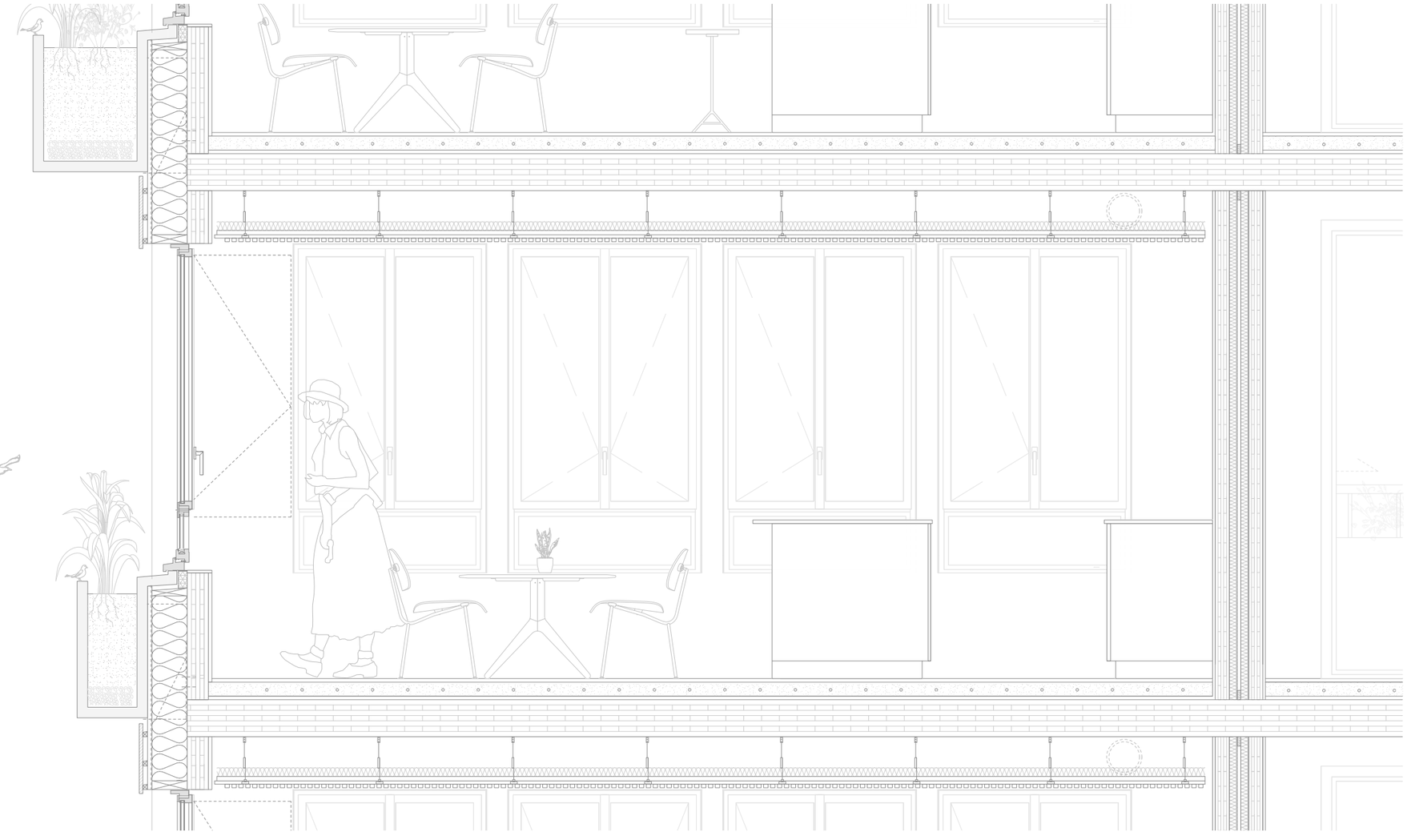
LIGHT**HOUSE**



Ásta María Þorsteinsdóttir
5620732

P5 Presentation
AR3AD100 Advanced Housing Design

Presentation structure

1 RESEARCH

2 RESEARCH TAKEAWAYS

3 URBAN STRATEGIES

4 DESIGN

Systemic gender inequality

Patriarchal power structures and gender norms, sustaining systems of oppression.

The nuclear home as a tool of repression

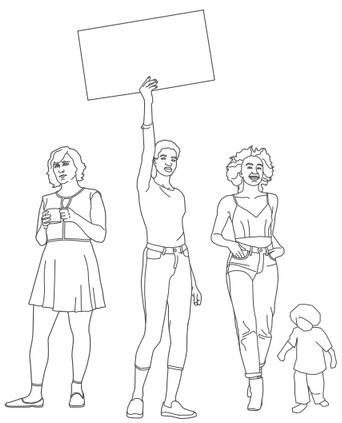
Nuclear housing hardwires **divisions in labour, gender and class** into the built fabric of our cities.

The home as a site of violence

The notion of the safe family home juxtaposed against the dangerous public sphere disregards the harsh reality of **domestic abuse**. For women in the home, privacy can also mean confinement, captivity, and isolation.

Gender equitable housing?

- Questioning the dichotomy between the productive workplace and the non productive dwelling
- Re-defining the boundaries between private and public spheres
- Facilitating the sharing of domestic labor and care work
- Connecting the notion of safety to community rather than privacy?

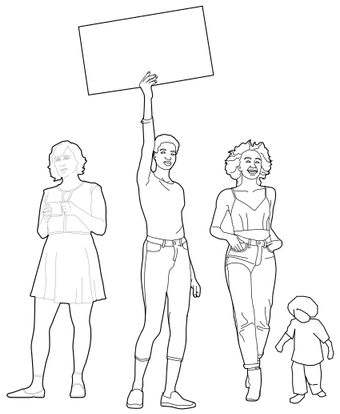


1 How do the conditions of gender inequality translate into spatial diagrams/produce gendered spaces?
In which way does this affect the gendered segregation of labor and economic inequality?

2 What are the socio-spatial and economic needs of those who survived domestic violence?
In which ways can collective living be beneficial – and what are the potential risks?

3 What kind of socio-spatial reprogramming can contribute to a gender-equitable dwelling?
Which dimensions of the co-housing model can be used to promote this?

Target group



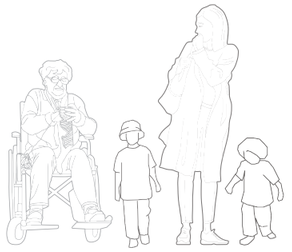
Survivors of domestic violence

Solo dwellers

Starters

Single parents

Elderly people



Extended families

User profile

Age:	**25-44 (71%)**	<25 (19%) >44 (10%)
Background:	**Migrant background (67%)**	Born in Netherlands (33%)
Employment status:	**Unemployed (83%)**	Employed (17%)
Economic status:	**Income under 1500 euro (93%)**	Income over 1500 euro (7%)

Housing options

Emergency shelter	Up to 90 days
Transitional housing	6 mo. - 2 years
Long term housing	Permanent

Socio-economic needs

Affordability

- Economic instability resulting from domestic violence often leads to long term housing instability
- Ensuring secure, affordable housing is crucial

Care

- Challening transition from a shelter to an independent home
- Many women still require help from social workers and other caretakers after finding independent housing,

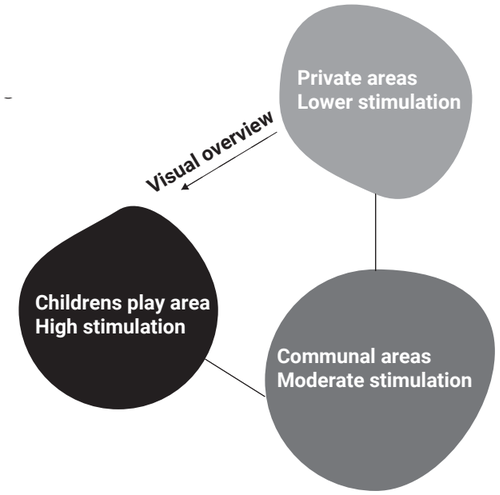
Employment / Education

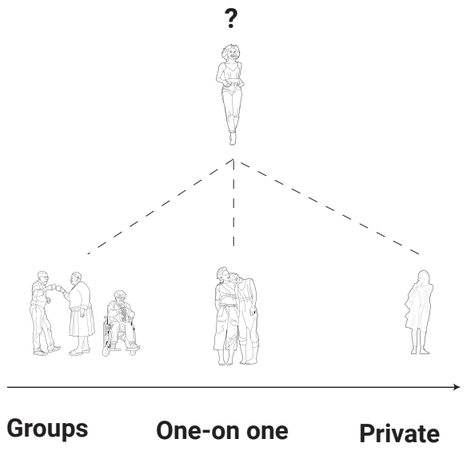
- Access to education and
- building employment skills

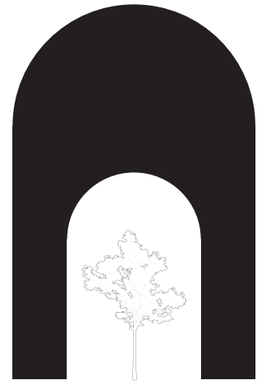
Community collaboration

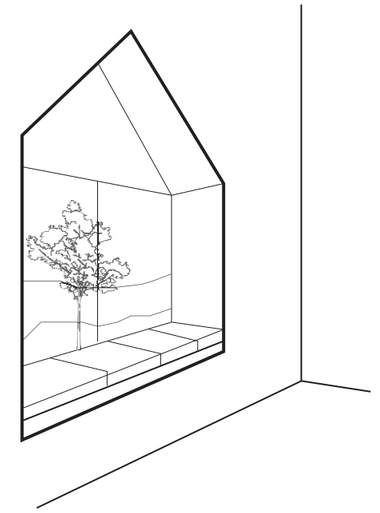
- Strong community bonds can help ensure both economic and social safety

Sources: Blijf Groep. (2021). In de Lift – Cohortstudie naar de effecten van de Oranje Huijs aanpak.
Conner, D. (2014). Financial Freedom: Women, Money, and Domestic Abuse. William & Mary Journal of Race, Gender, and Social Justice.









Stimulation

The amount of sensory information in an environment such as noise, light and smell.
-Crowding or inappropriate interpersonal distances can increase stimulation and stress levels.

Control

Control refers to the ability to either alter the physical environment or regulate exposure to one's surroundings.

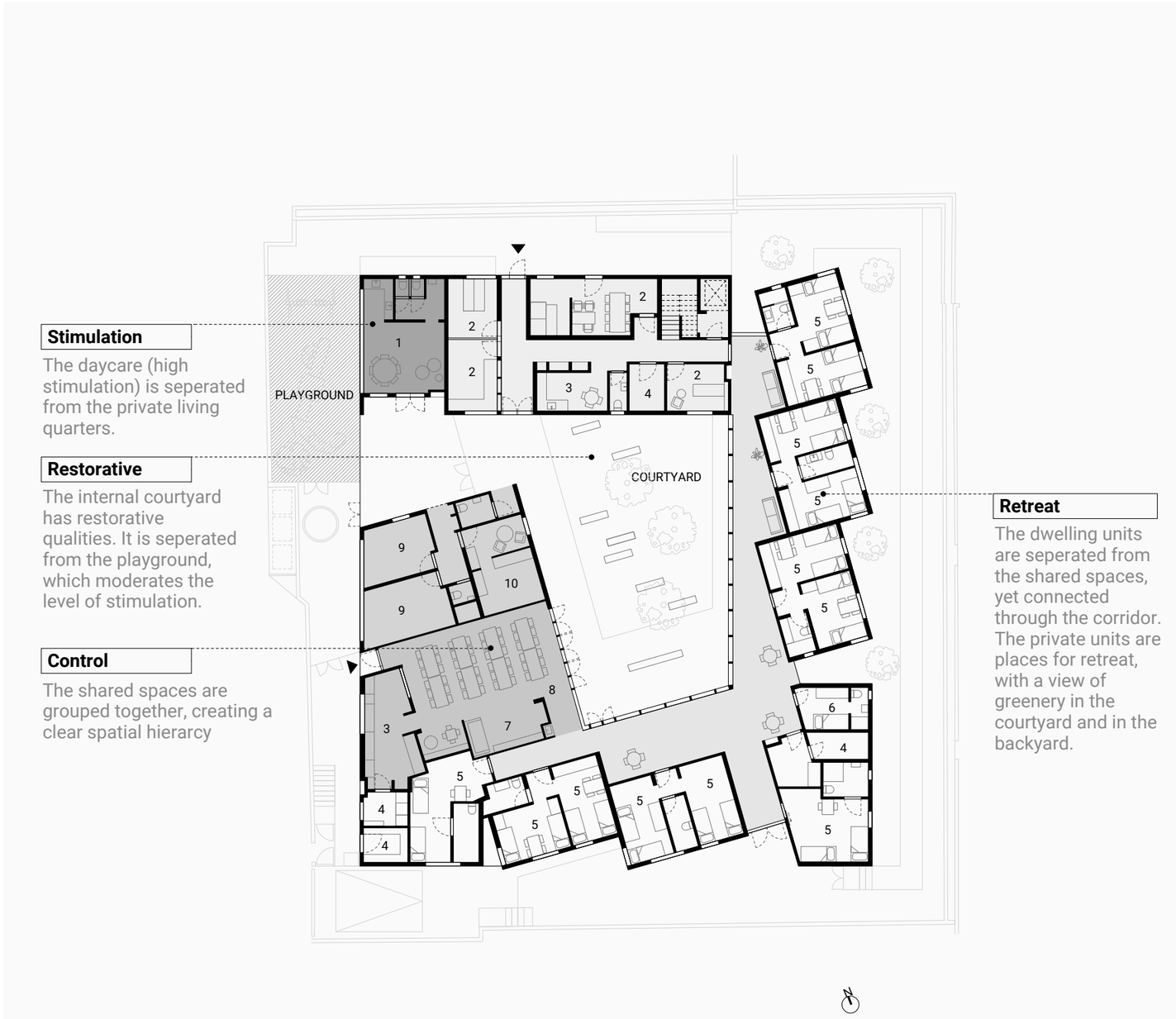
Coherence

Coherence refers to the clarity or legibility of building elements. Coherence allows users to easily identify the purpose and meaning of spaces inside buildings.

Restorative

Restorative qualities define the potential of design to function therapeutically. Restorative design elements include places of retreat, elements of fascination, and exposure to nature.

Sources: Evans, G.W., McCoy J.M. (1998). When Buildings Don't Work: The Role of Architecture in Human Health. Journal of Environmental Psychology.
Ayers. (2003). Women, environment, and healing: A battered women's shelter.



Stimulation

The daycare (high stimulation) is seperated from the private living quarters.

Restorative

The internal courtyard has restorative qualities. It is seperated from the playground, which moderates the level of stimulation.

Control

The shared spaces are grouped together, creating a clear spatial hierarcy

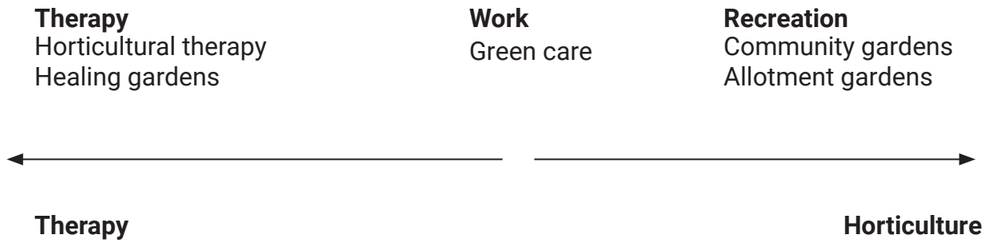
Retreat

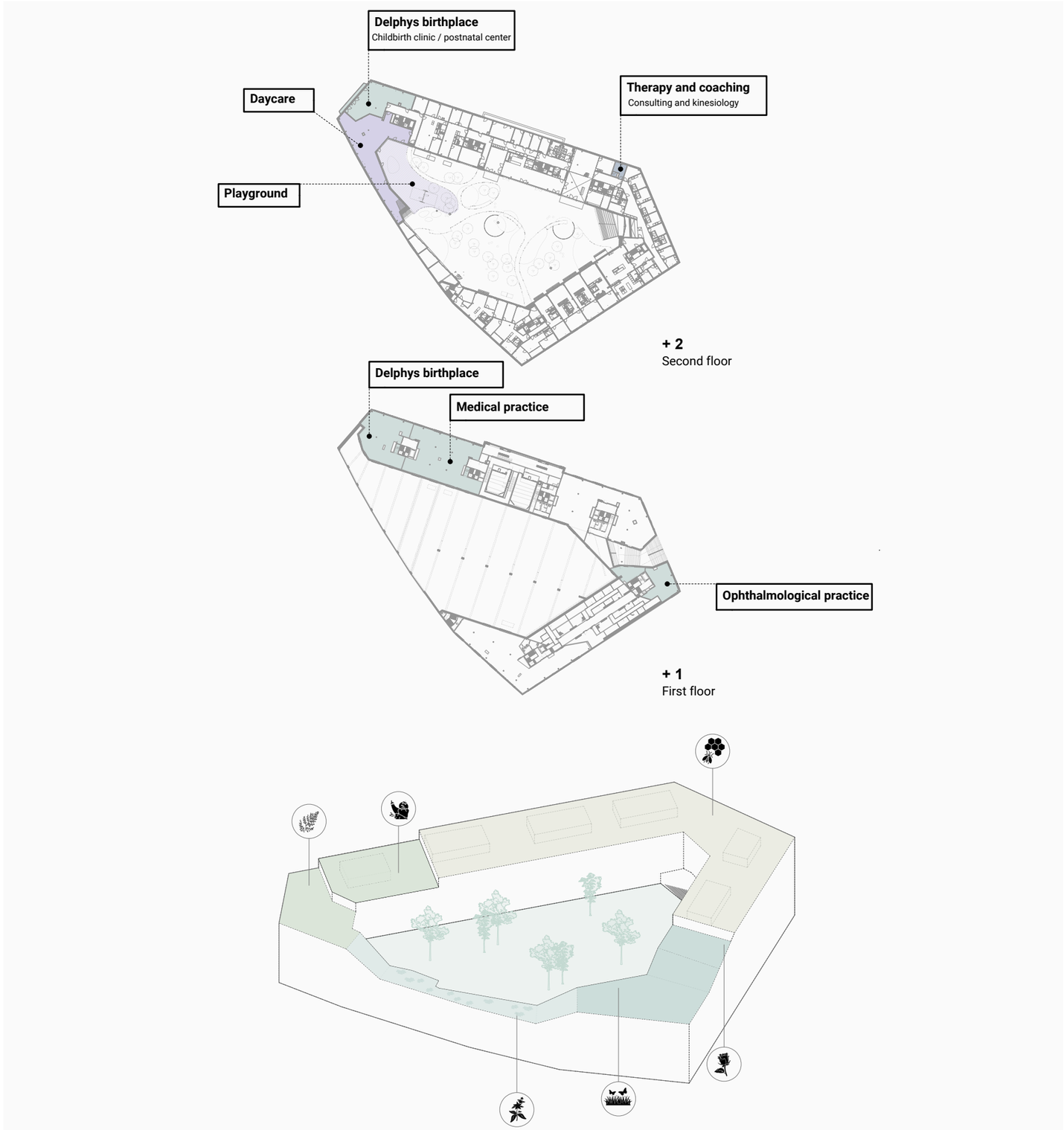
The dwelling units are seperated from the shared spaces, yet connected through the corridor. The private units are places for retreat, with a view of greenery in the courtyard and in the backyard.

Ada & Tamar House

Location: Tel Aviv
Year: 2018
Architects: Amos Goldreich archtiects

	Type of farms	Therapeutic qualities	Productive aspects
Therapeutic setting	**Healing gardens**	Healing gardens are designed to support healing processes and recovery of stress. Working or walking in these gardens can serve as means of rehabilitation.	The aim is to reach therapeutic goals - agricultural production is not important
Work setting	**Green care farms**	Meaningfull activities organized in a stress free enviroment can have educational an therapeutic qualities for diverse target groups.	On a Green Care farm, working with plants is a commercial activity. Clients take part in the production process - the quality and quantity of the crop are important.
Recreational setting	**Community / Allotment garden**	These can have indirect therapeutic effects, and can stimulate social cohesion.	The production is often focused on self-substinence. Recreation and productivity hold equal importance.





