INDEPENDENT ELDERLY LIVING, **INTEGRATED** INTO AN **INFORMAL CARE** STIMULATING **NEIGHBOURHOOD**

P5 Presentation

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April 13, 2023

Graduation studio: Advanced Housing Design (AR3AD100)
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Delegate Board of Examiners: Dr. A. Meijer

TU Delft

LET ME INTRODUCE YOU TO....

https://unsplash.com/s/photos/elderly-man

https://www.istockphoto.com/nl/foto/

Elderly that could use some help sometimes now they are getting older
Still can live indpendently, on condition that the built environment stimulates this

CONTENT

INTRODUCTION
RESEARCH
DESIGN LOCATION
DESIGN

Architecture and Dwelling

MSc 3 Graduation Studio Advanced Housing Design

Densification strategies

©Space&Matter – Oostenburgereiland, Amsterdam; 'a neighbourhood where everybody feels at home'

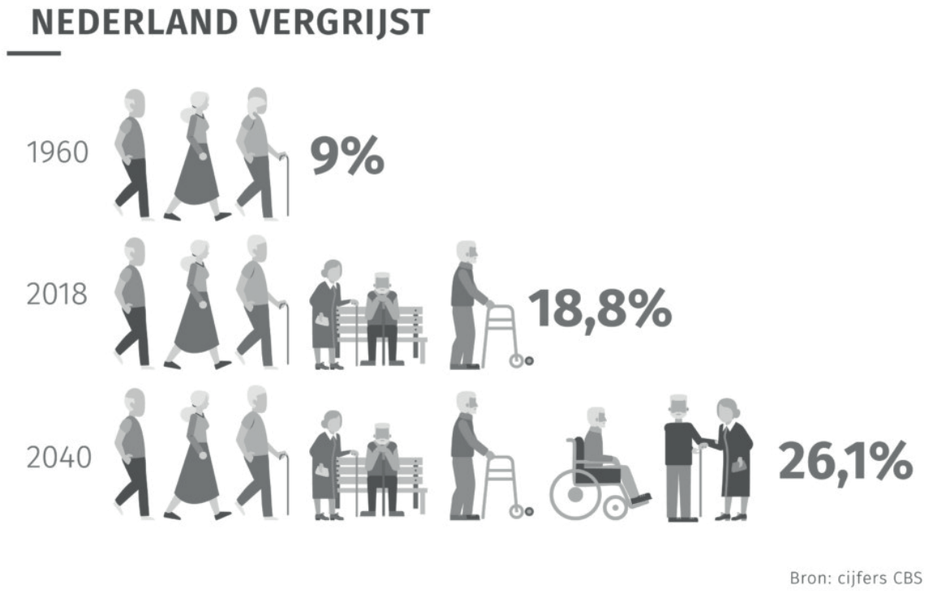
Spring semester 2022

Densification strategies to invigorate urbanities

HOUSING CRISIS

https://www.ad.nl/wonen/organisaties-woonprotesten-1-miljard-voor-woningbouw-onvoldoende-ab79999c/

SHORTAGE SUITABLE ELDERLY HOUSING



https://kafrahousing.com/nederland-vergrijst/

https://www.facebook.com/langerzelfstandigthuiswonen/photos/a.1103007956412615/1103066099740134/

Specific housing shortage in suitable housing for elderly
Elderly need to live longer independent at home due to transformations in long term care

JAMES & JILL

https://unsplash.com/s/photos/elderly-man

https://www.istockphoto.com/nl/foto/

James & Jill are also looking for a suitable house to live independent as long as possible
Now their house is not life-cycle-proof, and a good alternative in the neighbourhood is lacking
They notice that they would like to have some help with little things now they are getting older

CARE SHORTAGE

https://healthcare-in-europe.com/en/news/nurse-numbers-strongly-linked-to-patient-confidence-in-hospital-care.html

https://www.izz.nl/zorgorganisaties/wie-zorgt-er-voor-de-mantelzorger

Due to staff shortage in care less home care available
Informal care takers (mostly family) often over pressured

SOLUTION:

INFORMAL CARE PROVIDED BY NEIGHBOURS

RESEARCH QUESTIONS

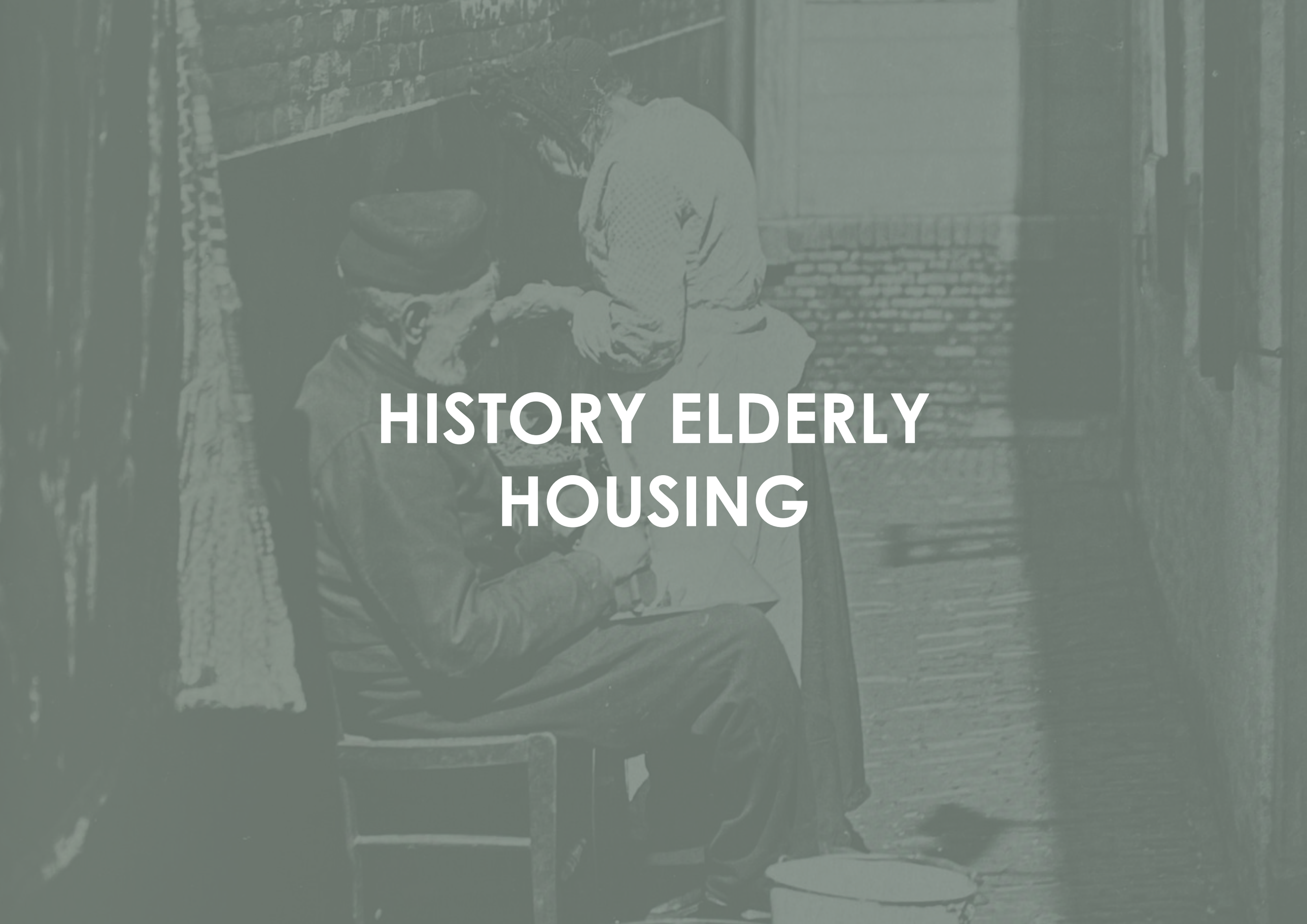
"What design strategy can be used to design independent livings for elderly with a light need of care, integrated into an existing neighbourhood, in such a way that it stimulates neighbours to provide informal care?"

How has elderly housing developed through the history and what can we learn from it?

What do elderly with a light need of care need on the scale of dwelling and the scale of the neighbourhood, to live longer independent at home?

