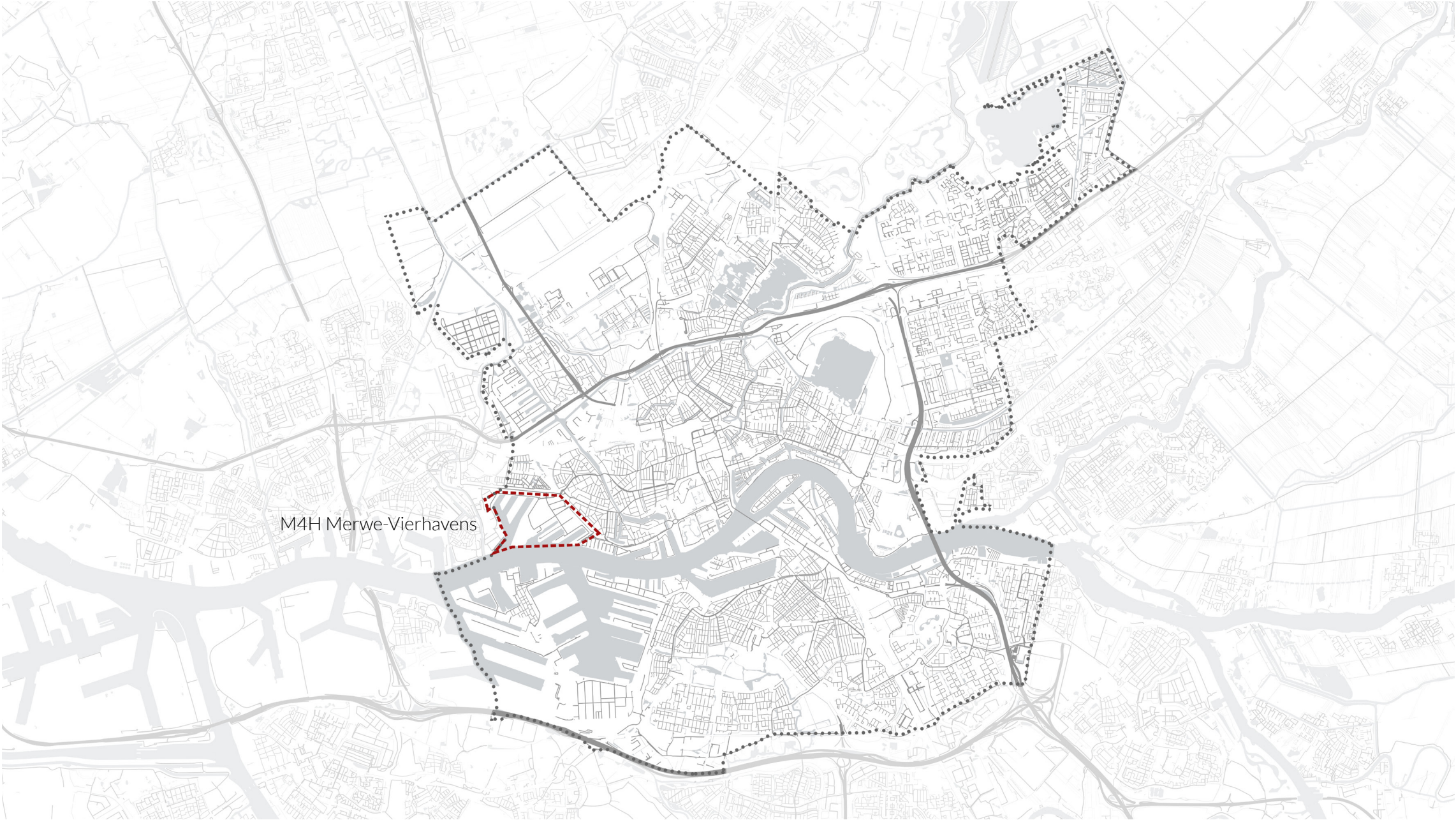


# U r b a n   w o o d s

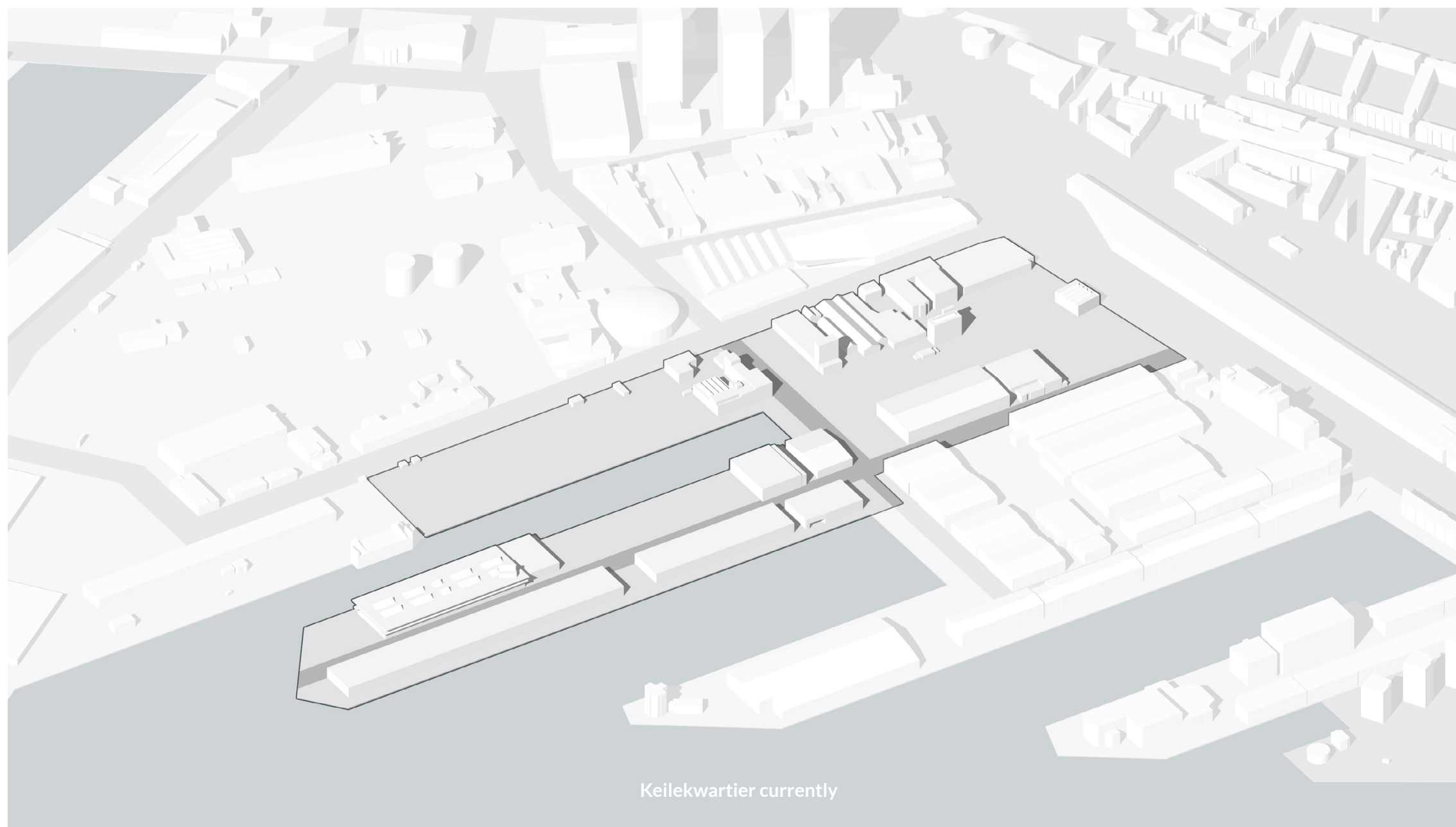
Open neighbourhood in Rotterdam

Emilka Markowska | [E.Markowska@student.tudelft.nl](mailto:E.Markowska@student.tudelft.nl)

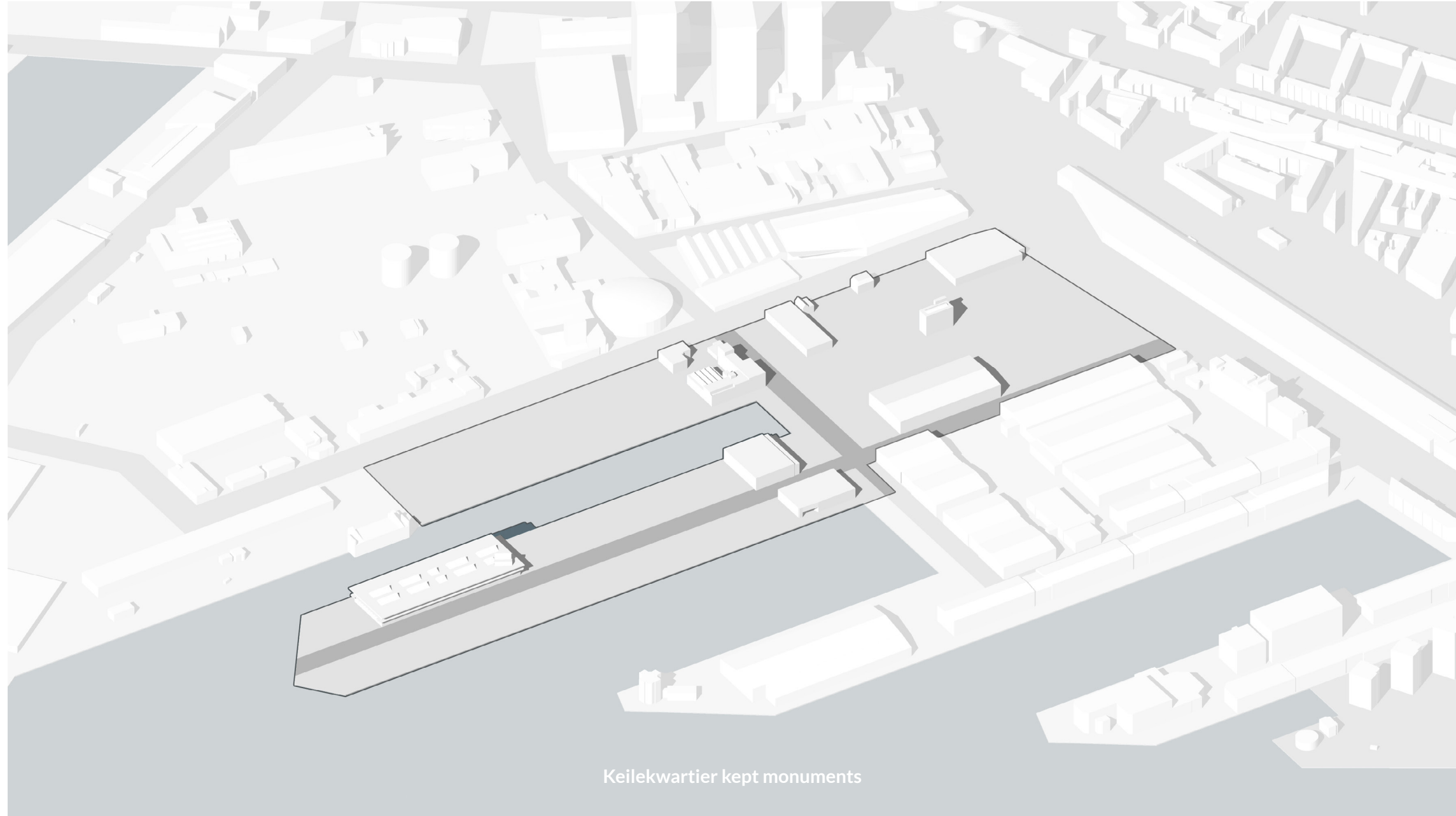
MSc4 Advanced Housing Design Graduation Studio  
P5 presentation 28.06.2021





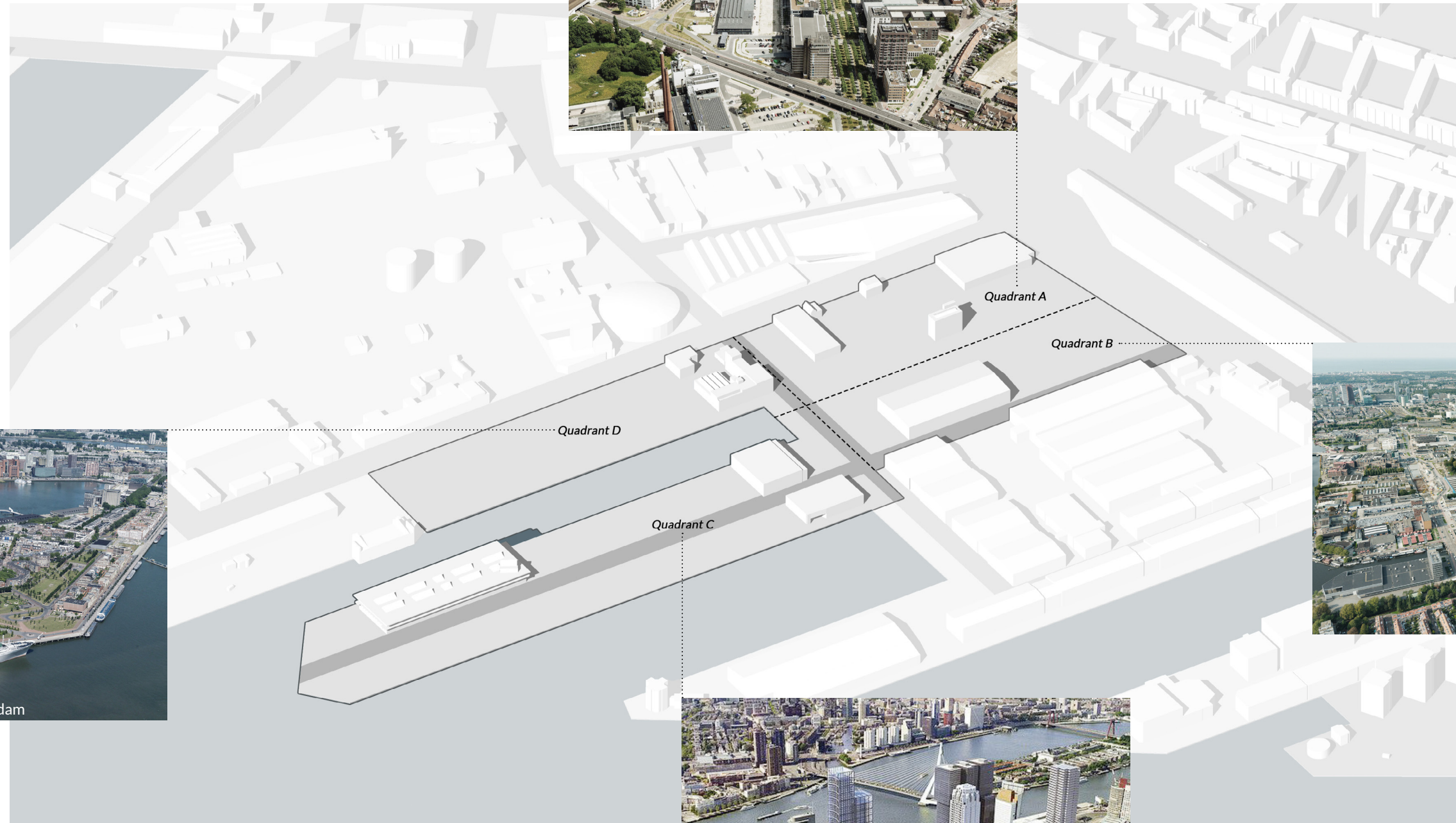


Keilekwartier currently

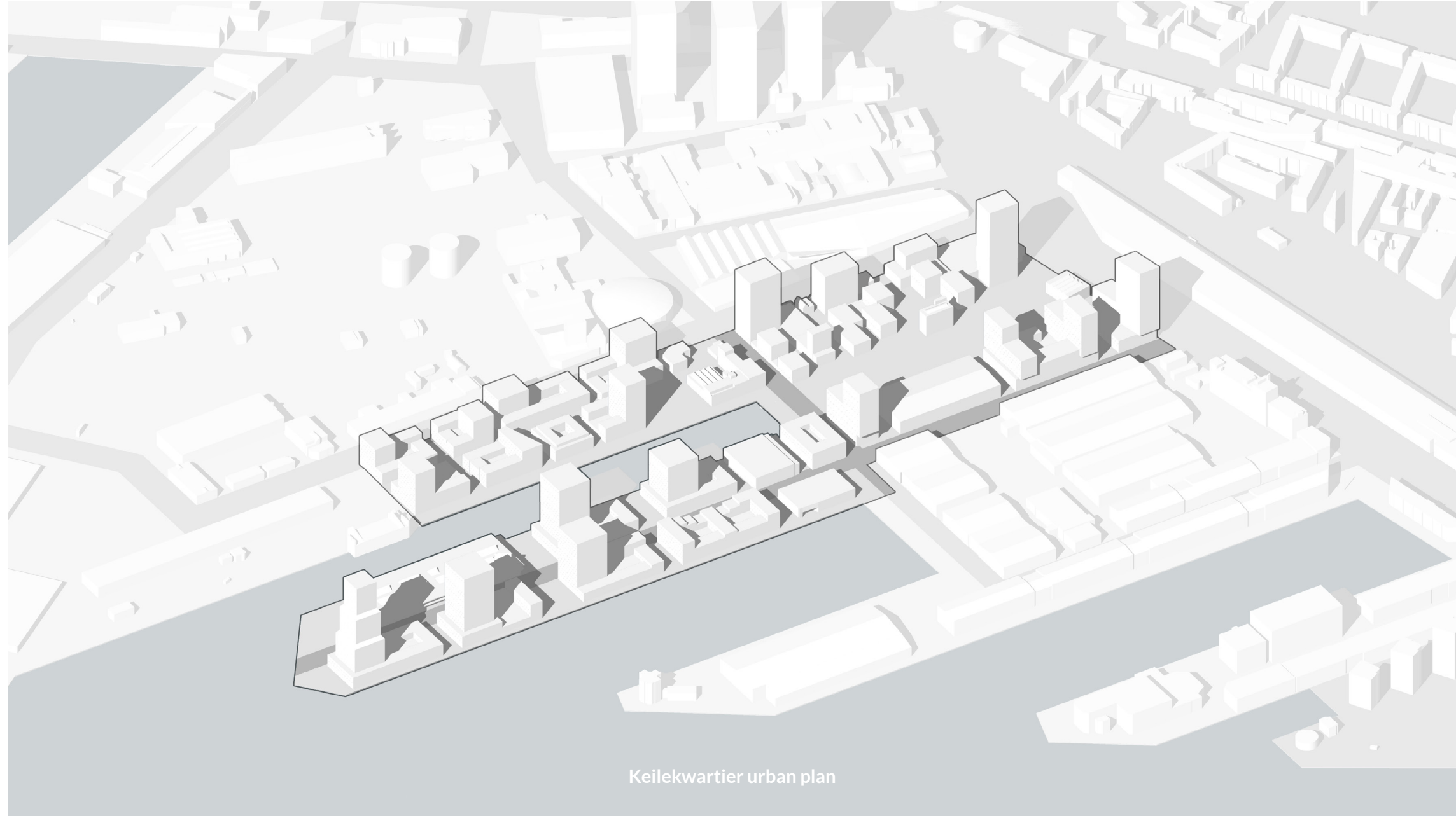


Keilekwartier kept monuments









Keilekwartier urban plan







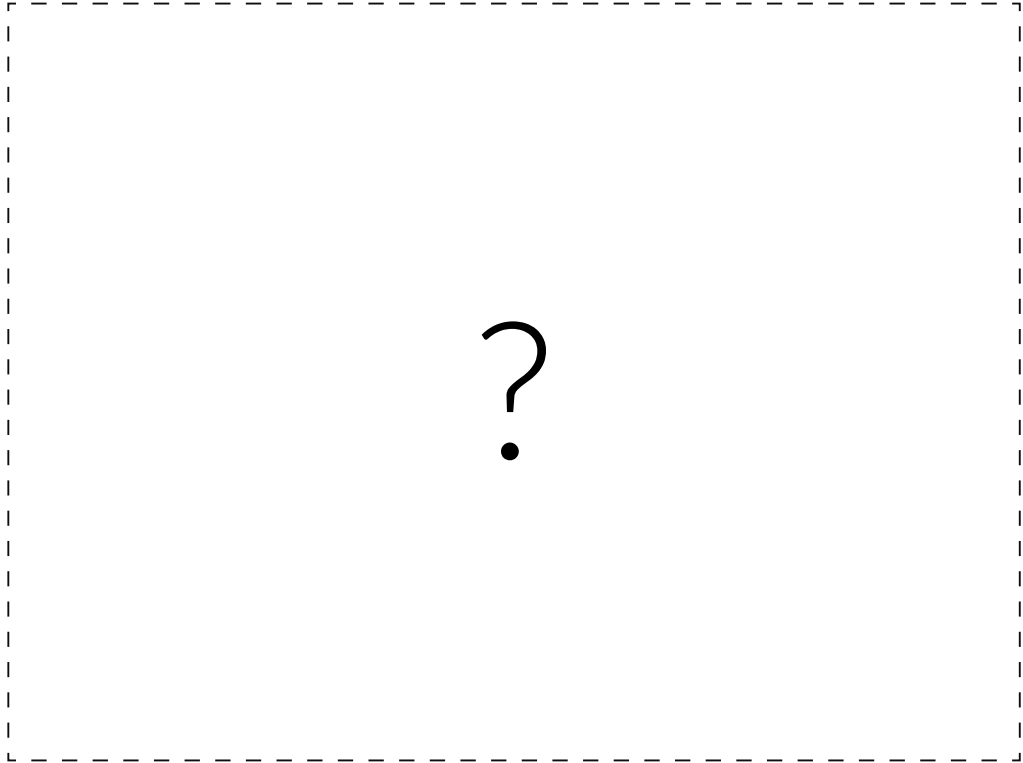




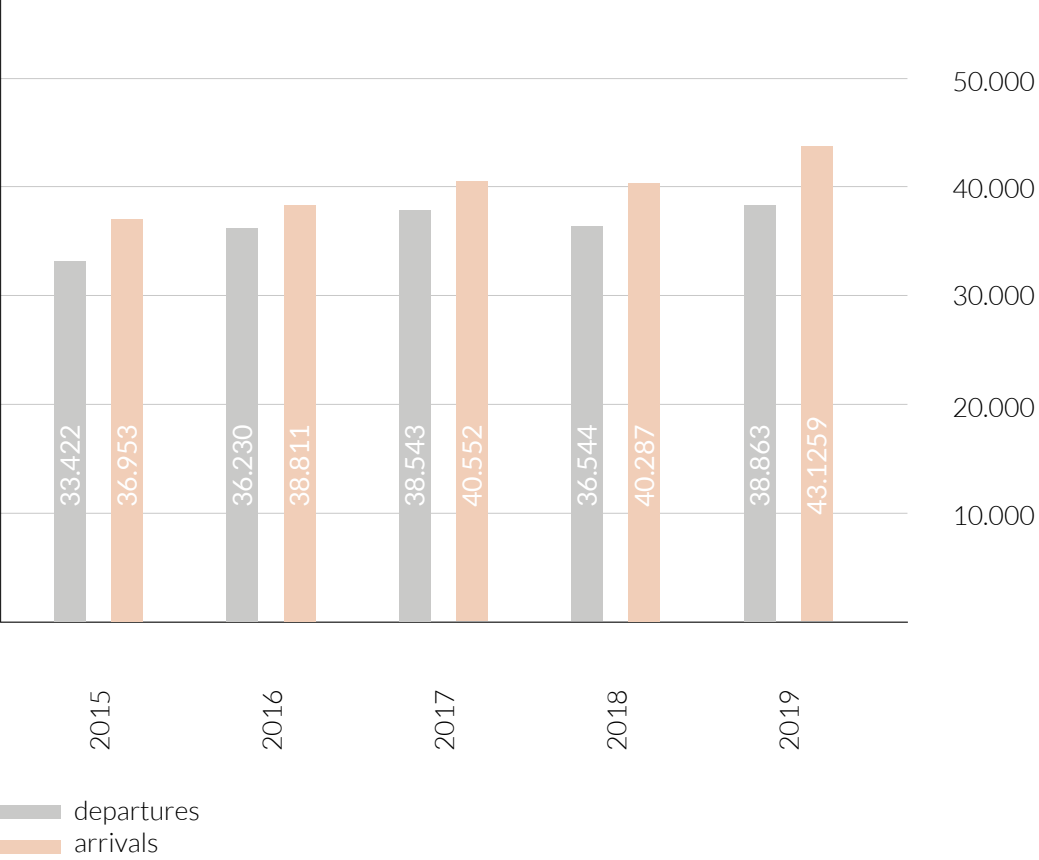
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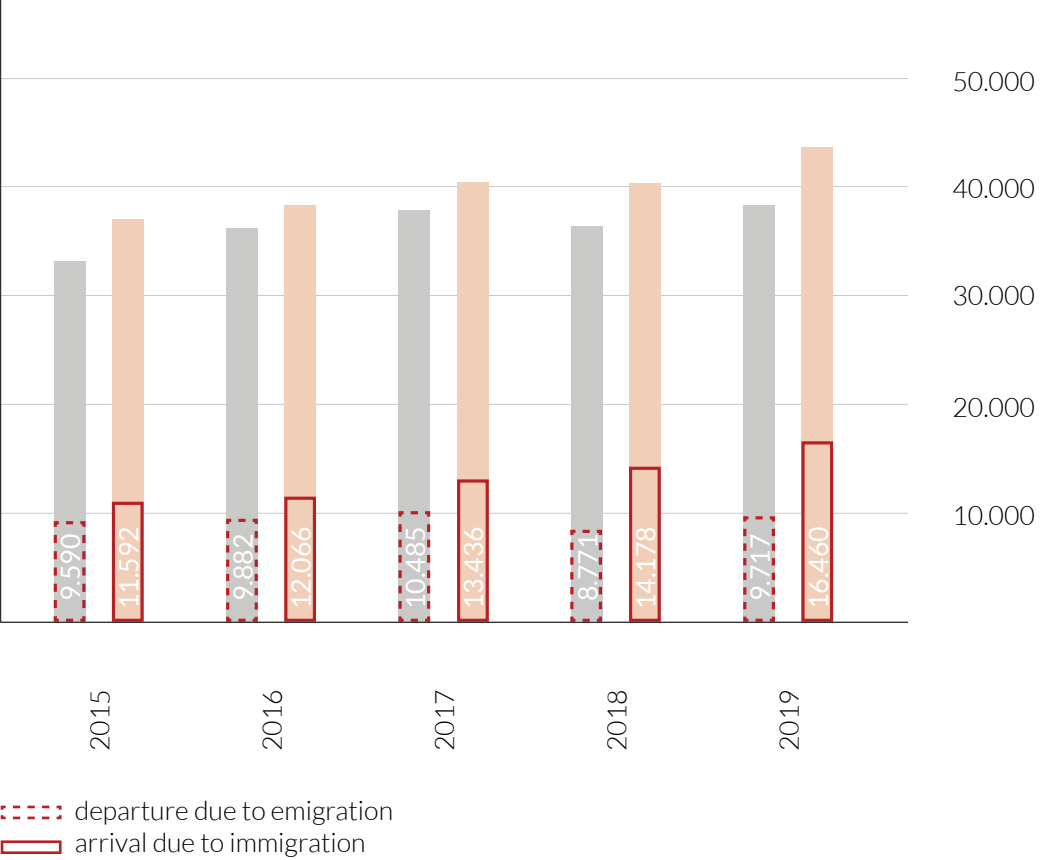
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Rotterdam:  
departures vs. arrivals



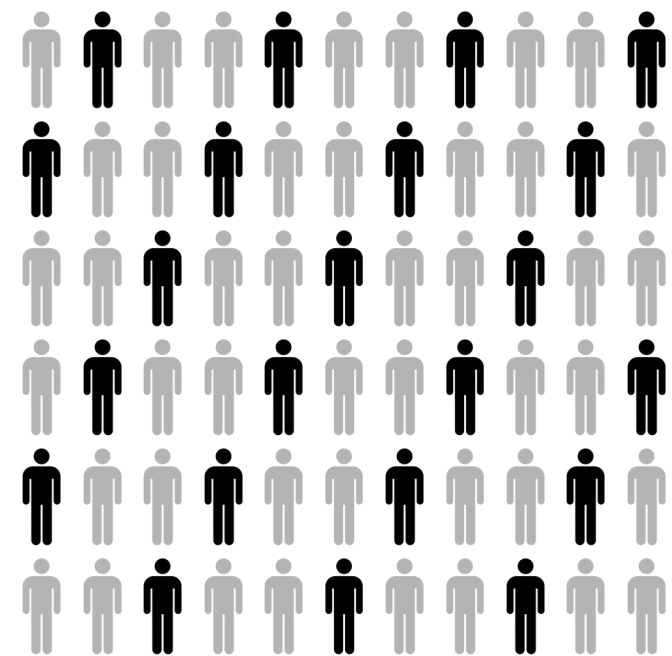
Rotterdam:  
emigration vs. immigration



Source: CBS (2020).



27% of foreign employees in Rotterdam are **expats**.



Source: Decisio (2019).

**expats - who are they?**

Expats, i.e. **international knowledge workers** are individuals from private households,  
who belong to the **labor force**,  
who were **born in a country other than where they reside**,  
and who have a **high level of education**.

Source: van Zeijl et al., 2020, p. 6.

expats - why?

expats

- highly-skilled
- contribute to the economy
- new in the country
- ready for change



the Netherlands

- need 1 million new homes until 2030
- want to participate in global economy more effectively
- diverse population

expats - why?

