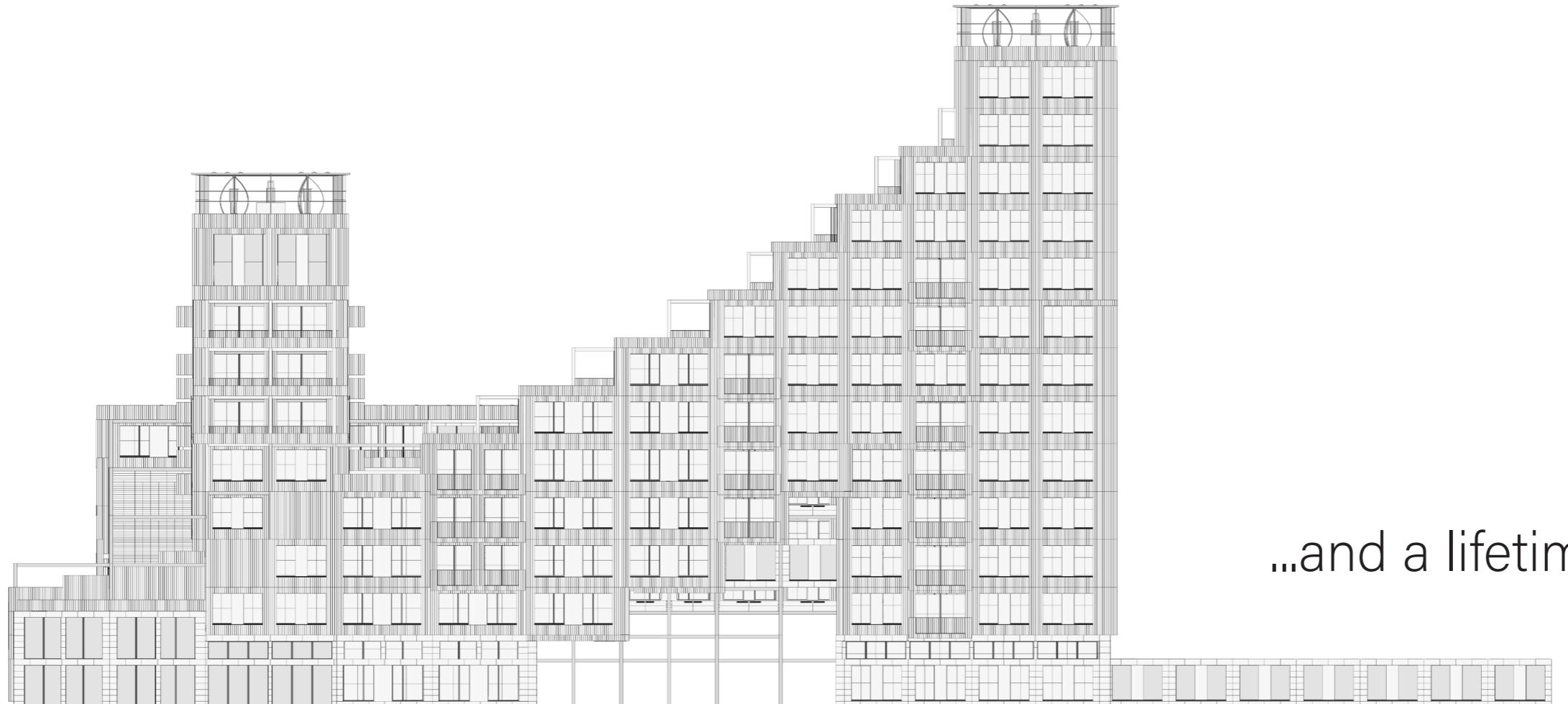


Between a day...



...and a lifetime

Integration of short-stay housing and the sharing economy in the post-war neighbourhood of Groot-IJsselmonde, Rotterdam

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Robbert Guis
Florian Eckardt

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1. Introduction

Background



- Societies move in an ever increasing pace, with significant changes in the way we live
- Post-war neighbourhoods were the modernist response to a large housing shortage, efficiency of the 'stamps' quickly created housing with adequate living conditions
- Nearly all constructed dwellings were single-family apartments or rowhouses, which fitted the needs of the time but currently create several issues
- Short-stay platforms have revolutionized tourist accomodations in popular cities, but have attracted backlash due to increasing housing prices and nuisance

Problem statement

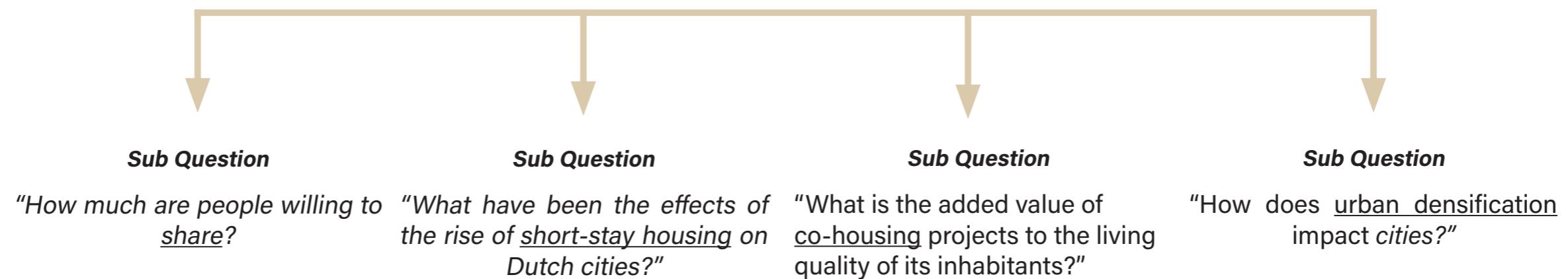


- Housing market in the Netherlands is slow and immovable, a construction sector which is lagging behind and the regulations not allowing for quick responses to changing wishes and needs in society
- Shifting market forces and digitalisation have caught up with the housing market, creating many issues on affordability and availability
- Leasing items for a short time can be a favourable option to owning because of its ease and possible cost advantage
- New ideas on ownership and sharing have yet to introduce themselves into the current housing market and architectural practises, leaving a significant potential untouched

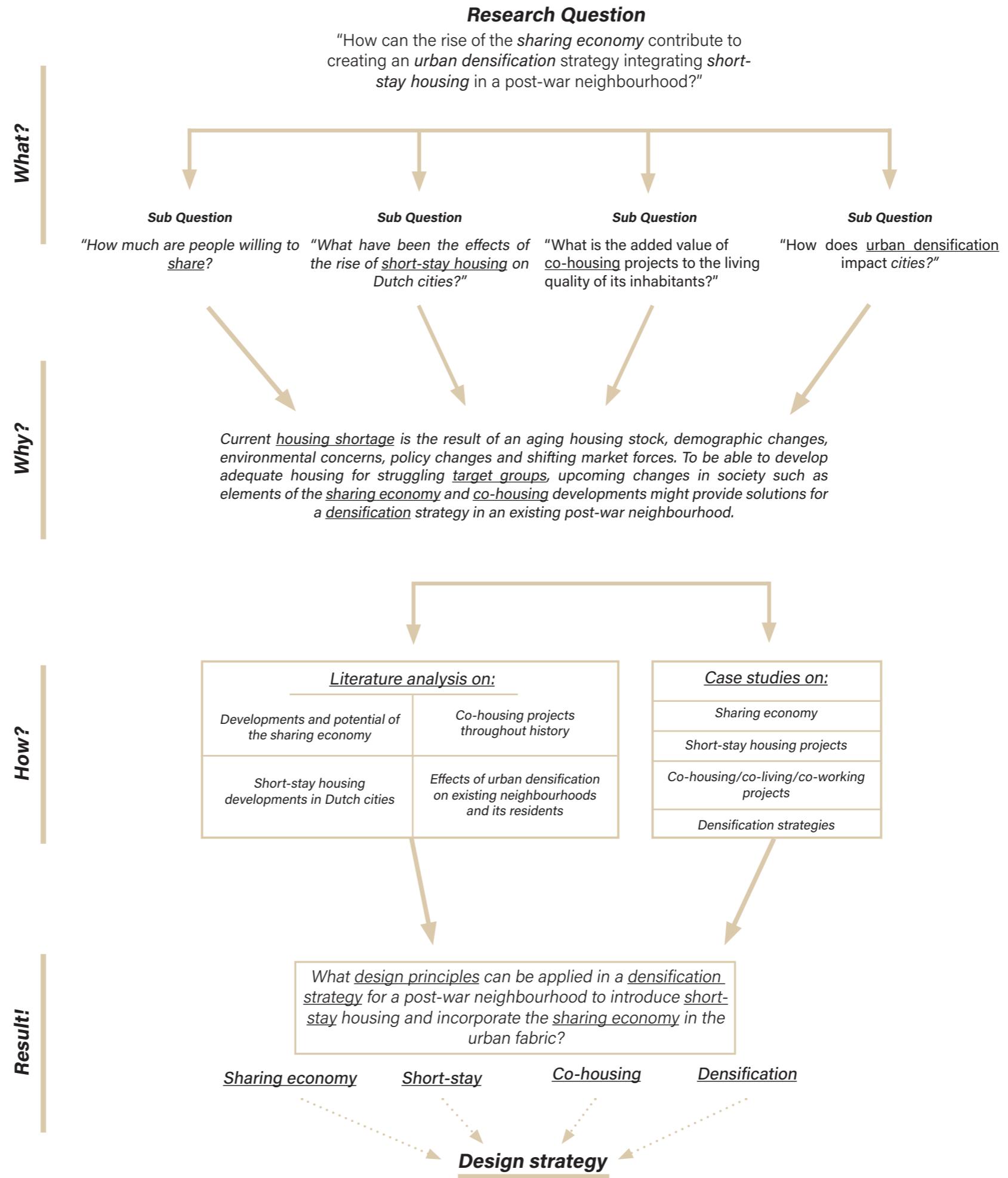
Research question

Research Question

"How can the rise of the *sharing economy* contribute to creating an *urban densification* strategy integrating *short-stay housing* in a post-war neighbourhood?"

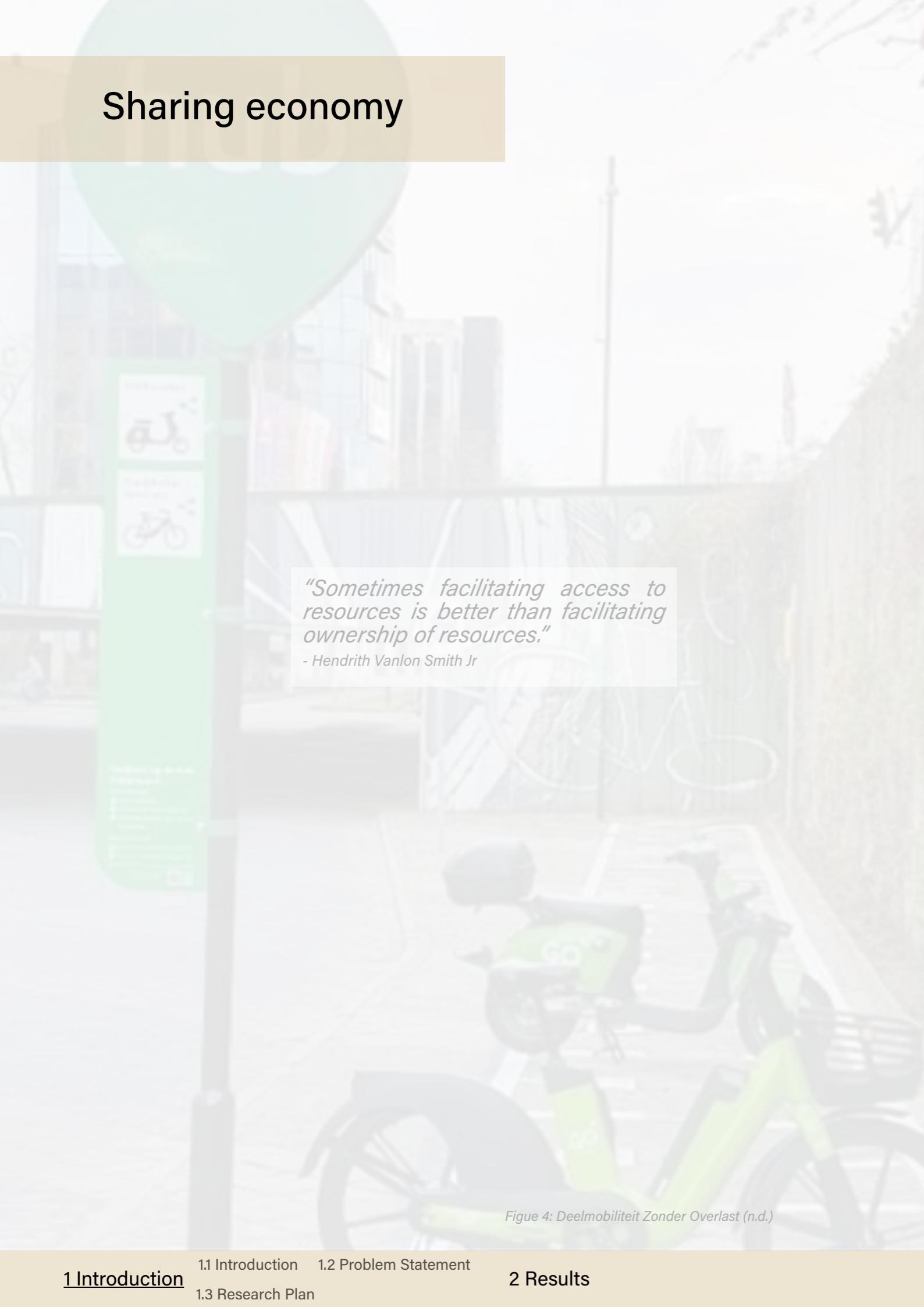


Research structure



2. Results

Sharing economy



"Sometimes facilitating access to resources is better than facilitating ownership of resources."

- Hendrik Vanlon Smith Jr

Definitions:

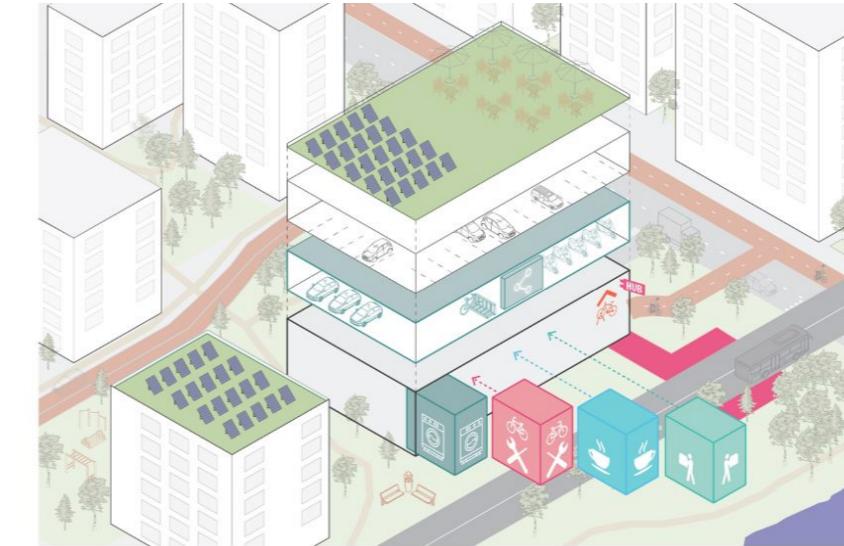
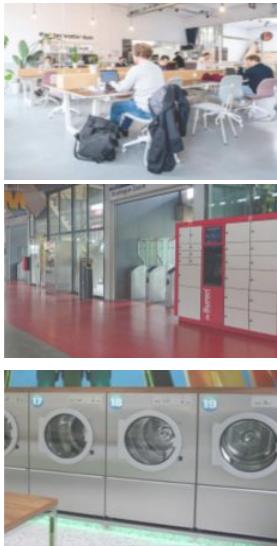
1. Recirculation of goods;
2. Increased utilization of durable assets ;
3. Exchange of services;
4. Sharing of productive assets.

Beneficial for several target groups by its potential to enable (short) social relationships

Sharing is based on trust and therefore works best if the group of people sharing remains small

Figue 4: Deelmobilitet Zonder Overlast (n.d.)

5. MOBILITEITSHUBS: VAN P-GARAGES NAAR COMMUNITY HUBS



Geclusterd
autoparkeren
uit het zicht

Meer groen
en verblijven
in de wijk

Minder
autoverkeer
Meer lopen

Multi
modale hub
(OV, MaaS)

Community
services

Smart grid
(schaal-
voordelen)

Flexibel
transformeer-
baar

Case studies



Project info

- completed in 2021
- 120 dwellings
- 7 buildings
- 100 parking spaces
- shared; garden, communal spaces, working spaces, cars, (cargo) bikes, commercial spaces

Figure 8: Facade of block 26 of Woon&Cobouw.nl



Project info

- to be completed in 2021
- 262 dwellings
- 7 buildings
- 100 parking spaces
- shared; common room, gym, parking garage, (cargo) bikes, commercial spaces, 'sharing wall' for tools etc.

Figure 15: Impression of SPOT (Architectenweb.nl)



Project info

- Published in 2022
- Aims at improving 'slow traffic' in cities
- 6 reports.
- Arguments for 'the 15 minute city'
- Case-studies on Rotterdam & Zwolle

Figure 19: Programma deelbaarheid (Kwantes et al.)



Project info

- completed in 2019
- 51 dwellings
- 7 buildings
- 100 parking spaces
- shared; garden, tools, vegetable garden, bikes, experiences

Figure 24: (Delva Landscape Architectuur)

Short-stay; Rotterdam



Many positives that tourism and short-stay housing can bring, but lessons can be learned from big cities overrun by tourists

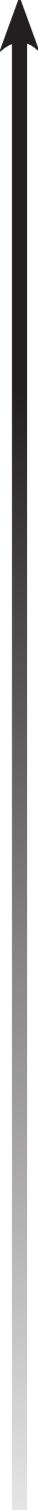
Rotterdam aims at the 'do-rist', being an active participant of the Rotterdam way of life

Short-stay housing as a driver of gentrification

Short-stay target groups

<p>1 year</p>  <p>Length of stay</p>	Expats	<ul style="list-style-type: none"> - Trend is short-stay - High income - English speaking 	<ul style="list-style-type: none"> - Want to integrate, but face cultural issues in the Netherlands - Creative expats seek cheap apartments, technical expats seek affordable suburb housing - Social contacts with other expats, few local ties
	Recently divorced	<ul style="list-style-type: none"> - Risk of homelessness - Leaving stress is found to be important - In need of new social contacts after a divorce 	<ul style="list-style-type: none"> - Single person household - Relatively low budget - Increasingly opt for co-parenting
	Refugees	<ul style="list-style-type: none"> - Appointed housing within 10 weeks - Family's get apartments, singles get rooms - (very) low budget 	<ul style="list-style-type: none"> - Lack culture-specific skills and knowledge - Social interaction promotes integration - Create social-bonds through collaboration
	Seasonal migrant worker	<ul style="list-style-type: none"> - Footloose migrants have a high risk of social issues and homelessness - Often have (lower segment) jobs - Integration through social interaction would alleviate issues 	<ul style="list-style-type: none"> - Single person household - Middle-schooled, often work lower than their education - (very) low budget
	Economically homeless	<ul style="list-style-type: none"> - Urgent need of housing - Often have (lower segment) jobs - Increase in homelessness among 20-30 year olds 	<ul style="list-style-type: none"> - Single person household - Middle-schooled - (very) low budget
	Tourists	<ul style="list-style-type: none"> - Can be for as little as one night - Higher 'per night' budget compared to regular rent - Positive interaction between residents and tourists is crucial for sustainable tourism 	<ul style="list-style-type: none"> - Tourism encounters may improve social interactions but can lead to difficulties due to rules over social behaviour - Travelling to get a view on a different culture - Not only share their accommodation with the host, but also their presence with the community
<p>1 day</p> 			

Short-stay target groups

<p>Length of stay</p> 	Expats	<ul style="list-style-type: none"> - Trend is short-stay <u>- High income</u> - English speaking 	<ul style="list-style-type: none"> <u>- Want to integrate, but face cultural issues in the Netherlands</u> - Creative expats seek cheap apartments, technical expats seek affordable suburb housing - Social contacts with other expats, few local ties
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Case-studies



Project info

- completed in 2019
- 279 units, with up to 412 rooms
- 7 buildings
- connected to a large commercial centre
- shared; gym, communal lounges, kitchens, bathrooms, roof garden, working spaces, commercial spaces

Figure 47: Facade of lyf funan (Discoverasr)

Project info

- completed in 2016
- 546 bedrooms
- 2 building volumes
- crossover between student housing and hotel
- shared; gym, communal lounges, kitchens, bathrooms, roof garden, working spaces, commercial spaces

Figure 42: The Collective Old Oak (PLP Architects)

Project info

- completed in 2016
- 400 rooms
- Energy production by windmills on top
- A bike is included with the room
- shared; communal spaces, workshop spaces, café, gym

Figure 53: The social hub, eindhoven (The Social Hub)

Project info

- completed in 2020
- 340 rooms
- hybrid-hotel concept; high-end hotel functions combined with short- and long-stay student facilities
- shared; communal spaces, working spaces, classrooms, library, meeting rooms, commercial spaces

Figure 60: The Student Hotel, Delft (KCAP Architects)

Co-Housing



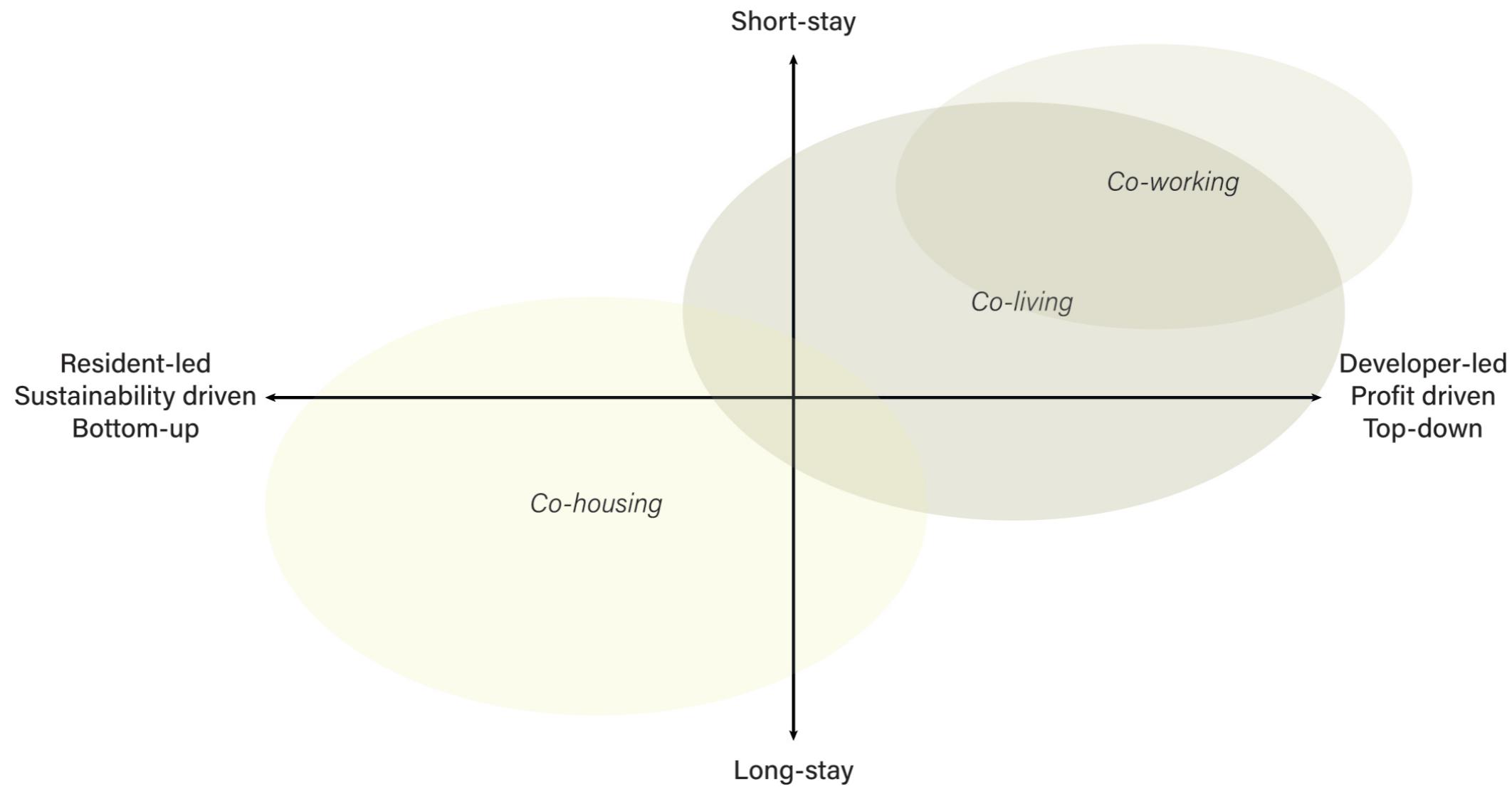
Creates many observed social, sustainable and economic benefits

Big rise in the last few decades, with the Dutch government looking into policies to support initiatives

Extended into the economic sphere through co-living and co-working, which share characteristics with co-housing

Figure 66: History of Cohousing (Milman, 1994)

Co-Housing



Case-studies



Project info

- completed in 2015
- 11 clusters with 10 to 12 dwellings
- 2 buildings
- shared; common room with living room, kitchen and working spaces, launderette, bikes.

Figure 71: Facade of one of the building blocks (mehr als wohnen)



Project info

- completed in 2013
- 64 unique dwellings
- 3 buildings
- Combination of standard apartments and cluster units
- shared; carpentry workshop, kitchen, studios, daycare center, co-working space, spaces for cultural project.

Figure 82: One of the blocks of Spreefeld (Archdaily)



Project info

- completed in 2015
- 138 dwellings
- 5 buildings
- Passive house concept
- shared; event room, restaurant by locals, workshop spaces, offices, guest apartments, laundry room

Figure 76: WagnisArt at night (Archdaily, González)



Project info

- completed in 2013
- 13 rooms
- 7,2 m² per room
- shared; kitchen, bathroom, dining, living room, working spaces, laundry, storage

Figure 90: Facade of LT Josai Shared House (Archdaily, b)

Urban Densification



Urban densification is essential for the growth of cities and sprawl significantly reduces energy consumption

Soft urban densification is a slow process in which small interventions are done

Hard urban densification is a top-down, government led process, usually encompassing large areas

Case-studies

Soft urban densification

A Bestaande woningen



Figure 106: Example of adding housing inbetween existing low-rise rowhouses (KAW architecten)

B Chirurgische ingrepen



Figure 107: Example of adding housing on the blind facades in corners of portico flats (KAW architecten)

C Herstructurering



Figure 108: Example of restructuring existing post-war housing blocks via transformation (KAW architecten)

D Randen



Figure 109: Example of adding housing on the 'empty' edges of post-war neighbourhoods (KAW architecten)

Hard urban densification



Project info

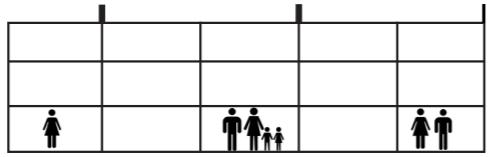
- Under construction
- > 16.000 residents
- shared; gardens, communal spaces, working spaces, cars, (cargo) bikes, commercial spaces

Project info

- completed in 2020
- changing housing needs; smaller households
- 4 strategies for post-war neighbourhoods
- Focusses on environmental, social and economically viable solutions

Figure 105: Example of urban densification (KAW architecten)

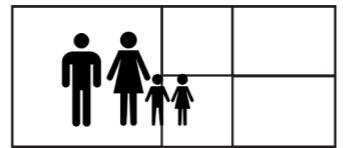
Dwelling types



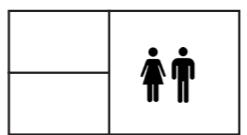
Terraced houses



Existing typologies



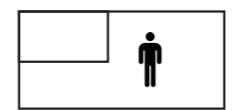
Single-family apartments



One-bedroom apartments



Potential

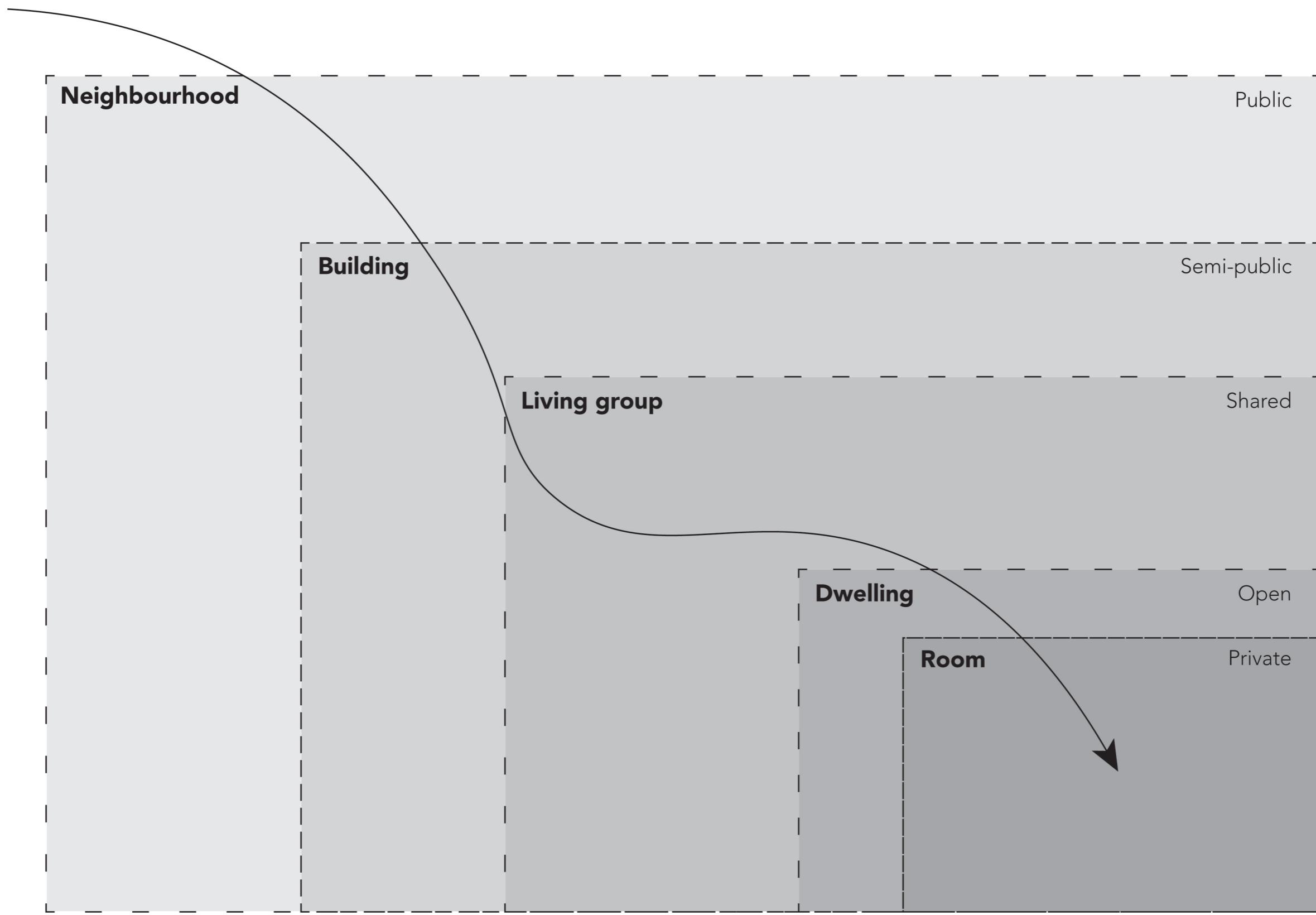


Studios

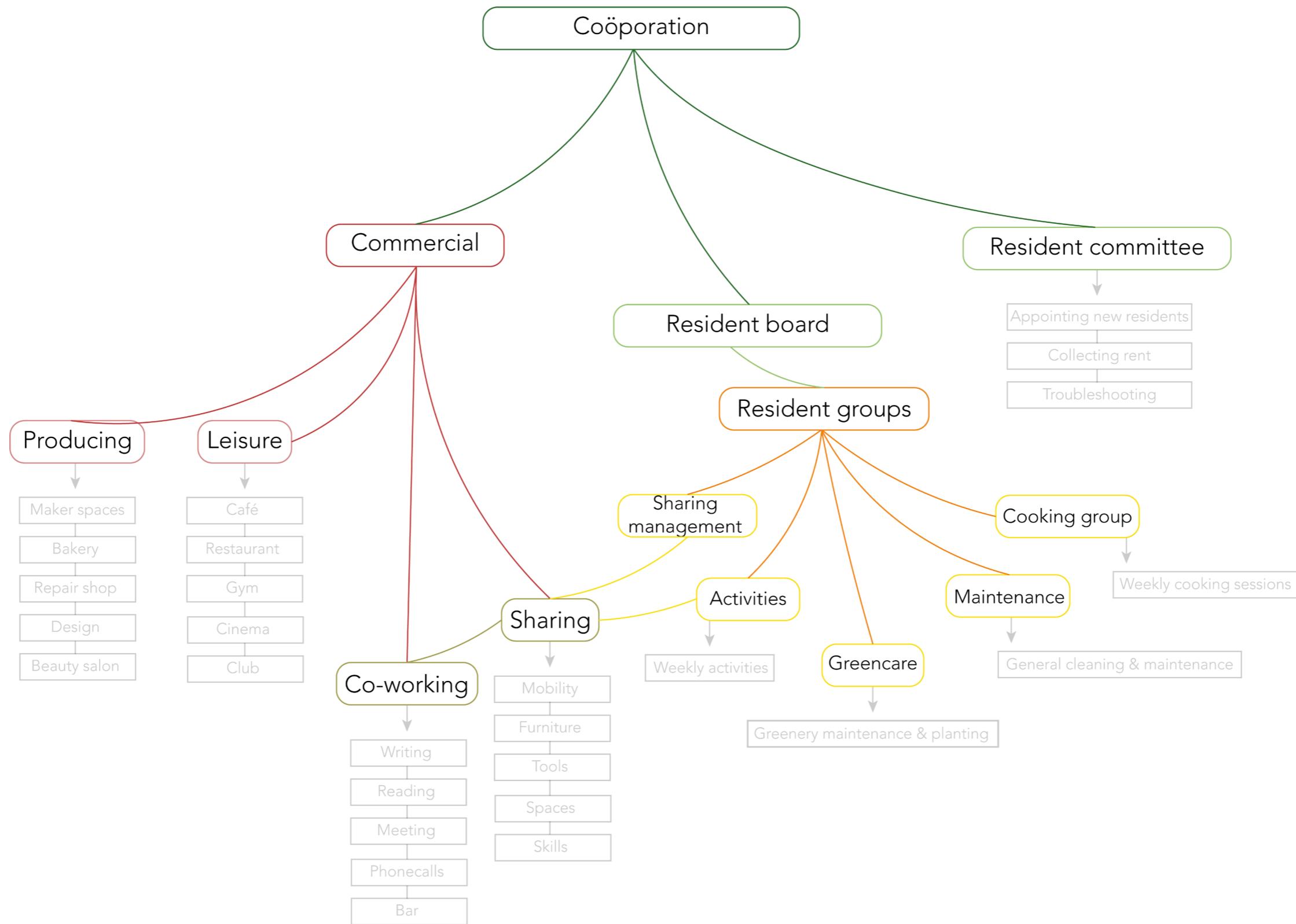


Shared living

Interaction through design



Management structure



3. Site & vision

Groot-IJsselmonde



1 Introduction

- 1.1 Introduction
- 1.2 Problem Statement
- 1.3 Research Plan

2 Results

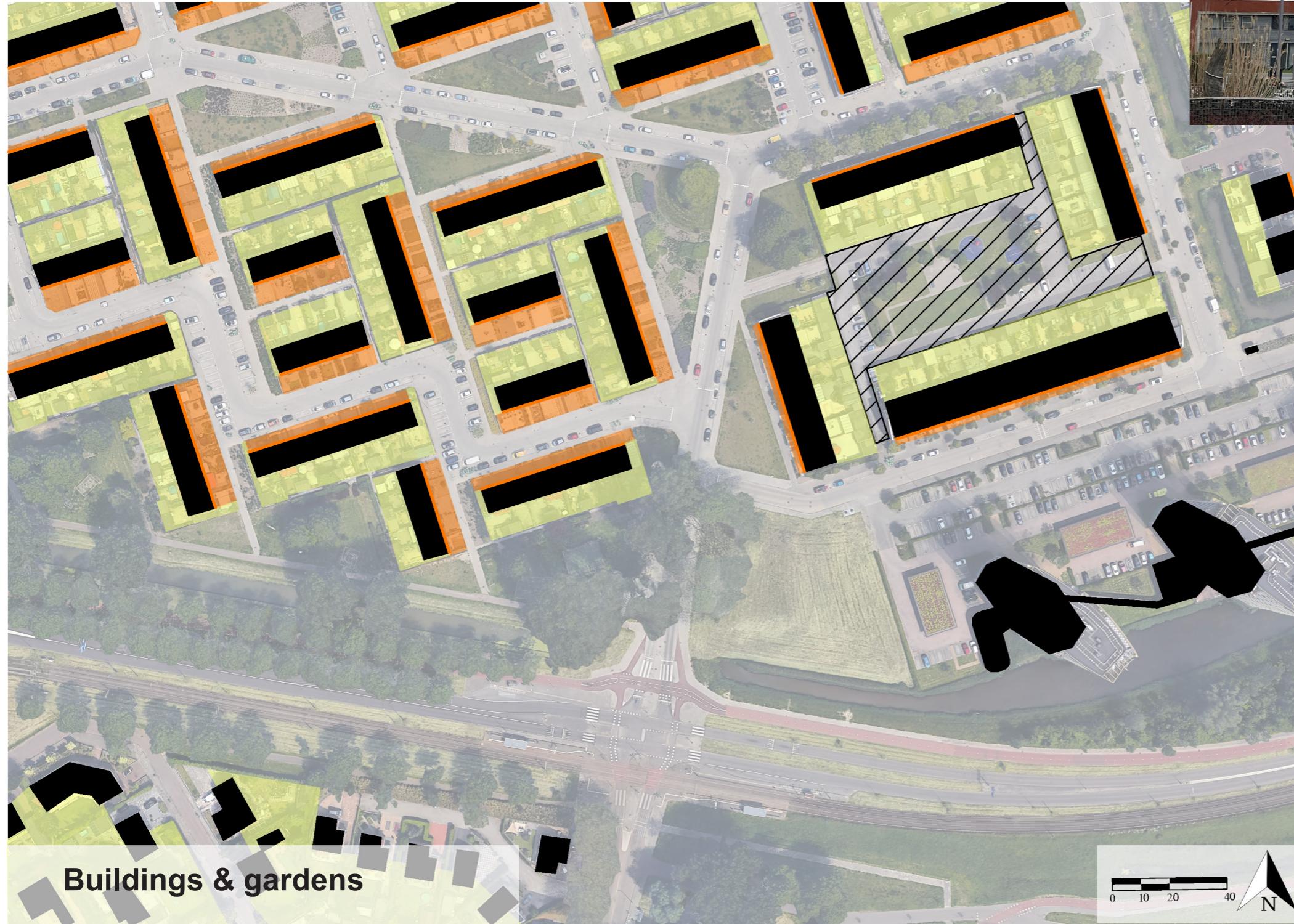
- 2.1 Sharing
- 2.3 Co-housing
- 2.3 Short-stay
- 2.4 Urban densification

