

The transience of society:

Through the lens of a post-war neighbourhood in The Netherlands

AMRITA SEN



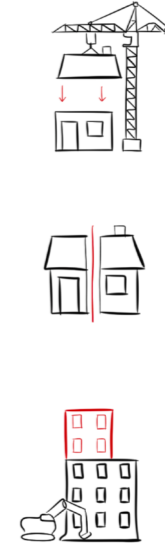
Re-Densification of *Westwijk*

- STUDIO BRIEF
- SITE INTRODUCTION
- RESEARCH FINDINGS
- DESIGN DEVELOPMENT
- DESIGN DETAILING

“ 1 million homes by 2030! ”

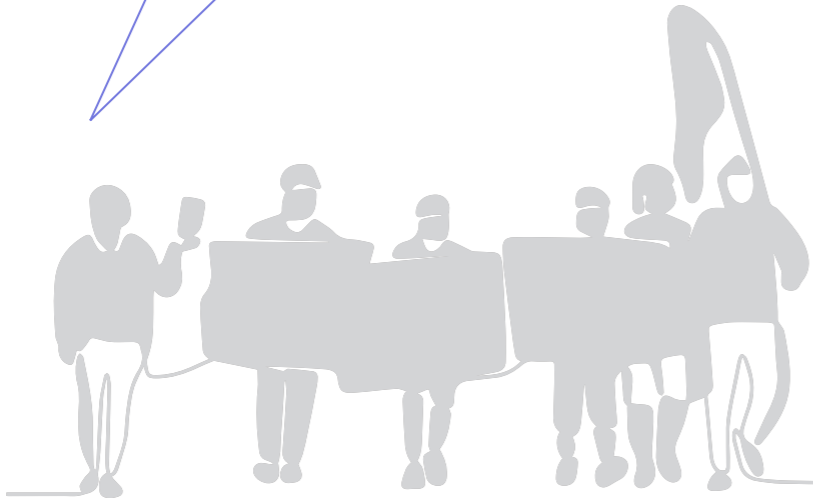
In 2023 there will be 8.270 million households and 7.712 million homes in the Netherlands. -Ministry of the Interior and Kingdom Relations.

- How?
- SPLIT
 - TRANSFORM
 - NEW BUILD



" The housing crisis is much more than a shortage of affordable housing."

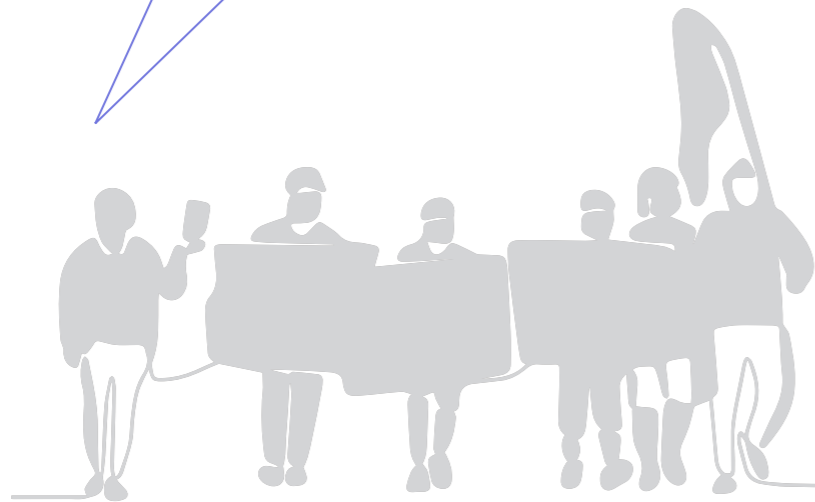
" The housing shortage is also the lack of a suitable home. If homes are not suitable, they will ultimately remain empty."



A suitable home?

"The housing crisis is much more than a shortage of affordable housing."

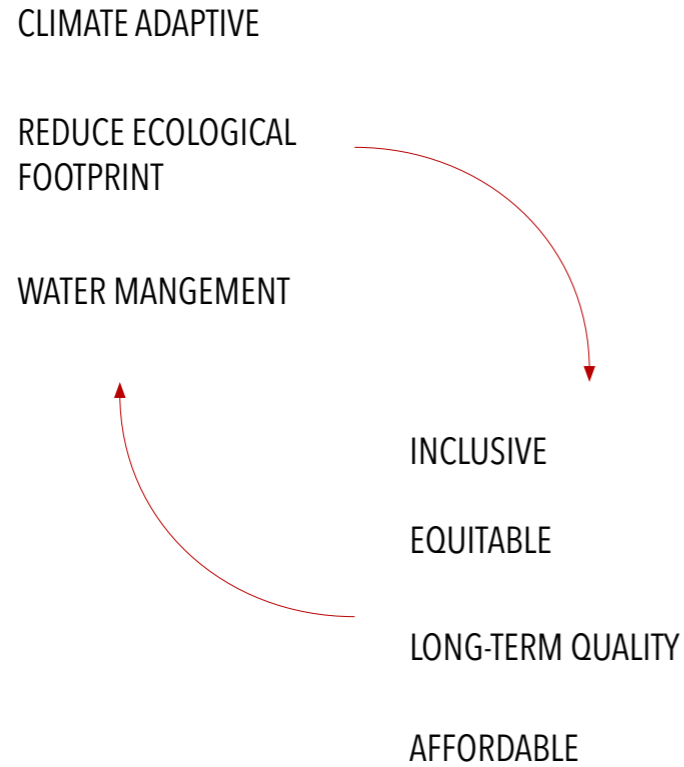
"The housing shortage is also the lack of a suitable home. If homes are not suitable, they will ultimately remain empty."



Studio Aims



"Designers can no longer look at the city as a physically built environment, but have to understand it as a **performing ecology of material flows and diverging habitats.**"

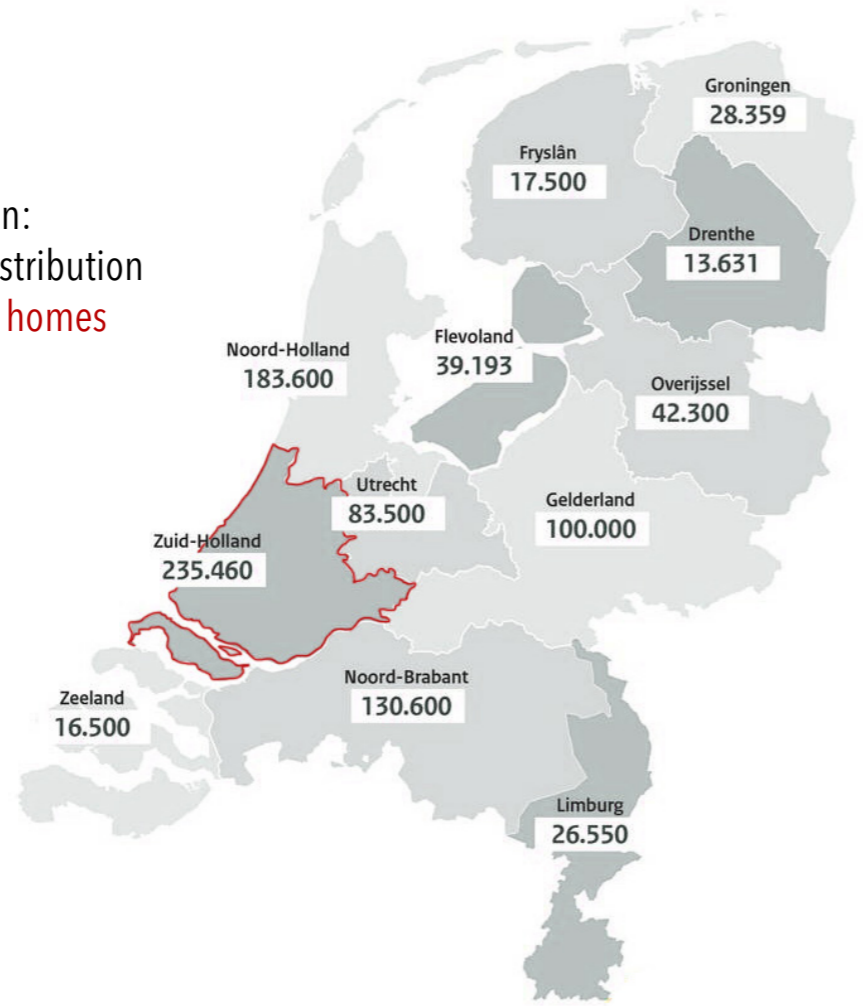


Studio Aims



“Designers can no longer look at the city as a physically built environment, but have to understand it as a **performing ecology of material flows and diverging habitats.**”

Housing Plan:
Area-wise distribution
for 917,193 homes



How?

SPLIT

TRANSFORM

NEW BUILD

Where?

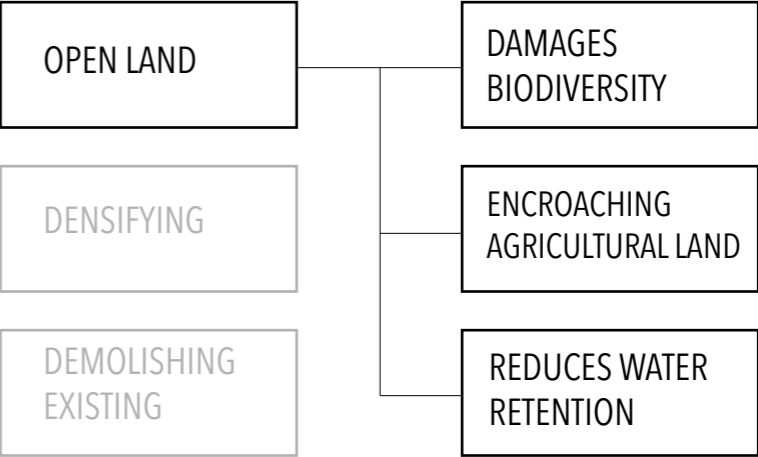
OPEN LAND

DENSIFYING

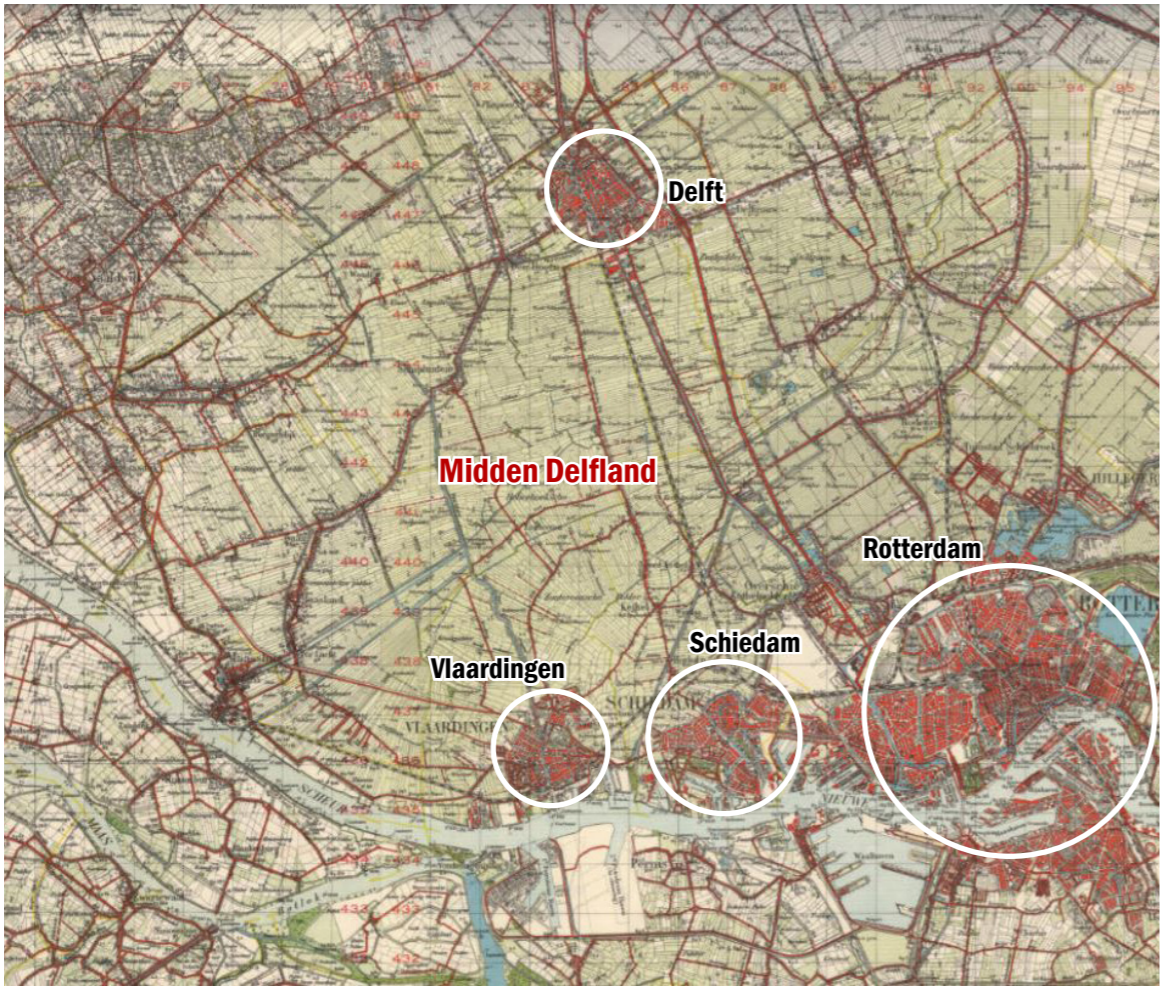
DEMOLISHING EXISTING



Where?



The growth and spread of city centres



1950



2023

National Productive Park Delfland



"Due to large paved surfaces in surrounding cities, there is a pressure on the water drainage system of Midden Delfland, **the boezem system has reached maximum capacity.**"





- Boezem buffer- water storage
- Peatland- agriculture
- Wetland for birds
- Woodland- wood production



Delft

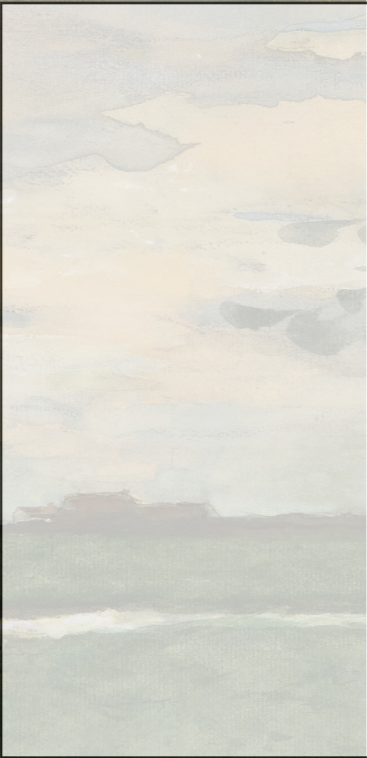
Rotterdam

"Midden-Delfland, a green lung and sponge for cities"

Dichotomy of space



Dichotomy of space



?

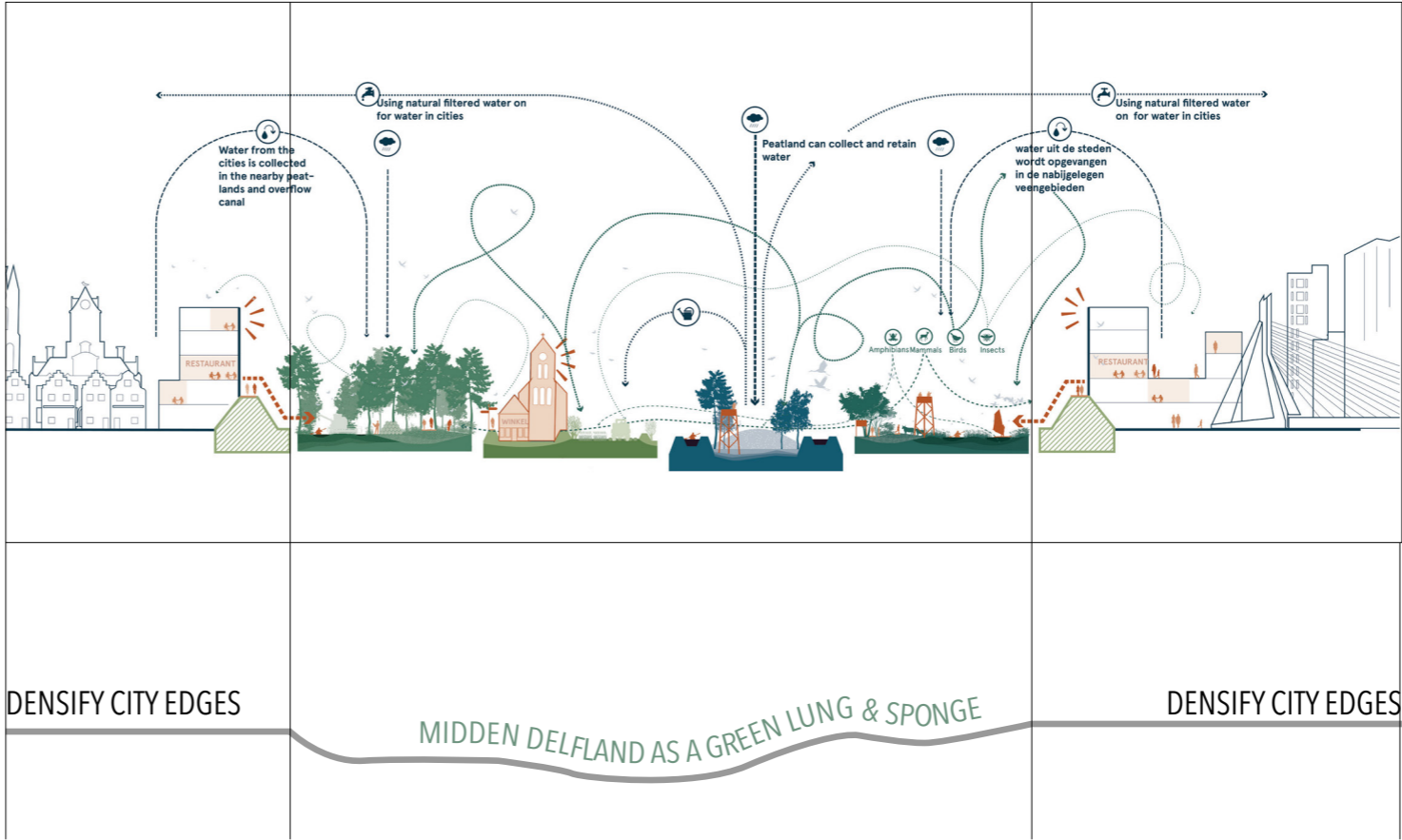


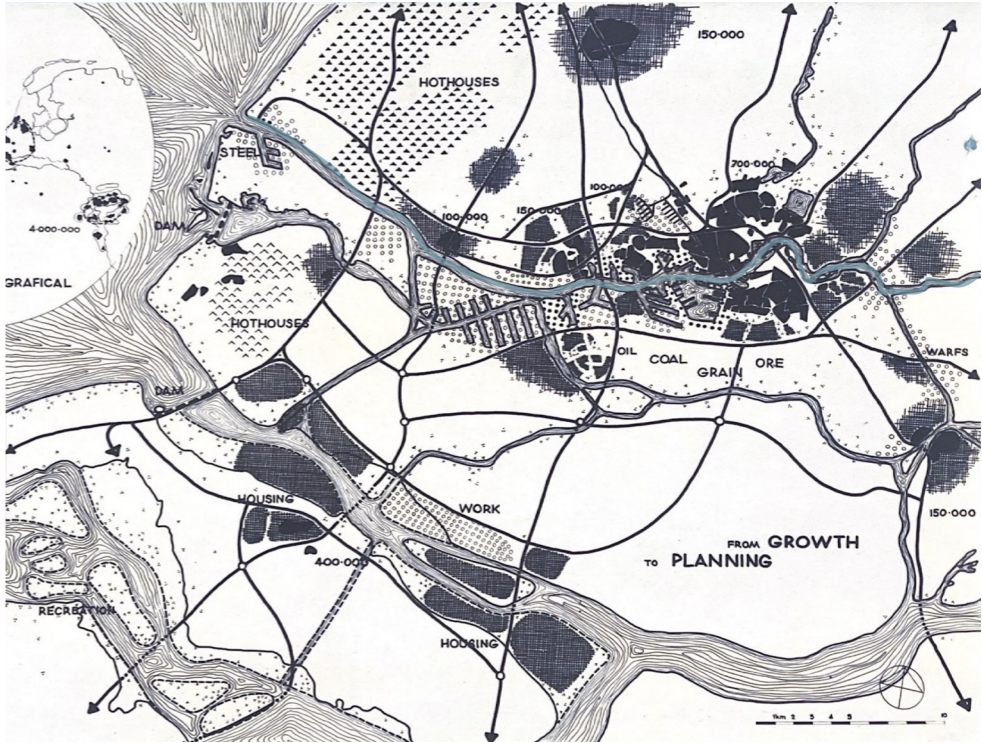
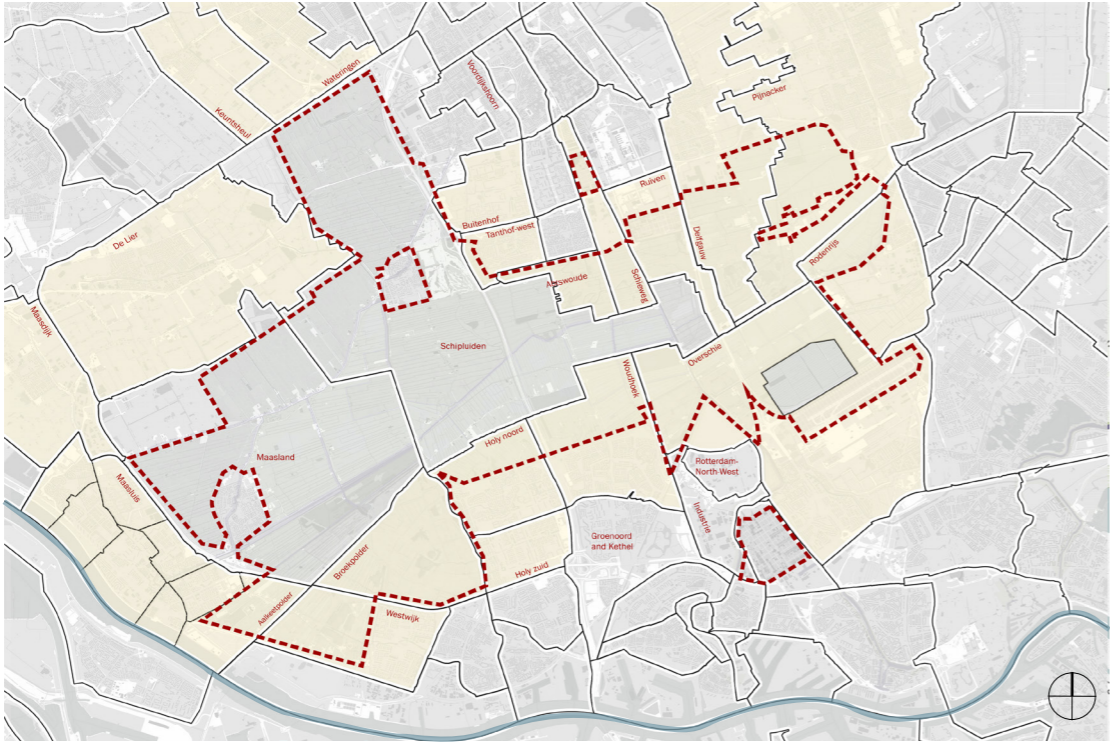
Where?

OPEN LAND

DENSIFYING

DEMOLISHING EXISTING





CIAM HOLLAND- GROUP 'OPBOUW'

3.5 million homes out of a total of 5 million were constructed after 1945, mostly designed as typical post-war neighbourhoods. (Prak & Priemus, 1985)

Where?

