

CROSSING THE ICEBERGS

date: 10.2022-12.2022

type: academic project

site location: ilulissat, Greenland

instructor: Ni kexin

group work : Li Xinru & Jiao Liulu

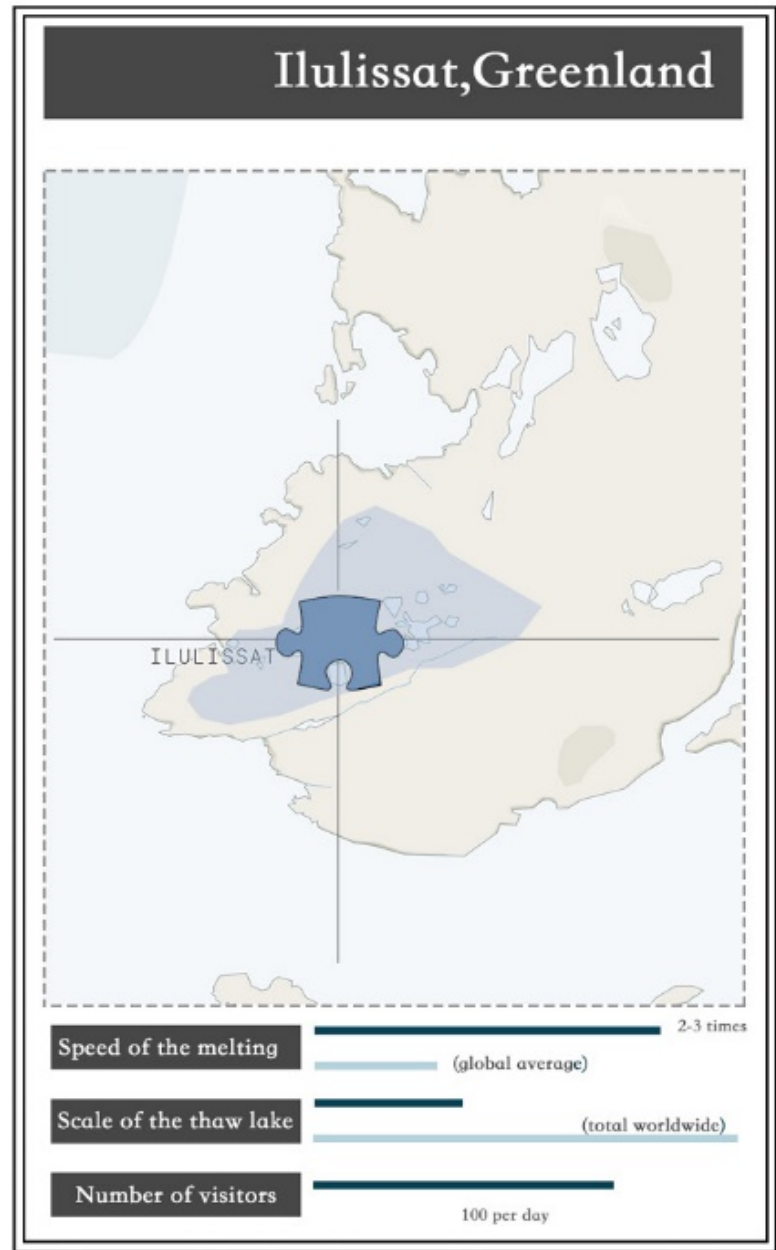
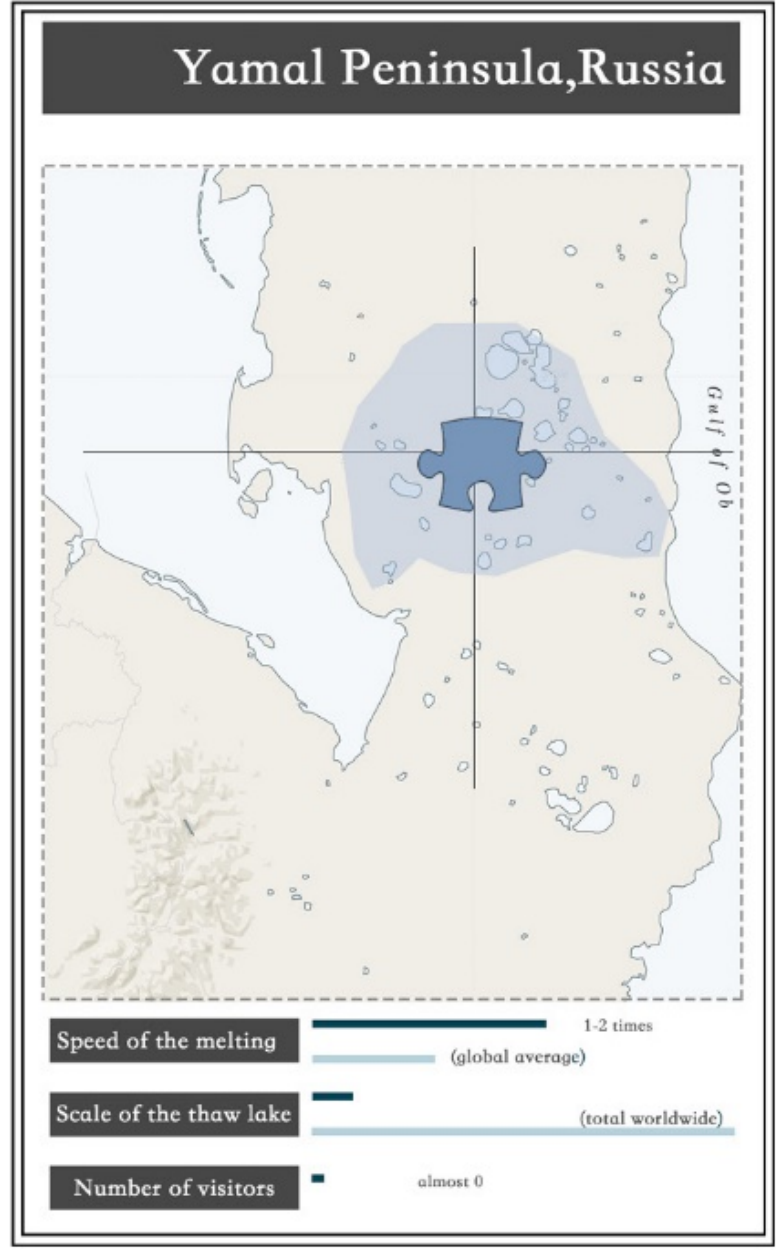
contribution:55%workload

(including:concept design 50%/modeling
60%/drawing 50%)

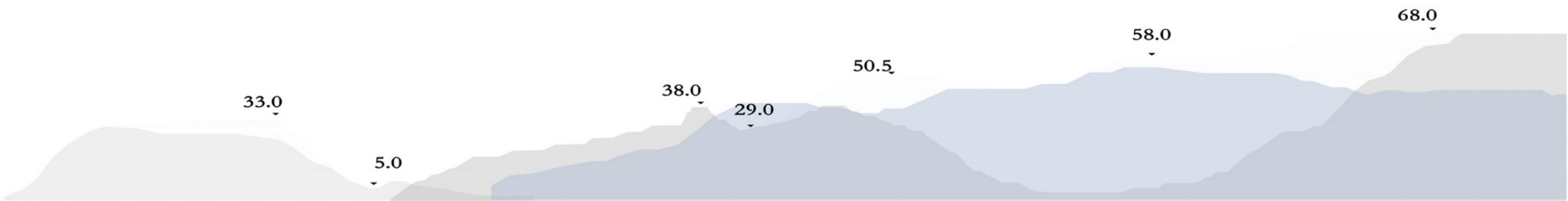
The project is based on the theme of sustainable development and focuses on the environmental problems of melting glaciers caused by global warming. Through the design, it is hoped to raise awareness of this serious problem and to reduce heat radiation through the building skin materials, building forms and installations to slow down the melting of glaciers.



