

The Vertical Town Square

Thomas Bax

P5 Presentation
June 20th

Public Building Graduation Studio 2023-24
The Vertical Campus | A Public Hub of the Future in The Hague



History of the Campus

not a campus in the modern sense, but a gathering of intellectuals

universities as part of city life

universities' legal privileges creating tension with local communities

universities partaking in broader cultural movements, influencing various aspects of society

enlightenment ideals in campus design, creating a holistic educational environment

increased demand for higher education, leading to the development of new campus models.

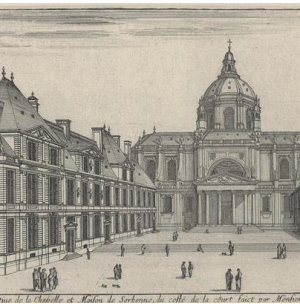
globalization and global challenges like climate change influencing campus culture and design



859 | **al-Qarawiyyin**
Traditions of higher learning were well developed in China, India, and the Islamic world.



1088 | **establishment University of Bologna**



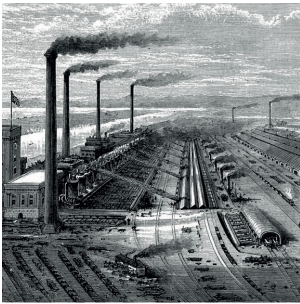
1150 | **foundation of University of Paris**



1500-1600 | **Renaissance and Humanism Influence Universities**



1499 | **University of Alcalá**
example of Renaissance university planning, self-contained complex.



Early 20th Century | **Industrialization and urbanization**
prompting campuses to move away from city centers



1962 | **University of Brasília**
A landmark of modernist architecture in campus design



2008 | **First MOOC**
Massive Open Online Course (MOOC) "CCK08", pioneered by Siemens and Downes.



2020-2022 | **COVID-19 Pandemic**
Led to a rethinking of campus spaces and their utility, as well as the importance of virtual learning environments.



300 BC | **Plato's Academy**



1096 | **establishment Oxford University**



1355 | **St. Scholastica Day riot - Oxford**



1636 | **Harvard University**



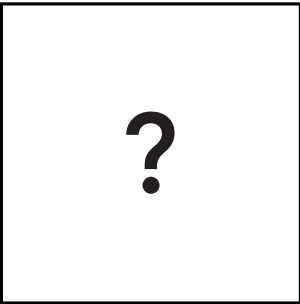
1819 | **University of Virginia**
Established by Thomas Jefferson



Mid-20th Century | **Post-WWII Educational Expansion**



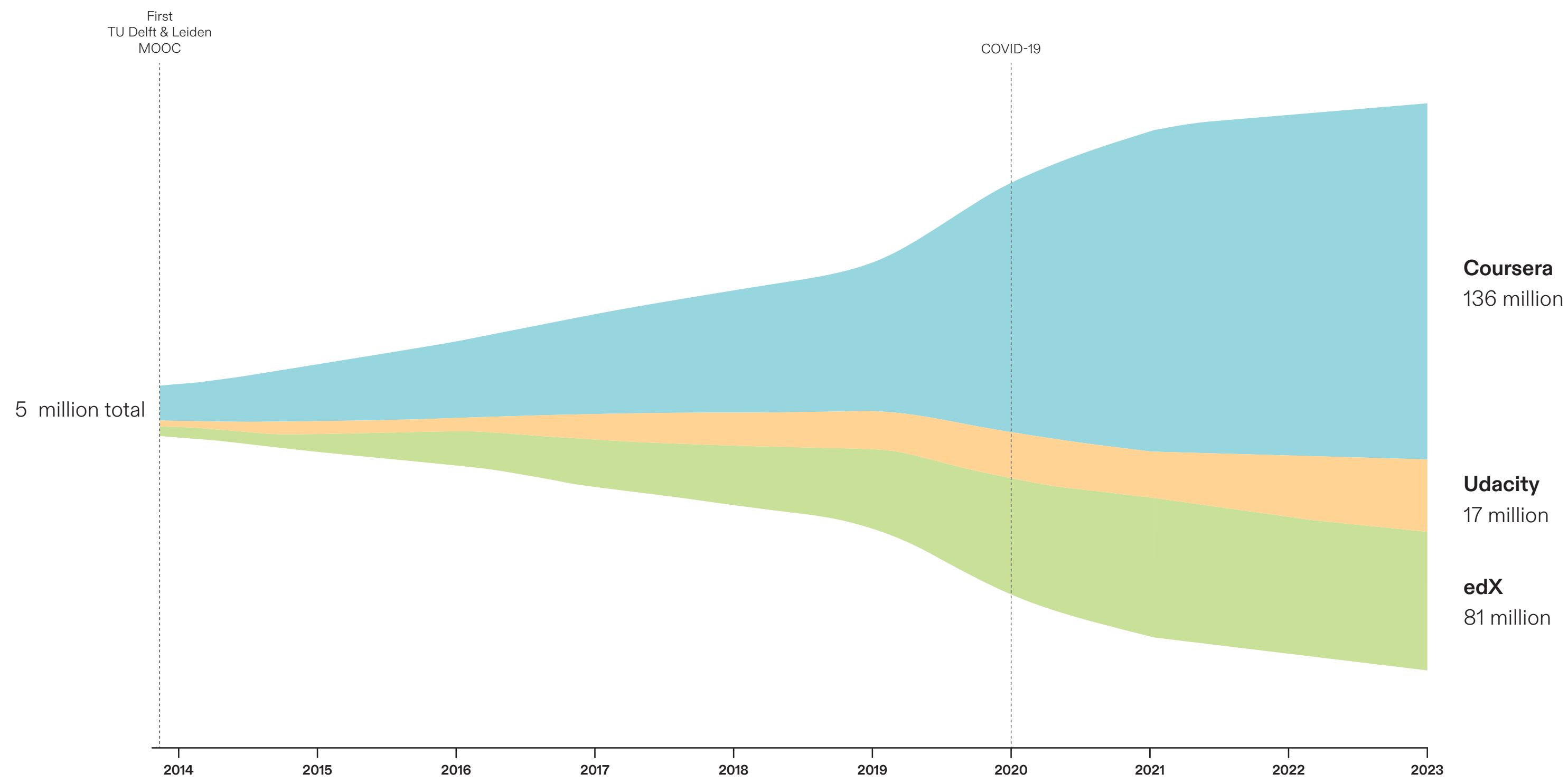
Late 20th Century to Present | **Focus on Sustainability and Technology**



21st Century | **Vertical Campus?**

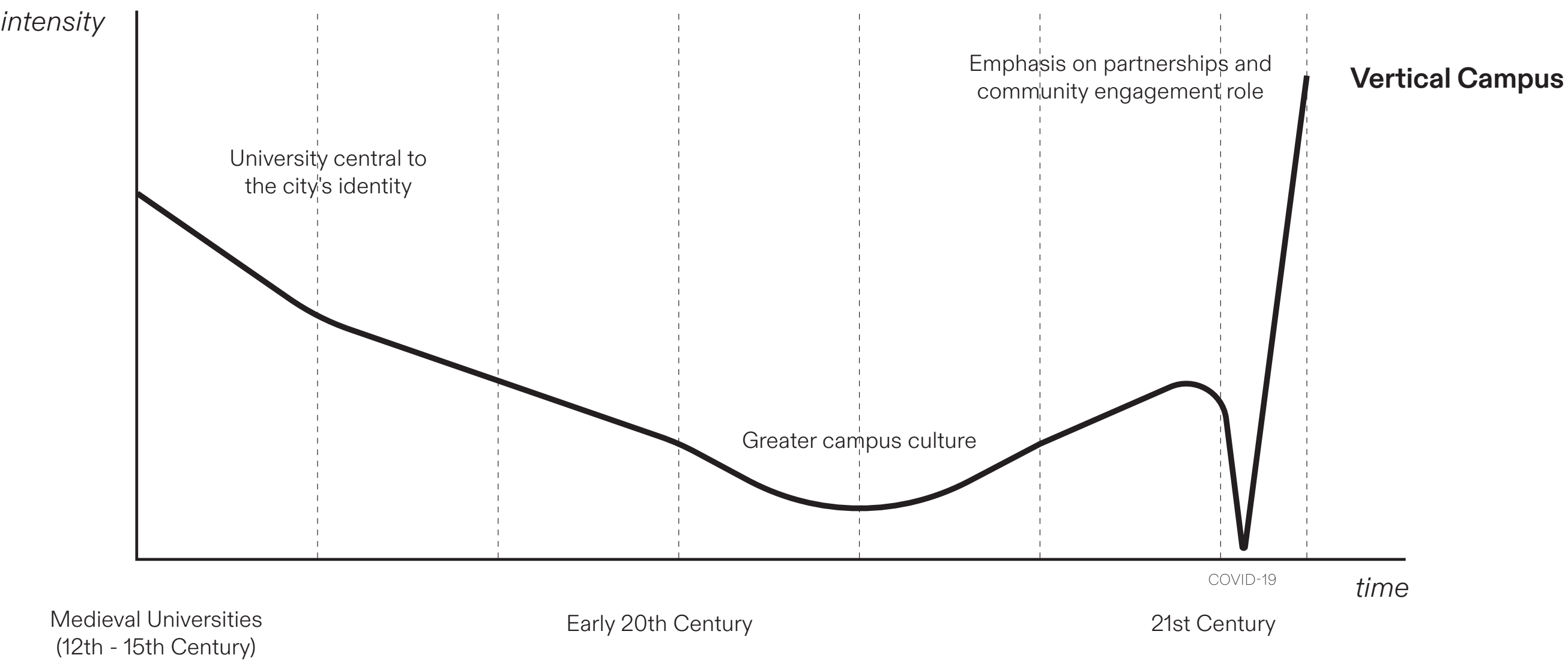
300 BC	1000	1300	1600	1800	1900	2000	now
	integration	tension	expansion	academical village		reintegration	integration
integrated and interdependent	strained and adversarial	collaborative and mutually beneficial	conceptually integrated but physically distinct	increasingly separate and self-contained	Globalized and collaborative	integrated & interdependent	

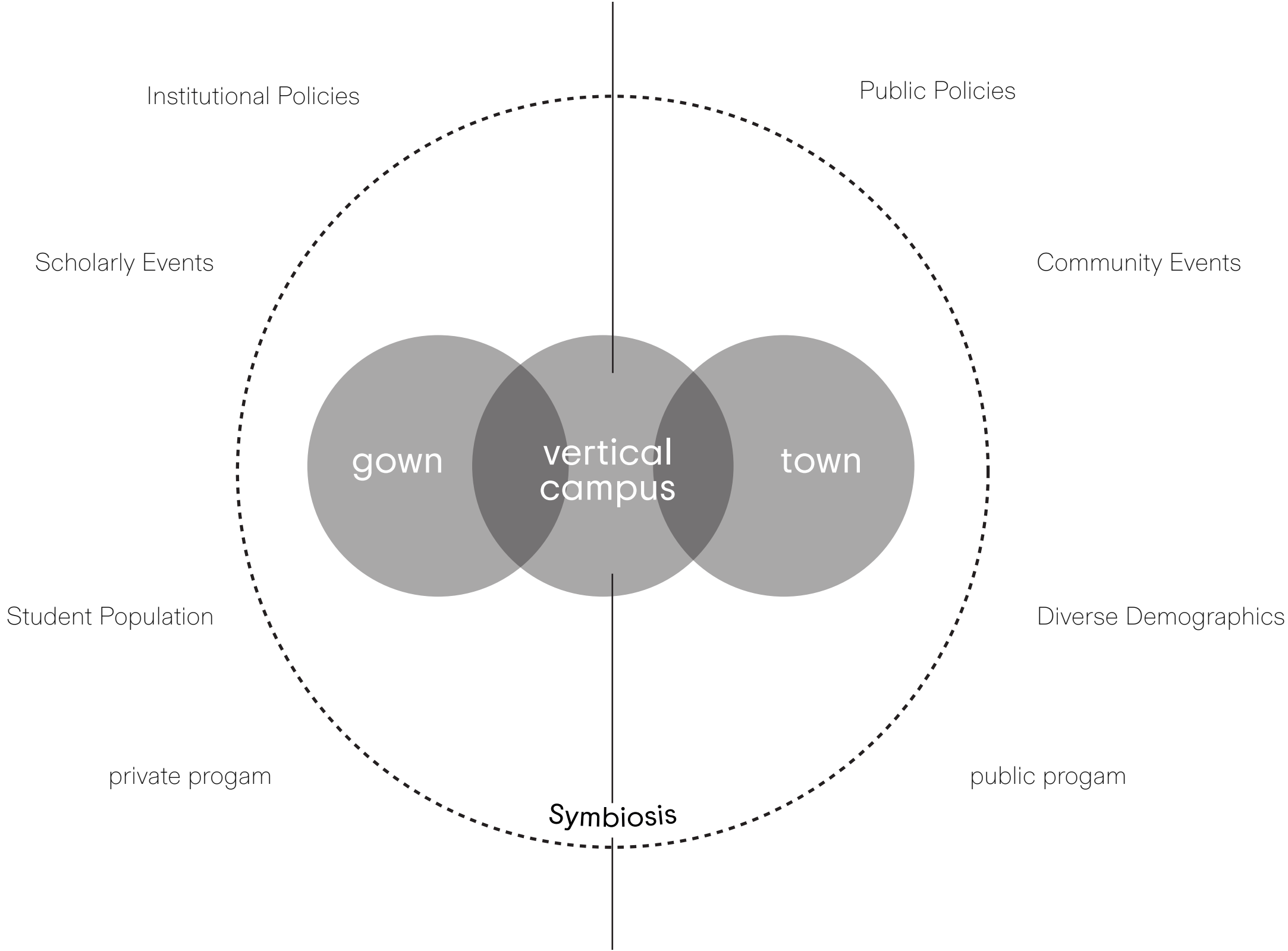
Grow online education



Increase in the quantity of registered users on three major MOOC platforms (Coursera, Udacity and edX). Thomas Bax (2024)

City - Campus relationship

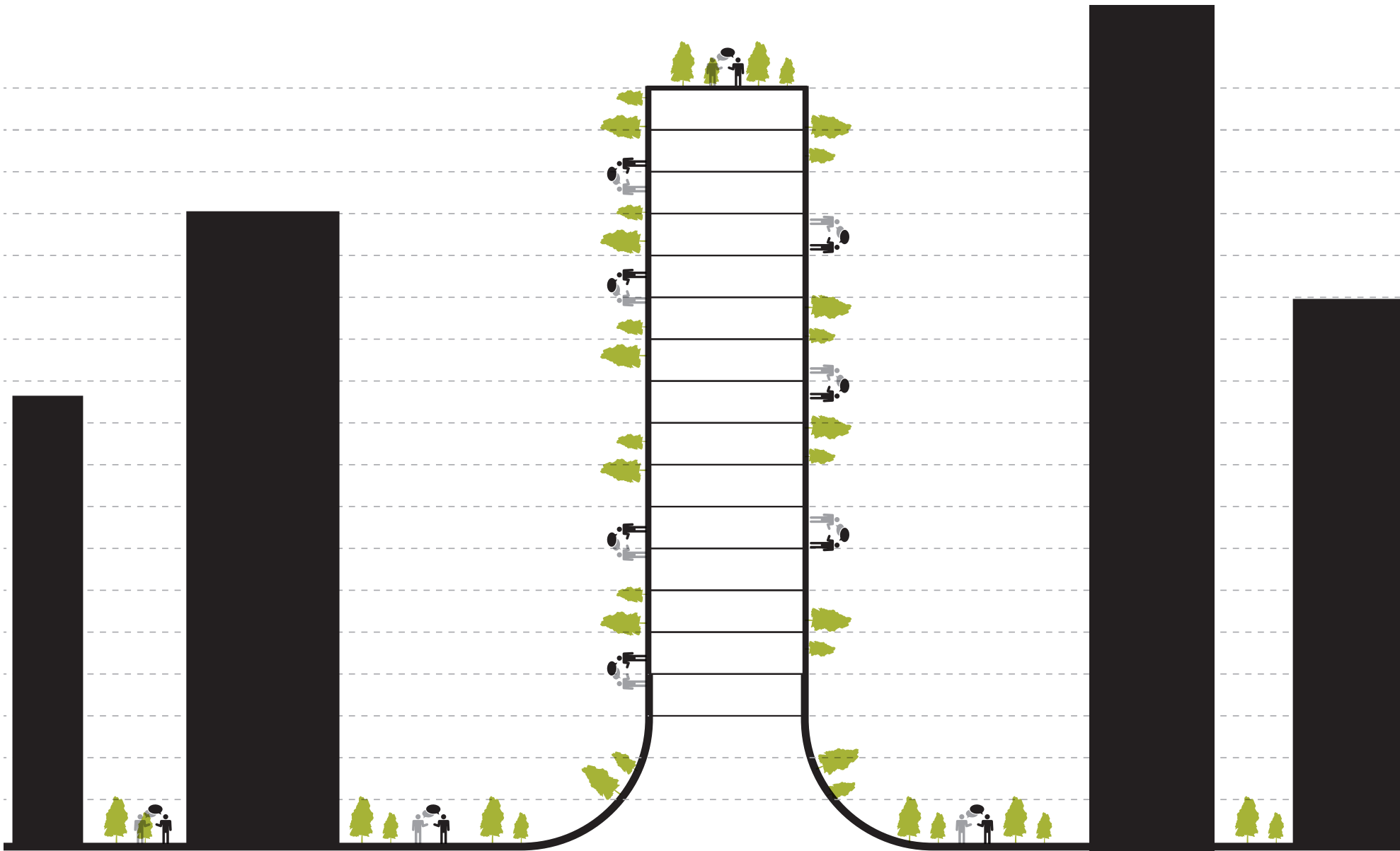




Proposal

Vertical Town Square

Campus against **urban anonymity** and **scarcity of engaging public spaces**



History of Town Square

Significant public spaces where **people meet** and where **many activities occur**

Representation

Beijing - 1989



Trading

Amsterdam - 1871



Residential and Traffic

New York - 2023



Trading

s-Hertogenbosch - 1530



Public programmes

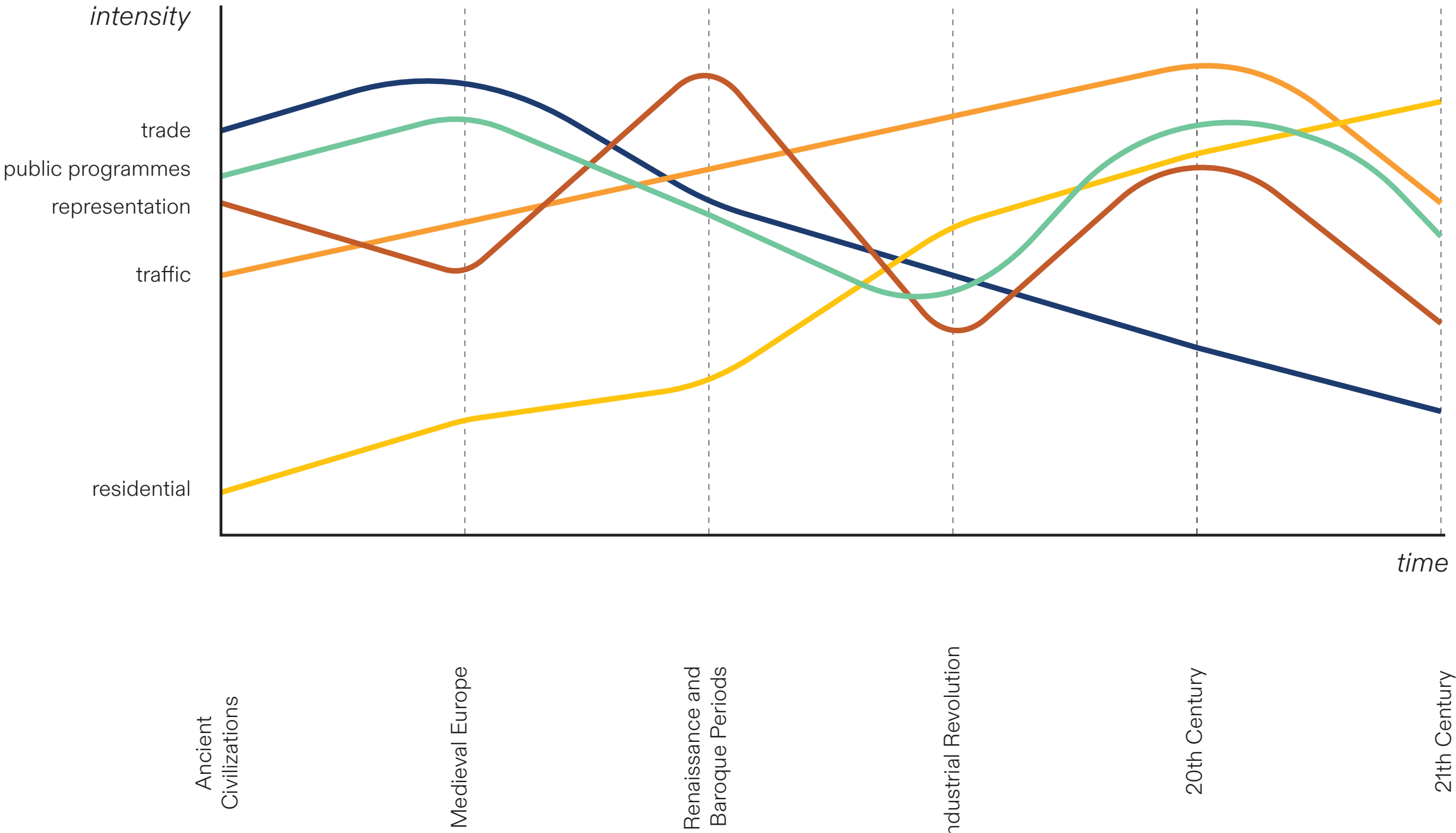
Antwerp - 1670



Representation

Paris - 1793

Functions and Programmes



Definition

town-square
noun

“An open area commonly found in the heart of a traditional town, used for community gatherings”

-Wiktionary

Definition

“ A town square is a central, open public space in a town or city, often serving as the heart of civic life and a **focal point for community gatherings and social interaction.**”

-Gehl, J., “Cities for People”, 2010

town-square
noun

“An open area commonly found in the heart of a traditional town, used for community gatherings”

-Wiktionary

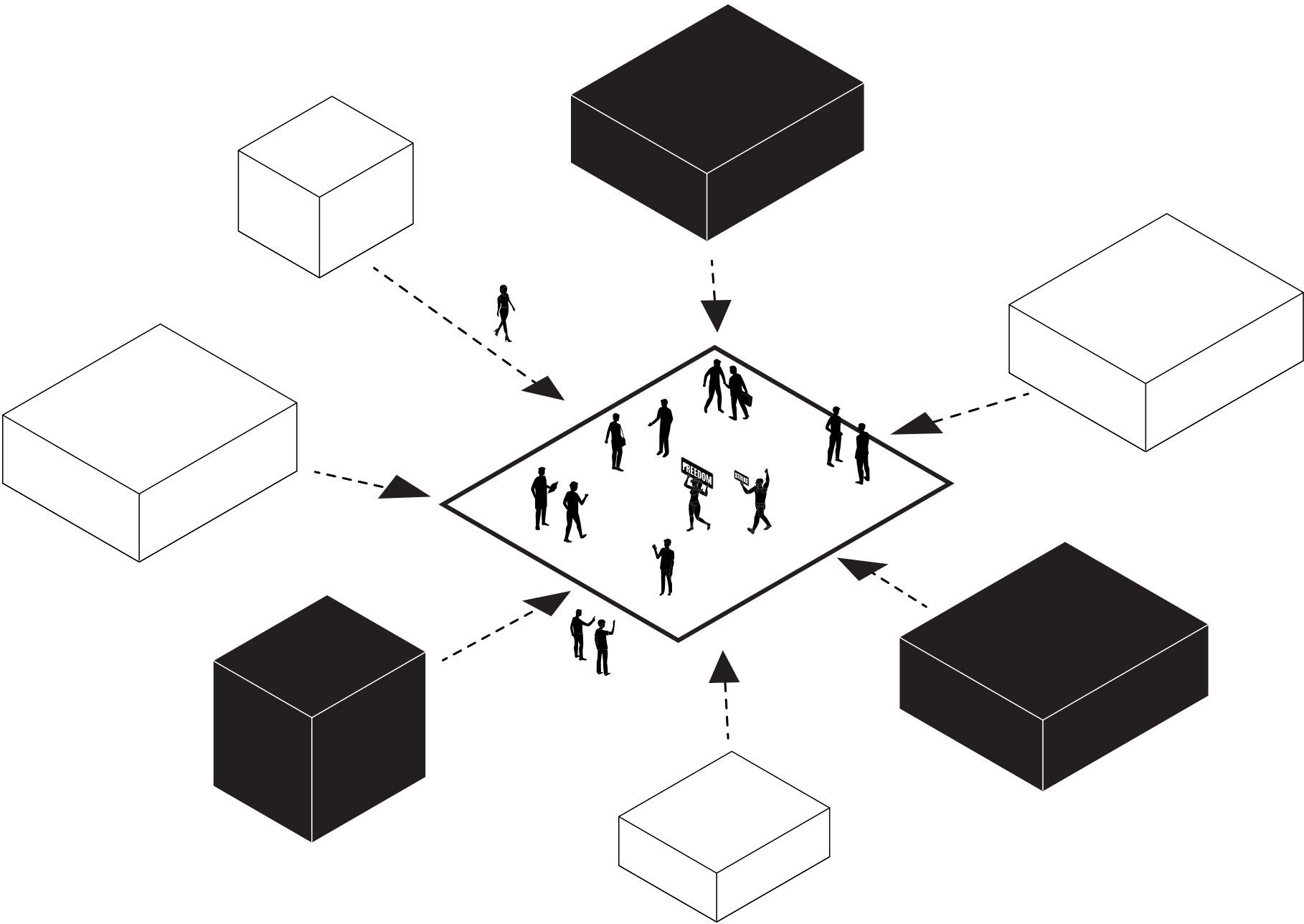
“In urban design, a town square is considered a key organizing feature that structures the **spatial arrangement** of buildings and streets, **providing a sense of place and community coherence.**”

- Jacobs, J., “The Death and Life of Great American Cities”, 1961

“Town squares are essential for civic engagement, offering a **venue for public discourse, events, and ceremonies**, thereby fostering **democratic participation and collective identity**”

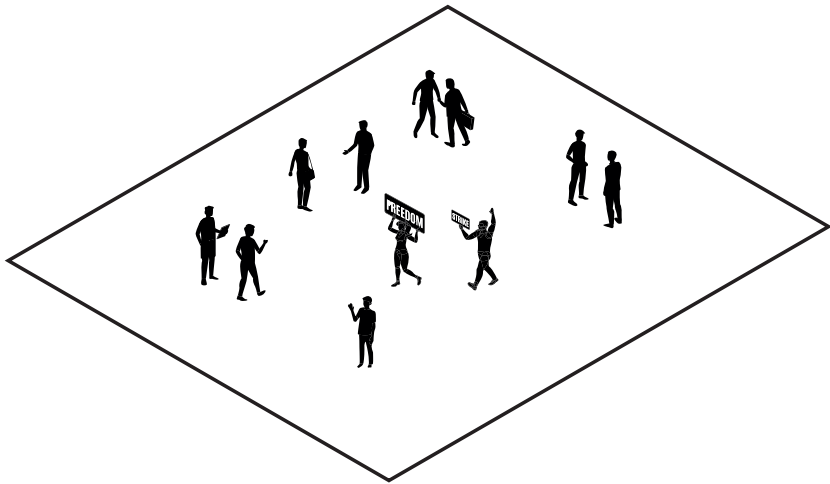
- Whyte, W. H., “The Social Life of Small Urban Spaces”, 1980

Fluid spaces enhancing communal interaction and connecting circulation



Town Squares

Connection to education



town square

Informal

Public

Flexible

Multi-functional

Open Environment

Integrated

Formal

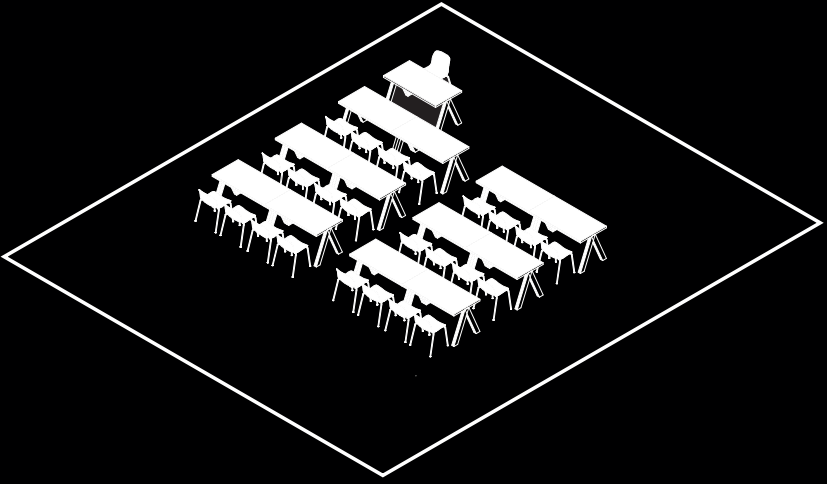
Private

Structured

Function-Specific

Controlled Environment

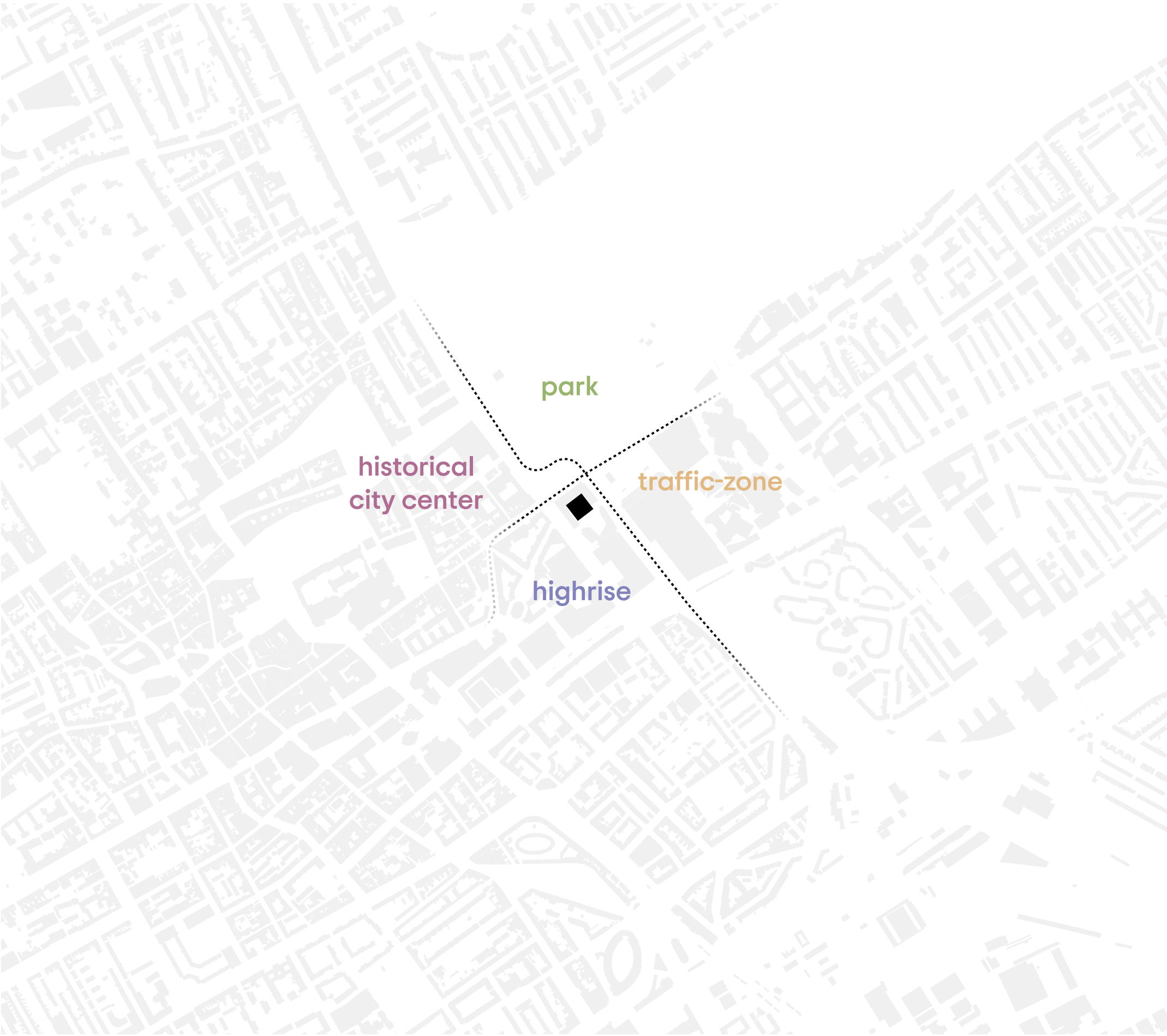
Isolated



classroom

Site

Intersection



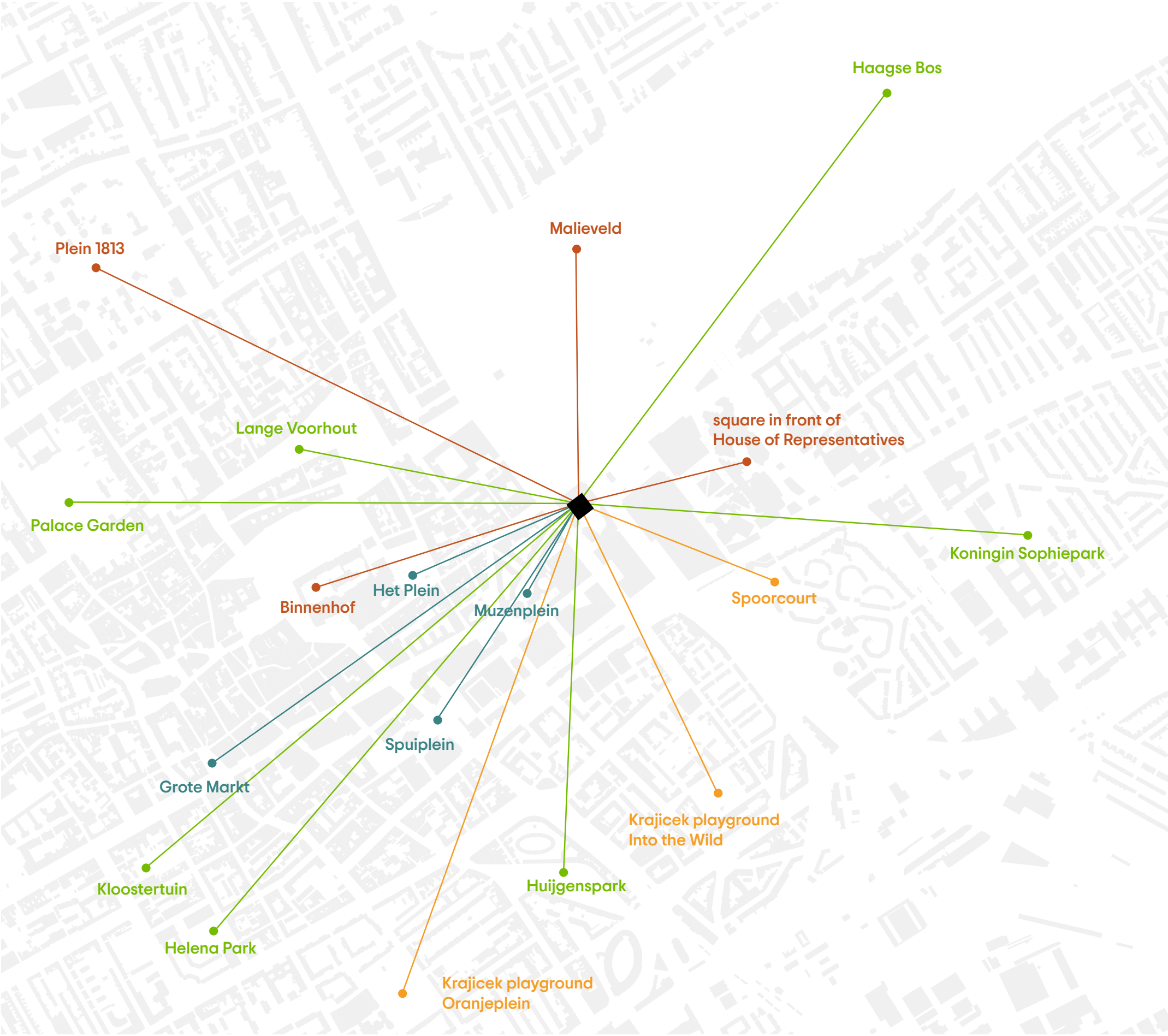
Site

Intersection



Site

Public spaces



- relaxation
- sports
- political
- undefined

Squares/Parks in The Hague



Plein 1813

Time 1869

Architect Johannes Jacobus Delia

Dimensions 140m x 80m (11.200 m²)



Lange Voorhout

Time 15th century

Architects -

Dimensions +- 38.000 m²



Paleistuin

Time 1609

Architect Hoeufft van Velsen

Dimensions 30.000 m²



Binnenhof

Time 13th century

Architect Cornelis Peters

Dimensions 3000 m²



Het Plein

Time 1632

Architect W.N. Rose

Dimensions 5250 m²



Muzenplein

Time 20th century

Architect Rob Krier

Dimensions 2000 m²



Spuiplein

Time 1861

Architects -

Dimensions 2500 m²

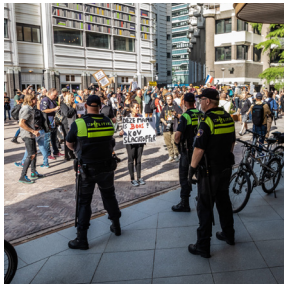


Square H. of R.