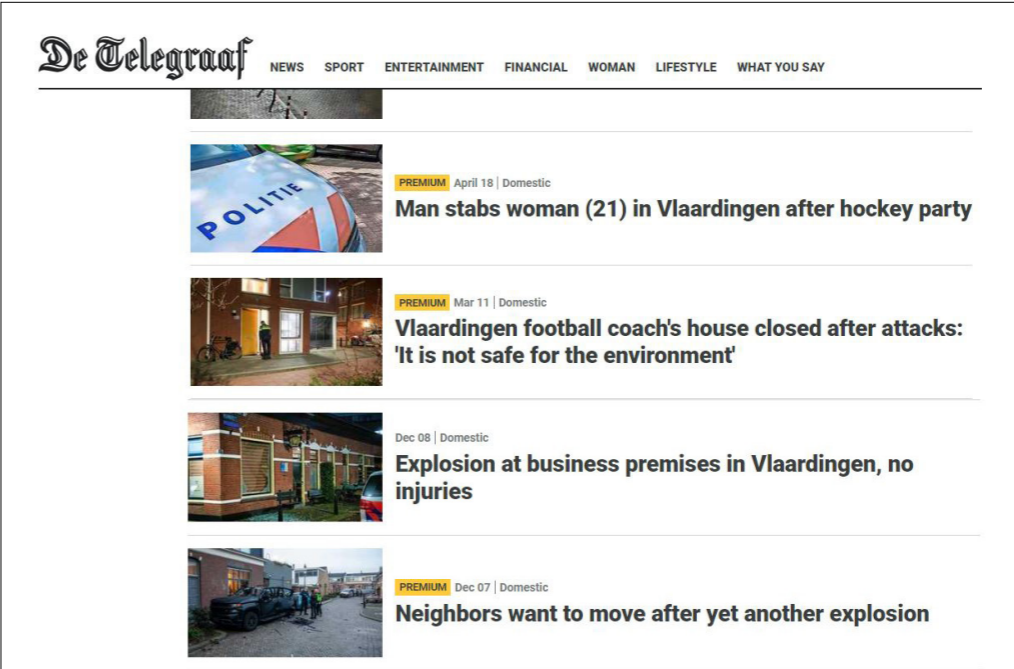
OPEN LAND

DENSIFYING

DEMOLISHING
EXISTING

upto 5% homes remain unoccupied
 (~ 400,000 of 8.1 million)

-Ministry of the Interior and Kingdom Relations



Unfavourable living conditions

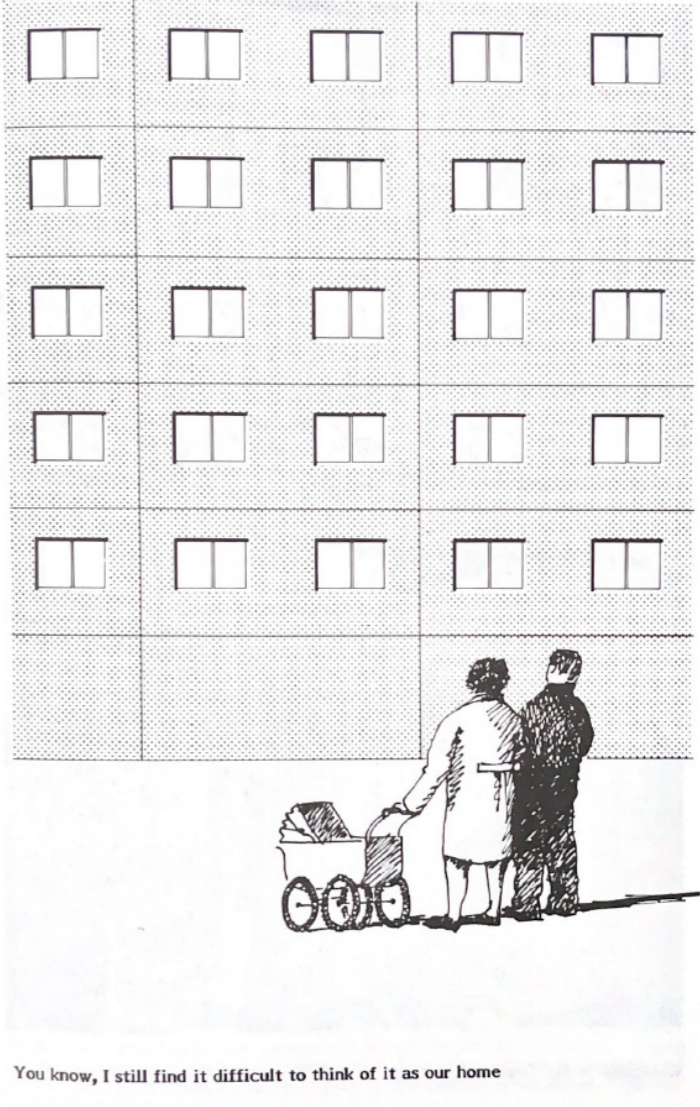
Decay

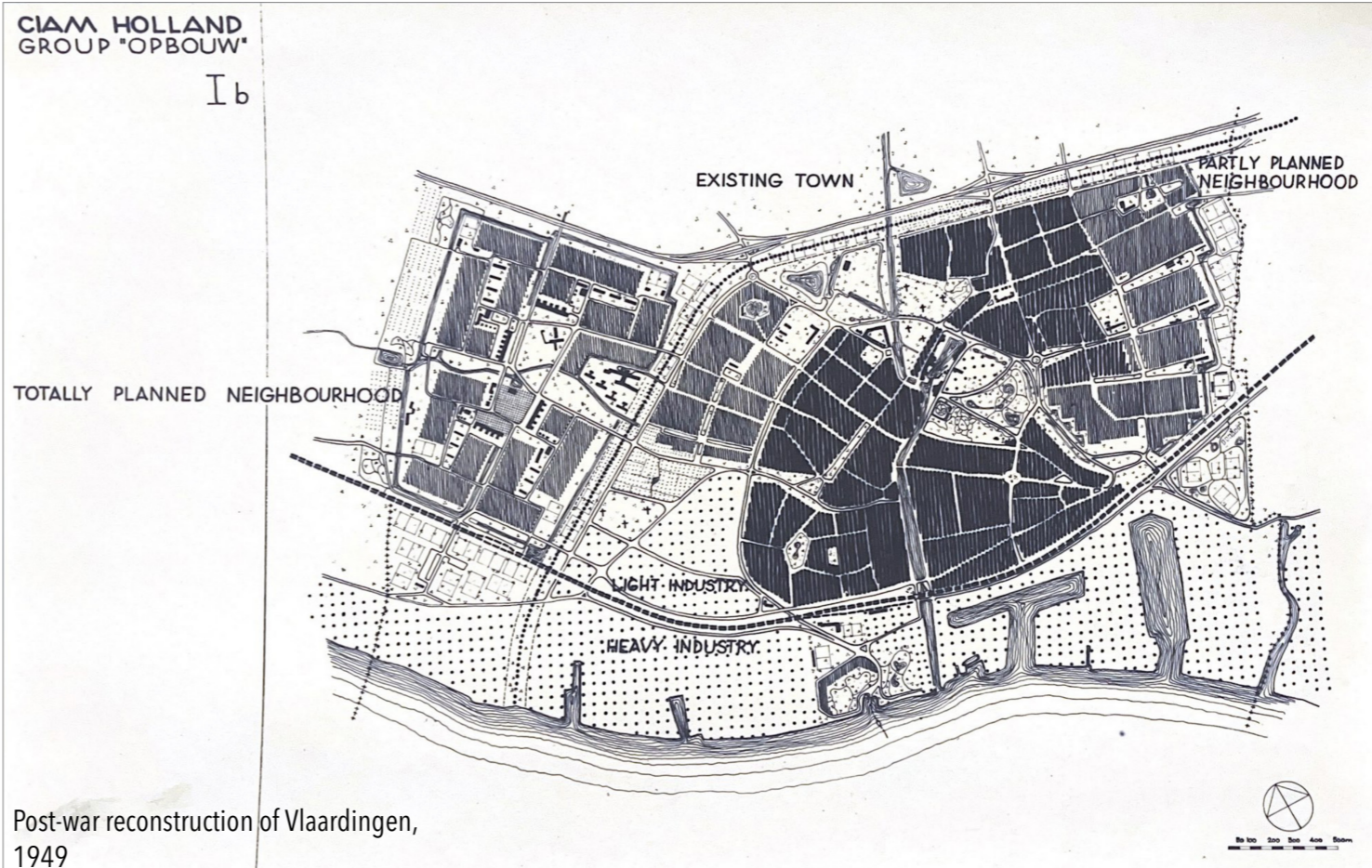
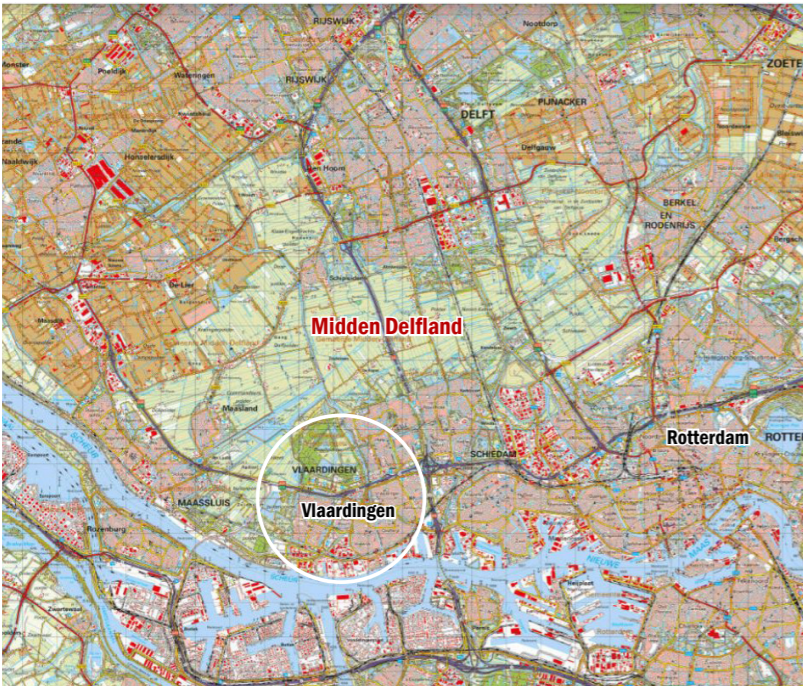
Spatial Decay

NO VARIATION IN HOUSING TYPOLOGIES	ABSOLUTE DIVIDE IN INTERIOR & EXTERIOR	LACK OF COMMUNAL SPACES	STERILE CORRIDORS
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HIGH VACANCY RATES	UNSAFE NEIGHBOURHOOD	ANONYMITY	LACK OF OWNERSHIP
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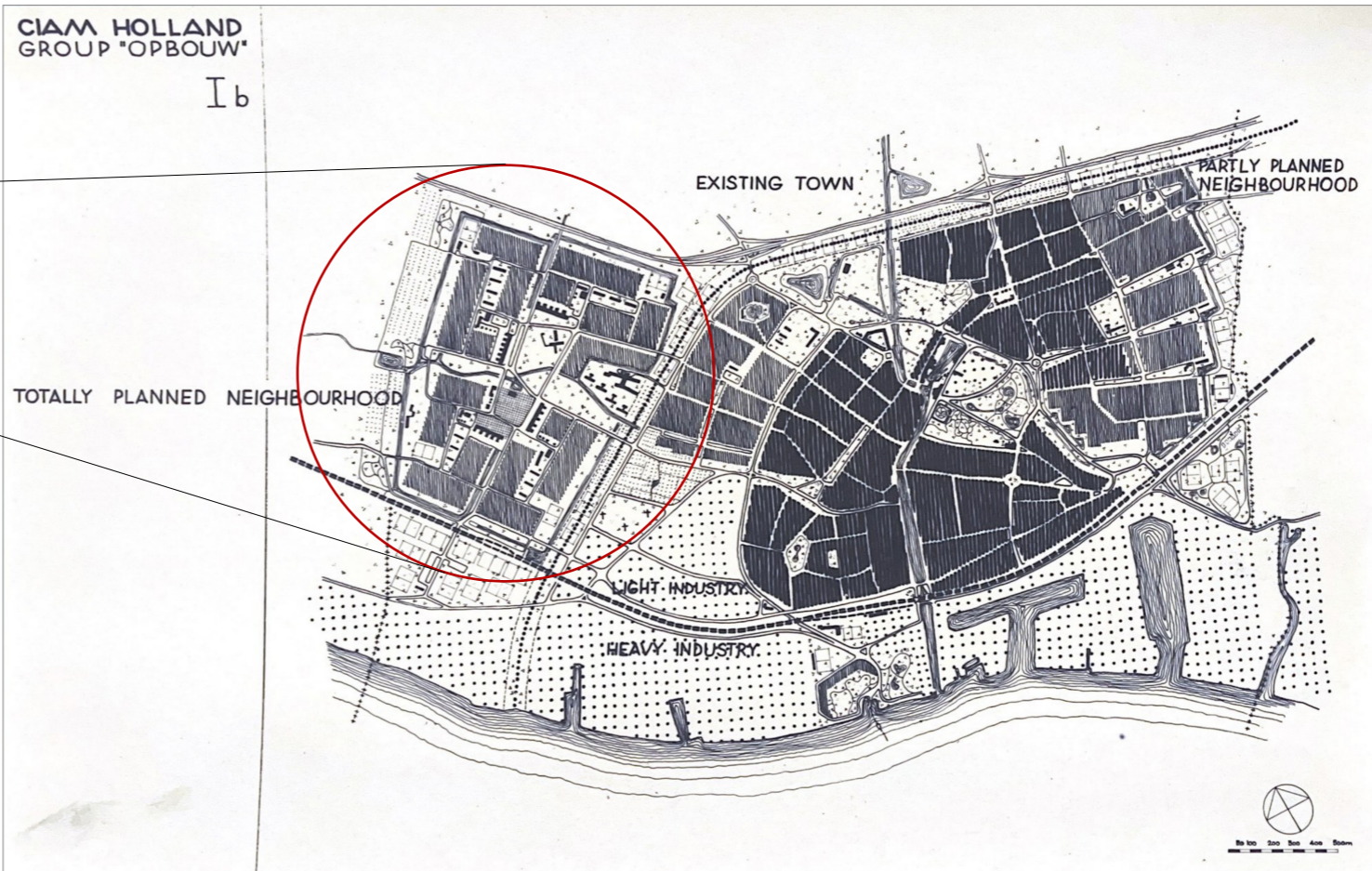
Social Decay



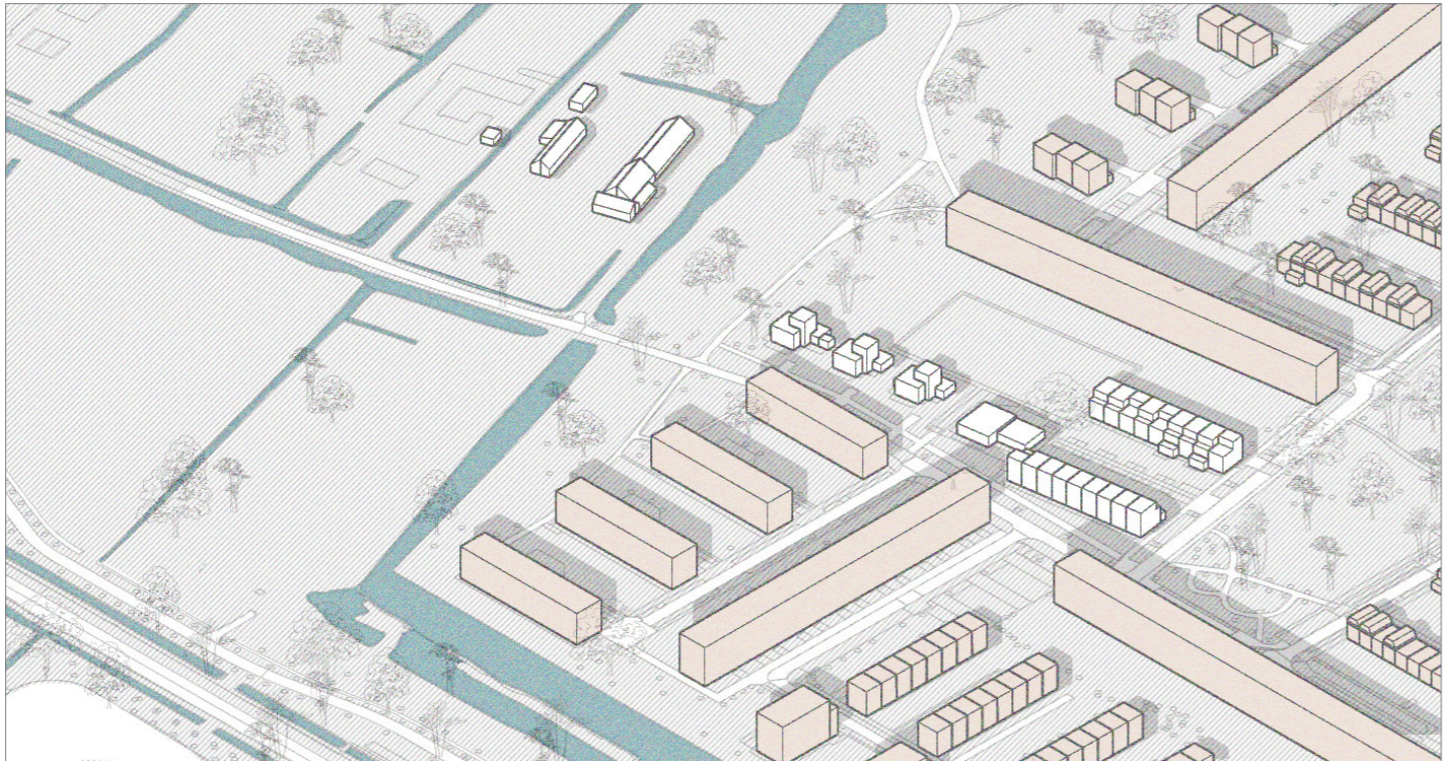


Post-war reconstruction of Vlaardingen, 1949

Densification of Vlaardingen



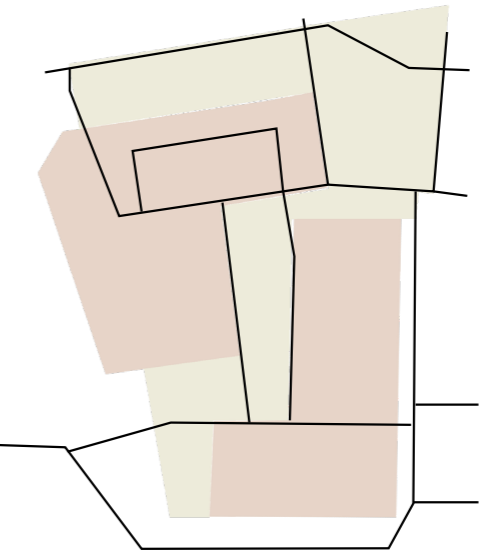
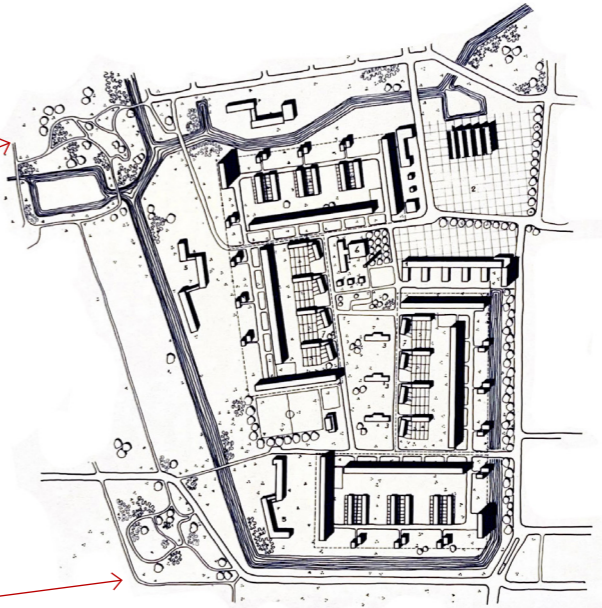
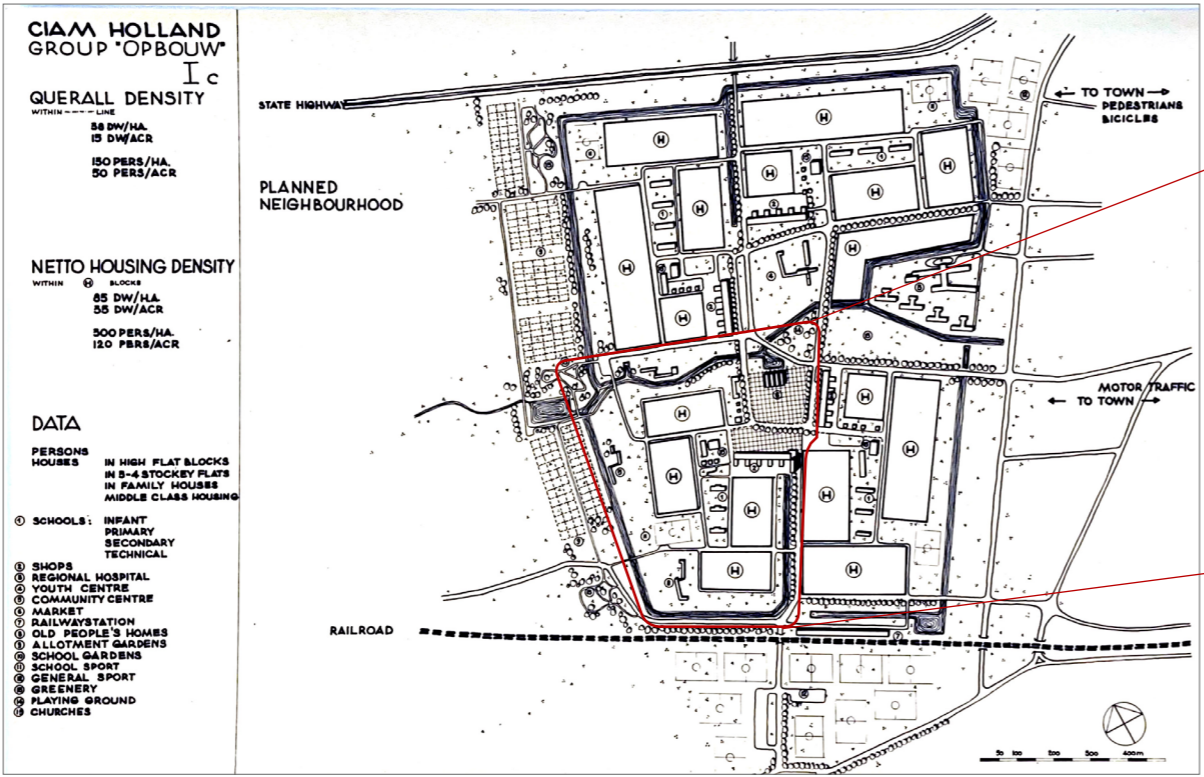
Formation of WESTWIJK



Dichotomy of space

Westwijk





A "totally planned neighbourhood"