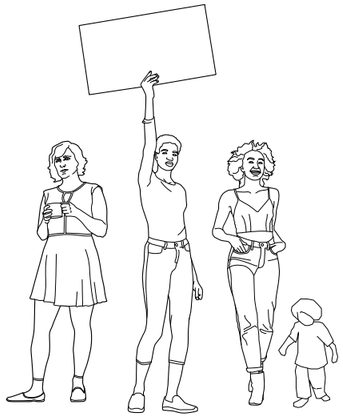
Kalkbreite

Location: Zurich
Year: 2014
Architects: Muller Sigrist Architecten

Haus A

Location: Zurich
Year: 2015
Architects: Duplex Architecten

Target group



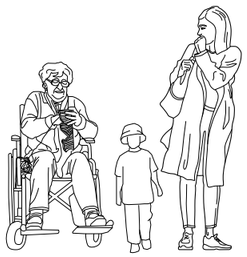
Survivors of domestic violence

Solo dwellers

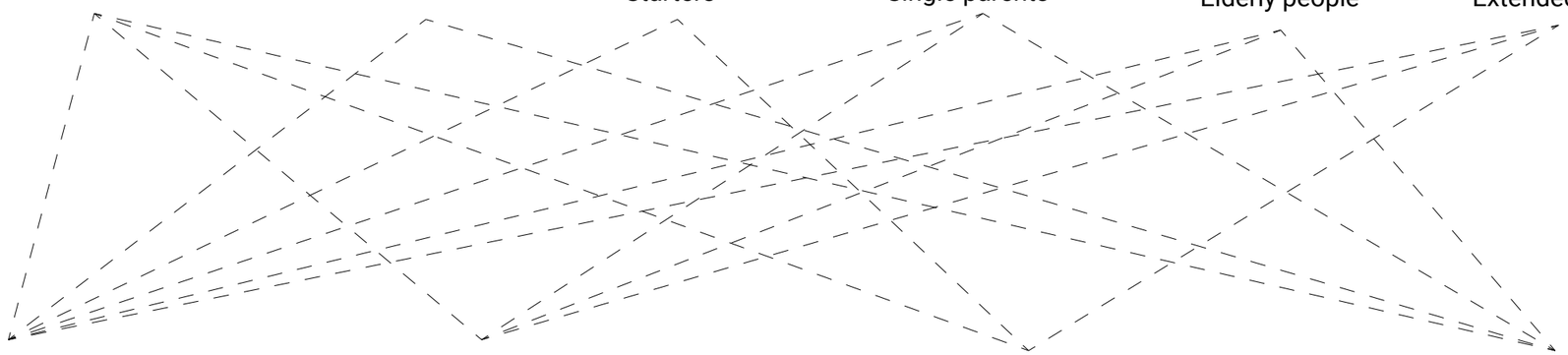
Starters

Single parents

Elderly people



Extended families



Socio-economic needs	Affordability	Care	Employment / Education	Community collaboration
Program & tenure	**Cooperative tenure** (Middle income) **Subsidized rent** (Lower income)	Childcare Care for elderly people Mental health care Medical health care	Employment opportunities Job finding services Education	Communal spaces Community gardening Collectivization of domestic work

Target group

Survivors of domestic violence

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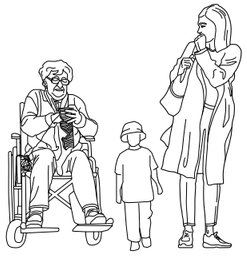
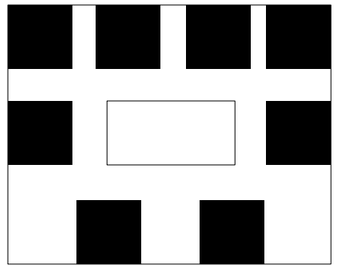
Elderly people



