

SJØSKRENTEN BATH

Sensors booklet

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Sjøskrenten bath is a public bath/ spa, located on Longyearbyen, Spitsbergen, Norway. Longyearbyen is a small community originated from the coal mining industry. Nowadays, there is only one operating mine left, and Longyearbyens new main source of income is tourism. Tourists from all over the world travels to Svalbard to experience the arctic natur and the arctic light: Polar nights and polar days. Longyearbyen has more polar nights and polar days then “regular” days, making the contrast between summer and winter almost the same as day and night.

Sjøskrenten bath explores the qualities of the extreme, natural light conditions in this arctic area, and contains spaces designed to emphasize the different light phenomena and weather conditions of the Arctic. The bath has an introverted core focusing on light, darkness and water. Extroverted spaces are surrounding this core, cantilevering above the sea and the raw nature. Tourism is the main income in Longyearbyen. The bath will offer tourists and inhabitants a new experience of the Arctic.

Light, darkness and water has been the main form-giving elements together with the construction: Longyearbyen has permafrost. Heat from buildings can make the permafrost melt, resulting in unstable ground conditions. Due to this, the bath is placed on a platform of artificial permafrost made of gravel that are kept cold by pipes with cool fluid.

SUBJECTIVE THOUGHTS AND THESIS

I grew up above the arctic circle, but have lived away from "home" for almost a decade. The thing that struck me the most every time I visit my family is the light conditions. Sleepy winters and energetic summers, color explosions on the sky and the northern lights. I wanted to work with this light-fascination for my diploma, but I did not want to work within my hometown- because when you know something too well, ideas might be locked out for reasons that are merely subjective. The reason for choosing Longyearbyen was the scenery. The rough nature with pointy mountains, harsh climate and the small, connected community. When I was 11 years old, I lived in Longyearbyen for a short periode, and the picture of the mountains across the fjord has been stuck in mind since then.

The program became a bath because I wanted to add another element to complimente the light conditions and because of the bloming tourism in Longyearbyen. Bars, restaurants and hotels are popping up and tourists from all over the world travel to Svalbard to experience the arctic.

With this in mind I wrote my 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 unstabil. Also, the arctic area is vulnerable. As a result of this, buildings are places 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 contidions of Svalbard**. These spaces will form a bath where light, darkness and water will be the main formgiving elements together with the construction.

Short reply to the thesis:

*There is a new way to construct on permafrost, where artifical permafrost is made. Basically you build a platform of gravel where the building should be placed and by cooling this platform down, the ground stays in a permanent permafrost state. This way of constructing makes it possible to use and re-use energy from the building (almost like a fridge - cool air stays in, while heat comes out). In this case there was a need for something to hold back the gravel from going into the sea, and earlier in the process I was working on a construction principle with gabions - steal frames that became stakes, filled with stones from the area. Since there are no natural building resources available, I found it good to use this stoned, which normally is not used to anything, for a purpose. Now this principle are used to hold the gravel in place.

** Weather is something that you are protected from inside the bath, but can explore through the glass facades and in the atrium where ice bathing can take place. Also on the walk to the bath by the bridge, people will be exposed to the weather, which will make the contrast between the cool outdoors and the warm inside bigger.

The process towards the finale result has included research, volume studies, sketching, site visit and design.

The main things I have focused on has been:

Volume - what is the right volum and size for both the program and the site

Construction - how to construct in ther arctic where there is permafrost

Light - how to frame different light conditions in one building

Water - how to unify different types of water (temperature, depts +)

