

Neighborhood and Community

Connecting the Tangible and the Intangible



The Location

The Master Plan

The Sector

The Building

The Dwelling

Building Technology

Video

How to design social housing with
a strong connection between the
community and the neighborhood in
Addis Ababa, Ethiopia?

Tangible

“A **neighborhood** is a limited territory within a larger urban area where people inhabit dwellings and interact socially.”
(Hallman, 1984)

Intangible

A **community** is a connection between individuals who will act collectively and share a collective identity, this can be attached to a physical place but also not bound by a physical context (Chaskin, 1997)



Africa



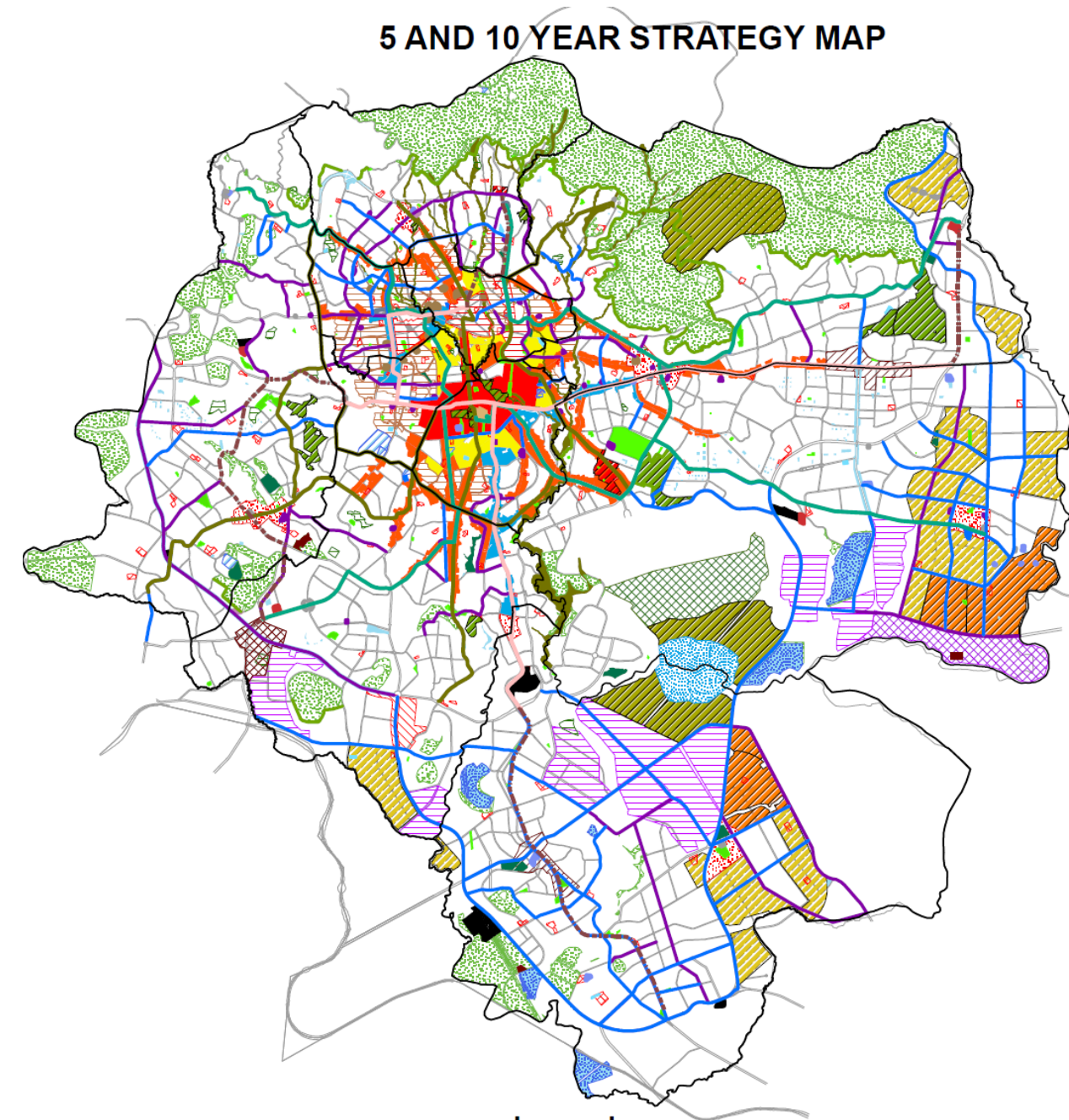
Ethiopia



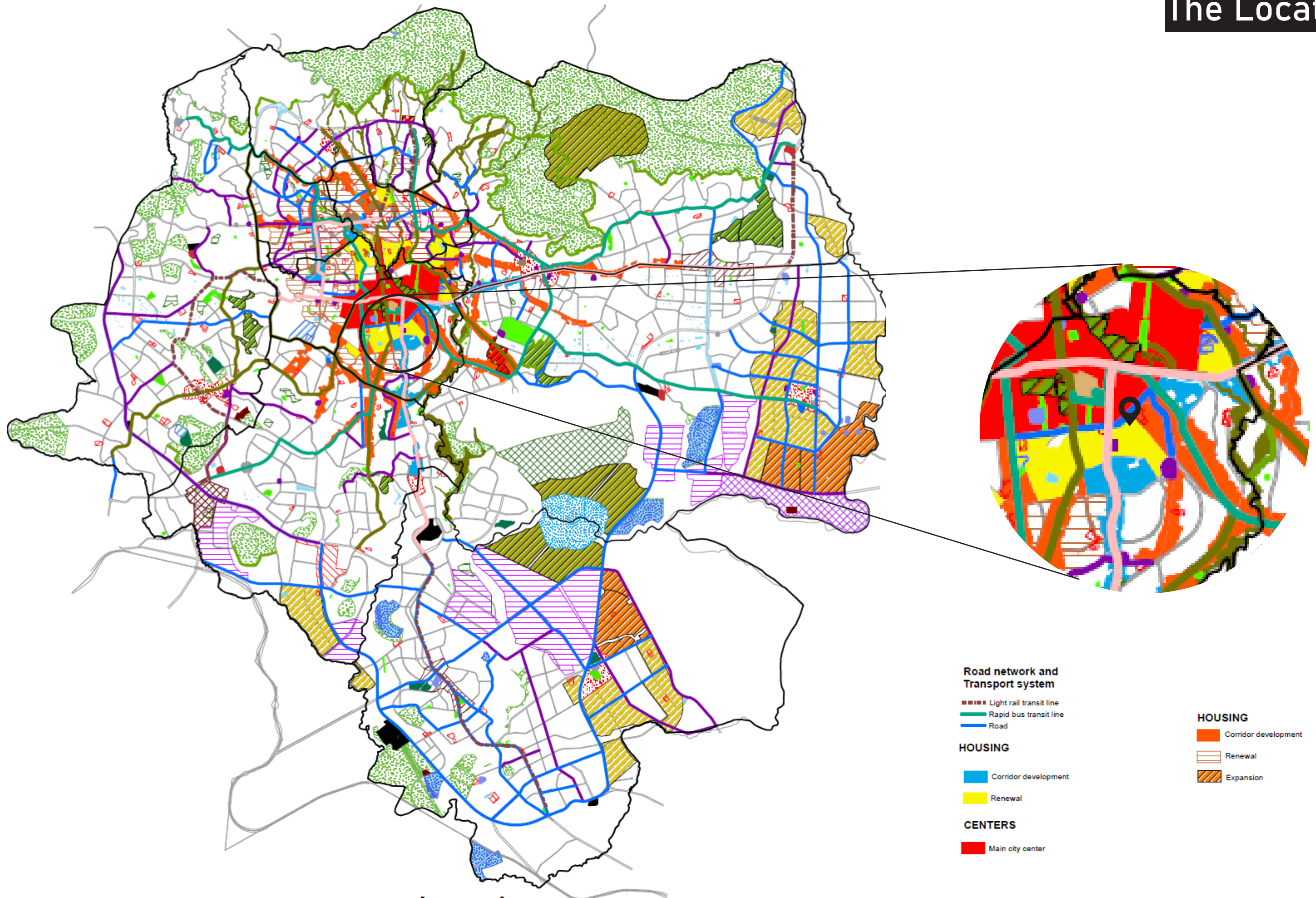
Addia Ababa

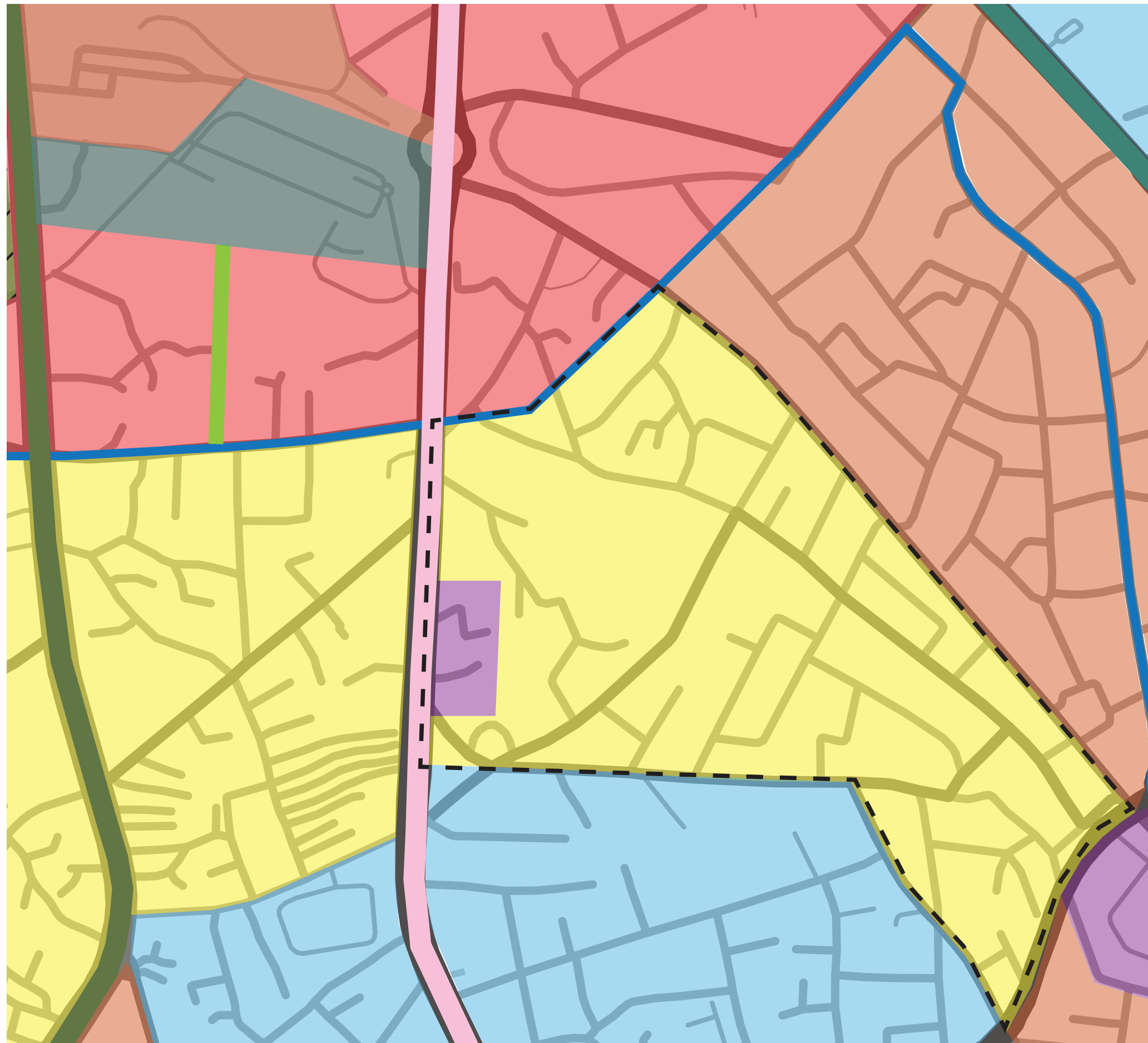


Addia Ababa



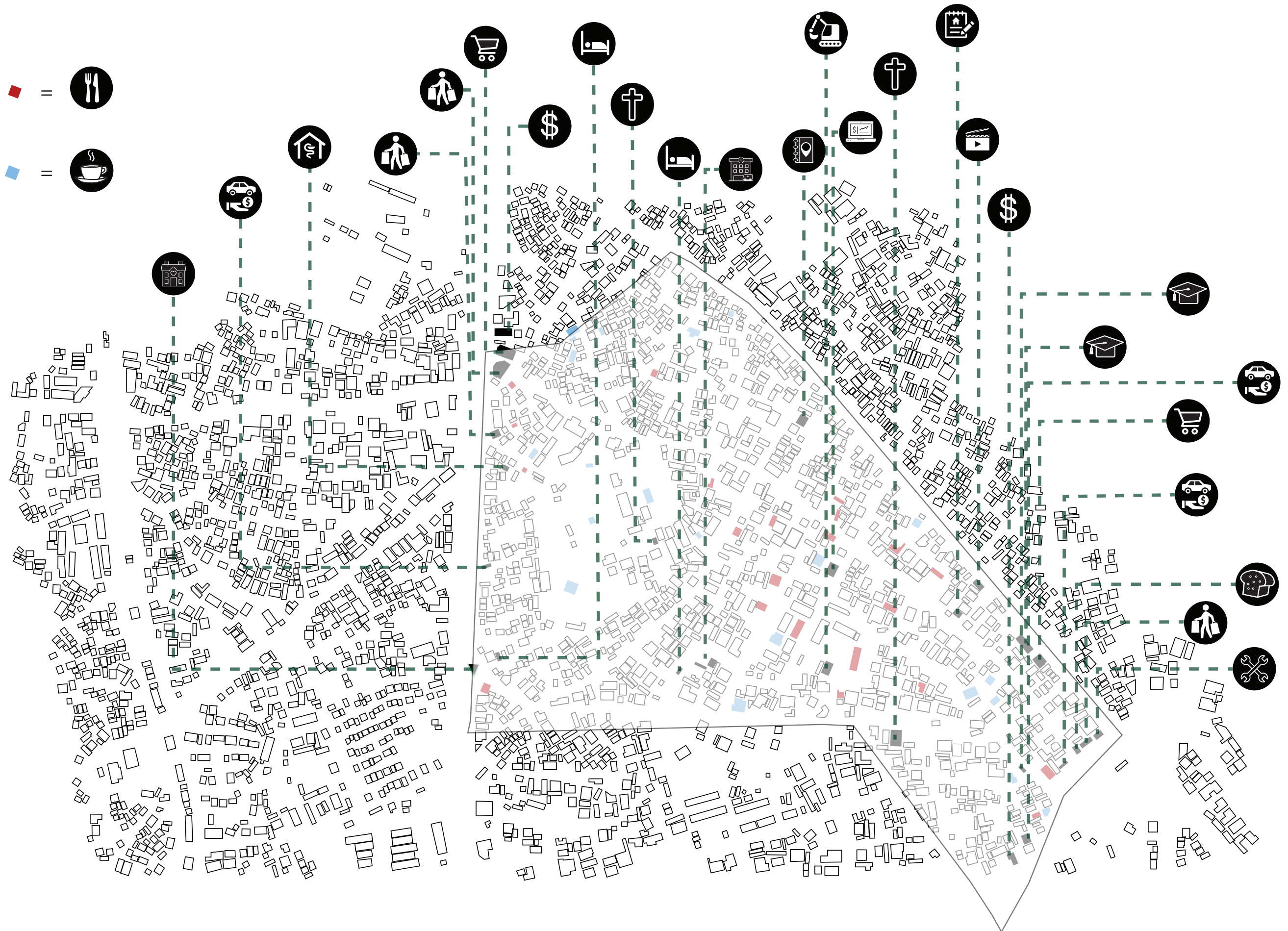
Addia Ababa





- Main City Center
- Housing, Renewal 1
- Housing, Renewal 2
- Housing, Corridor Development 1
- Housing, Corridor Development 2
- City Park
- Sub City Park
- Legehar Transport Hub
- Social Welfare Center
- Parking Building
- Road 1
- Rapid Bus Transit Line 1
- Rapid Bus Transit Line 2
- Light Rail Transit Line
- Special Street

