

VÆRBITT – An arctic dwelling in Longyearbyen

PROJECT DESCRIPTION:

Svalbard is changing in many ways and have been changing since the first mines were established over 100 years ago. From a coal miner society where men lived in simple barracks with their families on the mainland, to a society where tourism and research is the dominant source of income.

Today Longyearbyen is a small society with two kindergartens, a school, culture house and sports arena. The demography consists of nearly 50/50 men and women.

The society in the city is temporary. People does not live here throughout their whole life.

You must have a job and a place to stay if you are to live in Longyearbyen. Some people live there for many years before returning to the mainland, where they grow old, while most of the people are studying or working in Longyearbyen for a shorter period of time. This continuous replacement of locals makes the society different from the mainland.

People are more outgoing and often eager to know each other. It also seemed to us that they are very engaged in their community and in general resourceful people.

It is not only the social structures and way of living, which is changing in Longyearbyen. The climate is changing rapidly. Due to these changes, the weather is getting warmer, the soil becomes defrosted and avalanches is a problem for several houses in the small city. The barracks which today function as student accommodation are within the avalanche zone. It is decided that the students must be moved to another site within the city.

This new site is situated next to the city center; a place with a few restaurants and bars, some shops, grocery store and the post- and bank office. The location of the new site is also closer to the university center, unis.

We look at this as an opportunity to create a place where both students, workers and families can interact and have common spaces in different climatized areas and zones. We therefor want to investigate how these common places can be organized and how they can be used during the different seasons.

The climate at Svalbard is harsh and different from where most people on the planet live. We design spaces to meet and to shelter from weather by responding on our climatic research.

The project focuses on connecting the people studying, working and living in Longyearbyen, within one shelter. The project gives new housing for temporary students and workers, combined with unifying programs for all citizens. The thought behind this combination is for meeting to appear between these three categories; students, workers and families, but also to give the society of Longyearbyen space for programs that could benefit them all.

VÆRBITT

- AN ARCTIC DWELLING IN LONGYEARBYEN



DIPLOMA PROGRAM 2019
BERGEN SCHOOL OF ARCHITECTURE
FRIDA RØED SKAARA AND LOTTE BULL BERG

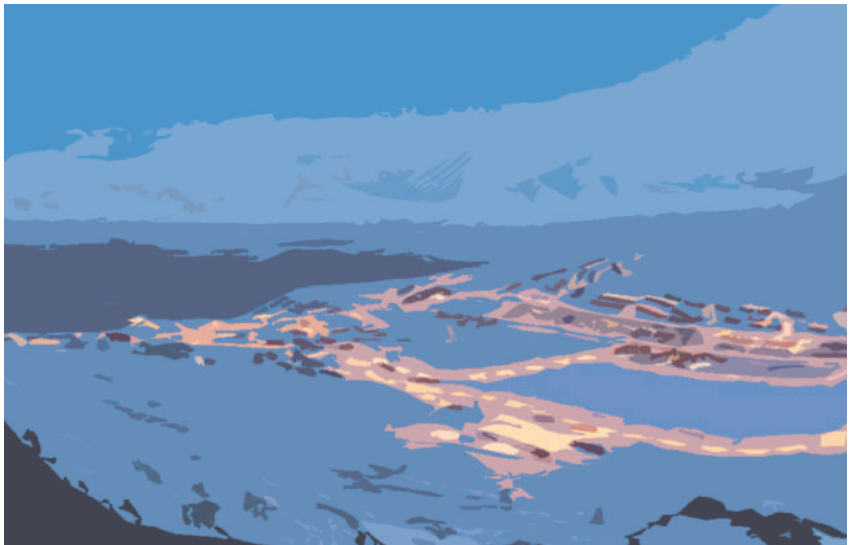


Illustration of Longyearbyen.

BERGEN SCHOOL OF ARCHITECTURE

TUTORS:

APP: Cristian Stefanescu

DAV: Marco Casagrande

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INTRODUCTION

Svalbard is changing in many ways and have been changing since the first mines were established over 100 years ago. From a coal miner society where men lived in simple barracks with their families on the mainland, to a society where tourism and research is the dominant source of income.

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It is not only the social structures and way of living, which is changing in Longyearbyen. The climate is changing rapidly. Due to these changes, the weather is getting warmer, the soil becomes defrosted and avalanches is a problem for several houses in the small city. The barracks which today function as student accommodation are within the avalanche zone. It is decided that the students must be moved to another site within the city.

Our project is about making new housing for students and workers in Longyearbyen. The site that has been given to this purpose is situated in the city center, next to the main street.

Because of this immediate relation to the urban life of Longyearbyen, the project will have unifying programs for all citizens.

The climate in Longyearbyen can be harsh, cold and dark. The project will give shelter from the weather but also be a place to experience the arctic climate.



Svalbards location in the world.

WHERE

74° - 81° N / 10° - 35° E

61.022 Km²

60 % ice

10 % vegetation

3000 polar bears

2562 inhabitants

Employment rate 85 %



CHOSEN SITUATION

Svalbard is the essence of the arctic wasteland; its an archipelago so rich in experiences that it is strange how it has still been preserved as a secret to most of the worlds population.

