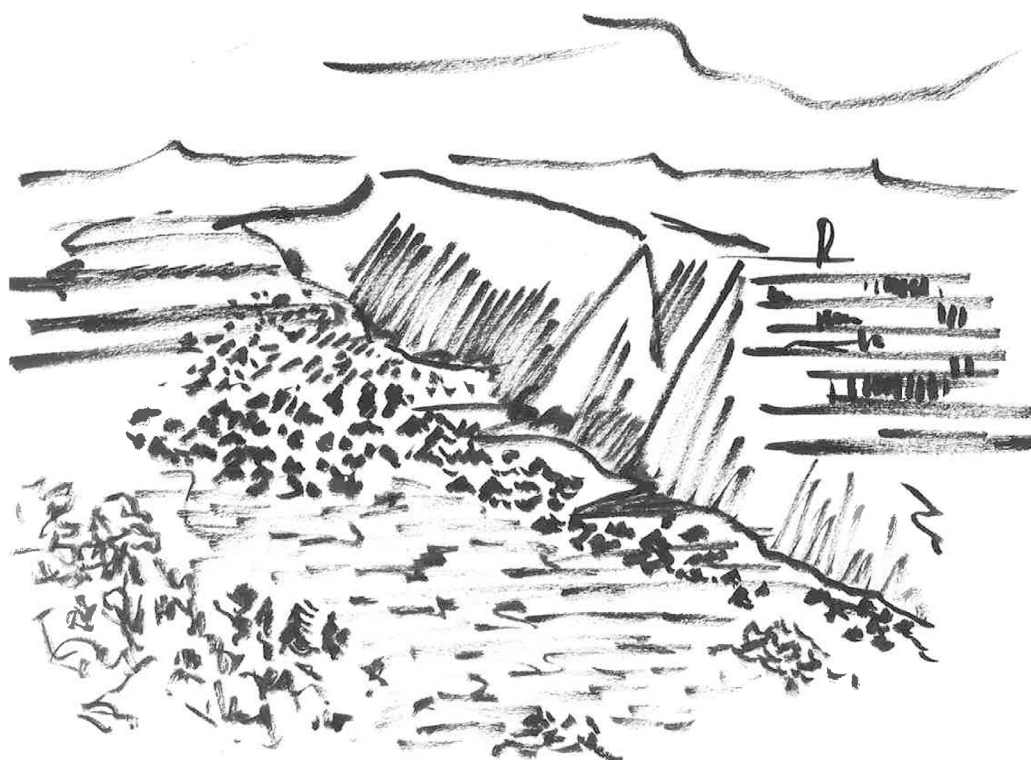




Swedish University of Agricultural Sciences
Faculty of Landscape Planning, Horticulture and Agricultural Sciences
Department of Landscape Architecture, Planning and Management

Design proposal for a Shifting Landscape - The Minecity Park in Kiruna

Anna Magnusson



Master's thesis in landscape architecture, 30 hp
Landscape Architecture Programme
Självständigt arbete vid LTJ-fakulteten, SLU
Alnarp, 2013

Designproposal for a Shifting Landscape - The Minecity Park in Kiruna

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Abstract

Landscape architecture involves designing with dynamism and change, either due to natural processes such as weather, growth of vegetation and seasonal changes or due to human impacts. There is however a tendency to focus on form rather than processes. Too often the representation of landscape architecture becomes static as it represents the space at one chosen time rather than visualising time, processes and flux. The aim of this master thesis is to explore the subject of designing a shifting landscape through a design proposal for the Minecity park in Kiruna. Kiruna, a small mining city in the north of Sweden, is going through vast changes as the underground mining for iron ore has forced a relocation of the city centre. The concept of the Minecity park is an attempt to create a green buffer zone between the city and the mine, as well as an effort to turn the demolished city centre into an attractive part of the urban life in Kiruna.

The design proposal is based on fieldwork conducted in Kiruna in September 2012 and February 2013. The proposal stretches from year 2013 to year 2033 as it covers the area affected by the mining at today's level. However the future of Kiruna is very uncertain since it is surrounded by rich findings of iron ore, hence the design includes strategies for how to handle the transformation.

Besides from the subject of designing and representing shifting landscapes, issues regarding space, place identity as well as the meaning of nature have been important. Spaces comprise different modes of creation wherein the lived space is as important as the actual appearance of the space. Identity, nostalgia and lived memories are often linked to buildings and spaces and these sights may contribute to the creation of a collective identity. In the case of Kiruna, where the transformation changes these structures and impact on the lived space, efforts must be made in order to maintain or to reformulate the cultural heritage of the landscape.

Keywords: Kiruna, Shifting landscapes, Minecity park, Place Identity, Design process, Representation, Landscape architecture

Foreword

This master thesis is the result of a journey through the landscape of Kiruna, as well as a journey through my own process of design.

I'd like to send my gratitude to Mikael Westerlund at LKAB, Christer Vinsa at Kiruna municipality, Mats Nilsson at Tekniska Verken i Kiruna AB, Sandra Wiklund at Ramböll and Lisa Diedrich for sharing information, thoughts and ideas for the special situation of Kiruna. I would like to send a special thanks to Anna-Karin Lindgren and Niko Vähätalo for their excellent hospitality and Nina Wiman for making the stay in Kiruna much more fun. And to my supervisor Carola Wingren for her support, direction and inspiration.

Finally I would like to express a warm thanks to family and friends for comments and advice as well as encouragement and inspiration.

Anna Magnusson

Malmö, May 2013

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This part introduces the project, the aims and objectives as well as the method used to conduct the thesis.



1. INTRODUCTION

Background

“Designing a shifting landscape” as a topic for my master thesis has emerged during the last years of my studies. During my second year at the landscape architecture program I went to a lecture held by landscape architect Anuradha Mathur. She lectured on her projects on flooding in Mumbai and the Mississippi delta, where the design and engineering has failed to consider the natural processes of the flood. Her lecture made a great impact on me, and the subject was once again brought to my attention when I during my fourth year of studies listened to a similar lecture on the same project, this time held by her husband Dilip da Cunha at a seminar on urban water. During the same time I was working on a school project on strategic planning for a former industrial site in Copenhagen, dealing with short time uses of the space while waiting for it to be transformed into housings. The subject of time, temporality and process were in focus and I found myself frustrated on the prevailing view of spaces as static.

A shifting landscape might refer to a space subject to seasonal change, growth of vegetation or shifting weather, but it may also refer to landscapes undergoing severe changes due to volcanic eruptions, flooding, tsunamis or earthquakes. Human forces such as agriculture, urbanization, warfare or the exploitation of natural resources can also have a great impact on the landscape. The dramatic change of a small mining city in the far north of Sweden, called Kiruna, came to my attention as parts of the city have to be relocated due to the mining’s impact on the ground. And so the subject for my thesis began to take its form.

The challenges that Kiruna is facing with the relocation of the city offer an interesting point of view on shifting landscapes, as well as its location north of the Arctic Circle that provides a seasonal change with extremes. This makes Kiruna a good example on how natural processes results in different perceptions and uses off the landscape throughout the year. The landscape of Kiruna, with its subarctic climate, desolate and epic surroundings of mountains, marches and fells stands in great contrast to the southern agricultural landscape of Sweden, where I’ve lived and worked all my life. The contrasting conditions provided me with an interesting challenge in landscape architecture.

As follows I will give a brief description on Kiruna, its historic background, the visions and endeavor for handling the demolition and relocation of the city.

Kiruna- a mining society

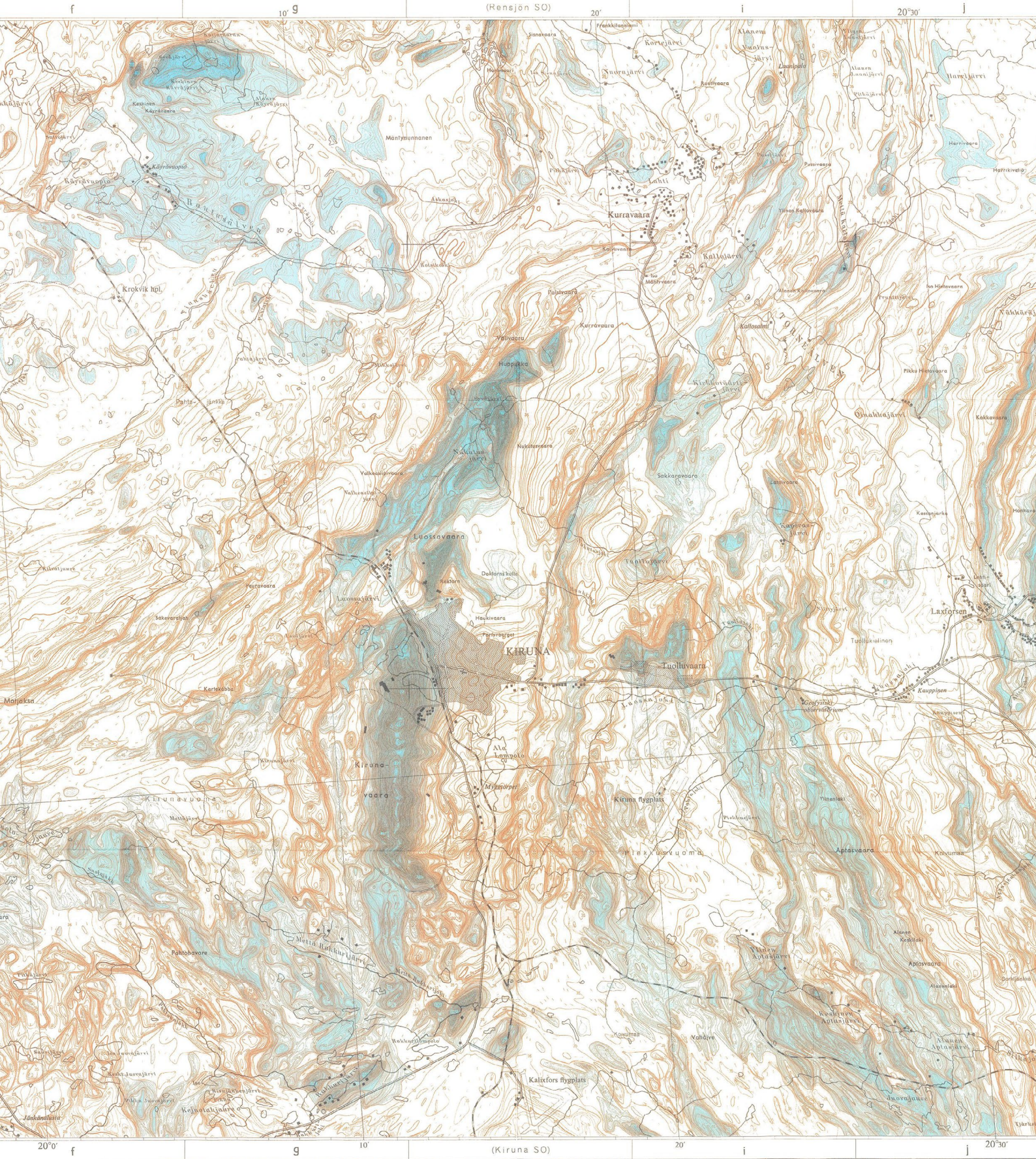
Kiruna came to the world’s attention in 2004 when it was announced that the whole city would have to move as a result of the mining (Kiruna Municipality, a: [www]). Kiruna is a small city by numbers of inhabitants, 23 000 in 2012 with 18 000 living in the city of Kiruna, but is one of the largest municipalities in the world with a surface as big as the half the Netherlands (Kiruna Municipality, b: [www]). It covers the national park of Abisko, the highest mountain of Sweden; Kebnekaise, and large vast areas of rivers and marches, bare mountains and forests. It is situated in the most northern part of Sweden with a harsh subarctic climate and is sparsely populated.

The city of Kiruna was founded in year 1900 when rich findings of iron ore started a rush for mining in the north region of Sweden, Norrland. Although the Sami people had known of the iron in the region for several years it was first in the end of the 19th century, with the birth of the railroad, that it was profitable to extract and transport the ore. With the decision to build the railroad of the Ofoton line, also called the Ore line, between the cities of Luleå and Narvik, the gate to the natural resources of Norrland was opened, and Swedish navvies and mine workers began to settle along the railroad (Brunnström, 1981, p. 25-26).

The mine in Kiruna is the largest underground mine in the world and its ore is of high quality. Since the founding of the mining company LKAB (Loussavaara-Kiirunavaara Corporation) in 1890, more than a billion tonnes of iron ore has been extracted from the mine, and LKAB has continued to be the largest employer in the city throughout the century (the LKAB story, 2013, p.8). During the first half of the 20th century the ore was extracted in opencast mines and it was natural for the city to develop within a close distance to the mine. However, the body of ore slopes down below the city, and the extraction from underground mine that started in 1962, has during the decades resulted in deformations in the ground. This has impacted on the built structures in the city (LKAB, a: [www]).

The first part of Kiruna that was demolished due to the iron making was an area called Ön (the island). It was one of the first housing areas that were built in Kiruna and was situated next to Kiirunavaara at the southern end of Loussajärvi. As the mining moved deeper and closer to the city Ön had to be relocated in the 1970s and a few hundreds had to move to new homes. The area is today closed off since the ground is fracturing (LKAB, b: [www]).

The transformation of the city is therefore not a new phenomenon in Kiruna, the situation has been known since the underground iron making first started. The present situation is however unique, since a completely new city centre will be built. Some parts of the transformation has already started such as the retracking of the railroad, rewiring of high-voltage lines, new transformers and substations as well as a new sewage system (LKAB, b: [www]).



1. The map is a hybrid between a map and a photography of magnetite. The blue illustrates findings of magnetite ore. As shown, Kiruna is surrounded by rich findings of ore. LKAB's archive of pictures.

A model community and the new city

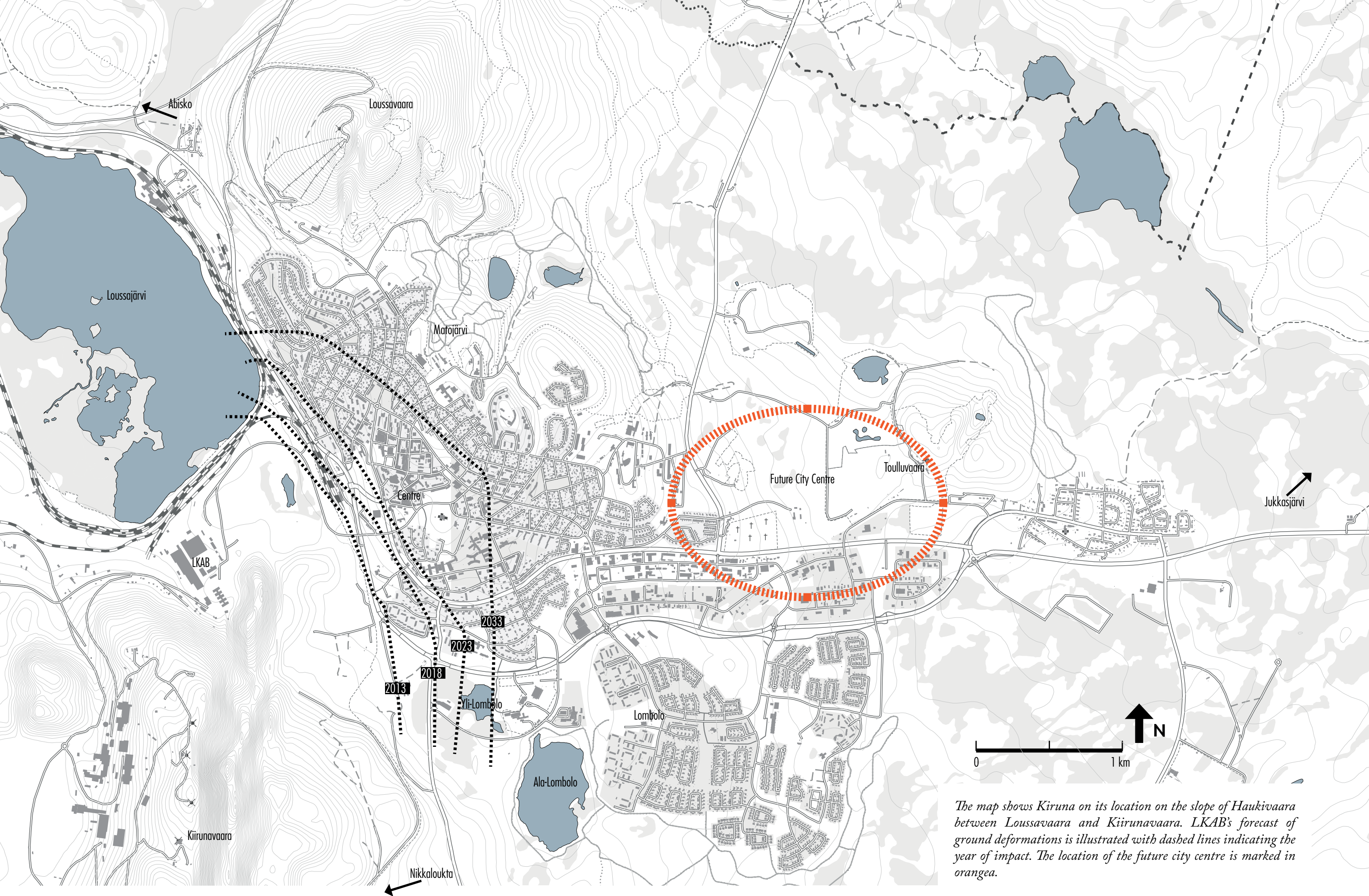
Already when Kiruna was founded it was planned to be modern city, with the intention to make it a model community. In order to prevent a chaotic shantytown and ease the housing shortages, which had dominated the first years of settlement in Kiruna, Sweden's foremost experts in architecture and community planning were engaged (Brunnström 1981, p. 111). The first managing director of LKAB, Hjalmar Lundbohm, is acknowledged as the founder of the town. Lundbohm was a geologist, with a keen interest in art and architecture. It was his decision to hire the architects Per-Olov Hallman, who designed the town plan of Kiruna and Gustaf Wickman who has designed many of the buildings in Kiruna (Kiruna Municipality, c: [www]). The name of Hjalmar Lundbohm is frequently recurring in the context of Kiruna. His former house is now an important historical building for the identity of the city. It houses a local association and exhibitions on historical photos and shows the oldest historic environment in Kiruna. It also contains a restaurant and a café. Kiruna has both a school and one of the main streets named after Hjalmar Lundbohm.

The town plan made by Per-Olov Hallman is acknowledged as the country's first climate adapted community plan. The plan was made to diminish the impacts on the existing landscape. The result was a city situated along the southwest slope of the Haukivaara mountain, with streets that follow the terrain in an irregular pattern, preventing the winds from getting speed. To facilitate the fastest transportation for the workers to reach the mining mountain, all the great roads in the city were designed to reach Kirunavaara (Brunnström 1981, p. 127-129). This is still evident today where one has a straight view towards the mountain of Kirunavaara from almost all parts of the city.

Today, over a century later, when the people of Kiruna have to move parts of their town, the intention is once again to make use of the creative thoughts of the old community plan and build a new model community (Kiruna Municipality, c: [www]).

The announcement in 2004 that several buildings in the central parts of Kiruna would have to move resulted in changes in the comprehensive plan and new locations where scouted to replace the centre. It was decided that the centre were to be placed in the northeastern parts, and in 2012 the municipality announced an international architect competition in order to get as many great inputs as possible. Ten teams were assigned the task to present a vision for Kiruna of tomorrow, with the watchwords of sustainability, attractiveness and identity. The task involved describing a strategy and structure for accomplishing the urban transformation in a dynamic process that enables qualities. The new and pre-existing must form a holistic entity (Architecture competition brief, 2012). The ten proposals were exhibited in the city hall in Kiruna during the winter of 2013 and the winner was announced in March 2013.

White architects, Ghilardi+Hellsten architects, Spacescape AB and Vectura Consulting AB, constitute the winning team with the proposal called *Kiruna 4-ever* (White architects and others, 2012). The jury describes the proposal to comprise visions for a dense, mixed and attractive city centre where the whole city will function and be perceived



The map shows Kiruna on its location on the slope of Haukivaara between Loussavaara and Kiirunavaara. LKAB's forecast of ground deformations is illustrated with dashed lines indicating the year of impact. The location of the future city centre is marked in orange.

as one unity throughout the whole process. The jury acknowledges that the proposal not only shows a clear vision and strategy for the physical transformation but also involves the participation of the inhabitants of Kiruna and is open for new ideas as the city expands (Jury verdict, 2013).

The jury declares that discussions regarding Kiruna's culture and what should be saved for future generations have been recurring throughout the process. They distinguish the new Kiruna as an opportunity to create a unique city, which will be an important brand and attraction to the region. They emphasize that the city must develop into something very distinctive and stresses the importance of public involvement in order to evolve the existing qualities of Kiruna. They claim that reflections on how the new city should be created is just as important as how it will appear. The transformation of the city has a time frame of 20 years (Jury verdict, 2013).

The Minecity Park

One important issue in the process of the transformation of Kiruna is how the former city is treated. The jury claims that although it is important to cherish the memory of the former city, leaving ruins of buildings behind may be an unwelcomed reminder of transience (Jury verdict, 2013).

Kiruna municipality and LKAB have been working together with a common vision on how to handle the areas that are affected by the deformations. As the land deformations move slowly, the first movement will not cause any damage that will result in any danger for entering the ground. It may however cause problems with the underground infrastructure, such as sewage and electricity, making it difficult to sustain a liveable environment of today's standards. It will take years before the fractures will appear on the ground and the area will therefore remain accessible for the general public. On the basis of this, the Kiruna municipality and LKAB decided to create parklands on former built areas and have formulated the concept of a Minecity park (LKAB, c: [www]). The park is described to function as a buffer zone between the city and the mine; to make sure no one will be forced to live with immediate access to the industrial fencing. When the first fractures appear the zone will be fenced off and the park will move closer towards the city, as new deformations in the ground forces the relocation of buildings (Kiruna Municipality, d: [www]).

The joint vision is that the historical environment should be visible in the park and that recycled building materials should be used in the design. The aim is to make the park into a living room, a place for recreation, activity and play (Kiruna Municipality, d: [www]).

The first phase of the Minecity park has already started. It is situated in the Iggesunds park and contains information boards, picnic spots, a skating rink, grilling spots and historic photographs, taken by the photographer Borg Mesch and printed on large stone walls. During wintertime, sculptures from the snow festival are exhibited in the park and during the summer the park houses grazing sheep.

The municipality and LKAB are now working with a design proposal for a development

of this phase, when the City hall, the former residence of Hjalmar Lundbohm and some residential areas will be relocated and the area turned into park. The themes

The challenge is how to handle the masses from the demolition and how to establish a positive contribution to the existing city as well as function as a meaningful border between the mine and the city. Together with the *National Public Art Council of Sweden*, two designs have been proposed for the park, one that visualizes the border and one that focuses on a holistic approach. (National Public Art Council of Sweden, 2012 [www]). The themes of "border between the park and the mine", "identity", "traces of history" and "transformation" have been the keywords in the process.

The border is proposed to be visualized by an artwork designed by Boel Hellman and Marcus Aerni called "the glowing worm". It is a sculpture in red steel, constructed in a cocoon-like design with viewpoints over the mining area. From the viewpoints, one can experience the traces of the buildings and environments that has gone lost through the deformation of the ground. The sculpture will be illuminated at night, and it will be moved as the border moves (National Public Art Council of Sweden, 2012 [www]).

The other proposal is designed by Ingo Vetter, Karl Tuikkanen and Sofia Sundberg. It is called "The landscape of cubes", and consists of the debris from the buildings, utilized and organized into cubes. The material from the buildings is crushed on site and packaged in cubes that will be laid out in the landscape. The cubes will visualize the former structure of the buildings (National Public Art Council of Sweden [www]).

The directing actors are now discussing to what extent these proposals will be carried out. Besides from the contribution from the *National Public Art Council* the proposal for the whole Minecity park suggests that all existing paths and roads will be kept, trees and plants will be kept and protected during the demolition, information boards and picnic spots will be placed throughout the park and existing playgrounds will be kept.

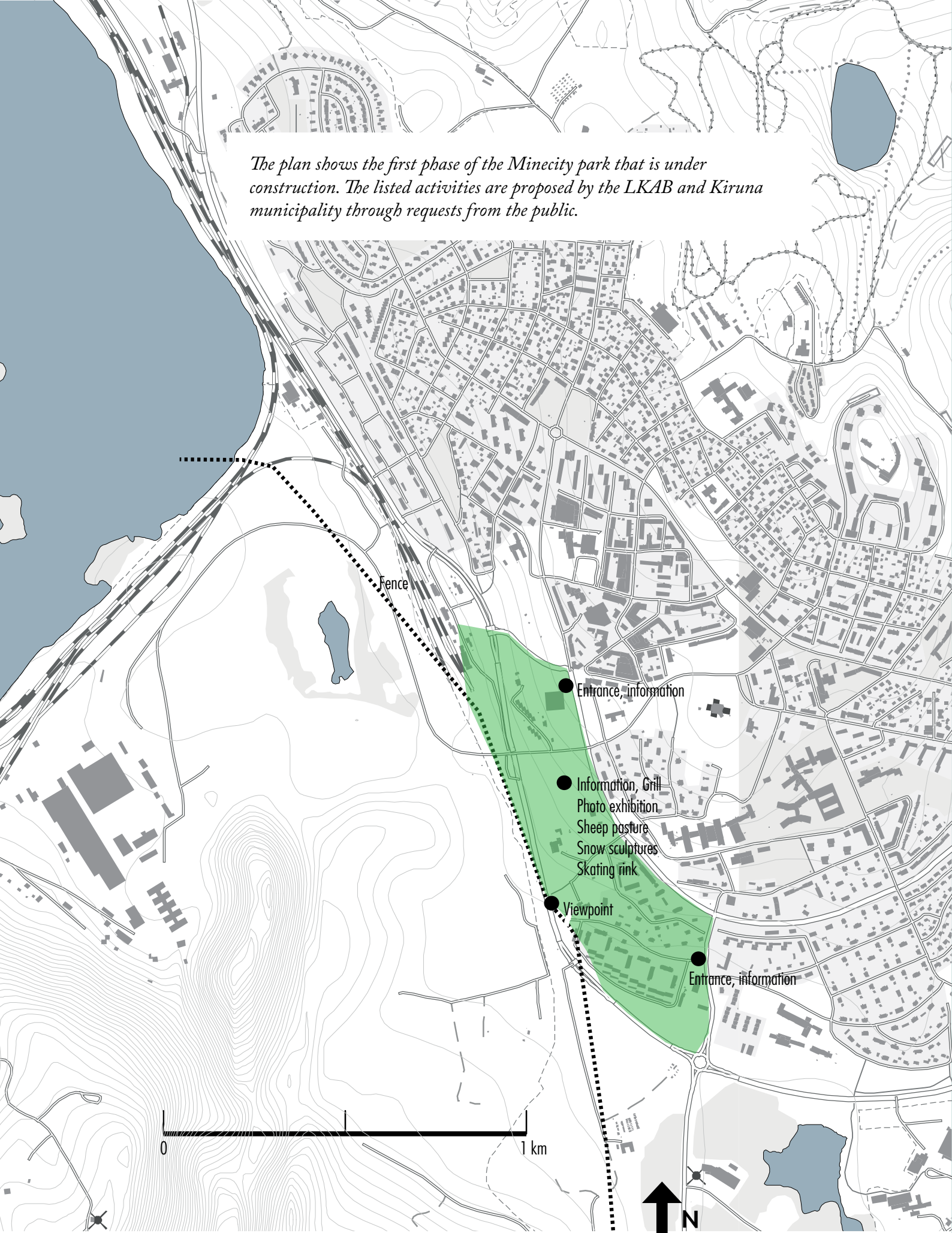


Photo exhibition, Minecity park, 2012-09-23



Minecity park, 2012-09-23



The entrance, Minecity park, 2012-09-23



Photo exhibition, Minecity park, 2013-02-04



Shelter, Minecity park, 2013-02-04



Snow sculptures, Minecity park 2013-02-04

Aims and Objectives

The aim of the master thesis is to get a broader perspective on how to design and visualize a landscape in transition with the objective to develop these thoughts through a design proposal for the Minecity park in Kiruna. The transformation of Kiruna is a huge project that involves several issues which are interesting for the topic. I have however limited my proposal to focus on the Minecity park since it contains many of the issues at stake, such as how to handle a demolished site, shifting meanings and temporary usage of spaces.

