The Urban Village

Co-living housing in the Binkhorst The Hague

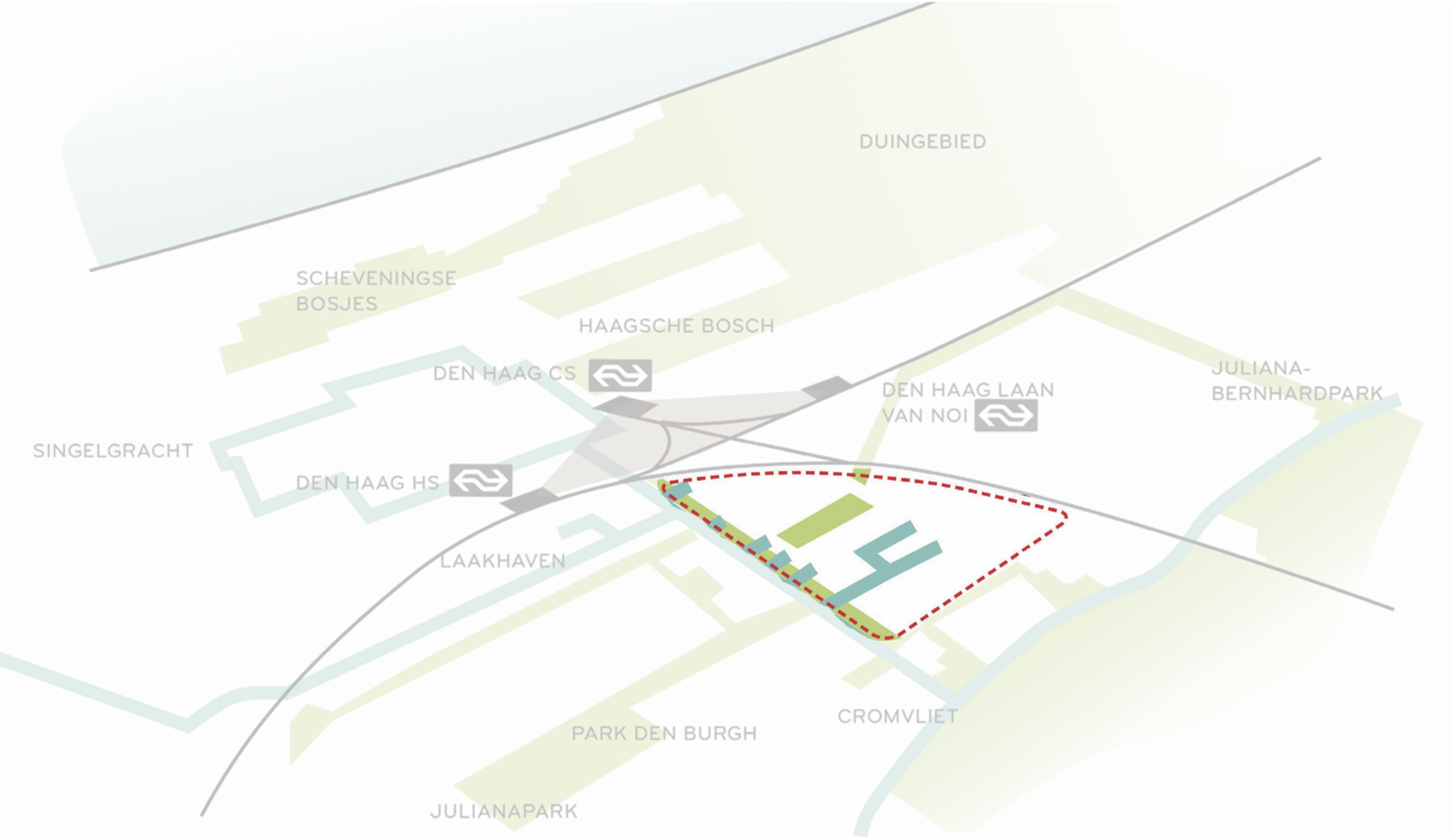
WELCOME

PRESENTATION STRUCTURE

1. The location
2. Problem statement
3. The concept
4. The typology
5. Design principles
6. Construction
7. Functions
8. Climate system
9. Water rising danger

PRESENTATION STRUCTURE

THE LOCATION



THE LOCATION

Binckhorst The Hague

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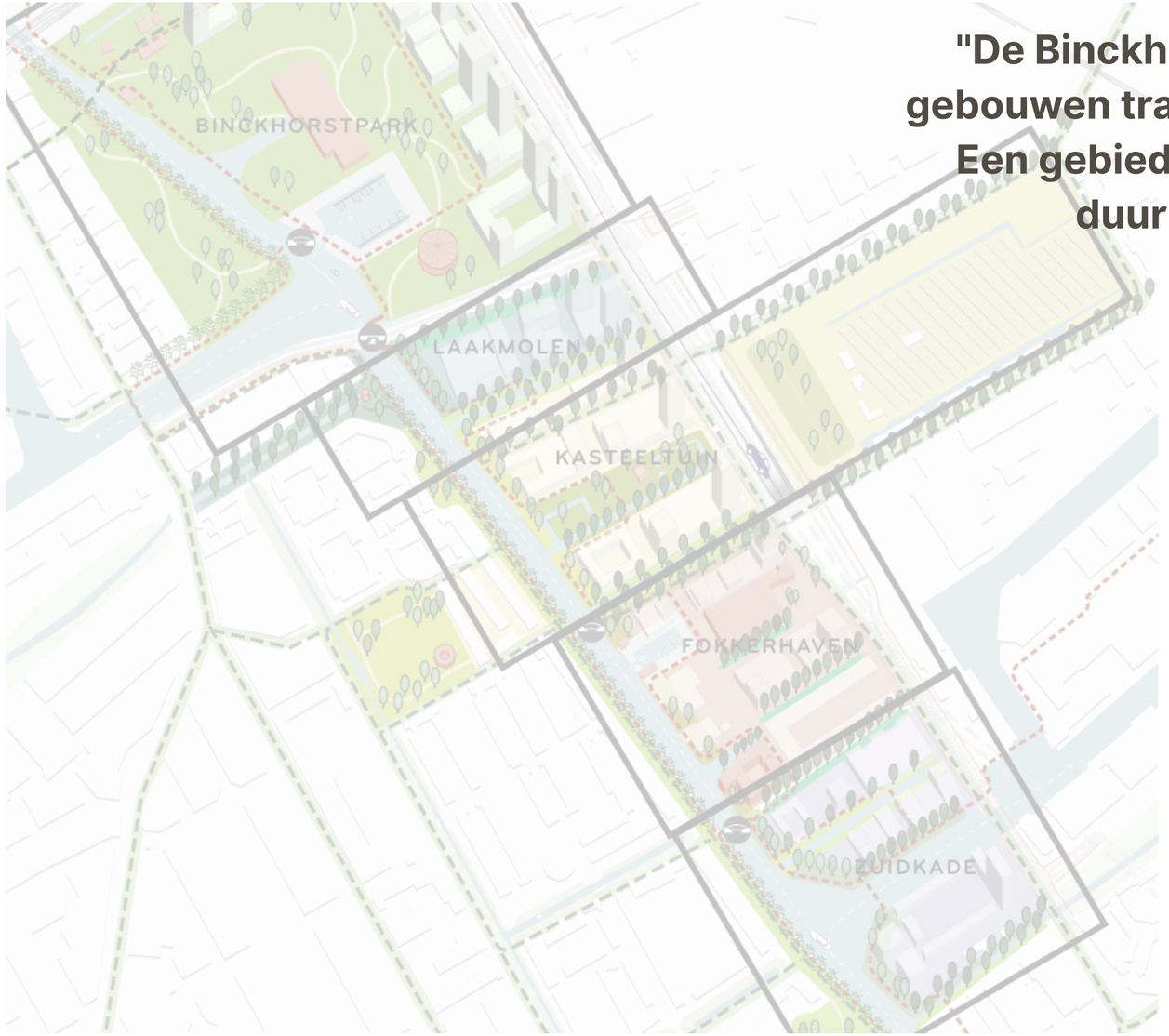
Binckhorst The Hague



"De Binckhorst: een gebied dat van grijze gebouwen transformeert naar levendig groen! Een gebied vol op in ontwikkeling waarbij duurzaamheid voorop staat."

THE LOCATION

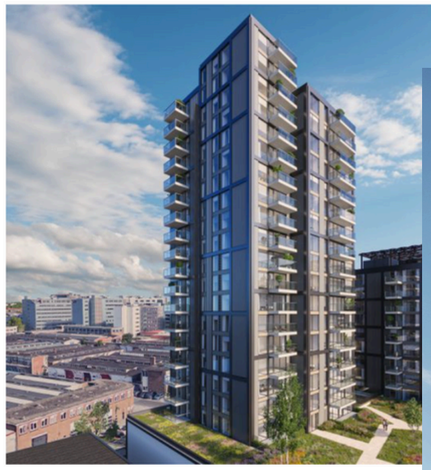
Binckhorst The Hague

BINCK POORT KLAAR VOOR START VERHUUR

THE LOCATION

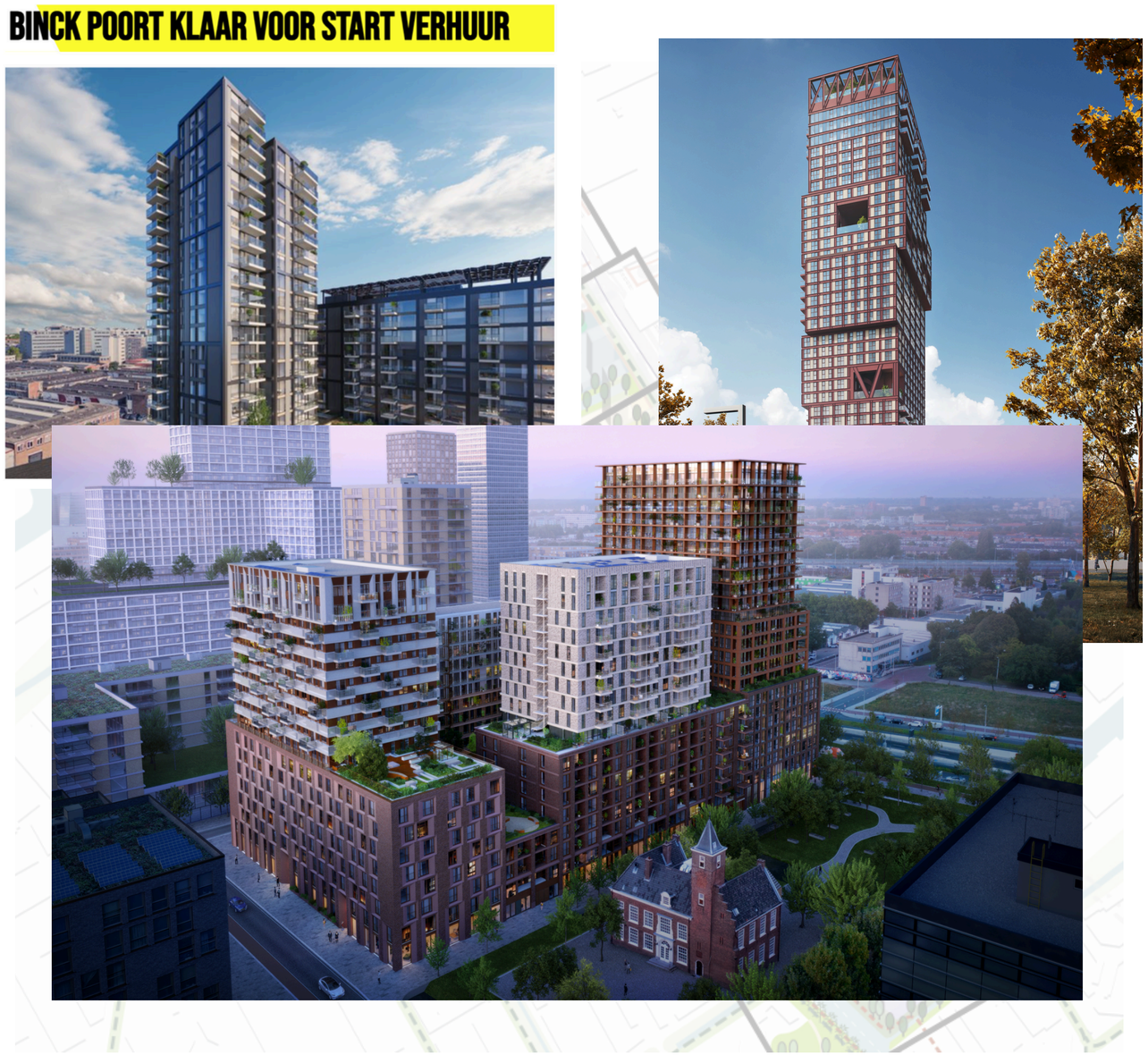
Binckhorst The Hague

BINCK POORT KLAAR VOOR START VERHUUR



THE LOCATION

Binckhorst The Hague



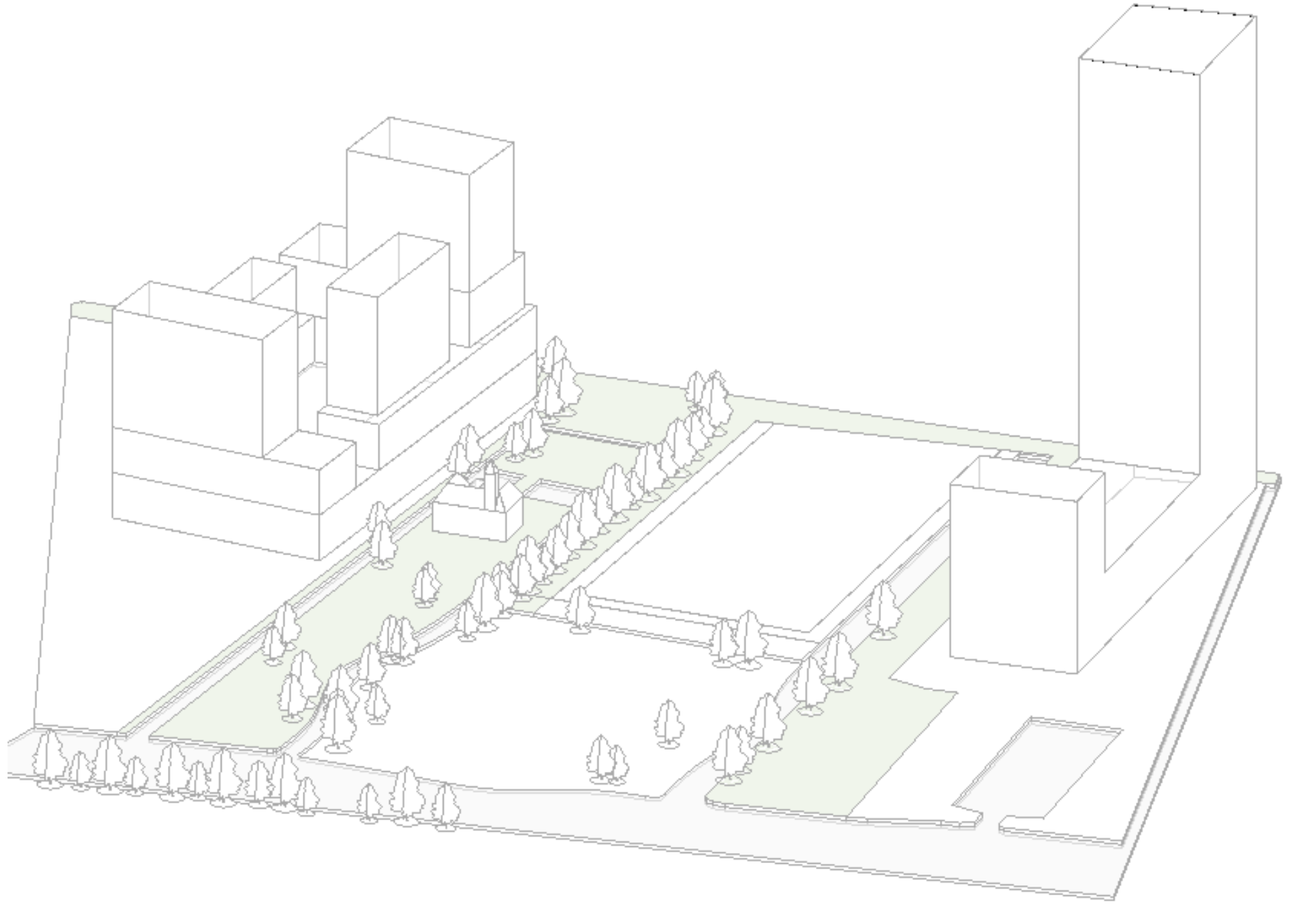
THE LOCATION

Binckhorst The Hague

Where are the innovative green buildings?

