A Monastic Passage in the Landscape

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Explore Lab 39
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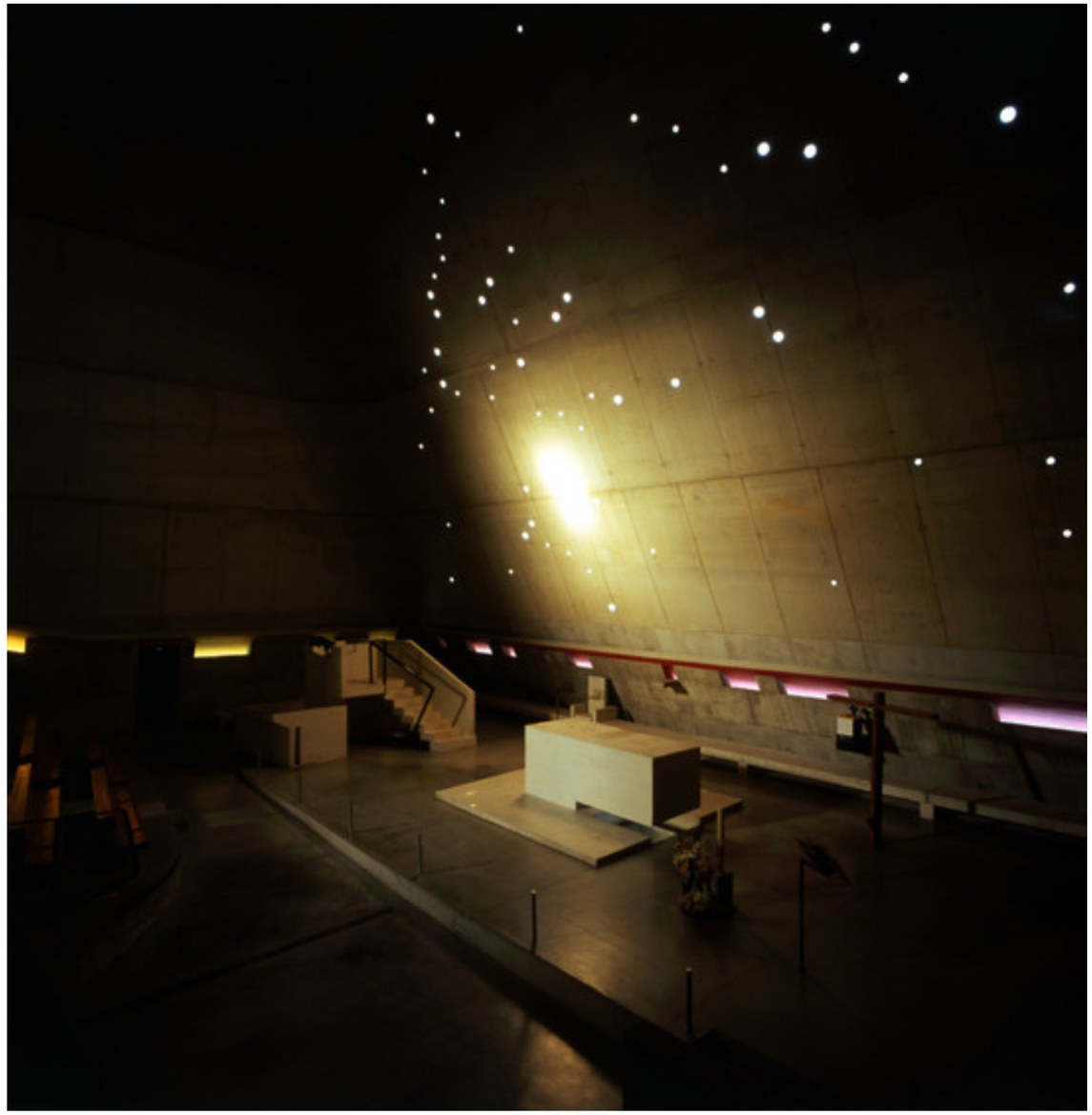
Introduction

Explore Lab

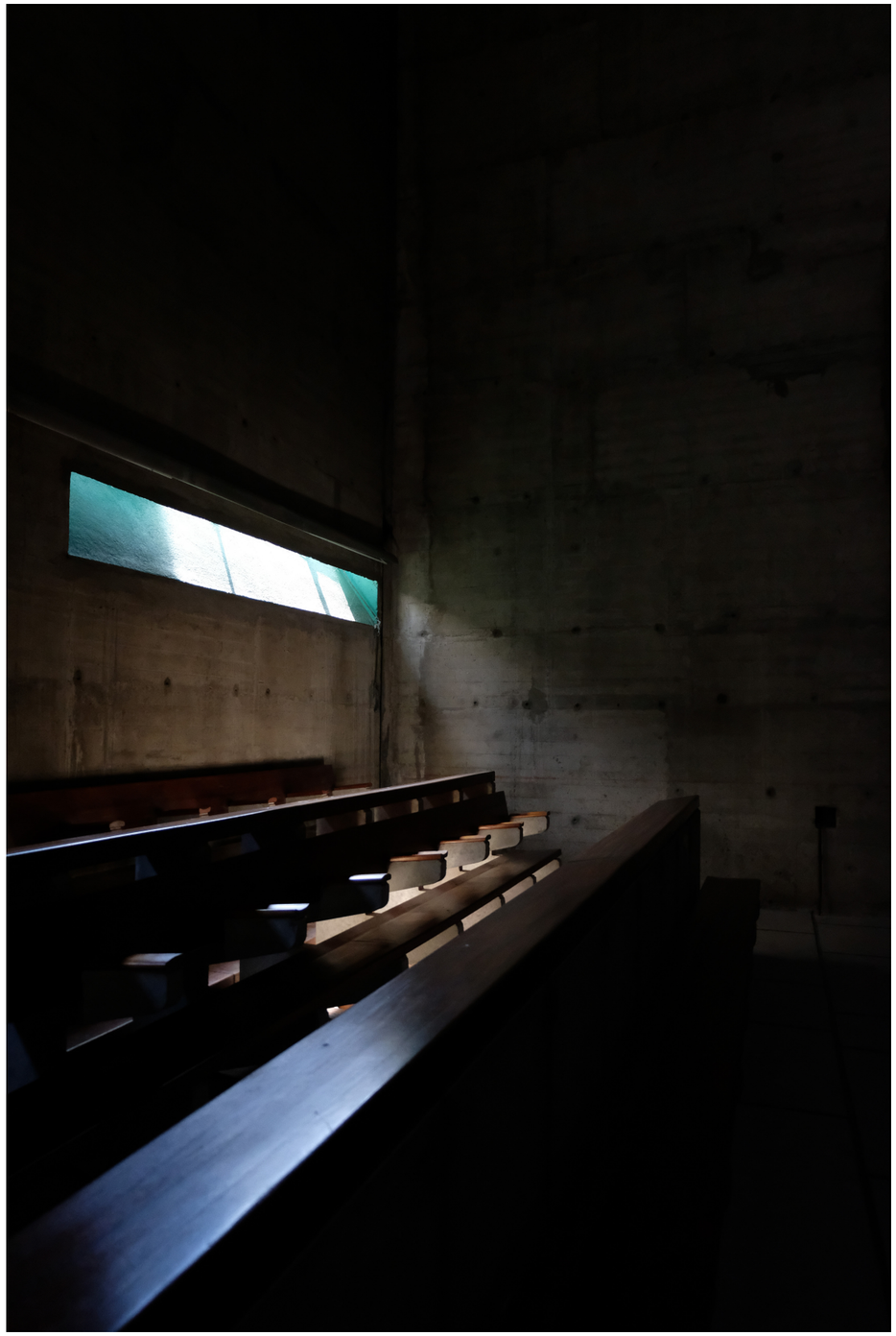
Introduction - Interests

Sacred spaces

St. Pierre, Firminy



Couvent Sainte Marie de la Tourette

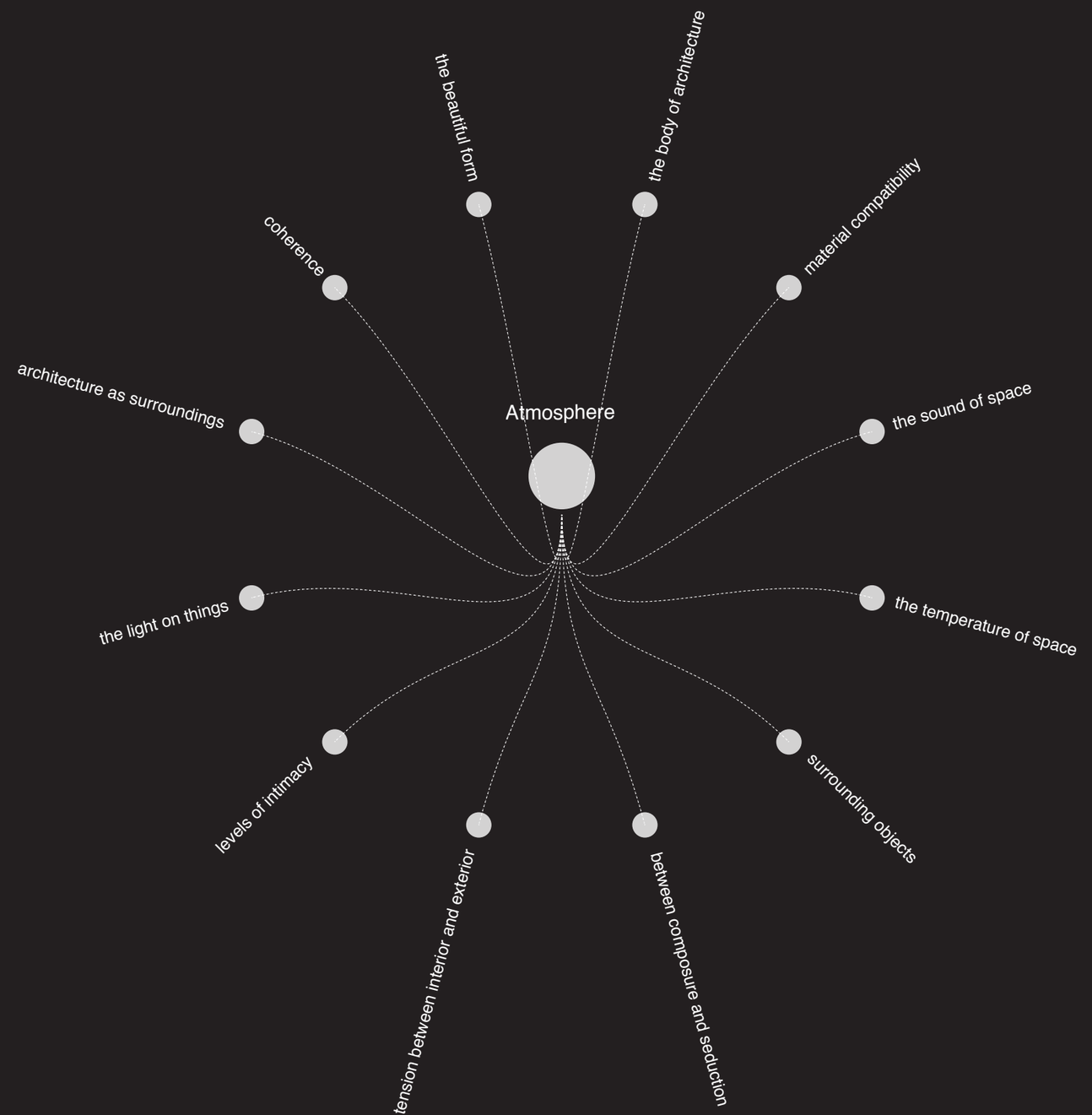


Introduction - Interests

Sacred spaces

Introduction - Interests

Sacred spaces - Atmosphere


Atmosphere
the beautiful form
the body of architecture
coherence
material compatibility
architecture as surroundings
the sound of space
the light on things
the temperature of space
levels of intimacy
surrounding objects
tension between interior and exterior
between composure and seduction

Introduction - Interests

Sacred spaces - Atmosphere

Creation of Emotional /
Contemplative Spaces

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Creation of Emotional /
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Death as a Theme

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Death as a Theme

A Space to Contemplate Death

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Landscape

⟶ Design

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Landscape

→ Design

How can we make
atmosphere in architecture
more approachable?

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Landscape

How can we make
atmosphere in architecture
more approachable?

→ Research

Foundation Models (AI)

Generative Fill
Tropical frog with beautiful detail...

How can we ‘process’ architecture atmospheres so that it is more approachable?

Atmospheres is the emergent quality of various elements in the building that we perceive (measurable)

This process of recognising implicit and abstract concepts out of measurable input is something that foundation models (AI models) do well at scale

The visualised output of foundation models can be used to navigate the theme of atmospheres

This can be used to evaluate AI tools

Method

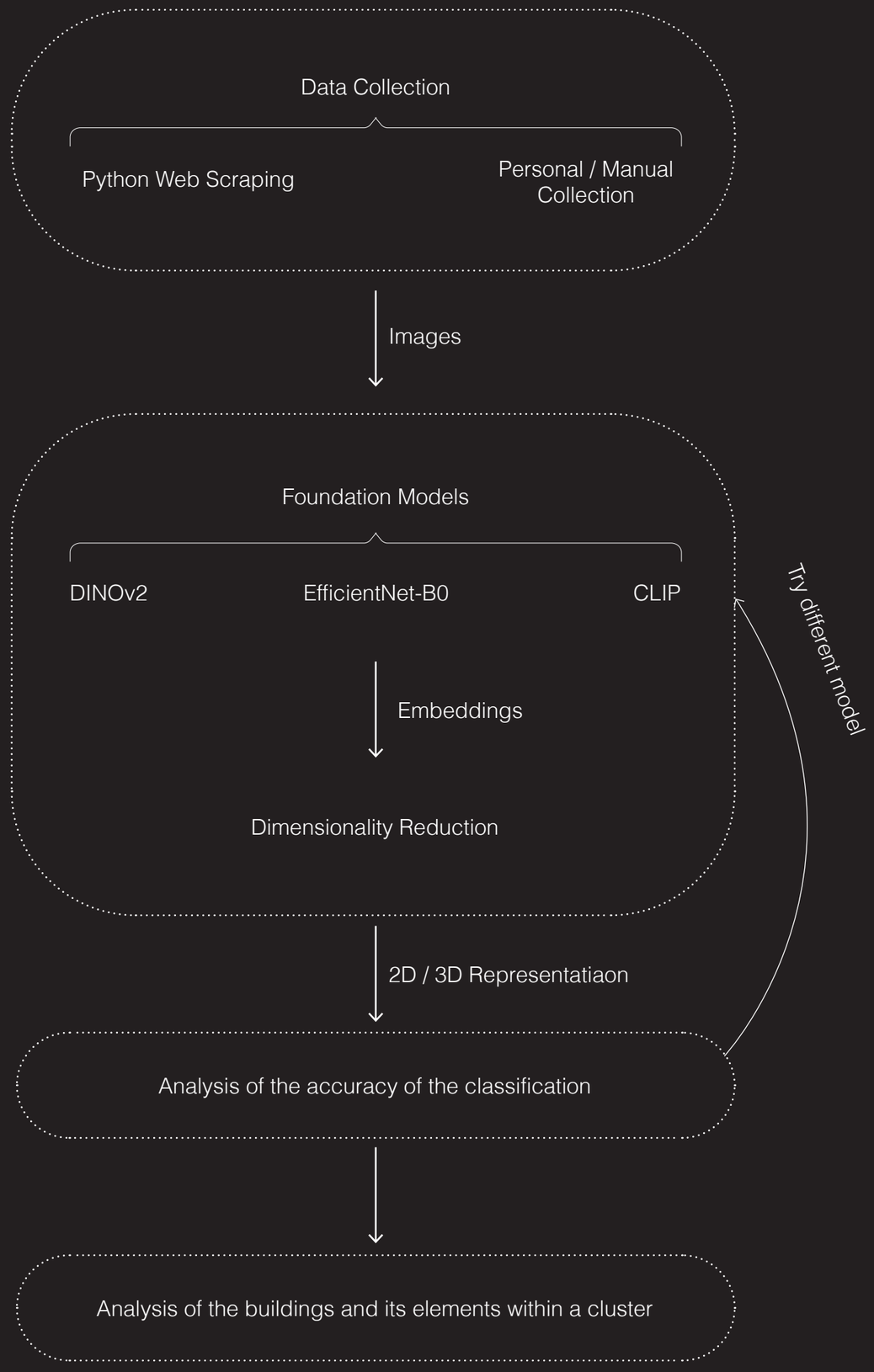

Data Collection
Python Web Scraping
Personal / Manual Collection
Images
Foundation Models
DINOv2
EfficientNet-B0
CLIP
Embeddings
Dimensionality Reduction
2D / 3D Representatiaon
Analysis of the accuracy of the classification
Try different model
Analysis of the buildings and its elements within a cluster

Image to Embedding

Image

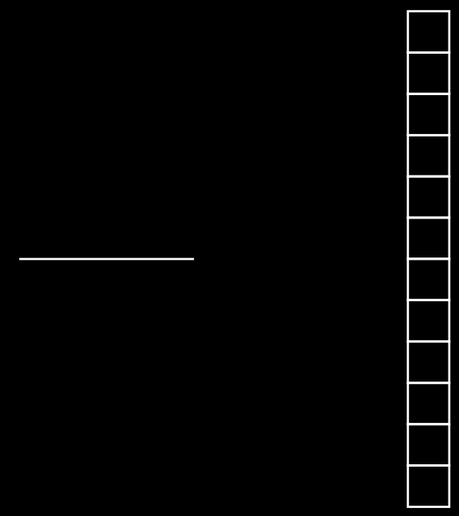
Model

Vector Embedding

Contains all the features that the foundation model detects in an image.

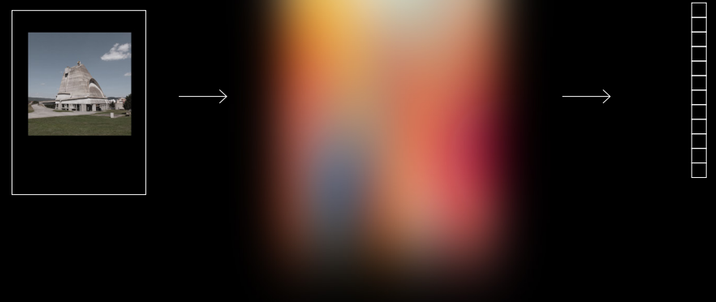
such as “How much of the image is blue?”
“How round is the subject of the image?”, etc

vector format: (0.871236, 0.615235, 0.135234...

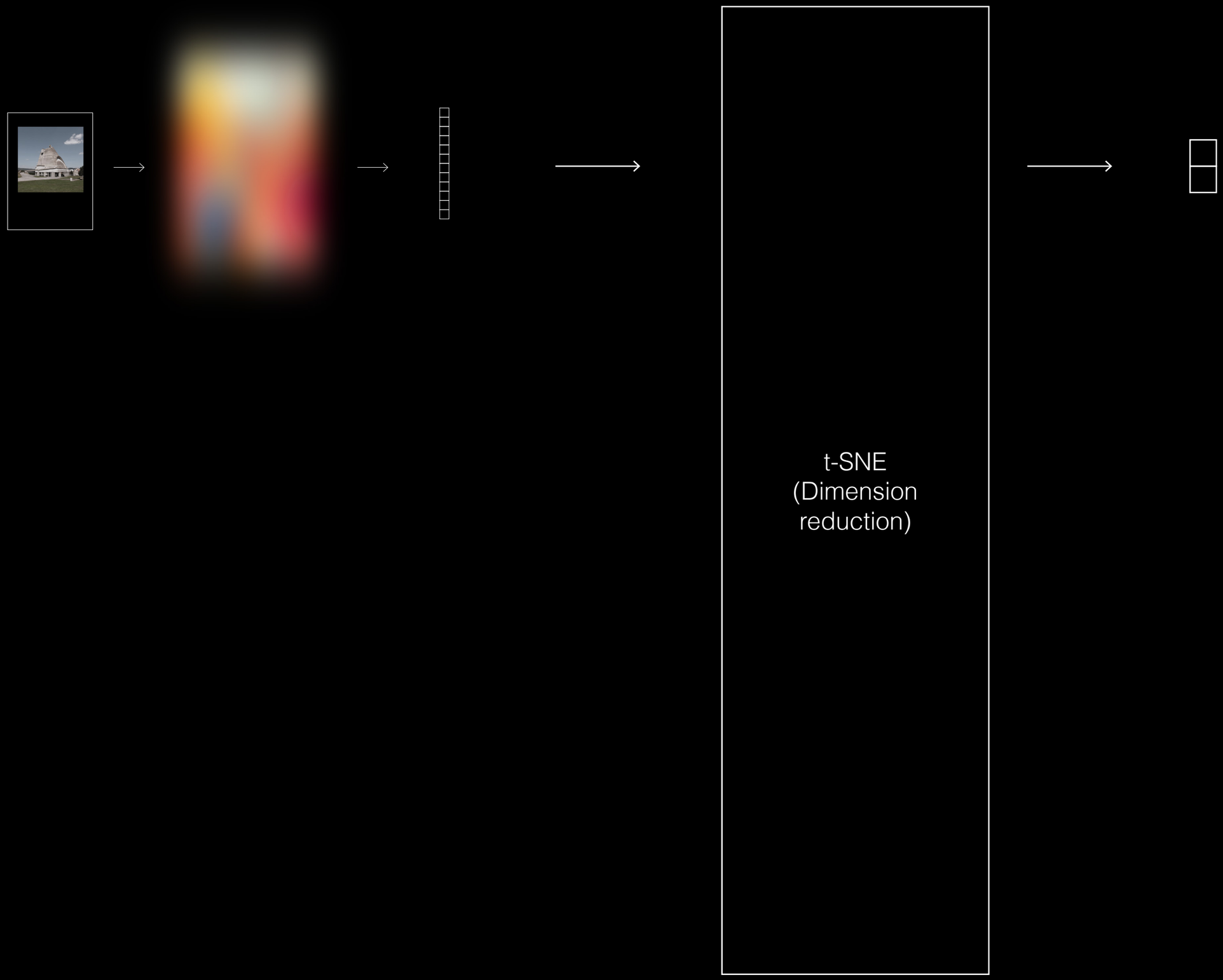


Vector Embedding

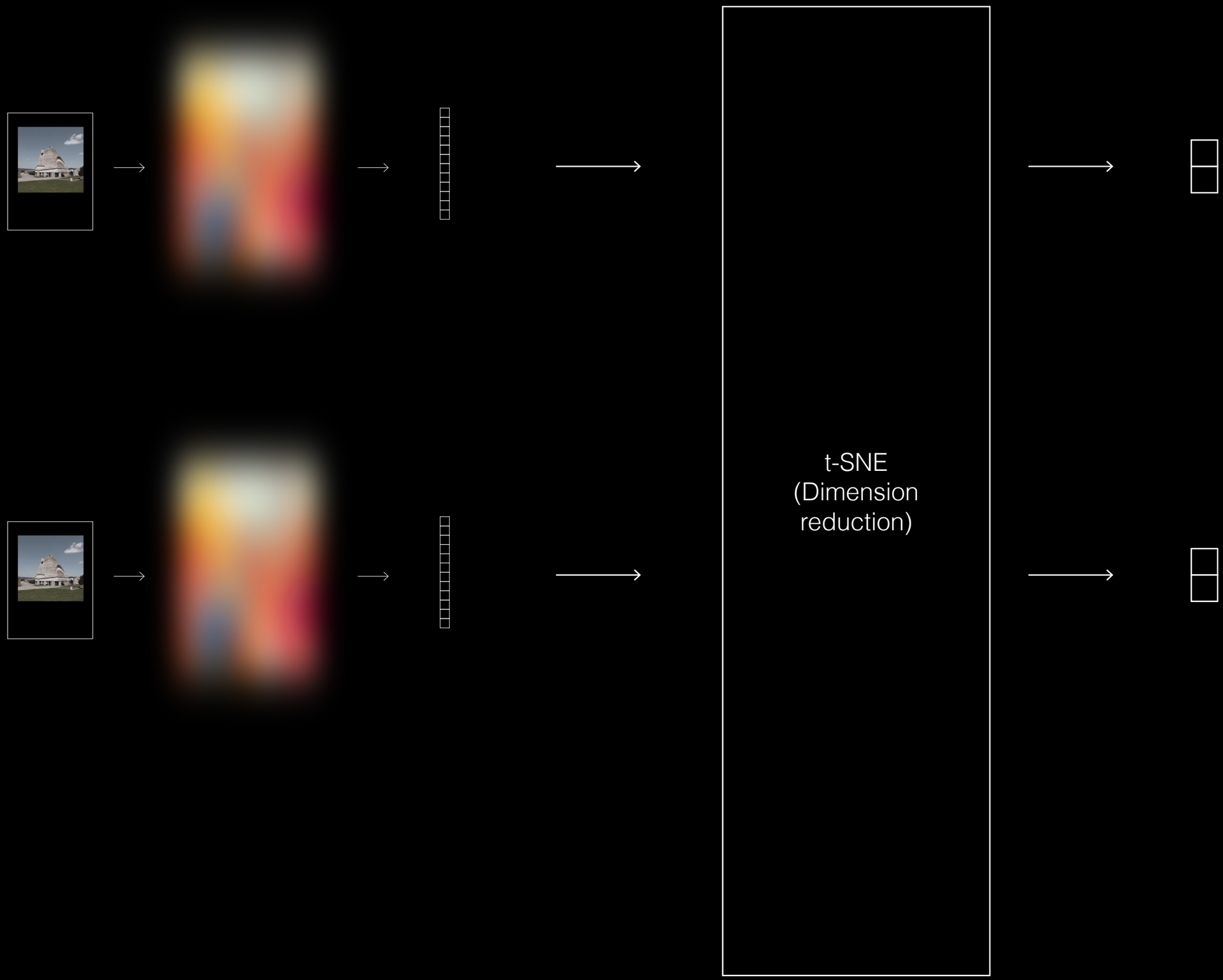
Embedding to Coordinates



Embedding to Coordinates



Embedding to Coordinates



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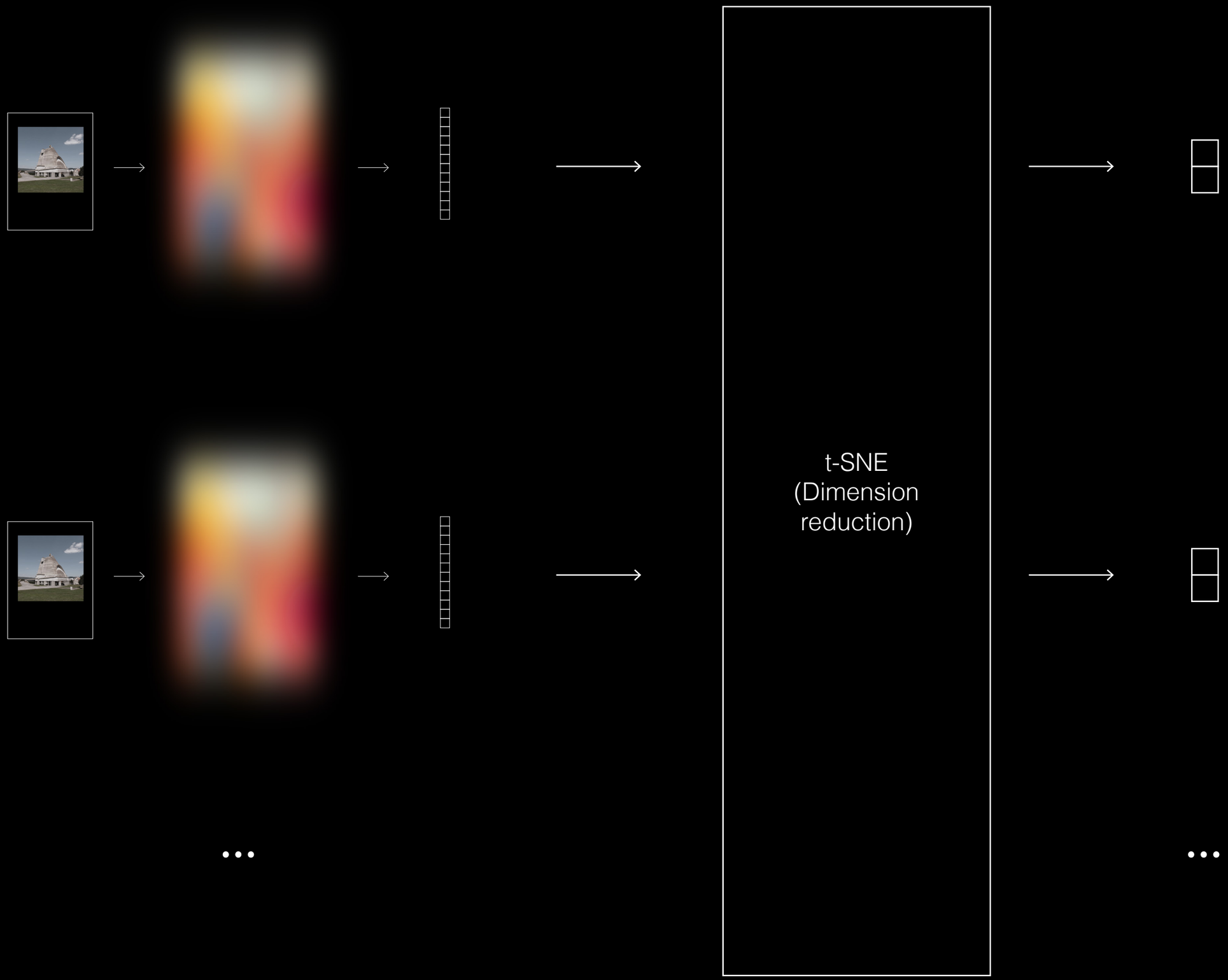