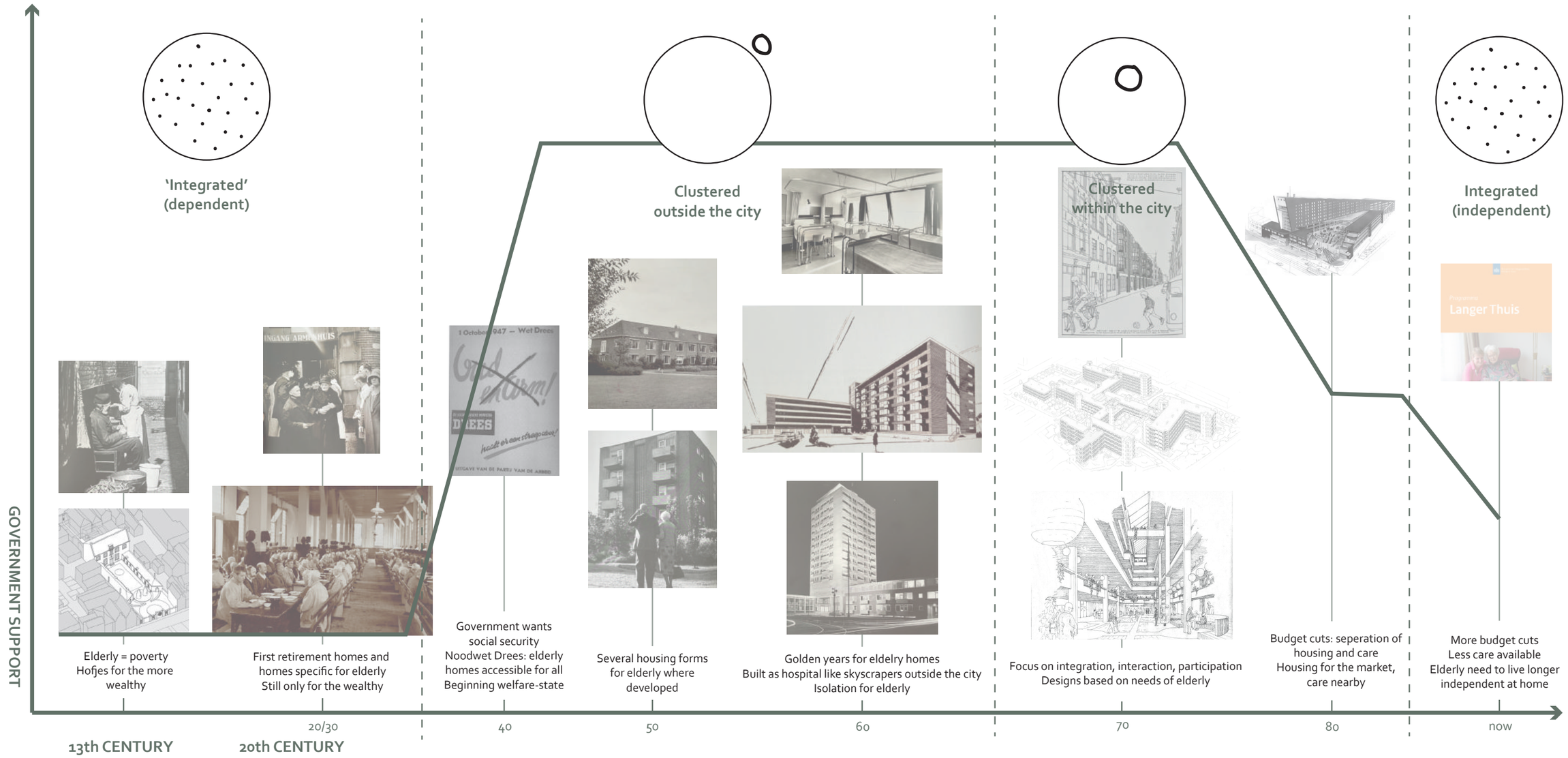
What informal care can be provided by neighbours and what could stimulate neighbours to provide informal care?

How can design stimulate social cohesion and therefore stimulate informal care?



HISTORY ELDERLY HOUSING

HISTORY ELDERLY HOUSING



Timeline history elderly housing

HISTORICAL CASE STUDIES

DE DRIE HOVEN - Herman Hertzberger
Amsterdam, 1976

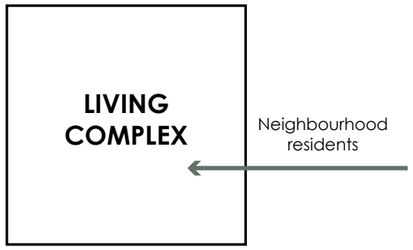
Source: AHH

DE ZONNETRAP - Curjel & Hartsuyker
Rotterdam, 1970

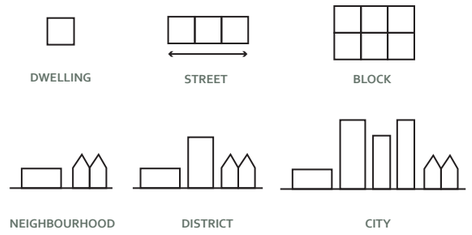
Source: AHH

Focus on integration, participation and interaction. How did the design stimulate this?
Can we still use this nowadays?

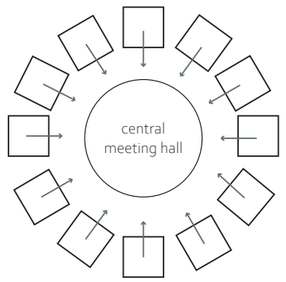
HISTORICAL CASE STUDIES



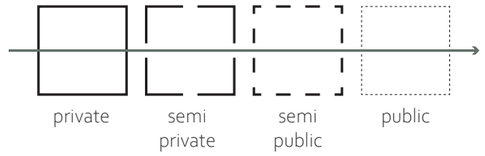
LET NEIGHBOURHOOD RESIDENTS COME INTO THE COMPLEX



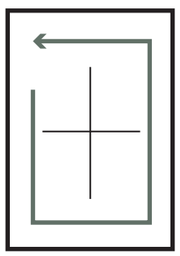
DESIGN WITH DIFFERENT SCALES OF INTERACTION