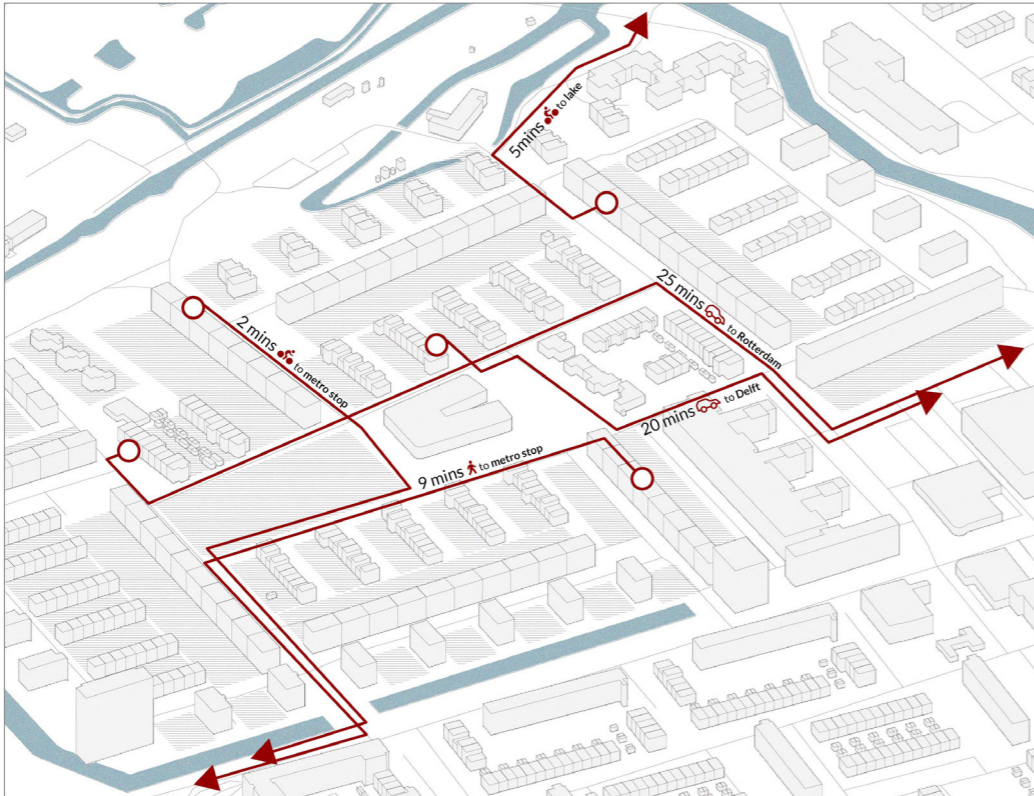
LIVING | WORKING | RECREATION | CIRCULATION



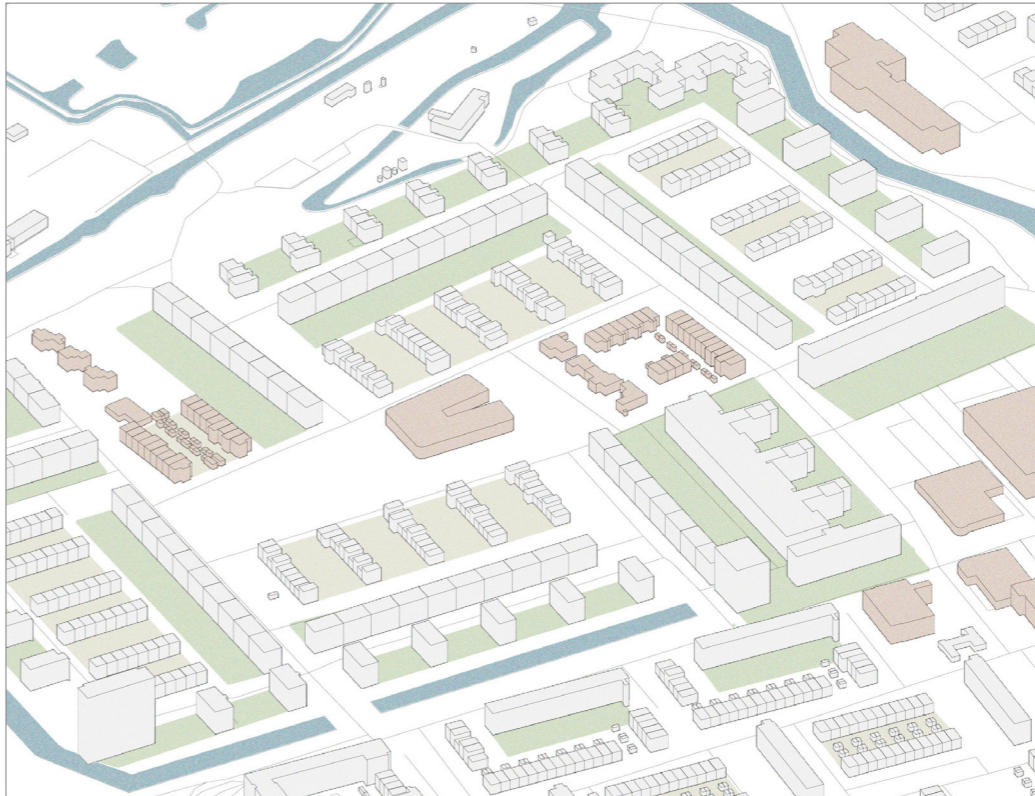


The zonal planning granted good connectivity.....

at the cost of spatial disconnect at the neighbourhood scale

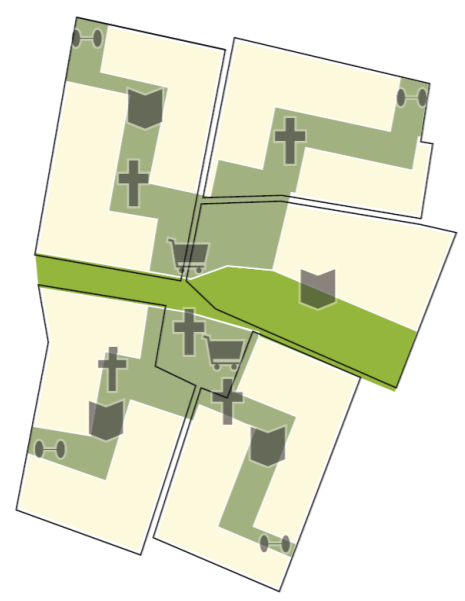


Buurt Hoogkamer

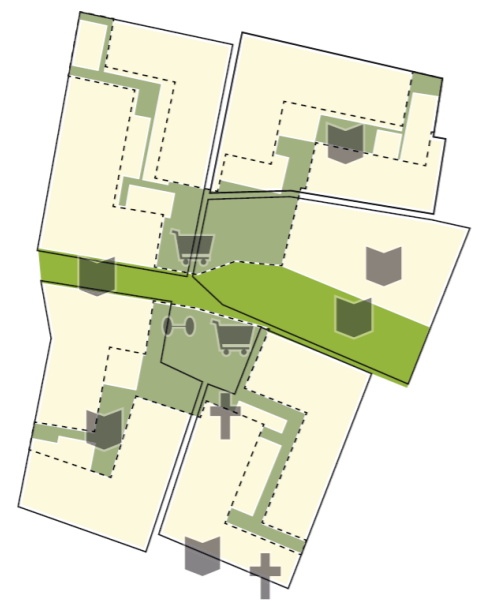


- PUBLIC OPEN SPACE
- PRIVATE OPEN SPACE
- POST WAR DEVELOPMENTS
- DEVELOPMENTS POST 2000s
- SITE EXTENTS





Original structure of planning



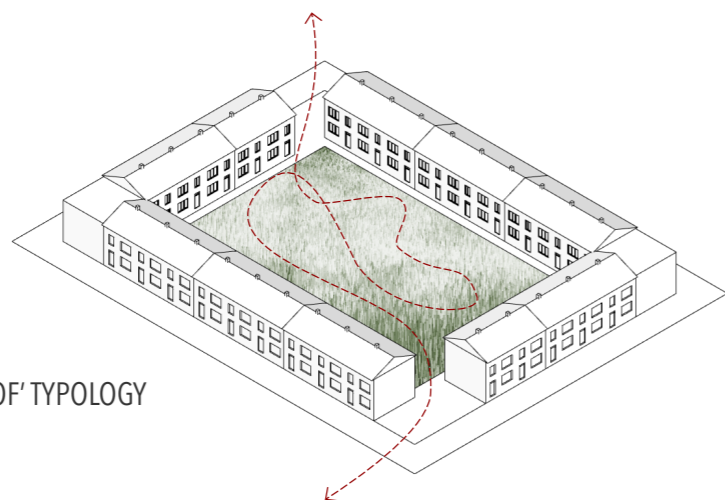
Present day obstructed structure



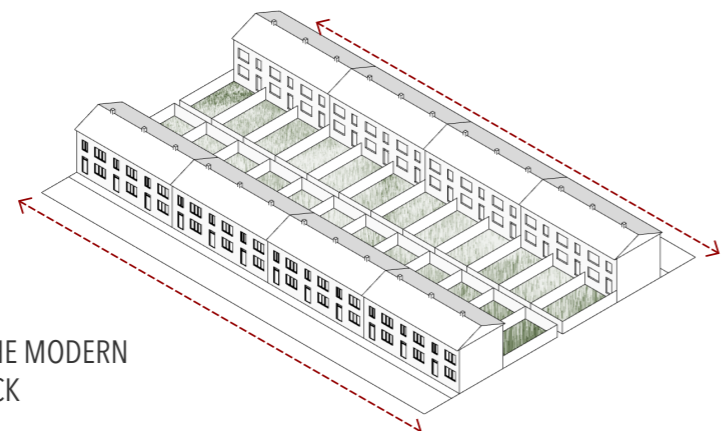
POST WAR DEVELOPMENT 1963

NEW DEVELOPMENT 2015

TRADITIONAL 'HOF' TYPOLOGY

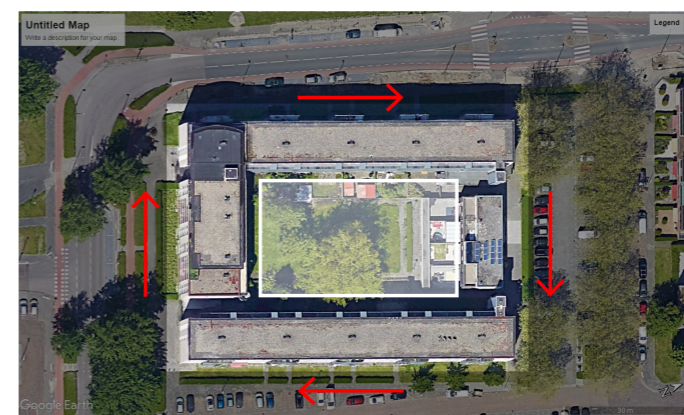


VARIATION OF THE MODERN PERIMETER BLOCK



Transience of space

From public to private life





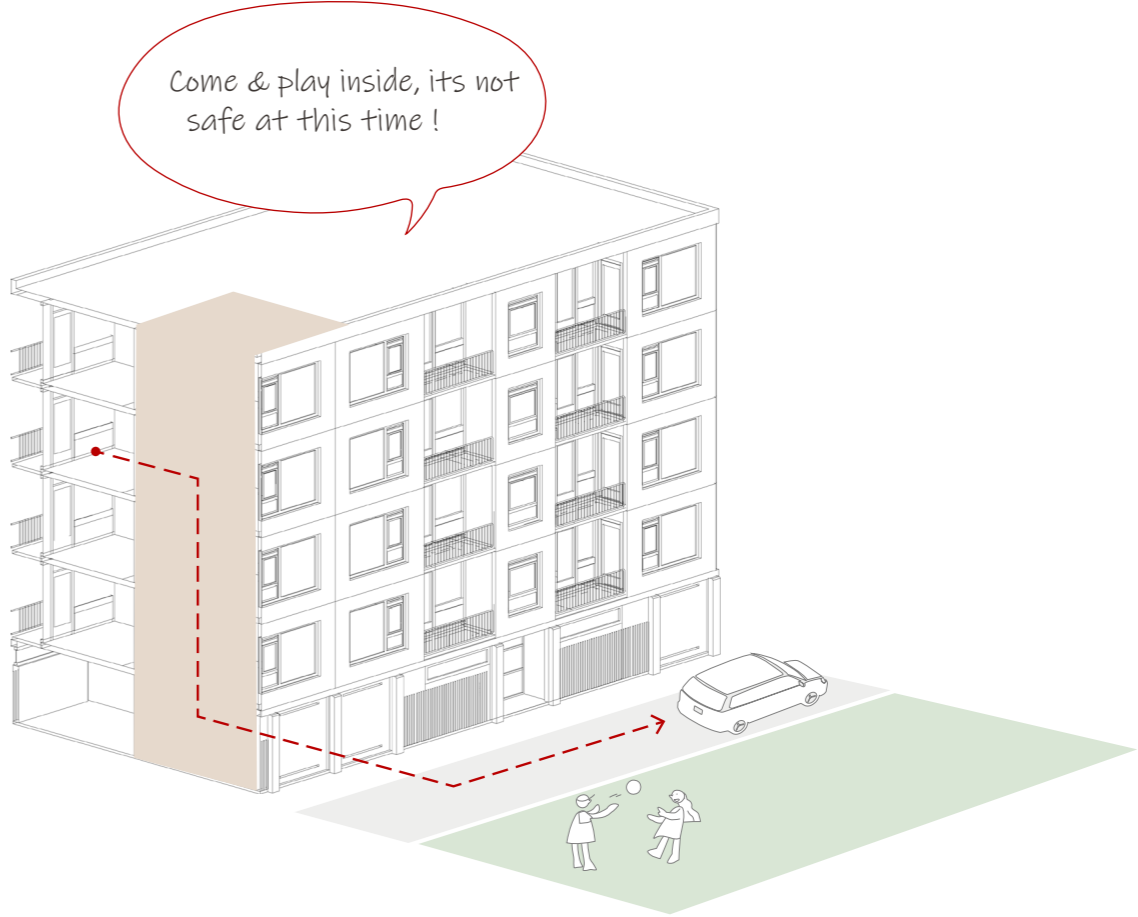
Familistère de Guise, 1859

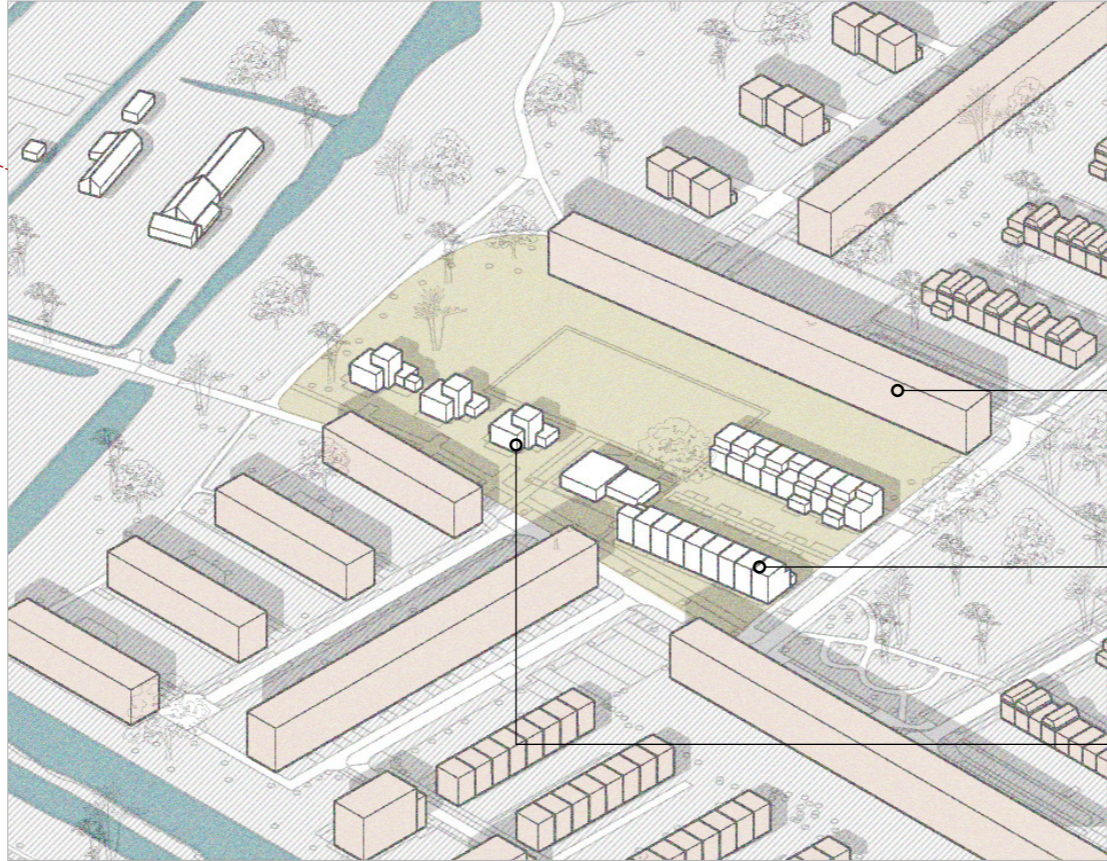


OPEN SPACE IS MERELY A BY-PRODUCT OF THE BUILT FORM



Day-to-day activities of residents have no spatial reason to coincide



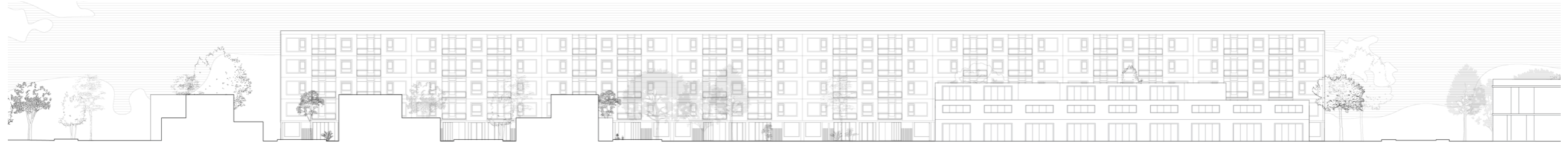
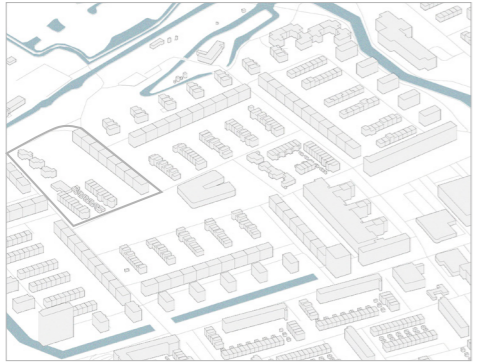


Existing scales of development

Year- 1963
 80 apartments (18-76 sqm)
 Plot area- 1510 sqm

Year-2000
 18 row houses (109-145 sqm)
 Plot area- 211-282 sqm

Year- 2000
 3 bungalows (193sqm)
 Plot area- 575sqm





Highrise

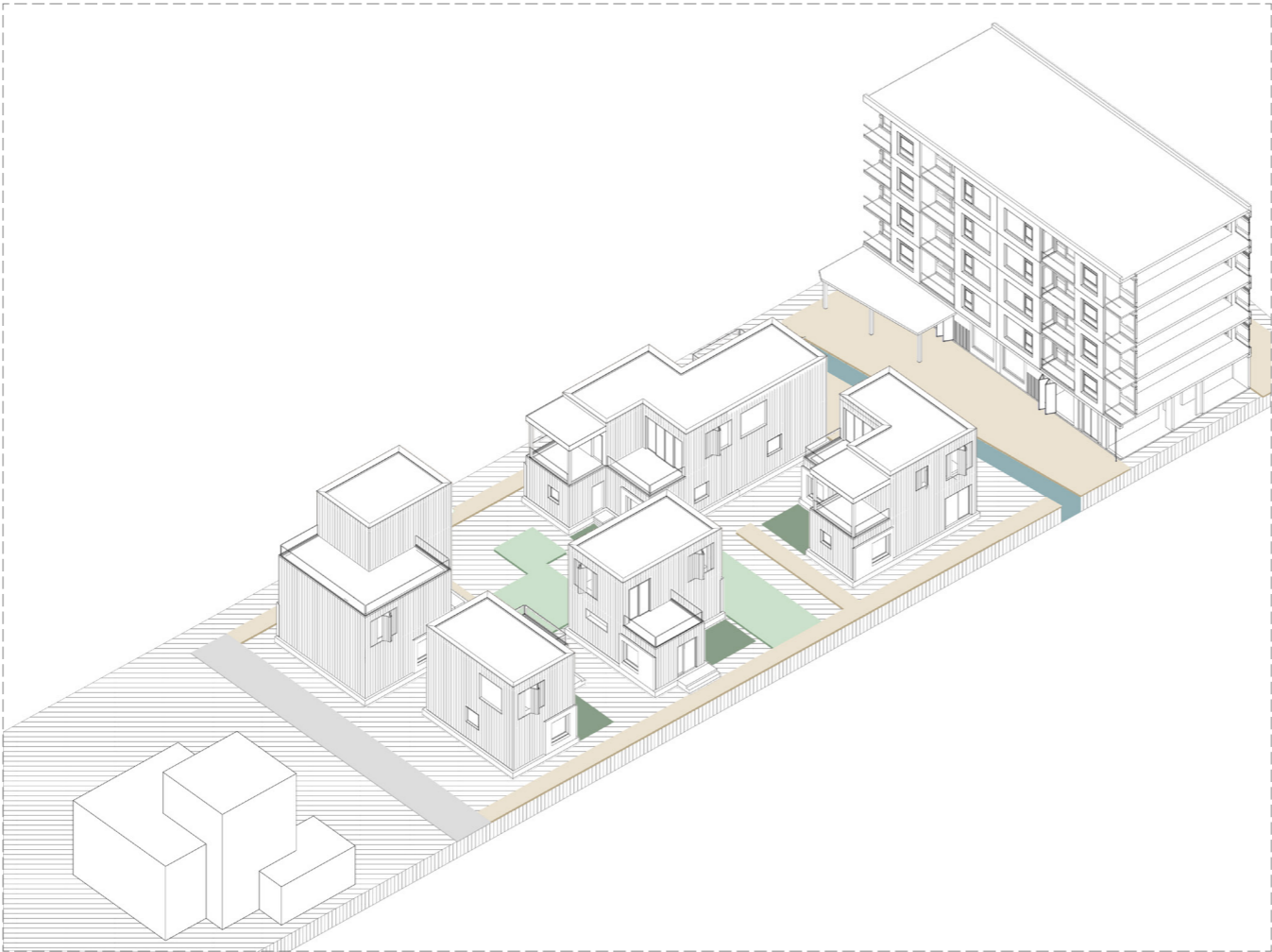


Row-houses



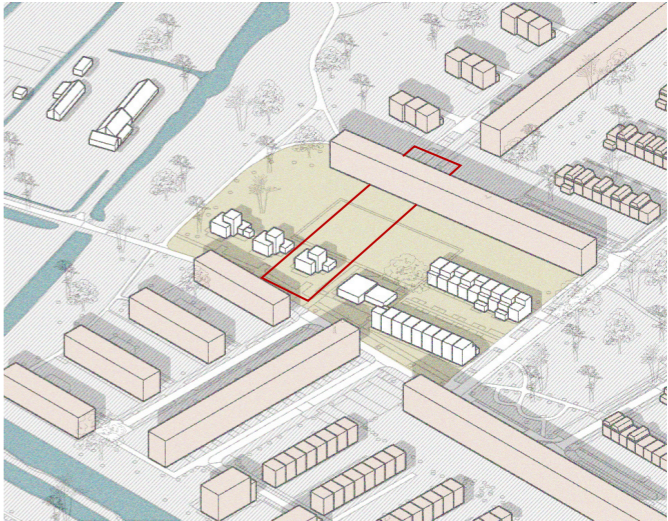
Bungalows

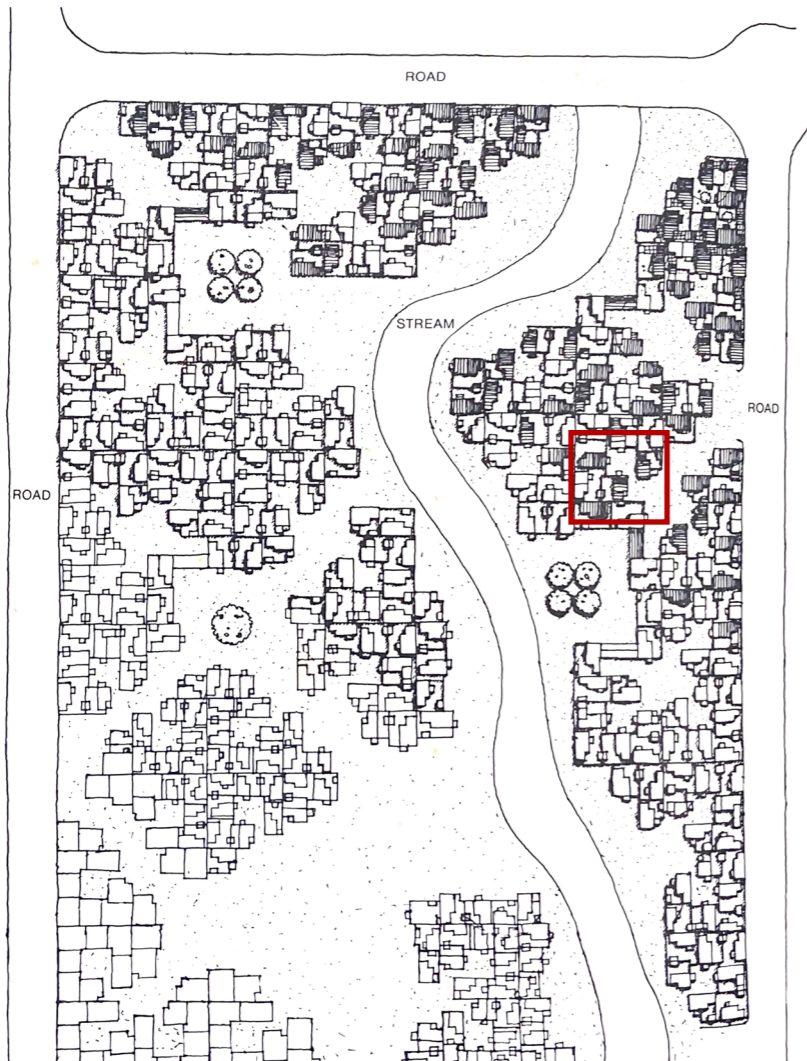




Overview

- Integrate post-war building into the new settlement
- Bridge the gap in the starkly different living arrangement
- Create a balance between public and private open space