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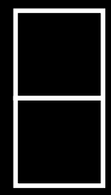
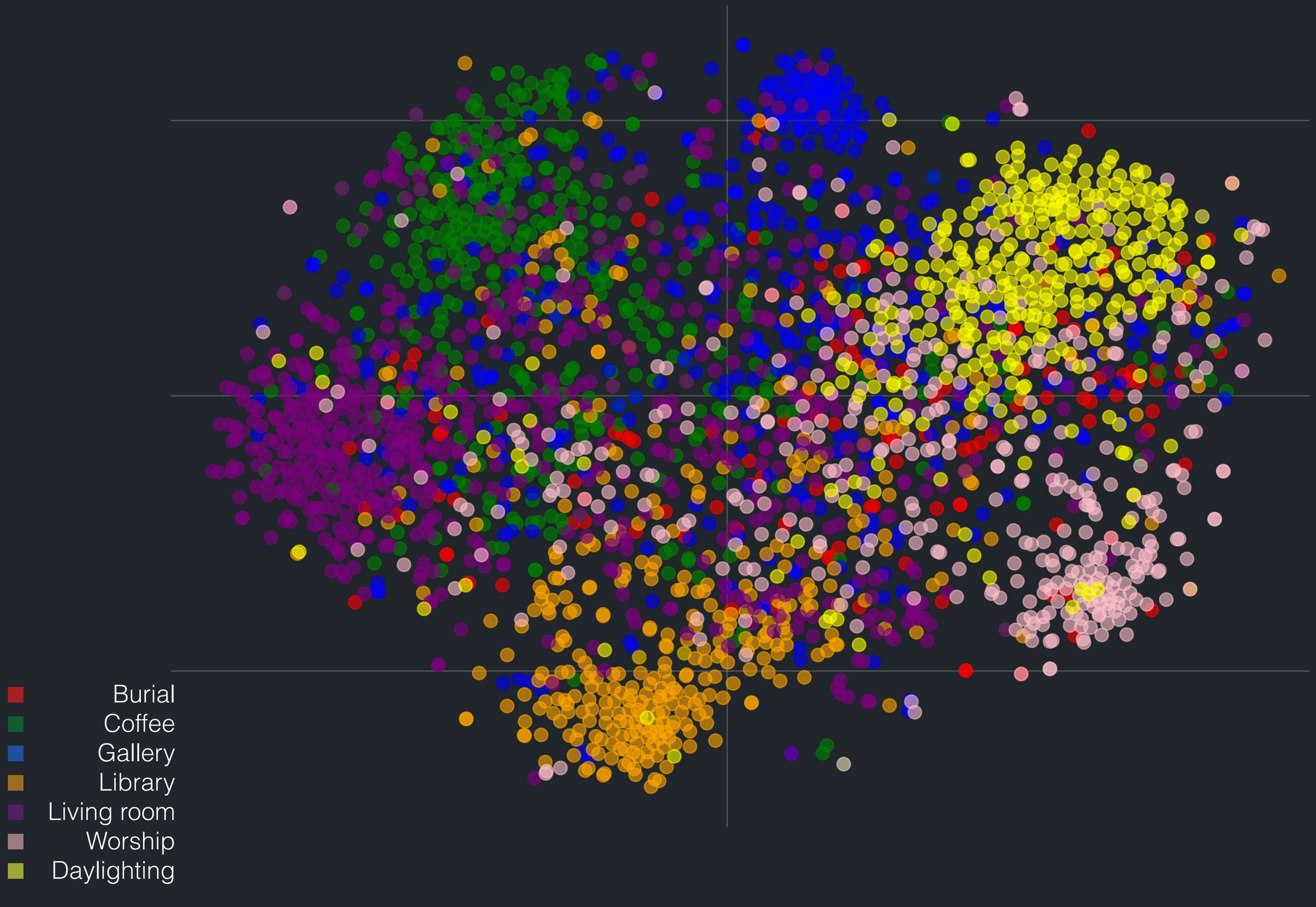
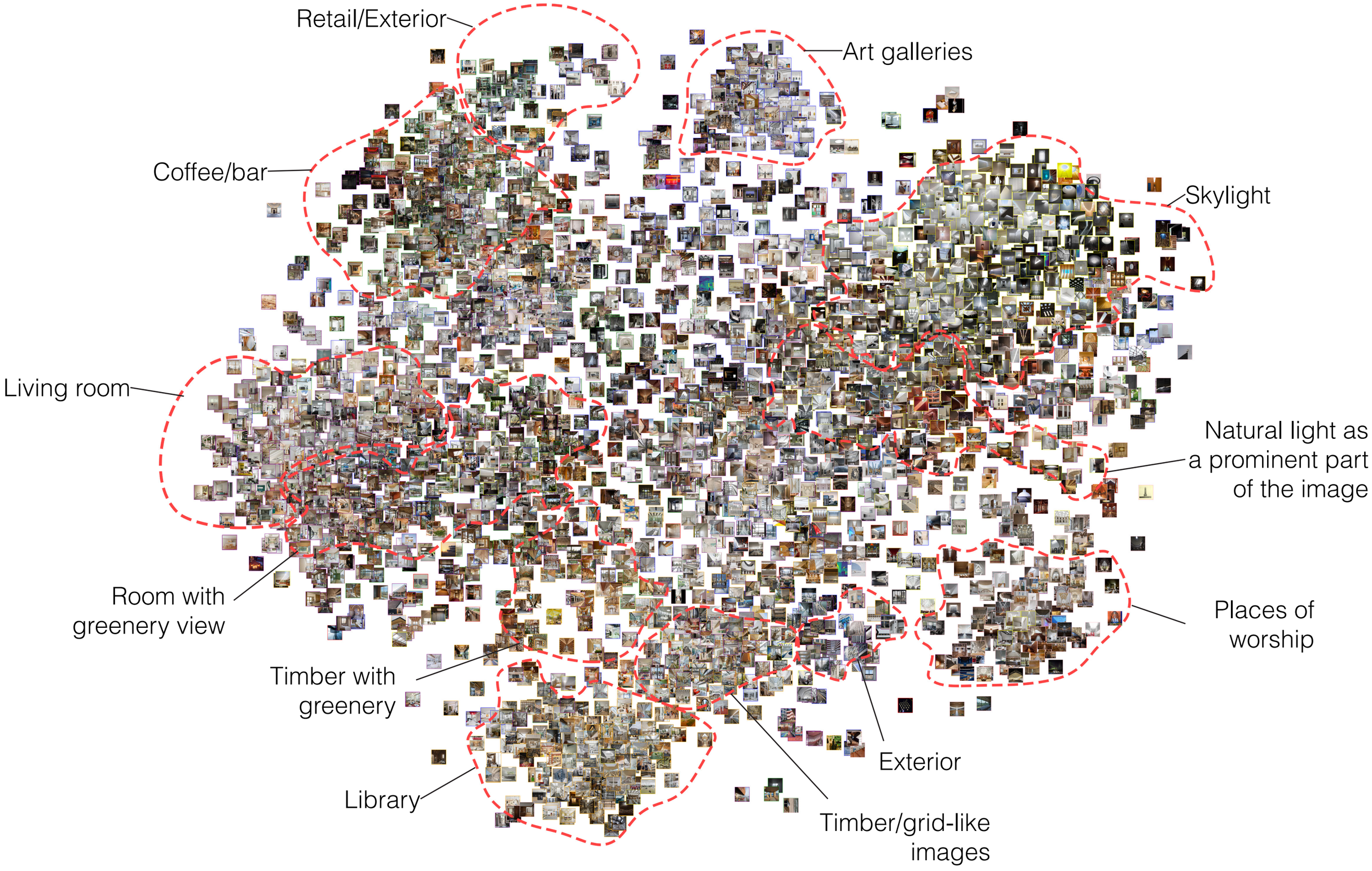


CLIP Output


Burial
Coffee
Gallery
Library
Living room
Worship
Daylighting

CLIP Output

CLIP Semantics

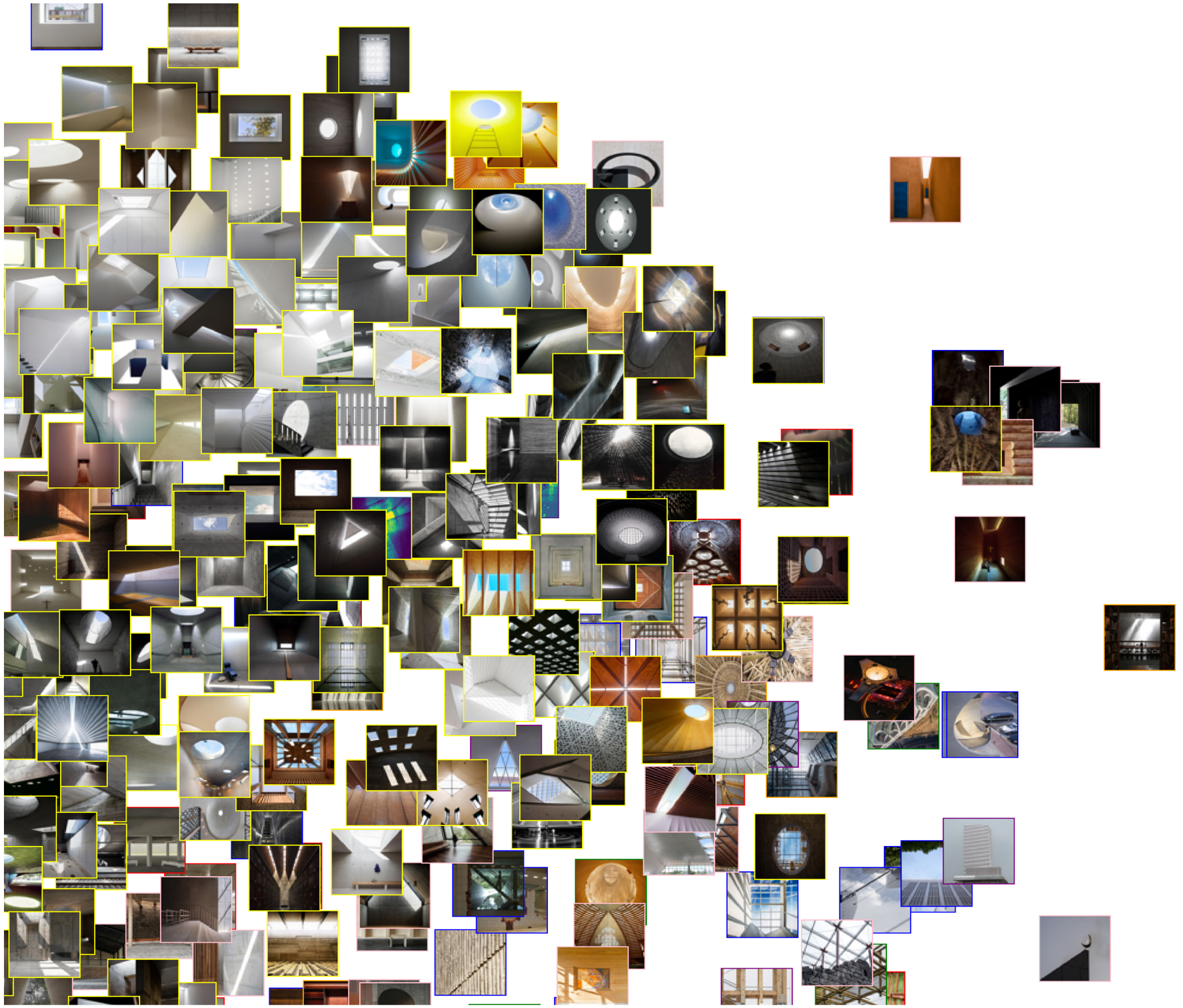


Use-case: Precedent Finding

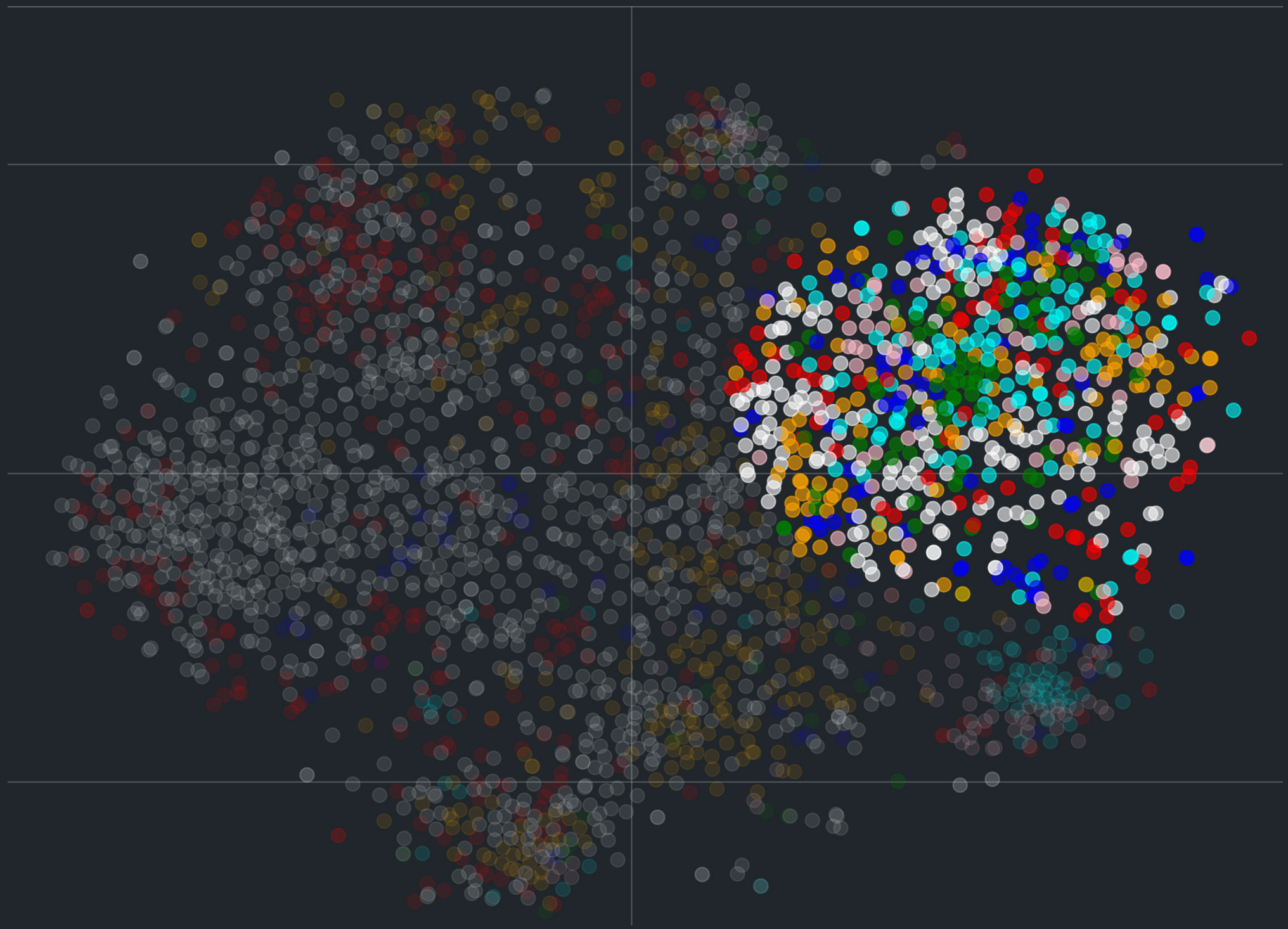
Source: https://divisare.com/projects/349303-peter-zumthor-rasmus-hjortshoj-coast-bruder-klaus-feldkapelle

2D Plot Results: CLIP

2D Plot Results: CLIP



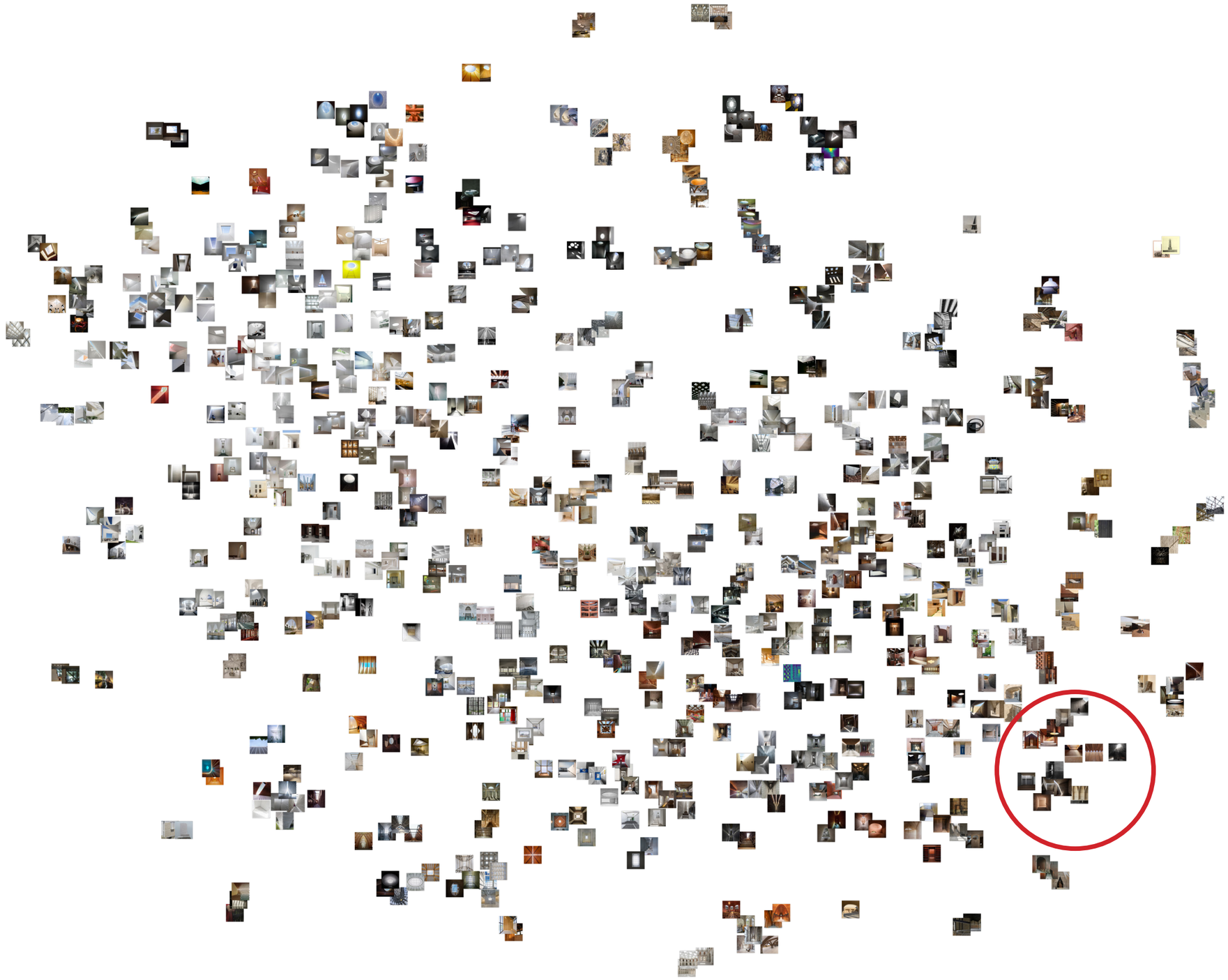
2D Plot Results: CLIP (Selection)



“An image that has a _____ atmosphere”

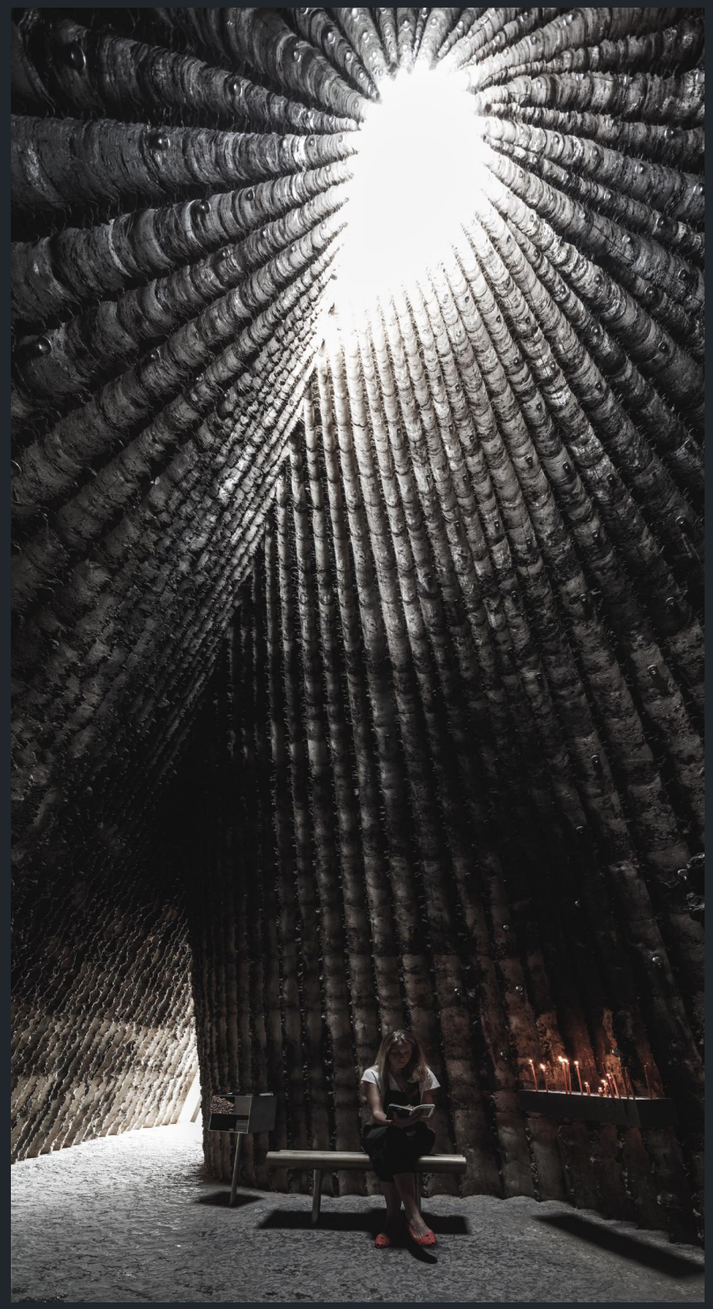
- Cosy
- Transcendental
- Serene
- Retail
- Relaxed
- Spiritual
- Sacred

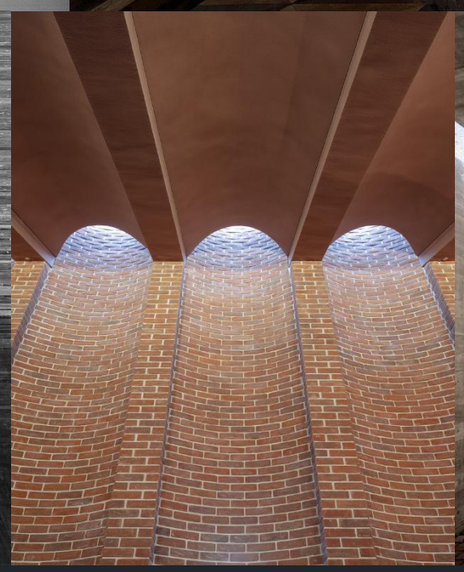
2D Plot (Zoom in - using DINOv2)



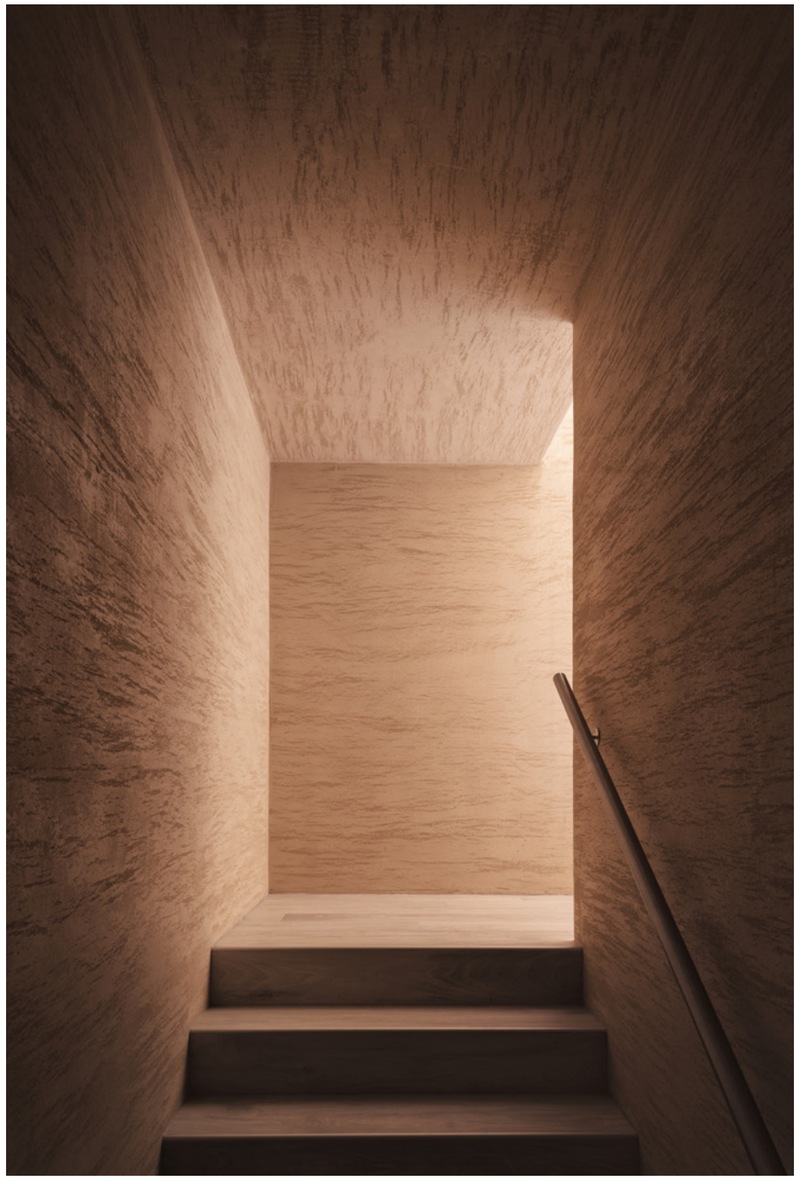
2D Plot (Zoom in - using DINOv2)

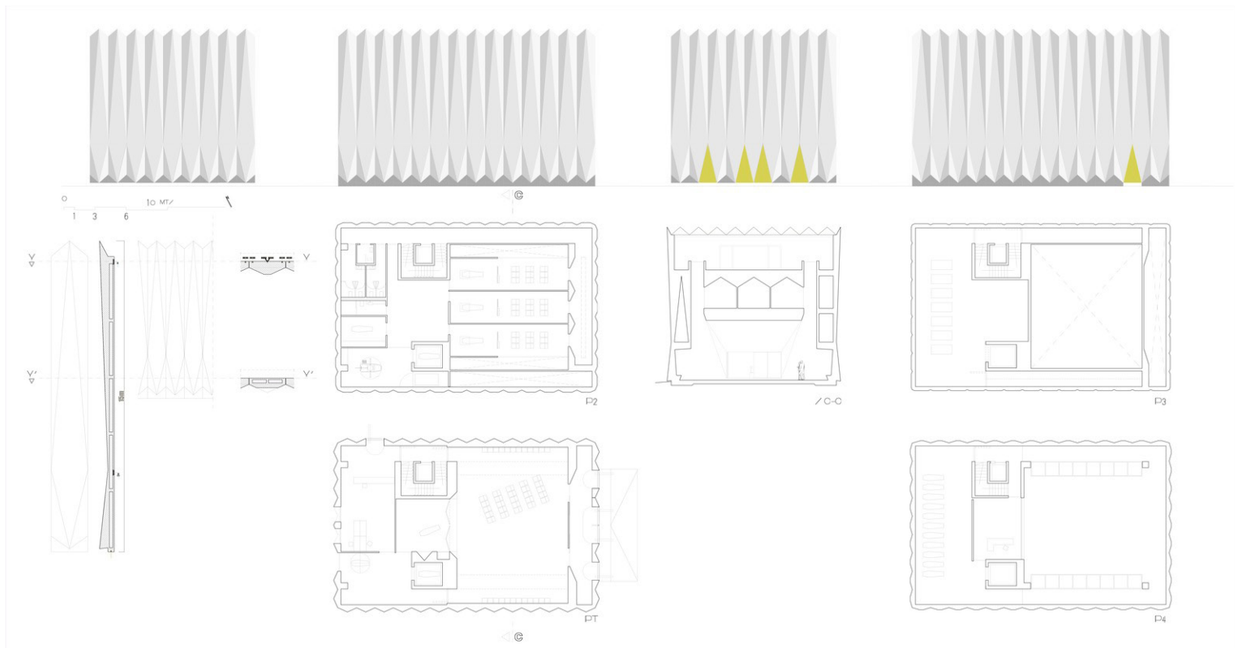
Use-case: Precedent Finding



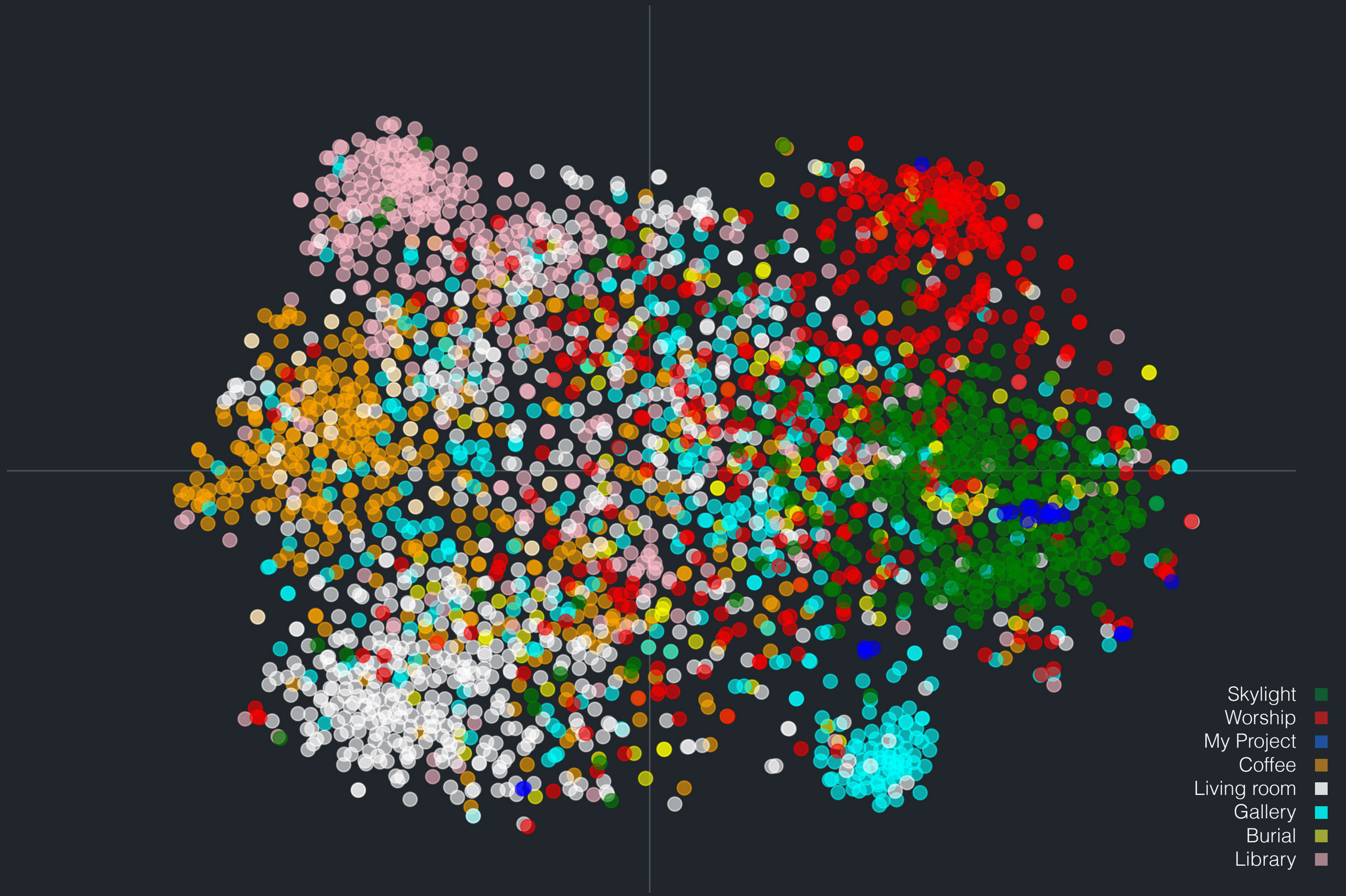


Software vs Designer




0
1 3 6
10 MT
Y
Y'
P2
C-C
P3
P1
P4

Use-case: Evaluating My Design



Overview

Sacred Spaces - Atmosphere

Creation of Emotional /
Contemplative Spaces

→ Design

Death as a Theme

A Space to Contemplate Death

Landscape

How can we make
atmosphere in architecture
more approachable?