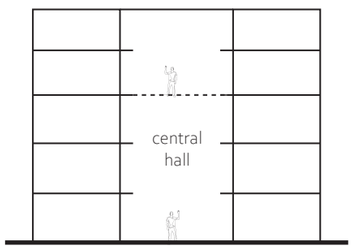
ORGANIZE DWELLINGS AROUND A CENTRAL MEETING HALL



PROVIDE BUFFER ZONES FOR A TRANSITION FROM PRIVATE TO PUBLIC



FLEXIBLE FLOORPLAN FREEDOM OF CHOICE



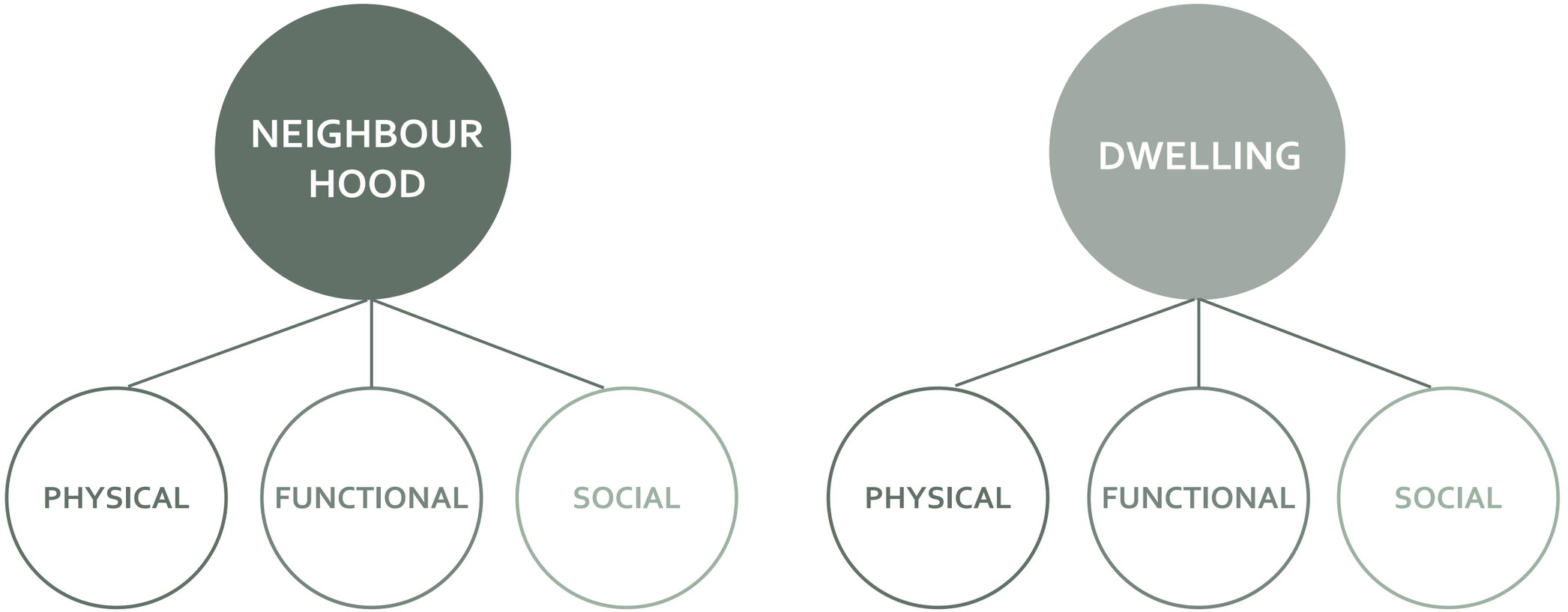
BRIDGES FOR VERTICAL CONNECTION

COLOURS AND SHAPES FOR ORIENTATION

Design elements that could still be applicable in designs nowadays

NEEDS AND WISHES ELDERLY

NEEDS AND WISHES ELDERY

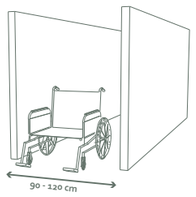


Extensive overview of aspects on different levels that stimulate the indepence of elderly

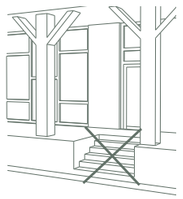
NEEDS AND WISHES ELDERY

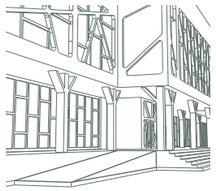
NEIGHBOURHOOD - PHYSICAL

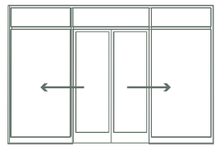
ACCESSIBILITY

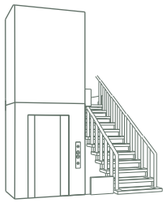


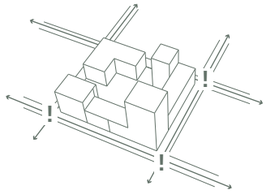
WHEELCHAIR

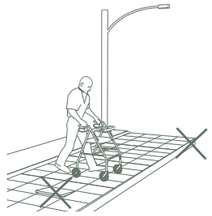

NO STAIRS

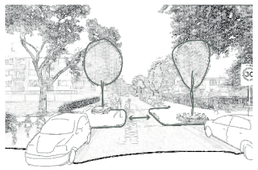

RAMPS


AUTOMATIC DOORS

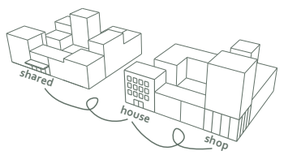

ELEVATORS


CLEAR ROAD STRUCTURE


NO OBSTACLES

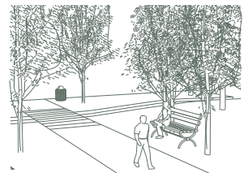

SLOW DOWN TRAFFIC

ACTIVITY

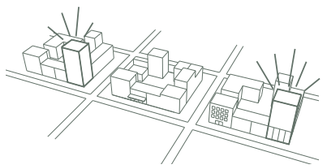


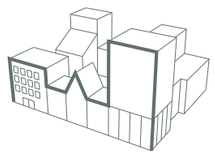
FUNCTION MIX

BENCHES


PARK

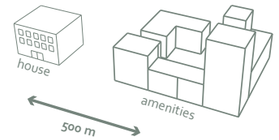
RECOGNITION


STREET CORNERS


DIVERSITY IN ARCHITECTURE

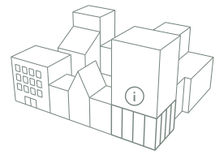
NEIGHBOURHOOD - FUNCTIONAL

AMENITIES

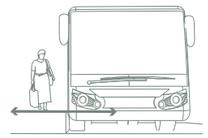


AMENITIES CLOSE BY

INFORMATION


INFORMATION POINT

TRANSPORT

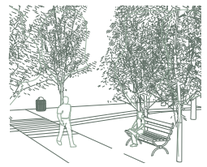

ACCESSIBLE BUS

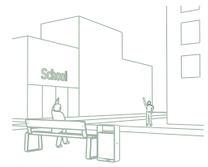
PARKING PERSONAL TRANSPORT

TAXI PLACE

NEIGHBOURHOOD - SOCIAL

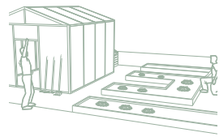
CONTACT RICH


PARK



BENCH ACTIVE PLACE

BALCONY / GARDEN


VEGETABLE GARDENS

SHARED ACTIVITIES

CHOICE

INTERGENERATIONAL

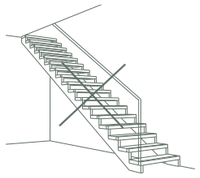
HOUSEHOLD MIX

RECIPROCITY

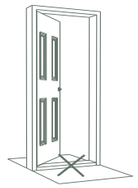
NEEDS AND WISHES ELDERY

DWELLING - PHYSICAL

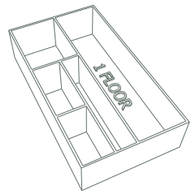
ACCESSIBILITY



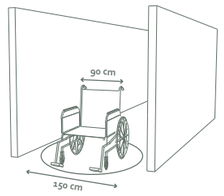
NO STAIRS



NO THRESHOLDS

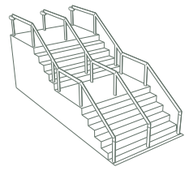


ONE FLOOR



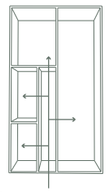
WHEELCHAIR

ACTIVITY



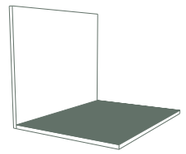
BANNISTERS BOTH SIDES

RECOGNITION

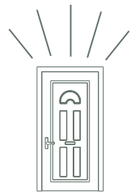


CLEAR LAYOUT

COLOURS

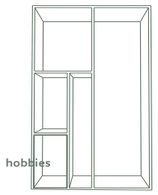


CONTRAST



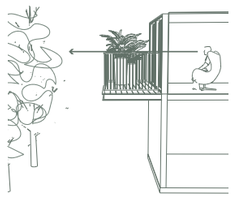
FRONT DOOR

COMFORT



HOBBY ROOM

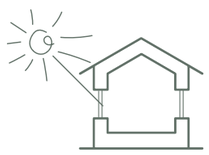
CHAIR WITH VIEW



BALCONY / GARDEN/ GREEN VIEW

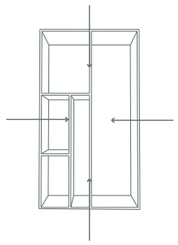
CONSTANT HEAT

GOOD VENTILATION



DAYLIGHT

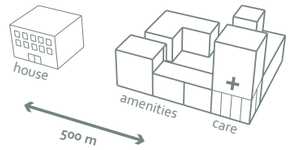
MAINTENANCE



NOT TOO BIG

DWELLING - FUNCTIONAL

AMENITIES



AMENITIES CLOSE BY

HOME ASSISTANCE

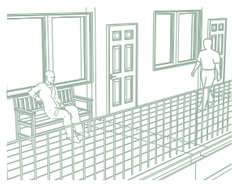
DOMOTICA

DWELLING - SOCIAL

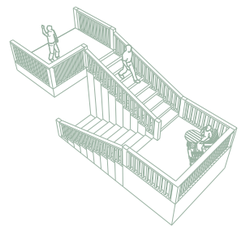
CONNECTIVITY

VIEW ON LIVELINESS

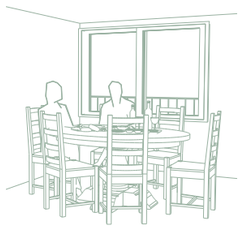
CERTAIN AMOUNT OF PRIVACY - BALCONY



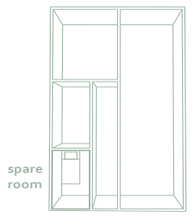
TRANSITION ZONE GALLERY SPACE



SEMI-PUBLIC STAIRWELL



KITCHEN TABLE



SPARE ROOM

SHARED SPACES

INFORMAL CARE

TYPE OF HELP THAT COULD BE PROVIDED

https://www.ctud.nl/?page_id=124

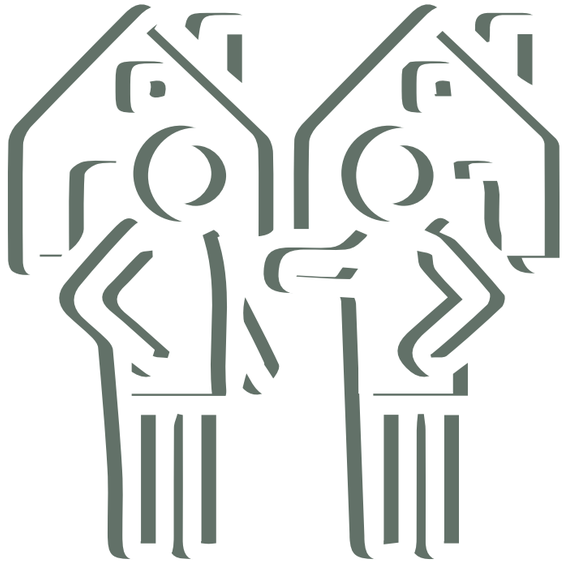
https://www.welzijnbergen.nl/laatste-nieuws/actueel/wie-wil-er-boodschappen-doen