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the Netherlands

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Rotterdam

- post-harbor lands
- innovation



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Rotterdam

- post-harbor lands
- innovation



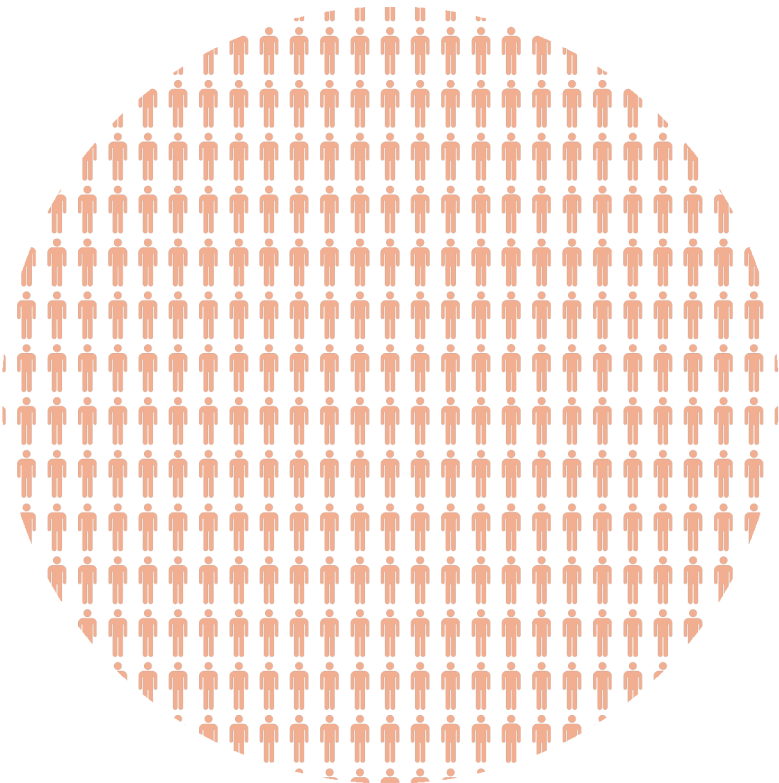
M4H

- experiment
- knowledge investment
- live-work environment

expats - why?

international knowledge workers

64% don't feel integrated within Dutch culture  
88% wants to integrate



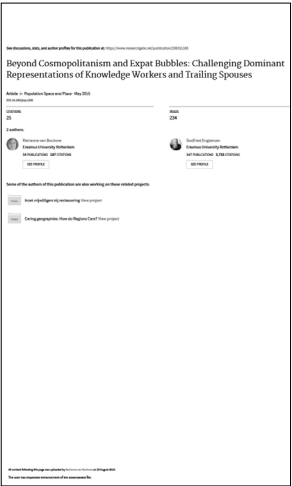
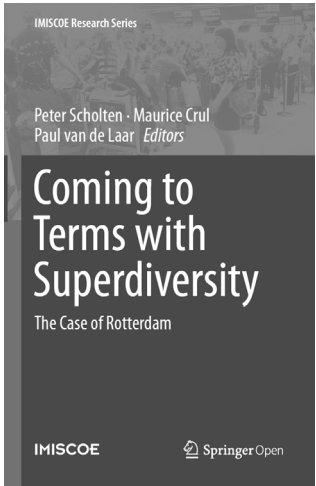
the Netherlands



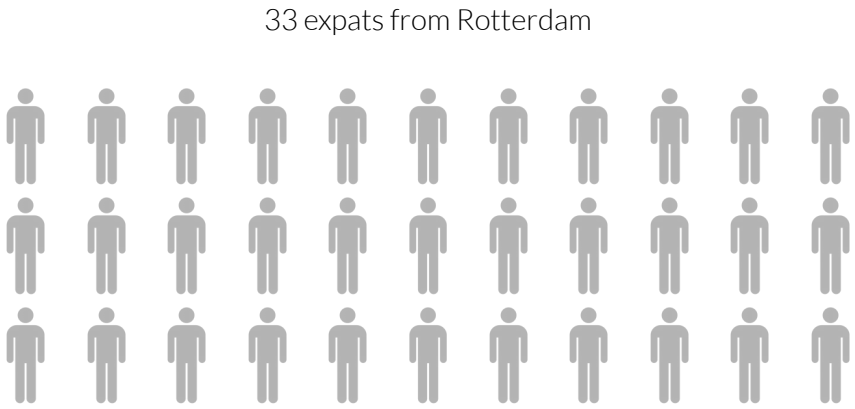
**housing for expats in M4H - but how?**

research methods

literature



questionnaire



interviews

Gareth (35)  
UK  
single father



Maria (35), Bartek (38)  
Poland  
couple



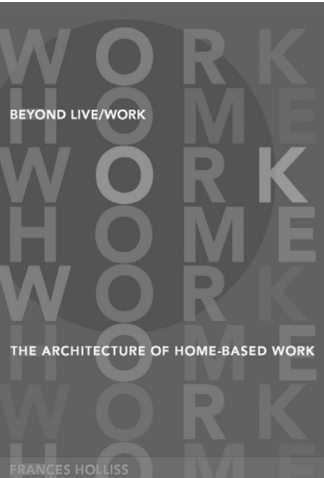
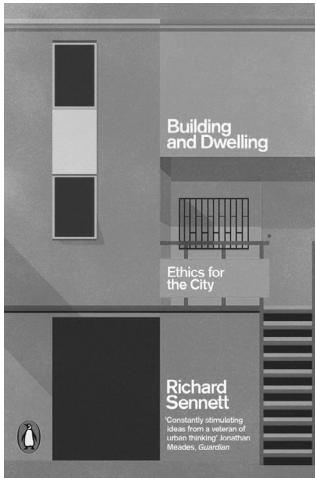
21 nationalities



Grace (28)  
USA  
expat's spouse



Daniela (23)  
Russia/Bolivia  
expat's spouse



Laura Salm  
Rotterdam Expat Center  
Account Manager





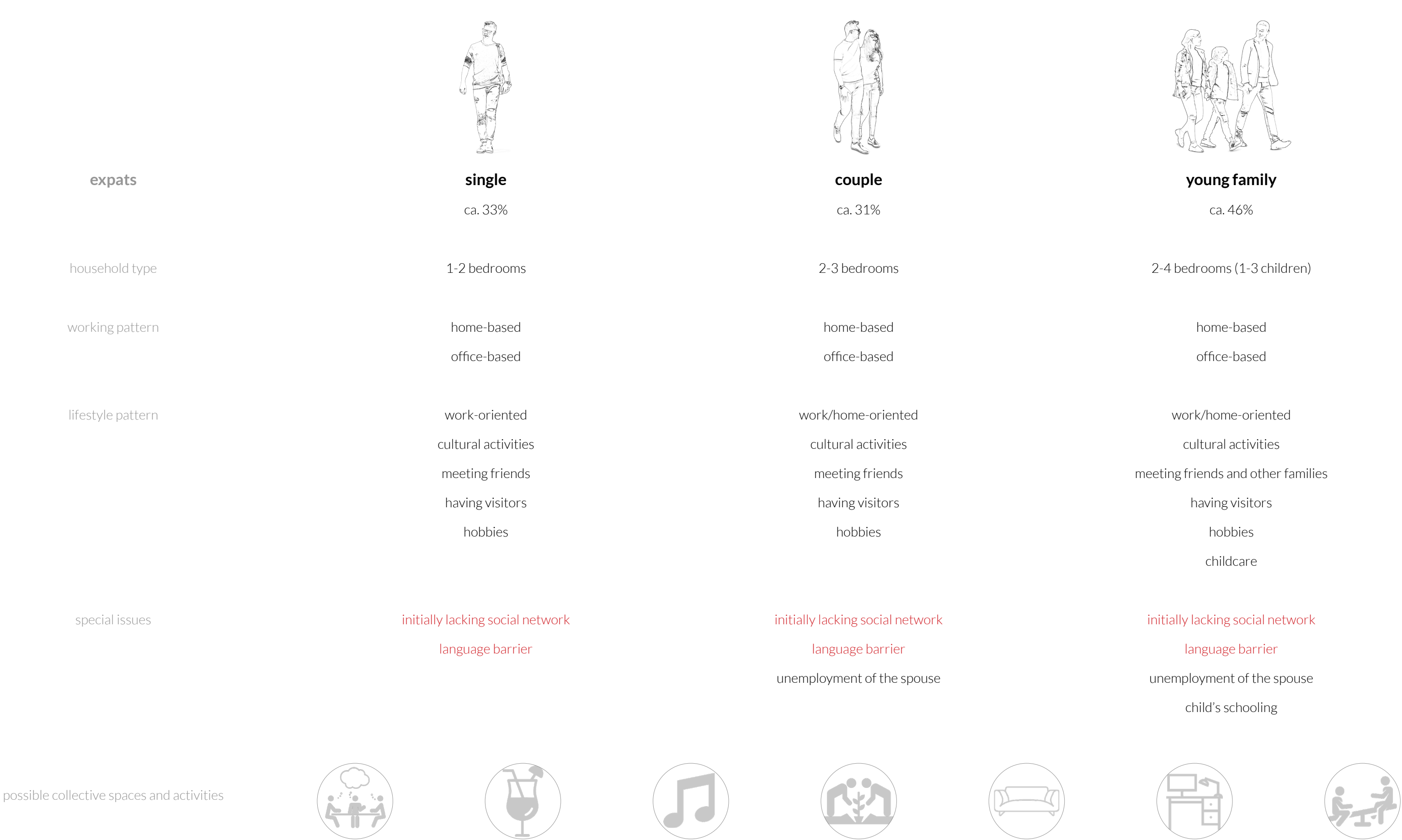
research findings

			
	<b>single</b>	<b>couple</b>	<b>young family</b>
	ca. 33%	ca. 31%	ca. 46%
household type	1-2 bedrooms	2-3 bedrooms	2-4 bedrooms (1-3 children)
working pattern	home-based office-based	home-based office-based	home-based office-based
lifestyle pattern	work-oriented cultural activities meeting friends having visitors hobbies	work/home-oriented cultural activities meeting friends having visitors hobbies	work/home-oriented cultural activities meeting friends and other families having visitors hobbies childcare
special issues	initially lacking social network language barrier	initially lacking social network language barrier unemployment of the spouse	initially lacking social network language barrier unemployment of the spouse child's schooling

research findings

			
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research findings



What makes an urban neighborhood inclusive?

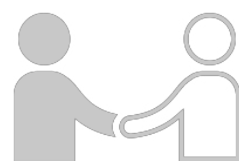
What is a desirable live-work environment for a diverse group of dwellers?

What constitutes attractive housing conditions in dense urban surroundings?



design principles

inclusiveness



design principles

inclusiveness



collectivity



design principles

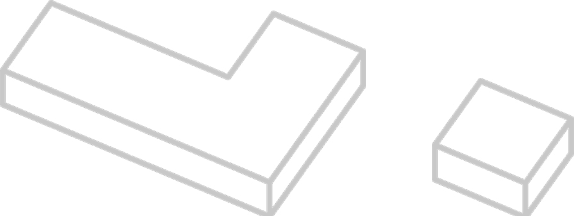
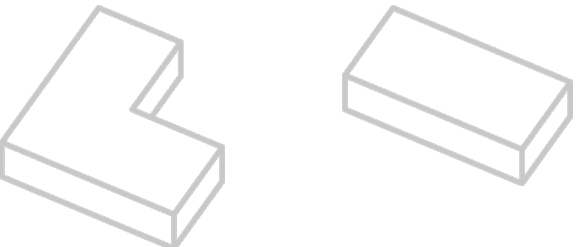
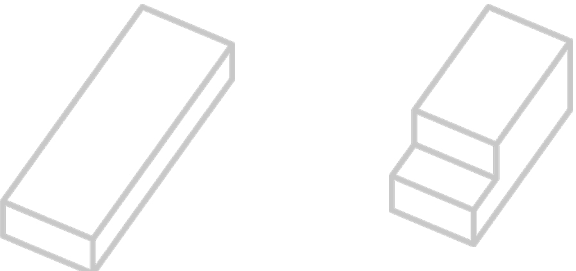
inclusiveness



collectivity

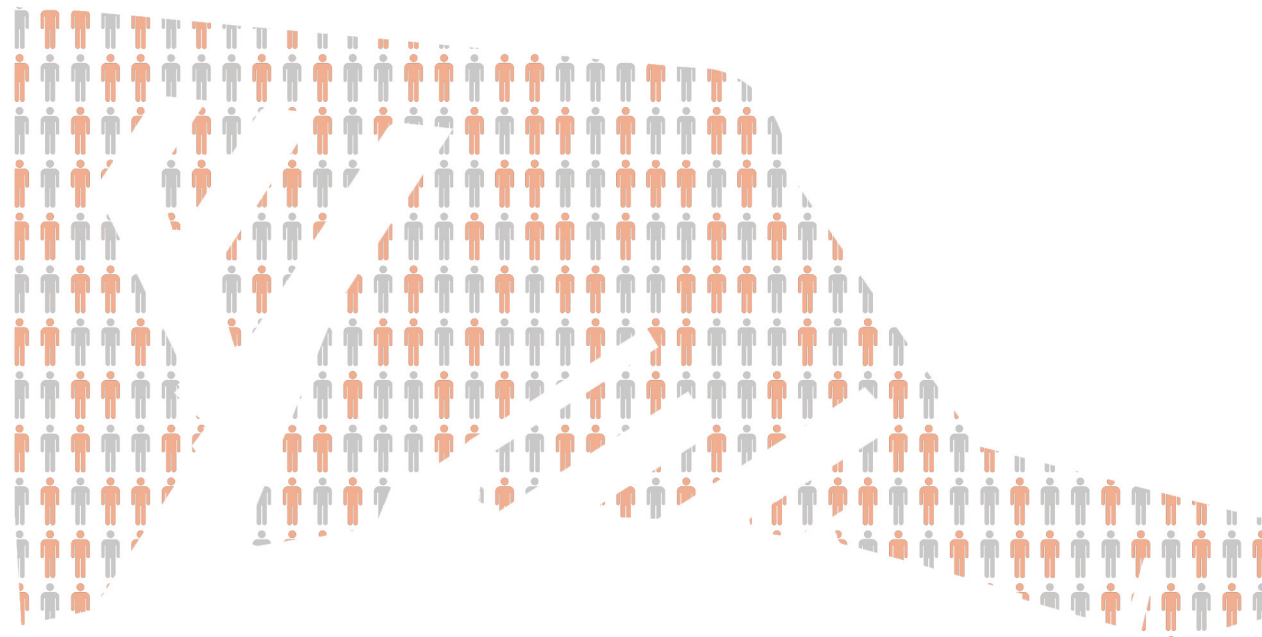


diversity

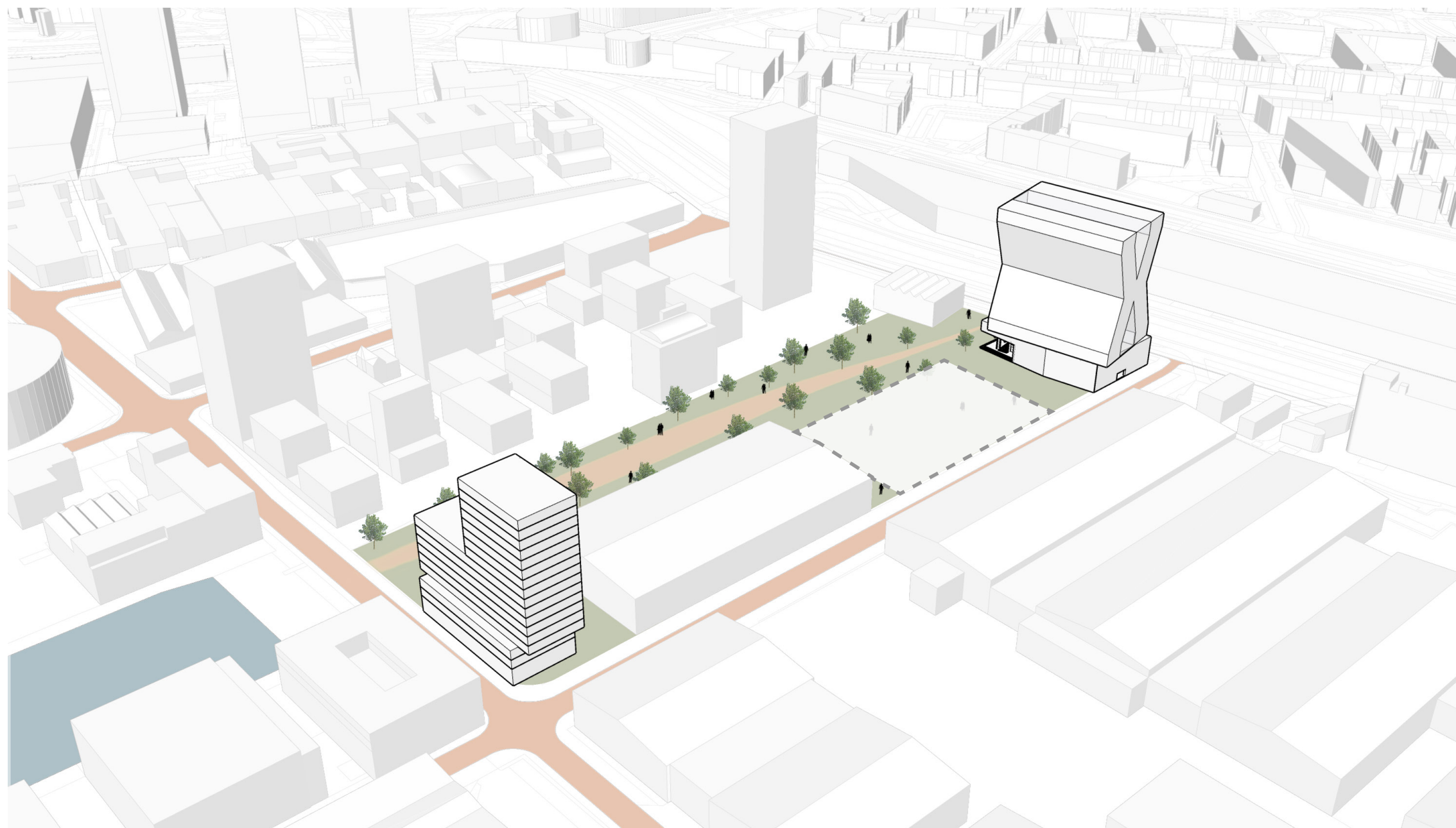




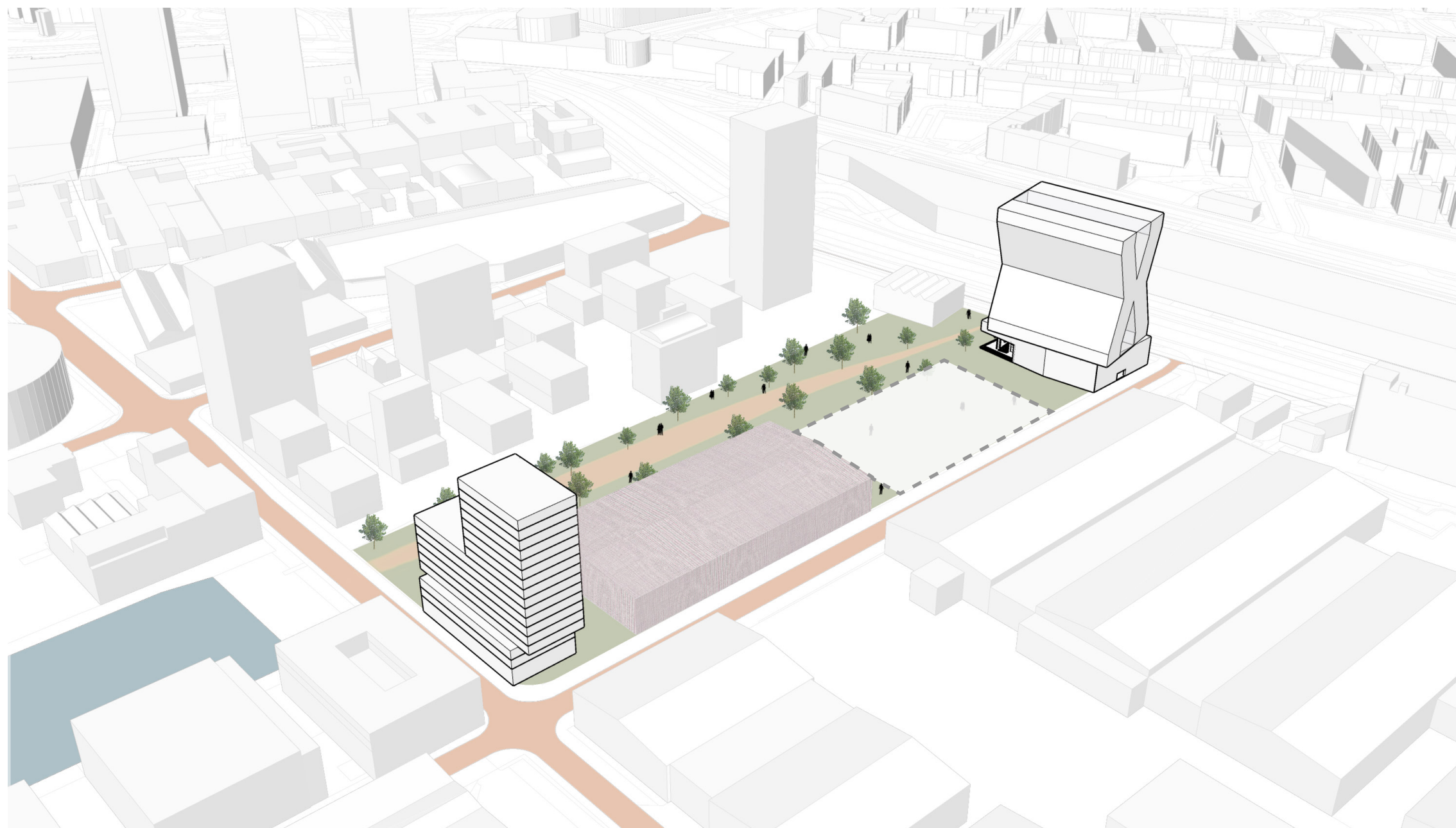
**A community of expats**  
diverse community for singles, couples and young families