THE LOCATION

Binckhorst The Hague



THE PLOT

PROBLEM STATEMENT

The 5 dangers The Binckhorst is facing

PROBLEM STATEMENT

The 5 dangers The Binckhorst is facing

1. **Loneliness**

The built environment built for individualism

The 5 dangers The Binckhorst is facing

1. **Loneliness**
2. **Lifeless architecture**

High, boring boxes that lost all human scale

PROBLEM STATEMENT

The 5 dangers The Binckhorst is facing

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**

The use of active climate systems rather than passive design and bio-inspired systems

PROBLEM STATEMENT

The 5 dangers The Binckhorst is facing

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**
4. **Water rising**

Potential to 1,2m rising by 2100 (KNMI)

PROBLEM STATEMENT

The 5 dangers The Binckhorst is facing

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**
4. **Water rising**
5. **Housing need**

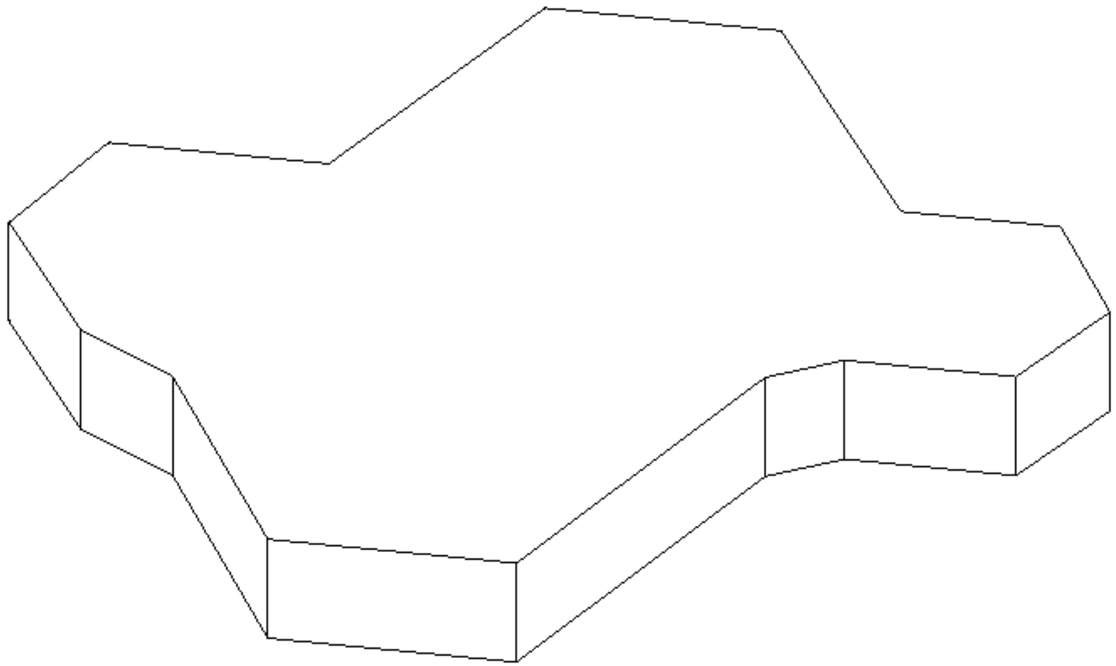
In 2025 there are 434.000 house seakers

PROBLEM STATEMENT

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**
4. **Water rising**
5. **Housing need**