https://saaraanhuis.nl/mantelzorg-aan-huis/hulp-bij-administratie/

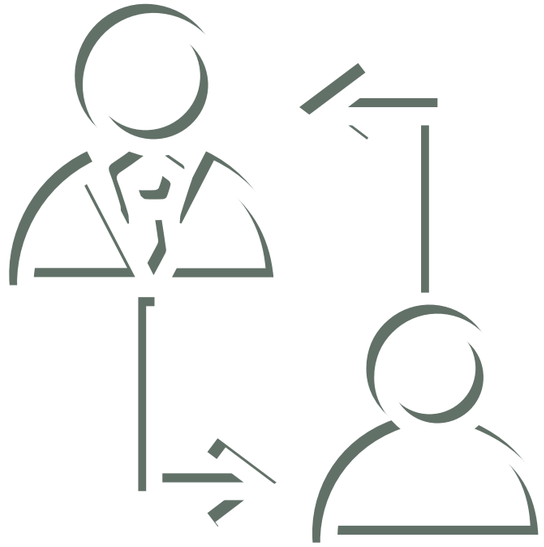
https://saaraanhuis.nl/mantelzorg-aan-huis/hulp-bij-administratie/

Household tasks, groceries, administrative support, emotional support

WHAT STIMULATES PROVIDING HELP



GET TO KNOW AND LIKE YOUR NEIGHBOURS



RECIPROCITY

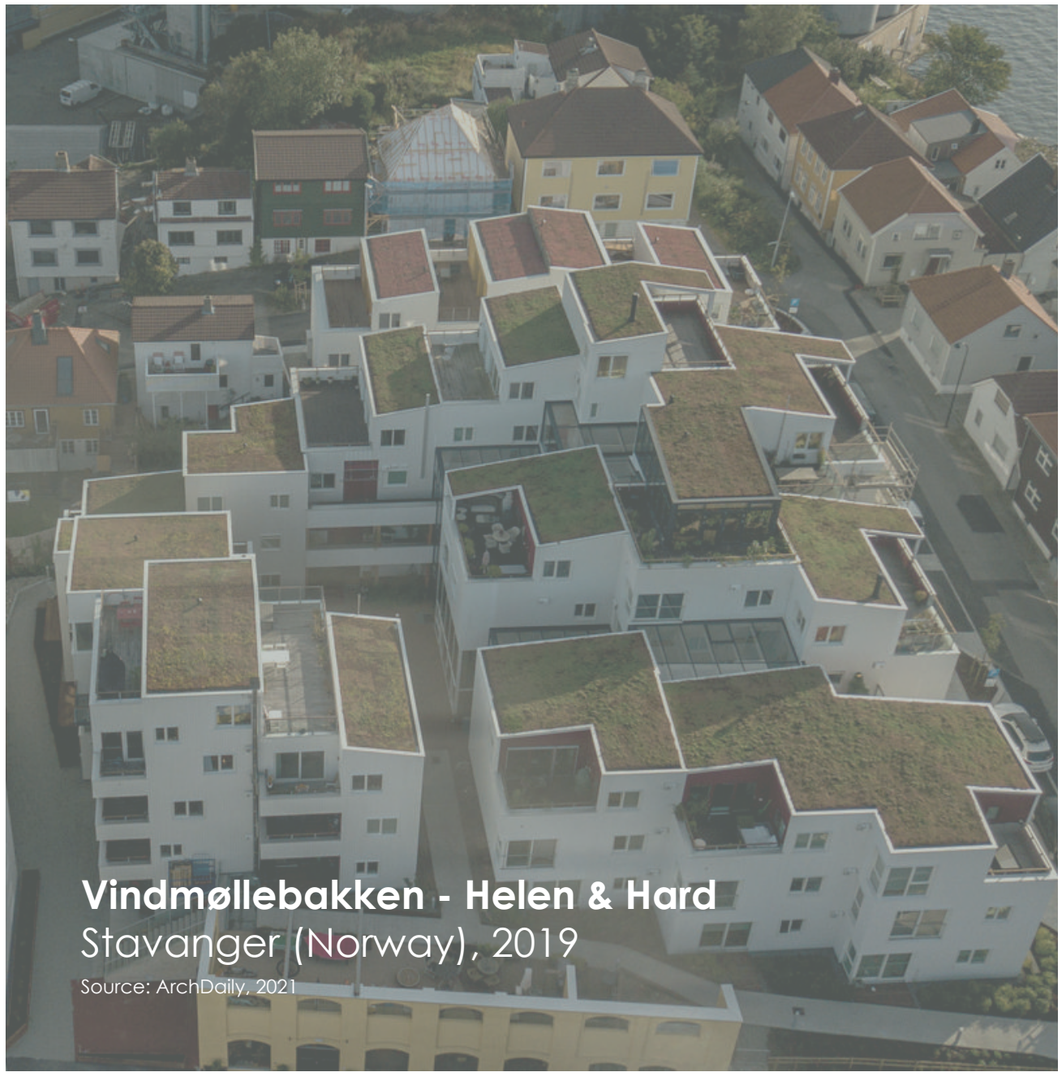
SOCIAL COHESION

"EVERYDAY ATTENTIVENESS"

"People signal whether another person needs a helping hand, then offer it or at least make sure that someone else offers it"

HOW CAN DESIGN STIMULATE SOCIAL COHESION?

CASE STUDIES

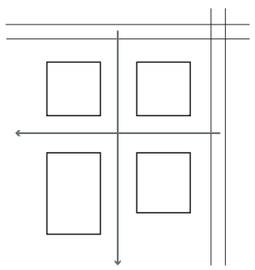


Vindmøllebakken - Helen & Hard
Stavanger (Norway), 2019
Source: ArchDaily, 2021

ZWEI+PLUS - Trans_City
Vienna (Austria), 2018
Source: ArchDaily, 2020

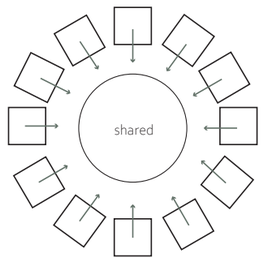
Multi-generational housing complexes (just as in an existing neighbourhood)
Focussed on social interaction and social cohesion

DESIGN ELEMENTS TO INCREASE SOCIAL COHESION

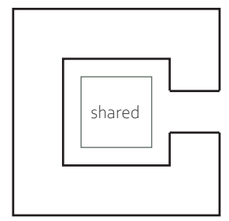


CONNECT ROUTES TO NEIGHBOURHOOD

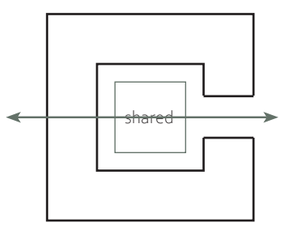
PLACE PUBLIC NEIGHBOURHOOD FUNCTIONS IN PLINTH