It is a place where people live close to extreme weather conditions, climate and wildlife. The archipelago is closer to the North Pole than to the capital of Norway, Oslo. It can safely be called the coldest and most windy part of Norway. An iced placed where there are more polar pears than humans.

Half of the area and most of the territorial waters are today protected by seven national parks and six nature reserves.

Despite the special and sometimes rather "inhuman" living conditions, people have settled at Svalbard through ages. Svalbardtraktaten, an international agreement, says that people from all over the world can settle at Svalbard. Half of the population is being replaced every four year.





Photo: Lotte B.B.



LONGYEARBYEN

Longyearbyen is situated 78° north and 15° east, and in the zone of the *middle arctic thundra*. It has an arctic climate and areas of stark landscape, and most of the land is frozen during the whole year. The landscape is hilly and quite bare, with no trees or much vegetation.



Photo: Store Norske

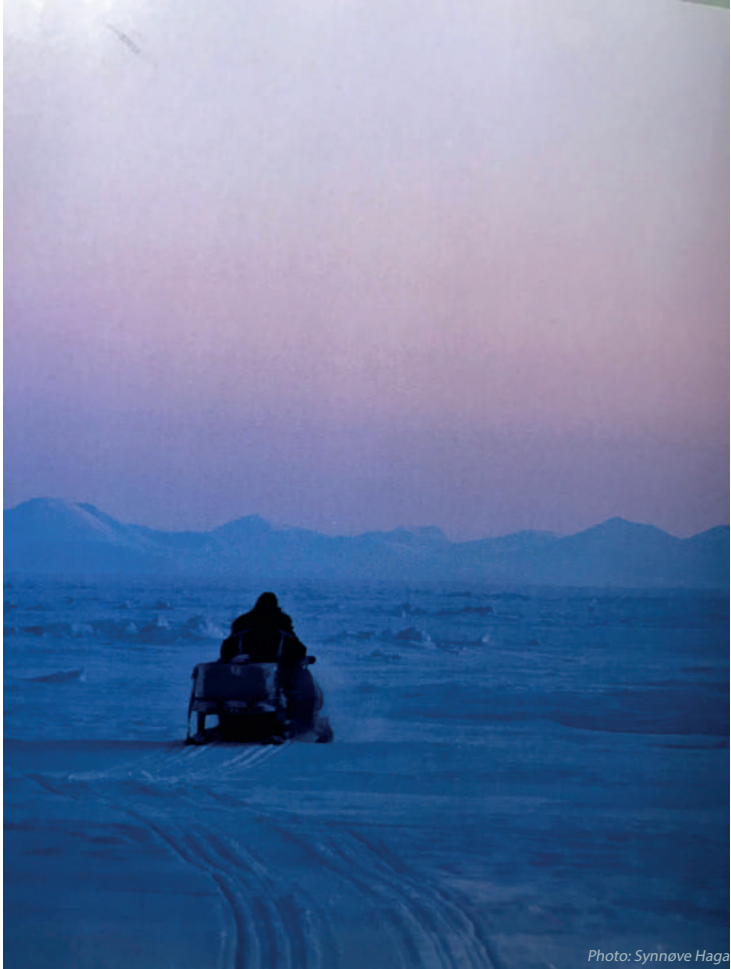


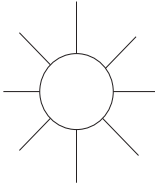
Photo: Synnøve Haga

ARCTIC CLIMATE

In the arctic tundra climate, the average temperature is between 0° and 10° in the warmest months of the year. The sun conditions are quite unique with midnight sun in the summer and polar nights in the winter. The weather can change very quickly and can be quite extreme.

The climate at Svalbard has a strong maritime character with a lot of fog and clouds due to its location in a border area between virtually permanent ice cover in the northeast and open sea in the south and west. A slight displacement of wind systems and low-pressure paths results in great effects in the weather, especially in the winter. The branch of The Norwegian Atlantic Stream that runs north along the west coast of Spitsbergen and further east of the north coast, is perhaps the most important factor for weather and climate.

CLIMATIC FACTORES



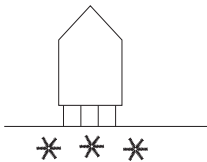
Midnight sun

Days of midnight sun: 76
(14th of May-28th of July)



Dark season

Days without sun: 128
(14th of Oct-24 of Feb)



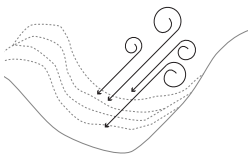
Permafrost

The soil is below freezing point
during a periode of over two years.



Flood

Expected to have increased off-
run in the rivers from glaciers and
increased precipitation.



Local wind condition

The climate is affected by the topography
and in the valley of Longyearbyen winds
from the mountains and are cold and from
the sea is often warmer.