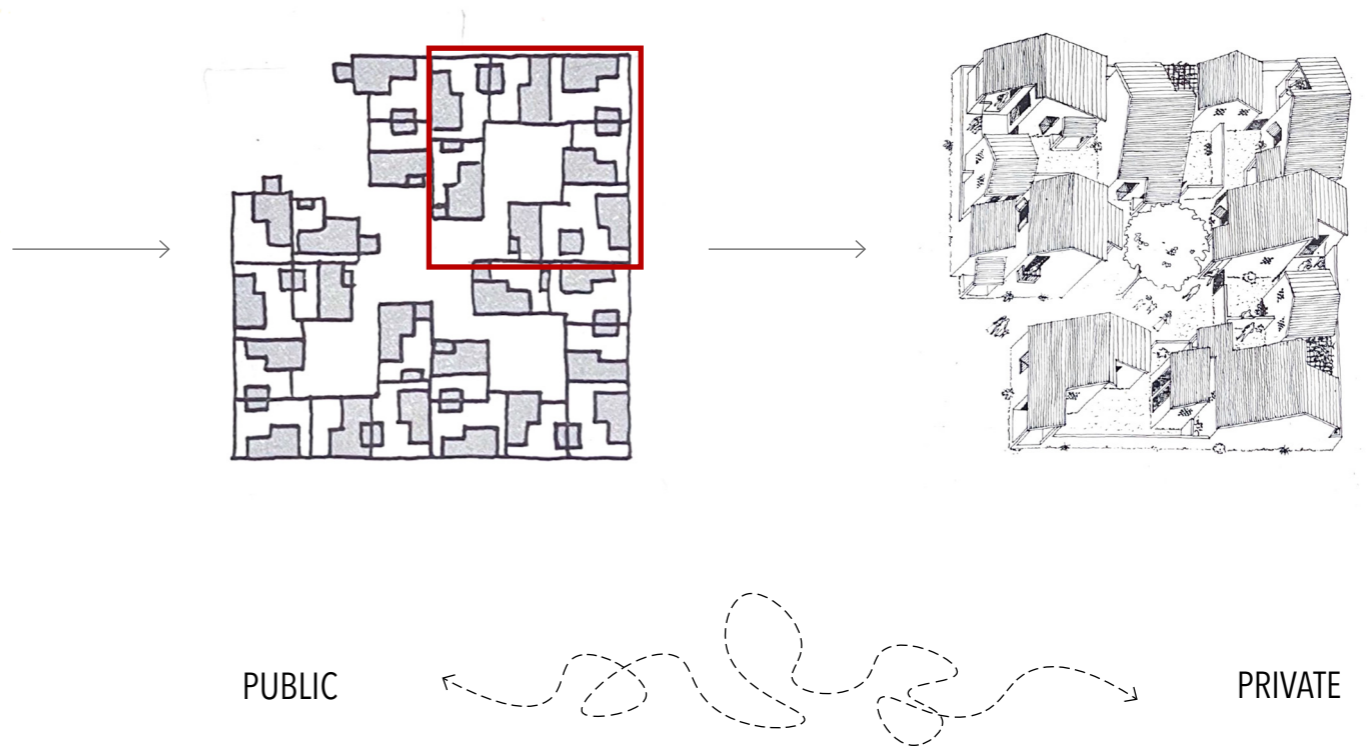




Belapur Housing by Charles Correa (1983)

The hierarchies of space

SOCIETY - the aggregate of people living together in a more or less ordered community.

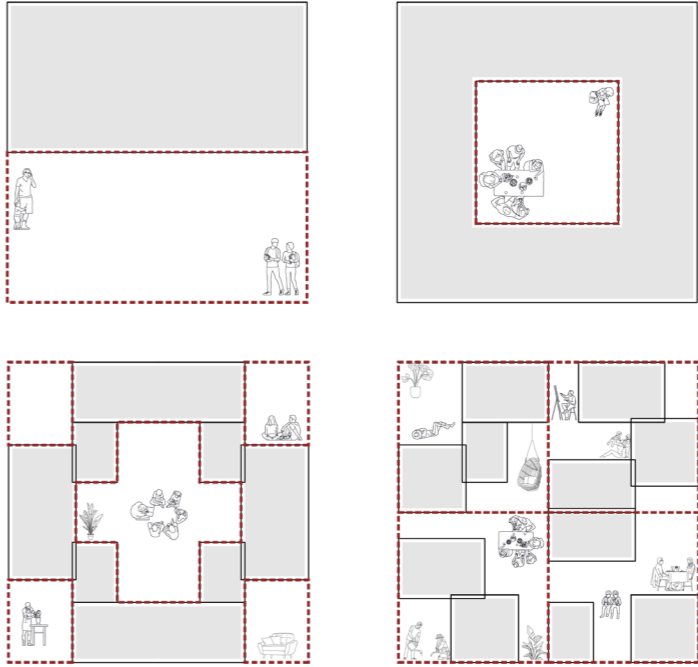




Concept sketches of the Amsterdam Orphanage by Aldo van Eyck (1960)



Small interior plaza in the PREVI Housing Project, Lima (1969)

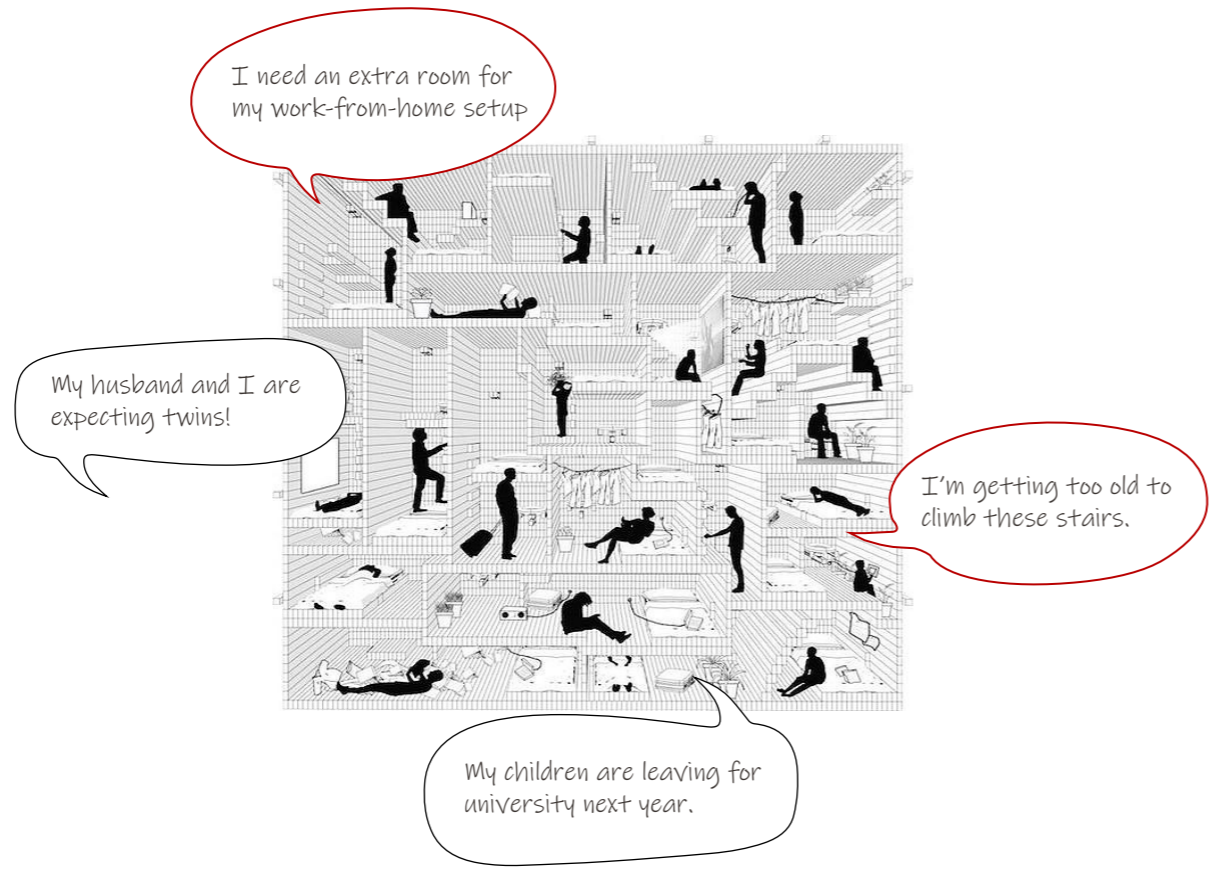


the HUMAN SCALE, the MEDIATOR, the ZONE OF TRANSIENCE



The 'in-between'

Transience of society



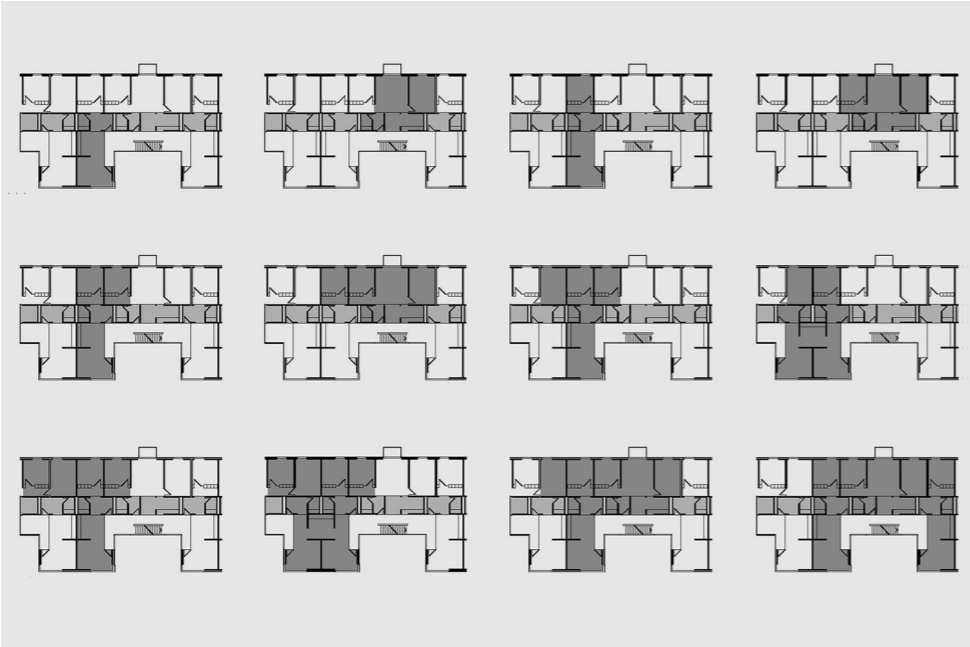
2005



2021

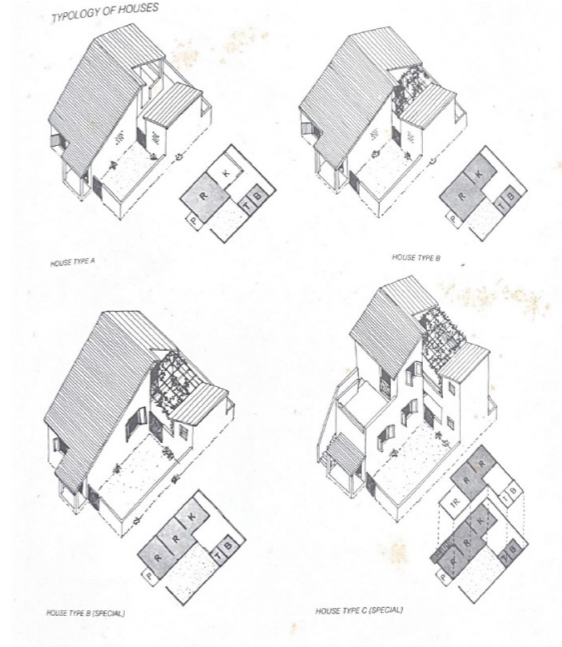
Permanence of the built environment resists change

Incremental through re-arrangement



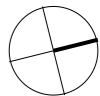
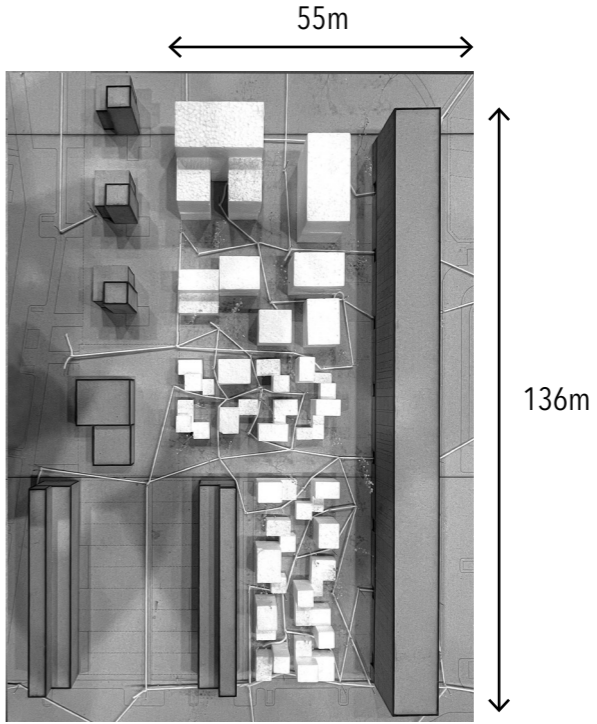
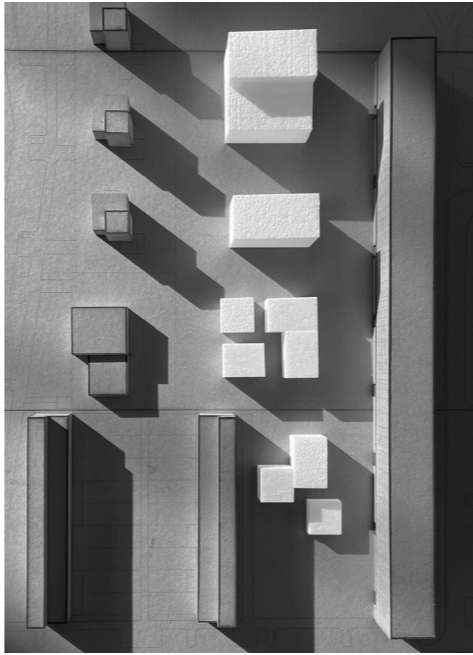
Siedlung Hellmutstrasse / A.D.P. Architektur und Planung
Switzerland 1985

Incremental through construction



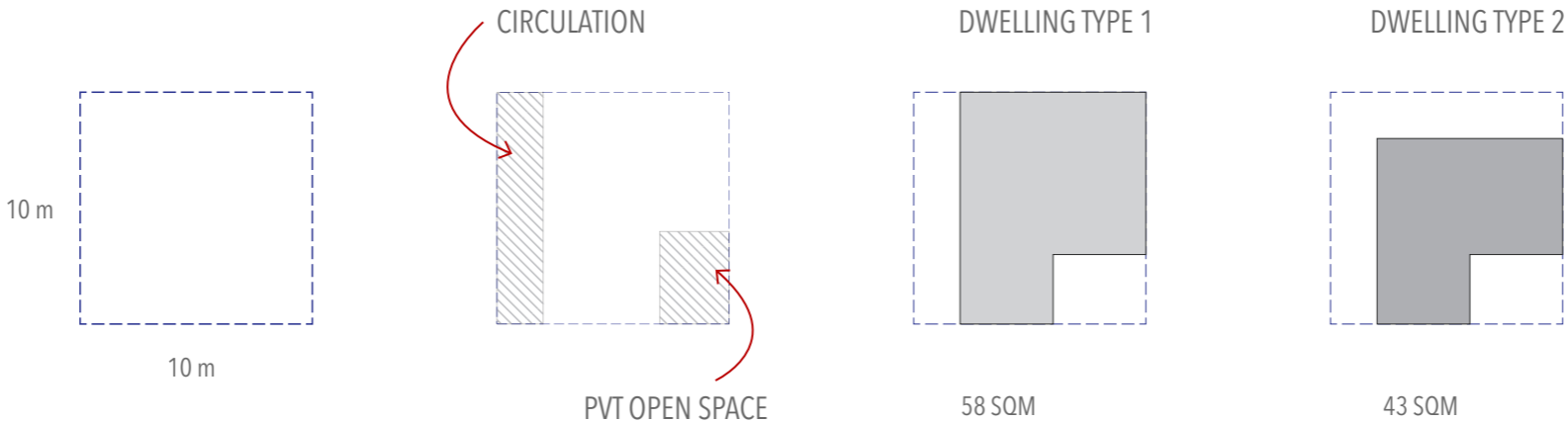
Belapur Low-cost Housing / Charles Correa
Navi Mumbai 1983

A balance of scales?



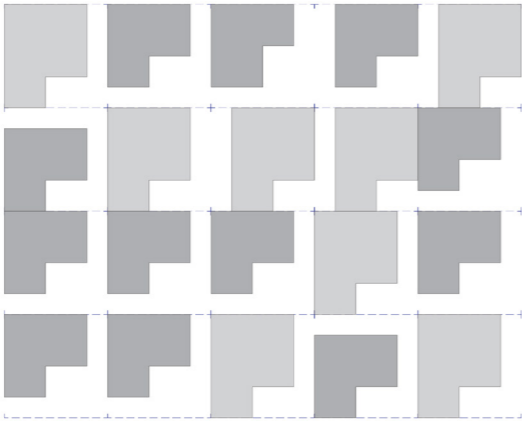
Design Aims

- can be inserted into any **existing urban residential neighbourhoods**
- **scalable** from a cluster of units to a large-scale development
- **multiplicity** & ease replicating

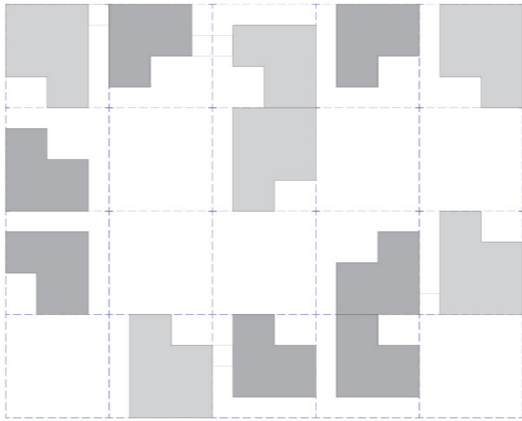


Design Aims

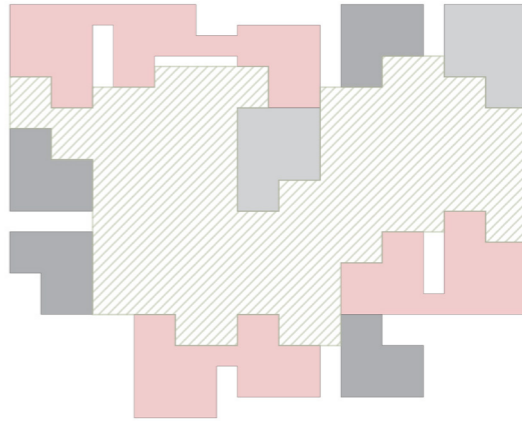
- various scales of **private to public open spaces**
- **variation** in housing typologies to cater to a wide range of people
- **adaptability** for future growth



