

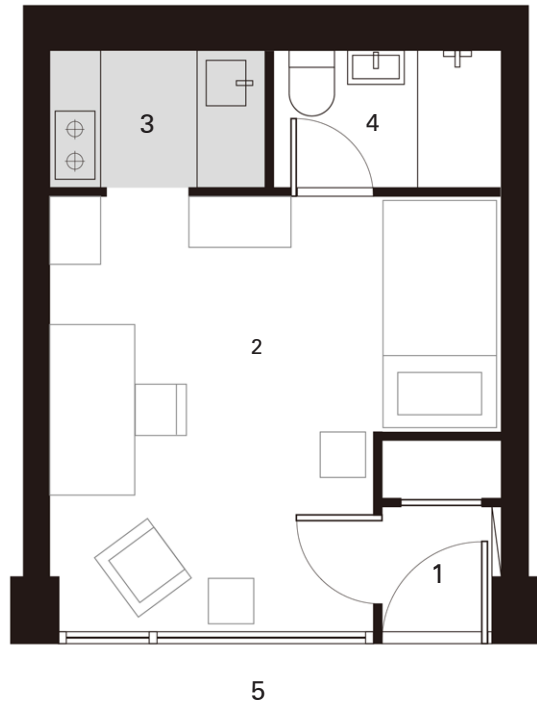
Blijkeuken

Redesigning the Fat Type Housing with Kitchens for Social Making

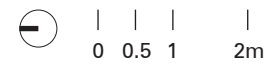


Hsiu-Ju Chang 5069874
TU Delft. Faculty of Architecture and Built Environment
AR3AD100 Advanced Housing Design (2021/22 Q4)
June 2022

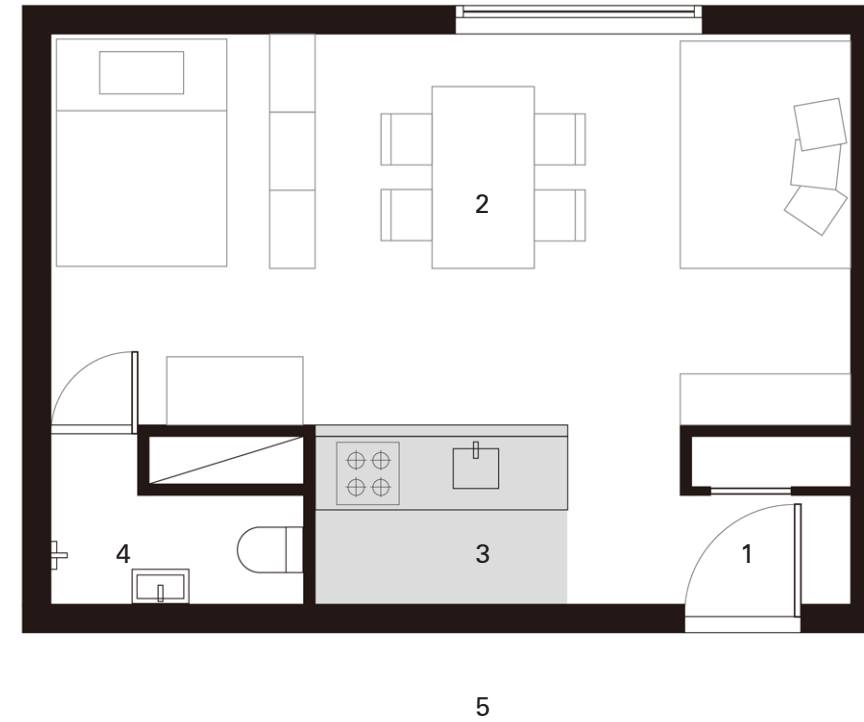
Motivation



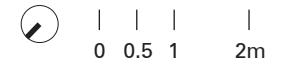
- 1 Entrance
- 2 Living Space
- 3 Kitchen
- 4 Bathroom
- 5 Gallery



Floor Plan of Previous Studio Room

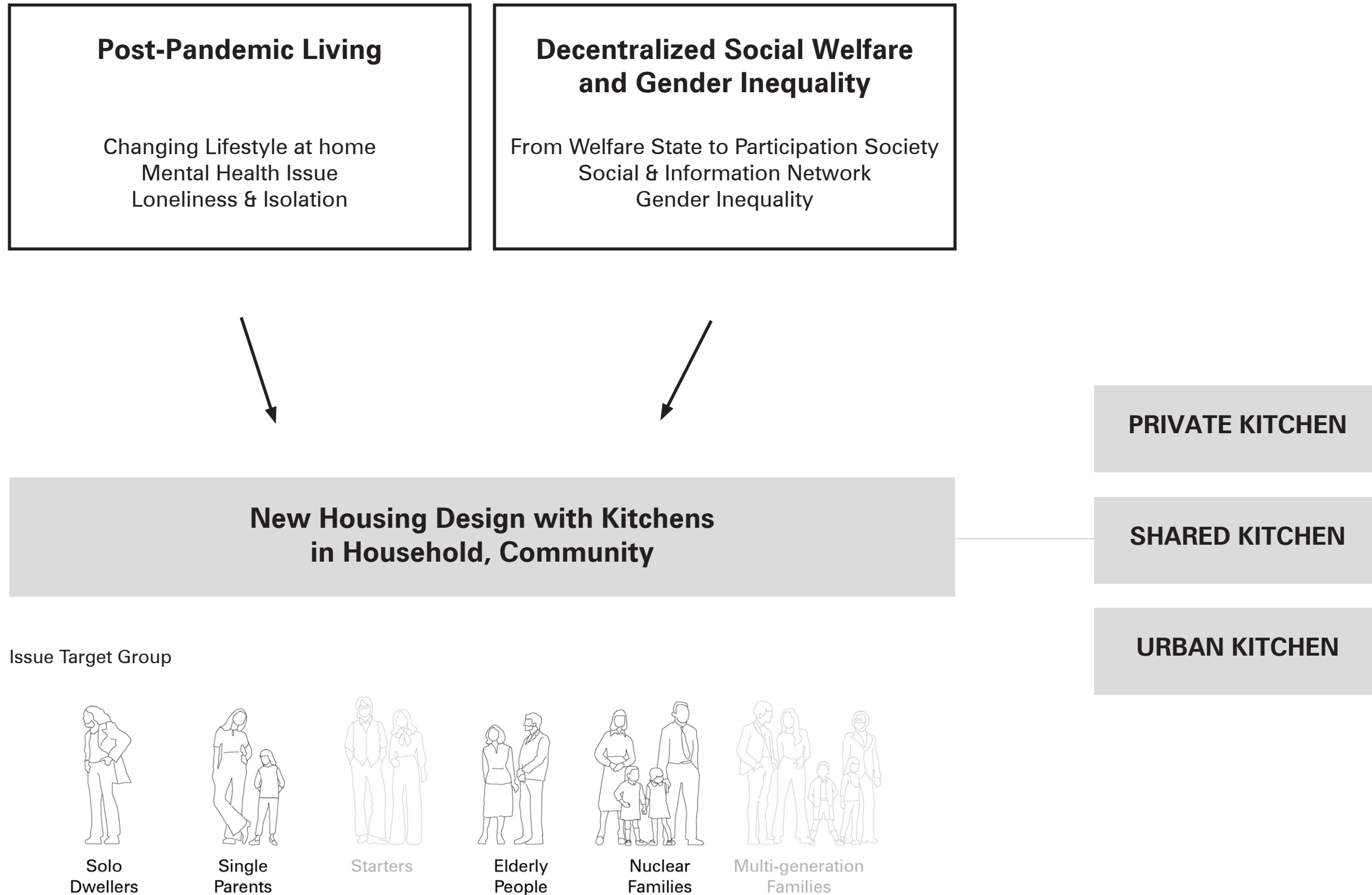


- 1 Entrance
- 2 Living Space
- 3 Kitchen
- 4 Bathroom
- 5 Corridor



Floor Plan of Current Studio Room

Problem Statement



Problem Statement

Housing Crisis in the Netherlands

Commodification of Housing
Mismatched Housing Market
Densifying City



New Tenure Type & New Housing Type

THE FAT TYPE

30M

30M

Issue Target Group



Solo Dwellers



Single Parents



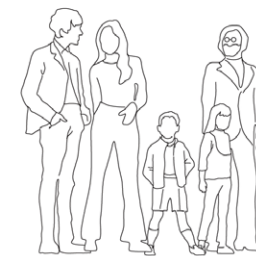
Starters



Elderly People

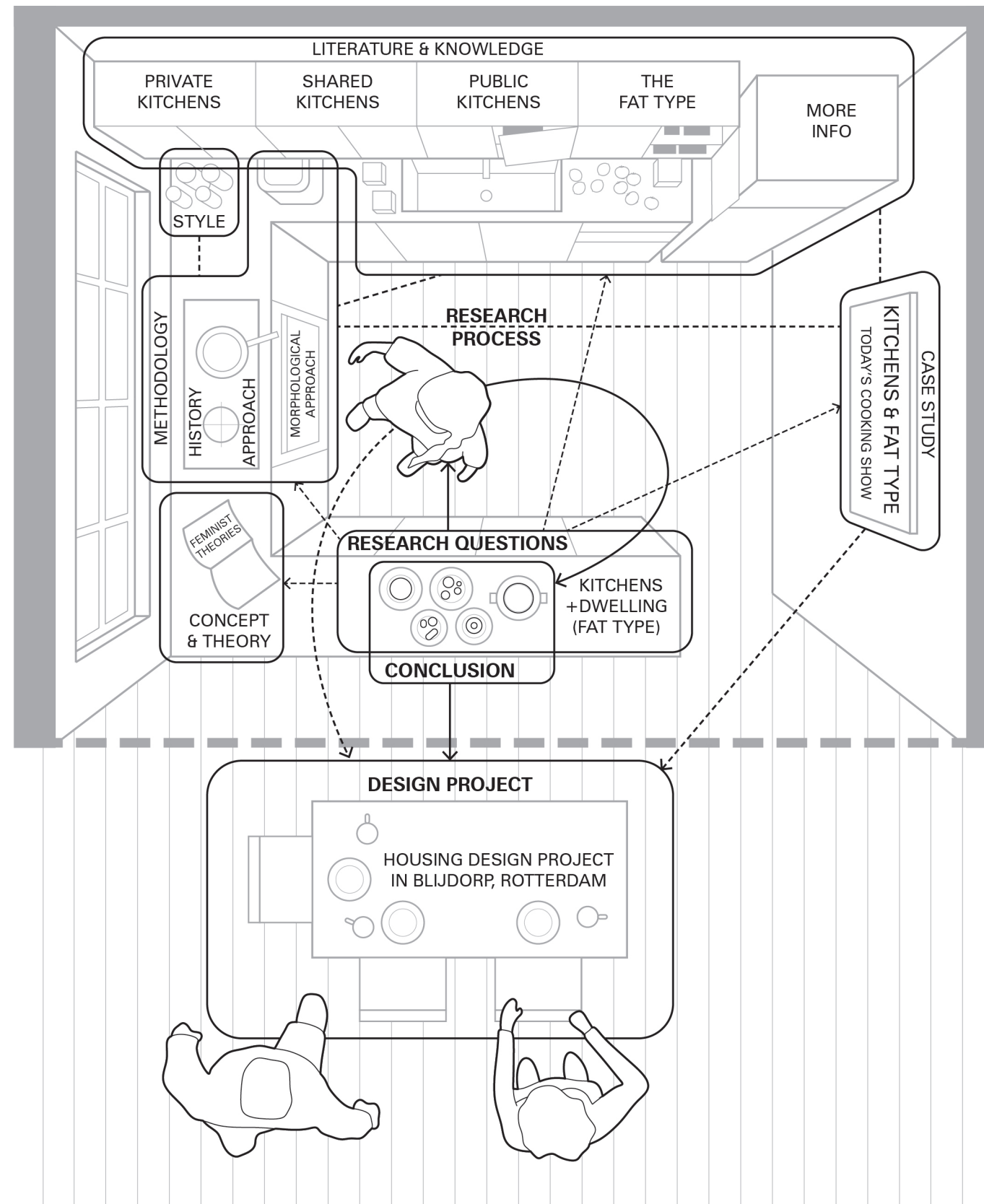
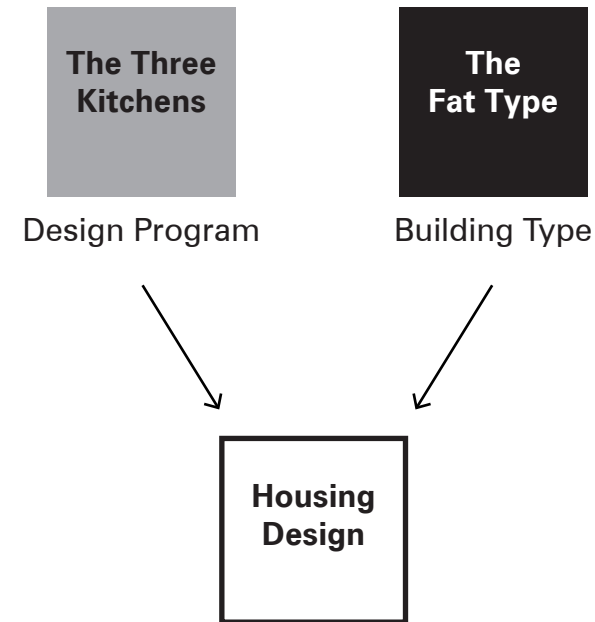


Nuclear Families



Multi-generation Families

Research Diagram & Research Question



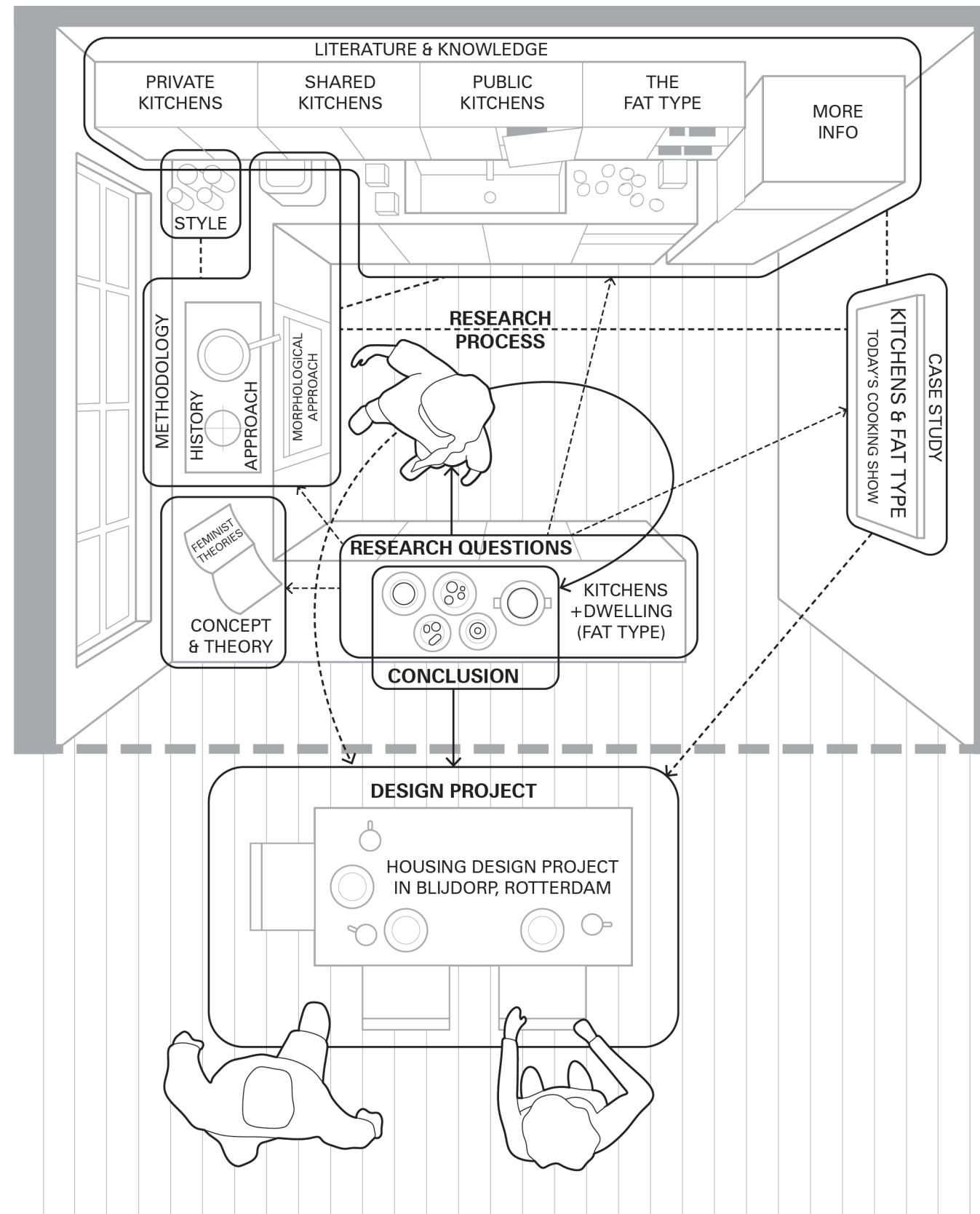
Research Diagram & Research Question

1. How could private modern kitchen of the 20s, shared kitchen of the 70s, and urban kitchen of 2010s enlighten the kitchen and housing design in the 2020s of Netherlands?

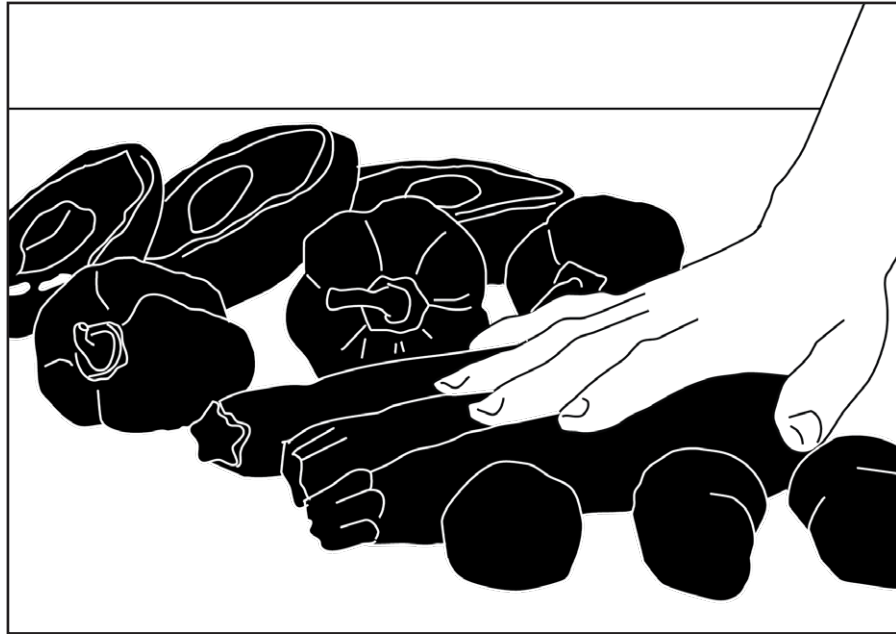
- 1) How did the industrialized equipment and optimization of efficiency in the private modern kitchen in the 1920s provide opportunities for gender equality and the shift of social gender roles?
- 2) How did the concern of care and sharing in the 1970s contribute to the shared kitchen and cohousing design?
- 3) How did the urban kitchens respond to the late capitalist society and become social support in communities?

2. How does the potential of the three types of kitchens impact future housing design in the Fat Type buildings in the Dutch urban context?

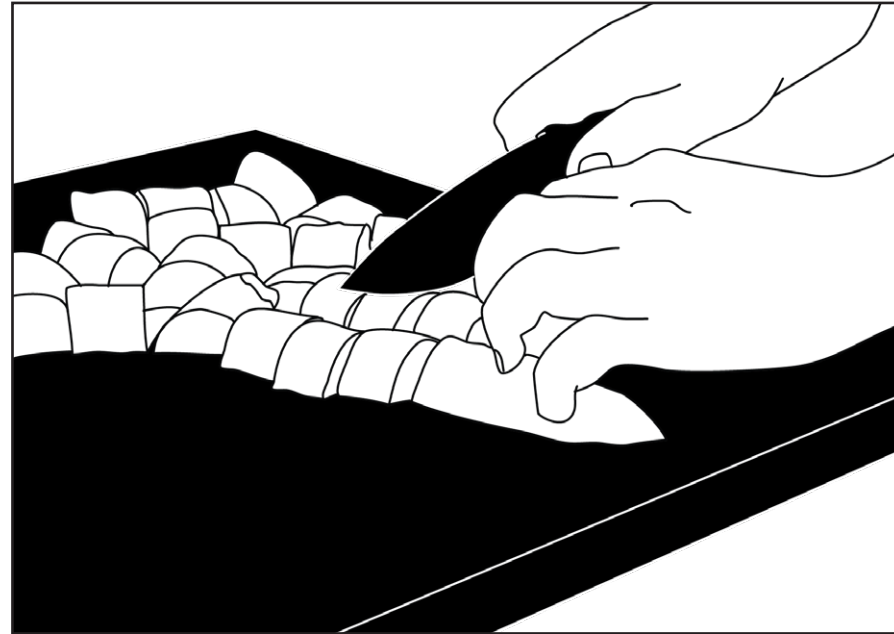
- 1) What are the urban characteristics and spatial qualities of the Fat Type?
- 2) How can the tradition of Dutch housing design shape the design of the Fat Type buildings?
- 3) How can the three types of kitchens provoke new housing design for the Fat Type buildings?



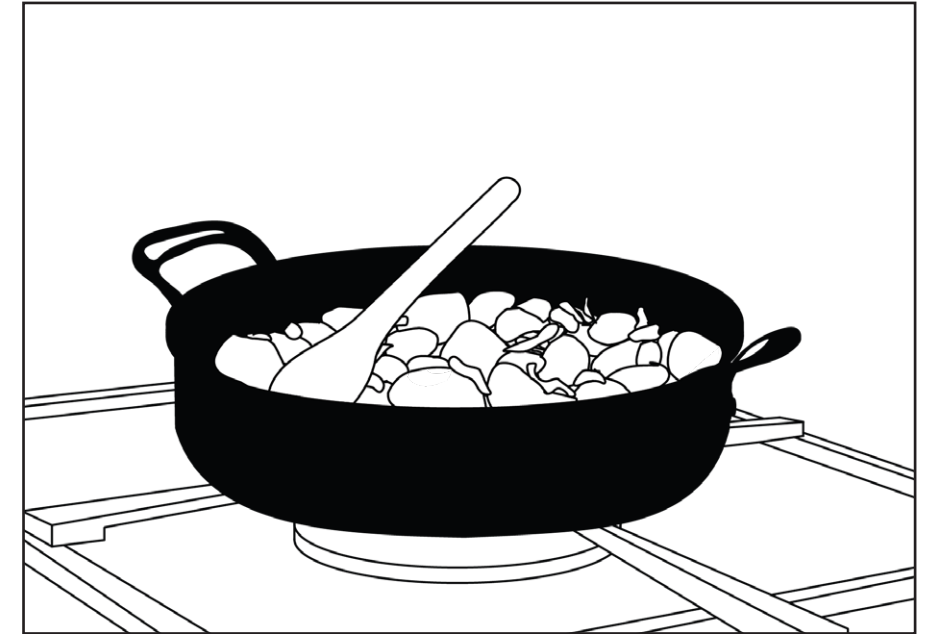
Cooking Steps



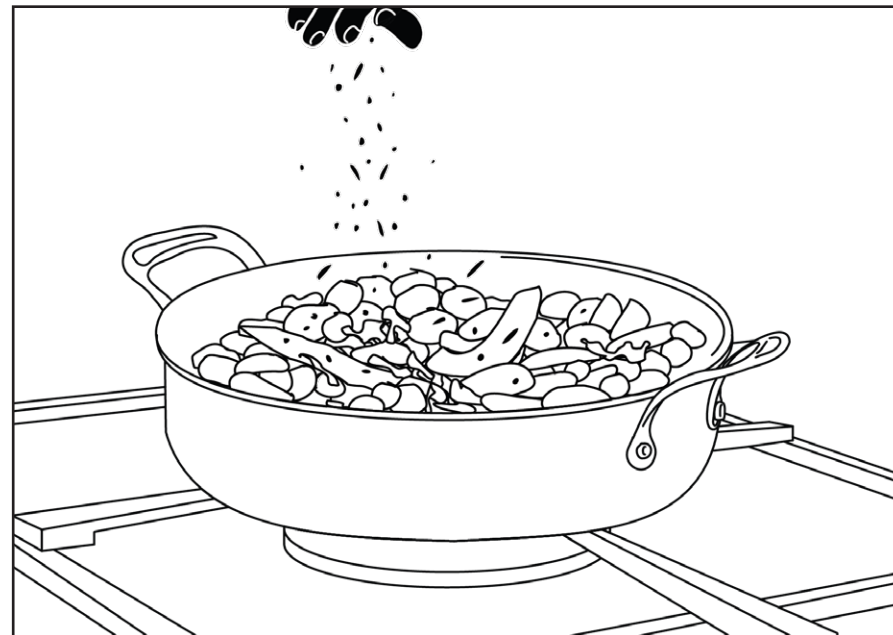
Step 00: ingredients



Step 01: chopping



Step 02: brewing



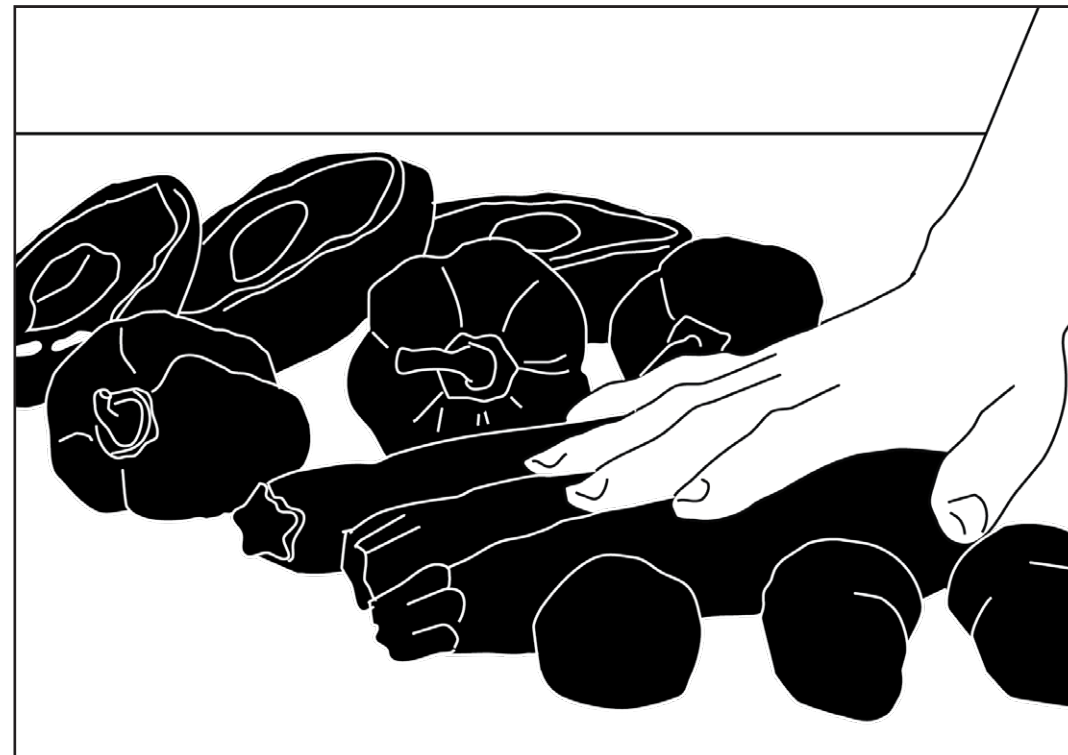
Step 03: seasoning



Step 04: plating & tasting

Step 00

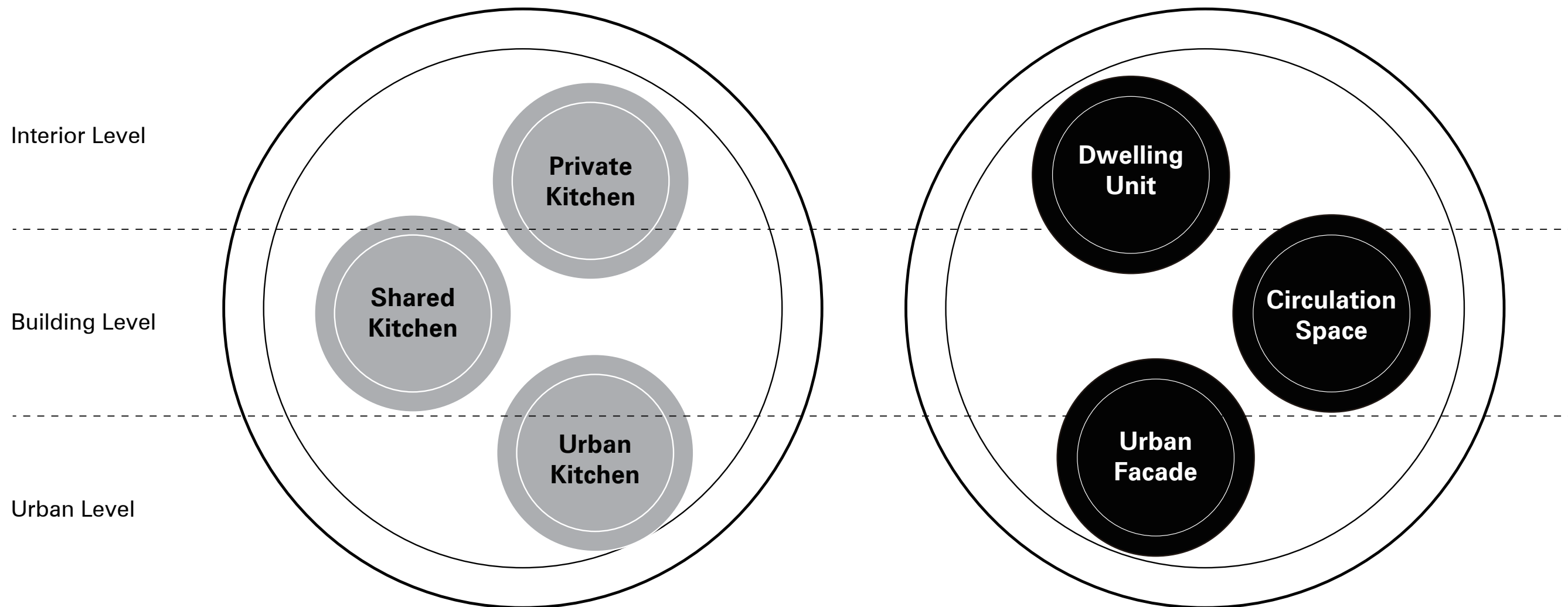
ingredients



Ingredients Overview

Historical Approach

Morphological Approach



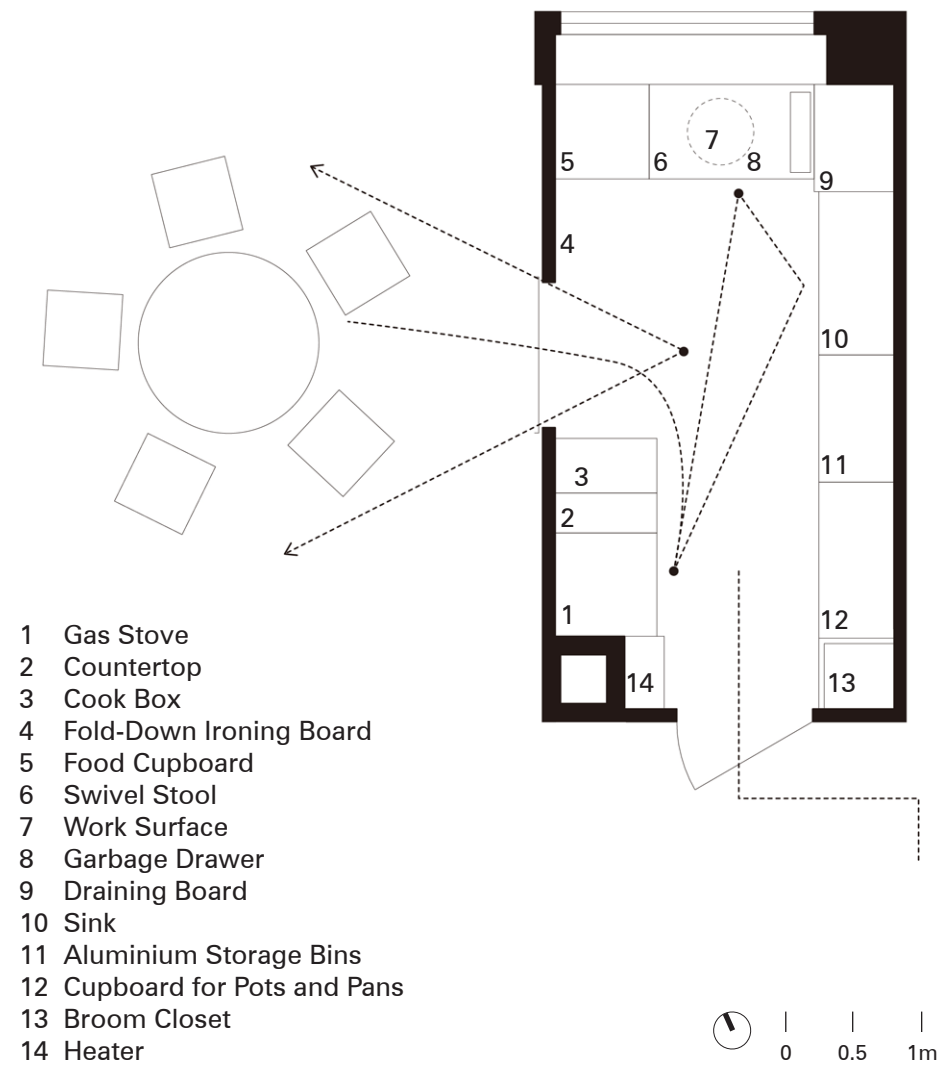
Three Kitchen Types

The Fat Type

The Three Kitchen Constellations

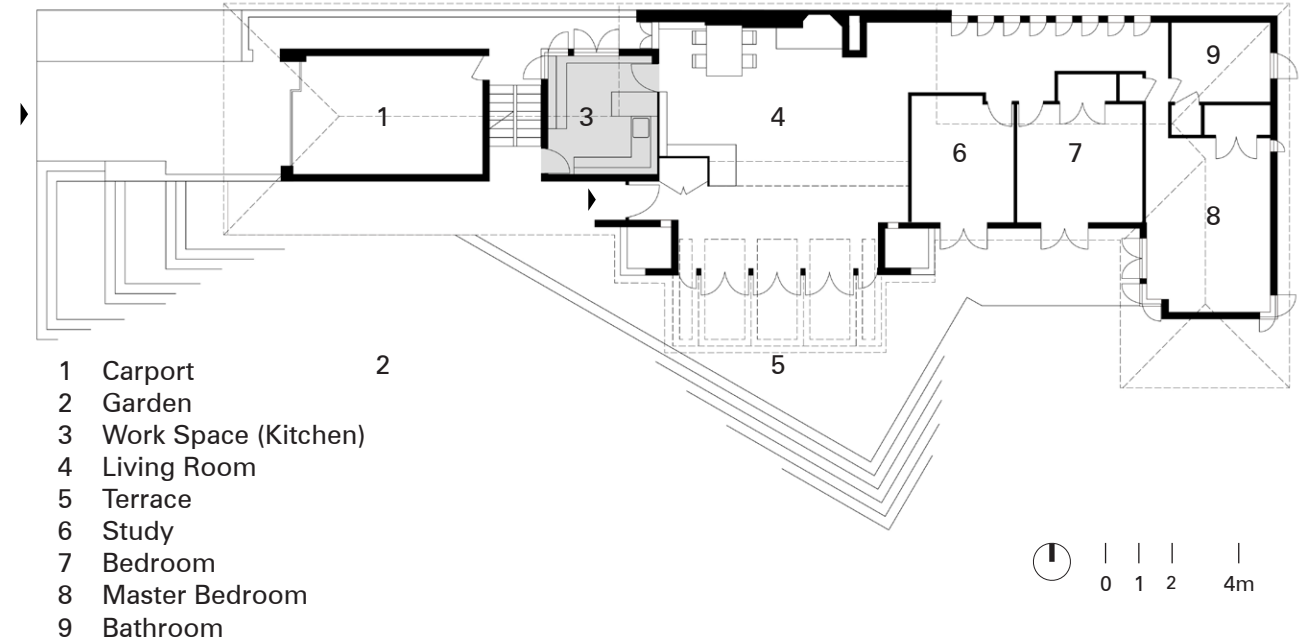
1. Private Modern Kitchens of the 20s

Frankfurt Kitchen, Margarete Schütte-Lihotzky, 1926



User of the Frankfurt Kitchen
Frankfurt Kitchen (Paul Wolff, 1927)