→ Research

Foundation Models (AI)

Brief

Design Brief

A space that would allow for the user to approach death in a more direct way.

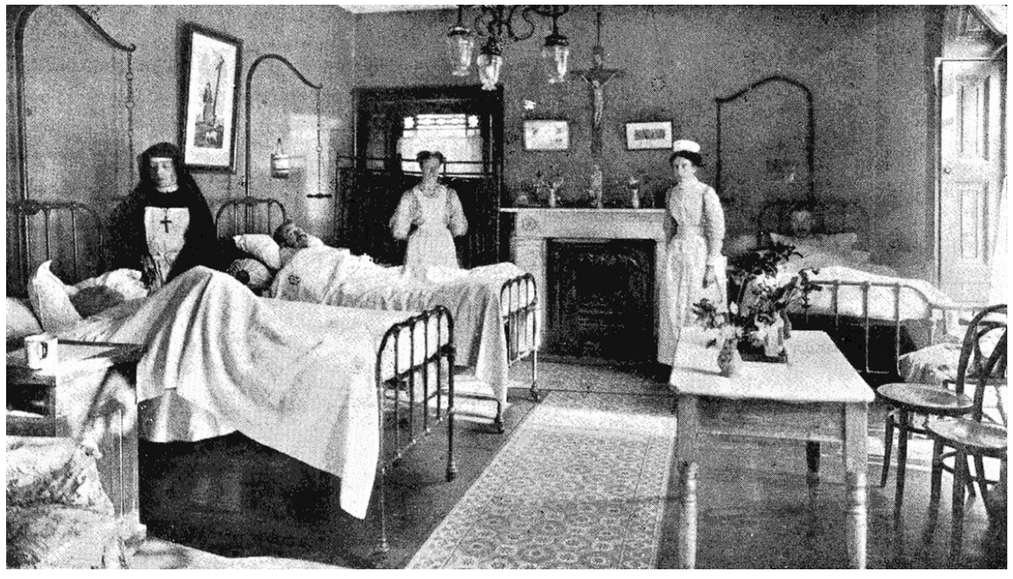
The design is intended for patients with terminal illness that chooses the option of withdrawing from routine life and society in order to contemplate and process the impossible concept of death.

The design aims to serve as a liminal space (a space of transition) between this realm and the next, focused on the theme of coming to terms with mortality (and the typical palliative care).

Elizabeth Kübler Ross- On Death and Dying

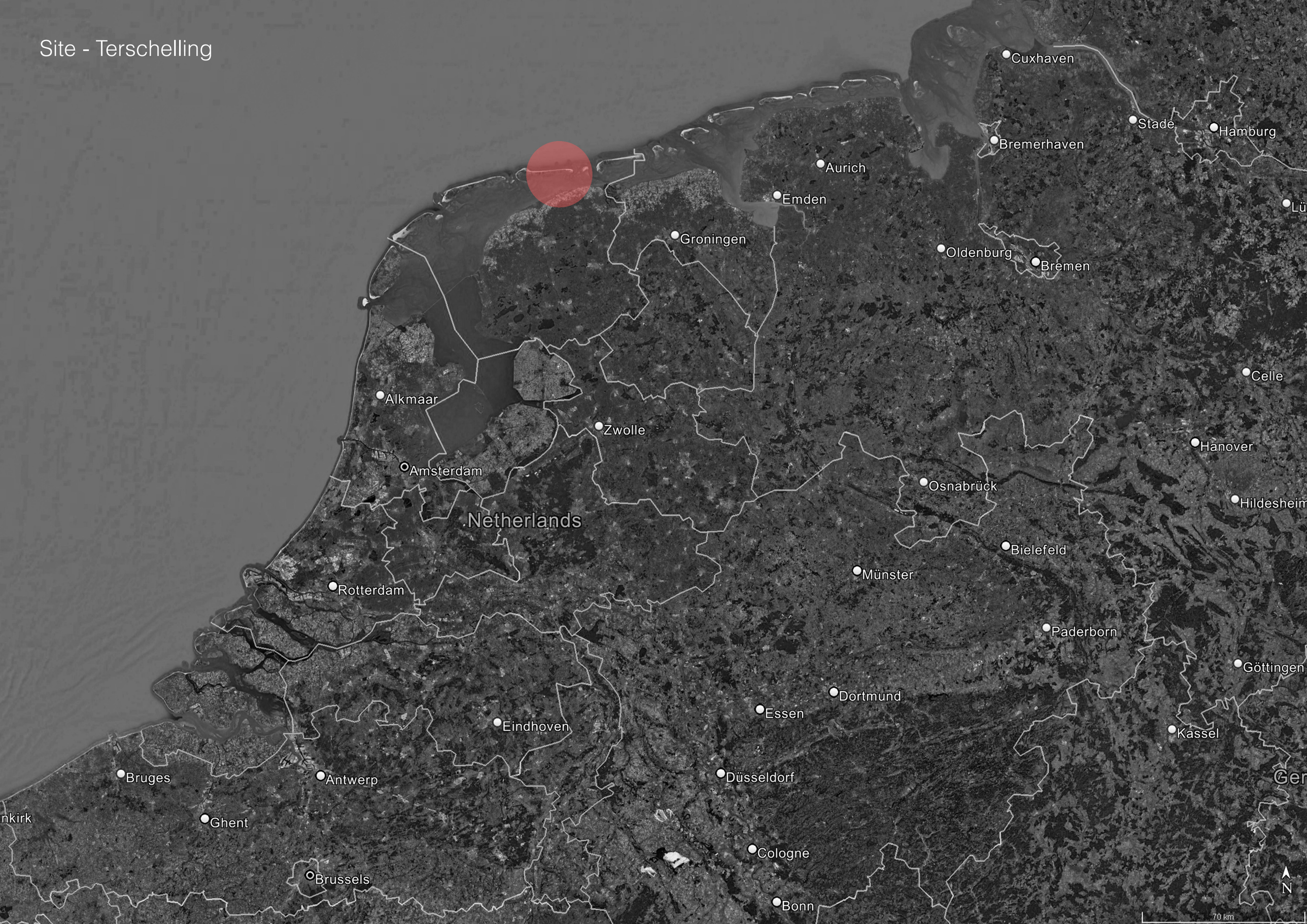
- Denial and Isolation
- Anger
- Bargaining
- Depression
- Acceptance

Care House of the Wind Chimneys by Hiroshi Nakamura &
NAP



The Monastery

Site - Terschelling



Site

50m 100m

Hopeful, Anxious, Moved

Hopeful, Anxious, Moved

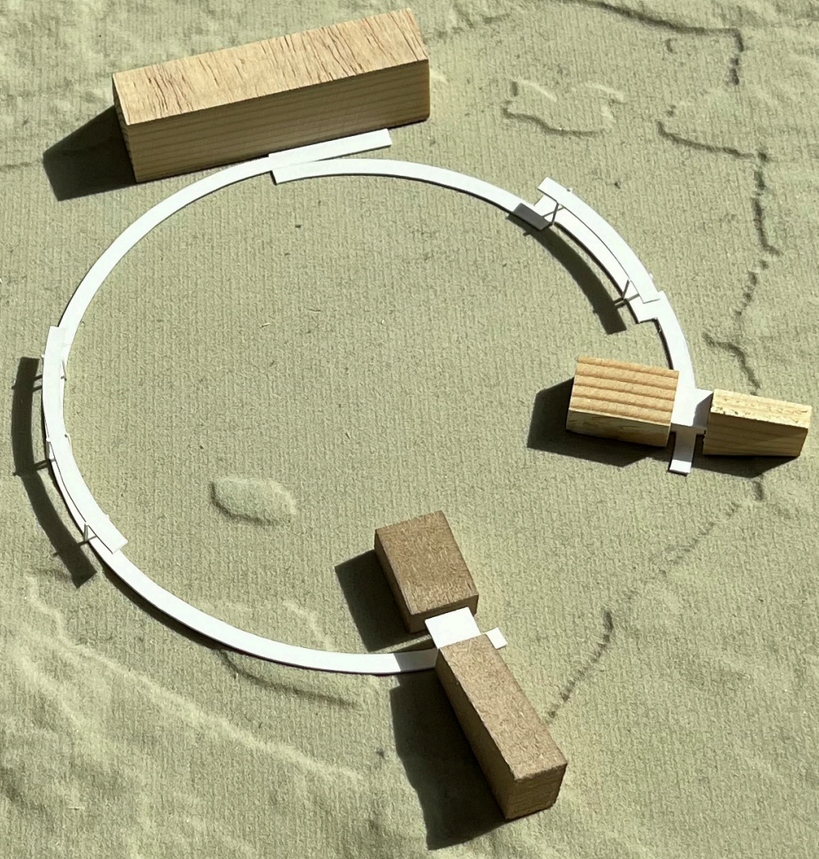
Hopeful, Calm, Moved

Hopeful, Calm, Moved

Awe, Hopeful, Anxious, Fear, Cautious, Moved

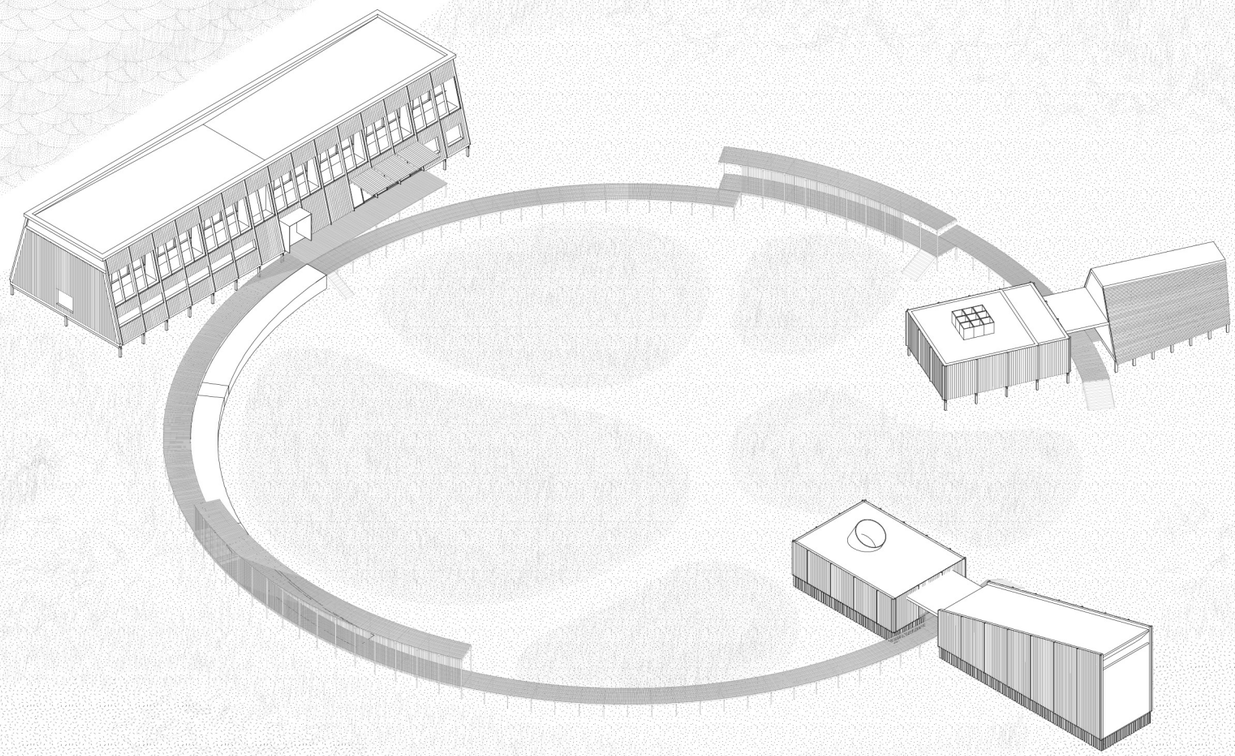
Awe, Hopeful, Anxious, Fear, Cautious, Moved

Awe, Anxious, Fear, Cautious

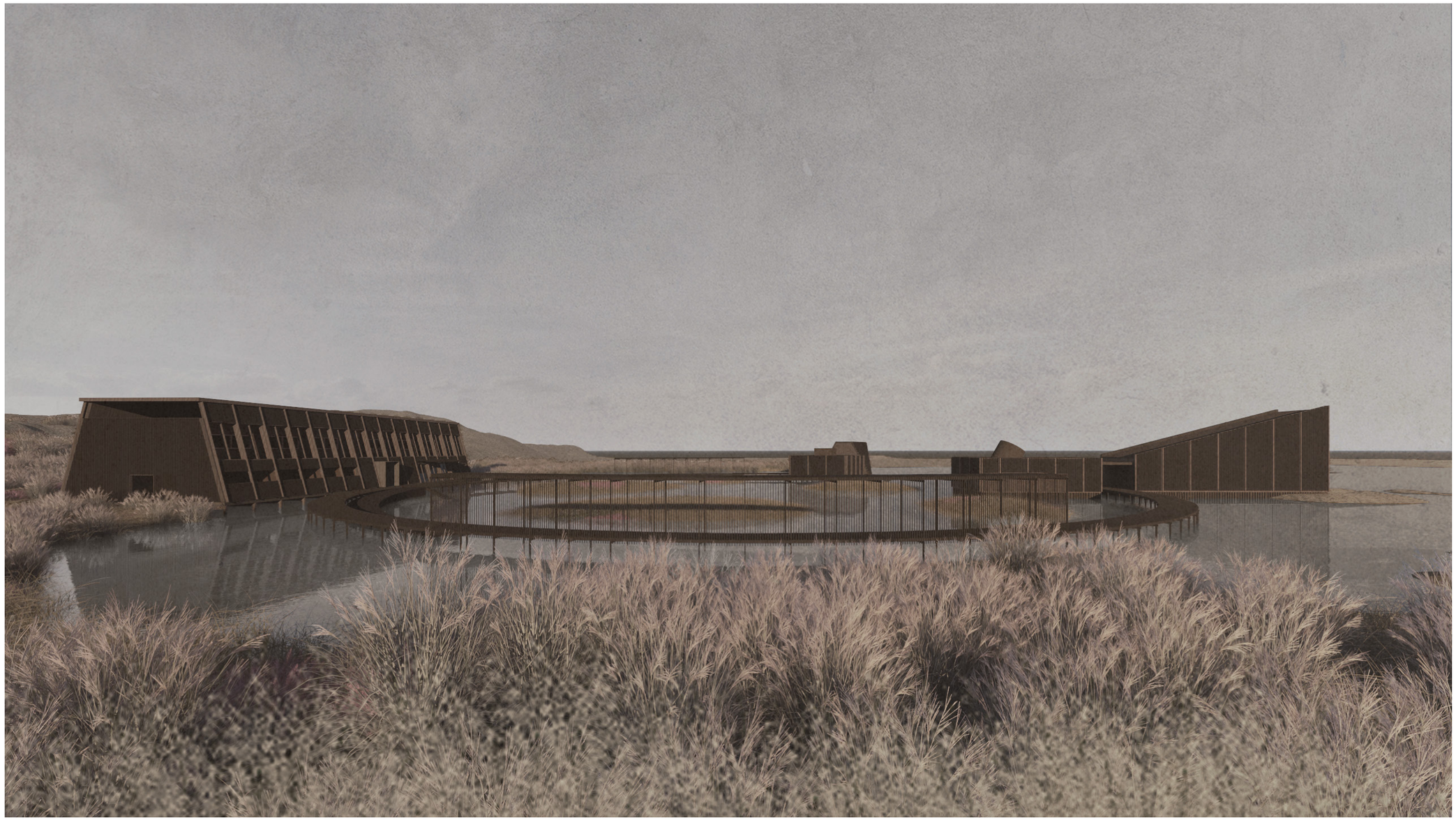


Siteplan 1:500 @A2

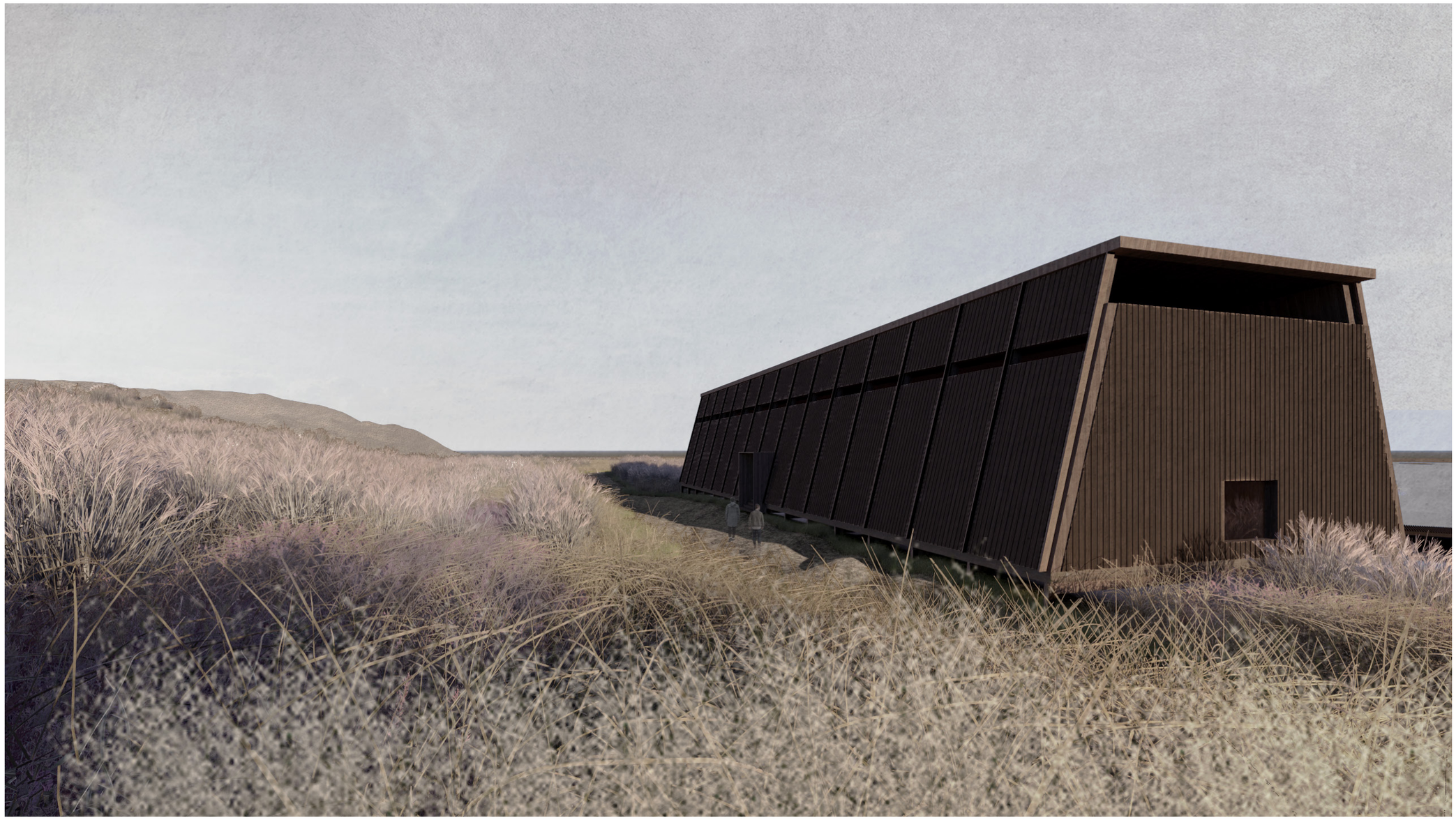
5m 10m



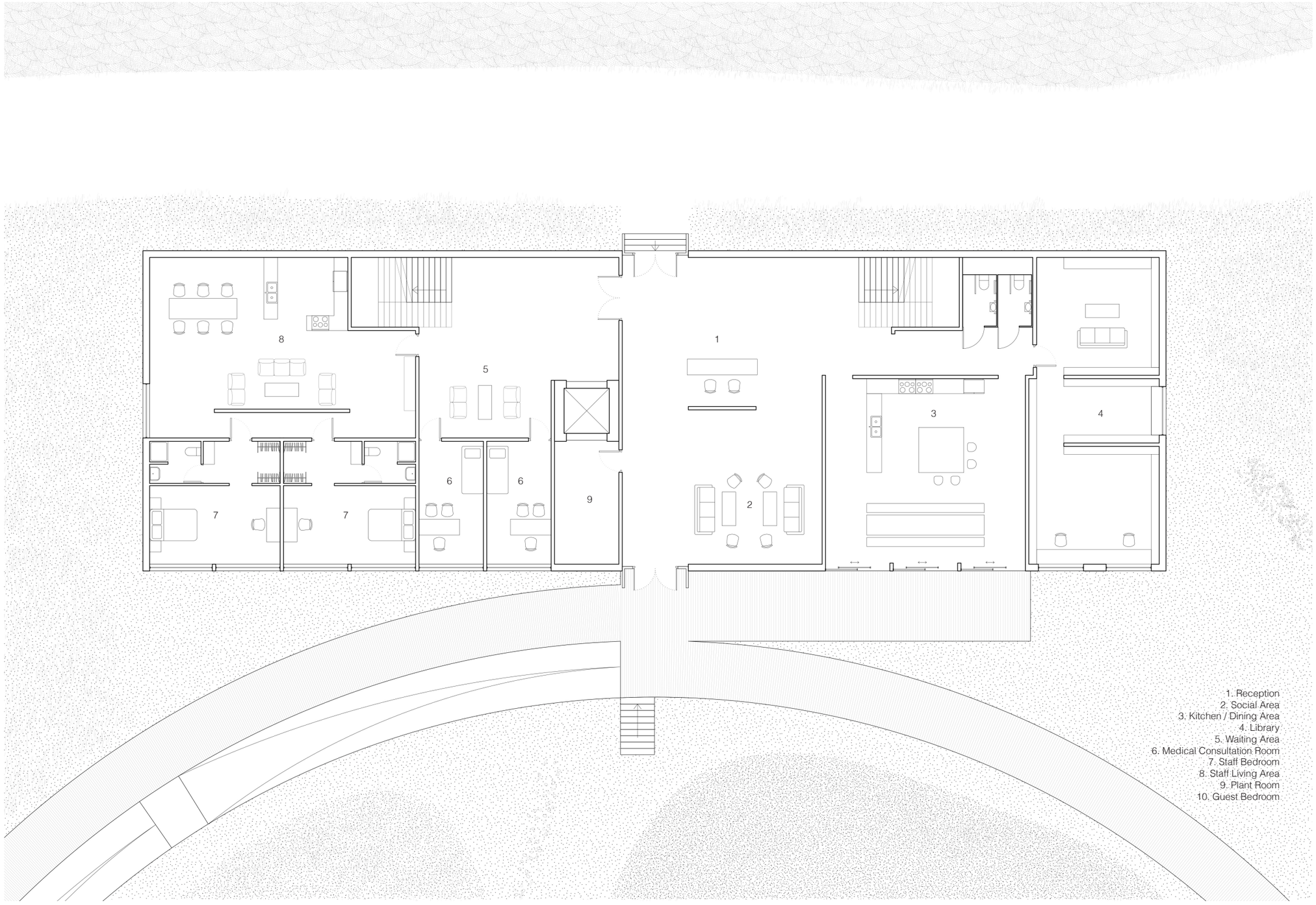
Approach



Approach



Main Building Plan GF 1:100 @A2

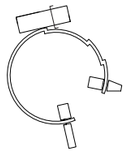


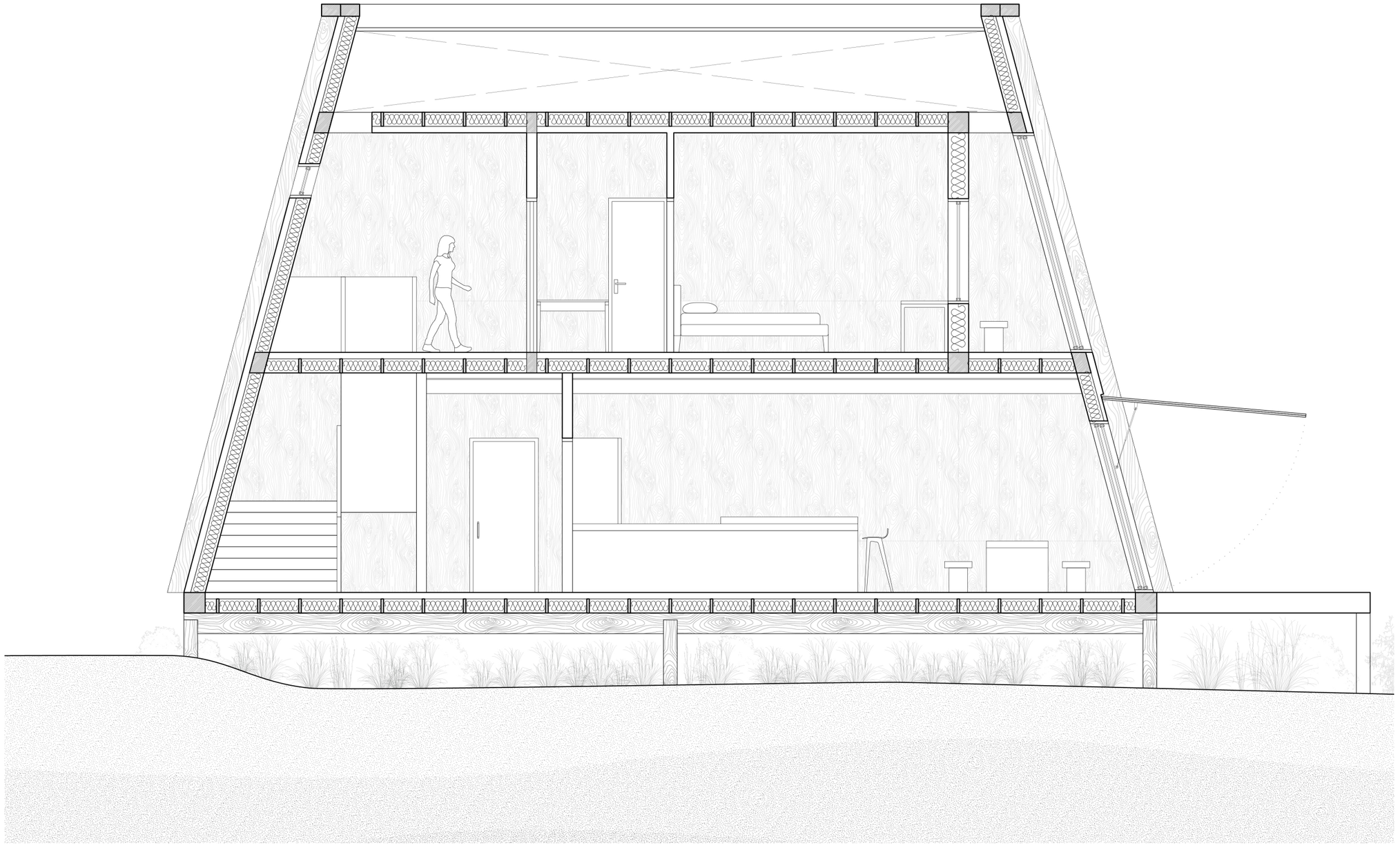
1. Reception
2. Social Area
3. Kitchen / Dining Area
4. Library
5. Waiting Area
6. Medical Consultation Room
7. Staff Bedroom
8. Staff Living Area
9. Plant Room
10. Guest Bedroom