3 Site & vision

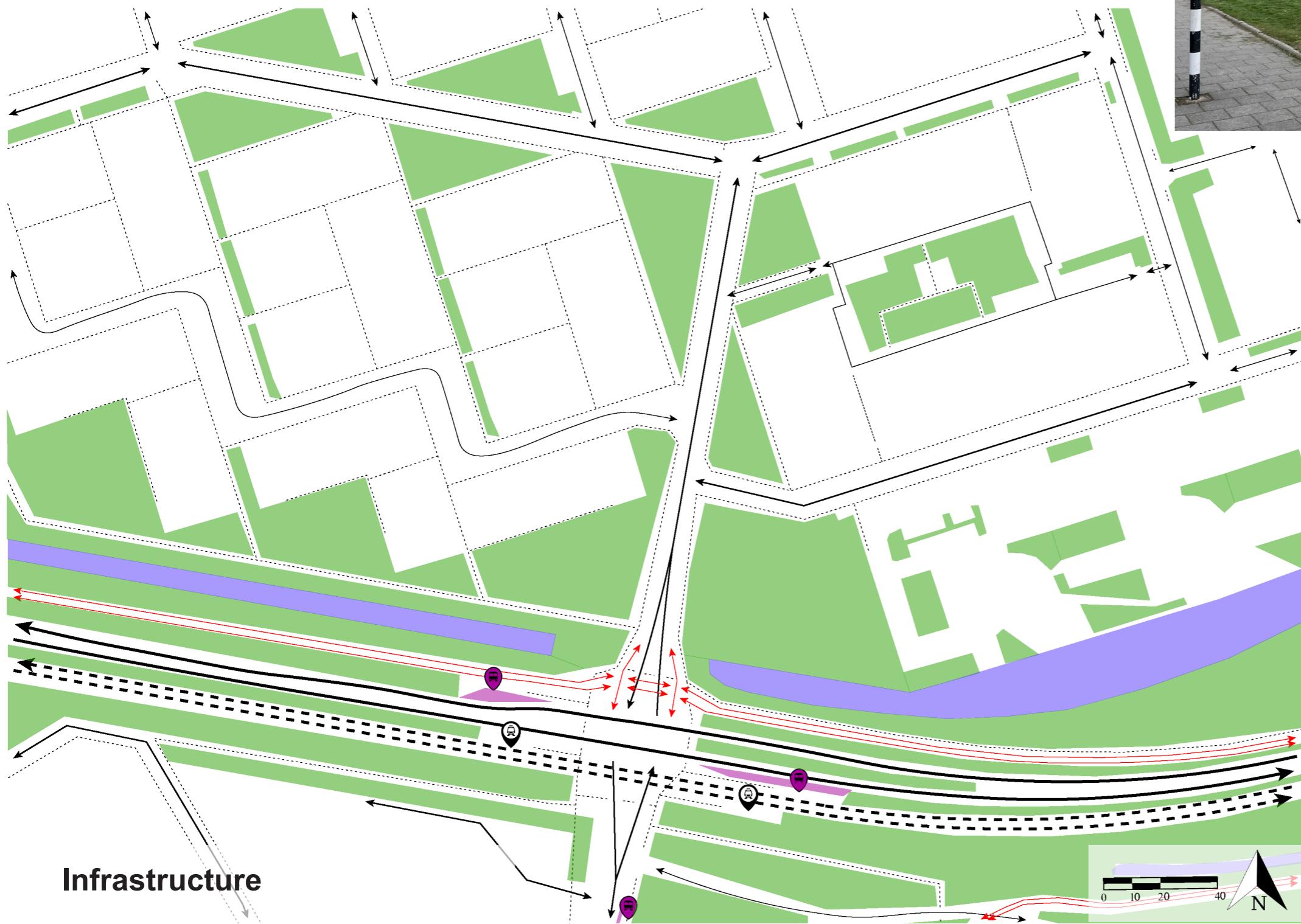
Location; Groenenhagen



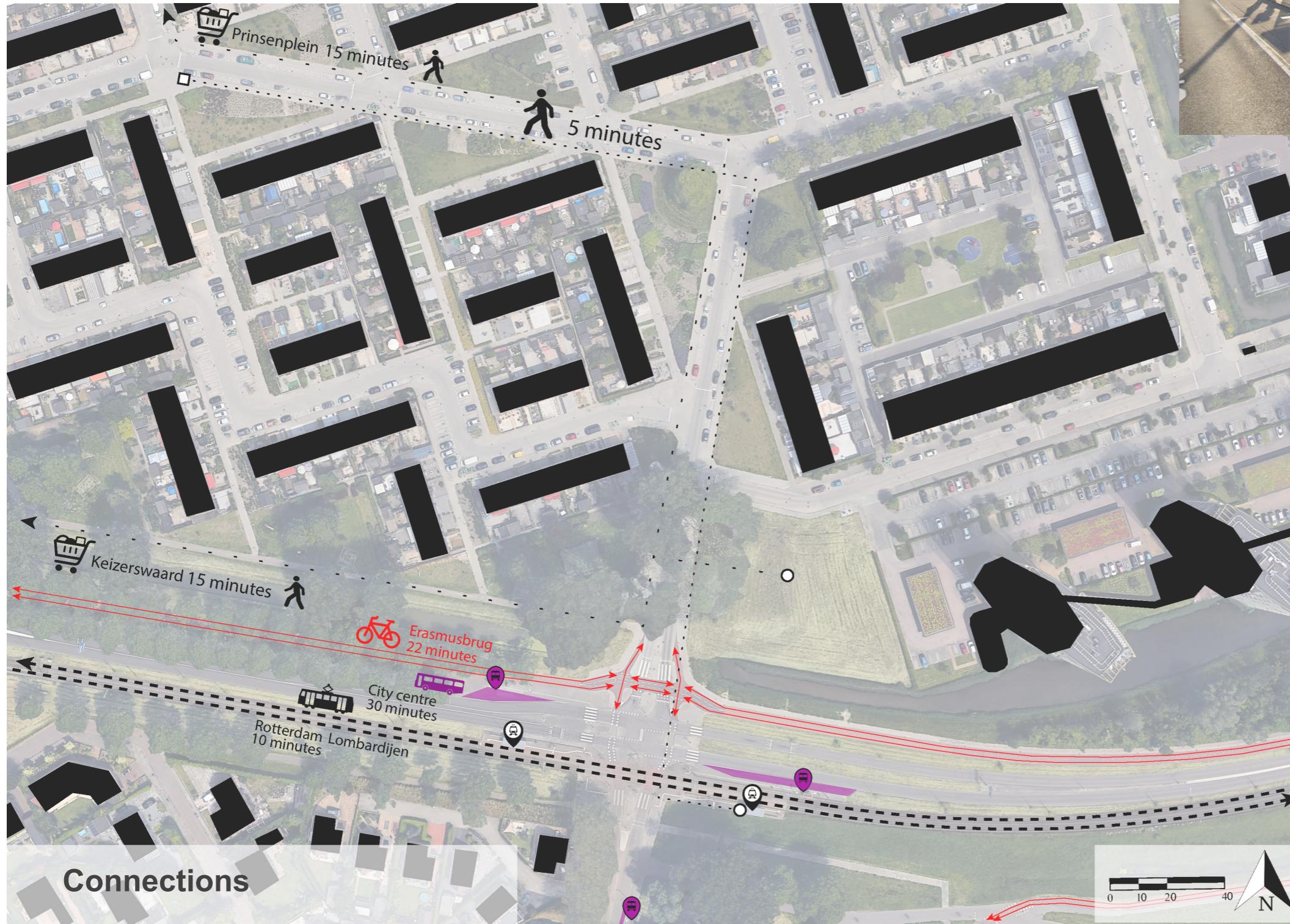
Site Analysis



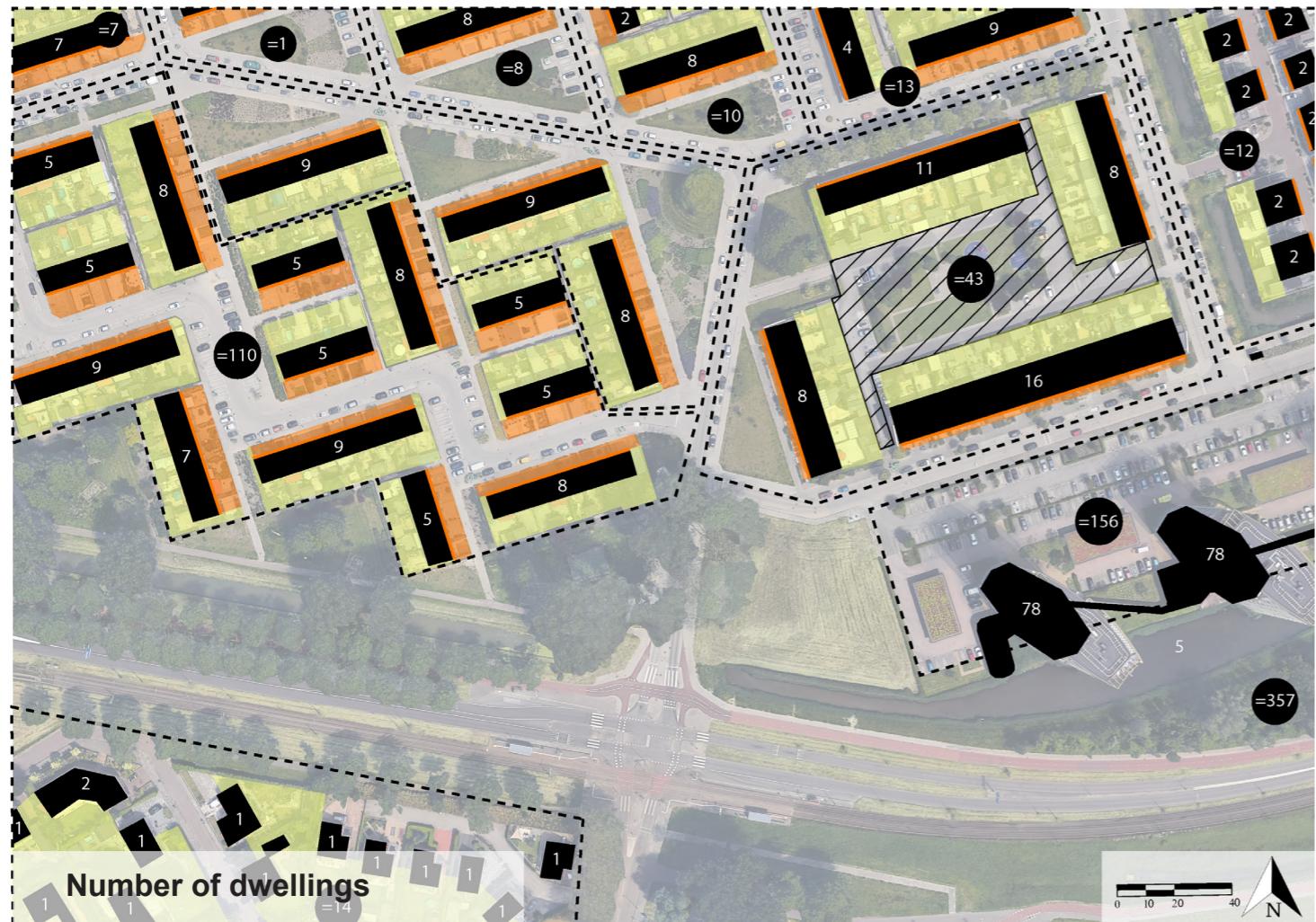
Site Analysis



Site Analysis



Site Analysis



Legend

- Building
- Area border
- Dwellings in area

= 1,5 parking spaces per dwelling

Legend

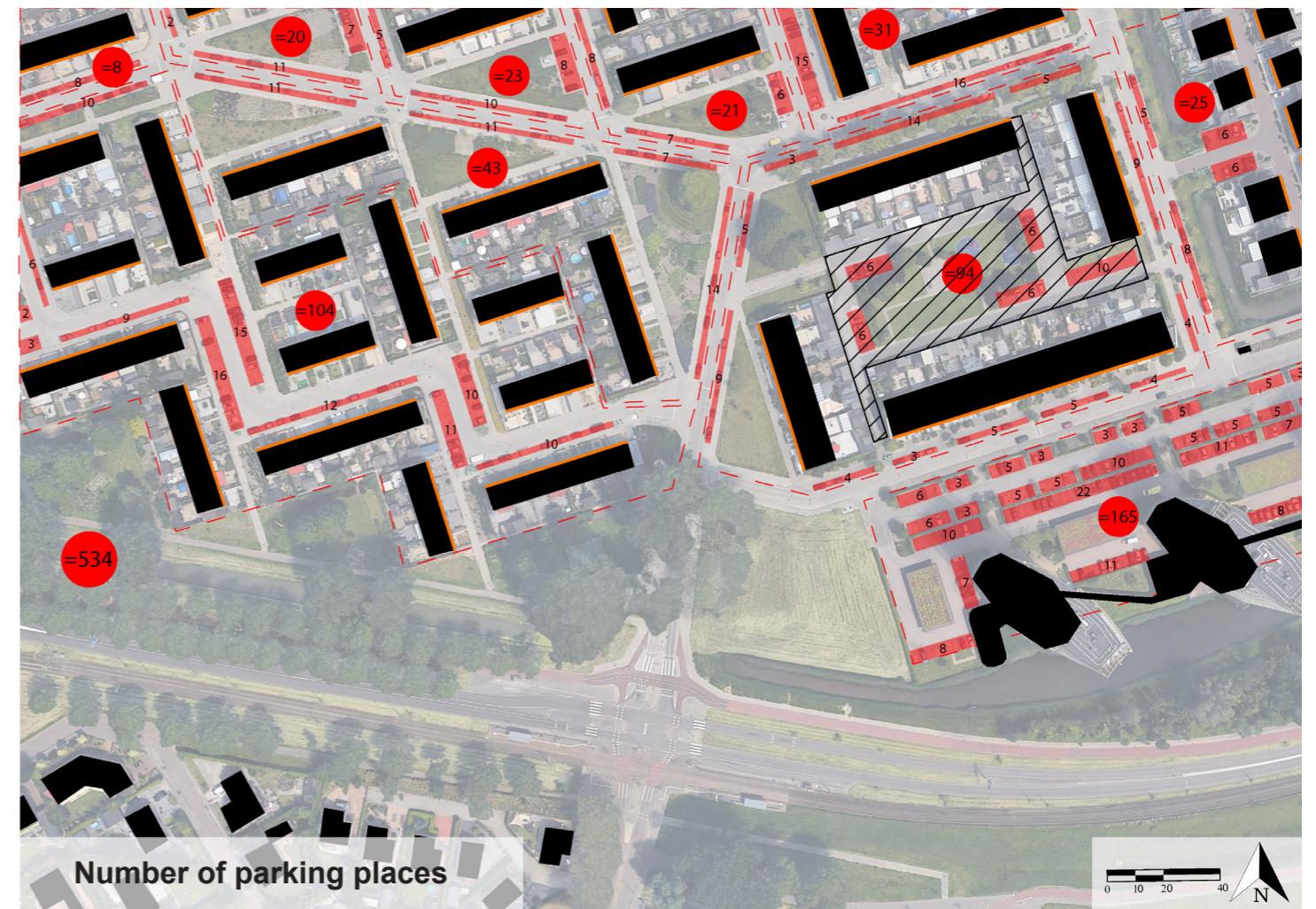
- Building
- Area border
- Dwellings in area

