

DIPLOMA PROGRAM FALL 2017

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Institute: Architecture

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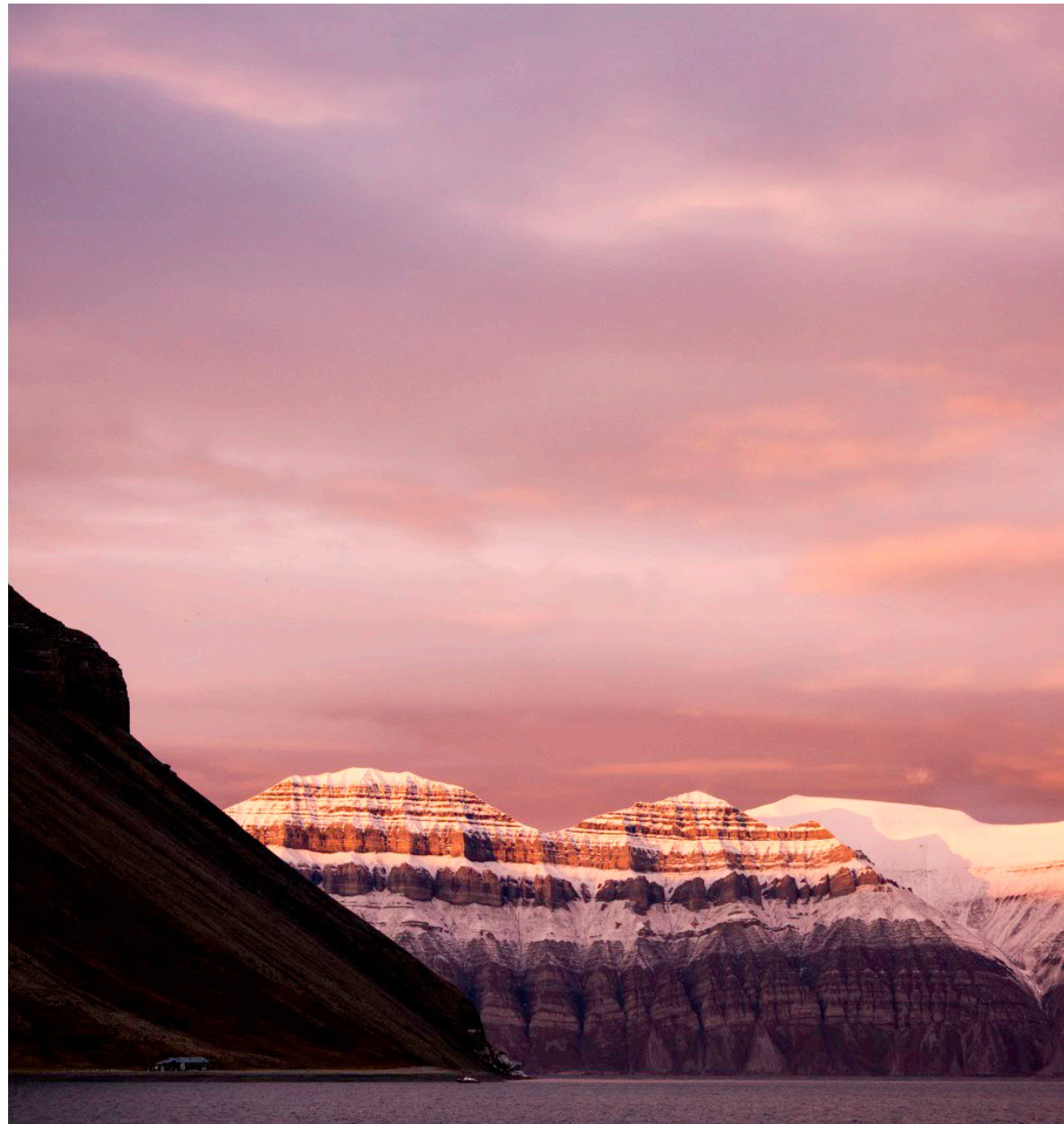
External supervisor:

Company cooperation:

