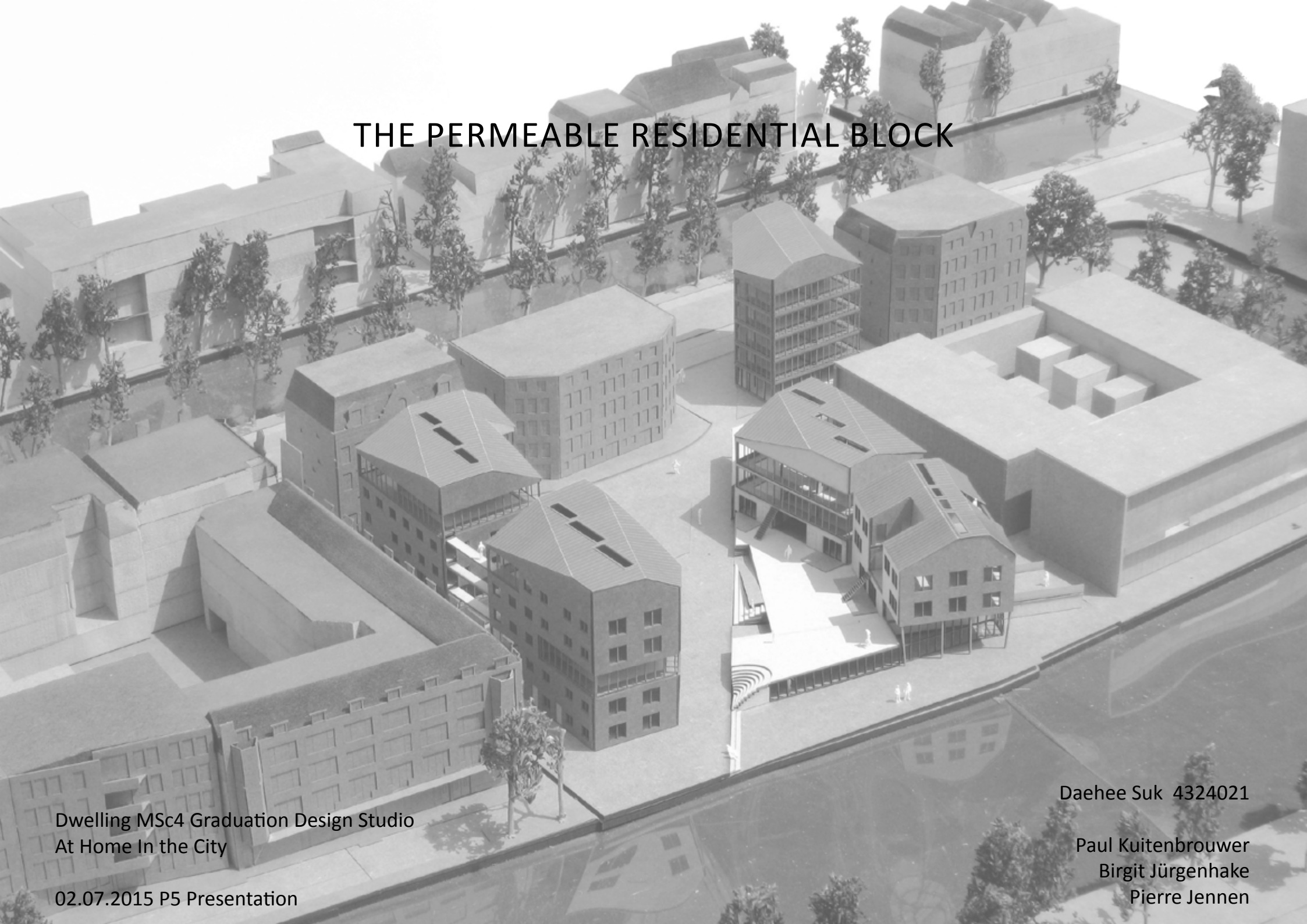
THE PERMEABLE RESIDENTIAL BLOCK

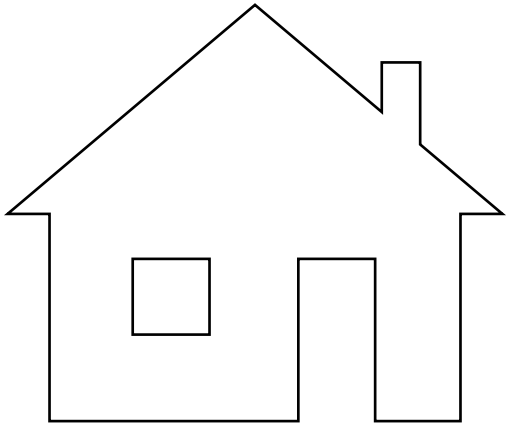


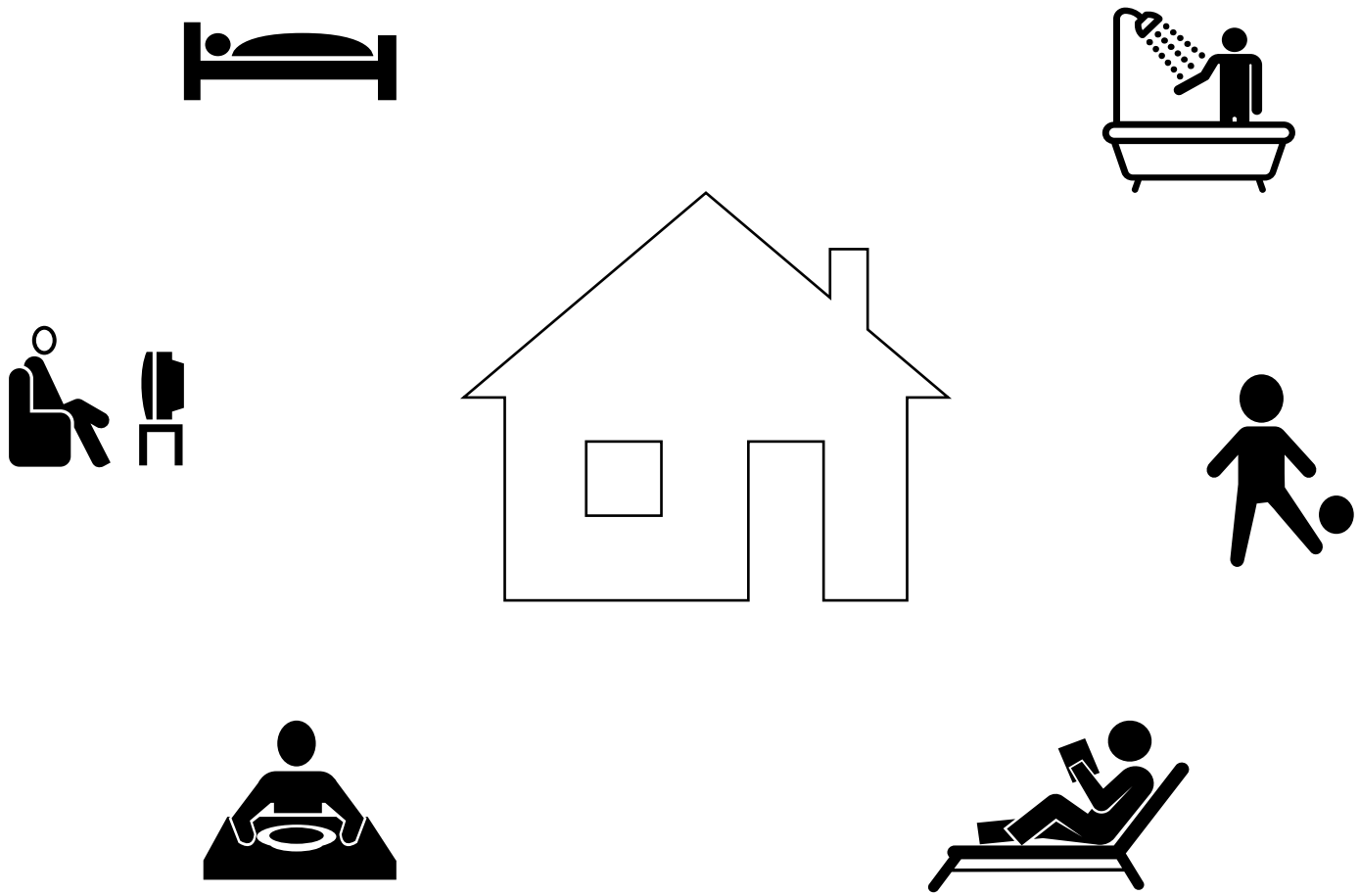
Dwelling MSc4 Graduation Design Studio
At Home In the City

02.07.2015 P5 Presentation

Daehee Suk 4324021

Paul Kuitenbrouwer
Birgit Jürgenhake
Pierre Jennen





Bijlmer

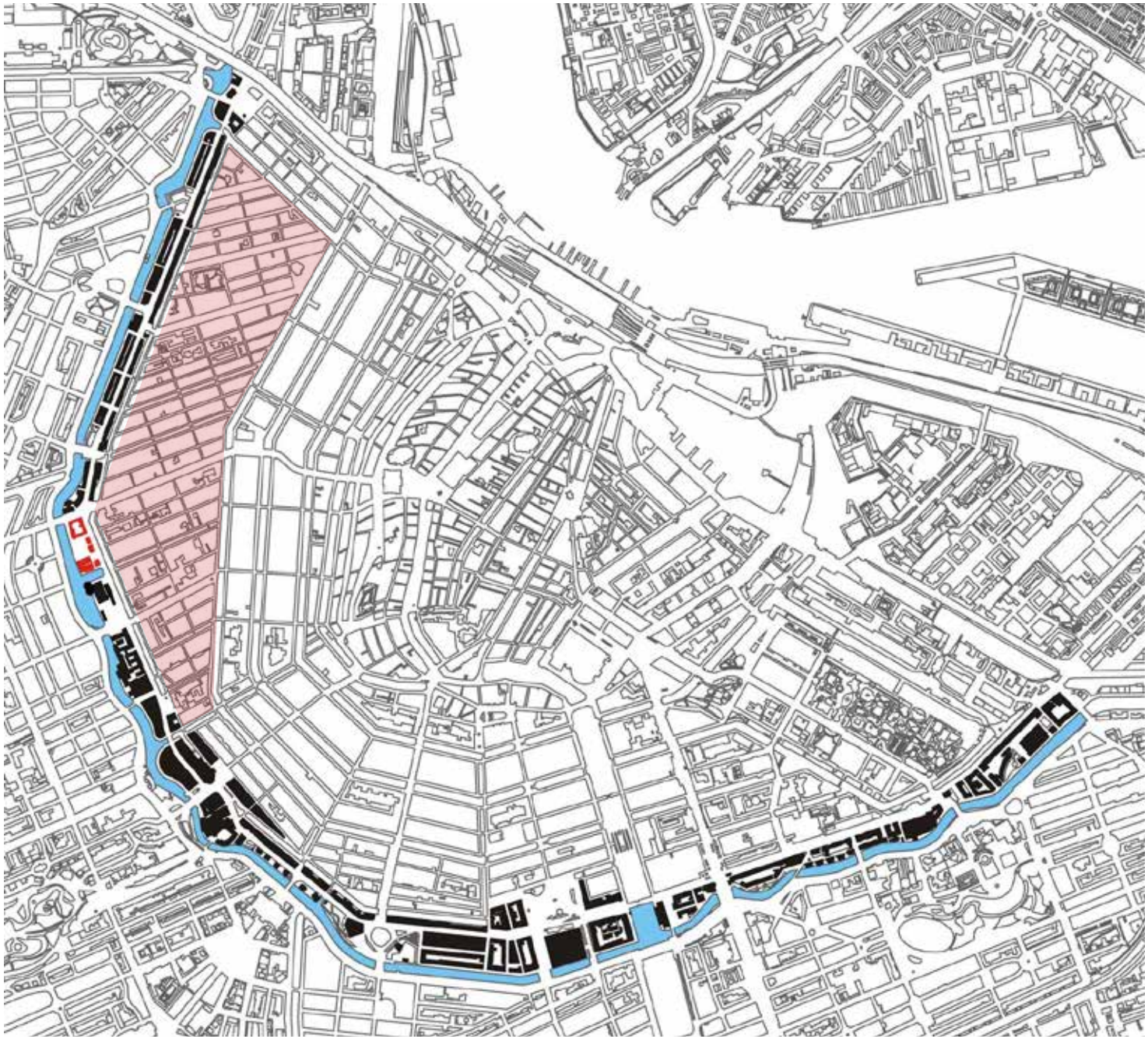
Funnenpark

Public

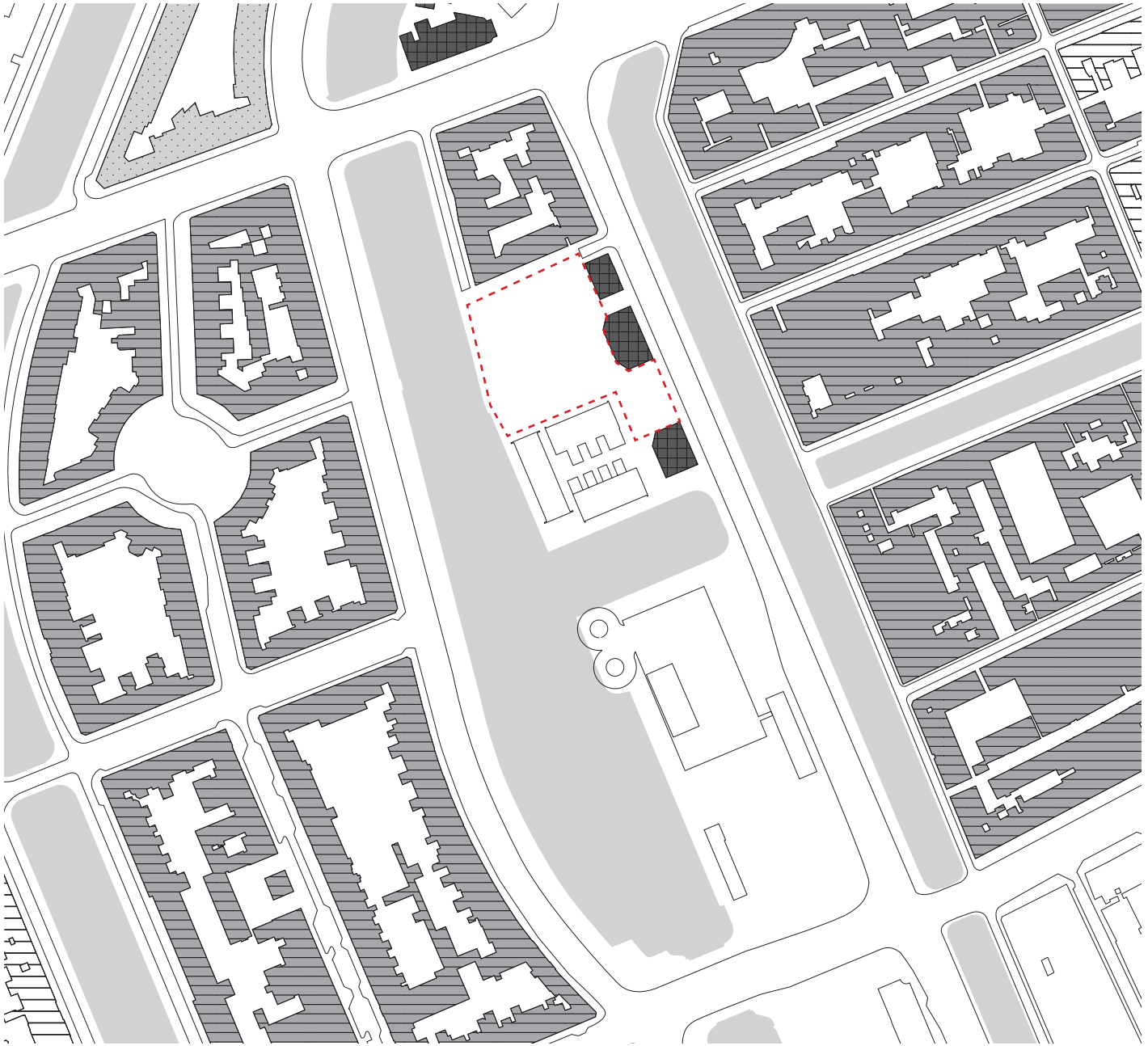
collective

private

GROENMARKT AMSTERDAM



URBAN ANALYSIS _ URBAN BLOCK



PERIMETER BLOCK

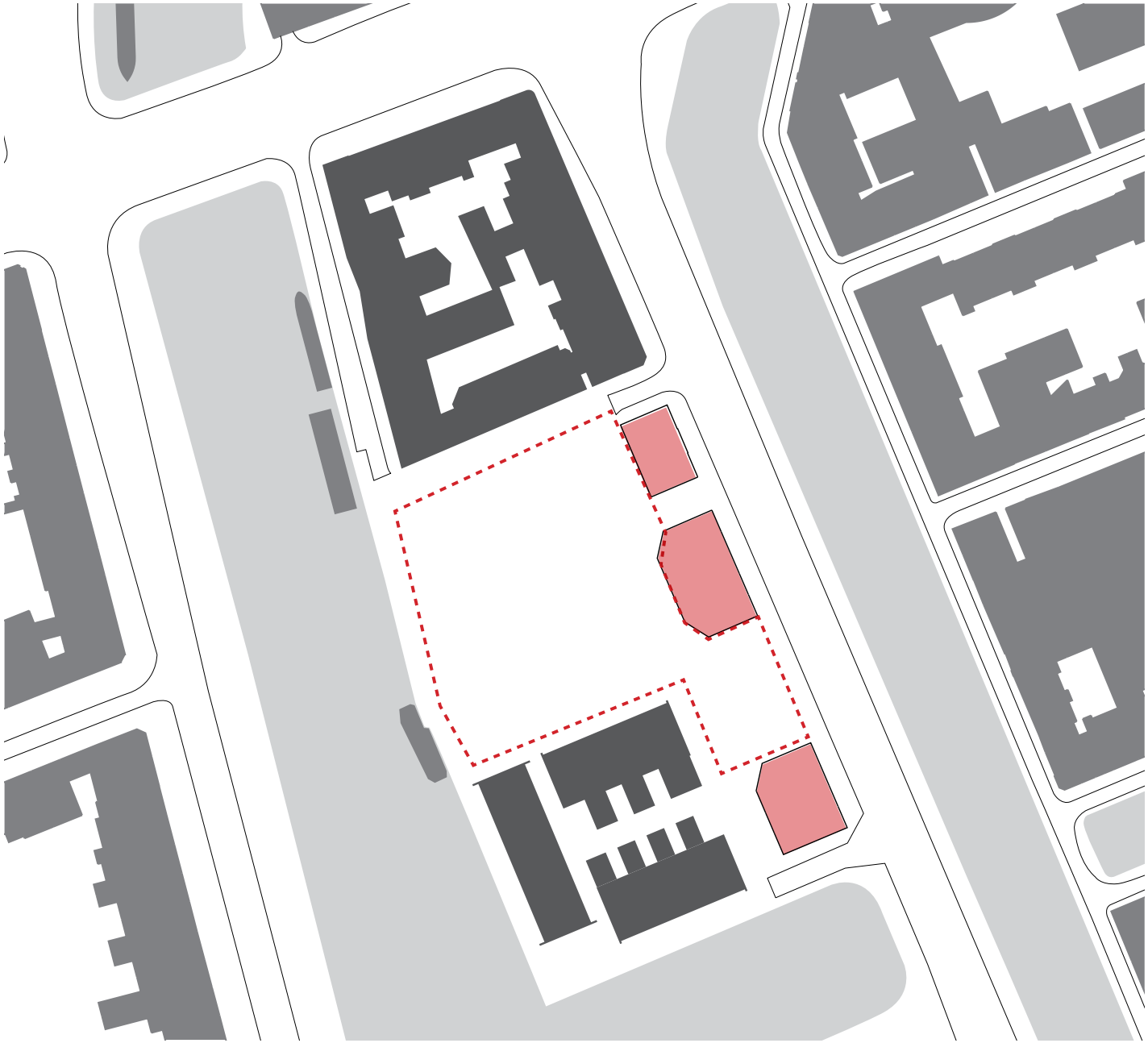
URBAN ANALYSIS _ PUBLIC SPACE

PRIVATE HOUSES

PRIVATE GARDENS

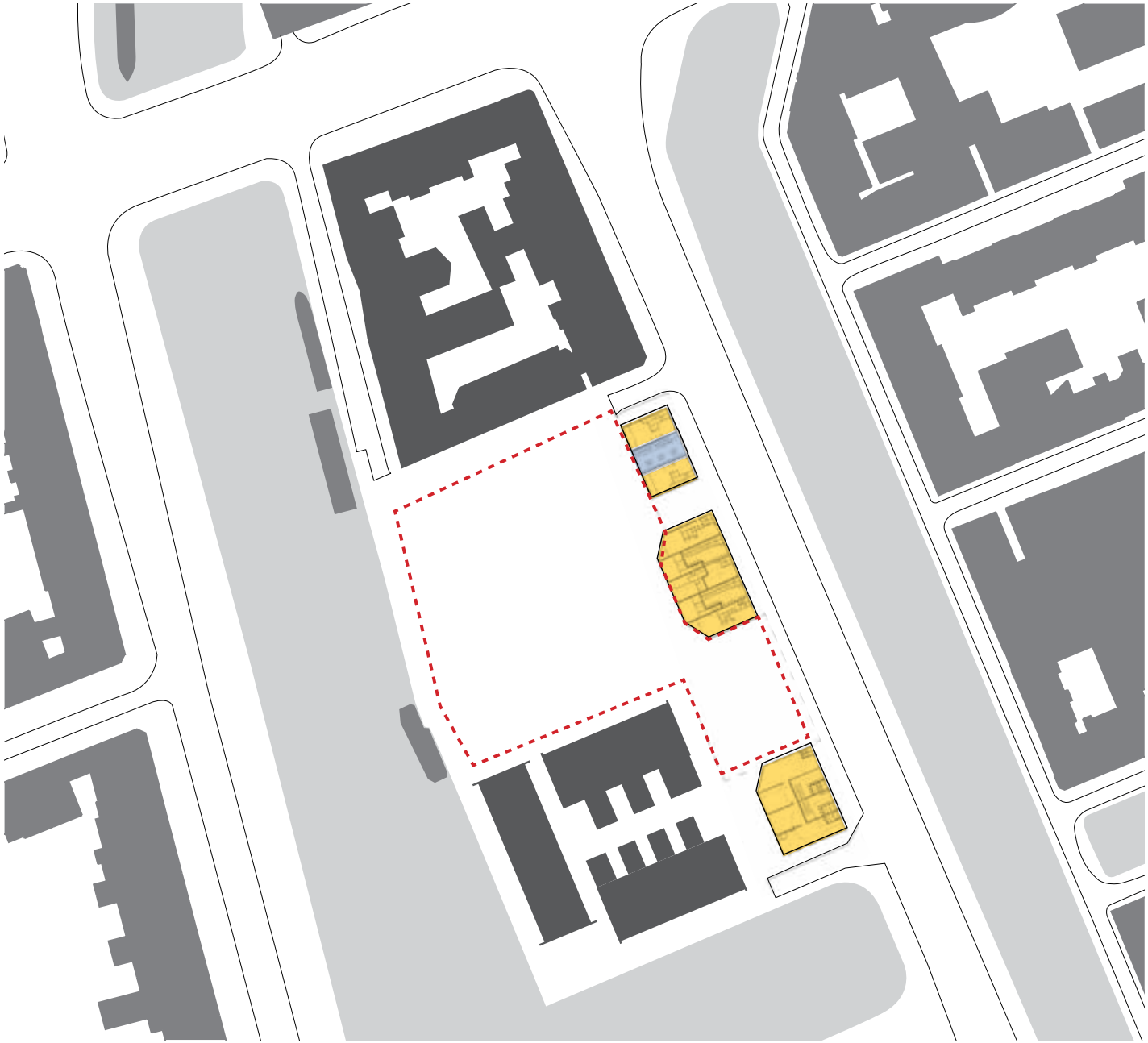
PUBLIC STREET

SITE ANALYSIS



FREE-STANDING BLOCK

SITE GROUND FLOOR PROGRAM



Monumental buildings
(after renovation)

PLINTH - STORAGES

PLINTH - RENOVATED DWELLINGS
(LOGGIA OR LIVING-SPACE)

URBAN ANALYSIS _ MIXED USE ON THE GROUND FLOOR

Play ground

Cafe / Restaurant

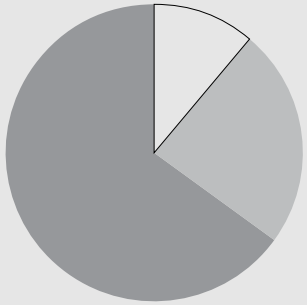
LEGEND

- SERVICES (RETAIL AND CATERING)
- WORKING (OFFICES AND COMPANIES)
- LIVING (RESIDENTIAL)
- OTHER FUNCTIONS

TARGET GROUP

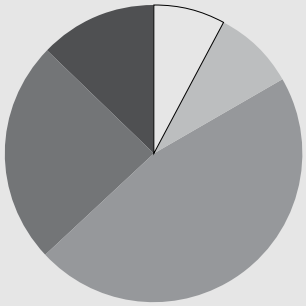
MARITAL STATUS: GROENMARKT

- family 11.2%
- cohabit 23.9%
- single 64.9%



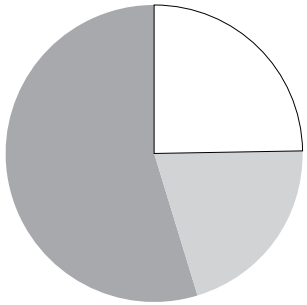
AGE : GROENMARKT

- 0-14 years 7.9%
- 15-24 years 8.9%
- 25-44 years 46.2%
- 45-64 years 24.4%
- 65+ 12.5 %



MARITAL STATUS: AMSTERDAM

- family 24.8%
- cohabit 20.5%
- single 54.6%



AGE : AMSTERDAM

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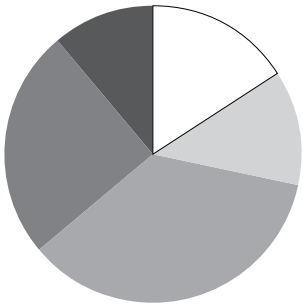
- 15-24 years 8.9%
- 25-44 years 46.2%
- 45-64 years 24.4%
- 65+ 12.5 %



TARGET GROUP

MARITAL STATUS: GROENMARKT

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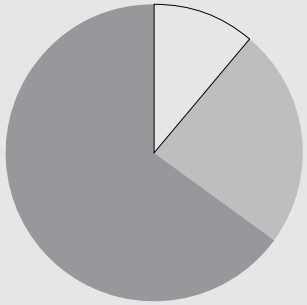
- cohabit 23.9%
- single 64.9%



AGE : GROENMARKT

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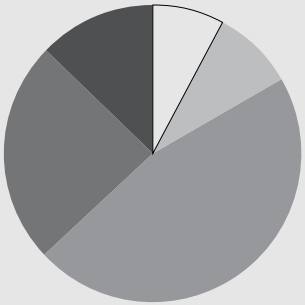
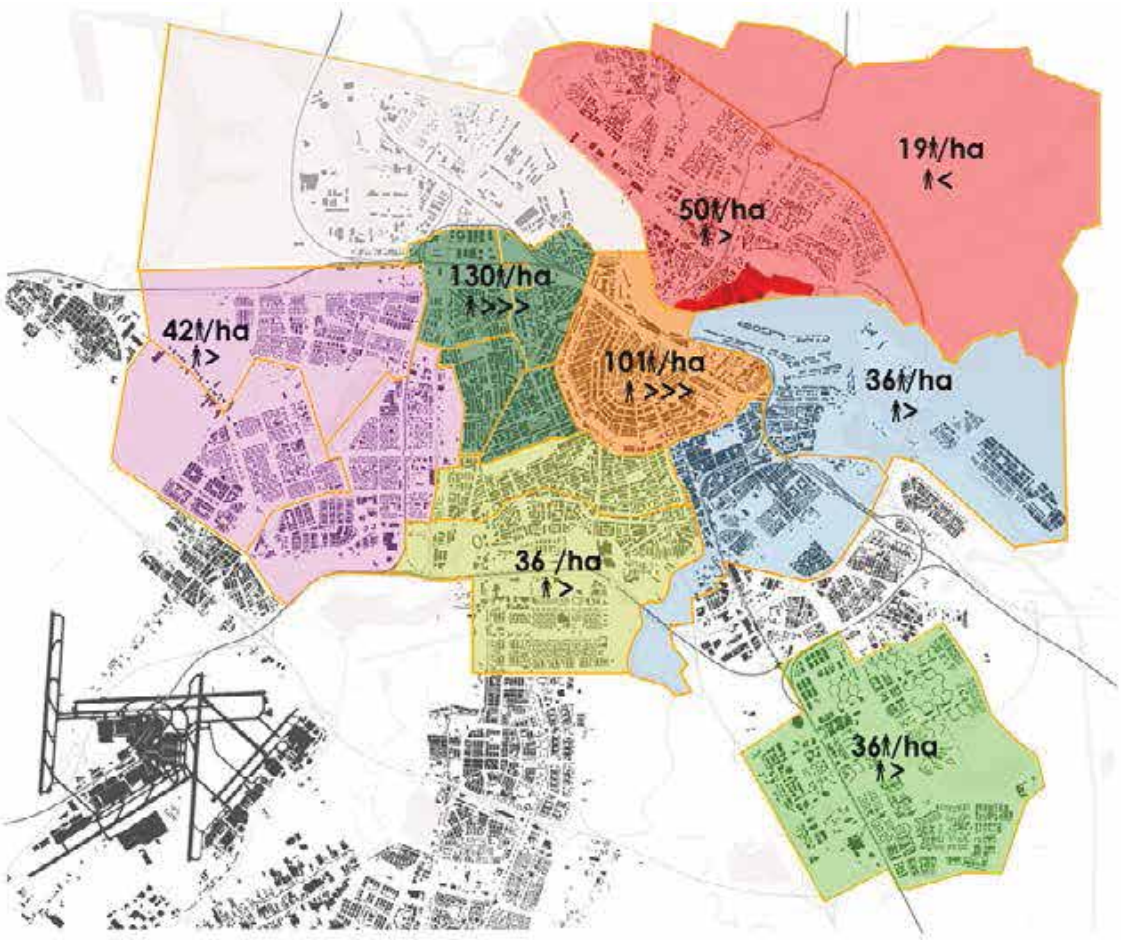


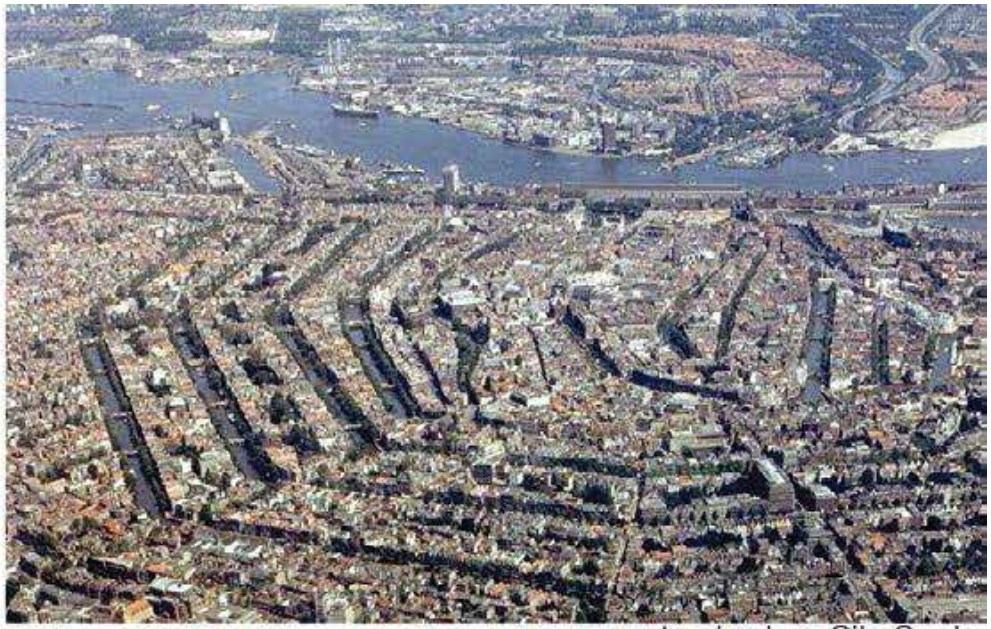
Single

Elderly

Family

AMSTERDAM DENSITY





Amsterdam City Centre

STADSDEEL CENTRUM
8 km2 / ℓ : 81,000

STADSDEEL NOORD
64 km2 / ℓ : 87,000

STADSDEEL OOST
31 km2 / ℓ : 112,000

STADSDEEL ZUID
17 km2 / ℓ : 132,000

STADSDEEL ZUIDOOST
22 km2 / ℓ : 80,000

STADSDEEL WEST
10 km2 / ℓ : 130,000

STADSDEEL NIEUW-WEST
32 km2 / ℓ : 133,000

WESTPOORT

ℓ< : VERY LESS DENSITY

ℓ> : LESS DENSITY

ℓ>>> : HIGH DENSITY

Current density - Amsterdam city (metropolitan scale)
land area: 166 km2/762,057 inhabitant

ARCHITECTURAL POSITION

PROBLEM STATEMENT 1

Amsterdam traditional typology creates a strict division
between **PRIVATE** and **PUBLIC** space
This environment do not give sense of belonging between people

PROBLEM STATEMENT 2

Botania (2002)
by de Architekten Cie.

Parkrand (2007)
by MVRDV*

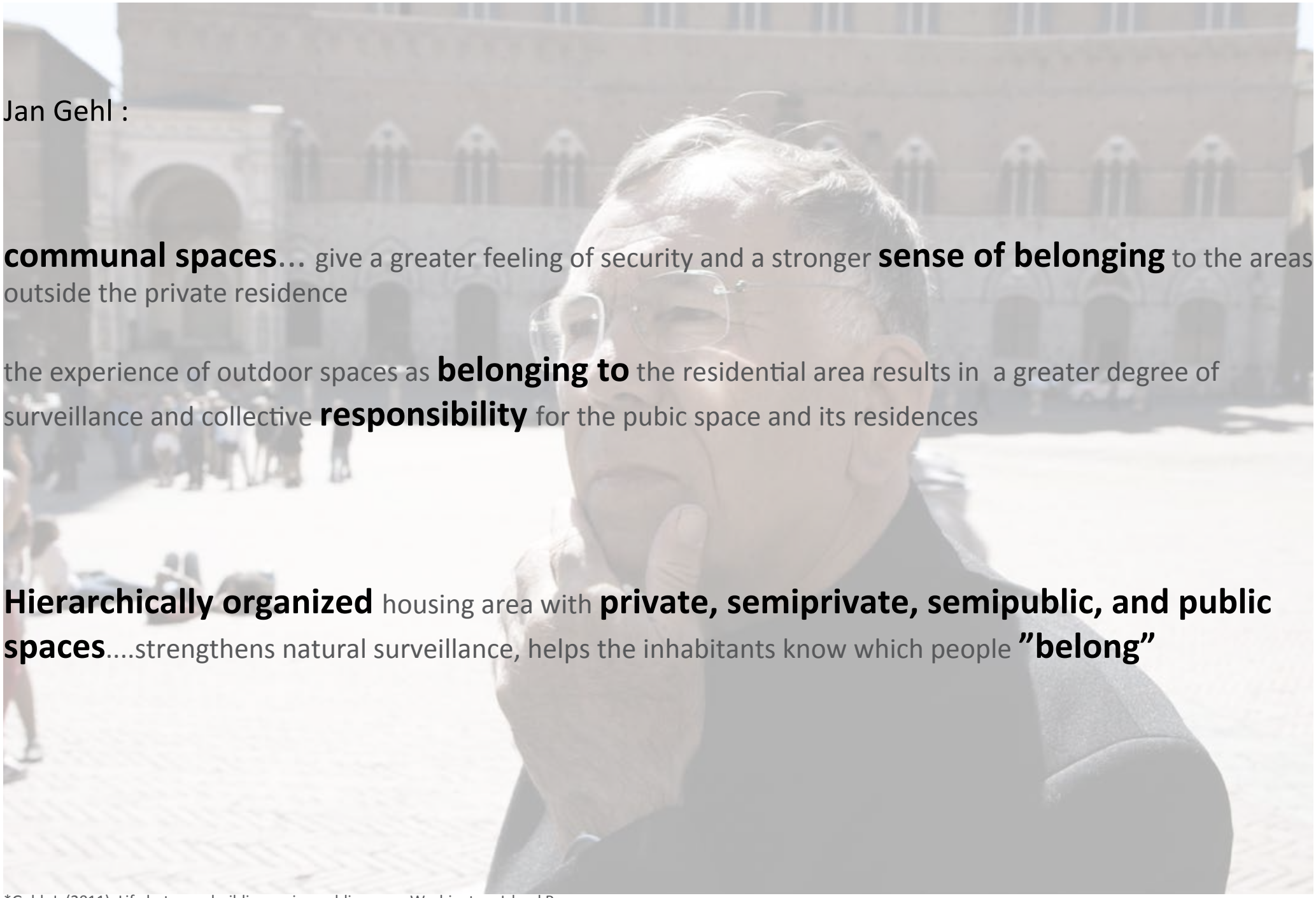
Privatized collective space within a block is **not functioning**.
Dwellers do not use the space and no one has responsibility.

*Parkrand Building http://farm3.static.flickr.com/2797/5813638465_d622114da7.jpg

DESIGN QUESTION

Q: What kind of architectural intervention could enhance sense of belonging for the dwellers in the collective housing?

sub Q: What spatial elements can create and enhance quality of private and collective life?



Jan Gehl :

communal spaces… give a greater feeling of security and a stronger **sense of belonging** to the areas outside the private residence

the experience of outdoor spaces as **belonging to** the residential area results in a greater degree of surveillance and collective **responsibility** for the pubic space and its residences

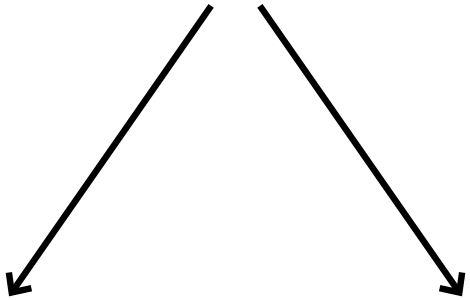
Hierarchically organized housing area with **private, semiprivate, semipublic, and public spaces**....strengthens natural surveillance, helps the inhabitants know which people **”belong”**

*Gehl, J. (2011). Life between buildings using public space. Washington: Island Press.

WHAT I WANT TO ACHIEVE WITH MY GRADUATION PROJECT?

PUBLIC — **TRANSITION** — PRIVATE

Definition :
Semipublic,
Semiprivate (collective space)



High sense of belonging

High quality of private and collective life

transtion

1. The process or a period of changing from one state or condition to another

PUBLIC

PRIVATE

PUBLIC

PRIVATE

PUBLIC

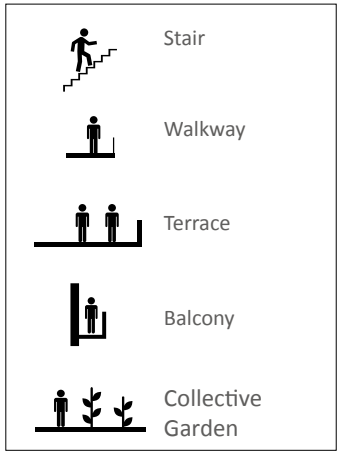
PRIVATE

PUBLIC

PRIVATE

PUBLIC	PUBLIC COLLECTIVE	PRIVATE COLLECTIVE	PRIVATE
			

RESEARCH



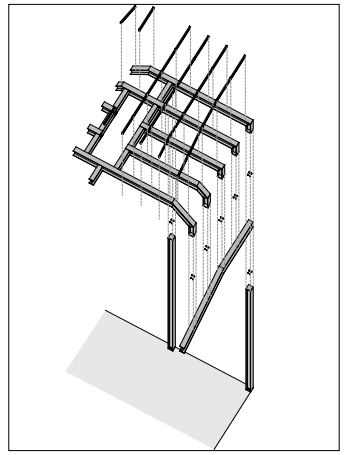
PUBLIC

PUBLIC COLLECTIVE

PRIVATE COLLECTIVE

PRIVATE

BUILDING TECHNOLOGY



RESEARCH

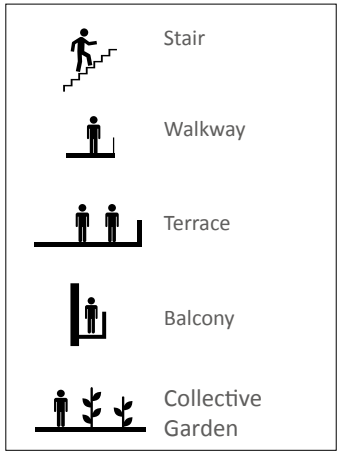
PUBLIC

PUBLIC COLLECTIVE

PRIVATE COLLECTIVE

PRIVATE

BUILDING TECHNOLOGY



| Problem statement

Botania (2002)
by de Architekten Cie.

Parkrand (2007)
by MVRDV

NON-FUNCTIONING COLLECTIVE SPACE

ISOLATION | NO SENSE OF COMMUNITY

| Research question

When do spatial elements enhance the contact between dwellers in collective housing in the city of Amsterdam?

THEORY STUDIES

Various contact forms

Close contact
_contact during lingering / staying
_interaction / long time

Chance contact
_possibility of communicating with neighbors

Passive contact
_"see and hear" contacts
_ passing by contacts

Contact-making activities

Walking
dimensioning of street
_spatial sequence
_paving materials and street surface condition
_differences in level

Standing
_staying
_zone for staying: edge effect[1]

Sitting
_orientation and view
_sitting landscape

Elements


Stair


Walkway


Terrace


Balcony


Collective Garden

*Gehl, J. (2011). Life between buildings using public space. Washington: Island Press.