There are several architecture competitions currently taking place at the same time in Kiruna. One concerns the new city centre, one concerns the new city hall and one concerns the design of the Minecity park. My proposal only concerns the design of the Minecity park. The proposed design "The glowing worm" and "The landscape of cubes" mainly consider the traces of history and the border and focuses on the first phase of the park (2013-2023), the aim with my design is to propose a strategy on how to create the park through all phases.

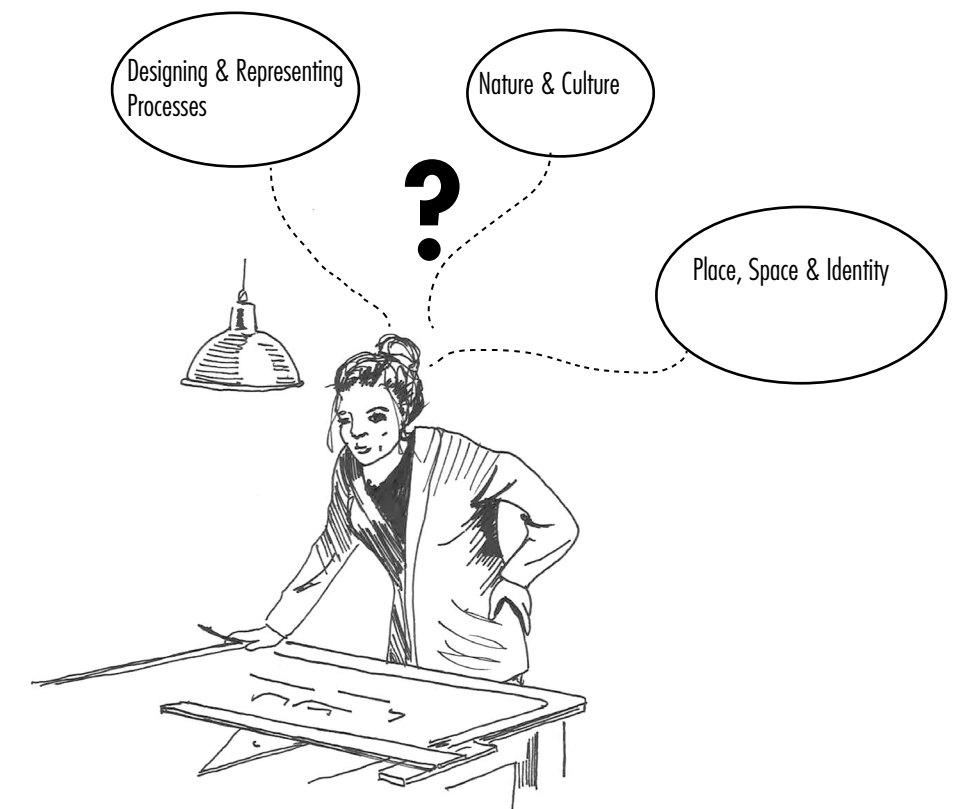
As described in the previous paragraph there are rich findings of ore around Kiruna, leaving the city planning in a precarious situation. My proposal concerns the area that, according to LKAB's forecasts is affected by the mining in Kirunavaara made on the level of today, at a depth of 1365m. A continuous mining on a deeper level will however affect other areas.

In order to make a design proposal, which consider the processes of nature as well as the human impact, I have raised the following research questions:

- Which evident values do the place comprise? Such as nostalgia, identity, memory as well as landscape features such as vegetation, exposure to sun etc.
- Which structures are fundamental in the transformation from city to park and finally to industry?
- How can flexible structures, which consider the precarious future of the park, be created?
- How may the park relate to its surrounding in the future Kiruna.
- What meaning will the term of Minecity park have in Kiruna?

The preceding questions ground the analysis, concept and finally the proposal for the Minecity park. Other more comprehensive questions regarding design of a shifting landscape such as the design and representation of processes and the concept of space, place, identity and nature have emerged during the process and will be discussed in my reflections.

The thesis is directed towards practitioners within the field of landscape architecture, city planners, politicians and fellow students.

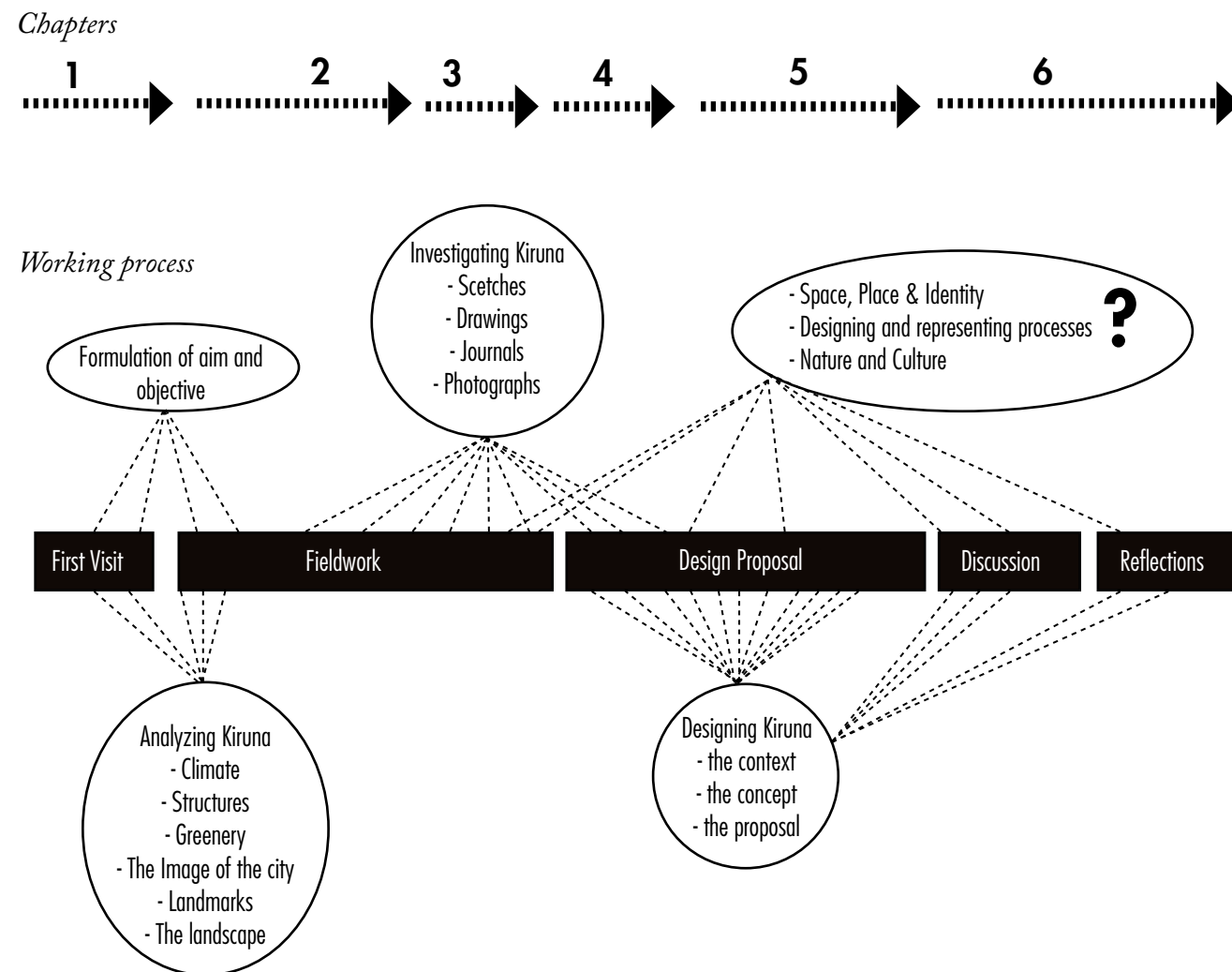


Outline of chapters

The structure of the thesis mirrors the process of its production. It is divided in six chapters, where the first introduces the project, followed by the second chapter that relates to the context of Kiruna. The most important part constitutes of chapter three, four and five and contains analysis, concept and the design proposal. The sixth chapter is reflective in relation to specific subjects as nature, space, identity, design process and representation.

Chapter two, *Kiruna in context*, consist of photographs, sketches, drawings and diary entries made during the stay in Kiruna. The purpose is to describe the conditions that surround the city.

Chapter three, four and five present the analysis, concept and design proposal, described in sketches, pictures and architectural drawings as well as in text.



The diagram illustrates the phases throughout my process and how it is divided in the chapters through the master thesis.

Method

The method used to conduct the thesis can be described as an exploring research through design. It has been an open process wherein the raised issue has been processed through intuitive sketching.

The methodology has involved three phases; 1) Fieldwork, 2) Analysis and design and 3) Reflection on specific themes based on a literature review.

Through the exploring approach and the open process I have later found resemblances and inspiration in an ethnographic approach for conducting the fieldwork as well as in grounded theory as a method for answering the researched questions.

Ethnography is described as a form of research which synthesizes information about the life of a people or a group in an attempt to understand the culture that is being studied. The role of the fieldworker is described to collect and consider multiple sources of information to convey the perspective of the people in the studied culture (Chiseri-Strater & Stone Sunstein, 2000).

Grounded theory is a method of research in which the researcher begins with collecting material through a variety of methods, which are the basis for the creation of a theory (Hartman, 2001). Based on my exploring methods it has been natural to find inspiration in grounded theory while I have accumulated literature to fill the gaps of knowledge in my reflections. It is thus the practice that has generated the literature that has been linked to the study.

The fieldwork

The most important input for my design constitutes of fieldwork in Kiruna, during one weekend in September and one month in February, wherein the research questions have been investigated. The aim was to get a sense of the local conditions, the culture and the society of Kiruna, and to untangle the complex situation of the transformation by meeting some of the directing actors at the municipality of Kiruna and LKAB. The meetings have been carried out as unstructured conversations where I have been informed on concerns and visions regarding the future of Kiruna.

The project first started out with a short field trip to Kiruna in September. At that time I had not yet formulated a purpose or aim for my thesis, instead I went with an open mind, curious on the city far up north and its facing project on transforming the city. It was at that time that I was first introduced to the concept of the Minecity Park, and my thoughts after that first visit resulted in the formulation of an objective for my thesis. Sketches, memos and pictures taken during the visit have turned out to be of great value in the later analysis of the sight. The possibility to experience Kiruna at two different times of the year has been priceless since the timeframe for my thesis otherwise only would enable me to experience Kiruna during my fieldwork in the winter, meaning I would only experience the city covered in deep snow.

The fieldwork was carried out during the whole month of February, as I rented an apartment on the ground floor of a family's house in the central parts of Kiruna. During my stay I lived and observed the daily life of Kiruna and the observations were noted in diary, on memo, sketches and photographs. As a Swedish myself, I had no difficulties in taking part of the social life such as in conversations or in reading local newspaper or community information, a language barrier may have resulted in different perceptions and analysis. In that context I have considered my role as an insider in the field of study. I have however also pointed an outside perspectives as I have entered the field of the tourist industry by taking part of excursions and traveled to tourist destinations outside of Kiruna such as the ski resort of Björkliden, the yearly market in Jokkmokk, the ice hotel in Jukkasjärvi, the amazing train ride to Narvik and an expedition on snow mobiles looking for the northern light. In these situations my role as somewhat in-between an insider and an outsider became obvious, as I had to explain some of the names and situations to the other tourists, while I at the same time was just as stunned and impressed as them. The meeting with tourists, traveled from far away destinations all across the globe, enabled me to view Kiruna from an exotic perspective.

Analysis and Design

The design process started out with investigation and analysis through sketches, observing and photographing the urban life, structures and surrounded landscape, which has grounded later drawings. The cold weather during my stay has disabled me from conducting on sight sketches; therefore the camera has been an essential tool for documenting the surroundings. Sketches and drawings have been made to visualize analysis, thoughts and ideas.

My analysis mainly consist of two kinds; one relational in which I have identified important structures, and one based on characters found in and surrounding Kiruna.

In my relational analysis I have found it useful to use inspiration from the terminology in "Lynch analysis" (Lynch, 1960) to identify important structures in the city of Kiruna and how these will be affected by the transformation. The analysis is founded by the American urban planner Kevin Lynch and is one of many ways to describe the city's character through existing form and through public perceptions. Lynch characterizes 5 different element of the city: paths, nodes, edges, districts and landmarks, with the aim to understand the relation between environmental images and the urban life (Lynch, 1960). I have identified important elements of Kiruna with the help from the result of a survey made by the municipality in order to find out how the Kiruna's inhabitants perceive their city (Kiruna, 2007). I have also identified them through my own perceptions based on my visits to Kiruna.

To analyze the landscape of Kiruna I have used a development of an analysis of greenery that I've come to learn through the course "Design, Concept and Theory" at the *The Swedish University of Agricultural Sciences* in Alnarp, during spring 2012. The method is a strategic way to identify and structure various types of greenery. The multitude of greenery in a limited zone becomes evident and by characterizing it on factors such as from wet to dry and from strict to wild it is more obvious how

the landscape is subject to change, both temporary and long lasting. I have expanded the method to include not only greenery but also snow and light, as these are just as important features in Kiruna.

The investigated structures and patterns have through quick sketches and analysis been sorted out into a basic concept which later have been refined into a design proposal.

The design processes has included different sketching techniques such as ink, water colour, pencils and graphic designs through image manipulation in Photoshop.

Literature review

During my process of design issues regarding designing with processes, and how to represent time and process in drawings has developed and I have consequently reflected on these schemes in further analysis through a literature review. As the grounded theory suggest, I have not started out my research with a literature review based on a formulated theory, rather I have made a literature review after collecting data, in order to comprehend and broaden the thoughts and questions that have emerged throughout the process.

Initially, I have read literature regarding Kiruna, its history and image. And I have read fiction set in the landscape of Kiruna, which has provided me with knowledge on how Kiruna is described and perceived in literature. Since the case of Kiruna and its transformation has been widely attended to, there have been an abundance of thesis on the subject, which has been of great value. There are recently upgraded reports on environment, cultural traditions, flora and fauna, weather, surveys on the attitudes of the inhabitants etcetera, which I have been notified on by the municipality. The ten proposed designs for the city centre that were exhibited in the city hall has been a great source of both information and inspiration.

This part of the thesis contains description on the landscape and city of Kiruna and its local conditions. It also features a description of the first phase of the Minecity park which is under construction.

2. KIRUNA IN CONTEXT.





Abisko, 2012-09-22



Kiruna, 2013-02-04



Kiirunavaara, 2013-02-06



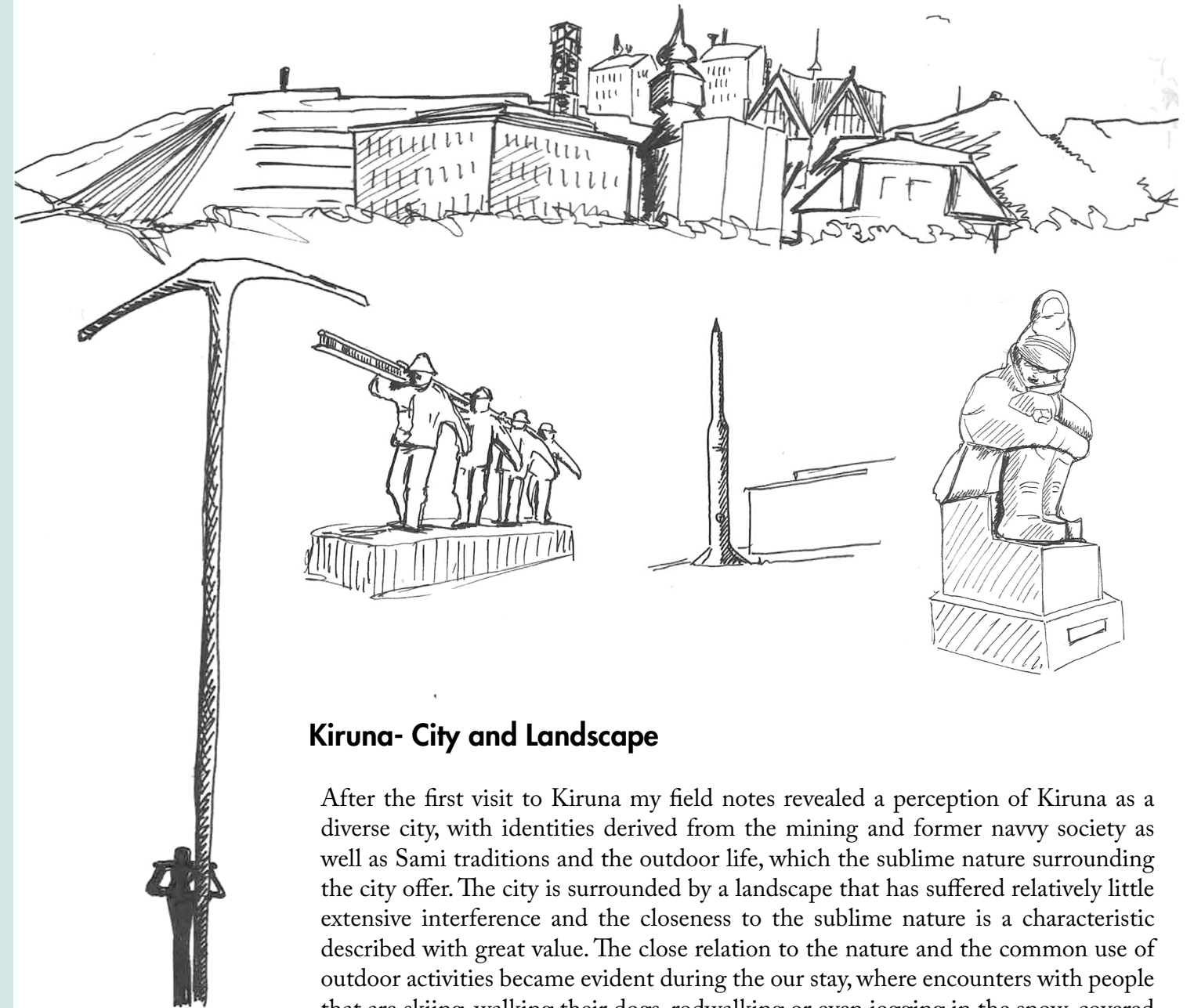
Nikkaloukta, 2012-09-23



Jukkasjärvi, 2013-02-10



Kiruna, 2013-02-22



Kiruna- City and Landscape

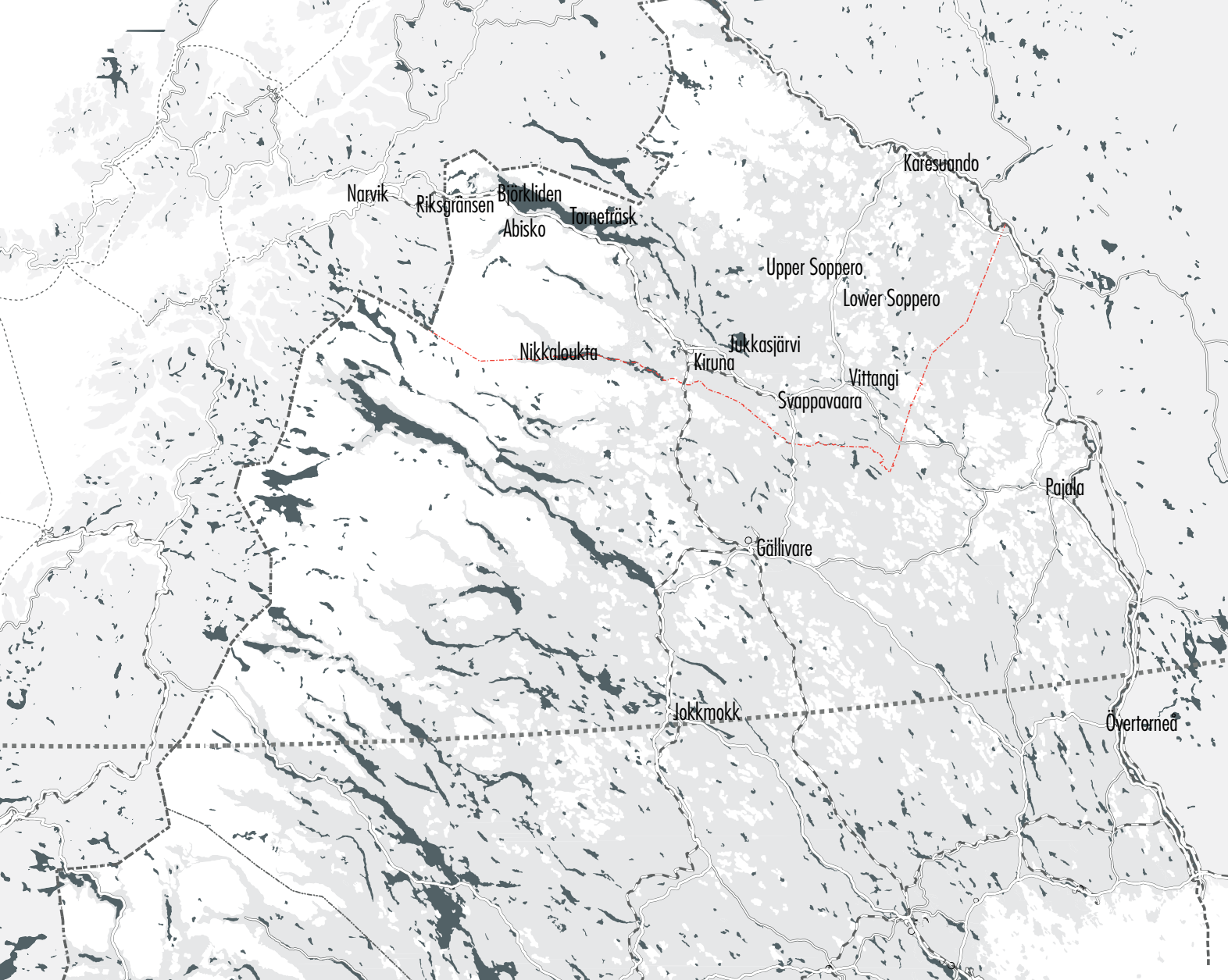
After the first visit to Kiruna my field notes revealed a perception of Kiruna as a diverse city, with identities derived from the mining and former navy society as well as Sami traditions and the outdoor life, which the sublime nature surrounding the city offer. The city is surrounded by a landscape that has suffered relatively little extensive interference and the closeness to the sublime nature is a characteristic described with great value. The close relation to the nature and the common use of outdoor activities became evident during the our stay, where encounters with people that are skiing, walking their dogs, rodwalking or even jogging in the snow-covered ground are common during all times. Activities such as hunting and fishing are described as common features of the life in Kiruna. The fieldwork also revealed views on Kiruna such as a great city to live in, where one easily take the snowmobile on a Friday after work, to drive to ones cabin outside the city for ice-fishing during the whole weekend. Several people said the same thing; they all had cottages to where they escaped the city during the weekends. Bo Nilsson notices the same thing in his study “Kiruna- Staden som idelologi” where his interviewers reveals that many seek activities outside of Kiruna and that the city therefore sometimes is completely drained with people. Everyone has left for their cabins, for other villages or for skiing or ice fishing on Torne river (Nilsson, 2009, p. 27).



Thursday & Friday 20–21 September 2012, Kiruna

We go by train through the landscapes of Sweden. We travel through forests, forests and more forests. There is forests all through Småland, than a break from forests while passing the cultural landscape of Östergötland. We enter forests again in Sörmland before we enter urban space of Stockholm and its surroundings. After a break in Stockholm it is night, and we go to sleep on a new train, but when we wake up we are once again traveling through forests. Now heading towards Boden for a new change of train...

...The train ride through the northern landscape of Västerbotten, Norrbotten and finally Lappland is still lined by forest, though a different kind of forest. Not only have we travelled north, it feels as if we have travelled in time, whereas the plants in Scania still are green and vital, the birches in the north are coloured in yellow and the marshes are shining in gold. The further north we go some trees have started to fold their leaves and on some places white spots of snow are glimpsing on the ground. While in southern Sweden the train pass houses and villages in the landscape of forests, up in the north it is completely desolate. When we are approaching Kiruna roads starts to appear, and huge piles of gravel, industries and wind turbines appear in the horizon. We can see the mine towering itself over the city when we, after 24 hours by train, are rolling in to the train station of Kiruna.



Kiruna is one of the largest municipalities in the world, situated farthest north in Sweden and borders to both Norway and Finland. It contains large vast areas of mountains, rivers and marches as well as tourist attractions such as ski resorts and national parks.