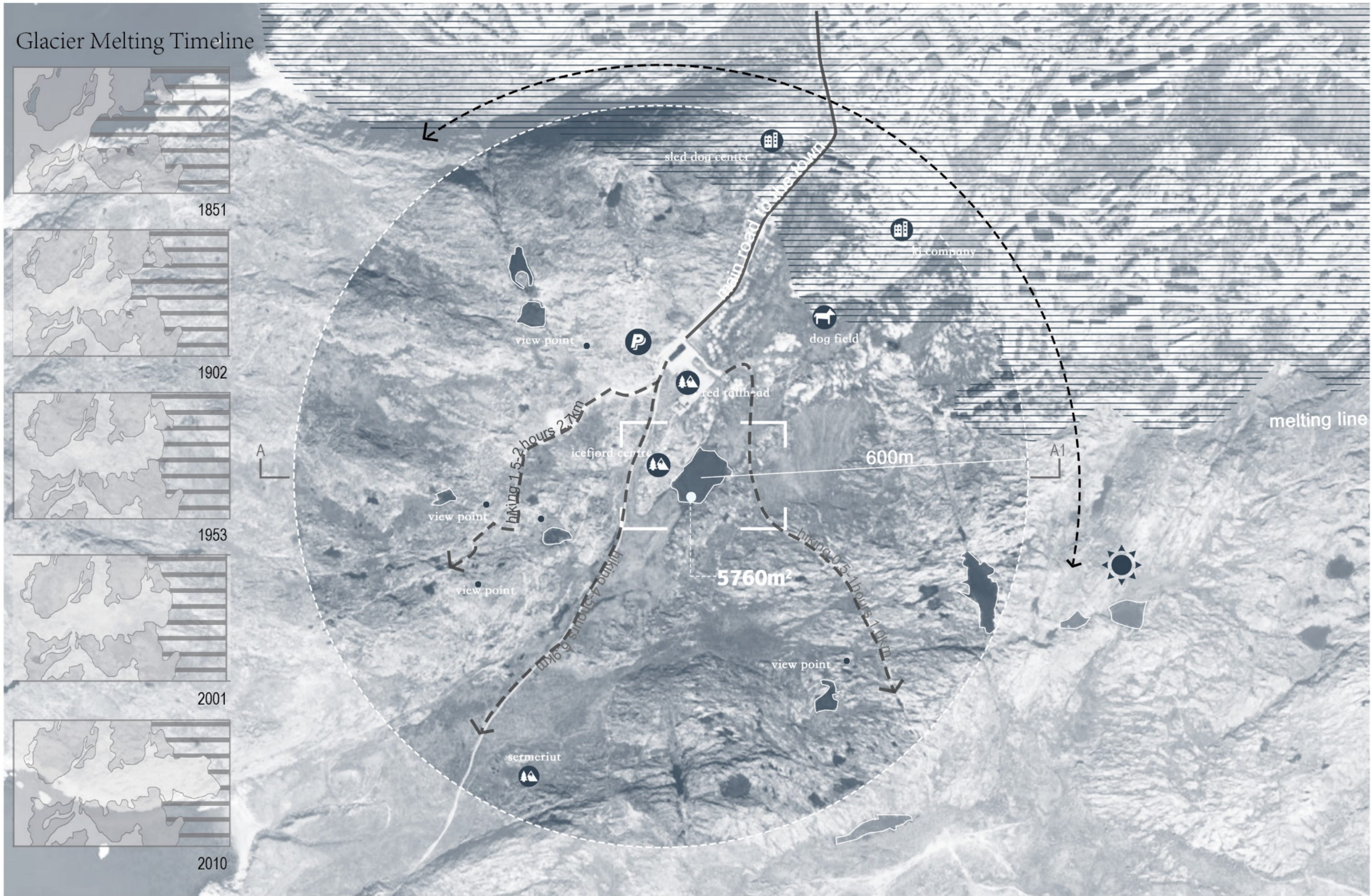
THAW LAKE PHENOMENA



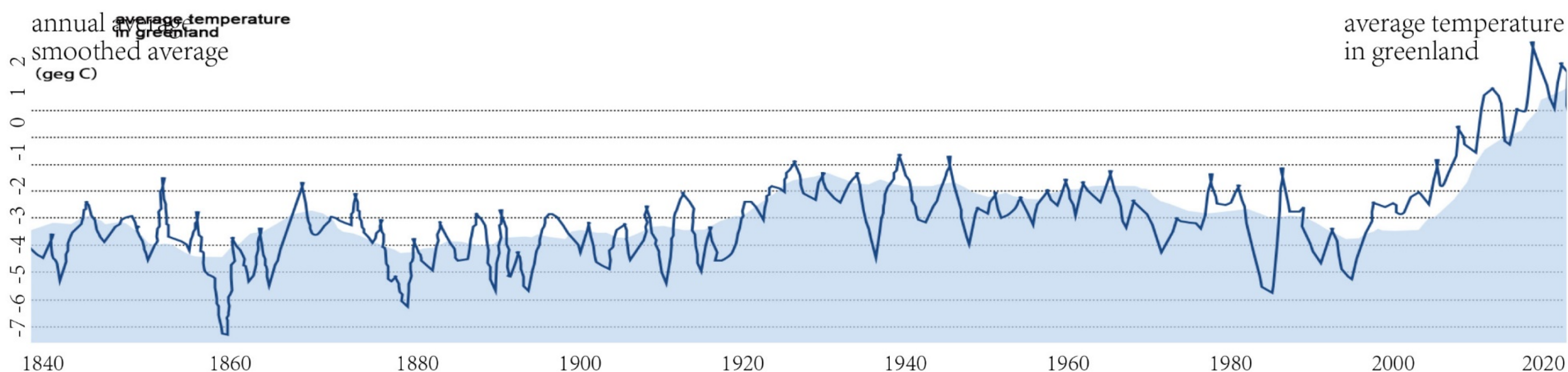
A-A SECTION



MAPPING

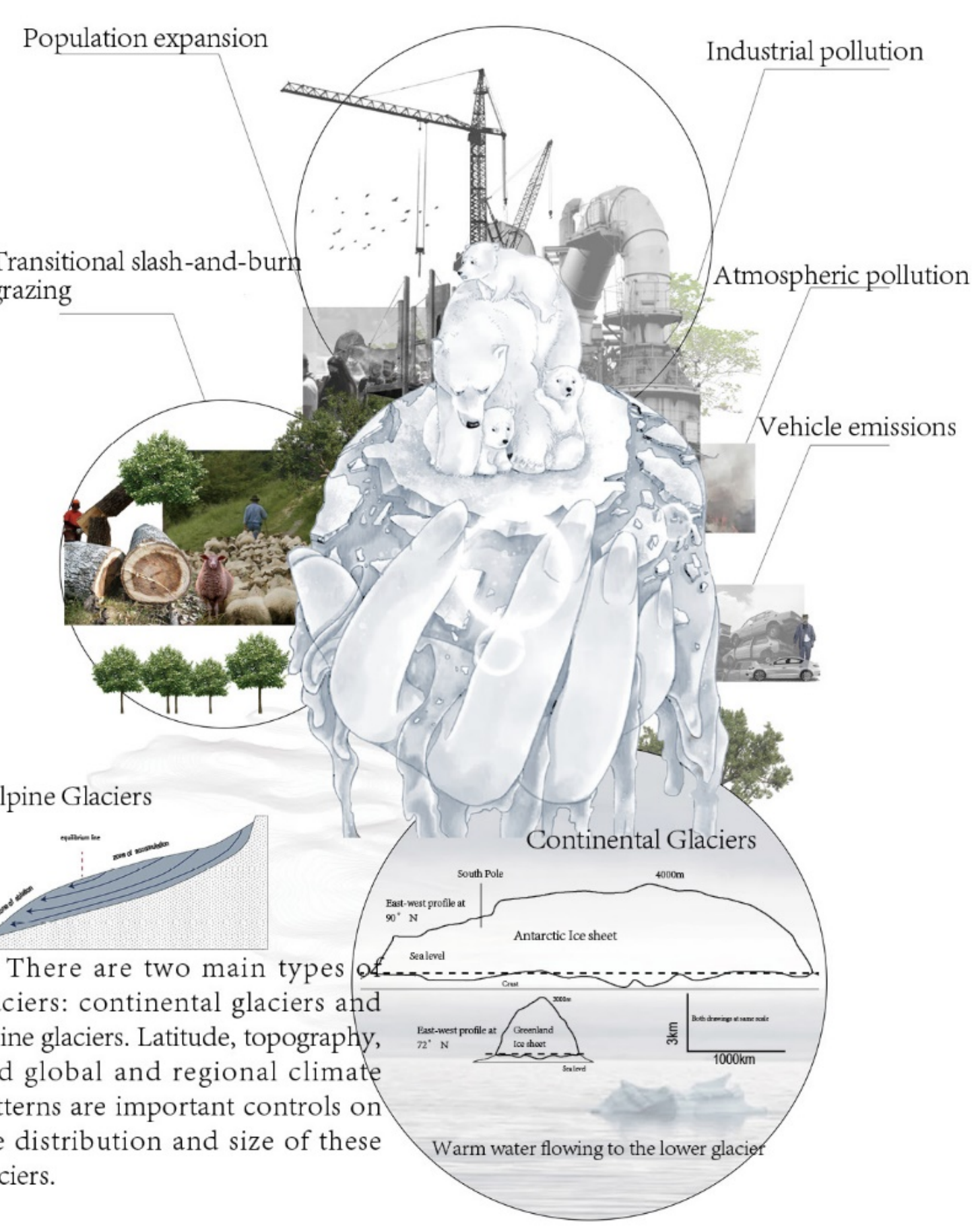


AVERAGE TEMPERATURE IN GREENLAND

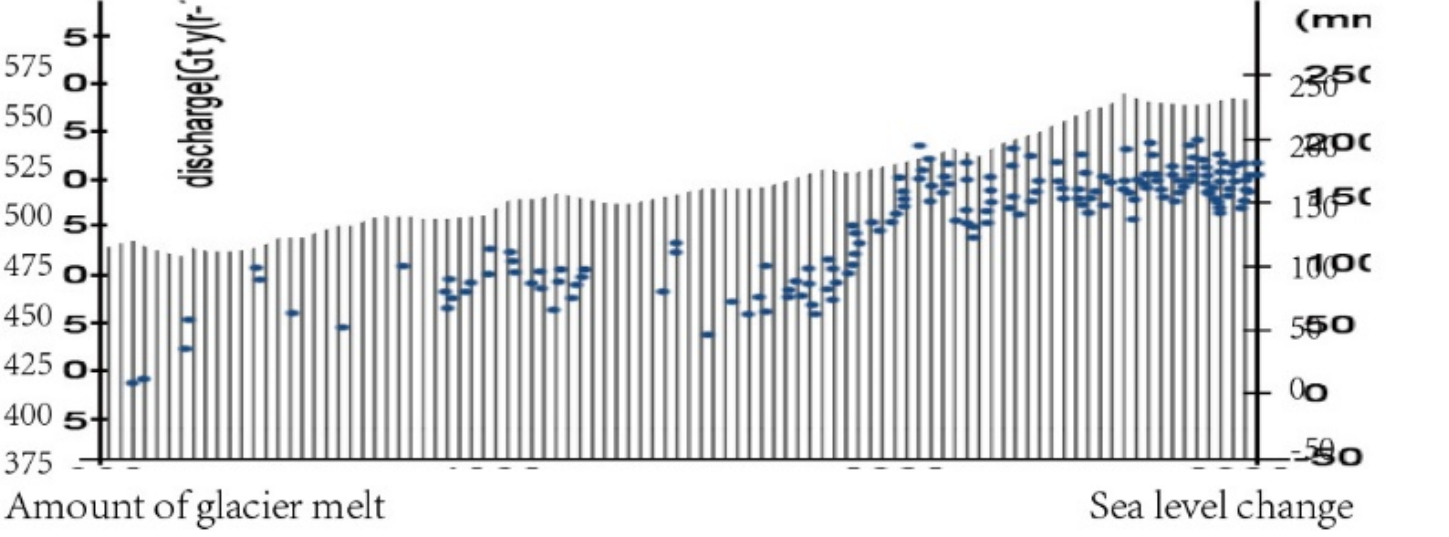


Global warming has always been a worldwide problem, and is particularly pronounced in glaciated areas such as Greenland. The data shows that both the mass of the ice sheet and the sea level have been decreasing, especially in the last two decades. Many glacier areas are experiencing thermal melt lakes, which can release large amounts of carbonaceous gases and thus accelerate environmental degradation. I wanted to create buildings and installations that would address the melting ice and educate visitors at the same time, so we started with the largest and most visited Ilulissat.