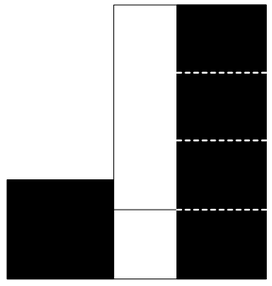
Extended families

Dwelling typology



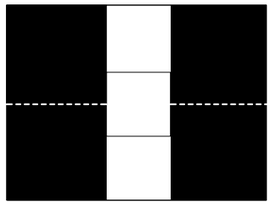
Cluster dwellings

Dwelling unit: 30 m2



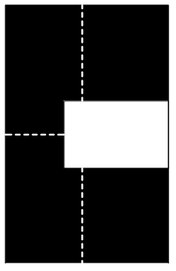
Intergenerational housing

Dwelling unit: 40-65 m2



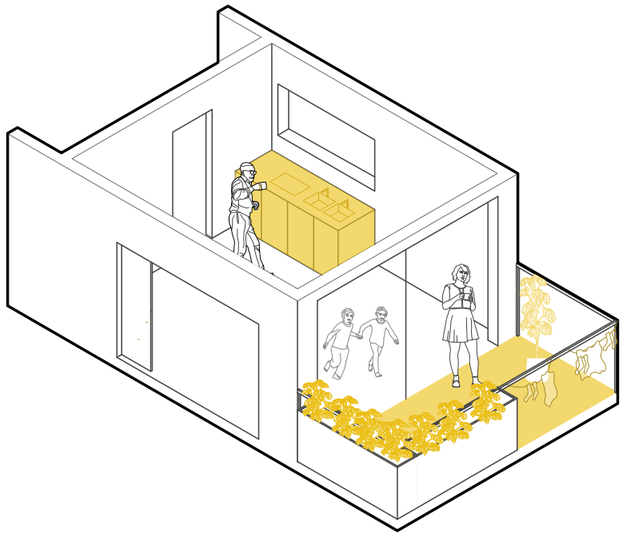
Interconnected family flats

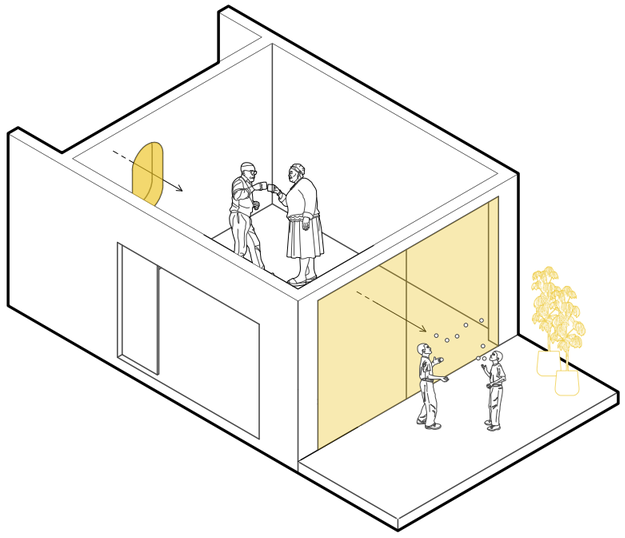
Dwelling unit: 70-80 m2

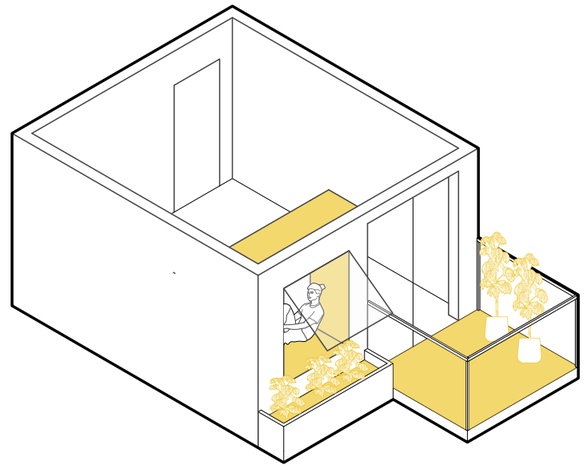


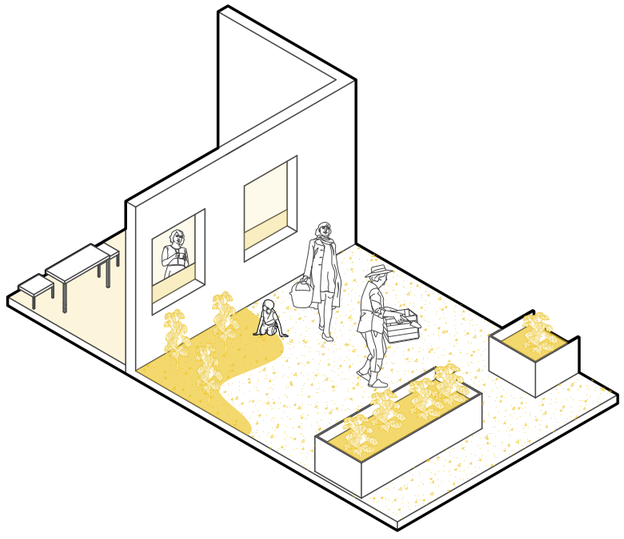
The nest

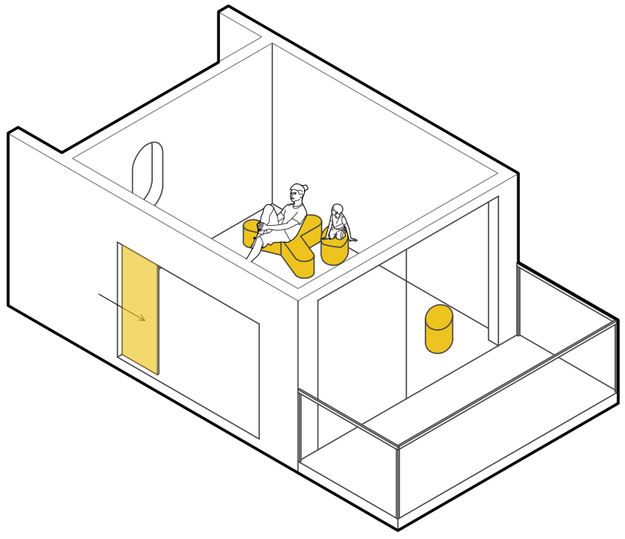
Dwelling unit: 45-60 m2

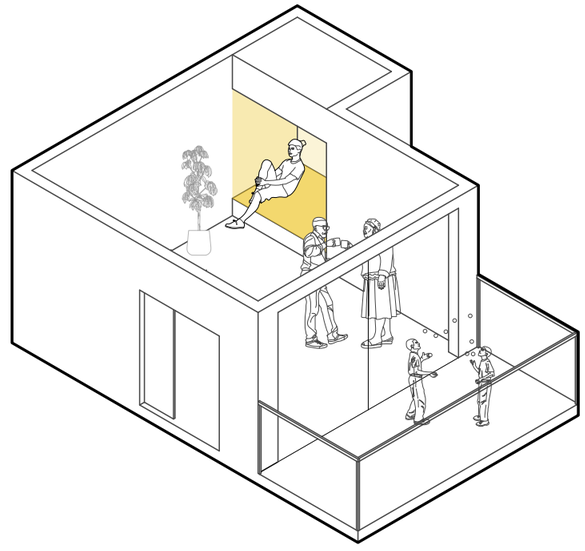


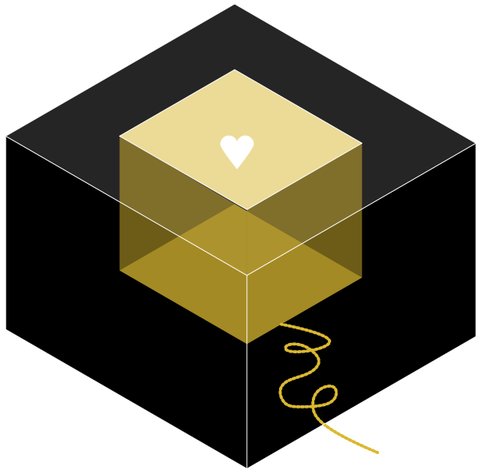




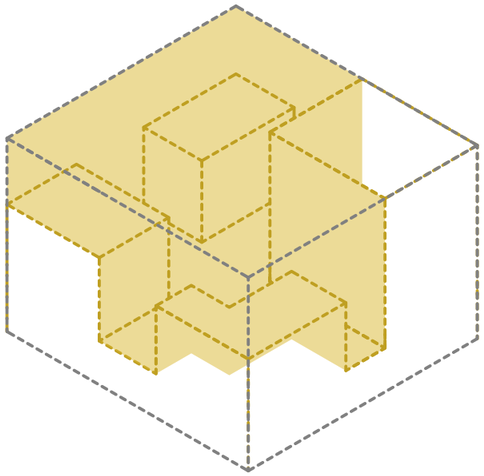




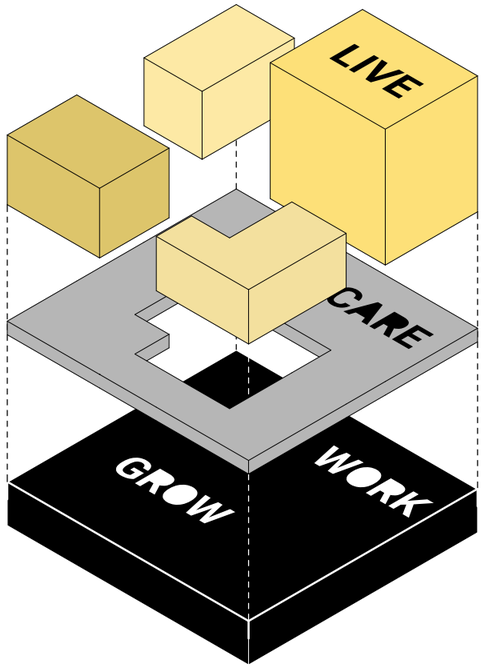




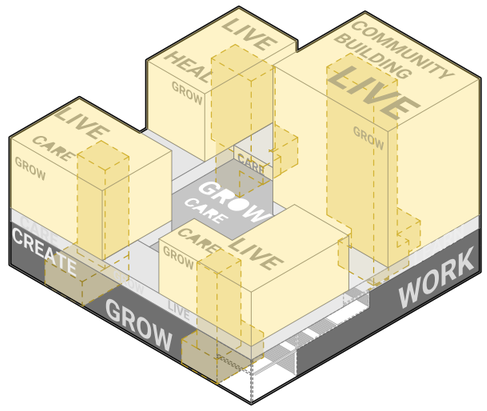
Protective exterior / Soft interior



Breaking down the mass

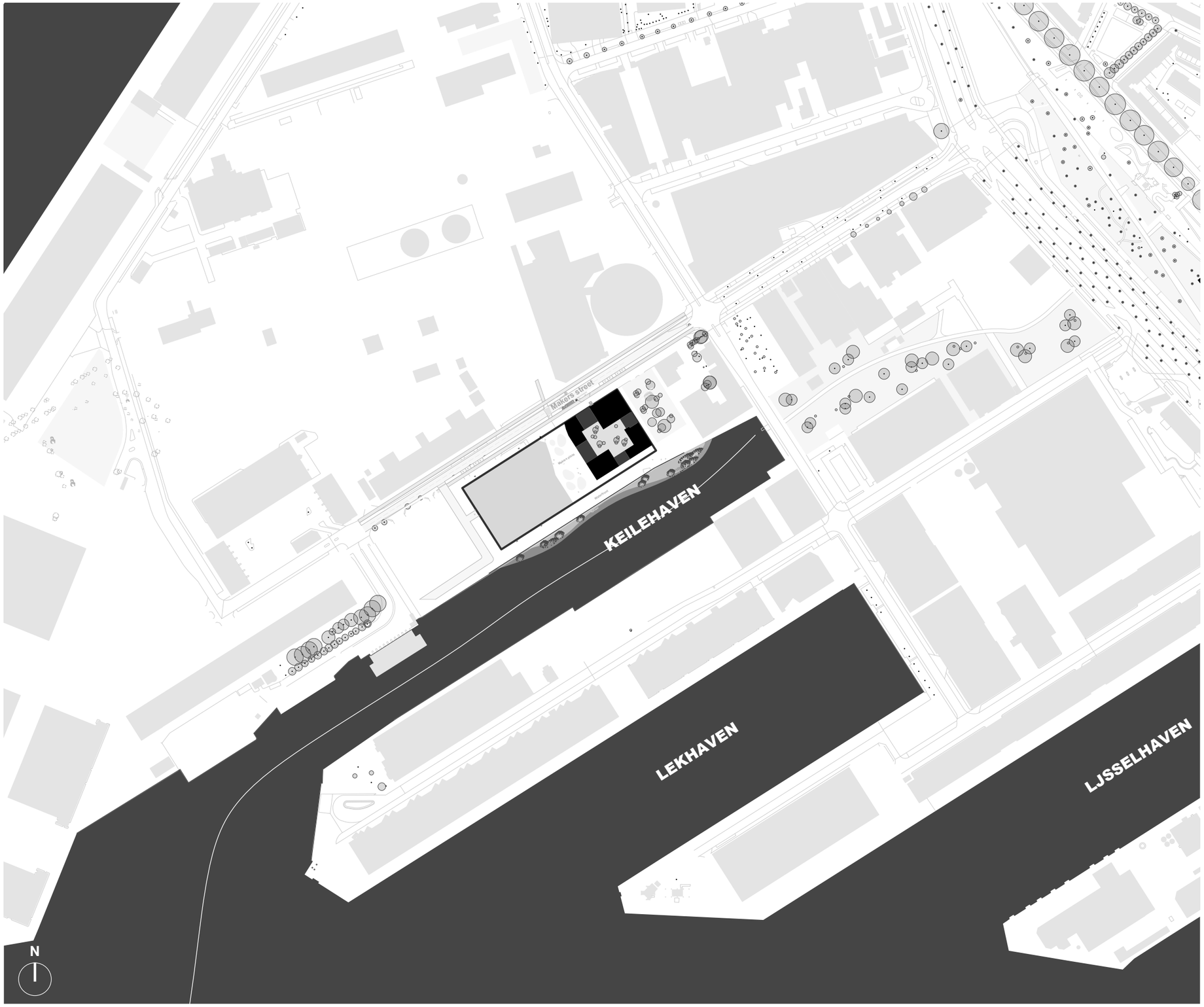


Program: Live, work, care



Integrating work, care and housing in one living environment

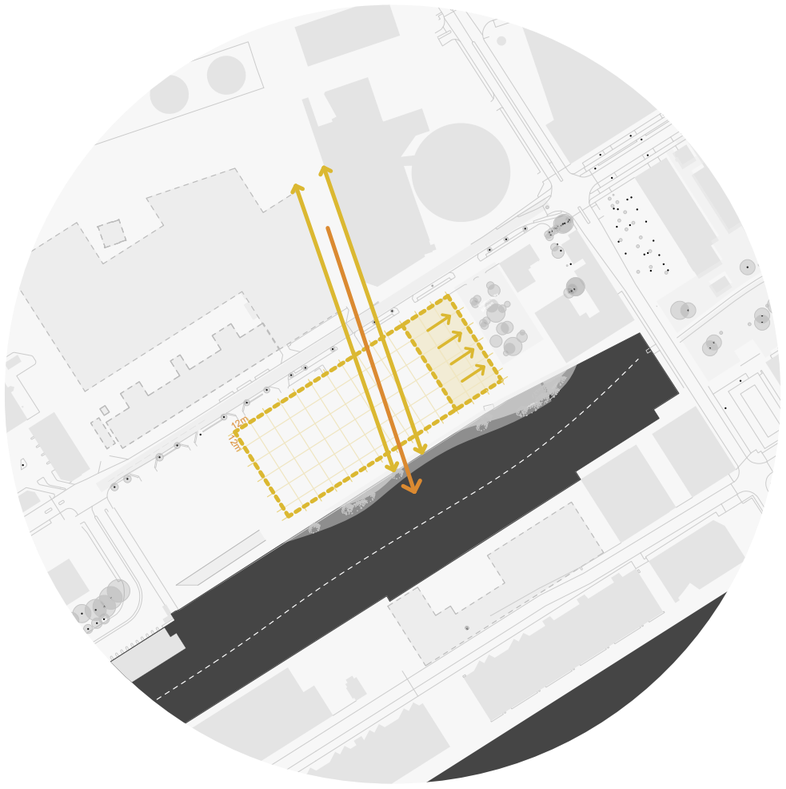
Site location | M4H area, Rotterdam



Program synergy

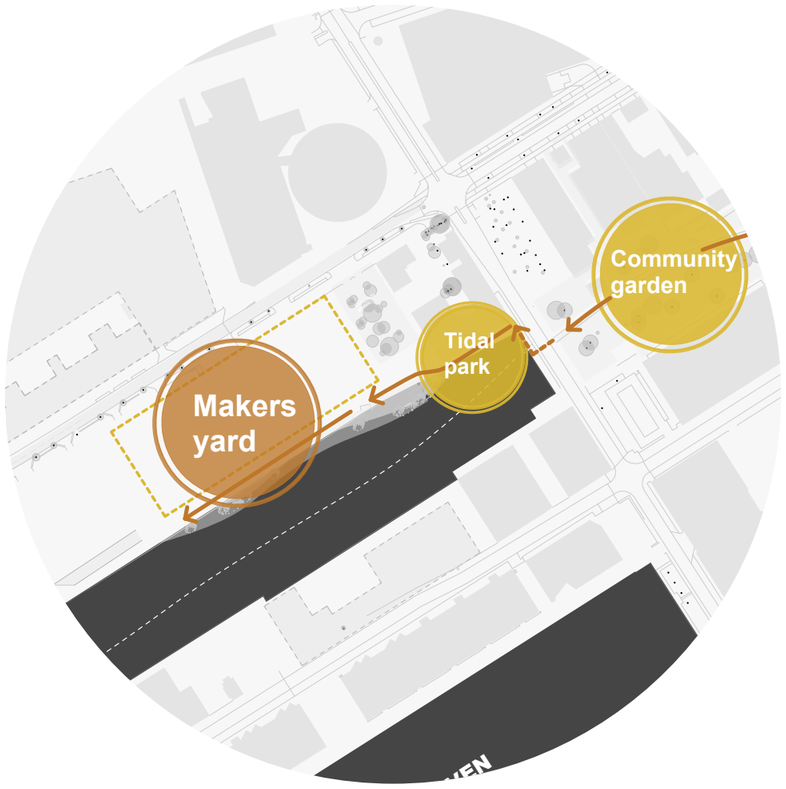
Social mix

Stepping stone



Grid

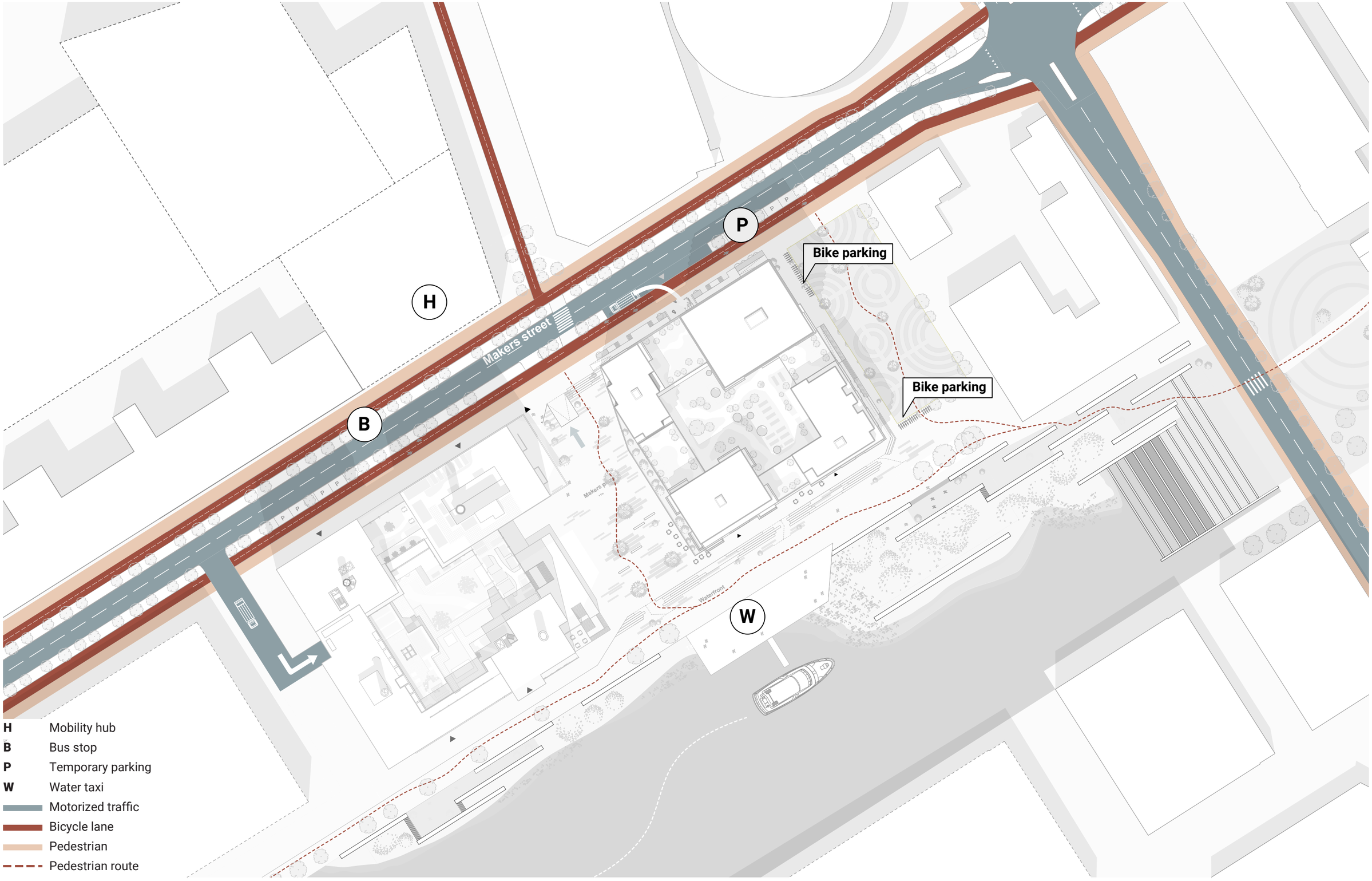
S M L



Urban connections

N

Urban masterplan | 1:1000


P
Bike parking
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Makers street
Bike parking
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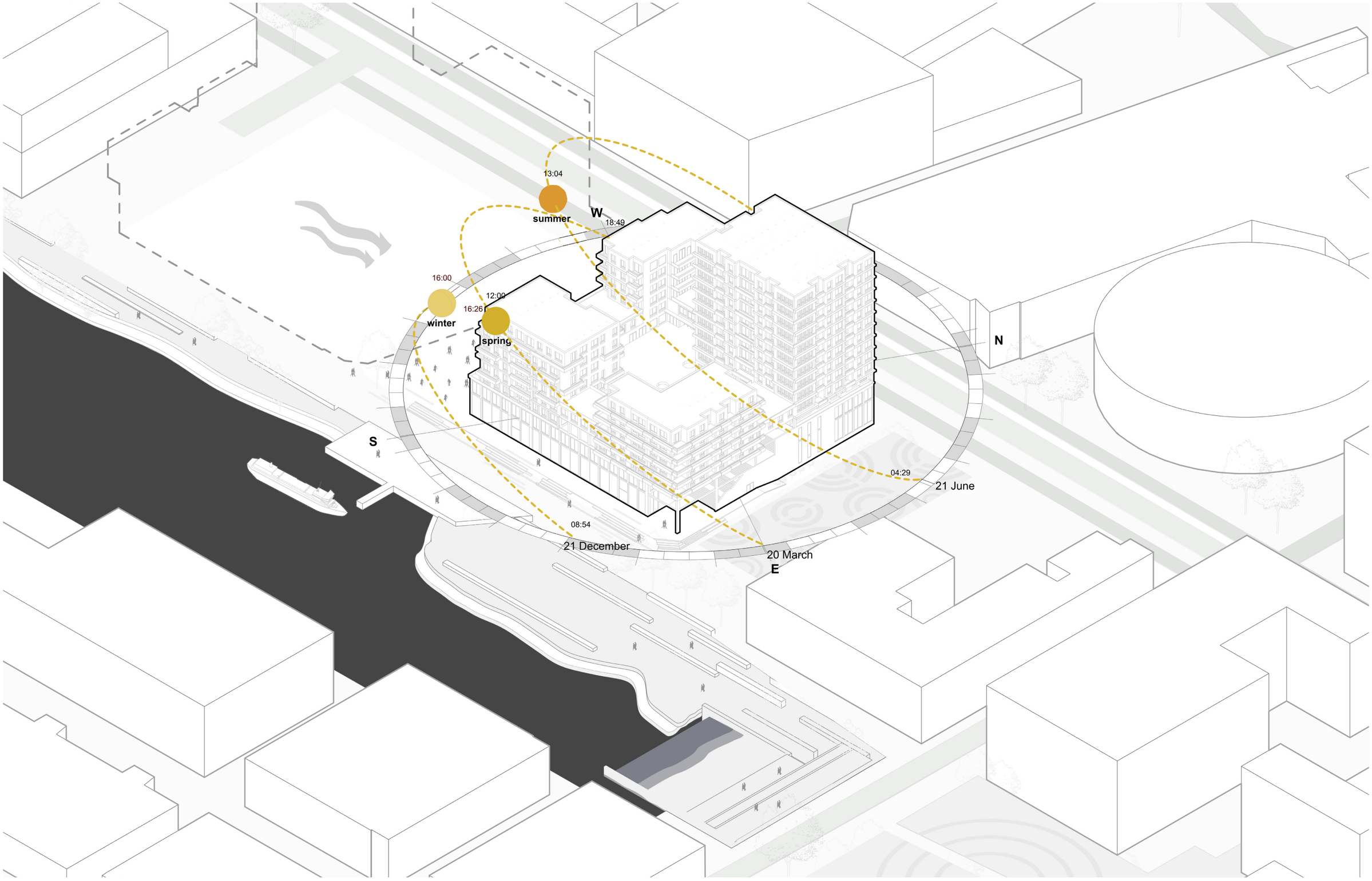
Waterfront
W
H Mobility hub
B Bus stop
P Temporary parking
W Water taxi
Motorized traffic
Bicycle lane
Pedestrian
Pedestrian route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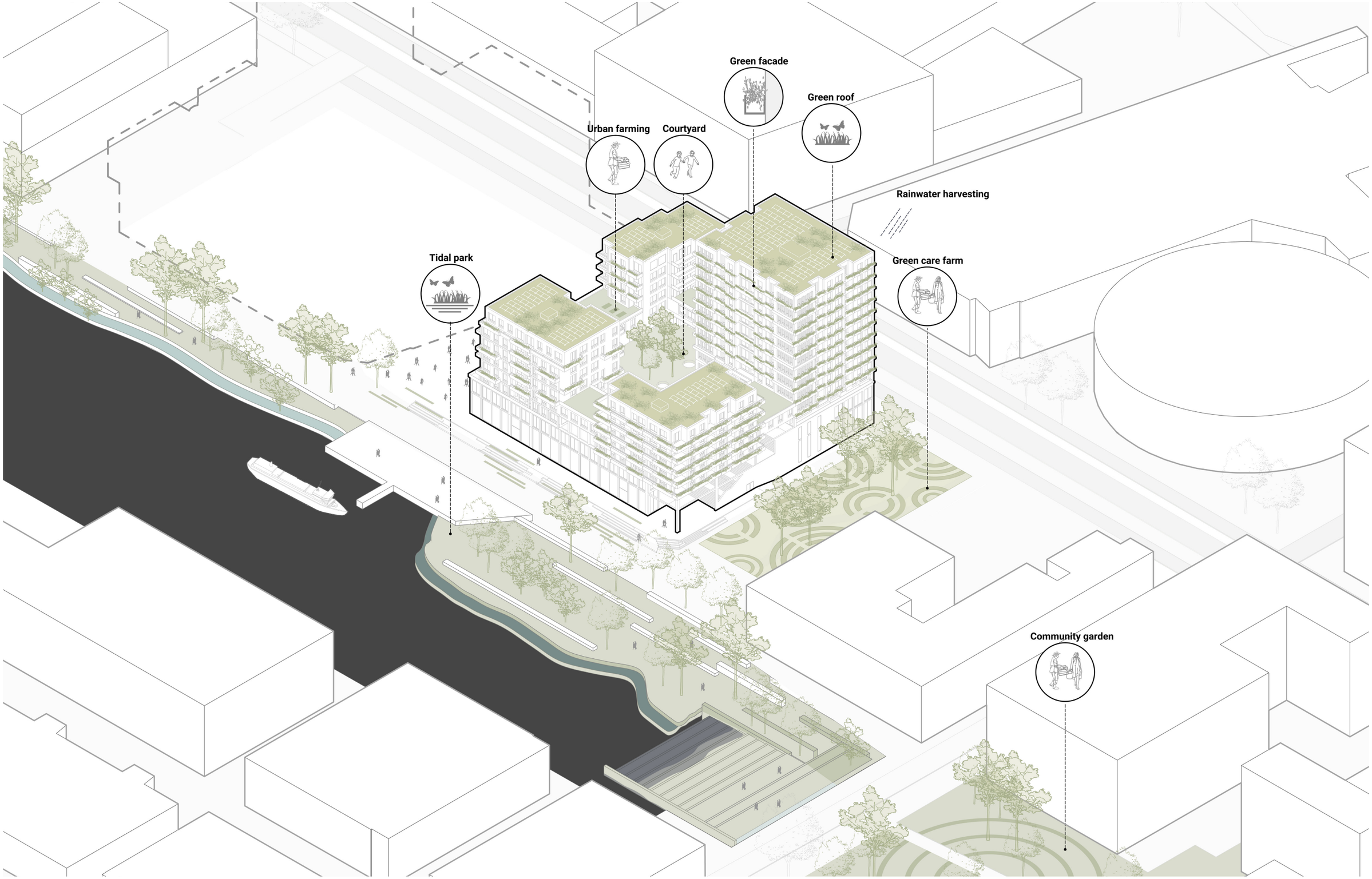
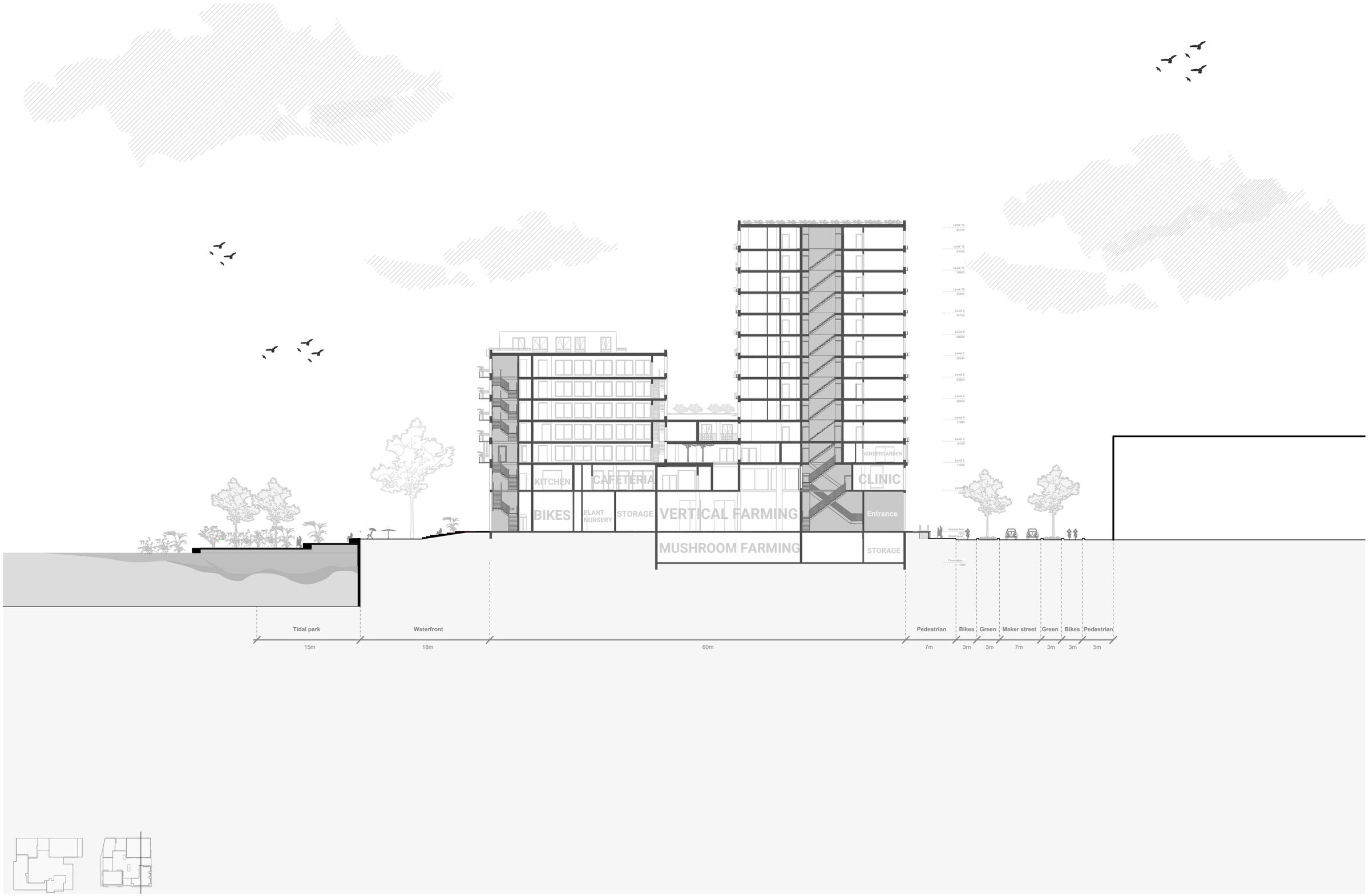
Urban masterplan I Greenery & Urban farming / Biodiversity

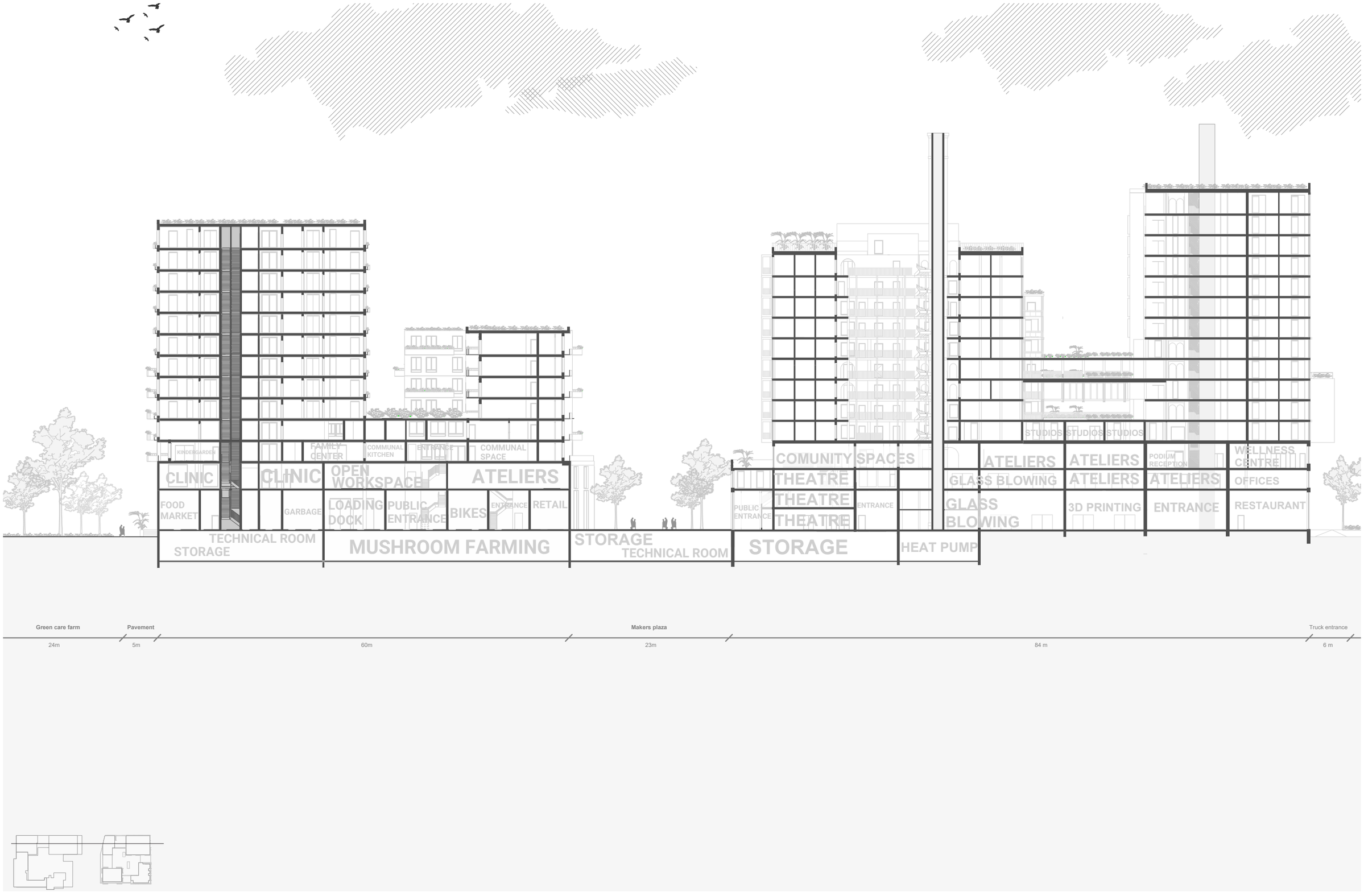


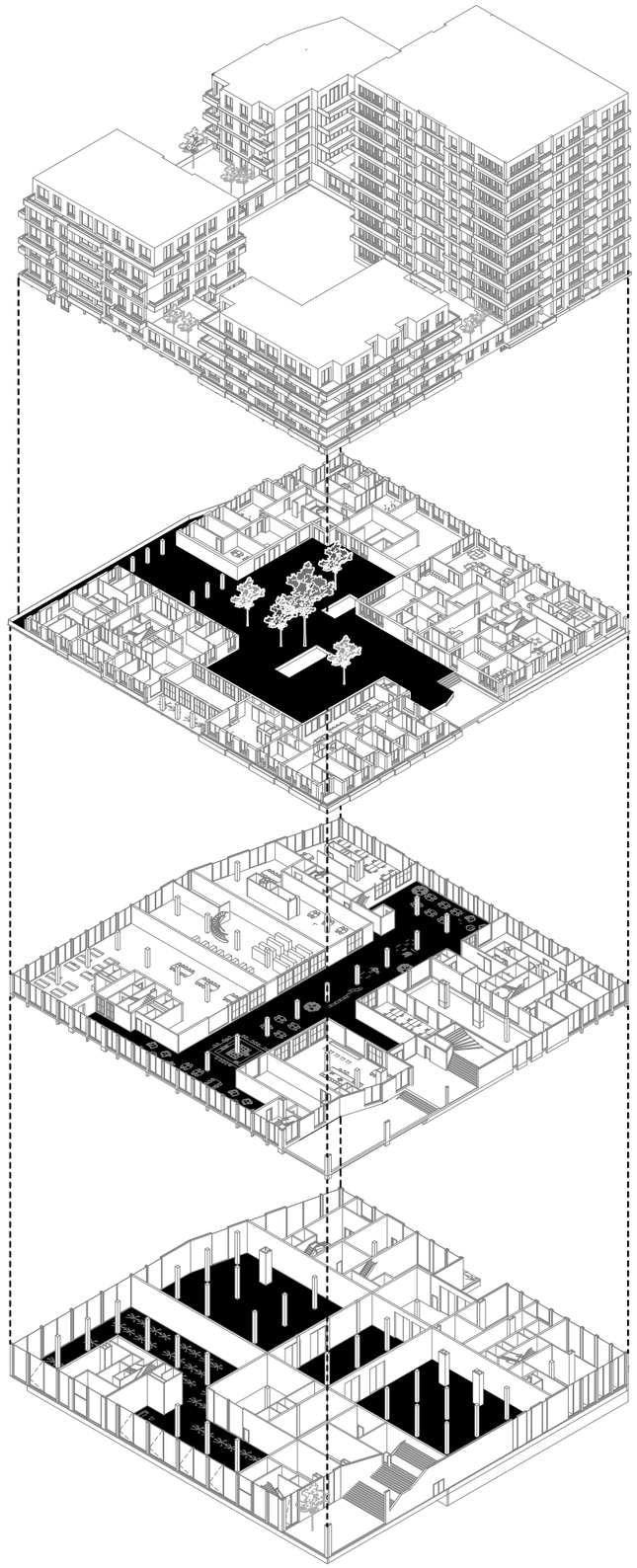
Urban masterplan | 1:500

Urban section | 1:500



Urban section | 1:500





SQUARE METERS PER PERSON **36 m2**

PROGRAM	GFA	%
Living	11.832 m2	**(50%)**
Working	7.531 m2	**(32%)**
Care	981 m2	**(04%)**
Circulation	2.251 m2	**(10%)**
Storage & Other	882 m2	**(04%)**
TOTAL	**23.477 m2**	

+3-12

CO-HOUSING

+2

COURTYARD/ CARE / COLLECTIVE

Kindergarden & Family center
Employment services
Counceling
Community kitchen
Entrance lobbies
Dwellings

+1

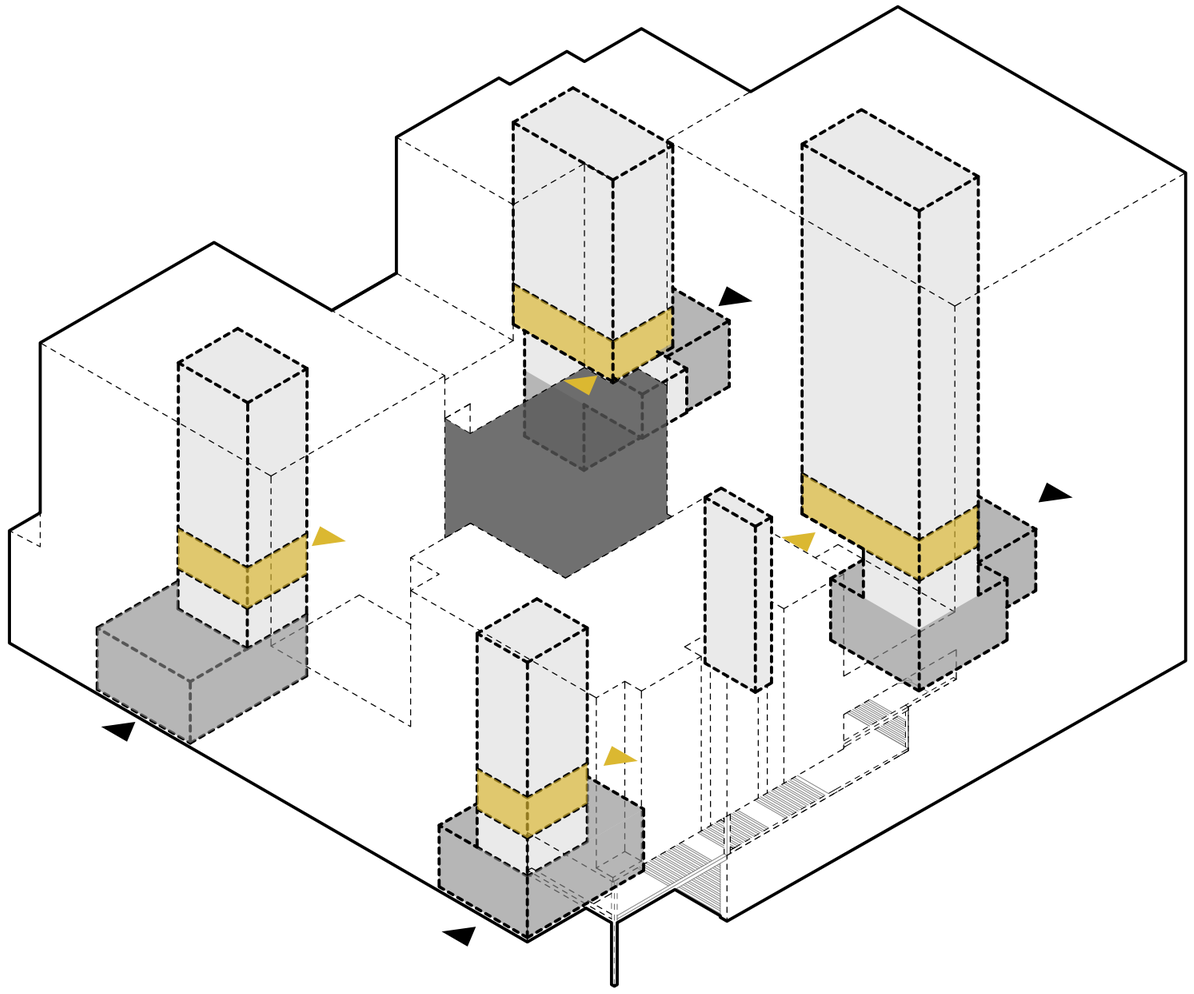
CO-WORKING / PUBLIC AMENITIES

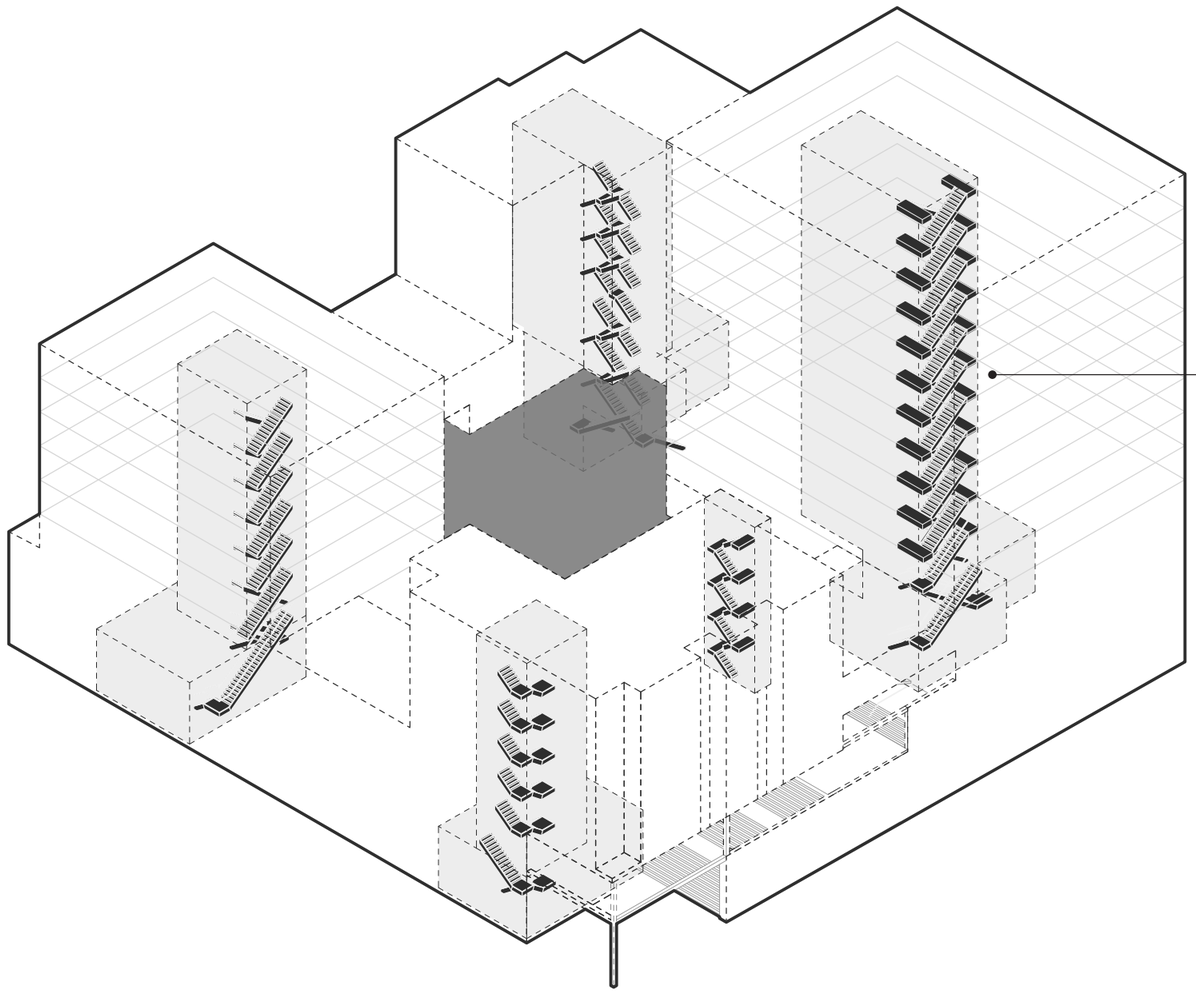
Green-lab
Library
Cafeteria
Offices & ateliers
Medical practice