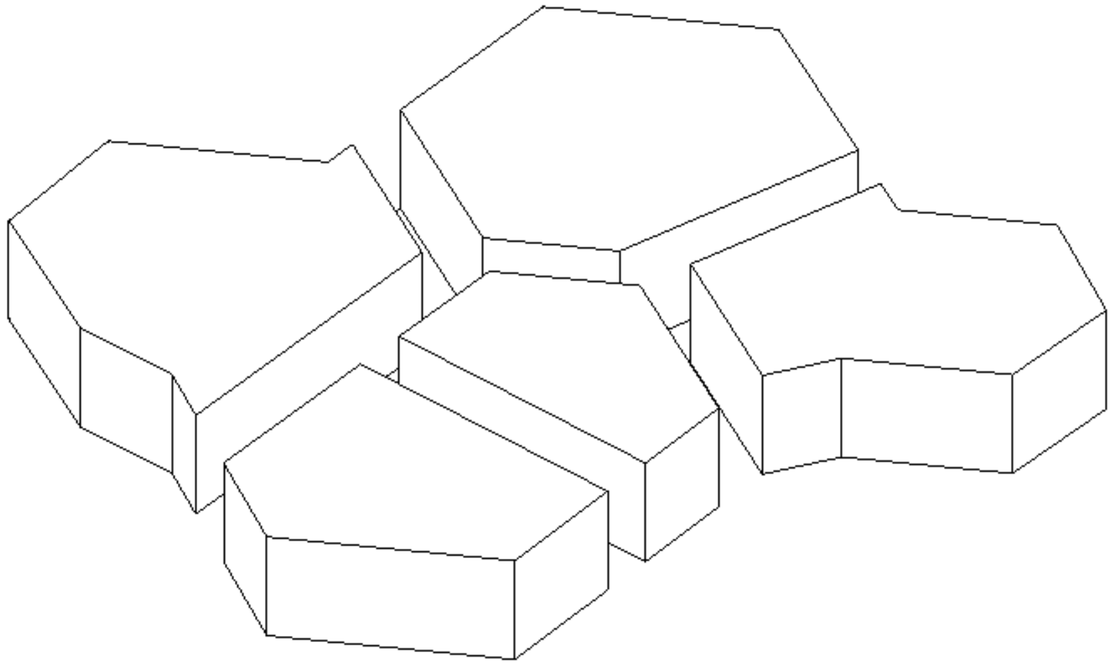
THE CONCEPT

THE CONCEPT



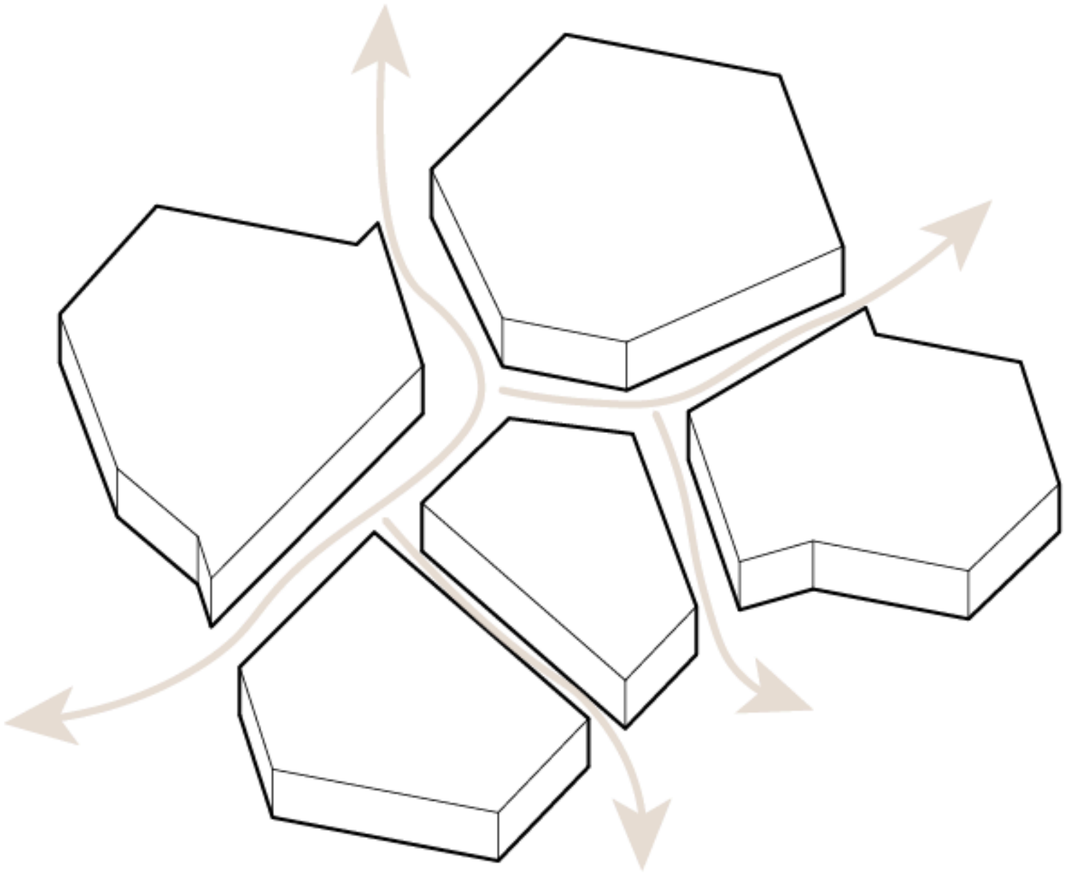
THE CONCEPT

Shared spaces in the plinth



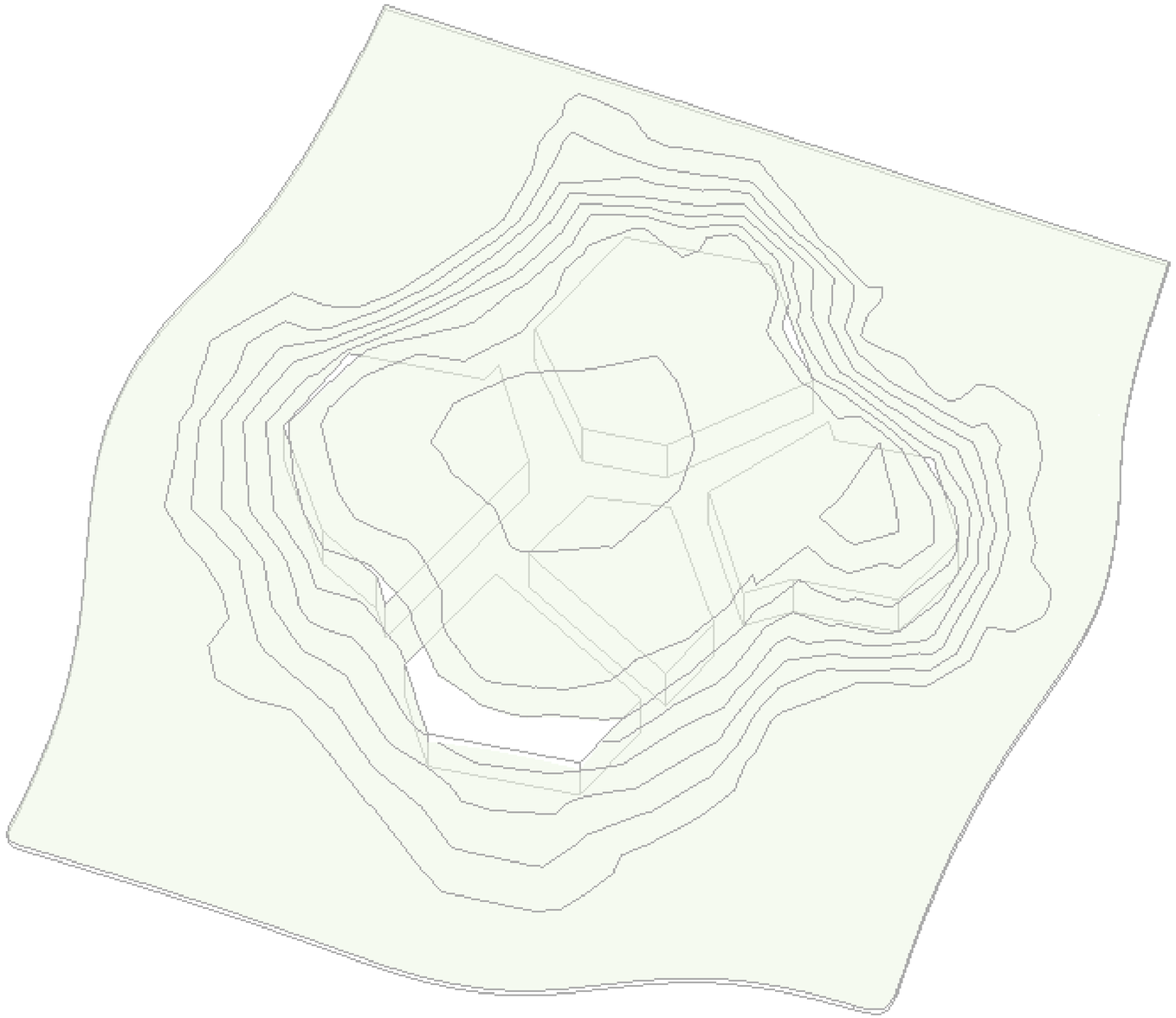
THE CONCEPT

Shared spaces in the plinth



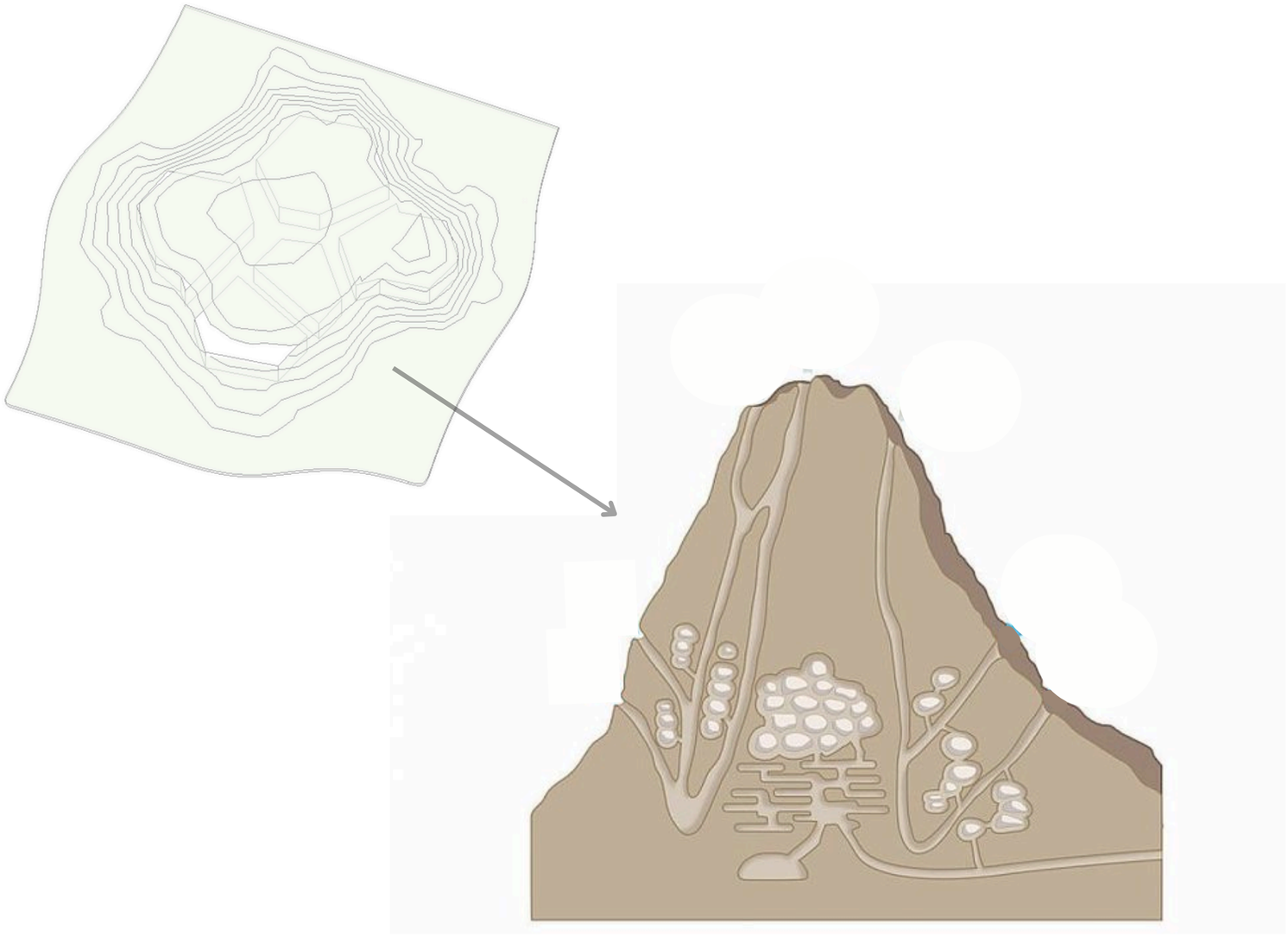
THE CONCEPT

subdivided to create scenic route



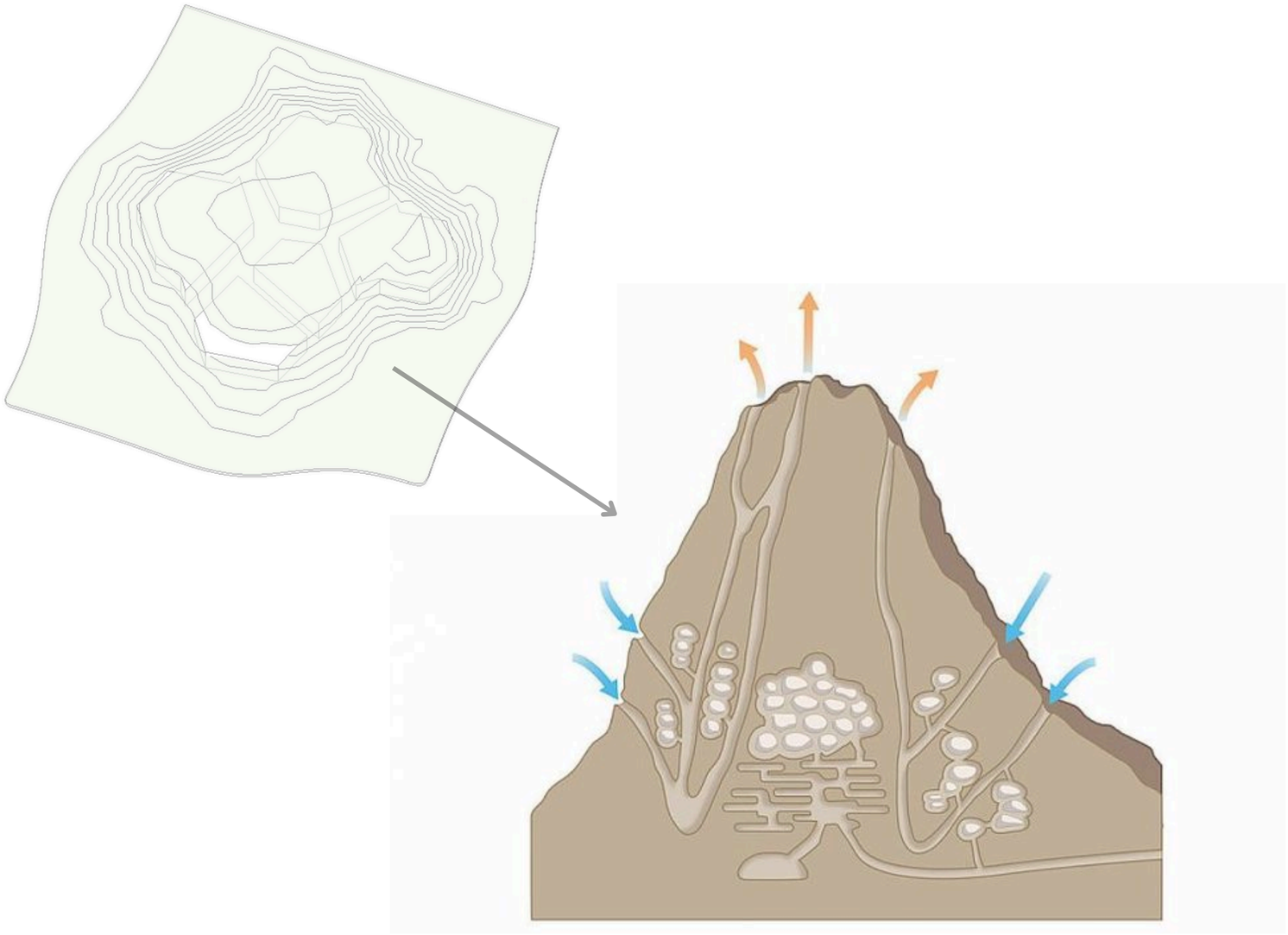
THE CONCEPT

covered in green hill



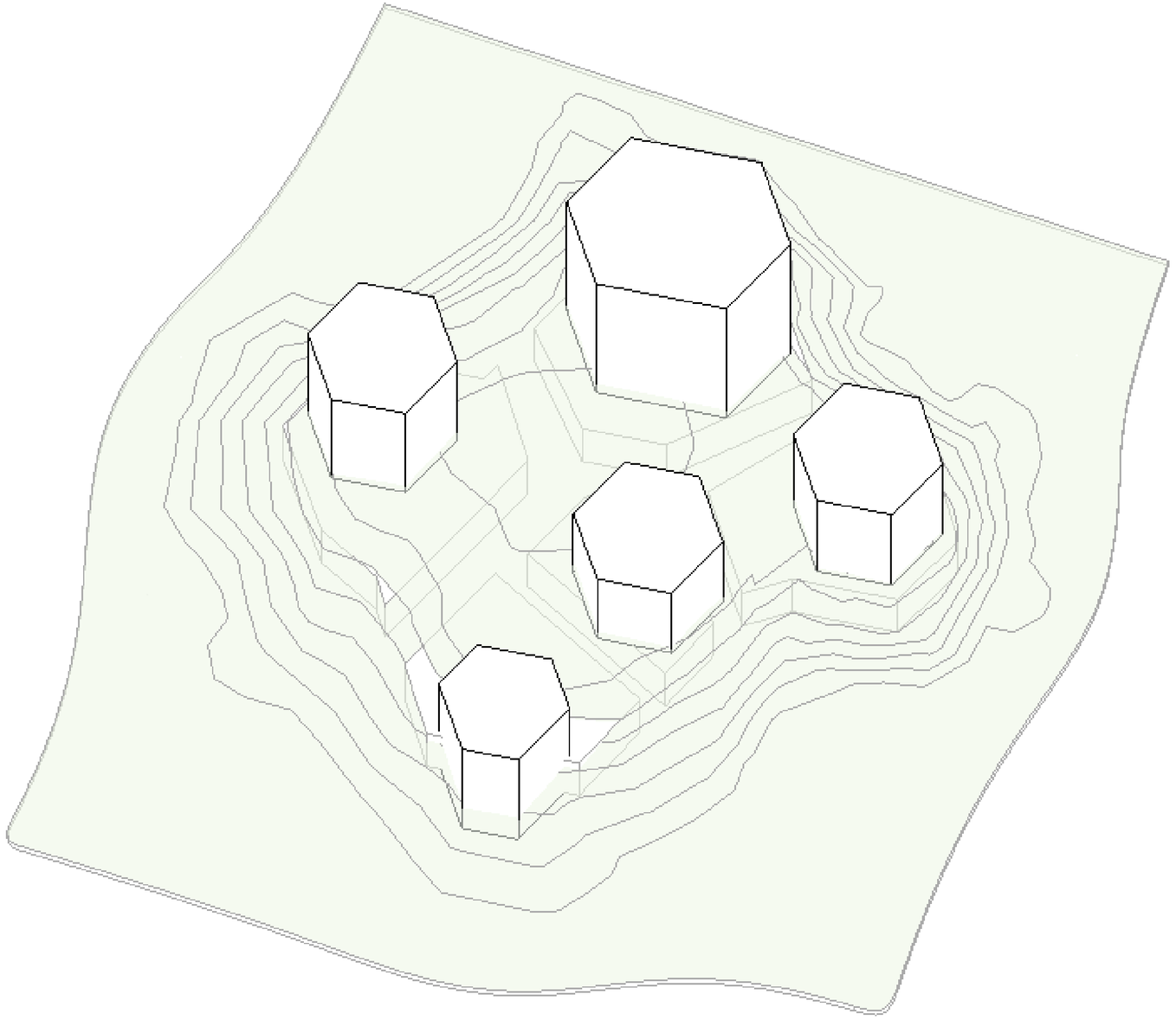
THE CONCEPT

anthill concept



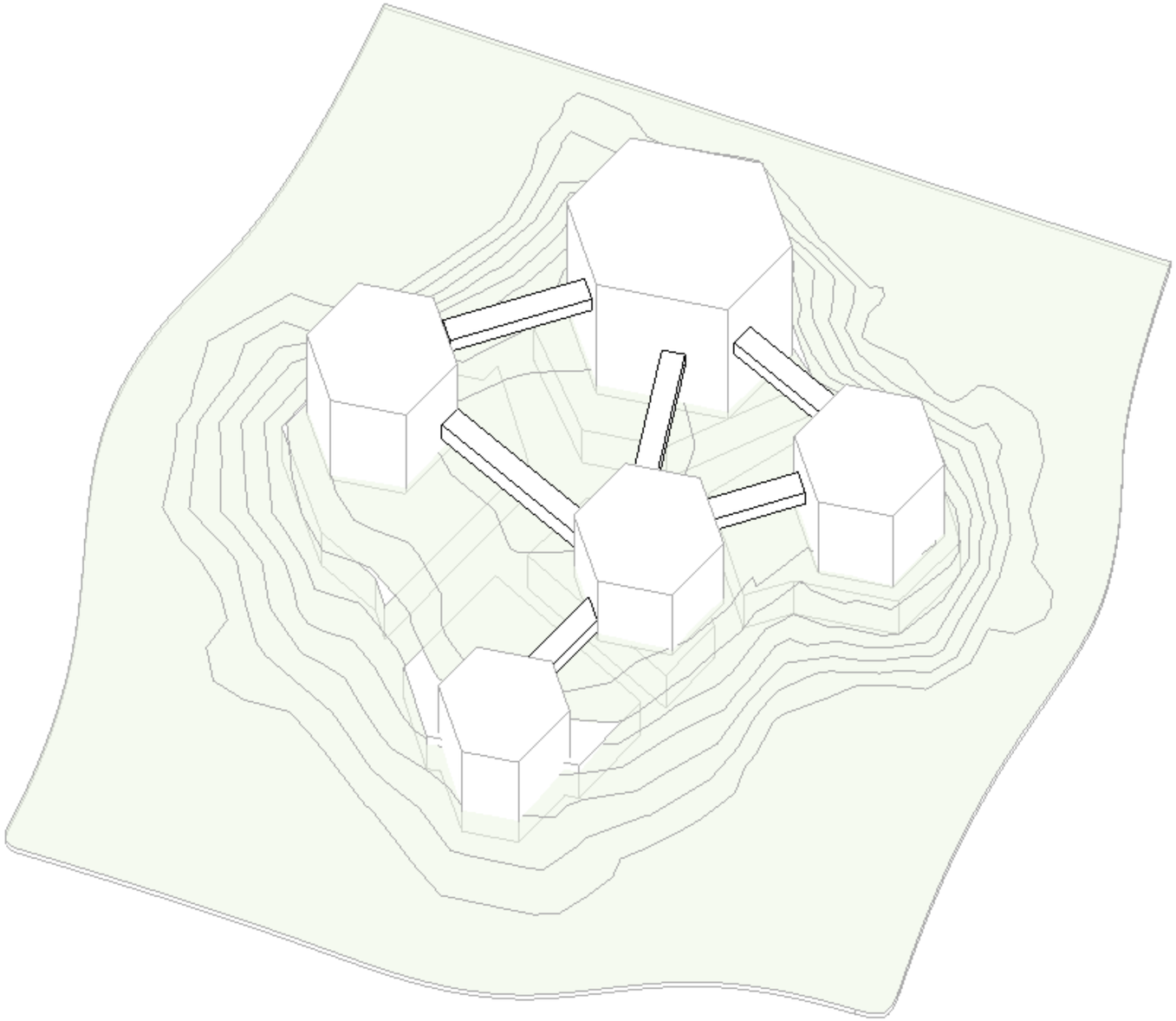
THE CONCEPT

anthill concept



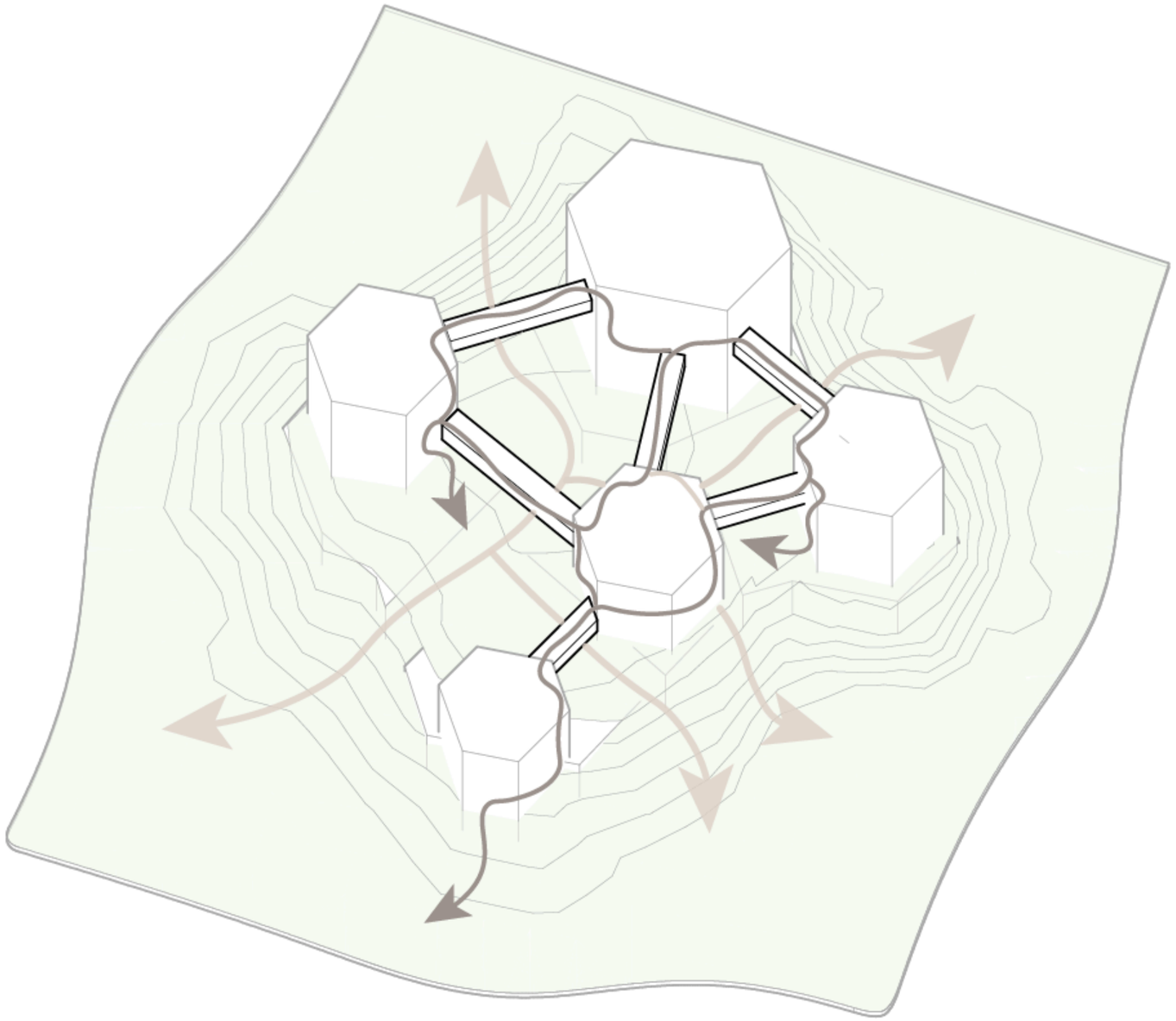
THE CONCEPT

5 towers expended from the hill



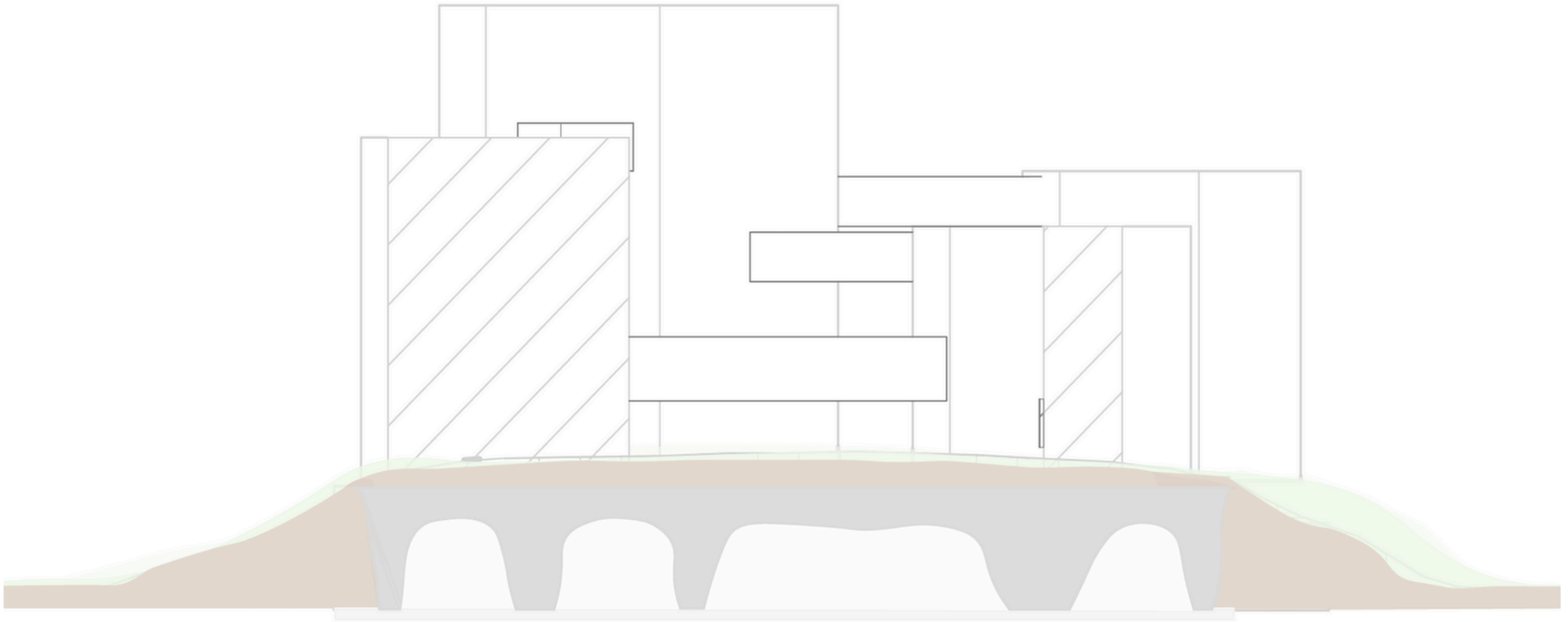
THE CONCEPT

air bridges connecting the towers



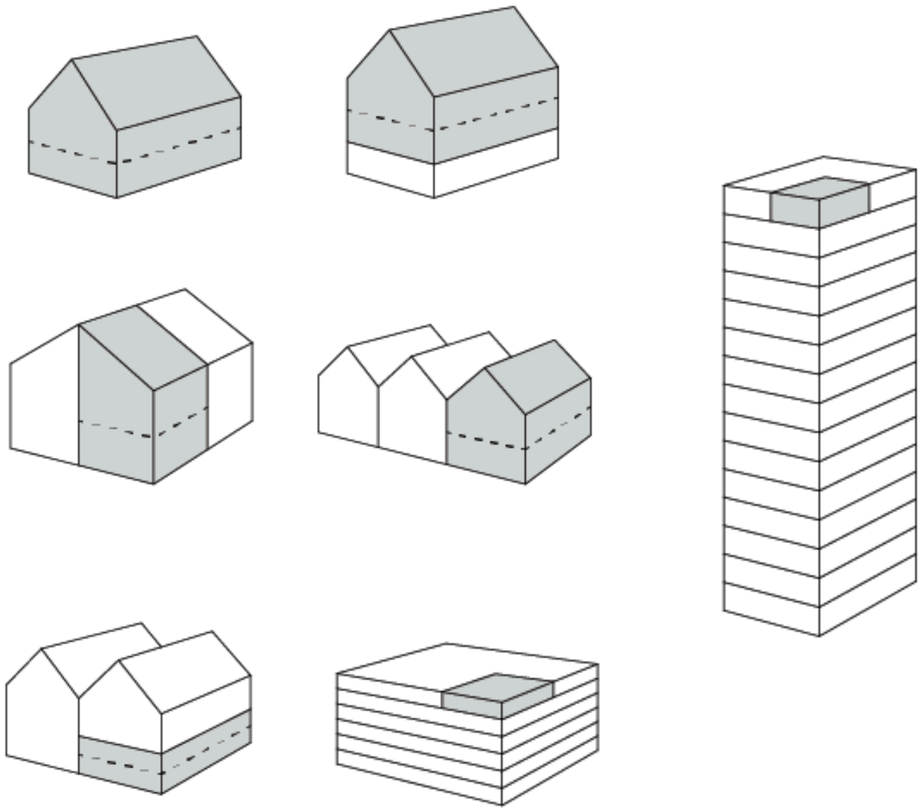
THE CONCEPT

Scenic route through all levels



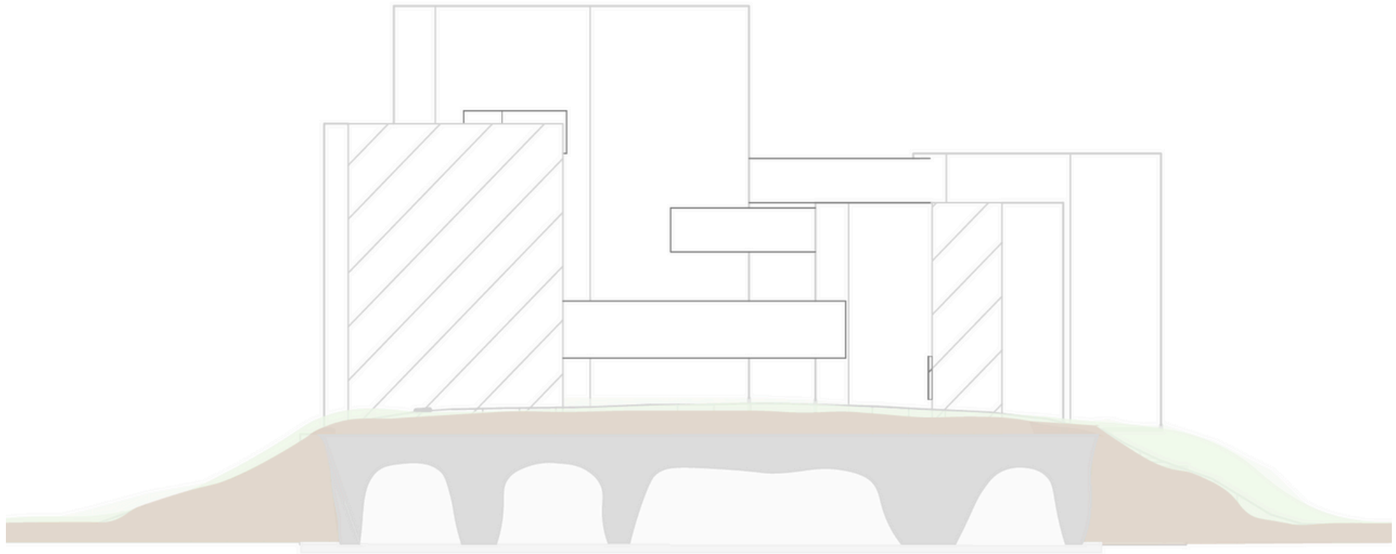
CONCEPT SECTION

THE TYPOLOGY



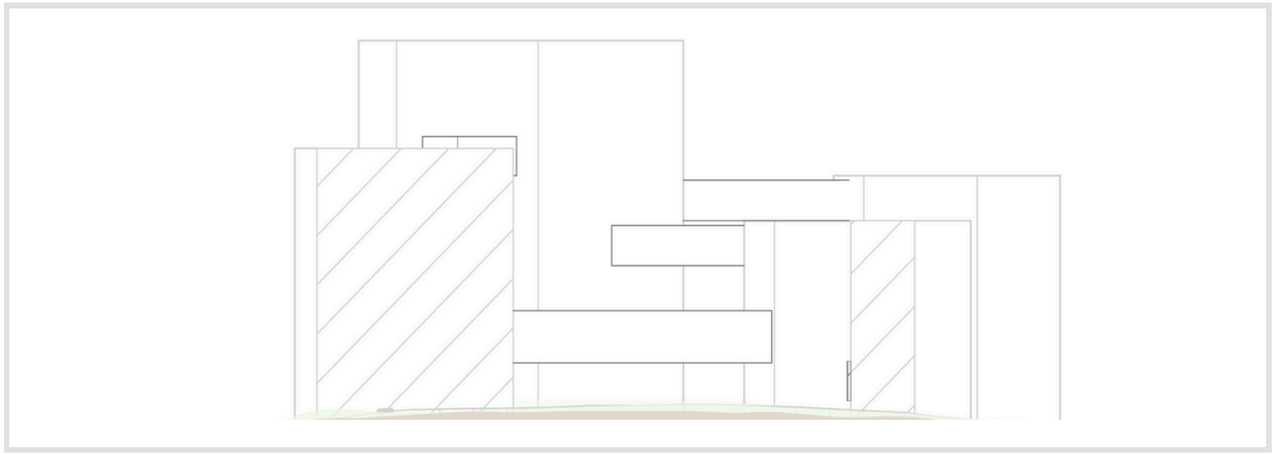
TYPOLOGY

Different housing typologies

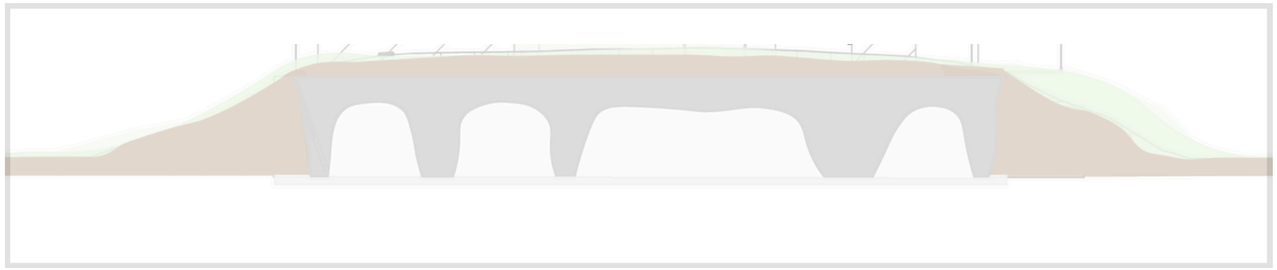


TYPOLOGY

Urban living + park + shared living



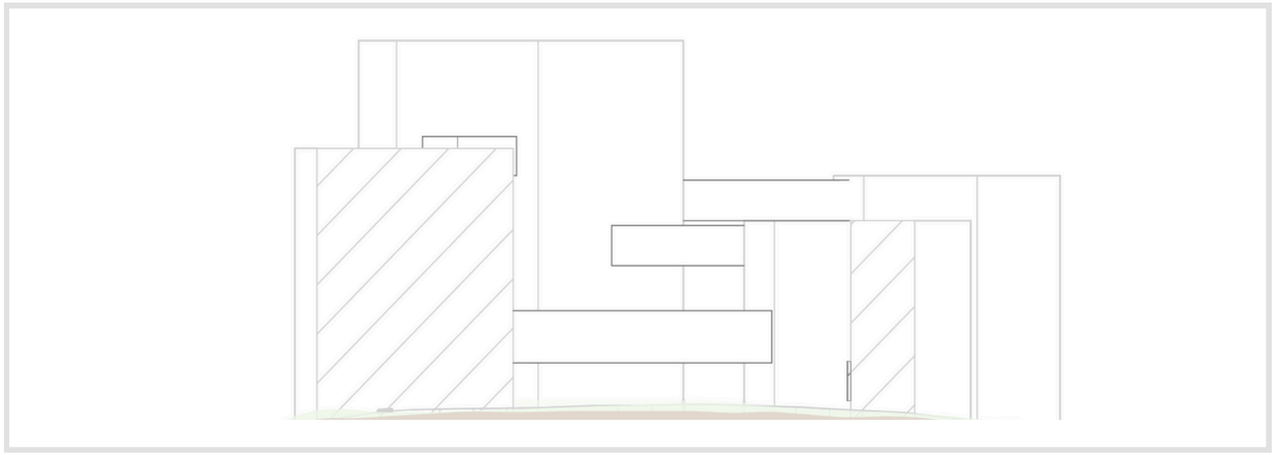
Living



Communal

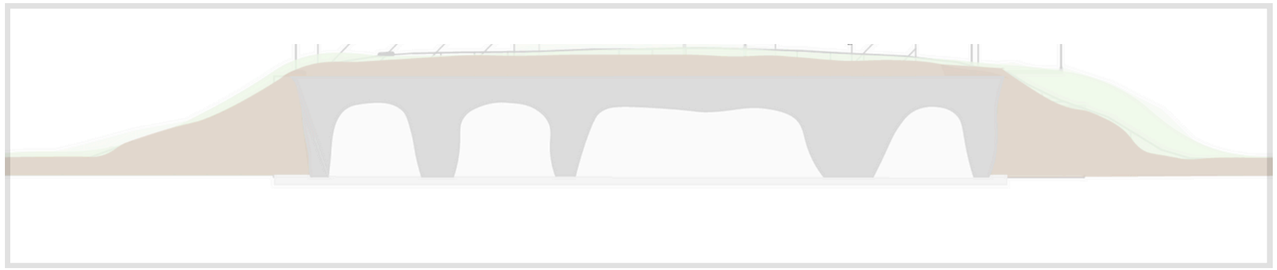
TYPOLOGY

Hybrid park urban living



Living

Community owned



Communal

Municipality

TYPOLOGY

Who owns the building?

DESIGN PRINCIPLES

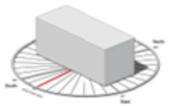
based on research

RESEARCH

RETHINKING HVAC SYSTEMS:

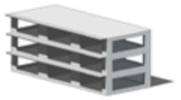
The possibilities of passive and bio-inspired techniques in residential buildings

ARCHITECTURAL FORM | PASSIVE TECHNIQUES | ACTIVE TECHNIQUES

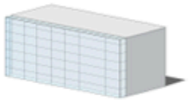


Shape and Orientation

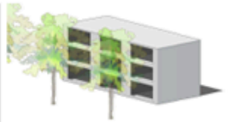
Fenestration



Envelope shading

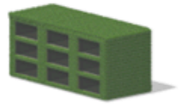


Sunspace

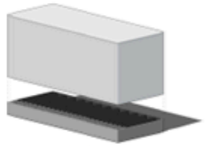


Shading with trees

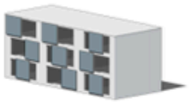
Glazed balconies



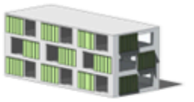
Green envelope



Labyrinth thermal system