Title of project: Sjøskrenten Bath

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INTRODUCTION

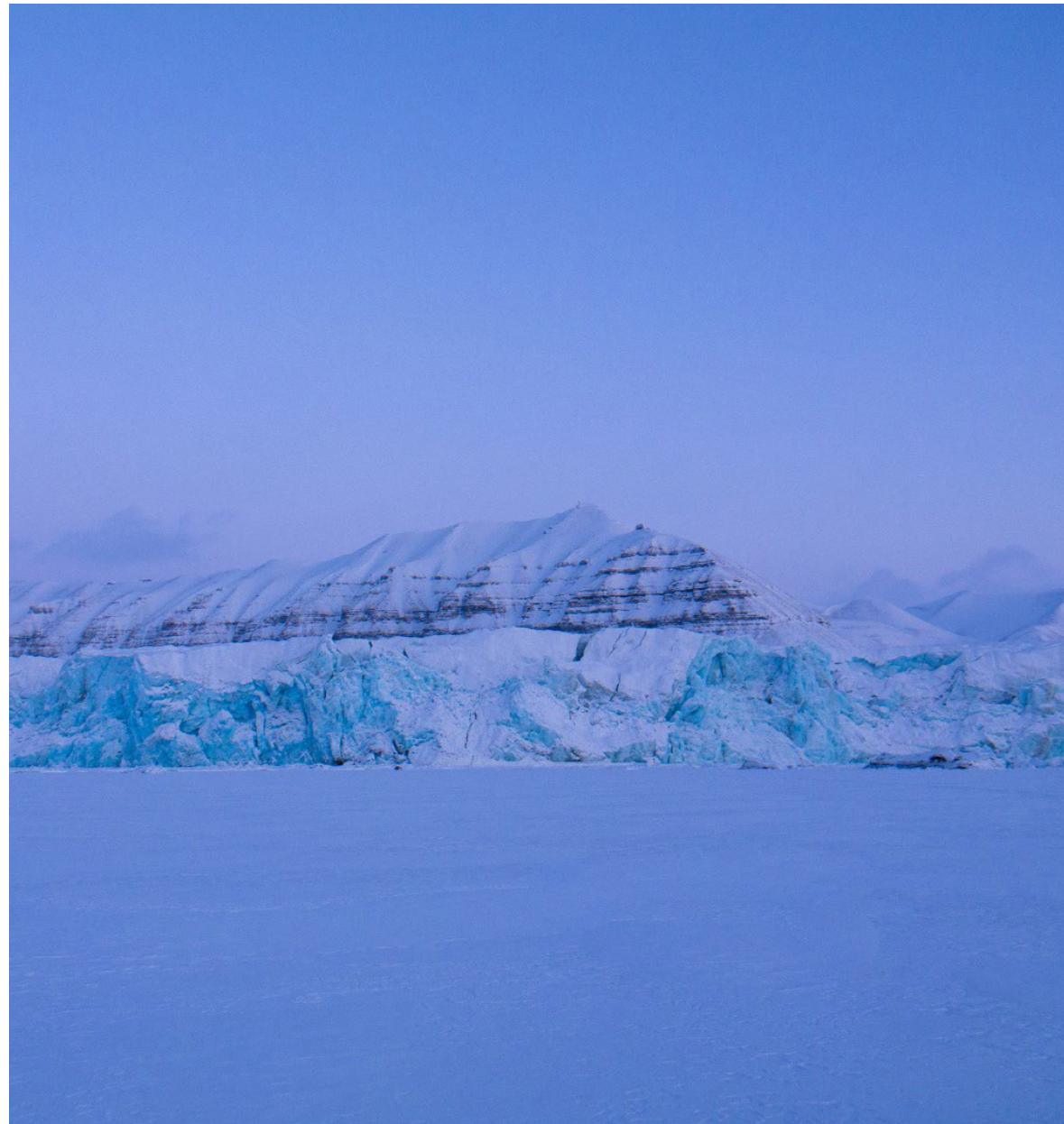
I propose to design a spa/ public bath as a way to discuss and discover the quality of natural light and natural darkness. The element of water will give the light conditions another layer, and another feature to play with.

My main focus will be on the variety of spaces depending on light + water + time (time of year and time of day). Another focus will be construction. Permafrost gives another challenge to the project: How to construct a bath without digging down in the ground?

The project explores the natural and extreme light conditions in the arctic area where there are more polar nights and polar days per year, then "regular" days. To strive for the best light conditions as possible and at the same time allow the darkness to play its role, is the main goal for this project.

People move to Svalbard to experience the conditions of the extreme nature. In average people live there for only seven years. Longyearbyen might be a place to live for a short time, for many people, just for the experience. The project aims to emphasize this experience for inhabitants and tourists.

Longyearbyen was founded due to mining, but now a days there is only one operative mine left. Tourism is the new main form of income.

