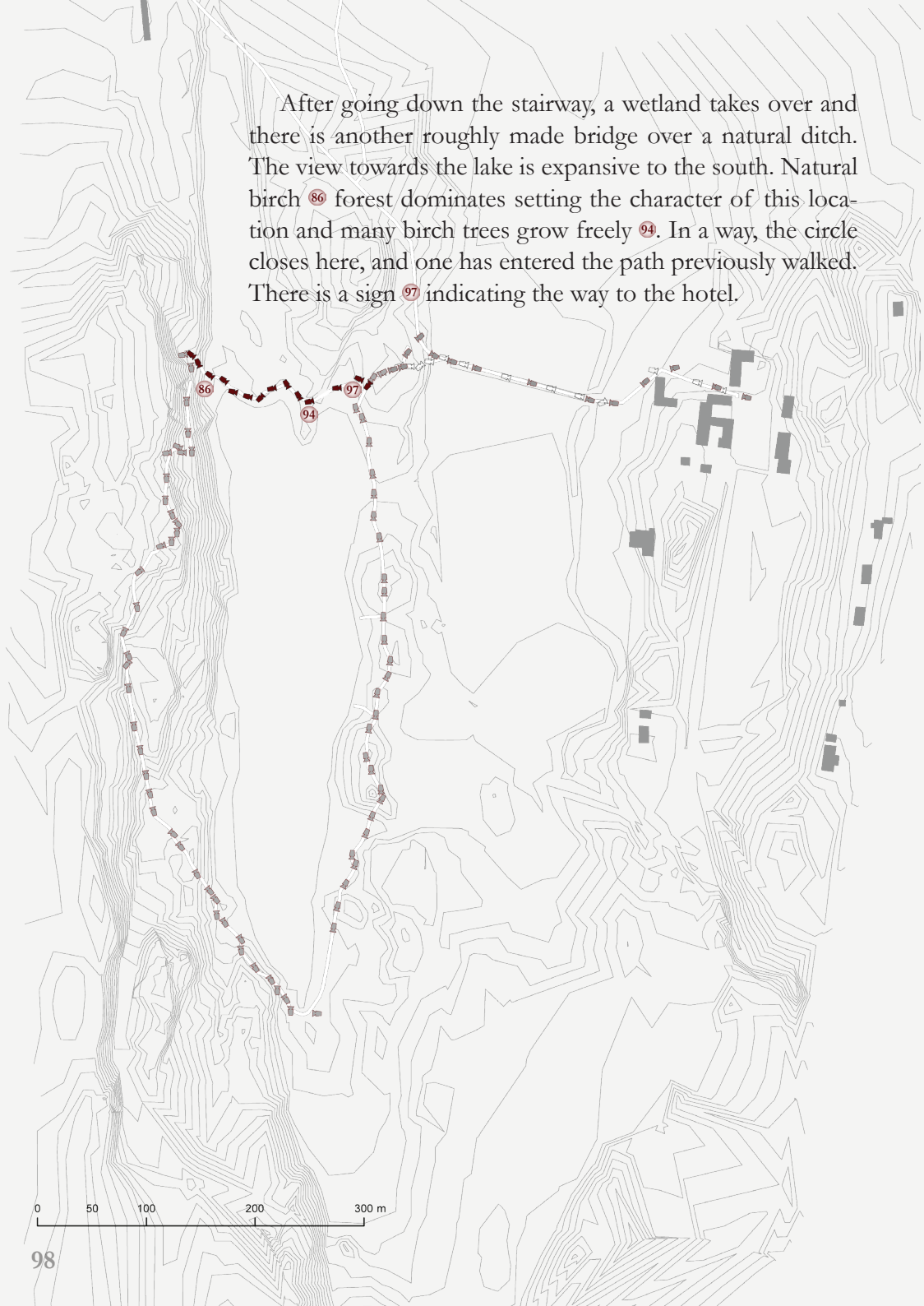


Figure 138: (Previous page.) Serial vision map 6 of 8.

Figures 139-153: Photographs 71-84 of Serial vision (2010).

After going down the stairway, a wetland takes over and there is another roughly made bridge over a natural ditch. The view towards the lake is expansive to the south. Natural birch 86 forest dominates setting the character of this location and many birch trees grow freely 94. In a way, the circle closes here, and one has entered the path previously walked. There is a sign 97 indicating the way to the hotel.



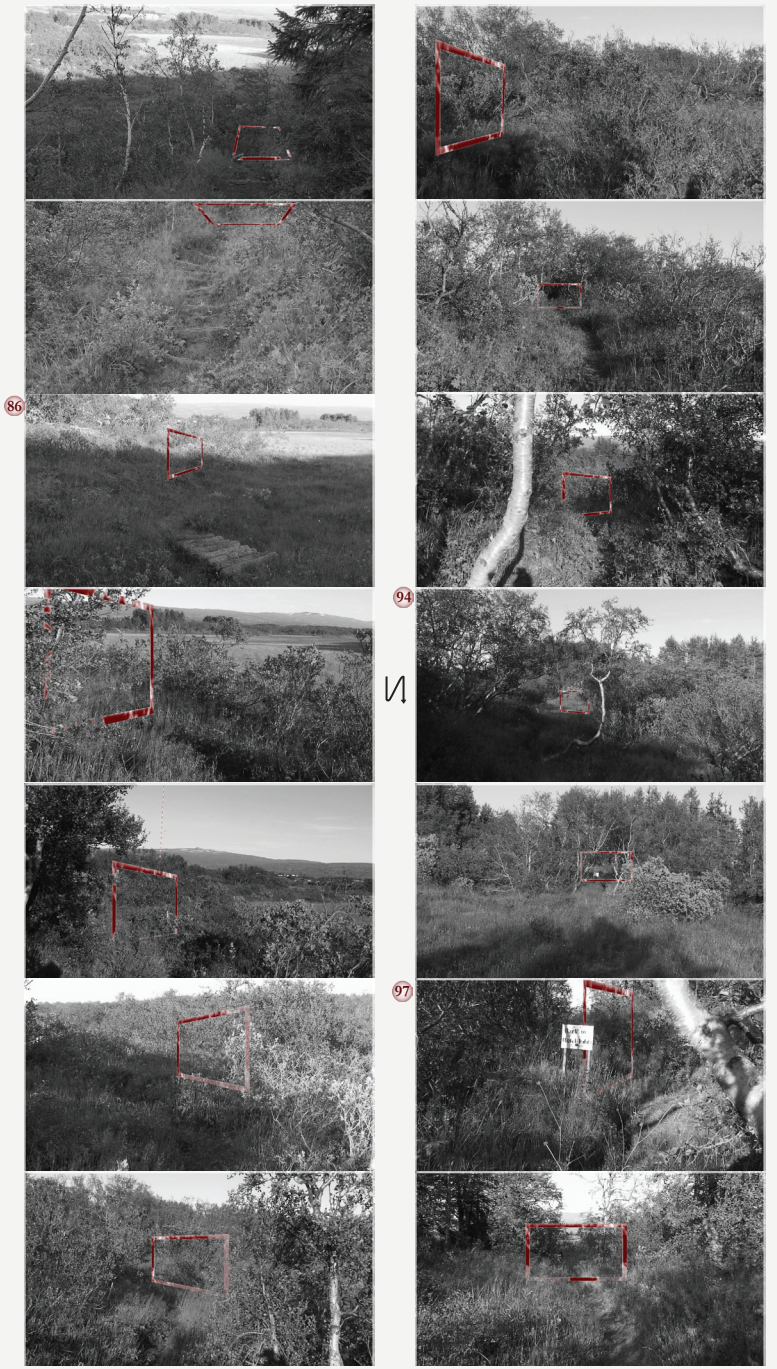


Figure 154: (Previous page.) Serial vision map 7 of 8.

Figures 155-169: Photographs 85-98 of Serial vision (2010).

Again one passes the pruned larch stand 98, except now it is seen from a new angle. Instead of walking the entire way back by the same path, some guests like to change paths by walking on a little rough track 100 leading to the cement poles 103 mentioned earlier. On the way back, the housing area dominants the visible landscape. The radio mast with its rhythmically blinking lights shares the landscape and is clearly seen through the twilight and dark hours.

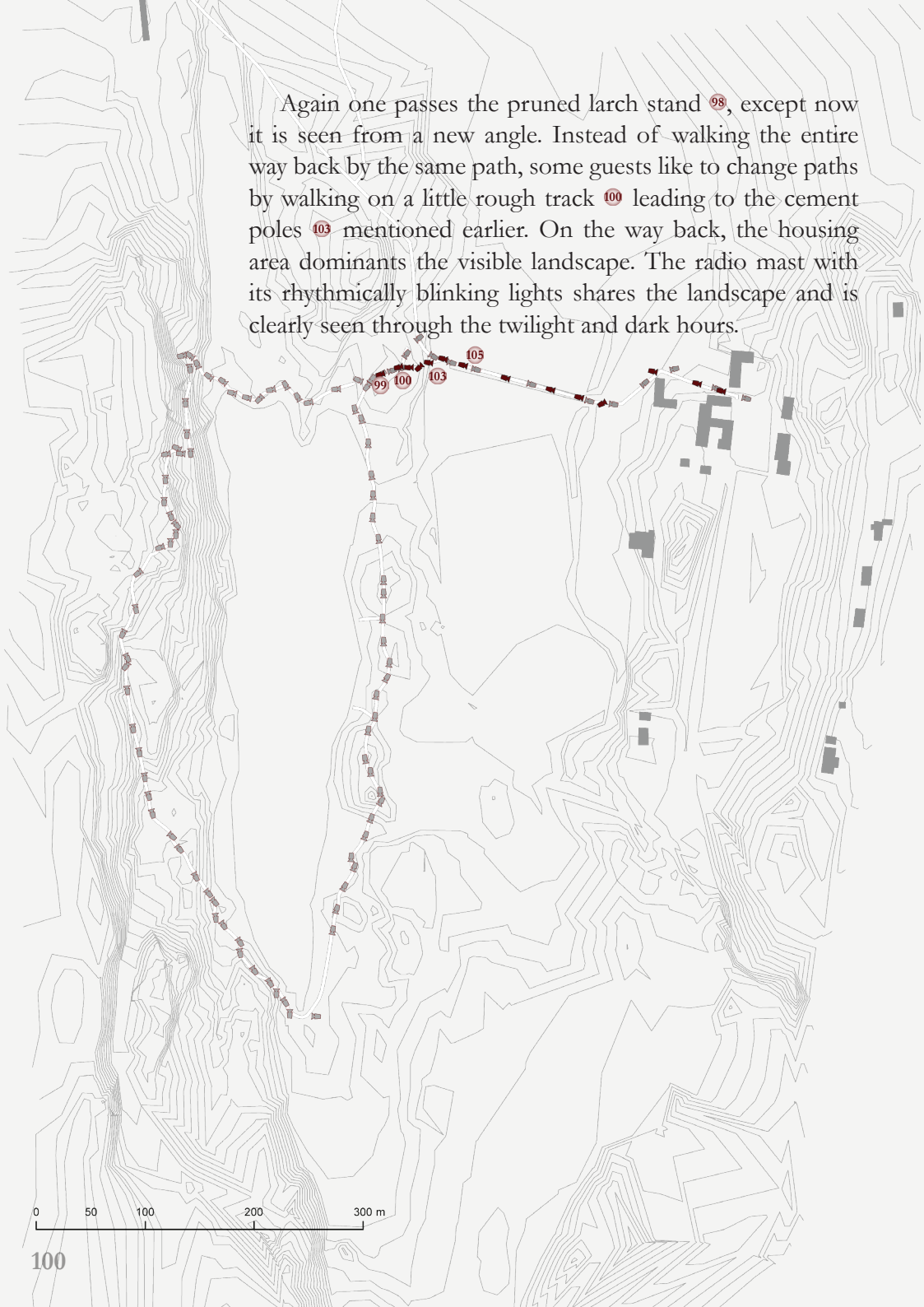




Figure 170: (Previous page.) Serial vision map 8 of 8.

Figures 171-185: Photographs 99-112 of Serial vision (2010).

LyBeRitt landscape analysis

The project area, as the whole th northern *Hérað*, is characterised by long and short ridges (that run from north to south) with bogs and lakes in between. One unique feature of *Eiðar* estate and especially *Húsatjörn* Lake is the presence of woodland. The presence of the forest is attributable to the exclusion of sheep and the addition of stands of exotic trees, especially around *Húsatjörn* Lake. Although landscape has a physical presence that can be seen by anyone, individuals interpret what they see in relation to their backgrounds and experiences. Therefore it is highly unlikely that they will "see" the same thing. Knowing a subject inside out is not enough, it has to be explainable and everybody should be able to understand it in the same way. Like Dr. Watson (from Sherlock Holmes) who was good at observing the obvious, one must ask what the obvious is.

By analysing the landscape specifically, on either a small or a large scale, one recognizes new functions of environmental elements, both as unique elements and in relation to others.

"LyBeRitt landscape analysis" is a tool that simplifies visual landscape. This tool will be used in the following pages to analyse the *Húsatjörn* Lake area. In figure 186 all the feature types can be seen. These include: points, lines, planes, volume and nodes.

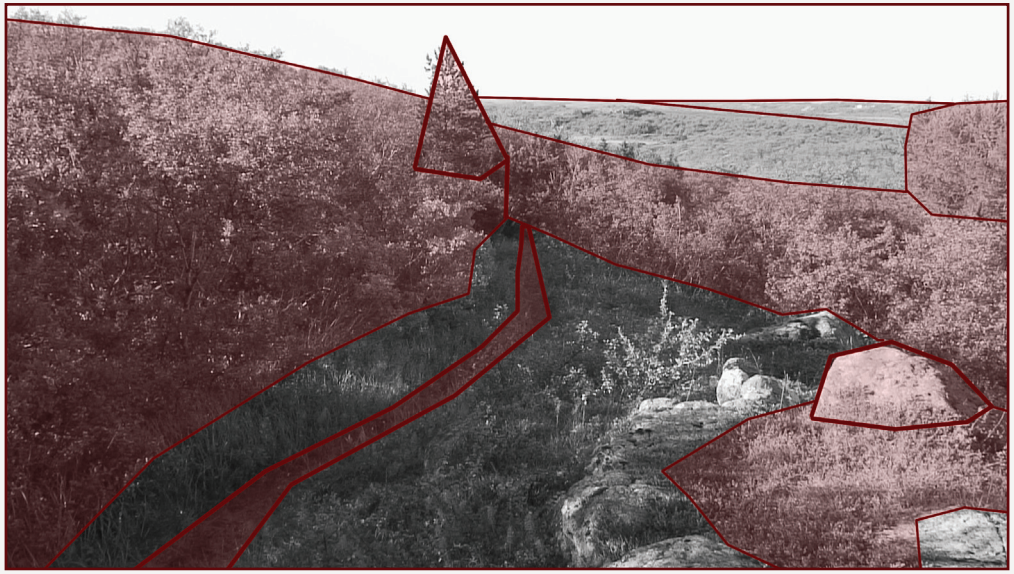


Figure 186: The spruce in the middle is classified as a point, as is the stone on the right. The path is a line, the native trees are volume and the forest in the back is a plane. Most these elements are linked and when viewed from a certain angle form a node (2010).

Points

Points can be found everywhere in the landscape at *Eiðar* estate. Elements either catching the eye immediately or those that might do so if changes were made either to the element itself, or its surroundings were defined as points. In some cases there were obvious points, but the element itself was not outstanding in the strictest definition of the word. For example stones that could have been defined as nodes or a bridge that was part of a path could be defined as a line. The most obvious points at *Húsatjörn* Lake are shown in figure 188.



Figure 187: A small rowan, in fall red colour when the photo was taken, and a large solitary rock resting on the bedrock, stand out in the landscape. These two points have totally different characters (2010).



Figure 188: Only a few points are marked on the map although there are many more in the landscape. The reason for selecting these points is that they were unique in the landscape.

Lines

Landscape is dynamic and lines can run up and down, be wide and narrow and even energetic or stagnant (so to speak). Without analysing an area some of this movement might not be recognised. Lines in the landscape range from the vast horizon to a small stream. At times this gives a feeling of motion, where unending energy flows either smoothly in a curved shape, like a river flowing down a hill or forcibly, strong and direct like the wind pattern in the sky. The lines at *Húsatjörn* Lake are mainly the paths, ditches and buffers of bogs and forest.



Figure 189: A confusing path guides the way into a field, crossing a simple fence and a ditch. Although the electric pole is straight, it is not considered a line rather a point, as is the bridge. When crossing the field there is a line separating the common field from the more interesting forest (2010).

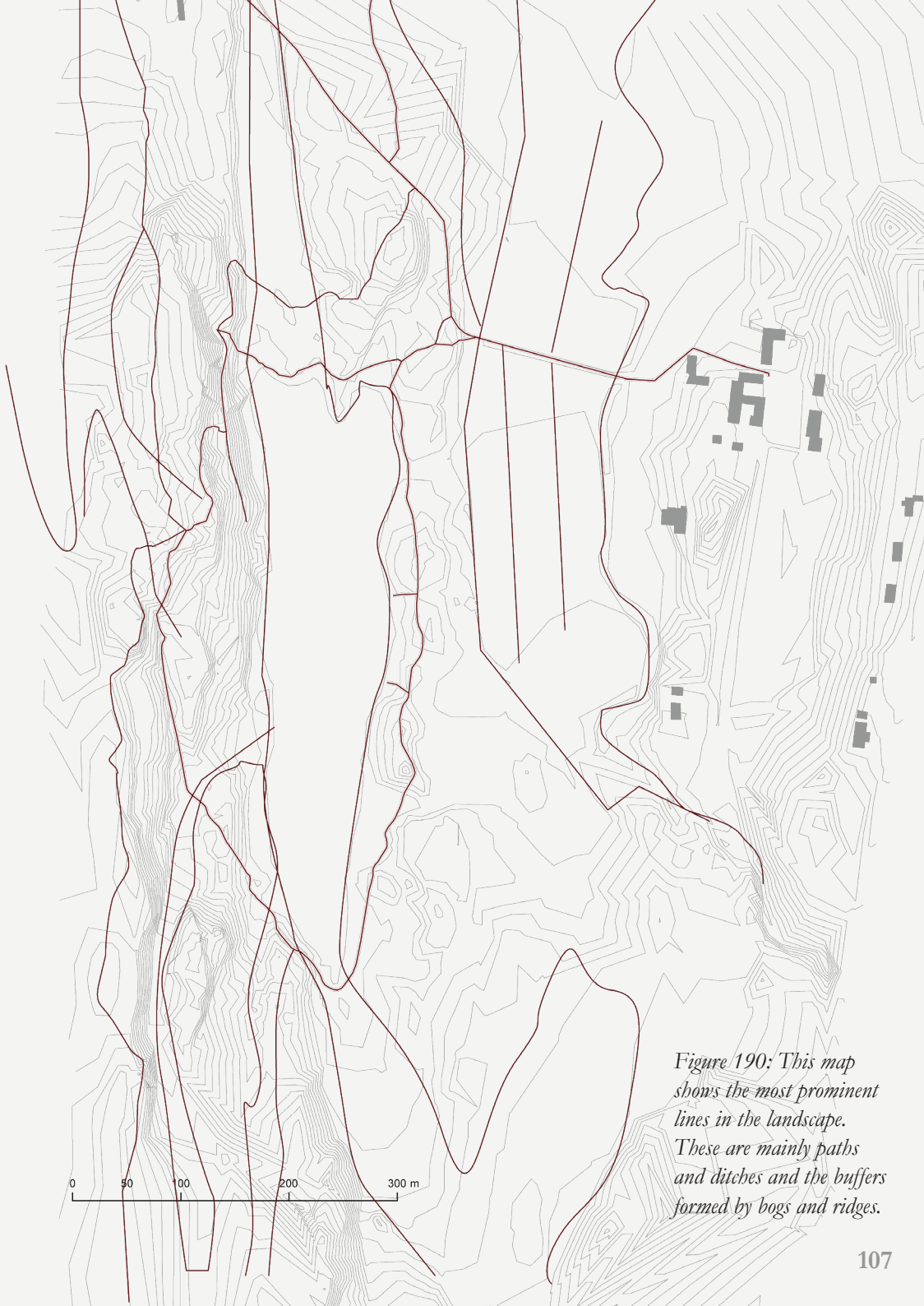


Figure 190: This map shows the most prominent lines in the landscape. These are mainly paths and ditches and the buffers formed by bogs and ridges.

Planes

Planes in a landscape are usually flat and rather two-dimensional. Planes can be any size, from the never ending, flat ocean to a strip of debris left by a small landslide on a hillside. Because of their two dimensional nature, planes may not identifiable from the outside, but are unmistakable from the inside. A parking lot for example is defined as a line when viewed from the distance. However its definition changes to plane when one is on the lot. The planes in *Húsatjörn* Lake are mainly the lake itself and the bogs.

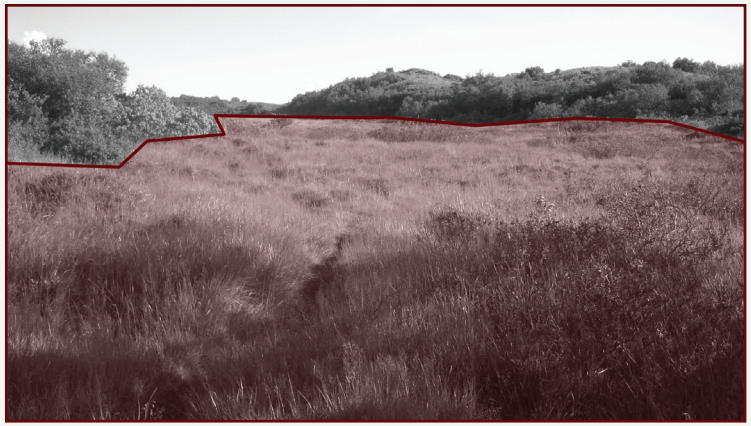


Figure 191: A bog with small scale lines surrounded by massive volume, especially on the right (2010).



Figure 192: On this map the bogs, the lake and the fields are the largest and most obvious planes.

Volume

Landscape can sometimes be difficult to traverse, such as cliffs, shrub layers or walls. Those insurmountable obstacles are considered barriers or volume. Unlike planes that seem two-dimensional, volume has a third dimension giving the landscape visual mass. The volume at *Húsatjörn* Lake is provided by the shrub like birches, the exotic trees and the numerous ridges.

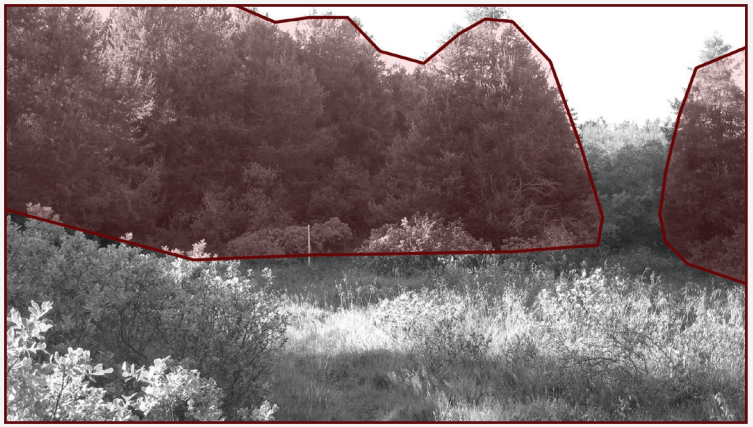


Figure 193: In the foreground is a flat bog with a large wall of larch rising from behind. The large mass dominates the view (2010).

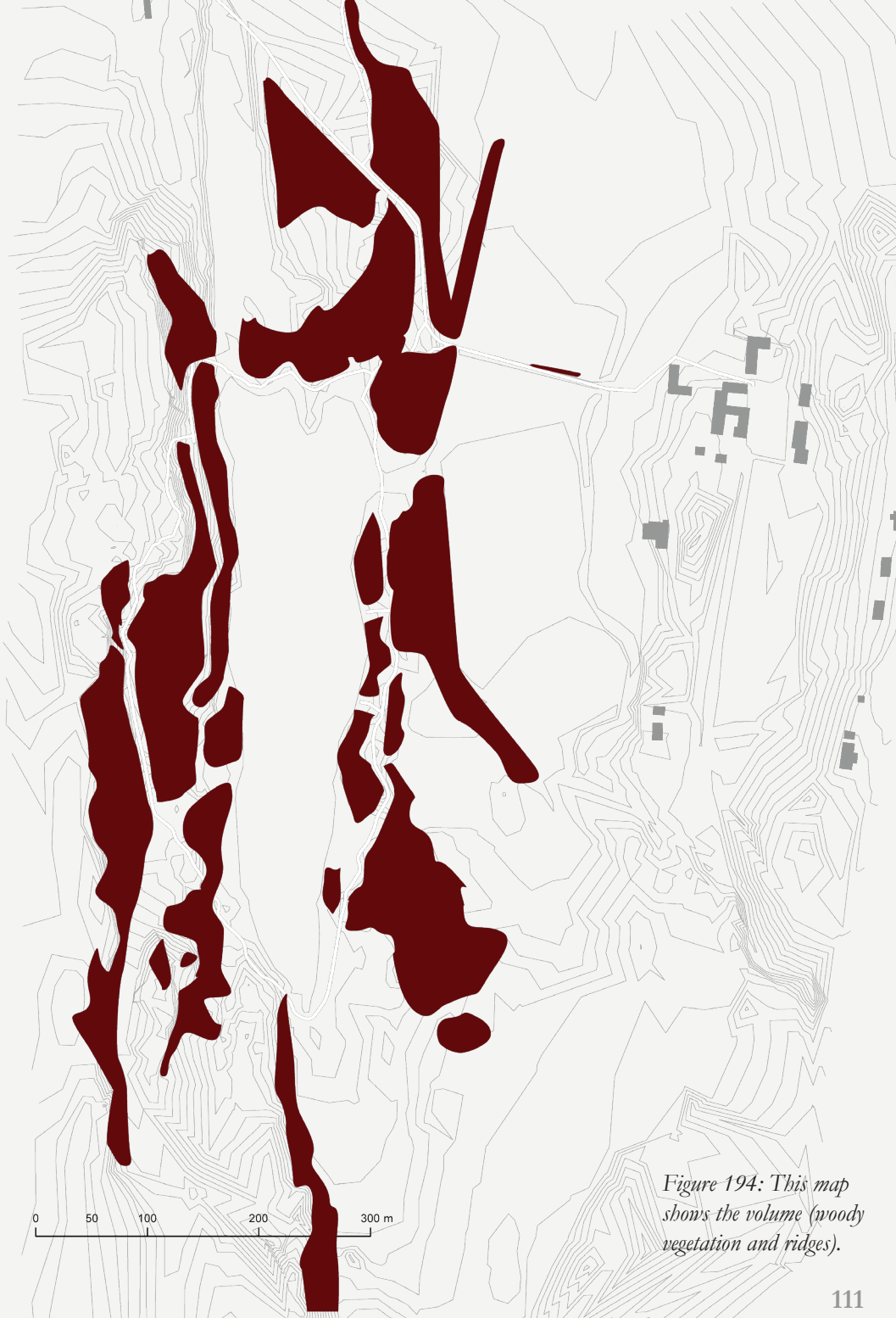


Figure 194: This map shows the volume (woody vegetation and ridges).

Nodes

Nodes are in principle a point. The difference between these two is their functions. While points are independent elements in a landscape, like an individual tree, a stone or a pole, a node is an element that can be an individual element or a component of a larger feature or node. A bridge can both be defined as an individual point (with its stable energy) or a node such as a crossroads of a path and stream (where the energy flows). There are few nodes in *Húsatjörn* Lake. The most obvious ones are marked on the map.

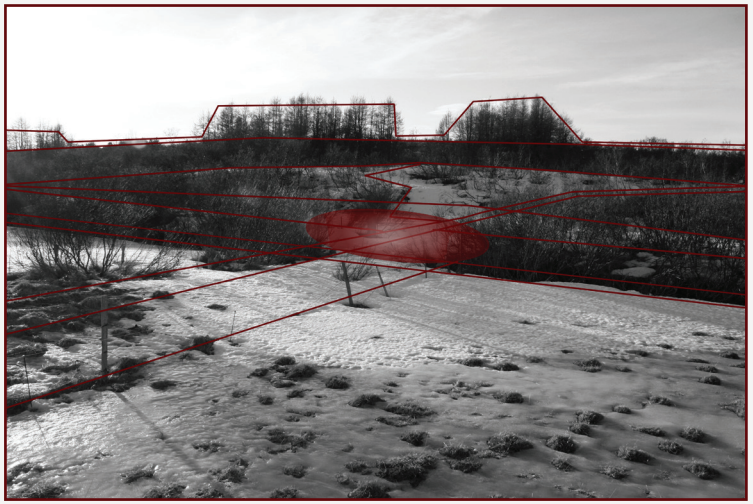


Figure 195: This map shows the most obvious nodes at Húsatjörn *Lake. A horse track crosses a footpath. At the same point, the water runs through a culvert under the path. The energy here flows in several directions (2010).*



Figure 196: Map of nodes

Puplic participation

Both interviews and a workshop were used for including the public in the design process. The interviews were both formal and informal. The informal interviews ranged from a conversation with an old school mate who had worked at *Eiðar*, to a monolog conversation with a local dentist. Formal interviews were taken with professionals who work with forest and recreation design and other major stakeholders. Formal interviews were recorded on a camcorder. No formal questionnaire was used during these conversations.

The workshop held at *Eiðar* included a walk around the area followed by a brainstorming session using the Styrofoam ™ model. As with the interviews, no formal questionnaire was used. In both instances keywords and ideas were written down immediately after.

These notes were then used during the analysis process for each zone. The ideas and impressions written for each zone provide invaluable information not unlike that obtained by Steiner (2008). All ideas and impressions were considered and when appropriate included in the current situation column of the analysis and incorporated into the design solutions.



Figure 197: A participant explaining a totally new vision at Húsatjörn *Lake. Pictured are (reading left to right): Hlynur Gauti Sigurðsson, Esther Kjartansdóttir, Sigrún Árnadóttir, Edda Björnsdóttir, Valgerður Valdimarsdóttir, Bergrún Anna Vernharðsdóttir (explainer), Orri Hrafnkellsson, and Sherry Curl (Björgvin Steinar Friðriksson 2011).*


Design

Figure 198: (Previous page.) Fly eggs in a bog at Húsatjörn *Lake (2011).*

Design

HÚSATJÖRN LAKE OVERALL

Description

The general opinion of those interviewed in this study regarding the area surrounding *Húsatjörn* Lake is that the area is of significant natural beauty. The surroundings have marked natural contrasts in a relatively small area, like the soft lines of the wetlands versus the rough lines of the cliffs, vertical mass found in the larch stands versus the horizontal mass of the heather and a complex mixture of natural elements versus uniform ecosystems. The area has much to offer in the combination of stone ridges and wetland landscapes. There is a lake with a variety of birds, native birch and planted conifer forests, rough cliffs and soft wetlands just to mention a few of the landscape elements. Most guests agree the landscape is eye catching and the other senses are fulfilled as well, but there are also historical elements making the area even more unique. The problem is that these historical ruins are often hidden, as the author himself found while looking for the ruins of the *"Goat fence"*. The ruins remained hidden in the landscape until they were highlighted by the light of dusk.

The number of visits to the area in the summer of 2010 was around 800. During this time guests' footsteps kept the track visible, without them the track would have slowly disappeared. In all cases the trail is a single file track. That means that all guests walk in almost the same footsteps on the narrow path circling the lake. There are few exceptions, where people walk beside the trail forming social trails damaging the areas closest to the trail. One example of such negative user impacts is the recently formed path along the shoreline of the east bank of the lake. The path is a threat to the vegetation, not only the ground vegetation, but also to the trees. It is likely these footsteps will loosen the soil binding provided by the vegetation's roots and these social paths will develop into loose muddy tracks. When trails have become as degraded as those in the *Húsatjörn* area are today, they are not suitable for everybody. Elderly people for example may hesitate to use them and young children might ask their parents to carry them because it is too hard for them to walk. This description goes for all the paths around the lake: Path suitable for single file walking by fit individuals in waterproof boots.



Figure 199: Narrow walking track that can be very wet (2011).



Figure 200: A child´s view is different than that of their parents (2011).



Figure 201: Bridge made by volunteers using wood from the forest (2011).

The only facilities found in *Húsatjörn* Lake were provided by volunteers without a budget for materials. Taking that into account the facilities are quite good and serve guests' basic needs. There are five bridges, one stairway and five benches. There are no tables, trash bins or piers although some guests expressed a desire for such facilities. No desire for lighting in the area was expressed.

Design

In this design the area around *Húsatjörn* Lake is divided into two different yet related functions: Restorative and Social. The Restorative area is located mainly to the west of the lake, where most of the pine and spruce trees are and includes the cliffs on that side. This area is dedicated to those guests wanting to experience birdlife, feel quietness, obtain a sense of solitude and recharge their batteries. The Social area is on the east side of the lake where the land is not as steep and hilly and is relatively close to the housing area. There are two main reasons for this location, these are the closeness to the housing area and because it is relatively flat. Both are conducive for use as an area for families and friends where people of all ages and physical abilities can come together easily.

Figure 202: View to the south over Húsatjörn Lake. The social area (to the left) is relatively flat whereas the restorative area is rather steep (2011).



This classification does not mean social activities cannot or should not thrive in the Restorative area and vice versa. It simply means the design for each area focuses on each type of benefit. Therefore it should be more desirable and appropriate to use the area for its designated purpose. Guests can use both areas as they wish, but because of the infrastructure they will feel more inclined to use it as they are "informally guided" without formal restrictions being imposed. Other activities can be carried out in these areas as well such as dog walking, cross-country skiing and berry picking to name a few. Learning is another activity extremely relevant to this area. Considering *Eiðar* was an educational institution for more than a century, it seems inappropriate not to include educational opportunities in the area's design. Former students will bring their mates and offspring and their interactions will undoubtedly contain some form of education. For instance: a story of an event that happened at *Eiðar* in the old days, learning how to swim in the lake and even places they went for a walk around the lake to make out. Another form of education is excursions with a guide to inform guests about the area's history, ruins and nature all with the proper embellishments. Yet another approach is signs along the lake, providing brief information about the geological ridge spanning the lake, the fish types in the lake, or information about tree species, bird species, grass species or wind patterns. These informational signs must be in harmony with the surrounding nature and not detract from the guests' experiences, especially in the Restorative area.