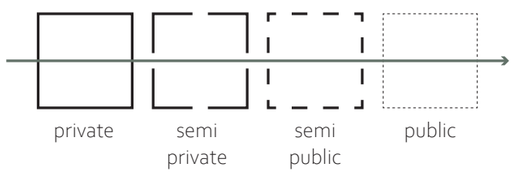


ARRANGE DWELLINGS AROUND SHARED SPACE

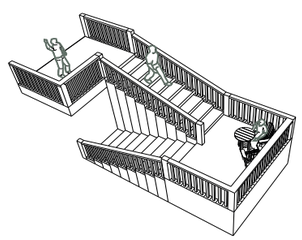


CREATE A SENSE OF SECURITY

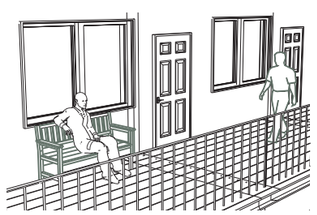




PROVIDE BUFFER ZONES FOR TRANSITION



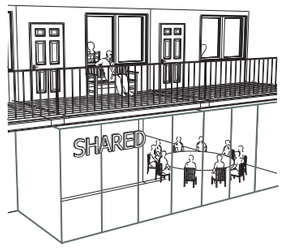
USE STAIRS AS PLACE TO INTERACT



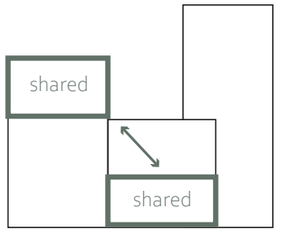
CREATE SEMI-PRIVATE ZONE ALONG GALLERY

ROUTES THROUGH SHARED SPACE

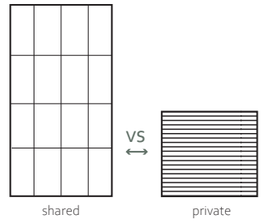
DIFFERENT DWELLING TYPOLOGIES FOR A MIX OF HOUSEHOLDS



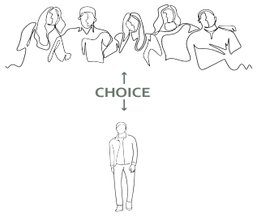
CREATE SHARED SPACES (FOR DIFFERENT INTERESTS)



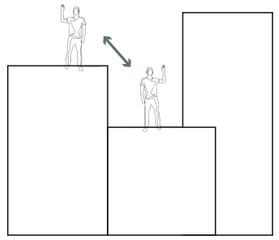
SPREAD SHARED SPACES THROUGH BUILDING (MOVEMENT)



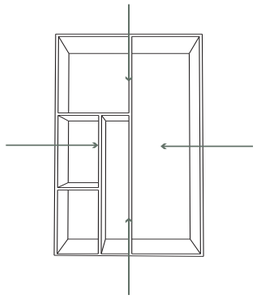
CLEAR SEPERATION PUBLIC - PRIVATE



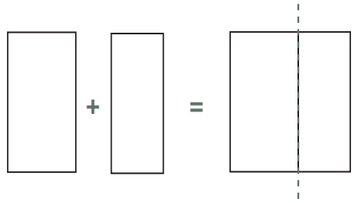
CREATE POSSIBILITY TO CHOOSE INTERACTION



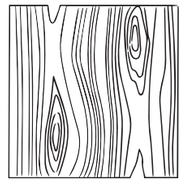
CREATE VERTICAL SIGHT LINES/INTERACTION



SMALL DWELLING (MORE LIKELY USE OF SHARED)



ADAPTABLE HOUSING (FOR CHANGING POPULATION)



WOOD = WARMTH

MAIN FINDINGS RESEARCH

Integrate elderly in a multi-generational neighbourhood

Stimulate independence by creating a physical accessible, functional and social sustainable environment

Create possibilities for interaction and (un)planned encounters

Provide for a warm & green environment that enhances the feeling of security and well-being

All sub-questions combined lead to a design strategy
These four main points form the base of this strategy

Design strategy that can be used to design independent livings for elderly with a light need of care, integrated into an existing neighbourhood, in such a way that it stimulates neighbours to provide informal care

Applicable in densification projects

Densification design in Groot-IJsselmonde

GROOT-IJSSELMONDE

Post-war neighbourhood in Rotterdam

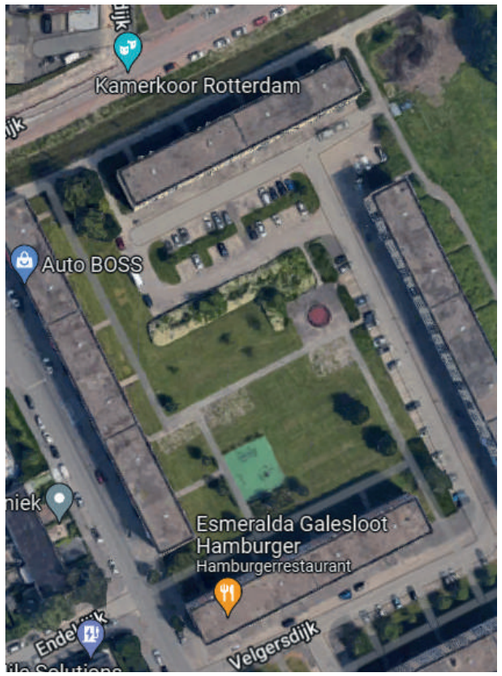
HORDIJKERVELD

Design location in Hordijkerveld, one of the neighbourhoods of Groot-IJsselmonde

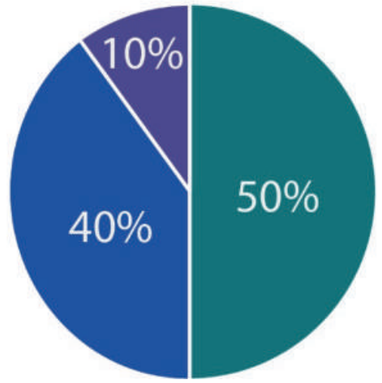
WHY HORDIJKERVELD?

Elderly in family homes
(who already live here since the beginning)
Lack of alternative

Stamp like structure
Unused space inbetween
Densification possibilities



Stamp like structure
Closed, big courtyards
Lack of interaction



Diverse targetgroups
Do not connect
Lack of social cohesion

LACK OF SOCIAL COHESION

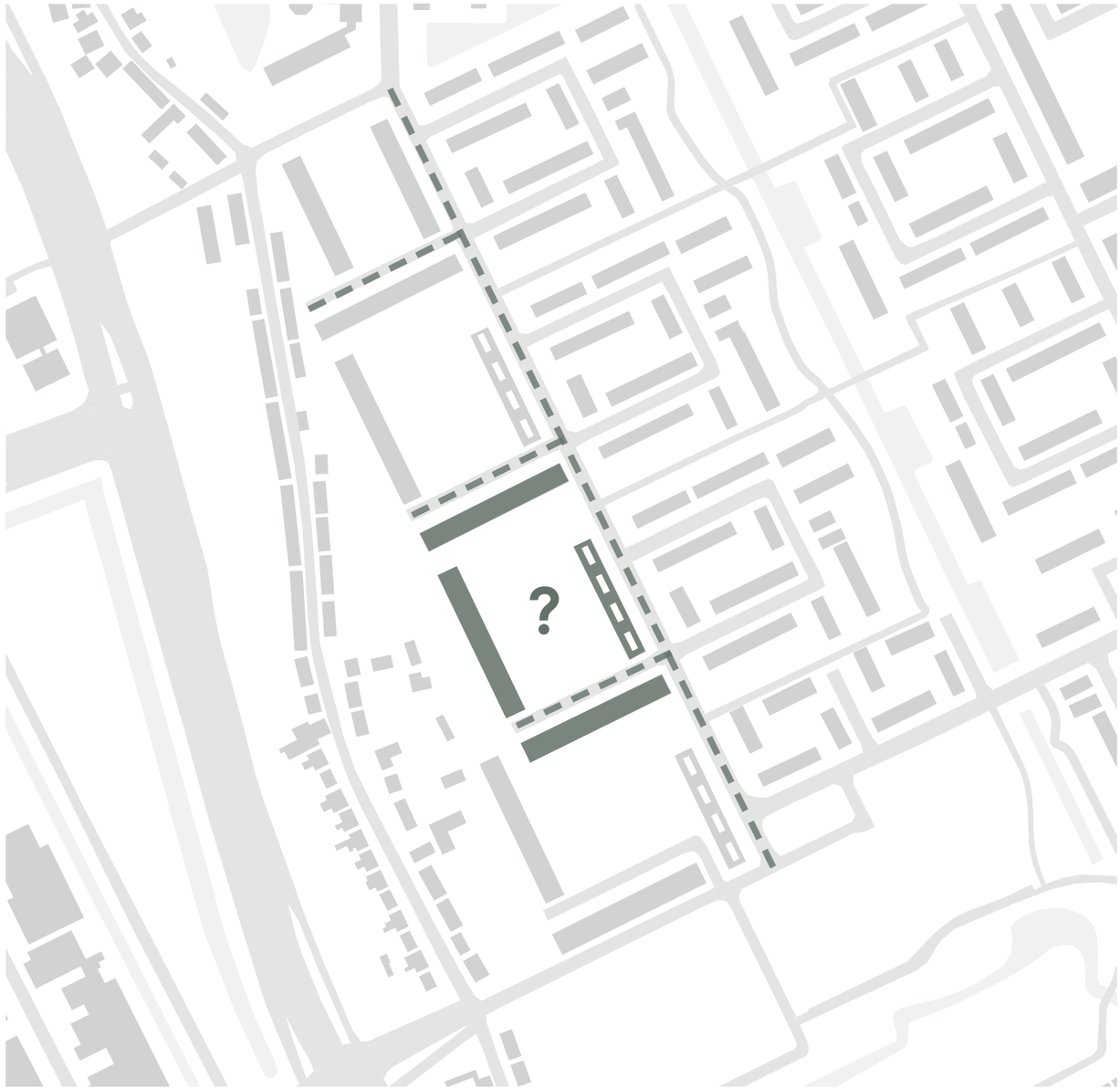
“THEY DON’T TALK WITH EACH OTHER, BUT ABOUT EACH OTHER”