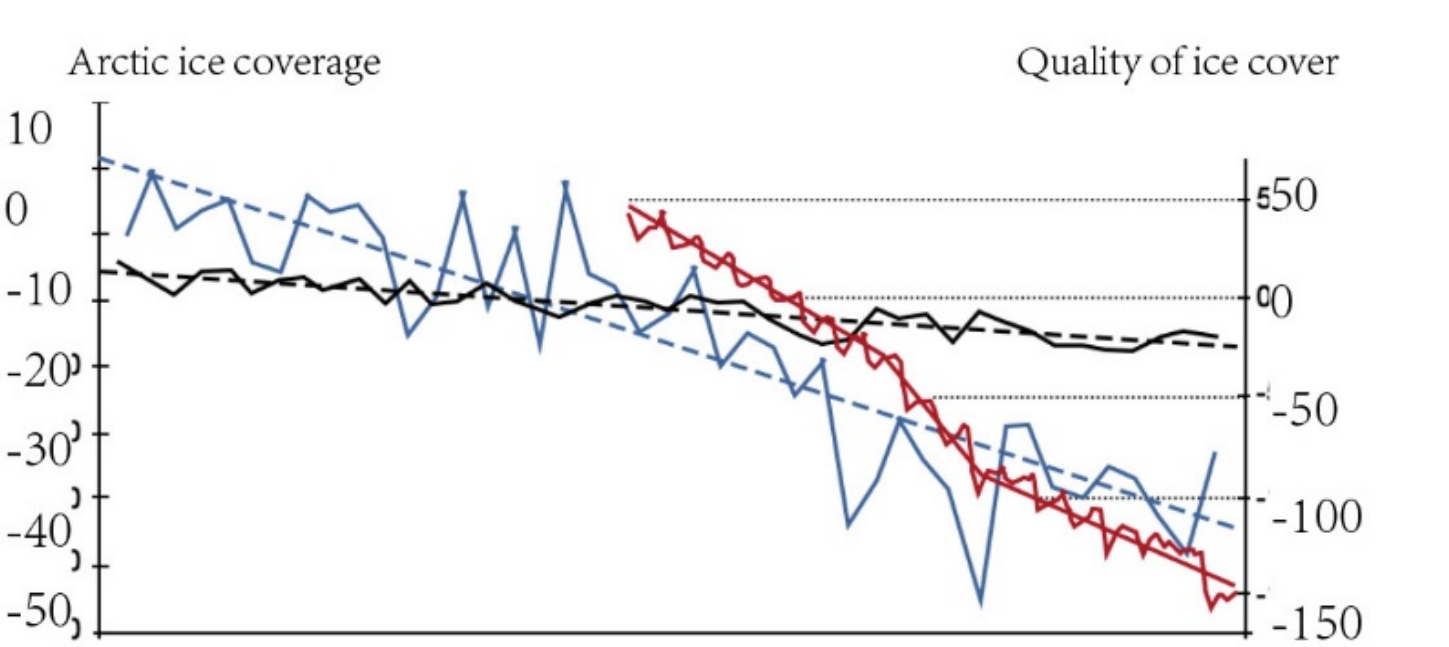
CAUSES OF GLACIAL MELTING



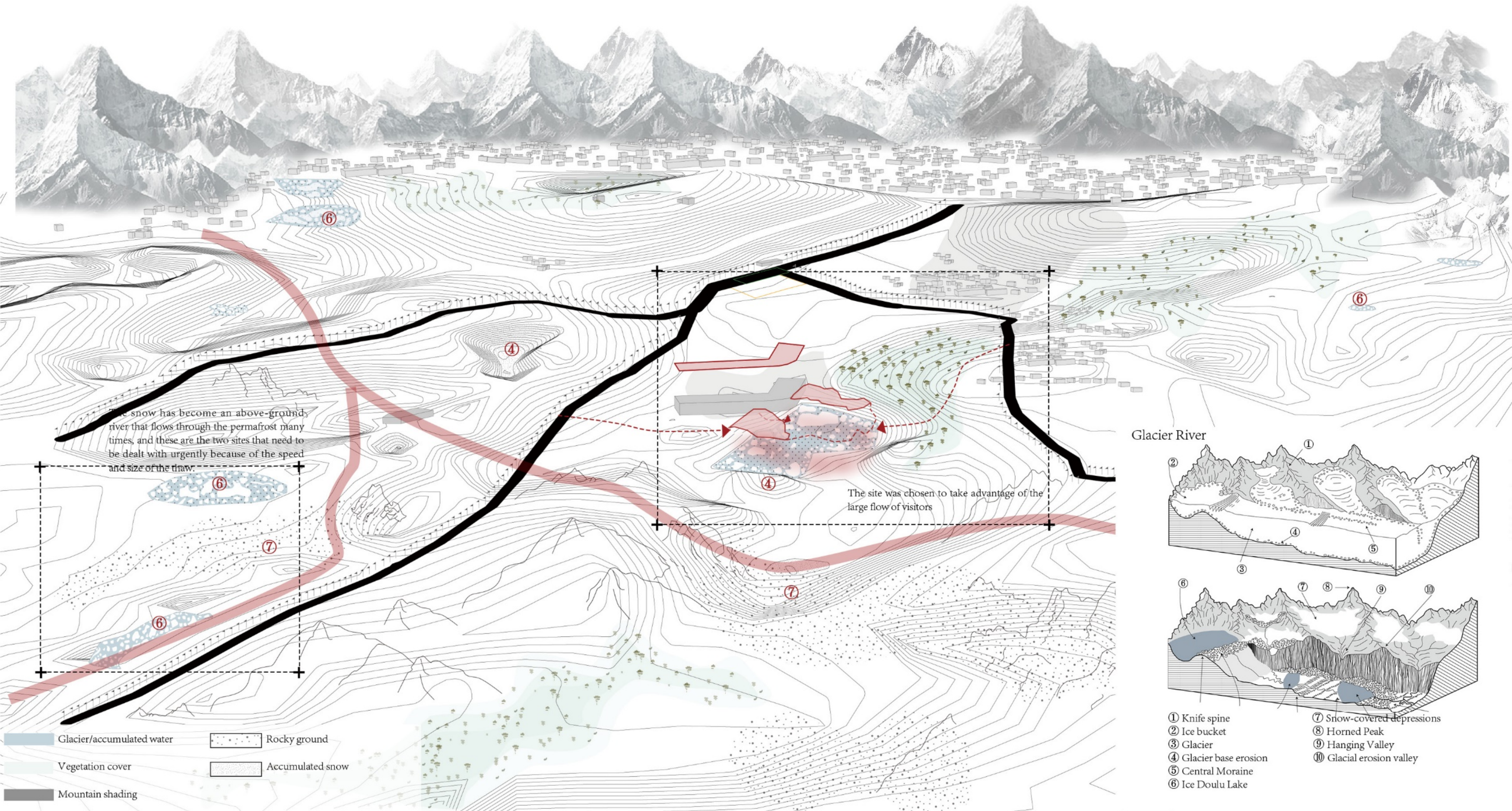
ARCTIC ICE COVERAGE/QUALITY OF ICE COVER



AMOUNT OF GLACIER MELT / SEA LEVEL CHANGE



ICE STATUS



LIFE OF ILLUSSAT

The story begins in Greenland, where for a hundred years people lived in a special glacial climate and made their living from the fishing and tourist industries.

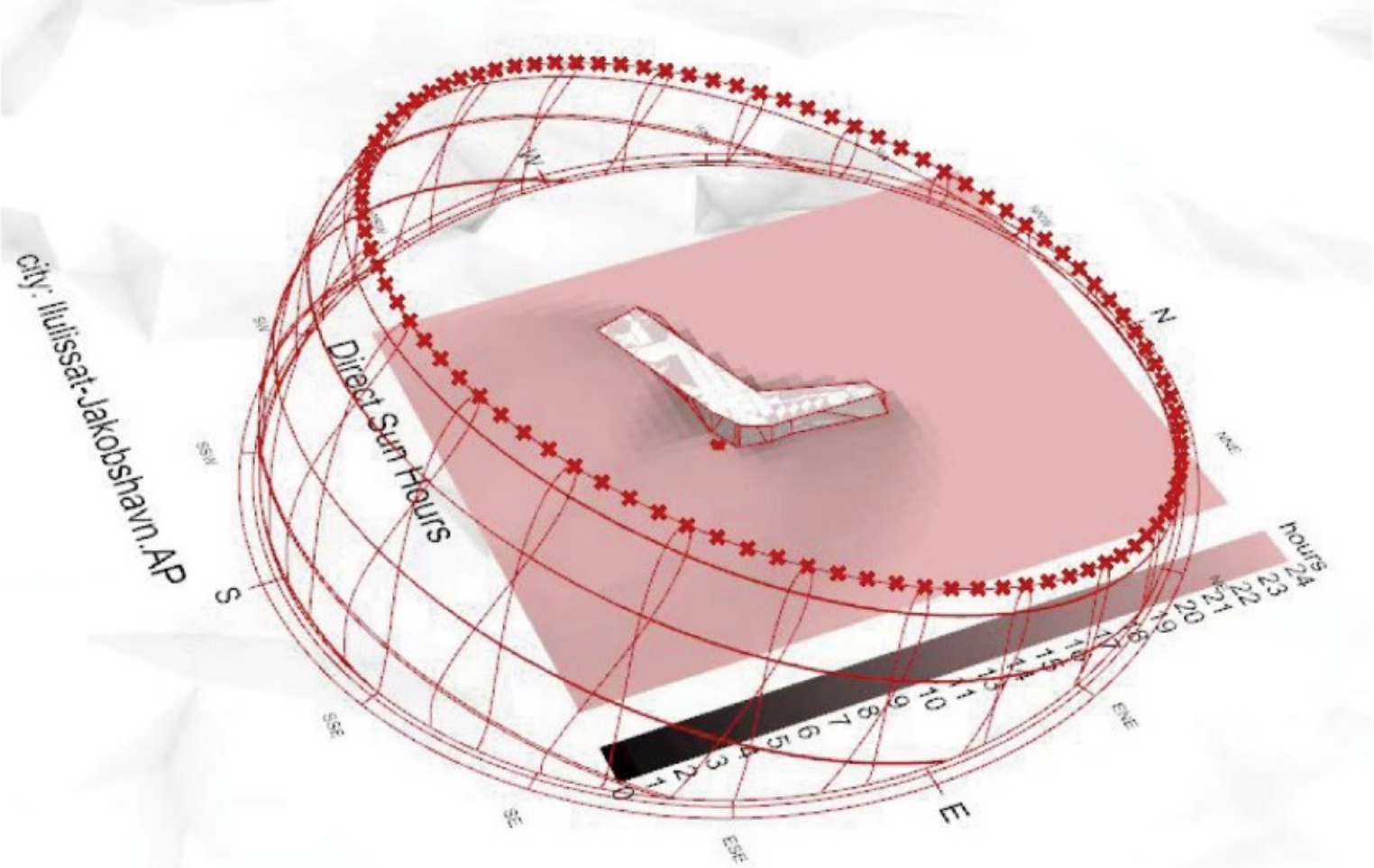
With global warming, the glaciers here have suffered unprecedented damage and residents here can see a gradual drop in the snow line every year.