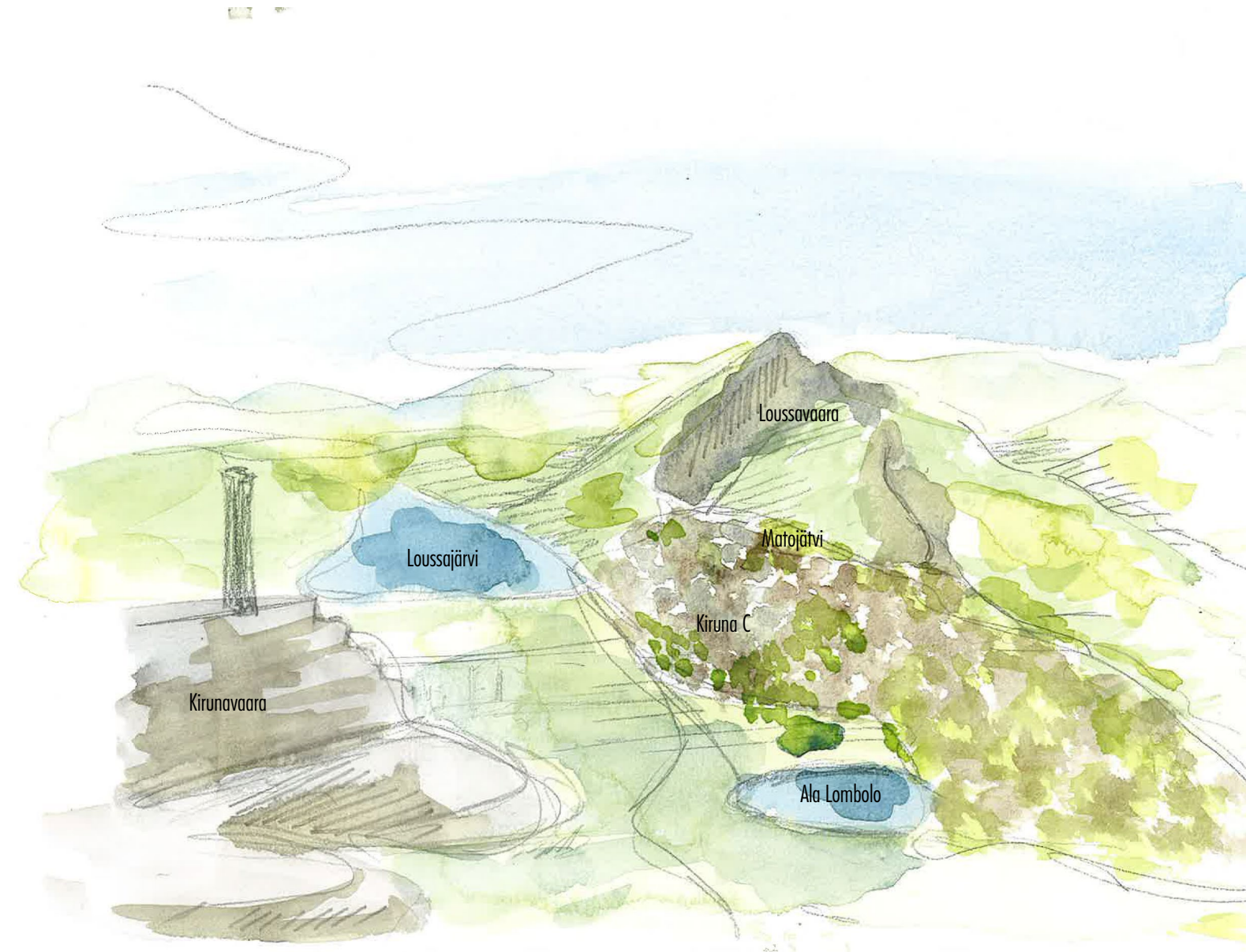
The marches of Torne River

Within the municipality of Kiruna lies the ski resorts of Björkliden and Riksgränsen, the national park of Abisko, Torne River and Kebnekaise; the highest mountain in Sweden. These, along with the ice hotel in Jukkasjärvi are the places that are most common in representations of Kiruna in tourist brochures and websites. The surrounding landscape together with the exotic brand of polar conditions with northern light, snow, dog-sledging and the Sami culture attracts thousands of tourists every year and makes tourism an important industry in Kiruna. Recently a direct flight from Copenhagen to Kiruna was opened and it is also possible to fly direct to Tokyo from Kiruna. Kiruna municipality describes the city on their website as a place of many extremes, a special city where the cold is colder, the light is lighter, the peaks are higher, the spaces bigger and the location further north than any other place in Sweden (Kiruna Municipality, e: [www]).

Already on the train from Scania to Kiruna, we encountered many people who travelled to Kiruna to experience the polar scene and especially the mythical aurora light. Many of the foreign tourists describe the encounter with the fresh air in Sweden to be a contrast towards their home and the large depopulated areas of forest to be breathtaking. A couple of British girls in their twenties who are taking the train from Stockholm to Kiruna are both fascinated and horrified over the desolated areas. When the train stops in *Bastuträsk*, a small village north of the city of Umeå, they burst out their wonder when a woman hops of the train. They can't believe someone would actually live there.



"The Gate to Lapponia"- One of the most pictured sites in Kiruna.



Interestingly enough, many of the activities that are branded on tourists websites and at the tourist office are situated outside of the city, leaving Kiruna to be somewhat of a transfer zone for the tourists. The recommended visits inside of the city are the church, the City hall and the LKAB visit centre at the mine. The transformation of the city has however opened an opportunity for the city to attract attention. It is now possible to take guided walks in the city through the historical parts, which will be erased, and visits to important buildings that will be relocated.



Jukkasjärvi, 2013-02-10



Jukkasjärvi, 2013-02-10



Jukkasjärvi, 2013-02-10



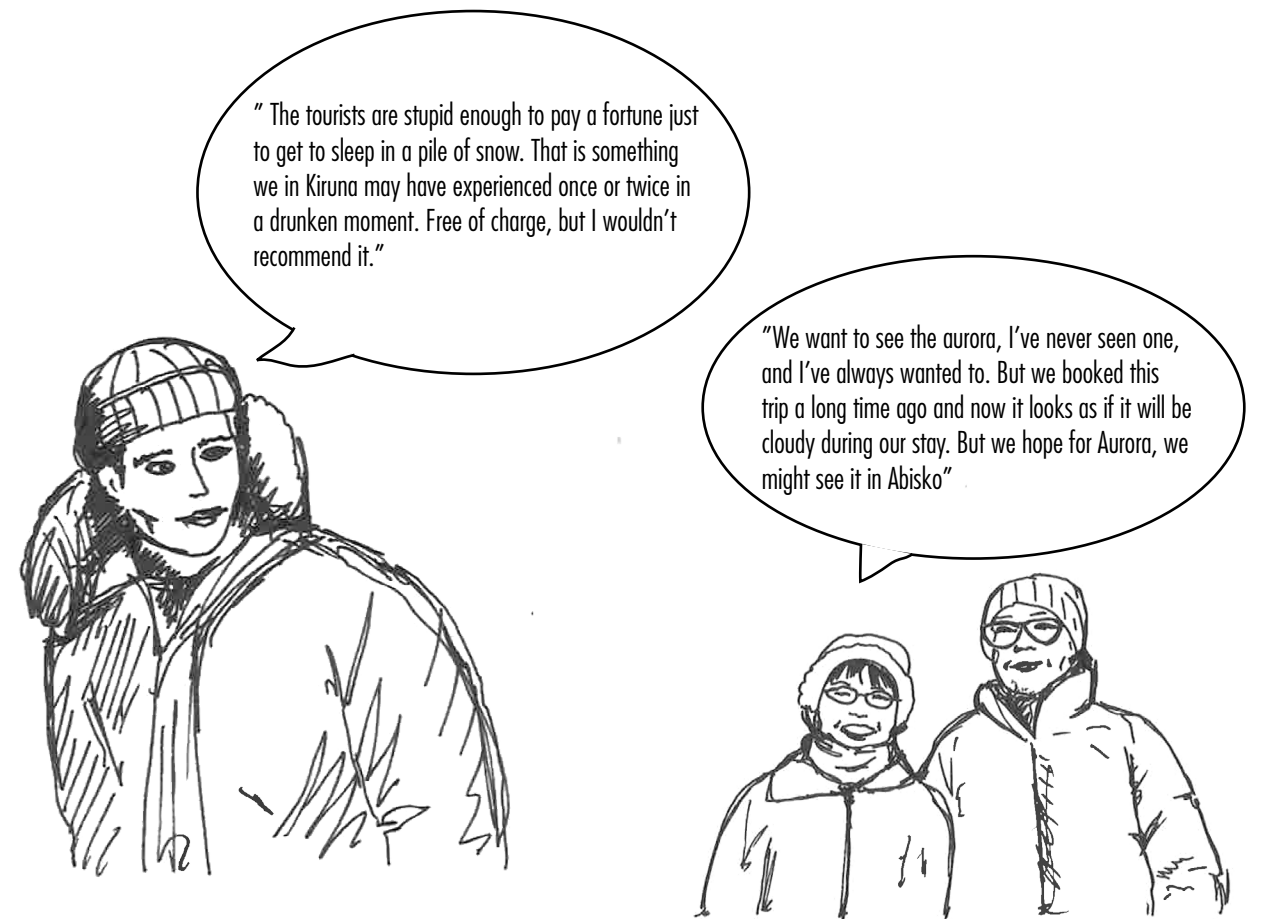
Northern Lights Tour, 2013-02-19



Jukkasjärvi, 2013-02-10



Jukkasjärvi, 2013-02-10



Tuesday 19/2, Kiruna

We go by snowmobiles in a group of tourists out in the forest, and despite several layers of thick clothes, I've never been so cold in my whole life. I have lumps of ice and snow in my eyelashes and eyebrows and I have lost all feeling in my toes and fingers. Despite that everyone seems to be paralyzed by cold, everyone leaves the excursion satisfied. We have seen the northern light and been served warm drinks of the typical Nordic lingonberry, a hot casserole of Souvvas (smoked and salted reindeer) and we have enjoyed a dessert of cloud berries and whipped cream. While we leave the activity to go home and thaw our frozen bodies in a warm house, some of our companions are going back to the ice hotel in Jukkasjärvi to sleep in an ice room.

The most common topic to discuss among the tourists seems to be the chances of seeing the northern light. People are paying a fortune to experience cold adventures in a subarctic scene. It's the extreme excursions that appear to sell. Excursions on snowmobiles out in the wild, ice-fishing in Torne river, dog- or reindeer sledging, visits to Sami villages or a stay in an ice room at the ice hotel in Jukkasjärvi are promoted by the tourist brochures in Kiruna.

Whether through actively seeking out extreme sports or other physical challenges in the environment, or finding oneself amidst a natural phenomenon, or being caught in severe weather, many people find natural places sublime (Brady 2010, p. 128).



Local conditions

As described by Corner (1992), Van Doreen (2011), Hoyer (1999) and Descombes (1999), landscape is not only the built ground, but also a medium of sensual, affective and emotional experience; characterized by processes of light, weather and growth. Kiruna's position as a subarctic city puts it in an extreme situation where the seasonal changes offer a wide range of experiences of the landscape.

Kiruna is situated approximately 150 kilometres north of the polar circle and is hence a part of the Arctic region. By definition, that means a climate where the average temperature during all months usually stays under 10° C. It means that it is relatively unusual with temperatures above 10° C even during summer. Kiruna is characterized by an inland subarctic climate and lies in vegetation zone 8 (Magnusson, 2012 (SMHI)). The polar conditions such as the midnight sun, the polar night, the northern light, the snow and the cold climate is what constitutes the qualities of Kiruna in its branding. But it also provides a harsh climate and situations in city planning which is very unlike many other places. The streets have to be broad, even though it's a small town with considerable little traffic, to handle all the snow that covers the ground for half the year. During some days in winter it is dark all day and during summer it is light. Few plants have the ability to establish and thrive and the once that does have a relatively short but intense season for growth. This suggest that not only does the city transform due to the mine industry, but it also has seasonal changes which provides extremes, resulting in completely different perceptions of the city through out the year.



The Church park, Kiruna 2012-09-23



*The Hjalmar Lundbohm Residence, Kiruna
2012-09-23*



The Minecity park, Kiruna , 2012-09-23



The Railroad park, Kiruna, 2013-02-04



The Railroad park, Kiruna, 2013-02-04



The City hall, Kiruna, 2013-02-06

Vegetation

The city plan of Hallman had situated the parks of the city in those places where the terrain made it difficult to build, where trees and bushes already were growing. This is still evident today where the central parks of Kiruna are situated in the steep areas and are covered with trees.

The Railroad park is situated along The Hjalmar Lundbohm road, between the City hall, the Railway station and the residential area of "Lower Norrmalm". It has come to be one of the places described as important for Kiruna (Kiruna, 2007). Other parks that are popular are the park situated by the church and the park that centres around the former residence of Hjalmar Lundbohm, where the first phase of the Minecitypark now is situated. Besides from the central parks, the recreation areas at Matojärvi and Loussavaara are described as popular (Kiruna, 2007).

The vegetation in Kiruna is dominated by birch, rowan, spruce, aspen, bird cherries and willow. On some places, as in the park outside the residence of the Hjalmar Lundbohm residence, there are exotic conifers such as Swiss pine and Blue spruce.

While analyzing the green spaces in Kiruna there seems to be a lack of large, open parks, with the romantic design of open lawns, trees planted both in groups and solitaires and winding paths through ponds, etcetera. Typical parks that are so custom in other European cities. The parks in Kiruna appear more as resembles of the nature surrounding Kiruna, with birch forests and high grass.

The National research school for Architecture and Planning in the Urban Landscape made a field trip to Kiruna in 2010 and has documented their stay in a report called *Malmabanen diaries*. They too notices the same thing, the city with all the nature around the corner, with a landscape that is everywhere, lack parks (APULA, 2010, p. 14).

The central parts of Kiruna, which will be relocated during the coming ten years is dominated by hard surfaces with little vegetation, therefore the next phase of the Minecitypark might be very grey.

Snow

Kiruna is covered with snow during approximately 6 months of the year; the level of snow is usually on 0,7 metre. This year (2013) it has been measured to be over 1 metre, which according to the statistics only occurs every 10th year (Magnusson, 2012 (SMHI)).

The long period of snow enables activities such as snowmobiles, dog sledging, ice fishing and skiing during a large part of the year. The city offers many trails for cross country skiing and the mountain of Loussavaara has a lift system and slopes for downhill skiing. The snow is used as an identity and character for Kiruna, which houses a snow festival in January every year. During the snow festivals a competition in the making of snow sculptures is held, the sculptures are left standing during the winter. Snow and ice is also used in the construction of the ice hotel, where the clear ice from the Torne river, the unique design created by new artists every year, as well as the famous ice bar, constitutes a unique and attractive brand.

Monday 4/2 Kiruna

I have walked along The Hjalmar Lundbohm road, through the Railroad park, towards the city hall, through the Minecity park and in to the centre There is so much snow everywhere; large piles have been shovelled up on the sides along the road. A two meter high wall of snow stands on my side, it narrows the road and one can't see any difference from the sidewalk and the road, if it wasn't for the footprints in the snow I would think I'm walking in the middle of where the cars drive, I'm afraid I will get hit.... Back home the snow is like a powder that colours the city white, but here it rather drowns the whole city in thick layers of white. My 4-year-old nephew doesn't believe me when I explain to him that in Kiruna it is one metre of snow on the ground. A boy from Scania just can't believe that it is possible for so much snow to exist.

It feels sort of unnecessary to design detailed and patterned materials on the ground when the snow will drown it all. But on the other hand it is as if it is not needed, the snow brings enough beauty anyway.

Tuesday 5/2 Kiruna

Today it's been snowing all day and everything is white. The sky is white, as are the ground and the mountains. The only thing that breaks the white are the houses and the trees that contrast the white with its vertical grey lines. The snow makes it difficult to walk and the piles of snow hinder my directions, I'm forced to walk where it has been ploughed. I wonder what it's like for disabled people who live in Kiruna, do they stay indoors all winter long? I'm glad I have solid boots which gives me a good hold on the ground.



The Rail road park, Kiruna 2013-02-04



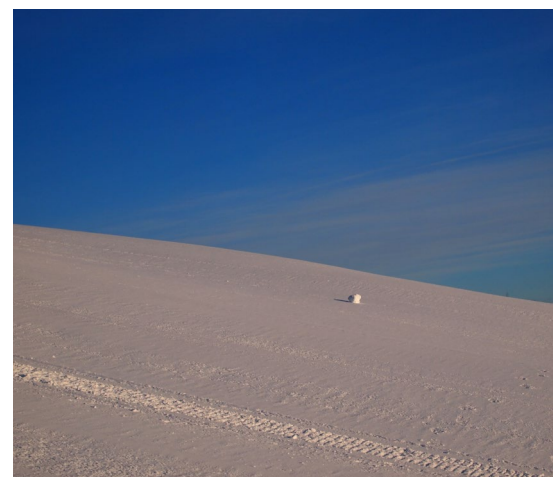
The Rail road park, Kiruna 2013-02-04



Kiruna , 2013-02-05



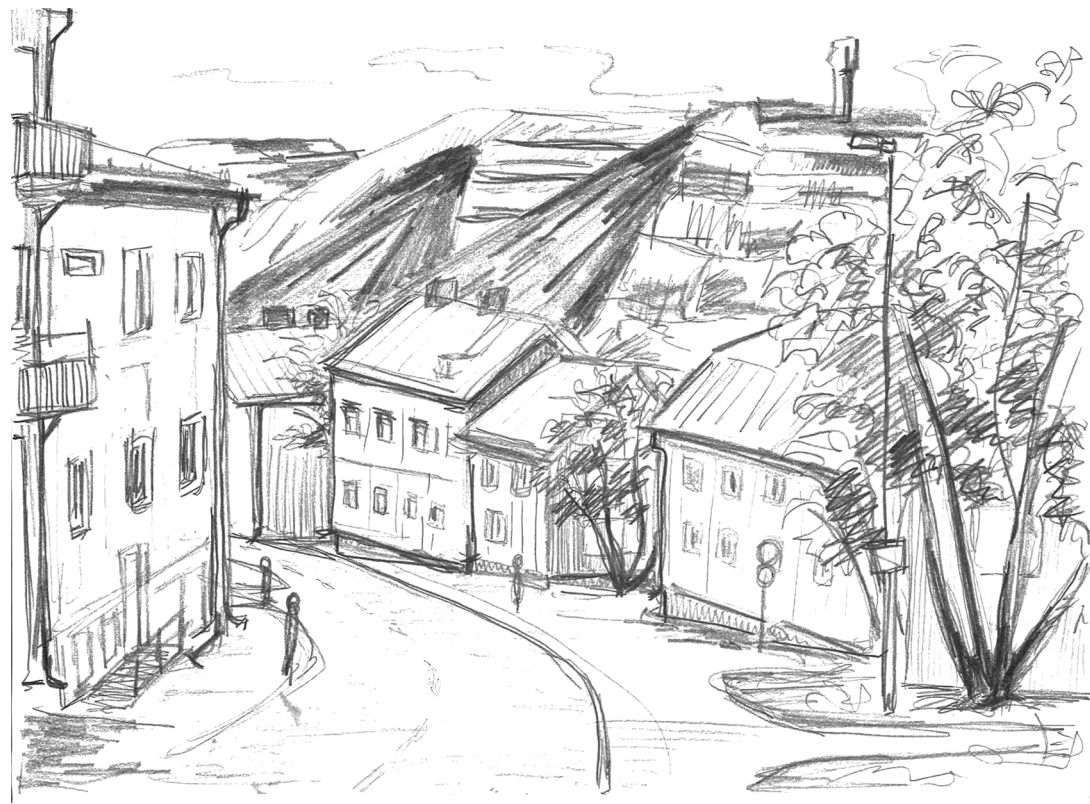
Jukkasjärvi, 2013-02-10



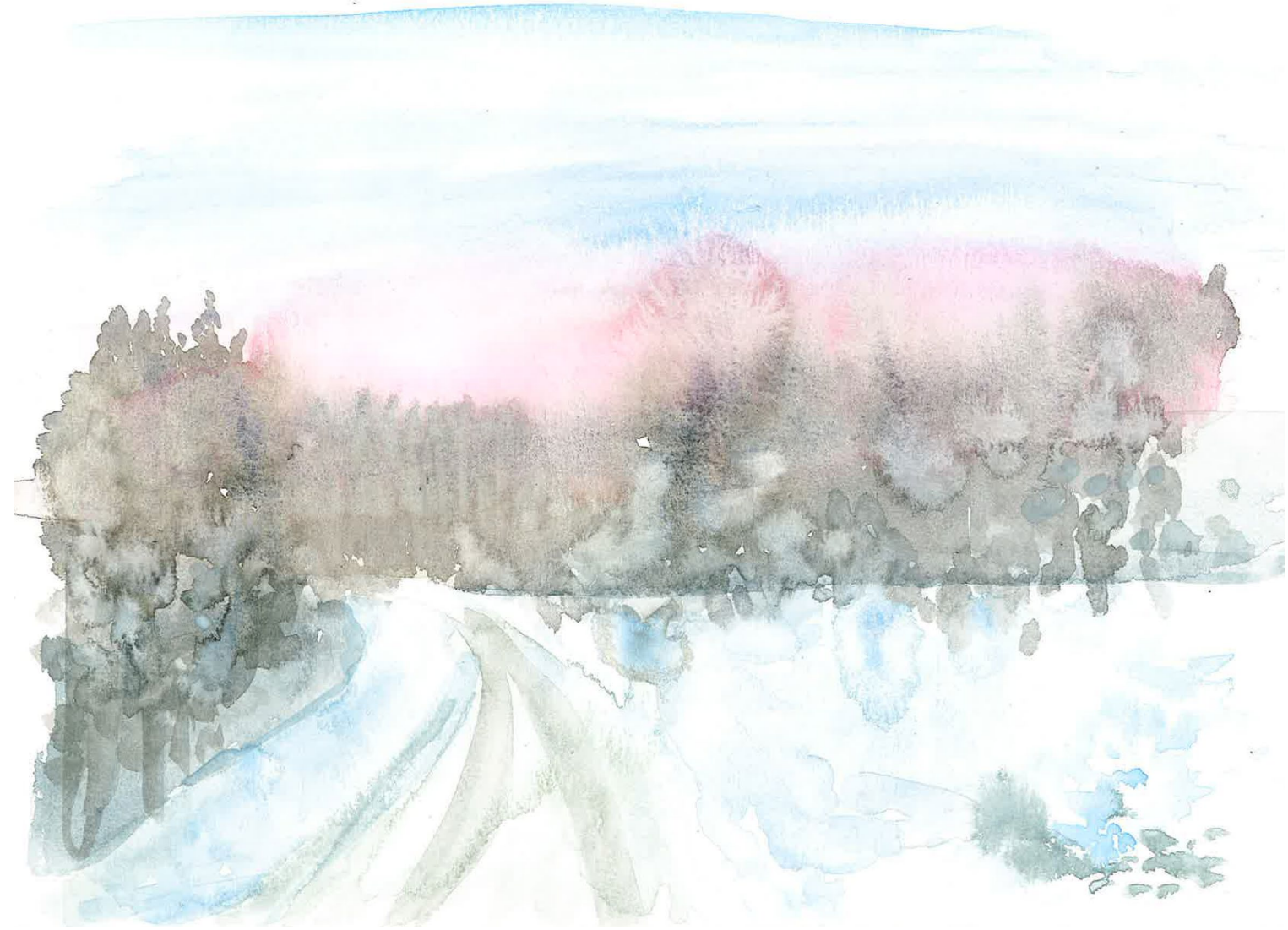
Loussavaara, 2013-02-22



Kiruna, 2013-02-11



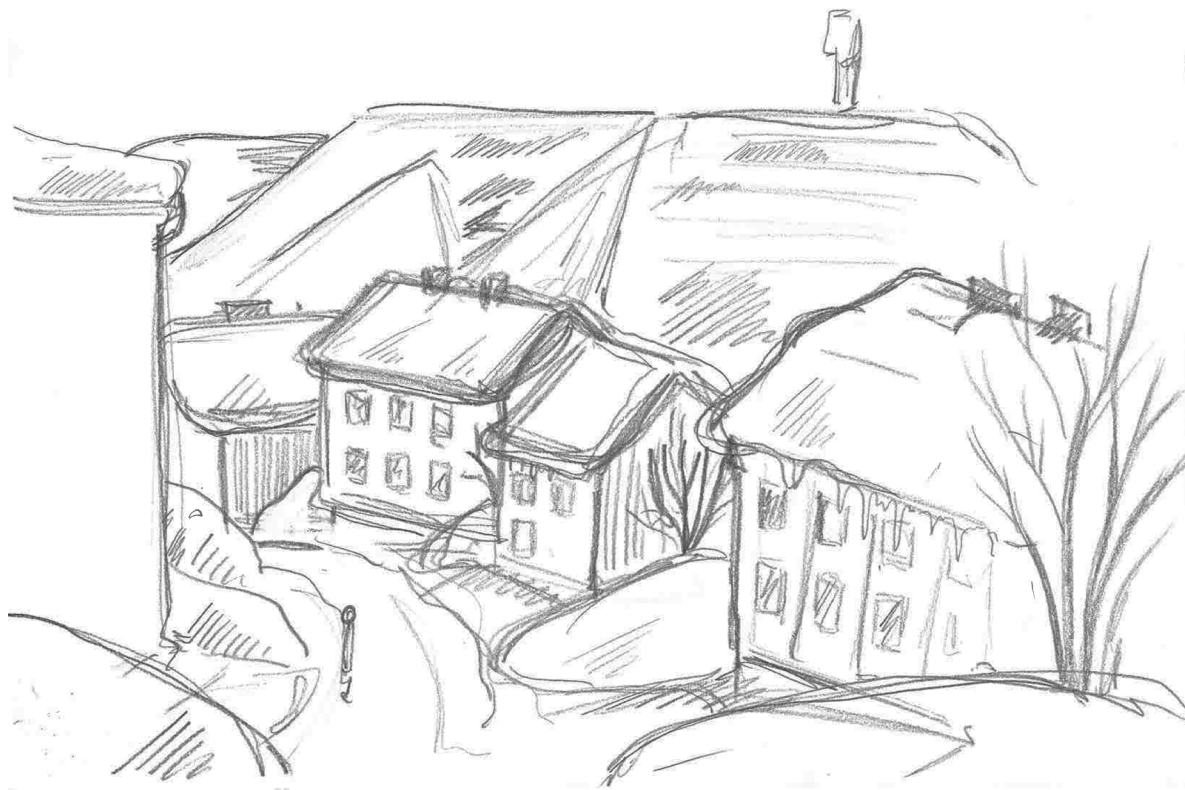
The Konduktörs street in Kiruna, September 2012



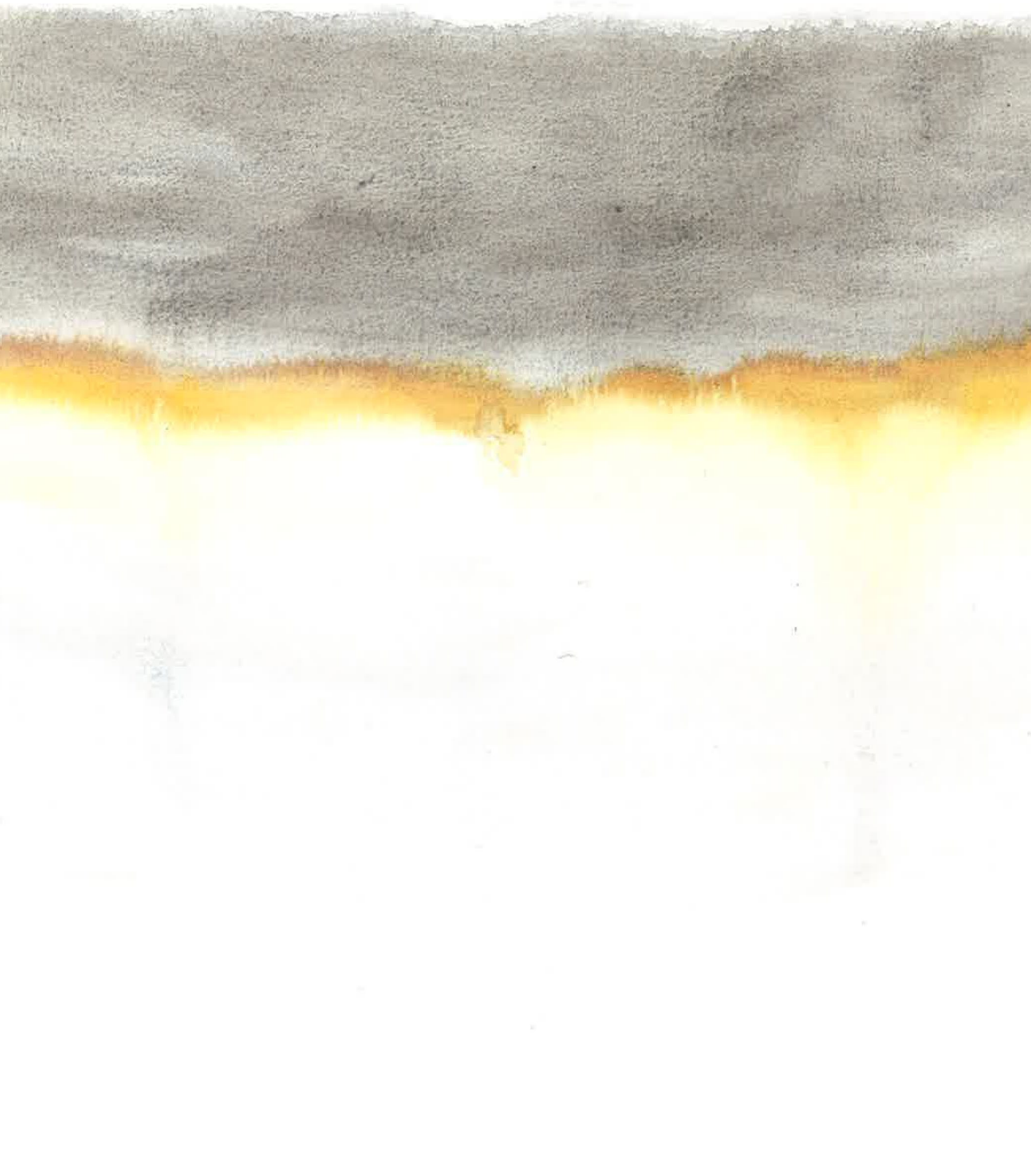
Light

Light plays an essential role in the perception of the landscape. Sunset and sunrises are often common in depictions on landscapes and are frequently used in descriptions on beautiful moments or as object for songs and tales. Cities, regions and sites are often attributed with how beautiful a place appears in a certain light with images such as golden, pink and pearly atmospheres. At the same time the absence of light is just as important in descriptions on landscapes. Landscape is often primarily conceptualized in the presence of daylight and what is perceived in daylight is often perceived completely different in the absence of light, those nocturnal experiences has however been widely changed with the lighting in modern cities. (Edensor 2010, p. 230).