Community centre co-worker

GALLERY FLATS AROUND COURTYARD

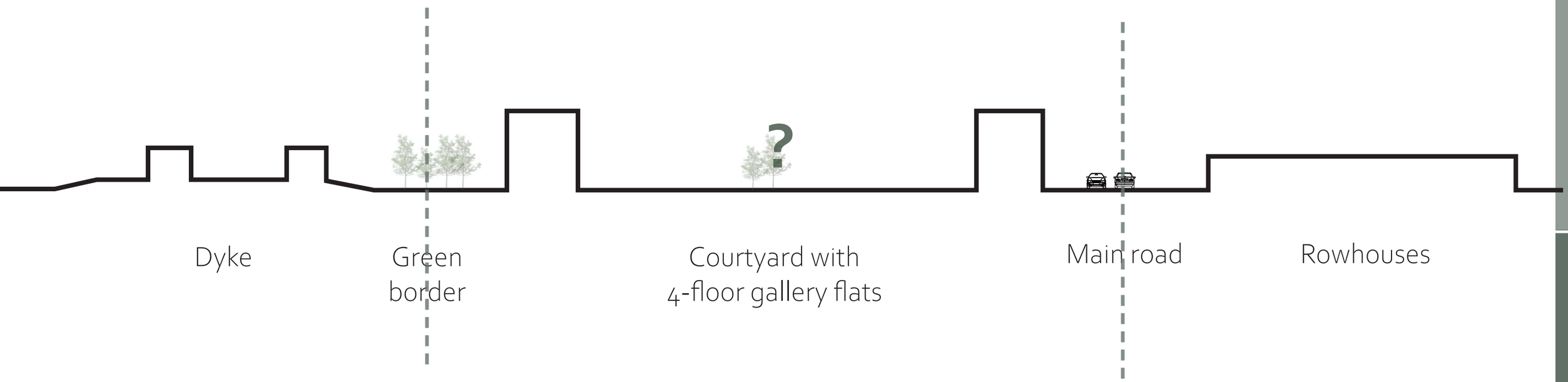
Gallery flats around large, empty courtyards

CHALLENGES



Barriers: road, buildings itself

CHALLENGES

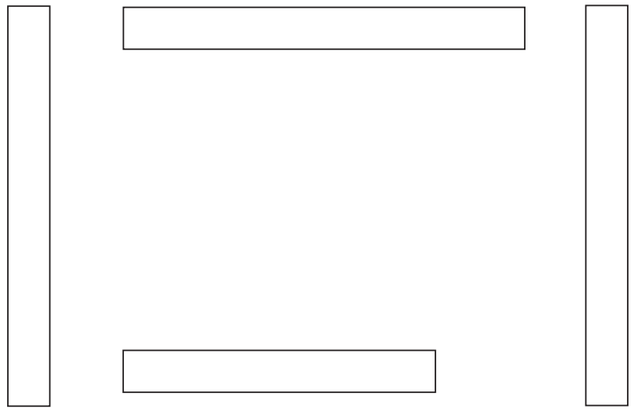


Empty courtyards
Lack of social cohesion

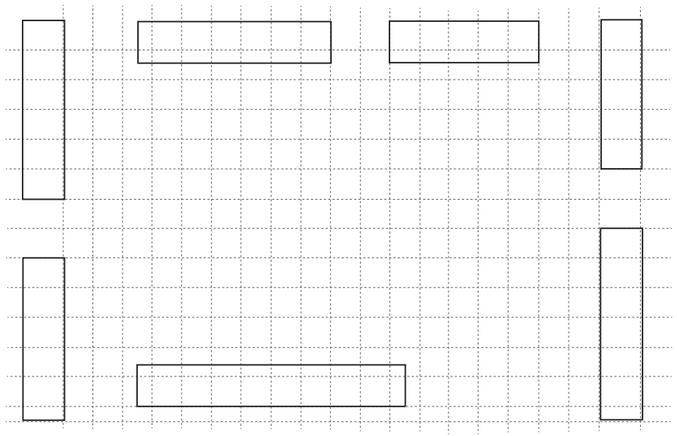
Room for densification
Room for (social) reinvigoration

DENSIFICATION DESIGN

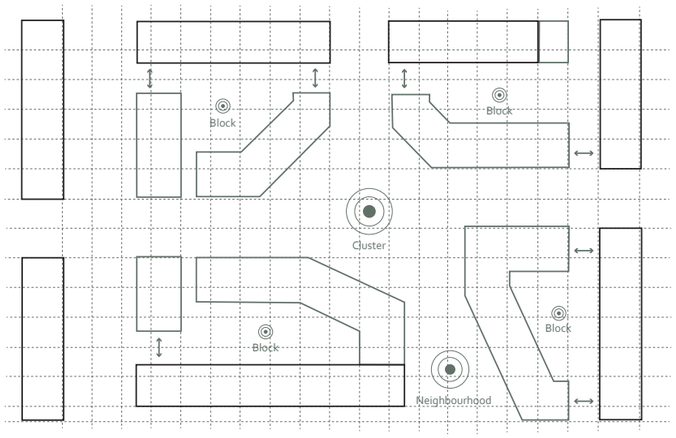
FIRST DESIGN STEPS



Existing buildings



Make buildings permeable by cuts



Add building volumes to create shared courtyards on different scales: the neighbourhood, the cluster and the block.

COURTYARDS ON DIFFERENT SCALES

Ground floor

2 5 10 20

- Neighbourhood functions for different generations
- Recognisable corner from street
- Entrances around cluster courtyard
- More intimate block courtyards