Trombe wall



Algae facade

Technical working

building form

summer winter

summer winter

summer winter

summer winter

summer winter

summer winter

summer winter

summer winter

summer winter

Architectural added value

Visual comfort
- optimal use of solar path

Spatial comfort
- enhances routing and area experience

Social value
- can create room for social gathering

8

Visual comfort
- maximum daylight penetration

Spatial comfort
- potential layout difficulties due to large wall openings

Social value
- no added social value

6

Visual comfort
- reduced visual comfort in summer

Spatial comfort
- overhangs pose potential for additional outdoor space

Social value
- no added social value

4

Visual comfort
- reduces direct sunlight, especially in summer

Spatial comfort
- can be utilized as extra outdoor space, even in winter

Social value
- creates a social space for residents and visitors of the area

8

Visual comfort
- reduced visual comfort in summer

Spatial comfort
- no added spatial comfort

Social value
- enhances natural cooling of the area and creates potential for social gathering

6

Visual comfort
- reduces direct sunlight, especially in summer

Spatial comfort
- can be utilized as extra outdoor space, even in winter

Social value
- no added social value

6

Visual comfort
- no added visual comfort

Spatial comfort
- no added spatial comfort

Social value
- creates a natural cooling effect and humidity balance in the area

5

Visual comfort
- the system is applied in the basement so no visual comfort is hindered

Spatial comfort
- no added spatial comfort

Social value
- no added social value

5

Visual comfort
- the system obstructs daylight penetration

Spatial comfort
- no added spatial comfort

Social value
- can be seen as architectural statement

4

Visual comfort
- the algae panels can be used as adaptable shading systems

Spatial comfort
- no added spatial comfort

Social value
- can be seen as architectural statement and signiture piece of an area

