Degrees of Encounter:

Densification Strategies to Alleviate Urban Loneliness in Post-War Neighbourhoods



P5 - 17/01/2024

Tutors:
Harald Mooij
Robbert Guis
Florian Eckardt

MSc 4 Advanced Housing
Densification Strategies:
Invigorating ContemporaryUrbanities

Alaa El Din Hendi
5599466

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The Current Dutch Housing Crisis

A quick overview

>50 %

Ages 45+

A Growing Ageing Population

406K

Homes by 2030

Increased Number of Single Person household

227K

in 2022

Increased Number of foriegn migration

1 Million Homes ?

Personal Motivation

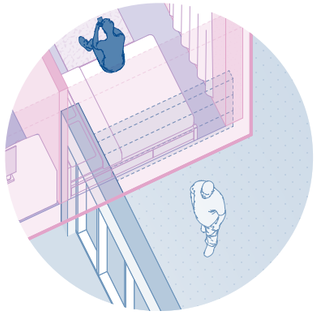
The UK



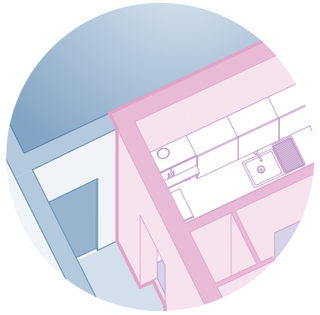
London, 2019

Personal Motivation

The Netherlands



1. There is no lobby or front desk but I can hear people go in and out, with no organic meeting places in the building



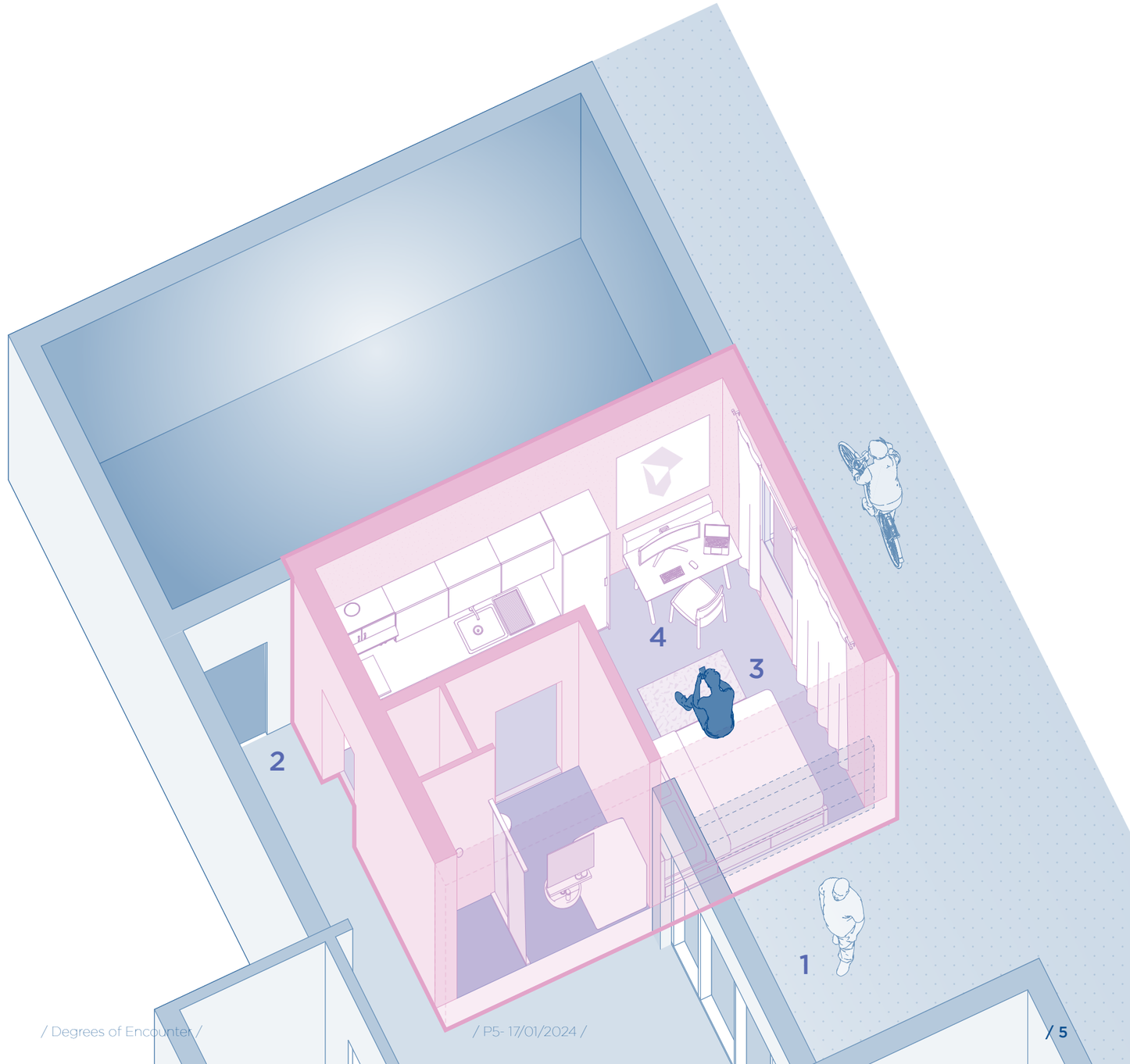
2. Two years living here and I still wonder who lives next to me, despite the narrow corridor that we both share.



3. Bed placed in full view on the ground floor directly in front of the main street. I have to keep my curtains closed with privacy sheets.



4. Study table placed in front of radiator, decorated with a poster from one of my previous studio submissions (a picture of Thamesmead)



The Mental Health Crisis

&

A Global Loneliness Epidemic

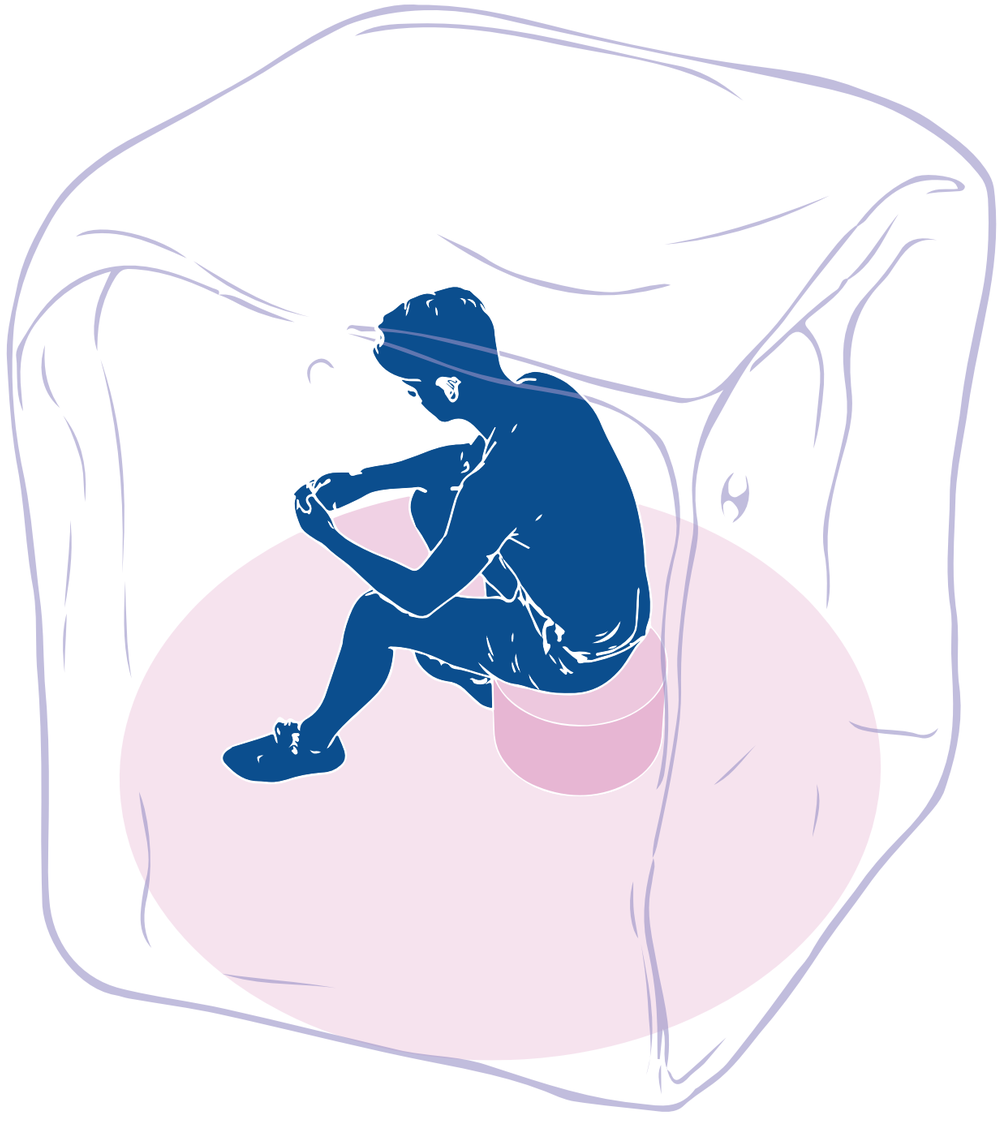
by 2030

55% London

52% New York

Report Feeling Lonely

LONELINESS — ~~Solitude~~



Involuntary Mental State

TYPES

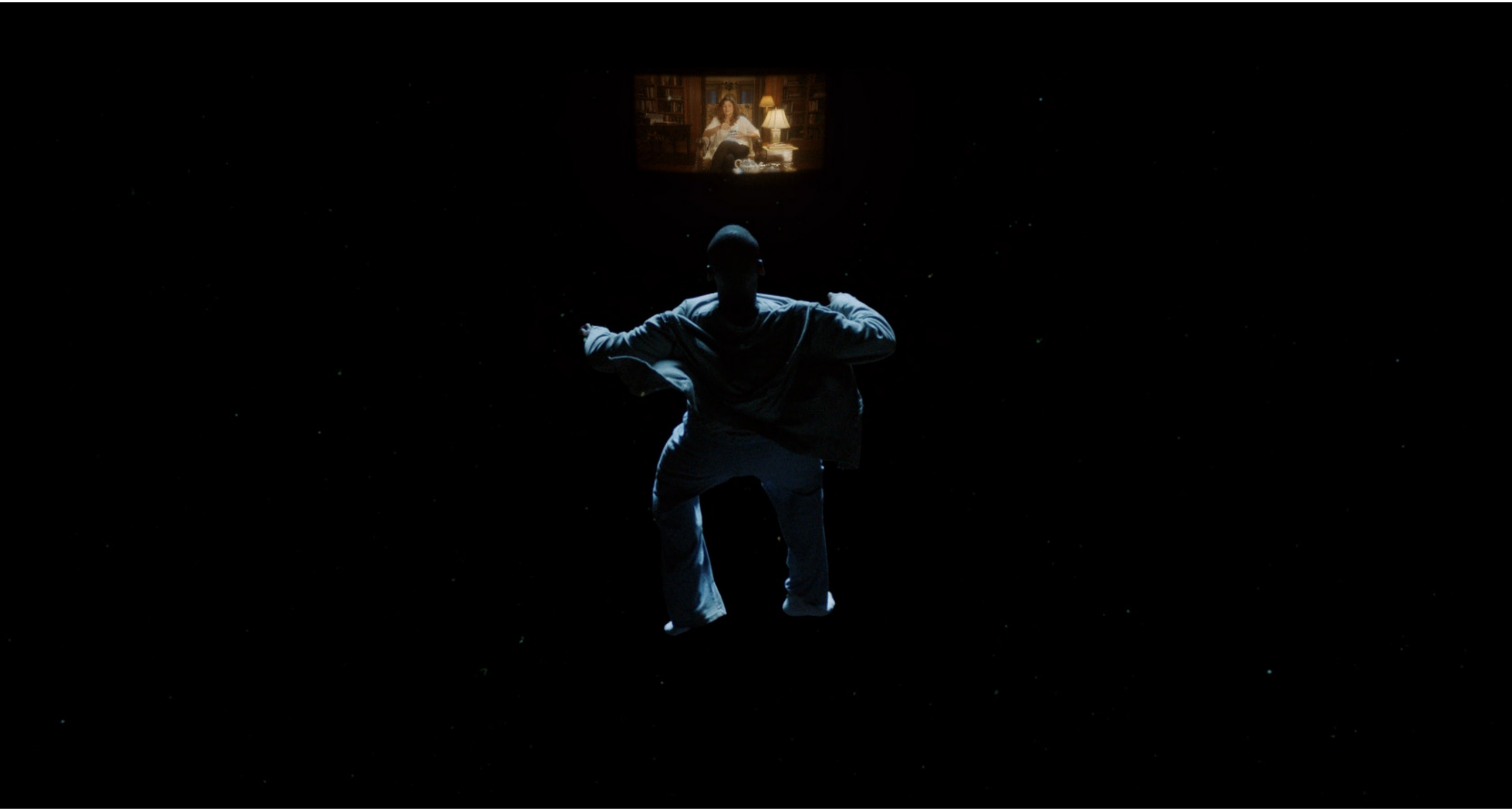
- Situational
- Emotional
- Chronic
- Social

HEALTH RISKS

- Suicide
- Depression
- Anxiety
- Antisocial behavior
- Alcohol and drug addiction
- Memory and learning deterioration
- Alzheimer's Progression
- Heart disease

"Hell is if you are frozen in isolation into a block of ice. That is where I have been."
Schizophrenic woman suffering from Loneliness in Laing (2017)

Capturing the Experiance



“The Sunken Place”
Film - Get Out
Directed by Jordan Peele (2017)

Situational

Urban Loneliness:

"You can be lonely anywhere, but there is a particular flavour to the loneliness that comes from living in a city, surrounded by millions of people. One might think this state was antithetical to urban living, to the massed presence of other human beings, and yet mere physical proximity is not enough to dispel a sense of internal isolation. It's possible – easy, even – to feel desolate and unfrequented in oneself while living cheek by jowl with others. **Cities can be lonely places, and in admitting this we see that loneliness doesn't necessarily require physical solitude, but rather an absence or paucity of connection, closeness, kinship: an inability, for one reason or another, to find as much intimacy as is desired.** Unhappy, as the dictionary has it, as a result of being without the companionship of others. Hardly any wonder, then, that it can reach its apotheosis in a crowd."

The Lonely City Adventures in the Art of Being Alone
Olivia Laing

* Situational Loneliness

URBANisation

Densification

PERCEIVED OVERCROWDING

LONELINESS

BUT HOW DO YOU FEEL?

Negative Perspective

Inadequacy In Navigating Social Interaction

Hyper Vigilant

Sense of Shame



Post-War Neighbourhood Densifcation

Groot-IJsselmonde
(Rotterdam, The Netherlands)





Groot- IJsselmonde's Figure Ground



Groot- IJsselmonde's Green Spaces

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Target Groups and Loneliness

Demographic analysis of Groot-IJsselmonde

1 in 10

Dutch Citizens

Experience Loneliness

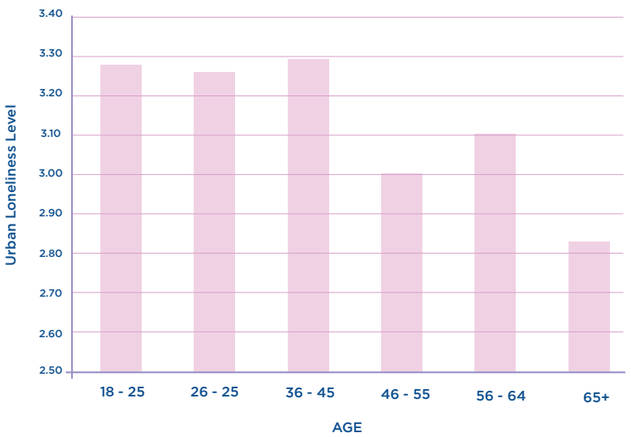
(Statistics Netherlands, 2020)

Target Groups most affected

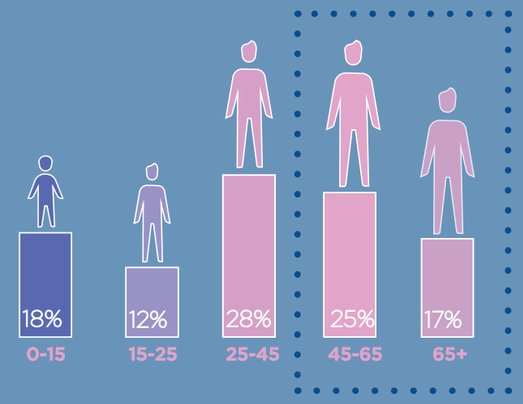
Elderly
Single Parents
Students / Young people
Single person Households
Migrants
Low-Income Households

“Loneliness is a major problem in IJsselmonde. This requires appropriate policy for each Target group.”

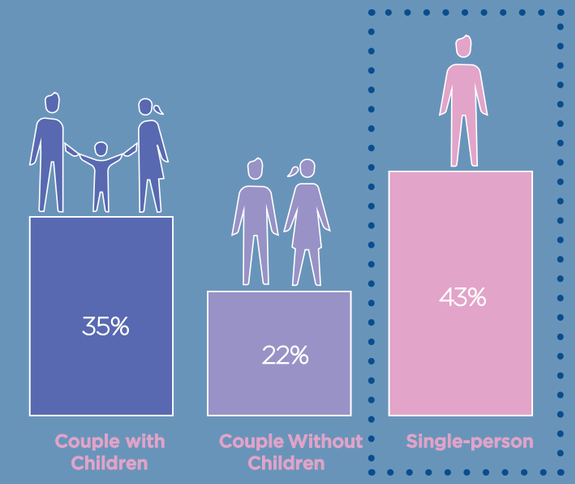
Gezondheid in kaart
(IJsselmonde)
GGD Rotterdam



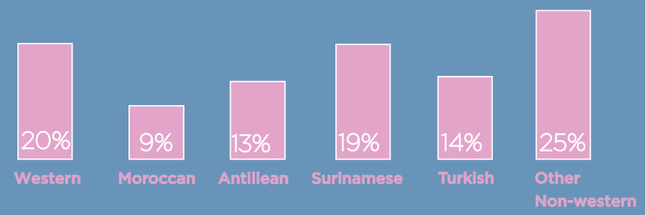
Age composition

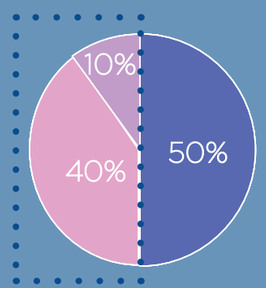


Family composition



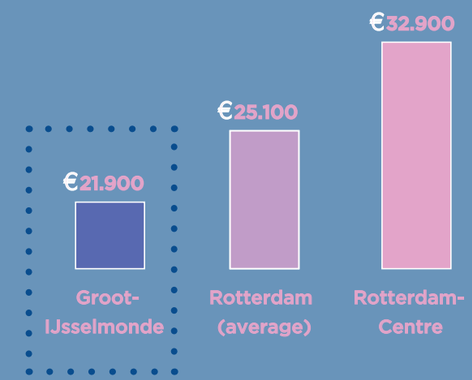
Nationality



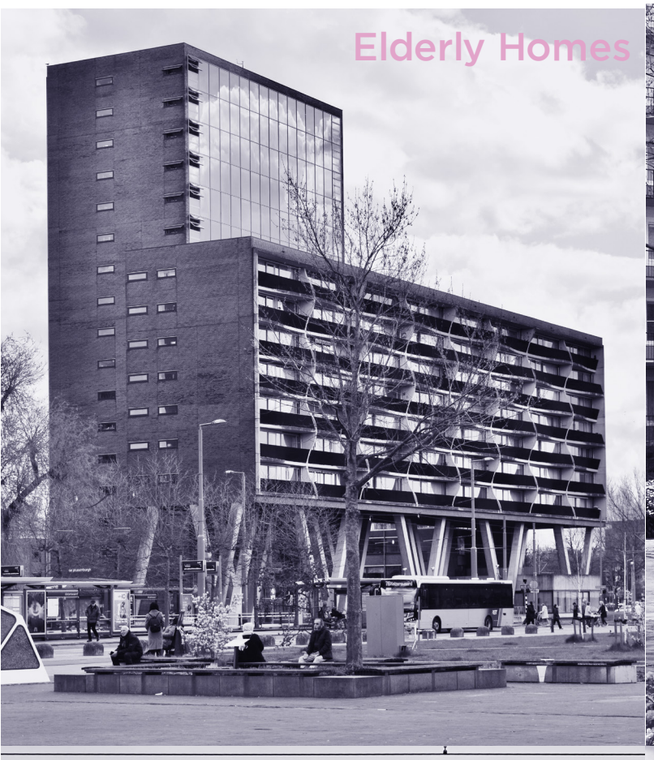




Income



Groot-IJsselmonde Through Photographs











Groot-IJsselmonde in Photographs



Which design strategies can be utilised to alleviate the effects of urban loneliness on Single household target groups in existing post war neighbourhoods ?

Which design strategies can be utilised to **alleviate** the effects of urban loneliness on Single household target groups in existing post war neighbourhoods ?

Aesthetic
Co-Housing
Public Functions
Green Spaces

Future Proof

Elderly
Starters
Single parents
Students
Migrants

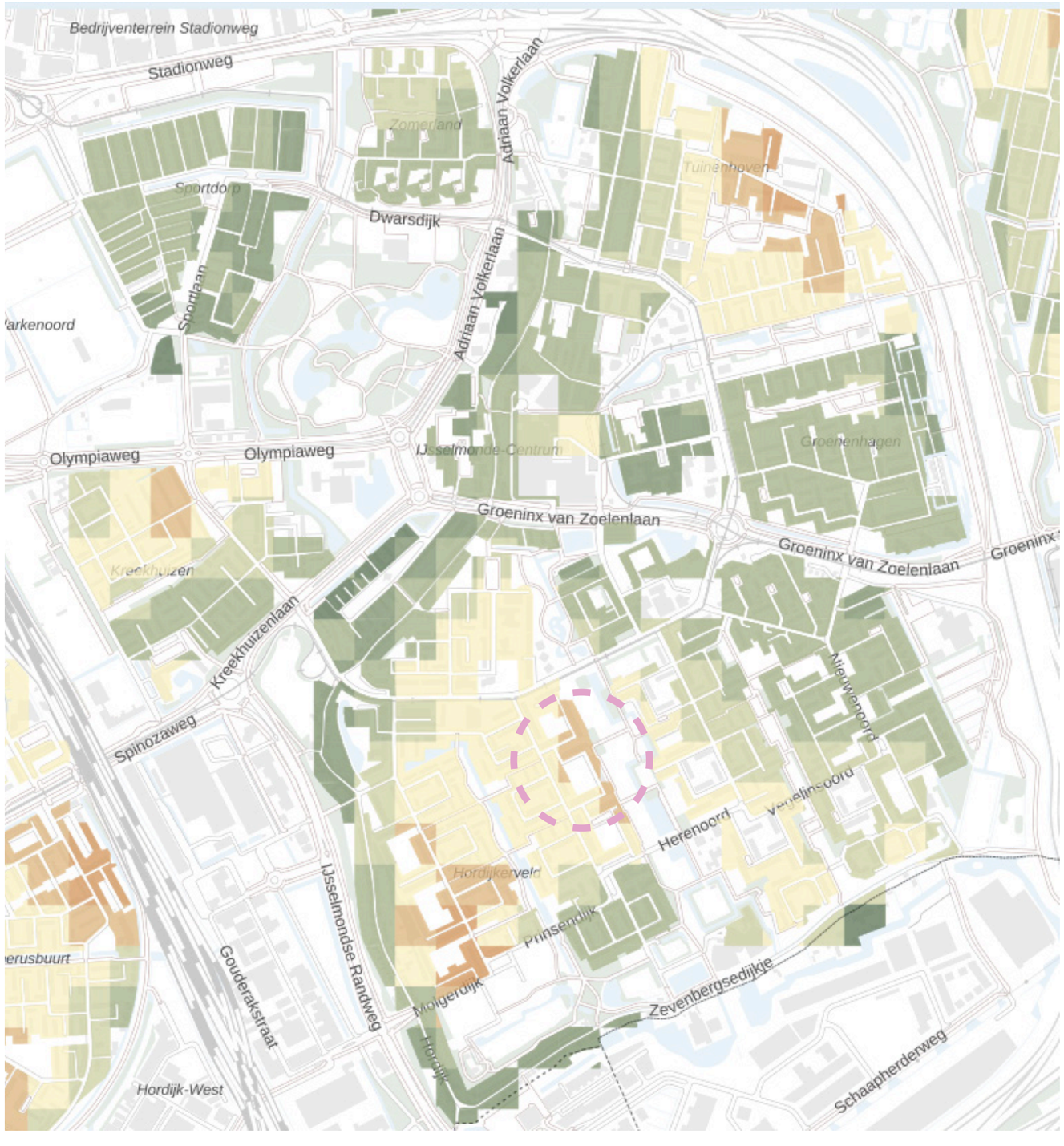
Densification

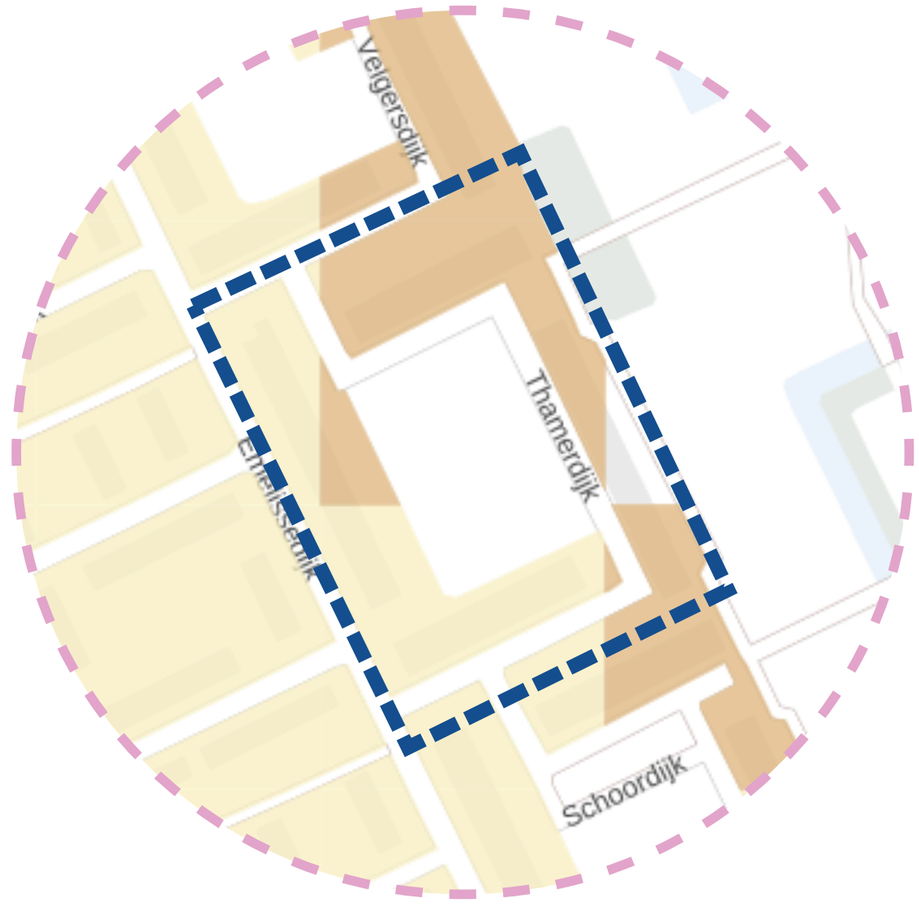
Research Outcomes

Site Location: Thamerdijk

Hordijkerveld

Source: (Leefbaarometer Hom, n.d.)





- Very Insufficient
- Largely Insufficient
- Insuficent
- Weak
- Enough
- Ample
- Good
- Very Good
- Excellent

N

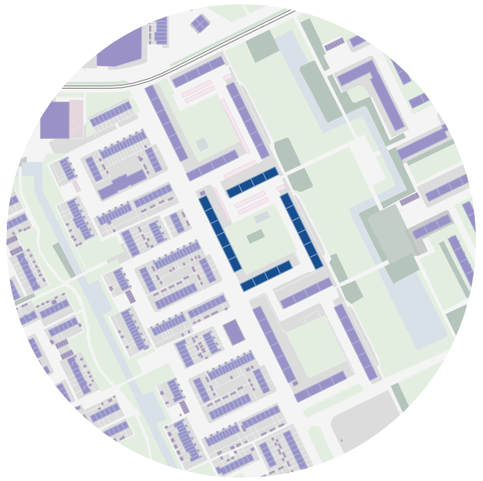
Site Location: Thamerdijk

Hordijkerveld - 1960's



Map of Dura-Cogniet Locations
in Groot-Ijsselmonde

- Border
- Other
- Thamerdijk
- Dura-Cogniet



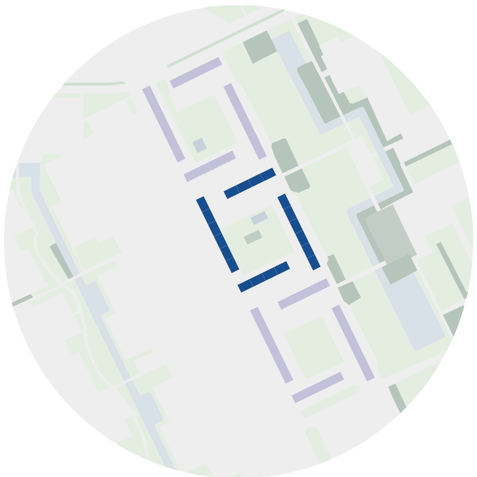
General Site



Border



Road Network — Walkable paths



Green Spaces



Sportdorp 1918-1942 · Zomerland 1956 · Kreekhuizen 1958 · **Hordijkerveld 1960** · Reyeroord 1960 · Groenenhagen 1962 · Tuinenhoven 1962 · Center 1963

N

Research Report Findings

What were the conditions that allowed for urban loneliness to begin?

Historic

Which modernist design strategies provokes urban loneliness?

Historic

How can the existing green space in IJsselmonde be revitalized within a housing scheme to create a sense of community?

Urban Scale

How can the ‘human scale’ be used to help reduce the feeling of anonymity through spatial design practices?

Building Scale

How can the diversification of target groups through Co-Housing be used as a tool to break social barriers?

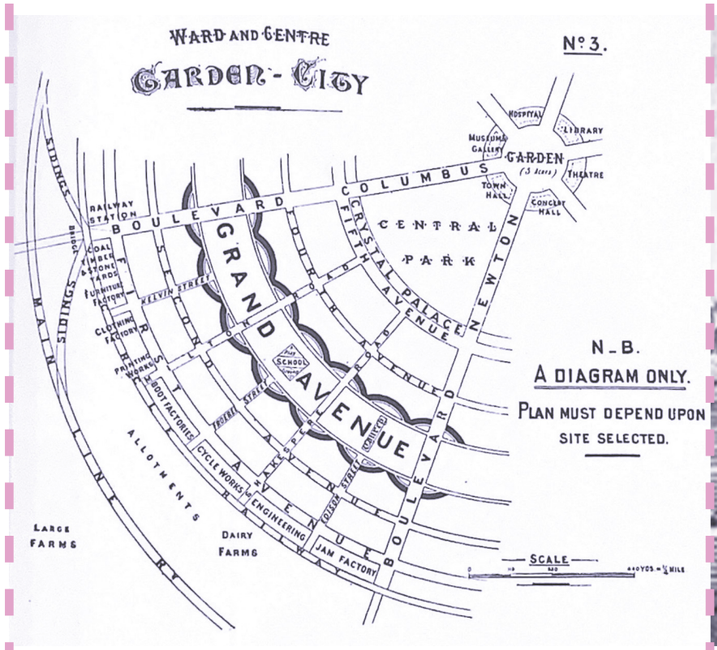
Dwelling Scale

History Findings
Timeline of Key Events

Two Industrial Revolutions (1760 to 1914)

Mass Migration Towards cities

The Garden City

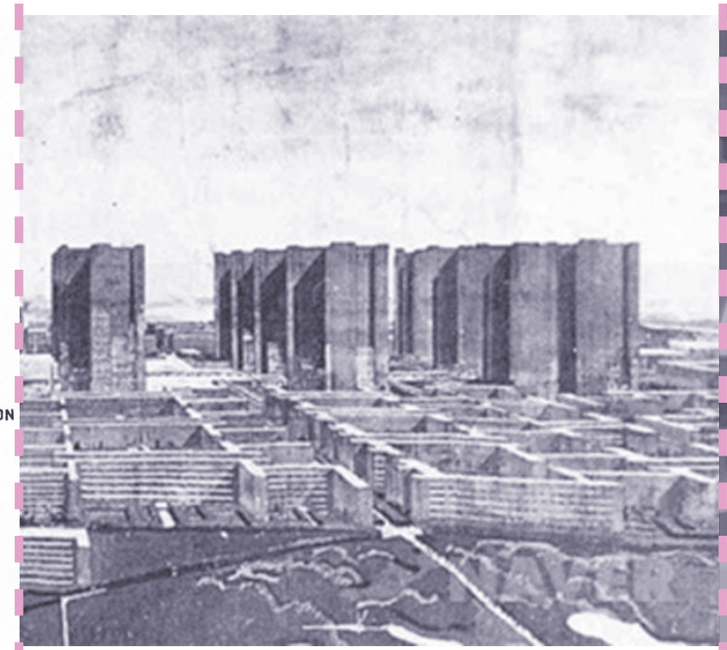


By Ebenezer Howard
(1898)

World War I

Start of Dutch Housing Crisis

Air, Light and Freedom



By Le Corbuisier
(1935)

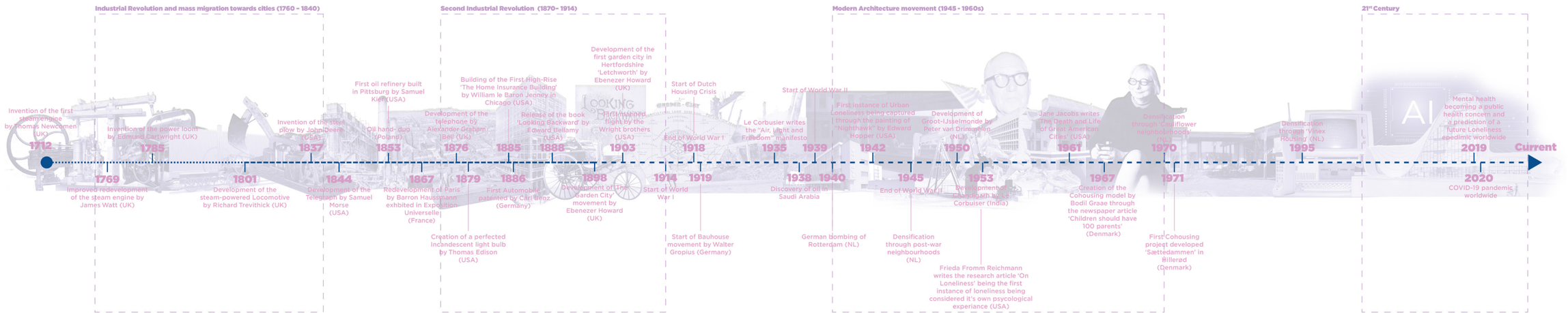
World War II

NightHawk



By Edward Hopper
(1942)

Start of Mental Health crisis



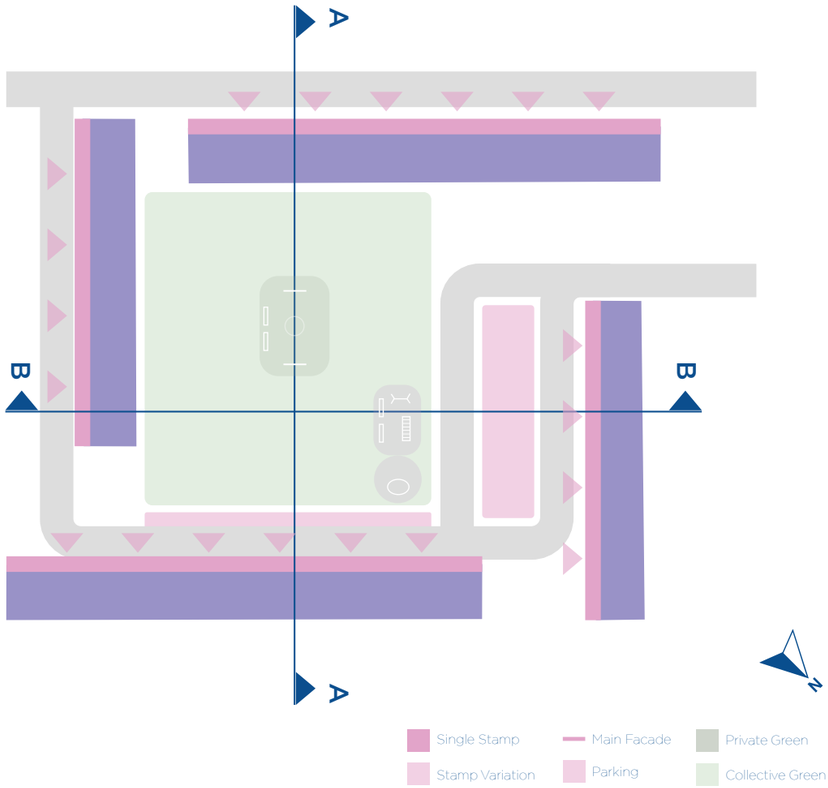
History Findings
The City as a “Convivial Tool”

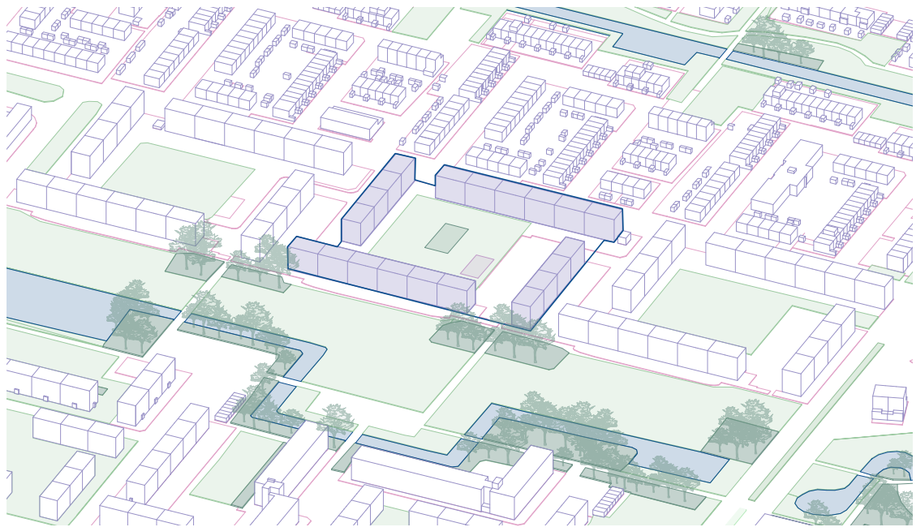


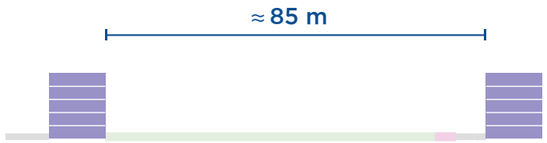
Background for ‘Ghost in the Shell’
Gouache on paper and acrylic on transparent film
By Hiromasa Ogura and Shirow Masamune (1995)