1m 5m 10m

Model Section 1

Main Building Short Section 1:50 @A3

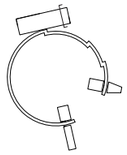


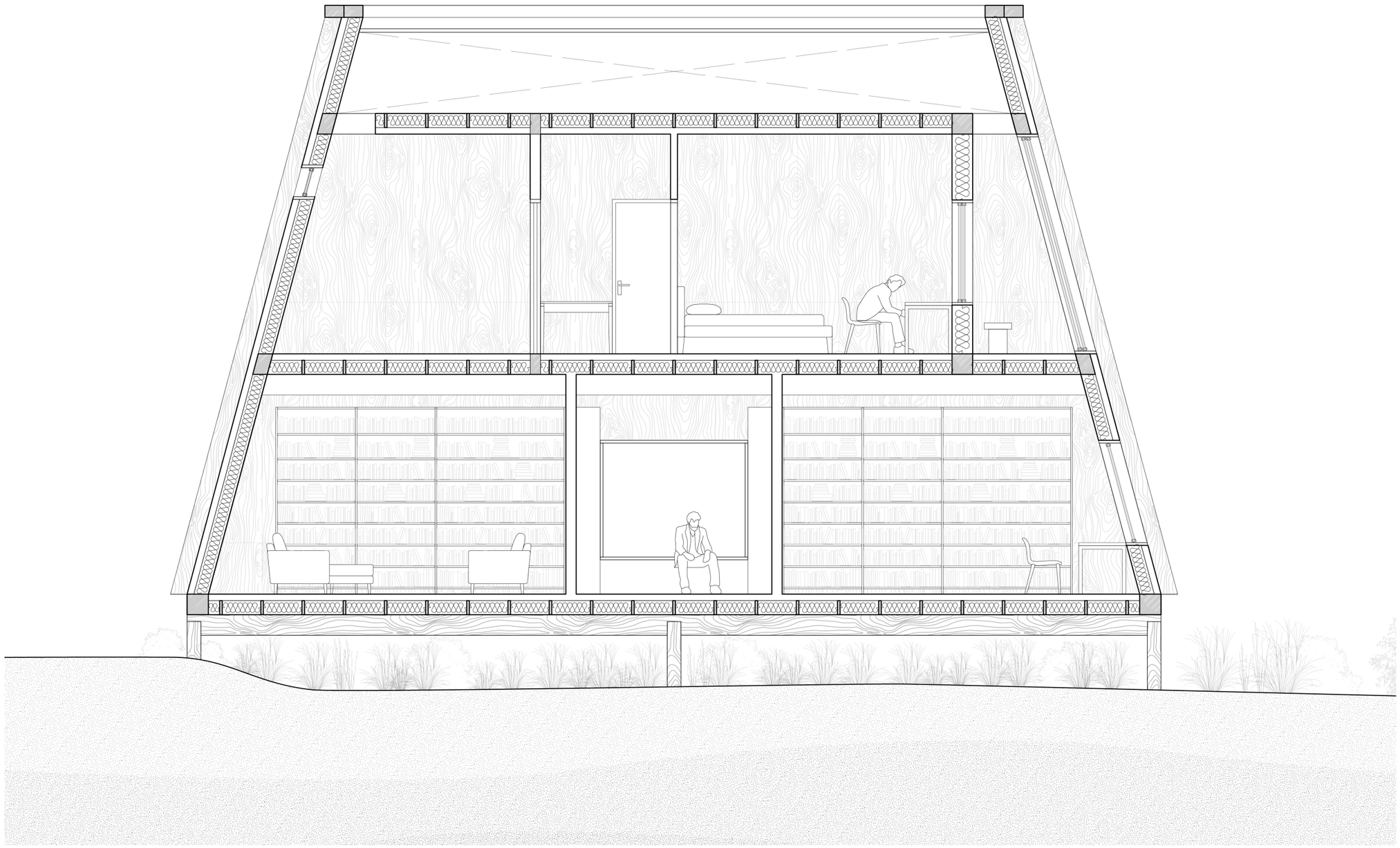


1m 5m 10m

Model Section 2

Main Building Short Section 1:50 @A3

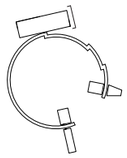


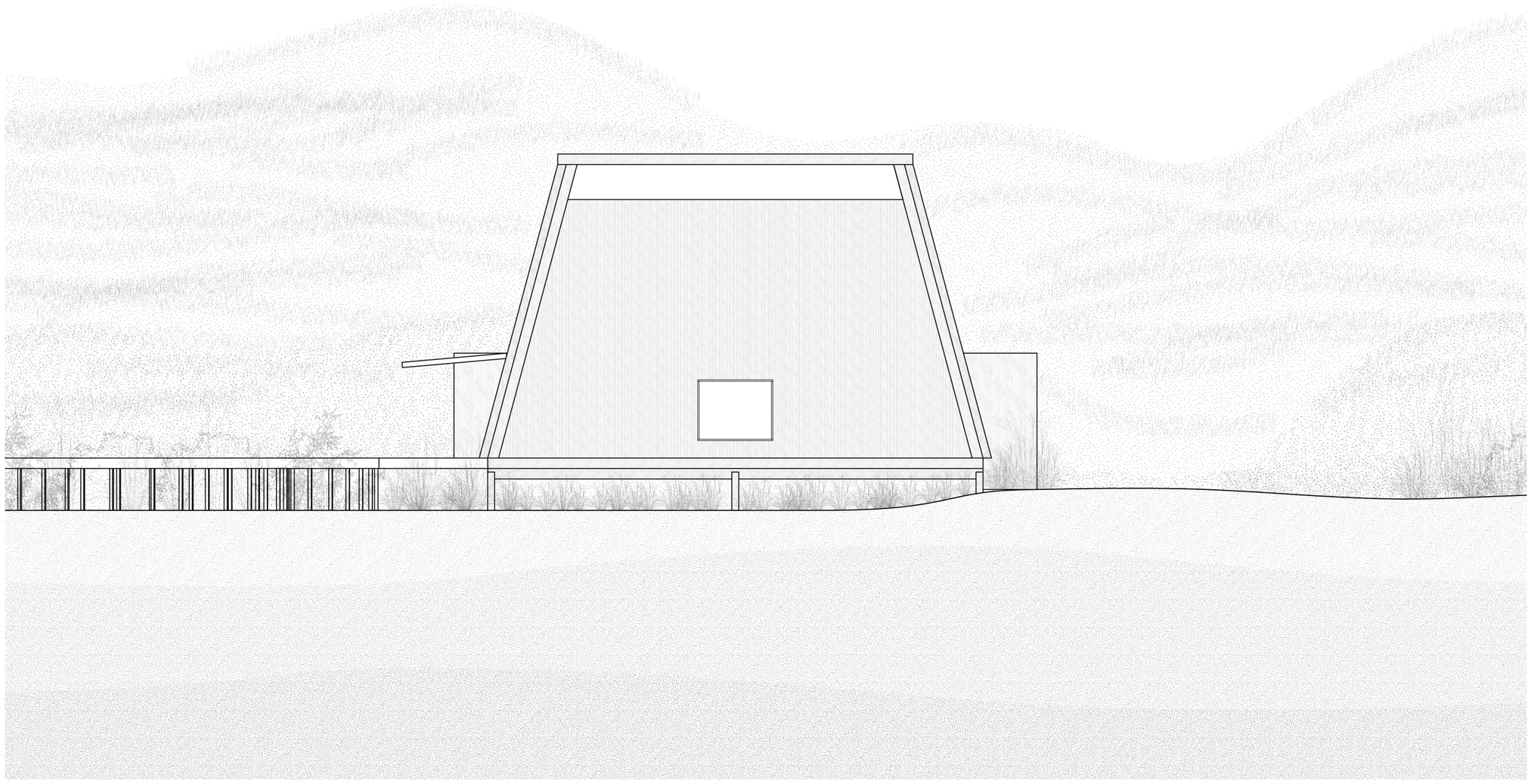


1m 5m 10m

Model Section 3

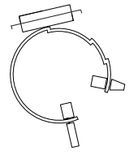
Main Building Short Elevation 1:100 @A3

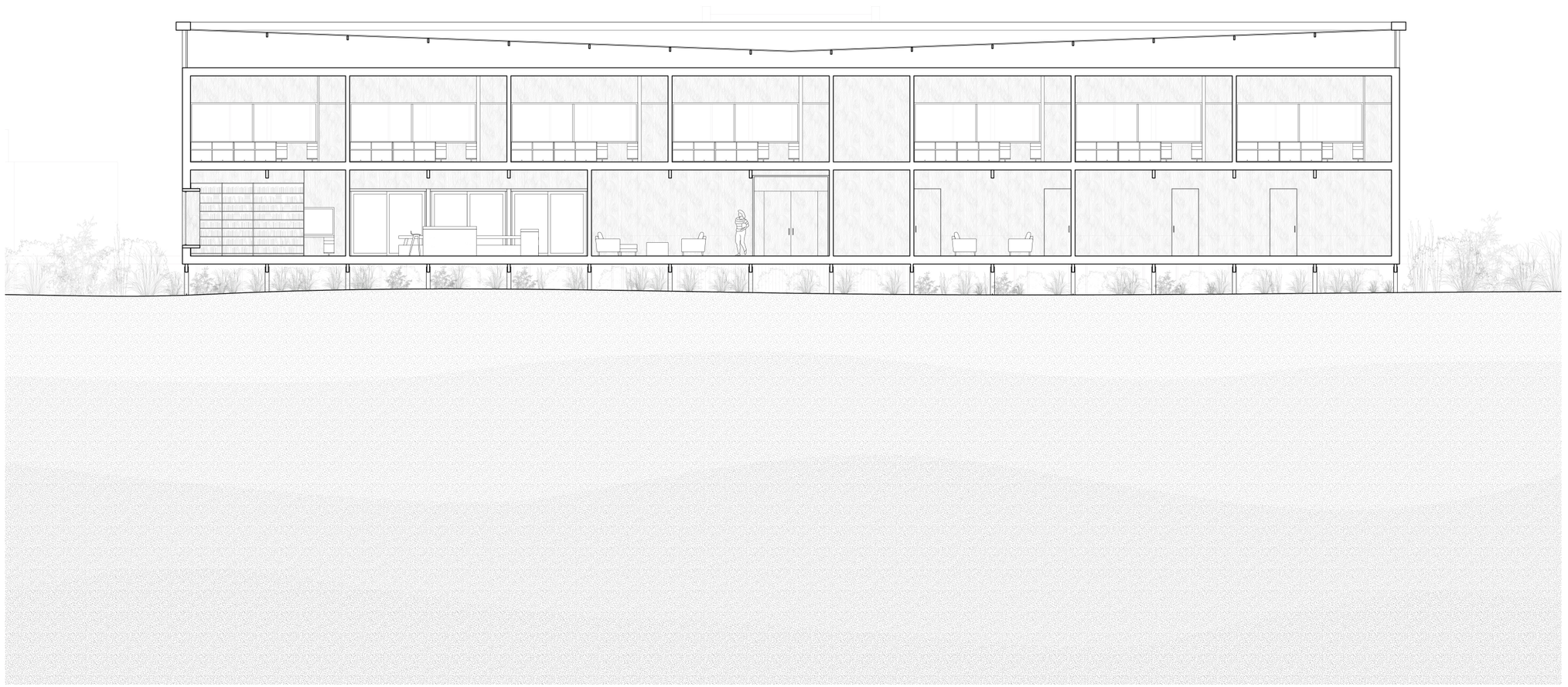




1m 5m 10m

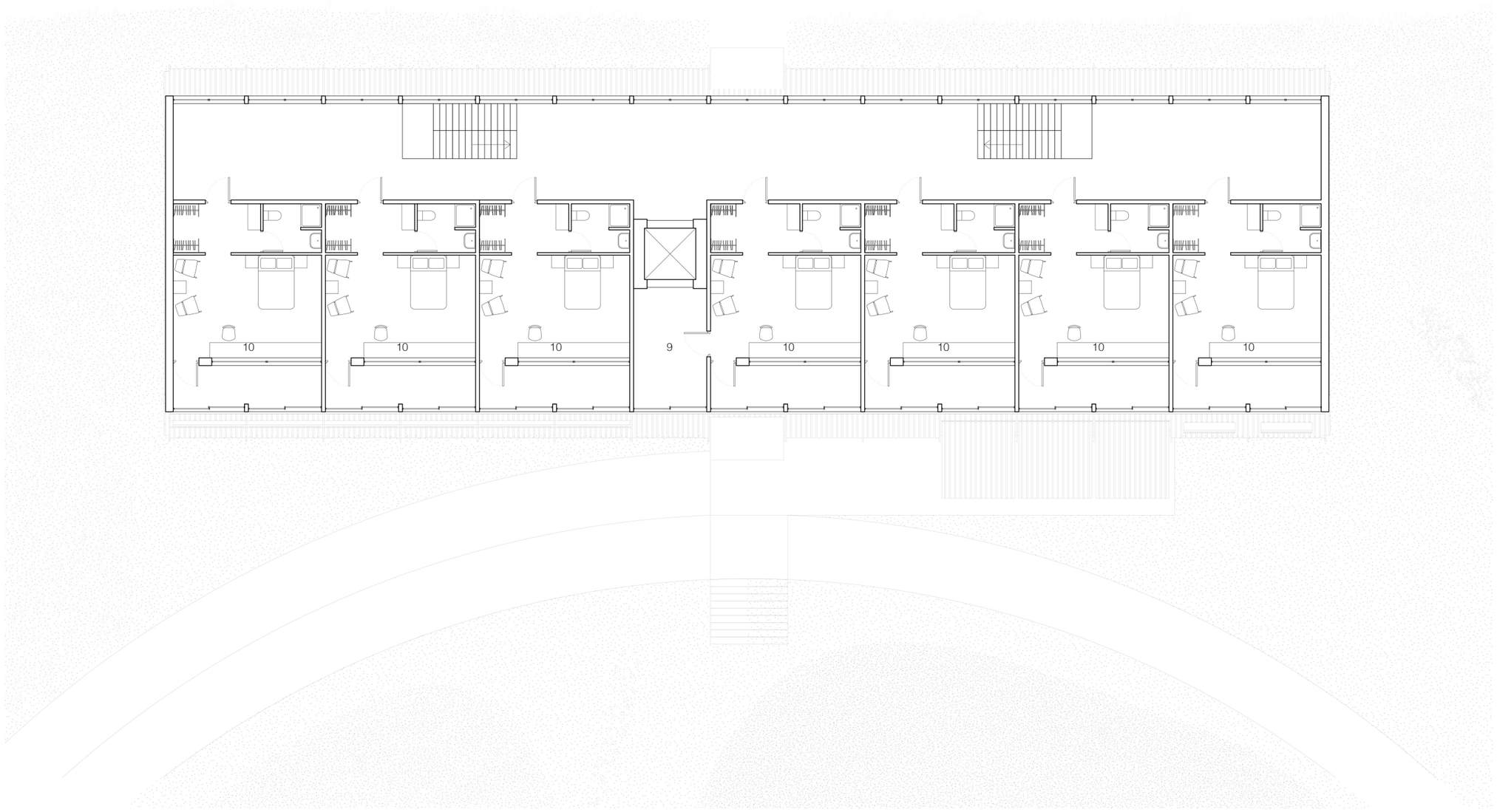
Main Building Long Section 1:100 @A2





1m 5m 10m

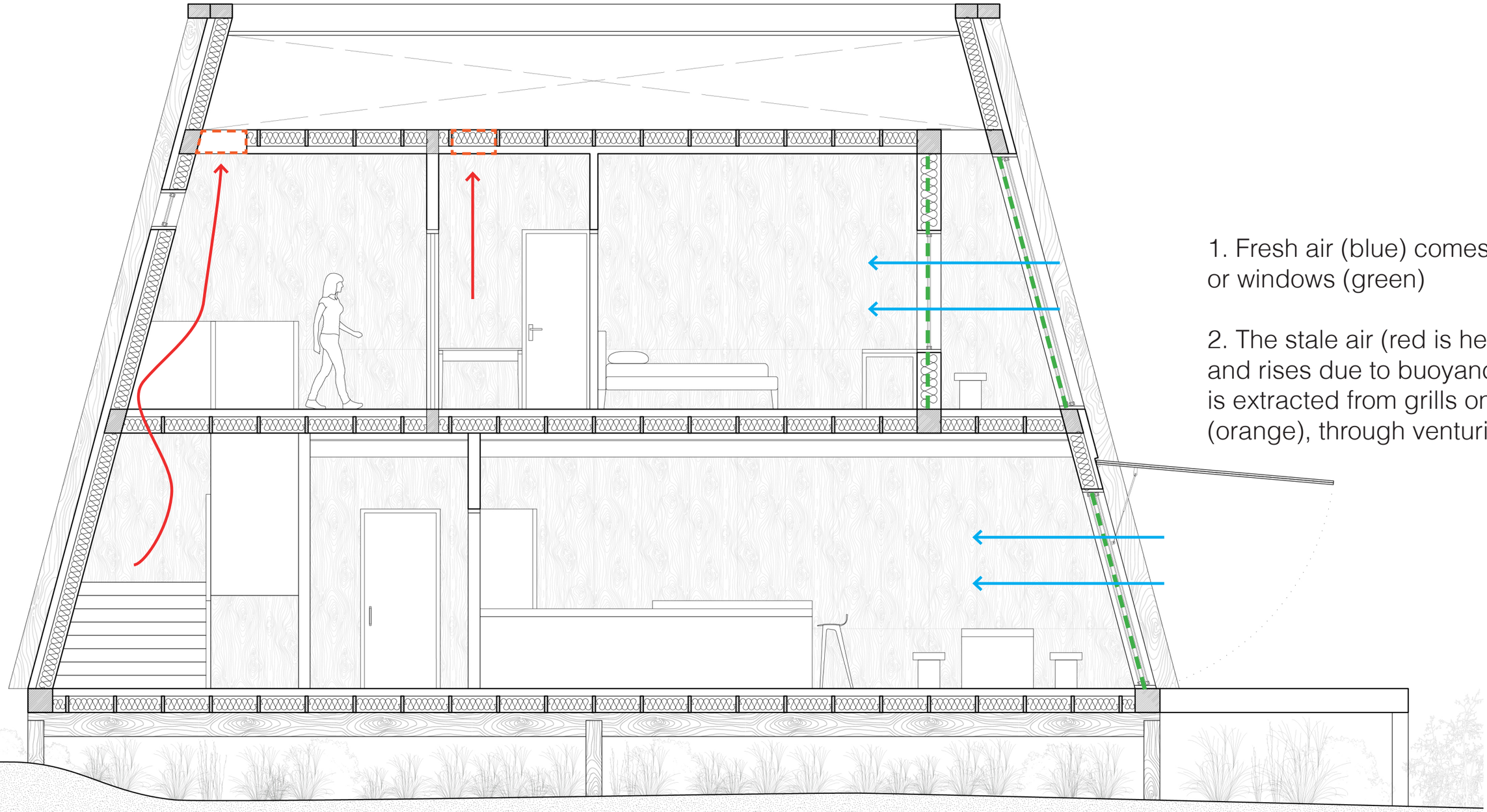
Main Building Plan 1F 1:100 @A2



1m 5m 10m

Bedroom Perspective

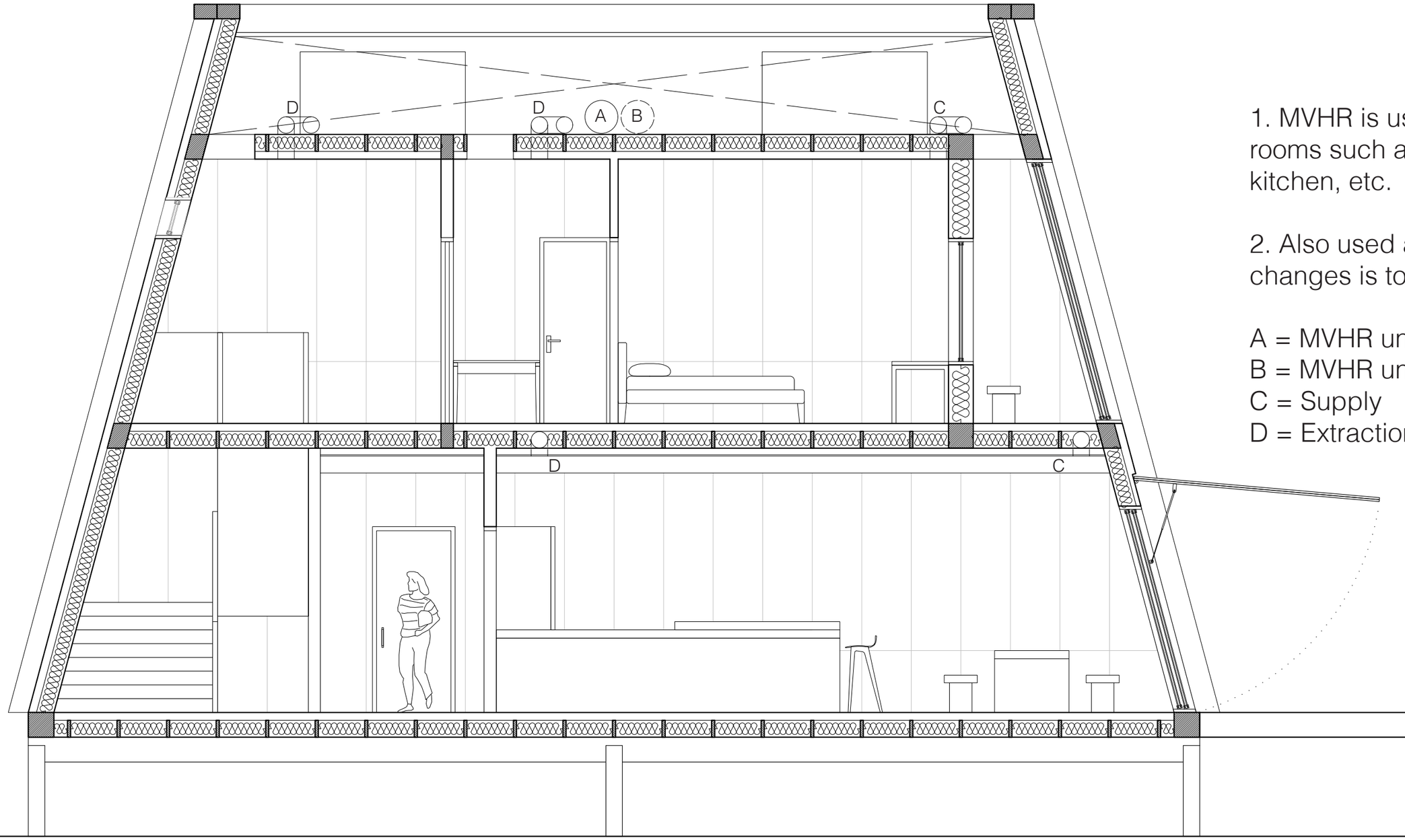
Passive Ventilation



1. Fresh air (blue) comes from grills or windows (green)

2. The stale air (red is heated up and rises due to buoyancy and is extracted from grills on ceiling (orange), through venturi effect

Mechanical Ventilation

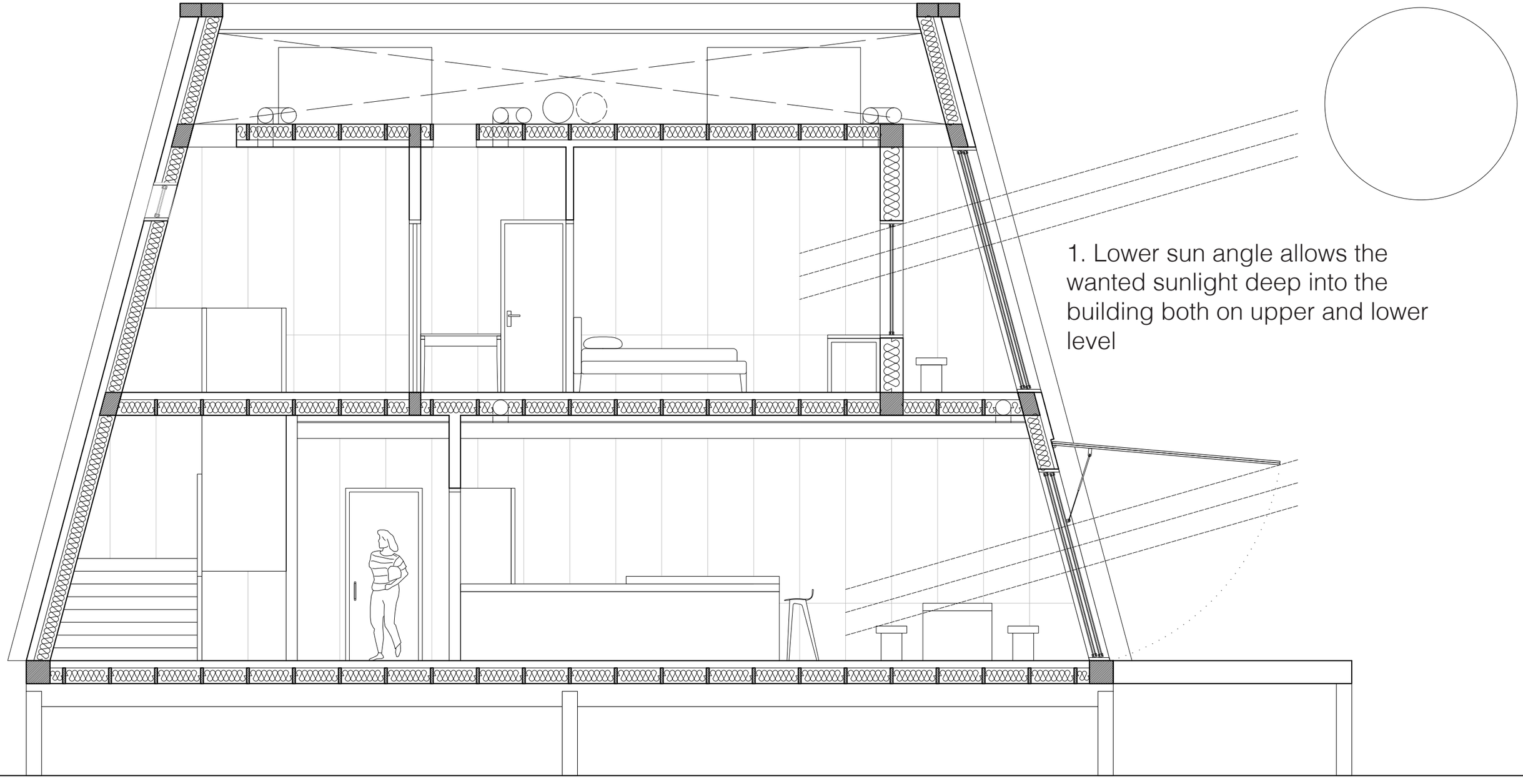


1. MVHR is used mostly used for wet rooms such as toilets, bathrooms, kitchen, etc.

2. Also used as backup if air changes is too low

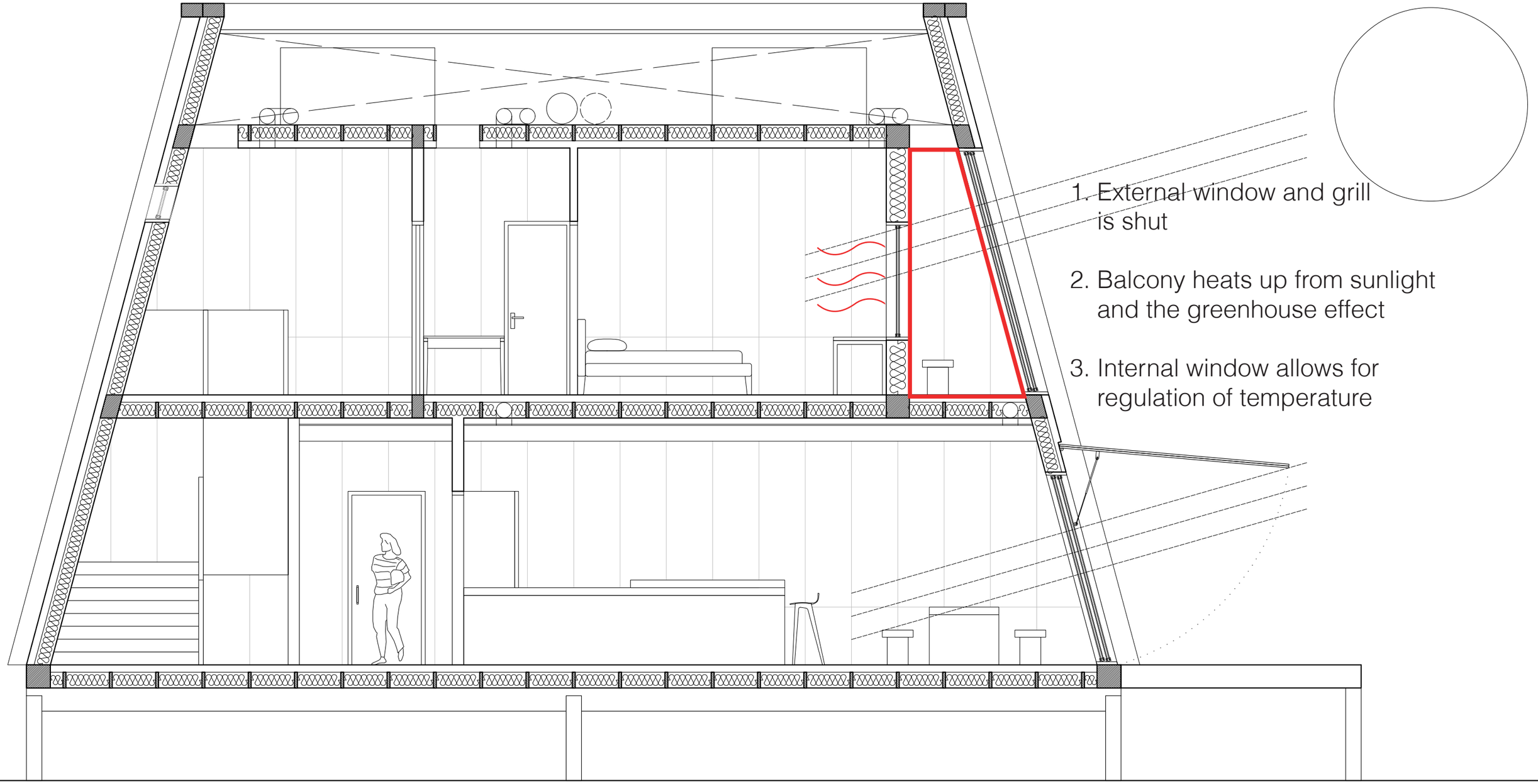
A = MVHR unit Intake
B = MVHR unit Exhaust
C = Supply
D = Extraction

Winter Scenario (Shading)



1. Lower sun angle allows the wanted sunlight deep into the building both on upper and lower level

Winter Scenario (Passive Heating)

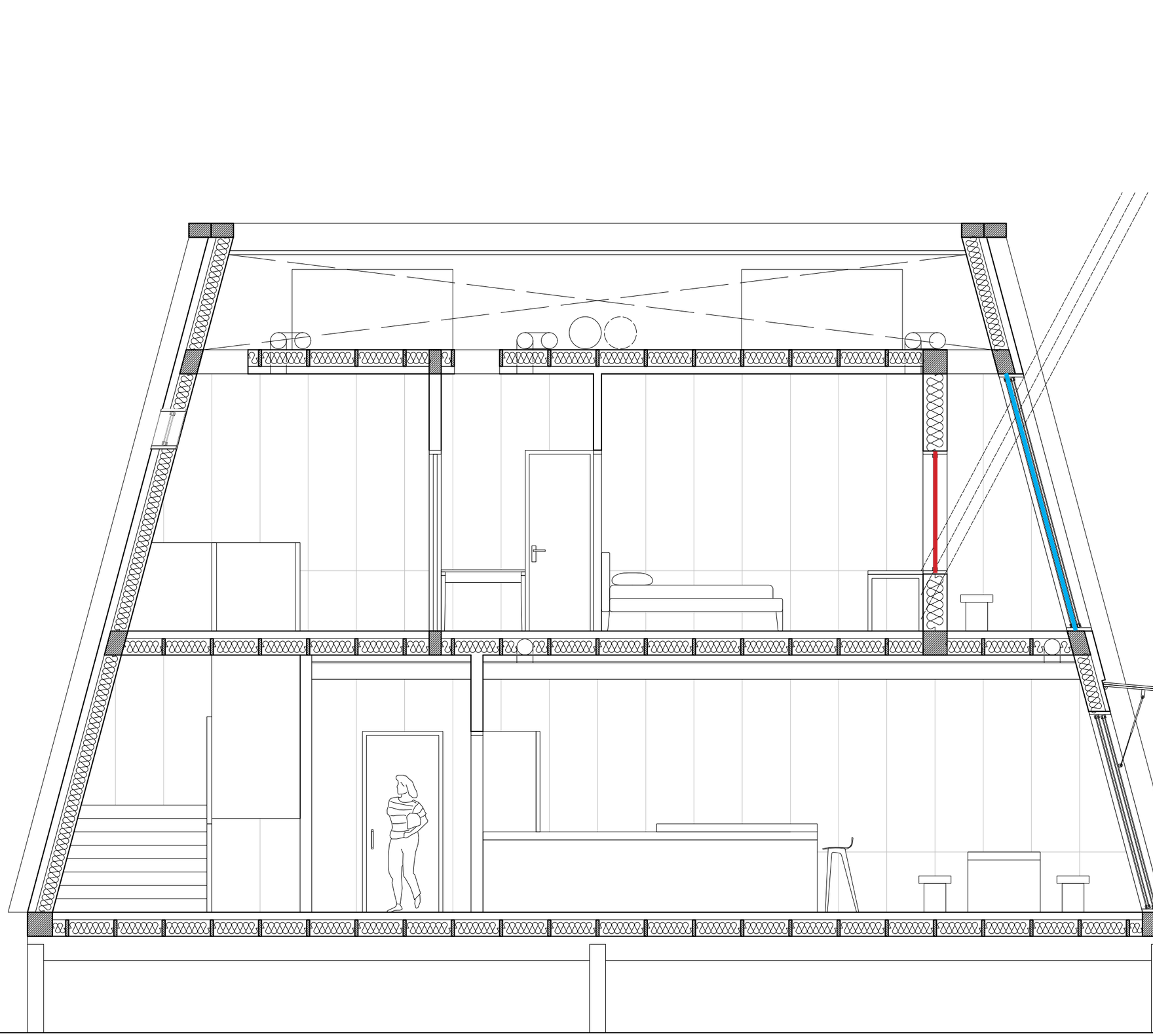


1. External window and grill is shut

2. Balcony heats up from sunlight and the greenhouse effect

3. Internal window allows for regulation of temperature

Summer Scenario



1. External window (blue) is open

2. Balcony is ventilated and does not create greenhouse effect

3. Internal window (red) can be used to further regulate temperature

4. Balcony offsets the bedroom preventing too much exposure to sun

5. Movable facade on lower floor provides shade and prevents sunlight from entering

Section Facing South

The prevailing wind comes from the west (right side of this drawing)