Kiruna has 50 days of midnight sun, where the sun never sets below horizon, and 20 days of polar night, where the sun never rises above the horizon. In these northern regions, where the short days of daylight in wintertime contrast the long days of light in summertime, light plays an important role in the perception of the seasonal change.



The Konduktörs street in Kiruna, February 2013



In a local magazine there is a column about the sun in Kiruna. The writer claims that Kiruna do have sun all year round, one just has to go far up to see it. The writer describes his habit to once a year, on the darkest day of the year, walk up to the mountain of Loussavaara to scout for the sun. Around Christmas and new years the sun doesn't rise above the polar, and the writer describes Kiruna to be covered by a grey and raw mist. However, if the sky is clear enough one can see the sun from a hilltop. During the 21st of December 2012 when he went up to scout the sun, one part of the surface of the sun was visible for 3 minutes. On the way down he met a family walking uphill to look for the light, but they were too late. (Theander, 2013).

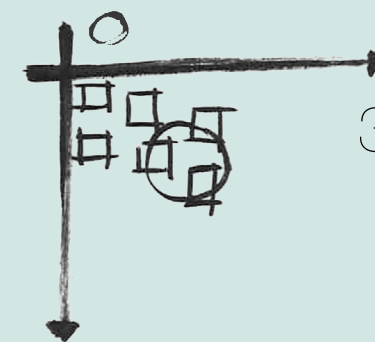
With stories like that it is not hard to imagine how valuable the light is when it finally arrives in the end of January. We are told that we are visiting Kiruna in a good time; there is still snow and it starts to get light outside.

The absence of light may attract those who wish to move away from over-illuminated landscapes. Due to the electric illuminating of cities, with more intense lightning the more people and traffic around, one may relate complete darkness to complete silence, which may be very appealing for some. The absence of light is also what enables the experience of the polar lighting, so called Aurora Borealis. Polar light is caused by electrically charged particles blown from the sun that are attracted to the earth's magnetic poles, hence polar light occurs both near the geographic south and north pole. The light appears as dancing light in colours ranging from blue to green. Mystic surrounds the phenomenon and the technical depictions of the aurora are usually regarded as insufficient; it is rather the mystical experience that is appreciated (Edensor 2010, p. 227). We are told that several cabins around Kiruna now have skylights in their ceilings to please Japanese tourists. Japanese legends says that children that are created under a sky of northern will get extraordinary beauty.

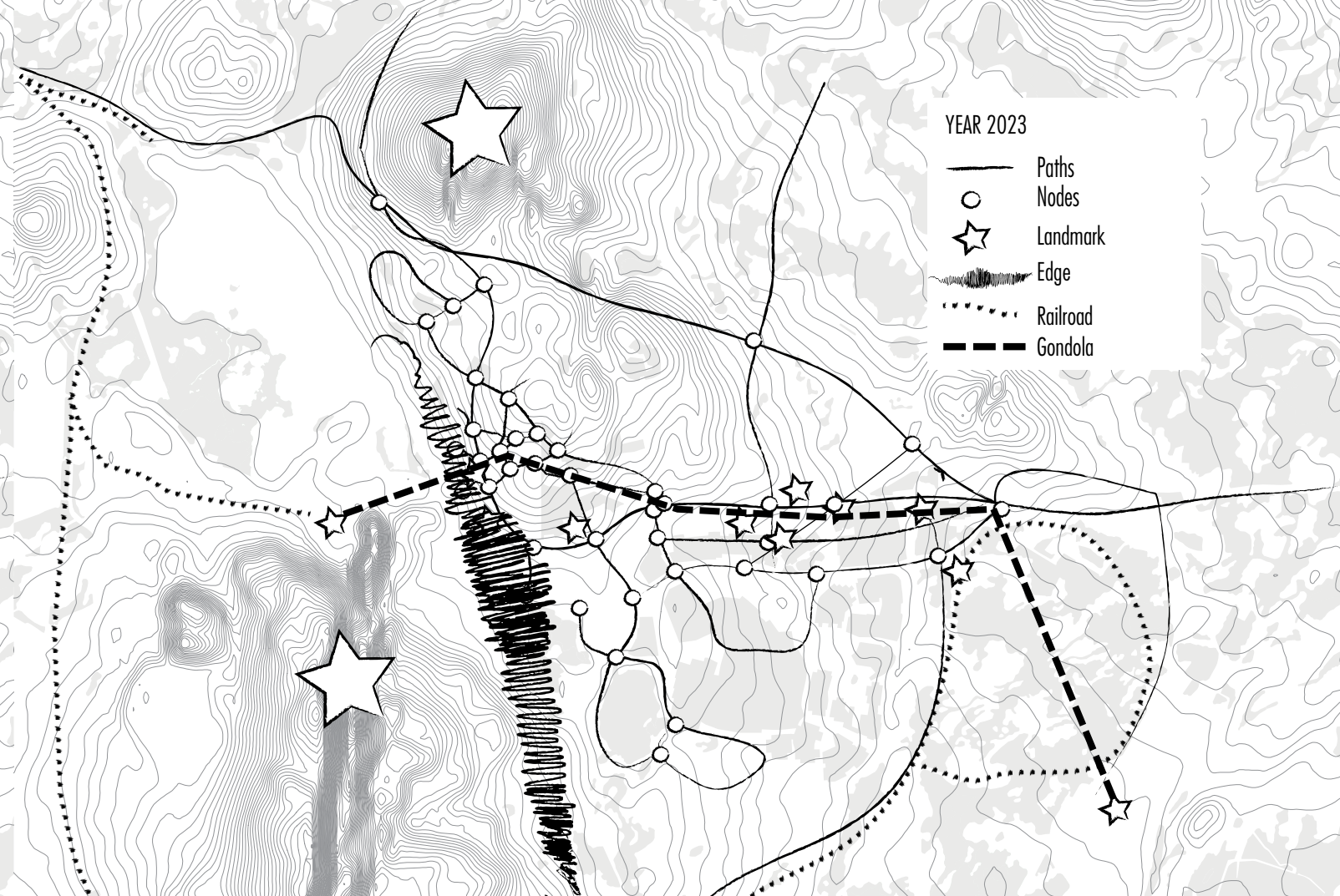
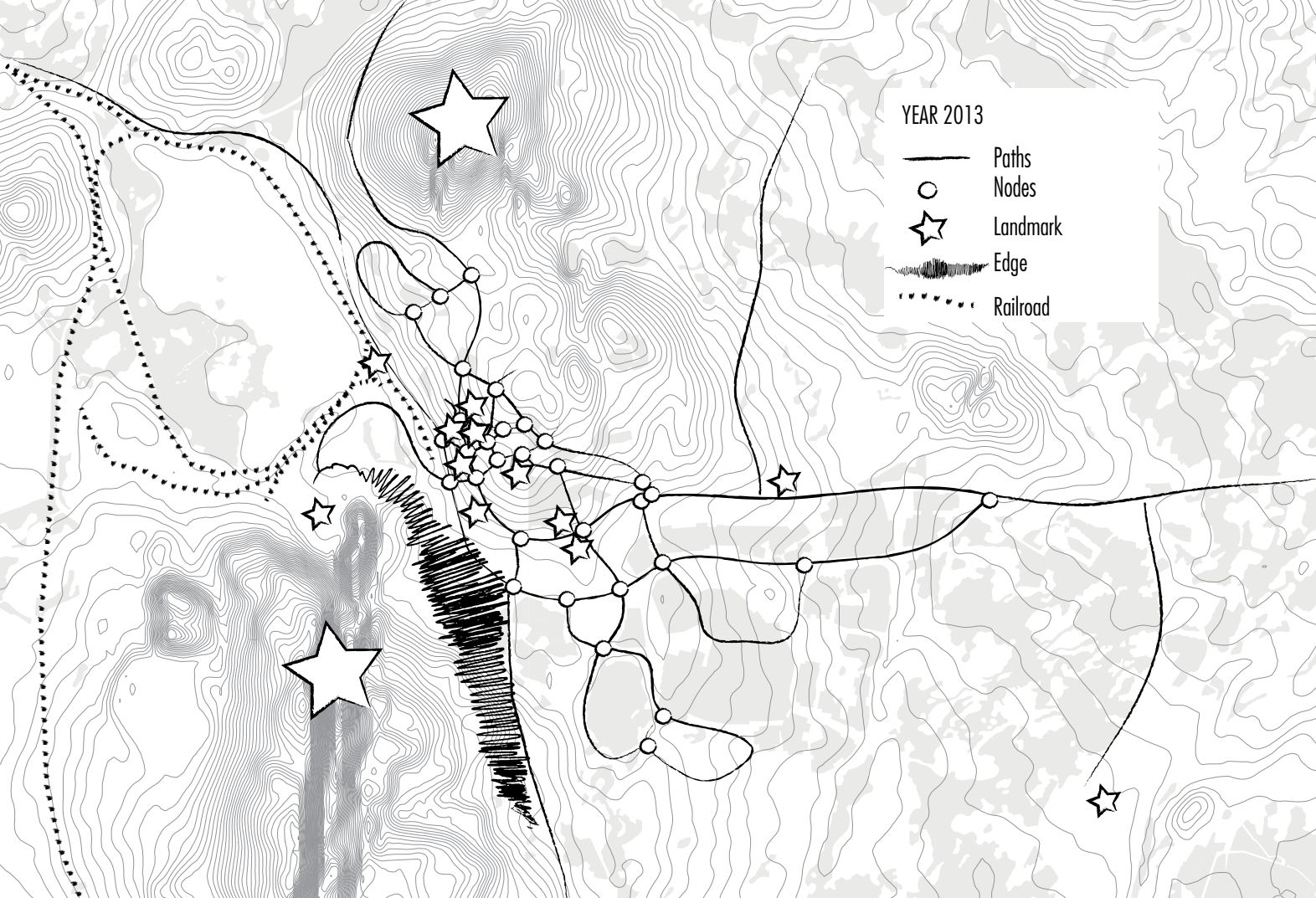
A widespread desire to witness the polar light has given rise to an expanding tourist sector, where visitors travel to an increasing number of destinations within or near the Arctic Circle. The ideal situation for watching the light is a clear sky in black darkness, which means far away from illuminated cities. The desolate surroundings of Kiruna with clean air, free from polluting particles, offers good spots for experiencing the northern light. Experiencing the northern light seems to have become an integral part of Kiruna's tourist branding.

With the midnight sun, which provides hikers from all over world an ideal situation, the absence of light, which weighs down the life in Kiruna during winter, and the mythical Aurora Borealis; light is certainly an important factor in the landscape of Kiruna. The absence of light affects the perception of the spaces and, although the electric lights is intensified by the reflections from the white snow, it is important to reflect on issues regarding perceptions on safety in the design of the Mine city park in Kiruna.

This part of the thesis contains analysis of Kiruna which grounds the concept and proposed design.



3. ANALYSIS



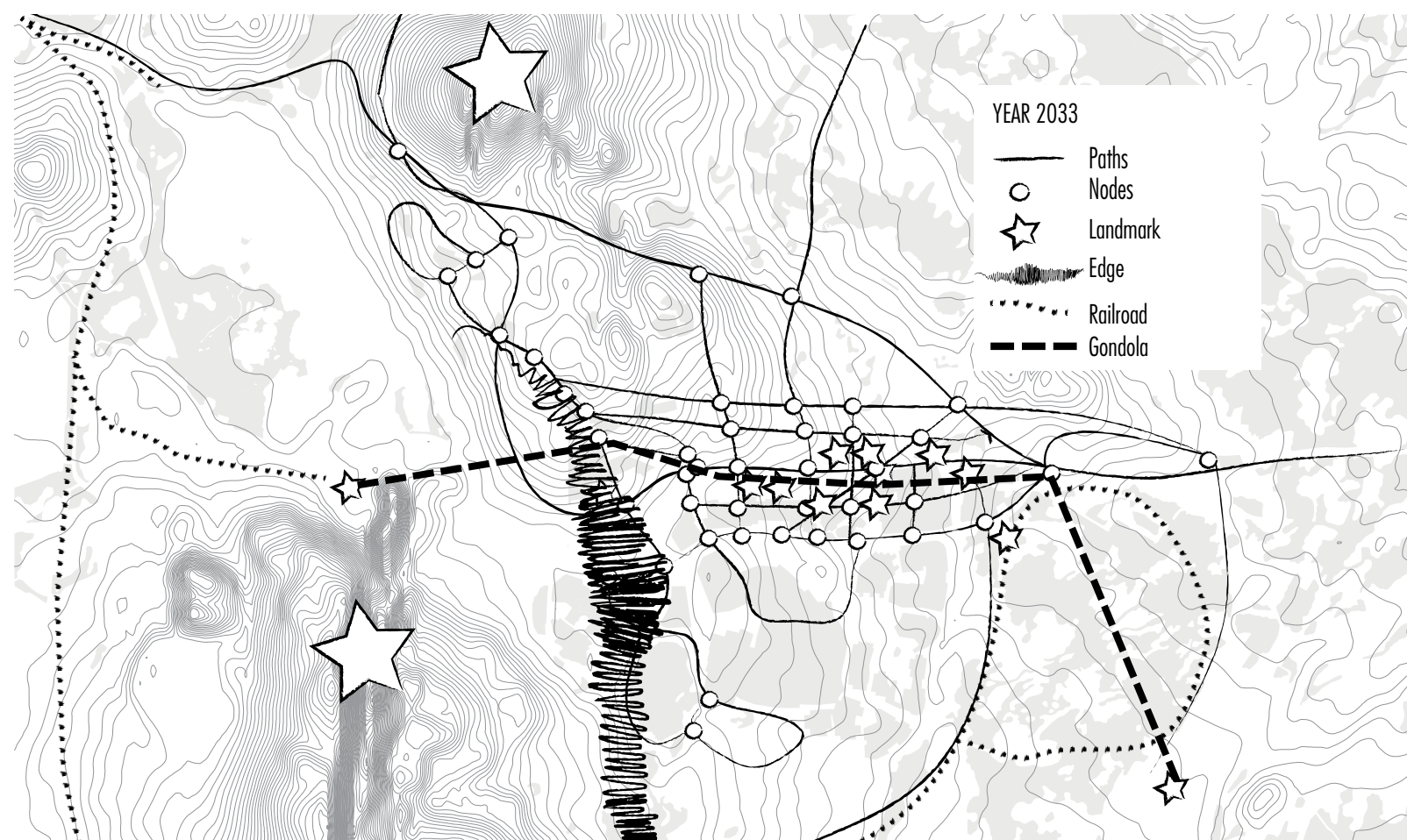
Relational Analysis of Kiruna

The analysis is inspired by Kevin Lynch's terminology when describing the city's image and its elements (Lynch, 1960). I have used this as an approach to recognize how the important features of Kiruna will change by the city's transformation.

The first analyse depicts Kiruna in its present shape with important nodes, landmarks and paths situated in a regular pattern in the city centre. The mountains of Loussavaara and Kiirunavaara constitute important landmarks and the deformed ground form a significant edge towards the landscape in west.

The analysis on next page shows the future location of important buildings, streets and nodes, based on approximate locations. It should not be read as exact positions, since that is not yet decided by the municipality. What becomes evident through the analysis is however, that Kiruna during the coming 20 years will consist of a scattered centre. Important functions will exist in both the former and the future centre and the future, they must coexist as a whole unity before the edge towards the mine will fence off the previous centre. The important features will move in a eastward direction, while the landmarks of Kirunavaara and Loussavaara still stands, and the edge continues to close of the landscape in west.

This analysis also stresses the issue on the inherent values in the nodes, landmarks and paths that will be transformed.



Matrix Analysis

The analysis shows different types of landscapes that I've found in and surrounding Kiruna. The scheme is developed from a methodology used in the course "Design, Concept and Theory" at *The Swedish University of Agricultural Sciences* in year 2012, as I have found it to be a useful tool for elaborating on types of vegetation.

I have categorized the landscapes according to strict-wild, sparse-dense, dry-wet and static-shifting as these are some of the important forms in the transformation from built city to parkland. As the matrix suggest; what constitute the urban field of today may appear as a fell in a wild context, the open lawn may be equated with the marsh and the garden with a forest. As will the static parts of the city centre, lawns and ponds transform into a more shifting context while transforming from park to industrial land.

This method provides a palette of types of landscape that may be used in the formation of the Minecity Park. The different types are laid out on the plan of Kiruna and it illustrates the sparse and strict city centre and industrial land, surrounded by gardens and the denser parks is situated in the outskirts of the city. The same pattern will be followed as the city turns into park, they will however appear in a new mode. It will take several years before the vegetation have grown enough for the pattern to change.

The concept of wild nature is however complex and this division between strict and wild raise the issue on nature and culture, which will be discussed further in chapter 6.

The same method is applied to the material of snow and light as well, as these are important components in the landscape of Kiruna.

Green Matrix



Green Matrix



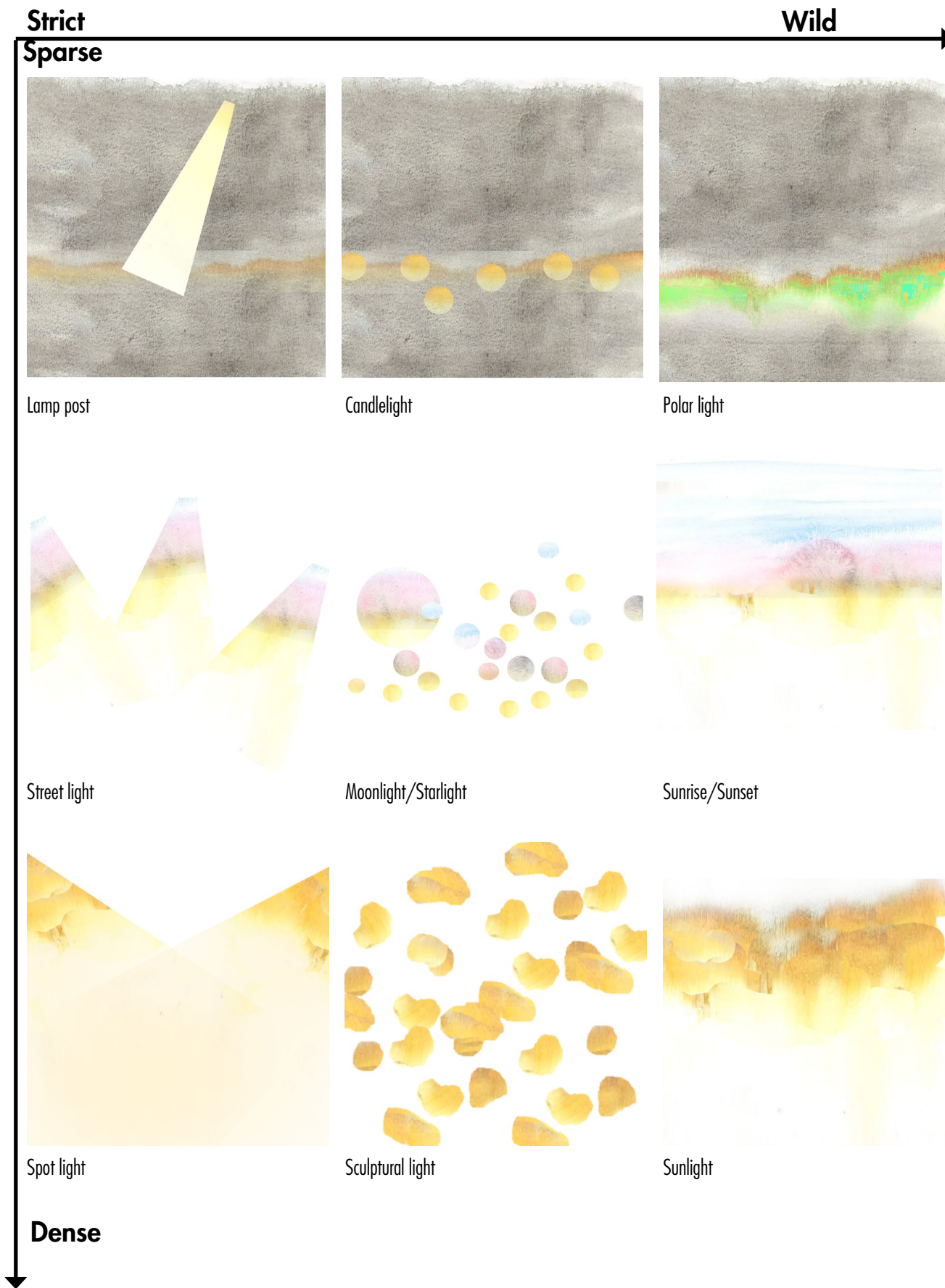
The plan illustrates the sparse and strict city centre and industrial land, surrounded by private gardens. The parks of the city is situated in the steep terrain in southwest and surrounded the church. They're situated in the areas first to be affected by the ground deformations (The forecast by LKAB is illustrated in red lines).

The big, recreational parks is situated outside the city in Matojärvi, Loussavaara and near Ala Lombolo.

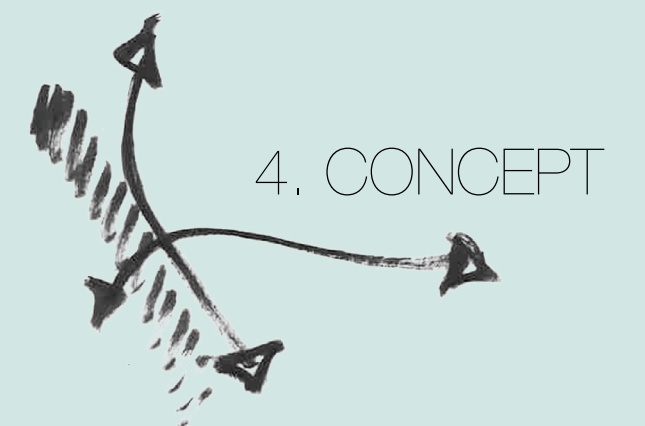
Snow Matrix

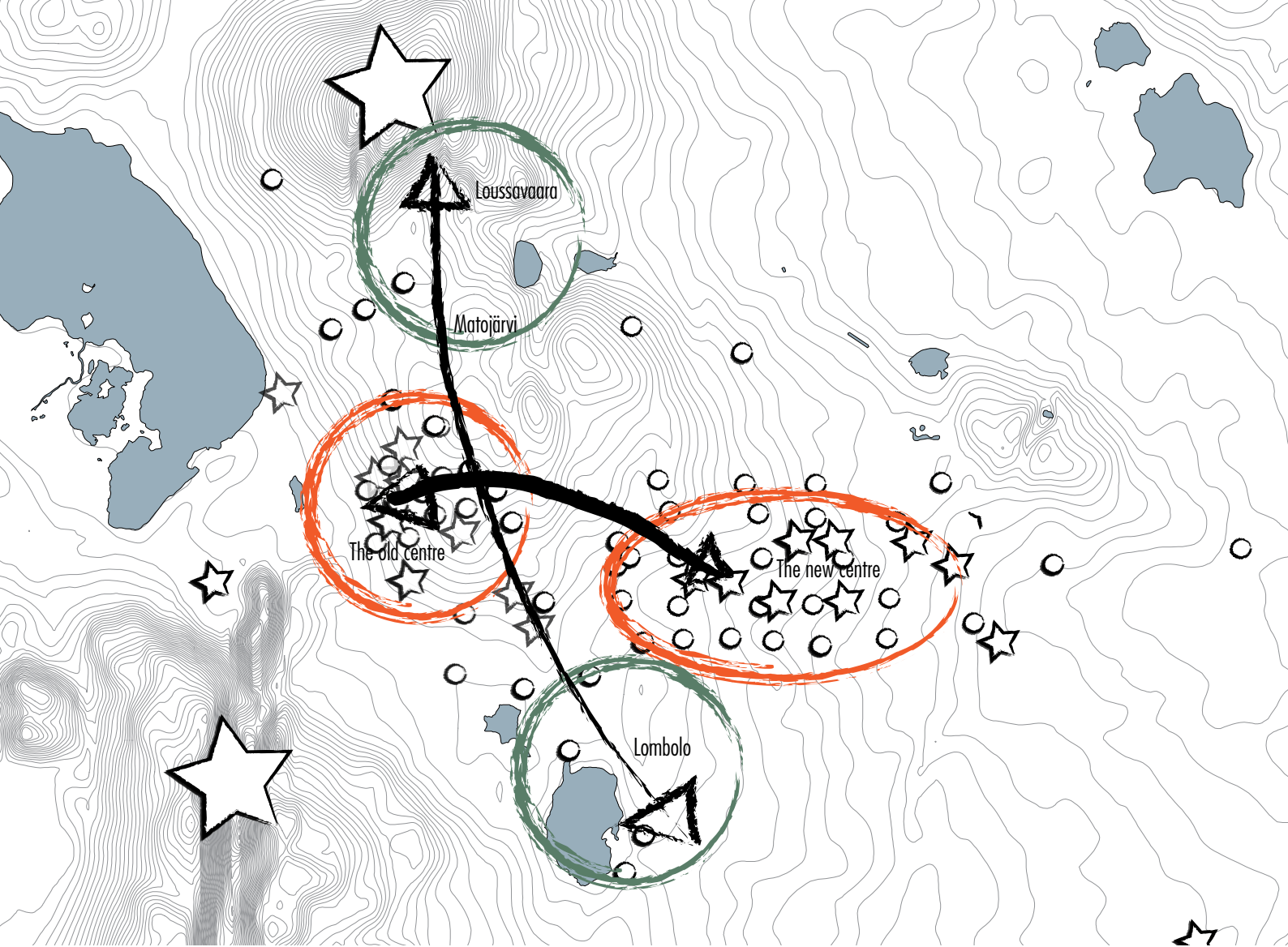


Light Matrix



This chapter introduces the concept for my design proposal, illustrated in sketches.