Malcom Willey House, Frank Lloyd Wright, 1934

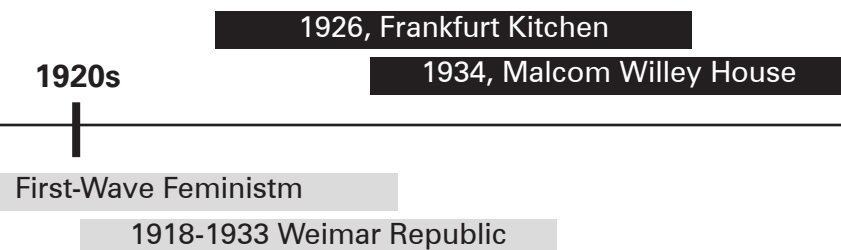


Kitchen Side

Kitchen Facade & Social Interactions

0 0.25 0.5 1m

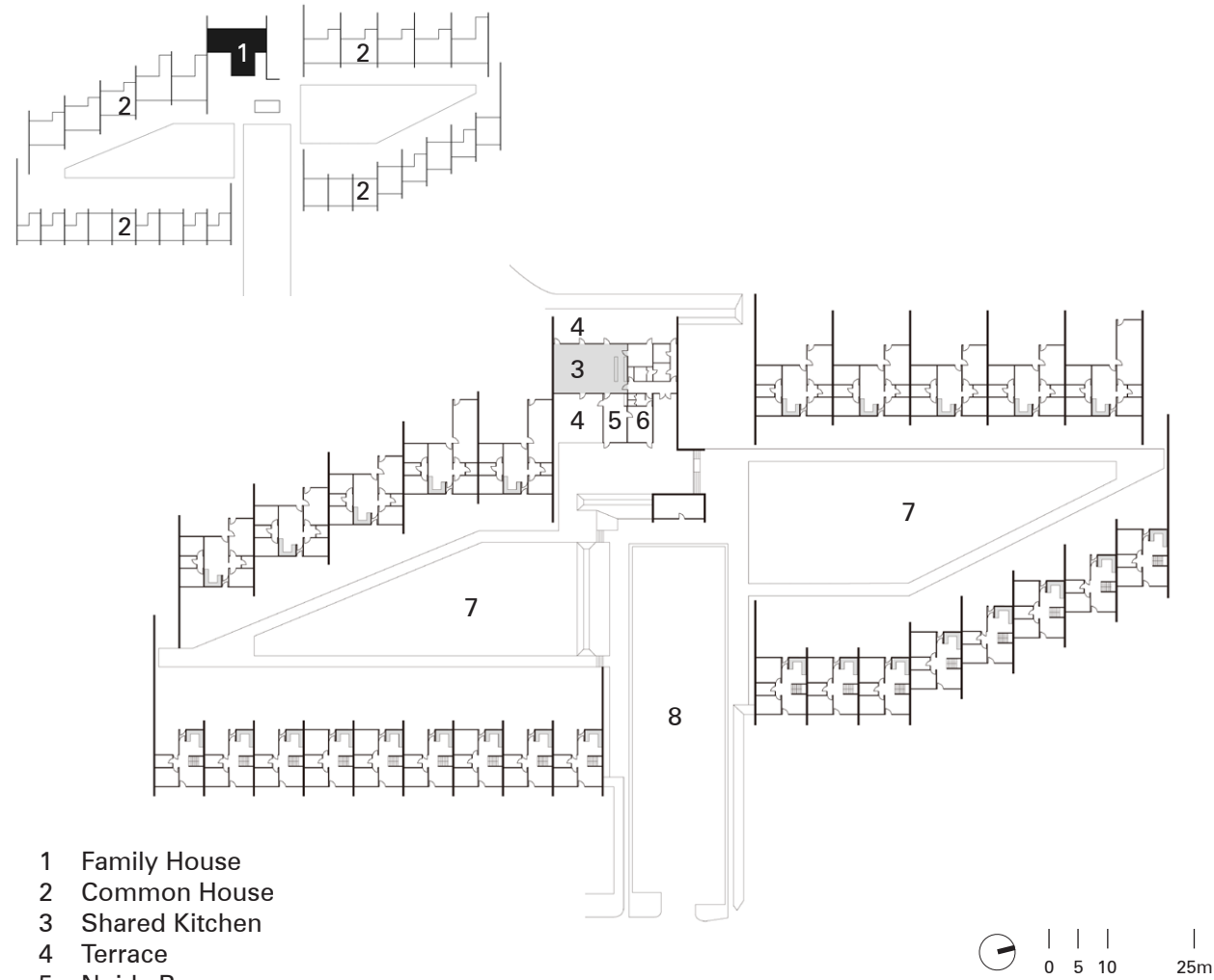
Frankfurt Kitchen and Equipments



The Three Kitchen Constellations

2. Shared Kitchens of the 70s

Sættedammen, Theo Bjerg, 1972



- 1 Family House
- 2 Common House
- 3 Shared Kitchen
- 4 Terrace
- 5 Noidy Room
- 6 Quiet Room
- 7 Communal Garden
- 8 Carport

Masterplan, Sættedammen

Stacken, Siv Carlsson, 1979



- 1 Apartments
- 2 Dining Room
- 3 Shared Kitchen
- 4 Scullery
- 5 Play Room
- 6 Guest Room
- 7 Toilet
- 8 Elevator

5th Floor Plan, Sættedammen

1920s

1972, Sættedammen

1970s

1979, Stacken

2010s

Second-Wave Feminism

Cold War

The Three Kitchen Constellations

3. Urban Kitchens of the 2010s

Comedor Popular (Collective Kitchen) in Lima, 1978-



Comedor Popular La Balanza, Lima.
(Credit: Anna Puigjaner)

Children's Cafeteria, 2012-



Illustration for Children's Cafeteria (Kodomo Shokudo)
(Source: <http://kodomoshokudo-tour.jp/>)

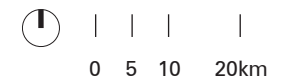
Lima Metropolitan

Area: 2819 km²
 Population: 10.88 million
 Number of Urban Kitchens: 2384
 Average Service Territory: 1.18 km²/kitchen



Tokyo Metropolitan

Area: 2194 km²
 Population: 37.4 million
 Number of Urban Kitchens: 143
 Average Service Territory: 15.34 km²/kitchen



Urban Kitchen Density Analysis, Lima & Tokyo

1920s

1970s

1978, Comedor Popular in Lima

2012, Children's Cafeteria

2010s

1975, Democratization of Peru

70s Recession & Energy Crisis

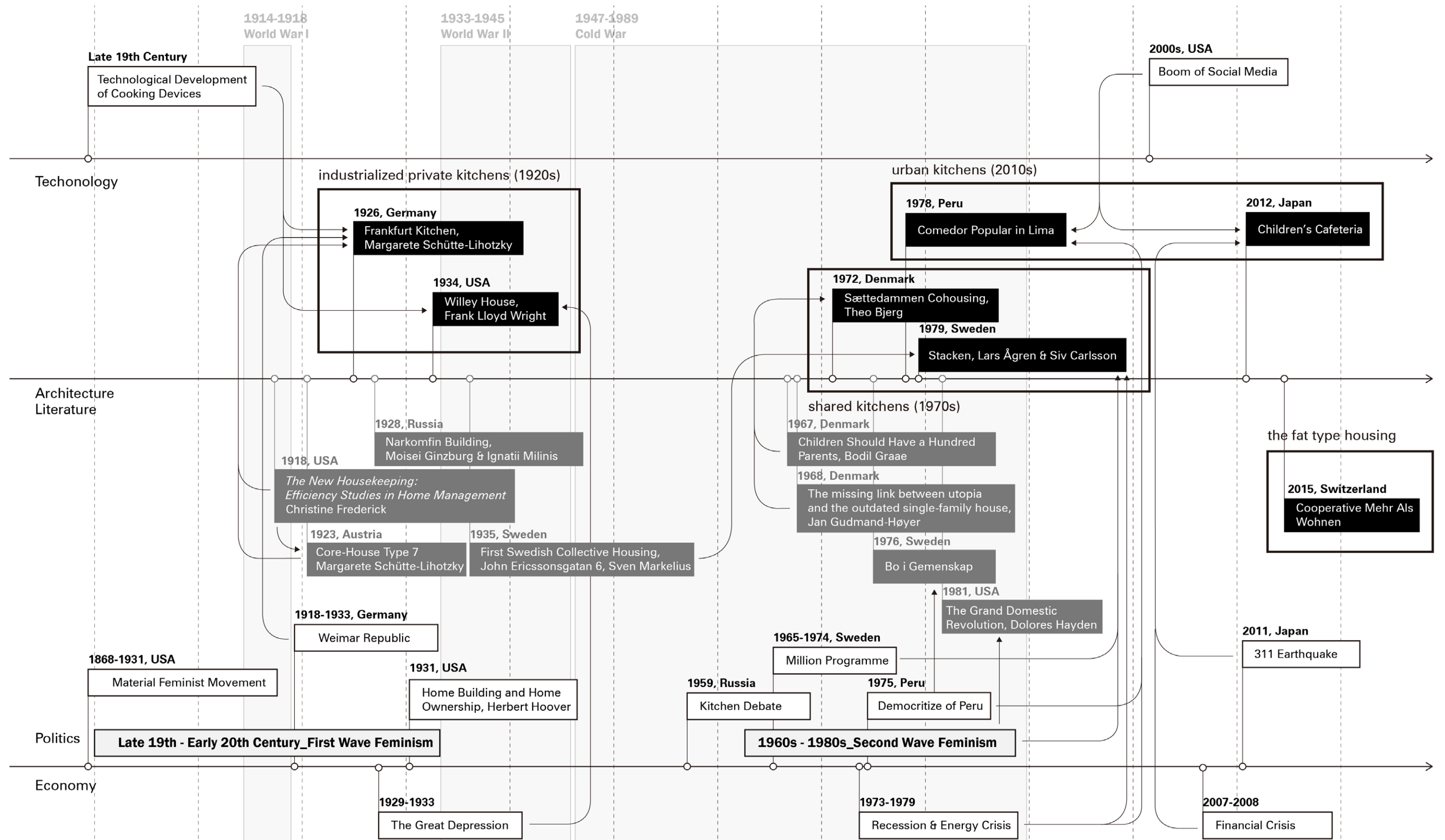
2011 311 Earthquake

Invention of the Social Media

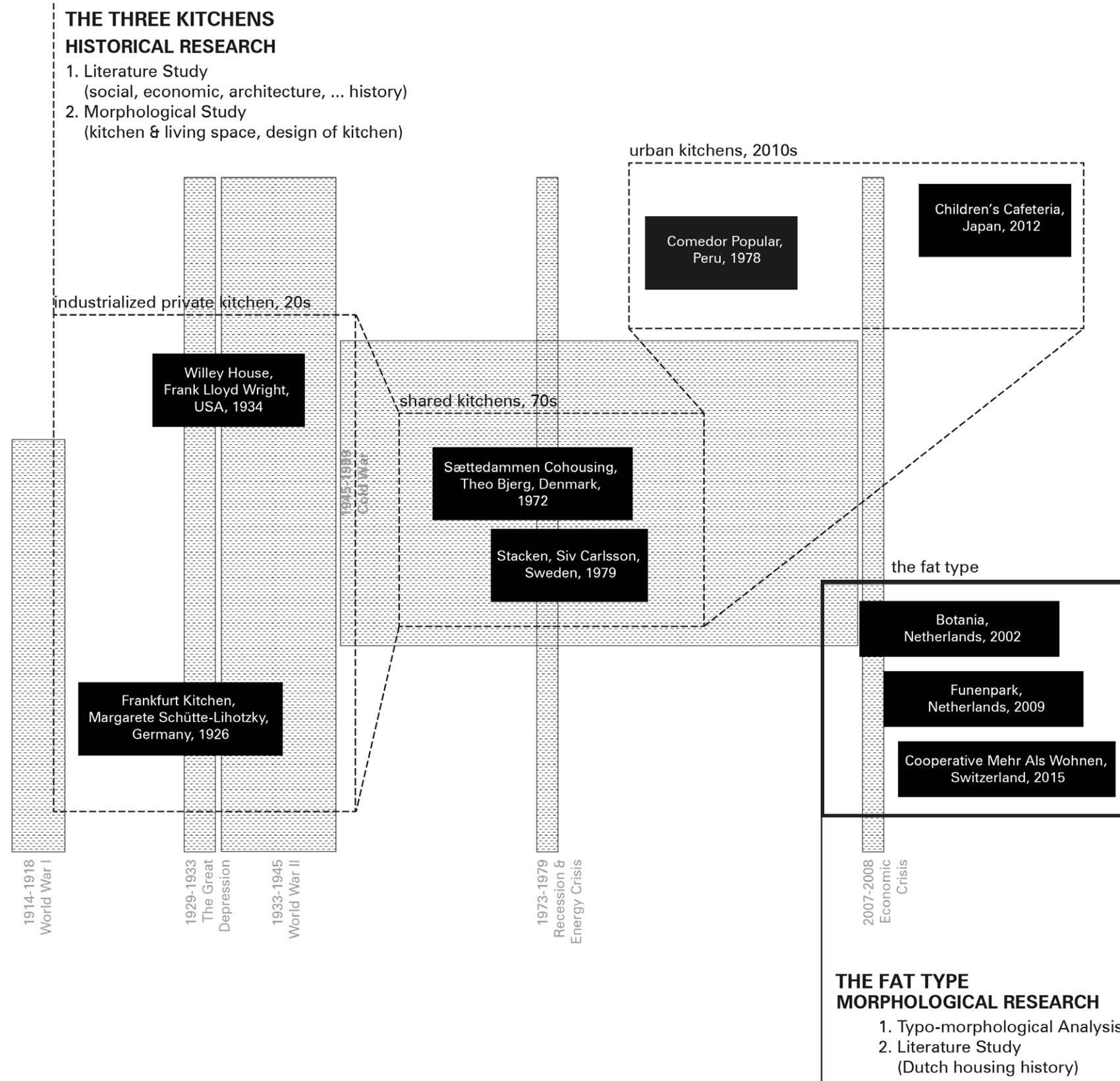
2007-2008 Economic Crisis

The Three Kitchen Constellations

Research Findings



The Fat Type



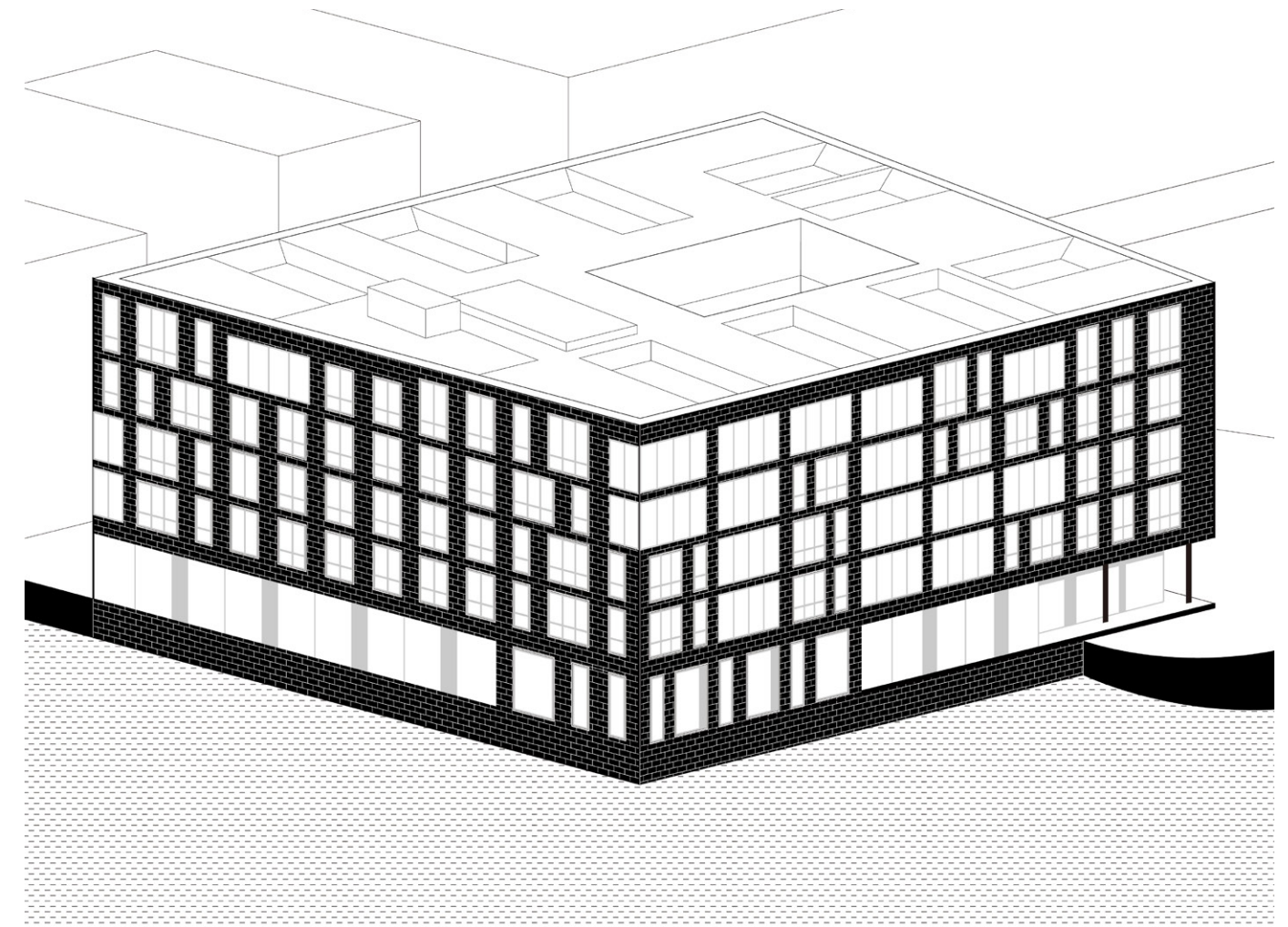
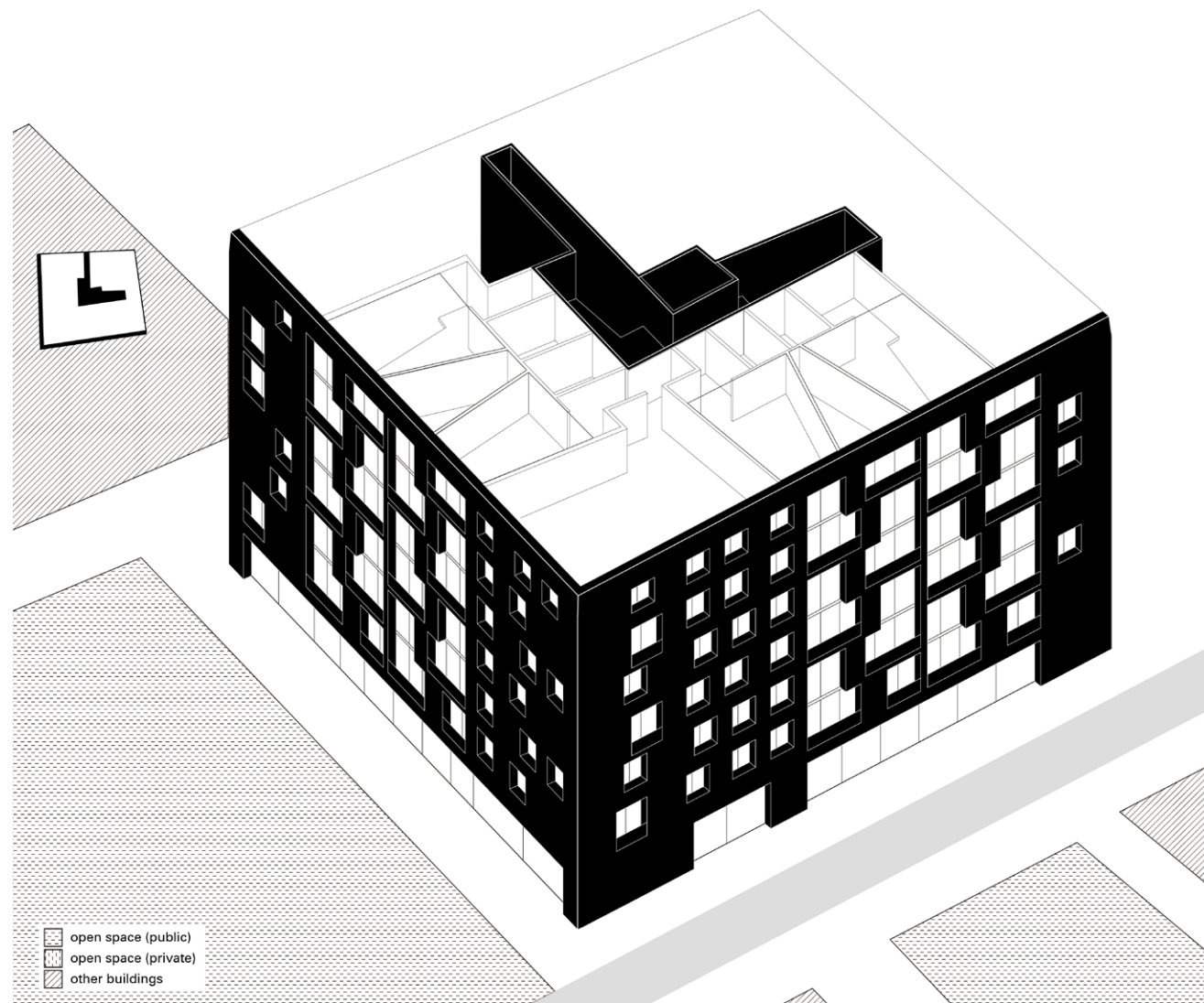
What are the urban characteristics and spatial qualities of the Fat Type?

How can the tradition of Dutch housing design shape the design of the Fat Type buildings?

List of Case Study with Timeline & Research Methods, made by the author

The Fat Type

1. Urban Facade

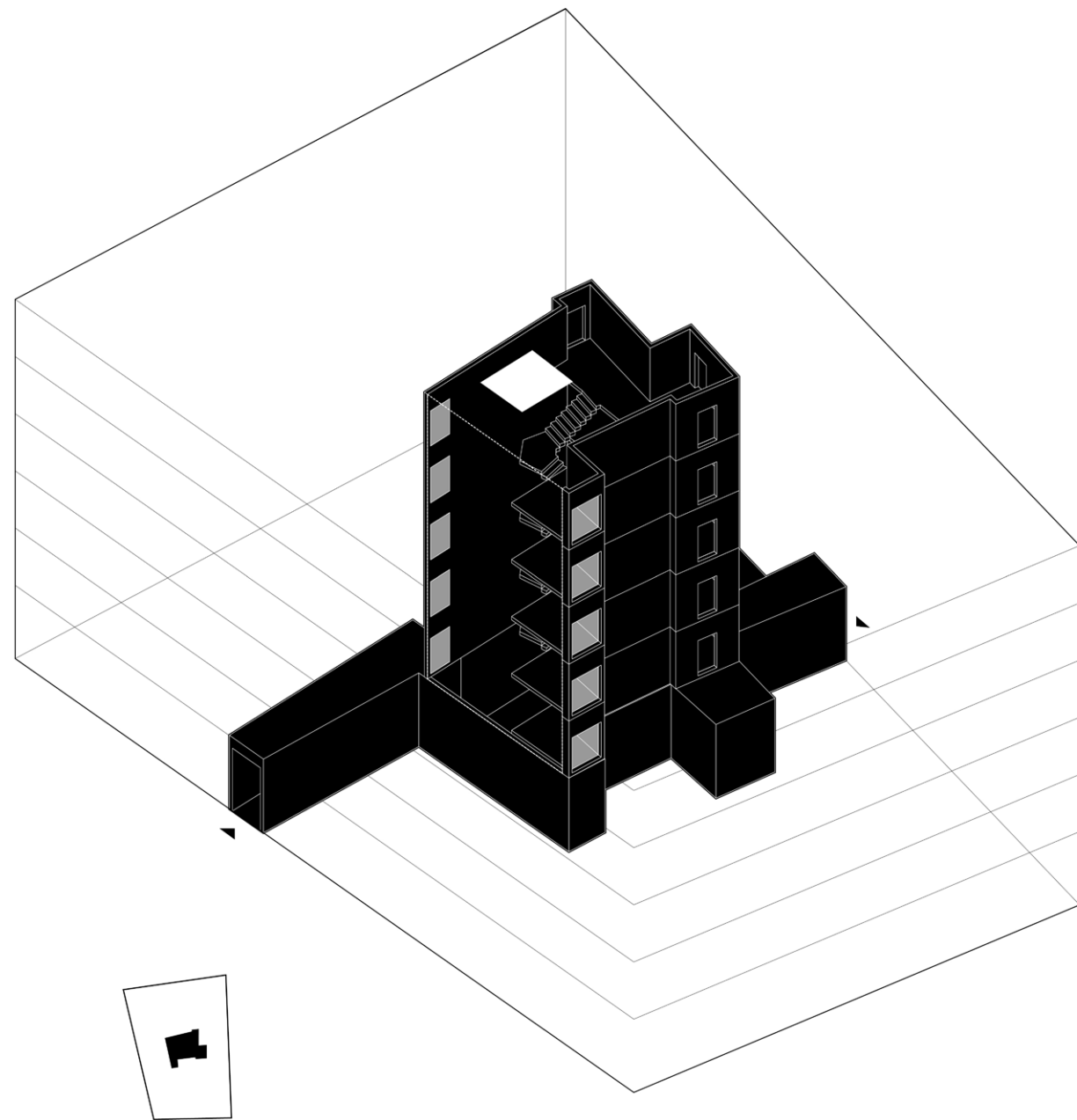


Facade Analysis, Haus G, Mehr Als Wohnen

North-East and North-West Facade, Botania

The Fat Type

2. Circulation Space



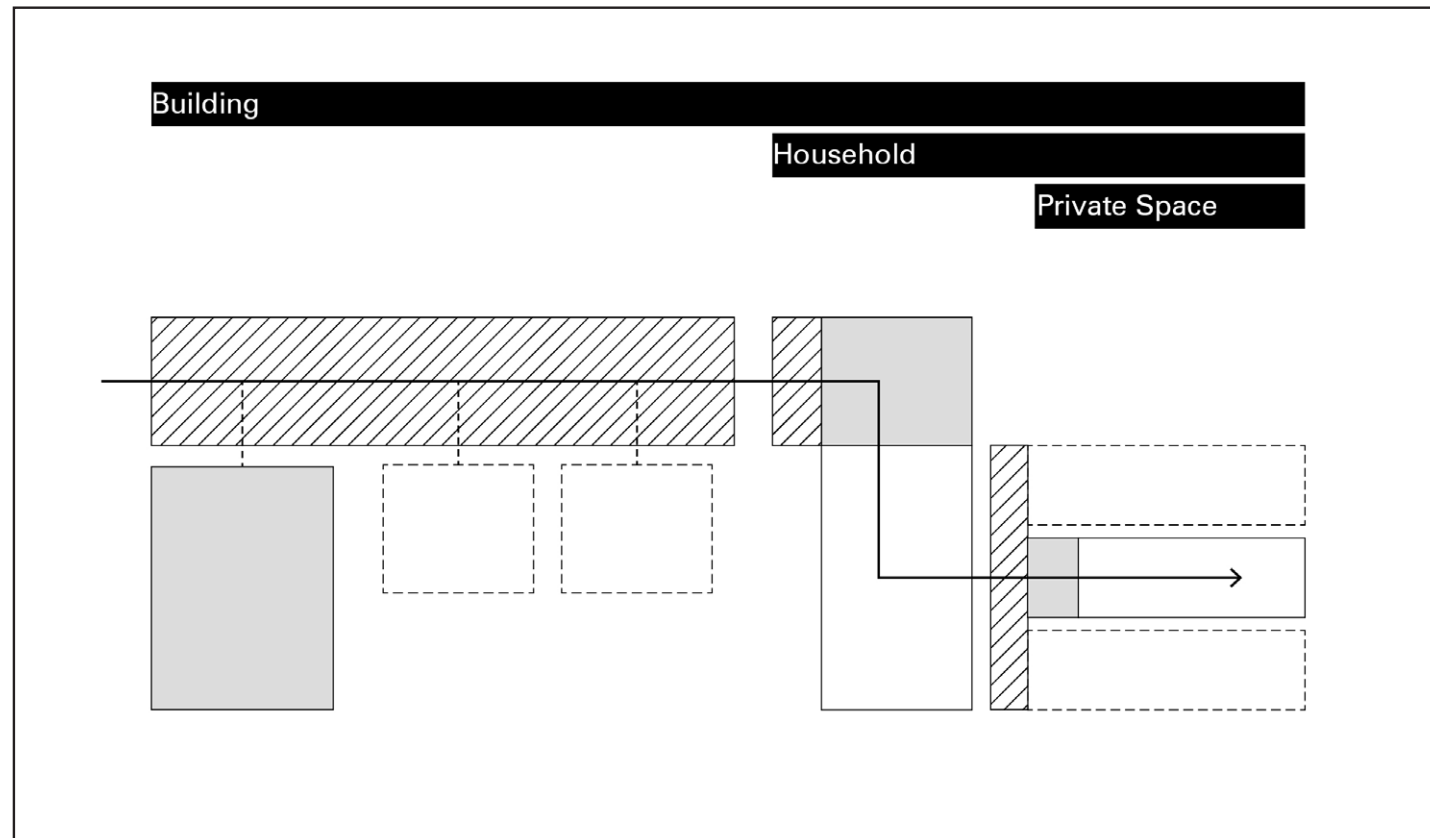
Vertical Circulation Study, Haus A, Mehr Als Wohnen



The Street, Johannes Vermeer, 1658
Justus van Effenblok, Michiel Brinkman, Rotterdam, 1922

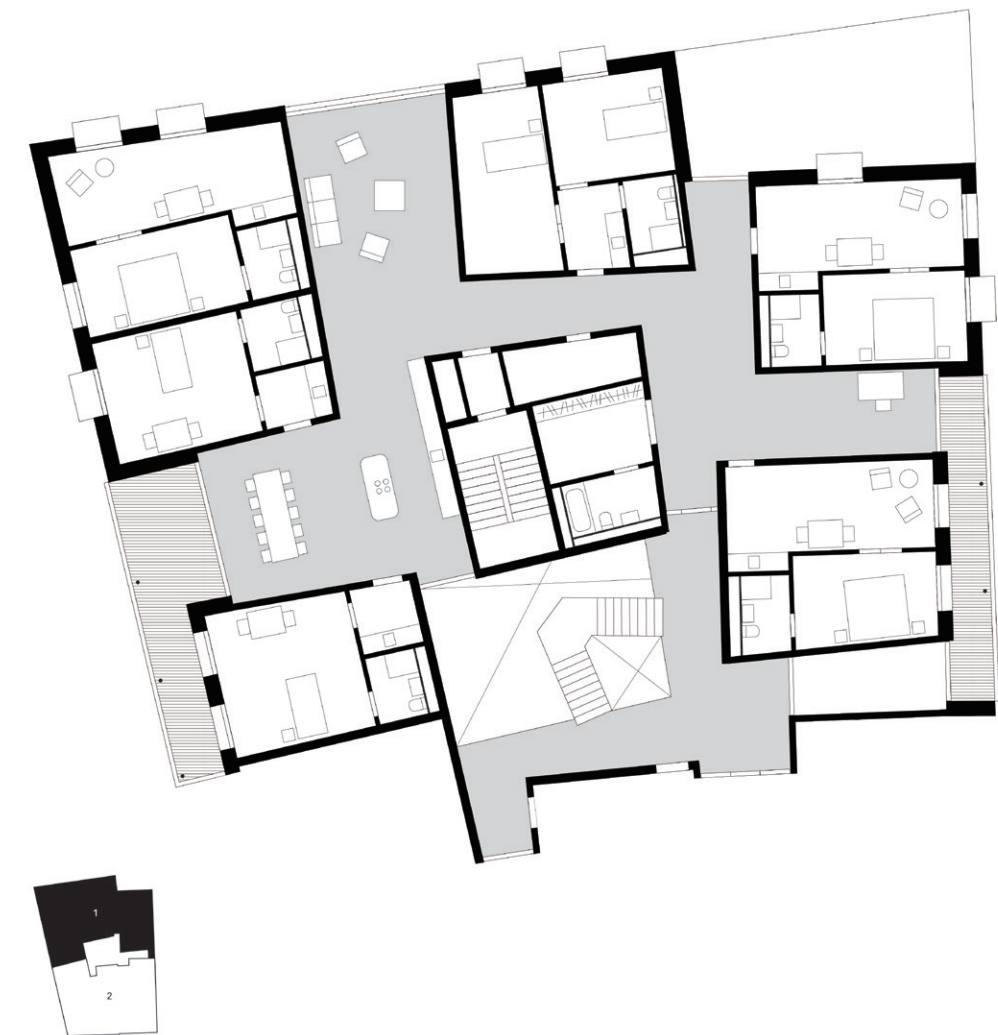
The Fat Type

3. Dwelling Types



Concept Diagram
Spatial Hierarchy

- ▨ Circulation & Transition
- Kitchen
- Living Space (living room/bedroom)
- ⋯ Other Unit (household/room)



Housing Unit, Haus A, Mehr Als Wohnen

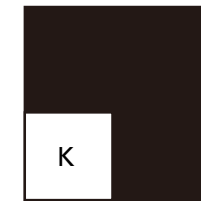
Research Conclusion



spatial quality, privacy



social relation



urban context, dining area, social relation

Private Kitchen

Shared Kitchen

Urban Kitchen

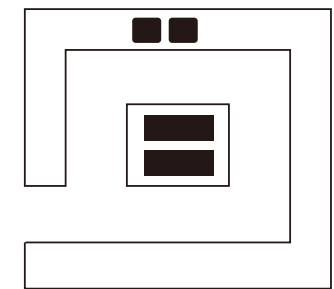
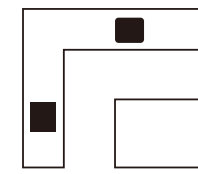
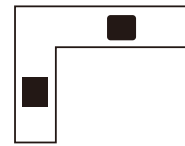
XS
Kitchenette