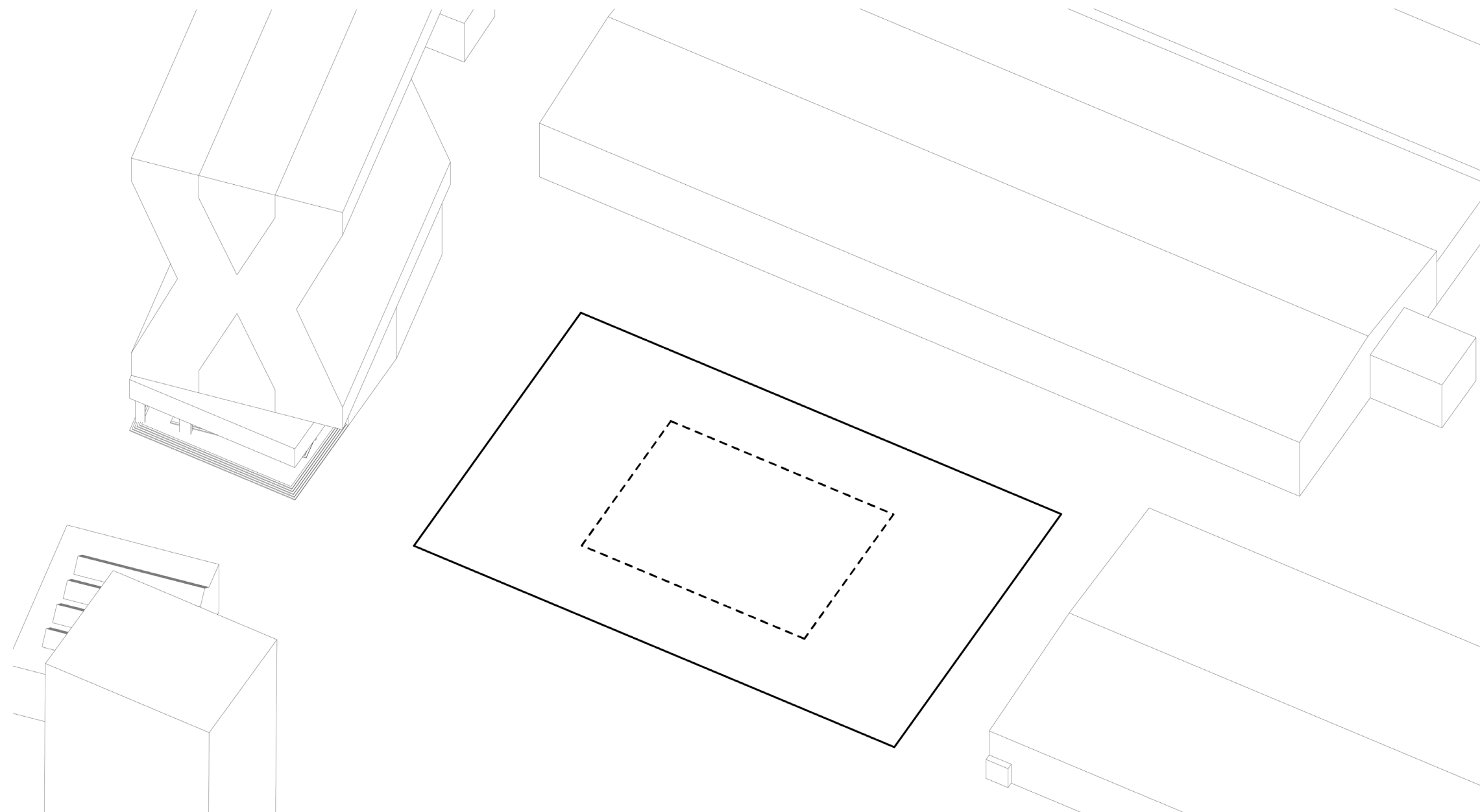


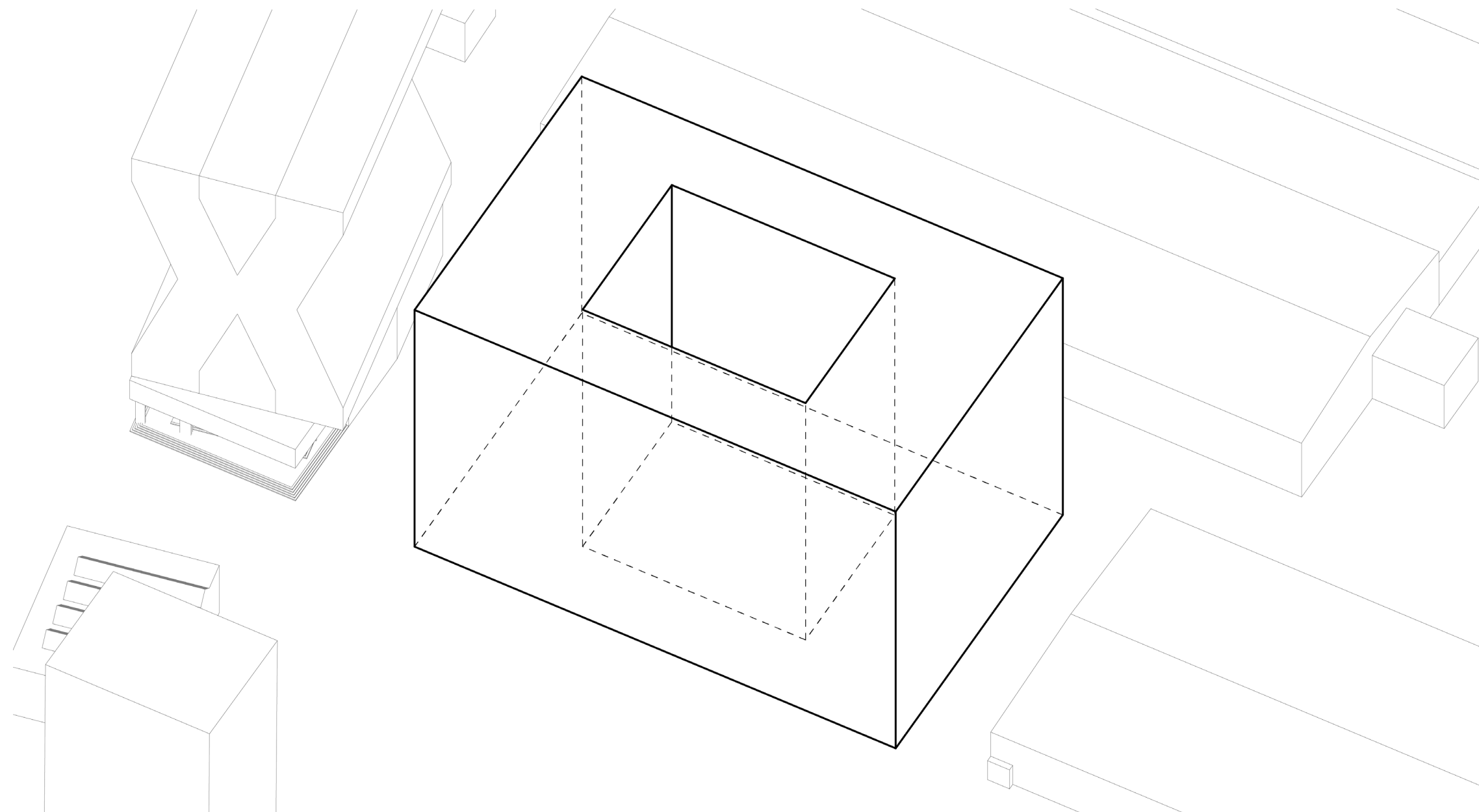


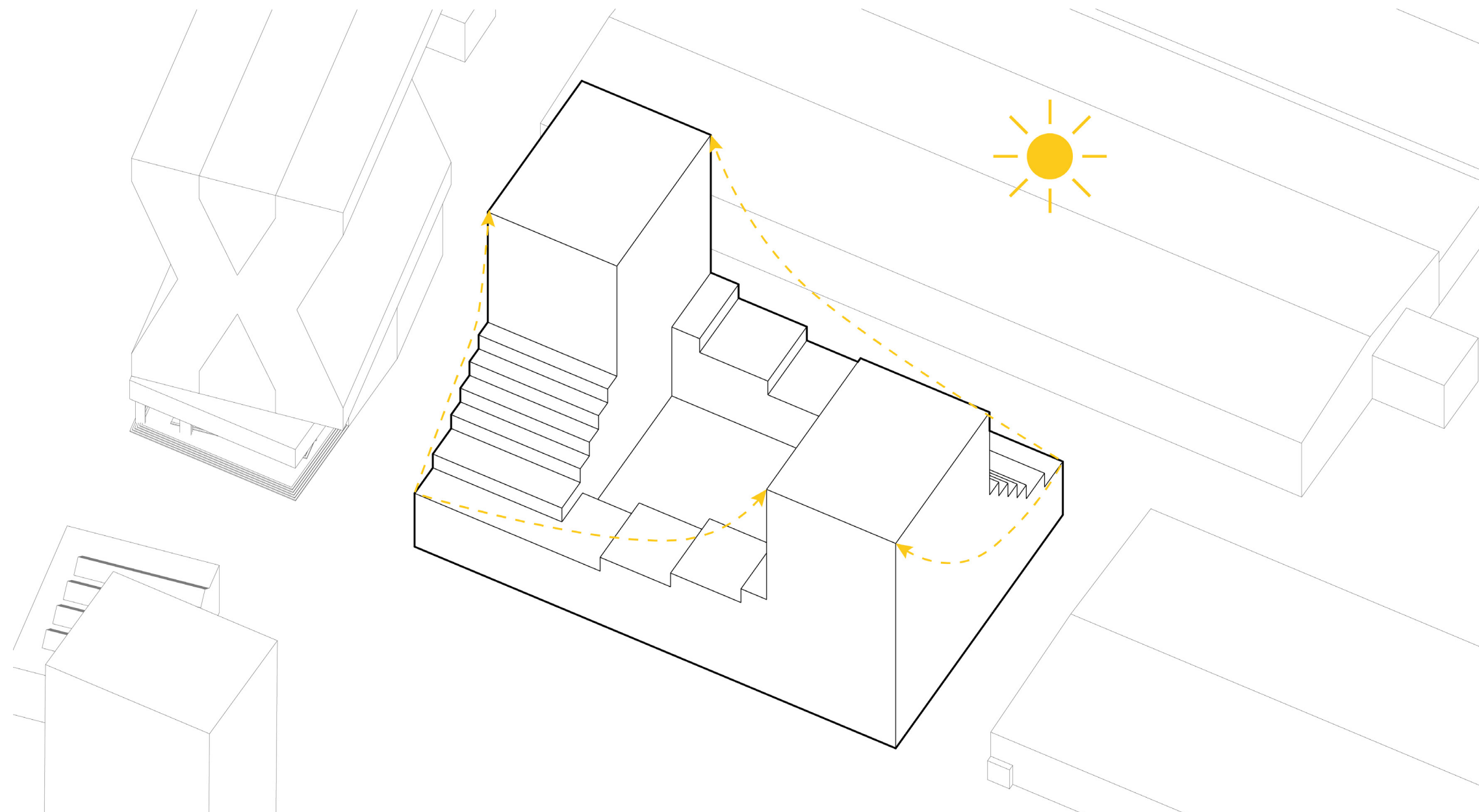


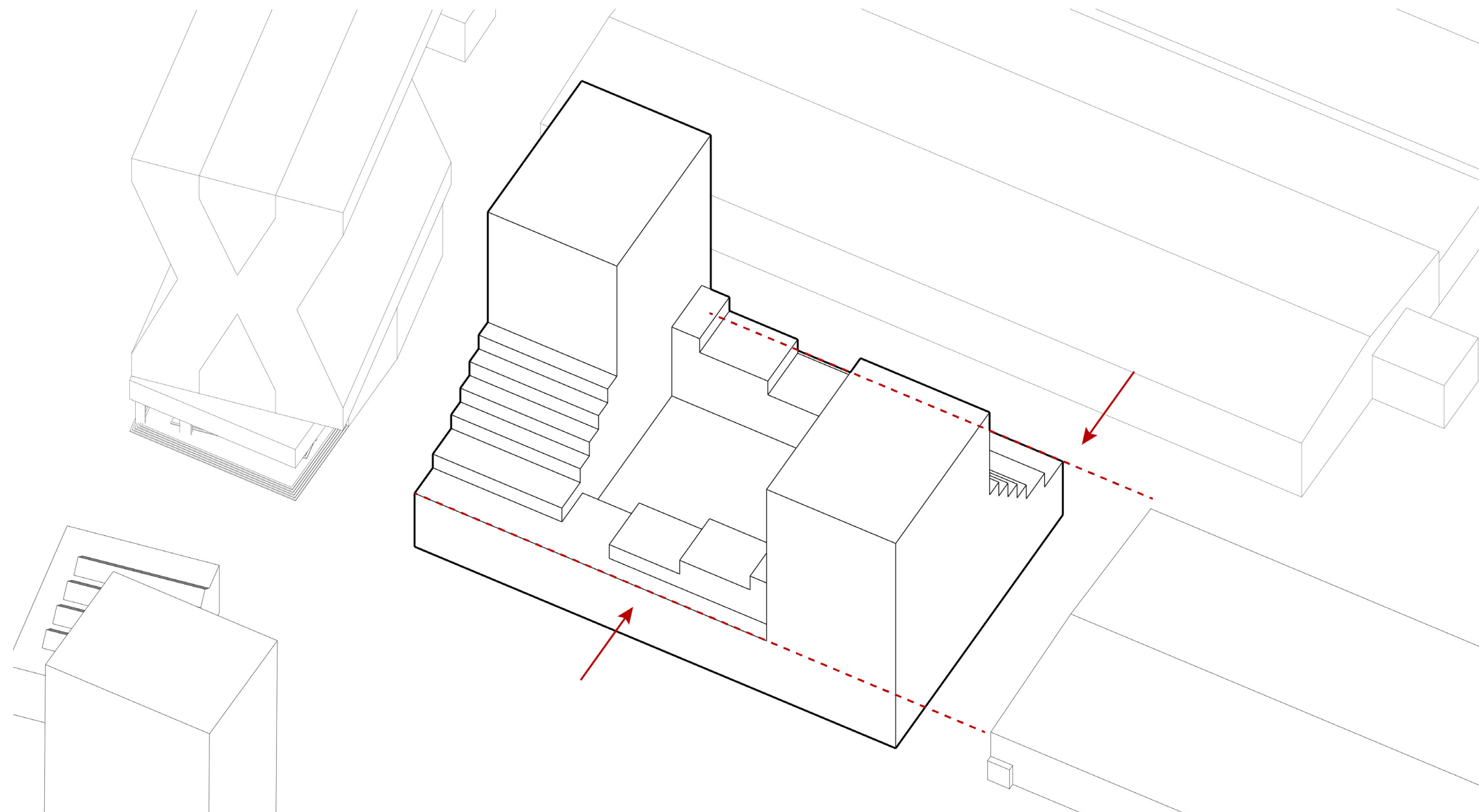


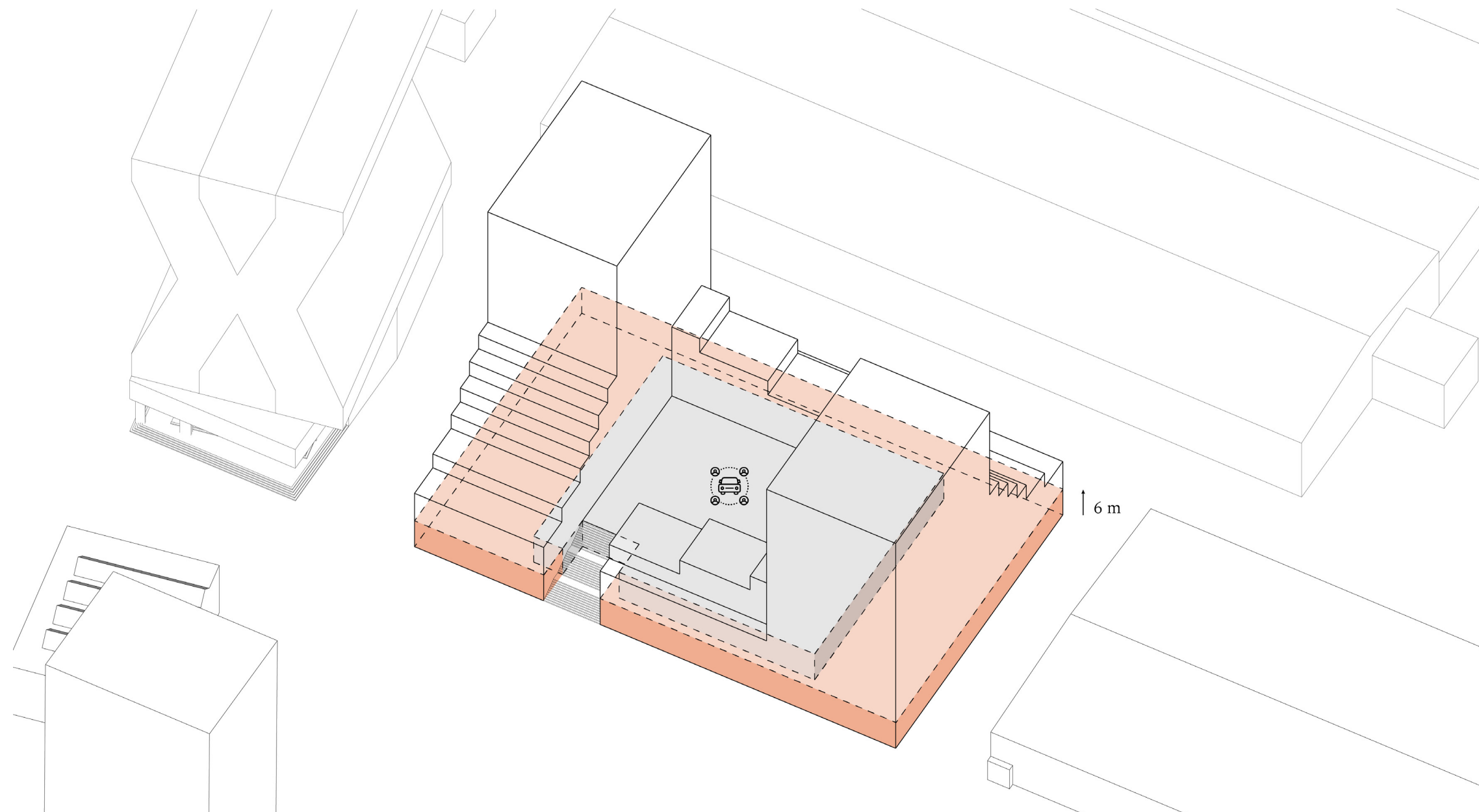




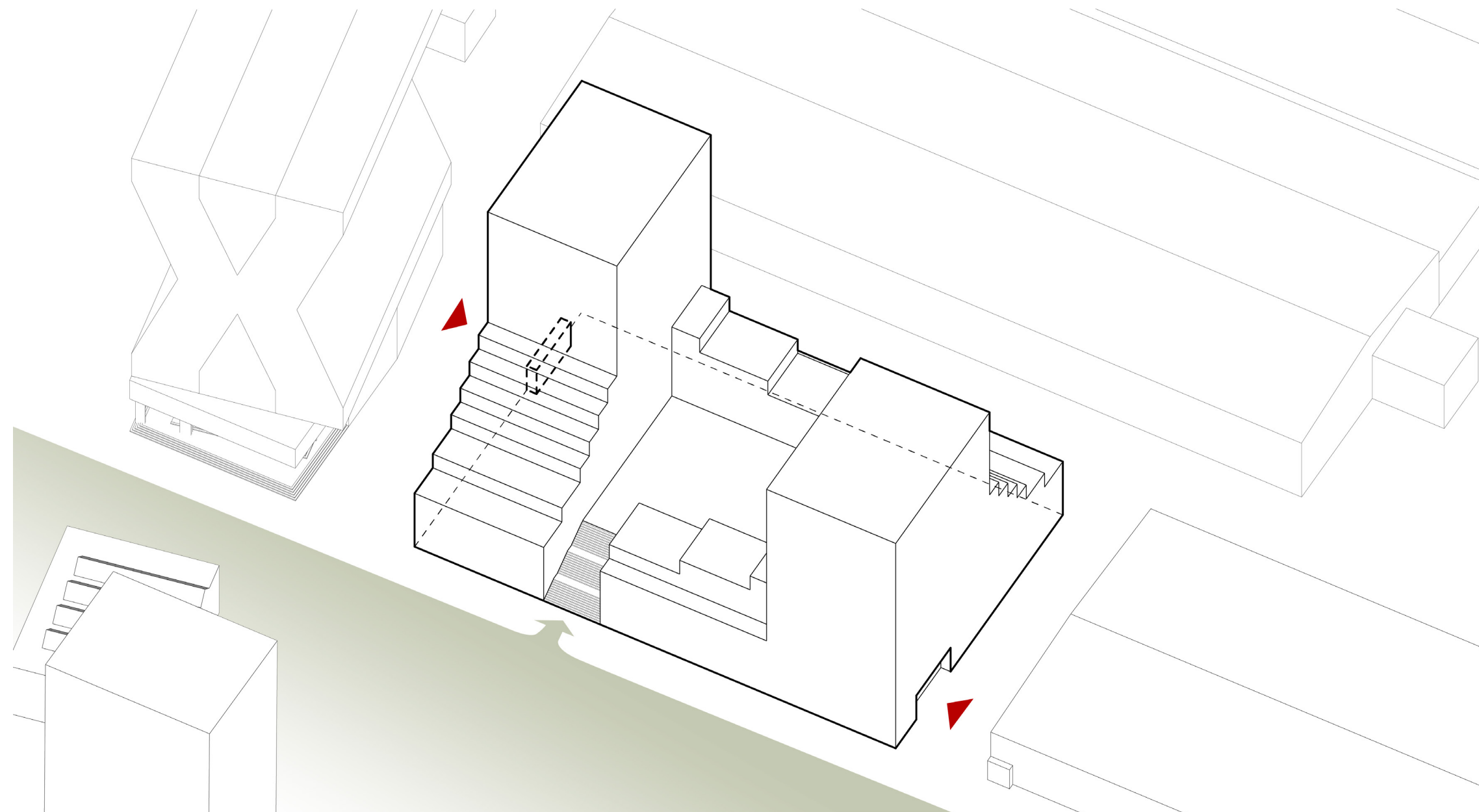


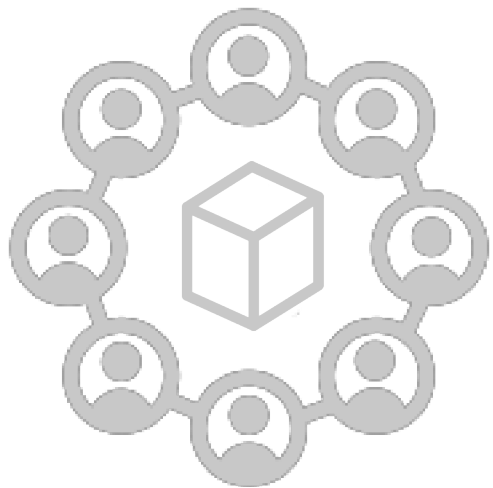


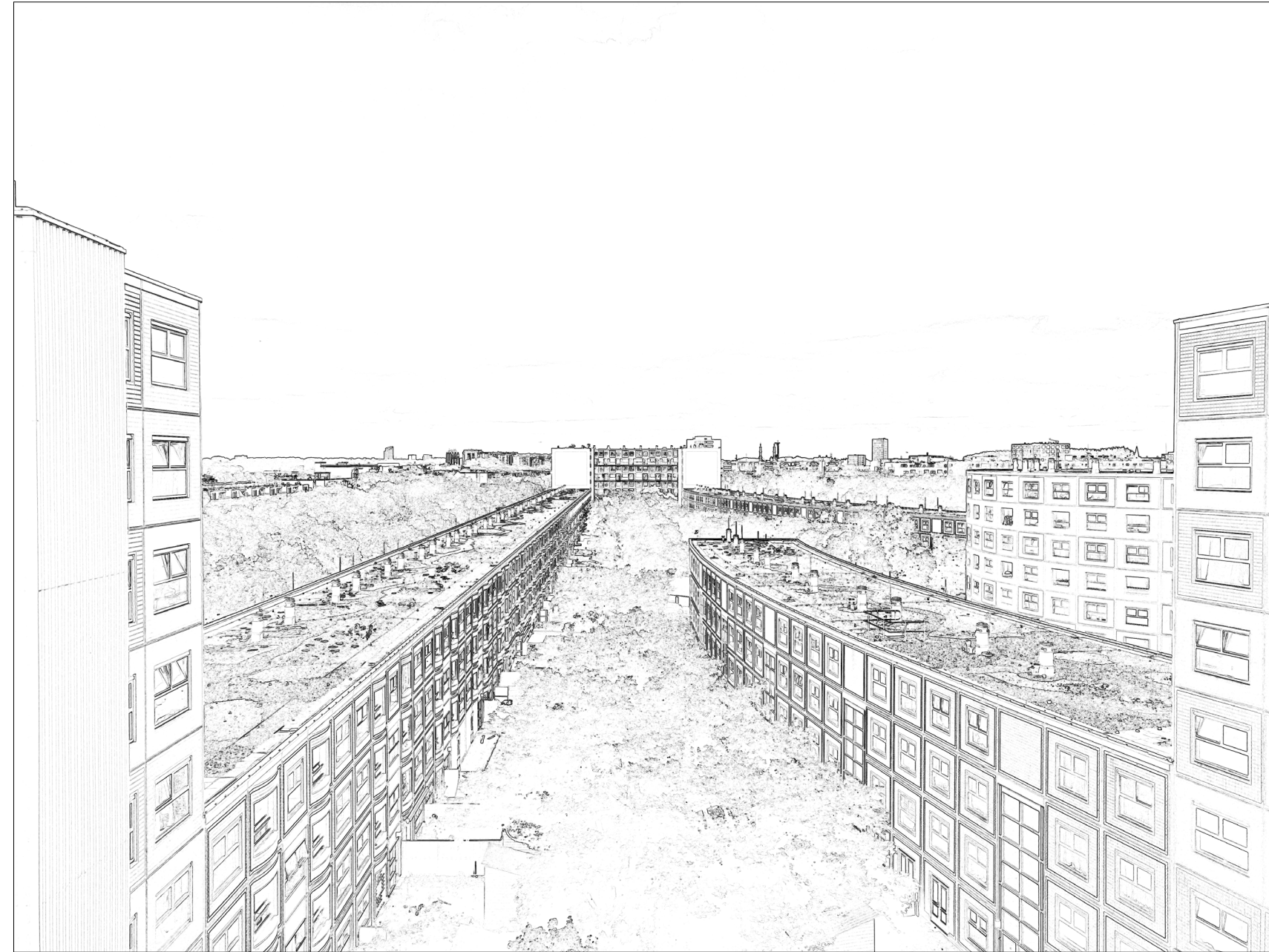


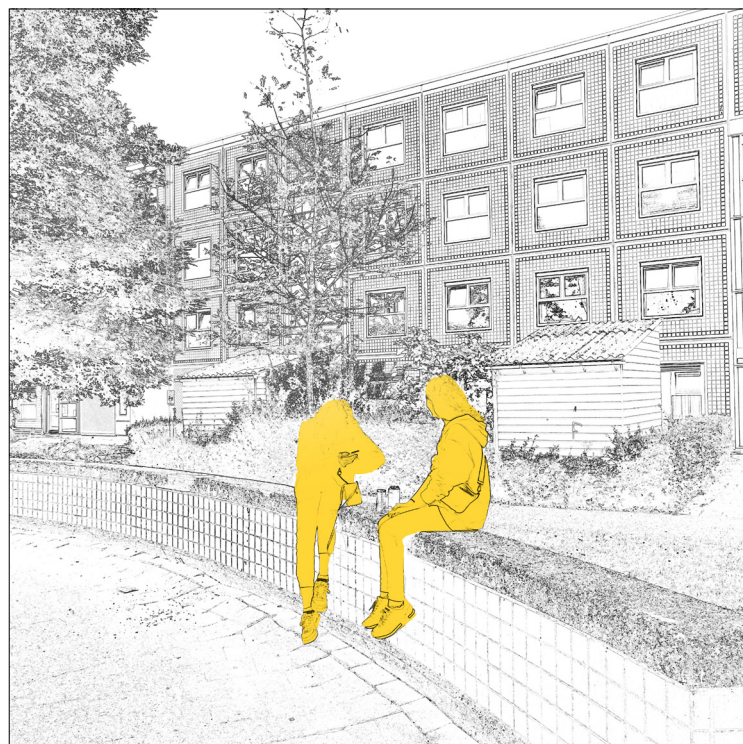




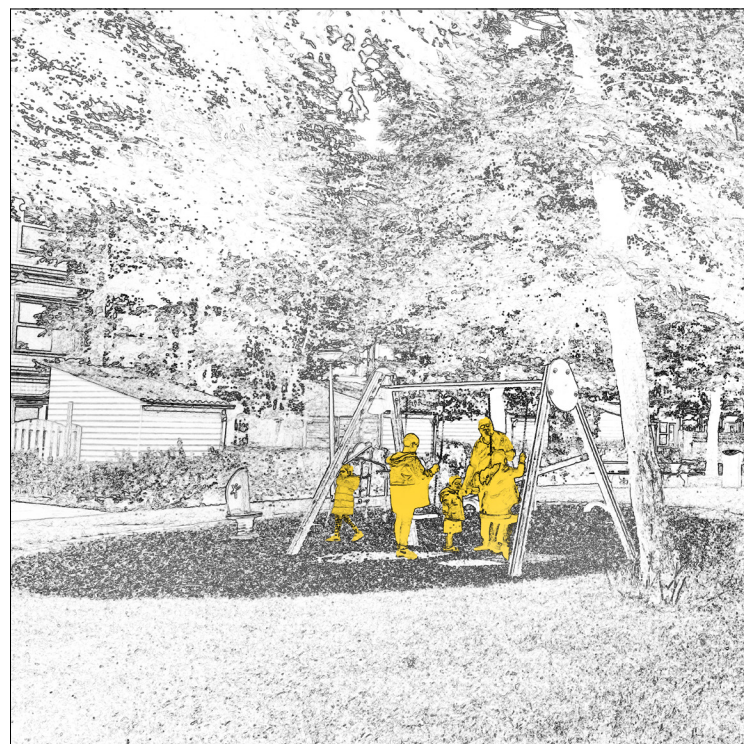
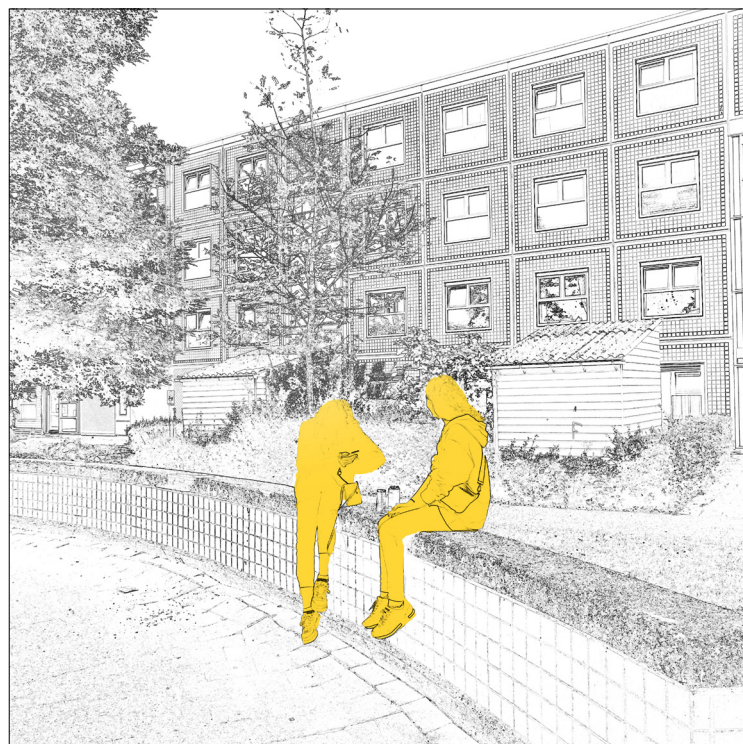




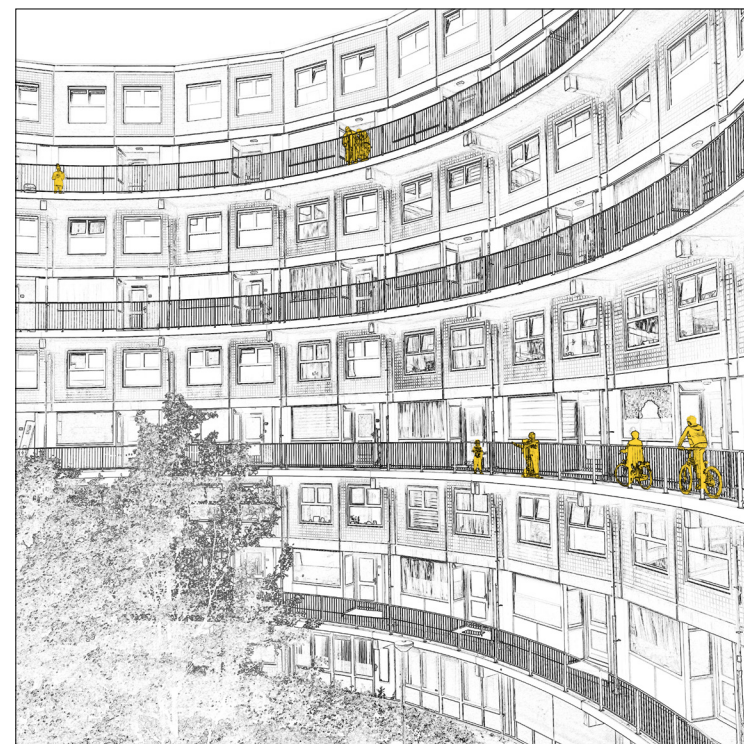
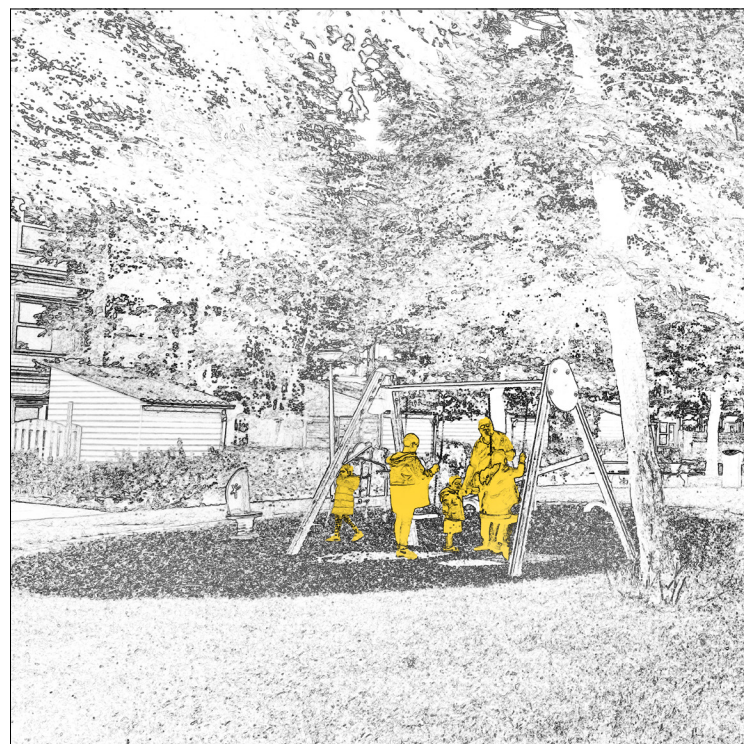
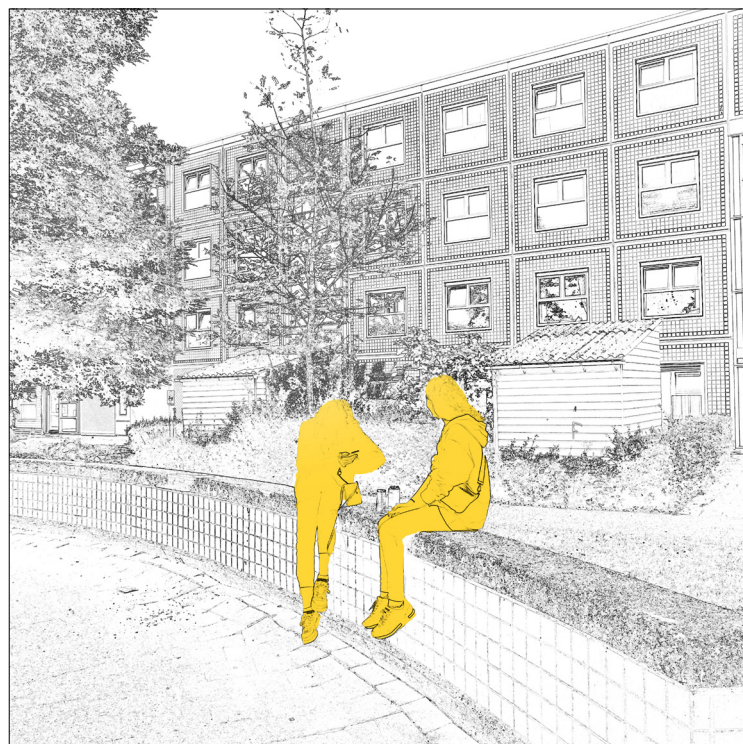




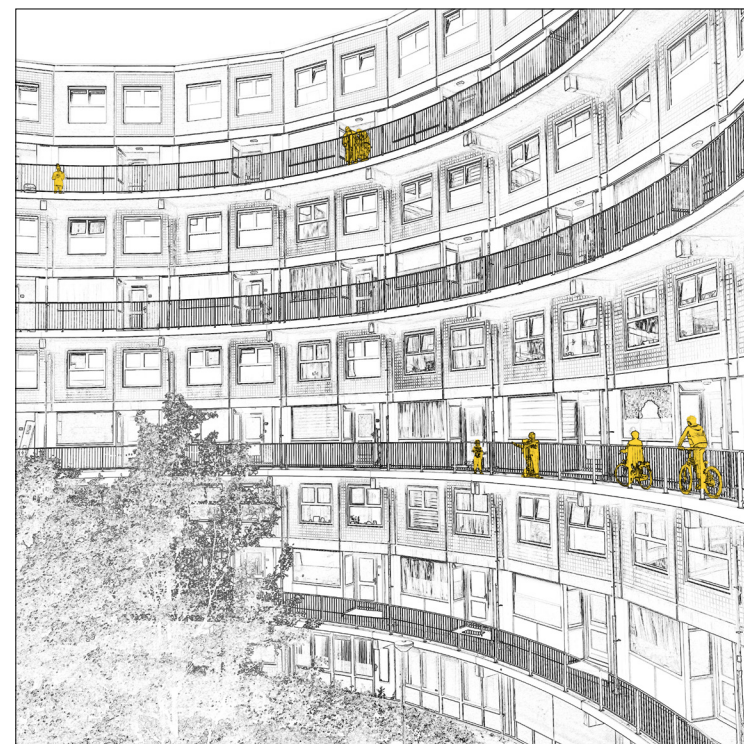
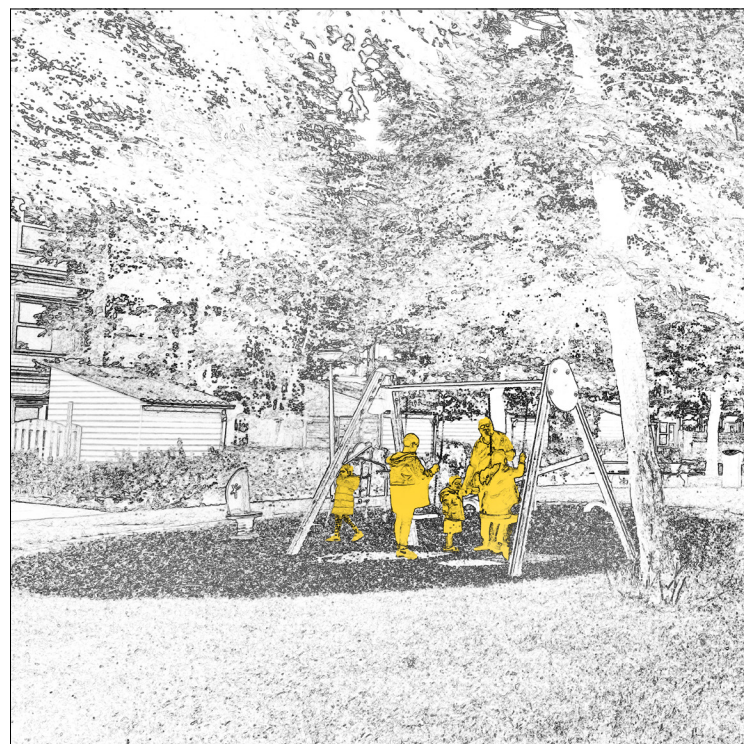
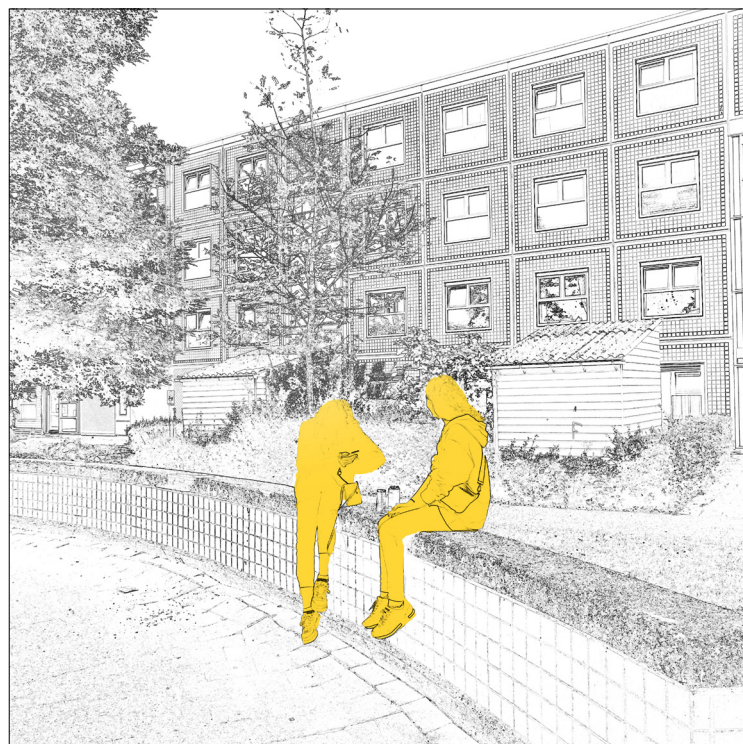