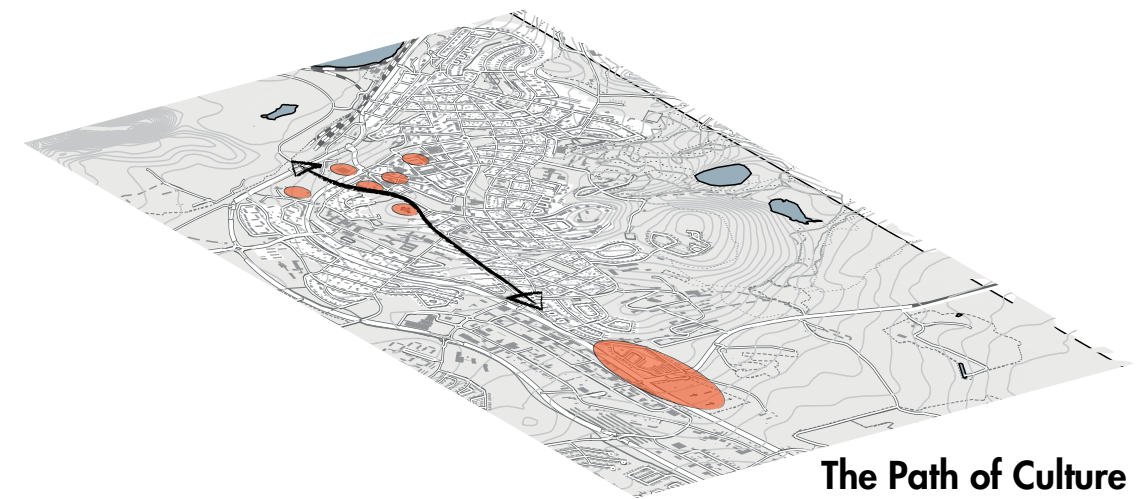
Concept for the Minecity park

Kiruna will during the coming years be spread out, with two city centres existing at the same time, one under construction and one under demolition. The Minecity park will initially have a central location but will, as the new centre grows stronger, become a park in the periphery of the city.

Instead of functioning as a park of remembrance of the former city, or a green buffer to the mine, the Minecity park may function as a link between old and new and a connection between recreational parks and surroundings outside of Kiruna.

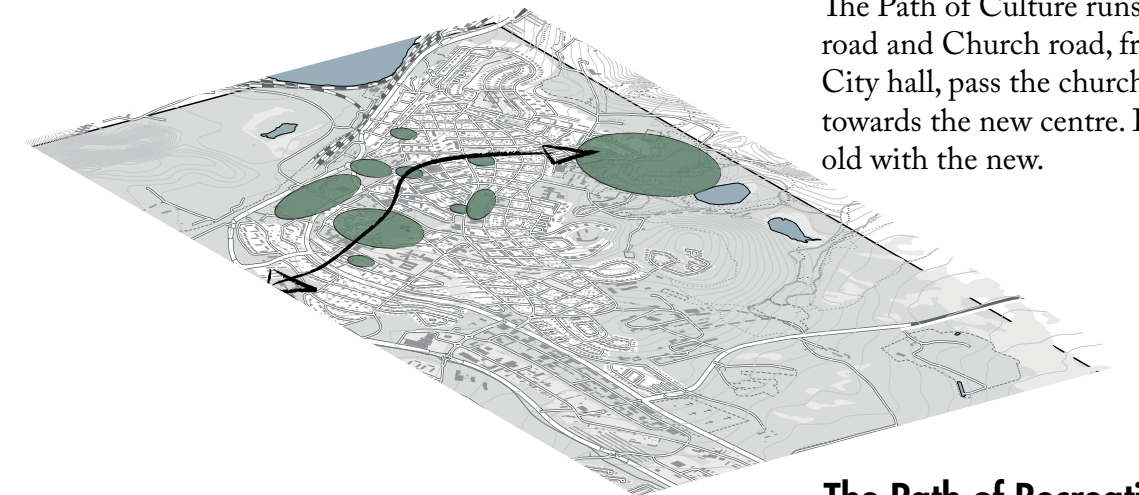
The Minecity park should be formulated along paths, which continues outside the borders of the park and therefore connect the different parts of Kiruna.

One path connects the former city centre with the new, another path connects the landscape in the north end of the city with the south end, and a third one runs along the border towards the mine.



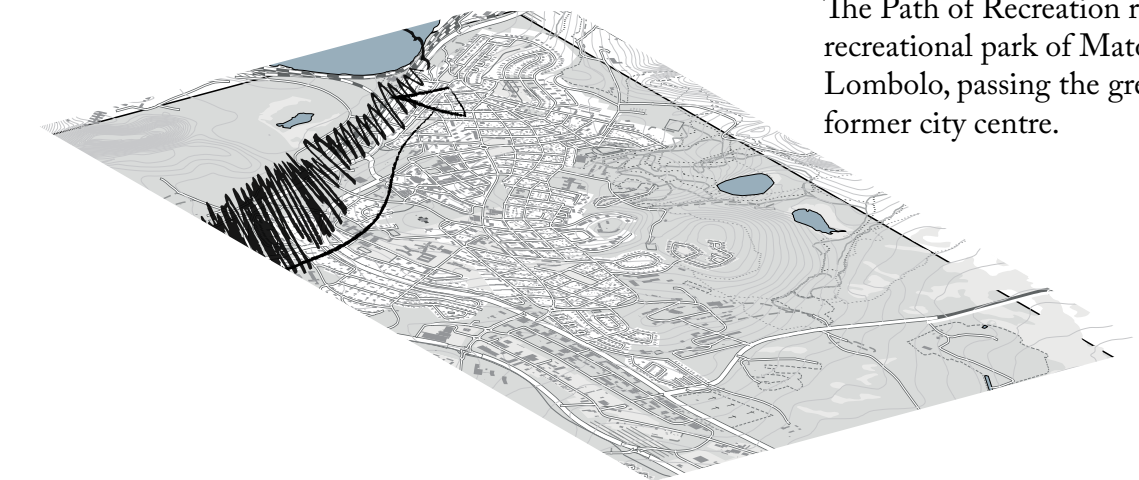
The Path of Culture

The Path of Culture runs along Mining road and Church road, from the former City hall, pass the church and heading towards the new centre. It will connect the old with the new.



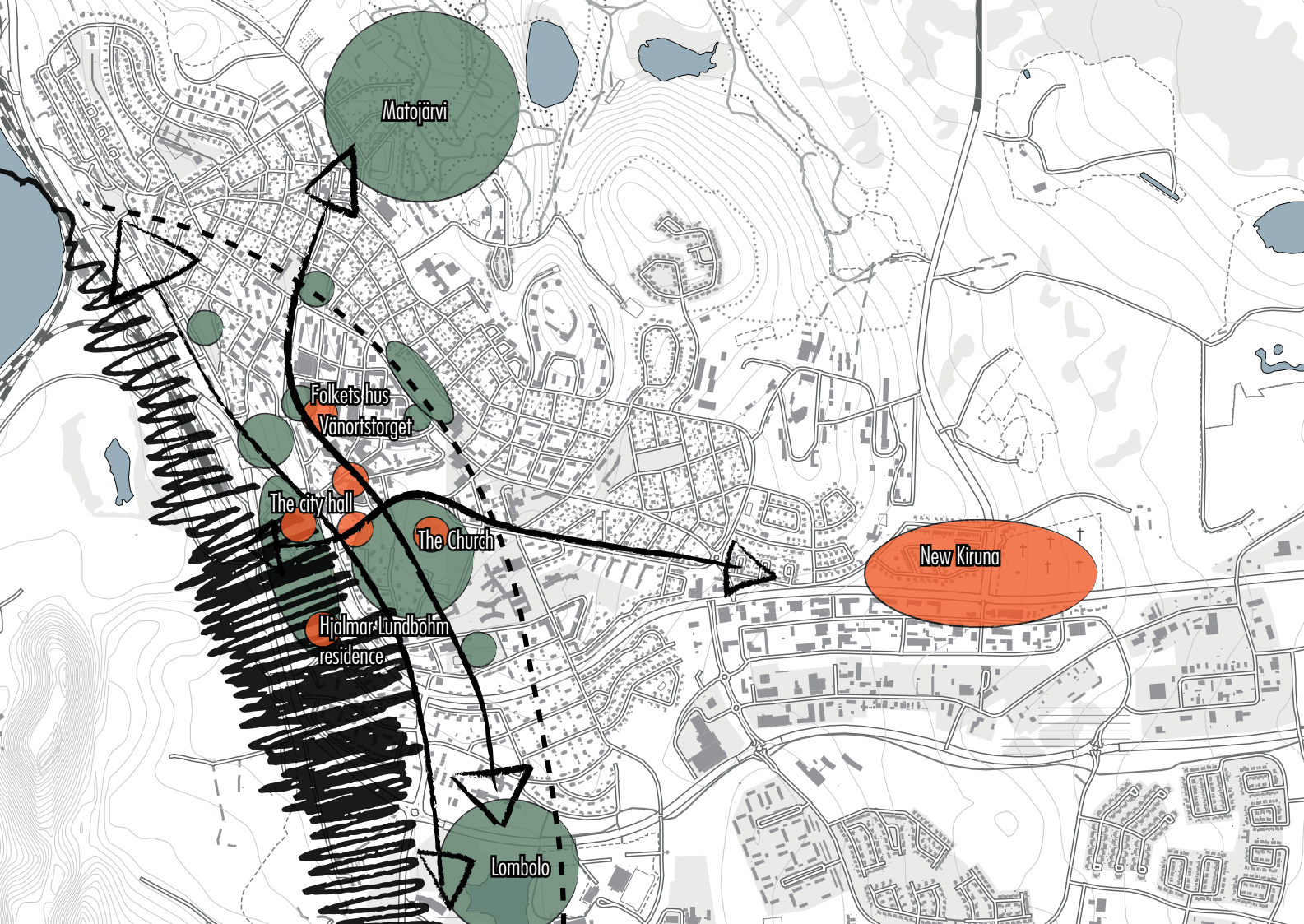
The Path of Recreation

The Path of Recreation runs from the recreational park of Matojärvi, towards Lombolo, passing the green parks in the former city centre.



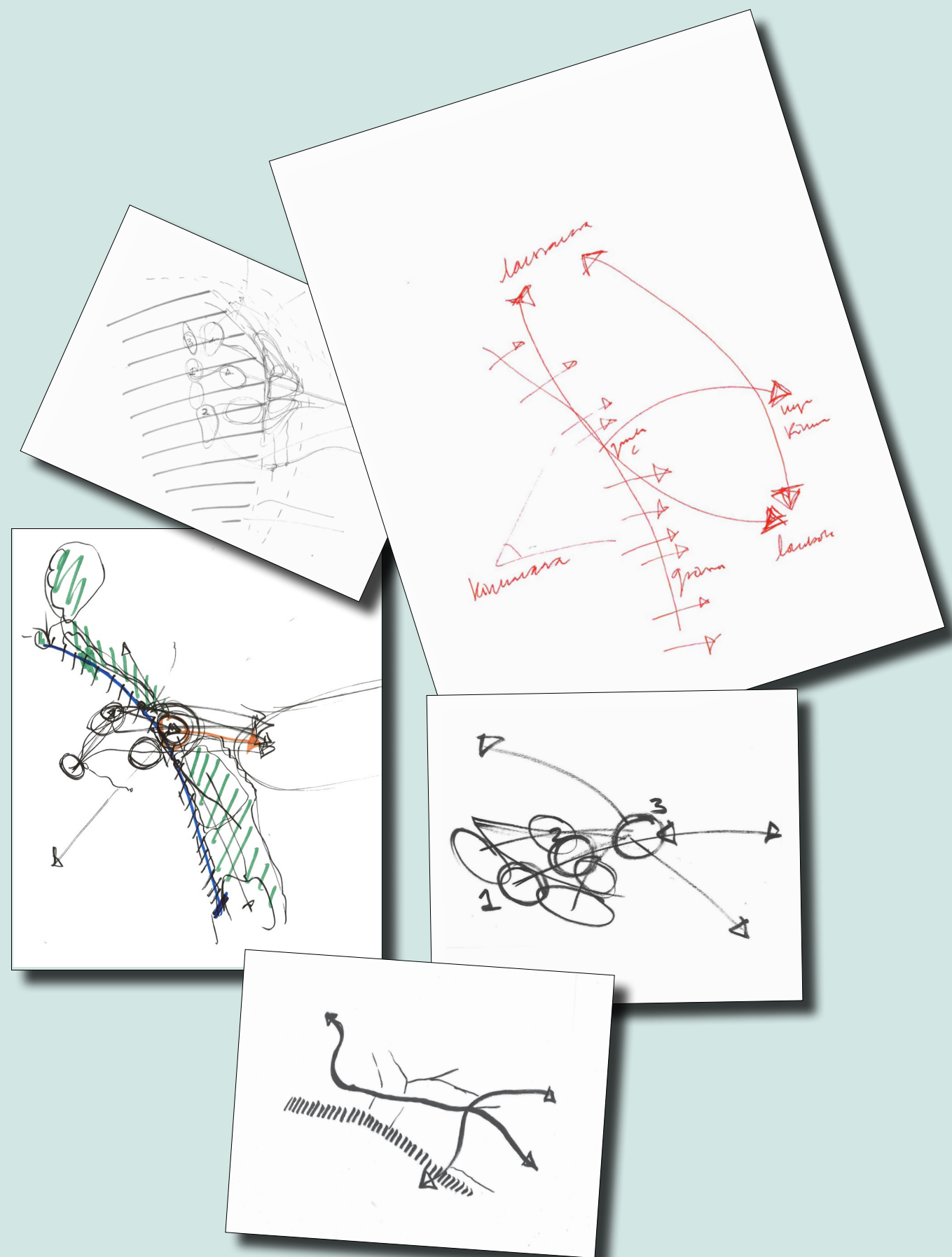
The Path along the Border

The Path along the Border runs along the fence with visual points and information boards on given sights along the fence.



Existing paths such as “The path of health” and other jogging/walking tracks will be connected through the conceptual paths.

Activities in the Minecity park will be situated along the paths, on important sites in the former city and in nodes between the three suggested paths. The activities will be moved throughout the different phases along with the border.



Quick sketches in the process of creating a concept for the design proposal.

This chapter illustrates the design proposal through sketches, plans, sections diagrams and collages.



Strategies

The proposed design shows the Minecity Park as the area affected by today's level of mining. As the mining goes deeper underground new areas will be affected. The same concept and strategies as in the proposed design can however be used in future areas.

1. To prevent the park from becoming an isolated enclave, the area should be well connected with surrounding parts of Kiruna through established routes. Three important paths along existing roads are identified and the construction of the park should always start along these paths, even before the area is supposed to be turned into a park. This doesn't require any changes in land-use planning.

The first path runs along with the border towards the mine.

The second path connects the recreation areas in the periphery of the city. This puts the park in a green context and increases the recreational values in Kiruna.

The third path connects the old centre with the new, along which cultural events is placed.

2. The activities of the park is placed in nodes between the paths or in important places that already have a strong identity in the minds of the inhabitants. The inhabitants of Kiruna may request the activities. These will move along as the park shift.

3. New vegetation should be added and should be planted before the demolition begins (at those places where it is possible). Large qualities of plants should be chosen and pre grown carpets of perennials, bushes and grass should be rolled out.

4. Materials from the demolished buildings should be crushed and reused as gravel, fillings or decoration.

5. Existing street grids and structures from buildings should be kept. The structure may consist either of crushed gravel gathered in gabions as in the proposed design "Landscape of cubes", or by other ways of showing the structure in three dimensions.

6. Banks made by crushed material should be laid out where the fence and future fences will stand.

7. Viewpoints should be placed along the border, from which it is possible to get information on the landscape and to look at the area through telescopes.

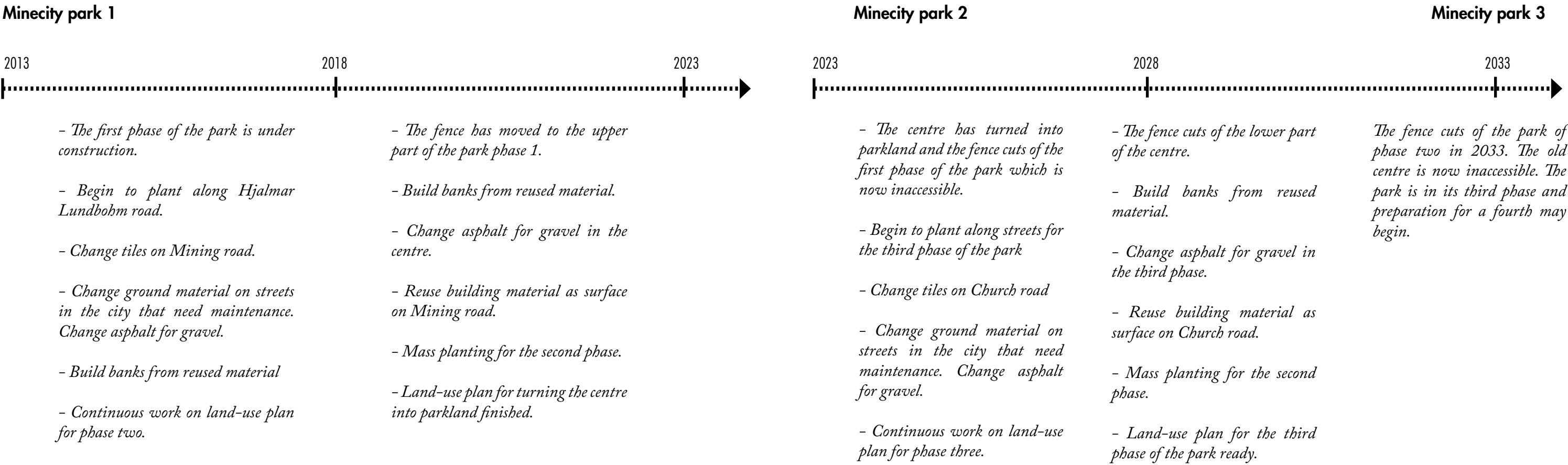
8. The fence should be constructed in wood, and emulate the reindeer fences in the landscape surrounding Kiruna.

9. The park should be illuminated with a special focus on the paths. Light sculptures should be placed throughout the park and the structures from the former buildings should be illuminated.

10. When the ground starts to fracture and the area must be closed off vertical elements such as lampposts should be removed as they start to tilt.

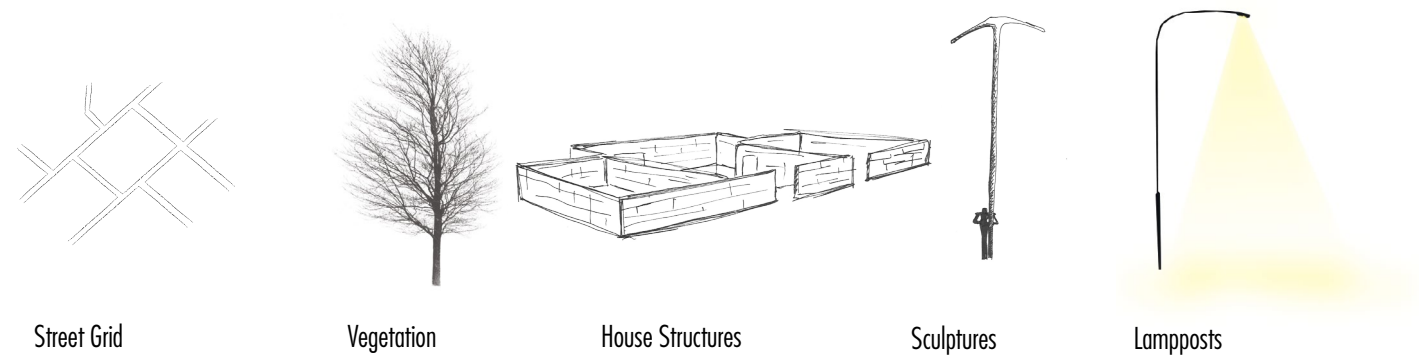
11. The management of the park should be intensely as long as the park is accessible, to prevent the area from being perceived as ruins or abandoned. When the area is closed off it will be maintained as natural land.

Time Line- When to do what

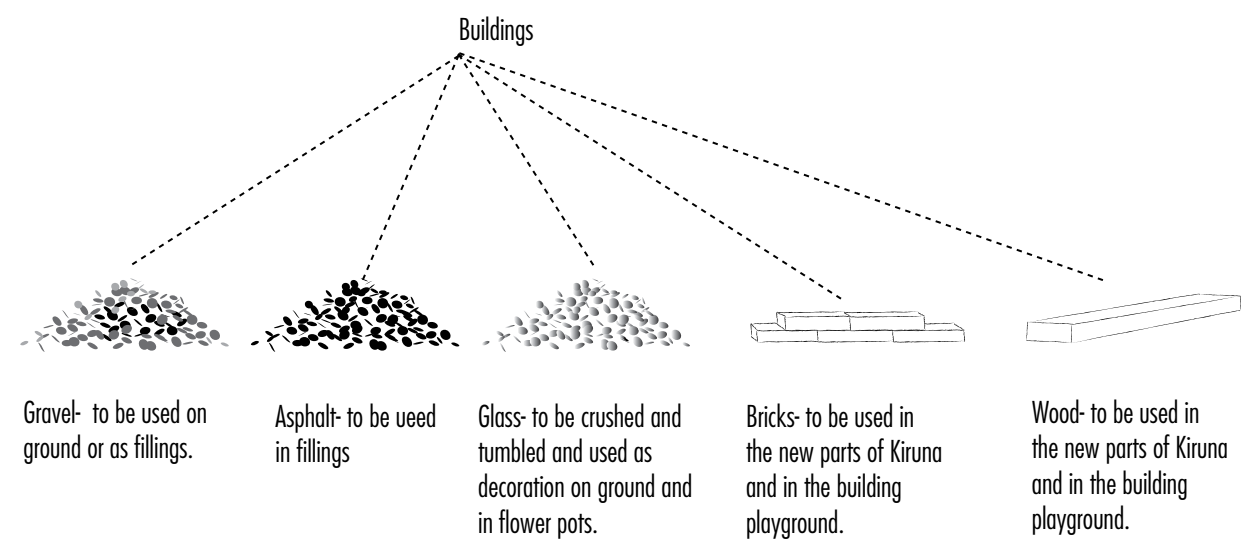


Componants and Structures

Existing components that will be used as the area becomes park.