4000 local people
3000 years history

The illussat, the most popular tourist area in the region, has seen a lot of construction in recent years and has attracted a large number of visitors to the area.

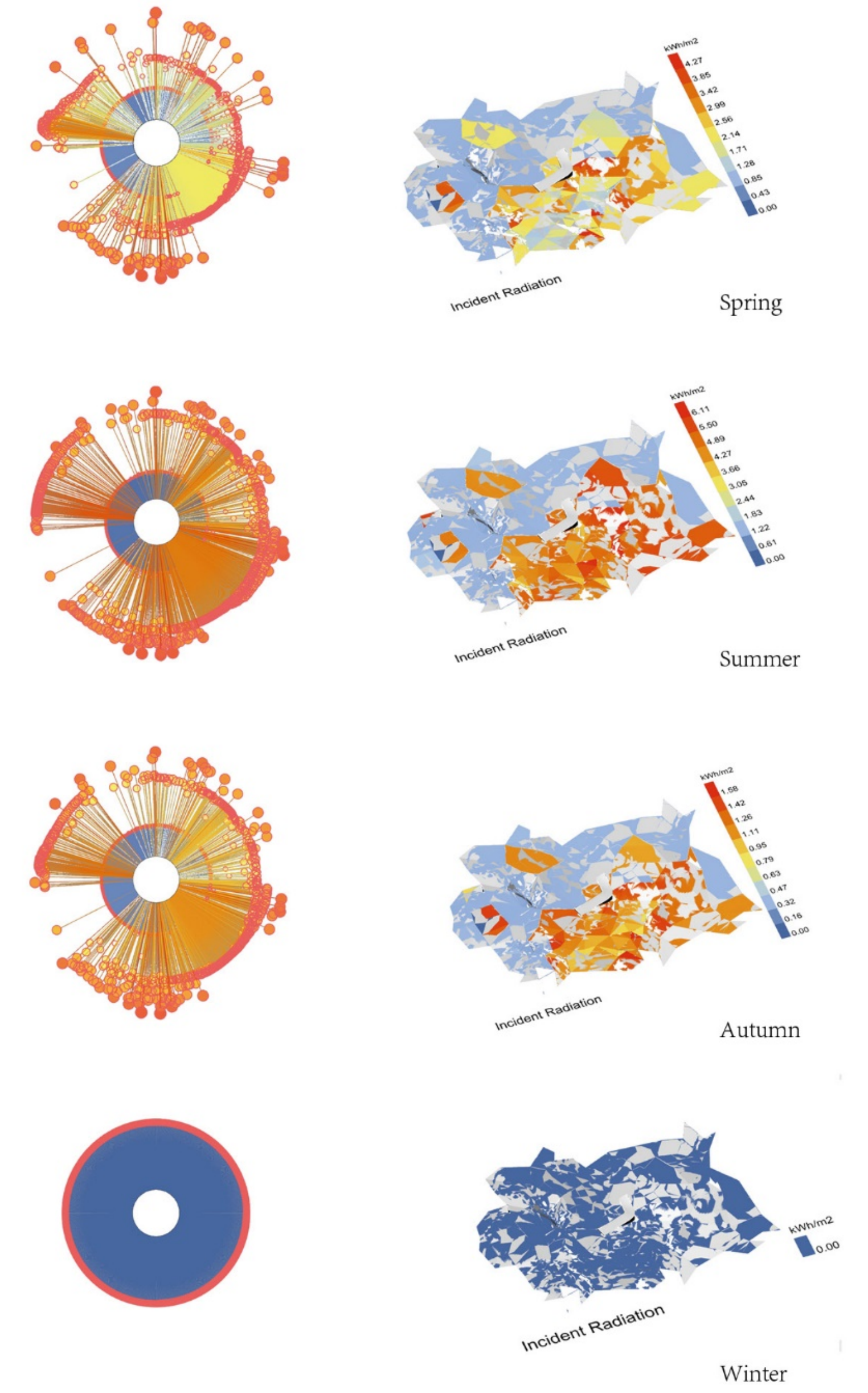
We also hope that this is an opportunity for visitors to see the beauty of nature while being aware of its demise. At the same time, we hope to take some effective measures to stop this.

SUNLIGHT ANALYSIS

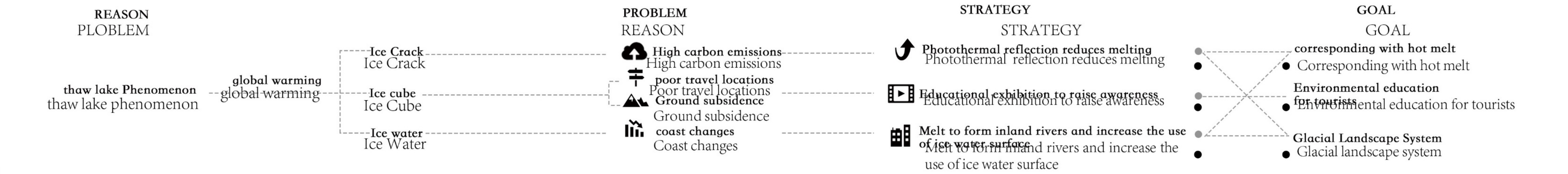


Zooming into the site, we found that there was an established glacier museum , which I used as an opportunity to analyse and design. The distribution of light and heat radiation on the site dictated the main locations for construction to reduce glacial melt. And the four seasons of radiation changes determined where the ice on the lake was most in need of protection.