S
Kitchenette

M
Family Kitchen

L
Large Family Kitchen

XL
Professional Kitchen



PRIVATE

HOUSEHOLD

COMMUNITY

PUBLIC

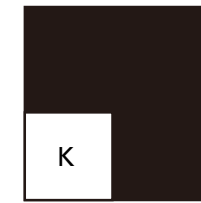
Research Conclusion



spatial quality, privacy



social relation



urban context, dining area, social relation

Private Kitchen Shared Kitchen Urban Kitchen

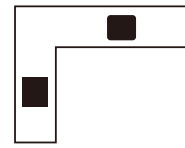
XS
Kitchenette



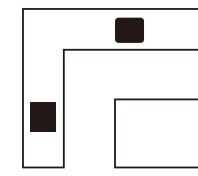
S
Kitchenette



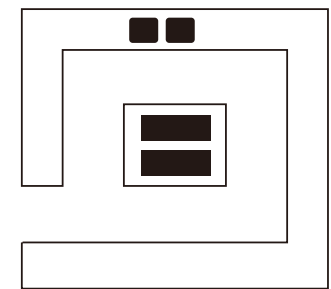
M
Family Kitchen



L
Large Family Kitchen



XL
Professional Kitchen

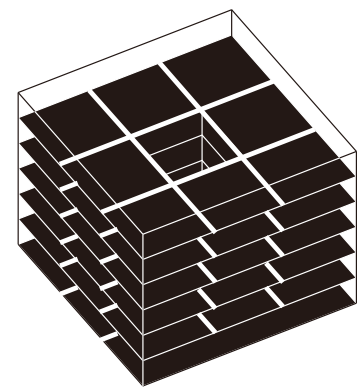


PRIVATE

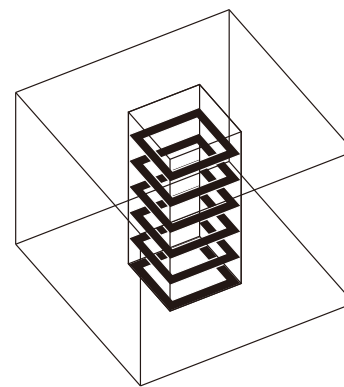
HOUSEHOLD

COMMUNITY

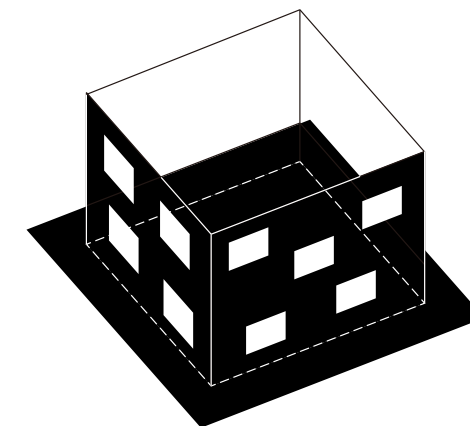
PUBLIC



Dwelling Types



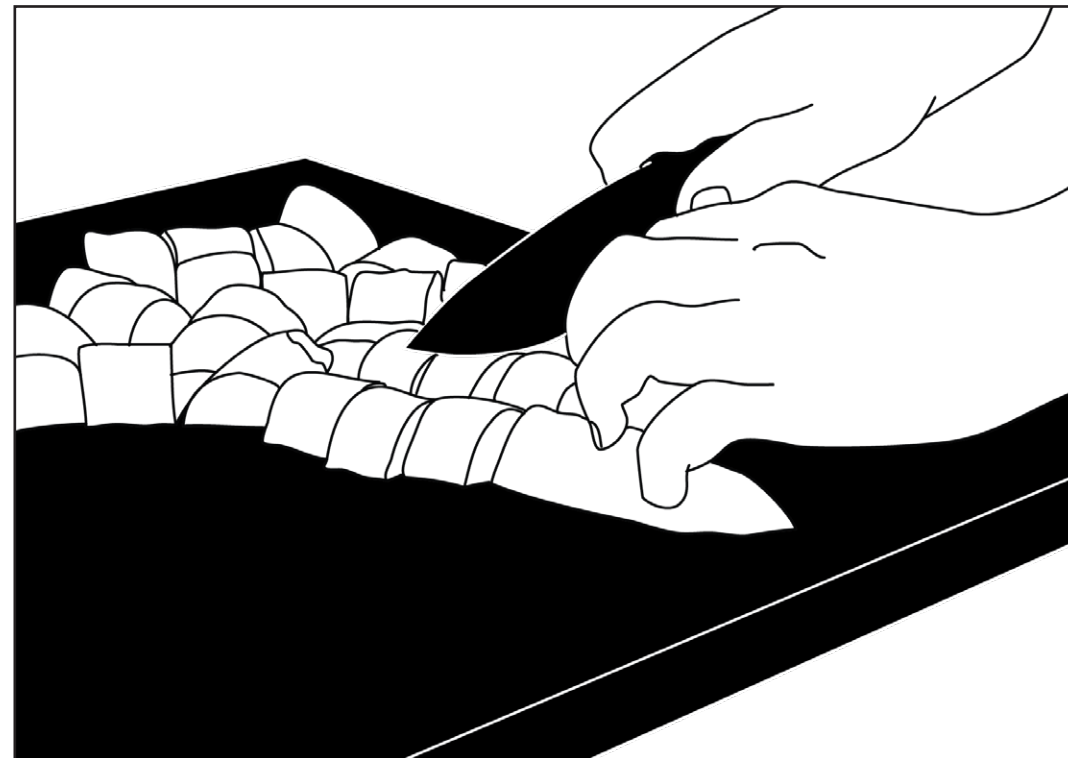
Circulation Space



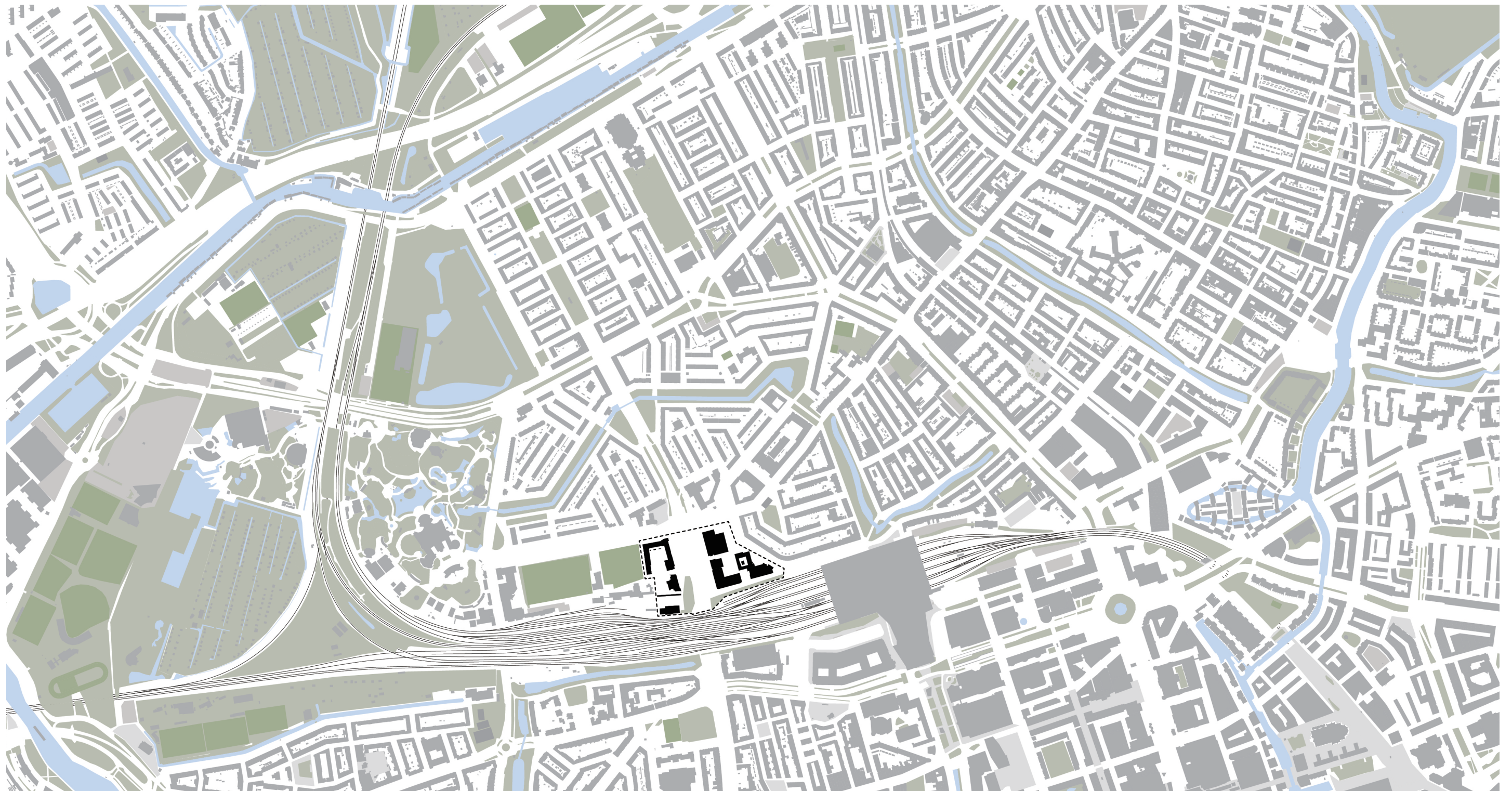
Facade

Step 01

chopping



Site Location

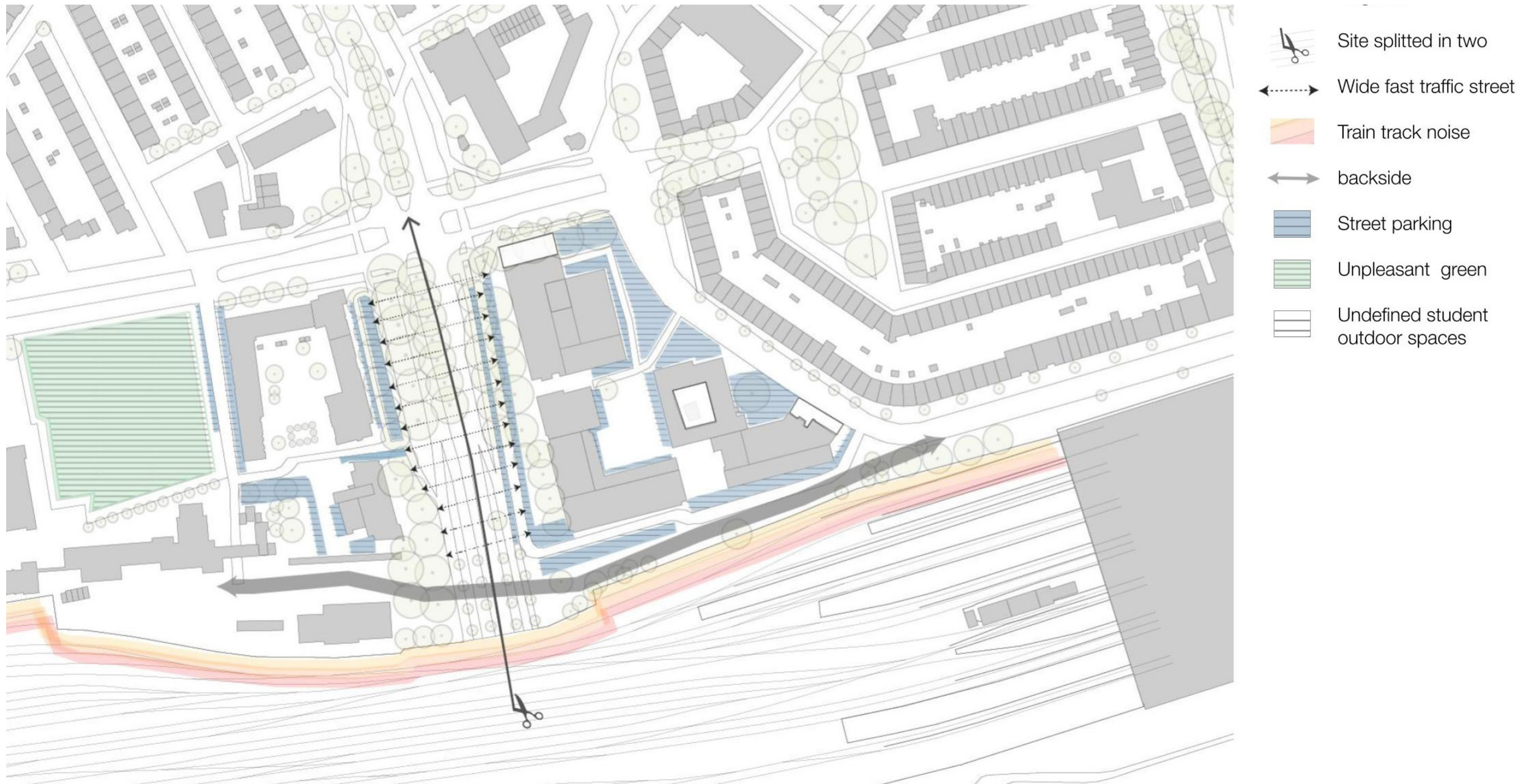


Map of Rotterdam North



0 100 200 400m

Urban Context



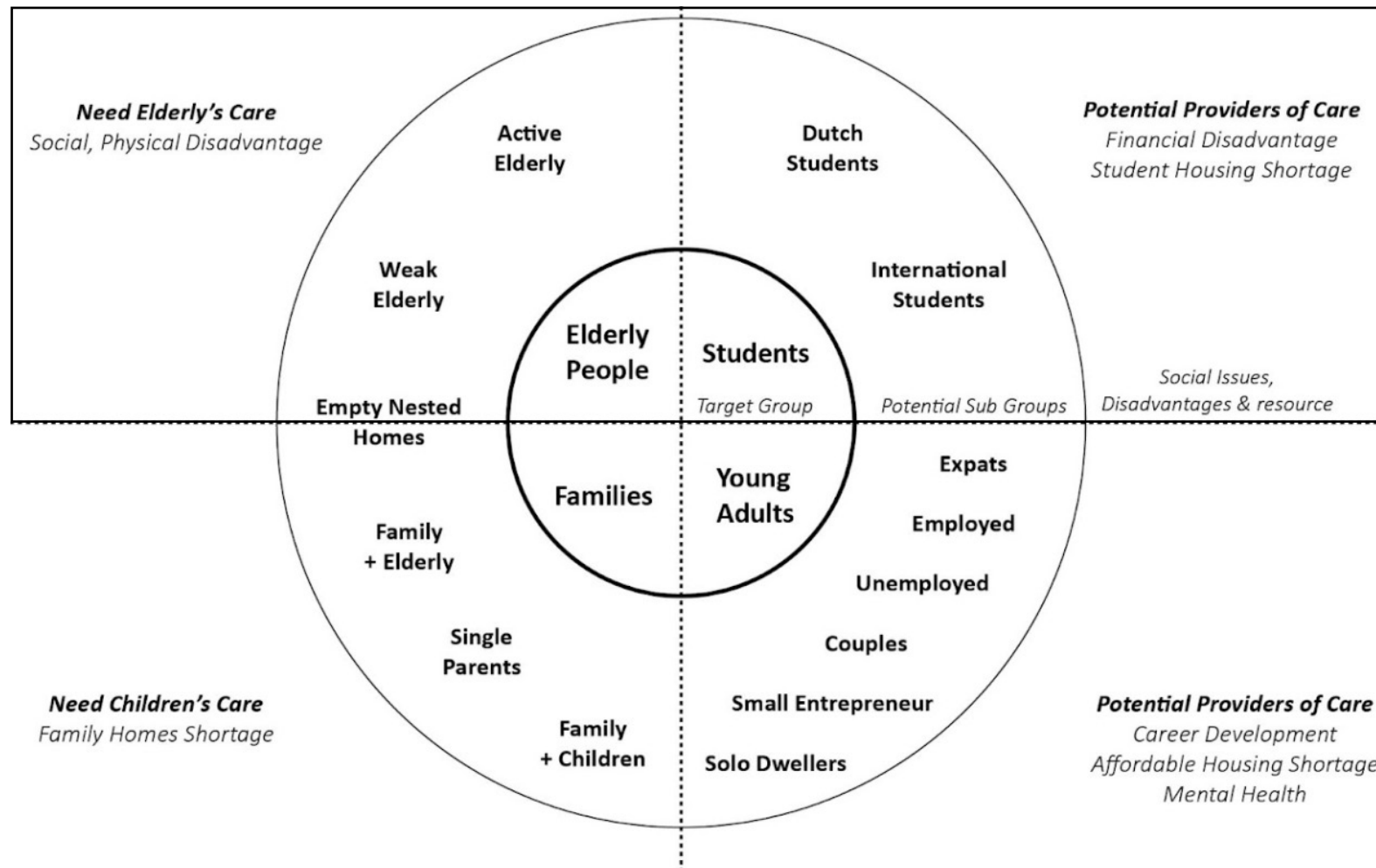
Site Problem Map (Credit: Urban Strategy Group **Social Group**)



0 20 40 80m

Urban Masterplan

dwellers on site



Urban Masterplan Target Group
Credit: Urban Strategy Group **Social Group**

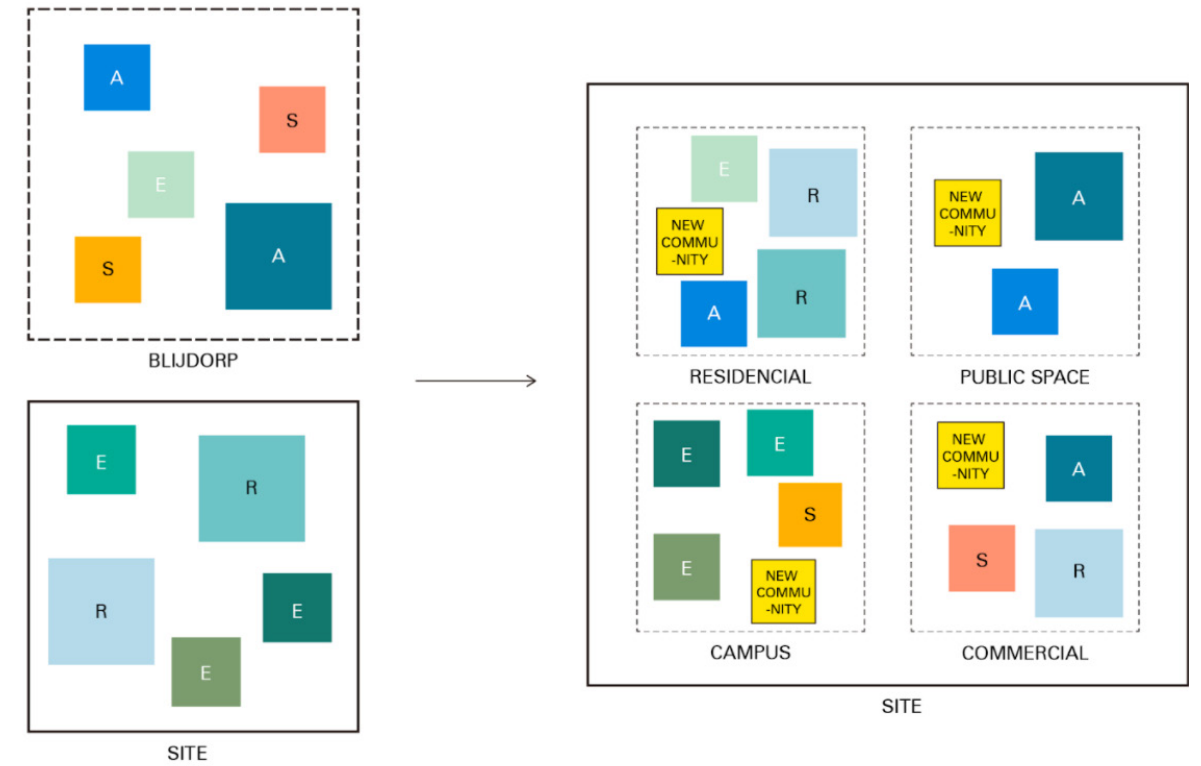
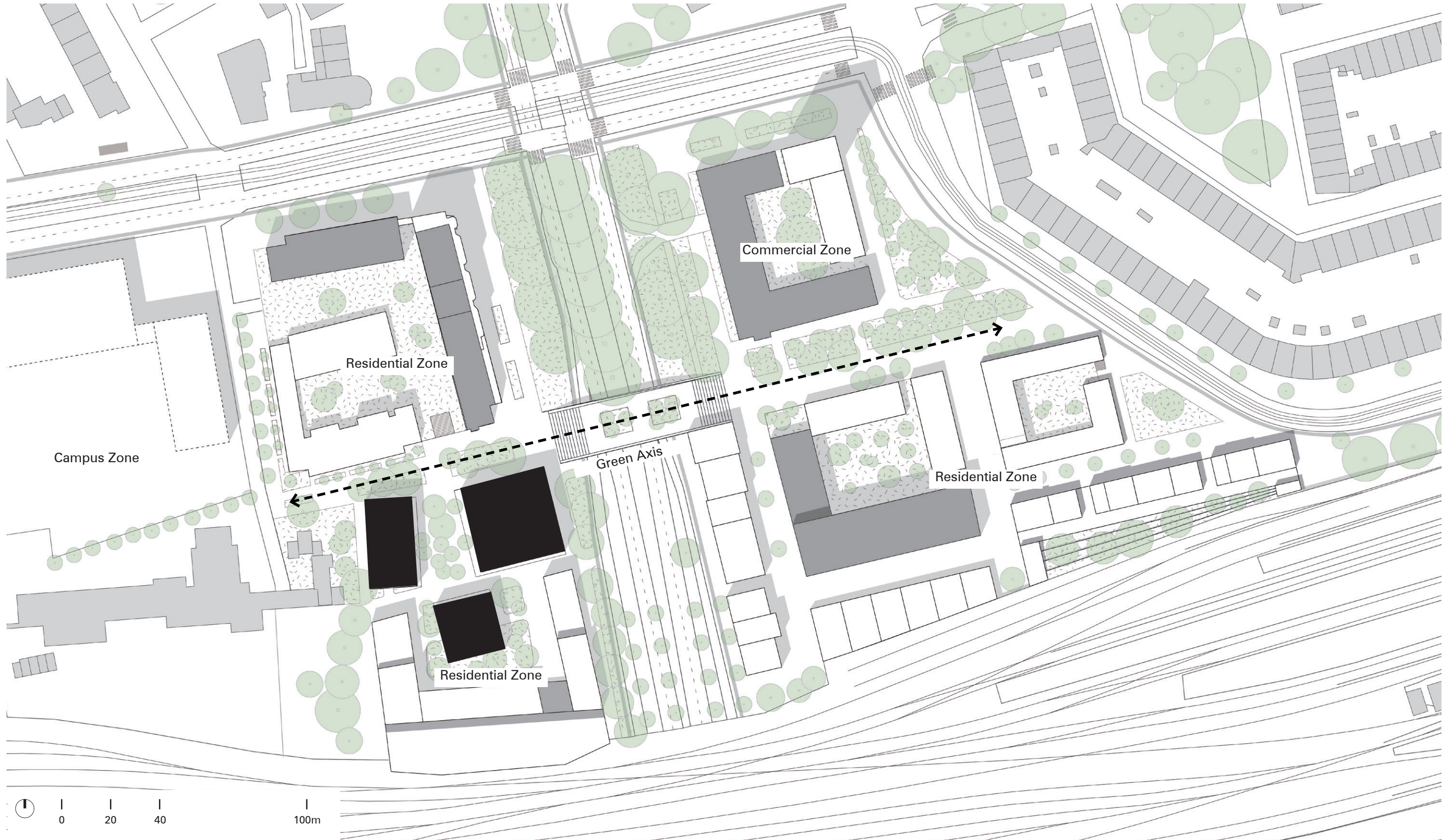


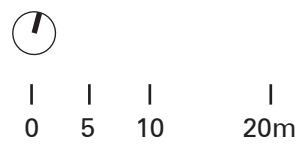
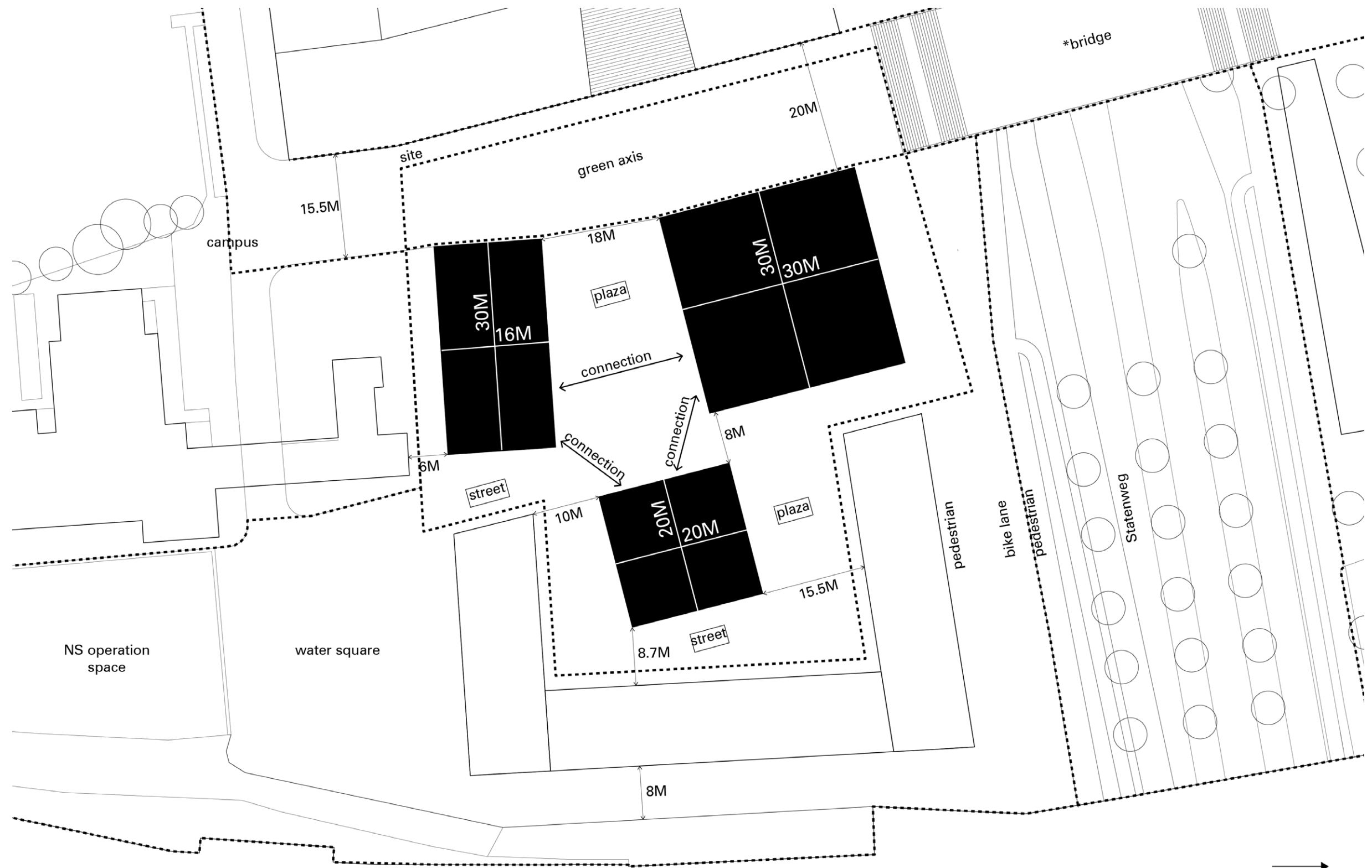
Diagram for Community Keeping & Making
Credit: Urban Strategy Group **Social Group**

Urban Masterplan

- Planning Ambitions:
1. Defined Urban Fabric
 2. Neighborhood Center
 3. Healthy Living
 4. Social Sustainability



Design Plot



→ Rotterdam
Centraal

Open Space and Ground Floor Functions



0 5 10 20m

open space (public)

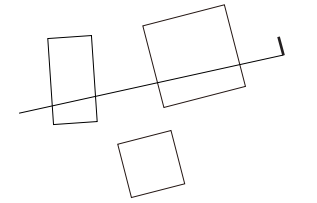
open space (private)

shops, business

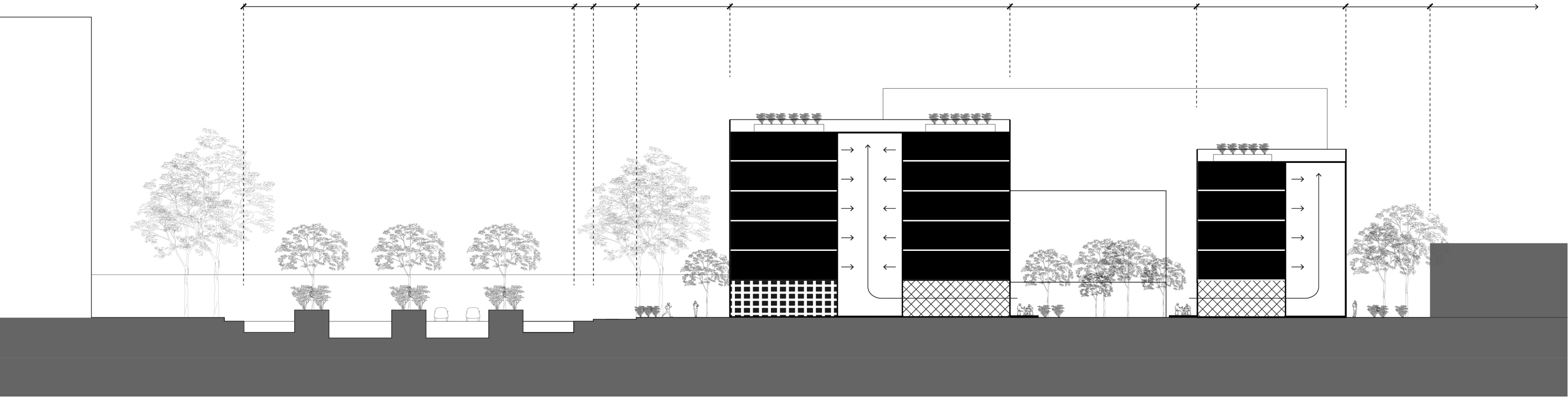
kitchen & facility



dwelling

Urban Section



Statenweg (cars) 35M
 pedestrian (tunnel) 2M
 existing bike lane 4.5M
 pedestrian & green 10M
 Fat Type 30M
 Open Space 20M
 Chobby Type 16M
 green space 9M
 Montessori School