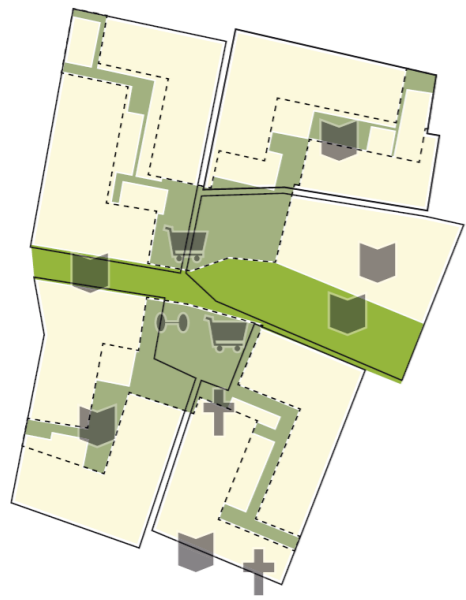
DENSIFY- QUANTITY



DENSIFY WITH QUALITY



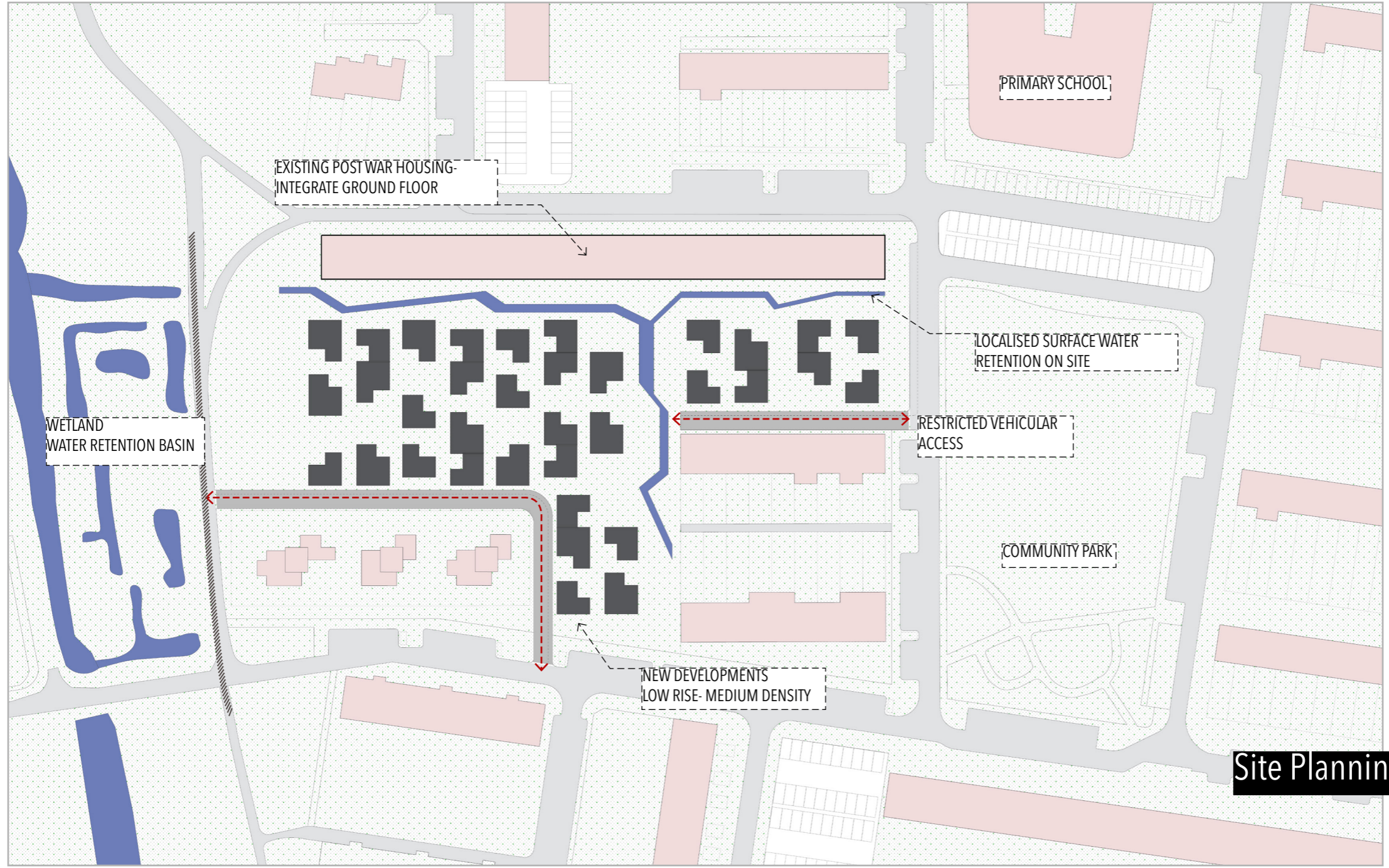
A HOUSE FOR EVERYONE



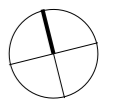
WESTWIJK TODAY

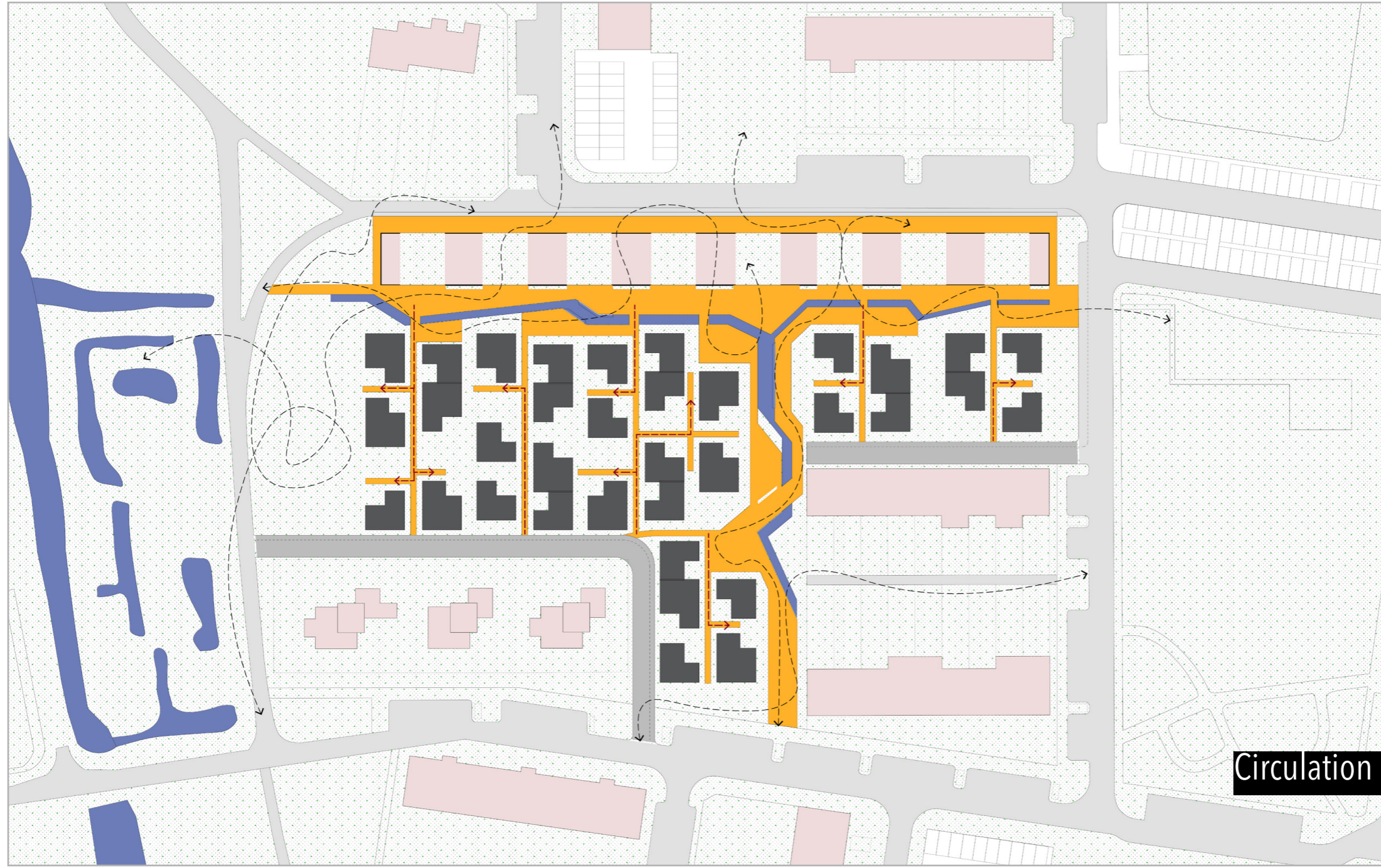


FUTURE OF WESTWIJK



Site Planning

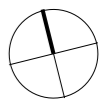




Public 

Residents 

Circulation

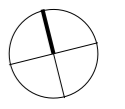


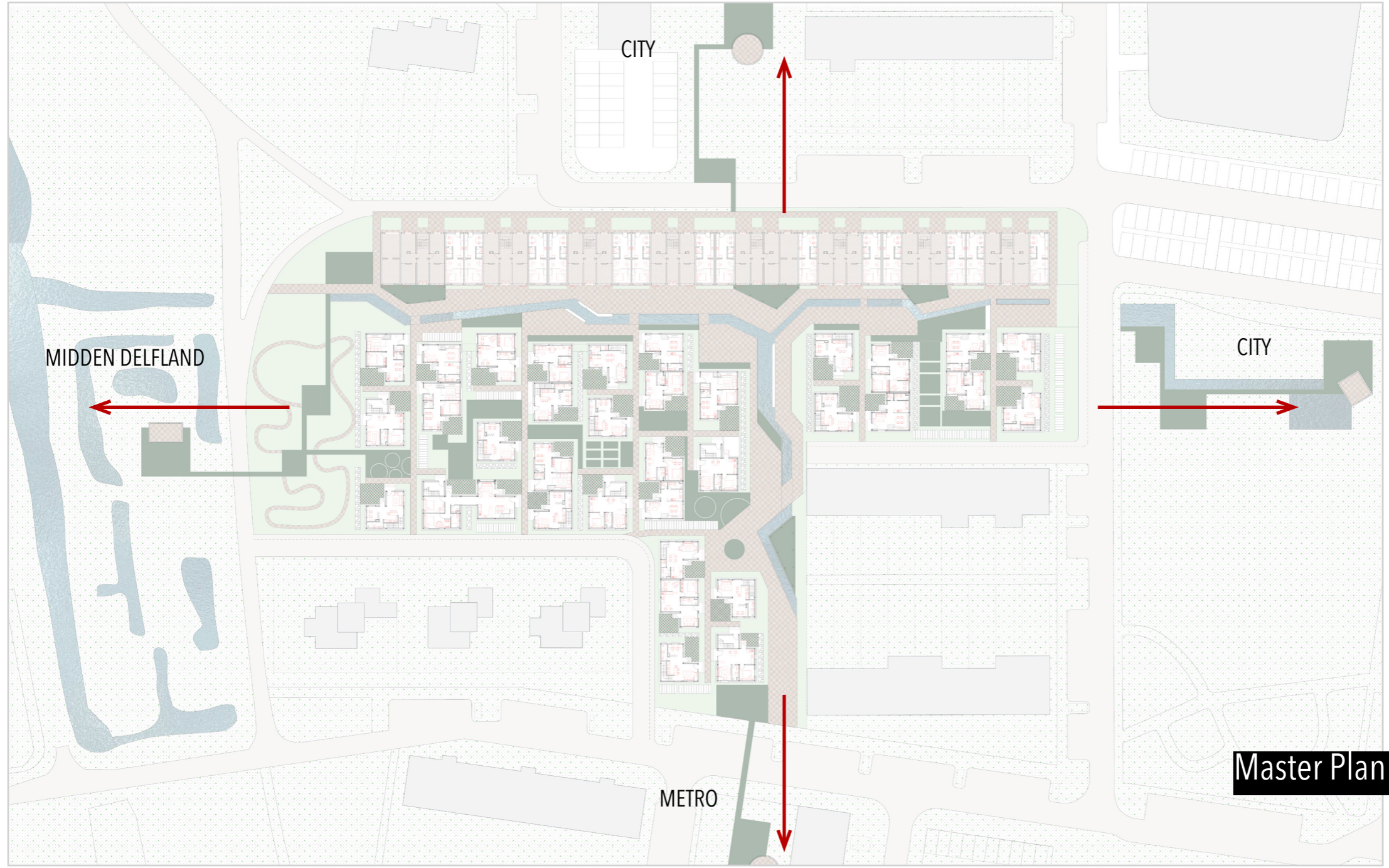


55 dwelling units

Re-Densifying Westwijk

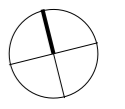
Master Plan

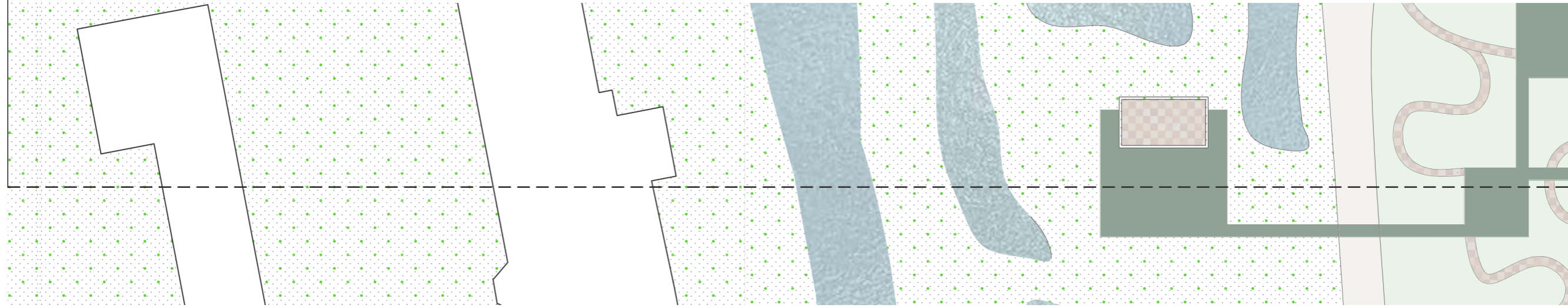


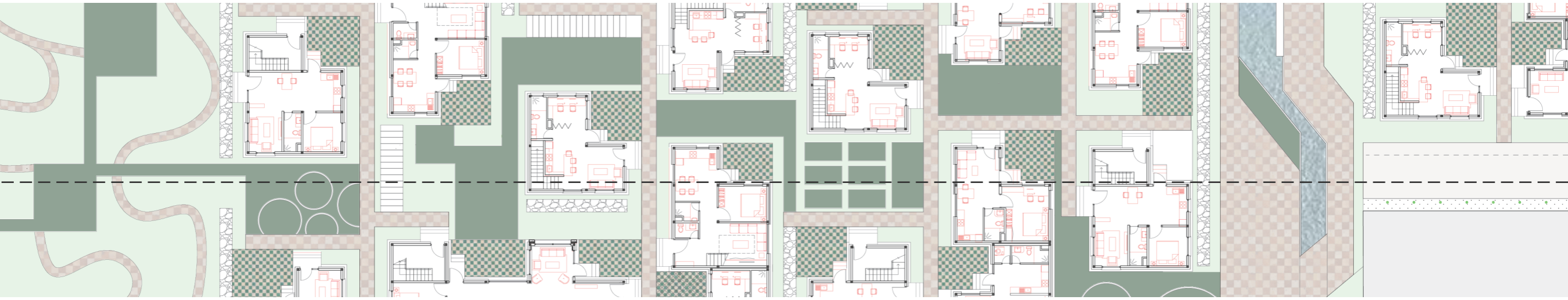


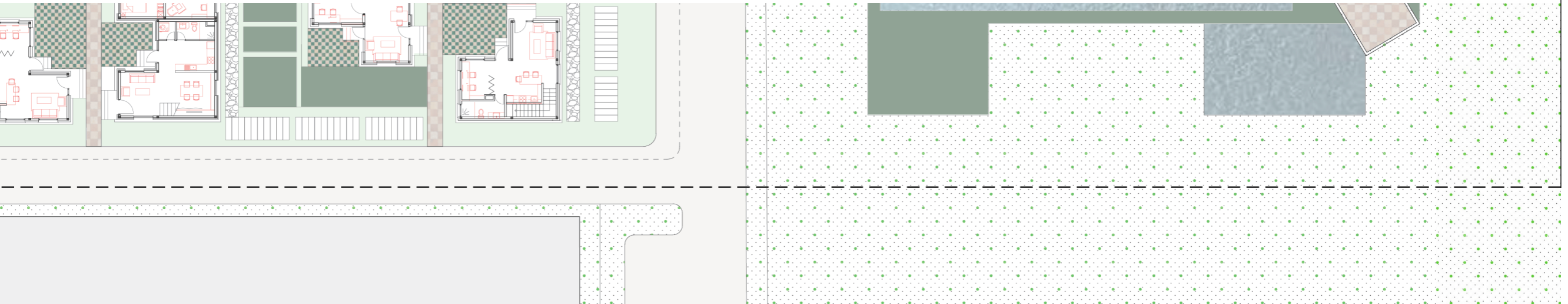
Re-Densifying Westwijk

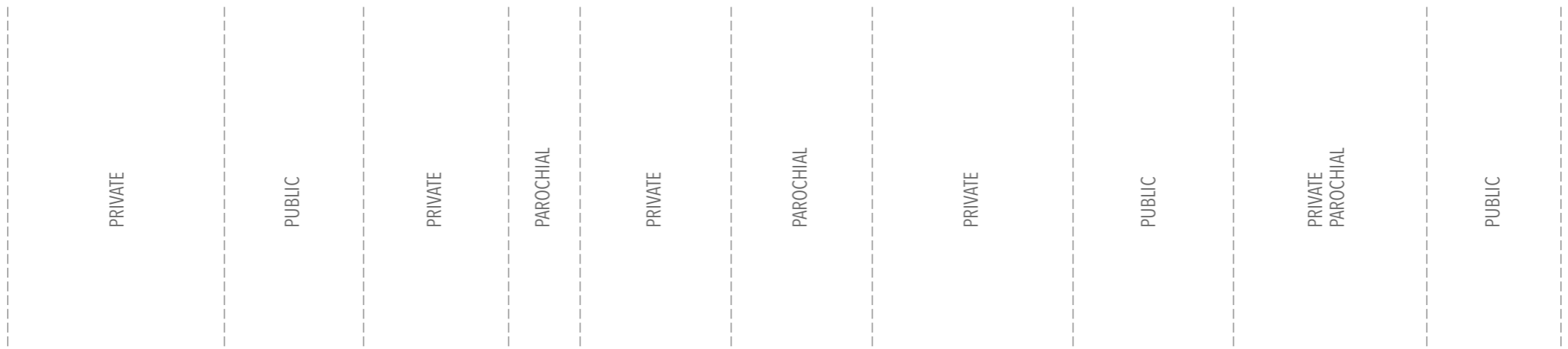
Master Plan











PRIVATE

PUBLIC

PRIVATE

PAROCHIAL

PRIVATE

PAROCHIAL

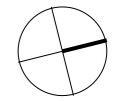
PRIVATE

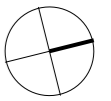
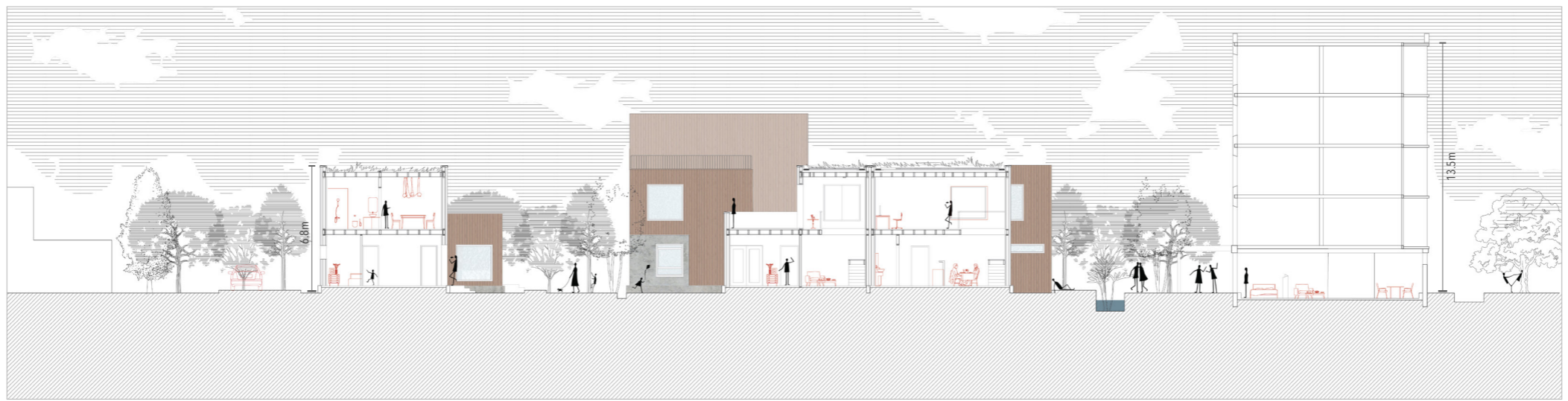
PUBLIC

PRIVATE
PAROCHIAL

PUBLIC

Spatial Transitions







PAROCHIAL



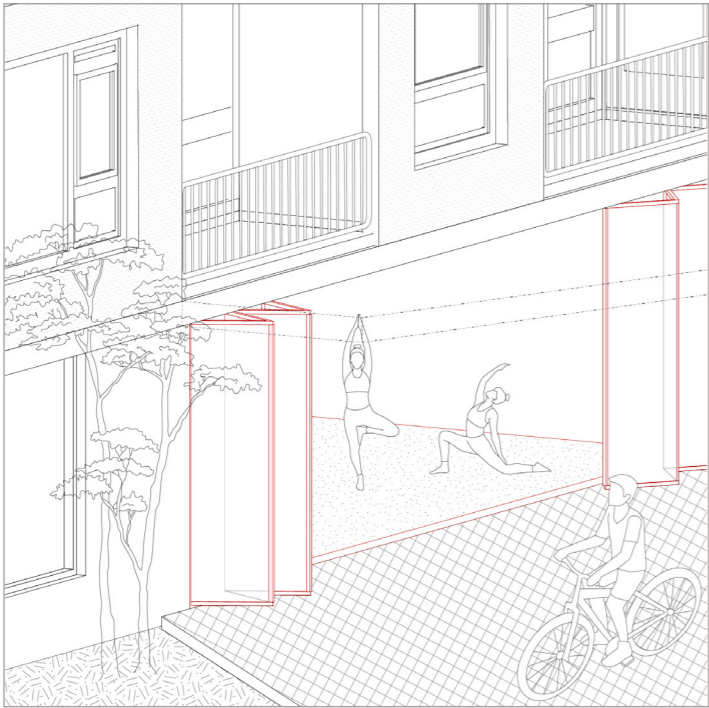
PUBLIC

PAROCHIAL

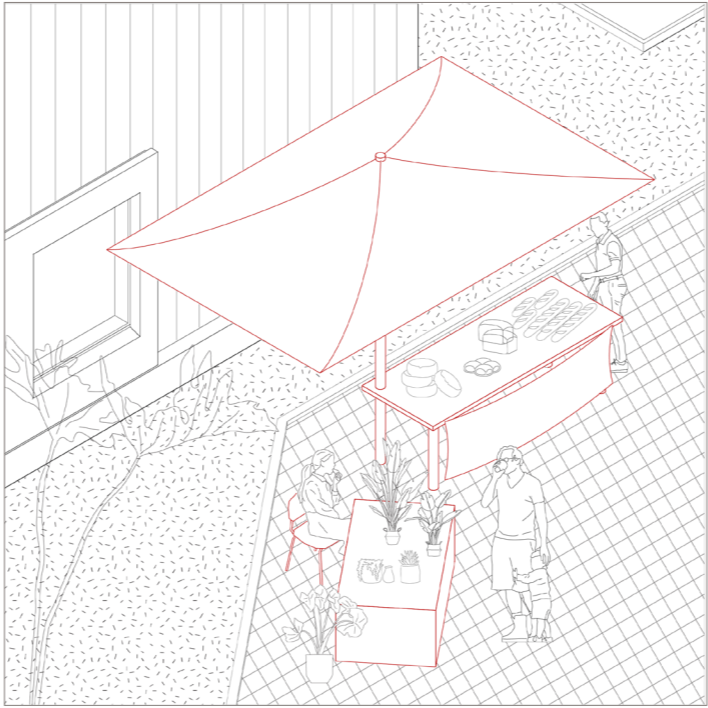


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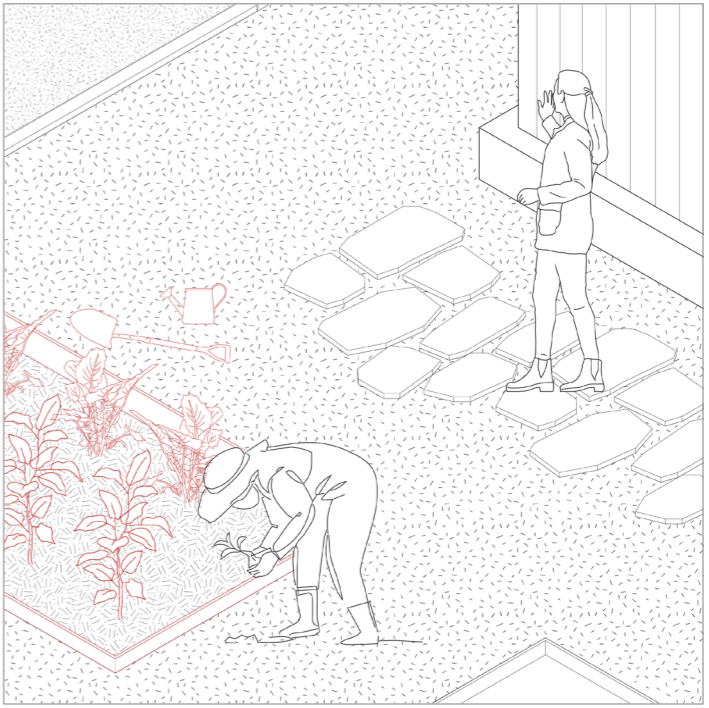