Time 1980s

Architect Dick Apon

Dimensions 600 m²



Malieveld

Time 1606

Architects -

Dimensions 350m x 200m (75.000m²)



Krajicek playground Oranjeplein

Time 2021

Architects -

Dimensions 2500 m²



Kloostertuin

Time 1700

Architect -

Dimensions 1680 m²



Grote Markt

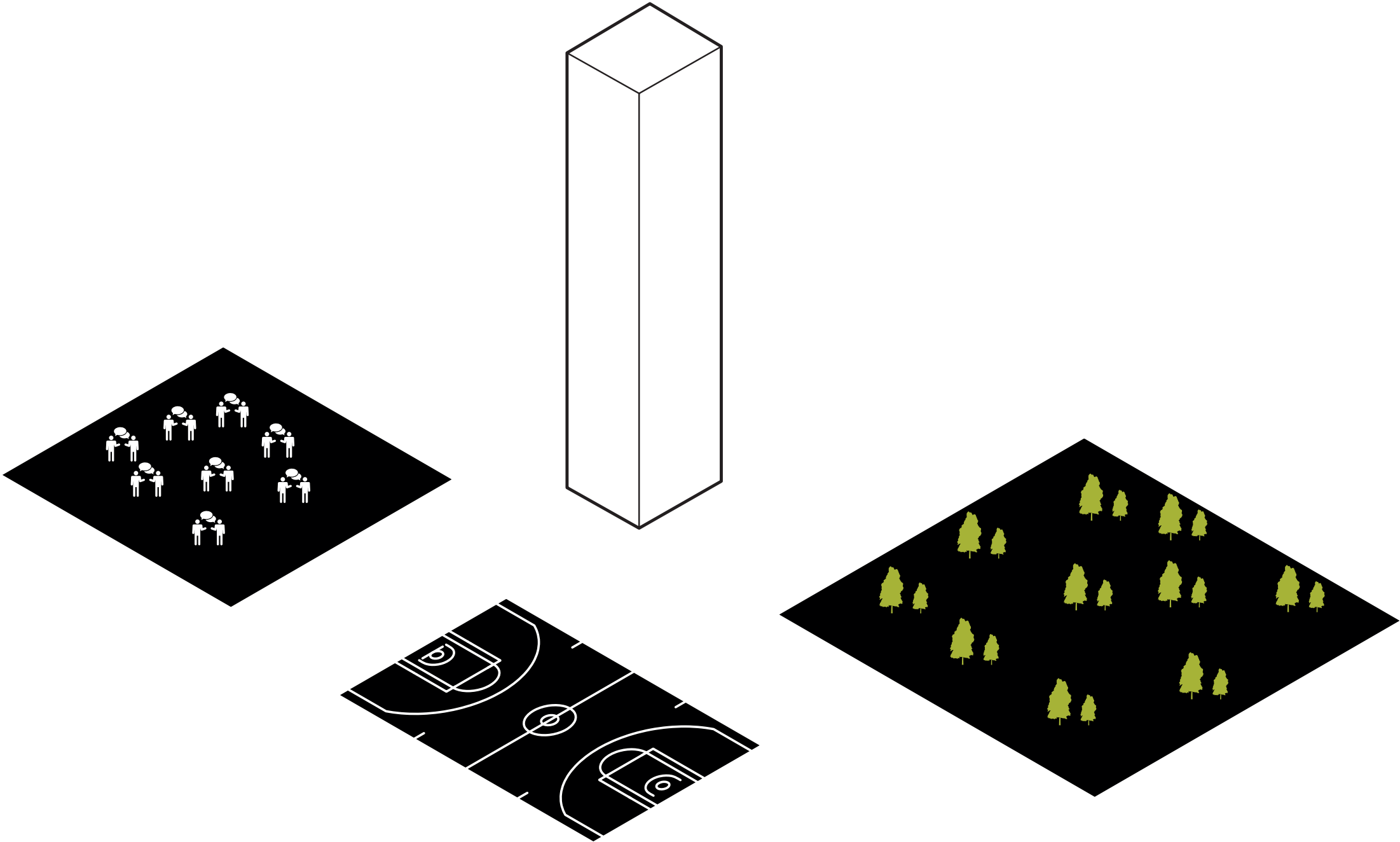
Time 17th century

Architects -

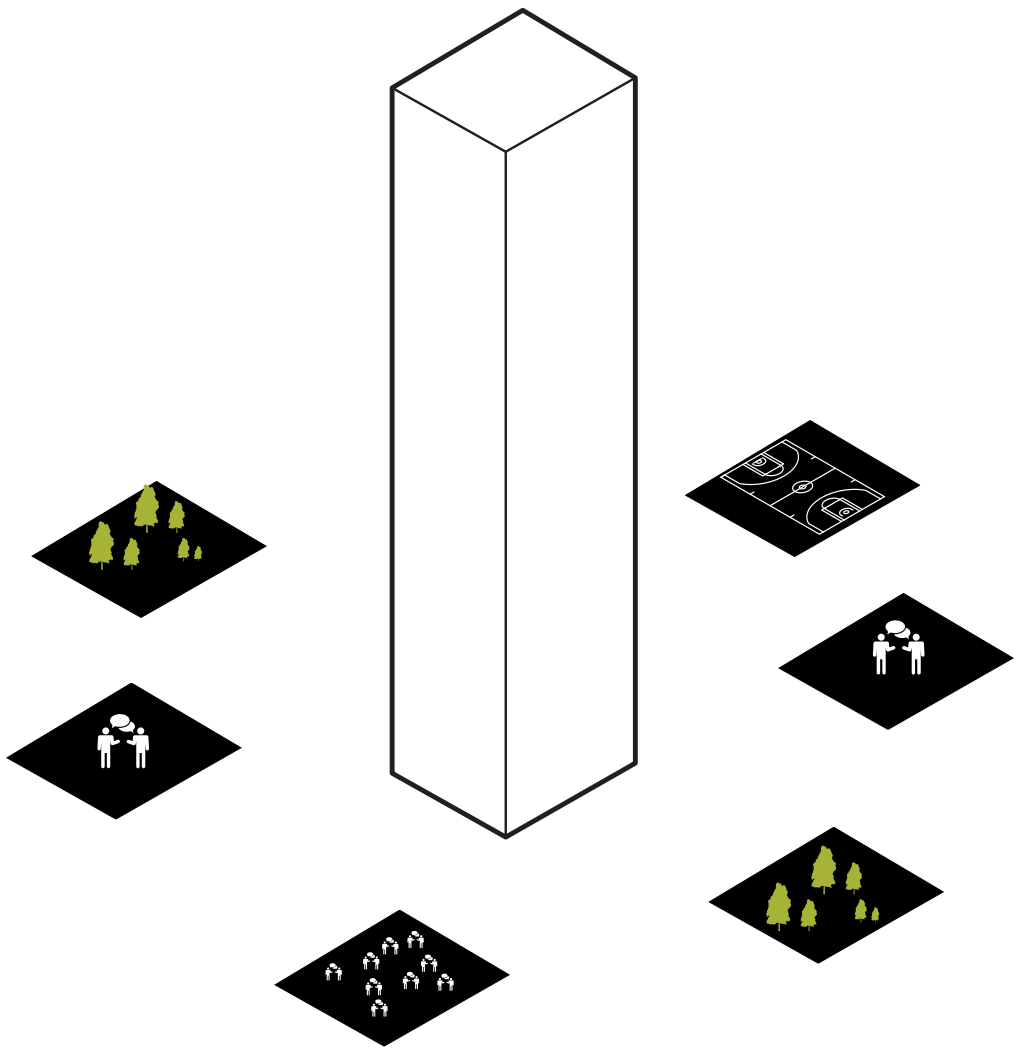
Dimensions 105m x 40m (4.200m²)



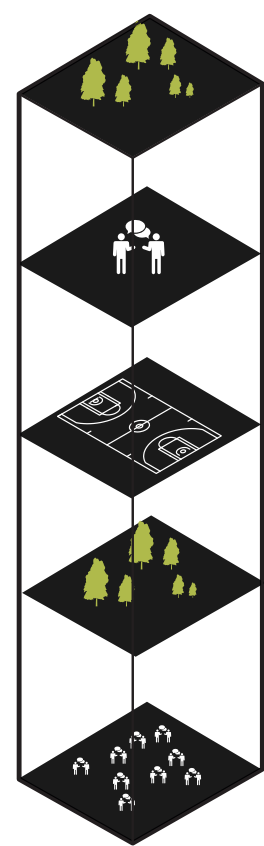
current model



scaling the urban to building level



the vertical town square



Capacity Plan

Proposal P1

smooth **circulation**, pleasant to **stay**

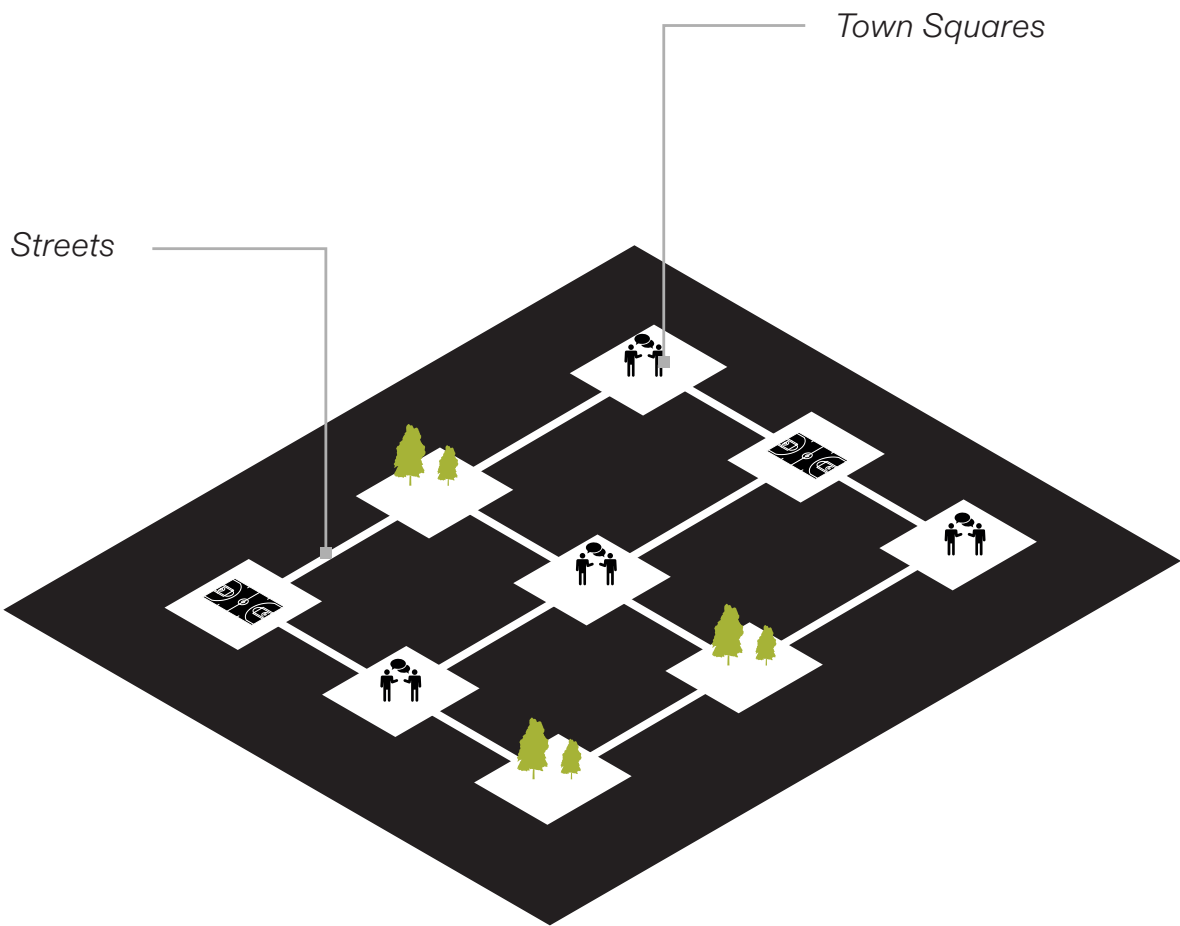


Capacity Plan

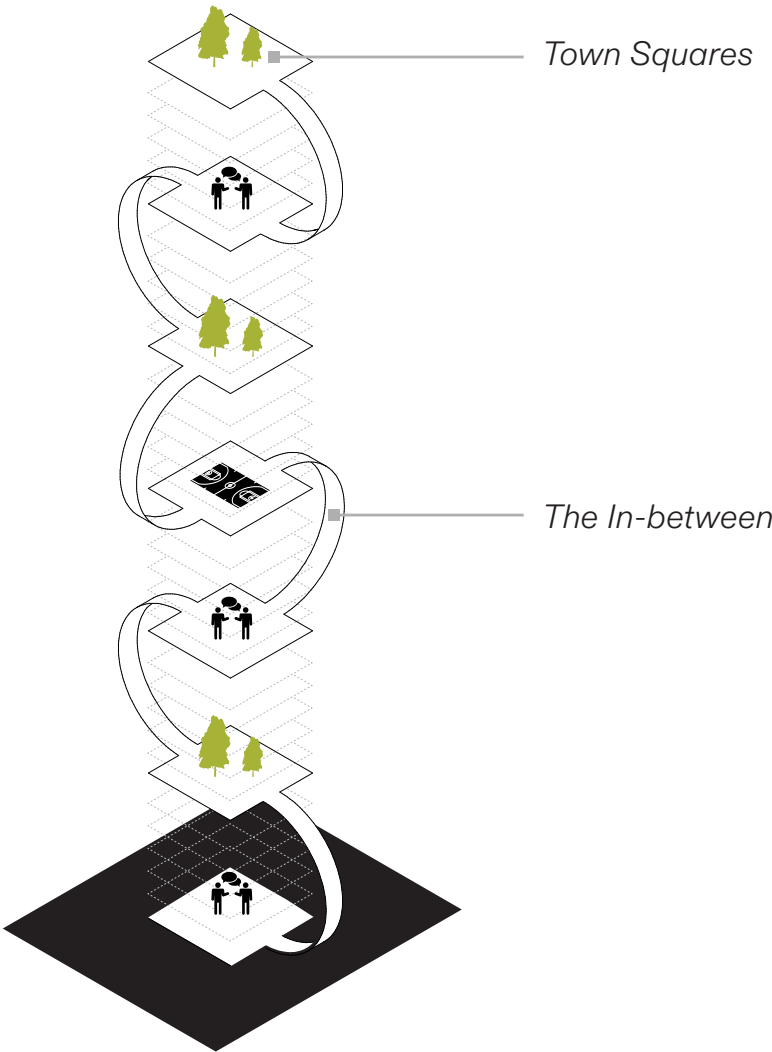
Proposal P1



Vertical Translation



Traditional Lay Out

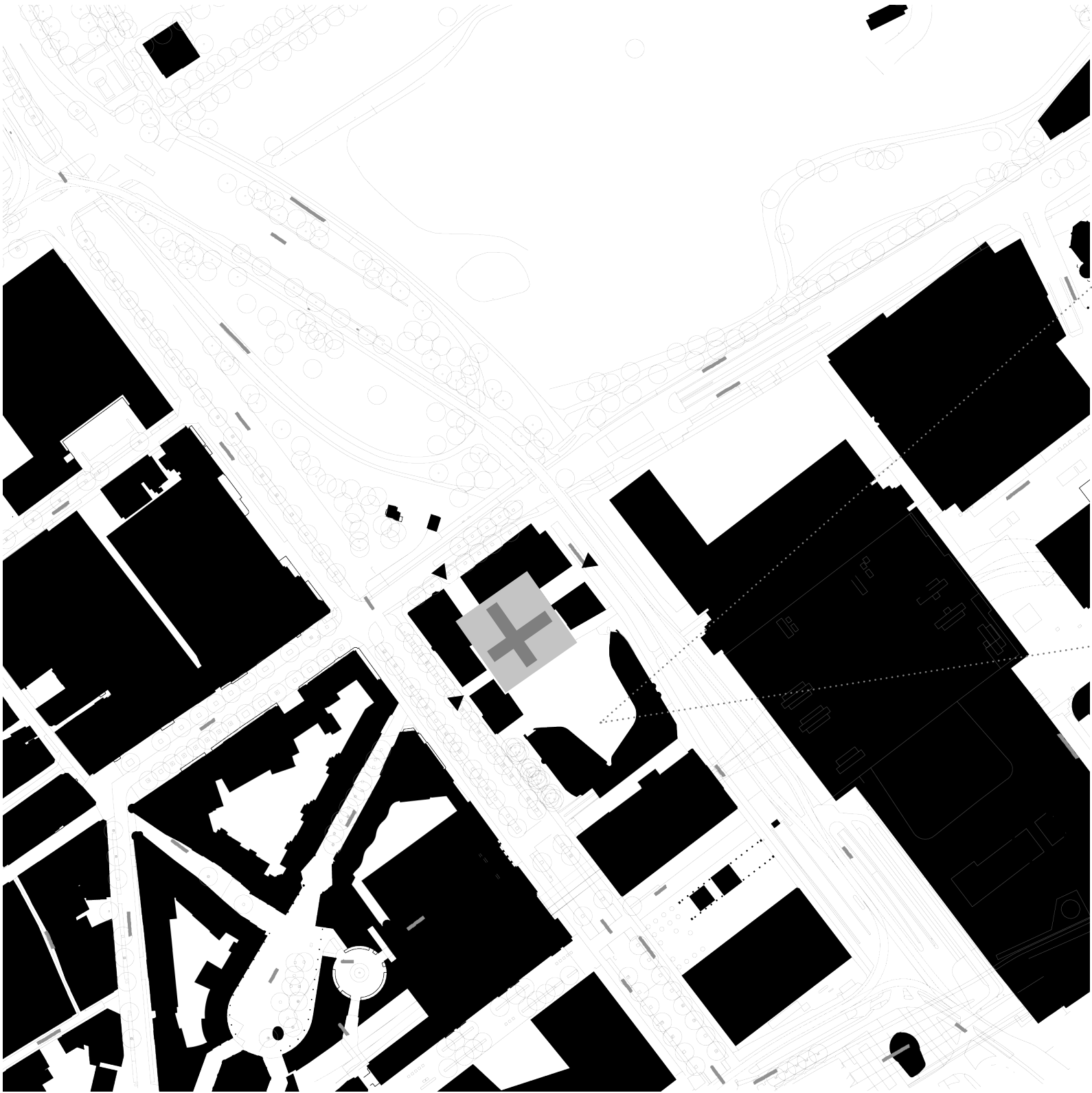


“Vertical Town Square”



Section

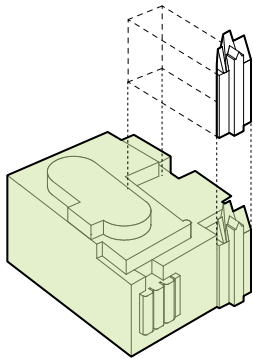
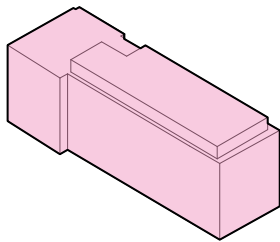
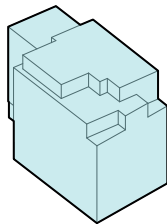
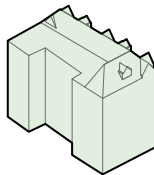
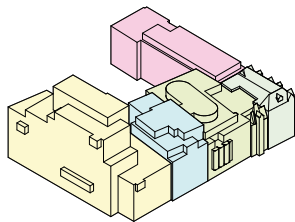




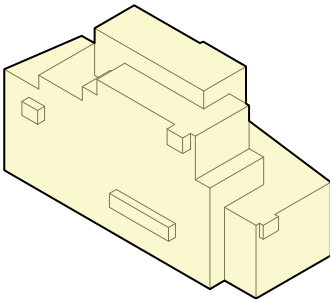
HOFTOREN

architect	Kohn Pedersen Fox Associates
height	142 m - 31 floors
role	- Ministry of Education, Culture and Science - Gambling Authority - CIBG - State Cleaners Association - DUO

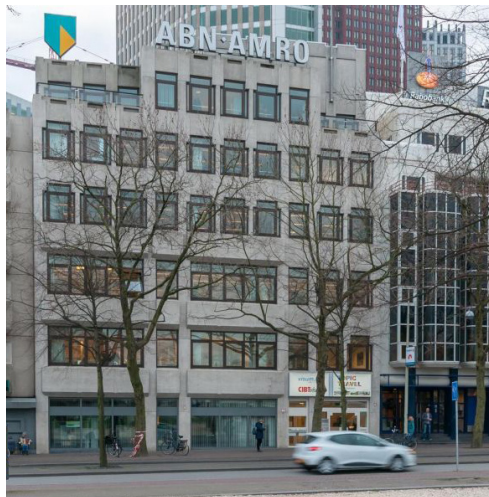
Existing Buildings



Residence (1907)
Liefland, W.B. van
Municipal Monument

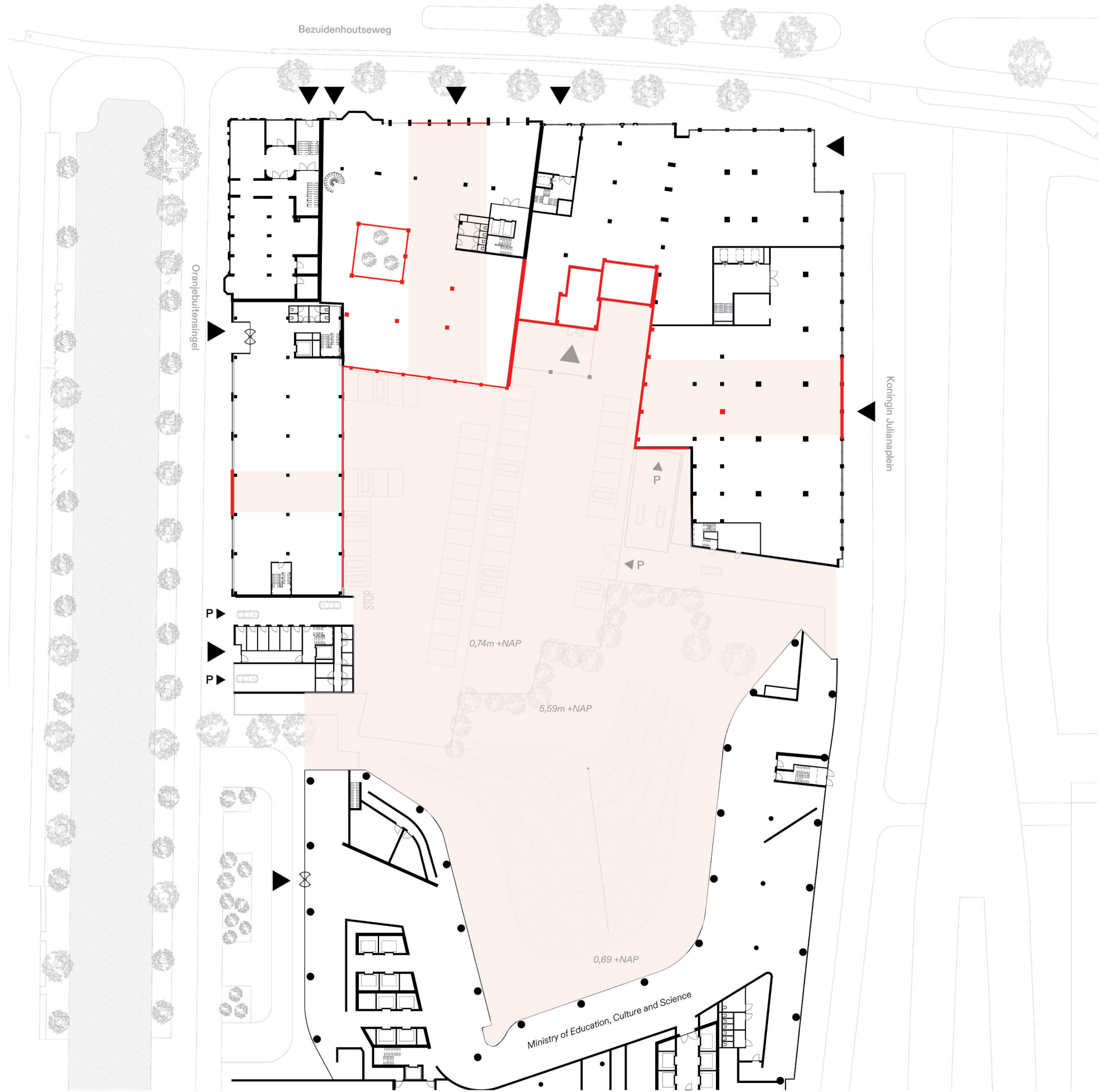


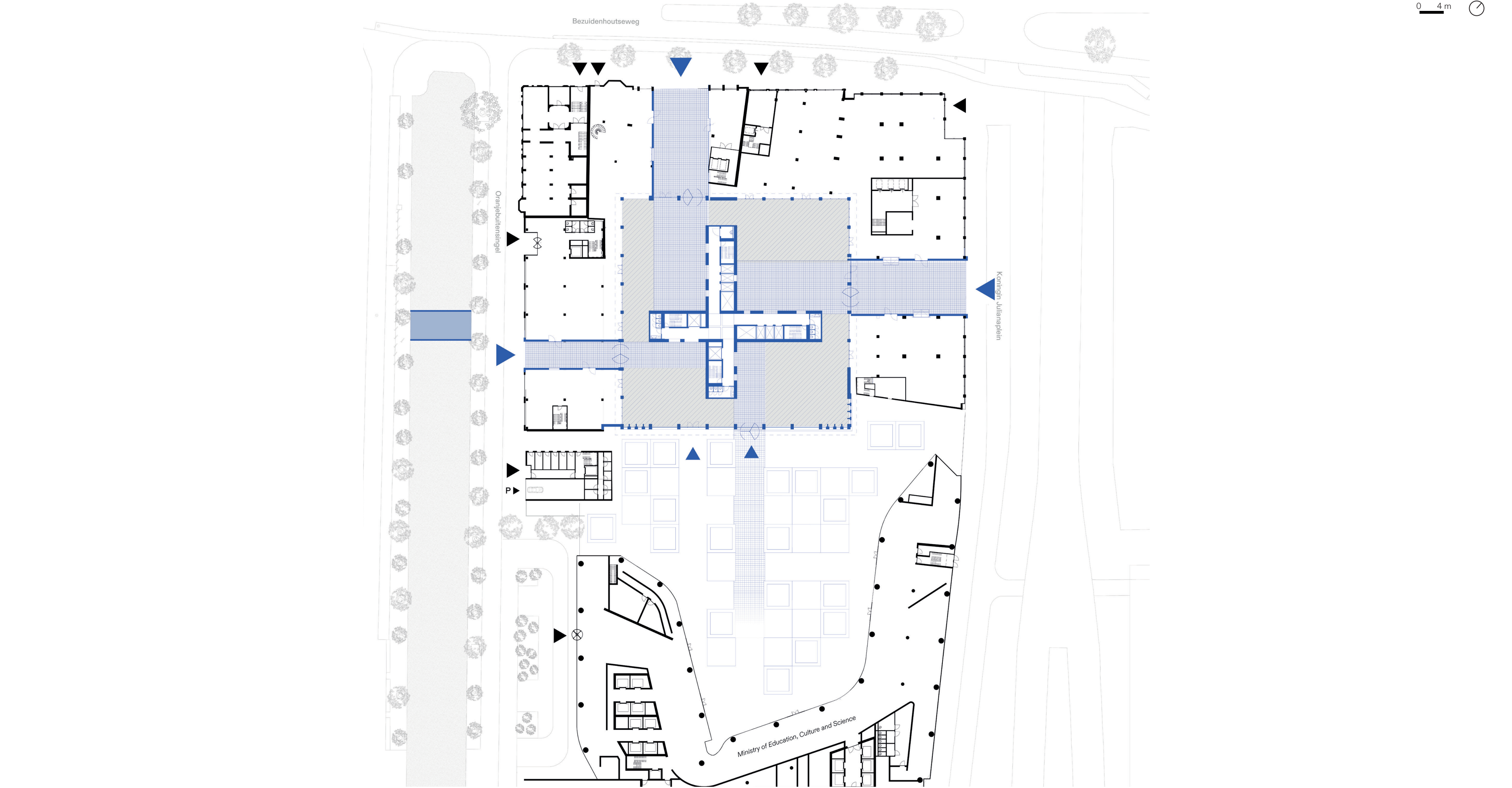
Basic Information					
Building Name	Kantoorgebouw Haagsche Assurantie Compagnie	Den Hout	Oranje Hout	Nieuwe Hout	Kantorenflat Bellevue 's Gravenhage
Architect	Johan Muttters (1858-1930)	Mehrtens & Van Veldhoven Architecten	Prent-Landman Architecten	Mehrtens & Van Veldhoven Architecten	Hornstra Verschoor
Year of Construction	1913	1984	1981	1974	1975
Functional Analysis					
Current Use	Office	Office	Office and Residential	Banking Building	Office
Original Use	Banking Building	Banking Building	Office and Residential	Banking Building	Office