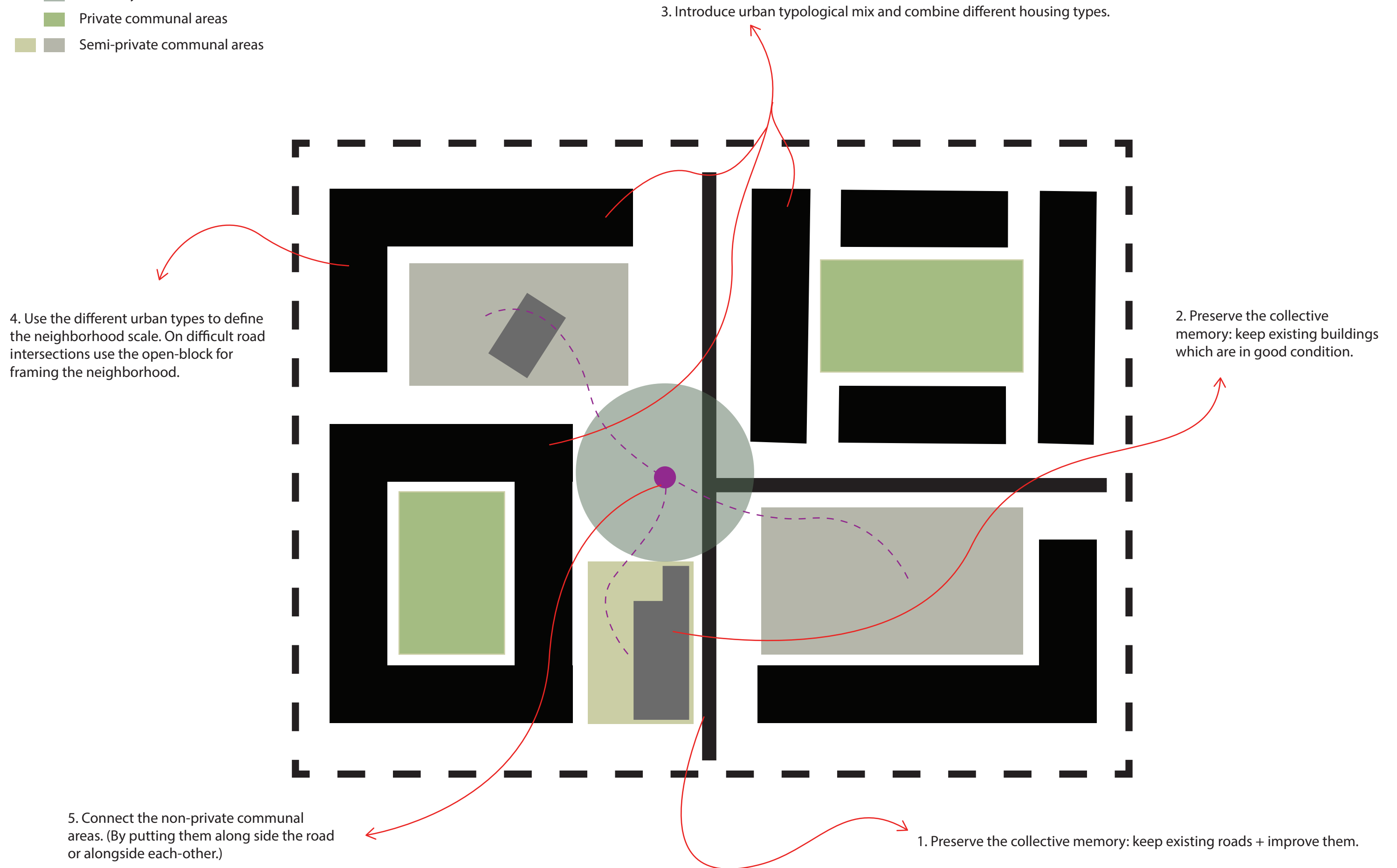




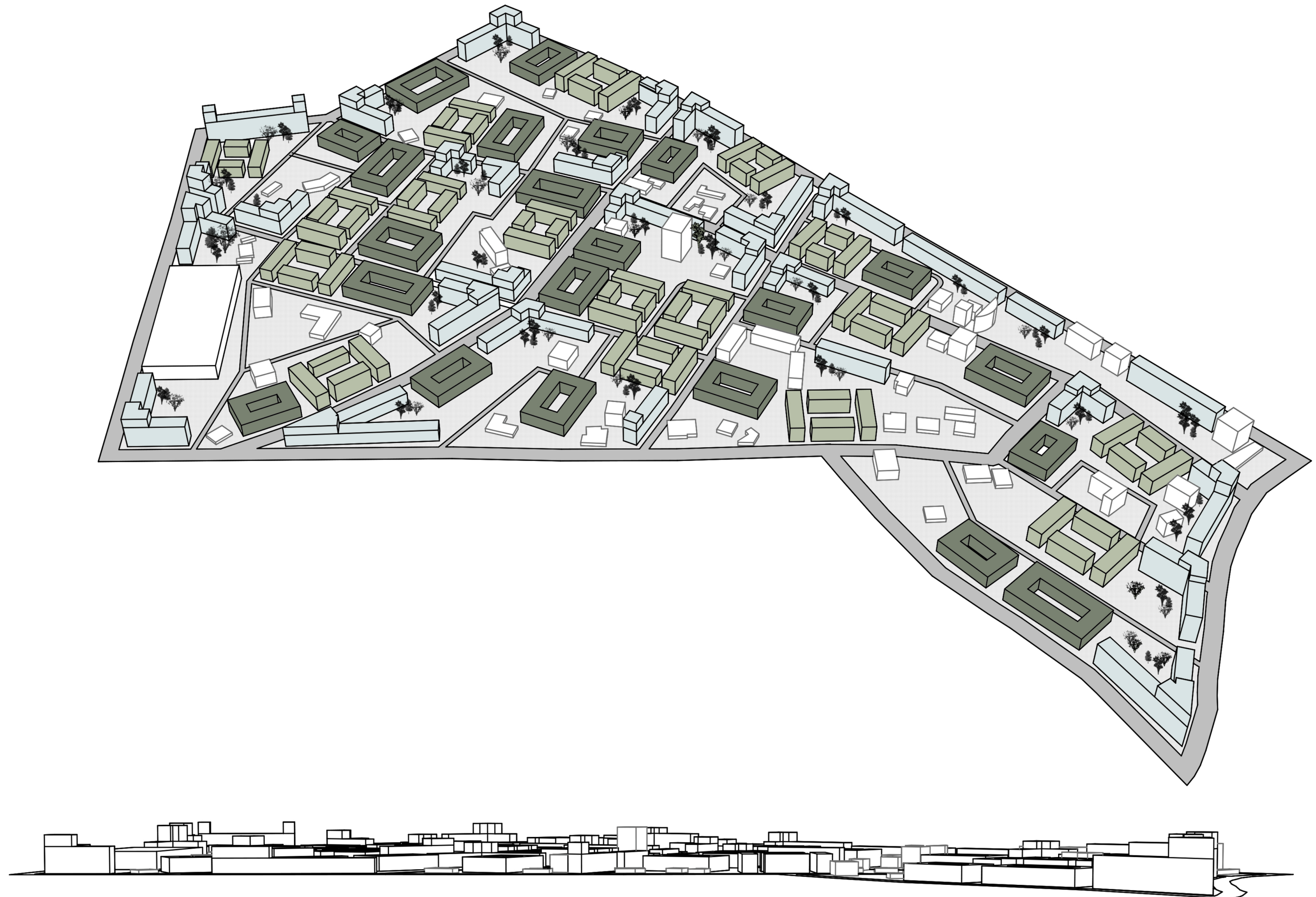
The Master Plan

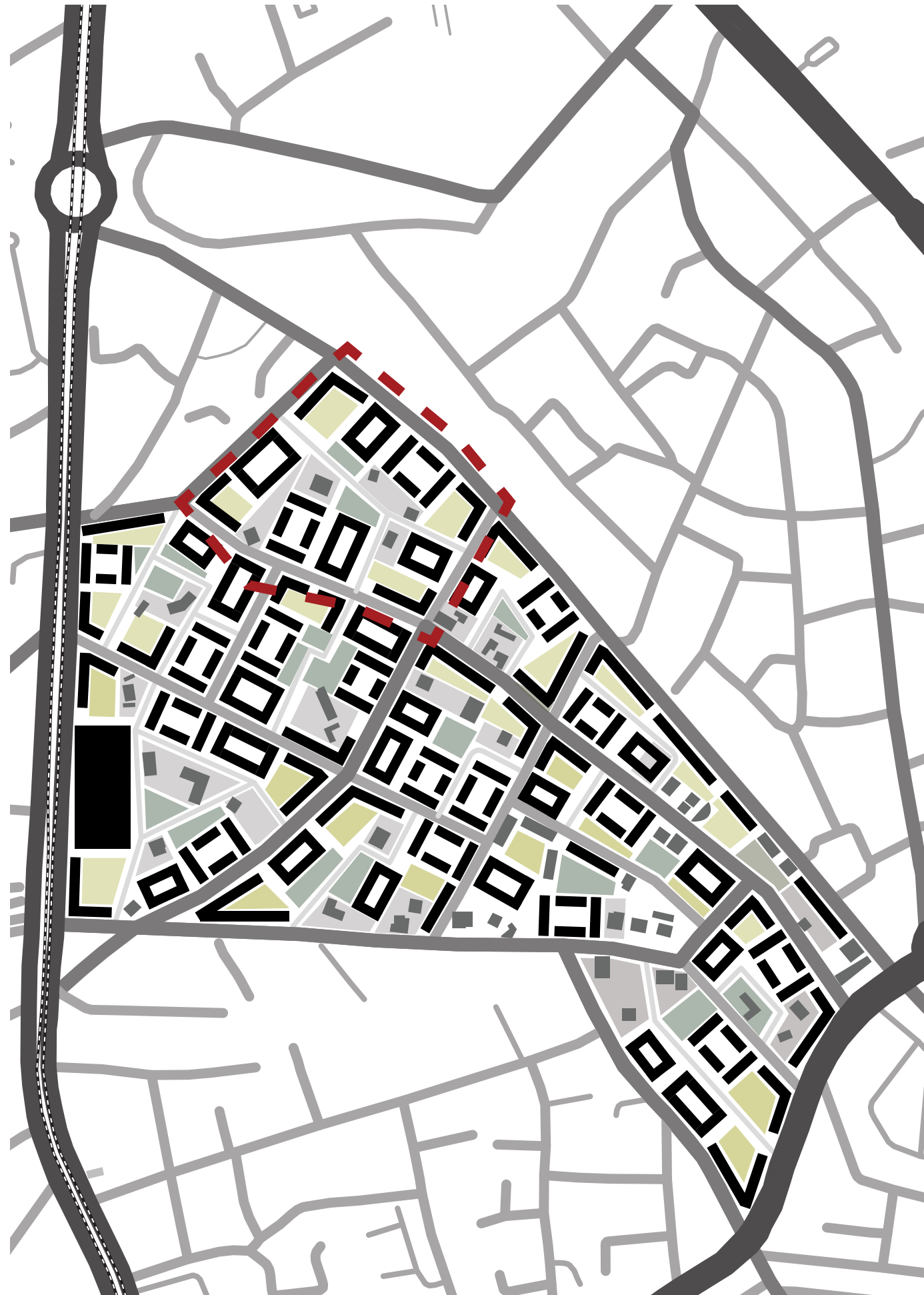


- 'Centrally' located communal area
- Private communal areas
- Semi-private communal areas