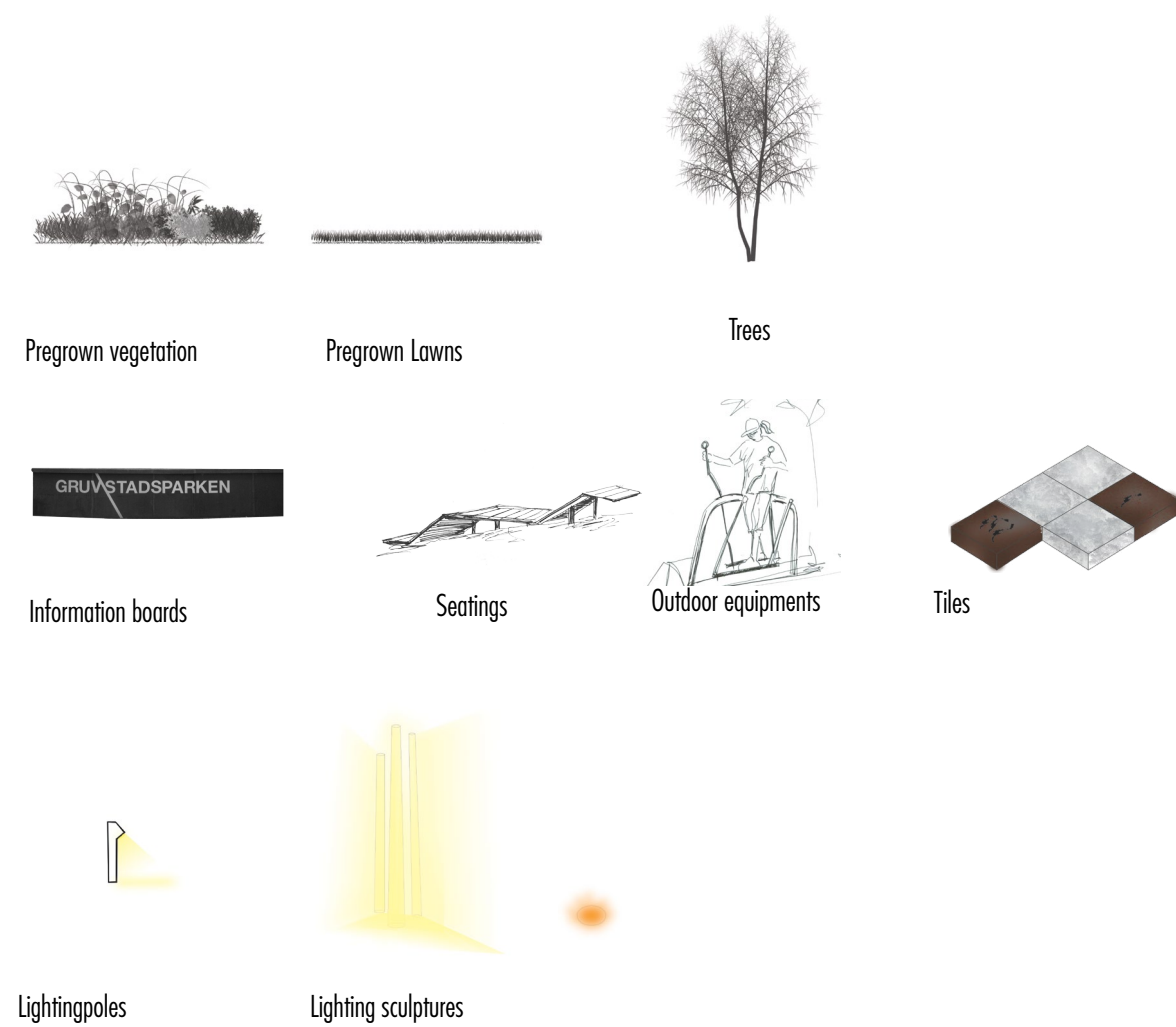
Recycled material



Removed material



Added material



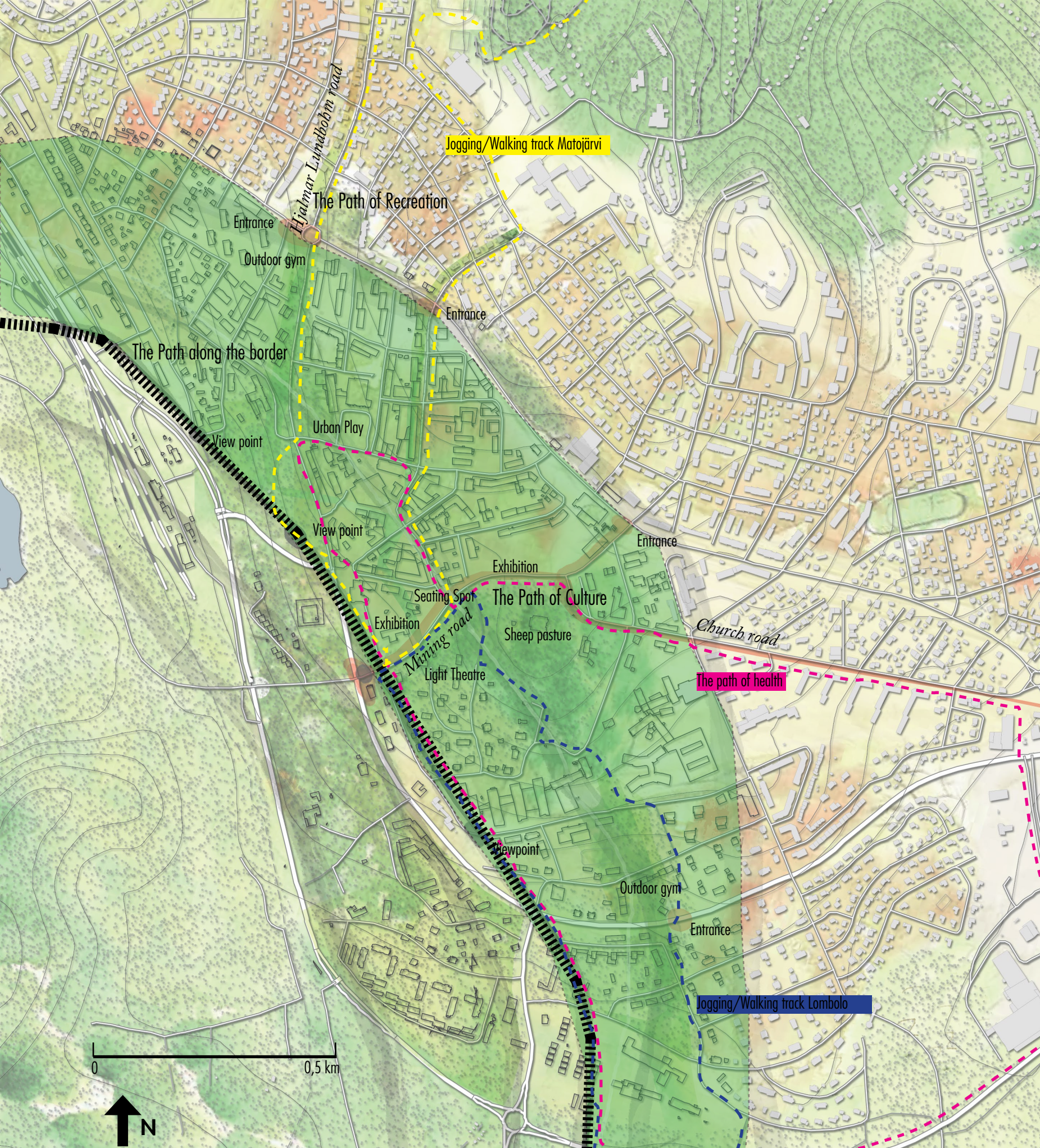


The Minecity Park 1, 2013-2023

The Minecity park is situated in the southwest end of the city. The demolition of the buildings in the centre and the rebuilding of the new city has started. New vegetation is planted along existing streets and the ground material is changed from asphalt to gravel.

The path of health, which runs through Kiruna today will pass through the Minecity park as will jogging and walking tracks that connects with Matojärvi and Lombolo.

Crushed building material from demolished buildings will be put in banks where future fence will fences will stand.

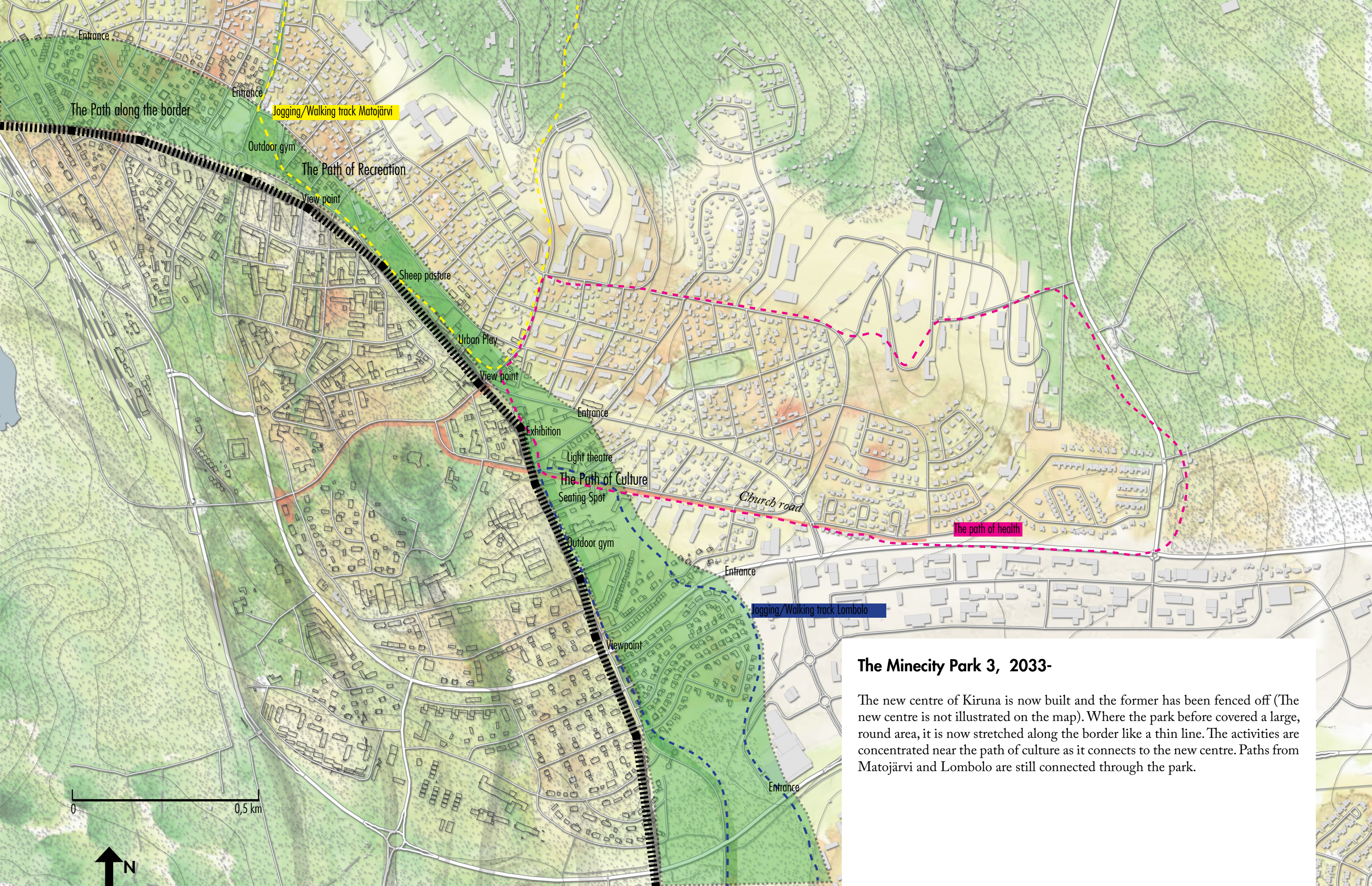


The Minecity park 2, 2023-2033

The first phase of the Minecity park is now fenced off and the buildings in the former centre of Kiruna has demolished. The new centre is under construction. The Minecity park covers a large area and the activities and functions of the park is situated near the paths of recreation, culture and the border.

The trees and plants have grown the past ten years and have established green avenues. Perennials and grass are planted on the ground of the demolished house blocks.

At the same time the preparation for the next phase begins, with plantings along the roads outside the park, and adding of tiles along Church road, which will be a part of the Minecity park after year 2033.



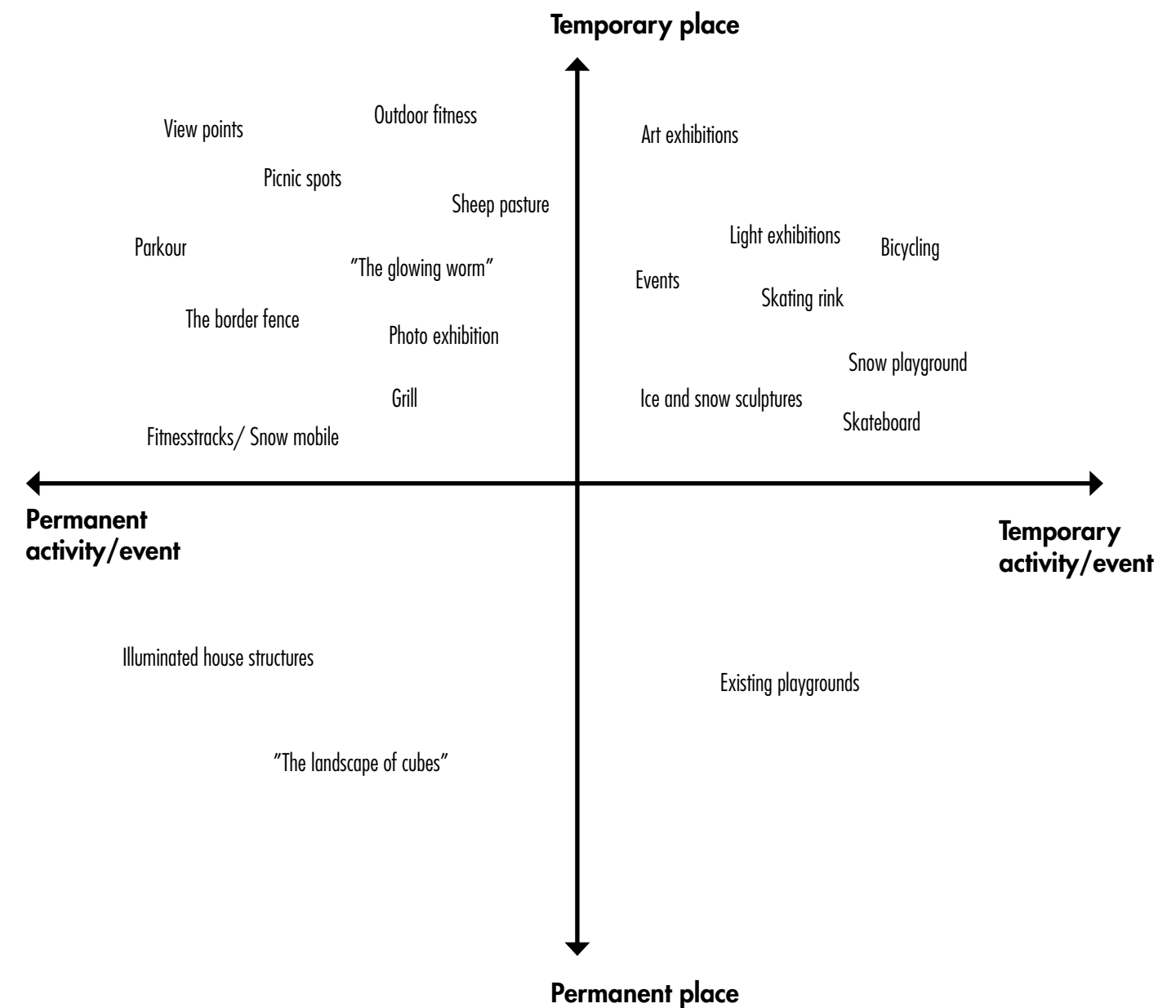
The Minecity Park 3, 2033-

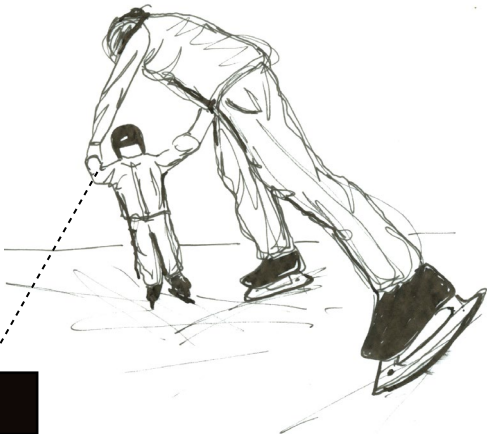
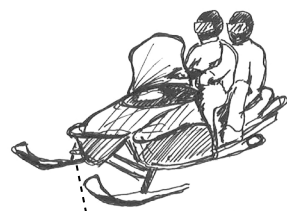
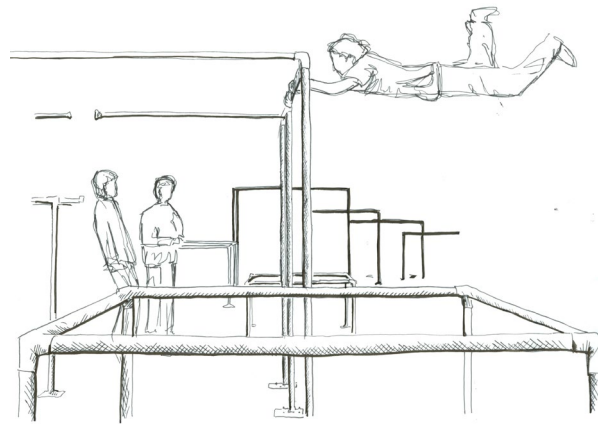
The new centre of Kiruna is now built and the former has been fenced off (The new centre is not illustrated on the map). Where the park before covered a large, round area, it is now stretched along the border like a thin line. The activities are concentrated near the path of culture as it connects to the new centre. Paths from Matojärvi and Lombolo are still connected through the park.

Activities and Events in the Park

The diagram shows proposed activities for the Minecity park. Most of the activities are suggested from the first phase of the park, such as skating rink, picnic spots, photo exhibition etcetera. I have proposed more activities as the second and third phase will occupy a larger area. An extended use of material such as snow/ice and light is proposed. Additional activities may be chosen by the inhabitants of Kiruna.

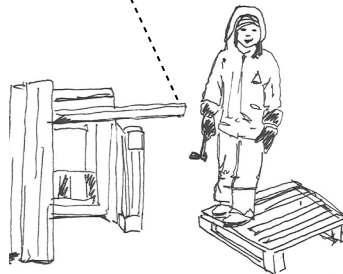
As the physical framework of the park will be temporary most of the activities is placed in the upper boxes of the diagram. These are more or less permanent activities which will be moved along with the border. Activities such as existing playgrounds and illuminated house structures and streets will be left standing or removed when the area is fenced off.





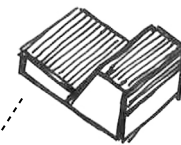
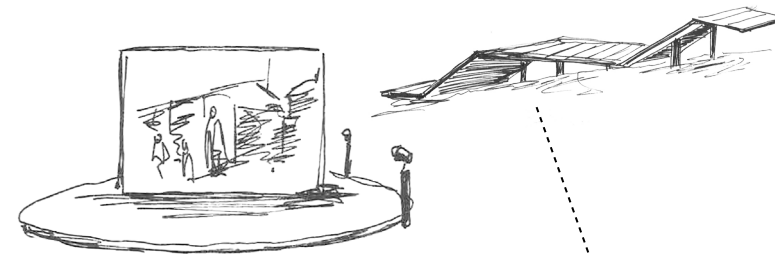
Urban Play

- Parkour
- Cycling
- Building Playground
- Snow Playground
- Ball sports
- Skateboards



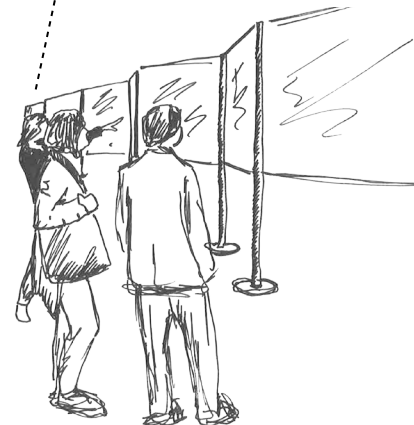
Fitness

- Skating rink
- Tracks for snow mobiles
- Outdoor gym
- Ski trails
- Jogging trails



Exhibition Square

- Art exhibitions
- Snow sculptures
- Photo exhibition



Seating Spots

Varied, informal seatings in addition to classic park benches.



Lighting Theatre

- Lighting sculptures
- Illuminated trees and structures.

The Path of Recreation

2013-2023

Hjalmar Lundbohm road



Vegetation should be added along the Hjalmar Lundbohm road before the area is turned into park.

2023-2033

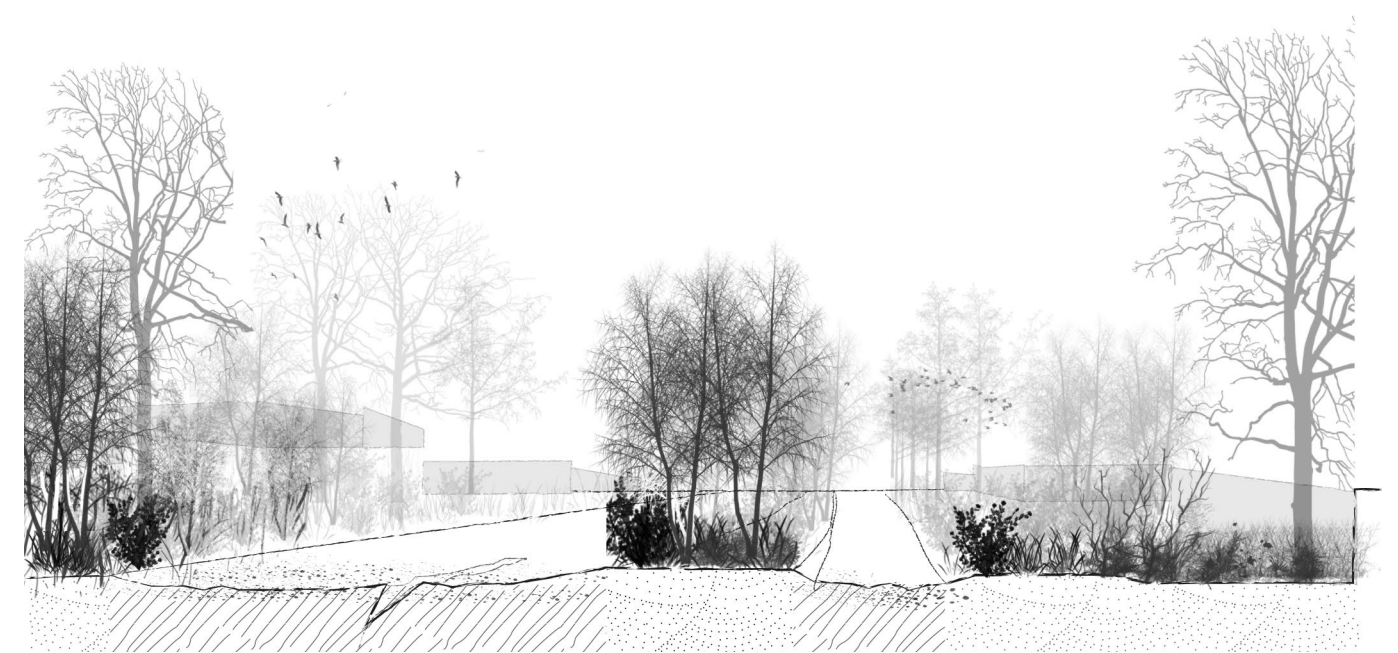
Hjalmar Lundbohm road



The buildings have been demolished and left stands structures of the former houses.

2033-

Hjalmar Lundbohm road



The area is now fenced off and one can no longer access it. Material such as lamp posts and benches have been transported to the new Minecity Park.

Vegetation along the Path of Recreation

Already from year 2013 a plan for new vegetation along the Path of recreation should be made. The first section shows Hjalmar Lundbohm road when the buildings still are standing and the Minecity park is situated in the south end of the city. The road has been narrowed and supplemented with plantations stretching from the recreation site of Matojärvi and Loussavaara down to Lombolo.

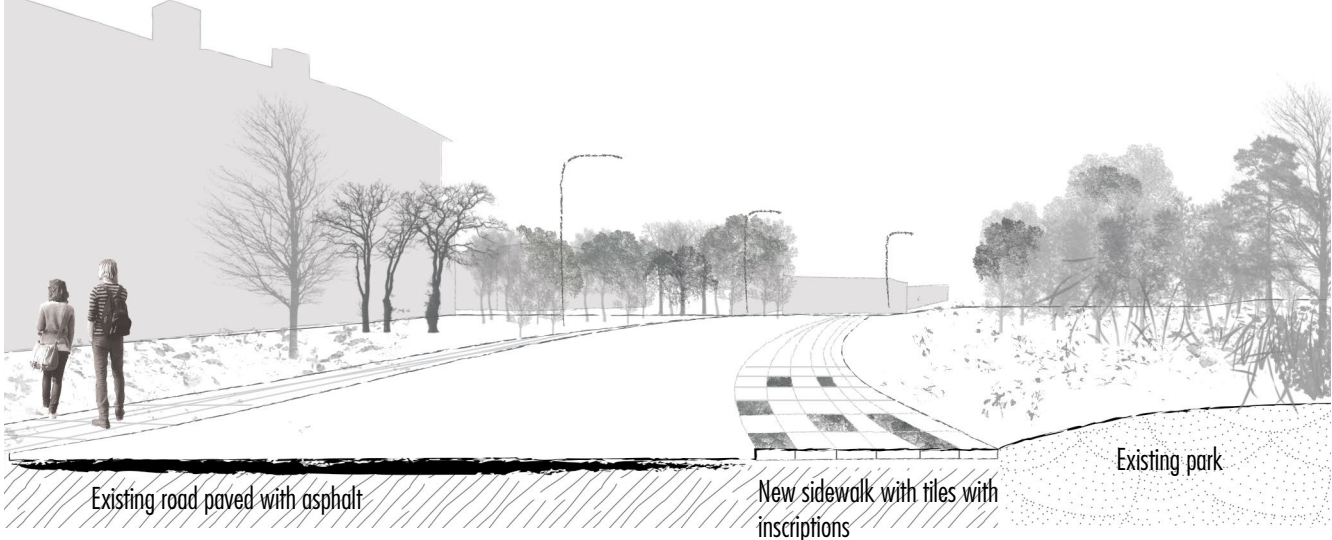
To establish a plantation with high values of both aesthetics and biodiversity, vegetation should be planted in all levels.

The highest level consists of fast growing trees, suited for the climate, such as poplar rowan and bird cherries in large sizes. Solitaire bushes, grass and perennials are covering the middle level and the ground. Pre-grown carpets of perennials and grass should be laid out, which will give a fast result and bring quality already during the first year.

The Path of Culture

2013-2023

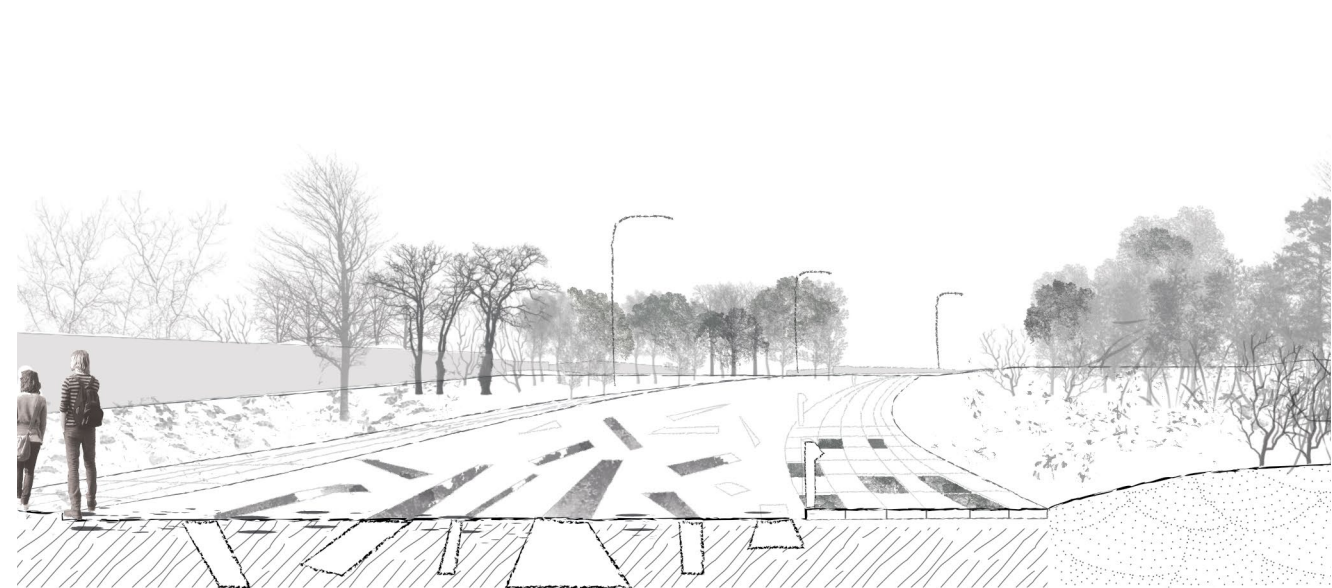
Mining road



The sidewalk along the Mining road should be remade with new in scripted tiles as the building still stands. Events such as temporary exhibitions may be placed along the street.