Urban Scale Findings

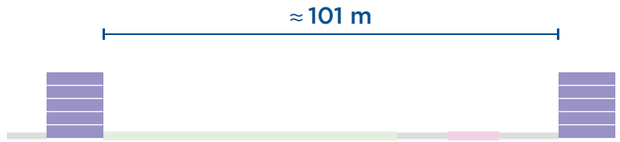
Stap analysis and Observation







SECTION A-A

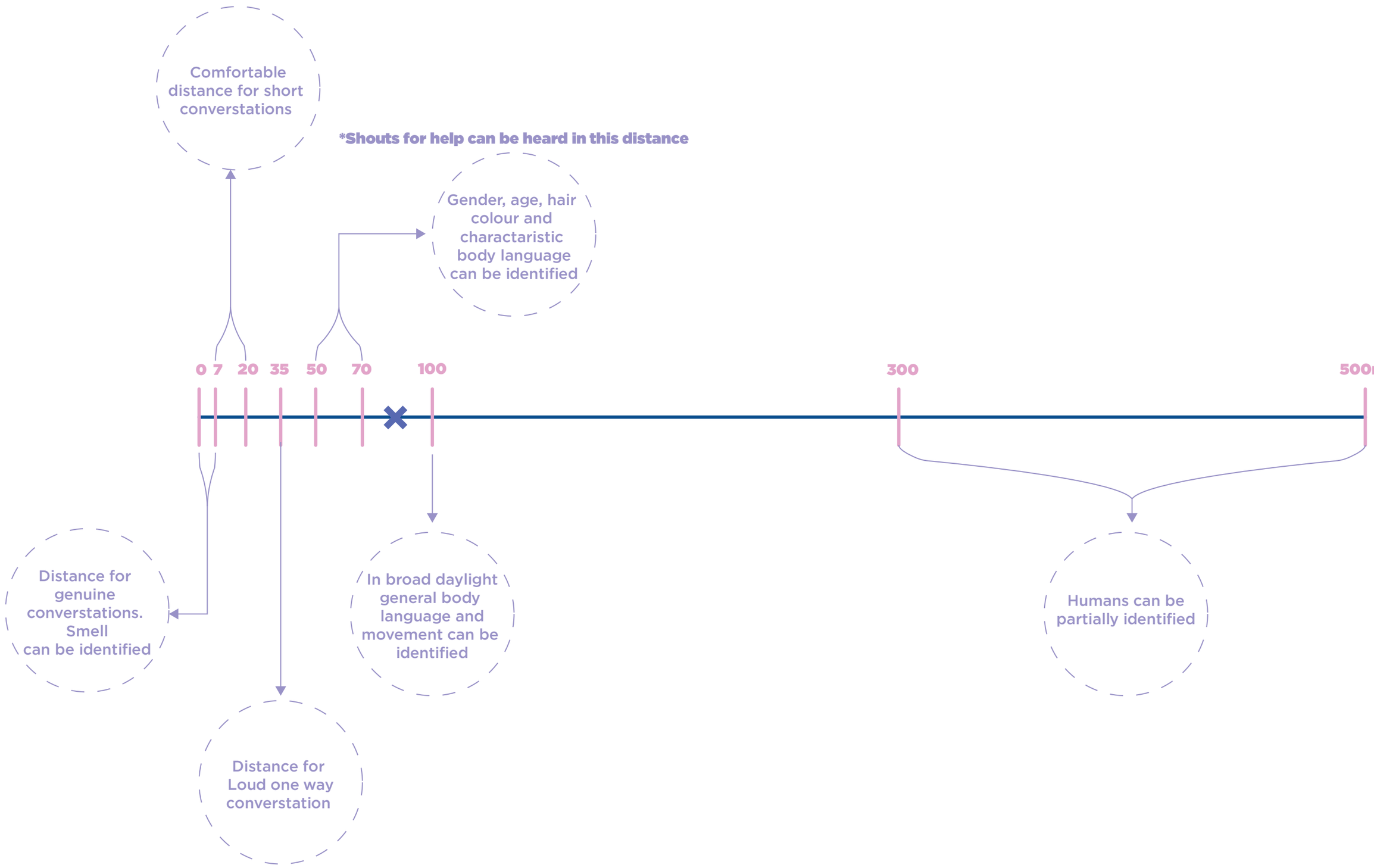


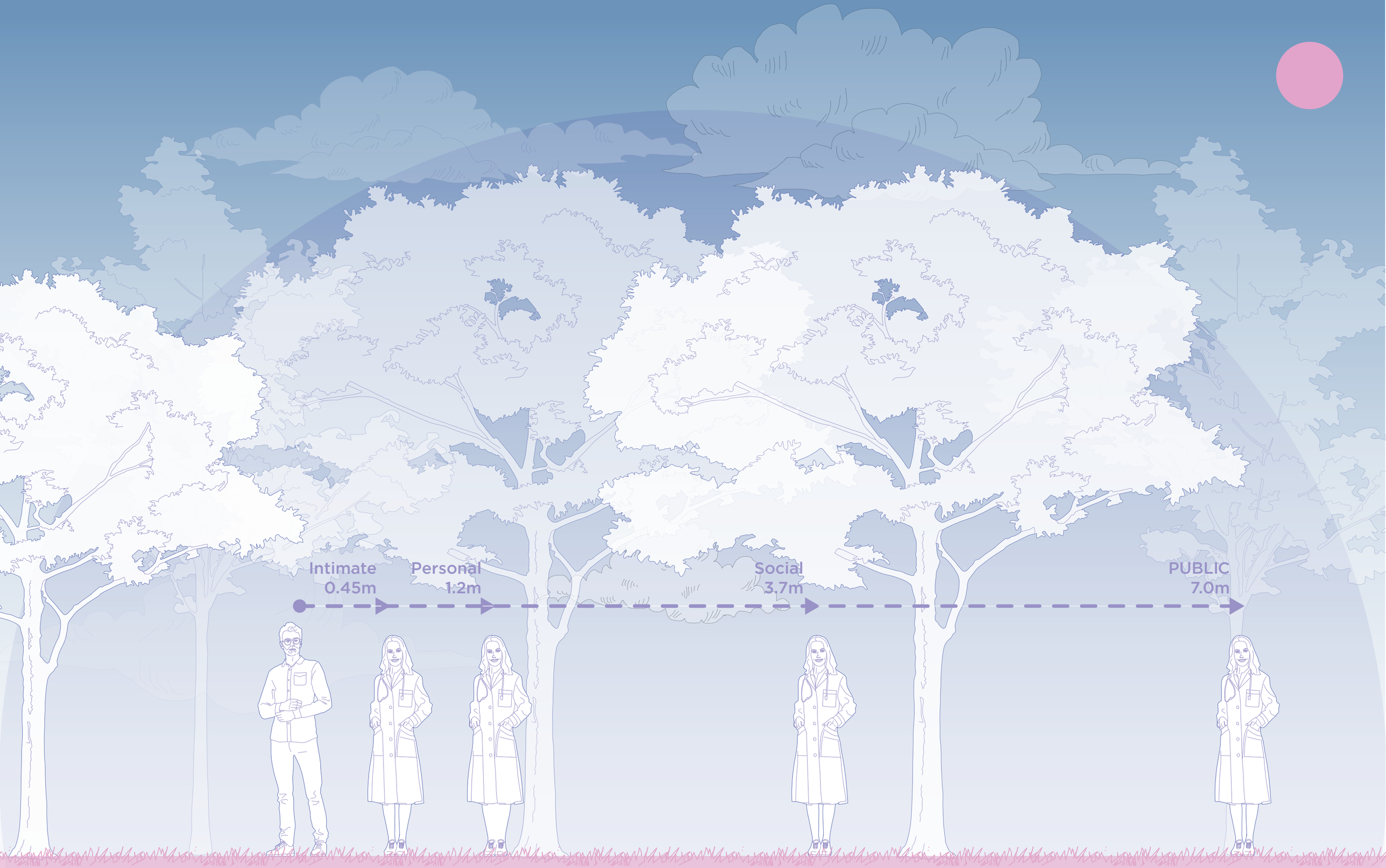
SECTION B-B



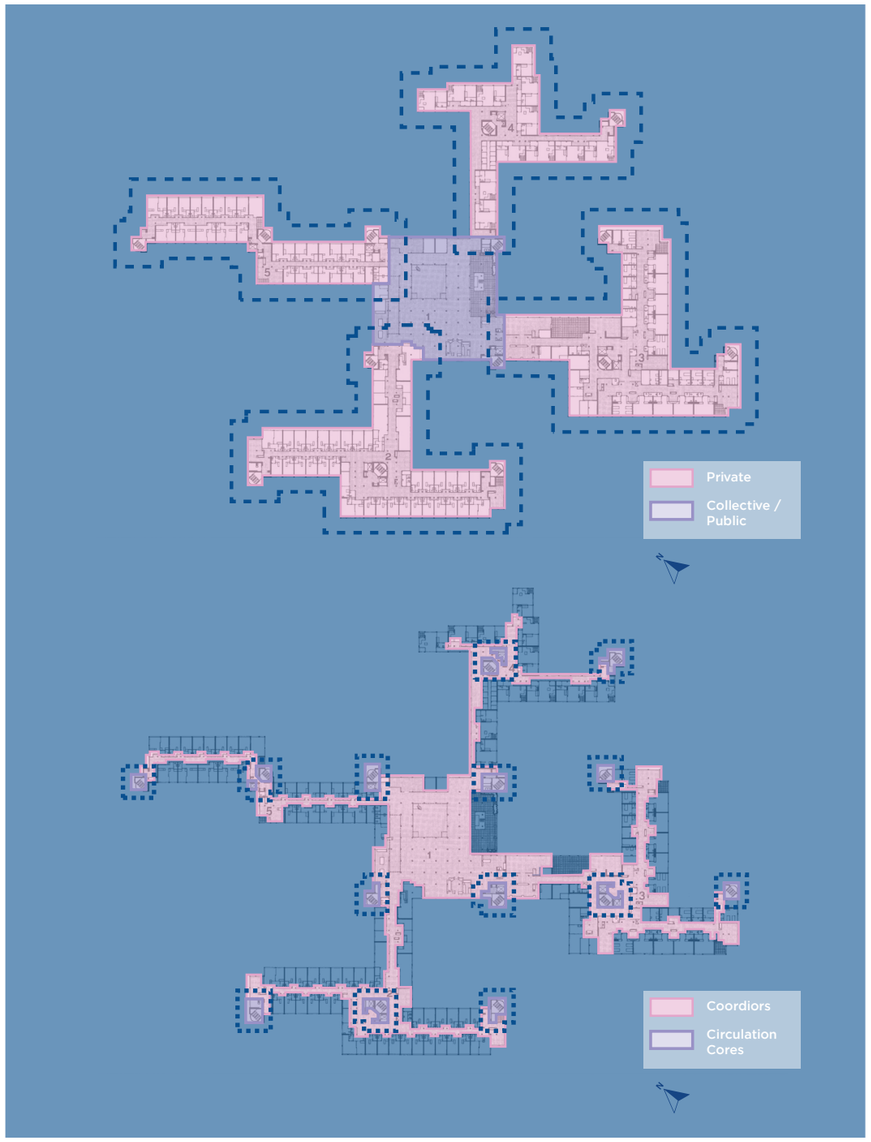
Urban Scale Findings

Thamerdijk's Distances on The Human Scale

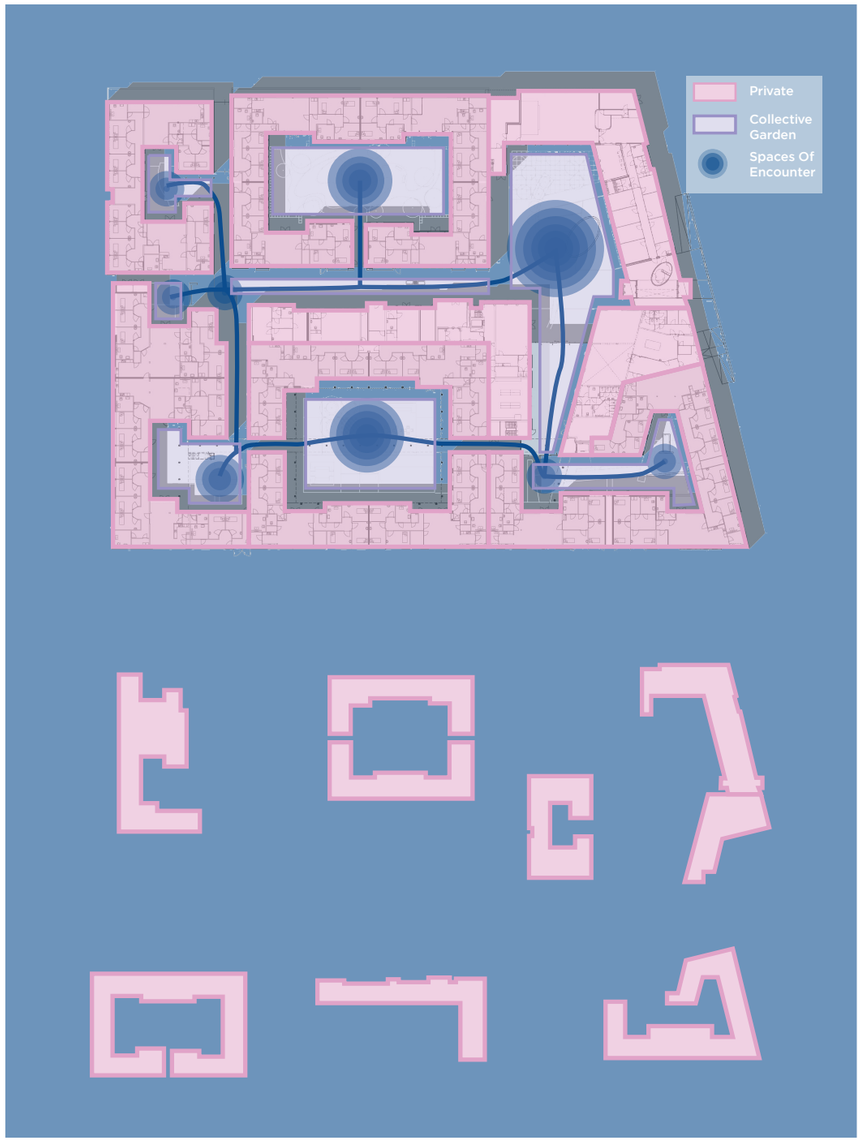



Intimate
0.45m
Personal
1.2m
Social
3.7m
PUBLIC
7.0m

De Drie Hoven
Herman Herzberger
(Amsterdam 1964- 1974)



De Hogeweyk
Molenaar & Bol & Van Dillon
(Wesp 2008)



Building Scale Findings

Site Observations



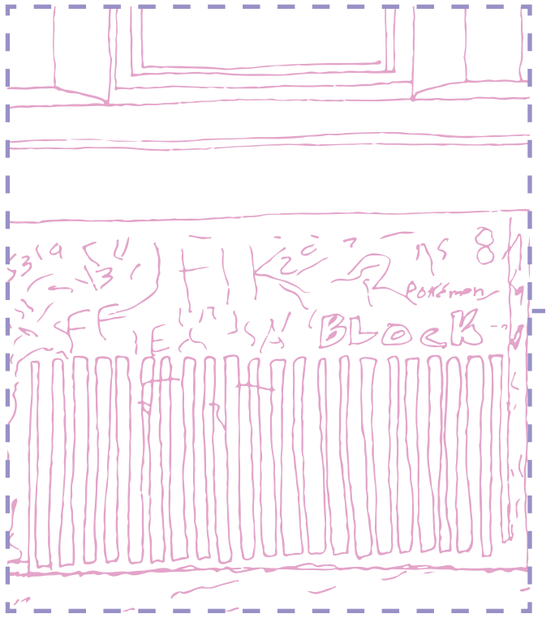




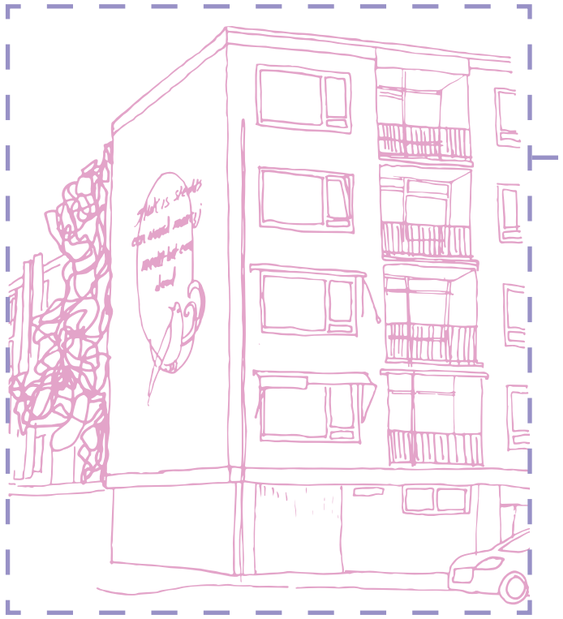


Building Scale Findings

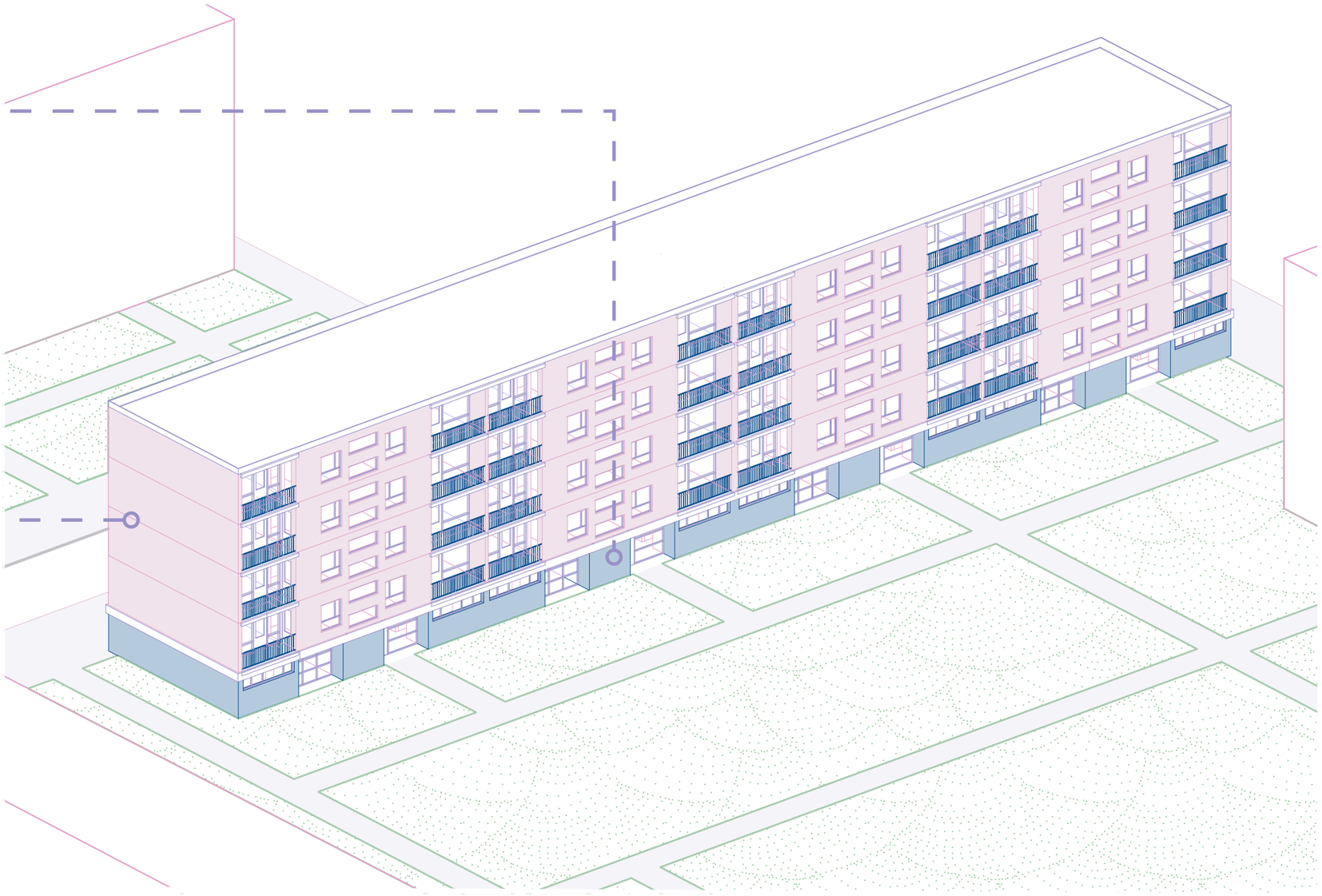
Site Observation: Monotonous Facade



Childrens Drawings

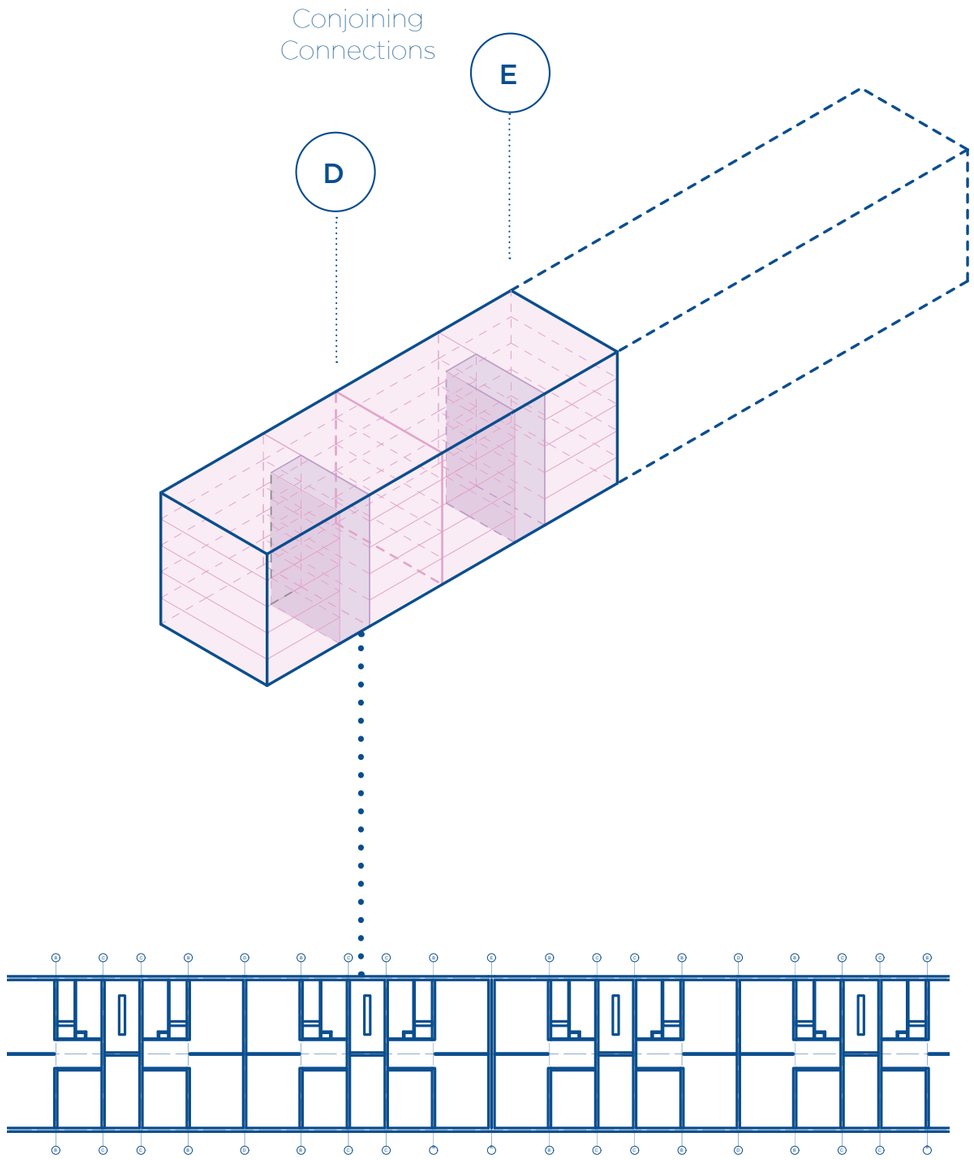


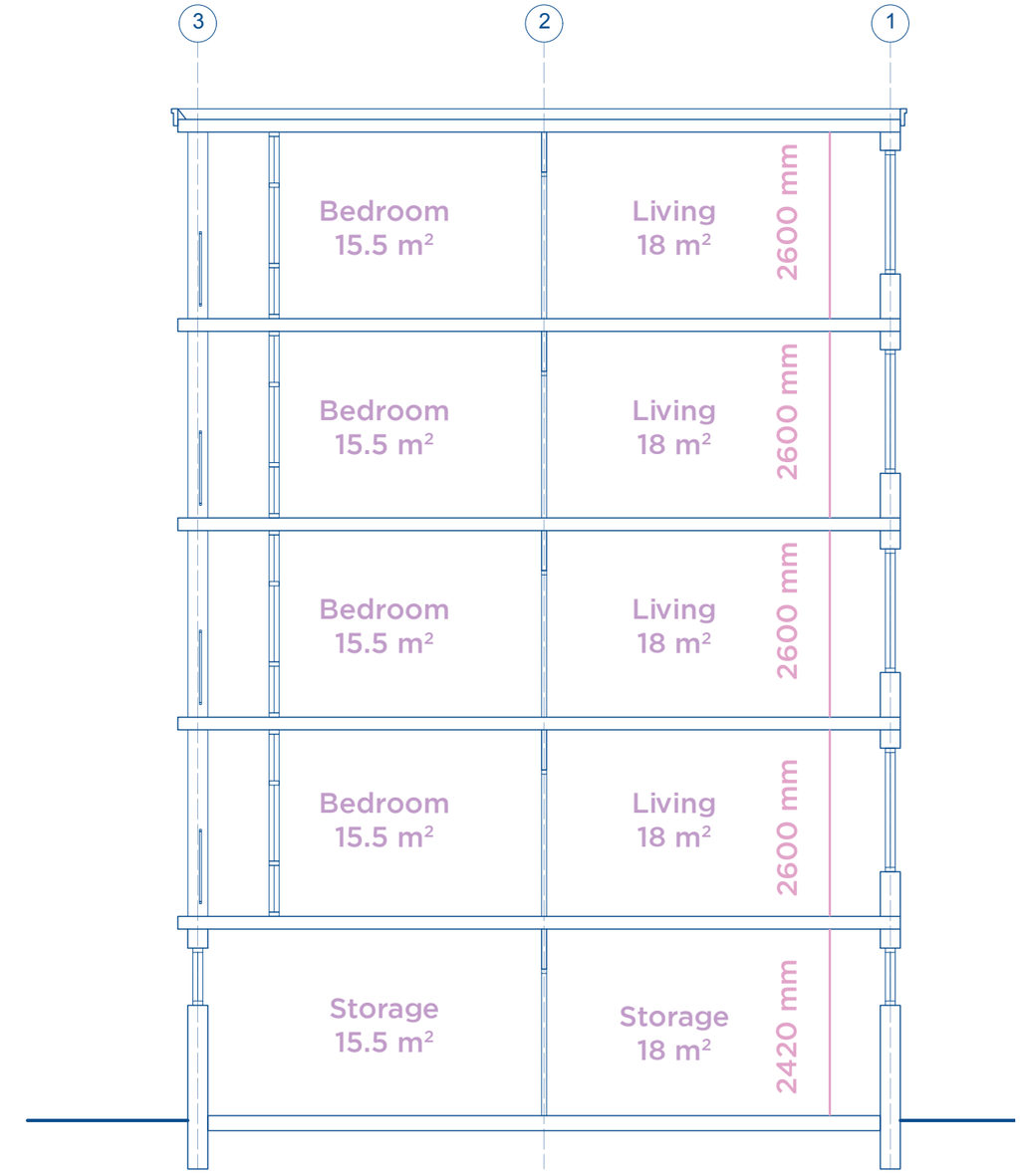
Wall Murals



Building Scale Findings

Archive Visit: Dura Coignite Construction





Building Scale Findings

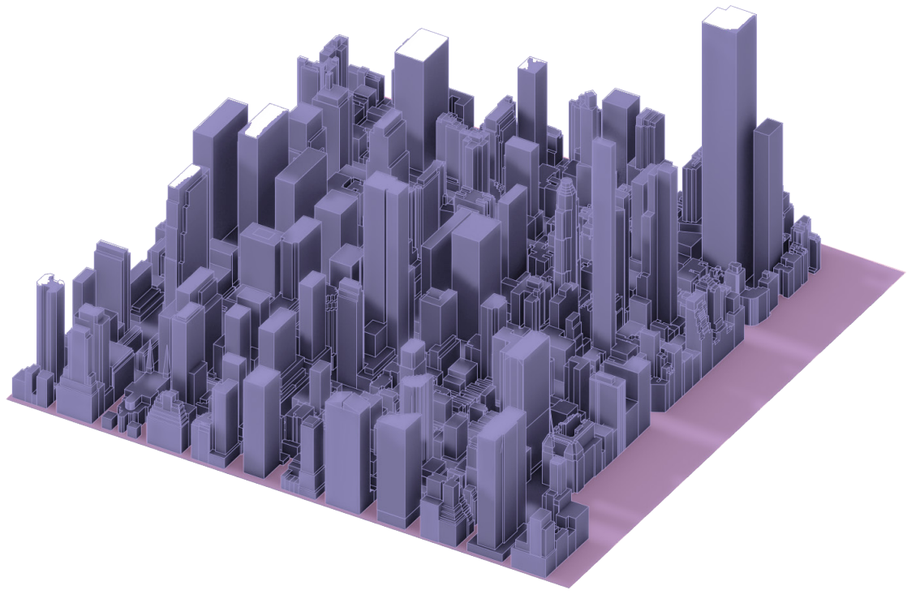
Human Scale and Density

Thamerdijk

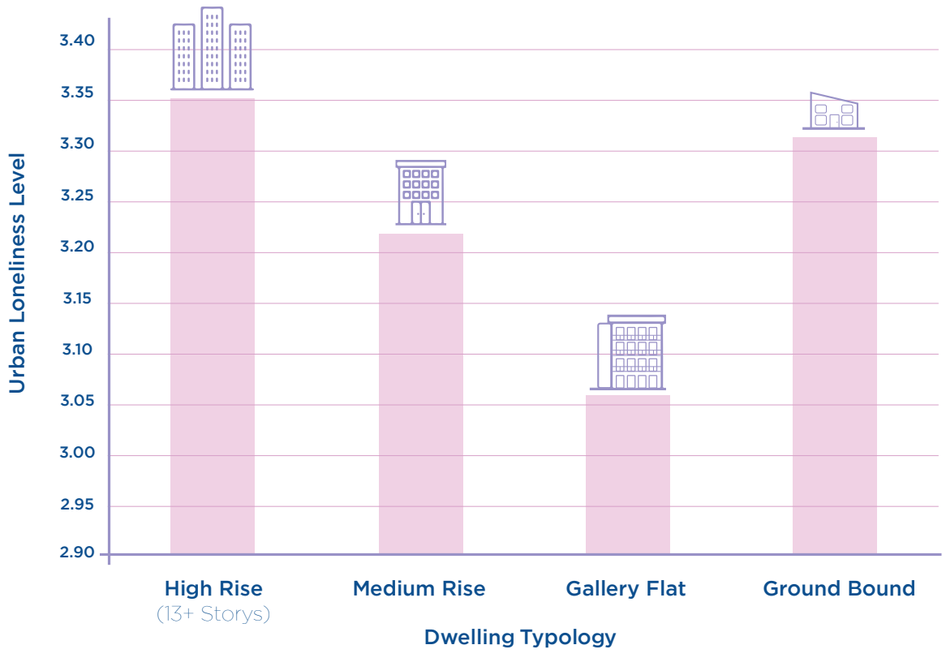
Old Cities in 1900	New Cities in 2000 (High Density)	New Cities in 2000 (Low Density)	New Cities in 2000 (suburbs)
475 ha	155 ha	21 ha	8 ha
200 %	200 %	25 %	20 %
2000 pers/ ha	155 pers/ ha	42 pers/ ha	17 pers/ ha
4 people	1.8 people	2 people	2.2 people

Building Scale Findings

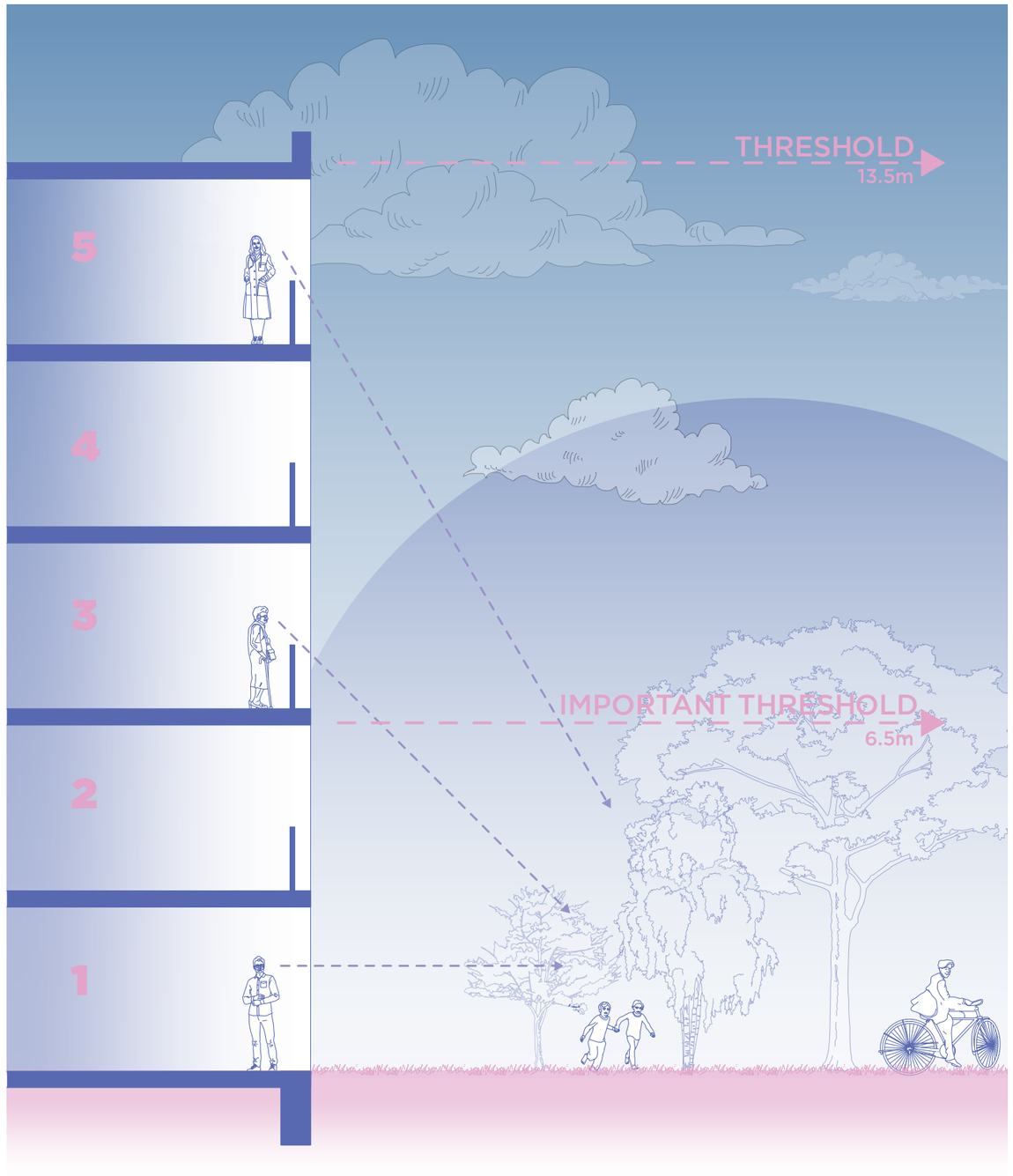
Building analysis in relation to the 'Human scale'



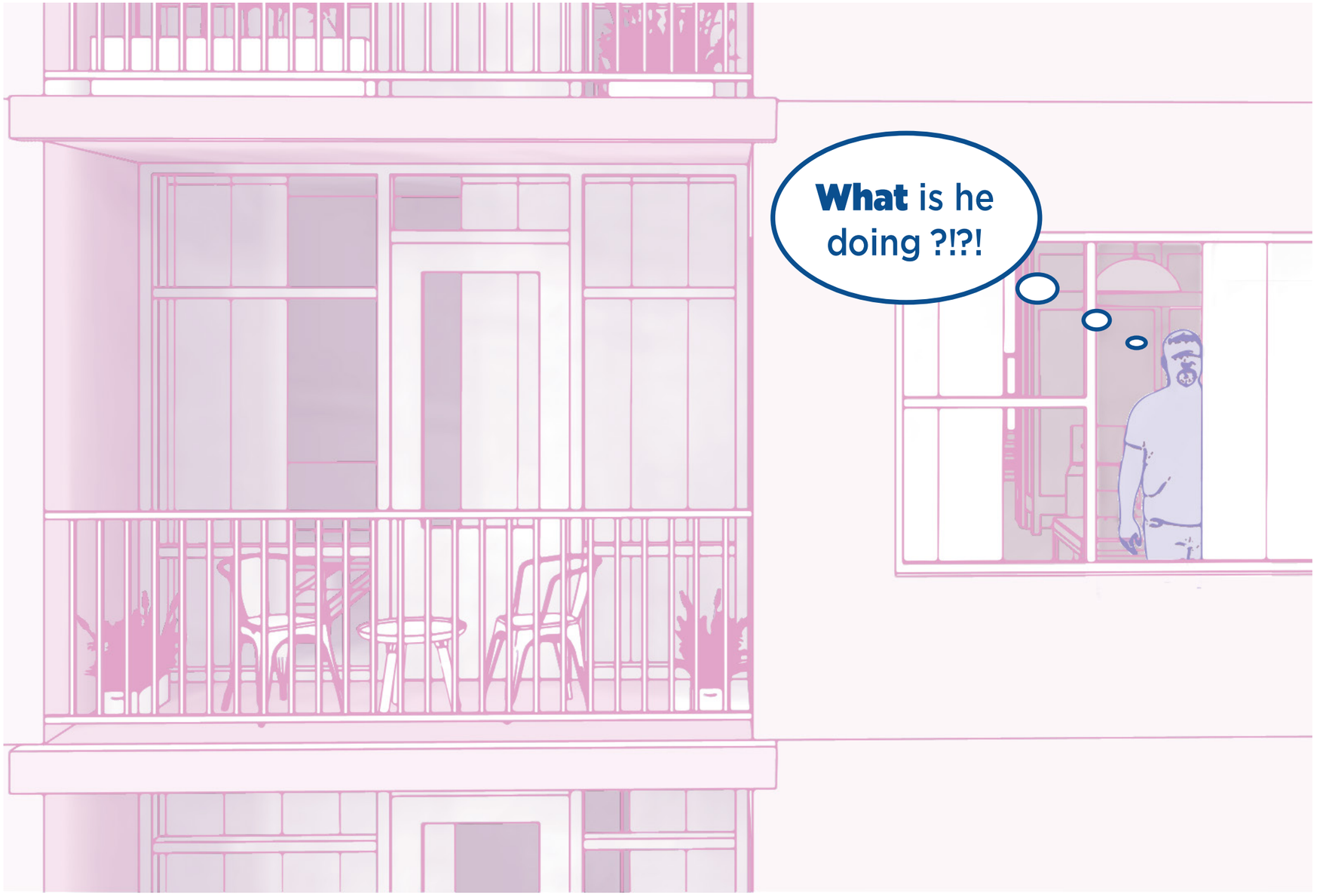
Shadow Analysis of Manhattan



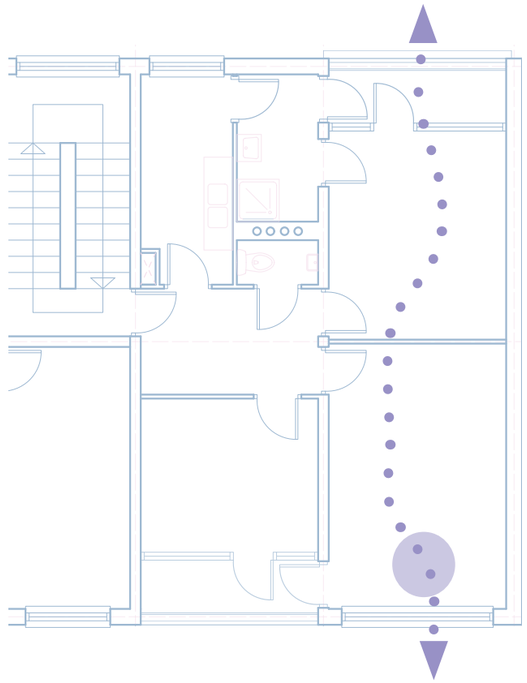
'Quantative 'analysis findings



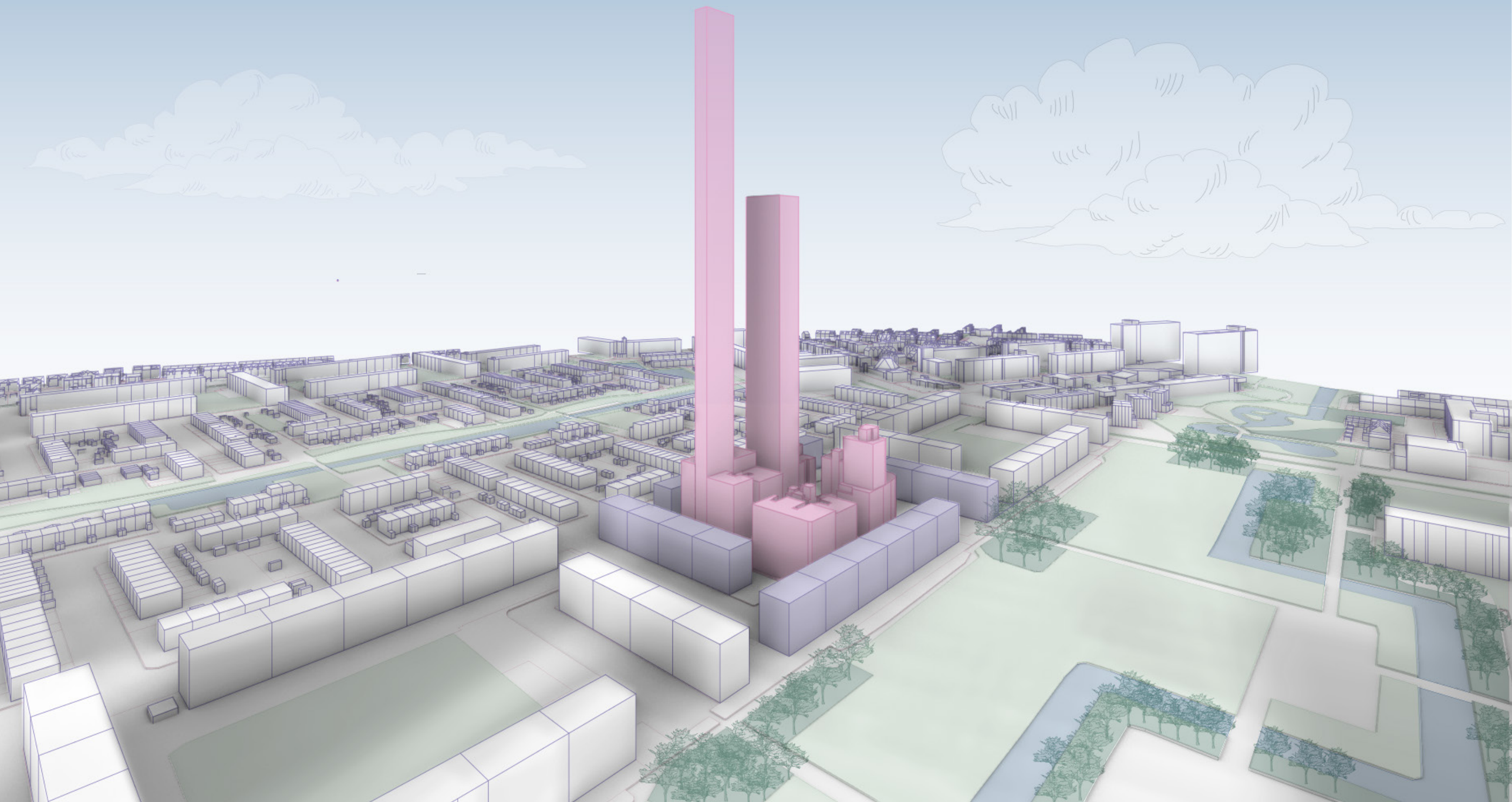
Jan Gehl's Verticle Human Scale


What is he doing ?!?!