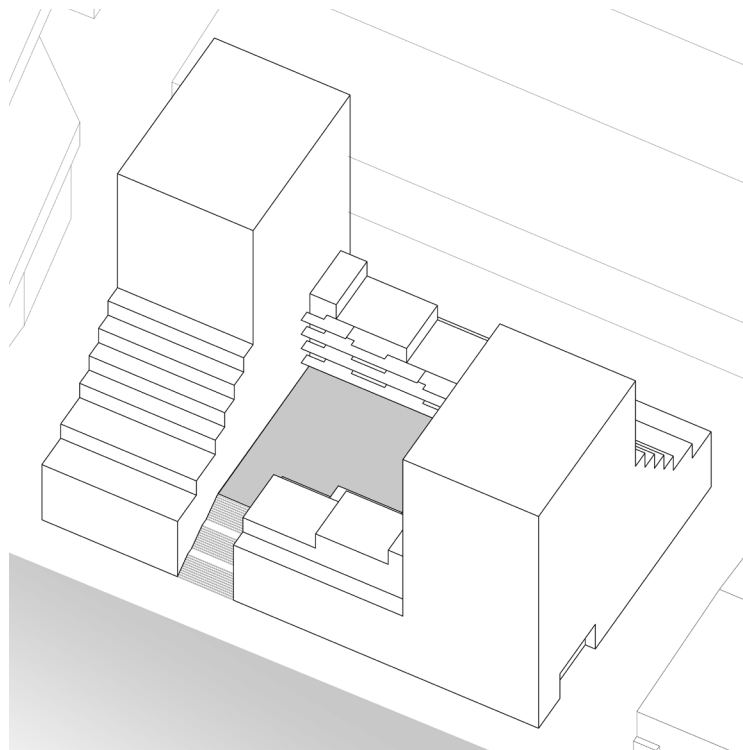




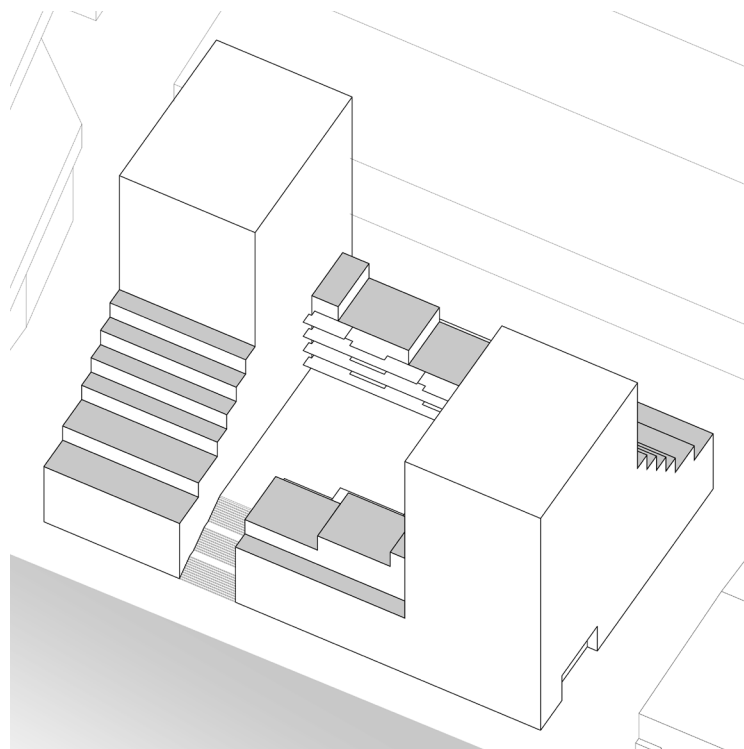
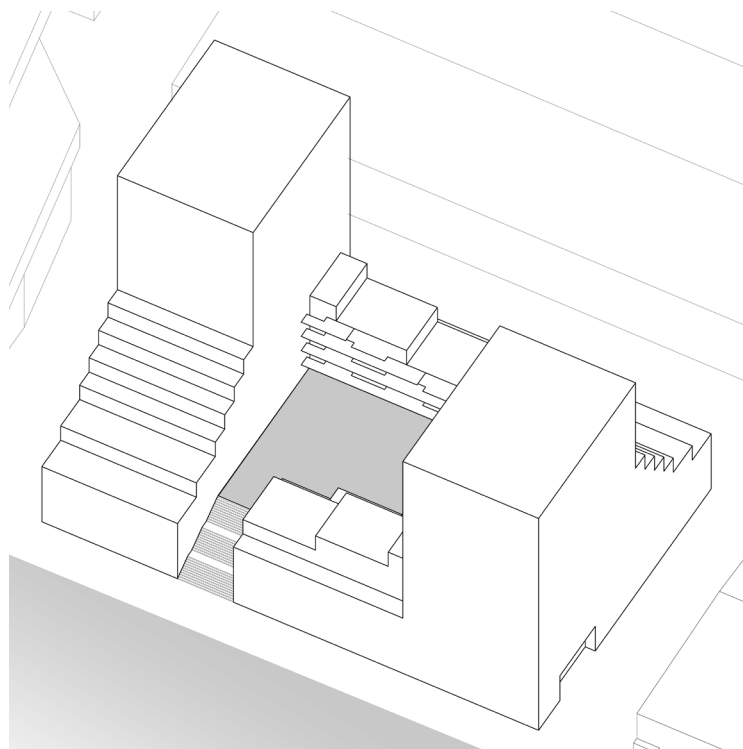
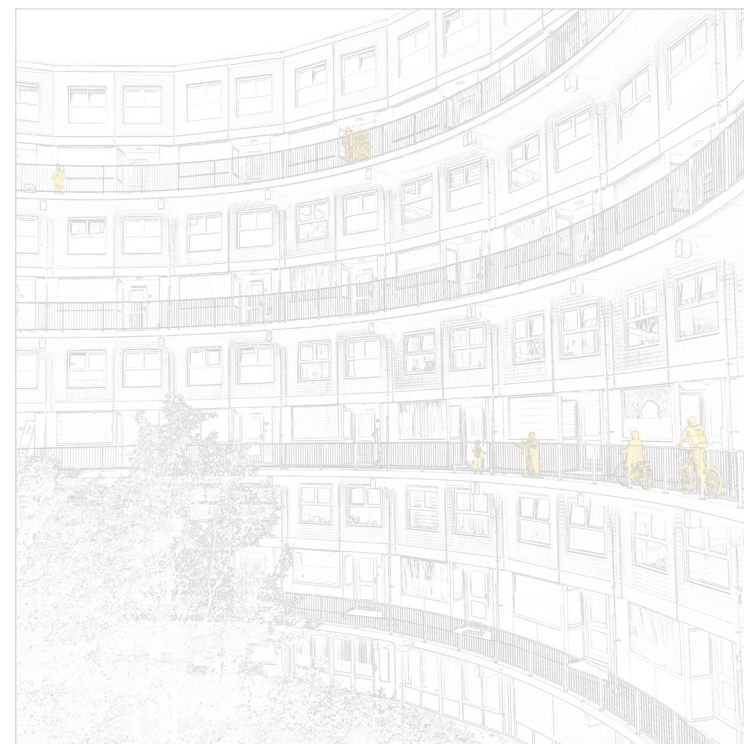
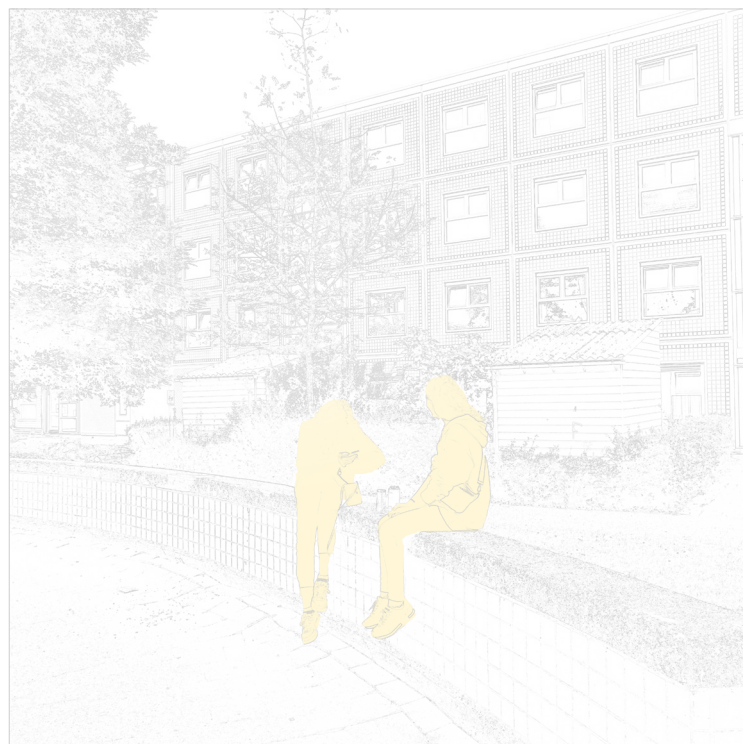




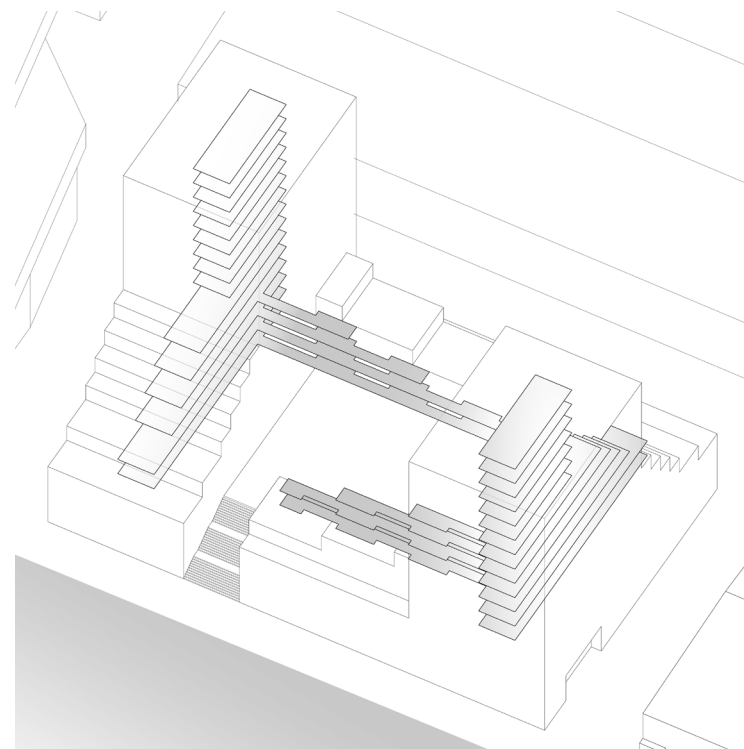
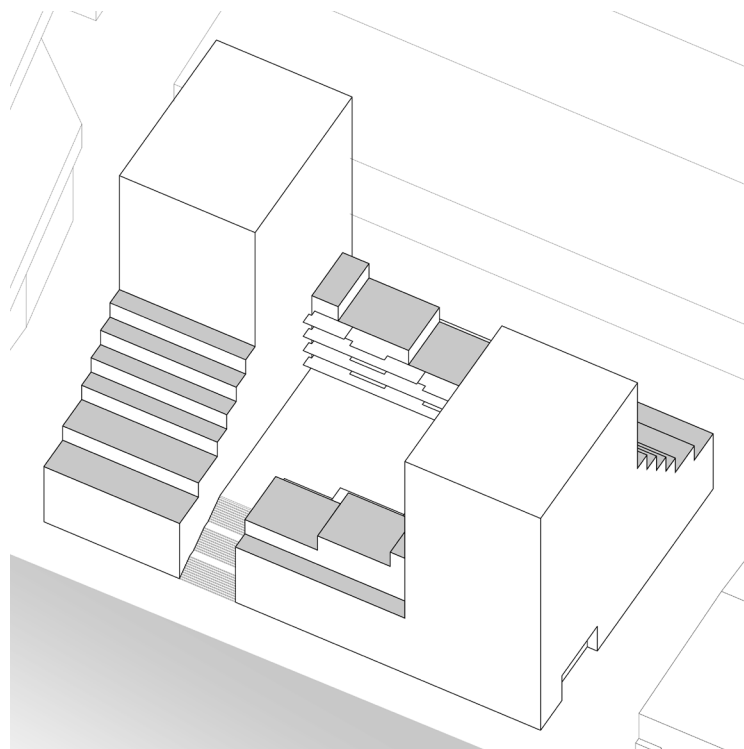
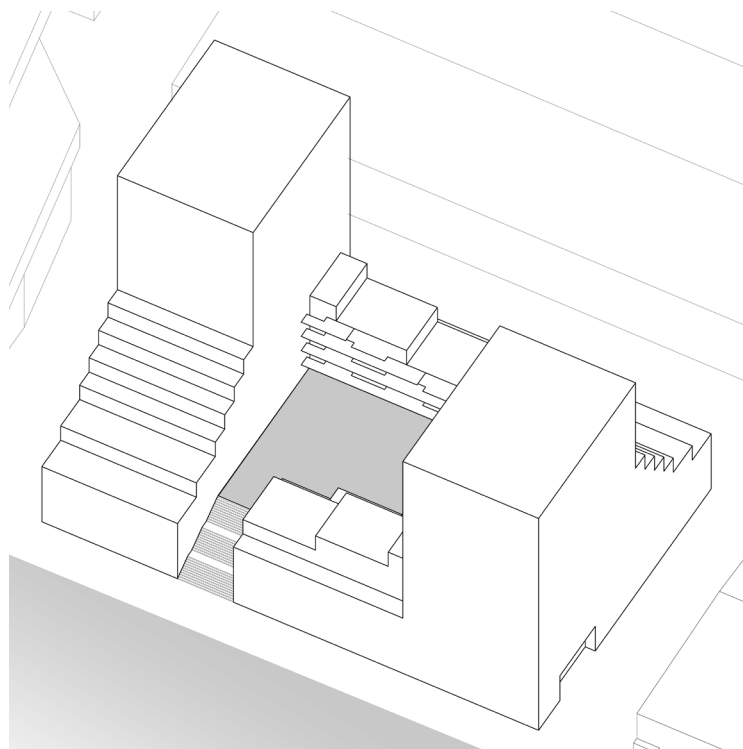
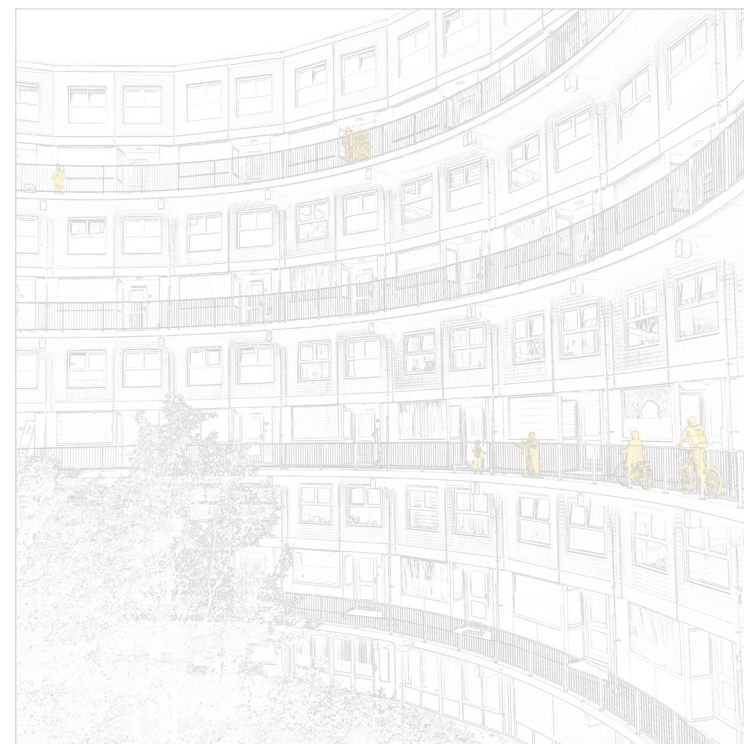
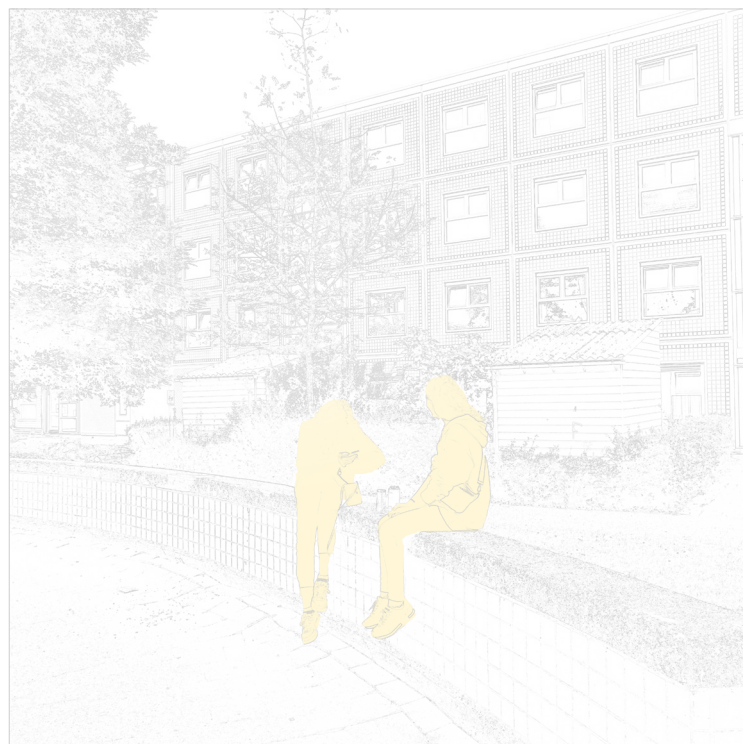




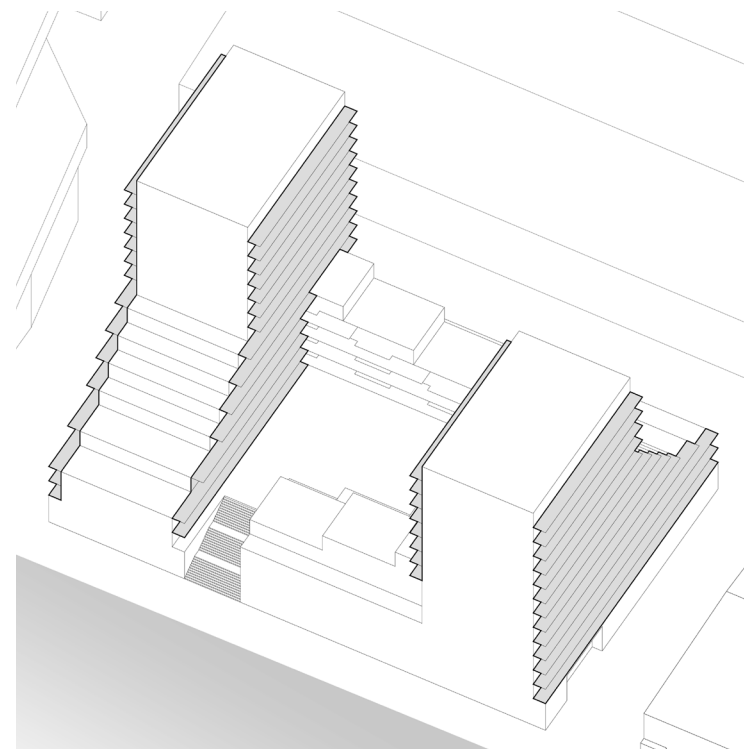
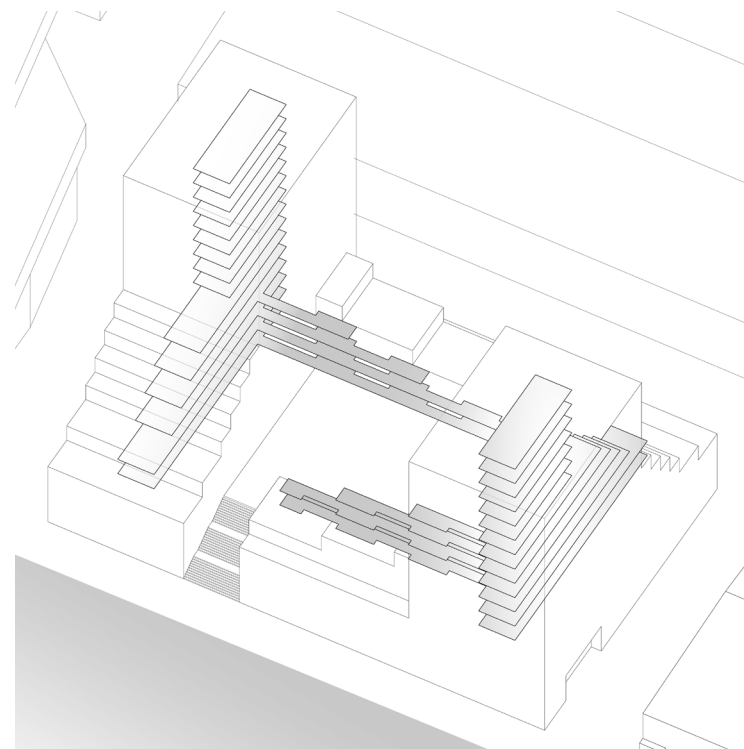
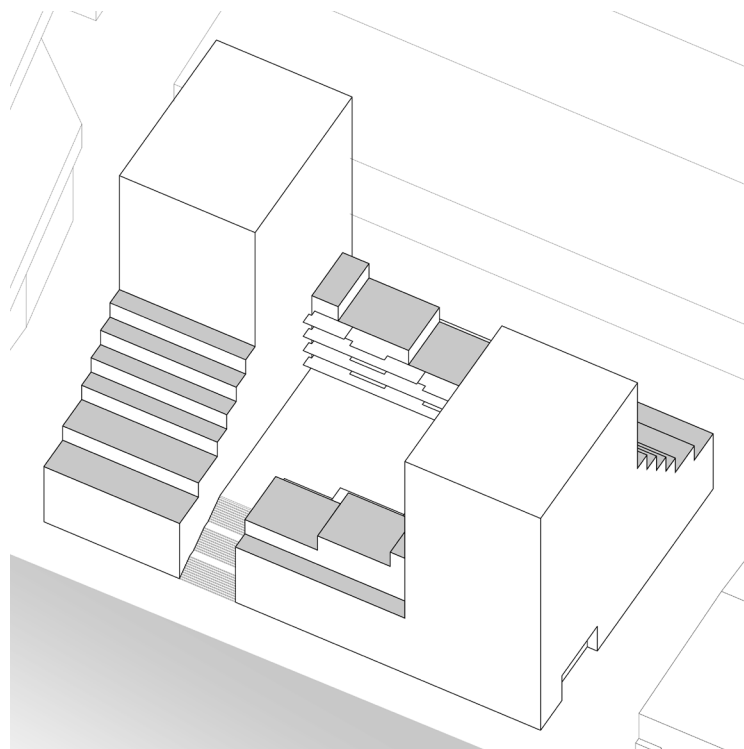
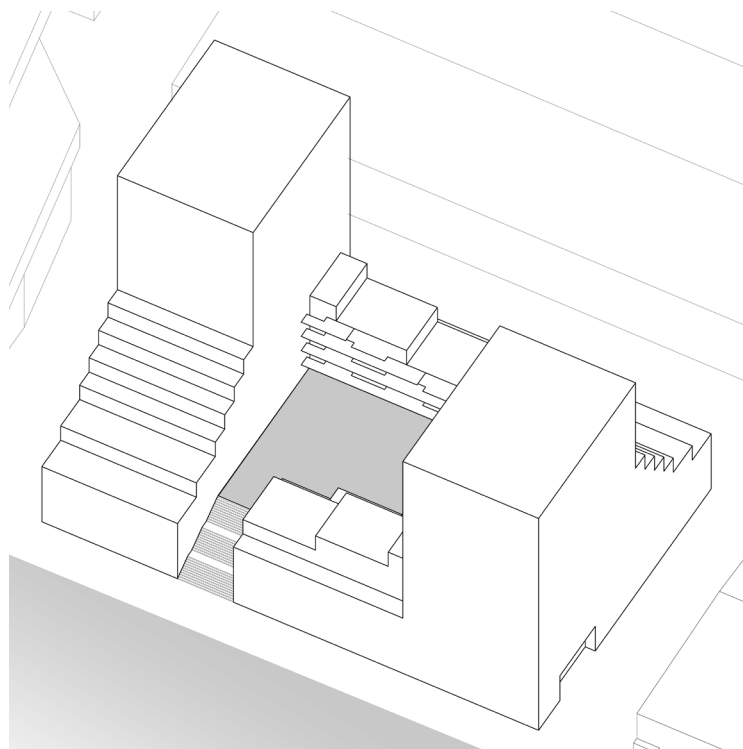
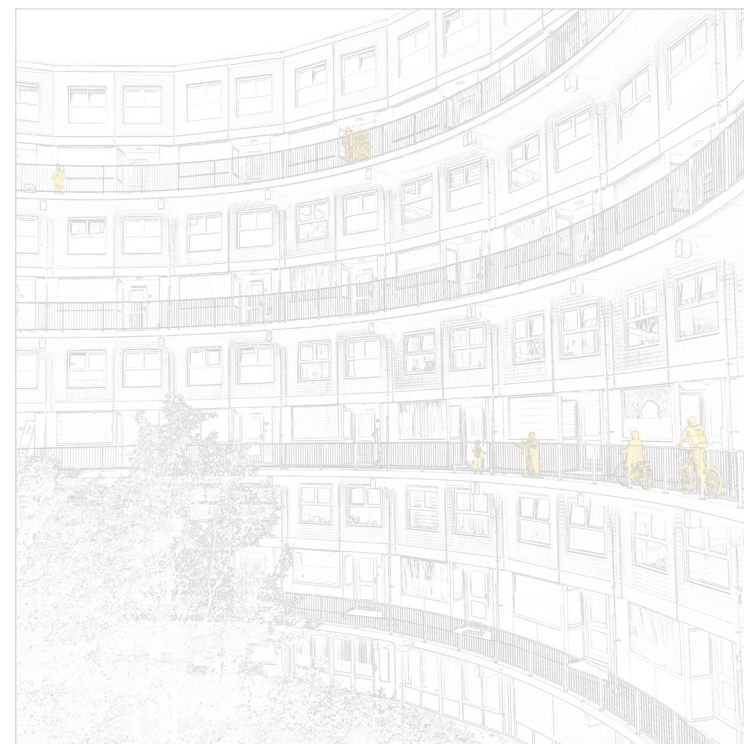
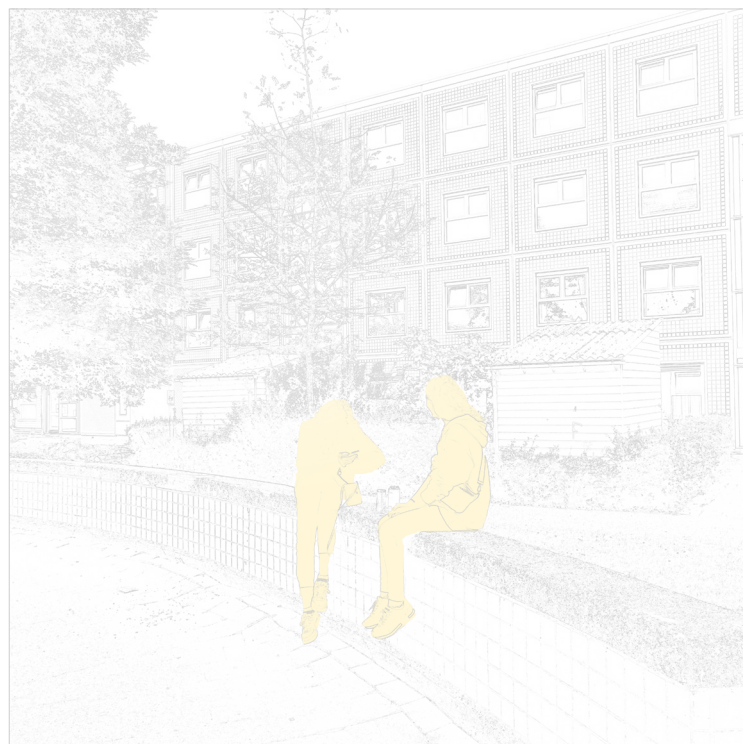