CASE STUDIES

| Contact within building

Weespersrtraat Student Housing (1959)
-Herman Hertzberger

Lootsbuurt (2007)
-ANA architecten

| Contact between semi-public and private

Haarlemmer Houttuinen (1982)
-Herman Hertzberger

Pentagon (1983)
-Theo Bosch & Aldo van Eyck

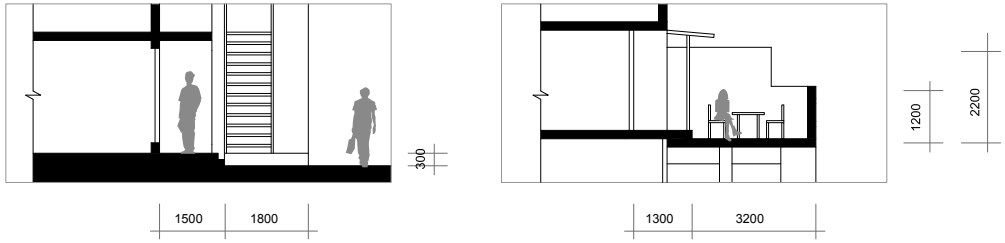
| Contact between building blocks

GWL Terrein (1998)
-KCAP,DKV, Neutelings Riedijk, Meyer & Van Schooten Atelier Zeinstra, van der Pol

De Stadstuinen (2008)
-Dp6 architectuurstudio

CONCLUSION

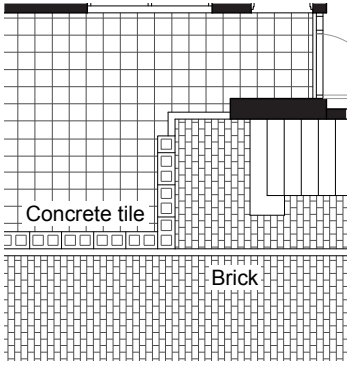
_Dimension



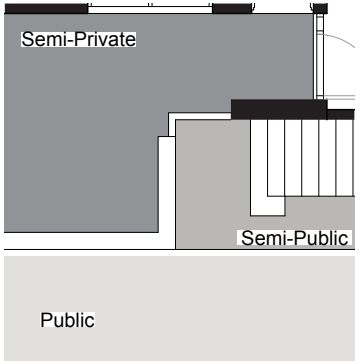
Dimension for standing | walking

Dimension for sitting

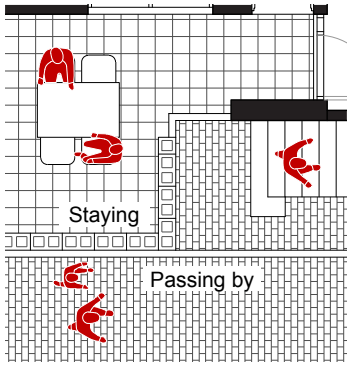
_Material



Change of material

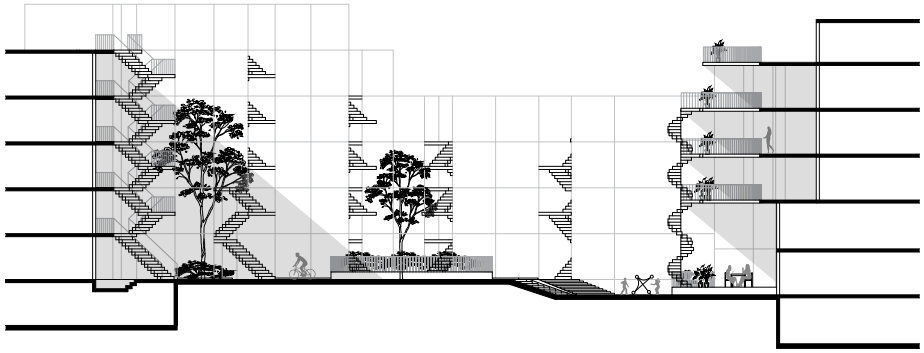


Define different zone



Contacts between different activities

_Atmosphere



CONCLUSION_Composition of spatial elements

	STAY			PASSBY					
Element	g. Gallery	h. Corridor	e. Landing	j. Balcony	i. Frontyard	c. Common Deck	b. Seat	a. Stair	d. Street	g. Gallery	h. Corridor	e. Landing	k. Courtyard
Composition	Stay - Stay			Stay - Passby				Passby - Passby		Stay - Passby			
Contact													
	Close contact			Chance contact						Passive contact			

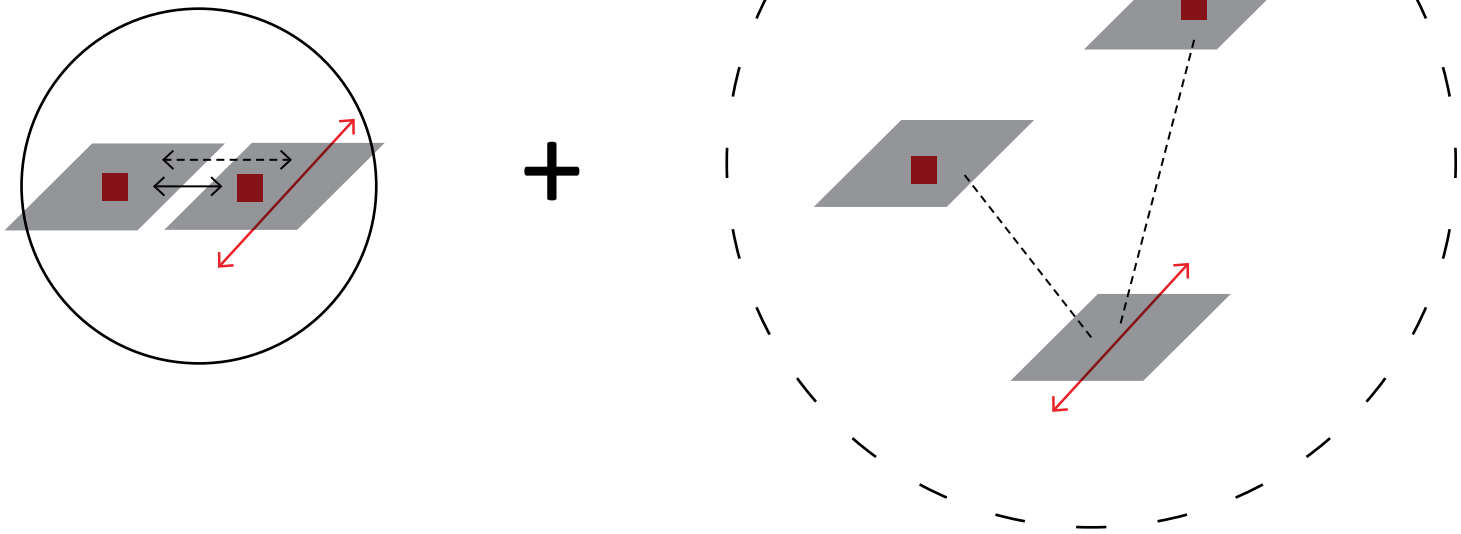
CONCLUSION

*Contact

- Close contact
- Chance contact
- Passive contact

*Activity

- Stay
- Stay / Pass by
- Pass by



HORIZONTAL
composition of elements

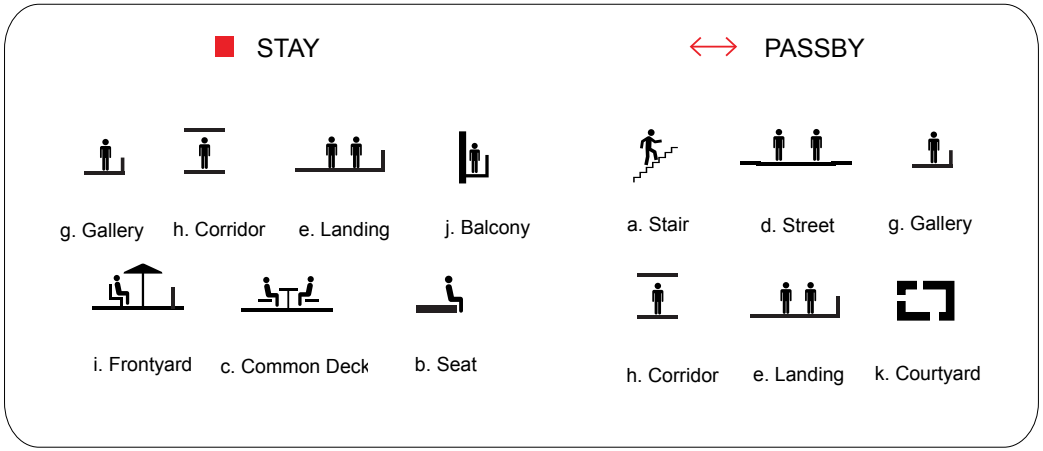
- Close / Chance contacts
- Narrow range of space

VERTICAL
composition of elements

- Passive contacts
- Wide range of space

PUBLIC — **TRANSITION** — PRIVATE

contact making elements



URBAN

RESEARCH

PUBLIC

PUBLIC COLLECTIVE

PRIVATE COLLECTIVE

PRIVATE

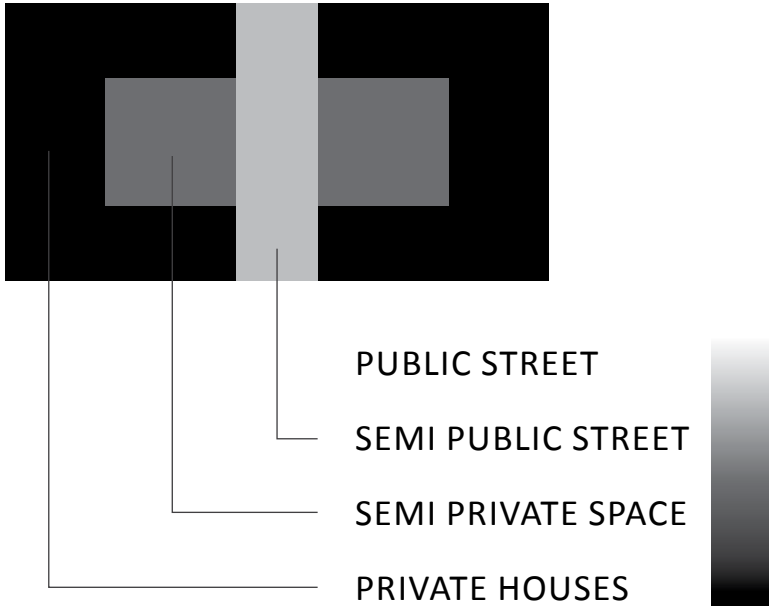
BUILDING TECHNOLOGY

URBAN CONCEPT_TRANSITION

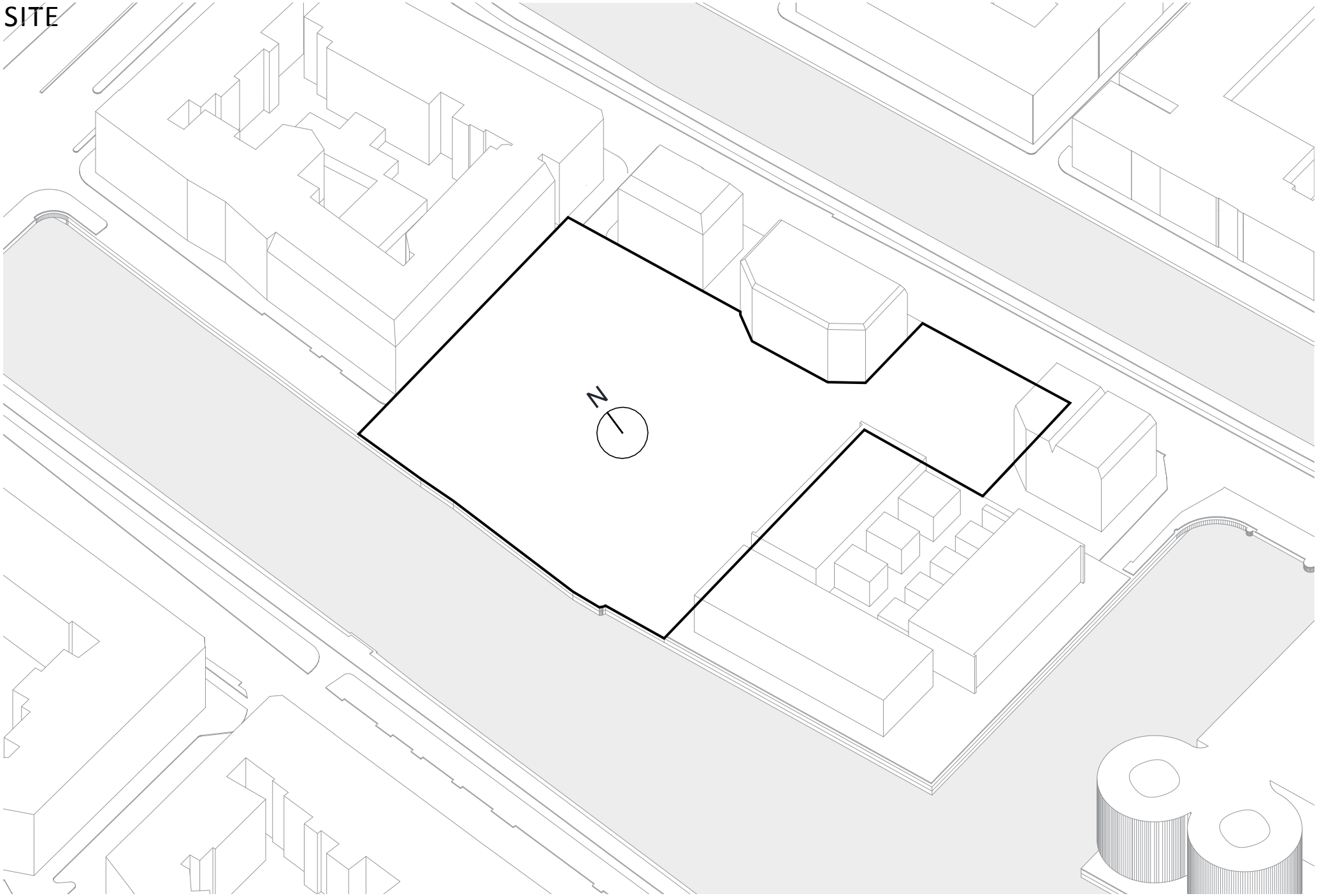
AMSTERDAM BLOCK TYPOLOGY

PUBLIC STREET

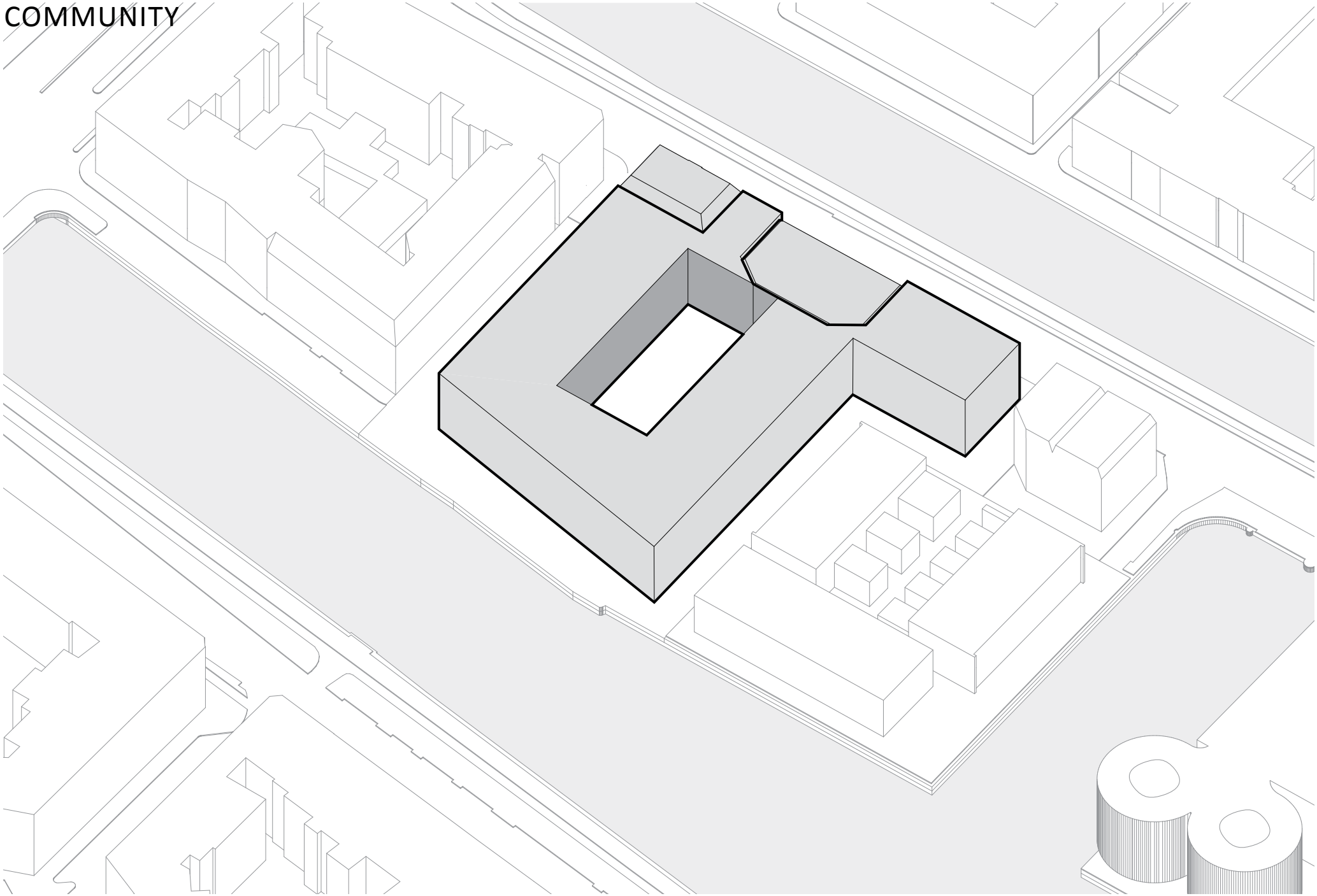
+ TRANSITION



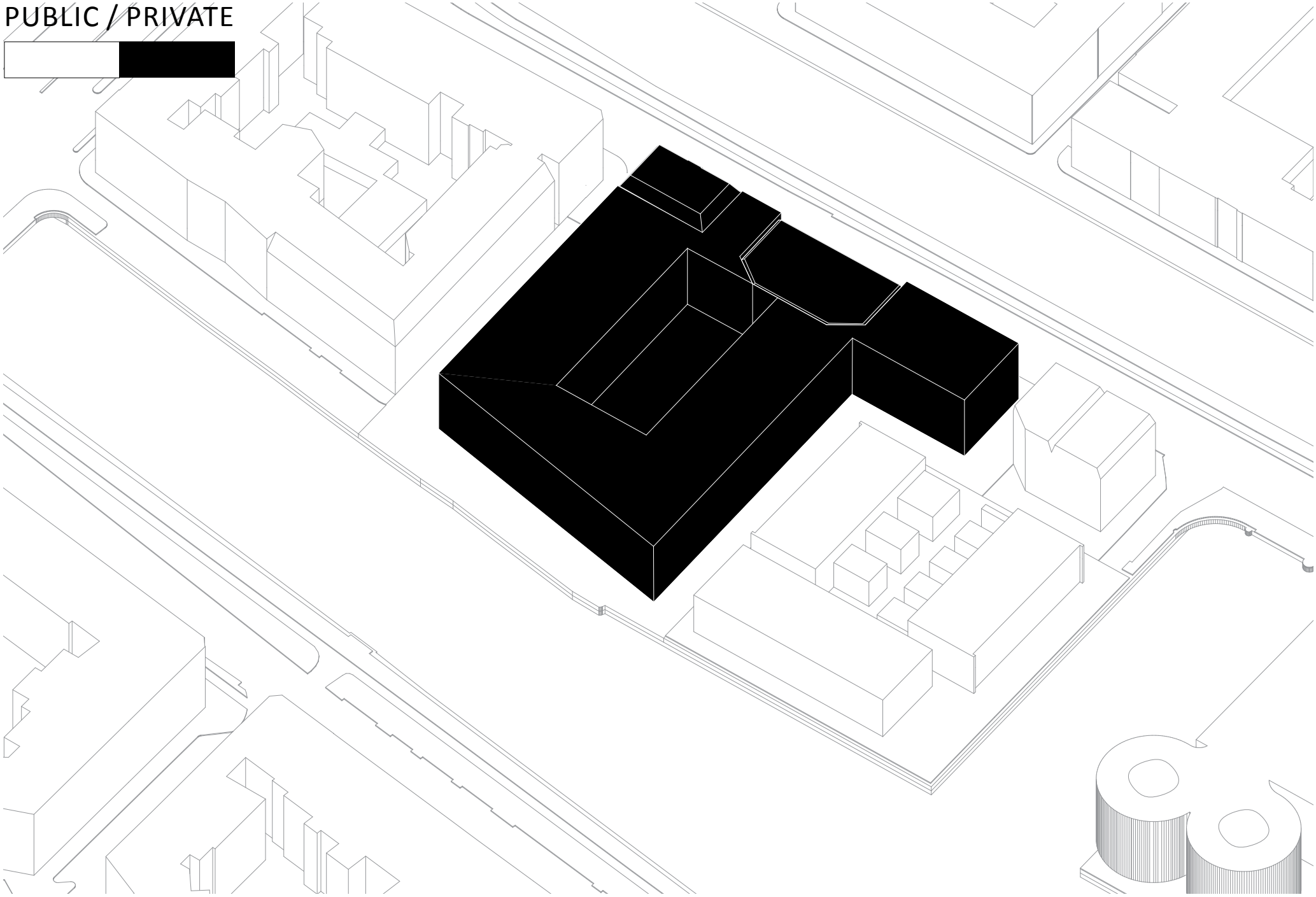
SITE



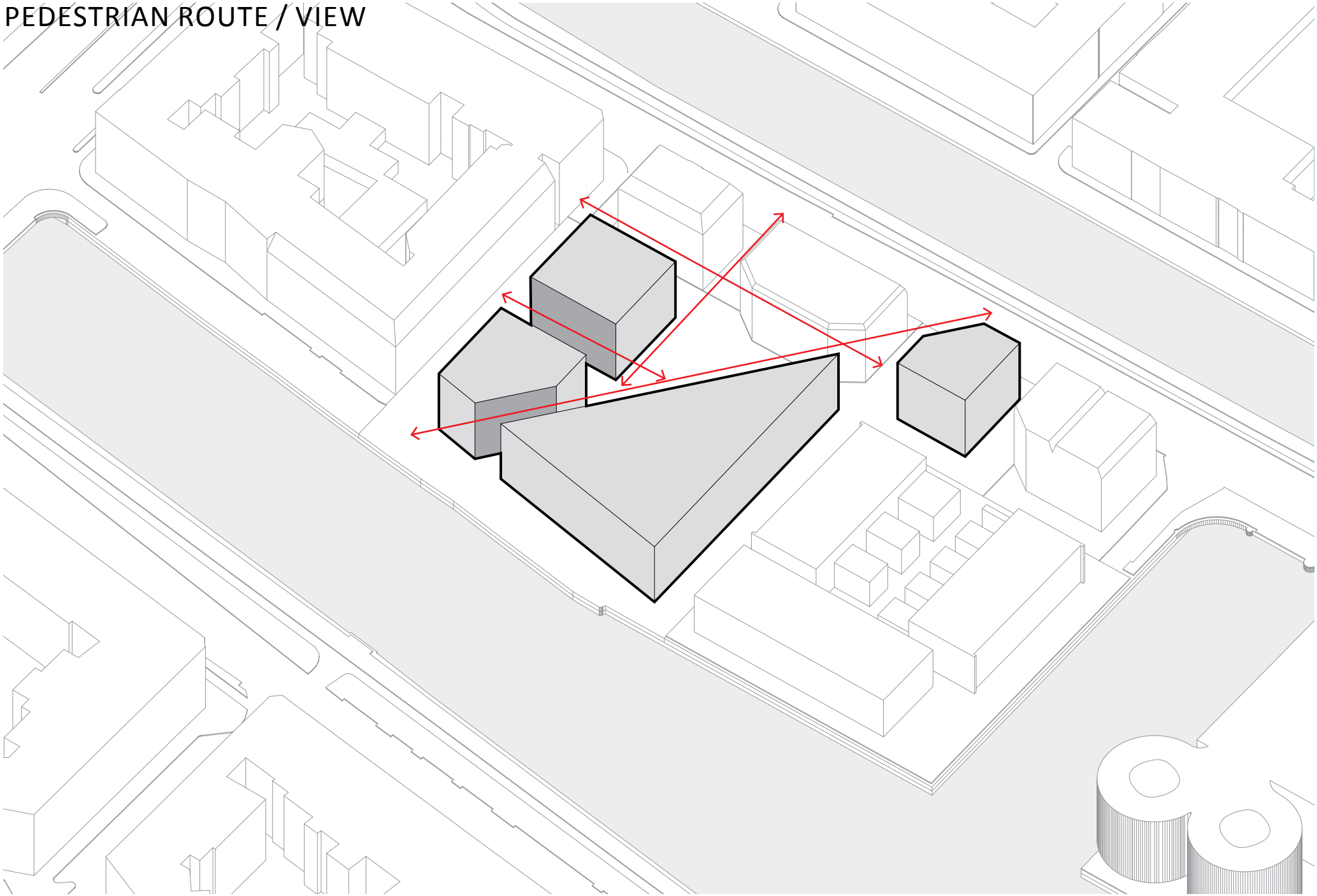
COMMUNITY



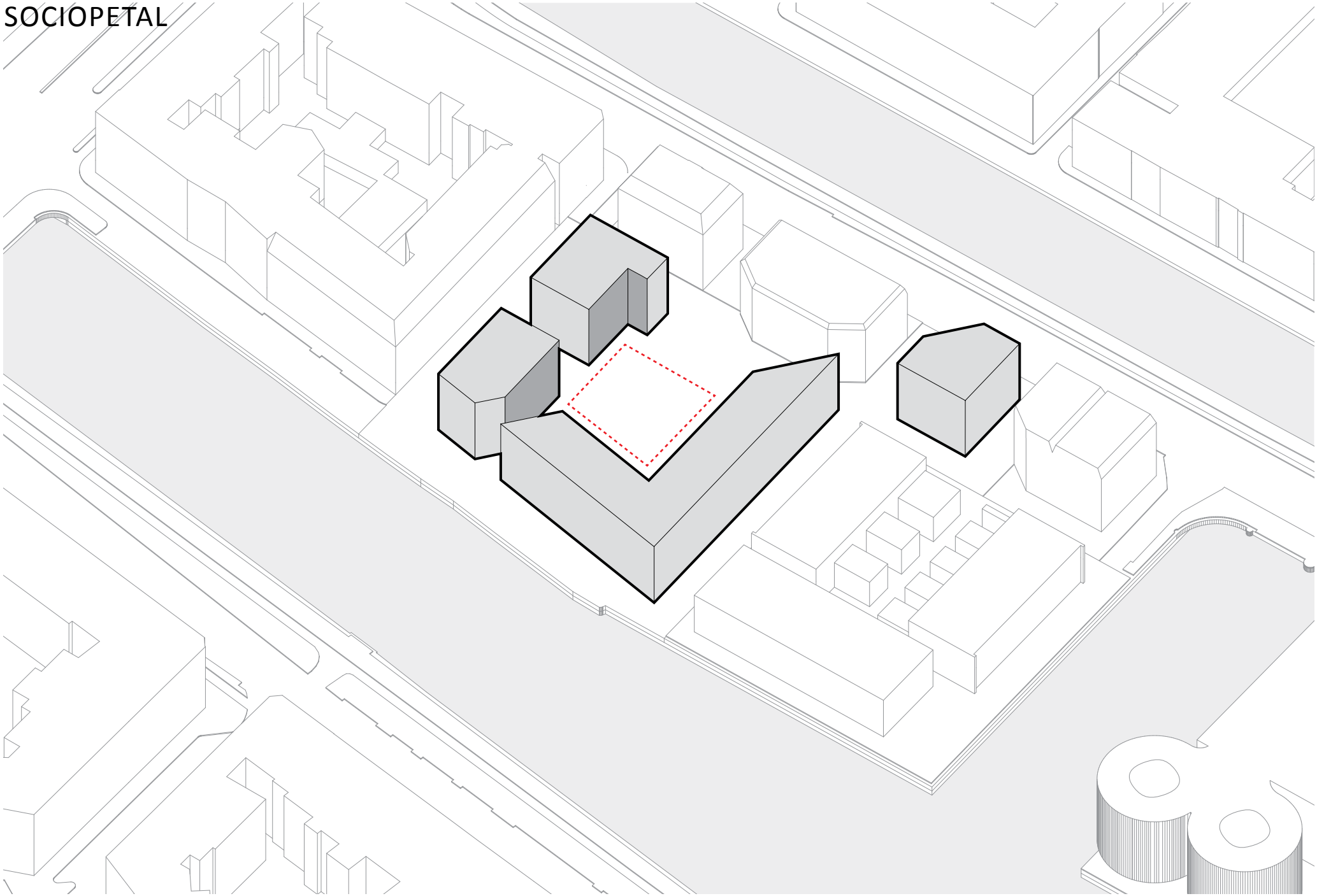
PUBLIC / PRIVATE



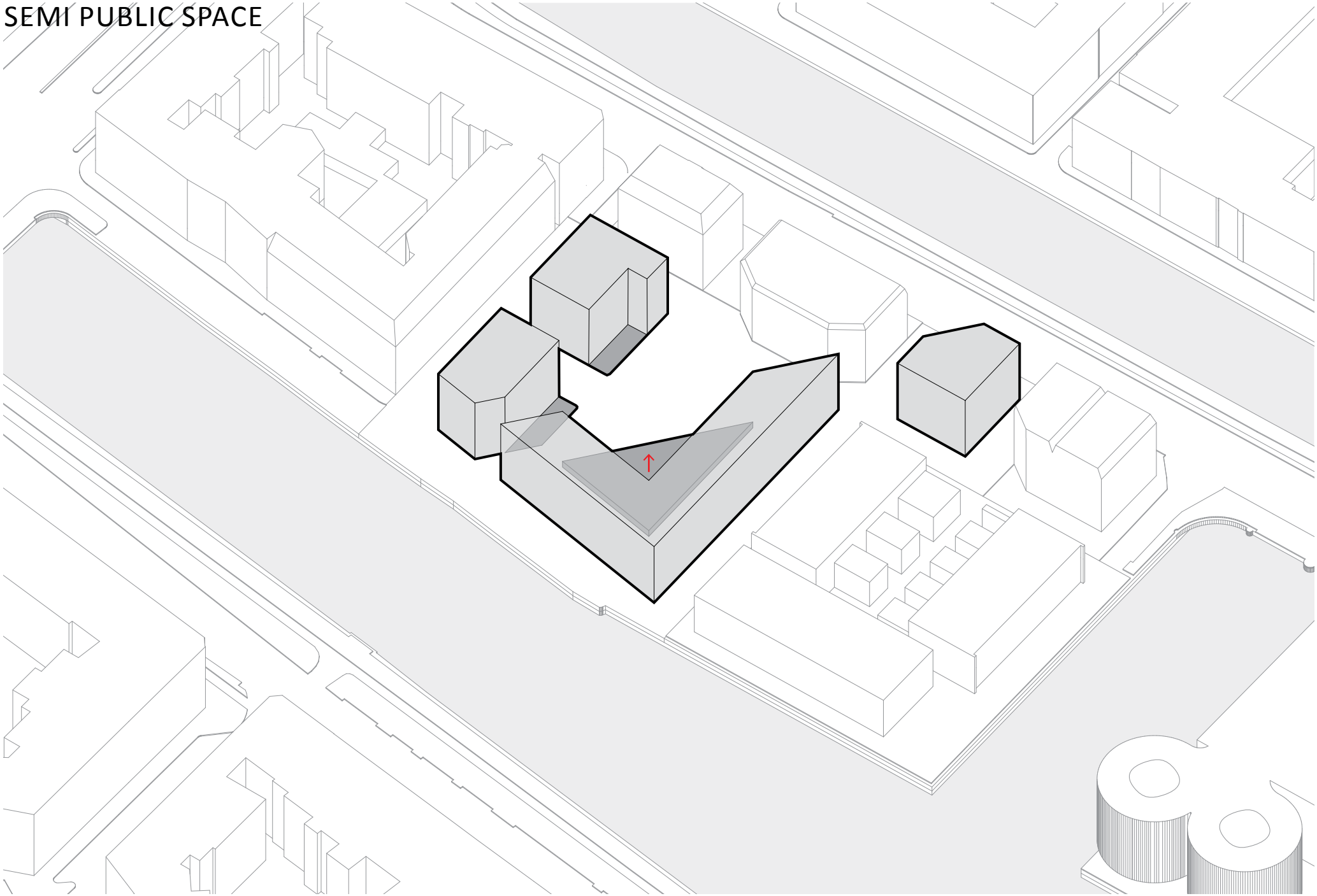
PEDESTRIAN ROUTE / VIEW



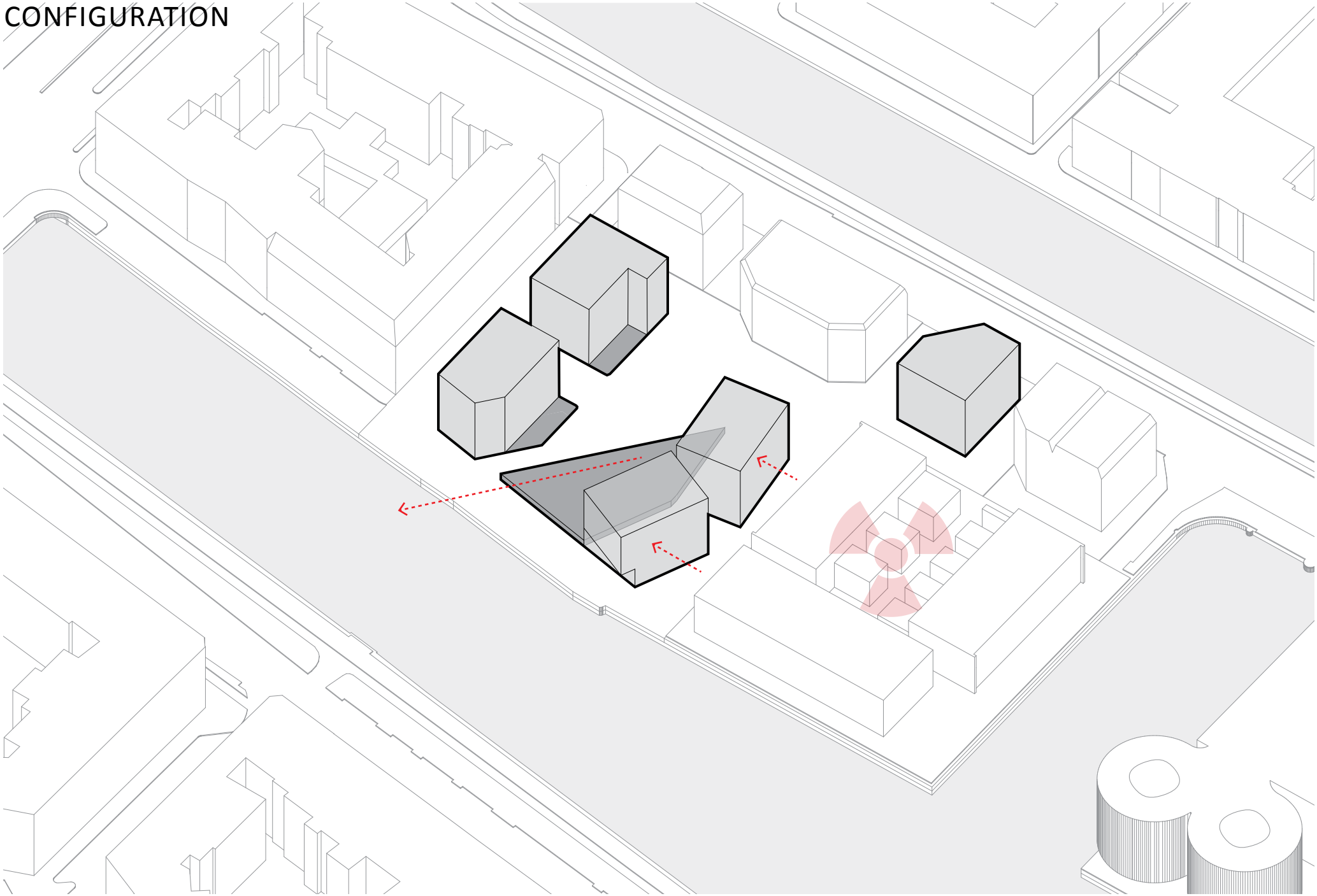
SOCIOPETAL



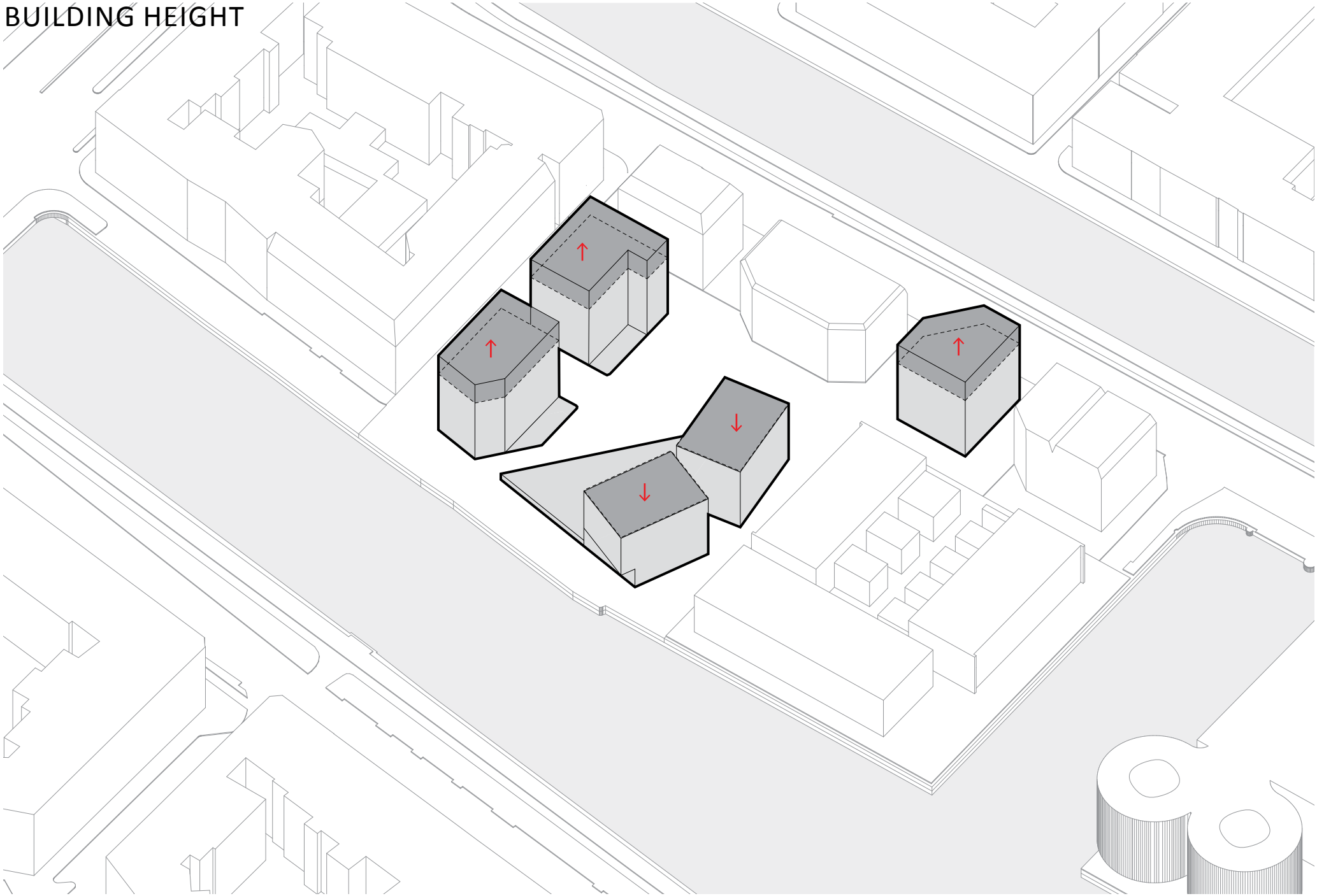
SEMI PUBLIC SPACE



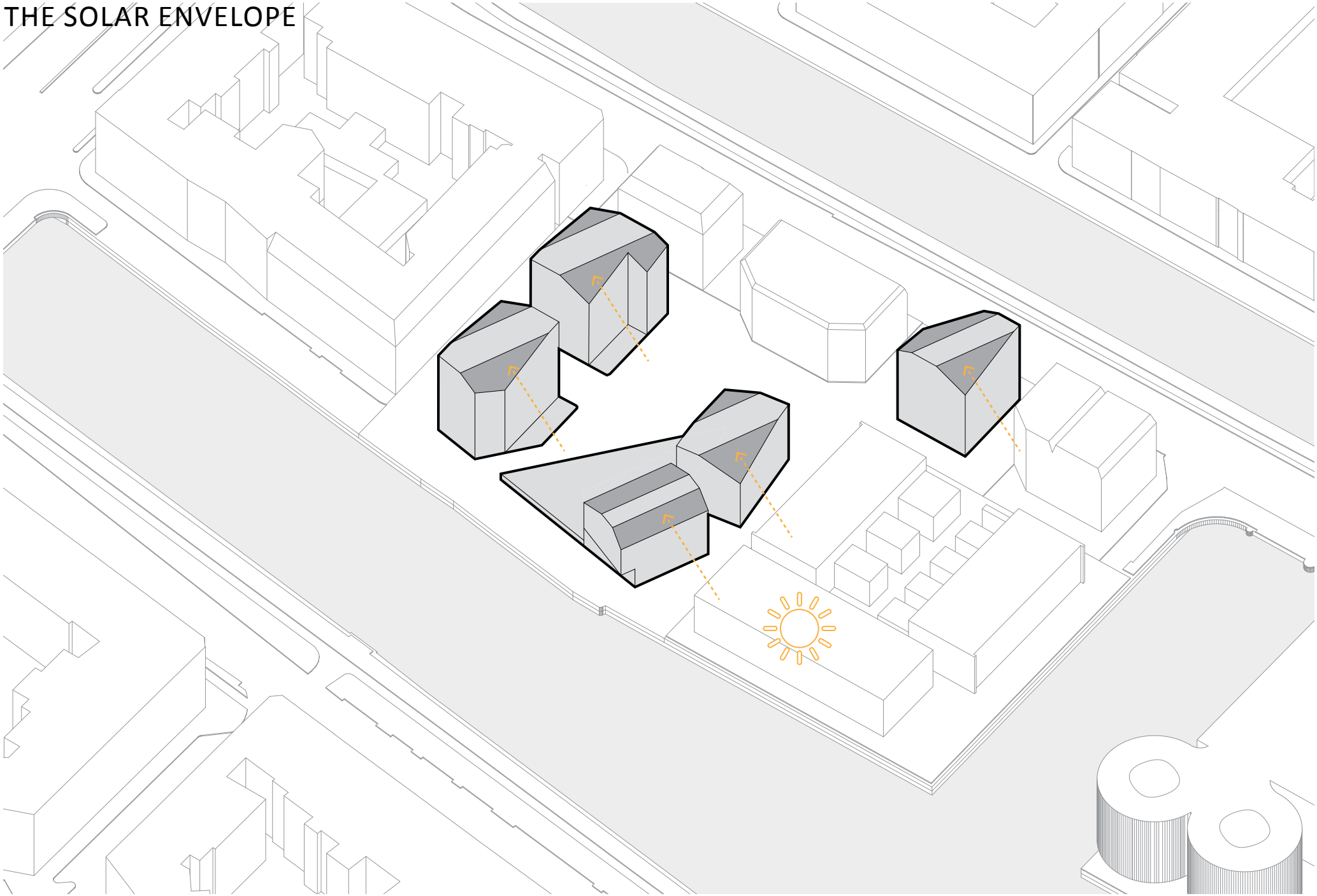
CONFIGURATION



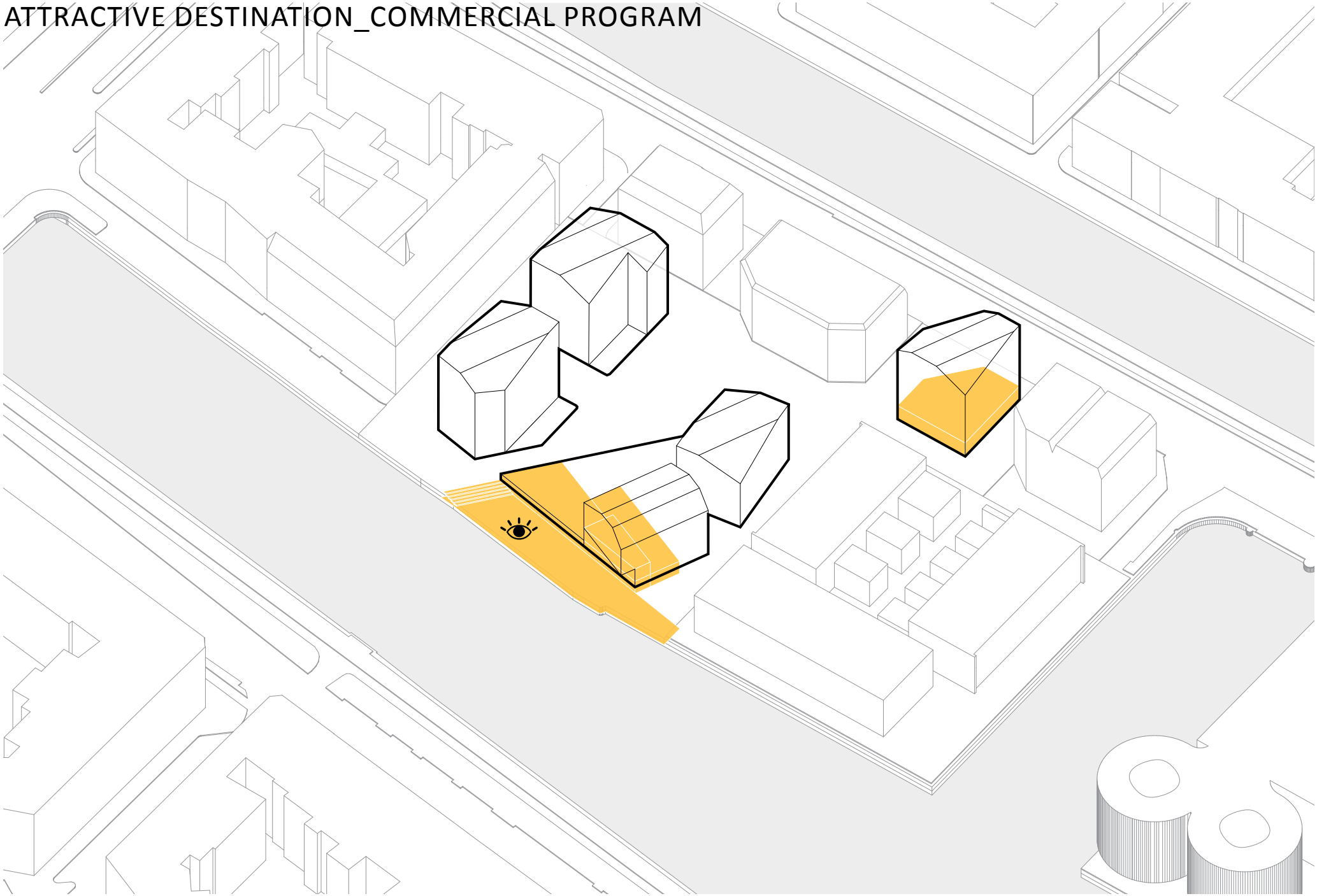
BUILDING HEIGHT



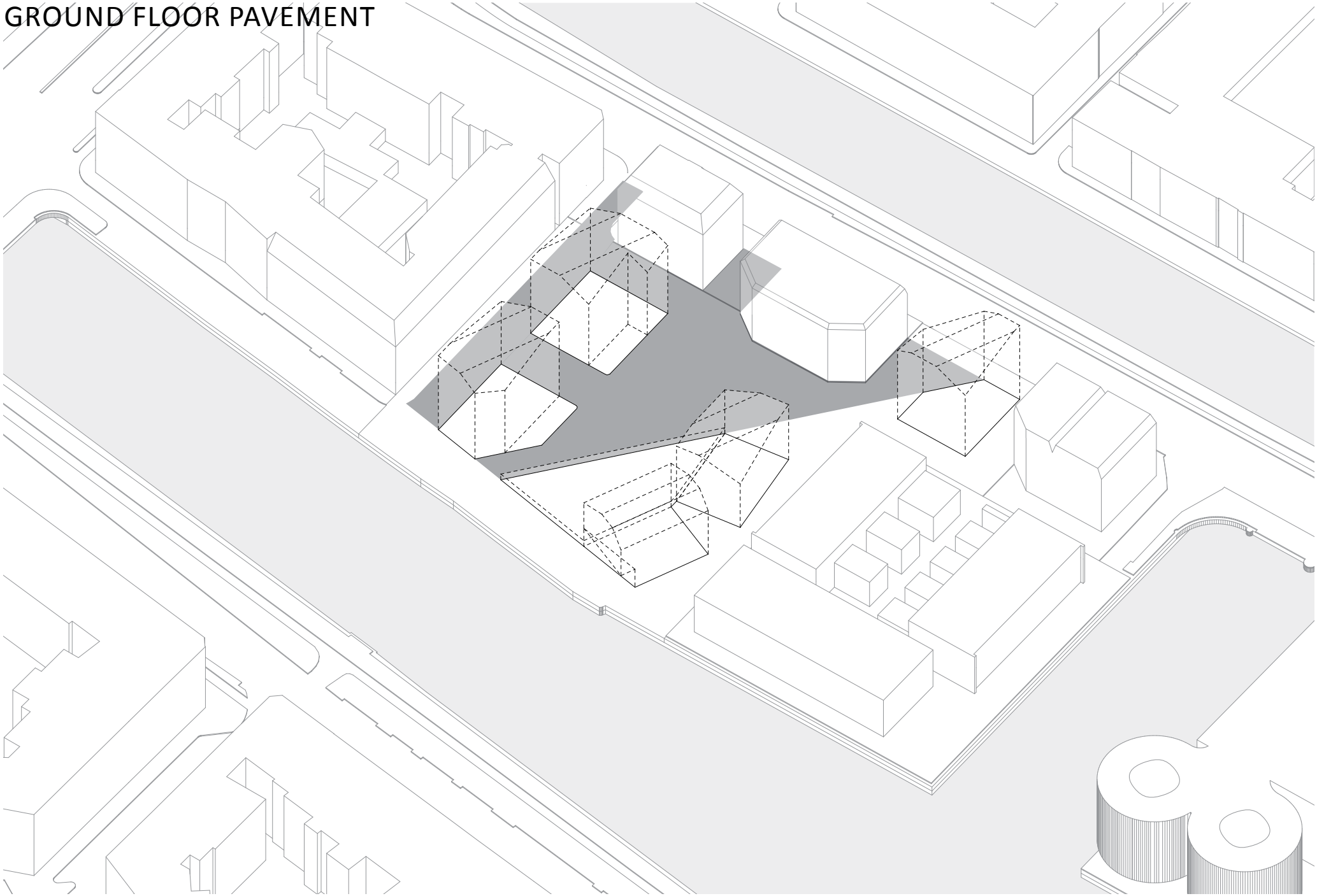
THE SOLAR ENVELOPE



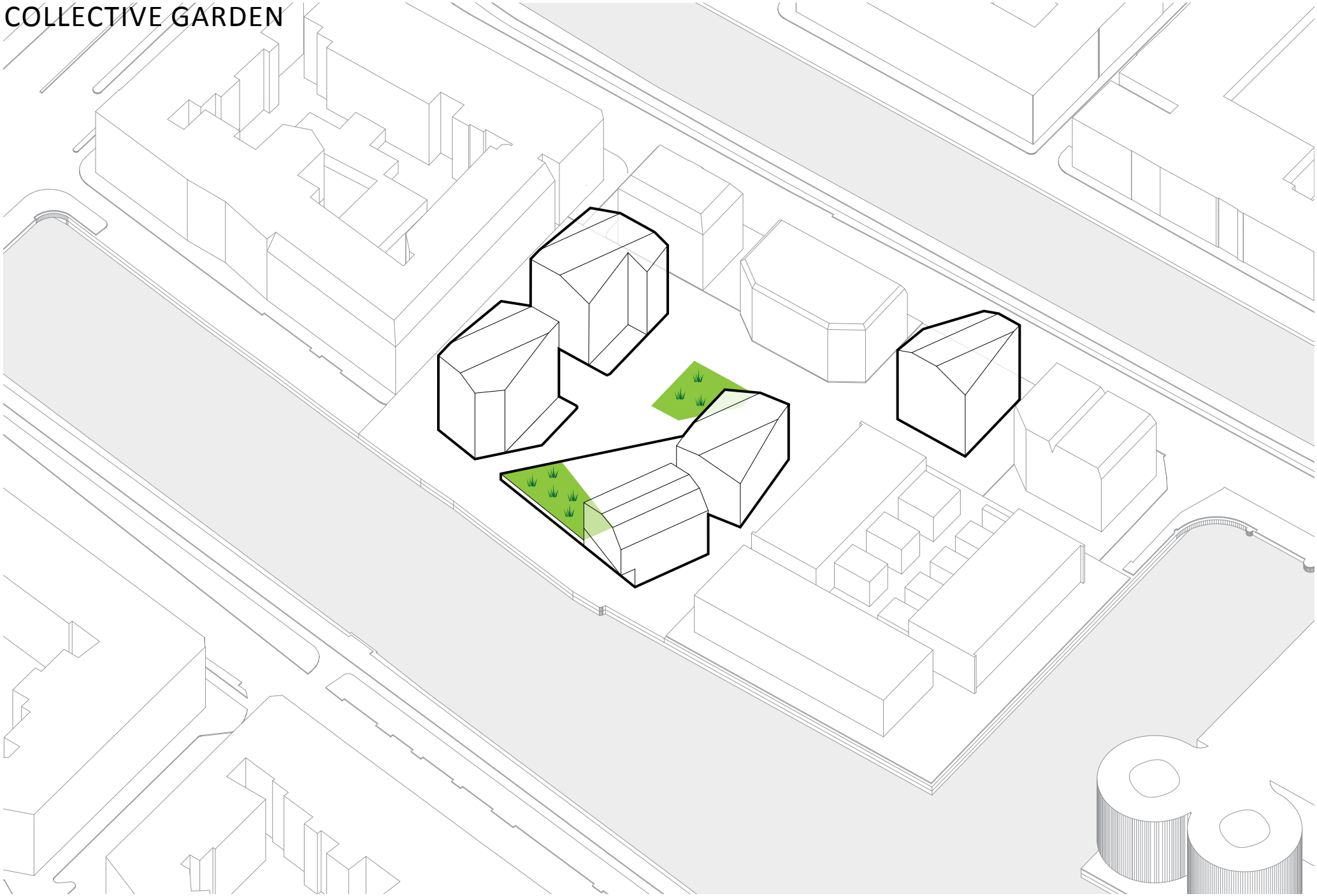
ATTRACTIVE DESTINATION_COMMERCIAL PROGRAM