NEIGHBOURHOOD ENTRANCE

CLUSTER COURTYARD

SHARED GARDEN BLOCK

ROUTING

Courtyards connected by pedestrian routes

Movement through cluster

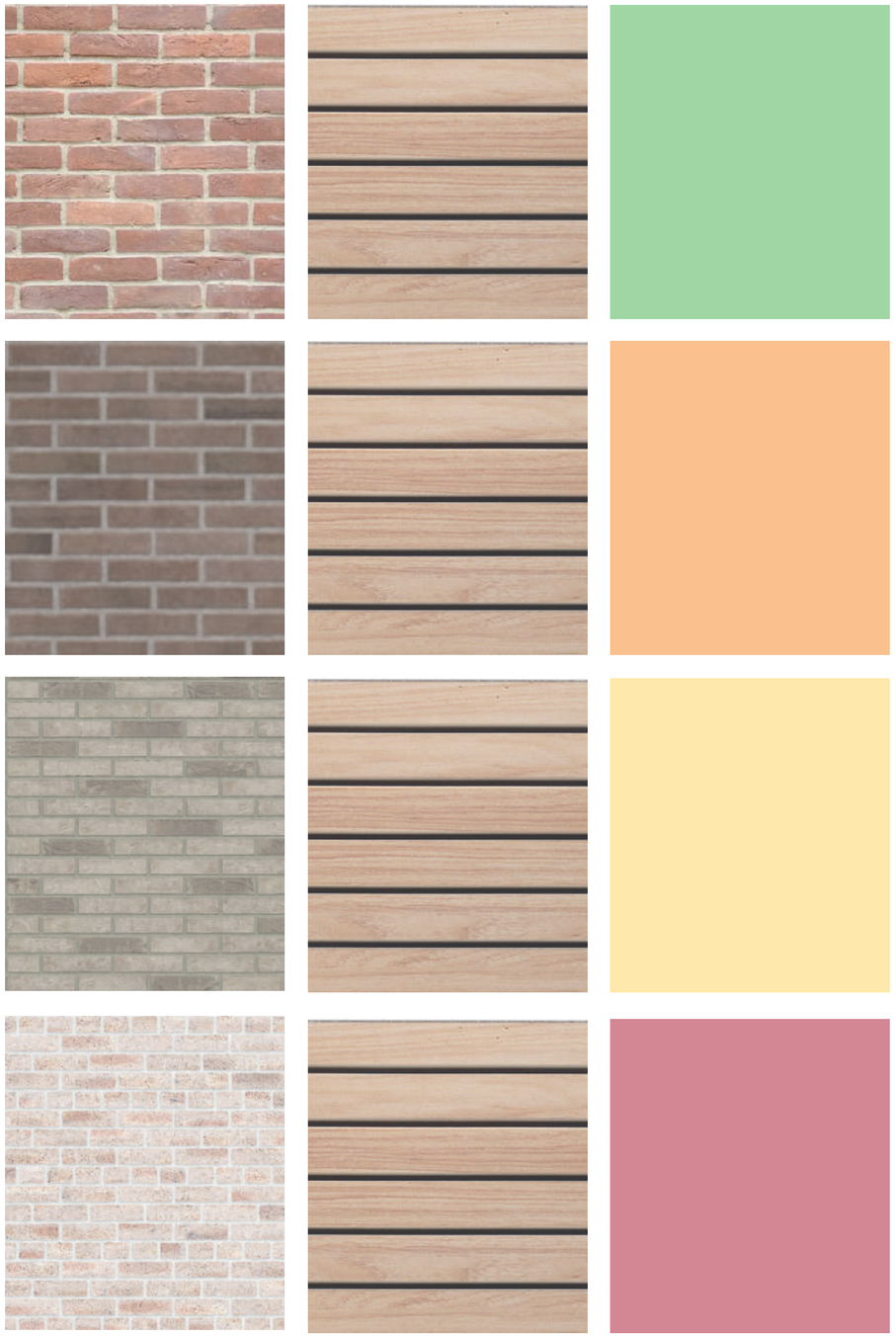
Movement through shared courtyard, to stimulate encounter

Choice for interaction - more private entrances

Ground floor

2 5 10 20

MATERIAL CONCEPT



Warm, neutral materials: sense of security

Circulair: green environment

Same materials to make it feel coherent - community feeling

Different colours to increase orientation

Accent colours, well visible by elderly

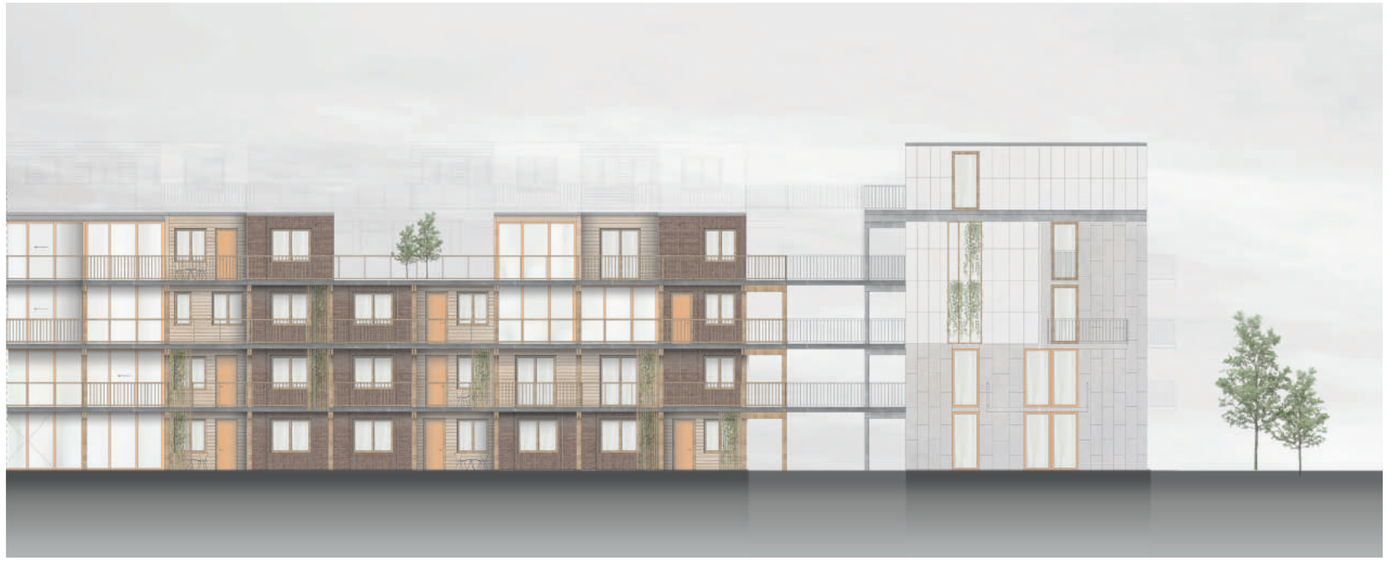
RECOGNISABILITY

Elevation 1: Red block

2 5 10 20

Elevation 3: Green block

Elevation 2: Yellow block



Elevation 4: Orange block

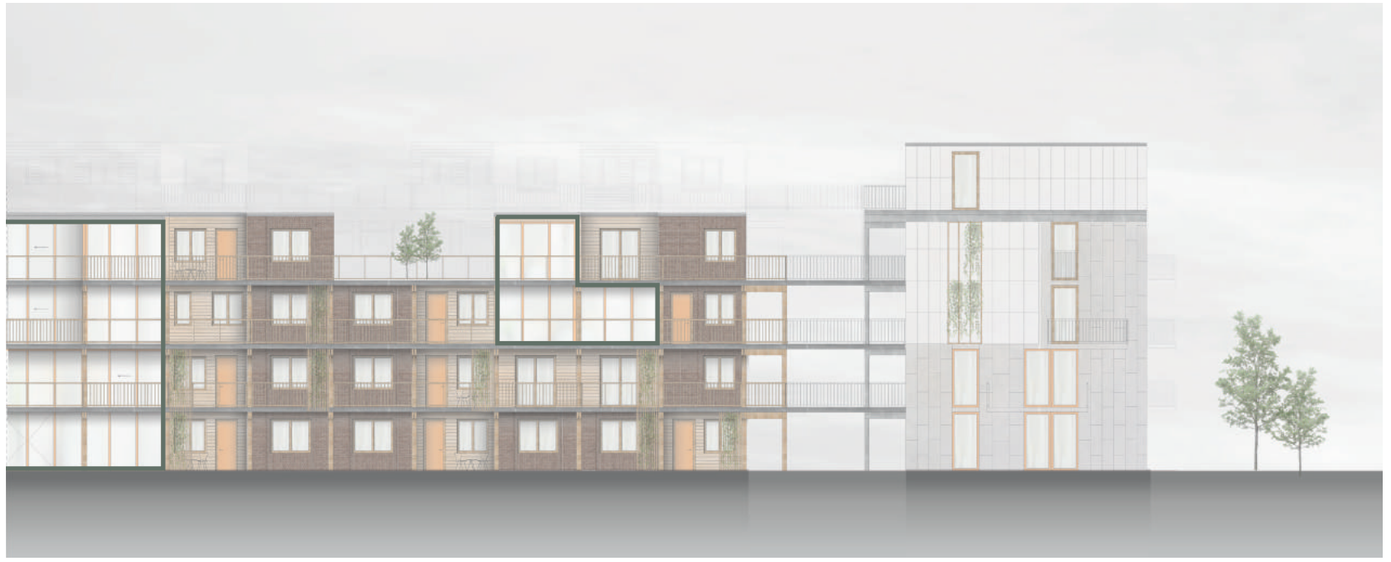
RECOGNISABILITY

Elevation 1: Red block

2 5 10 20

Elevation 3: Green block

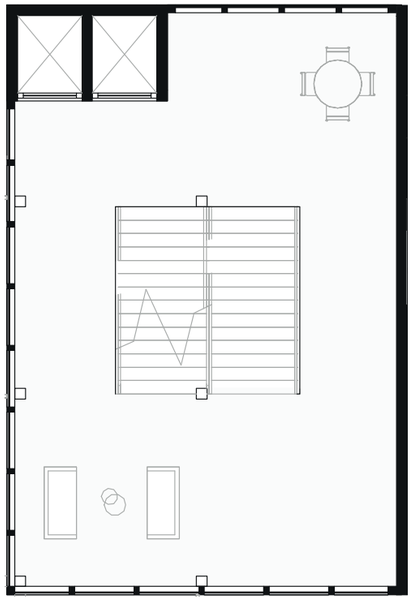
Elevation 2: Yellow block



Elevation 4: Orange block

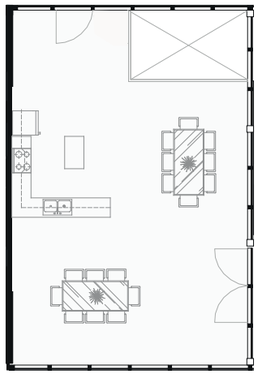
Highlight entrances and shared spaces by an open facade