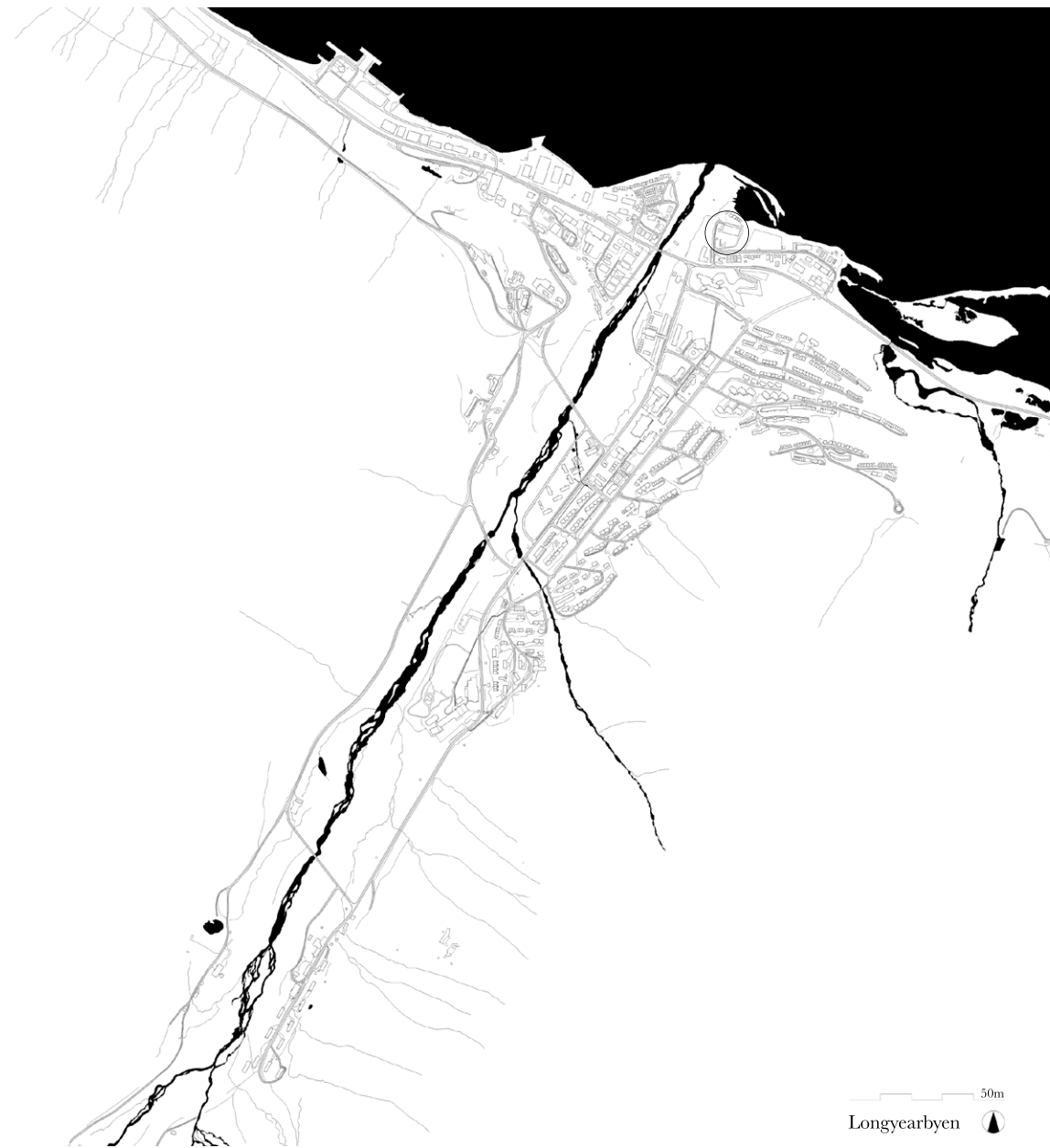


THESIS

In the arctic area, the contrast between summer and winter is the same as the contrast between night and day. How can the design of a bath help to emphasize this contrasts? Svalbard has polar night and polar day. The project will have to work well in both extreme situations. Other time issues to emphasize is when the sun is rising for the first time of year, and when it sets, when the sky is filled with colors.

Svalbard and Longyearbyen have permafrost. This means that the ground is frozen the entire year, only the top layer of earth can melt during summer. One should not dig downwards and place buildings below the ground level because the heat from the building will make the permafrost melt and the ground will become unstable. Also, the arctic area is vulnerable. As a result of this, buildings are placed on stakes above the ground level in the arctic area. This principle will be a formgiver and how can I make this an advantage? Which materials will be most beneficial?