6

Carbon footprint

0,00 kg CO2/m2 / 36% energy reduction

6

0,00 kg CO2/m2 / 0% energy reduction

4

-114,58 kg CO2/m2 / 19% energy reduction

4

96,64 kg CO2/m2 / 36% energy reduction

5

-98,04 kg CO2/m2 / 19% energy reduction

4

91,60 kg CO2/m2 / 30% energy reduction

4

-40,39 kg CO2/m2 / 20% energy reduction

4

106,50 kg CO2/m2 / 31% energy reduction

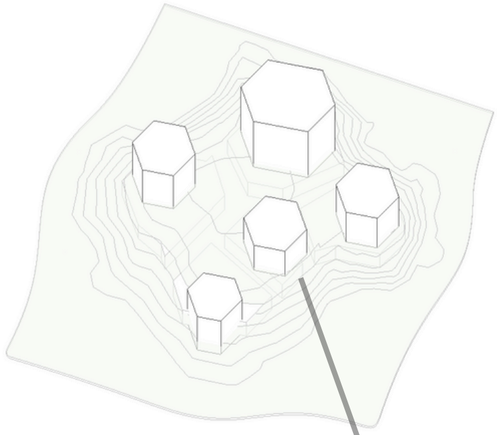
4

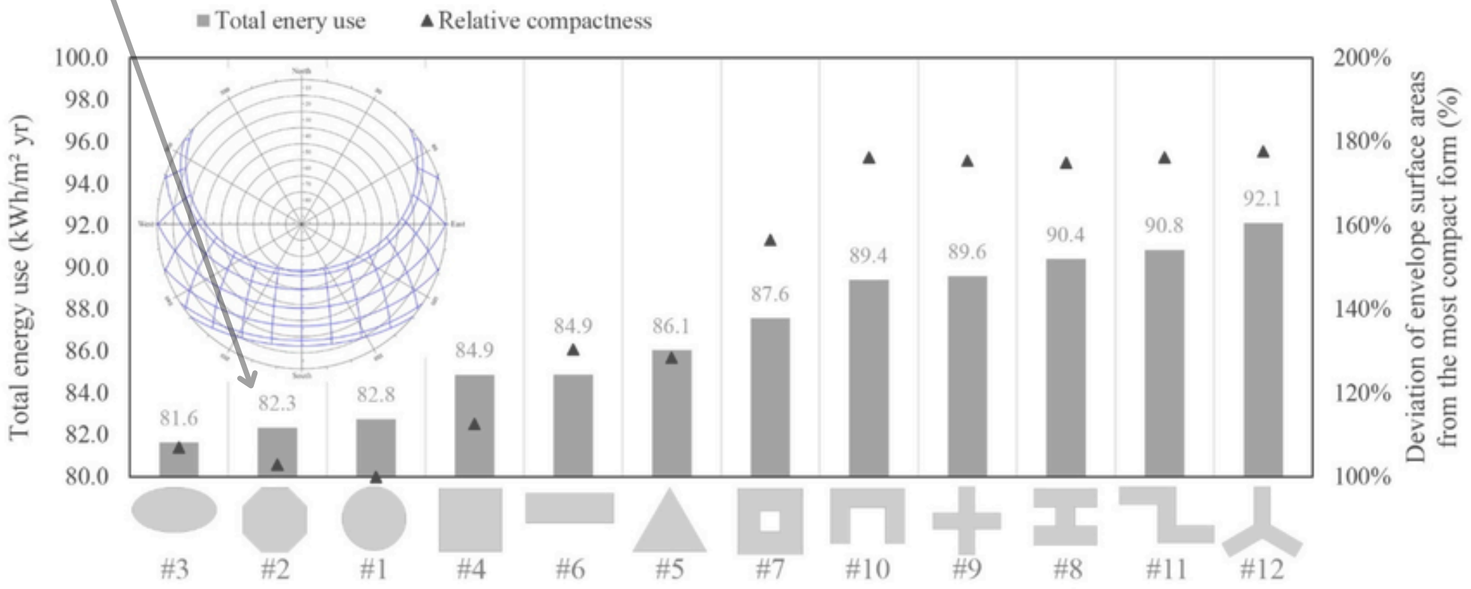
89,48 kg CO2/m2 / 30% energy reduction

4

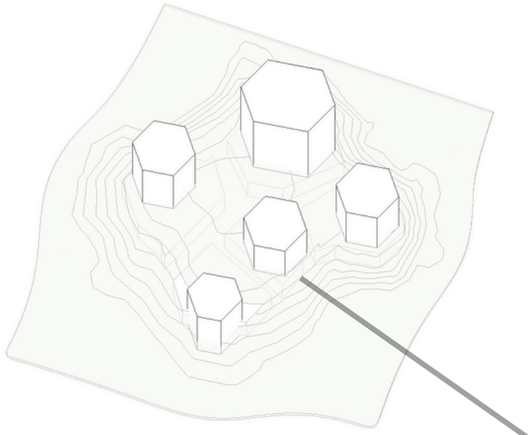
254,01 kg CO2/m2 / 50% energy reduction

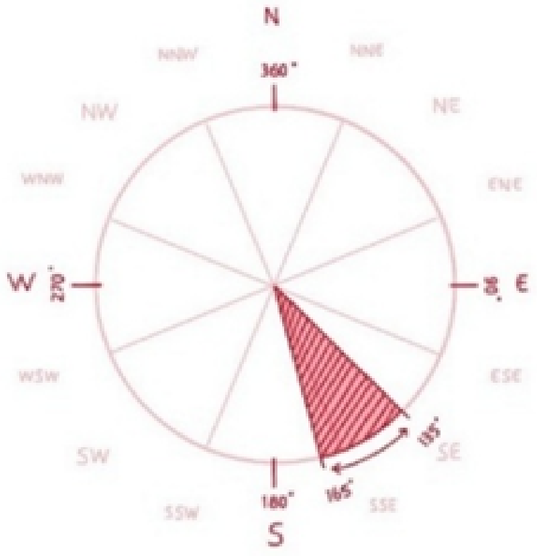
4



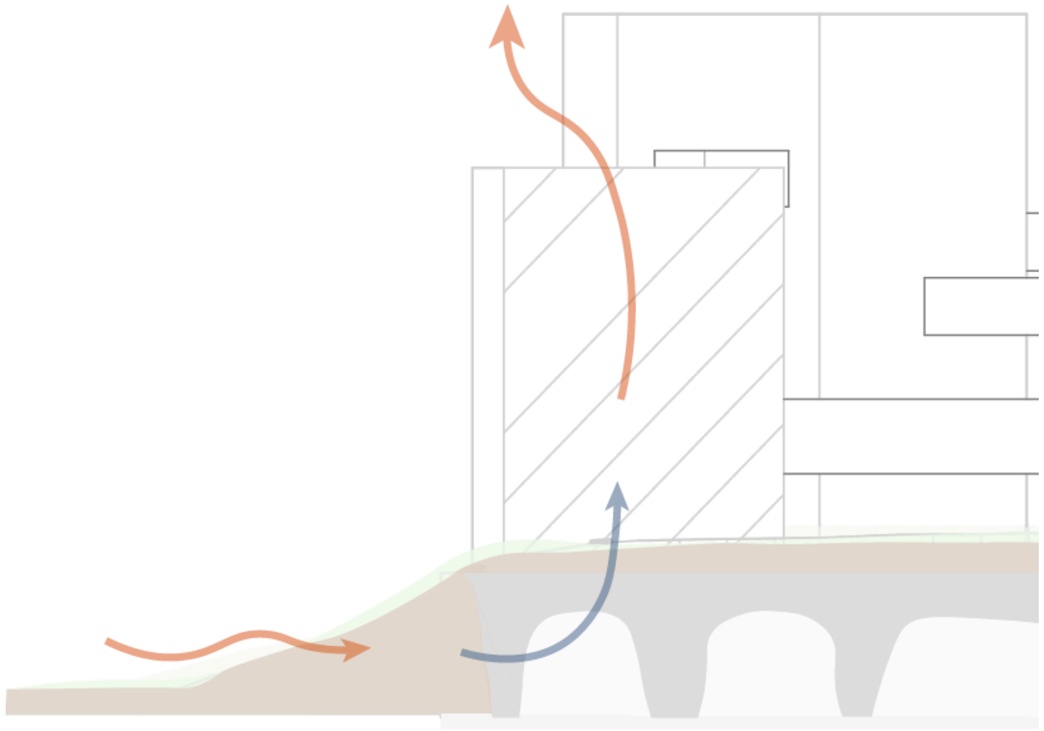


PASSIVE FORM STUDIE



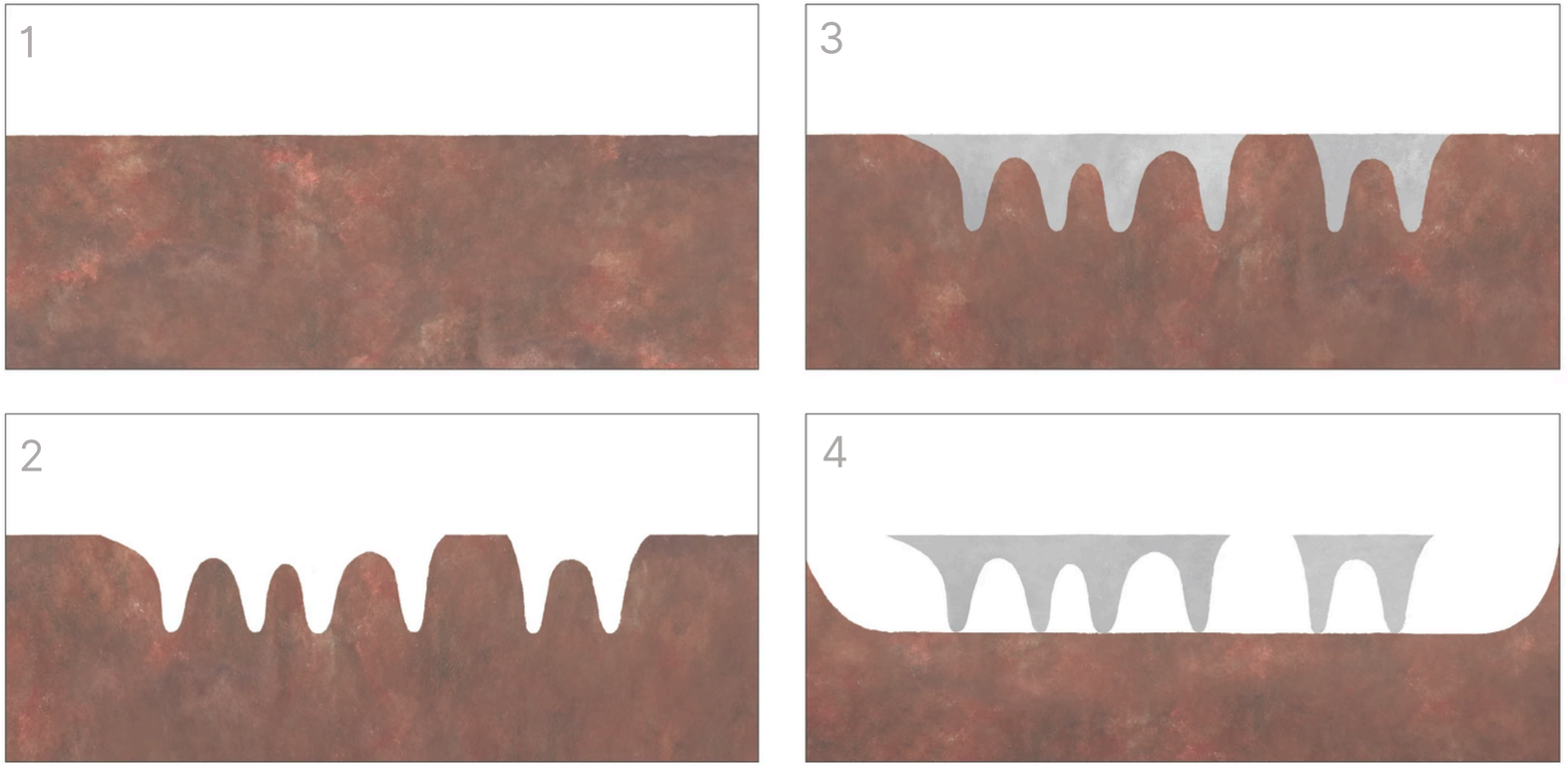


PASSIVE ORIENTATION
& FENESTRATION



PASSIVE COOLINIG
WITH THERMAL MASS

CONSTRUCTION



CONSTRUCTION

concept by *Junya Ishigami*

CONSTRUCTION

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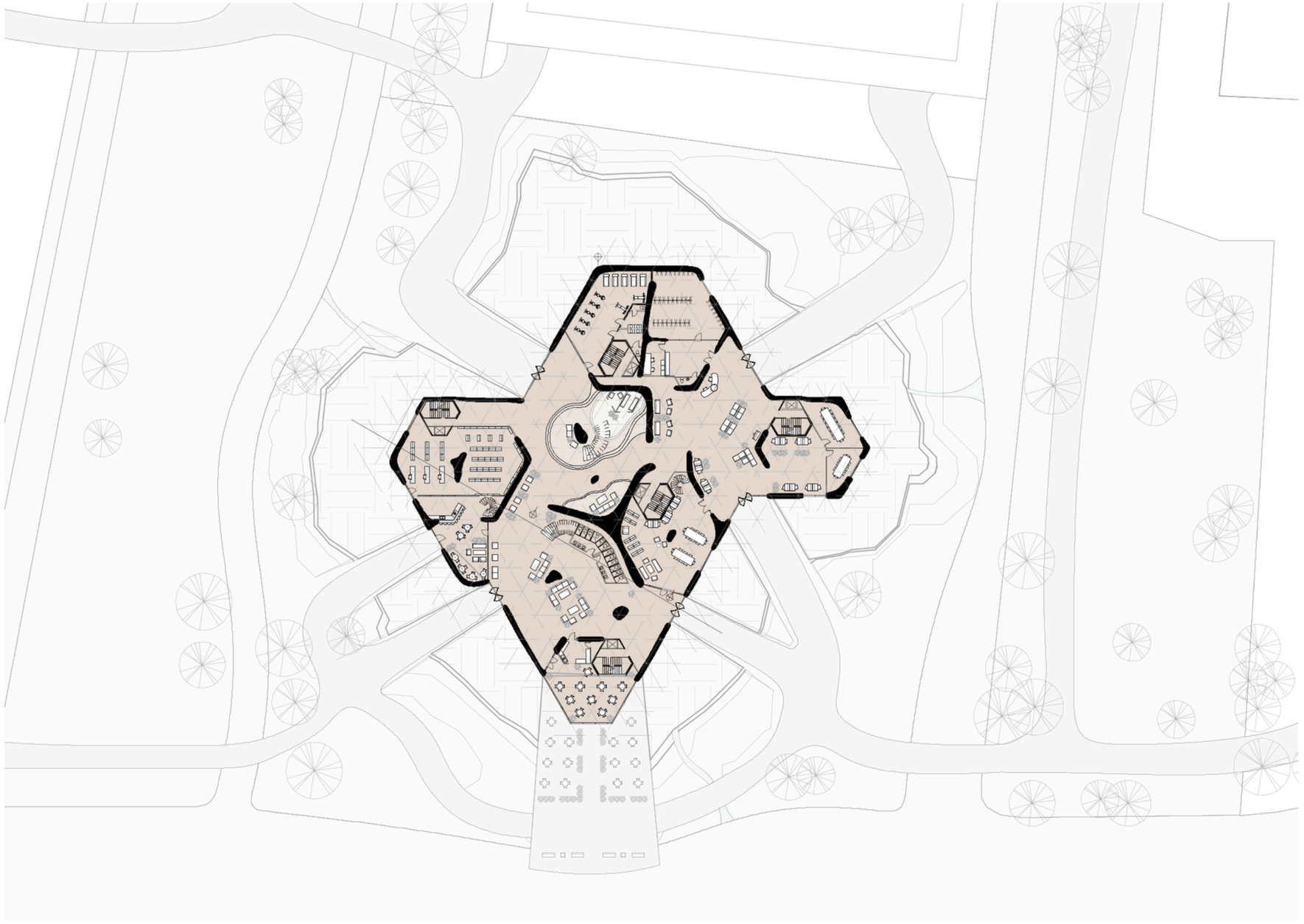
CONSTRUCTION