Demolish





Entrances

east entrance



north entrance

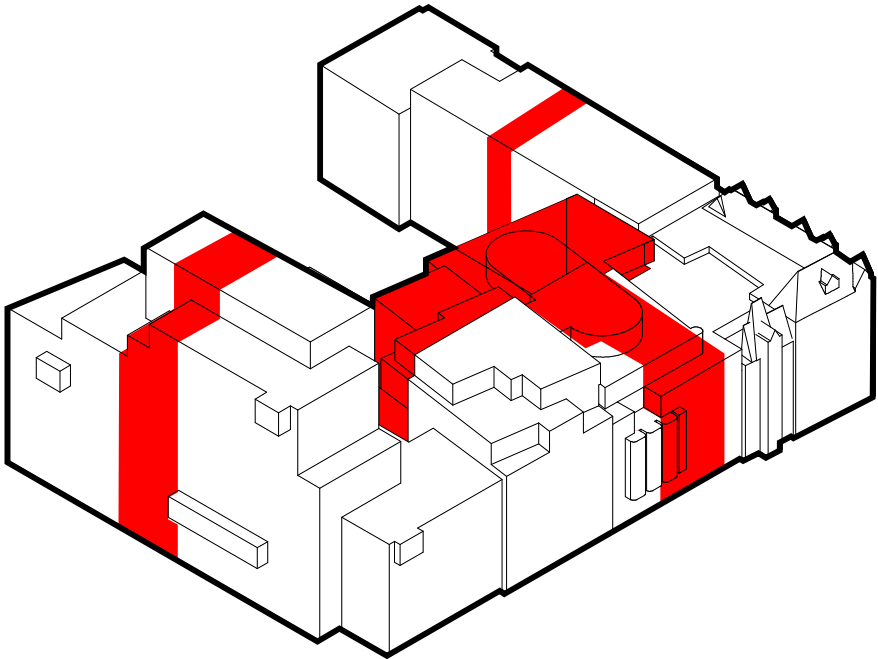


west entrance

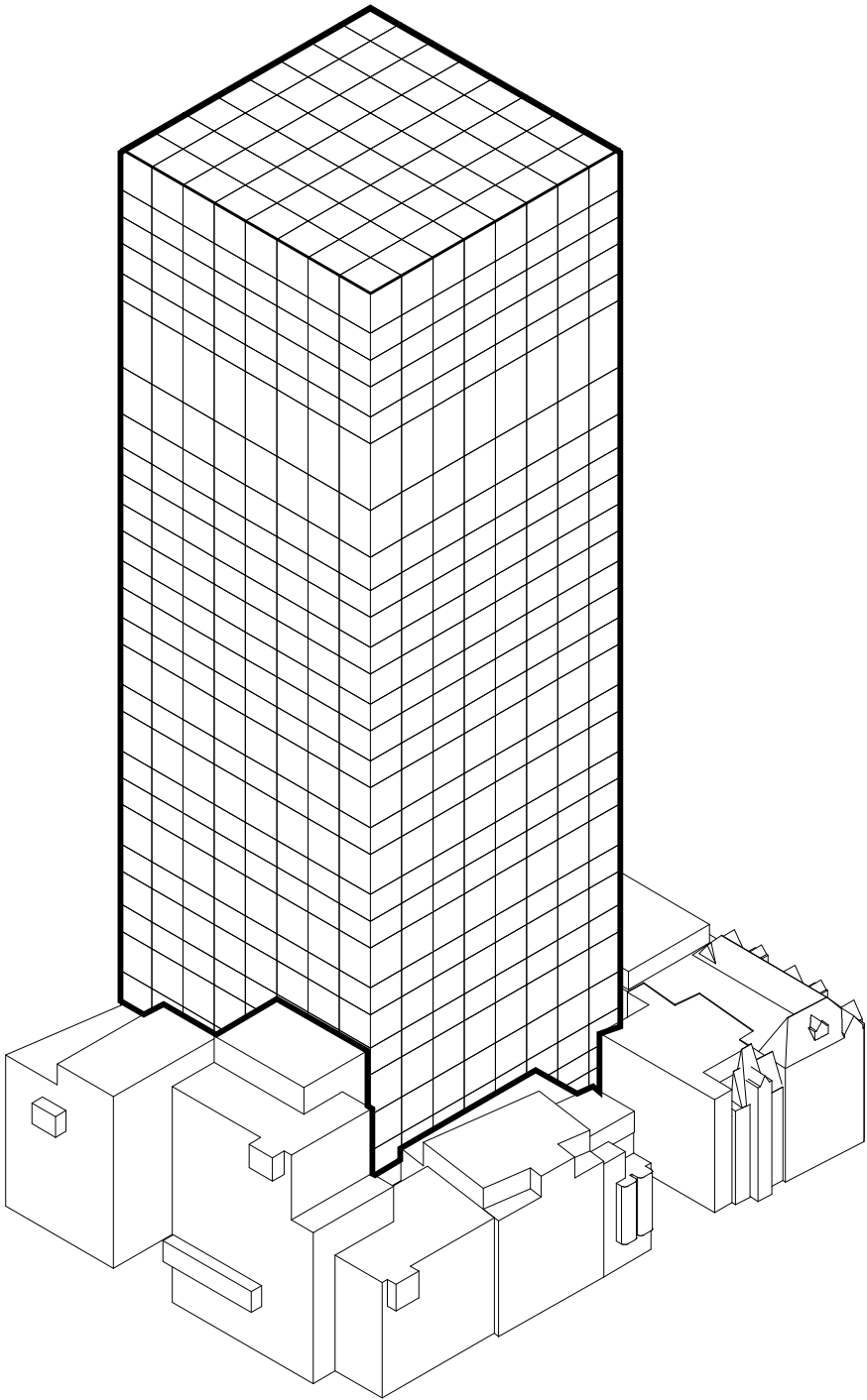




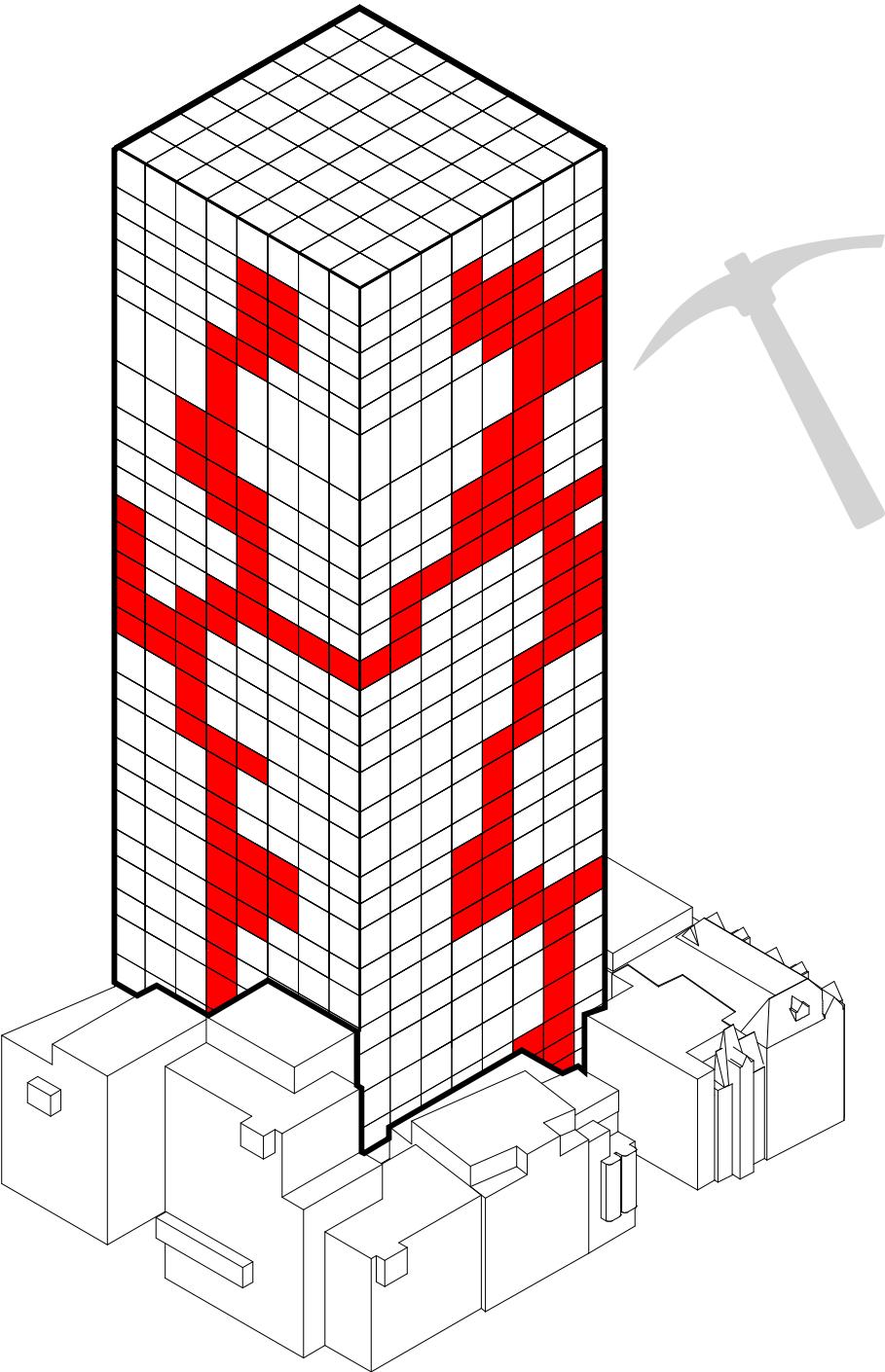
1 removal parts existing



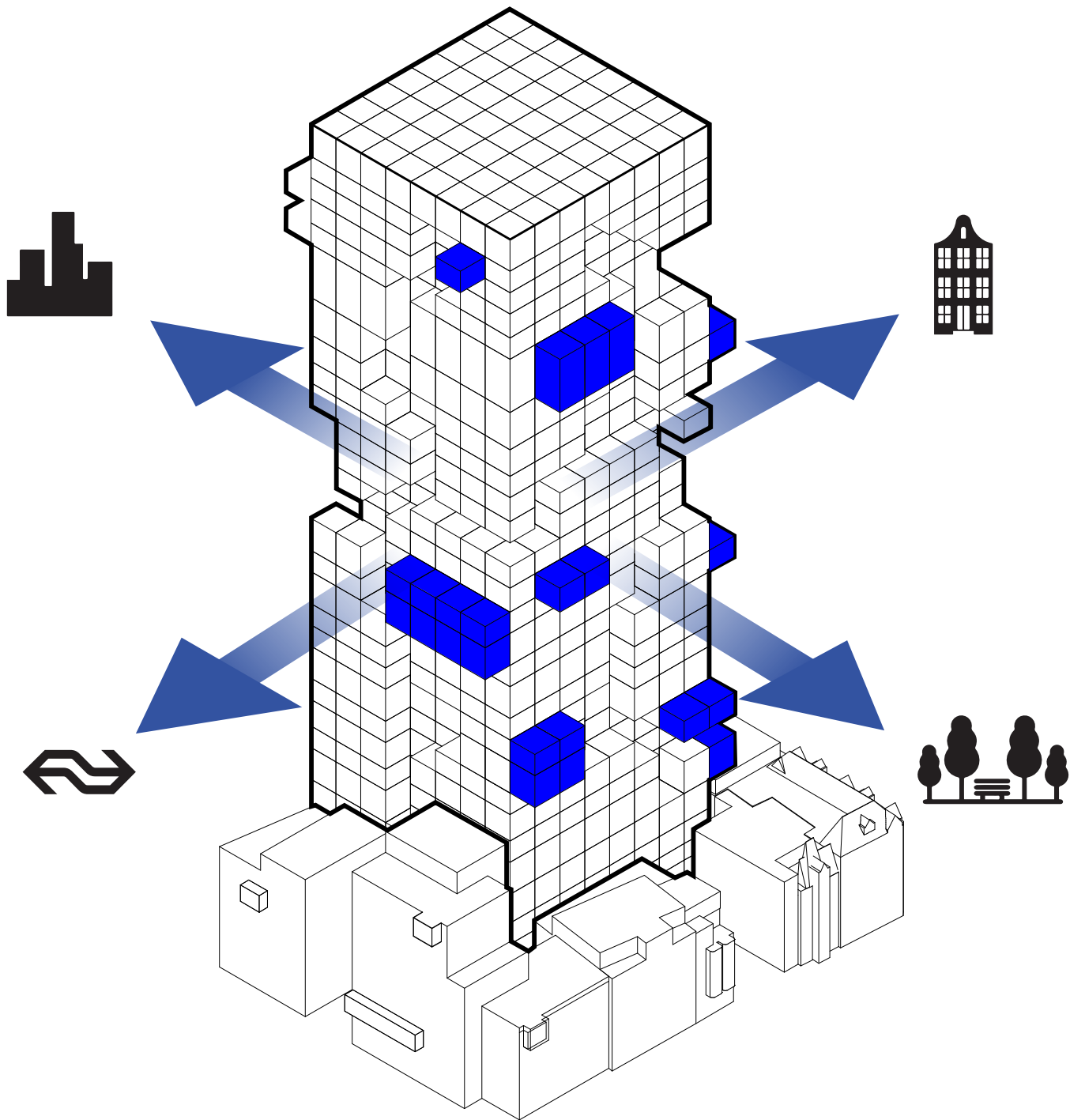
2 generic grid tower



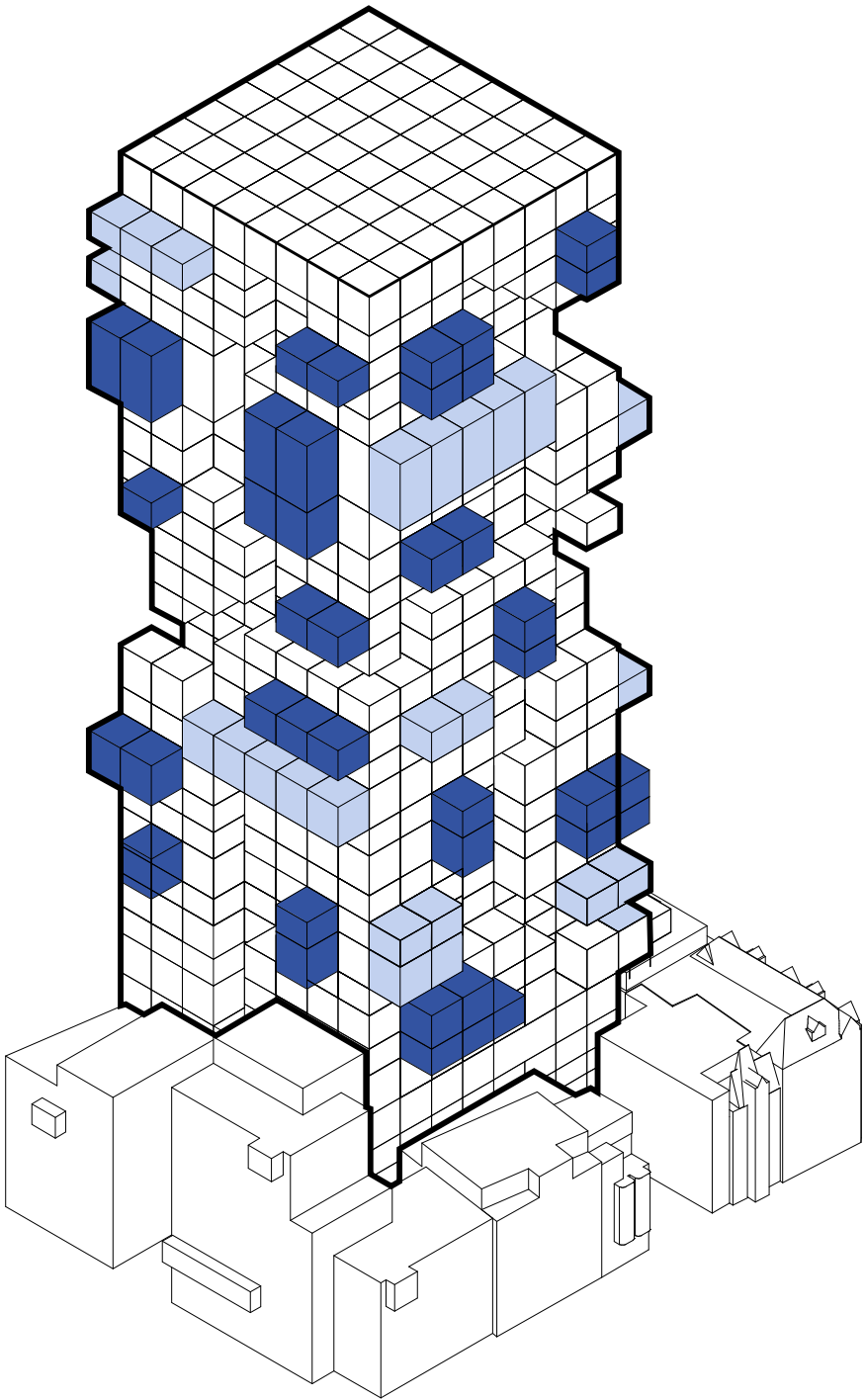
3 adding porosity



4 extending

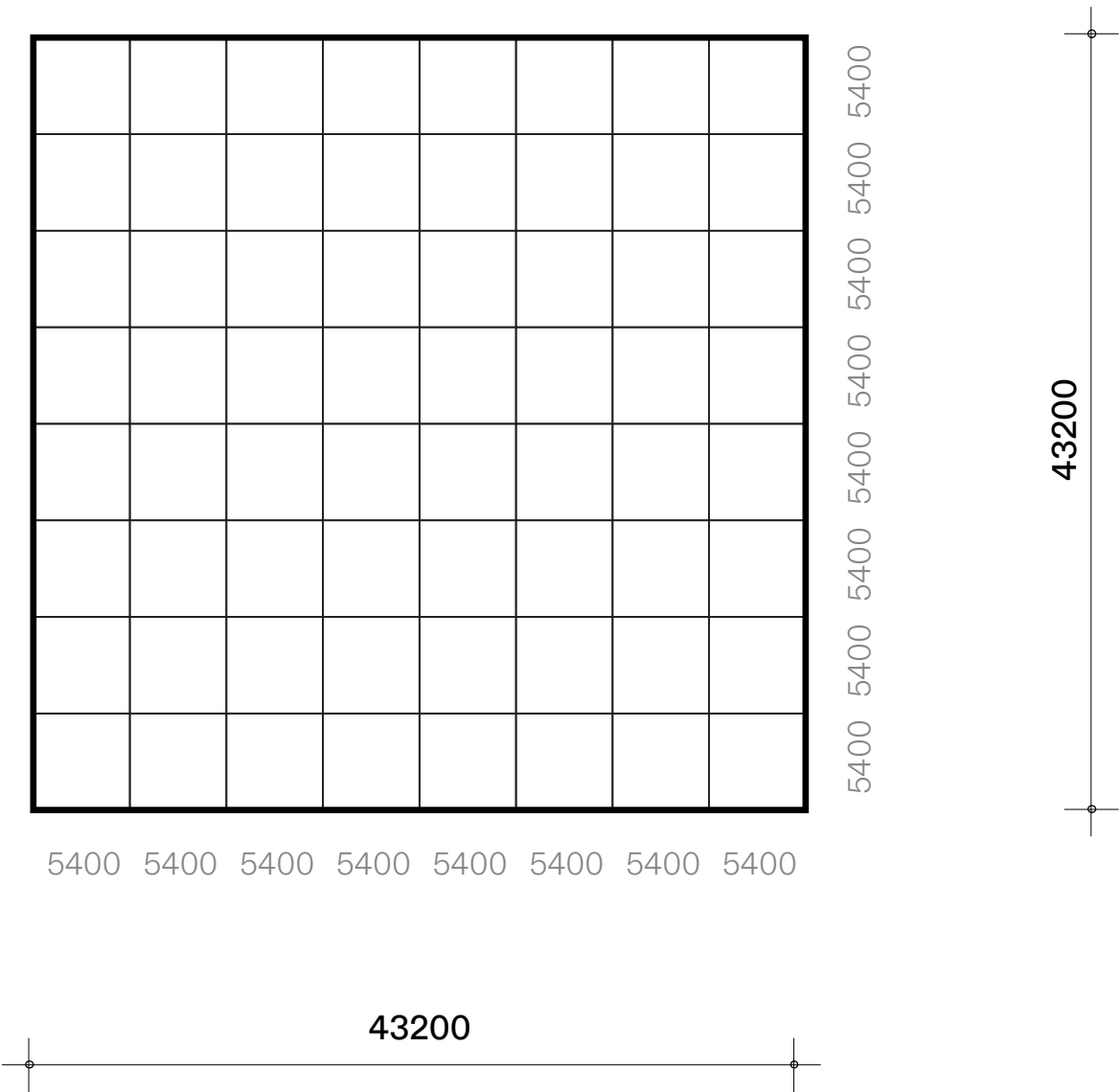


5 future-proof



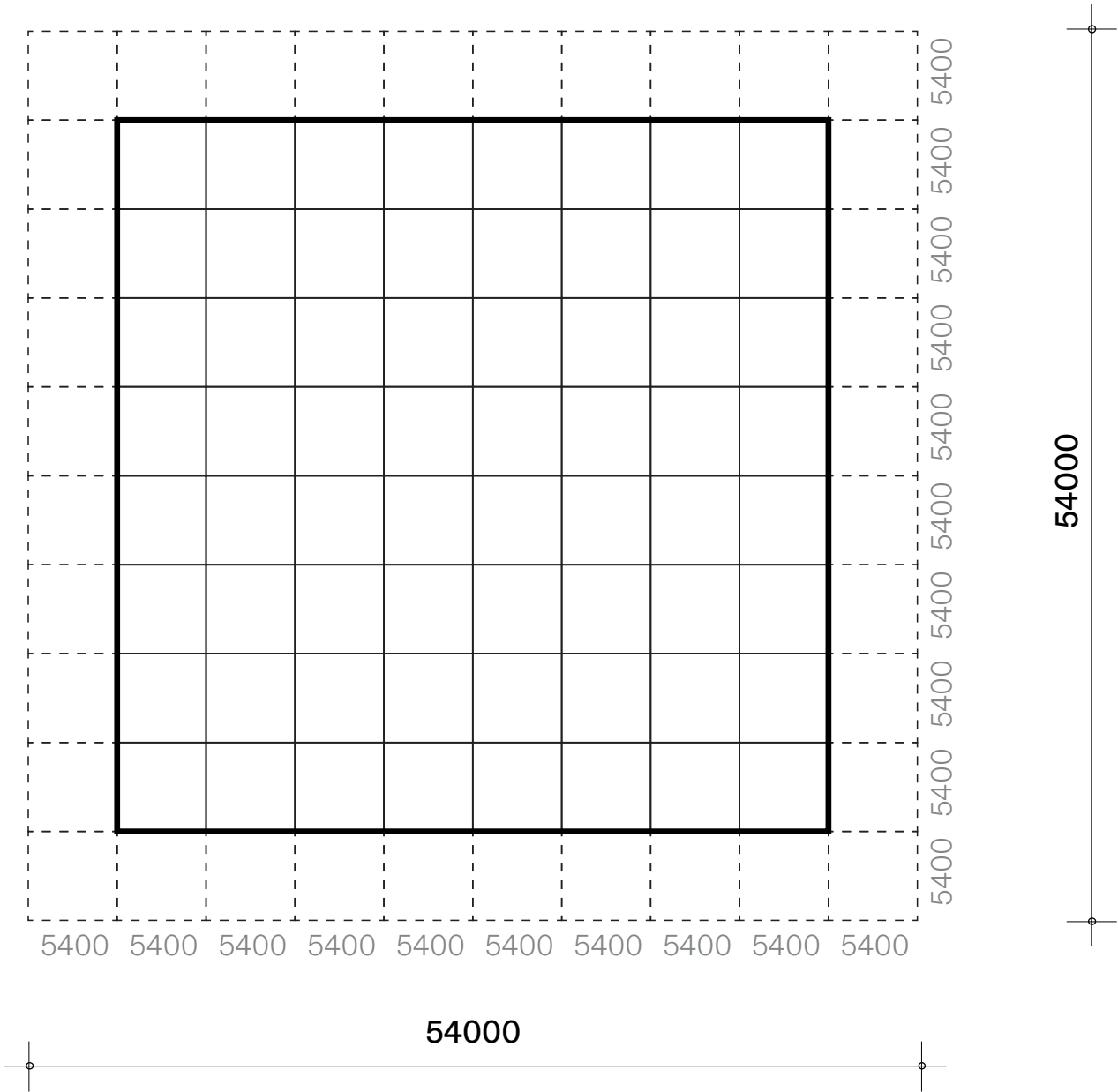
Floor Plan

Grid framework



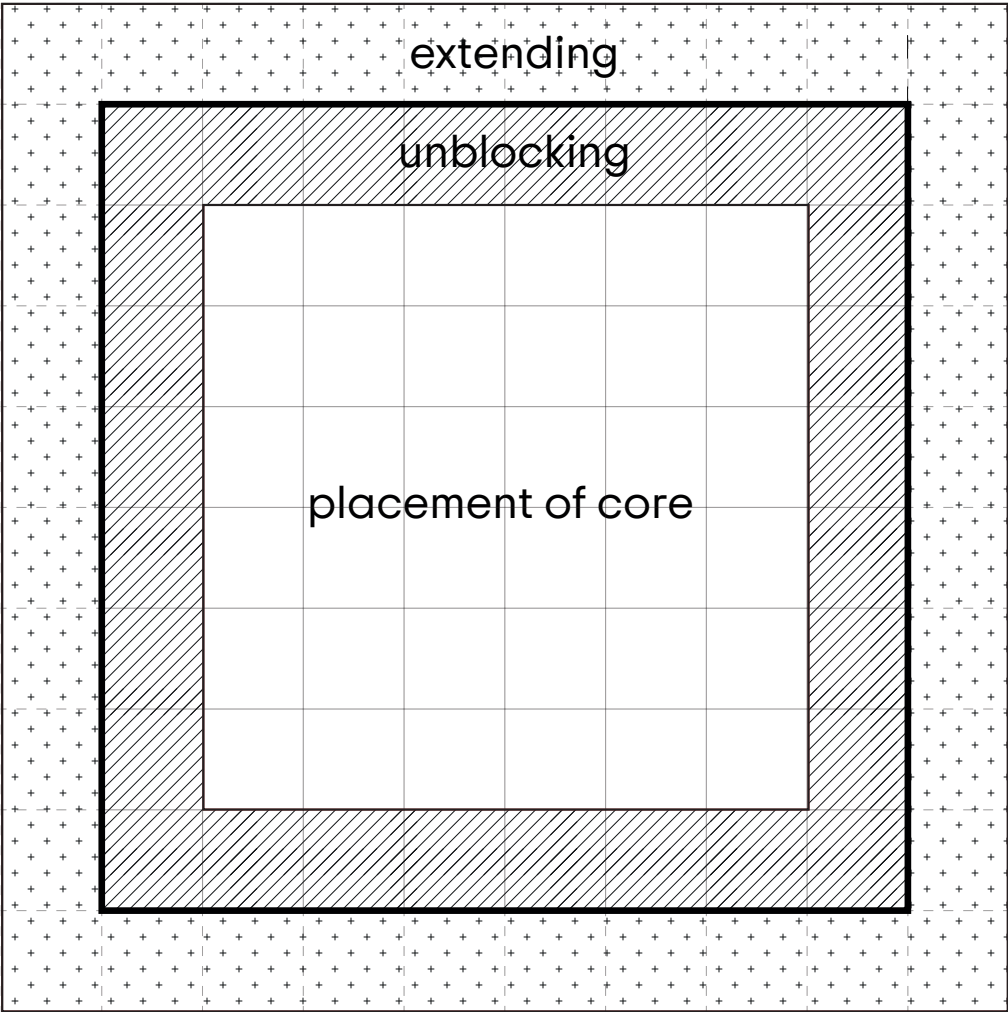
Floor Plan

Grid framework



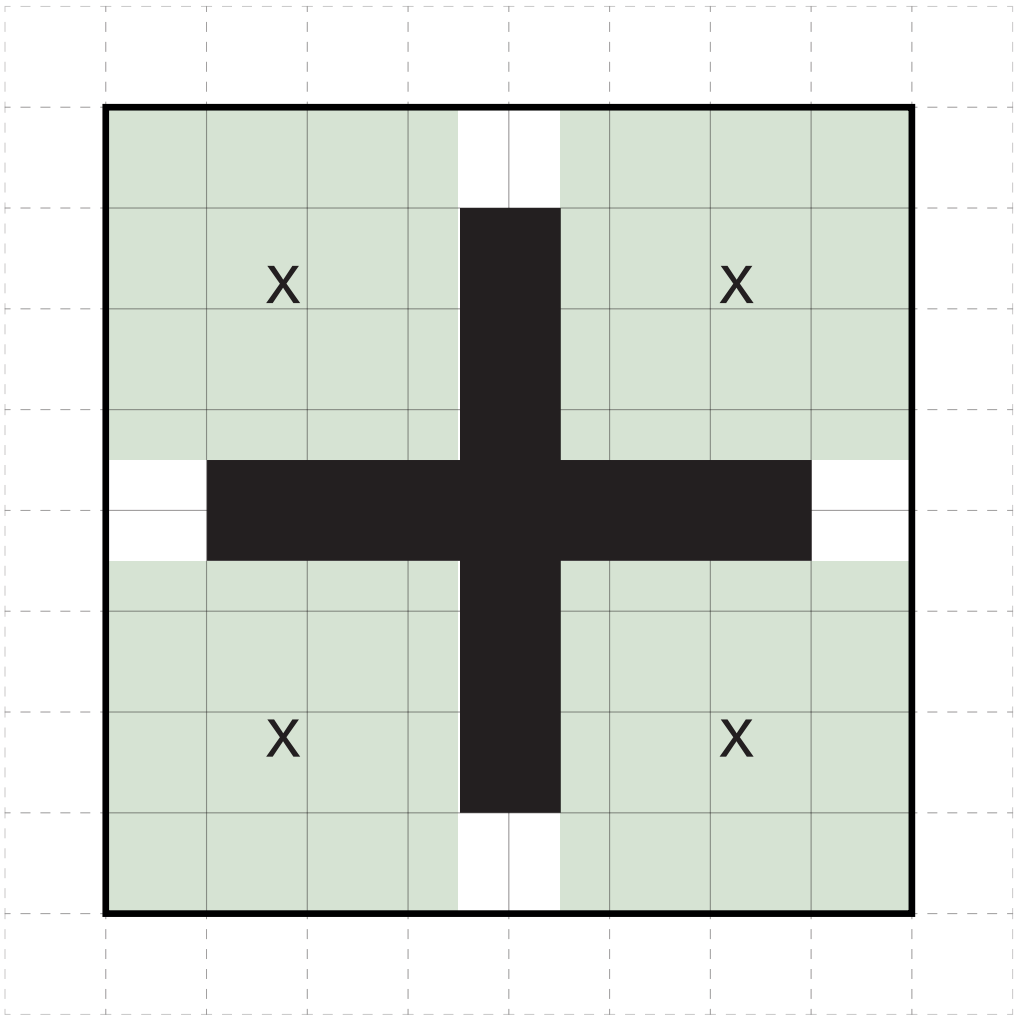
Floor Plan

Zones



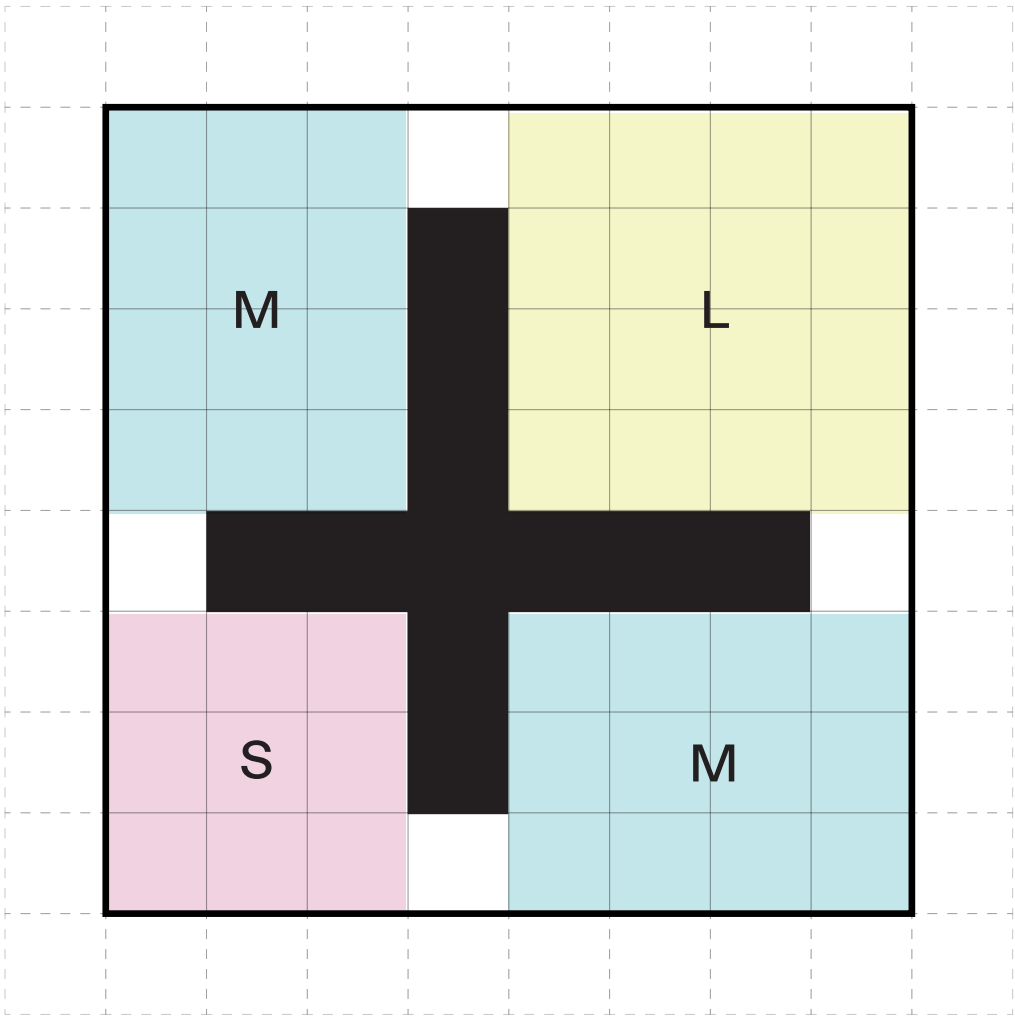
Floor Plan

Core



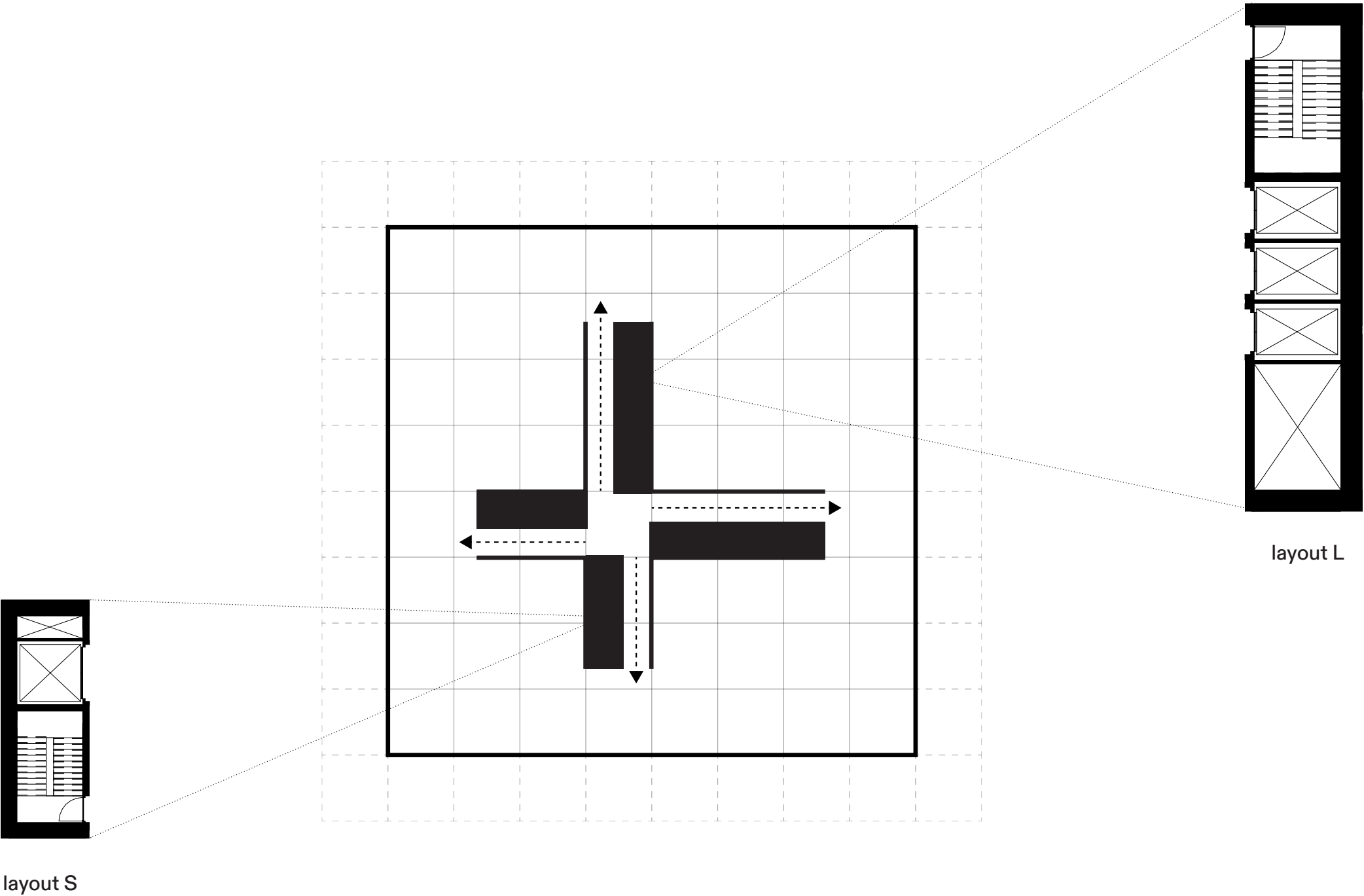
Floor Plan

Core



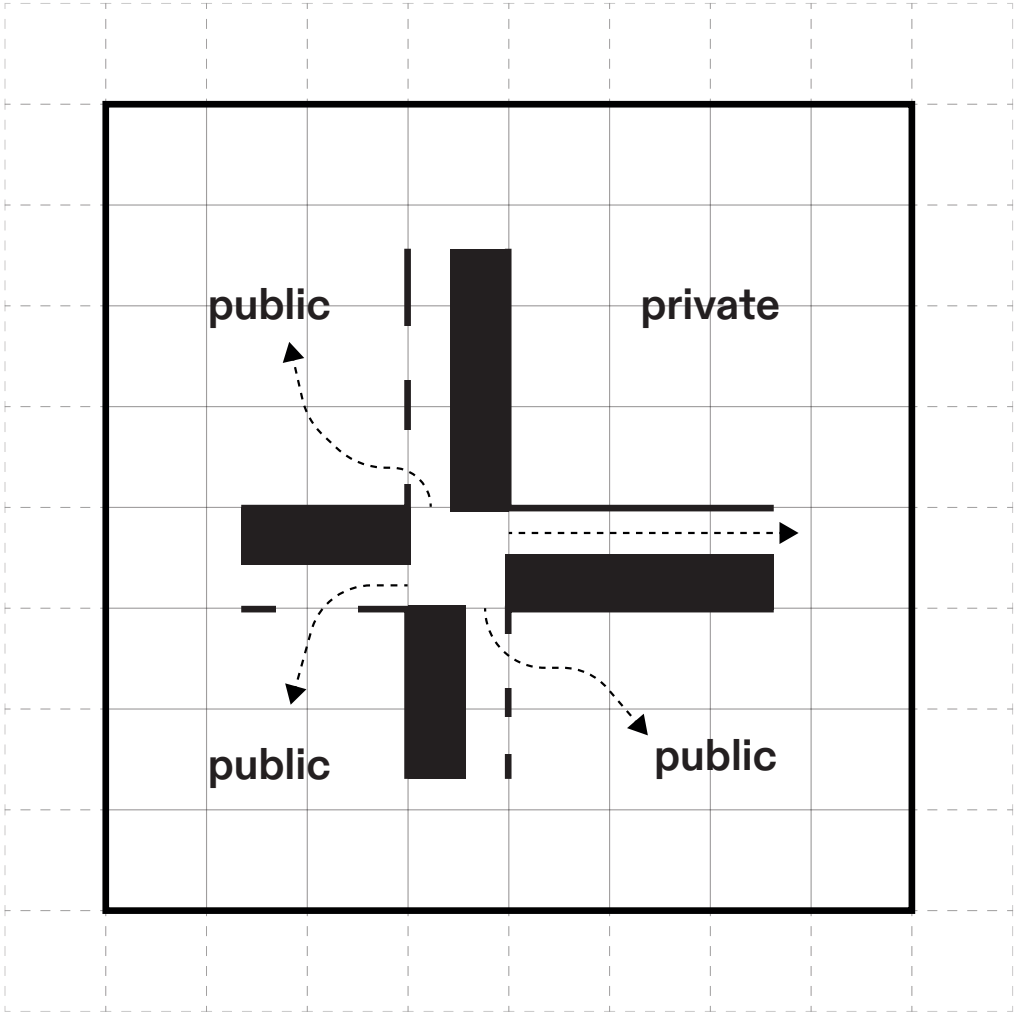
Floor Plan

Circulation



Floor Plan

Circulation

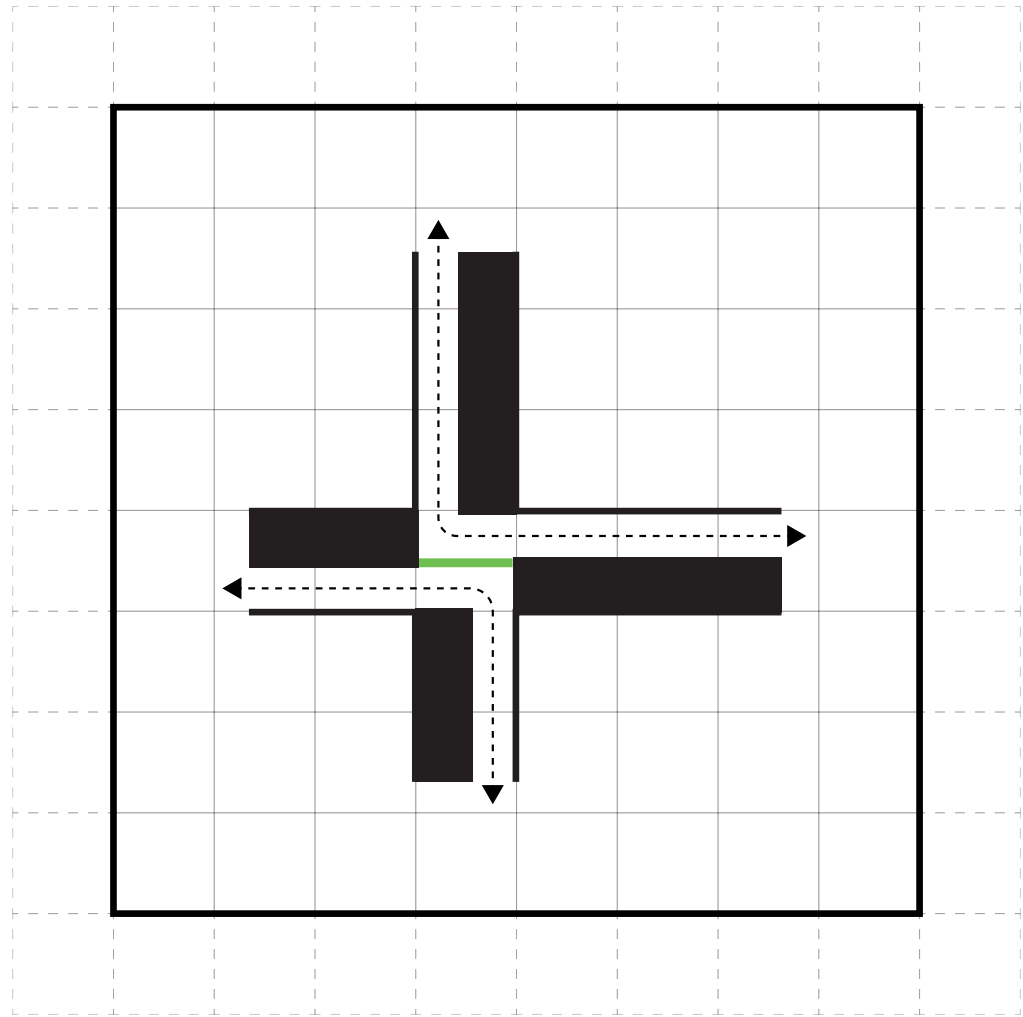


Floor Plan

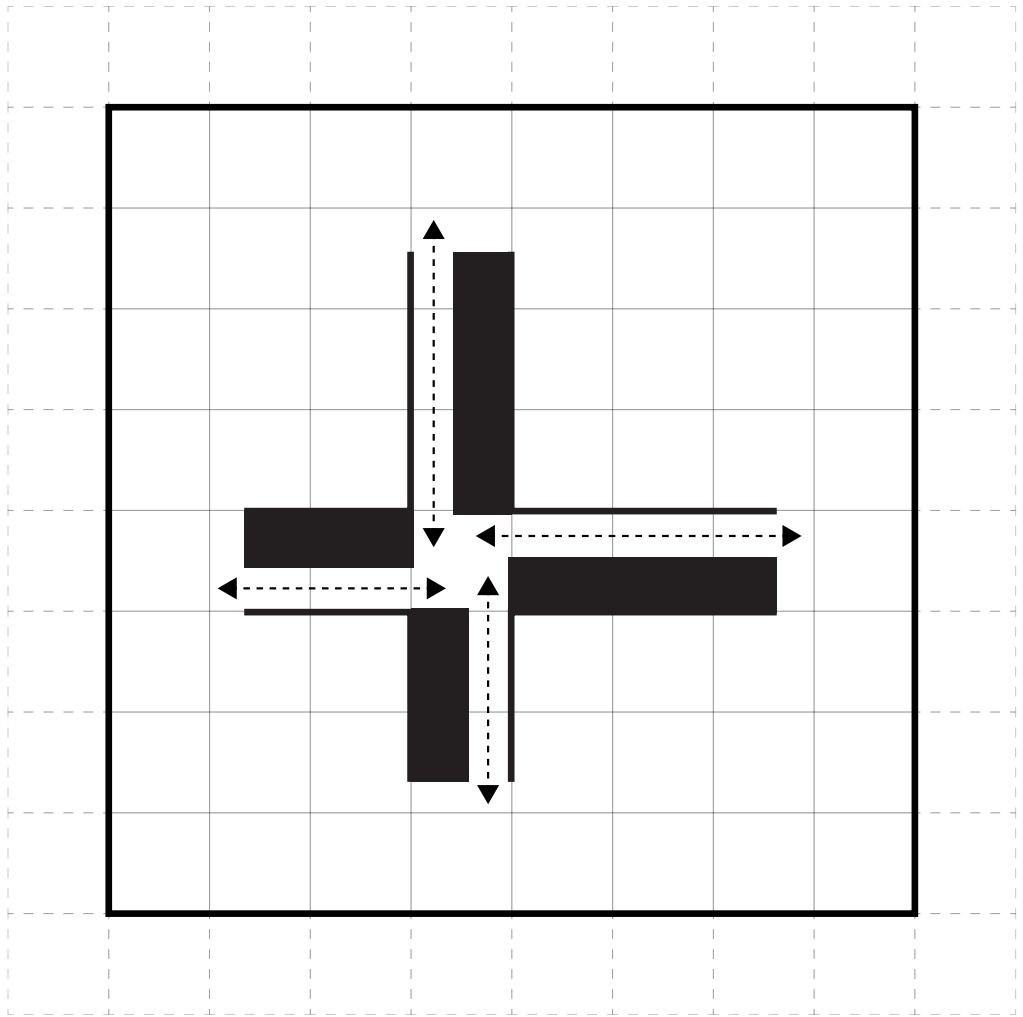
Circulation variations



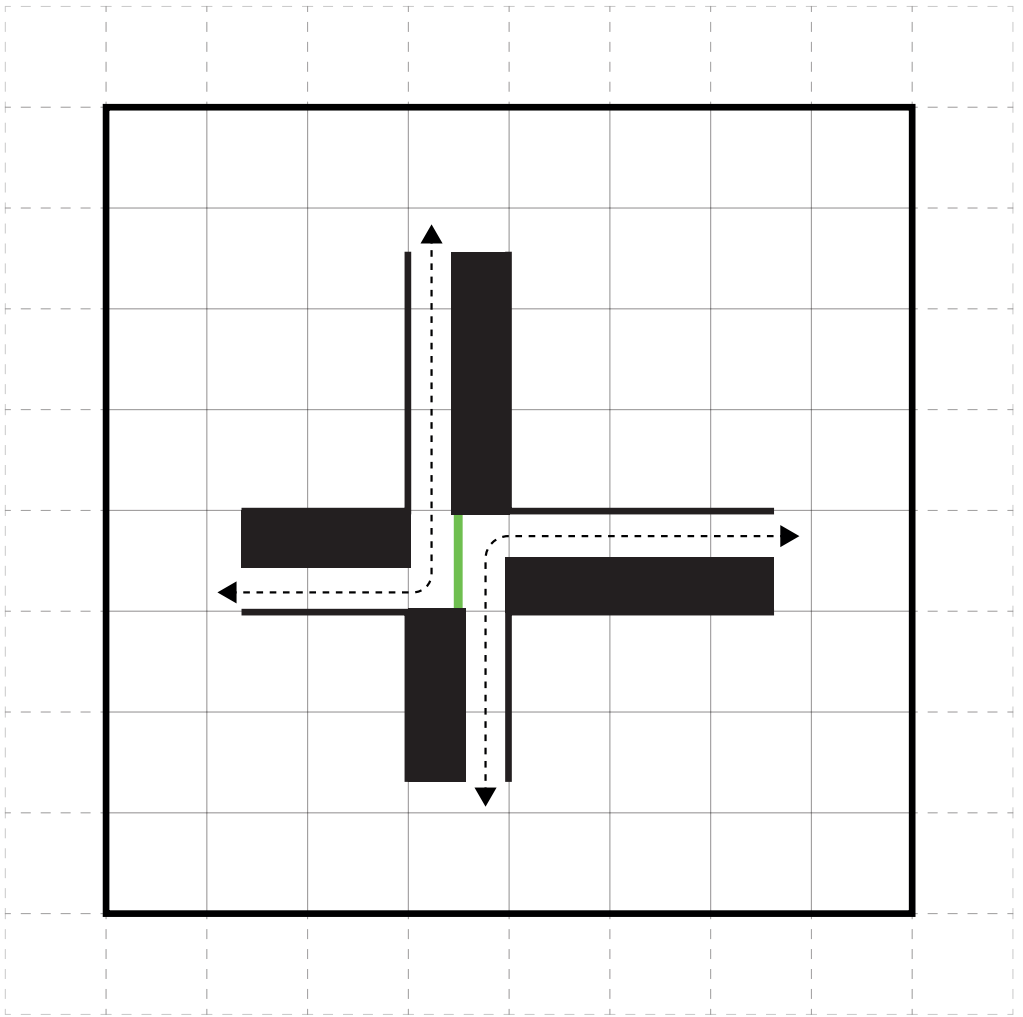
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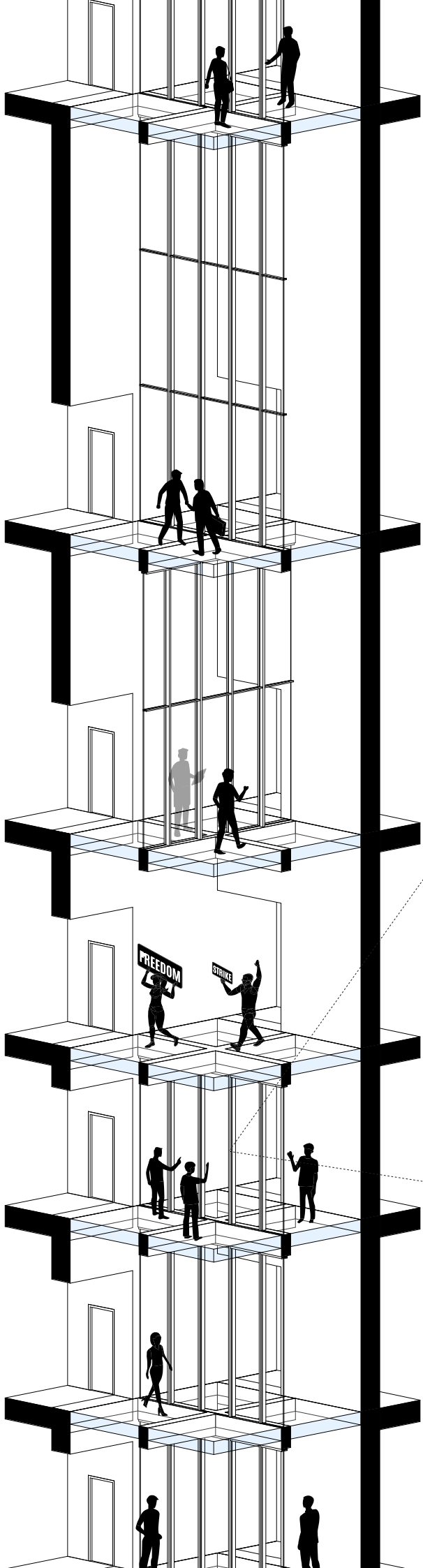


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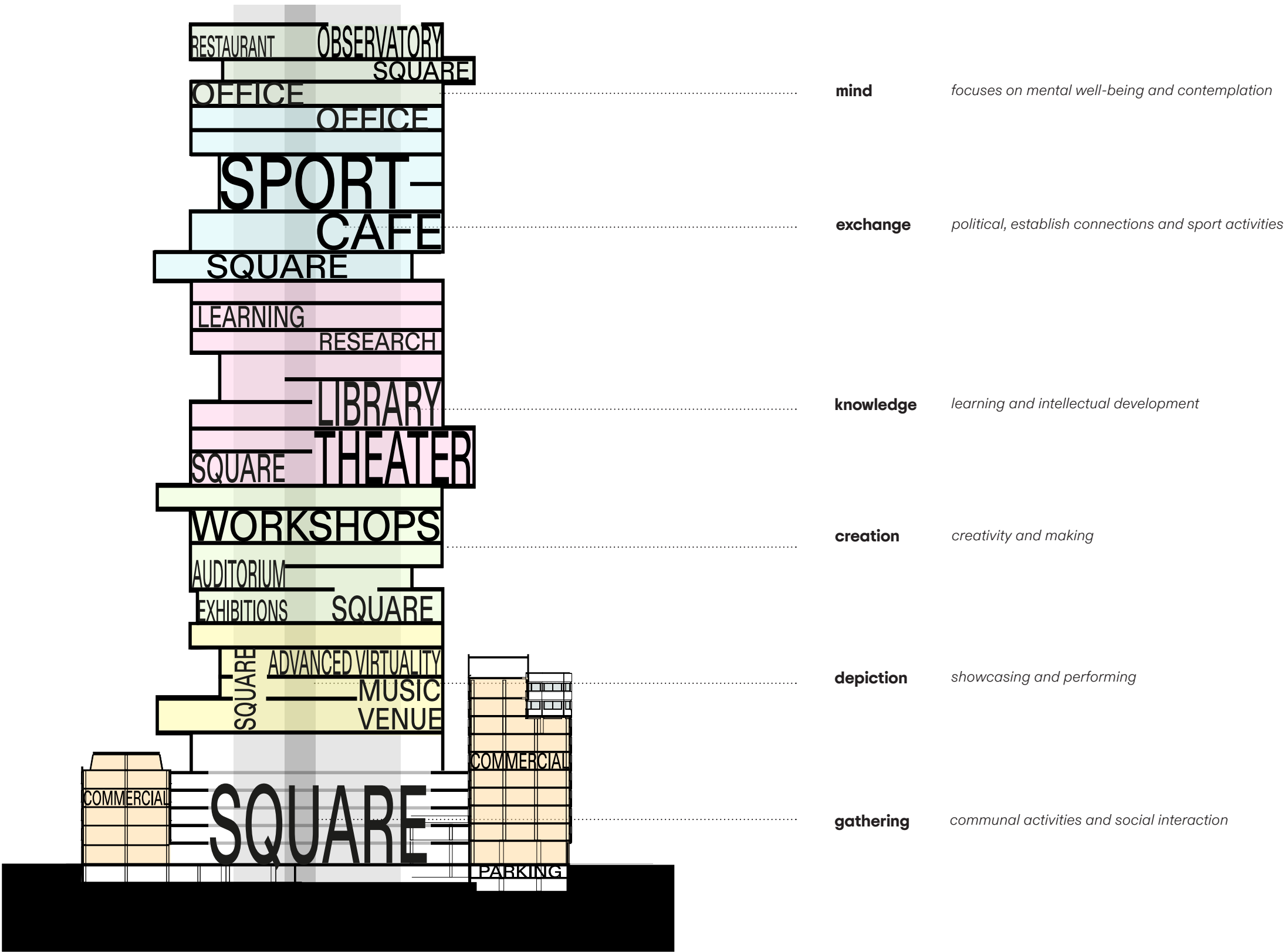


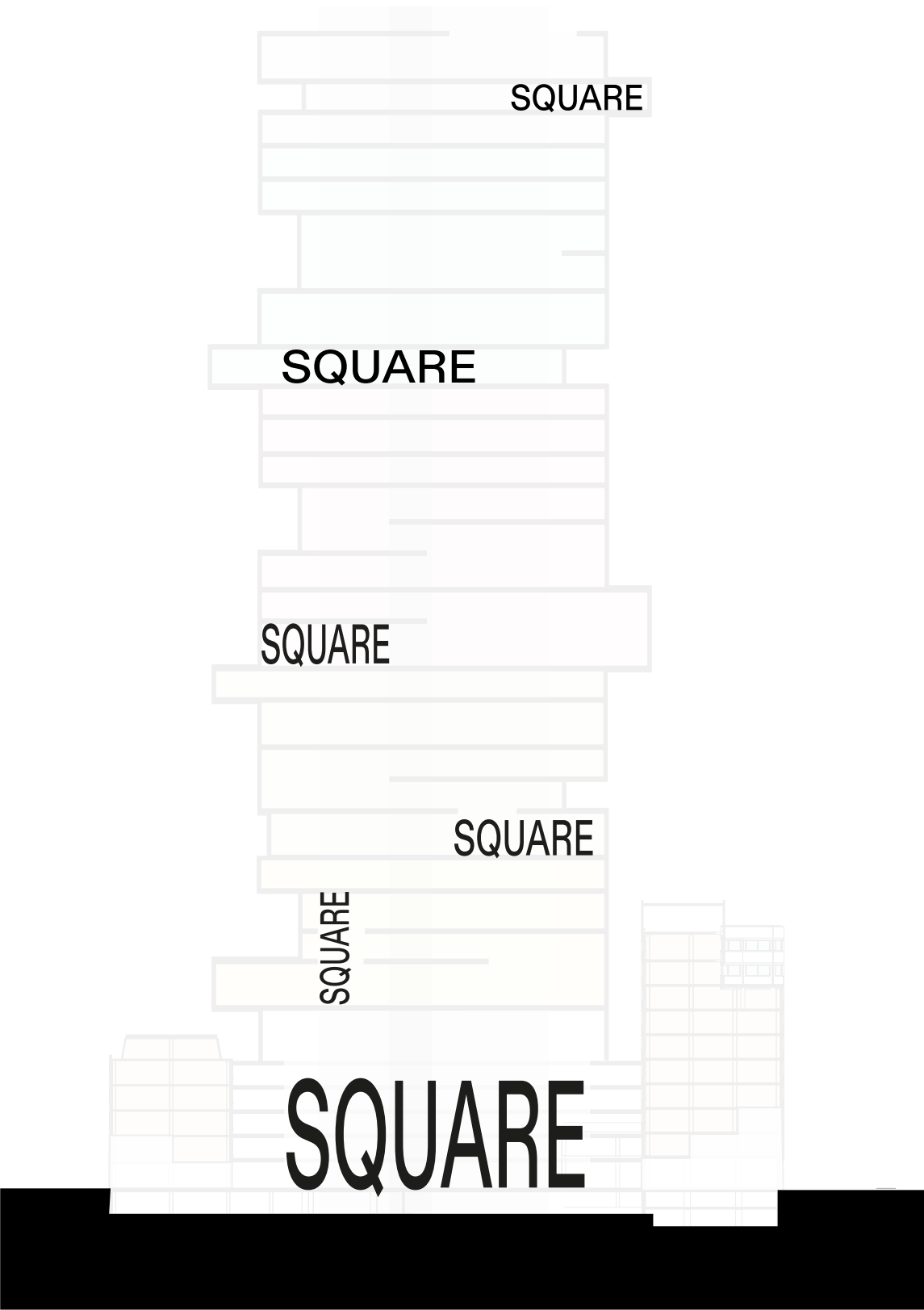
Core

Circulation



Program





mind *focuses on mental well-being and contemplation*

exchange *political, establish connections and sport activities*

knowledge *learning and intellectual development*

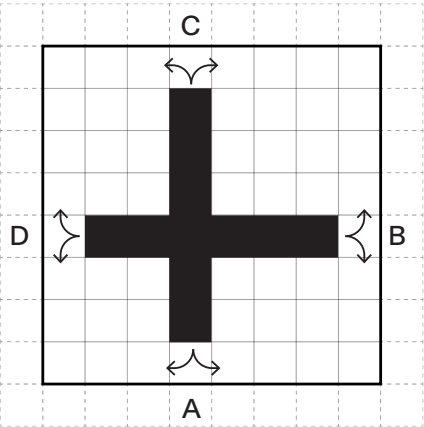
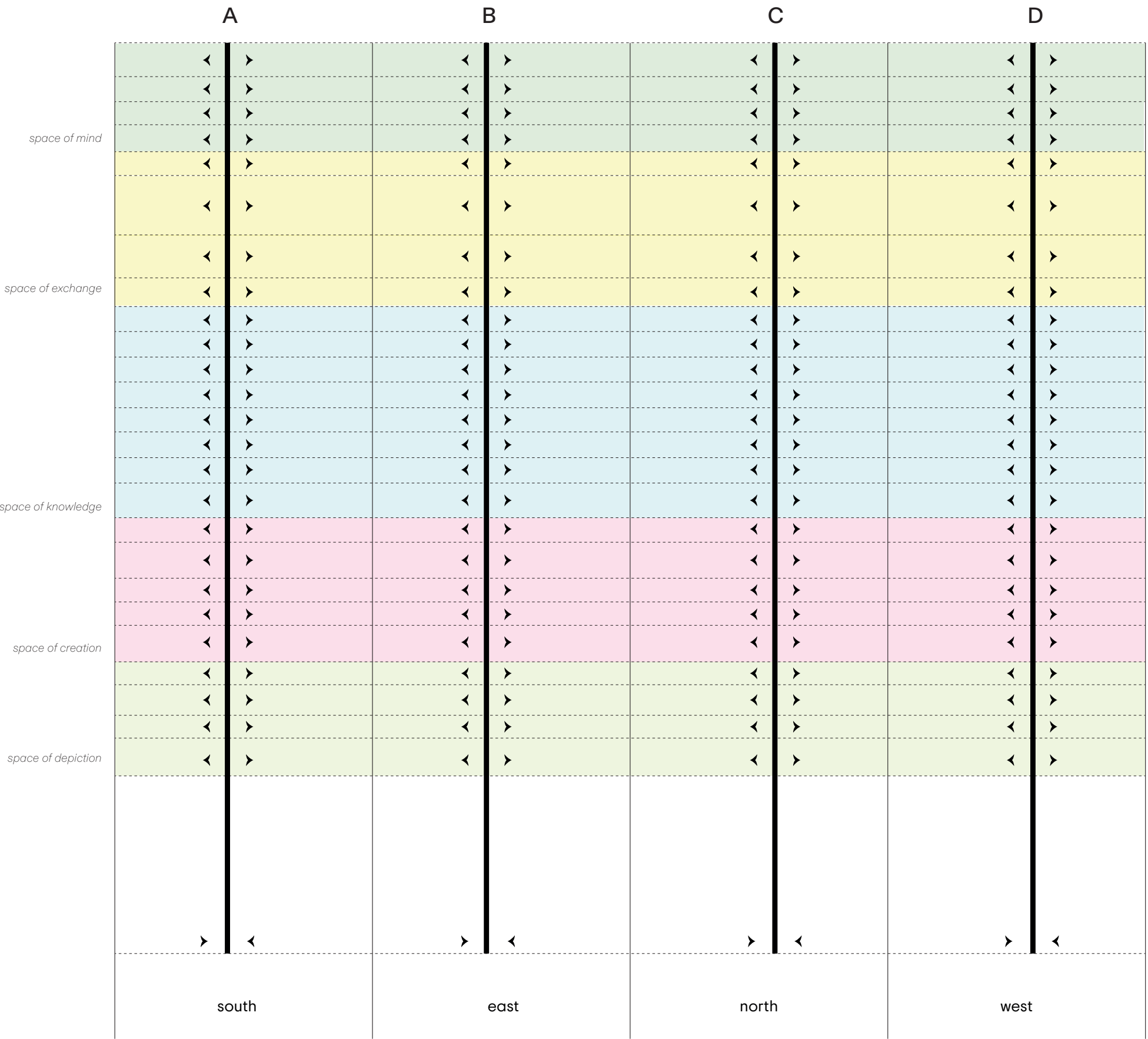
creation *creativity and making*

depiction *showcasing and performing*

gathering *communal activities and social interaction*

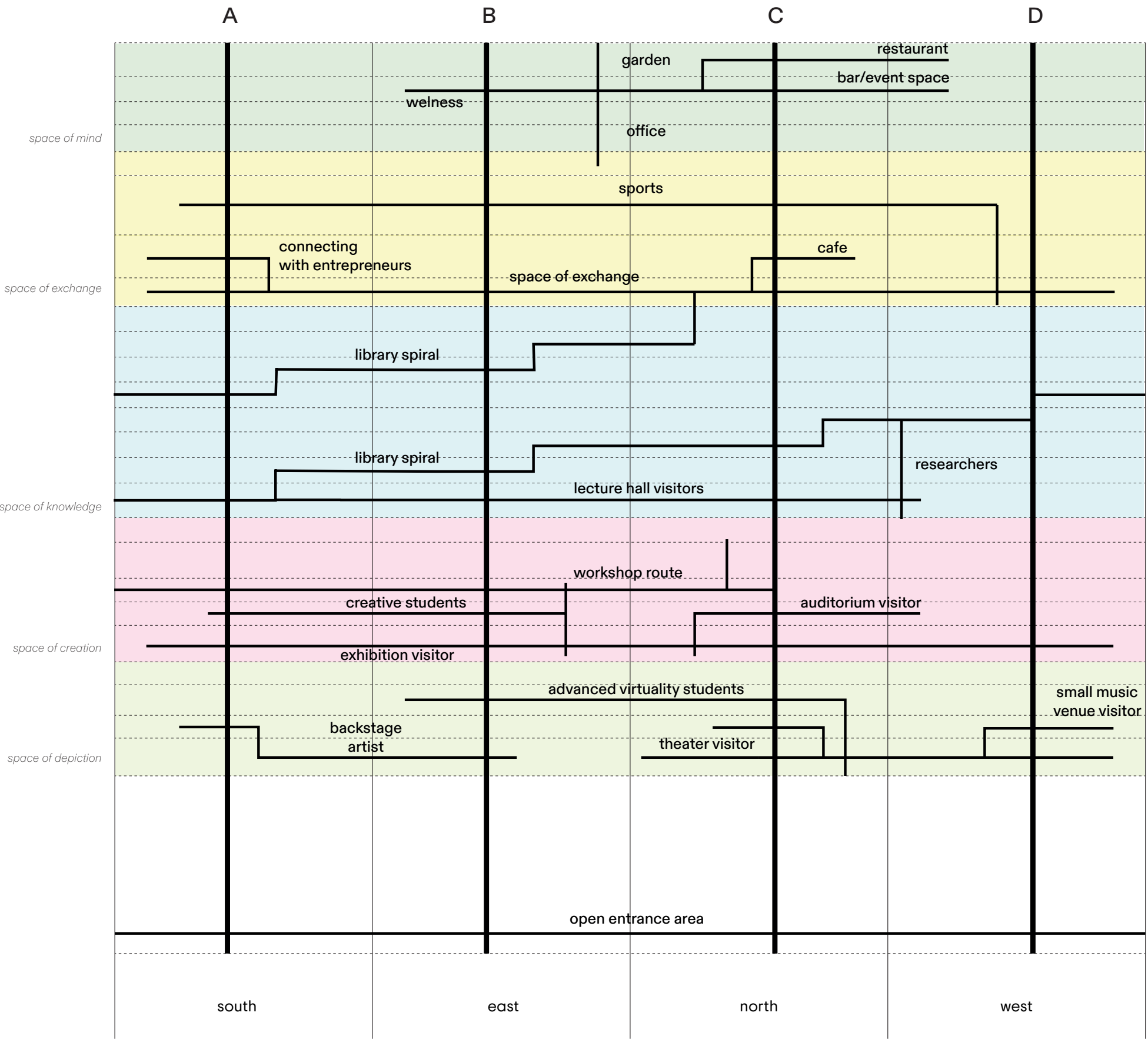
Circulation

Primary



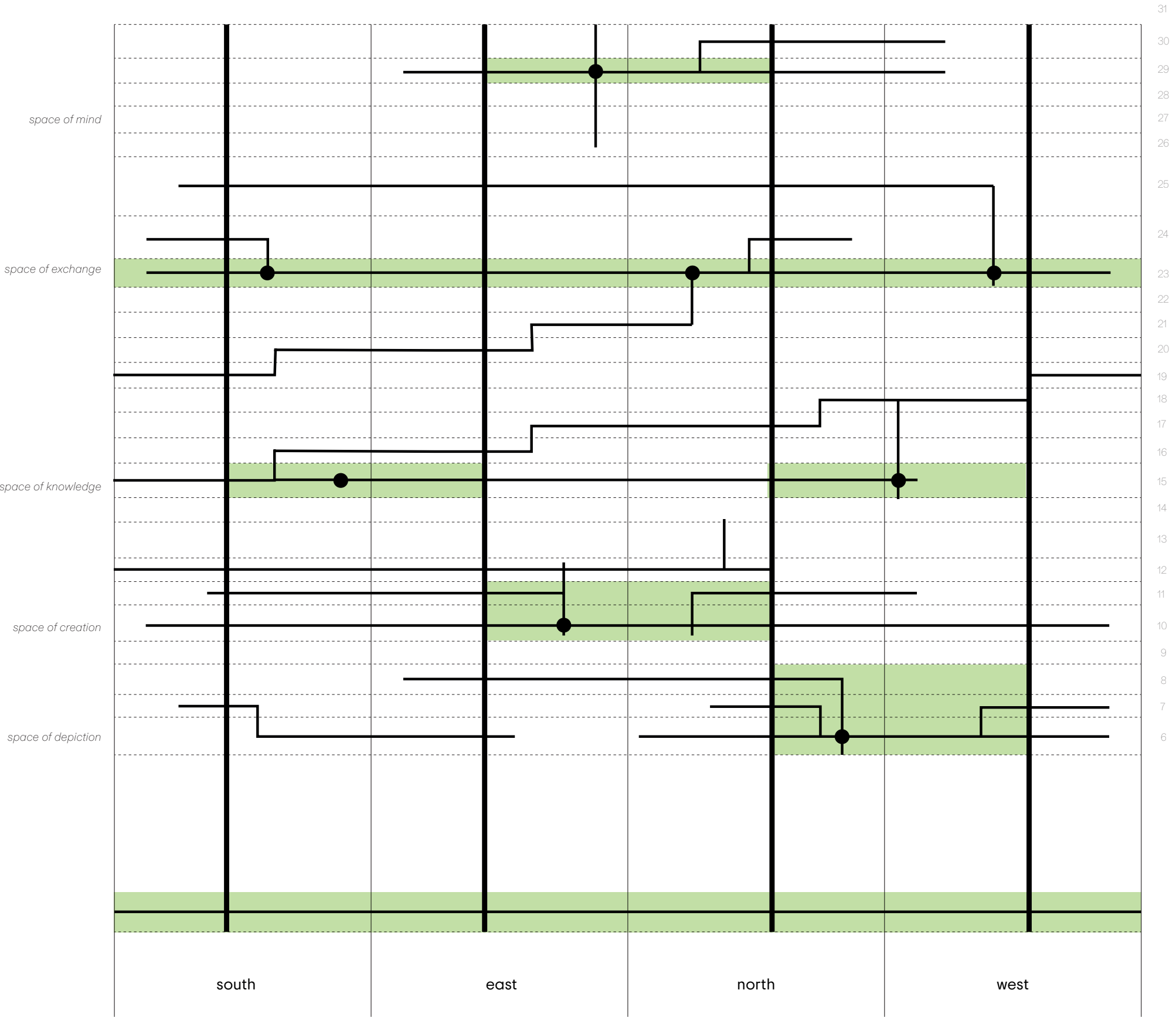
Circulation

Secondary



Circulation

Town Squares



Town Squares

Key values

1

Image and Identity

contribute to the character of a place,
fostering a sense of identity and
belonging

2

Flexibility

adapt to different needs and remain a
central hub of activity

3

Attractions and
Destinations

points of interest that provide reasons
for people to visit and explore

4

Accessibility and
Connectivity

good connectivity encourages frequent
use and movement

5

Human Scale

spaces that feel comfortable and
relatable to people















6

Seamless Integration with
Surroundings

extends its influence into the
surrounding program

Town Squares

Characteristics

		gathering		depiction		creation		knowledge		exchange		mind	
character		welcoming		creative		artistic		intellectual		dynamic		calming	
		open		bold		messy		studious		social		serene	
		central		expressive		inspiring		quiet		energetic		restful	