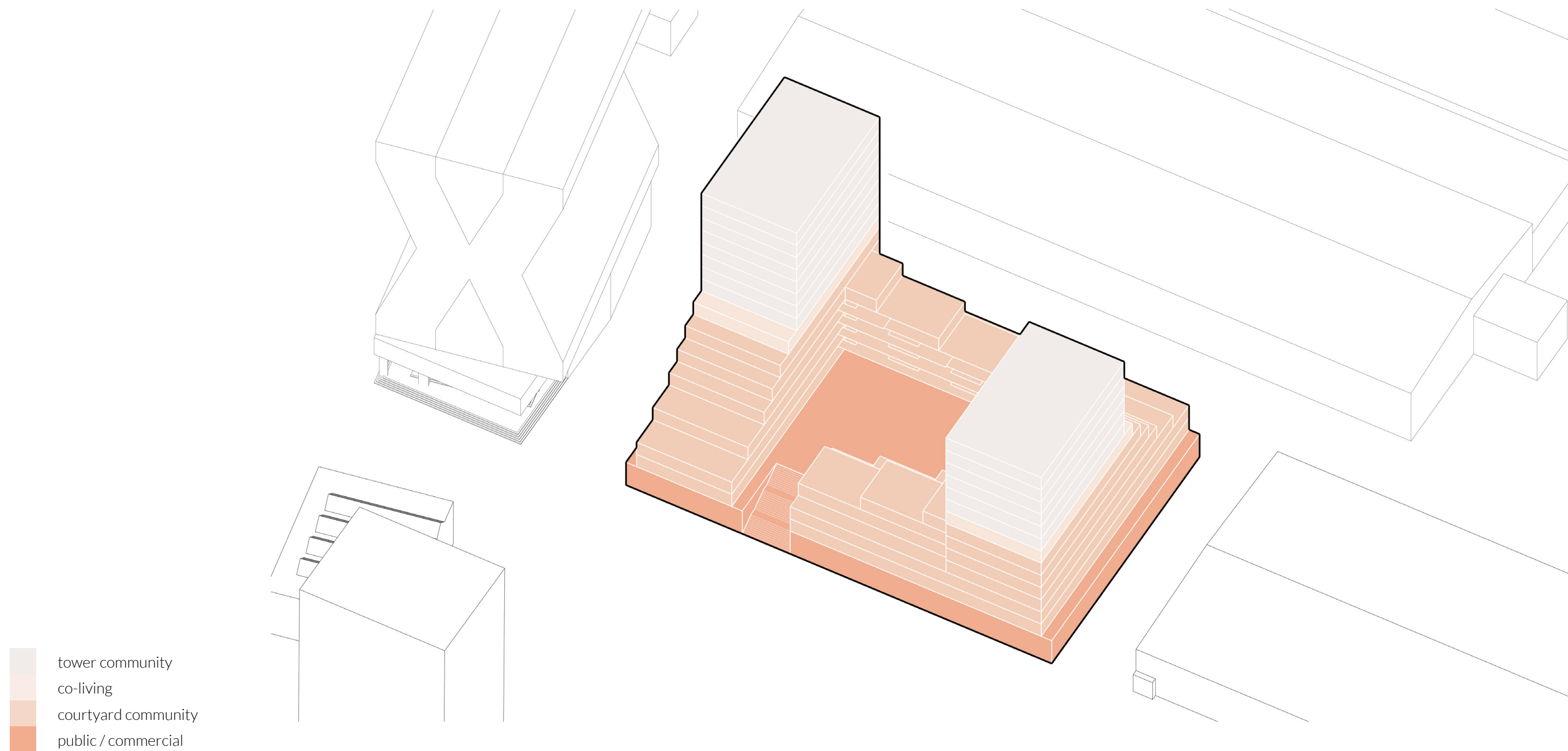




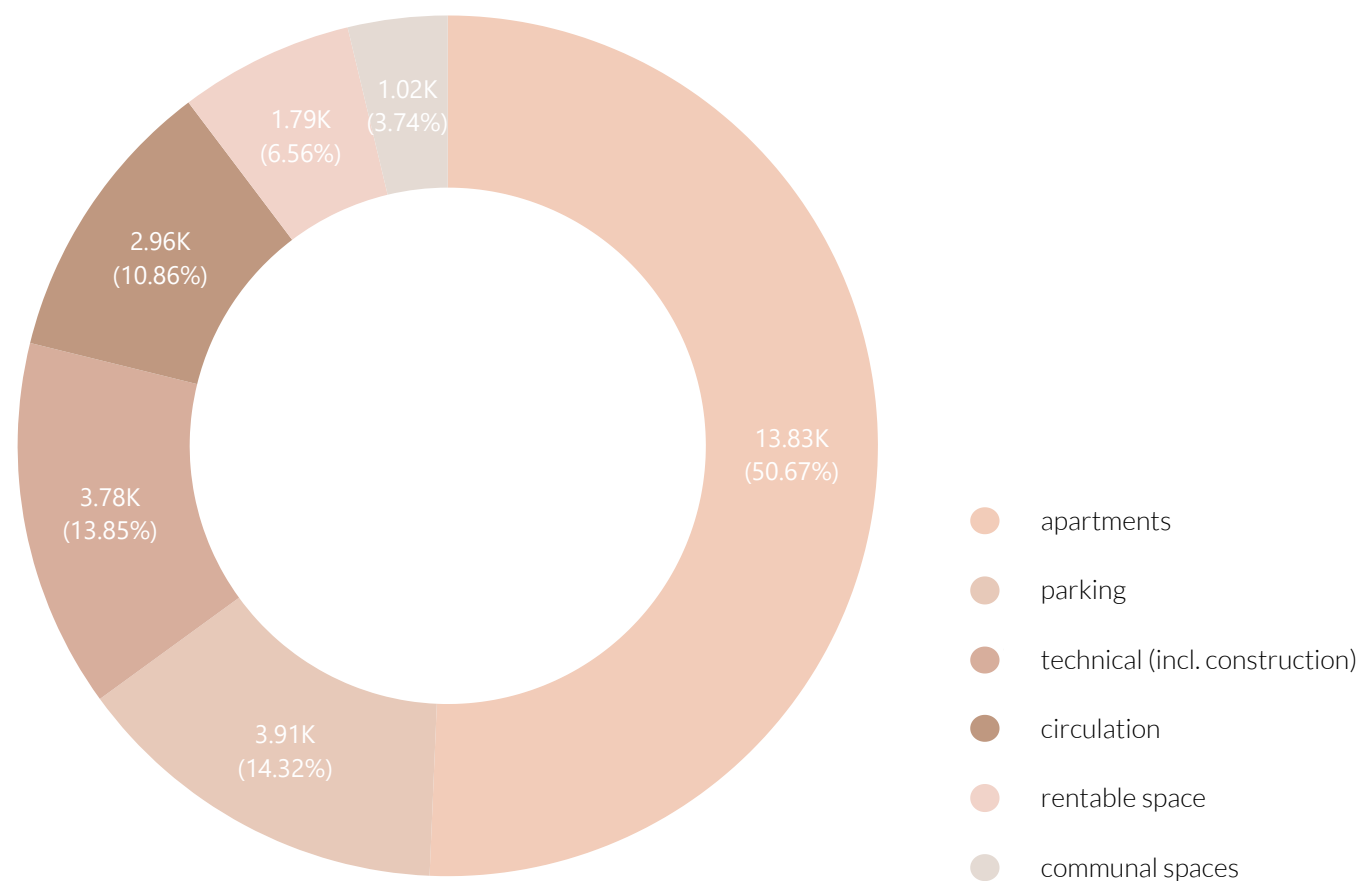


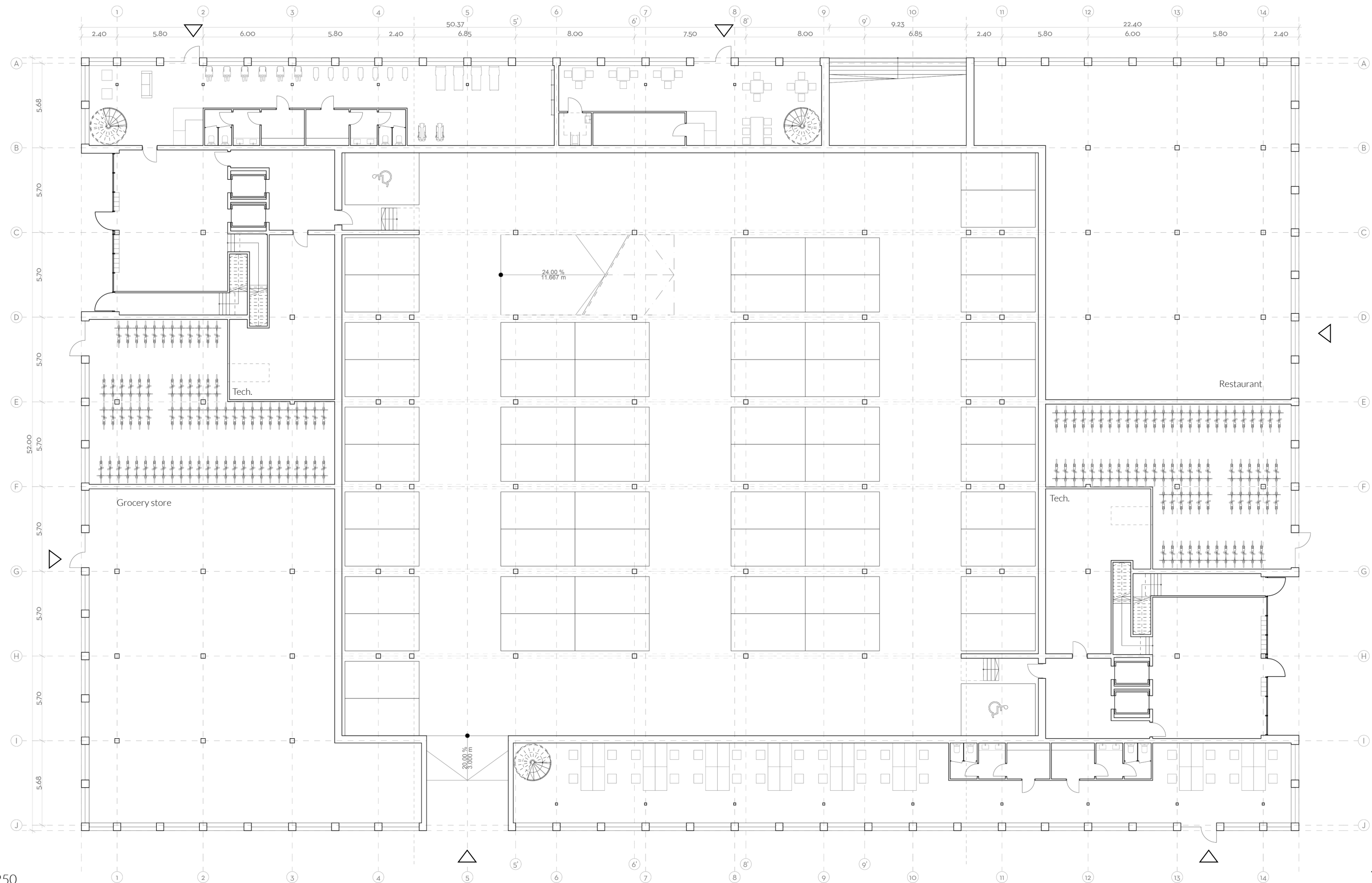




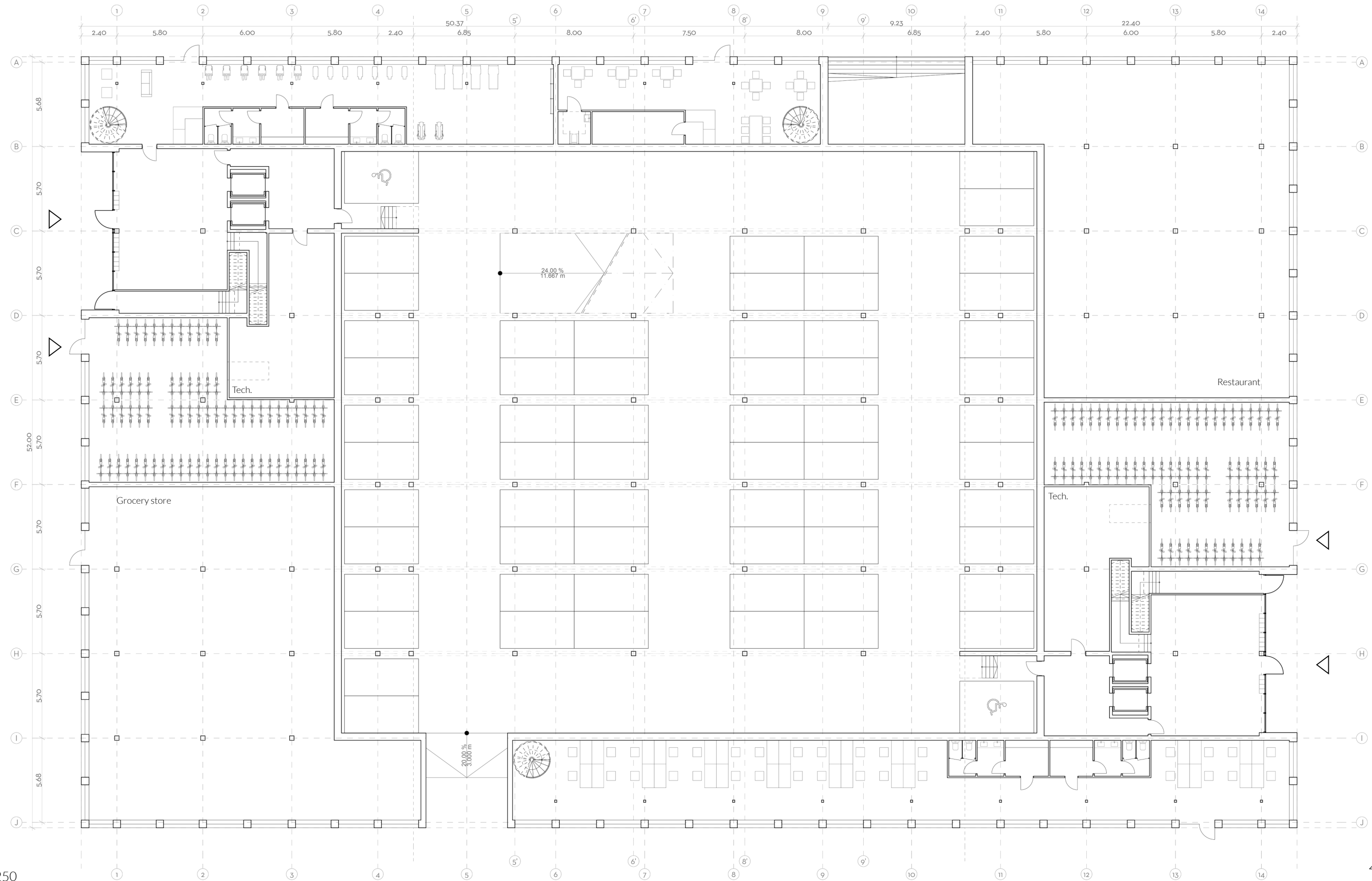








Ground floor 1:250



Ground floor 1:250





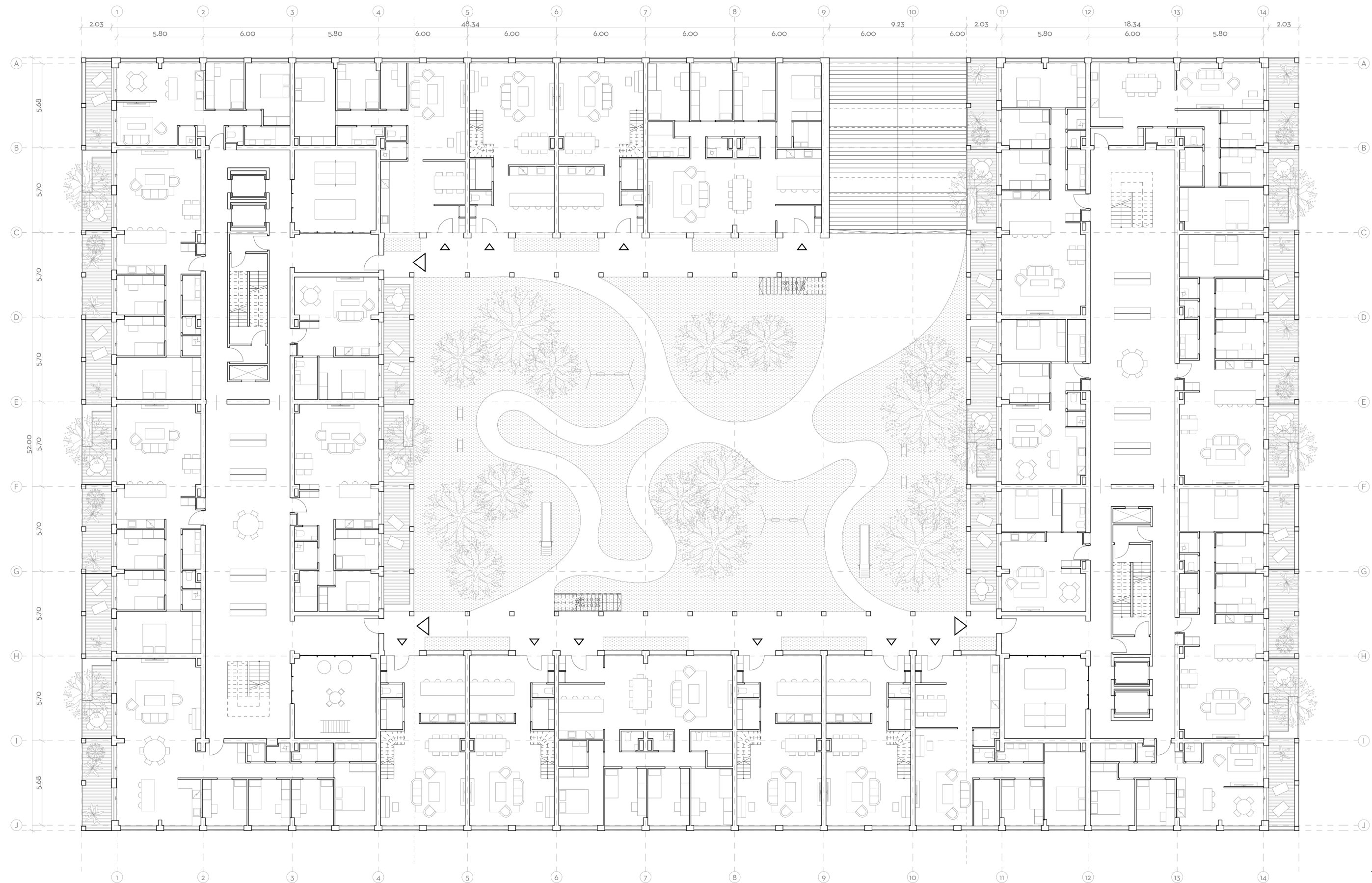




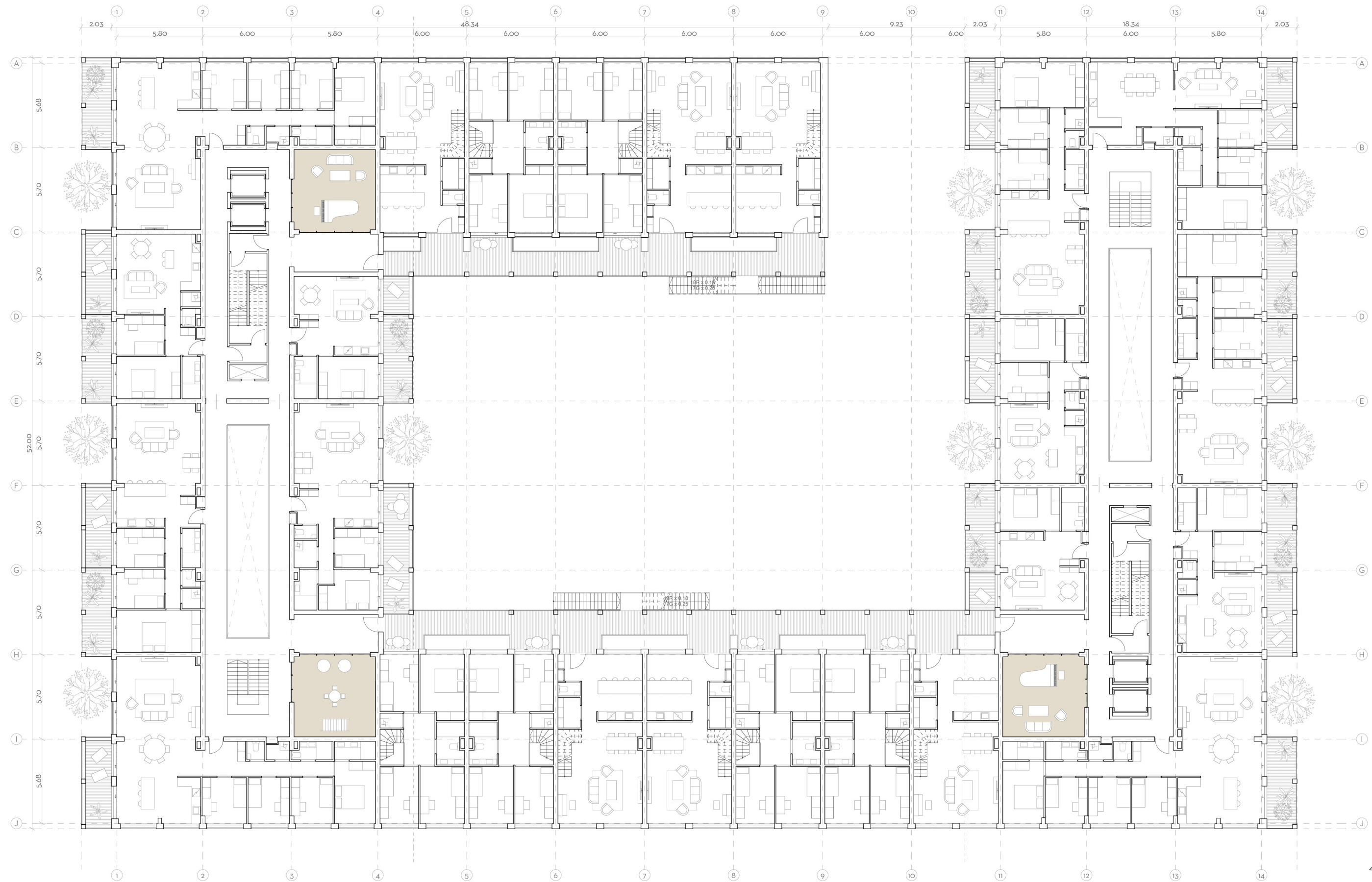


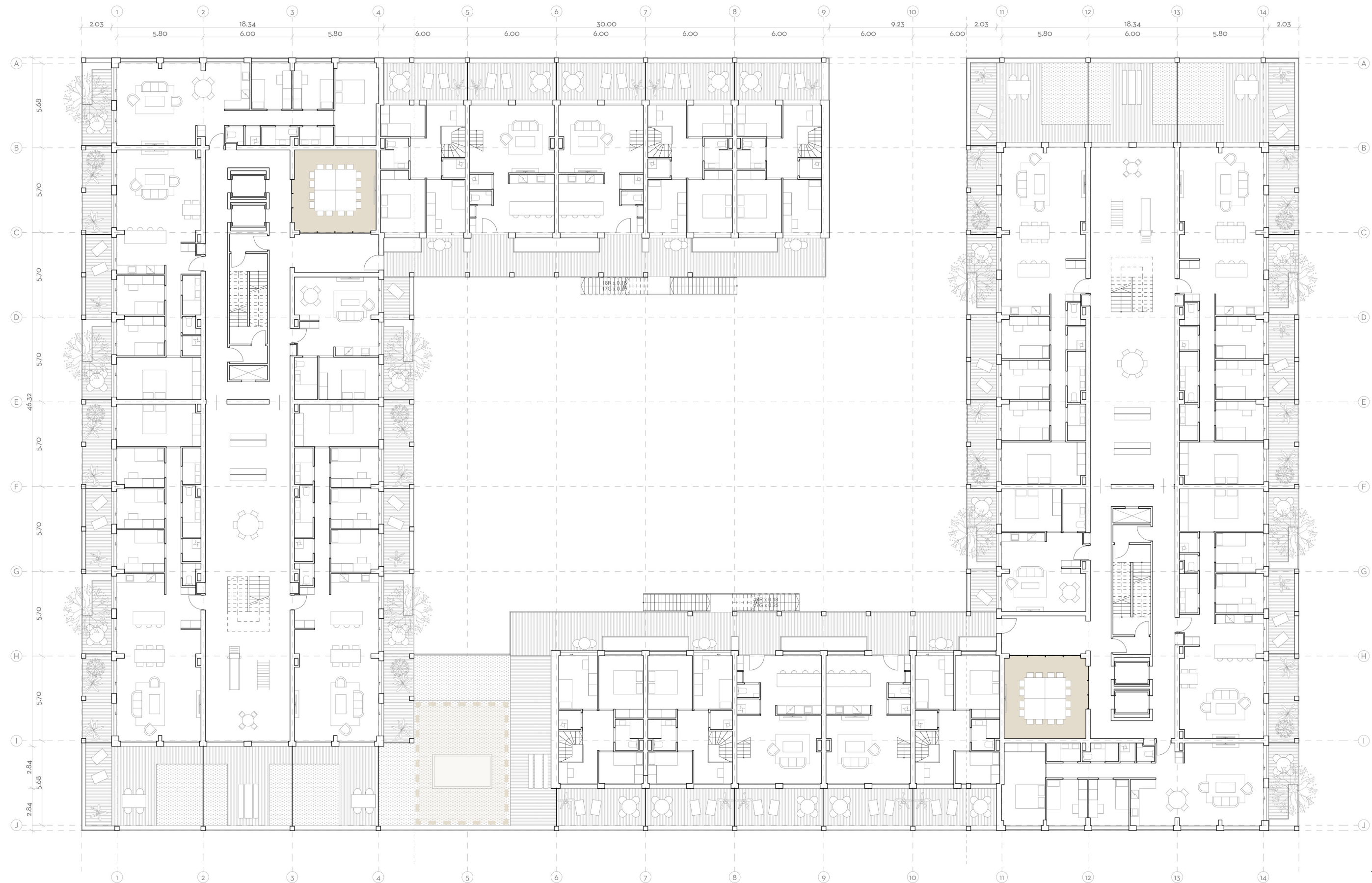






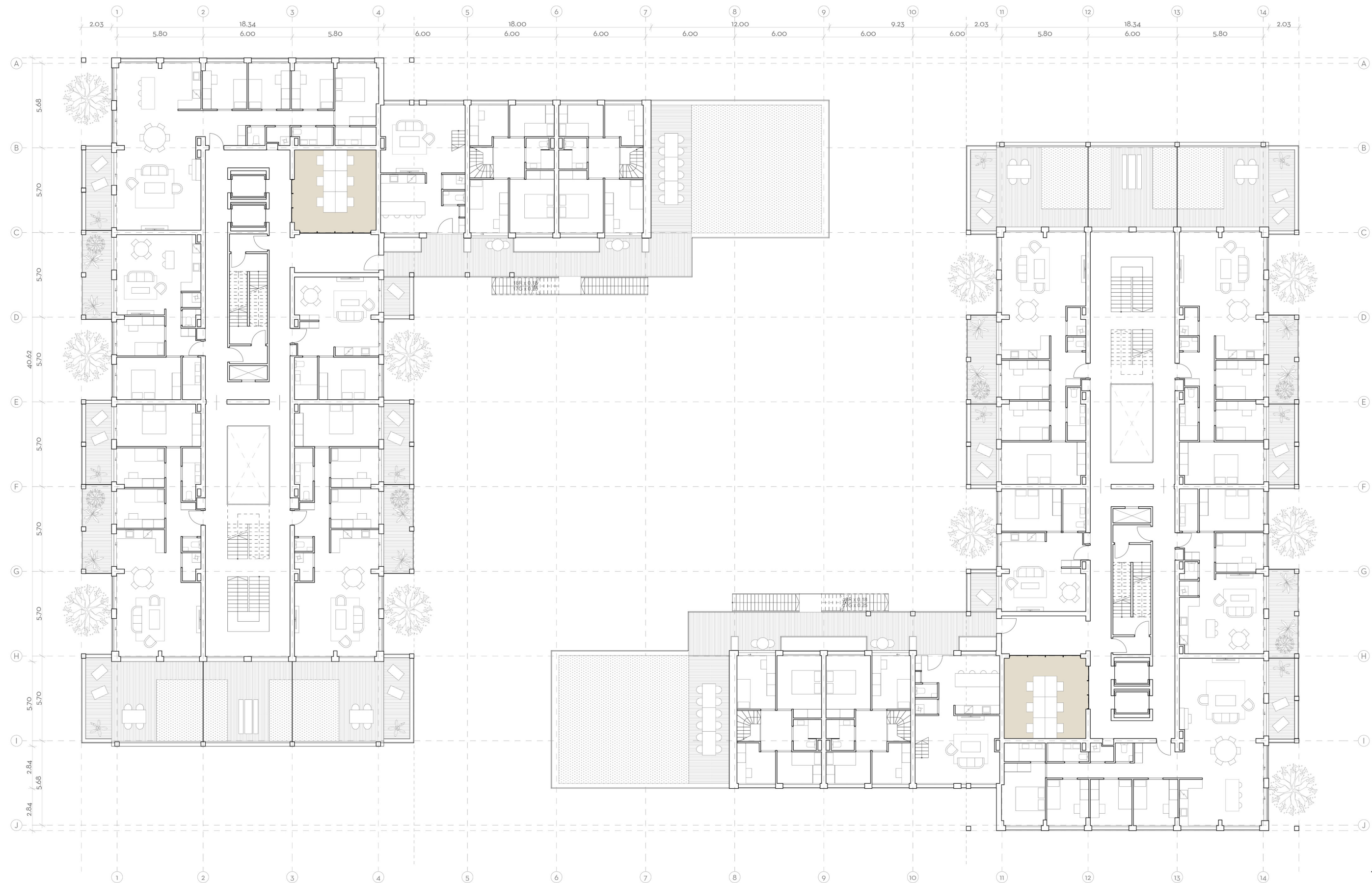
1st floor 1:250



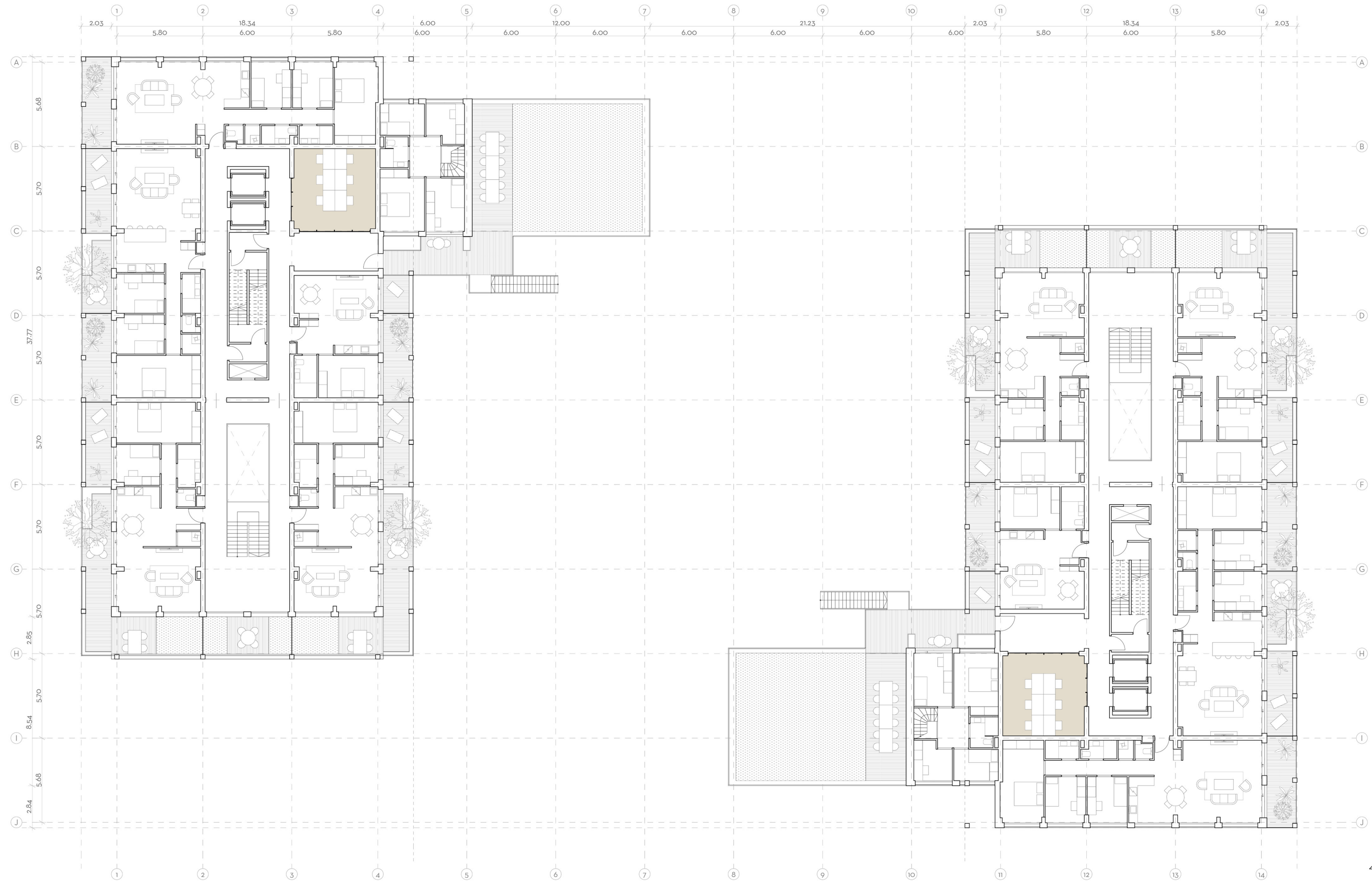


3rd floor 1:250



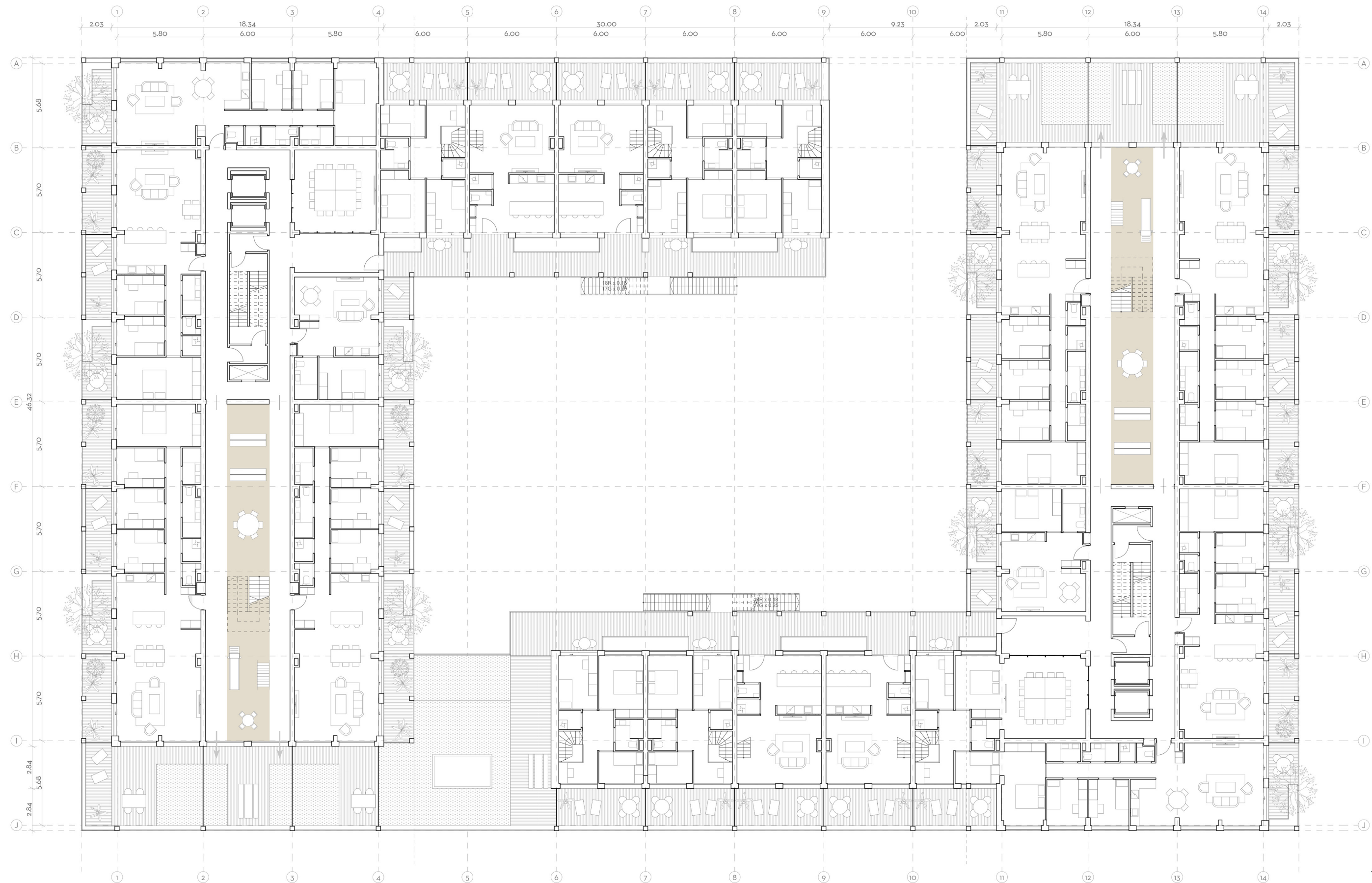


4th floor 1:250



5th floor 1:250





3rd floor 1:250



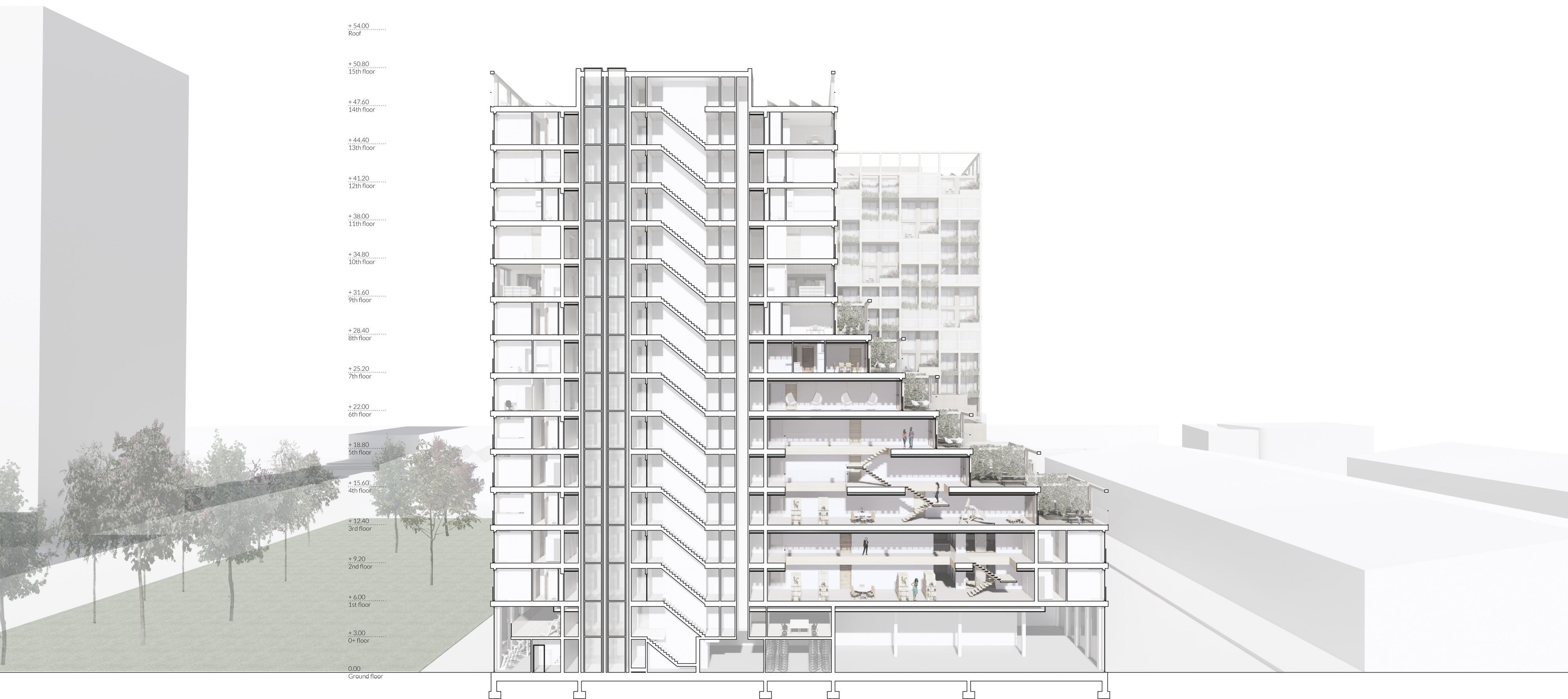


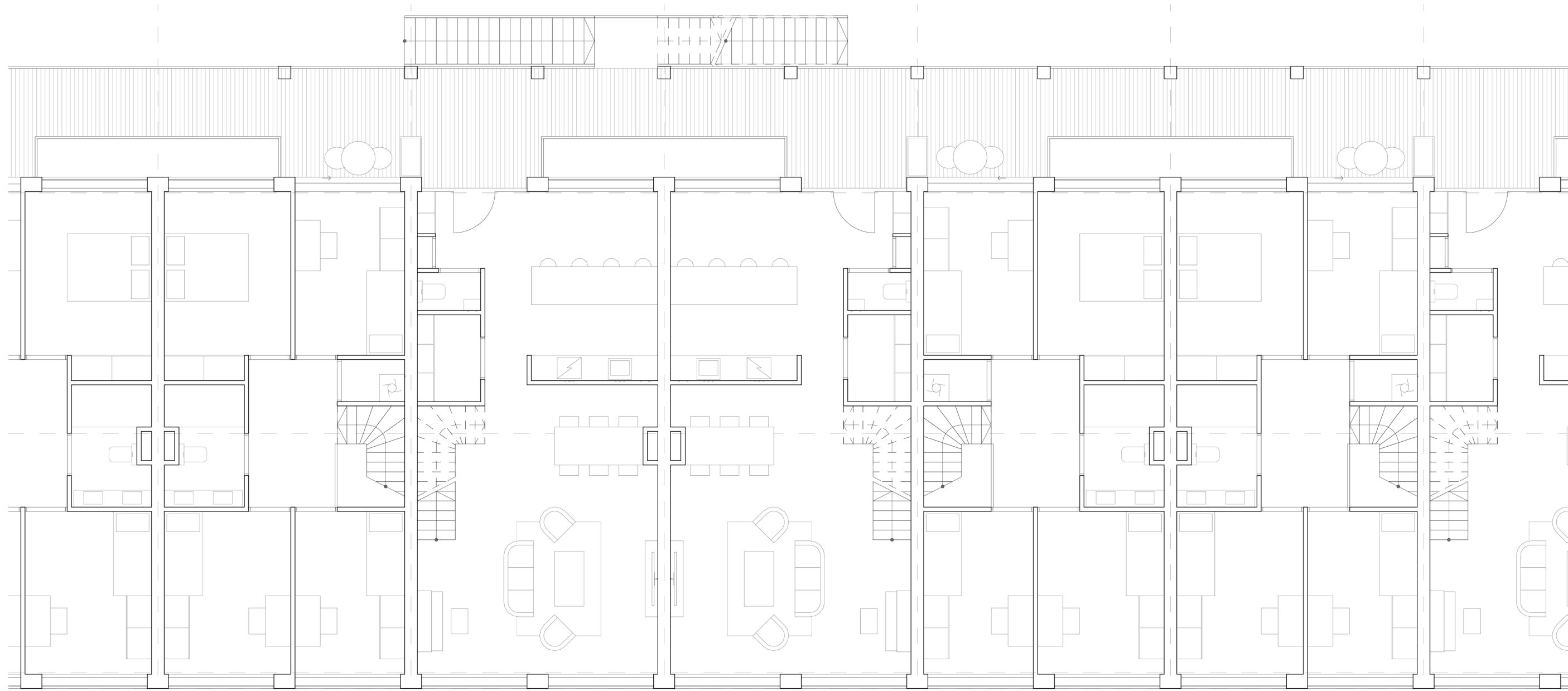
1st floor



6th floor







2nd floor 1:100









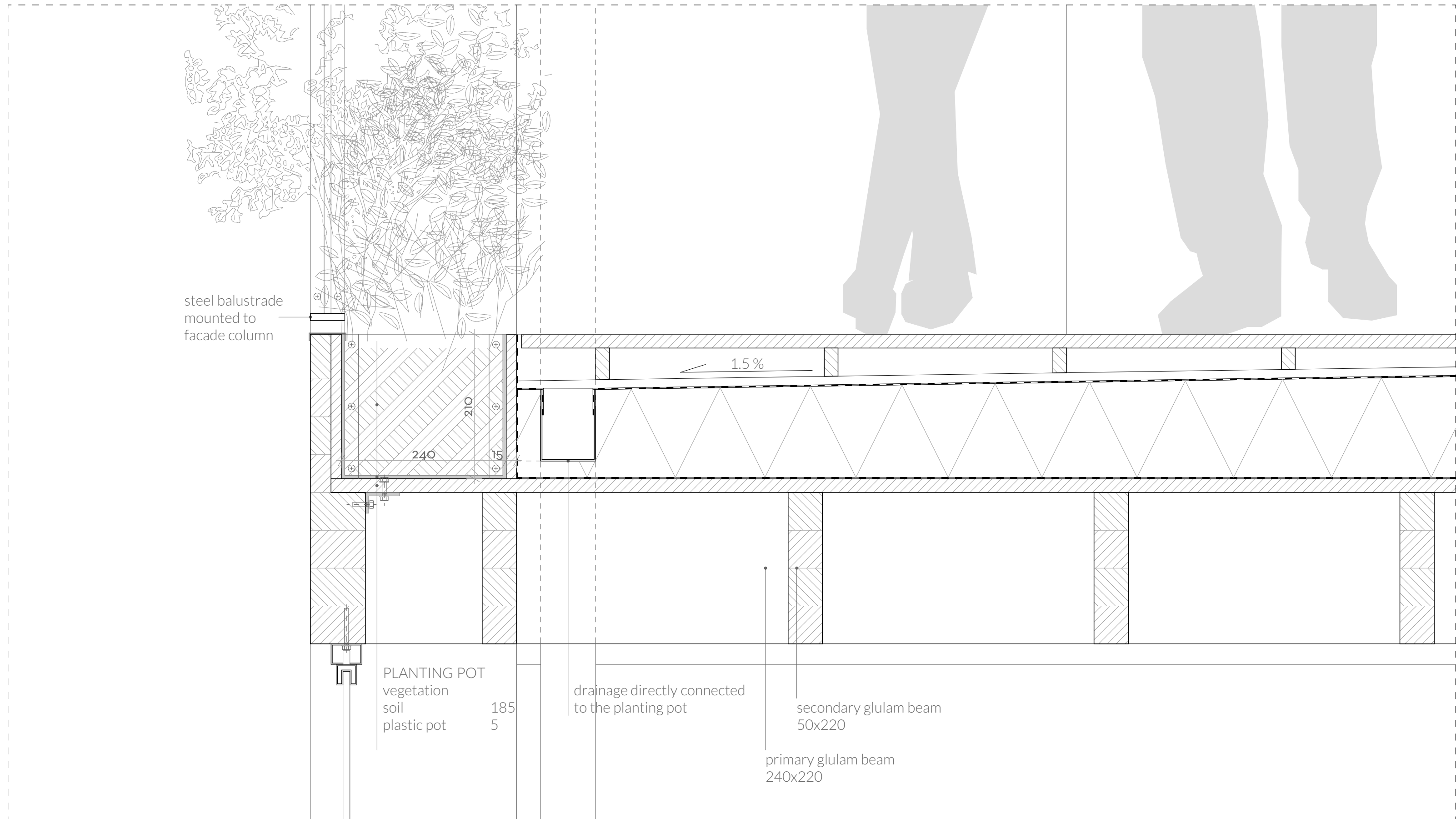


















**intensive roof**  
70% of the roof area  
contains sedum

**native trees  
in the inner court**  
- holladse iep  
- plataan  
- tilia cordata

**climbing shrubs**  
provide nectar  
for butterflies

**extensive roofs**  
for urban gardening