2023-2033

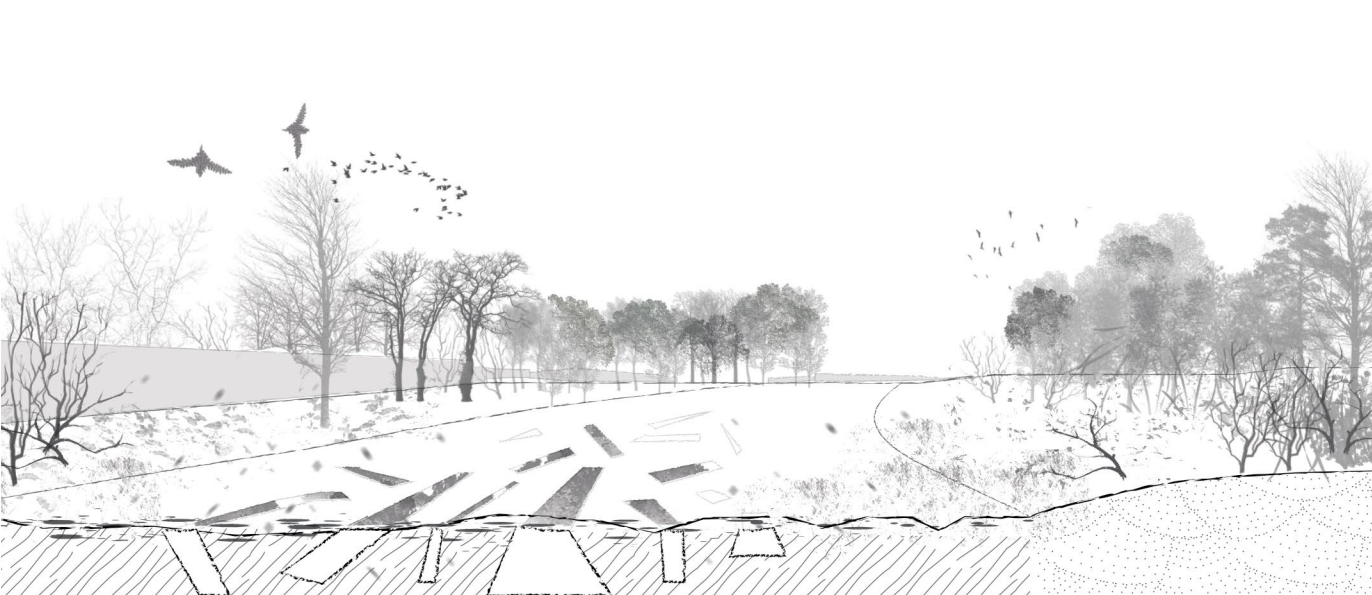
Mining road



As the buildings been removed or relocated and the area turned into park, asphalt should be replaced with gravel. The Mining road is decorated by large pieces of material from demolished buildings visible in the surface of the street. The lighting has been extended with lamp post, lighting sculptures and illuminated trees and house structures.

2033-

Mining road



When the area is inaccessible, the in scripted tiles have been relocated to the Church road for the nest phase of the park as well as the lamp posts and other element such as benches and exhibition boards. Left stands the structures from the former houses.

New Ground on the Path of Culture

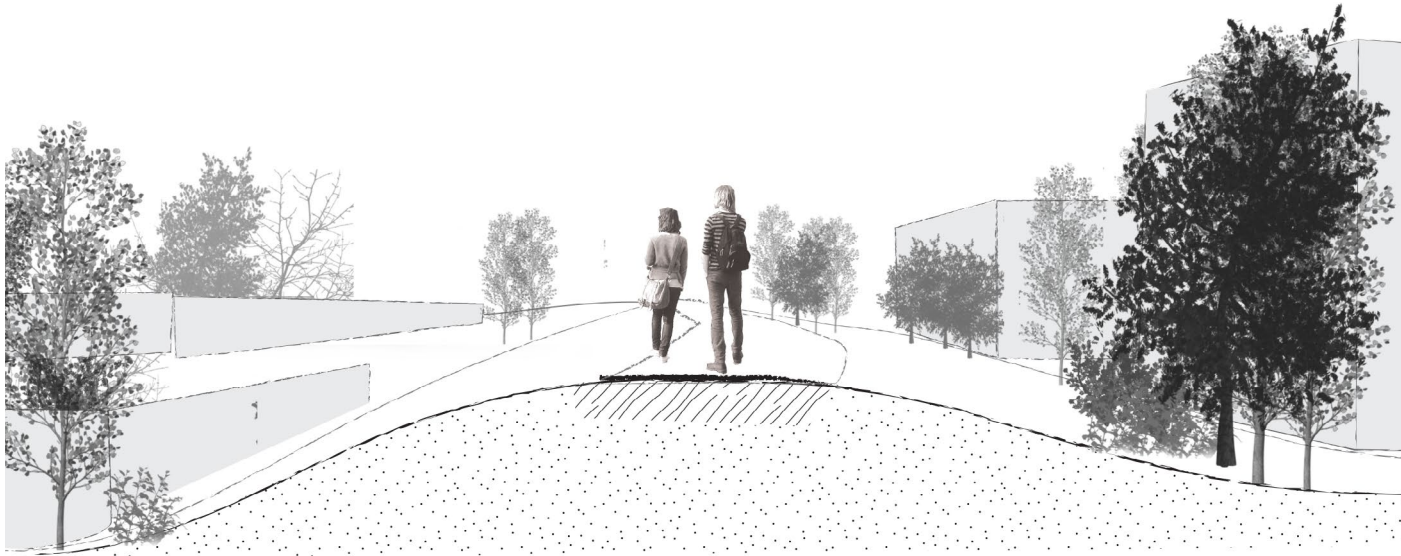
After the first buildings are demolished, crushed materials can be used as gravel on sidewalks along the Path of Recreation.

The sidewalk along Mining road will be laid with new tiles in corteen steel, as the material used in the first phase of the Minecity park. The tiles will be placed in a random pattern next to the other concrete tiles.

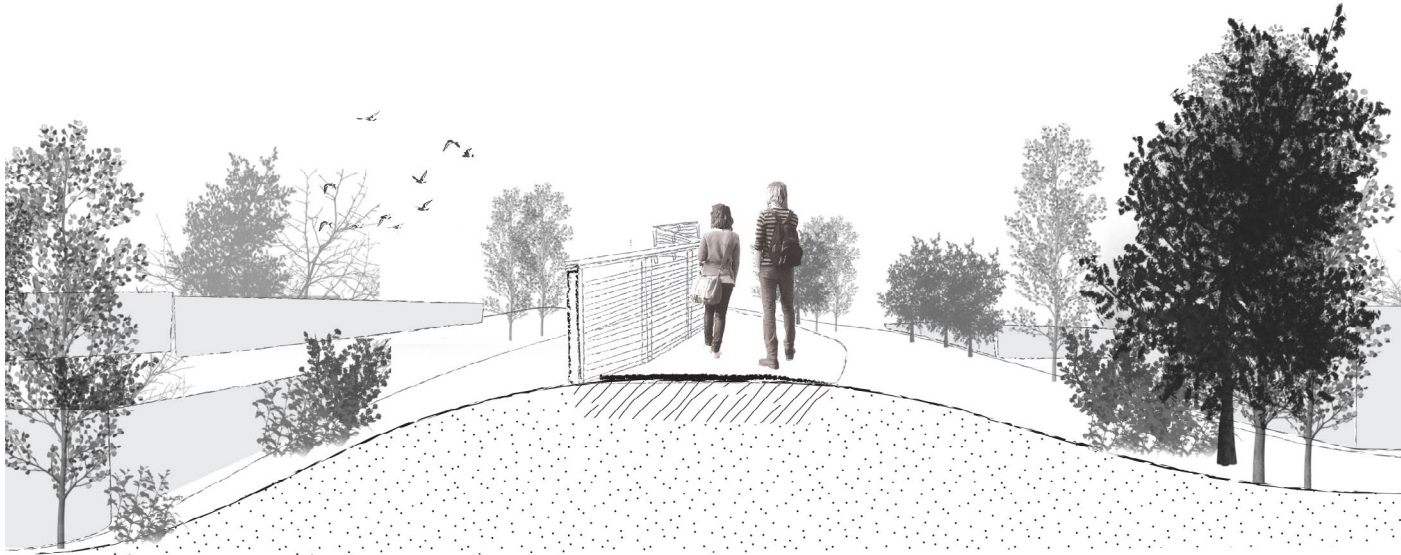
The corteen steel tiles will be engraved with names, dates or sentences that the inhabitants of Kiruna may choose. Each one can get their own tile and may engrave it with nostalgic memories or wishes and prospectives for the future. The sidewalk will lead from the entrance of the first phase of the Minecity park and follow the Path of Culture towards the new centre of Kiruna.

The Path along the Border

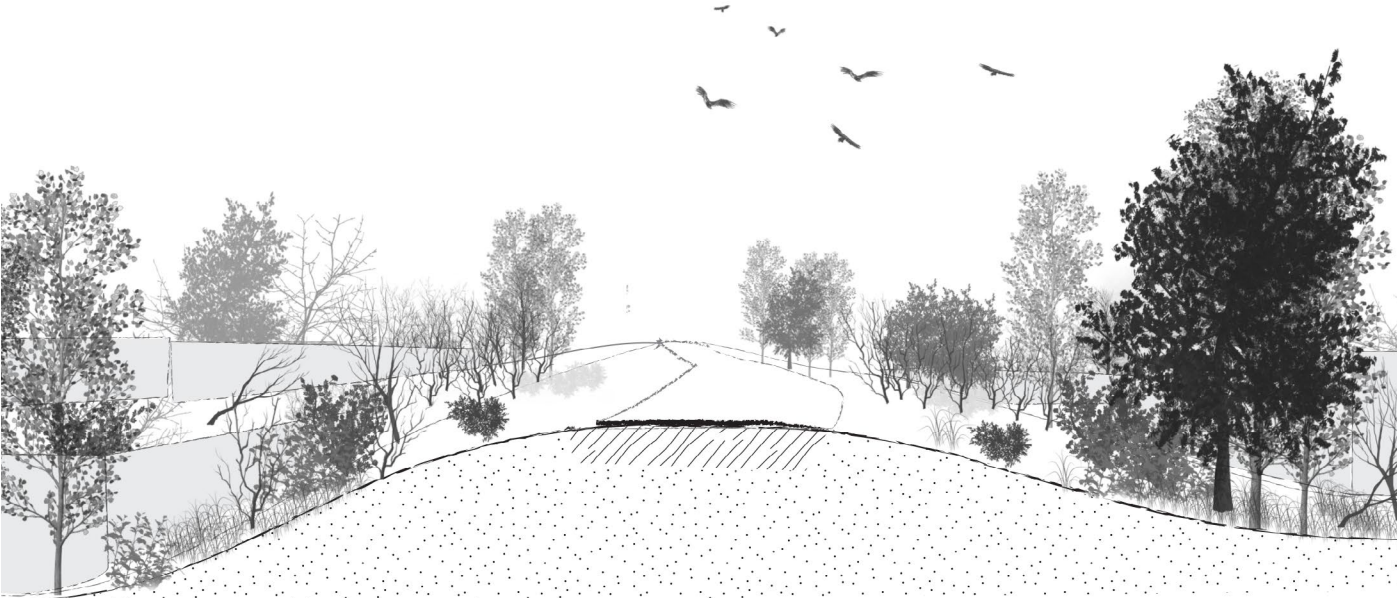
2013-2023



2023-2033



2033-

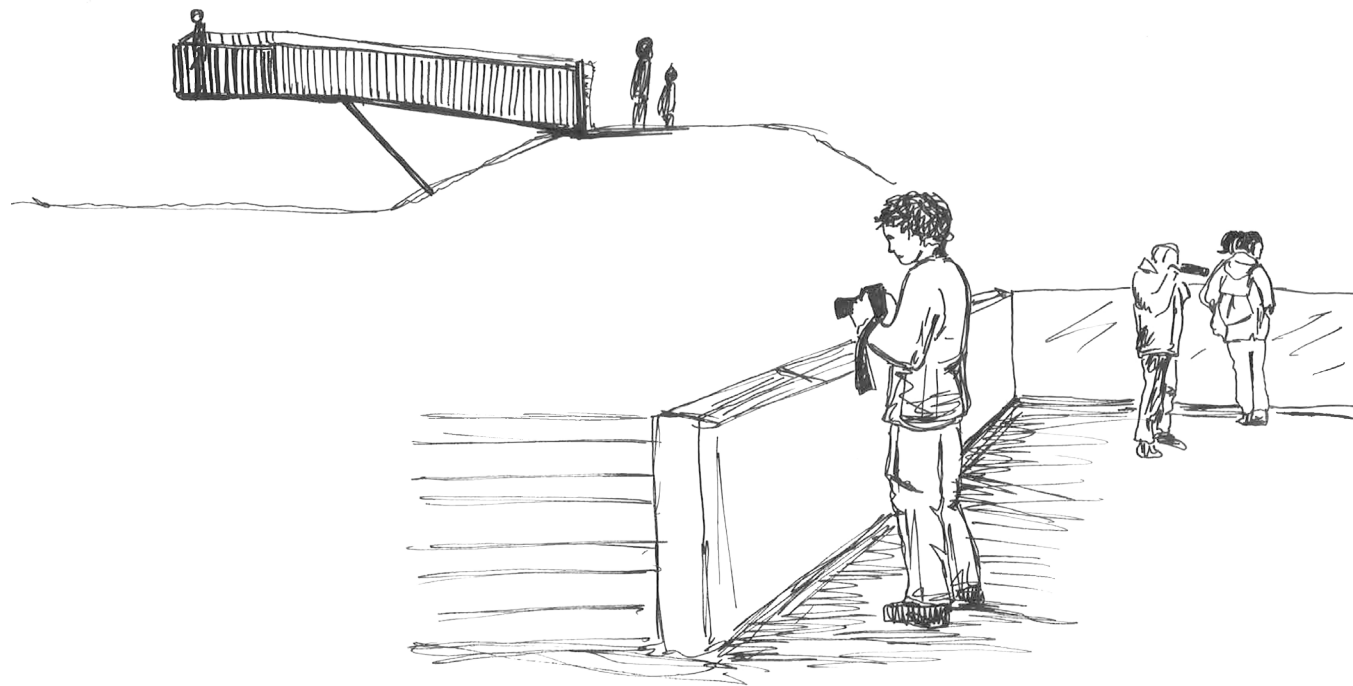


Building banks

The demolition of the buildings and the asphalt will generate an enormous amount of material that preferably should be reused in the area. Besides from using the crushed material as cover on the ground, it may also be reused as fillings in banks throughout the park. The banks should be placed where future fencing is predicted to be located. The banks will form natural edges when the area will be fenced in. Meanwhile the banks may function as shelters from bad weather, hence creating spontaneous and informal seating spots when the area is open. Once the area is inaccessible the banks will appear as traces in the landscape from former fences.



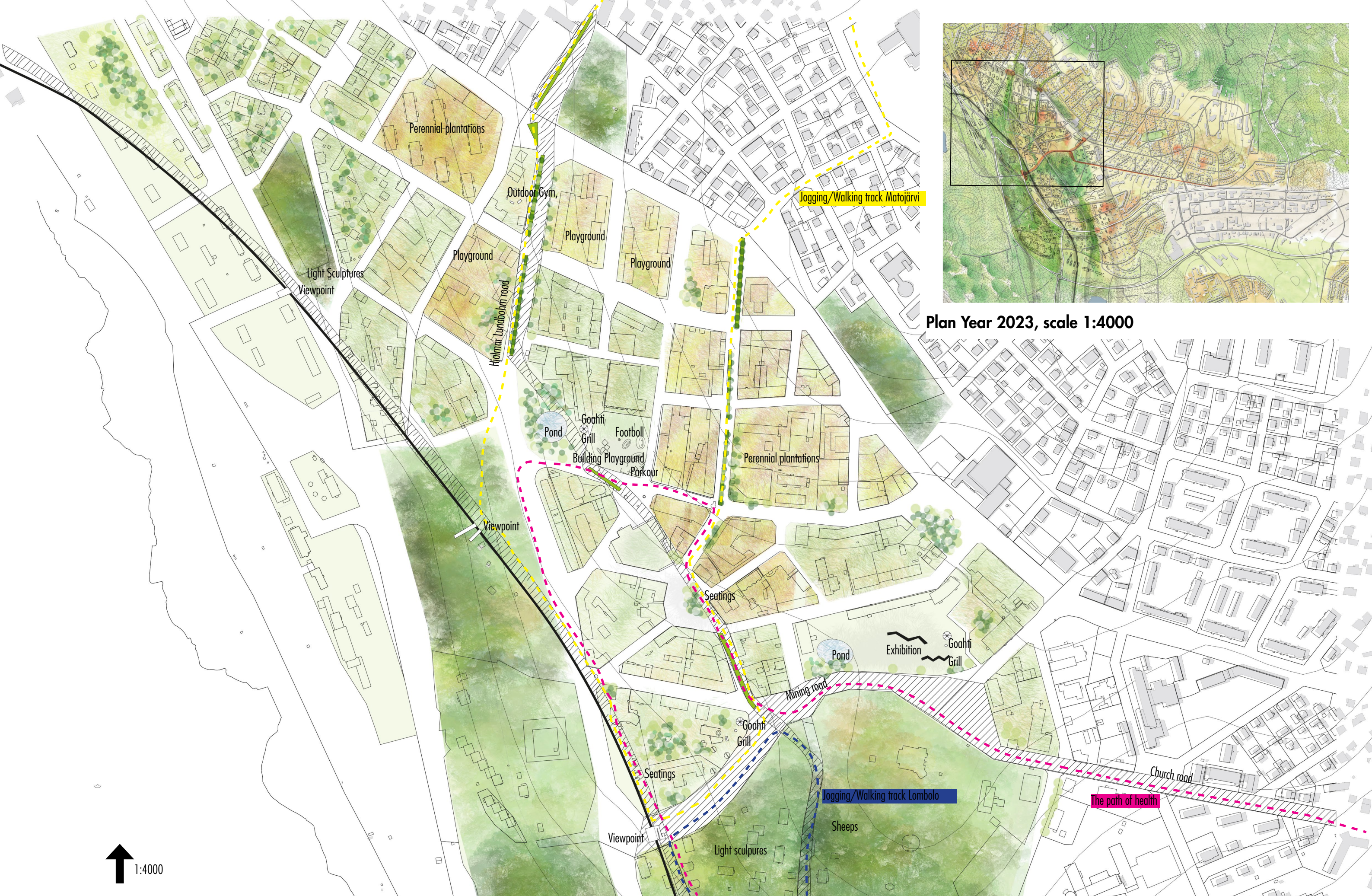
The banks provide shelter from the wind and offer warm spaces for informal use.



There should be different kinds of viewpoints along the border; piers extending out into the landscape or larger platforms that may accommodate many people and providing information.

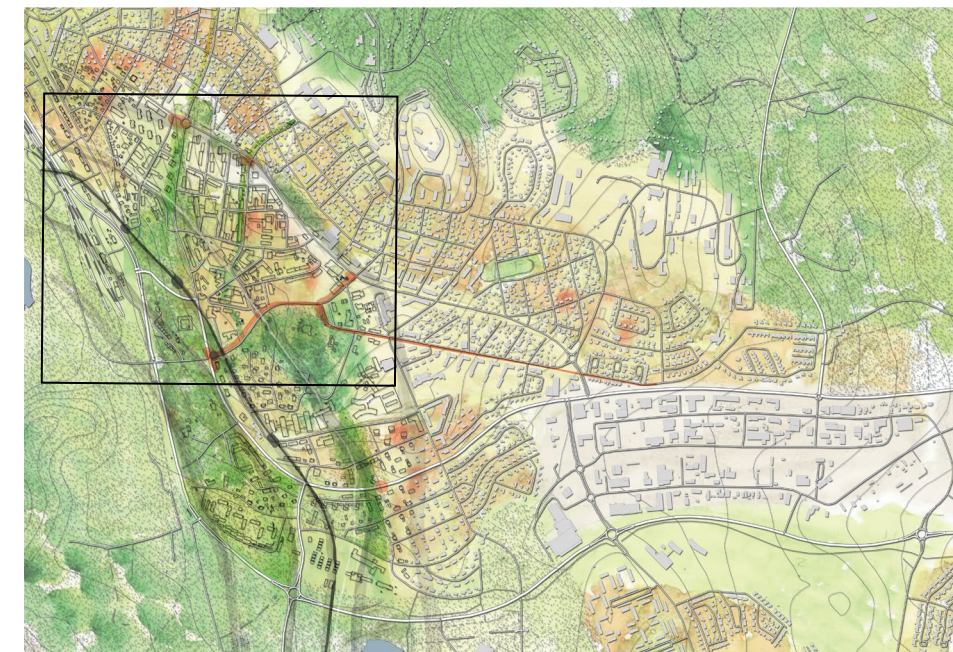
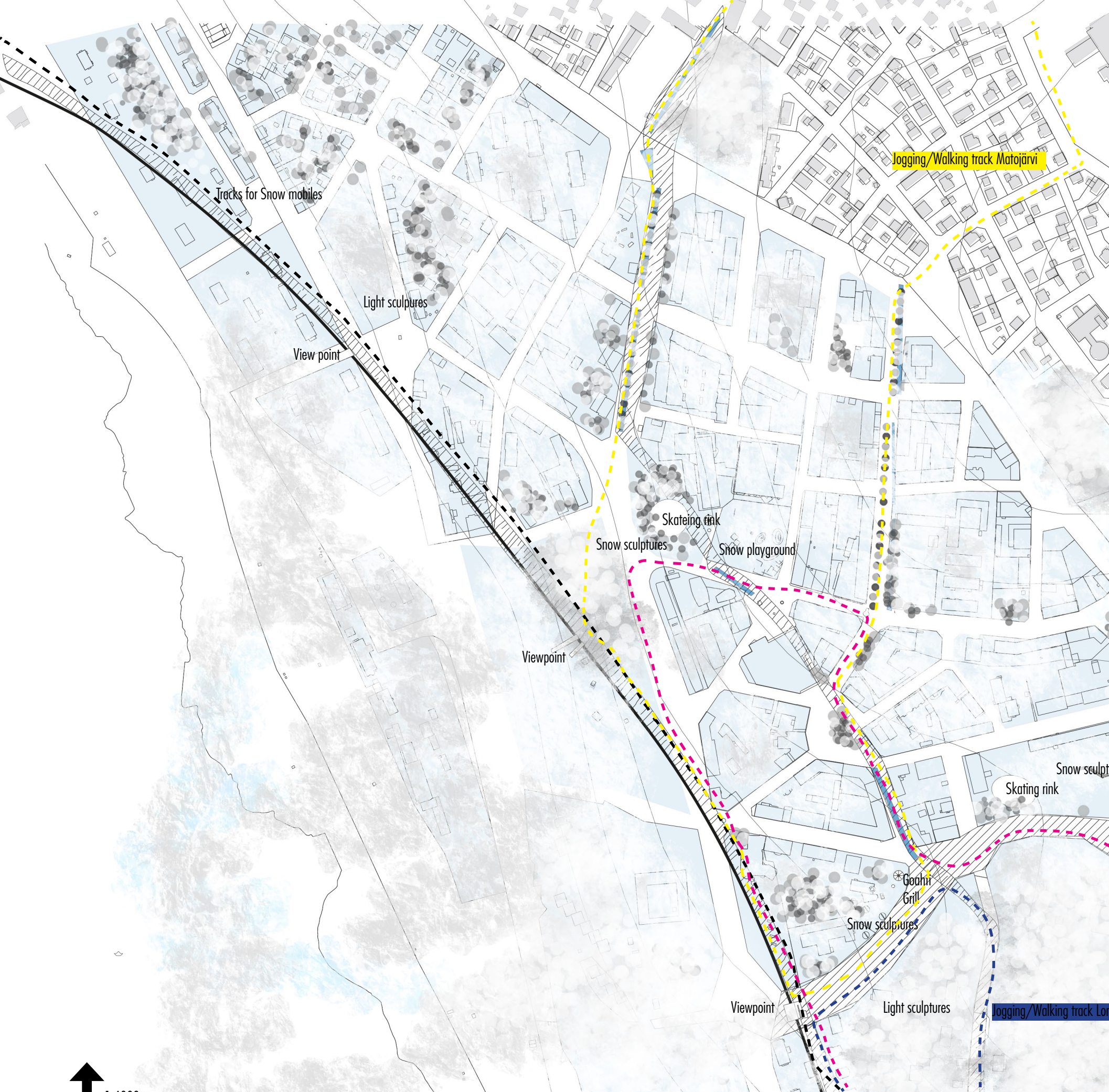


Drawing made early in the process to visualize thoughts of the border along the bank, with wooded fence and viewpoints.



Plan Year 2023, scale 1:4000





Plan Year 2023, scale 1:4000





Visions for the Future- The Path of Culture in 2023



Spring

After the dark winter the daylight has returned and as the ground is still covered in deep snow the landscape in the park offers activities such as skiing or playing in the snow-built playground. Sculptures made in ice and snow are lining the Path of Culture.



Summer

The summer has arrived with days of 24 hours of sun. The perennials around the park are flowering and the open lawns provides various types of ball-sports and other events. The Path of Culture houses temporary exhibition and events, as well as diverse groups of seating and picnic tables. Sheep and their lambs are grazing in the pasture of the Church park.



Autumn

The days are getting shorter, the temperature has dropped but the snow has not yet started to fall. The trees has changed colours and the perennials and grasses of the Minecity park has coloured the ground in red and gold. The Path of Culture still houses temporary exhibitions and events and the park offers activities such as parkour, skateboarding and other sports.



Winter

Towards the end of November the days has turned shorter and the snow starts to cover the ground. The accessible activities in the park is limited and it is much less populated. Various sources of light and illumination however provides interesting and beautiful sites along daily walks.

This part contains a discussion based on a literature review and reflections about the research questions, the process and the final proposal.



6. DISCUSSION AND REFLECTION

Discussion

Throughout the process of my design I have focused on a few different aspects in order to untangle the importance of a thoughtful design of shifting landscapes, on which I have grounded the theoretical perspective of this paper. The theory contains three strands; a) Space, place and Identity b) Designing and representing processes and c) The concept of nature in relation to the Minecity park. These have been the keywords when I have searched to answer the researched questions through a literature review. As follows I will examine the issues, as they are described in literature. Each topic is complex and could be further explored under other circumstances. This should not be seen as an overview of the topics in its entirety, instead I have been looking for literature that reflects on specific concepts that have been of importance in my reflections.

Space, Place and Identity

The case of the Minecitypark in Kiruna is dealing with transformed spaces, shifting meanings and erased places, therefore I have found it useful to reflect upon what constitute a place or a space. This became evident in my analysis of the transformation of important nodes and landmarks in Kiruna. I have used Henri Lefebvres theory on the production of space as an outline for my reflections. Lefebvre (1974) describes space, as constituted by three dimensions and that it needs to be understood in its totality. He contends that there are different modes of the production and describes three concepts of space which he calls *Spatial practice*, *Representations of space* and *Representational space*.

The *Spatial practice* is described as the everyday practice, the daily reality perceived through a physical connection to the space. The *Representation of space*, is the concept or theories of a space, it is about expectations and spatial visions for the future. The *Representational space* is the associated images and symbols that represent a space. It is based on experiences and relates to the perceptions and representations of existing spaces, it is connected to a defined room. It can be translated as the lived space (Lefebvre, 1974).