		inviting		vibrant		functional		engaging		collaborative		peaceful	
performative potential			star shape		relaxation		being inside		relaxation		gathering		relaxation
			gathering		ceremonial		meeting		meeting		strolling		scene
			strolling		gathering		gathering		strolling		meeting		being inside
			meeting		scene		corso		scene		ceremonial		
											scene		

Town Squares

Goals and challenges

UN Sustainable Development Goals (SDG's)

- 3

Good health and well-being
- 4

Quality Education
- 6

Clean water and sanitation
- 11

Sustainable cities and communities
- 12









































Responsible consumption and production
- 13

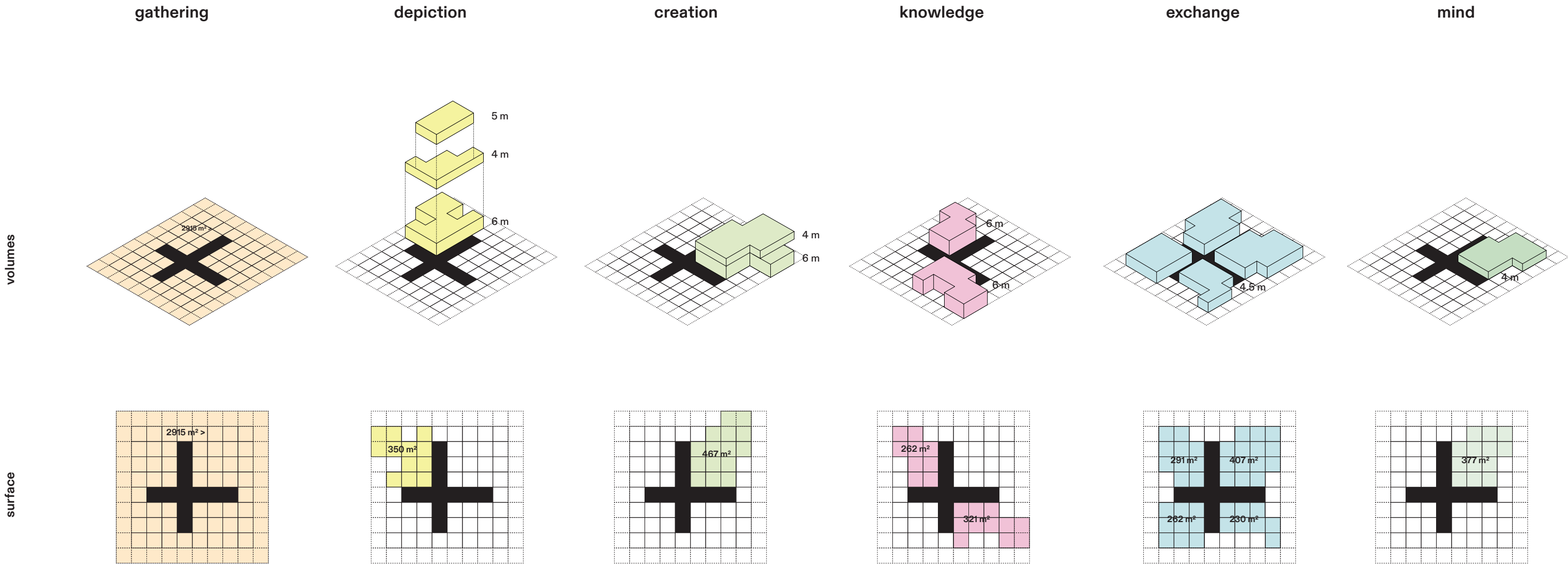
Climate action
- 15

Life on earth

Urban challenges

- Good health and well-being
- Growth of the city
- Inclusive and diverse city
- Quality of life in the city

	gathering	depiction	creation	knowledge	exchange	mind
character	welcoming open central inviting	creative bold expressive vibrant	artistic messy inspiring functional	intellectual studious quiet engaging	dynamic social energetic collaborative	calming serene restful peaceful
performative potential	<div><div></div>star shape</div> <div><div></div>gathering</div> <div><div></div>strolling</div> <div><div></div>meeting</div>	<div><div></div>relaxation</div> <div><div></div>ceremonial</div> <div><div></div>gathering</div> <div><div></div>scene</div>	<div><div></div>being inside</div> <div><div></div>meeting</div> <div><div></div>gathering</div> <div><div></div>corso</div>	<div><div></div>relaxation</div> <div><div></div>meeting</div> <div><div></div>strolling</div> <div><div></div>scene</div>	<div><div></div>gathering</div> <div><div></div>strolling</div> <div><div></div>meeting</div> <div><div></div>ceremonial</div> <div><div></div>scene</div>	<div><div></div>relaxation</div> <div><div></div>scene</div> <div><div></div>being inside</div>
urban challenges	<div><div>3</div><div>11</div><div>13</div></div> <div><div></div><div></div><div></div></div>	<div><div>3</div><div>4</div><div>11</div></div> <div><div></div><div></div></div>	<div><div>3</div><div>4</div><div>11</div></div> <div><div></div><div></div><div></div></div>	<div><div>11</div><div>13</div></div> <div><div></div><div></div></div>	<div><div>4</div><div>11</div><div>13</div></div> <div><div></div><div></div><div></div></div>	<div><div>3</div><div>6</div><div>11</div><div>15</div></div> <div><div></div><div></div><div></div></div>

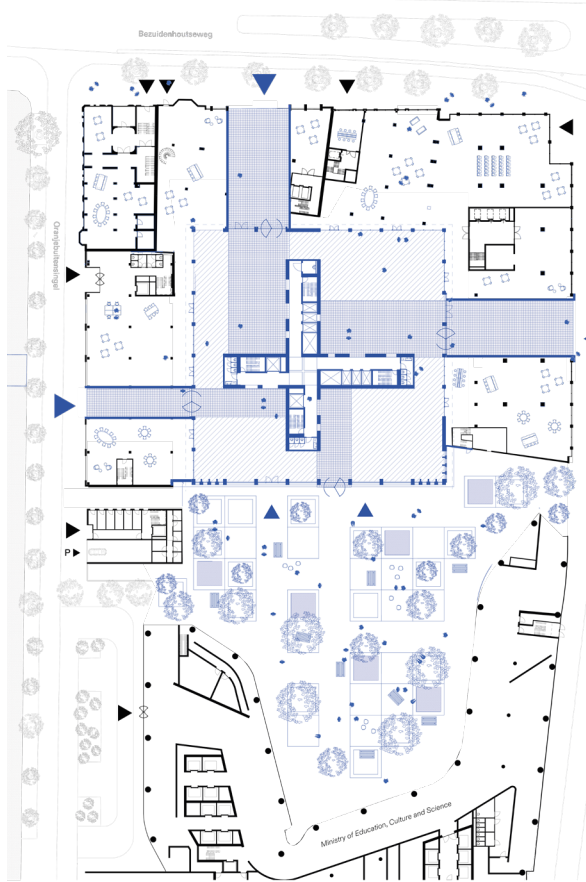


Town Squares

Floor plans

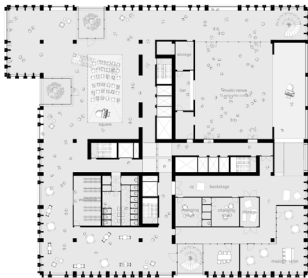


gathering

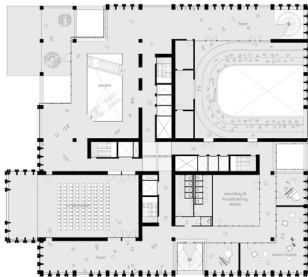


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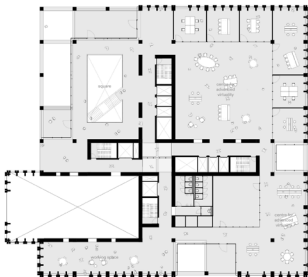
depiction