Organization - how to organize different functions

Movement - how to enter the bath, and how to move inside the the bath

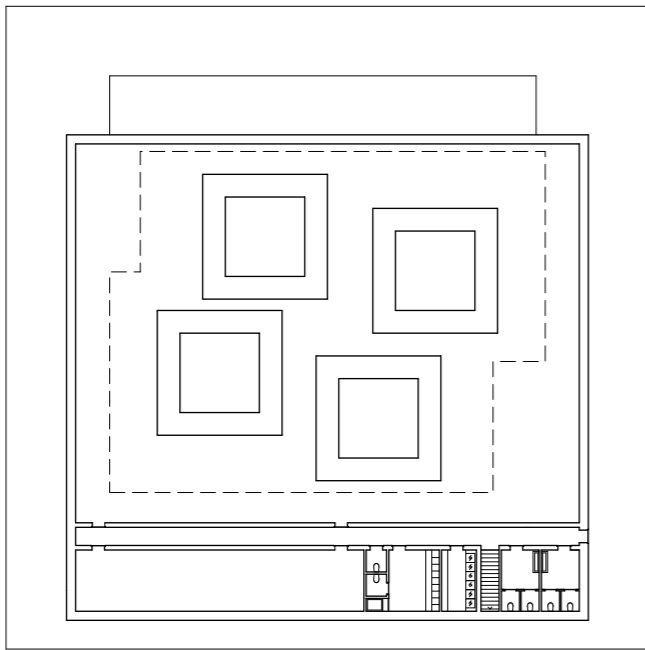
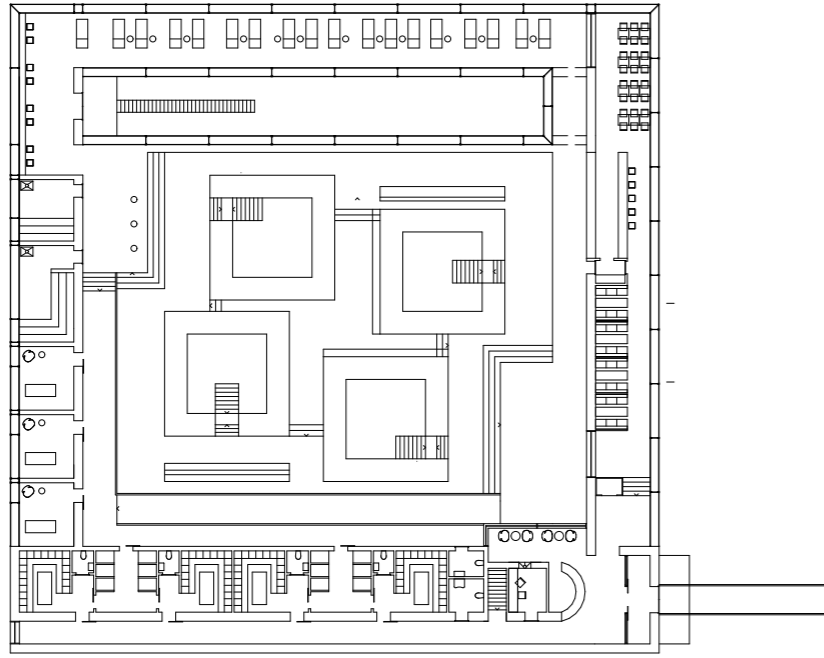
Section - how to unify different levels

Program - what should and should not be included in the program, and what is the best sizes for the functions