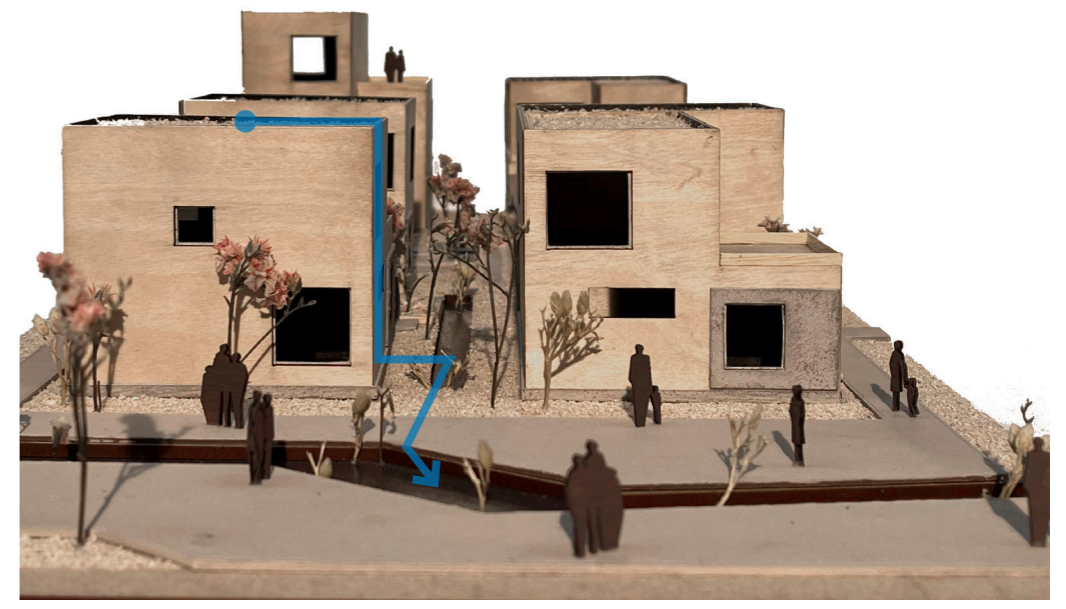
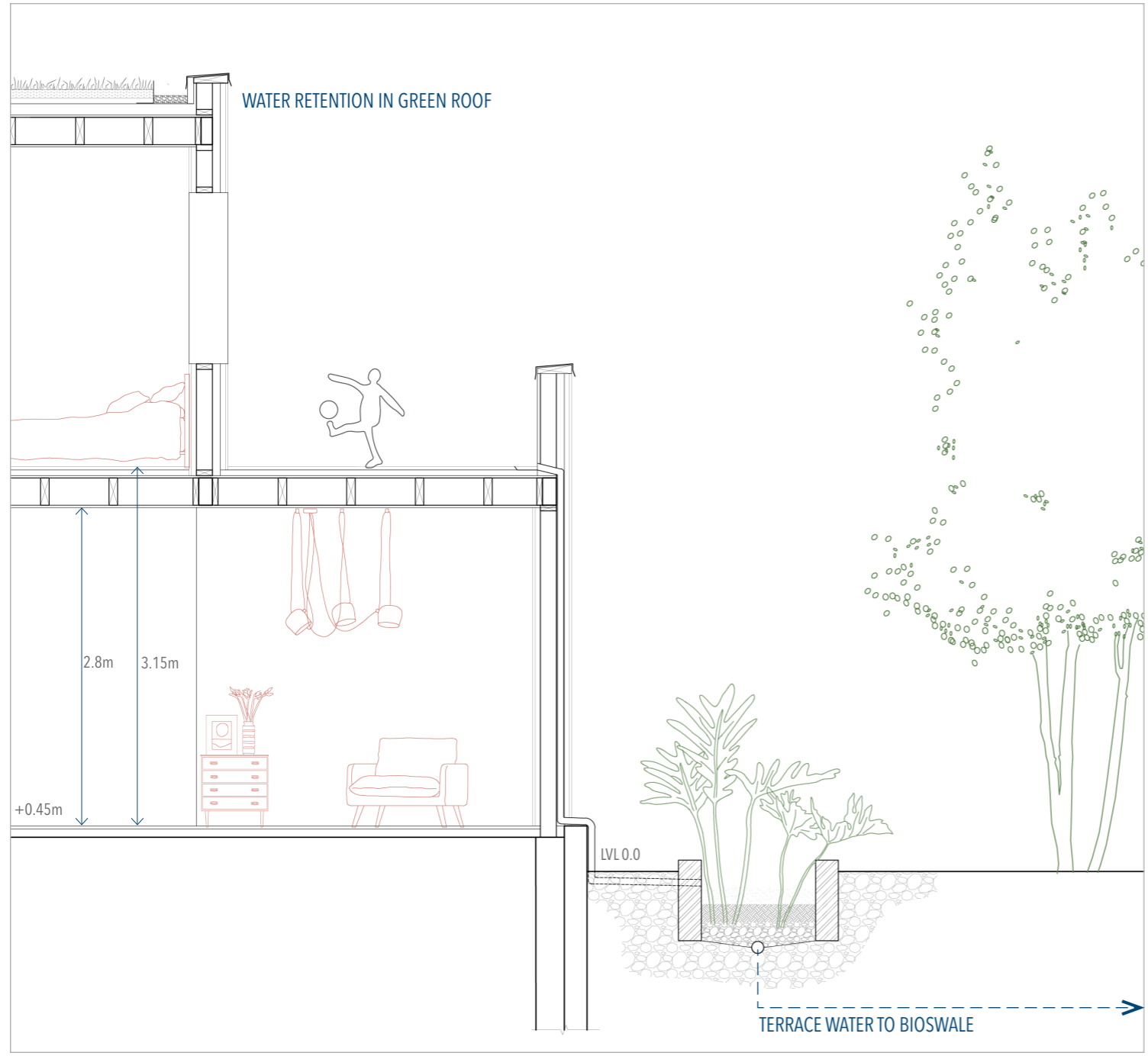
Workshop spaces, creative studios, common kitchen, laundry facilities



Public plaza, local market pop-ups, canopied pavillions

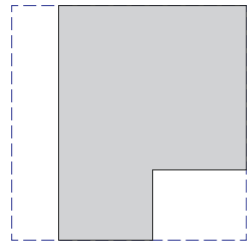


Community farming, water storage and welcoming biodiversity

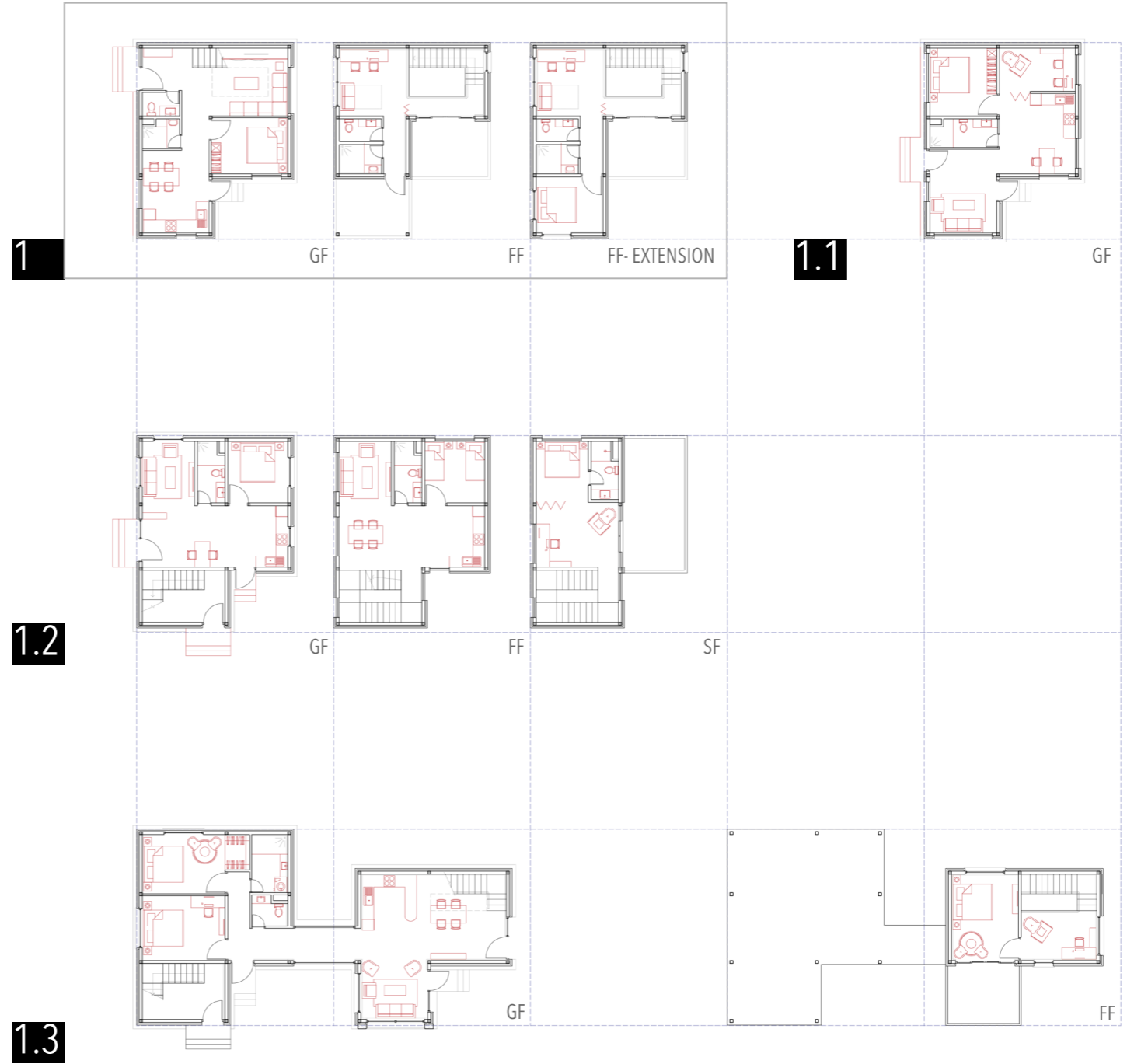


OVERFLOW TO CENTRAL 'WADI'

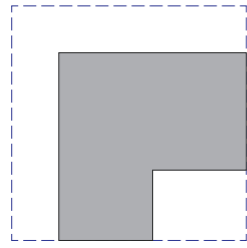
Type 1 & Variations



58 SQM

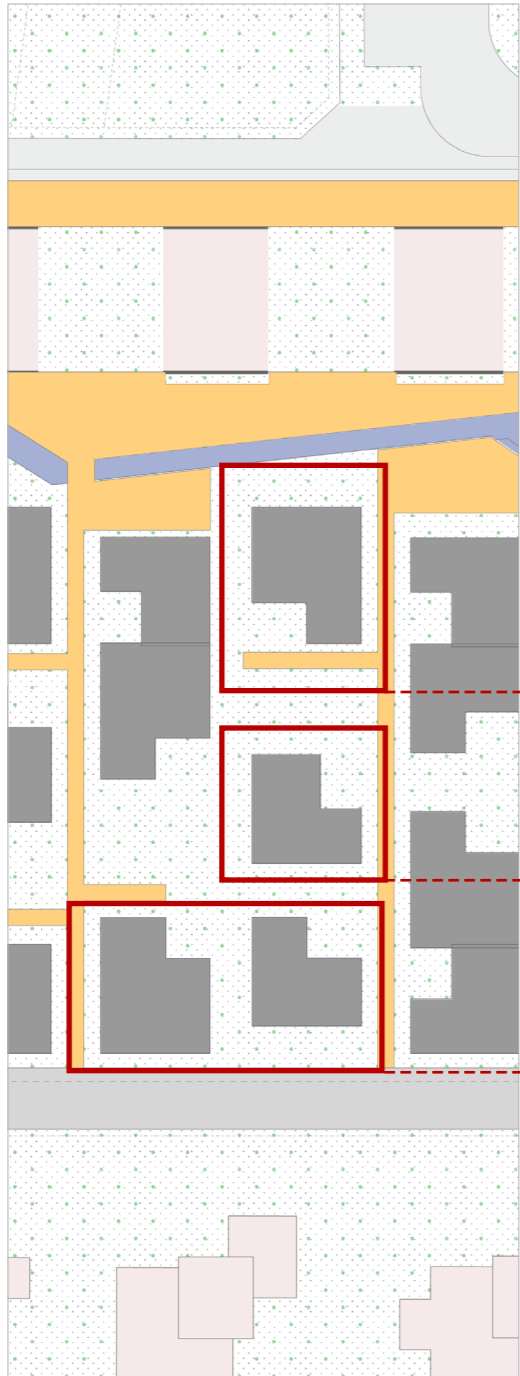


Type 2 & Variations



43 SQM





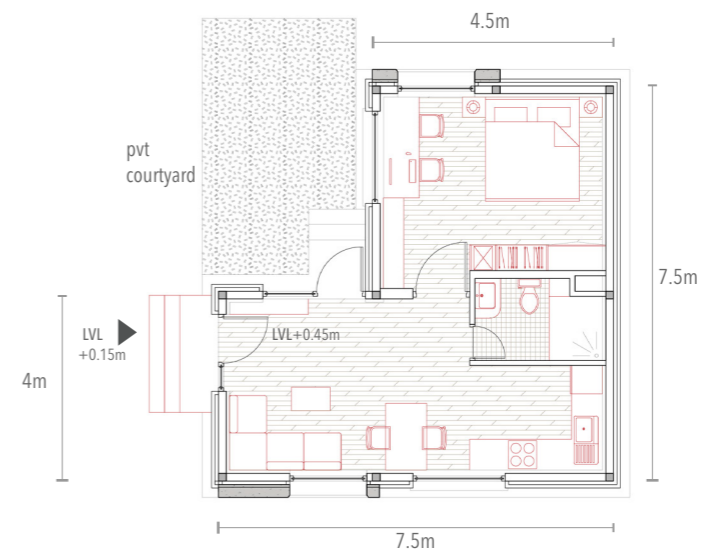
Type 2

Type 1.1

Type 2.3

Type 1.1 | built 43sqm | unbuilt 10sqm

Studio
appropriate for singles, couples, elderly



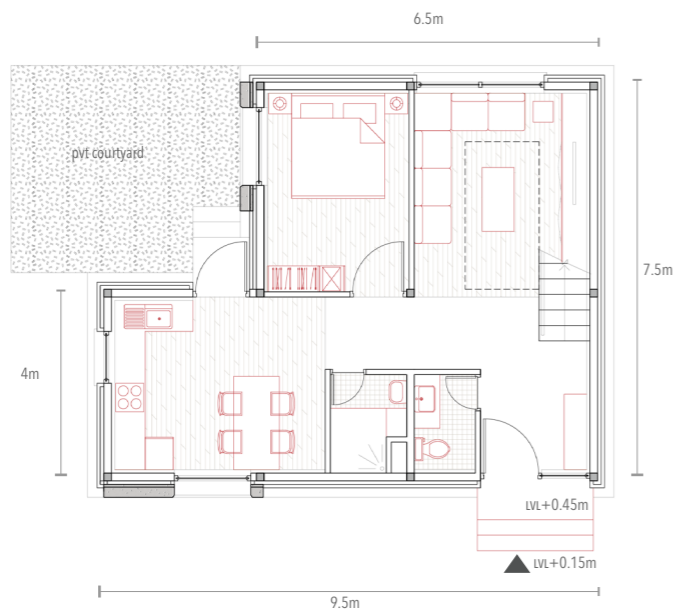
GF

Type 2

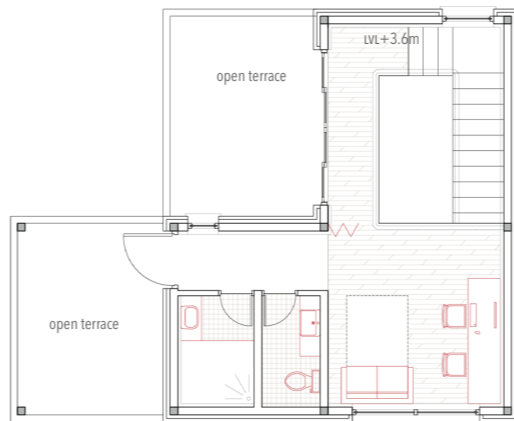
built 90sqm → 110sqm | unbuilt 25 sqm

Townhouse

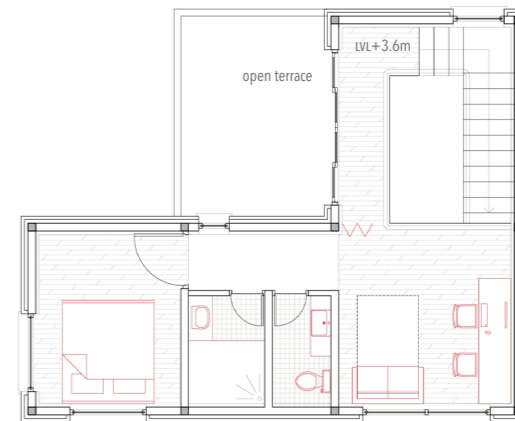
appropriate for couples, small families, elderly with need for care