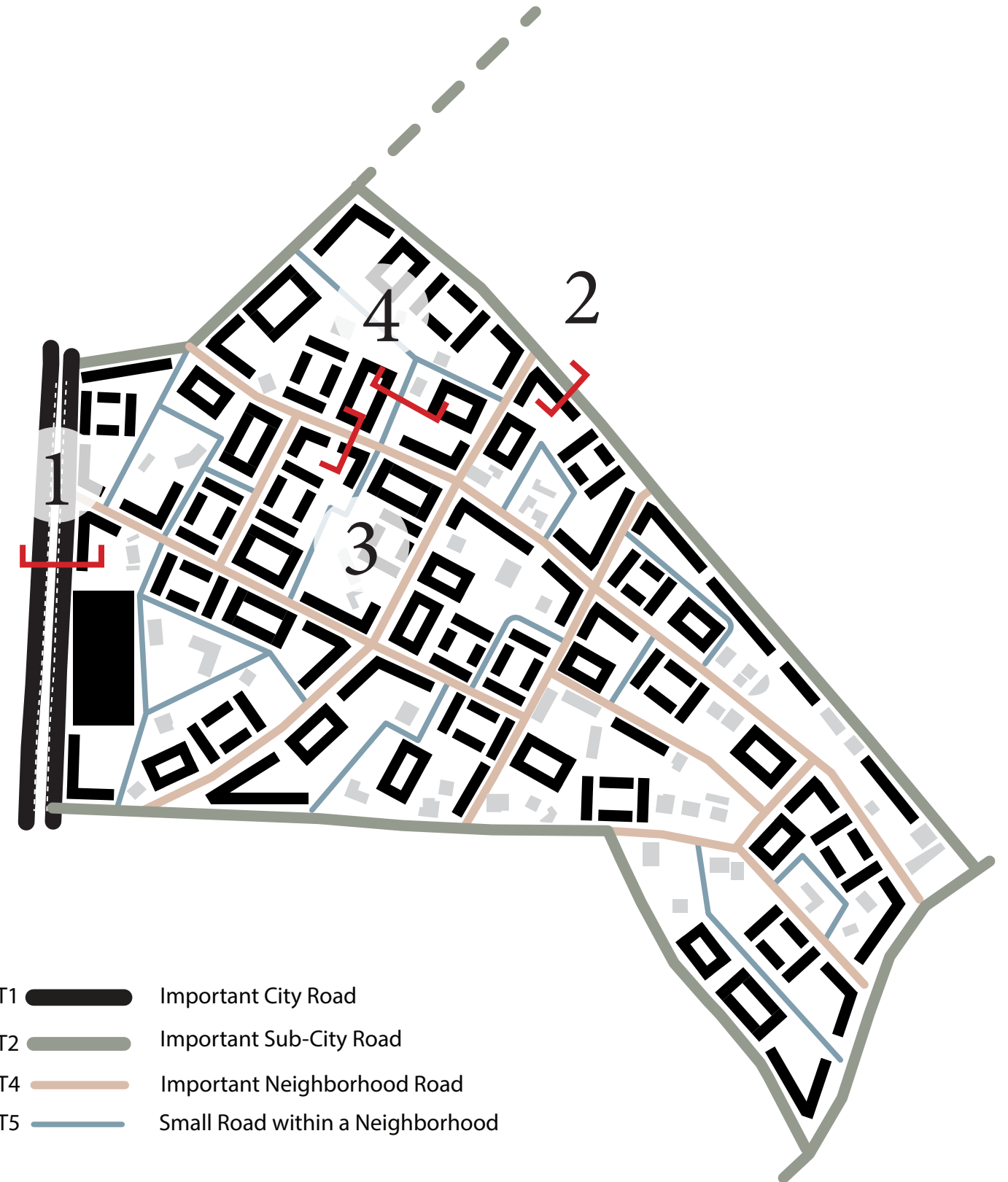










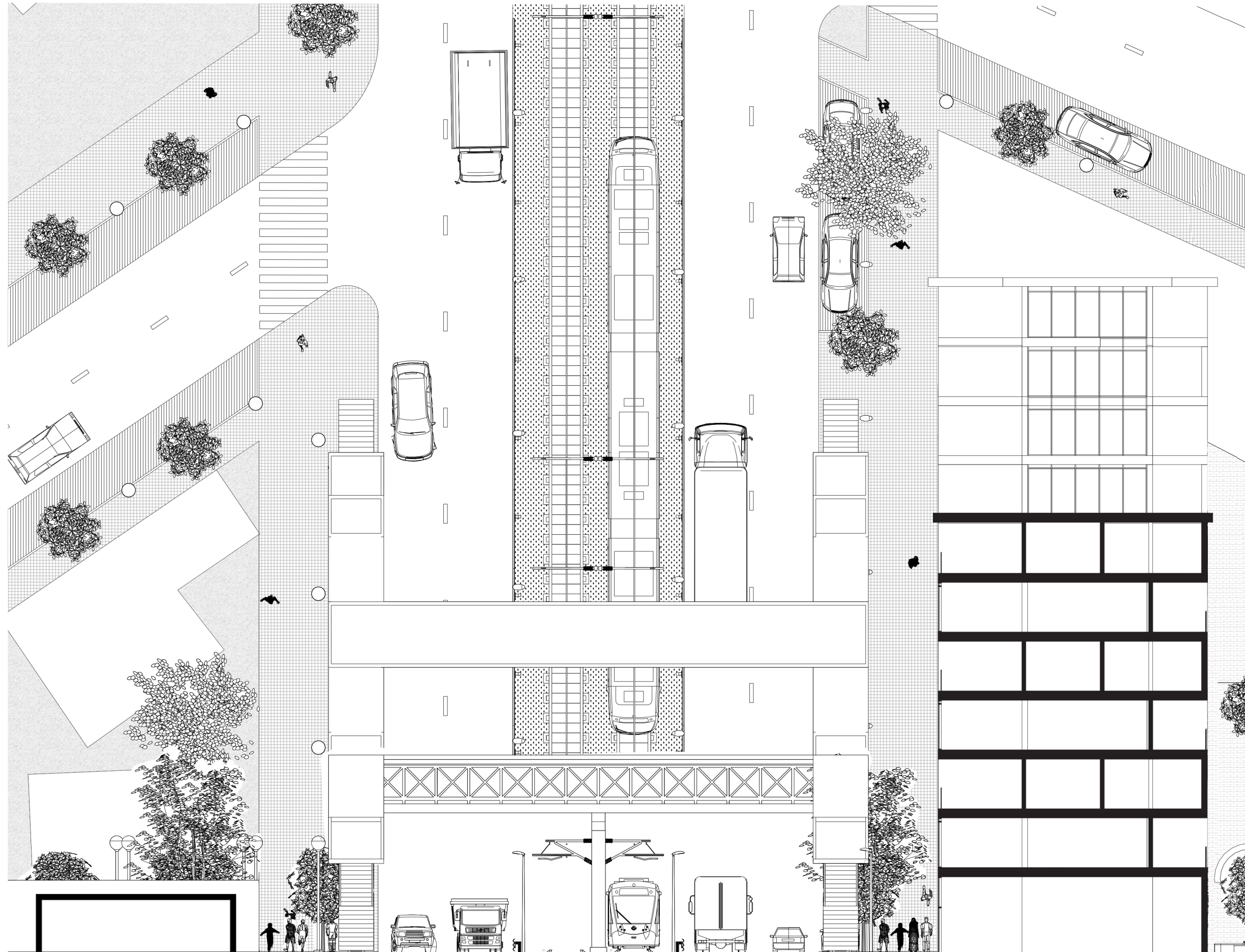


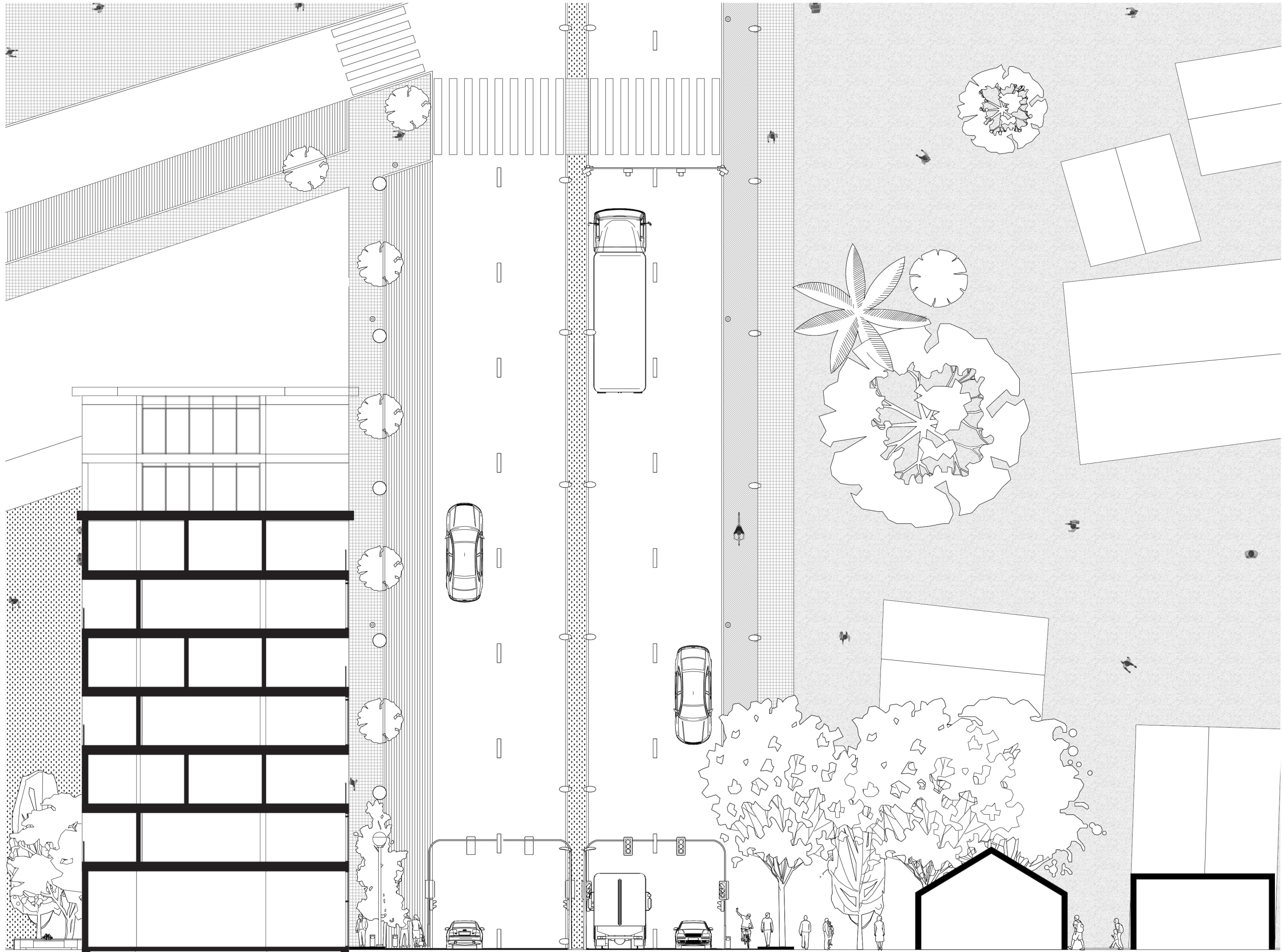
Urban Sections

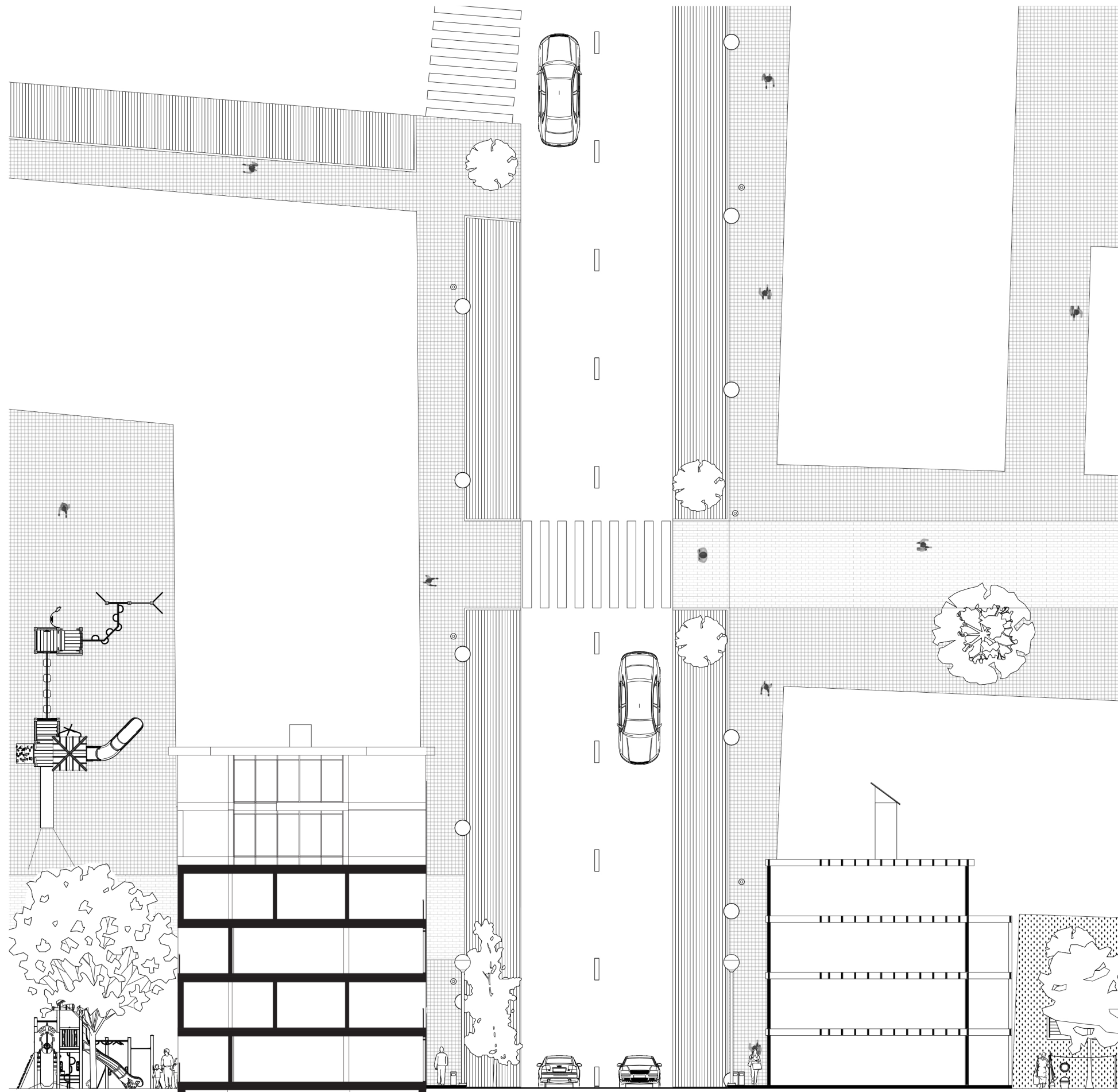


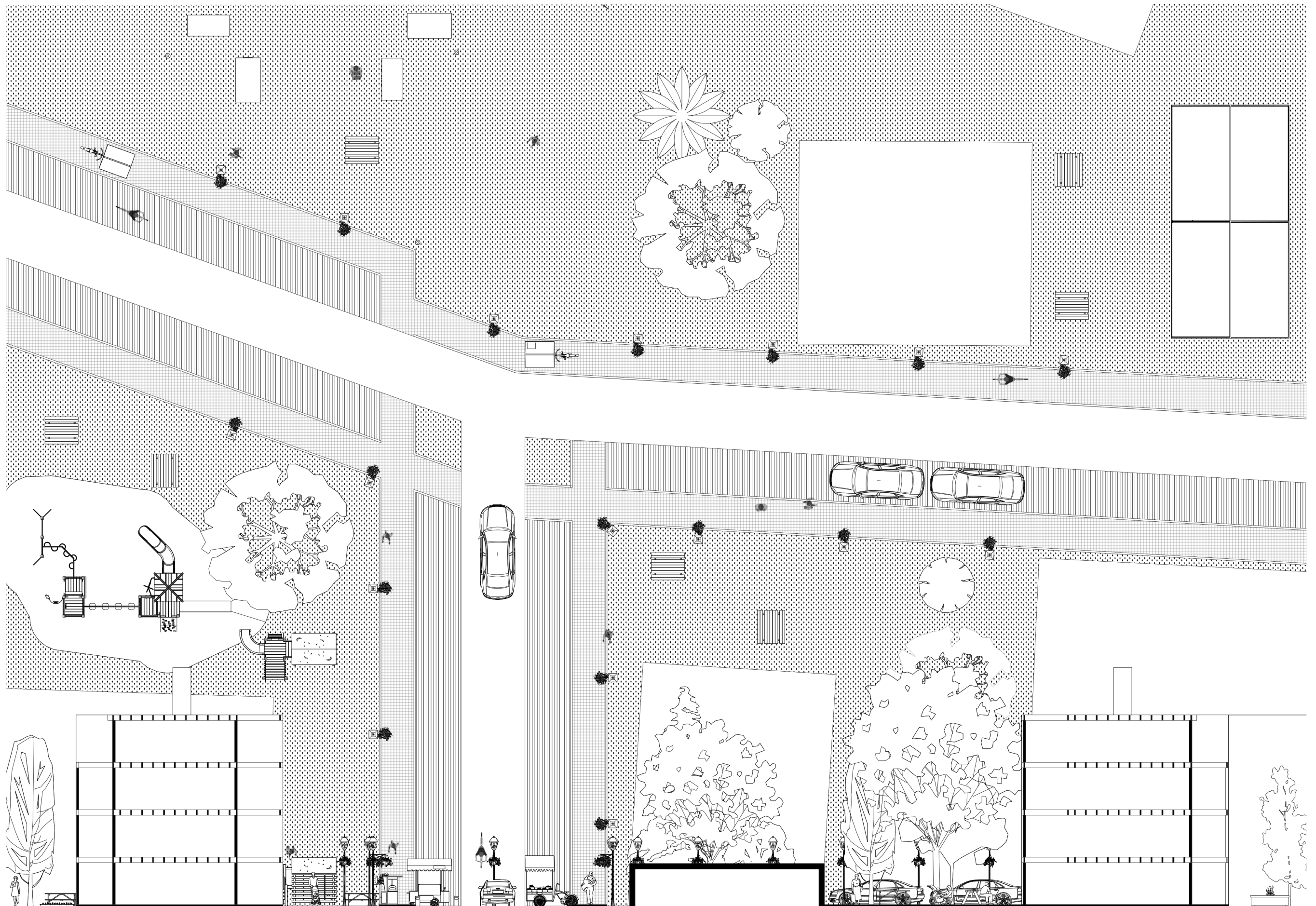
- T1  Important City Road
- T2  Important Sub-City Road
- T4  Important Neighborhood Road
- T5  Small Road within a Neighborhood





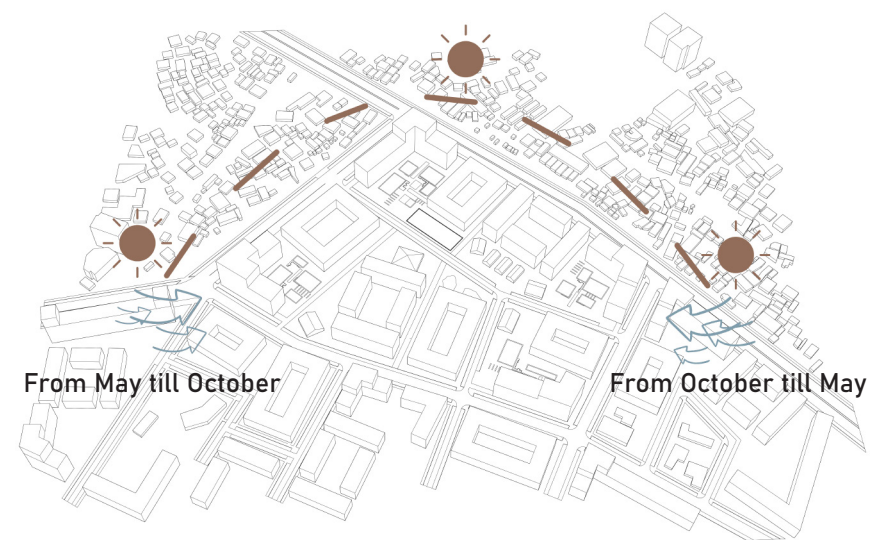




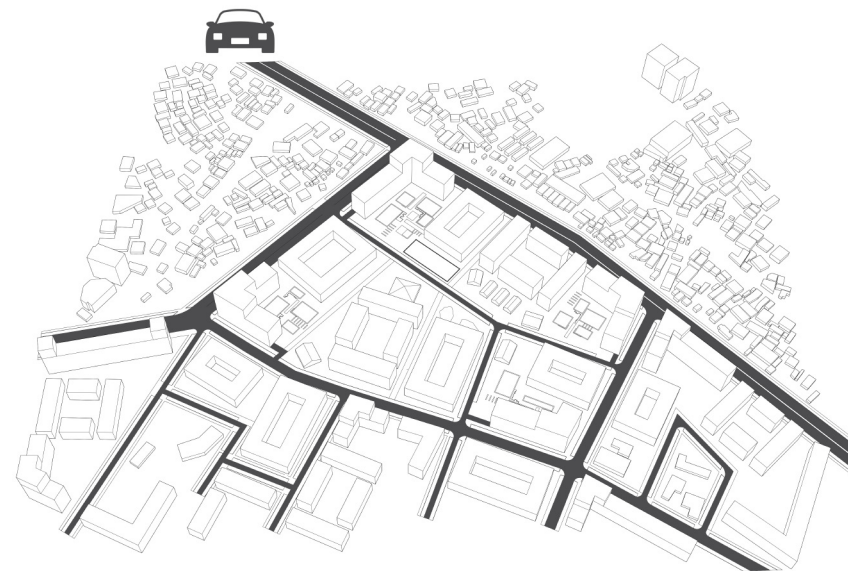


The Sector, Building and Dwelling

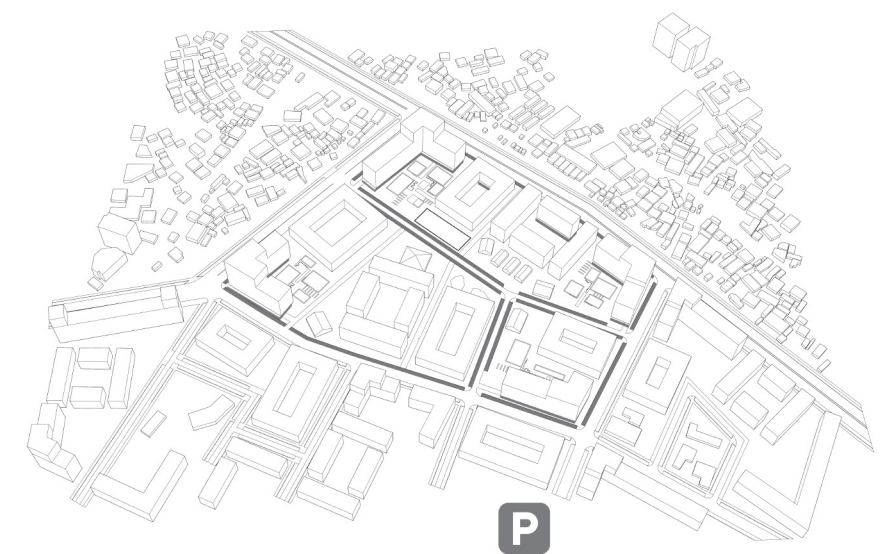




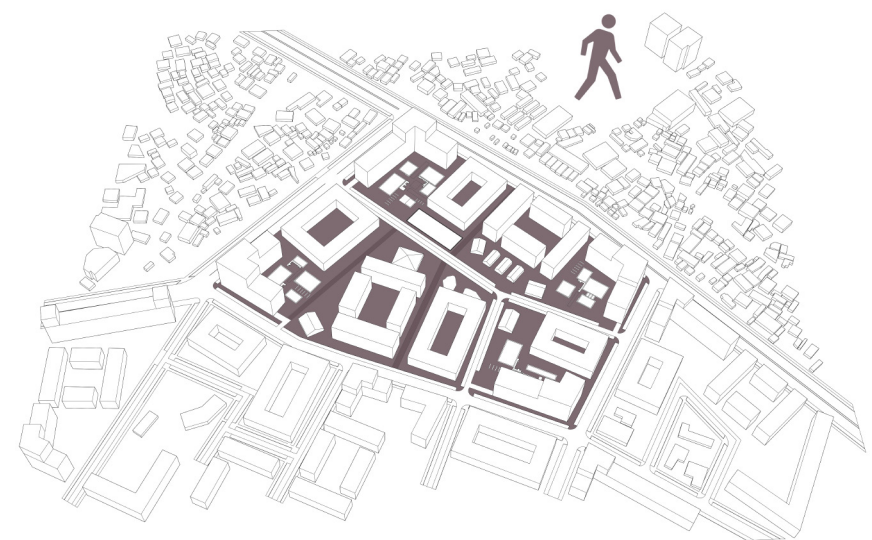
The orientation of the sector and the wind direction.



The roads which are accessible by car in this sector.



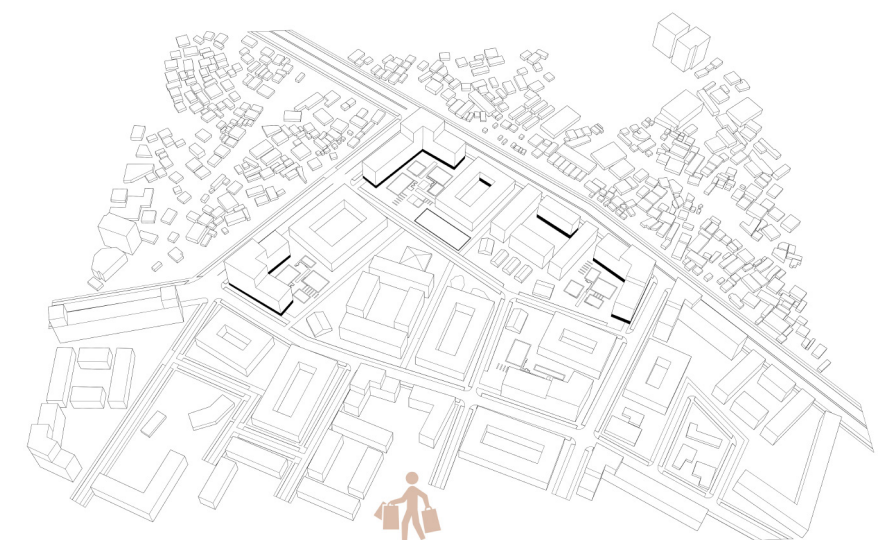
The above ground parking facilities in the sector. The buildings for the higher income groups have also underground private parking.



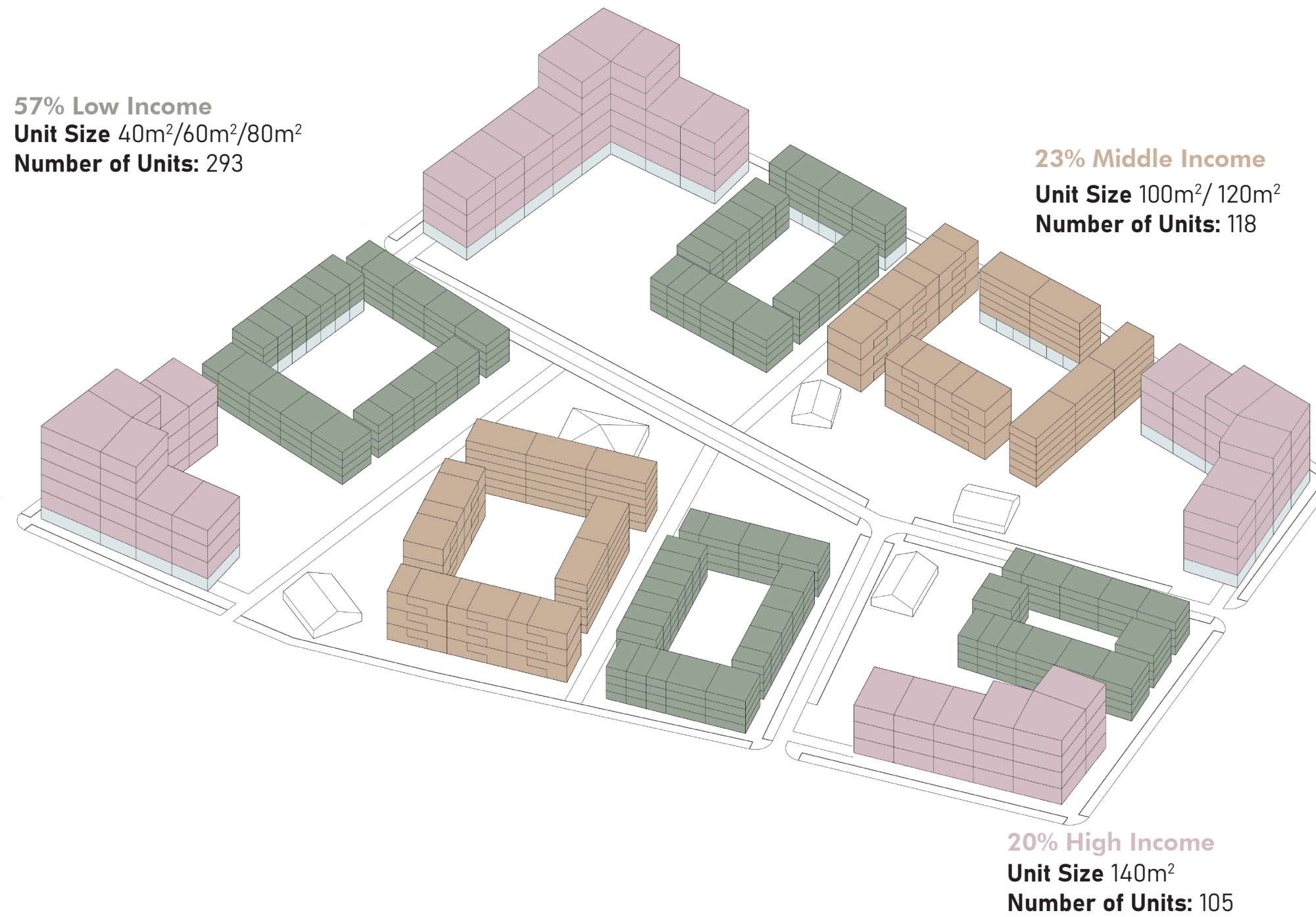
Paving/ sidewalk



The green and relaxing areas within the sector, these areas are also buffer areas for heavy rainfall. (Later in this report this will be explained more.)