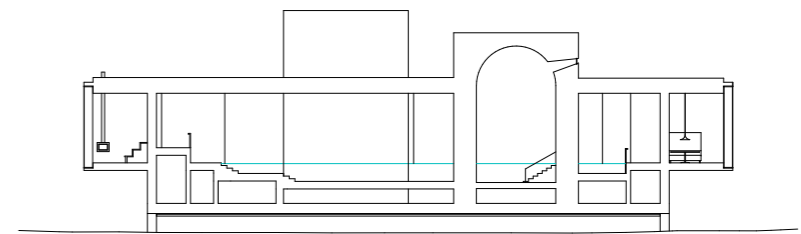
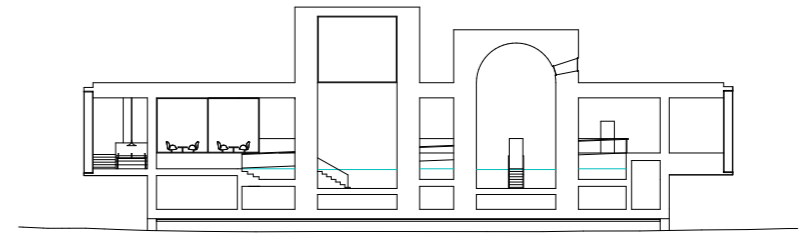
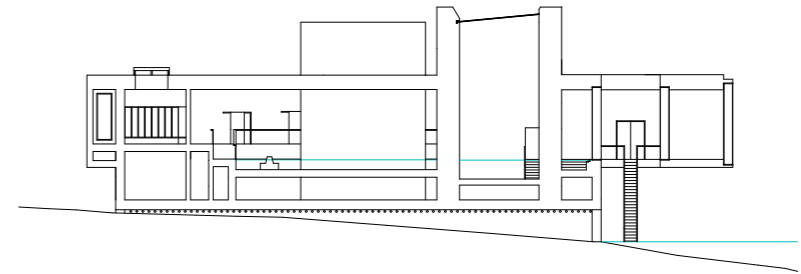
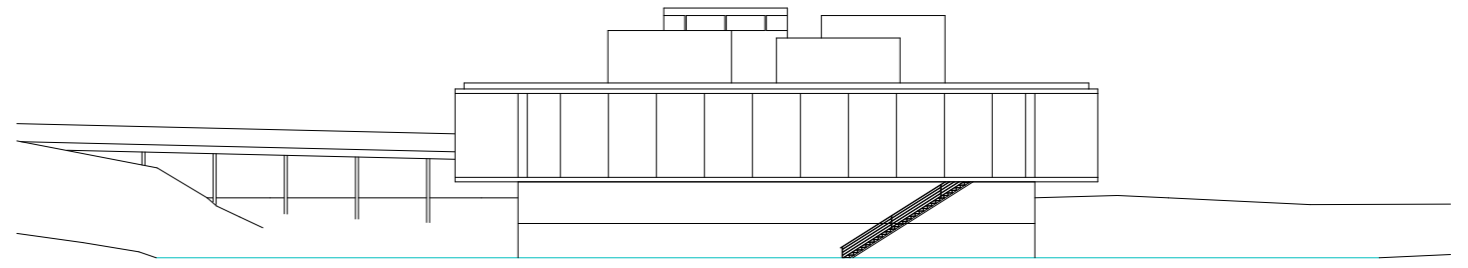
Detailing - interior, facade, construction - which principle would be the best for Sjøskrenten Bath

Feel free to look at my sketch books and the project booklet, where there is a shorter summary of the process, if you like to see more of the process.