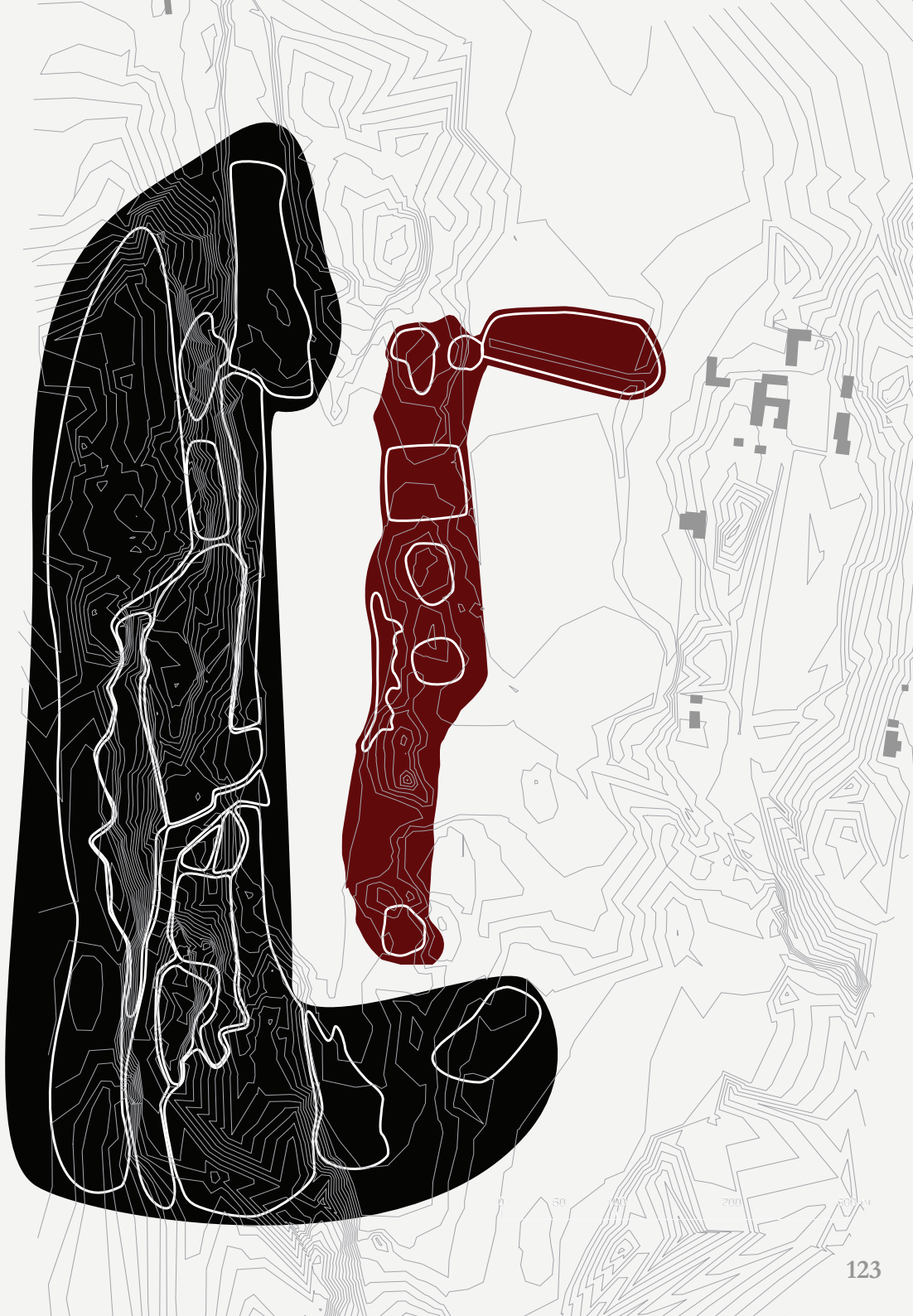


Figure 203: Húsatjörn *Lake divided into Social (red) and Restorative (black) areas.*

As mentioned earlier, the plantations at *Eiðar* are some of the first plantations of exotic species in this part of *Hérað*. When the larches were planted there was no formal plan and no clear idea of how or if the trees would grow. The planting was done to satisfy the curiosity of some and was met with scepticism by others. Because of these factors, it is possible to consider these plantations as a landscape laboratory of sorts. In keeping with this unintentional laboratory, some of the areas surrounding *Húsatjörn* Lake will be designed using that concept. However afforestation has a major impact on the landscape and it is necessary to establish general goals for the various zones. However these are not detailed and are intended for use as guidelines only. A map of future plantations was drawn where the designer's vision for the area is shown. How the vision is realized is left to the area's future managers.



Figure 204: Suggestions for future planting.

Large dotted areas = Predominantly conifers with some broadleaves and scrubs.
Small dotted areas = Predominantly broadleaves, mostly scrub, limited numbers of conifers are allowed.
White areas = Low vegetation, from none at all to low shrubs.
(More details are given in the text for the induvidual zones.)

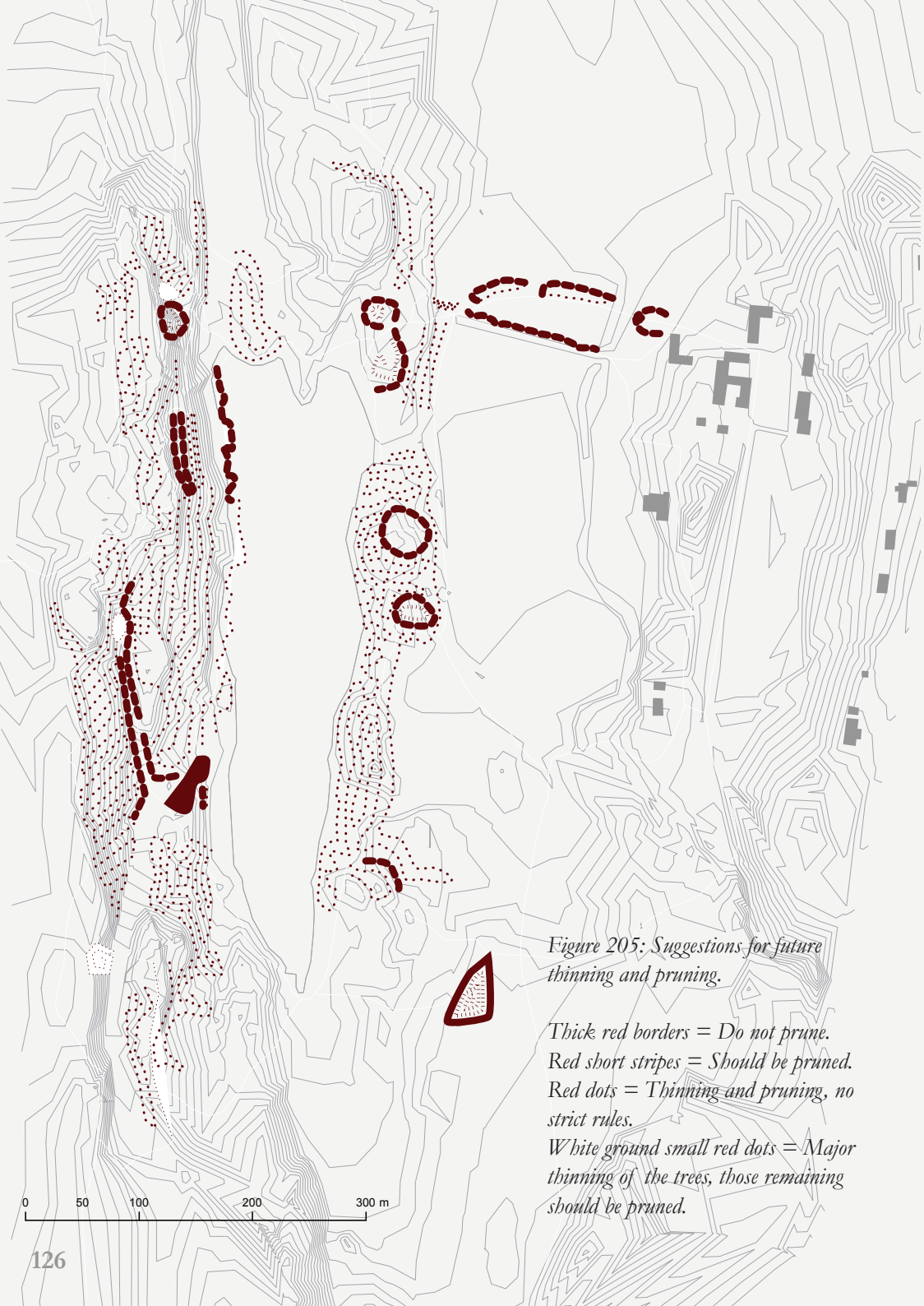


Figure 205: Suggestions for future thinning and pruning.

Thick red borders = Do not prune.
Red short stripes = Should be pruned.
Red dots = Thinning and pruning, no strict rules.
White ground small red dots = Major thinning of the trees, those remaining should be pruned.

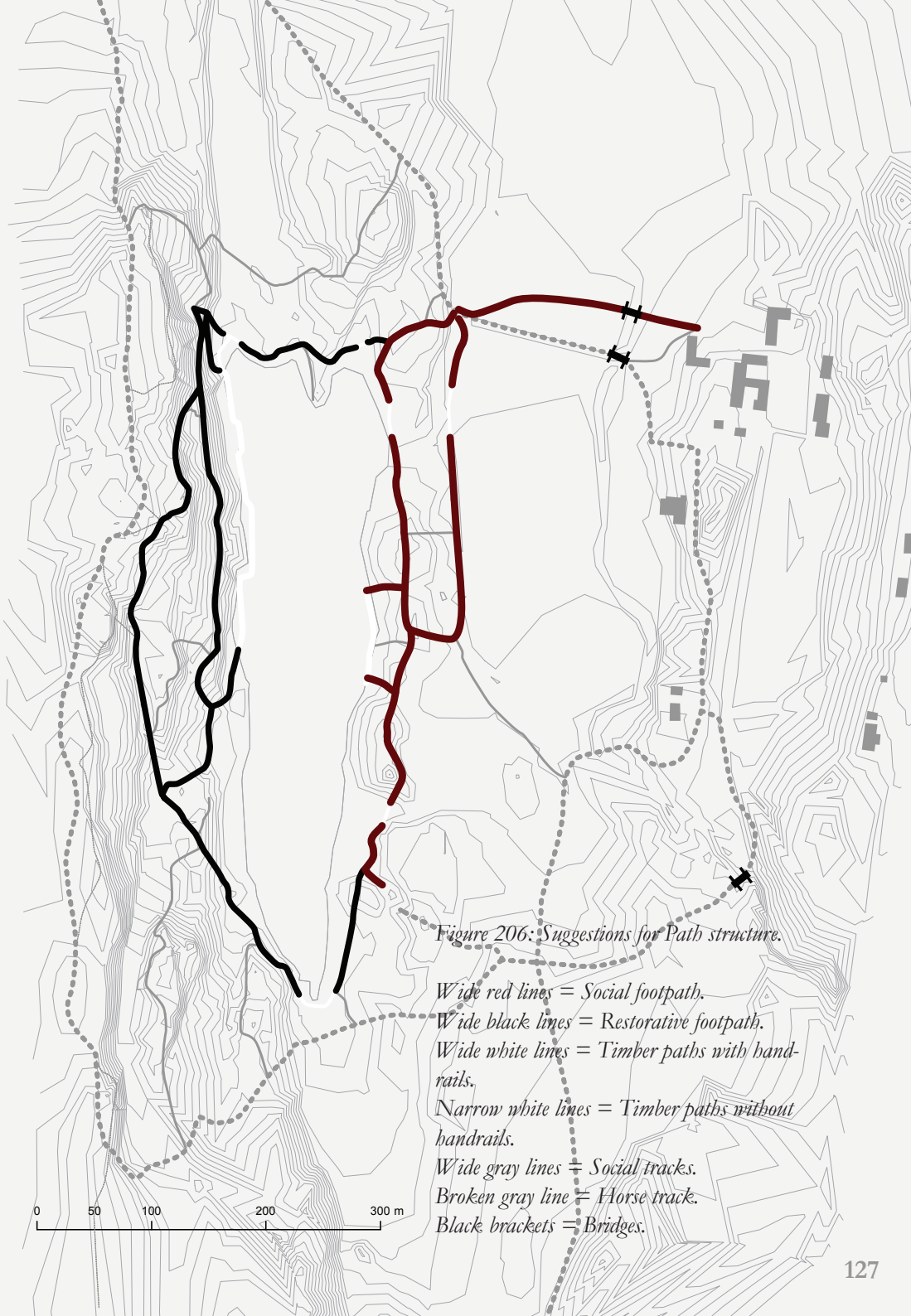


Figure 206: Suggestions for Path structure.

Wide red lines = Social footpath.
Wide black lines = Restorative footpath.
Wide white lines = Timber paths with hand-rails.
Narrow white lines = Timber paths without handrails.
Wide gray lines = Social tracks.
Broken gray line = Horse track.
Black brackets = Bridges.

Explanation of the figures used in the Design chapter

Several figures have been used throughout the design chapter. Each zone has its own logo. An example of these is shown and explained in figure 207. In the upper corner of the left hand page either a red or black map is found. The red maps symbolize the Social area and the black maps the Restorative area. The white shape on these maps is the location of the zone being discussed. An example can be seen in figure 208. Figure 209 shows a close-up of a map like those found at the bottom of the page for each zone. These maps are always on a scale of 1:2,000 and the elevation lines are at an increment of one meter. Paths are marked in red or white. If there are sections drawn for the zone, the location of the sections is shown on the map. Figure 210 shows the current situation for the required attributes of an area and the solution to be included in the design. Figure 211 is an example of the section for the various zones. These are on a scale of 1:400. In all sections elevations line 0 is the surface level of Húsatjörn Lake, 32 meters above sea level.

Figure 207: (Upper left corner.) Example of the logos used in this chapter. The outer circle of the logo, here shown both red and black, indicates whether the zone is located in the Social or the Restorative area. Logos for zones in the Social area have a red outer circle and zones in the Restorative area have a black circle.

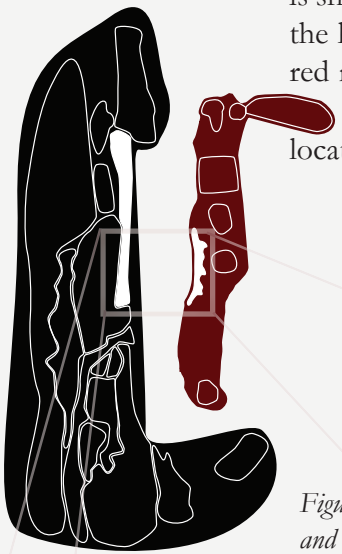


Figure 208: Red maps are used for zones in the Social area and black maps for zones in the Restorative area. White shapes show the location of the zone being designed.

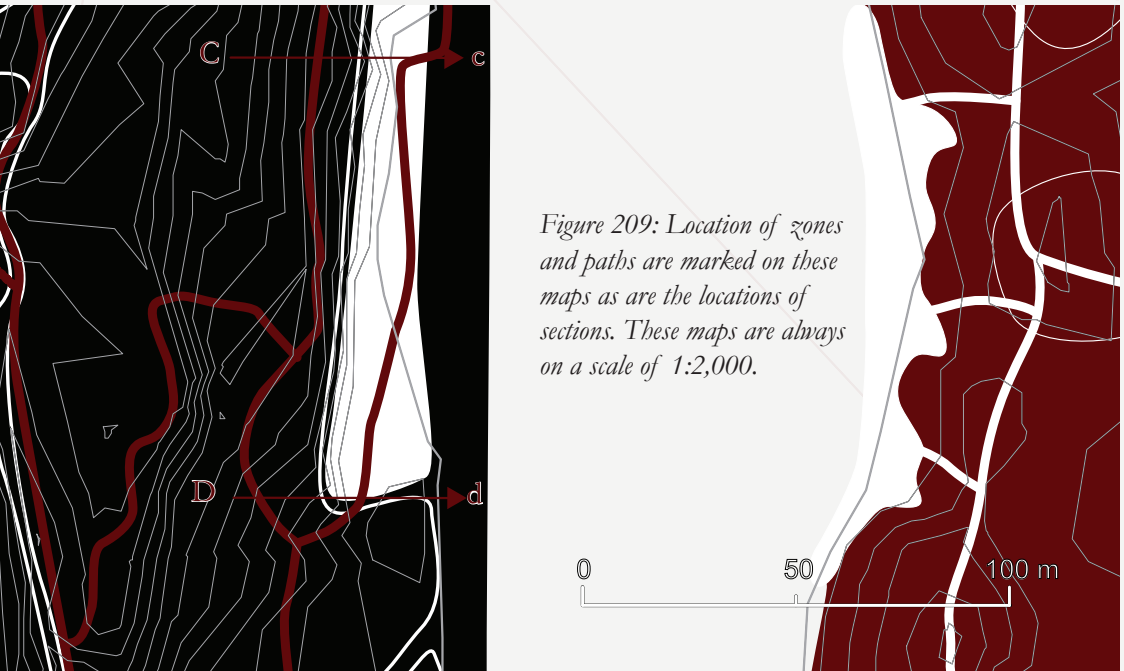


Figure 209: Location of zones and paths are marked on these maps as are the locations of sections. These maps are always on a scale of 1:2,000.

Attribute name	Current situation	Solution
Shelter from wind	Low vegetation	Plant trees
Being away	It is an opening	Plant trees
Fascination	Interesting ruins	Protect the ruins

Figure 210: Attribute table for the zone showing the current state of the attributes and the design solutions.

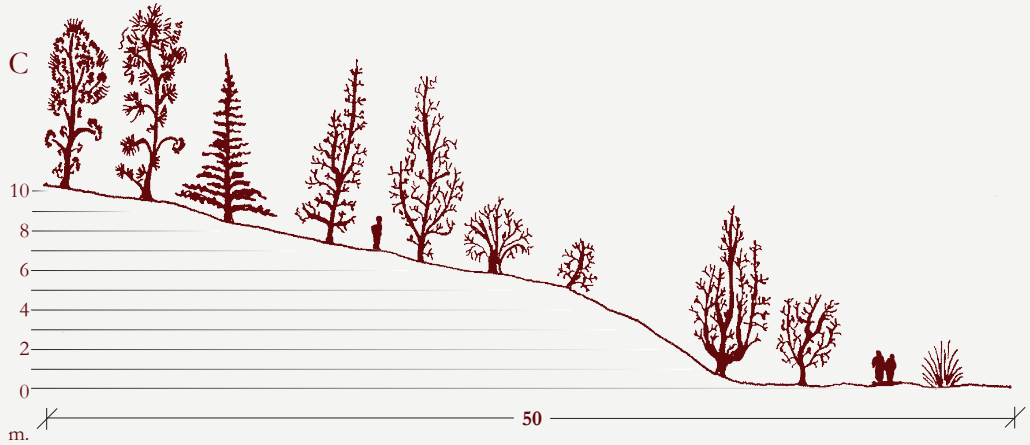
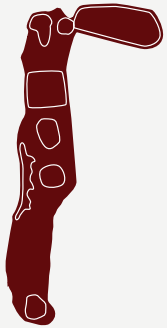


Figure 211: Example of the section drawings. The 0 meter line on all section drawings is the level of the lake's surface (32 m.a.s.l.). The scale for the sections is 1:400.



SOCIAL AREA

Description

The social area is designed to have unclear borders and therefore no set limits. However, it was roughly marked on a map to distinguish it from other areas, such as housing, fields and the restorative area. In the west it joins *Húsatjörn* Lake, the north boundary is close to the horse track and cliffs, the east side consists of the housing cluster and fields. The south side ends close to the archaeological site of the *"Sheep Fence"*. The area is about 8 hectares of relatively flat land characterised largely by wetlands.

Design

The overall design for the Social area includes the infrastructure of the path system, the path structure itself and additional tree stands.

There will be a circular path system in the area, providing guests with moderate physical disabilities to go to the lake and back without travelling the same way twice. This circular, all abilities path will open the area to a larger number of people. People's tendency to walk around the lake in the same direction increases the sense of privacy of the guests, as they are less likely to meet other walkers.

The path structure is designed to withstand at least 1,000 visits a summer without negative user impacts. Paths are wide enough that two wheelchairs can meet and pass one another easily. Surfaces must therefore be as smooth and even as possible within the design parameters. This requires increased drainage to prevent the accumulation of water on the surfaces and ensure as little ice as possible accumulates in the wintertime. On average, ground water should not be higher than 20 centimetres under the surface. When the surrounding soil is too wet or a stream must be crossed, a timber floor with an anti-slip texture is used. Benches for resting will be added at approximately 100 m. intervals (Gehl 2010).

Attribute name	Current situation	Solution
Circular path 	The land is relatively flat and wet. The vegetation has not been planned or maintained and native birch and willows grow quite freely. It is often difficult to pass through without boots and pruning tools might be helpful.	An accessable circular main-path connected to the surroundings by other paths, tracks and trails.
Path structure 	The existing paths in the Social area are narrow, wet and uneven.	The paths need smooth, well-drained surfaces suitable for wheelchairs and wide enough for two wheelchairs to pass one another easily.

New trees will be added in the area, both into established stands and in some of the open areas. The structure and placement of new tree stands, as well as openings to be retained were prioritised and are shown in figures 205 and 206 . Detailed descriptions concerning species are not given in order to retain landscape laboratory conditions.

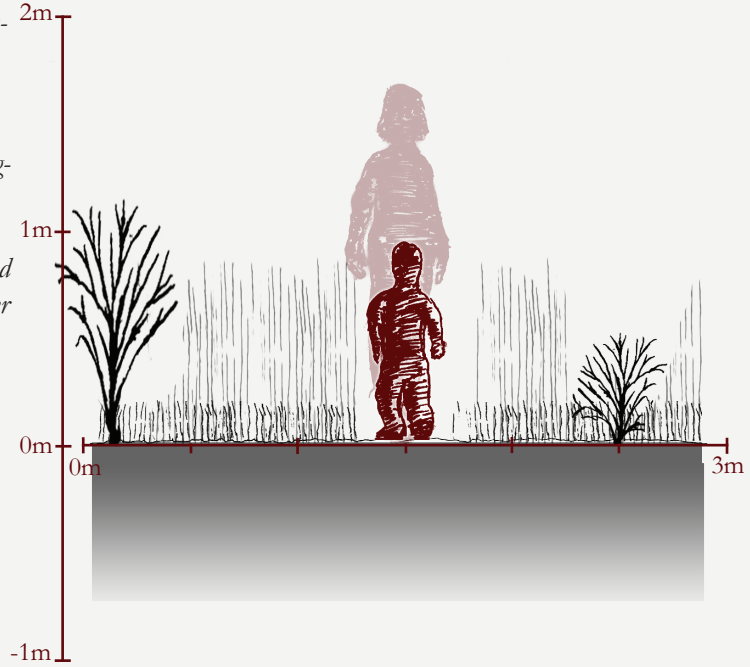


Figure 212: An illustration of the average path structure as it is today. The illustration shows tall grass on the path edges, the social trail made by guests and a child in front of its mother, forced to walk single file. Other tracts are shown in fig. 206. These are wetter, steep and bumpy.

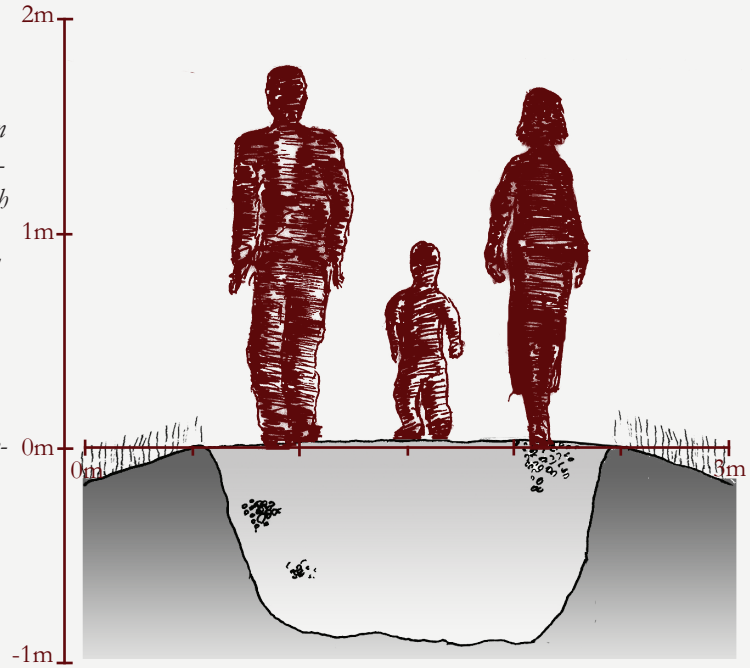


Figure 213: Path S1- The path system in the Social area is supposed to be accessible to most people and wide enough for two people to walk on side by side. In the illustration the improved path is dug down about 60 cm. and some of the soil is flatten on either side (This raises the sides by approximately 20 cm.). The soil is then blended with gravel before it is replaced to improve drainage and prevent damage caused by frost. When completed the surface of the path will be 20 cm. higher than before.

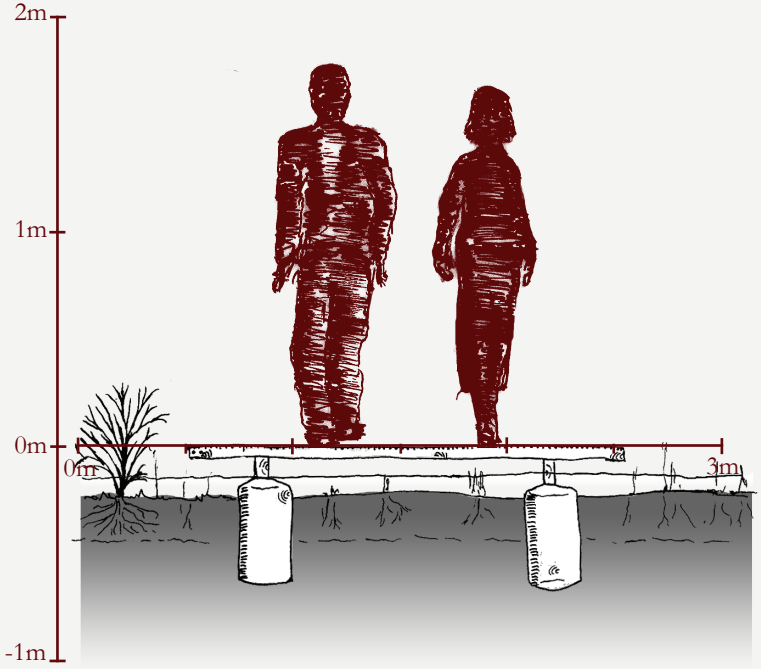


Figure 214: Path S2- On path sections where the surface is sometimes wet, such as in the spring and fall, a timber path is used. These will rise slightly above the surface of the ground in relation to the highest possible water level. The timbers will be textured to reduce slipperiness.

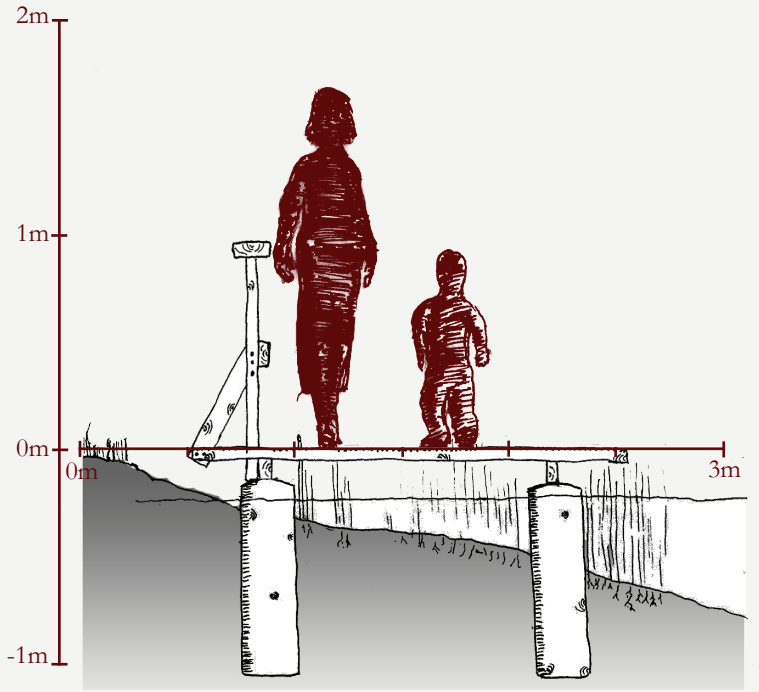


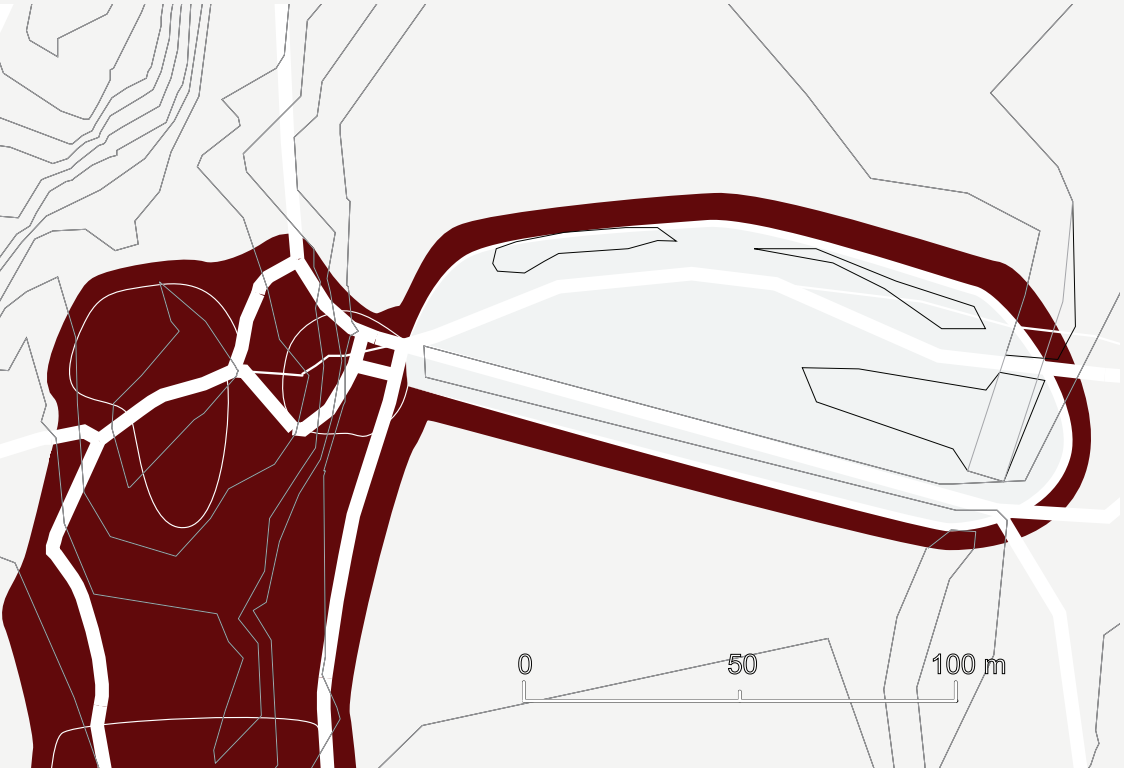
Figure 215: Path S3- This path is similar in structure to S2 except it is in the water. A meter (more or less) deep anchoring support will hold the path stable and handrails be placed on the land side of the path. This type of path is used only along the lake.

"Strawberry fields forever"

DESIDERATUM

The "*Desideratum*" is the part of the journey to *Húsatjörn* Lake that is motivating and evokes curiosity while being friendly and safe. One can see where one came from and where one is heading.

The zone "*Desideratum*" is a buffer area connecting the housing area to the woodlands surrounding *Húsatjörn* Lake. In other words it is the entrance to the forest. This is the only zone not in direct visible contact with the lake. Today this area is a combination of fields and a track. The majority of guests consider this the least attractive part of an otherwise pleasant walk around the lake. By making this area more attractive it ceases to be a barrier becoming instead a transitional area, a desideratum.



Description

In the 1950's around 1500 willows were planted along a track, on the north side (Þórarinsson 1983, p.205) where the horse track is located today. The few surviving plants are around 4 meters tall at present and provide some shelter from the wind. Shelter from the northerly wind is crucial for the guests of this zone and makes the area more welcoming. On the south side of the track is a field and a one wire electric-fence runs through the middle. This is the only zone not surrounded by forest, making it open to wind from all directions. The existing willows are not only beneficial for the guests to this zone, but also to crops and livestock.

The area between the housing area and *Húsatjörn* Lake is, and has been for decades, a hay field. Before the intervention of humans it was a wetland. A power line crosses the field in a north to south direction with electric poles positioned almost in the middle of the field. A stream, *Eiðalækur*, flows between the field and housing area. To get to the field and *Húsatjörn* Lake, it is necessary to cross this stream. A wooden



Figure 216: The old bridge crossing Eiðalækur and an electric pole in the field (2011).

bridge has been used to get across. The bridge is about 10 meters long and 2 meters wide and badly worn. This bridge cannot be seen from the port of the housing area, nor is the path leading to it easily recognized. Although the bridge does not appear safe, it still carries horses and riders back and forth. This path is generally considered the only connection from the housing area to the forest, although it is possible to get to the forest using four-wheel drive vehicles on a track further north, closer to the summerhouses. The path over the fields has deep tufts of grass making it difficult to see the uneven track, and dangerous, even for horses. People heading to *Húsatjörn* Lake are forced to use this horse track as a walking path. Because this section is intended as an all abilities trail, it is necessary to provide two separate trails for access. This provides for user safety and comfort while making it possible to use different surface materials for each group; a soft surface for horses and gravel for those walking.

Attribute name	Current situation	Solution
Shelter from wind 	A poorly maintained willow hedge is the only windbreak in this area. Free growing willow has a short life span and since it has not been maintained, it is expected that the hedge will not live much longer. *(Lawerence, Zasada and Stuart 1986)*	Adding more windbreaks to this zone will have a more welcoming effect on potential guests. The design calls for making the shelter with trees and shrubs. The topography of the surrounding area with its small hills and stones adds to the shelter from the wind.
Access 	Both those travelling by foot and those on horseback use the track over the fields. The track is very grassy with a lot of Arctic tuft grass (*Deschampsia caespitose*) making it difficult to see the ground, bumpy and dangerous, even for horses.	The current track and bridge will be repaired and used for horses. The new path utilizes some sections of the existing path, but requires some additions. The style and materials used in this area will be consistent with those used for the path in the Social area. A new bridge will be built that is clearly visible from the port of the housing area. Signs at the beginning of the tracks are used to direct users to the appropriate track.

Figure 217: (180°angle.) A new bridge will connect the housing area, through the aspen, directly to the zone. On the right the old bridge is to repaired this has mostly been used for horses. In between the wetland will be restored (2011).



Design

Outside the "*Desideratum*" zone will be a hay field, just as it was before. The field area will include a restored wetland of approximately one hectare. The wetland defines the character of the area. Four additional elements are included in the design: the footpath, horse track, small hills, and the wetland.

The current track and bridge will be improved and used for horses. The fastest, least expensive and easiest way to make this path reasonably smooth is to use a tractor with a cultivator to break up the ground. Afterwards gravel will be added. The bridge must be repaired. The wooden planks in the bridge will be replaced with a hardwood species to increase durability.

A new footpath and bridge for people walking will be placed about 100 meters north of the existing bridge. An old hedge of willow lies along the horse track on the north side and will be retained, as a heritage element and wind shelter. South of the track are open fields where livestock, mainly horses, are grazed. The existing electric fence will be replaced with a fence made of timber. This is not only more attractive, but it allows guests to get close to the animals without the possibility of being shocked by the fence.