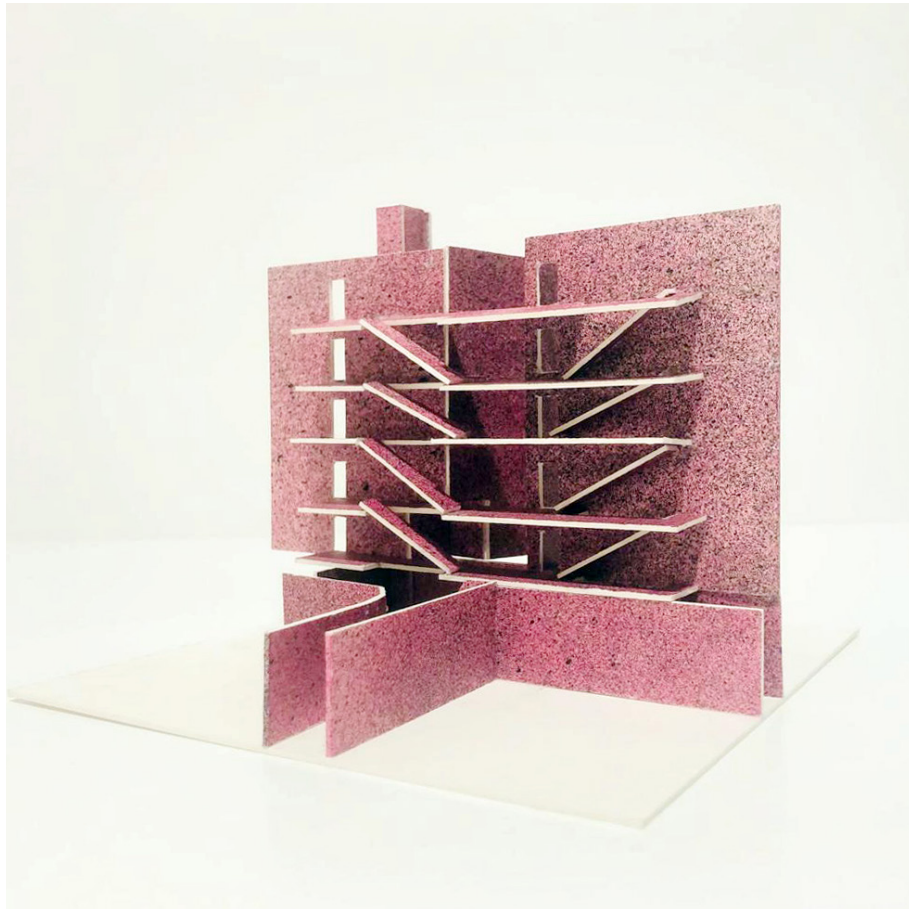


 kitchen & facility
  shop, business
  dwelling

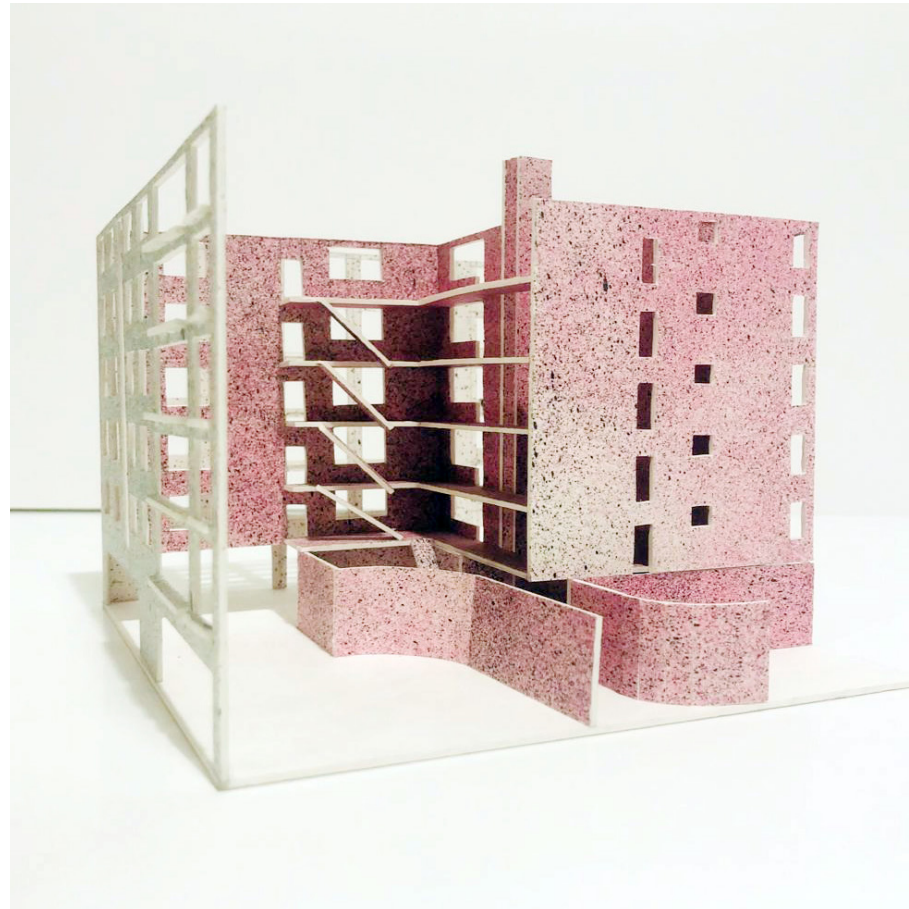
Urban Section

| | | |
 0 4 10 20m

Building Design Strategy



Study Model 001

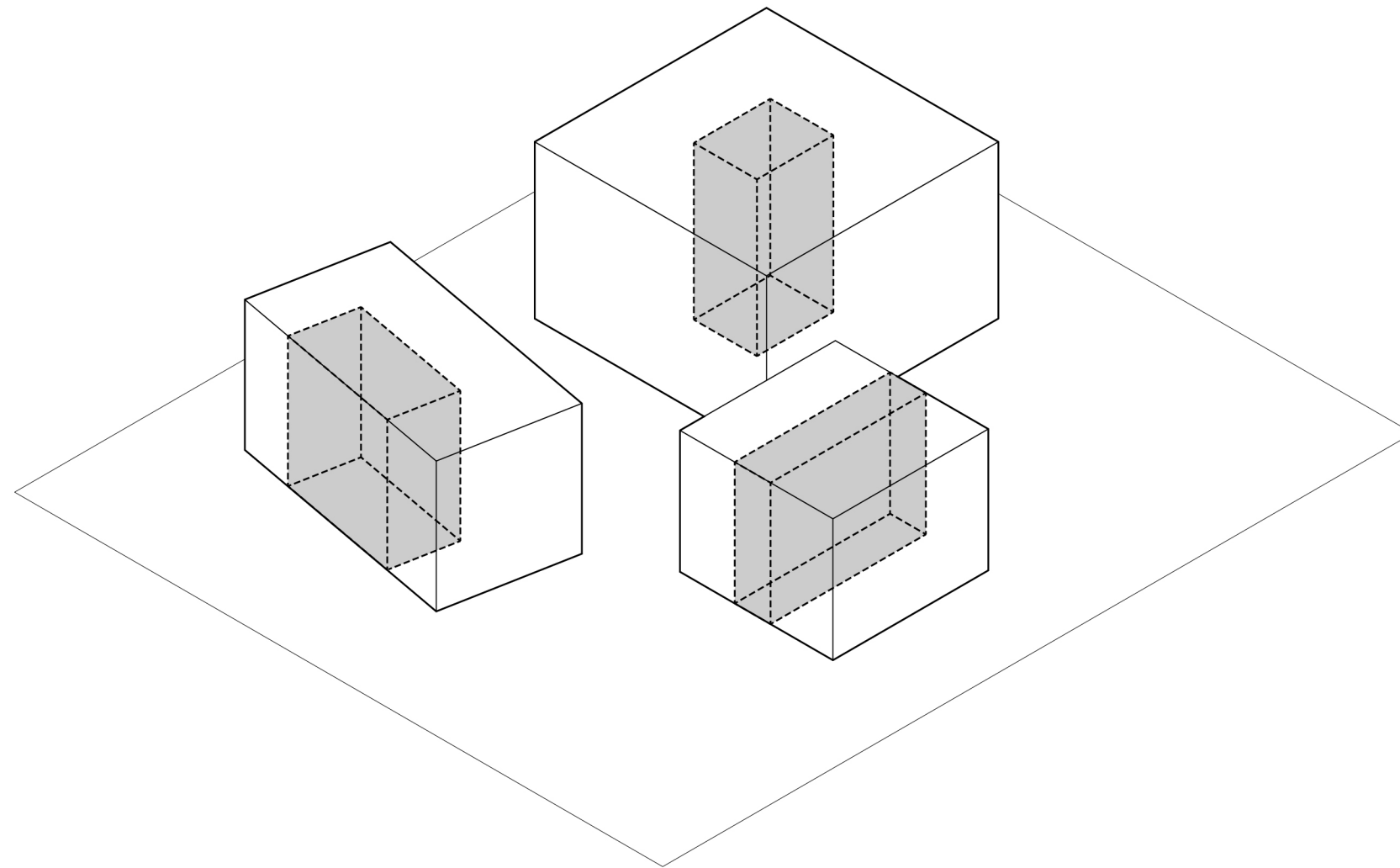


Study Model 002

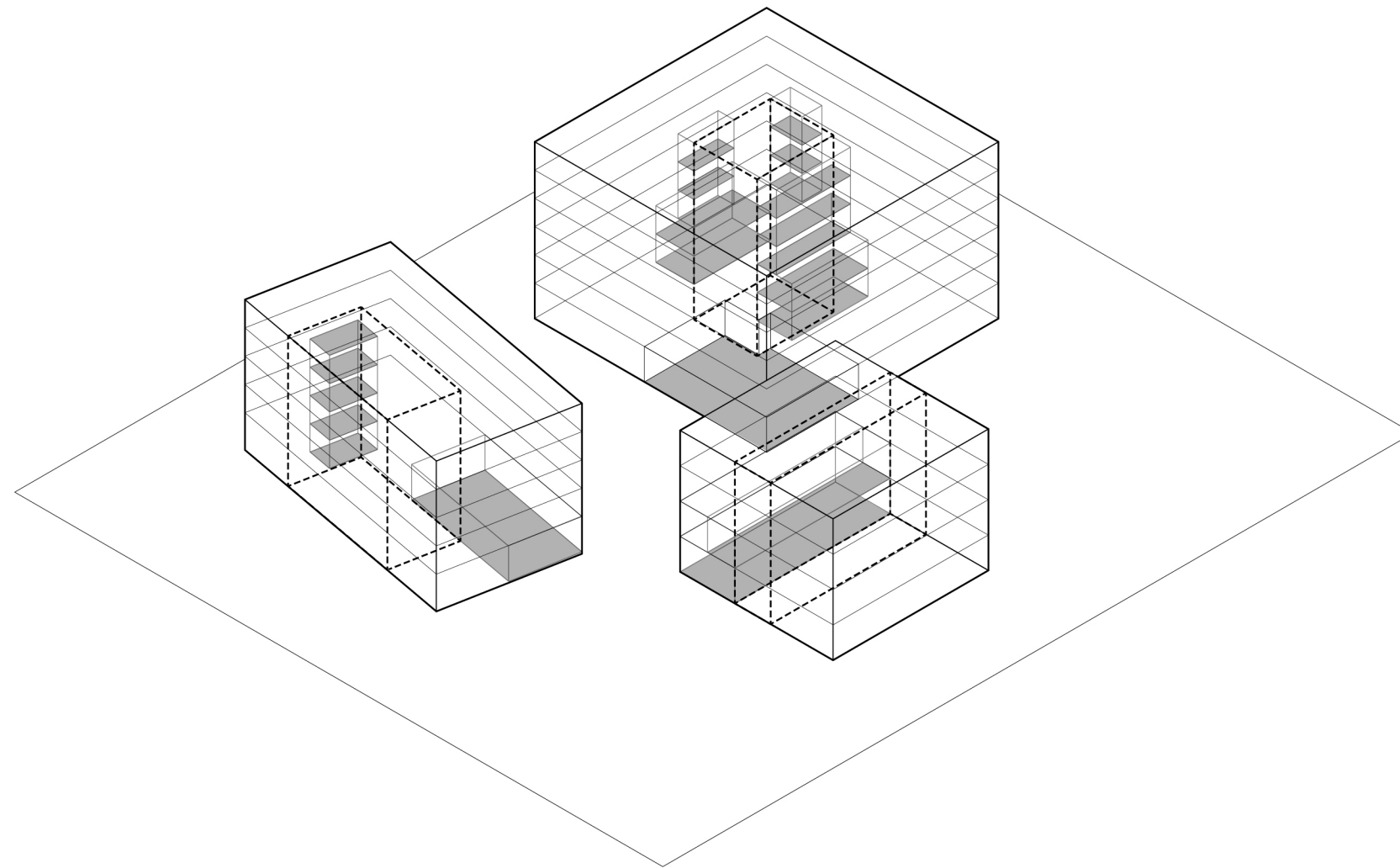


Study Model 003

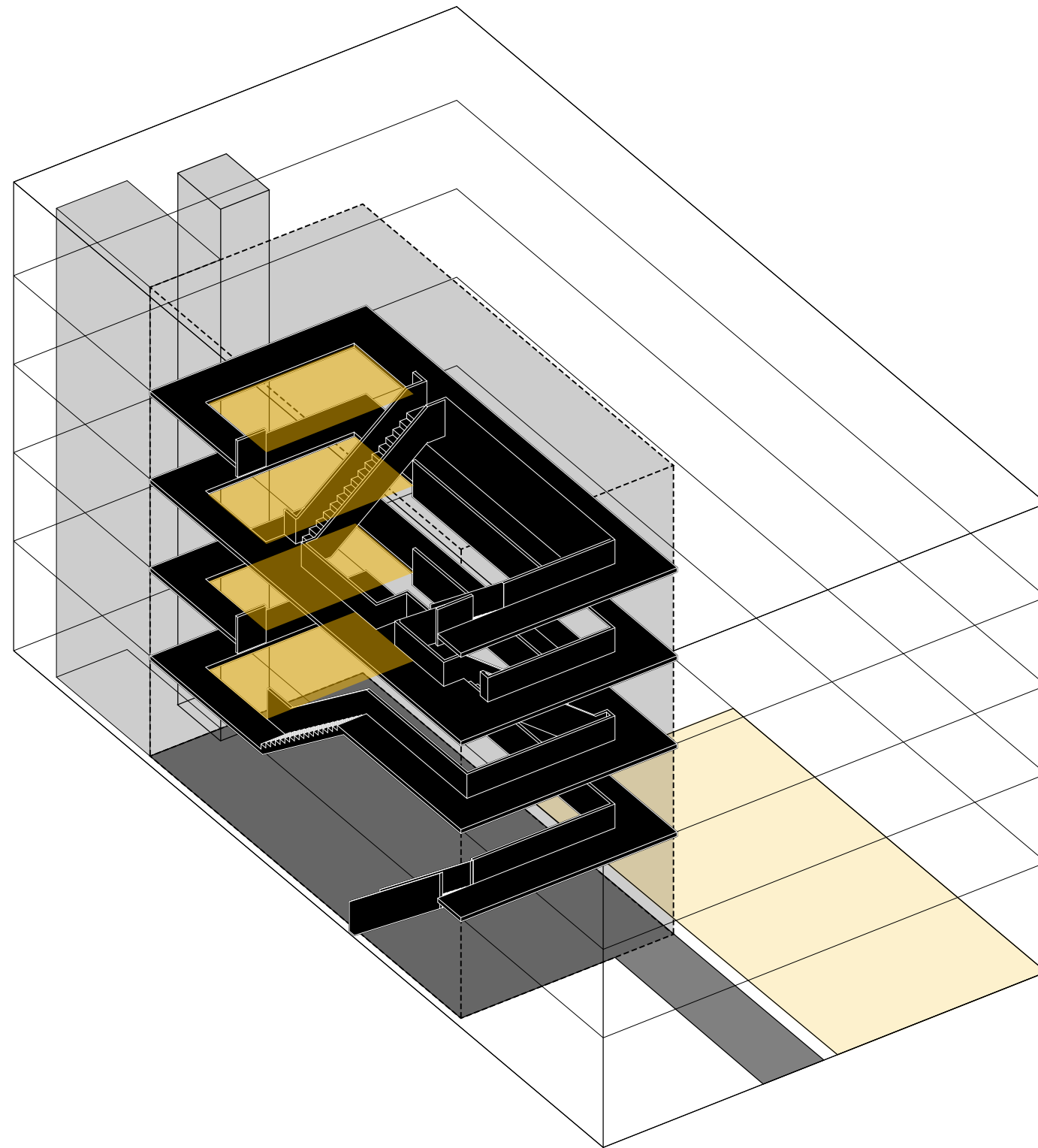
Building Design Strategy



Building Design Strategy



Building Design Strategy

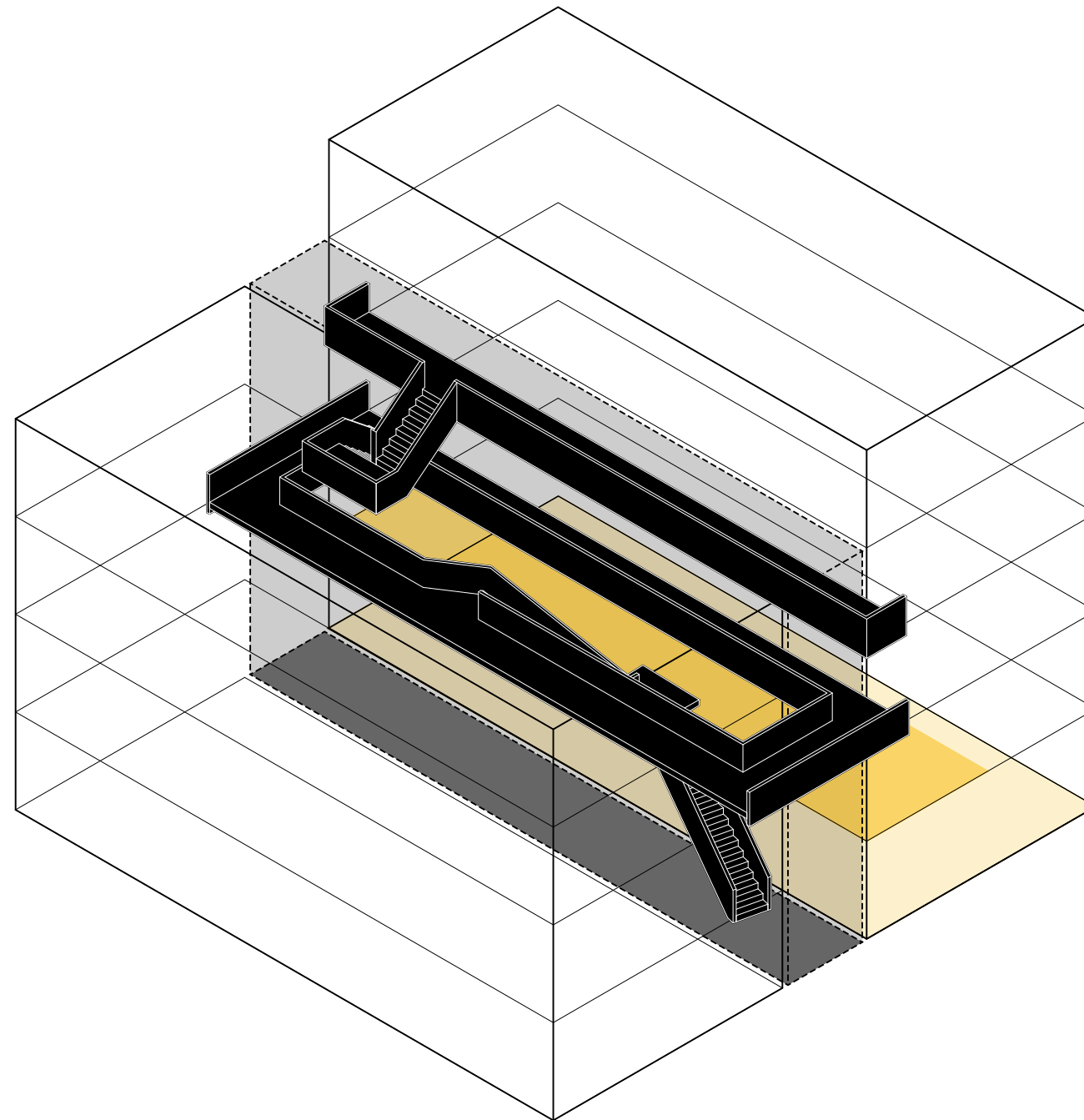


Conceptual Diagram
Kitchen & Core_16X31

- Central Staircase
- Entrance
- Vertical Circulation Core
- Urban Kitchen
- Shared Kitchen
- Housing

0 1 2 5m

Building Design Strategy

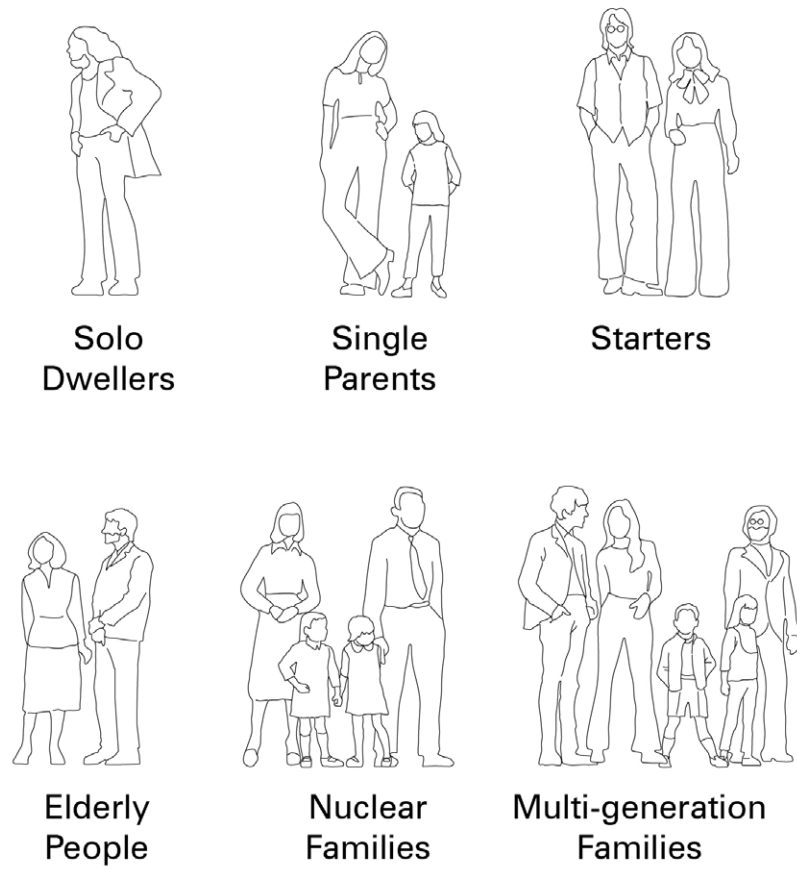


Conceptual Diagram
Kitchen & Core_20X20

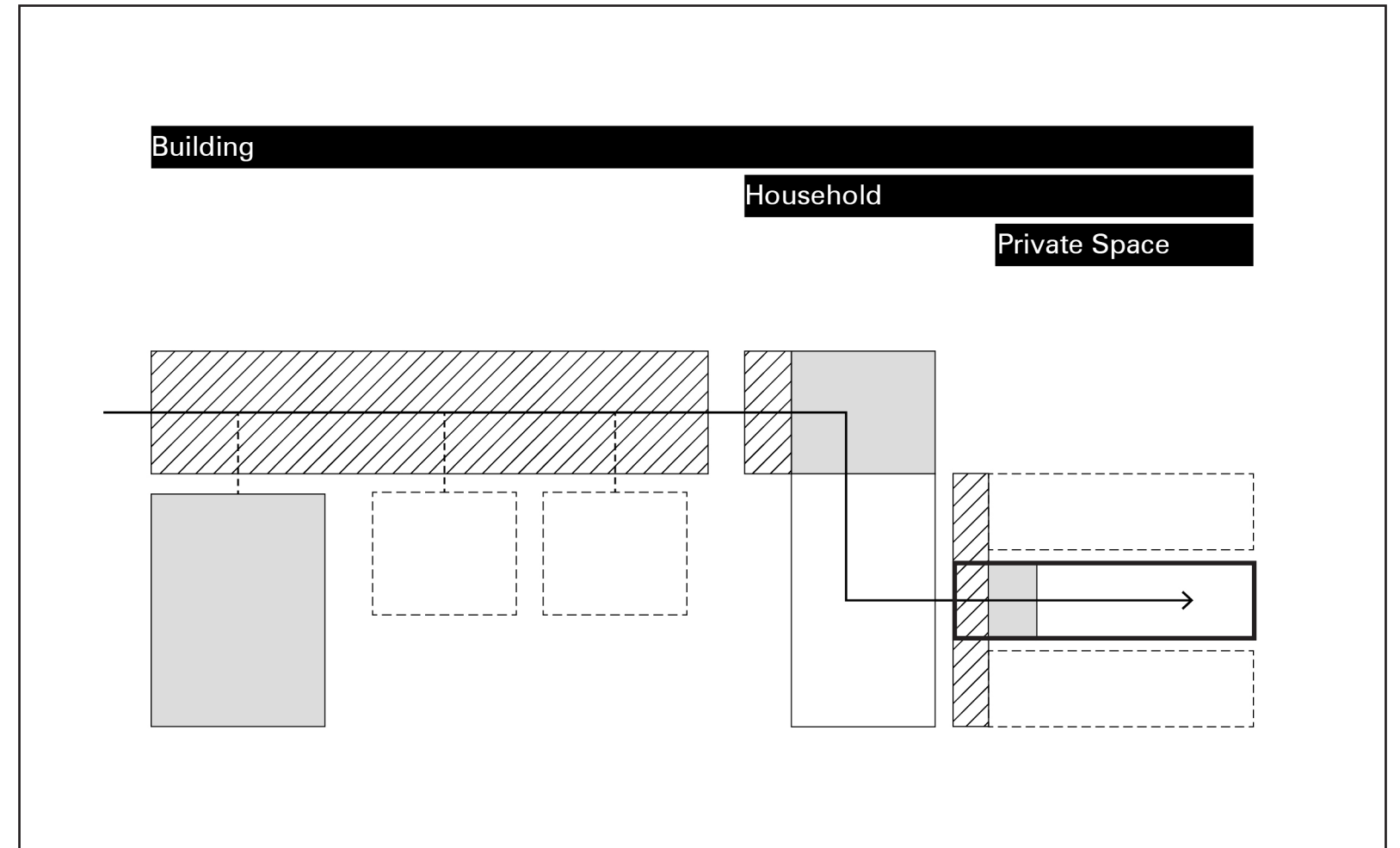
- Central Staircase
- Entrance
- Vertical Circulation Core
- Urban Kitchen
- Shared Kitchen
- Housing

0 1 2 5m

Dwelling Types



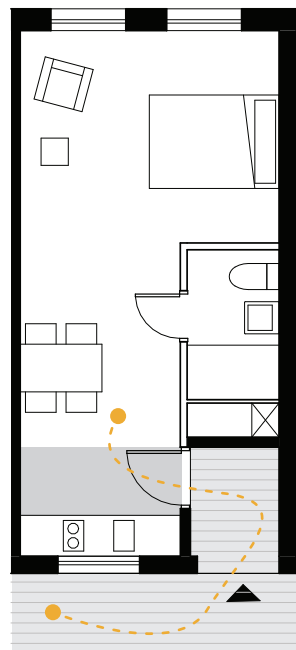
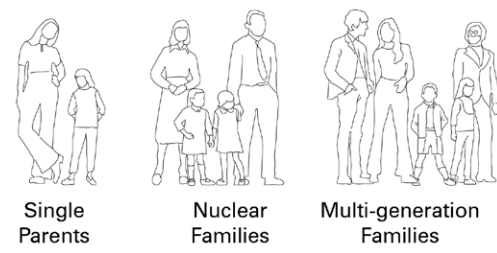
Target Groups



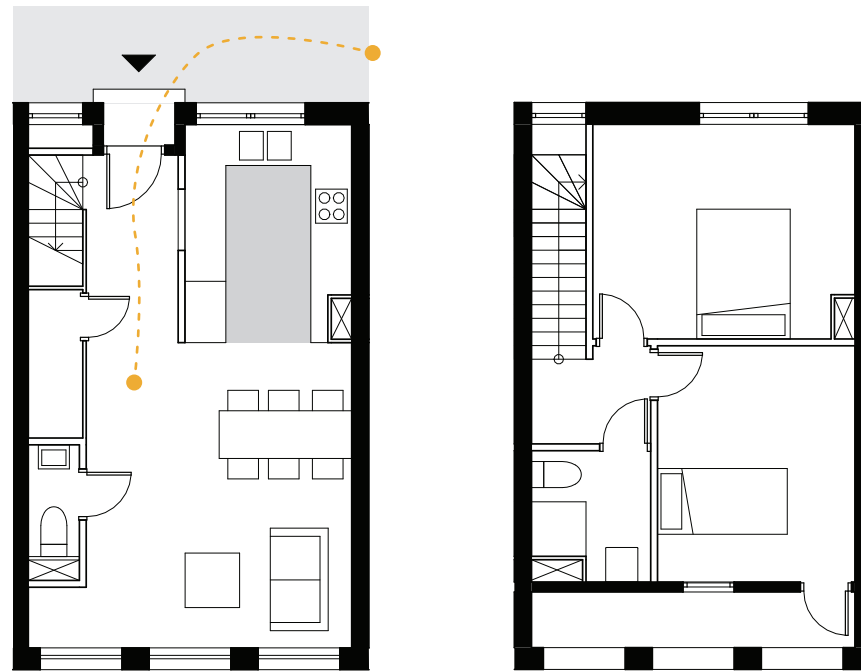
Concept Diagram
Spatial Hierarchy

- ▨ Circulation & Transition
- Kitchen
- Living Space (living room/bedroom)
- ⋯ Other Unit (household/room)

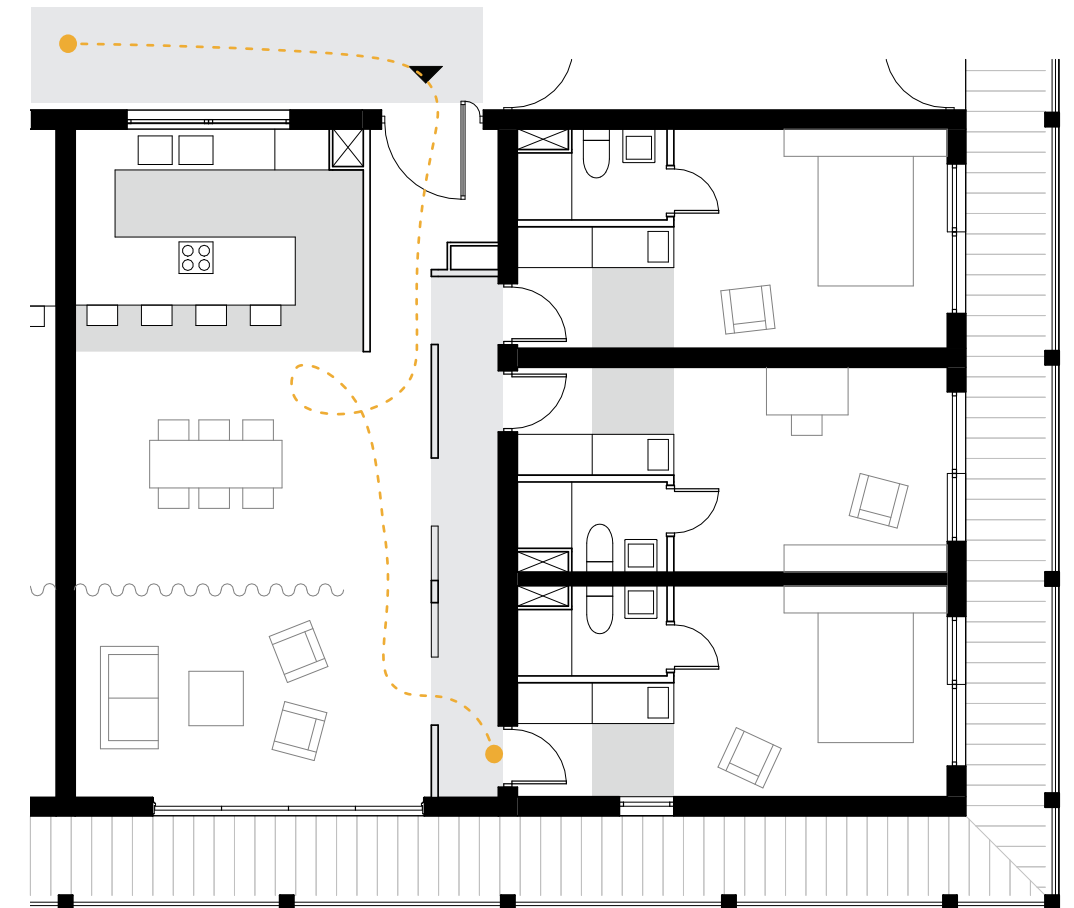
Three Dwelling Types: Studio, Maisonette, Cluster Apartment



Housing Unit Plan
Studio



Housing Unit Plan
Maisonette

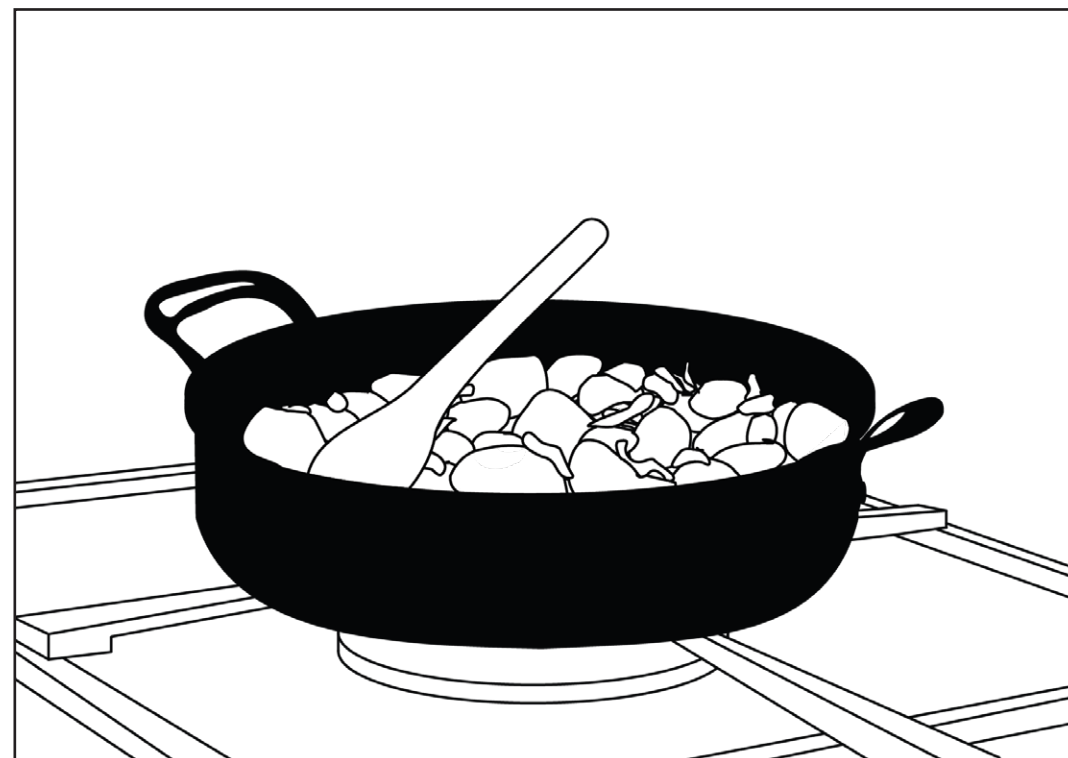


Housing Unit Plan
Cluster Apartment

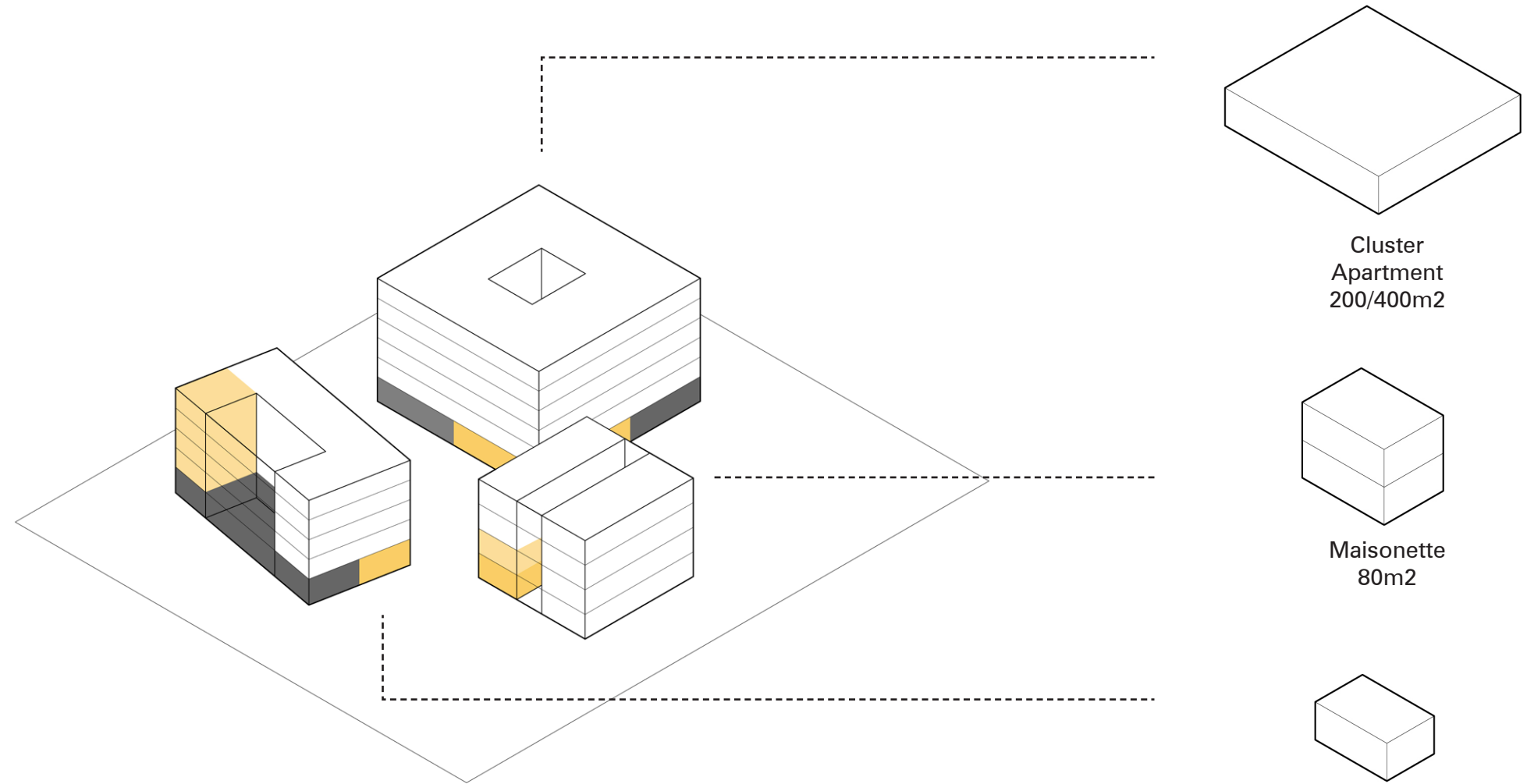
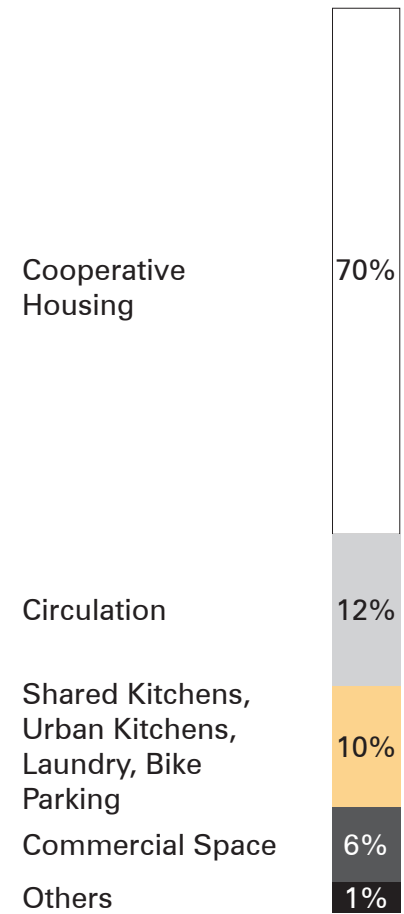
- Circulation & Transition
- Kitchen

Step 02

brewing

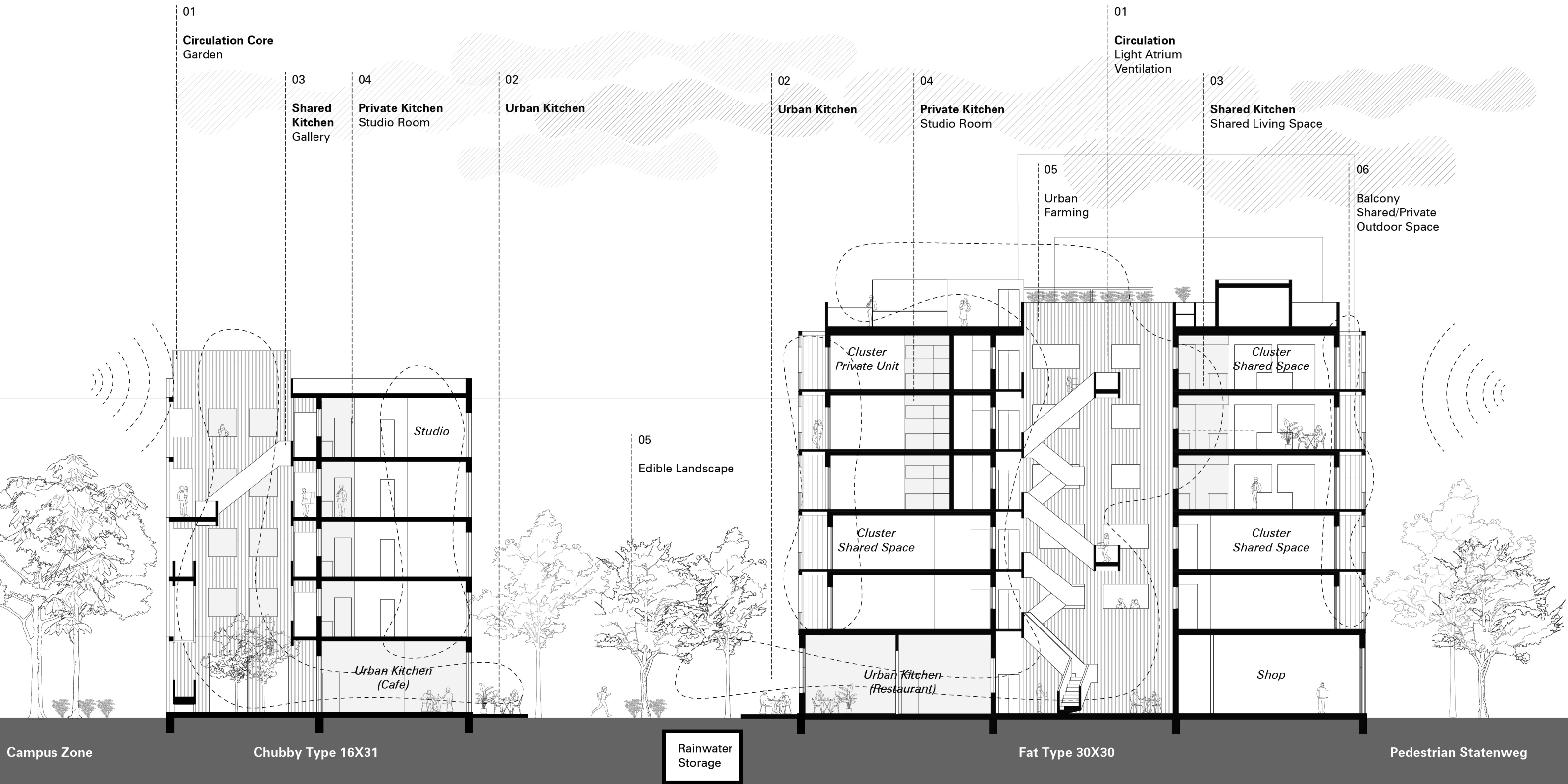
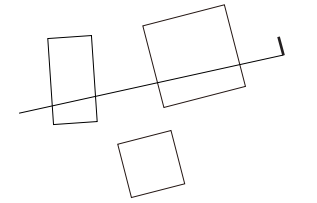


Programming



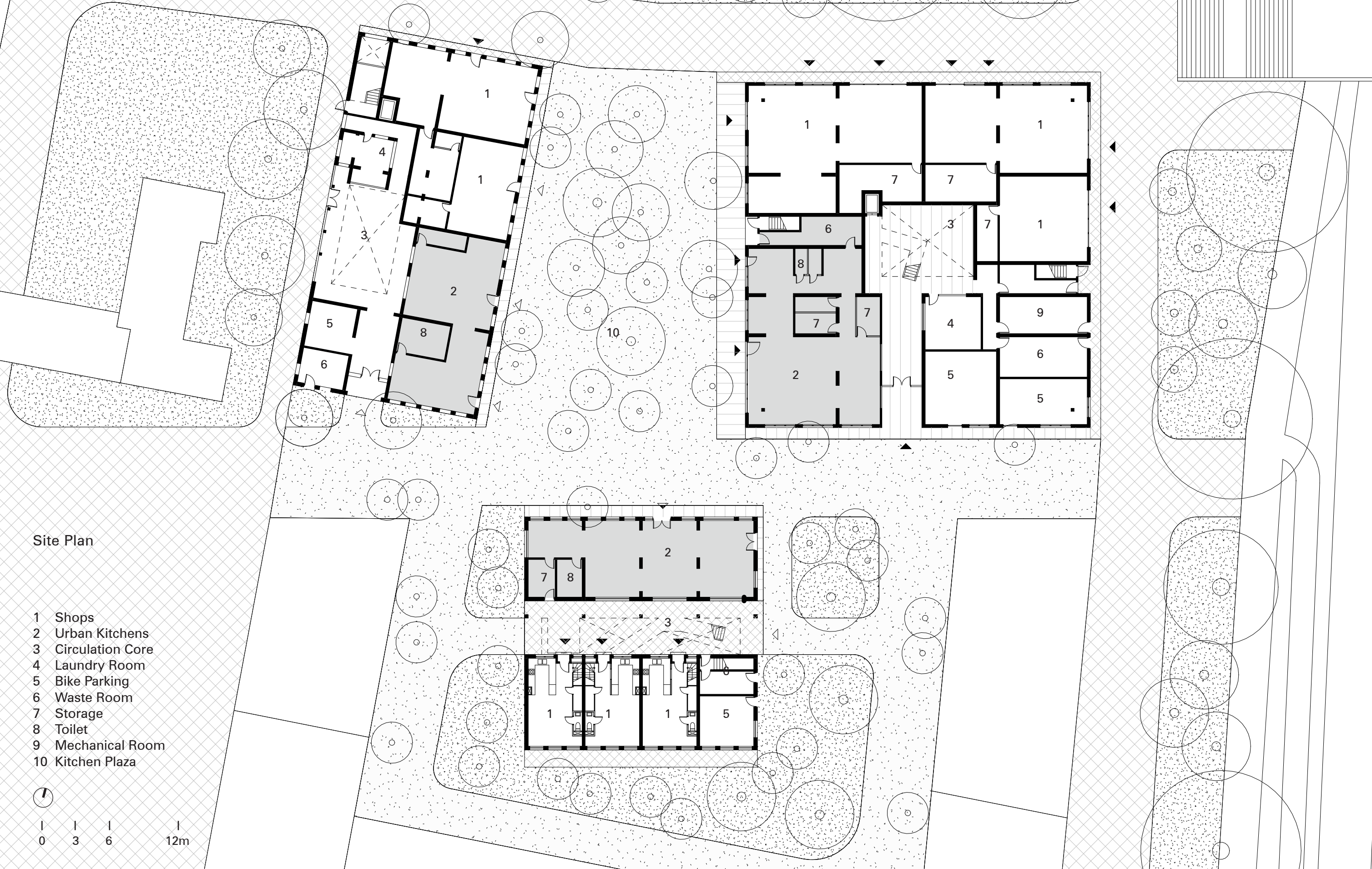
- Community Facility
- Commercial
- Urban Kitchen
- Shared Kitchen