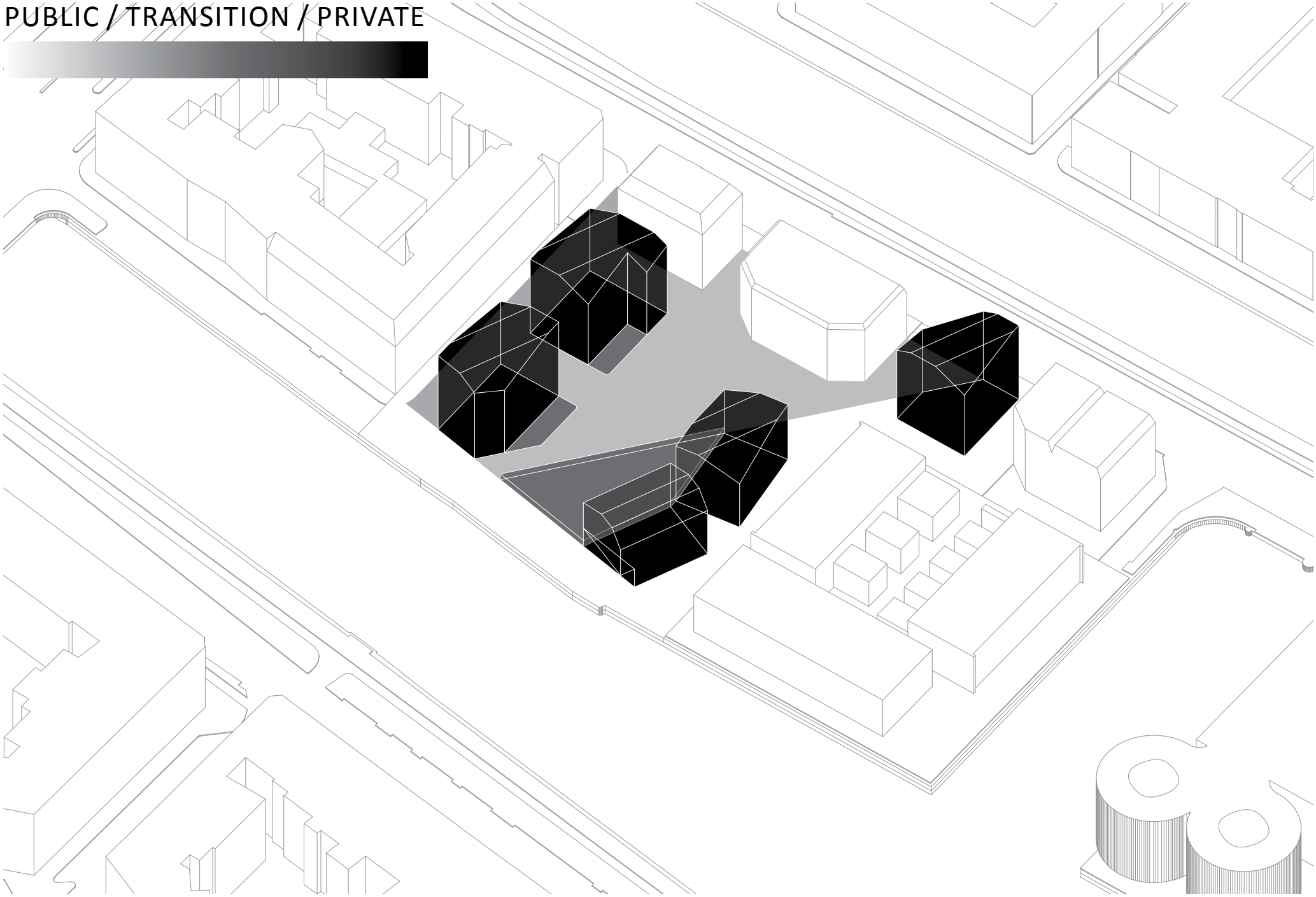
GROUND FLOOR PAVEMENT



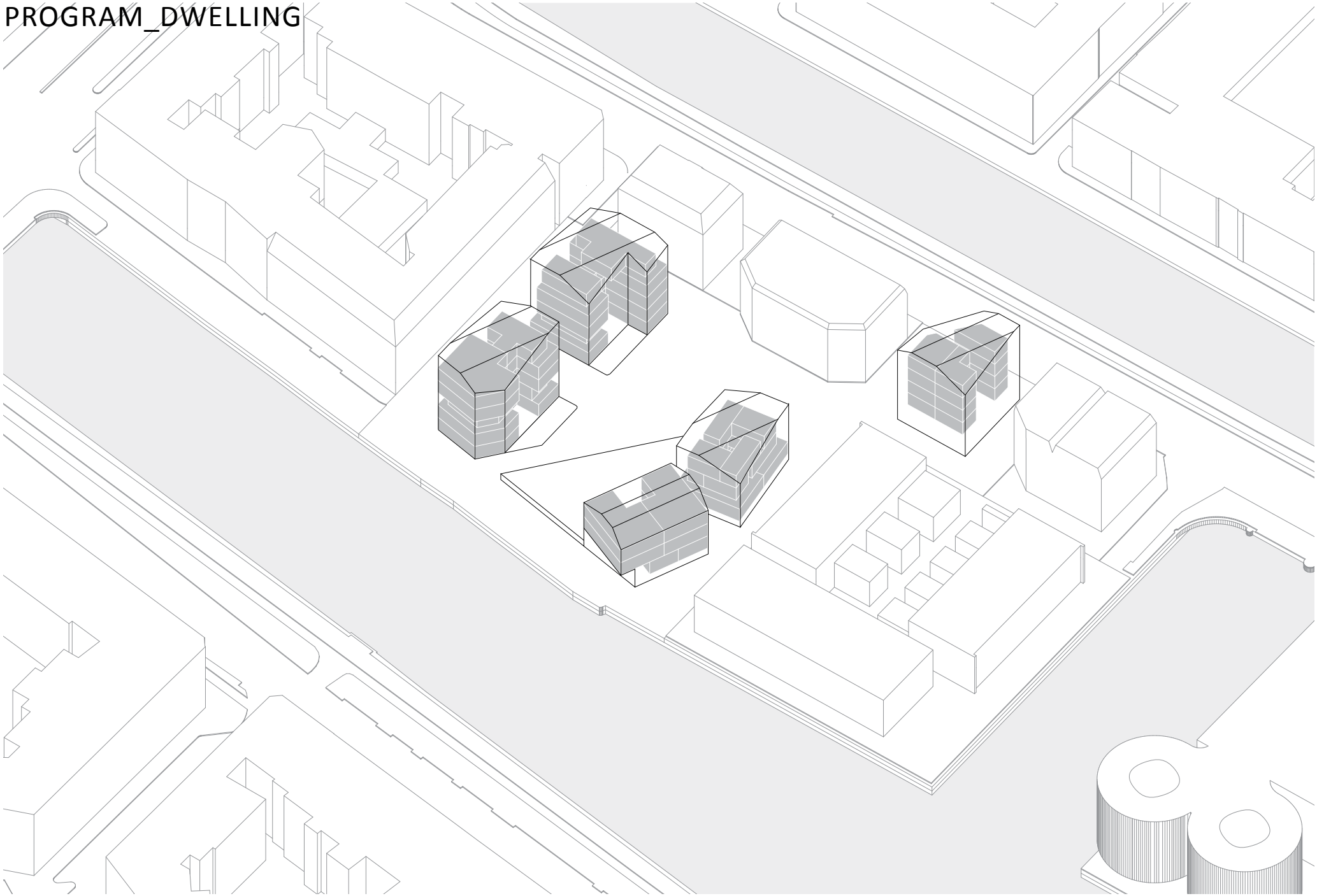
COLLECTIVE GARDEN



PUBLIC / TRANSITION / PRIVATE

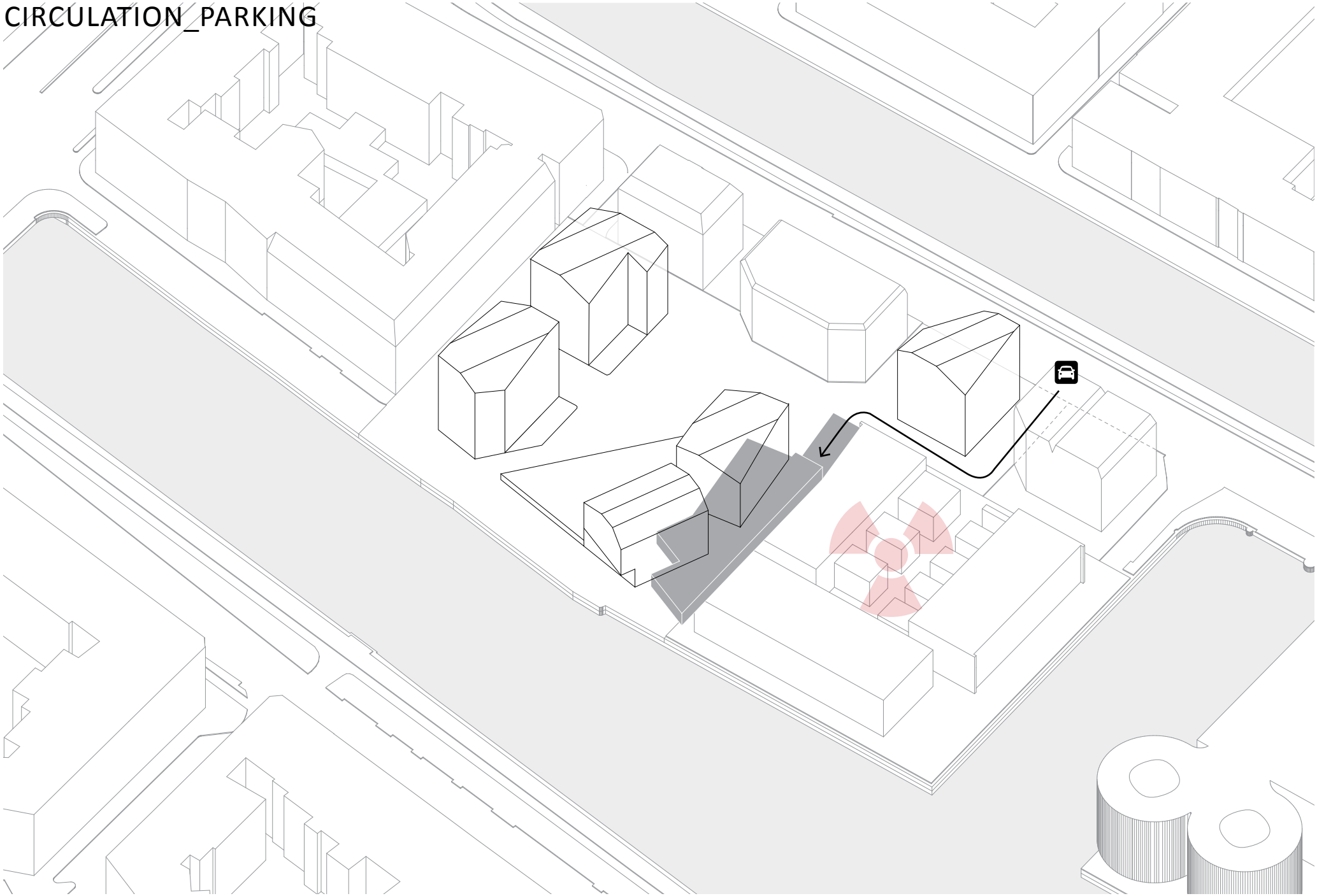


PROGRAM_DWELLING

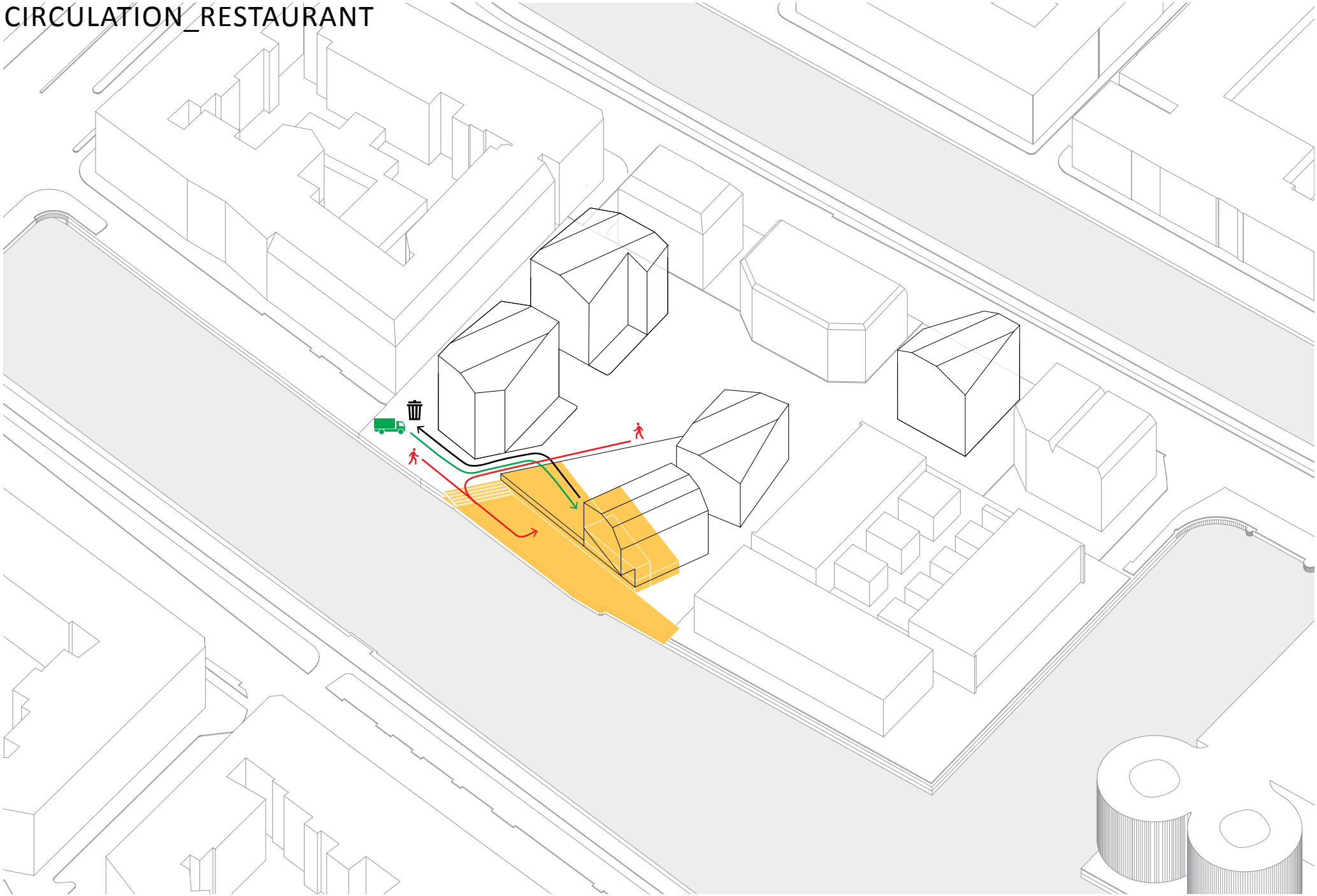


CIRCULATION SYSTEM

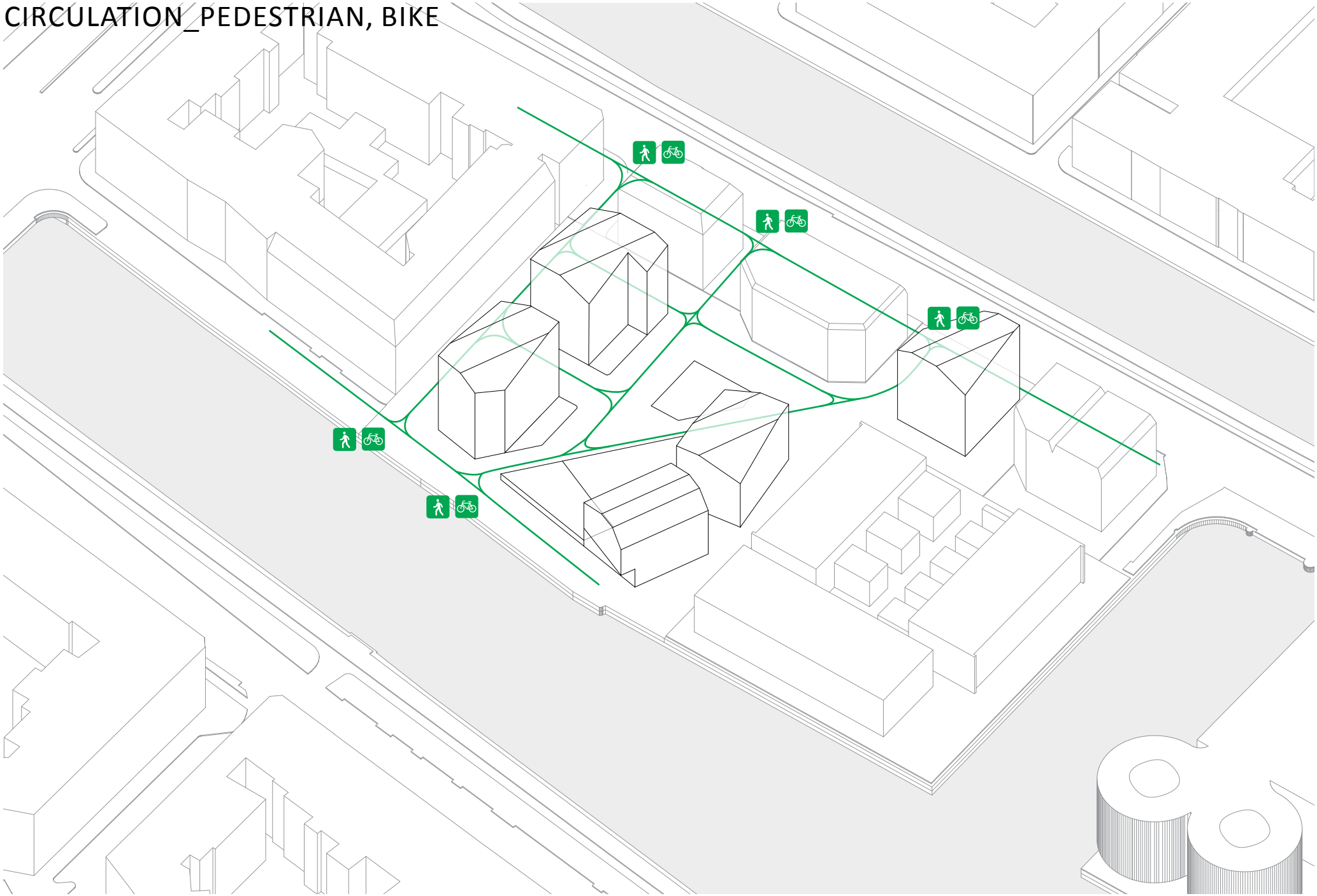
CIRCULATION_PARKING



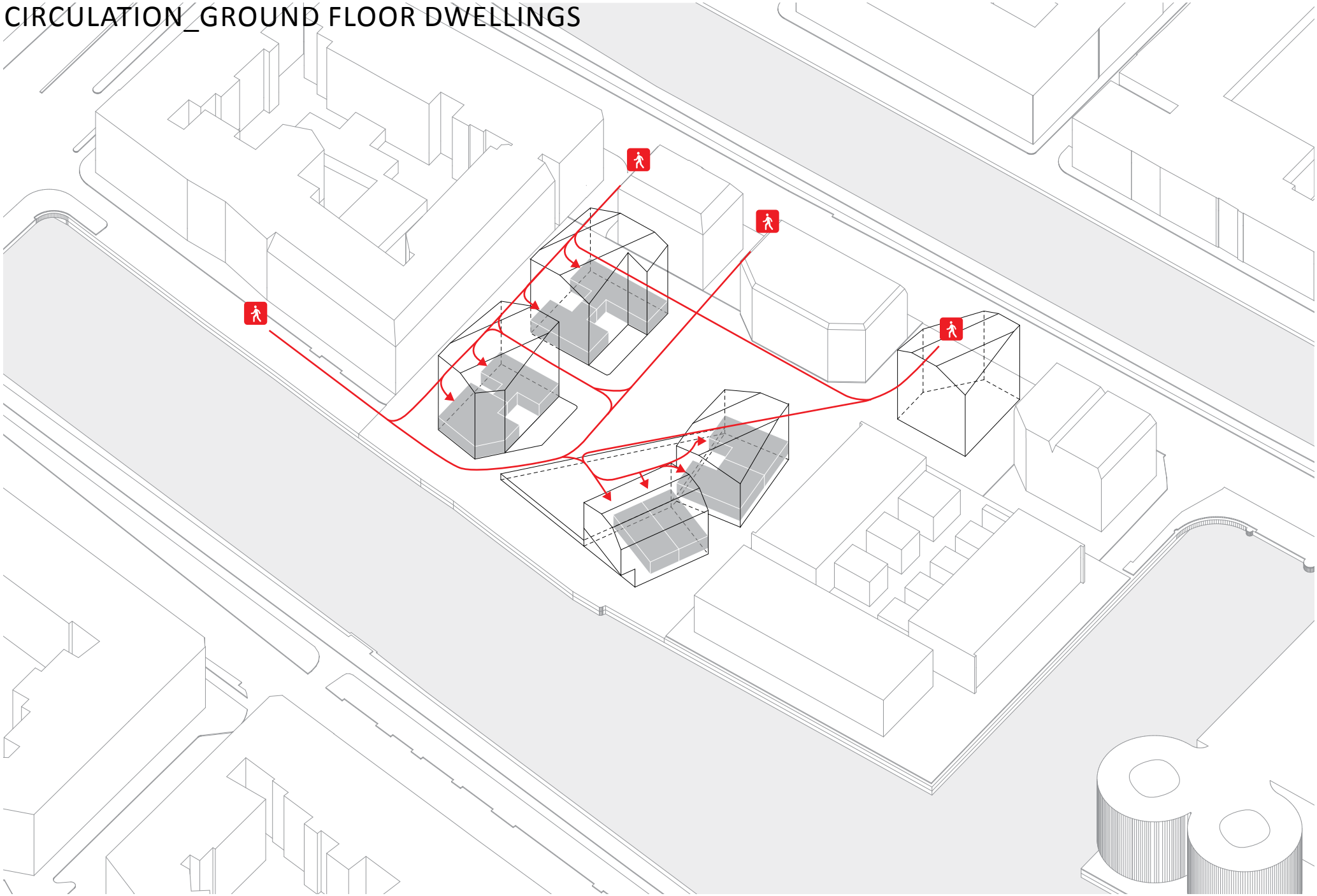
CIRCULATION_RESTAURANT



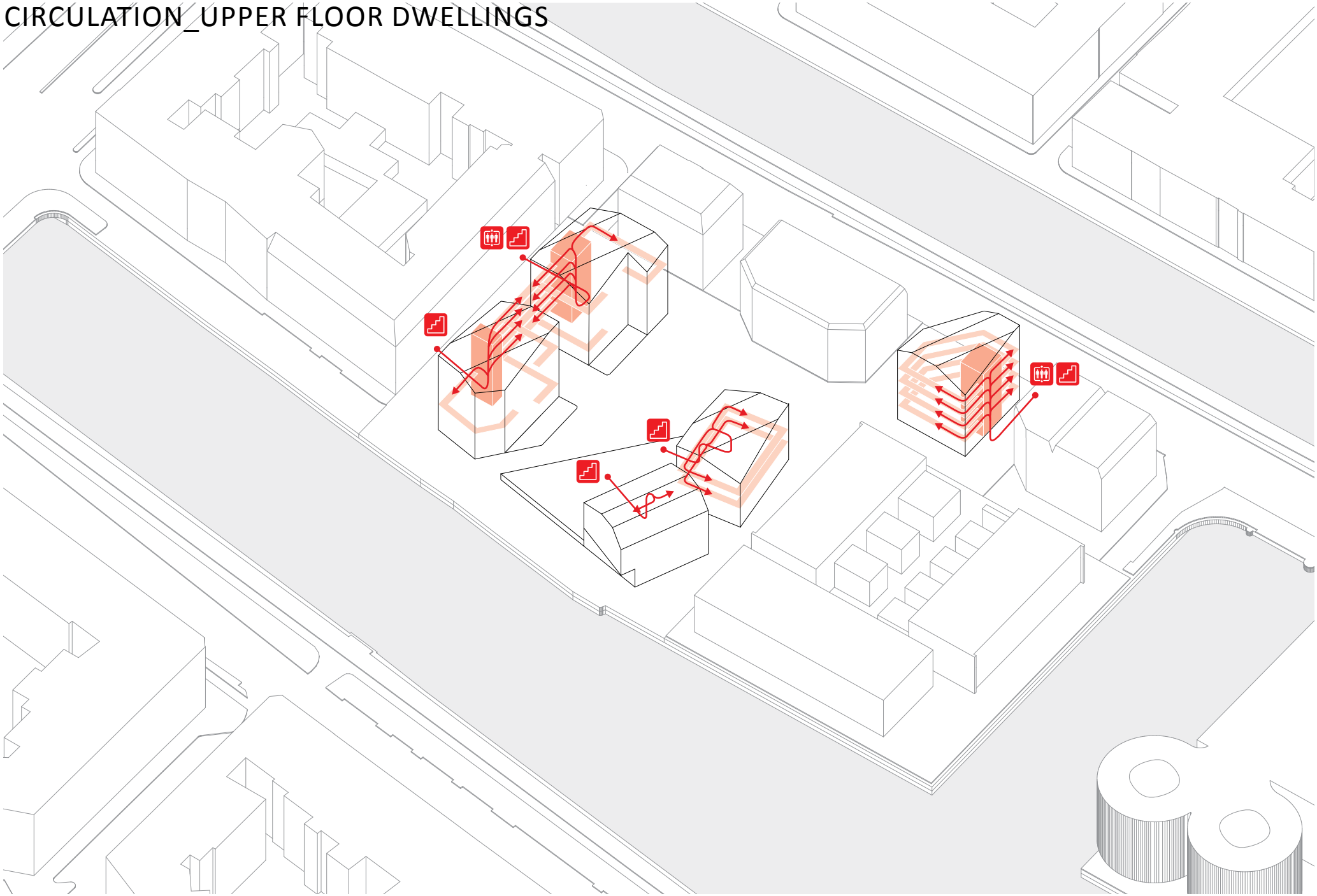
CIRCULATION_PEDESTRIAN, BIKE



CIRCULATION_GROUND FLOOR DWELLINGS



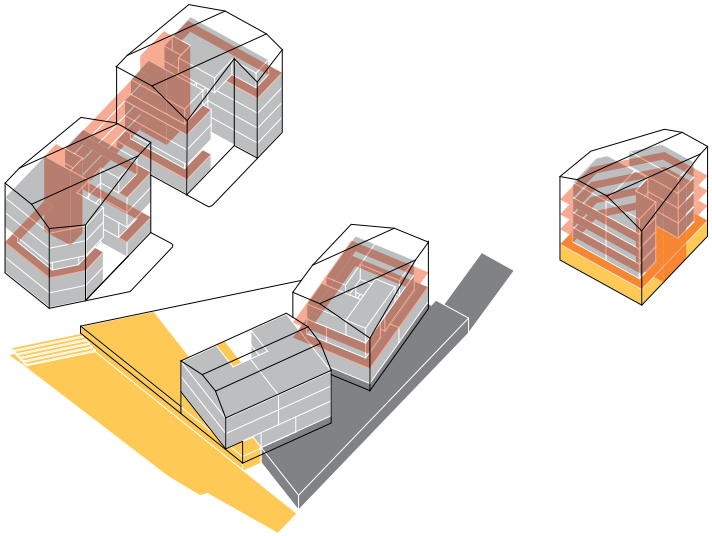
CIRCULATION_UPPER FLOOR DWELLINGS

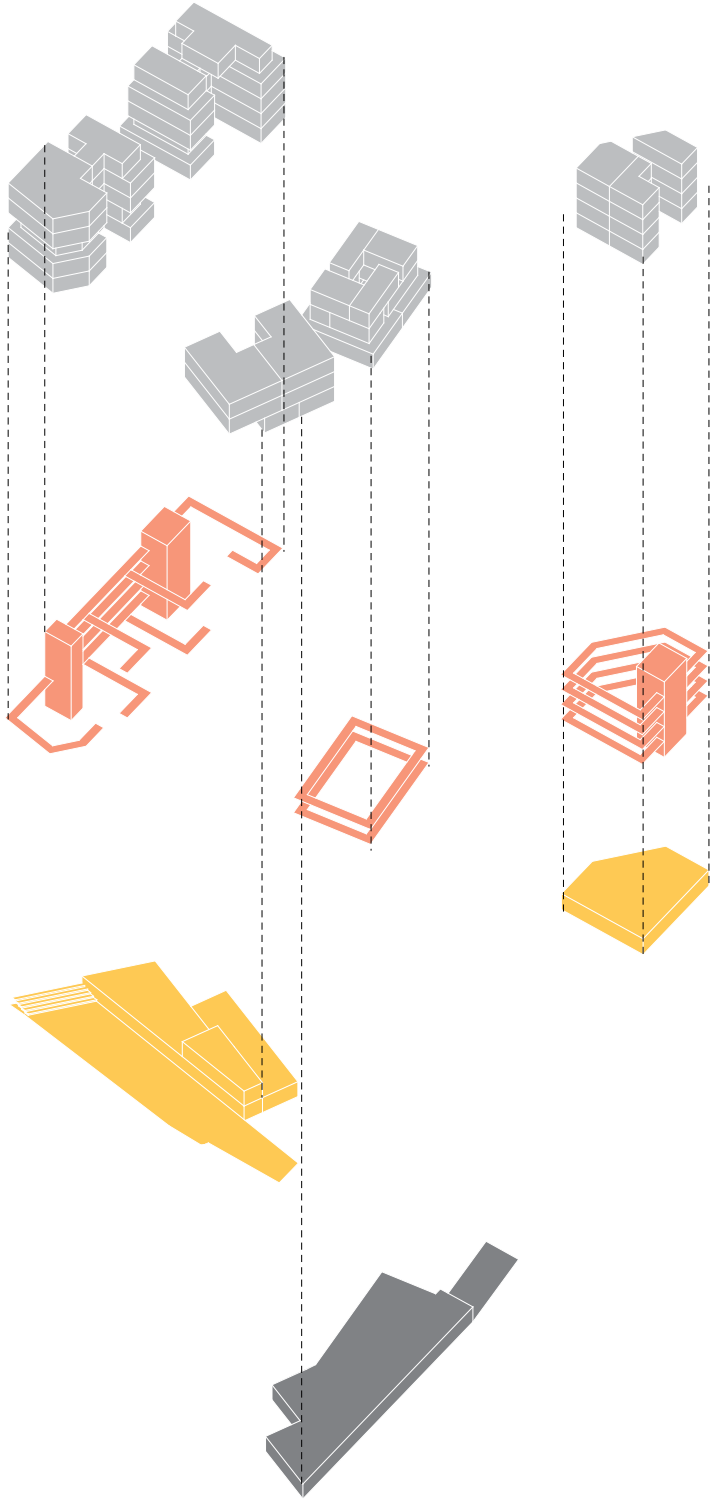


URBAN

RESEARCH | PUBLIC | **PUBLIC COLLECTIVE** | PRIVATE COLLECTIVE | PRIVATE | BUILDING TECHNOLOGY

BUILDING PROGRAM





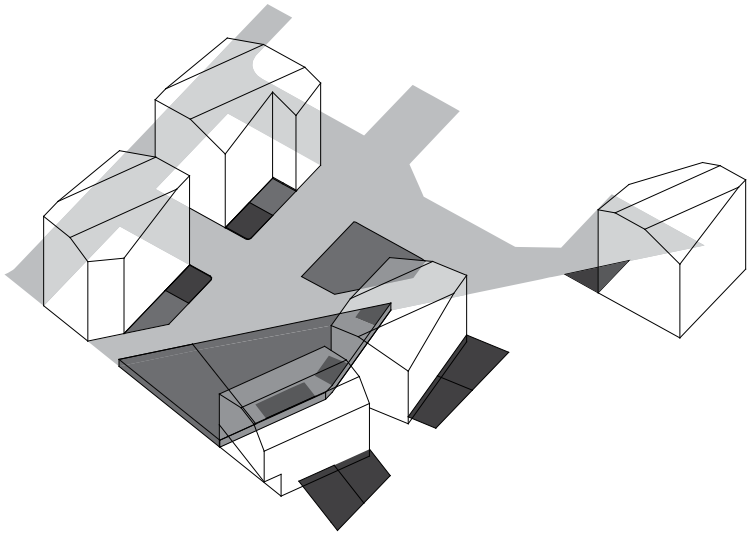
Dwellings

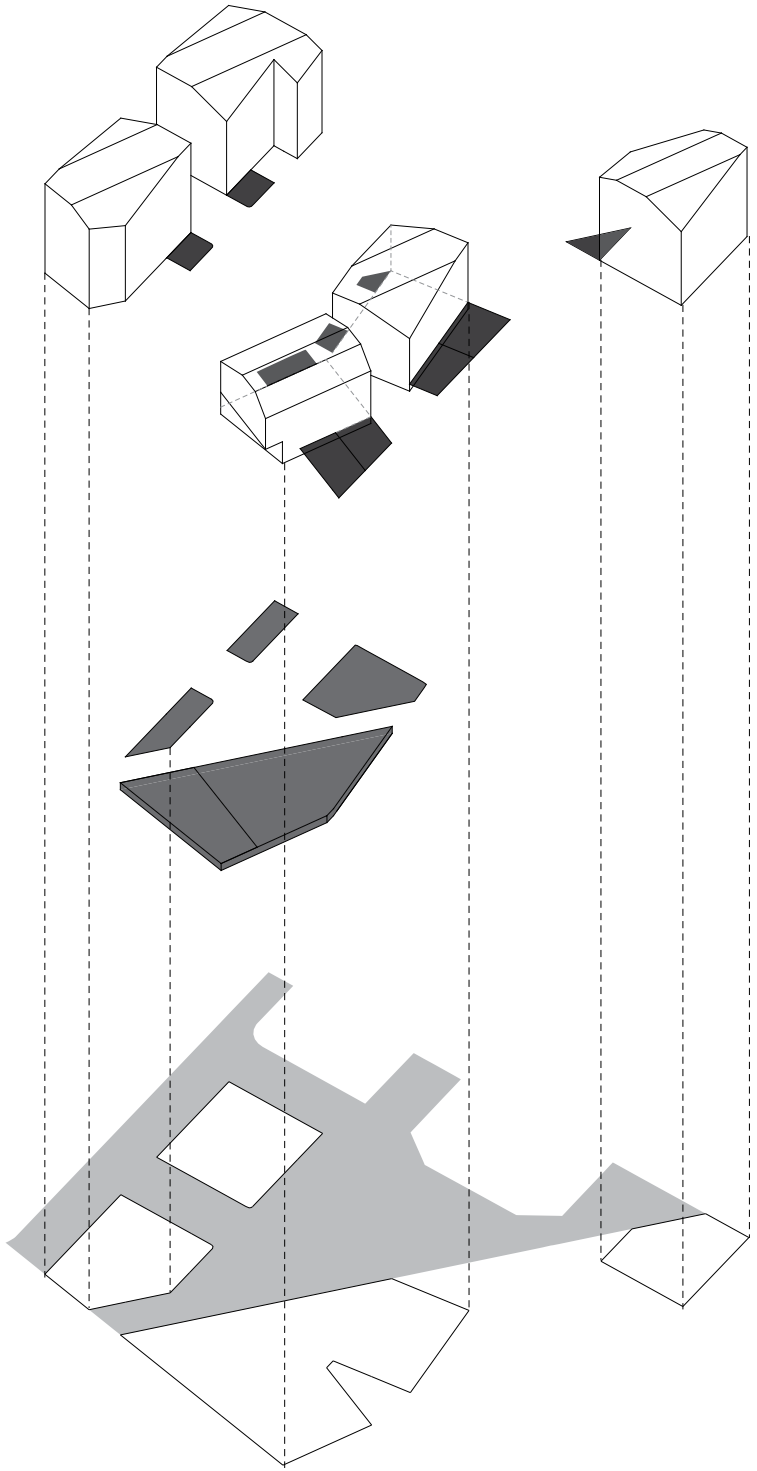
Cores/
Circulation

Public program

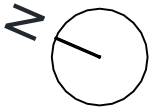
Car Parking

GROUND FLOOR TRANSITION

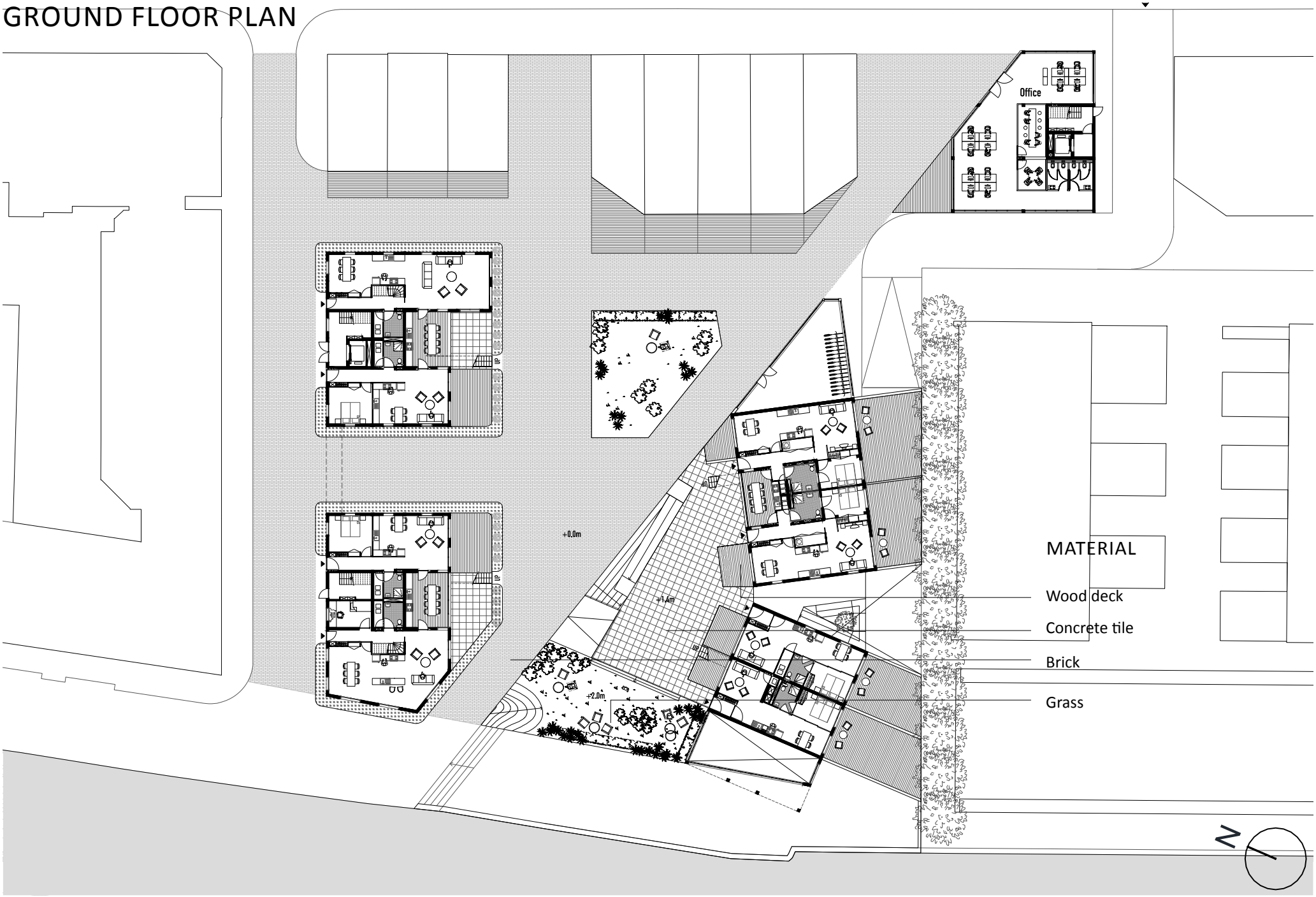




BASEMENT FLOOR PLAN

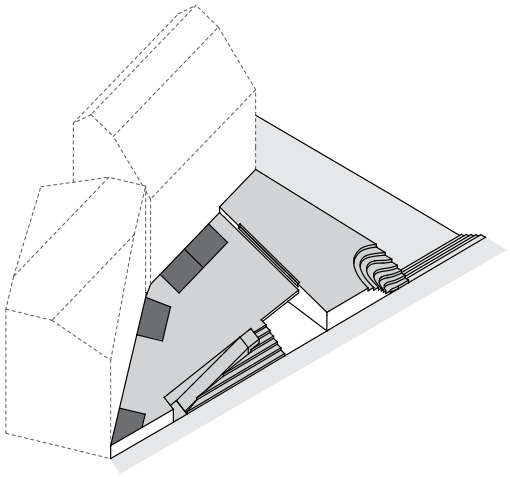


GROUND FLOOR PLAN

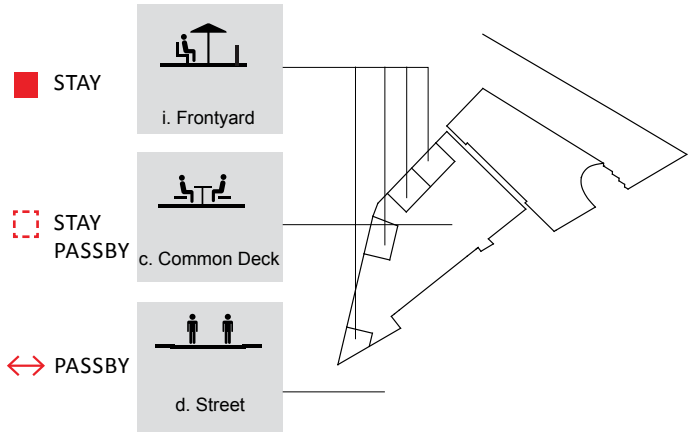


Elements, Composition, Activity, Contact

THEME RESEARCH

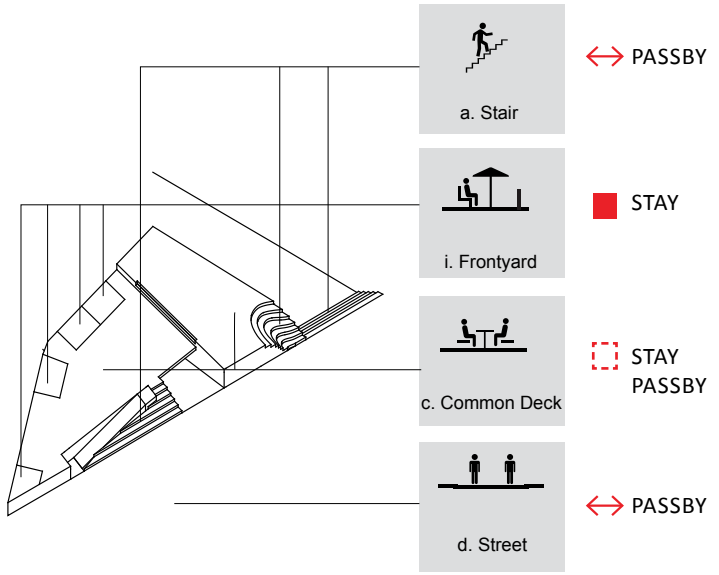


Transitional space
in the center



HORIZONTAL
composition of elements

+



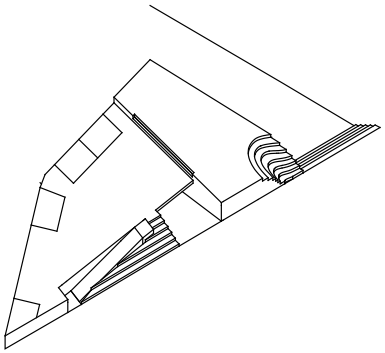
VERTICAL
composition of elements

*Activity

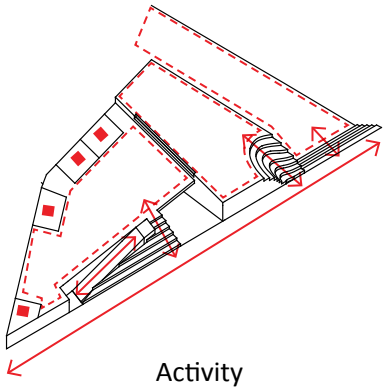
- Stay
- Stay / Pass by
- Pass by

*Contact

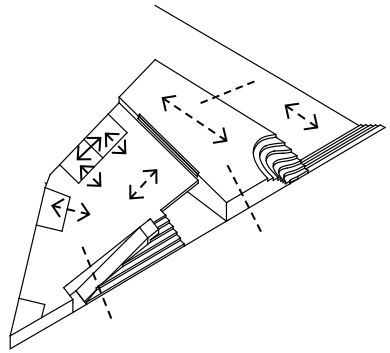
- Close contact
- Chance contact
- Passive contact