Figure 218: Alexander Robertson admiring the horses on the fields. As do most, he found the track difficult for walking (2010).



Figure 219: The horse track will be reworked using a cultivator similar to the one being used by local farmer Helgi Bragason (2011).



Figure 220: Aspen along Eiðalækur. The bridge would be positioned west of these trees (2010).

The housing area is usually considered the starting point for travelling to Húsatjörn Lake. The way from the housing area to the zone "*Desideratum*" is not readily visible at present. By having a reasonably prominent bridge over *Eiðalækur*, easily seen from the housing port, it is more tempting to go for a walk into the distant forest. Before the bridge is reached, a short corridor of aspen (*Populus trichocarpa*) leads the way. It is important that the bridge and its closest environment are welcoming. After the bridge is crossed the "*Desideratum*" zone formally begins. The power line crossing the zone interrupts the big picture of the area and should be removed or buried. The path curves gently to the left drawing the guests' attention from the right. On the right side are small hills, covered in shrubs and trees that are not as interesting as the left side of the path, where the attention is drawn. The view on the near left is of a wetland and about 100 meters away is the horse track. The clusters of trees and shrubs prevent the track from being totally visible from the footpath. This gives both stakeholder groups (horseback riders and walkers) some privacy and at the same time gives the walkers a glimpse of what is happening behind the shrubs. After about a 200 meter walk, the two paths come together in the zone "*Lobby*" where they cross. When the path is travelled in the other direction, the wetlands are on the right side, the housing in the distance and the radio mast crowns the horizon. The horse track lies almost directly towards the mast, although there is a house in between. When something as dominant as the radio mast is at the end of a straight path it might seem endlessly far away, although step by step one is moving closer. When a group is heading towards such an object, usually only the person in the lead notices it. On the other hand, the footpath's curved shape makes the distance (about 200 m.) seem infinite. When the "*Desideratum*" is entered on the way back from the forest, a new perspective appears. The dominating feature, the radio mast, appears to change its position in the landscape adding depth. Similar to the "*Dissing-Weitling style*" in the *Oresund* Bridge linking Copenhagen and *Malmo*, where the bridge curves a little providing those accessing it a view towards the structure (Richard Hare 2010, pers. comm., Jan.; Dissing Weitling Architecture n.d.). The small scrub covered hills are also noticeable from this angel. From this vantage point they appear more open as does the surrounding field.

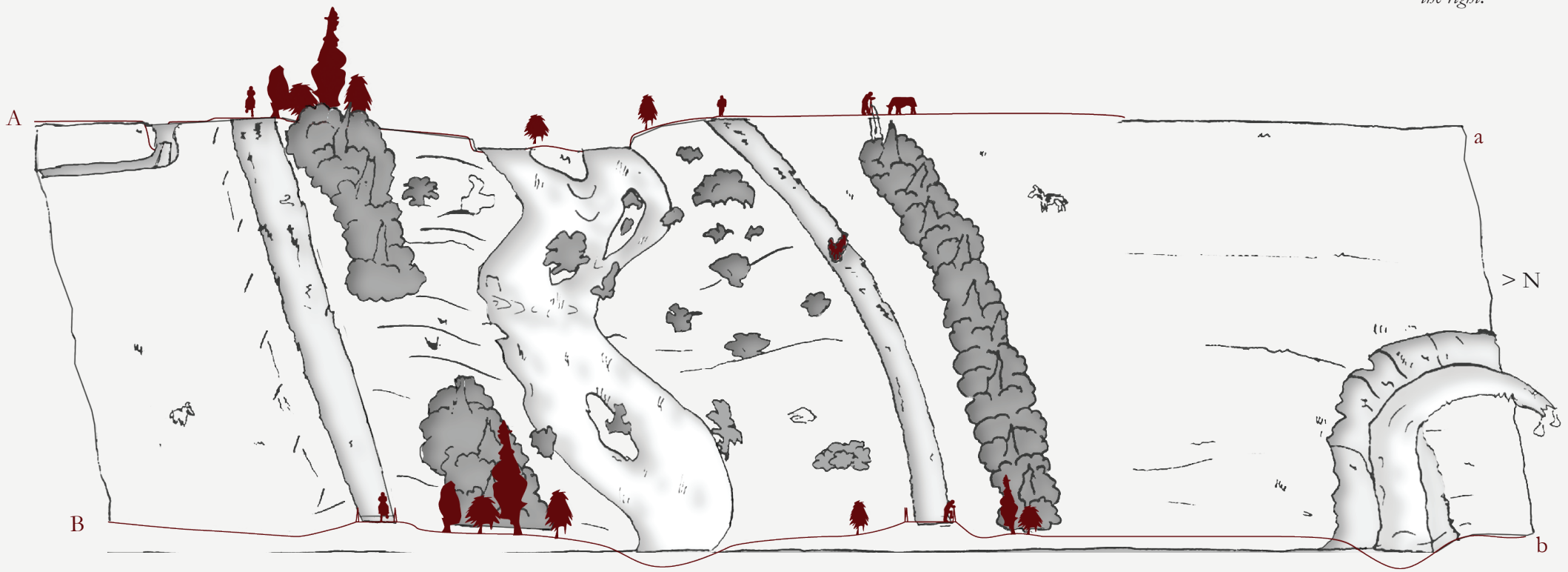


Figure 221: The bridge over Oresund is in the "Dissing-Weitling style". Copenhagen is in the distance (flickr.com n.d.).

On the north side of the path small hills (not more than 2 m. high) are added and planted with trees, shrubs and strawberries to increase shelter from the cold northerly wind and add visual interest. These hills are barriers between the fields and the footpath and are shaped with a steep slope (about 1.5 m. high) on the field side towards the north and much less steep in the path side, towards the south. The steep edge might be covered with turf from the wetland reconstruction. A timber fence connects these hills and prevents livestock from entering the path. The positions of the small hills are irregular in relation to the path. They are placed so it is easier to see between them into the field from the west than when viewed from the east. The hills are made of soil retrieved from reclaiming the wetland.

The bulk of the work in this zone is the restoration of the wetland. The wetland serves as a buffer between the two tracks (horse track and foot path). The water flowing into the wetland comes from the drainage system surrounding the fields, flowing first into a small curved stream and on into *Eiðalækur*. Wetland vegetation will be planted. The difference between high and low water levels, for example spring and fall, will be very visible. The idea is to experience a wetland ecosystem, with varying water levels, decaying leaves from trees, insects and birds, and other elements found in wetlands.

Figure 222: Illustration of the restored wetland. Fields are on both sides of the wetland. An informal shelterbelt will be placed along both the horse track, on the left, and the footpath, on the right. The drainage system from the fields is directed into the wetland and wetland species will be planted there. The stream Eiðalækur *turns naturally on the edge on the right.*



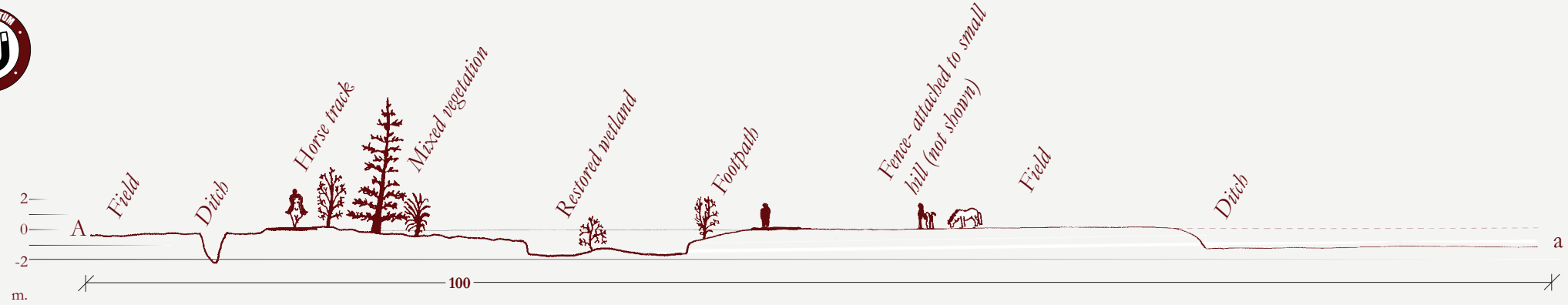


Figure 223: Desideratum A
From left to right: A drainage ditch along the horse track and old shelterbelt. The restored wetland and new footpath, fence that runs into a small hill (not shown).

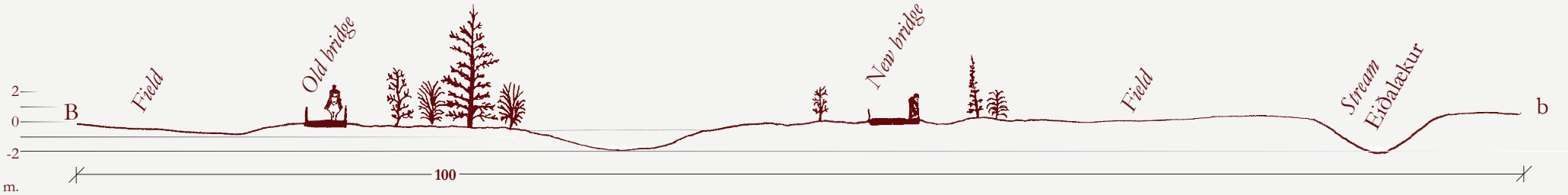


Figure 224: Desederatum B
Section of the same view showing the new design.

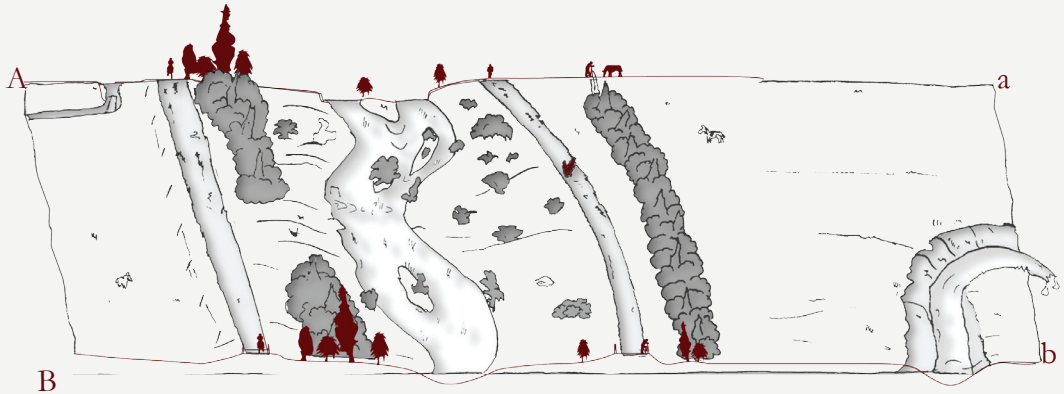
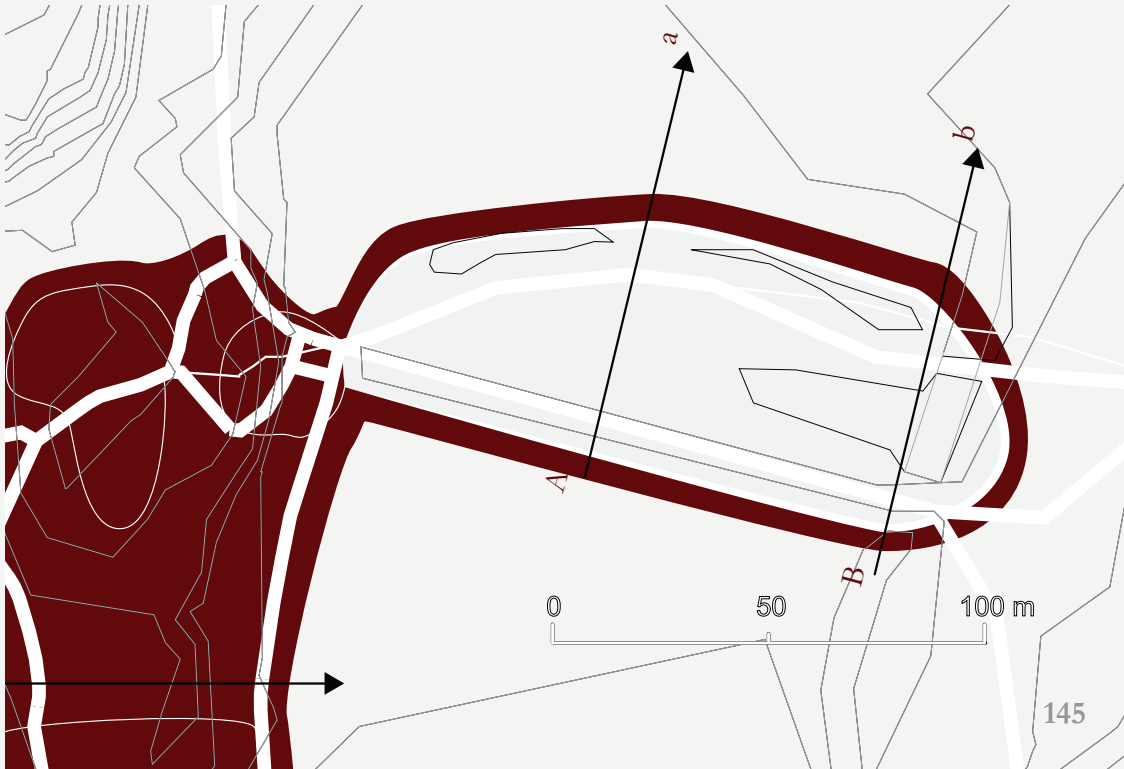


Figure 225: Smaller version of figure 222 from the previous page.

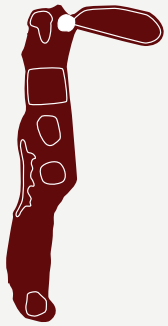




"Let your heart lead the way"

LOBBY

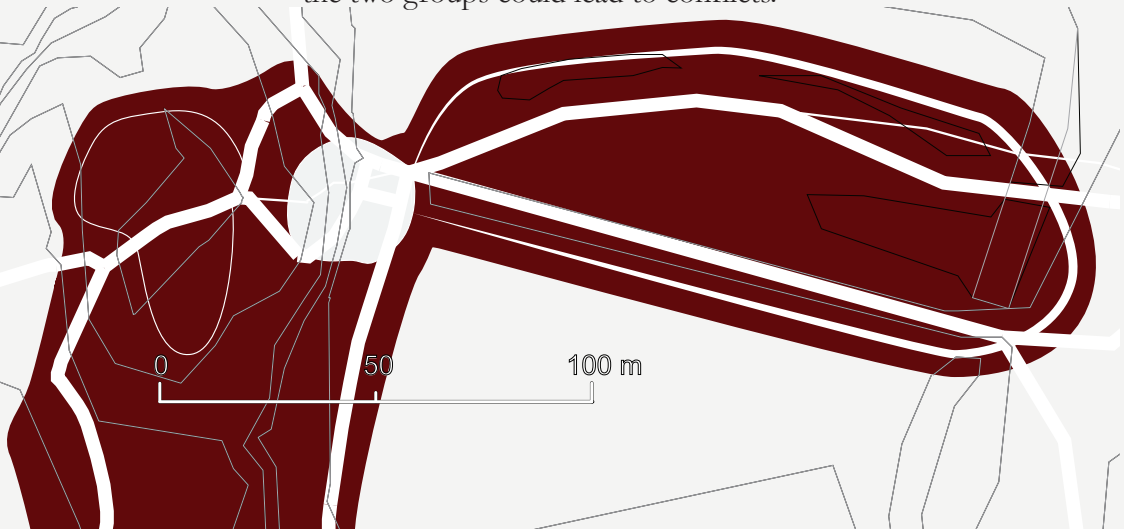
The entrance into the forest around *Húsatjörn* Lake is through the zone "*Lobby*". This is where all the tracks come together. It is a meeting point and a reception area, just as a lobby should be.



Description

The old road, used almost exclusively as a horse track now days, ends at the ruins of an old power plant located on the shore of a large river, *Lagarfljót*. The power plant produced electricity for the school 1935-1965. Power lines connected the power plant to the school with a stopping point near the fields, where the electricity was transformed from AC (Alternating current) to DC (Direct current) at the transformer station. In the middle of the "*Lobby*" zone, are the remains of the transformer station. These consist of a cement floor of about 12 square meters (4x3m.) (St. Þórarinsson 2011, pers. comm., June).

Both the horse track and footpath cross in this zone. While the horses continue on, those walking must cross the horse track to enter *Húsatjörn* Lake. The use of the track for the two groups could lead to conflicts.



Attribute name	Current situation	Solution
Shelter from wind 	Sheltered by native trees.	Designing and adding new plantings increases the shelter.
Coherent 	The zone's character is rather coherent, but the overall maintenance has been neglected.	The level of maintenance for both infrastructure and natural features must be increased to a level indicating the area is "cared for".
Access 	Uneven, loose track caused by horse hoofs.	Guide the horses to the correct track and make the soil stronger, for example with binding agent.
Meeting point 	There is a lack of a friendly, welcoming interface in this "*Lobby*". The old cement floor is visible, but it lacks context and purpose.	Formerly the cement square was the base of an electric transformer. Adding informational signs would answer many of the guests' questions about the area, regarding its nature, history and other area features.
Place to sit down 	Lack of places to sit down.	Benches and perhaps tables are needed.

Figure 226: (Inset.) Original photo of the zone "Lobby", from the west (2011).

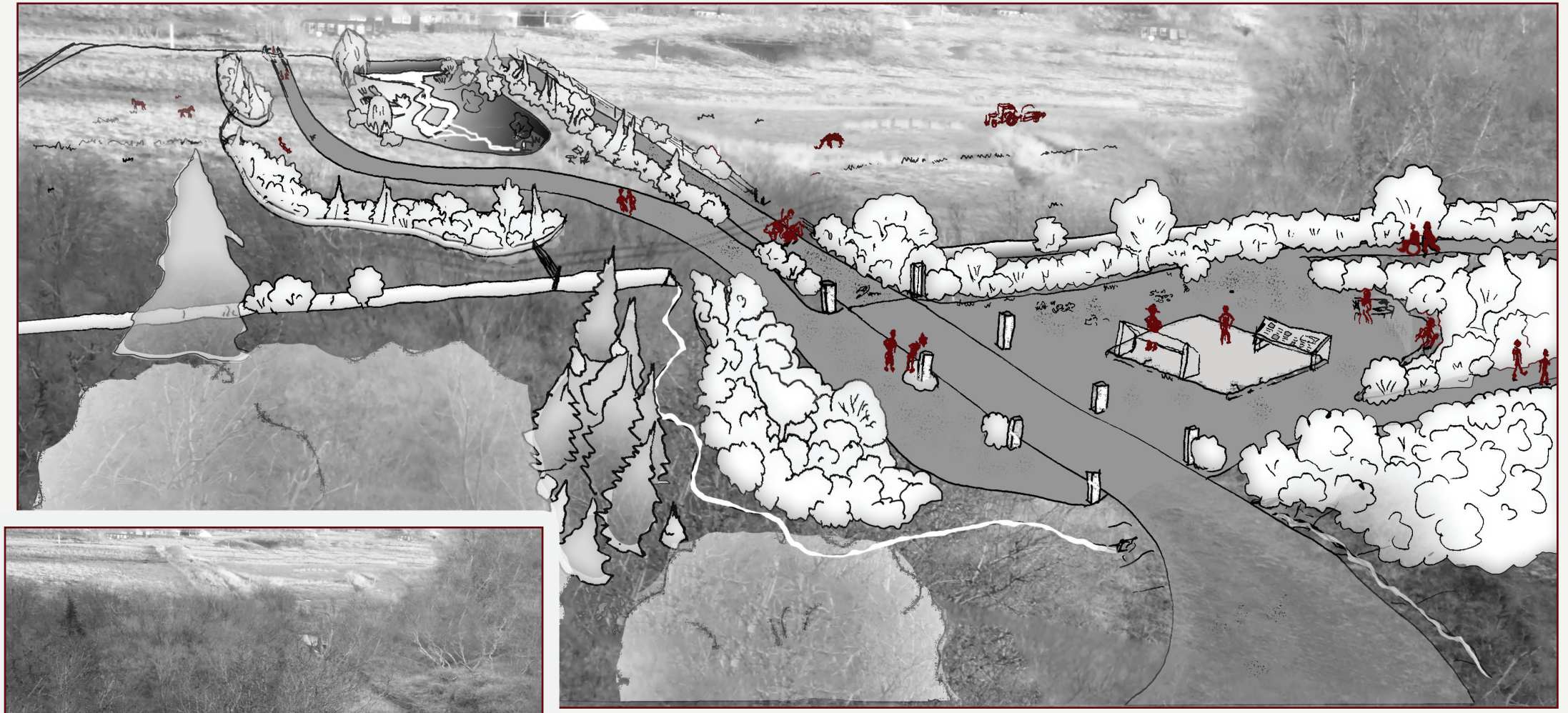
Figure 227: The design for the "Lobby" zone. The viewing angle is 8 meters up on the horse track, looking east towards the housing area.

Today there are two paths in this zone. There is one path from the zone *"Desideratum"* going further north, then turning left to enter the zone *"Larch Crown"*. Another rough track lies close to the *"Larch Crown"* zone, although the former is preferred.

The zone is sheltered from the dominant winds by a mixture of native shrubs, birch and rounded willow.

Design

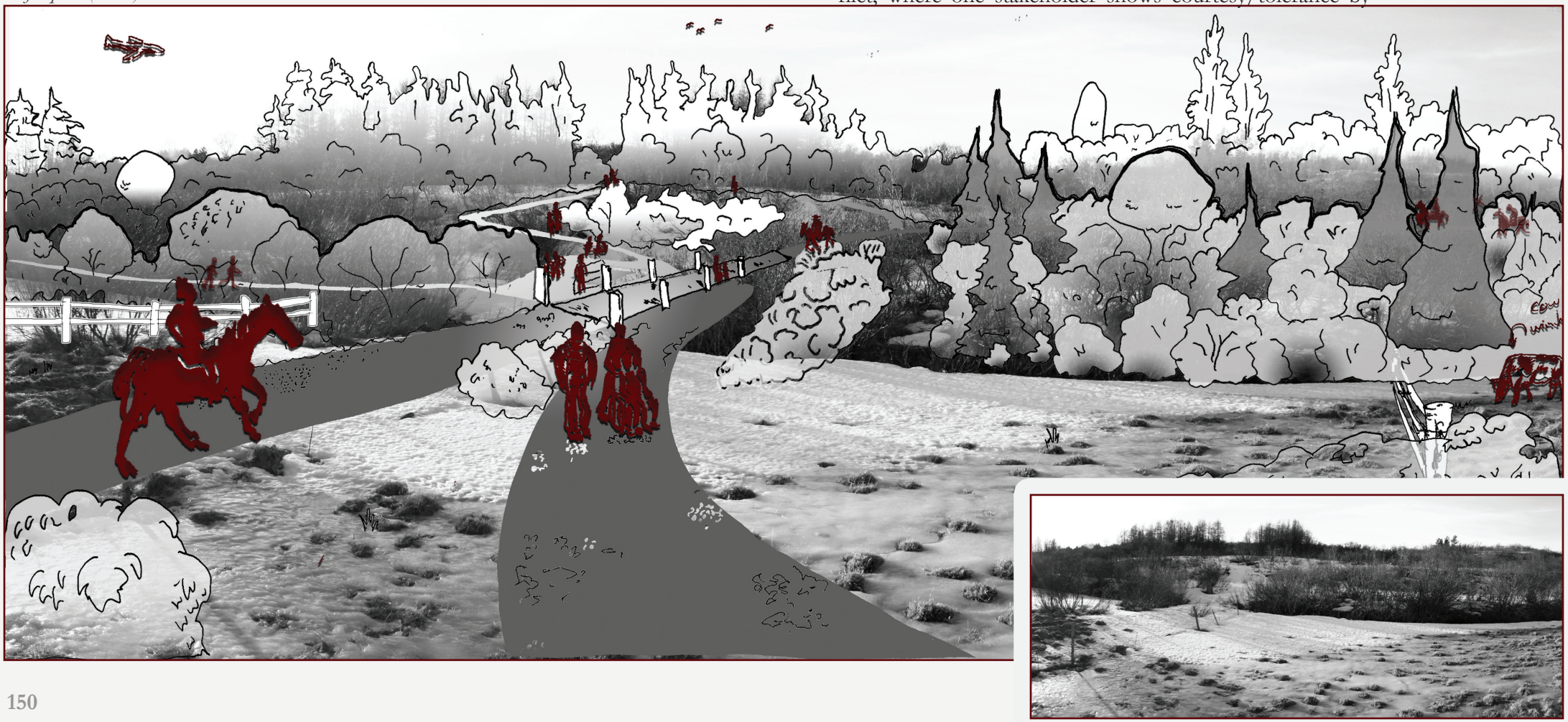
A fundamental part of the design in this zone is to prevent possible conflicts between horseback riders and walkers when walkers are forced to cross the horse track. Two issues must be resolved. One is to make sure the horses do not enter the footpath and the second is to ensure the surface of this common area remains as smooth as possible, despite its use by horses. Other parts of the design include tree placement, benches and tables, and informational signs on the cement square. These along with a general sprucing up of the area increase the zone's level of coherency.



The horse track will lay exactly as it does today, but it will be repaired. Two small, adjoined mounds will be added on the north side and a small ditch placed between them to redirect rainwater. The mounds will be covered with vegetation. The one closer to the track will be lower and covered with low growing shrubs and the one in the back will be covered by taller conifers and broadleaves. The surface of the horse track will be strengthened with cement based binding agent retaining the character of the cement base of the transformer station. This surface is also used where the footpath crosses the horse track at the entrance of the "Lobby". Small pillars, like the old fence post that held the gate of the old fence (one is still standing, the other has fallen, are placed on either side of the improved surface to ensure horses cannot get onto the footpath of their own accord. These precautions minimizes conflicts between stakeholder groups and prevents the development of mutual animosity, while the awareness of the other's presence fosters a sense of comradeship based on a shared albeit different experience of place and helps promote positive conflict resolution. Roland Gustavsson (R. Gustavsson 2007, Pers. Comm., February) termed such circumstances, positive conflict, where one stakeholder shows courtesy/tolerance by

Figure 228: The zone "Lobby"viewed towards the west from 4 meters up the footpath (2011).

Figure 229: (Insert.) Original picture of the zone Lobby, viewed to the west.



waiting until the other passes, thereby strengthening their causal relationship. Signs will be positioned beside the footpath to warn walkers of the possibility of meeting horses. Signs are also placed on the horse track to make riders aware of possible walkers.

The drainage system separating the fields and the forest made accessibility from one to the other difficult. In order to improve accessibility, a 5 meter wide culvert was put in under the existing track. Five meters is not sufficient to accommodate a separate horse track and a walking path. Therefore it is necessary to extend the culvert to a width of 10 meters. The only other traffic on this section of the tracks is the limited seasonal use of the tracks by local farmers. In both spring and fall, it is necessary for them to cross both tracks. Use of the tracks by the farmers is so infrequent that it will not have a marked impact on the track's users. Nor will it have a significant impact on the track's surface.

Several trees must be removed when the tracks are reworked and this may compromise the shelter from the northern wind to some extent. Therefore new tree plantings are required on the north. (Spruce will be used towards



Figure 230: The author indicating where a new path will be (Fjölnir Björn Hlynsson 2011).



Figure 231: Father and son standing on the current path and horse track in front of the zone "Lobby" (2009).

the north and tea-leaved willow to the south (*Salix phylicifolia*)). The circular shape and lighter color of the willows provides contrast to the darker, triangular spruce. The area contains cement squares, willow circles either red (in winter) or light green (in summer), and dark green spruce triangles providing year round interest. The old cement floor of the transformer station square is the heart of the lobby and it is relevant to have information signs, just as found in other reception areas. The area adjacent to the square provides a welcoming area to sit before walking further. From this spot one of the paths is more obvious than the other and it is the most direct way to the lake, with a stop in the zone *"Larch Crown"*. The other path is not as obvious and is the route back from the zone *"Dam"*.

The *"Lobby"* zone has a "new life" functioning as a lobby or perhaps beating heart, with veins leading in all directions. The zone is now coherent so, let the heart lead the way.

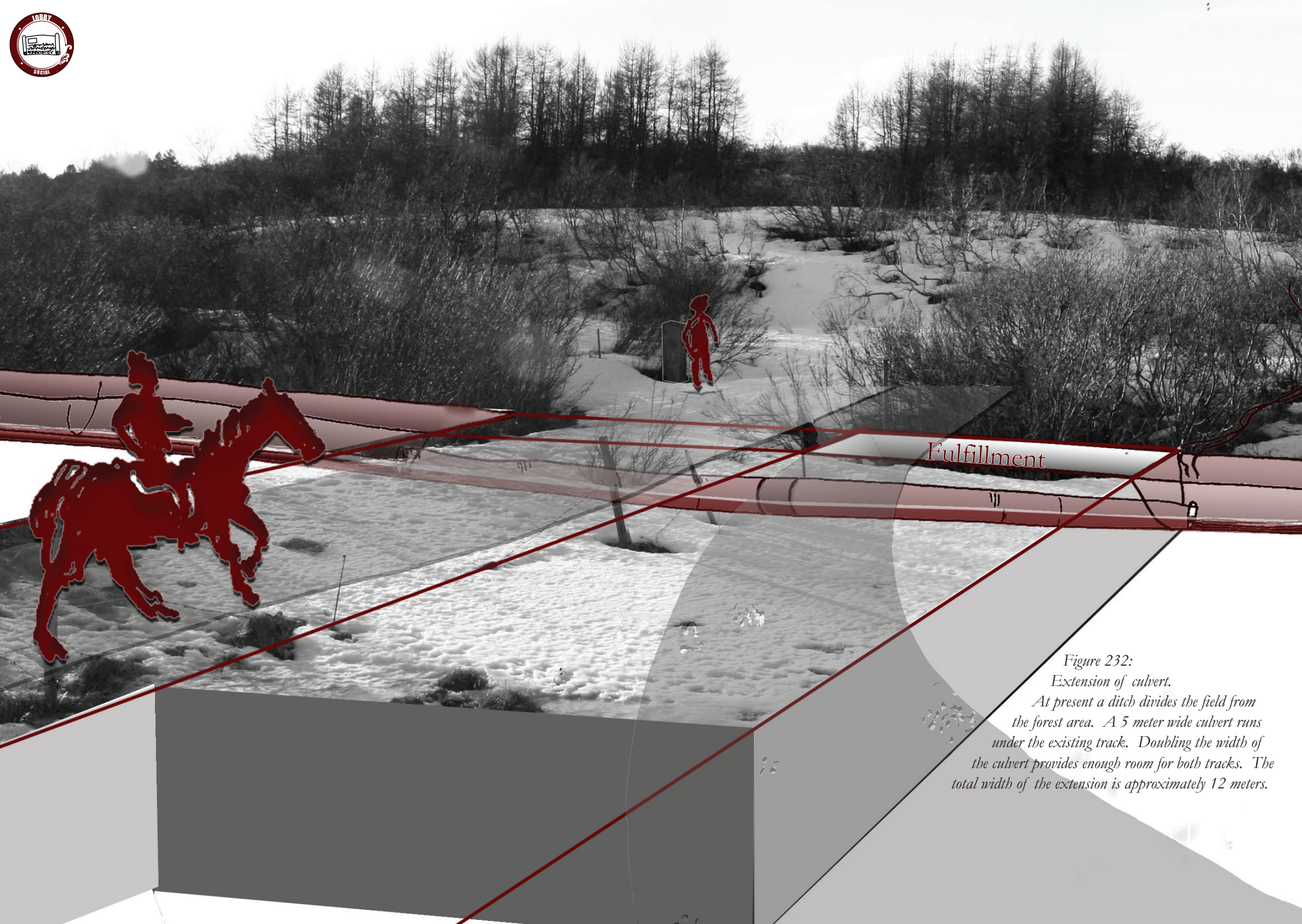
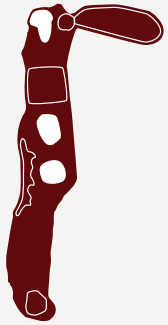


Figure 232:
Extension of culvert.
At present a ditch divides the field from the forest area. A 5 meter wide culvert runs under the existing track. Doubling the width of the culvert provides enough room for both tracks. The total width of the extension is approximately 12 meters.





"Jewel in the crown"

LARCH CROWNS

Published works about the area agree that four groups of larch were the first plantations at *Húsatjörn* Lake. Five hundred larch plants were divided into four stands; two stands on the west side of the lake and two on the east side. (Þórarinsson 1983).

The two stands on the east combined with a third slightly younger stand from the zone "*Larch Crowns*".

Attribute name	Current situation	Solution
Shelter from wind	All three stands are tall and provide shelter from the wind.	It is important during future maintenance not to open the stands too much thus allowing the wind into the zone.
Forest feeling	One stand is well pruned allowing guests to get close to the stems and experience literally being in the forest. The other two are not pruned and therefore difficult to reach because of large branches.	The other two stands have not been pruned yet. When they are, it will be done implementing "creative management" with an experienced supervisor.

Description

On the east side of the Lake there are three separate larch stands. Through the years each of the stands has been maintained differently. In the northeast stand most of the trees were pruned up to two meters. The other two stands were not as heavily managed, if managed at all. Although the trees are only about 10 meters high, they offer good shelter from the wind and provide the feeling of being in the forest.

Design

The design for this zone will be in the form of creative management. The elements involved are the tree crowns, stumps and branches as well as the ground vegetation and path surfaces. Although creative management will be used here, some profession guidance will be needed to ensure the lower layers of the vegetation are not opened too much, unless that is the intention at the time. Minimal guidance will also be needed to ensure the path surfaces are durable and any sensitive vegetation in the area is not negatively impacted.



Figure 233: The author standing in the middle of the northest stand. It was pruned and it is accessible and tidy (Fjölnir Björn Hlynsson 2011).



Figure 234: View of the smallest larch stand. The photograph is taken from the existing path (2011).