concept by *Junya Ishigami*

CONSTRUCTION

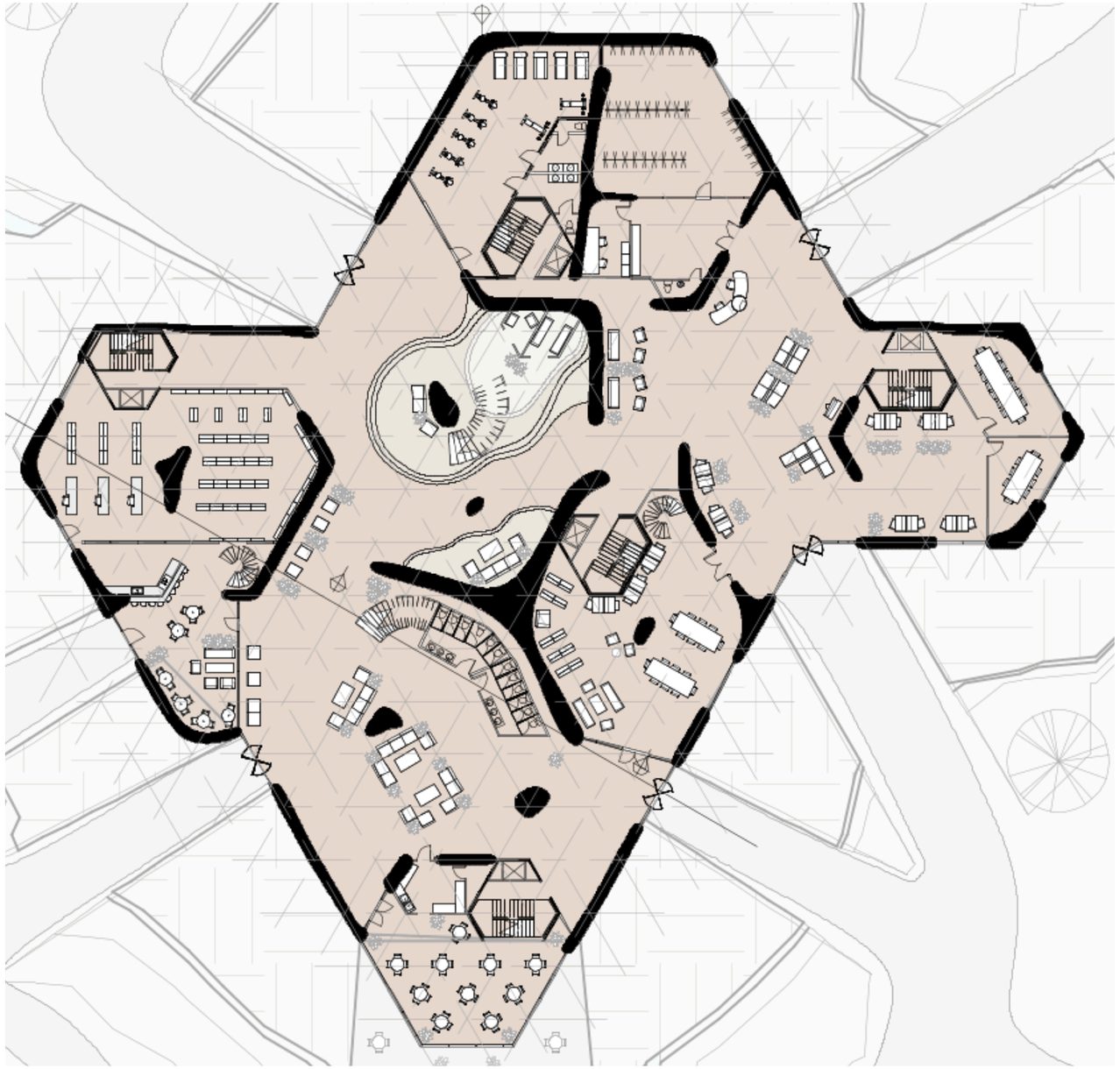
FUNCTIONS

The hill



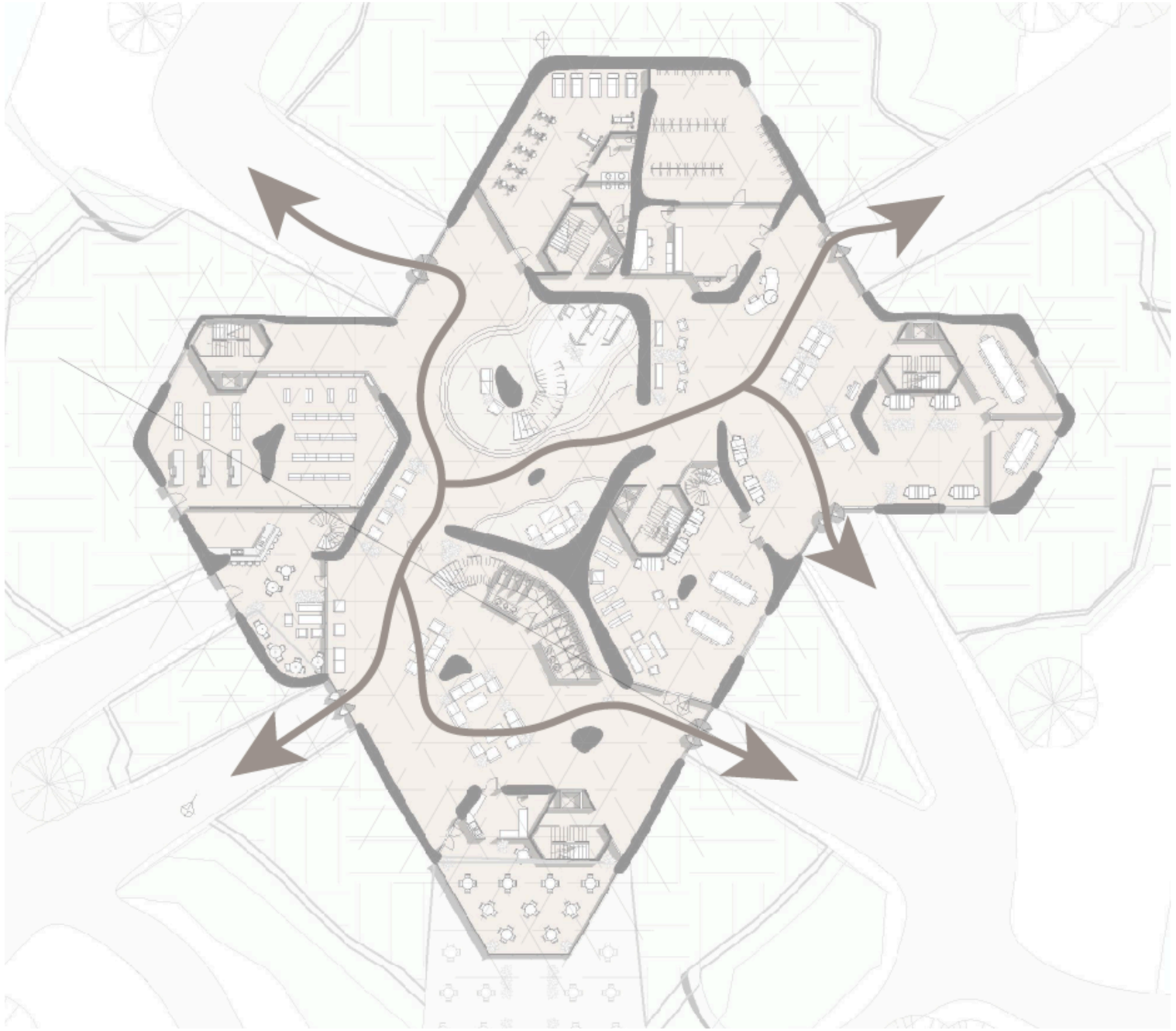
FUNCTIONS

communal functions



FUNCTIONS

communal functions



FUNCTIONS

communal functions

FUNCTIONS

communal functions

FUNCTIONS

communal functions

FUNCTIONS

The park

FUNCTIONS

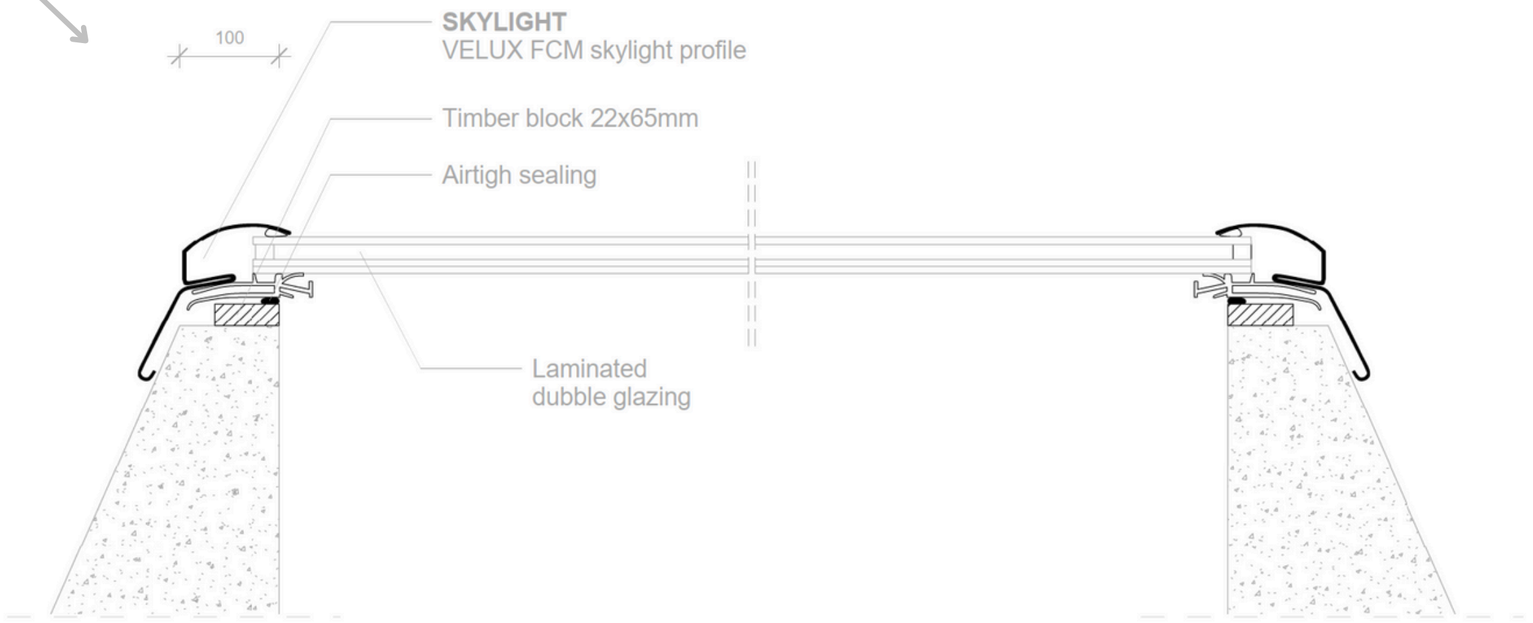
landscape

FUNCTIONS

landscape

FUNCTIONS

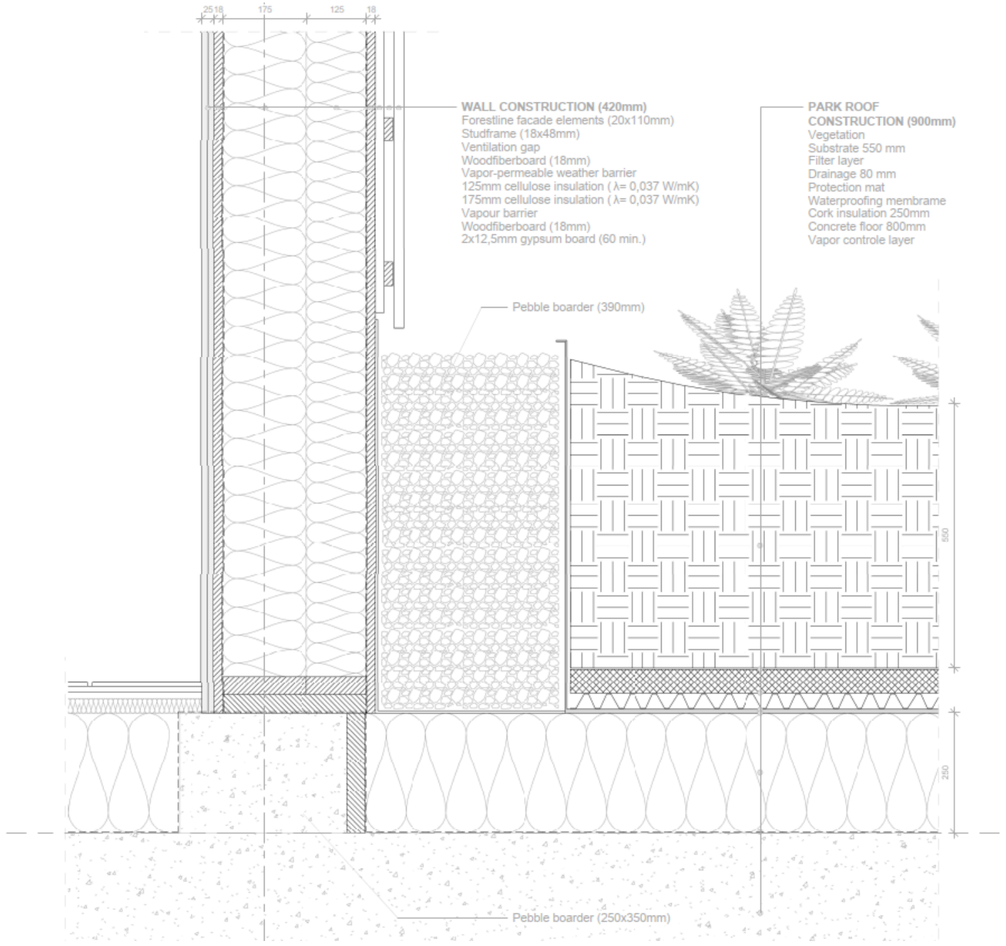
landscape



Detail 3 1:5

DETAIL

landscape



DETAIL

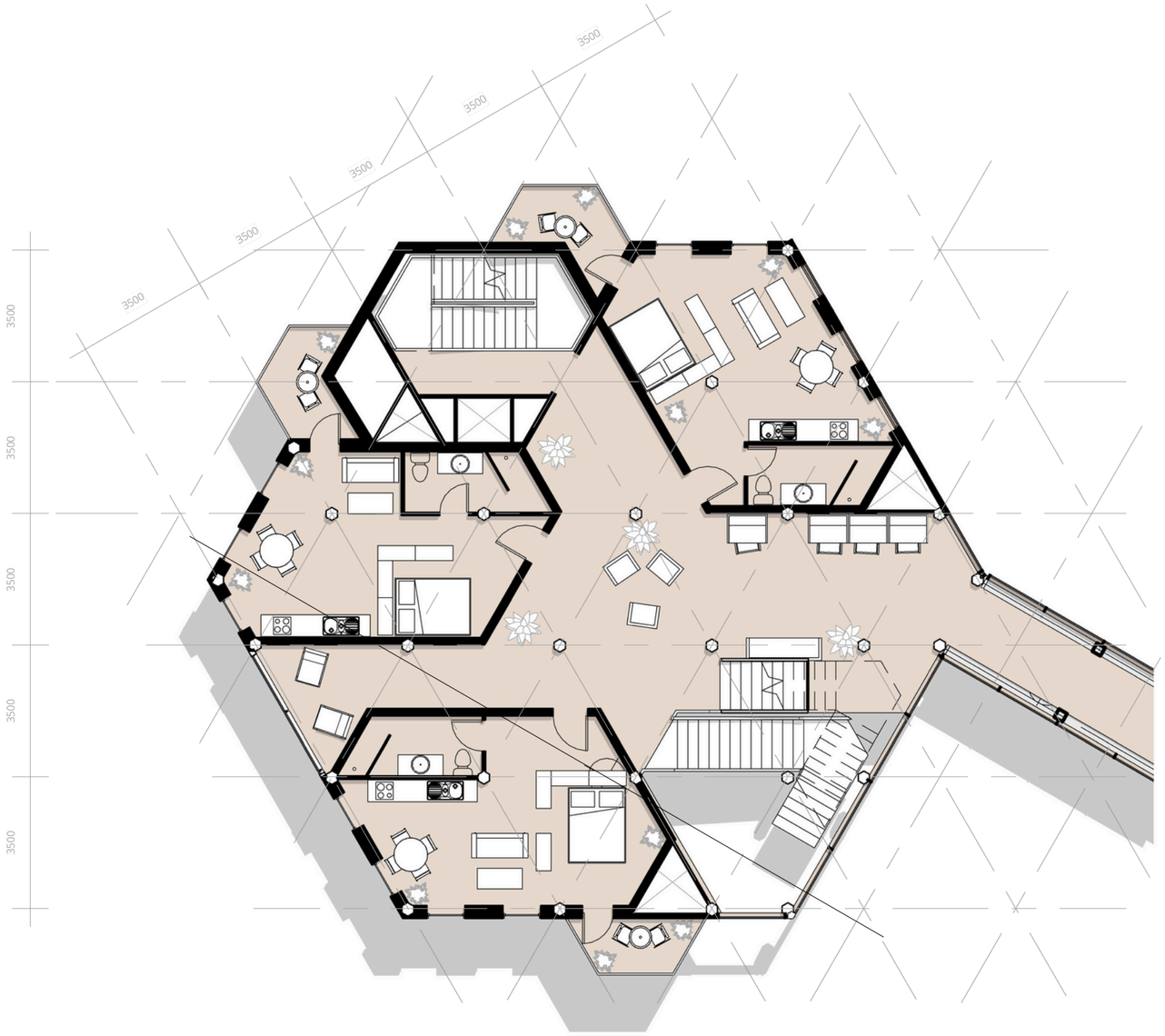
landscape

FUNCTIONS

landscape

FUNCTIONS

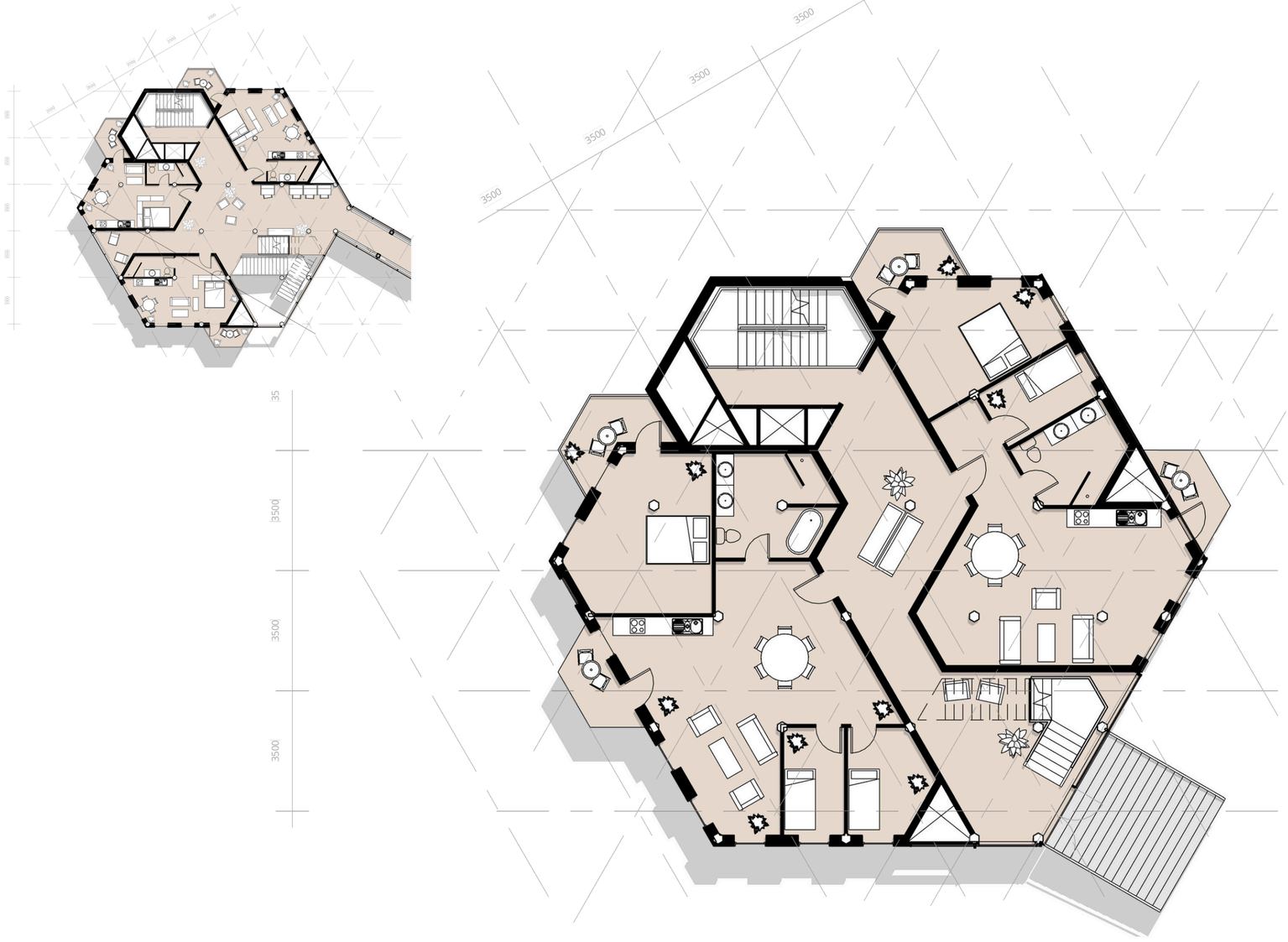
The tower



FUNCTIONS

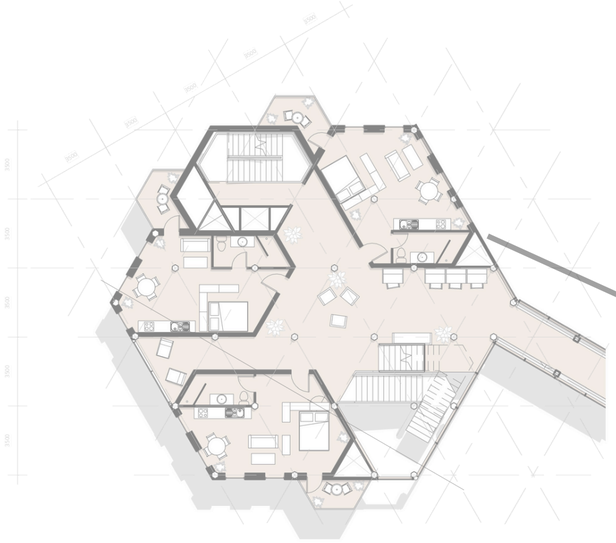