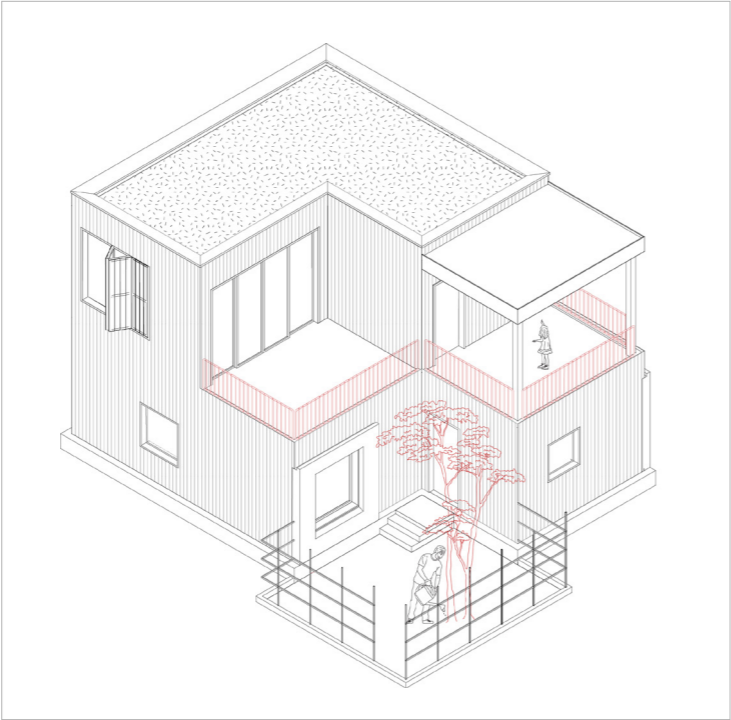
GF



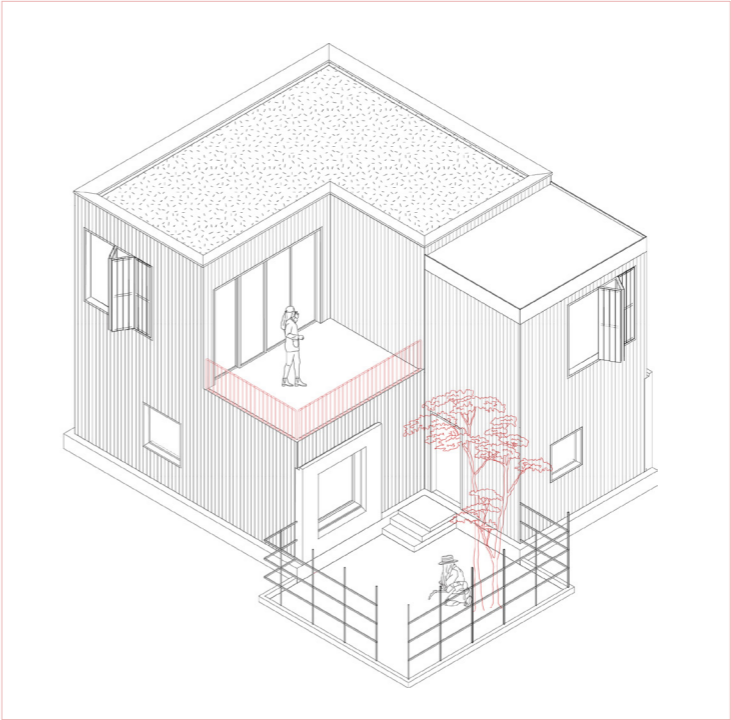
FF



FF- EXTENSION



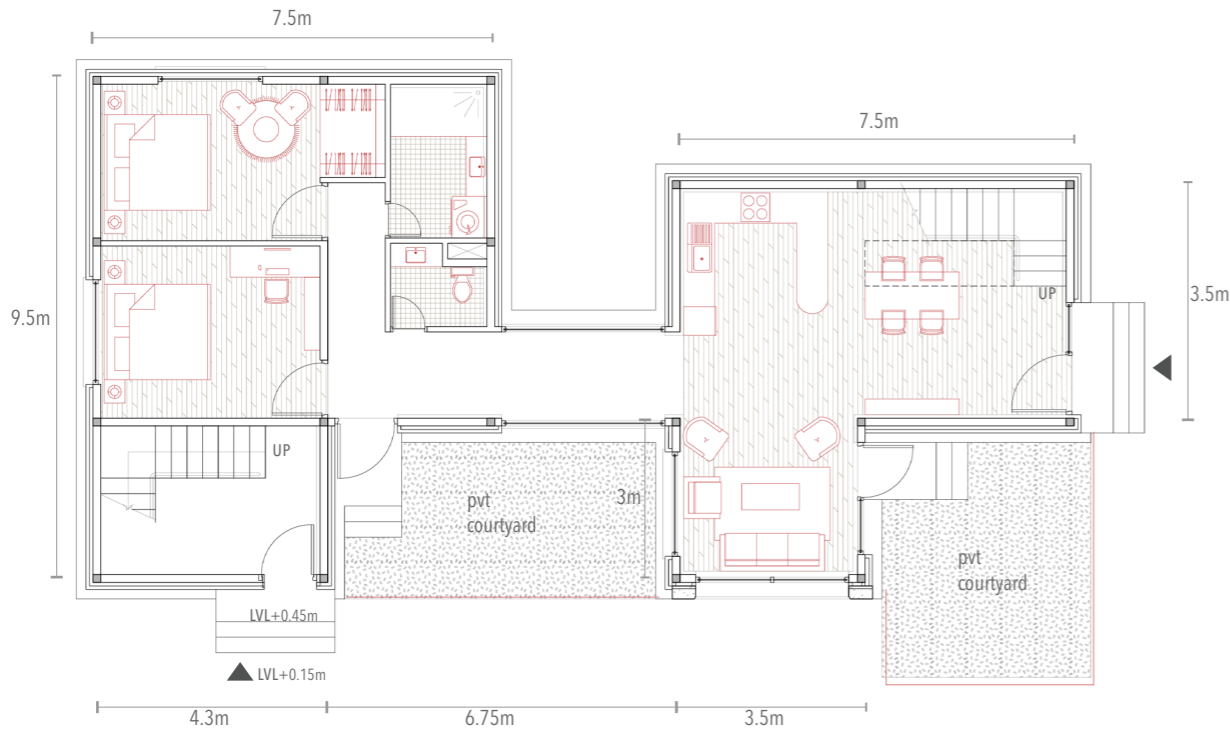
PHASE 1



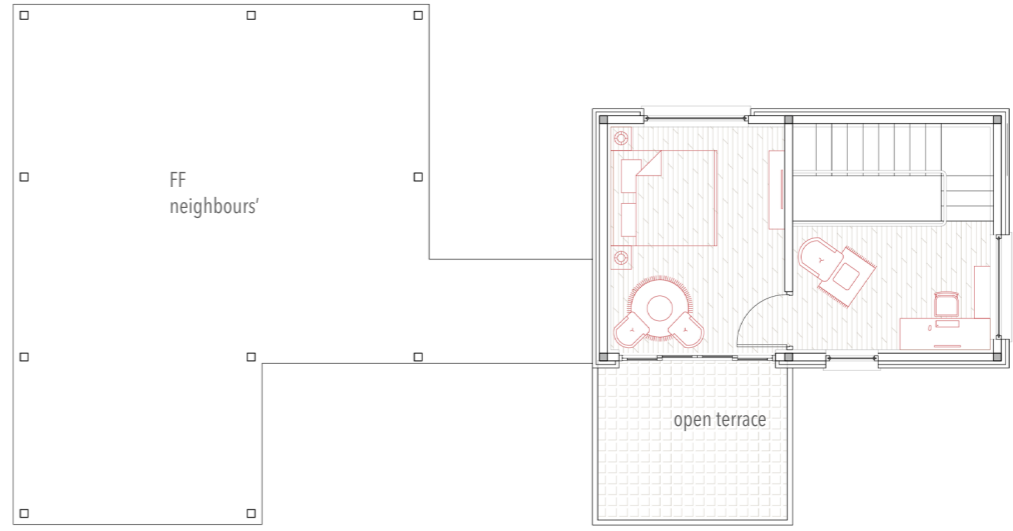
POSSIBLE GROWTH

Type 2.3 | built 130sqm | unbuilt 30 sqm

Townhouse- combined
appropriate families, house sharing



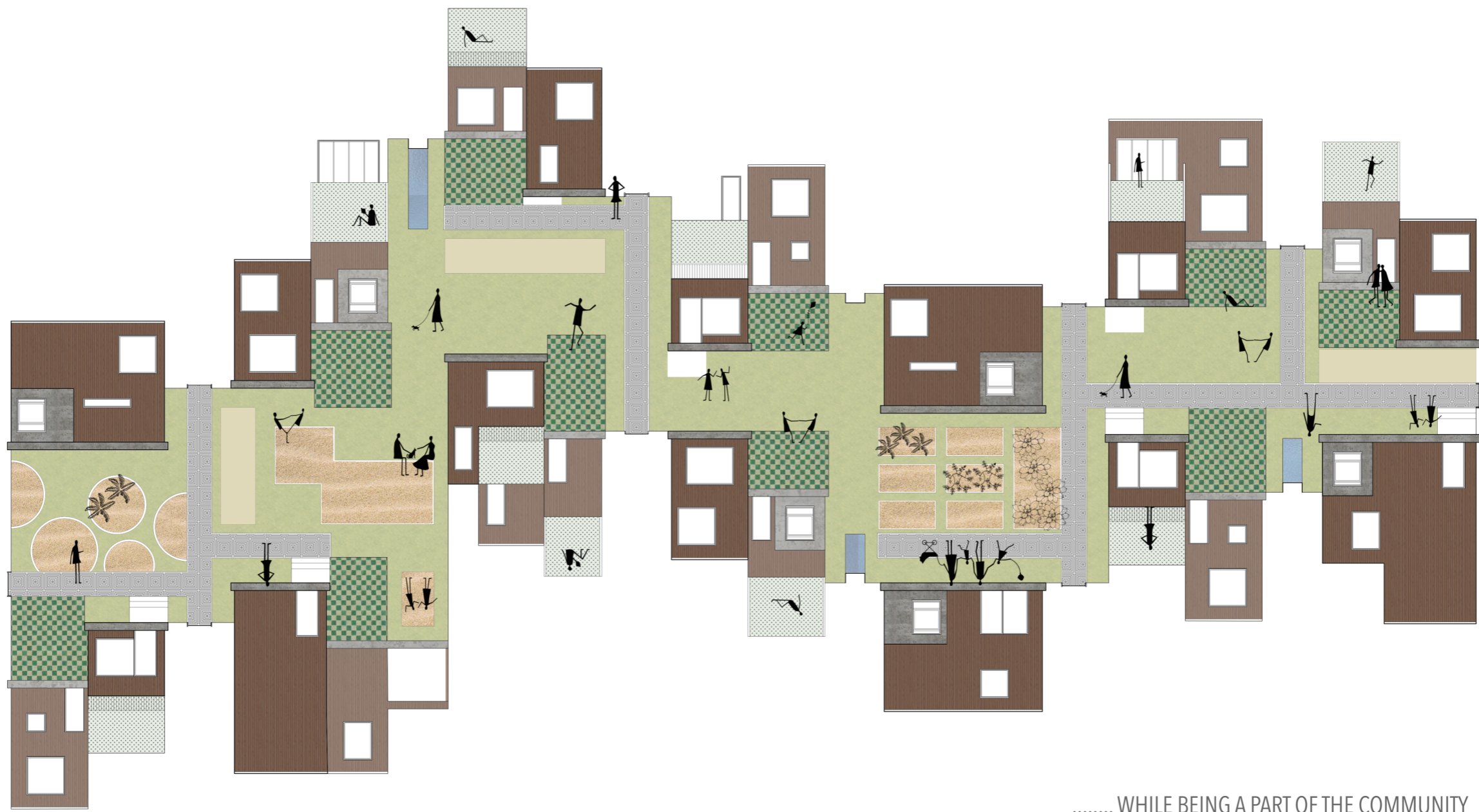
GF



FF

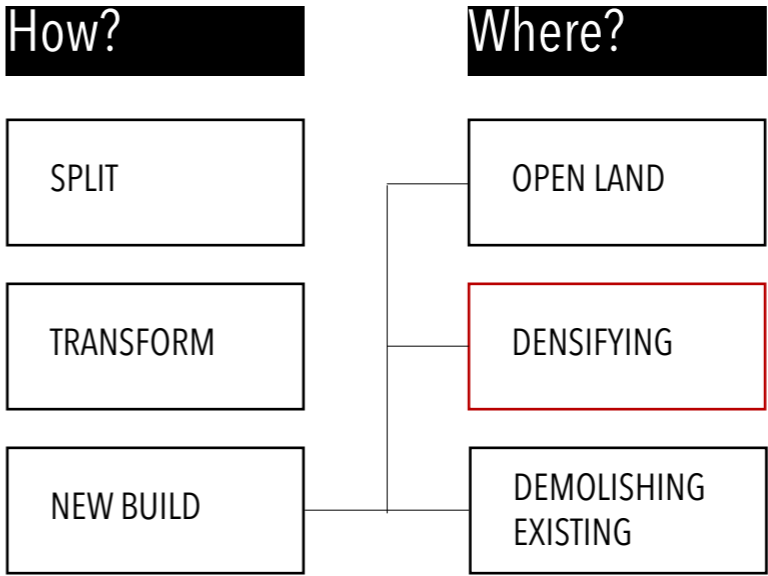


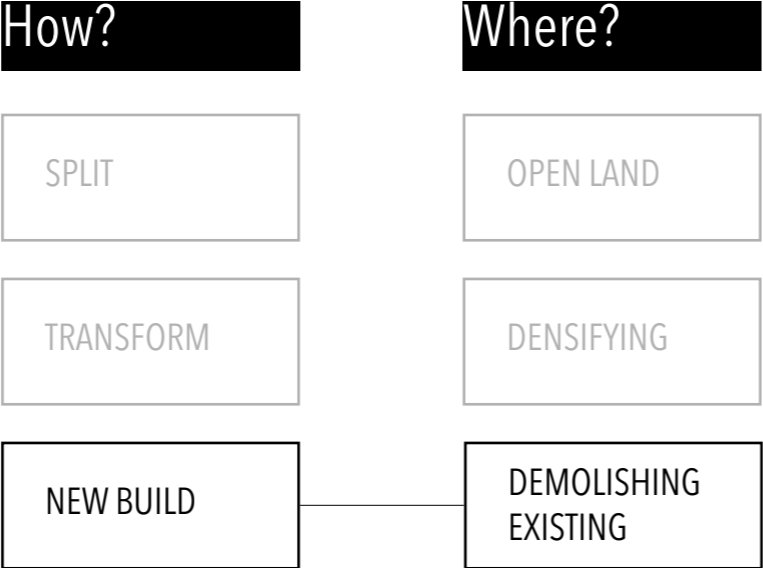
DEFINE YOUR OWN THRESHOLD.....



..... WHILE BEING A PART OF THE COMMUNITY

" 1 million homes by 2030! "





" An estimated 189 thousand homes will disappear due to demolition. "
-Ministry of the Interior and Kingdom Relations

How?

SPLIT

TRANSFORM

NEW BUILD

Where?

OPEN LAND

DENSIFYING

DEMOLISHING EXISTING

WHERE WILL THE WASTE GO?

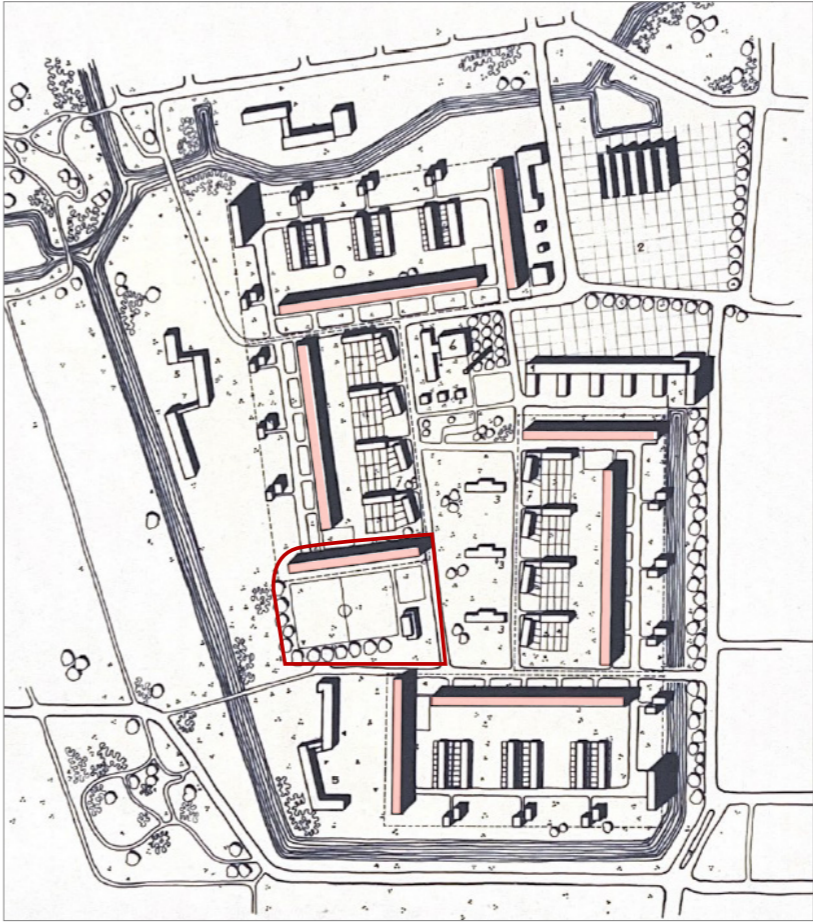
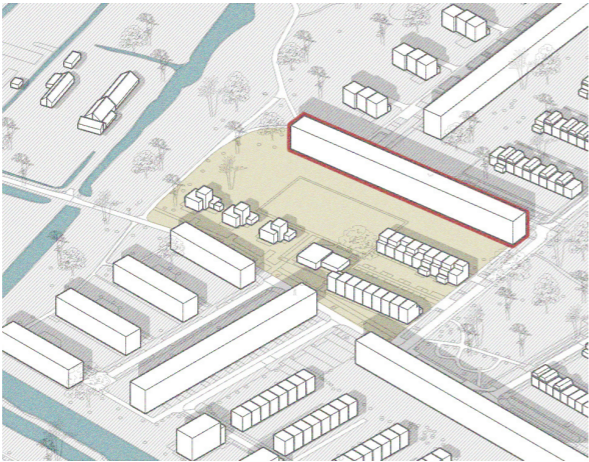
WHY CAN'T THEY BE RENOVATED?



Dura- Coignet

& the System-Construction revolution

A total of 31,000 homes were constructed in the Netherlands in the period between 1959 to 1975.





VISUALISATION BY DURA-VERMEER
1950s/60s

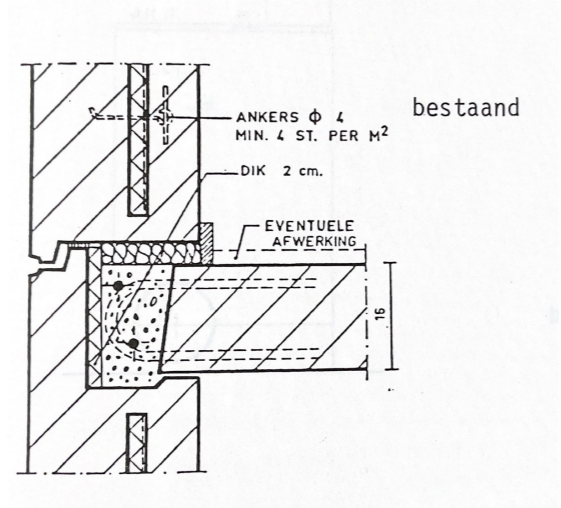


AS SEEN TODAY
2024

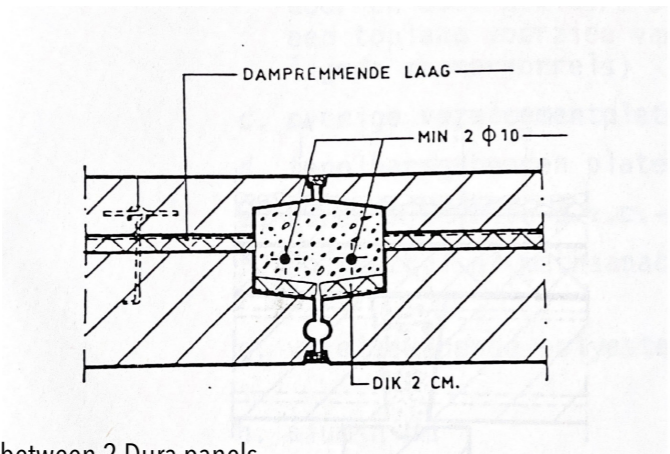


Dura-Cignet Factory in Heijplaat, Rotterdam





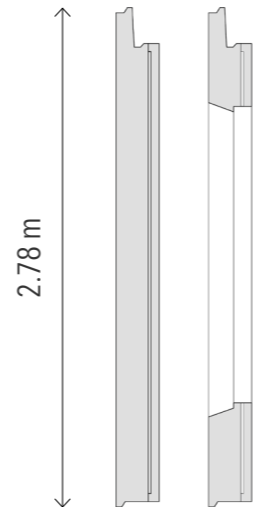
Dura panel to floor slab connection



Connection between 2 Dura panels

Dura- Coignet

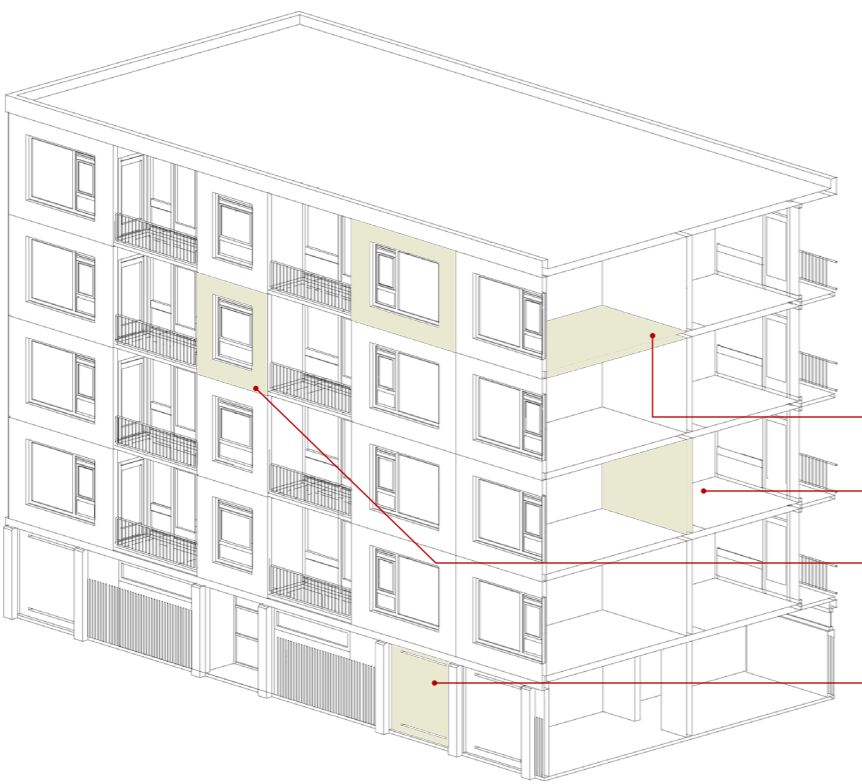
Composition & Connections



15mm polystyrene insulation sandwiched between 2 precast concrete layers

Dura- Coignet

Material Recovery



Floor slabs 20mm thick

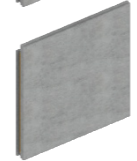
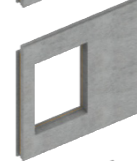
Internal structural wall panels 20mm

Facade panels (external structural walls) 25 mm thick

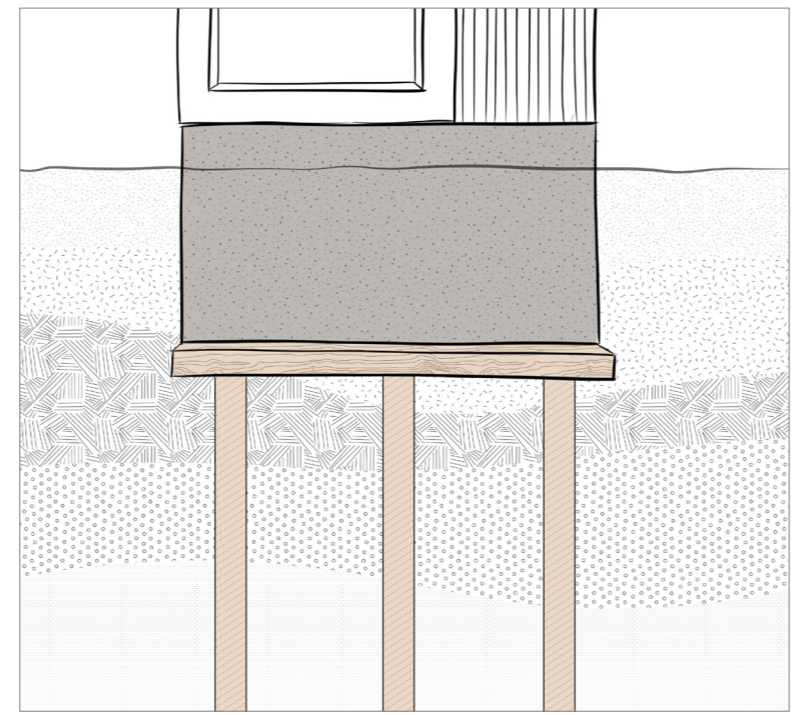
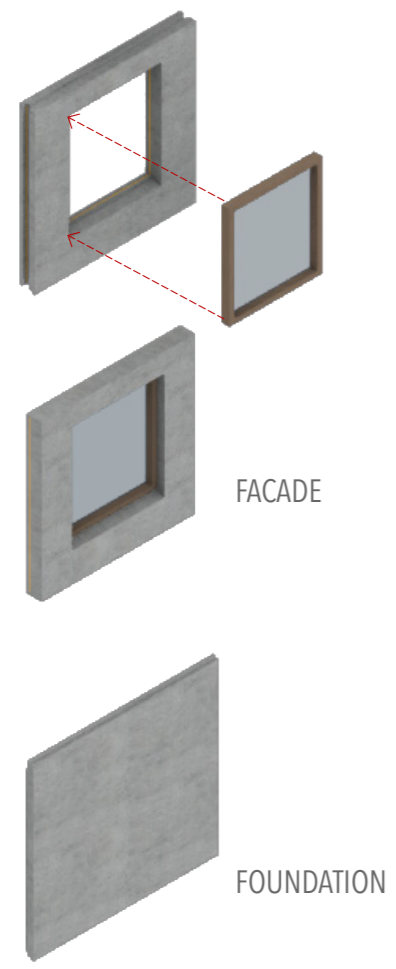
Structural Elements- Ground floor base