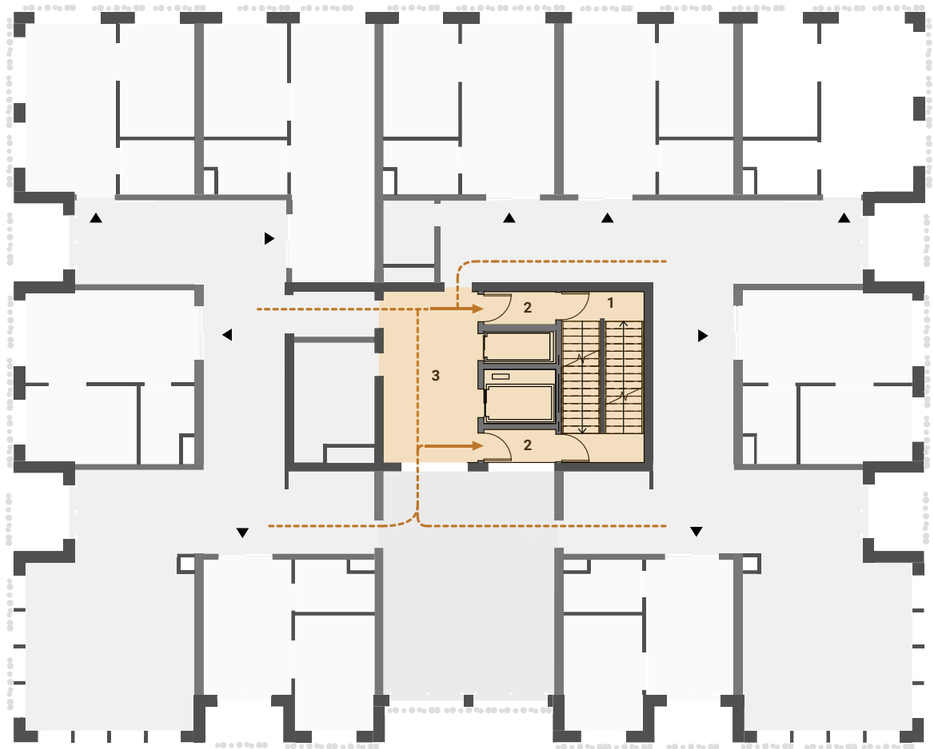
GF

AGRICULTURAL PRODUCTION / RETAIL

Vertical farming
Tomato farm & restaurant
Mycelium production
Zero waste food market
Retail



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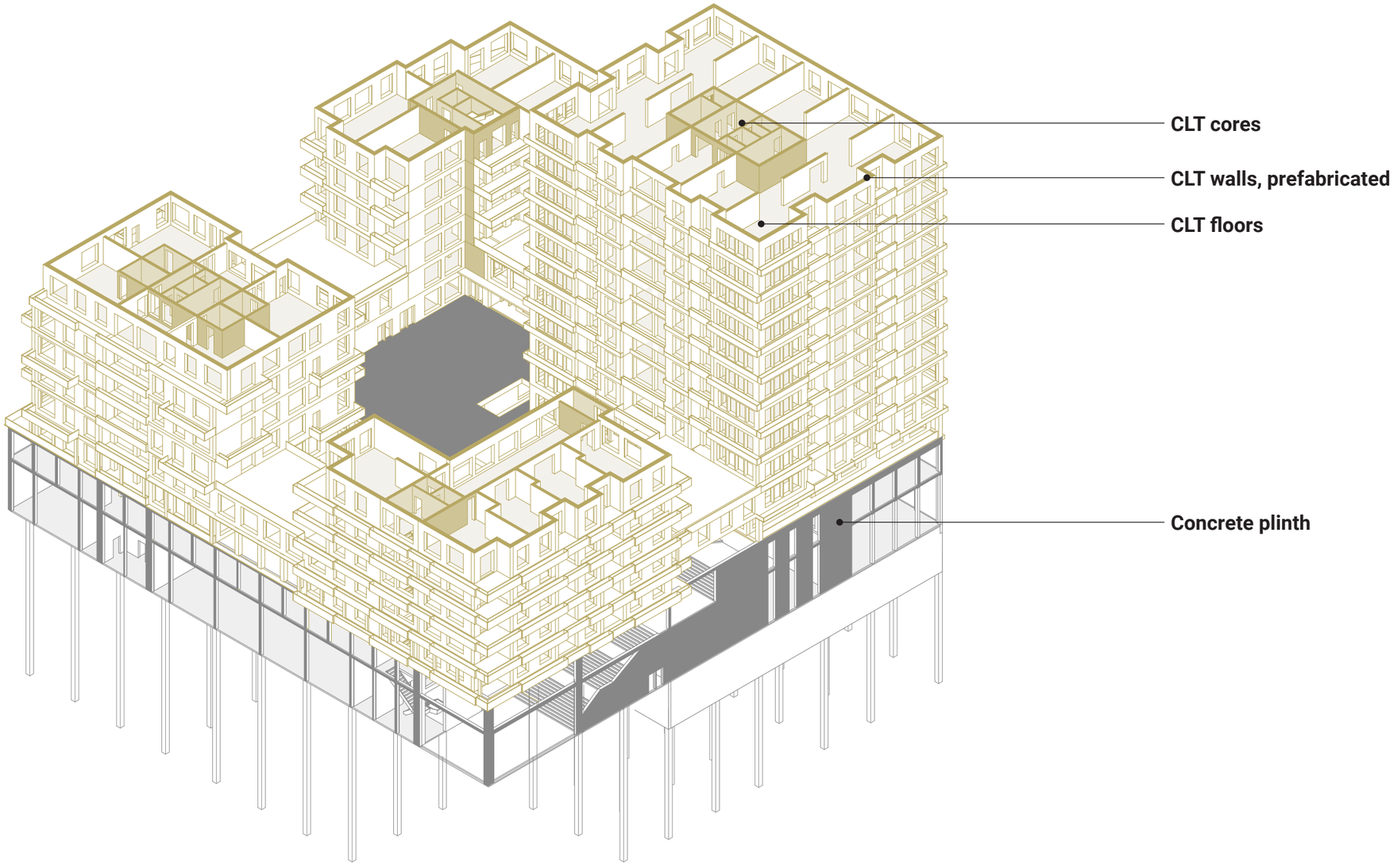
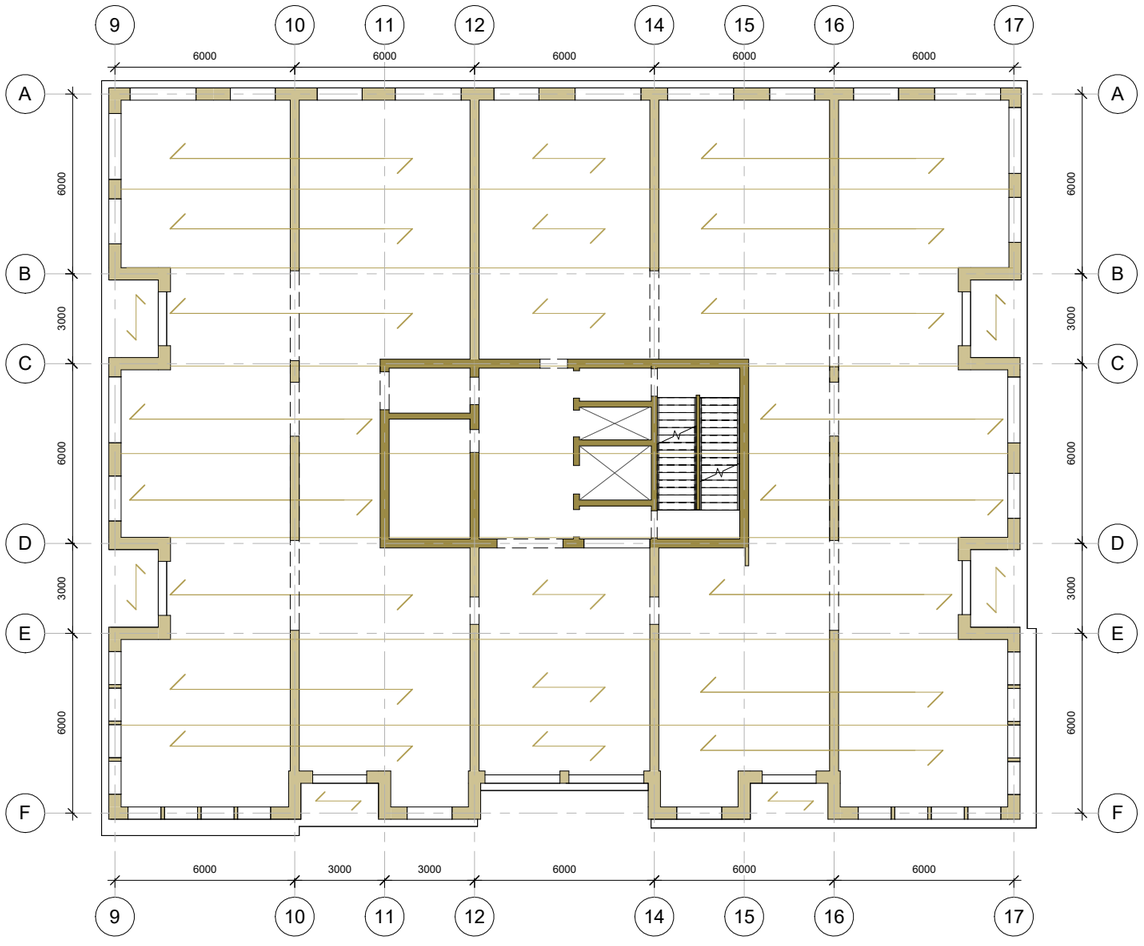

CLT cores
CLT walls, prefabricated
CLT floors
Concrete plinth



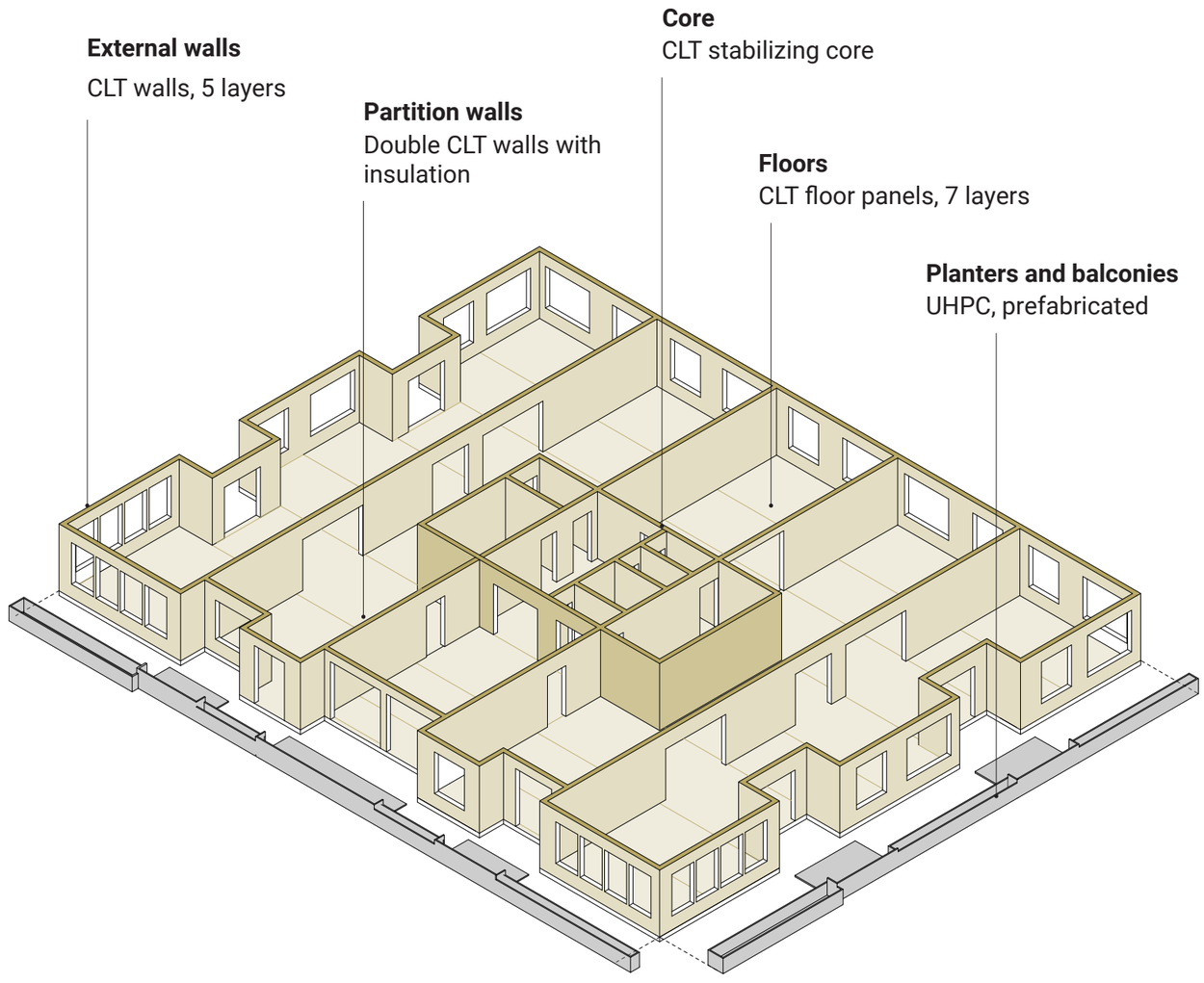
External walls
CLT walls, 5 layers

Partition walls
Double CLT walls with insulation

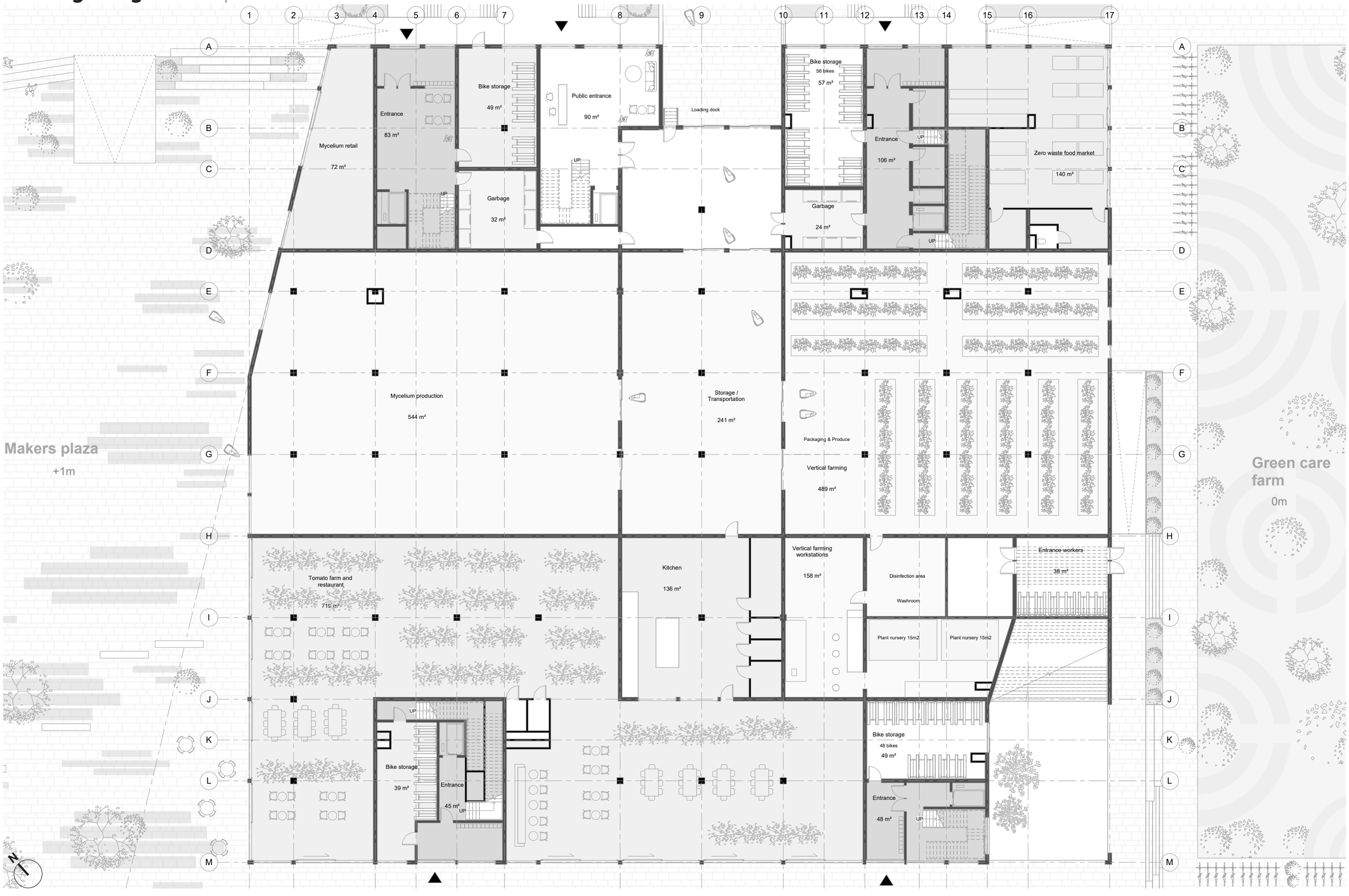
Core
CLT stabilizing core

Floors
CLT floor panels, 7 layers

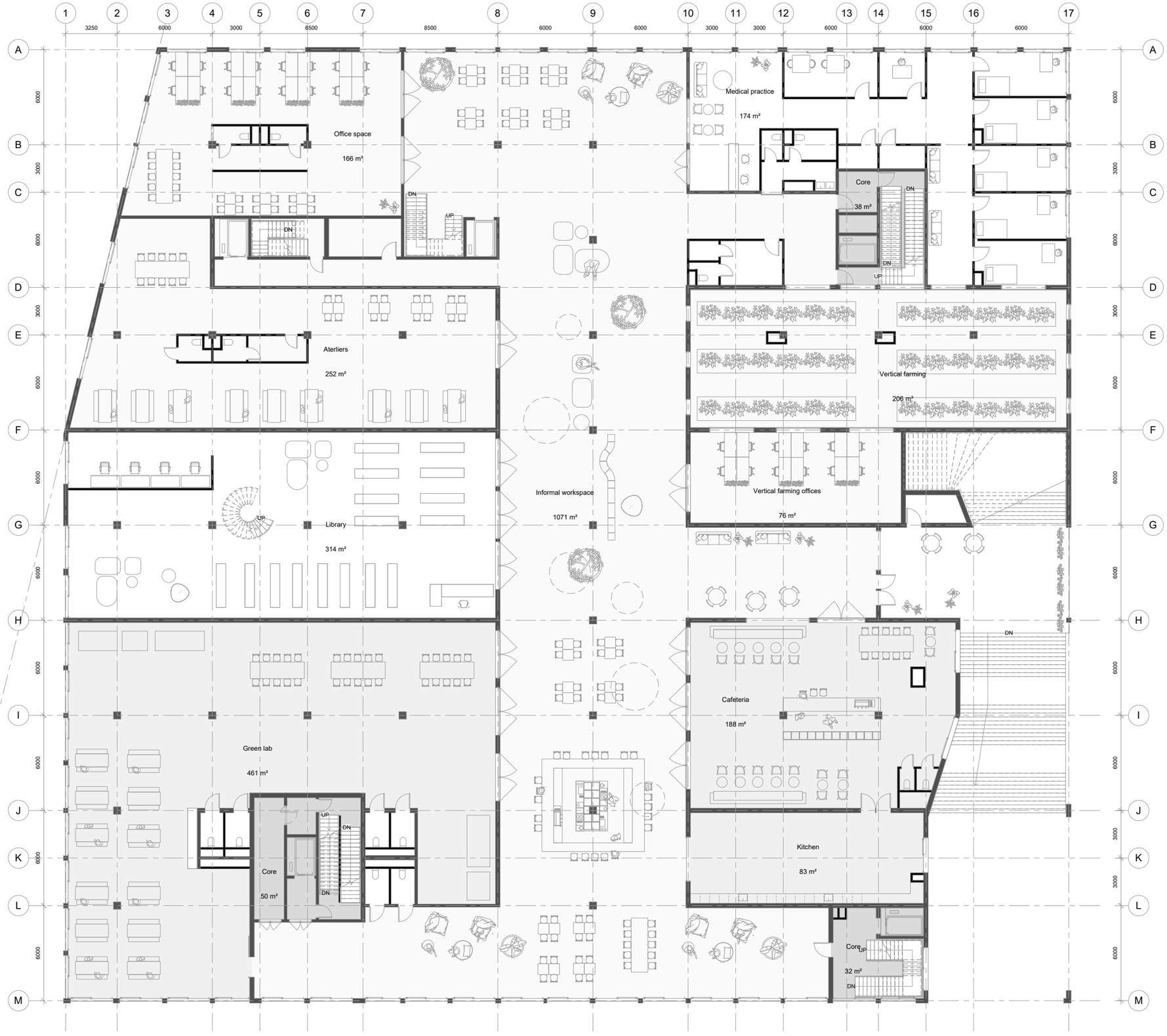
Planters and balconies
UHPC, prefabricated