Programming



0 1 2 5m

Building Design



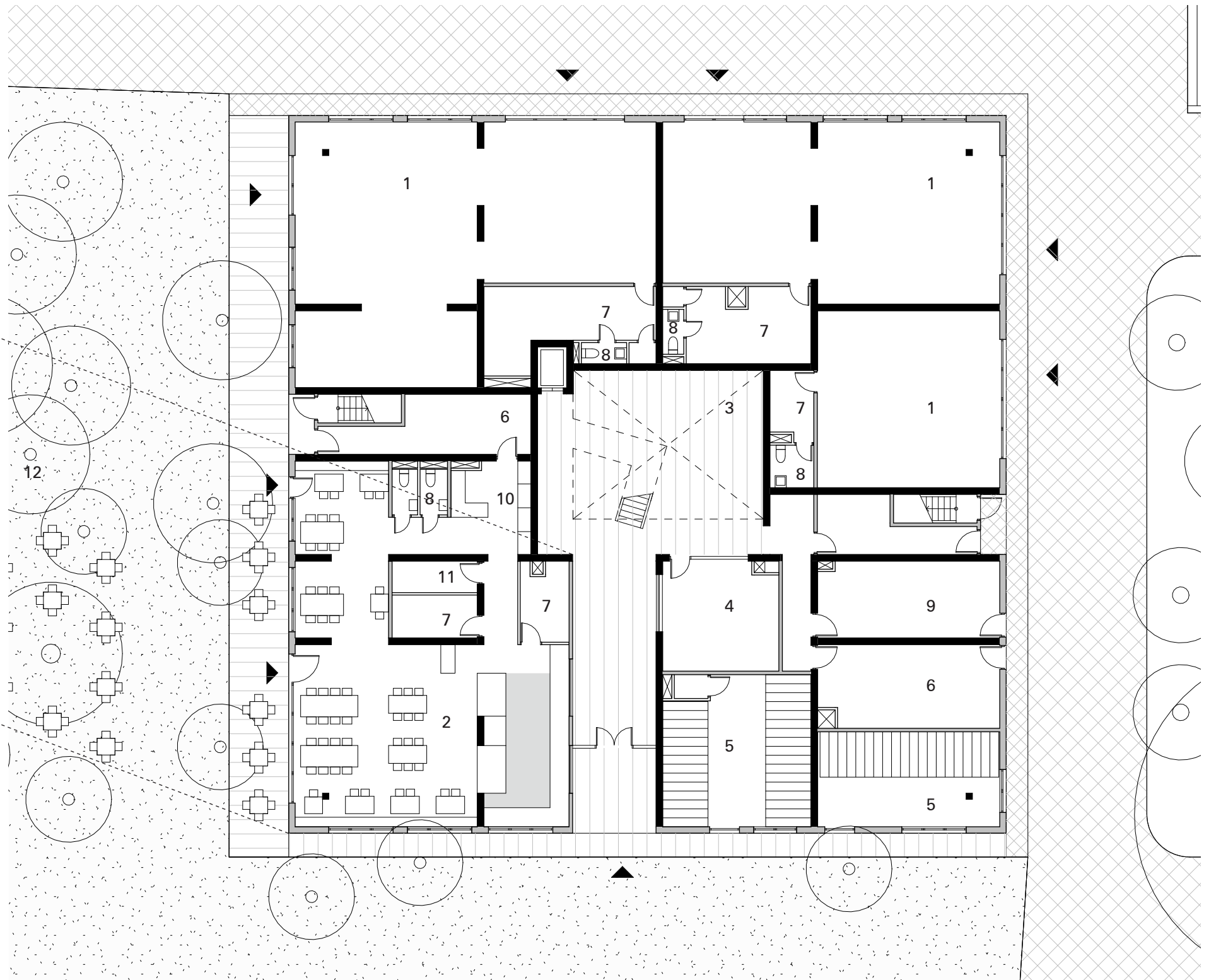
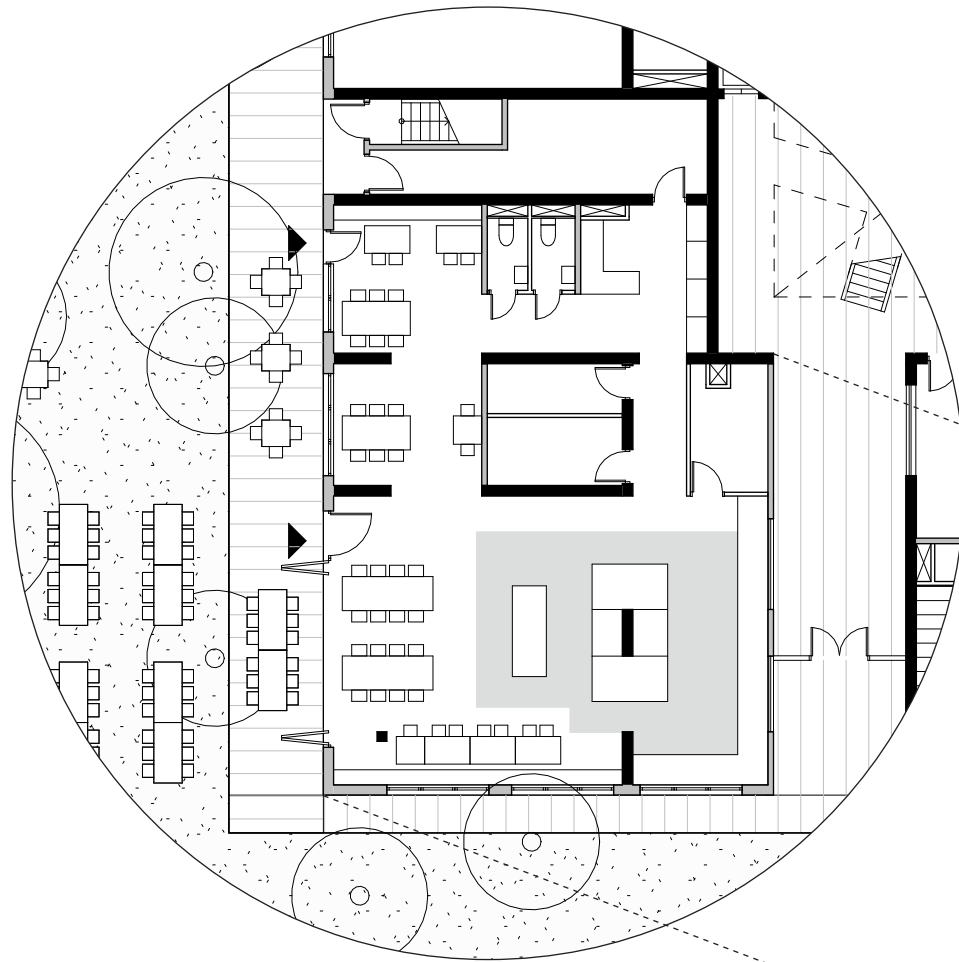
Site Plan

- 1 Shops
- 2 Urban Kitchens
- 3 Circulation Core
- 4 Laundry Room
- 5 Bike Parking
- 6 Waste Room
- 7 Storage
- 8 Toilet
- 9 Mechanical Room
- 10 Kitchen Plaza



Building Design

Urban Kitchen Event Layout



30X30 GF Plan

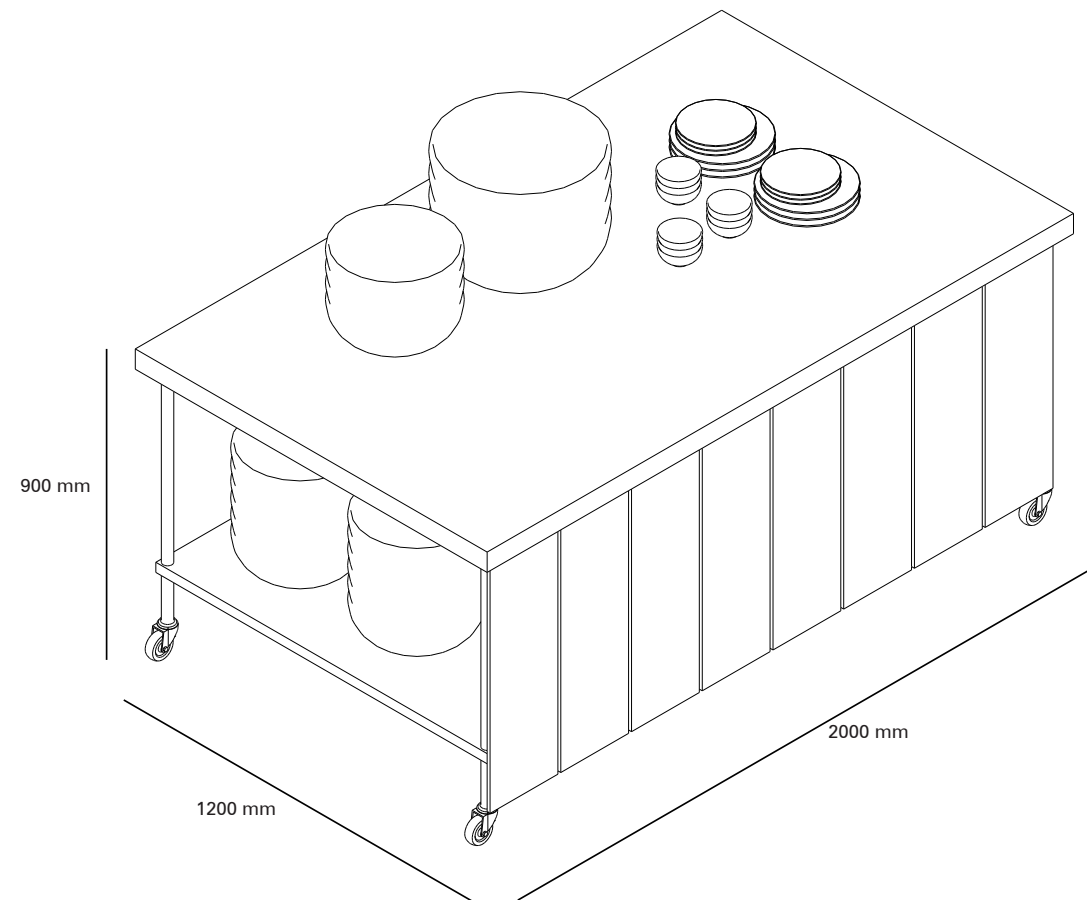
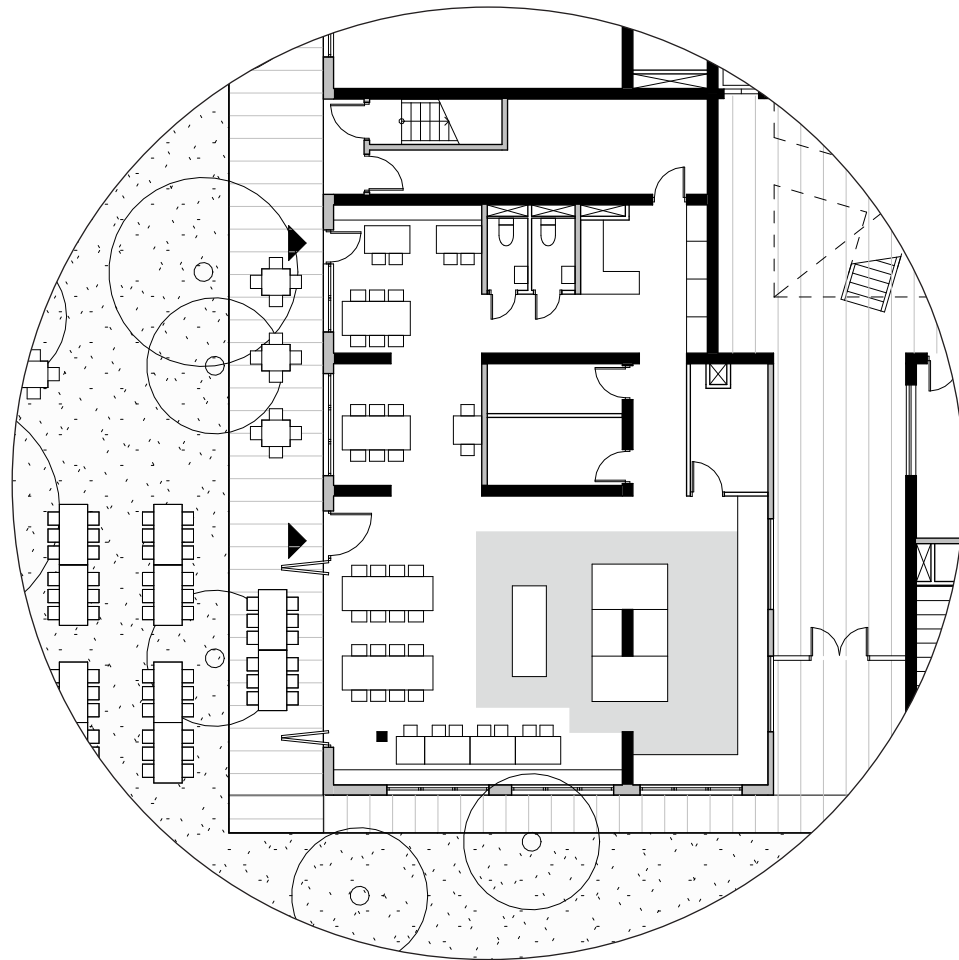
- | | |
|--------------------|-------------------|
| 1 Shops | 7 Storage |
| 2 Urban Kitchens | 8 Toilet |
| 3 Circulation Core | 9 Mechanical Room |
| 4 Laundry Room | 10 Scullery |
| 5 Bike Parking | 11 Staff Room |
| 6 Waste Room | 12 Kitchen Plaza |



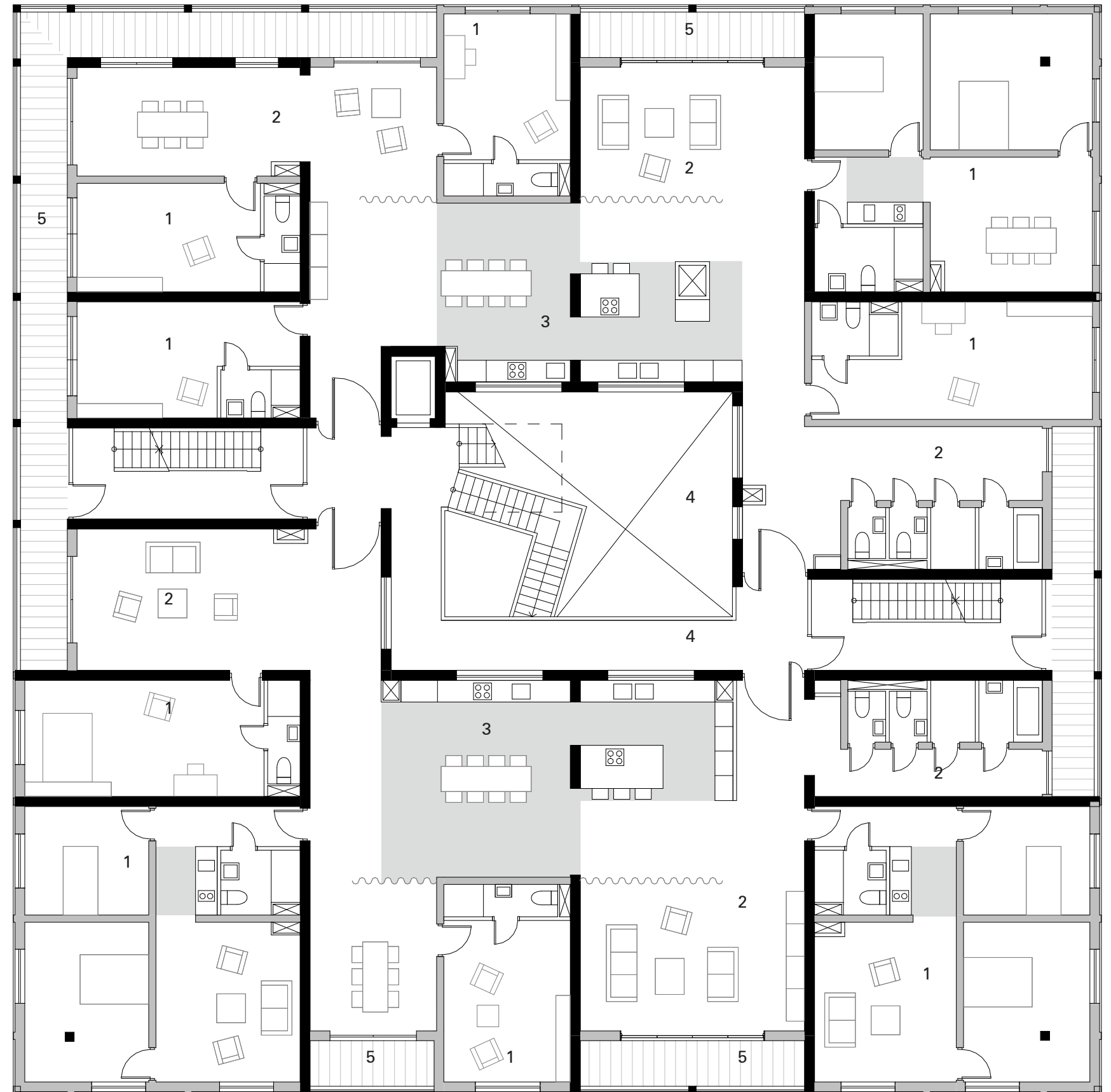
0 1 2 5m

Building Design

Urban Kitchen Event Layout



Building Design



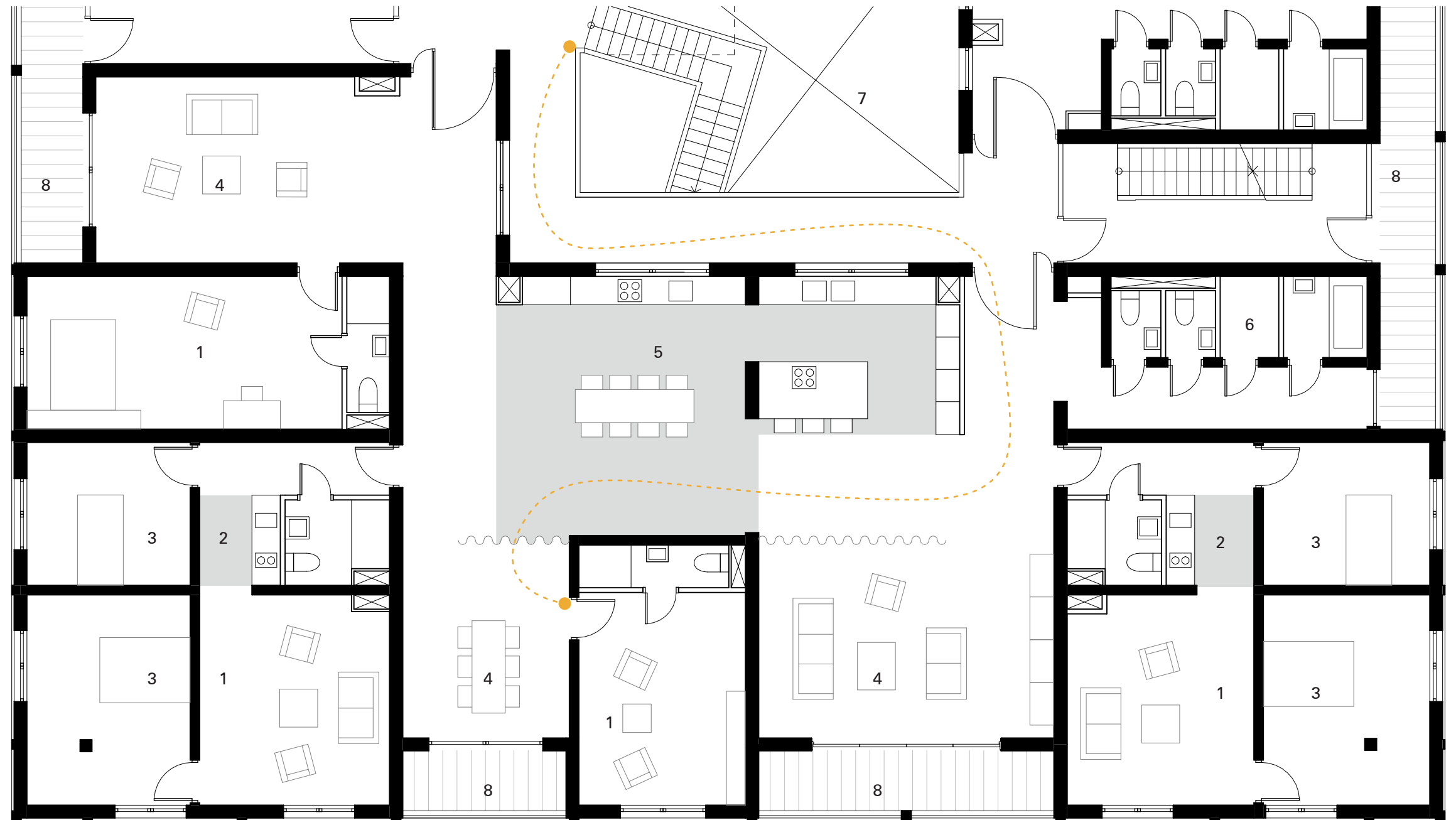
Fat Type 30X30
Floor Plan 1-2F

- 1 Private Unit
- 2 Shared Living Space
- 3 Shared Kitchen
- 4 Circulation Space
- 5 Balcony



0 1 2 4m

Building Design



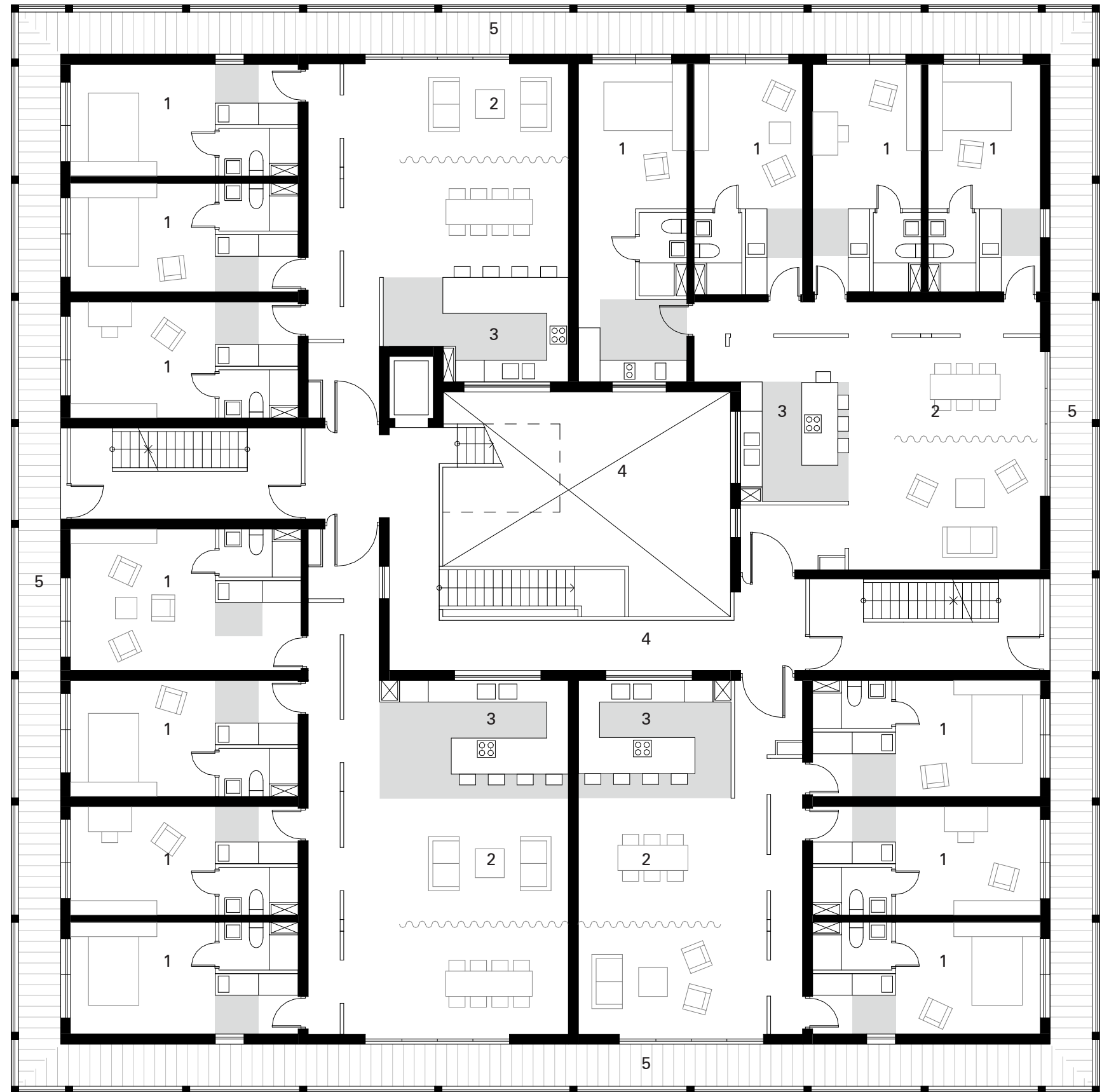
Fat Type Housing Type
1-2F_4-Units Cluster
Apartment

- 1 Private Living Space
- 2 Private Kitchen
- 3 Bedroom
- 4 Shared Living Space
- 5 Shared Kitchen
- 6 Shared Facility
- 7 Circulation Space
- 8 Balcony



0 1 2 4m

Building Design



Fat Type 30X30
Floor Plan 3-5F

- 1 Private Unit
- 2 Shared Living Space
- 3 Shared Kitchen
- 4 Circulation Space
- 5 Balcony



0 1 2 4m

Building Design

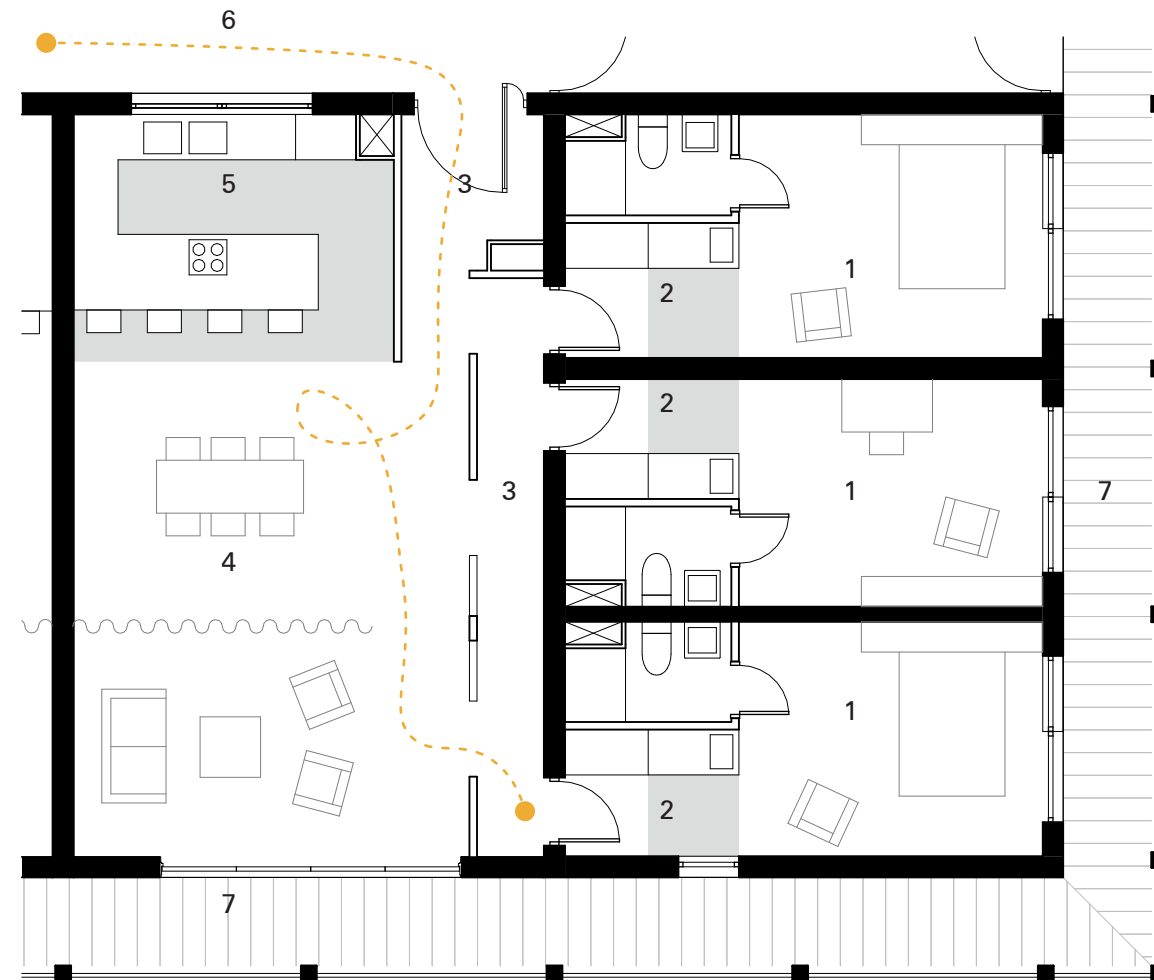


Fat Type Housing Type
3-5F_3-Units Cluster
Apartment

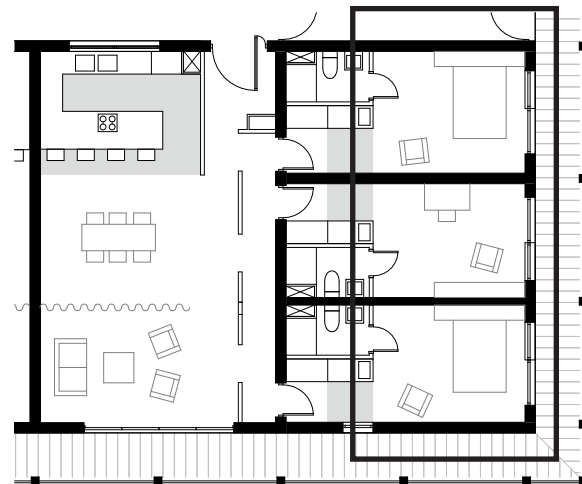
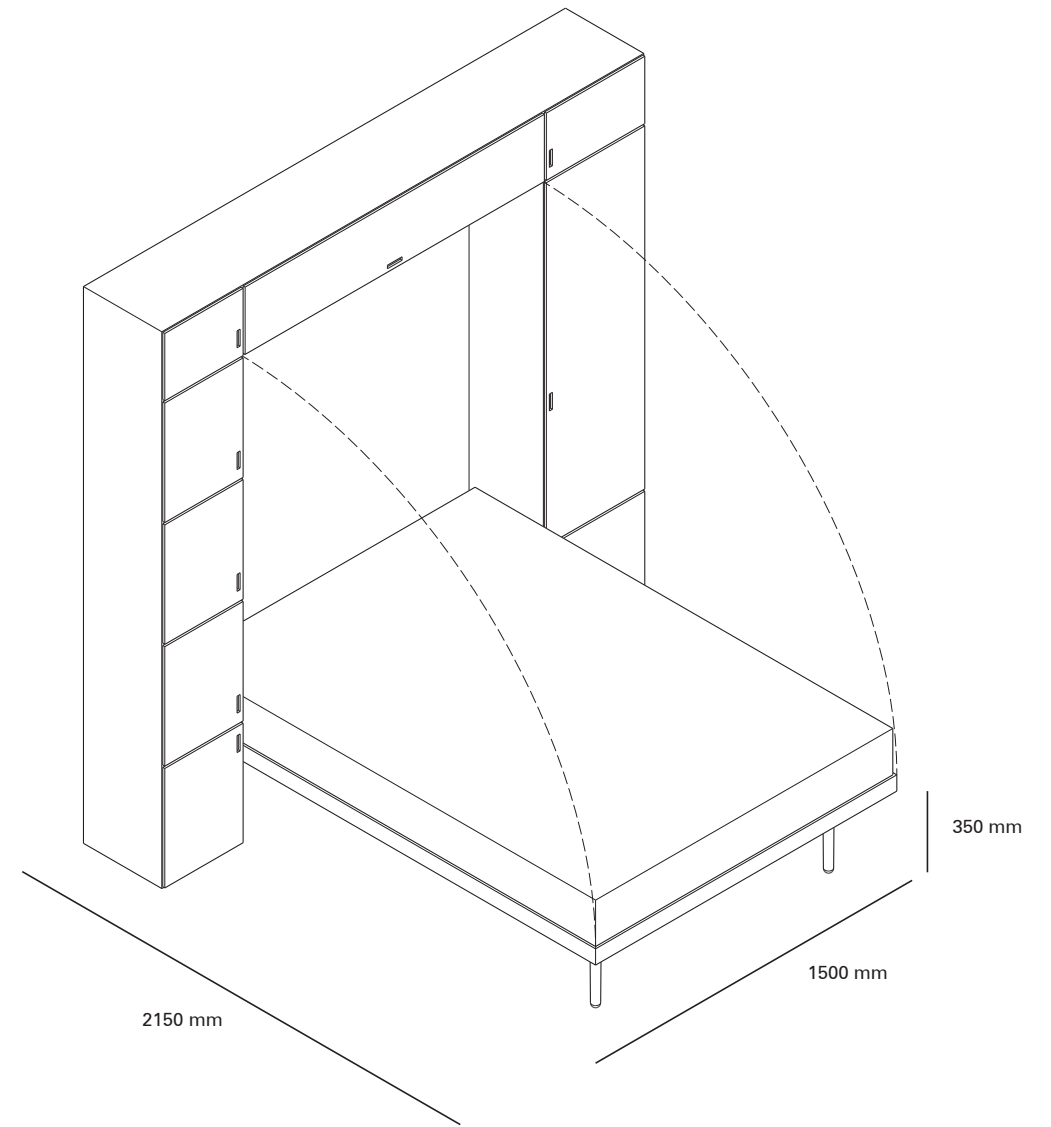
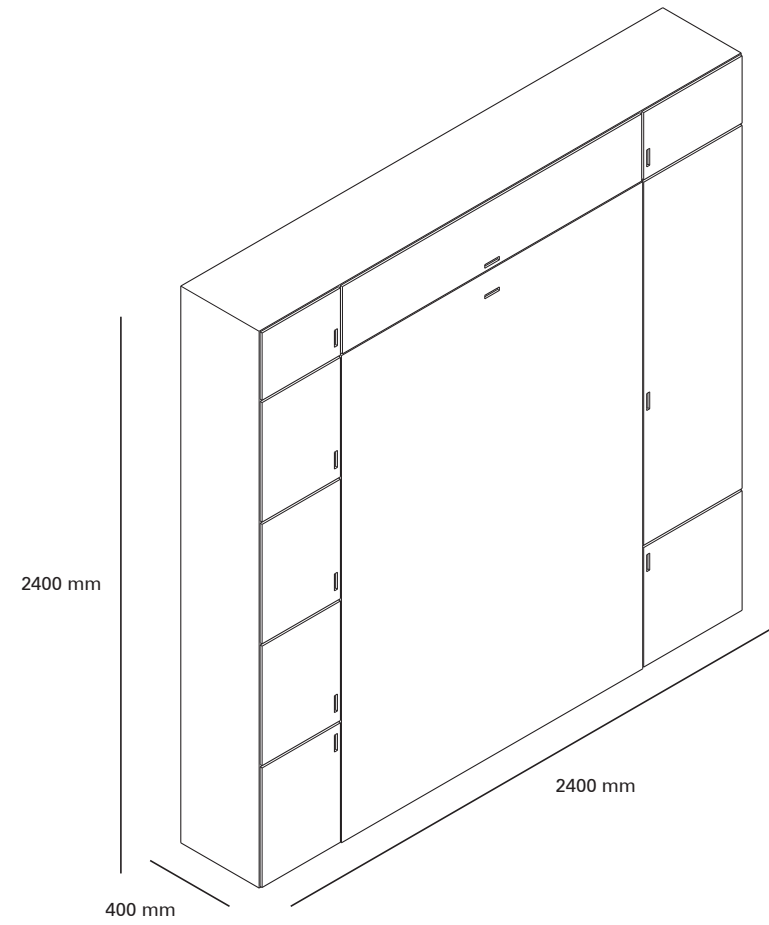
- 1 Private Living Space
- 2 Private Kitchen
- 3 Transitional Space
- 4 Shared Living Space
- 5 Shared Kitchen
- 6 Circulation Space
- 7 Balcony



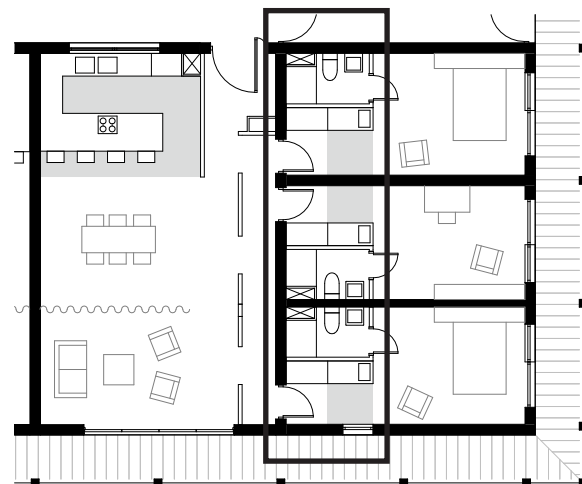
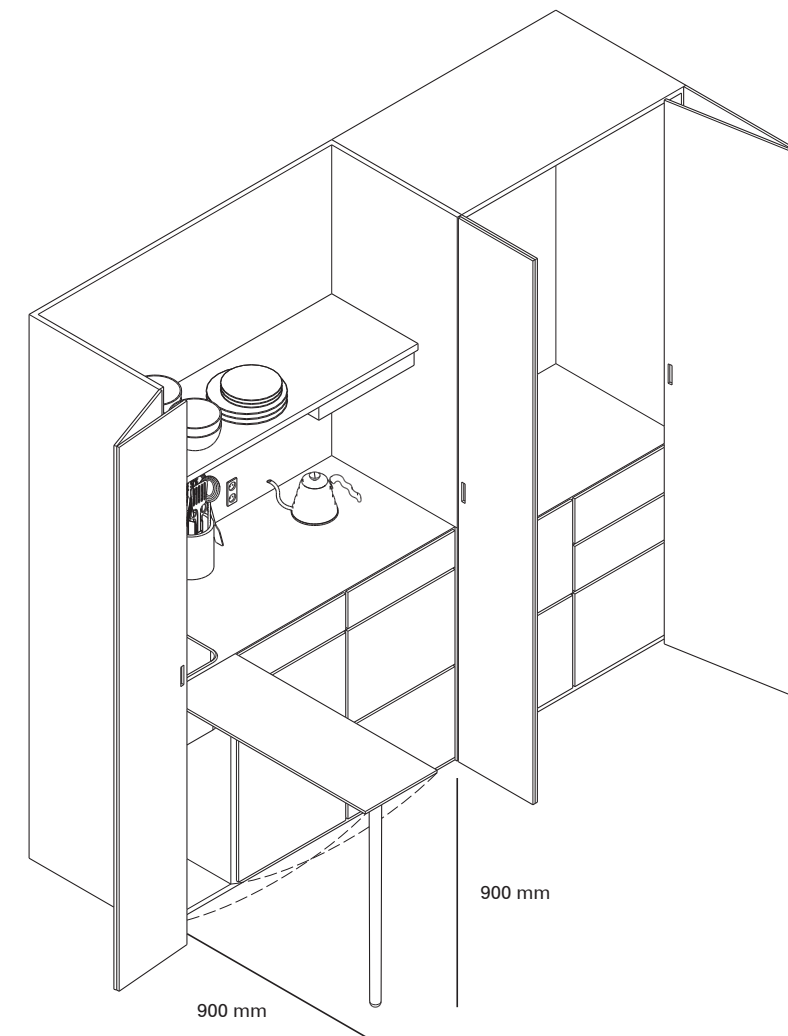
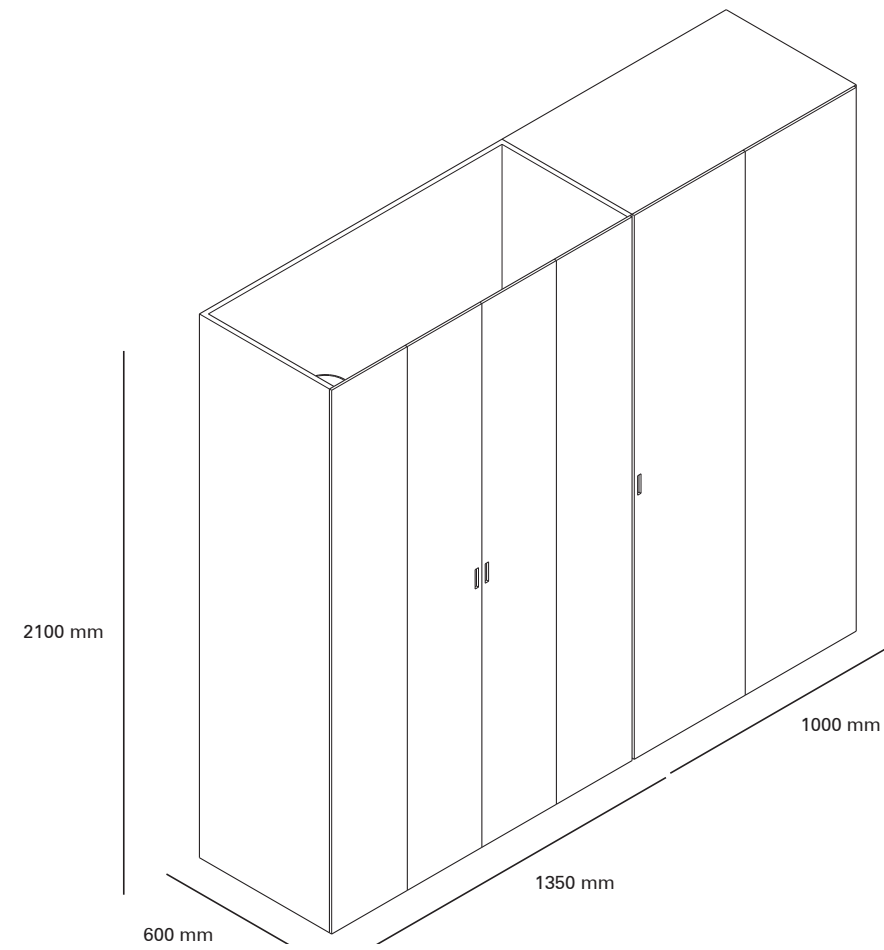
0 1 2 4m