534

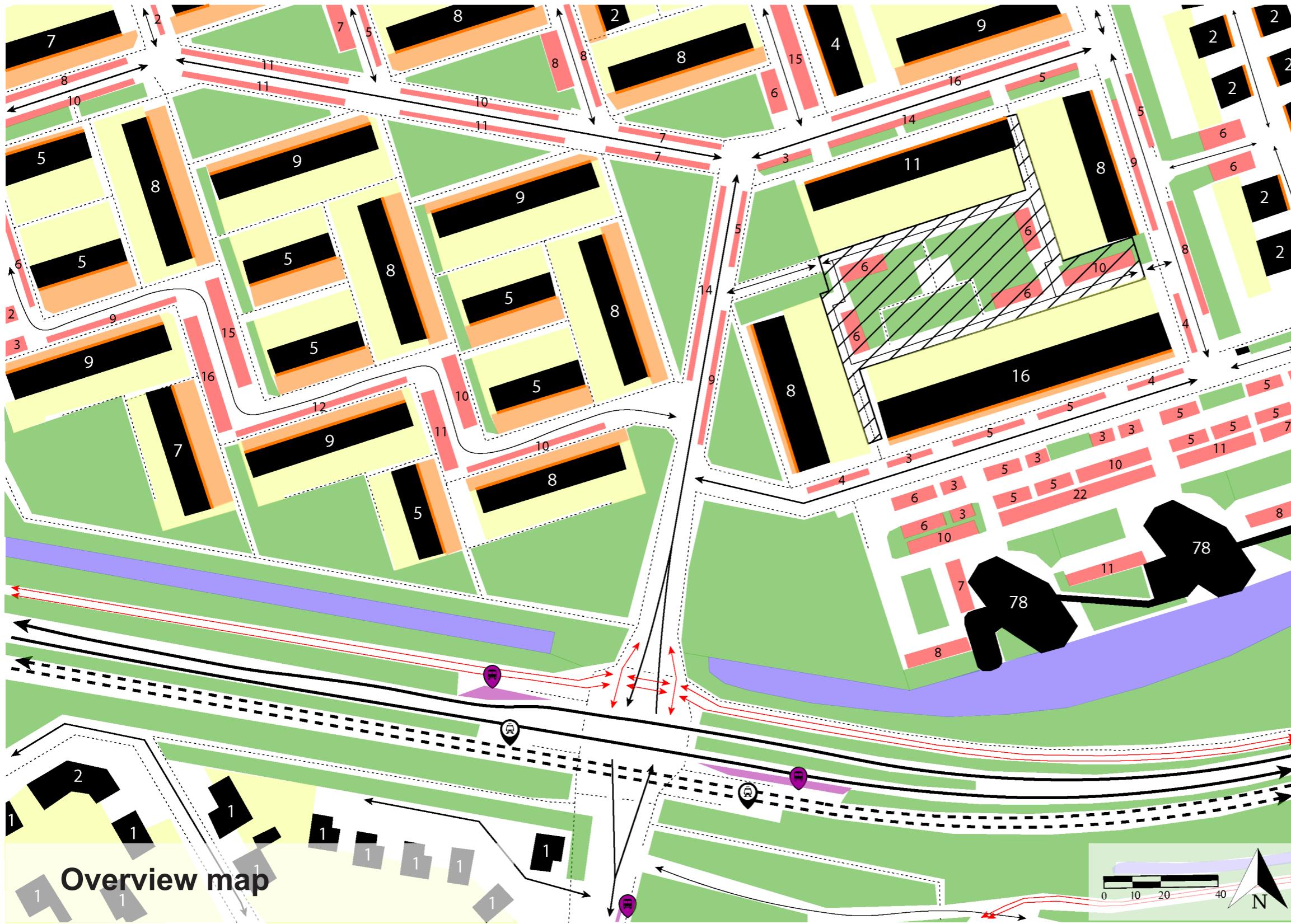
Parking spaces



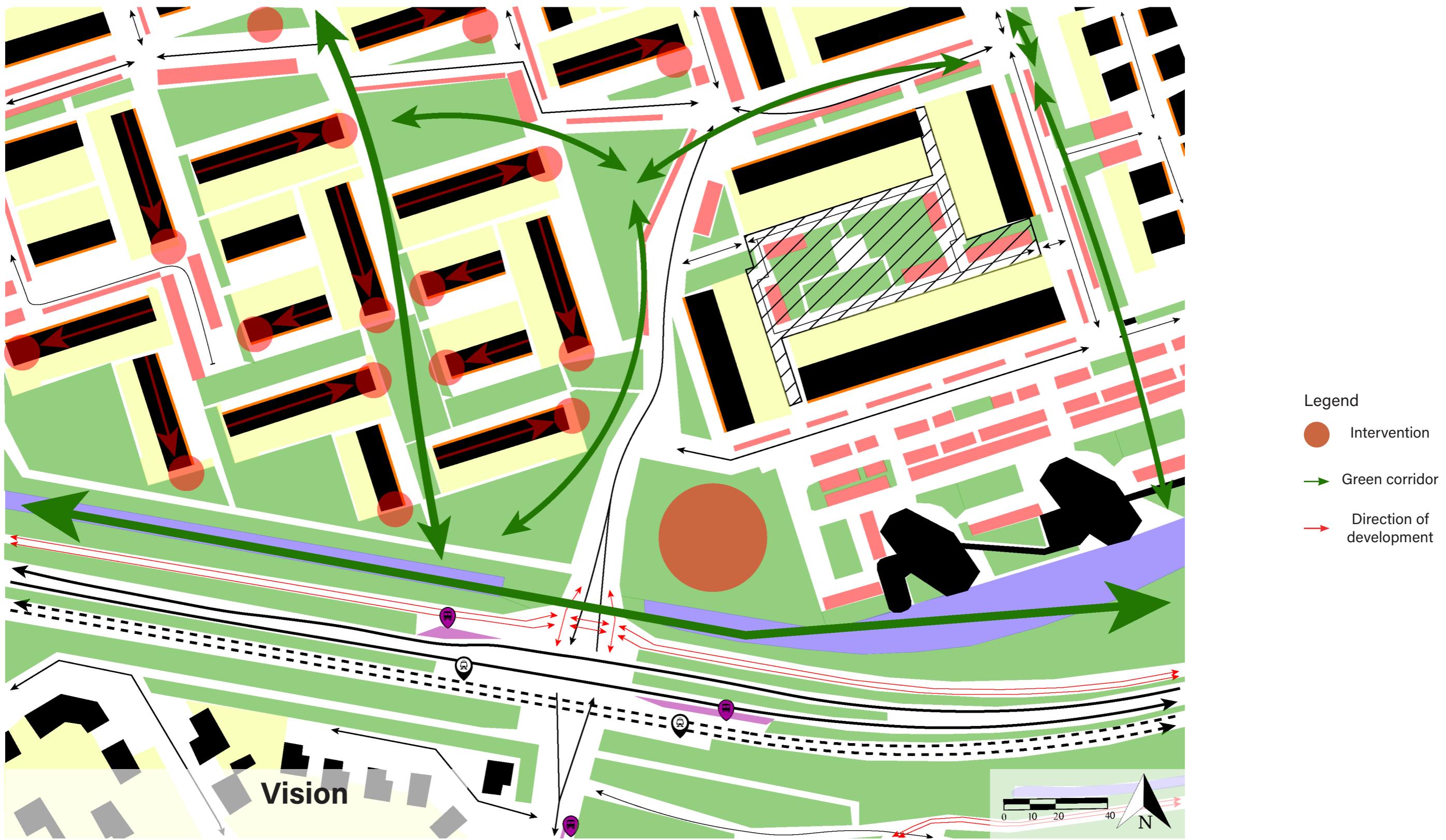
Extensive parking lots



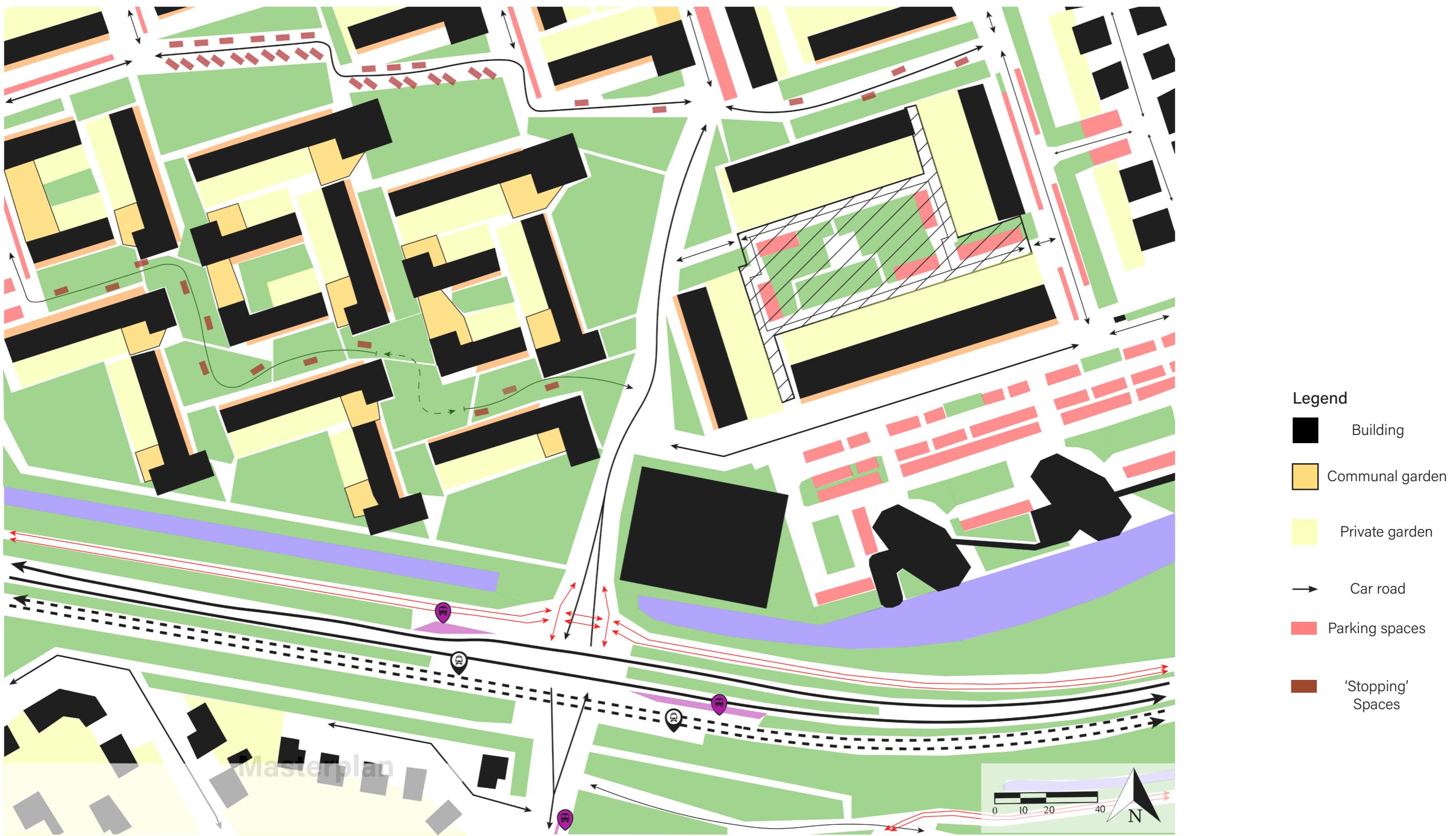
Site Analysis



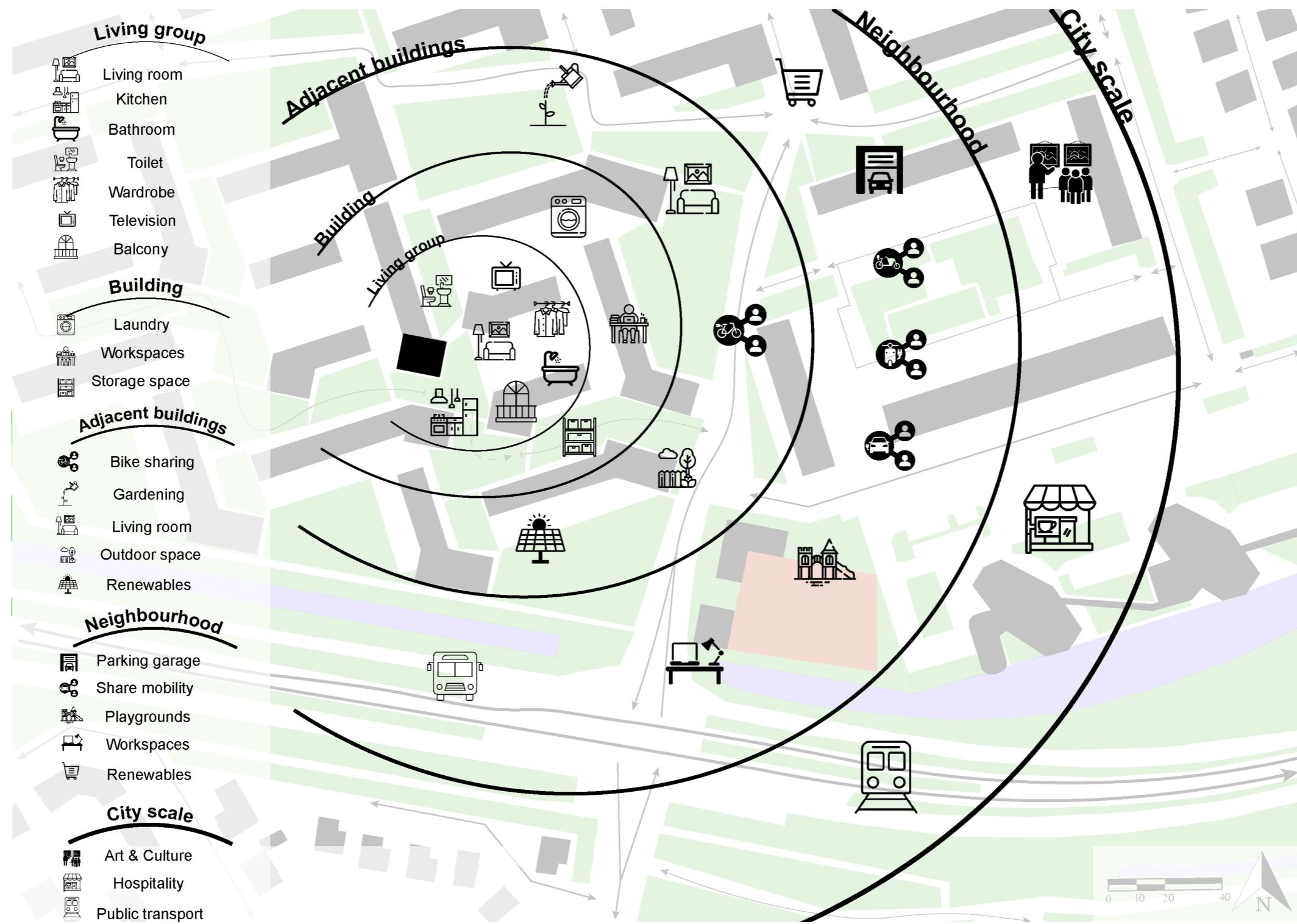
Vision; intentions



Masterplan



Vision; levels of sharing



4. Design

Current situation



Detailed masterplan



Masterplan traffic



Masterplan densification



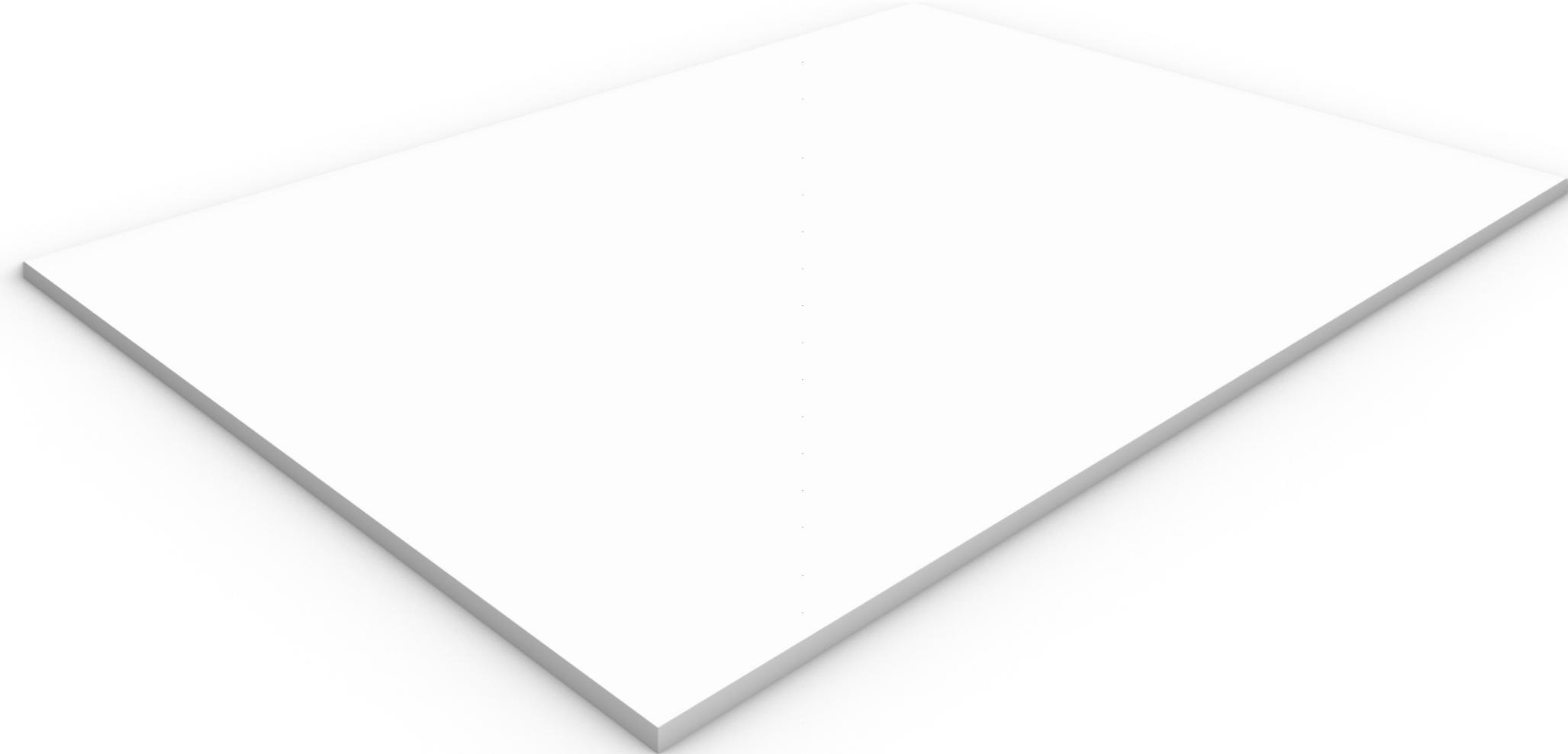
Masterplan



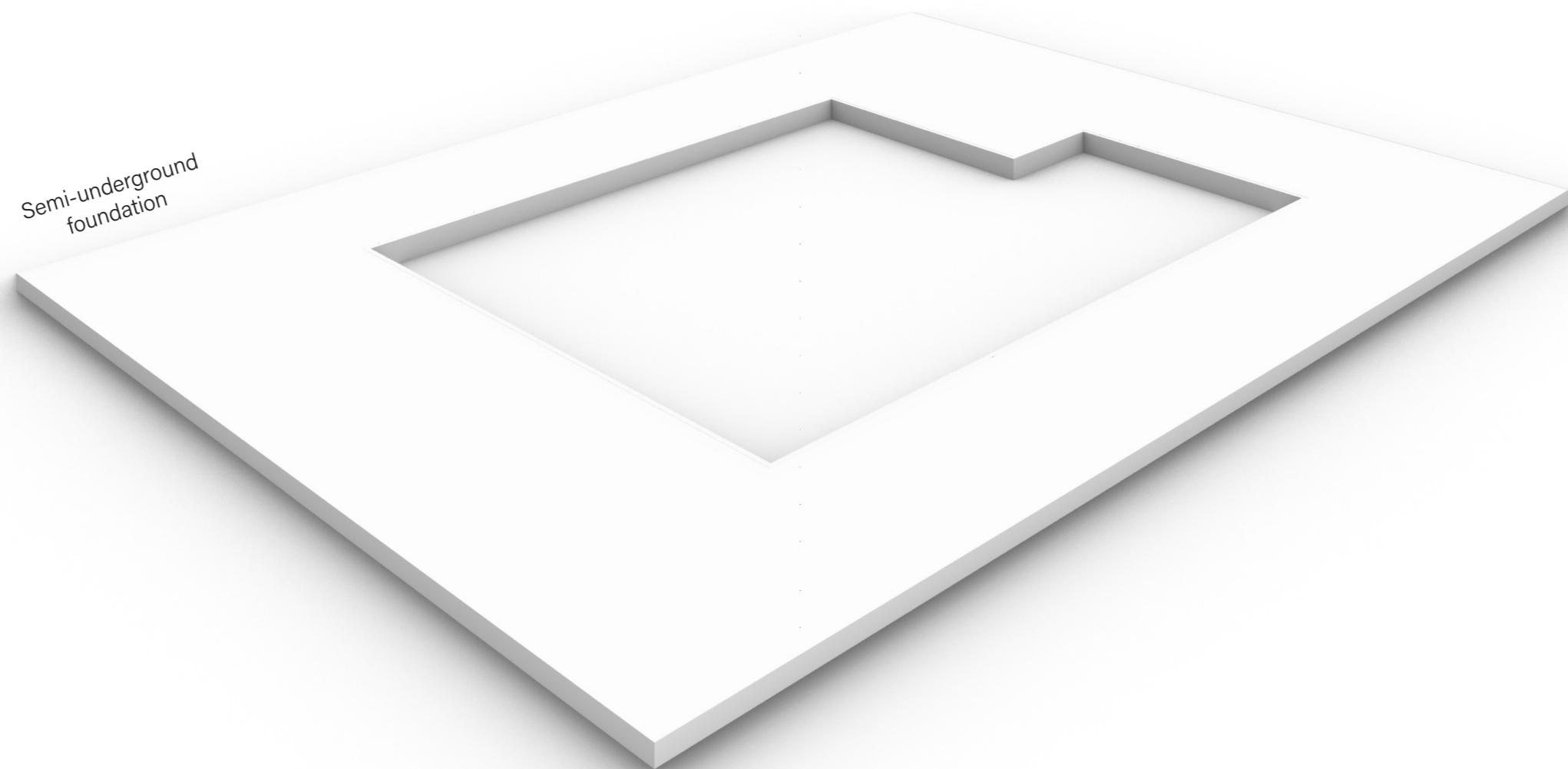
Site



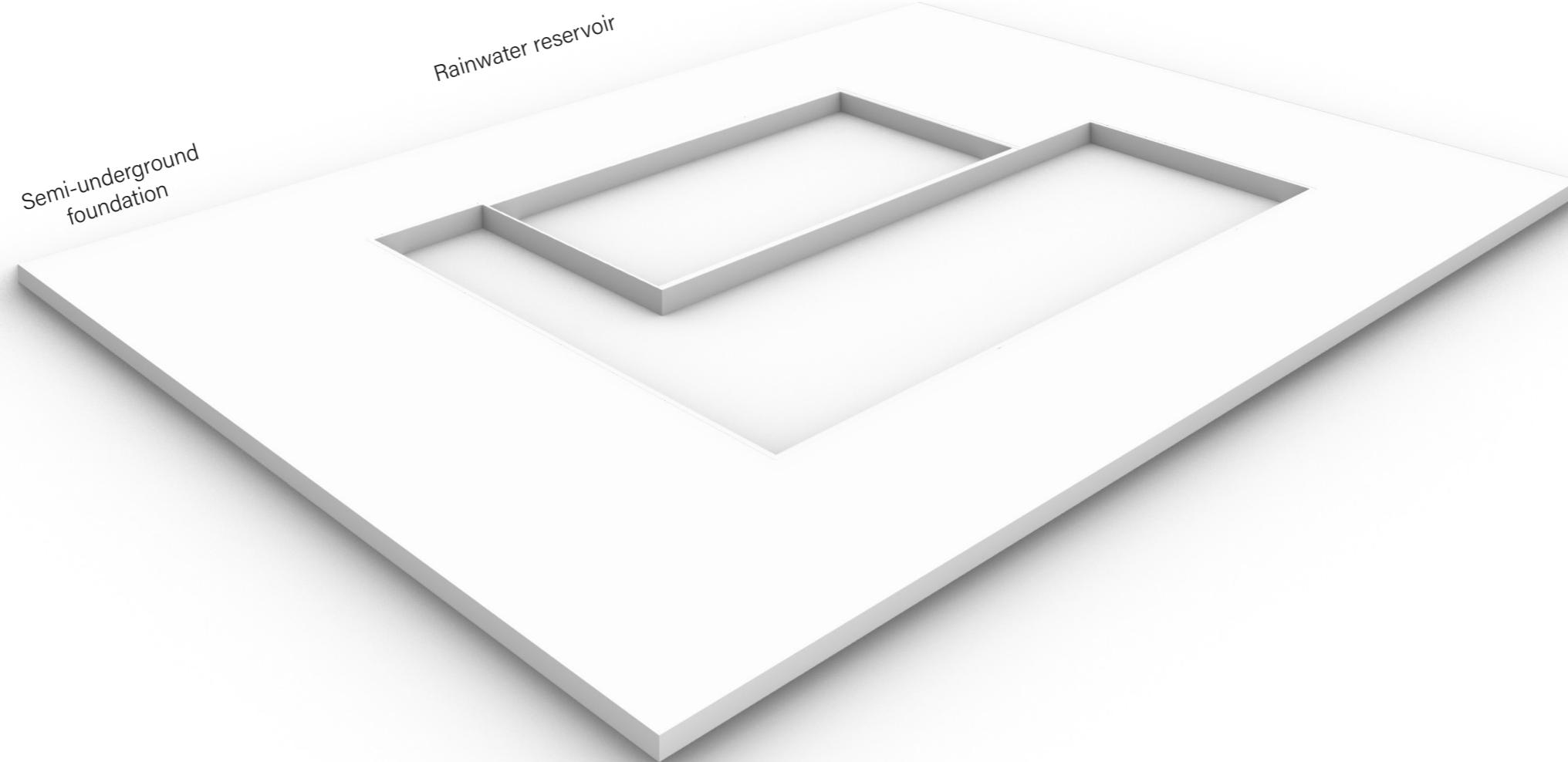
Structure



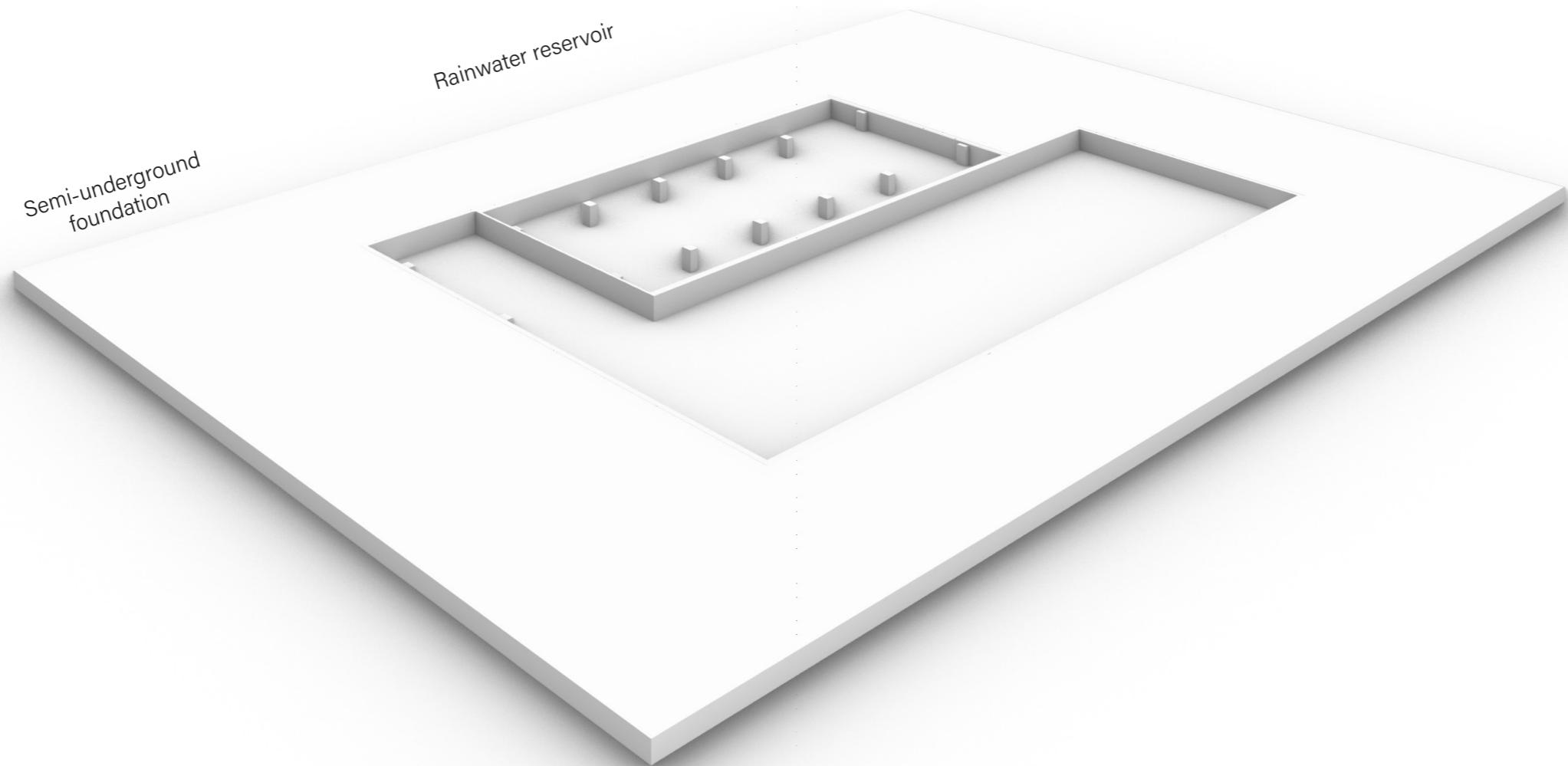
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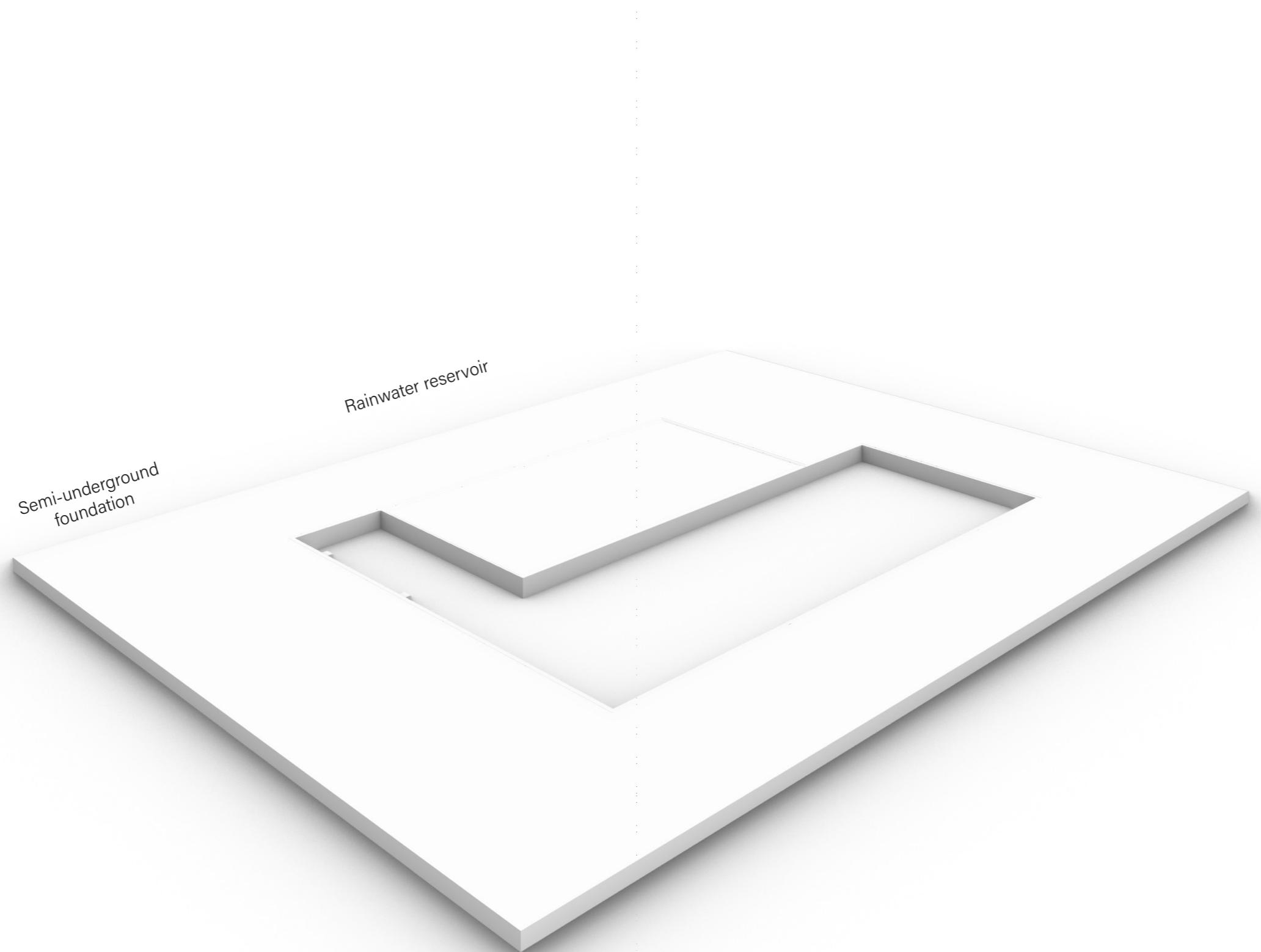
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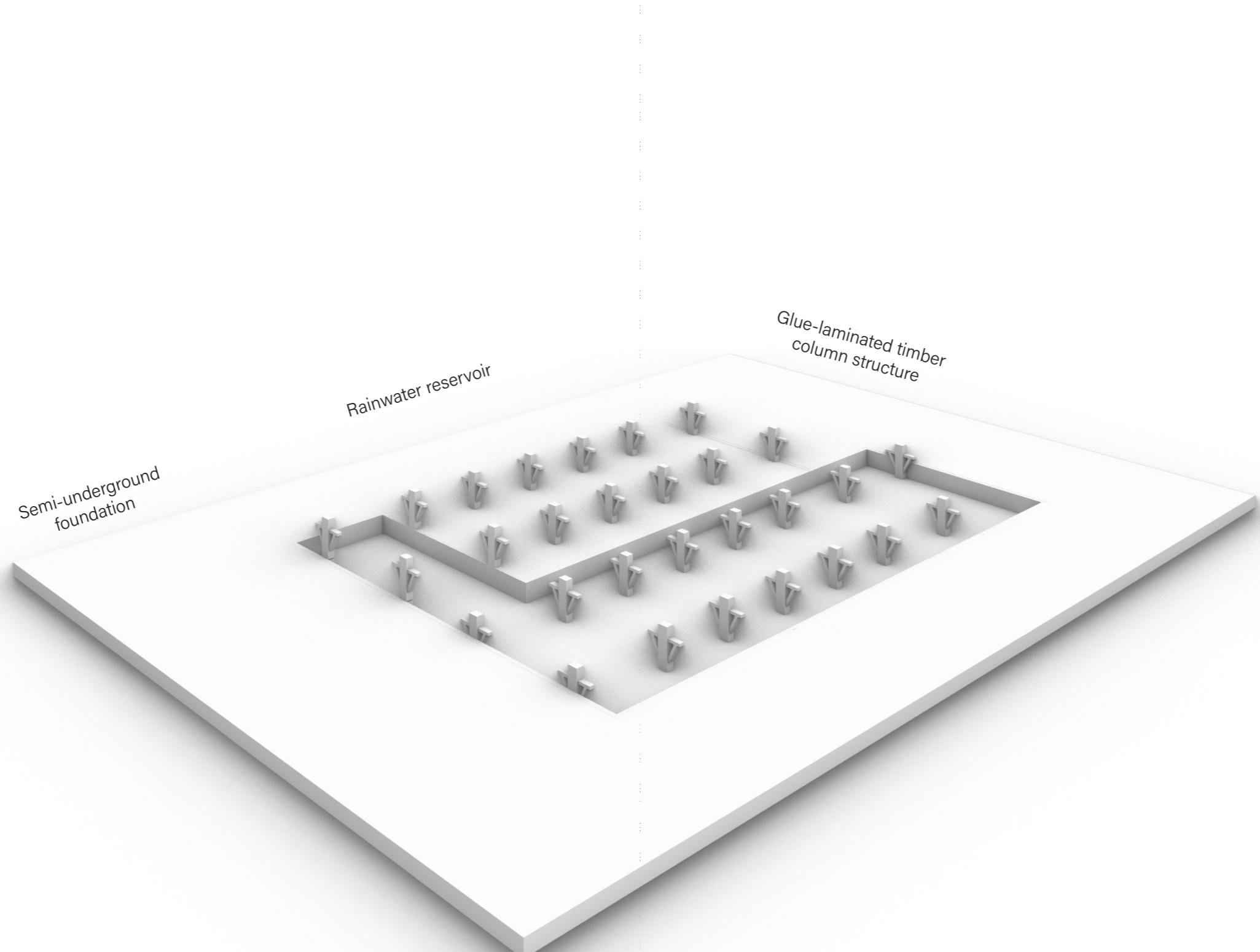
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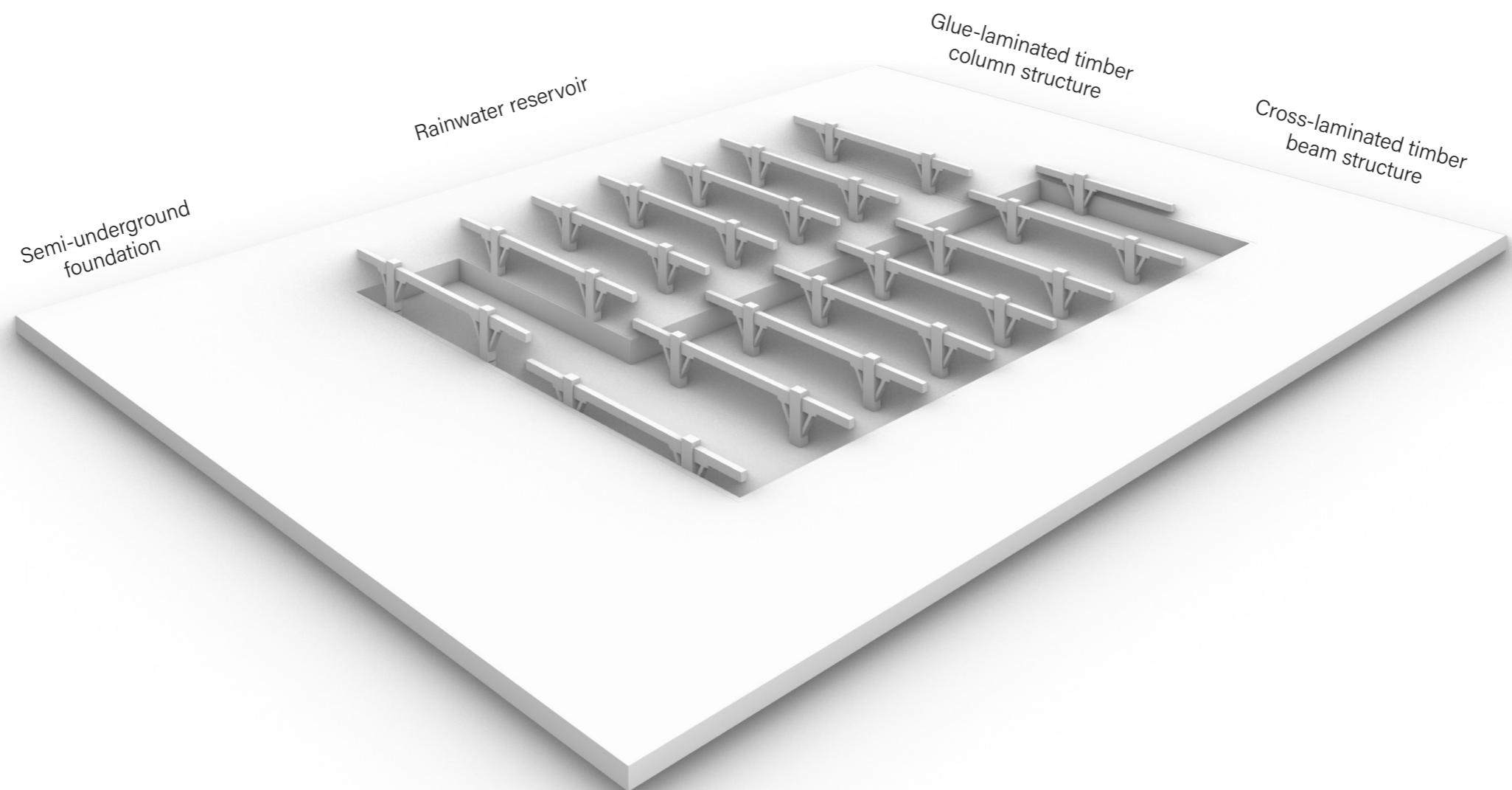
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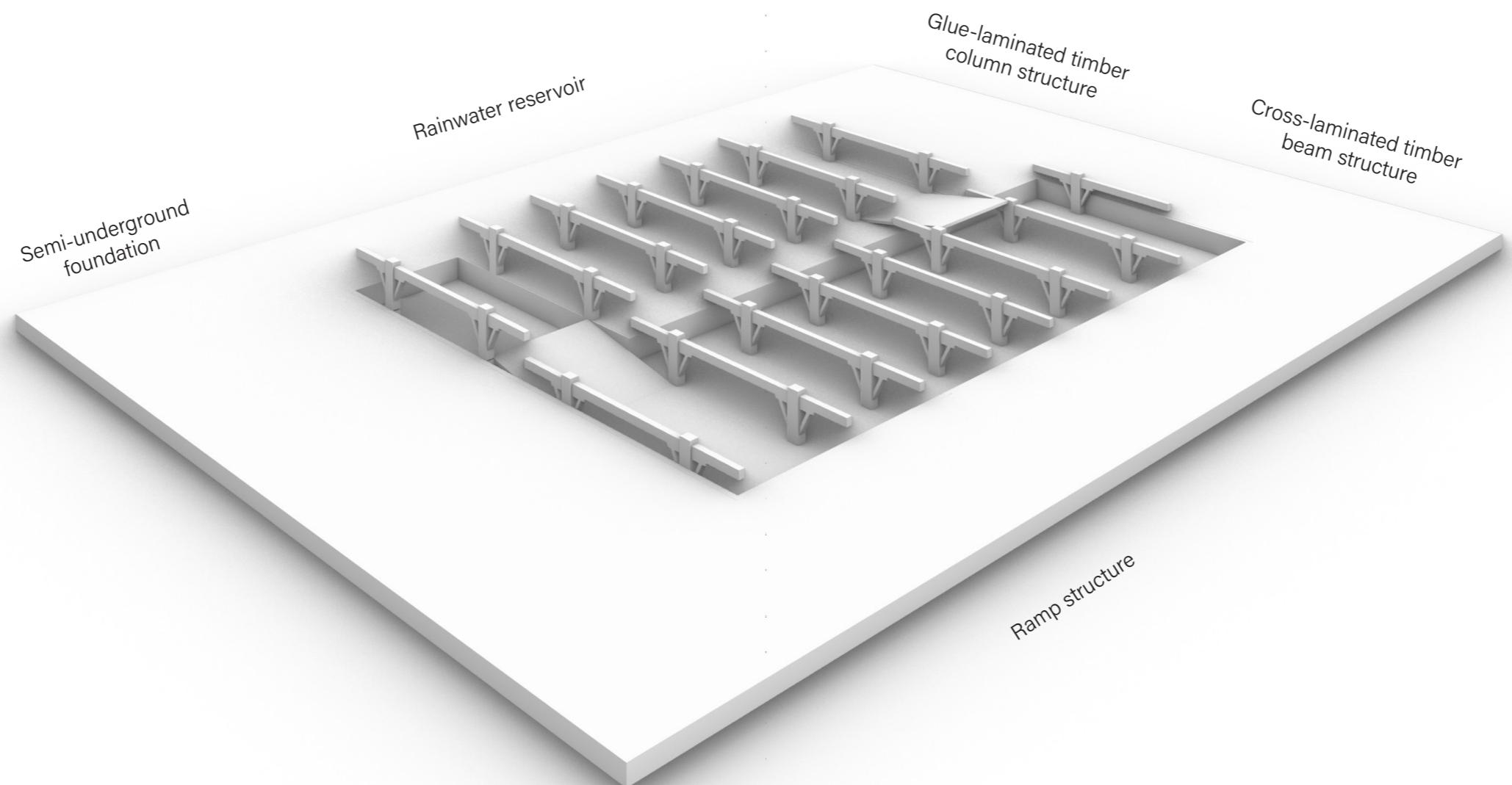
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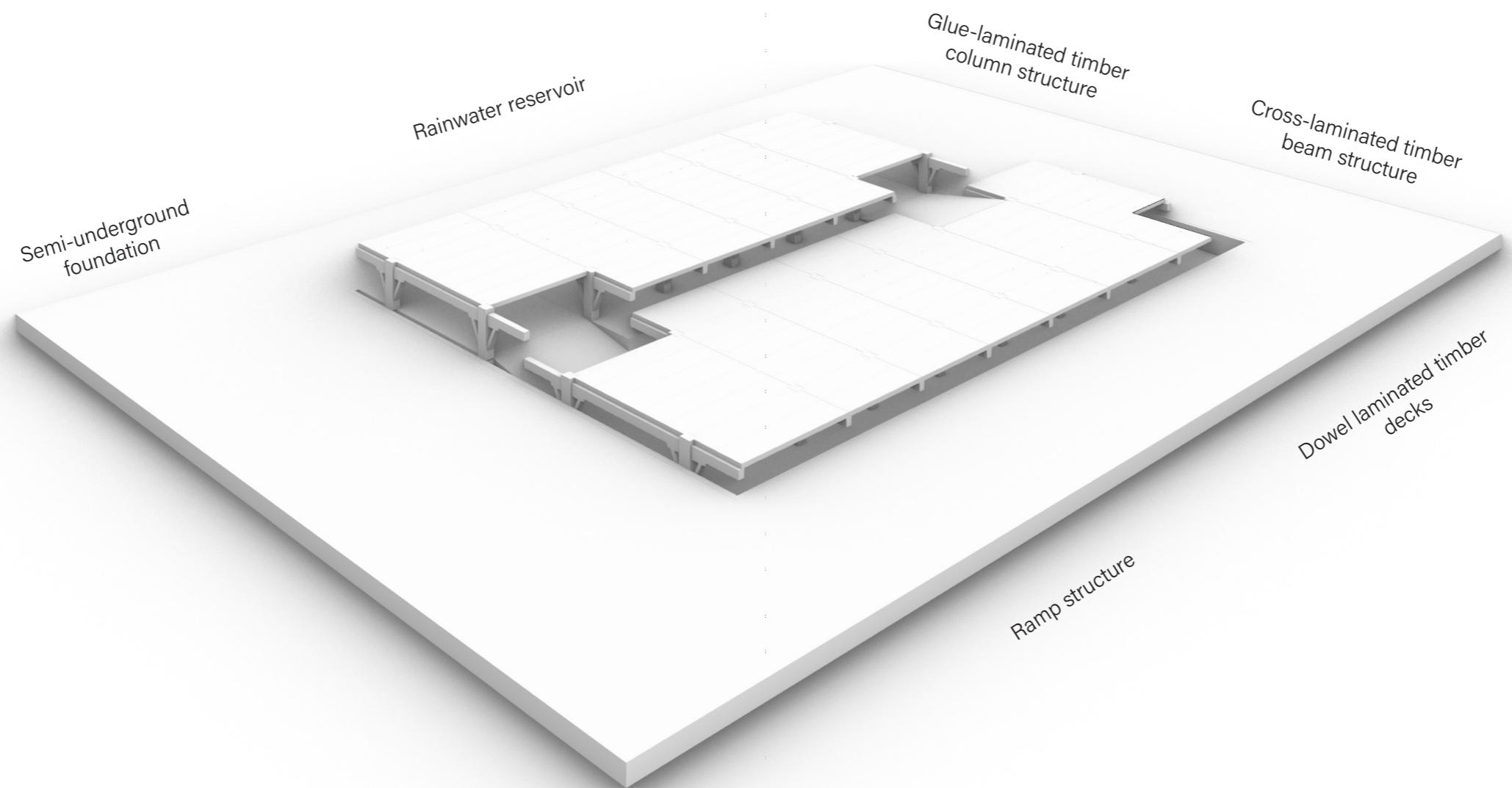
Structure



Structure

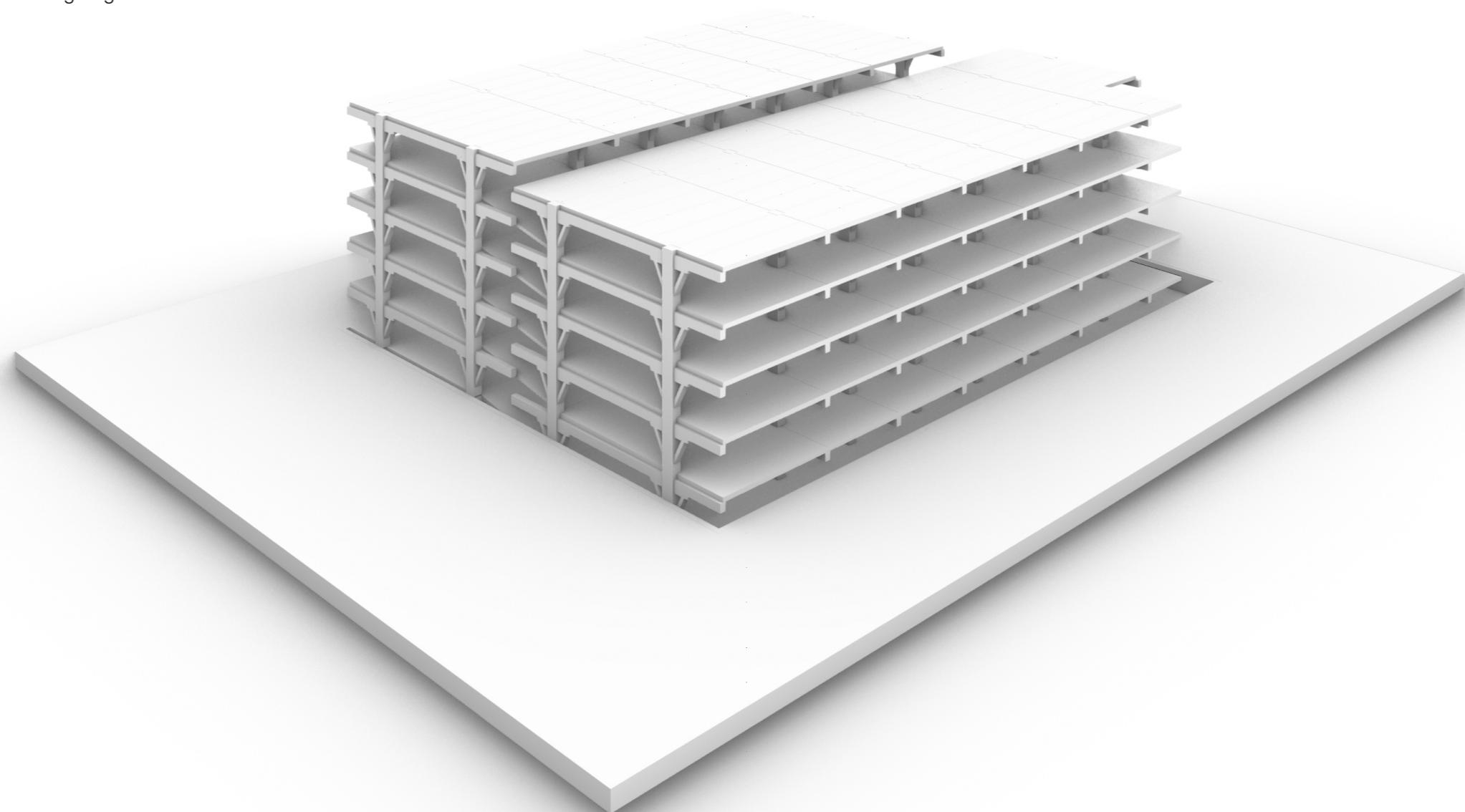


Structure

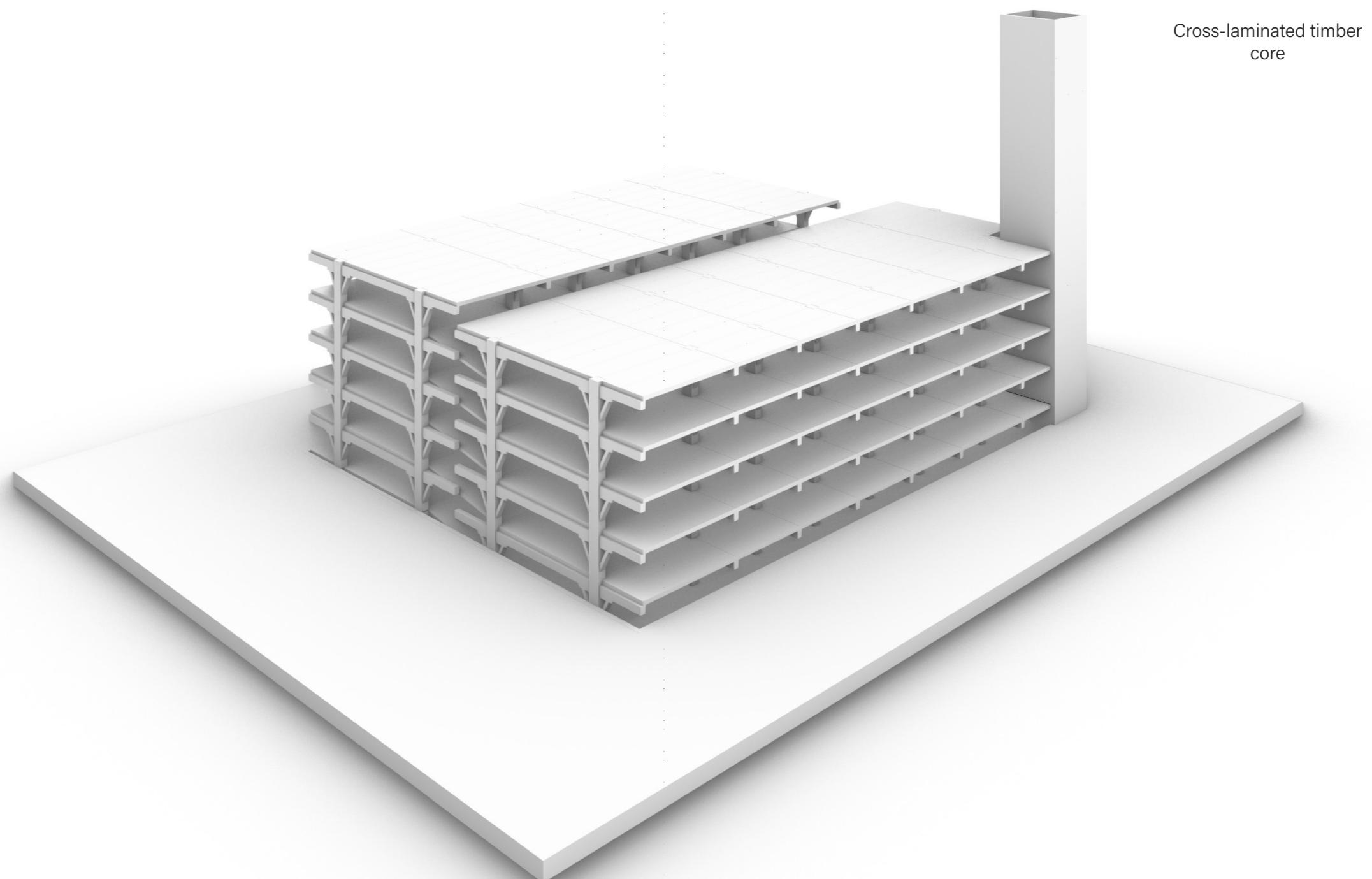


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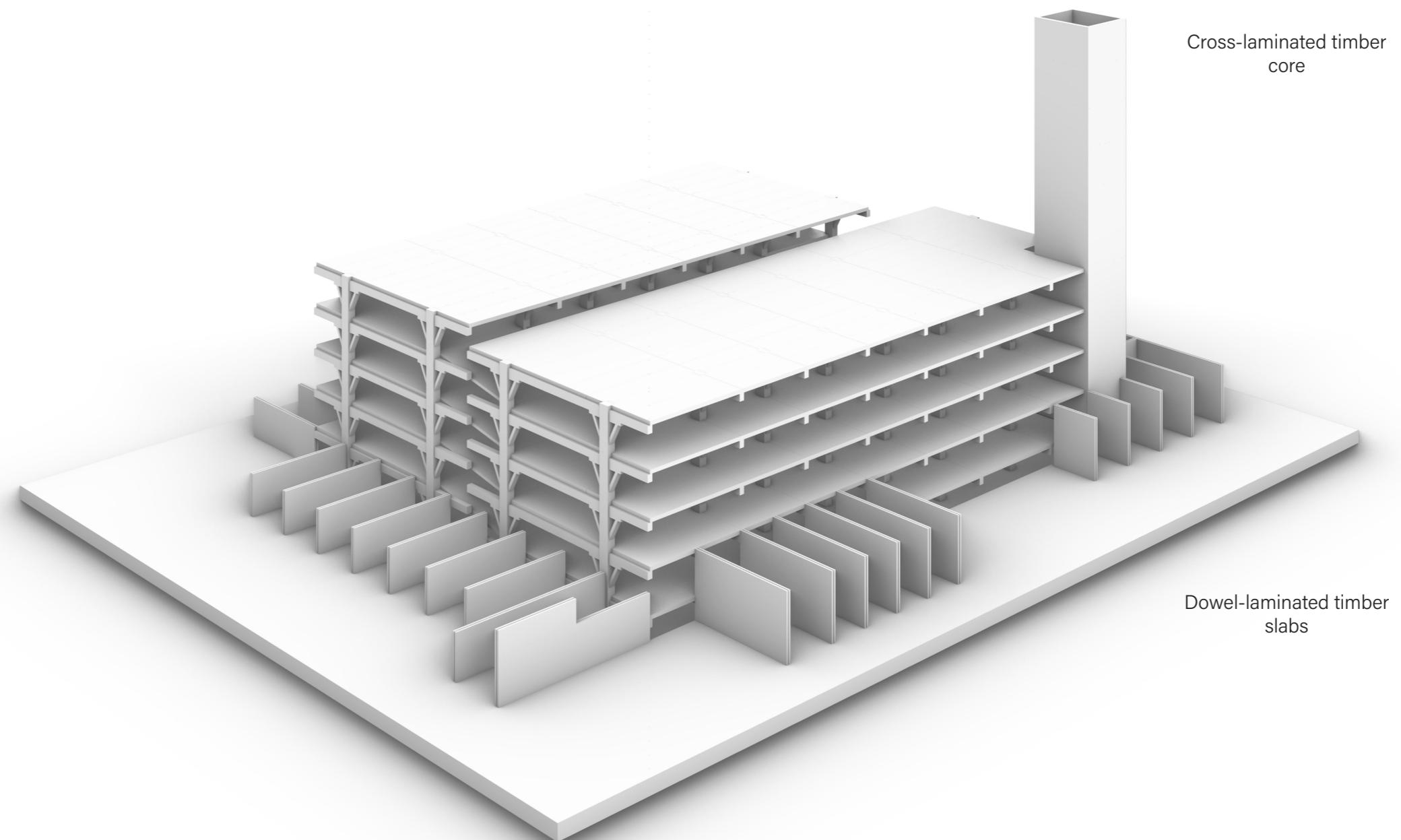
Timber structure parking garage