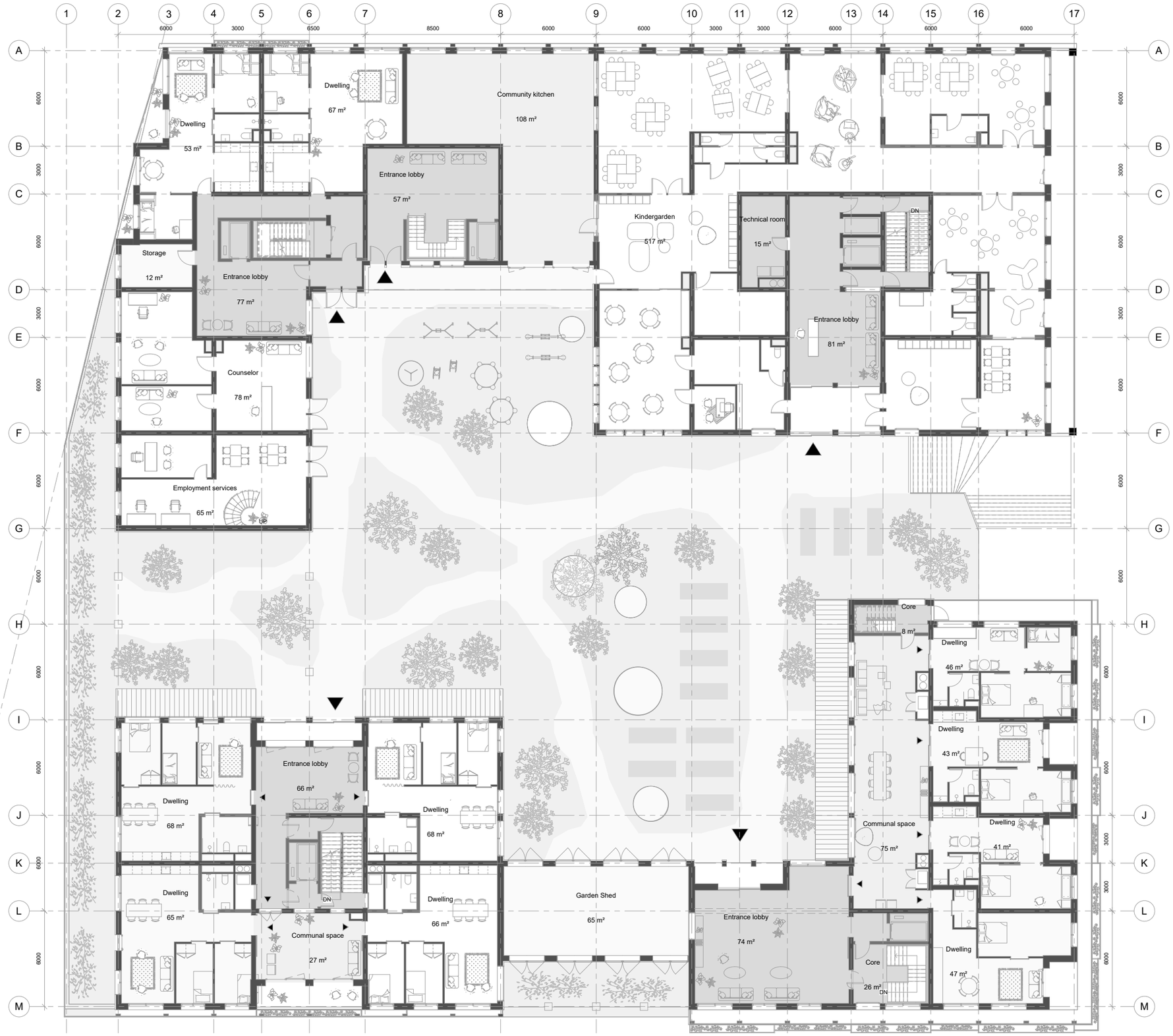
Building design | Floorplans / GF



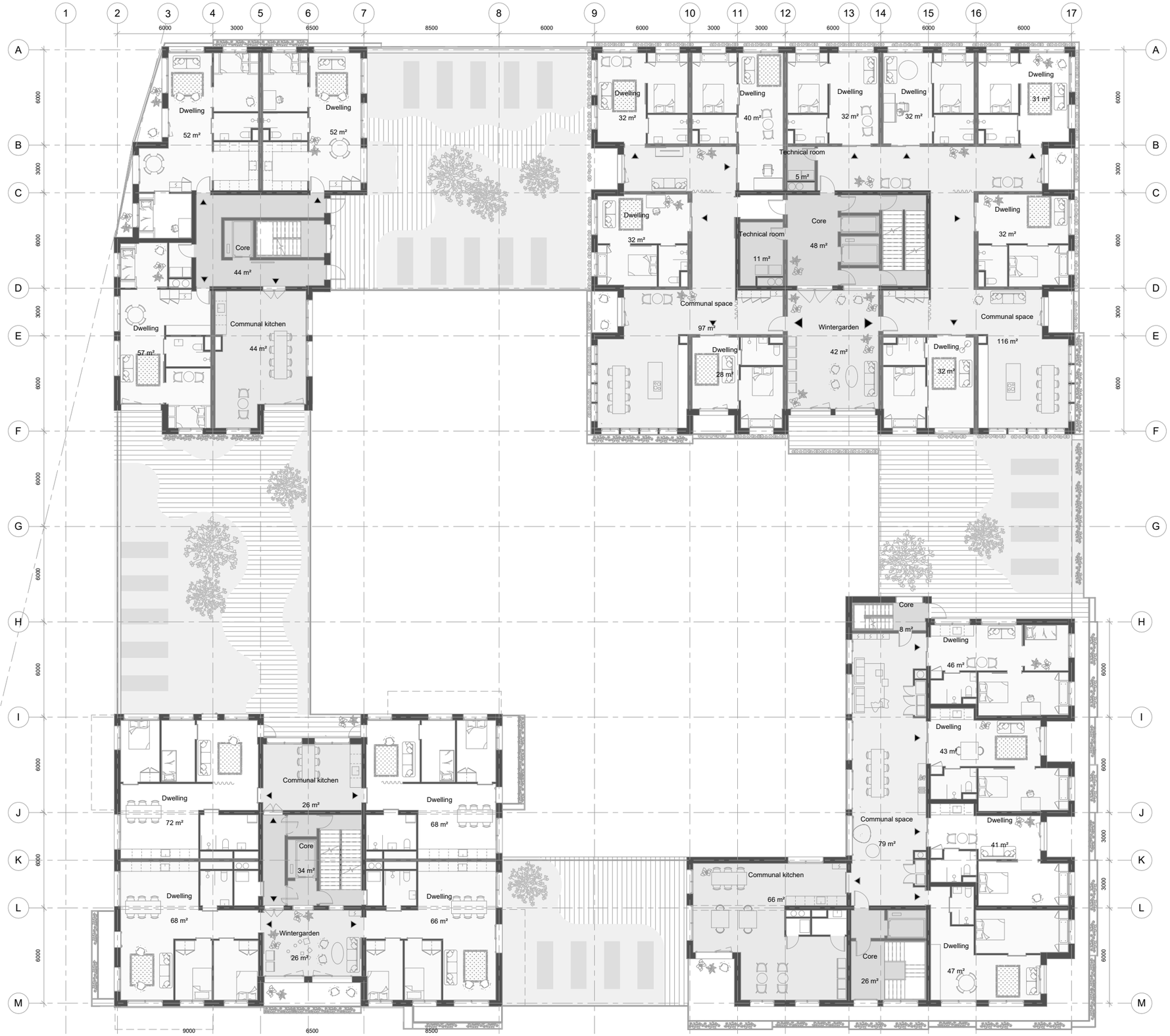
Building design | Floorplans / 1st floor



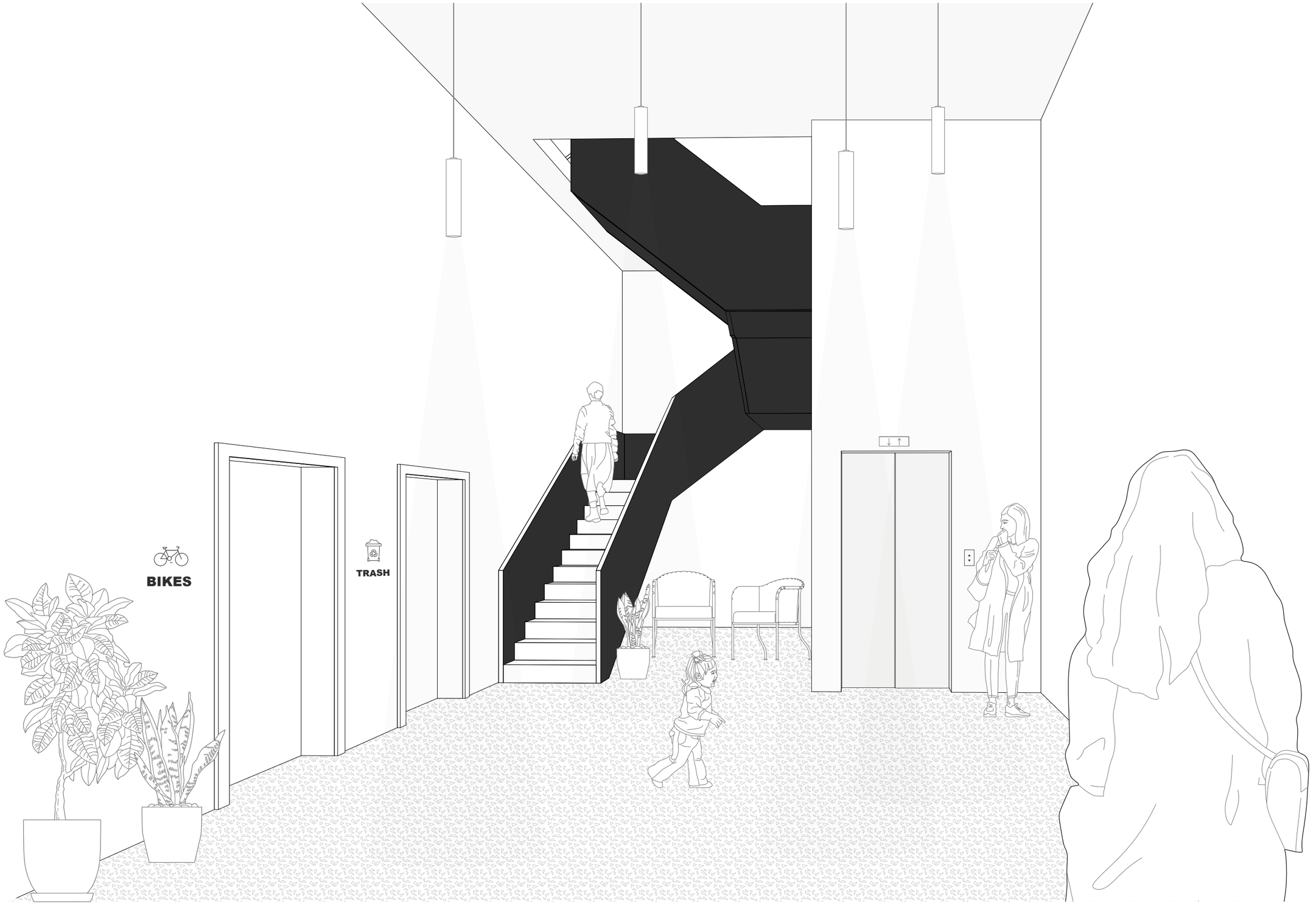
Building design | Floorplans/ 2nd floor



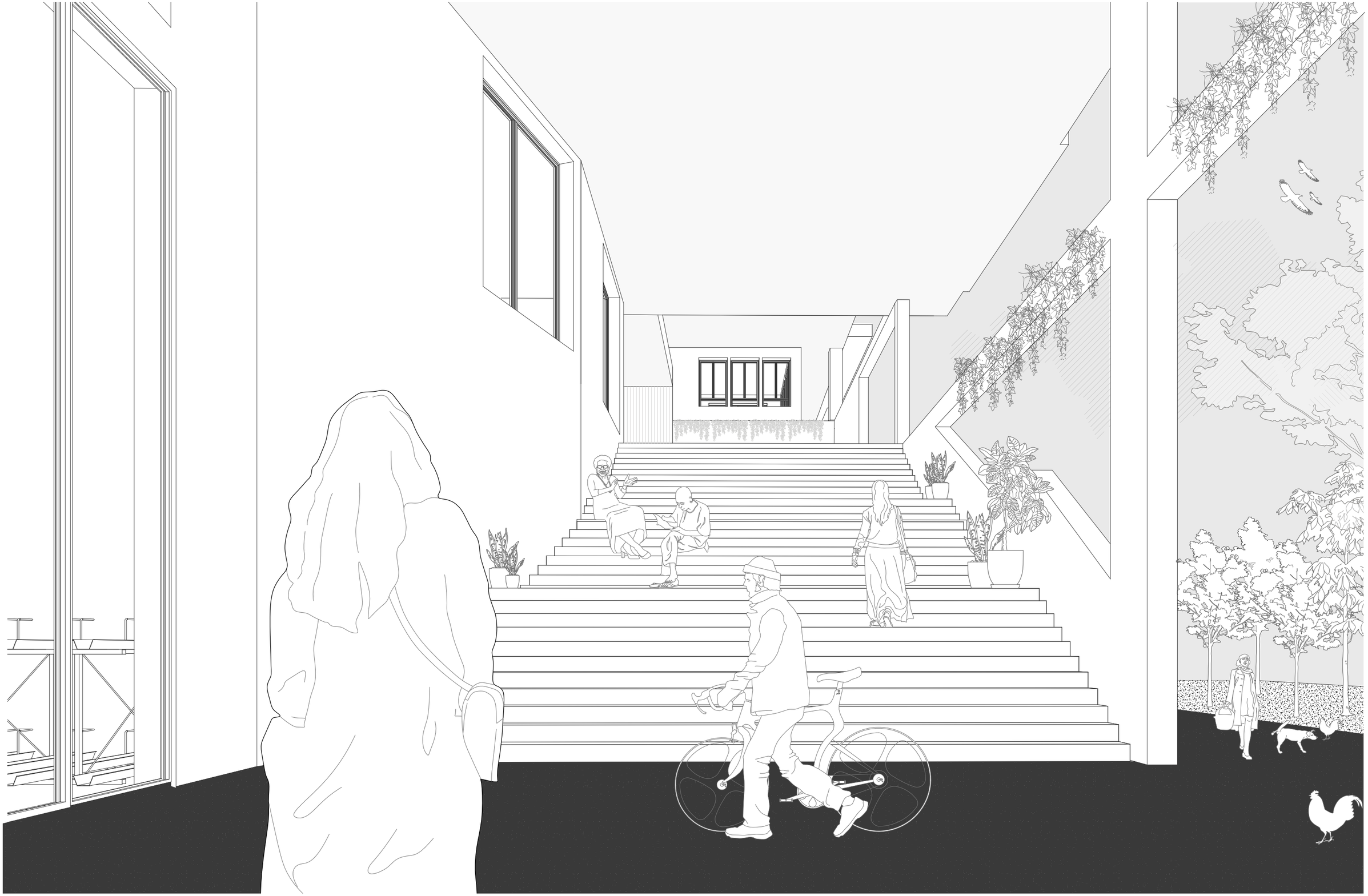
Building design | Floorplans / 4th floor