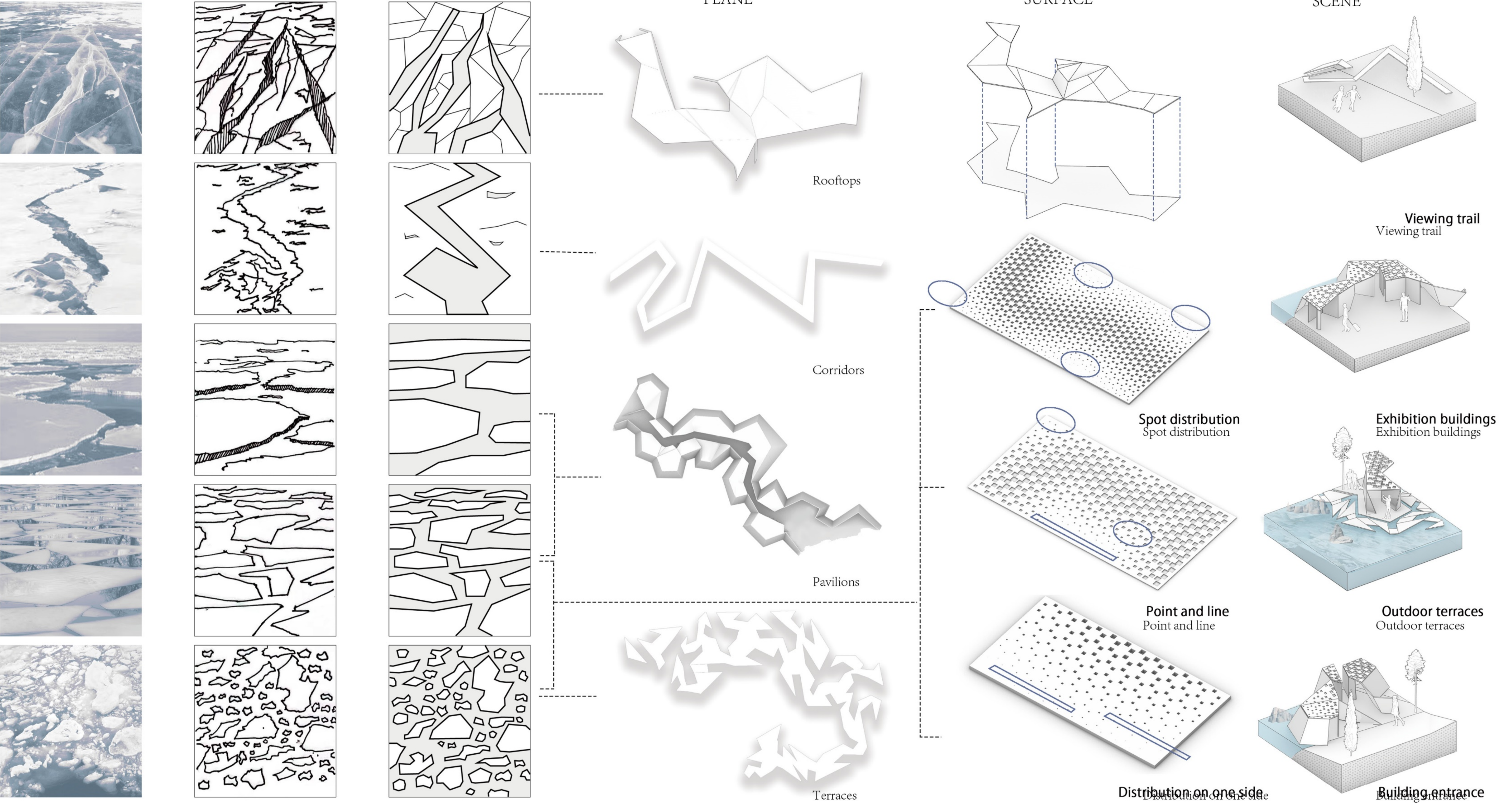
THERMAL RADIATION ANALYSIS



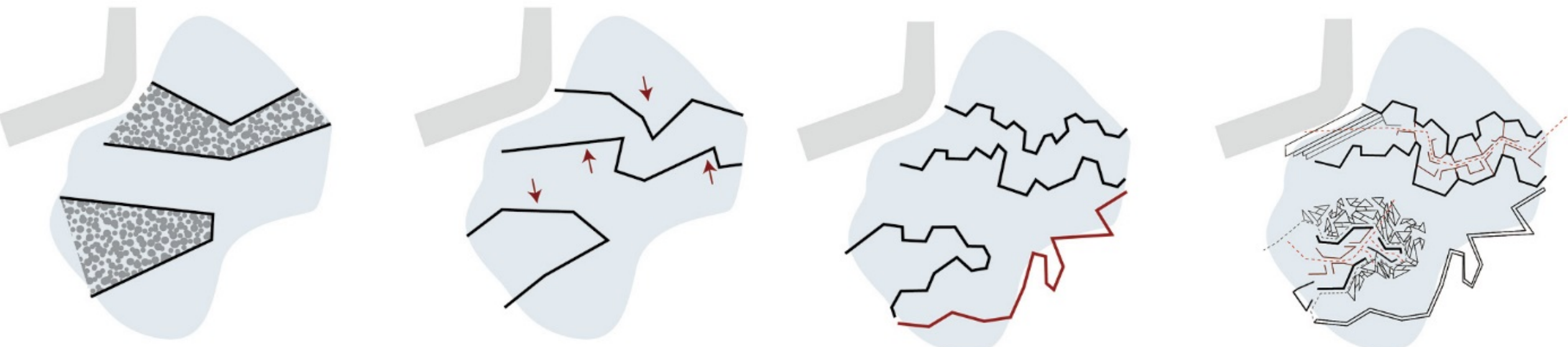
CONCEPTUAL DEVELOPMENT



ICE STATUS



SHAPE COMPOSITION



- 1. Delineate the construction area and location
- 2. Generate outlines based on sight lines and staggered pedestrian flow boundaries
- 3. New and old buildings, different construction connections
- 4. Adding details , creating platforms