The roof has a sloped shape to create the venturi effect and aid with natural ventilation

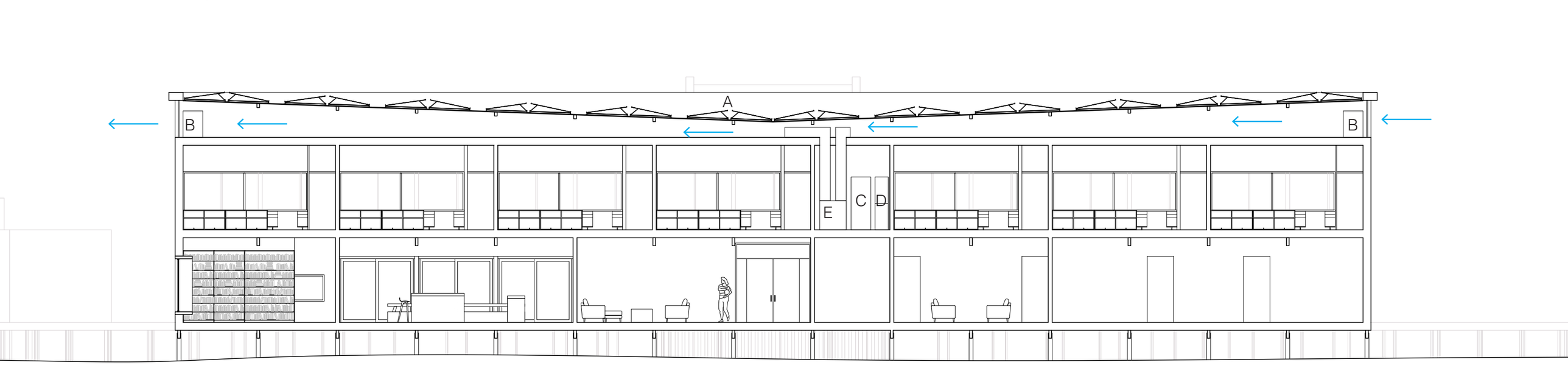
A. With solar panels being more advanced and can function without direct sunlight,
it is more efficient to lay it out with a 10 degree incline

B. Air source heat pump out-door units placed on the roof

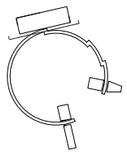
C. Indoor unit to convert heat from the airsource heat pump into underfloor heating

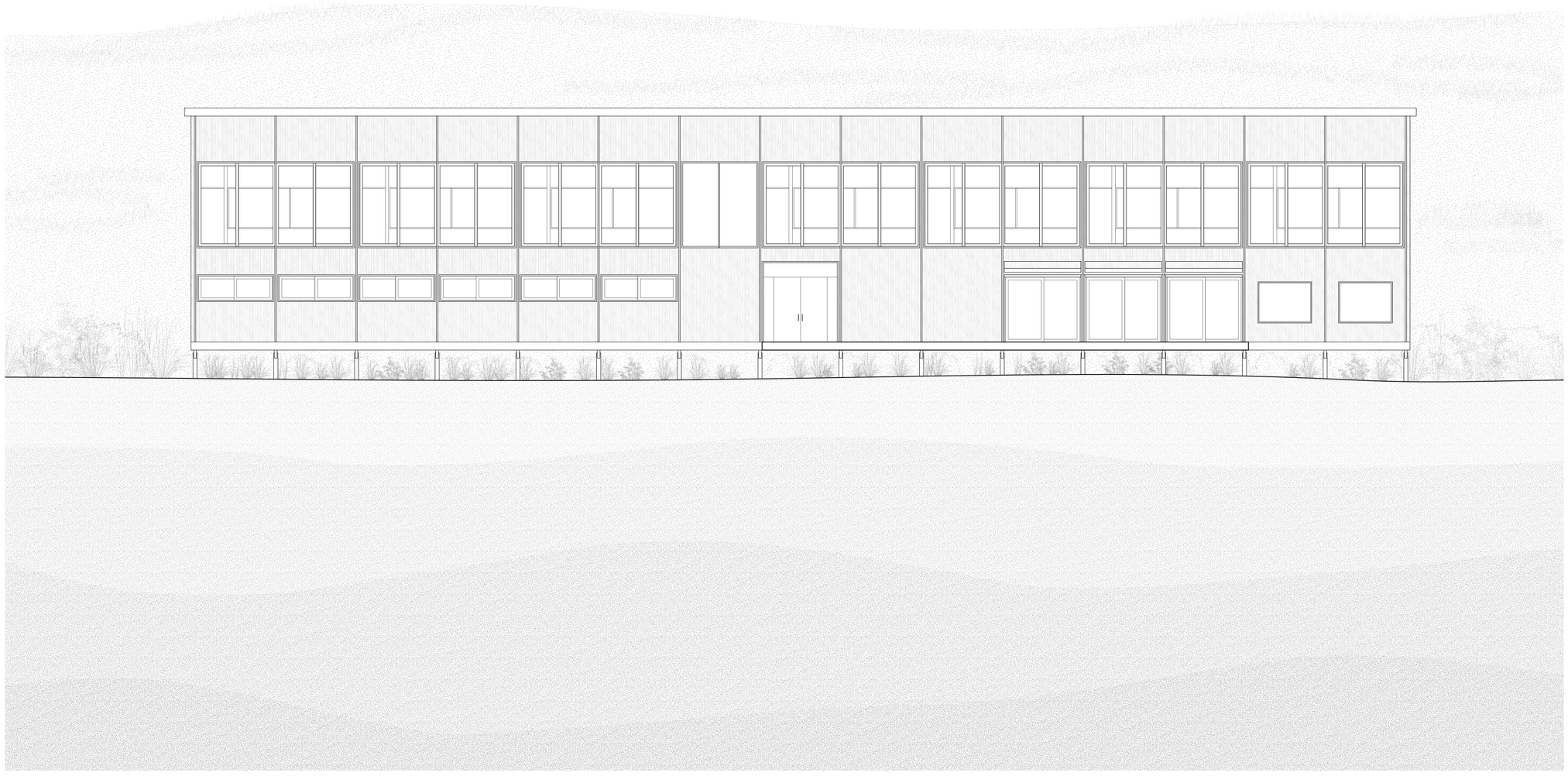
D. Solar panel batteries to help with electricity in shoulder months

E. MVHR unit with the intake facing against the direction of the prevailing wind and exhaust facing
the other way



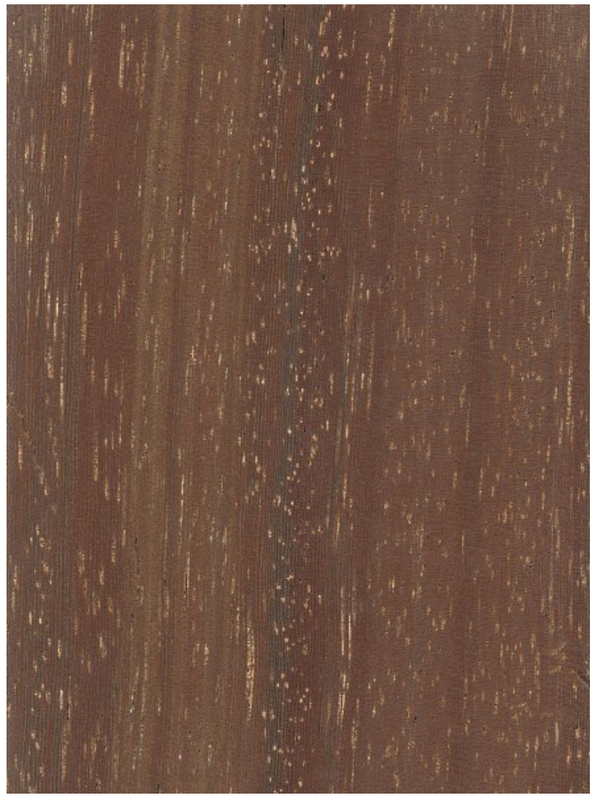
Main Building Long Elevation 1:100 @A2





1m 5m 10m

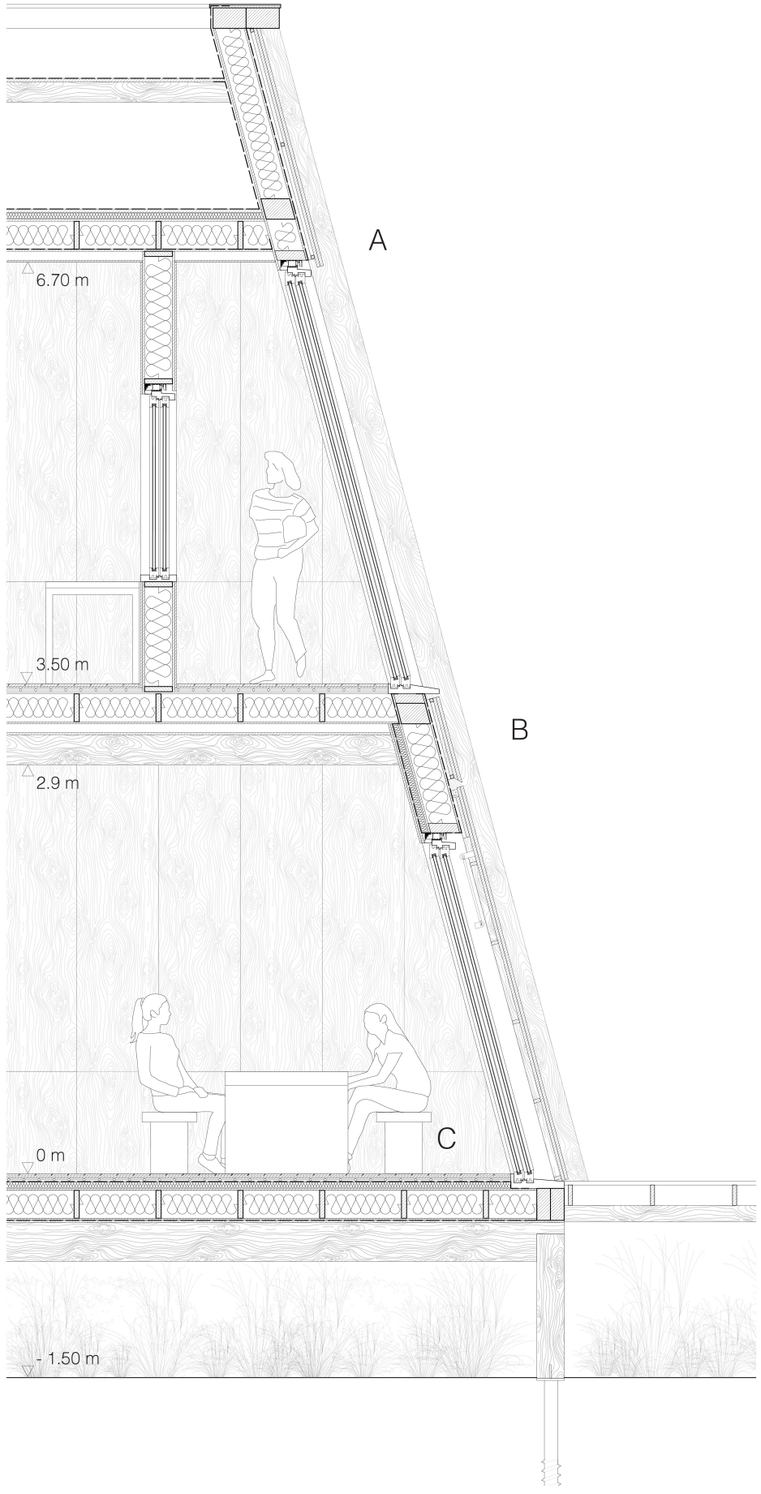
Material



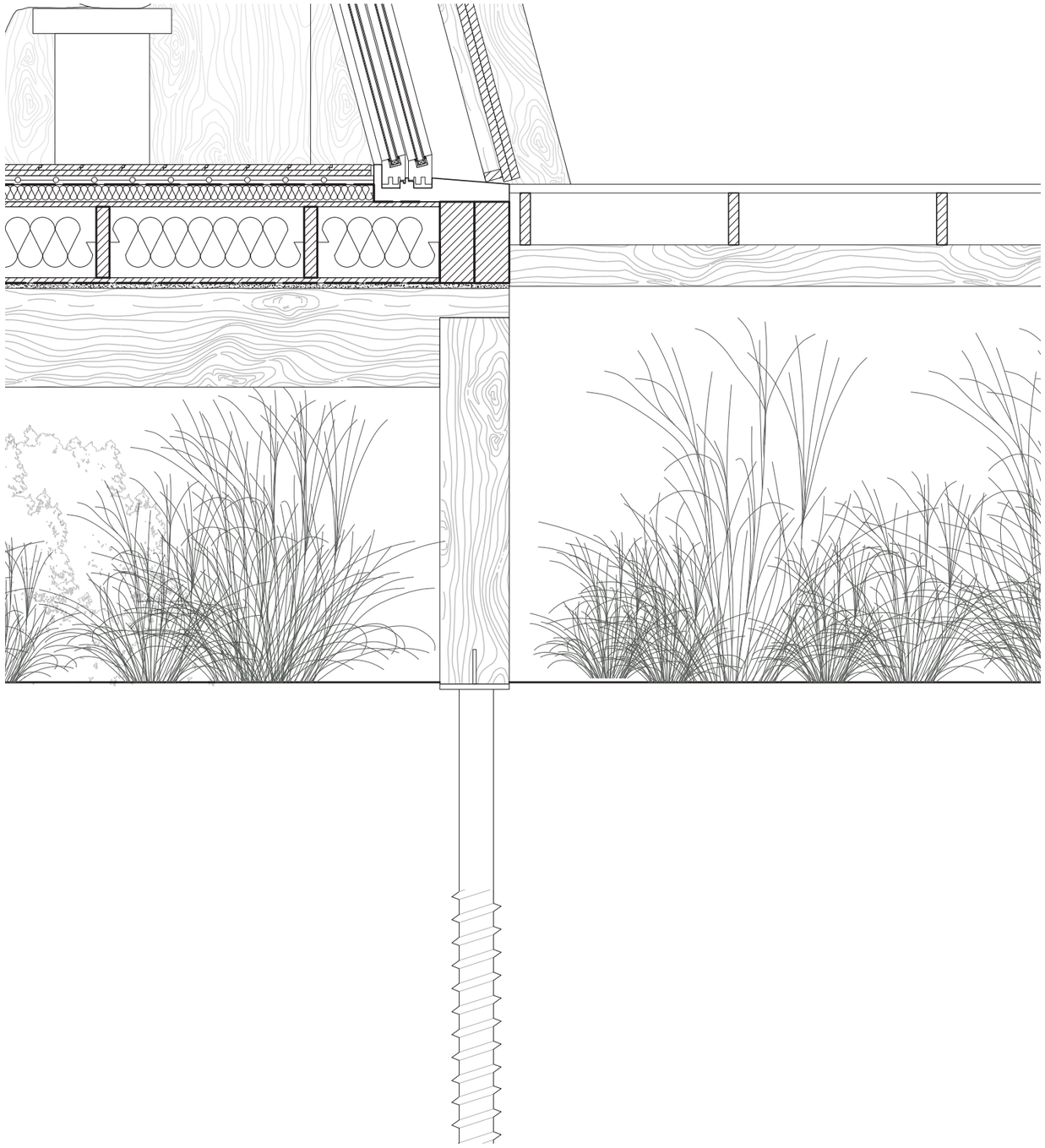
Ekki Timber
- Lower parts

Thermo Essen
- Cladding

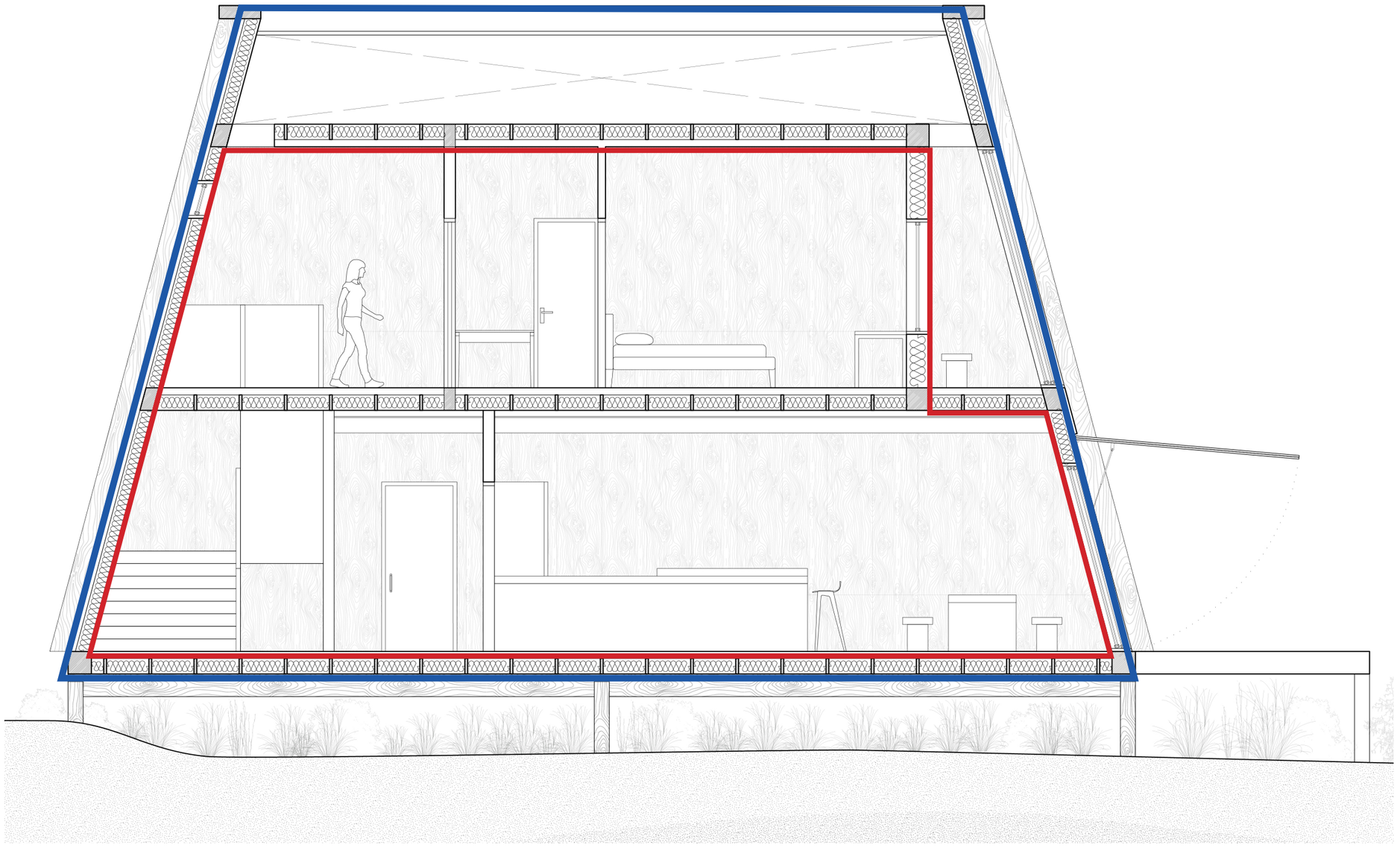
Detail



Detail Zoomed



Material Treatment



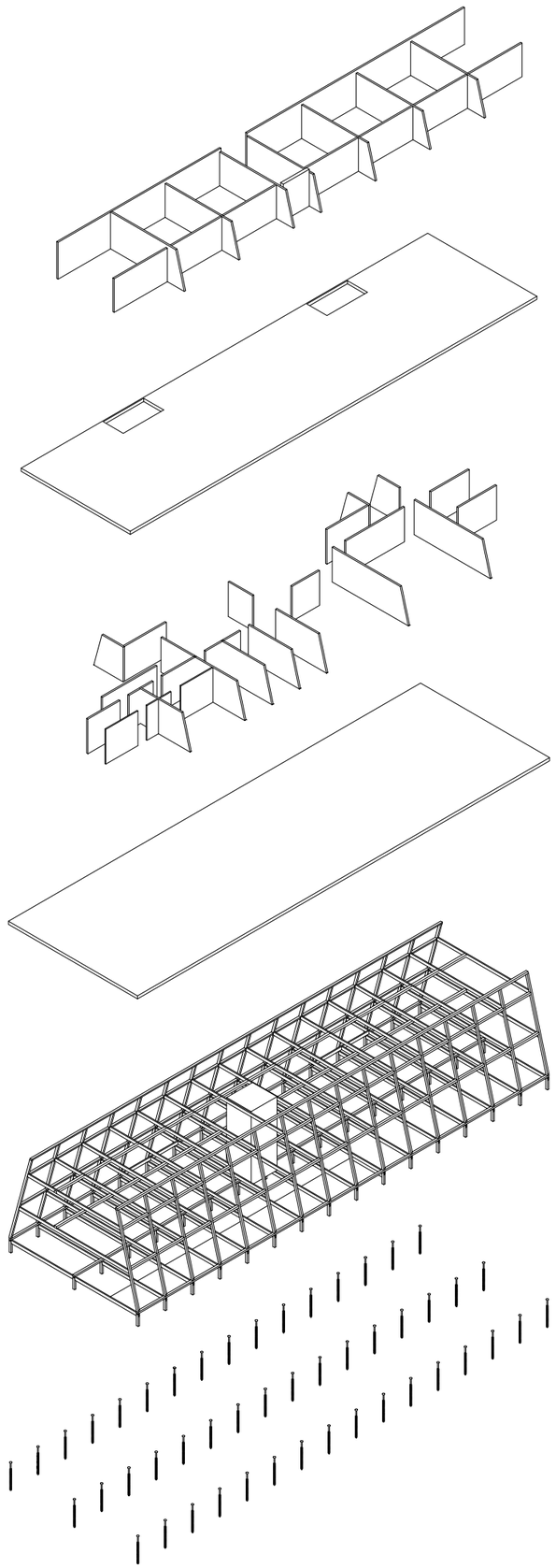
Model Photo

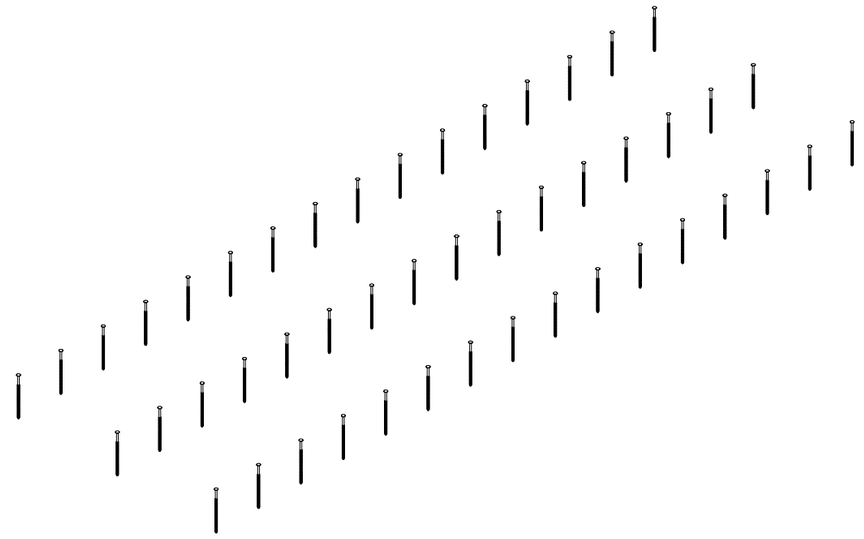
Structure Principle

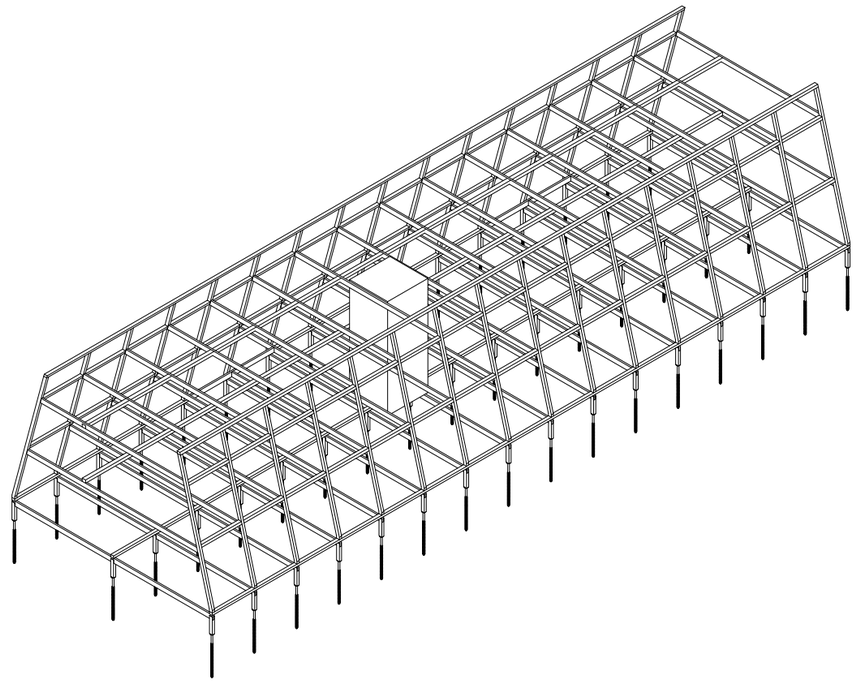
Timber Stud
Construction (HSB)
for walls and floors
(600 mm centres)