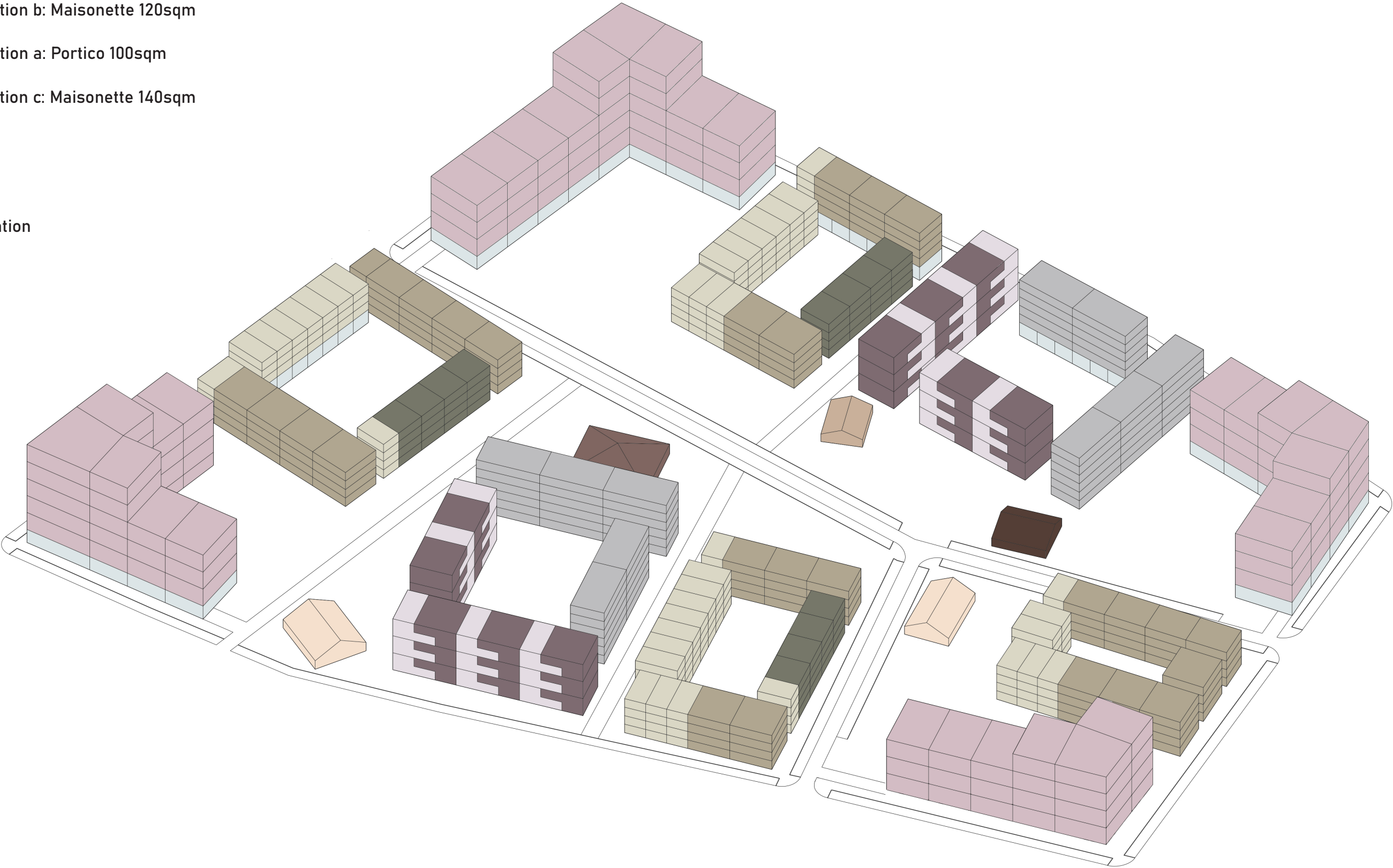


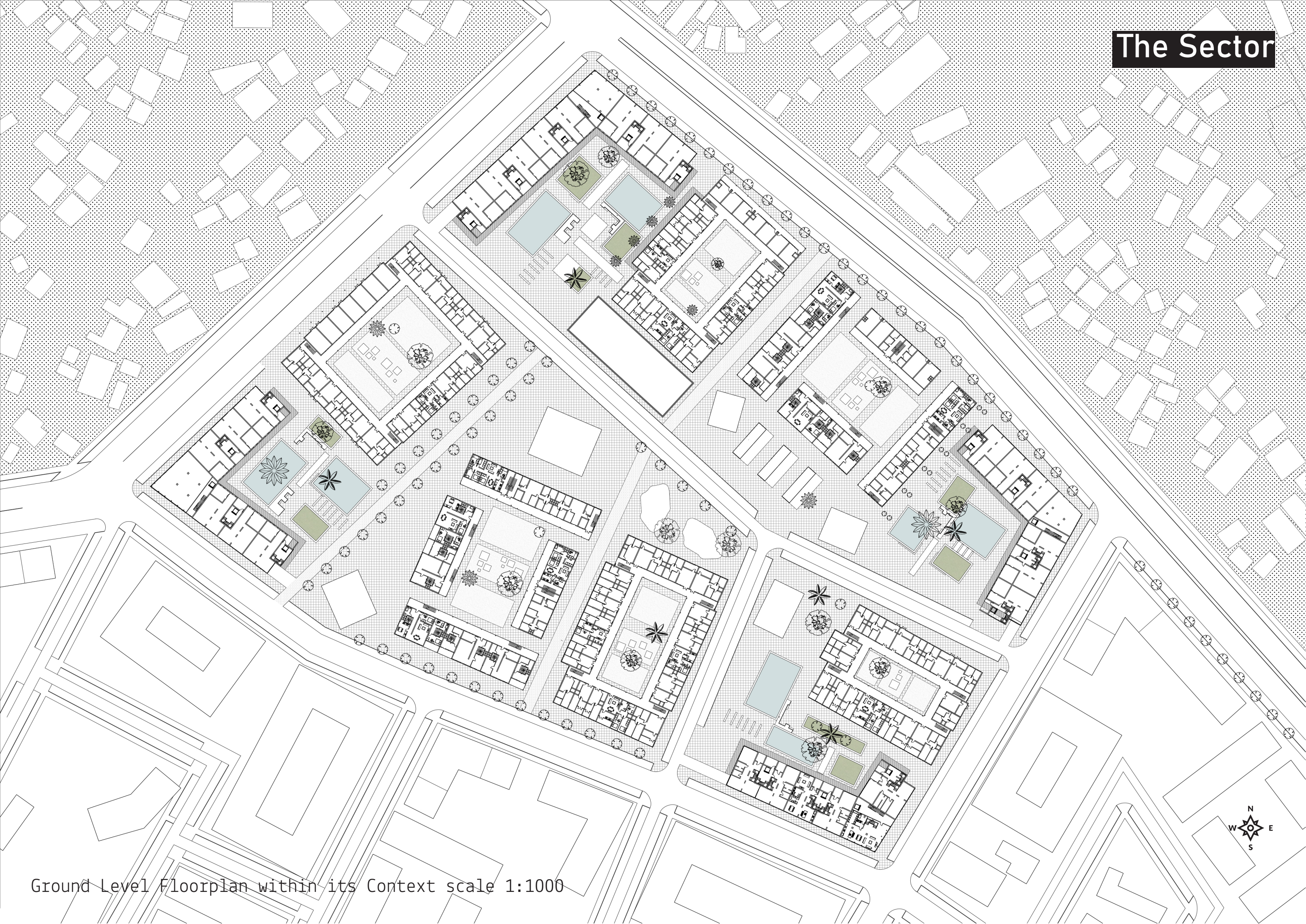
The retail locations within the sector (usually the ground level of buildings facing either a T1 or T2 street.)

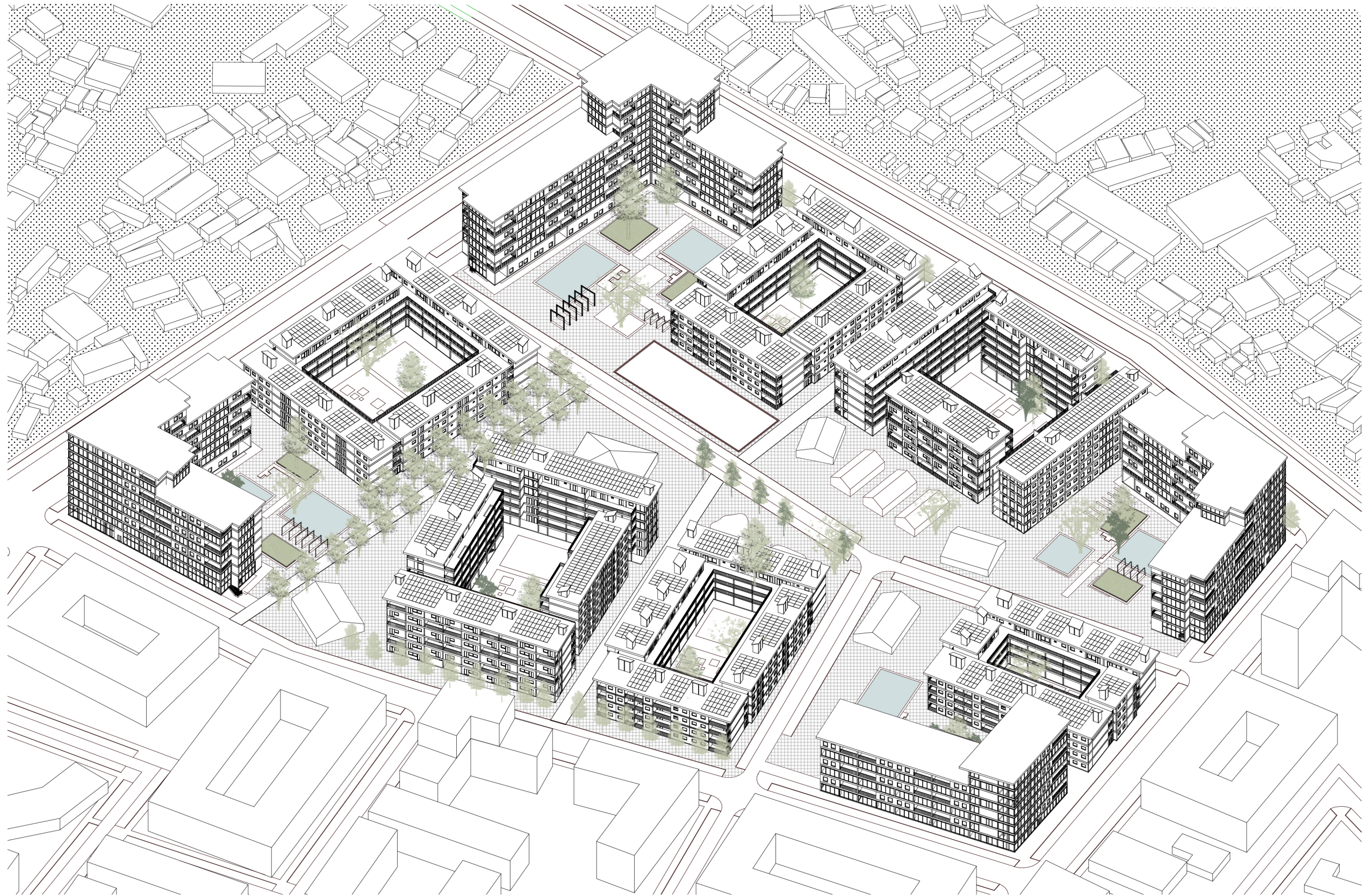


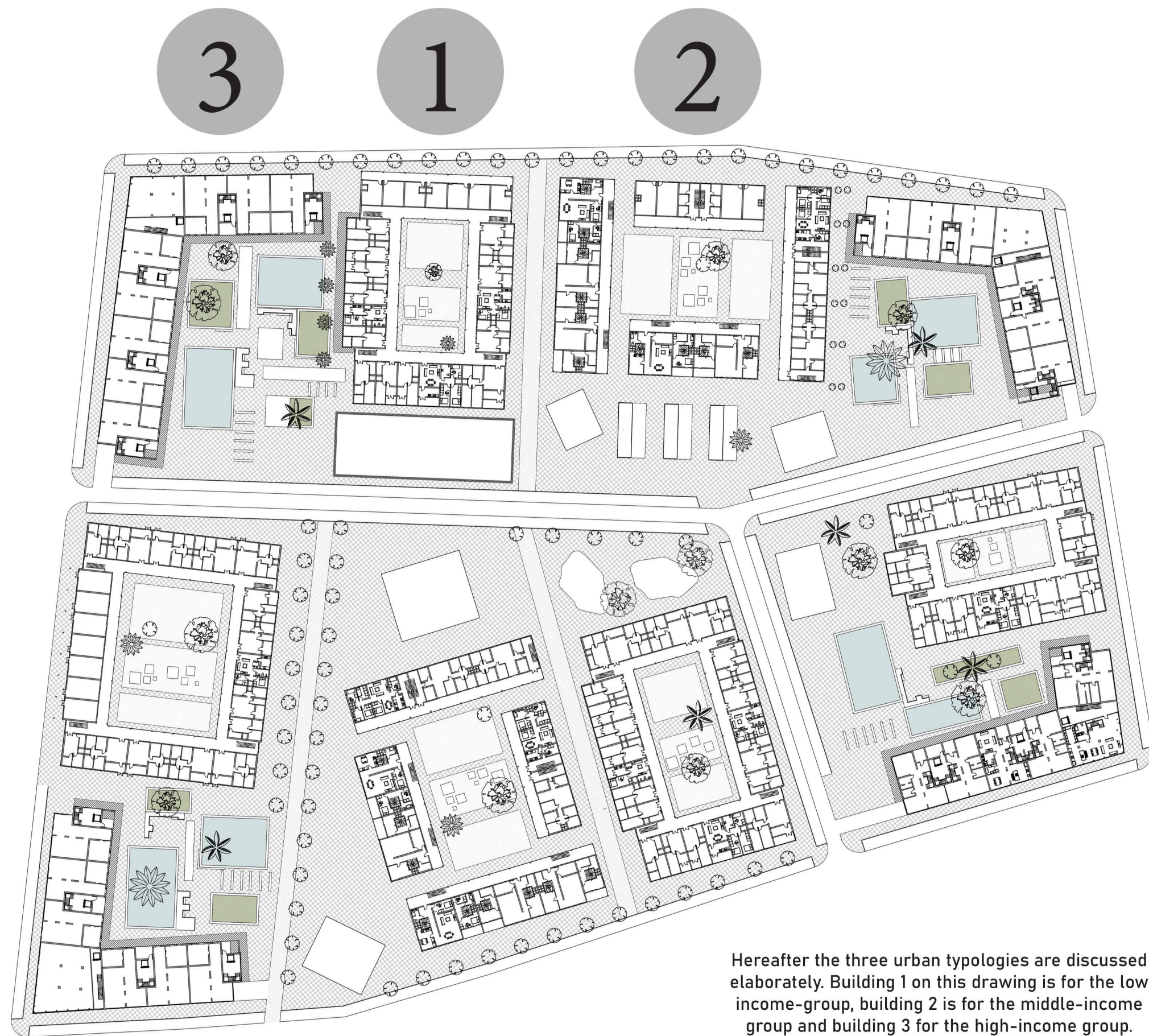
Plot 4.07 ha
Number of Dwellings 516
Density 126 dw/ha

- Dwelling Type 1 variation a: Apartment 40sqm
- Dwelling Type 1 variation b: Apartment 60sqm
- Dwelling Type 1 variation c: Apartment 80sqm
- Dwelling Type 2 variation a: Maisonette 120sqm
- Dwelling Type 2 variation b: Maisonette 120sqm
- Dwelling Type 3 variation a: Portico 100sqm
- Dwelling Type 2 variation c: Maisonette 140sqm
- Retail
- Sports Facility
- Homeowners association
- Community Building
- Daycare for children



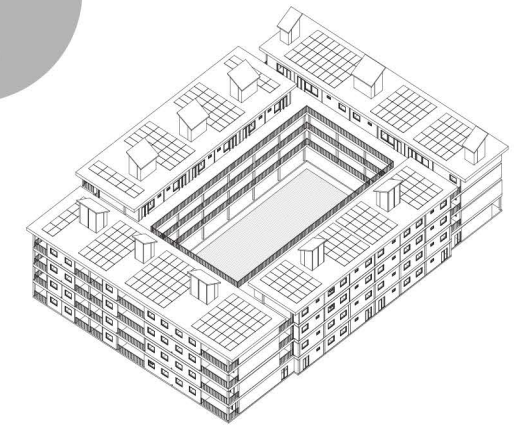




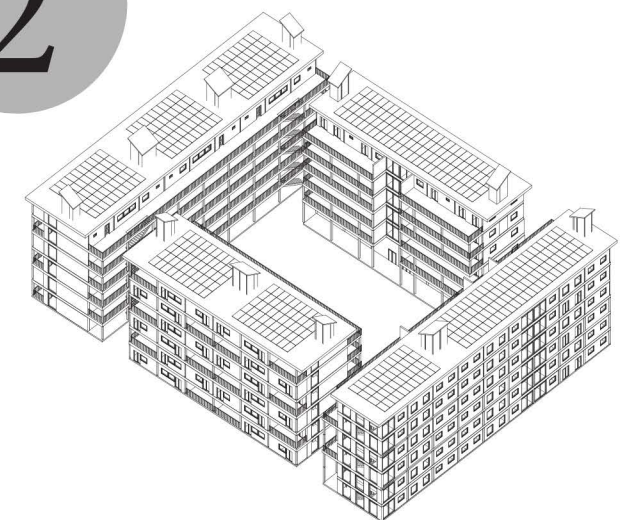


Hereafter the three urban typologies are discussed elaborately. Building 1 on this drawing is for the low income-group, building 2 is for the middle-income group and building 3 for the high-income group.

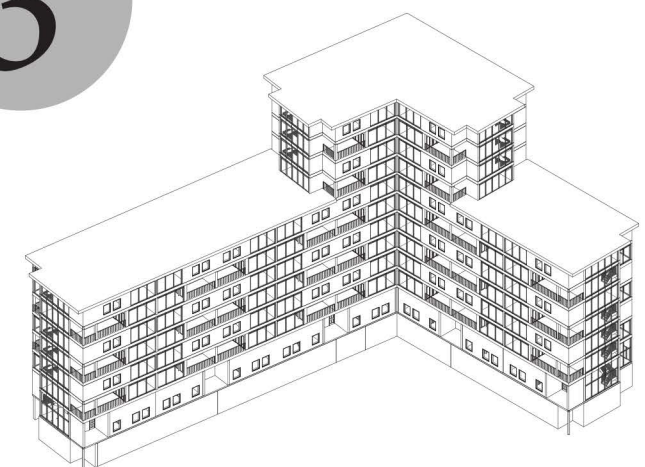
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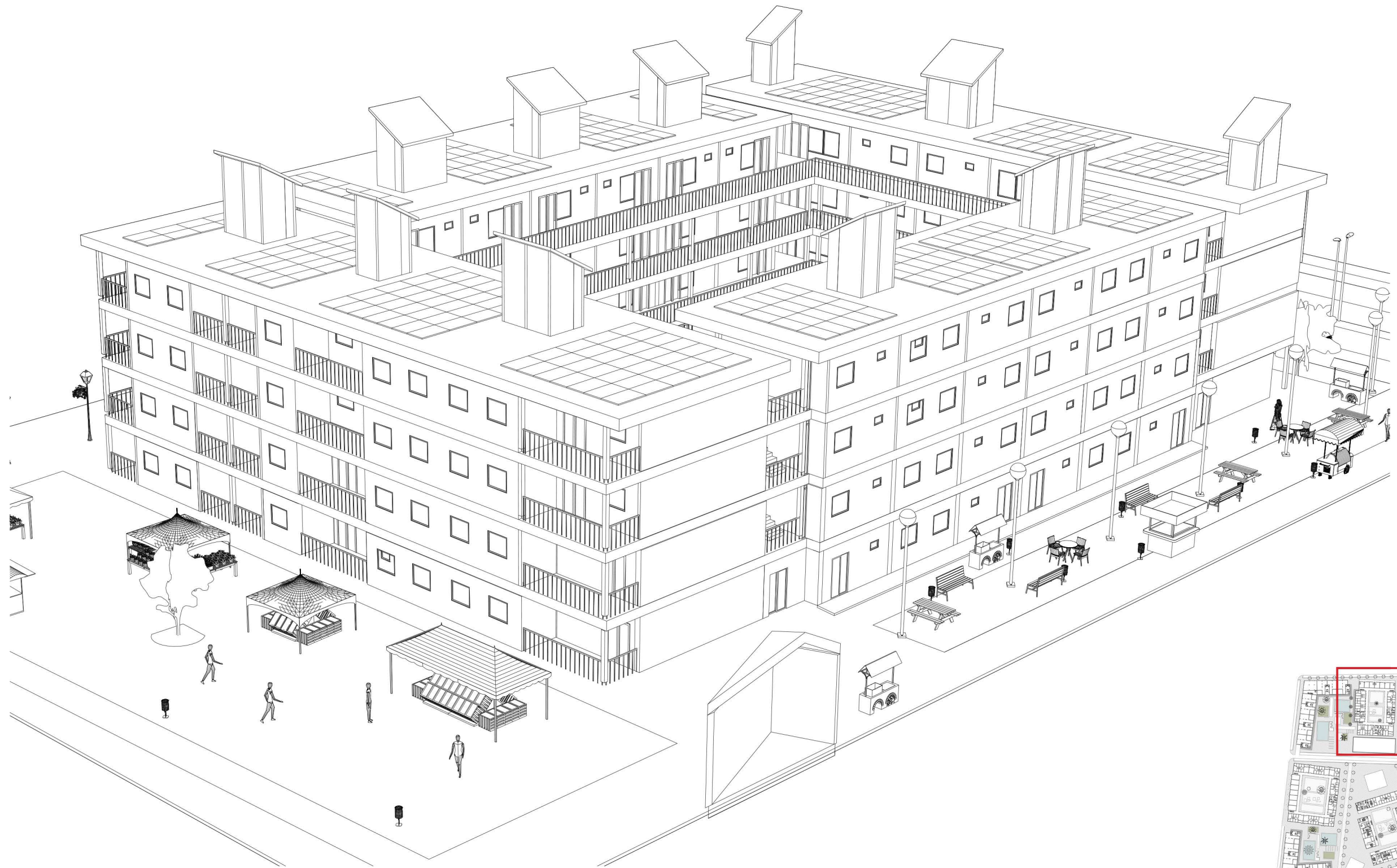