"Meeting eye to eye"

DAM

Description

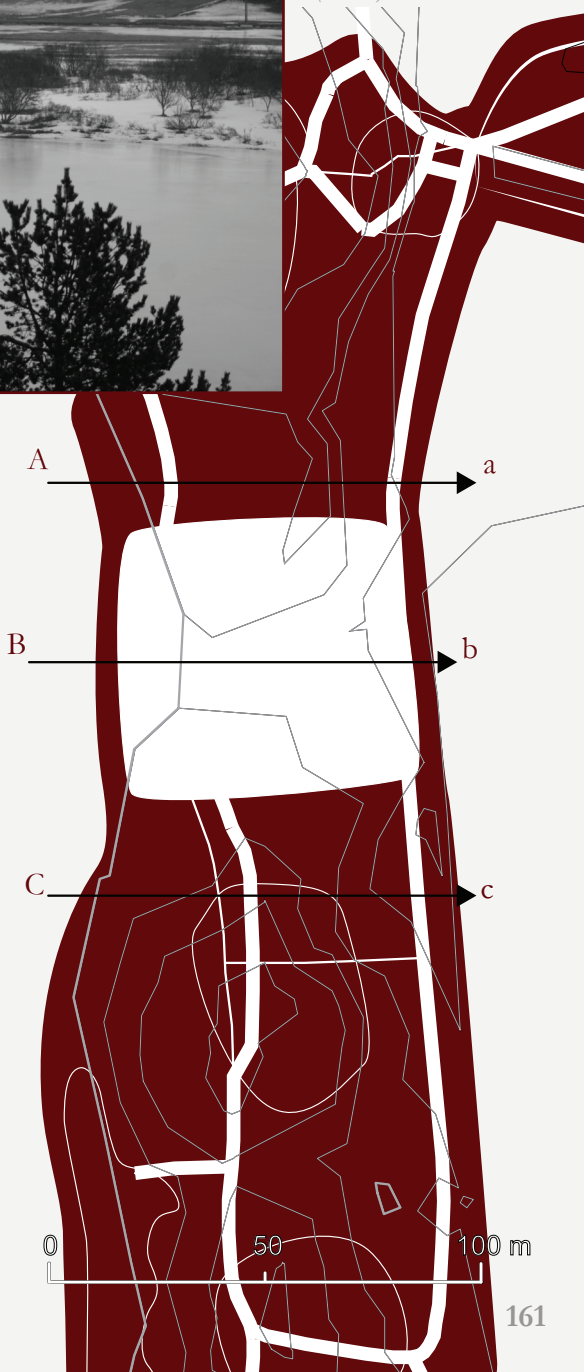
This zone is more or less a wetland with a ditch draining the overflow from the lake into the drainage system in the fields. Despite the ditch, the ground is saturated and the area is covered by scrubby wetland vegetation.

Attribute name	Current situation	Solution
Small rapids	The water from the lake falls into a ditch and on into a larger drainage system. That wastes the water resource.	The water will be more elegant if the ditch is dammed and some soil removed allowing the water to flow through the entire zone in a series of small rapids.
Shrub vegetation	Shrubs are already there.	Additional wetland shrub species will be added.
Eye to eye level to birds	The path is quite far from the bank of the lake. The path is usually wet.	By removing some of the soil, and strengthening the lake bank and adding a small dam made of soil and rocks to one side of the lake, it is possible to bring the water's surface to eye level and provide the opportunity to observe the birds eye-to-eye.



Figure 235: The dam seen from west to east (2011).

Because of the saturation of the soil, the path in this zone is often wet and difficult to traverse. Because it was originally a wetland, it was decided to reclaim it as a wetland, with small rapids and shrub vegetation. During the interviews for this project, ideas of how to see under the lake's surface without getting wet were frequently mentioned. For example the use of glass balls floating on the water (S. Sighvatsson 2009, pers. comm. October). Implementation of such ideas is expensive and some users felt they were not in harmony with the landscape. Some persons interviewed expressed a desire to get closer to the birds on the lake. All ideas expressed by those interviewed were taken into consideration during the design of this zone.



Design

The soil is rather wet in this zone and will be even wetter after the drainage ditch is dammed. Much of the soil at the lower (eastern) part of the lakeshore will be removed and the path system lowered about 1.5 meters making the path lower than the lake's water level. Instead of having a drainage ditch that balances the seasonal water flow; these differences will become more obvious. Large rocks from the surrounding area (to maintain natural harmony) are placed here, as are small ponds that dry out during some parts of the year. This mimics natural wetlands with running water in small rapids. The area will be accessible to everybody and it will be easier for users to watch the birds on the water without disturbing them too much. Users will be able to keep their feet dry. Two timber paths cross this zone; one close to the lake, about 1.5 meters below water level(behind the dam) and the other closer to the grass fields, about 1 meter below the field. (There is about a 1 meter height difference between the lowest points of each path.)



Figure 238: North section (a-A). The view is to the south in summer, from the nothern part of the zone. In the distance the southern section(c-C) can be seen. The lake is on the right (2010).

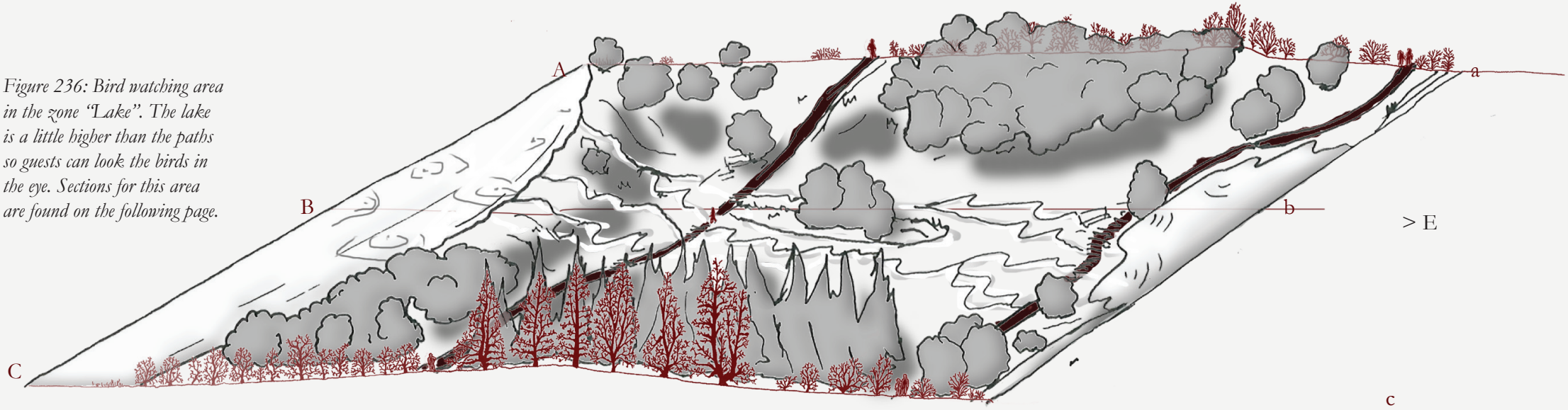


Figure 236: Bird watching area in the zone "Lake". The lake is a little higher than the paths so guests can look the birds in the eye. Sections for this area are found on the following page.

Figure 237: South section (C-c). The view is to north in winter. The lake is on the left (2011).



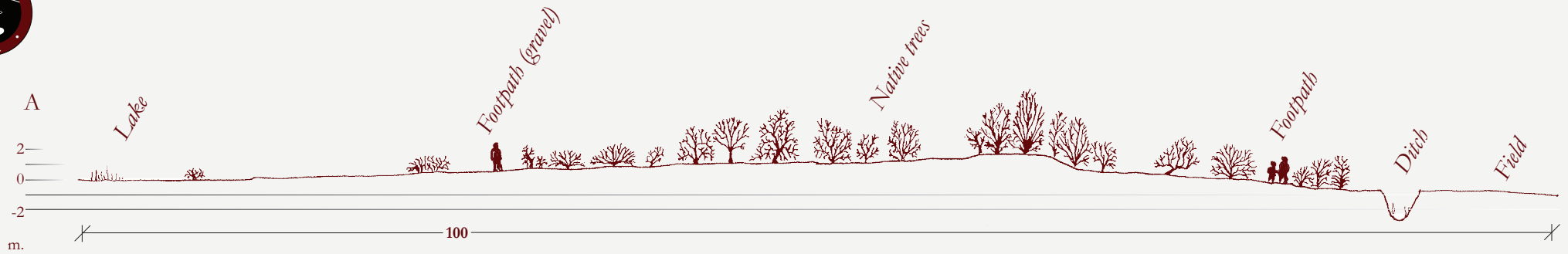


Figure 239: Northern section (A-a).

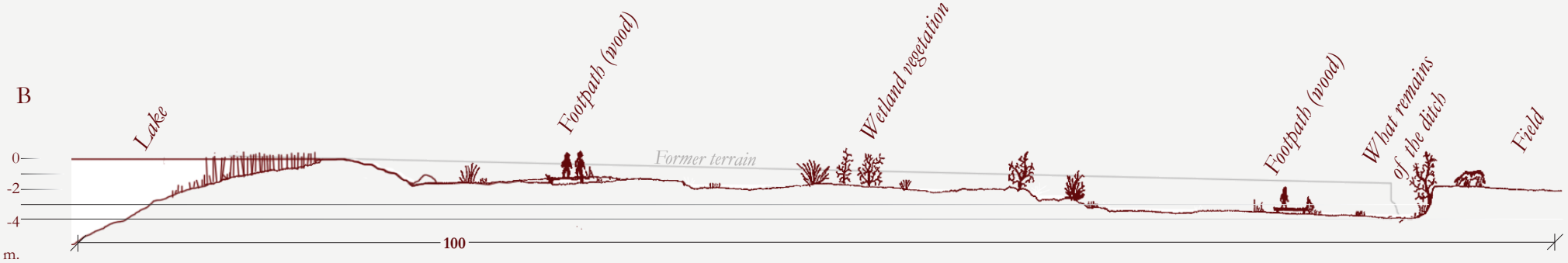


Figure 240: Middle section (B-b).



Figure 241: South section (C-c).

"Wet, wet, wet"

LAKE

Description

The "*Lake*" zone is a combination of the lake's bank and the nearby native shrubbery woodland. The three rest areas along the bank are connected both individually to the path system and in between. All of the paths are narrow, hilly, muddy and wet and not accessible to everybody. The surface vegetation is not strong enough to carry foot traffic without negative impacts. Benches can be found in all three rest areas. The benches are poorly constructed, although they are quite well positioned. Other facilities are not provided in the rest areas. People often use these three rest areas as entrances to the lake for fishing or boating. One special element along the lake's bank is the natural stone ridge across the middle of the lake. At that spot there are more rocks and large stones than other sections of the bank.



Attribute name	Current situation	Solution
Rest areas	Poorly constructed facilities.	Provide strong, attractive benches and tables.
Access to the rest areas	The path is narrow with weak surface materials.	Needs to be wider with durable gravel surface.
Access along the Lake	The lakeside is vulnerable to traffic.	A durable path at the water's surface level.

Design

This zone is to be bright and welcoming with openings to the lake. Among the native birch, taller and flowering trees will add interest to the area. Tree species such as bird cherry (*Prunus padus*) and Swedish rowan (*Sorbus intermedia*) will be added at intervals. Access to this zone must be easy for guests of all ages and various physical conditions. It will be convenient to take a seat and rest. Facilities like benches and tables will be placed in each of the three rest areas. A formal path was not originally planned or put in along the lake; however there is an obvious social trail with negative impacts to the shoreline. To protect the vulnerable vegetation it is necessary to build a more permanent path of strong material, for example wood. Having a durable path closer to the lake not only provides users with the opportunity to be near the water, but also prevents social path formation and further damage. The path can also be used as a pier for fishing and boating. A turnout in the path will be added close to where the stone ridge crosses the lake. An information sign should be there, explaining the geological feature underneath the water. (See more on page 170.)

Figure 242: Wooden path along the lake with handrails away from the lake. This allows guest to be close to the water without damaging the vulnerable lake bank. Also the wooden resting area is in harmony with the nature.

Figure 243: (Insert.) Orginal picture of the zone "Lake" viewed from the north (2011).





Figure 244: Roughly in the middle of Húsatjörn Lake is a stone ridge. The ridge is so close to the surface of the water that it is possible to wade across the lake by following the ridge. The location of the ridge is shown as a red line (Aerial photograph by Loftmynd ehf 2008).

Figure 245: On this photograph the location of the ridge was added using an uneven red strip. The ridge itself is not readily visible (2011).





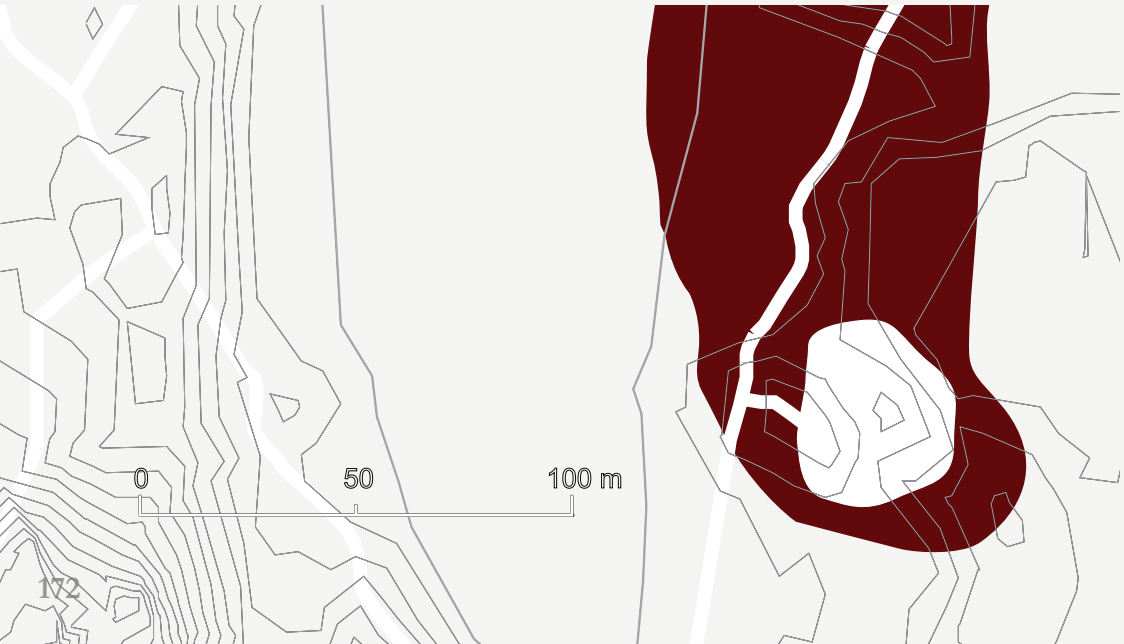
Figure 246: From the shore the ridge's location can be located by the presence of large rocks on the lake's bank. Large rocks are not common on other sections of the bank (2011).

"O sole mio"

SHEEP-AMPHY

Description

The name of this zone *"Sheep Amphy"* is a combination of the former use of the area and the area's natural topography. Sheep were fenced there, in a so-called "Sheep house" (*Fjárhús*) from which the name of the lake is drawn. In the early days the lake was called "*Fjárhúsatjörn*", but as time went by it was shortened to "*Húsatjörn*" Lake. A rounded "bowl" in the landscape is reminiscent of a Roman amphitheater, only smaller and not perfectly round. This amphy has a radius of about 20 meters and its highest sides reach four meters. Native birch covers most of the slopes for the whole circle giving good shelter from most winds. The birch is so dense that it is extremely difficult to get through. The lowest point in the area is in the middle of the circle where water can collect. This is however mostly during the spring, as the snow melts. The biggest problem is access. The amphy is hidden by dense birch and there is no track into it.



Attribute name	Current situation	Solution
Shelter from wind	Birch covers most of the slopes providing good shelter.	By adding larger tree species (such as spruce, larch or pine) north of the amphy more shelter is created. These are to be placed on the north side of the amphy and will not affect the sunlight. The additional trees will increase the feeling of being in the forest in future.
Forest-clearing feeling	Native birch grows all around the amphy and to some extent inside it.	By cutting down most of the birch on the slopes, and planting large tree species to the north of the amphy the contrast of the forest and clearing increases.
Meeting point	It is naturally hidden from guests.	Clearing some of the birch makes it more pleasant as a meeting point.
Accessible	Access does not exist.	A proper path from the path system solves the main access problem. Another important access route is added for cars needing to enter with materials and to serve as a security path for the area.
Fireplace	There is no fireplace today.	A fireplace for grilling will be added.
Cultural ruins	The ruins can be found although they are not apparent to everyone. The ruins' most obvious parts are the walls.	A sign with information would give the zone more dignity. The existing walls could be used as benches.

Design

The zone is thickly covered by native birch providing shelter and for most Icelanders it also gives a forest feeling and an impression of safety. Cold winds come from the north and by planting larger tree species under the birch canopy, about 20 meters north of the amphy, greater shelter and a more profound forest feeling is created. These plantations are not in a straight line, but rather small random stands that do not affect the sunlight. It is necessary to fell and prune much of the birch situated on the slopes, otherwise it is hard to sit down and relax and it is not as good of a gathering point as it could be. This area is quite isolated from the guests, as it is today and there is no access. It should be connected to the main path system for walkers in the Social area. It should be accessible by horseback from the west and by motor vehicles for emergency access. A fireplace will be located close to the access point, where the danger of fire is limited. There will be no vegetation near the fireplace. A small well can be dug in the nearby wetland for emergency use. The fireplace faces west so the griller can easily see into the amphy, the sun will not bother the griller, and it fits well into the landscape. The fireplace must not be in contact with the walls of the cultural ruins, but the walls can be used as benches.

Figure 247: Design for the "Sheep Amphy". Spruce has been planted on the left (north) to provide shelter from the cold north wind. The footpath is shown in the middle. The horse track and access road connect to it from the east. The grilling area is on the left.



Figure 248: (Insert.) The zone "Sheep Amphy" as it is at present. The view is to the north-east (2011).

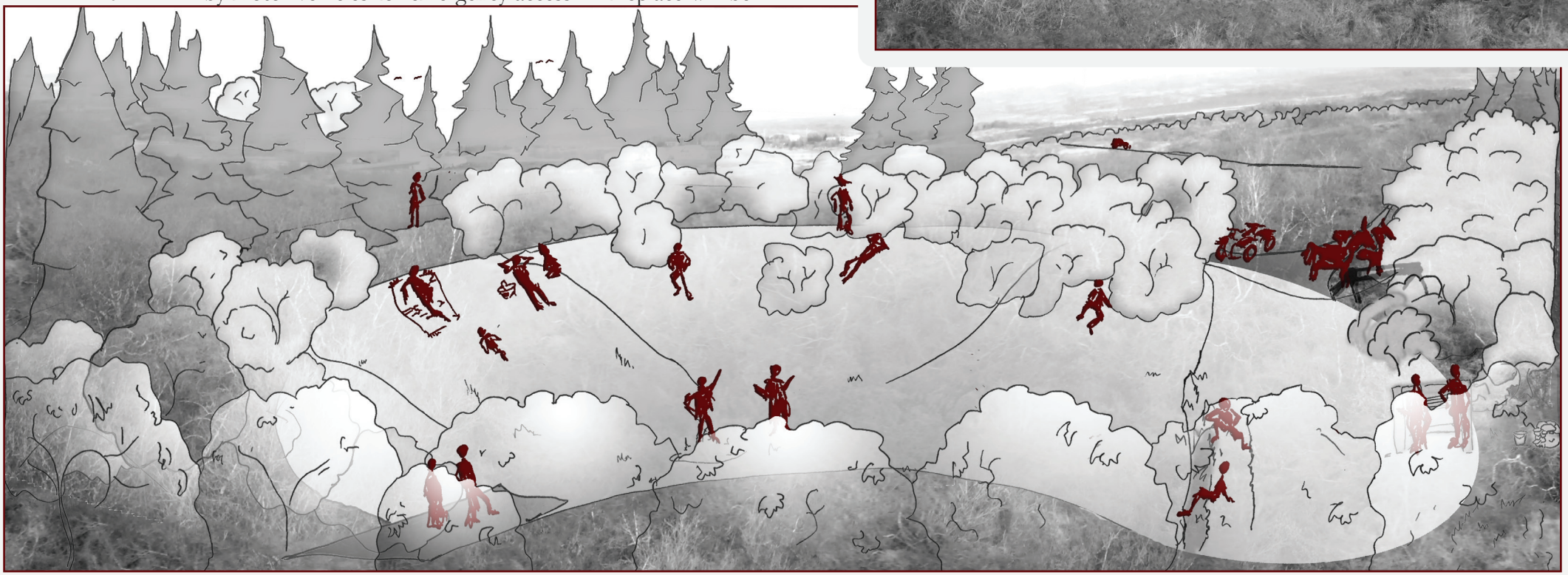


Figure 249: The amphy under snow in March (2011).



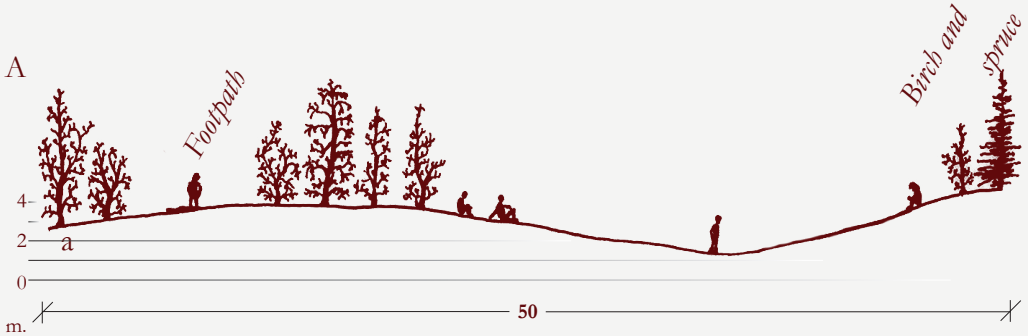


Figure 250: Section A shows the "Sheep Amphy". The section runs west to east.

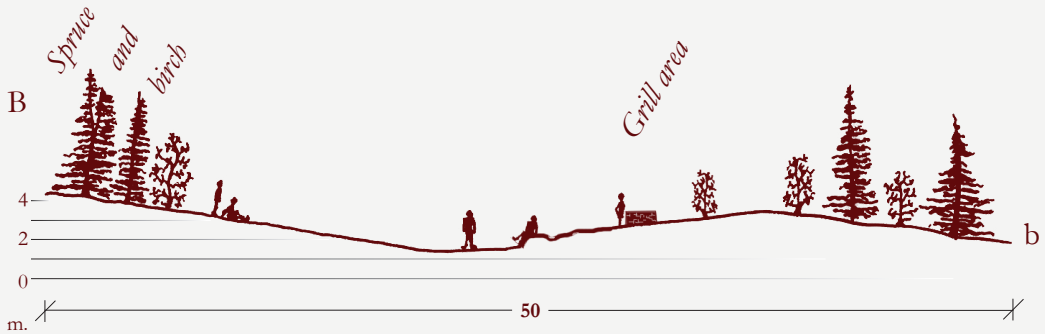
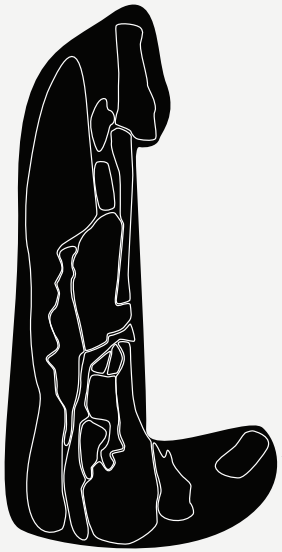


Figure 251: Section B from the "Sheep Amphy". The section runs north to south.



Figure 252: The amphy in July (2011).



RESTORATIVE AREA

Description

The restorative area has no clear borders and therefore no set limits. However, it was roughly marked on a map to distinguish it. It connects indirectly to the Social area on two ends, and it is also connected to an informal path system around *Eiðar* estate (usually sheep tracks). The Restorative area is located more or less between the lake in the east, and the ridge to the west. To the north and south are large wetlands. There are no acceptable tracks today, other than the path around the lake, but it is as primitive as all the others "for one person in boots at a time". One documented archaeological site, the "Goat-fence", is located inside the roughly defined Restorative area. Another archaeological site, the "Ox-fence", is to the north. Many exotic trees were planted there although native species are quite abundant. The area covers about 40 hectares of hilly landscape with wetland, dry land, openings and closed areas.

Attribute name	Current situation	Solution
Variable path system 	The land is hilly with many interesting viewpoints. However there are no obvious paths to most of the viewpoints. One path lies from the social area on the south end of the lake, through a wetland up into an exotic forest under cliffs and on to a rest area with a bench at a scenic viewpoint. The path goes down into a small spruce stand where there is another bench then continues down a steep stair, into a wetland to the north of the lake and reconnects to the Social area.	Accessible paths with a variety of construction materials are needed for walkers. At its widest (the circle path) should accommodate two persons walking side by side.
Path structure 	The existing paths in the Restorative area are the same type as those found in the Social area; narrow, wet and uneven.	The paths need smooth, well-drained surfaces suitable for walkers to easily walk side by side.

Figure 253: Panorama of the whole area, seen from east. The scenery is typical for this area (2011).



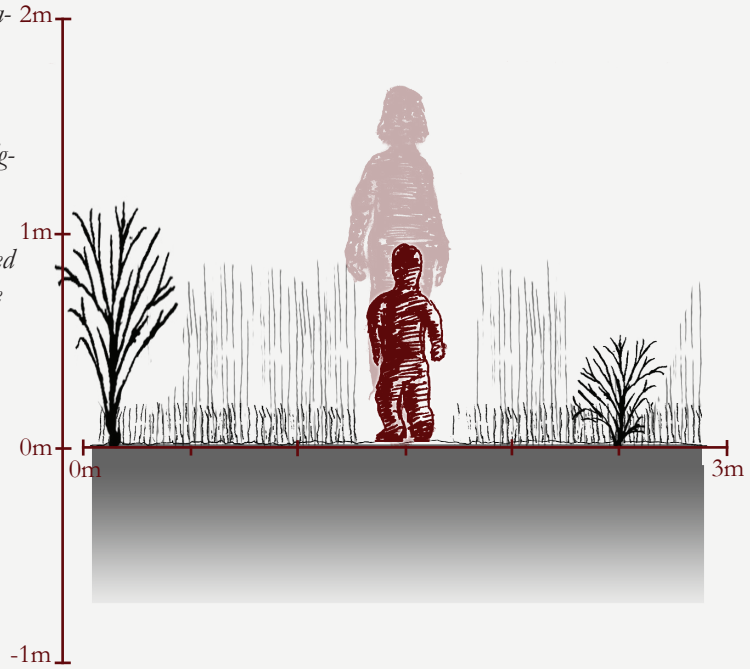


Figure 254: An illustration of the average path structure as it is today. The illustration shows tall grass on the path edges, the social trail made by guests and a child in front of its mother, forced to walk single file. (The same path is shown on page 132.)

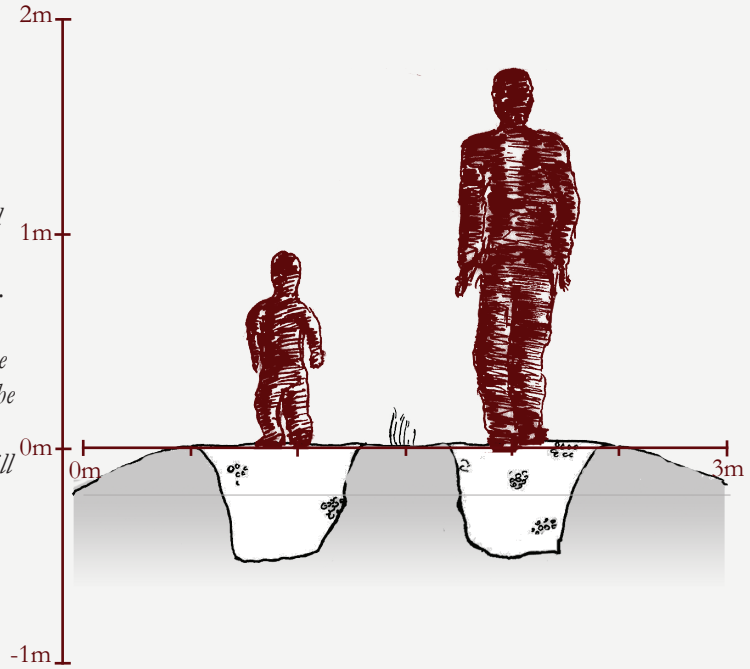


Figure 255: Path R1 - The path structure in the Restorative area will be simpler then in the Social area. Two 30 cm. deep ditches will be dug and the extra soil will be placed on the surface. The ditch it self will then be about 50 cm. Gravel will be placed in the ditch to provide adequate drainage. The width of the paths will be approximately one mater.

Design

Extensive modifications are not urgent in the Restorative area. The path structure however needs reworking. It must be stronger, drier and wider. There are many areas, small scale and large, suitable for meditation or similar healing activities. Most of these are already accessible and have been used as such over the years. However, most guests have not discovered the hidden ones that have even greater potential. This design emphasizes areas like those and reveals the secrets of a few by means of a path system that goes through a dense forest and along some cliffs.

The Restorative area is divided into 15 zones. Each of these has their own character and design. To provide the psychological benefits of outdoor recreation, it is important that each zone fulfill all four of Kaplan's attributes for a restorative environment (1995). These are: a sense of being a way, fascination, extent and compatibility. The current condition of these attributes and how they can be retained or improved is described in detail in the following for each zone.

LONELY SPRUCE

Description

"*Lonely Spruce*" is a small spruce plantation from the 1980´s. The tallest trees are around four meters high and the smallest only a few centimetres. It is still a rather bright spruce stand as only a few of the tree crowns have grown together. It is perhaps not the most excellent place for leisure, but in time its leisure value will increase.



Attribute name	Current situation	Solution
Being away	The location is remote and secluded with small hills that for the most part block the view to the housing area.	It will only improve in time, as the trees grow taller.
Fascination	The spruces are only about 4 meters high.	In 10 years these trees will have grown to twice their present size and become more fascinating.
Extent	The stand's location is somewhat "out of the blue" in relation to the other plantations.	In time, it will be totally different from inside the stand, than the outside. When the time comes the stand will need pruning on the inside. The outside of the stand must be left natural to form a wall of trees.
Compatibility	No actual path lays near the stand and the lack of height in the trees reduces the area's compatibility.	It will take approximately 10 growing seasons for the area to reach the lowest acceptable level of compatibility. No actions can be taken that would reduce the waiting period.



Figure 256: "Lonely Spruce" seen from the current path where it lies closest (2011).

Design

The design of this zone requires patience. Many stands, similar to this one, are situated here and there on *Eiðar* estate and there is no visible structure connecting them. A horse track will be placed at the northern edge of the current stand, but other trees will be planted. This will result in larger stands that will enclose the track. Those who ride there can admire the dense mass rising like a pyramid from the ground without noticing anyone who might be inside it. Meanwhile those inside would be aware of the horses, but not see them. When the spruce has grown some, there is great potential for a hall of pillars. It is necessary to prune the inside of the stand after about 10 years, but absolutely not the outer edges. Without dense edges it would not have the feeling of a coherent zone. One cannot see into the stand, but one can see out with a feeling of security, like a secret haven.

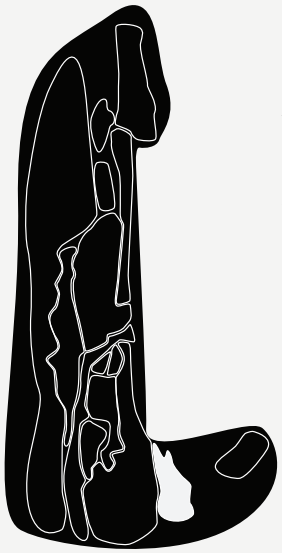
Figure 257: Húsatjörn lake is on the left, "Sheep Amphy" in the middle and "Lonely Spruce" is to the right (2011).



INNER BOG

Description

The "*Inner Bog*" is a large wetland with no tall vegetation on the south and the lake to the north. The path that lies thorough it can be very wet. A small bridge, made of larch from the forest, crosses a small ditch that drains the upper wetland into the lake. The ditch is about 30-50 cm. deep and 80 cm. wide under the bridge and gets a little deeper as it goes further into the bog, however the width remains the same. Usually, the ditch is not clearly visible because of tall grass. The bridge has been used as intended, but needs to be rebuilt. Ruins of an old fence lay close by standing like a small ridge across the view to the south. Although these ruins are quite obvious in the landscape, it is not certain that people notice them because while they are only about 20 meters from the current path and the view in the distance captivates the eye.





Attribute name	Current situation	Solution
Being away	There is a scenic view towards *Húsatjörn* Lake on one side and a wetland on the other side.	The area is good as it is. Any interference with the landscape here must be done with care.
Fascination	The zone is unsheltered from the north and the south and the wind can blow through the zone unhindered. The opening also provides a scenic view towards the lake and into the bog. If it is windy, the wind can have a positive effect on guests, drawing their attention to the contrast with the sheltered zones on both sides.	It is good as it is, although some guests might desire more shelter. There are opportunities for fascination for all users in this zone.
Extent	A combination of flat and hilly land provides the feeling of extent; the level of the path's surface is almost the same as the lake's and small hills block the view to the west and east.	Keep it as it is.
Compatibility	The current path requires a lot of the guests' attention be placed on walking because it covered by high grass and guests have to be careful where they place their feet. The groundwater level is high, but not high enough to degrade the habitat for the grasses.	By making a footpath of timber the compatibility of the area is increased. Restoring the groundwater level to the full depth of the ditch (around 30-50 cm.) will instill a feeling of separation from the horses, further increasing compatibility. (See more in the Design chapter here below).

Design

The main focus in this zone is on the view to the north and south. The main problem is the semi-wet surface and access across it. Two things must be considered. The first is that the existing path is often quite wet and the small bridge over the small ditch needs to be repaired. The second is the remains of the old fence. By filling up the ditch the water level will rise by about 30 cm. where the bridge is today and potentially form a few small streams on the surface. (It will rise even further in the bog.) The grass exists in this area because of the ditch and low ground water level. By raising the groundwater level, the grass will recede and bog vegetation will take its place. A wooden path without handrails will be built over the wetland close to where the current footpath is, as low to ground level as possible.



Figure 258: The path can be wet, especially in the spring (Fjölnir Björn Hlynsson 2011 April).

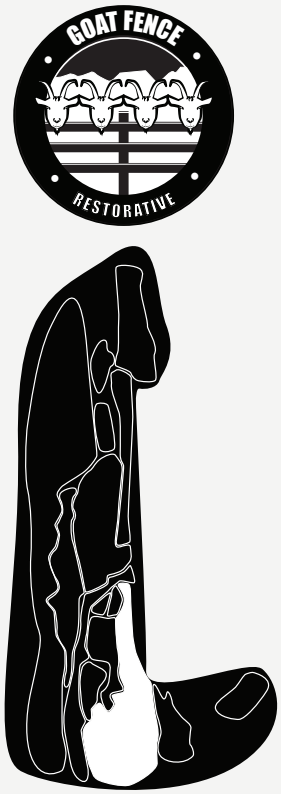


Figure 259: The view from the path north to the lake (Fjölnir Björn Hlynsson 2011).



Figure 260: Illustration of the horse track and the pond (2011).

The ruins of the fence will be changed into a horse track. Some guests might find it intimidating to have the two trails so close together, but by establishing a shallow, informal pond along the horse track emphasizing separation, that intimidation may be overcome. The horse track needs to be stronger and higher than the bog. In places the soil is densely trampled by the horses and a few small culverts (around 10 cm. in diameter) are necessary so the water can continue to flow naturally. The horse track can also be used for walking and since it is only about 20 meters away from the footpath it will be possible to access it from the footpath from either side of the wetland.