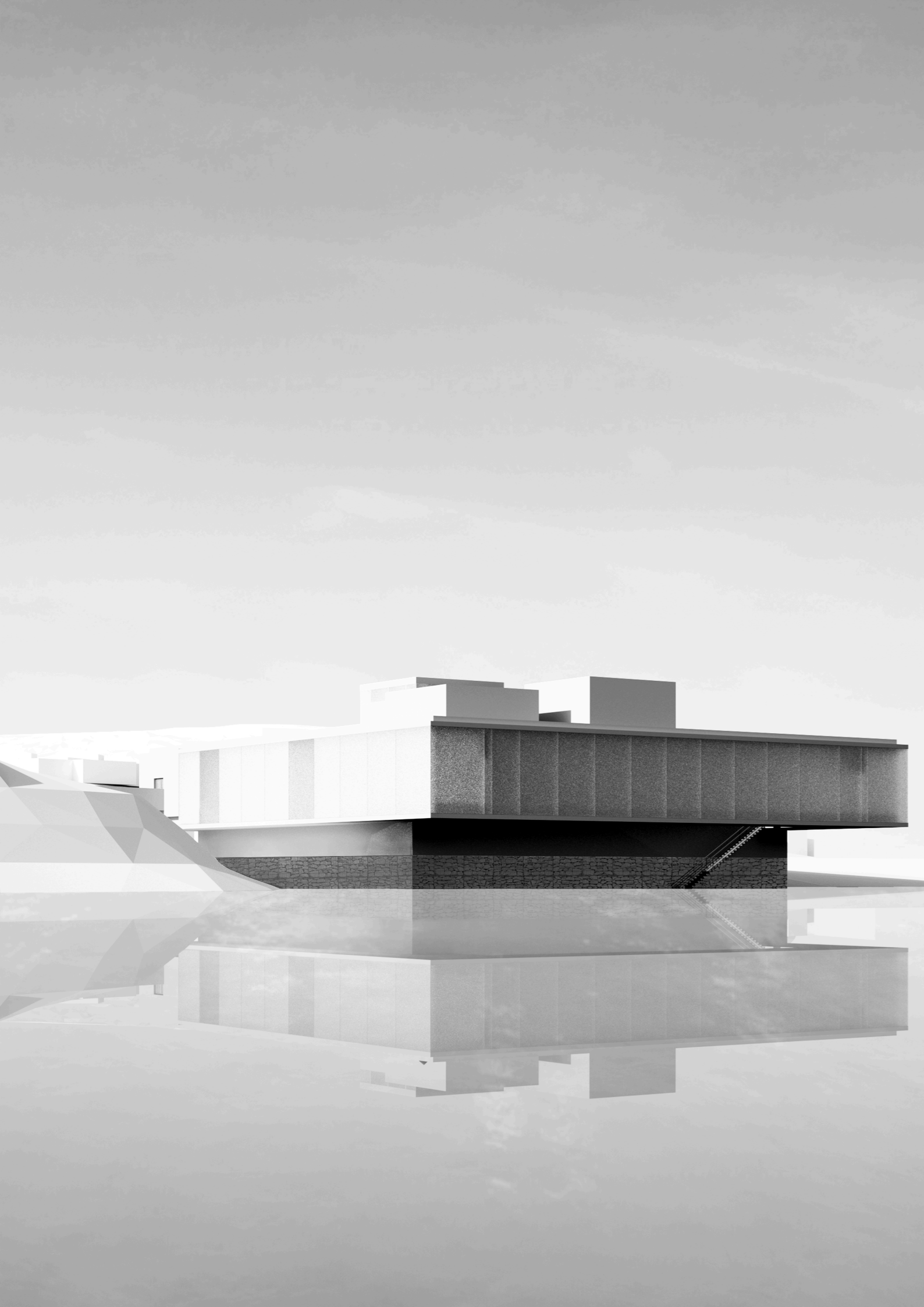




Plan bath and basement 1:500



Facade and sections 1:500



ARCHITECTURAL CONCEPT

The volume is a floating square. The square appears as horizontal from all directions, in contrast to the surrounding, pointy mountains. The concept is based on regular shapes that creates irregular spaces and variety in atmosphere and light conditions. The plan is organized with an introverted core containing the bathing area which are surrounded by an extroverted belt of functions (entrence hall, bar, relaxing areas, saunas, treatment rooms, showers, changing rooms). Inside the introverted bathing area, more squares appears and create an irregular negative space. The light inside this core is filtered through an atrium. In the four squares, that from the outside looks the same, light is framing four different, and culturally important, natural light conditions: The northern lights, The daylight, The evening sun - and the last sunbeams of the year, and The morning sun - and the first sunbeams of the year. These four squares together with the section breaks the regularity.

The square is placed on a smaller platform and cantilevers in all directions to appear as a floating object. The platform contains artificial permafrost made of gravel held back by gabions, and a floor for technical purposes (water treatment, water tanks++).

The facade is partly concrete, nanogel and glass. Where there is glass or nanogel, the facade is double layered. Between the layers there is room for both light fixtures and warm air flow to prevent condensation. The light fixtures makes the bath visible in the polar nights, and the nanogel gives privacy in areas where one would like to feel private. Concrete is the main material because of the baths need to be airtight, and due to its possibility to blend in to the rough scenery - the concrete will contain stones from the region.