2

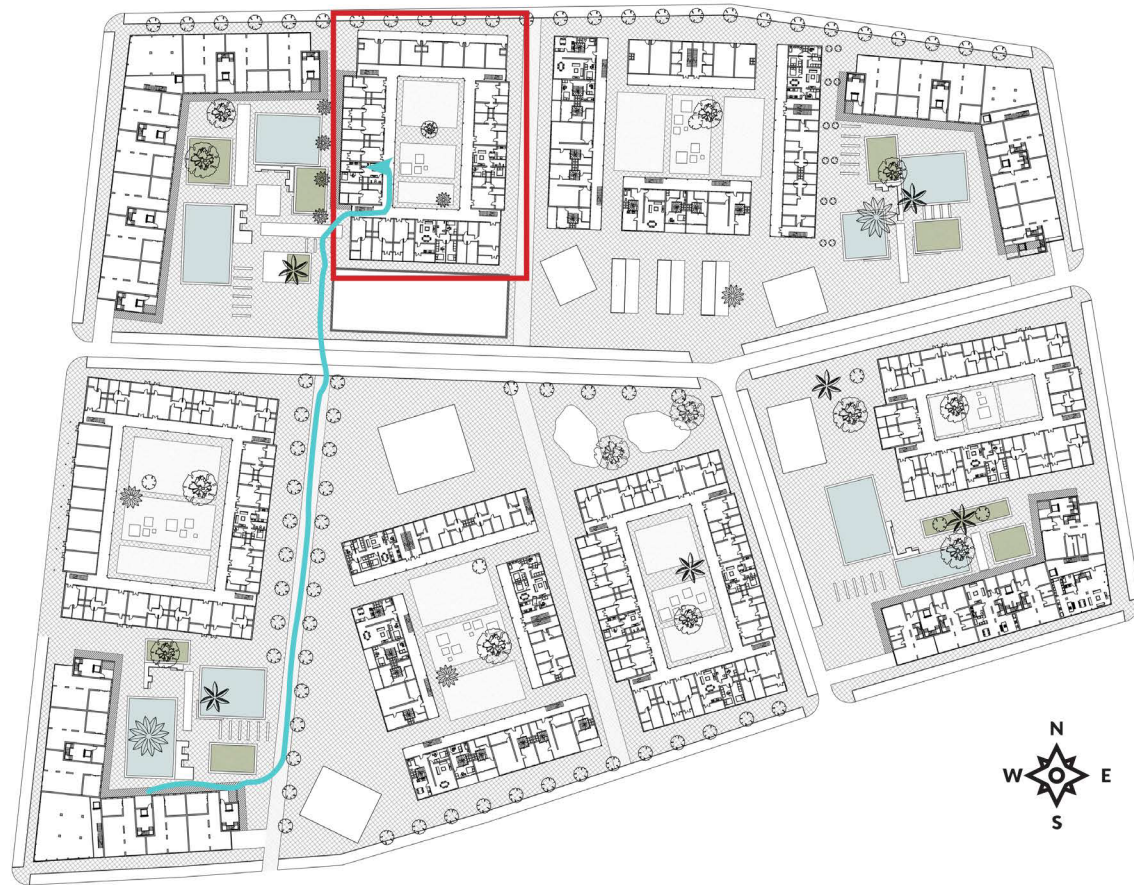


3

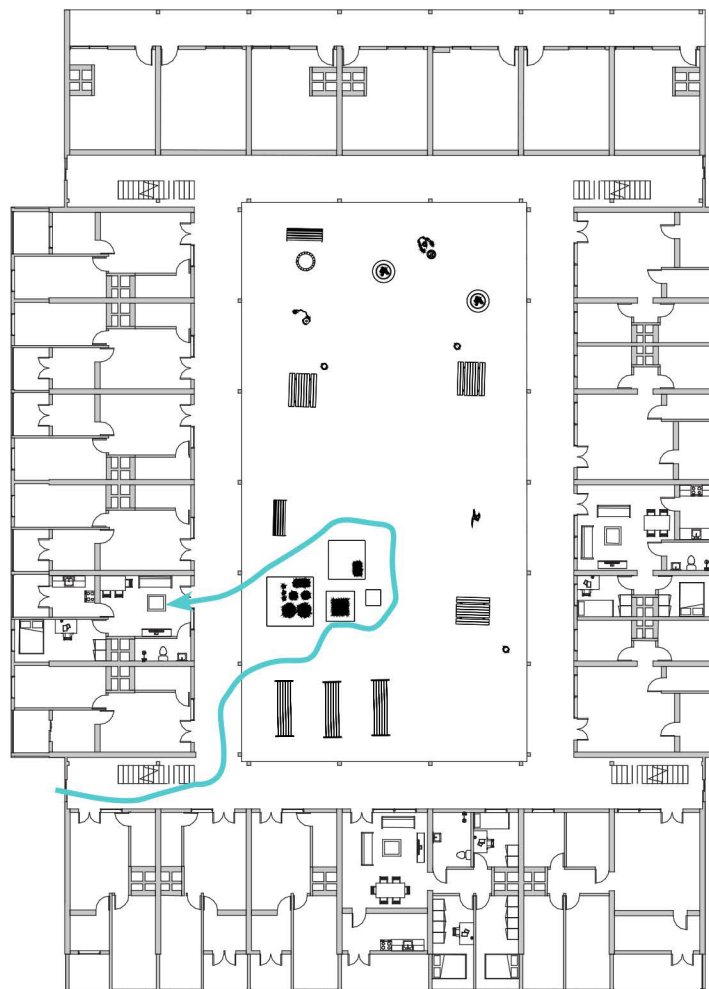
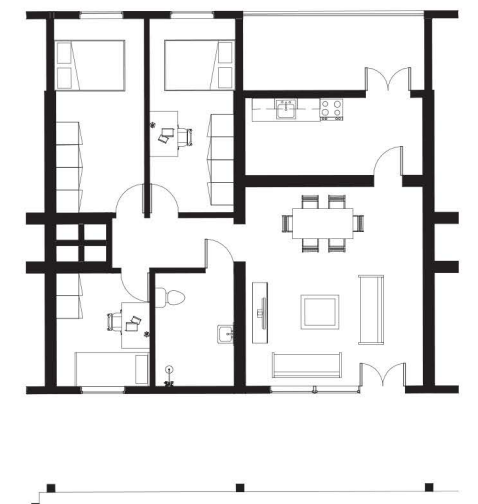
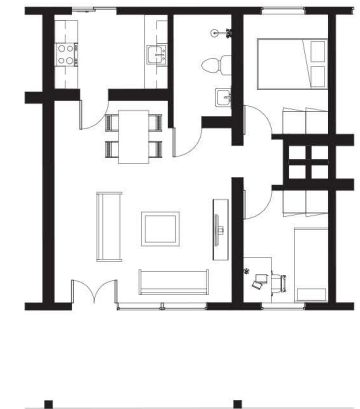
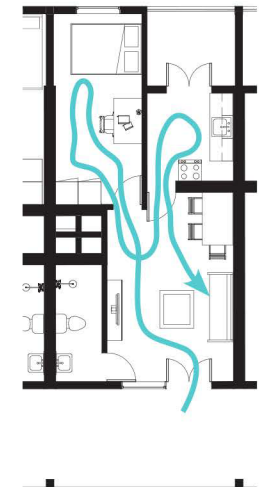
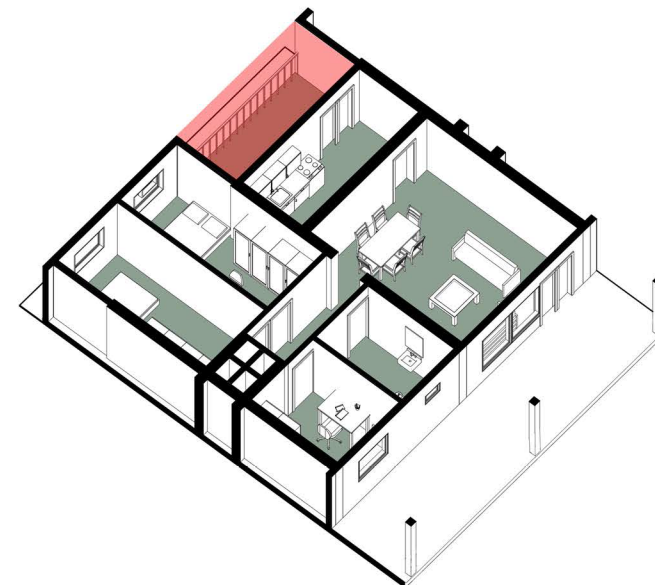
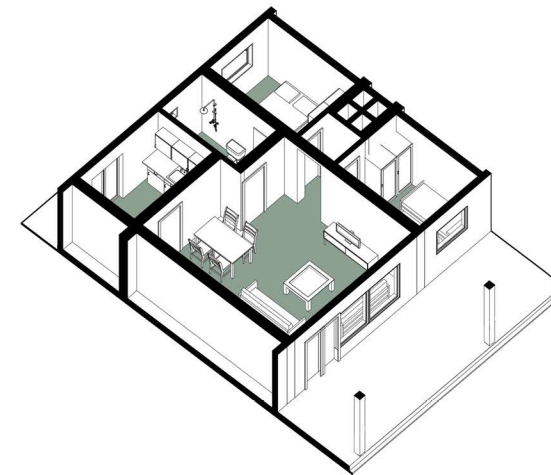
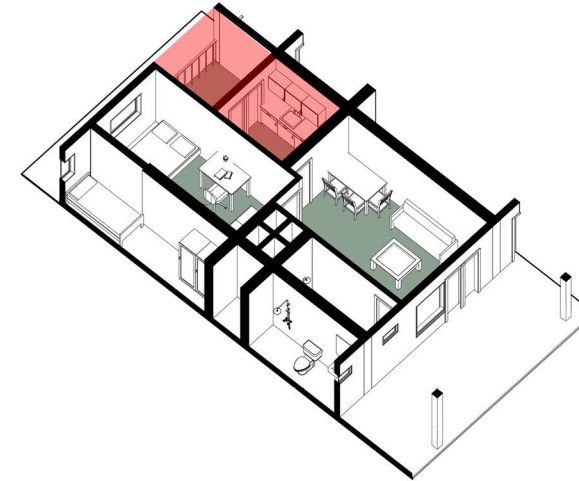




The Dwelling

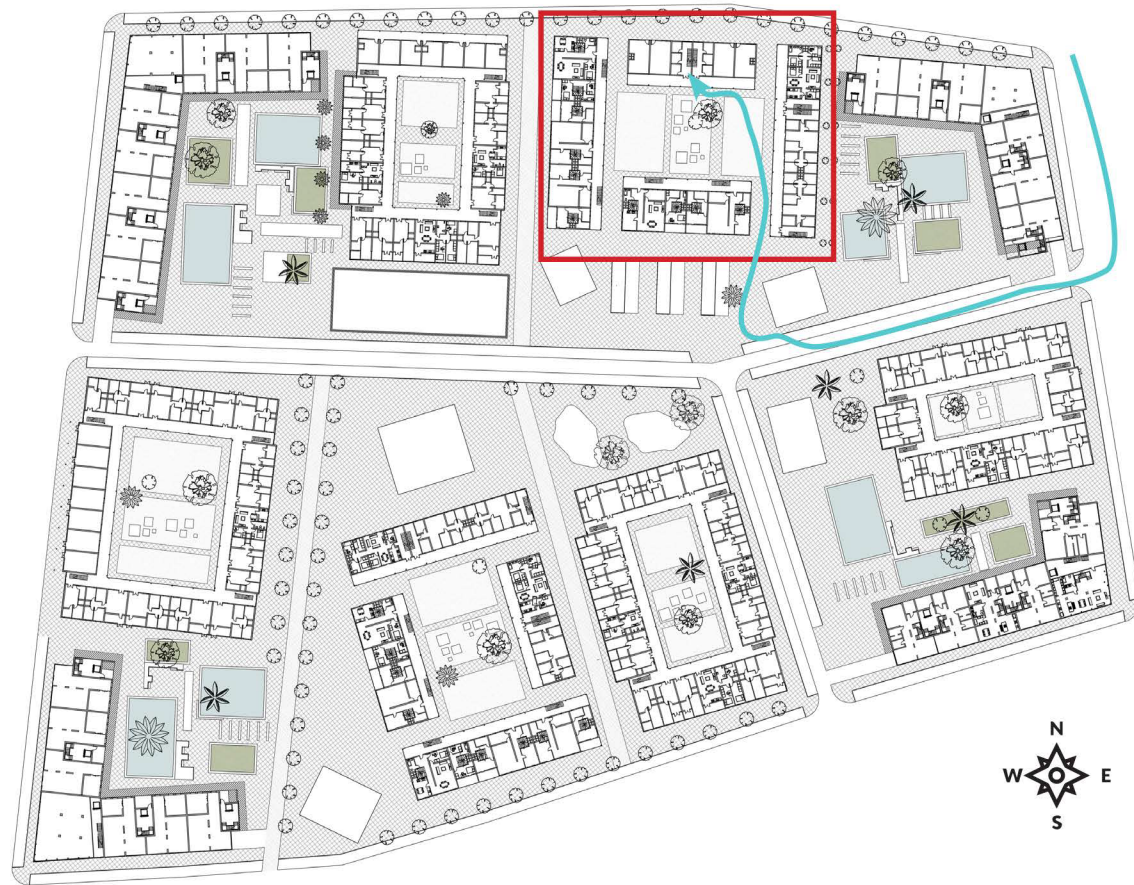


Name: Zala
Gender: Female
Age: 50
Job: Clening Lady

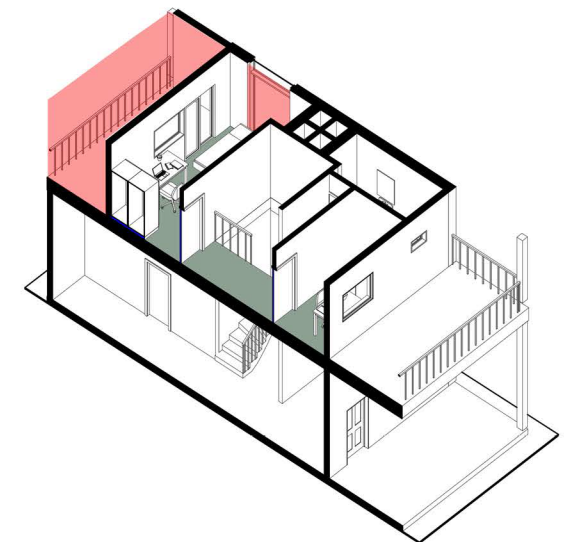
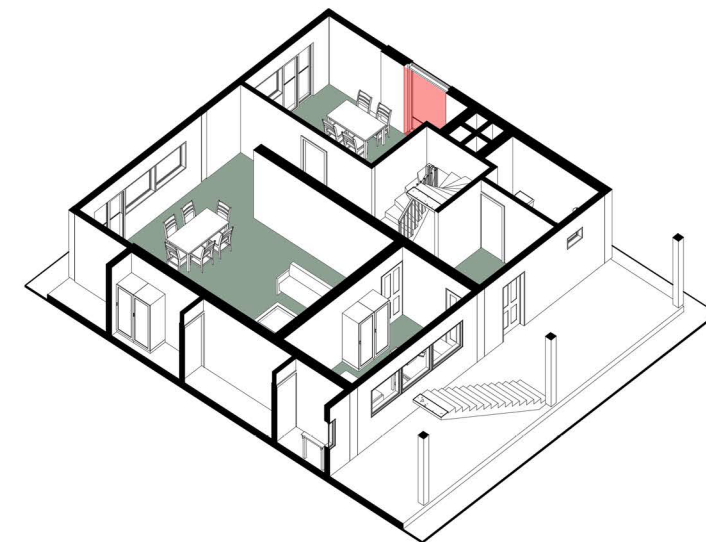
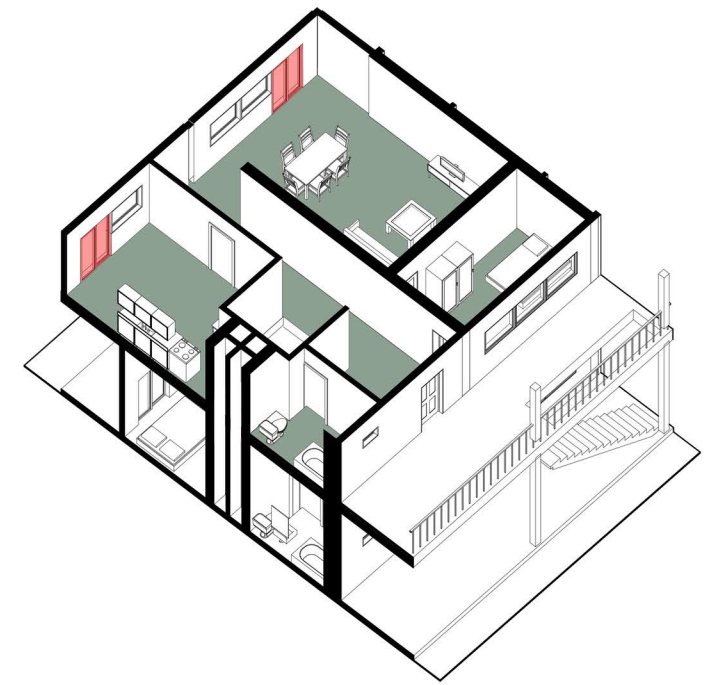
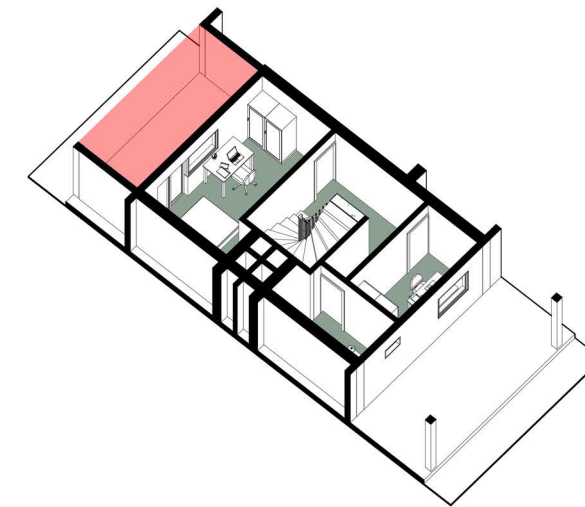
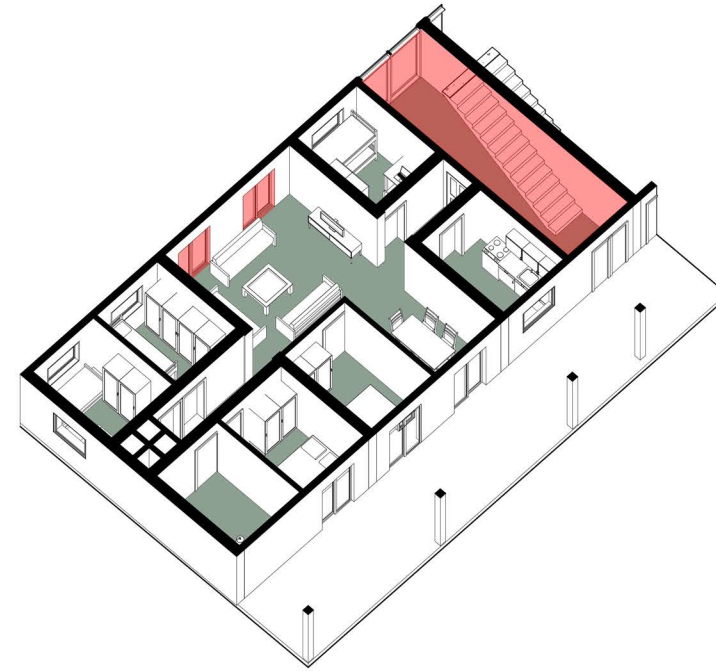