Composition



Activity



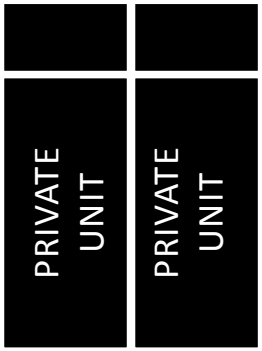
Contact

DWELLING

RESEARCH | PUBLIC | PUBLIC COLLECTIVE | **PRIVATE COLLECTIVE** | PRIVATE | BUILDING TECHNOLOGY

DWELLING CONCEPT_TRANSITION

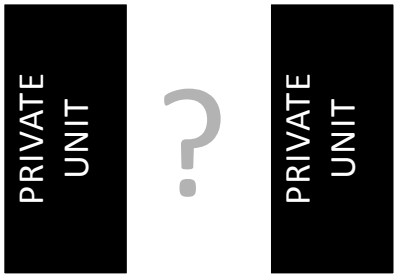
AMSTERDAM DWELLING TYPOLOGY



PUBLIC STREET

+ TRANSITION

Semipublic,
Semiprivate



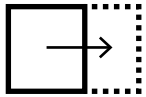
HOUSING REQUIREMENTS

Single

45 m2 - 80 m2

Collective space

Bike parking



Flexible space

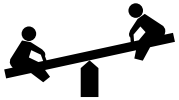
Cheap

Family

100 m2 - 120 m2

Garden

Car parking



Play ground

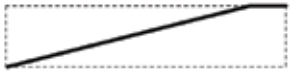
Safety zone

Elderly

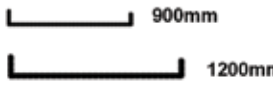
45 m2 - 80 m2

Ground floor dwelling for easy access

Network



Disable ramp H:L = 1:15



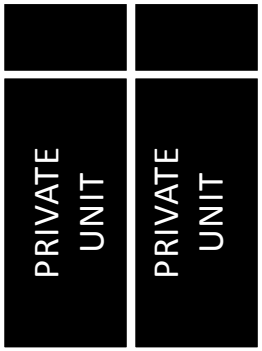
Ideal transitional space width

Lift Access

Hand rail requirements 900mm - 1000m m

DWELLING CONCEPT_TRANSITION

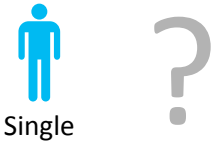
AMSTERDAM DWELLING TYPOLOGY

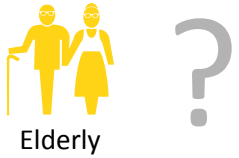


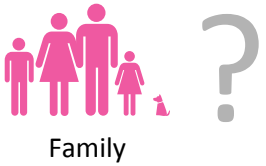
PUBLIC STREET

+ TRANSITION

Semipublic,
Semiprivate



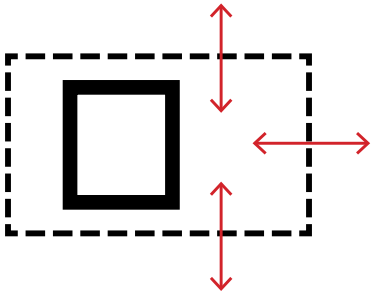




DWELLING CONCEPT_TRANSITION

Single

Spatial
Organization



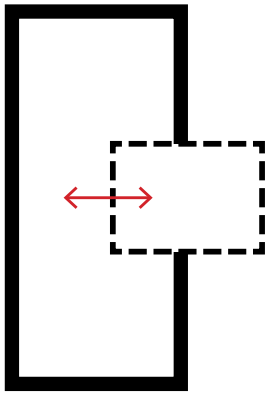
Privacy

Private
Semi Private
Semi Public

DWELLING CONCEPT_TRANSITION

Elderly

Spatial
Organization



Privacy

Private

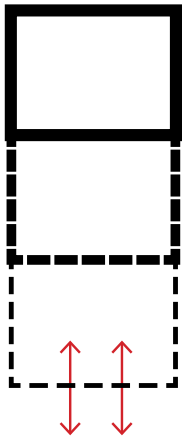
Semi Private

Semi Public

DWELLING CONCEPT_TRANSITION

Family

Spatial
Organization



Privacy

Private

Semi Private

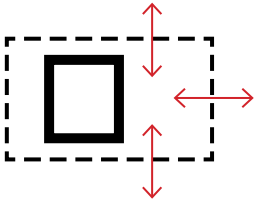
Semi Public

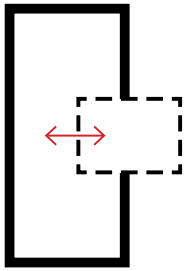
DWELLING CONCEPT_TRANSITION

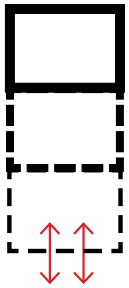
Single

Elderly

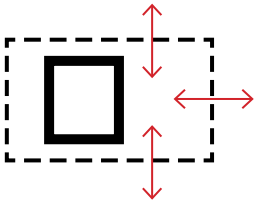
Family







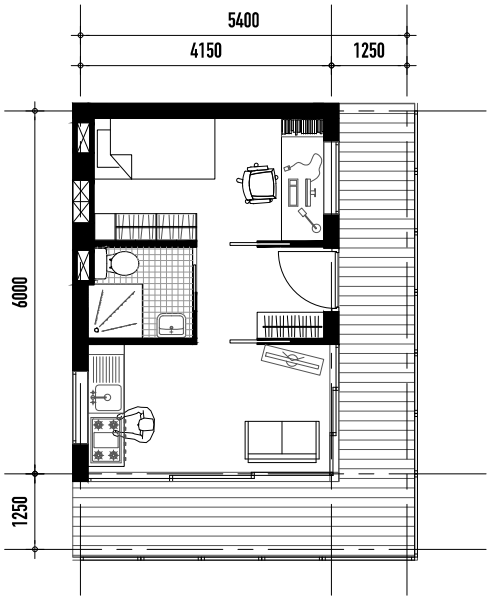
Single



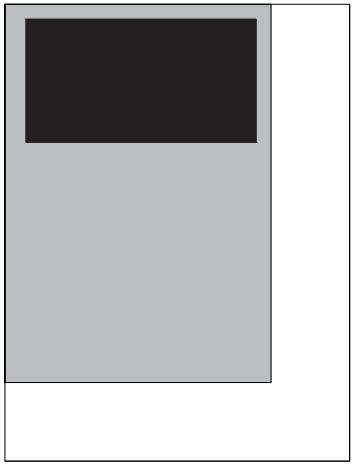
Elderly

Family

DWELLING TYPOLOGY_SINGLE

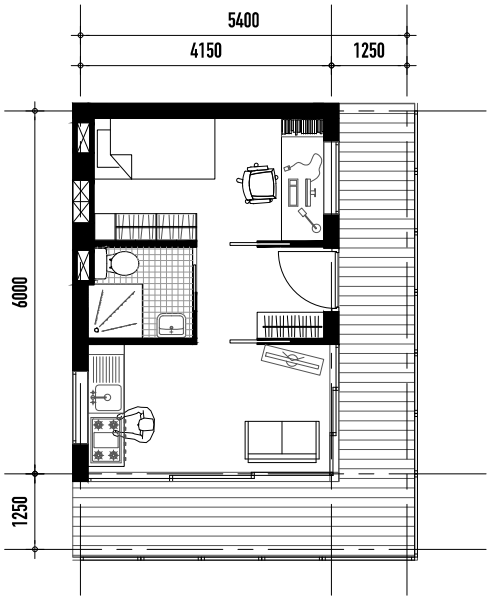


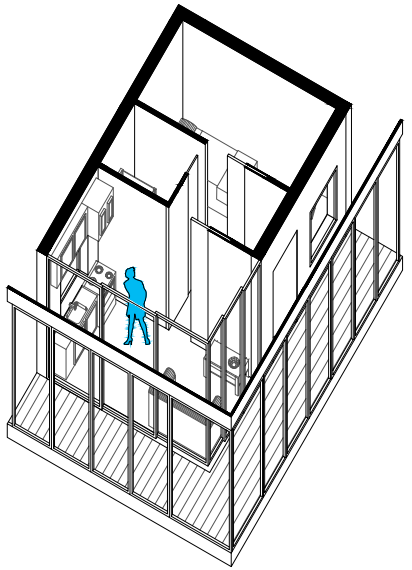
24.9 m2



Private Semi Private Semi Public

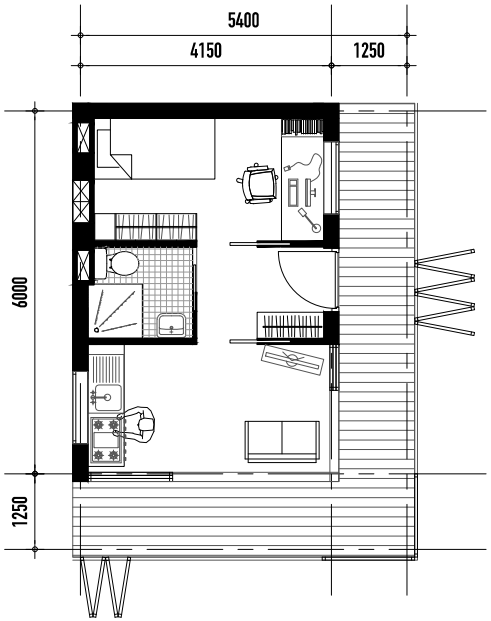
DWELLING TYPOLOGY_SINGLE_CLOSED

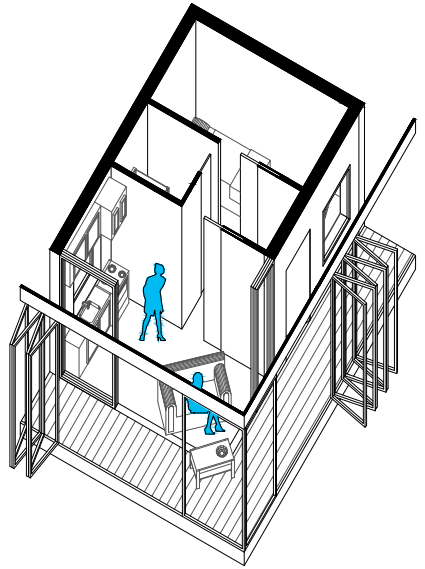




Closed

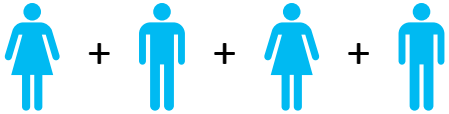
DWELLING TYPOLOGY_SINGLE_OPEN

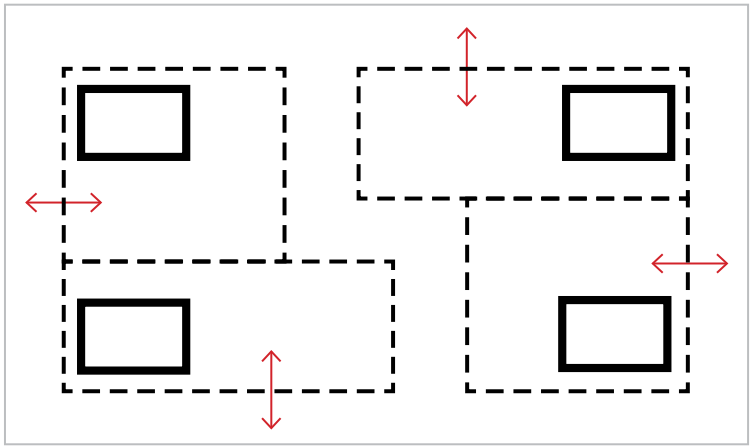




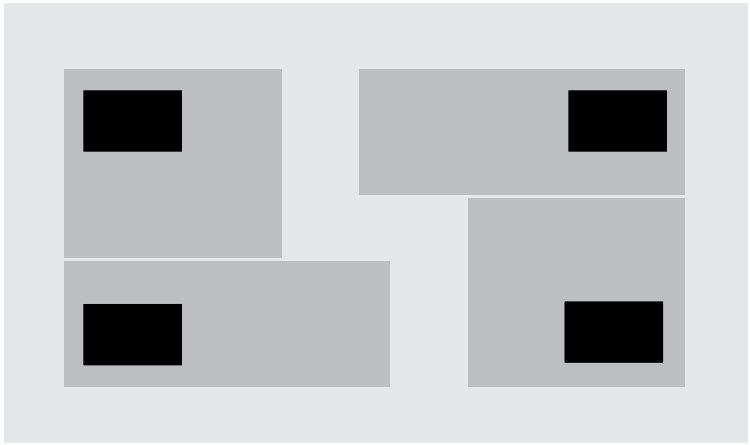
Open

SINGLE_COMMUNITY



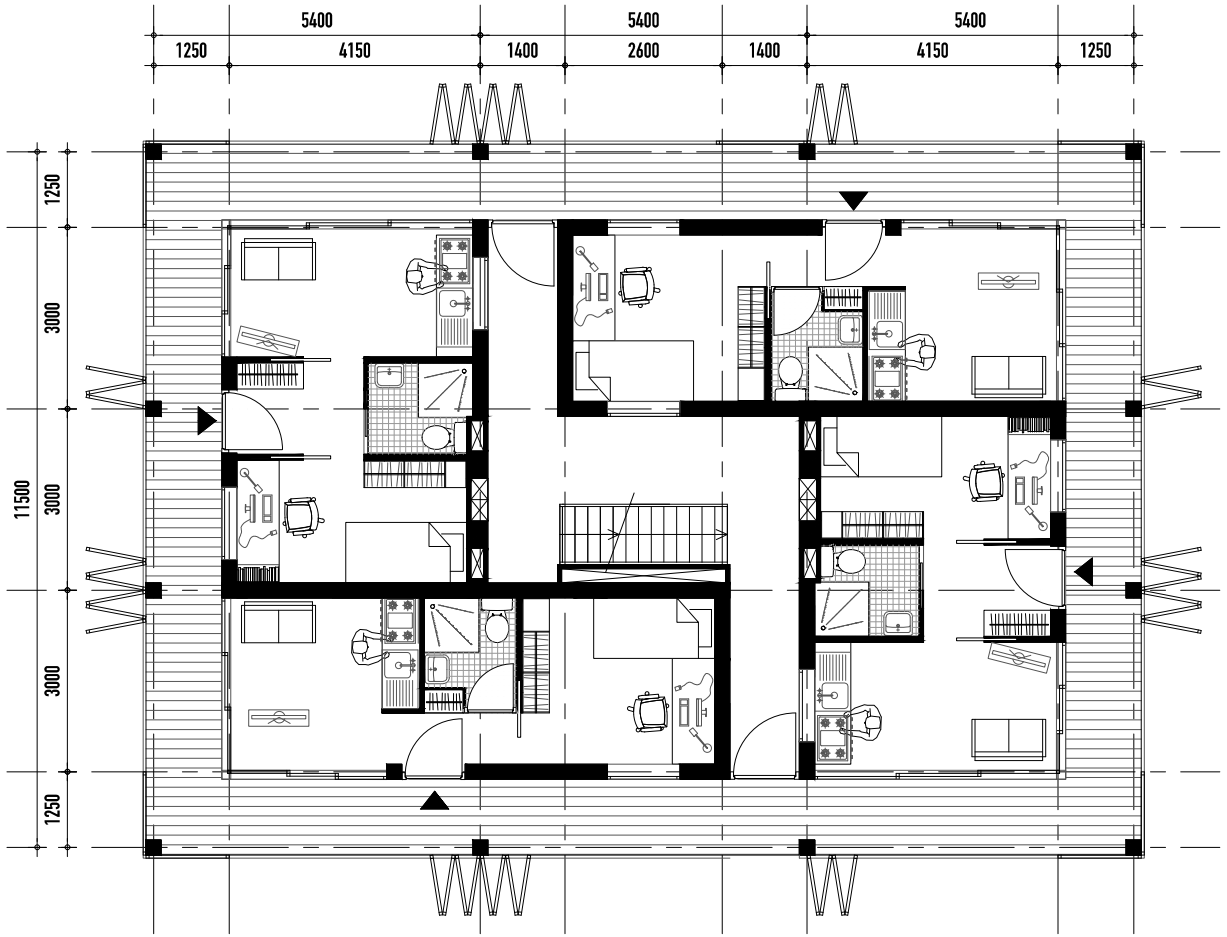


Spatial
Organization



Privacy

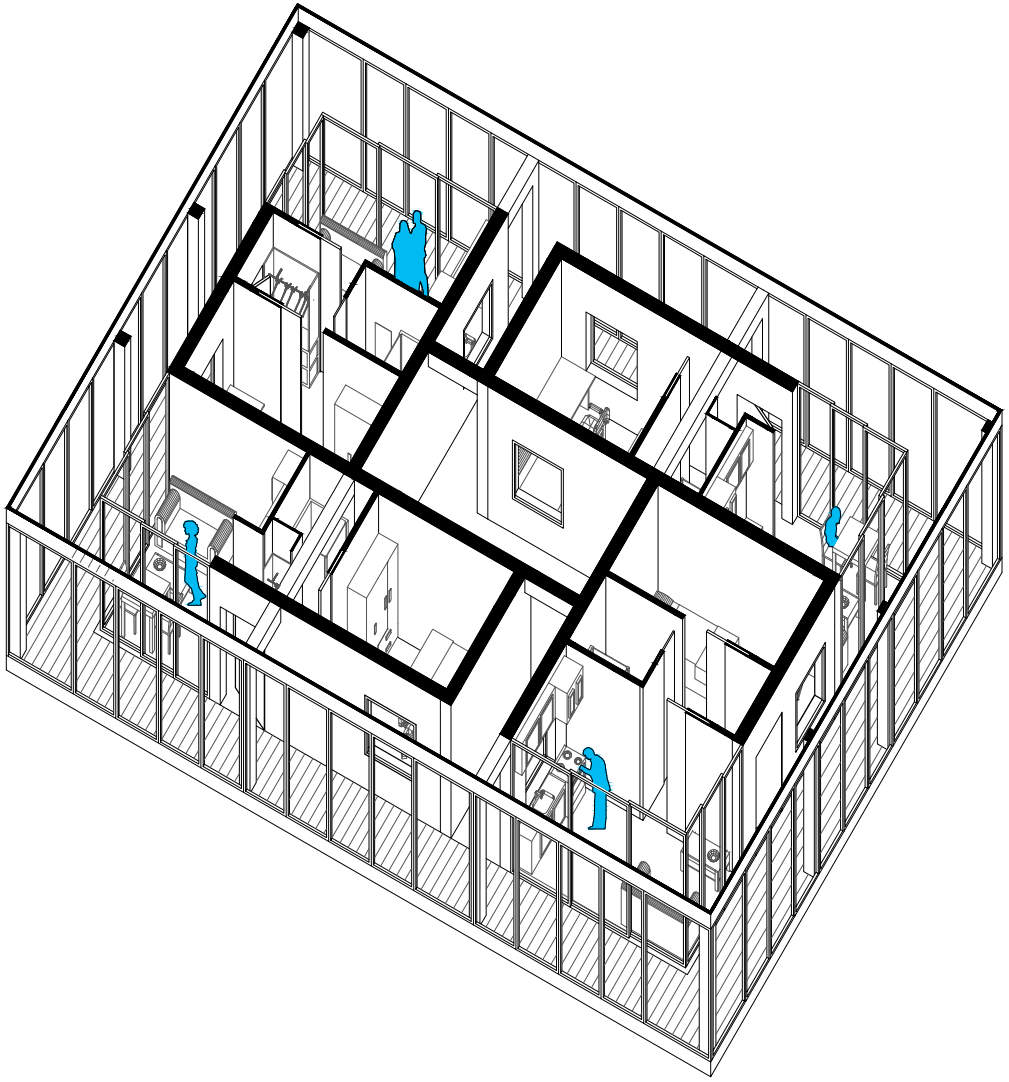
SINGLE_COMMUNITY



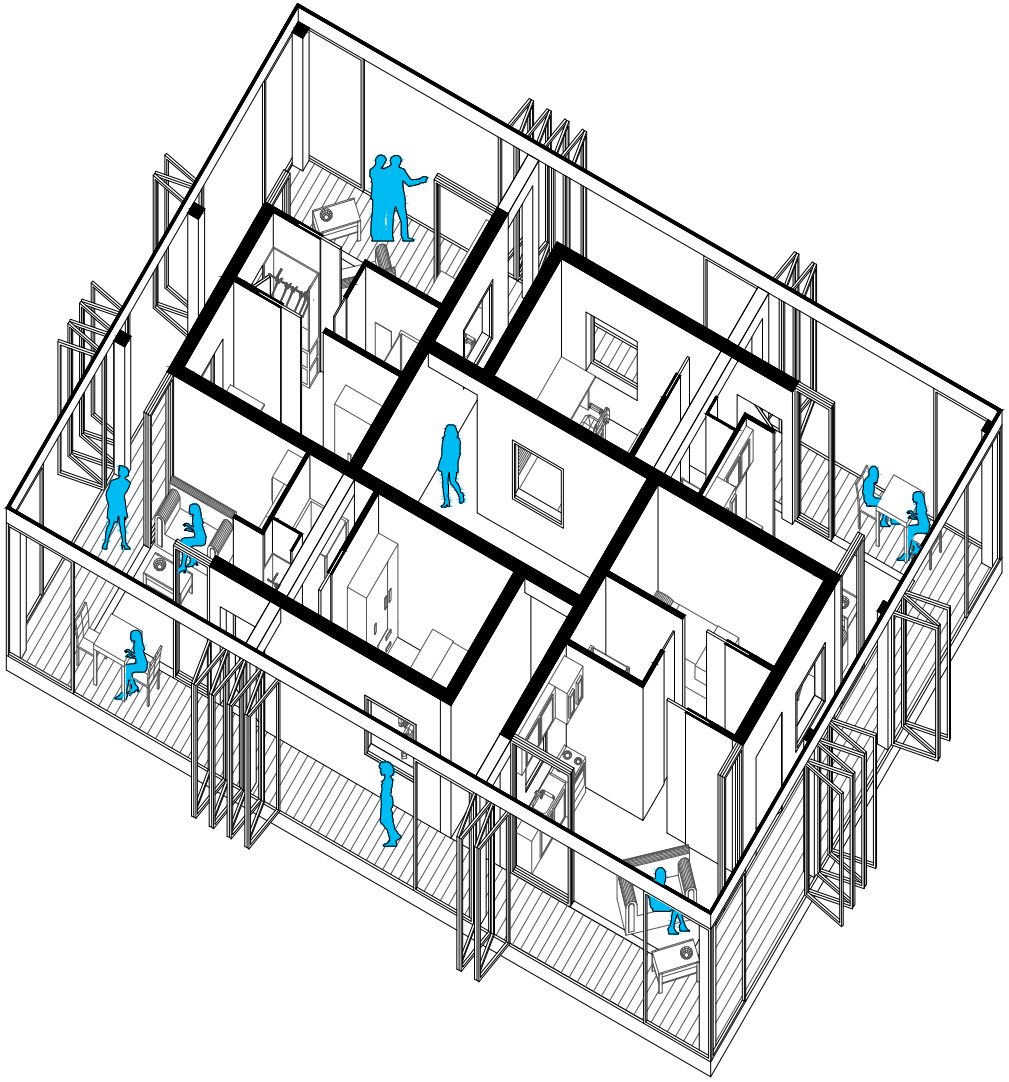
CONTACT MAKING
SPATIAL ELEMENTS

STAY	↔ PASSBY	↔ PASSBY
b. Seat	a. Stair	g. Gallery

SINGLE_COMMUNITY_CLOSED



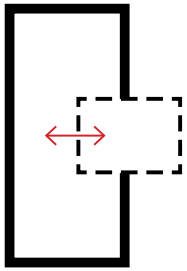
SINGLE_COMMUNITY_OPEN



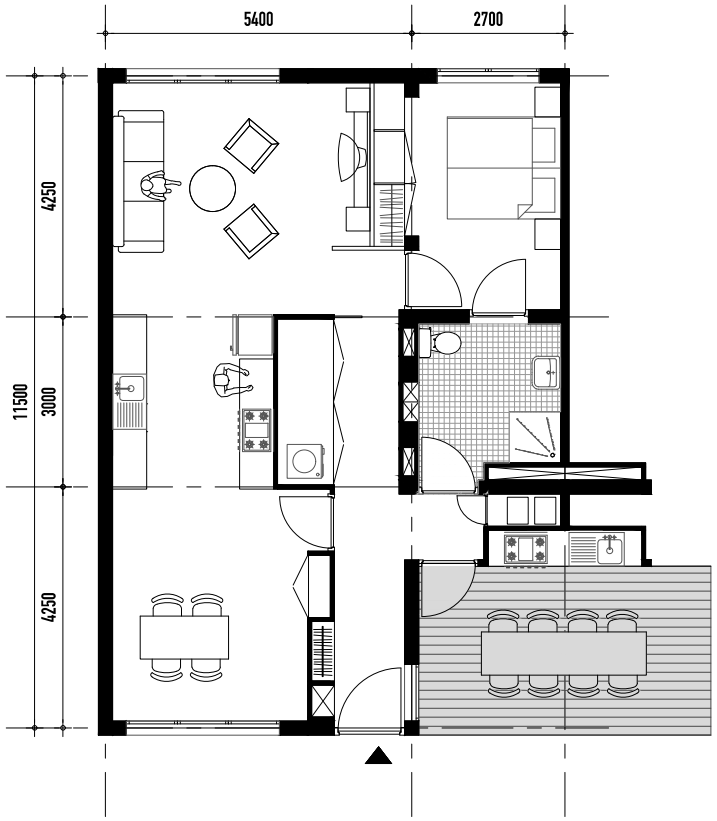
Single

Elderly