tower standard floorplan

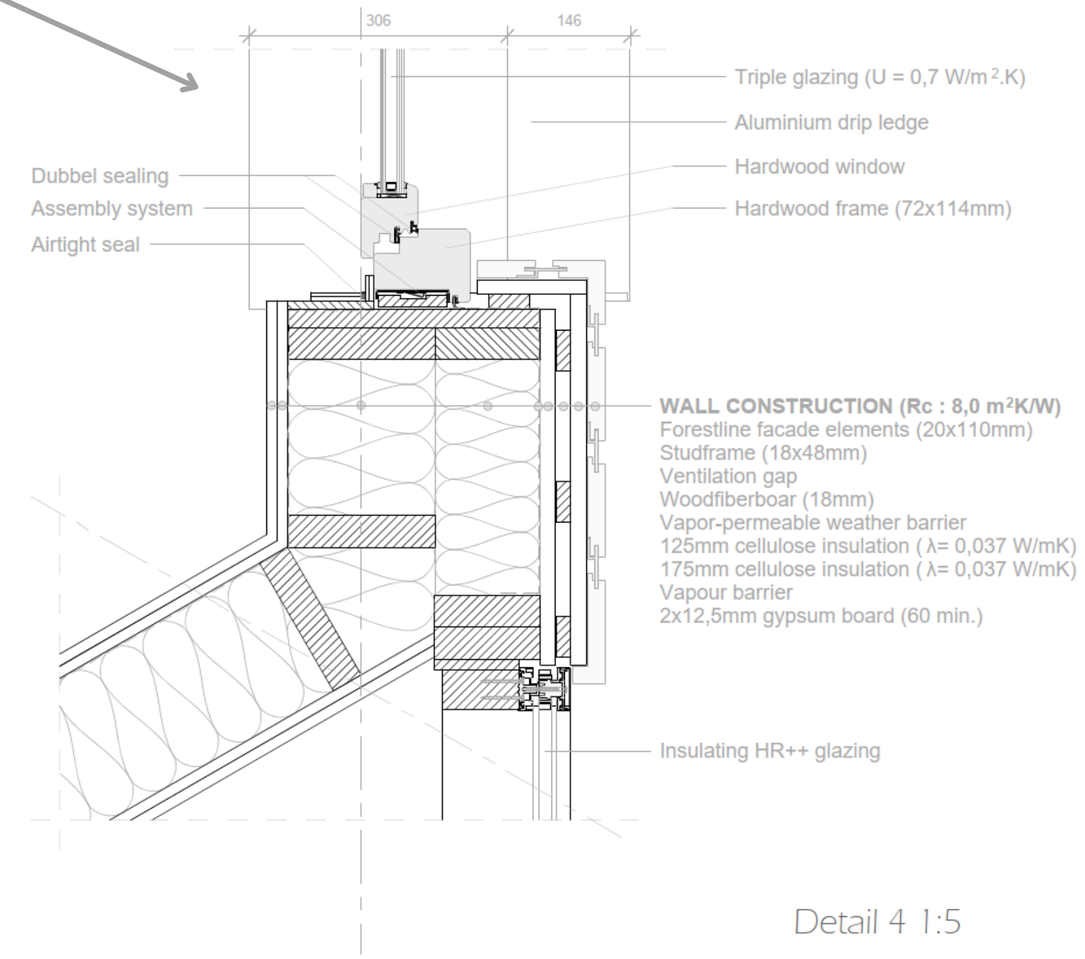
38m2 studios



FUNCTIONS

modulair adaptable floorplan





Detail 4 1:5

FUNCTIONS

modulair adaptable floorplan in detail

FUNCTIONS

tower

FUNCTIONS

tower

FUNCTIONS

tower

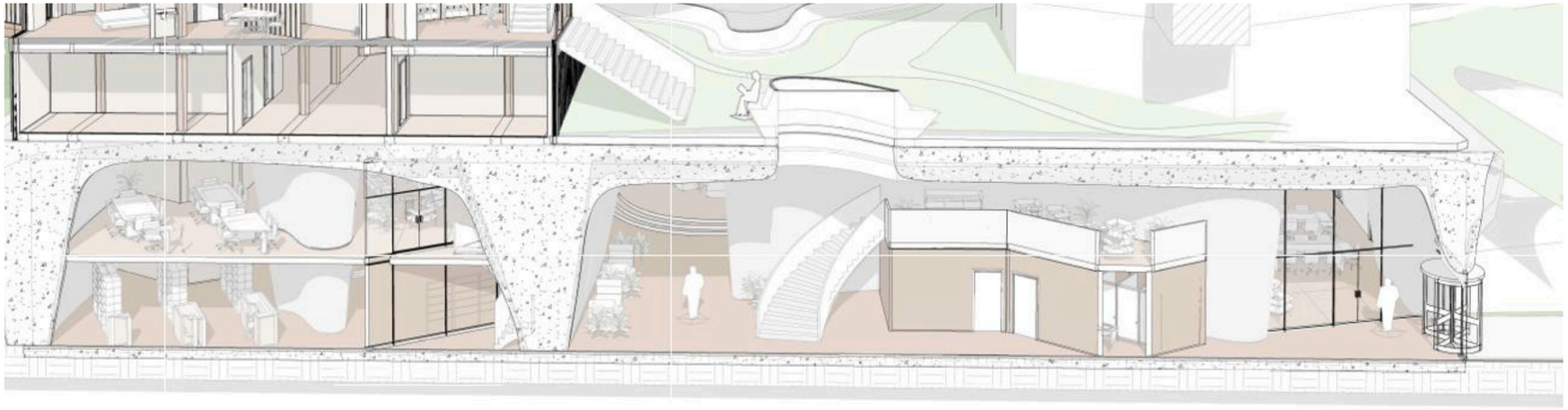
FUNCTIONS

tower

COMBINED FUNCTIONS

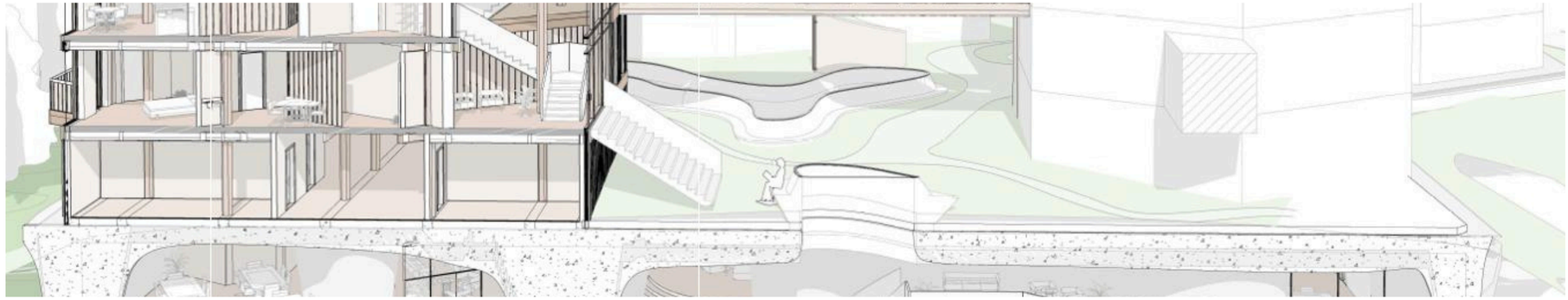
COMBINED FUNCTIONS

in section



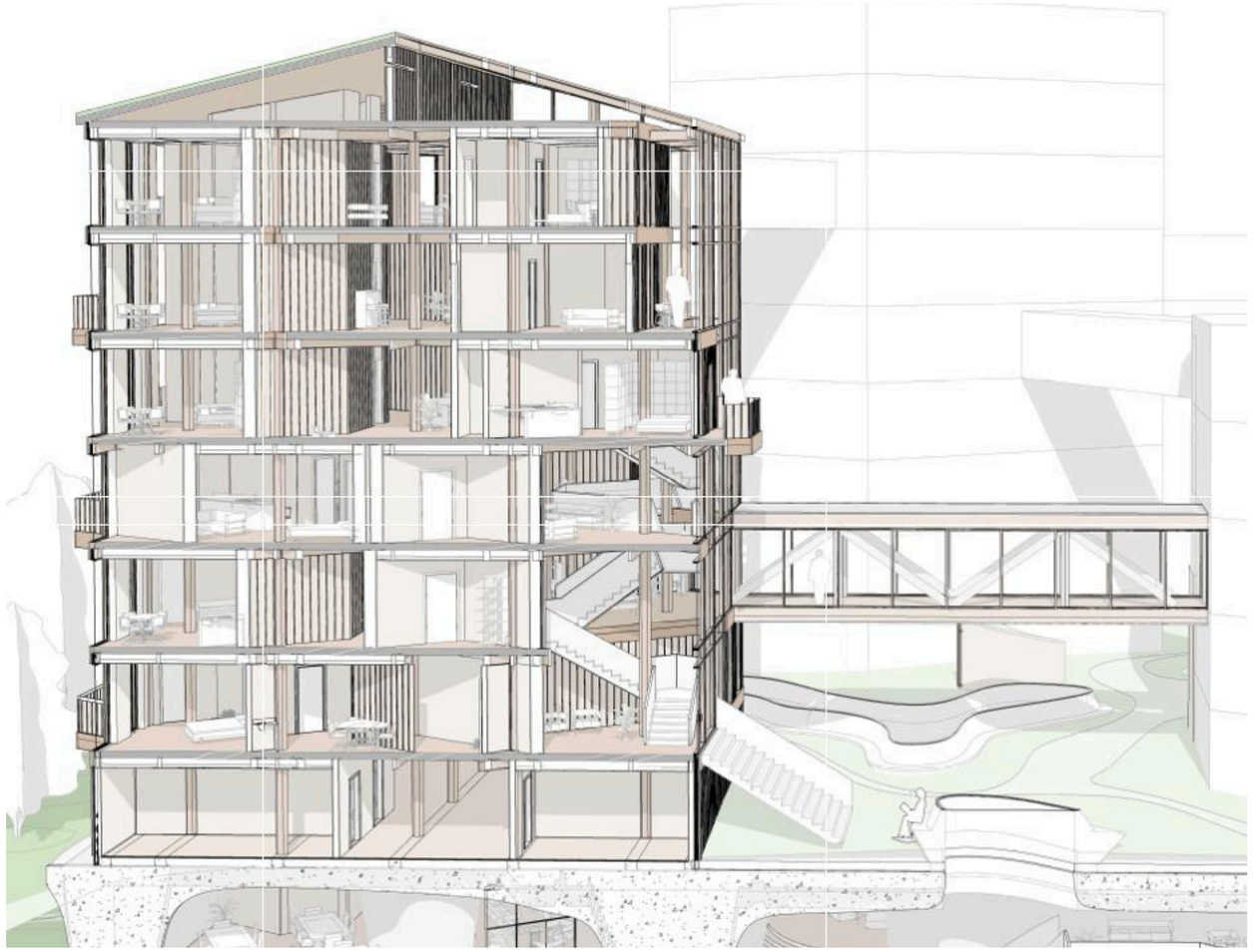
COMBINED FUNCTIONS

the hill



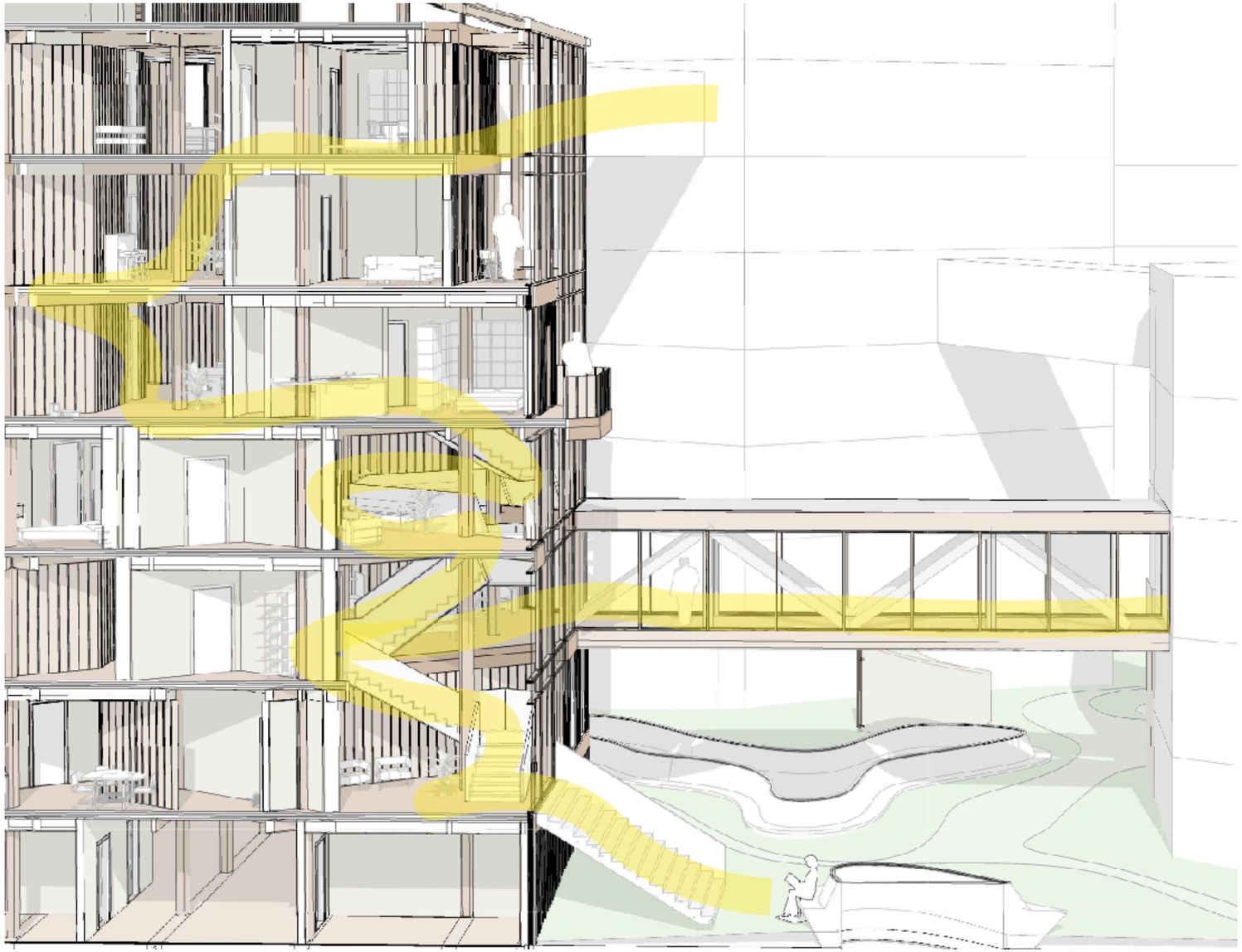
COMBINED FUNCTIONS

the park



COMBINED FUNCTIONS

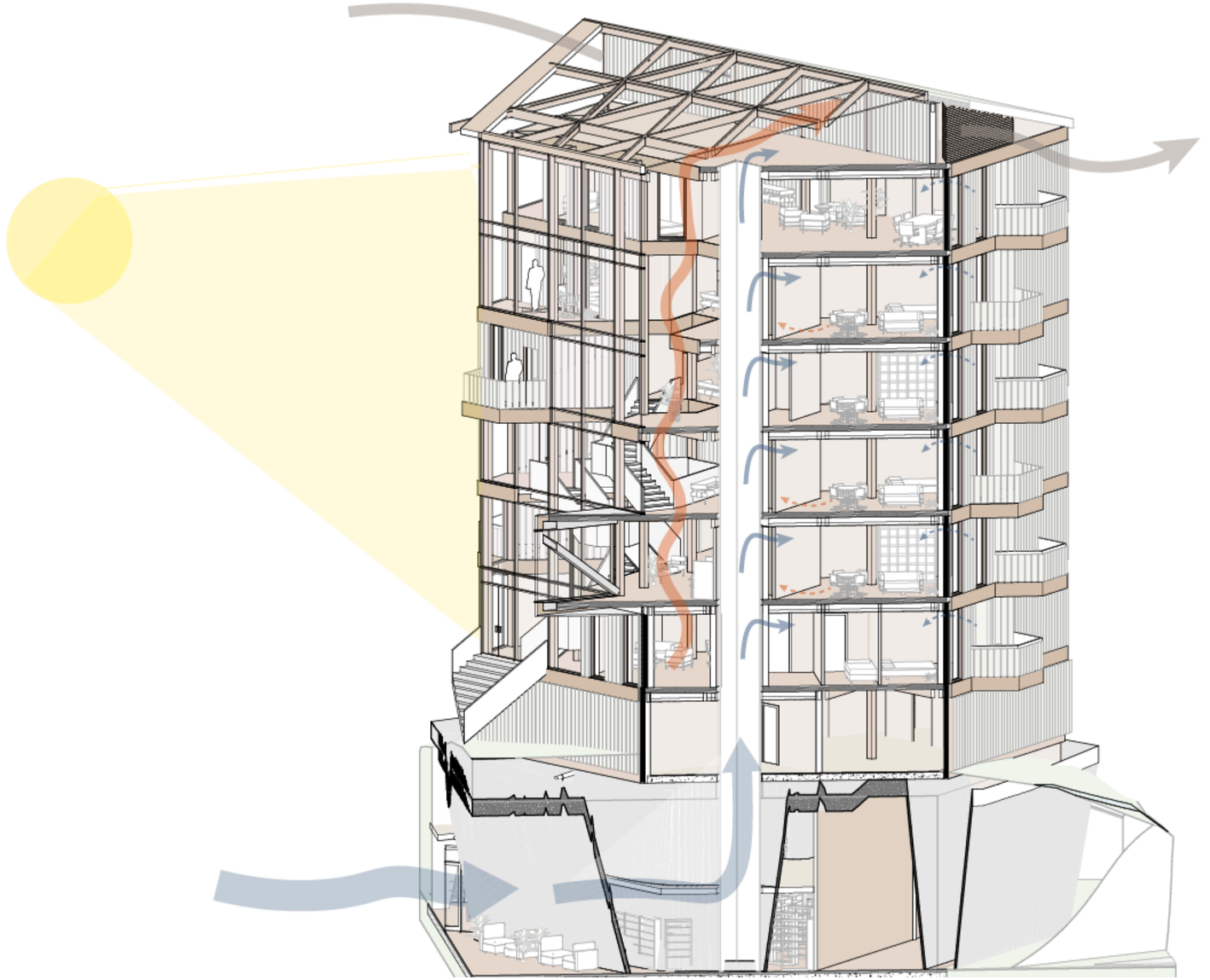
the tower



COMBINED FUNCTIONS

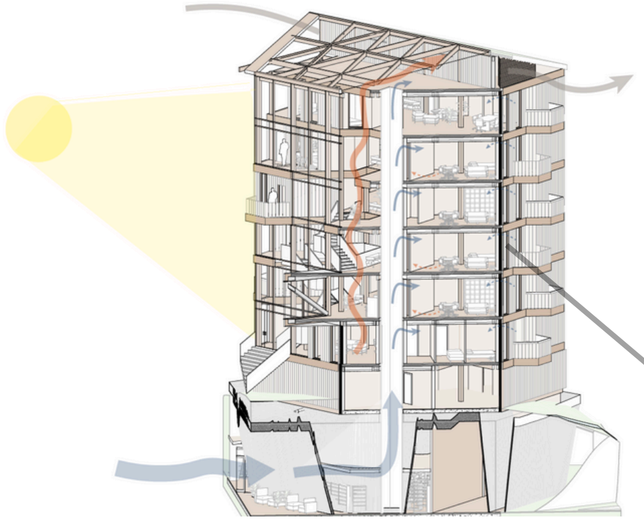