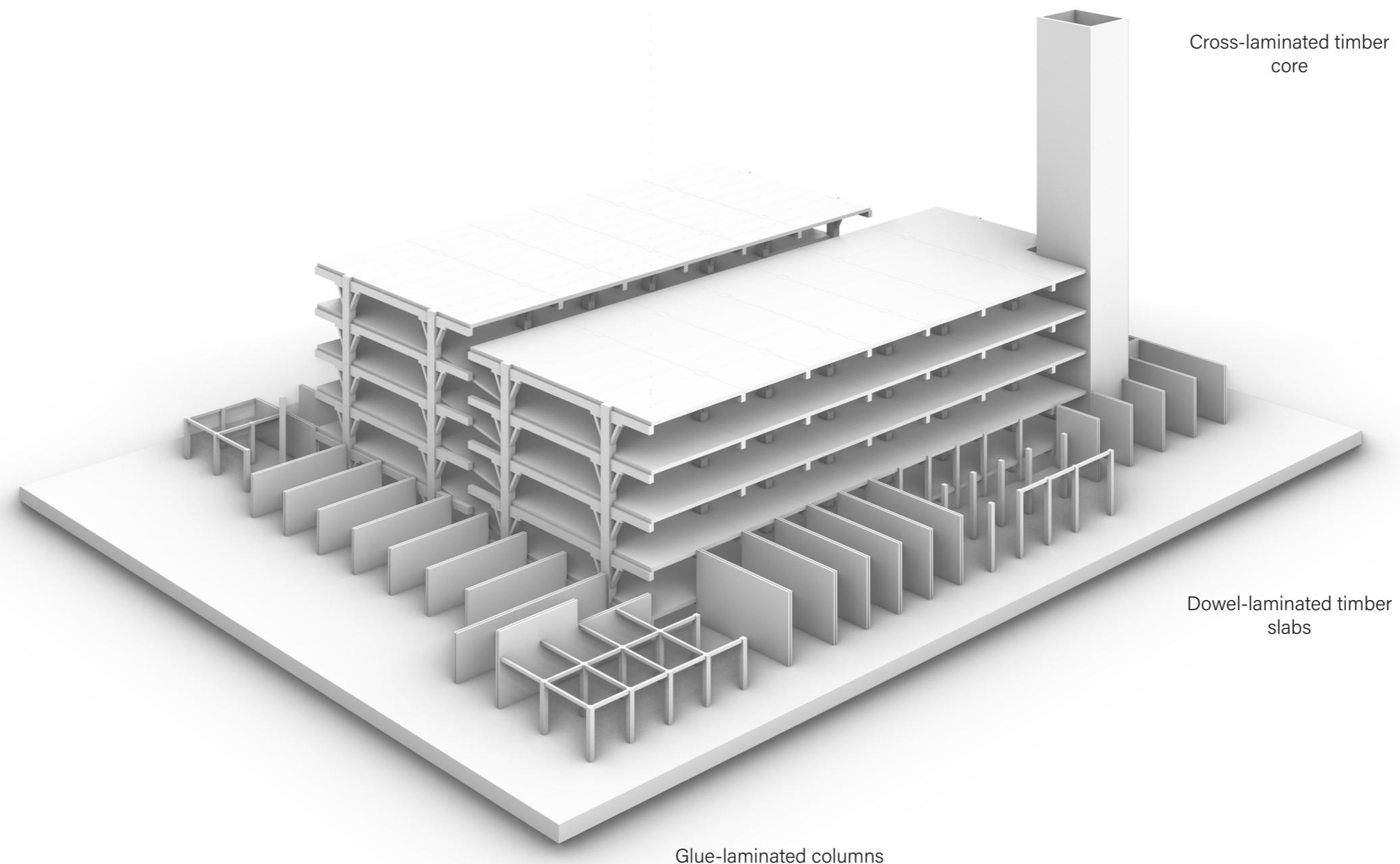
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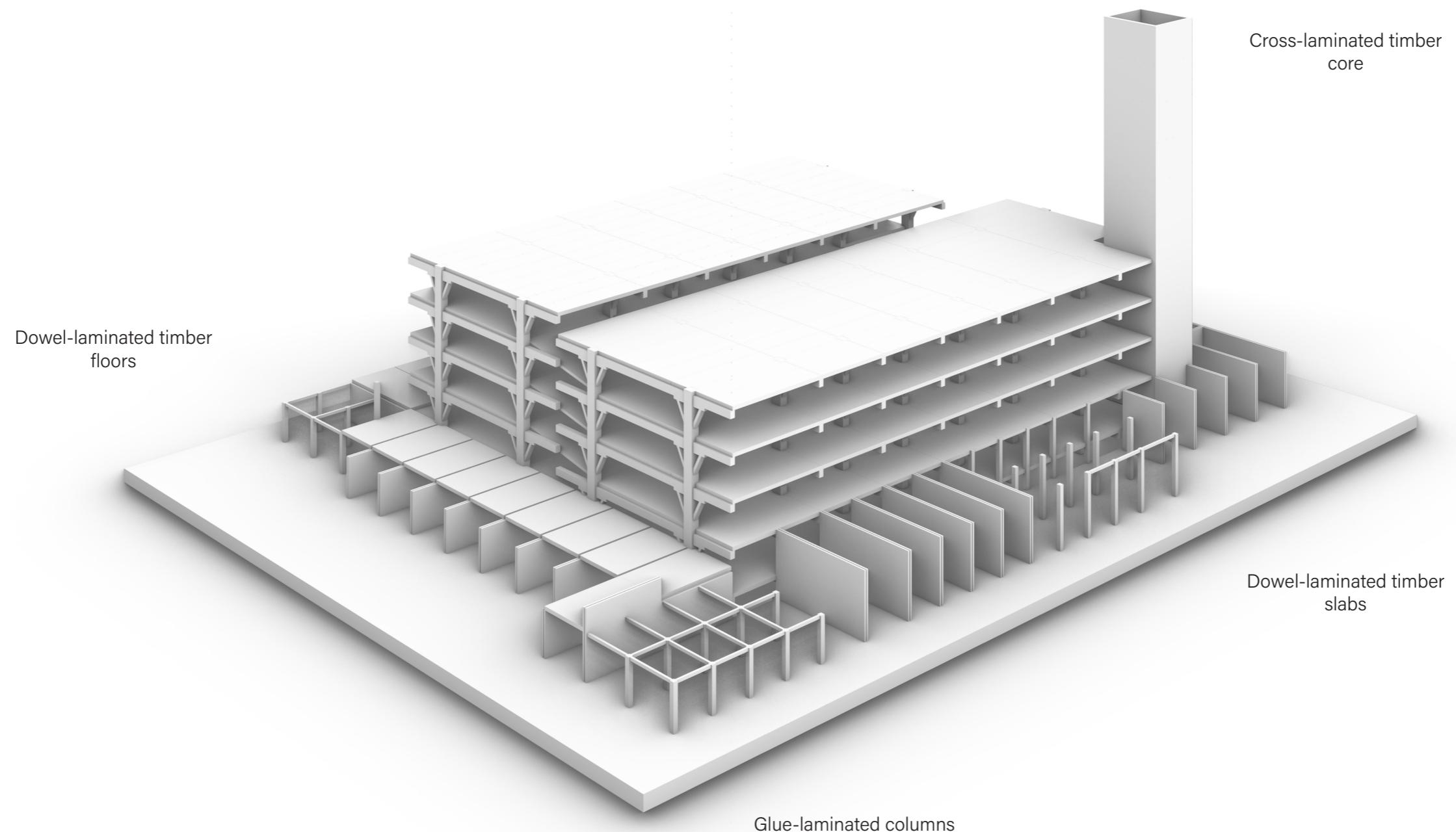
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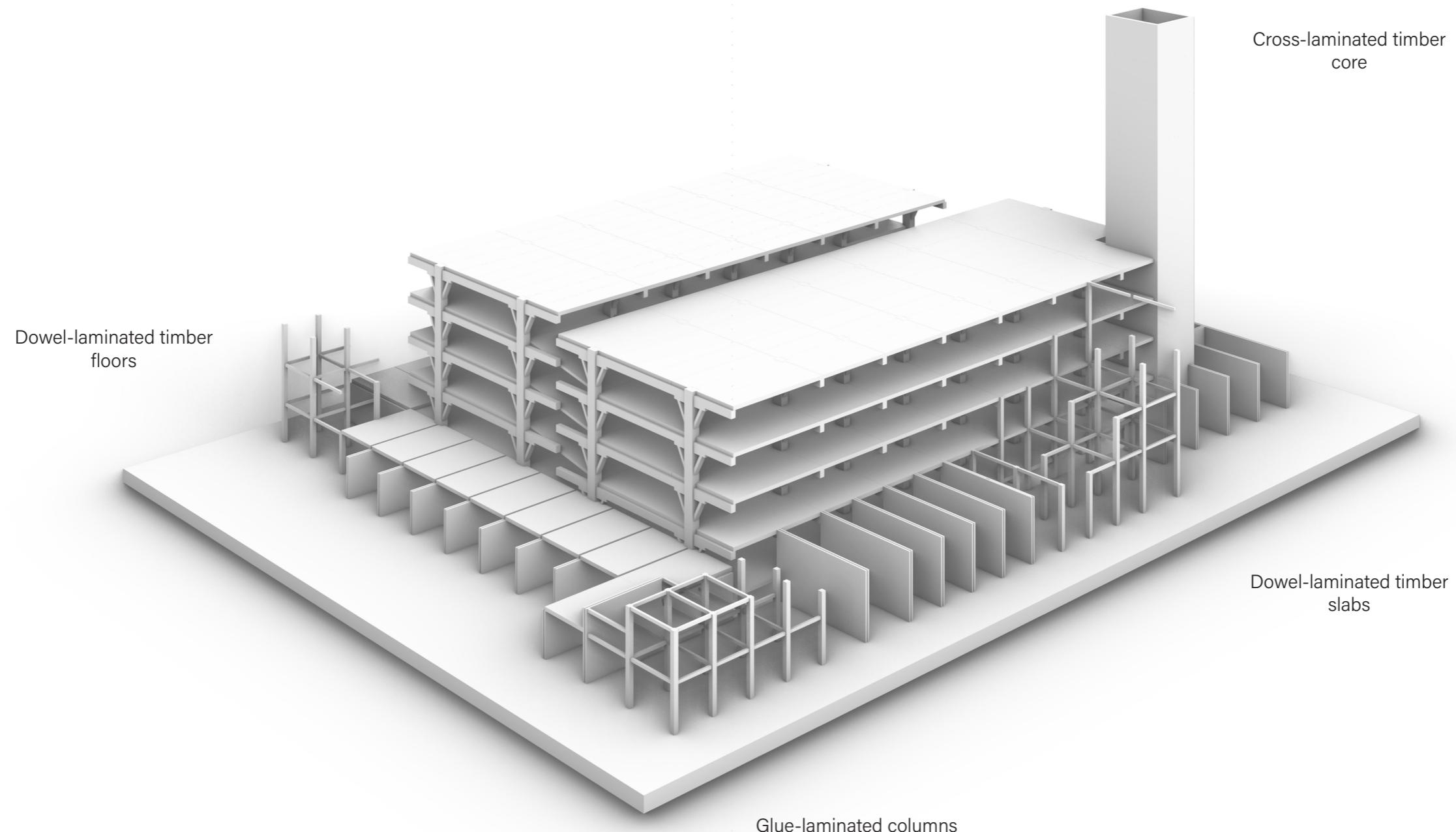
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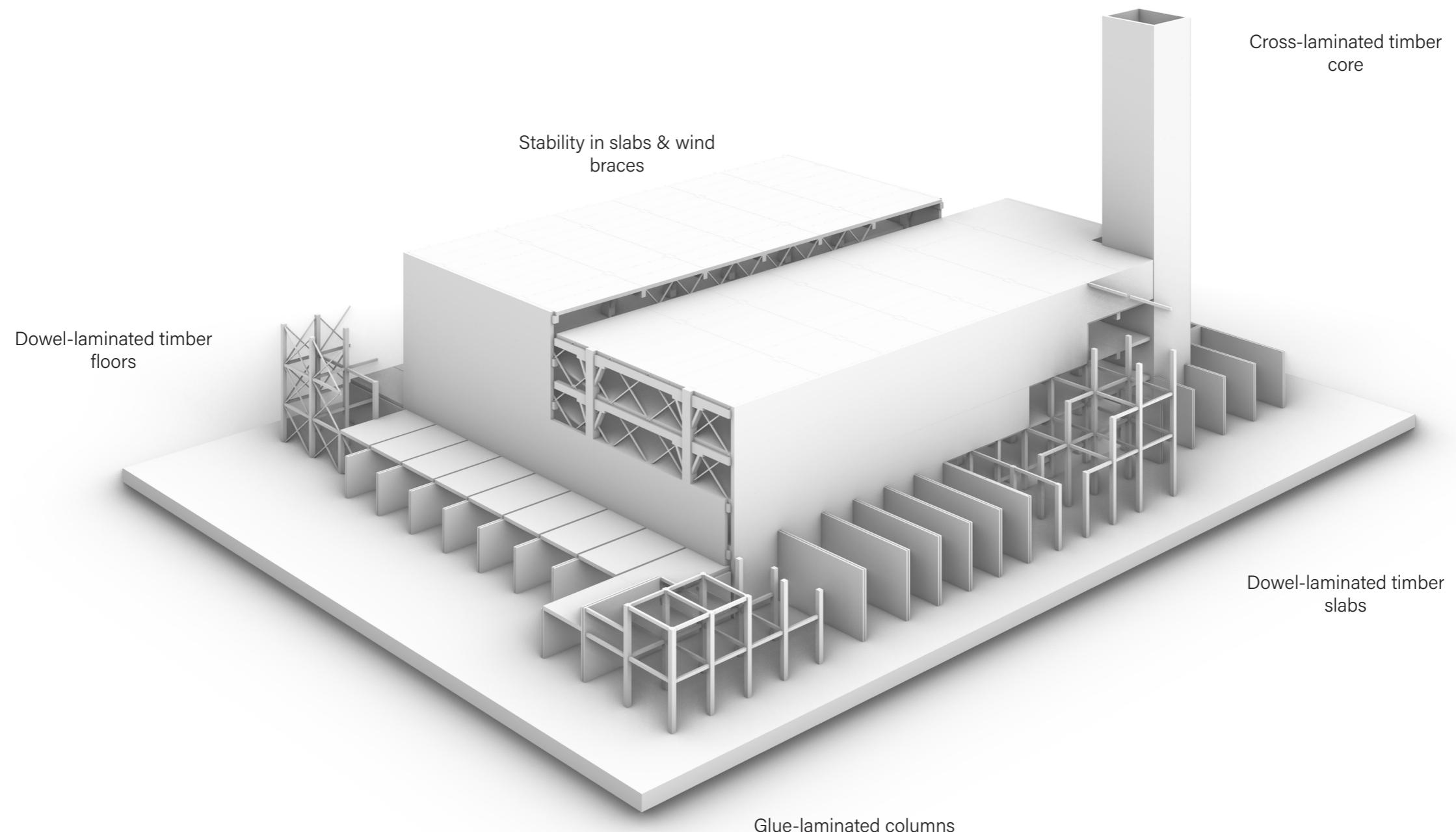
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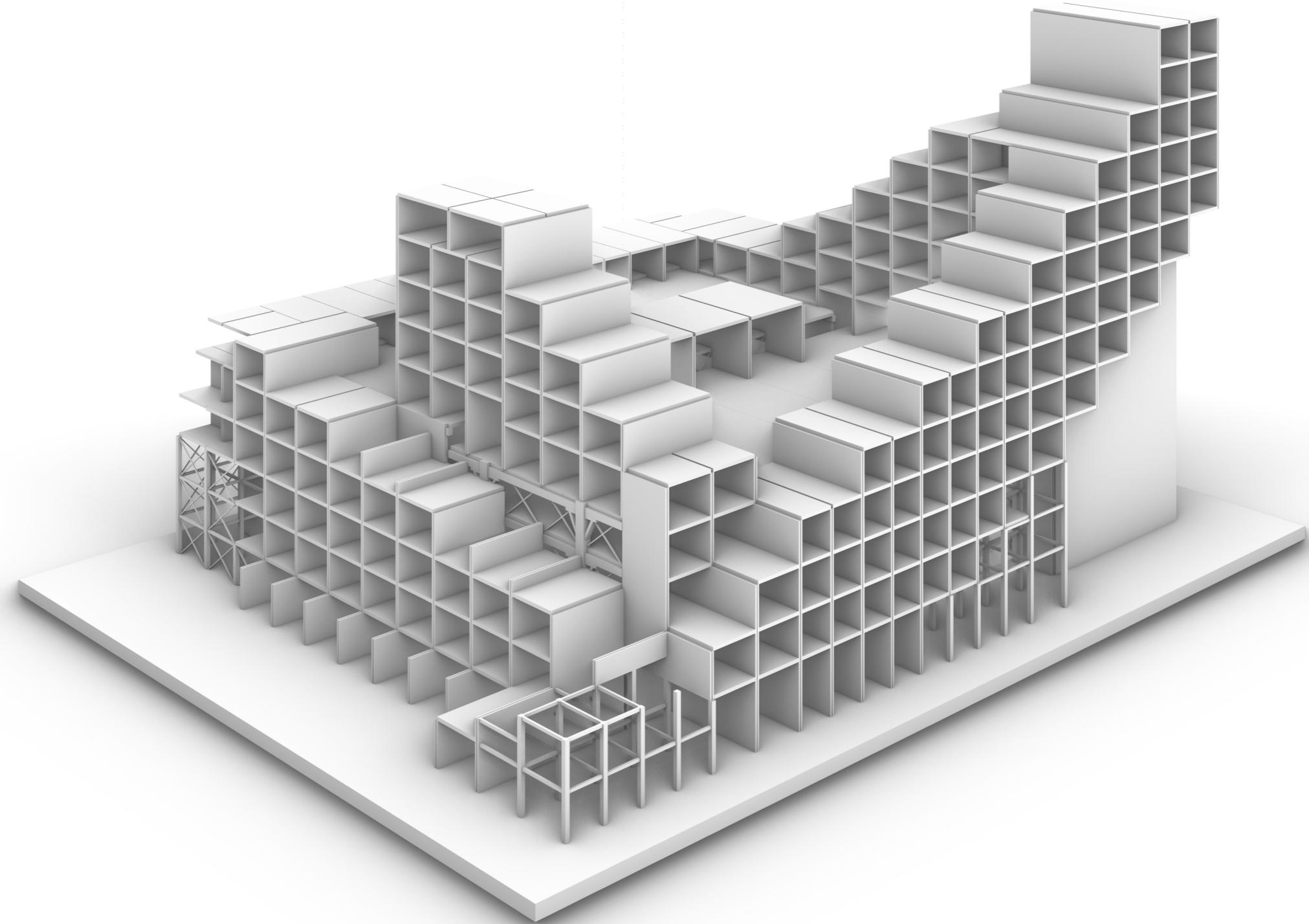
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Structure



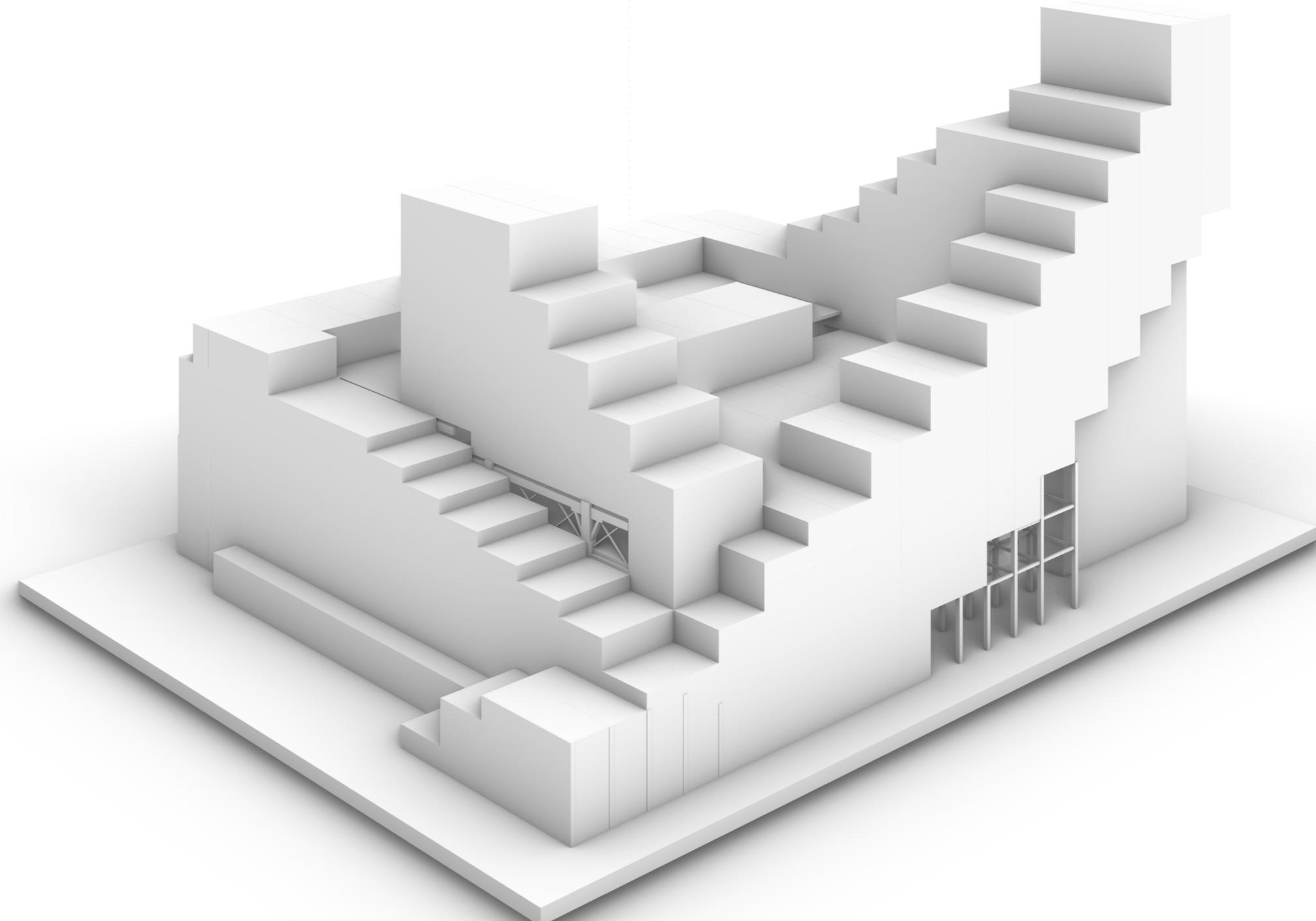
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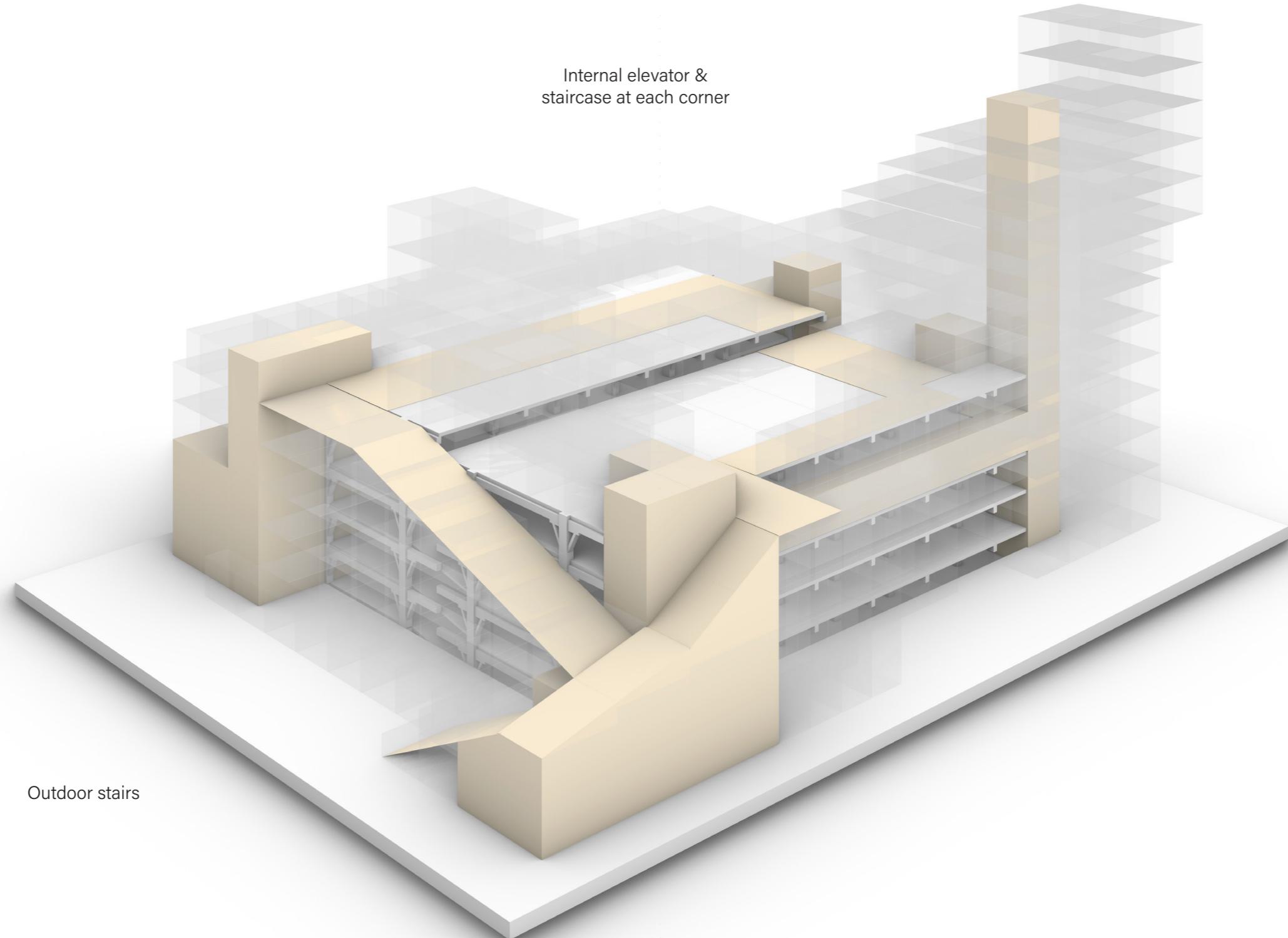
Structure



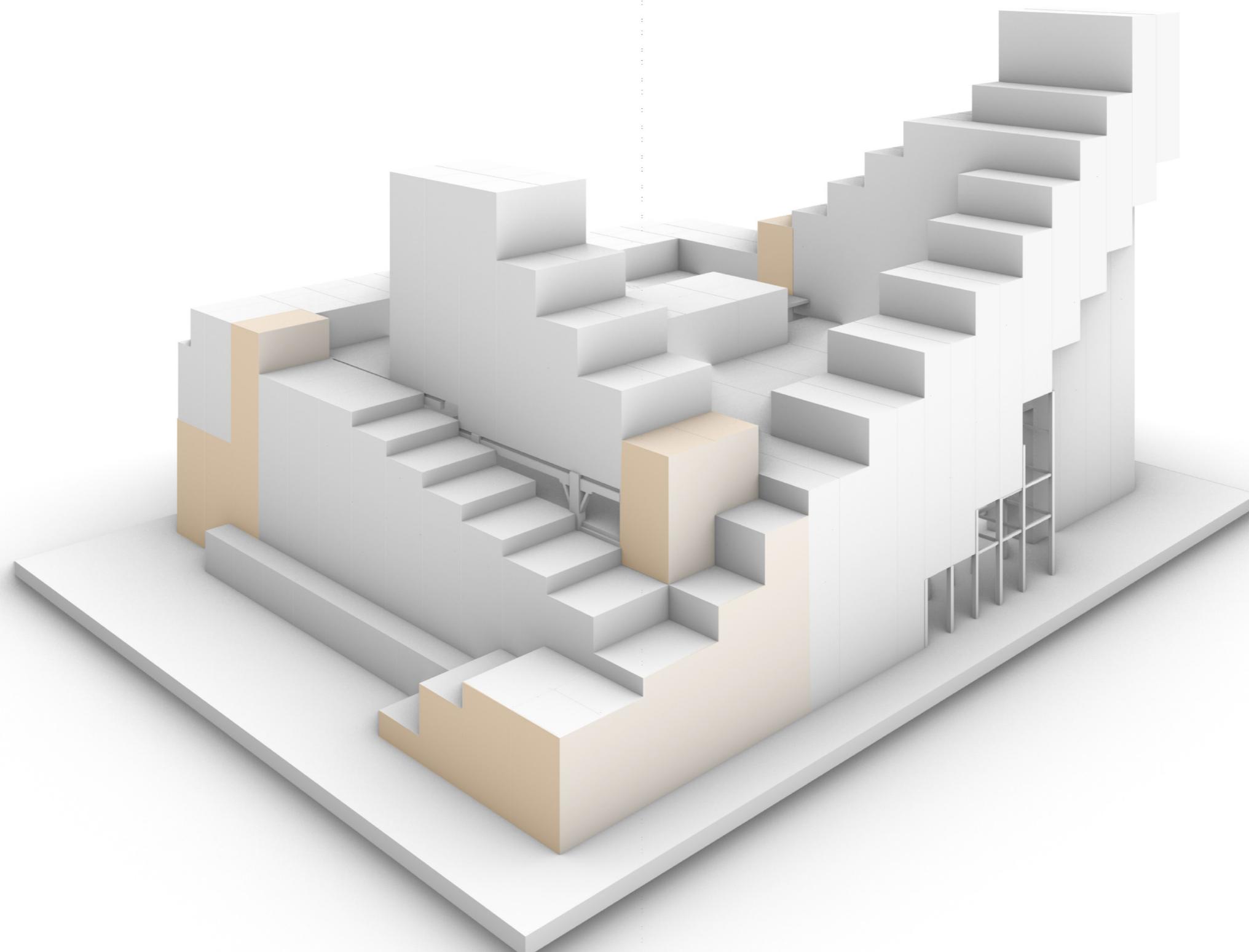
Structure



Circulation

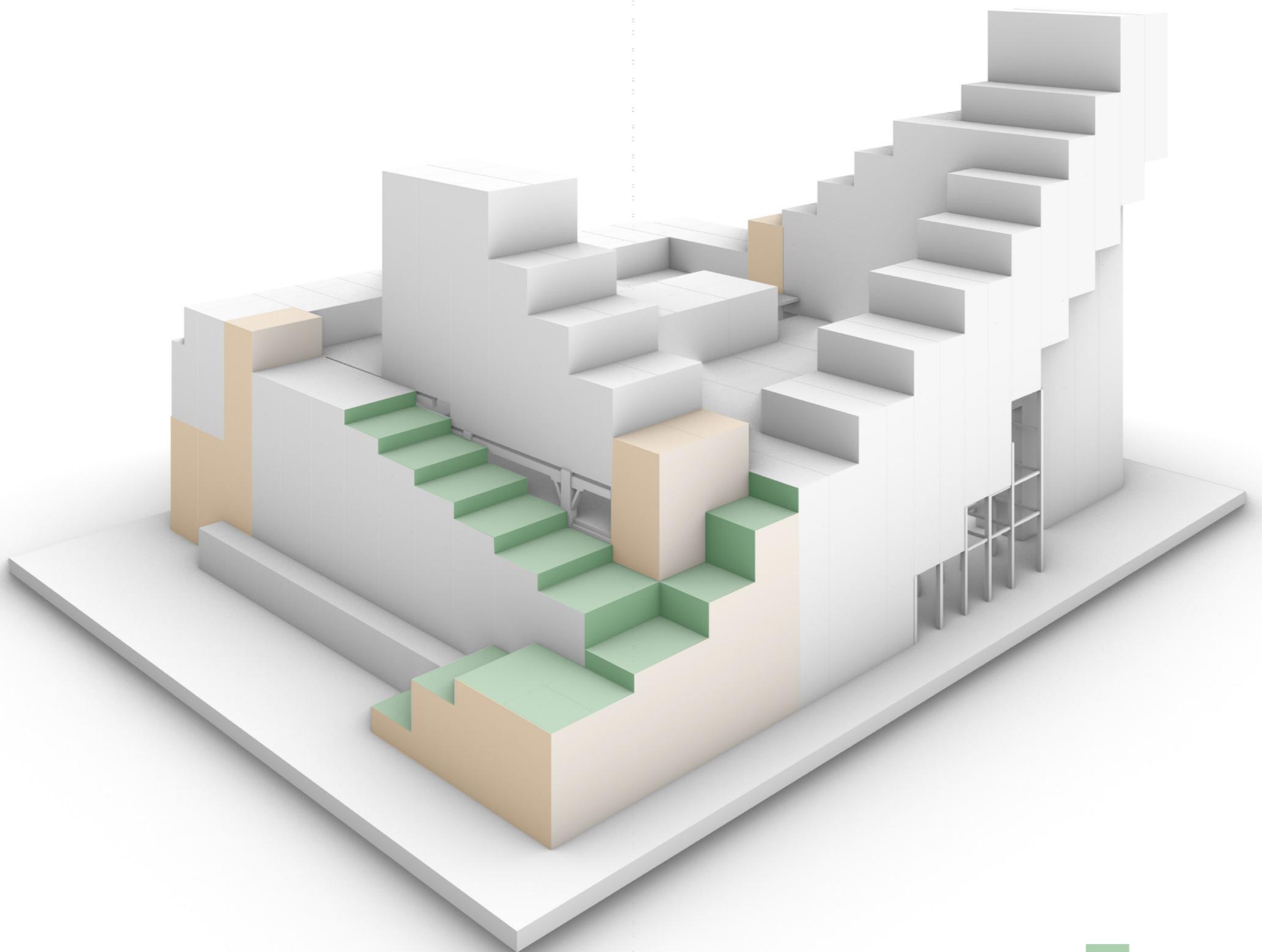


Mass & functions

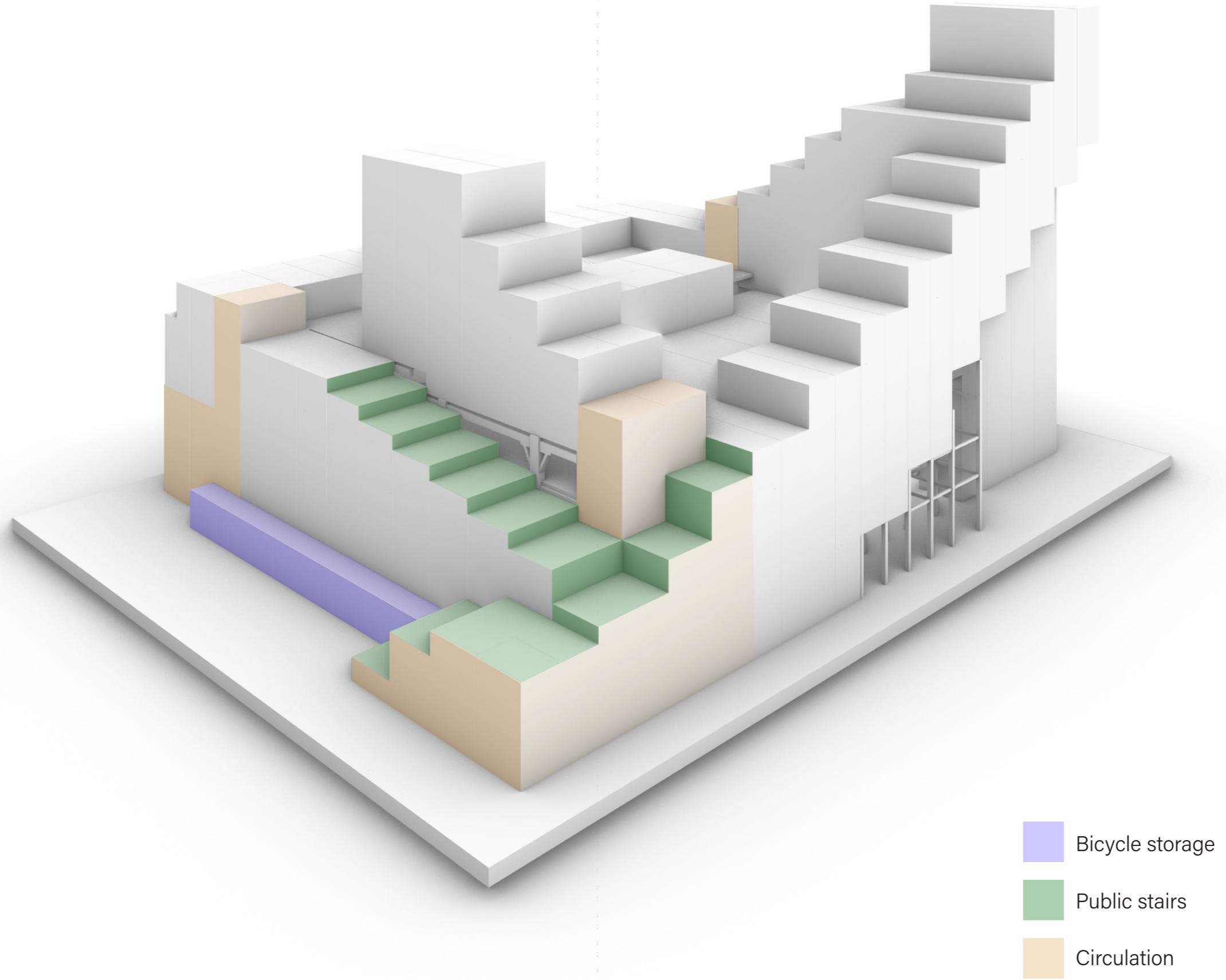


Orange square icon representing circulation.