A ‘MANHATTAN’ DENSIFICATION STRATEGY **WILL NOT** WORK HERE !

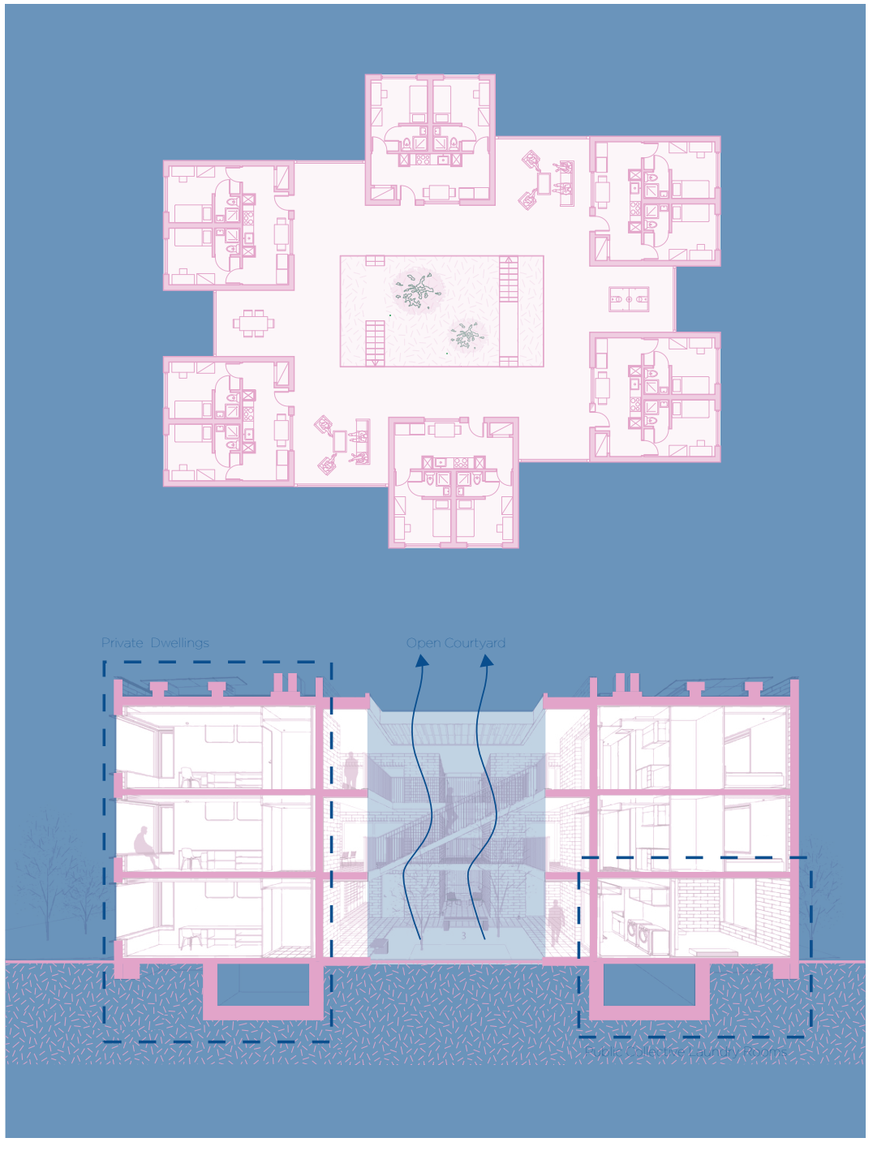


Building Scale Findings

Case Study Analysis - Open Space

Asahi Facilities Hotarugaike Dormitory
KAEDE /

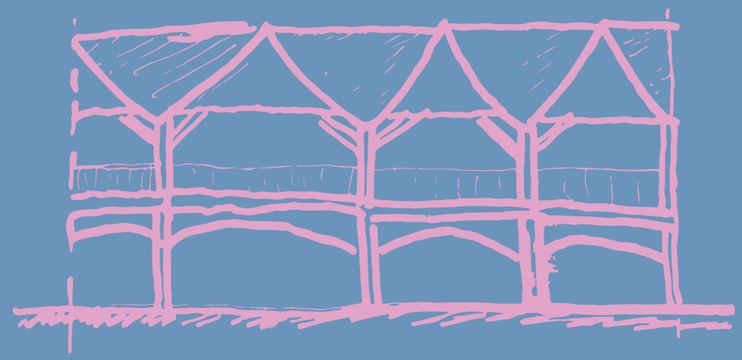
(Osaka, 2019)



Pavilion Typologies
Hospital architecture design

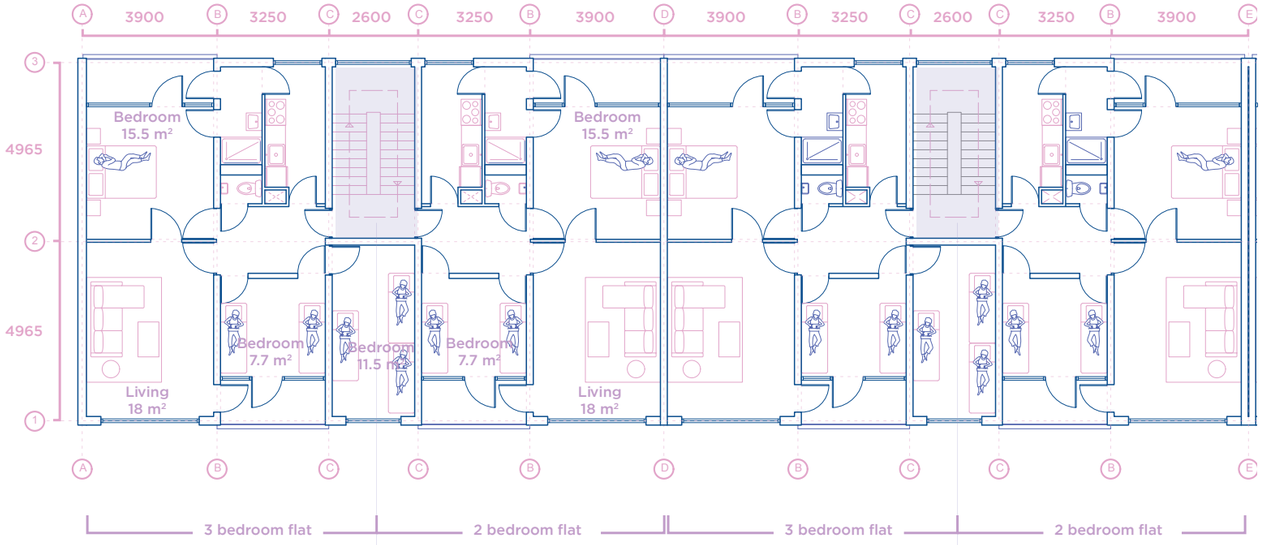


Waverly Hills TB sanatorium. Retrieved from Sanatorium - From the First to the Last - TBFacts (2022)

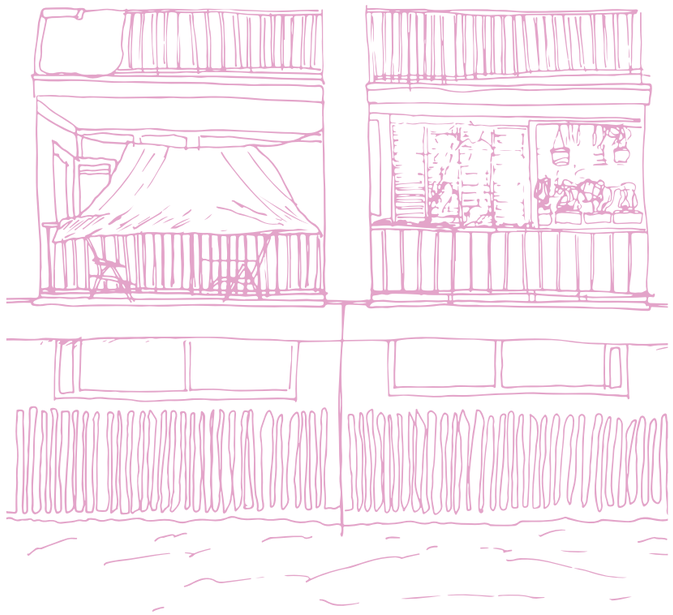


Dwelling Scale Observations

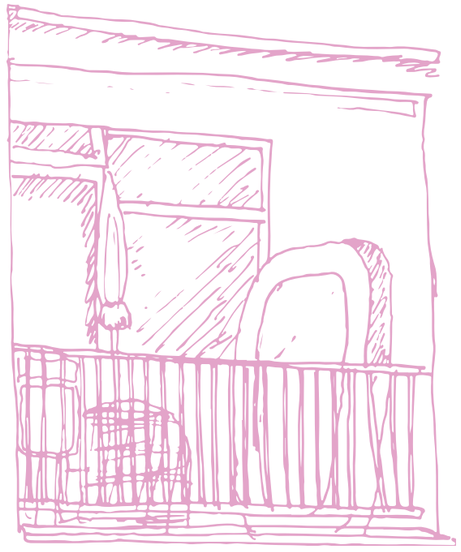
Dwelling Analysis Through Archival Drawings



Circulation Space

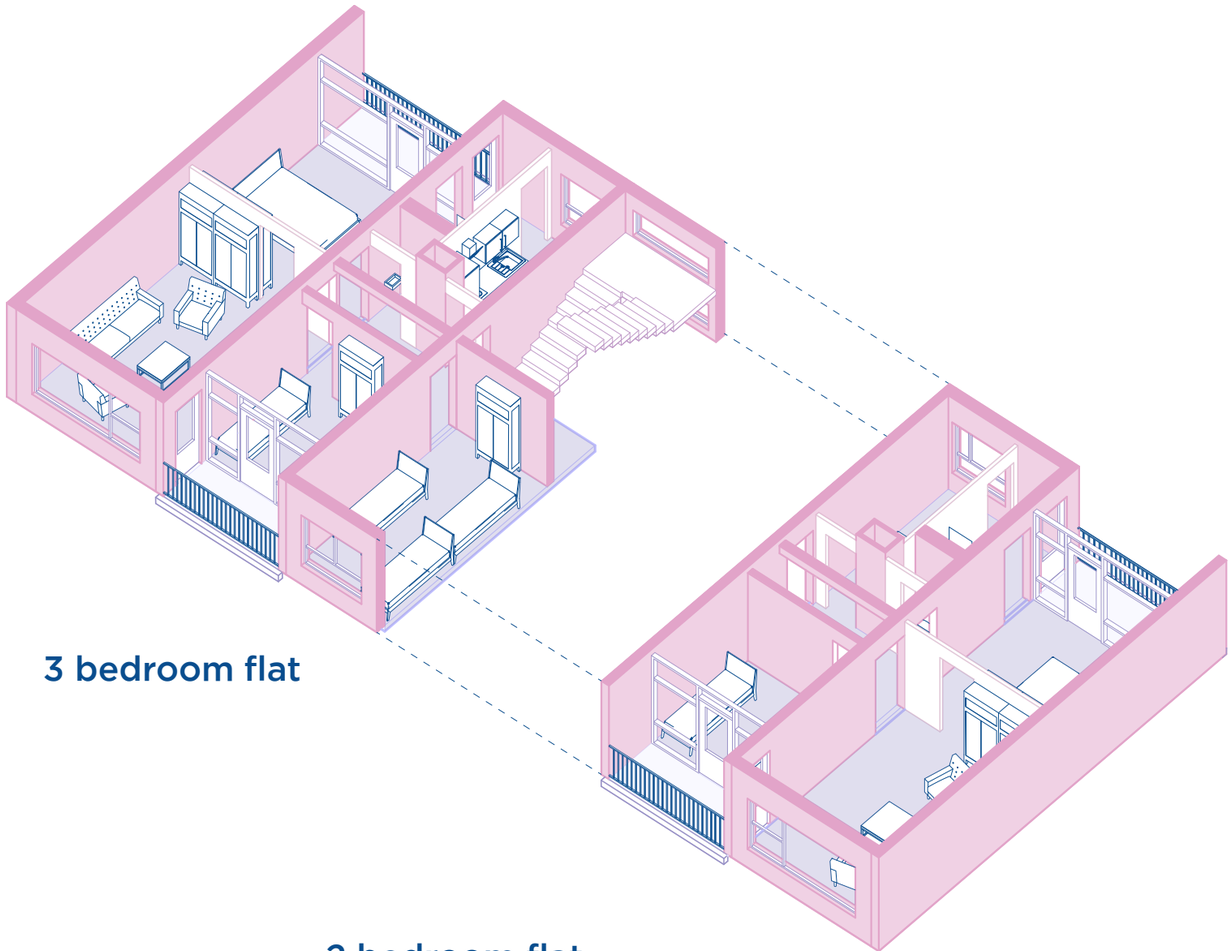


Circulation Space



Dwelling Scale Observations

Dwelling Analysis Through Archival Drawings

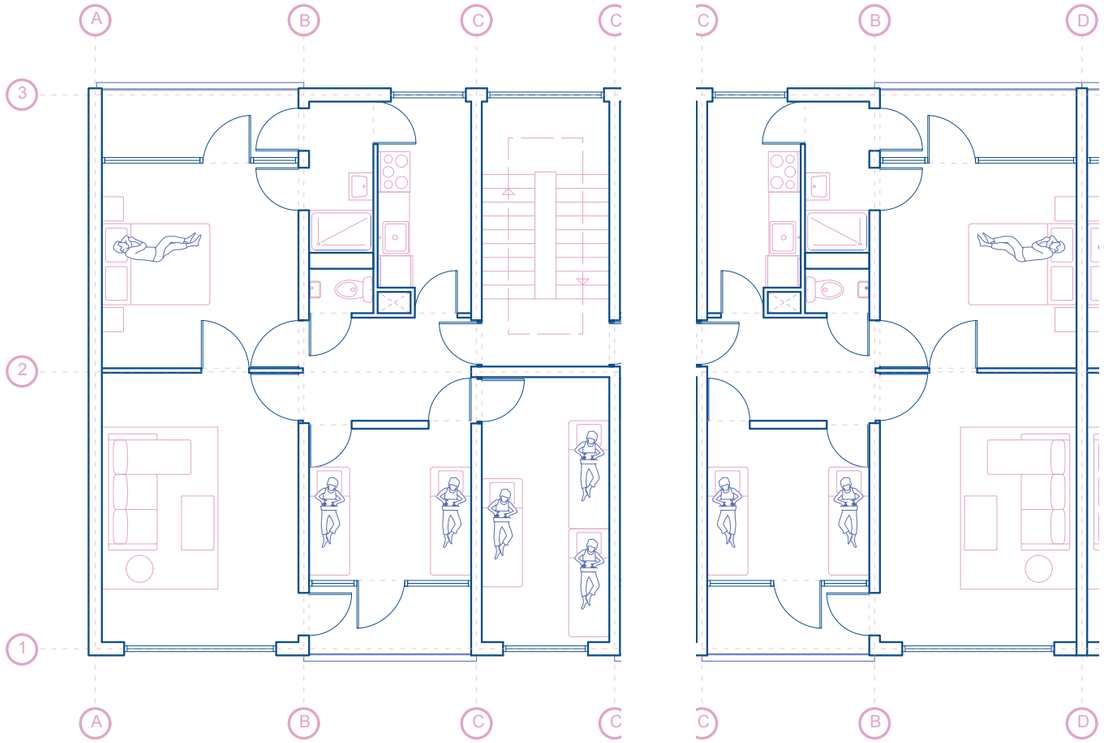


3 bedroom flat

2 bedroom flat

83.6 m²

70.9 m²



3 Bedroom Flat

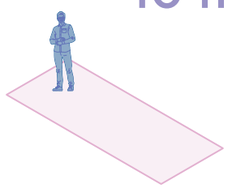
2 Bedroom Flat

Loneliness Levels in Dwelling Scale

Target Group Preferences

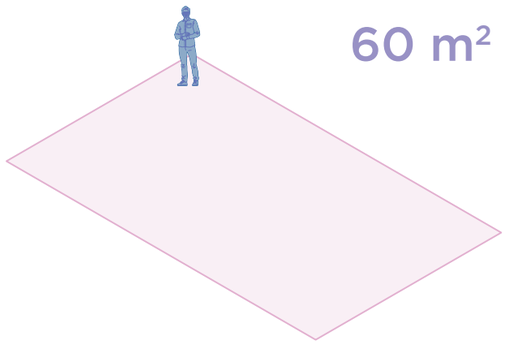
Old Cities in 1900

10 m²



New Cities in 2000

60 m²



LONELINESS LEVELS

>45m²

men and women

Ages 25+

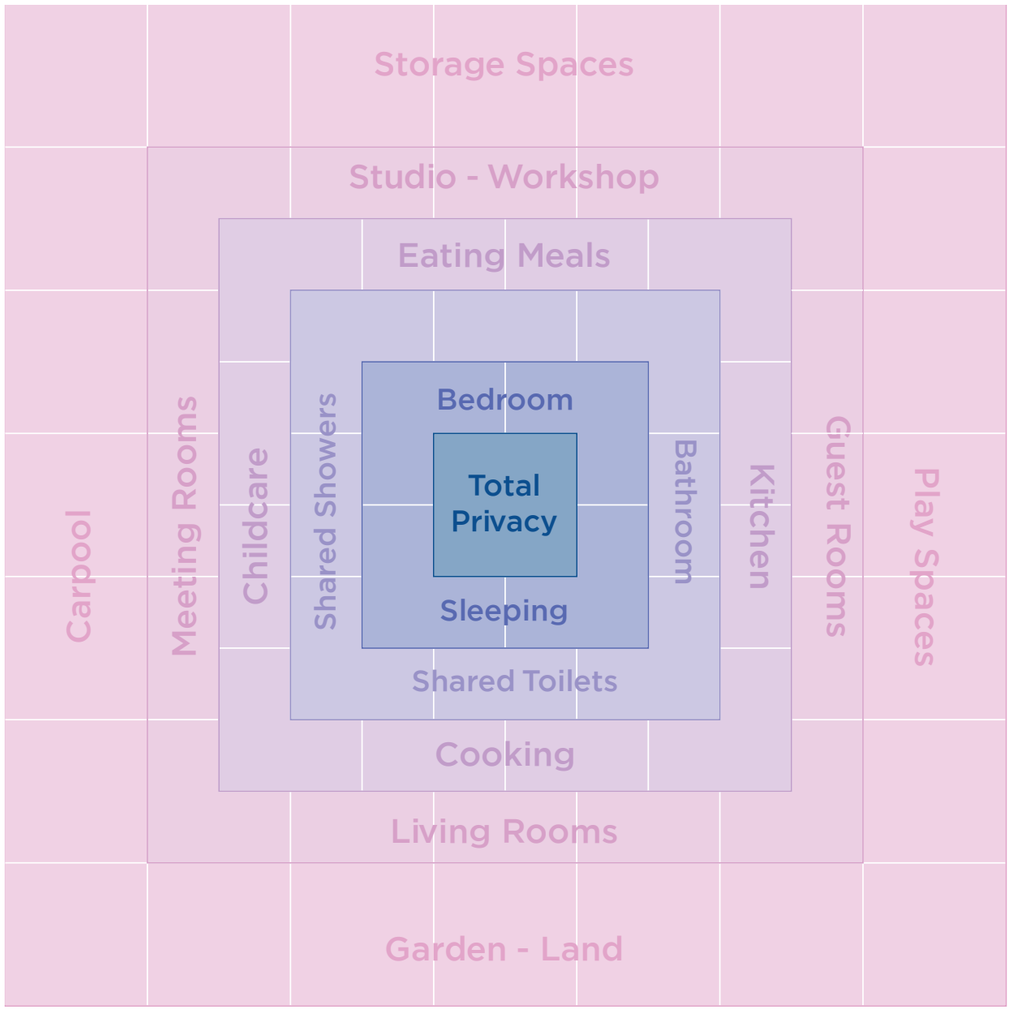
>45m²

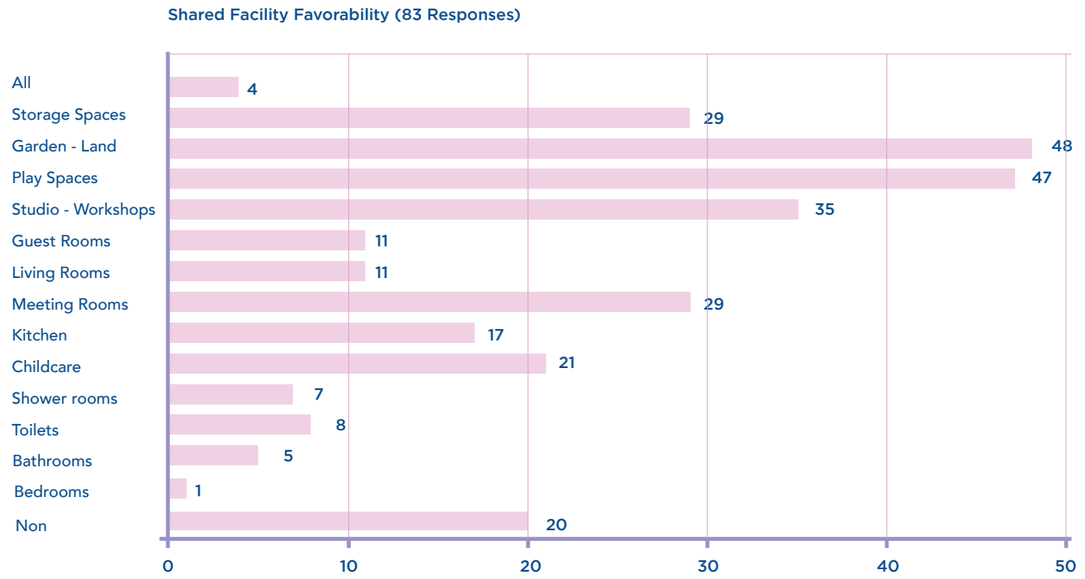
men and women

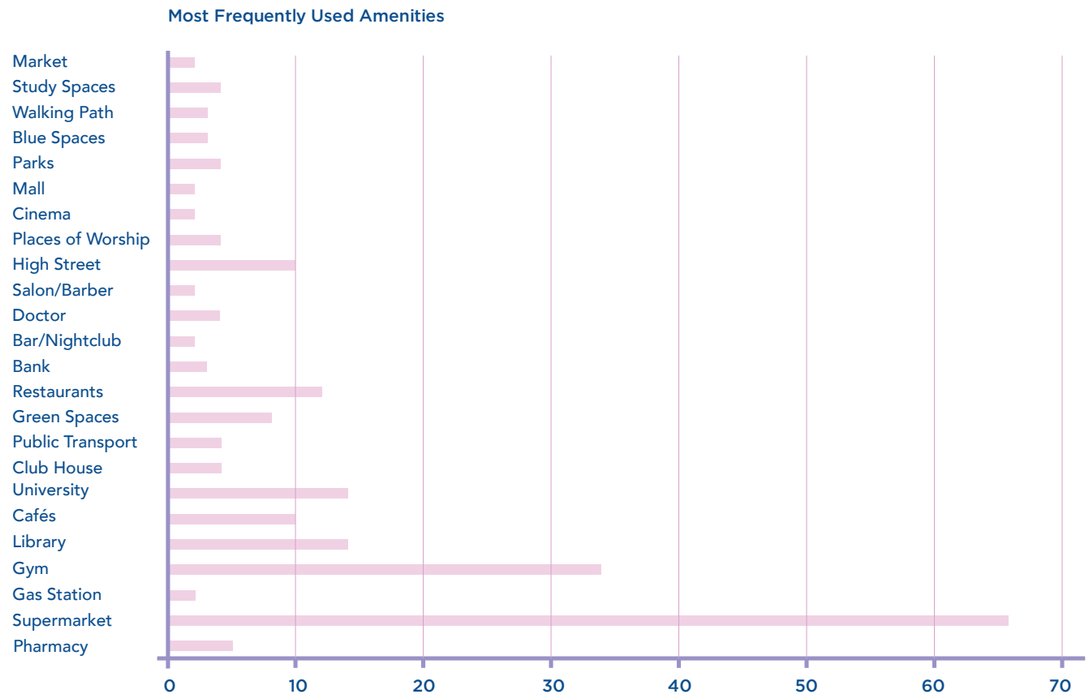
Ages 18 to 25

Dwelling Design Strategy: Co-Living

Degrees of Sharing and User Participation

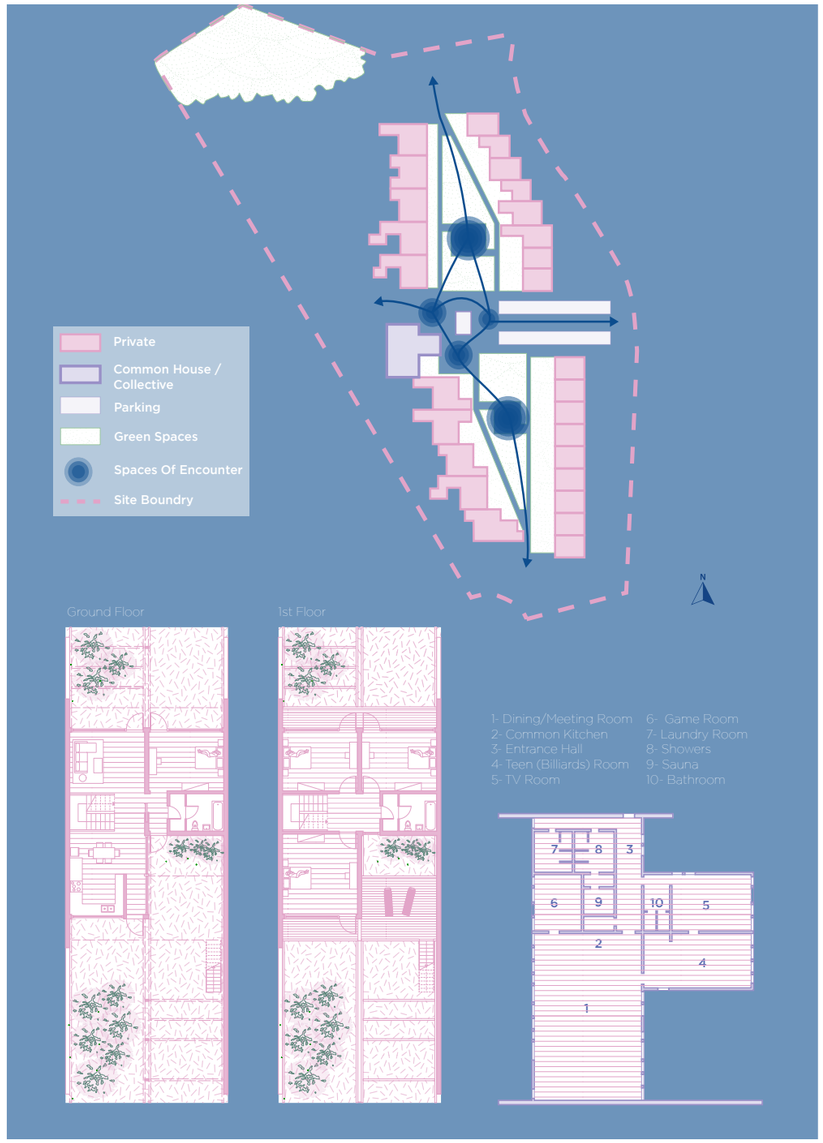




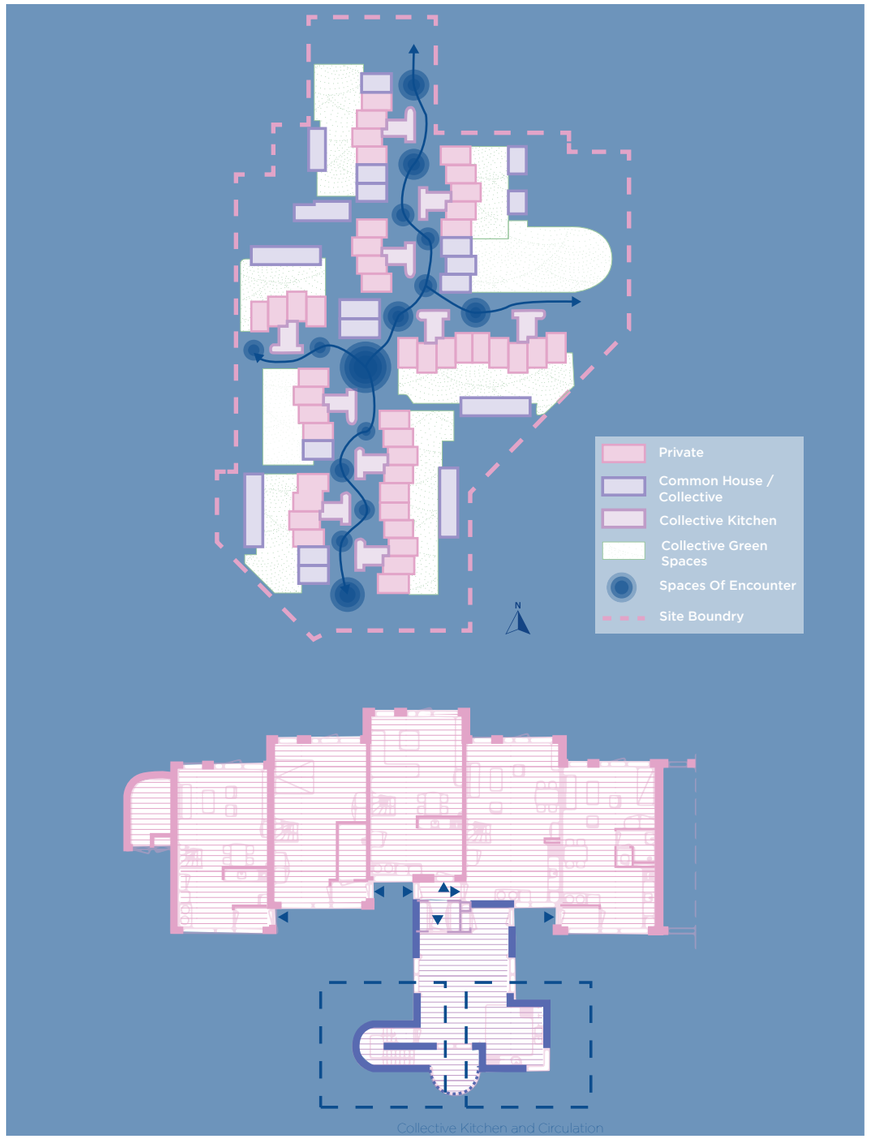


Dwelling Scale
Case Study Findings - Shared Kitchens

Sættedammen
Theo Bjerg
(Hillerød, 1969–72)

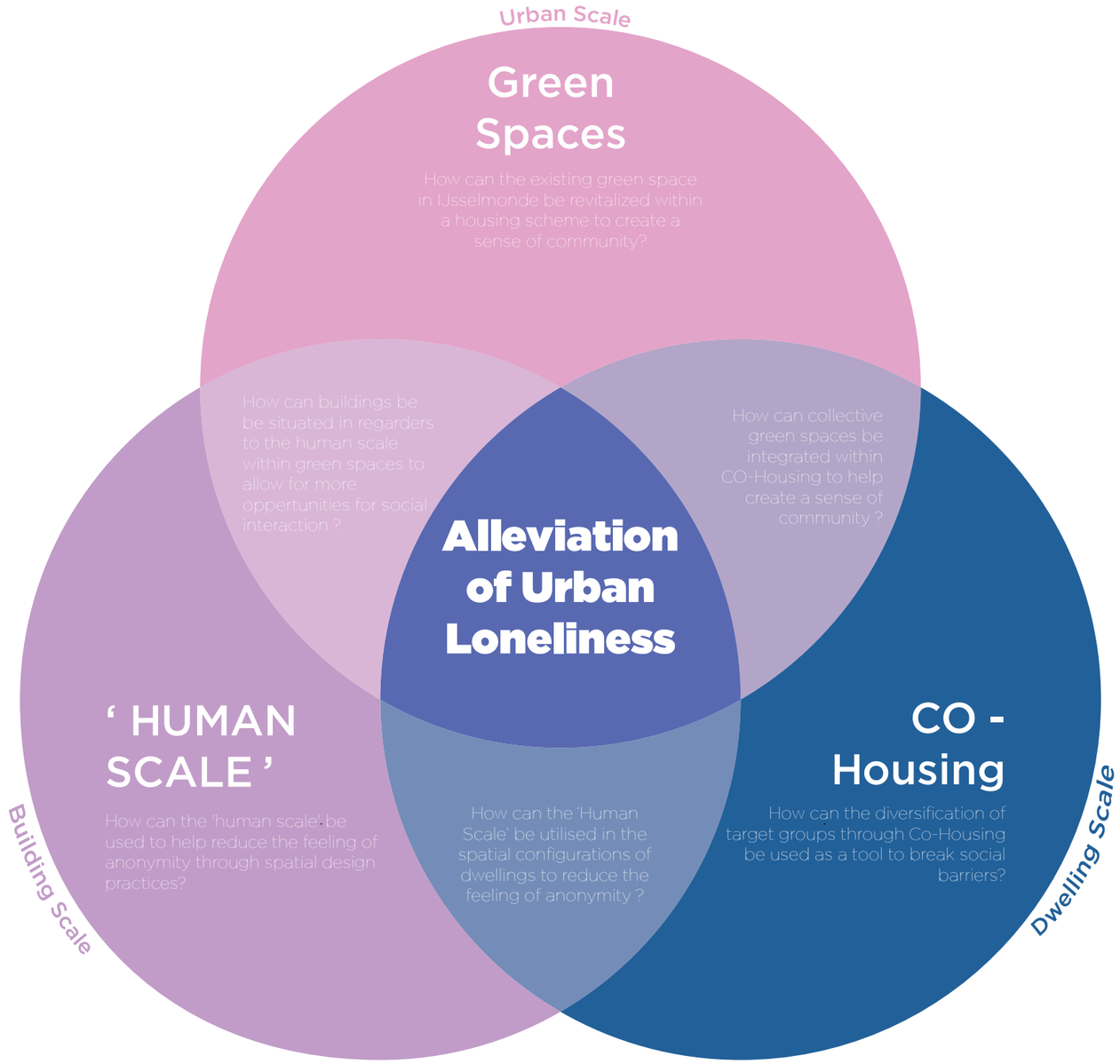


Hilversum Meent
Leo de Jonge &
Pieter Weeda
(Hilversum, 1970–77)