In the case of Kiruna, parts of all the spaces as described by Lefebvre will be erased. The most prominent may be the shift of the *spatial practice* as buildings will be removed, activities relocated and places fenced in, as well as the removal of the *representational space* where the lived space that constitutes Kiruna today will be reformulated and replaced by new spaces. It could therefore be important to handle the erased spaces with a humble design where the reformulation should be done by its creators, meaning involving the inhabitants in the planning process may be crucial for a successful result.

The physical structures, *the spatial practice*, in the Minecity Park will exist during a limited time (due to progress of the fractures on the ground), allowing them to play in more or less temporary roles. This becomes apparent when I have organized the activities according to permanent vs. temporary activities and places (see diagram on page 77). The majority of the activities have landed in the upper boxes of temporary

place, while the activities in themselves may be more or less permanent. Due to the uncertain physical framework of the park I have strived for a structure depended on flows rather than on fixed places, hence the proposed paths of the park as the main structure.

One of my initial questions were which evident values do the places in the Minecity Park contains? As the *Representational space* will be removed, the lived and experienced places and its associated images will be reformulated and this might impact on the collective identity or shared images of the city.

G.J Ashworth and Brian Graham argues that people call upon affinity with places or at least with representations of places while defining their identity. Even though such places are imaginary, they still constitute a powerful part of the individual and social practices where the material world is transformed into realms of meaning and lived experiences (Ashworth & Graham, 2005, p.3). In addition, they argue that because places are in continues states of becoming, senses of place must be related to senses of time, wherein the key linkage is heritage (ibid. p. 4). Huigen and Meijering (2005) argue that a place often derives its identity from the landscape or built environment, it is also derived from regional economic activities or products. They say that identity is often used for place marketing in tourism, where heritage is an outstanding characteristic, the “face” of the place (p.20). They refer to the process of attributing an identity to a place as the construction of place identity, claiming that place identity is firstly a social construct. They suggest that acknowledgment of an identity implies that being in that particular place makes one feel at home or at ease (ibid. p.21).

It can be argued that a city, a place, is a collective product, wherein ideologies are central for its identity, for the experience of a city as familiar and related to place (Nilsson, 2009. p.13). Kiruna can be depicted as a set of ideologies, wherein the inhabitants are being affected by these perceptions and ideologies when they now have to define what constitutes their city (Nilsson, 2009). The ideology of Kiruna is not only based on mentalities, gender and culture but also through visual experiences of material and form, where important parts of the identity are mirrored in public representations such as buildings and statues. Specific buildings or monuments constitute places that function both as geographic landmarks and as ideological marks. Through their prescribed meaning of heritage they formulate perceptions, which the residents of Kiruna may identify themselves with (Nilsson, 2009, pp. 63-80). Anderson (1993/1991) suggests that specific monuments can form the basis of an imagined community. As does Brian Ladd who argues that buildings and places are important for the shared identity and heritage of a city. Ladd claims that memories often are cleaved to the physical settings of events, and consequently buildings and places have so many stories to tell. How these structures are seen, treated and remembered sheds light on a collective identity (Ladd, 2008, p.1-2).

It is interesting to consider how the tourist industry in Kiruna brands the image of Kiruna as related to the epic landscape, the extreme and exotic. As the built places in the city are now under threat of disappearing it may be important to attribute the identity to the surrounding landscape instead of mirrored in buildings or statues.

Designing shifting landscapes

The theoretical concept of “shifting landscape” can be understood in various ways. Shifting may be replaced by dynamical, transitional or changing and may refer to seasonal changes or long-term development. Corner (1992) and van Doreen (2011) show examples on attitudes that a landscape always is a subject to growth and change; it is affected by short-term changes in seasons, and to a slower change in terms of ecological development. For the purpose of this paper shifting landscape is understood both as a shift in the functions and use of the landscape (as from city to park, to mine) and as short-time changes due to natural processes.

James Corner describes landscape as a “living biome that is subject to flux and change by natural processes over time” claiming that landscape cannot be frozen as a single moment in time (Corner, 1992, p. 148). Alan Berger also equalizes the city with a living organism, adding that the faster they grow the more waste (dross) they produce. Berger has developed the term Drosscape as a mean to elaborate on the design process of the transformation on former industrial sites (Berger, 2007). Ian McHarg claims that it is essential to understand the city as a form, derived from geological and biological evolution, existing as a sum of natural processes and adapted by man. The place is in the process of becoming and can only be seen through its physical evolution, which explains the present form (McHarg, 1968). Therefore landscape architecture is almost never at one certain moment completely ready, it is constantly transforming (Van Doreen, 2011, pp. 11-19).

Anuradha Mathur and Dilip da Cunha argues that the belief that nature can be controlled through calculations and technology has promoted a war against natural processes, it has cultivated an attitude to terrain grounded in the belief that land and water are separable. This has encouraged a landscape of hard edges and clear and distinct entities (da Cunha & Mathur, 2009, p. 4). They have in their project “Soak” dealt with the problematic issue on the soaking of Mumbai. Mumbai is accustomed to being soaked by the monsoon, however, the rains on the 26th July 2005, flooded the city and killed hundreds as parts of Mumbai went under water. Mathur and da Cunha argues that an estuary such as Mumbai, demands gradients, fluid occupancies and negotiated moments instead of walls, defined lands uses and hard edges. In short, it demands the accommodation with the water, a design with the monsoon instead of a war against it. “Soak” is a project that encourages designs that hold monsoon water rather than channel them out to the sea (da Cunha & Mathur, 2009, p. 4)

Ann Whiston Spirn argues that neglecting pertinent processes may lead to failure of function and expression. She claims that architects and landscape architects often tend to focus on form and material rather than process and when designs fail to be sustained it is often because designers have ignored the processes that shape them during and after its construction (Spirn 1998, p. 96).

Designing with a focus on processes and time, rather than on form and material is attended to by Høyer (1999), who describes landscape architecture as an “art of incorporating functional and aesthetic concerns within the peculiarities of a particular

location, inherently marking the character and specificity of the time and place” (p. 85). He describes the task to be to clarify unique and individual expressions of a place and its following transformation into new forms, an approach that he says must consider the dynamism of both the natural and the cultural world. He exemplifies the logical evolution of time, materials, spaces, structures, light and color, claiming every site is already unique and that local conditions such as weather, topography and light ought to inspire and generate new forms of design as needs and desires changes. On the basis of what already exist the designer do not need to make any wholesale renovation and Høyer concludes that what is important is that the place gives independence and presence to the experiential quality of landscape. At the same time allowing the design to change and adapt over time (Høyer, 1999 pp. 87-88).

Georges Descombes too considers his work in conditional terms, as constructions that are produced and transformed through persistent reshaping processes (Descombes, 1999, p. 92). Just like Høyer does, Descombes discusses weather, seasons, light and growth as never ending processes that are shaping the sites, and he is interested in investigating traces that exist as manifestations of dynamics, generated by different sources. He claims that those traces not only allows him to understand the shifts and modifications of sites in time, but also recognizes future potentials. He adds that it is not only terrain that changes with time but also the way people perceive it, noting that his work is just as much about restructuring an imaginative sense of a place, an idea as it is concerned with material and space (Descombes, 1999, pp. 92-93).

Spirn (1998) thus argue that landscape is complex and dynamic, it demands more than using local materials and imitating forms common in the regional landscape. She claims that to speak in context requires to distinguish deep and lasting context from superficial and to respond to the histories of each as well as to project these contexts into the future (p. 167). Spirn means that all that has happened and lived in a place contributes to a sense and identity; the place is a tapestry of woven contexts. She describes the landscape to be a play with many actors such as flowers, people, trees and rocks, who all come and go across the stage. The play might be a heroic story; epics design to tell tales about deeds and events of great cultural significance. Likewise it could be a lighthearted comedy or figurative poetry. One has to read and constantly reread the landscape (Spirn, 1998. p. 50).

Although Kiruna shows an example of an extreme shift in the use of the landscape it is thus not unique, instead landscapes are always subject to change and temporality, which the landscape architect must consider.

The Representation of shifting landscapes

One of my ambitions throughout the process has been how to represent my design. The shifting nature of the park made it difficult to depict it at one chosen time, as the representation would not be truthful. This is however a reoccurring problem in the context of landscape architecture.

Van Doreen (2011) acknowledges that landscape architects almost always intervene in existing situations and are dealing with very different stages of maturity at the

same time. Though, he claims there is a lack of coherence in landscape architecture rhetoric; temporality and dynamics may be features of landscape architecture, but the dynamics is often not visible in the drawings (pp. 15-19). Corner (1992) claims that the dynamism of landscape not only challenge the intentionality and meaning of landscape architecture, but also makes it almost impossible to represent and to experience it externally. Landscape cannot be reduced to a single point of view, neither spatially nor as a single moment in time (p. 148). Corner claims that although the experience of landscape is hard to visualize by drawings, useful and imaginative relations between drawings and landscape has evolved over the centuries. He discusses landscape and architectural drawings as three distinct and separate types; a) projection, b) notation and c) representation. He describes projection to be the direct analogies between drawing and construction and includes the plan, the elevation, the section, the axonometric and the perspective. The notations seek to identify part of a diagram including measured plans, sections and elevations and written specifications. Notations identify the parts that constitute it rather than portray or depict experience. Representation aims unlike projection and notation to represent a given landscape or a building, seeking to obtain the same experiential effects but in a different medium such as a pictorial perspective. A landscape architectural picture is a representation of an imagined scene, contrary to a perceived scene, and in turn the built landscape becomes a representation of the imagined picture (Corner, 1992, pp. 149-155). Van Doreen (2011) however, argues that the representation in landscape architecture is only a whole, complete set of drawings, text and oral explanation. He means that representation is often used where we might have said 'presentation', being the set of drawings you show to present a project (p. 9- 11).

Corner (1992) mentions that another difficulty in landscape architecture is the relationship of drawing to the production of the built landscapes. People other than the landscape architect do the actual work of building and construction. The landscape architects are caught at a peculiar distance from the elements that are elaborated on, such as plants, earth, water, stone and light. He states there is therefore a discrepancy between what is represented and what gets built (pp. 144-145). Thereto, van Doreen (2011) argues that there are diverse palettes of other actor's co intervening with actions that are often not known. Suggesting foreseen and unforeseen interventions will affect the landscape we ultimately get. He claims that therefore every landscape drawing is cheating us, as it suggests a landscape that probably never will be there in exactly that given form (van Doreen, 2011. p. 11).

A static representation of landscape not only cheat us, it may in addition cause problems when the landscape do not behave as it is represented. Da Cunha and Mathur (2009) argue that the uncritical acceptance of the line between land and sea has brought Mumbai the flood of 2005. They describe it to be more than a failure of a drainage system or a failure of planning and administration; rather it is a failure to visualize a terrain (p. 39). The authors have elaborated on the same issue in their book "Mississippi Floods- Designing a shifting landscape" where they have made a journey through the meanders, flows, banks and beds of the lower Mississippi and have explored the images that capture this dynamic landscape including maps, paintings, diagrams, data sheets, construction drawings, photographs etc (da Cunha & Mathur, 2001). The premise is that images are projective rather than descriptive, and their truth

lies not merely in what they portray but also in what they leave out. Despite evidence of the many former paths and abandoned channels of the Mississippi, it was decided that the political boundaries of the river should be marked on its "centre line". And therefore efforts have been made to keep the Mississippi focused on maintaining its position. Through this, a conflict has arisen between the river seeking its own level and the Corps of engineers determined to define those layers (da Cunha & Mathur, 2001). The authors describe the view on Mississippi as an object rather than a landscape of flux, and that the public rarely gets to experience this shifting landscape, except perhaps in flood when its magnificence instead is tinged with the tragedy of its devastation. The war on Mississippi, between the settlement and the river is now an everyday practice, and while it continues da Cunha and Mathur requires an understanding of the representation of the river, beginning with flux instead of flood (da Cunha & Mathur, 2001, p.152-153)

Nature and Culture

The Minecity park is a state in time; it is the borderline, the period between city and industry. The aim is to offer valuable and attractive substitute to the city, a buffer between the city and the mine, hence the idea of parkland. The word park may however suggest certain qualities and may include certain preconceptions about how the area will appear and one might wonder whether the area truly can live up to that.

The first phase of the Minecity park mainly consists of places that already are parks today, which makes it easy to agree on the concept of Minecitypark. It is however more difficult to imagine the concept during the next phase, when the first part no longer is accessible and the Minecity park is situated in the former city centre that are now characterized by buildings and pavement. If the concept of Minecity park shall include the same qualities throughout all phases the perception of park and greenery must be discussed and efforts must be taken to raise the recreational values in the paved zones today. Especially since the subarctic climate makes all kind of establishment of greenery rather slow.

The proposal for the first phase of the Minecity park (under construction by the LKAB and Kiruna municipality) includes no additional vegetation; it suggests that nature should have its own course. To let the nature take over, however, contradicts with the stakeholders vision to diminish the decay. Ever since LKAB has taken over the management of the park the maintenance has been made more intense. For example the shovelling of snow in the park has been upgraded to the same priority as the streets in the inner city. This is the opposite of "nature taking over" since the area is actually more firmly controlled now than before the birth of the Minecity park. Thereto, natural processes and ecosystems will be obstructed since animals will be prevented to enter the area with the future fencing. However, the vegetation will grow freely and may eventually turn the area into what may appear as a wild zone.

To let the nature take over in the Minecity park does not give a clear picture of what the area will become, since the term of nature can be recognized in numerous ways. In my analysis of the landscape where I have categorized the greenery in a matrix showing strict and wild (see page 50-53), issues regarding wilderness and nature have

emerged. What I refer to wilderness is rather a perception of the character of the park rather than an untouched wild nature. It stresses the question on what is perceived as nature.

John Dixon Hunt divides nature into three types, the first, the second and the third. The first nature is described as the wild and unknown; it is thus very complex since different cultures will identify the wilderness differently. One criterion of nature is its hostility and “otherness”, is has also been used to describe places to locate mysterious and fearful presence of the gods (Hunt, 2000). Hunt claims that during the 20th century the first nature for some time only has existed as an idea, since many people probably never have moved out of the second nature, which is described to be the cultural and agricultural landscape. What once were wild parts of the globe have rapidly disappeared or are threatened with elimination; hence areas of wilderness have become highly valued (Hunt 2000, pp. 51-57). The third nature is described as the opposite to the unmediated, untouched and primal first nature. It is just like the second, brought into being by deliberate human management only where the second one lack what we'd call design the third nature is brought by human interventions that goes beyond what is required by the necessities or practice of agriculture or urban settlement. It is designed with the wish or need to make the site beautiful (ibid. 59-63). The design can very well be intended to replicate the first or second nature and it may be difficult to separate it as a designed garden/park. For example Frederick Law Olmsted's design of Central park inherit the three different scales of nature differentiated in the regular, the pastoral and the wild zone (Hunt, 2000, p. 51). Spirn (1998) describes how many landmarks of landscape architecture are assumed to be either works of nature or unforeseen products of culture. She describes how Olmsted left a legacy of wonderful places, such as New York's Central park and the Niagara Falls or Yosemite, which few recognizes as built landscapes. Many people are startled to learn that Central park was constructed or how the extensively experiences of Niagara Falls and Yosemite are shaped through design (pp. 53-54).

However, Hunt emphasizes that the arithmetic of three natures is symbolic rather than literal or prescriptive, he stresses that the third nature is not necessarily privileged the other two, instead the reckoning of three natures indicates that a territory can be viewed in the light of how it has been treated in time and space (Hunt 2000, p. 35). Hunt argues that we best recognize and understand any one nature by its relationship with the other two, by that we can conclude that any notion or interpretation of nature is relational and depended on its context. Hunt states that modern writings on garden and landscape architecture generally have neglected the view of garden as part of a greater landscape and as a result we tend to miss the importance of setting and the understanding of a garden in a topographical and conceptual context (Hunt 2000, p.35).

An interesting example on our perception of wilderness or nature is the case of *Gyllins garden*, described by Qviström (2011). *Gyllins garden* is a park in the peripheral of Malmö, a city far south in Sweden, on fertile agricultural land, a very opposite to the context of Kiruna. It is a former plant nursery that was abandoned, left in decay and is now turned into urban settlements. Whereas the Minecity park in Kiruna will transfer from city to park to industrial land, *Gyllins garden* hence go the other way

around. When the plant nursery was shut down and the property taken over by the municipality, green assets such as windbreak plantations, fruit trees, hedges and shrubs where left as living ruins. While waiting for the abandoned area to be turned into housings *Gyllins garden* changed when neighbours started to appropriate the garden for recreational use and the seemingly wild character of the place qualified as a loose space, meaning a place that is open for personal interpretations and actions (Qviström, 2011). This has given rise to some difficulties when the municipality recently started to build the area and to turn parts of it into a park. Qviström has interviewed some of the neighbours that has been using *Gyllins garden* for several years. According to him many are concerned that the wild character of the garden will be taken away when it is turned into a park. For year's people have visited *Gyllins garden* for the purpose to be on their own and philosophize, or to pick elderflower, forsythia and berries, prune the shrubs and children have come here to play more freely. Qviström notices that the introduction of a spatial framework in the area generates a domestication of the wild character and he says that this process illustrates the difficulties in handling the qualities of urban wilderness. But he says that the recognition of the informal use and the green values as a nature-park, the ruins of the place and the every day use has managed to break down the splitting between nature and culture (ibid). More solutions for overcoming the dichotomy between nature and culture are also requested by Kathryn Moore who stresses the need to redefine nature as the whole thing and the necessity to work with natural processes rather than physical forms (Moore, 2011). More (2011) argues that landscape not only represents the physical context but also reflects our memories, values and the experiences we have of a place.

The example with the Minecity park, with its historical traces of culture and its subarctic surroundings (as could be described by Hunt as a first nature), could just as *Gyllins garden* visualize an example of a fascinating unit of nature and culture wherein the term Park becomes a complex illustration of the third nature, consisting of both social structures and replicates of wilderness.

Conclusion

The very nature of landscape architecture involves dealing with dynamics and change, thus the design must focus on processes rather than static material and form. Local conditions such as soil, topography, wind and light shapes and constantly reshapes any given site; therefore the designer must be coherent to every trace in the landscape by means to perceive the future. Thereto every site is constituted by happenings, social constructions and individual perceptions of the visitors. The concept of space and place is complex, and spaces comprise different modes of creation wherein the lived space is as important as the actual appearance of the space. Identity, nostalgia and lived memories are often linked to buildings and spaces and these sights may contribute to the creation of a collective identity of a city and an imagined community. As in the case of Kiruna, where transformations change these structures and impact on the lived space, efforts must be made in order to maintain or to reformulate the cultural heritage of the landscape.

The complex nature of landscape architecture is further complicated when it is to be

represented on a two dimensional paper, wherein the changes of space and time as well as the experience of a place is very limited. These are problems that landscape architects struggle with in any given case or scenario. The case of the Minecity park in Kiruna, with its limited time frame and the precarious situation, sheds light on the difficulties in depicting the design in one frozen moment of time. Thereto the Minecity park is an interesting example on the complex meanings of nature where the future use and perception of the park will be interesting to follow.

Reflections

I started out my work with the aim to get a deeper understanding on how to design a landscape in transition, in the end of my process I'm now reflecting on whether it has provided me with answers or left me with more questions. The choice of Kiruna as a studied example has however forced me to think in new ways in designing and drawing which undoubtedly will be useful in my future work as a landscape architect.

The open process.

I started out with a curious approach to the issue and to the case of Kiruna and have intentionally decided not to take on any theoretical approach before I've made my design. I thereto tried not to get stuck in the visions, scenarios and decisions taken by the municipality or LKAB. My aim has been investigative rather than targeted. This has enabled me to constantly reformulate my task, which has made the journey much more interesting and the design more unlimited. The investigative approach has however made it much more difficult to conclude since new questions and issues constantly have reoccurred.

The fieldwork

One of the reasons for choosing Kiruna as a case, was its location and contrasting conditions to what I've been used to work with in landscape architecture and I decided early in the process that it would be difficult for me to make any proposed design without getting to know the city better. Spirn (2008) argues that trying to read a foreign landscape is like trying to read a foreign language; to read a landscape deeply, one requires local knowledge and on foreign ground one needs an interpreter (p. 4). My monthly stay in Kiruna has enabled me to read the landscape better wherein photographs, sketches and written notes of sights, sounds, smells and conversations have constituted my data. Without the fieldwork the sensational approach to the place would be left out and my design would inevitable have come to a completely different result. As concluded before, the designer must be coherent to every trace in the landscape, such created by the local conditions, in order to focus on processes rather than form, thus the landscape designer must be familiar with the local conditions. I do not; however believe that this suggests that it would be impossible for a landscape architect to create a successful design on foreign ground. Nonetheless, I believe that it requires a deeper understanding of the site, and this has been the purpose of my visit in Kiruna.

As for the practice during my stay I decided to follow a previously made schedule in which I had a set up certain rules. The rules involved taking the same paths and being at certain places at the same time every day while observing the urban life. This enabled me to better identify patterns in the every day life of Kiruna, which I have used later in my proposal.

My proposed design

The intention was to make a design for the park that would be flexible and would consider different scenarios in the uncertain future of Kiruna. There are some aspects on which the park is particularly depended on and this regards the future process and location of the new city. If the new houses are not built according to the time frame, the creation of the park will be postponed, as the old houses will not be demolished in time. This may suggest that the time frame between the city and the mine will not be long enough to be able to sustain parkland. This was one strong reason to why I in my proposed design have placed the important activities along existing roads and paths and decided that the process should start from this year, and not wait until a given time. This means that the park along the roads will bring attractive qualities to the city even if the Minecity park not will exist during the proposed time. I did not want my design to be depended on demolished buildings or built spaces. Therefore the existing street grid has been the foundation of my design. An extension of the proposed paths into the housings area around Matojärvi and Lombolo will raise the qualities in these areas and not only in the bound area of the park or the new city. To establish the parks along the streets does not either demand a reworked land-use plan.

The design of the new city is another aspect that may impact on the design of the park. At the time for my visit in Kiruna and when I started to make my design for the park, the ten proposed designs in the architecture competition were exhibited in the city hall of Kiruna. The winner had not yet been decided, I only new the approximate location. This meant that I had to make a design that, even though I wanted it to relate to and connect with the new city, would have to be independent from the proposed designs. I believe this was actually fruitful for me since it made it impossible to base my design on accurate locations, streets or functions of the future city, the final design may therefore have become more flexible. As now, when the winning design is announced I cannot find any problem for my design to function along with it. This suggests that my proposal may be flexible enough to function with a remaking of the proposed design as well (as the proposed design is not fixed yet, the winning team will continue to work on it). The only thing that would make my proposal a bit problematic is if the location of the new city is set in a completely new direction. This would however only mean that the Path of Culture in my design would have to be redirected towards the new location of the city; the basic principles would be the same.

The design proposal for the Minecity Park, "the glowing worm" and "The landscape of cubes" made in collaboration with the *National Public Art Council of Sweden*, have partly been included in my design. I have decided to integrate the "landscape of cubes" as I believe that visible structures of the former buildings will make an effective and characteristic attribute to the park. I have however not made any decision whether they should be made of gabions (as proposed in "the landscape of cubes") or not.

Although I do propose they should be three dimensional rather than patterns on the ground, as they should be visible when the ground is covered in snow.

The proposed design “the glowing worm” for the border between the park and the fenced area, will bring attention to the border, it will also bring qualities to the fenced areas where the viewpoint enables people to look out on the previous landscape, thus make the fenced area a part of Kiruna as well. Nevertheless, “the glowing worm” is only situated at one given site, and the border proposed to be constructed in meshed fence. The meshed fence may appear industrial and reinforce a perception of a demolished area left in decay.

I have in my proposal suggested that the border should be constructed in a material and form that blends in well with the surrounding. I have also suggested that additional viewpoints should be placed along the border to stage activity all along the border and not only at the glowing worm.

One of the ten design proposals for the new Kiruna, named “There is a crack in everything, that’s how the light gets in”, suggest that material from demolished buildings should be crushed and put in banks placed where future borders will be placed (Eccosistema Urbano and others, 2012). This is not only an efficient way to handle the huge amount of material, the bank will also function very well in the landscape, making the border a natural part of it. Thereto, the fencing of the area may appear less brutal if the fence is placed on banks that have already been situated in the area for a time. Consequently, I have suggested this strategy in my proposal.

Anna Sundin has in her master project in architecture made a proposal for the border in Kiruna (Sundin, 2009). She explores how to construct architecture that relates to dynamic processes. She proposes a fence, constructed in horizontal wooden bars with expanded pockets, hideouts and bridges as viewpoints to experience the landscape. The design and choice of material makes the border appears more thoughtful and less industrial than a fence in meshed steel would. Thereto, it is inspired by flexible structures in the region such as the reindeer enclosures, which makes it suitable in the landscape of Kiruna. I have been followed Sundin’s outline, and proposed that the border should be constructed in a similar manner with various forms of viewpoints.

I have decided to add new vegetation in my design, even though the limited time bound for the park and the climate of Kiruna imply it may not be possible for the visitors of the park to experience them full grown. This was another reason why I suggested that they should start to plant along the paths already this year. I have also suggested an extensive use of perennials and grass, which would bring quality earlier than a young tree would. During my first visit to Kiruna in September, one of the most striking features was the ground vegetation that coloured the fields in gold and red in the surroundings of Kiruna. I found this to be an inspiring substitute to the thick layers of snow that covers the ground the rest of the year.

I have suggested the use of pre grown perennials, bushes and grass, which comes in ready made carpets to roll out on the ground. There is however a limited range of products on the market, suited for vegetation zone 8. The large project of the

transformation of the city suggests there is a need to establish a plant nursery in Kiruna where vegetation suited for the local conditions can be cultivated. The plant nursery could provide trees in large quantities and ready made carpets of perennials, grass and bushes.

Lessons for the future

Whether my final design solves all the issues or answers all my questions or not, is not as important to me as how my design process has evolved. The complex situation of Kiruna and the Minecity park has challenged me to think and work in new ways wherein I have learned to be more sensitive towards the local conditions. It has forced me to think in new strategies and in new ways of representing my design. In this case I had to reflect much more on the drawing of time, wherein I have not only varied in scale in my representation but also in the change of seasons and time. In my sections and diagrams I have tried to illustrate principles rather than exact images and measurements, as I wanted the principles to operate on varied scenarios and restrain from depicting an actual place. I preferred to illustrate the surroundings by using collages rather than a pictorial or a bird’s eye perspective, as the collage does not suggest being exact. Van Doreen (2012) describes collages as open and interpretative type of drawings, which support the inherent uncertainty in our work.

As I have illustrated the plans and sections at different times, I have also illustrated my collages through different seasons. This has resulted in a large set of plans, sections and images that solely cannot depict the design but may together visualize the idea. I believe that the thoughts and reflections on time and change, in both the design and the representation, which I have focused on in the case of Kiruna, will be useful in all kinds of future design projects.

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