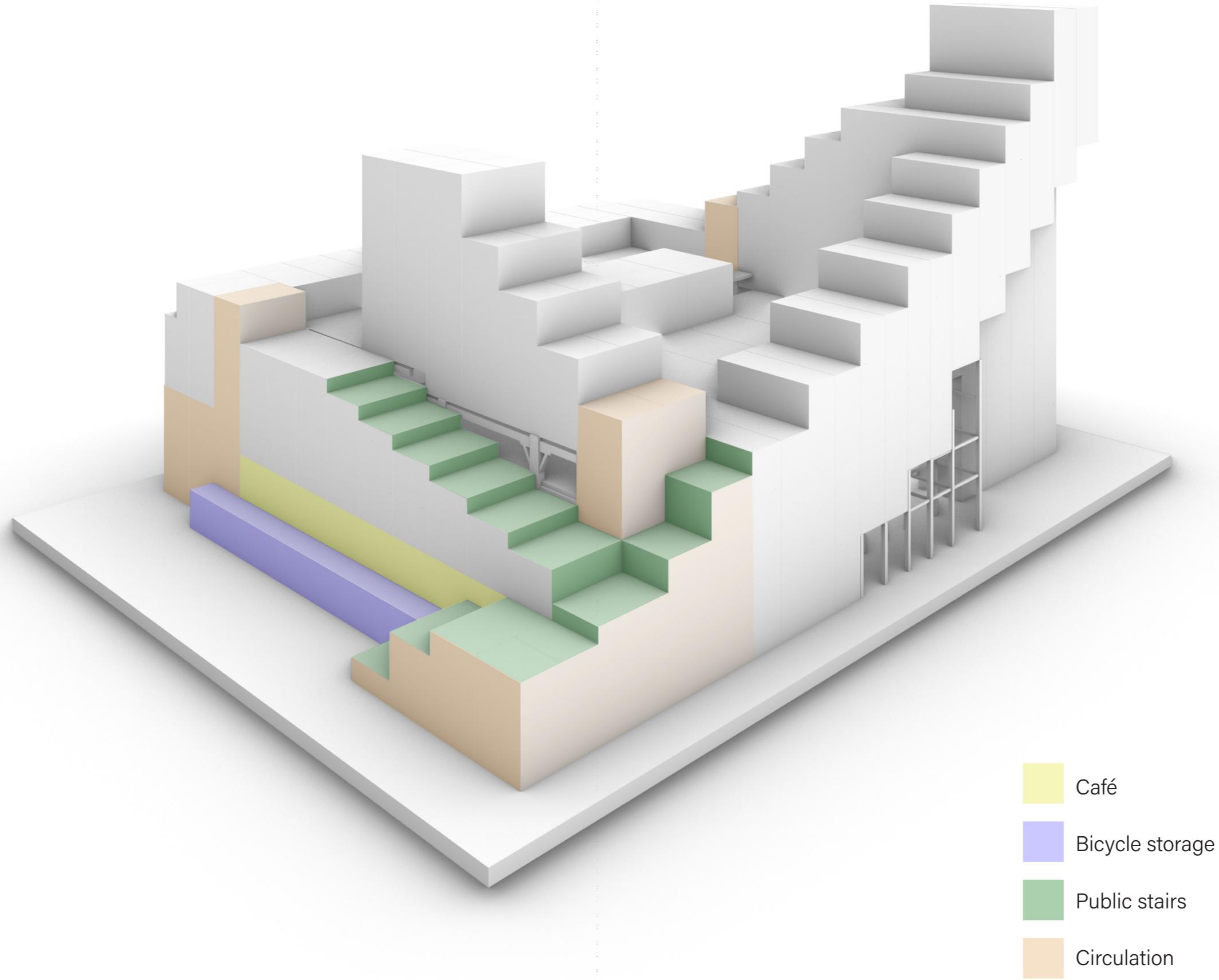
Mass & functions



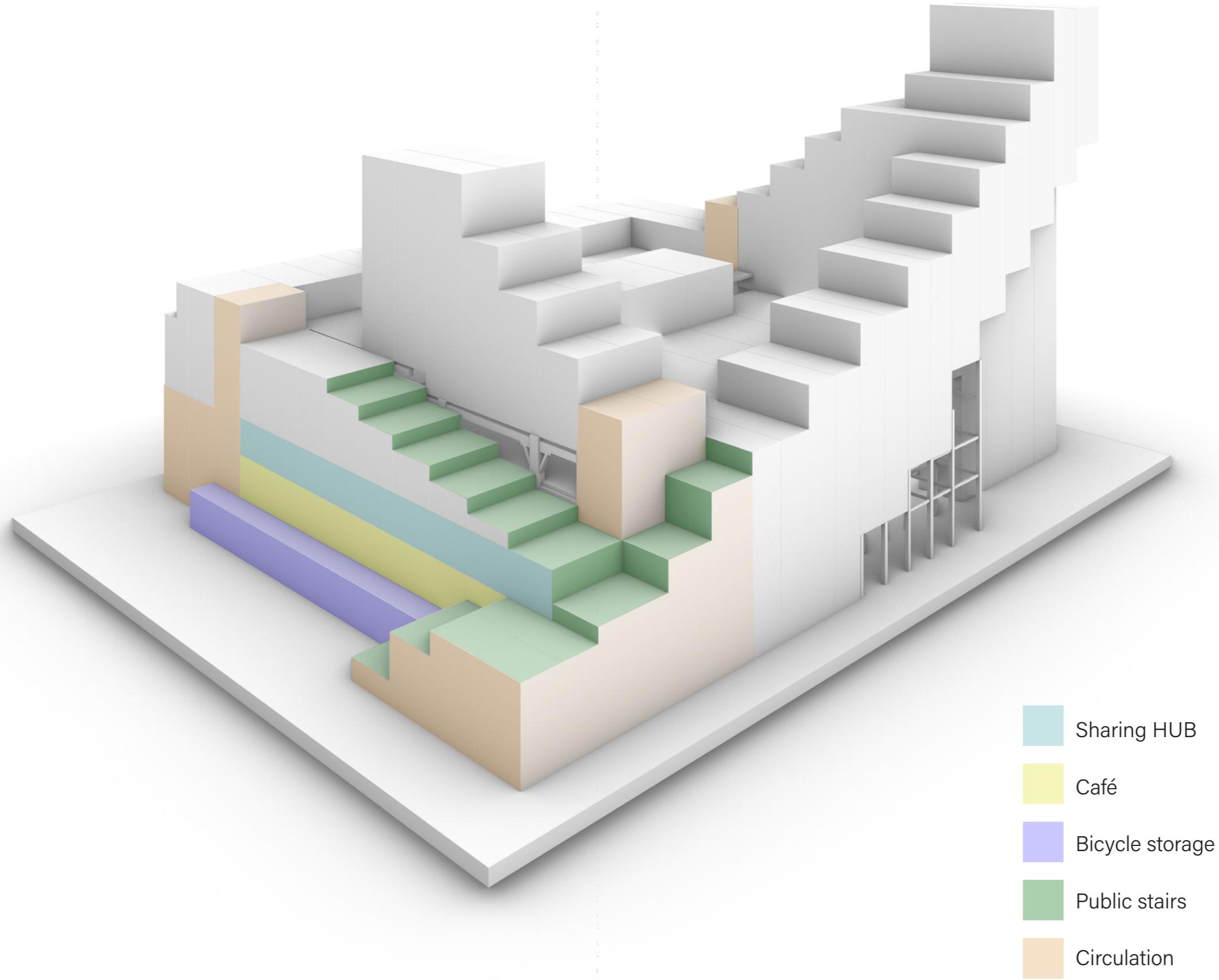
Mass & functions



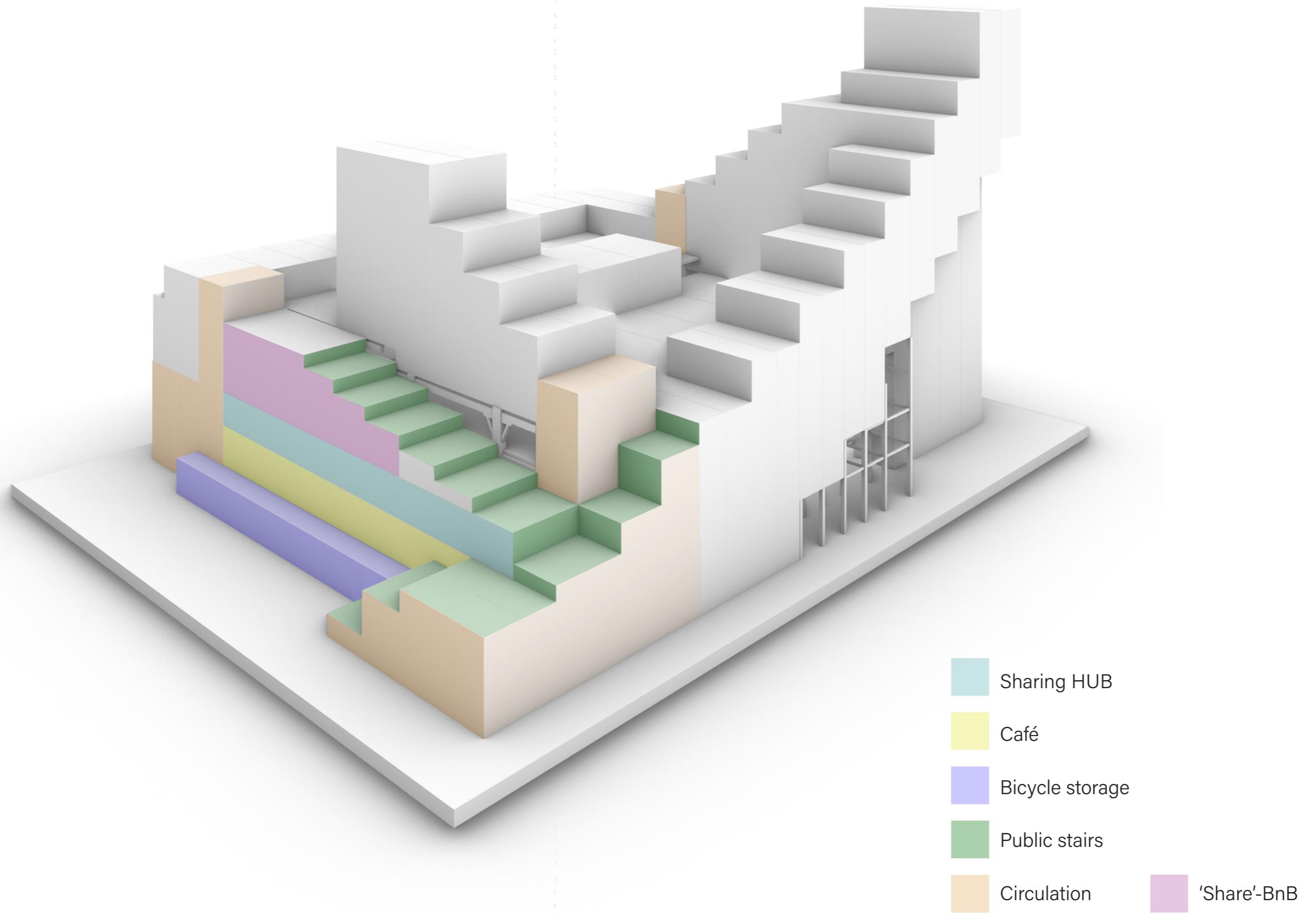
Mass & functions



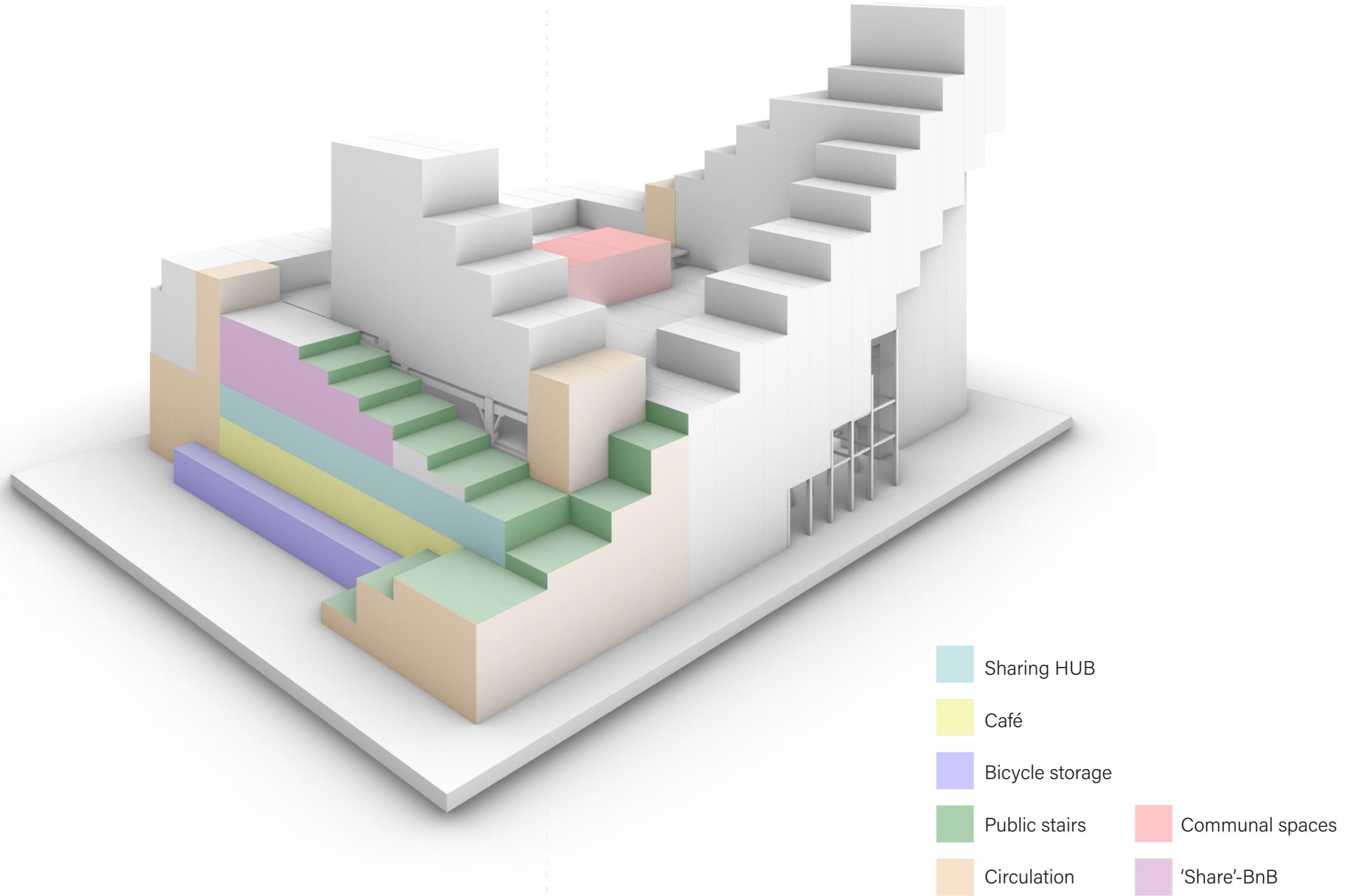
Mass & functions



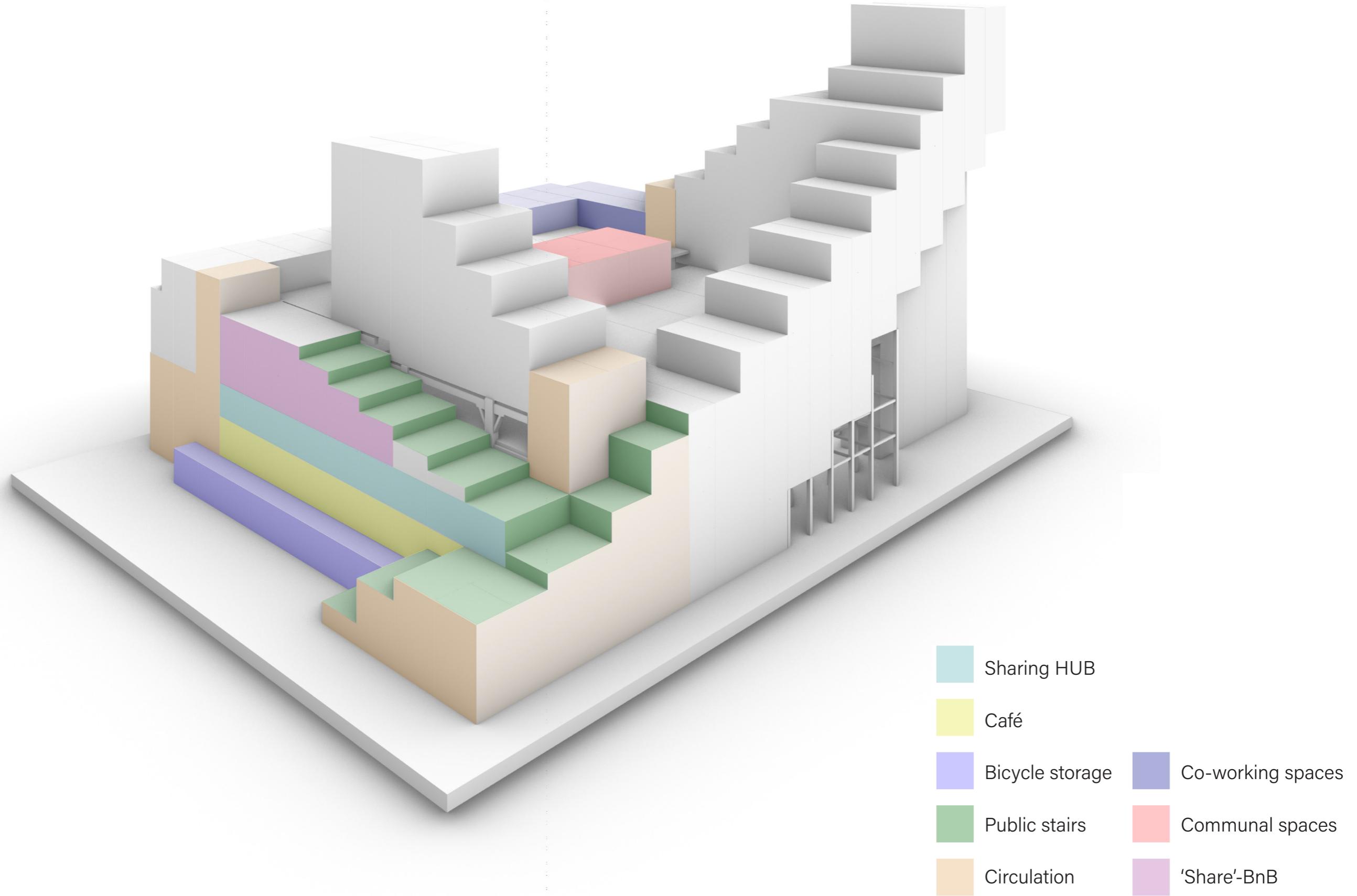
Mass & functions



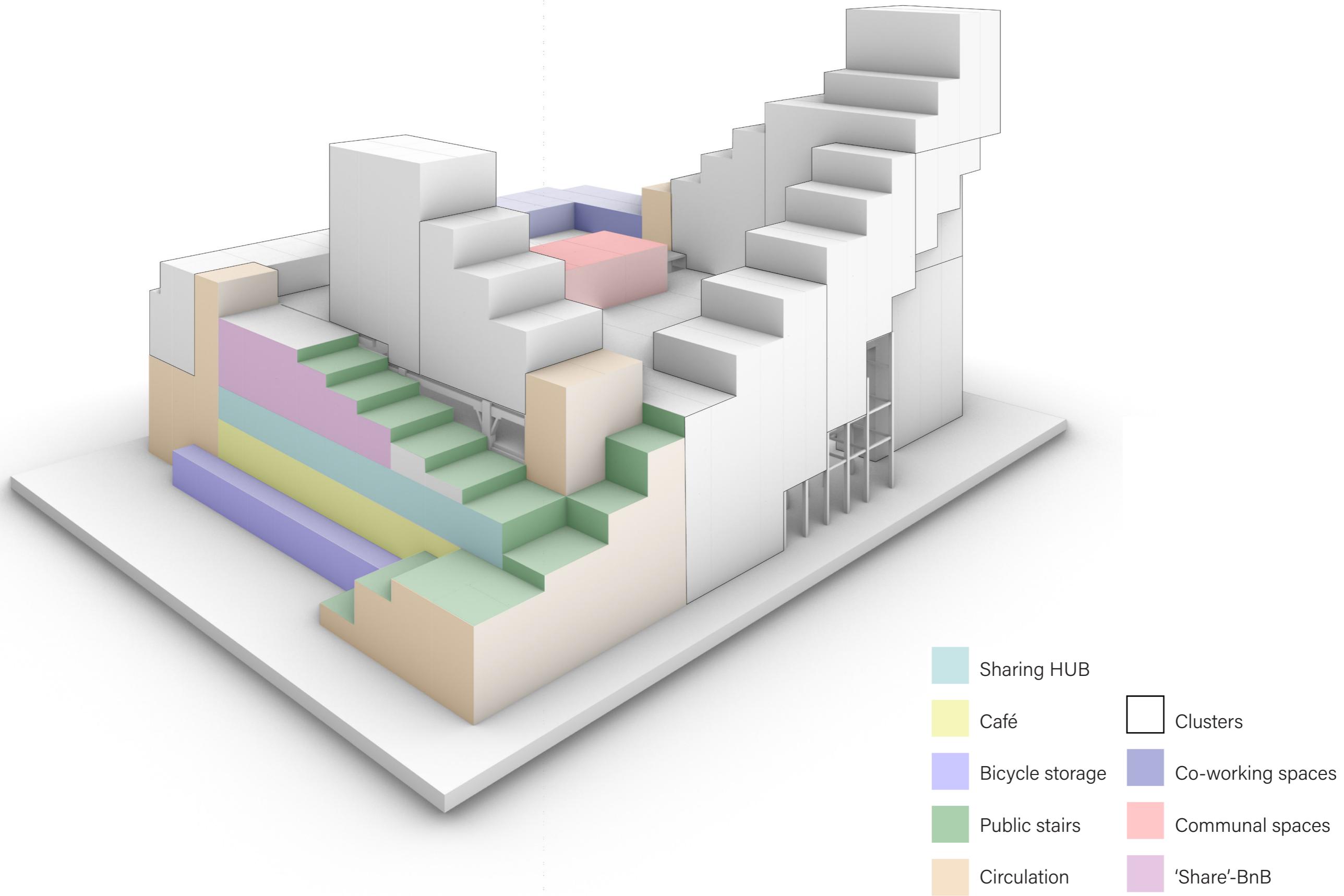
Mass & functions



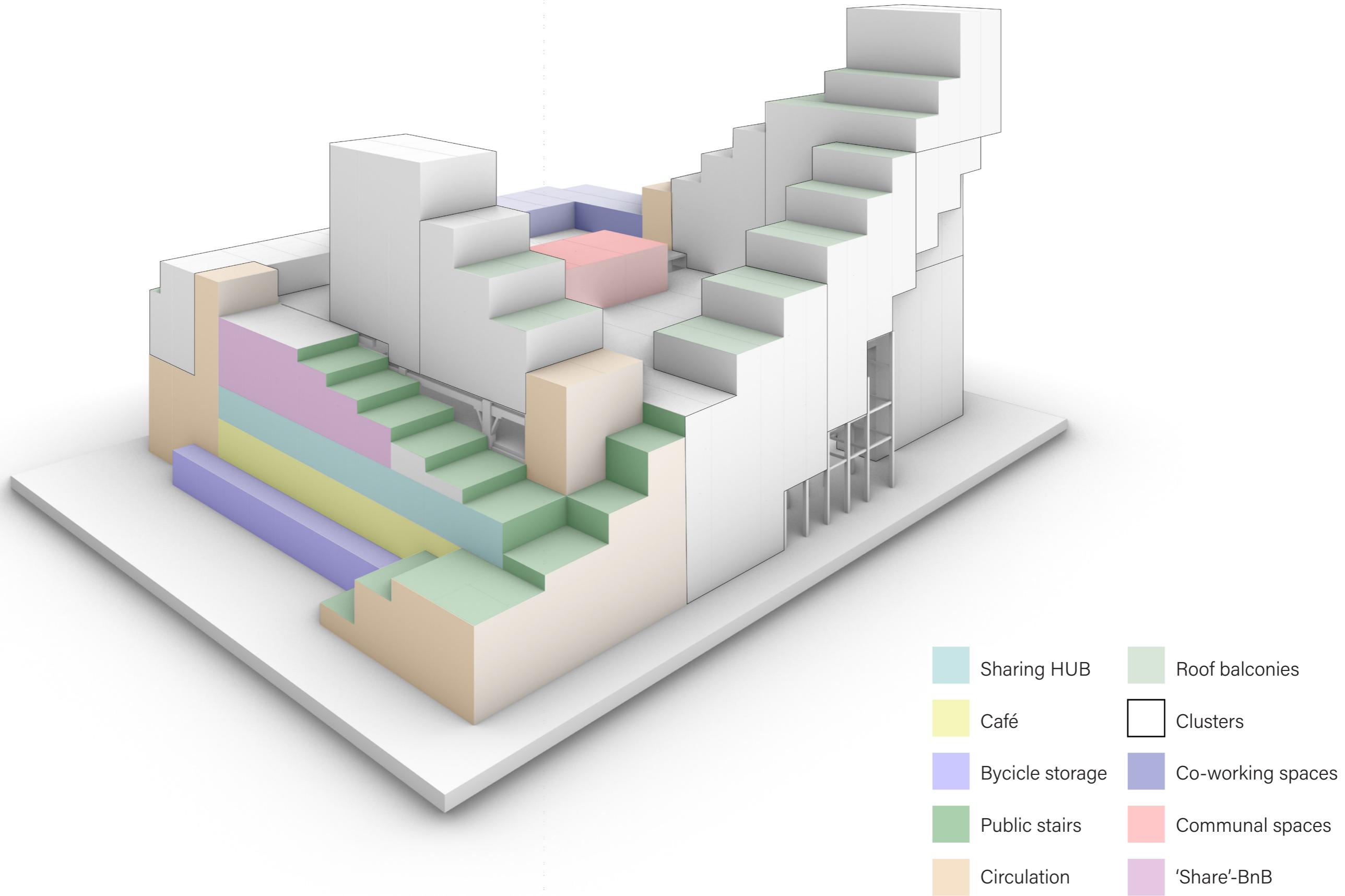
Mass & functions



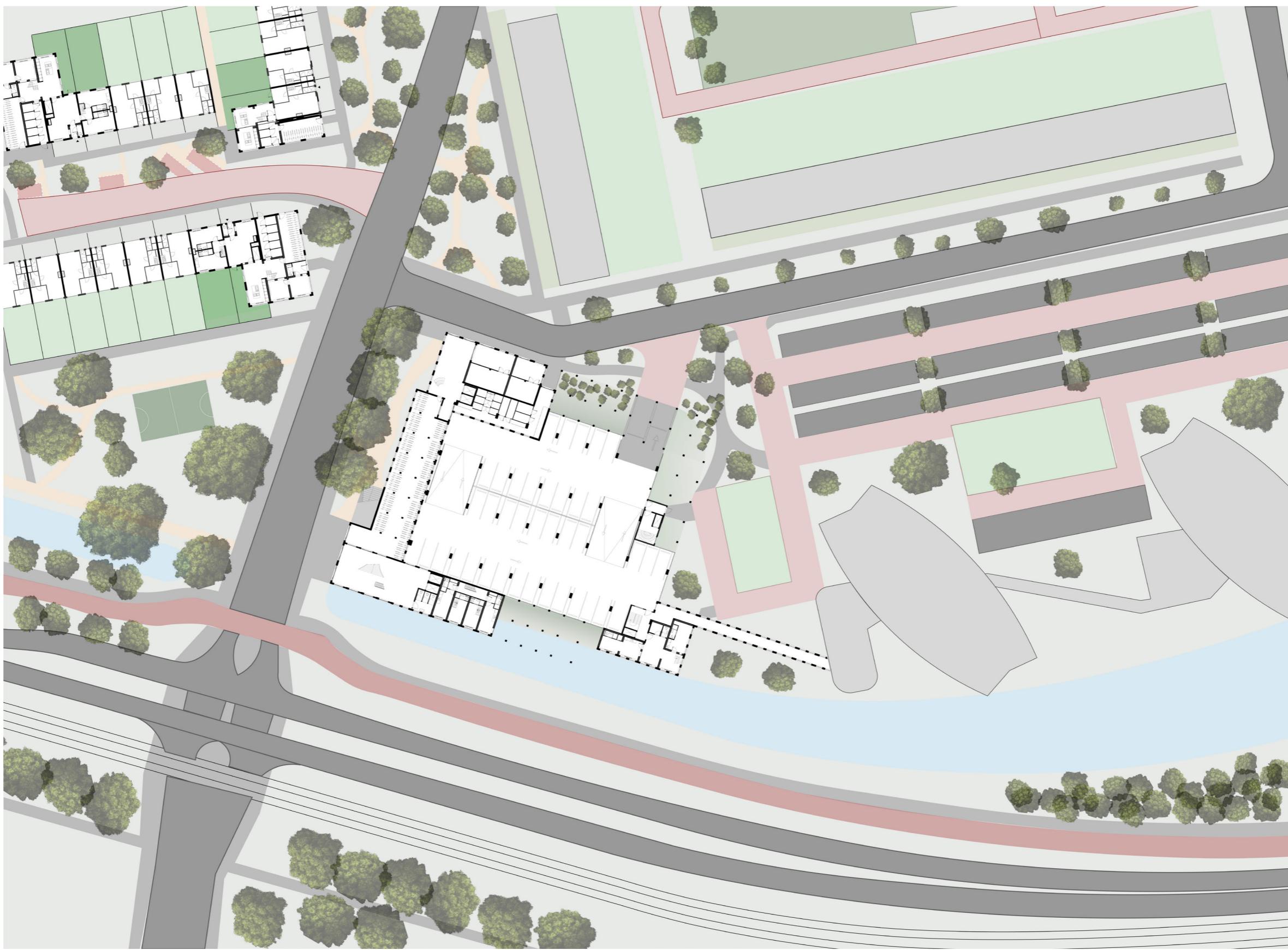
Mass & functions



Mass & functions



Ground floor

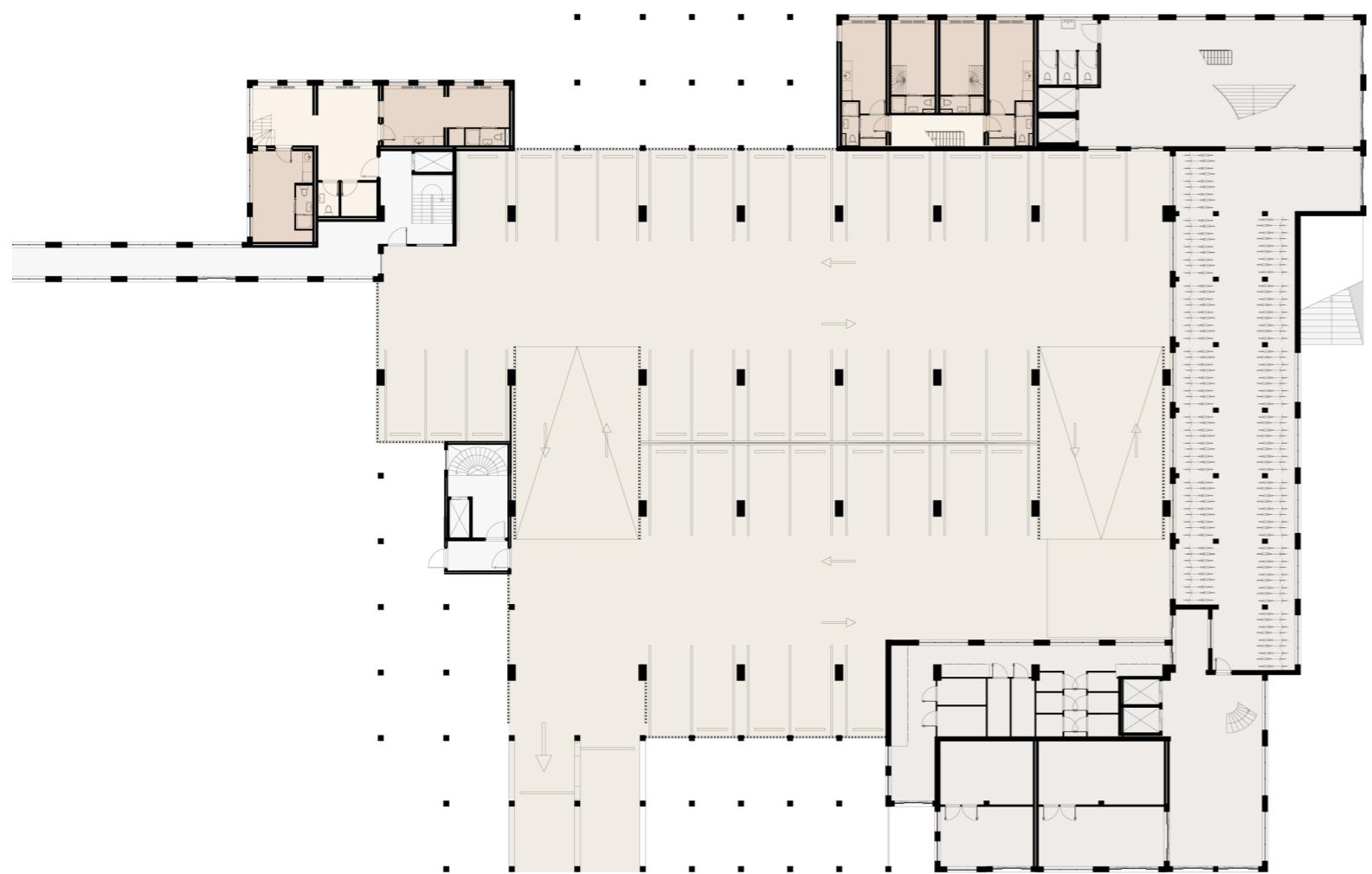


Entrance



Floor plans

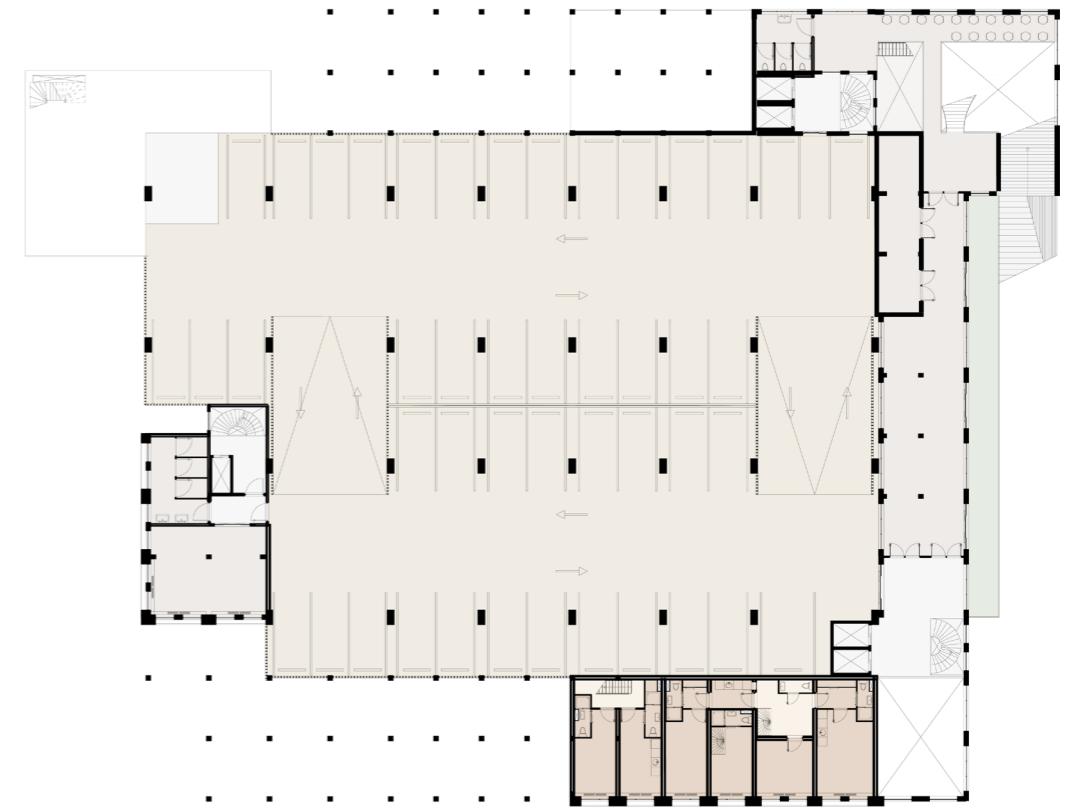
Ground floor



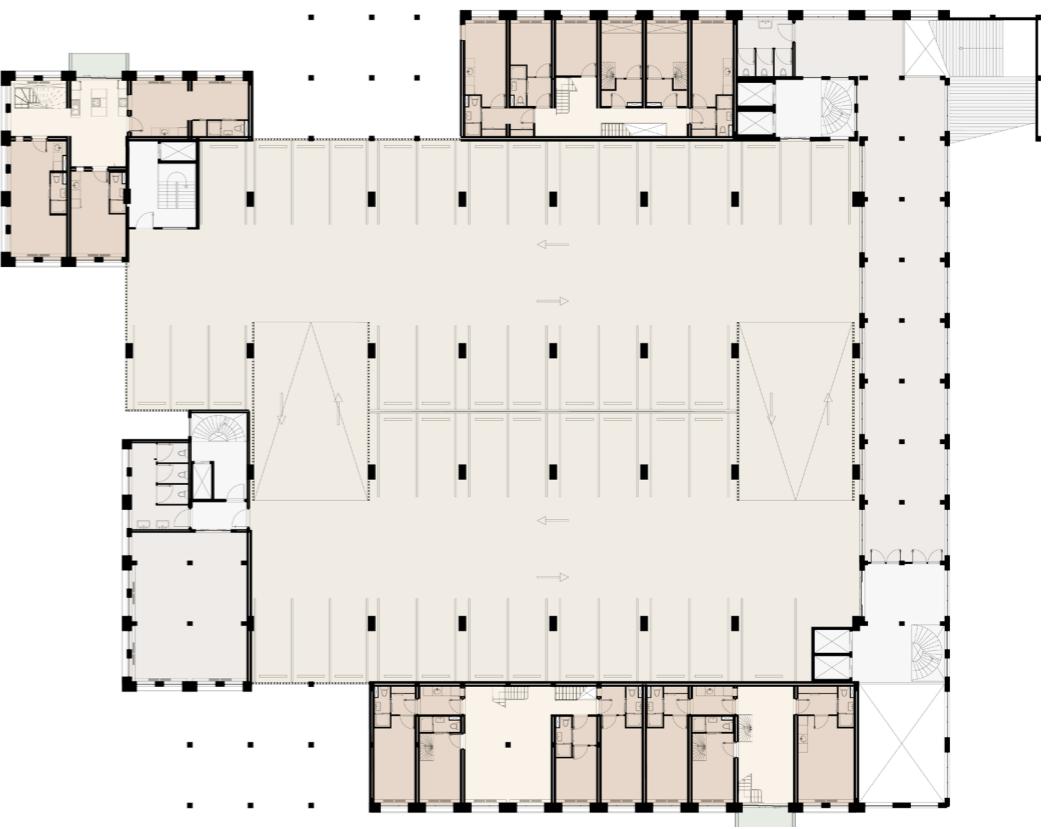
 Dwelling
Shared spaces
Communal spaces

Garage
Circulation
Shared outdoor spaces

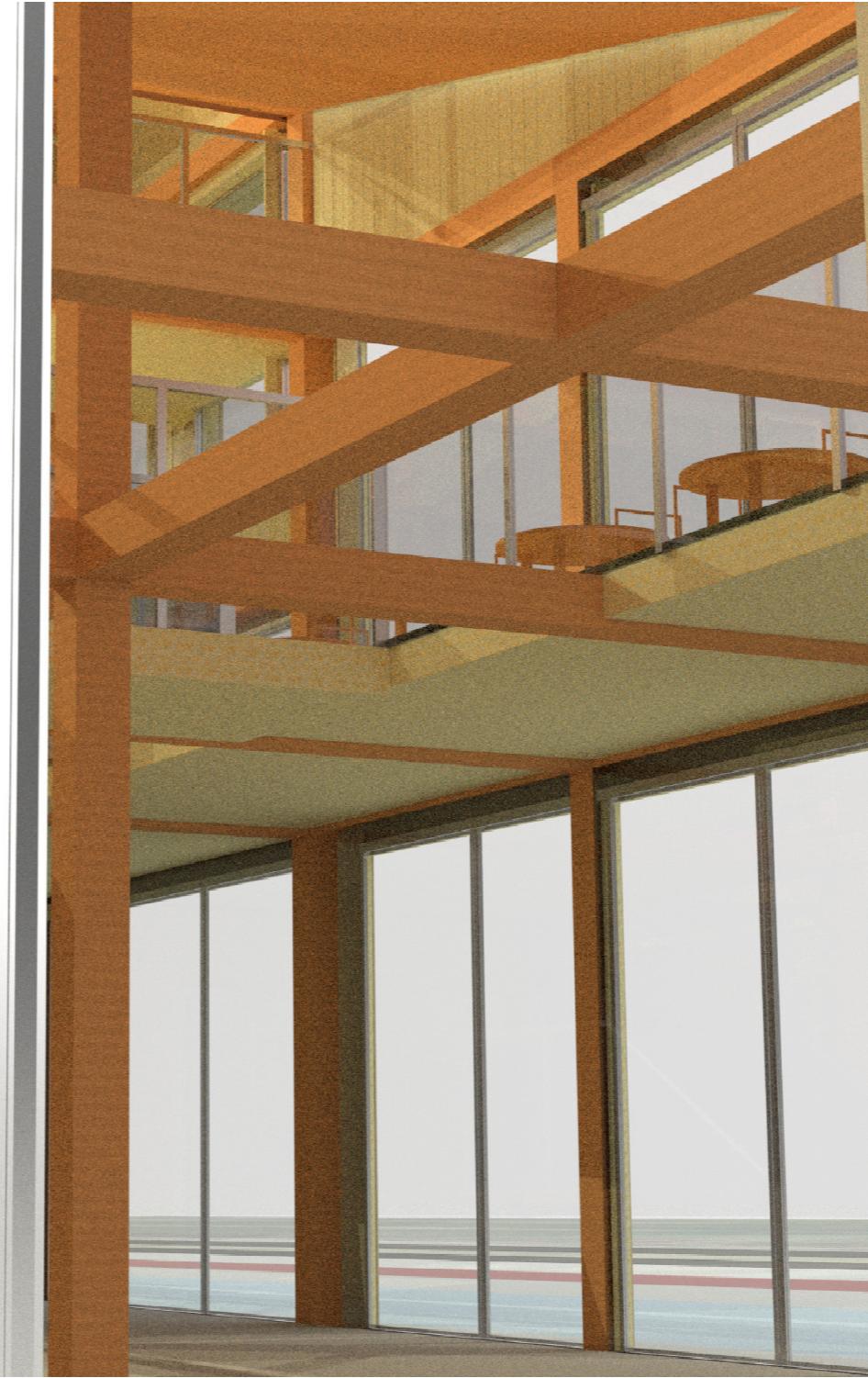
Floor +1



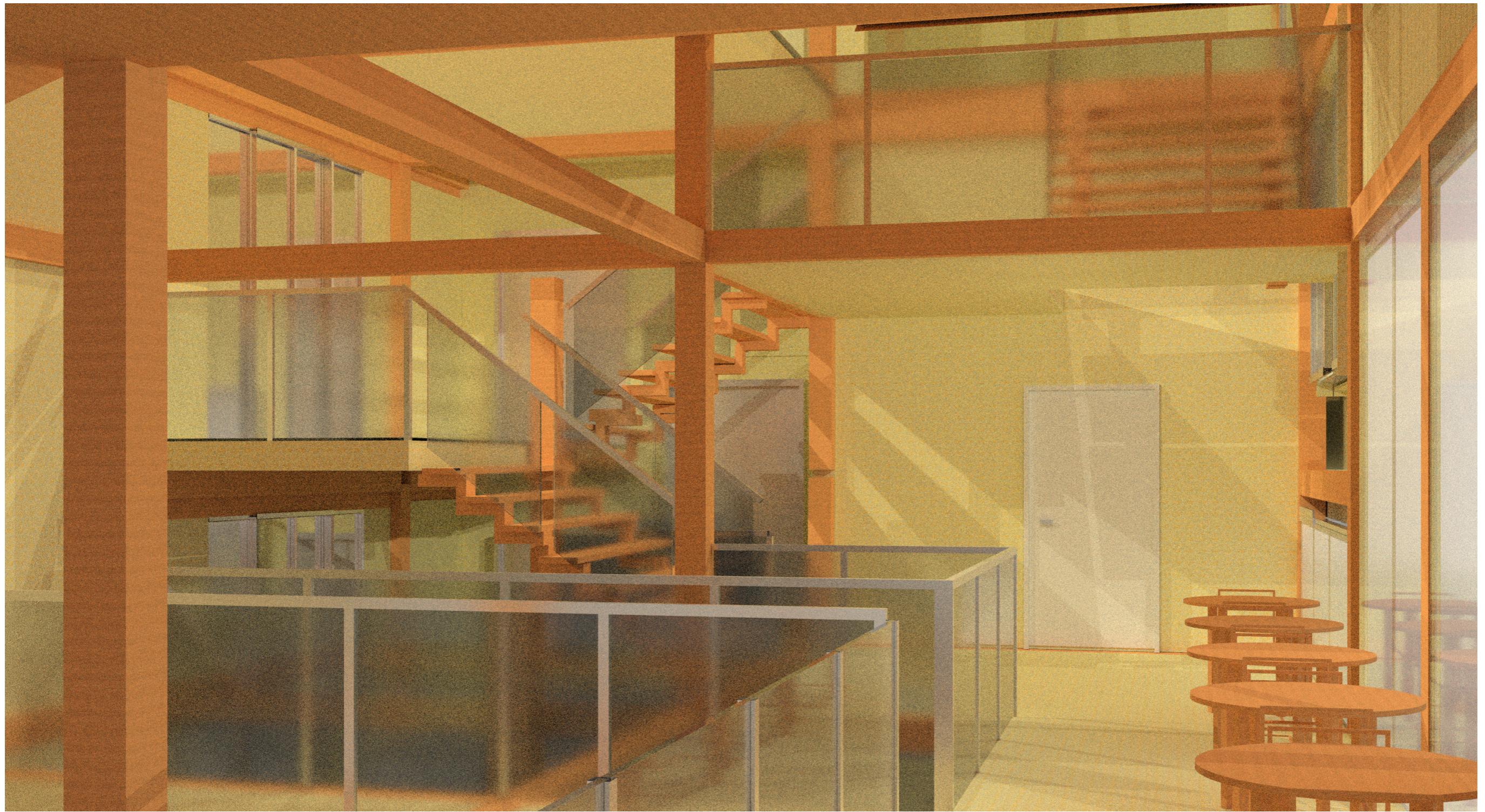
Floor +2



Entrance

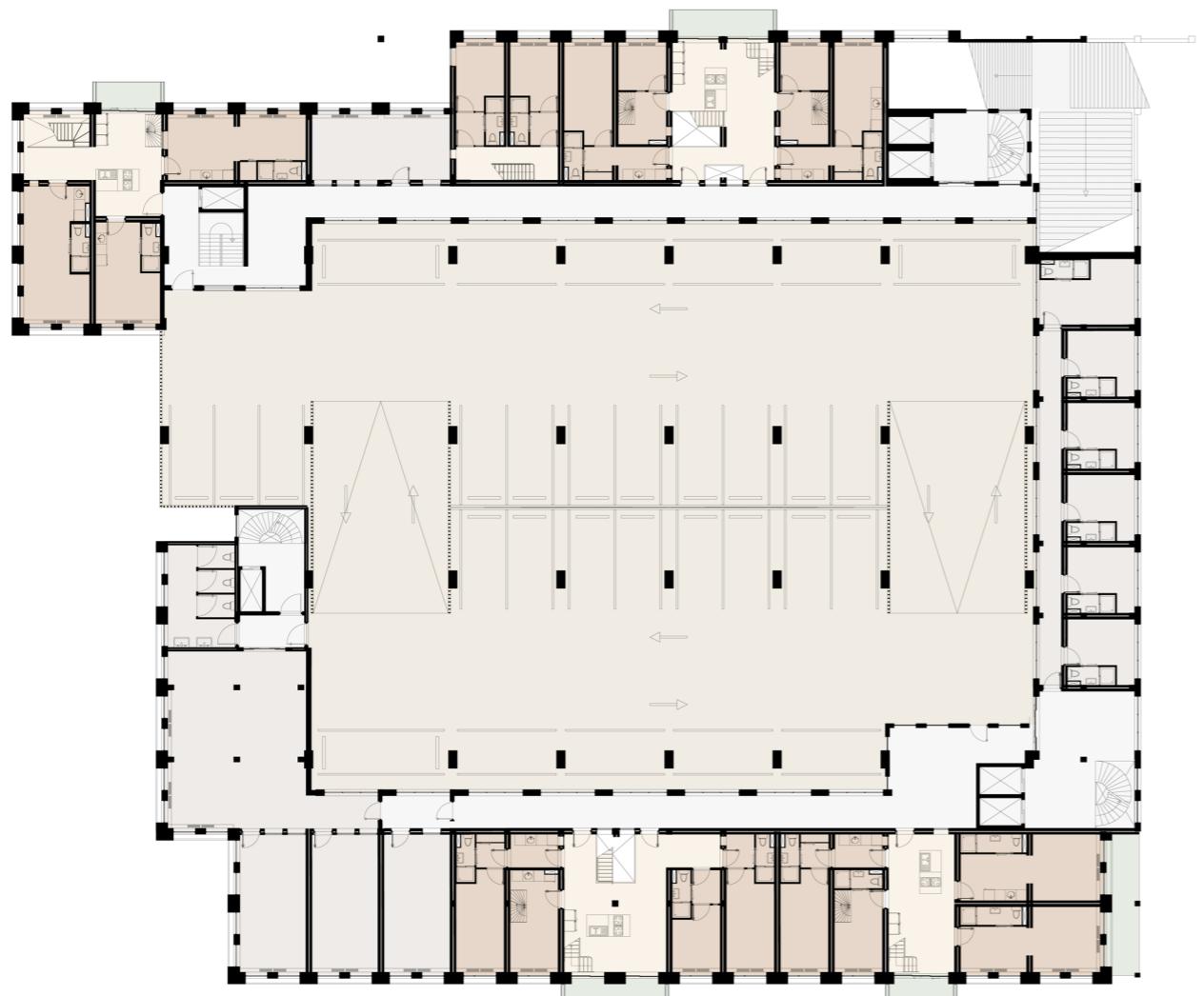


Entrance



Floor plans

Floor +3

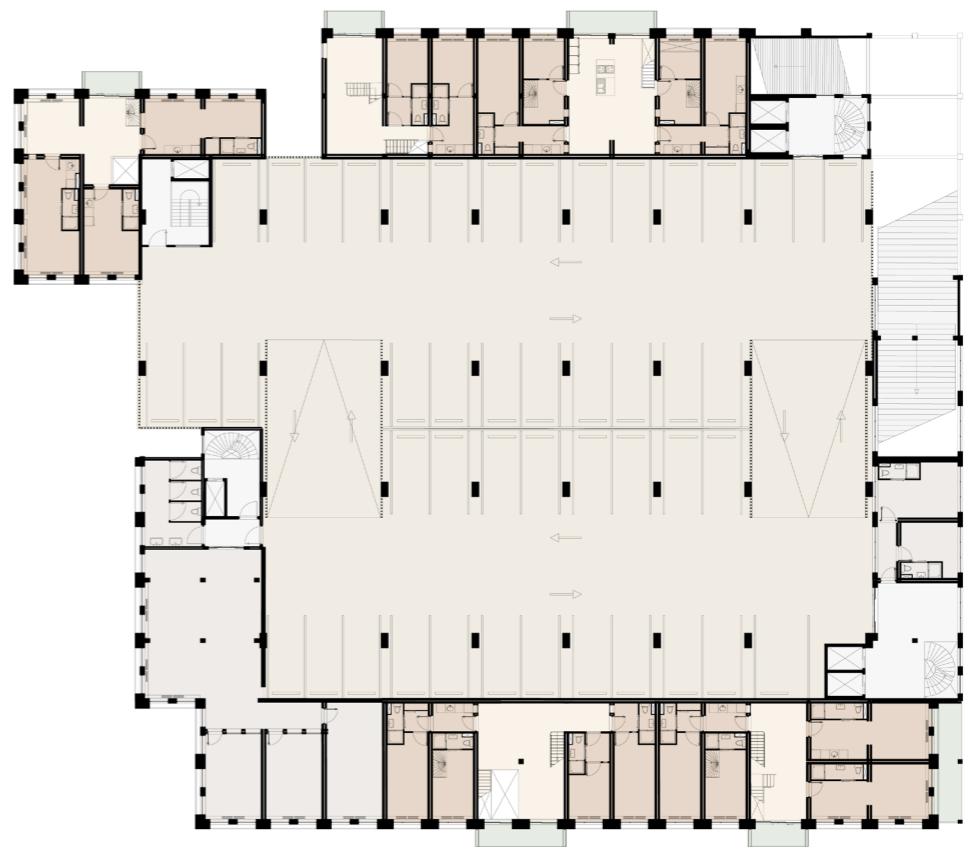


Dwelling
Shared spaces
Communal spaces

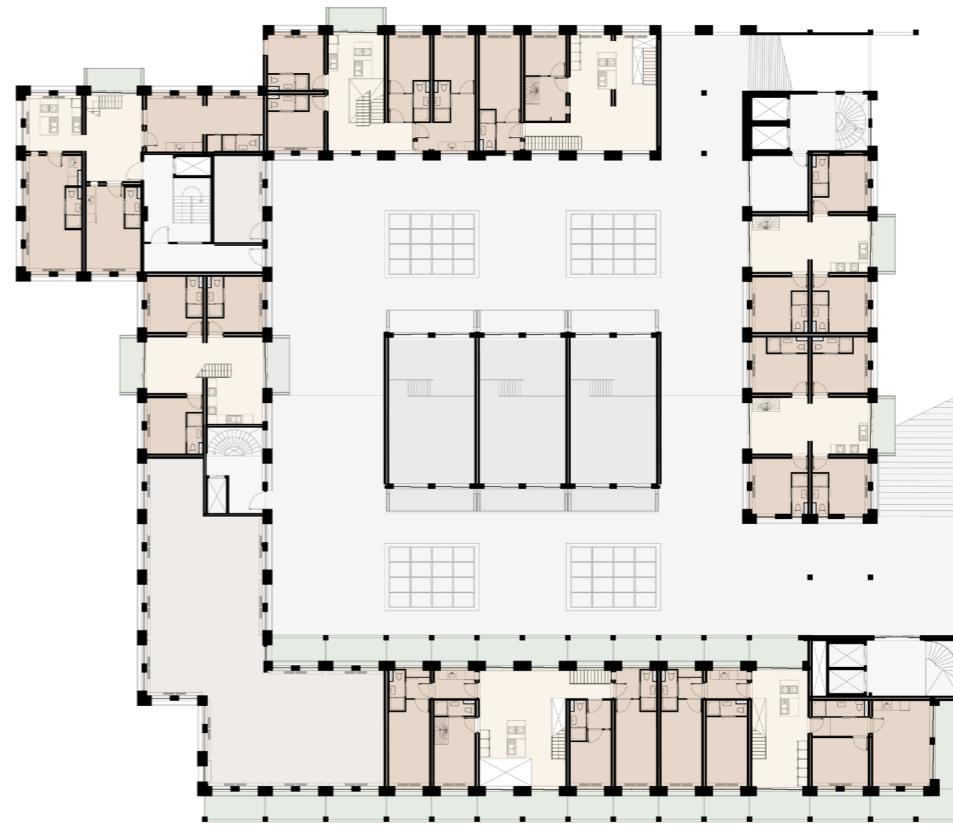
Garage
Circulation
Shared outdoor spaces



Floor +4



Floor +5

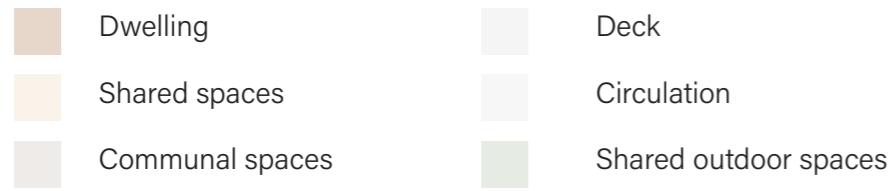
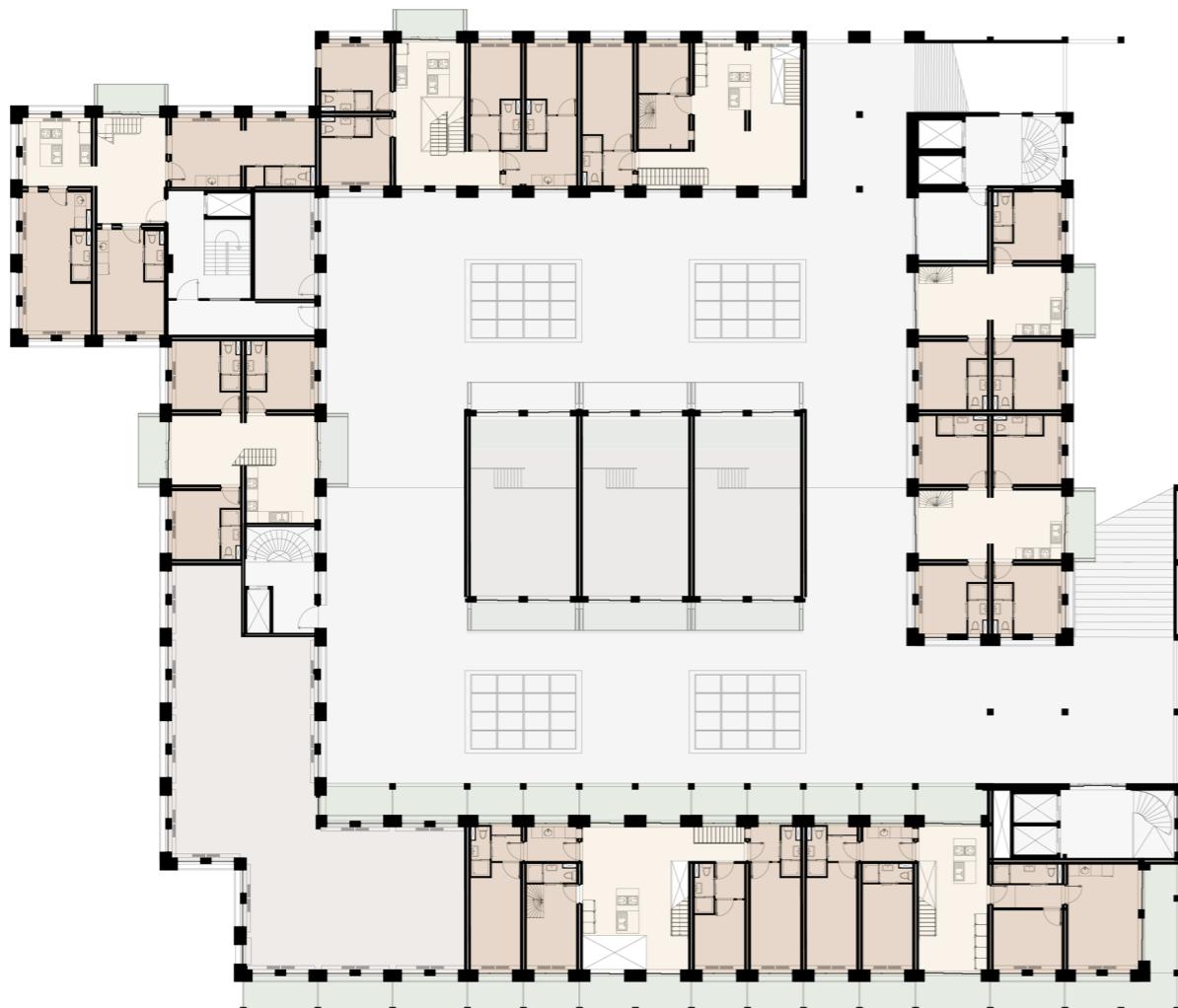