View to the sea and the mountains across the fjord

Midnight sun, view out to the sea through the fjord

First sun of the year

Last sun of the year

Longyearbyen

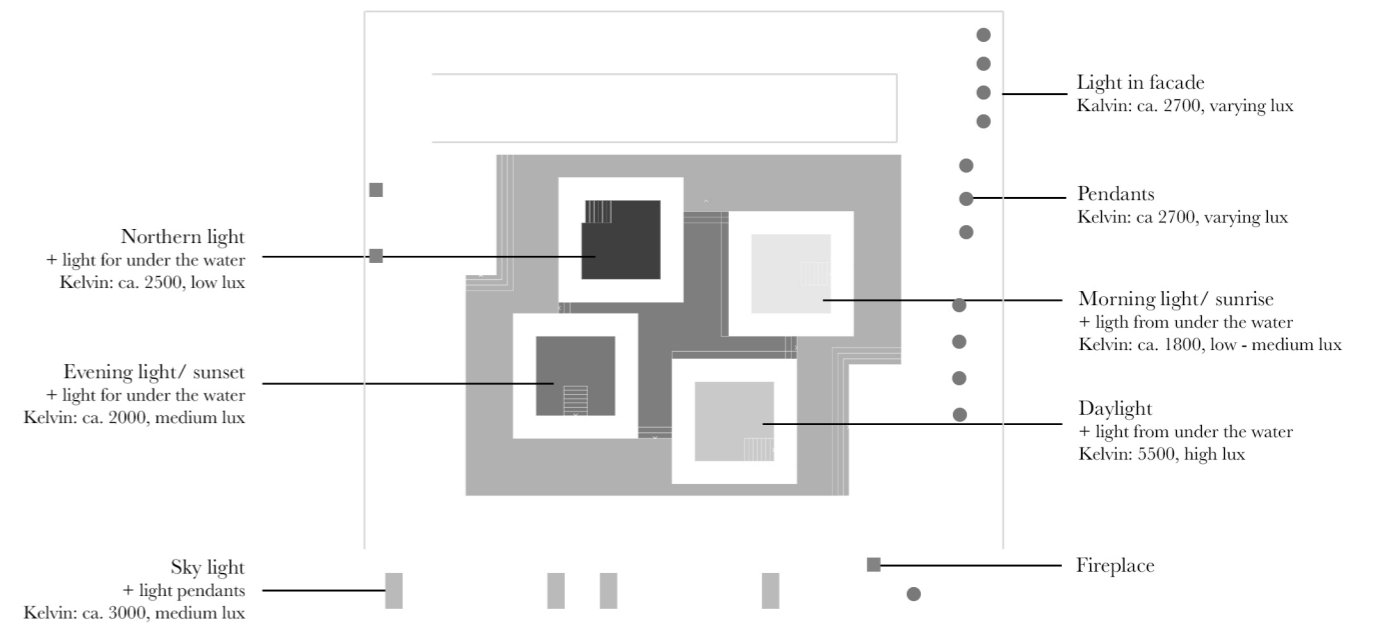
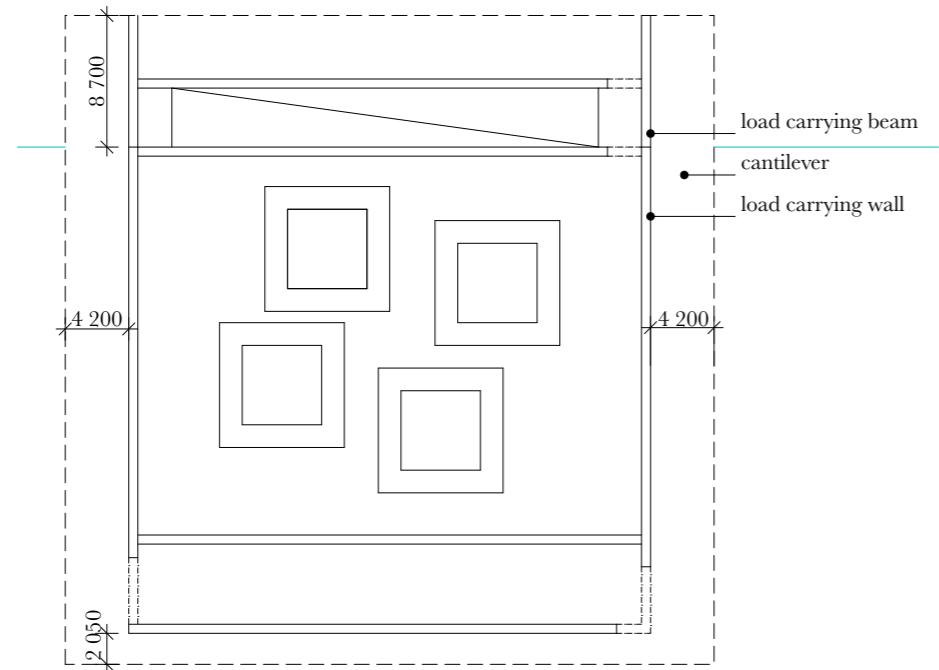
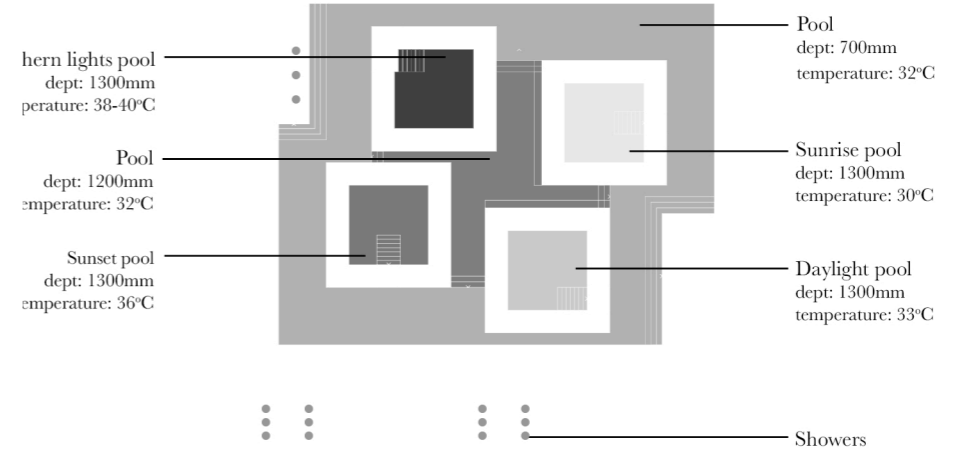
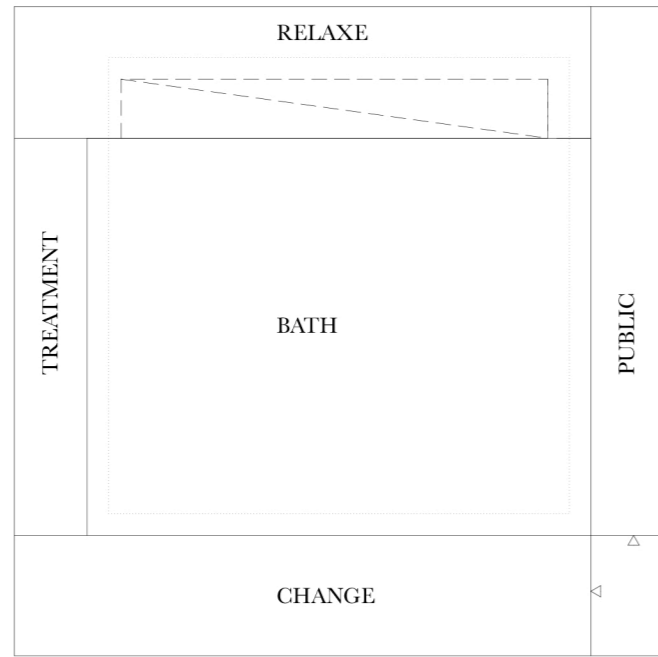
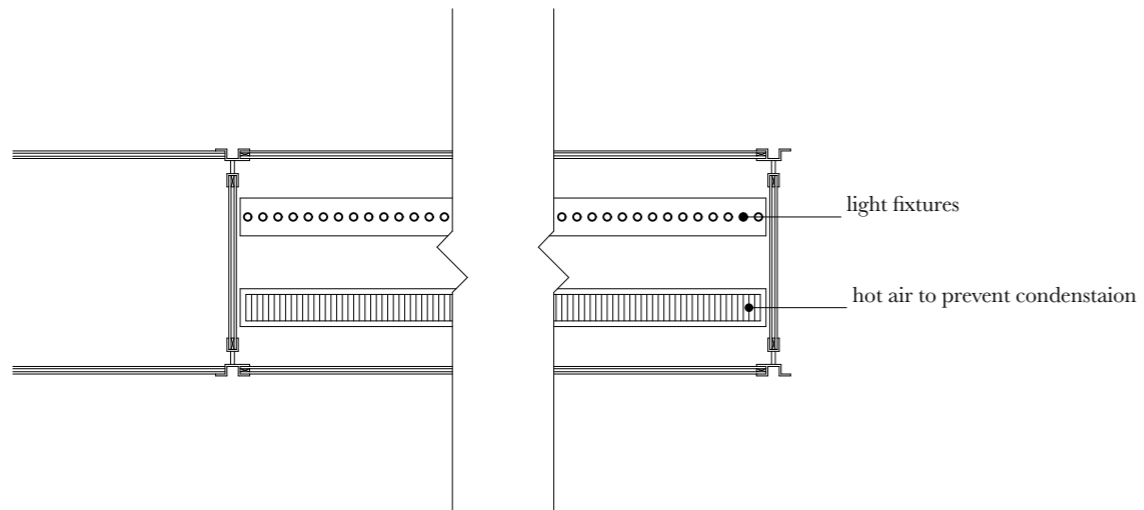