Family



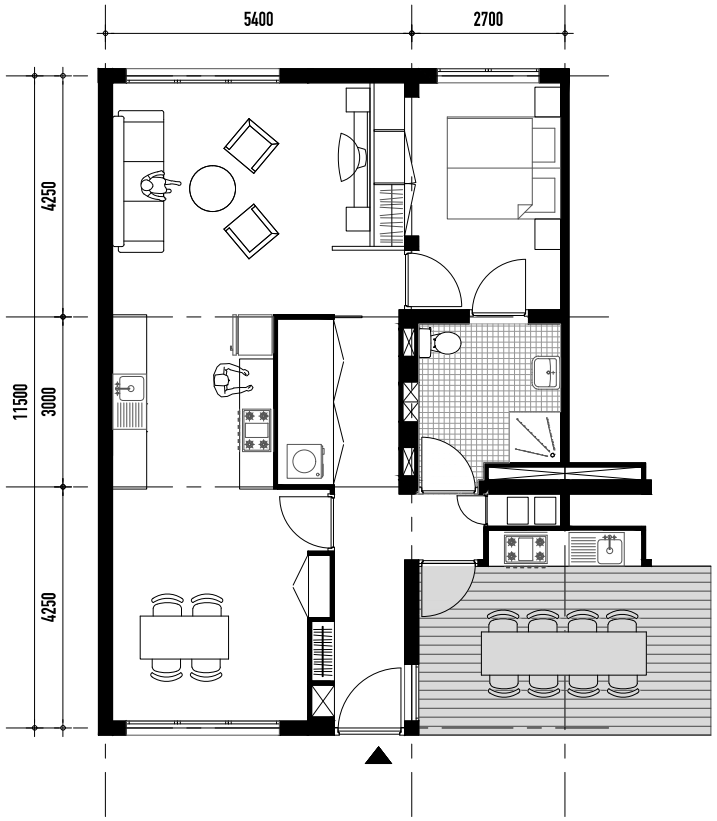
DWELLING TYPOLOGY_ELDERLY

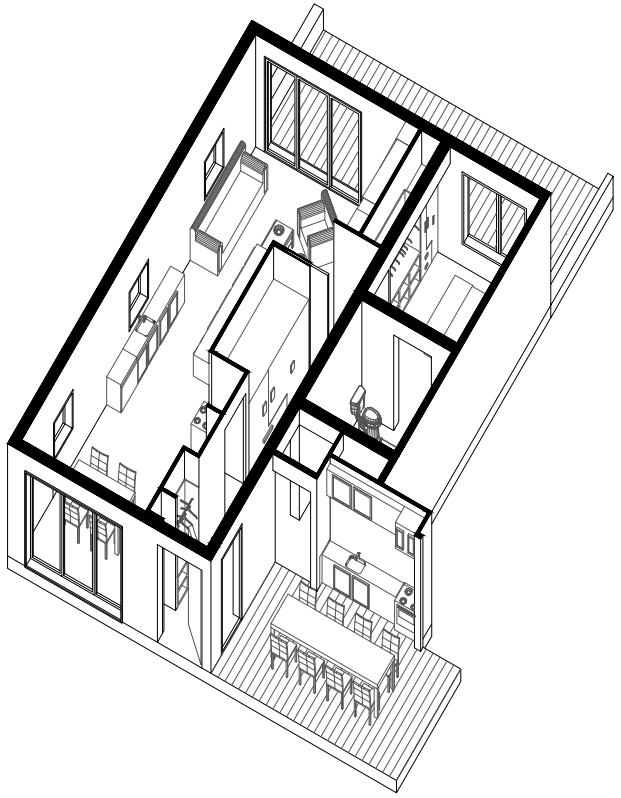


84.5 m2

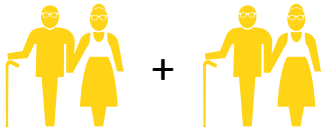
Private Semi Private Semi Public

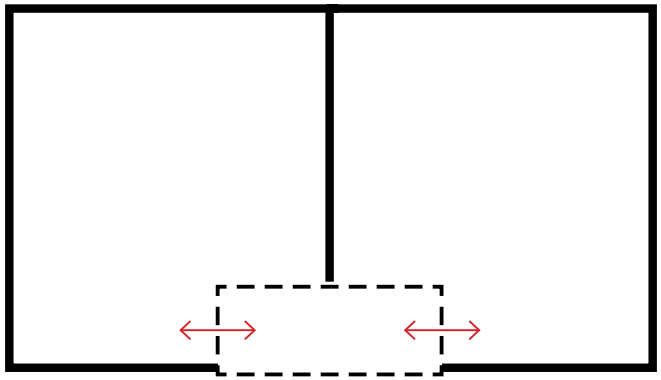
DWELLING TYPOLOGY_ELDERLY





ELDERLY_COMMUNITY

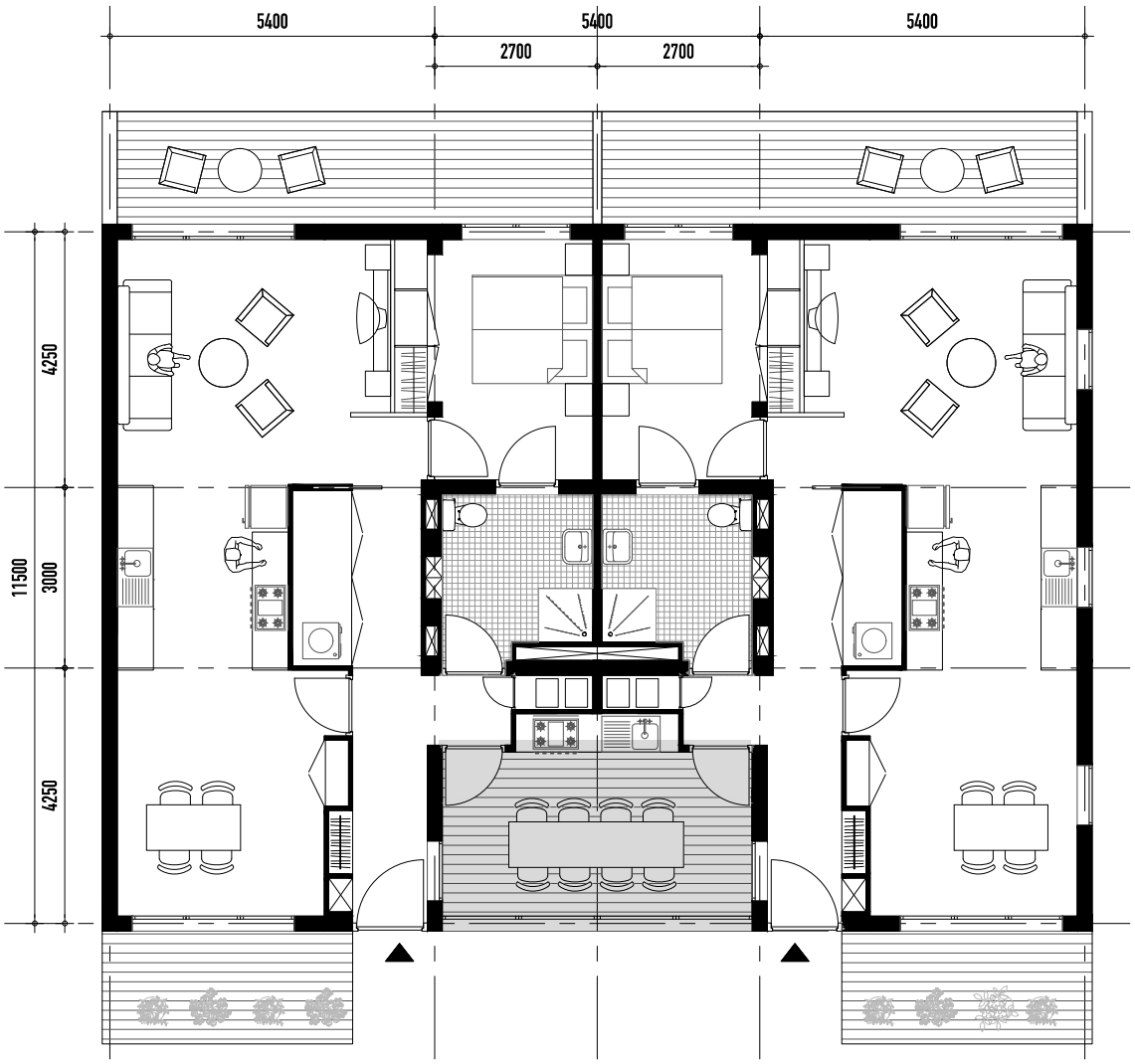




Spatial
Organization

Privacy

ELDERLY_COMMUNITY_TRANSITION ZONE



CONTACT MAKING SPATIAL ELEMENTS

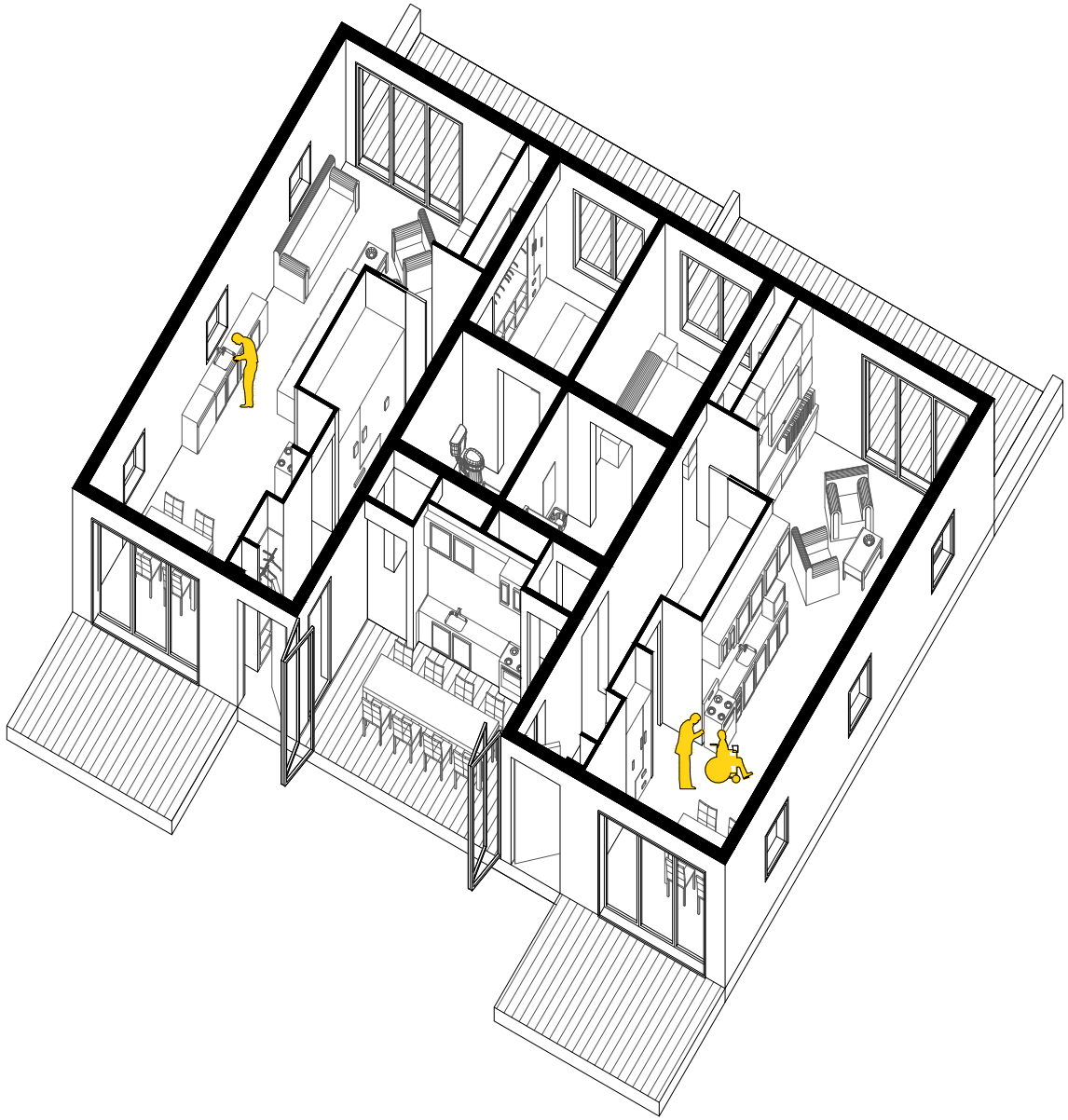
STAY

STAY PASSBY

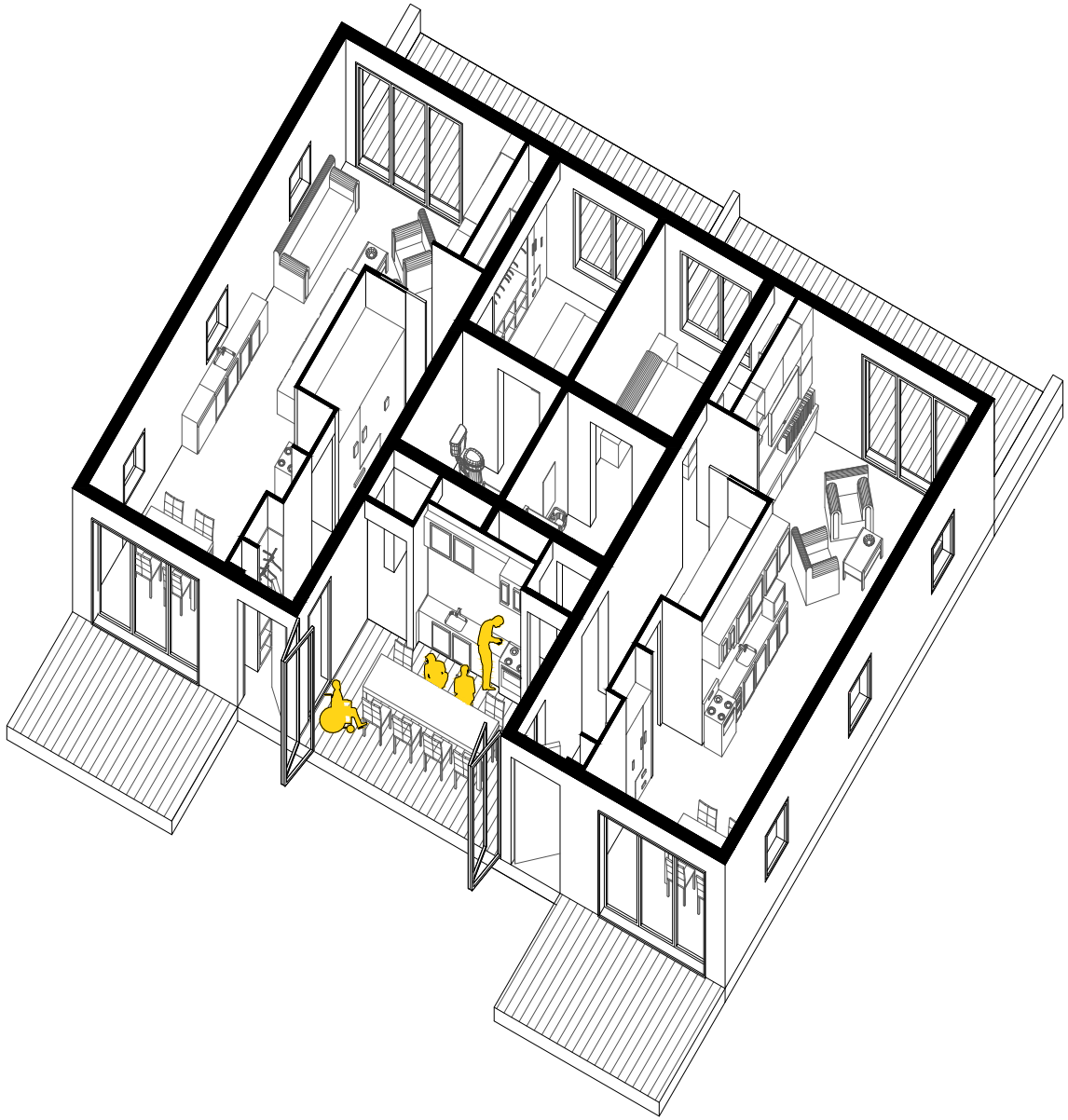
i. Frontyard

c. Common Deck

ELDERLY_COMMUNITY_ SCENARIO 1



ELDERLY_COMMUNITY_ SCENARIO 2

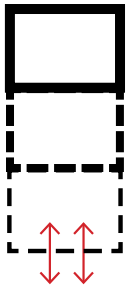


ELDERLY_COMMUNITY_ SCENARIO 3

Single

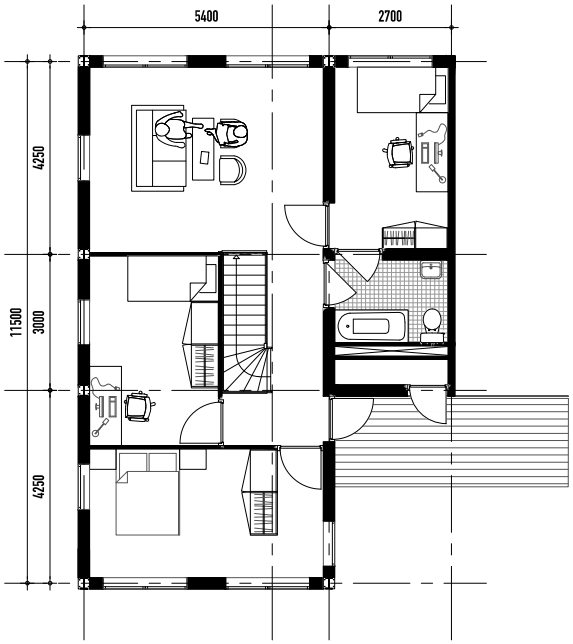
Elderly

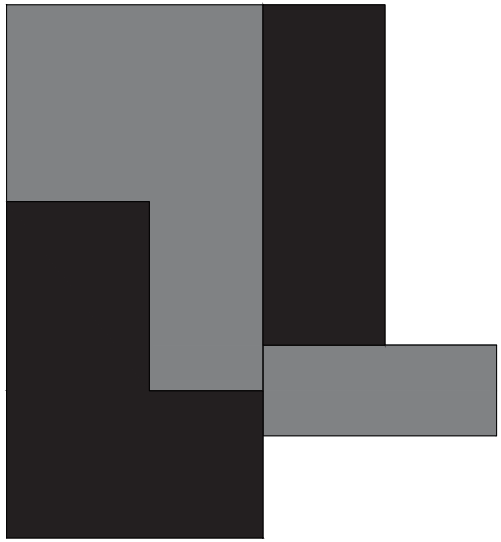
Family



DWELLING TYPOLOGY_FAMILY

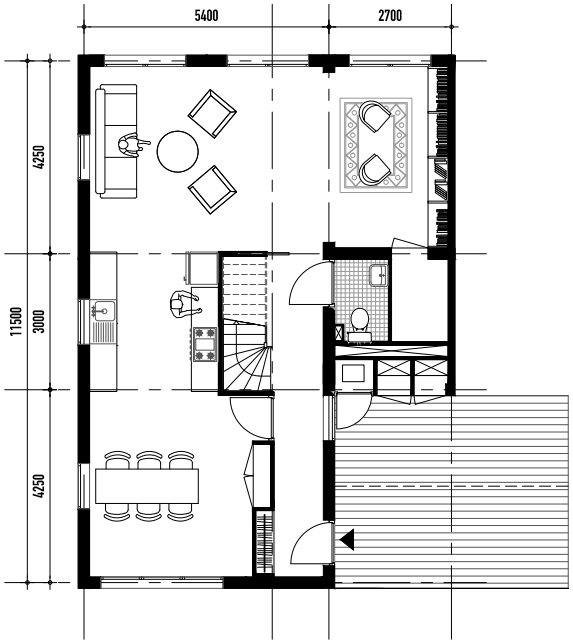
Upper floor
81.6 m2

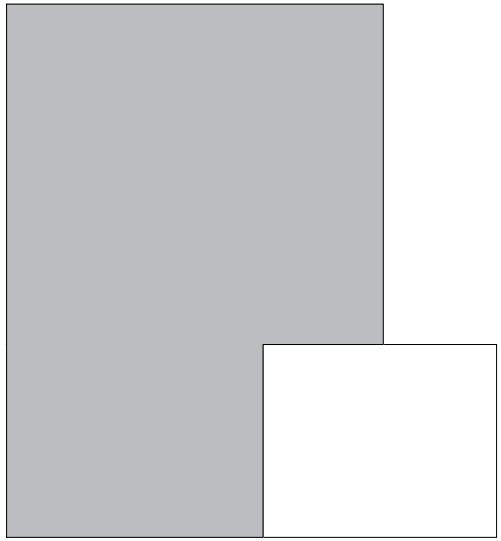




Upper floor

Lower floor
81.6 m2

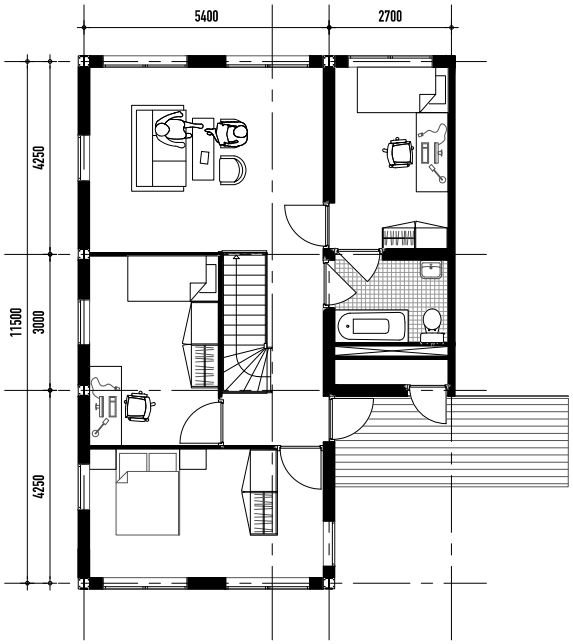


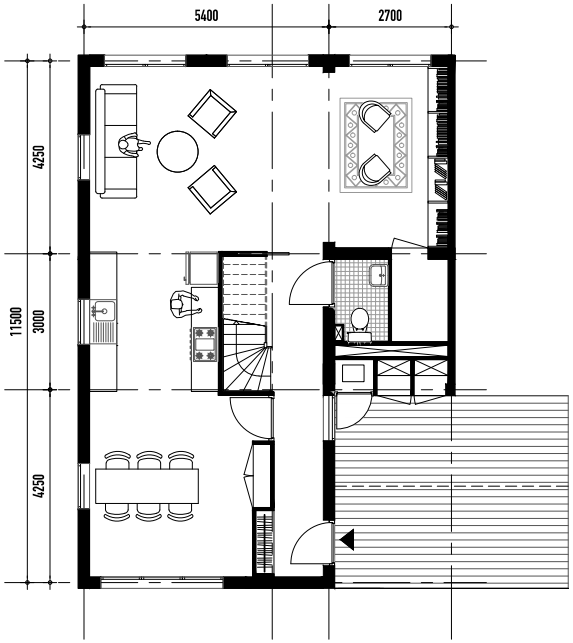


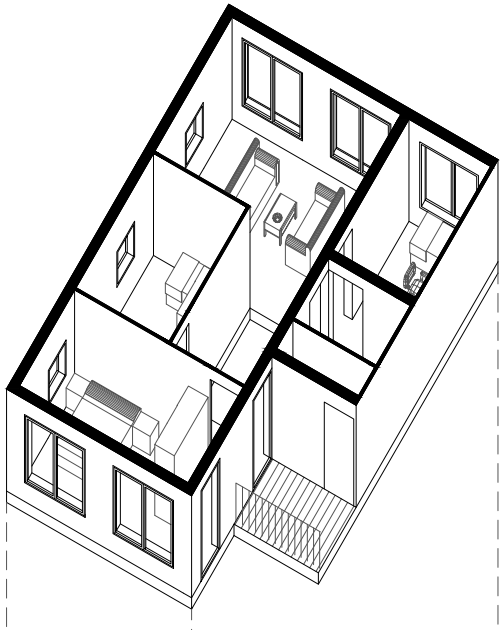
Lower floor

Private Semi Private Semi Public

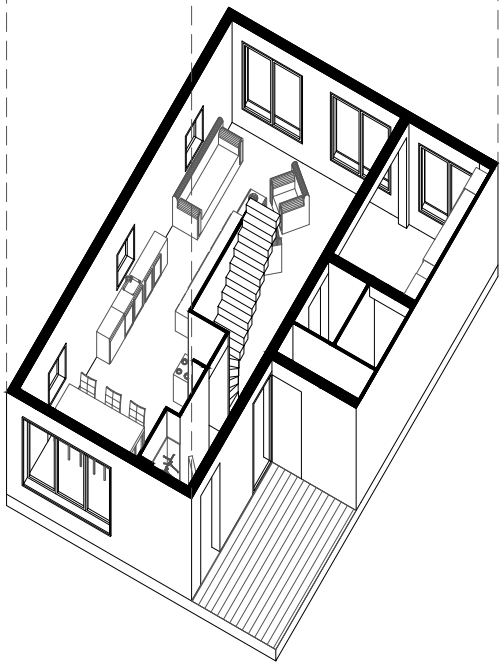
DWELLING TYPOLOGY_FAMILY





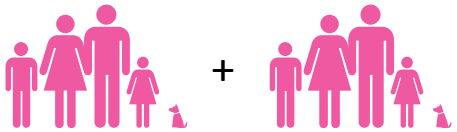


Upper floor

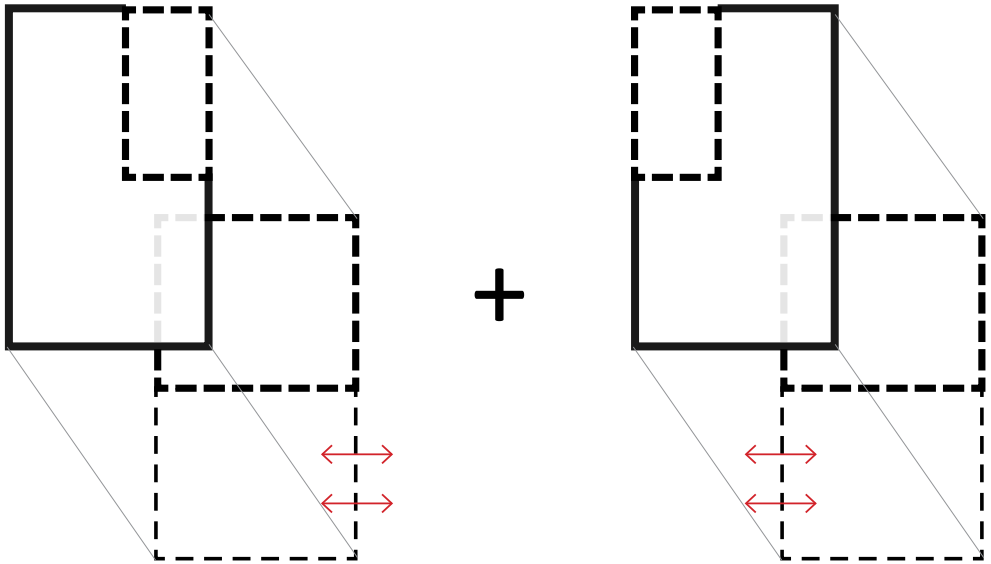


Lower floor

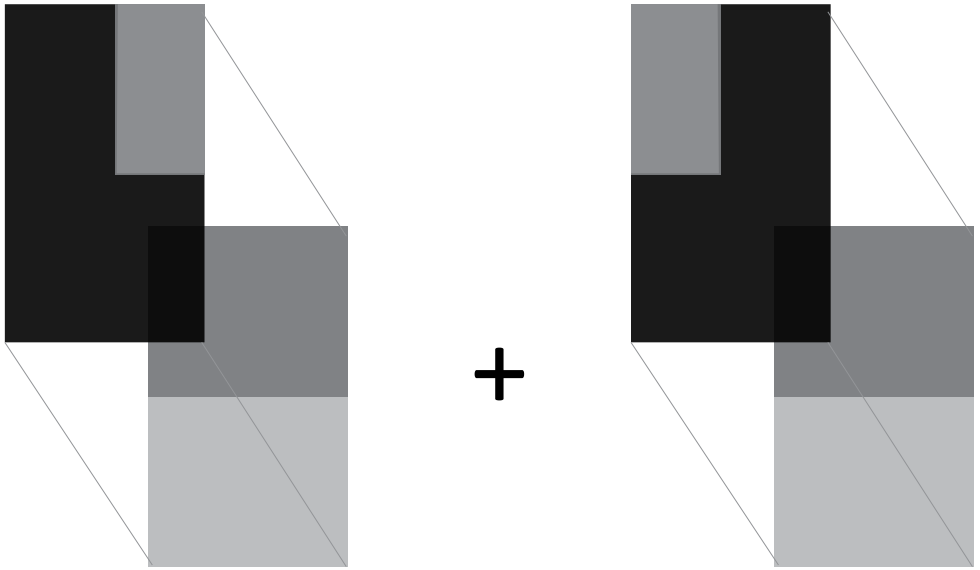
FAMILY_COMMUNITY



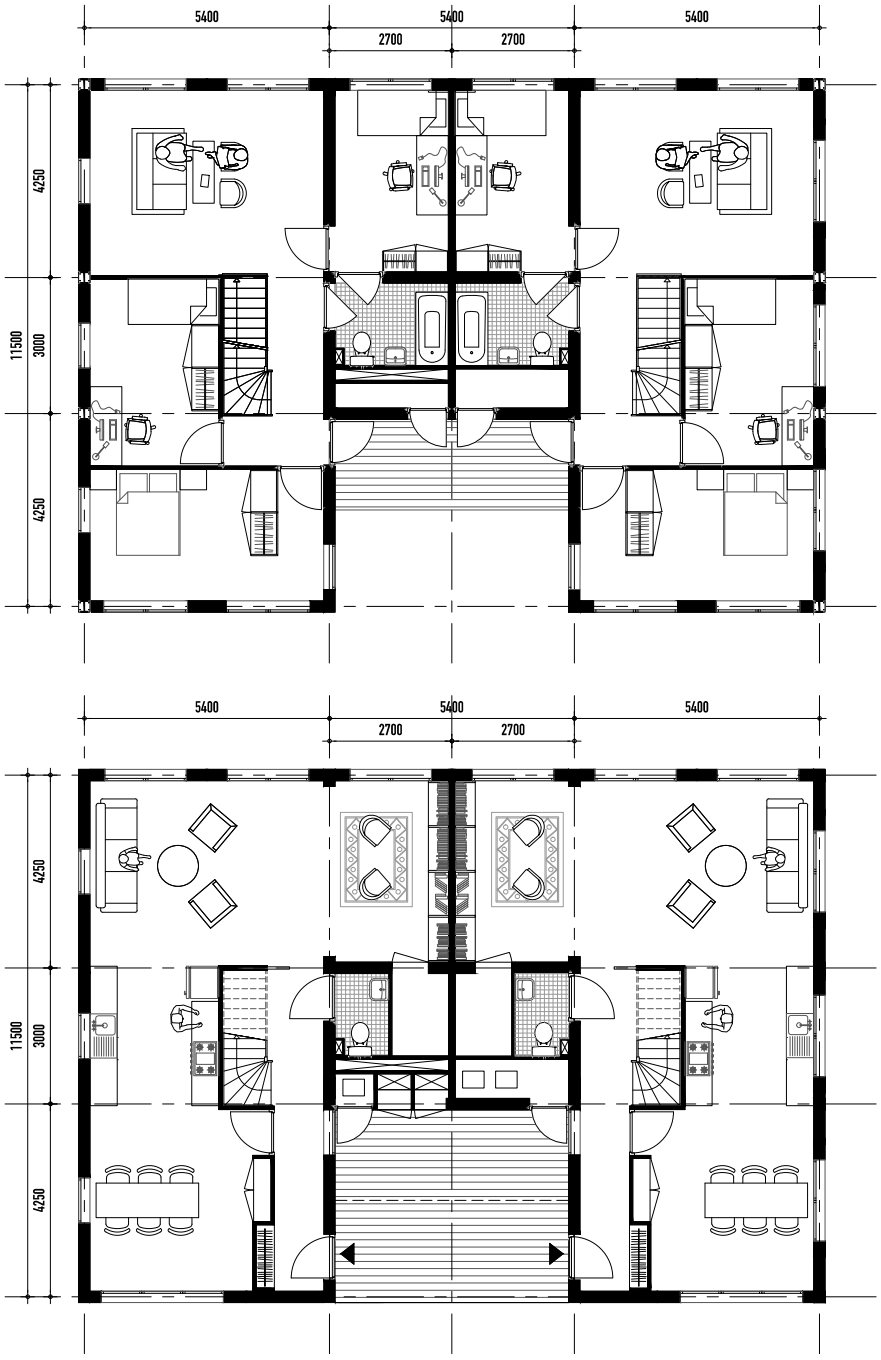
Spatial
Organization



Privacy



FAMILY_COMMUNITY



Upper floor

Lower floor

CONTACT MAKING SPATIAL ELEMENTS

STAY

STAY
PASSBY

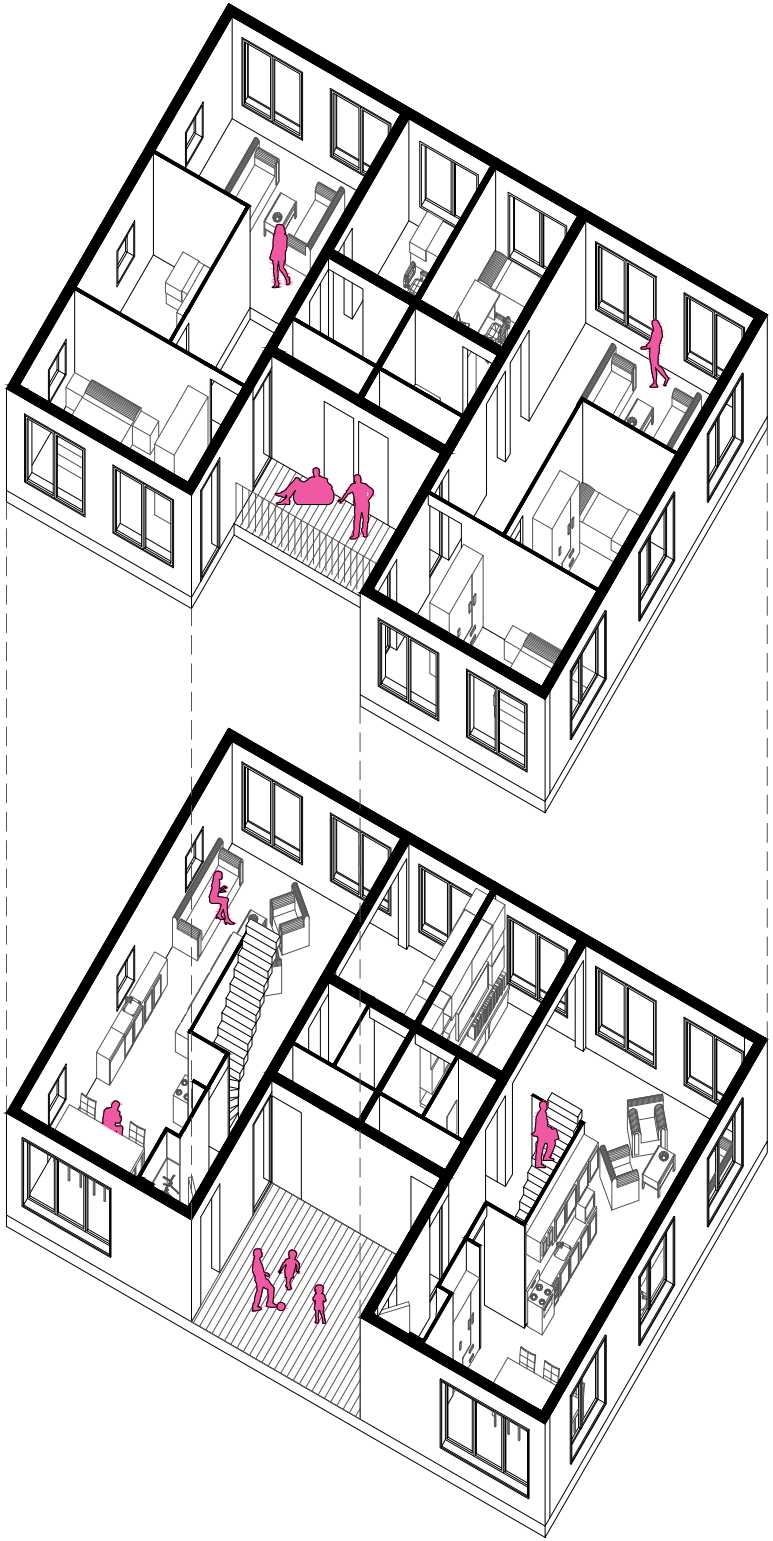
PASSBY

j. Balcony

c. Common Deck

a. Stair

FAMILY_COMMUNITY

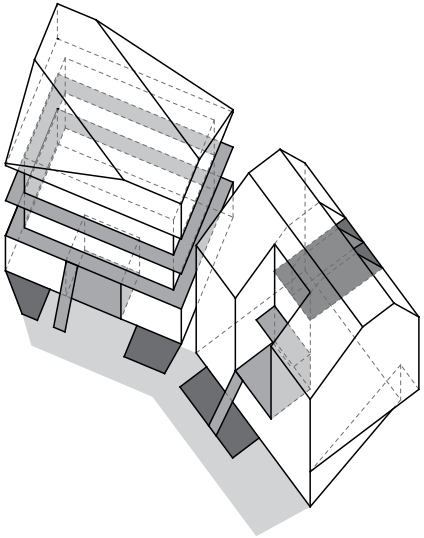


Upper floor

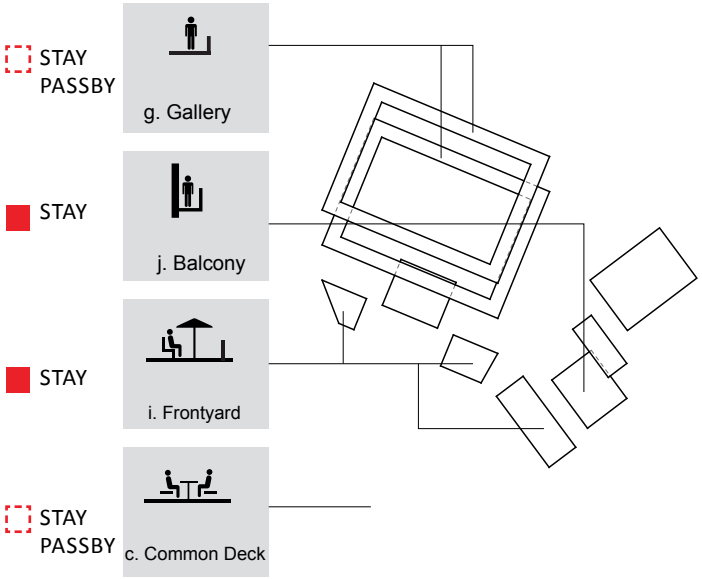
Lower floor

THEME RESEARCH

Elements, Composition, Activity, Contact

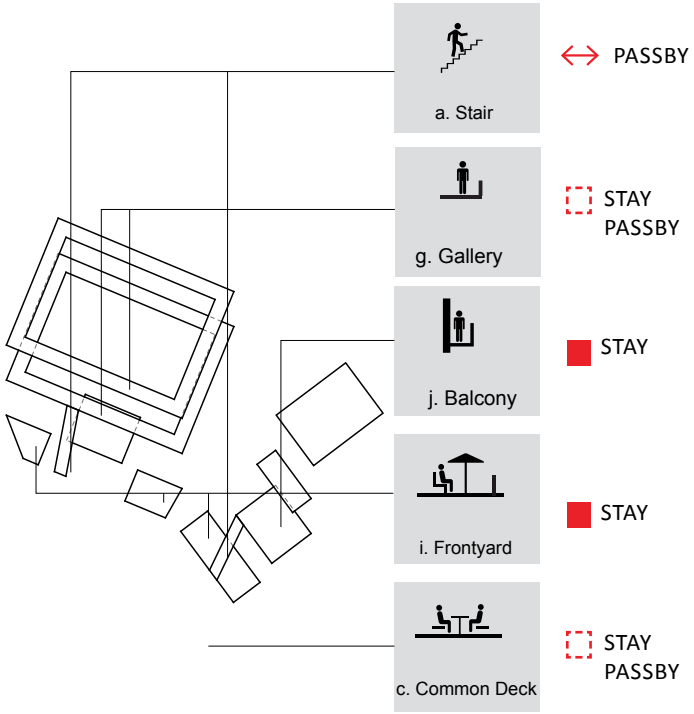


Transitional space
in the center



HORIZONTAL
composition of elements

+



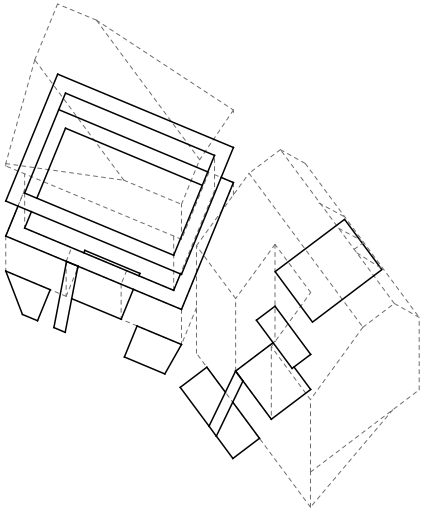
VERTICAL
composition of elements

*Activity

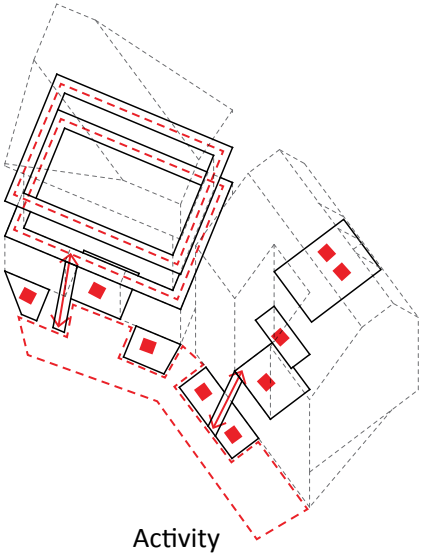
- Stay
- Stay / Pass by
- Pass by

*Contact

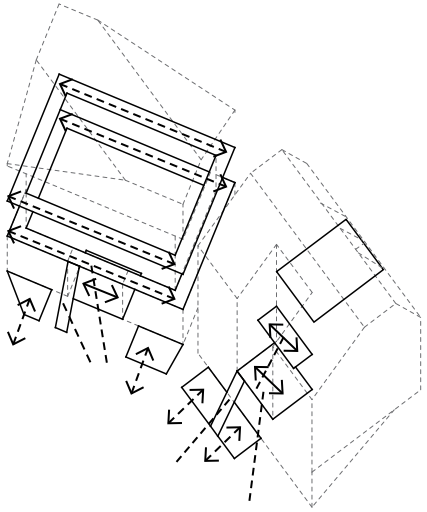
- Close contact
- Chance contact
- Passive contact



Composition



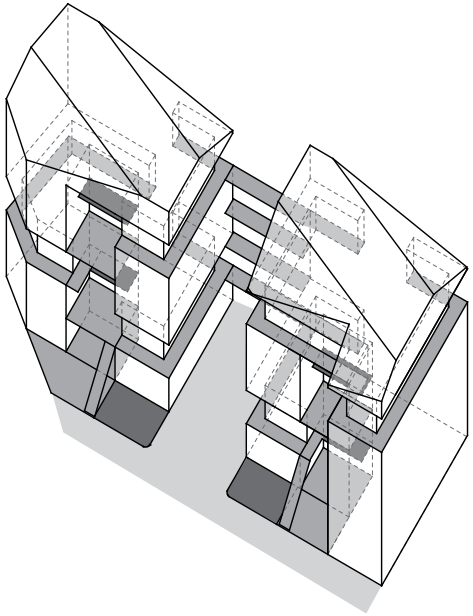
Activity



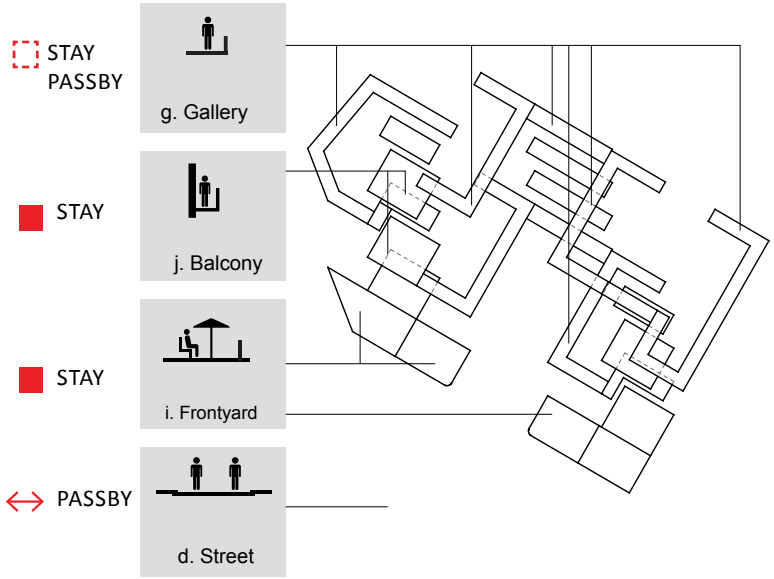
Contact

THEME RESEARCH

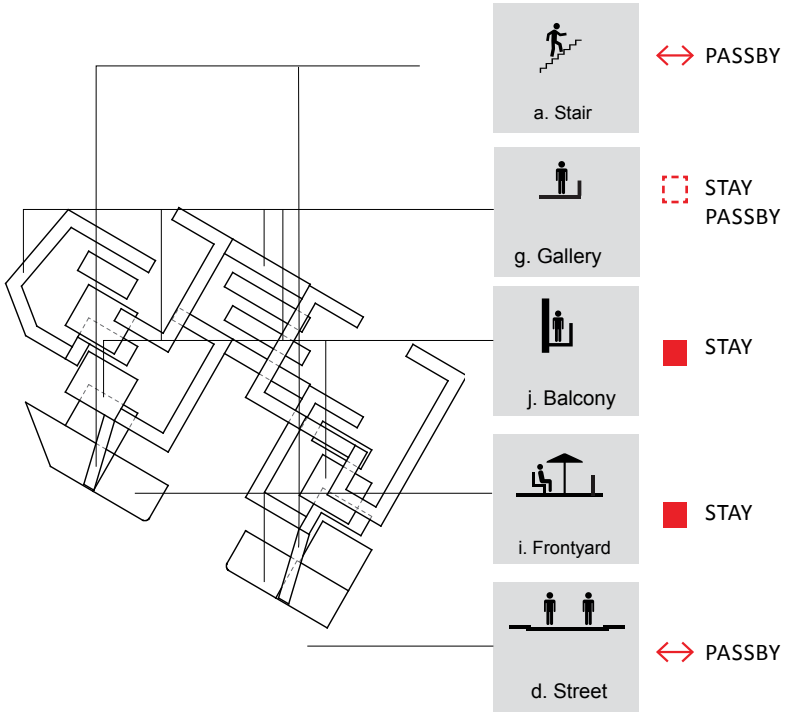
Elements, Composition, Activity, Contact



Transitional space
in the center



HORIZONTAL
composition of elements



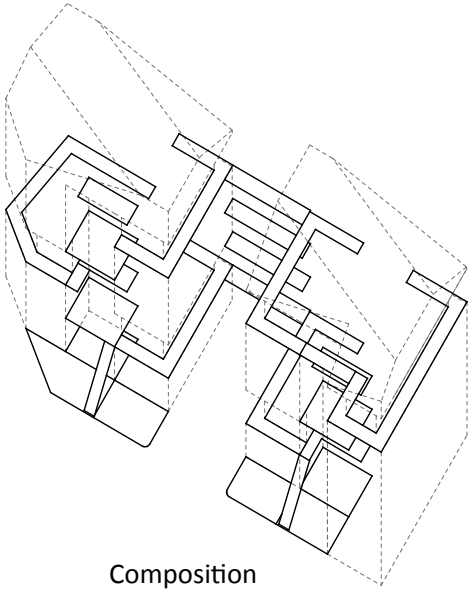
VERTICAL
composition of elements

*Activity

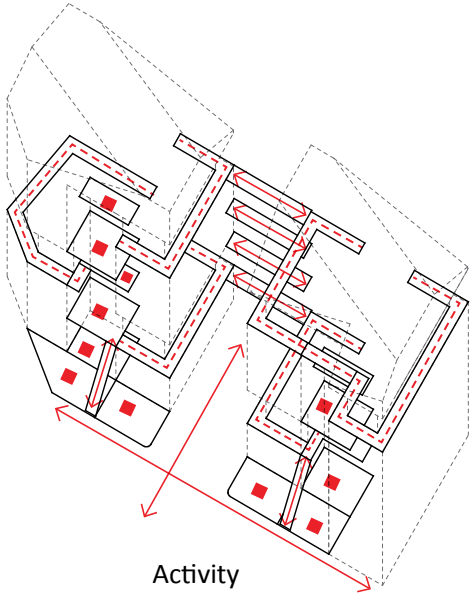
- Stay
- Stay / Pass by
- Pass by

*Contact

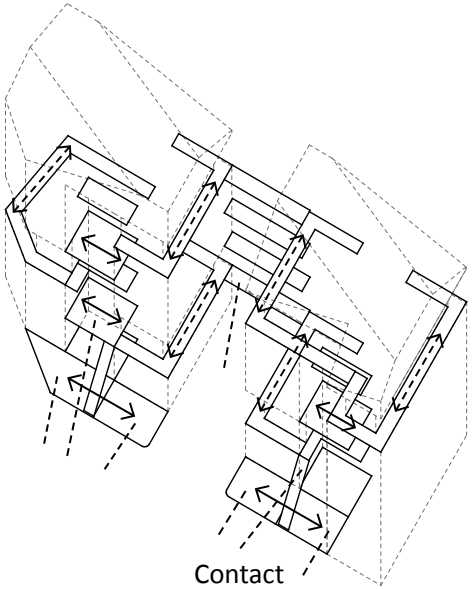
- Close contact
- Chance contact
- Passive contact