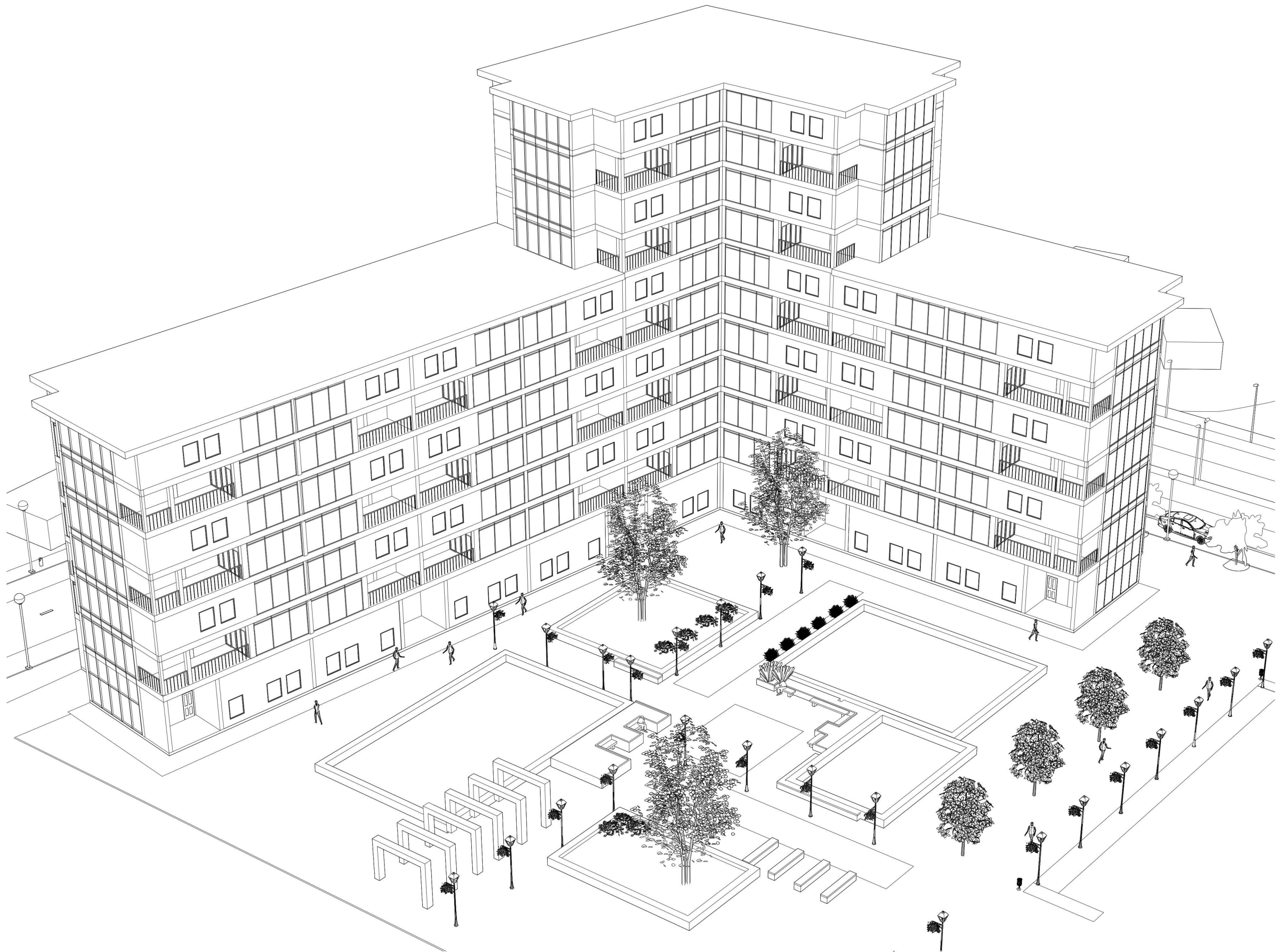


The Dwelling

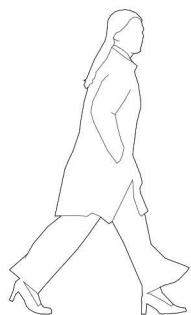


Name: Ife
Gender: Female
Age: 40
Job: shop owner

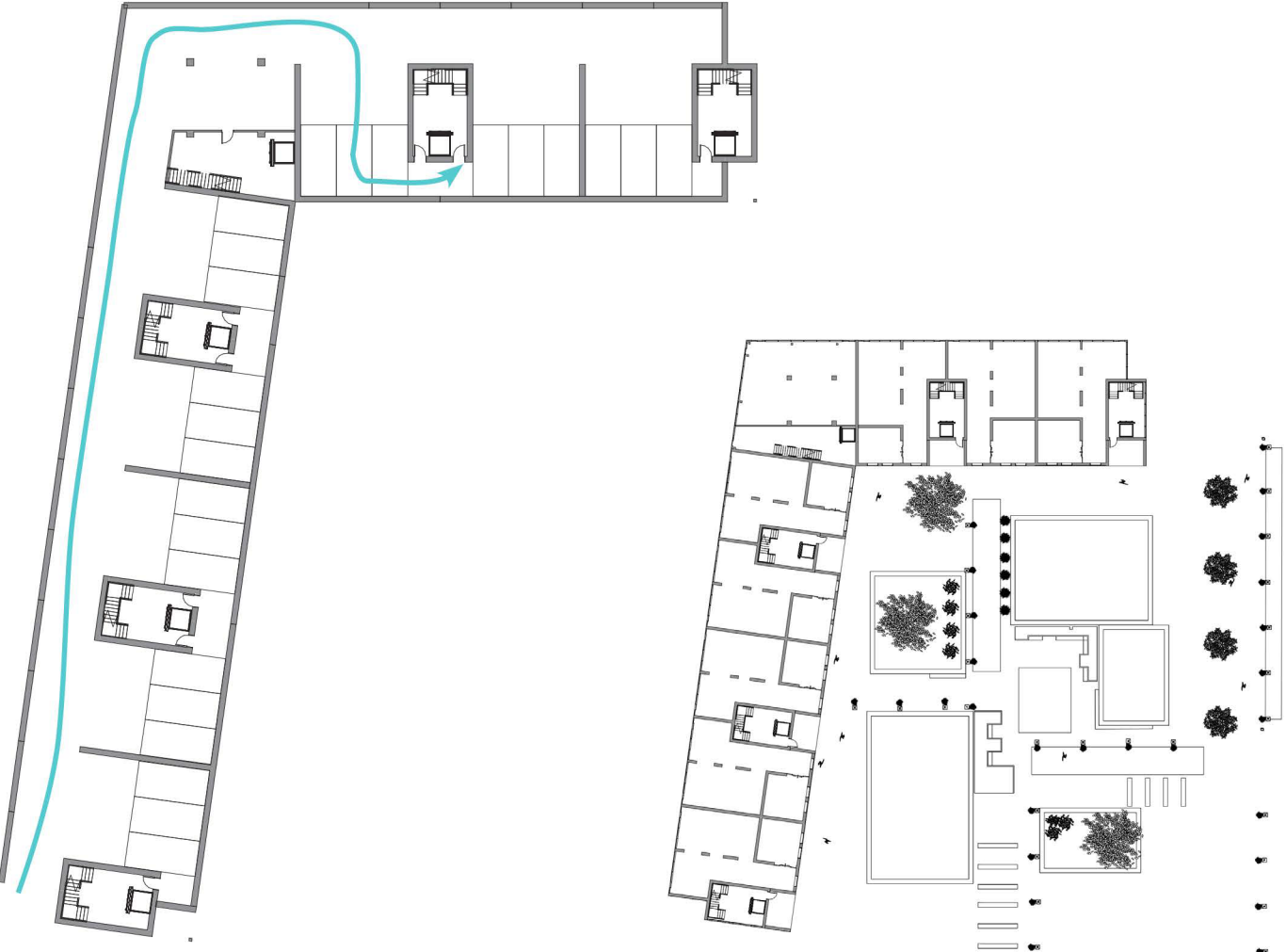
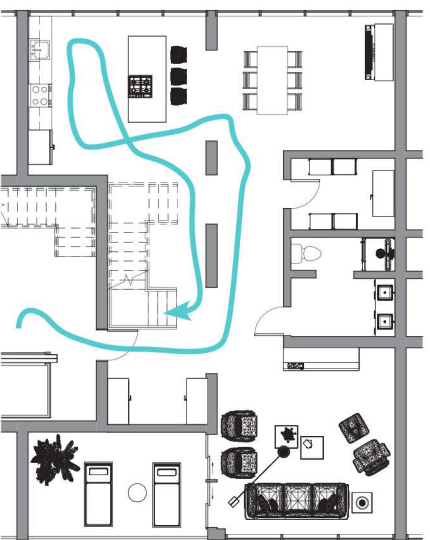
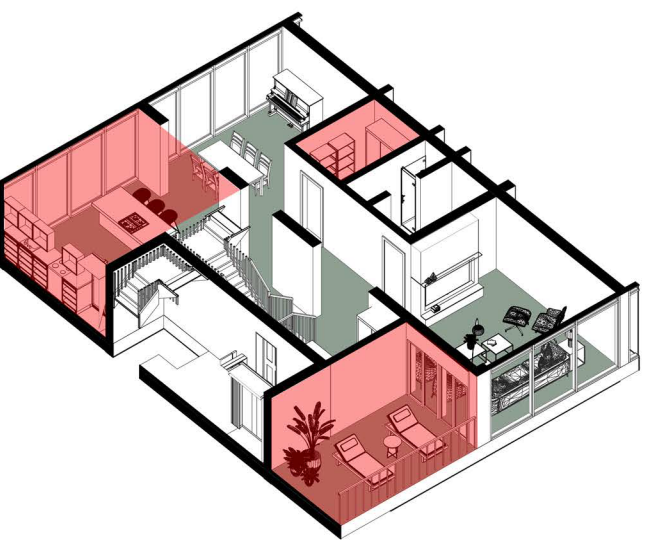
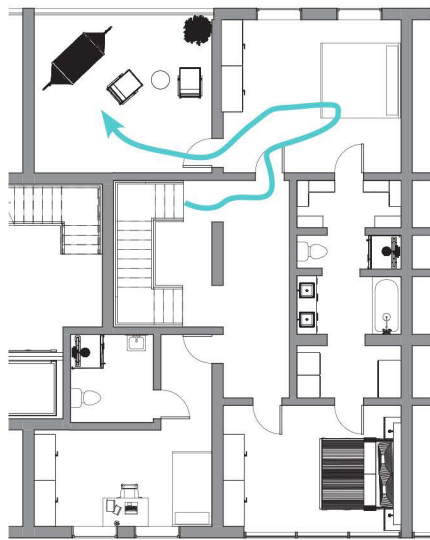
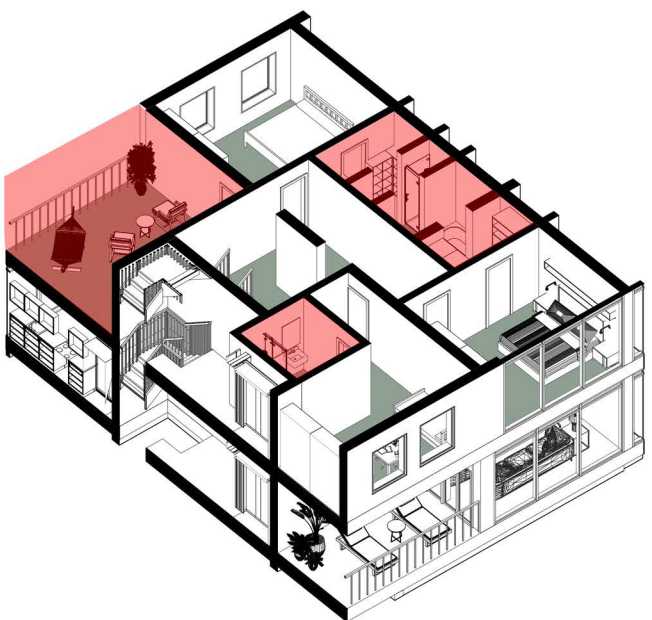




The Dwelling

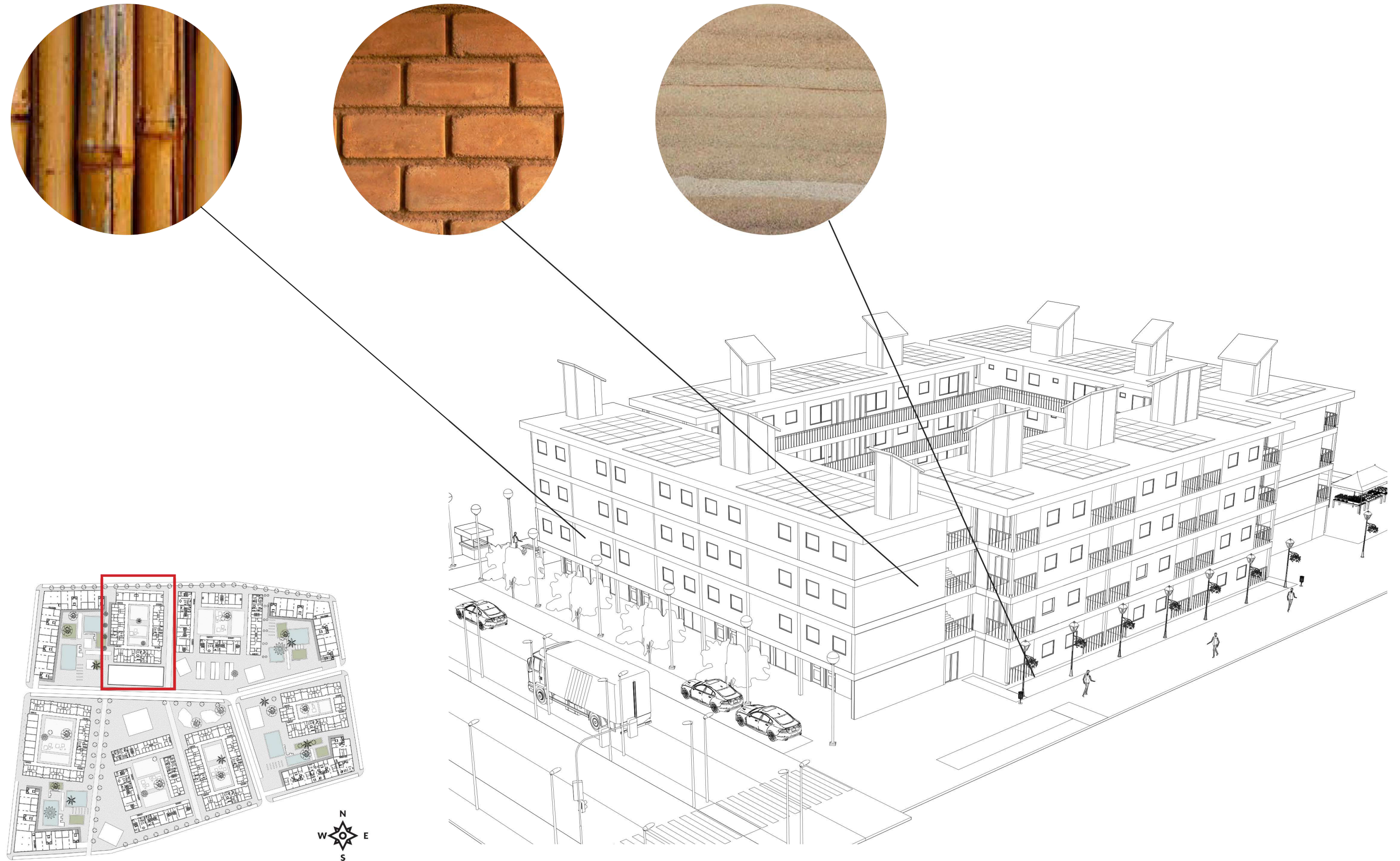


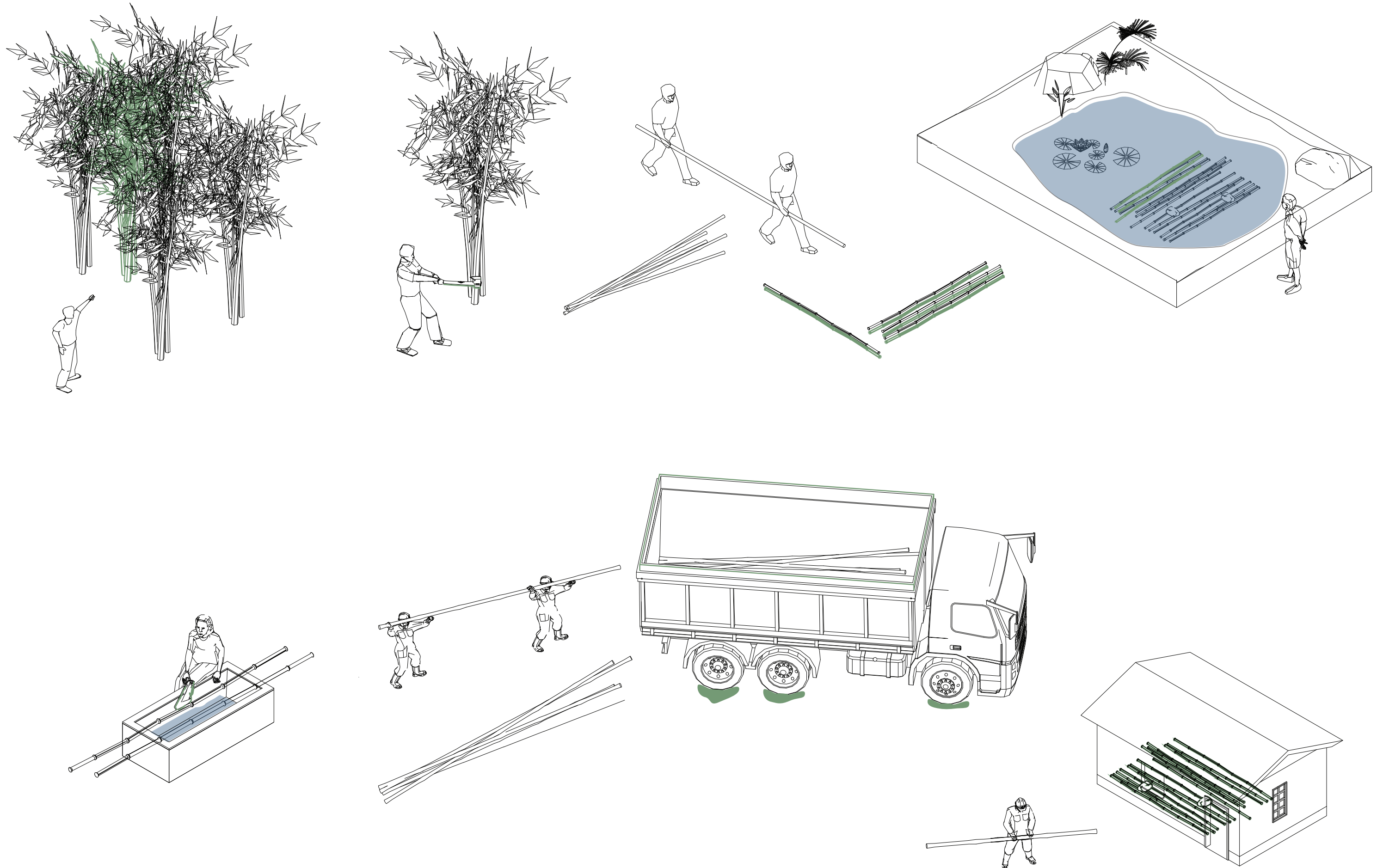
Name: Zoya
Gender: Female
Age: 30
Job: bank employee