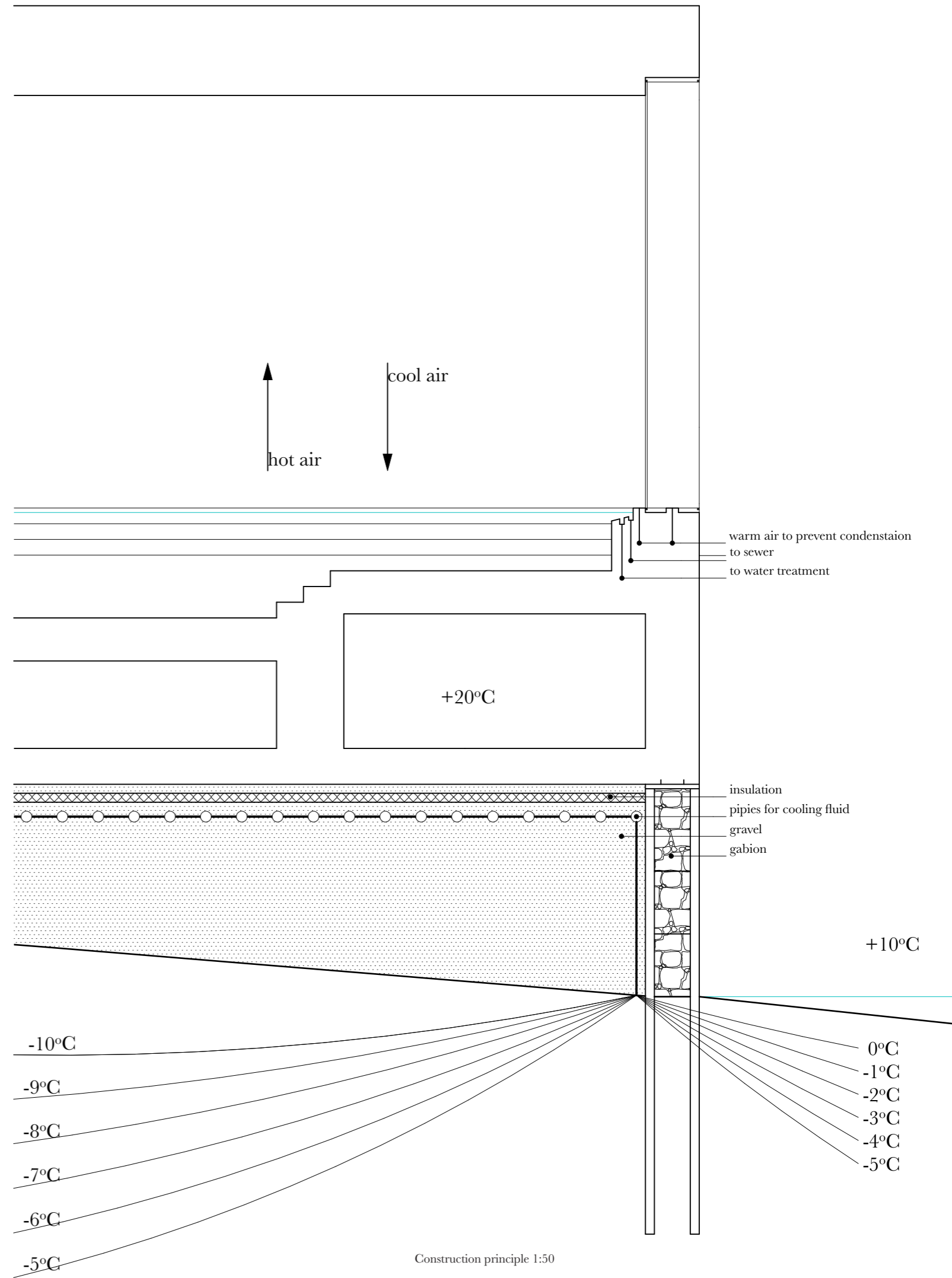


Diagram organization and construction 1:500

Diagram baths and light 1:500



Facade principle 1:50



Construction principle 1:50