Hallway

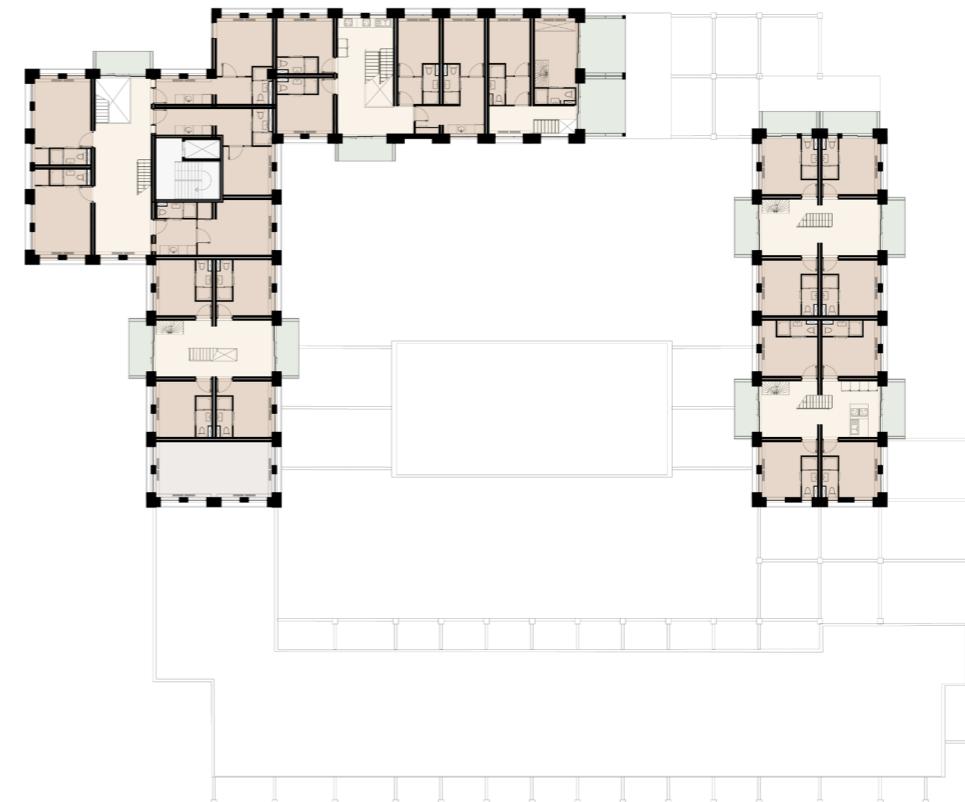


Floor plans

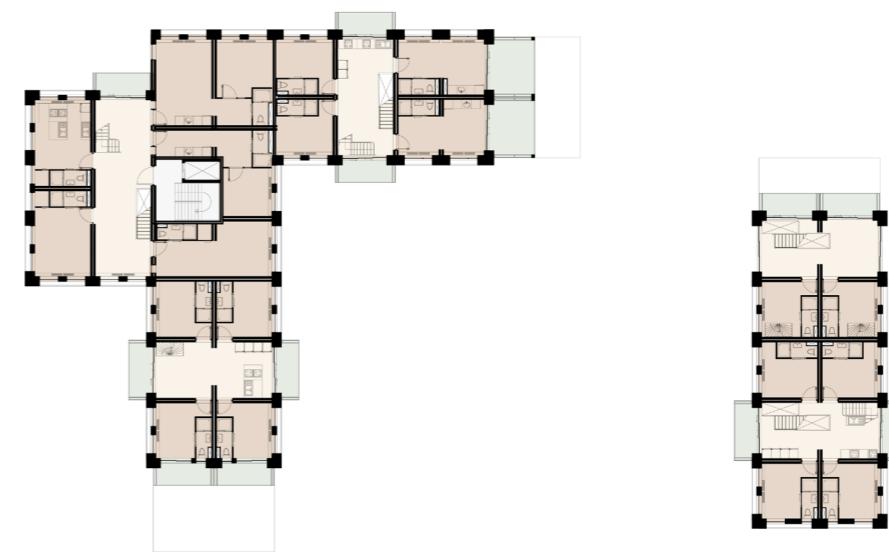
Floor +5



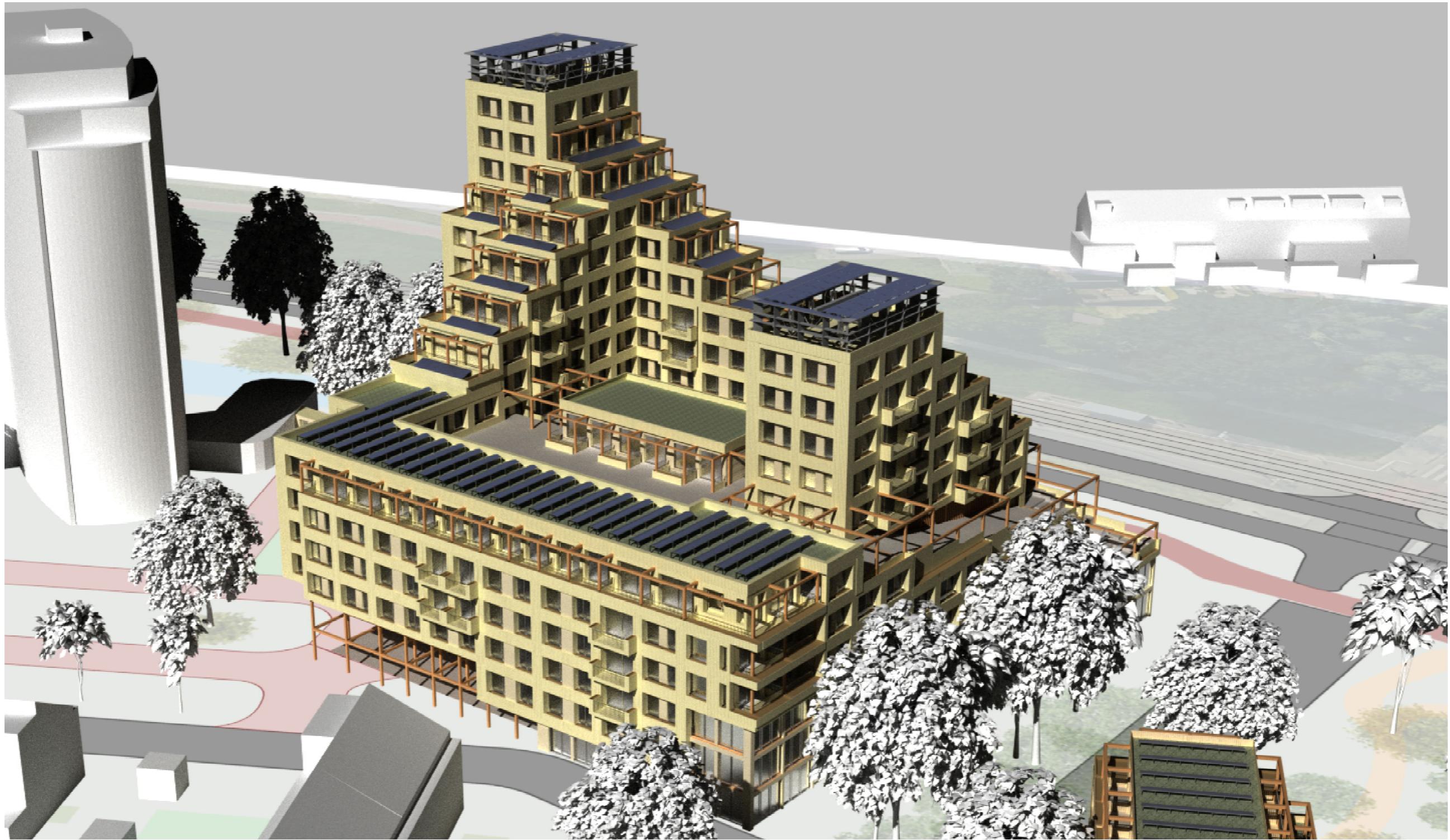
Floor +6



Floor +7

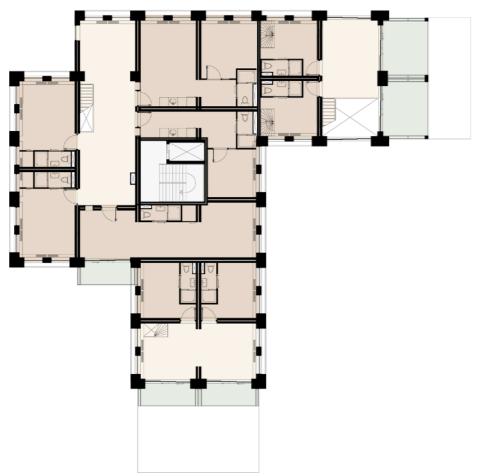


Deck



Floor plans

Floor +8



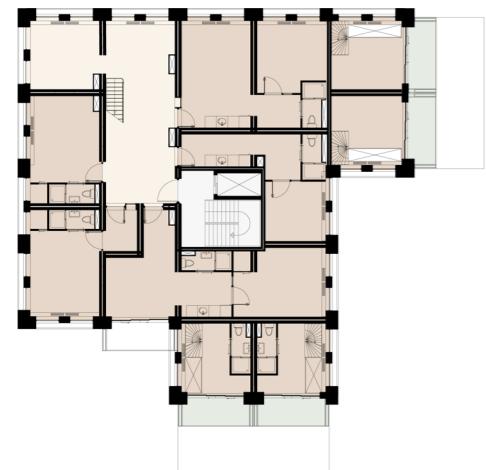
Floor +10



Floor +12



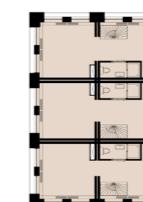
Floor +9



Floor +11



Floor +13



-  Dwelling
-  Circulation
-  Shared spaces
-  Shared outdoor spaces
-  Communal spaces



Highrise



Elevations 1:500



South-east elevation

1 Introduction

- 1.1 Introduction
- 1.2 Problem Statement
- 1.3 Research Plan

2 Results

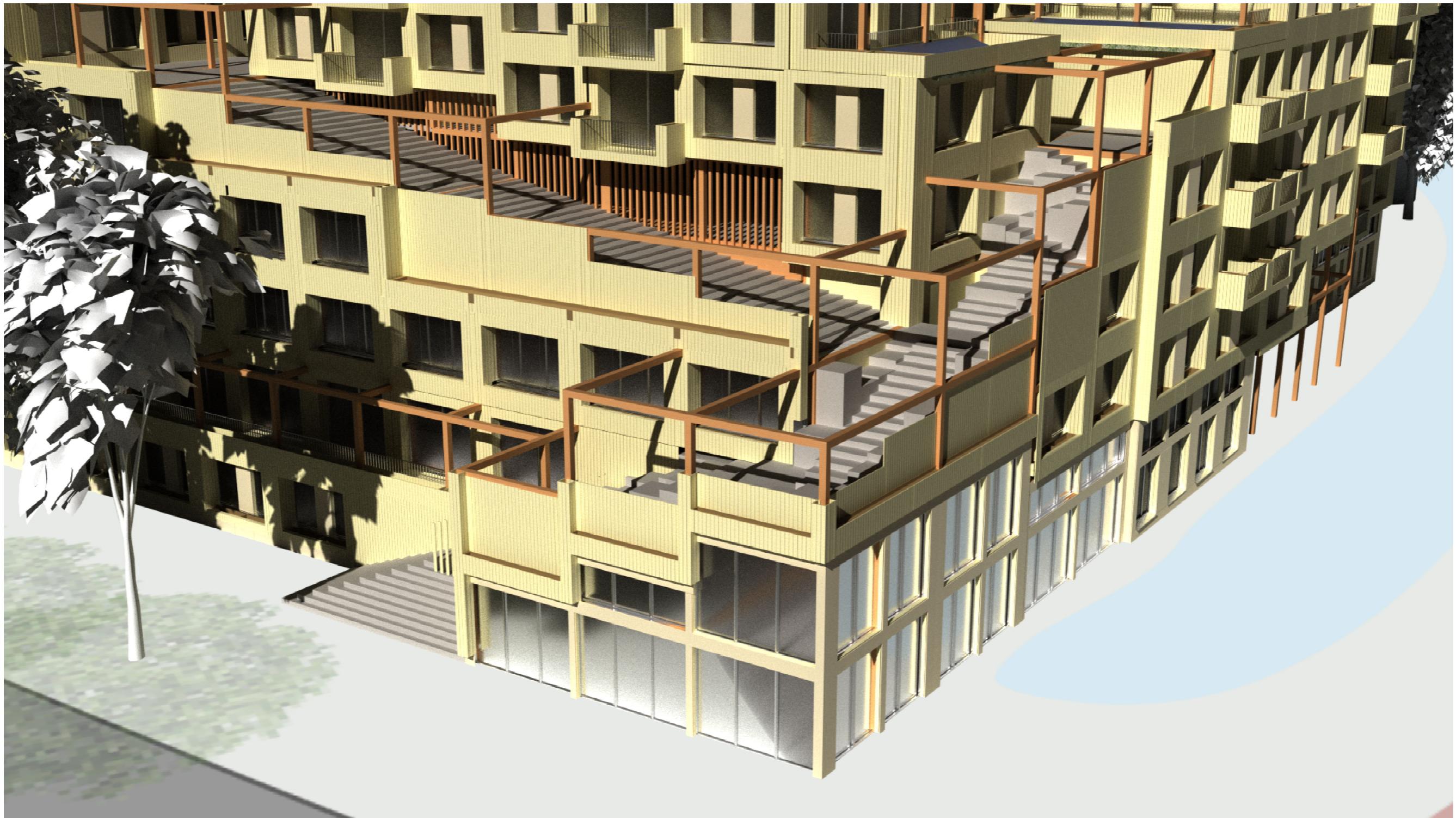
- 2.1 Sharing
- 2.3 Co-housing
- 2.3 Short-stay
- 2.4 Urban densification

3 Site Vision

- 3.1 Site Analysis
- 3.2 Vision
- 3.3 Masterplan

4 Design

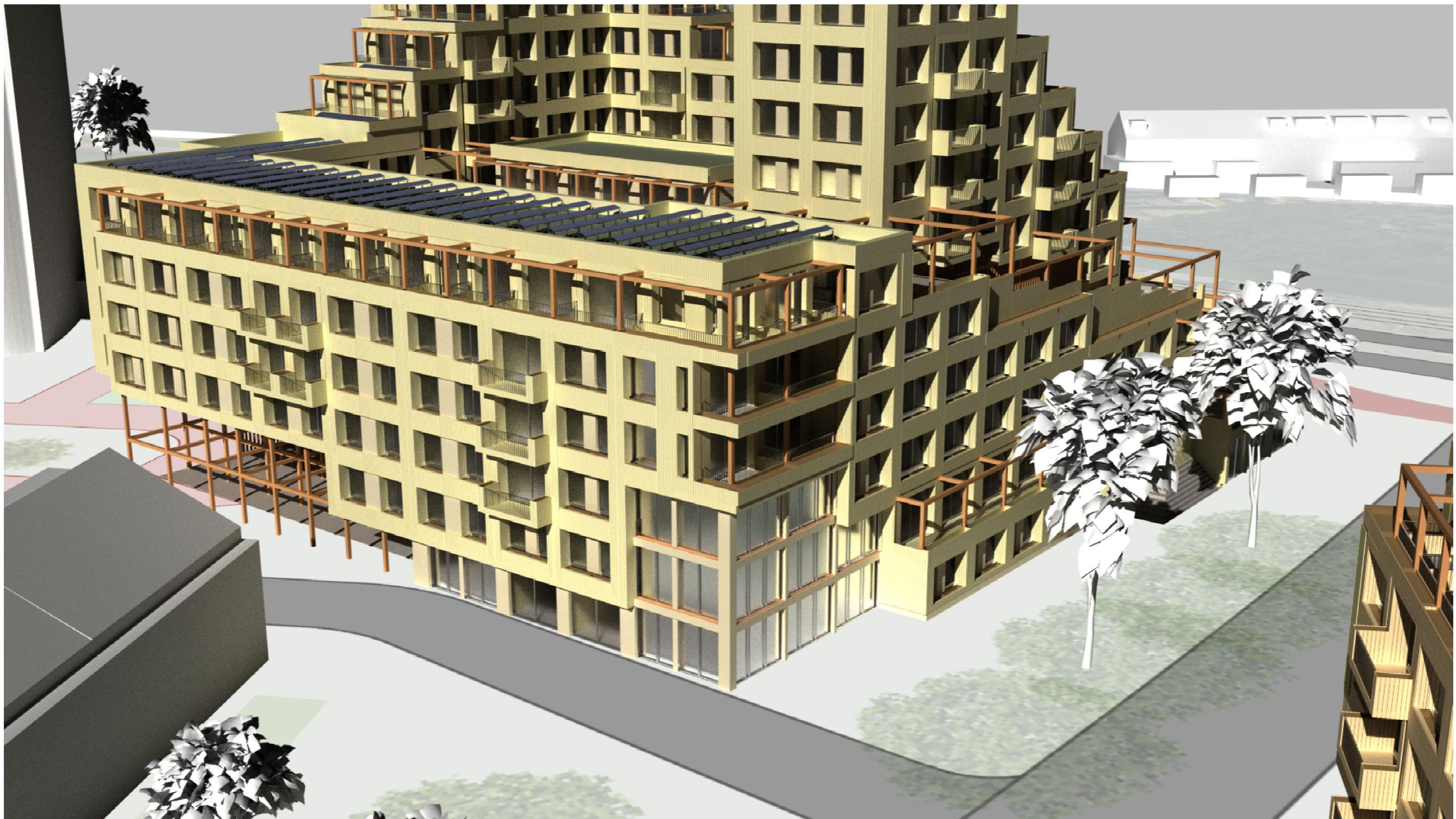
Impressions



Impressions

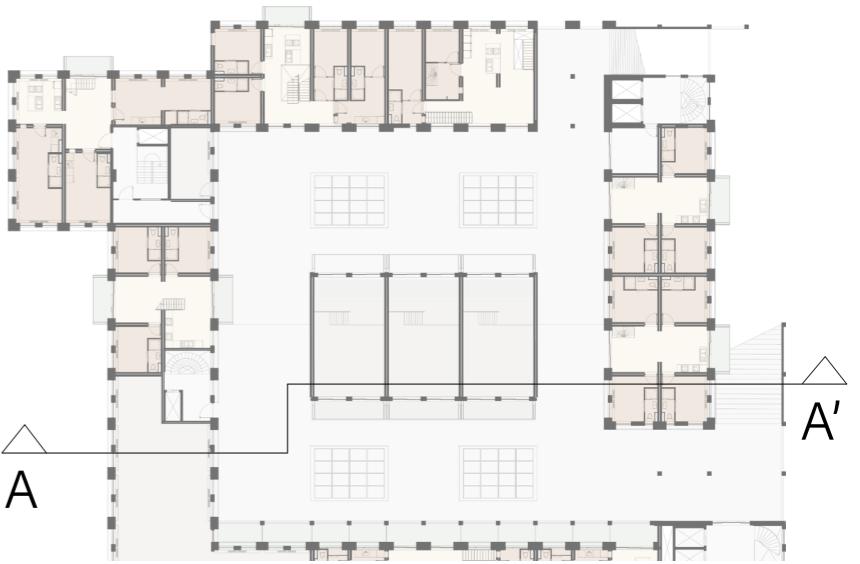
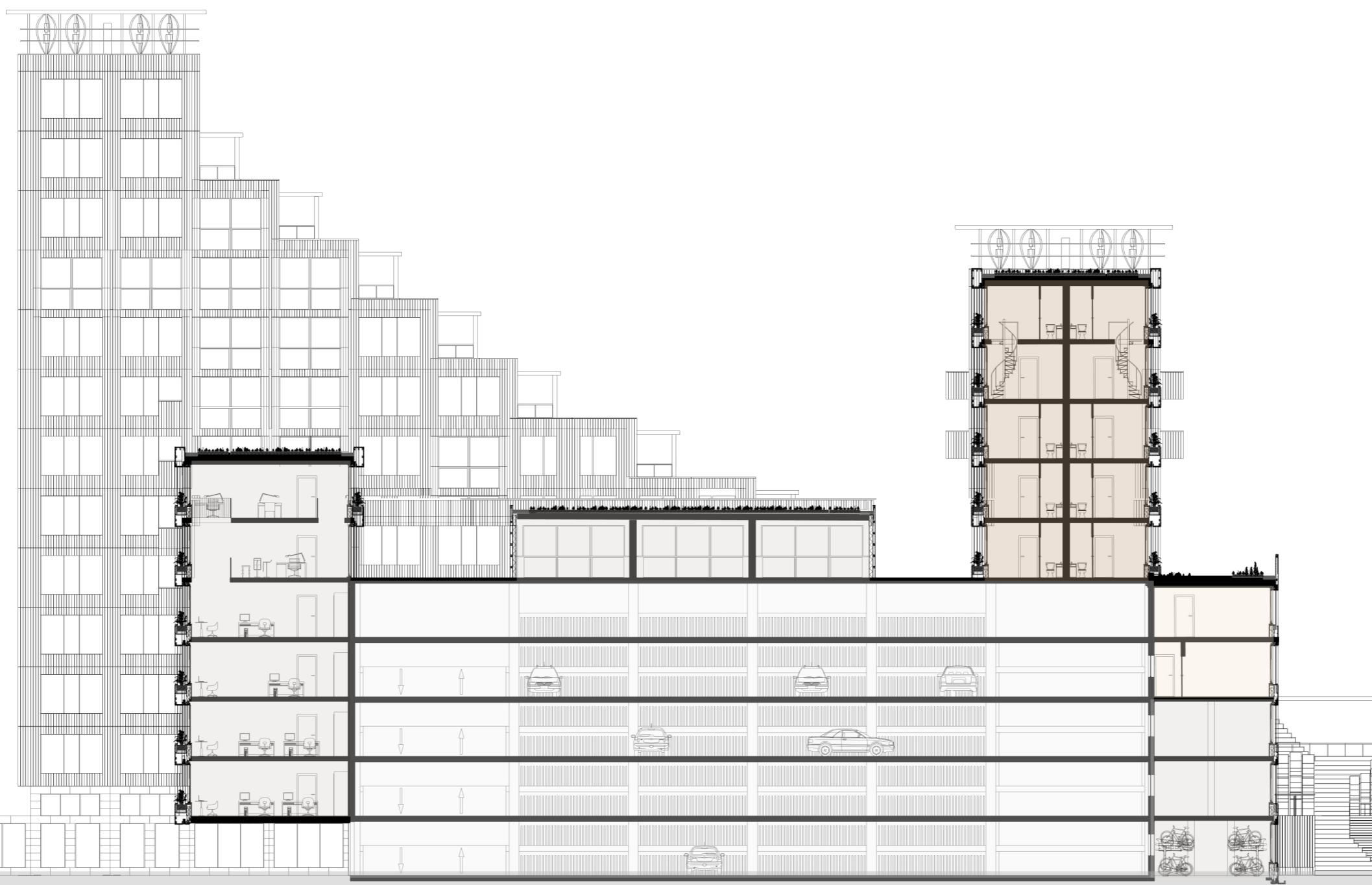


Impressions



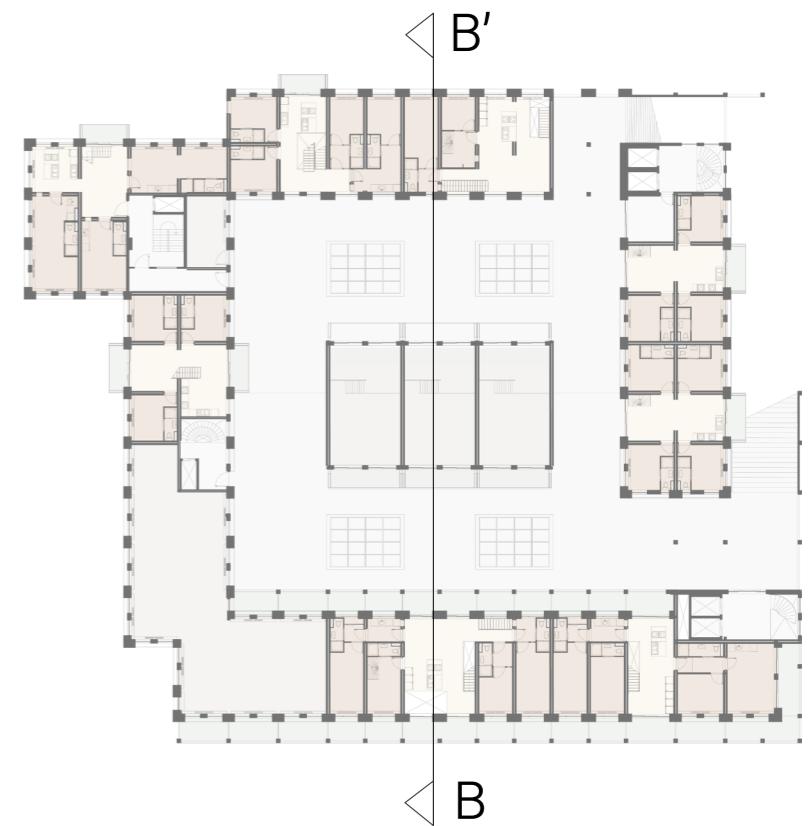
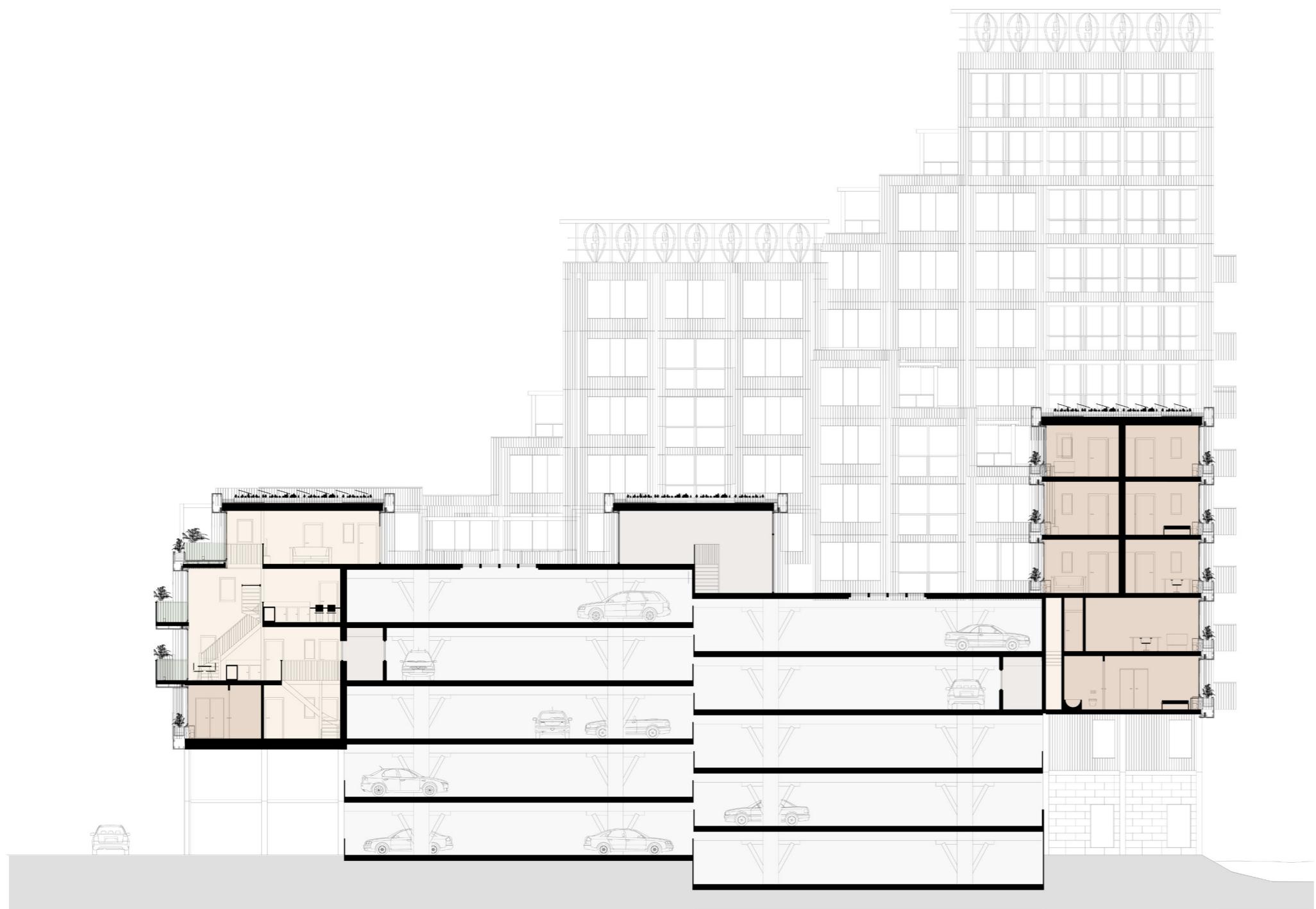
Sections 1:100

Section A - A'

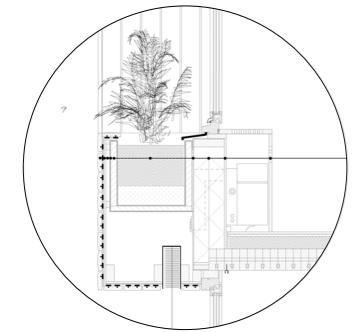


Sections 1:50

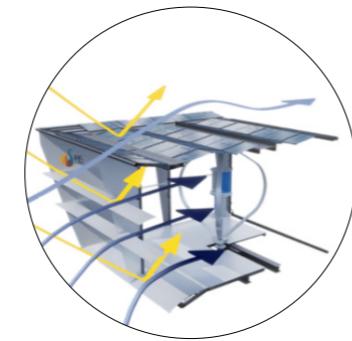
Section B - B'