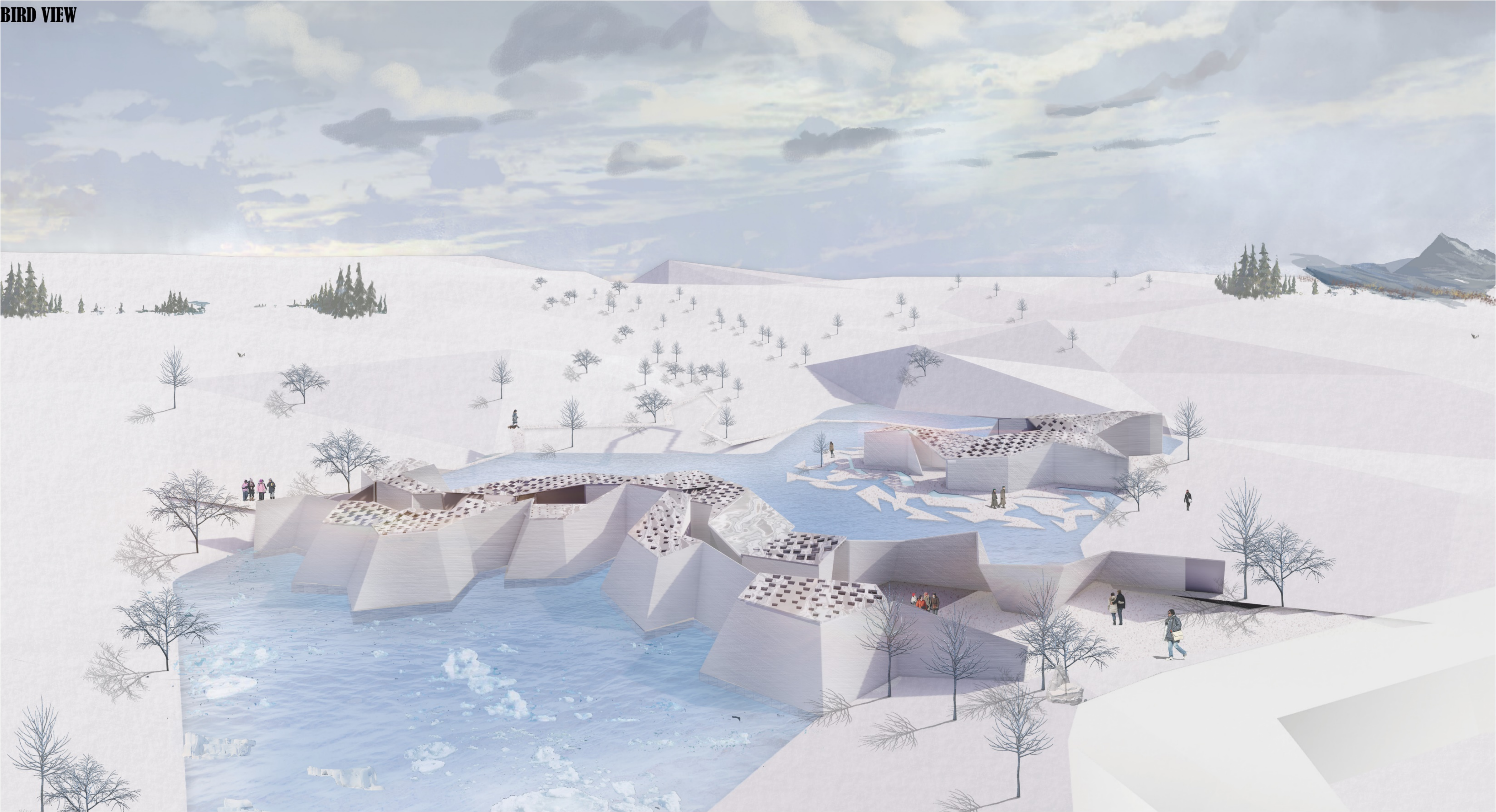
GROUND FLOOR PLAN



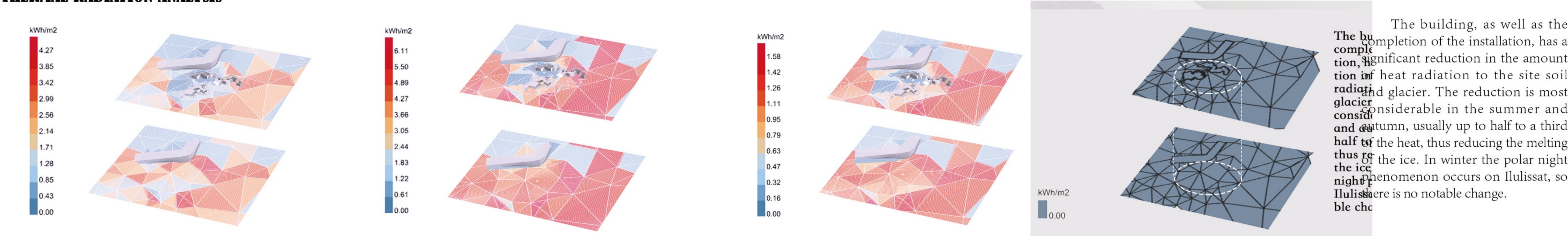
MASTER PLAN



BIRD VIEW

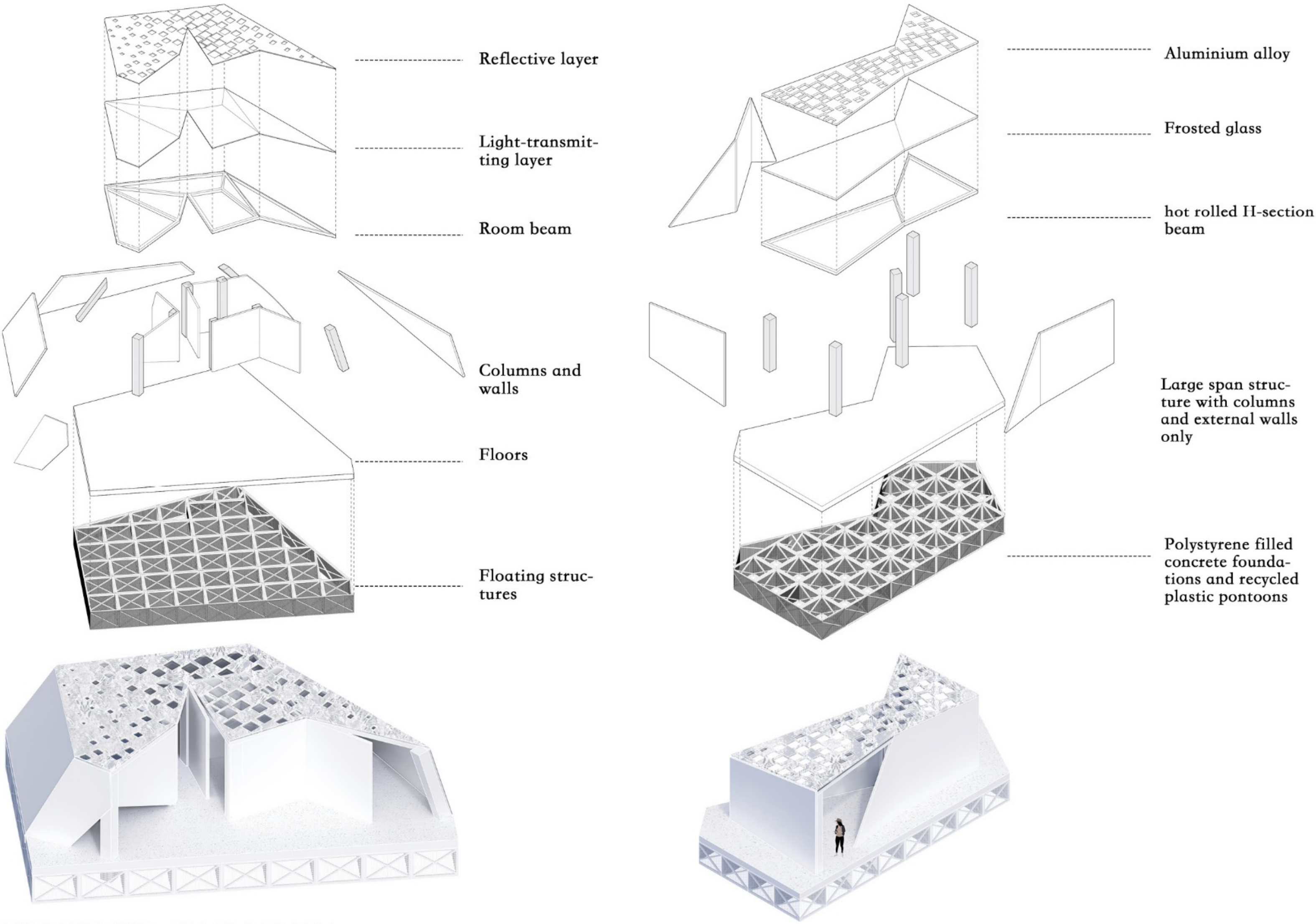


THERMAL RADIATION ANALYSIS

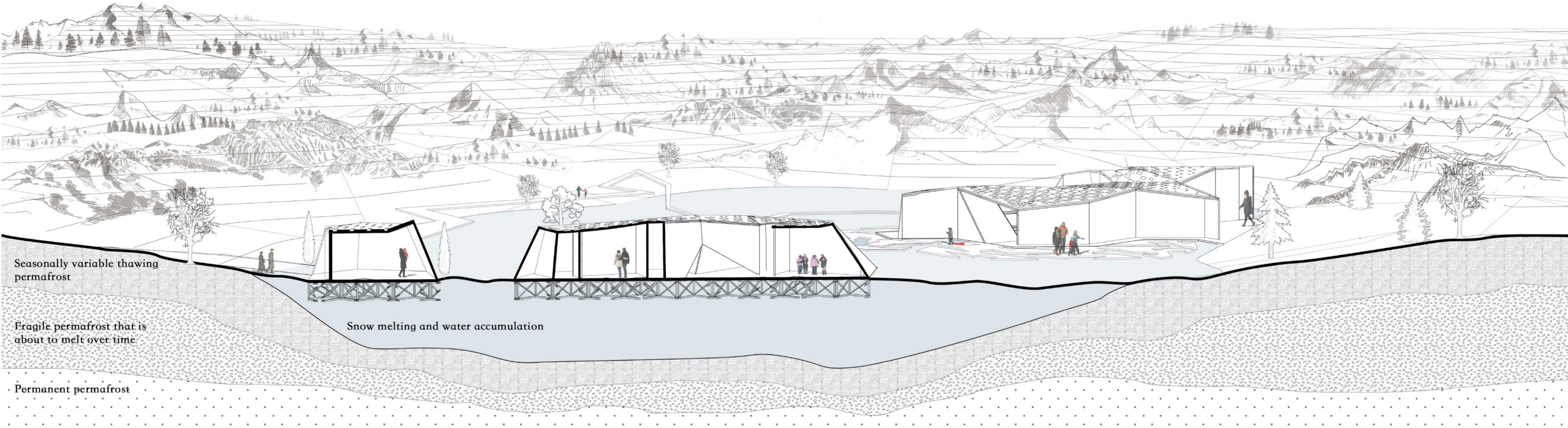


STRUCTURE

A simple flat module made from reinforced recycled plastic to create a safe, floating base structurefor building spaces over water.