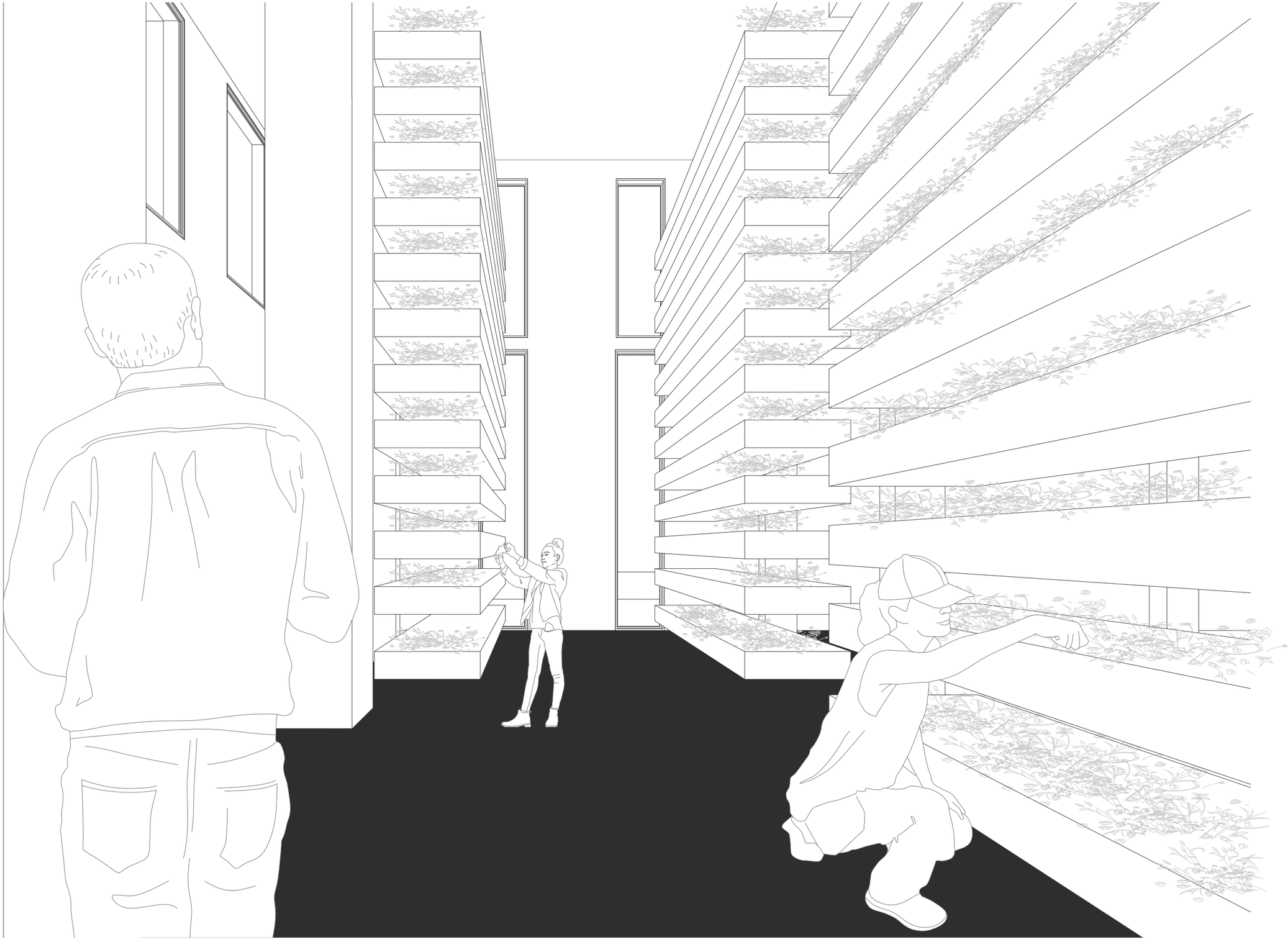


Impression | Residential entrance

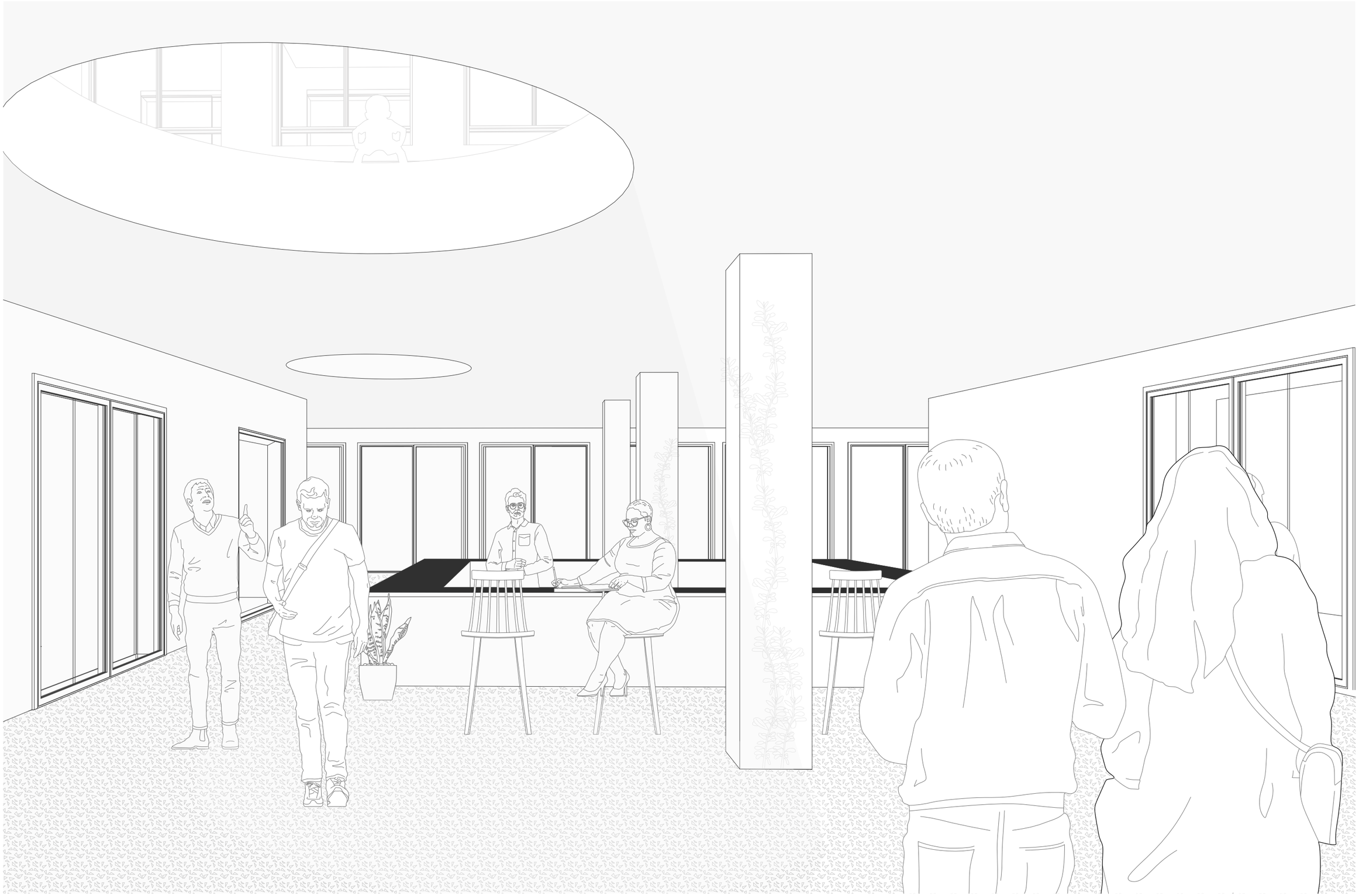


Impression| Stairs to courtyard



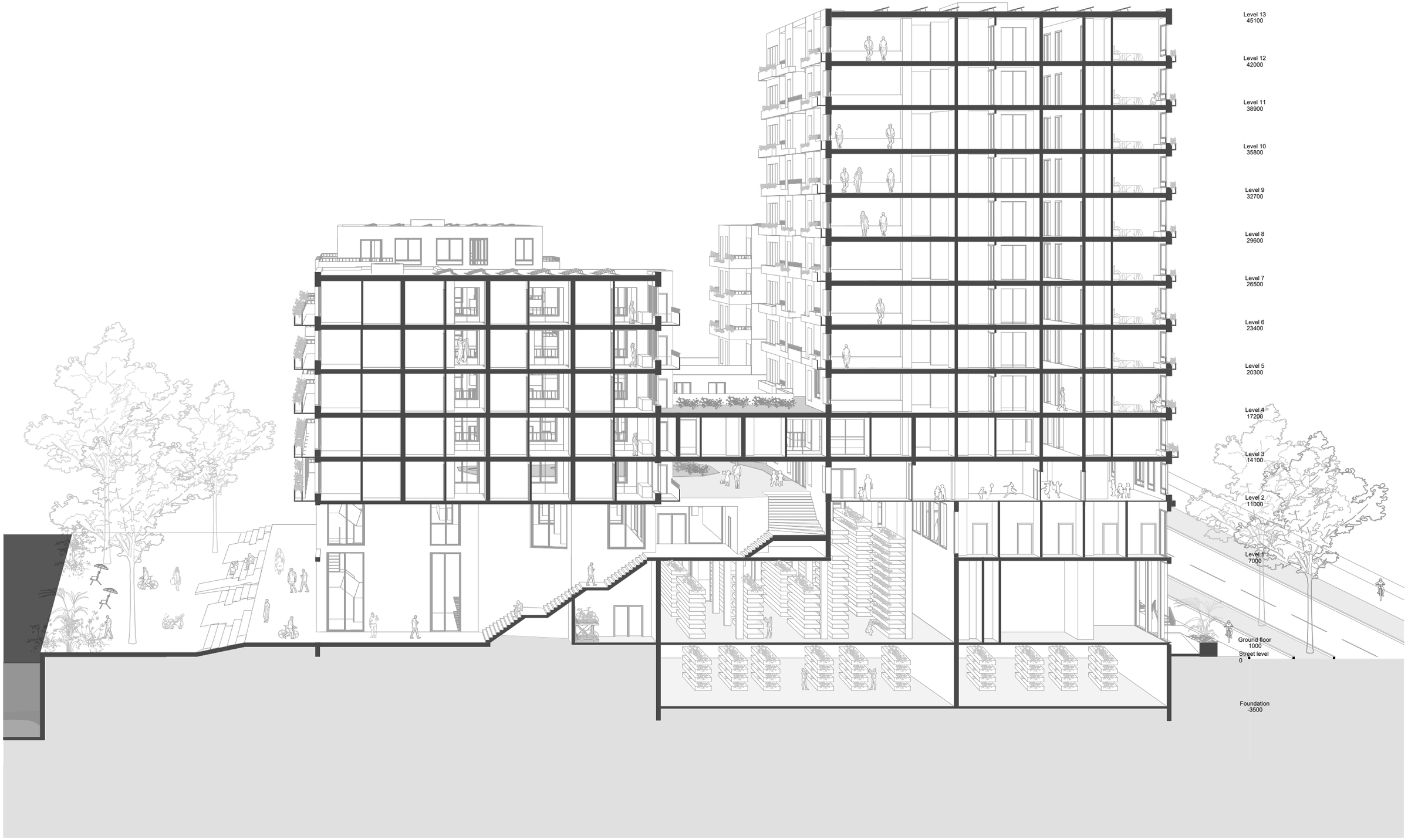


Impression | Co-working space

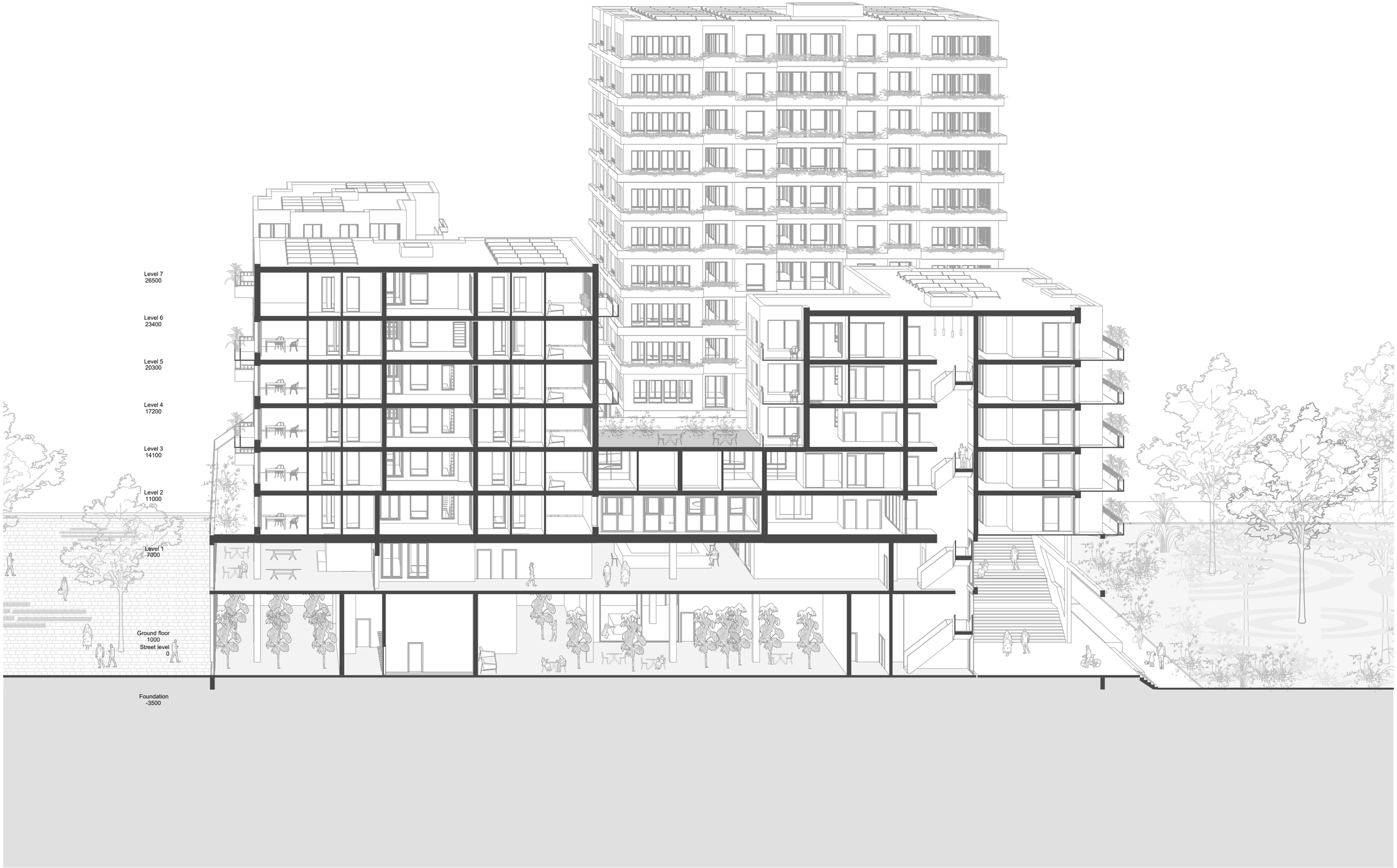


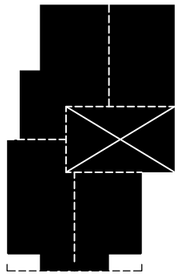
Impression| Walk through the courtyard

Building design | Section A-A

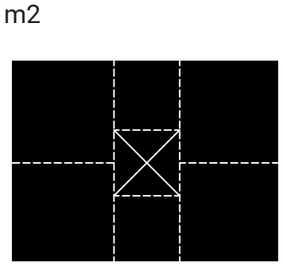


Building design | Section B-B

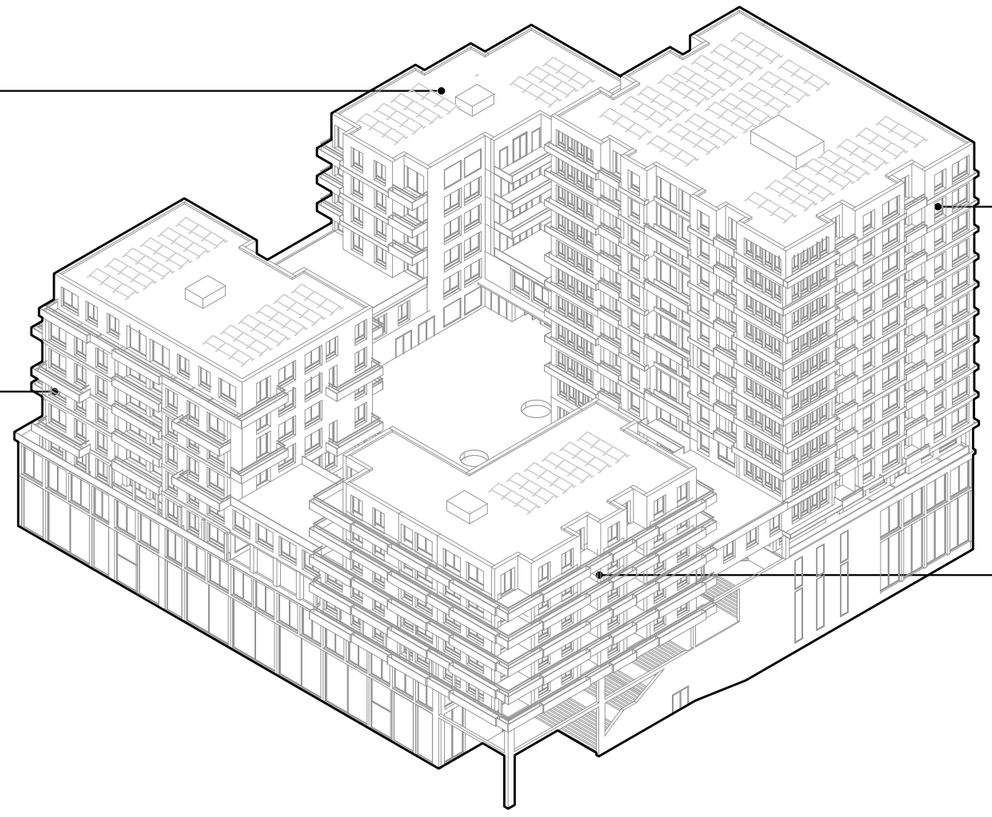


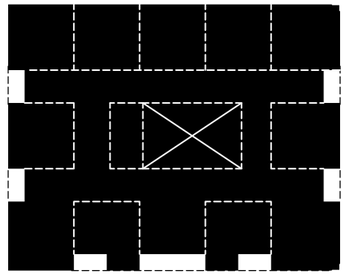


The nest
22 dwellings
44-57 m2

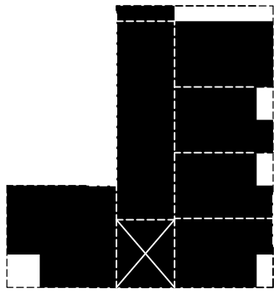


Interconnected family flats
27 dwellings
73-80 m2

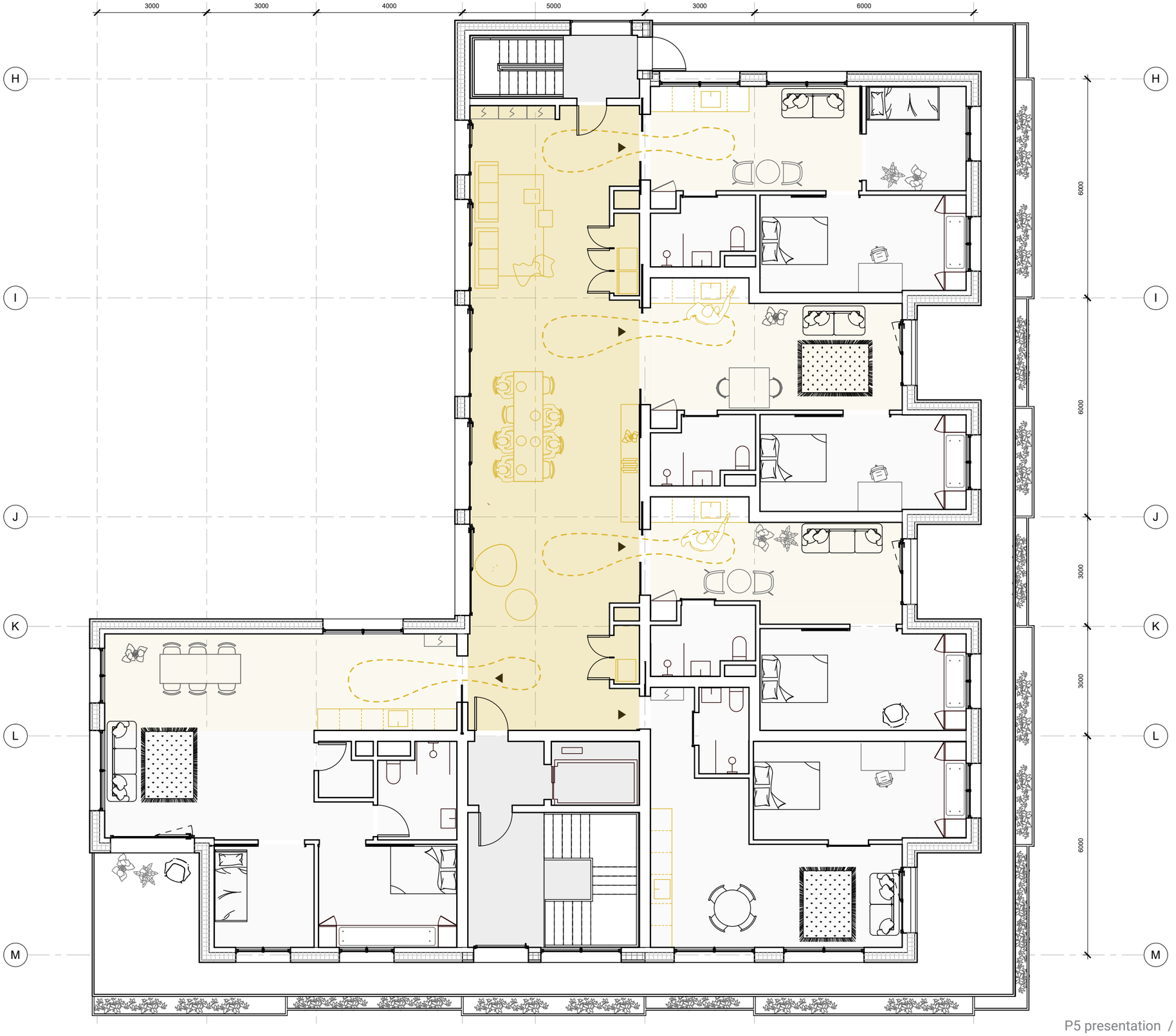




Cluster dwellings
95 units
28-32 m2



Intergenerational housing
27 dwellings
43-65 m2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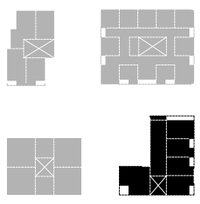

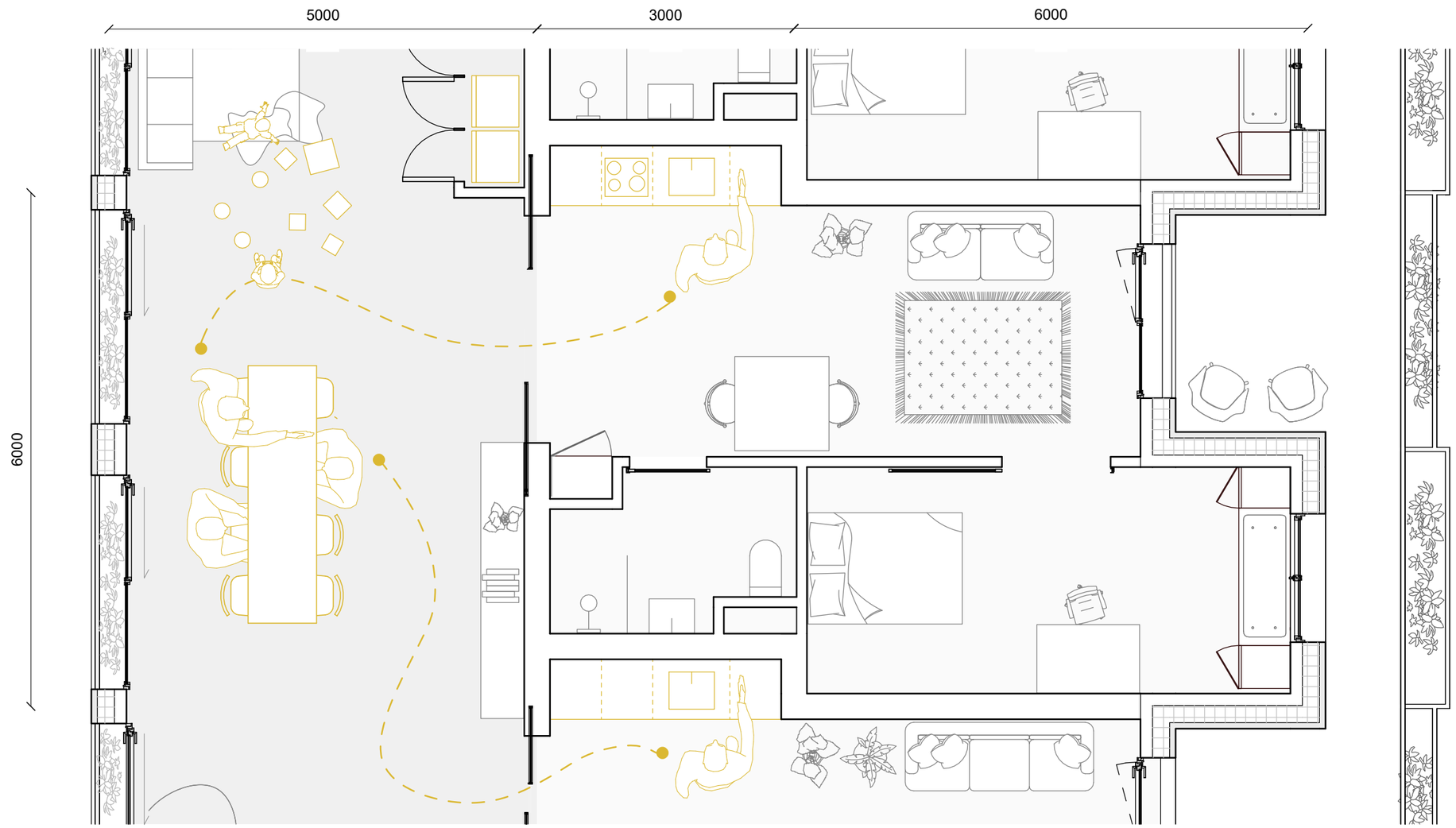
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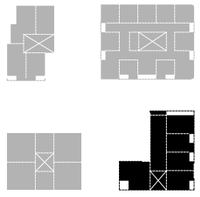
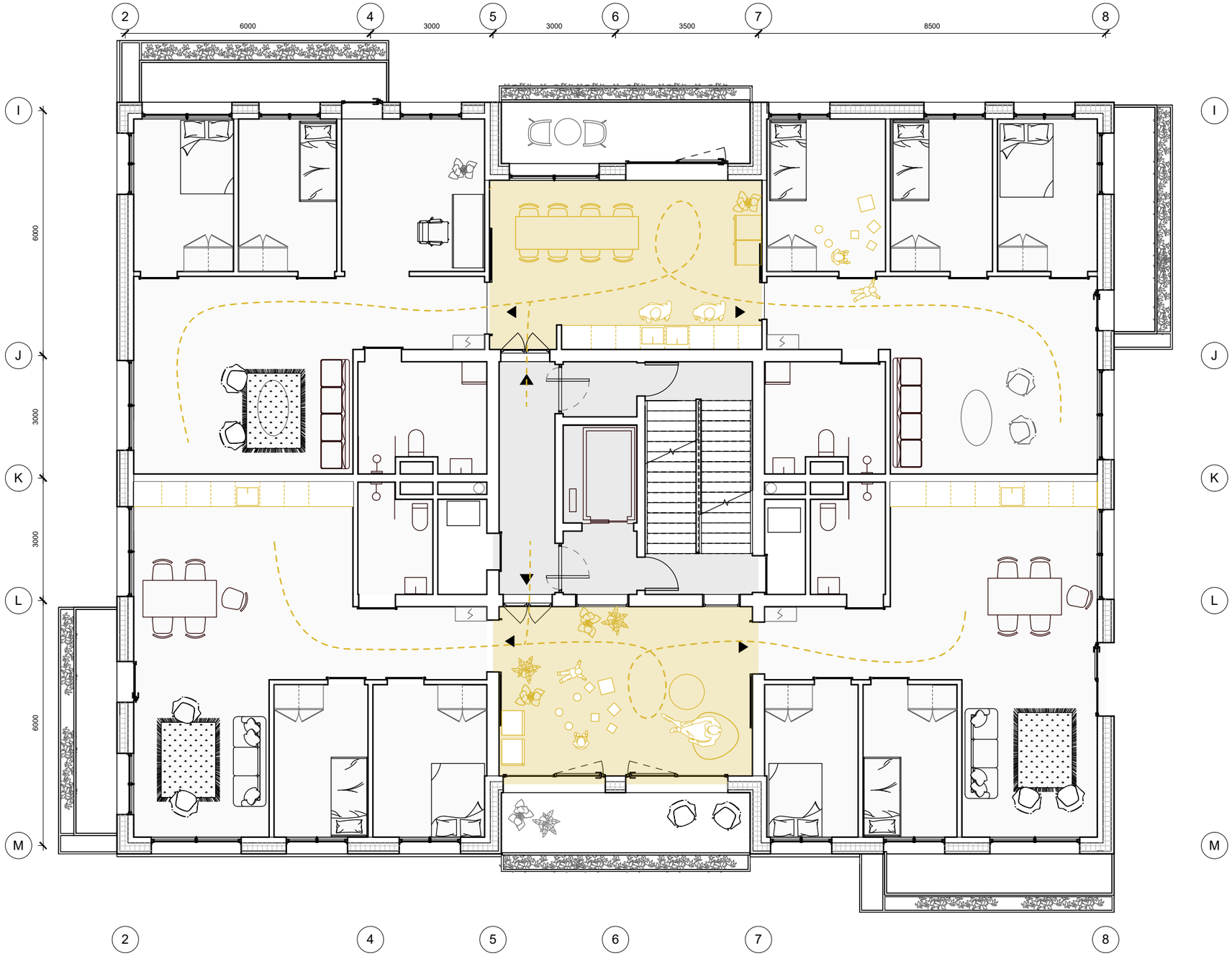