Climate concept section



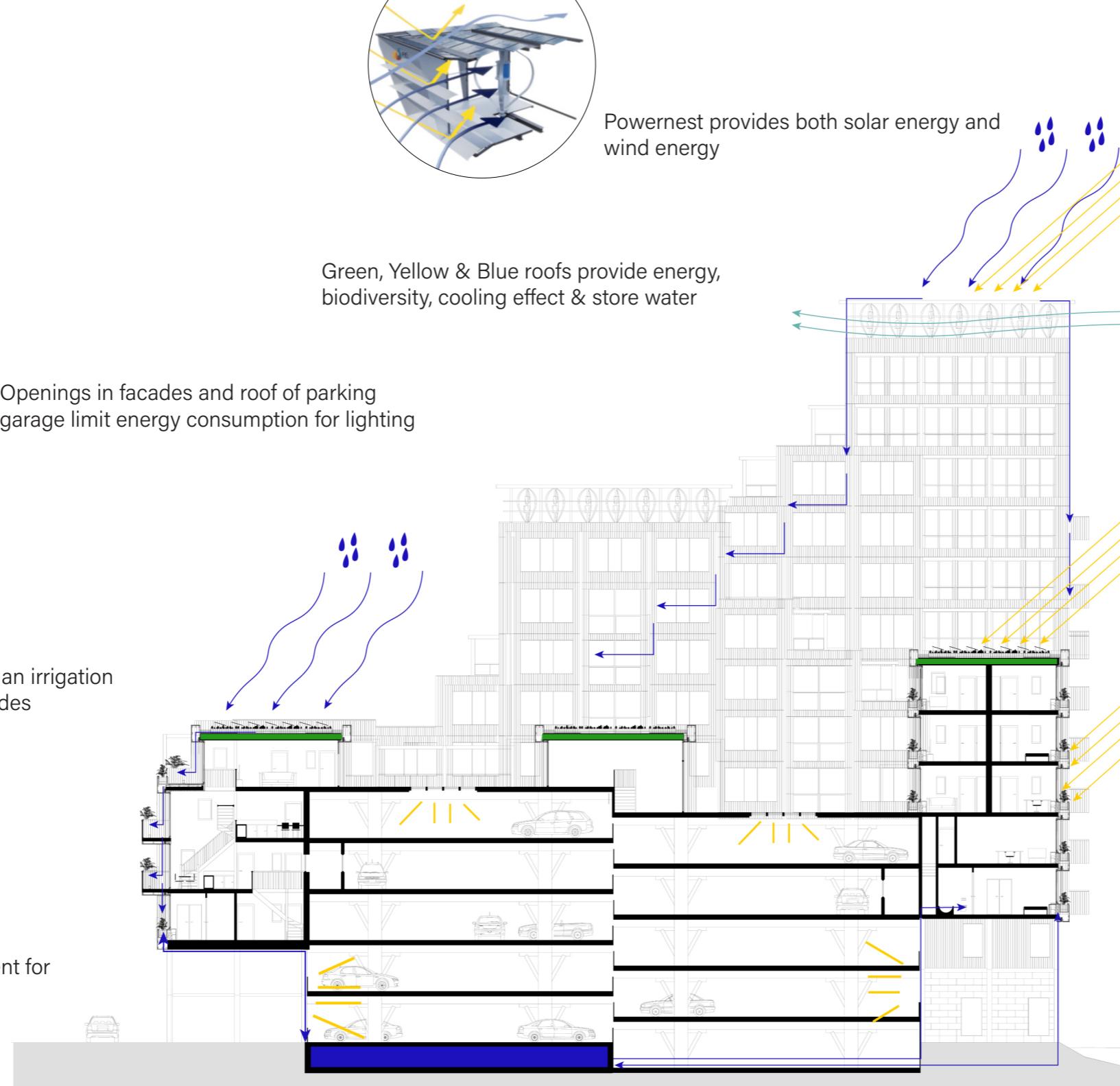
Rainwater trickles down through an irrigation system for the plants on the facades



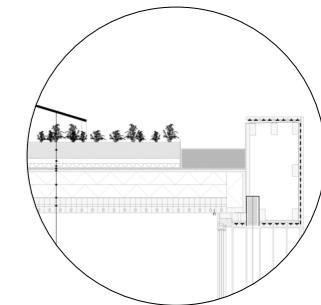
Powernest provides both solar energy and wind energy

Green, Yellow & Blue roofs provide energy, biodiversity, cooling effect & store water

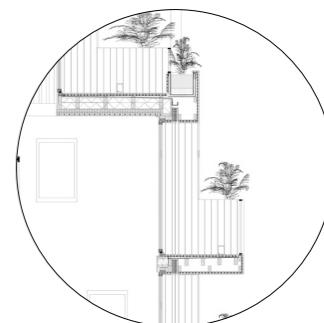
Openings in facades and roof of parking garage limit energy consumption for lighting



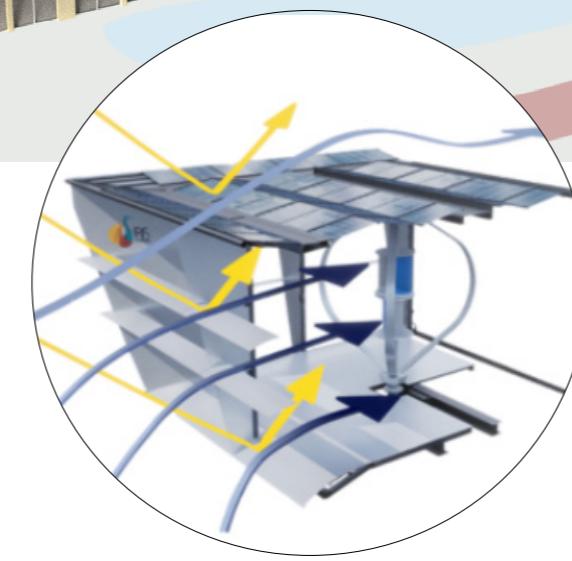
Large (rain)water storage in basement for irrigating plants and flushing toilets



Facade design limits sun exposure on windows in high summer, whilst allowing sun to enter in winter



Powernest



1 Introduction

- 1.1 Introduction
- 1.2 Problem Statement
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2 Results

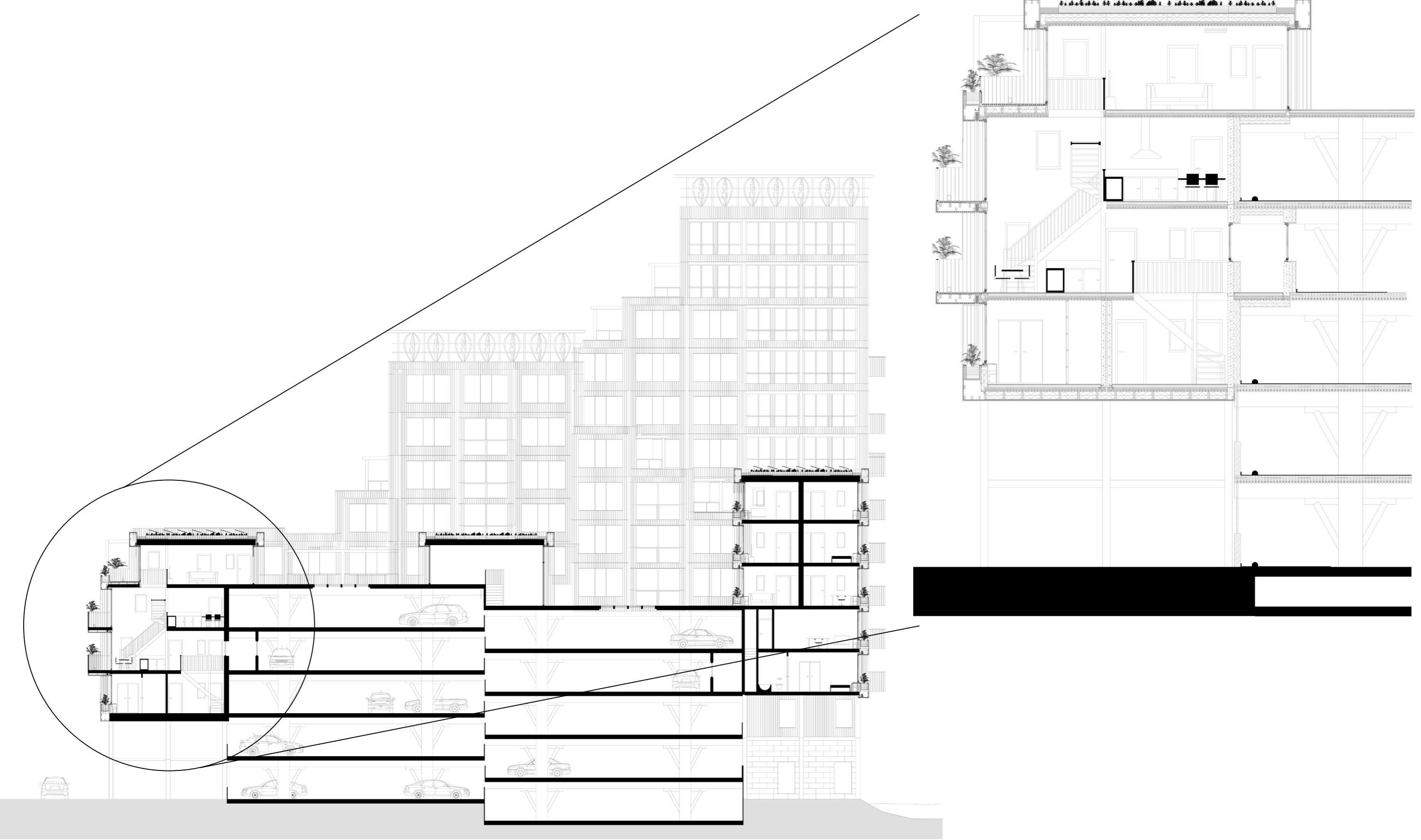
- 2.1 Sharing
- 2.3 Co-housing
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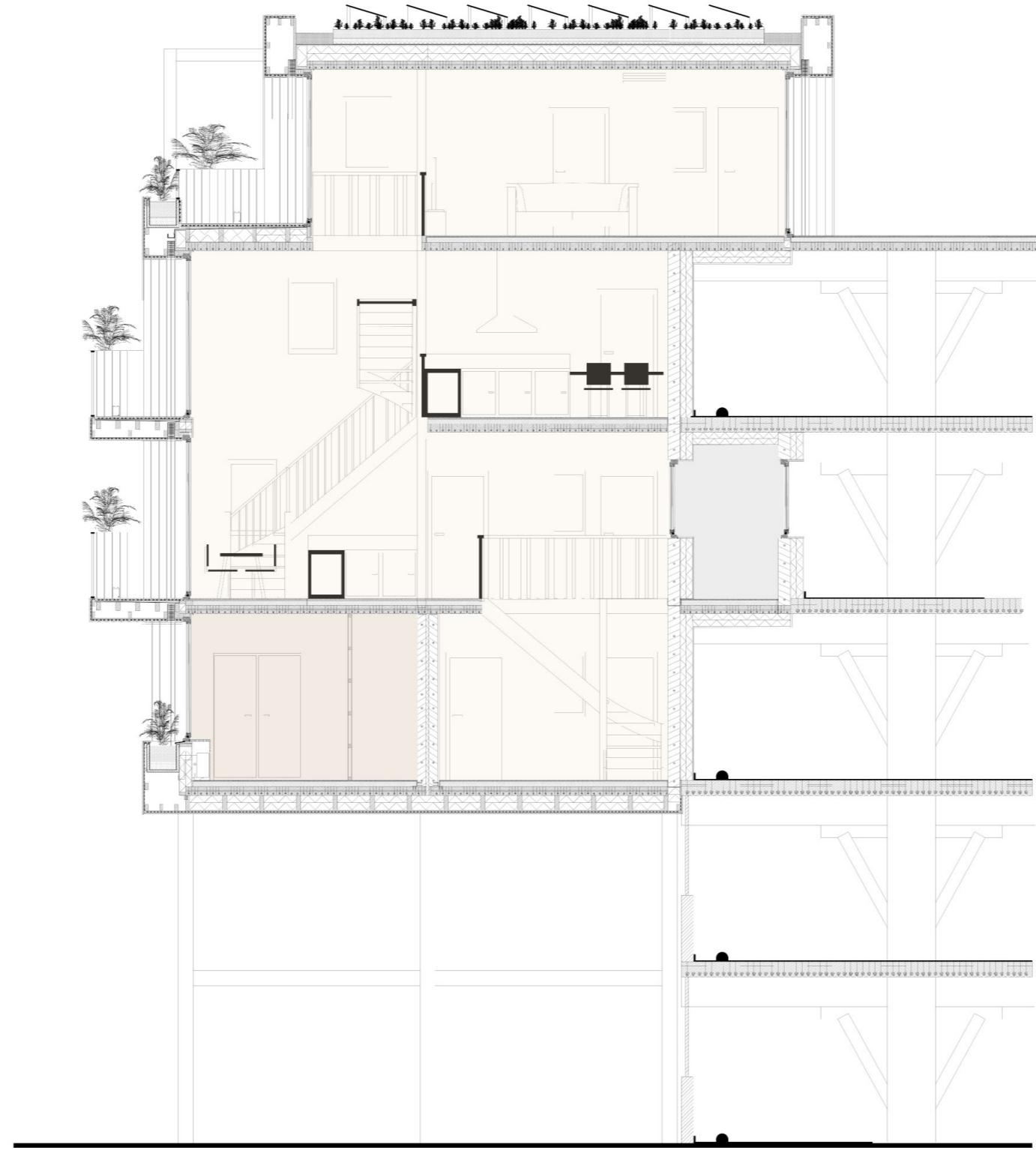
- 3.1 Site Analysis
- 3.2 Vision
- 3.3 Masterplan

4 Design

Sections 1:50

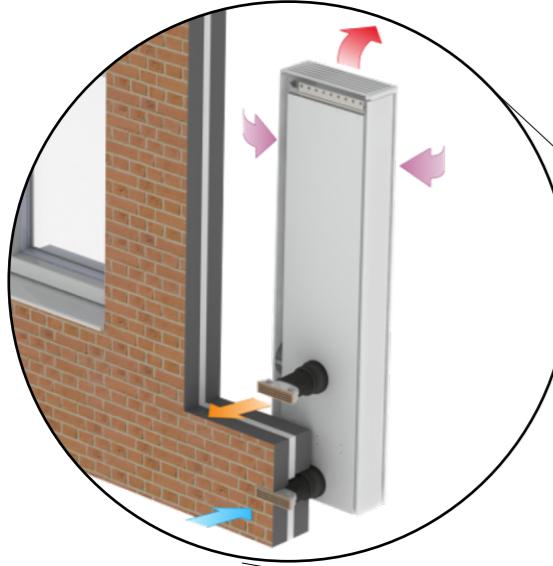


Section 1:50

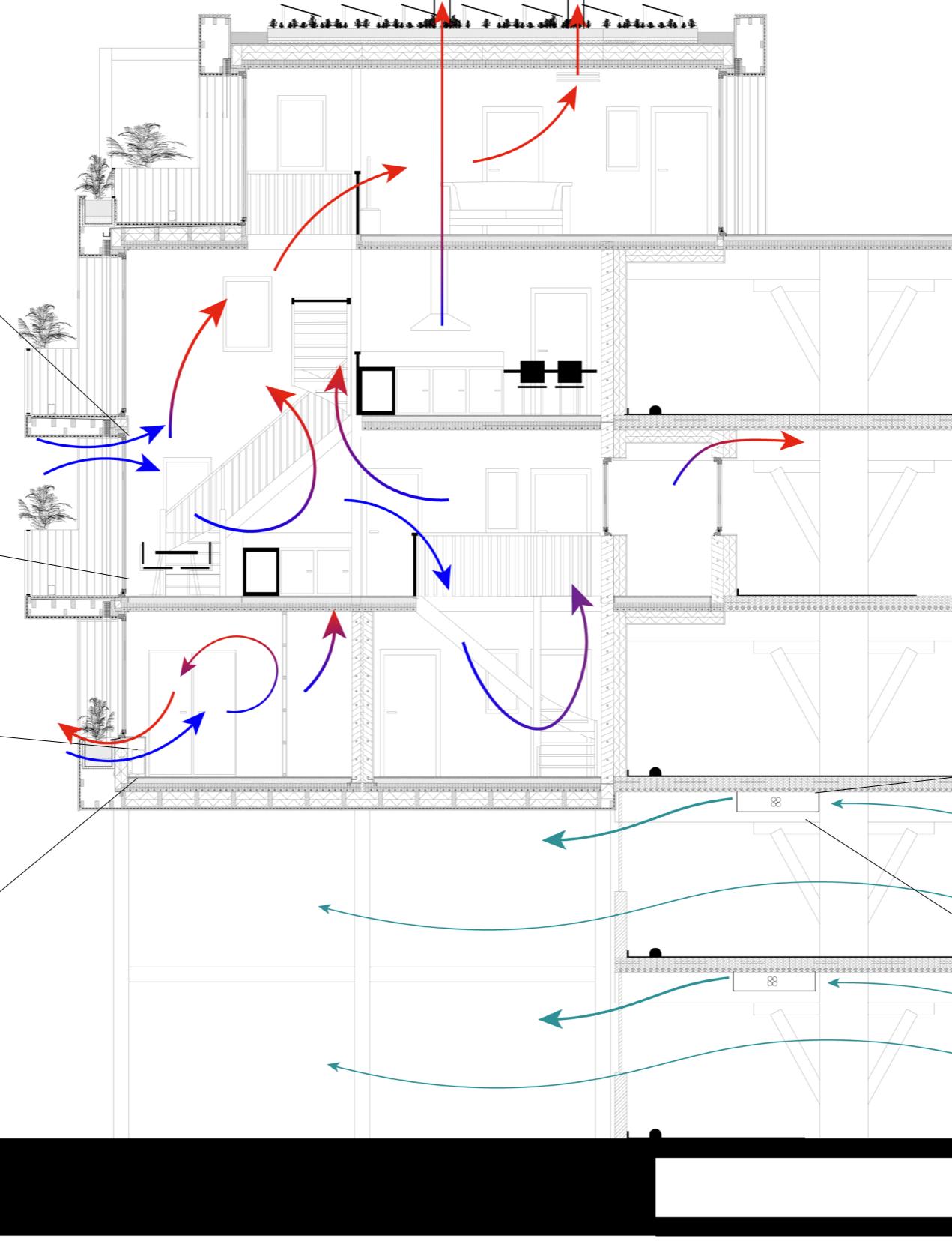
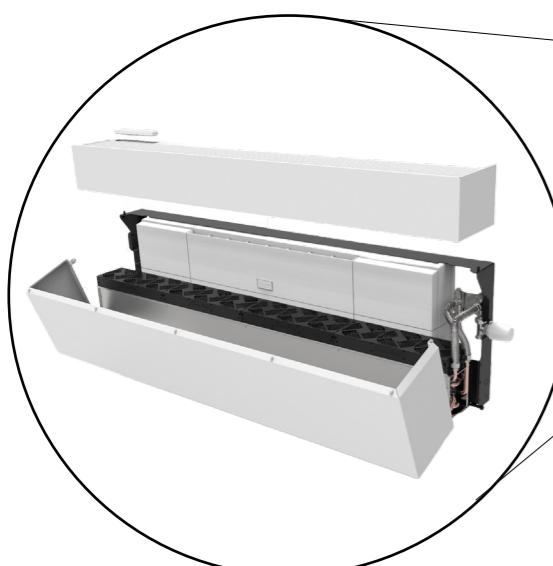


Heating & ventilation

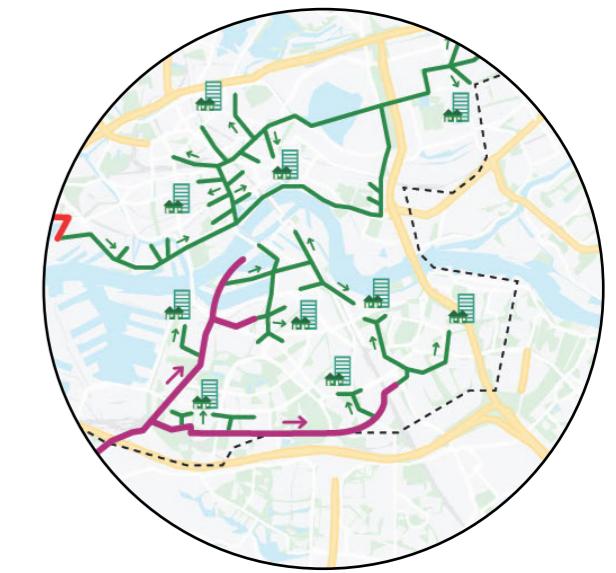
Climarad Ventura V1C-S
Decentralised heating, cooling & ventilation on low temperature heating, with heat recovery



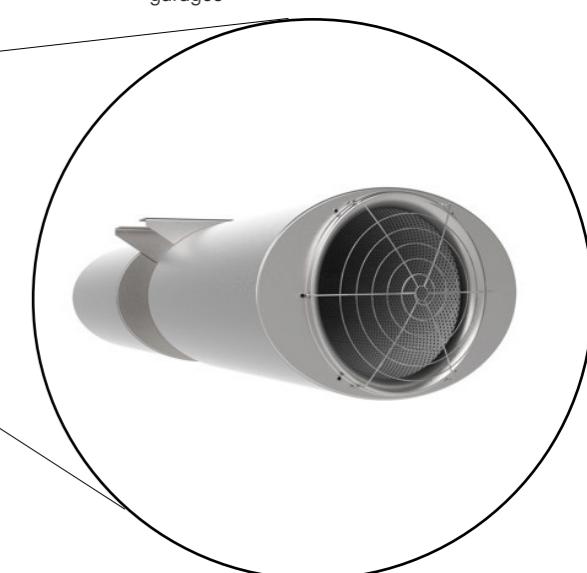
Climarad Vita H1C-S
Decentralised heating, cooling & ventilation on low temperature heating, with heat recovery



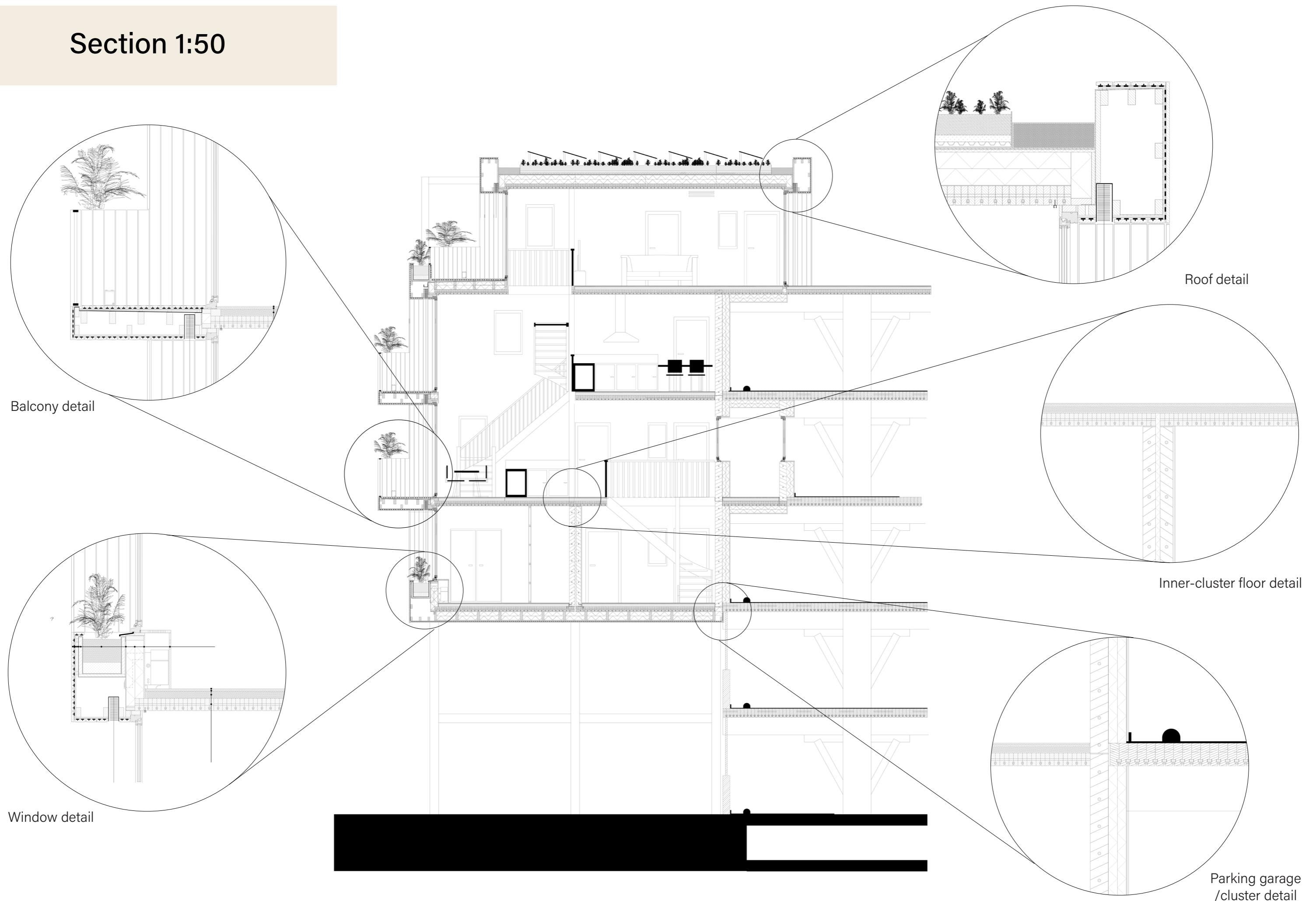
City heat network Rotterdam



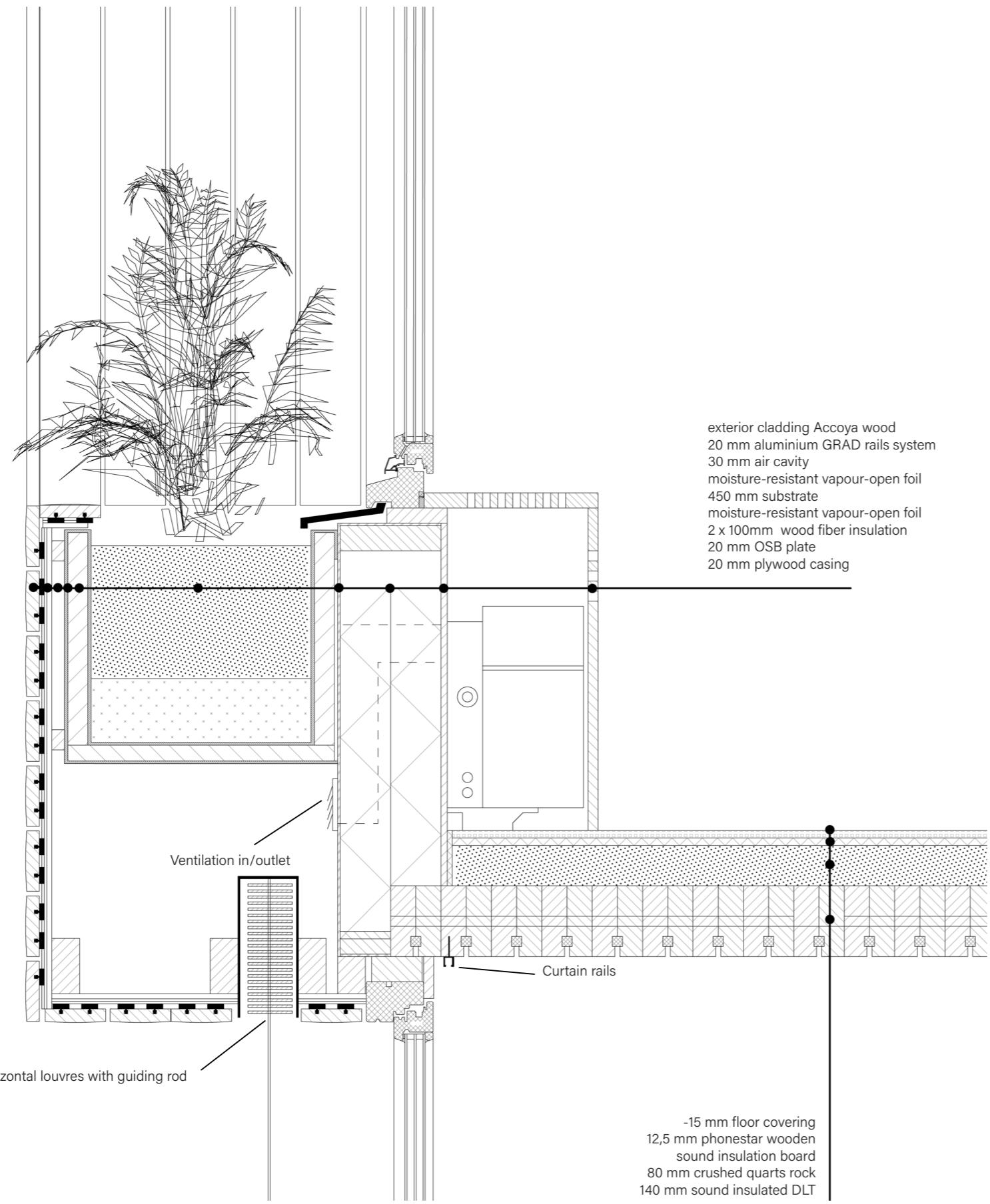
NOVENCO pressure ventilation for parking garages



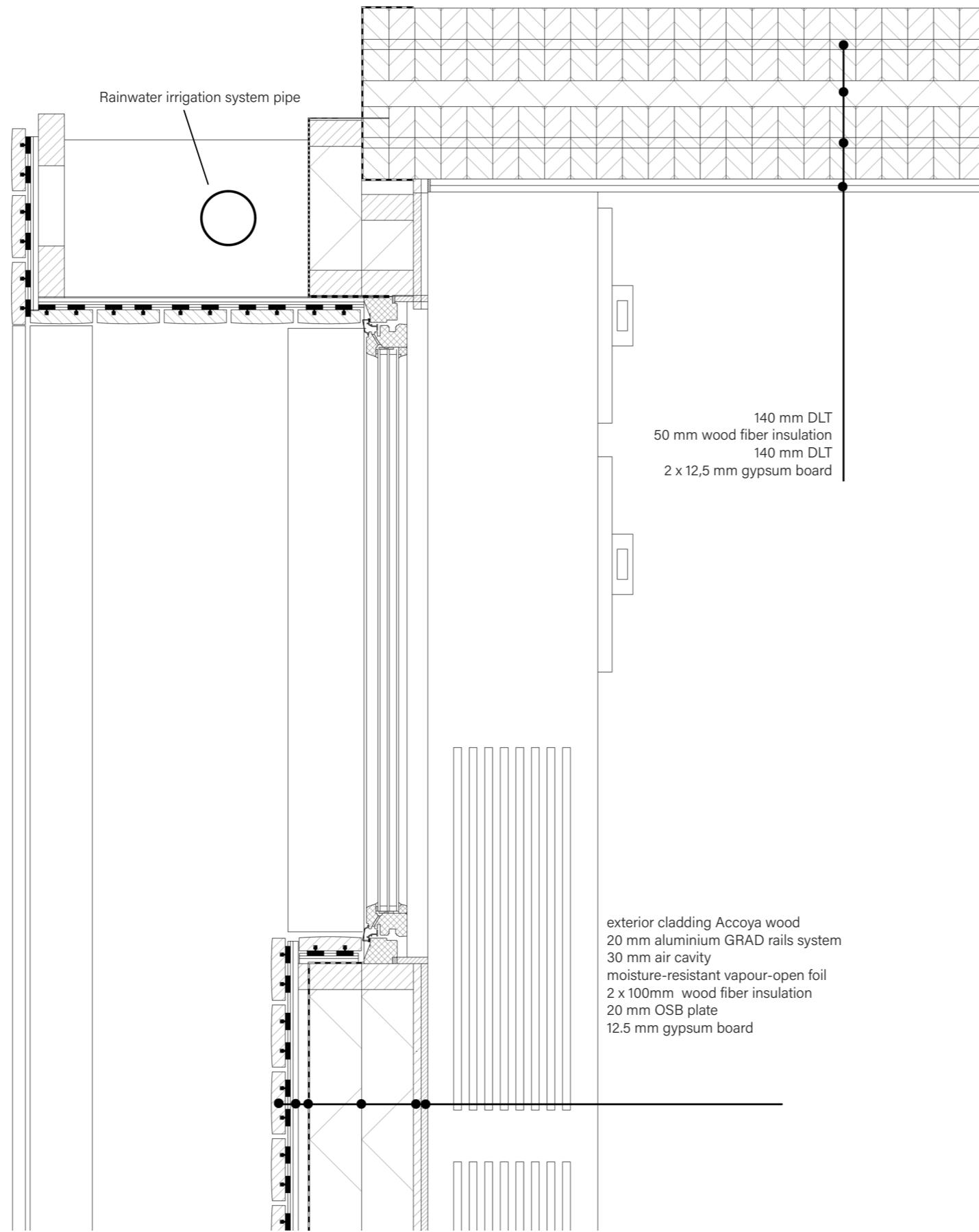
Section 1:50



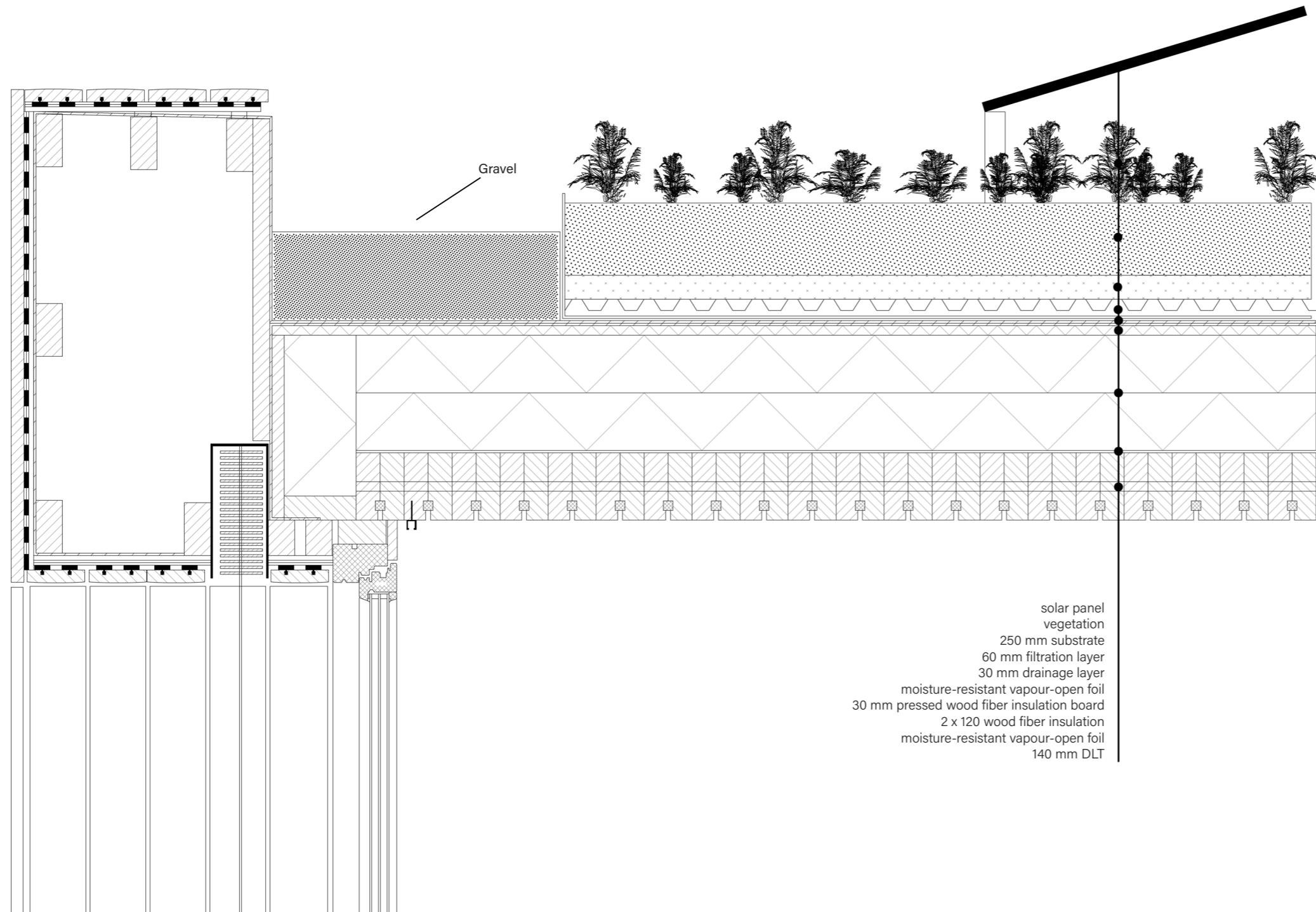
Vertical window detail scale 1:5



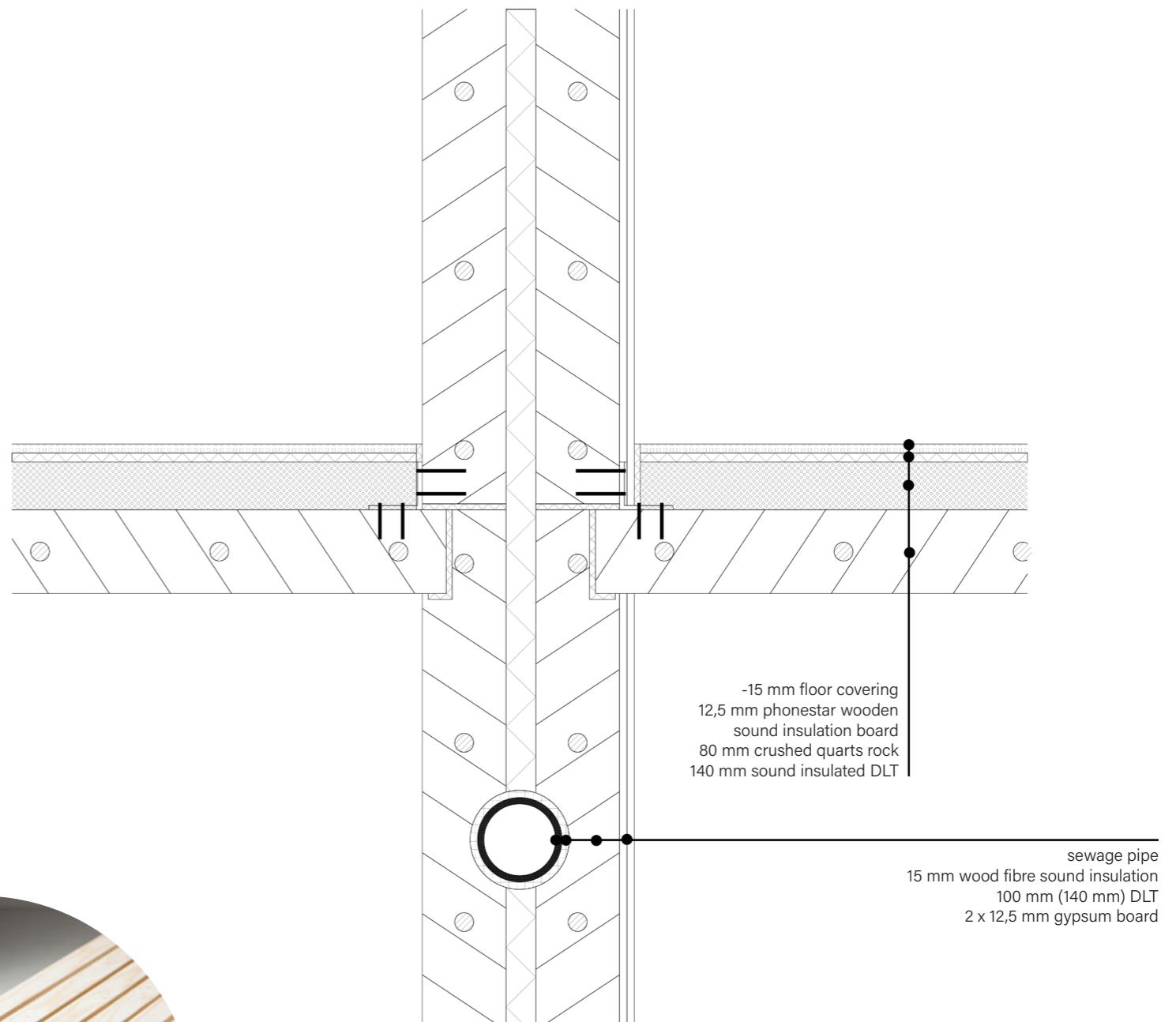
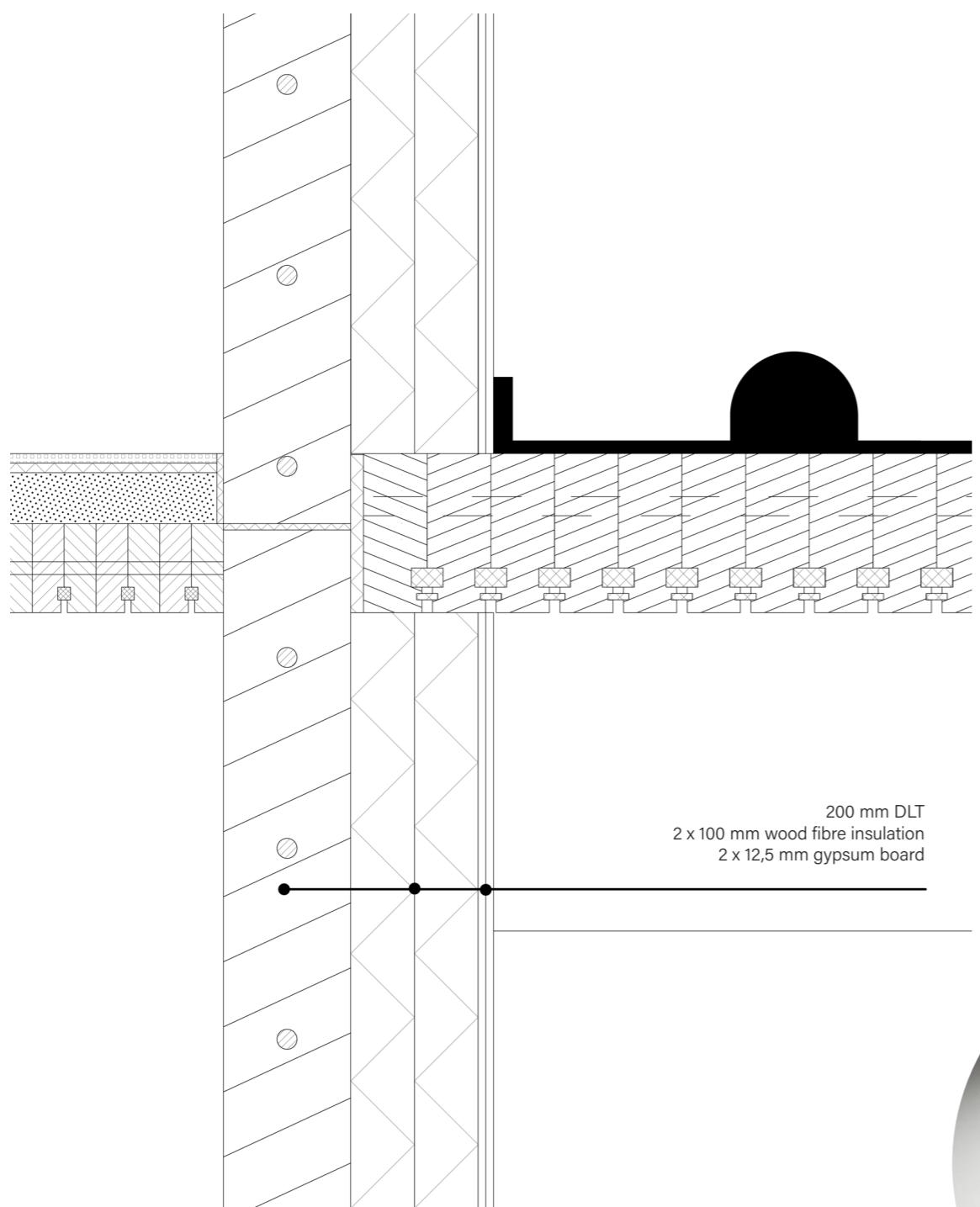
Horizontal window detail scale 1:5