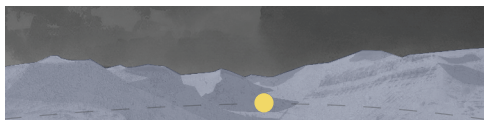
LIGHT PHENOMENA IN THE ARCTIC

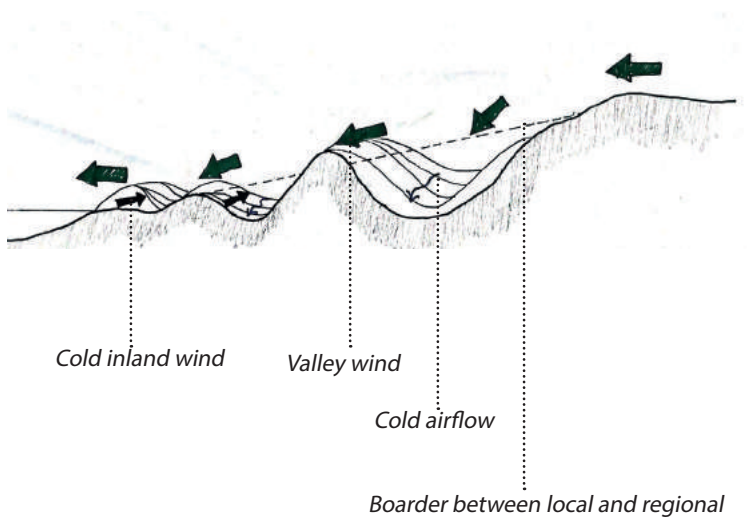
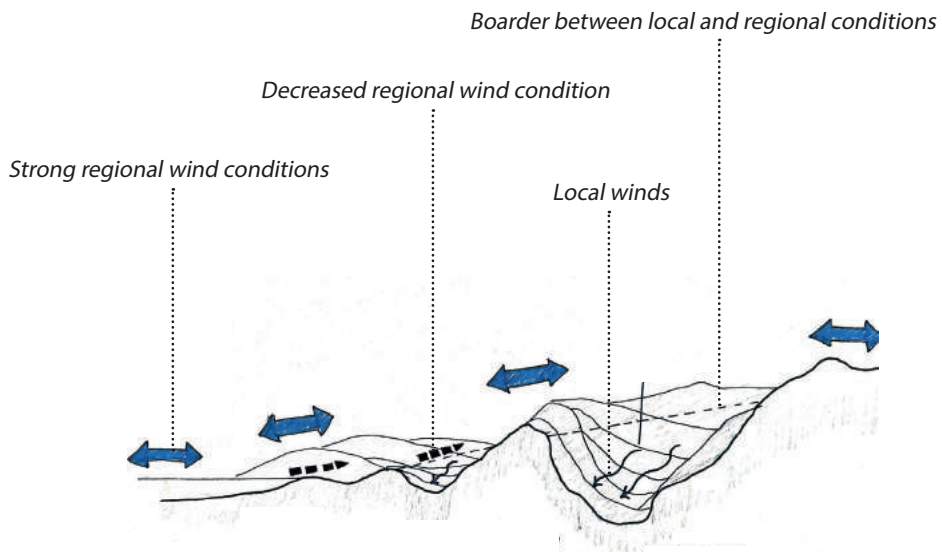
Midnight sun - the midnight sun is a natural phenomenon that occurs during the summer months in places north of the Arctic circle or south of the Antarctic Circle, when the sun remains visible at the local midnight. Around the summer solstice (approximately 21st in the Northern Hemisphere) the sun is visible for the full 24 hours.

The blue hour - is around 2 o'clock in the afternoon. The residual light is reflected off the blue sea and the white snow, and the landscape get bathed in a glassy deep blue color.

Aurora Borealis - on clear nights during the winter months you can experience the aurora borealis. This phenomenon is created by collisions between electrical charged particles from the sun that enter the earth's atmosphere and the magnetic poles in the northern hemispheres.

Polar nights - on the North Cape when the sun remains under the horizon for more than two months during the winter, it is often referred to as polar nights.





LOCAL WIND

Wind in topographical areas - topoclimate.

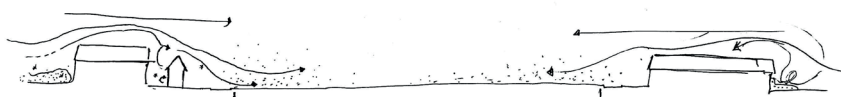
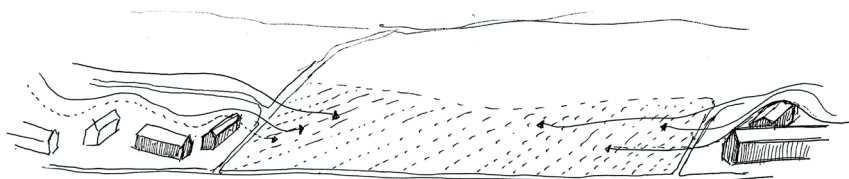
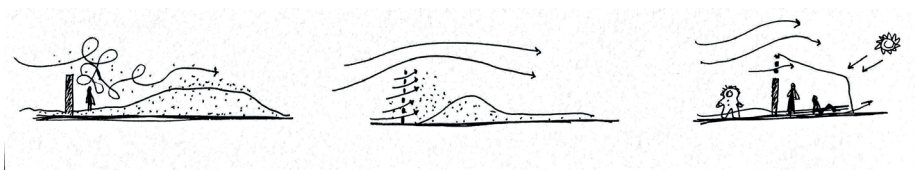
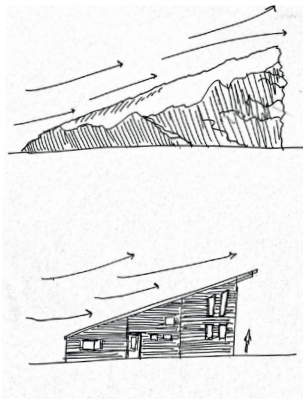
Regional winds (værlagsvind) is altered and decreased by the topography. Hills and hillocks gets strong wind, while the valley is sheltered and have instead local wind systems.