GOAT FENCE

Description

The zone *"Goat Fence"* is a small valley consisting of a small ridge on the east, a small wetland in the middle and part of a larger ridge to the west. There is a fantastic view from the eastern ridge towards the lake. (A wider view is available from the taller ridges close by.) This zone takes its name from ruins that are tricky to find when one does not know where to look (as the author discovered), but when found, there is no doubt that they are indeed the ruins of the old fence. In the summer time the ruins are covered in lupine (*Lupinus nootkatensis*) and rather difficult to see. But in other seasons they are more visible. The ruins are on both sides of the wetland, on the eastern and the western ridges. It is perhaps easier to recognize the ruins to the west when seen from the eastern ridge, because it looks like they are framed in a pine plantation. The goat fence ruins cover only a small area in the north of this relatively large zone. A small valley opens up in the south and gets wider and wider. From there the ruins of an old fence (also mentioned in *"Inner Bog"* and *"Lonely Spruce"*) that continue up to the highest ridge are easily seen. This zone is the first to rise from the flatland, in the circle around the normal route around the lake. That means that the guest's experience on the walk begins to change.

Attribute name	Current situation	Solution
Being away 	The housing area can be seen from the eastern ridge, but because of the distance it does not have a significant effect on the experience of being away. While standing elsewhere in this zone the housing cannot be seen.	Keep it as is.
Fascination 	A charming view of the landscape can be seen from the eastern cliffs.	Keep it as is.
Extent 	Only a few meters from the current footpath are the ruins that give the area a mysterious spirit.	Remove the lupines.
Compatibility 	The elevation change begins to have an effect on the landscape giving it diverse perspectives. Some guests might consider the lupines in the ruins a major problem.	The elevation difference offers great potential for many different viewpoints and experiences. In time the lupines will give way to other vegetation and leave the soil richer in nutrients. The enriched soil can support a denser layer of vegetation in the future that could hide the view of the ruins. In order to prevent the increase in soil fertility the lupines should be removed.

Design

The design is about protecting the ruins, refining the existing tracks and adding several others. The ruins are hidden by lupines and this needs to be remedied. In Iceland lupines are mainly used on eroded land and for replacing nutrients into the soil. The lupines will eventually decline and be replaced by denser vegetation hiding the ruins from view. This is why it is necessary to remove the lupines in areas with cultural ruins like the *"Goat Fence"*. An information sign will be placed close to the ruins and the story of the fence told in a few words.

Today the area is only accessible by the footpath close to the lake. A horse track will lay on the south side of the zone where the old fence was and go further on to the zone *"Ridge"*. More informal paths will lead to the south further along the ridge; another path goes up the west ridge into the zone *"Rock Hill"*. These tracks are not part of the present plan, but can be added later if desired.



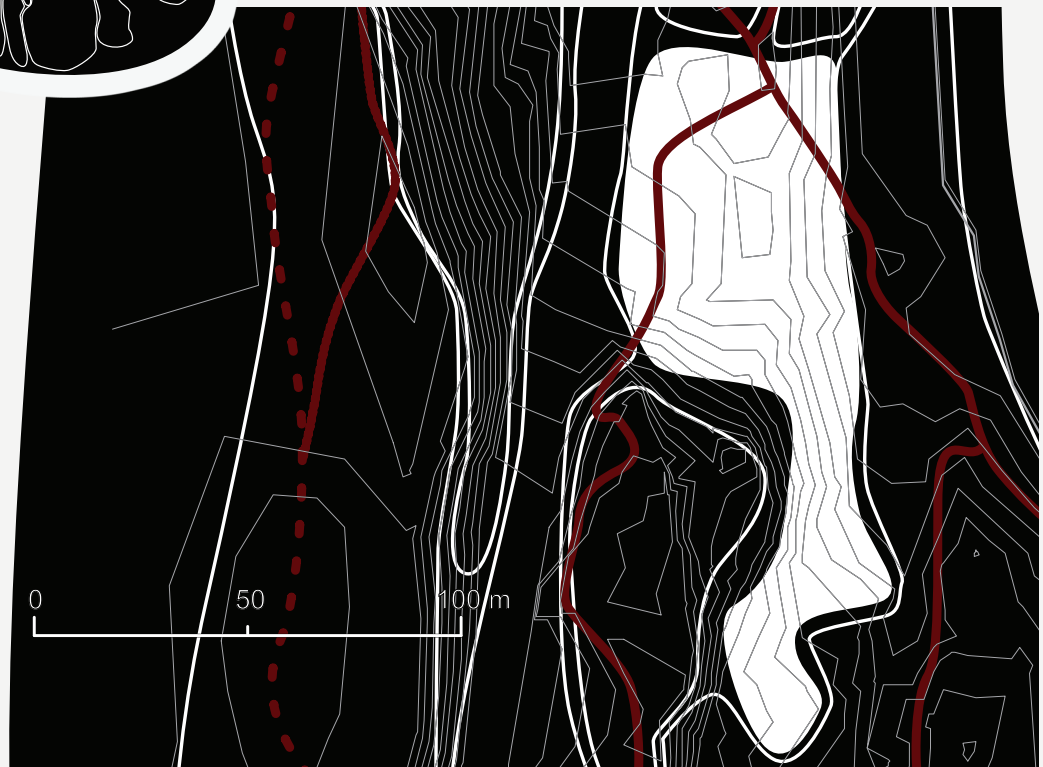
Figure 261: "Goat Fence" on both sides of the bog. The view is from the part that is covered in lupine, on the other side is the fence framed by pine trees. It is difficult to see the ruins when they are covered by vegetation (2011).

GOAT PINE

Description

The *"Goat Pine"* zone is about one hectare and comes after the *"Goat Fence"* when walking along the current footpath. These two zones are in principle the same. The difference between them is the *"Goat Pine"* zone is covered by large trees giving the area a different atmosphere. The dominant species is pine, but larch and spruce are also present. This zone is located on a little hill and to the west and east there are small bogs. To the south there is a 10 meter high cliff and in the north a hill continues further on ending at *Húsatjörn* Lake.





Attribute name	Current situation	Solution
Being away	Forest feeling here, one is surrounded by a pine forest.	Retain the forest, use only minor maintenance.
Fascination	The trees are sculptured into many forms. This area appeals not only to humans, numerous birds use it for nesting.	Retain the forest, use only minor maintenance.
Extent	This is the first zone with large pine trees and they provide good shelter and a new type of forest feeling, since there were only birches and larch stands before.	Retain the forest, use only minor maintenance.
Compatibility	The feeling is some form of solitude, although it is possible to see through the stand. Nothing is visible that interrupts the feeling of being surrounded by the forest.	Retain the forest, use only minor maintenance.

Design

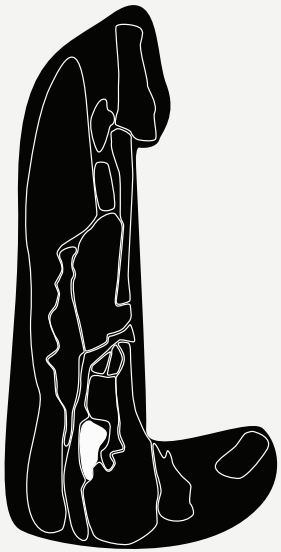
This zone is directly connected to four other zones, yet has a different character the others. (There is a 5th zone, the *"Larch Tale"* nearby, but it is not directly connected to the other zones.) The *"Goat Pine"* zone is mainly covered in pine trees, but there is also some larch, spruce and birch. There are no demands to the design other than the footpath connecting this zone with the other two. Social tracks will appear in time connecting the two zones. It is important to mention some aspects of the maintenance for this zone. Pruning can improve timber quality, and access for people, but in a restorative forest it is also important to remain mindful of areas where the trees should not be pruned.



Figure 262: The photo is taken from inside the "Goat Fence" ruins. The path can be seen to the right. The cliff on the right is the zone "Rock Hill". The forest to the left is part of the "Owl Forest" (2011).



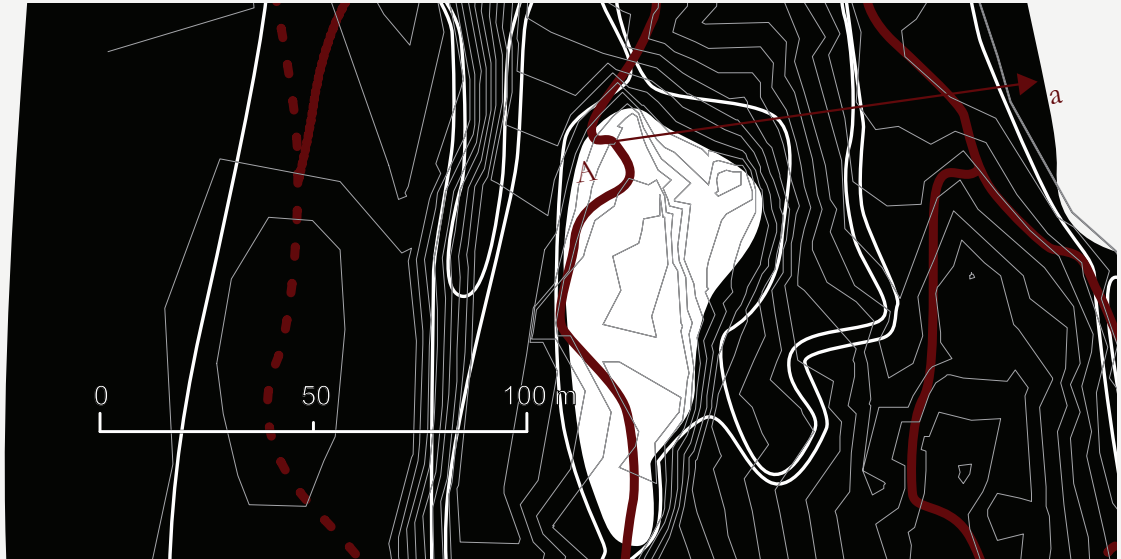
Figure 263: The horse track lies east to west connecting the "Goat Fence" over "Rock Hill" up to the "Ridge" then turns north along the cliffs (2011).



ROCK HILL

Description

The *"Rock Hill"* is a high peak on a hill along a long and narrow bog, *"Theater Bog"*. It is worthwhile to sit down on a rock here and enjoy the view. There are pine trees underneath the hill to the east and north. The *"Ridge"* is at a similar height to the west and birch and lupine grow well continuing up the hill to the south. The hill is rather steep in most directions, except the south. It is possible to walk up one social path without climbing from the northwest. That social path leads to the zone *"Goat Pine"* and the vegetation is so dense that it is necessary to prune trees or even cut them down. After about 10-20 years trees will affect the view from the hill and when this happens a decision must be taken as to what to do. There is no actual social path to the south, but it is also possible to walk there from the hill. The zone to the west is called *"Theater Bog"* and it is unique in the landscape because of its shape. (More information is found in the zone *"Theater Bog"*.)



Attribute name	Current situation	Solution
Being away	A vast area can be seen from the viewpoint as it is today, ranging from treetops to the housing area in *Eiðar* and on to the mountains in the distance.	After two decades the mountain view may be lost because of the pine underneath. When this happens the decision must be taken of how best to maintain the view, for example by framing the view in treetops or by cutting them down.
Fascination	The view is open in most directions and is very attractive.	Control the view with caution and as little intervention as possible.
Extent	Today the most valuable experience is the view.	Later the view might be the mixture of scenic view and the closeness of small birds in the treetops.
Compatibility	There are no formal paths up the hill at present. They are not needed for the general public. The branches in the trees underneath are more of an obstacle than the track up to the hill.	For those few that do not trust themselves to walk up on the north side, the horse track on the south side of the hill provides an alternative means of access with no steep cliffs to climb.

Design

The hill is a natural attraction. The access paths need minor repairs. Guests wary of walking up the old sheep track can walk along the horse track. From the horse track to the vantage point the land is rather flat although there are many bushes and lupines to cross. The vegetation on the walking track needs to be removed. For people who do not have physical handicaps or a fear of heights there is no obstacle regardless of age. (The author walked the steepest path with gentleman over 80 years old and woman over 60 years old and there was no problem.) The treetops from the zone *"Goat Pine"* have not yet reached eye level when one is standing on the top of the hill. However when that time comes, the supervisor will be faced with three questions: Should it be left to grow freely? Should the trees be pruned?, or Should some or all of the trees be cut down? If the decision is to cut down some or all of the trees and open up the view it needs to be done with caution. Another less drastic option is to manage it like the zone *"Window"* (See figure 270, page 207).



Figure 264: The view over the "Goat Pine" towards the housing area. In late April there is no lupine (Fjönir Björn Hlynsson 2011).



Figure 265: View from the same cliff, only 10 meters east of figure 264. In August the lupine covers the entire cliff (2011).



Figure 266: Photo of the zones "Rock Hill" and "Goat Pine". The read line on the photo is roughly the same area as the section below (2011).

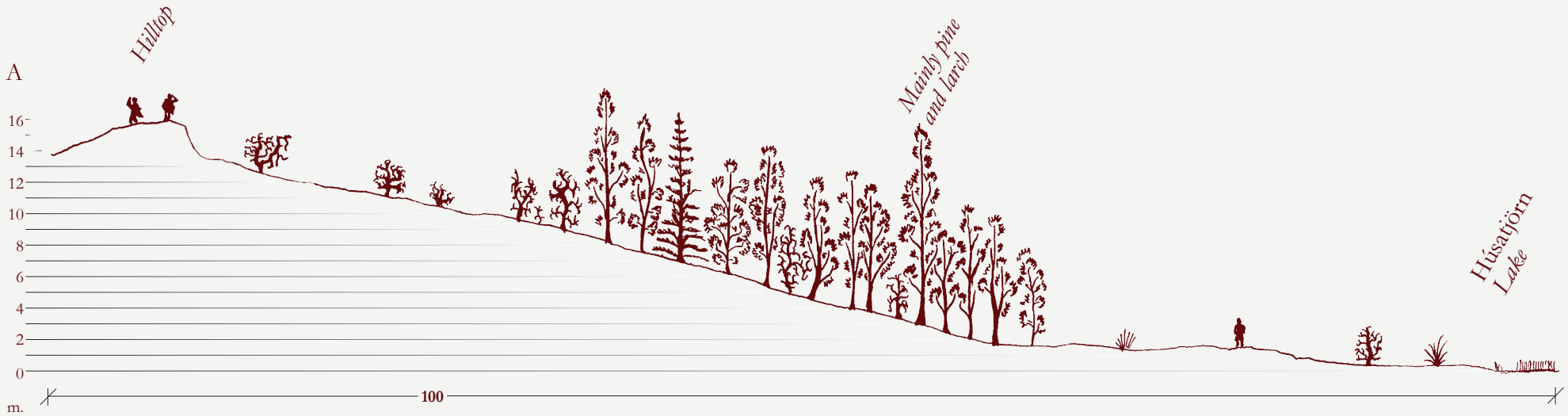


Figure 267: Section of "Rock Hill" and "Goat Pine".

WINDOW

Description

The zone "*Window*" is a located on a small hill. It is directly connected to the zone "*Goat Pine*" by a social track. It is a small opening surrounded almost entirely by dense larch that have reached a height of ten meters. Because of the density of the larch branches, it is not tempting to walk into the opening.





Design

This zone is close to *Húsatjörn* Lake; however the lake is barely visible although the waves can be heard. There are many ways to open the zone visually towards the lake, such as cutting trees down, pruning them from bottom-up or doing a modern design in it. By cutting branches in a specific place and order a square can be made. That square might look like a window. This is a perfect spot for small groups to have picnics with a table and bench to sit on and a window towards the lake guests feel as though they are inside and outside and the same time (Bára Sigurjónsdóttir and Sóley Þrastardóttir 2011, pers. comm., August).

Attribute name	Current situation	Solution
Being away	The sight in this particular zone is more or less dense larch, but the experience also involves hearing the waves on *Húsatjörn* Lake. Potentially, for example if children are playing in boats on the lake, the guest might experience mixed feelings, since one can hear the children, but not see them clearly.	By pruning part of the trees the feeling of being away might increase when sound sources can be seen and heard. Instead of feeling totally isolated it gives more of a feeling of belonging.
Fascination	The larch is fascinating, but water is usually the natural element the people prefer to experience. In between the dense larch branches the lake is visible, especially when the trees are dormant.	With a little pruning towards the lake fascination increases.
Extent	Today it is almost like a room with three walls and is a "world" of its own. The feeling of closeness to the lake is strong.	With a little pruning a "whole world" can be seen and the potential experiences of this zone fulfilled.
Compatibility	The feeling of being enclosed entirely by trees is relaxing, but at the same time can be a bit frightening causing in some a sense of claustrophobia, because the big picture is lacking.	By opening the side towards the lake, the missing element can be visualized and the zone becomes more compatible.

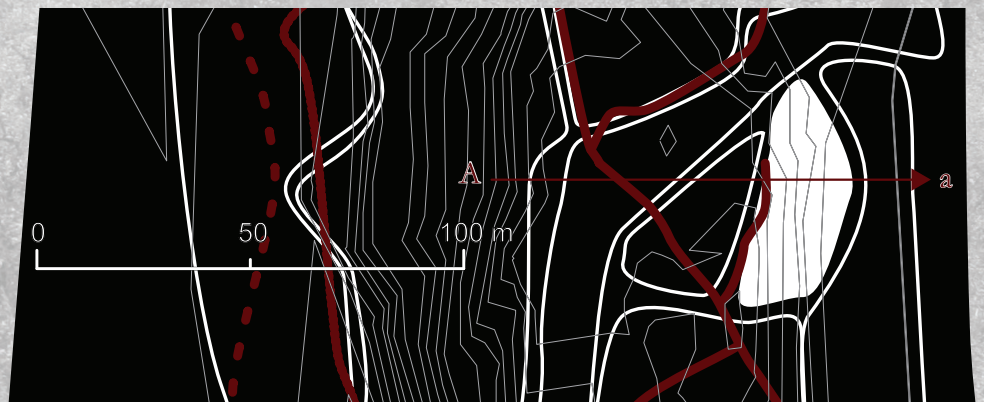


Figure 268: (The background picture is a view from the cliff in the zone "Rock Hill" towards "Window". From this viewpoint the close presence to the lake seem obvious (2011)).



Figure 269: View from the existing path towards "Larch Tale" on the left and "Window" on the right (2011).



Figure 271: The view from the zone "Window" might look like this, except the frame itself will not exist. It is shown here to demonstrate the architecture of this zone (Pálmi Hreinn Sigurðsson 2011).

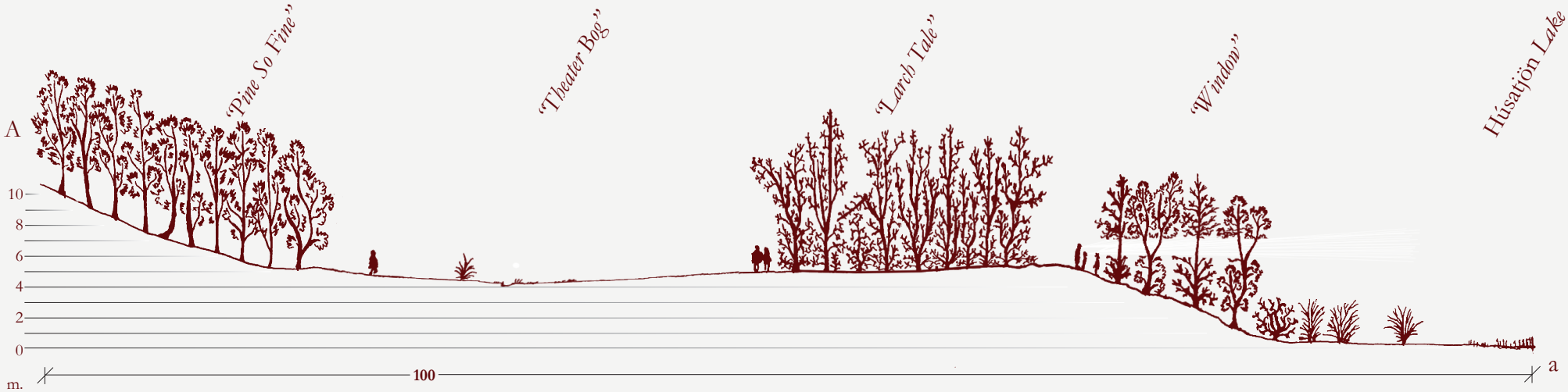
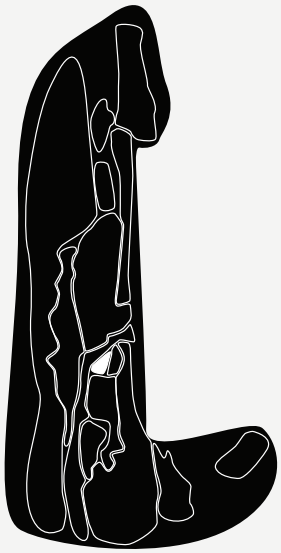


Figure 270: Section including four zones: "Pine so Fine" will mainly be pruned, "Larch Tale" will be kept untouched and "Window" will have pruning in the middle of trees, forming a square. The fourth "Theater Bog" is discussed on page 210).

LARCH TALE

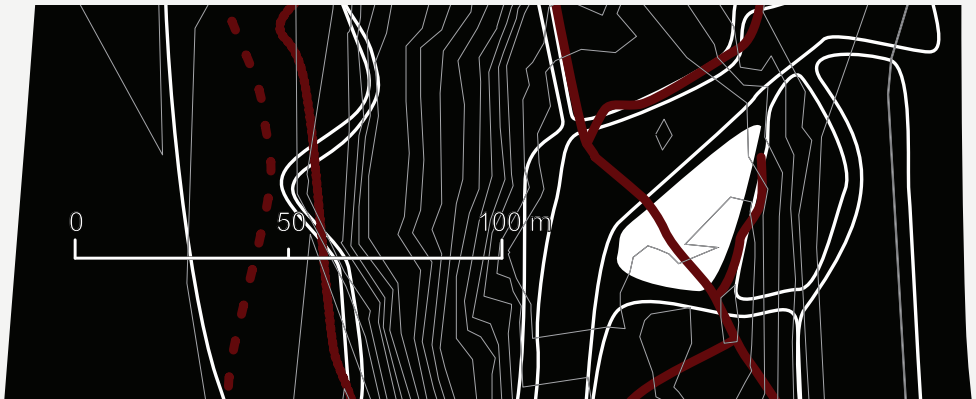
Description

When walking around *Húsatjörn* Lake this stand appears to be a little different from all the others. What makes it exceptional is the unique form of the stand. Some guests find it eerie, like a dark forest from a children's tale such as the woods in "Little Red Riding Hood" or "Goldilocks" (Fjölnir Björn Hlynsson and others 2011 pers. comm., April).



Design

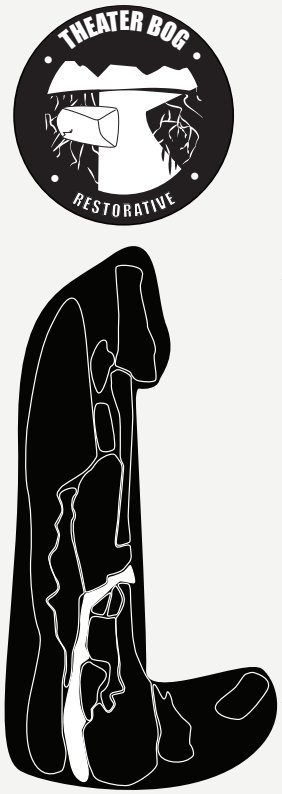
"*Larch Tale*" is a zone that is best left alone. Here nature will be the designer. It should be left without interference or maintenance.



Attribute name	Current situation	Solution
Being away	The trees are so dense that is not tempting to enter.	Do nothing so people do not enter.
Fascination	It looks like a fairytale woods from the outside.	Allow it to be admired from the outside.
Extent	When one is inside it feels like an isolated world.	Do nothing so people do not enter.
Compatibility	The zone is so dense that injury from tree branches is possible.	Do nothing so people do not enter.



Figure 272: The stand "Larch Tale"is a small larch stand that has never been maintained. Here the stand can be seen towards the north-west, where a part of the path lies (2011).



THEATER BOG

Description

"Theater Bog" zone is connected to almost all zones at *Húsatjörn* Lake. It is about 500 meters long, but only 50 meters wide at the widest. It is a narrow bog ending at the lake and reaching the top of the ridges. Where the bog itself first appears it is wide and divides into two, one branch going to the zone *"Goat Fence"* and the other ending in this zone. Where this line begins a fence once crossed the bog. The steep cliffs of the zone *"Ridge"* shape the bog towards the west and *"Rock Hill"* shapes it in the east. In *"Rock Hill"* there is a small rock precipice about 5 meters wide and 3 meters high protruding into the bog, here called the theater stone. On the other side of the bog there is a slope that is not as steep as most others in the close surroundings. The bog is very wet and flat where the theater stone is. A few meters lower, the bog gets steeper and wider. Trees frame the bog at that point. The zone *"Pine So Fine"* is to the west and *"Goat Pine"* to the east. The current path crosses the bog at that spot and



Figure 273: The stone that this zone is named after. The stone forms a natural stage (2011).

Attribute name	Current situation	Solution
Being away	It is an opening, but relatively sheltered from all directions.	Keep the same character.
Fascination	The bog itself is perhaps not remarkable, but the edges of all the other zones are.	The bog should be in a similar character as it is now.
Extent	When walking along the current path, one could feel a little overwhelmed by the sudden opening and extensive view.	Structure the path system.
Compatibility	The zone can be very wet and unwelcoming.	A structured path system would improve compatibility.

it is wise to walk carefully in the spring time when the bog is wettest, to prevent getting wet feet. Somewhat lower a drainage ditch crosses the bog and the bog becomes relatively flat again. At that spot the bog turns directly towards the lake where the zone *"Owl Forest"* is located slightly towards the northwest and *"Larch Tale"* and *"Window"* to the south. A tall dead birch stands in the middle of the open bog towards the lake. (See page 8.)

Design

This area is a long, narrow bog. The main focus is on the theater, horse track and the footpath system. Considering the landscape, it seems problematic to lower the ground water as it could have considerable negative impacts. Therefore it is necessary to work with the water or take drastic measures to drain the area. Since drainage would change the landscape dramatically, it is more desirable to work with the ground water. A horse track will be placed where the old fence crosses the bog, a continuation of the horse track from the *"Goat Fence"* zone. The bog is almost flat where the horse track is, but gets steeper with a downward slope about 200 meters away, where the theater stone is located. A narrow ditch will be excavated in curved lines from the horse track to the theater area ending in a little shallow pond. The theater in the zone *"Rock Hill"* can be used for entertainments, as in other theaters. Directly across from it is a natural slope perfect for the audience. The pond can even be used as a prop. As mentioned before, the bog gets a little steeper (although this may not be obvious for most guests). This steeper section continues down for approximately 200 meters. The current circle track crosses the bog and the footpath needs to be dried. This will be done using the same technique as used for the horse track in the zone *"Inner Bog"*. The soil will be razed, a small ditch put in beside it with a culvert underneath. A new footpath will be established from the existing one leading down the bog, over the existing ditch (about 1.5 meters deep) connecting it to the *"Owl Forest"*.





Figure 274: The stone for which this zone is named. The stone is suitable for entertainments of many types (2011).

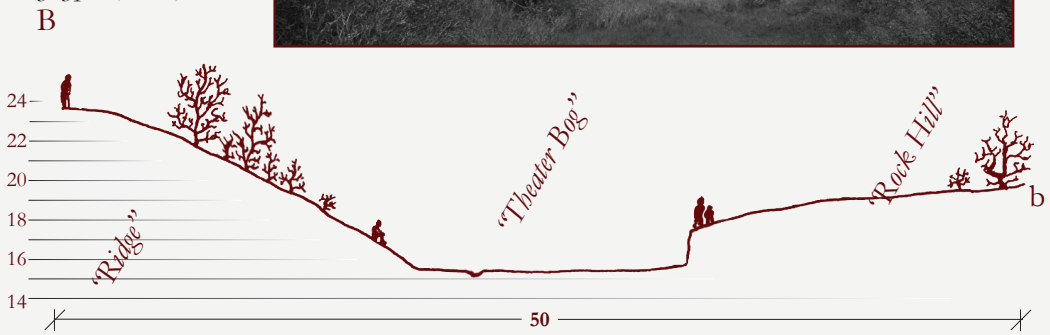


Figure 275: Section showing the "Ridge" to the left, "Theater Bog" in the middle and "Rock Hill" to the right.

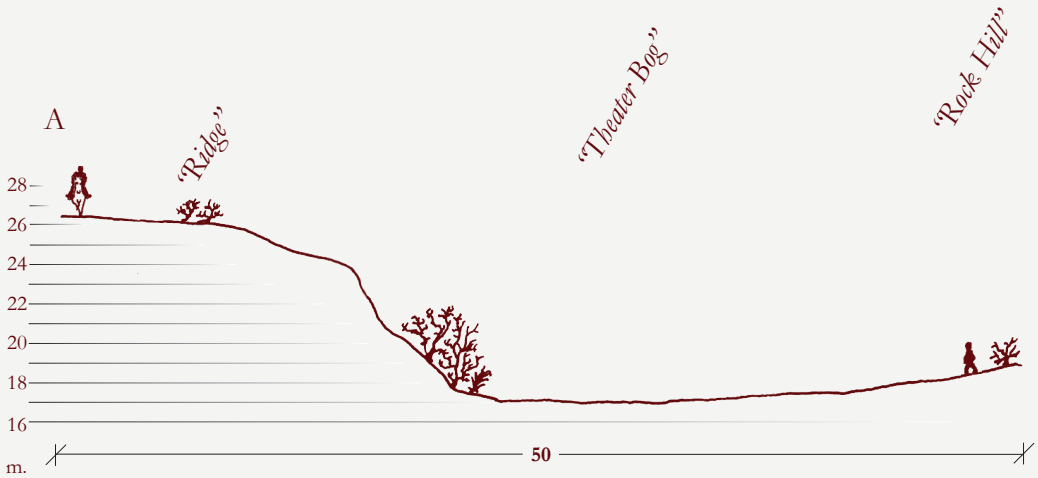


Figure 276: Section of a horse track on the "Ridge" in the left and the upper side of the "Theater Bog".

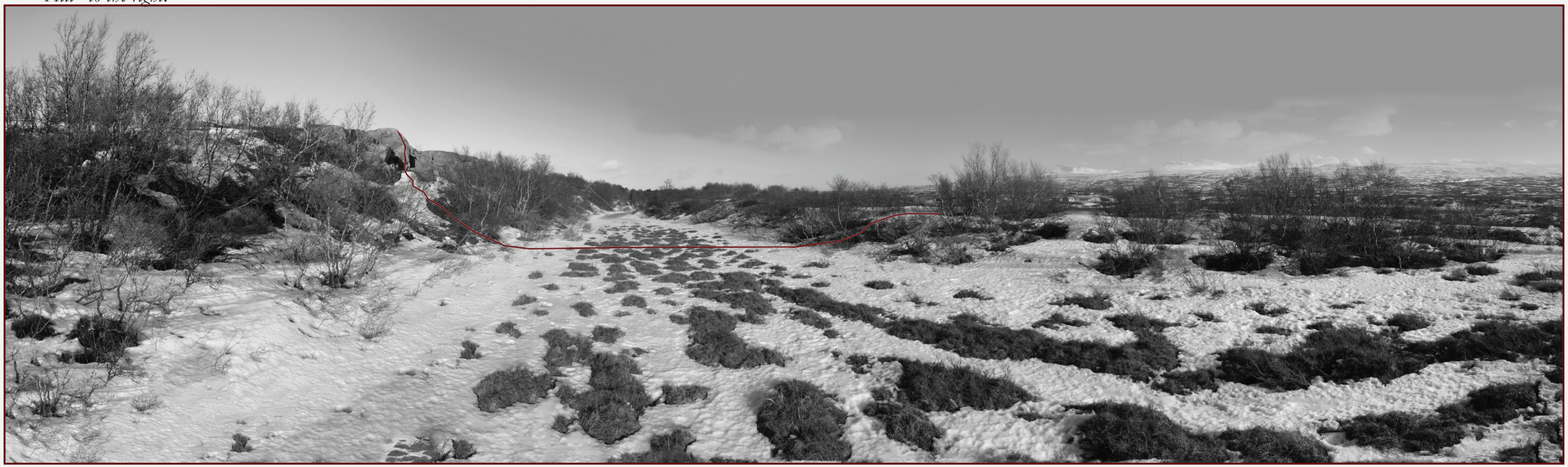
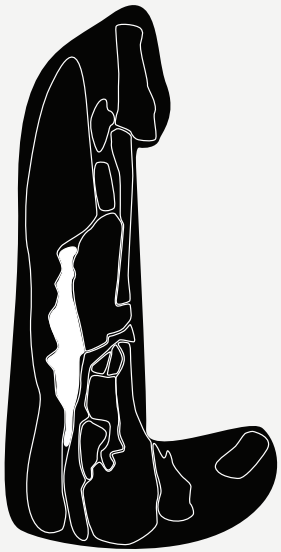


Figure 277: The small valley has steep sides and run off water from the surrounding area fills the bottom quickly. The new horse track will be on the cliff to the left and turn to the left from the spot from which this photograph was taken. The track crosses the bog where a fence was once and then continues further sloping downward. Theater rock and the audience seating are in the background. The closer thin red line is section A and towards the back is section B, where it crosses the theater (2011).



PINE SO FINE

Description

"Pine So Fine" is a pine forest zone with a mixture of native birch. A cliff runs along the zone towards the west and a small hill adjoins it to the east. The landscape is sculptured into some kind of tunnel or corridor all the way from the *"Theater Bog"* up to the *"Ridge"*. On the other side of the small hill is the *"Owl Forest"*. The current circle path is situated in the middle of this zone and rises with every step until it crosses a social track where two low ridges meet. From there access up to the ridges both to the south and the north is relatively easy. There is abundant birdlife is in this zone and mystical places can be found under the pine canopy in the shelter of the ridge. This zone is especially appealing to younger guests.



Figure 278: Overview over "Pine So Fine" from "Ridge". The lake is on the upper left (2011).

Attribute name	Current situation	Solution
Being away	The feeling underneath the pines and ridge (cliff) is quite isolated and at the same time energetic, refreshing and enveloping.	The zone is fine as is.
Fascination	The mixture of small cliffs and trees, both pine and birch is attractive, as is the curved landscape.	The zone is fine as is.
Extent	Some kind of isolation or solitude might be experienced, although in a pleasant way.	The zone is fine as is.
Compatibility	The mixture of low and high vegetation harmonizes with the landscape and the cliffs complete it. The only thing that is unsatisfactory is the narrow path that demands too much of the users' attention.	Fix the path.

Design

The form of the landscape gives the area a gentle enclosing feeling and the mixed vegetation (both low and tall) adds to the experience. The vegetation should for the most part be kept as it is, aside from some occasional minor pruning of the pine along the path towards the cliff, but not so much that the view opens up too much. The pine underneath the cliff (a few meters from the path) on the other hand can be pruned up to three meters high, as long as it does not



Figure 279: The dense shrubby birch layer is often broken by snow (2011).