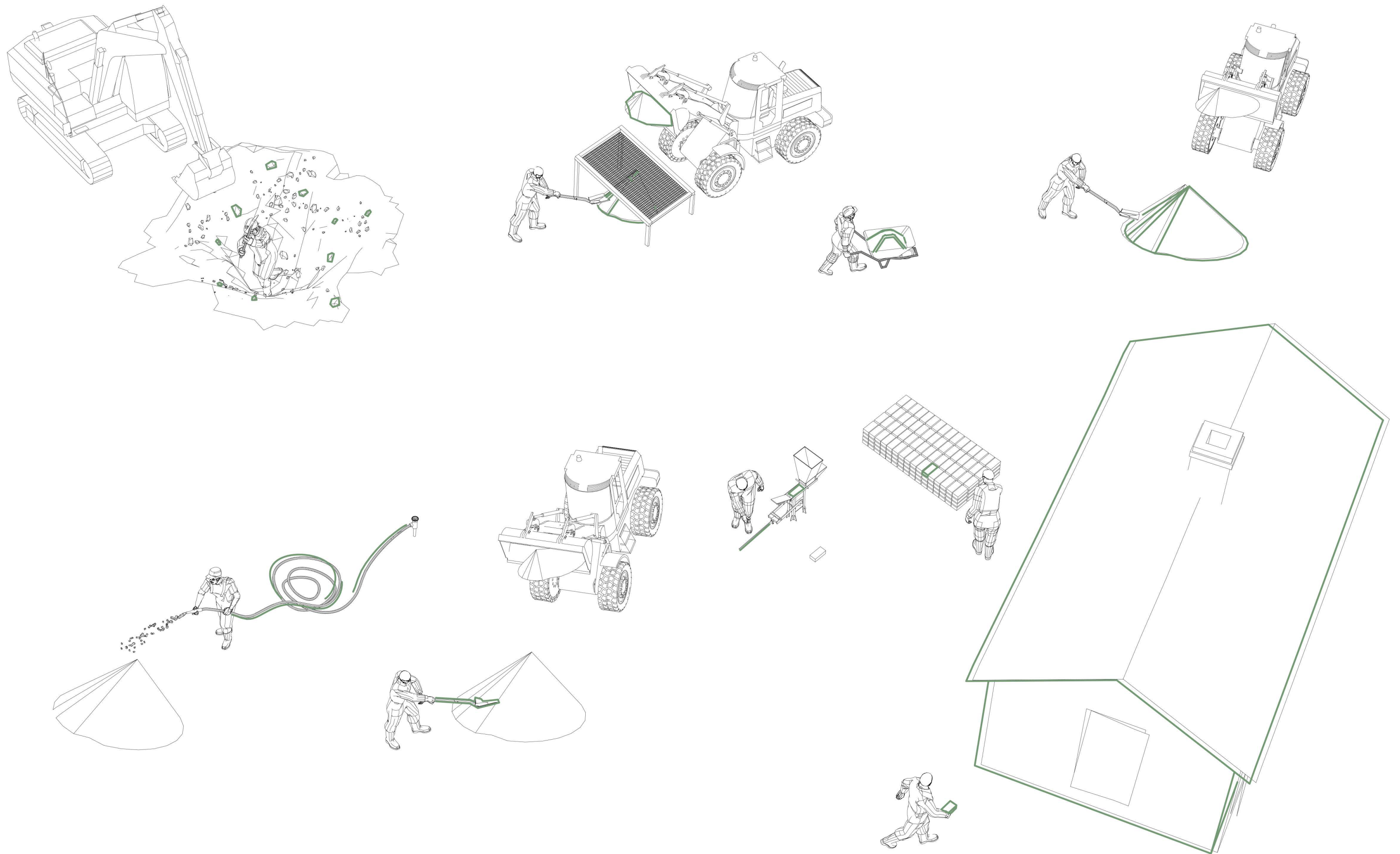


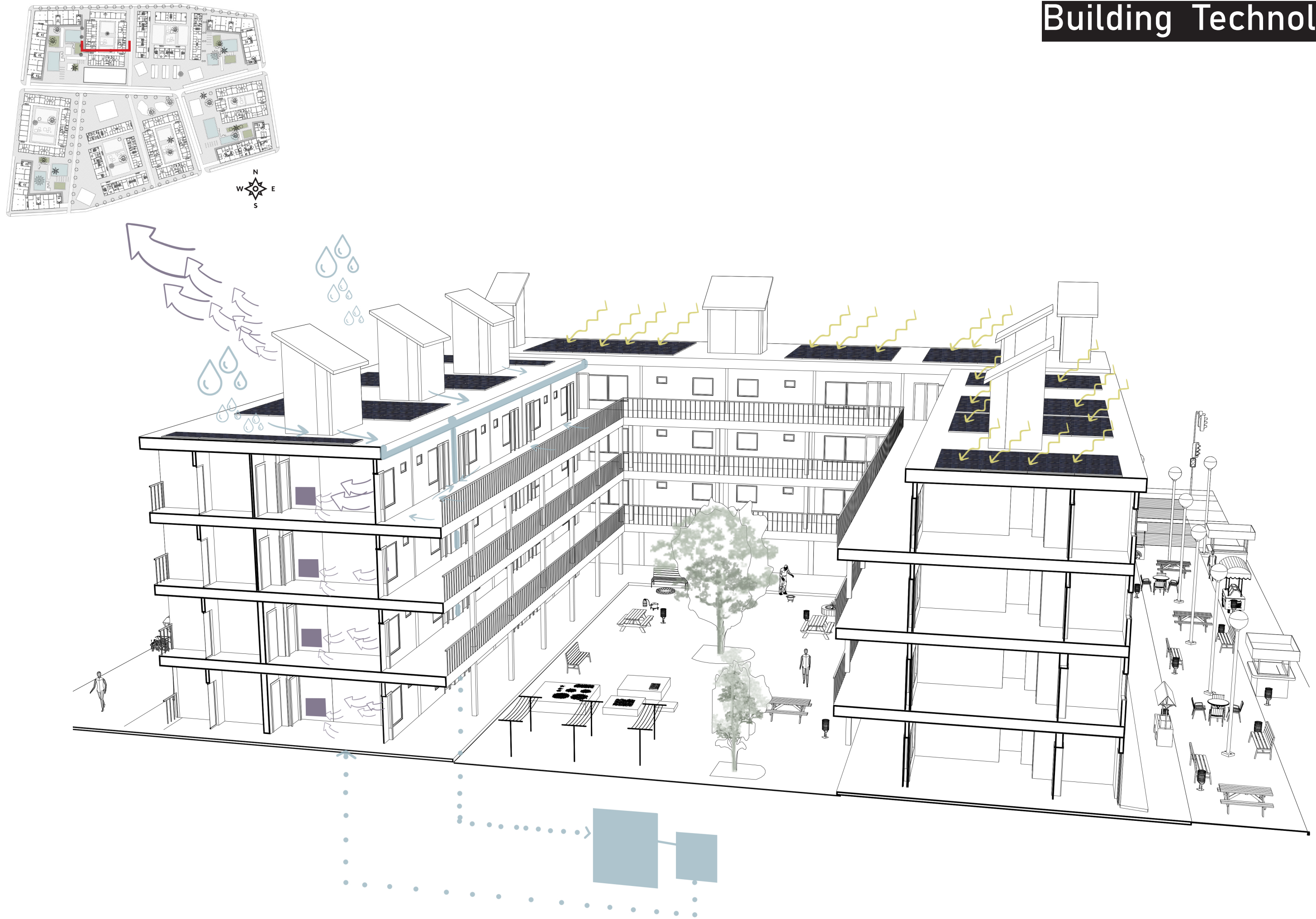
Building Technology

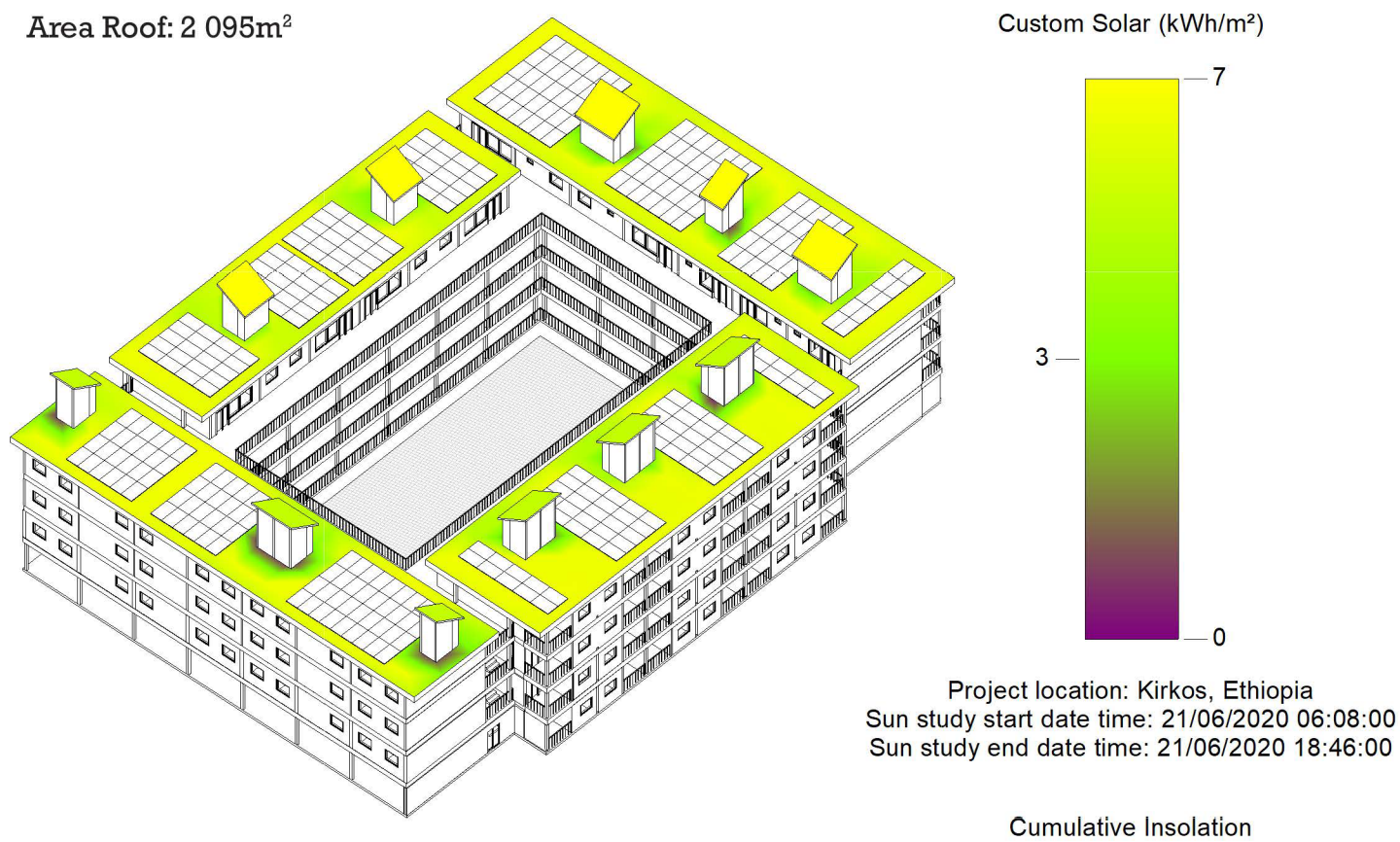




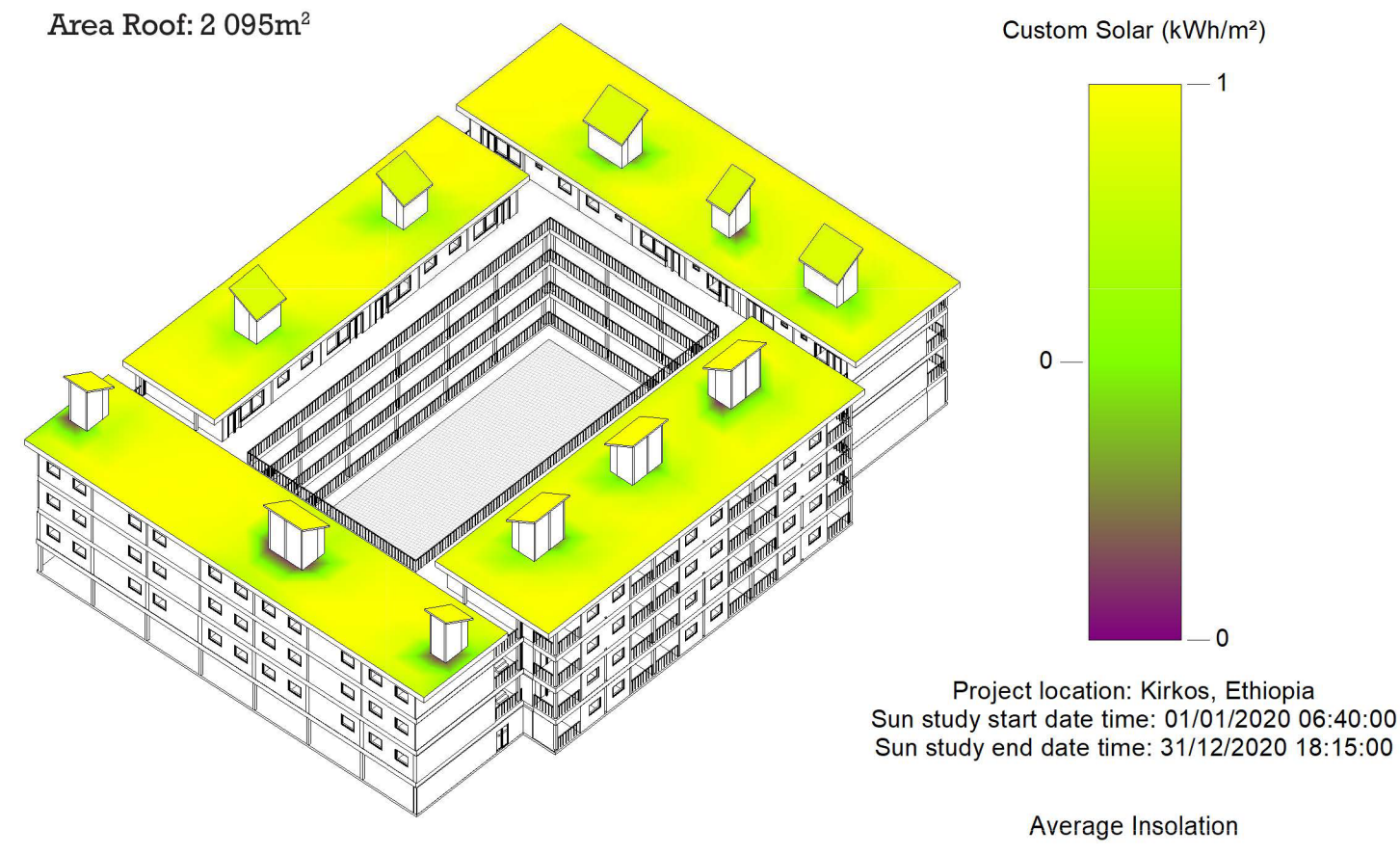




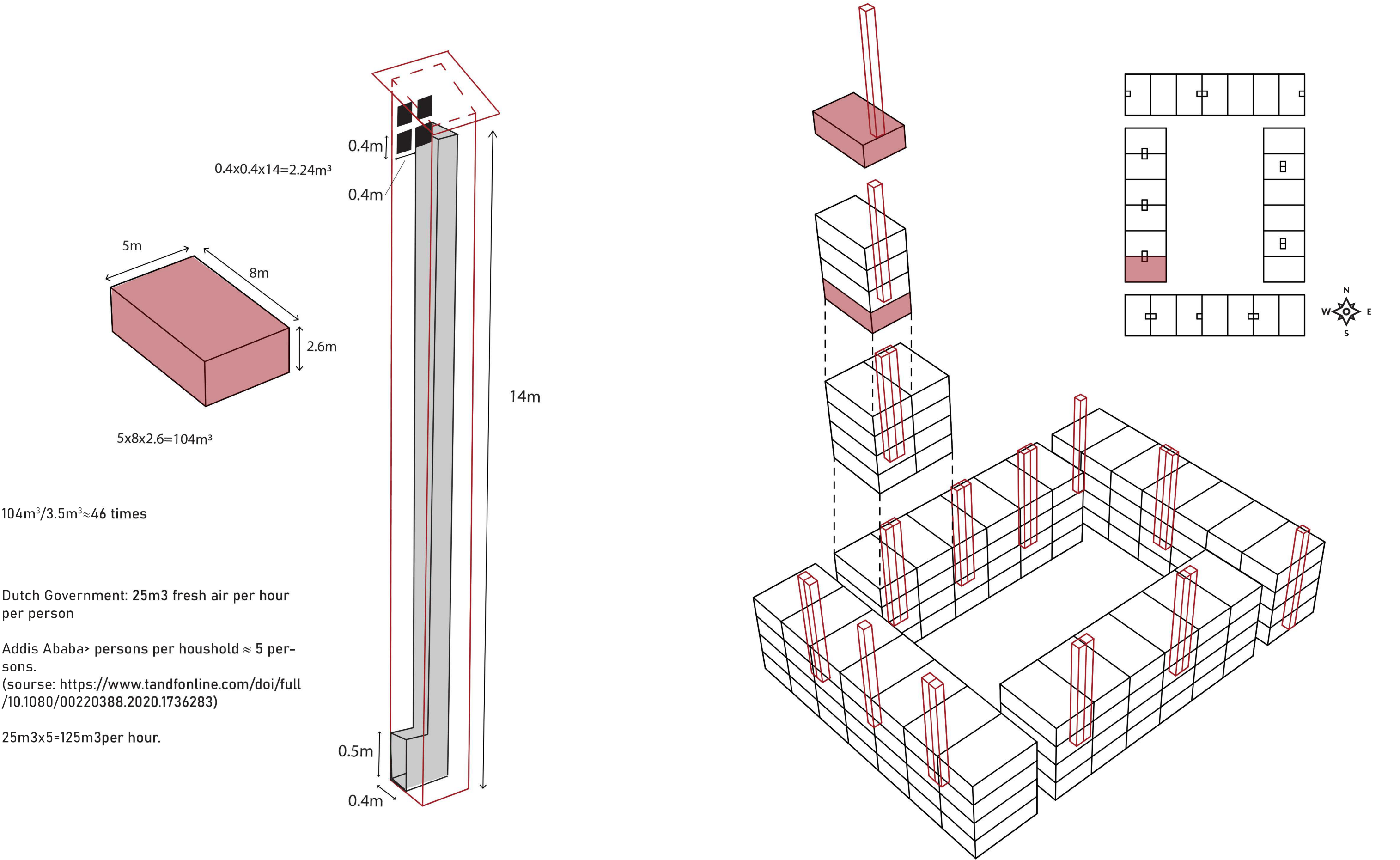




Cumulative Insolation:
11 925 kWh (one day)
5,69 kWh/m² (one day)

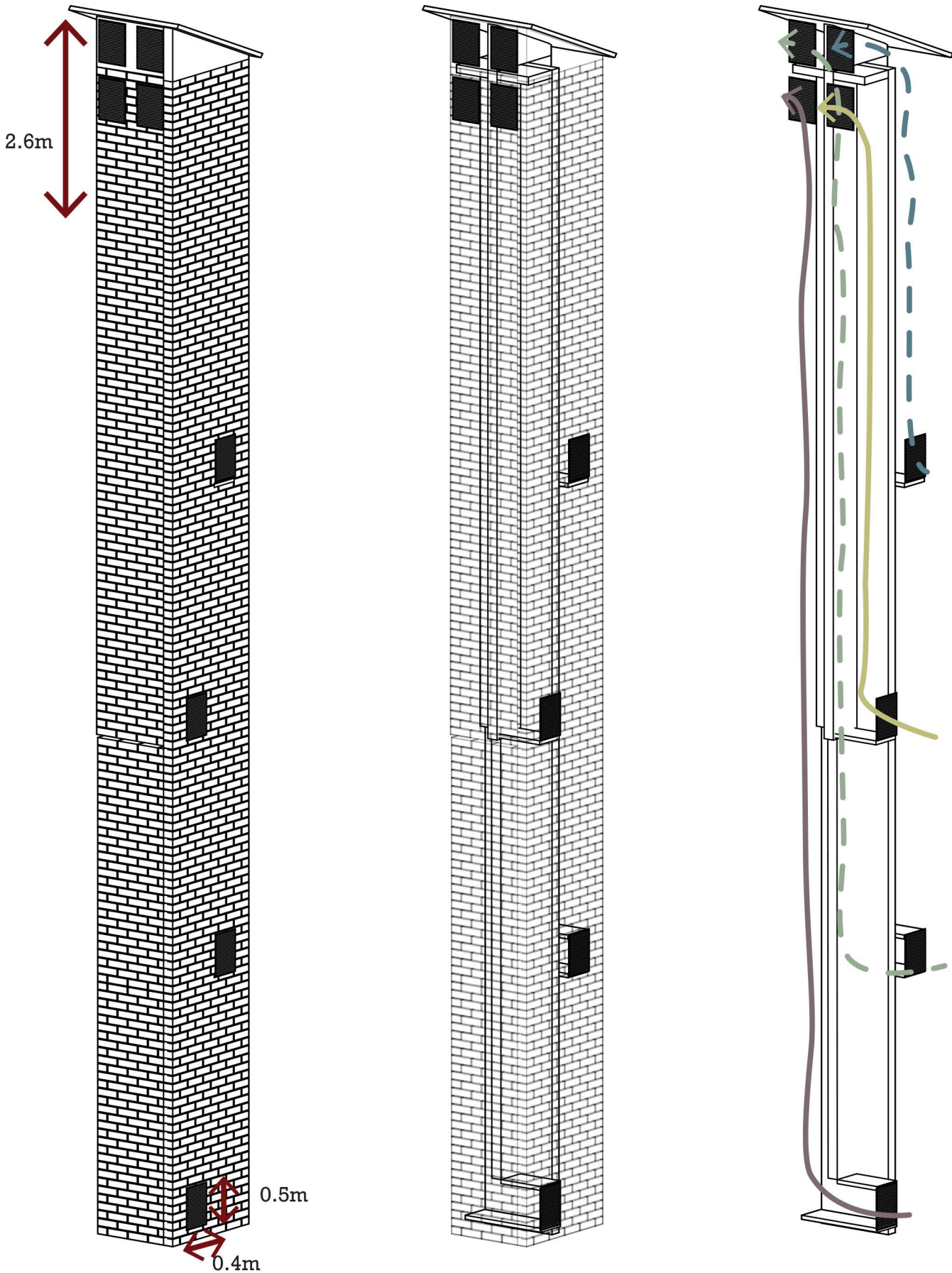


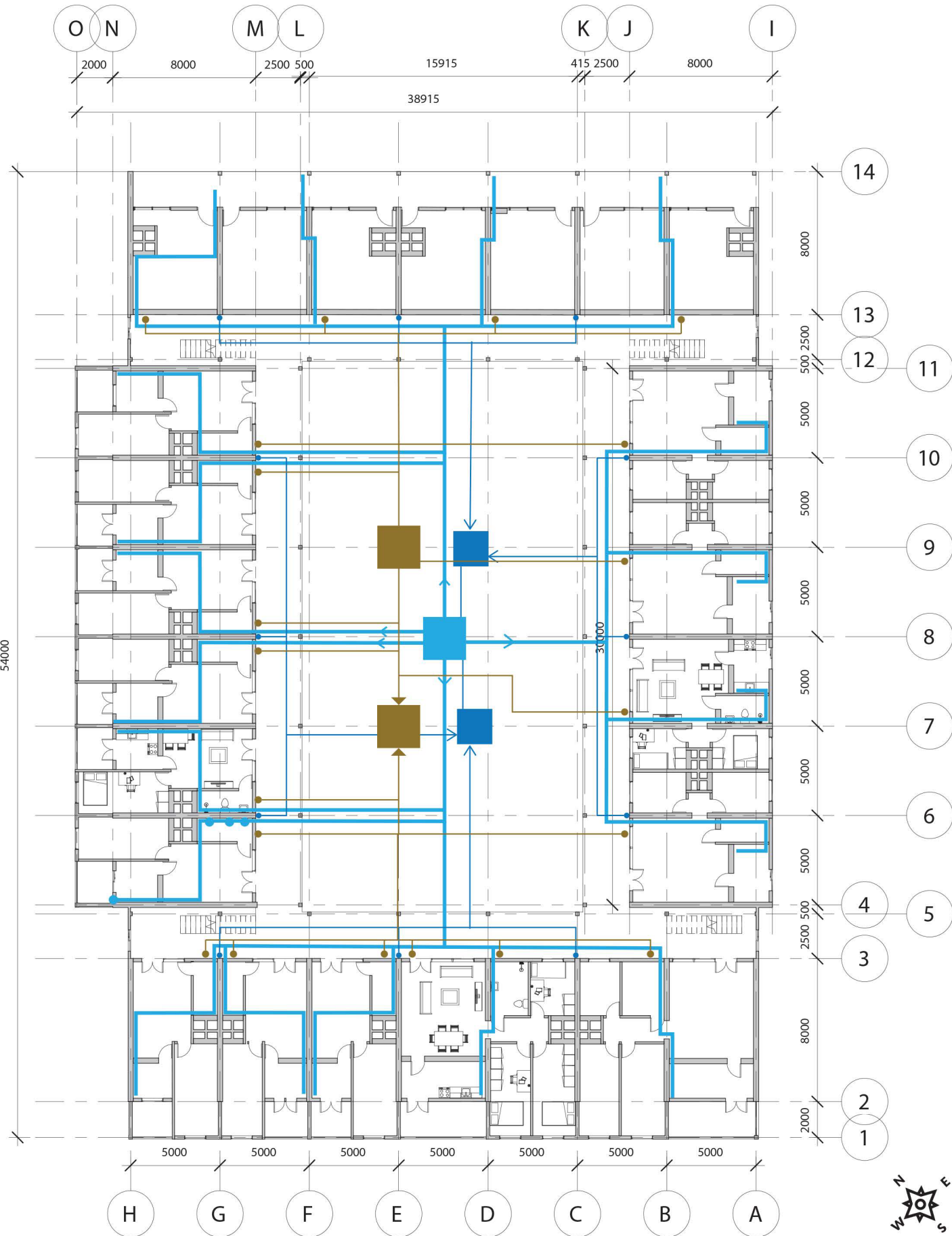
Average Insolation:
956 KWh (one year)
0,46 kWh/m² (one year)