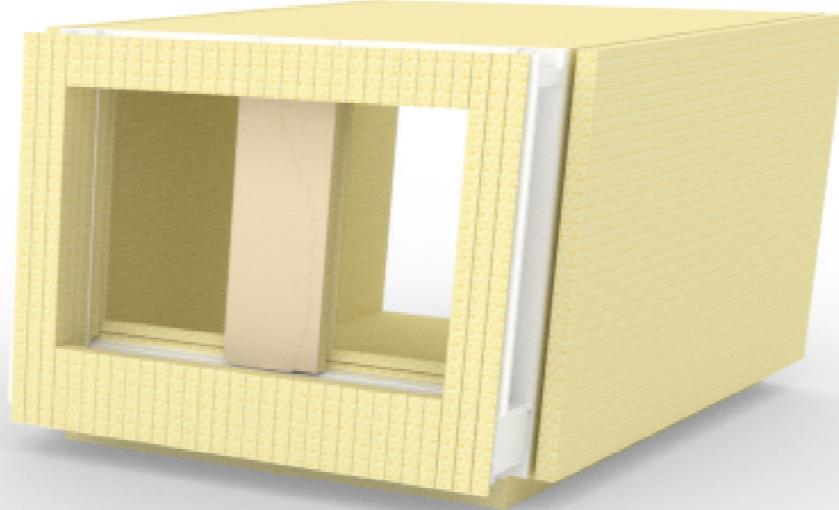
Vertical roof detail scale 1:5



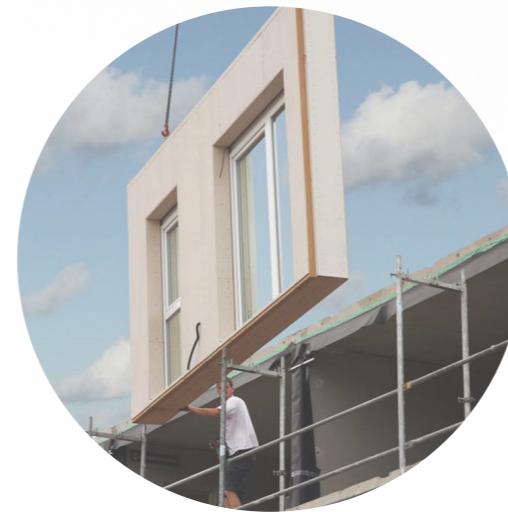
Vertical floor details scale 1:5



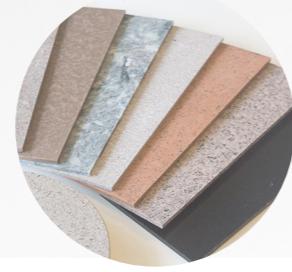
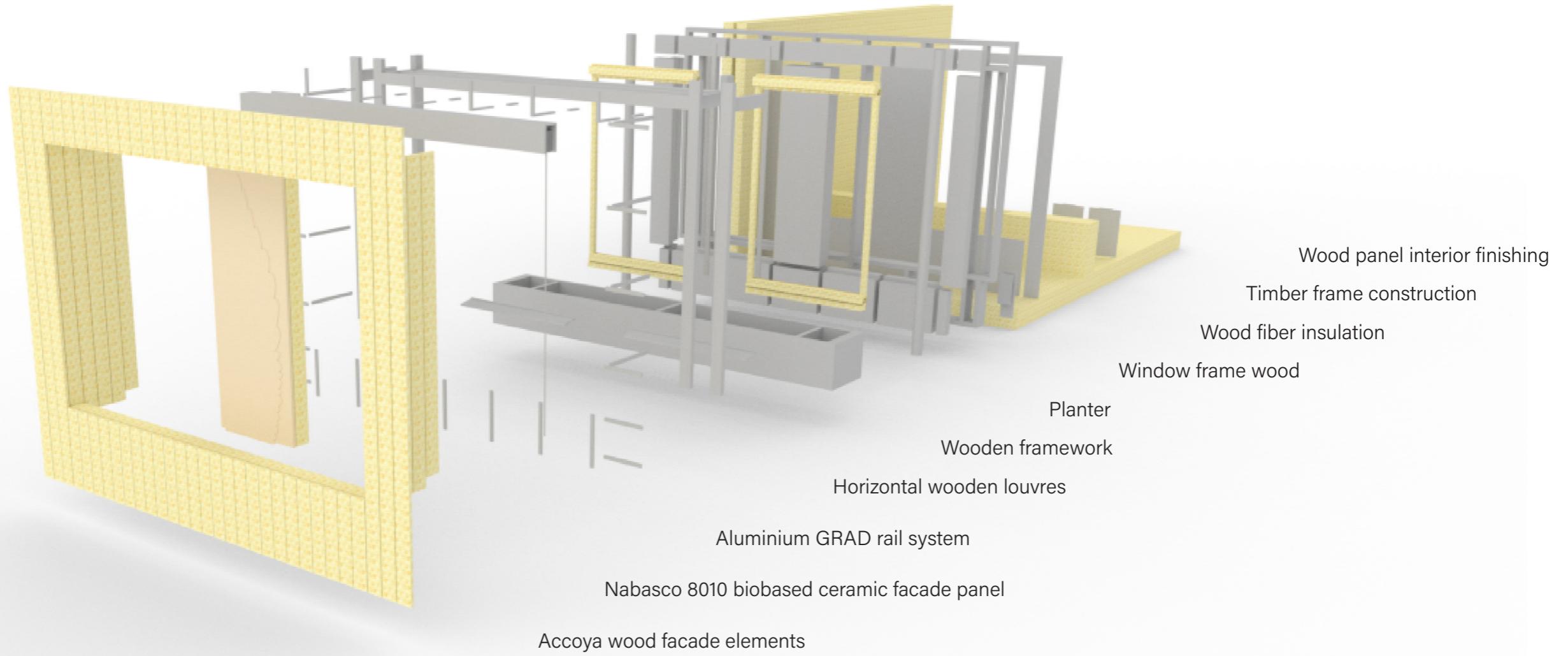
Facade



- Prefab facade elements
- 4 meters wide
- Integrated irrigation system for planter
- Horizontal external wooden louvres
- Double openable windows



Facade



Accoya wood facade elements

Nabasco 8010 biobased ceramic facade panel

Aluminium GRAD rail system

Planter

Wood fiber insulation

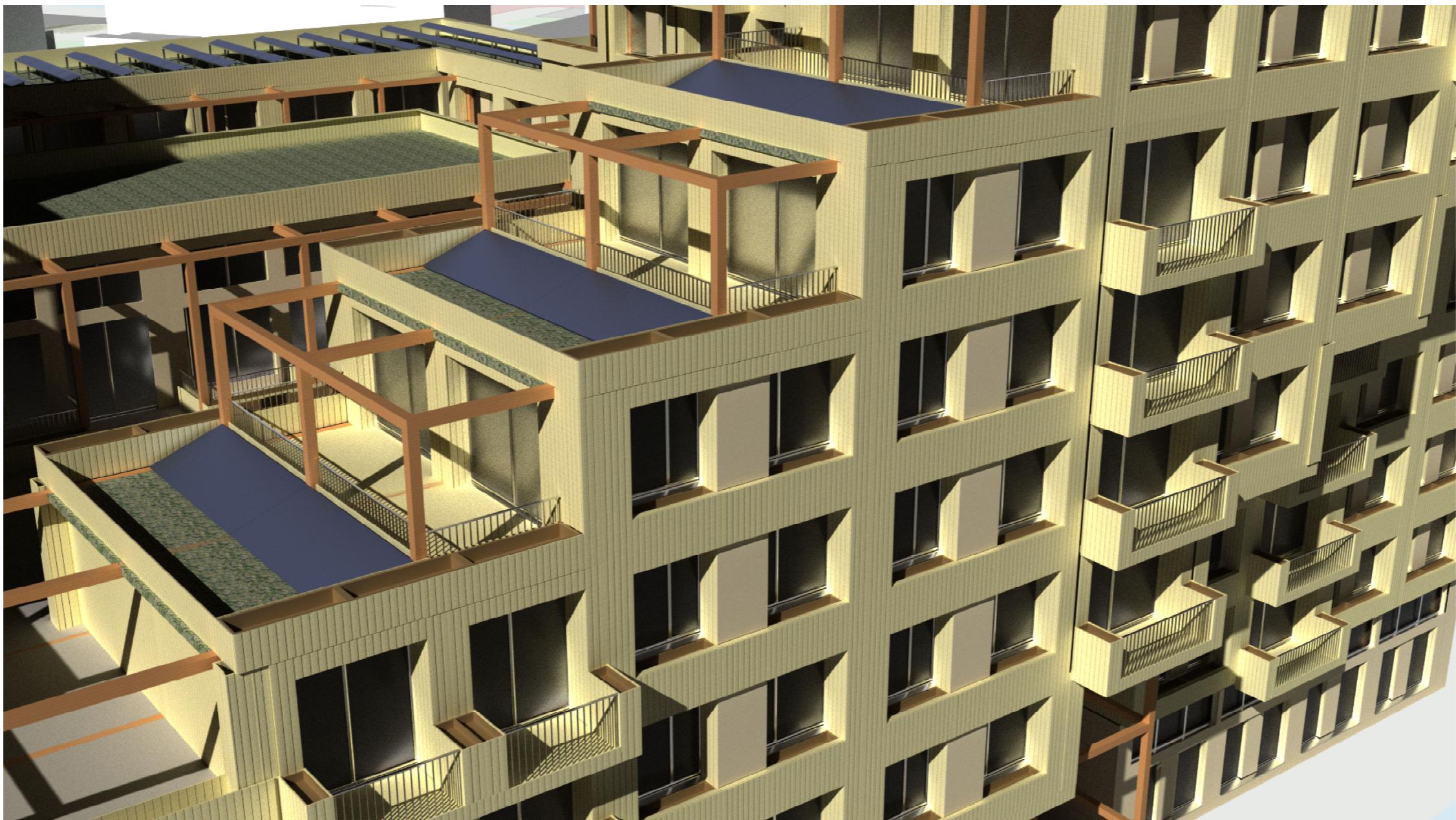
Facade



Usable window sill with storage cabinets and a depth of 350 mm

50% of floor, walls & ceiling is visible (constructive) DLT wood

Facade



Facade



Clusters 1:500

Floor +5



High-end cluster

Floor +6



Floor +7

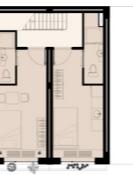


- Higher incomes
- Spacious private and shared spaces
- For example:
Expats
Recently divorced
Tourists

Floor +8



Floor +1



Regular cluster

Floor +2



Floor +3



Floor +4



Floor +5

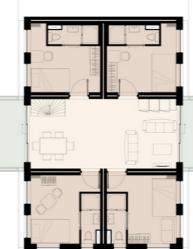


- Middle incomes
- Variety in spaces and dwellings
- For example:
Recently divorced
Tourists
Economically homeless

Floor +5



Floor +6



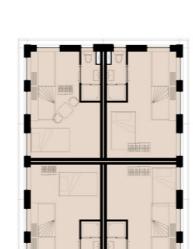
Floor +7



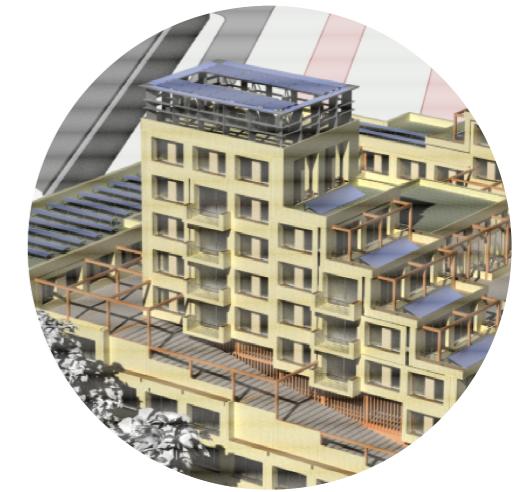
Floor +8



Floor +9



Budget cluster



-Lower incomes

-Basic and minimalistic amenities and dwellings

- For example:
Refugees
Economically homeless
Seasonal migrant workers

High-end cluster

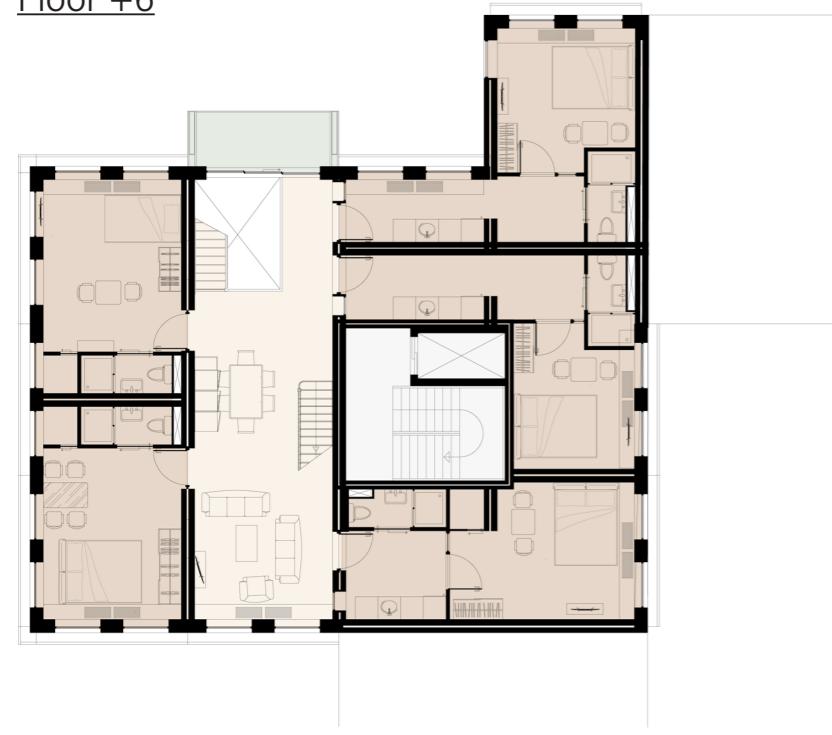
Floor +5



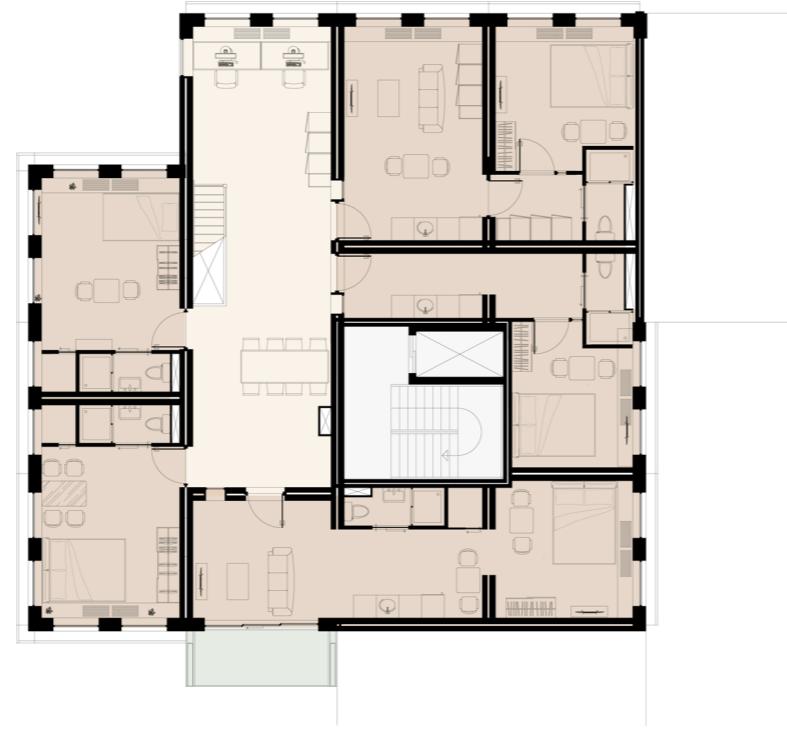
Floor +7



Floor +6



Floor +8

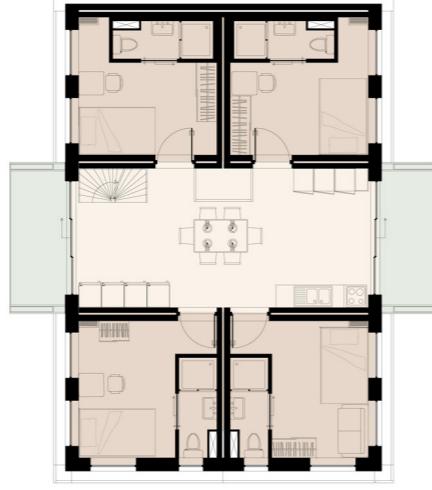


Budget cluster

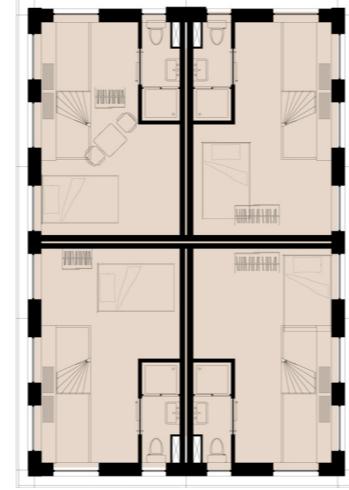
Floor +5



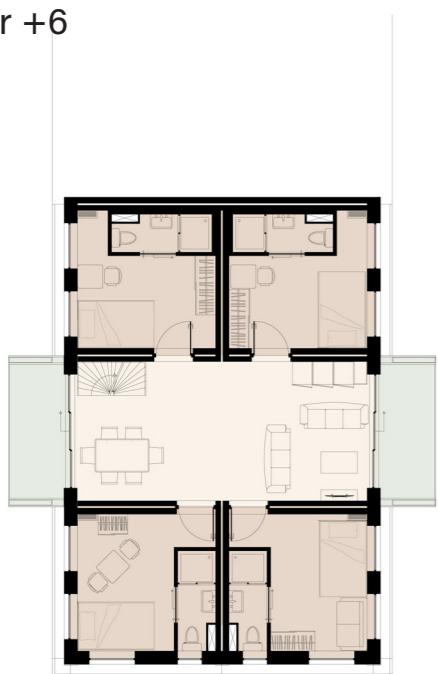
Floor +7



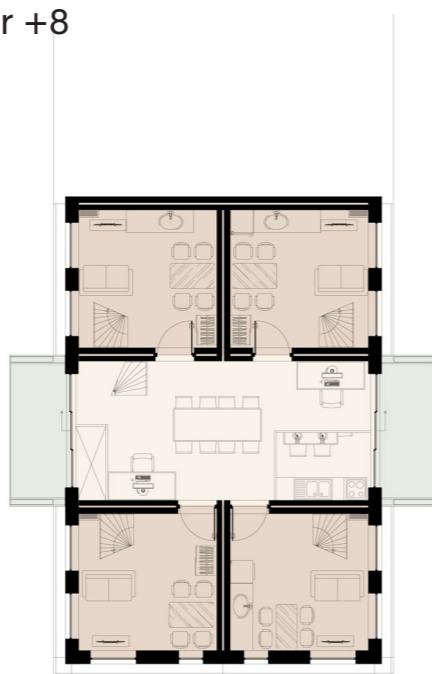
Floor +9



Floor +6

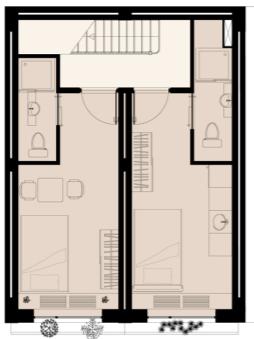


Floor +8

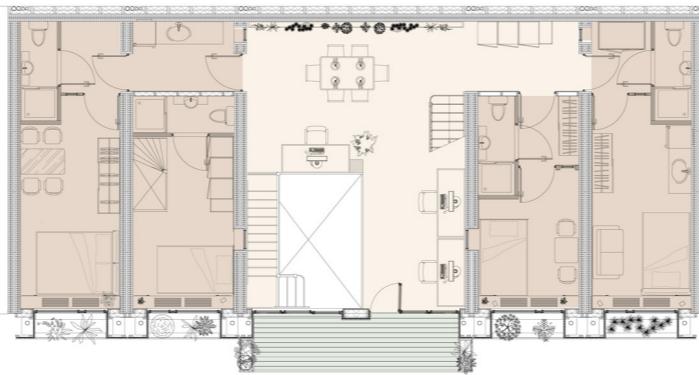


Regular cluster

Floor +1



Floor +4



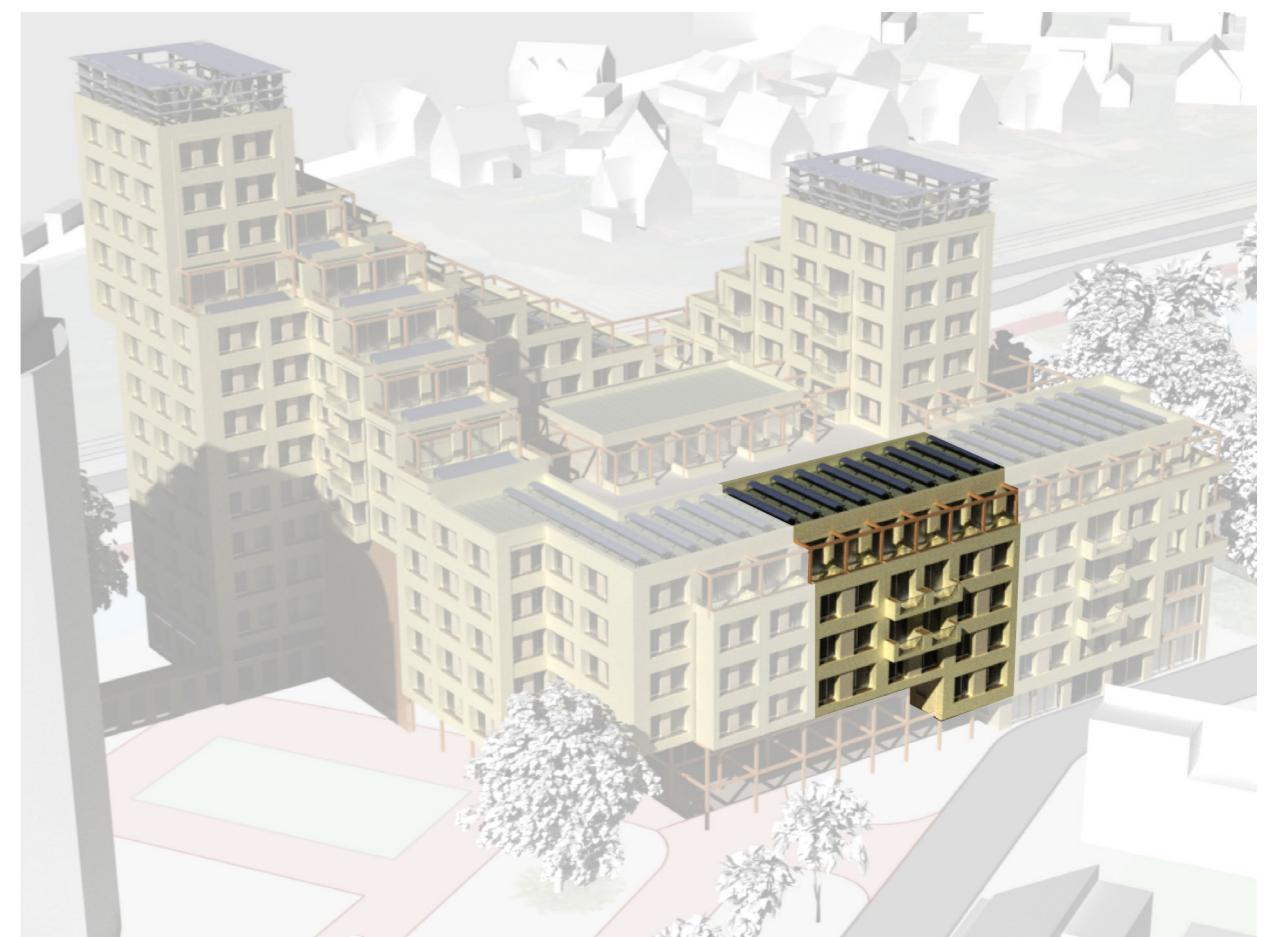
Floor +2



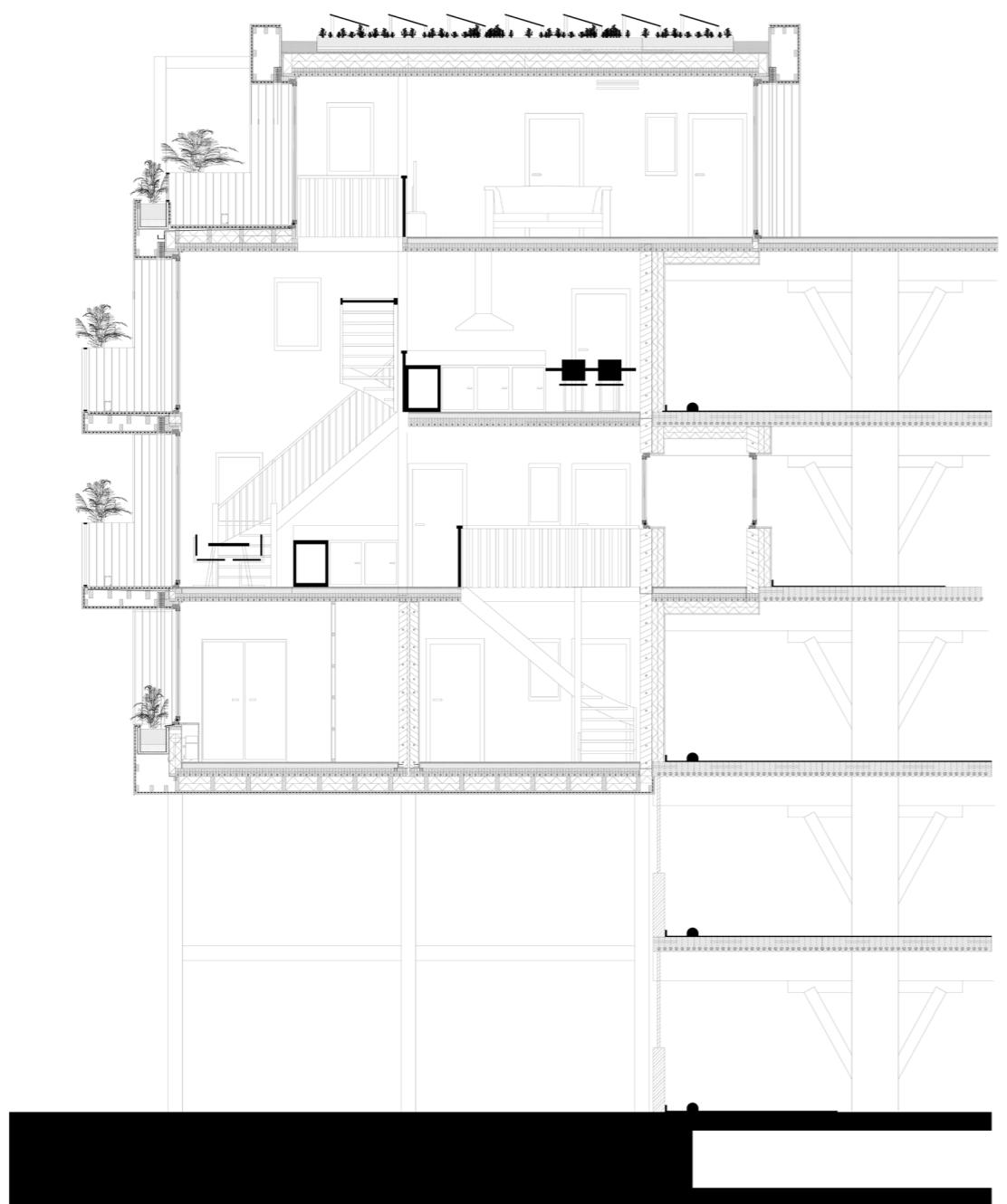
Floor +5



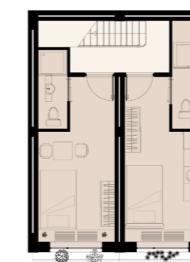
Floor +3



Cluster



Floor +1



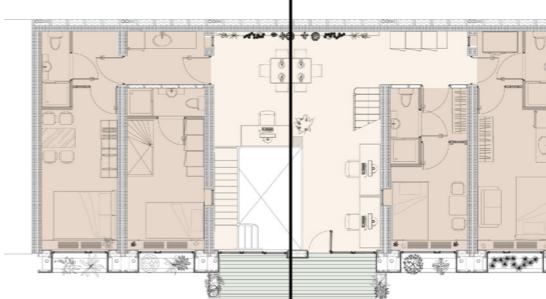
Floor +2



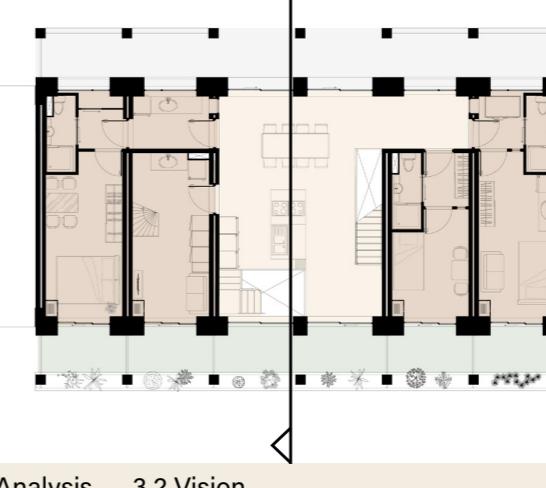
Floor +3



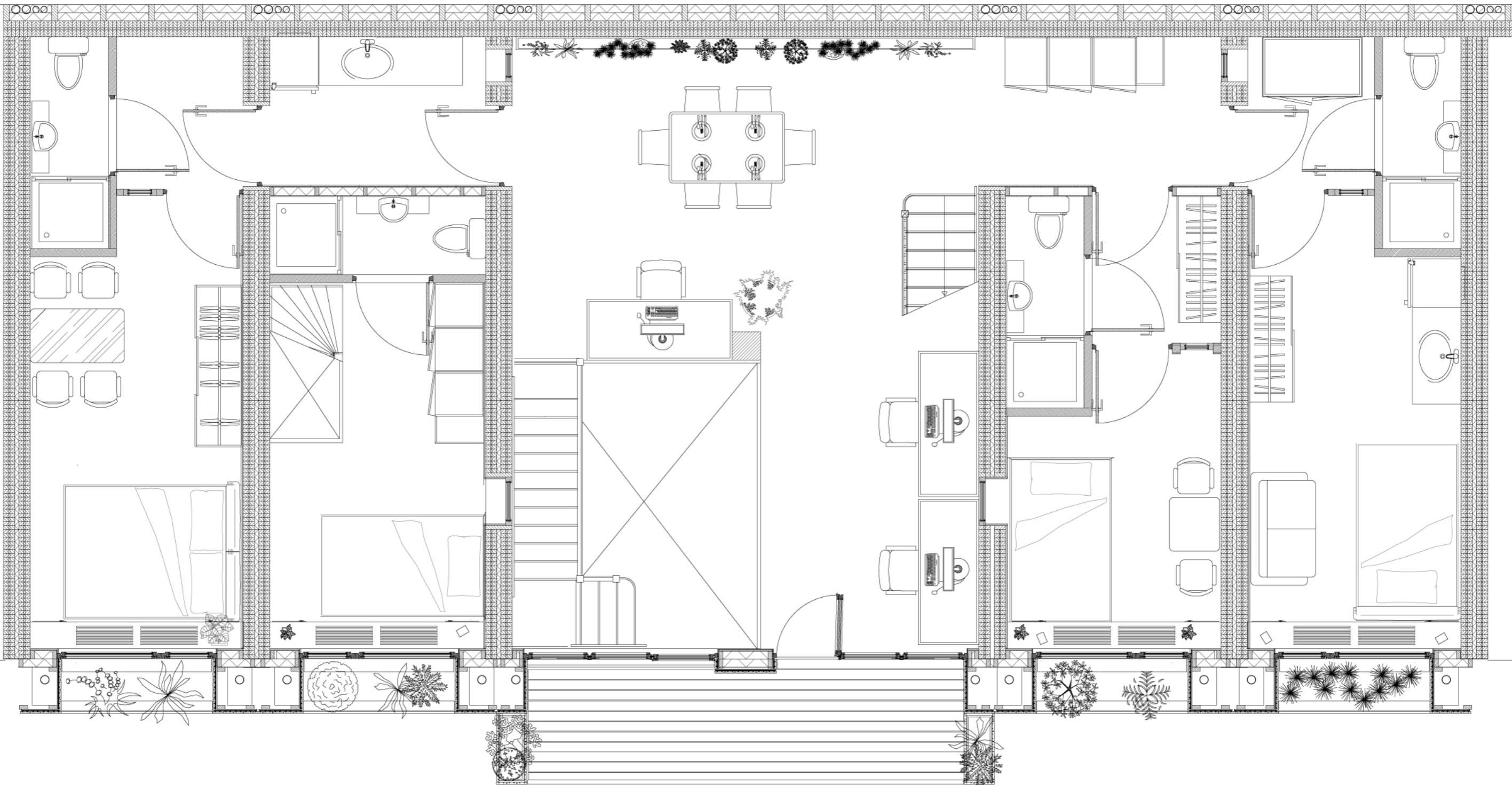
Floor +4



Floor +5



Regular cluster; floor 4



Types of dwellings



Masterplan



Clusters



Clusters



Clusters



Ground floor plan

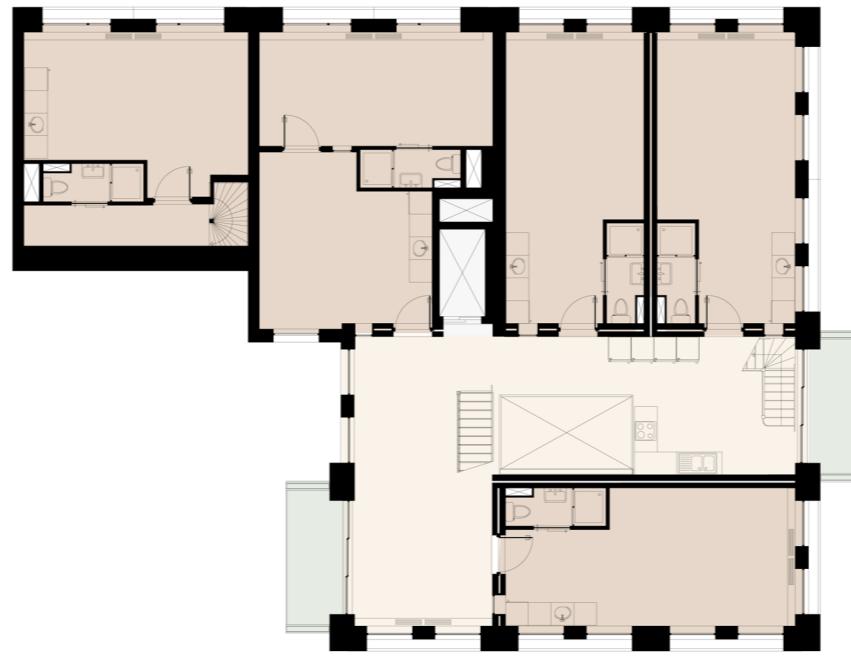


Floor plans

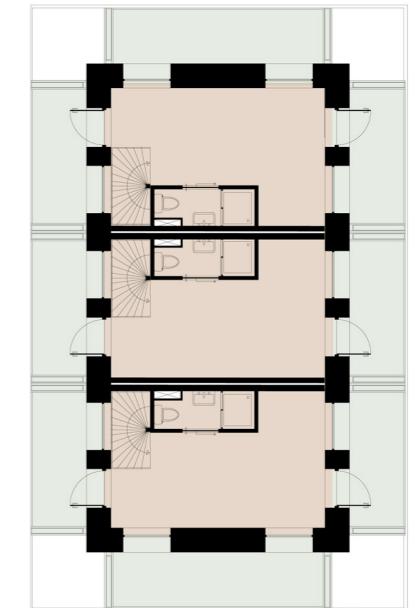
Ground floor



Floor +2



Floor +4



Floor +1



Floor +3



Impressions

Birds eye view north-east



Birds eye view south-east



Street view north-west



View from communal garden



Conclusion