**planting pots**  
attract insects

**winter residence  
for bats**

**nests for small birds**  
such as house sparrows,  
great tits and blue tits

**potted trees**  
attract birds, bees  
and butterflies;  
resistant to strong wind  
- acer campestre  
- acer cissifolium  
- betula utilis  
- cornus controversa  
- cornus kousa  
- cornus officinalis  
- crataegus xlaivallei  
- malus toringo  
- magnolia  
- tilia kiusiana





Urban woods - open neighbourhood in Rotterdam  
69/116



Keilepand



Soundport



Keileweg 28



Vierhavenstraat 50-54



window frames RAL 1019

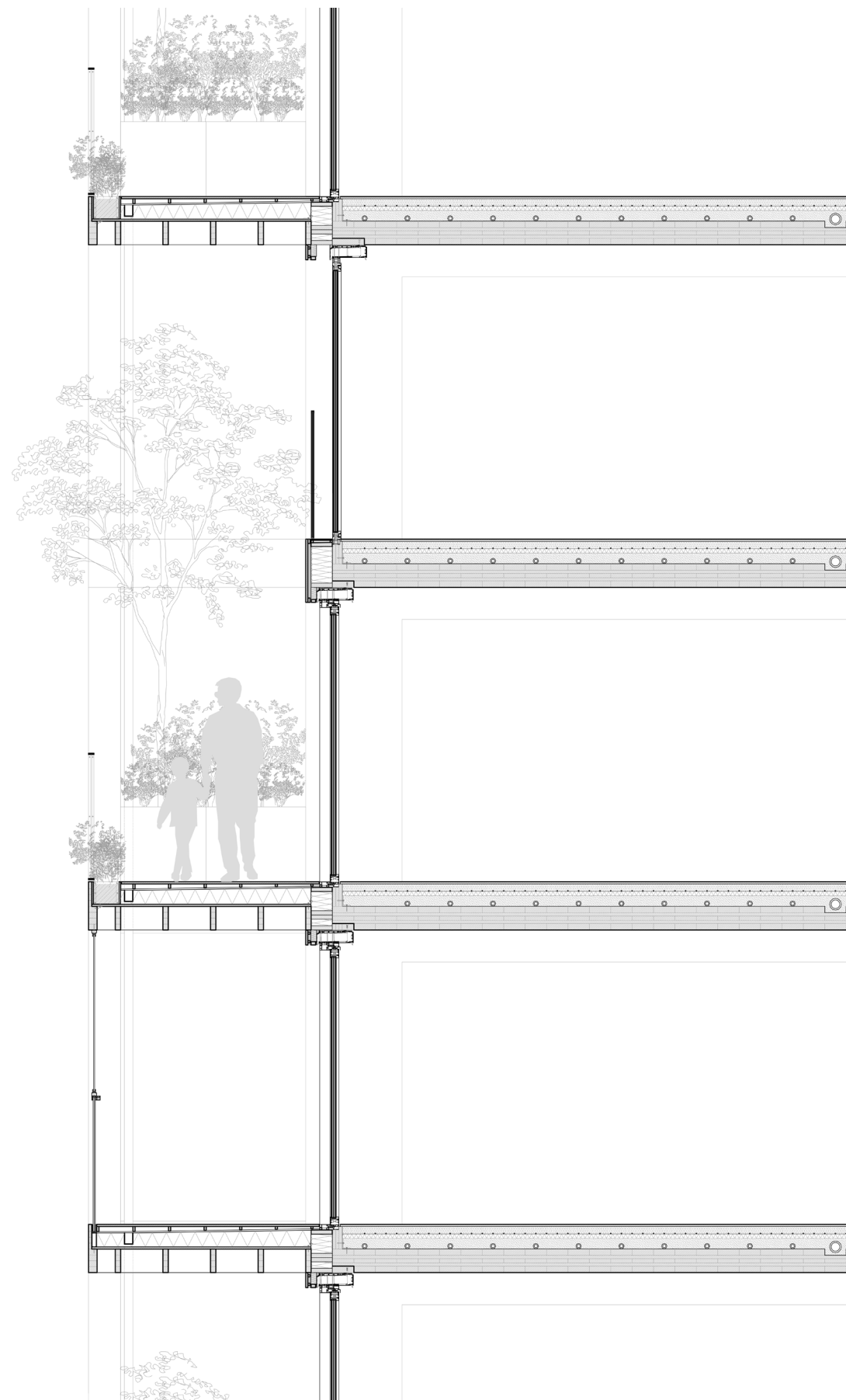
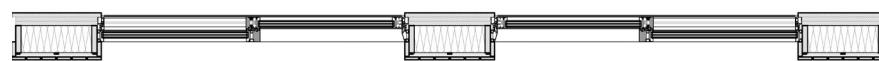
sun shading textile

accoya timber

sun shading textile

steel balustrades RAL 9016

















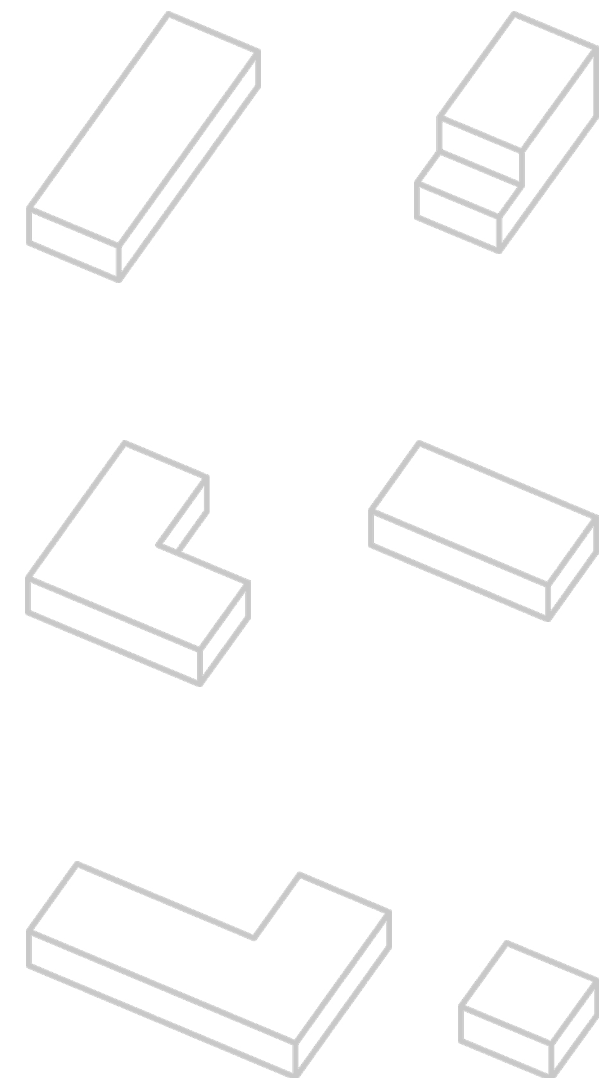


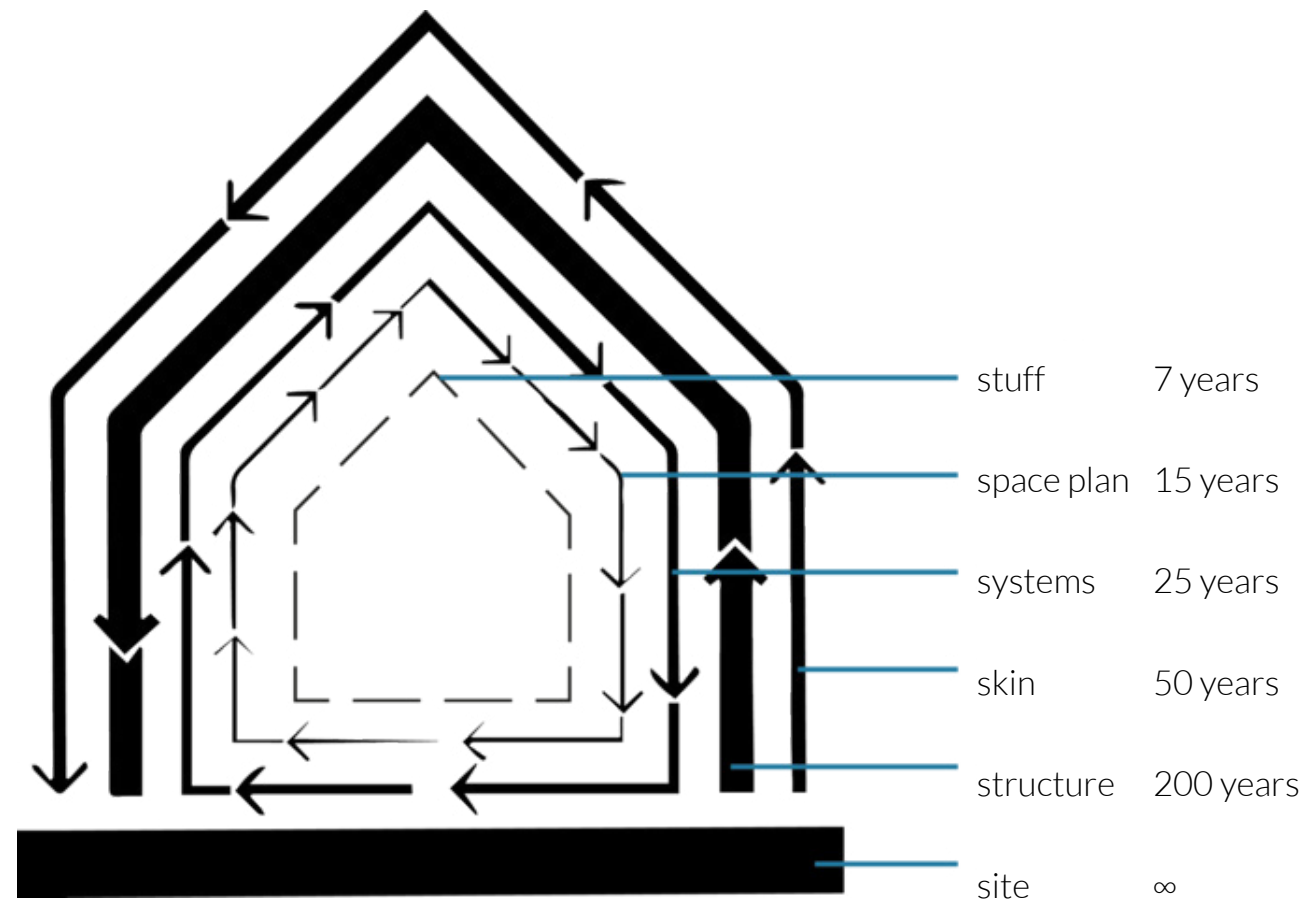




**how to design appropriate housing for such a diverse target group?**

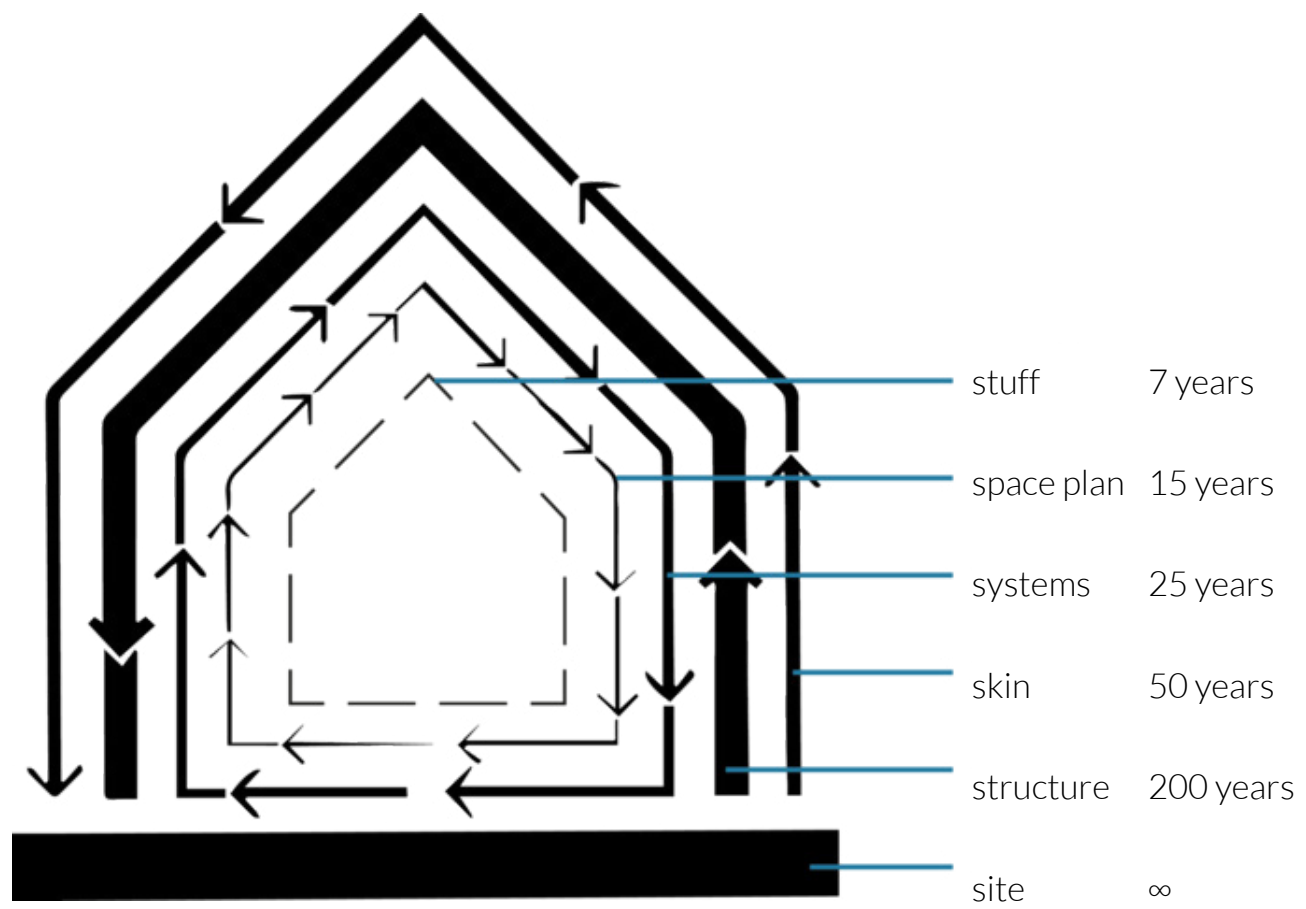
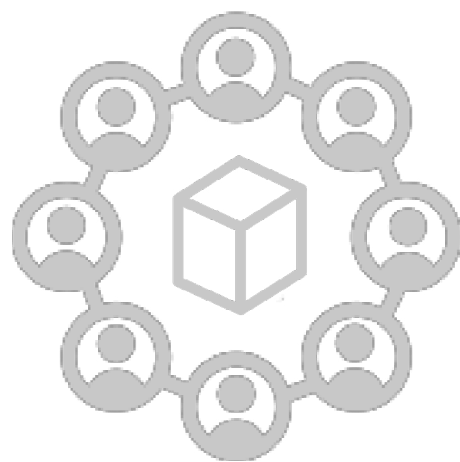