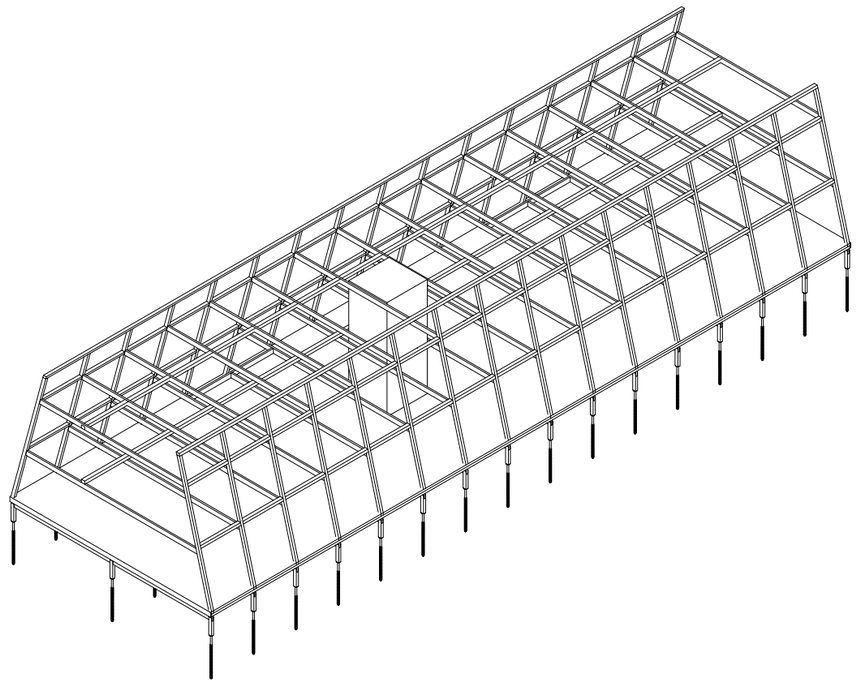
Glulam Beams +
Columns
300 x 150 mm

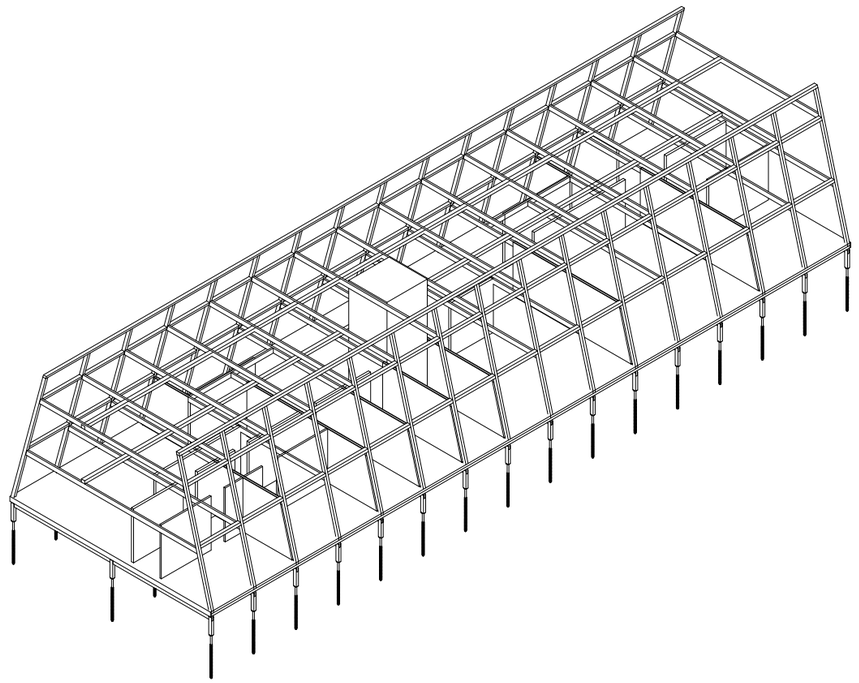
Screw Poles

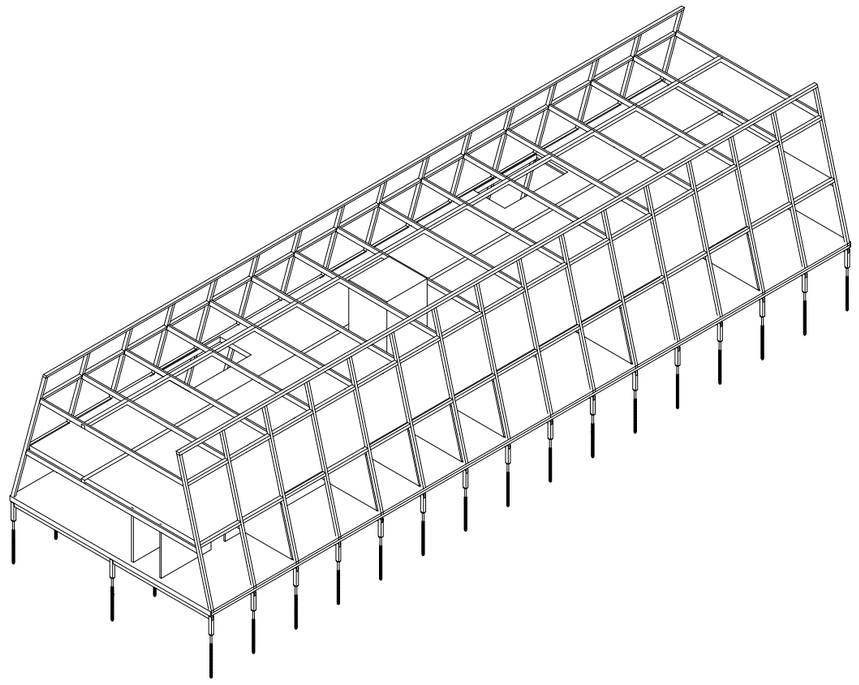


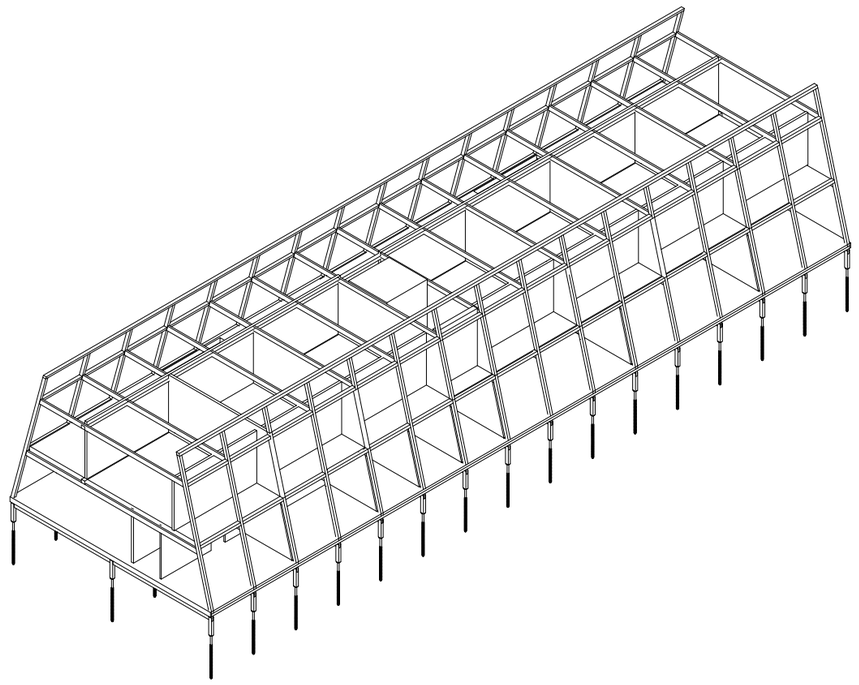


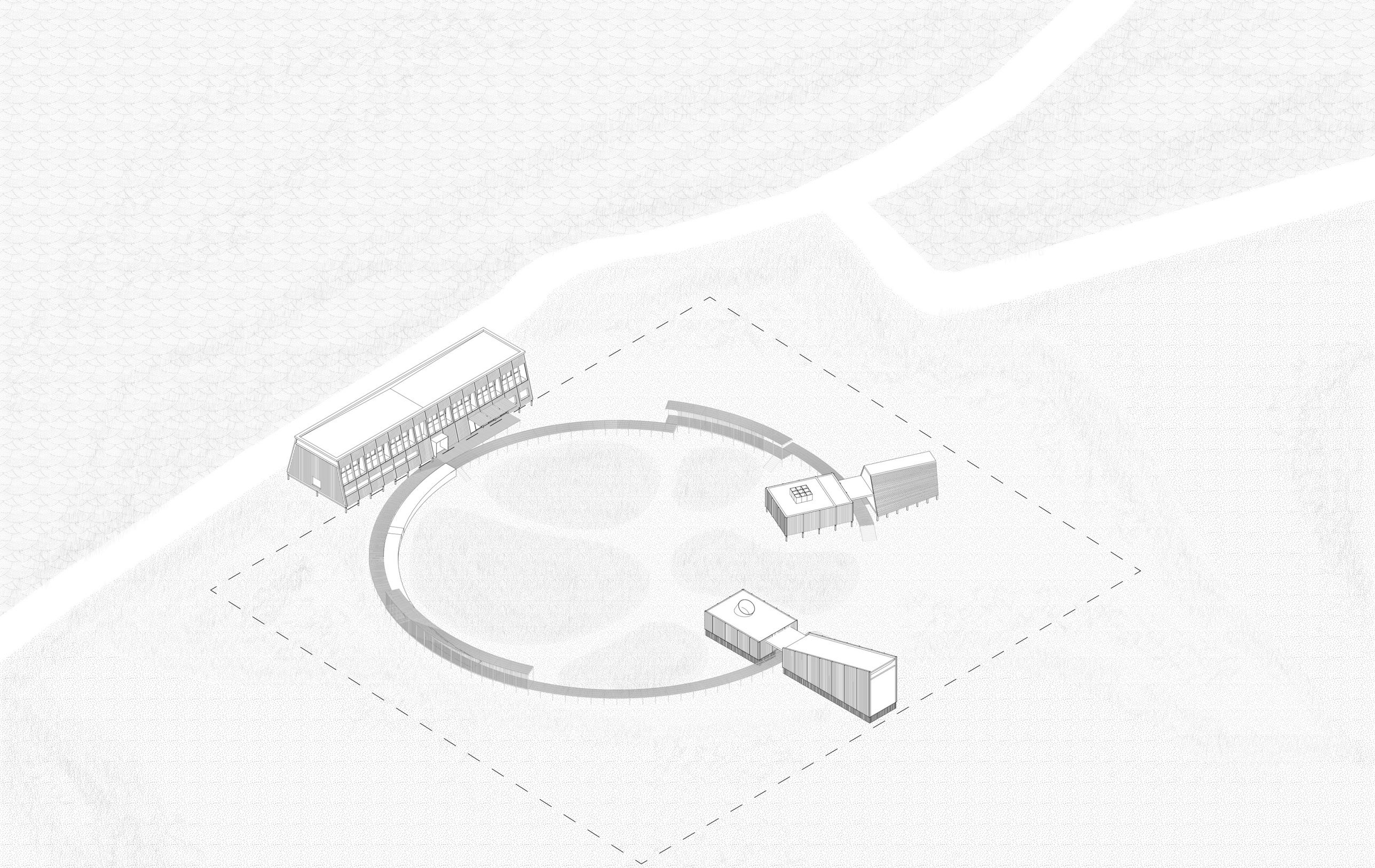








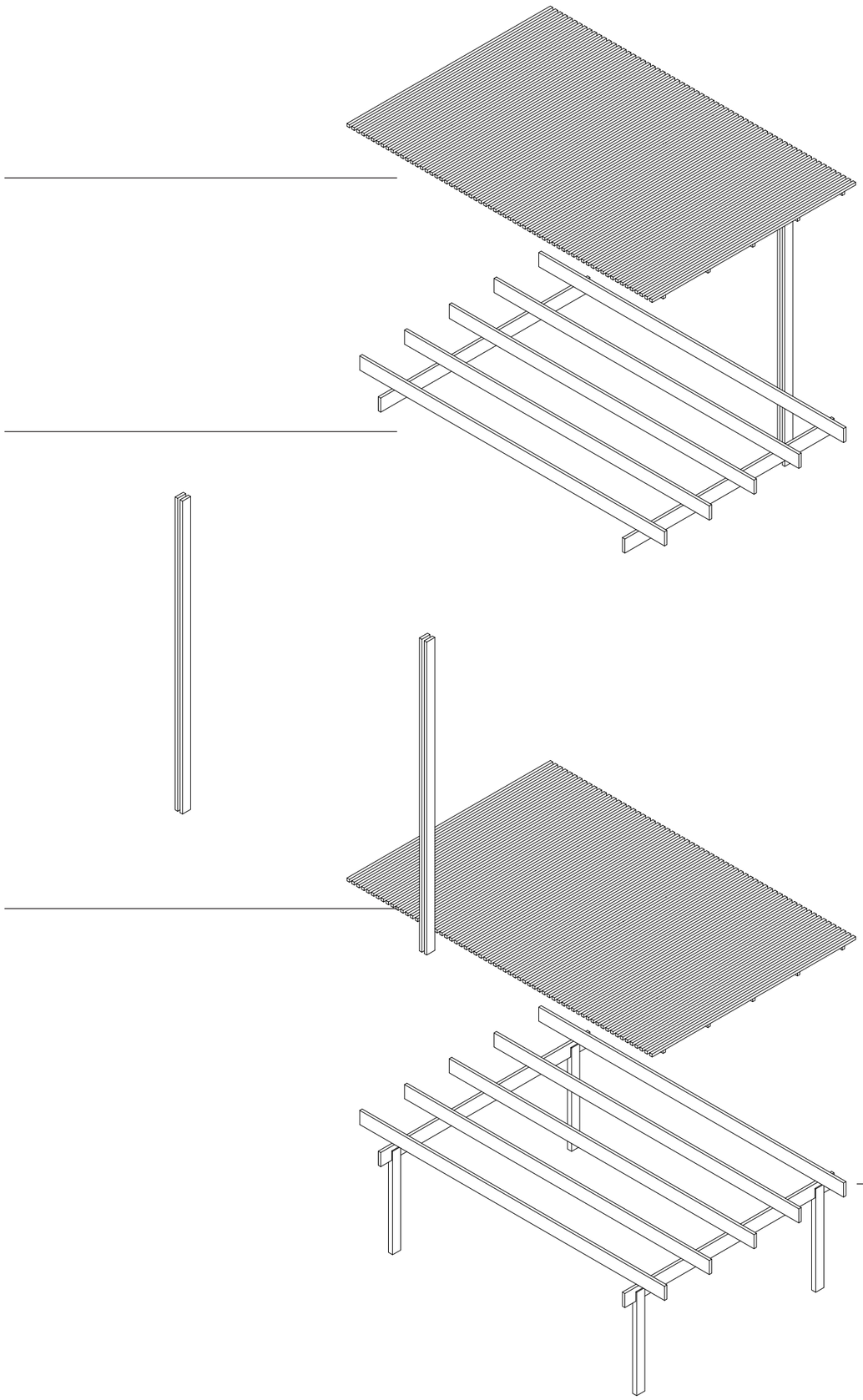




Raised Platform

Timber “Grills” in panel form used as roof

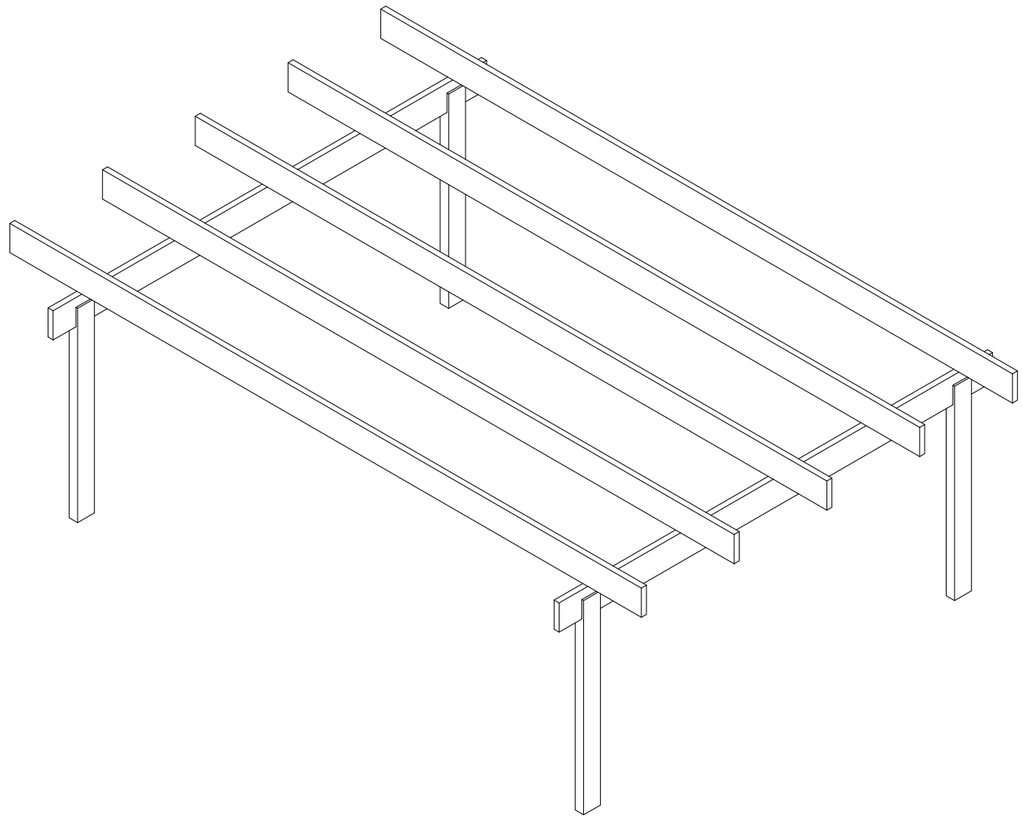
Timber Roof Beams 150 mm deep

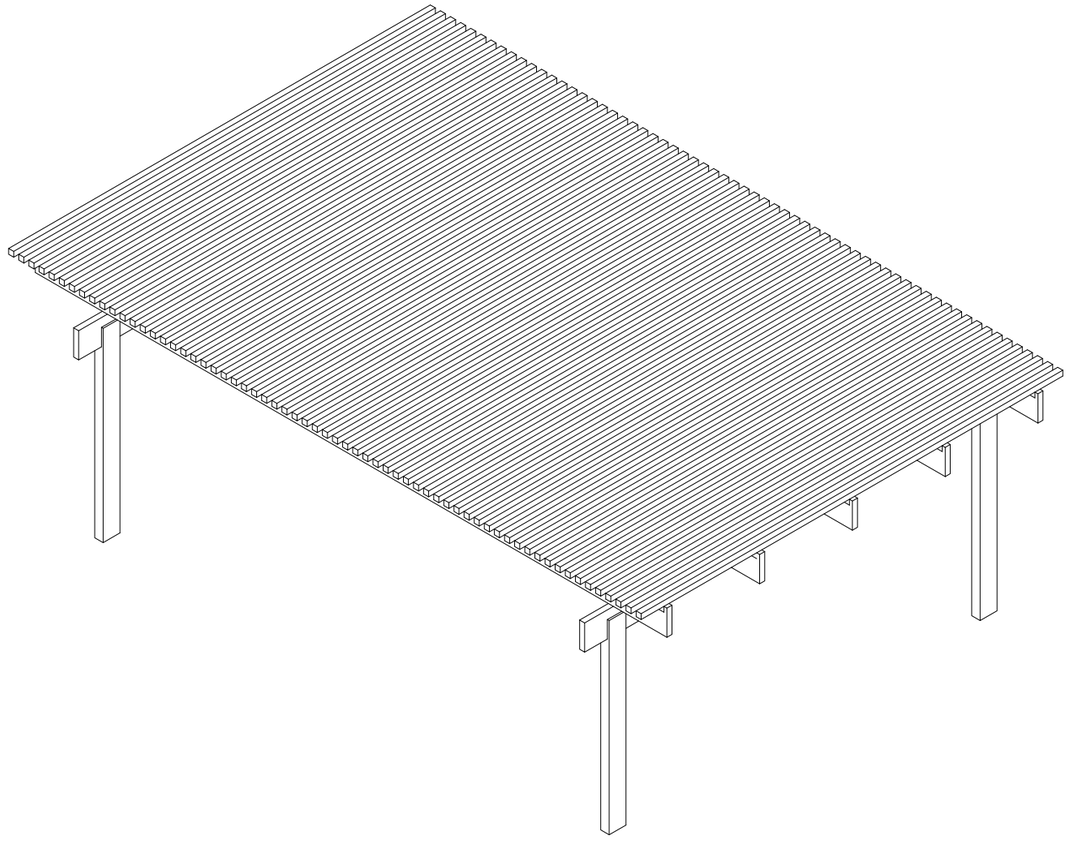


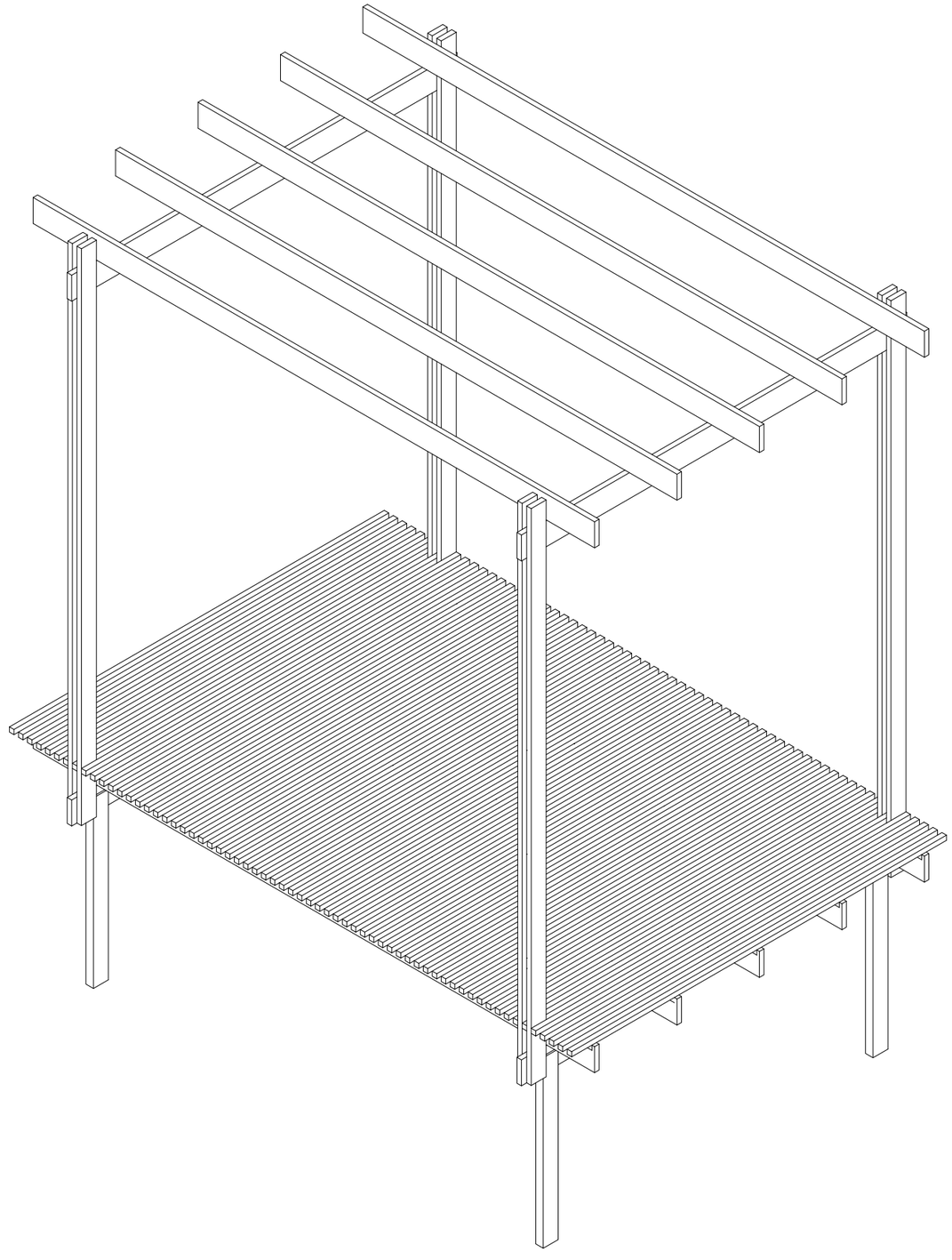
Timber “Grills” in panel form used as facade

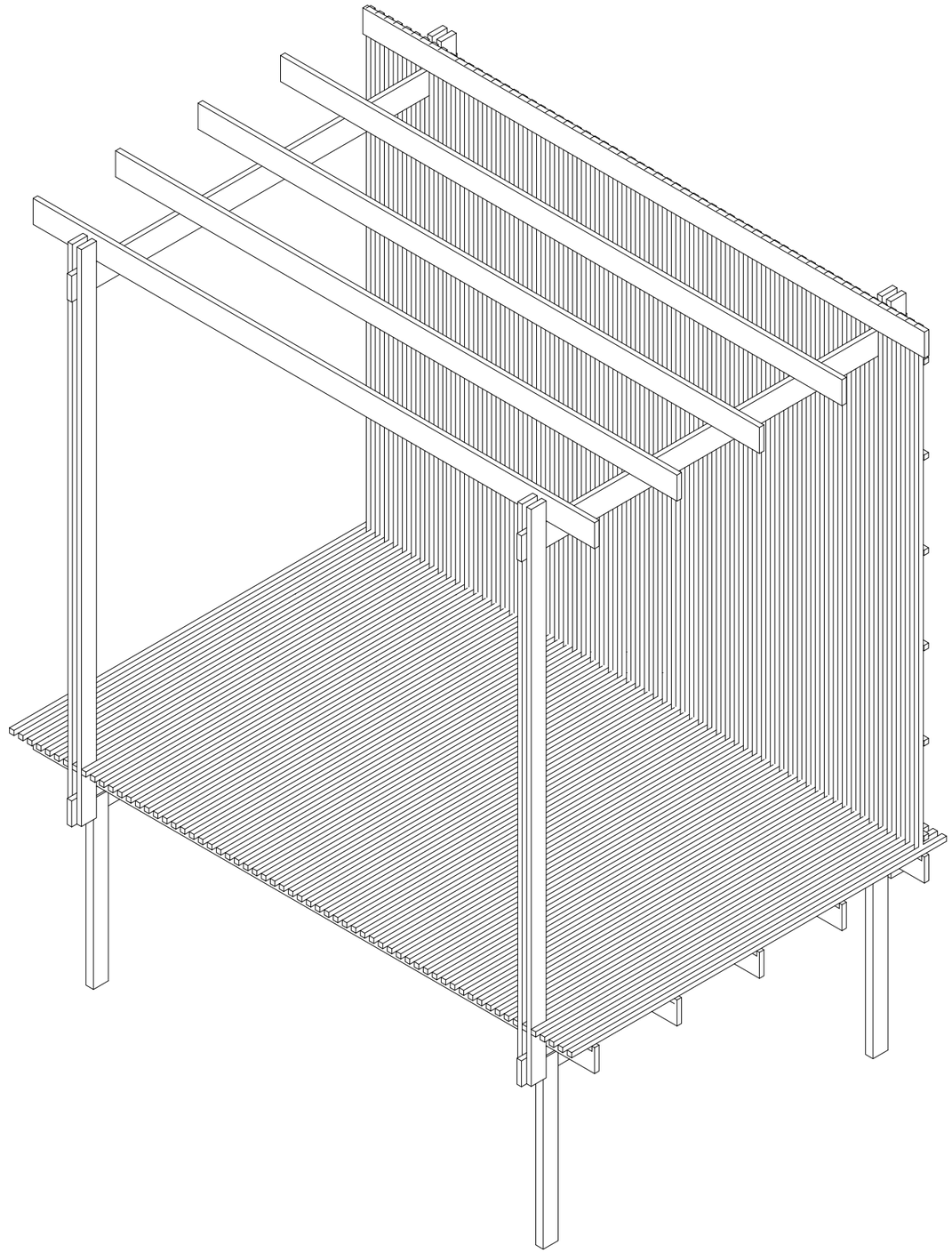
Timber “Grills” in panel form used as floor