06

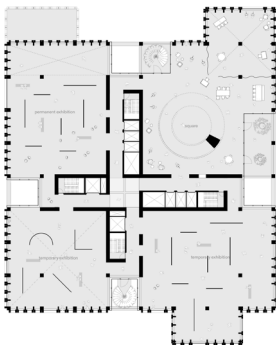


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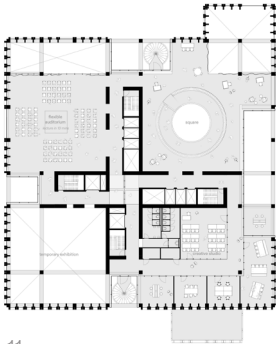


08

creation

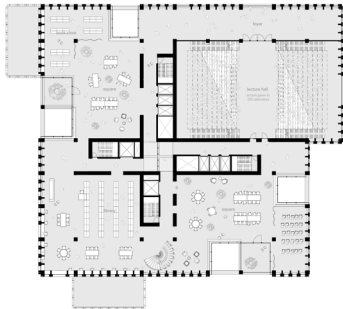


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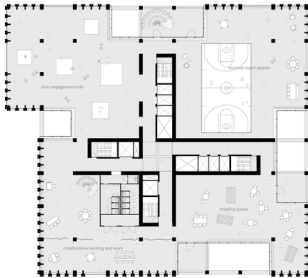
11

knowledge



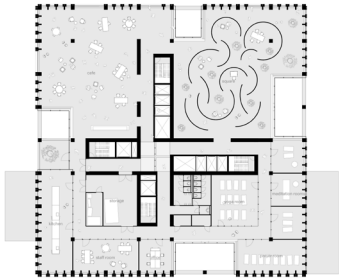
15

exchange



23

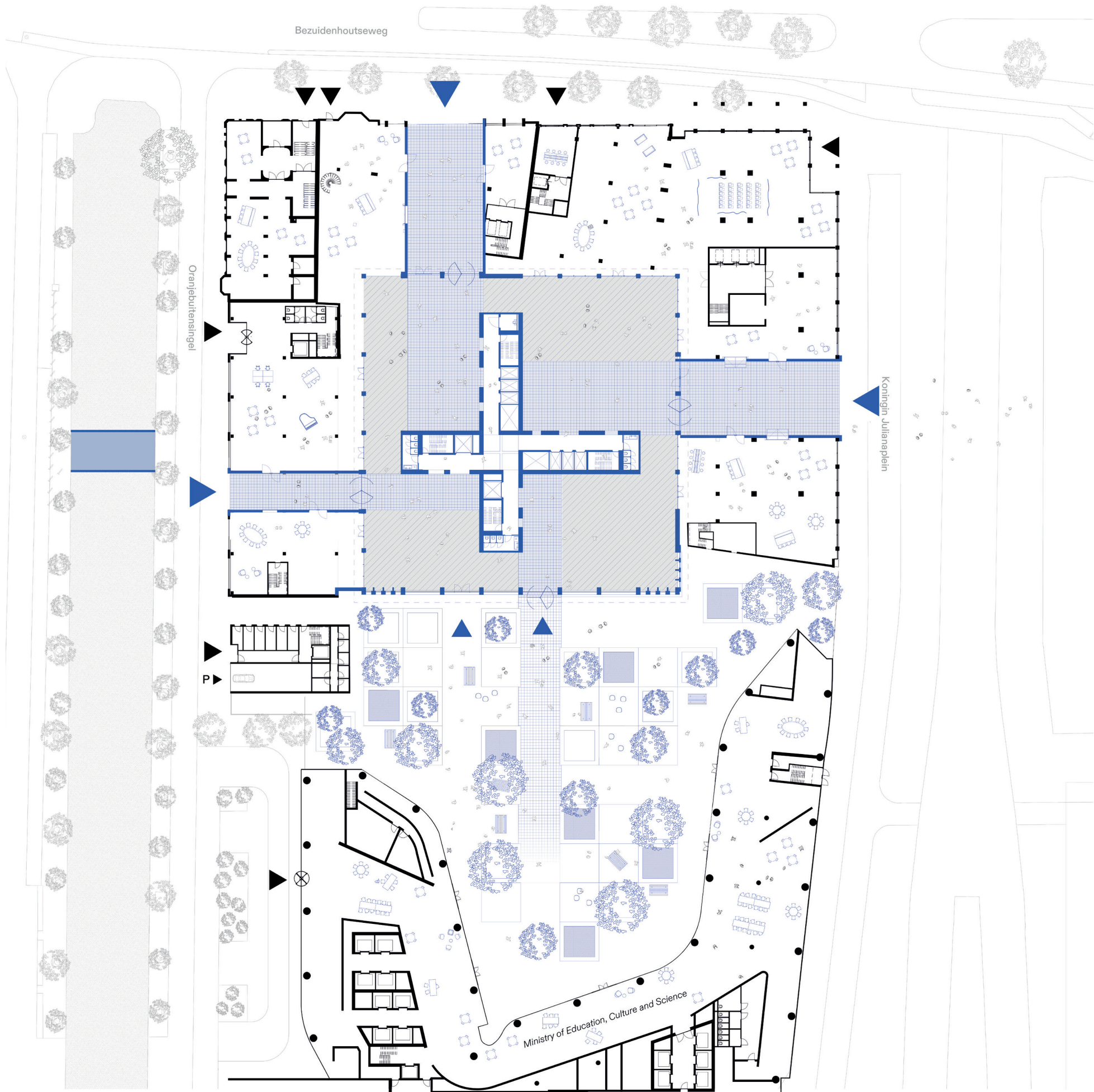
mind



29

Space of gathering

Ground floor

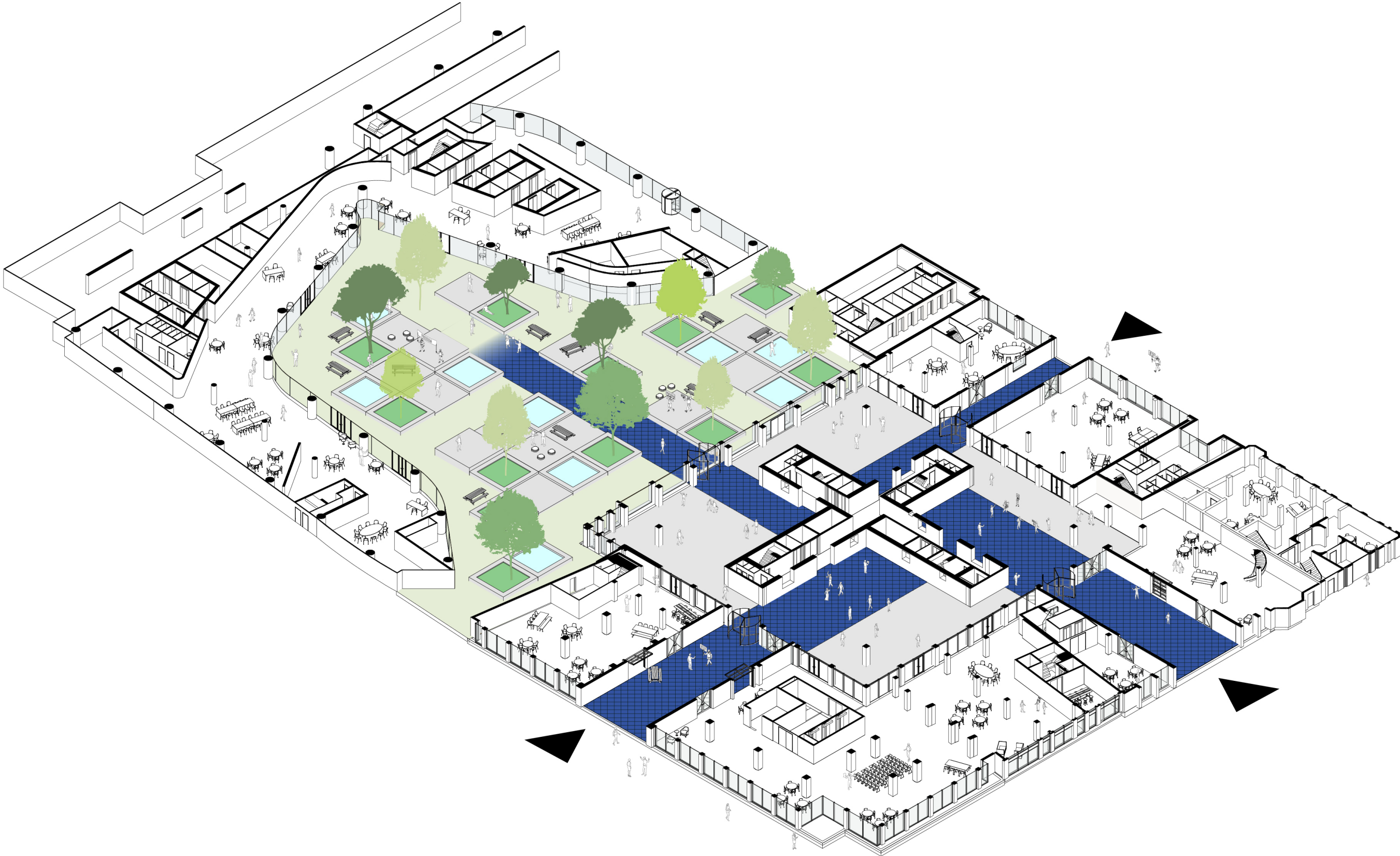


Space of gathering



Space of gathering

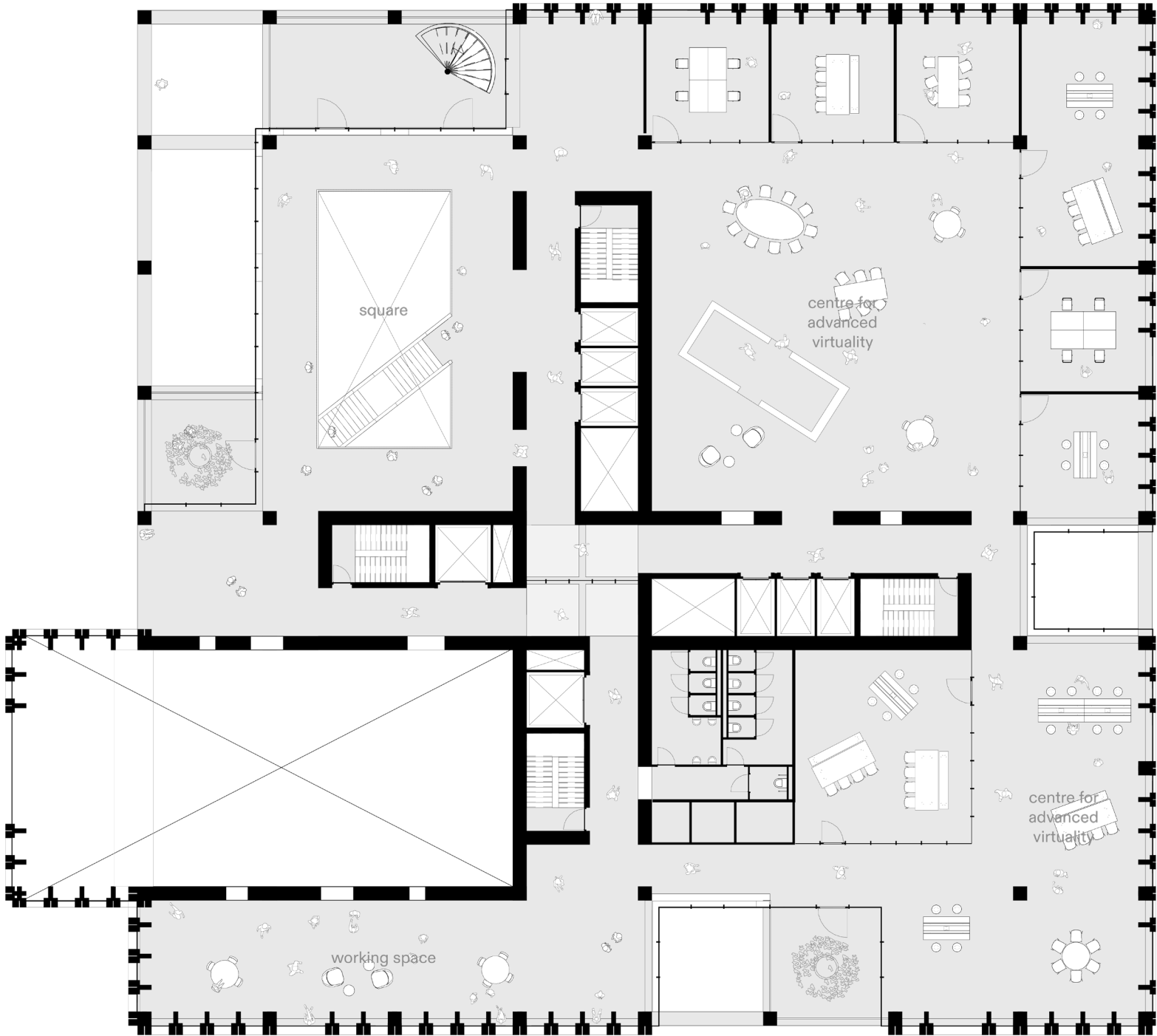
Axonometric view



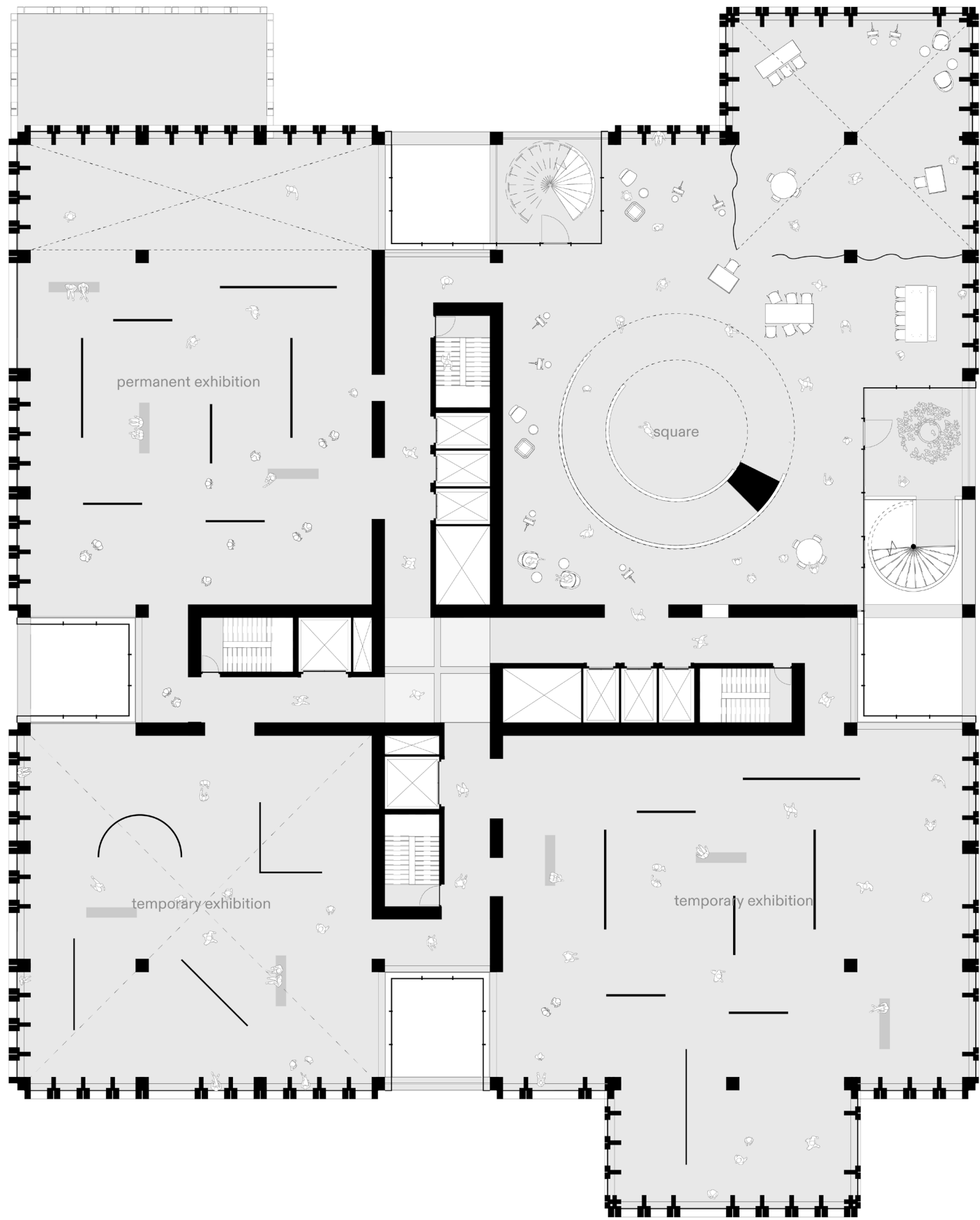
Space of gathering

Courtyard



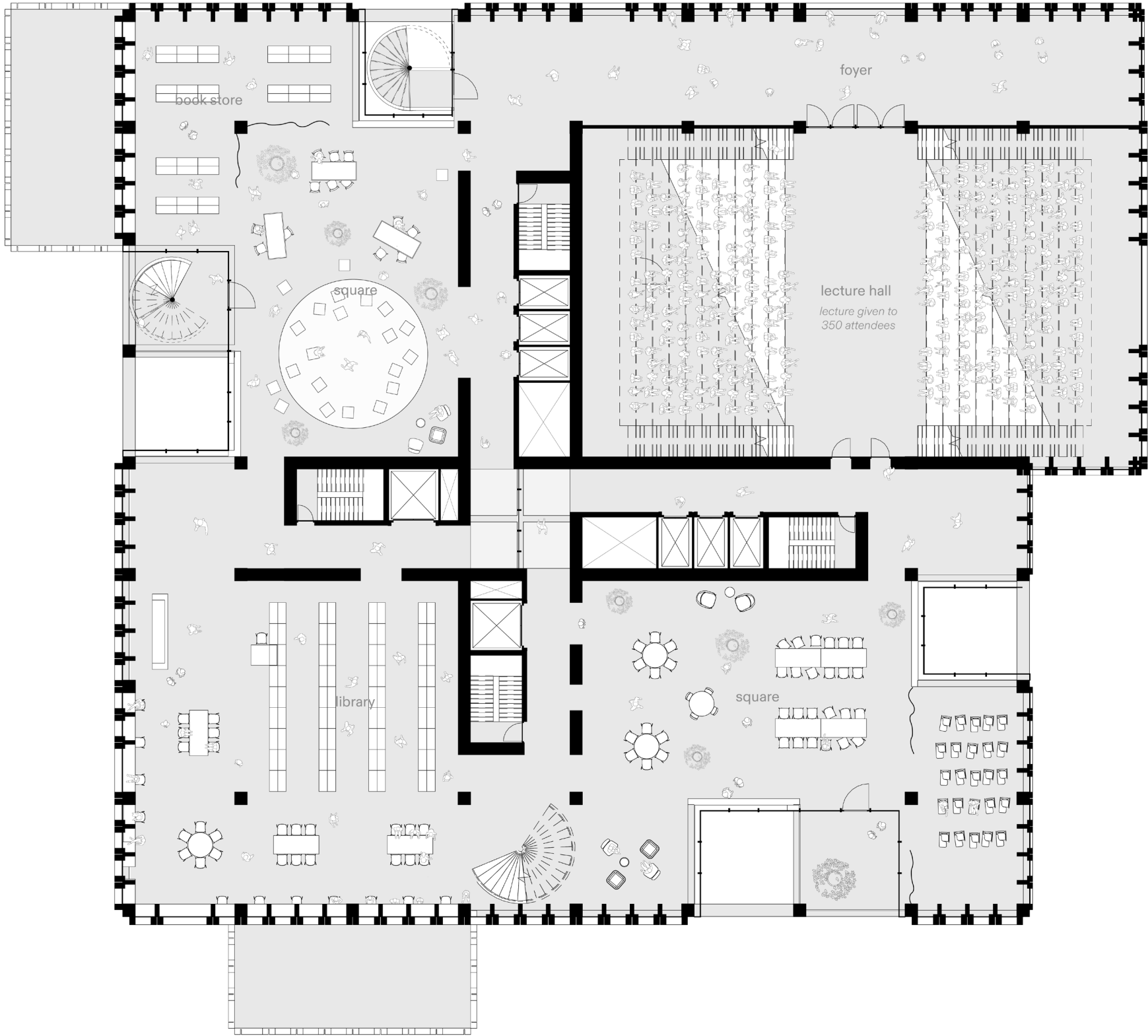






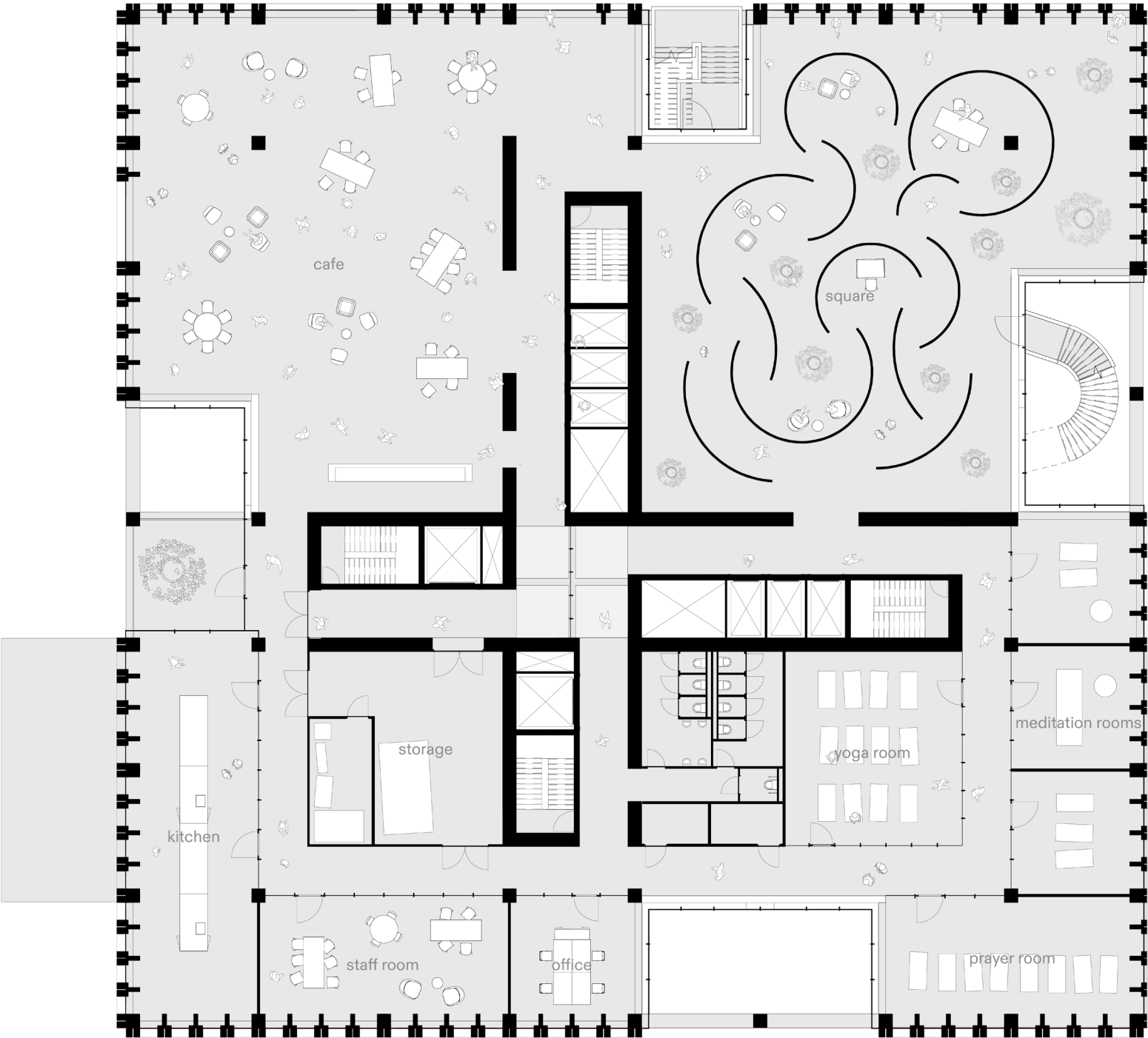
Space of creation

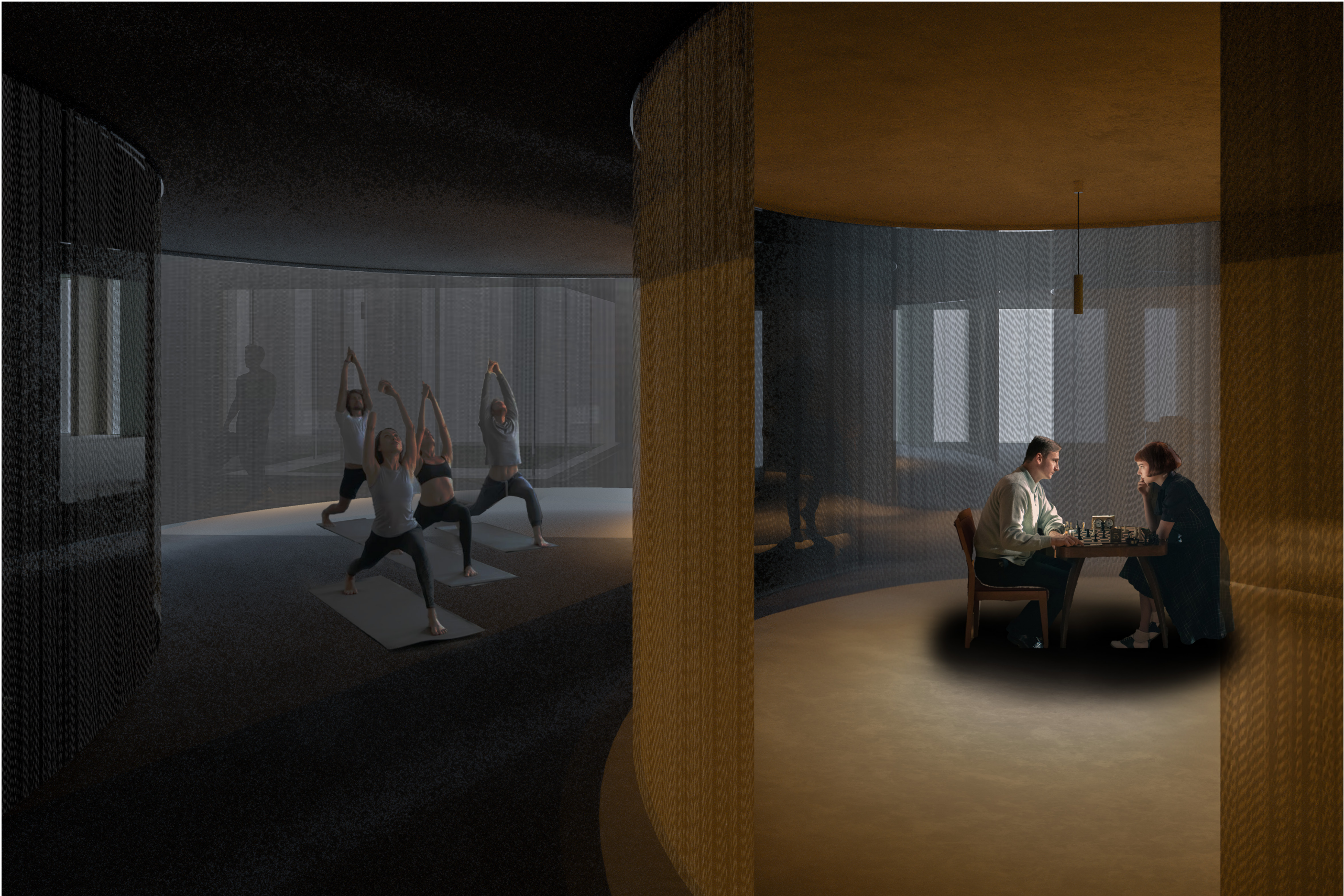




Space of knowledge

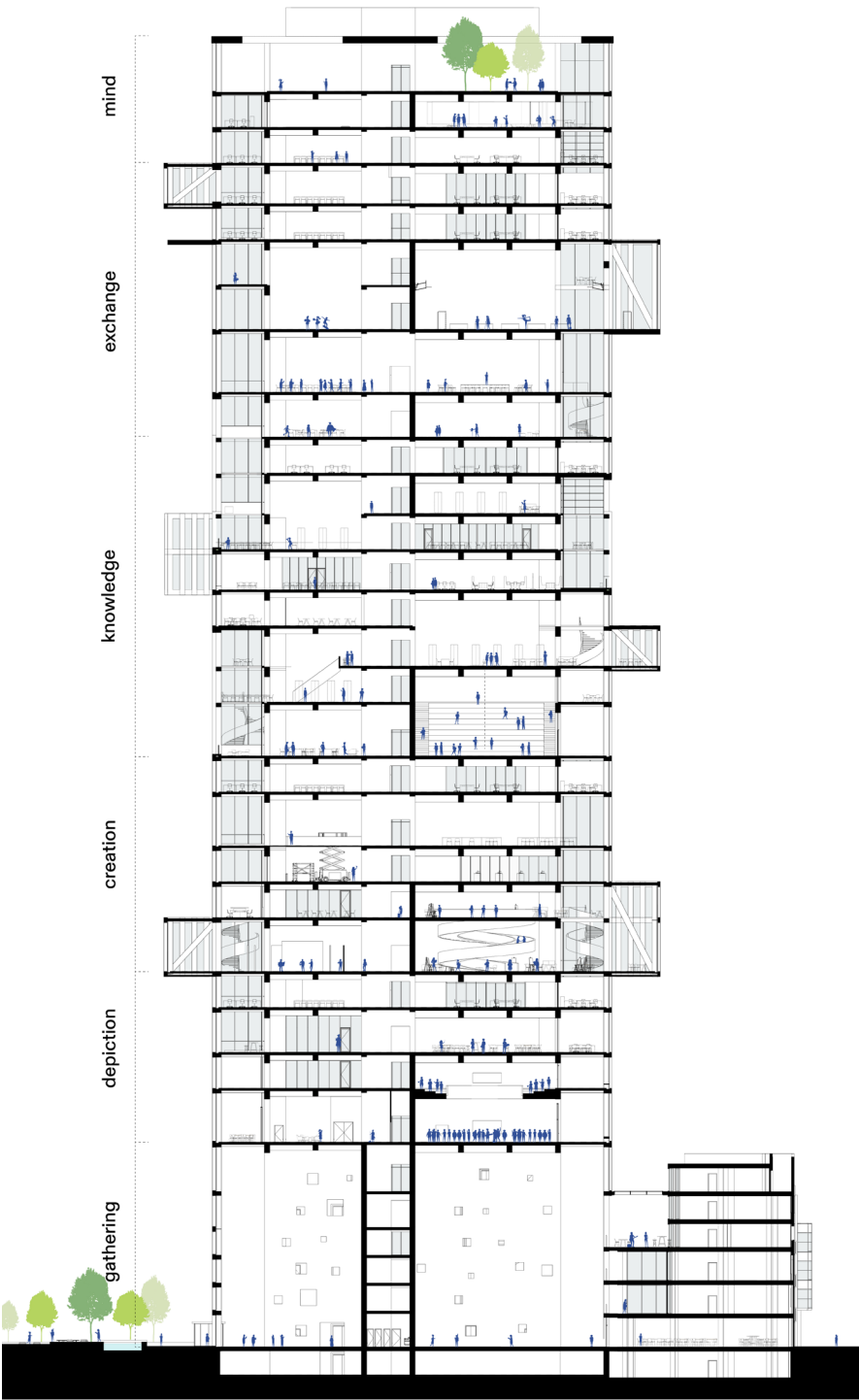
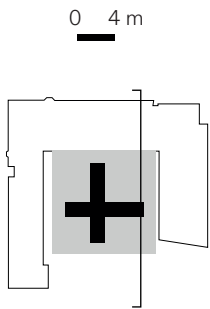






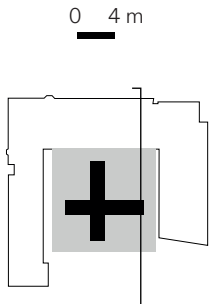
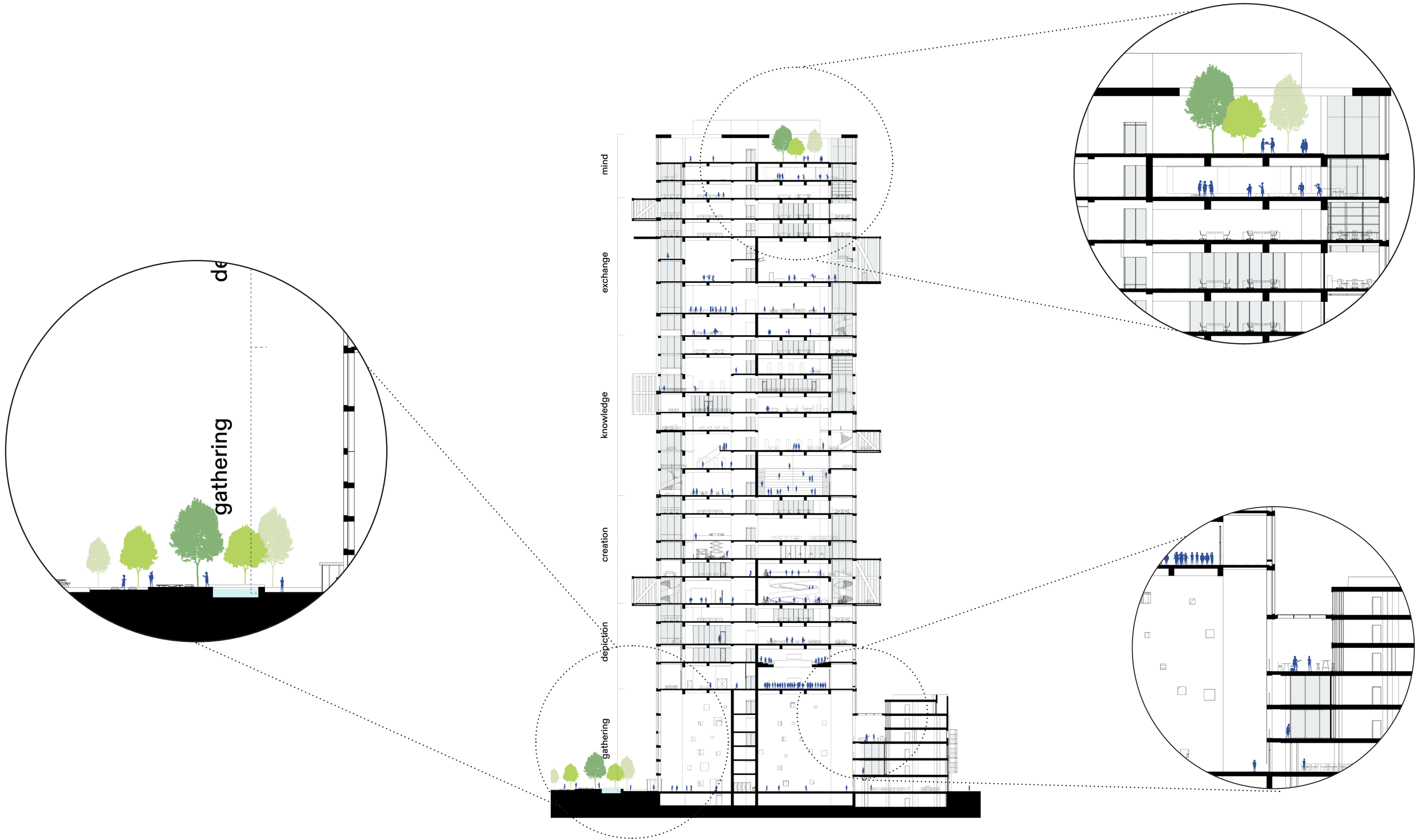
Section