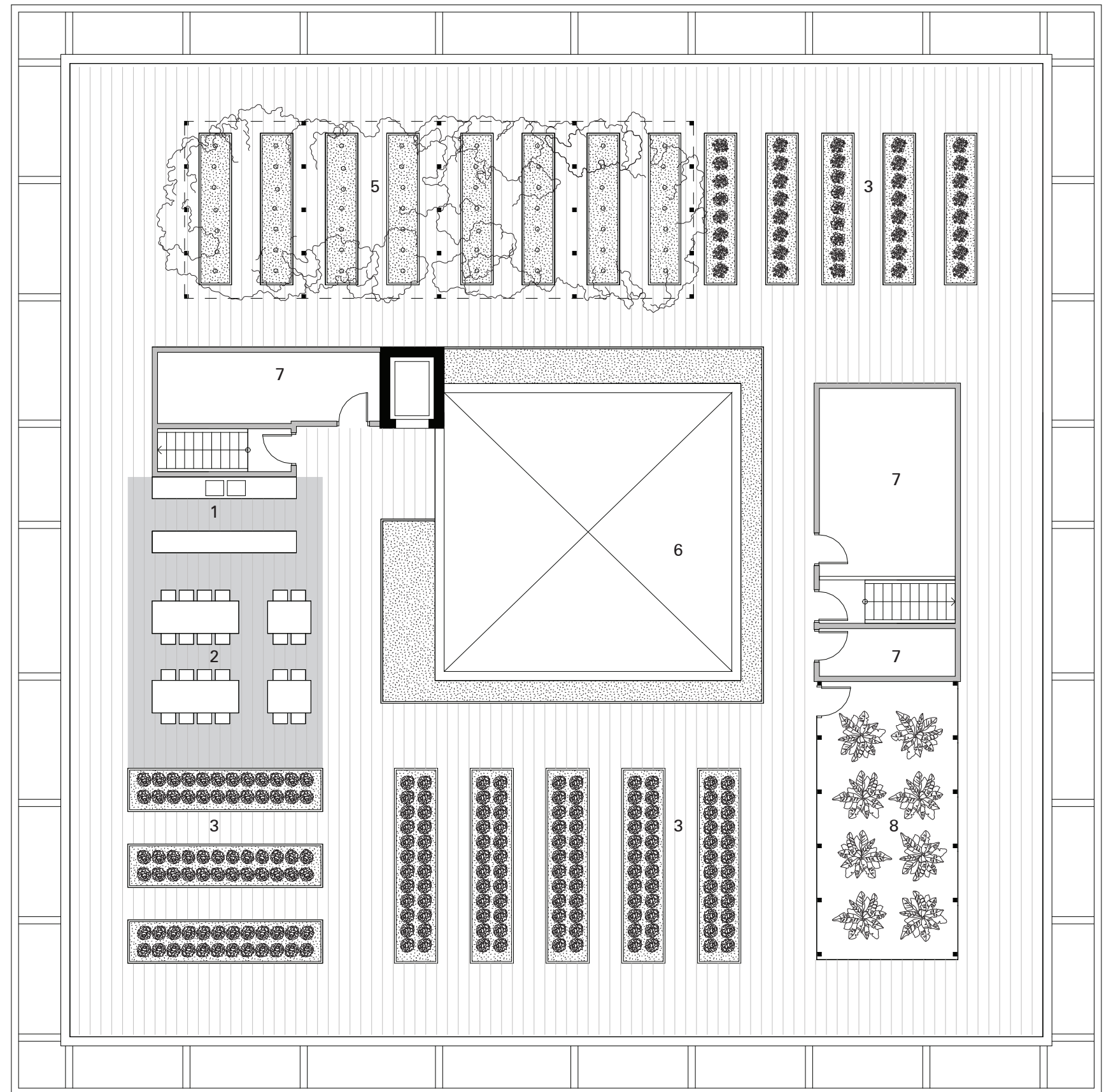
Furniture Design: Foldable Bed



Furniture Design: Kitchenette



Building Design



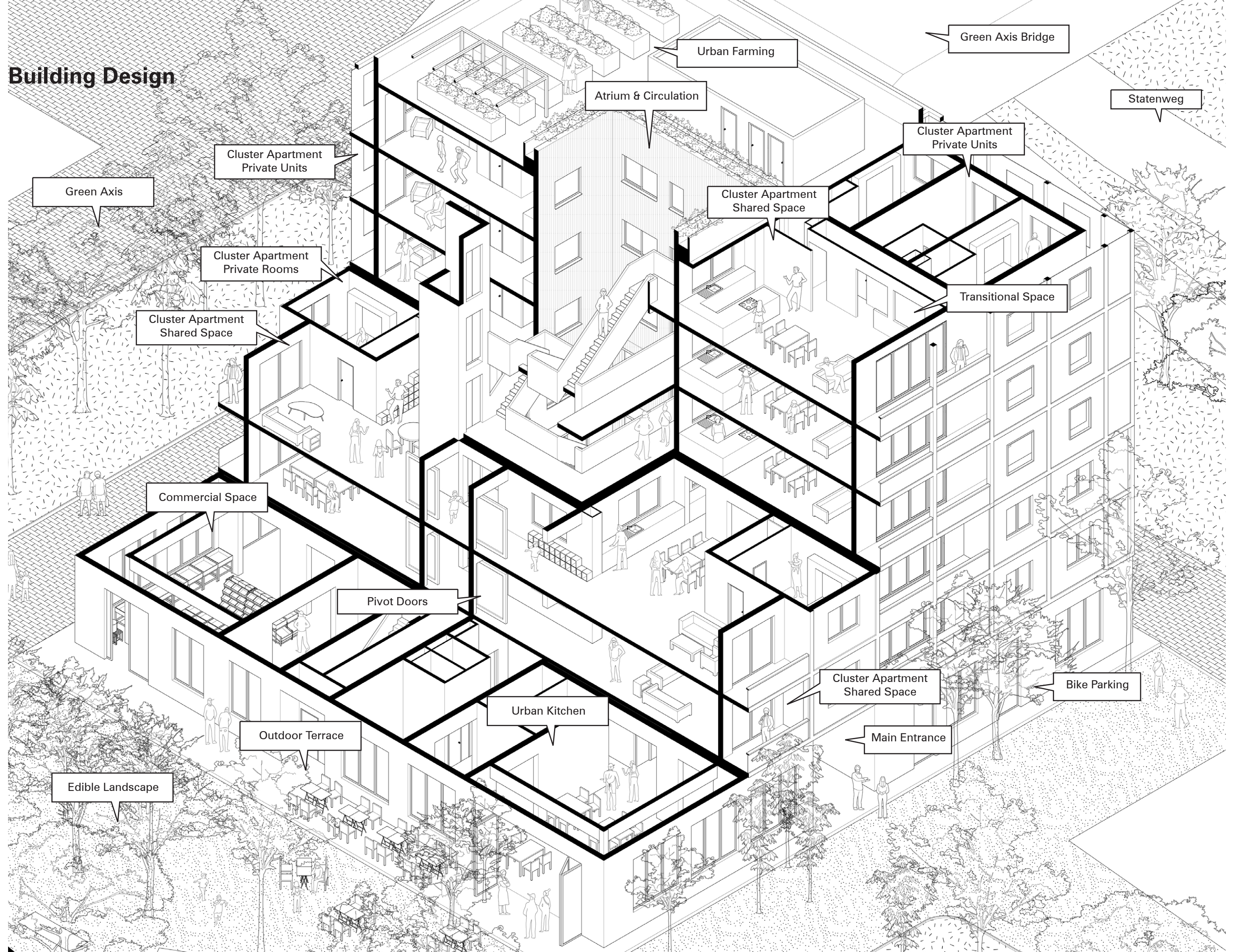
Roof Terrace_ Garden Kitchen and Kitchen Garden

- 1 Garden Kitchen
- 2 Dining Area
- 3 Kitchen Garden
- 4 Plants
- 5 Kitchen Garden (climbing plants)
- 6 Atrium
- 7 Mechanical/Storage
- 8 Green House

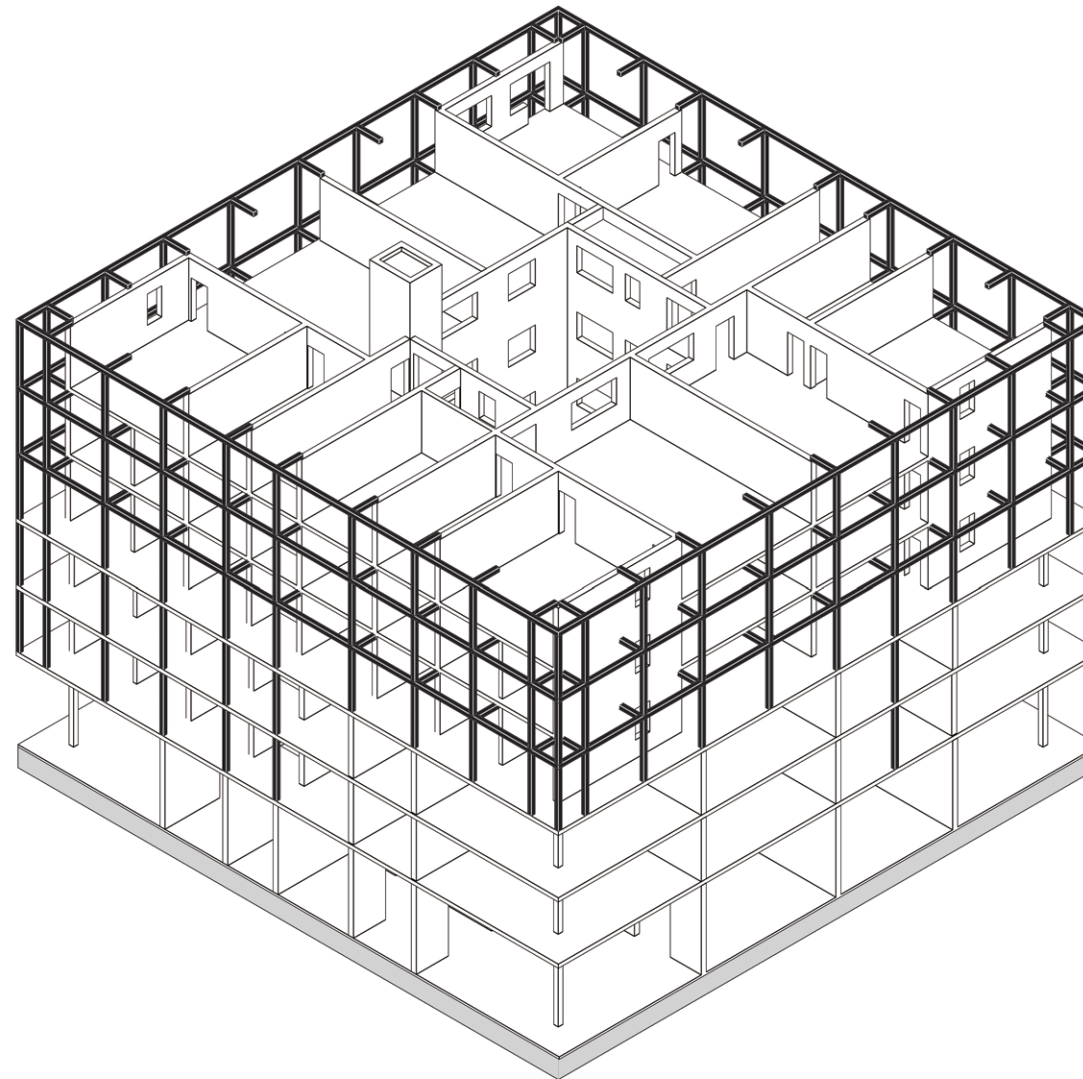


0 1 2 4m

Building Design



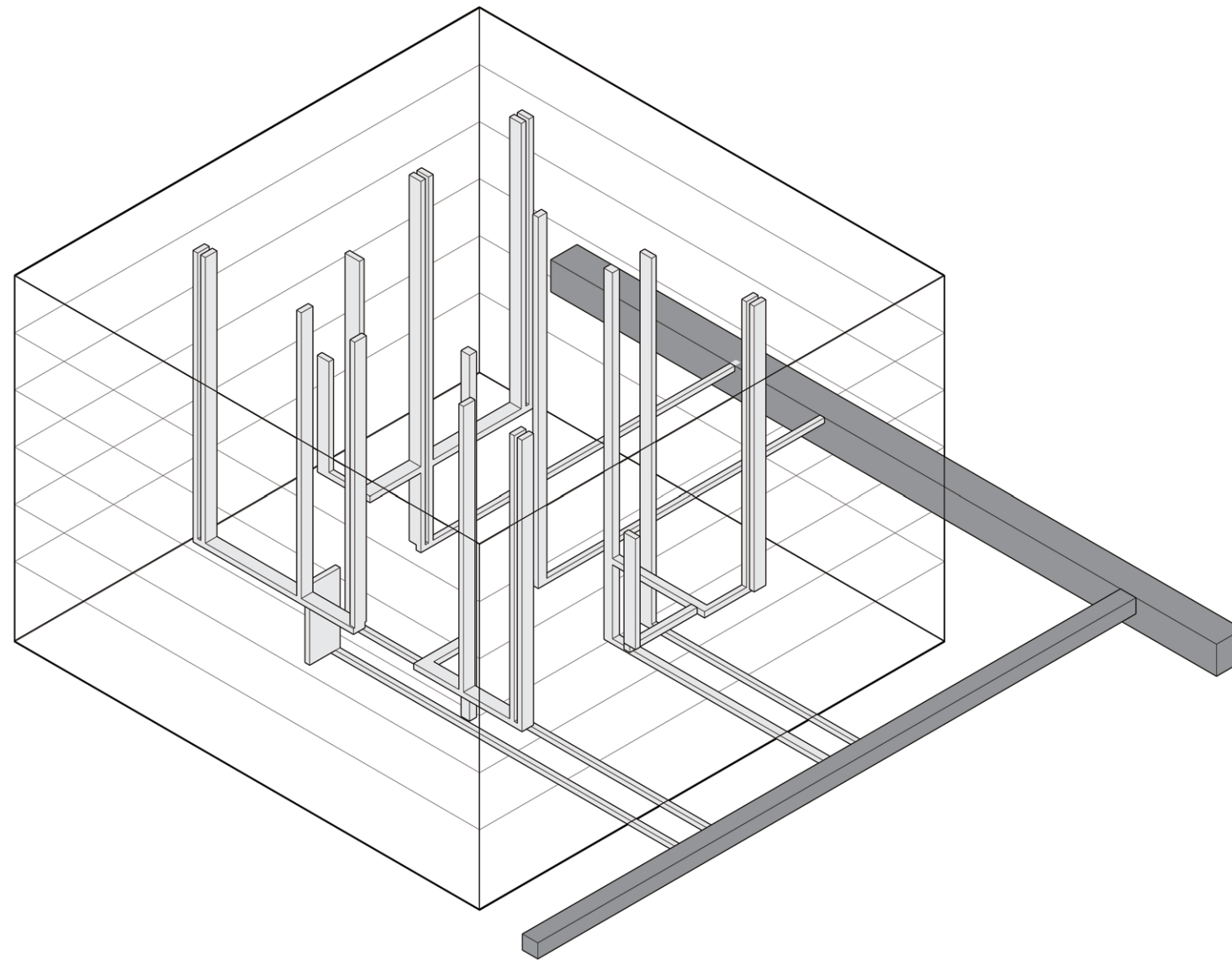
Building System



Building Structure Diagram
Load Bearing Walls & Steel Structure

- Steel Structure
- CLT
- Strip Foundation

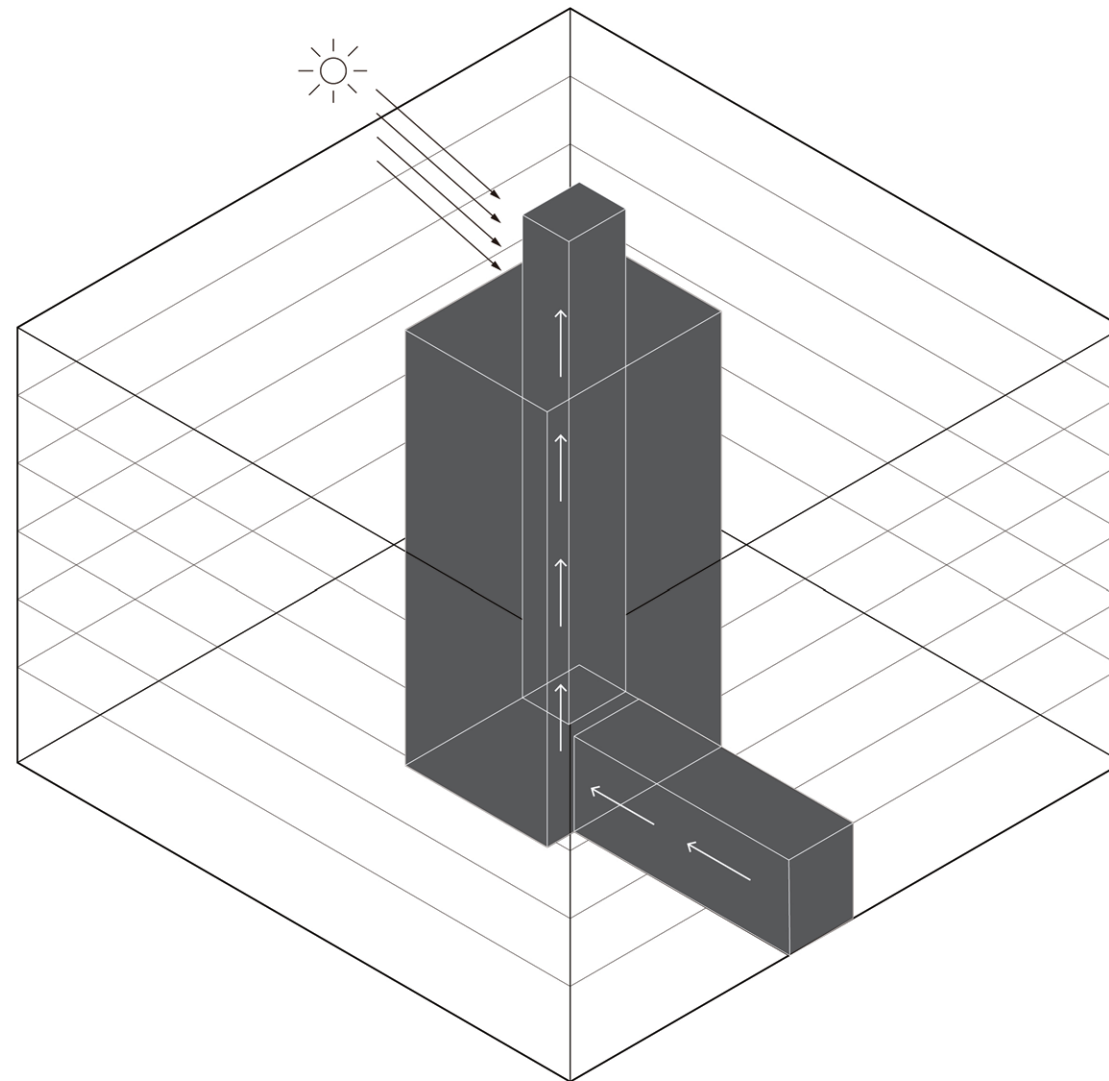
Building System



Building System Diagram
Shafts and Waste Water

- Shafts
- Sewage System

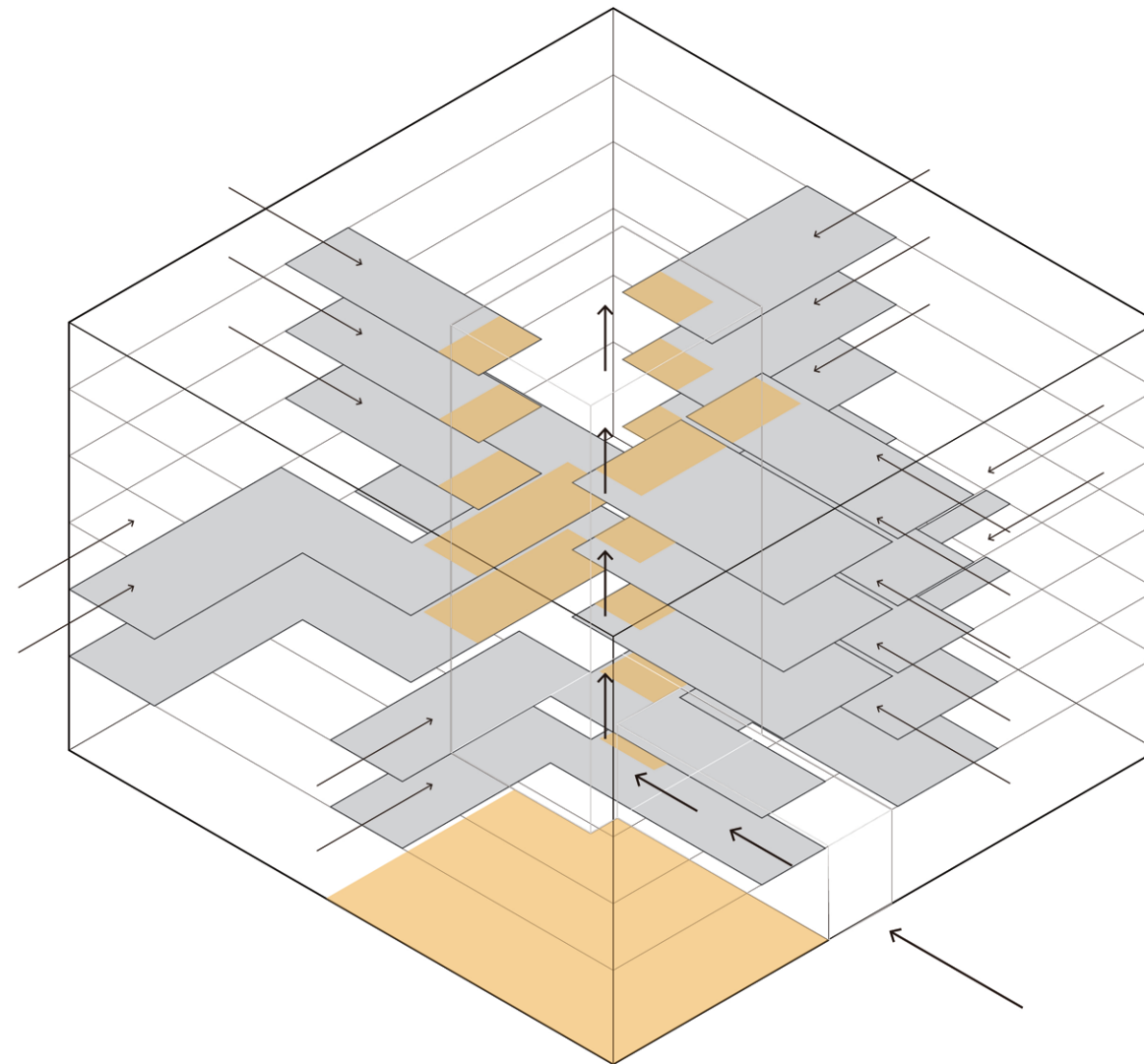
Building System



Building System Diagram
Natural Ventilation

- Circulation Core
- Kitchen
- Shared Living Room

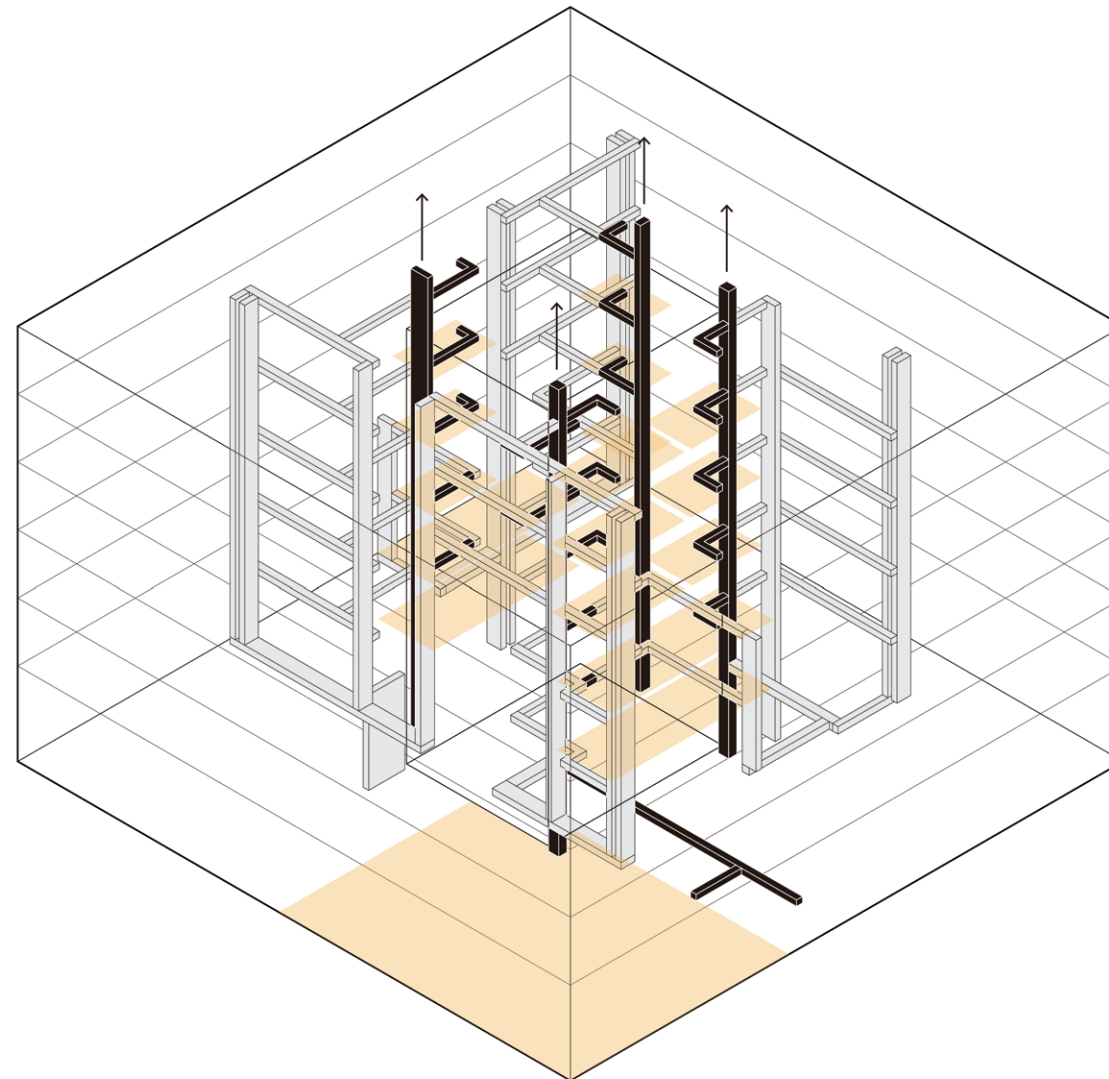
Building System



Building System Diagram
Natural Ventilation

- Circulation Core
- Kitchen
- Shared Living Room

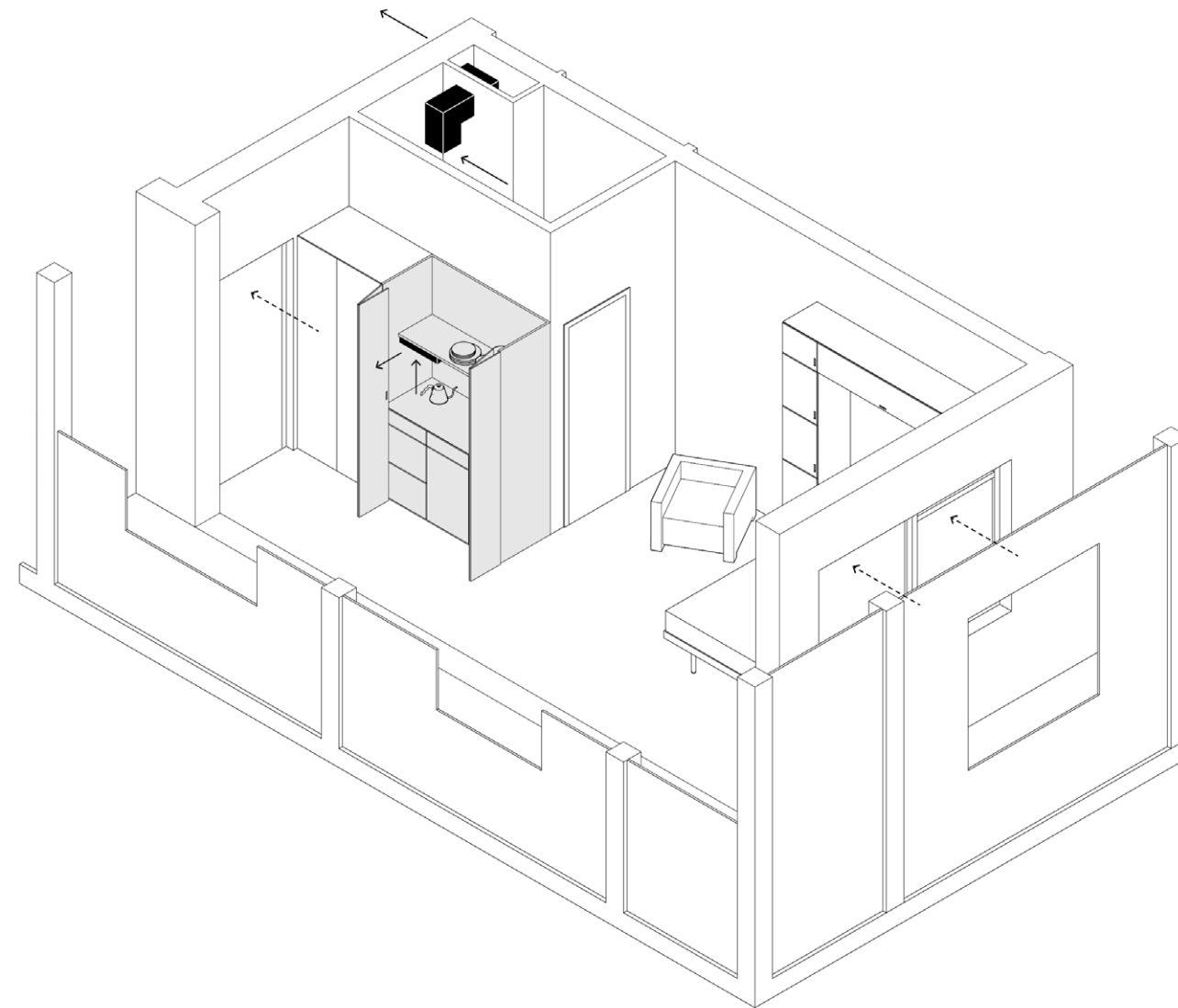
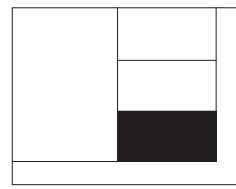
Building System



Building System Diagram
Mechanical Ventilation

- Mechanical Exhaust
- Kitchen
- Shafts and Ventilations from Bathrooms

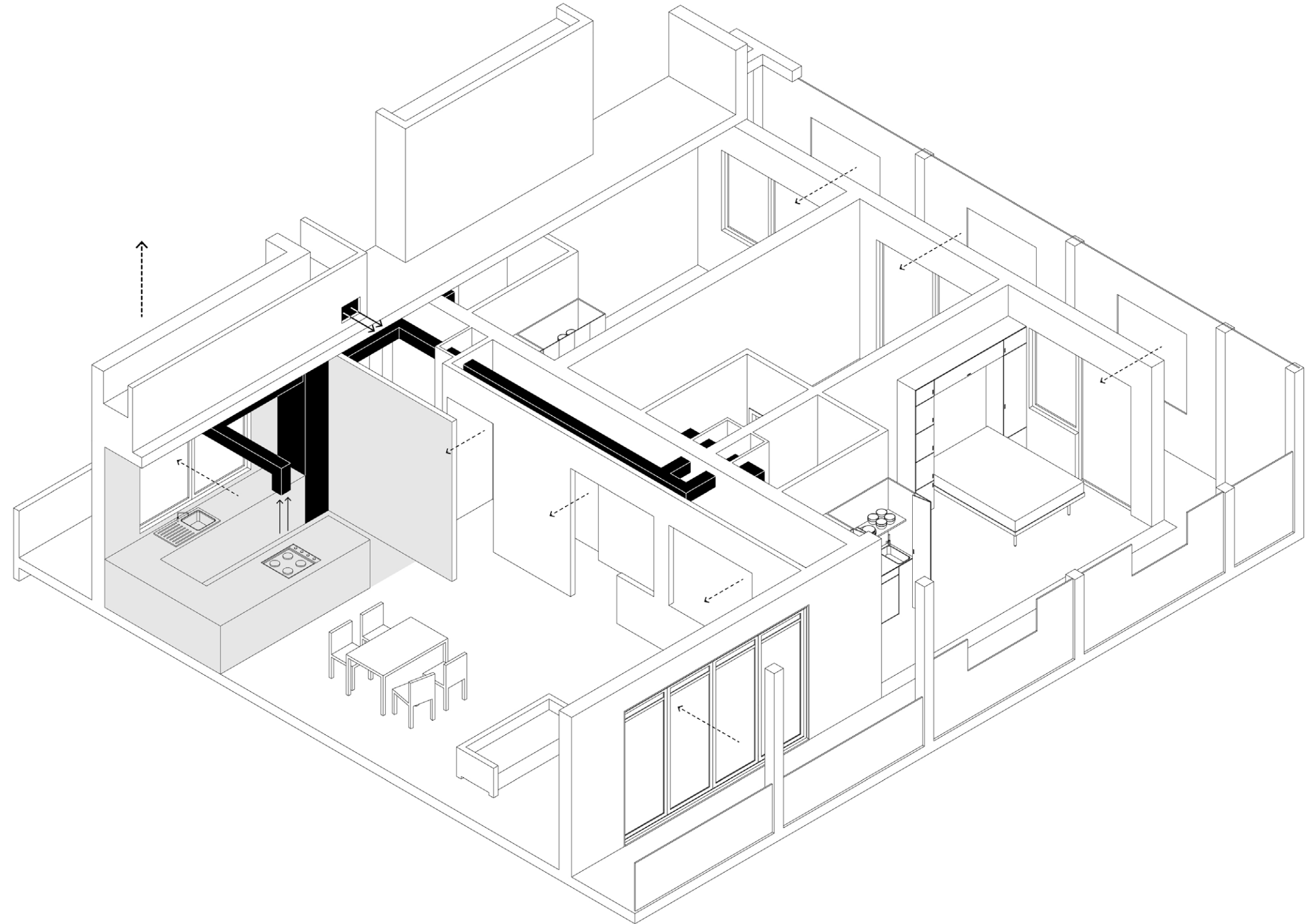
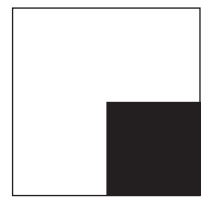
Building System