128 railings per building



184 exterior facade panels per building



SUB-STRUCTURE

Dura- Coignet

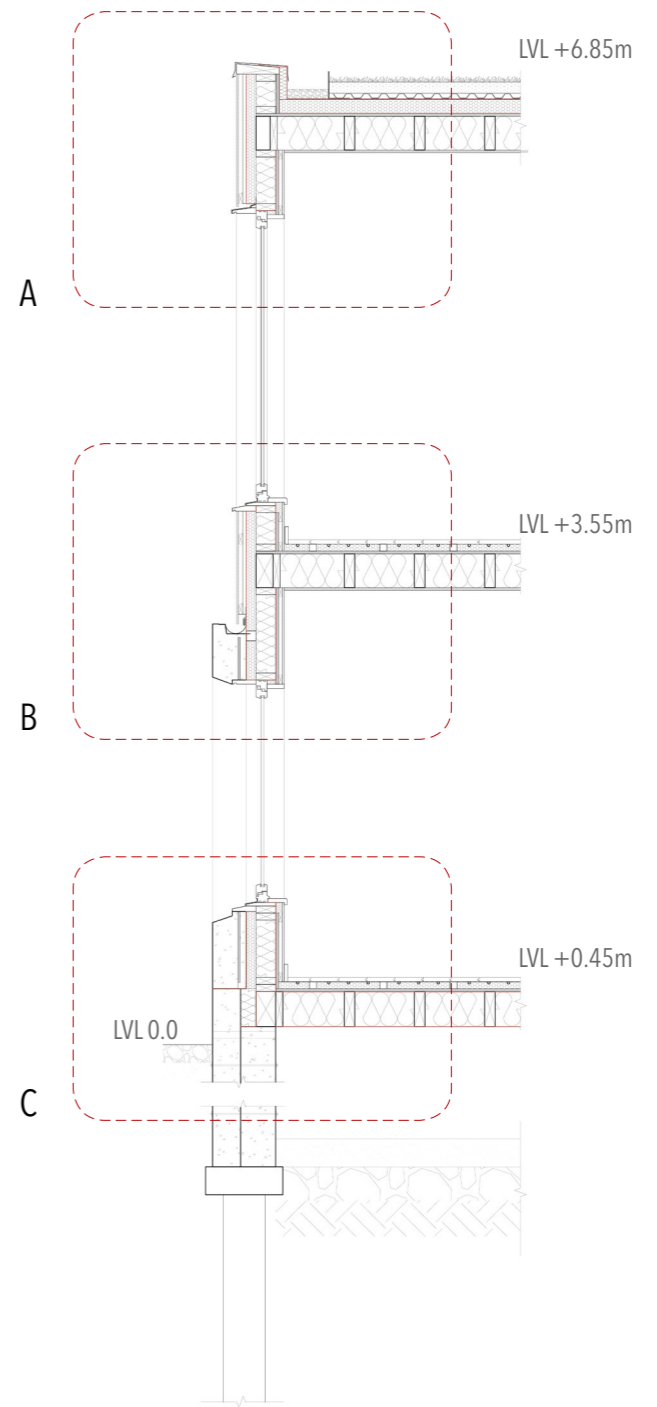
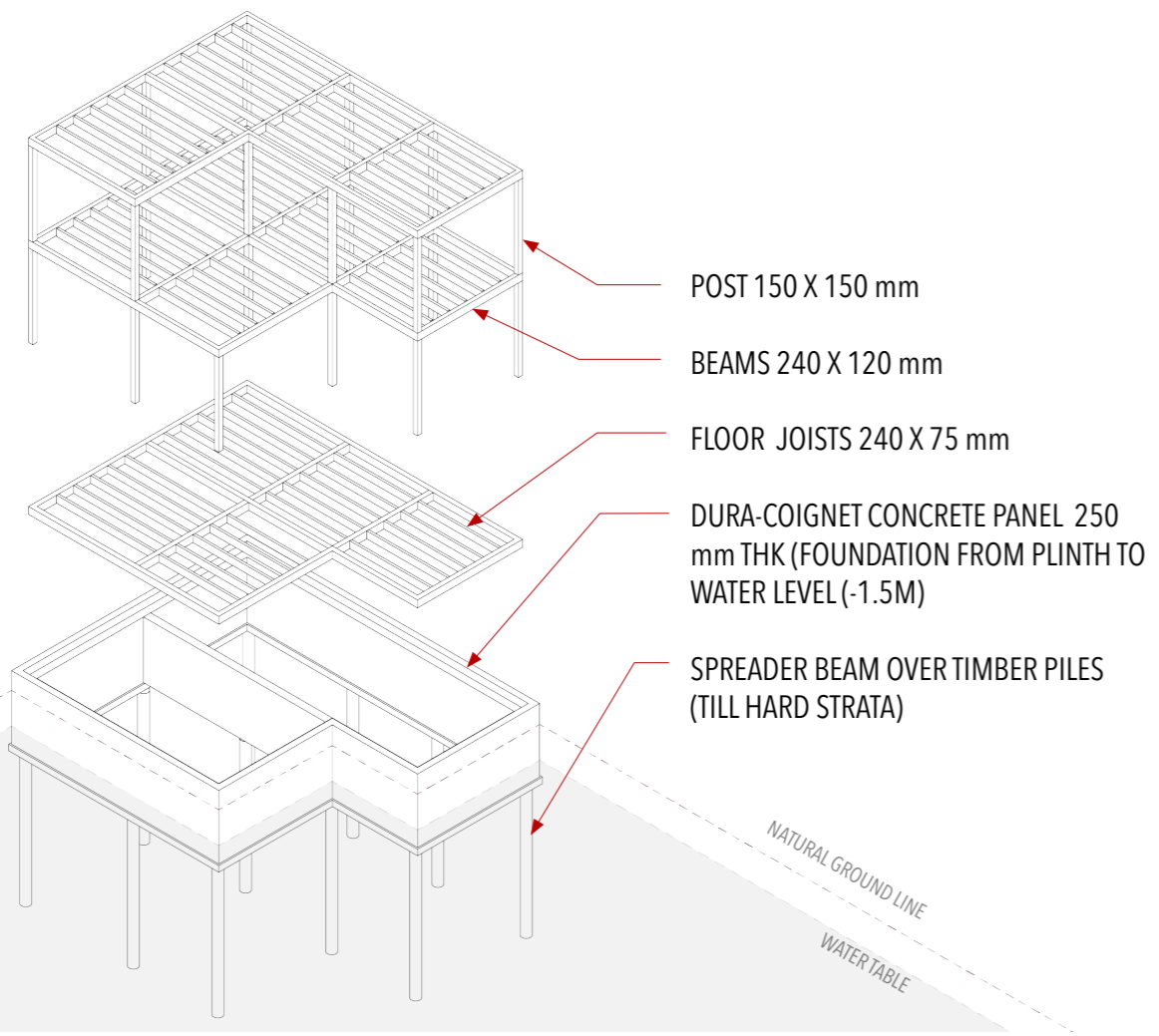
A new life



SUPER-STRUCTURE

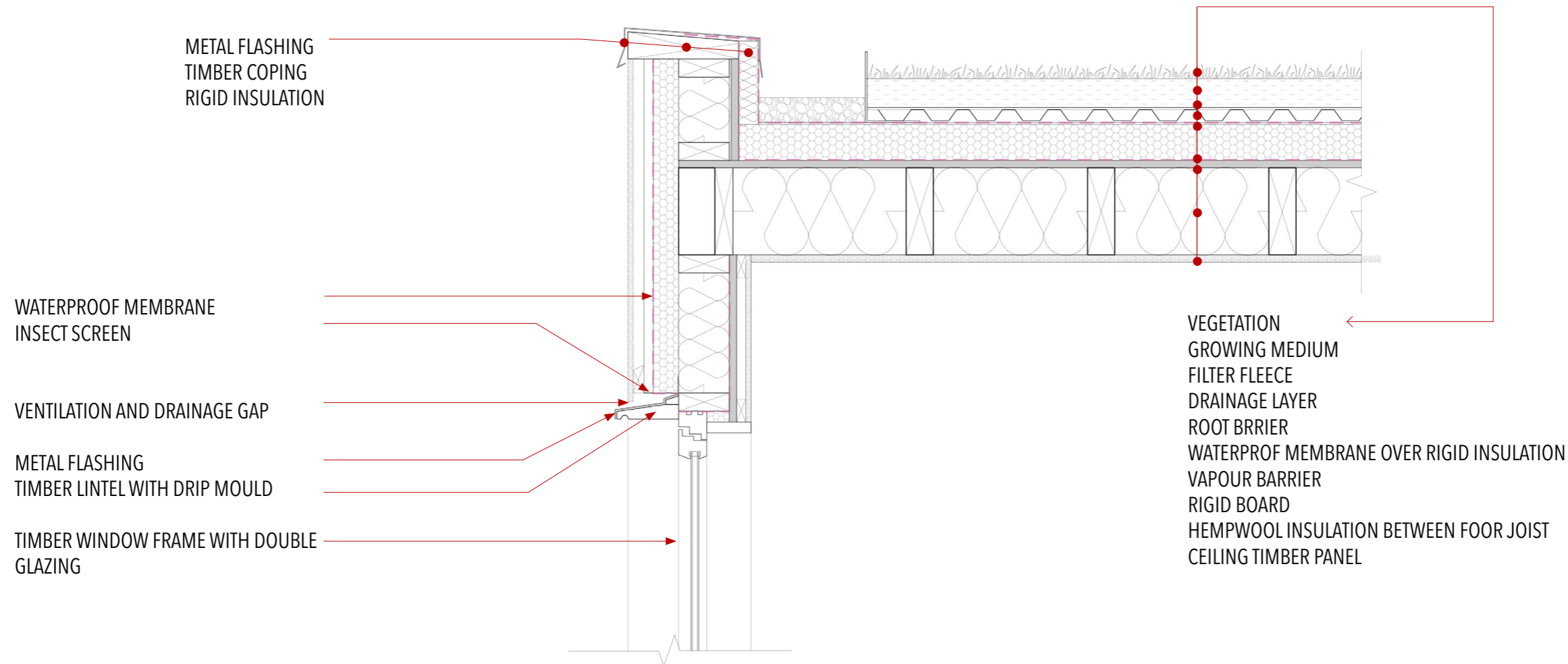
Structural skeleton

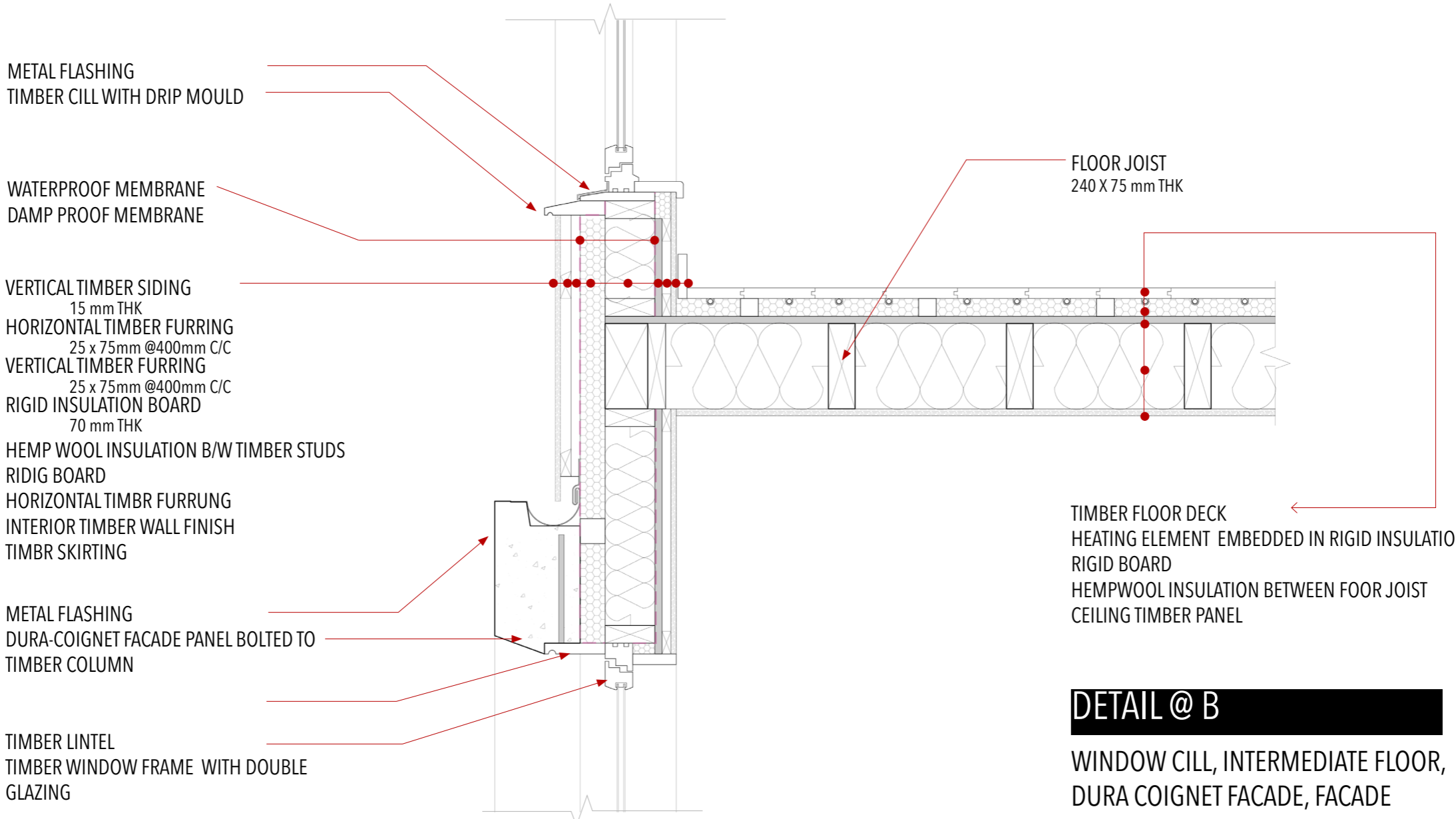
SUPER STRUCTURE:
POST-BEAM PLATFORM FRAMING
SUB-STRUCTURE:
REUSED CONCRETE DIAPHRAGM WALL
ON TIMBER PILES



DETAIL @ A

GREEN ROOF WITH PARAPET & WINDOW LINTEL DETAIL





METAL FLASHING
 TIMBER CILL WITH DRIP MOULD

WATERPROOF MEMBRANE
 DAMP PROOF MEMBRANE

VERTICAL TIMBER SIDING
 15 mm THK
 HORIZONTAL TIMBER FURRING
 25 x 75mm @400mm C/C
 VERTICAL TIMBER FURRING
 25 x 75mm @400mm C/C
 RIGID INSULATION BOARD
 70 mm THK

HEMP WOOL INSULATION B/W TIMBER STUDS
 RIDIG BOARD
 HORIZONTAL TIMBR FURRUNG
 INTERIOR TIMBER WALL FINISH
 TIMBR SKIRTING

METAL FLASHING
 DURA-COIGNET FACADE PANEL BOLTED TO
 TIMBER COLUMN

TIMBER LINTEL
 TIMBER WINDOW FRAME WITH DOUBLE
 GLAZING

FLOOR JOIST
 240 X 75 mm THK

TIMBER FLOOR DECK
 HEATING ELEMENT EMBEDDED IN RIGID INSULATION
 RIGID BOARD
 HEMPWOOL INSULATION BETWEEN FOOR JOIST
 CEILING TIMBER PANEL

DETAIL @ B

WINDOW CILL, INTERMEDIATE FLOOR,
 DURA COIGNET FACADE, FACADE
 DETAIL

DETAIL @ C

DURA COIGNET FACADE, PLINTH PROTECTION,
DURA COIGNET FOUNDATION SUPPORT,
GROUND FLOOR DETAIL

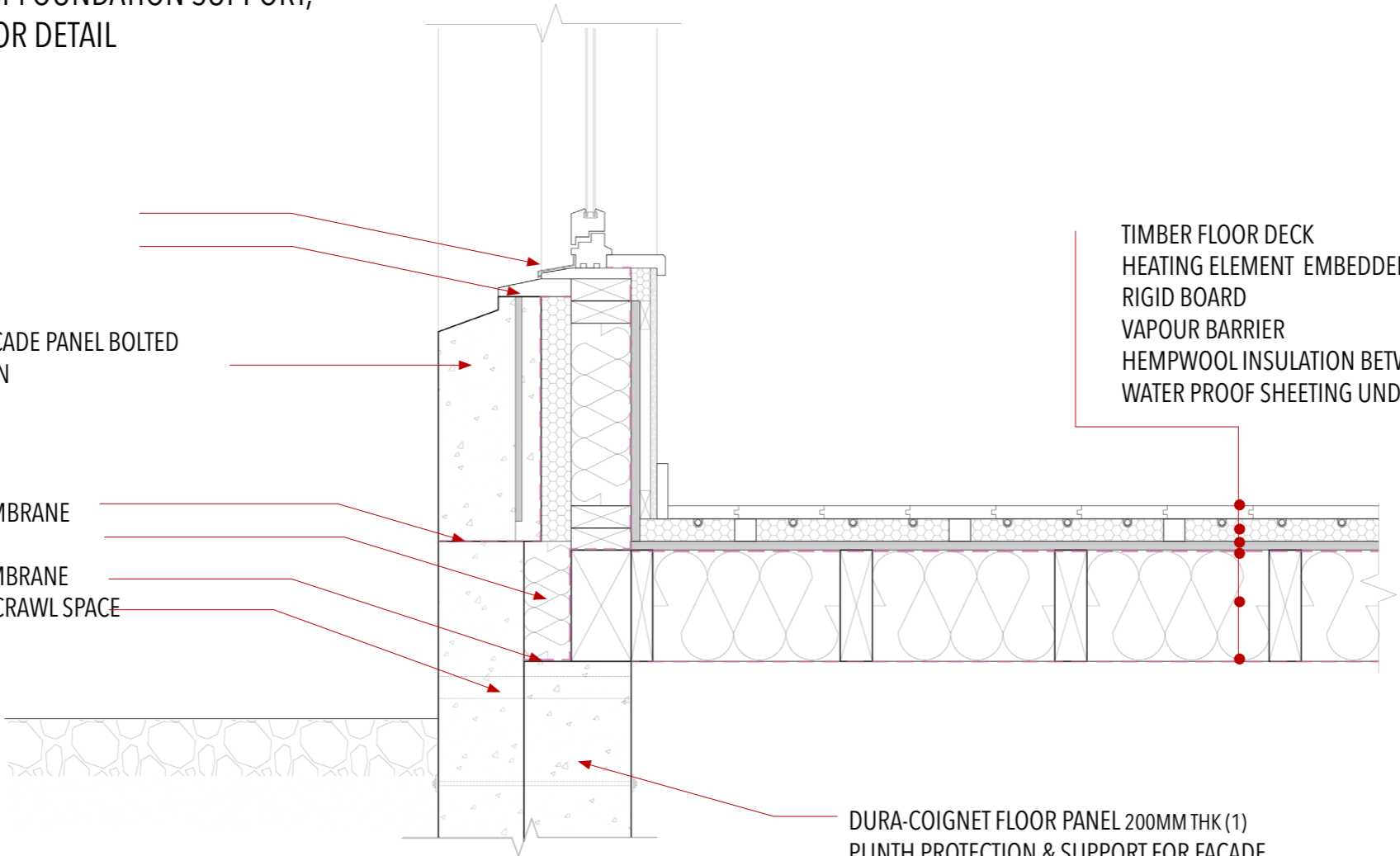
METAL FLASHING
TIMBER CILL

DURA-COIGNET FACADE PANEL BOLTED
TO TIMBER COLUMN

WATERPROOF MEMBRANE
INSULATION
DAMP PROOF MEMBRANE
VENTILATION FOR CRAWL SPACE

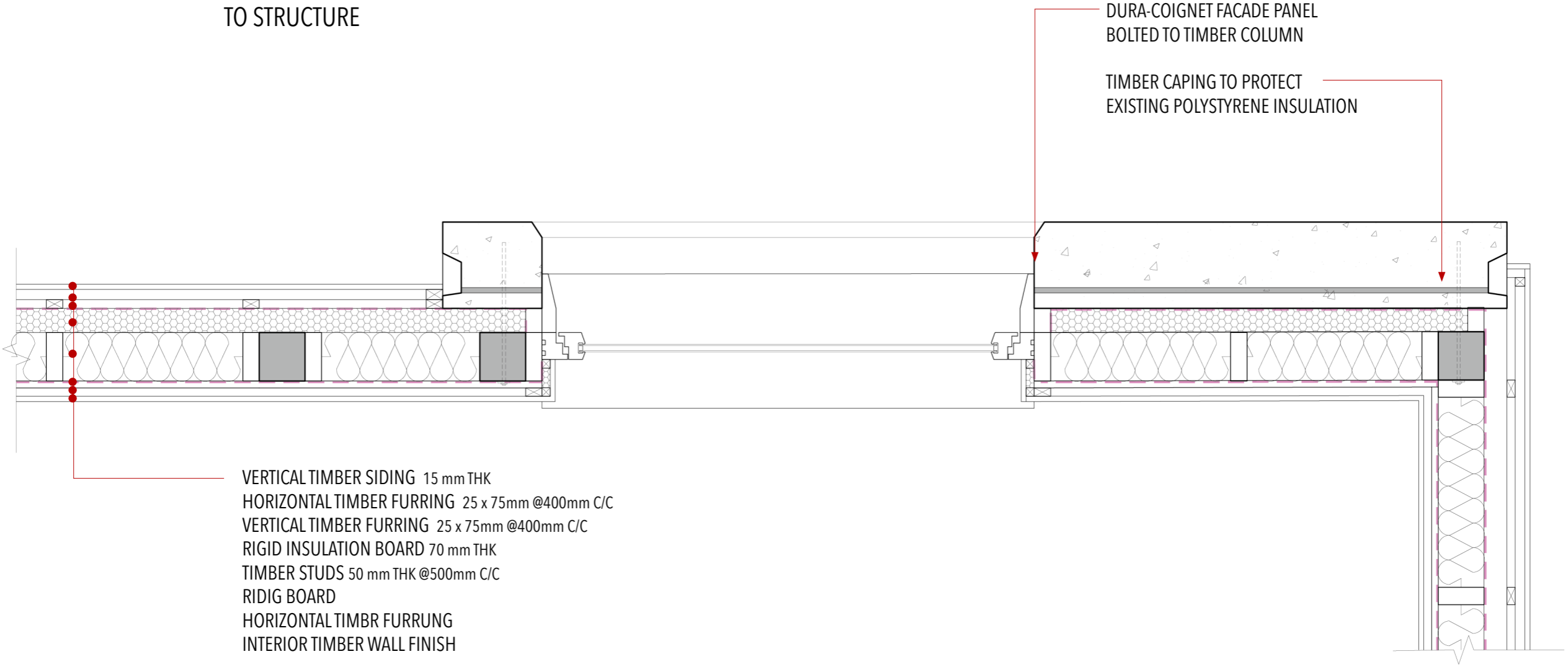
TIMBER FLOOR DECK
HEATING ELEMENT EMBEDDED IN RIGID INSULATION
RIGID BOARD
VAPOUR BARRIER
HEMPWOOL INSULATION BETWEEN FOOR JOIST
WATER PROOF SHEETING UNDER ENTIRE FLOOR

DURA-COIGNET FLOOR PANEL 200MM THK (1)
PLINTH PROTECTION & SUPPORT FOR FACADE
PANEL BOLTED TO DURA-COIGNET FACADE PANEL
250MM THK (2) OVER TIMBER PILE



DETAIL @ D

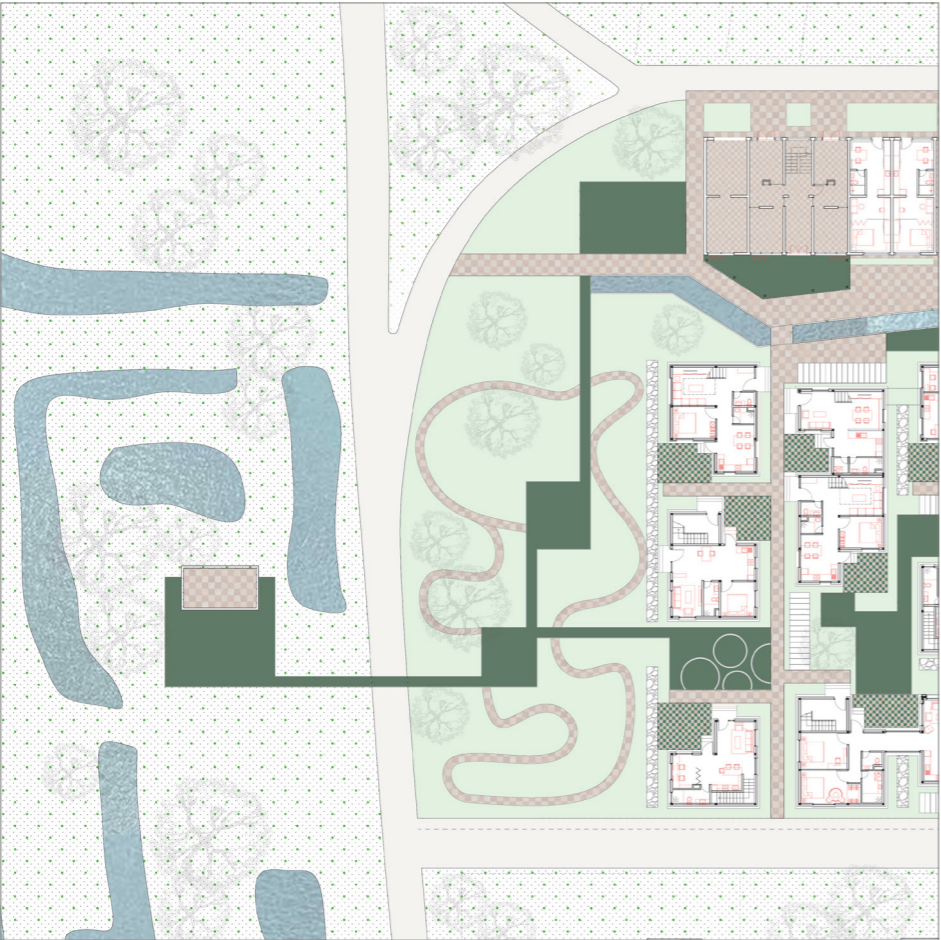
DURA COIGNET PANEL CONNECTION TO STRUCTURE



DURA-COIGNET FACADE PANEL
BOLTED TO TIMBER COLUMN

TIMBER CAPING TO PROTECT
EXISTING POLYSTYRENE INSULATION

VERTICAL TIMBER SIDING 15 mm THK
 HORIZONTAL TIMBER FURRING 25 x 75mm @400mm C/C
 VERTICAL TIMBER FURRING 25 x 75mm @400mm C/C
 RIGID INSULATION BOARD 70 mm THK
 TIMBER STUDS 50 mm THK @500mm C/C
 RIGID BOARD
 HORIZONTAL TIMBER FURRING
 INTERIOR TIMBER WALL FINISH



A Post-war Neighbourhood.....for the changing landscapes



The aim is not just to build houses,
it is to build a *community*.



AMRITA SEN | Ecologies of Inclusion
Delft University of Technology