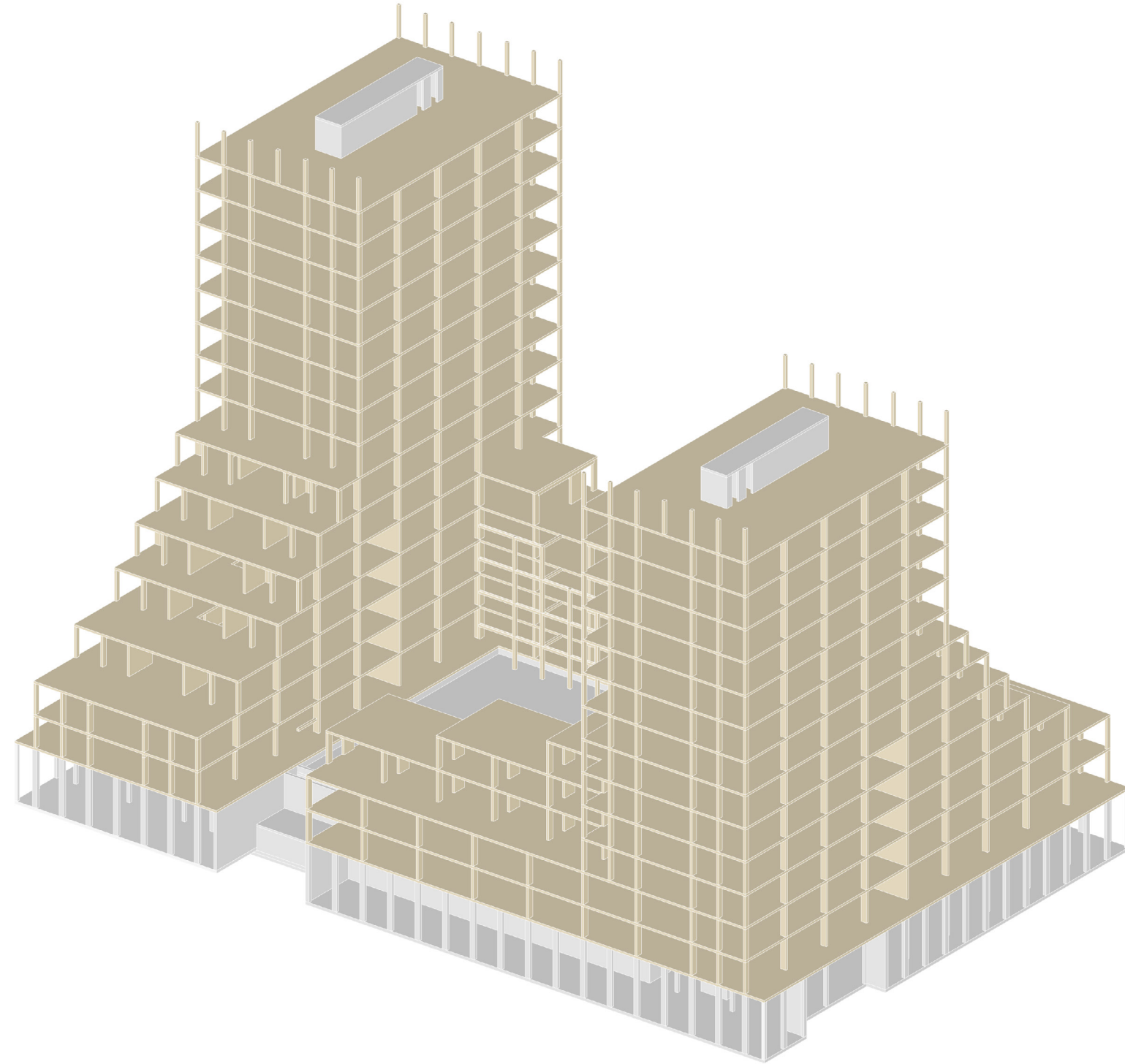


after: Brandt



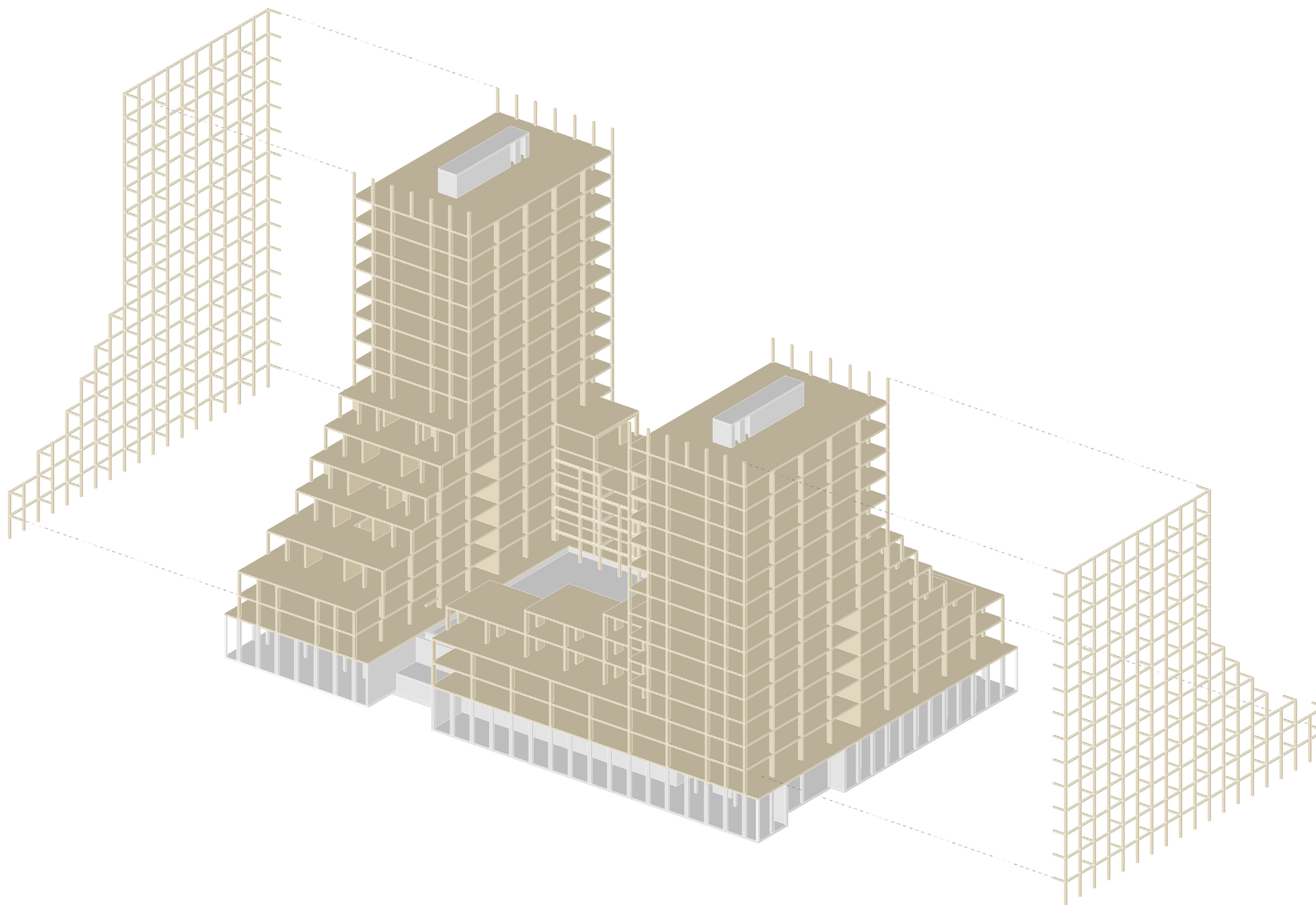


after: Brandt



**structure**





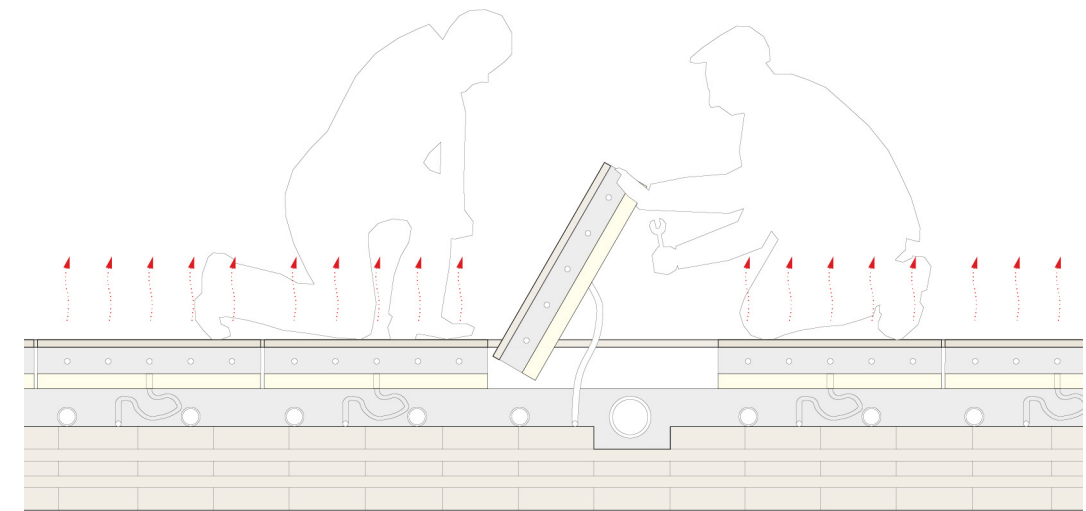
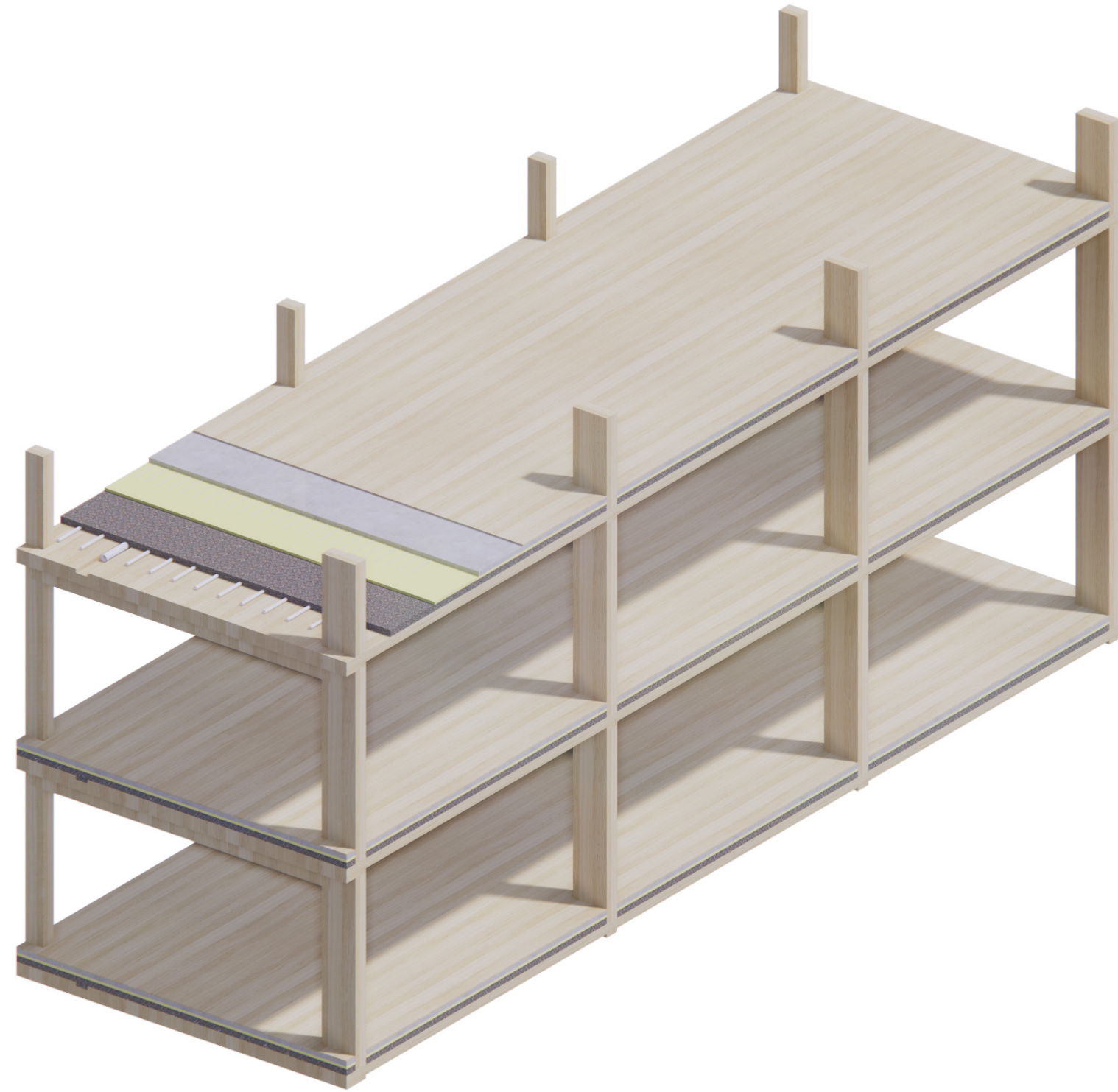
**structure | skin**



## structure

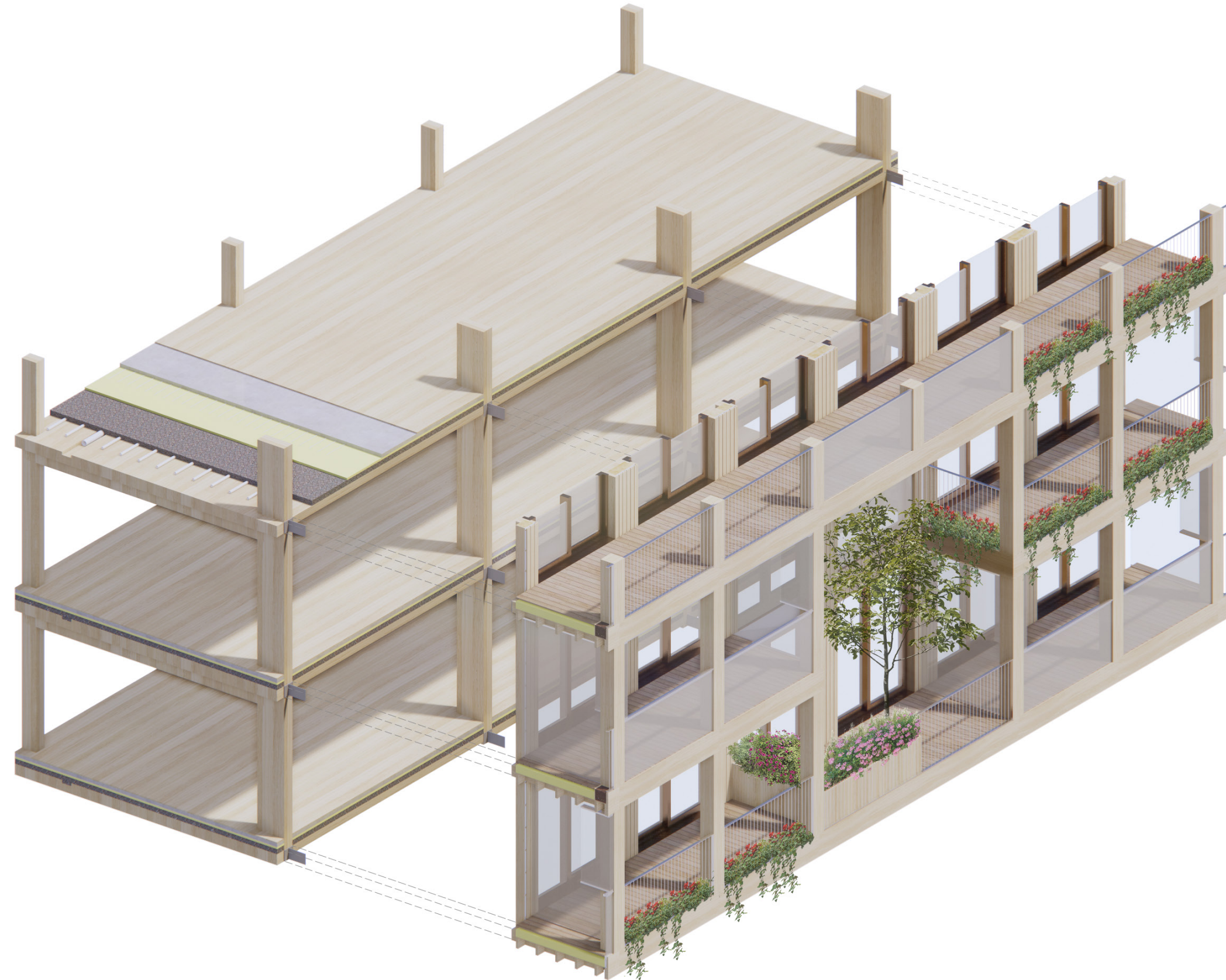
Urban woods - open neighbourhood in Rotterdam  
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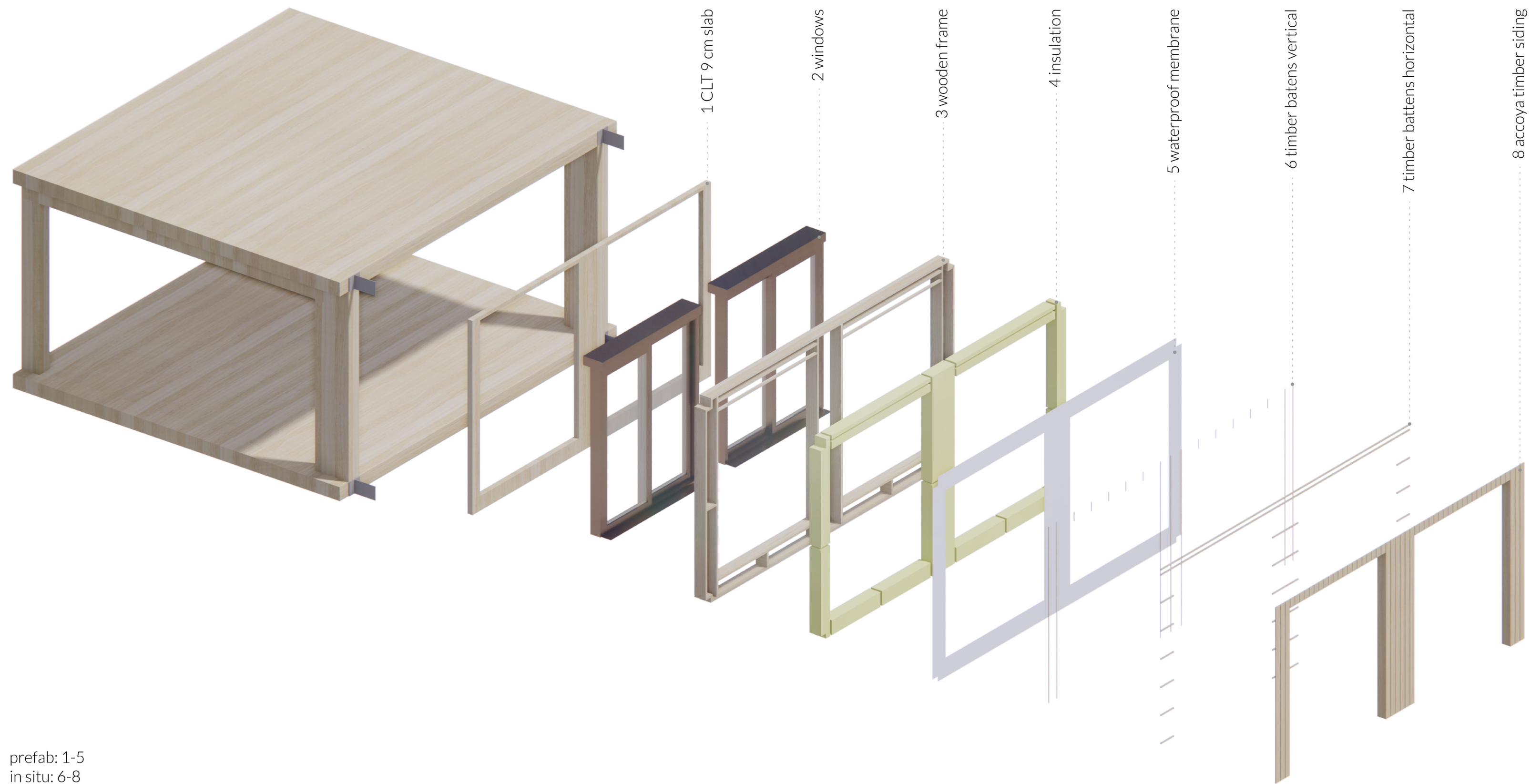
## systems