Composition



Activity

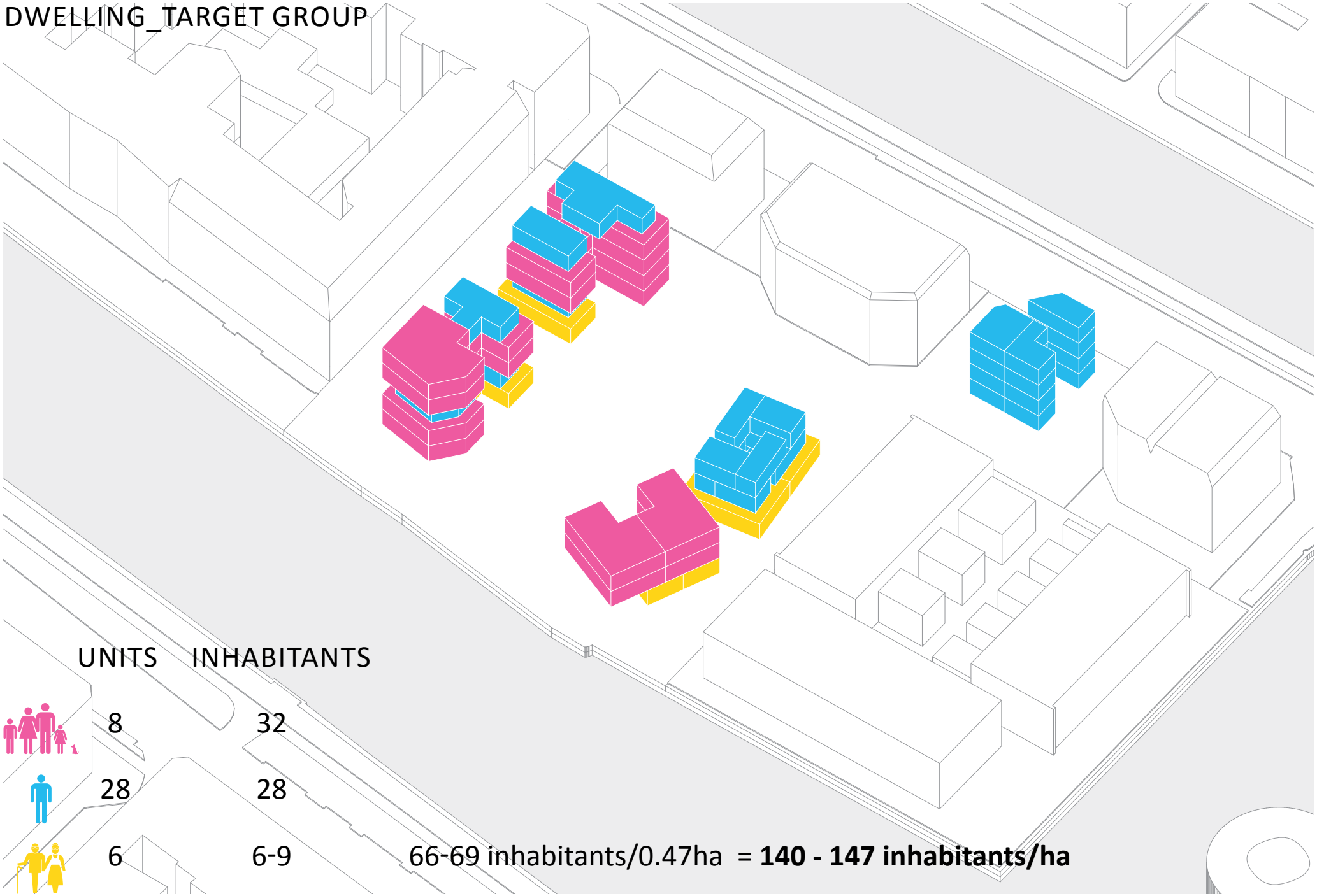


Contact

DWELLING

RESEARCH | PUBLIC | PUBLIC COLLECTIVE | PRIVATE COLLECTIVE | **PRIVATE** | BUILDING TECHNOLOGY

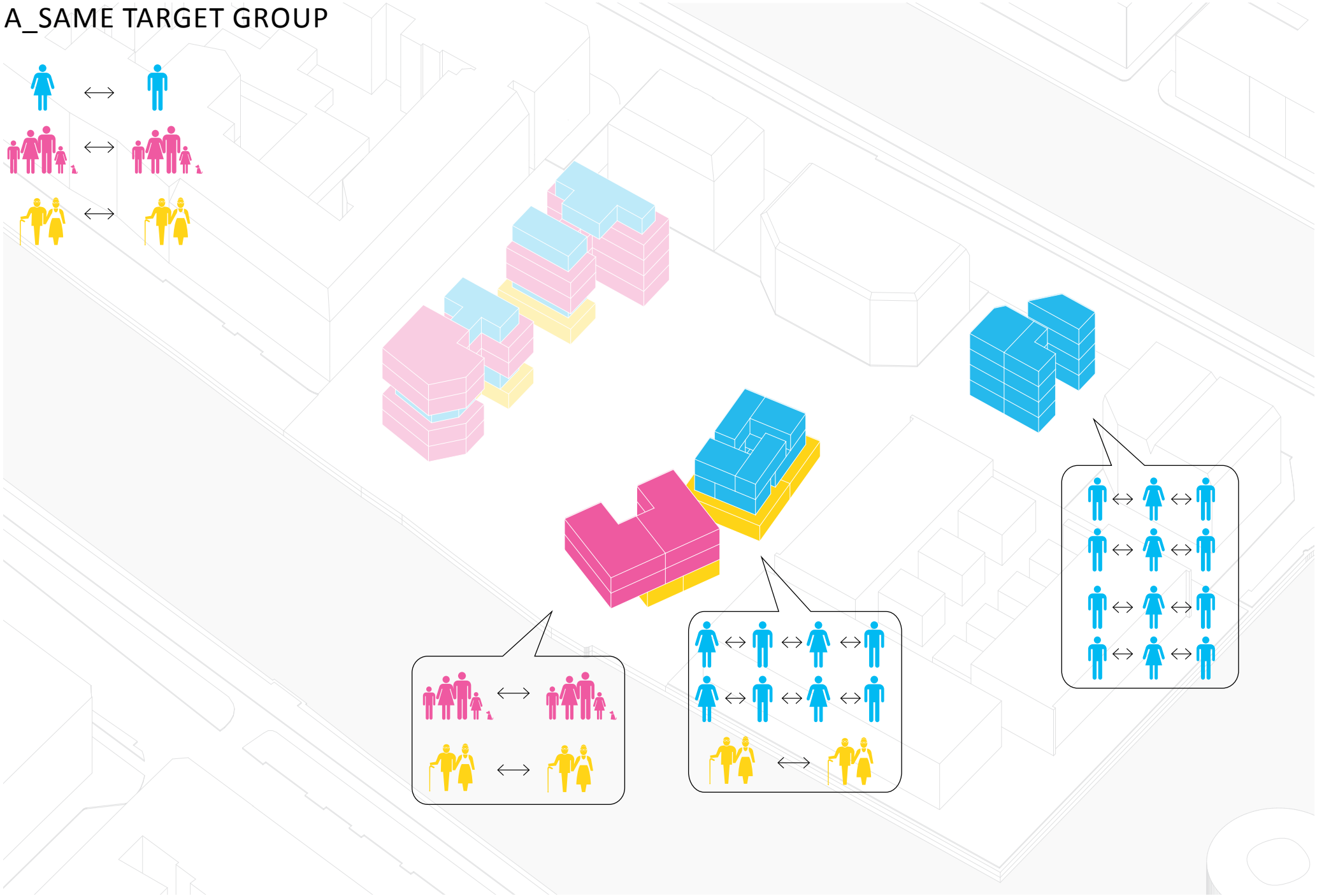
DWELLING_TARGET GROUP



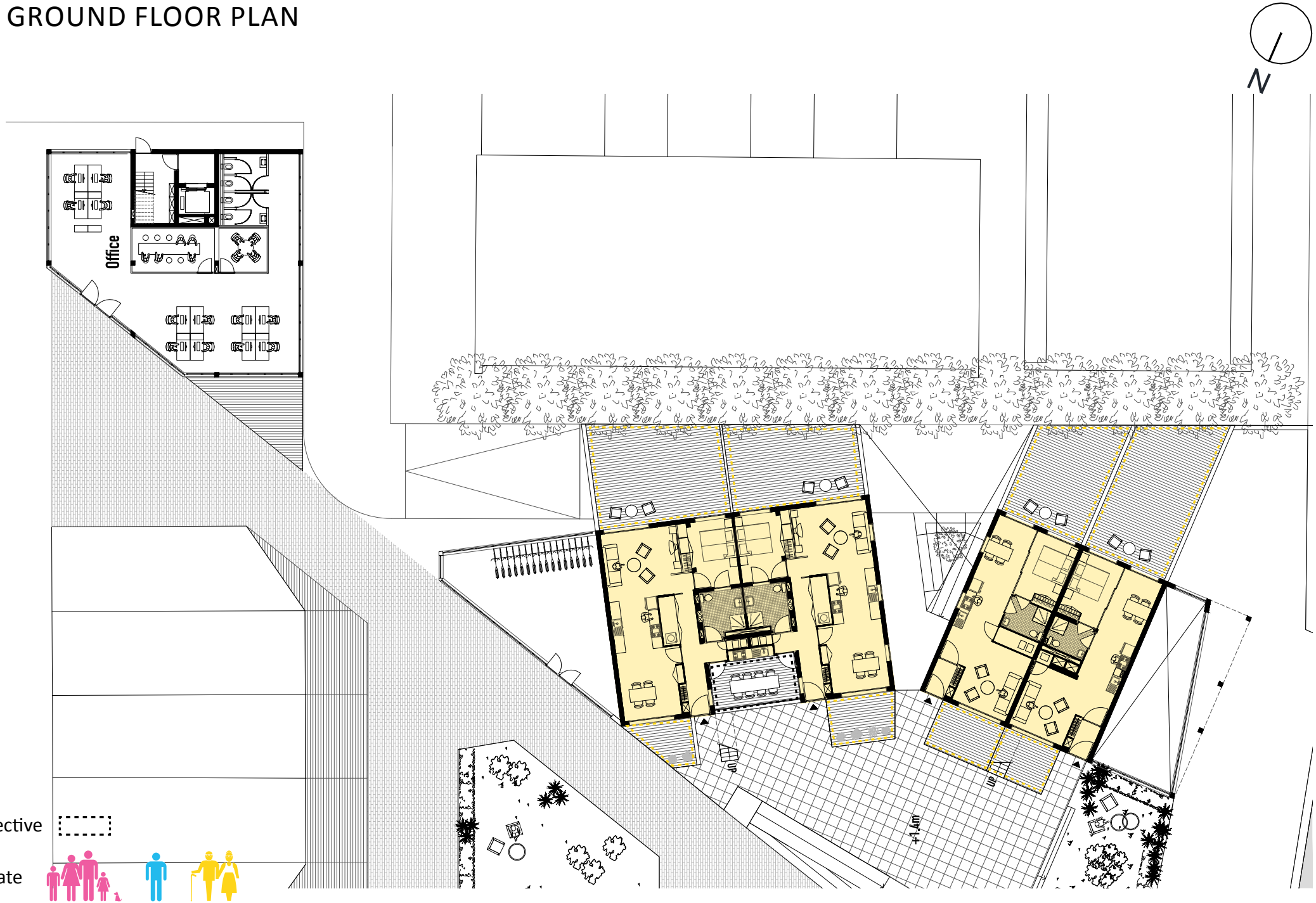
	UNITS	INHABITANTS
	8	32
	28	28
	6	6-9

66-69 inhabitants/0.47ha = **140 - 147 inhabitants/ha**

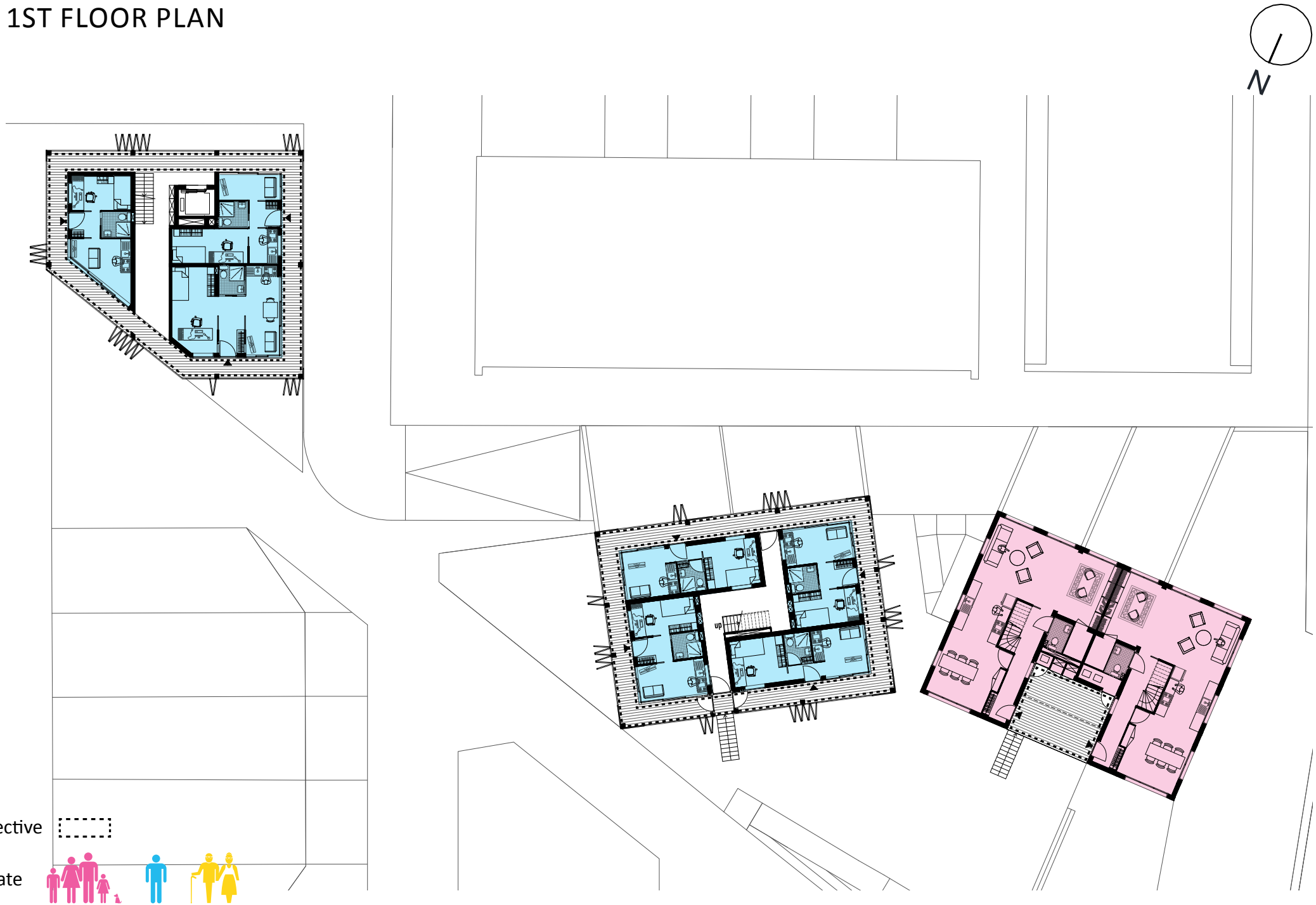
A_SAME TARGET GROUP



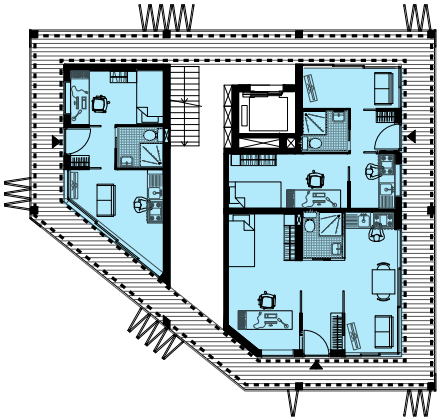
GROUND FLOOR PLAN

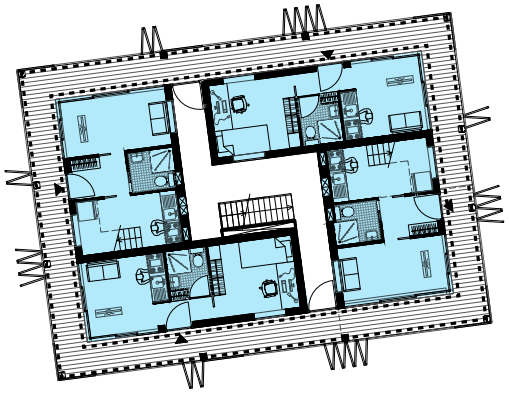


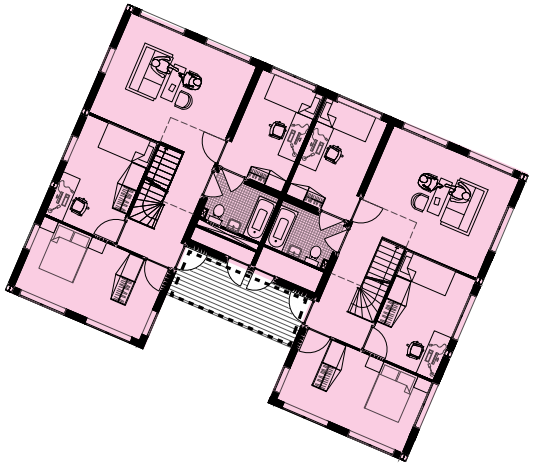
1ST FLOOR PLAN



2ND FLOOR PLAN



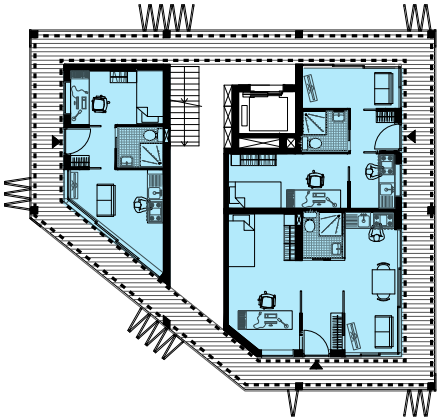


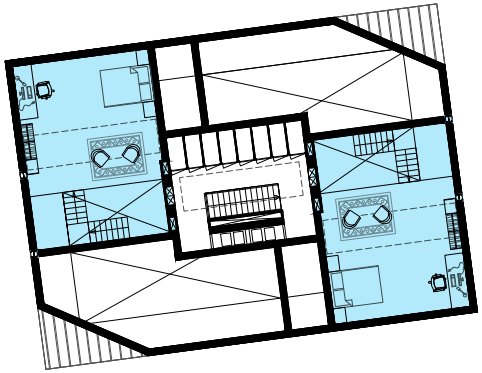


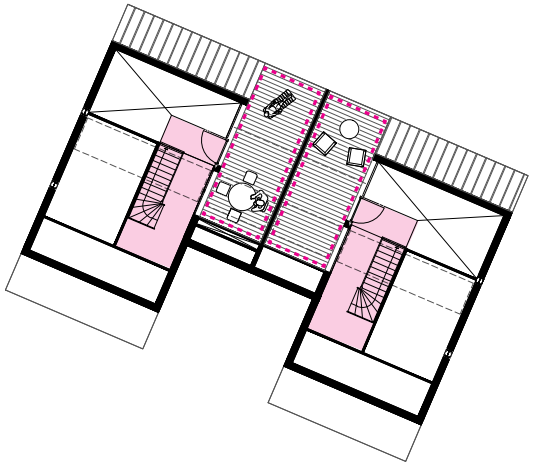
collective

private

3RD FLOOR PLAN



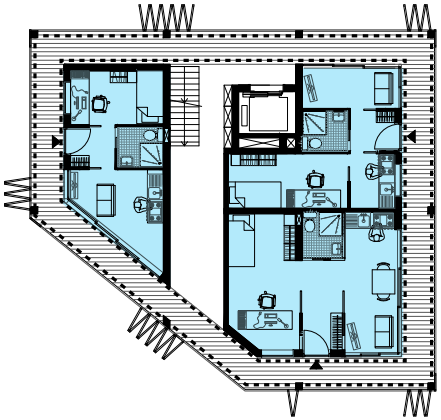


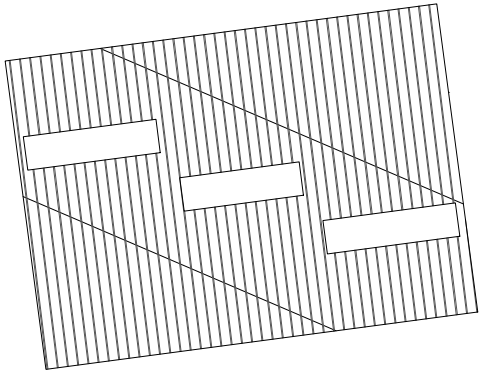


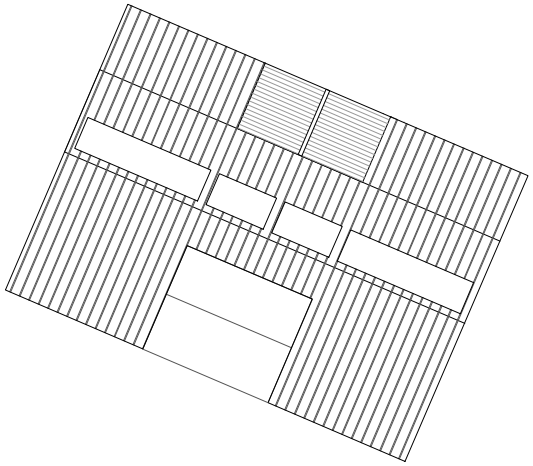
collective

private

4TH FLOOR PLAN



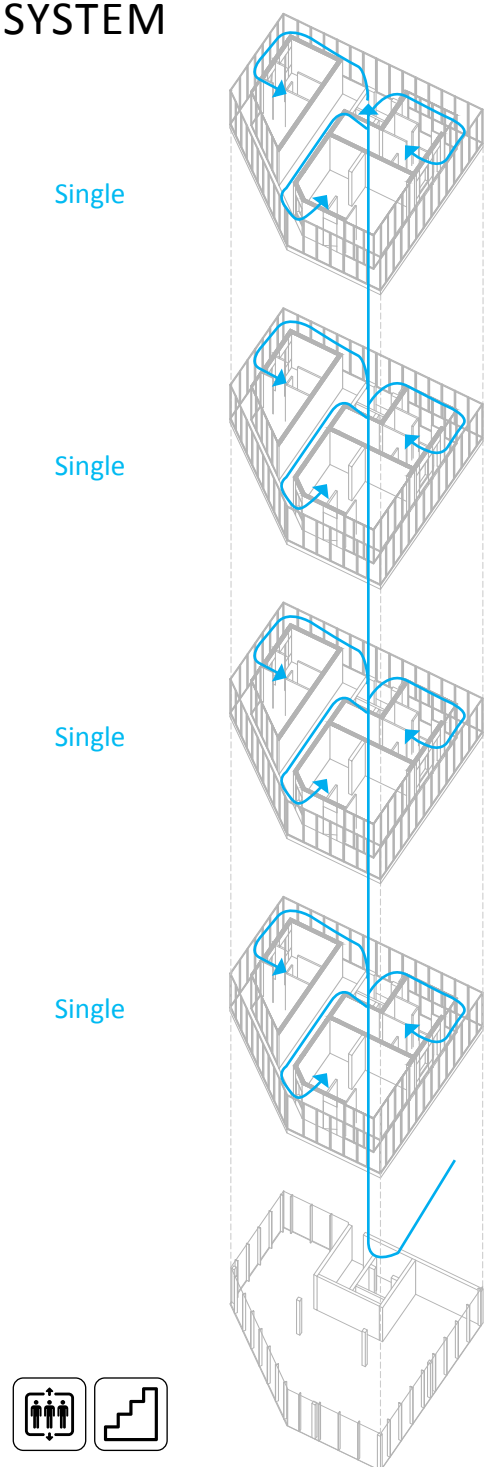


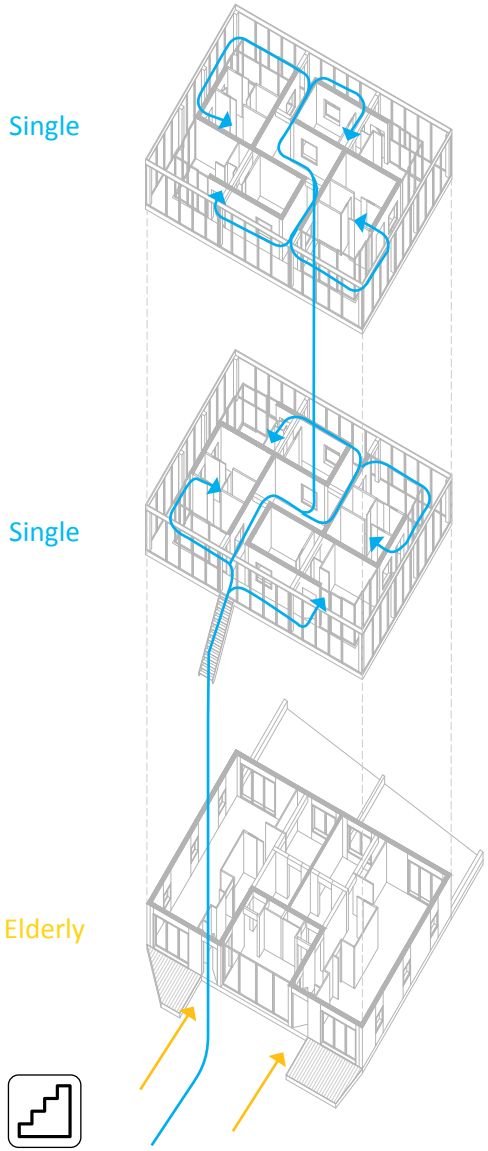


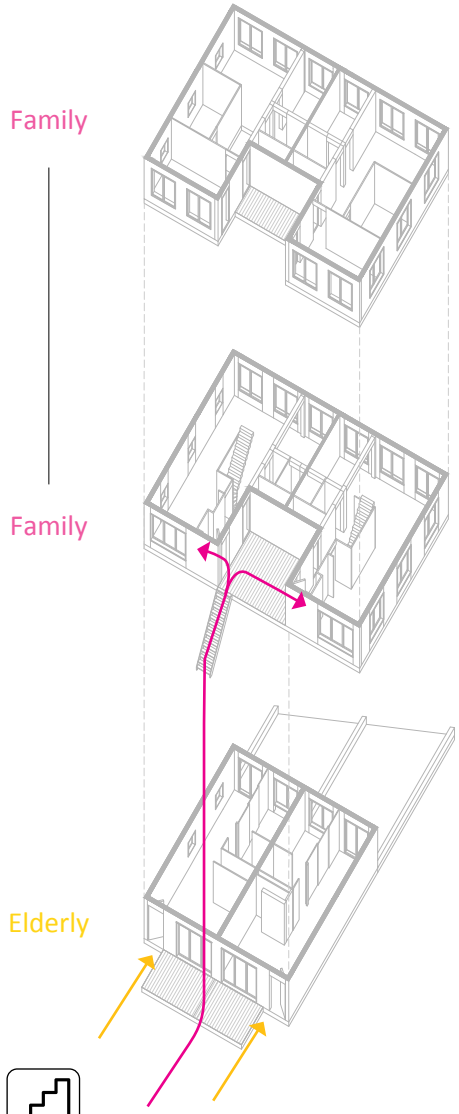
collective

private

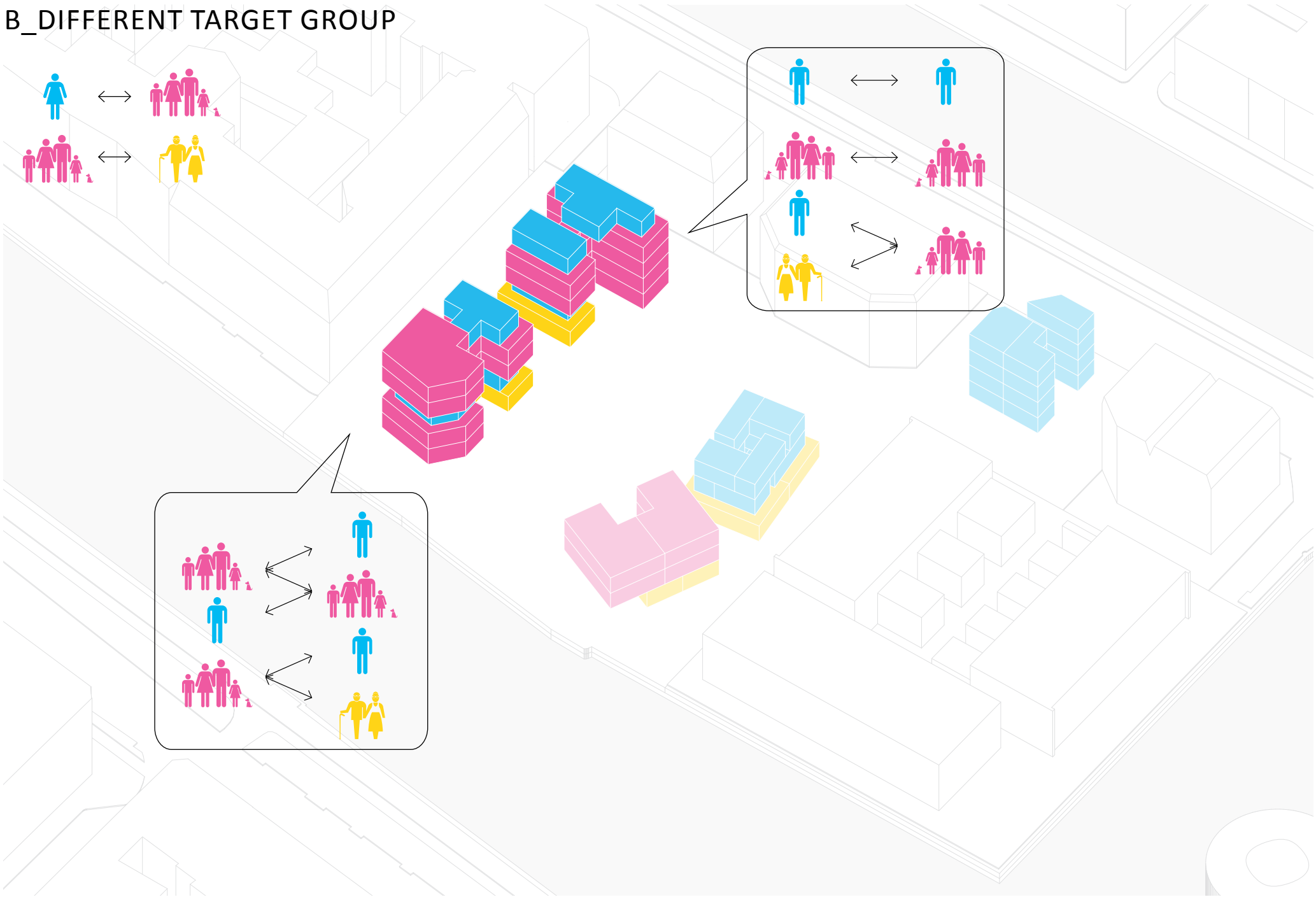
CIRCULATION SYSTEM





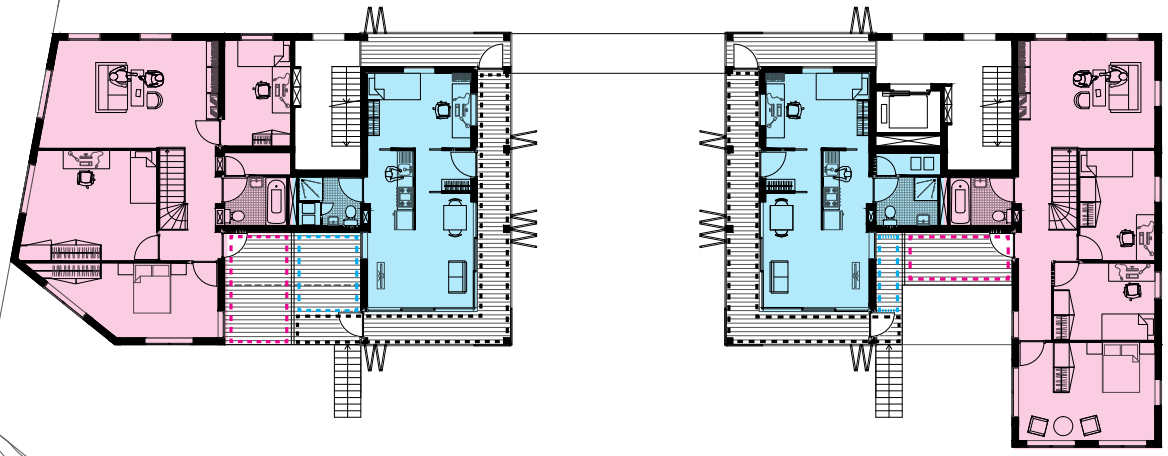


B_DIFFERENT TARGET GROUP



GROUND FLOOR PLAN

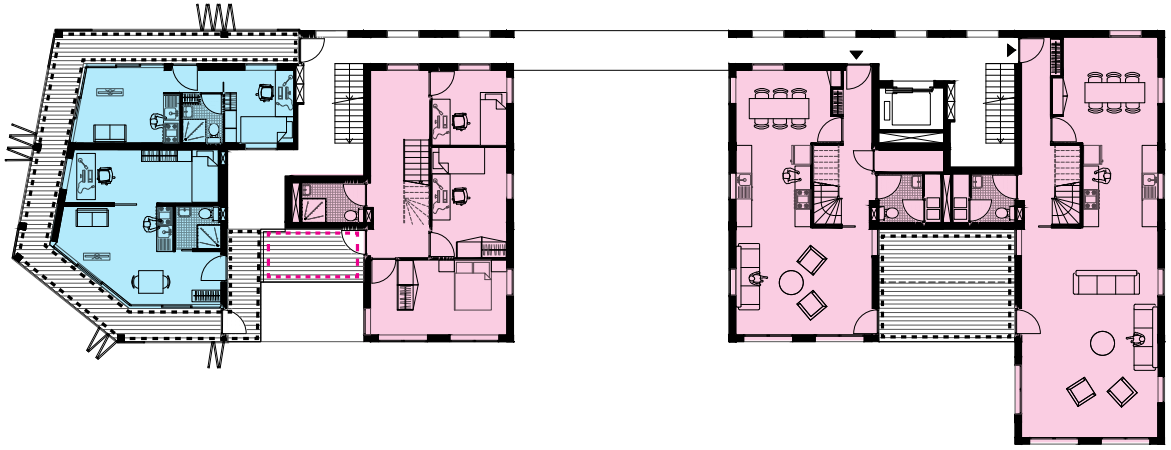
1ST FLOOR PLAN



collective

private

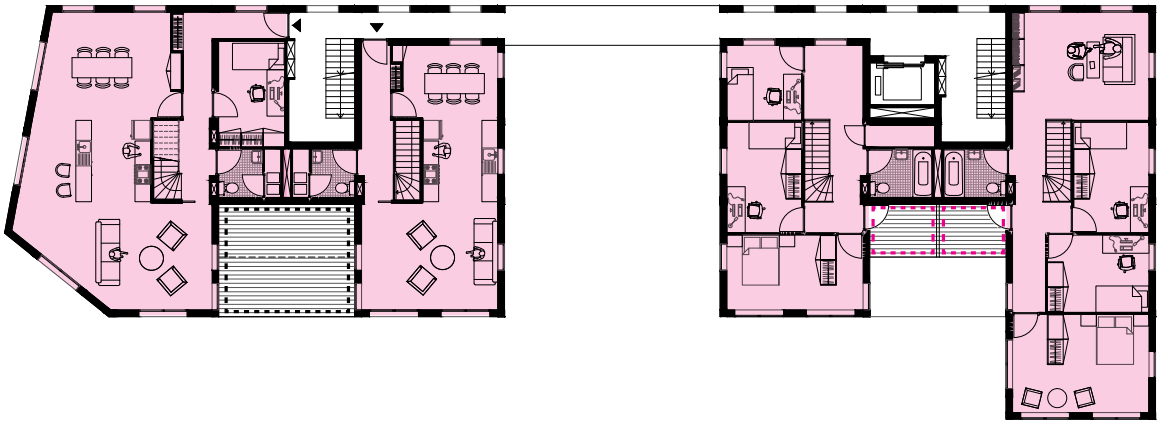
2ND FLOOR PLAN



collective

private

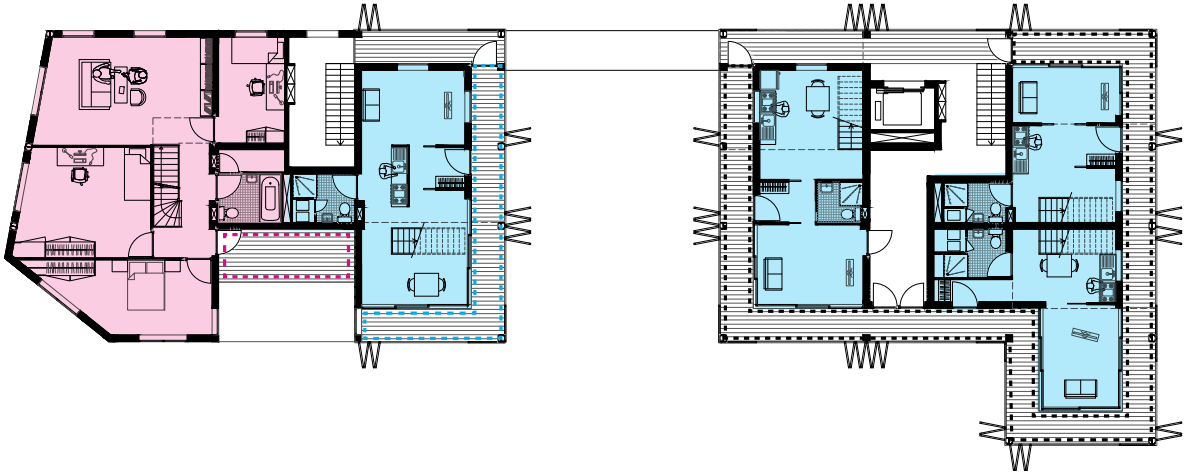
3RD FLOOR PLAN



collective

private

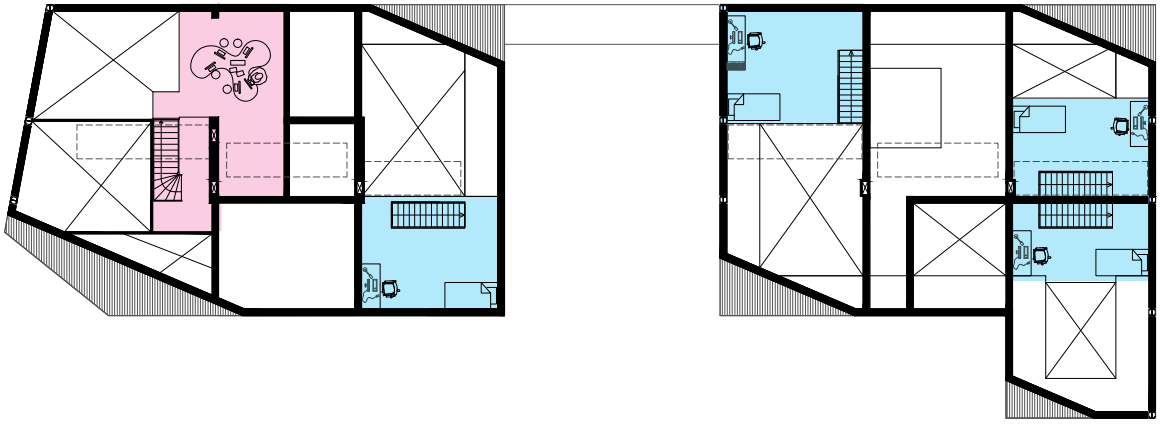
4TH FLOOR PLAN



collective

private

MEZZANINE FLOOR PLAN



CIRCULATION SYSTEM

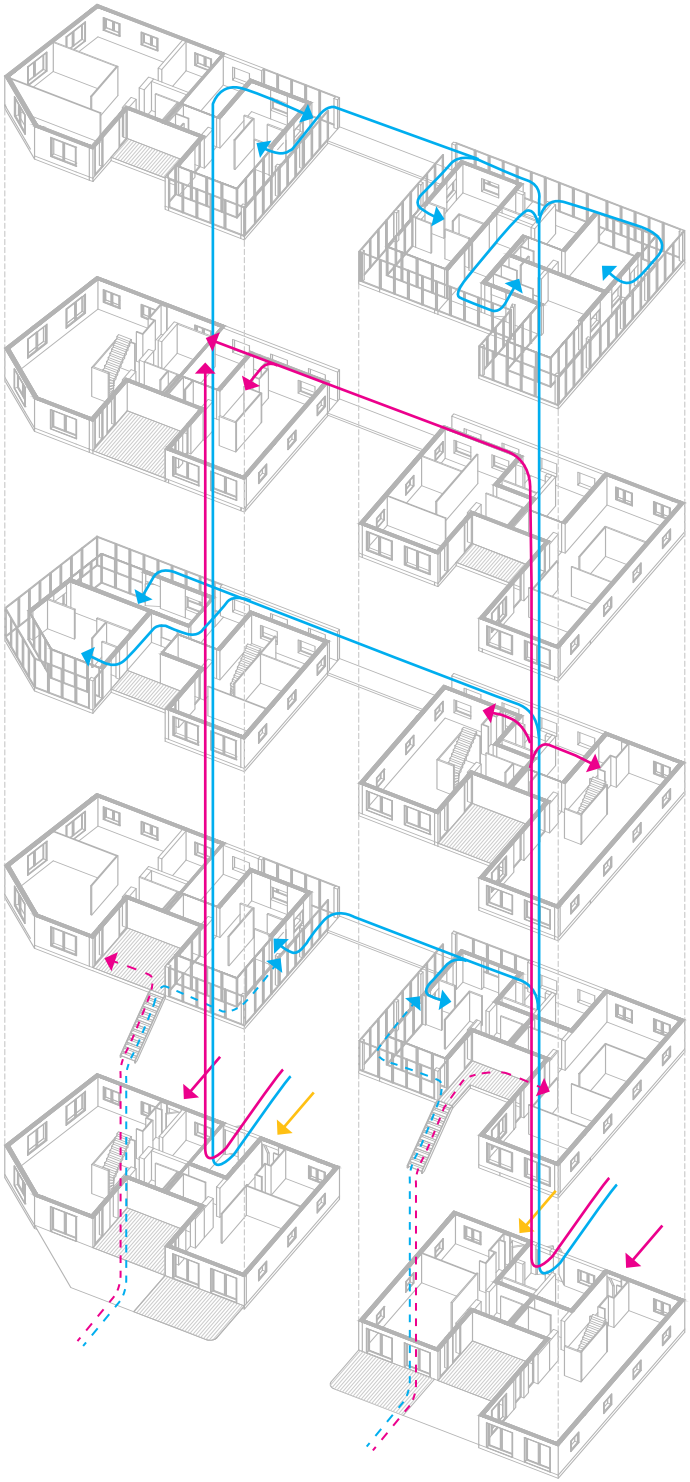
Family Single

Family Family

Single Family

Family Single

Family Elderly



Single Single

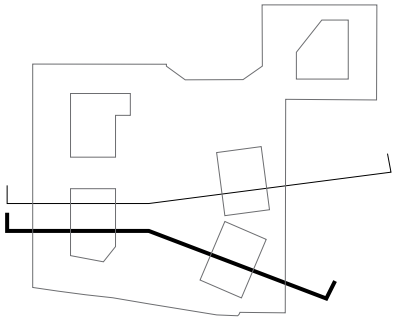
Family Family

Family Family

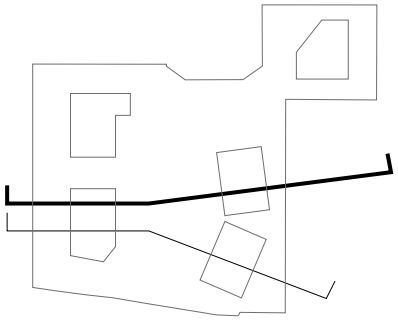
Single Family

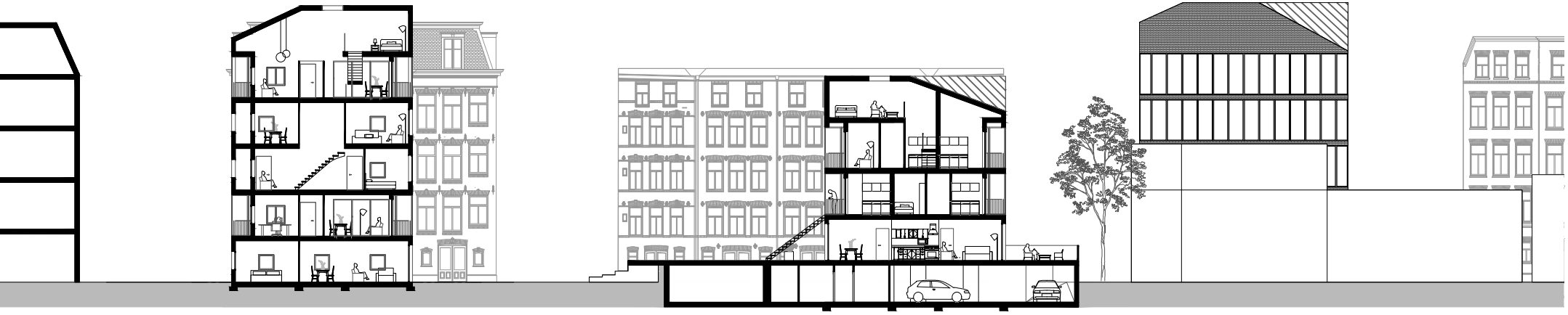
Elderly Family

SECTION



SECTION





RESEARCH

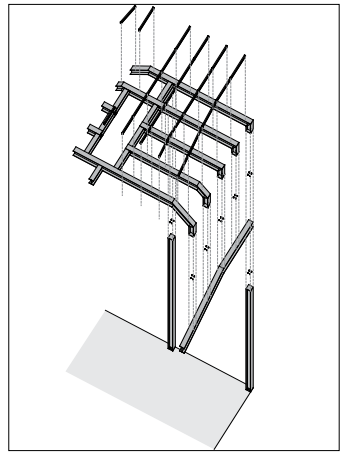
PUBLIC

PUBLIC COLLECTIVE

PRIVATE COLLECTIVE

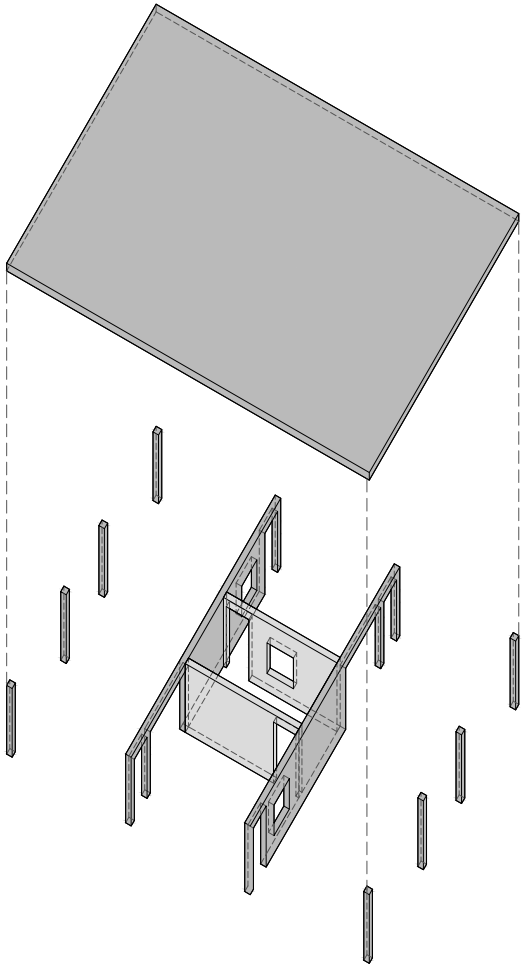
PRIVATE

BUILDING TECHNOLOGY



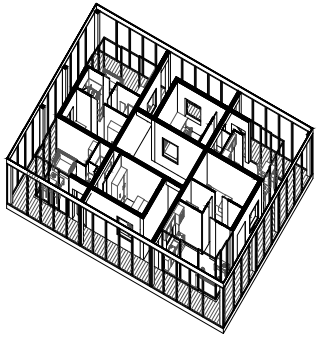
STRUCTURE

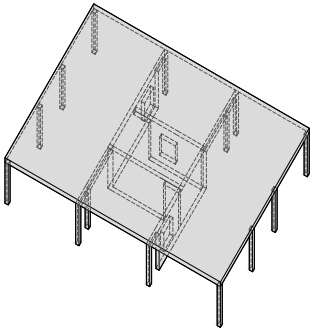
DWELLING TYPOLOGY_STRUCTURE



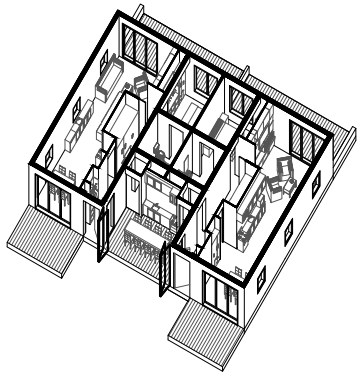
wall + column

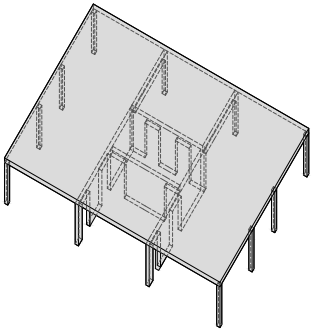
Single



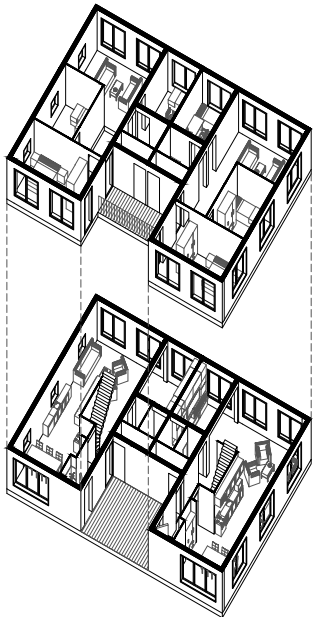


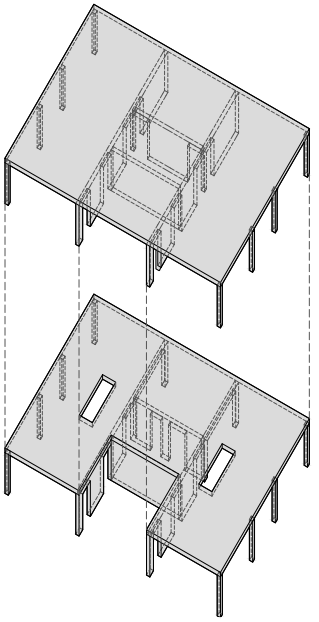
Elderly



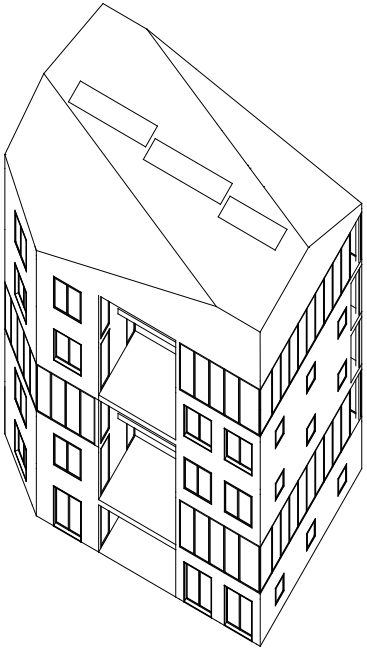


Family

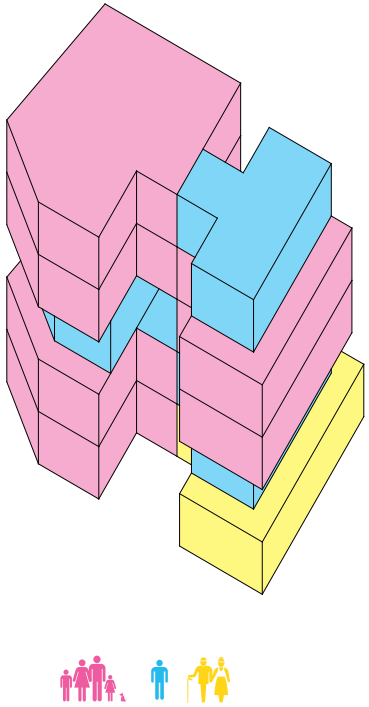




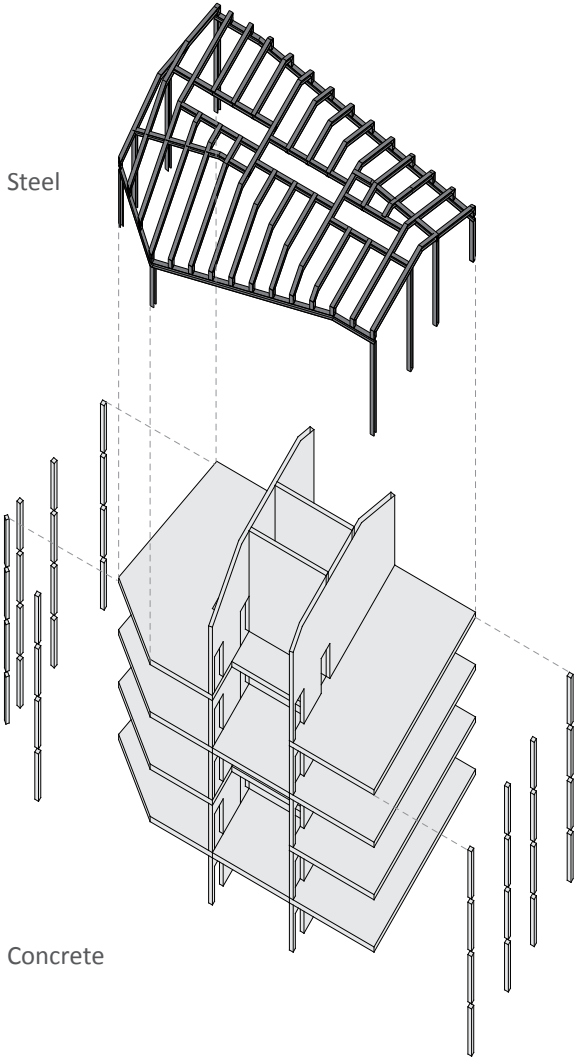
DWELLING BLOCK_STRUCTURE



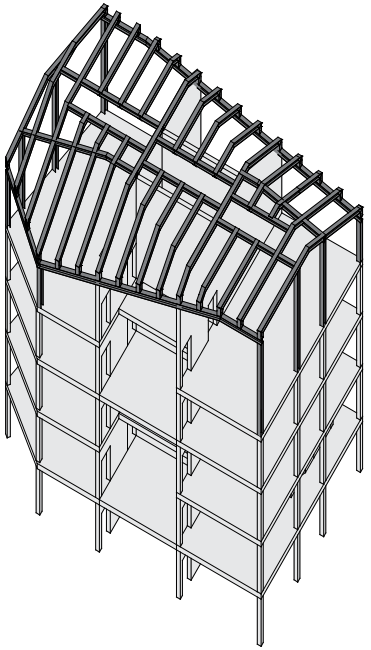
Building envelope



Dwelling types

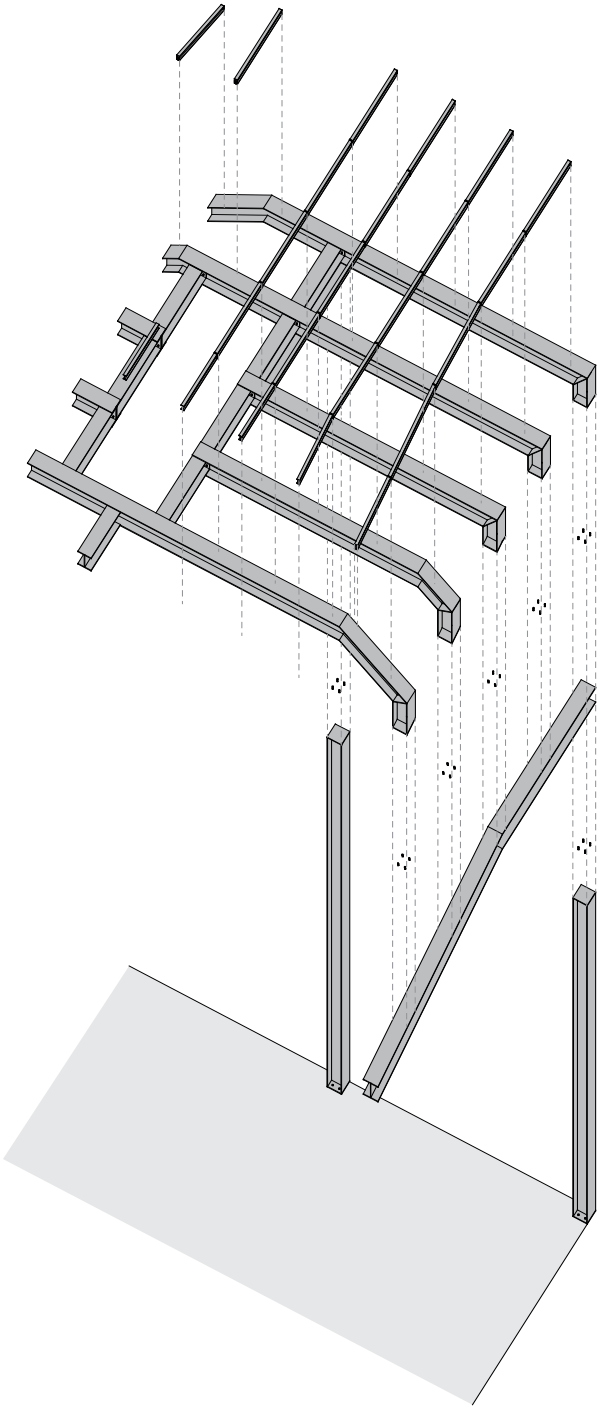


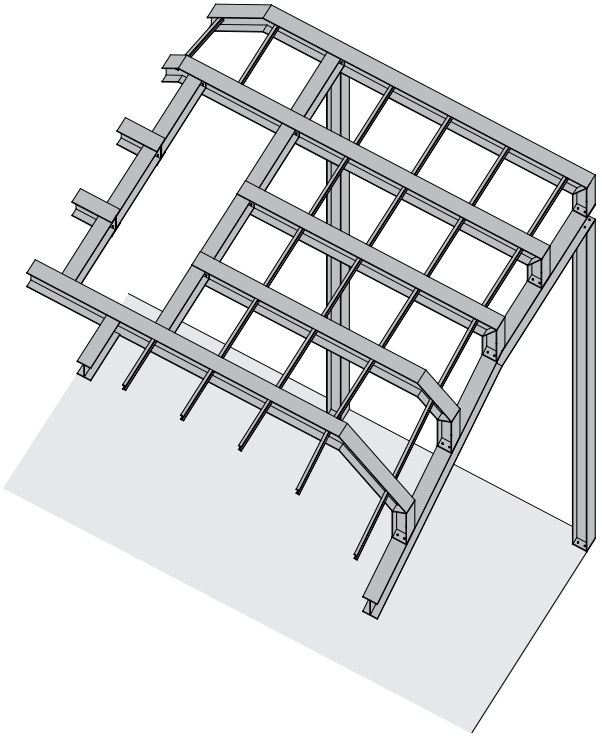
Building structure (material)