Figure 280: The native birch covers the ground so completely it is hard to see through even when there are no leaves on the trees (Fjölnir Björn Hlynsson 2011).

compromise the mystical quality of the view from the path. In the northern end of this zone there is a cliff that is taller than the others and the current path runs directly beneath it. The dominant vegetation there is birch, deformed by snow and almost impossible to get through. The pine is close by, but not exactly at this particular spot. The crooked birch will mostly be cut down and the few tall trees left standing will be trimmed. The tall cliff becomes even more dominant at this spot and the lower landscape opens up. A small flat area appears where benches and tables will be placed. Parents might want to sit down and watch their children play in the mystical trees and cliffs. A gravel path will be placed where the current path is and a new path added for guests wanting to walk along the ridges. It is expected that social tracks will appear in the area, formed mainly by children.



Figure 281: Dense birch almost covers the path (Fjölnir Björn Hlynsson 2011).

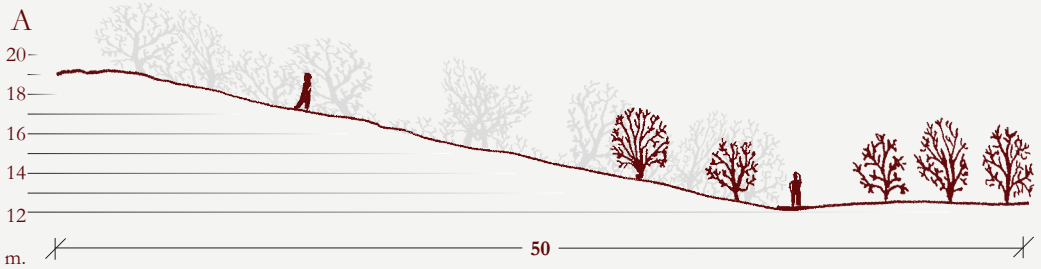
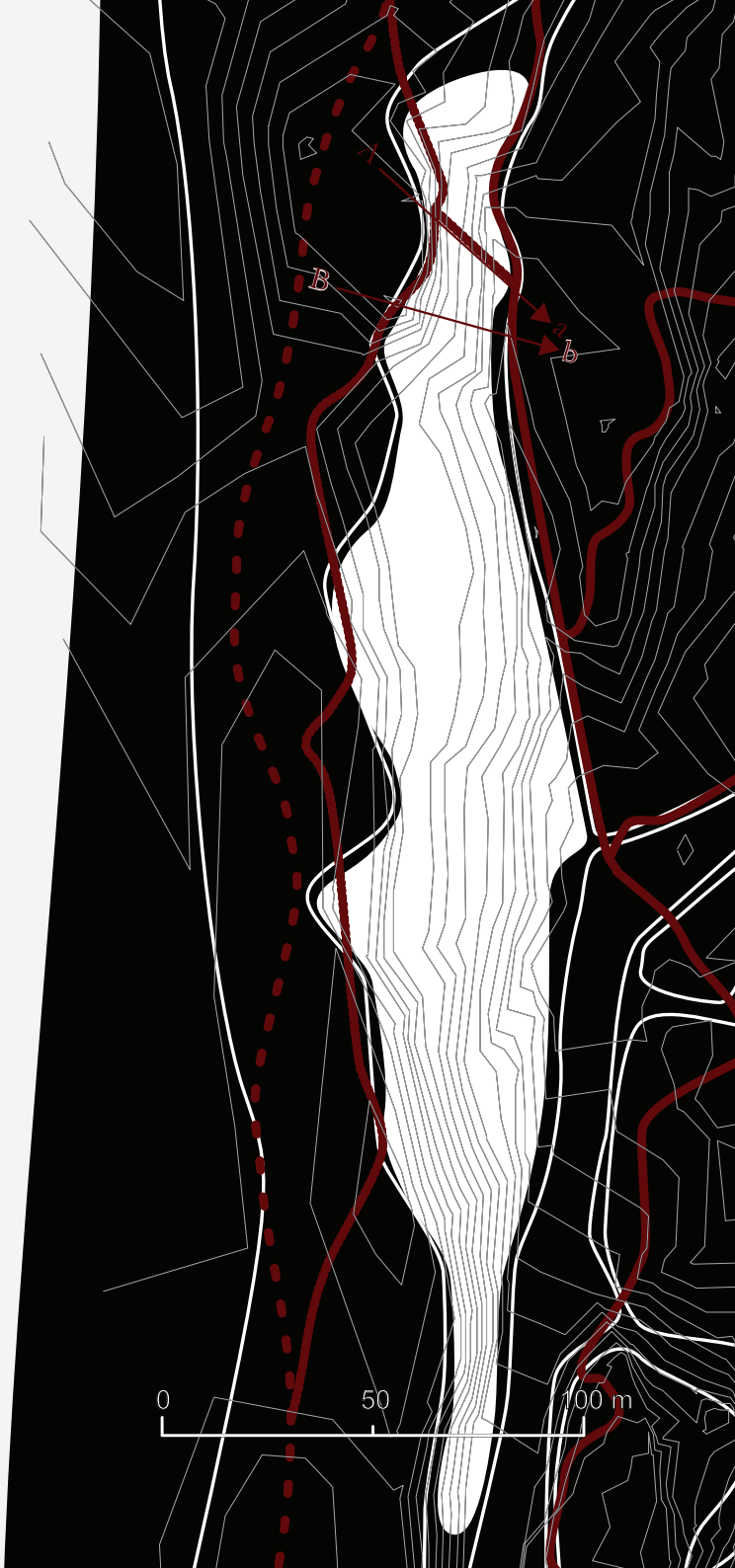
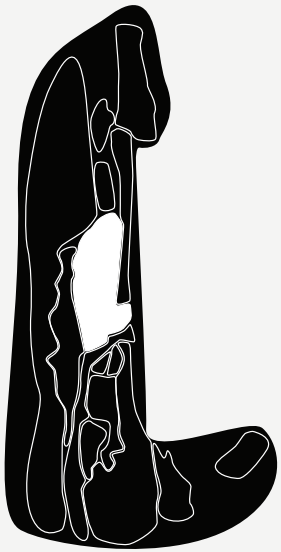


Figure 282: Section of a path connecting the cliffs in the zone "Ridge"and "Pine So Fine". This is the best slope for establishing a path in a large area. Vegetation to be removed is shown in gray.



Figure 283: Section of a path from a high cliff from the zone "Ridge" down to the zone "Pine So Fine" where there is a small flat area.





OWL FOREST

Description

"Owl Forest" is the zone with the largest stands of exotic tree species at *Húsatjörn* Lake. It is around three hectares and for the most part situated on a slope facing east. There are five other zones connected to this zone. This zone is a mixed forest of pine, larch, spruce, native birch, rowan and willow. It has not been maintained to any degree and therefore difficult to move around in because of dense branches, shrub birch and willows. At present there are only a few old sheep tracks to use for walking. One has to know *Húsatjörn* Lake quite well to know where to find the tracks. The forest has been used for some organized activities, for example it was used by the music school (C. Ross 2011, pers. comm., June) and the author found remnants of a small banner, tied to some trees in the area. This zone is teeming with bird life all year round. While in this area, the author was given special attention by one of the area's birds. This was a short-eared owl (*Asio flammeus*) that was seen two times in a one-year period (Fall 2009 and 2010). Both times it was in this zone. It is a relatively rare bird to see, although it is common in northern Hérað.

Attribute name	Current situation	Solution
Being away	This forest stand is difficult to access because of dense branches and scrub trees.	Maintenance in the form of cutting and pruning is needed.
Fascination	The tree sculptures and birdsong provide a high level of fascination to this zone.	Keep it as is.
Extent	It feels like a new, different world compared to the surrounding zones.	Keep it as it is.
Compatibility	The lack of maintenance and difficult access detracts from the experience.	Maintenance such as cutting and pruning is needed, as is a proper footpath.

Figure 284: "Owl Forest" is a dense mixed stand of larch, pine and native birch. It is difficult to get through the stand without being scratched (2010).

Design

The design goals for this zone are mainly two: establishing proper footpaths and carrying out vegetation maintenance. A good footpath is important in this zone because the zone is one of the most exciting parts of *Húsatjörn* Lake. Different paths add attraction by offering varying opportunities to the area. Guests who walk one circle on a given day may remember there were other possibilities and perhaps go back and explore further. Also a variety of paths disperse the guests around the lake and more people can use it without encountering each other. This zone is connected to three other zones directly by footpath. The connected zones are *"Larch Alley"*, *"Theater Bog"* and *"Carry Way"*. It is indirectly connected to two additional zones. With the maintenance of the vegetation, tree cutting and pruning, the appearance and experiences will change for the better. By adding benches and information signs for such features as bird species, tree species and history, this zone will become a popular choice among area guests.

Figure 285: Photo from inside "Owl Forest", one of the most accessible parts of the zone. A track lies through the whole zone, although further south the path is covered by native and exotic trees. The location is about 30 m. below "Larch Alley" and lies next through "Carry Way". Húsatjörn *Lake can be seen on the left and high mountains in the background (2011).*





CARRY WAY

Description

"*Carry Way*" is located along the lake on the west. It is impossible to get there without a boat, waders or over the frozen lake without getting wet. The vegetation is mostly *Carex spp.* along with willow and birch in the drier parts.

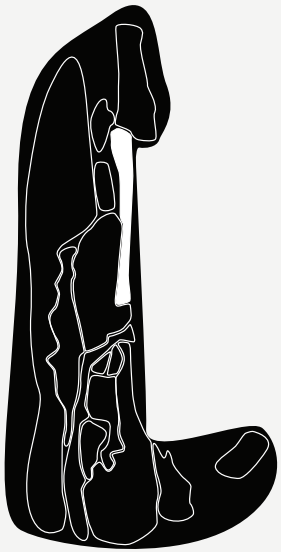


Figure 286: View of the "Carry Way" from the lake (2011).

Design

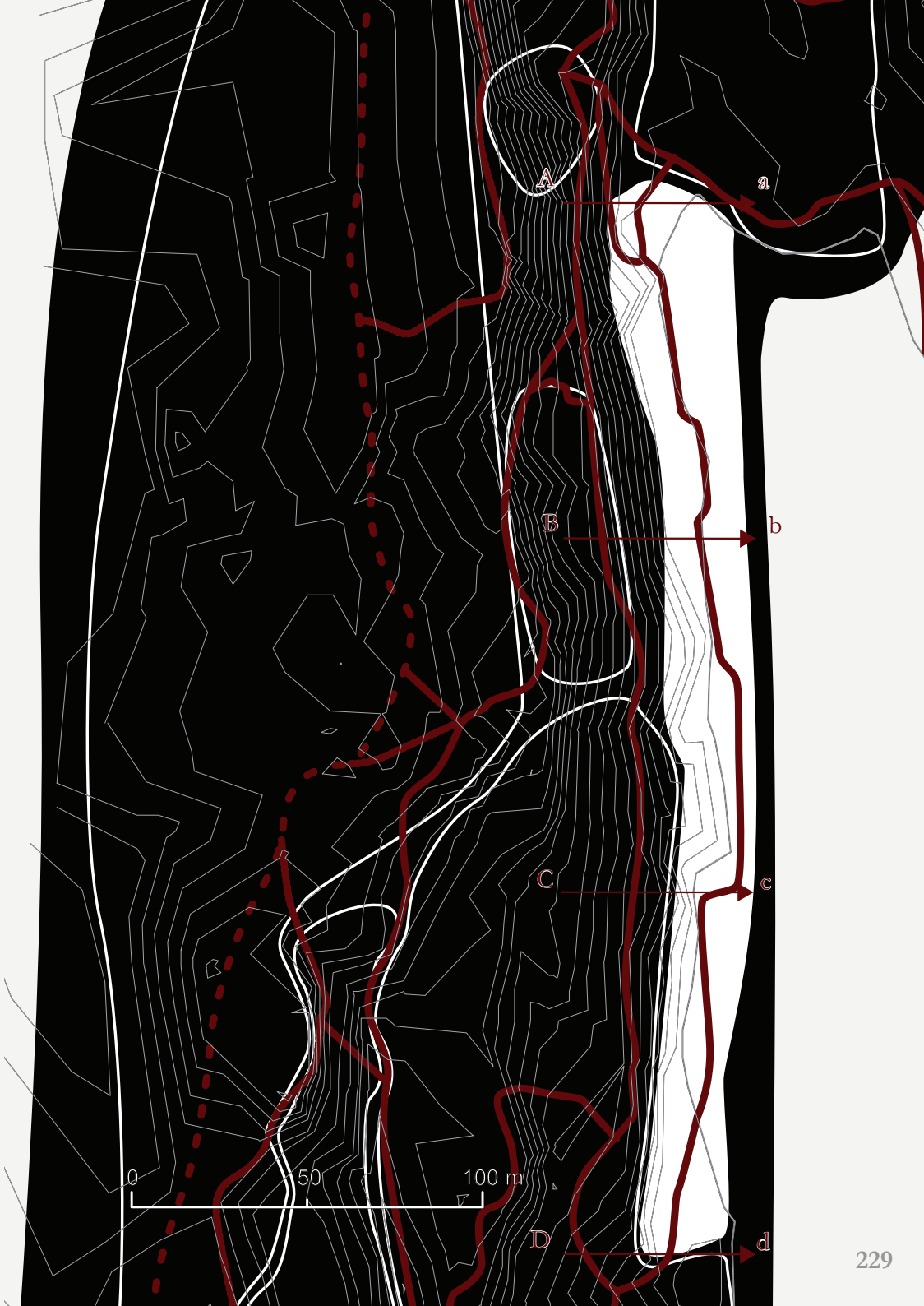
This zone's design entails building a 500 meter long wooden path that harmonizes with the surrounding rocks and lake. It will mostly be hidden from nesting birds and gives guests a different perspective of the life on and in the lake. The footpath needs to be durable and the width variable, some sections will be for a single person while others will be double. There will be protrusions at random intervals. The path is to be partially hidden and in sensitive areas such as the northern part where the birds nest, the path will be almost entirely hidden (see figure 292). In these sensitive areas the path will only be wide enough for one person at the time so the amount of time used to cross the area will as short as possible and limit the amount of stress to the birds. Potentially this path will be closed during the breeding

Attribute name	Current situation	Solution
Being away	It is impossible to access the area without special equipment or on ice.	A wooden footpath will provide access.
Fascination	It is impossible to access without special equipment or on ice and therefore elements capable of providing fascination are not readily enjoyed by most of the guests.	A wooden footpath will provide users the opportunity to view the water birds.
Extent	It is impossible to access without special equipment or on ice.	A wooden footpath will be practically hidden from view, making it easy to hide and watch the birds without disturbing them too much.
Compatibility	It is impossible to access without special equipment or on ice.	A wooden footpath will make the carry easily accessible and enjoyable for guests.



season. The supervisor must keep this possibility in mind. Informational signs will be placed at the entrances to the path informing guests how they can limit their impact or the birds. It is possible to increase the number of hides by making little islands close to the path and planting them with suitable native or exotic trees, shrubs and herbs to cover the path, for example tea-leaved willow (*Salix phylicifolia*).

Close to the middle of the wooden path is a unique geological feature warranting special attention. It is a ridge that crosses the lake from east to west just beneath the water's surface (see page 170). There should be an information sign on both the east and west banks of the lake explaining its formation. Benches will be placed here and there along the footpath so people are able to sit and enjoy the closeness of the wildlife. The path's floors are not built totally of wood; two other materials are used randomly spread over the whole path. One of those is cast iron grating. *Carex* sedges will grow easily through the grating and provide an interesting and exciting walking experience. The other material is to be transparent going below the water surface were it is deepest giving guests a glimpse under the surface. Both materials are installed the same way into the wooden path. They will be spread randomly along the path. They will be circular, and between 20-50 cm. in diameter (see figures 293 and 294).



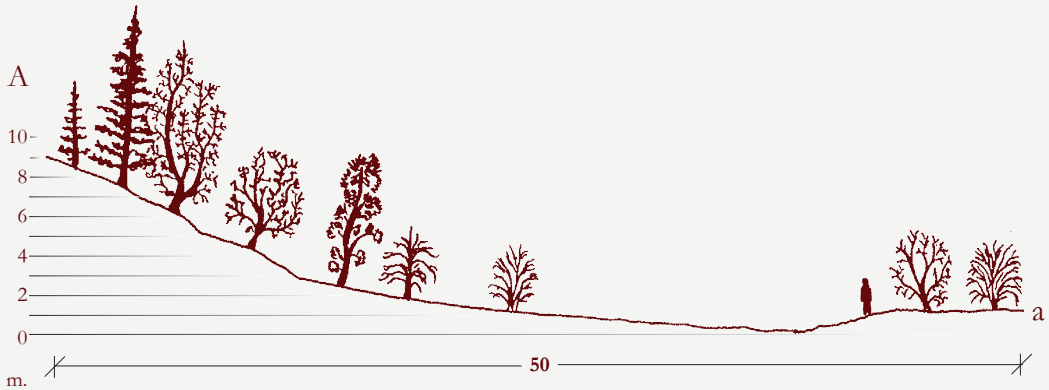


Figure 287: Section A of "Carry Way".

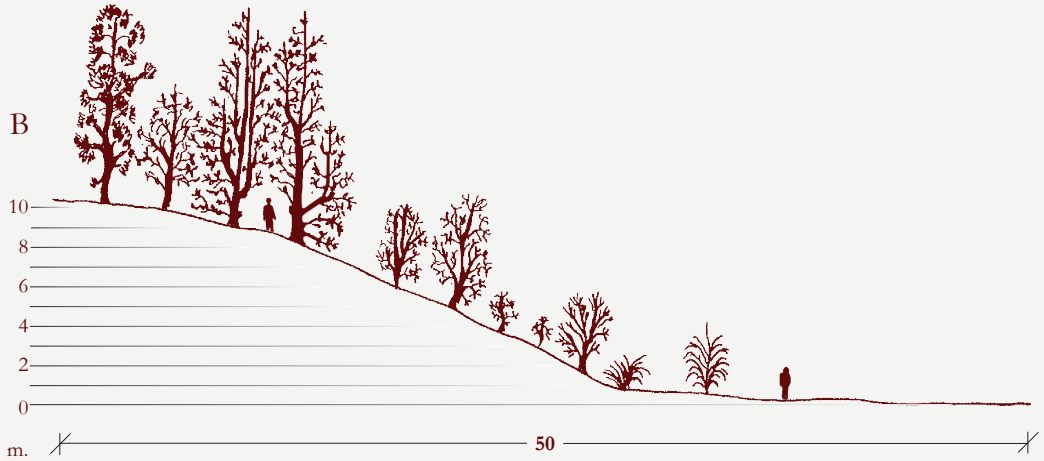


Figure 288: Section A of "Carry Way".

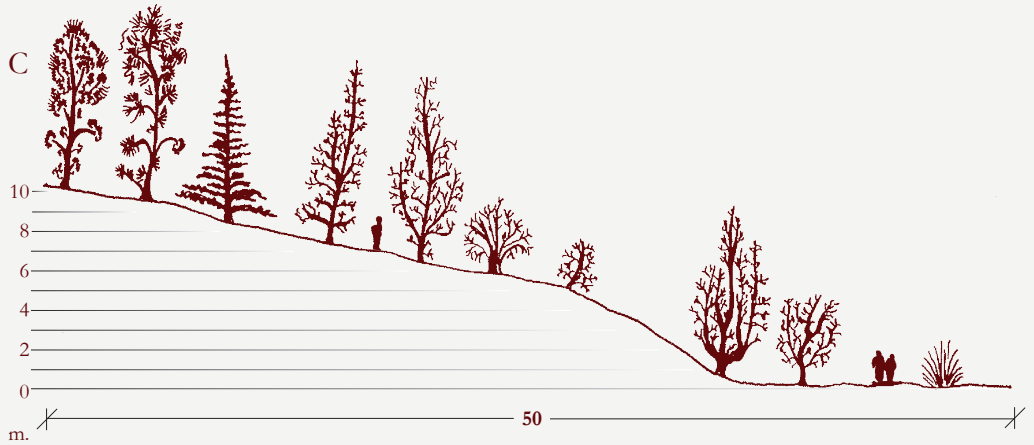


Figure 289: Section C of "Carry Way".

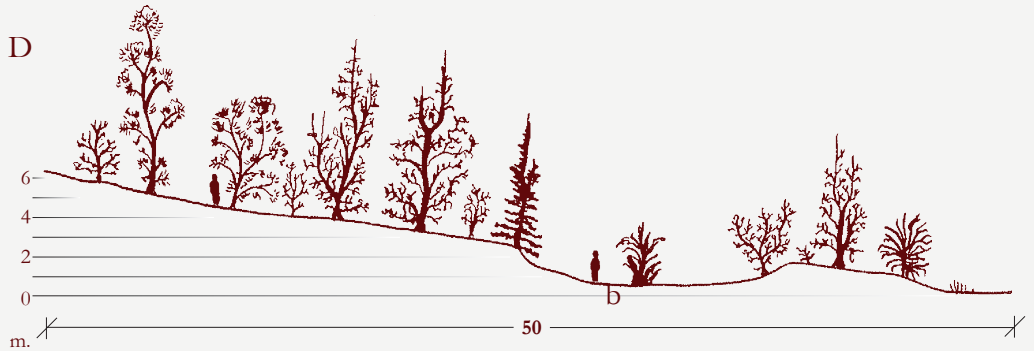


Figure 290: Section D of "Carry Way".

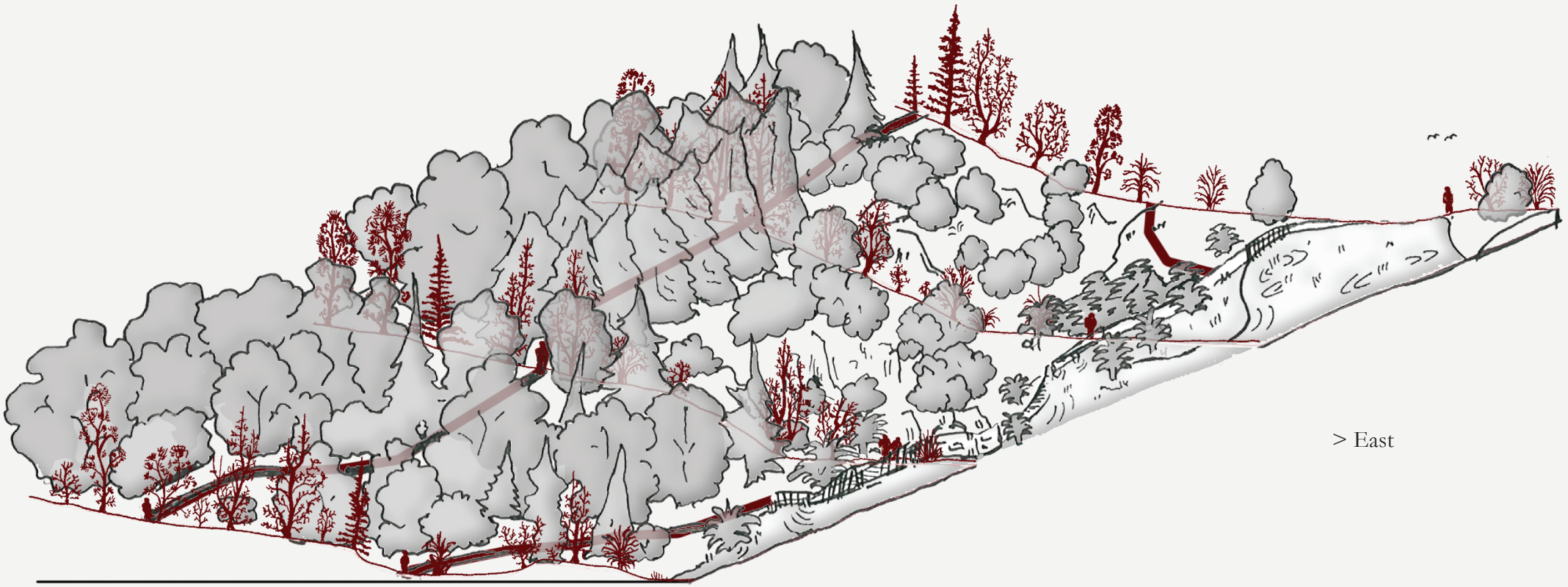
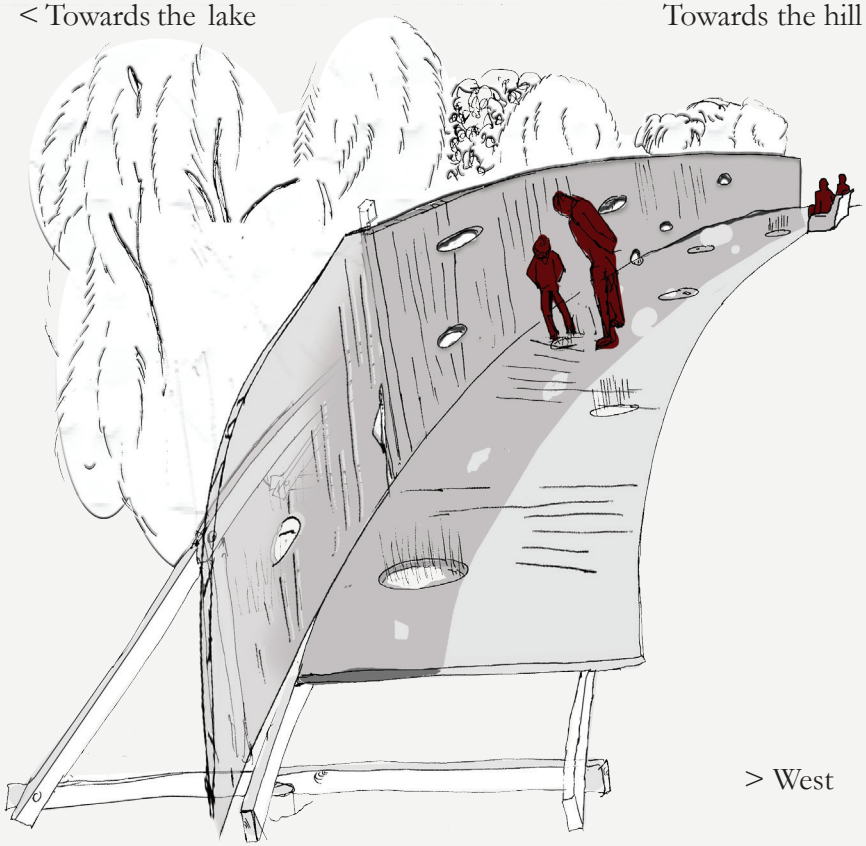


Figure 291: Illustration of all sections in the correct perspective. The path system and vegetation are also shown.

< Towards the lake

Towards the hill >



> West

Figure 292: The path in this zone is made for the most part from wood. A wooden wall between 1.8 and 2 m. high will be built on the side towards the lake. This wall is to help sheild nesting birds from the human traffic. A wall is only necessary on the northern side of the path. Portholes will be placed at random distances and heights along the wall. The lowest holes will be placed at a convenient height for children to look through. There are also gaps between the wall's timbers so it will be possible to see through them. The wall's framework will be to the outside. Not only does this make the wall more attractive, it also prevents children from climbing on it. When the crowns of the surrounding trees are higher than the wall, it will also be possible for visitors to enjoy watching birds in the tree tops and listen to their songs. The width of the path varies from 1.2 to 3 meters. This is done to force people to walk single file in sensitive areas. When people walk side by side, they tend to make more noise that could disturb the birds. In those sections where the path is narrow, the timbers on the wall will form a solid wall. There are two types of "solid holes" along the path. Solid holes do not actually exist, but the words are used here to represent circular areas in the wooden path covered by either plexiglas or iron gratings to prevent guests from falling through. These holes are explained in figures 293 and 294 on the following page.

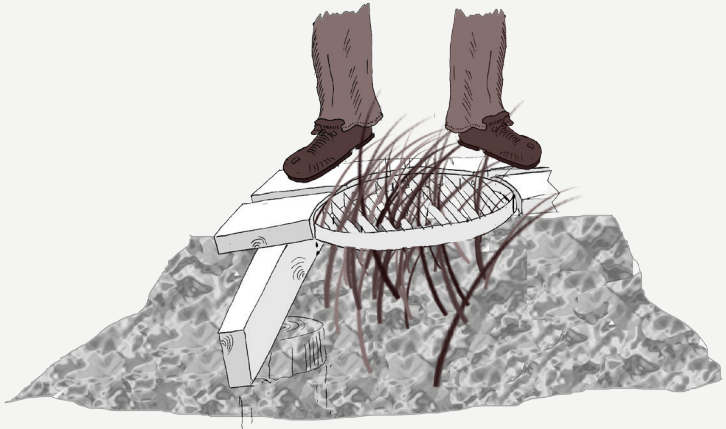


Figure 293: The iron grating allows sedges to grow up through the path's surface.

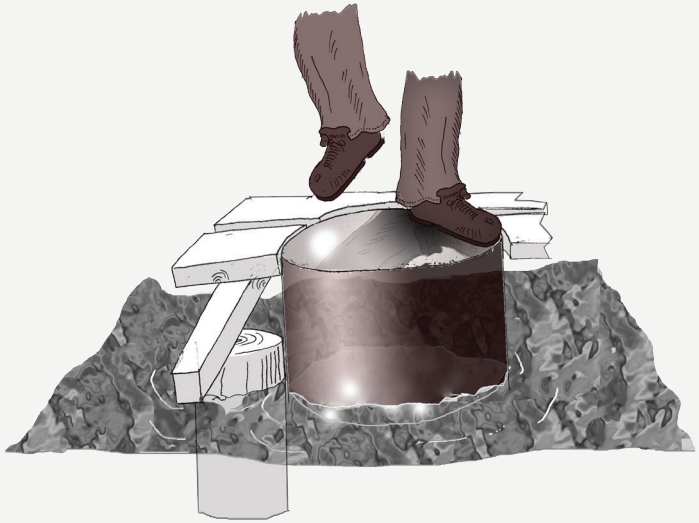


Figure 294: Thick transparent plexiglas is placed so that it goes well below the water's surface providing guests with a new view of the lake. In order to prevent sedges from obscuring the view, this type of hole must be placed where the lake is deepest and sedges cannot grow. The bottom of the plexiglas is rounded so dirt is less likely to adhere. The round shape also provides a "fish eye" effect. Some of these holes will also be made of thinner plexiglas placed just at the water's surface to provide another view of the lake.

LARCH ALLEY

Description

"Larch Alley" is a 100 meter long pure larch plantation from 1939. It is in two lines with about 2 meters between rows and between trees. The zone itself is on rather flat land, although to the west there is a steep slope upward and to the east a steep slope downward. The larches were pruned in the middle of the stand so it is possible to walk upright almost all the way through, but at the southern end, this alley suddenly stops in a dead end In the north end the path continues on to the the circle path.

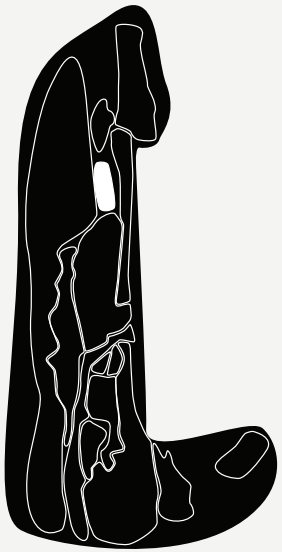
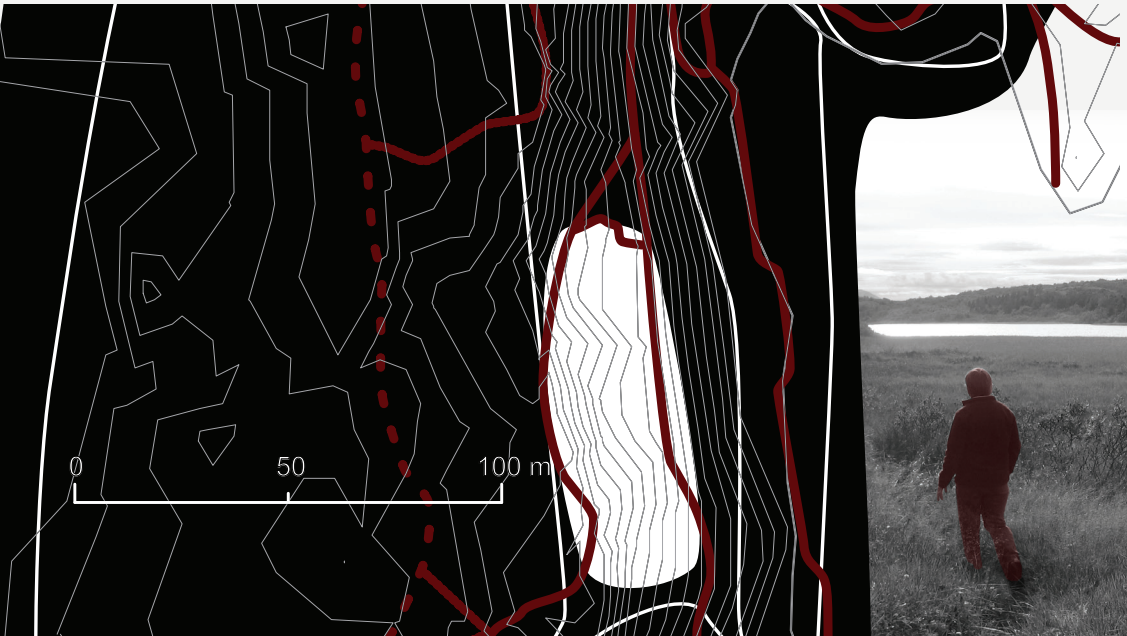


Figure 295: The view over the lake towards southwest. "Larch Alley" is shown in red on the photo (2009).



Attribute name	Current situation	Solution
Being away	It feeling is mystical, like being in an elf's castle (Daníel Friðrik Björgvinsson (age 6) 2011, pers. comm., on site, June).	Keep it as is.
Fascination	The sculptured form of the trees adds an adventurous feeling to the zone. Most of the branches outside the alley were not pruned giving it even more of a mystical feeling.	Keep it as is.
Extent	The feeling is a bit isolated while walking the track inside the alley, although it is quite obvious what is happening outside the alley.	Keep the outer branches of the trees as are. Absolutely do not prune them!
Compatibility	Some branches on the inside that were already pruned point dangerously towards guests who walk there.	Pruning the branches at the trunk will increase safety.



Design

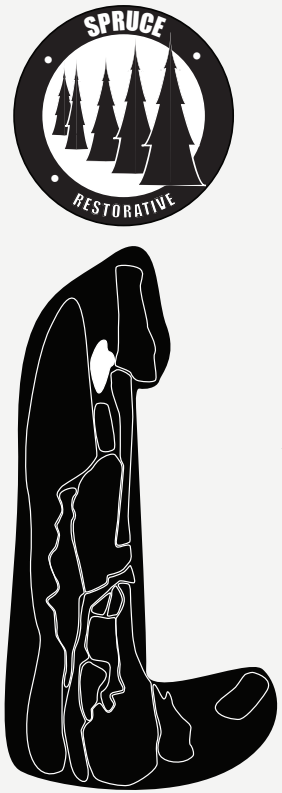
The idea of having this zone as an alley was clearly in mind when it was planted and the results are quite good. There is a lack of maintenance and professional oversight. The concept is good and the next step is to prune all the trees up to a height of three meters on the inside (not the outside). The cut has to be flesh with the trunk, not in the middle of a branch, as was done in many cases. Pruning in that manner can be dangerous. The social track laying between the rows is not of a high standard. Because of the buttresses on the trees the path is not as accessible and clear as it could be. However that can be an advantage, because the irregular structure makes it more adventurous to walk under the larch alley on a wood chip floor.