AA



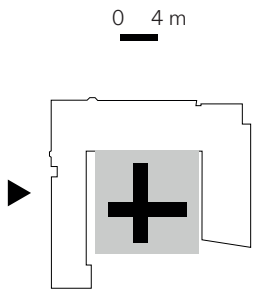
Section

AA



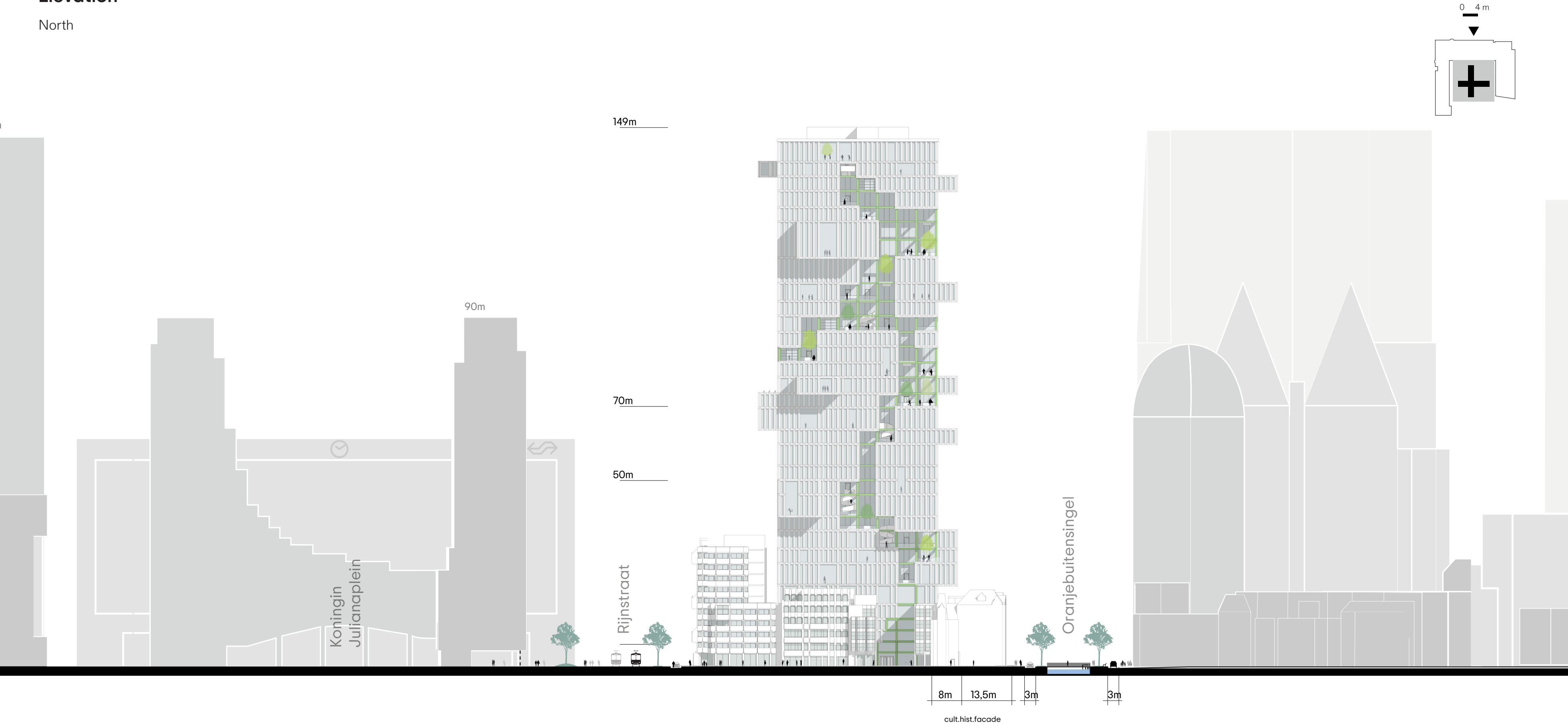
Elevation

East

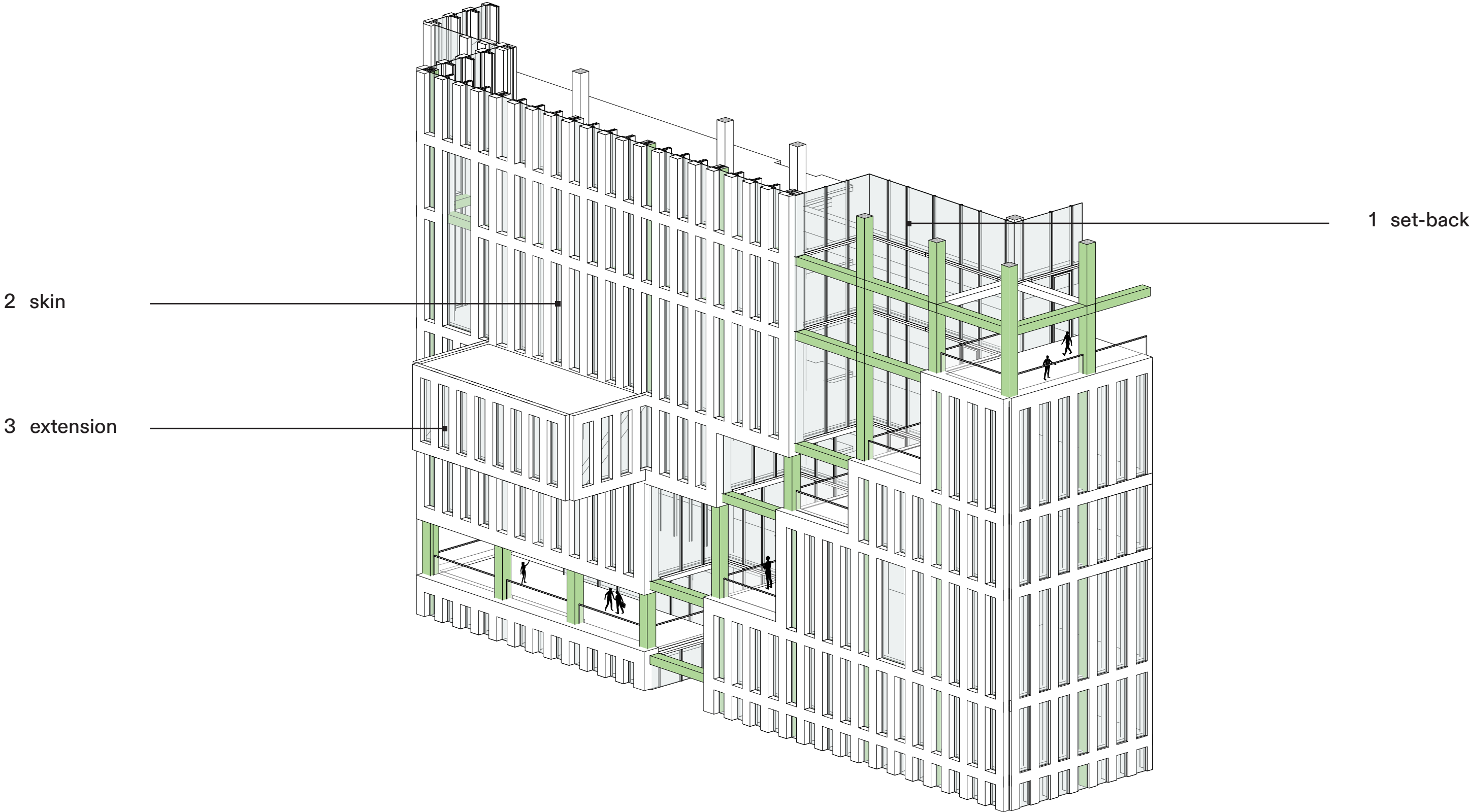


Elevation

North



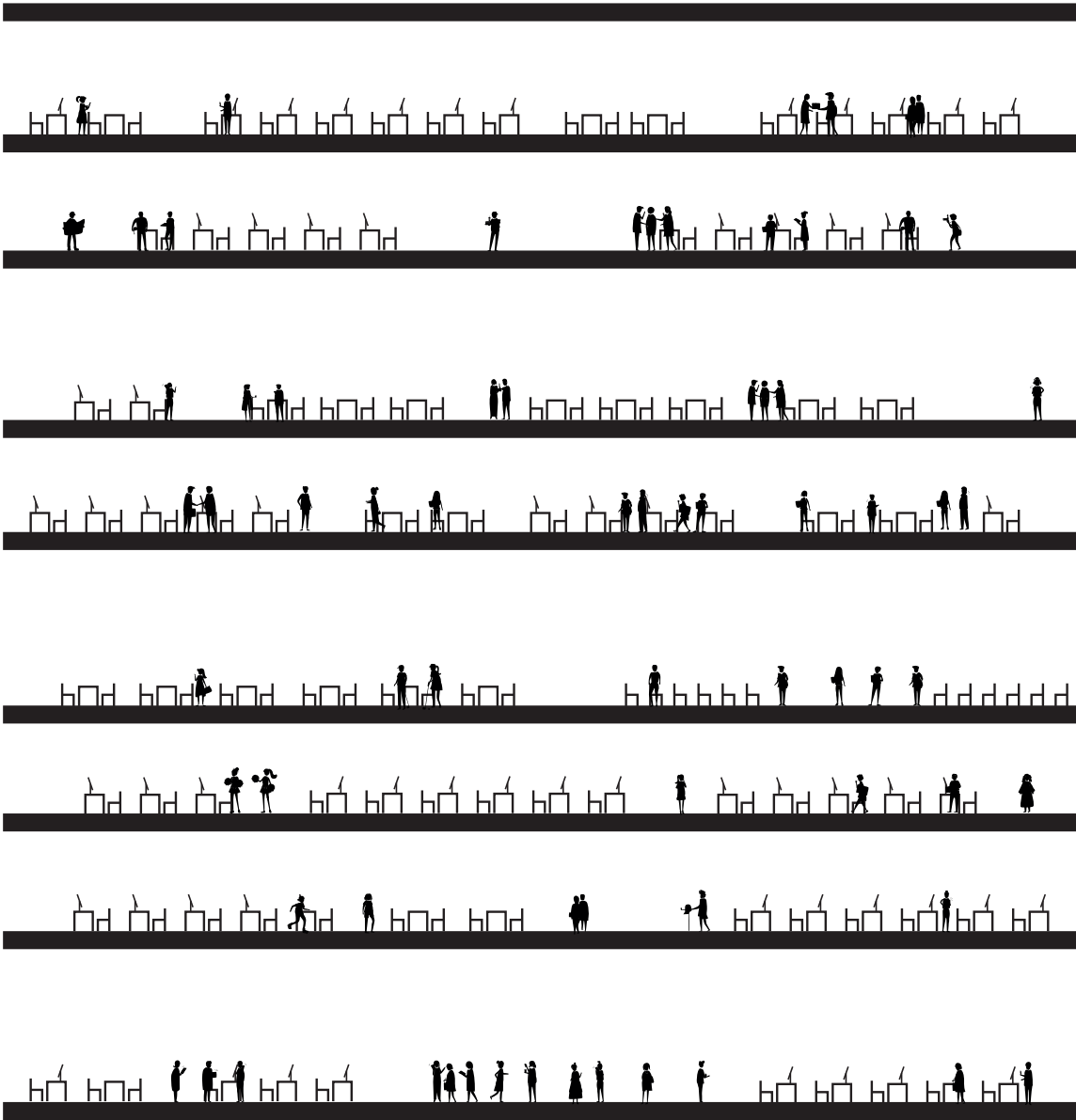
Facade layers



1 set-back

Concept

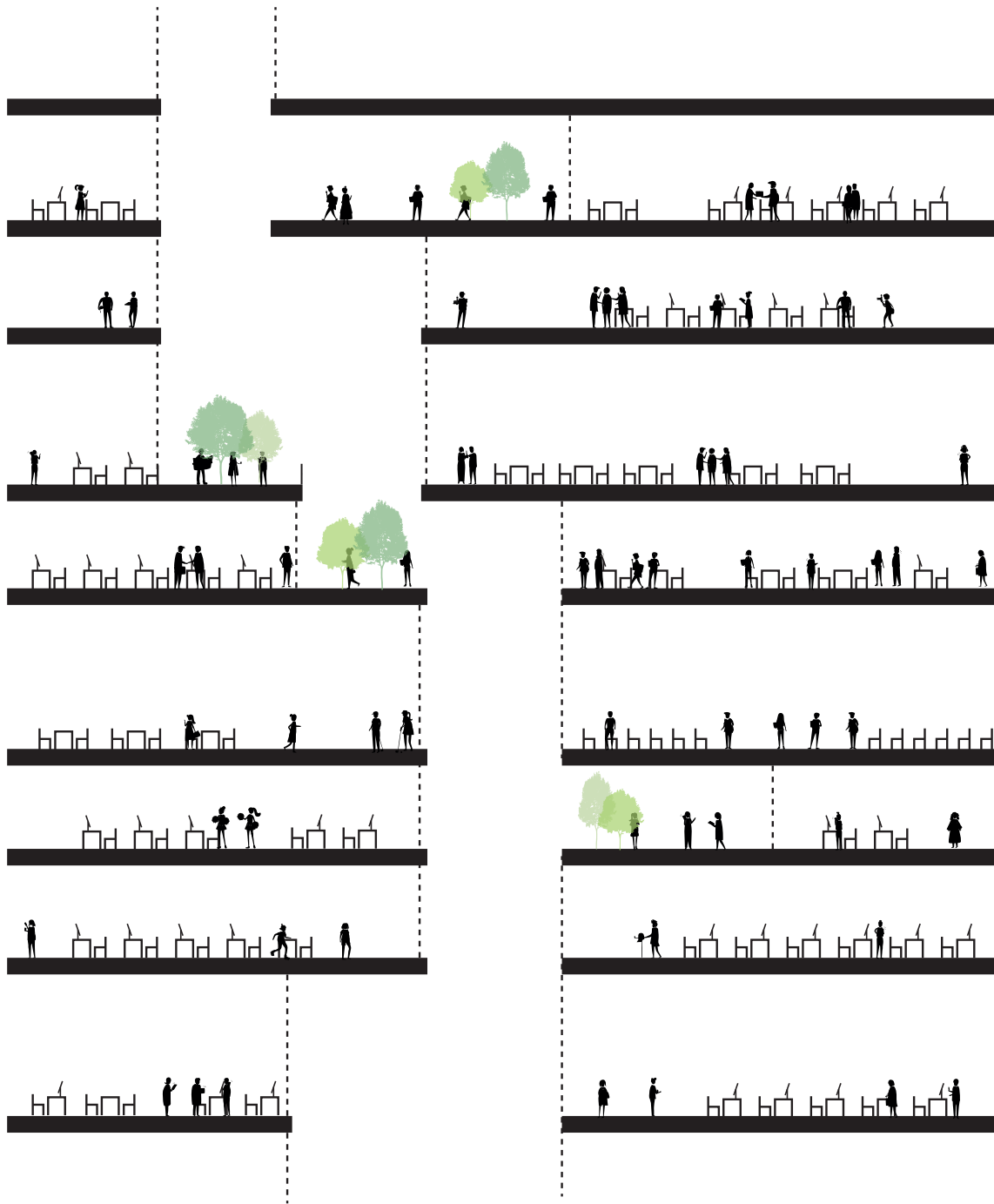
Typical highrise layout



1 set-back

Concept

The In-between



1 set-back

Program

space of mind	kitchen	view platform	garden	restaurant	kitchen	30
	kitchen	welness	square	bar/event space	kitchen	29
	office	office	office	office	office	28
	office	office	office	office	office	27
	office	office	office	office	office	26
space of exchange	changing rooms	multifunctional sporthall	sporthall	multifunctional sporthall	changing rooms	25
	hub	collaborative workspaces	auditorium	cafe	hub	24
	square	square	square	square	square	23
	office	office	office	office	office	22
	learning	library	library	research	learning	21
space of knowledge	library	learning	research	learning	library	20
	learning	research	library	library	learning	19
	learning	library	lecture hall	research	learning	18
	library	square	office	square	library	17
	office	office	office	office	office	16
space of creation	material shop	1-1 scale workshop	wood workshop	laser lab	material shop	15
	material storage		3D printing	auditorium	material storage	14
	temporary exhibition	creation studio	square	permanent exhibition	temporary exhibition	13
	office	temporary exhibition	square		temporary exhibition	12
	office	office	office	office	office	11
space of depiction	performance venue	server	advanced virtuality	office	performance venue	10
		studios		square		9
	wardrobe	backstage	theater		wardrobe	8
						7
						6
						5
						4
						3
						2
						1
south						
east						
north						
west						

1 set-back

Framework

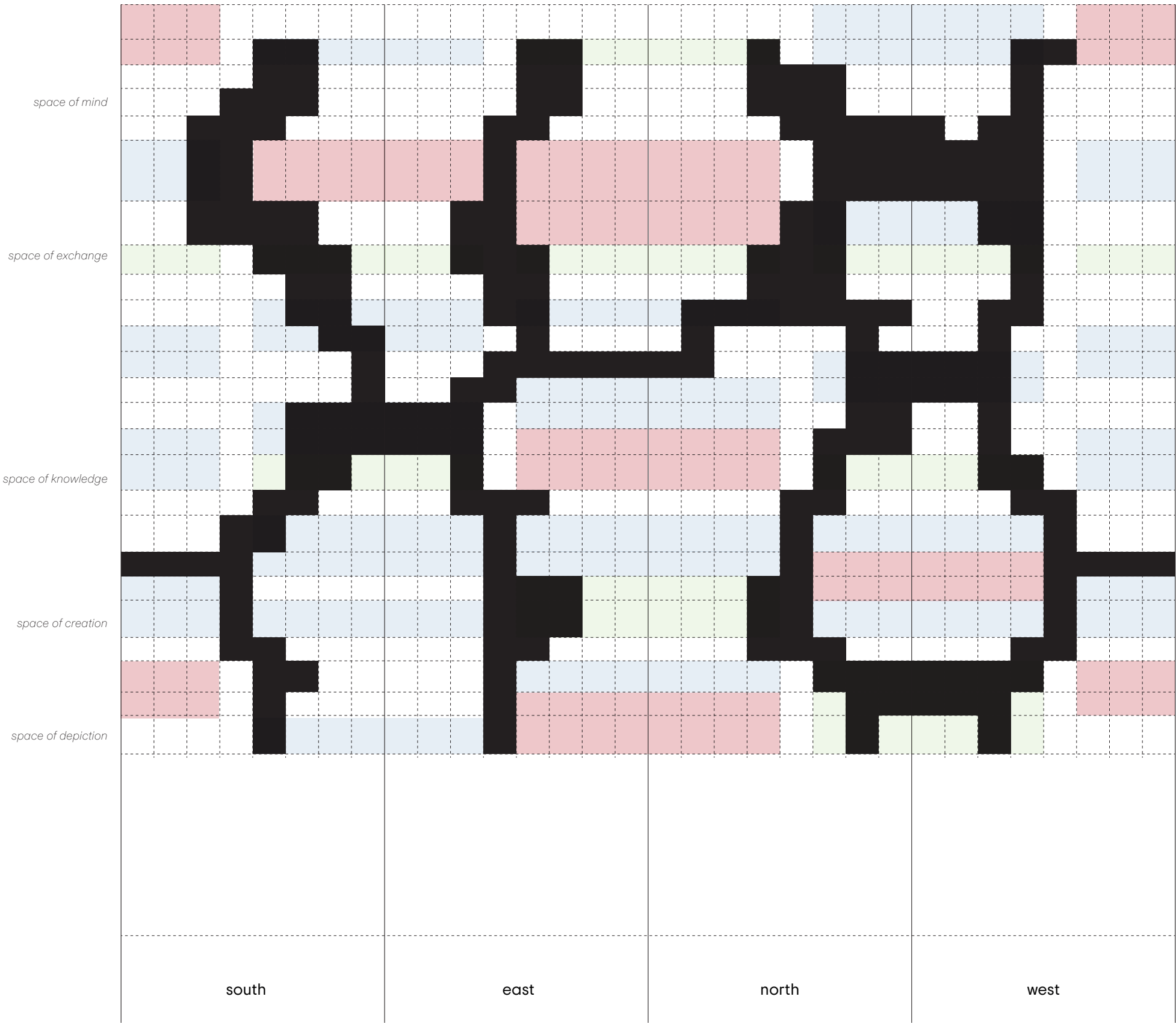
connect minimize unblock don't unblock



1 set-back

Intervention

● unblock ● connect ● minimize unblock ● don't unblock





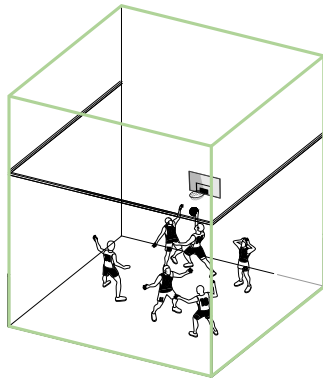


1

Functional



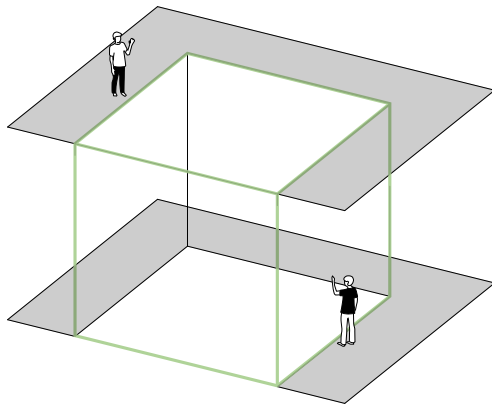
vertical transition
creating connection



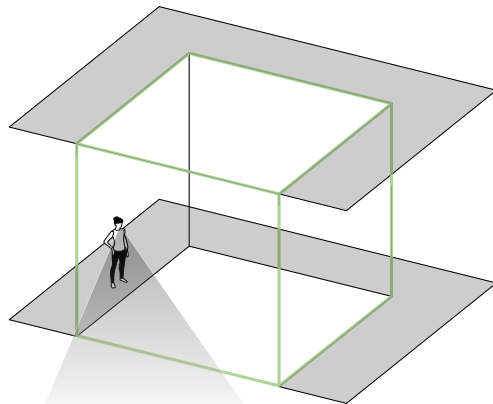
outdoor (class)room
program related

2

Symbolic



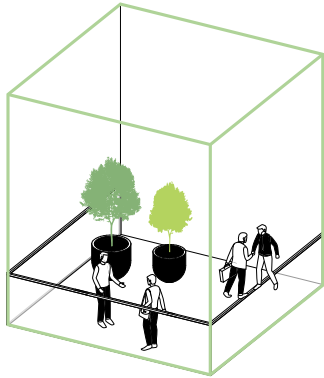
internal connection
linking the program



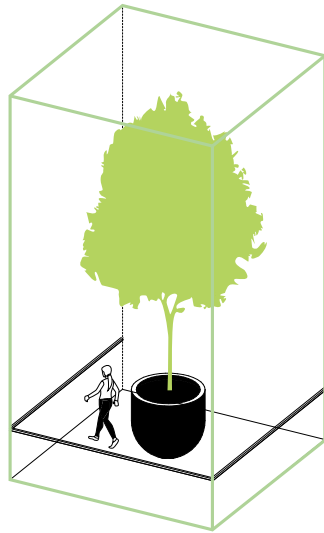
external connection
sightlines to the city