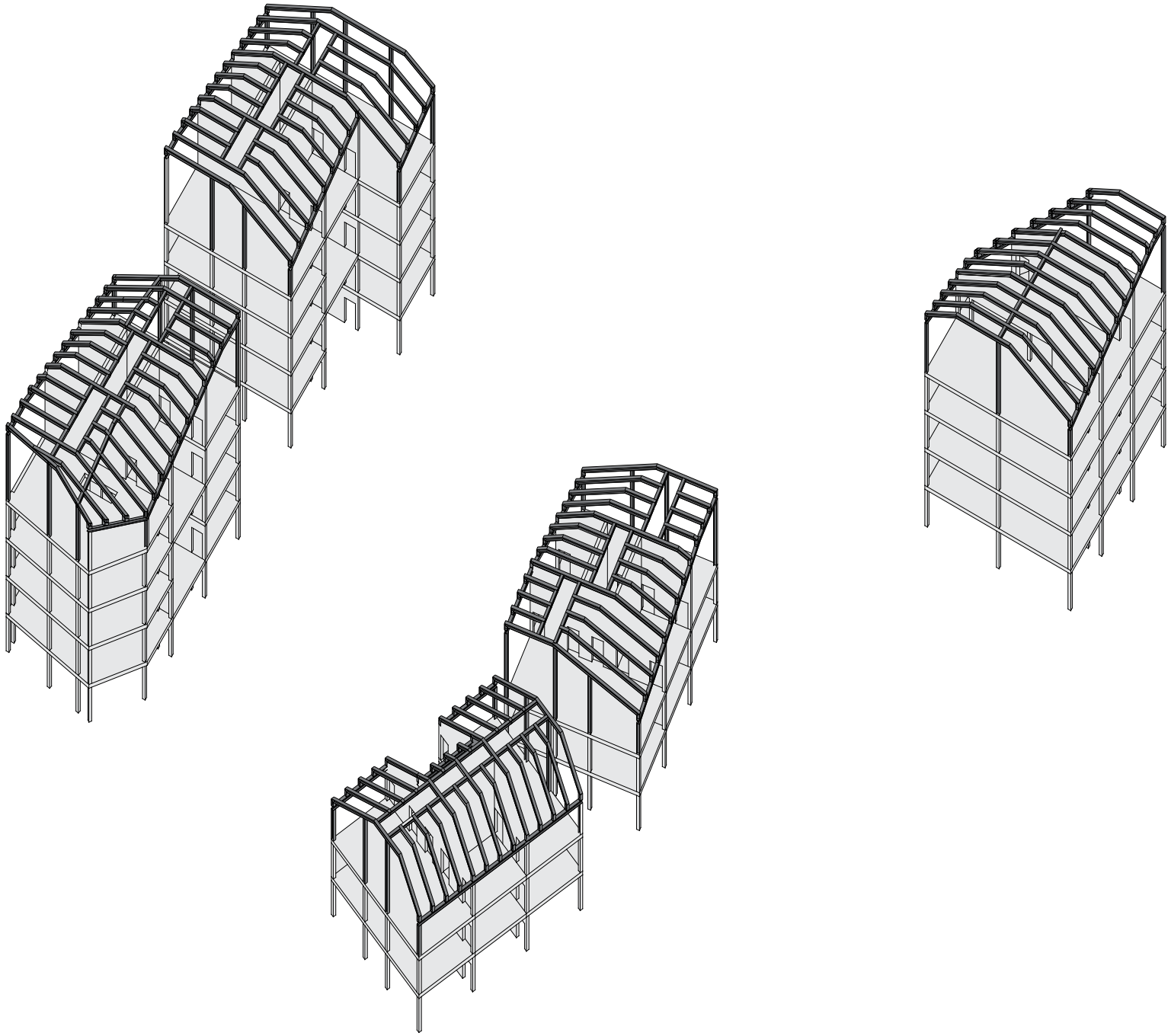
Building structure
Hybrid (wall + column)

TOP FLOOR STEEL STRUCTURE



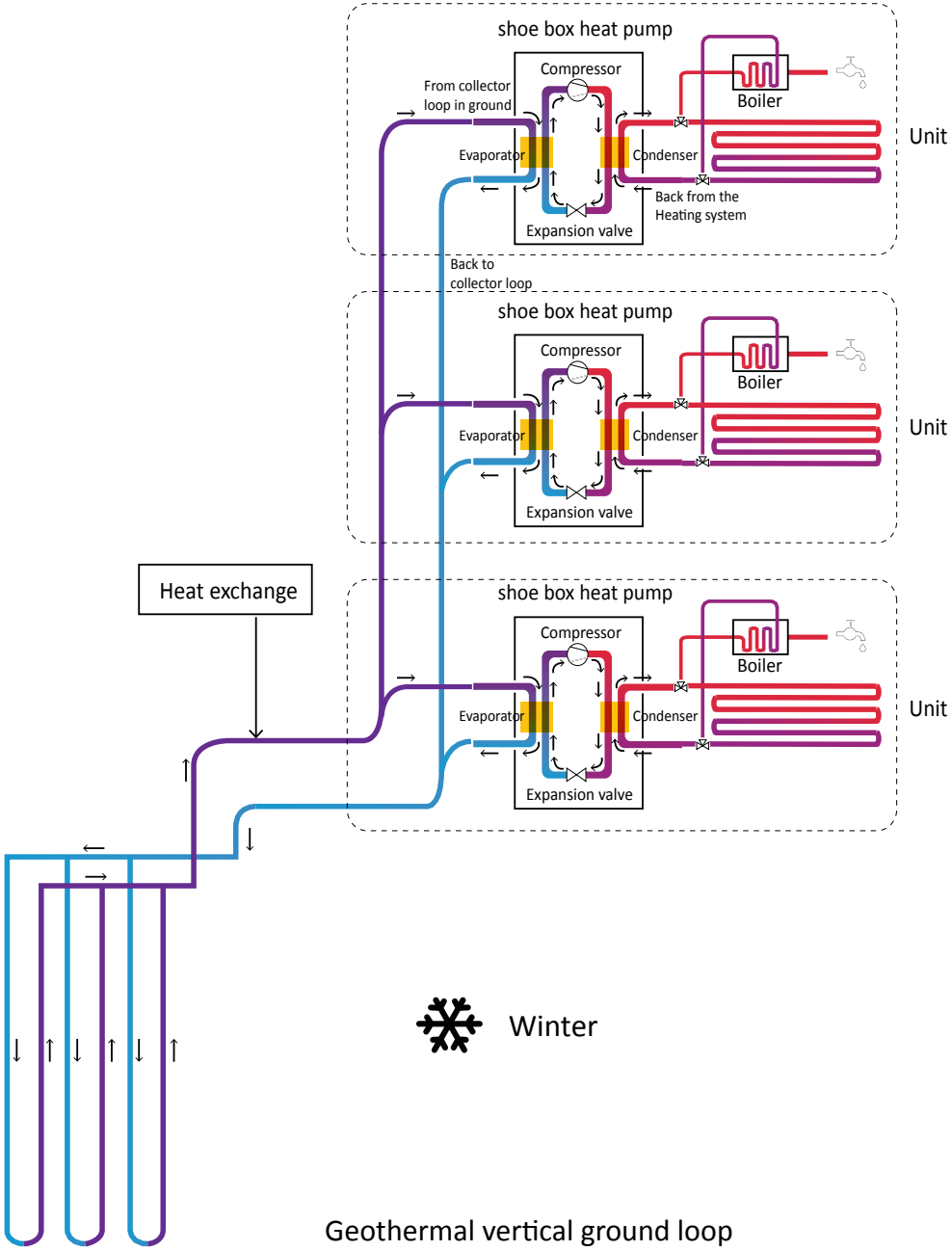


OVERALL STRUCTURE ORGANIZATION



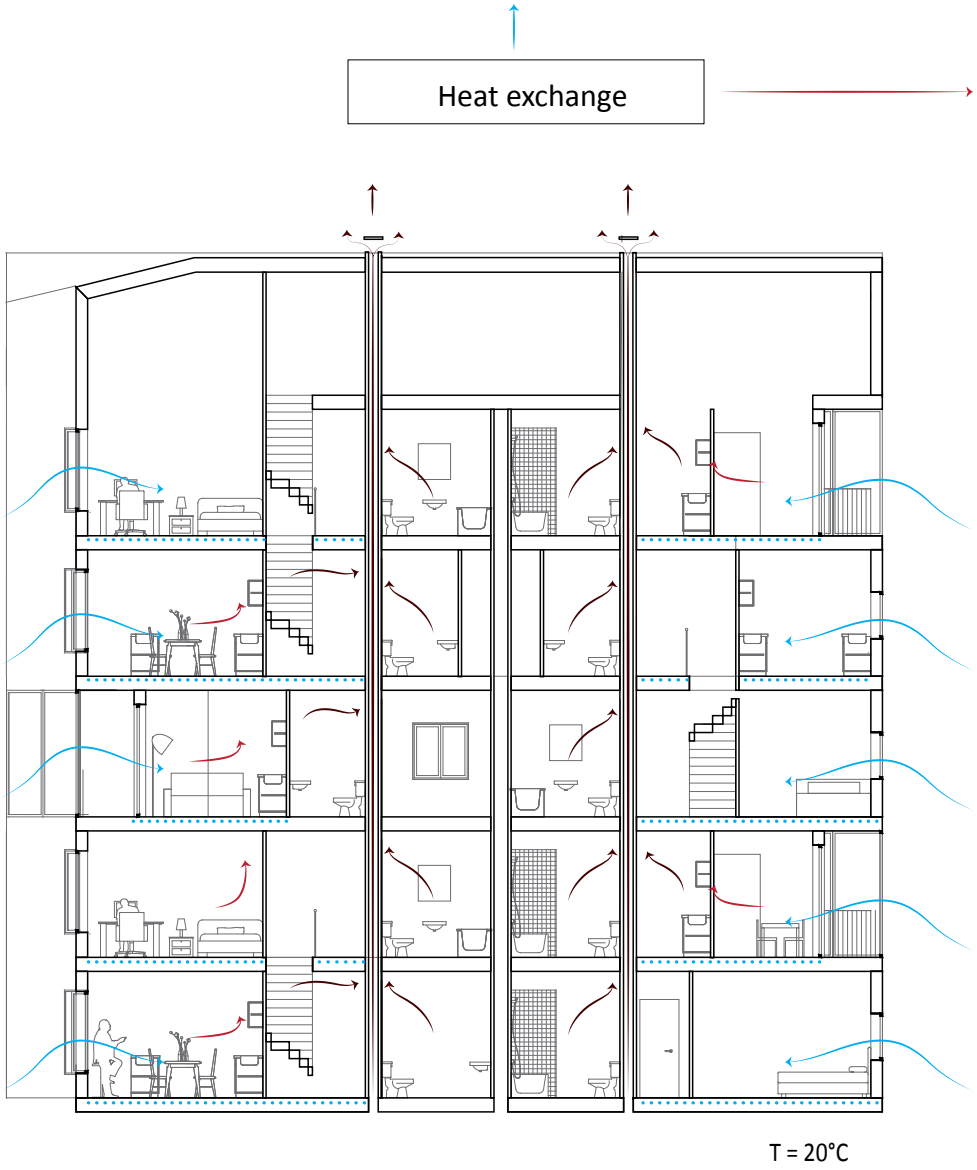
CLIMATE CONCEPT

ENERGY SCHEME DIAGRAM



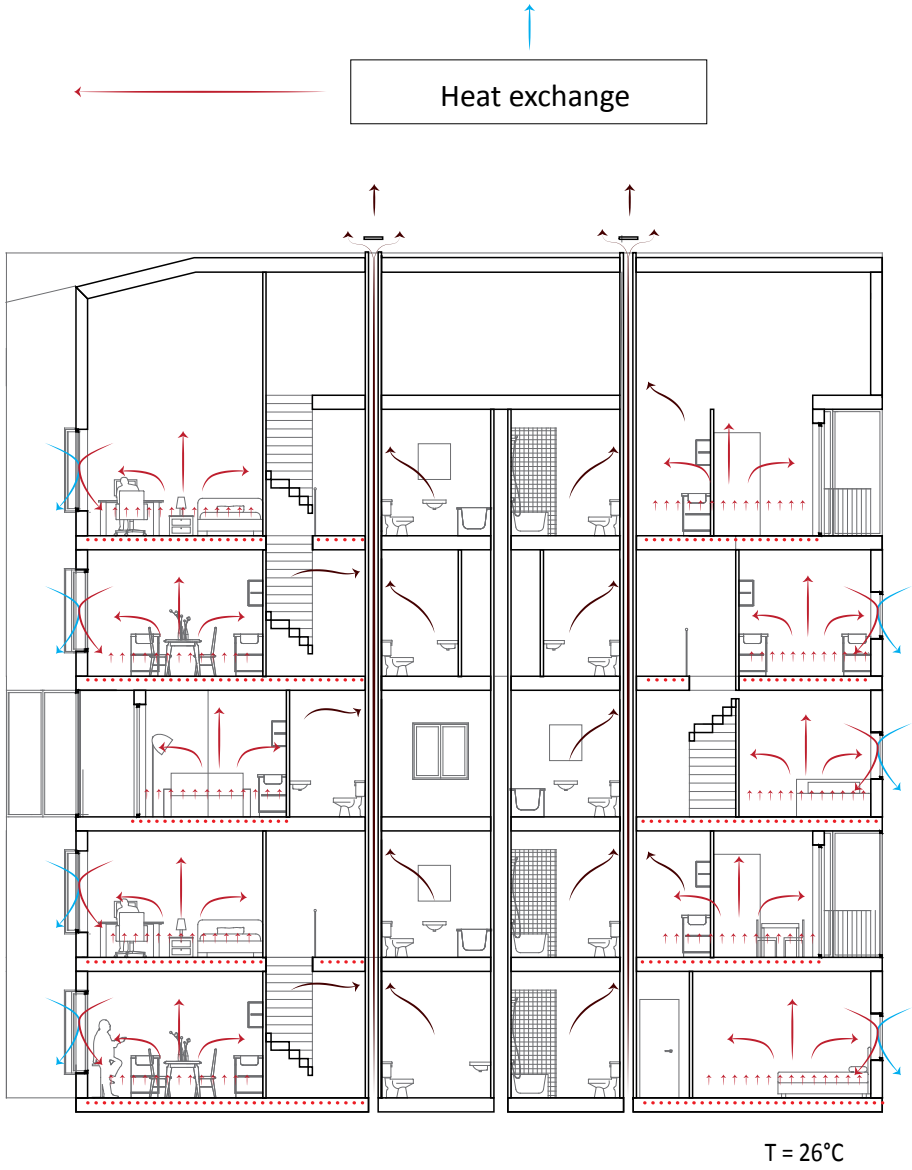
3kW SHOEBOX heatpump
530 x 475 x 370

CLIMATE CONCEPT DIAGRAM_COOLING, HEATING / VENTILATION



Summer

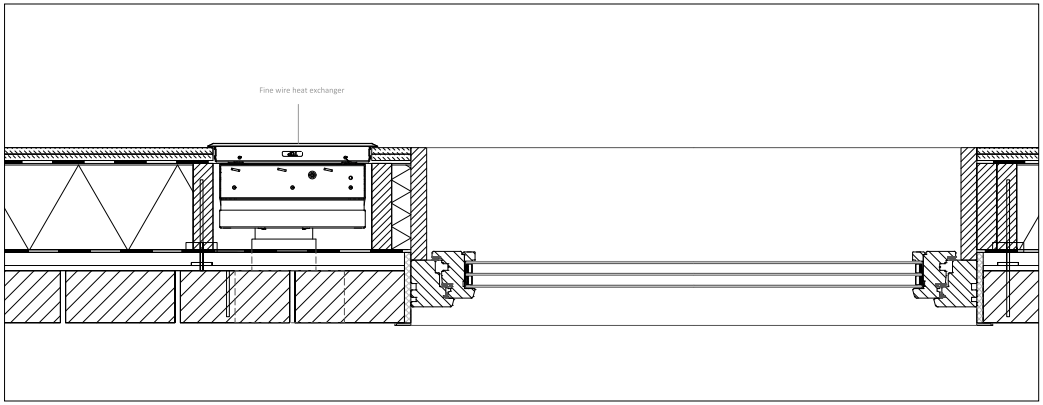
In the Summer, 21th JUN : solar altitude 62º

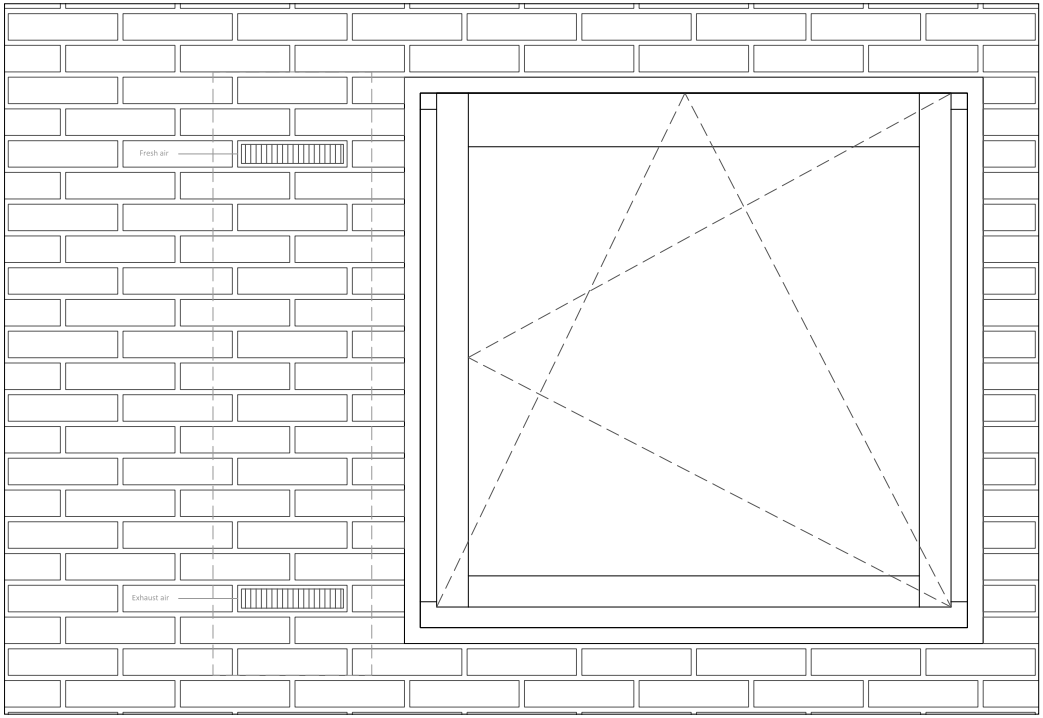


Winter

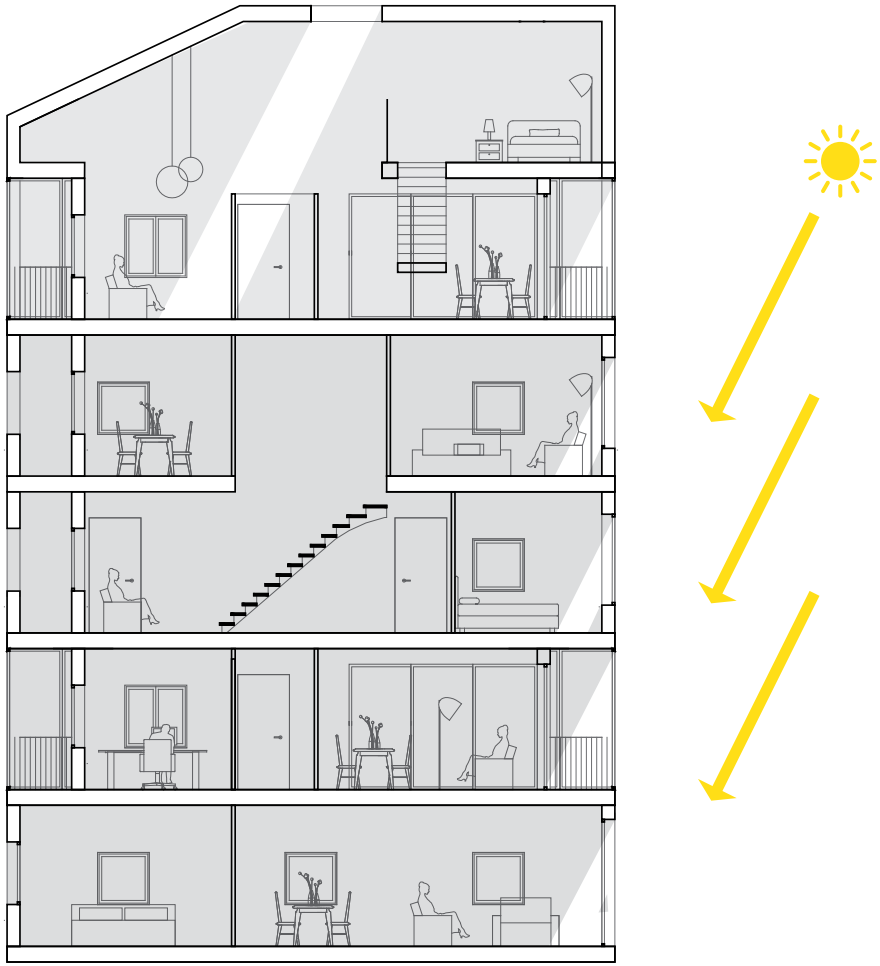
In the Winter, 21th Dec : solar altitude 15º

FINE WIRE HEAT EXCHANGER



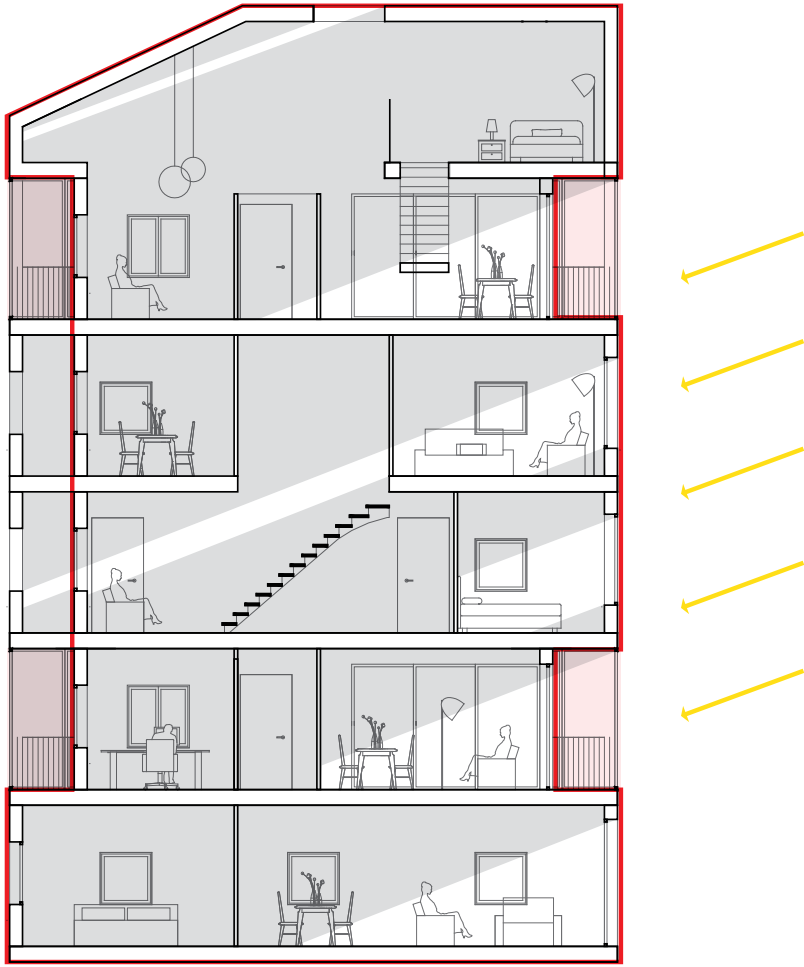


CLIMATE CONCEPT DIAGRAM_SUN LIGHT



Summer

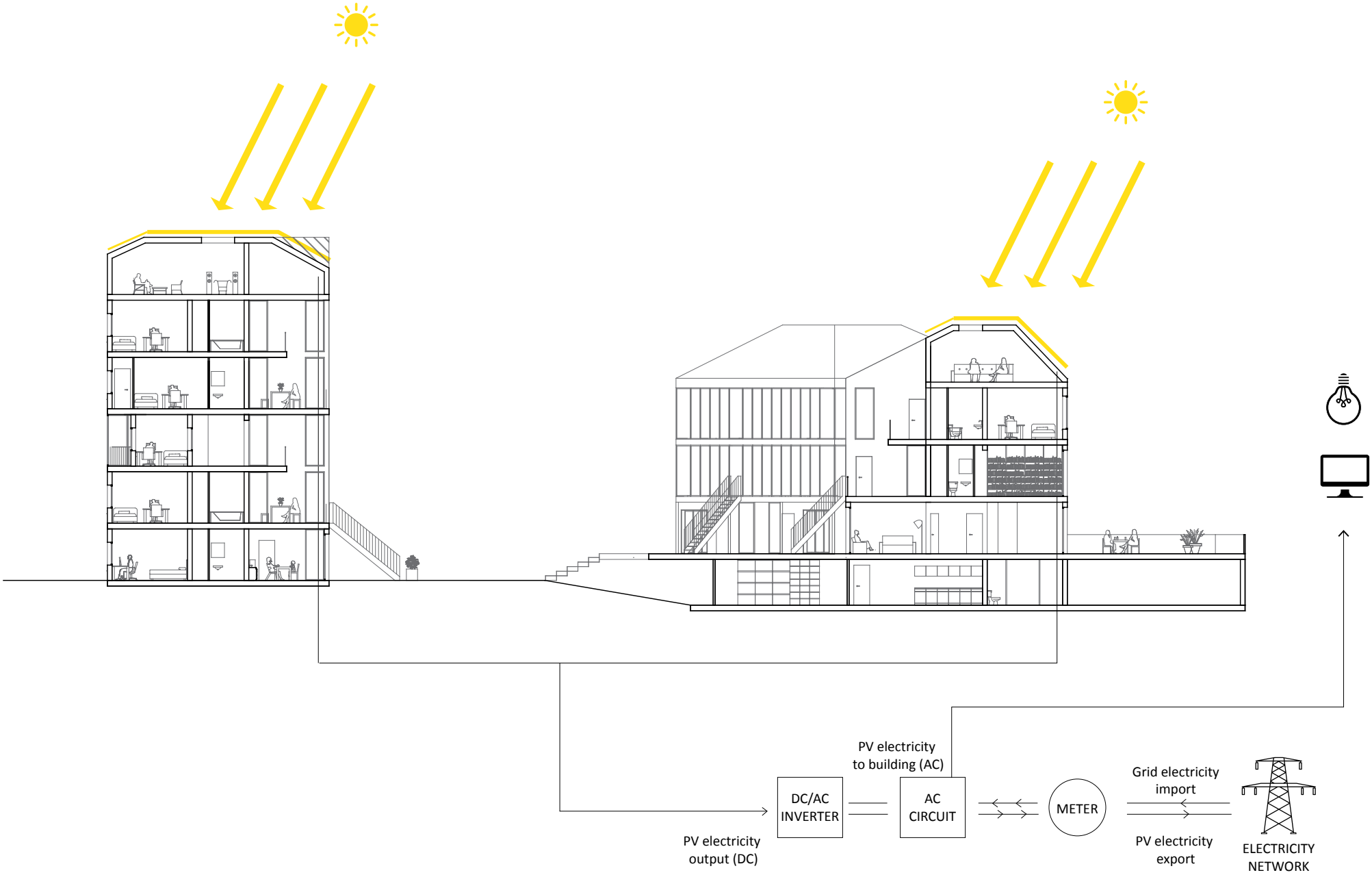
In the Summer, 21th JUN : solar altitude 62º



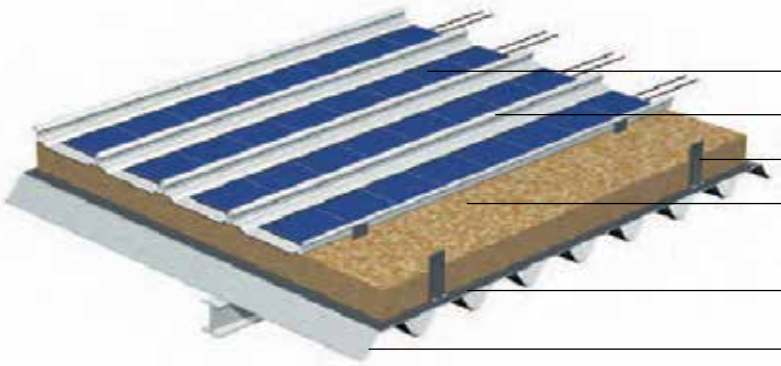
Winter

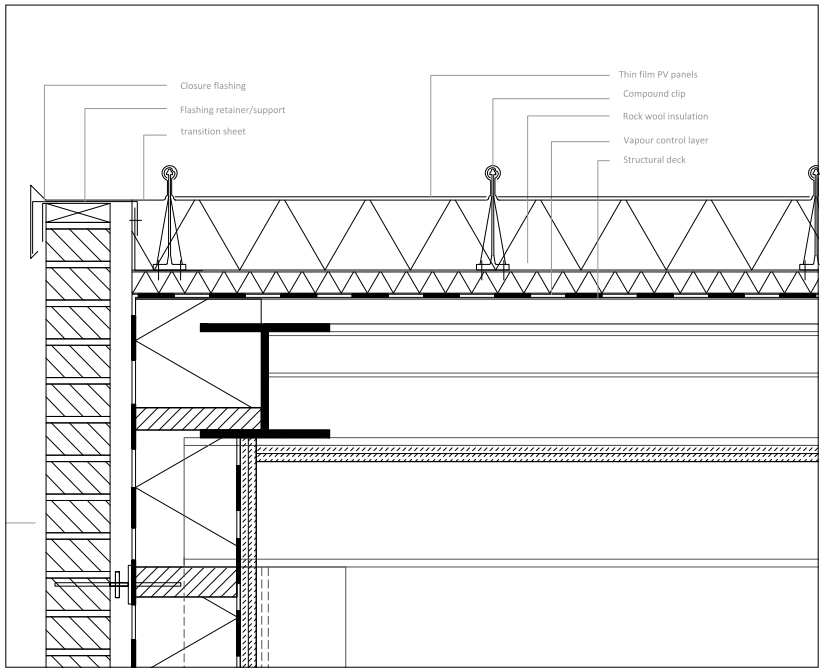
In the Winter, 21th Dec : solar altitude 15º