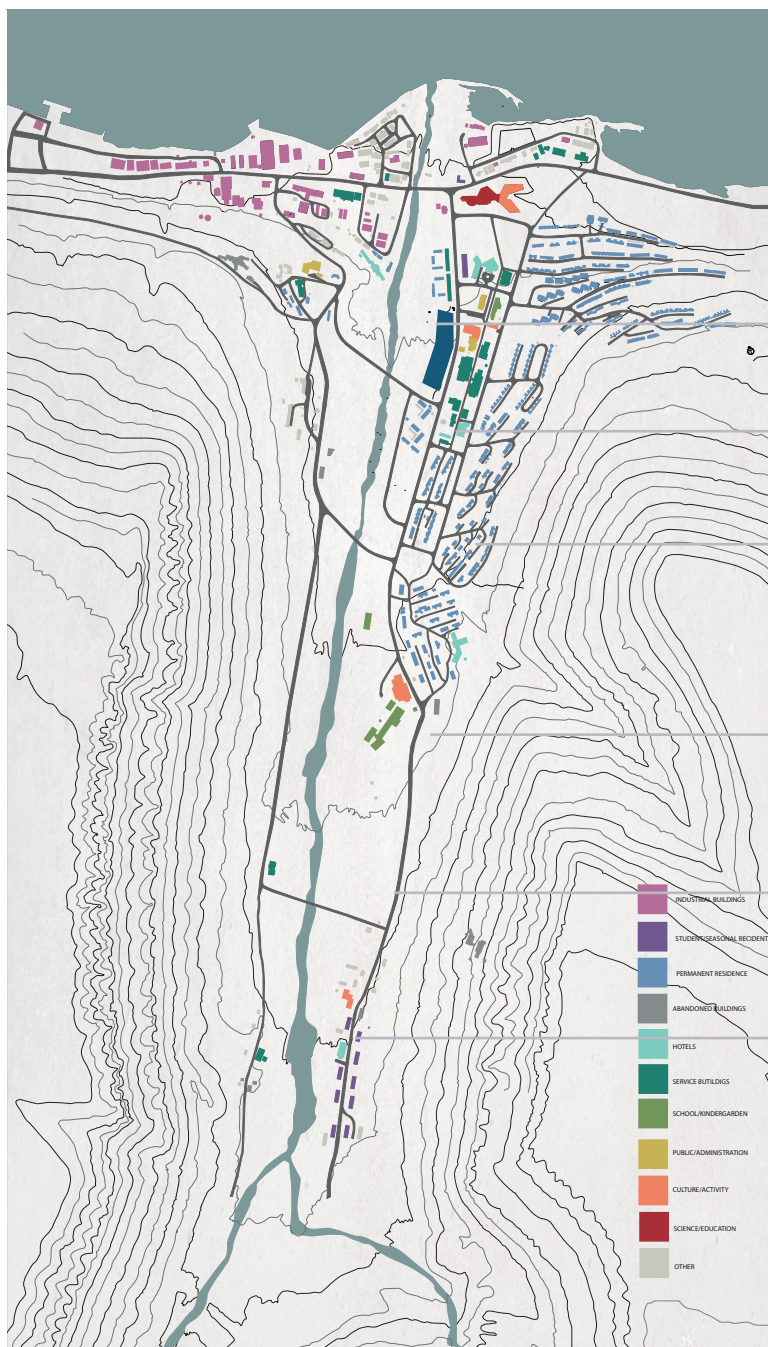


Photo: Synnøve Haga



LOCAL ADOPTATION





THE VALLEY OF LONGYEARBYEN

The site



Main street, pedestrian



Living area



Snowmobile track



Main road, walk/car



Nybyen studenthousing





Photo: Synnøve Haga

DEFINING THE LOCALS

The community of Longyearbyen is a temporary society. People are usually not staying there for many years. To become a part of the community you need a job and a place to live. The average is seven years, but many people stay there for a shorter time and a few live there for many years.

We are working with three different types of locals: Students, workers and families. The reason we divide the population into these categories is because they have different time aspect, interests and way of living (this was how we experienced it)

The students: Take courses that last from 5 weeks, a semester and some even do their master thesis there. It seemed to us that the student kept to themselves. Things organized for the students at UNIS was mainly for the students of UNIS.