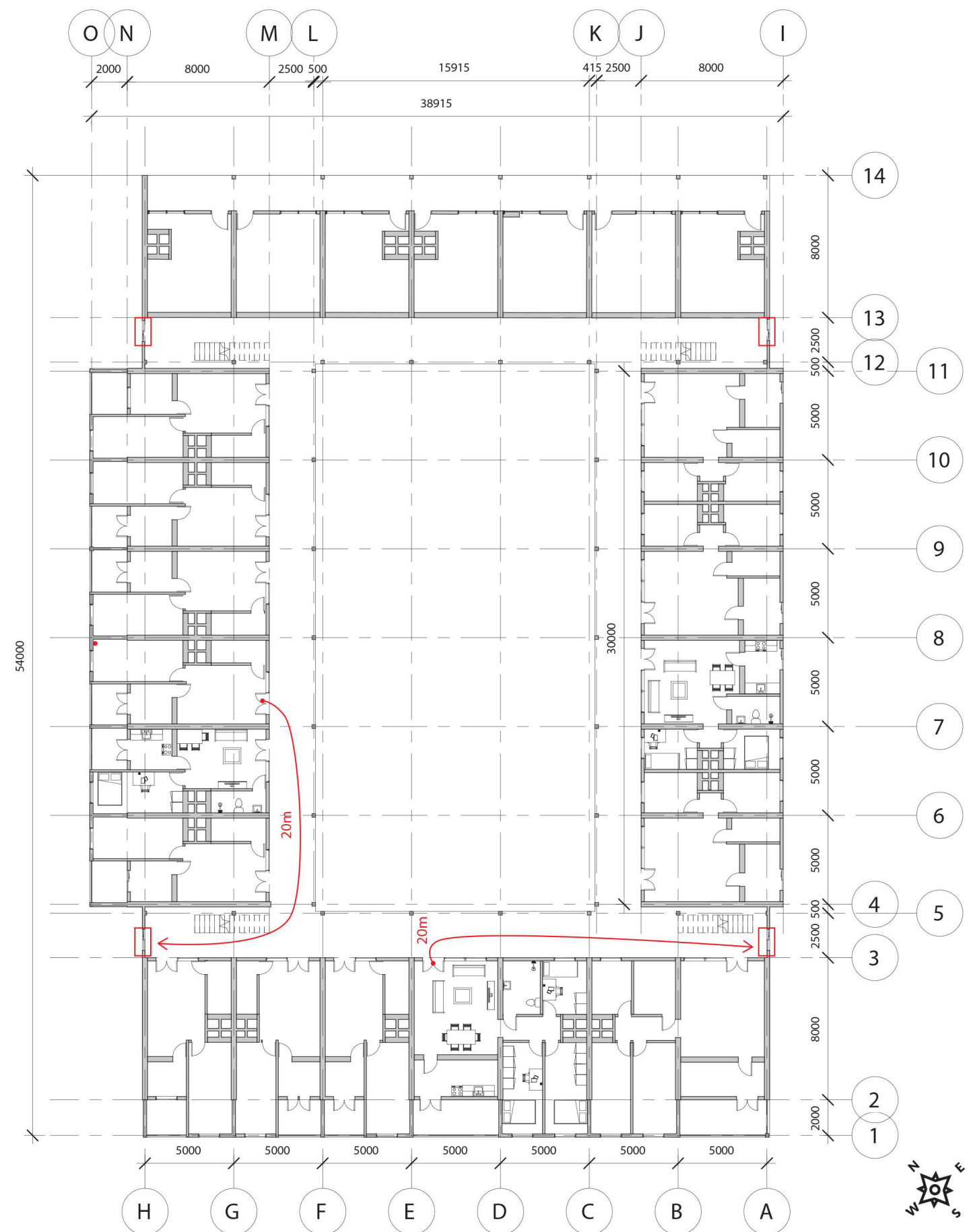
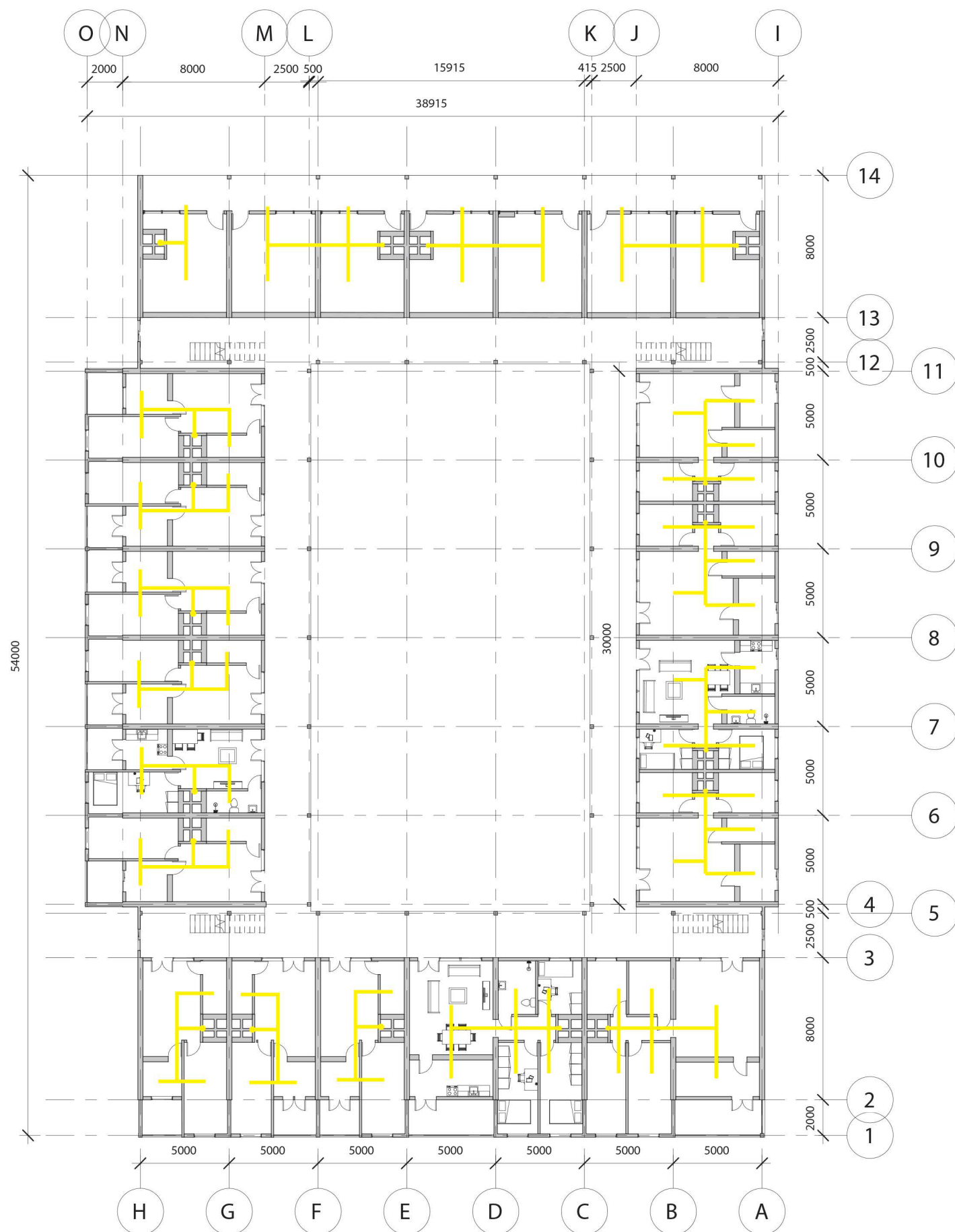


Gravitational constant	g	9,8	-
Height difference	h	2,6	m
Atmospheric pressure at ground	P ₀	100000	Pa
Gas constant of air	R	287	J/kgK
Outside temperature	T ₀	20	°C
Temperature in solar chimney	T ₁	21	°C
Pressure difference	ΔP	0,10	Pa
$\Delta P(h) = \frac{ghP_0}{R} \left(\frac{1}{T_0} - \frac{1}{T_1} \right)$			
Discharge coefficient	C _d	0,8	-
Inlet opening size	A	0,2	m ²
Density of air	ρ	1,2	kg/m ³
Airflow rate	Q	337,6	m ³ /h
$Q = C_d A_{eff} \sqrt{\frac{2\Delta P}{\rho}}$			
Room volume	V	104	m ³
Air change rate per hour	vv	3	x / h

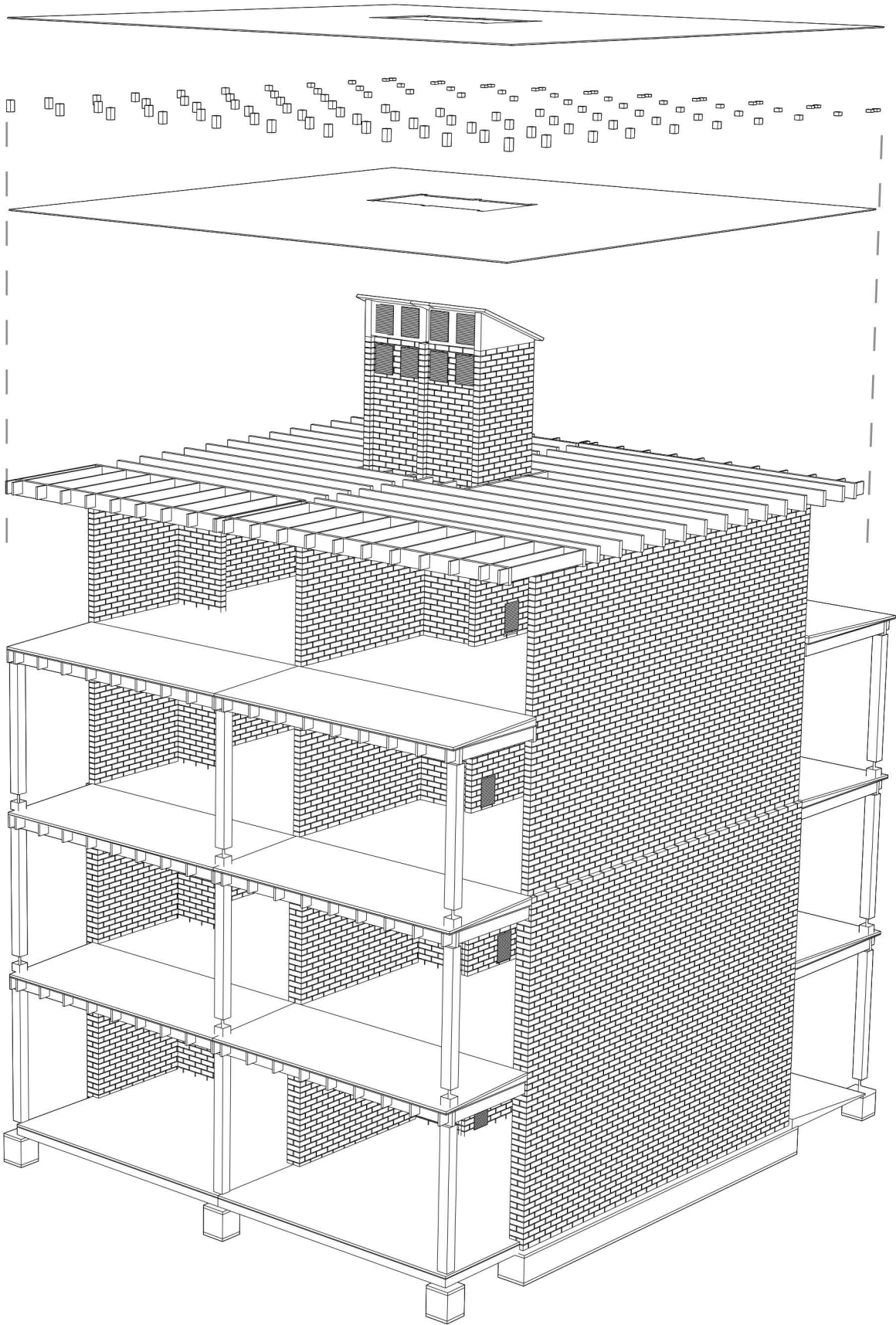
1755,6 m3/h>125m3per hour.



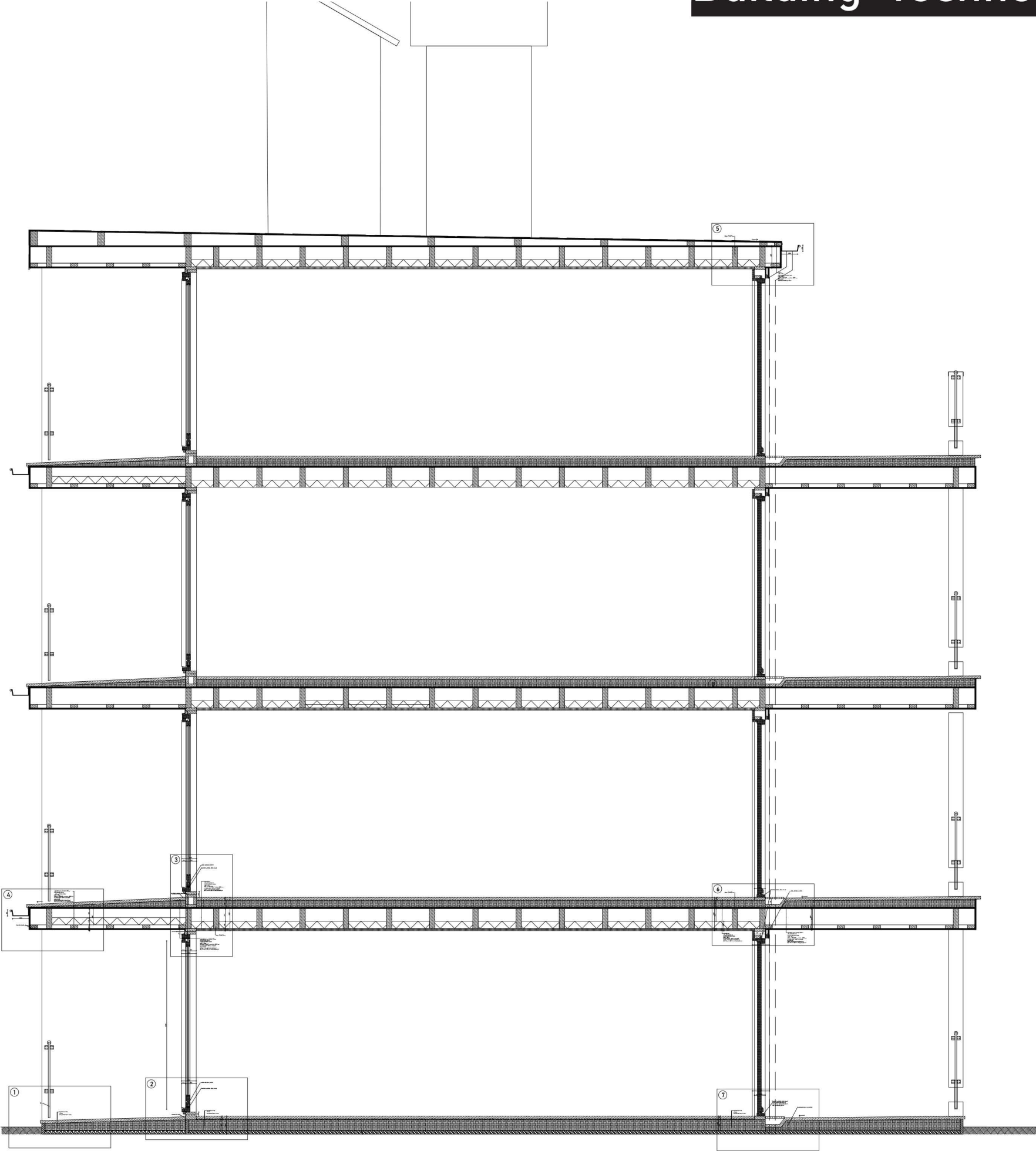
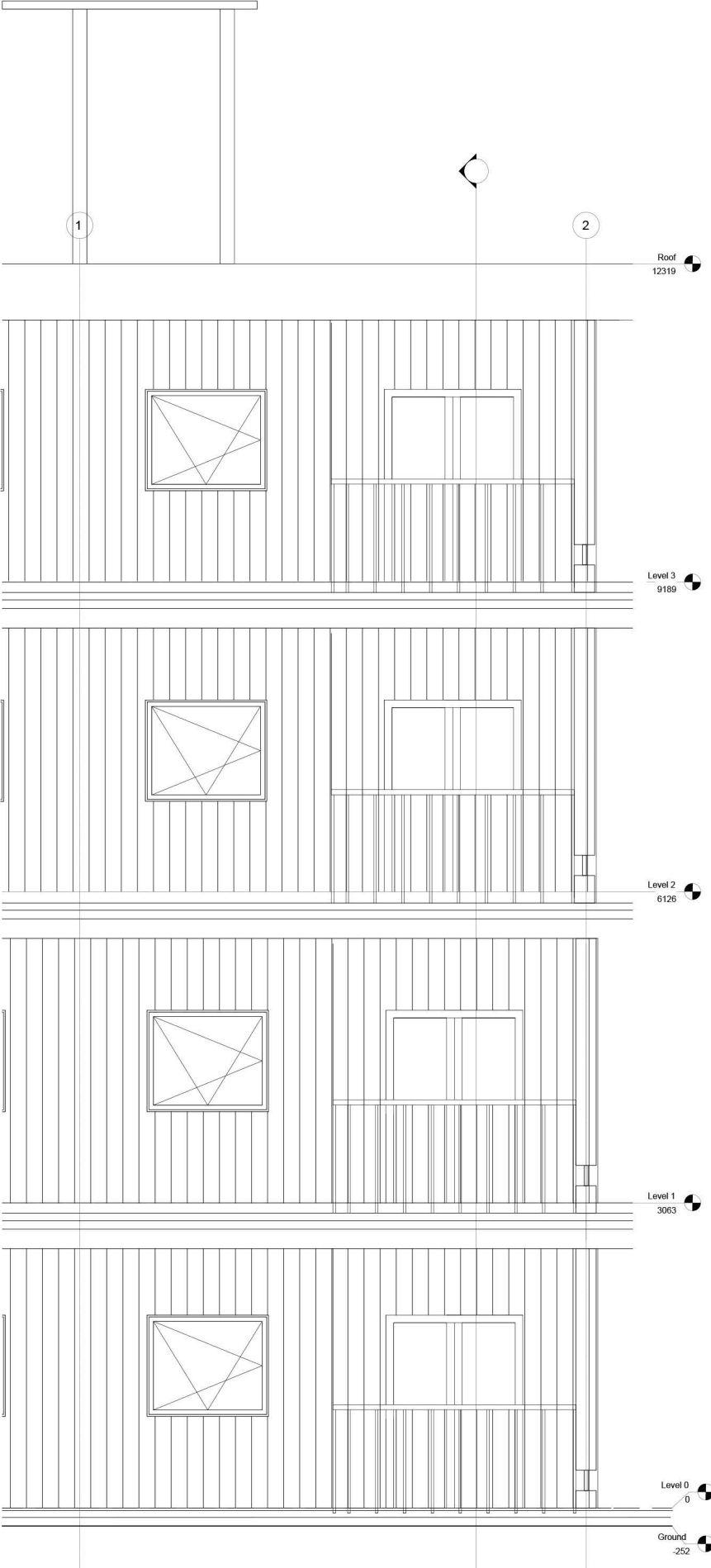




These floor plans show the grid according to which foundation is laid and on which the load bearing walls are to be found. The remittance of the horizontal and vertical forces is carried by these load bearing walls.



Load Bearing Structure





The End!
**Thank you for your
attention, questions?**