I intend to design spaces where the inhabitants and tourists of Longyearbyen can experience the different, and extreme, light and weather conditions of Svalbard. These spaces will form a bath where light, darkness and water will be the main formgiving elements together with the construction.



SITE

The project will be located on Longyearbyen, Svalbard, Norway. Rough nature and extreme conditions can be an inspiration for the architectural concept. Longyearbyen is the largest village on Svalbard with almost 2000 inhabitants and one of the main source of income is tourism. It is important that the project will be accessible to people, so the site is located in the heart of Longyearbyen at the shoreline called Sjøskrenten.

The site is by the shoreline. Today there is a garbage disposal area at the site, but this will be removed in close future. The entire shoreline is filled with industrial buildings, but Longyearbyen with Lokaltstyre and Sysselmannen (the local government) has a wish to make the shoreline more accessible to people, and this fall a plan for the new shoreline is being made. The transformation will happen in some years and after the transformation there will be both housing, shops and leisure by the shoreline.

There is an intention to make a promenade by the shoreline and to make walking routes for inhabitants and tourists. The site is located by the promenade and the project will become a feature on the walk.

The site is quite flat and it has a small climb in the back against the town, and in front there is only the fjord.



PROGRAM

Vestibule	approx. 30-100m ²
Changing area	approx. 100-150m ²
Toilets	approx. 35-40m ²
Showers	approx. 50-70m ²
3-5 Baths	approx. 200- 400m ²
1-3 Saunas	approx. 80-120m ²
Resting area	approx. 60-100m ²
Lounge	approx. 80-100m ²
Bar	approx. 25-50m ²
Communication	approx. 200-250m ²
Staff area	approx. 50m ²
Storage	approx. 20m ²
Laundry	approx. 20m ²
Technical:	
- Water treatment	approx. 50m ²
- Plants	approx. 20m ²
- Other techniques	approx. 20m ²