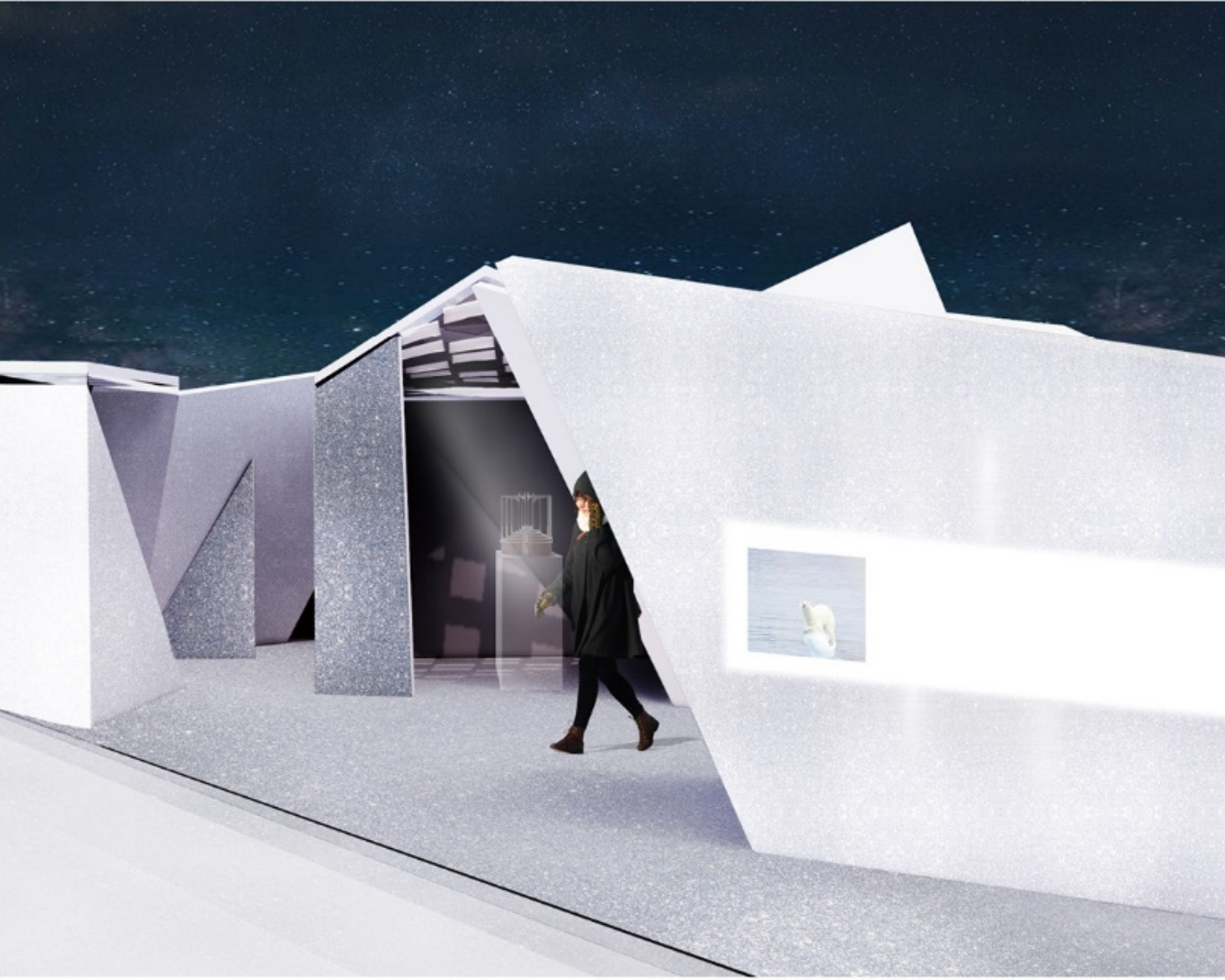


ANATOMICAL PERSPECTIVE



WALKING EXPERIENCE

The immersive exhibition hall gives visitors a deep sense of the disasters caused by global warming and fosters awareness of environmental protection.

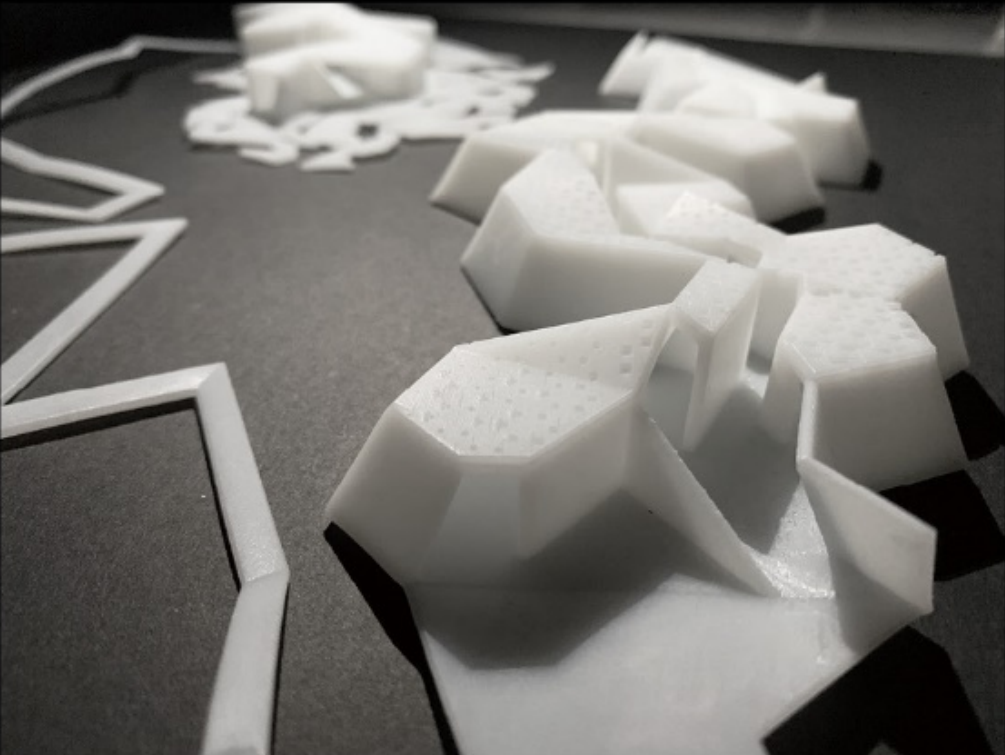


After experiencing the exhibition space inside the building, one steps outside to experience the melting of the glaciers even further.

WALKING EXPERIENCE

Here is the aerial view of the model of the site in different types .
In the site , the main building areas as well as the building form were identified through a preliminary analysis . The physical model again envisages human activities (viewing , reflection , resting , walking , etc .) from a three - dimensional perspective , while considering the connection to the original building.

Entrance A



Entrance B



Entrance C