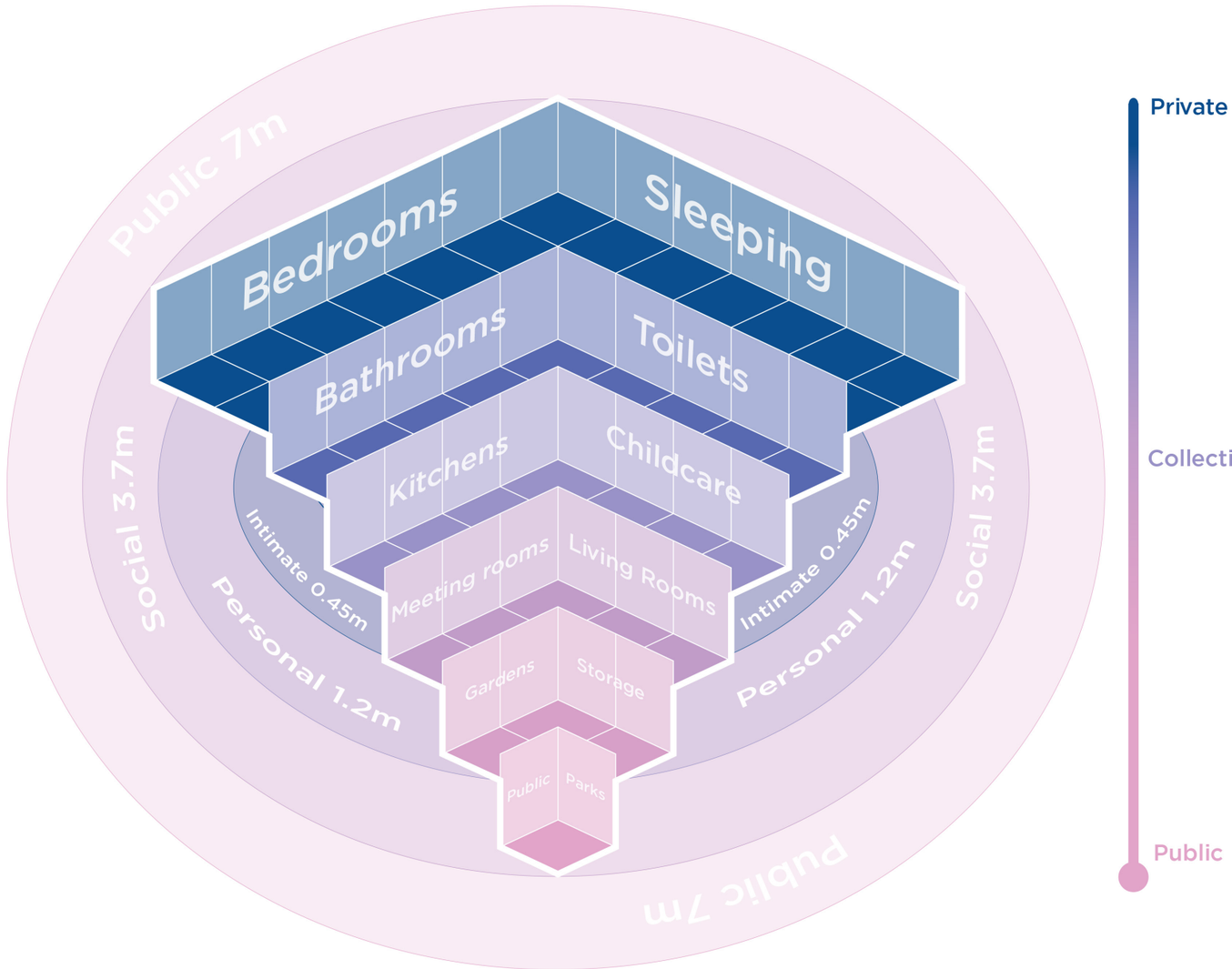
Research Conclusions

Design Aim



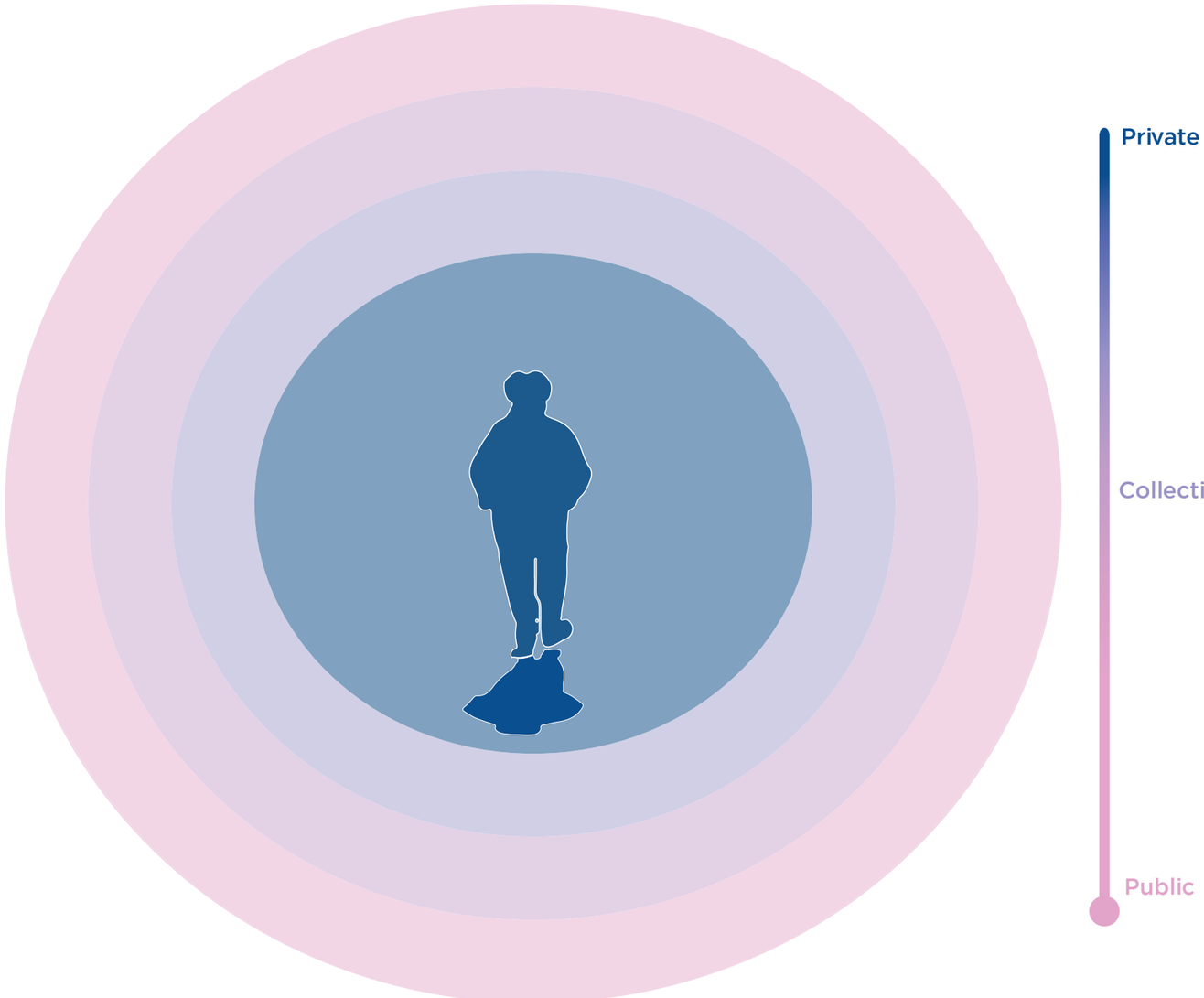
Research Conclusions

Degrees of Sharing Thermometer



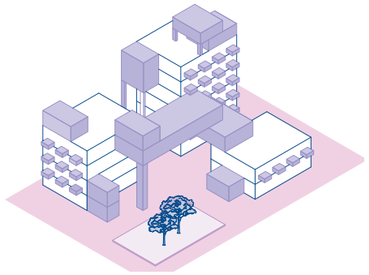
Research Conclusions

Degrees of Sharing Thermometer

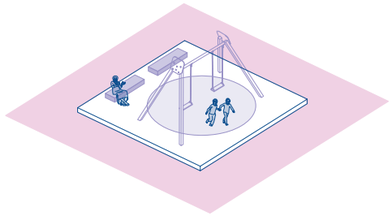


Soft Sequences of Threshold

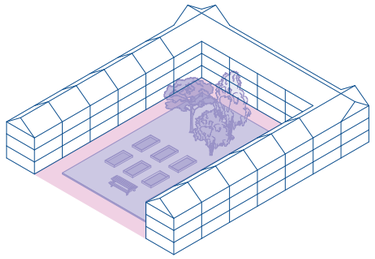
Design Manual
Overview From Research



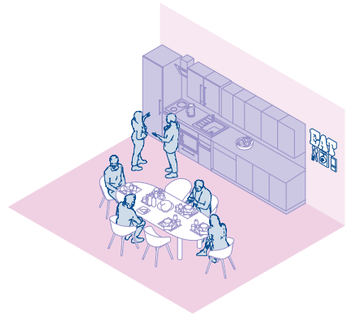
Playful Transformation



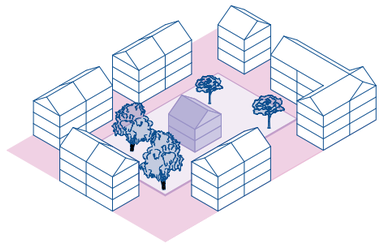
Play Space For Children



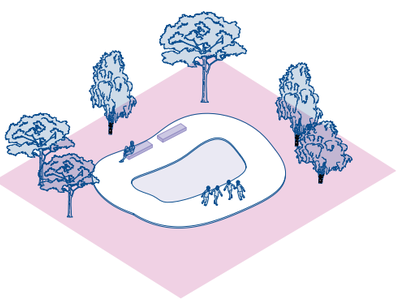
Communal Gardens



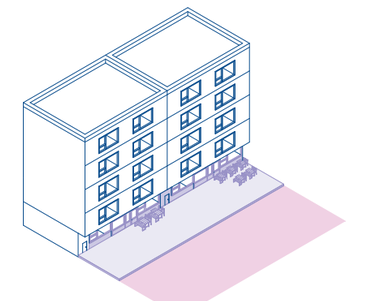
Common Kitchen And Dining



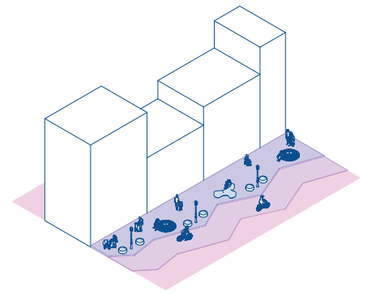
Clustering and Common House



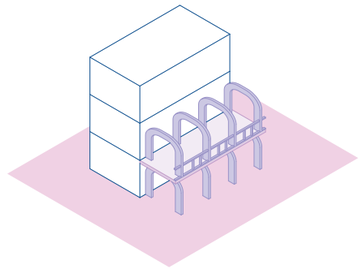
Blue Space and Urban Furniture



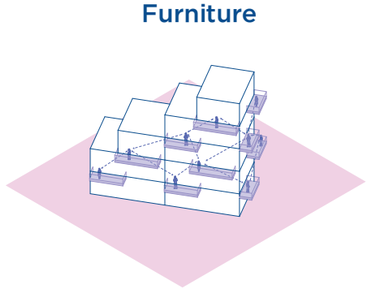
Soft Edges



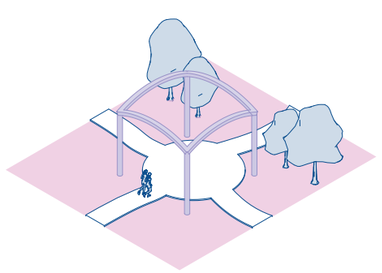
Playful Streets



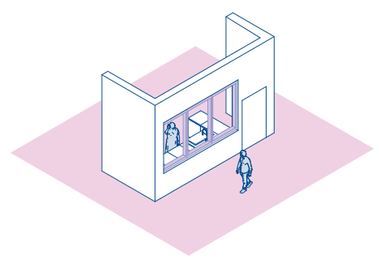
Playful Promenades



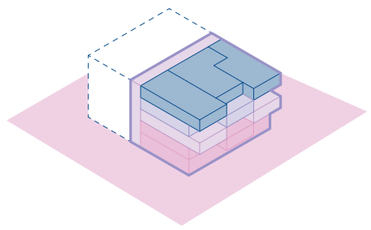
Visually Connected Balconies



Symbolic Gates and Multiple Pathways



Visual Transparency



Typology Variation



Walkability



Bikability



Resident Participation

DESIGN

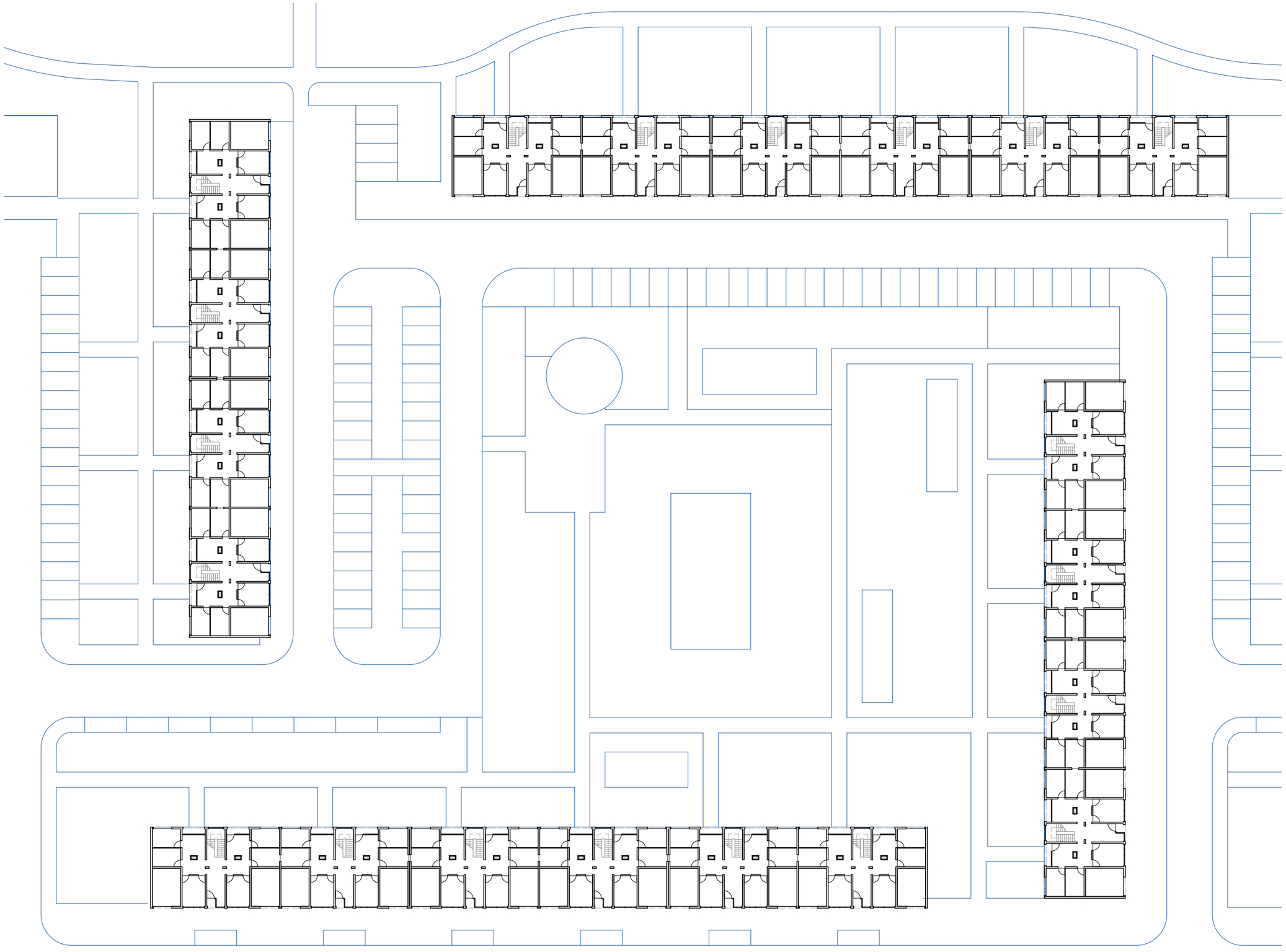
Restorative Densification

Intergenartional Housing

Masterplan of Thamerdijk

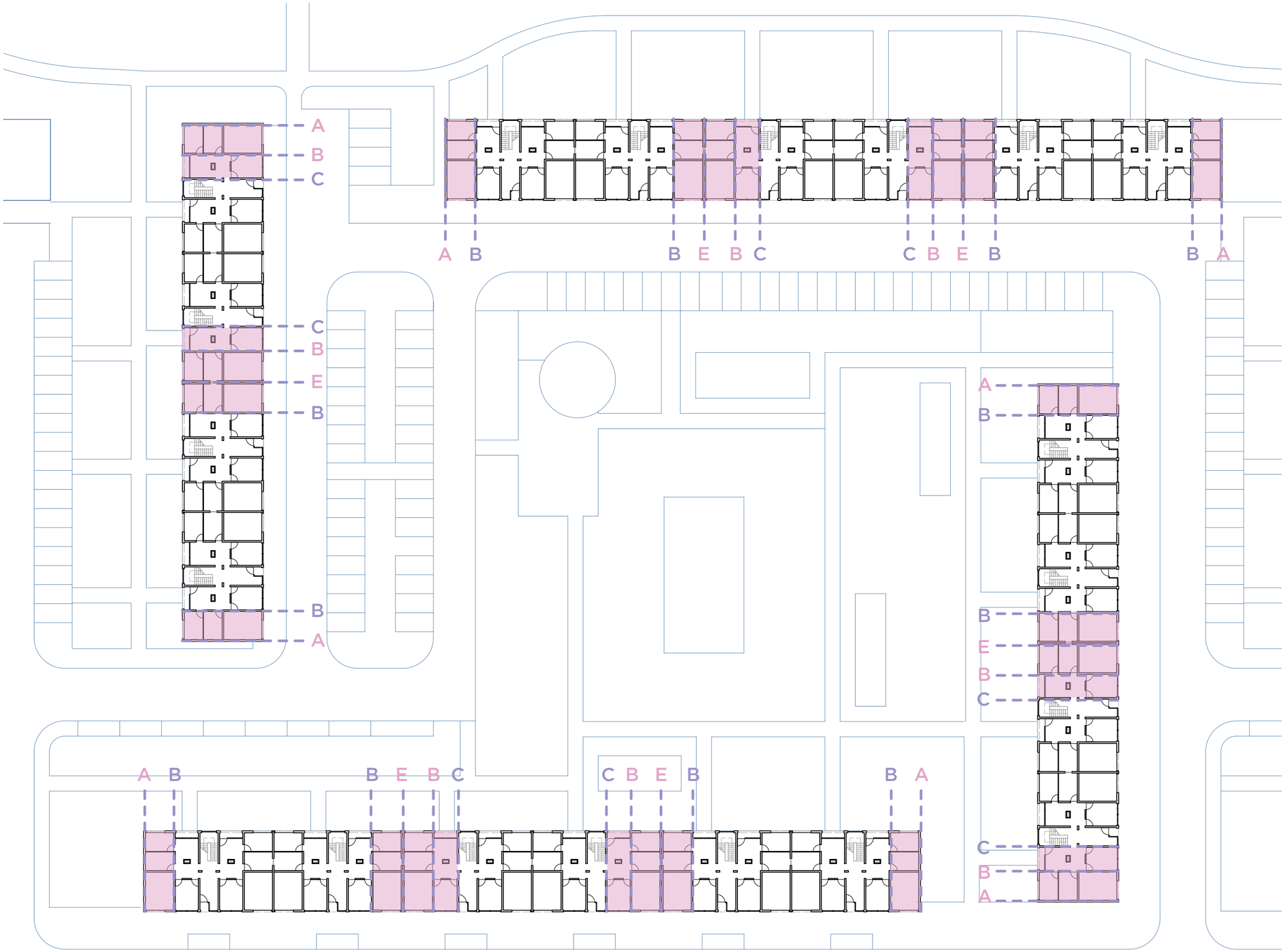
Existing Situation 1:500

138 Homes



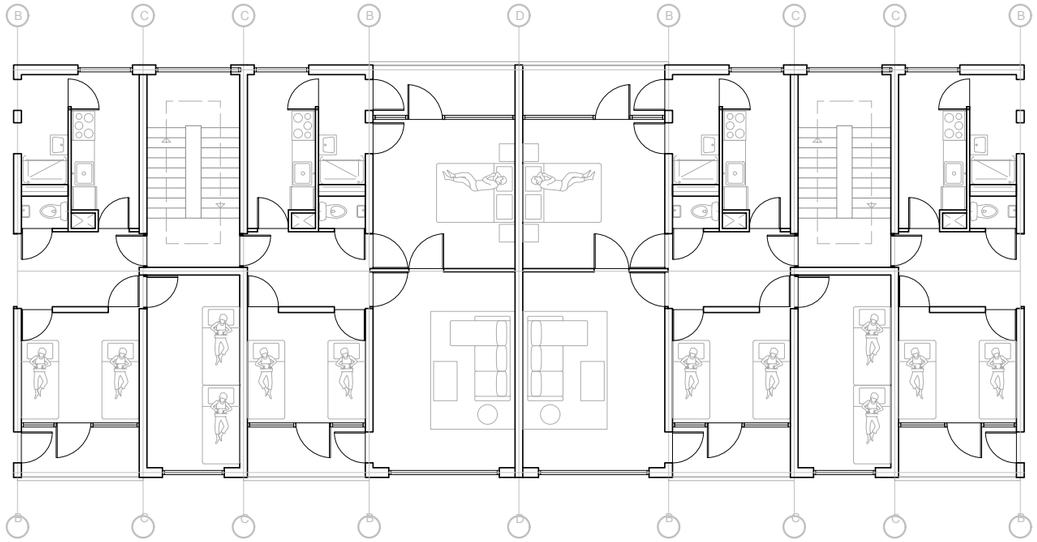
Masterplan of Thamerdijk

Demolition Plan 1:500

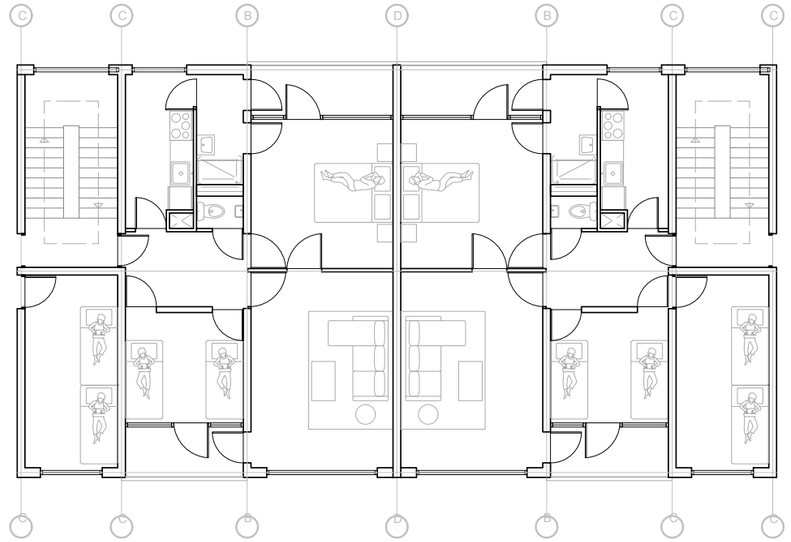


New Dwellings

Existing - Variant A and B



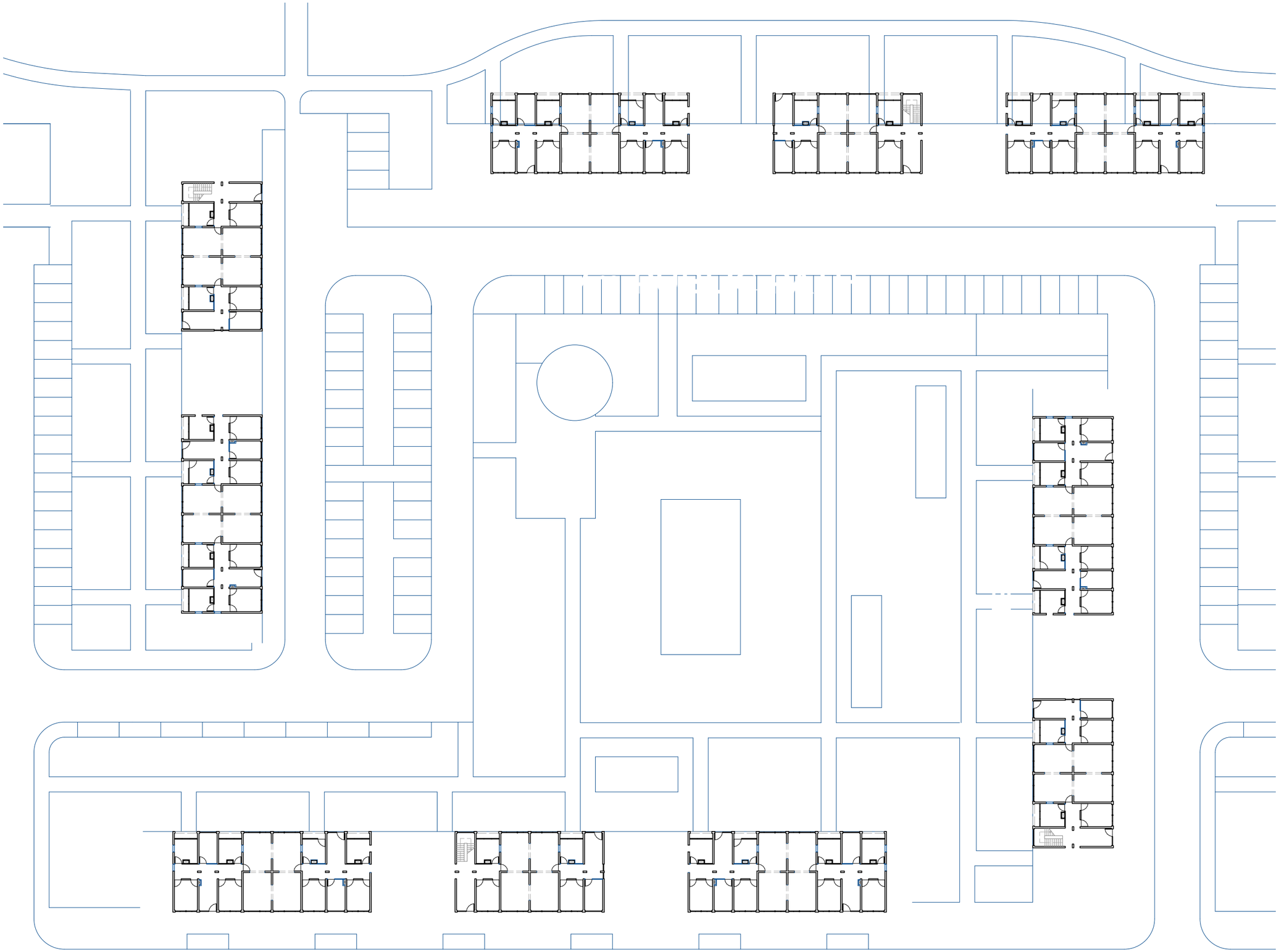
Type A



Type B

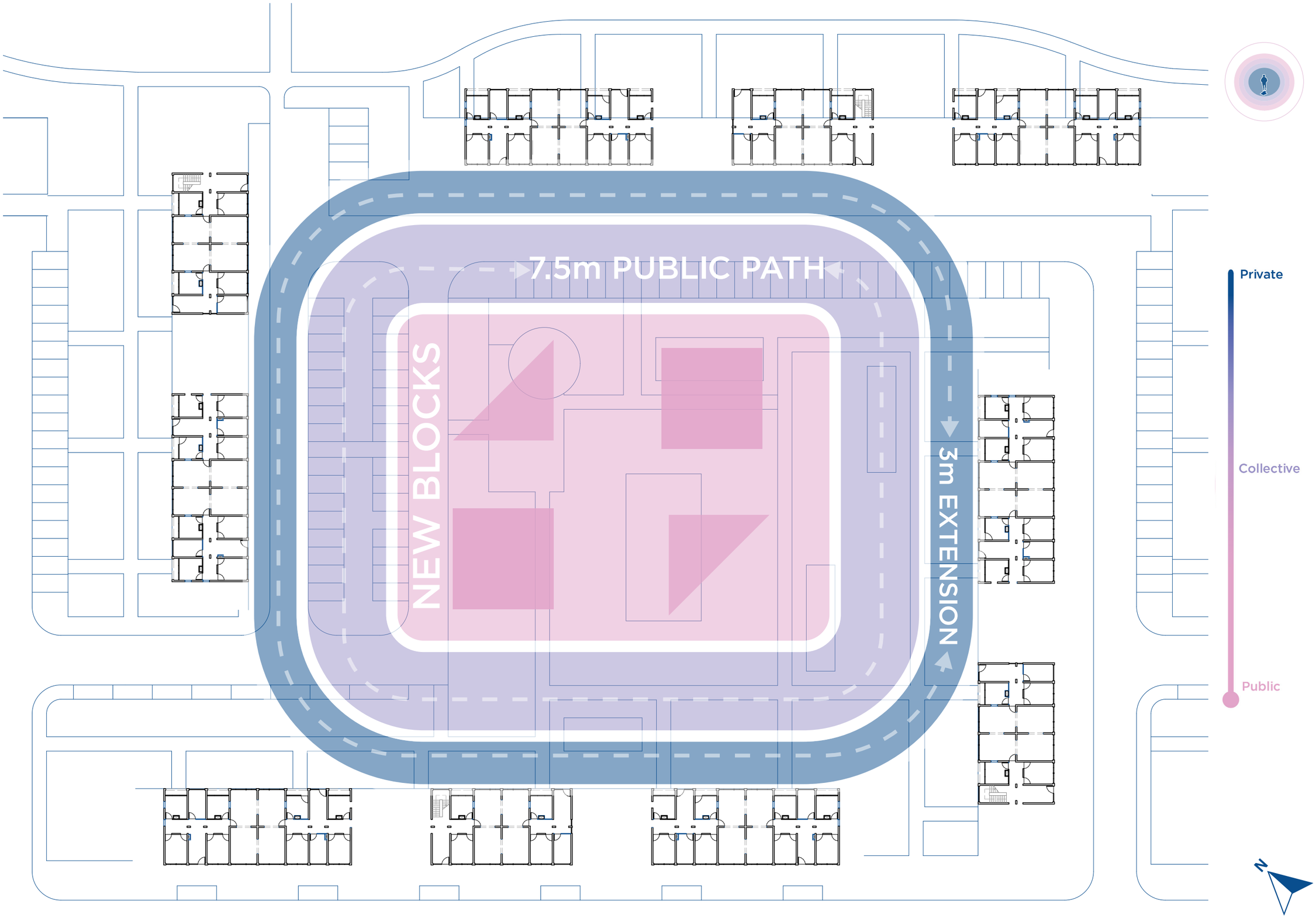
Masterplan of Thamerdijk

Existing Demolition 1:500



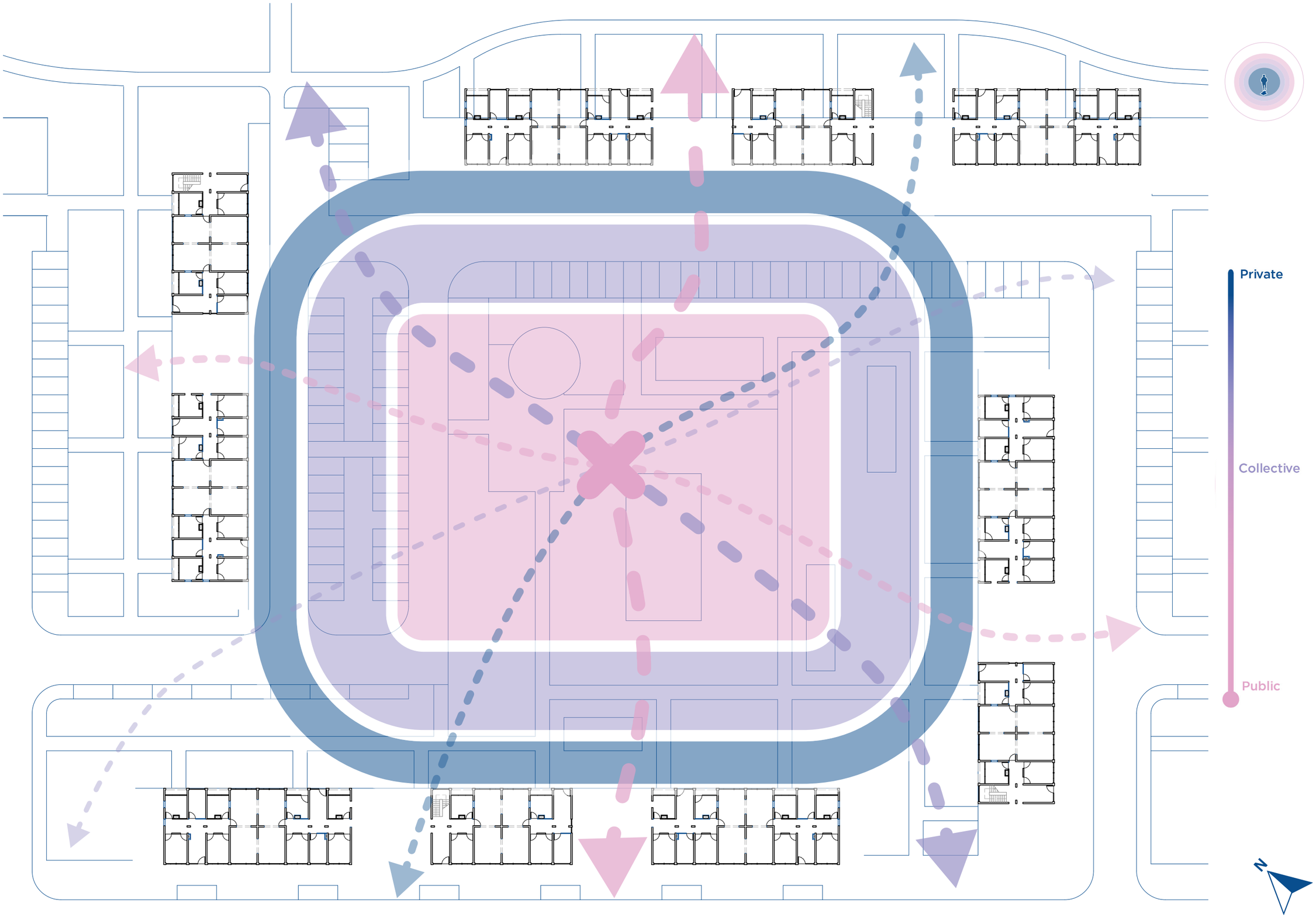
Masterplan of Thamerdijk

Master Plan Design - Distances



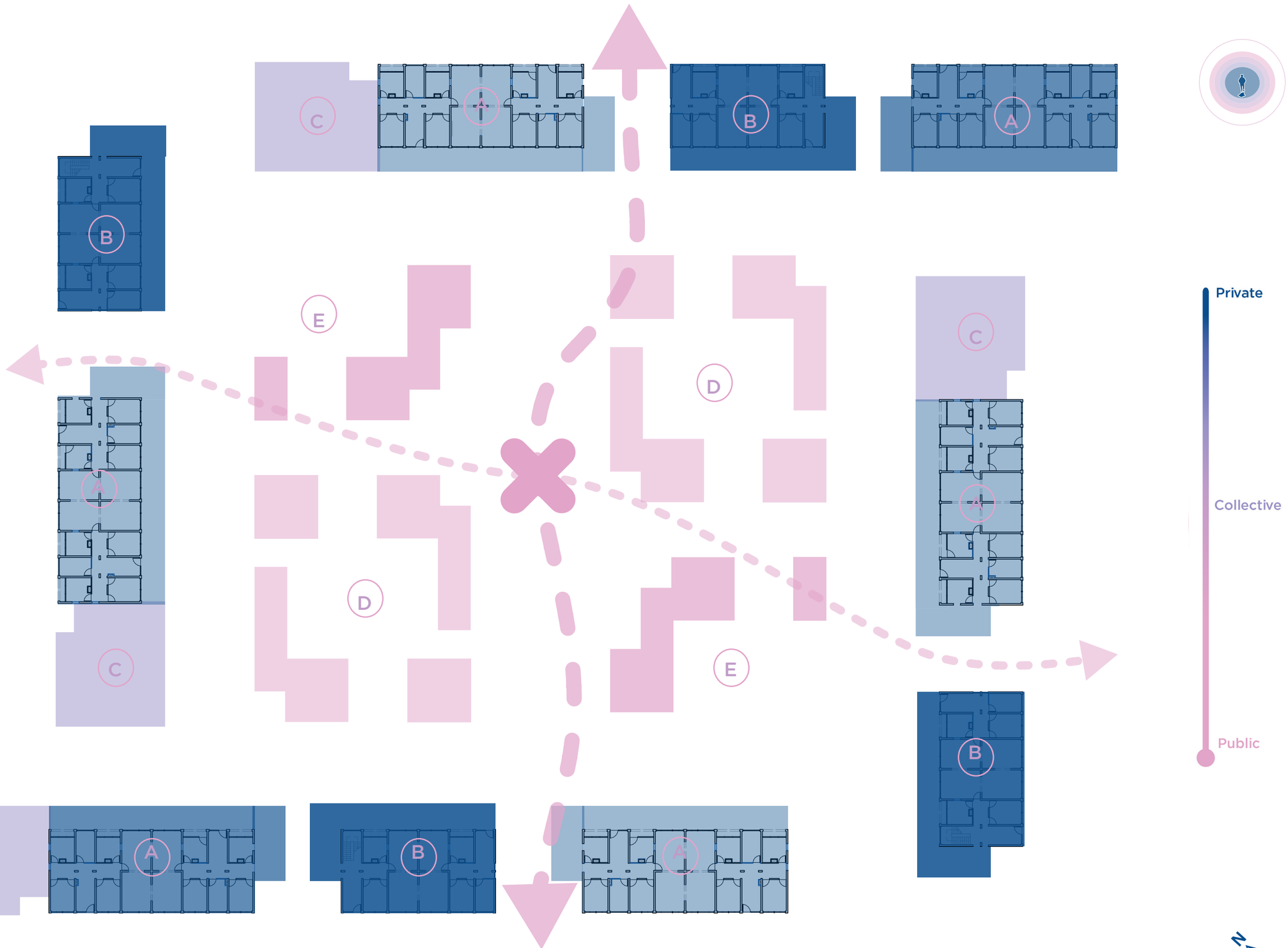
Masterplan of Thamerdijk

Master Plan Design



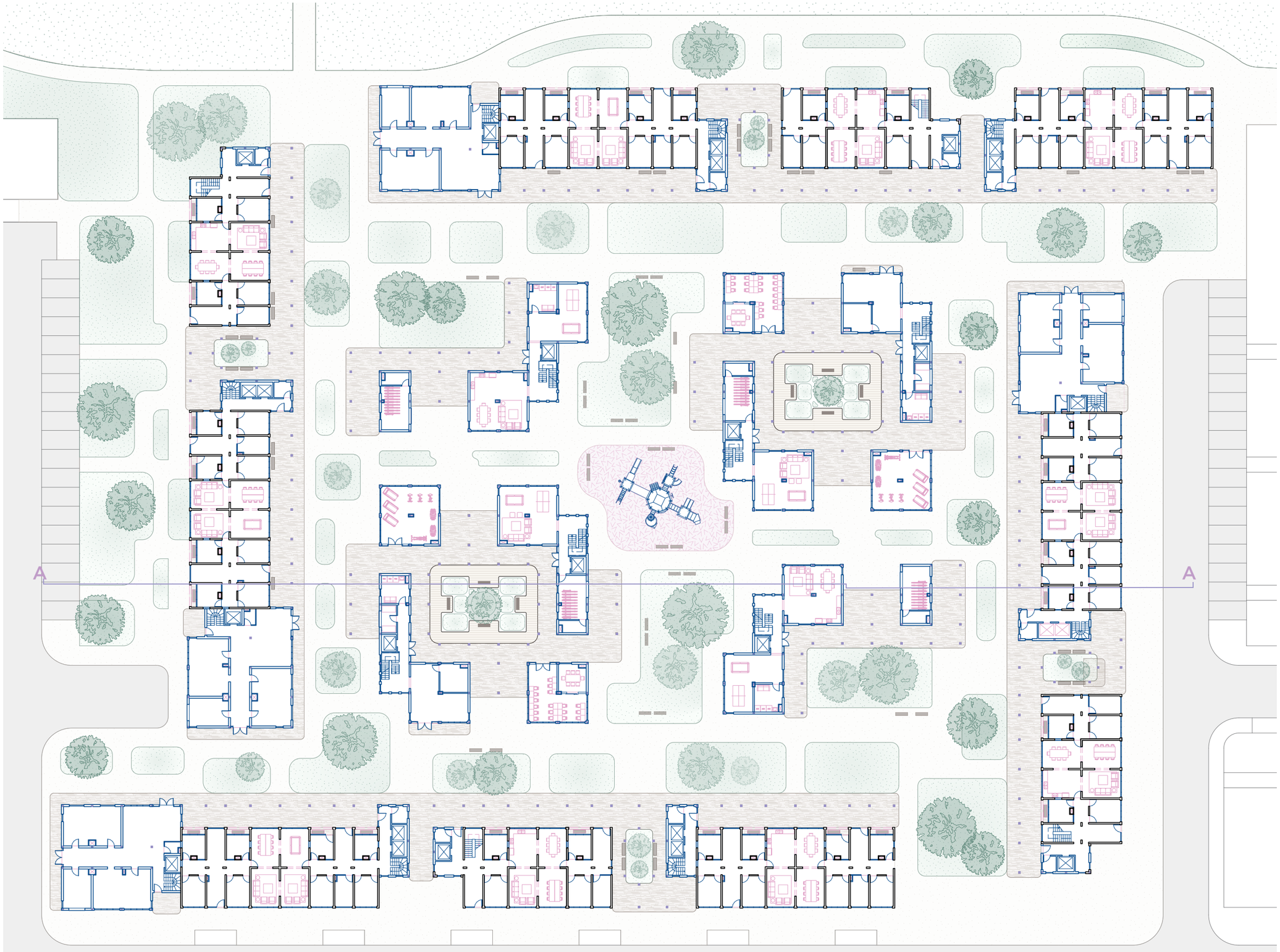
Masterplan of Thamerdijk

Existing Demolition 1:500



Masterplan of New Thamerdijk

Public/ Collective Ground 1:500

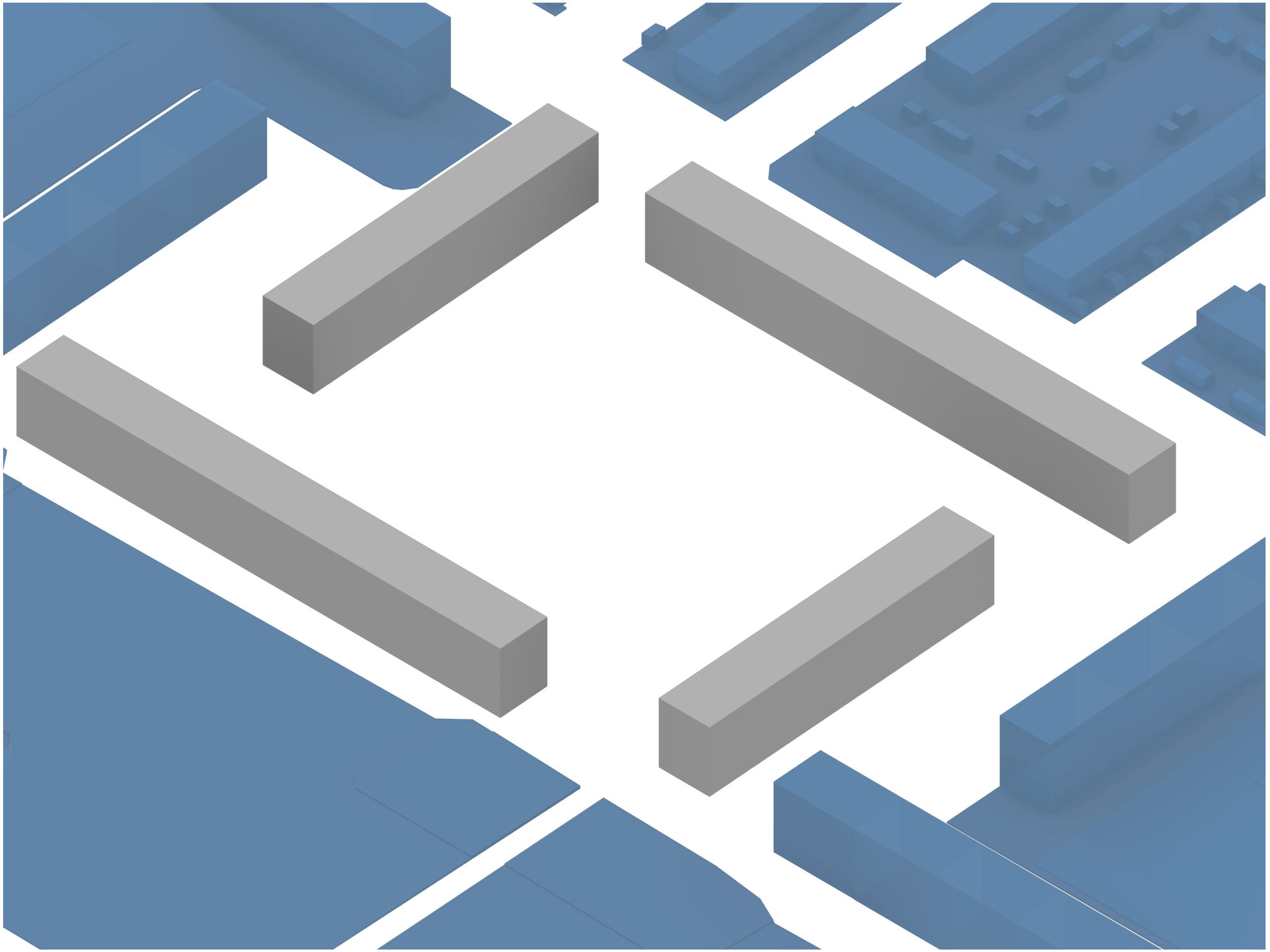


New

Existing