Impression | Kitchen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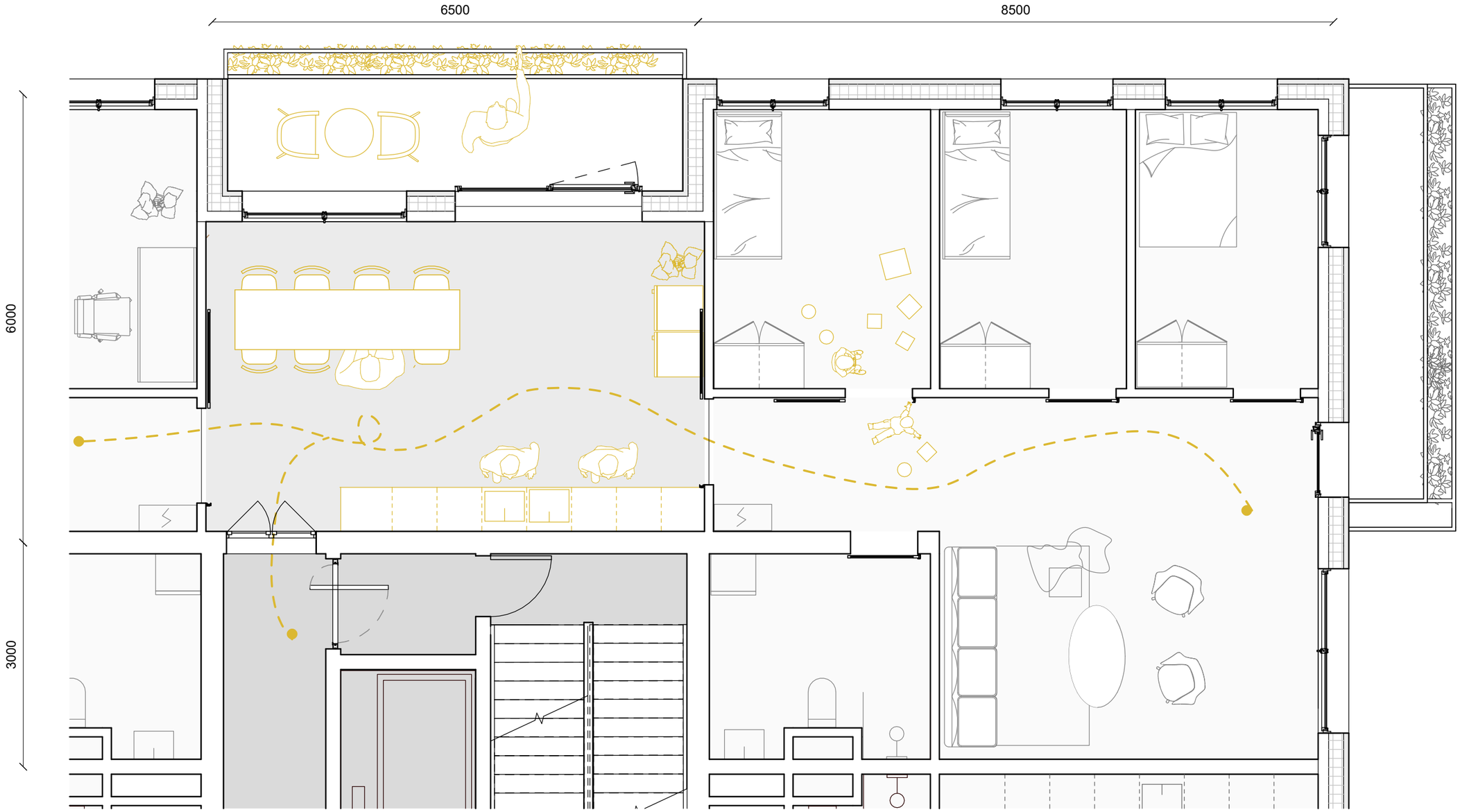
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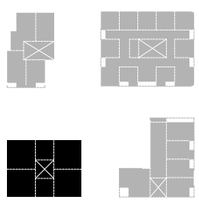
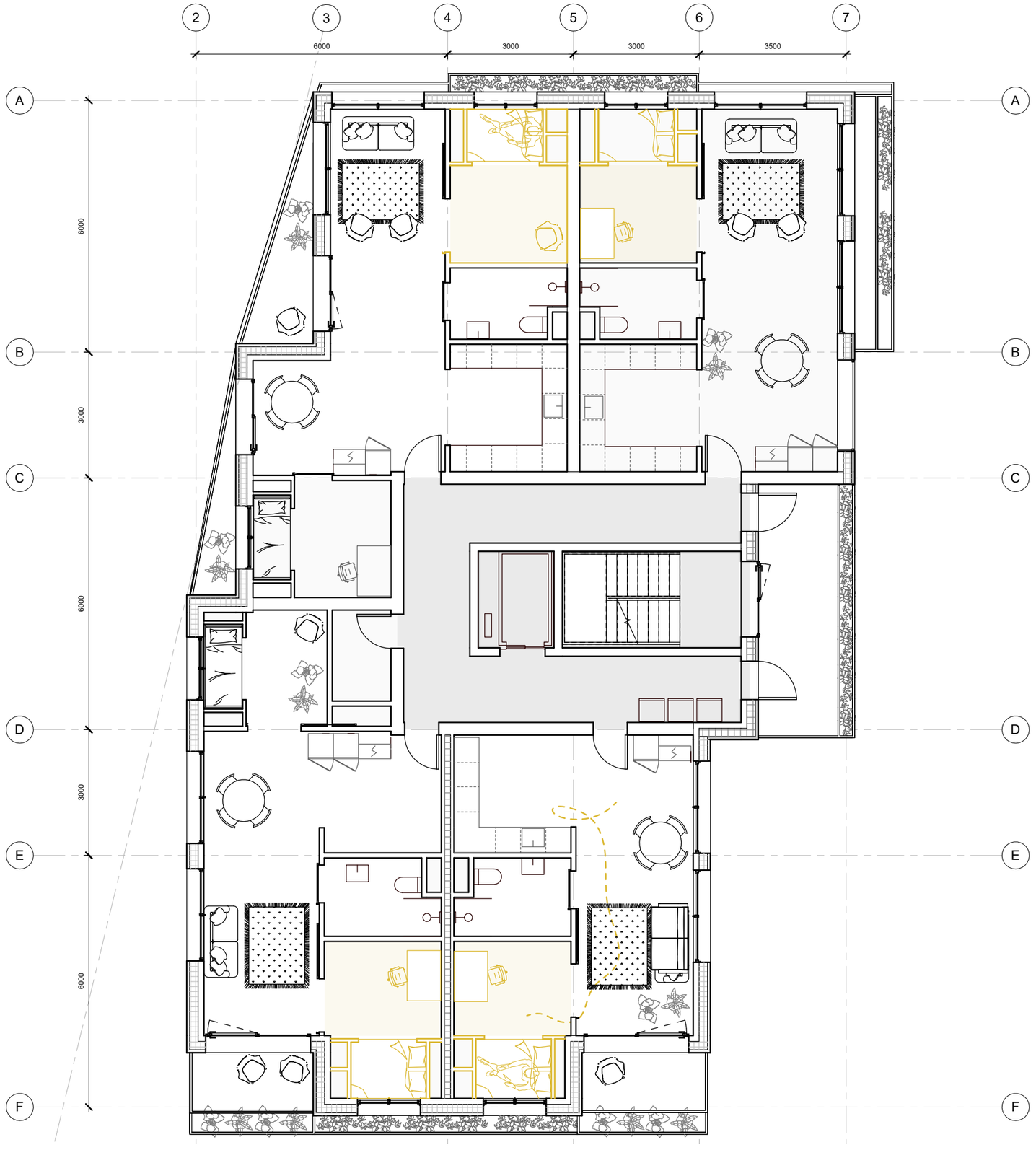


Impression I Shared kitchen

Impression I Shared kitchen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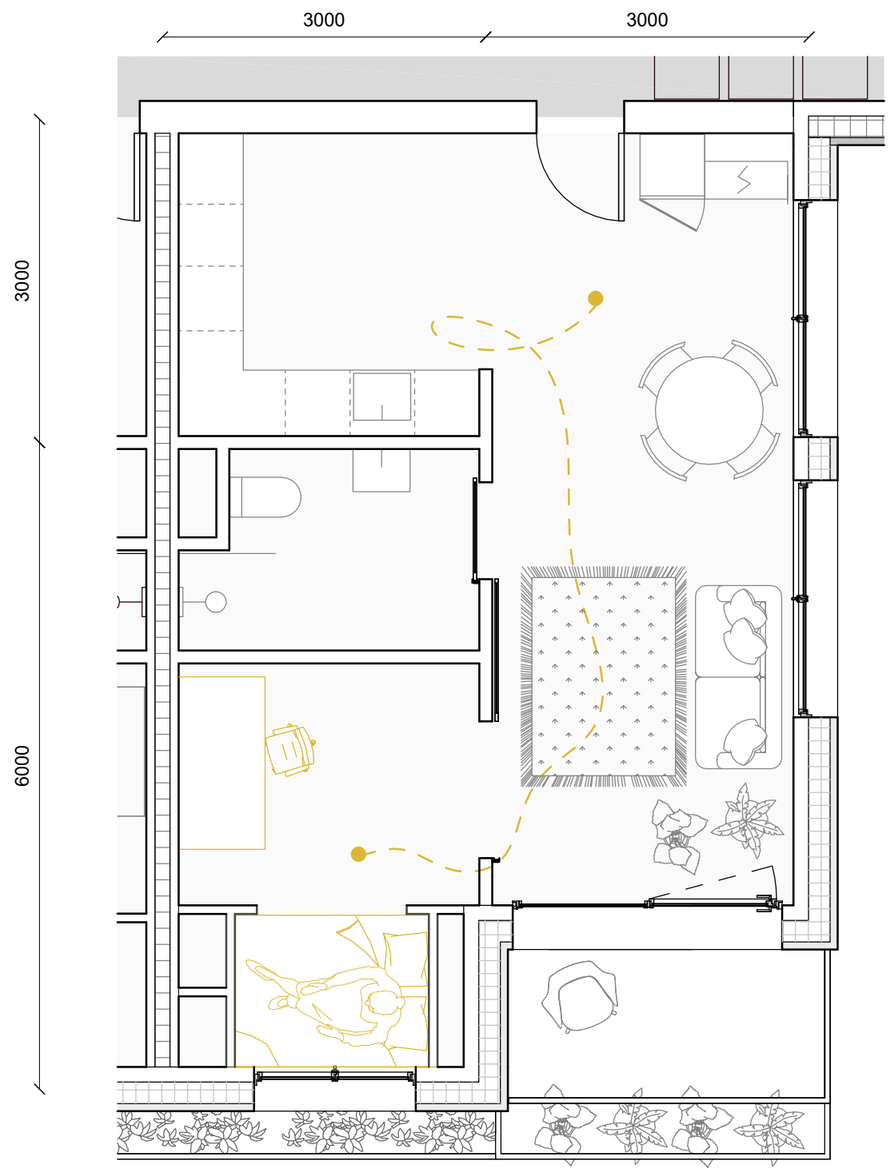
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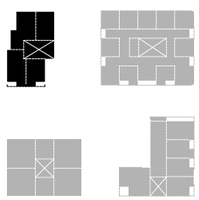
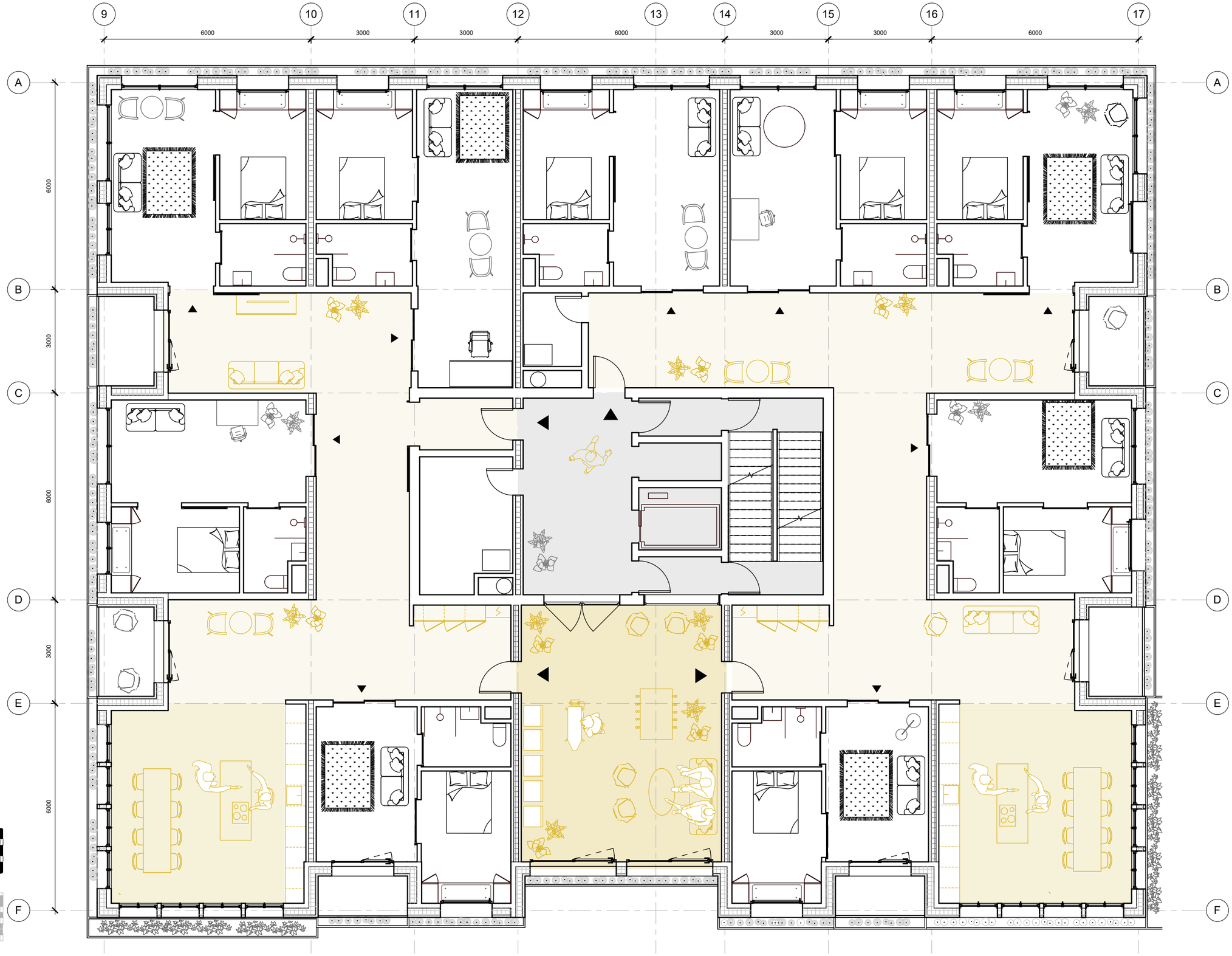
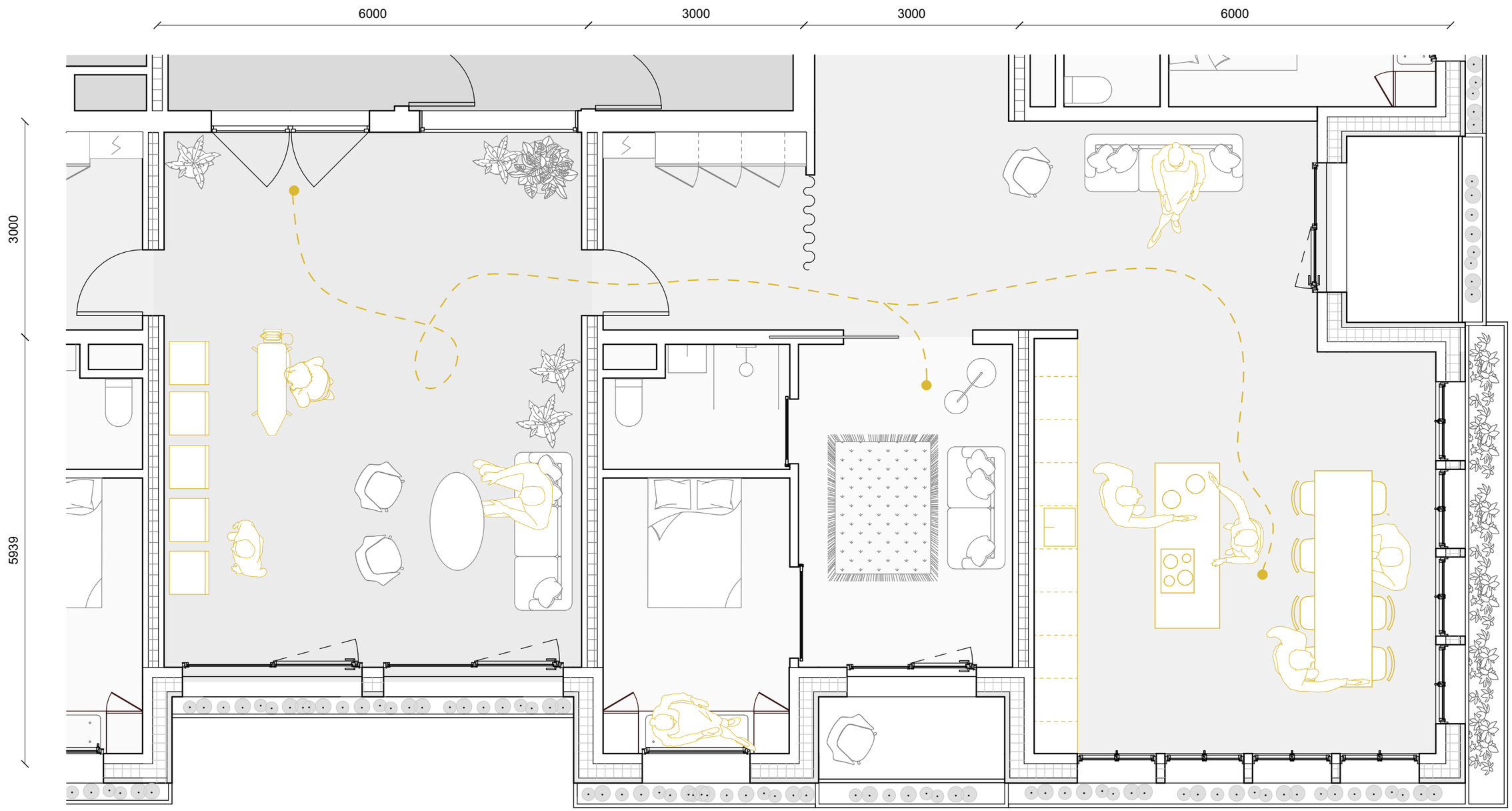


Building design | Dwellings 1:100 / Cluster

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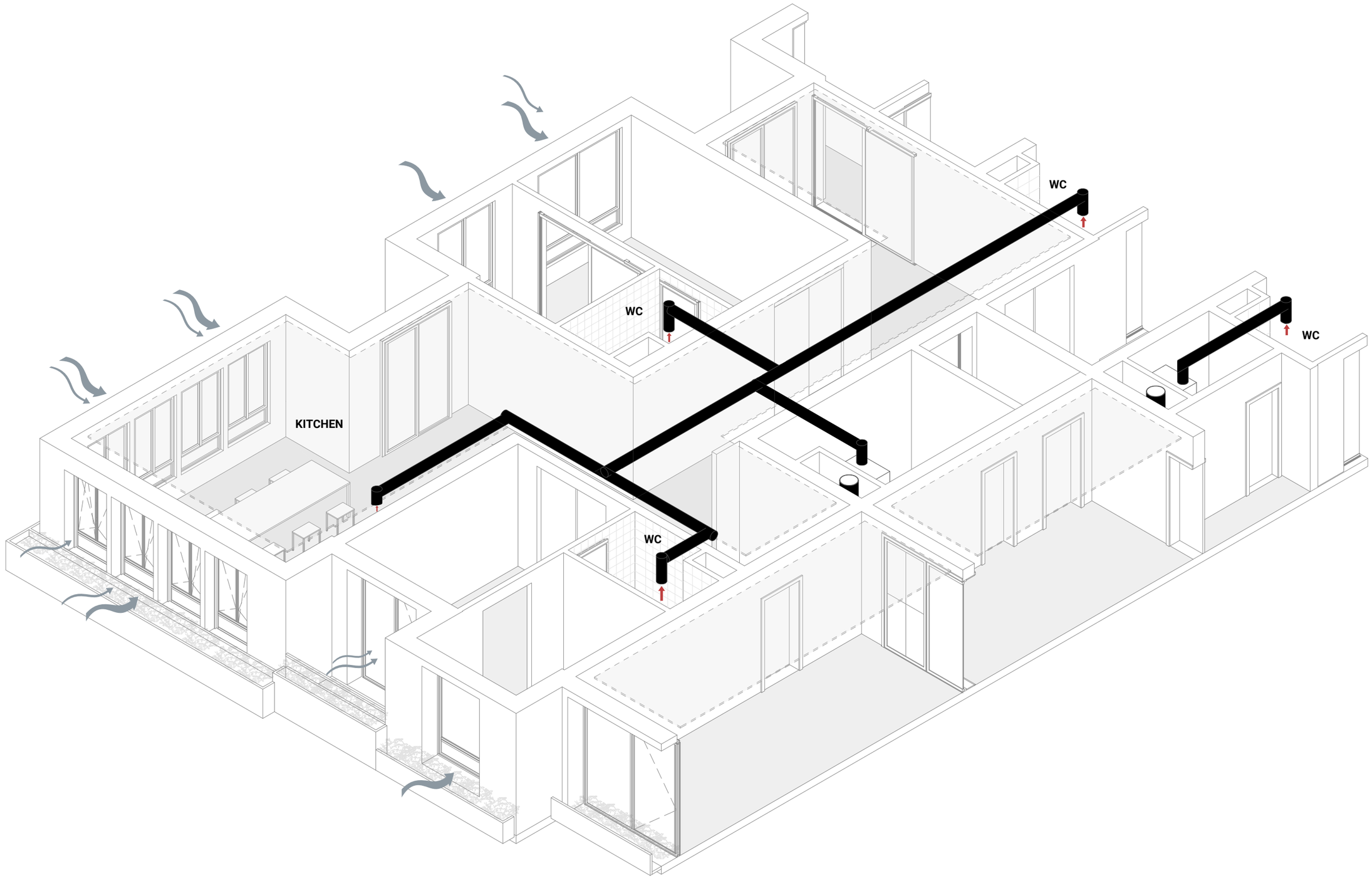
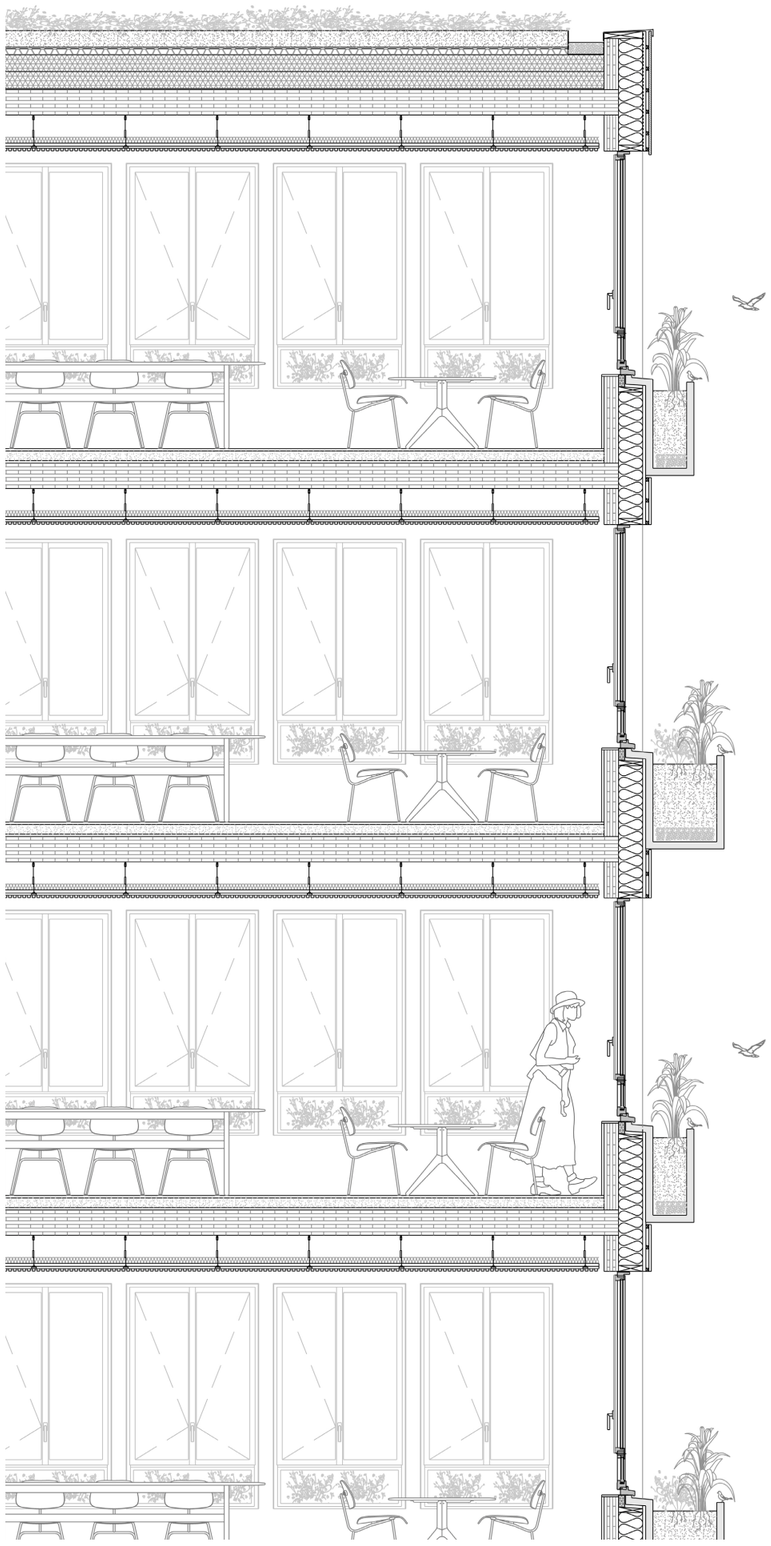
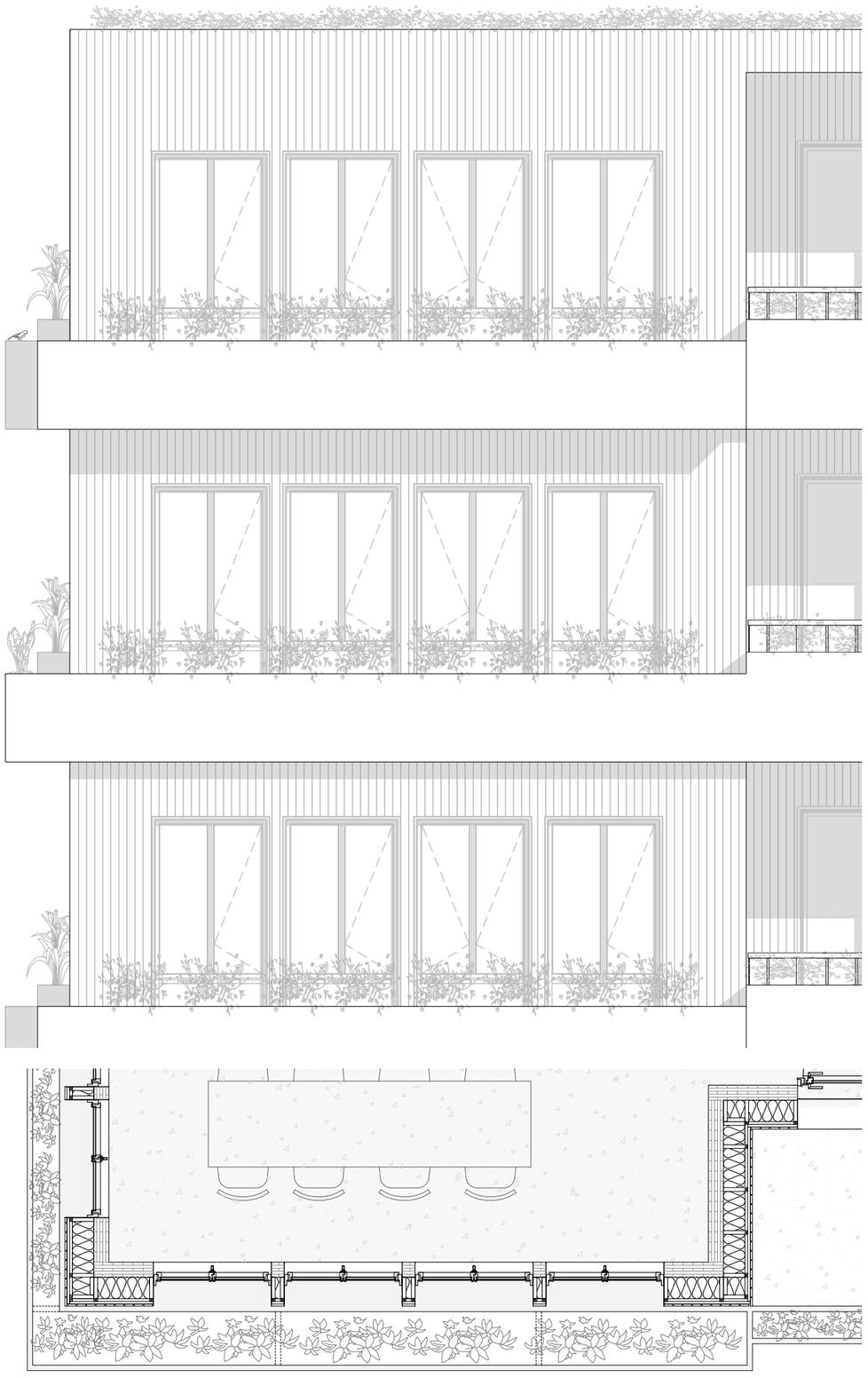
Impression I Wintergarden in cluster dwelling