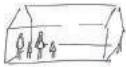
The families: They stay there often longer than the students and the single workers. They establish more relations through work, school, kindergarten, activities for the kids etc. and commit their whole family to the community.

The Workers: The "single worker" is in Longyearbyen to work and earn money but also for the experience of the place. Some of them we meet had only stayed there for a year but wanted to stay a while more and others were staying there for a season or a year.

Today's situation



Student



Family



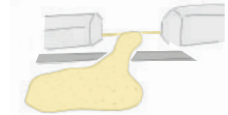
Worker

Vision



Gathered under one roof

Site

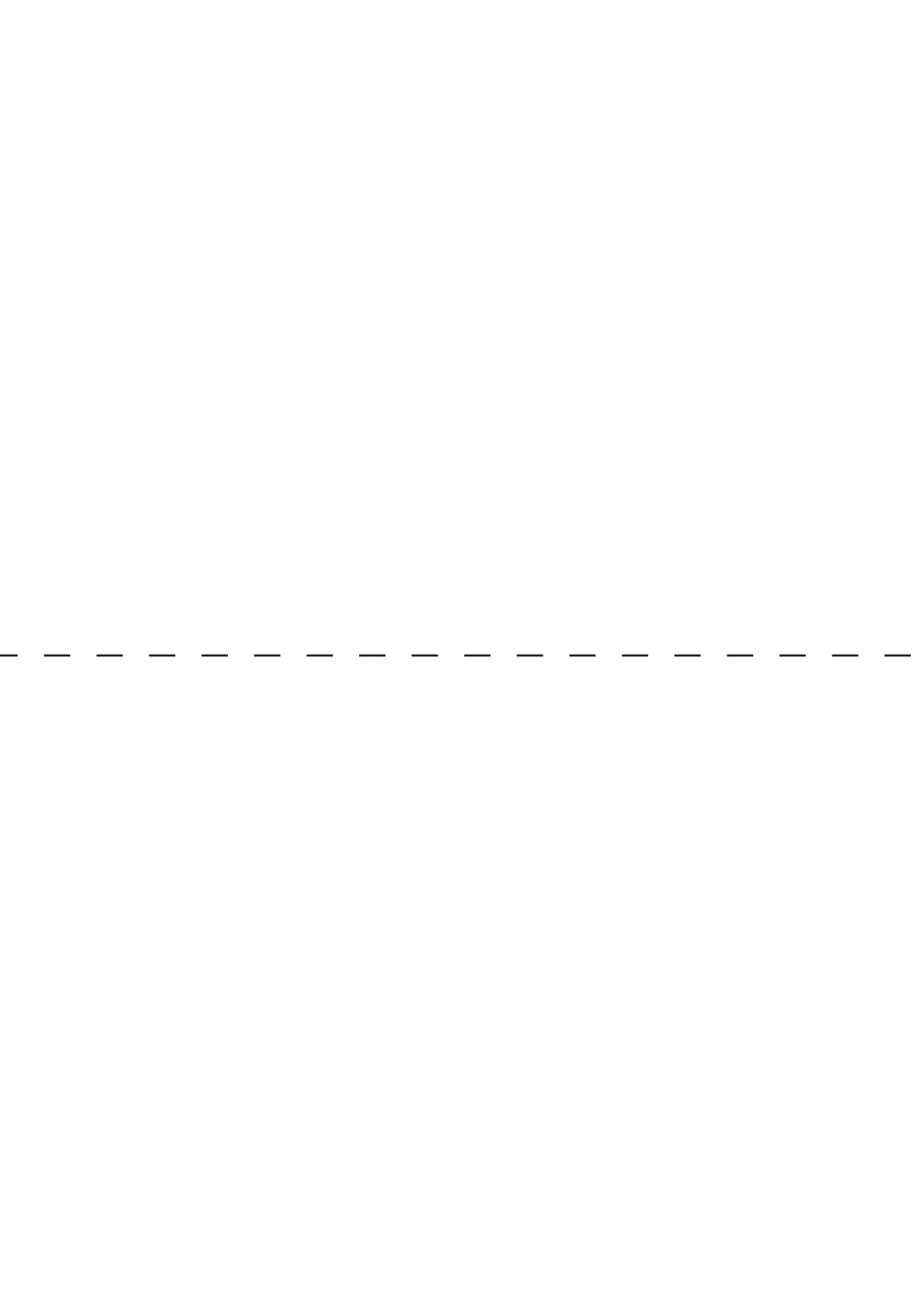


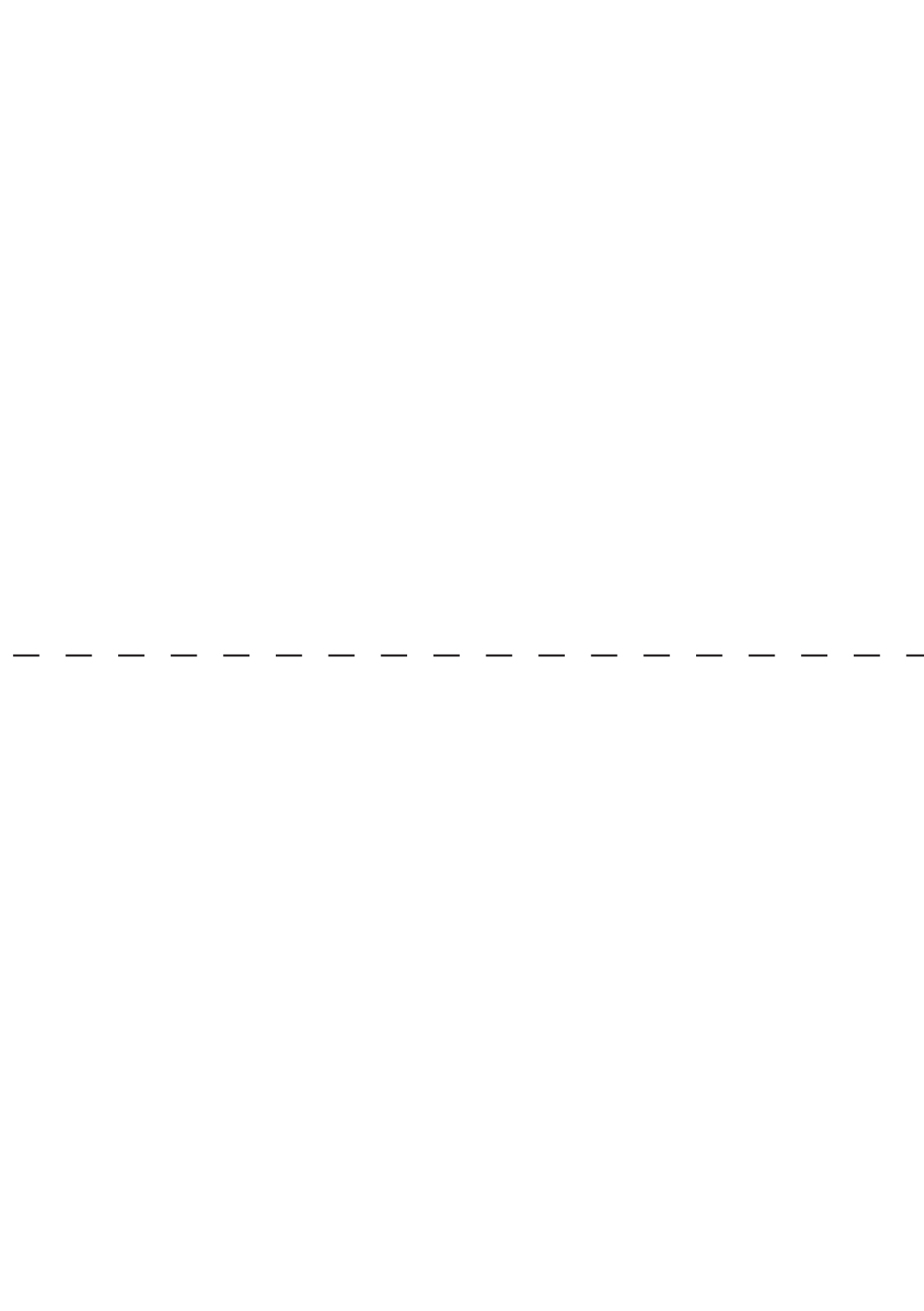
Communication channels

VISION

- To build in a conscious way in a fragile environment.
- We wish for natural meetings to appear between students, workers and families, and that the program shall benefit the society of Longyearbyen.
- Make a natural connection between this new structure and the existing city structure.