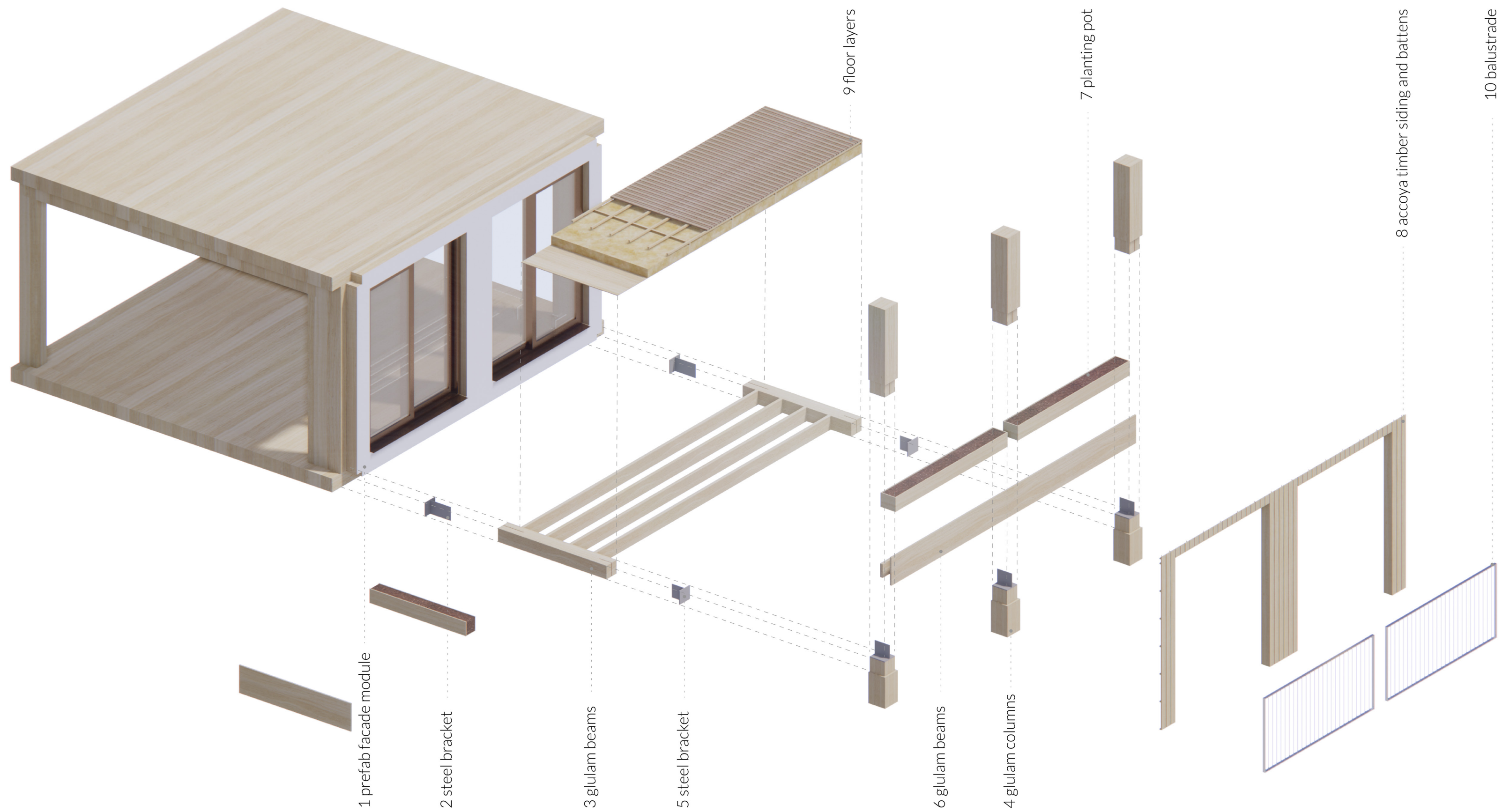


skin





prefab: 1-5  
in situ: 6-8



1 prefab facade module

2 steel bracket

3 glulam beams

5 steel bracket

6 glulam beams

4 glulam columns

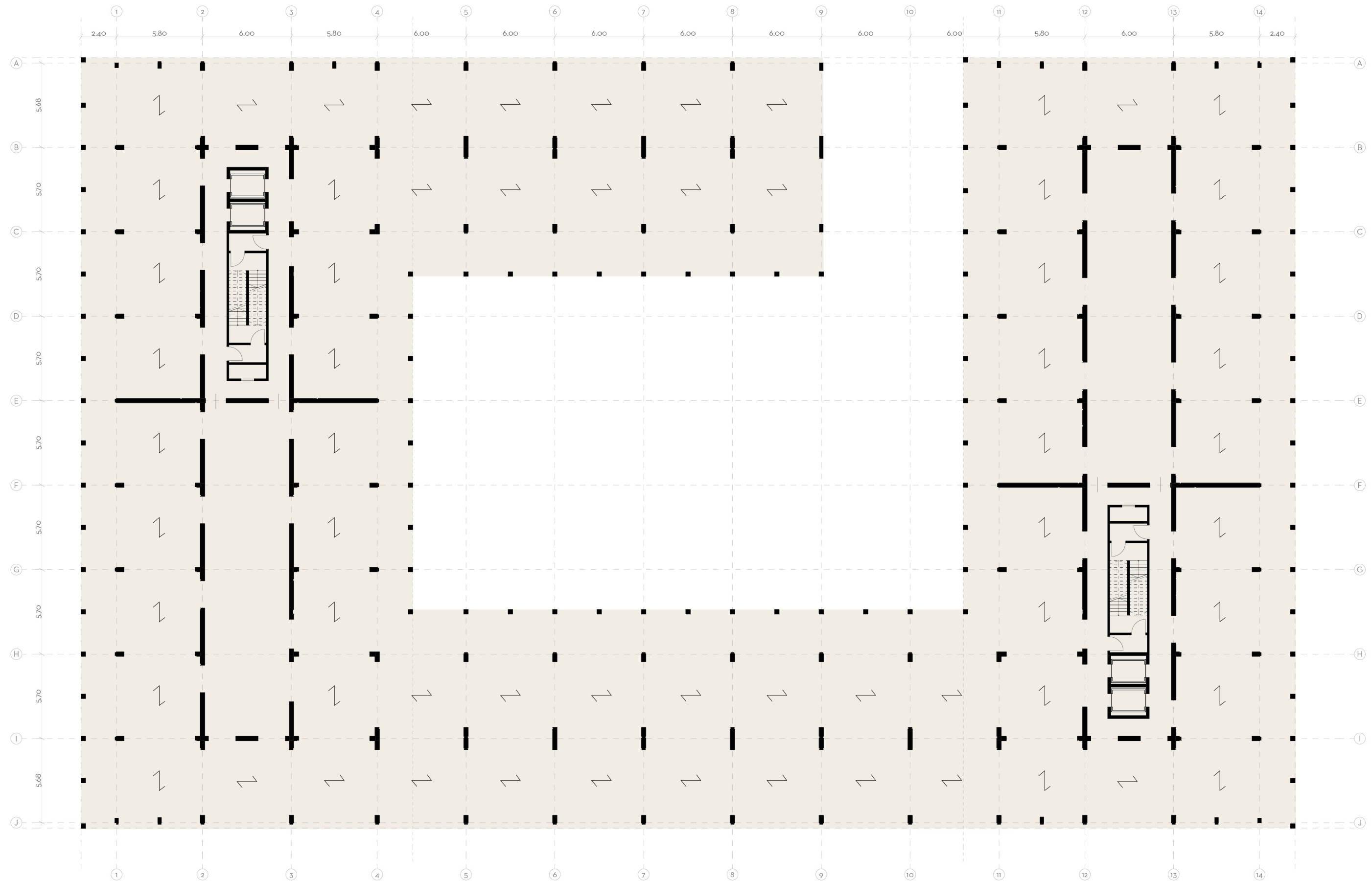
9 floor layers

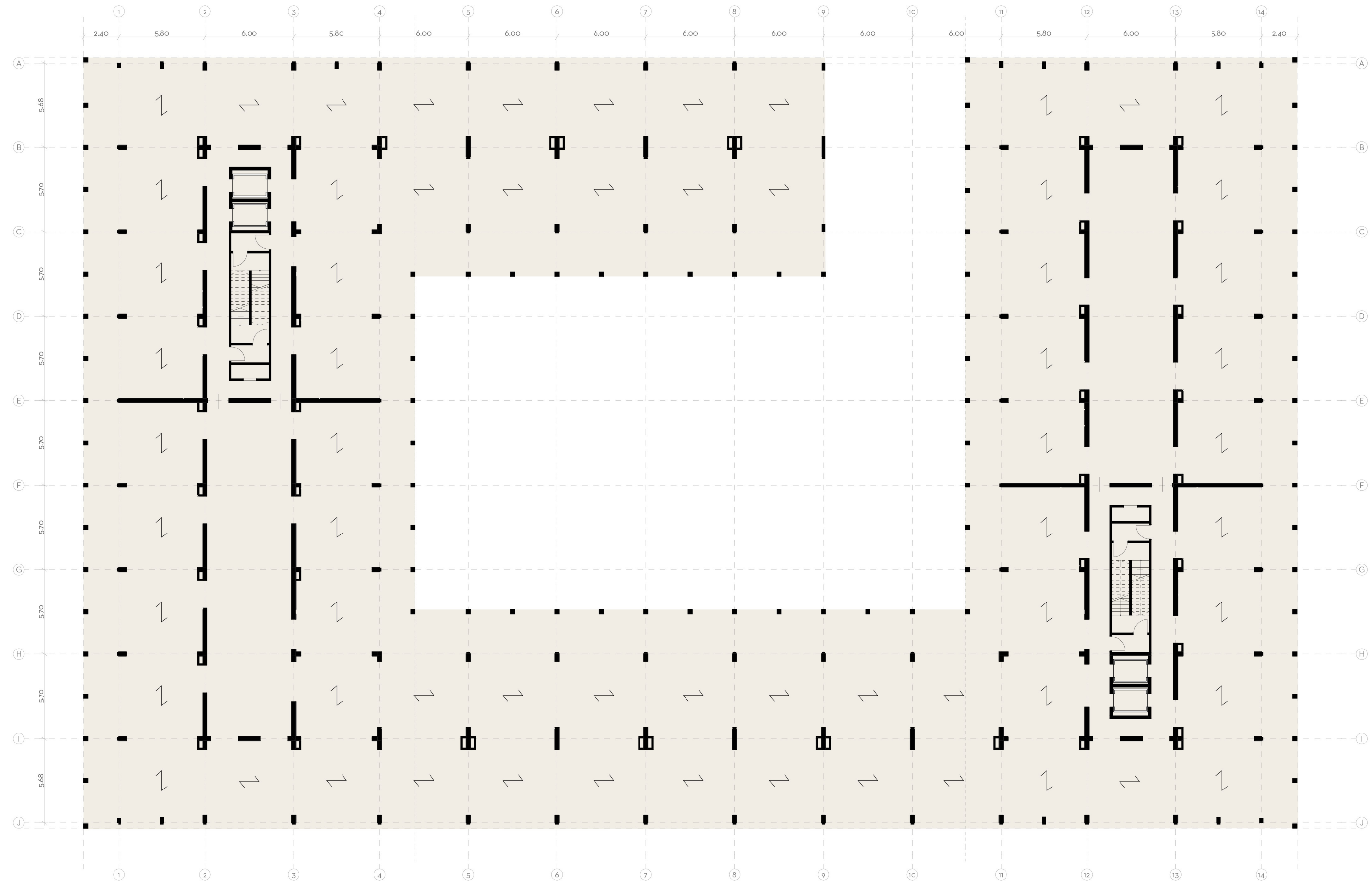
7 planting pot

8 accoya timber siding and battens

10 balustrade



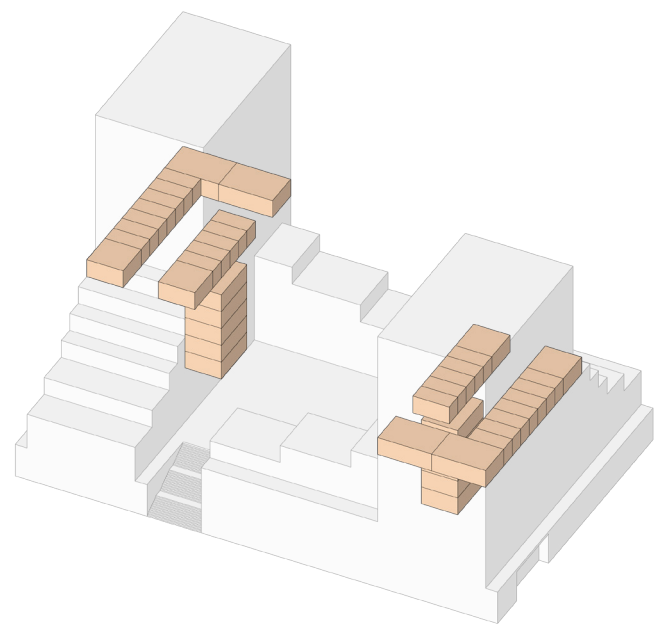








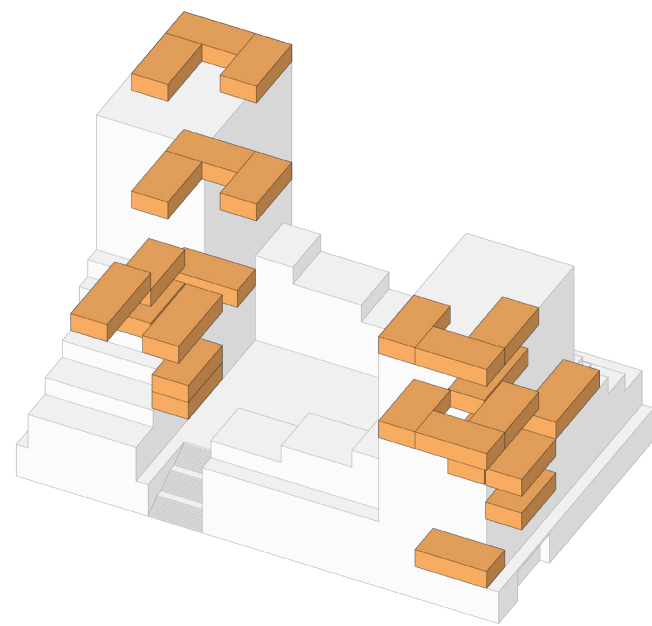
7th floor 1:250



35 -55 m² studio

10 apartments + 32 co-living units

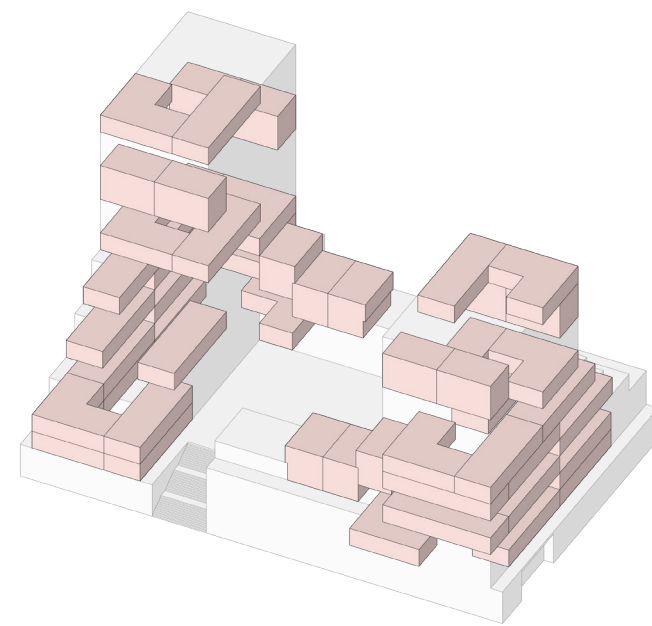
7% of all the apartments



60 - 80 m²

26 apartments

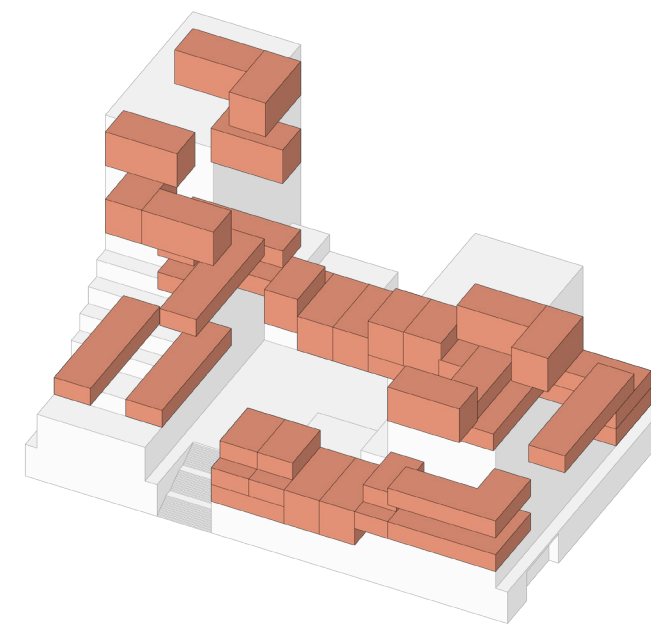
20% of all the apartments



90 - 100 m²

52 apartments

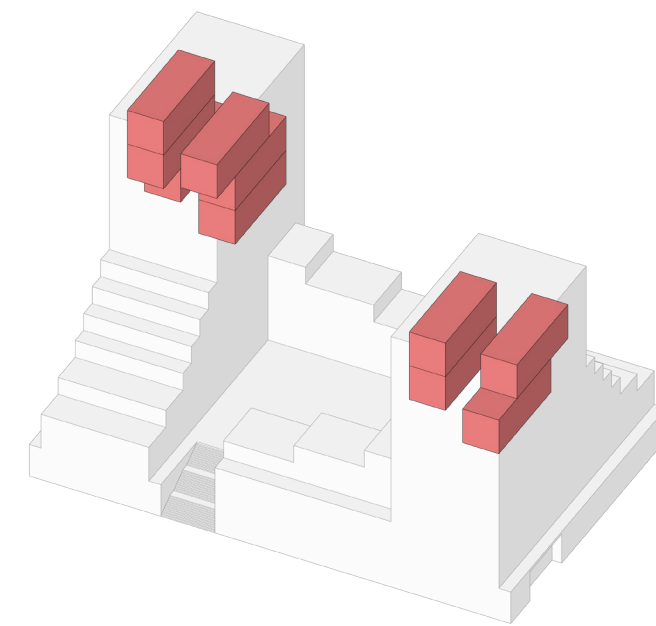
39% of all the apartments



110 -130 m²

35 apartments

26% of all the apartments



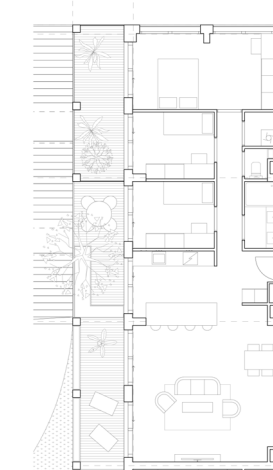
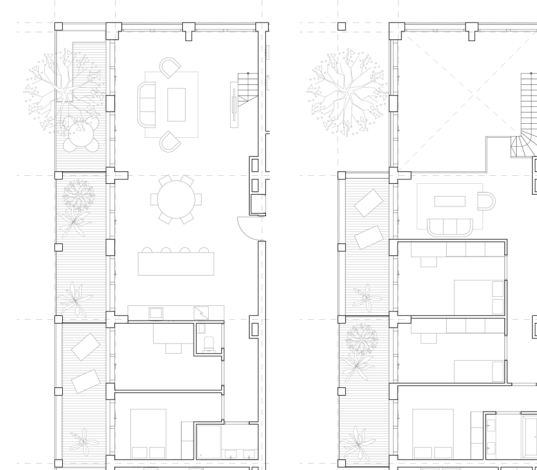
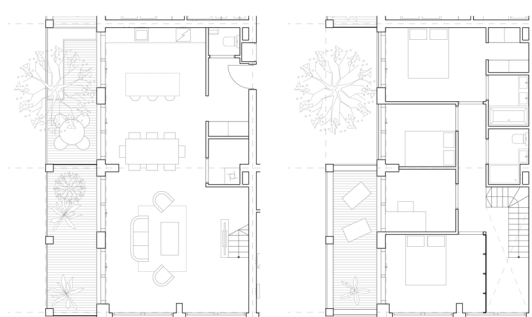
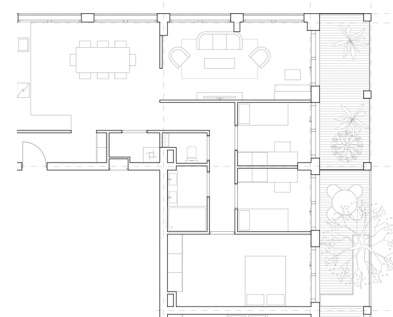
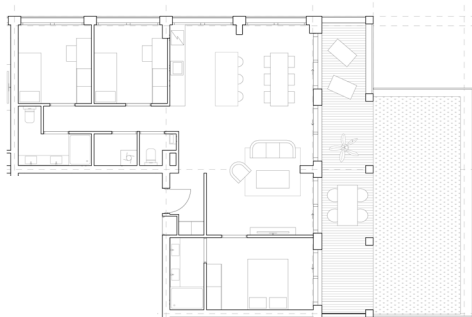
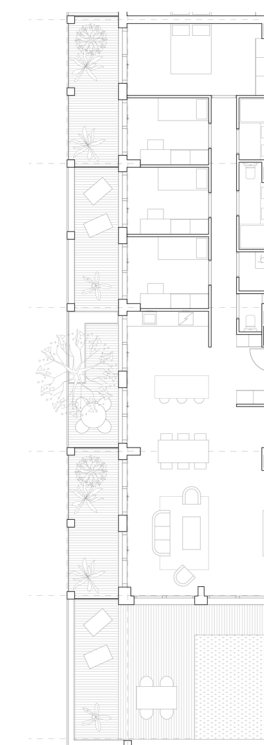
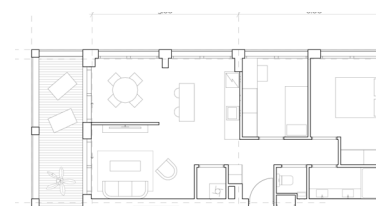
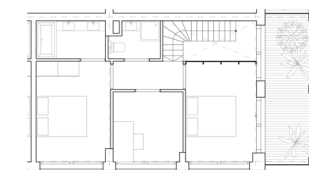
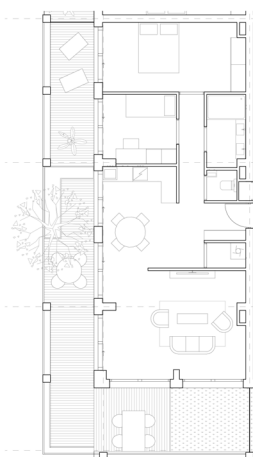
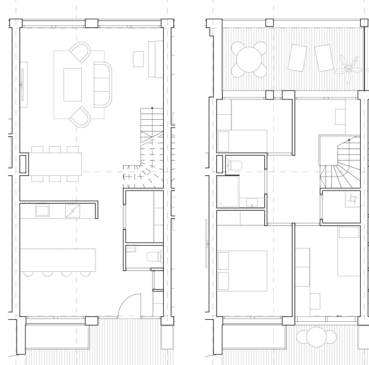
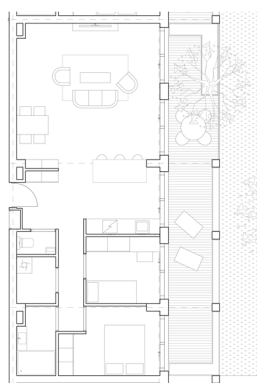
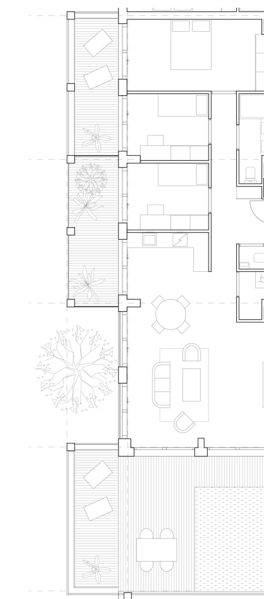
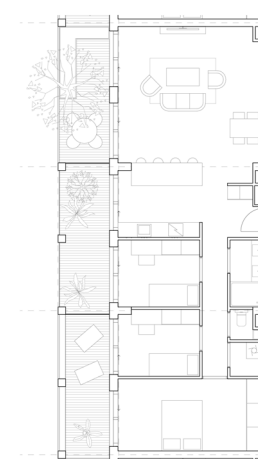
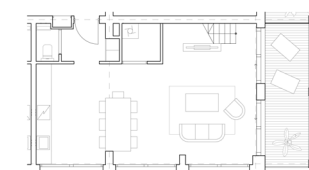
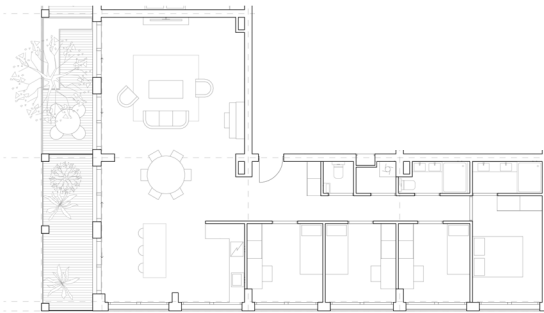
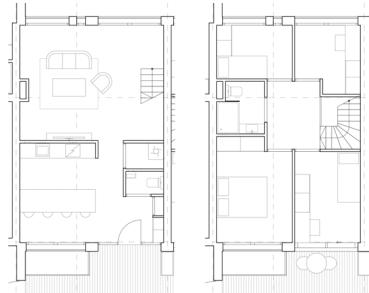
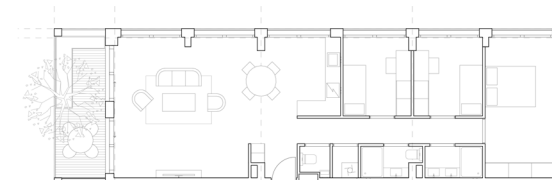
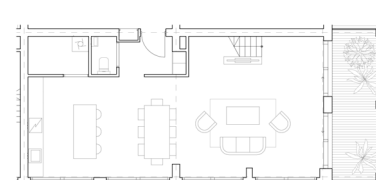
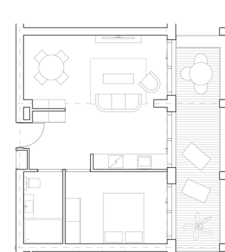
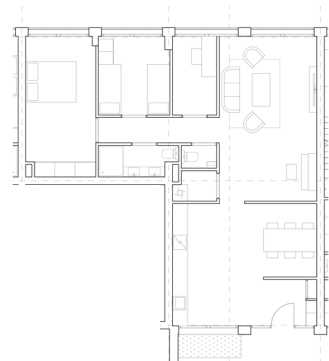
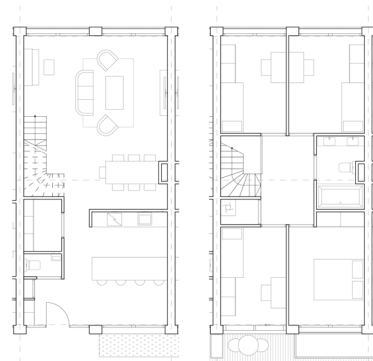
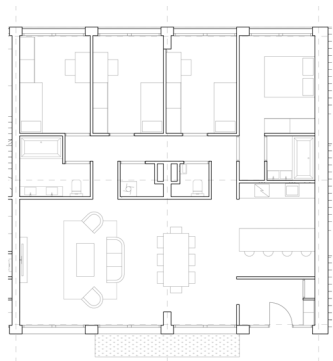
160 m²

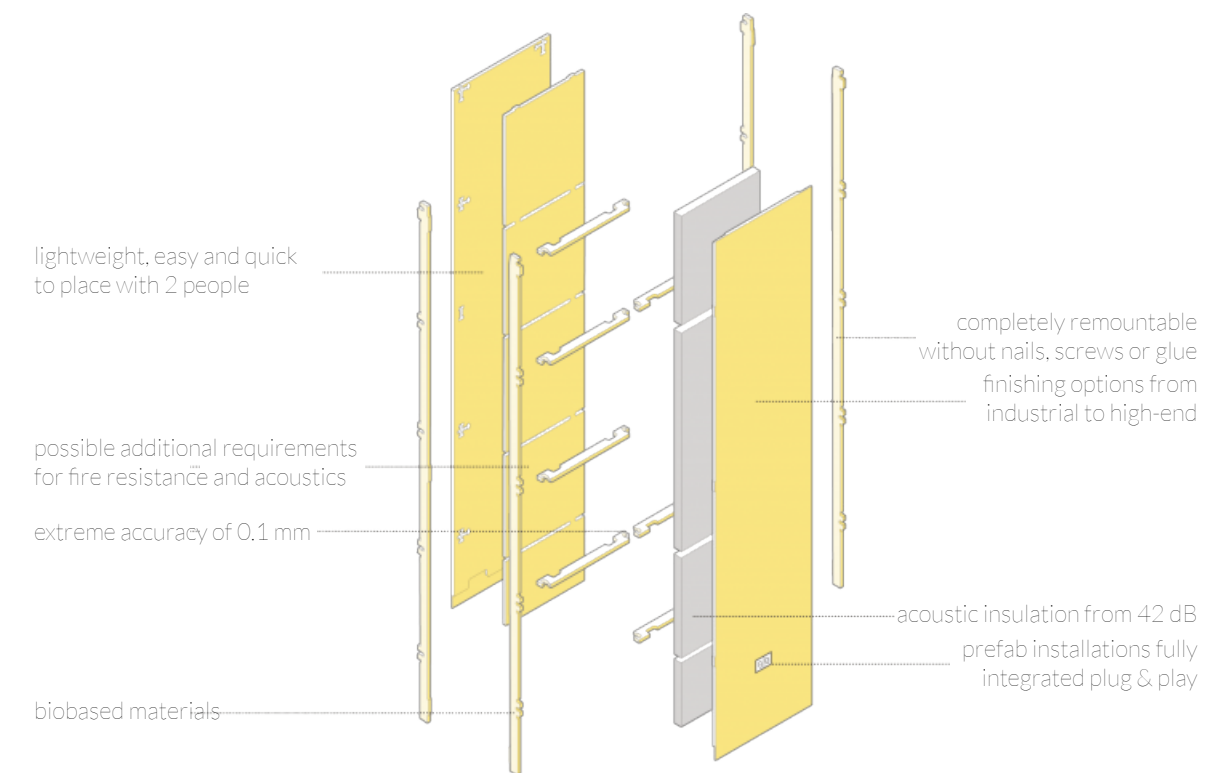
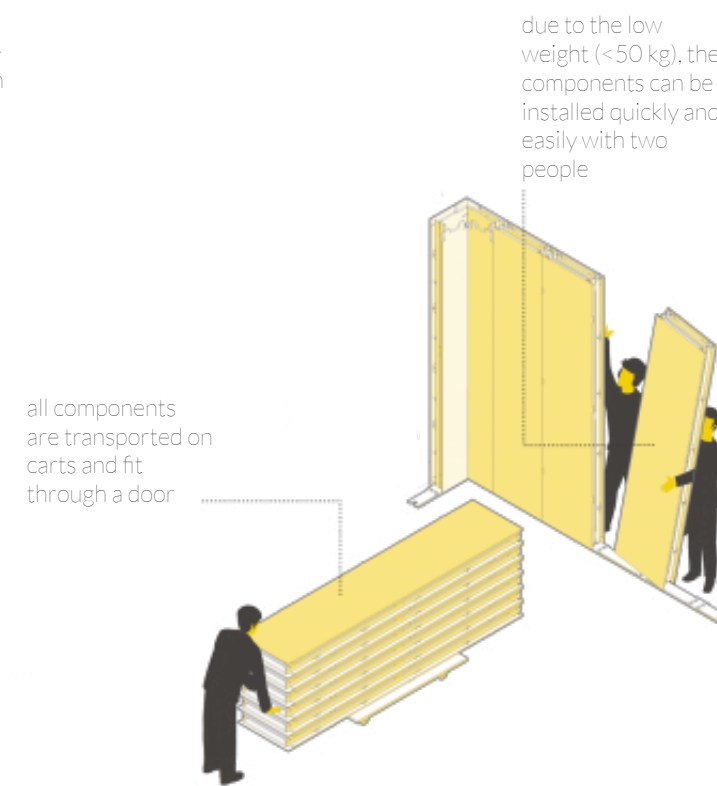
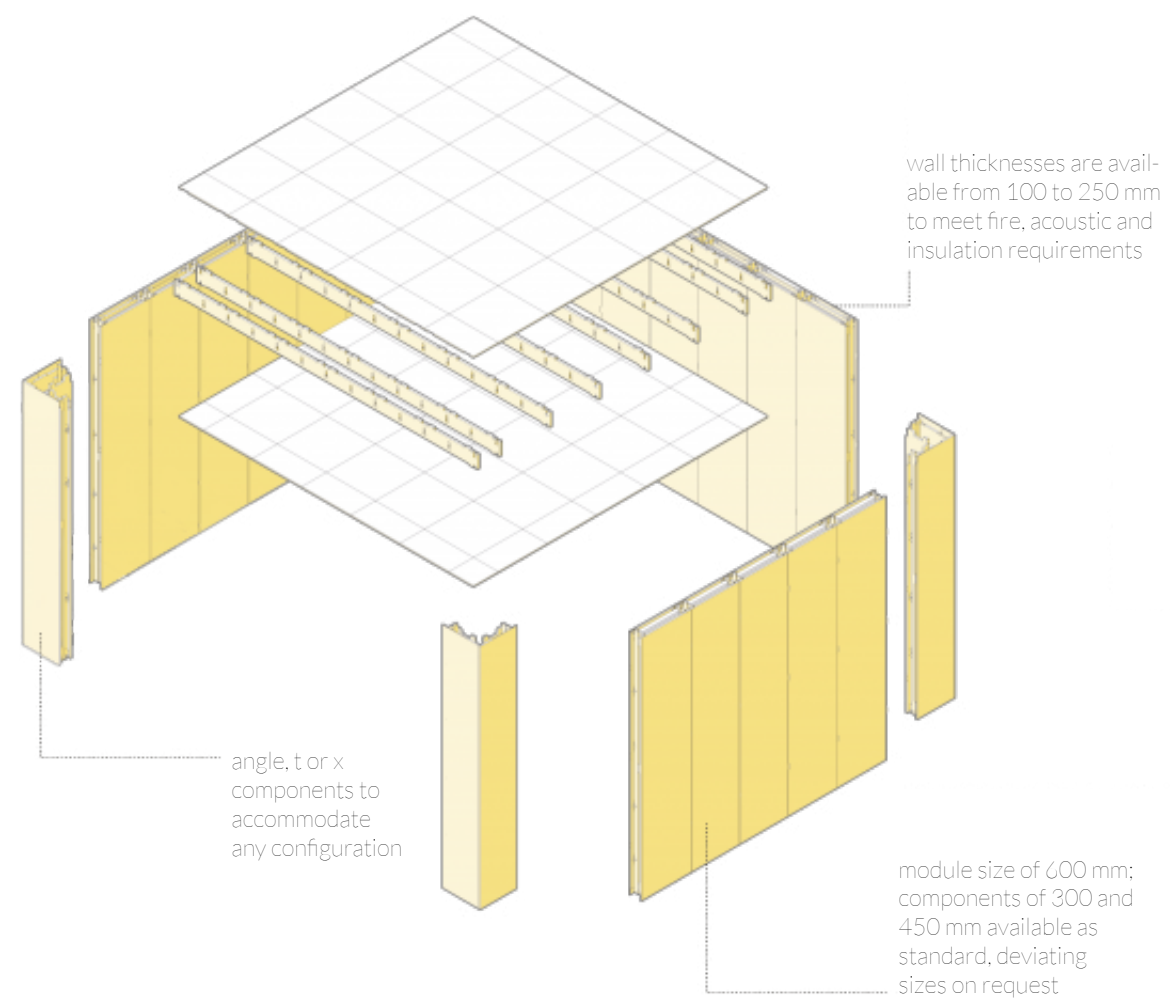
10 apartments

8% of all the apartments

Total: 133 apartments + 32 co-living units







system by: TheNewMakers (TNM) Delft





structure



possible infill: 132.8 m<sup>2</sup> 4-bedroom apartment





possible infill: 2 x 66.0 m<sup>2</sup> 2-bedroom apartments



structure





possible infill: 126.8 m<sup>2</sup> 4-bedroom apartment



possible infill: 94.0 m<sup>2</sup> 2-bedroom apartment + 32.0 m<sup>2</sup> studio





possible infill: 2 x 62.0 m<sup>2</sup> 2-bedroom apartments



structure





possible infill: 119.0 m<sup>2</sup> 4-bedroom apartment



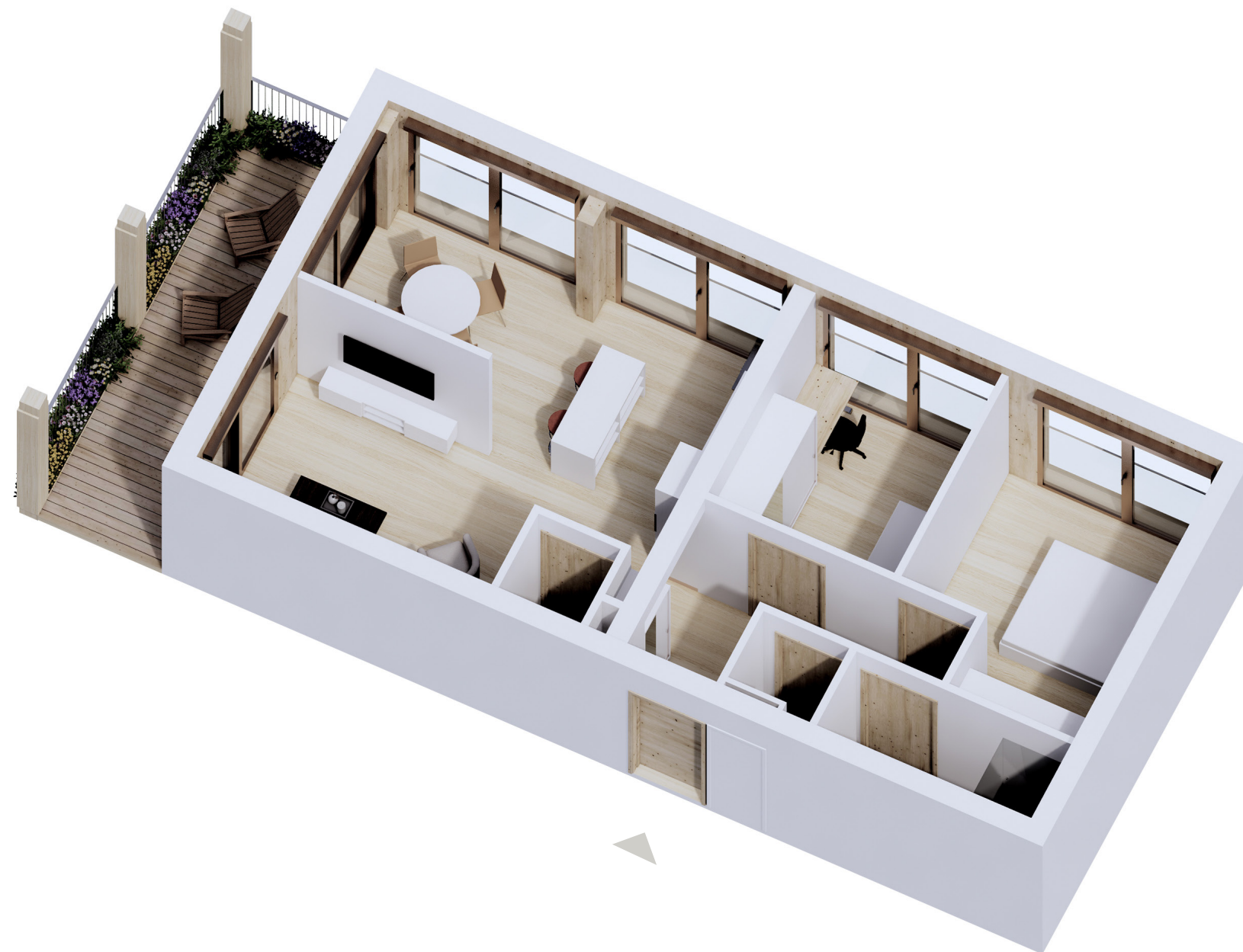


possible infill: 87.0 m<sup>2</sup> 2-bedroom apartment + 32.0 m<sup>2</sup> studio





structure



possible infill: 65.0 m<sup>2</sup> 2-bedroom apartment





possible infill: 50.0 m<sup>2</sup> studio + 15.0 m<sup>2</sup> office space



structure





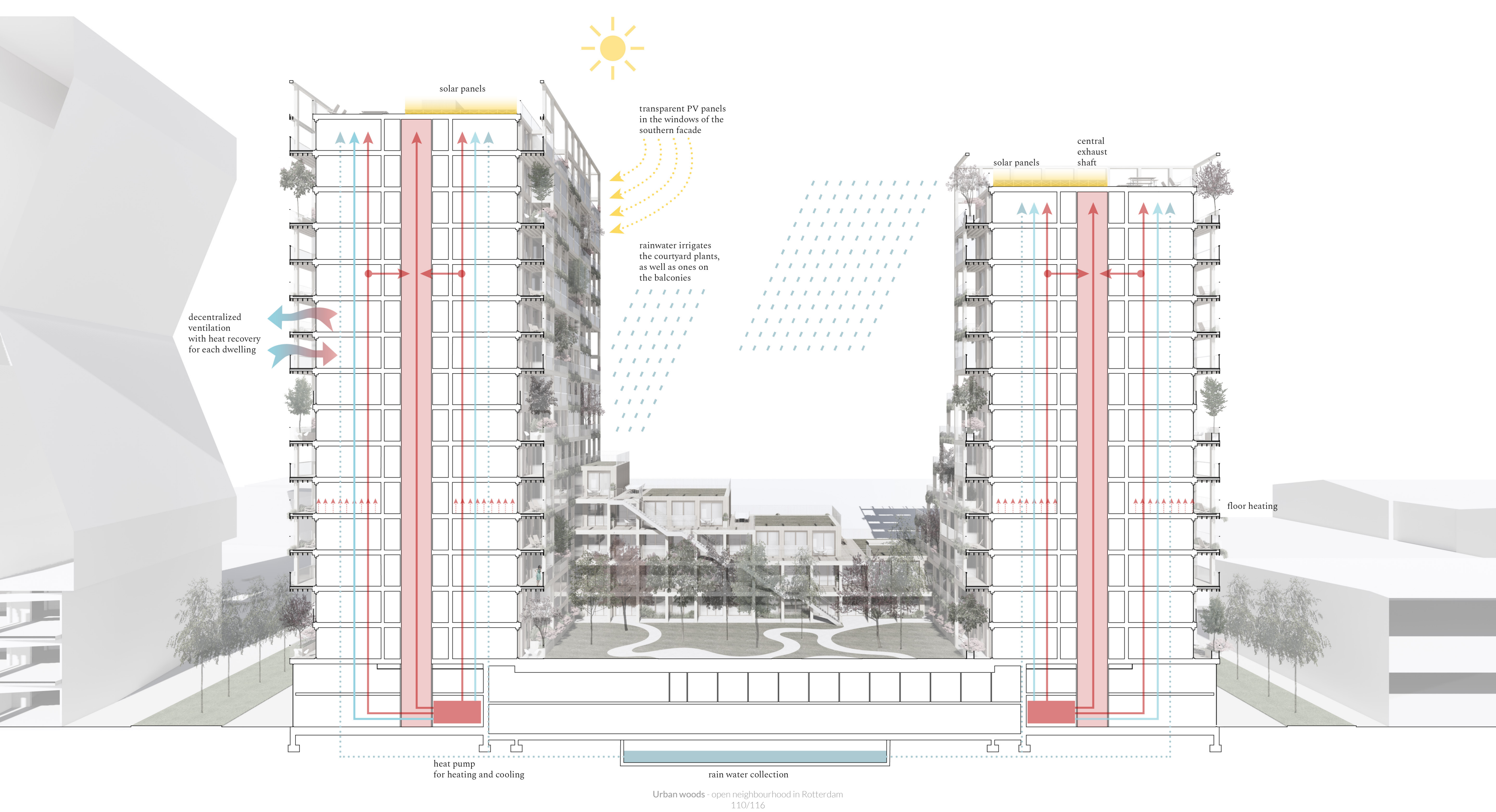
possible infill: 94.3 m<sup>2</sup> 3-bedroom apartment



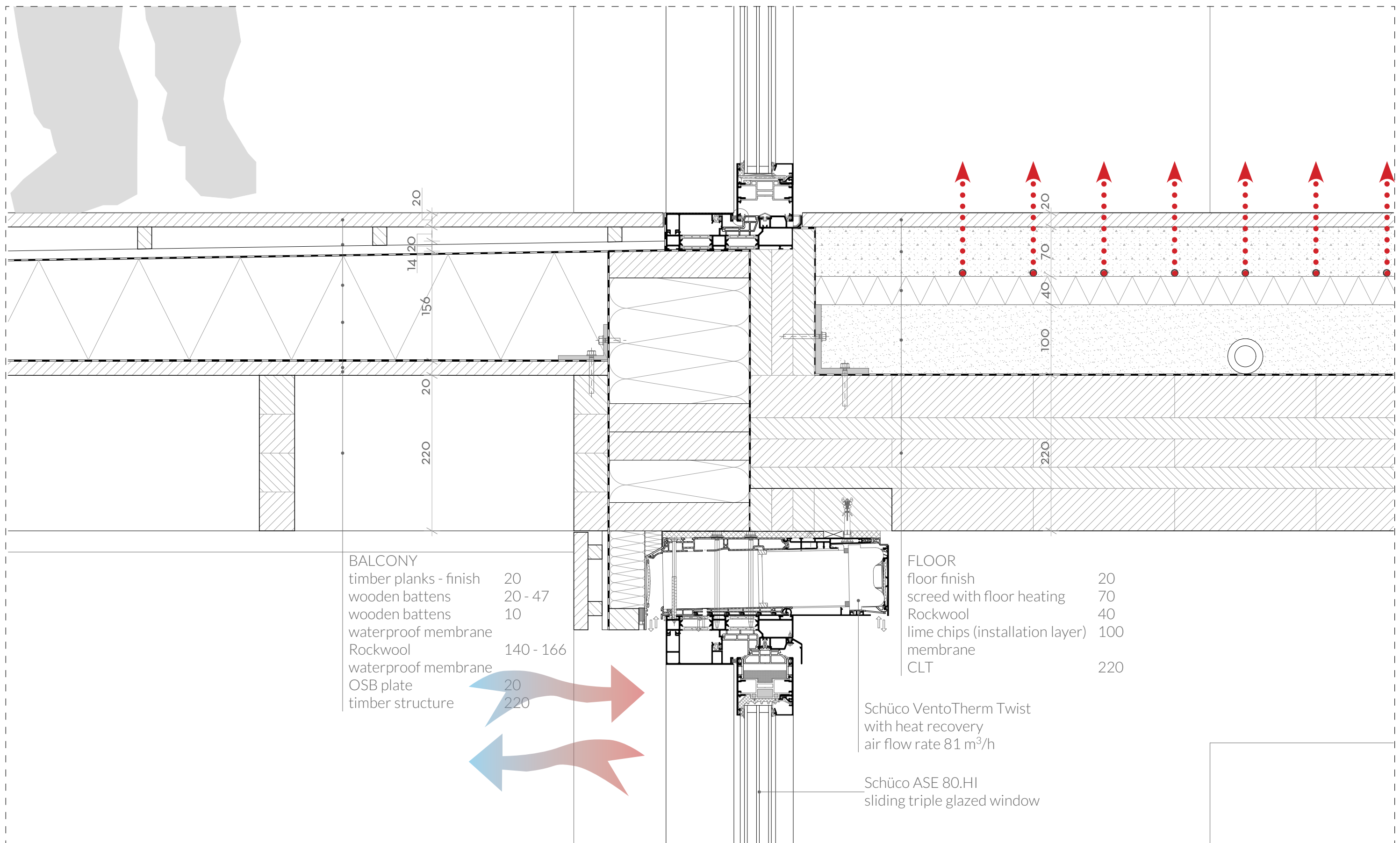
possible infill: 79.0 m<sup>2</sup> studio + 15.0 m<sup>2</sup> office space















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Urban woods - open neighbourhood in Rotterdam  
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Urban woods - open neighbourhood in Rotterdam  
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