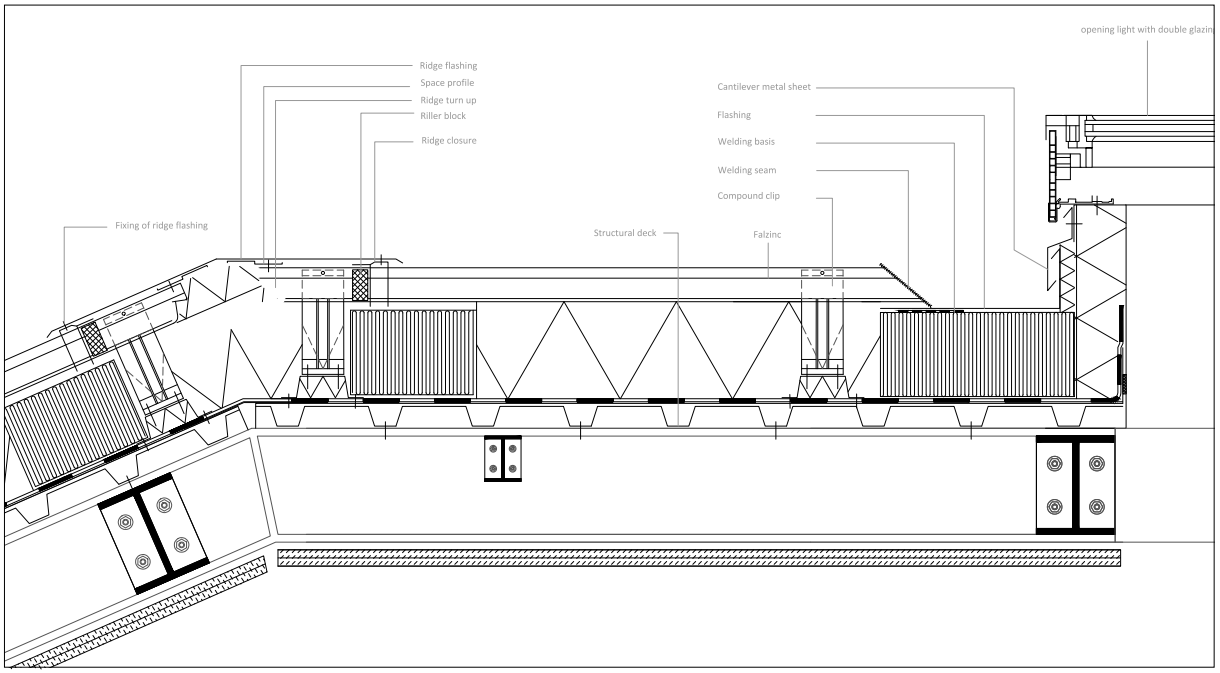
BUILDING-INTEGRATED PHOTOVOLTAICS



BUILDING-INTEGRATED PHOTOVOLTAICS

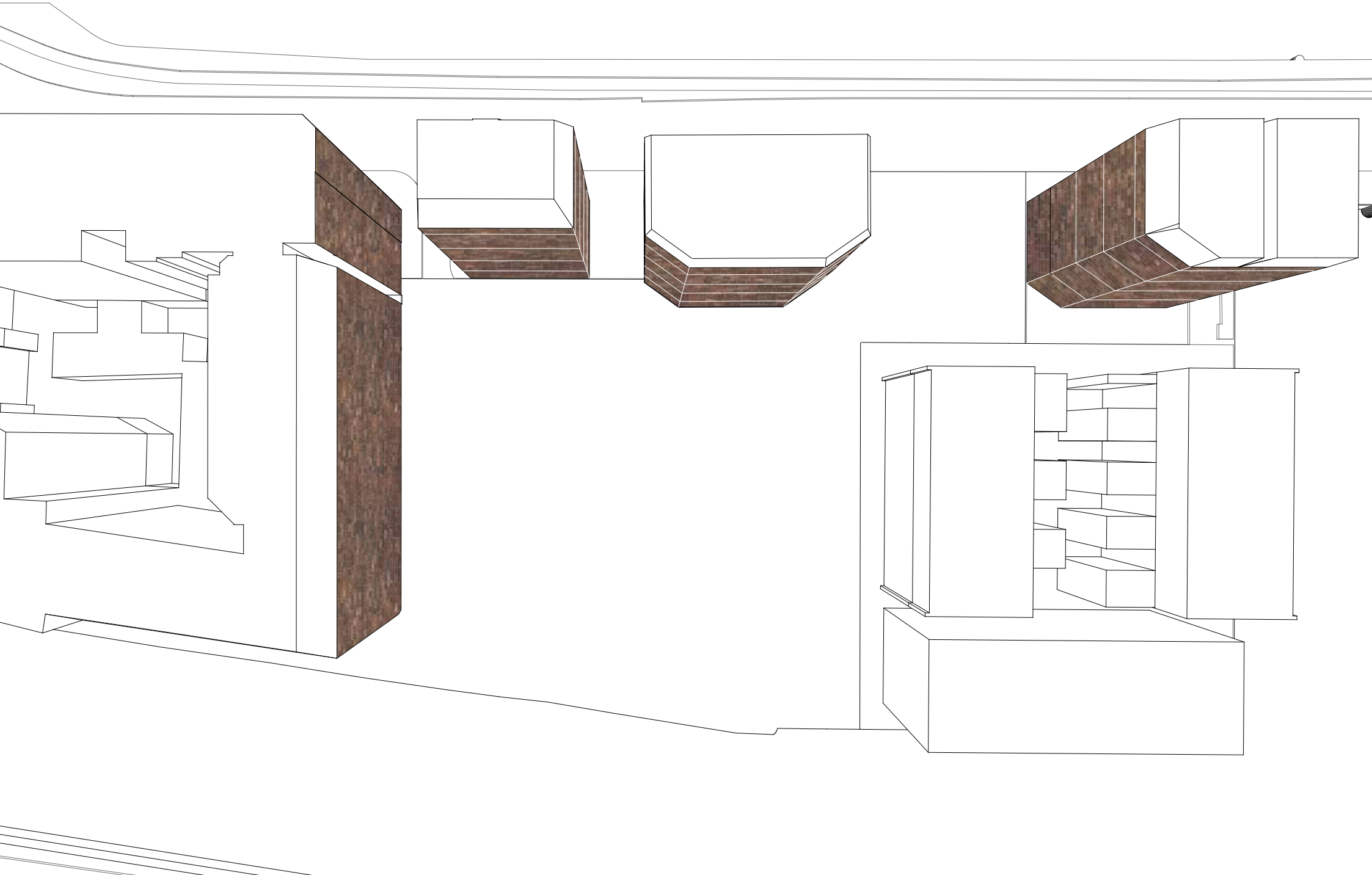




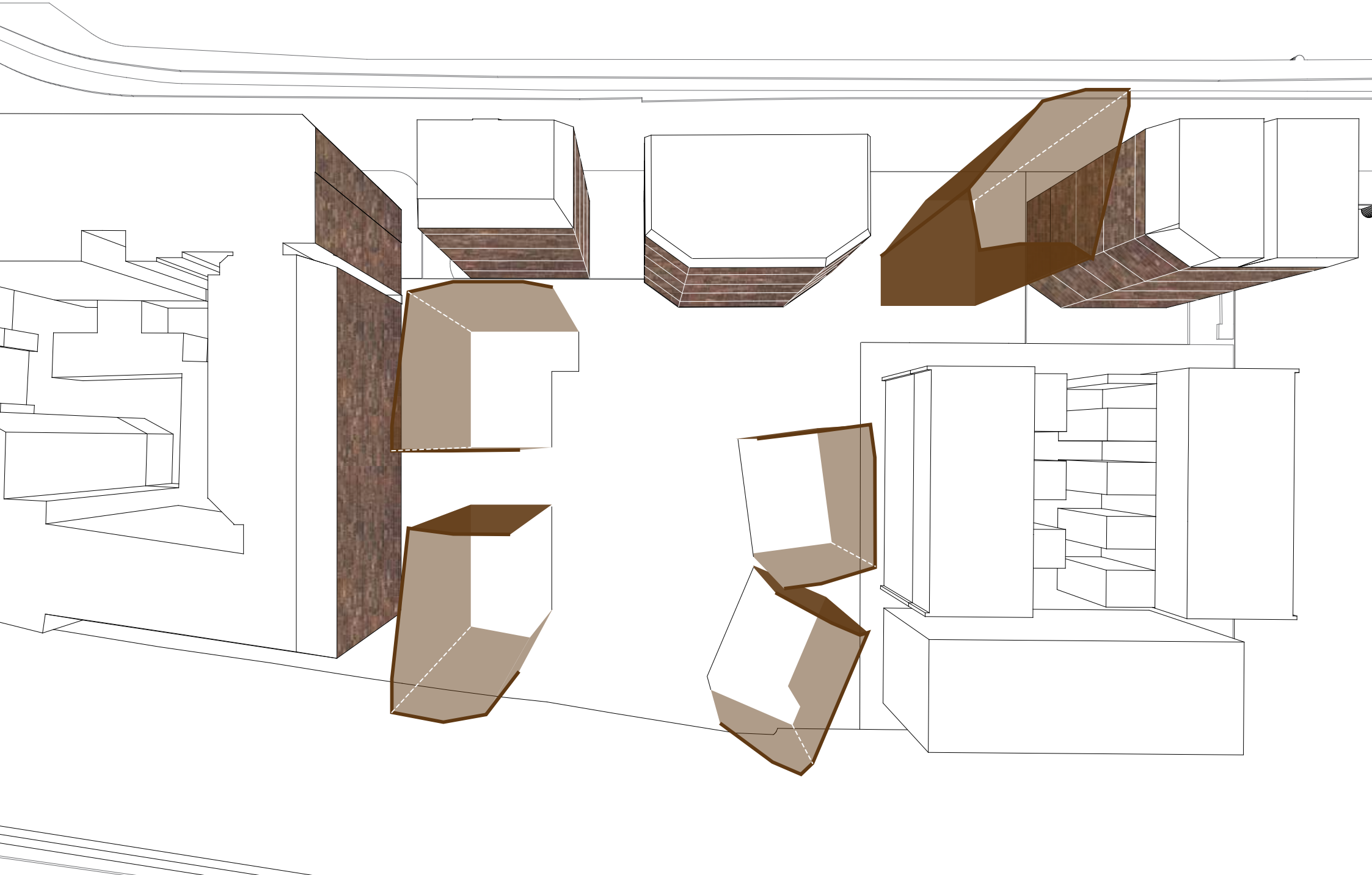


FACADE CONCEPT

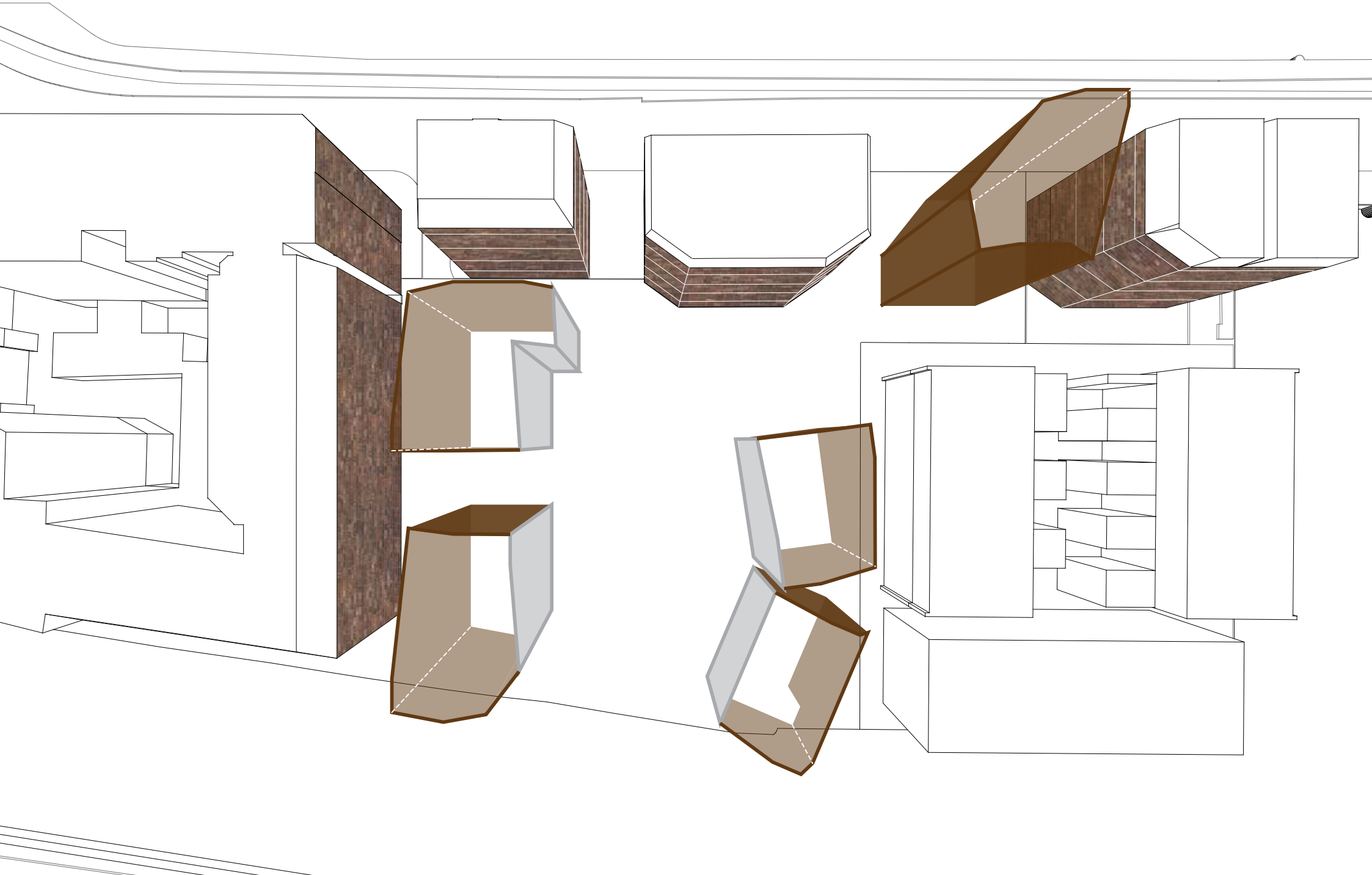
SURROUNDING BUILDINGS



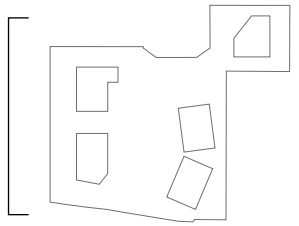
OUTER FACADE_**RED BRICK**

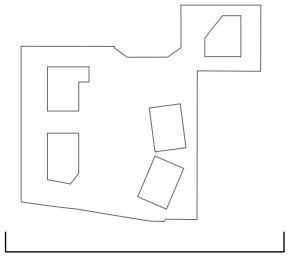


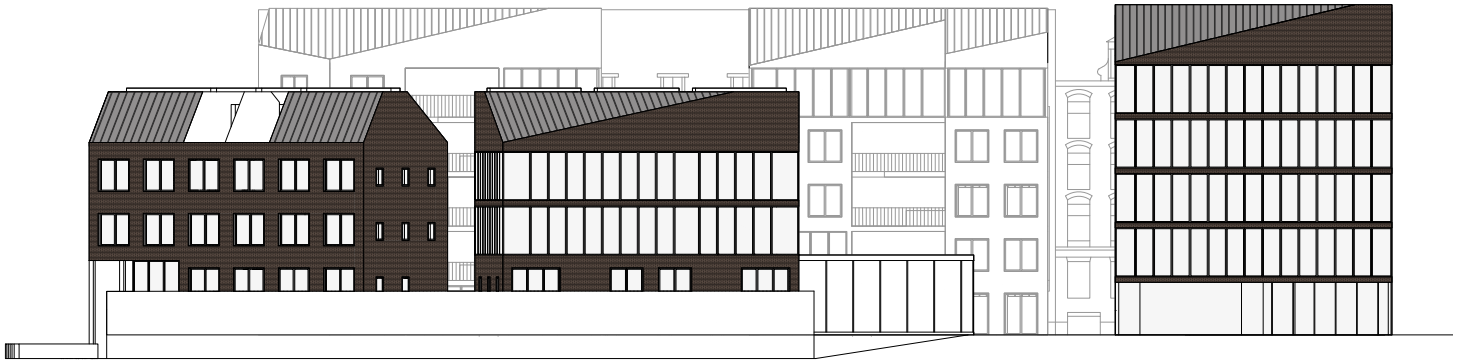
INNER FACADE_**GREY BRICK**

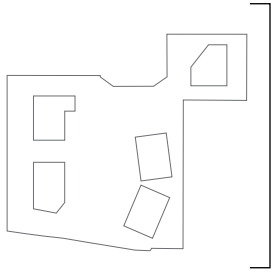


ELEVATION OUTER FACADE_**RED BRICK**

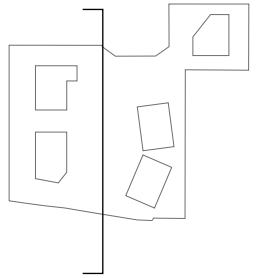


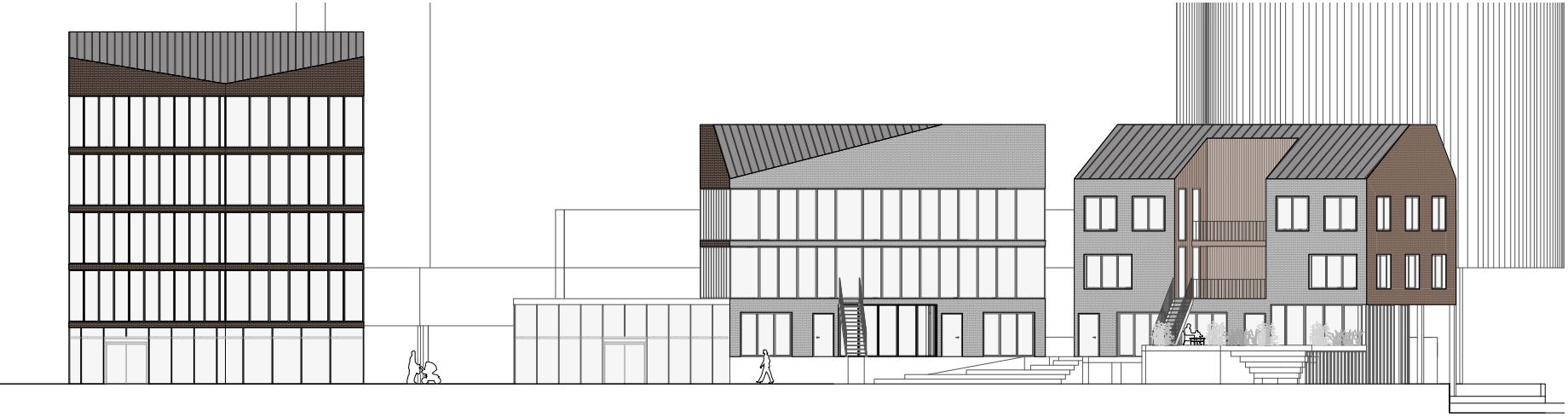


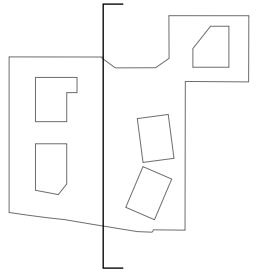




ELEVATION INNER FACADE_GREY BRICK







INNER FACADE TRANSITIONAL SPACES_GREY BRICK+WOOD

Shared balcony
(family)

shared living space
(elderly)

Flexible corridor
(single)

Private terrace

Window for collective space

Window for private space

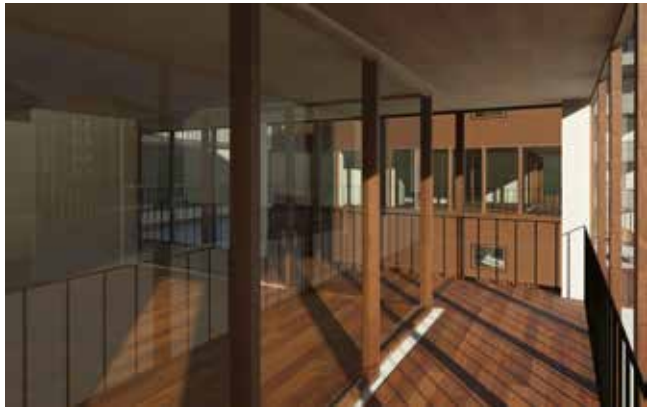
OUTER FACADE TRANSITIONAL SPACES_RED BRICK+WOOD

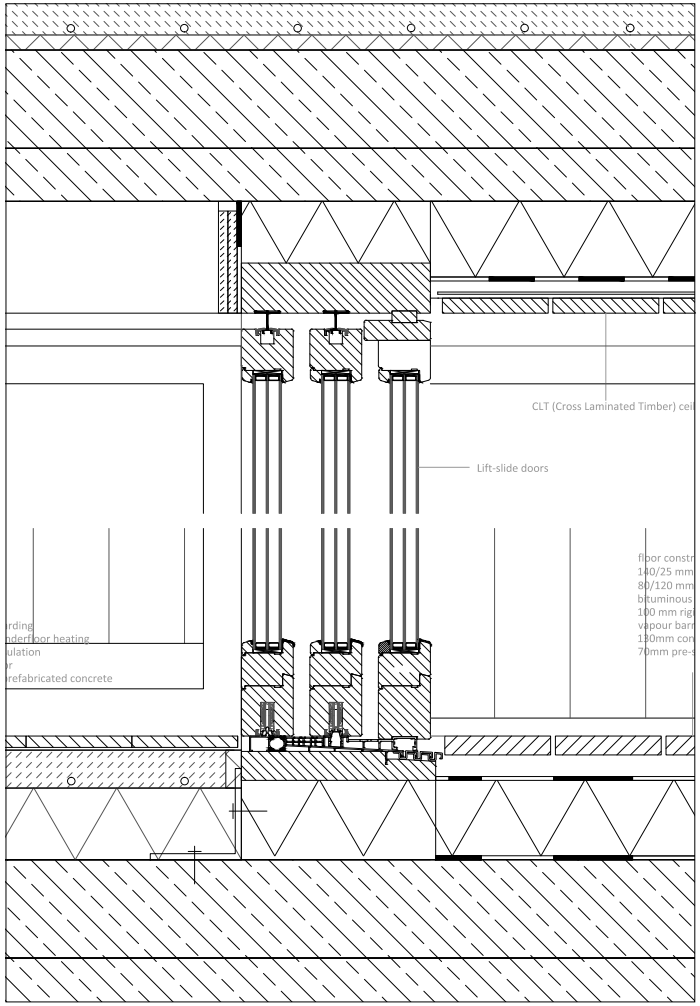
Flexible corridor

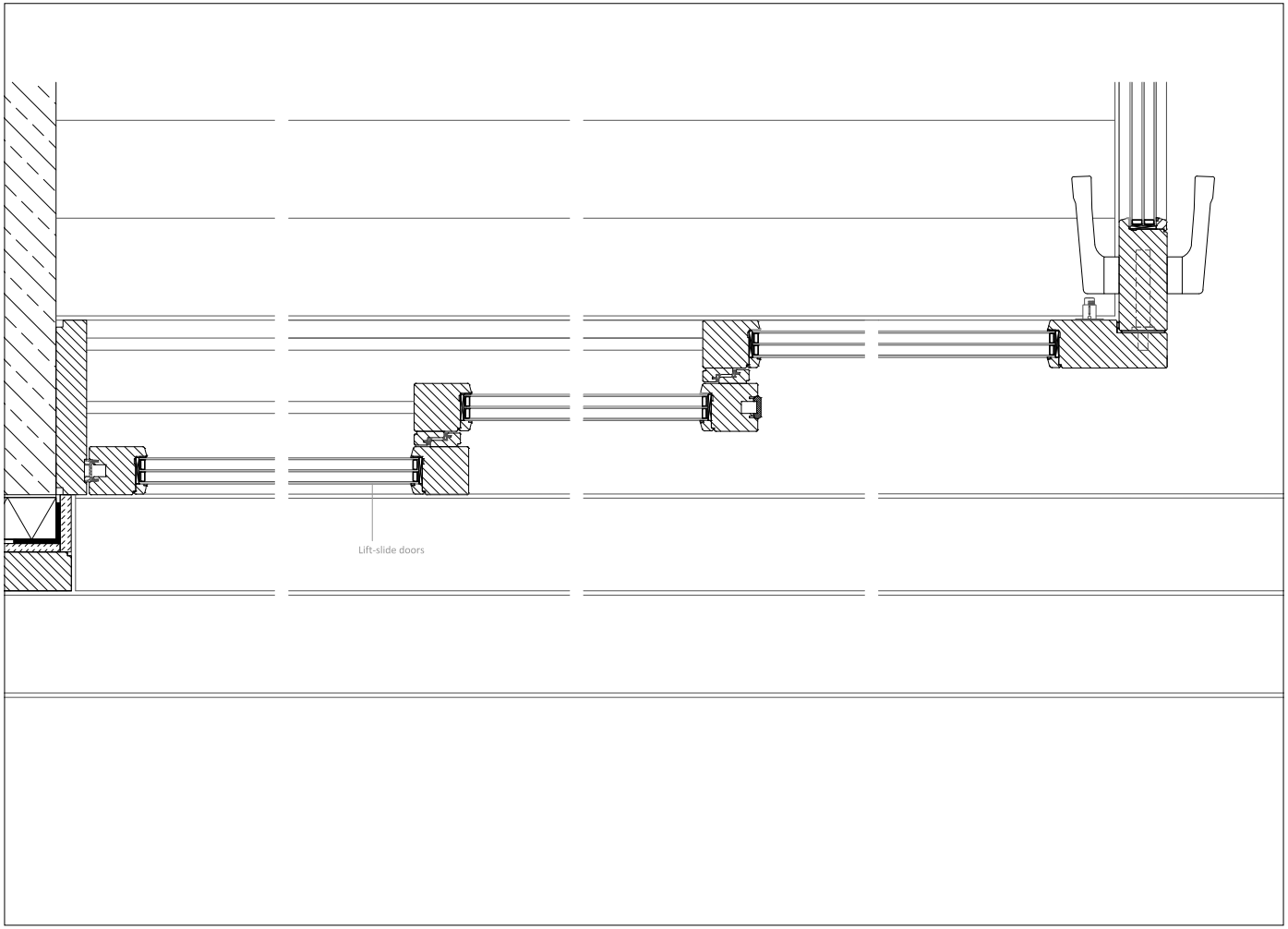
Private terrace

Window for collective space

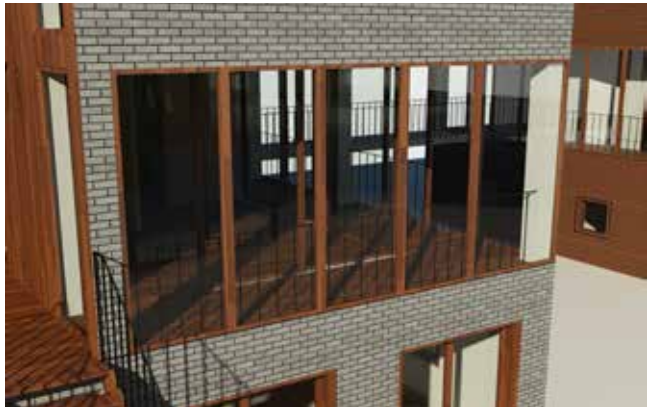
DETAIL_SLIDING DOOR

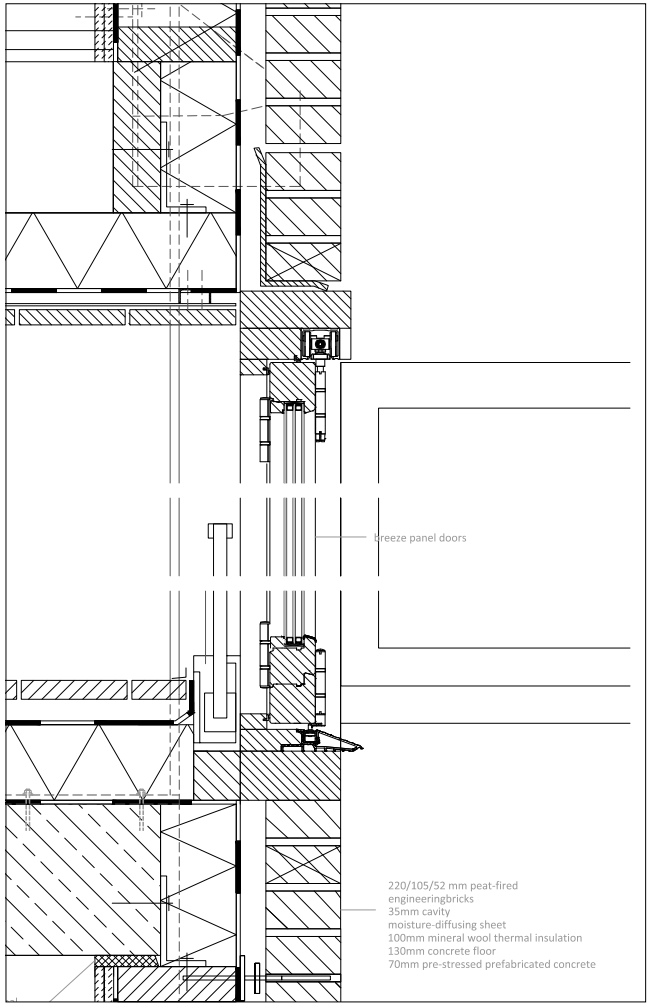


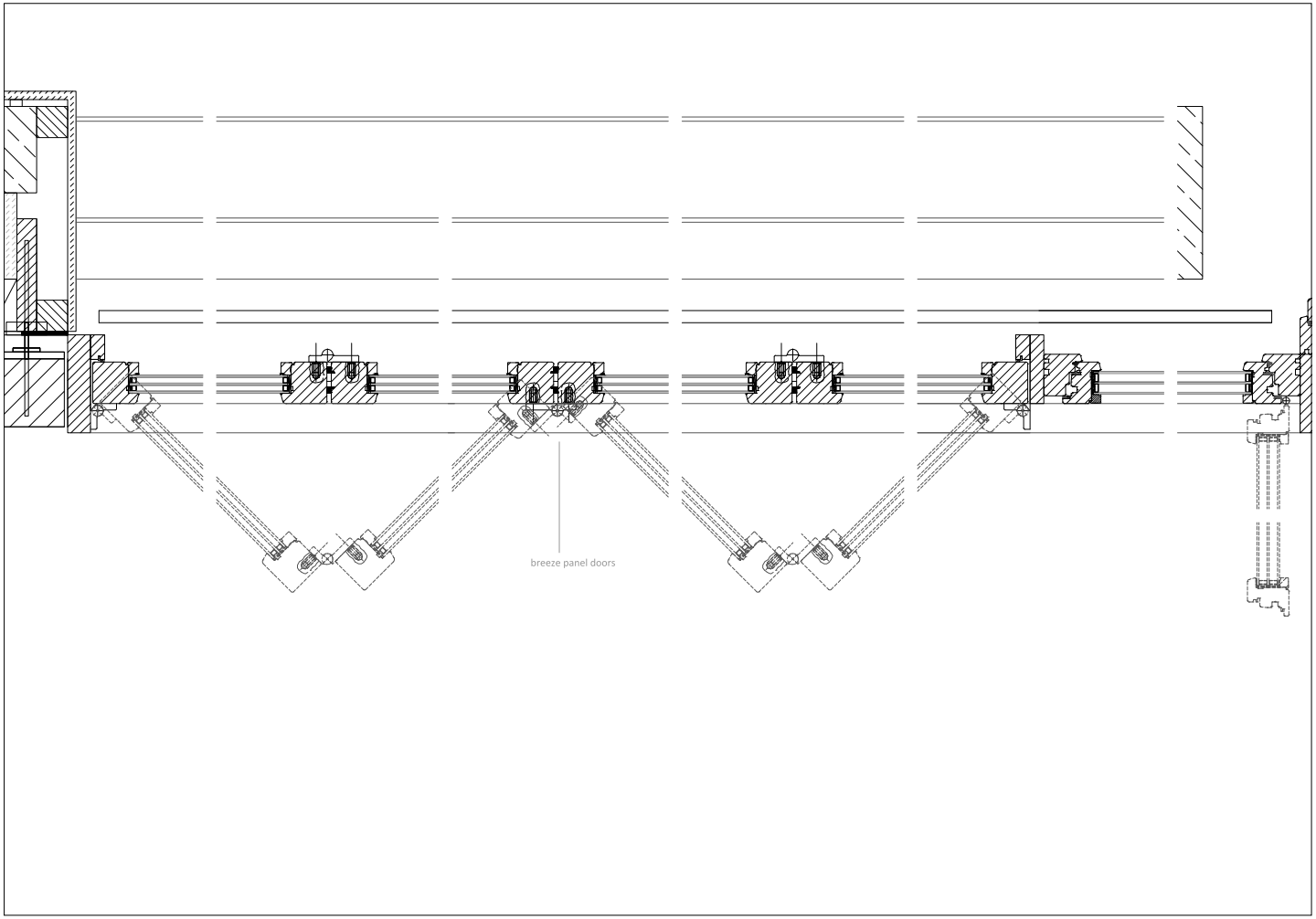




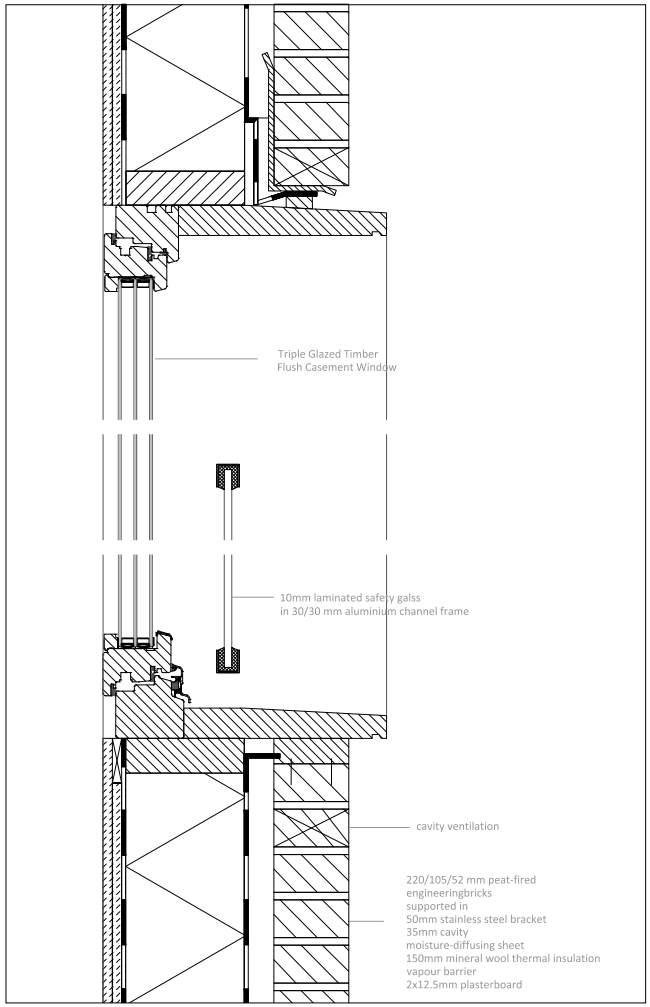
DETAIL_FOLDING DOOR

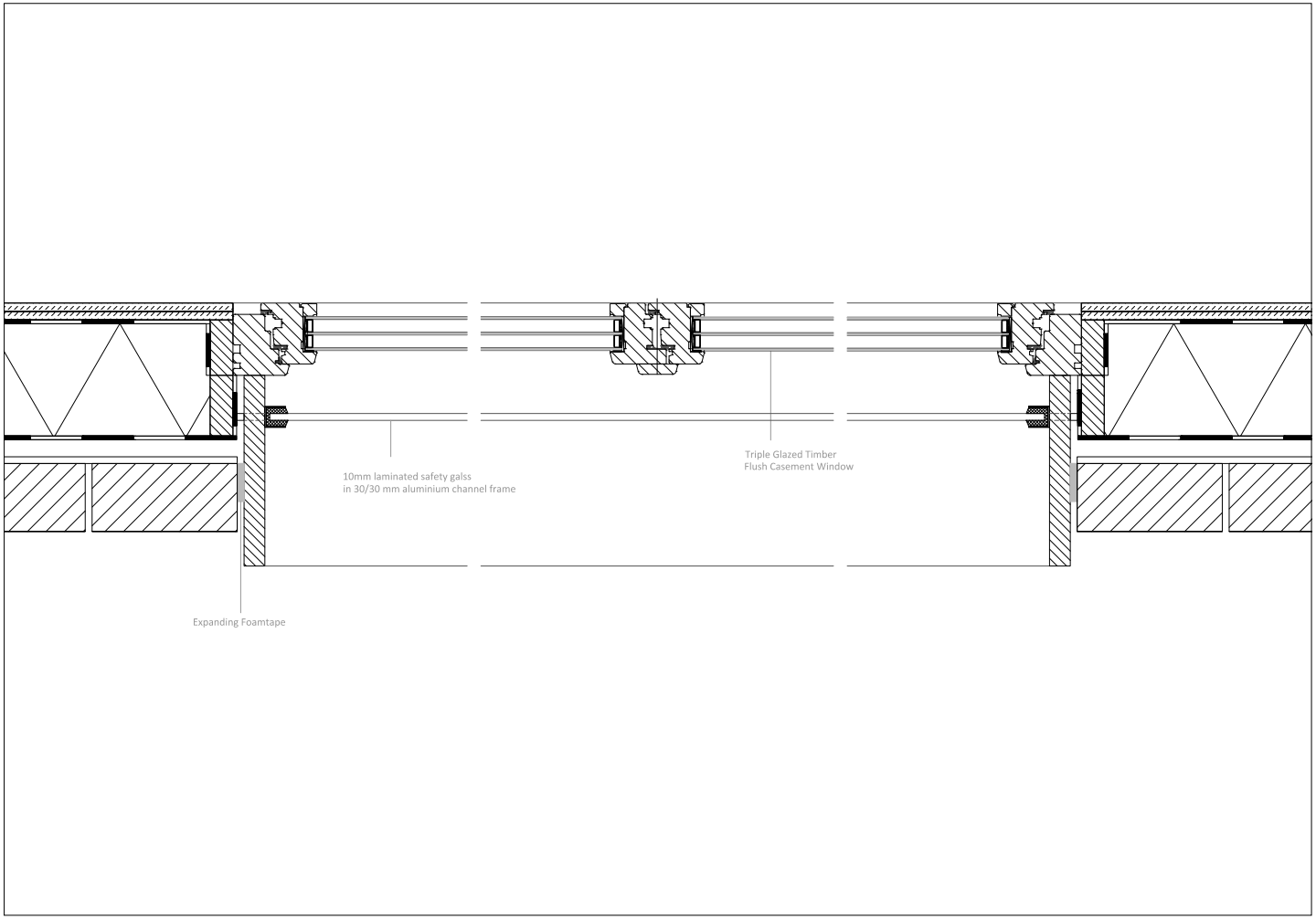




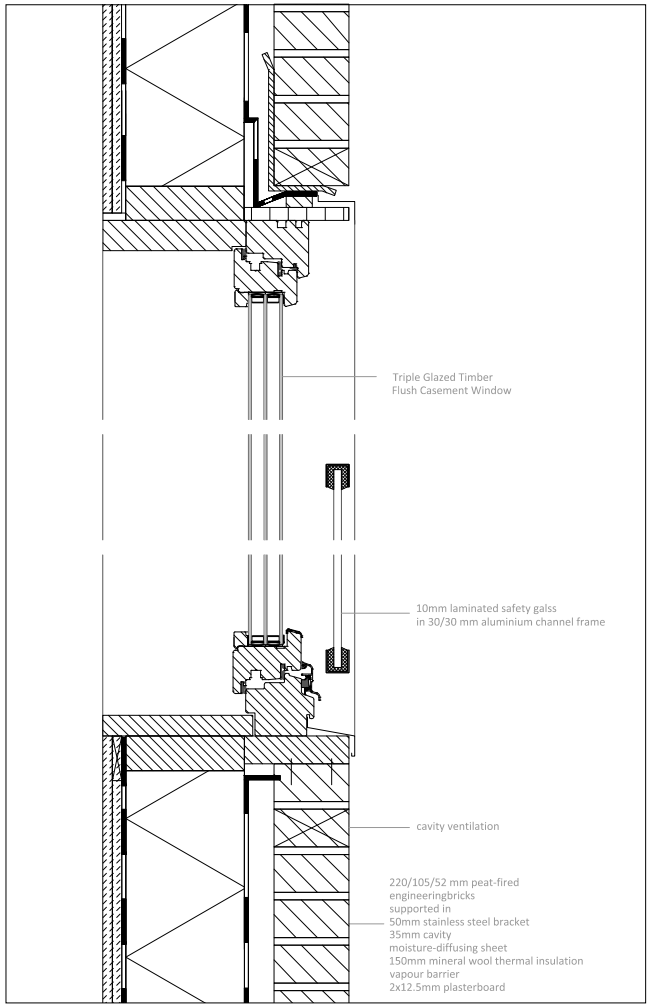


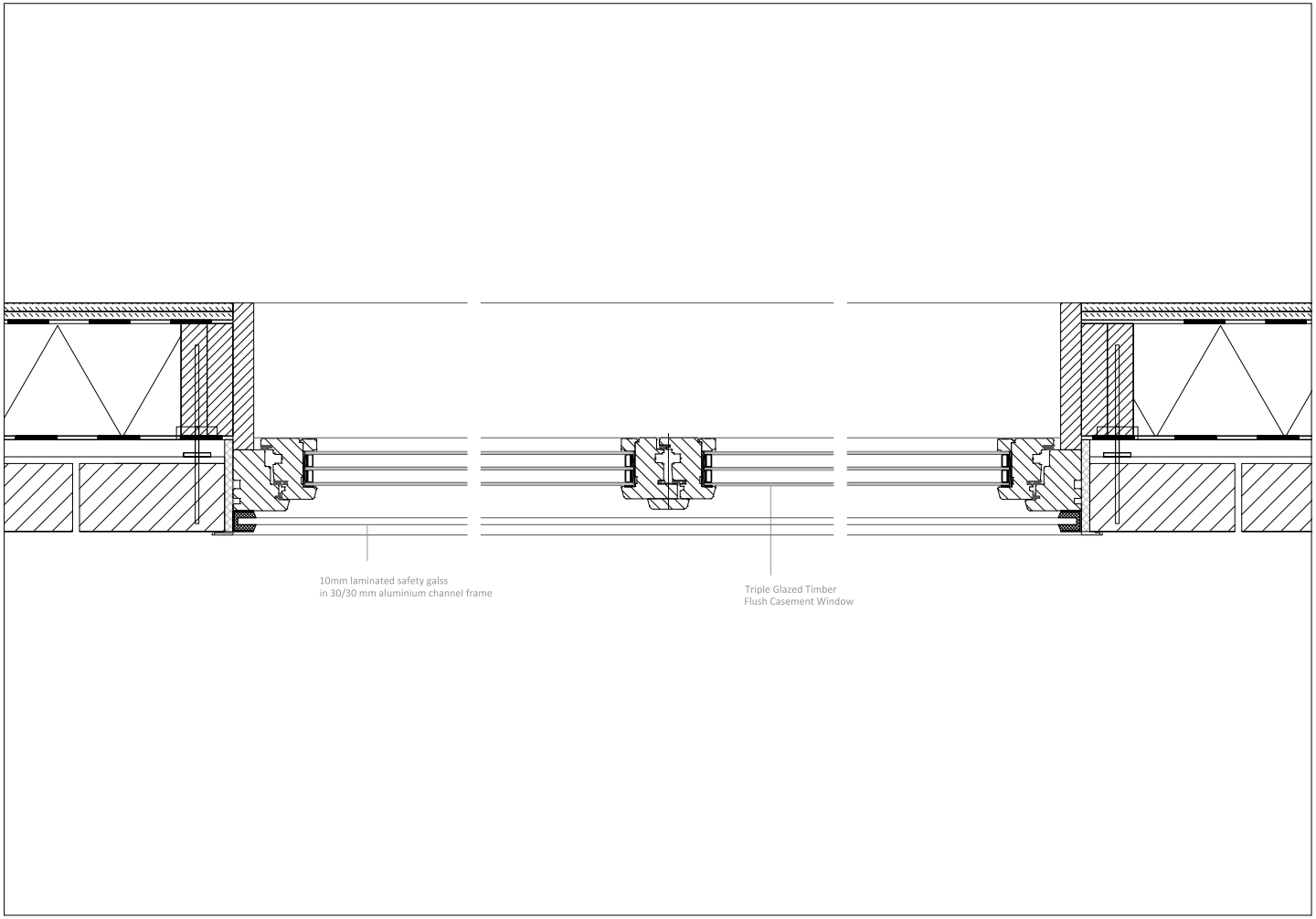
DETAIL_WINDOW FOR COLLECTIVE SPACE





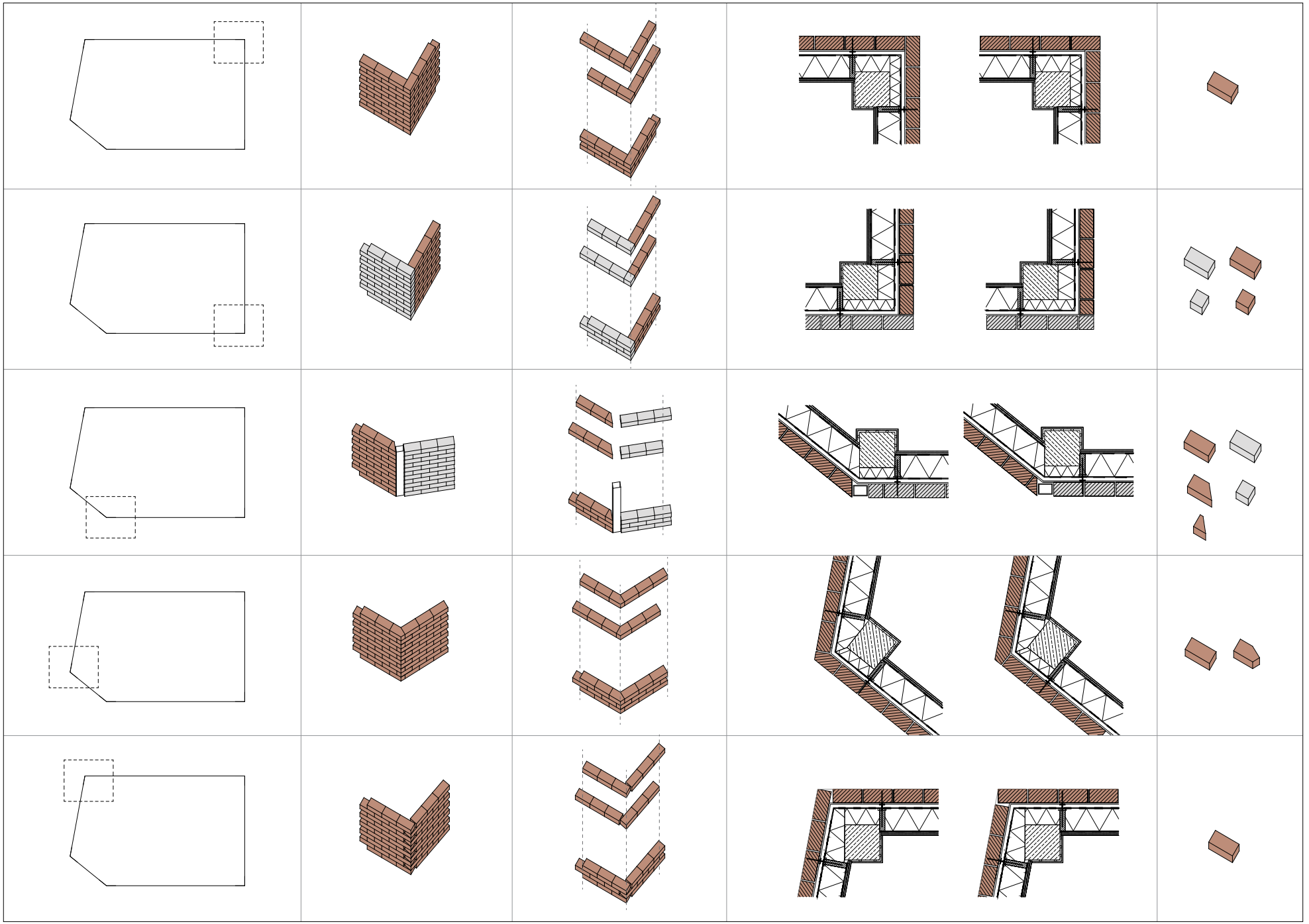
DETAIL_WINDOW FOR PRIVATE SPACE



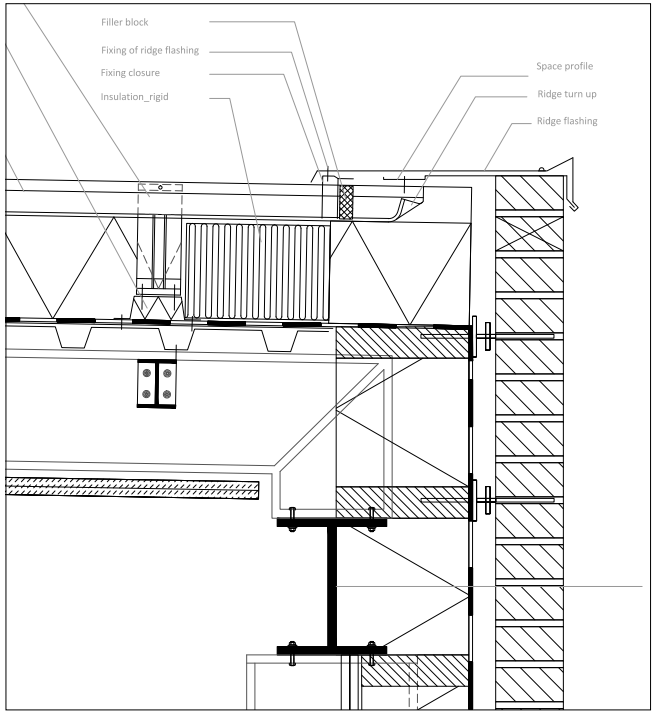


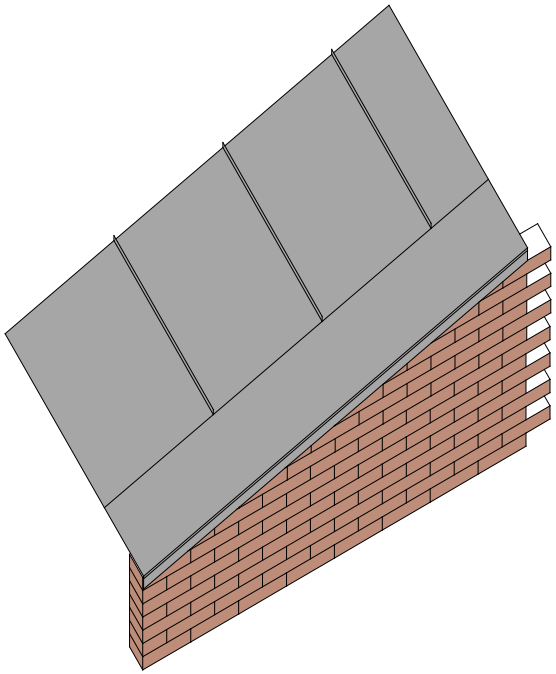
DETAIL FRAGMENT_SECTION, ELEVATION

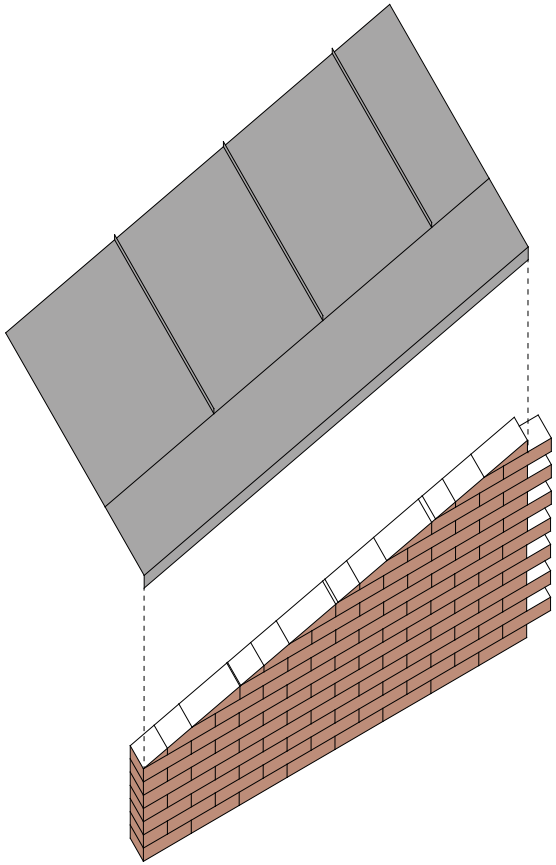
BRICK CORNER DETAIL



ROOF EDGE DETAIL





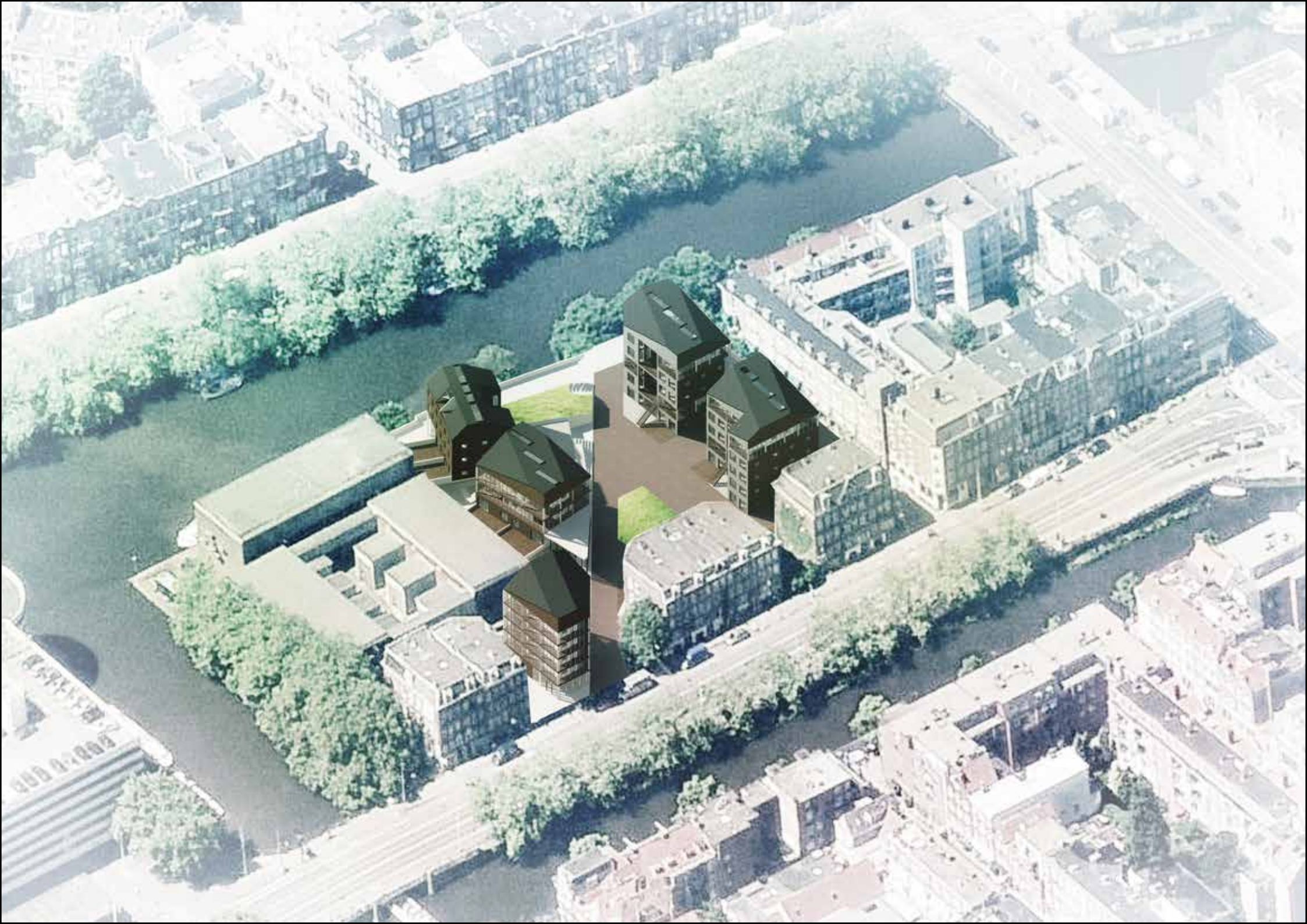


30 degree

35 degree

40 degree

45 degree



THANK YOU