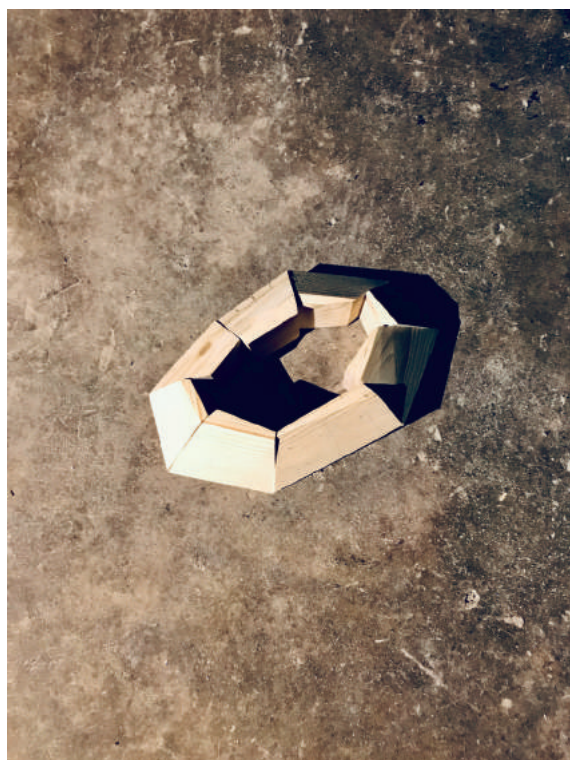


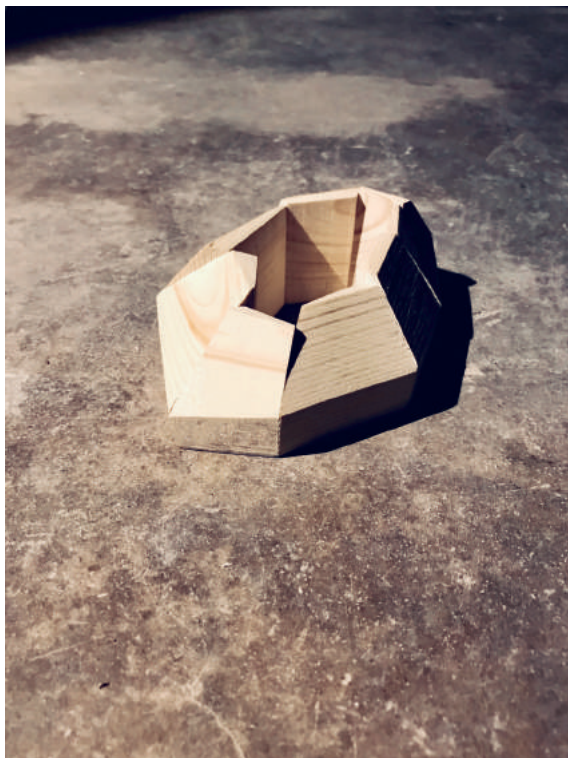
Main road

Pedestrian zone

Communication channels

THE SITE





Concept model of the building.

PROJECT AND STRATEGY

The project gives new housing for temporary living students and workers, combined with unifying programs for all citizens.

The thought behind this combination is for natural meetings to appear between the *locals*, but also to give the society a space for indoor activities that can benefit them all.

To be able to do a project like this we went on a study trip to Longyearbyen and lived with the students there. We met and spoke to people living there, and got a better overview of how the living situation is today.





LIGHT STUDIES

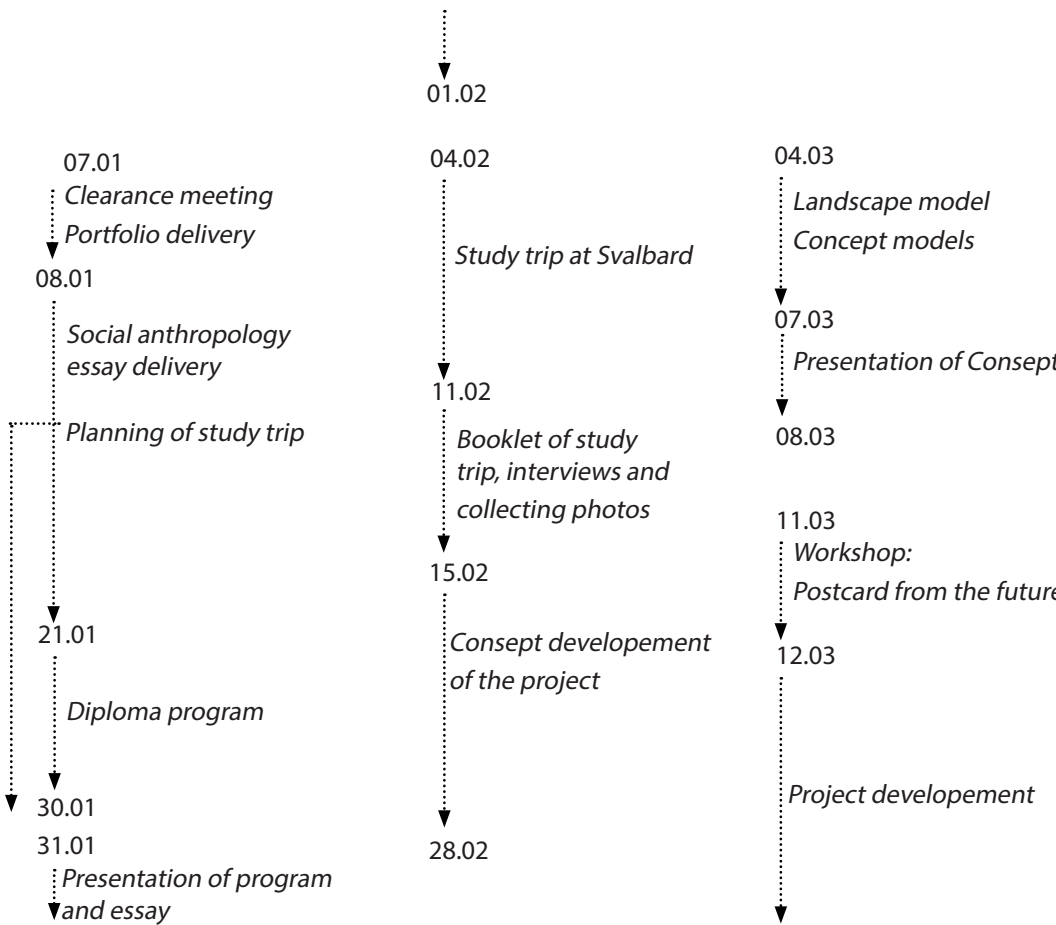
Investigation of light - both from the inside and the outside.