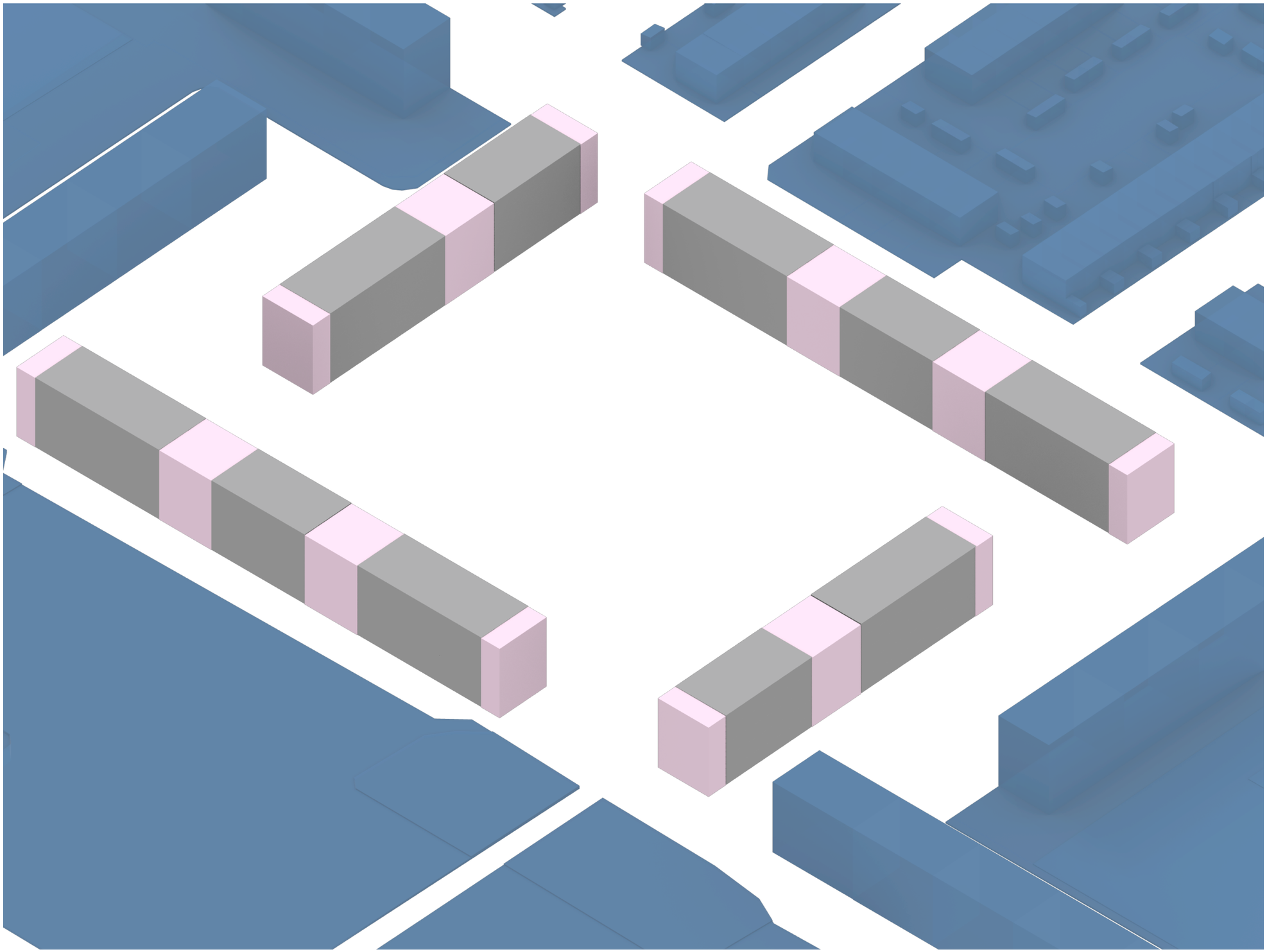
Transformation Scheme of Thamerdijk

0- Existing Building Blocks



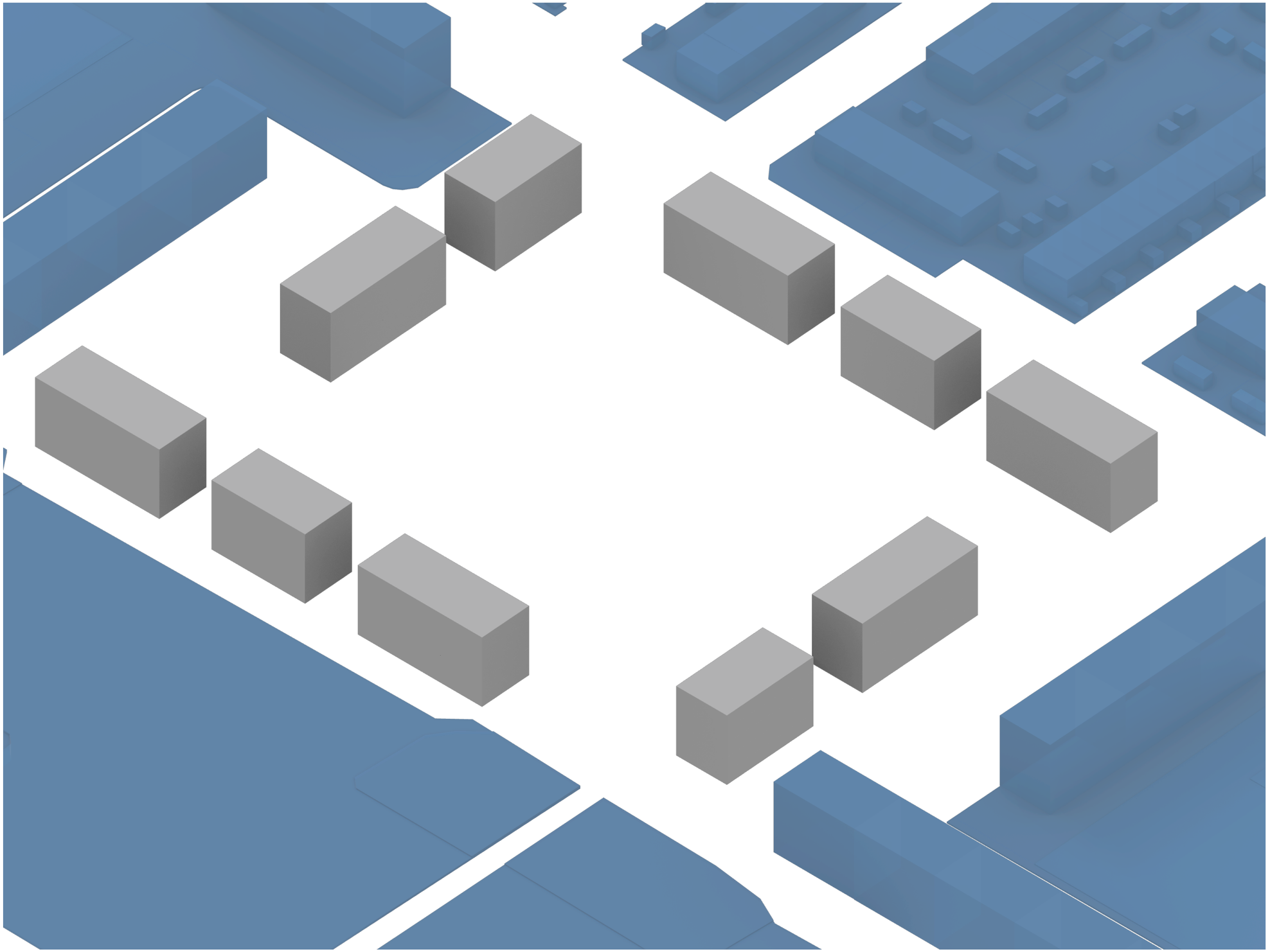
Transformation Scheme of Thamerdijk

1- Demolition



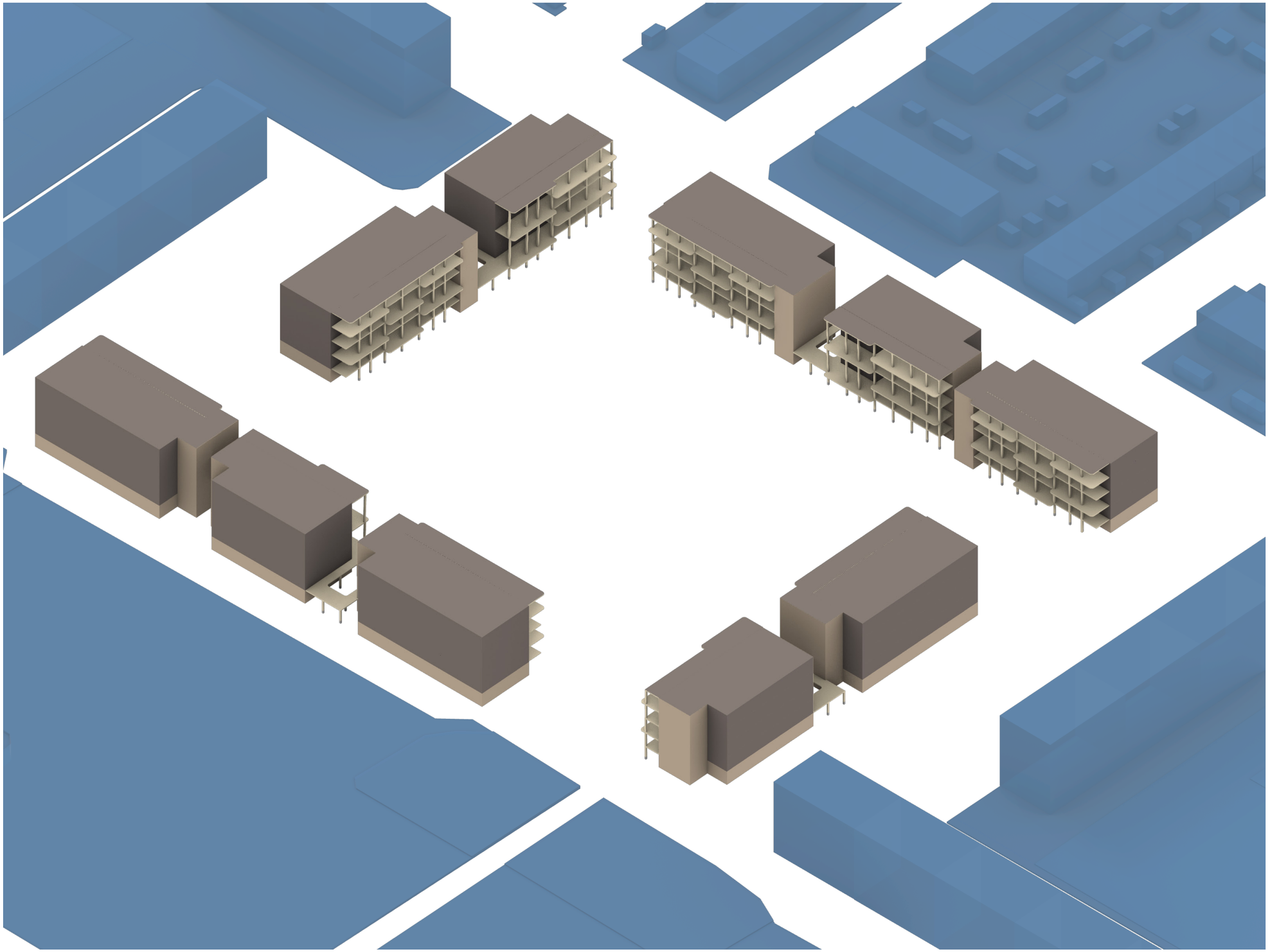
Transformation Scheme of Thamerdijk

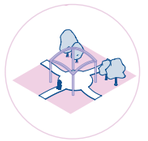
2- Cut Building blocks



Transformation Scheme of Thamerdijk

3- Facade Renovation and Circulation/ Gallery Attachments





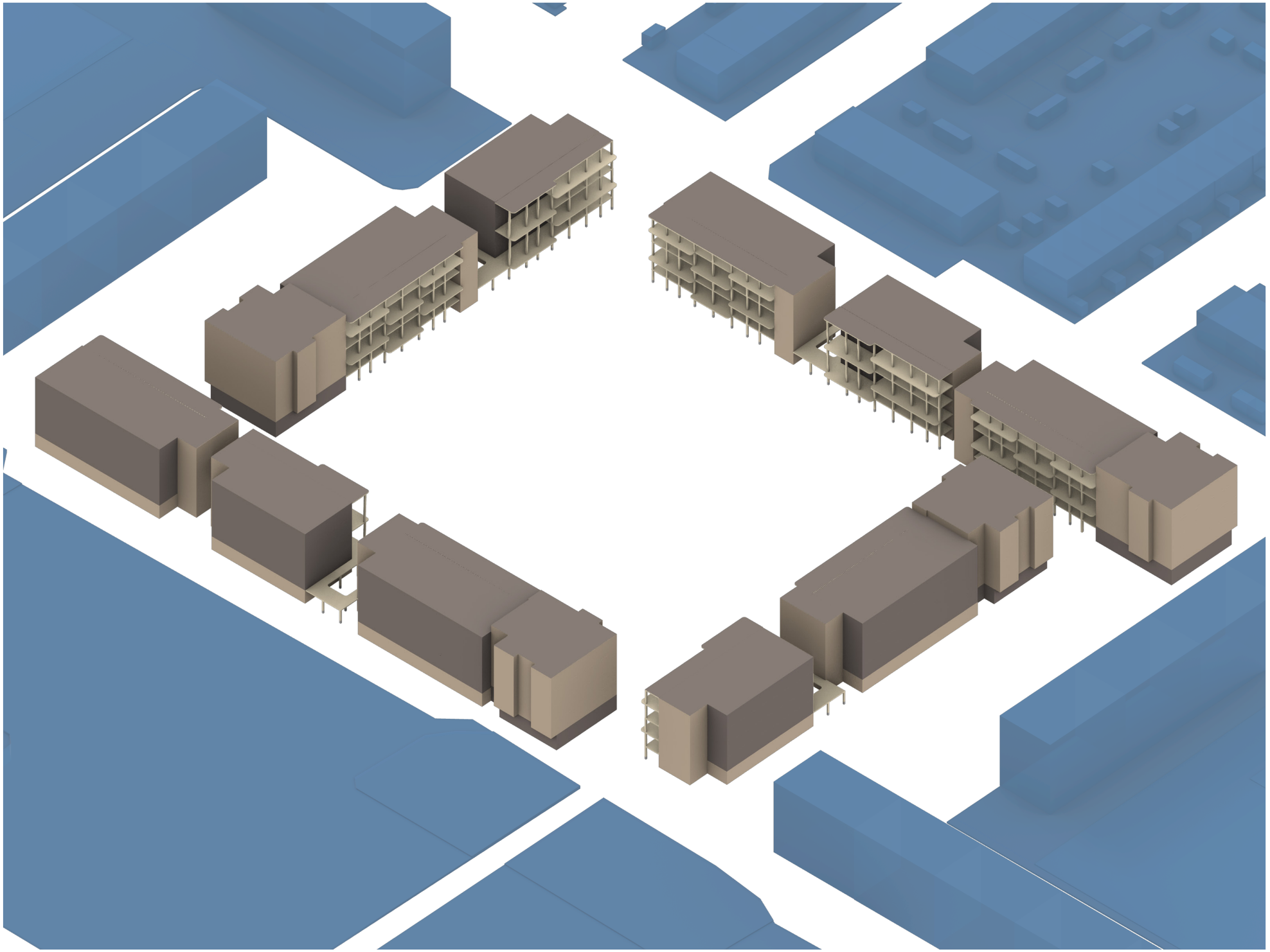






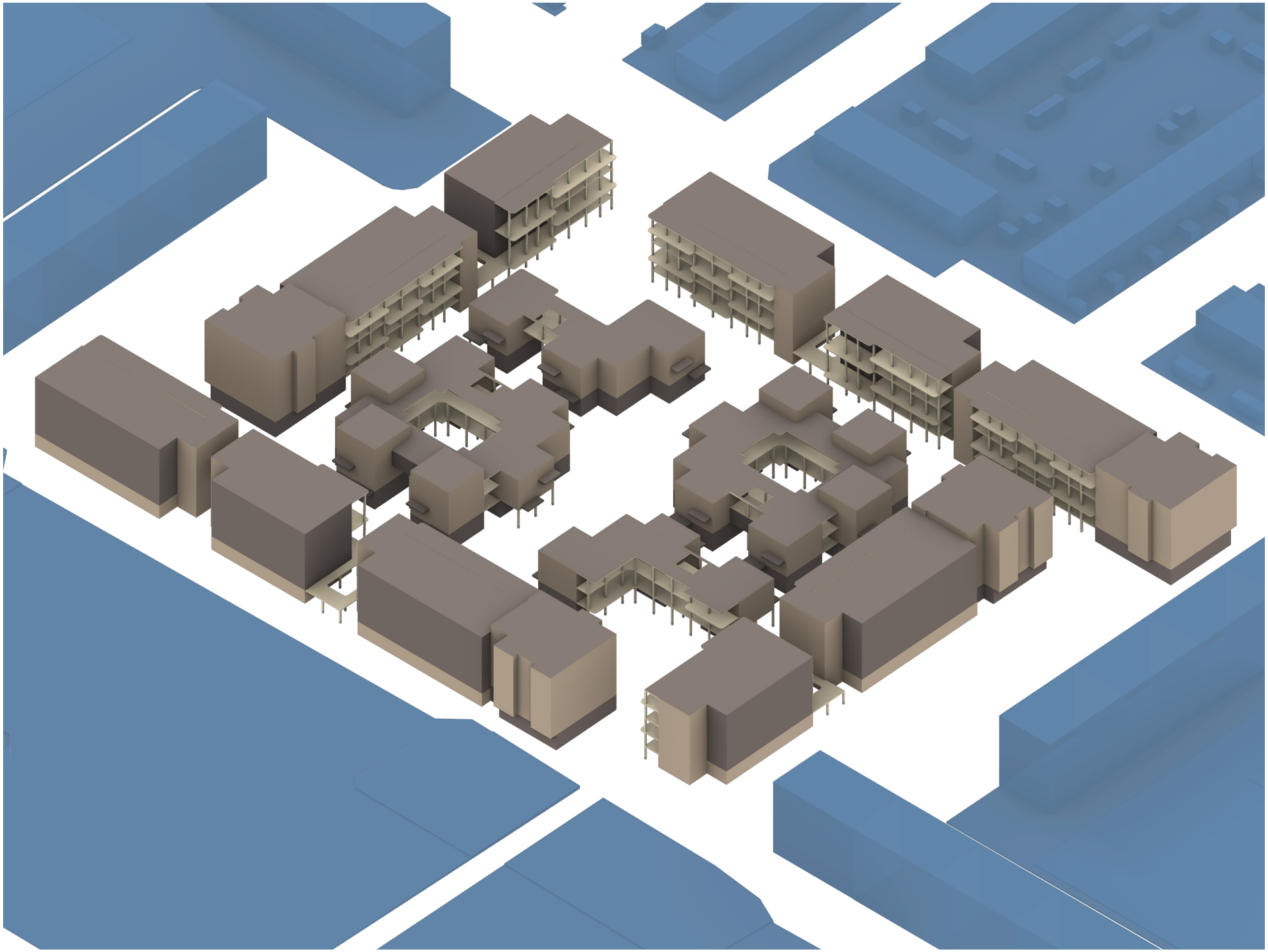
Transformation Scheme of Thamerdijk

4- Extension Blocks



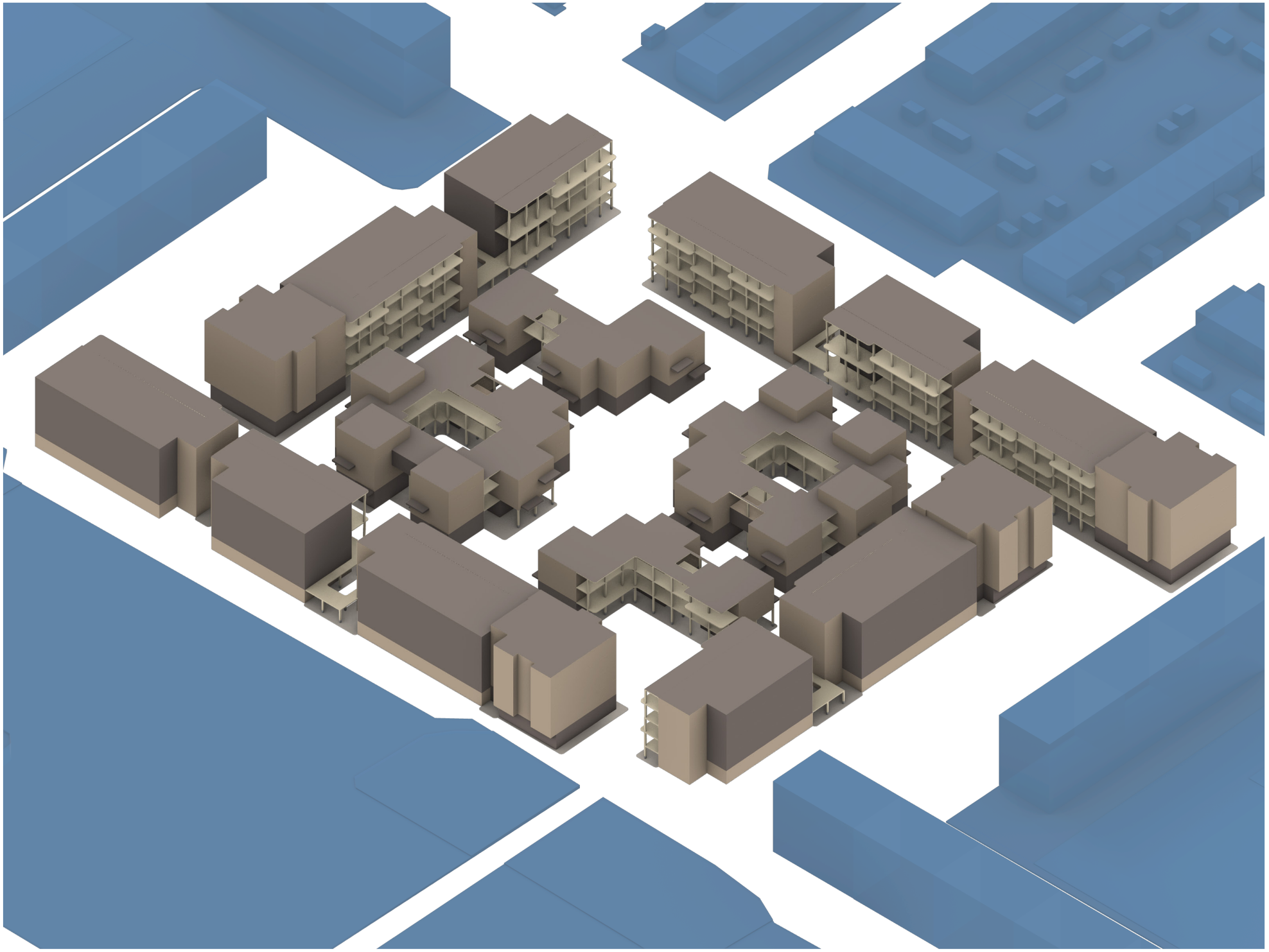
Transformation Scheme of Thamerdijk

5- New Central Building Blocks



Transformation Scheme of Thamerdijk

6- Ground Floor Paving



Transformation Scheme of Thamerdijk

7- New Pathways



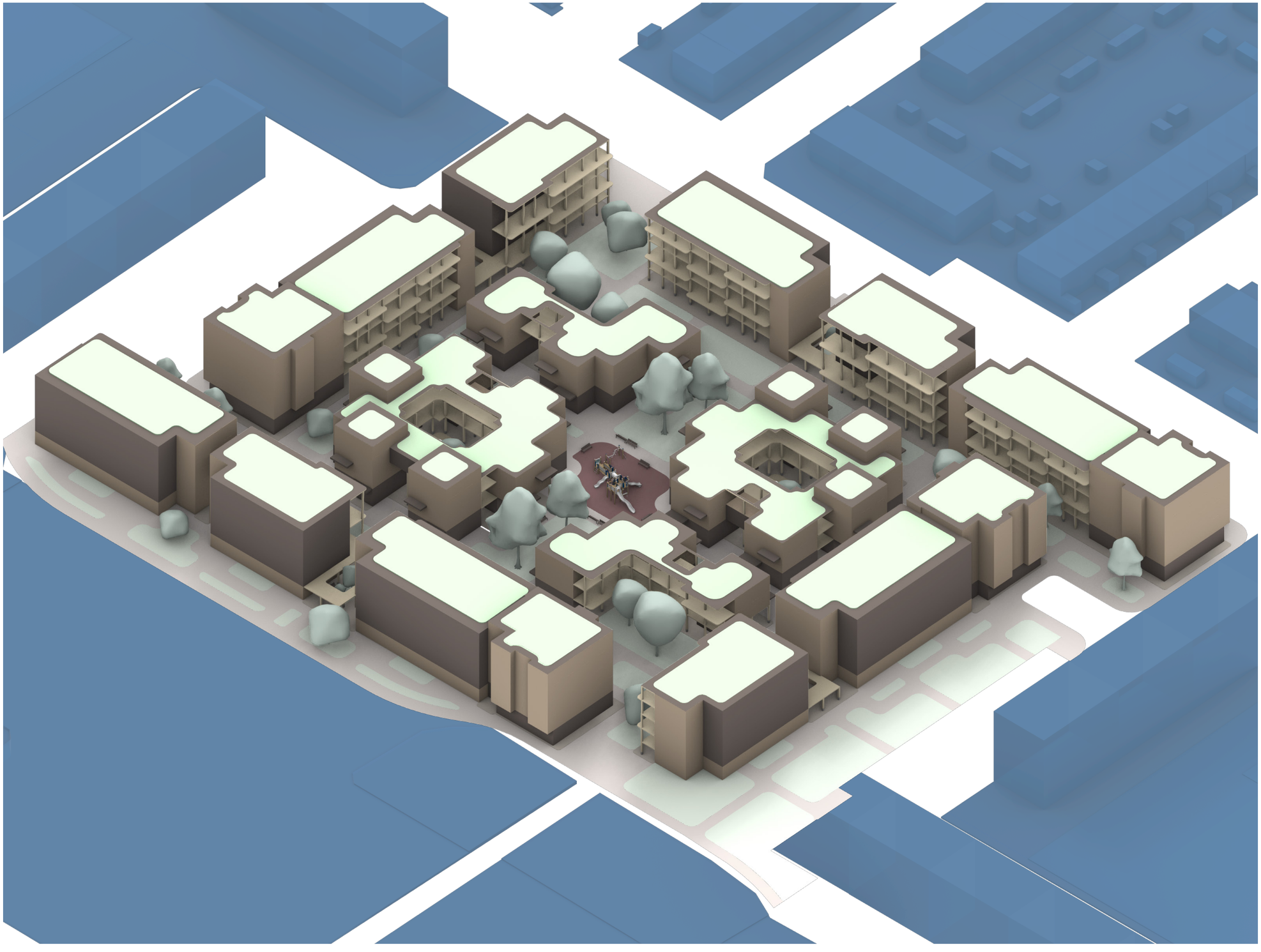
Transformation Scheme of Thamerdijk

8- New Central Playground



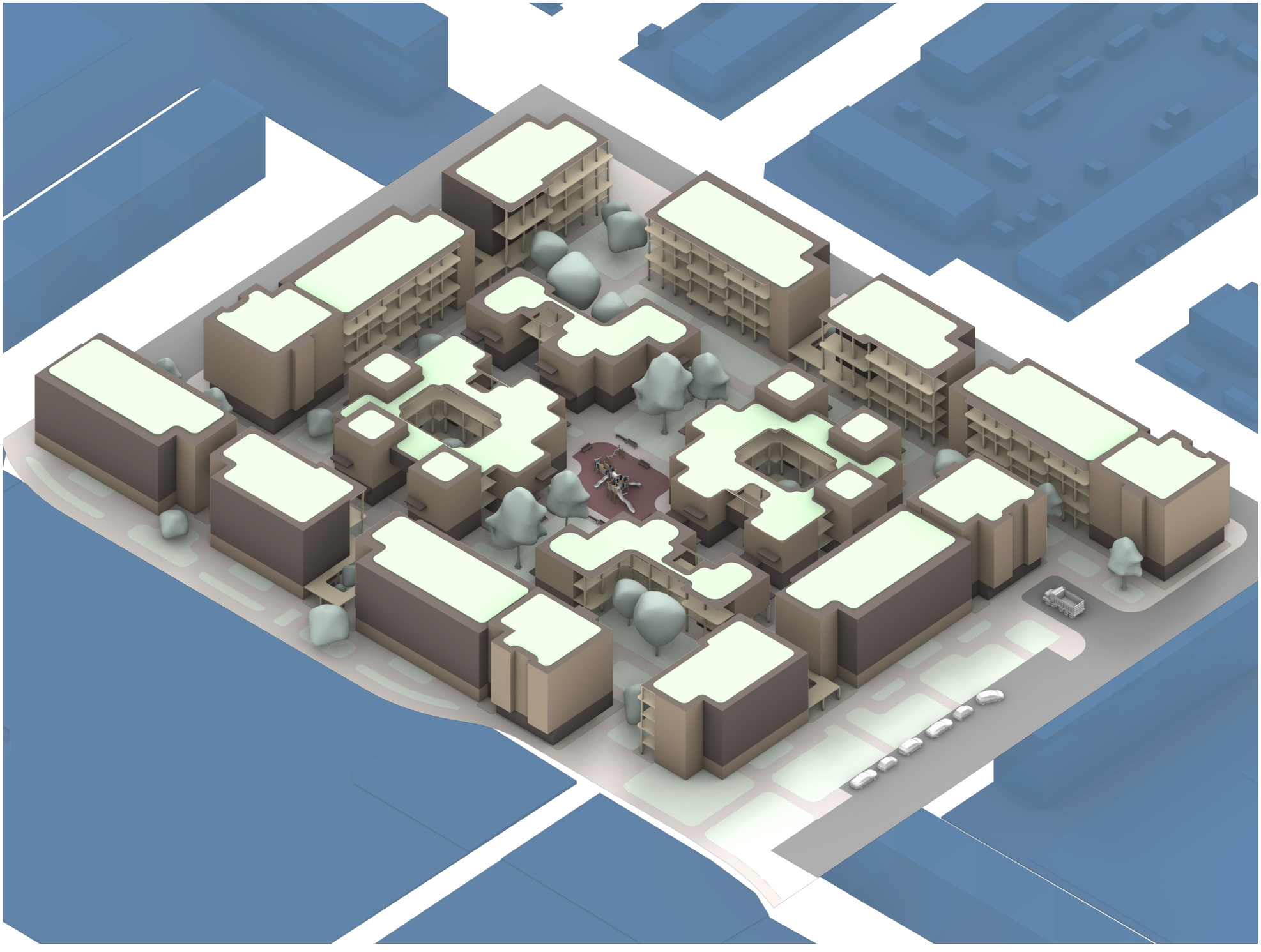
Proposed Masterplan of Thamerdijk

9- Landscaping



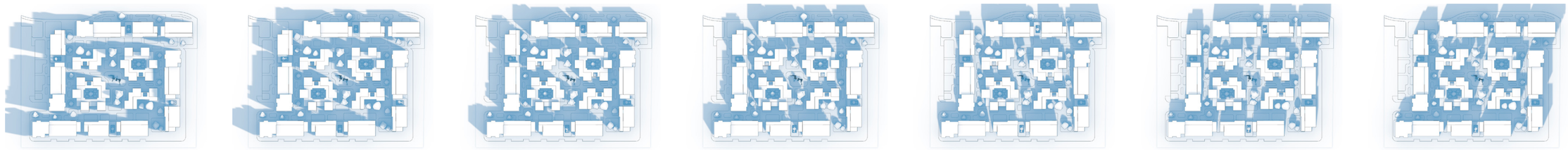
Proposed Masterplan of Thamerdijk

10- New Thamerdijk



Shadow Study

March 21st
Spring



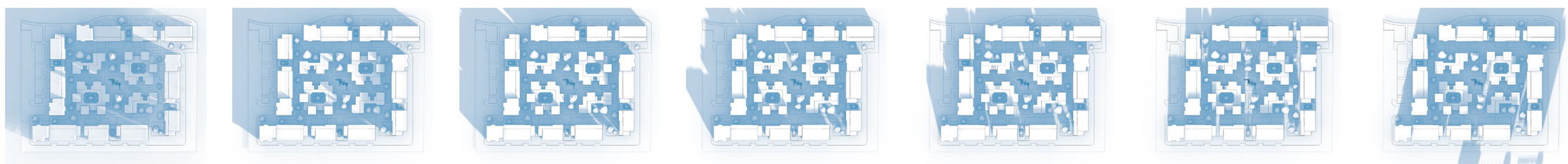
09:00 10:00 11:00 12:00 13:00 14:00 15:00

June 21st
Summer



09:00 10:00 11:00 12:00 13:00 14:00 15:00

Dec 21st
Winter



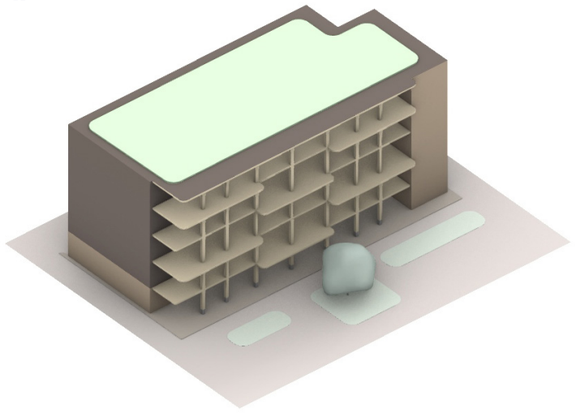
09:00 10:00 11:00 12:00 13:00 14:00 15:00

New Building Typologies
Densification Calculations

New Homes (Exc. new)=228
New Homes (Inc. new)= 376
+238 New Homes

TRANSFORMATION

A.

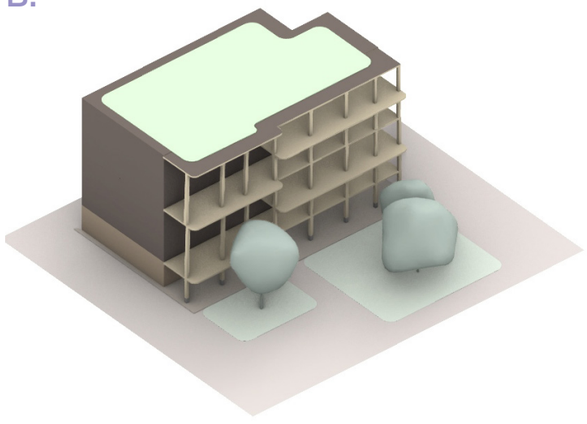


A[1]- 7 person x4 floors x 4 blocks = 112 persons
A[2]- 8 person x4 floors x 2 blocks = 64 persons

Total = 176 persons

*A[2] Collective on ground floor only

B.



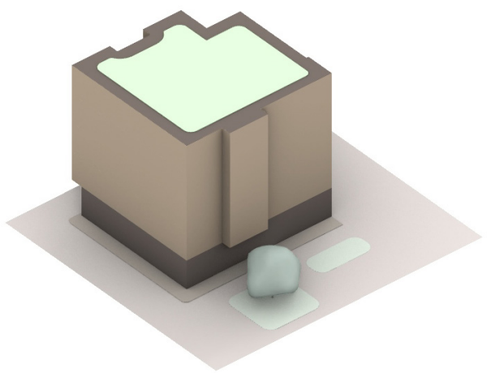
B[1]- (6 persons x 2 blocks) +(4 persons x 2 blocks) = 20 persons
B[2]- (8 persons x 2 blocks) +(8 persons x 2 blocks) = 32 persons

Total = 52 persons

*B[1] Exc. guest rooms

NEW

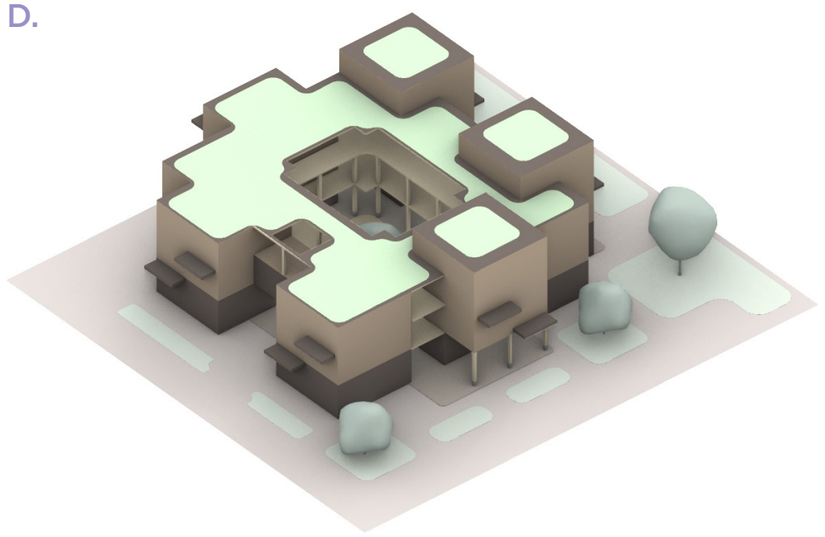
C.



C - 5 person x 4 floors x 4 blocks

Total = 80 persons

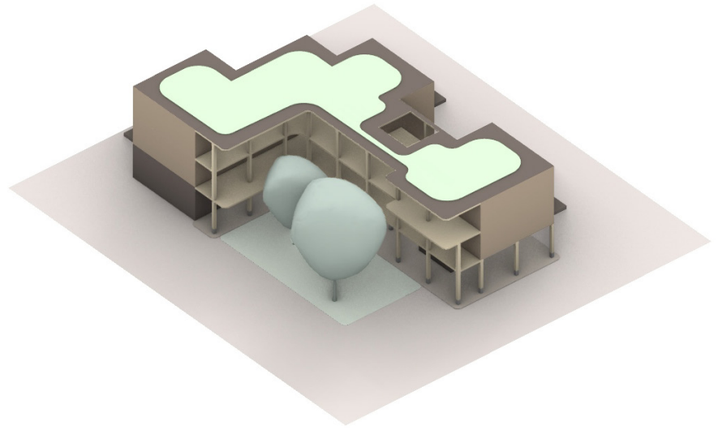
D.



D - 12 person x 2 floors x 2 blocks

Total = 48 persons

E.