Total area: approx. 1800-2300m²

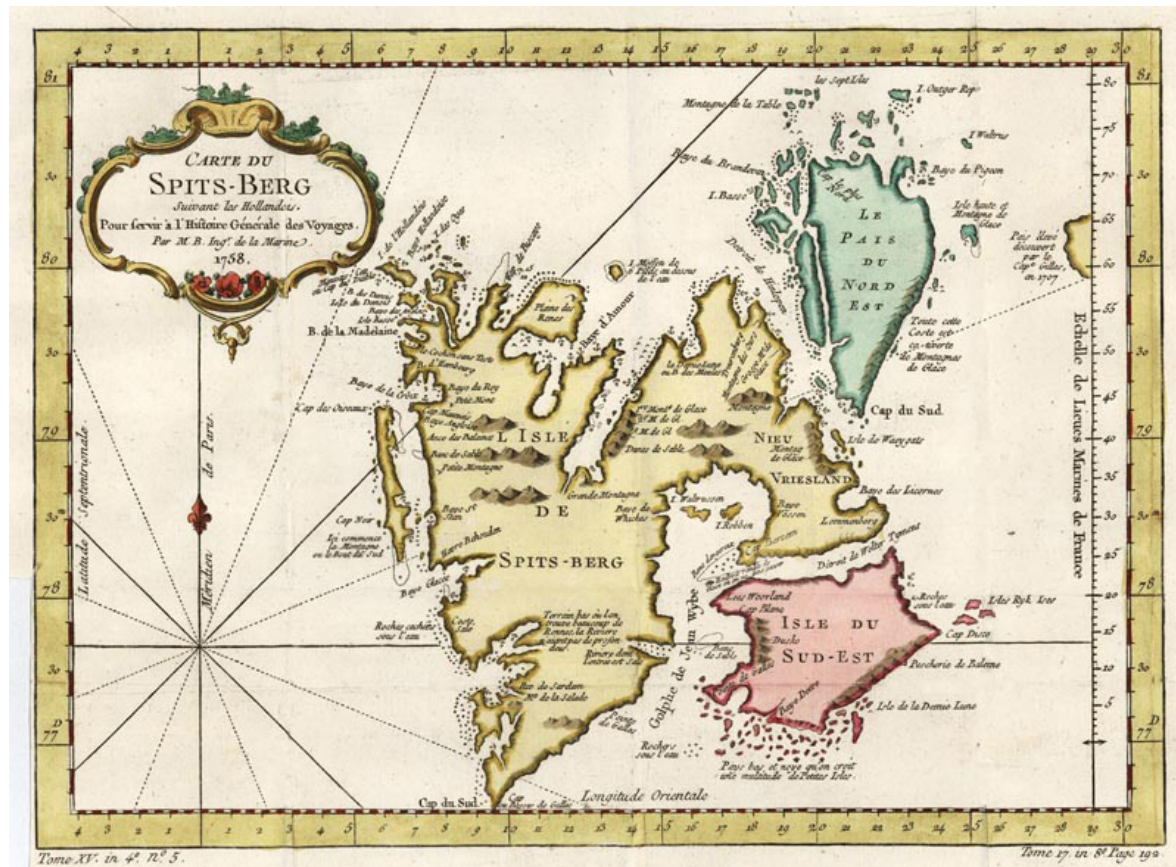
SHADES BETWEEN LIGHT AND DARK



Longyearbyen summer - fall



Longyearbyen winter - spring



SVBALBARD - HISTORY IN SHORT

The largest island of Svalbard, Spitsbergen, was discovered in 1596. The name was given due to the pointy mountains. Svalbard is rich on natural resources. Since the early 1600s hunting for whale, seal and fur was the main purpose of going to Svalbard. In 1905 the coal mining industry gave people another reason to go there. In 1920 it was decided that Norway should have the sovereignty over Svalbard, but Svalbard is still open to everyone: You don't need a visa to go to Svalbard, but you have to provide for yourself and have a place to live. During the second world war, Svalbard was evacuated and Longyearbyen, Barentsburg and Grumantbyen was destroyed by the Germans. The rebuilding started in 1945. Now the coal mining industry is reduced, and the main source of income on Svalbard is science and tourism.

SVBALBARD - FACTS

Inhabitants: 2 650, 2 162 lives in Longyearbyen and Ny Ålesund (2016)

Besides from Norwegians, there are 537 persons from 46 nations live on Svalbard.

Demography: Highest density of well educated, young people between 20-44yo. 55% of the inhabitants are men. Approximately 20% of the population move, and become replaced, every year. People, in average, live in Longyearbyen seven years.

Main source of income: 39% work with tourism and culture. 18% work with industry and transportation. 12% work with science and education. 10% work with mining. The remaining % is shops, public sector, information/ communication and other services.

Size: Svalbard in total is 61 022 km², Spitsbergen is 37 814 km². Svalbard is one of the least populated areas in the world regarding to size, with only 0,04 inhabitants per km².

Environment: The arctic nature is vulnerable, and 65% of the land area is therefore protected. Svalbard has many glaciers, Austfonna is the largest with 8 492 km². Due to climate changes, the glaciers of Svalbard are melting and reducing in volume.

Climate: Svalbard is warmer than other places at the same latitude due to the Gulf Stream. The average temperature is between -8°C and -2°C, in normal it's -16°C in the winters and +6°C in the summers. The average temperature has increased in the last decade. Average rainfall in Svalbard is between 200 and 400mm, Longyearbyen being a bit more dry.

Vegetation: Svalbard has permafrost and only the top meter of the earth is melted during the summer. There are no trees or shrubs, so the vegetation on the ground is very visible. It covers 6-7% of the land area. The species's growth environment and prevalence is characterized by high temperature fluctuations, short growing season, small nutritional access, wind exposure and earthquakes caused by frost.

Wildlife: The most normal animals you could experience on Svalbard is the Svalbard reindeer, mountain foxes, polar bears, Svalbard grouse and Svalbard char.

Polar night: from 11th of November to 30th of January

Midnight sun: from 20th of April to 22th of August.

APPROACH

Research: Water

Through case studies on public baths through out history I will get an understanding on different rituales and organizaions of baths. This will give an idea of what kind of spa / public bath this project will be.

Which rituals are linked to bathing?
 How has light influenced the baths?
 How does the water effect the light? - or how does the light effect the water?
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Research: Light