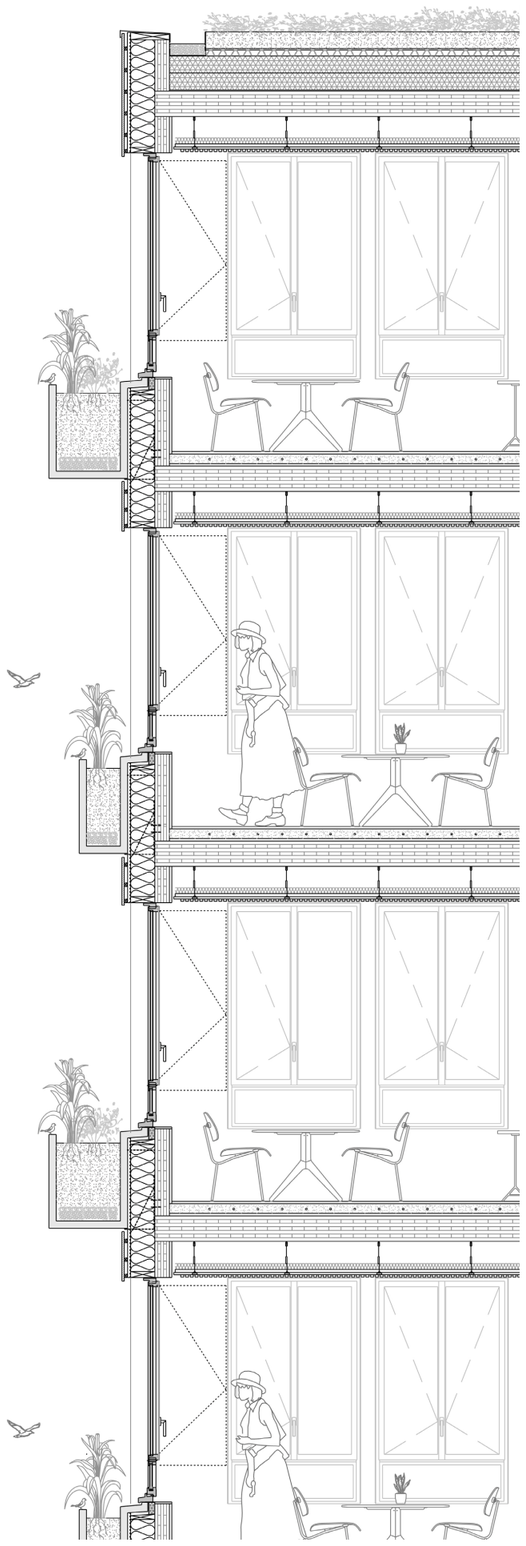


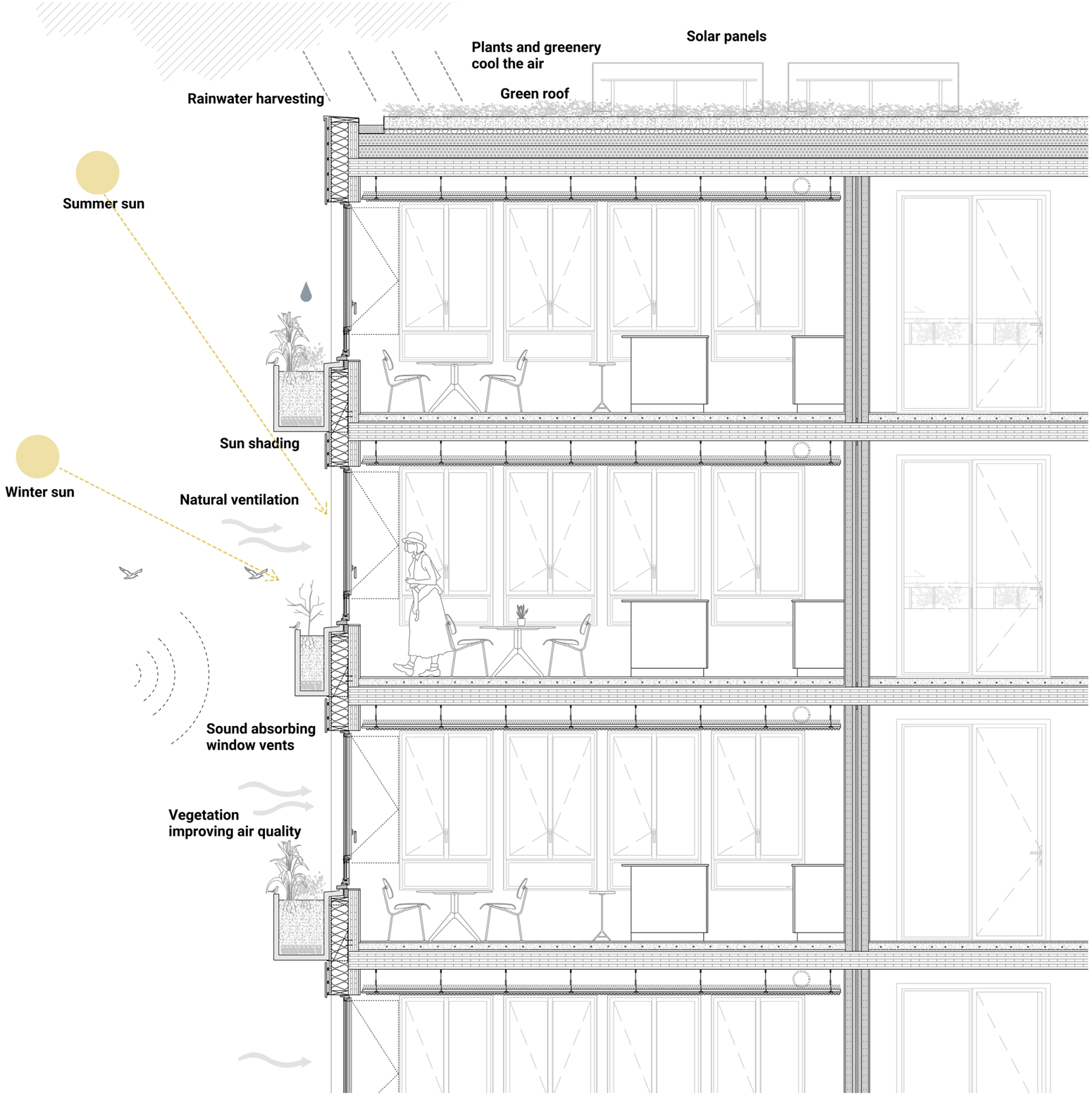
System C

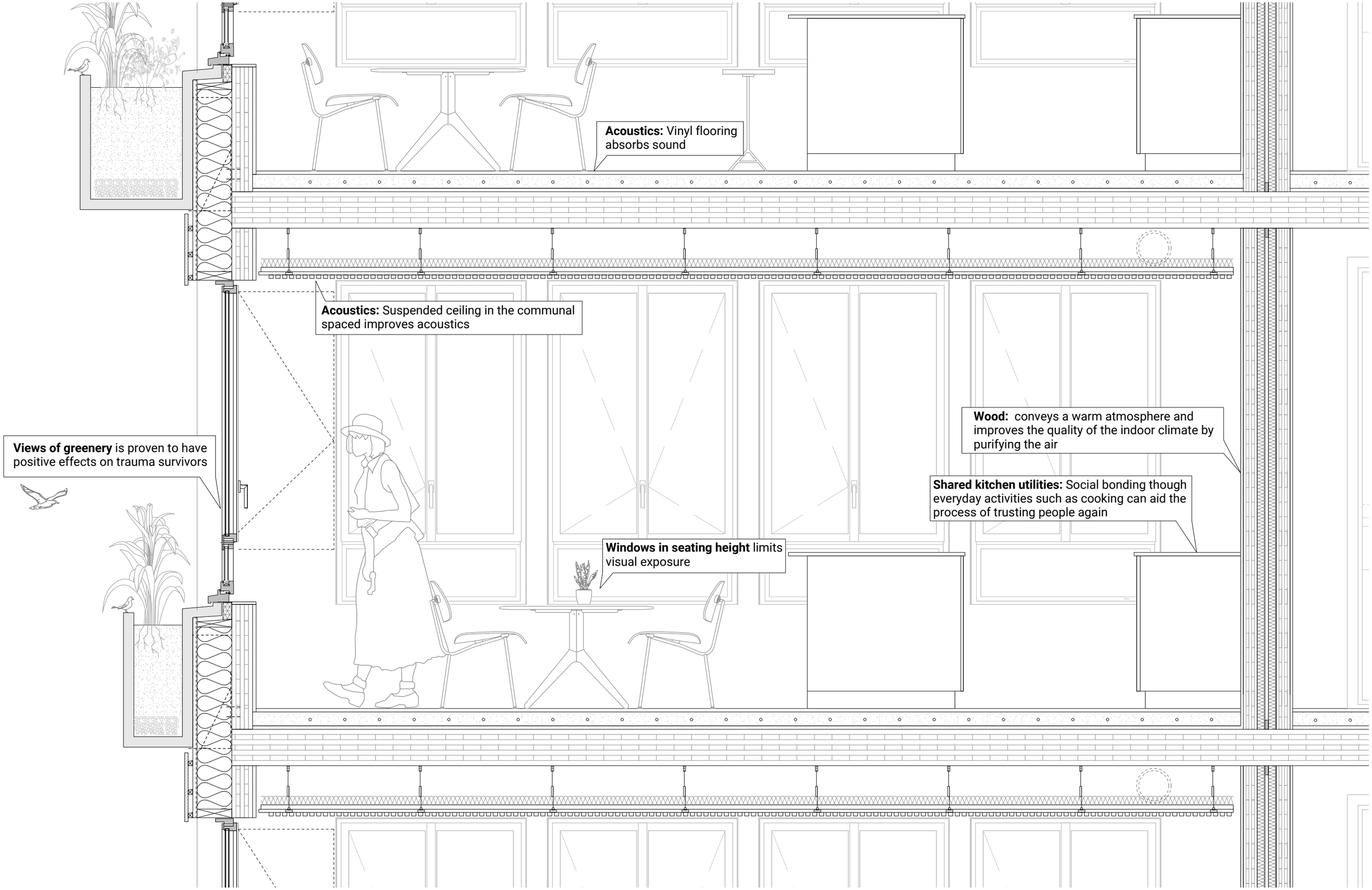
Natural air supply (Self-regulated window grilles)
Mechanical air exhaust








Solar panels
Plants and greenery
cool the air
Rainwater harvesting
Green roof
Summer sun
Sun shading
Winter sun
Natural ventilation
Sound absorbing
window vents
Vegetation
improving air quality


Acoustics: Vinyl flooring absorbs sound
Acoustics: Suspended ceiling in the communal spaced improves acoustics
Views of greenery is proven to have positive effects on trauma survivors
Wood: conveys a warm atmosphere and improves the quality of the indoor climate by purifying the air
Shared kitchen utilities: Social bonding though everyday activities such as cooking can aid the process of trusting people again
Windows in seating height limits visual exposure

ROOF STRUCTURE

Growing medium

Drainage element, water resevoir and root barrier

Rigid insulation 2x140mm

Vapour barrier

CLT roof panel, 7 layer

Suspended ceiling

EXTERIOR WALL STRUCTURE

Vertical facade panel Siberian larch

Batten

Counter batten

Water membrane

Hemp insulation

Vapour barrier

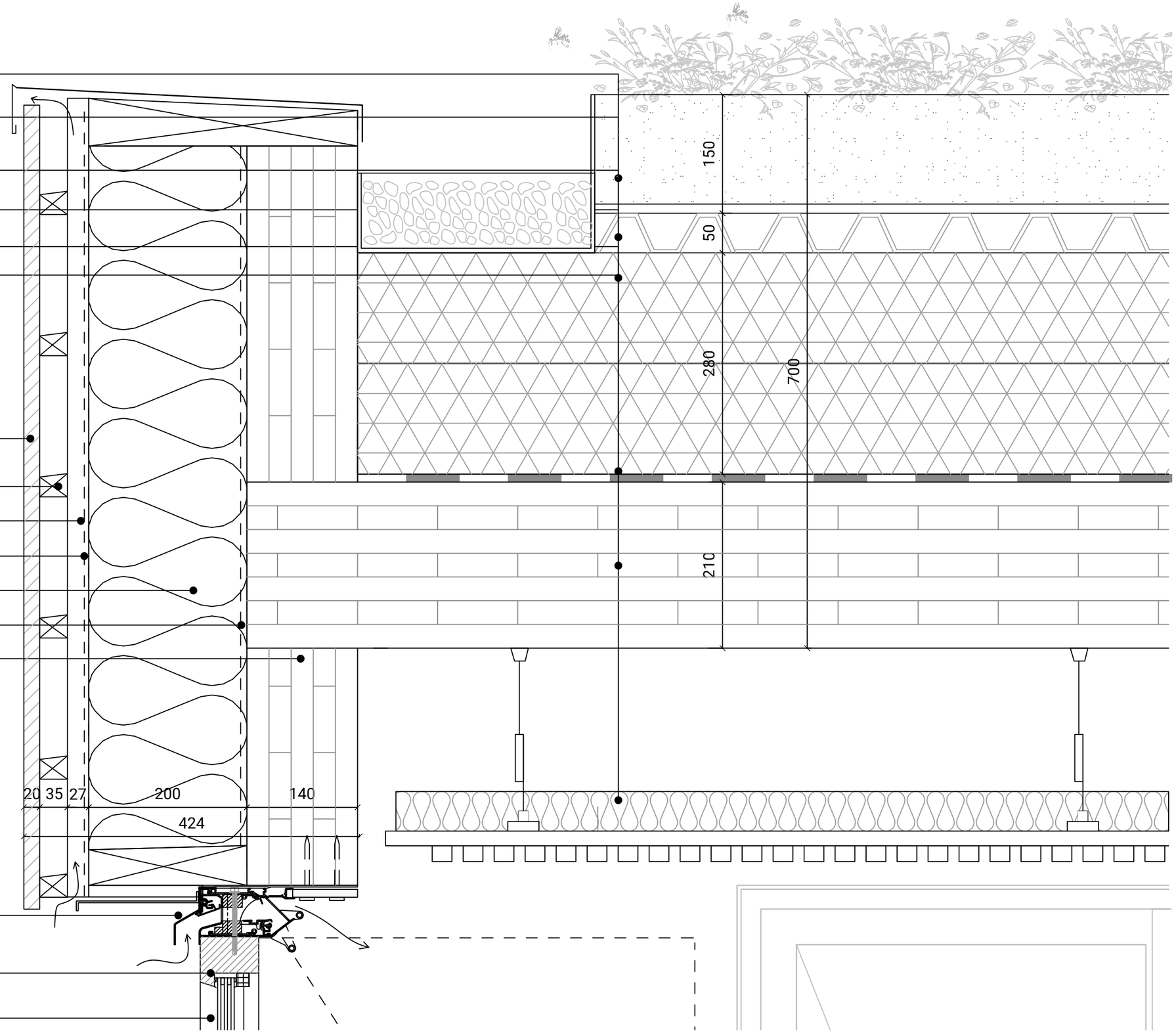
CLT wall, 5 layer

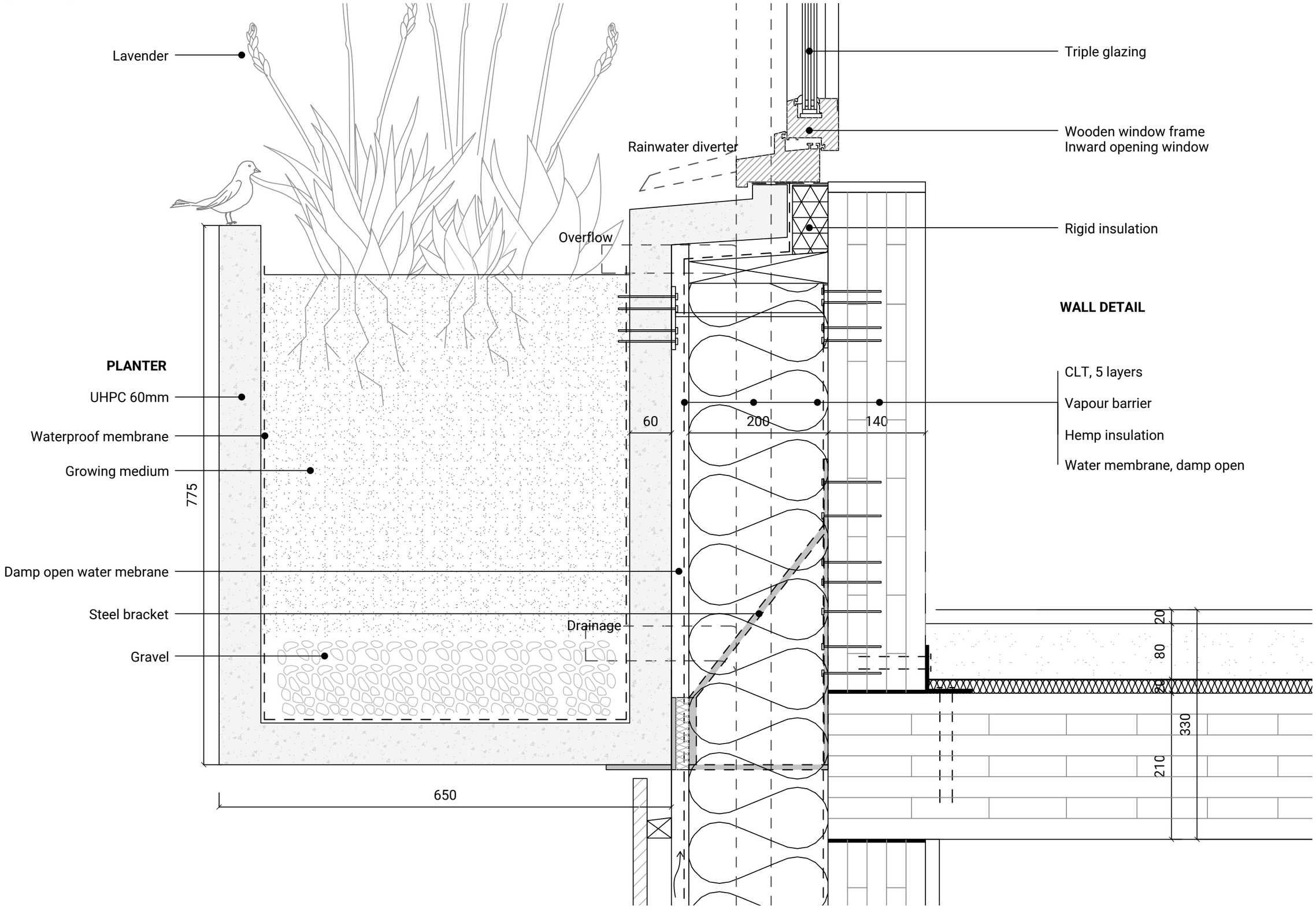
WINDOW DETAIL

Sound absorbing ventilation grille

Timber window frame

Triple glazing




Lavender
Triple glazing
Wooden window frame
Inward opening window
Rainwater diverter
Overflow
Rigid insulation
WALL DETAIL
PLANTER
UHPC 60mm
Waterproof membrane
Growing medium
Damp open water mebrane
Steel bracket
Gravel
Drainage
CLT, 5 layers
Vapour barrier
Hemp insulation
Water membrane, damp open
775
60
200
140
650
20
80
330
210

PARTITION WALL STRUCTURE

CLT panel

Insulation

270

80 45 45 80

FLOOR STRUCTURE

Vinyl flooring

Screed with floorheating

Impact insulation layer

CLT

20 80 20

330

210

Impression | Courtyard