the tower

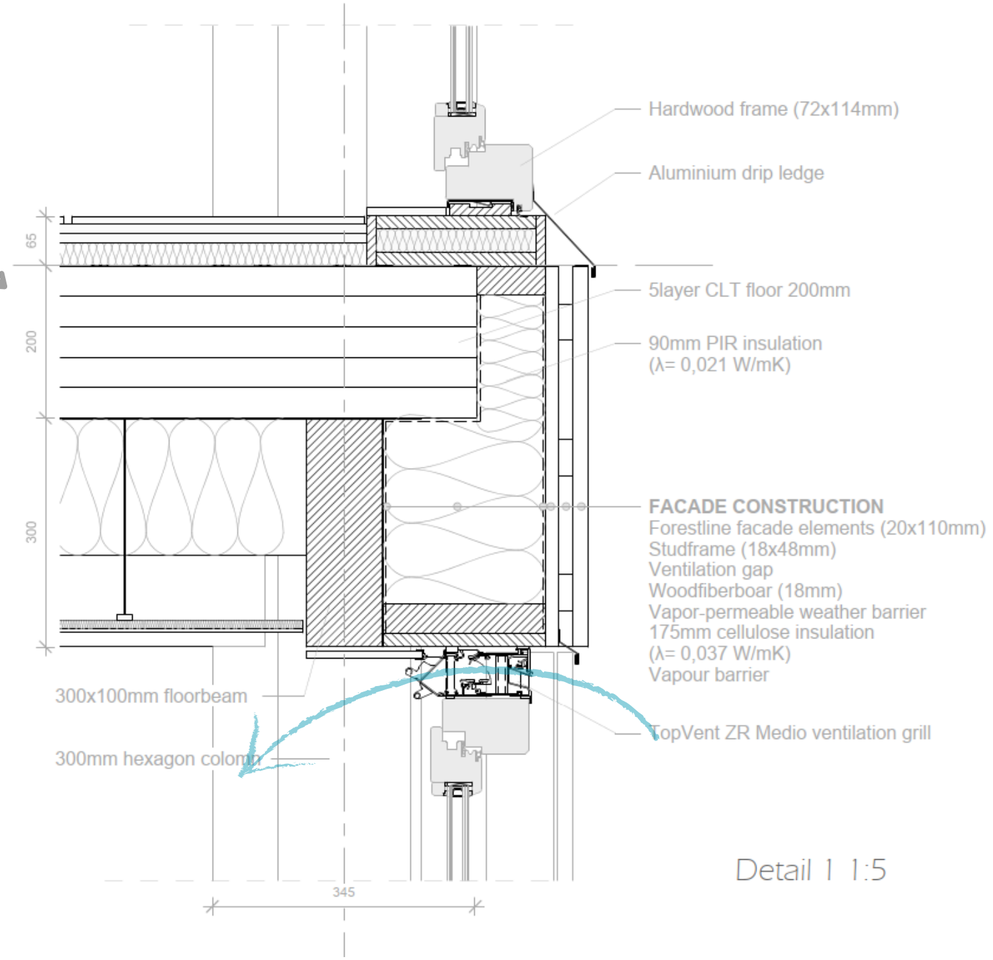
CLIMATE SYSTEM



SOLAR CHIMNEY

passive cooling





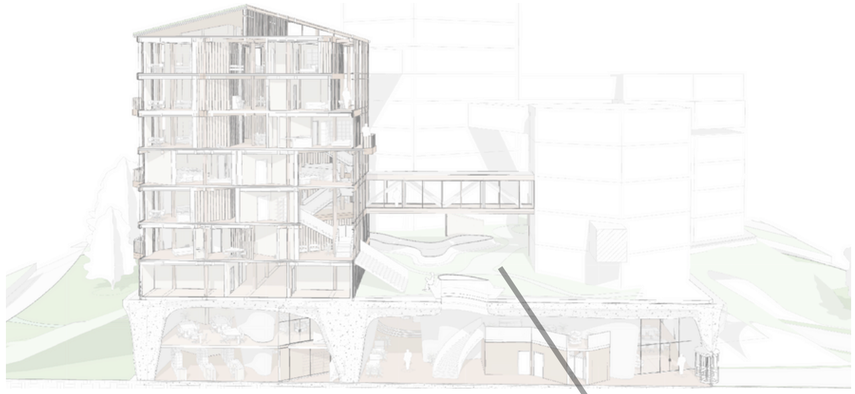
Detail 1 1:5

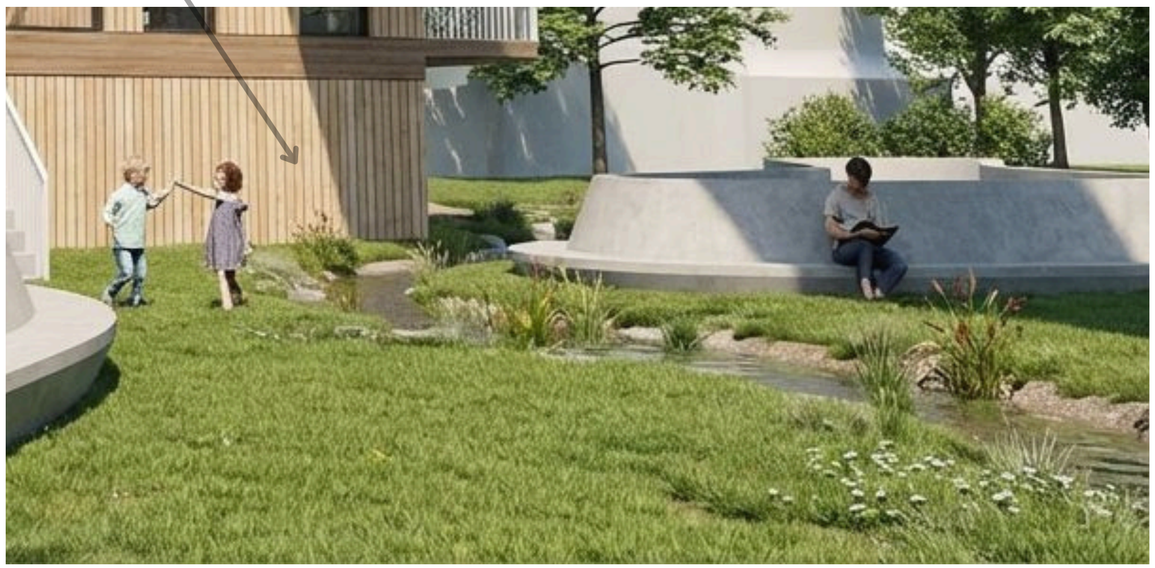
IN DETAIL

Water rising danger

PLINTH AS WATER BUFFER

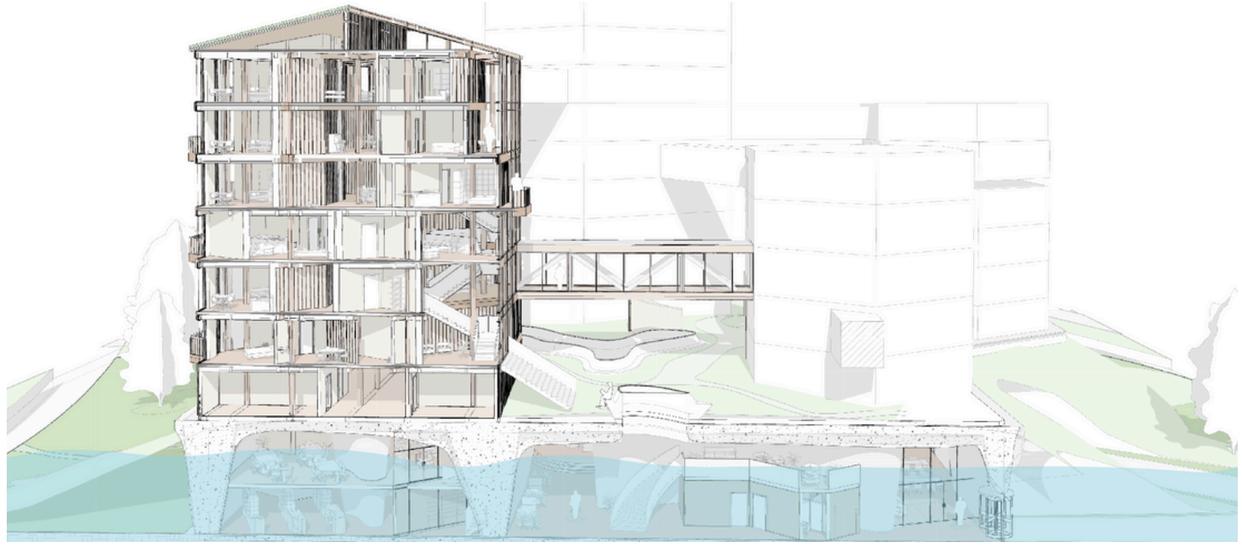
shortterm solution





PLINTH AS WATER BUFFER

shortterm solution



PLINTH AS WATER BUFFER

longterm solution

THE URBAN VILLAGE

1. Loneliness

1. **Loneliness**
2. **Lifeless architecture**

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**
4. **Water rising**

1. **Loneliness**
2. **Lifeless architecture**
3. **Ecological danger**
4. **Water rising**
5. **Housing need**

Thank you!