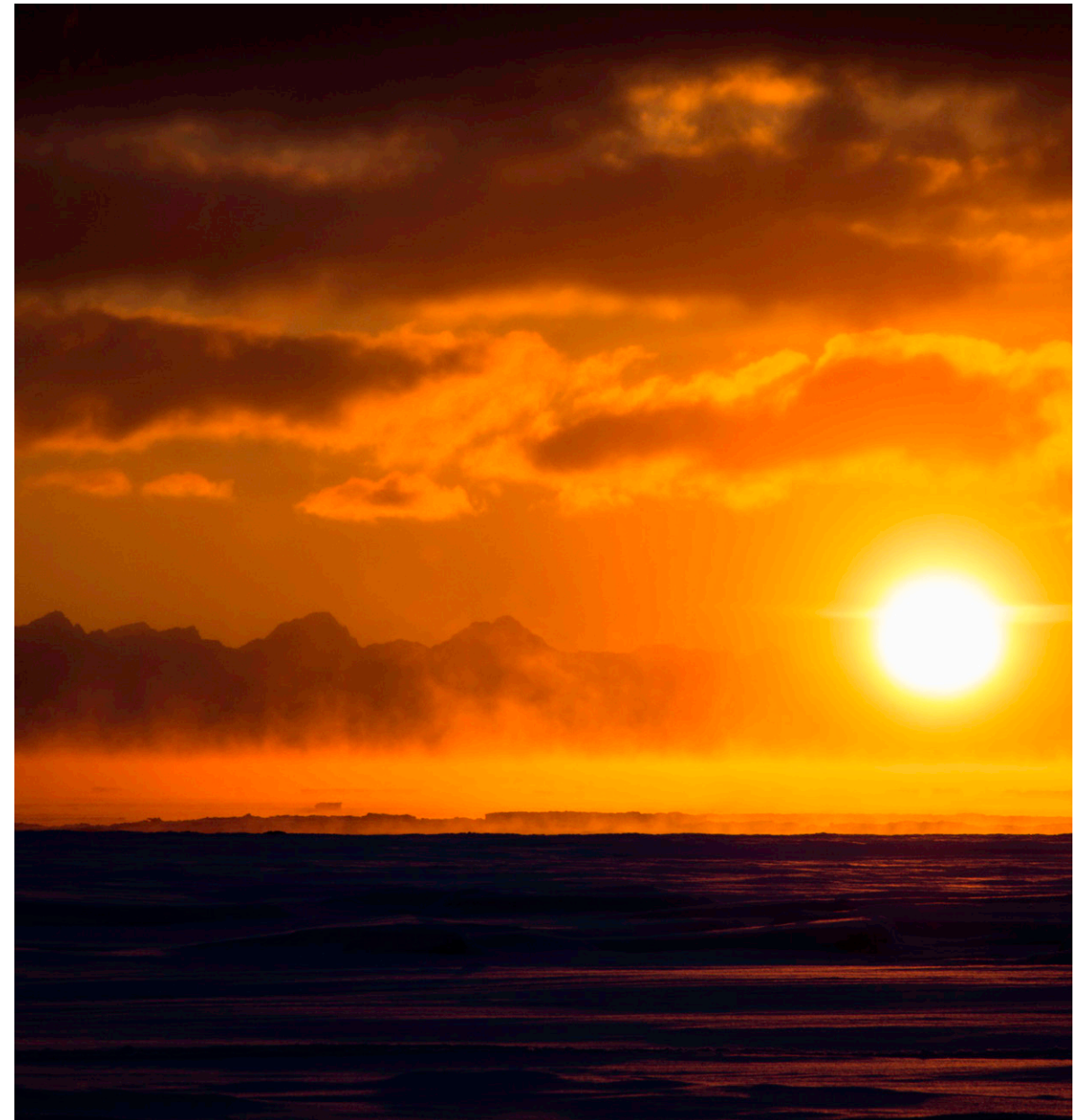
By studying the light conditions on Svalbard, I will get an idea of where to place the openings on the building and what light I should emphasize. I will also look at some case studies / examples of different use of light in architecture.

Get an exact ide of the suncurve and the sun degrees.
 Which light sources do I have available?
 Which techniques can be used to emphasize different lights?
 +++

Study trip: I will go to Longyearbyen in September. The reason for going in the fall is to get as many different light conditions as possible. The purpose is to do the site research and photo documentation.

Design: The main goal for the design is to create spaces depending on light and construction. Design includes experiments in 3D/model and drawing. The main part of the design phase will be to draw out one example on the chosen site.