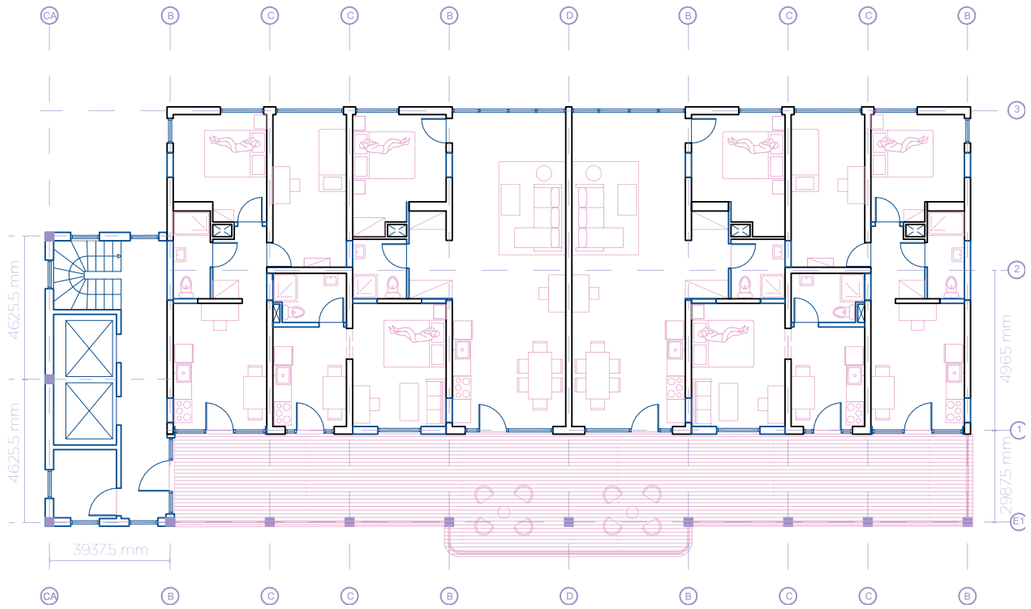
E - 5 person x 2 floors x 2 blocks

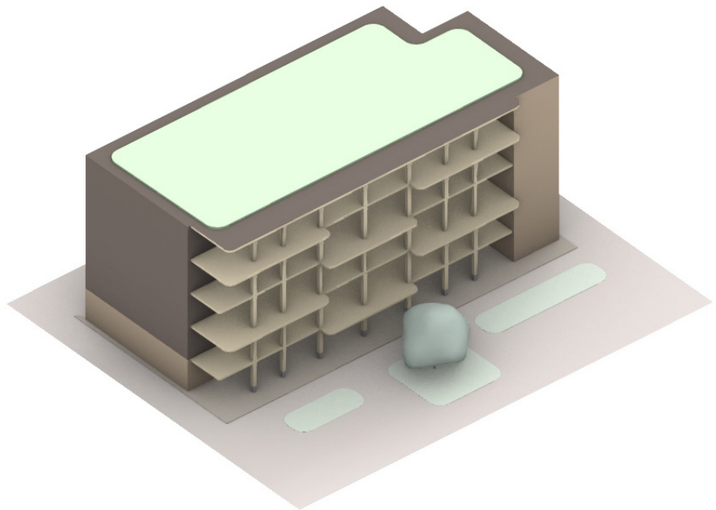
Total = 20 persons

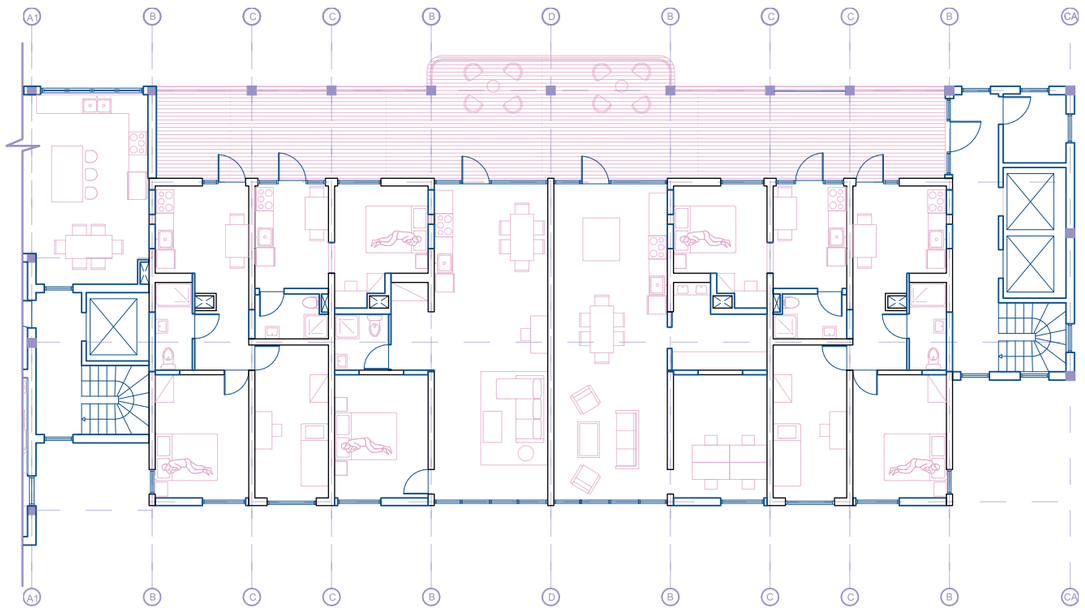
Building A (Transformation)

Typical Floor Plans of Elderly and Single Parent Studios (1:200)

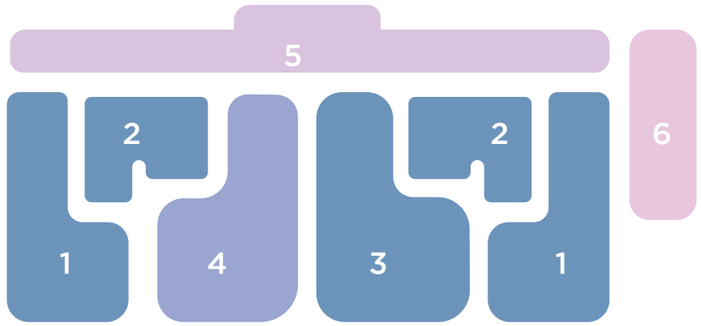
25 to 57 m²







— New — Old



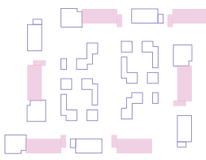
Private

Collective

Public

1- Two Bedroom Flat
2-Studio
3- Elderly large flat

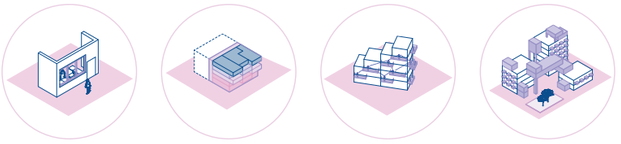
4- Shared Amenities
(Laundry, Kitchen, Dining and work space)
5-Gallery + terrace
6- New Circulation core

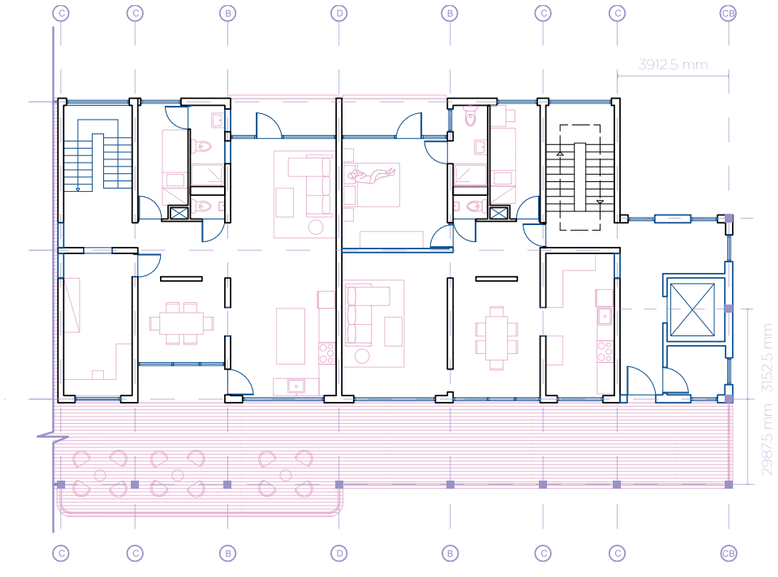


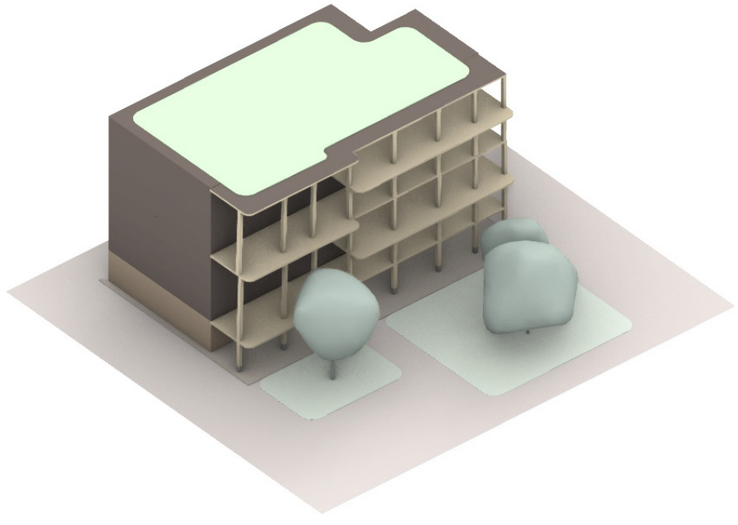
Building C (Transformation)

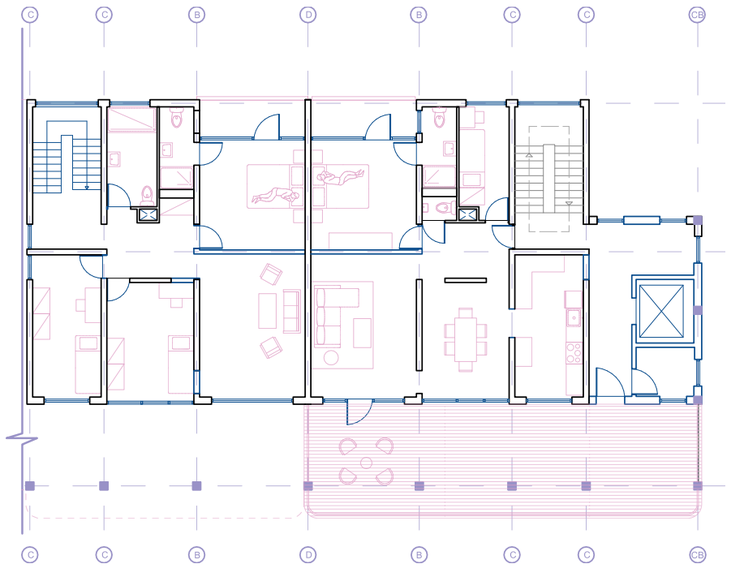
Typical Floor Plans of Elderly Apartments & Family Maisonettes (1:200)

84 to 167 m²

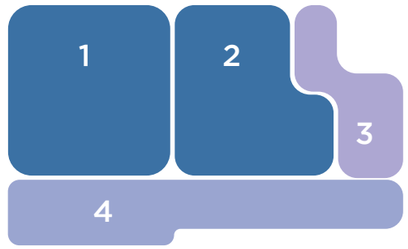


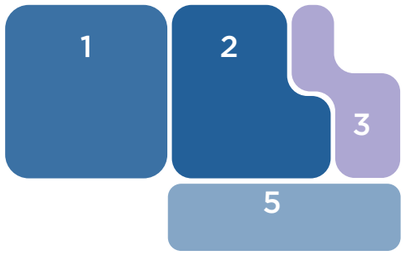






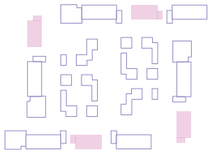
New Existing





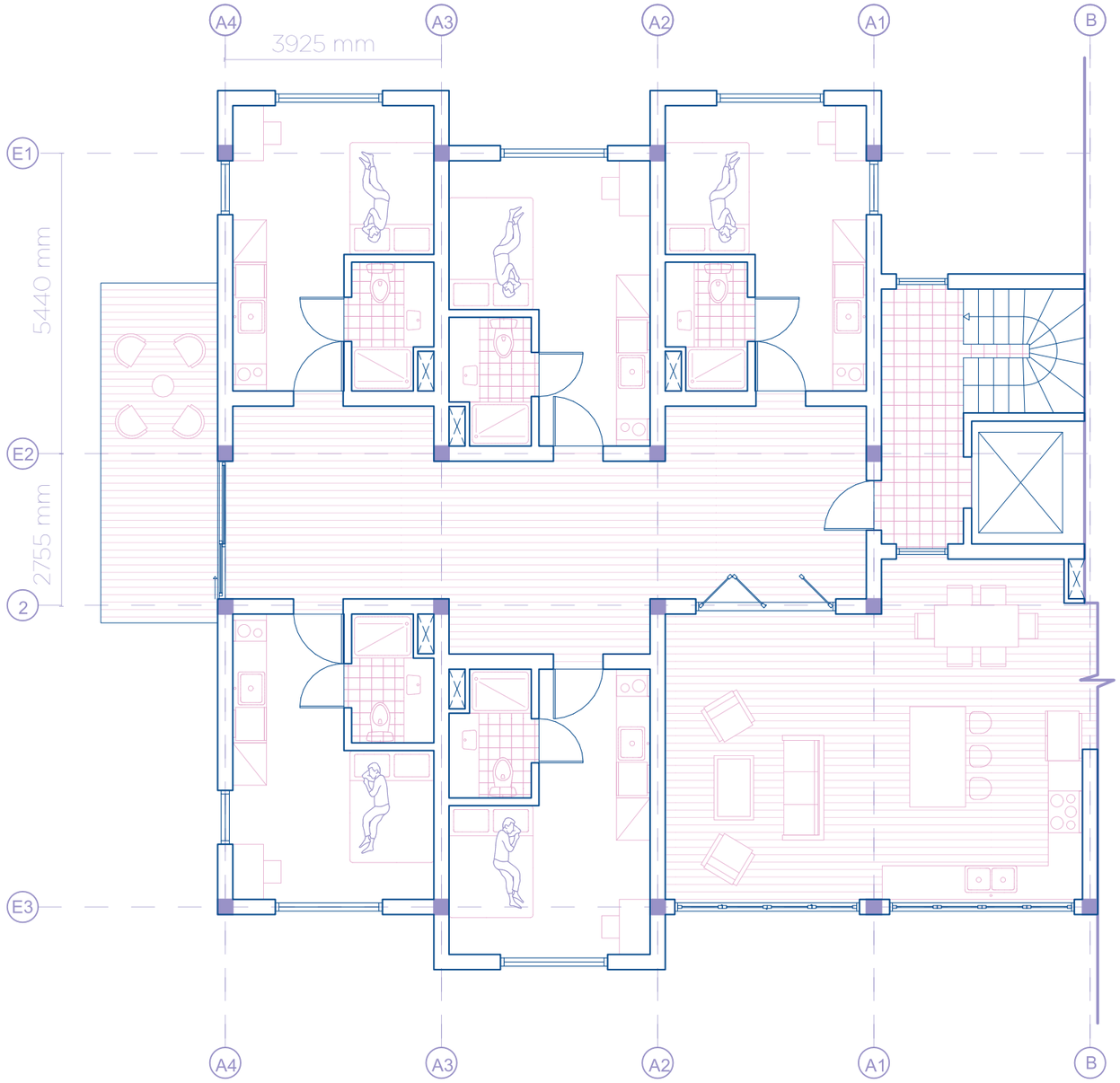


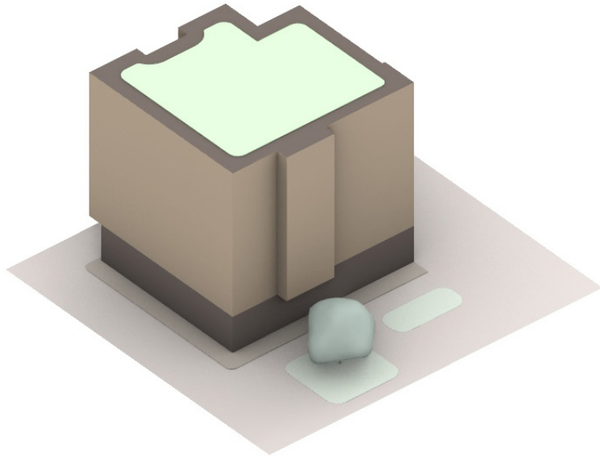
1- 3 bedroom Maisonette
2- 2 Bedroom Flat
3- New Circulation core
4- Shared Gallery
5- Semi- Private Gallery



Building C (New - Extension)

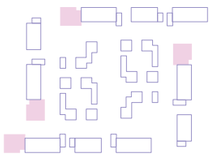
Typical Floor Plans of Students/ Starters Cluster (1:100)
Private Spaces 19 m^2 - Collective Space 43 m^2





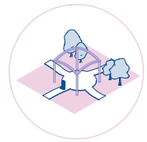
1- Studio with kitchenette
2-Cooridor
3- Shared Amenities
(Kitchen, Dining and living)

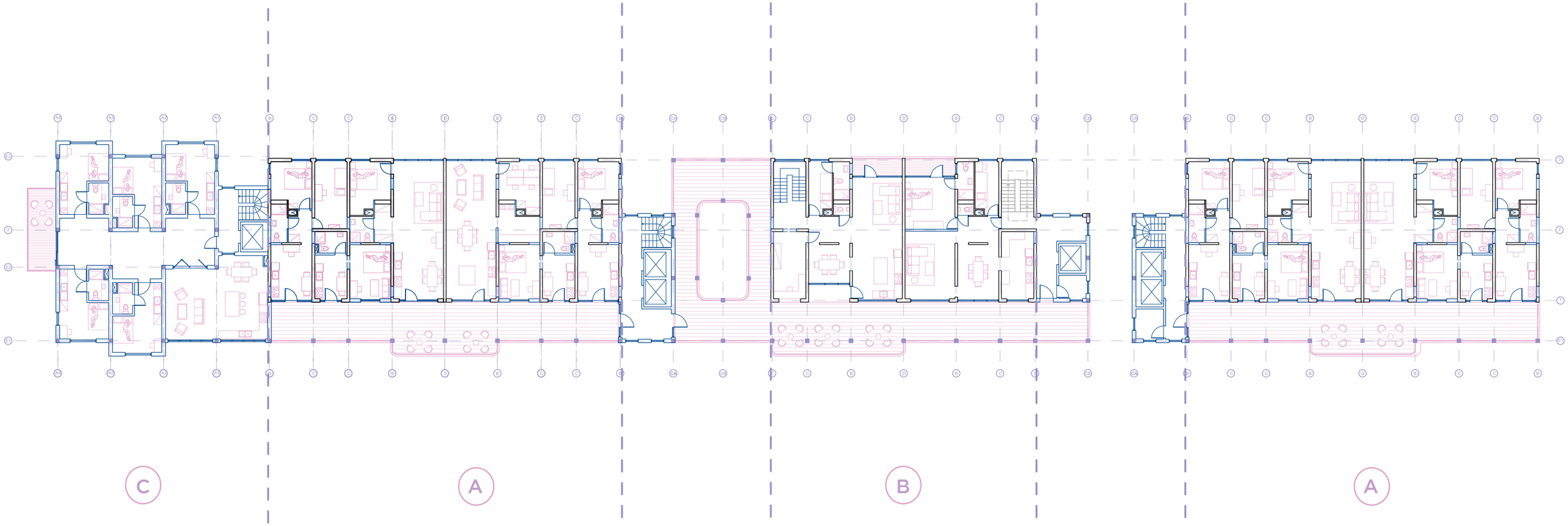
4- Circulation core
5- terrace



Intergenerational Cluster

1:500 Typical Floor Plans
(North - South Orientation)

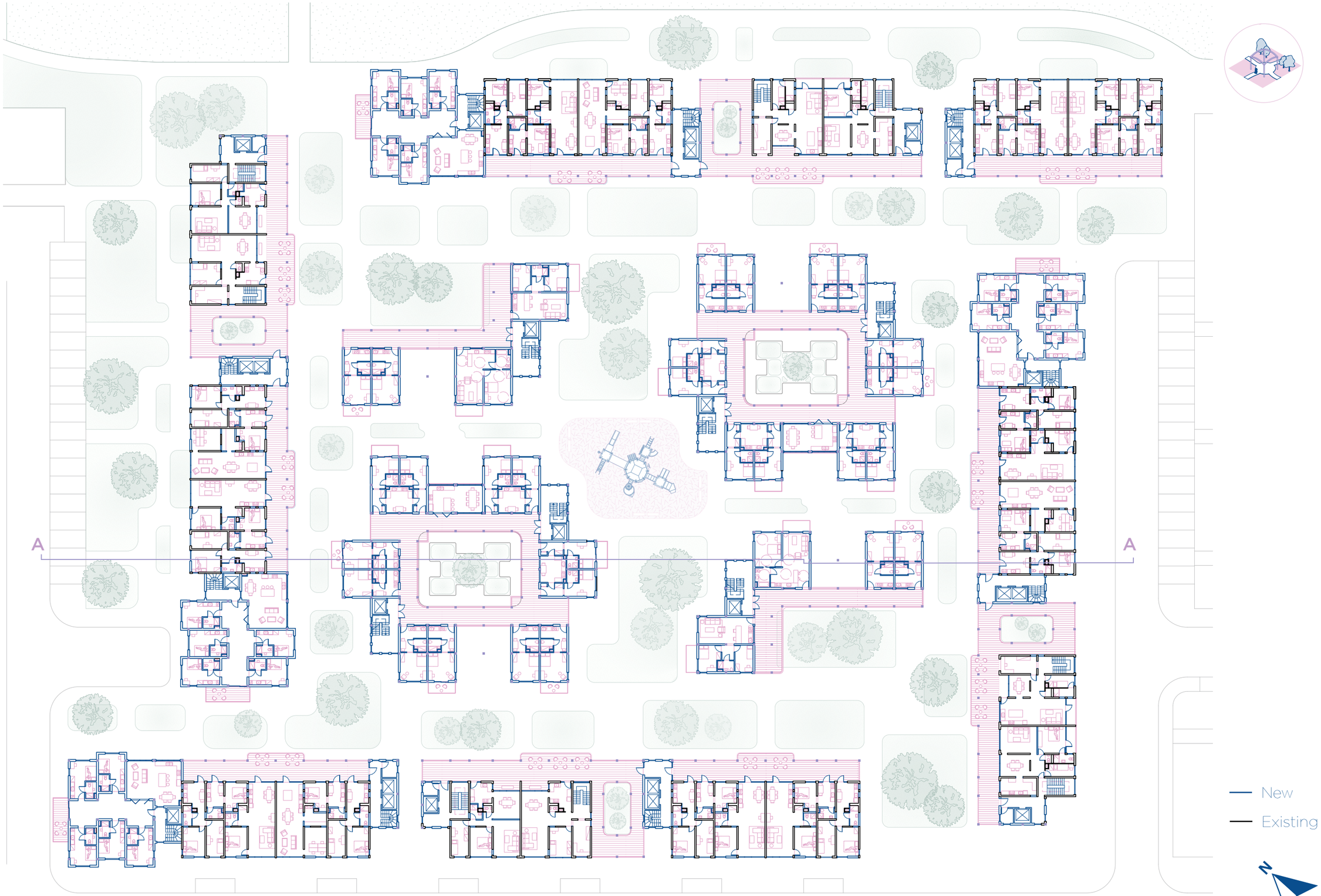




New Existing

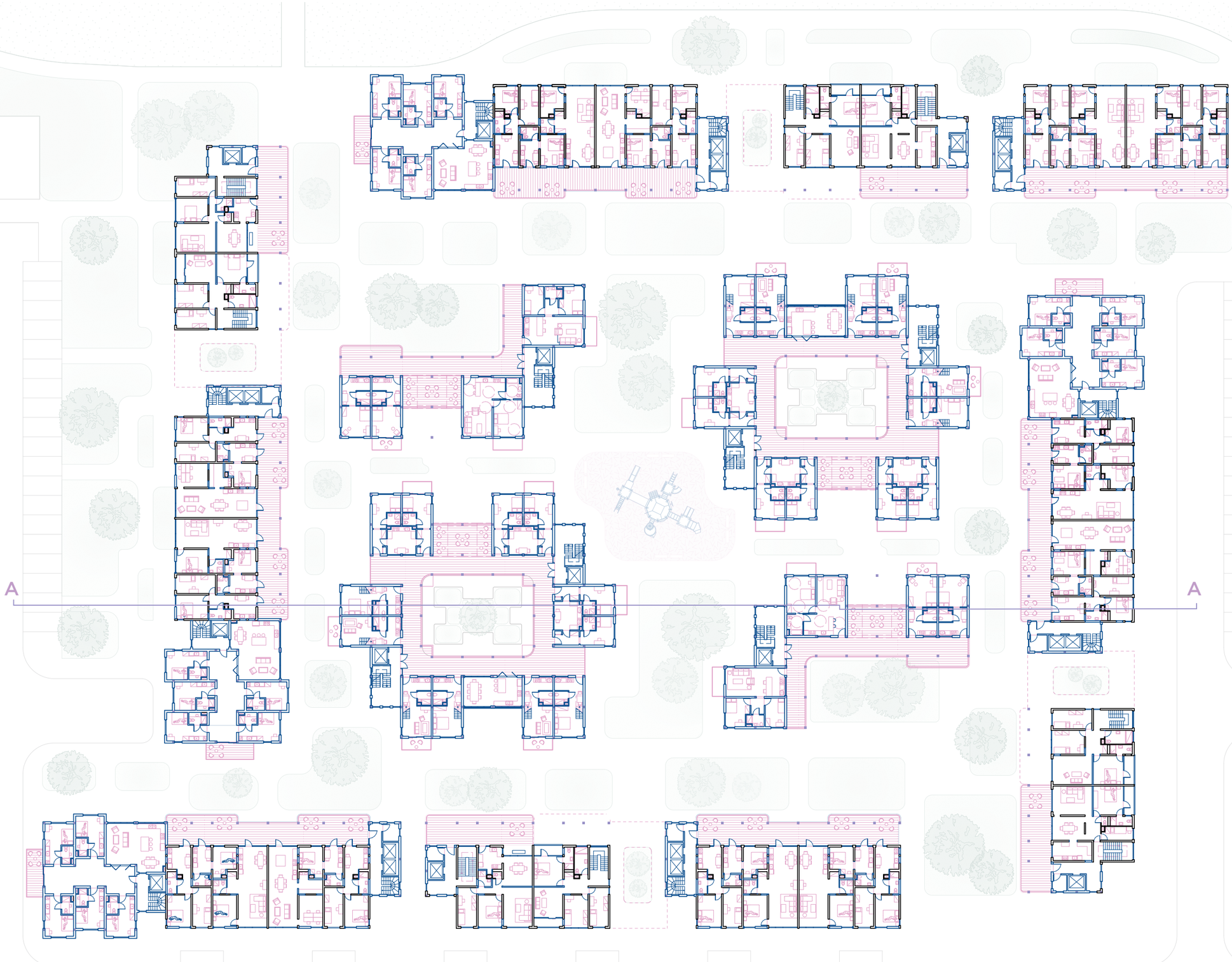
Masterplan of New Thamerdijk

1st Floor Dwellings & Galleries (1:500)



Masterplan of New Thamerdijk

2nd Floor Dwellings & Galleries (1:500)

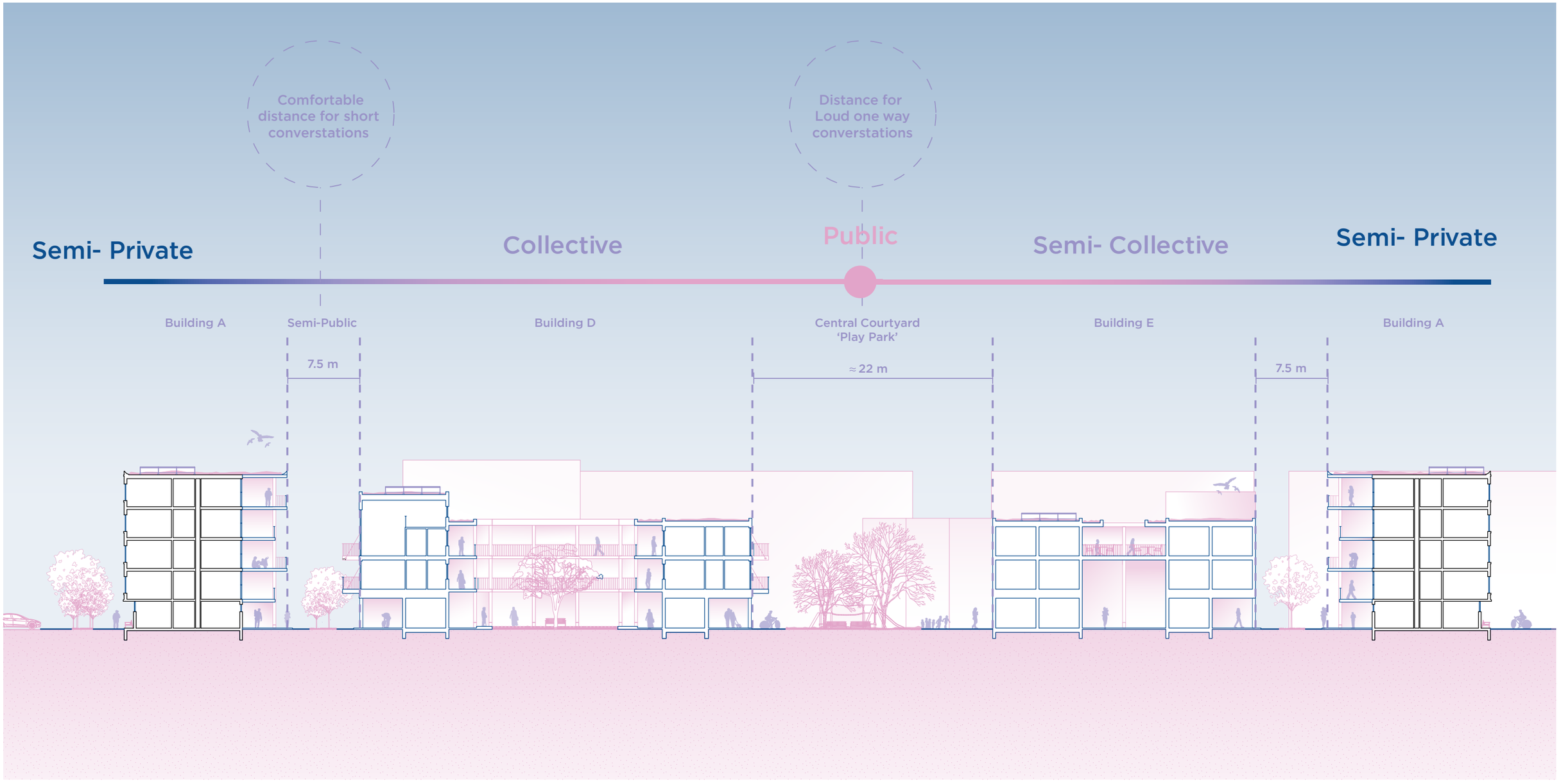


New

Existing

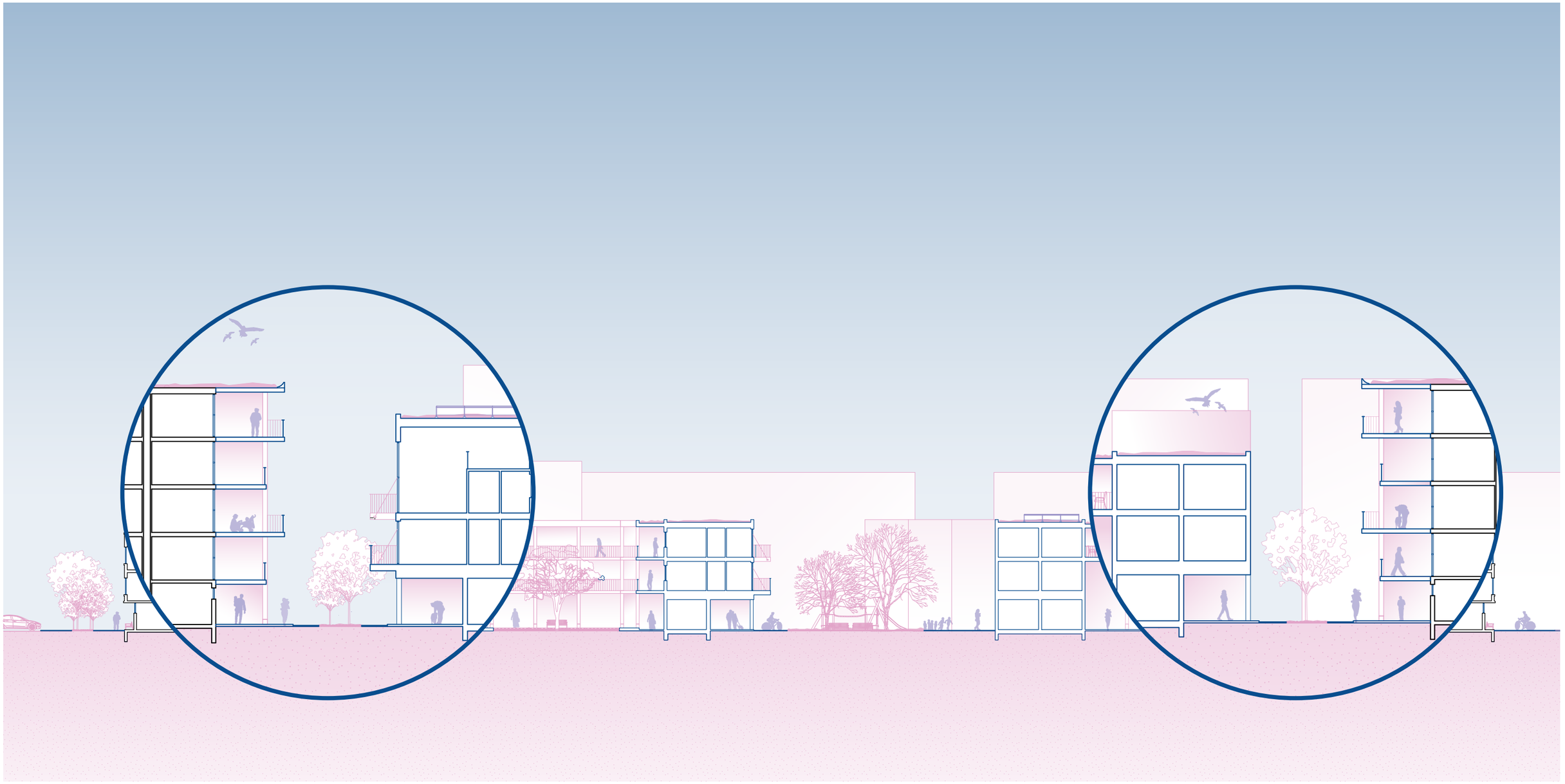
Section A-A

Section of Pathway Variation



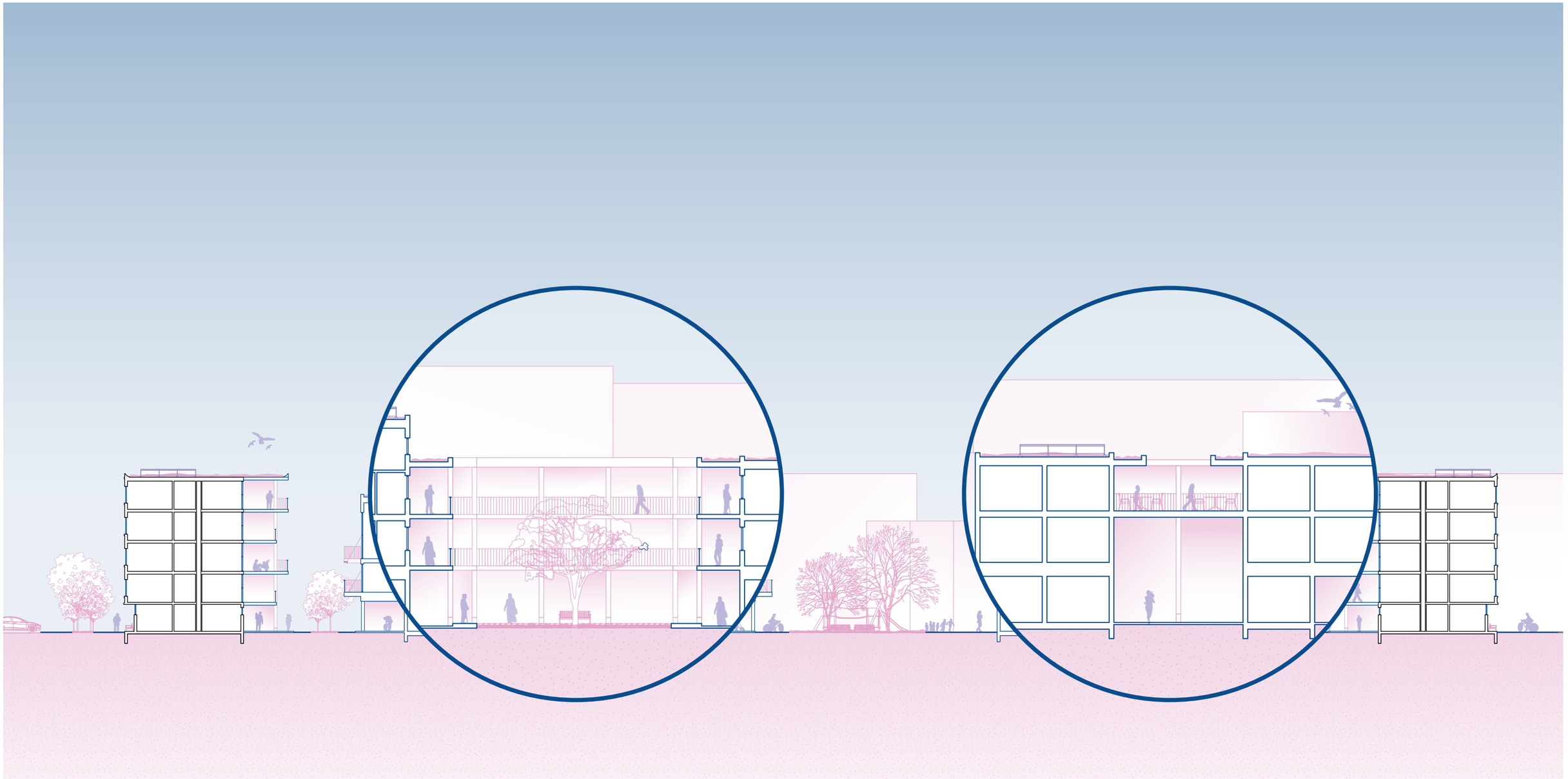
Section A-A

Cantilevering Galleries and Balconies



Section A-A

Open Courtyards and Double Heigh Pathways



Existing Situation

3d Perspective Of The Existing Building



Transformation

3D View Of Building Type A connection to C

Transformation

Accoya Textured:
Dwellings

Rockpanal Wood Beech
Collective/Public

New Build

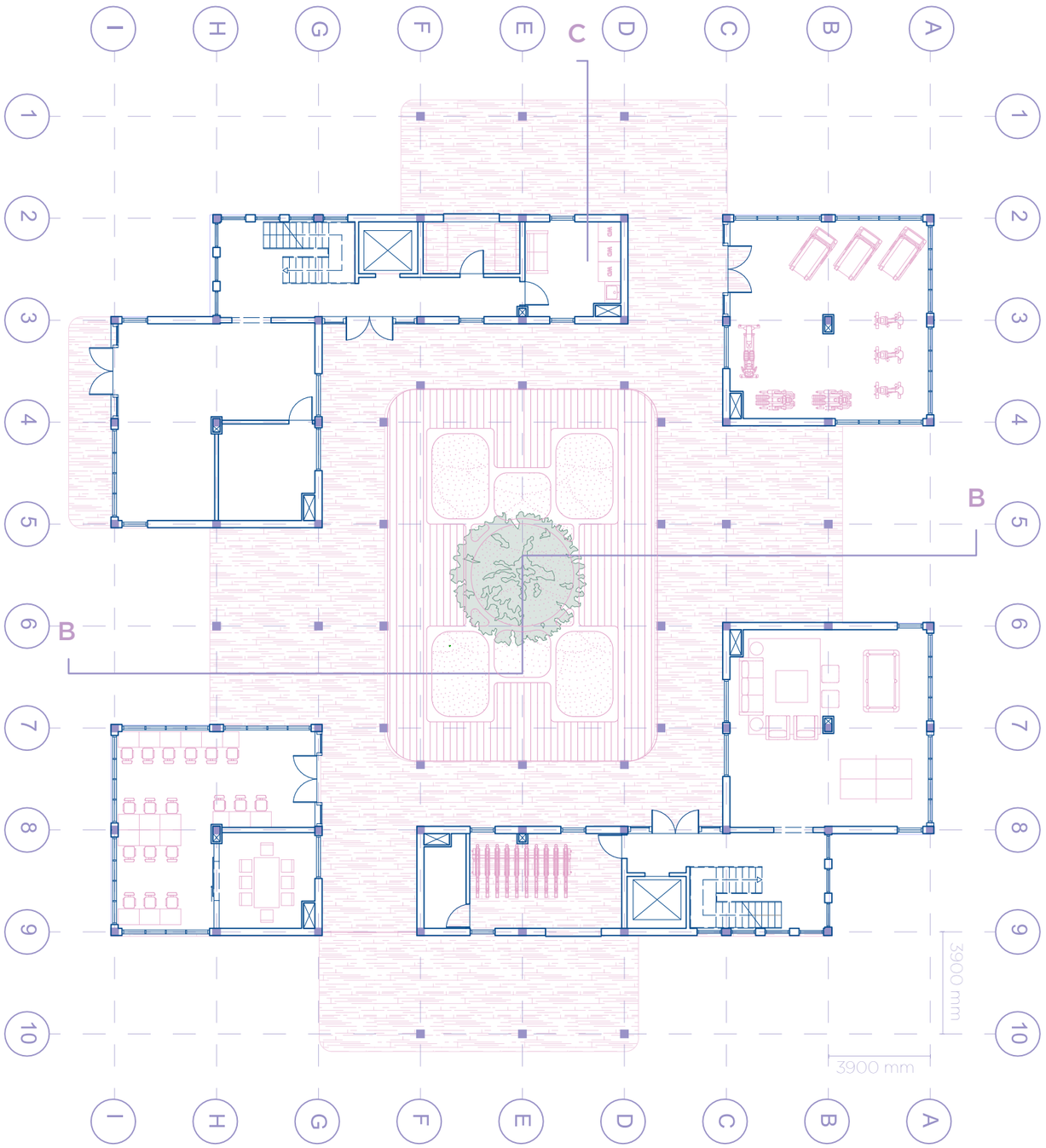
Accoya Uncoated
Dwellings

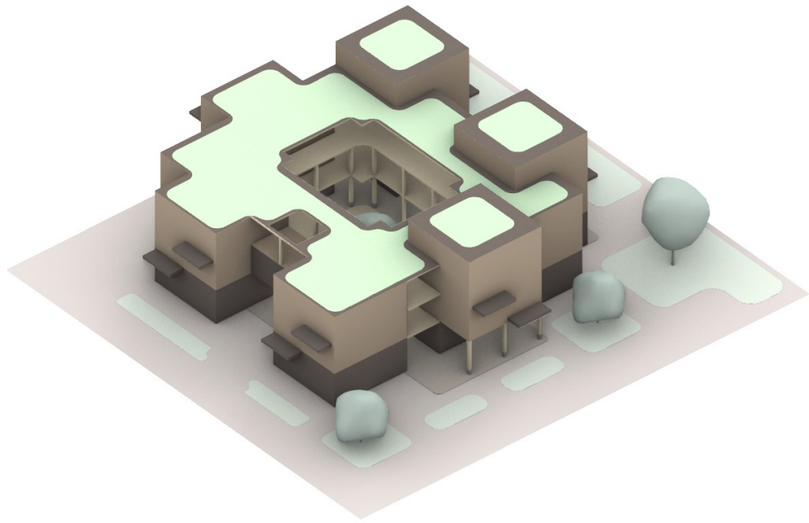
Rockpanal Wood Ceramic Oak
Collective/Public

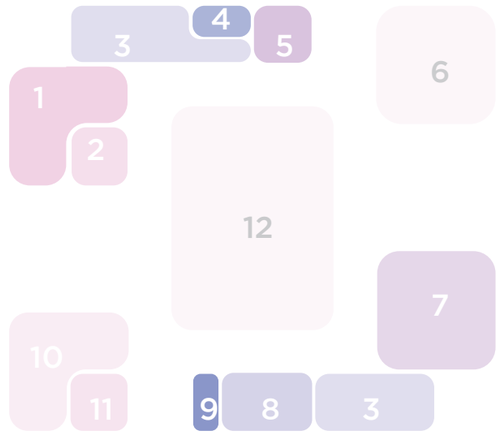


Building D (New)

Ground floor of the Public /Collective Spaces (1:200)
Target group: Student / Starter

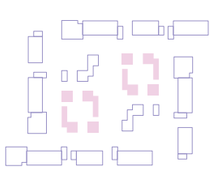








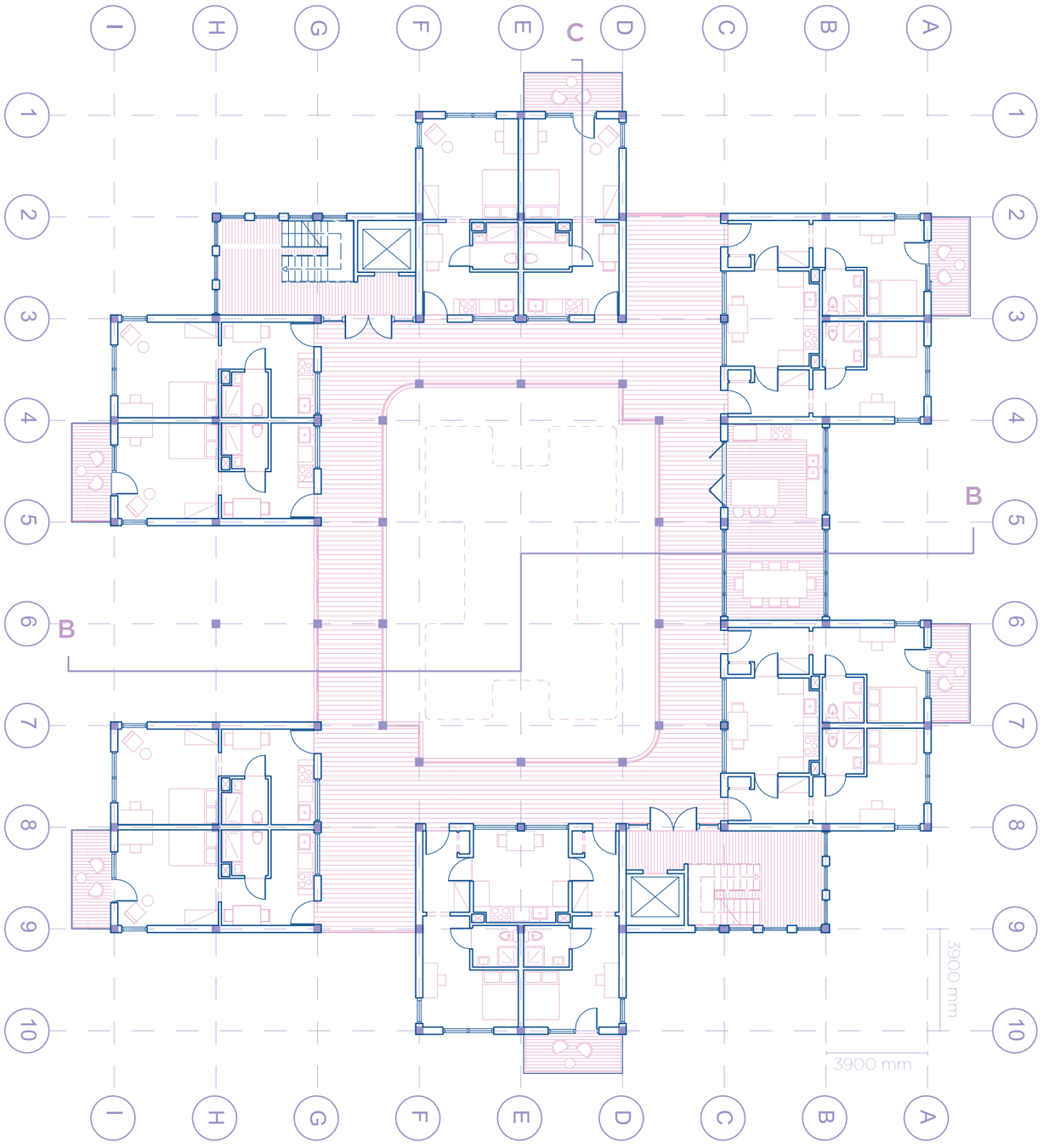
1- Lobby
2-Public W/C
3- Circulation Core
4- Garbage Room
5- Shared Laundry
6- Gym
7- Collective Game Room
8- Bike Storage
9- Utility Room
10- Public Study Room
11- Meeting Room
12- Central Courtyard