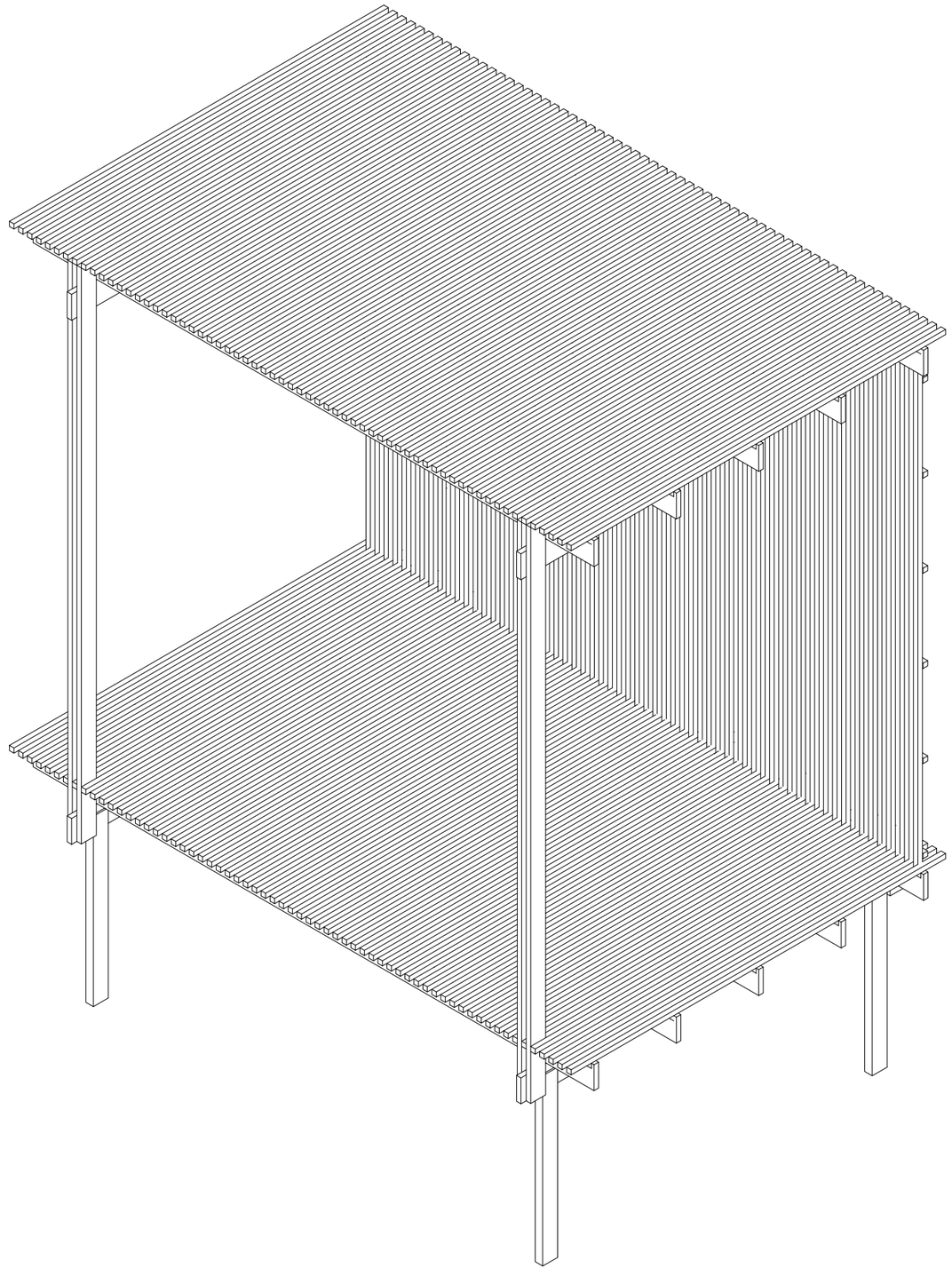
Timber Platform Beams 150 mm deep



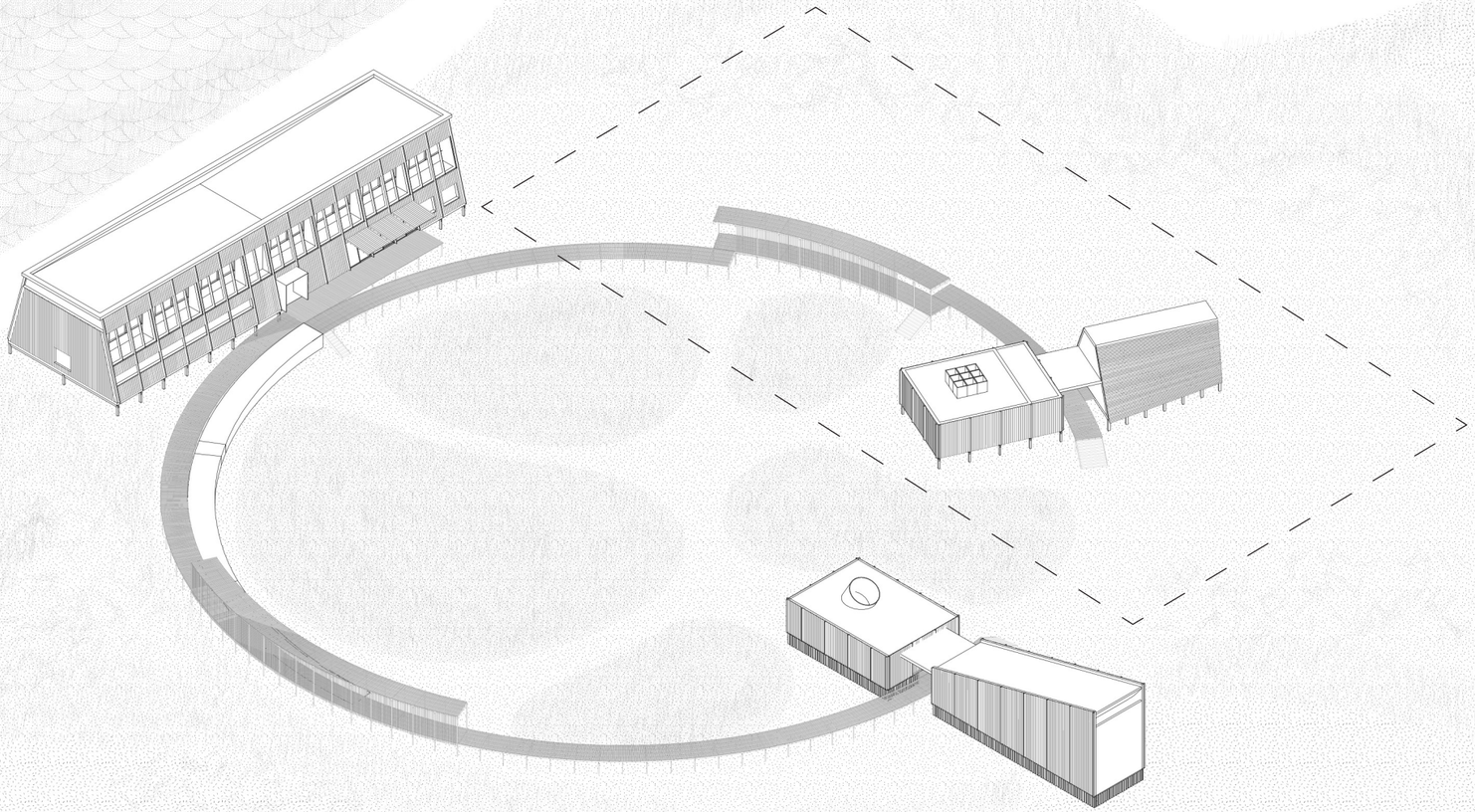


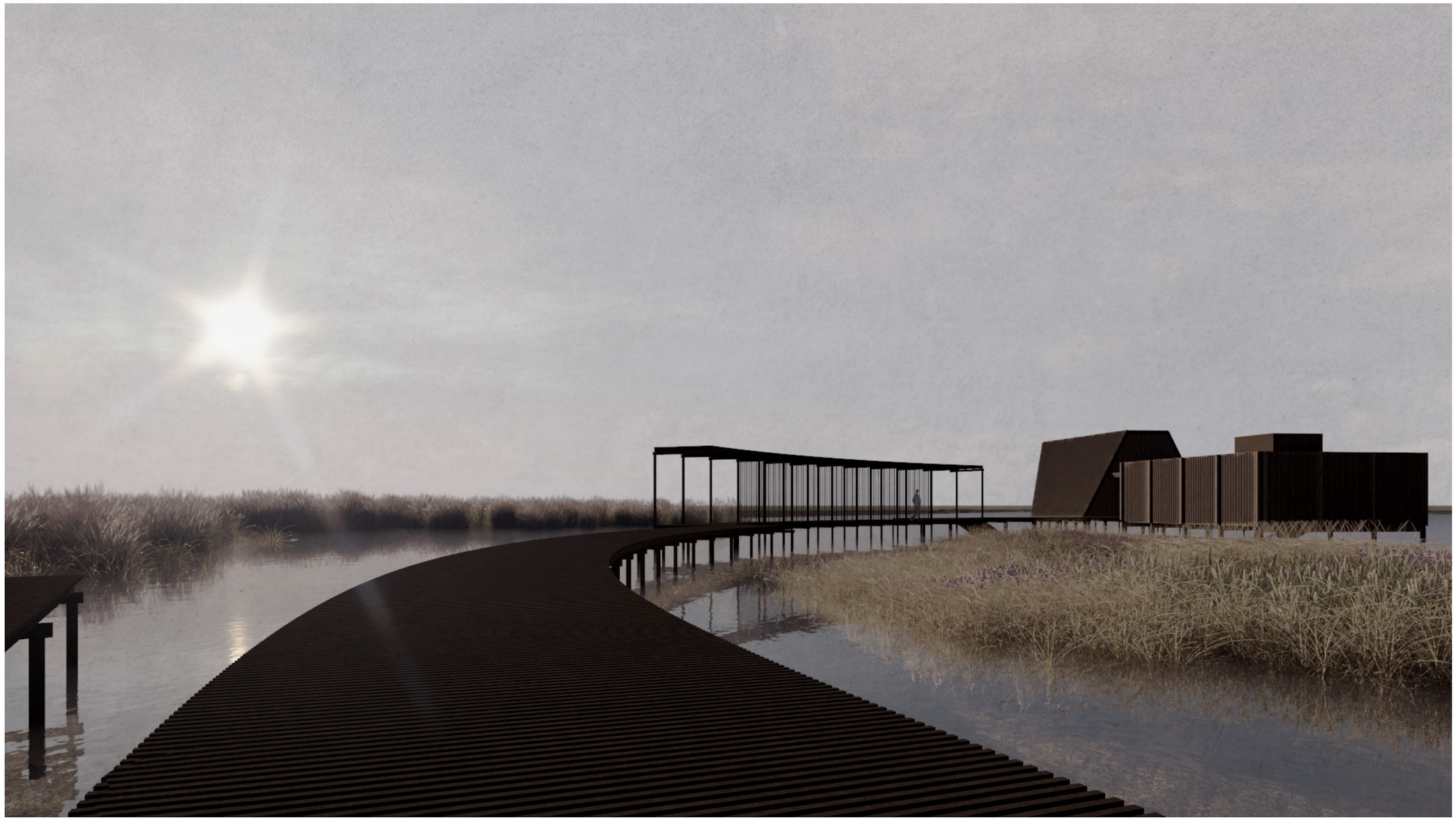




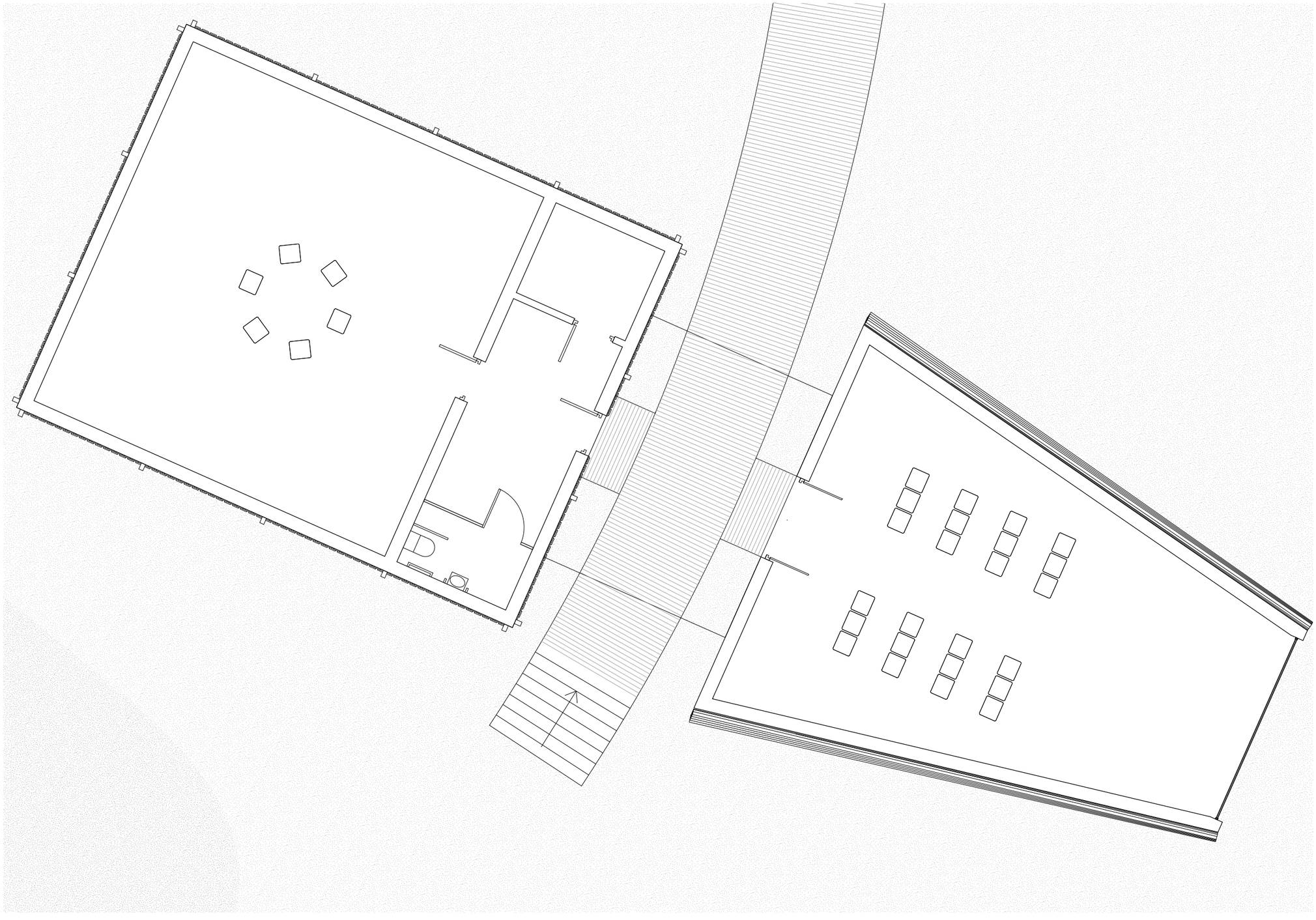


Pause & Views



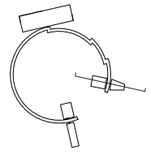


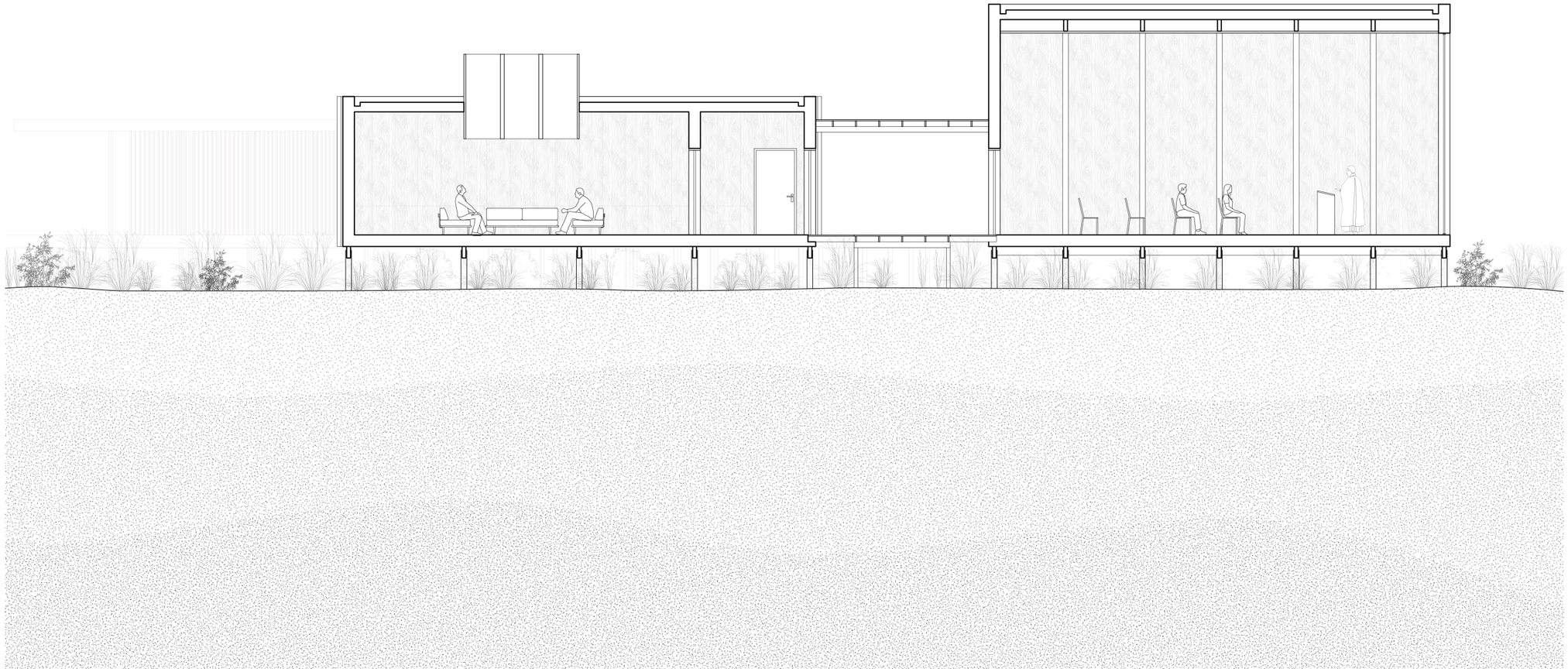
Plan 1:50 @ A3



1m 5m 10m

Section 1:100 @A3





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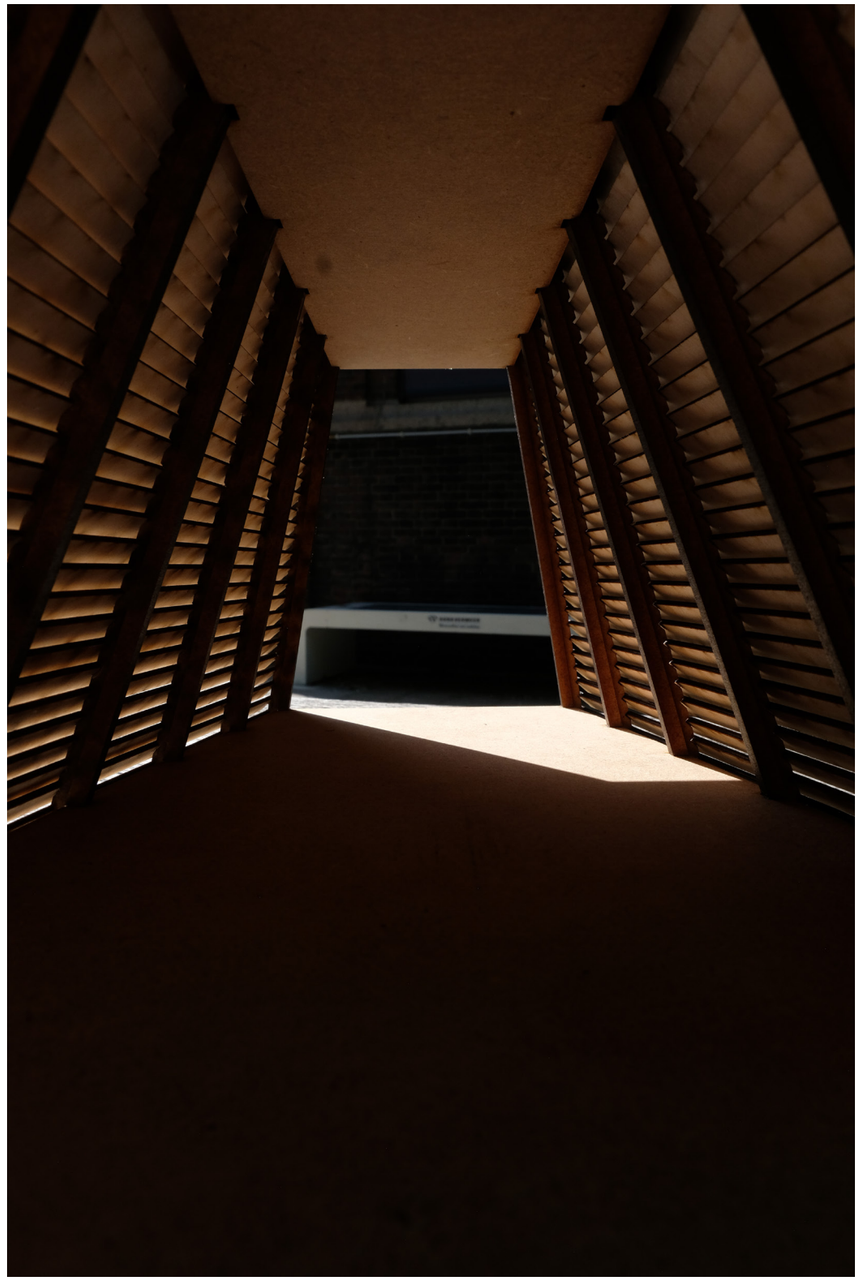
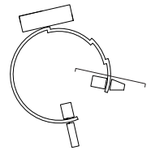
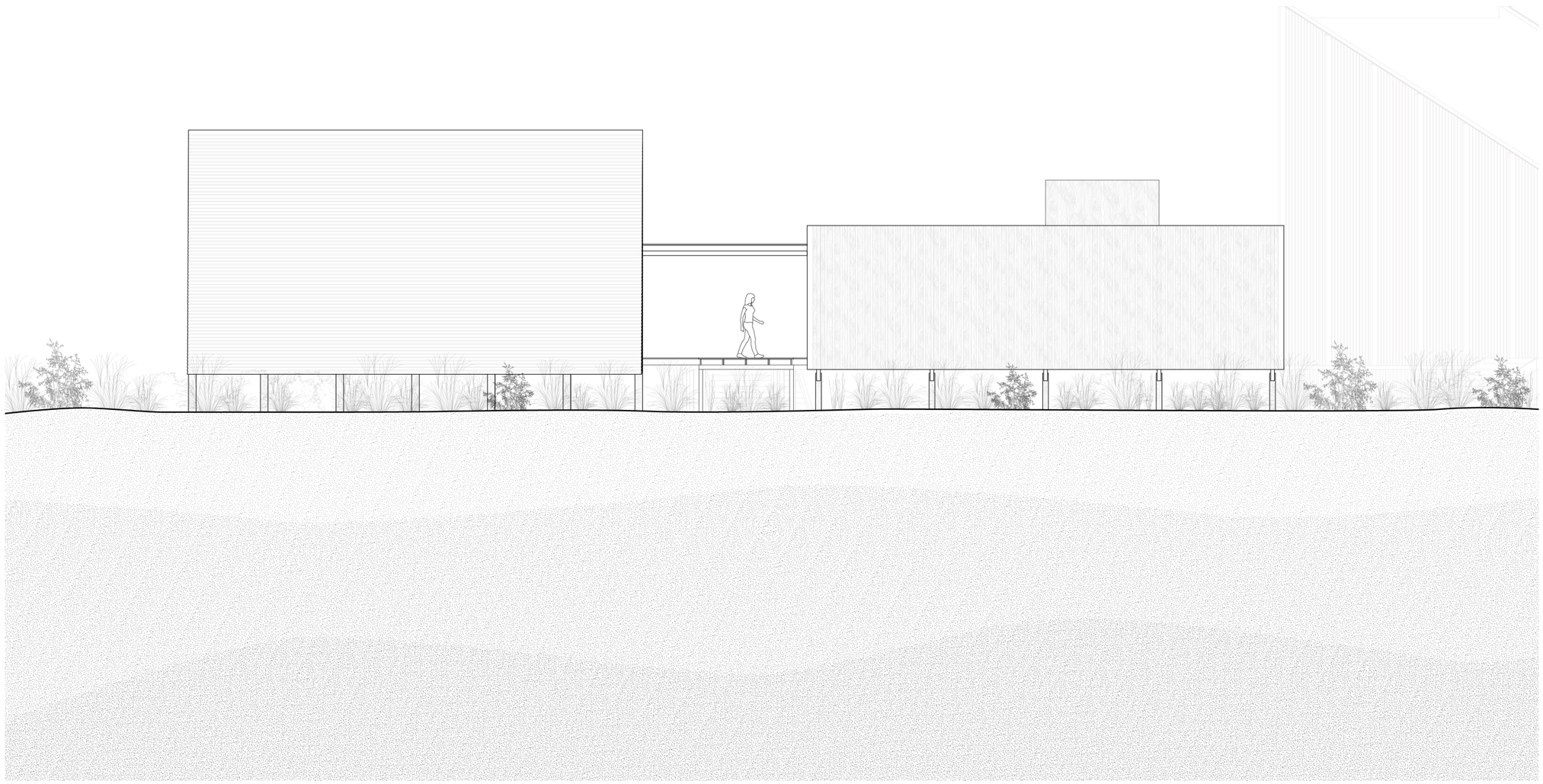


Elevation 1:100 @A3





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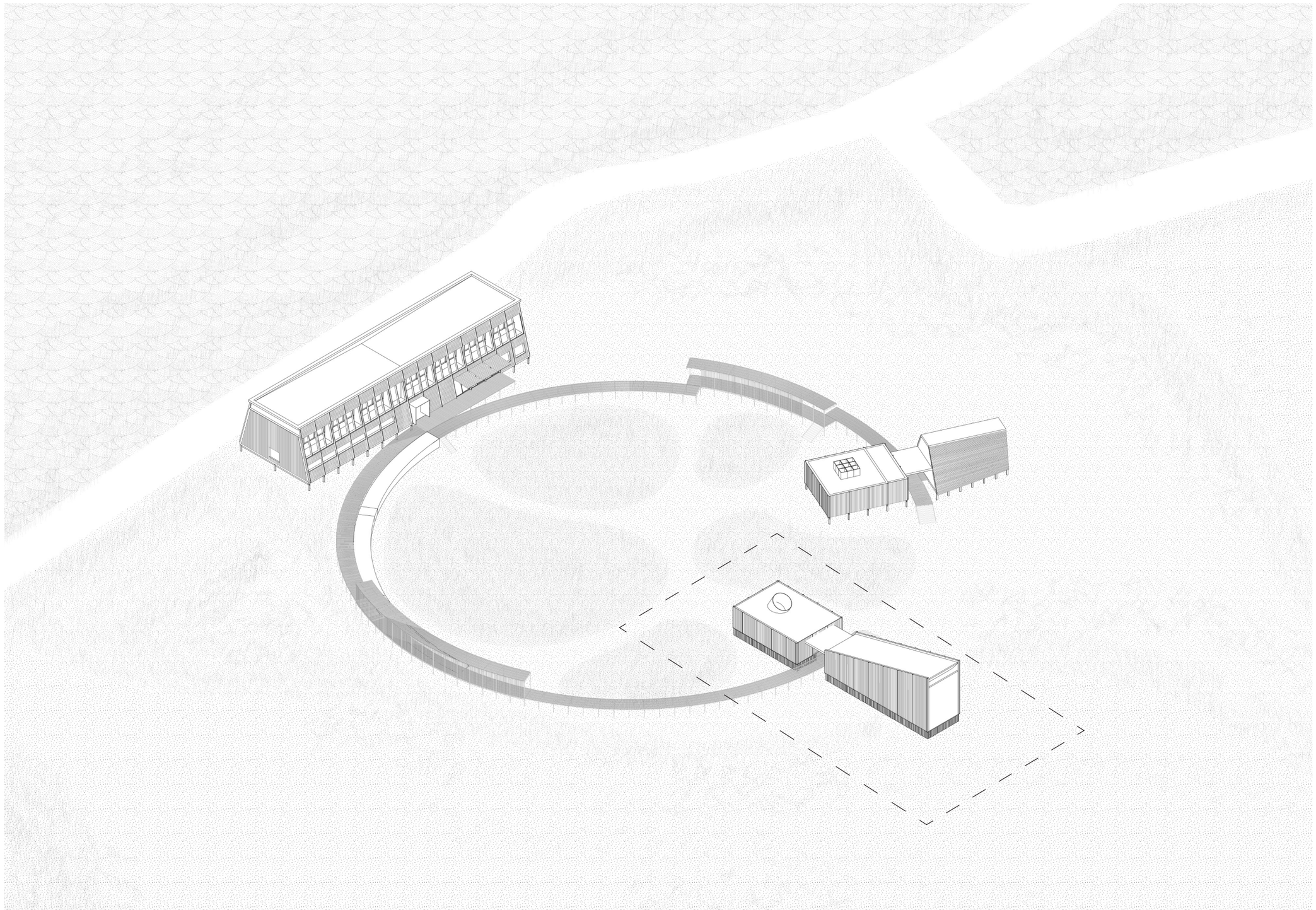
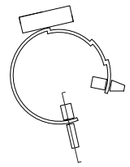
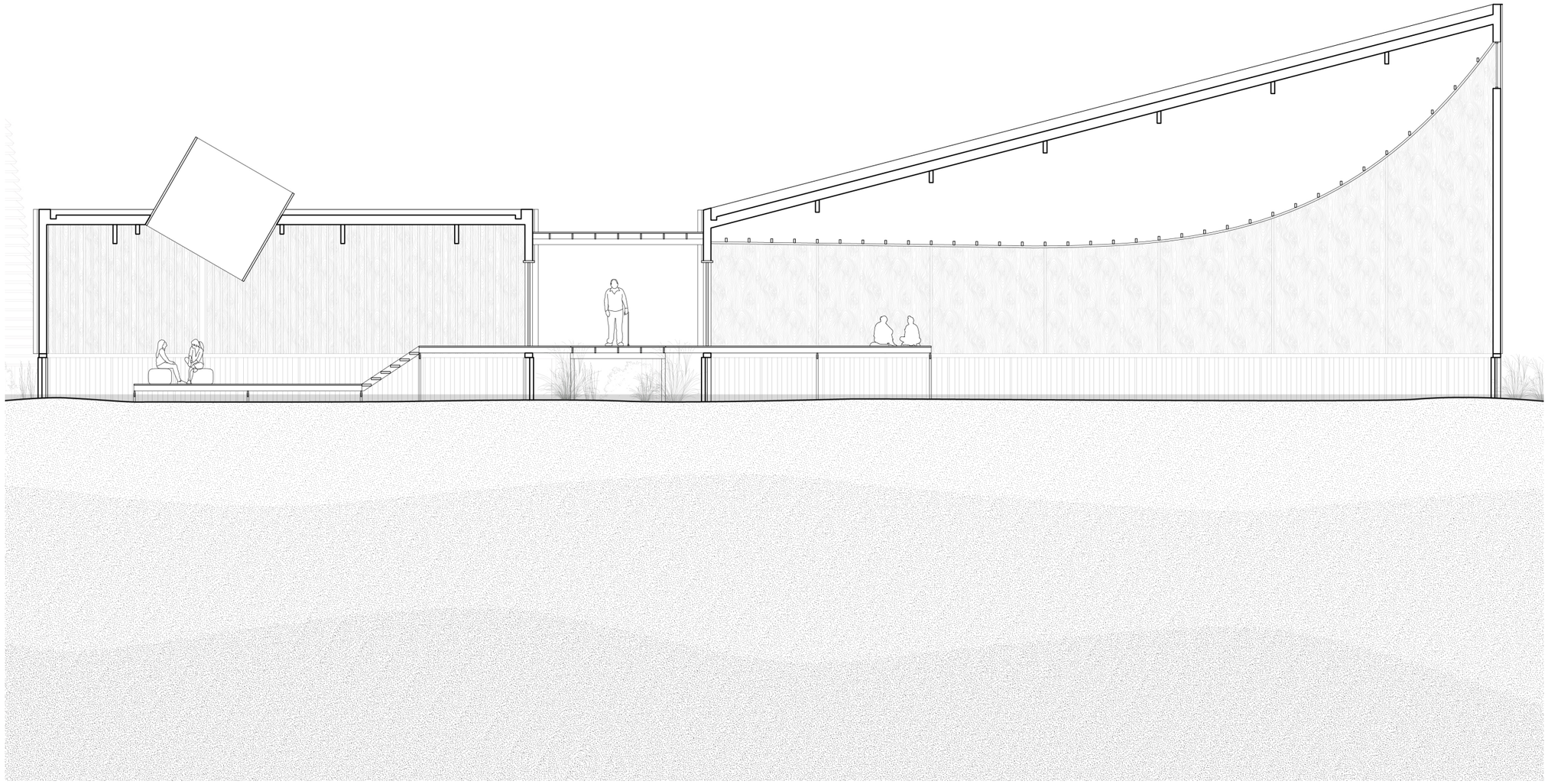