Figure 296: View over a part of "Larch Alley" (2011).





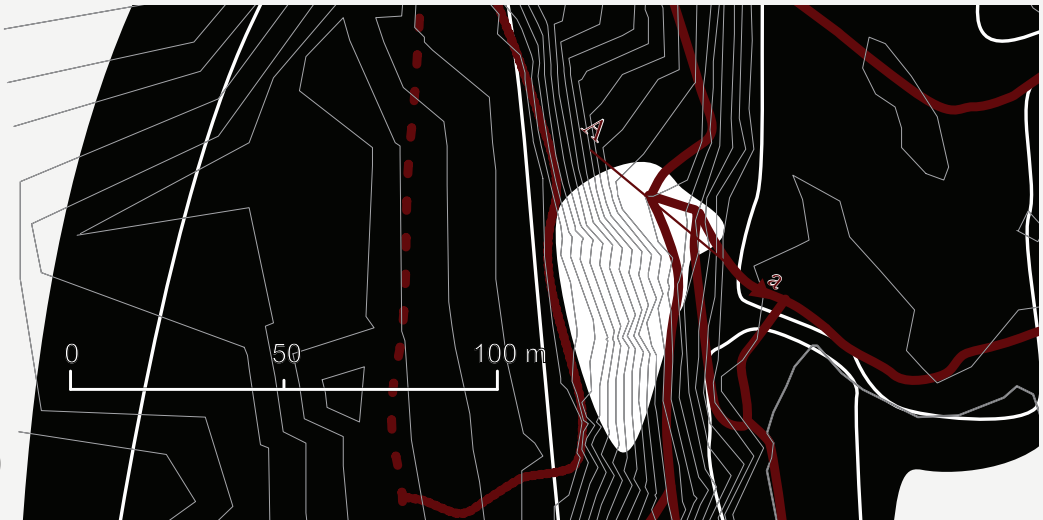
Figure 297: View of "Larch Alley" from the existing path facing north (2011).



SPRUCE

Description

"Spruce" is a small zone that takes its name from an old spruce stand of twenty, 8 meter tall spruce trees. It is largely situated on a steep slope about 10 meters higher than the lake's surface. The current path goes by the stand and is the narrowest part of the whole circle path and the most dangerous. One wrong move might lead to a fall down the slope, perhaps all the way down to the lake. To the north of the spruce trees there is a small, peaceful, flat grassy area with a bench to sit on. It is a relaxing spot where a great rock wall of 8 meters dominates the west and spruce and birch are plentiful. In this area one is quite sure of the existence of elves and hidden people. A social track goes further north and lies either up the ridge or to a piece of modern art, called *"Macy´s"*. The circle path turns at the rest area down the steep slope into a bog, *"Outer Bog"*. In the summer of 2007, two volunteers built a stairway up the slope (Gústaf Jarl Viðarsson and Sævar Hreiðarsson 2010, pers. comm., Dec.). That stairway was an impressive addition to the area considering there was no budget and no machines were used. It is possibly the greatest single effort put into the *Húsatjörn* Lake area for decades.



Attribute name	Current situation	Solution
Being away	Part of the housing area can be seen from this zone. This does not affect the user's experience of the area.	The zone provides a sense of being away.
Fascination	This zone offers a vast overview as well as attractive cliffs.	Good as it is.
Extent	Sheltered by cliffs, spruce and birch, it gives one a relaxed feeling.	Good as it is. Some thinning of the birch would improve the area.
Compatibility	Most of this zone is on a steep slope and that may seem threatening.	Make the footpath safer.



Figure 298: Author´s nephew standing by a sign at the entrance into the spruces. Behind him is steep path/ stair downwards (2011).

Design

The main design for this area includes safe access, maintenance and plantations.

The current path is only in a narrow track that is, in sections, dangerous. By making a wide gravel footpath, the danger is lessened. Handrails are not needed if the path is wide enough. Handrails could give the wrong impression of a walk in nature. The current stairway is adequate. However it could be better especially in regard to traffic and safety. Where the stairway starts at its highest point it goes around a large stone, one meter high (from the stair's surface) that continues along the stairway for 4 meters. This makes that particular part of the path narrow and it is steep beneath. If

Figure 299: View from the zone "Spruce" to the housing area (2011).



Figure 300: (Picture on the right.) The stair was a major input in 2007, but it is rather steep and can be slippery on wet days. For most guests the stairway is not an obstacle. On the picture a guest is walking down the stairway. The position of the leg shows how steep the stairway is (2011).

handrails were added, they would make the stairway too narrow. A little lower is a large step where up to three people can stand together. The stair then turns and goes directly down to the flatland before the bog takes over about 10 meters away. Each step is sturdily built, but is quite high for some people and the stairs are filled with soil that erodes in rainy weather. In other words, the stairway is steep, narrow and it can be slippery. The design involves a new stairway although the old stairway will be left standing. The old stairway can be used by runners. Although it will need periodic maintenance to remain usable. The new stairway will be much longer, not as steep, with fewer turns and a gravel surface. The highest point will be at the same point as in the older stairway, but it will follow the slope towards the lake and connect to the *"Carry Way"* path.

Some birch will be removed by the rest stop, especially directly under the cliff. Those trees not felled will be pruned and trimmed. Exotic shrubs and trees will be planted all around especially where the slope is steepest on both sides of the footpath.

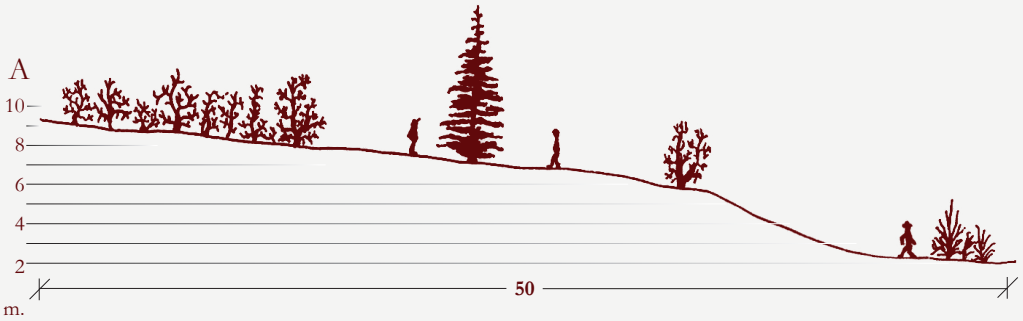


Figure 301: Section of current stairway.



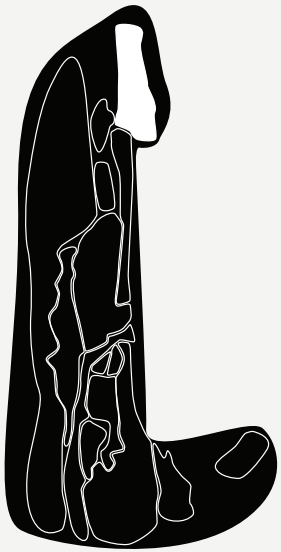
Figure 302: (Small photograph below.) The current path is shown as a red line. Húsatjörn Lake is on the left (2011).



Figure 303: The new wooden path will lead into the lake path at "Carry Way". A new path will be added that is not as steep as the existing stairway. The old path can still be used.



OUTER BOG



Description

The *"Outer Bog"* has low vegetation and the view towards south is of *Húsatjörn* Lake and the zone *"Carry Way"*. To the north, the lake *Eiðavatn* is seen in the distance. This wetland area is wetter than the wetland of the *"Inner Bog"*. The reason for this is there are no drainage ditches. There are two tracks that are possible to walk over without getting wet. One is the current circle path with a bridge over a small stream, similar to that found in the *"Inner Bog"*. The other is a short informal raised track, about 50 meters north of the circle path. This shorter path was probably made in the 1980's when a children's summer camp was held at *Eiðar*. This path is not easily seen in the bog, but it connects an old sheep-track on either side to the dry lands. It is a simple structure made by hand using shovels and other hand tools. The land underneath the section rises just enough to allow one to walk over it in sneakers without getting wet. All around the bridge are small puddles. On the west side of this bog is a steep hill, *"Spruce"*, that becomes lower as it continues north. On the east side there is a small hill rising barely one meter above the bog, but dry enough for birch trees to grow on it. This zone is not formally connected to the Social area, which is to the east. About 100 meters are left untouched to serve as a buffer between the Restorative and the Social areas.

Attribute name	Current situation	Solution
Being away 	It has a great view towards *Húsatjörn* Lake and a wetland on the other side.	It is good as is. Alterations to the landscape should be done with care.
Fascination 	The combination of wetland, the lake, steep slopes and relatively flat land is fascinating, although the zone is unsheltered from the north and south and the wind can blow through the zone unhindered.	It is good as is.
Extent 	Unlike the "*Inner Bog*" this bog feels more isolated because it is narrower with a large, steep, spruce covered slope dominating like a wall towards the west and birch covering it to the east. It fulfills the requirements of extent.	Keep it as is.
Compatibility 	Compatibility depends on where the zone is entered. If it is entered the normal way, passing the zone "*Spruce*", it might feel accessible enough. However, if it is entered from the east, it might seem prohibitive to some guests because of the steep stairway in the zone "*Spruce*". People who have trouble walking, might be wary and not confident enough to use the area.	By making the footpath out of wood instead of a wet track, as it is today, the area gains compatibility.

Design

The main focus in this zone is the view south towards the lake and a decent path across the bog for the benefit of walkers and the protection of the vegetation.

In the eastern part of this zone, close to the lake's bank will be a resting place with one bench. It needs to be as isolated as possible, so that guests are not disturbed by other guests walking the circle and they are able meditate or watch the birds on the lake.

A wooden path without handrails will be built over the wetland close to the current footpath. This path will be placed as close to the ground as possible. Nothing will be done to the path from the 1980's as it a part of the area's cultural history.



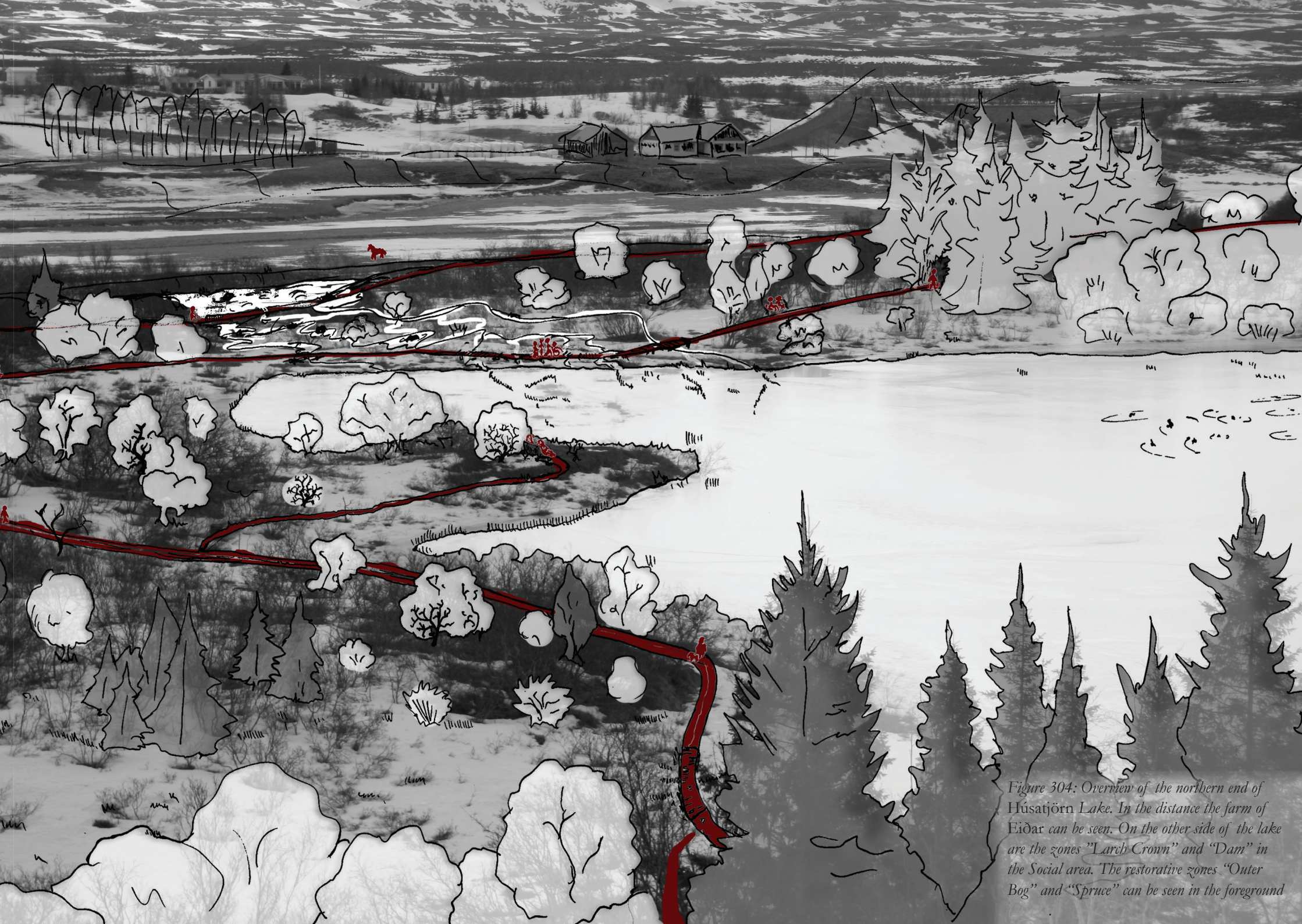
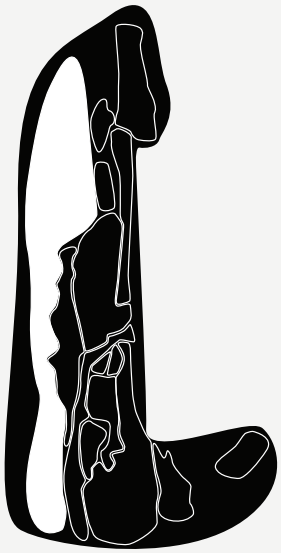


Figure 304: Overview of the northern end of Húsatjörn *Lake. In the distance the farm of* Eiðar *can be seen. On the other side of the lake are the zones "Larch Crown" and "Dam" in the Social area. The restorative zones "Outer Bog" and "Spruce" can be seen in the foreground*



RIDGE

Description

The *"Ridge"* zone is the top of the ridge. It is the zone with the most extensive view and the largest solid surface of stones and bedrock. The extensive overview in this zone is because this is the highest zone around *Húsatjörn* Lake. There is an old road on the northeast ridge. The road has not been used in many years and is now mostly covered in lupine and birch. The road reshapes and connects the circle around *Húsatjörn* Lake. Part of the circle lies on one of the lowest parts of the ridge. This is almost a 200 meter link connecting the zones *"Pines So Fine"* to *"Larch Alley"*. One of the most popular view spots of all is located on this link. There is a small bench at the view spot and normally guests sit down to enjoy the view for few minutes. There are many sheep tracks leading in all directions on the ridge that can be followed. There used to be a fence here once as evidenced by a single fence post still standing in the bedrock. One of the interviewees recognized it as the mighty sword Excalibur (Óttar Fjölnir Sigurðsson 2011, pers. comm., July). In the northeastern part of this zone there is an extensive view over *Eiðavatn* Lake and a large part of *Hérað*. A piece of modern art is located between the lakes *Húsatjörn* and *Eiðavatn*. This piece of art is controversial. Some guests find it impressive while others consider it an eyesore (see figure 54 on page 80).



Figure 305: The view from the "Ridge" towards "Larch Alley". Guests often like to sit there and enjoy the view, either on a rock or a bench (not pictured) (2010).

Attribute name	Current situation	Solution
Being away	The whole horizon can be seen from there, providing a sense of total freedom.	No need for changes.
Fascination	The view is breathtaking.	No need for changes.
Extent	The feeling of freedom is greatest on the ridges because of the vast view. It is just as interesting to enjoy the close surroundings of the complex terrain on the ridge itself, which is not as flat as it might seem at first.	No need for changes.
Compatibility	It is not as easy to get around in the summertime as in the winter. In general there are no established paths and that can detract from the enjoyment of the view.	Make proper paths/tracks.

Design

The landscape and the view in this zone are spectacular. The only thing missing is proper access. A horse track will be placed along the ridge connecting the horse track in the north to the horse track in the south. For guests on foot who do not want to walk along the horse track, a primitive-path will be prepared close to the ridge's edge so they can walk without being inconvenienced by horses. It will be prepared so guests do not have to worry too much about where they step. For example if lupines cover the ground the path will be covered by laying tree trunks together over the lupines. This prevents the lupines from growing so guests can concentrate on the view. The primitive path will not have a detailed design or structure; it will develop as a social track and be left to evolve with continued use. The resting place on the circle footpath (linking the zones *"Pine So Fine"* and *"Larch Alley"*) will be prepared like the rest of the paths. The resting places and viewpoint will be enlarged so there is enough space for two benches instead of one. The vegetation will be maintained by pruning and trimming. The last standing pole of the fence will have a new purpose, not unlike the sword Excalibur. The fence post is so securely attached in the bedrock that no one can remove it. When guests, especially children, have completed their journey from the housing area to the "top of the world", a final obstacle still remains, Excalibur. By welding a large handle on it will be a perfect plaything. Parents might tell a story for example that the Elves hold it down with a mighty force and when a pure soul tries to remove it, who knows what might happen.



Figure 307: Excalibur is here an old fence pole that is impossible to pull up. It is in the middle of the zone "Ridge" (2011).

Figure 306: The view from the vantage point in the zone "Ridge" (2011).



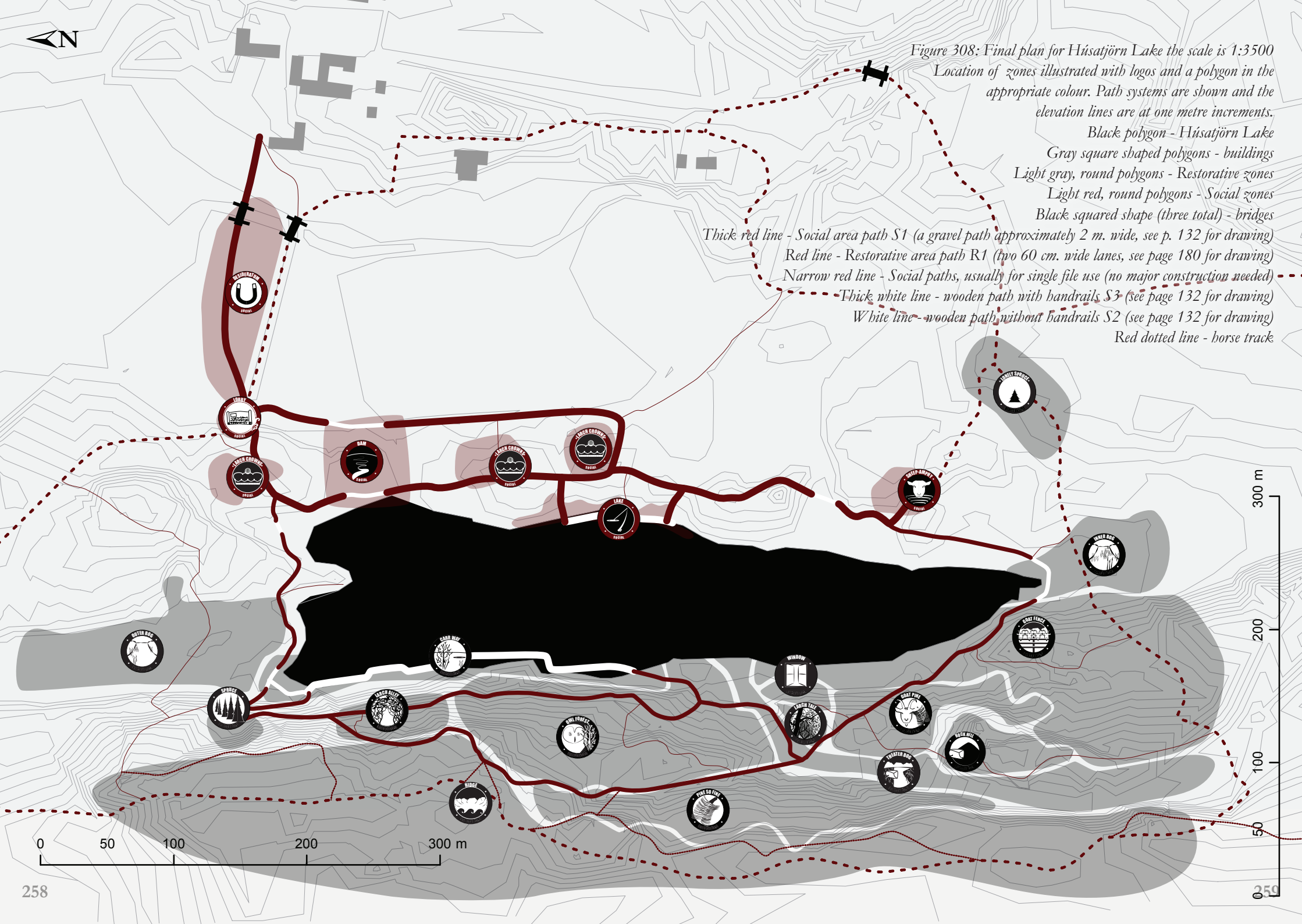


Figure 308: Final plan for Húsatjörn Lake the scale is 1:3500
Location of zones illustrated with logos and a polygon in the appropriate colour. Path systems are shown and the elevation lines are at one metre increments.
Black polygon - Húsatjörn Lake
Gray square shaped polygons - buildings
Light gray, round polygons - Restorative zones
Light red, round polygons - Social zones
Black squared shape (three total) - bridges
Thick red line - Social area path S1 (a gravel path approximately 2 m. wide, see p. 132 for drawing)
Red line - Restorative area path R1 (two 60 cm. wide lanes, see page 180 for drawing)
Narrow red line - Social paths, usually for single file use (no major construction needed)
Thick white line - wooden path with handrails S3 (see page 132 for drawing)
White line - wooden path without handrails S2 (see page 132 for drawing)
Red dotted line - horse track



Figure 309: Overview of Húsatjörn Lake. Photograph from an airplane flying at a low altitude. The path system is drawn on the map and the logos of zones indicate their locations.

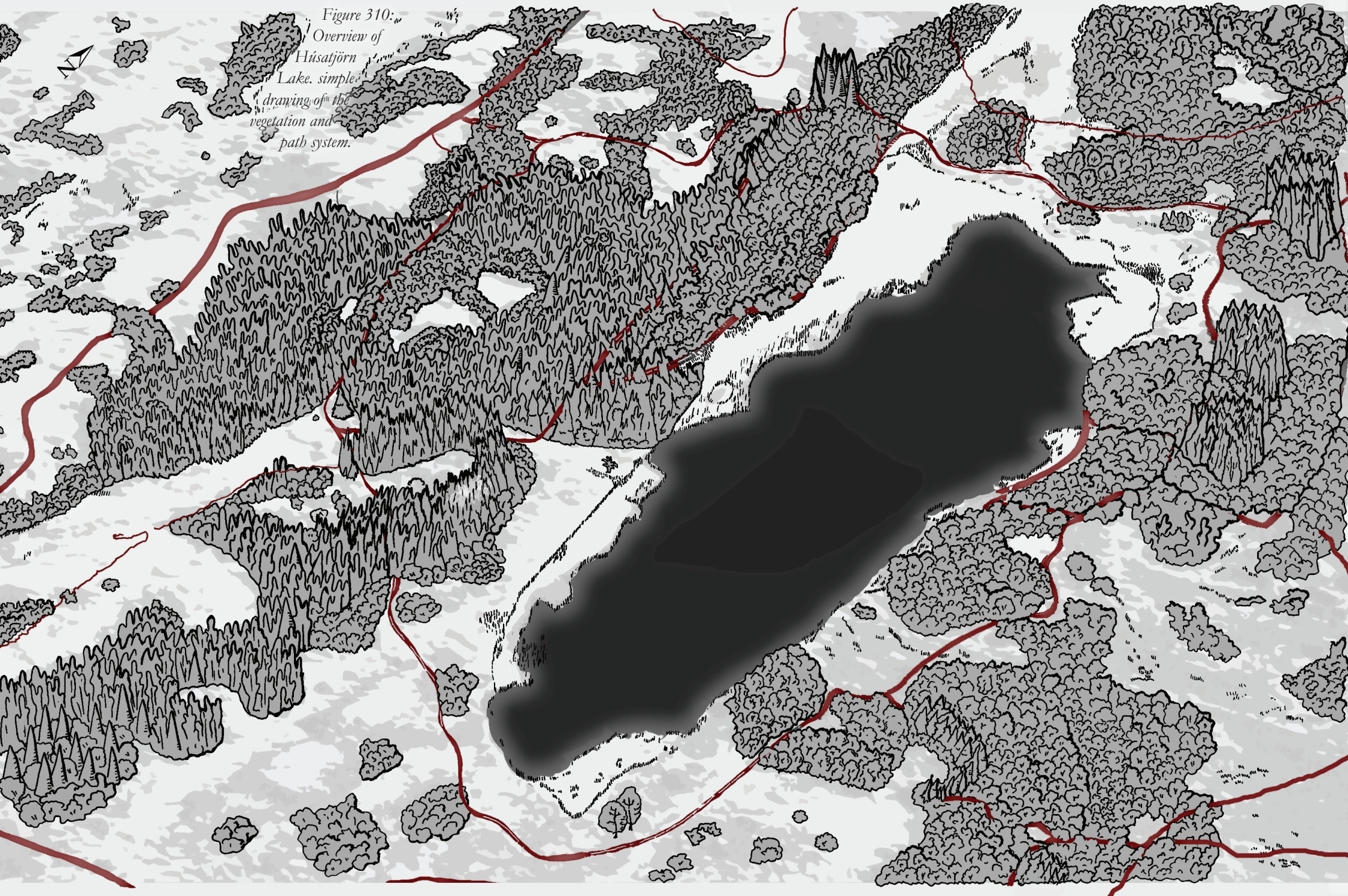
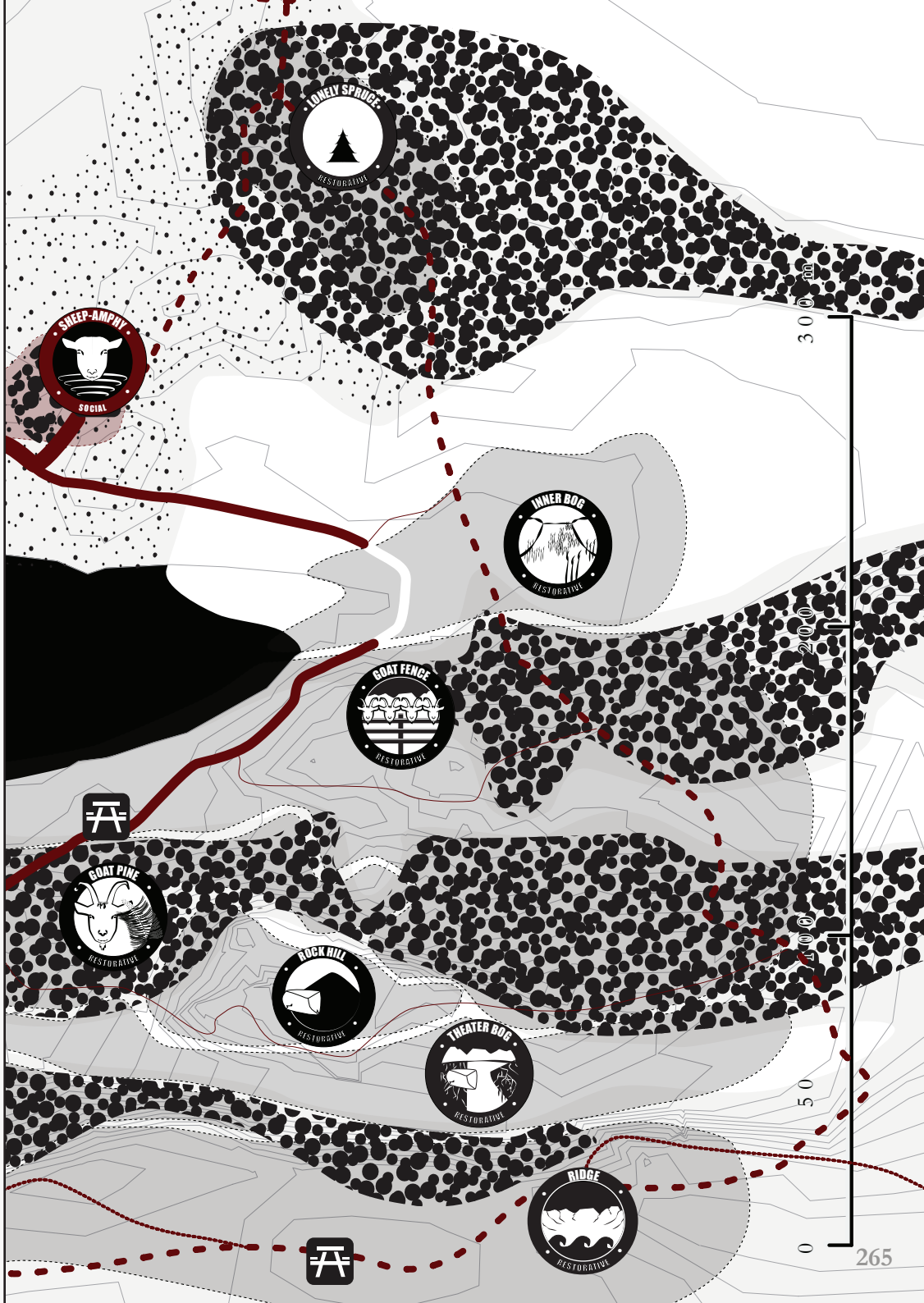


Figure 310: Overview of Húsatjörn Lake. simple drawing of the vegetation and path system.


LONELY SPRUCE
RESTORATIVE
SHEEP-AMPHY
SOCIAL
INNER BOG
RESTORATIVE
GOAT FENCE
RESTORATIVE
GOAT PINE
RESTORATIVE
ROCK HILL
RESTORATIVE
THEATER BOG
RESTORATIVE
RIDGE
RESTORATIVE
300m
200
100
50
0

Conclusions

There has been a recent awakening in Iceland to the importance of green areas to health and well being, although this has long been recognized in other countries. For example at the international conference "Forestry serving urban societies in the Northern Atlantic region" held in *Reykjavik* in 2009, several research projects were presented that showed forests and other natural and semi-natural environments as having a positive effect on psychological well being.

The largest population centre of *Hérað*, *Egilsstaðir*, has a population of 3,000 and is the centre business and services for a large part of Eastern Iceland. *Hallormsstaður* National Forest, over twenty km. south of *Egilsstaðir*, with its large network of footpaths, plays in integral role in the image of the region as one of great natural beauty and outdoor recreational value. Although the forest is visited by large numbers of people, both Icelandic and foreign, the number of local people is not as large as one might expect. This may be in some way related to the existence of *Selskógur* on the very edge of the village and a sense of displacement of the local people by the vast numbers of "outsiders" to *Hallormsstaður* Forest. Unfortunately there are no facilities expressly designed for handicapped and elderly visitors in *Selskógur* and only two such areas are located in *Hallormsstaður* Forest (Sigurðsson 2006). This limits the number of recreational opportunities for local people.

Eiðar estate, located twelve km. north of *Egilsstaðir*, has great potential for providing excellent recreational opportunities, especially the area closest to *Húsatjörn* Lake. *Húsatjörn* is not only in close proximately to the village, but because of the former school and other programs held there it holds a special place in the hearts of many local residents. The landscape at *Húsatjörn* Lake is not as steep as that found in the other two forests, making it more accessible to families with young children, handicapped persons and the elderly. The forest at *Húsatjörn* includes exotic species of considerable height, otherwise only found in *Hallormsstaður* Forest. These factors combined make *Húsatjörn* attractive as a recreational area.

During the design process for the forest surrounding *Húsatjörn*, many factors were taken into consideration. Both the analysis and design were done in a multidisciplinary manner to include factors as diverse as the area's history, nature, elements necessary to allow increased use by handicapped and elderly persons and the requirements of providing restorative and social benefits to the area's guests. Including all these factors was often difficult although at other times they were interlinked.

In order to understand the area's history it was necessary to research both old and new references. An effort was also made to interview older persons who had a personal knowledge of the area. Although some information was forth coming it would have desirable to interview a larger number of older individuals. Other stakeholders were also interviewed. During the interview process several interesting ideas and opinions came to light. Interviewing children may also have added a different perspective and ideas that could have been incorporated into the design. Laser counters provided the only quantitative data for area guests.

The landscape was analyzed, with special attention given to cultural, environmental and visuals elements. The first step in the process was to survey the entire area. The initial survey area was considerably larger than the finial project area. In retrospect, surveying a large area was essential in order to be able to select and then focus on the smaller area of *Húsatjörn*. The history of *Eiðar* estate goes back to the beginning of records written in Iceland and therefore the protection of sites of importance must be given first priority. The area survey showed several sites with archaeological ruins in the project area. During the design process these sites were given special attention, both to protect them and also to make them more obvious to area visitors.

Photography using both still and moving pictures played an important role in the analysis process. Emphasis was placed on taking photographs from as great a height as possible in order to get a suitable view over the tree tops. In one instance this was done using an 8 meter long stick. While this method proved adequate, better results might have been obtained by designing a method with the same height, but with a screen at eyelevel. Photographs were taken from an airplane flying at low altitude over the project area.

The area was also visited in every season, in different types of weather and different times of the day. This was done in order to catch the nuances of changes in the vegetation and lighting. Cullen's Serial vision method involving a process in the landscape (1971) was used to capture these on film. The Serial vision in the project area was based on the footpath as used by area guests. The photography was done in black and white. This method proved very useful as it accentuated the contrast in light and shadow which is often more important for design than the objects being photographed. Black and white photography also gave the cameraman more control in adjusting the contrast and provided a better understanding of the immediate surroundings. When all the data were gathered, the area was mapped for analysis.

During the process of identifying an analysis method to use in this project, it became clear that Lynch's process of analysis of urban landscape (1960) and that used by Bell (2004) were extremely similar. Further consideration brought to light the similarity of the analysis technique used by Ritter for ecological analysis (2005). Because of the similarities of these three methods and the fact that they were all pertinent to the project area, the three methods were combined to form the LyBeRitt method. This was used in analyzing the visual and ecological flow of the landscape. This combined with the photographs from the Serial vision proved to be very useful tools for reading the landscape.

Studies have shown that contrary to the long held belief that outdoor recreation is mainly used to improve physical condition, those benefits sought most are restorative and social (Curl 2008; Curl and Johannesdóttir 2005). When the area around *Húsatjörn* was analyzed, it became clear that the landscape, vegetation and size of the area would easily accommodate a social and a restorative area. The area was divided into two areas. The eastern most is closer to the buildings and has a more gentle landscape that does the western part where the slope is steeper and numerous cliffs are found. Therefore the eastern area was dedicated to social use and the west to restorative use.