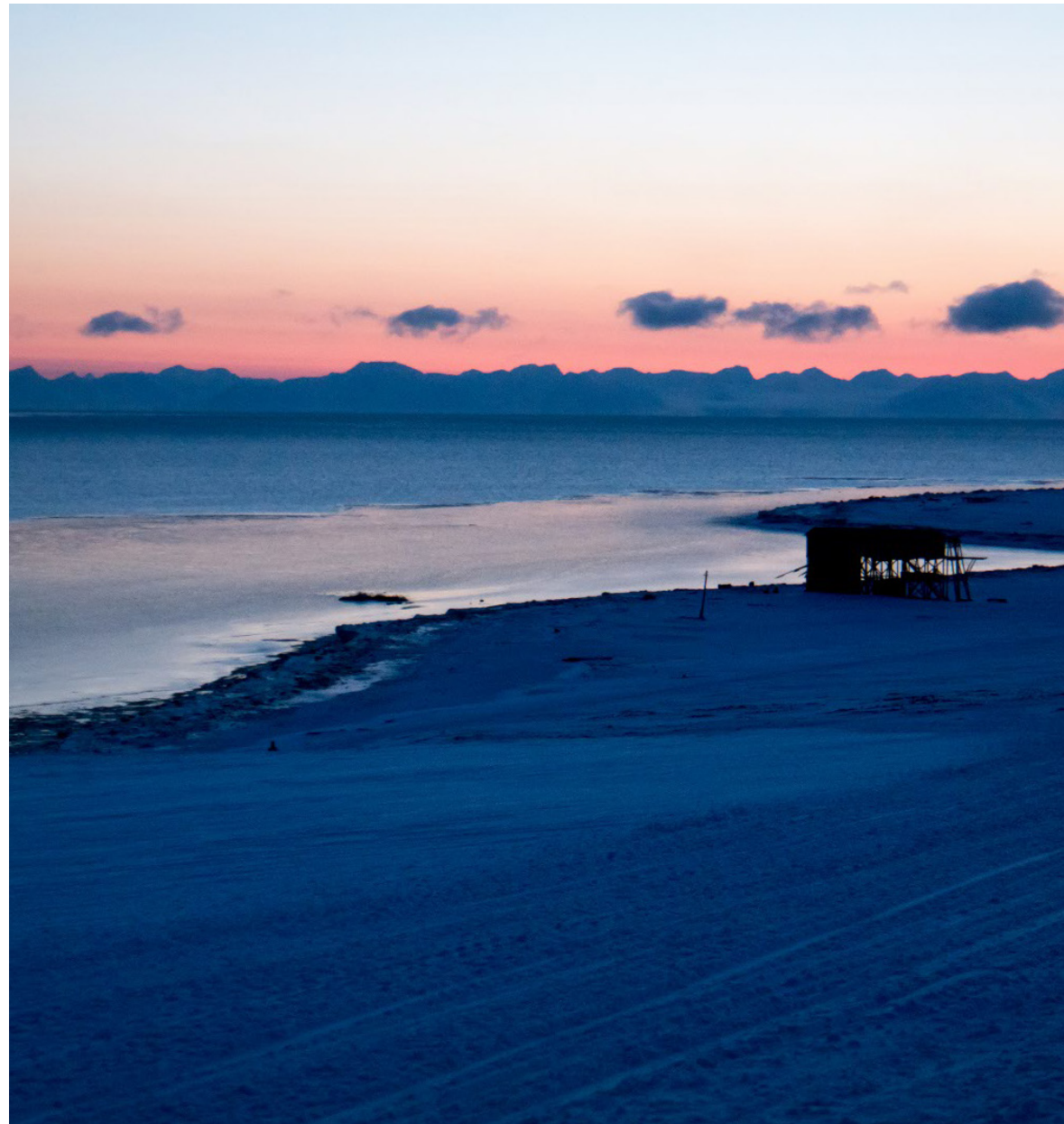
Reviews: Get another persons feed-back.





SCHEDULE

SUMMER	week 32 Semester start 16/08-17	week 34 Hand in: pre-diploma report
week 35 Research	week 36 Research	week 37 Research Concept/ Sketch <i>Review</i>
week 38 Study trip 18-20. september Site research Photo documentation	week 39 Concept/ Sketch	week 40 Concept/ Sketch <i>Review</i>
week 41 Plan, section, elevations Spatial	week 42 Plan, section, elevations Spatial <i>Review</i>	week 43 Plan, section, elevations Spatial <i>Review</i>
week 44 Plan, section, elevations Spatial <i>Review</i>	week 45 Plan, section, elevations Spatial <i>Review</i>	week 46 Produce Plan, section, elevation Drawings Due- date: titel, report 17.11.
week 47 Produce Plan, section, elevation Drawings + Model <i>Review</i>	week 48 Produce Plan, section, elevation Drawings + Model <i>Review</i>	week 49 Produce Plan, section, elevation Drawings + Model
week 50 Submit diploma 15.12.	CHRISTMAS	JANUARY Mount project Final reviews + ceremony Exhibition



SUBMITTED MATERIAL

Situation plan

1:500 or 1:1000 + 1:2000

Project with surroundings

Plans, sections, elevation

1:100 or 1:200

Spatial organization, thresholds, facade

Details, construction

1:10 or 1:20

Main principles, special details etc.