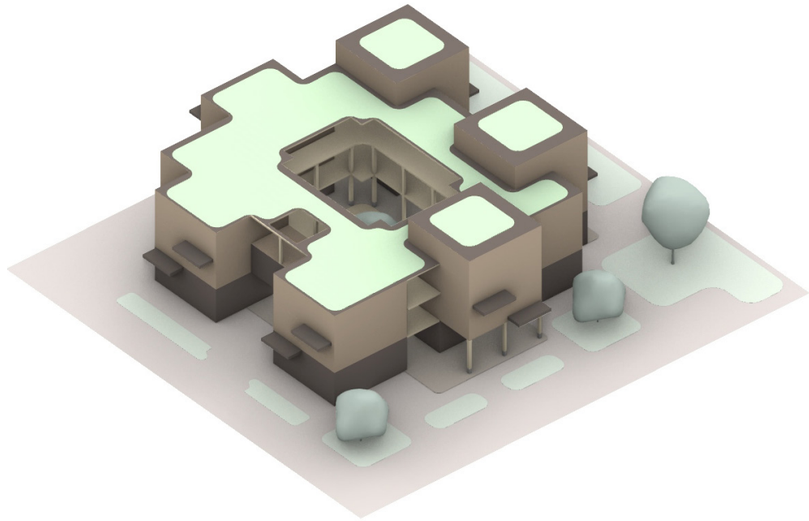


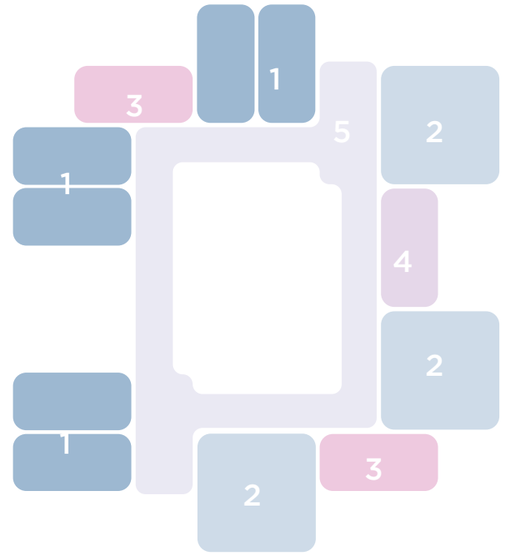
Building D (New) - Student / Starter Cluster

1st floor - Shared Kitchen and Private Studios Dwellings (1:200)

22 to 32 m²

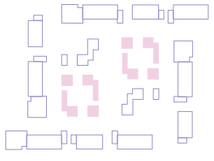








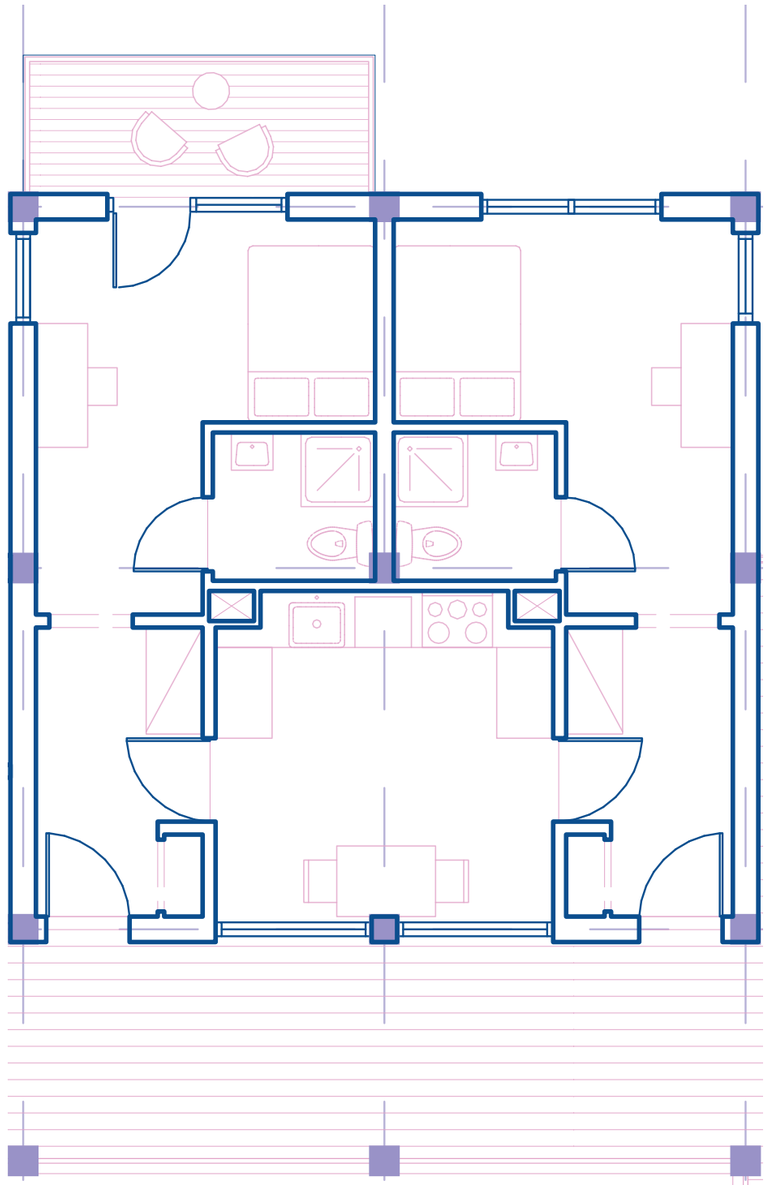
1- Private Studios
2- Studios with Shared Kitchen
3- Circulation Core
4- Collective Kitchen/ Dining
5- Collective Gallery

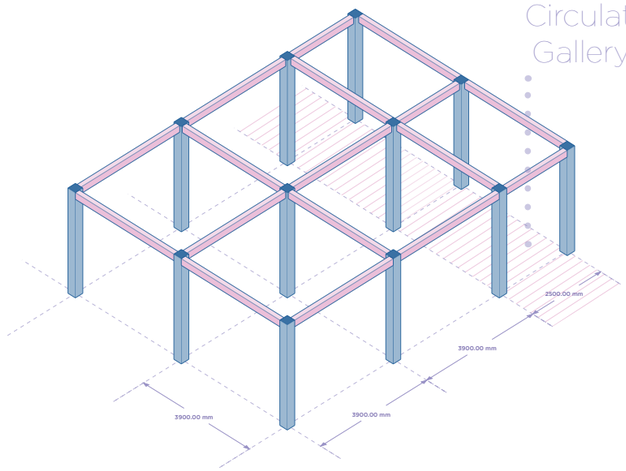


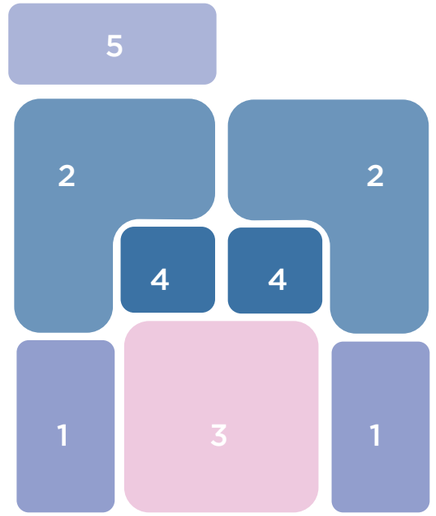
Building D (New) - Student / Starter Dwelling

Dwelling Plan of Shared Kitchen Studio (2)

22 to 27 m^2 Private - 12.5 m^2 Collective

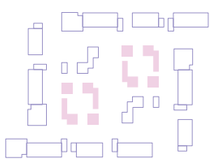








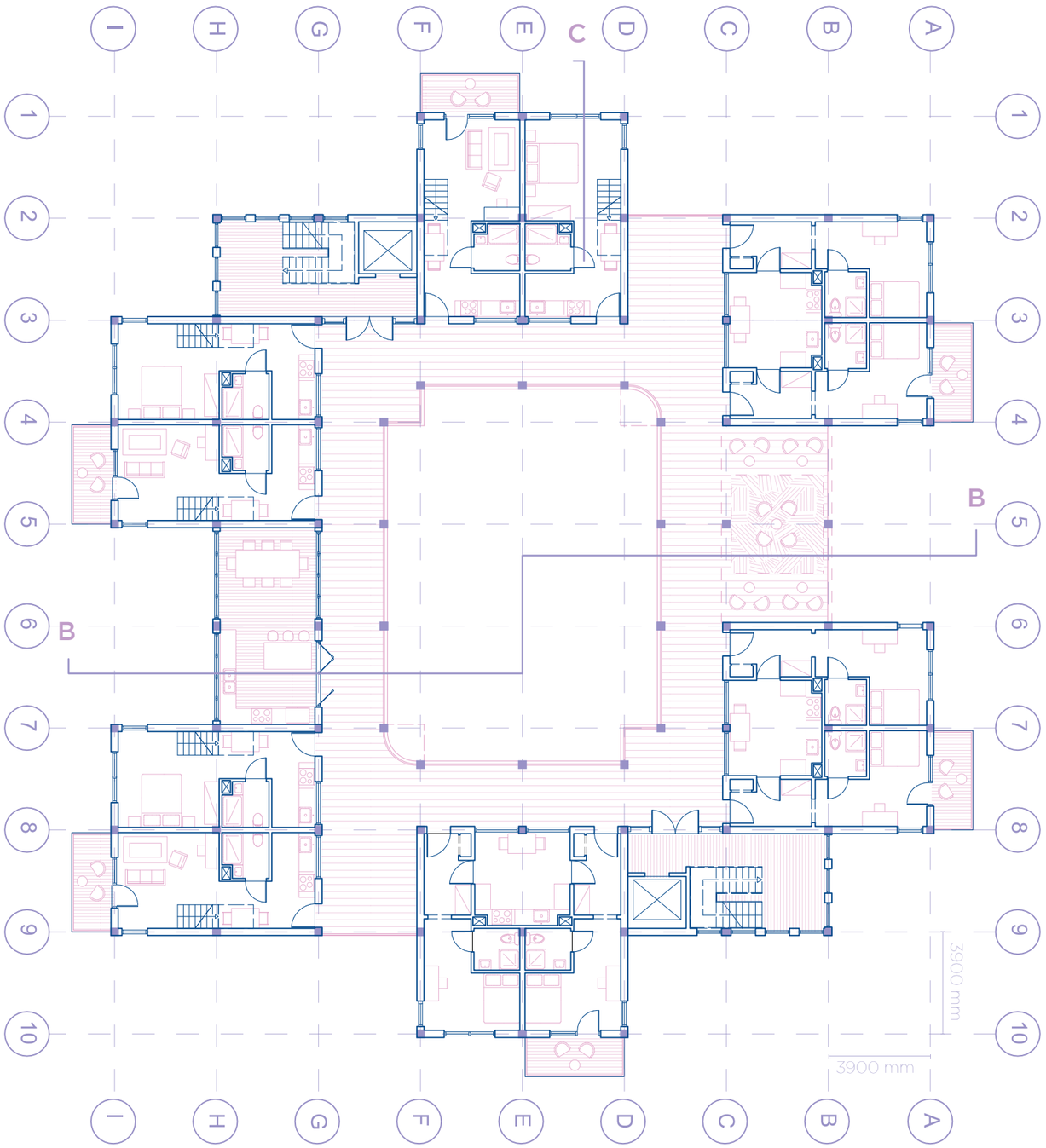
1- Entrance Lobby
2- Bedroom
3- Shared Kitchen
4- Bathroom
5- Private Balcony

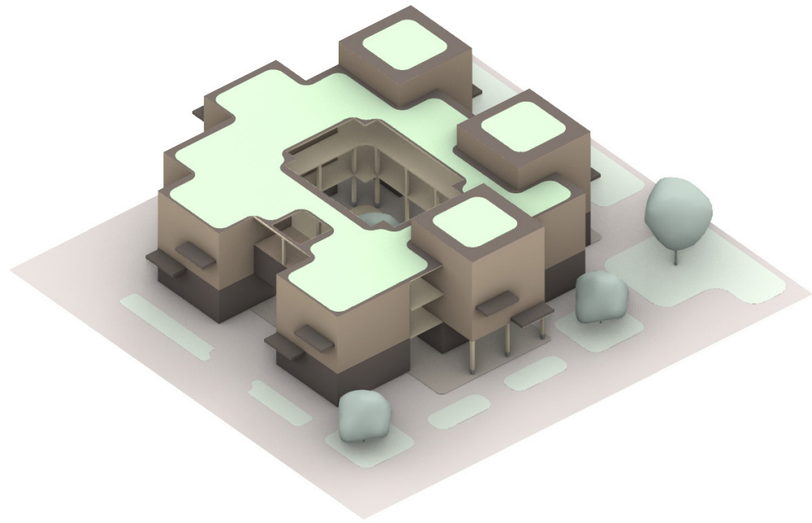


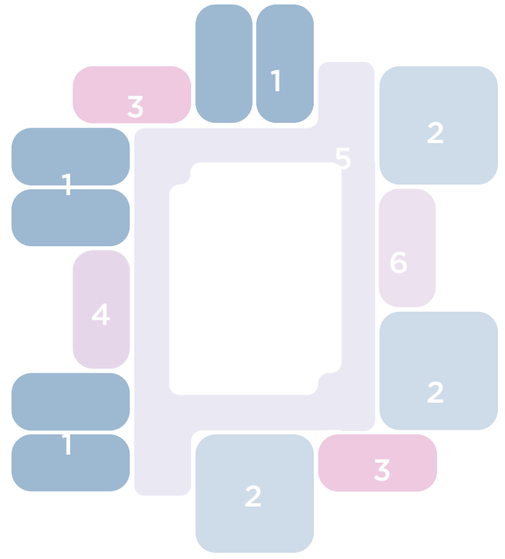
Building D (New)

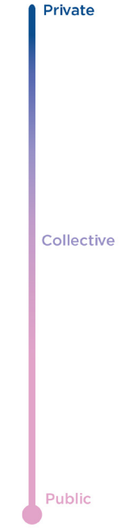
2st floor - Shared Kitchen and Maisonette studios (1:200)

22 to 44 m^2

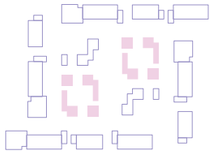






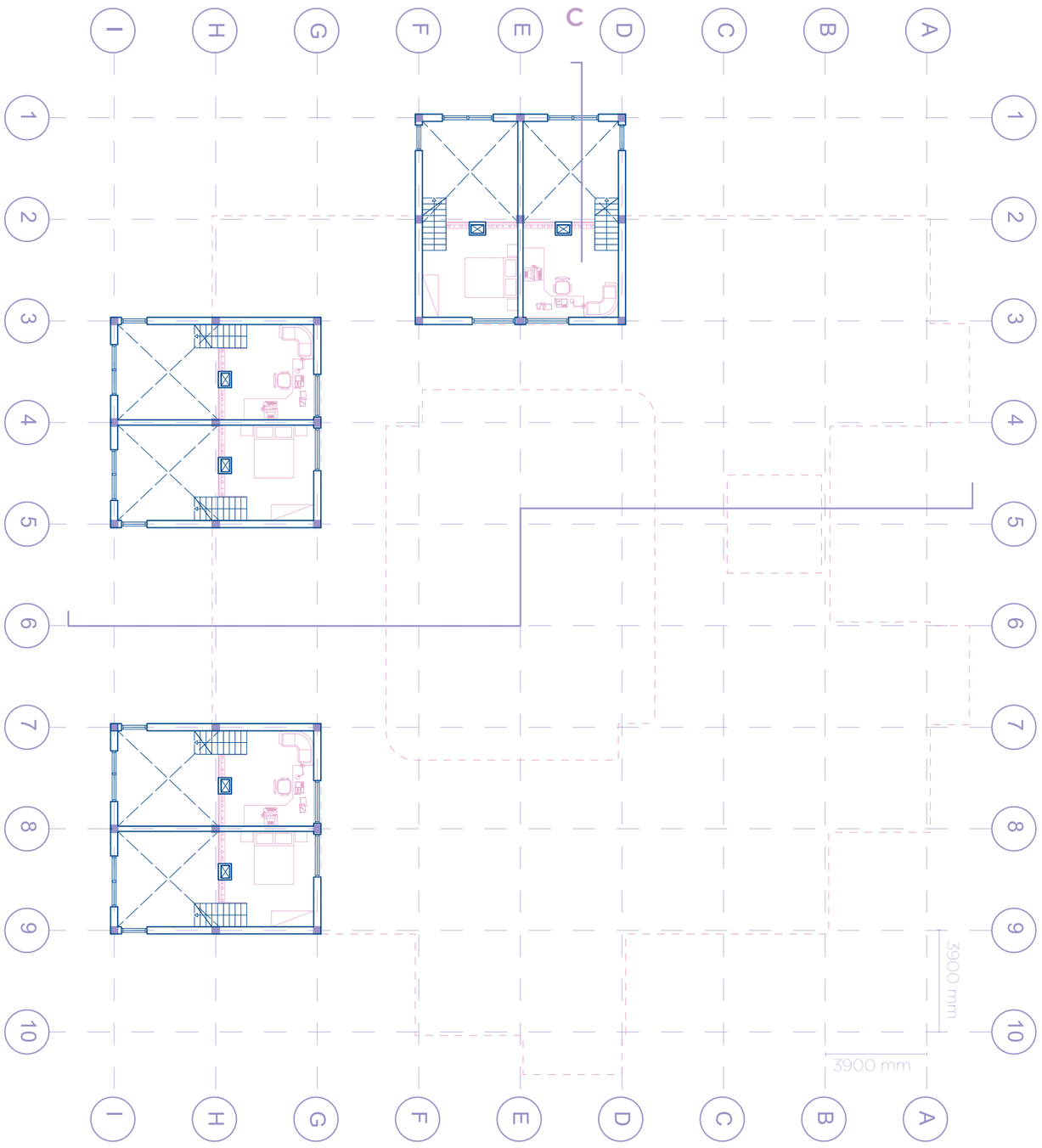


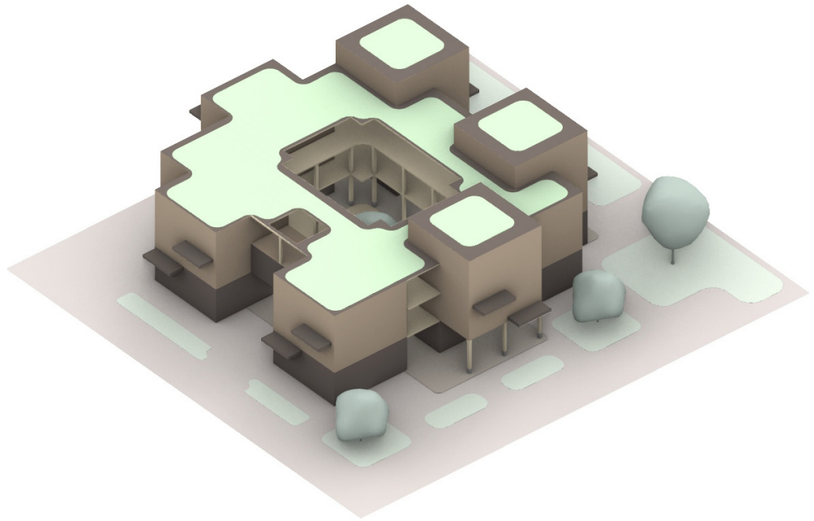
1- Private Maisonnete Studios
2- Studios with Shared Kitchen
3- Circulation Core
4- Collective Kitchen/ Dining
5- Collective Gallery
6- Collective Terrace

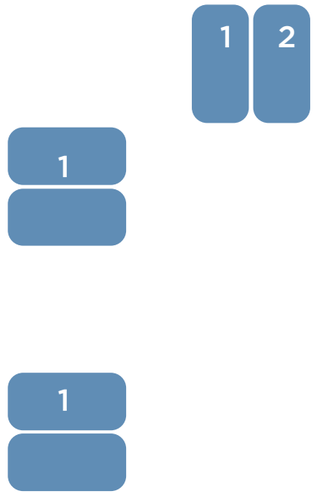


Building D (New) - Student / Starter Cluster

3rd Floor- Maisonette Level (1:200)

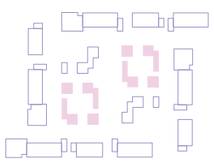








1- Maisoneete: Bedroom
2- Maisonette: Office



Section B-B

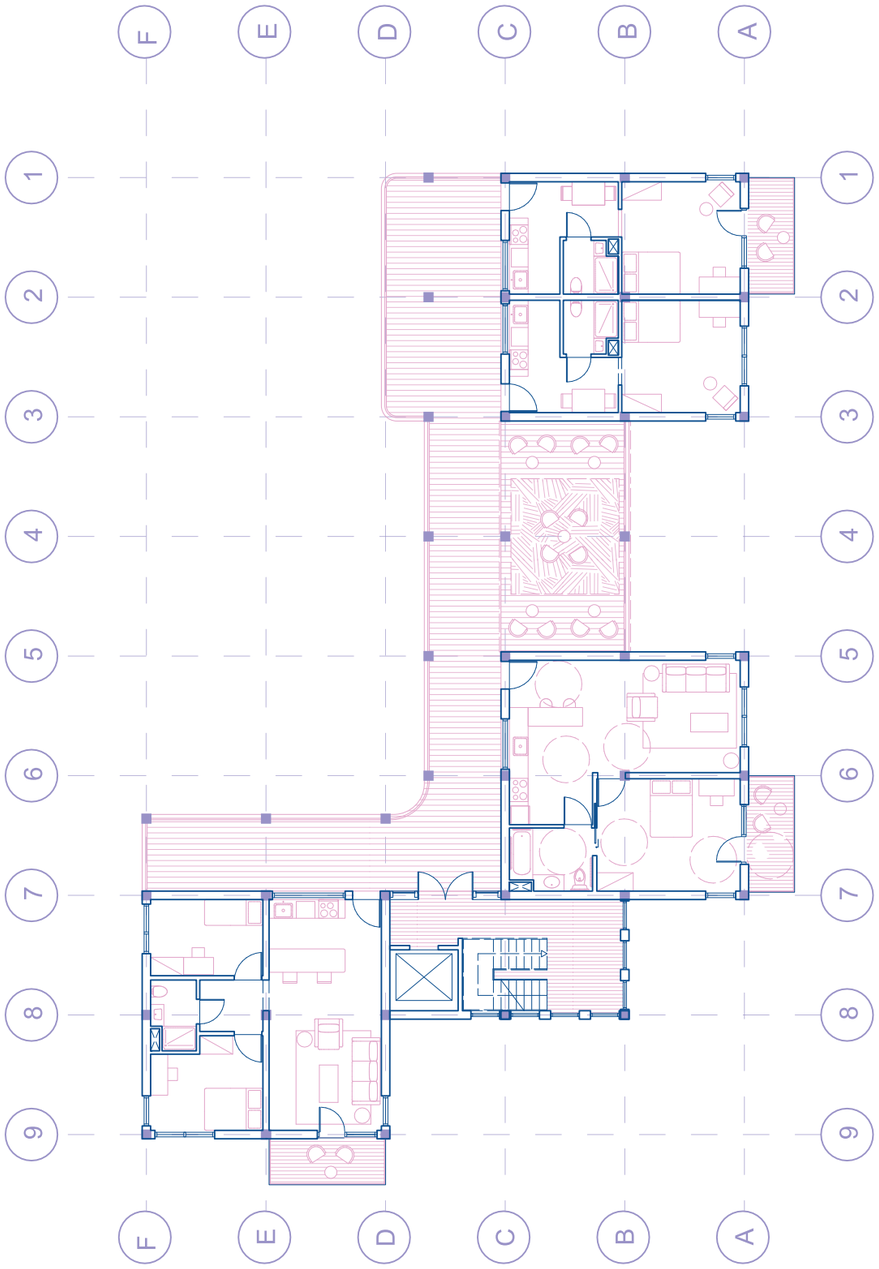
Section through Collective spaces of Building D

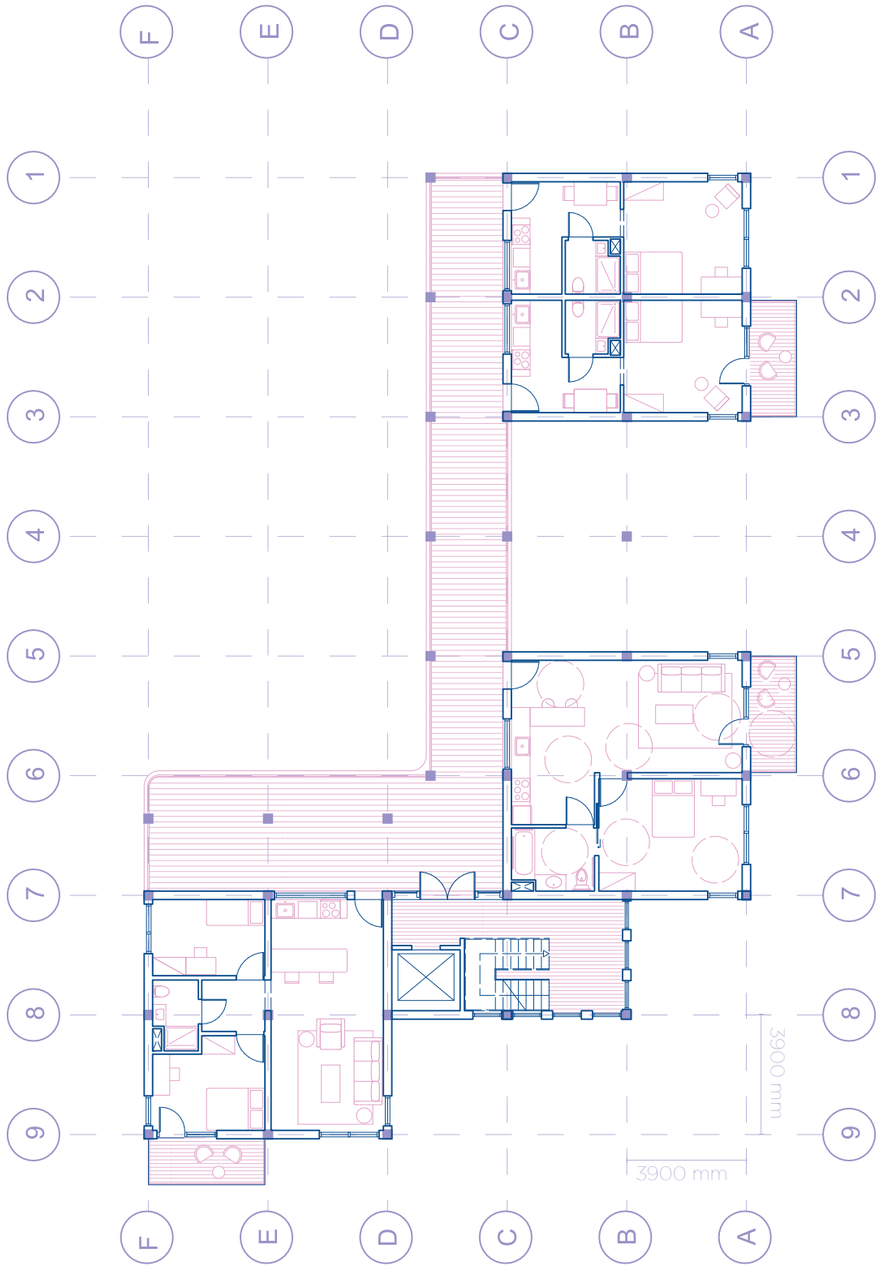


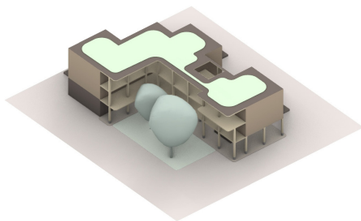
Building E (New) - Intergenerational

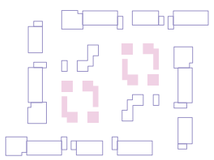
1st and 2nd Floor - Accessible Studio and Two bed Flat (1:200)

28 to 62 m²









New Build Elevations
Materialisation of Building A

New Build



Accoya Uncoated
Dwellings



Rockpanal Wood
Ceramic Oak
Collective/Public



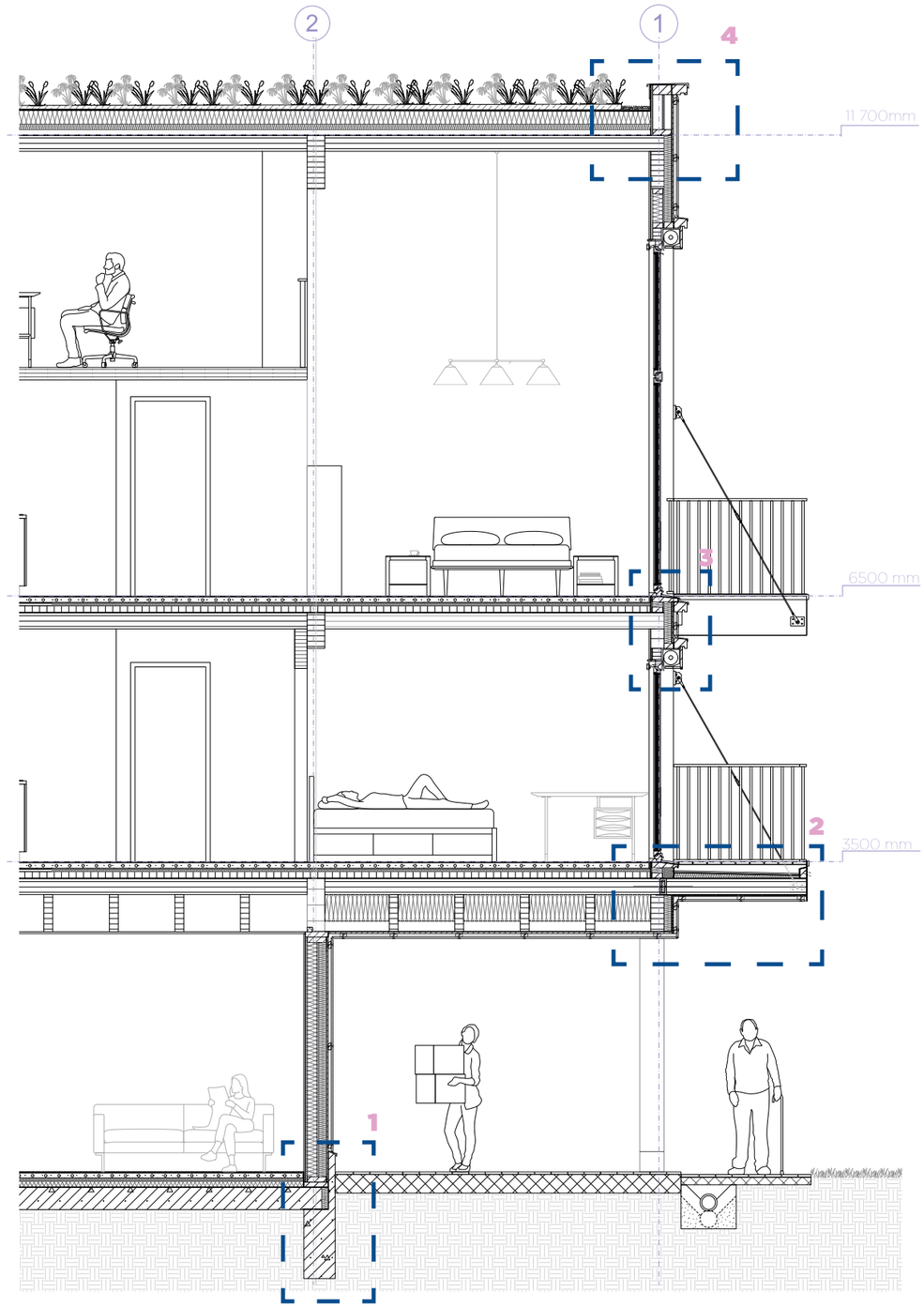




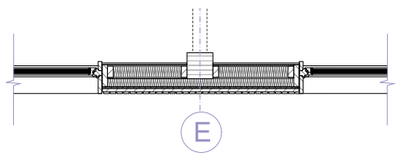


Section C

1:20 Details and Facade Fragment of Maisonette block

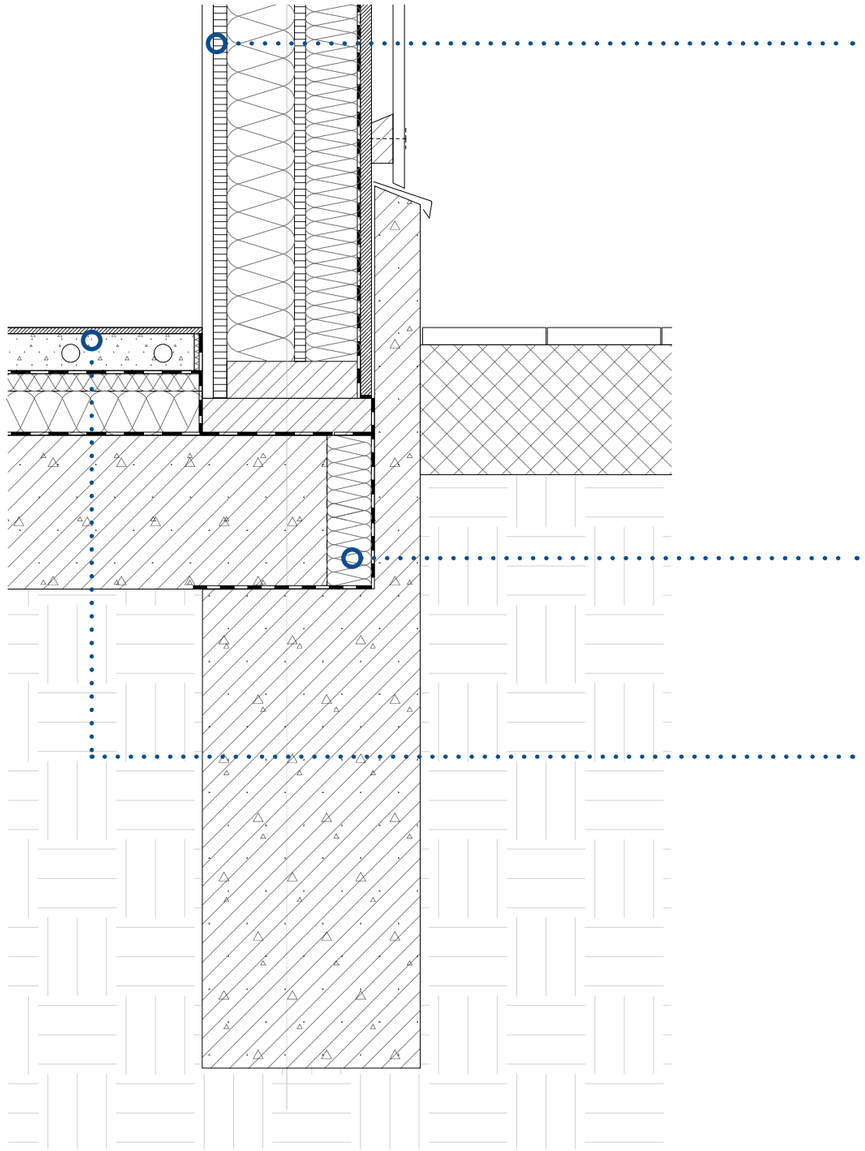






Detail 1

1:5 Detail of Foundation



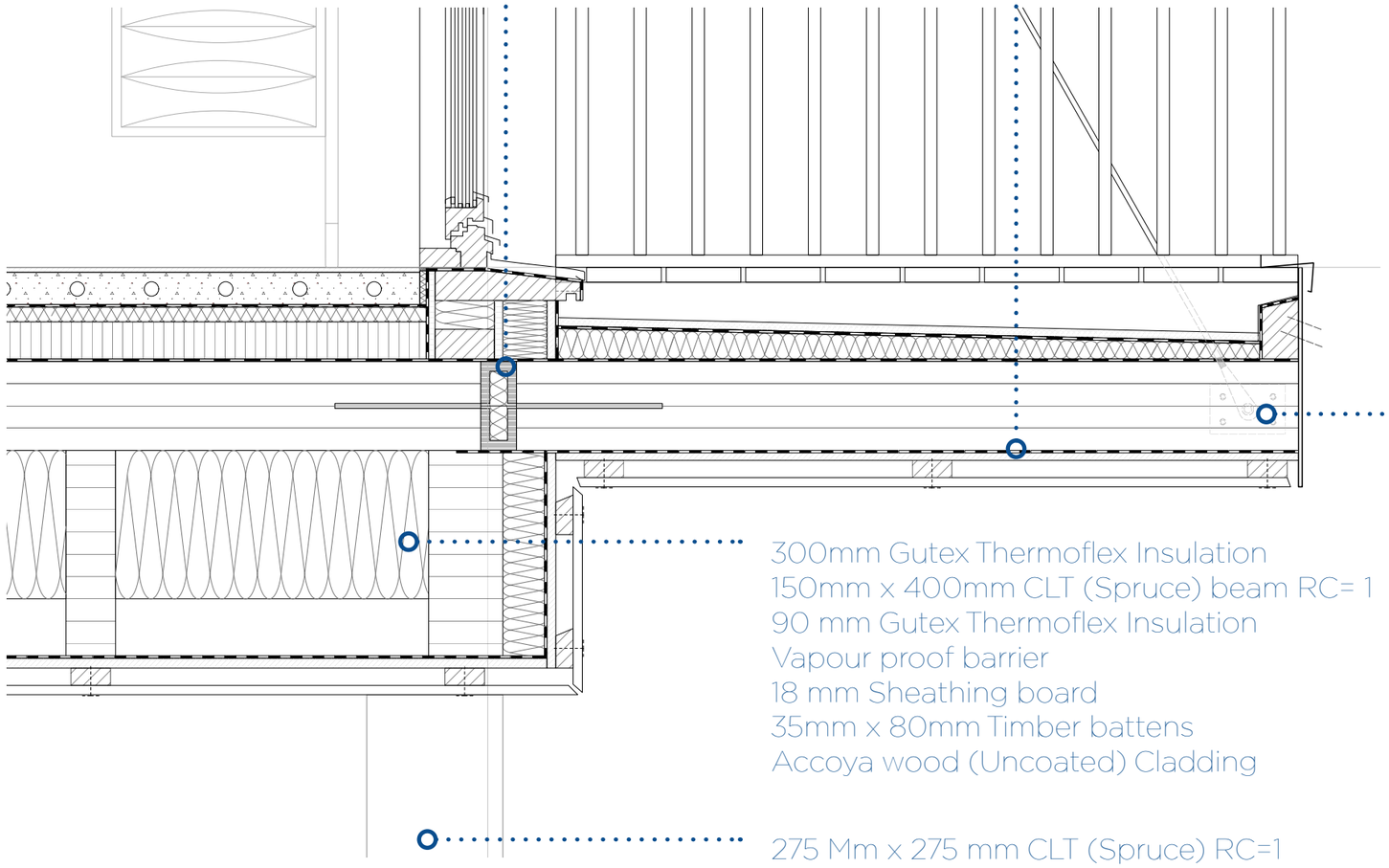
18 mm Fermacell (fire resistant) white plaster board
23 mm OSB board
120 mm Gutext Thermolex Insulation
13 mm Plywood
90mm Gutext Thermoflex Insulation
Vapour proof barrier
20 mm Sheathing board
35mm x 80mm timber battens
RockPanal Wood (Ceramic Oak) Cladding

Rigid Insulation

10 mm Timber floor boards
65mm screed with floor heating pipes
Vapour proof barrier
35 mm EPS Sound insulation
80mm Gutex Thermoflex insulation
DPM
250 mm Reinforced concrete

Detail 2

1:5 Detail of Cantilever and Balcony



Steel pin connecting balcony with internal
CLT (Spruce) floor slab RC=1

30mm balcony tiles
30mm structural timber
60./100 - 120 mm conical
Protective mat
40mm eps sound insulation
Emergency seal elastomer bitumen membrane
180 mm CLT (spruce) floor slab
DPM
18mm Sheathing board
35mm x 80mm Timber battens
Accoya wood (Uncoated) cladding