Ventilation Diagram
Private Unit

- Mechanical Exhaust
- Kitchen
- Mechanical Exhaust
- > Natural Ventilation

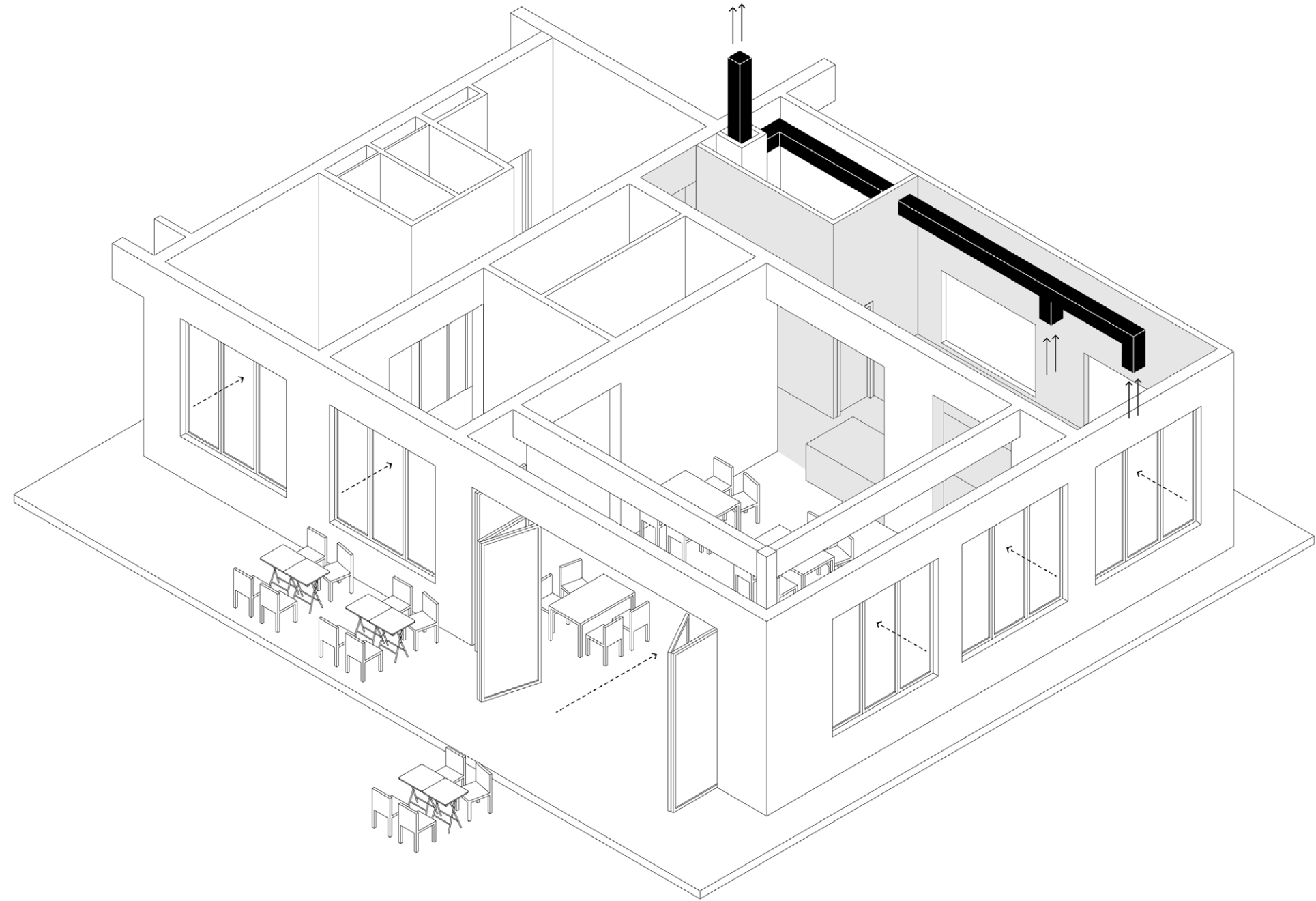
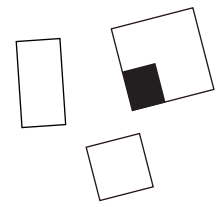
Building System



Ventilation Diagram
Cluster Apartment Shared Space

- Mechanical Exhaust
- Kitchen
- Mechanical Exhaust
- > Natural Ventilation

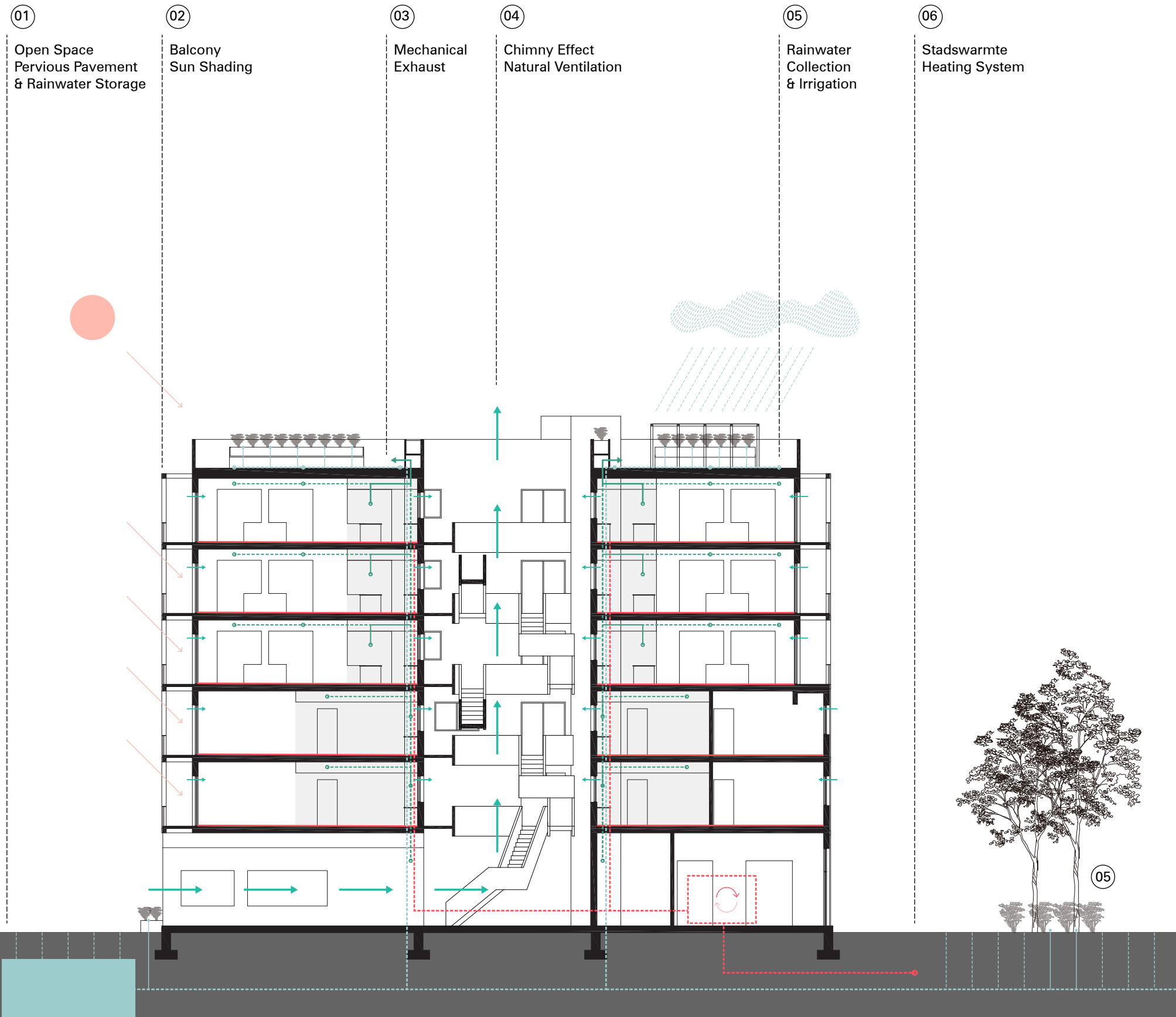
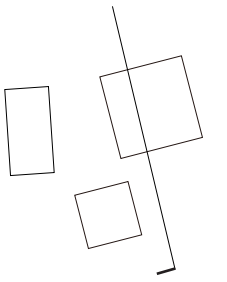
Building System



Ventilation Diagram
Urban Kitchen

- Mechanical Exhaust
- Kitchen
- Mechanical Exhaust
- > Natural Ventilation

Sustainable Strategy

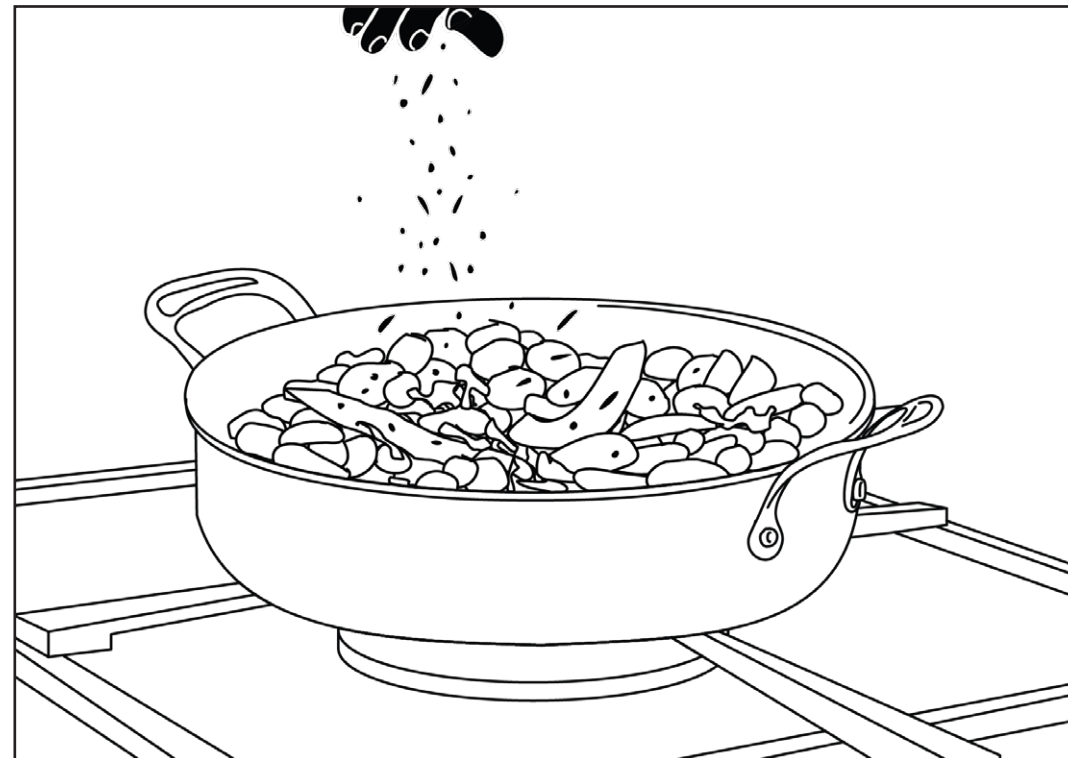


Sustainable Strategy
North-South Section

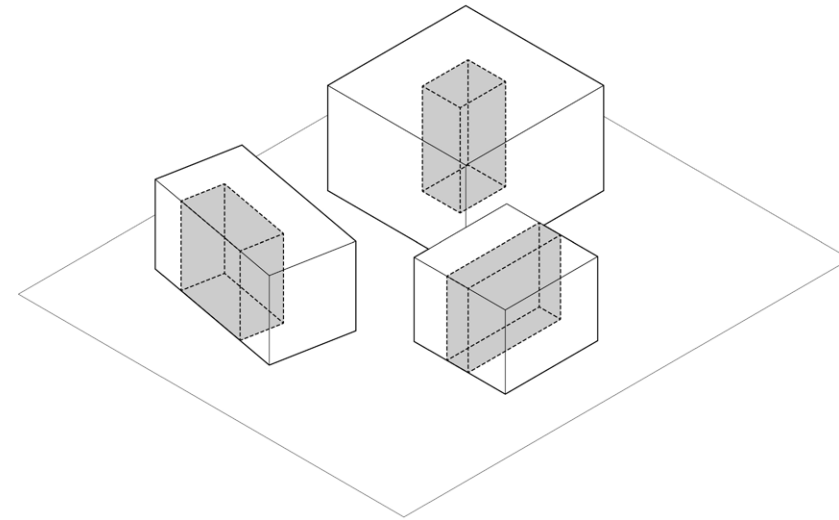
0 1 2 5m

Step 03

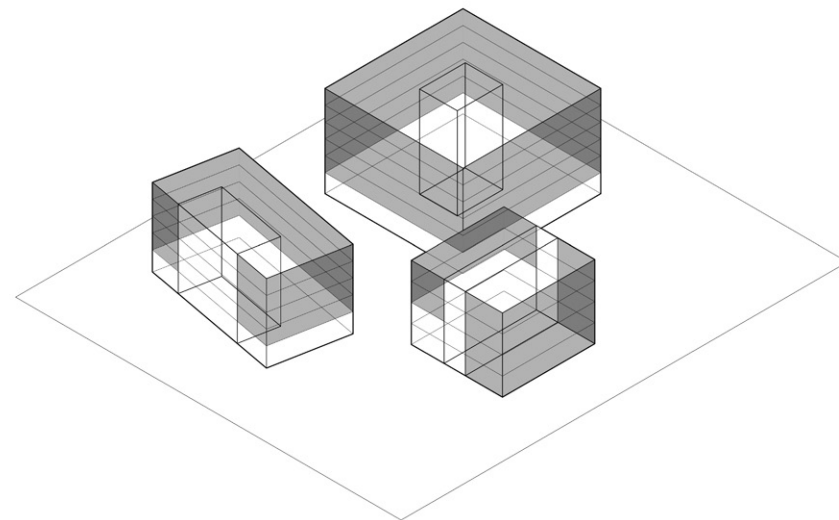
seasoning



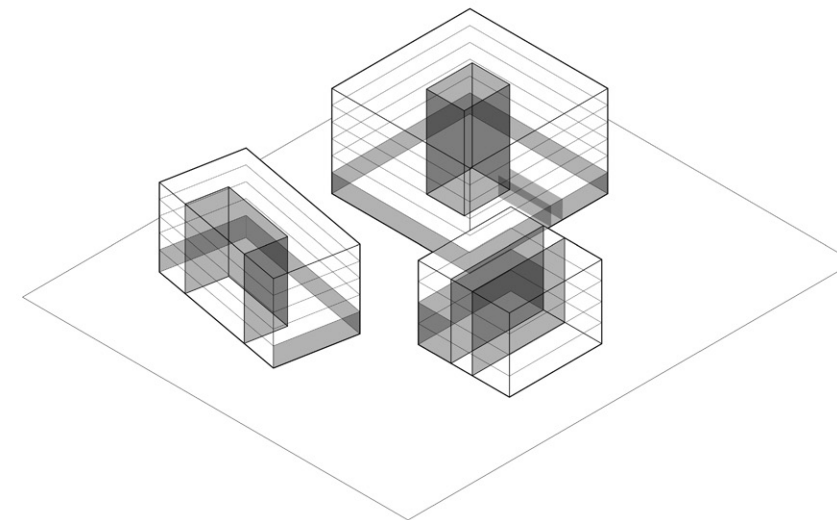
Urban Facade & Kitchen Facade



Circulation+Kitchen Core

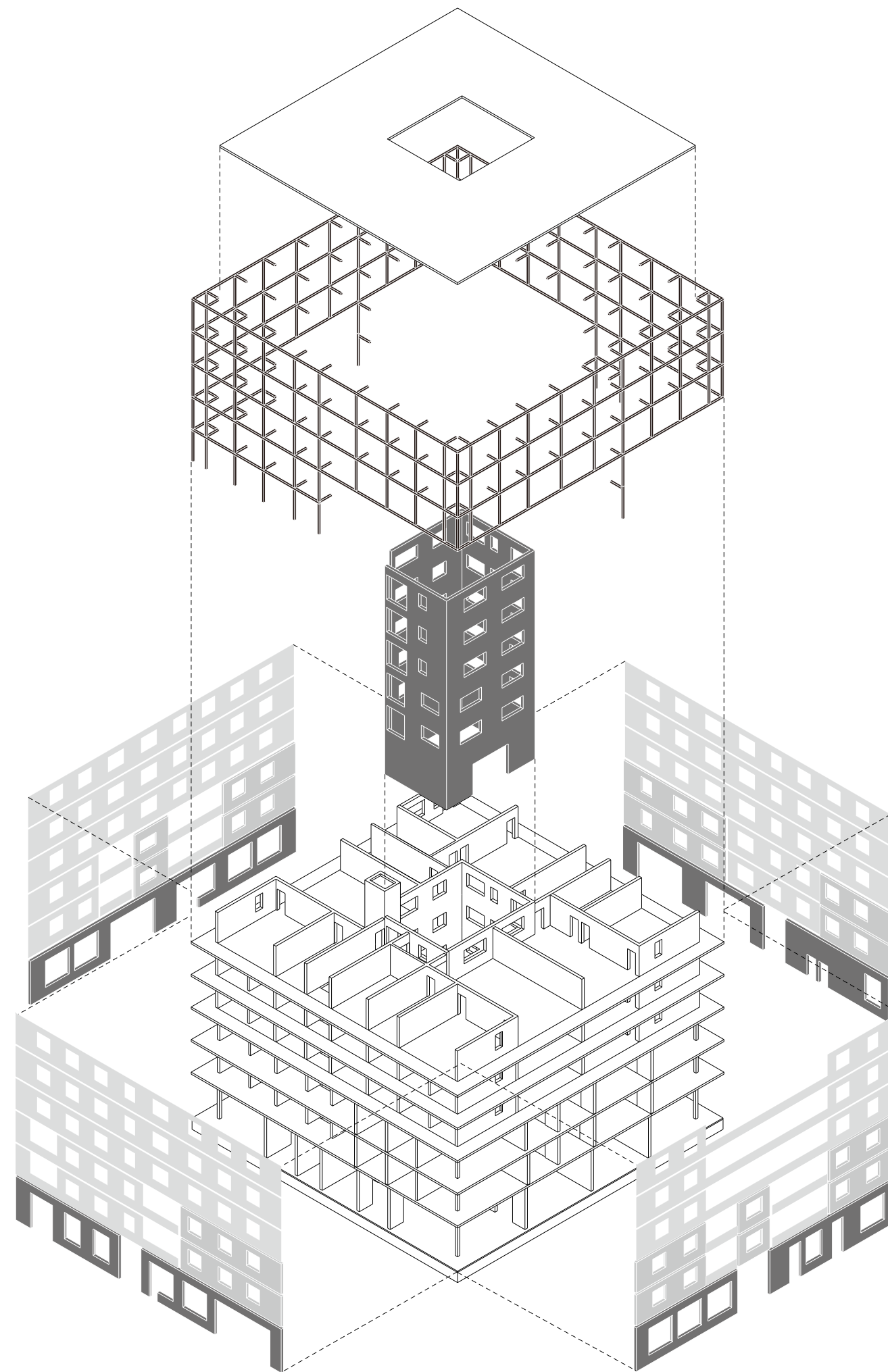


Urban Facade



Kitchen Facade

Urban Facade & Kitchen Facade

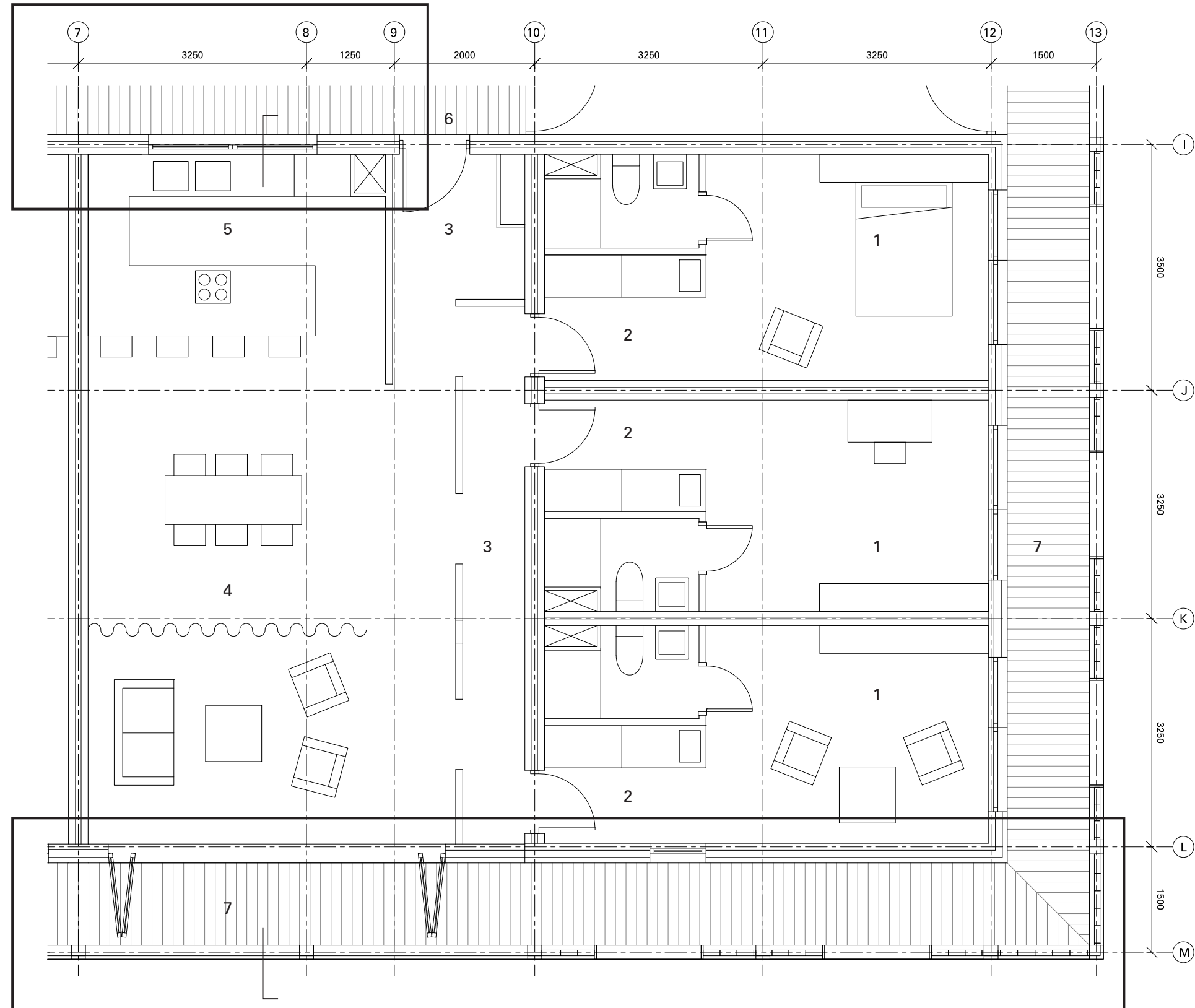


Structure System & Material

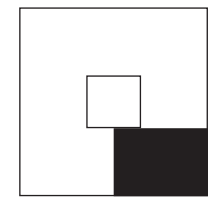
- Channel Glass
- Corrugated Aluminum Panel
- Corrugated Concrete Panel
- Steel Structure
- CLT

Urban Facade & Kitchen Facade

Kitchen Facade



Urban Facade



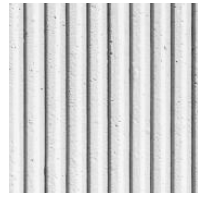
Fat Type Housing Type
3-5F_3-Units Cluster
Apartment_Plan

- 1 Private Living Space
- 2 Private Kitchen
- 3 Transitional Space
- 4 Shared Living Space
- 5 Shared Kitchen
- 6 Circulation Space
- 7 Balcony

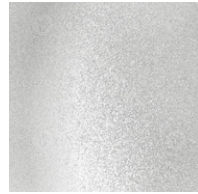


0 0.5 1 2m

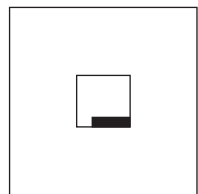
Facade Fragment: Kitchen Facade



Corrugated
Concrete
Panel



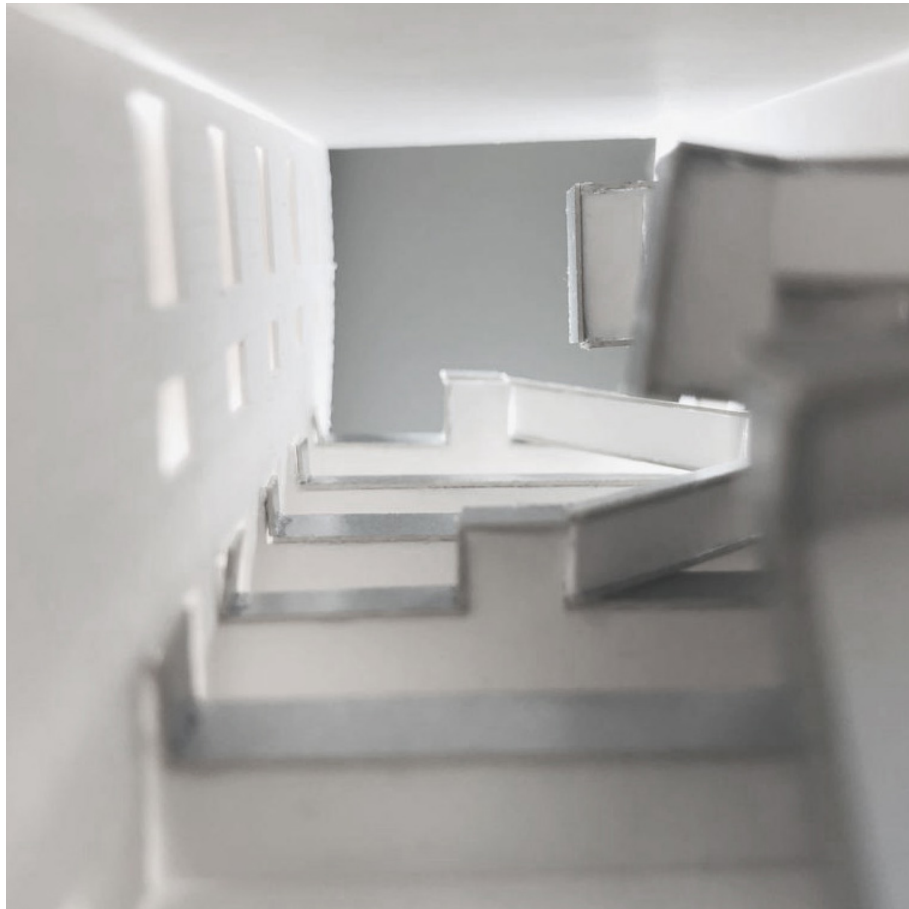
Reflective
Steel Plate



0 0.5 1 2m



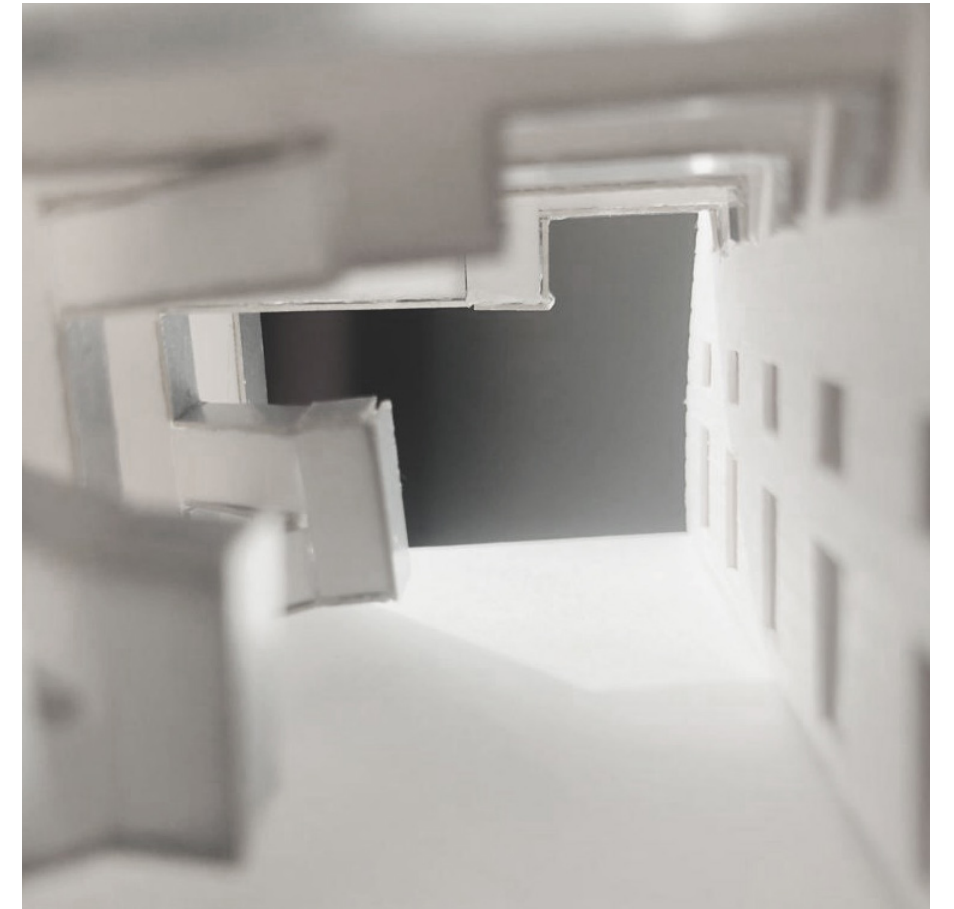
Facade Fragment: Kitchen Facade



Light from East

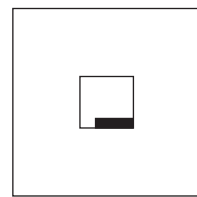
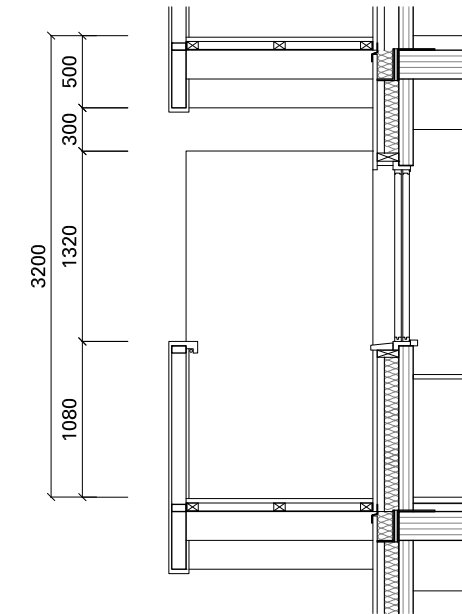
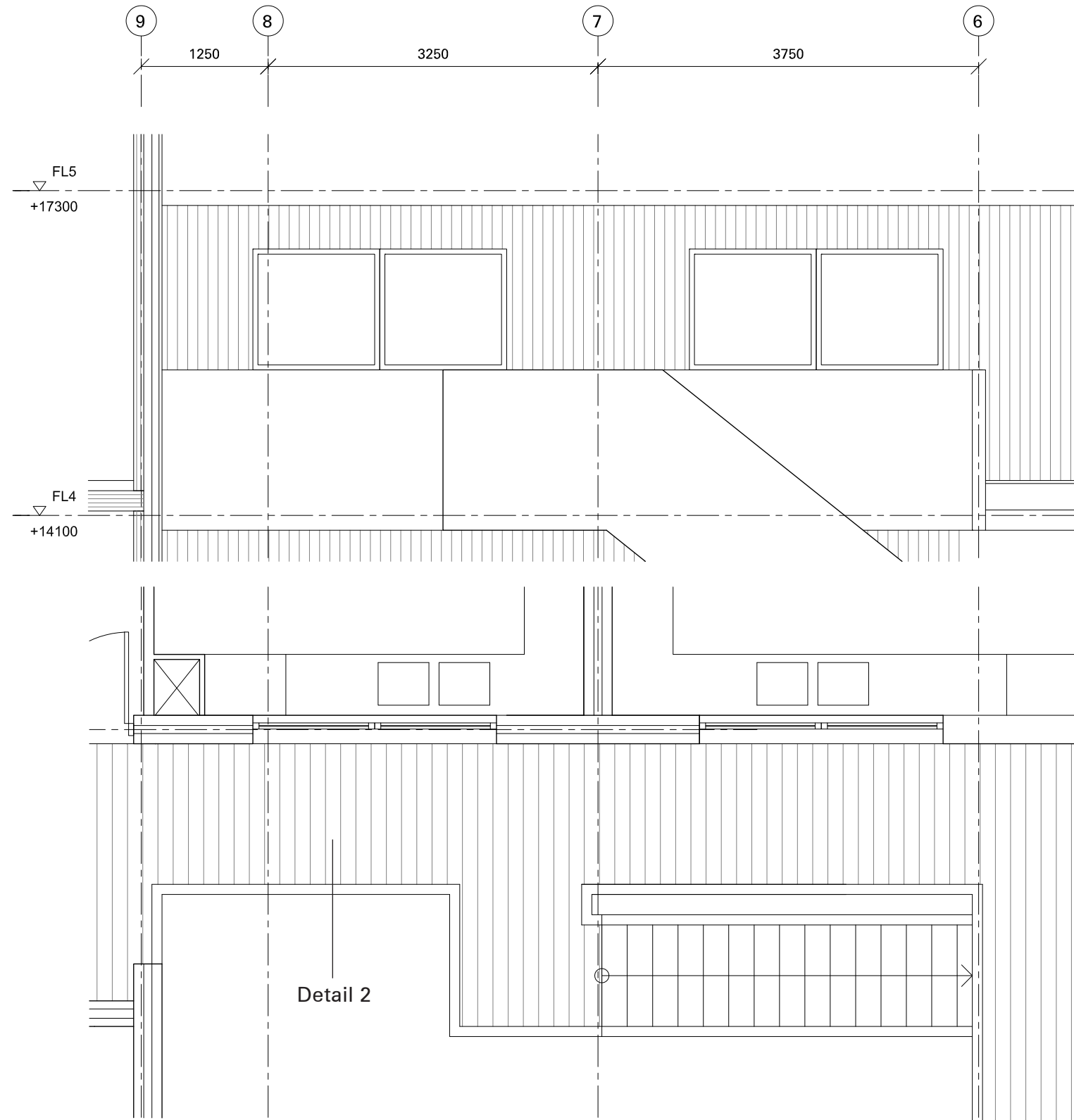


Light from South



Light from West

Facade Fragment: Kitchen Facade



Facade Fragment:
Kitchen Facade (South)

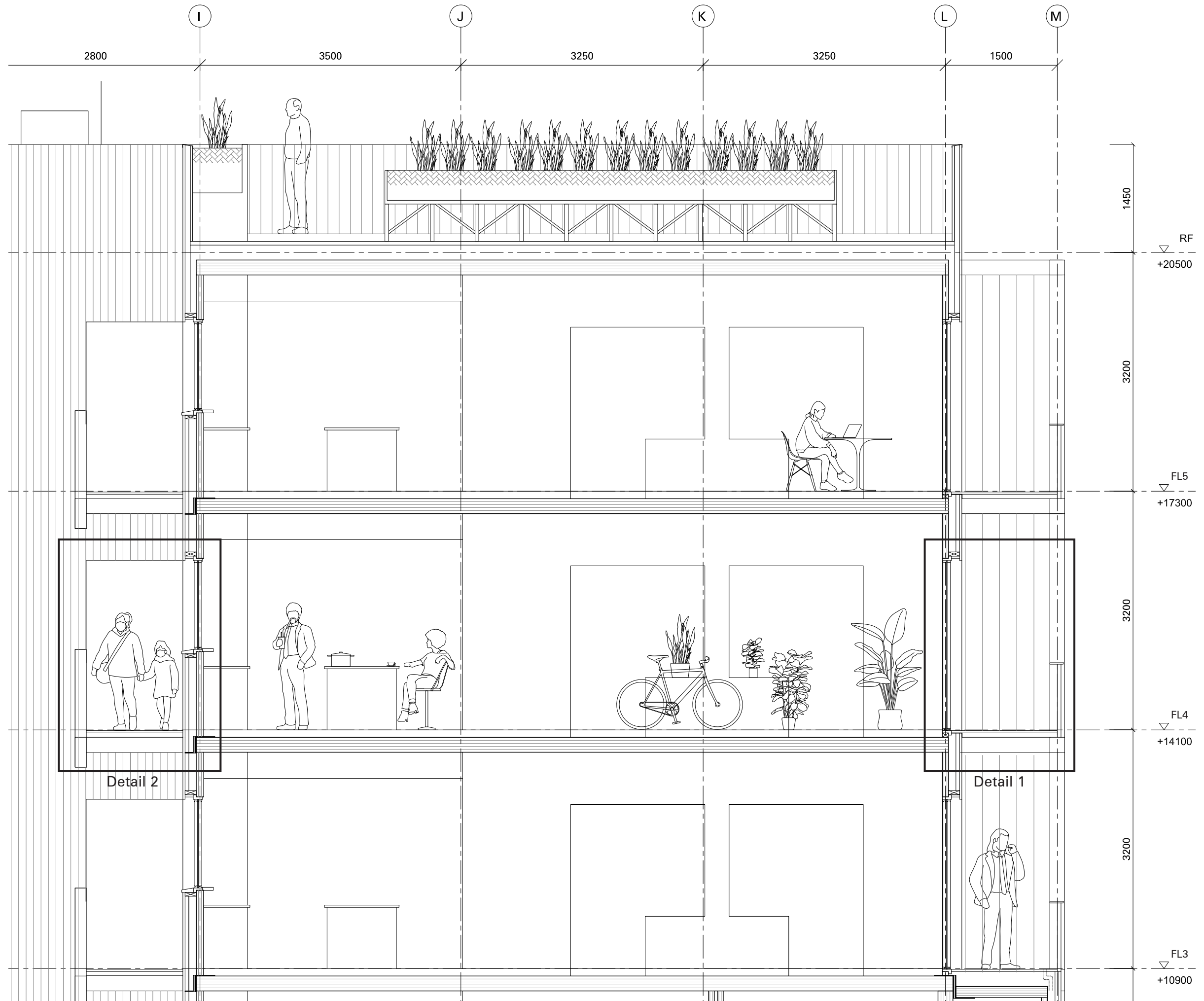
0 0.5 1 2m

Facade Fragment: Kitchen Facade

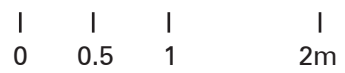


Kitchen Facade Corridor
Impression

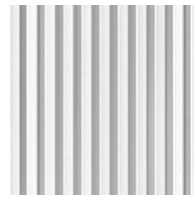
Section



Fat Type Cluster
Apartment Section (3-RF)