Illustrations, renders, sketches, photos and diagrams

Character, materiality, structure, spatial qualities, light conditions, temperature

Situation model, large scale

1:1000 or 1:2000

Building model

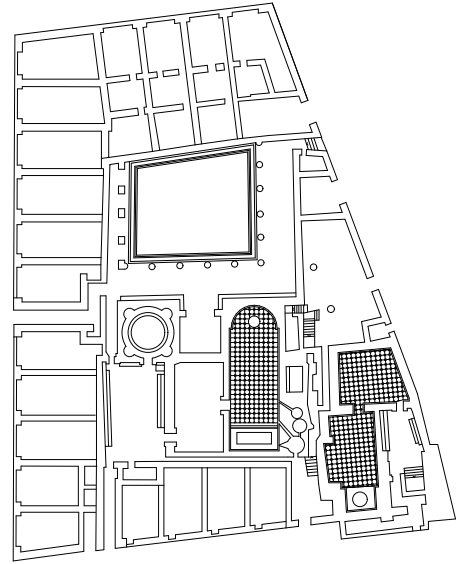
1:50, 1:100 or 1:200

Spatial organization (working model + presentation model), construction

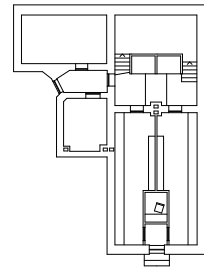
Documentation

Research- and process booklet, pre-diploma report, sensors booklet.

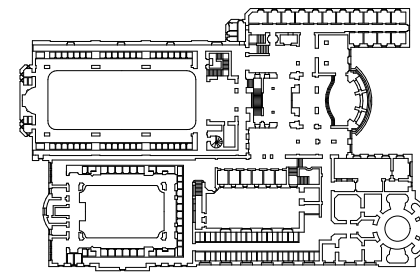
REFERENCE PROJECT: BATHS THROUGH HISTORY



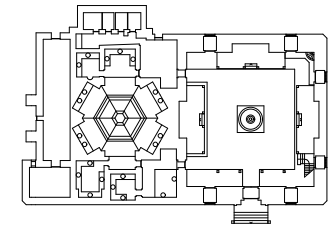
Roman bath (Old bath in Pompeii)



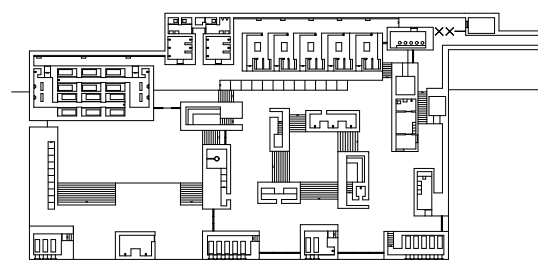
Finnish Sauna (Rajaportin)



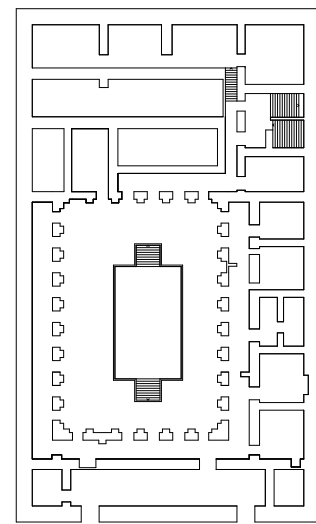
German bath (Müller)



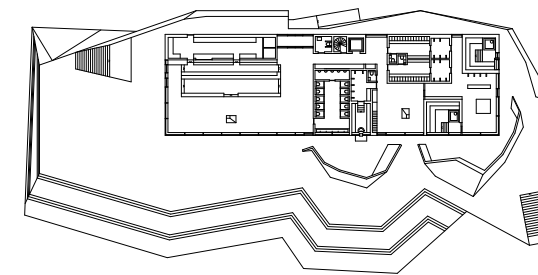
Turkish Bath (Kilic Ali Pasa Hamam)



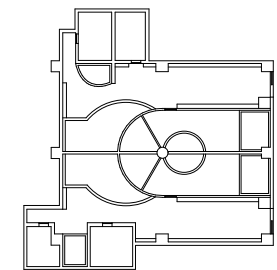
Modern spa (Therme Vals)



Ancient bath (Mohenjo Daro)



Modern sauna (Löyly)



Japanese bath (Matsunoya Sento)

REFERENCES

Dette er Svalbard 2016

Fride Eeg-Henriksen og Erik Sjømæling

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Baths through history

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The water temple, Academy edition/ Group LTD, 1993

Photos of Longyearbyen:

Lise Hagen