Model Photo

Meditation Space Section 1:100 @A3





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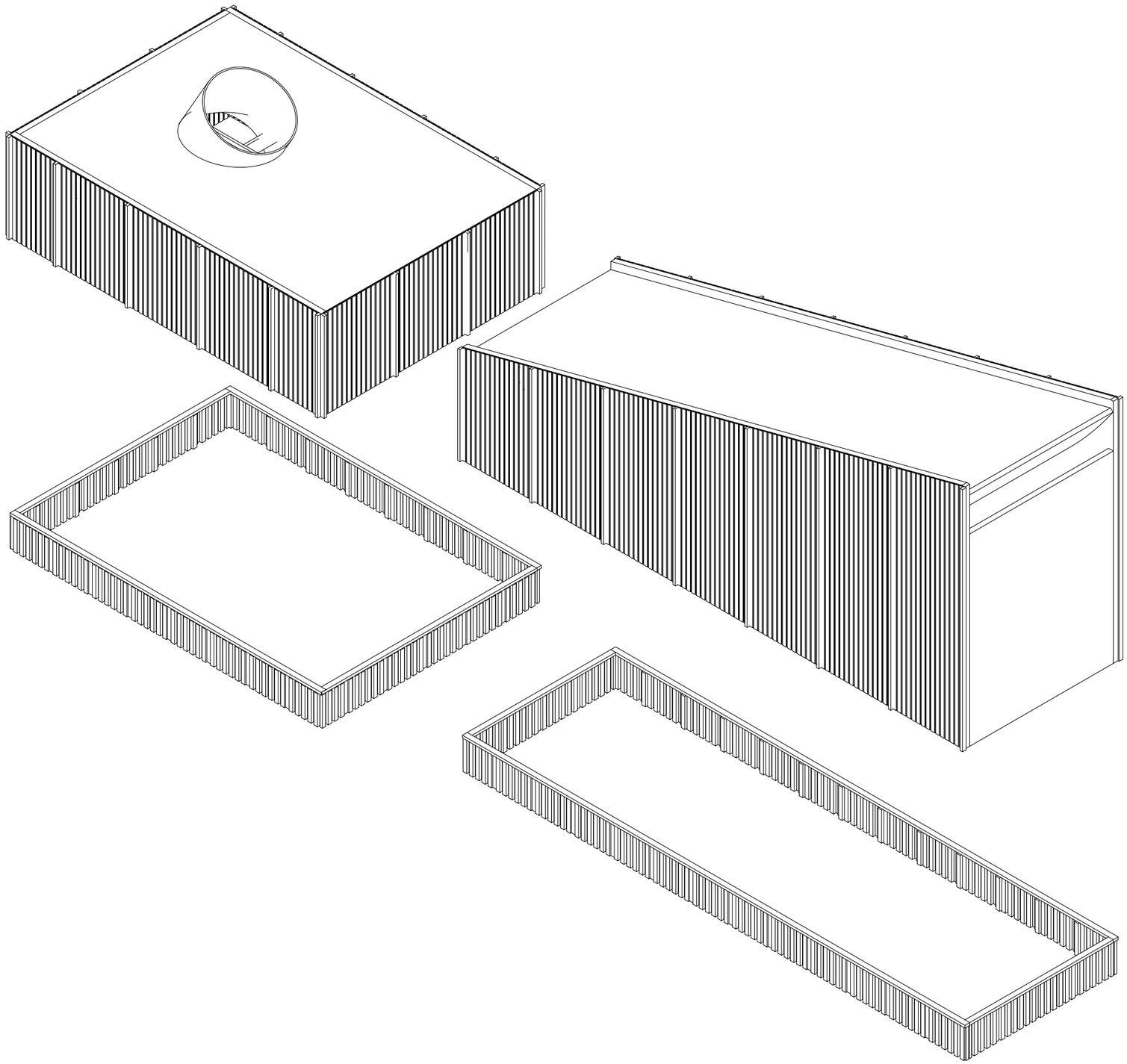
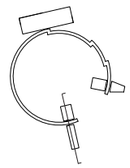
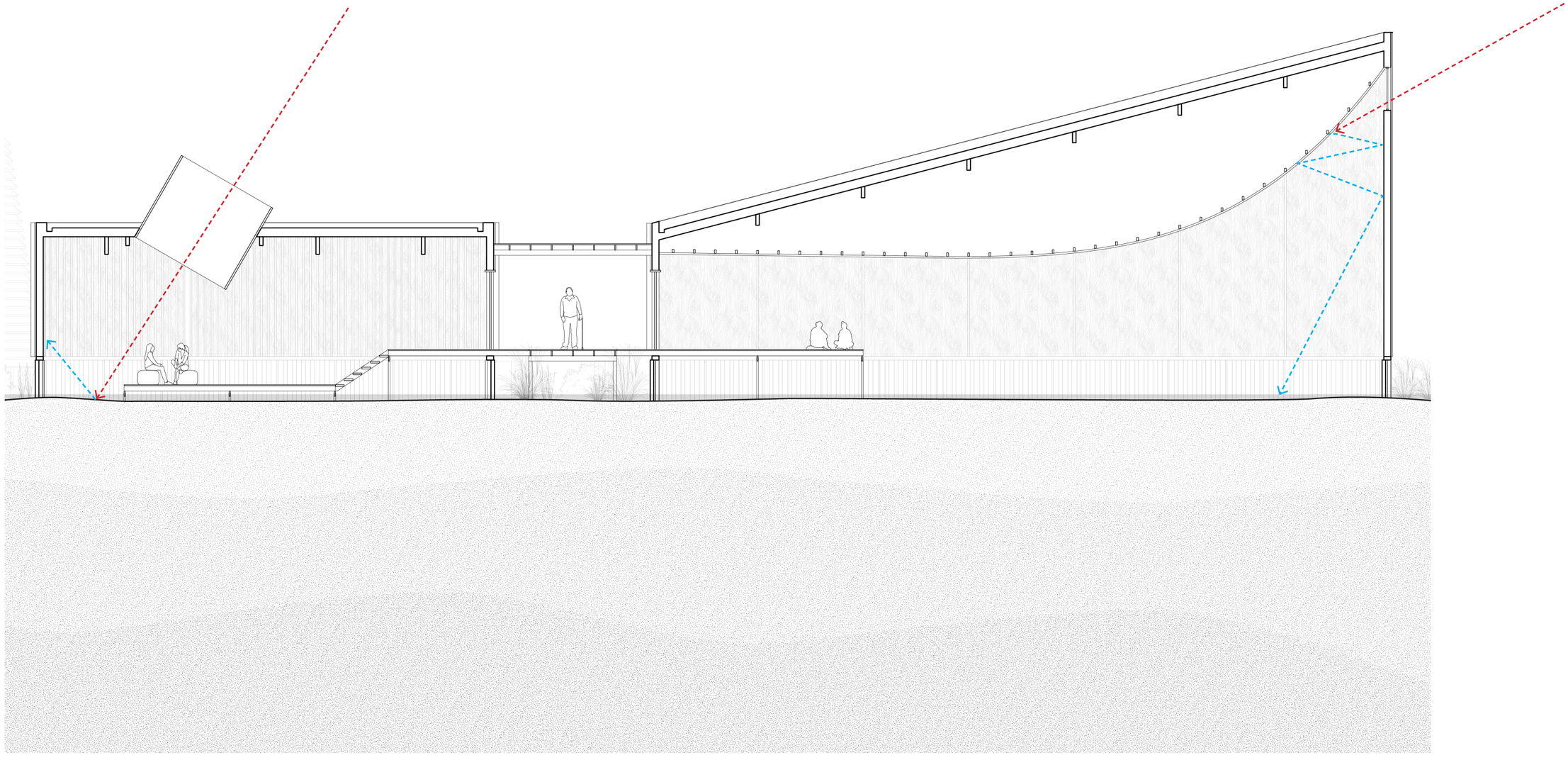


Plinth in Plan

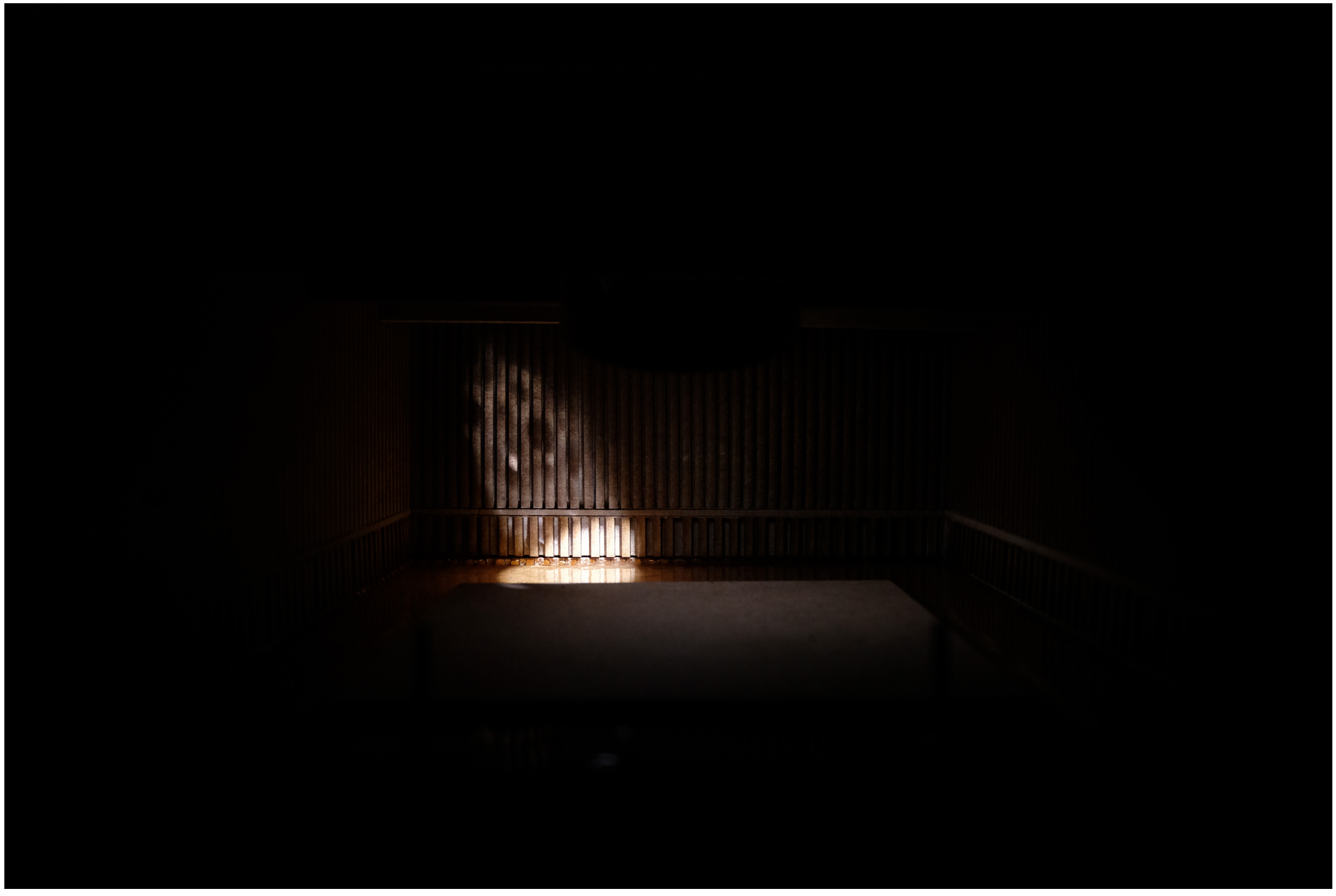
Sunlight vs Daylight



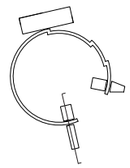


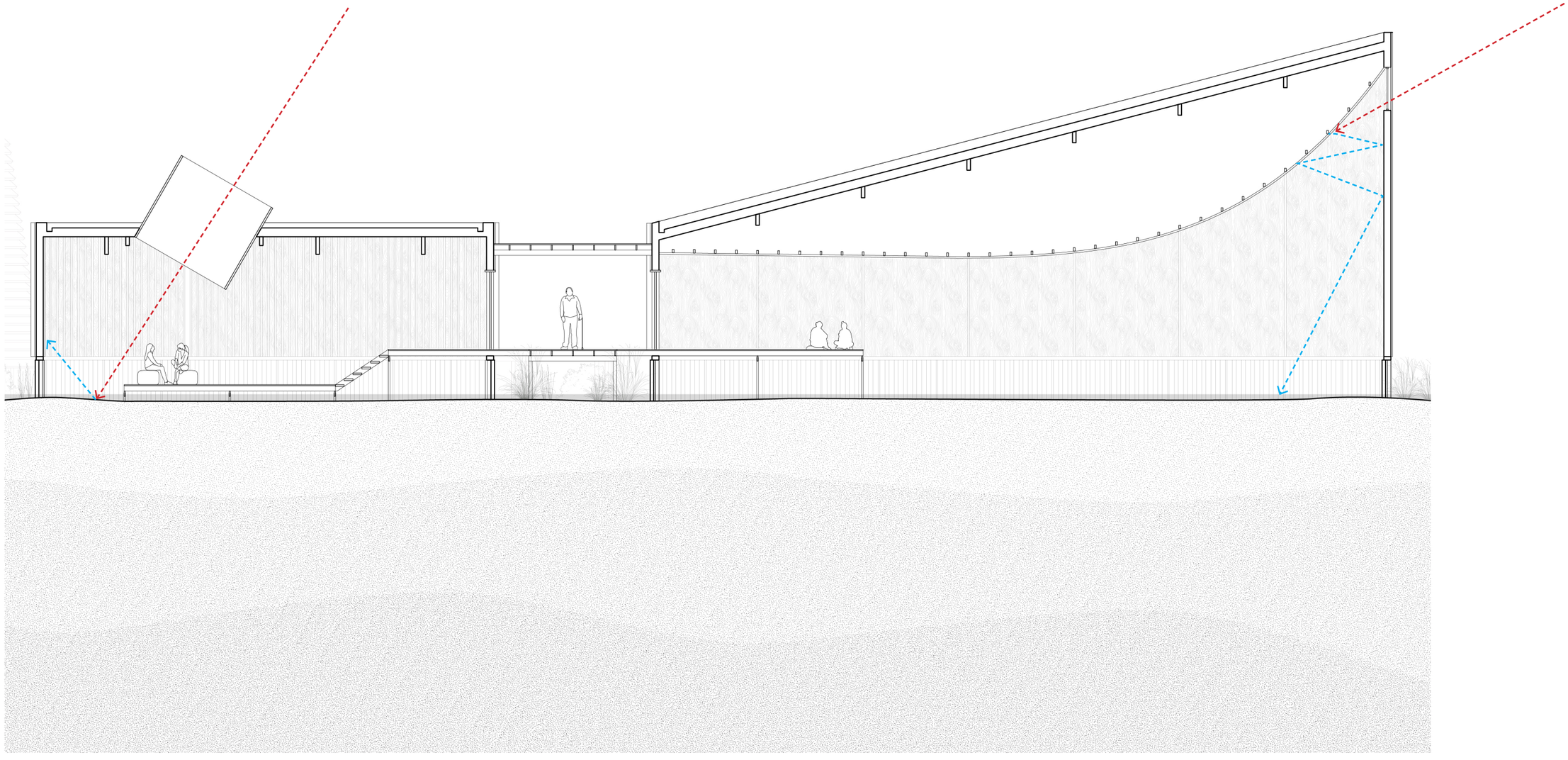
Render Perspective

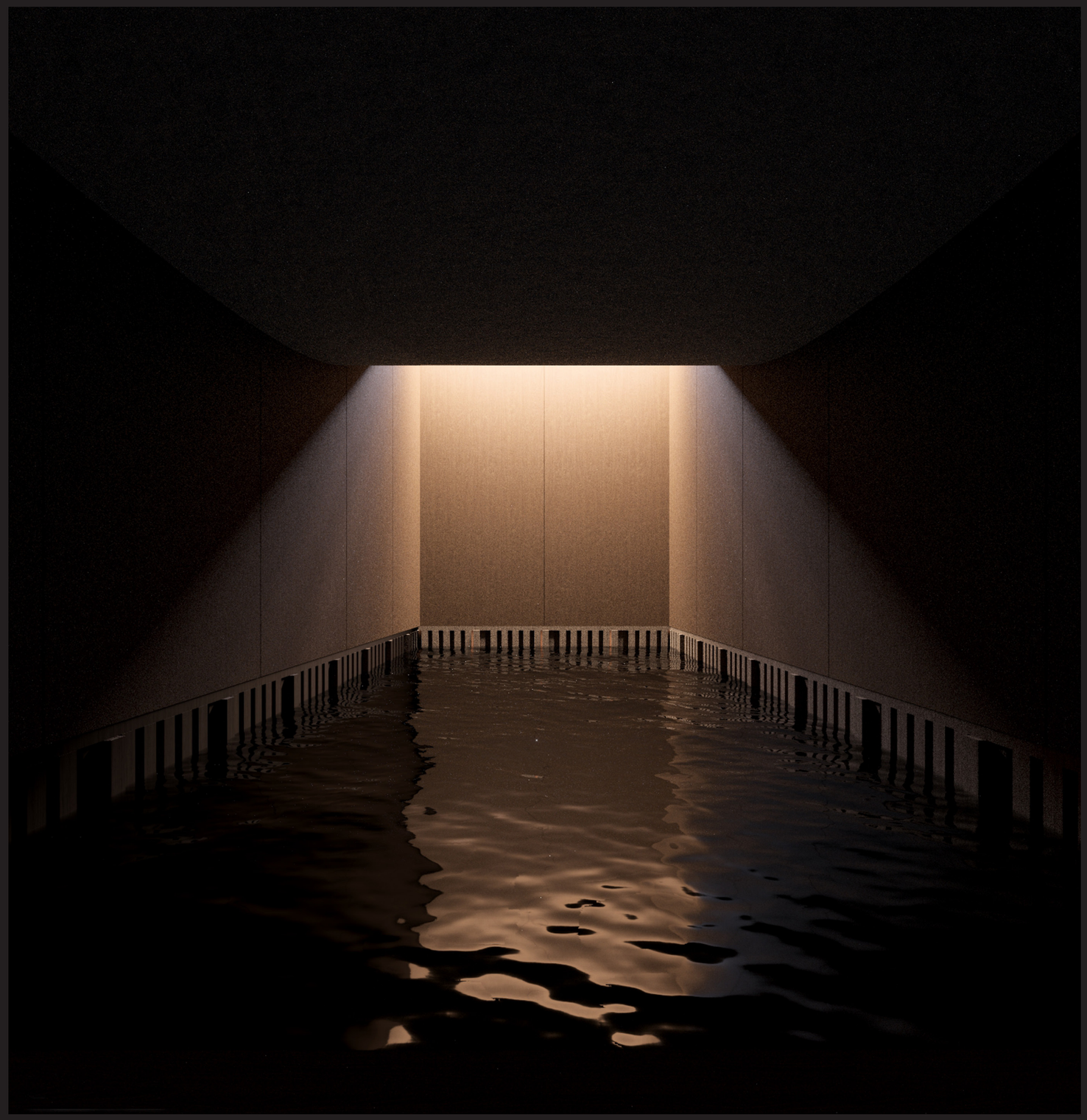
Model Photo



Sunlight vs Daylight

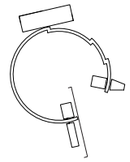


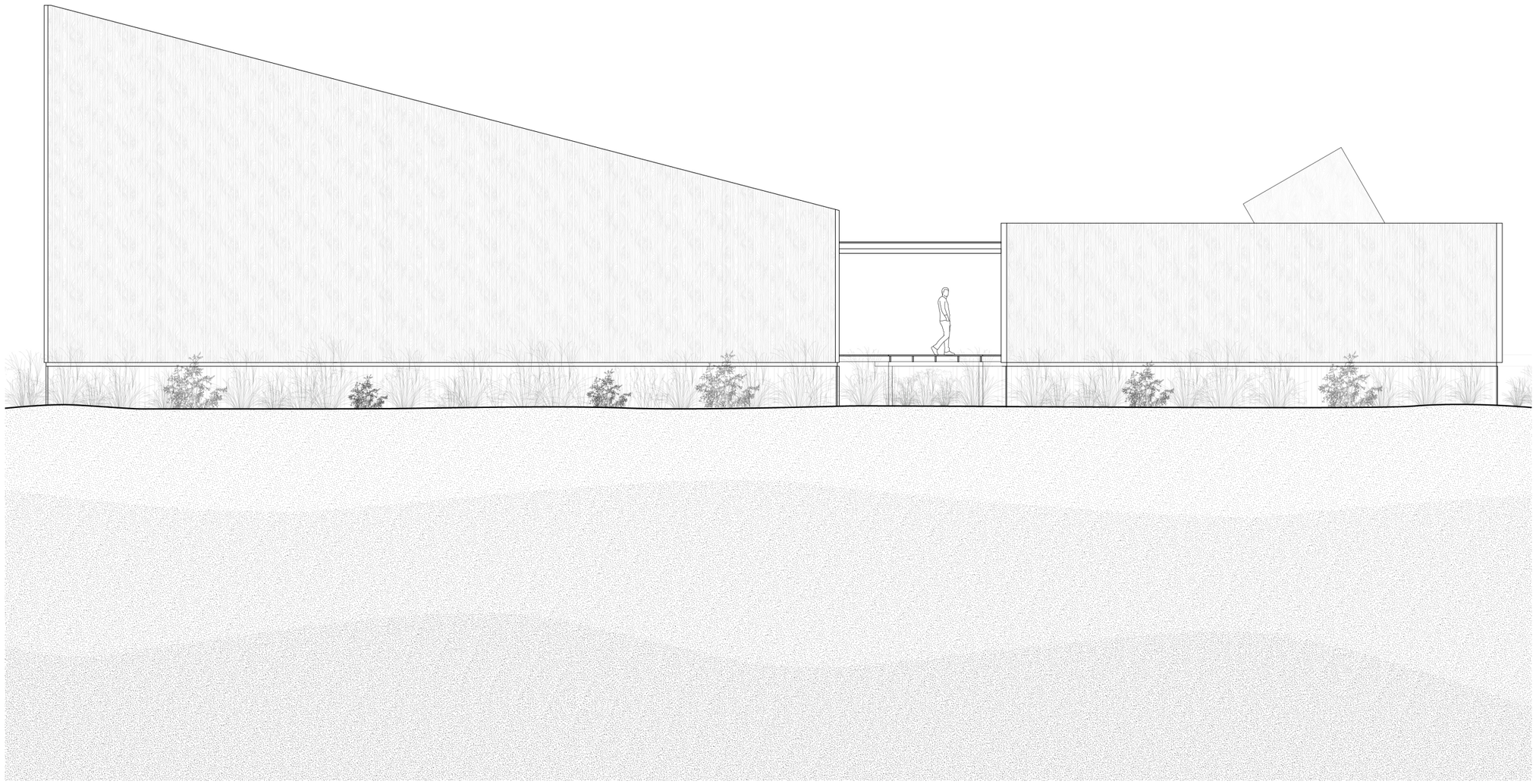




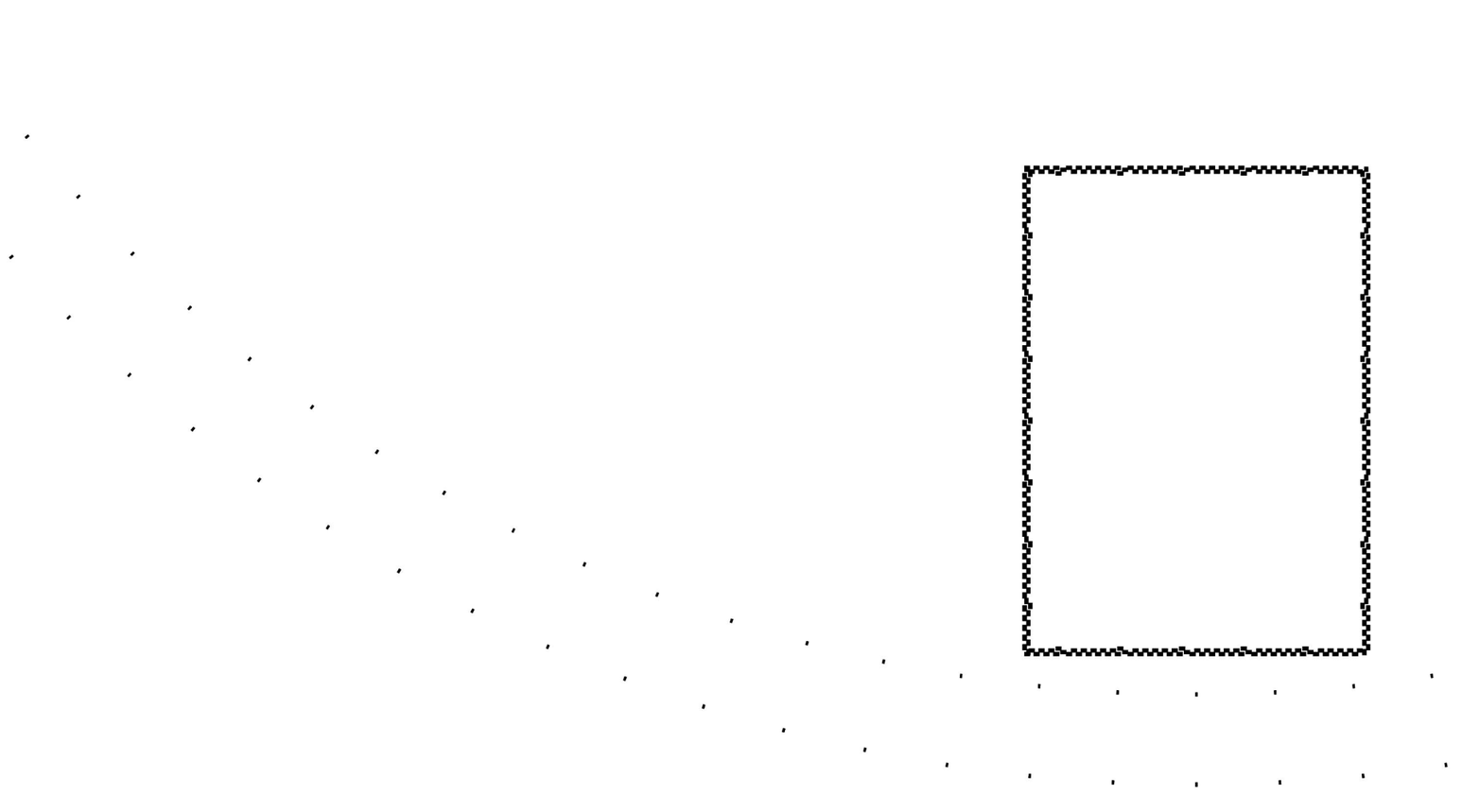
Model Photo

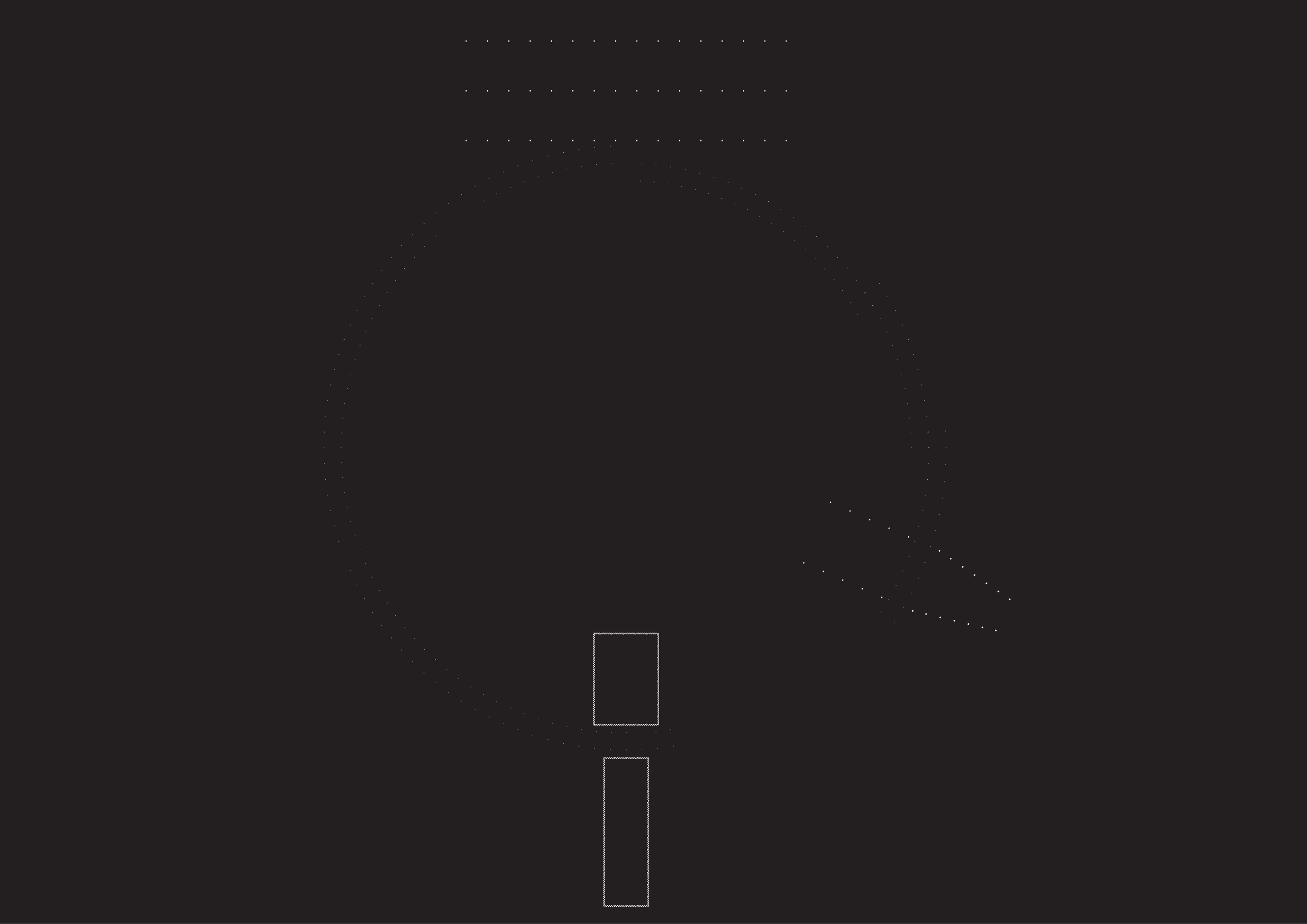
Meditation Elevation 1:100 @A3



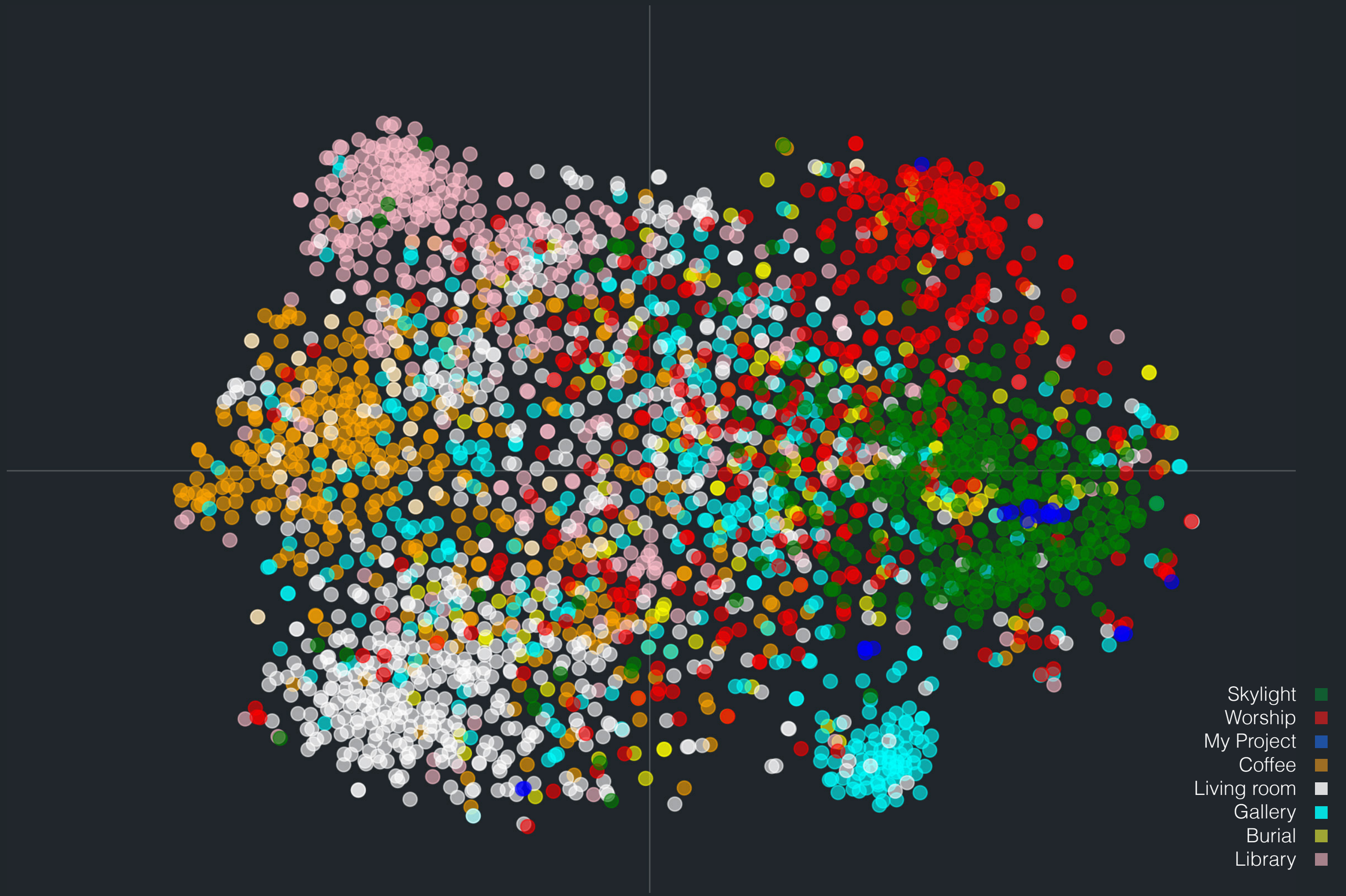


1m 5m 10m





Use-case: Evaluating My Design



Reflection

Thank You