Facade Fragment: Urban Facade



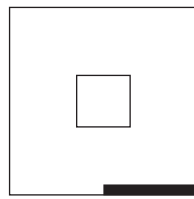
Corrugated Aluminum Panel



Channel Glass



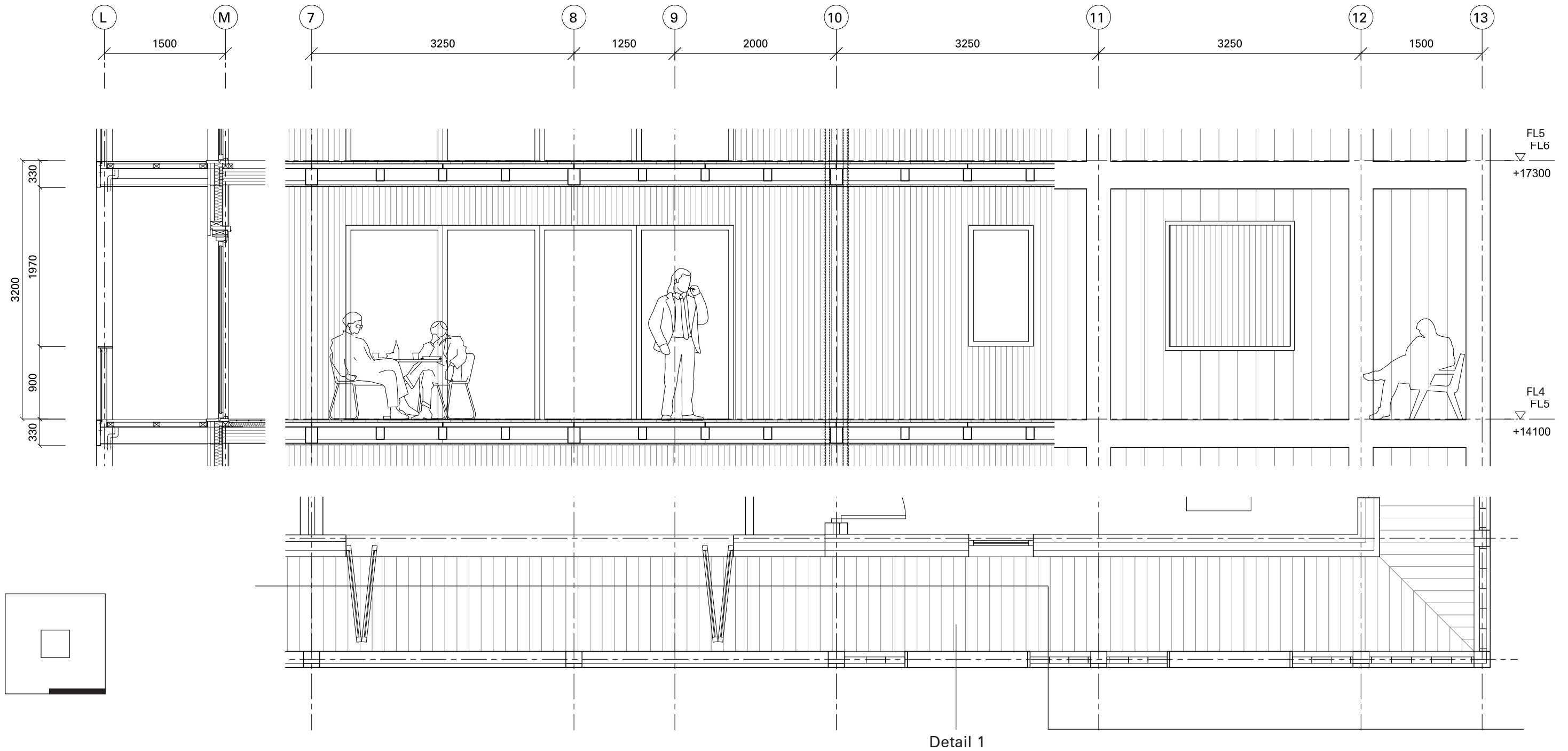
Aluminium Cladding



0 0.5 1 2m



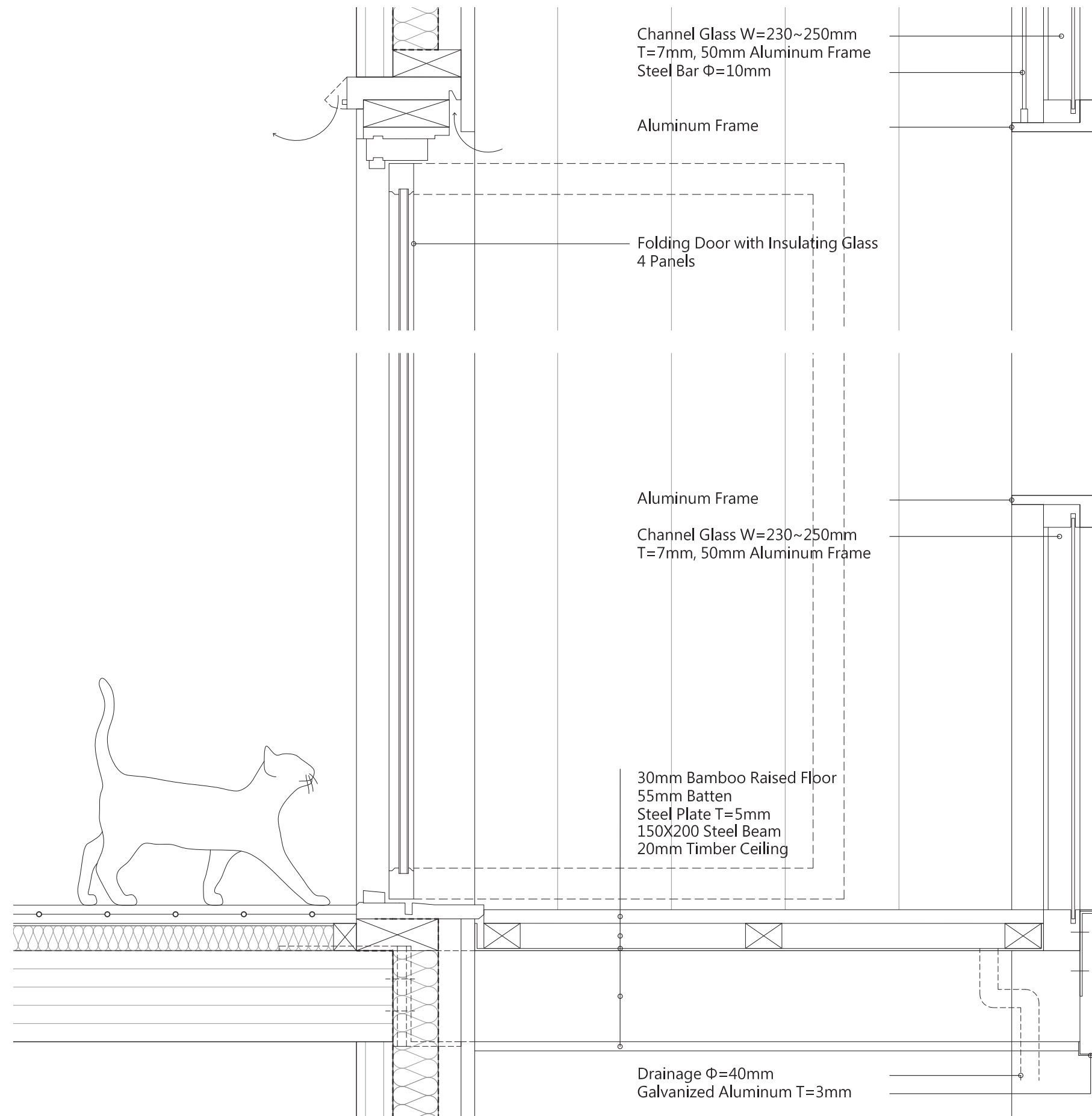
Facade Fragment: Urban Facade



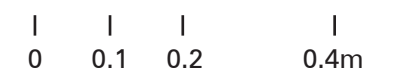
Facade Fragment:
Urban Facade (South)

0 0.5 1 2m

Facade Fragment: Urban Facade



17th Century Carpentry Dutch Townhouse
Construction Drawing, Source: Lecture Material of
Dick van Gameren (2021)

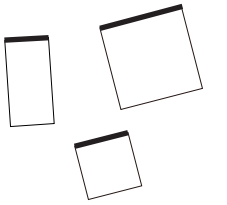


Facade Fragment: Urban Facade



Urban Facade Balcony
Impression

Complex Urban Facade



Three Buildings North Facade
From Green Axis

0 1 2 5m

Step 04

plating & tasting

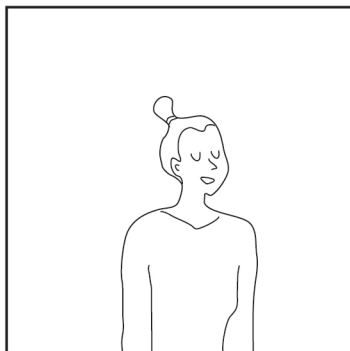




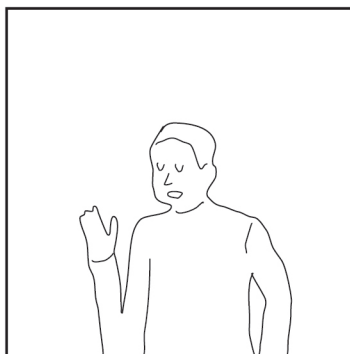
Lucy (40) Dutch
Office work / work from home
Work at Urban Kitchen Blijdorp
Single mother with a daughter Lisa (8)
Neighbor of Elke



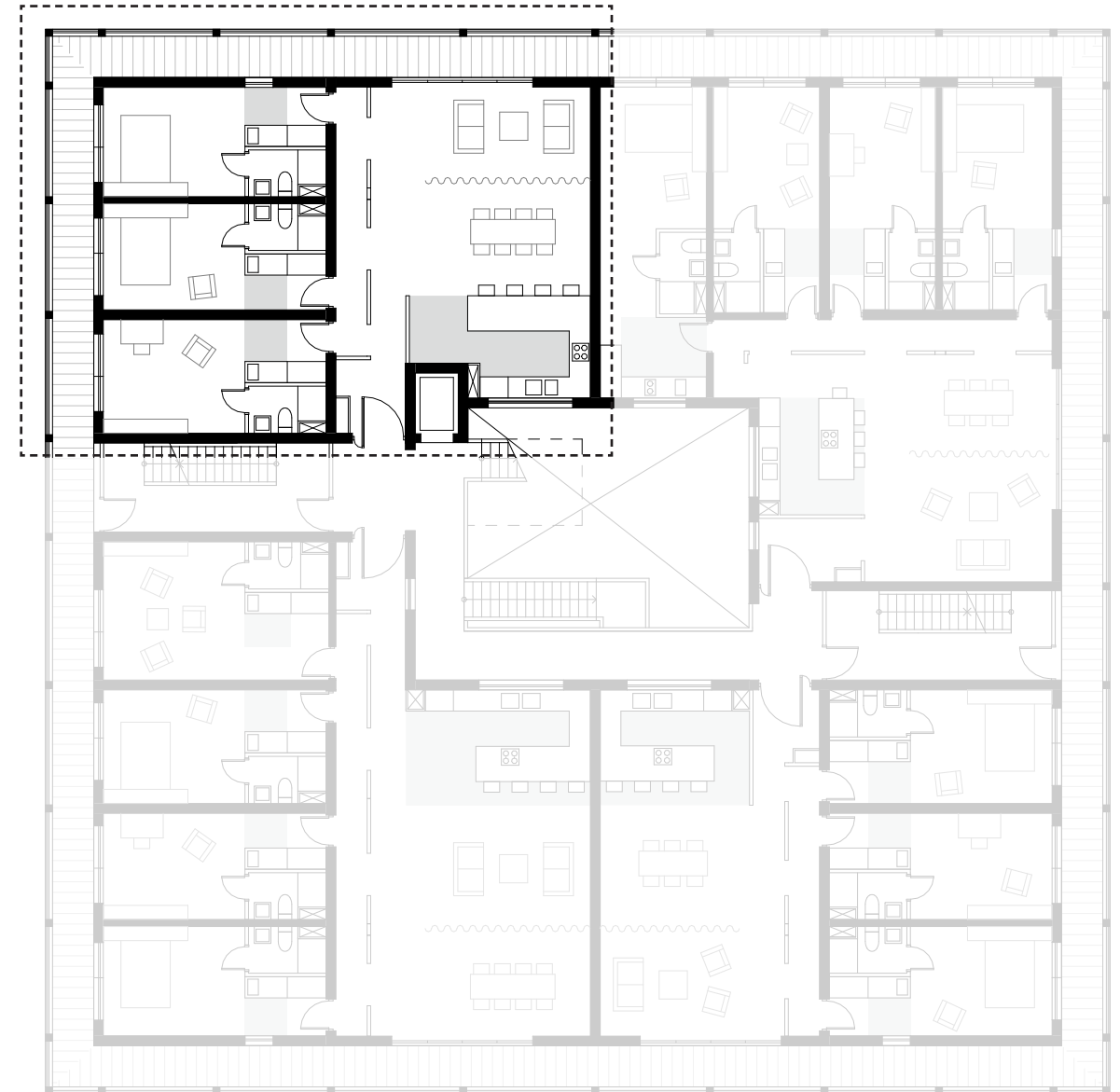
Lisa (8) Dutch
Primary School student
daughter of Lucy
Neighbor of Elke



Elke (25) Dutch
Freelance writer/work from home
Single
Neighbor of Lucy and Lisa



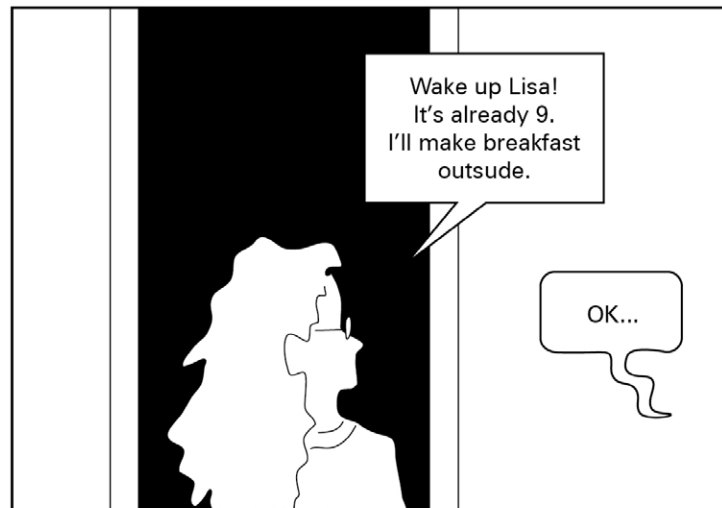
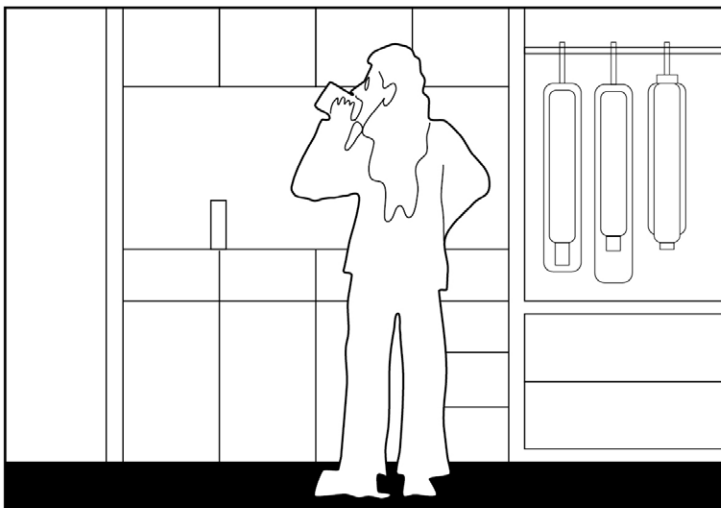
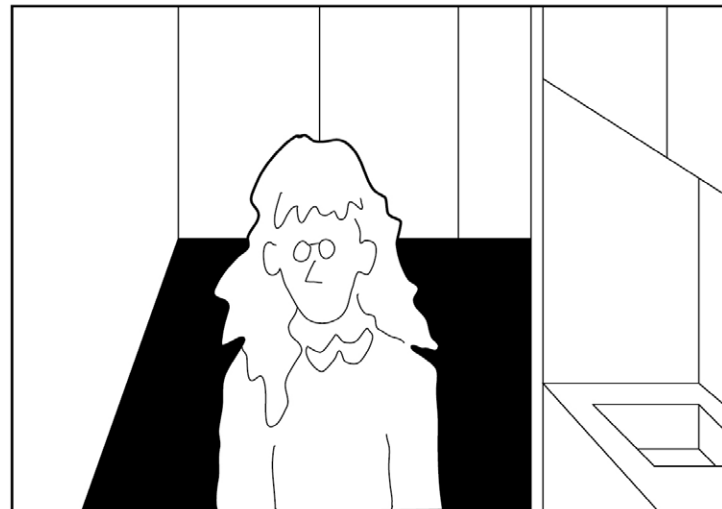
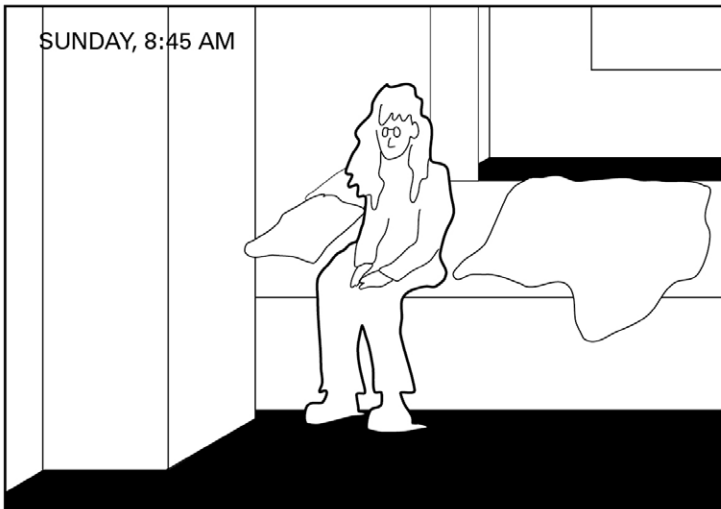
James (35) Dutch
Barista
Single
Potential tenant for Lucy and Elke's unit



Fat Type Standard Floor Plan

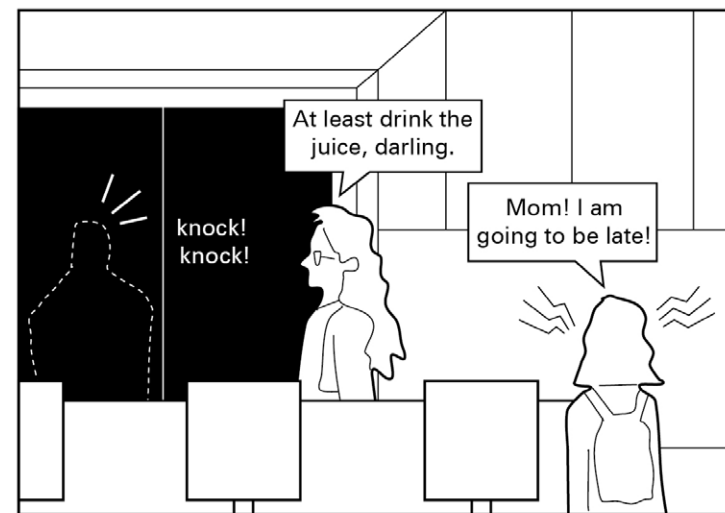
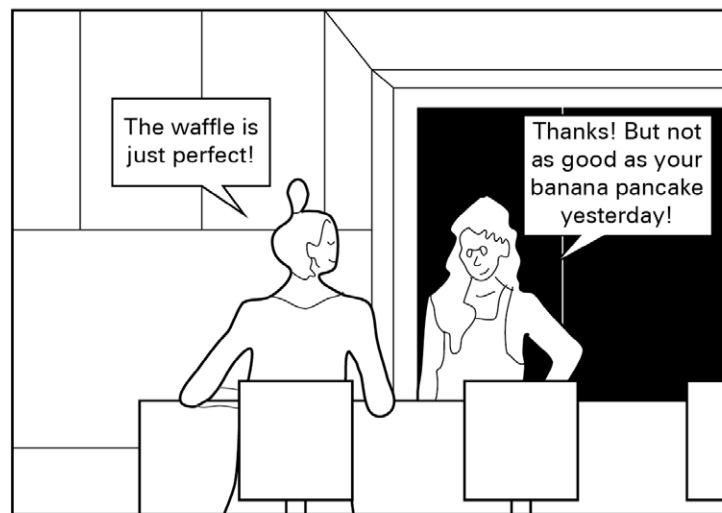
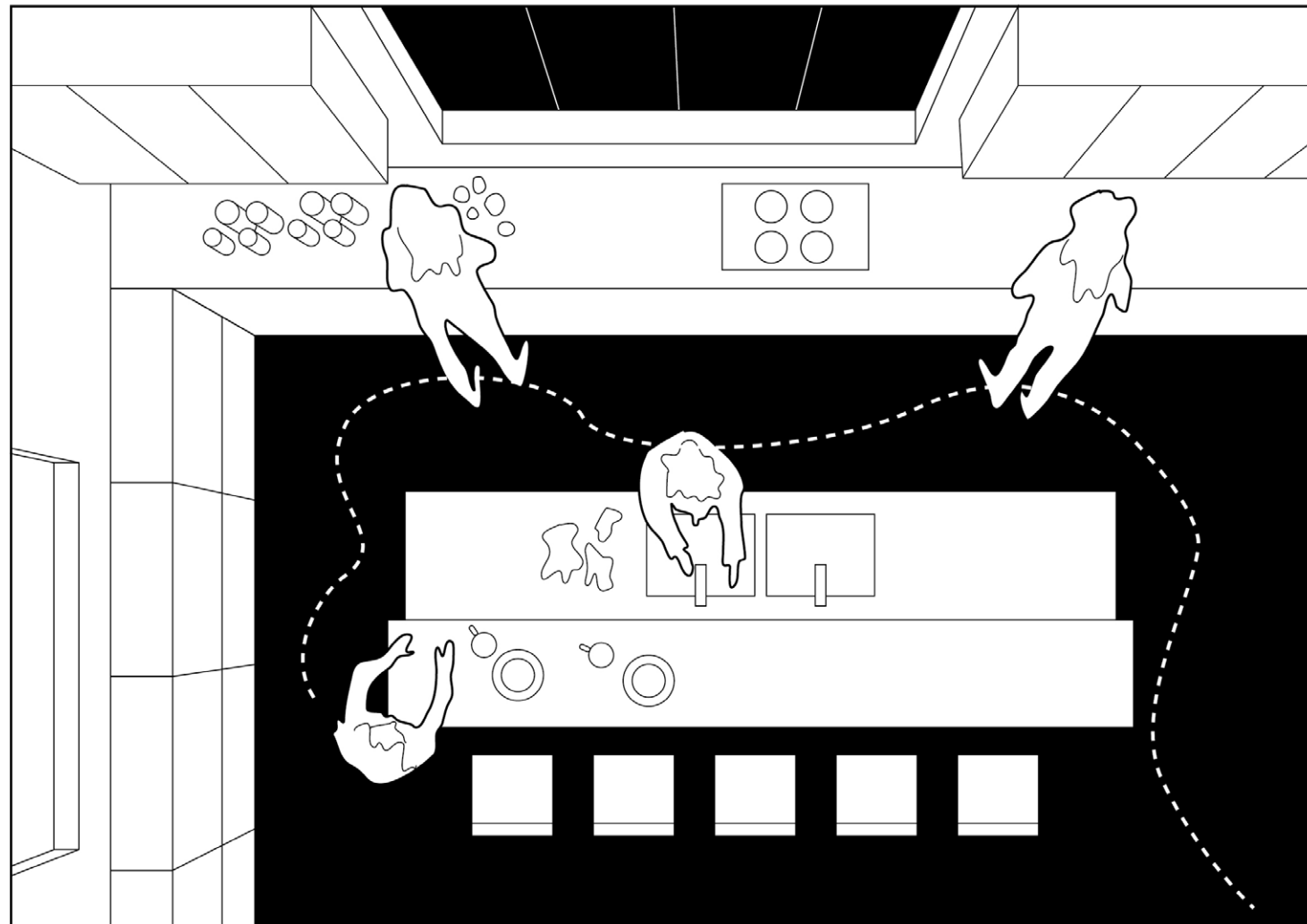


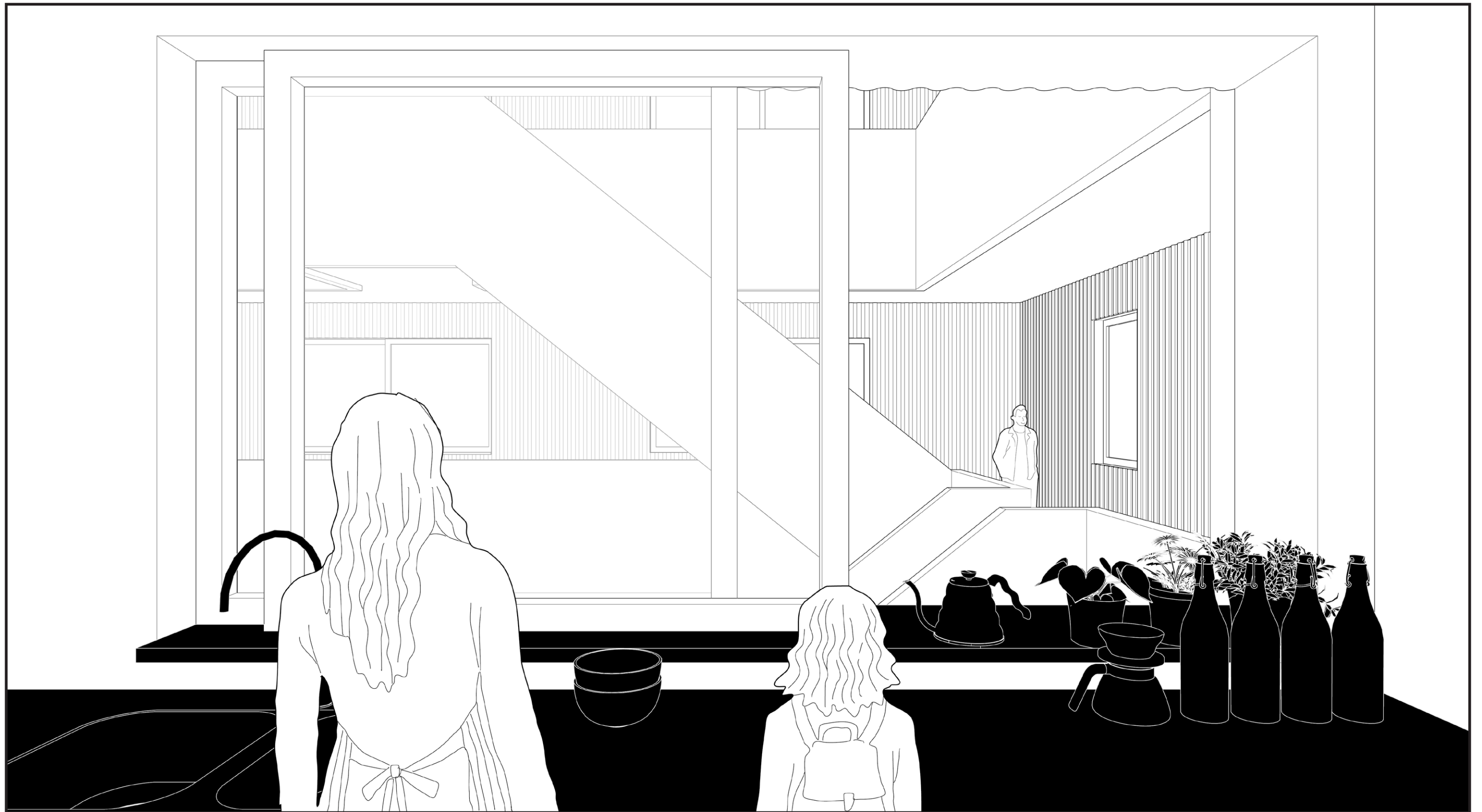
0 1 2 4m





Impression:
Cluster Apartment Shared Living Room

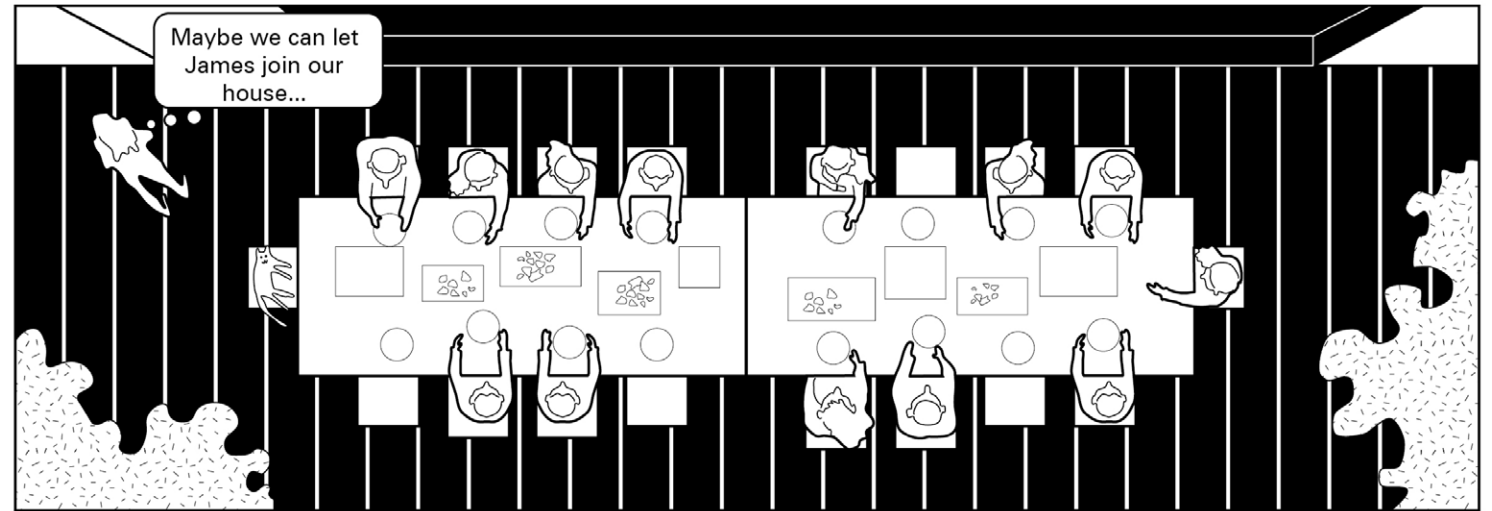
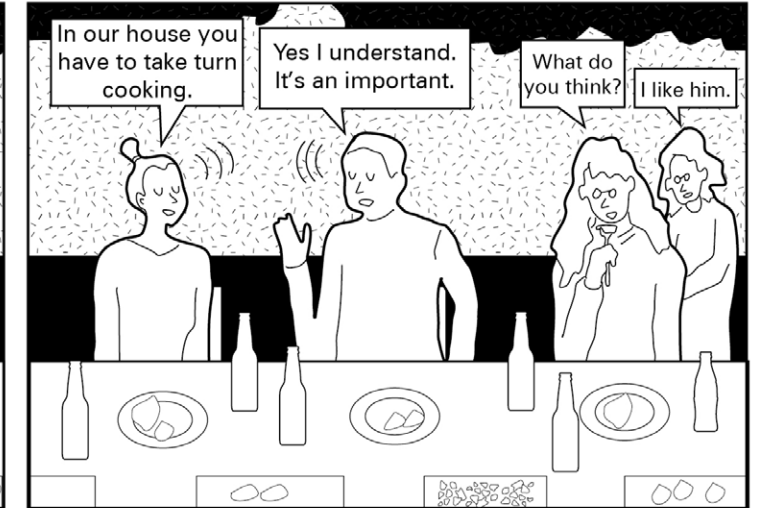
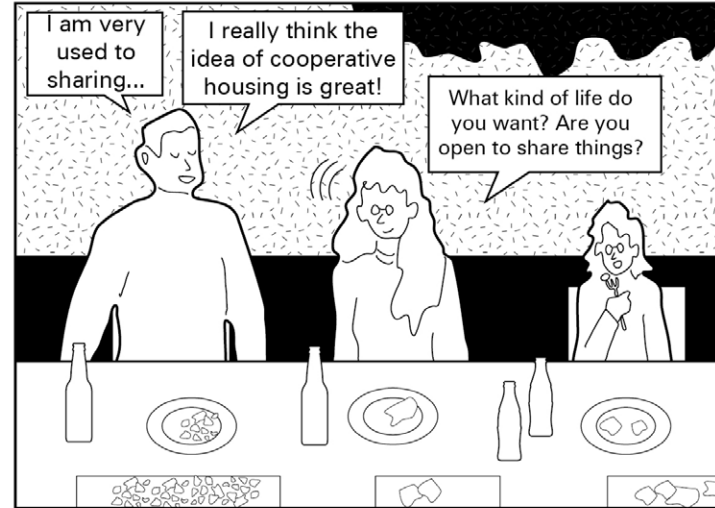




Impression:
Cluster Apartment Shared Kitchen Facing
Circulation Core



Impression:
Circulation Core

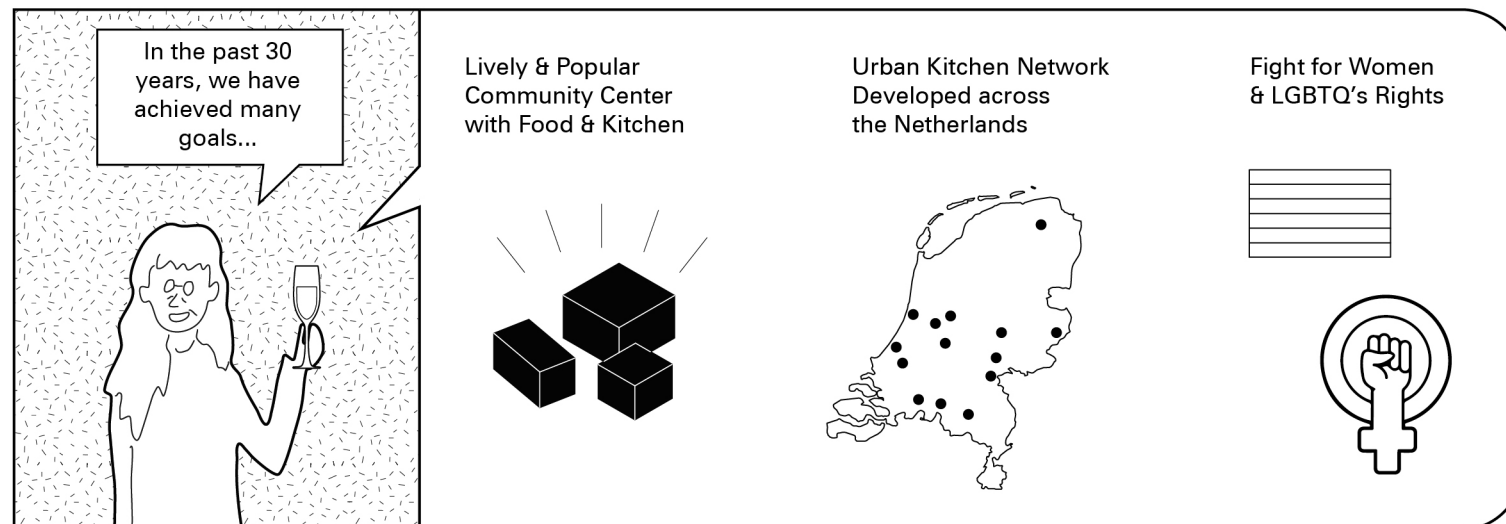
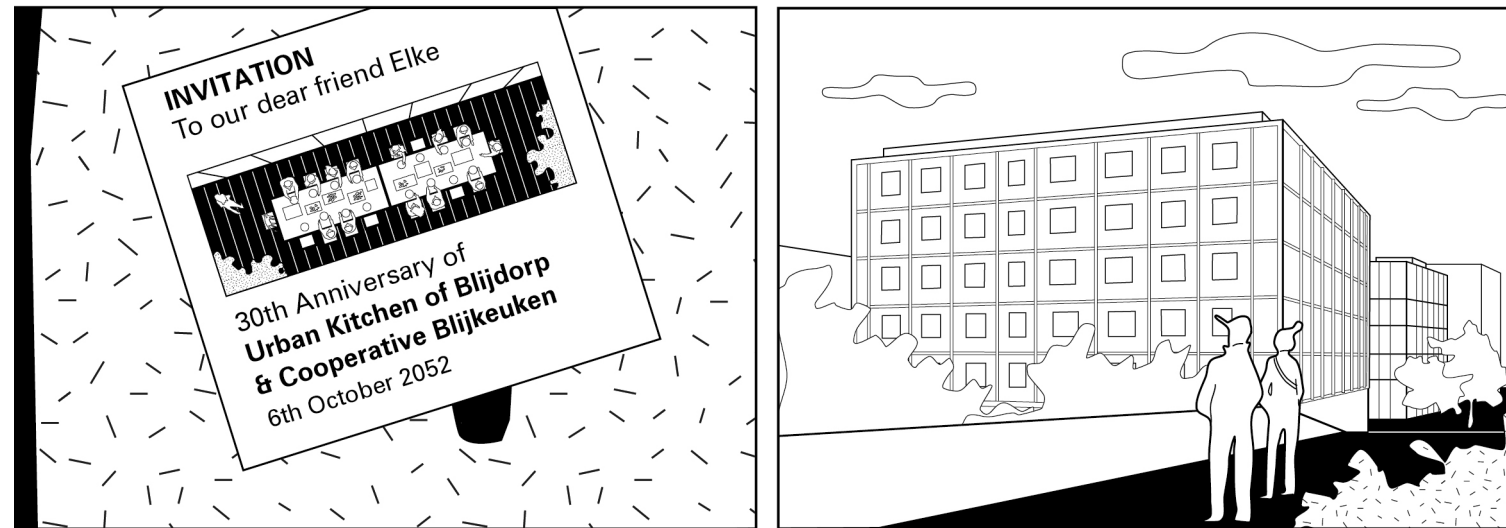




Impression:
Urban Kitchen From Public Space



Impression:
Rooftop Urban Farming





Impression:
Kitchen Plaza and Edible Landscape