3

Ecological



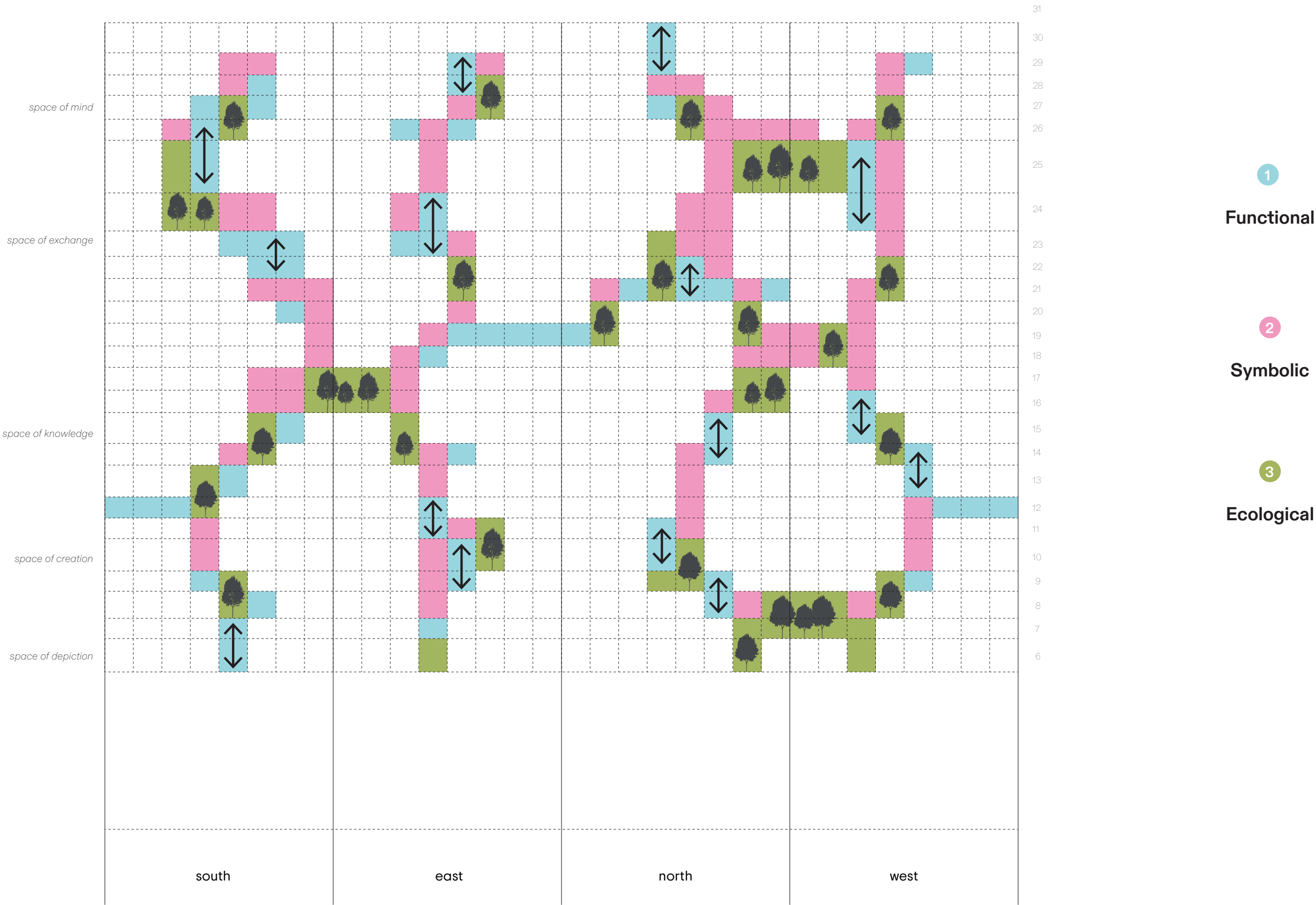
green garden
relaxtion and protection



trees

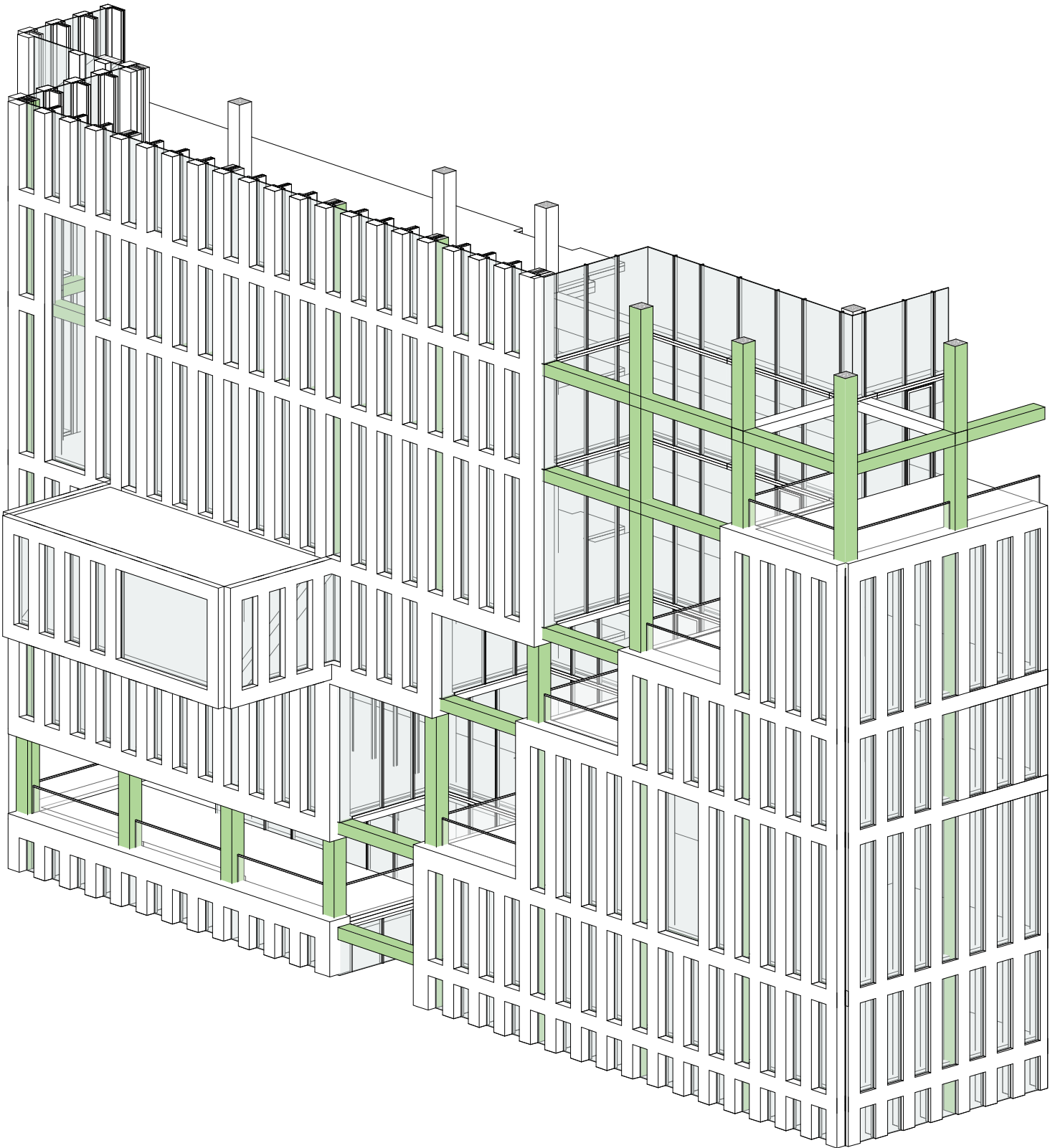
1 set-back

Outdoor spaces



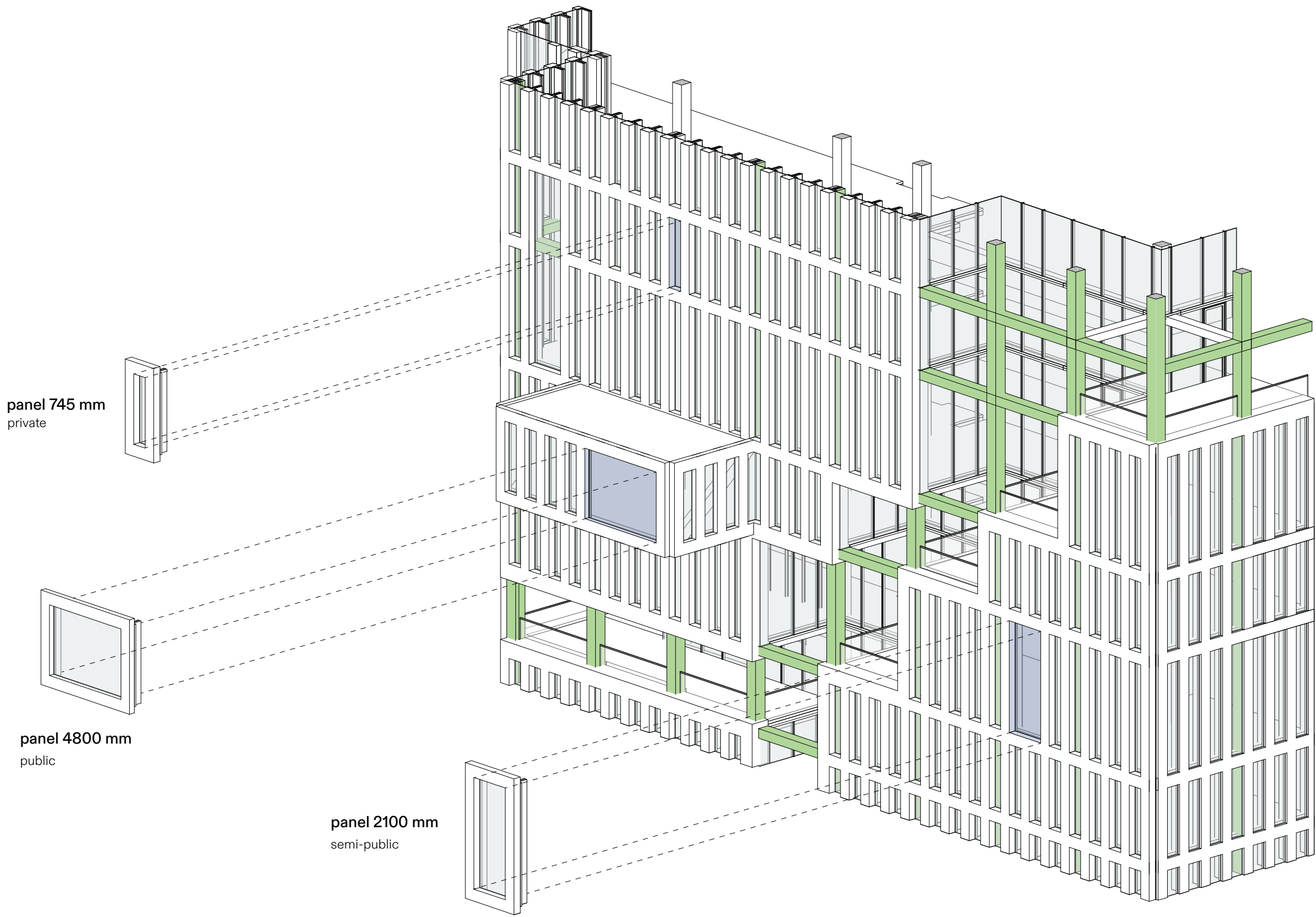
2 skin

Facade openings



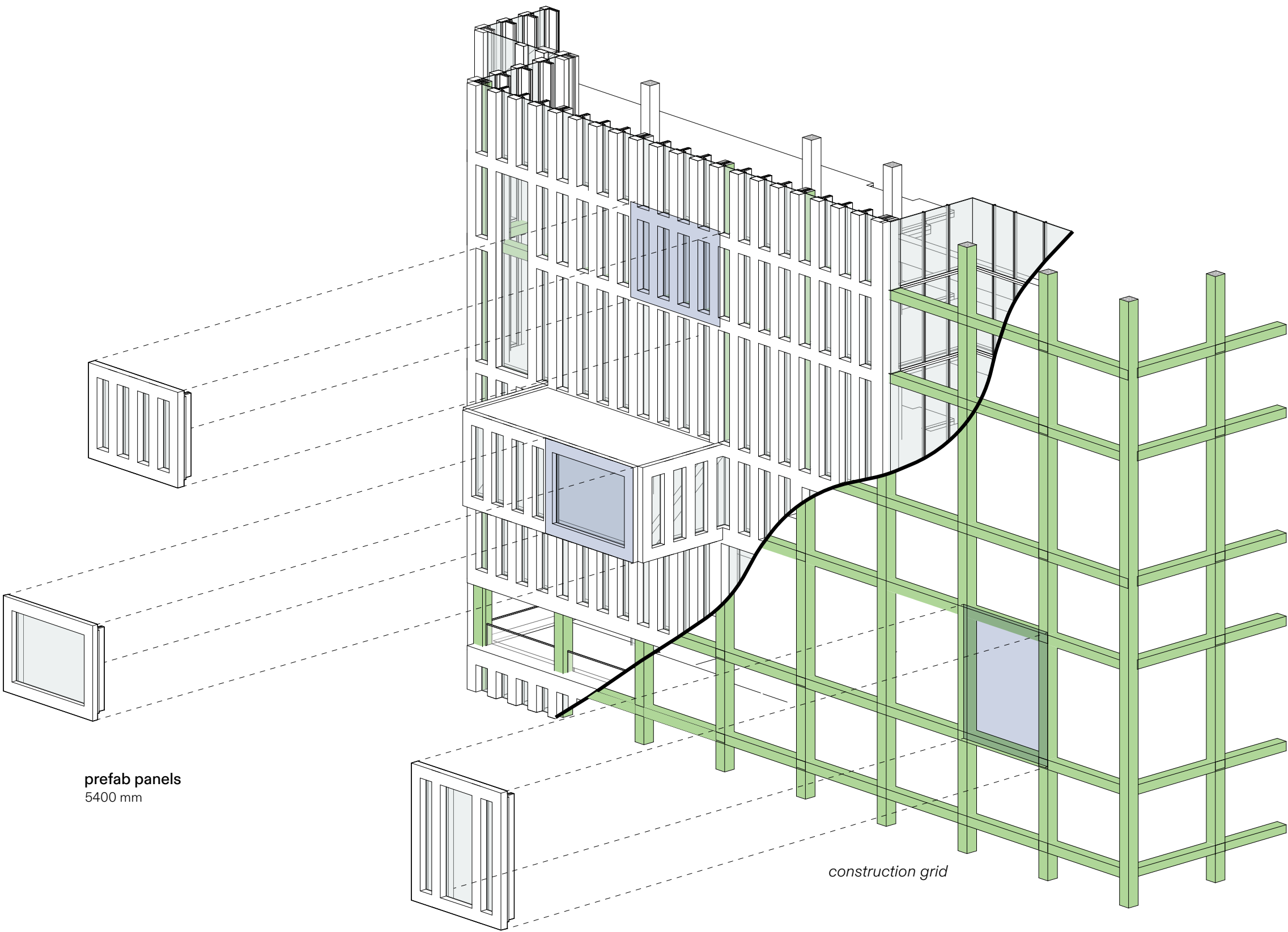
2 skin

Facade openings



2 skin

Facade panels



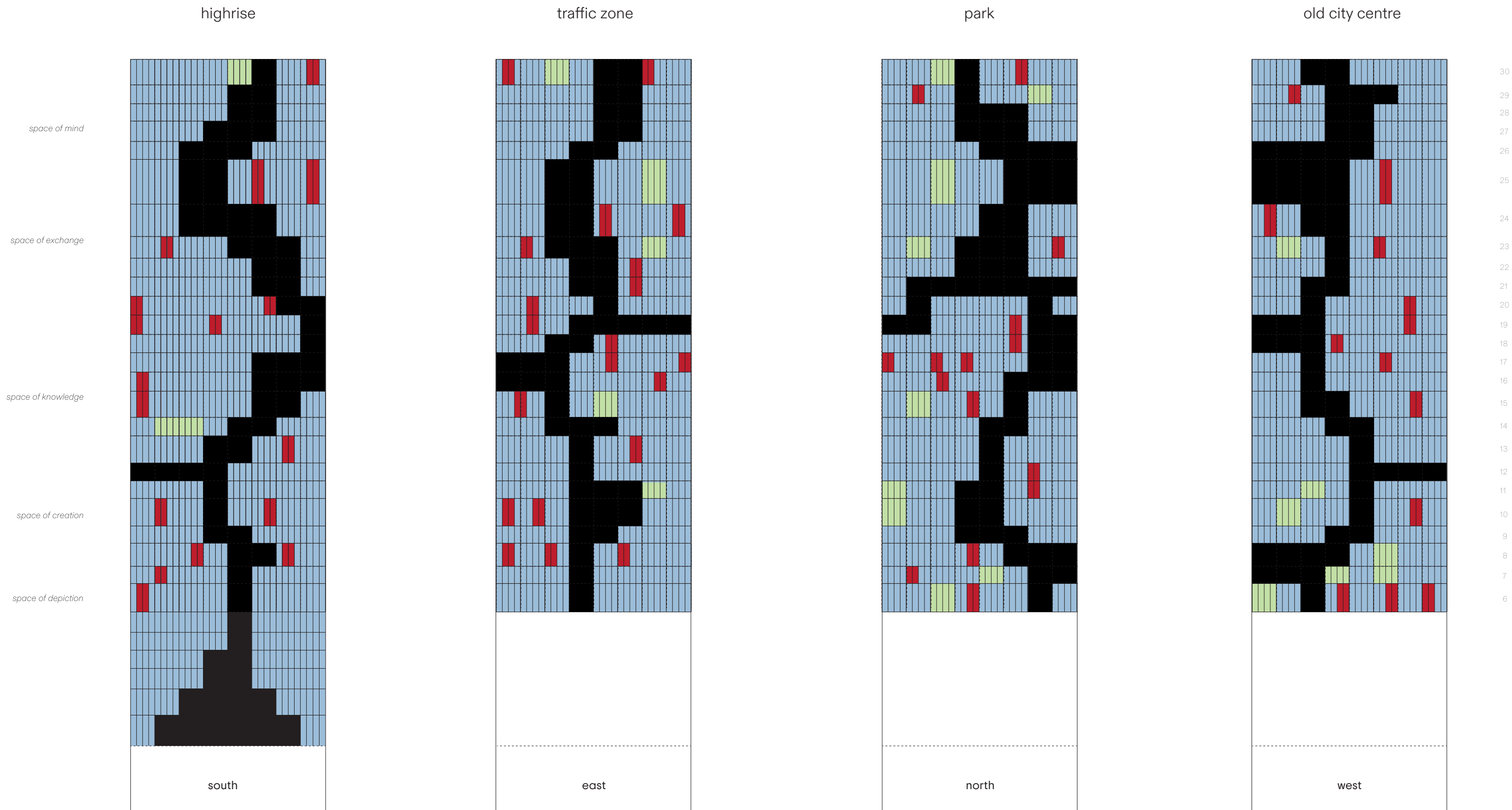
prefab panels
5400 mm

construction grid

2 skin

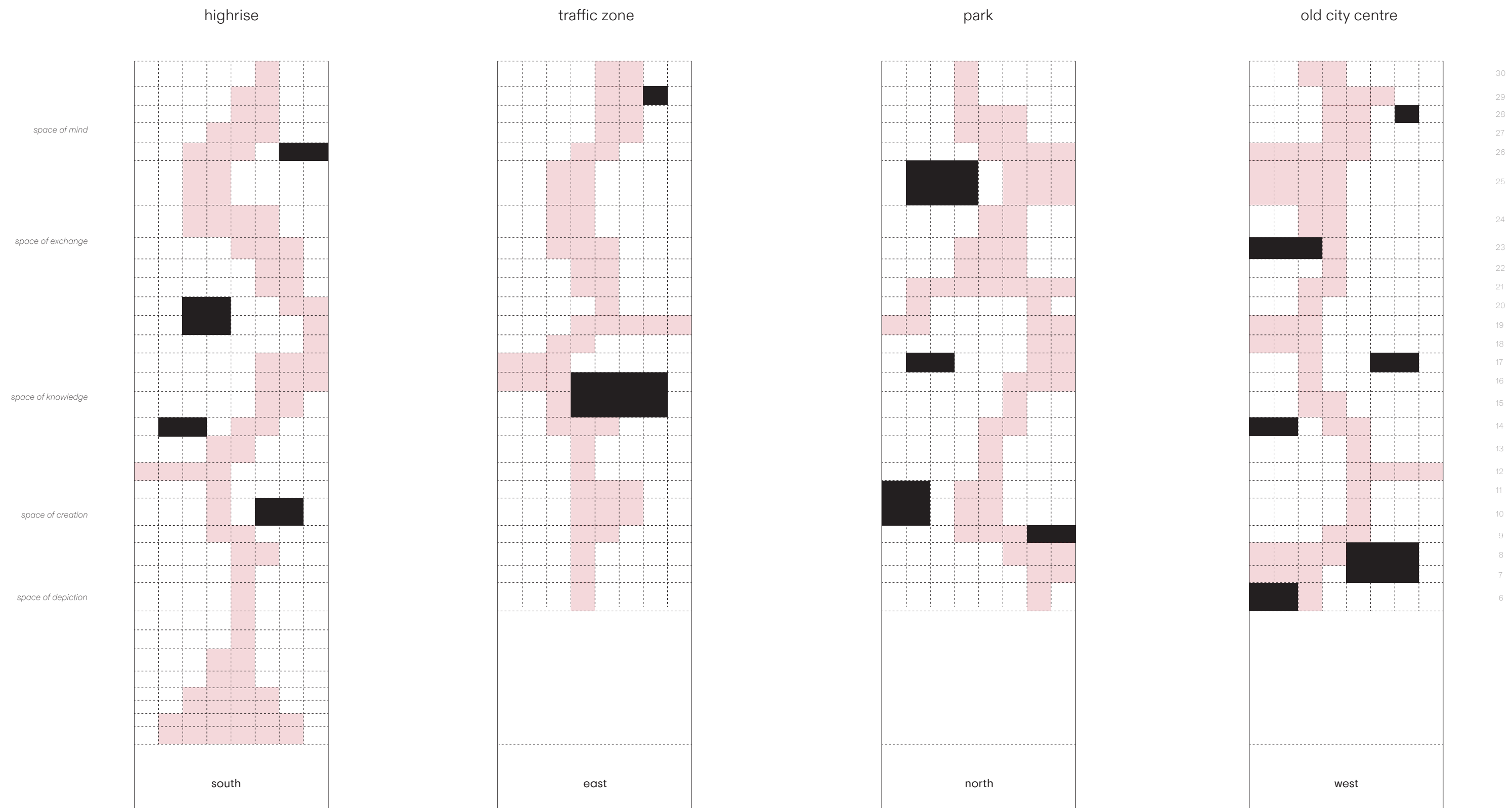
Facade panels

745 mm 2100 mm 4800 mm



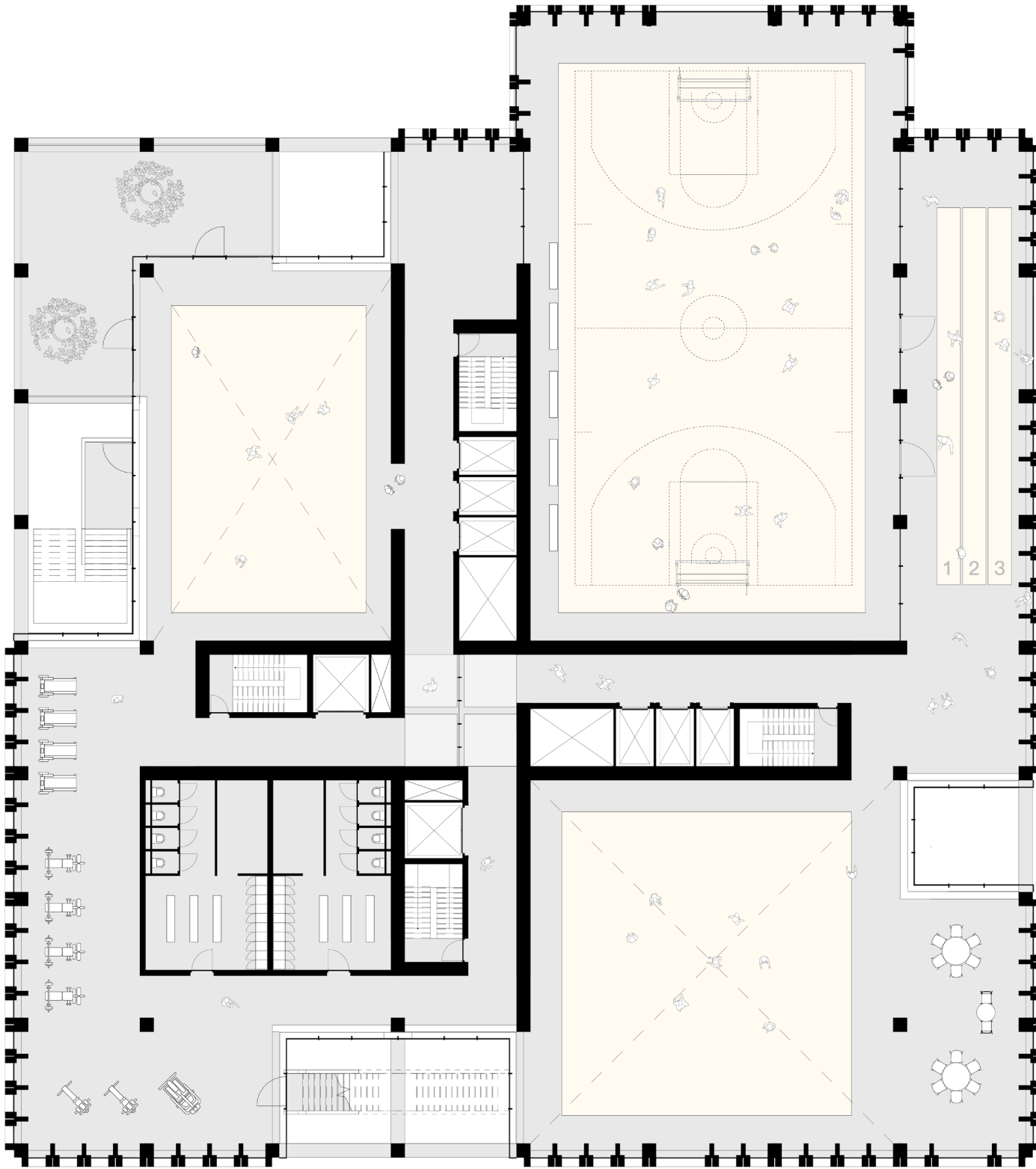
3 extension

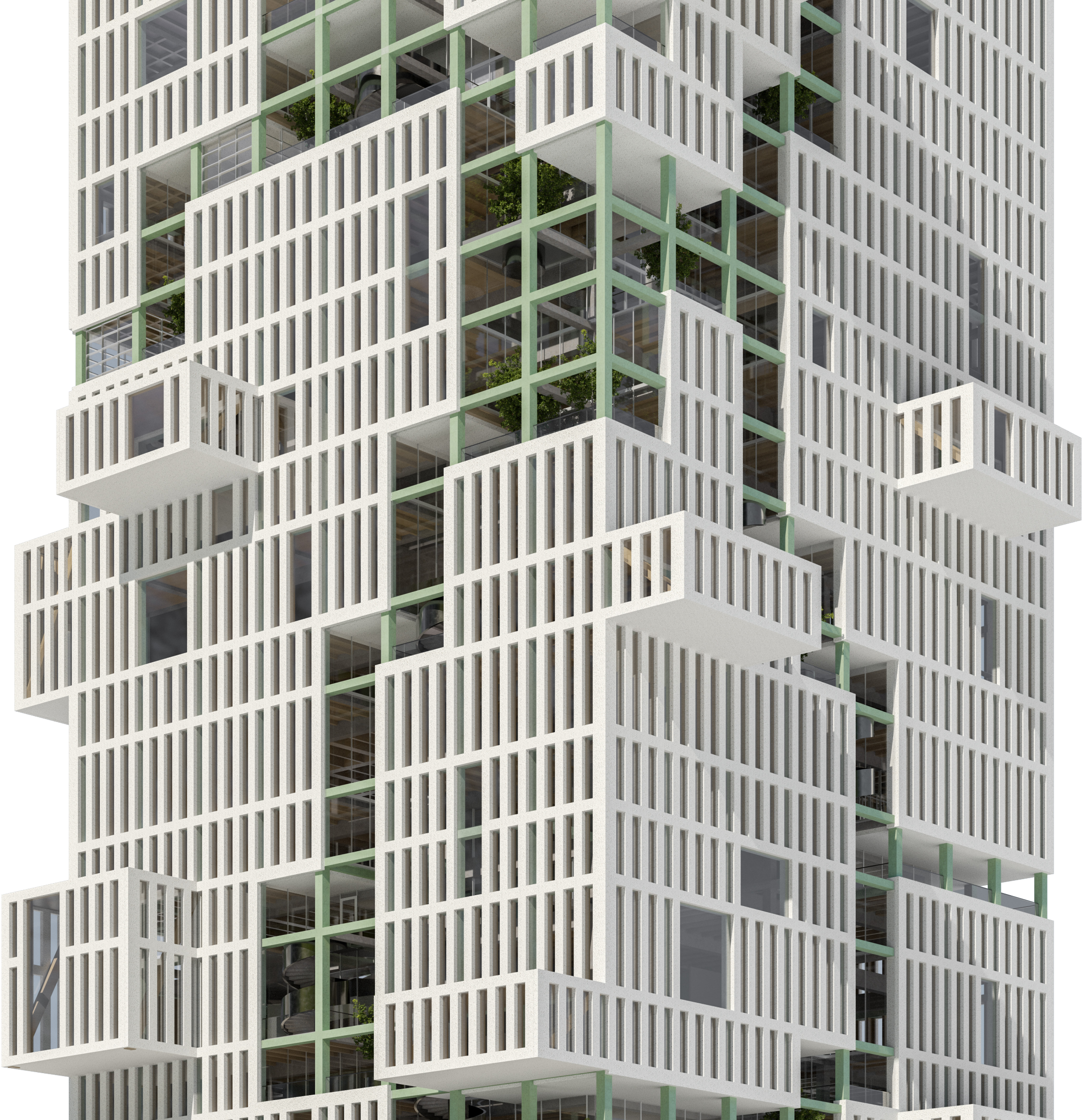
Intervention



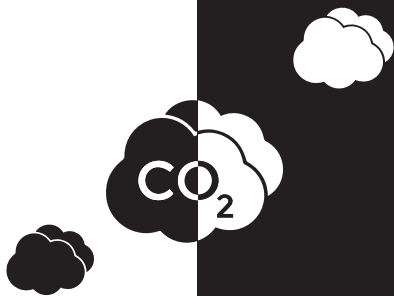
3 extension

Sport - floor 25

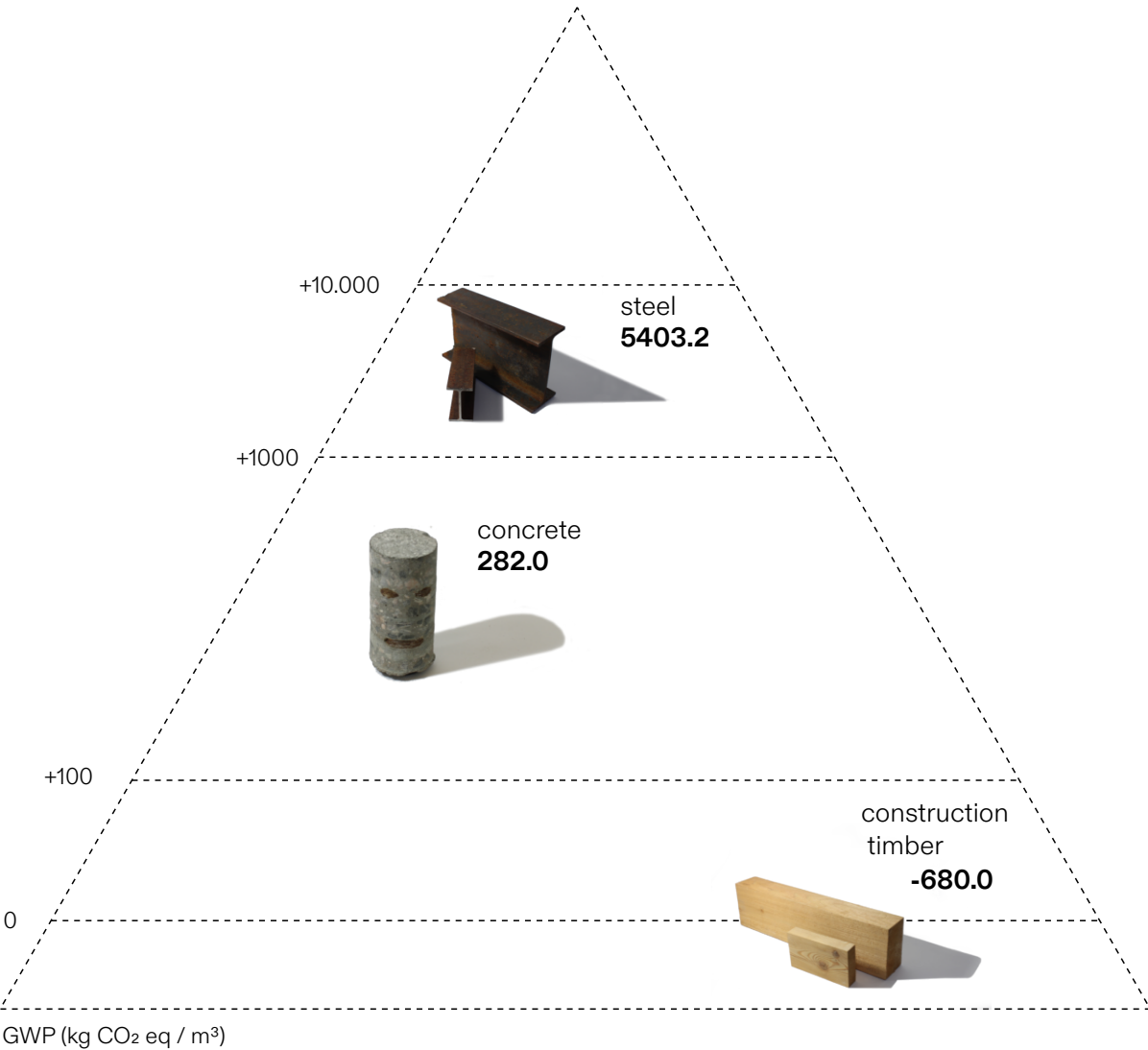




embodied energy
energy to construct



operational energy
to power the building

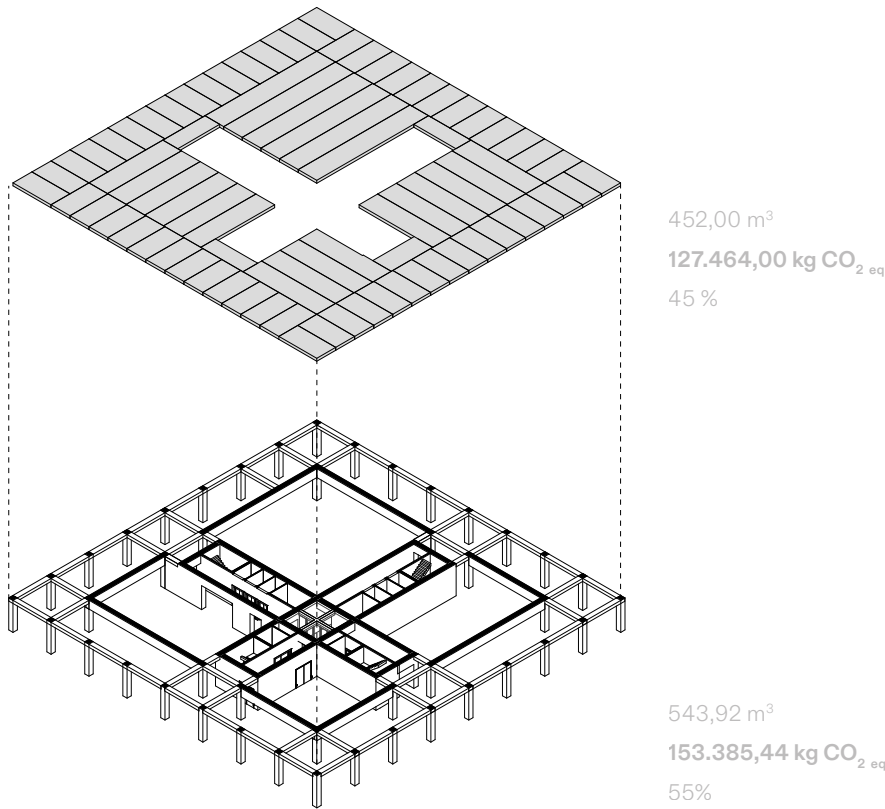


The Construction Material Pyramid
by Centre for Industrialised Architecture
(CINARK) at the Royal Danish Academy

Carbon footprint

4 m-high floor

embodied energy



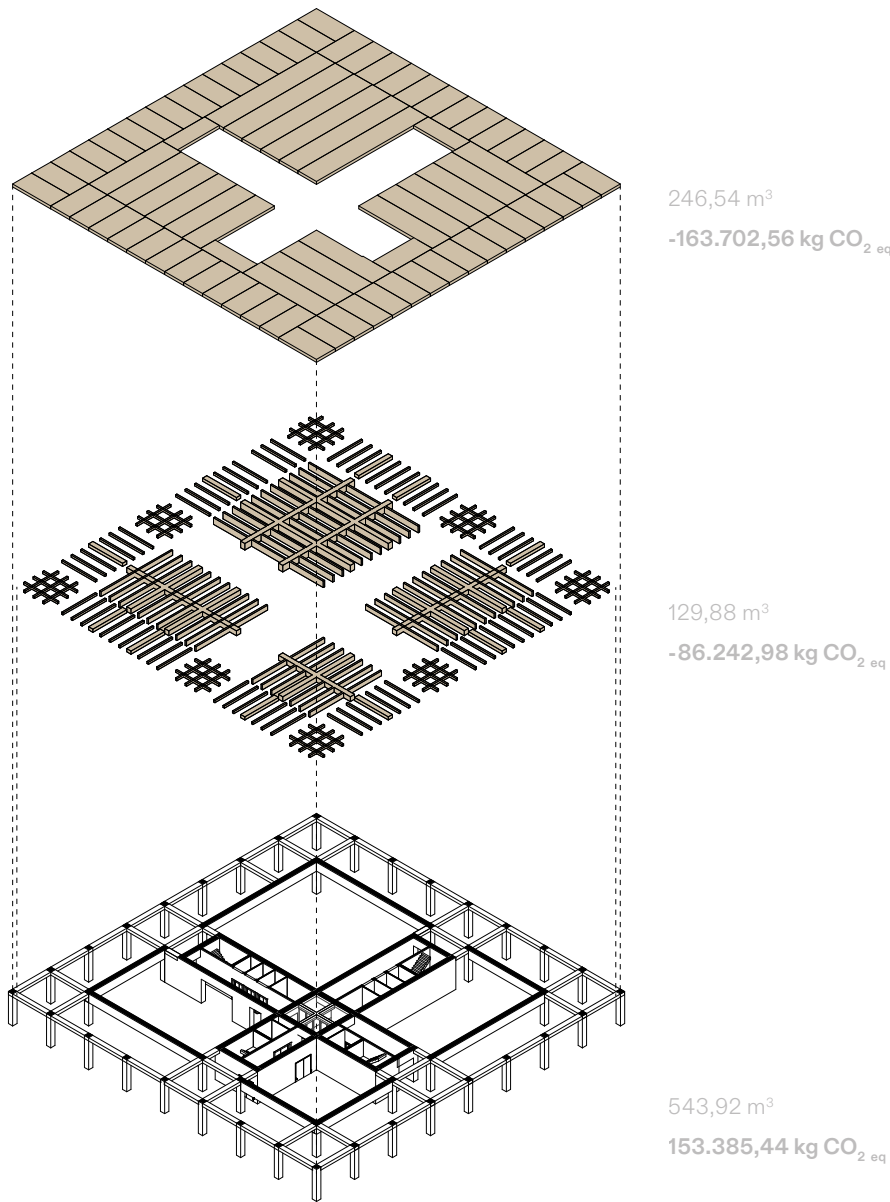
1 full concrete

144,03 kg CO₂ eq per m²

Carbon footprint

4 m-high floor

embodied energy



1 full concrete

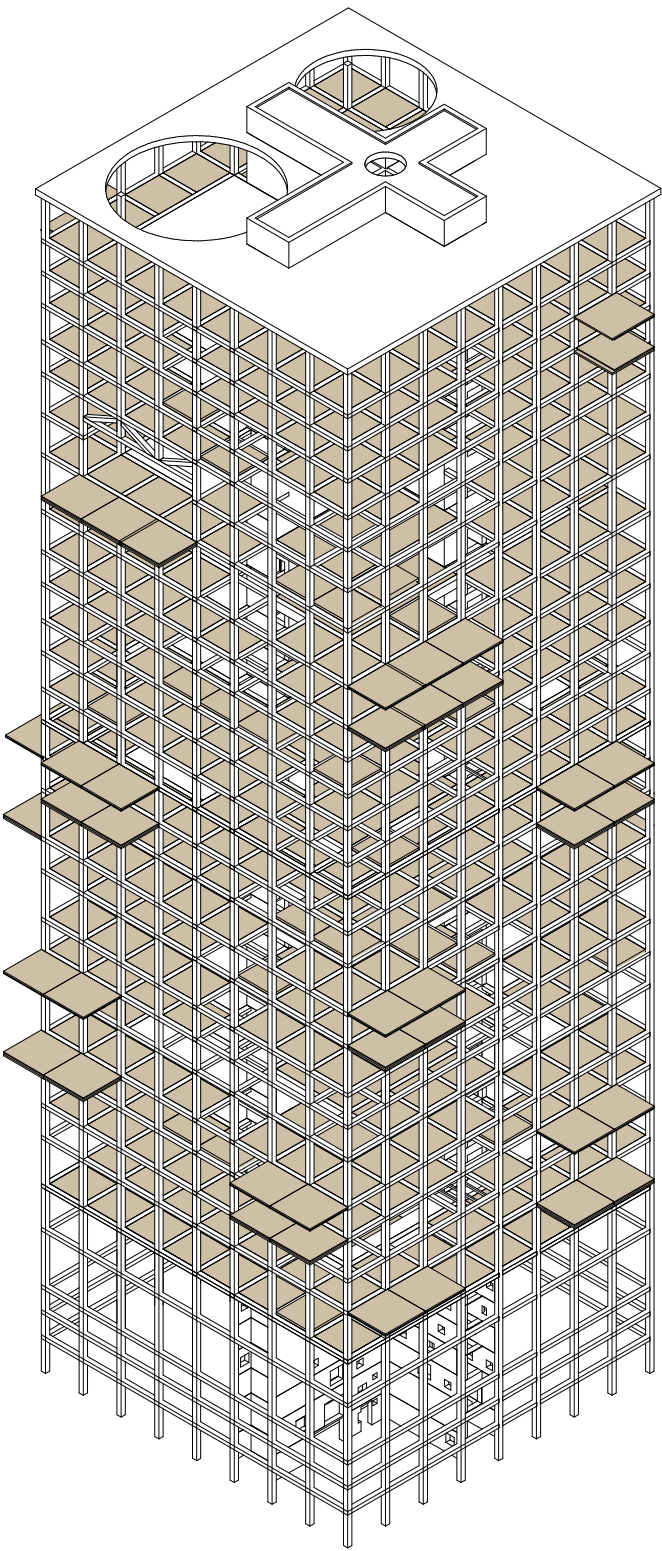
2 concrete base + wooden infill

144,03 kg CO₂eq per m² → -49,52 kg CO₂eq per m²

Carbon footprint

Building

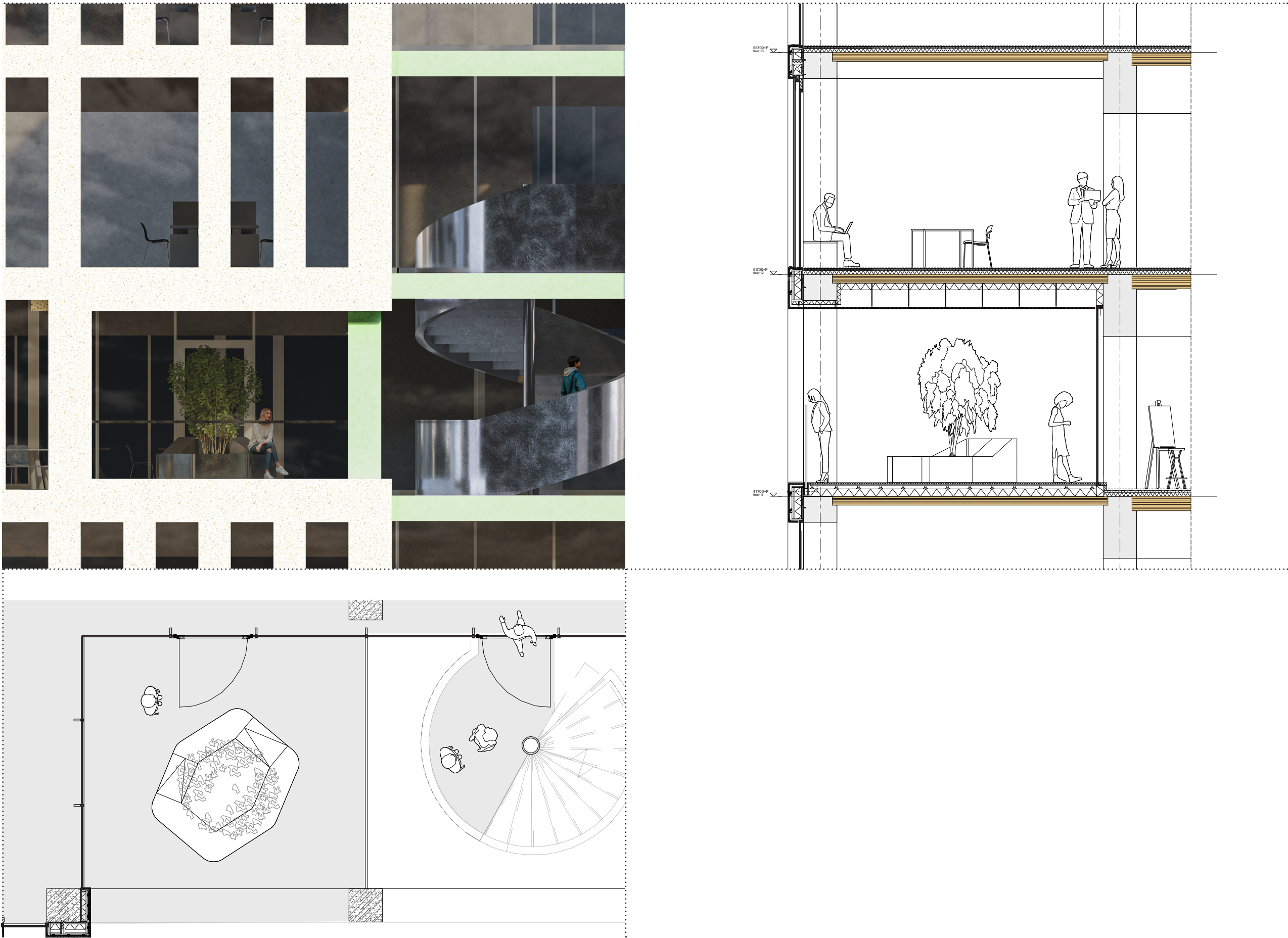
embodied energy

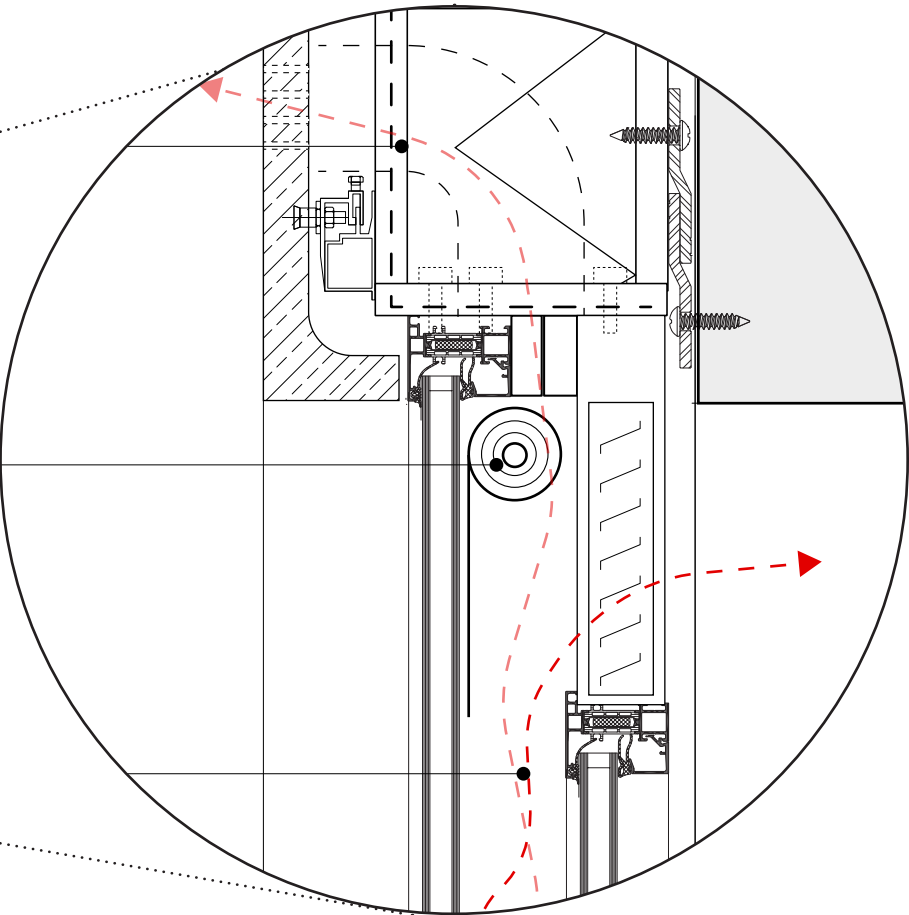
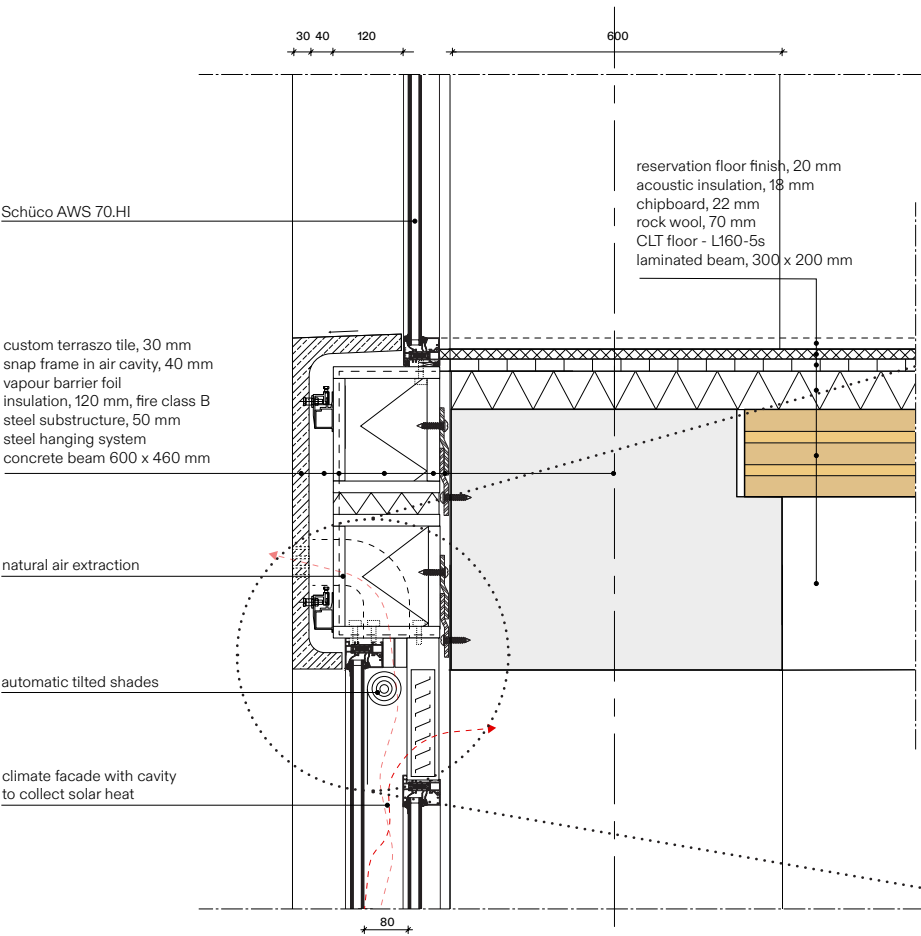