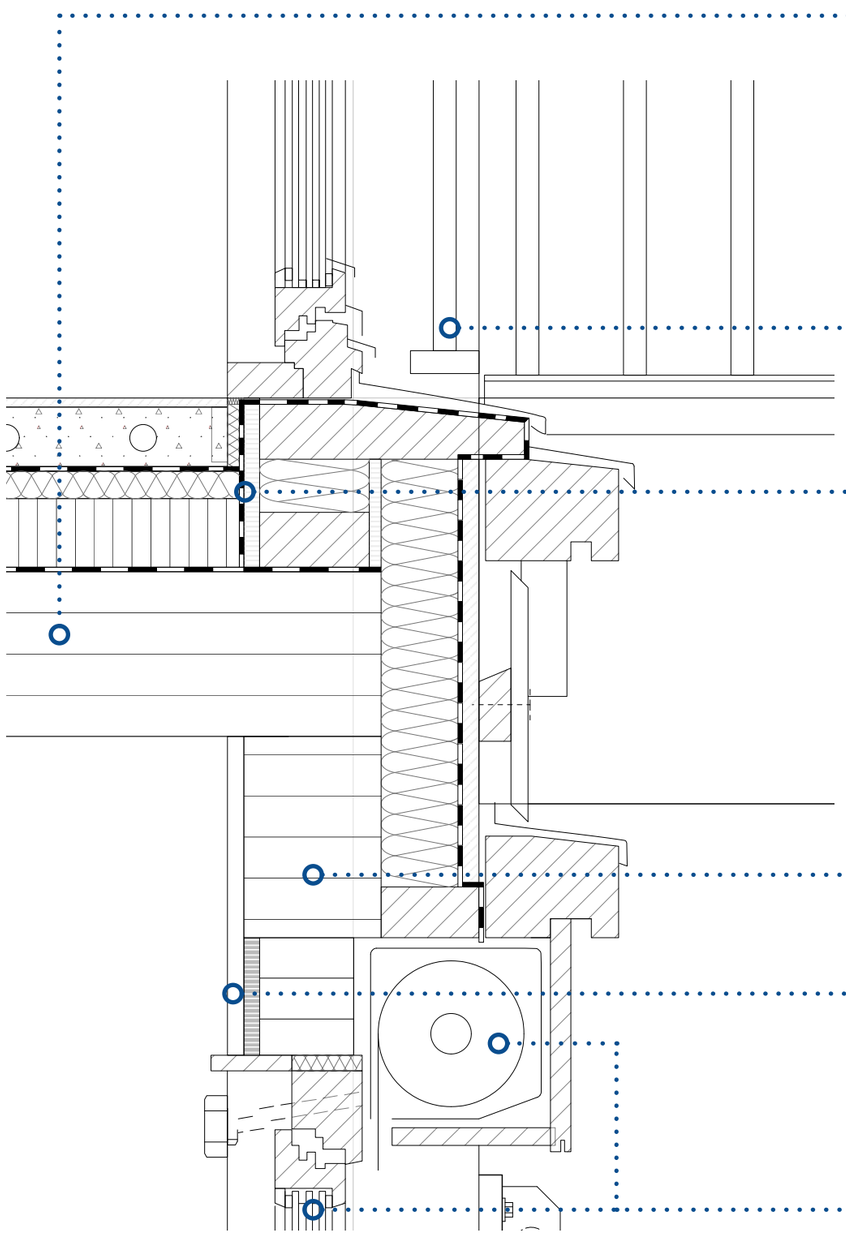
Steel bar screwed into a mounted plate

300mm Gutex Thermoflex Insulation
150mm x 400mm CLT (Spruce) beam RC= 1
90 mm Gutex Thermoflex Insulation
Vapour proof barrier
18 mm Sheathing board
35mm x 80mm Timber battens
Accoya wood (Uncoated) Cladding

275 Mm x 275 mm CLT (Spruce) RC=1
column on 500mm concrete footing
(in elevation)

Detail 3

1:5 Detail of Intermediate Wall to Floor Finish



180 mm CLT (Spruce) floor slab RC=1
DPM
80mm OSB board
35 mm EPS
Vapour Proof Barrier
65mm Screed with heating pipes
10mm Timber floor Interior finish

25mm x 1100mm Steel balustrade painted black

DPM
23mm OSB board
120 mm Gutext Thermoflex Insulation
13mm Plywood
90mm Gutext Thermoflex Insulation
Vapour proof barrier
20 mm Sheathing board
35mm x 80mm Timber battens
Accoya Wood (Unfinished) Cladding

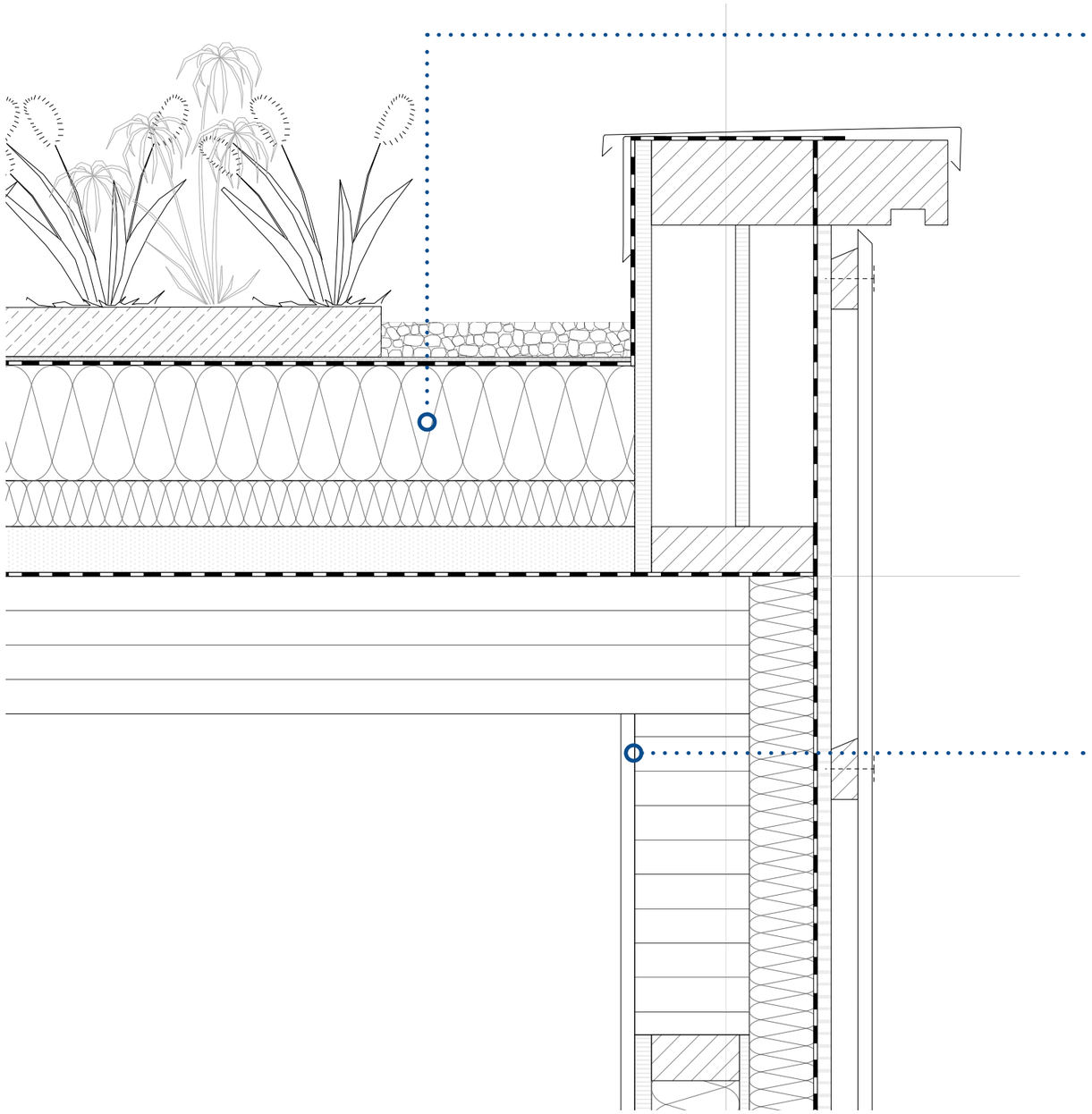
150 mm x 200 mm CLT (Spruce) Beam RC= 1

18mm White plaster board interior finish

Triple glazed windows / balcony doors
And shutters for climate control

Detail 4

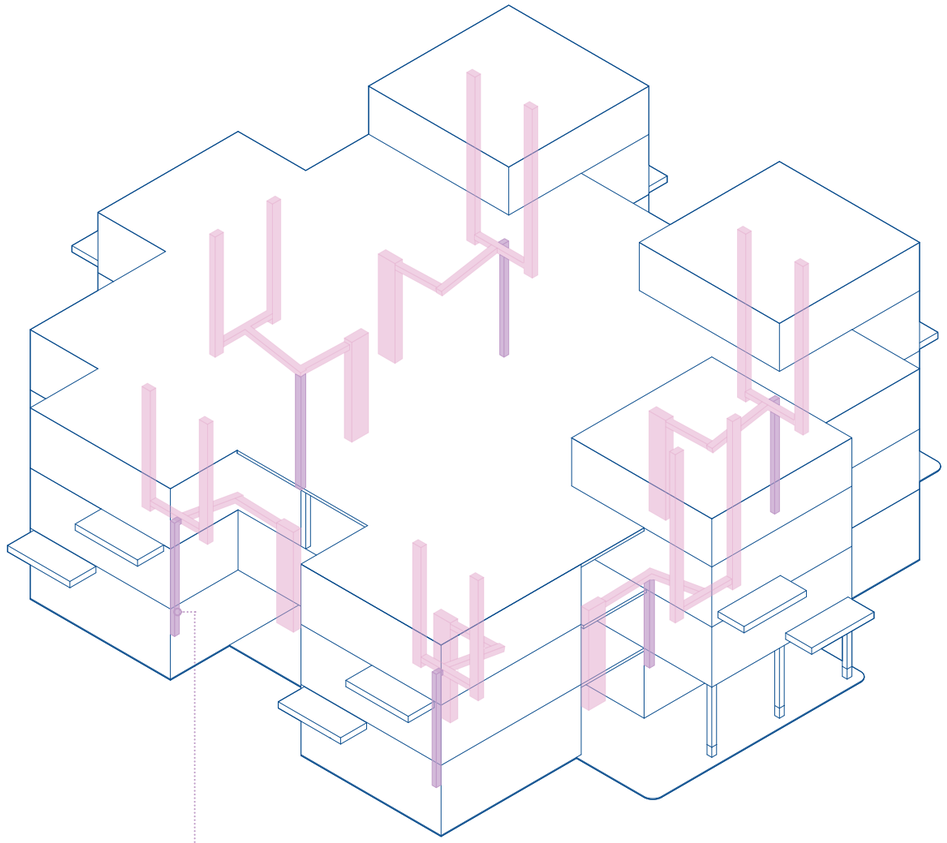
1:5 Detail of Green Roof



Gravel and extensive Vegetation
60 mm Drainage Element
6mm protective mat
DPM
150mm Unidek Aero Bio Insulation
---- 6 ° Incline for drainage ---
60 mm Unidek Aero Bio Insulation
60mm chipped infill bonded
Vapour barrier
180 mm CLT (Spruce) RC=1

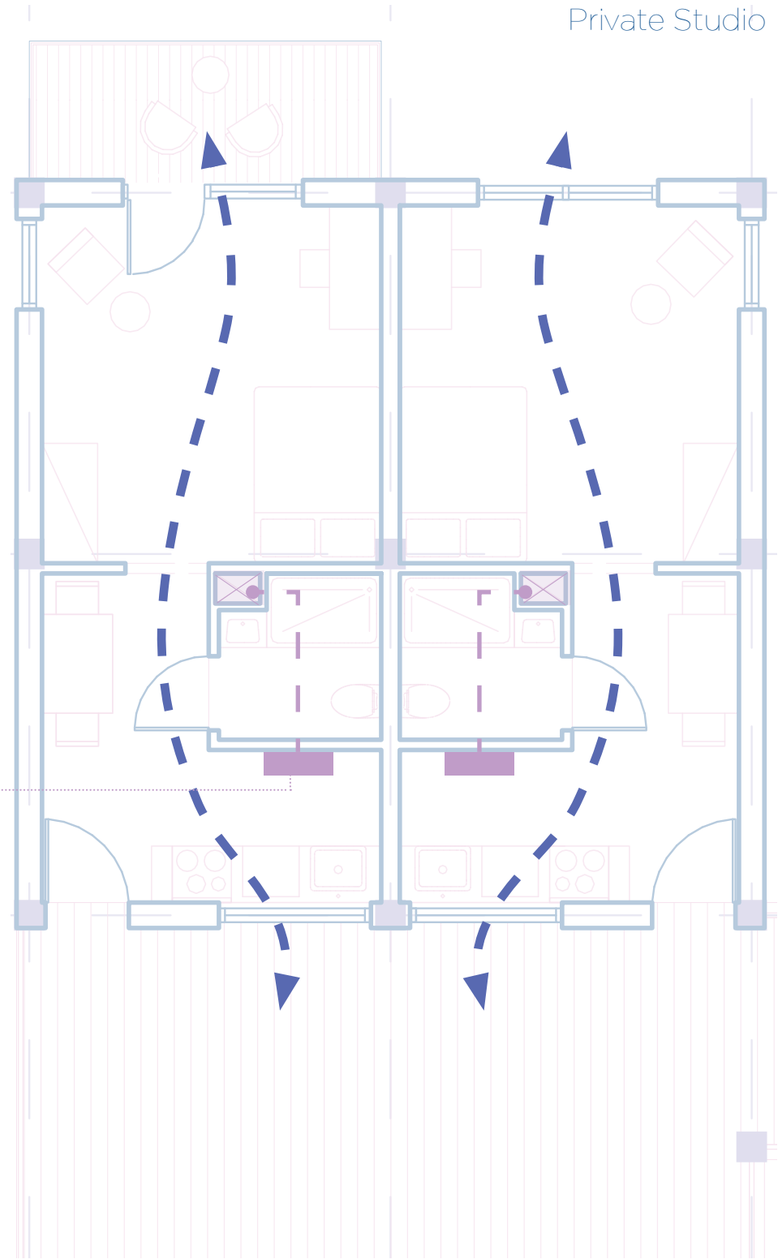
18 mm Fermacell (fire resistant) white plaster board
150 mm x 400 mm CLT (Spruce) Beam RC= 1
90mm Gutex Thermoflex insulation
18mm Sheathing board
Vapour proof barrier
35mm x 80 mm timber battens
Accoya wood Unfinished cladding (Exterior)

Building Technology
Ventilation - Building D



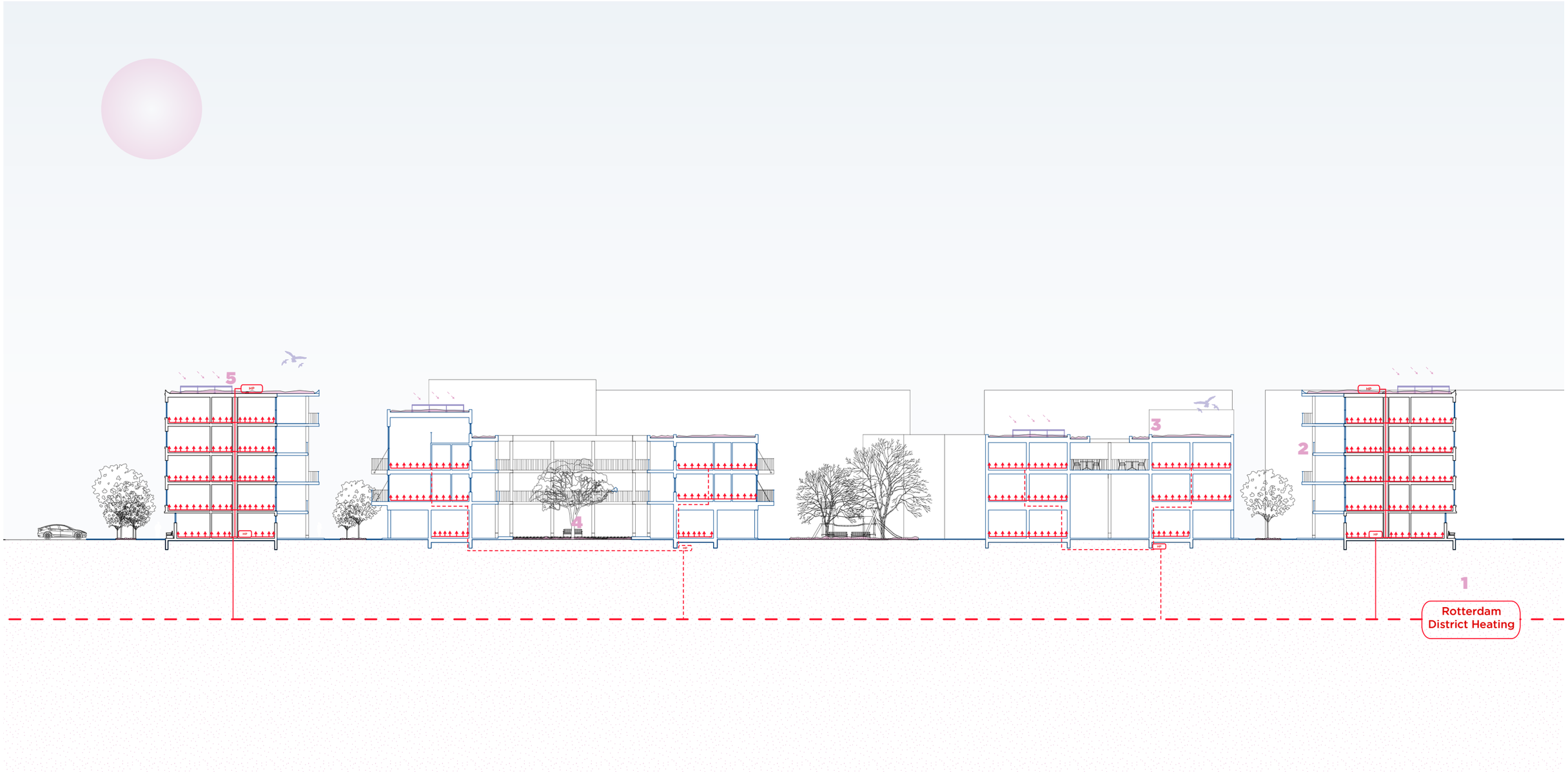
Mechanical Ventilation Exhaust Pipe
Ventilation pipes remains in the centre on the ground floor to minimise sound disturbance

Natural Cross Ventilation
Due to Dual Orientation



Mechanical Ventilation
Mechanical Exhausts
In Kitchens near bath-
rooms

Building Technology
Climate

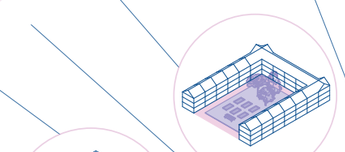


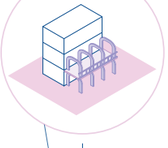
1- Floor Heating connected via Heat pump to Rotterdam's District heating
2- Passive Shading through Timber galleries and cantilevering balconies preventing access sunlight during the summer
3- Vegetation on Roof to attract bird migration, aid air quality and reduce heat island effect
4- Courtyards for air filtration and to reduce heat island effect
5- PV panels, orientated towards the south for Energy.

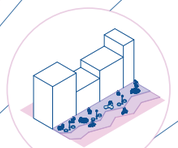
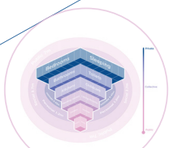
Conclusion

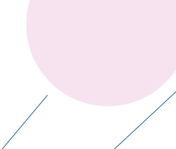

ALLEVIATING
URBAN
LONELINESS

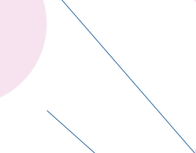
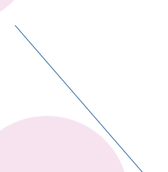
ALLEVIATING URBAN LONELINESS

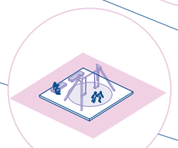




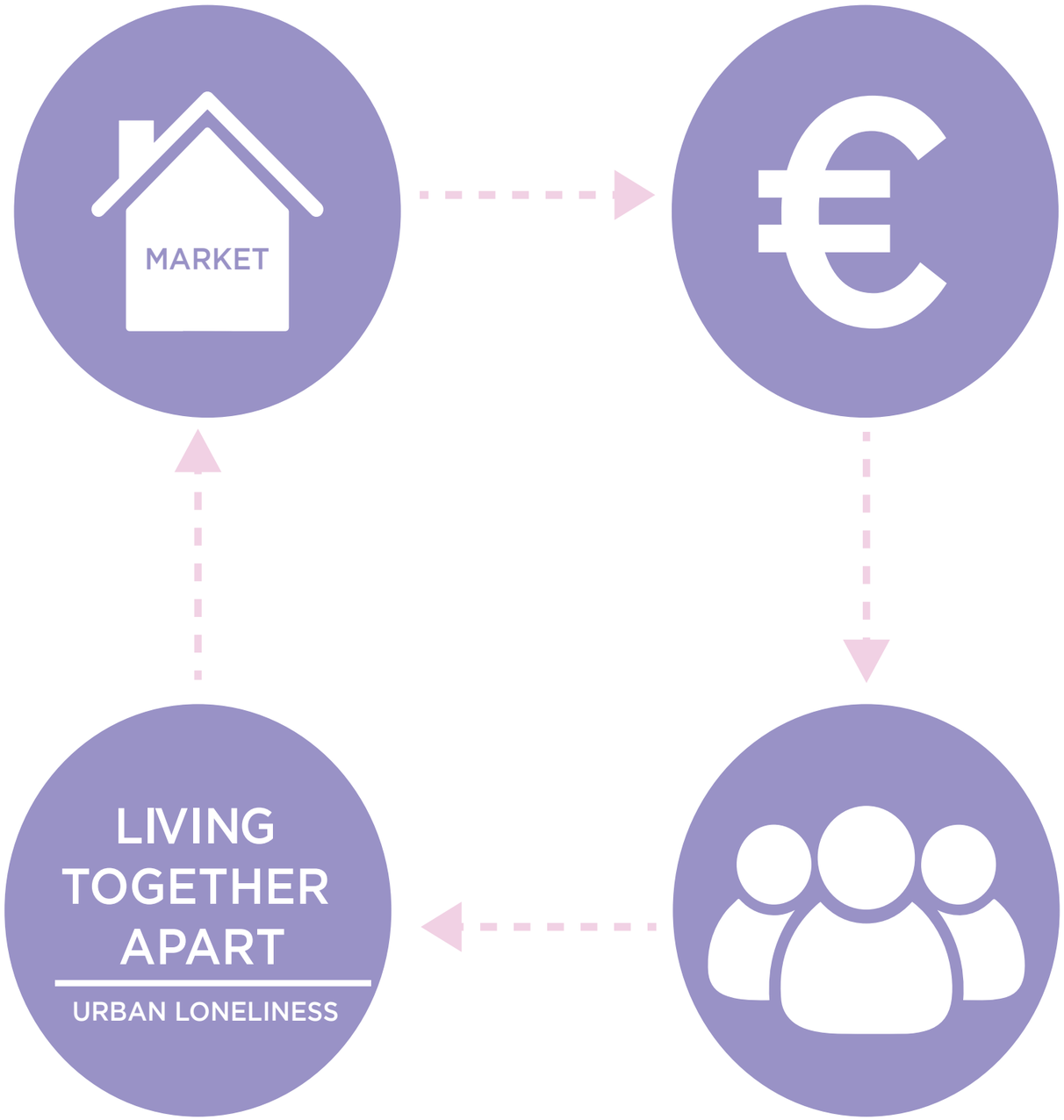



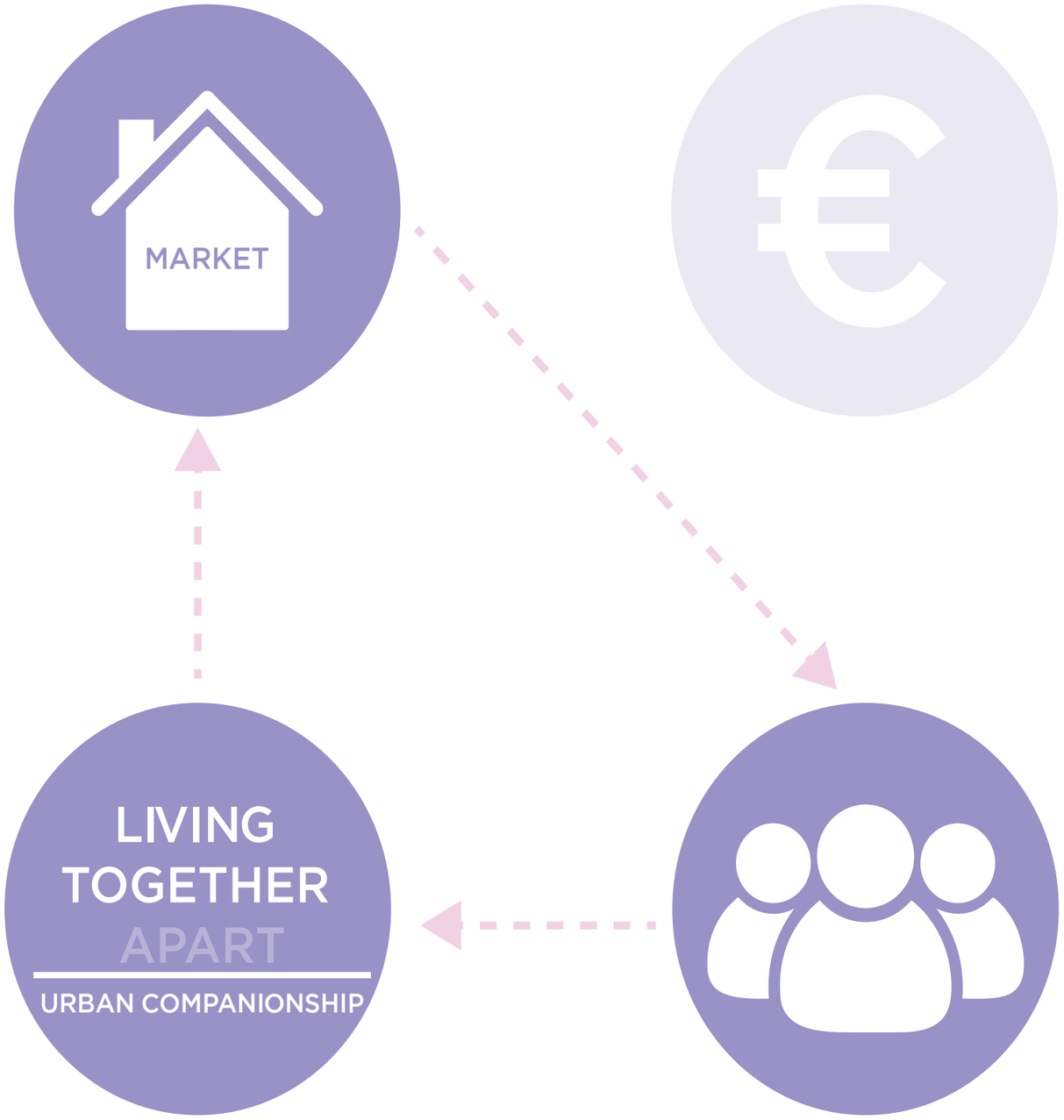


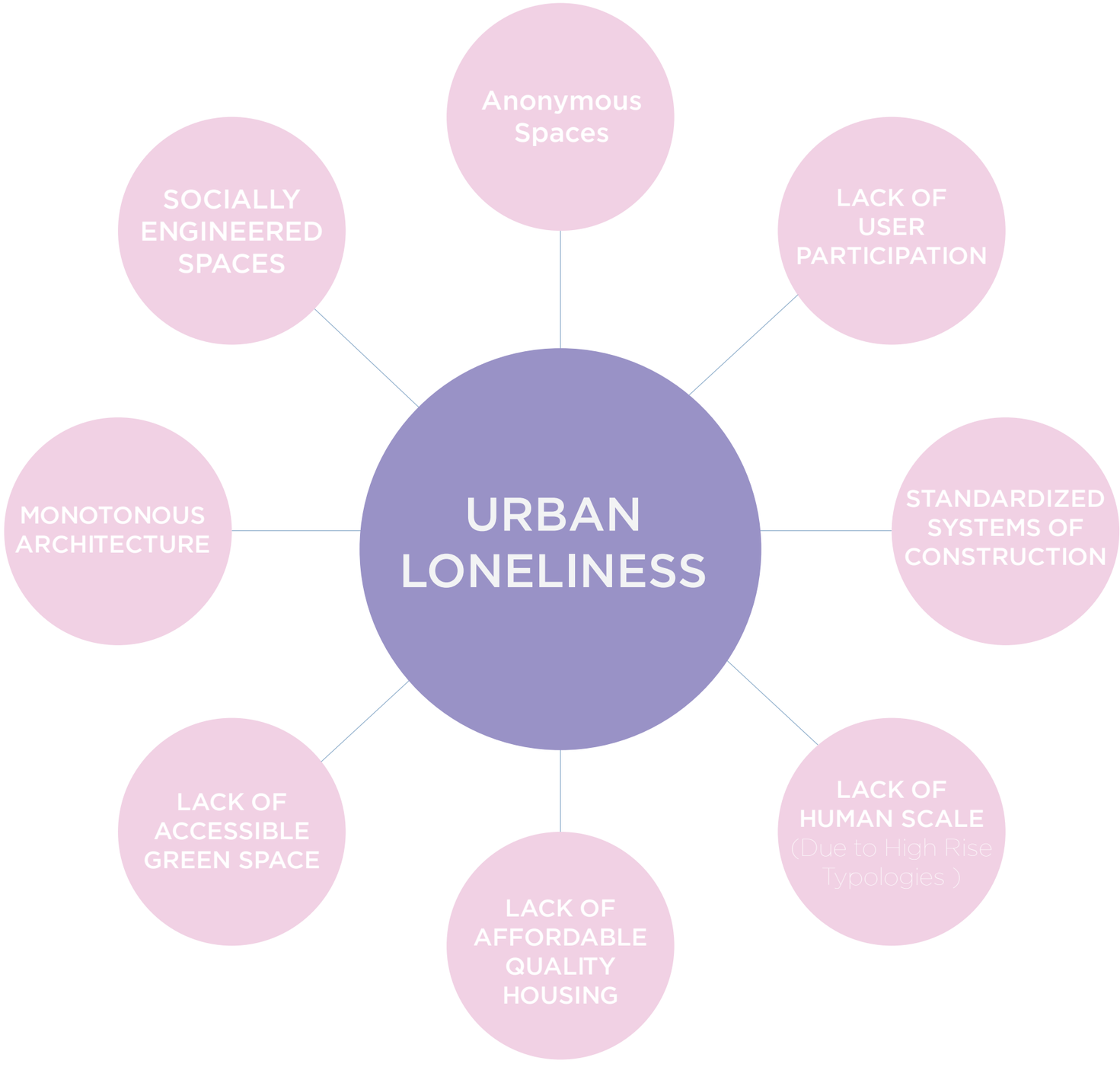

But why go through this effort?

“**Loneliness**, social isolation, or living alone **are risk factors for premature death** as great or greater than obesity and air pollution.”

The Architecture of Loneliness
Melinda Soós, 2019


MARKET
LIVING
TOGETHER
APART
URBAN LONELINESS

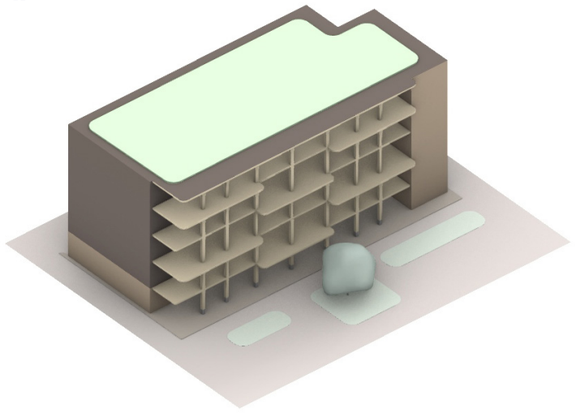

MARKET
LIVING
TOGETHER
APART
URBAN COMPANIONSHIP


Anonymous Spaces
SOCIALLY ENGINEERED SPACES
LACK OF USER PARTICIPATION
MONOTONOUS ARCHITECTURE
URBAN LONELINESS
STANDARDIZED SYSTEMS OF CONSTRUCTION
LACK OF ACCESSIBLE GREEN SPACE
LACK OF AFFORDABLE QUALITY HOUSING
LACK OF HUMAN SCALE (Due to High Rise Typologies)

New Homes (Exc. new)=228
New Homes (Inc. new)= 376
+238 New Homes

TRANSFORMATION

A.

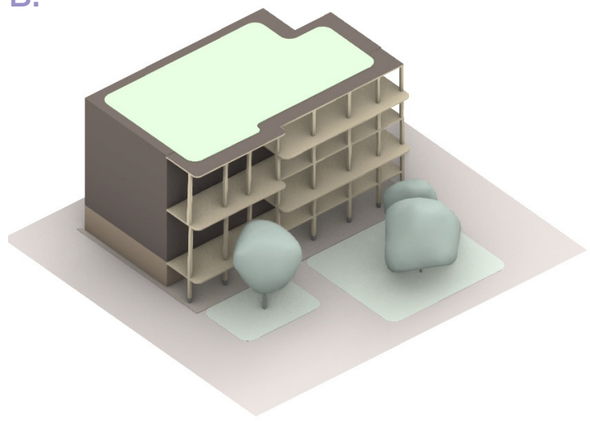


A[1]- 7 person x4 floors x 4 blocks = 112 persons
A[2]- 8 person x4 floors x 2 blocks = 64 persons

Total = 176 persons

*A[2] Collective on ground floor only

B.



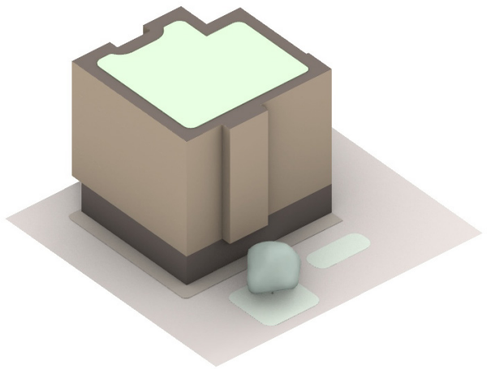
B[1]- (6 persons x 2 blocks) +(4 persons x 2 blocks) = 20 persons
B[2]- (8 persons x 2 blocks) +(8 persons x 2 blocks) = 32 persons

Total = 52 persons

*B[1] Exc. guest rooms

NEW

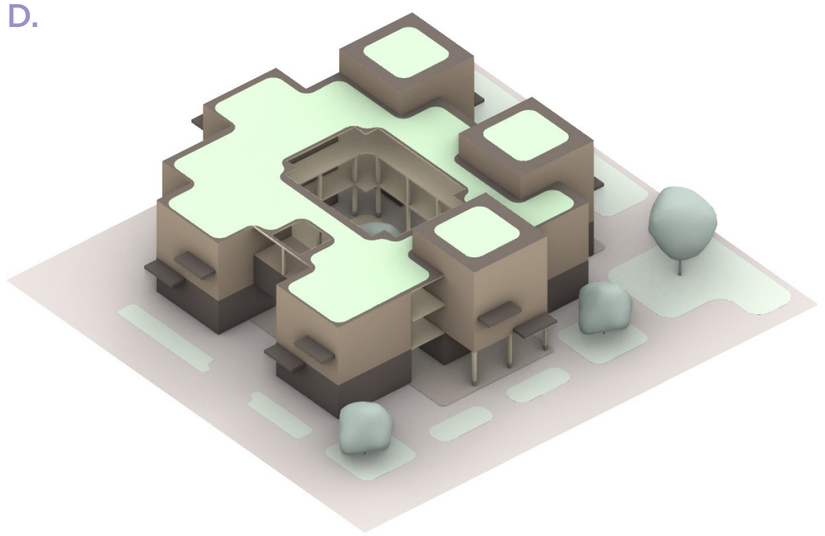
C.



C - 5 person x 4 floors x 4 blocks

Total = 80 persons

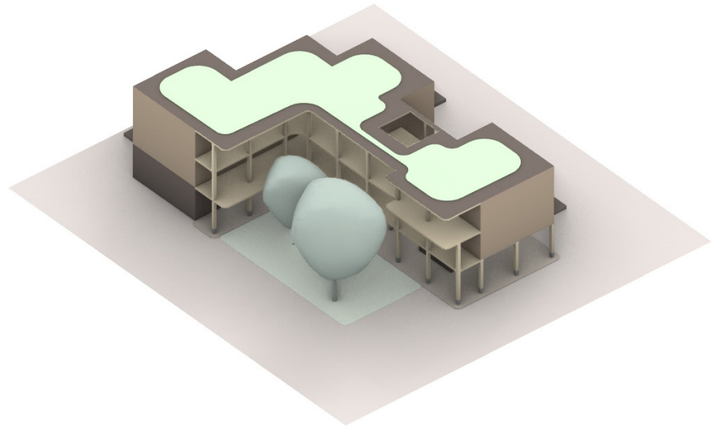
D.



D - 12 person x 2 floors x 2 blocks

Total = 48 persons

E.



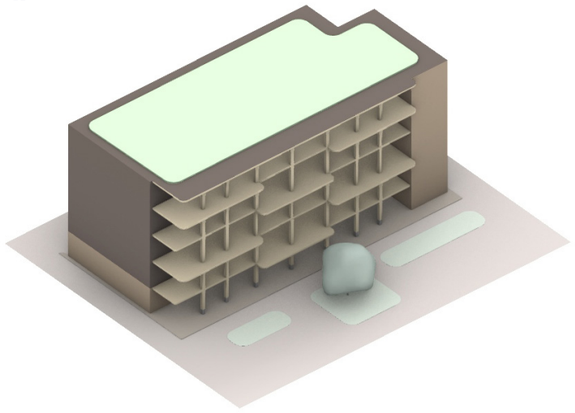
E - 5 person x 2 floors x 2 blocks

Total = 20 persons

New Homes (Exc. new)=228
New Homes (Inc. new)= 376
+90 New Homes

TRANSFORMATION

A.

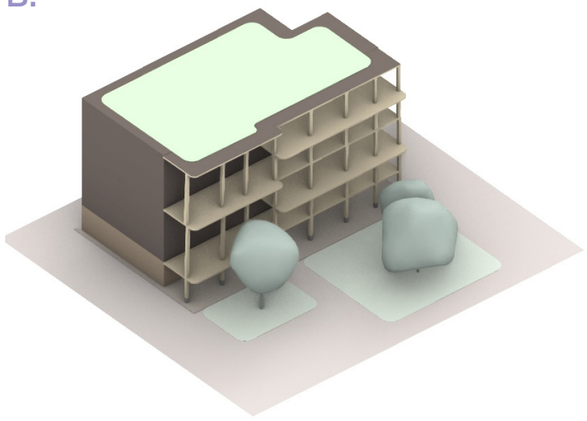


A[1]- 7 person x4 floors x 4 blocks = 112 persons
A[2]- 8 person x4 floors x 2 blocks = 64 persons

Total = 176 persons

*A[2] Collective on ground floor only

B.



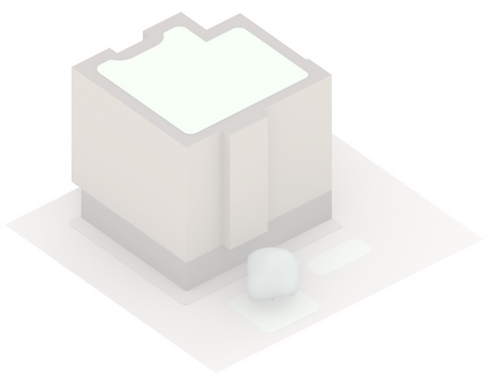
B[1]- (6 persons x 2 blocks) +(4 persons x 2 blocks) = 20 persons
B[2]- (8 persons x 2 blocks) +(8 persons x 2 blocks) = 32 persons

Total = 52 persons

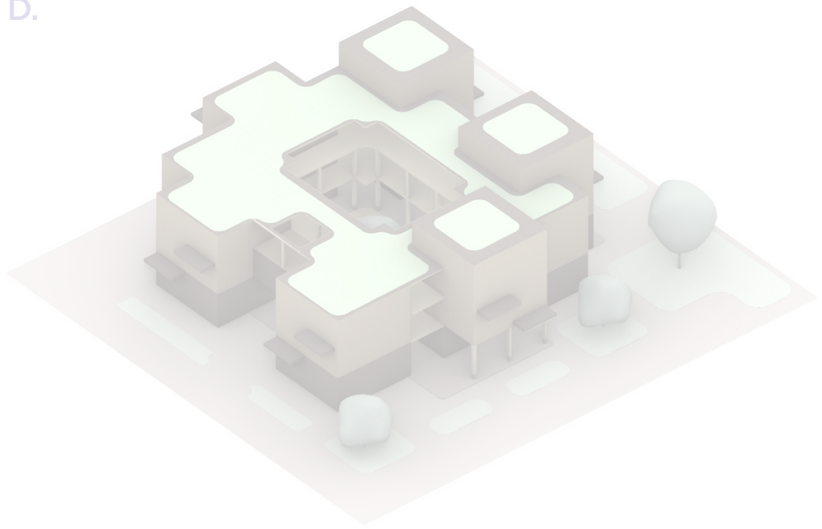
*B[1] Exc. guest rooms

NEW

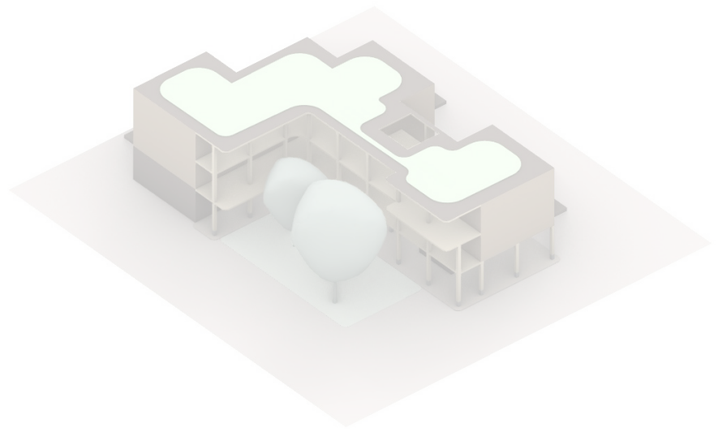
C.



D.



E.



Together, density is home

Thank You !