Each of these areas was further divided into zones and the positive and negative attributes of each were analyzed. In order to do this Stankey's method of attribute analysis, Recreational Opportunity Spectrum (1979) was combined with a simplified form of Stigsdotter and Grahn's "8 room" approach (2002) for social areas or Kaplan's characteristics of restorative environment (1995). By using this method it became obvious which features in a zone demanded specific attention in the design process, possibly preventing oversights or mistakes in the design process.

The resulting design provides for easy access by people of varying physical abilities and all ages. In the social zones, there are numerous opportunities for the enjoyment of both nature and the companionship of others. The restorative zones provide opportunities for more solitary experiences for small groups or individuals. The design however does not preclude this area's use by larger groups. Implementation of the design should result in an increase in recreational value while maintaining and improving the integrity of the area's environment.

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Appendix A Technical devices

Various devices and software programs were used to analyze the project area. A complete of these is found below. (Owner's names are shown below each item.)

Counter, SenSource
Skógrækt Ríkisins

GPS (Global positioning system) Magellan eXplorist 210
Héraðs- og Austurlandsskógar

GNSS (Global navigation saterlight system)
Trimple R8 (the stick), Trimble TSC2 (the keyboard), GSM mobile phone (-GSM Base: Egilsstaðir)
Mannvit

Camera, Canon EOS 350 (o.28 m/) Lens 18-55 mm
Héraðs- og Austurlandsskógar
Camera, Canon IXUS 500
Hlynur Gauti Sigurðsson

Camcorder, Flip
Hlynur Gauti Sigurðsson
Camcorder, Sony DSR-PD100
Hlynur Gauti Sigurðsson
Camcorder, Sony HVR-Z1E
Hlynur Gauti Sigurðsson
Camcorder, Sony HVR-A1
Kristinn Kristmundsson
Camcorder, Panasonic HPX 500
Hjalti Stefánsson
Camcorder, Canon DM-XM1
Björgvin Steinar Friðriksson

Computer, MAC
Hlynur Gauti Sigurðsson
Computer, PC,
Héraðs- og Austurlandsskógar
Computer, PC,
Mannvit
Computer, PC
Sherry Curl

Computer program- ARCMAP ™

Computer program- Micro-station ™

Computer program- Adobe Illustrator ™

Computer program- Adobe InDesign ™

Computer program- Adobe Photoshop ™

Computer program- Microsoft Word ™

Computer program- Microsoft Excel ™

(Computer program- Final Cut Pro ™)

Light aircraft registration number: TF-KLO
Piloted by: Tómas Kárason

Appendix B Zone analysing process

Chart A:

Working documents for varies analysis methods used for the *Húsatjörn* Lake area.

		8 rooms								ROS						Restorative				
		Rich in species	Serene / Peace	Festive	Common	Space	Pleasure garden	Culture	Wild	Primitive	Semi-primitive (Not motorized)	Semi-primitive (Motorized)	Roaded Natural	Rural	Urban	Being away	Fascination	Extent	Compatibility	Total
	Total	26	20	21	25	26	25	25	25	4	3	10	49	52	39	39	26	23	25	463
Forest types (Gustavsson 2008)																				
4 Rooms	1 Open		1	1	1	1		1	1				1	1	1		1		1	11
	2 Scattered	1	1	1	1	1	1	1	1				1	1			1		1	12
	3 Medium canopy cover	1	1	1	1		1	1	1				1	1		1	1	1	1	13
	4 Closed		1						1				1	1		1	1	1	1	8
Sustainable triangle (Larson 2005)																				
Forest t.	Recreation values	1	1	1	1	1	1	1	1				1	1	1	1	1	1	1	15
	Biodiversity values	1	1			1			1				1	1		1	1	1	1	10
	Timber production																			0
Plantation types (Krogh-Lund 2006)																				
Fælledparken	1. Tall trees	1	1	1	1		1	1	1				1	1	1	1	1	1	1	14
	2. Stands	1	1		1	1	1	1	1				1	1	1	1	1	1	1	14
	3. Forest edge	1						1					1	1			1	1		6
	4. Alleys					1		1					1	1	1		1			6
	5. Romantic garden and lake	1	1			1	1	1					1	1		1	1			9
	6. Open tree plantation																1	1	1	3
	7. Character trees	1	1	1	1	1	1	1	1				1	1	1	1	1	1	1	15
	8. Hedge			1	1	1	1	1							1			1	1	8
	9. Lawn			1	1	1	1	1							1			1	1	8

All of the required attributes from the 8 rooms (Stigsdotter and Grahn 2002) ROS (Clark and Stankey 1979) and restorative environments (Kaplan 1995) were placed on the X axis. Those features considered necessary in an area to fulfil the requirements for one of the uses found on the X axis were placed on the Y axis. Each zone was analysed for the presence or absence of the features on the Y axis. The total number from this analysis was used to determine the most appropriate use for each zone.

		8 rooms								ROS						Restorative				
		Rich in species	Serene / Peace	Festive	Common	Space	Pleasure garden	Culture	Wild	Primitive	Semi-primitive	Semi-primitive	Roaded Natural	Rural	Urban	Being away	Fascination	Extent	Compatibility	Total
8 rooms (Stigsdotter og Grahn 2002)																				
Rich in species	Variety of palnts	1											1	1		1				4
	Variety of animals	1											1	1		1				4
	Full of life	1											1	1		1				4
Serene	Peaceful		1									1	1	1		1				5
	No trash		1													1				2
	No interruptions by people		1													1				2
Festive	Clear boundaries			1										1	1					3
	Posssible lawn-activity			1									1	1	1					4
	Accessible			1								1	1	1	1					5
	View			1								1	1	1		1				5
Common	People				1								1	1	1					4
	Entertainment				1									1	1					3
	Easy accessibility				1									1	1					3
	Disabled access				1										1					2
	Many facilities				1										1					2
Space	City contrast					1									1					2
	Calming					1							1			1				3
	Cohesion samhyggd					1							1	1						3
	Coherent heilstætt					1							1	1	1	1				5
	Clearly demarcated					1								1	1					3
	Possible forest-feeling					1							1	1		1				4
	No or few paths					1							1	1		1				4
Culture	Historical track							1												1
	Human influences							1					1	1	1					4
	Only for culture							1					1	1	1					4

		8 rooms								ROS						Restorative				
		Rich in species	Serene / Peace	Festive	Common	Space	Pleasure garden	Culture	Wild	Primitive	Semi-primitive	Semi-primitive	Roaded Natural	Rural	Urban	Being away	Fascination	Extent	Compatibility	Total
8 rooms (Stigsdotter og Grahn 2002)																				
Pleasure garden	Robust						1													1
	Shielded						1						1	1	1	1				5
	Safety						1						1	1	1					4
	Many trees/bushes						1						1	1	1	1				5
	Invite to play						1						1	1	1	1				5
	Allure for children and grown ups						1							1	1					3
Wild	Few other users								1			1	1							3
	Nothing ubanized								1			1								2
	Visual and auditory peace								1			1	1	1						4
	Natural ground								1			1	1							3
	Inaccessibility								1			1								2
Kaplan (1998)																				
Fears	Visual access	1		1	1	1	1	1					1	1	1	1			1	11
	Enhancing familiarity	1	1	1	1	1	1	1	1				1	1	1	1	1		1	14
	Human signs	1	1	1	1	1	1	1					1	1	1	1		1	1	13
Preferences	Coherant areas	1		1	1		1	1					1	1	1		1	1	1	11
	Smooth ground	1	1	1	1		1	1	1					1	1	1	1	1	1	13
	Mystery	1				1		1	1				1	1		1	1	1		9
	A sense of depth	1	1	1	1	1	1	1	1				1	1		1	1	1	1	14
	Open spaces			1	1			1	1				1	1	1	1	1	1	1	11

		8 rooms								ROS						Restorative				
		Rich in species	Serene / Peace	Festive	Common	Space	Pleasure garden	Culture	Wild	Primitive	Semi-primitive	Semi-primitive	Roaded Natural	Rural	Urban	Being away	Fascination	Extent	Compatibility	Total
ROS (Clark and Stankey 1979)																				
Primative	Unmodified by humans									1						1				2
	Solitude									1						1				2
	Close to nature									1						1				2
Semi-primative	Chance of meeting people										1									1
	Minimal site controls										1									1
	Motorized activities											1								1
Road-ed	Some management activities												1							1
	Some solitude												1			1				2
Rural	Human activity													1						1
	Facilities													1						1
Urban	Dominate human activitity														1					1
	Urbanized environment														1					1
	Many facilities														1					1
	No risk apparent														1					1
Other																				
	Recreative	1	1				1		1				1	1		1	1	1	1	10
	Social	1		1	1	1		1						1	1		1	1	1	10
Induvidual	Many plants	1			1	1	1		1				1	1		1	1	1	1	11
	Many birdes	1				1	1		1				1	1		1	1	1	1	10
	Low level of noise	1	1				1		1				1			1	1			7
	Large open areas	1			1	1		1	1				1	1	1	1	1	1	1	12
	No human building	1	1						1	1	1	1				1		1	1	9
	Attraction for children			1	1								1	1	1		1			6

Chart B.

Working document of all 21 zones (Social and Restorative) analysed using chosen methods.

The whole area was divided into two main use areas, Social and Restorative. Zones were selected according to their characteristics and 6 zones were found to be suitable for social use and 15 for restorative use. Then each zone was analysed after four different methods. The first method is a revision of the Recreational Opportunity Spectrum (ROS) by Clark and Stankey (1979). Unlike the original ROS method with 6 attributes ranging from wild areas to urban areas, this method uses two classifications. These are areas with either social or restorative qualities. There are however some zones that are suitable for use as either. For example, a zone in the Social area can have restorative qualities. Learning attributes were added to locate areas with unique opportunities for learning. Although learning experiences can be found everywhere. Each zone was then analysed by forest type (Gustavsson 2008), Kaplan´s restorative environments (1995) and the 8 rooms method (Stigsdotter and Grahn 2002). The outcome of this process indicates the presence of each attribute in the zones.

| | | SOCIAL | | | | | | | | | | | | RESTORATIVE | | | | | | | | | | | |

| | | SOCIAL | | | | | | | | | | | | RESTORATIVE | | | | | | | | | | | |

Appendix C Section Overview

On the following pages all 18 section illustrations from the project can be seen.

The locations of all the sections are marked on the map on the following page. The sections are read from capital letter on the left to the right.

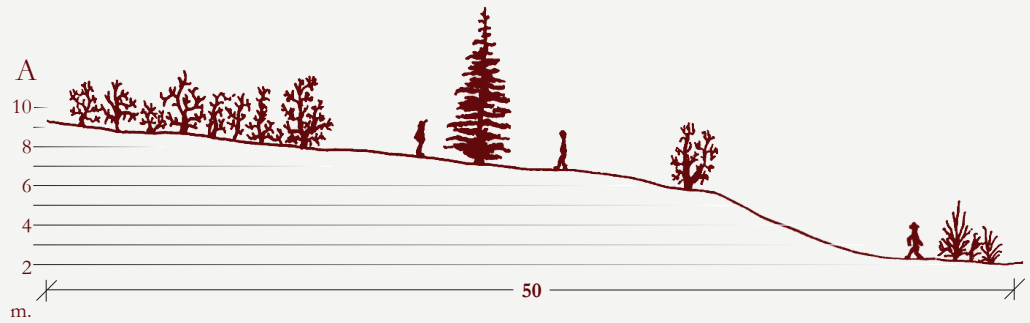
The length of the sections is either 50 meters or 100 meters. Sections A, B C, D, E, F, G, J, K, L and M are 50 meters long and H, I, N, O, P, R and S are 100 meters long.

The scale on the side of each illustration is in meters and the baseline (0) is the level of the water´s surface at *Húsatjörn* Lake, which is 32 meters above sea level. On the following map the baseline is represented by the thick elevation line. Height increments are one meter.

When a path crosses the section a character(s) has been drawn on a view spot, picnic spot, or a similar reference point.

The illustrations are part of the design, and therefore do not represent present conditions. However the elevation lines are unaltered. Changes to the sections are shown for sections O, P, and Q and R where major changes are found. Other sections have been left unaltered.

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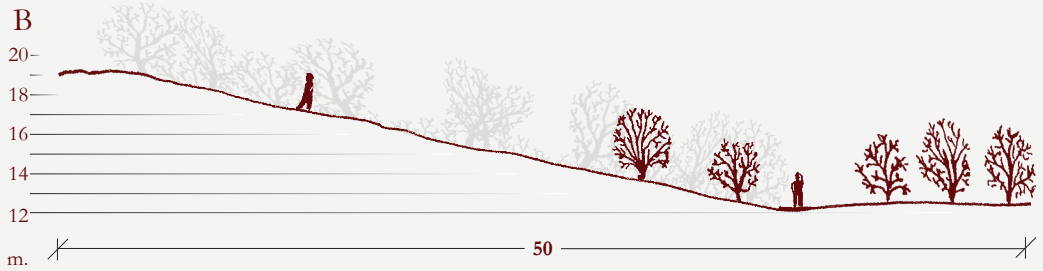
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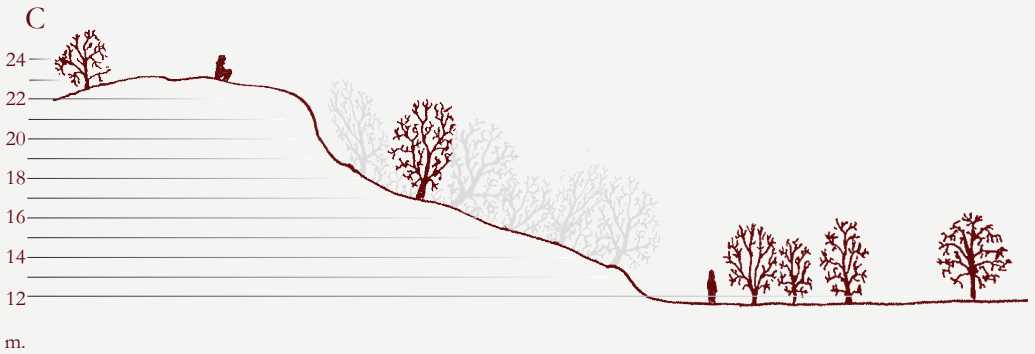
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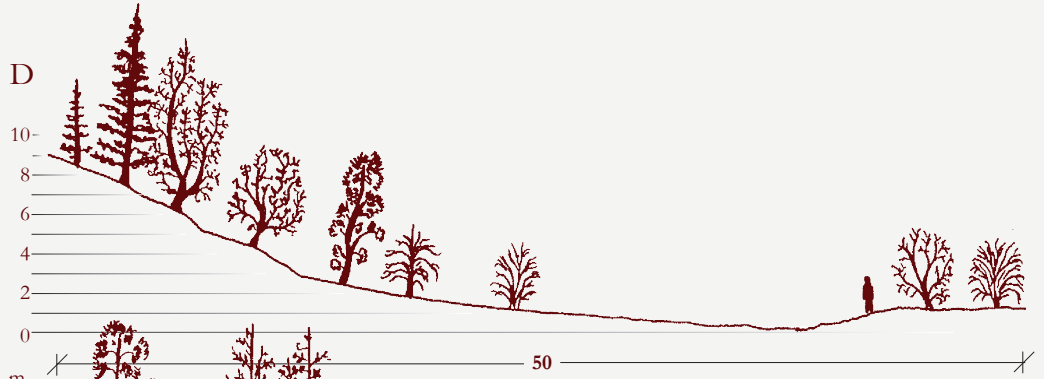
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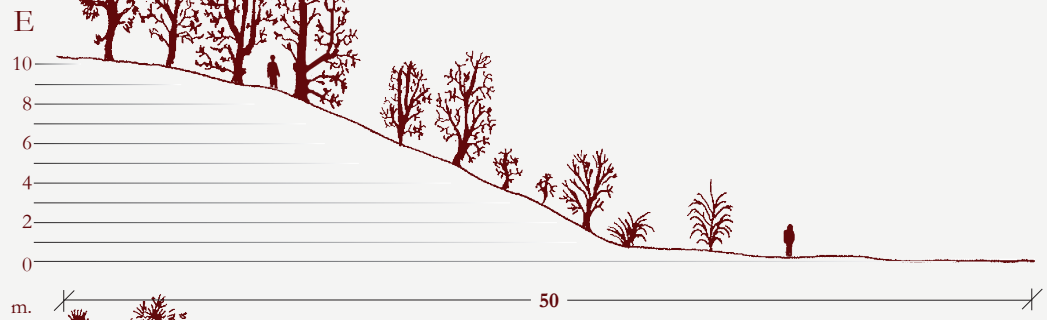
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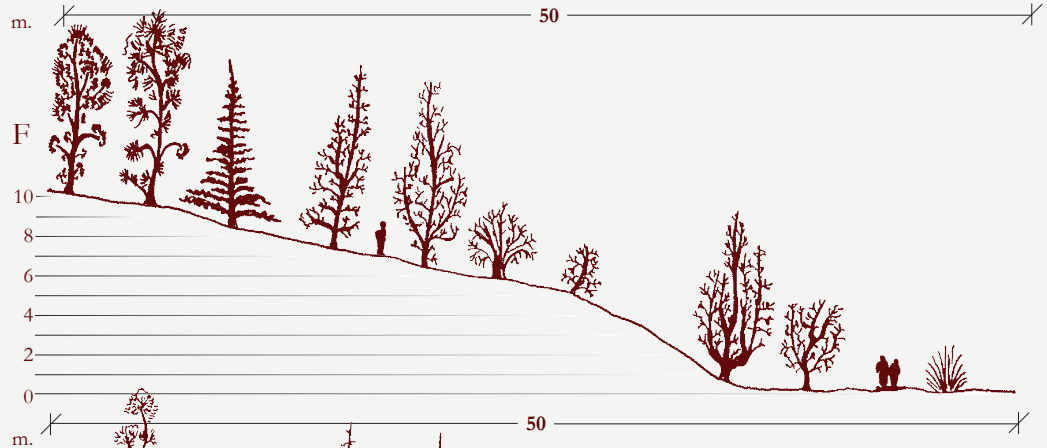
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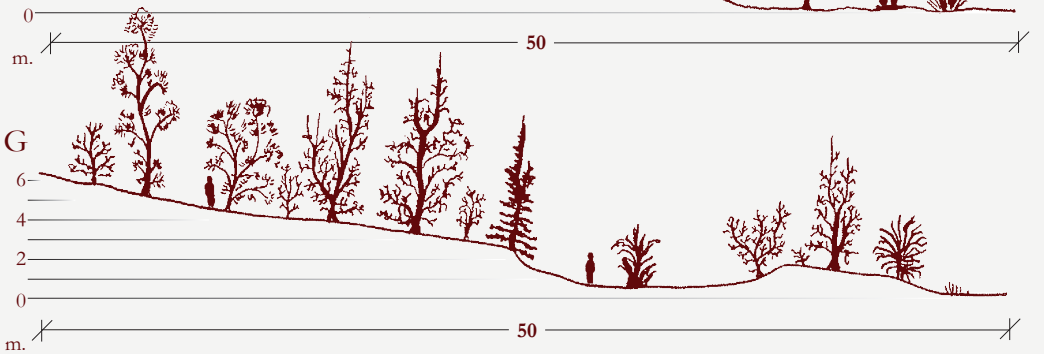
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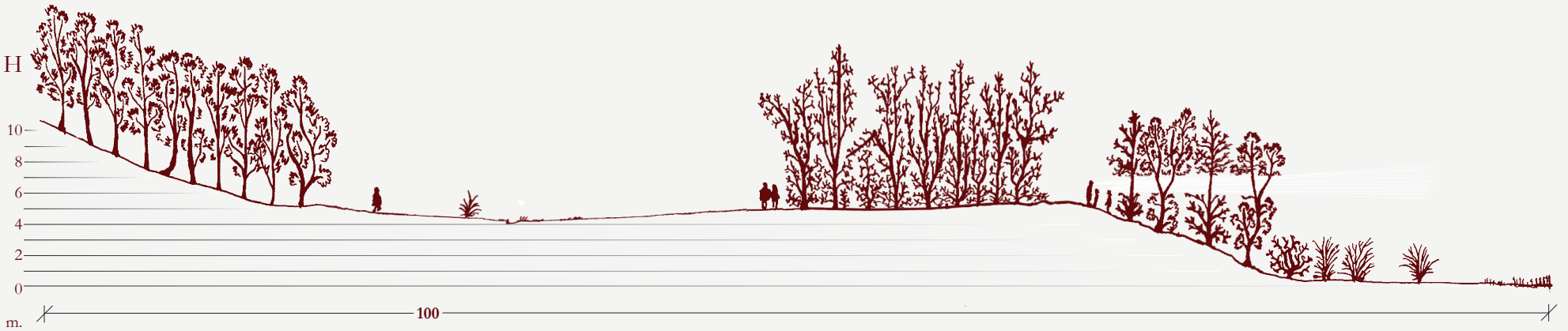
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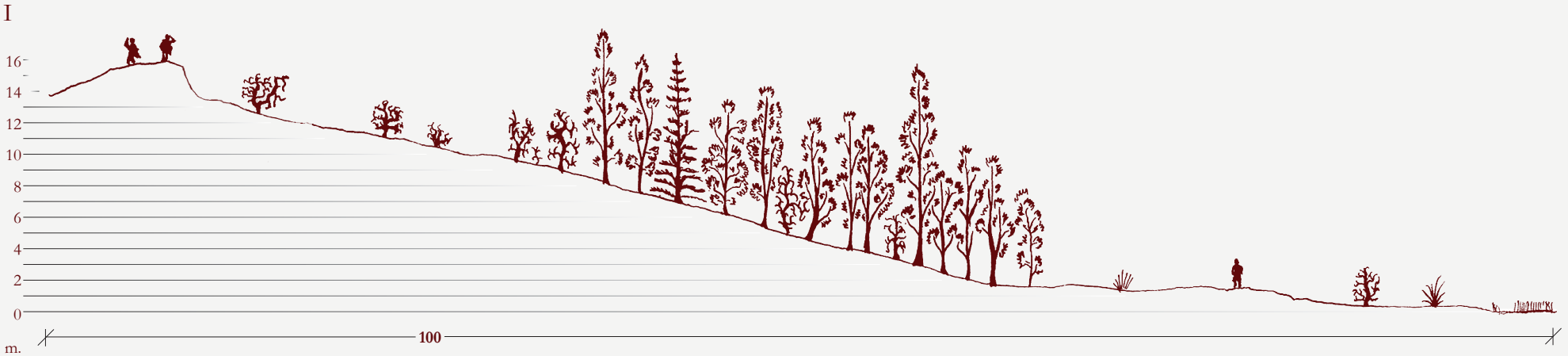
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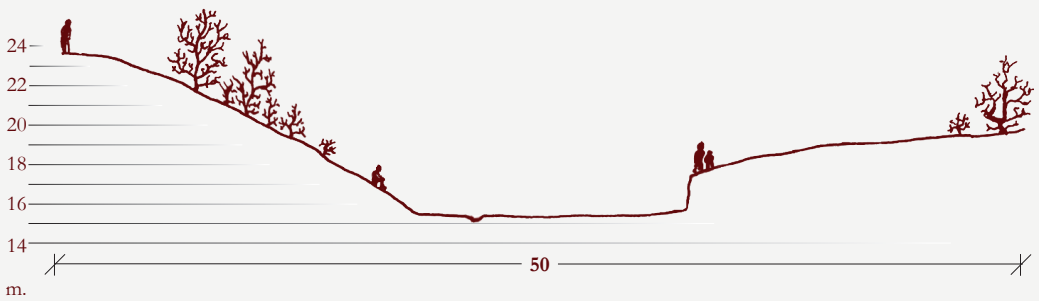
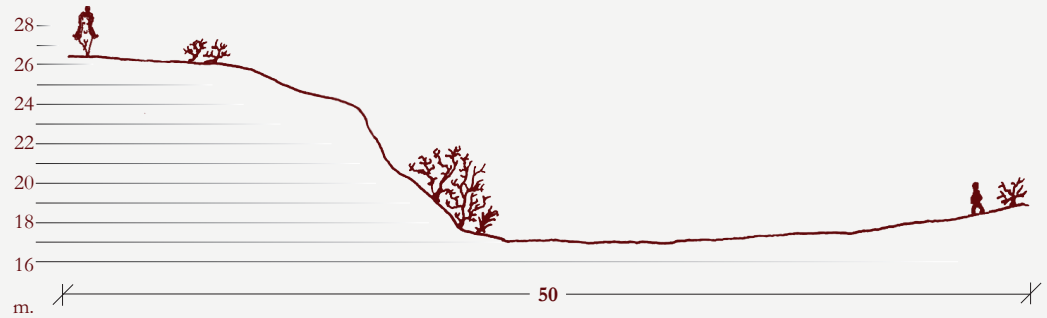


K



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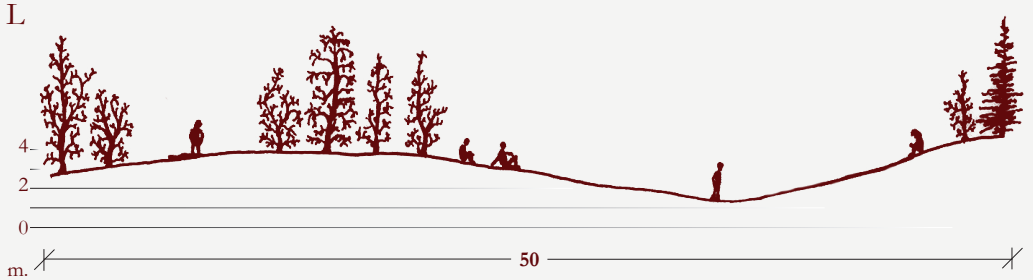
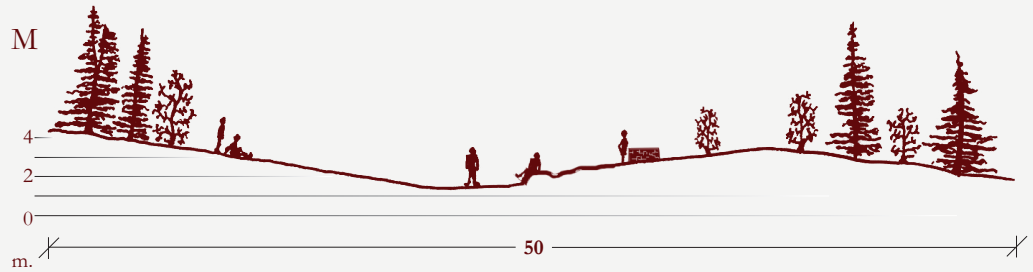
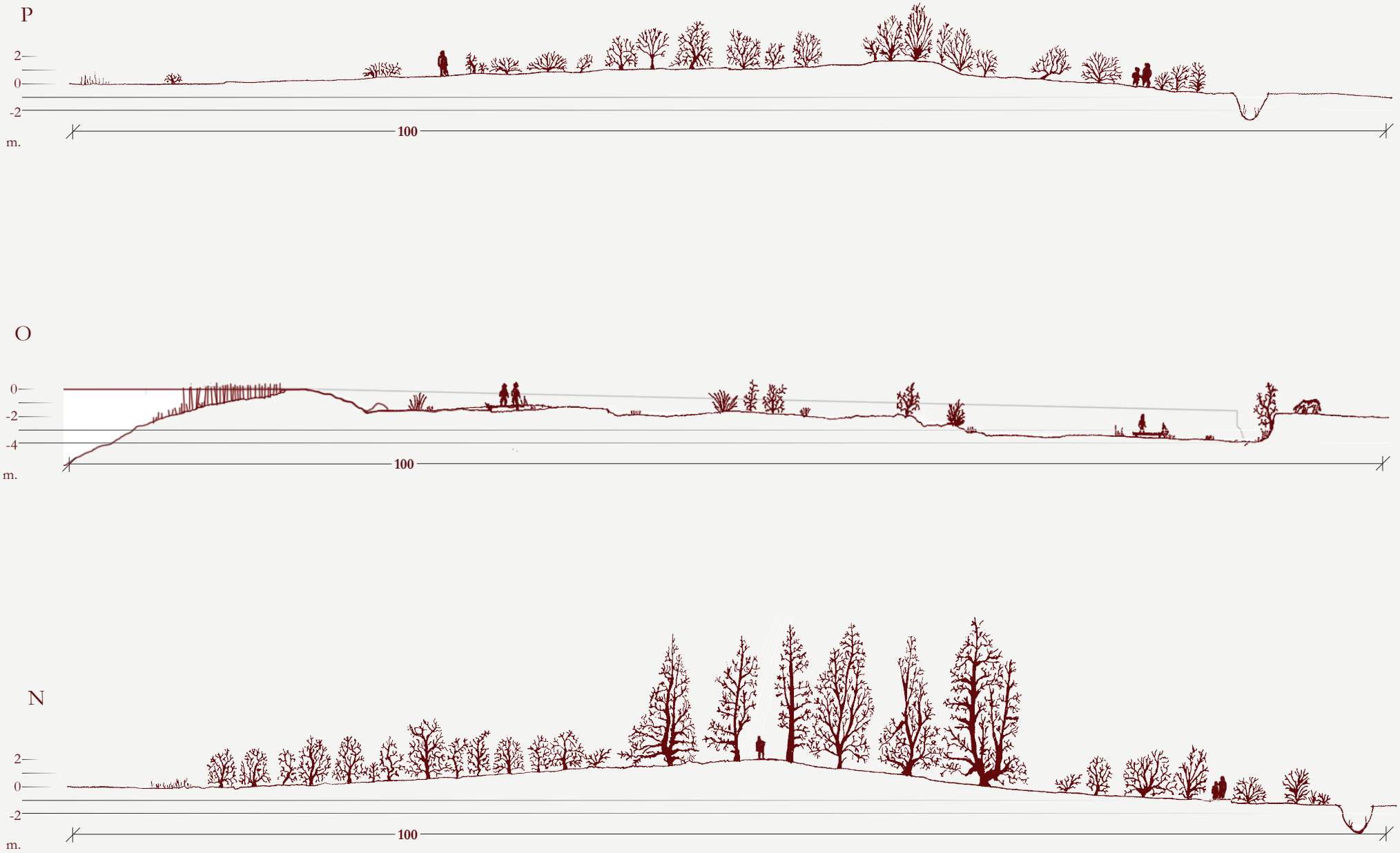
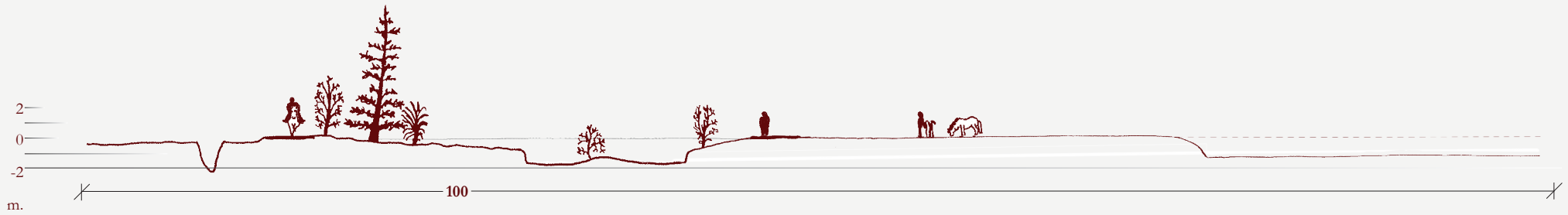


M




P
2
0
-2
m.
100
O
0
-2
-4
m.
100
N
2
0
-2
m.
100

Q



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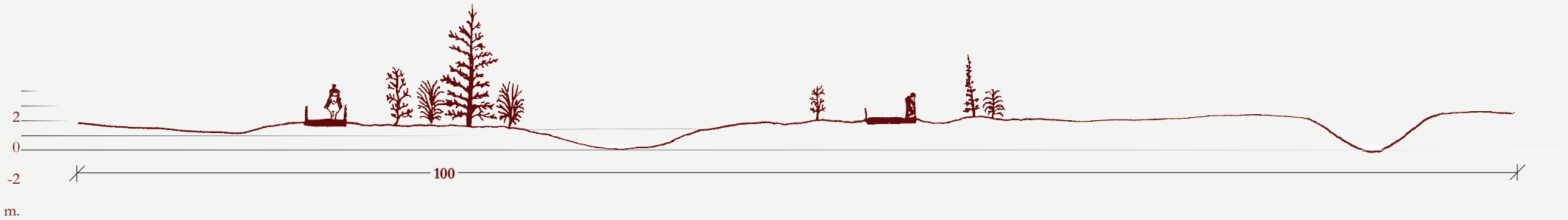


Appendix D Logos


























LARCH TALE
RESTORATIVE


THEATER BOG
RESTORATIVE


SPRUCE
RESTORATIVE


MANNVIT • MANNTAK • MANNGÖFGI •
EIÐASKÓLI


PINE SO FINE
RESTORATIVE


OWL FOREST
RESTORATIVE


OUTER BOG
RESTORATIVE


KNOWLEDGE • RESPONSIBILITY • INTEGRITY •
EIDAR SCHOOL


CARR WAY
RESTORATIVE


LARCH ALLEY
RESTORATIVE

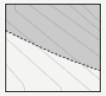

RIDGE
RESTORATIVE


MYSTIC • MUSE • MEDITATION •
HÚSATJÖRN LAKE

Figure 311: Final plan of Húsatjörn Lake on a scale of 1:2000
Location of zones, paths, facilities, elevation and vegetation



Black polygon - Húsatjörn Lake



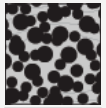
Thin gray lines - Elevation lines of one metre increments.



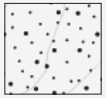
Light gray, round polygons - Restorative zones



Light red round polygons - Social zones



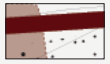
Large dotted areas - dominant conifer forest



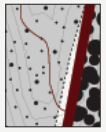
Small dotted areas - dominant broadleaved forest



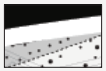
White areas - no tall vegetation



Thick red line - Social area path S1
(a gravel path approximately 2 m. wide, see p. 132 for drawing)



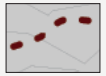
Red line - Restorative area path R1
(two 60 cm. wide lanes, see page 180 for drawing)
Narrow red line - Social paths, usually for single file use
(no major construction needed)



Thick white line - wooden path with handrails S3 (see page 132 for drawing)



White line - wooden path without handrails S2 (see page 132 for drawing)



Red dotted line - horse track



Symbols - Benches, all abilities path and pier


N
(Explanations are on the back)
DESIDERATUM
SOCIAL
LOBBY
SOCIAL
LARCH CROWNS
SOCIAL
DAM
SOCIAL
LARCH CROWNS
SOCIAL
LARCH CROWNS
SOCIAL
LAKE
SOCIAL
CARR WAY
RESTORATIVE
OUTER BOG
RESTORATIVE
WINDOW
RESTORATIVE
LARCH TALE
RESTORATIVE
LARCH ALLEY
RESTORATIVE
SPRUCE
RESTORATIVE
OWL FOREST
RESTORATIVE
PINE SO FINE
RESTORATIVE
RIDGE
RESTORATIVE
0
50
100
200
300 m