1 full concrete

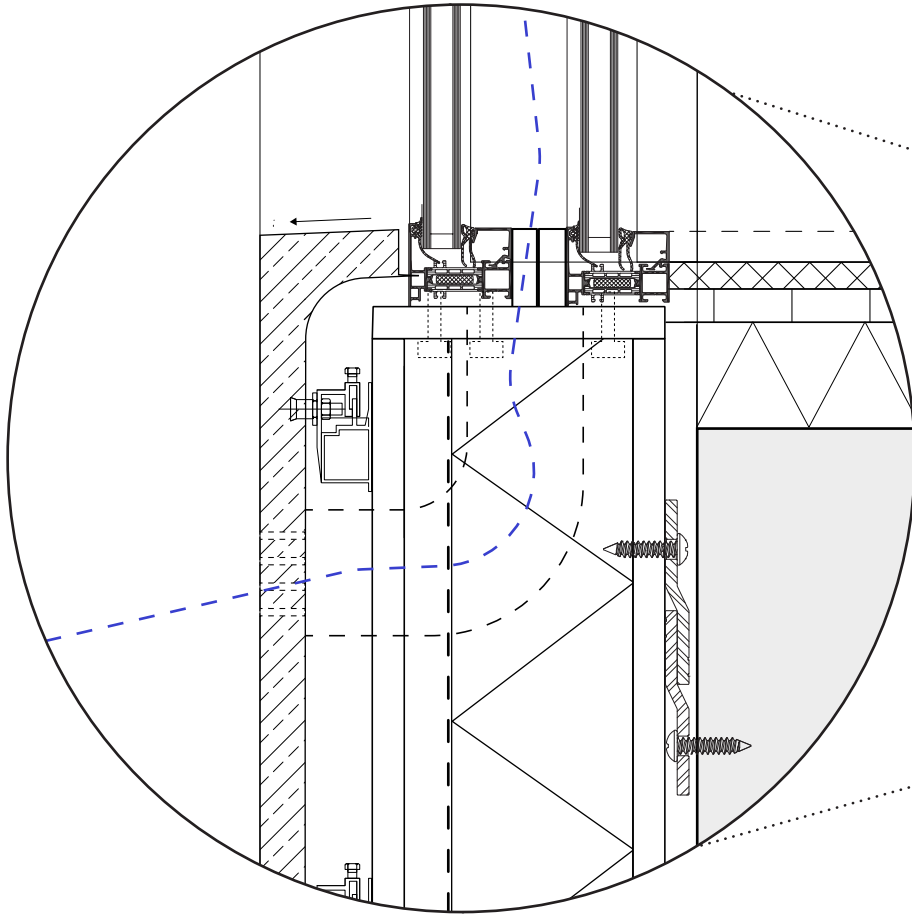
2 concrete base + wooden infill

9.251.156,64 kg CO₂_{eq} → -2.071.129,44 kg CO₂_{eq}

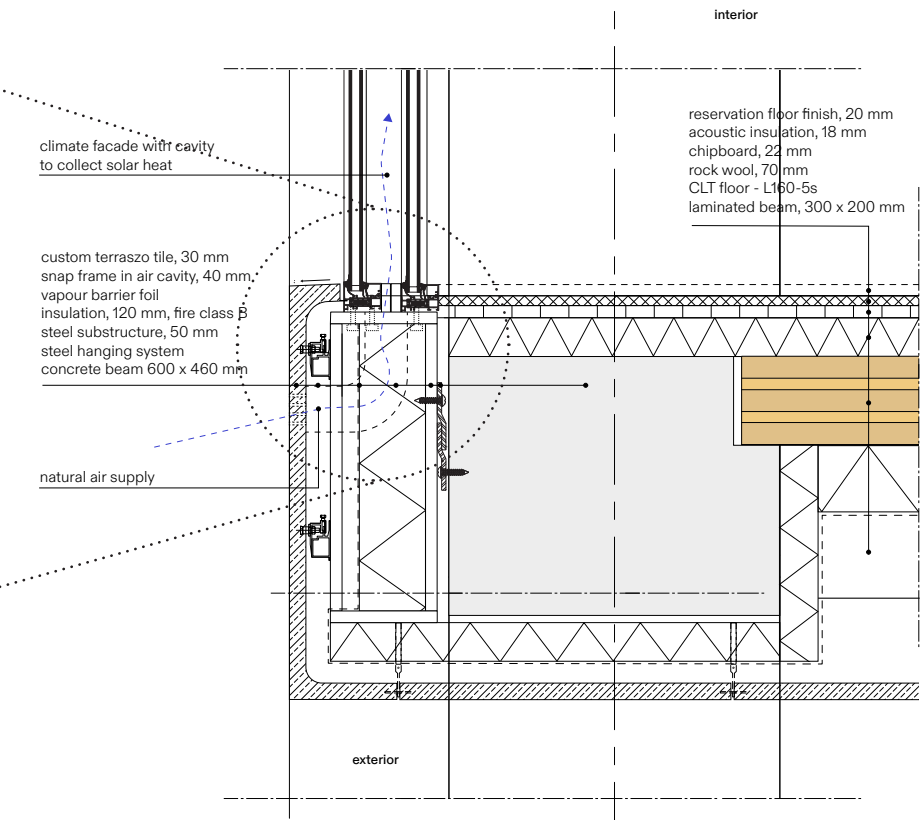


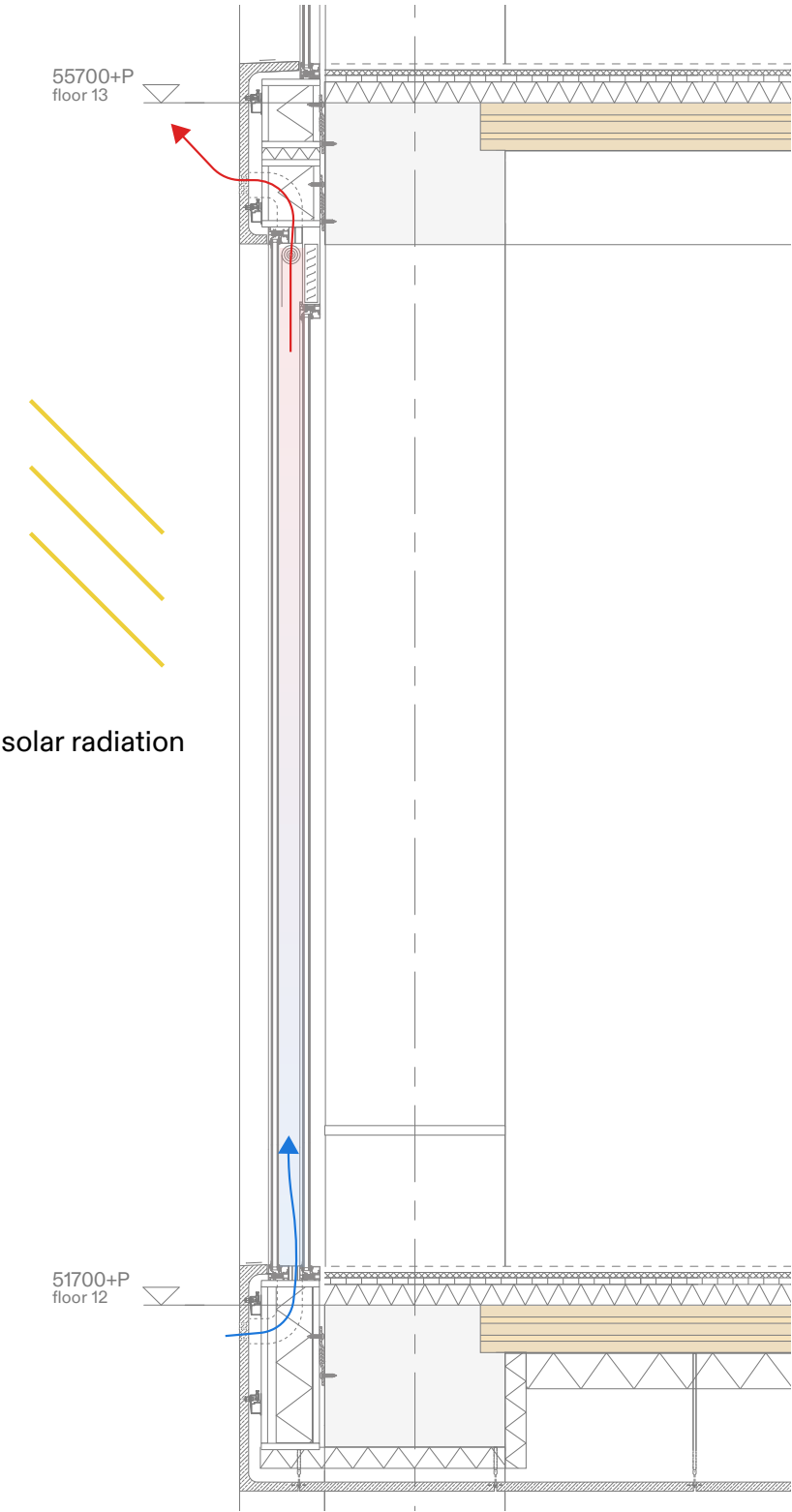


air outlet

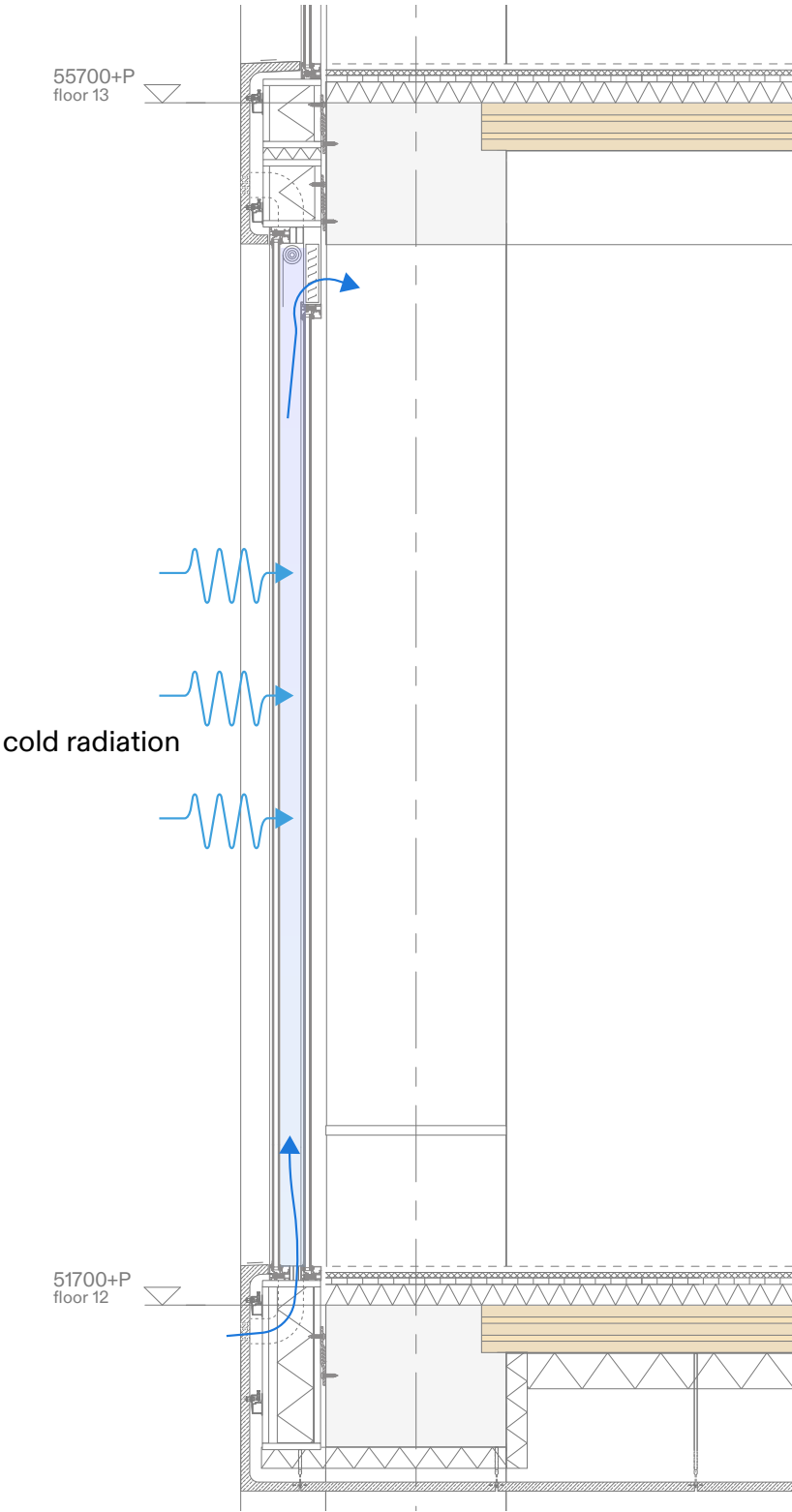


air intake

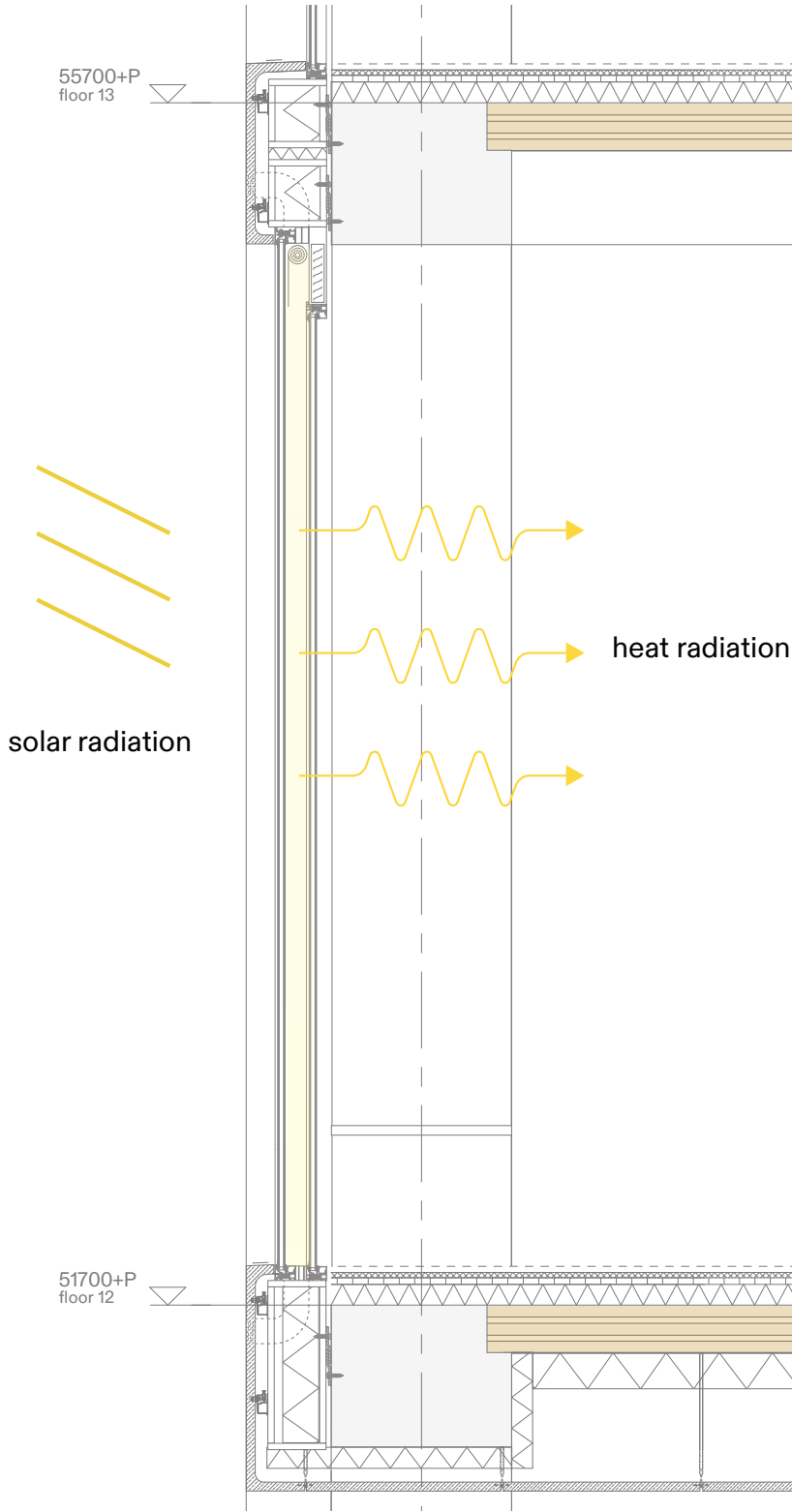




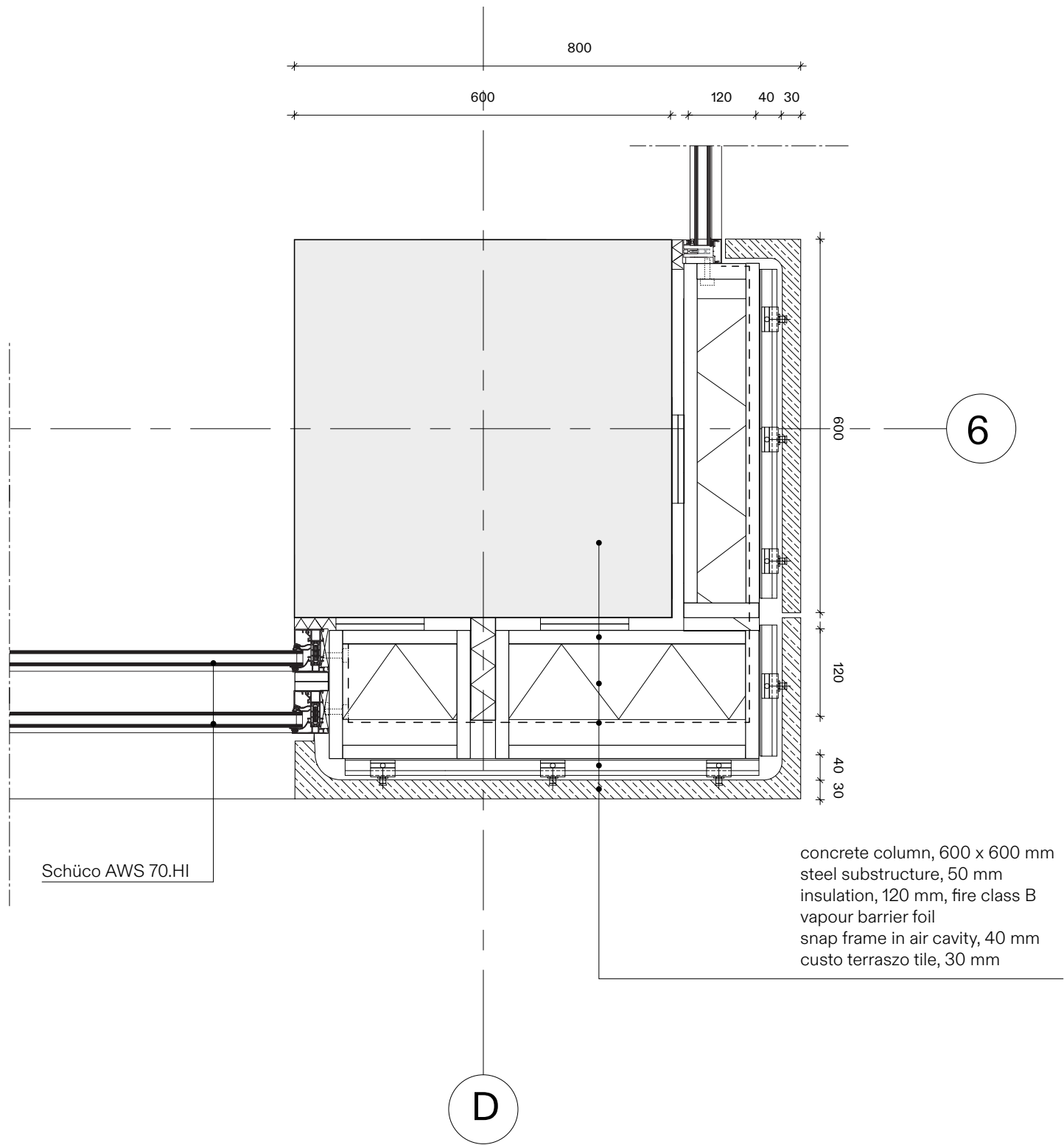
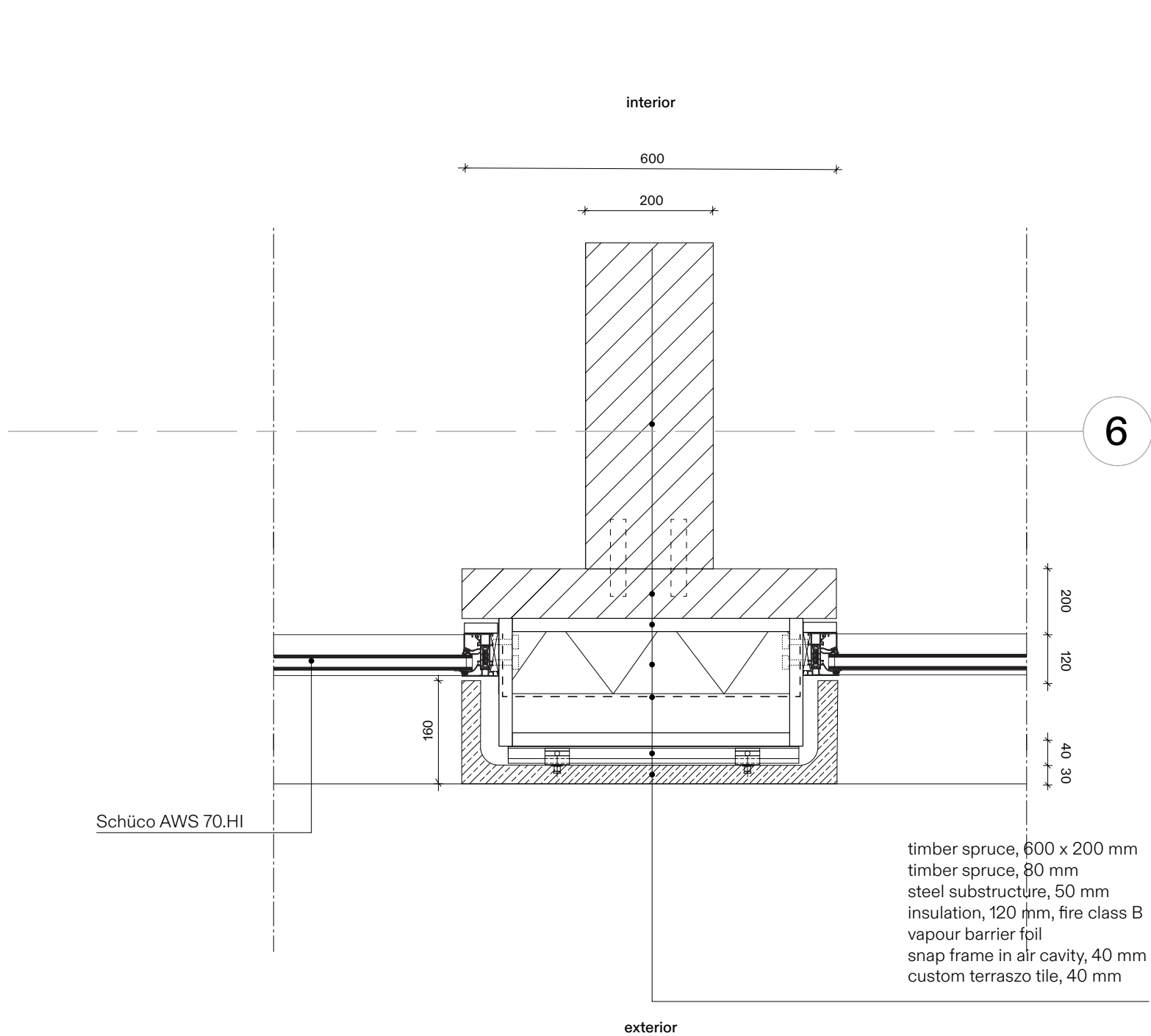
summer daytime



summer night/
transition seasons



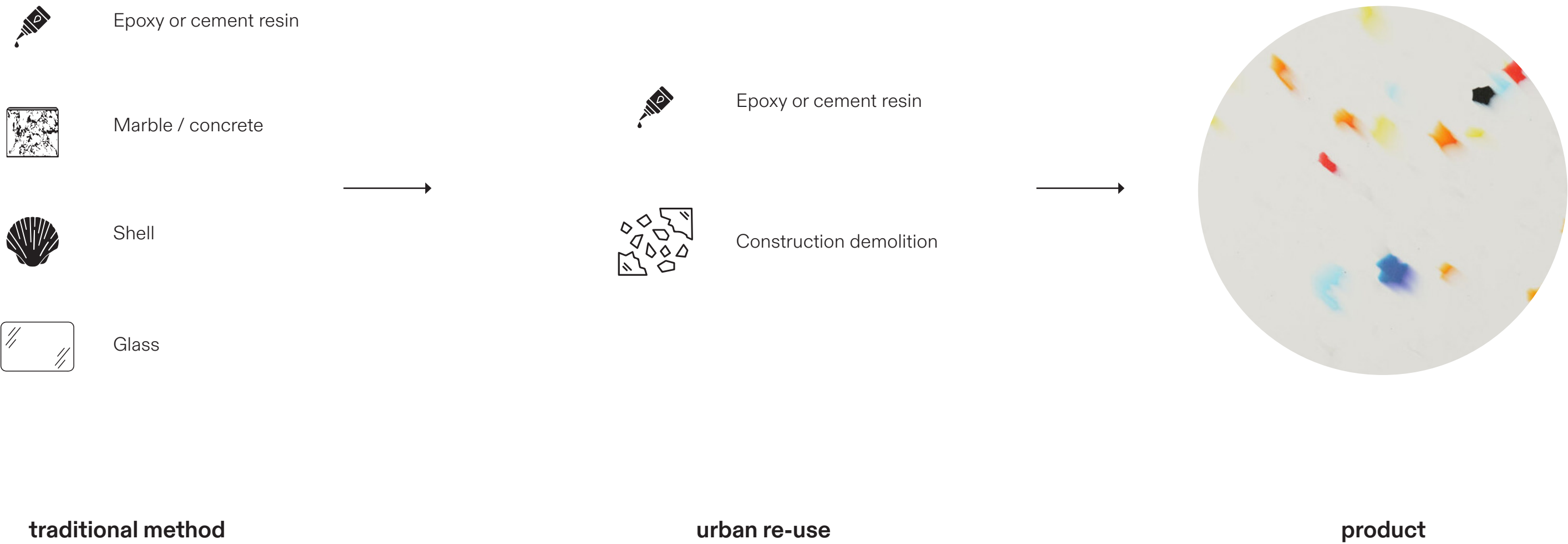
winter daytime



Materialisation

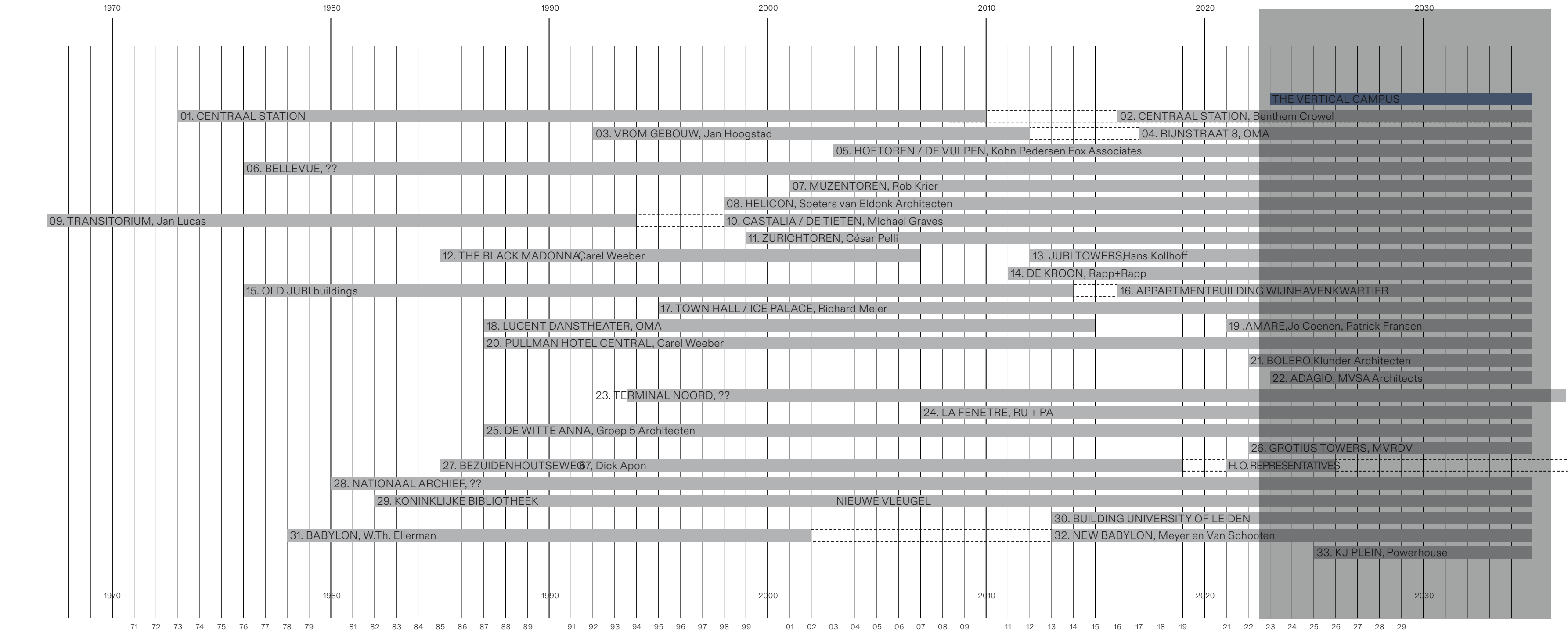
Facade material

“Built by the city, for the city”

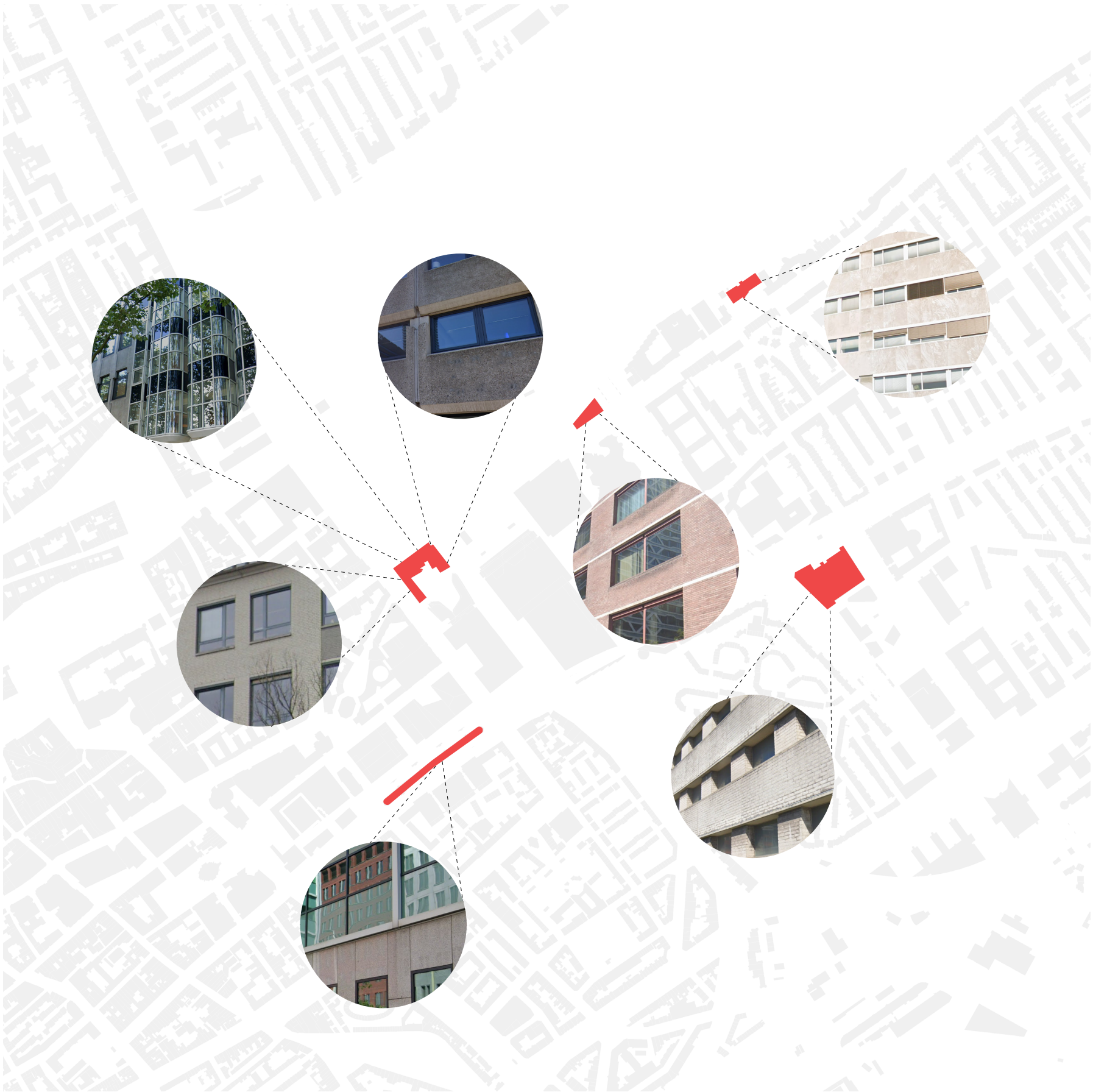


Materialisation

Building timeline







Sustainability

Durability

Lifespan of a Building

2024

Vertical Campus, The Hague
> 100 years

Modular Design

Layers of Brand

High-Durability Materials

Optimization

Solar chimney

Optimization

Local Renewable Energy

Sustainability - Construction + Materials

Hybrid Construction

Core + Columns

Concrete

conventional

Beams

Glulam

biobased

Floors

Wood (CLT)

biobased

Facade

Self-made terrazo tile

Recycle

Optimization

Stormwater retention

Optimization

Renewable Energy

Rainwater Harvesting

Sustainability

Greenery

Summer

Winter

Optimization

Climate facade

Optimization

Ventilation optimization