CALENDAR

January

February

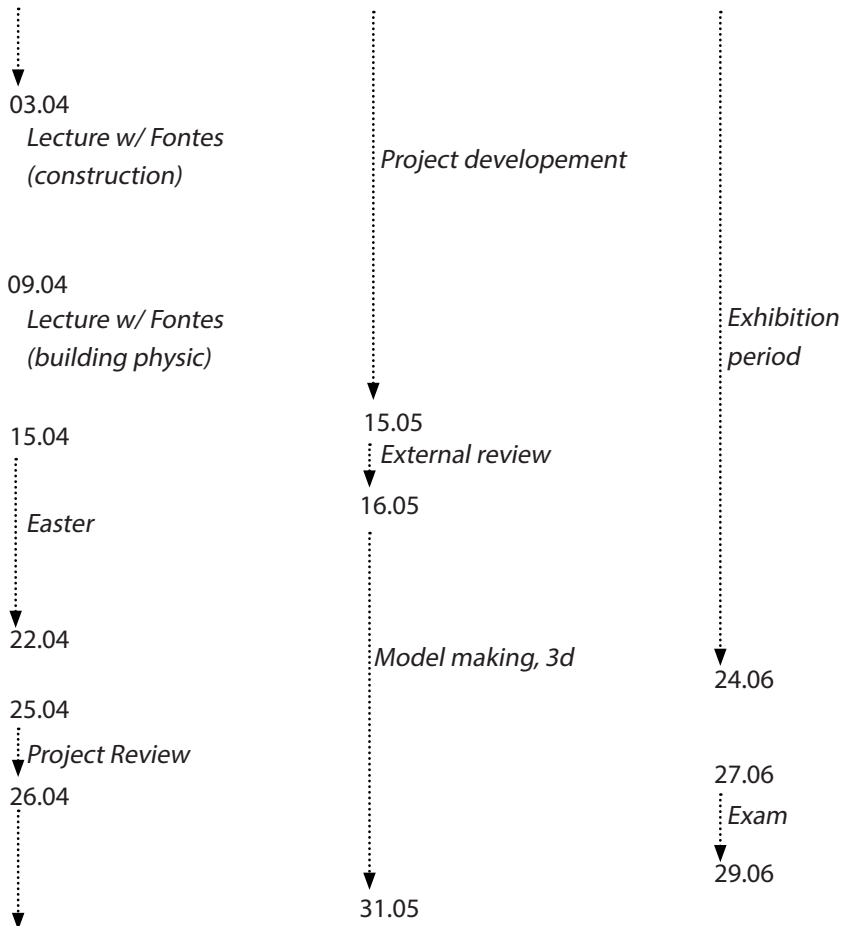
March



April

May

June



CV

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EDUCATION

EINAR GRANUM KUNSTFAGSKOLE
2011 - arts

BERGEN ARKITEKTHØGSKOLE
2014-2017 - 1st-3rd year of architecture

Master courses

ÉCOLE SPÉCIALE D'ARCHITECTURE
2017, fall semester - La fabrique collective
2018, spring semester - Laboratoire Architecture Urbaine

BERGEN ARKITEKTHØGSKOLE
2018, fall semester - Complex Context

| | | |
|-----------------|-----------|-----------------------------------|
| WORK EXPERIENCE | 2016-dd. | Høyer Bergen (part tim) |
| | 2014 | SAS, flight attendant (full time) |
| | 2013 | JPC, just cruzin' production |
| | 2010-2013 | Samsøe & Samsøe (full time) |
| | 2011-d.d | Pastor Fangensvei 28 (part time) |
| | 2008-2009 | Meny (full time) |
| | 2007-2008 | Skavangertun sykehjem |
| | 2005-2006 | Lampeland Bakeri |

Summer: assistant Kongsberg Sykehus (2010, 2011, 2012).

CV

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EDUCATION

BERGEN ARKITEKTHØGSKOLE
2014-2017 - 1st-3rd year of architecture

Master courses

BERGEN ARKITEKTHØGSKOLE
2017, fall semester - (Un)productive landscapes
2018, spring semester - Spaces for work
2018, fall semester - Complex Context

Other

2017-2018 - Student representative NAL

WORK EXPERIENCE

| | |
|-------------------|-------------------------|
| 2018-dd. | Home&Cottage |
| 2017, summer | Atelier Flora |
| 2015-2017 | Stoff&Stil |
| 2014 | Støttekontakt |
| 2014 | Træleborg barneskole |
| 2014 | Gipø Bo-og behandling |
| 2013 | APM-recycling |
| 2013, summer | Hage-og landskapservice |
| 2012, summer | Fønix AS |
| 2011-2012 | Eurosko |
| 2010-2012, winter | Svarstad Skisenter |
| 2009-2011 | Zeck Varemagasin |
| 2008, summer | Meny Farmandstredet |