INTERACTIVE STAIR CASES

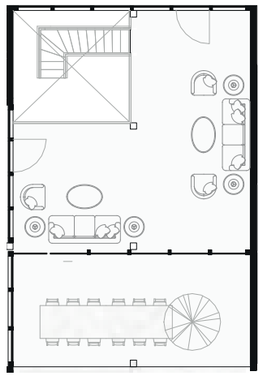


Stair case lounges

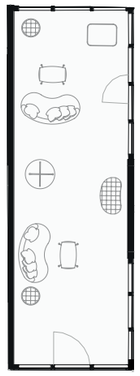
SHARED SPACES



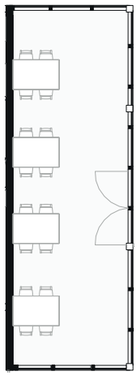
Kitchens



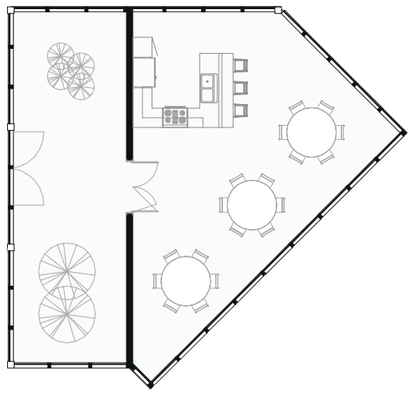
Living rooms



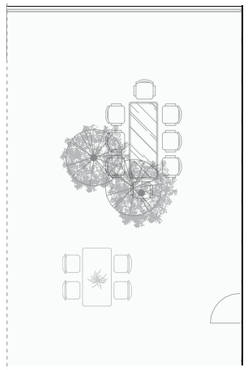
Kids play rooms



Office / study rooms



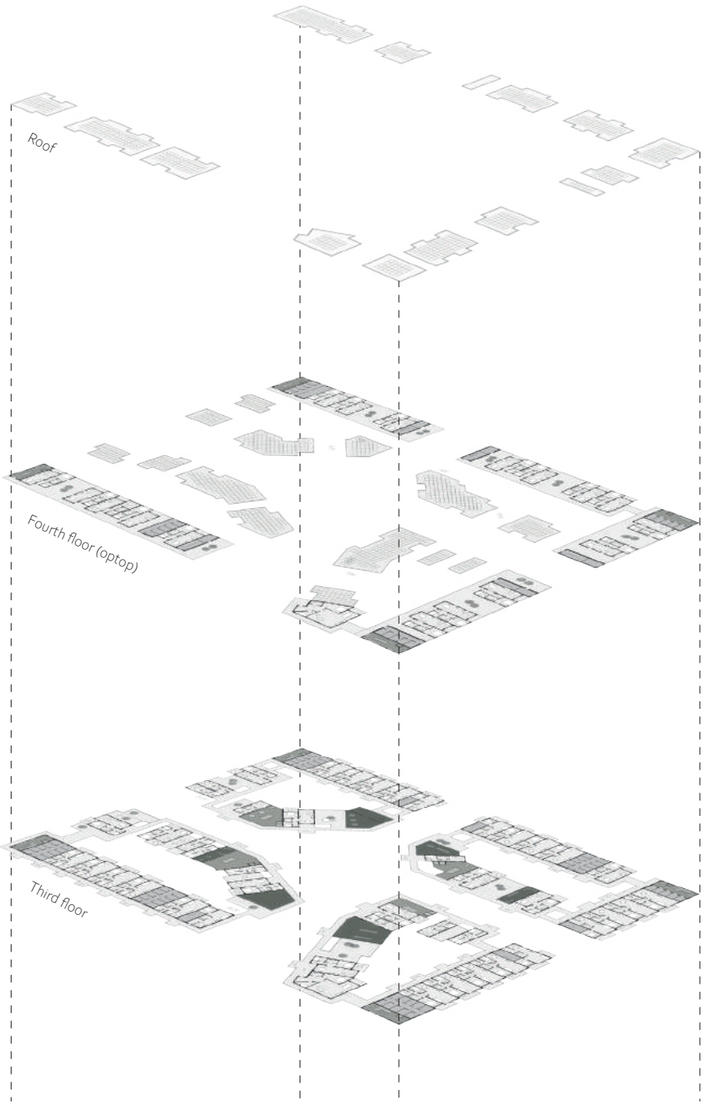
Green houses

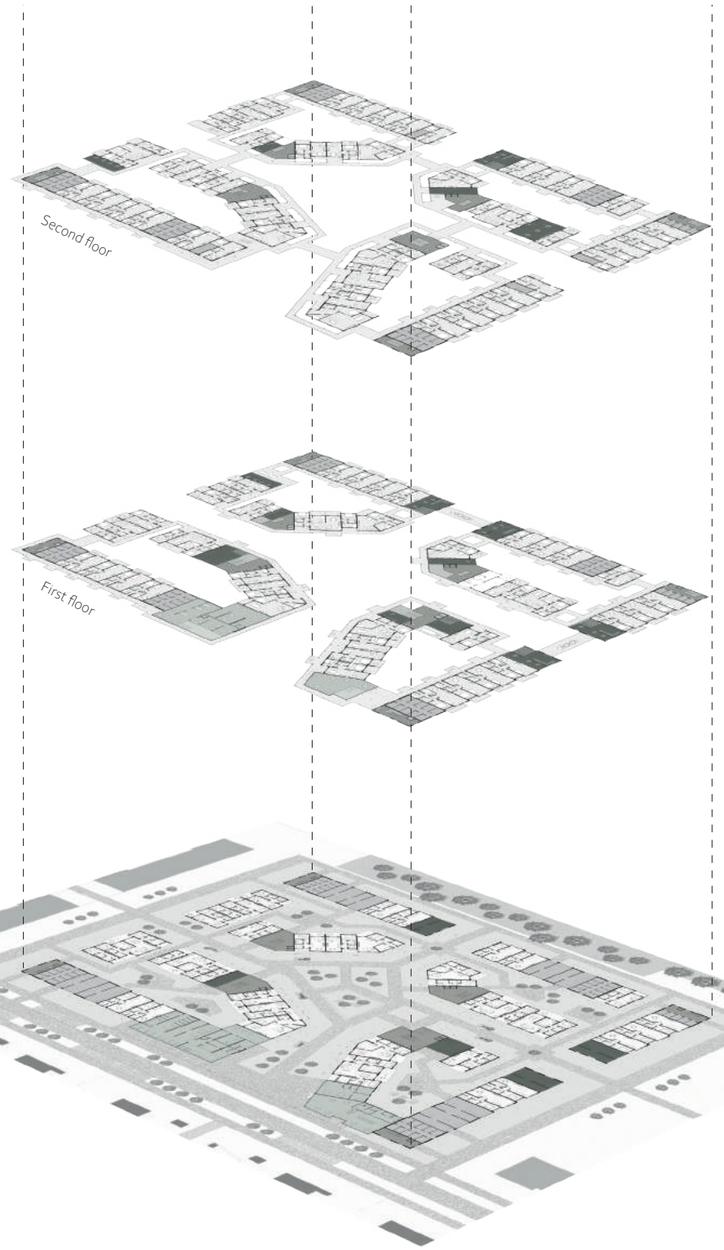


Roof gardens

Shared spaces for different targetgroups
Places to meet and getting to know each other
Offering each other help

DISTRIBUTED SHARED SPACES





Distributing the shared spaces through buildings stimulates movement, and therefore increases encounters

SHARED KITCHEN

SHARED ROOF GARDEN

First floor

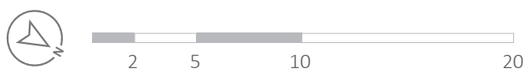
2 5 10 20

GALLERIES WITH FRONTPORCHES

Front porches in front of dwellings as semi-private space to stimulate interaction

Recognisability by room personalisation

First floor zoomed in



INTERACTIVE GALLERY

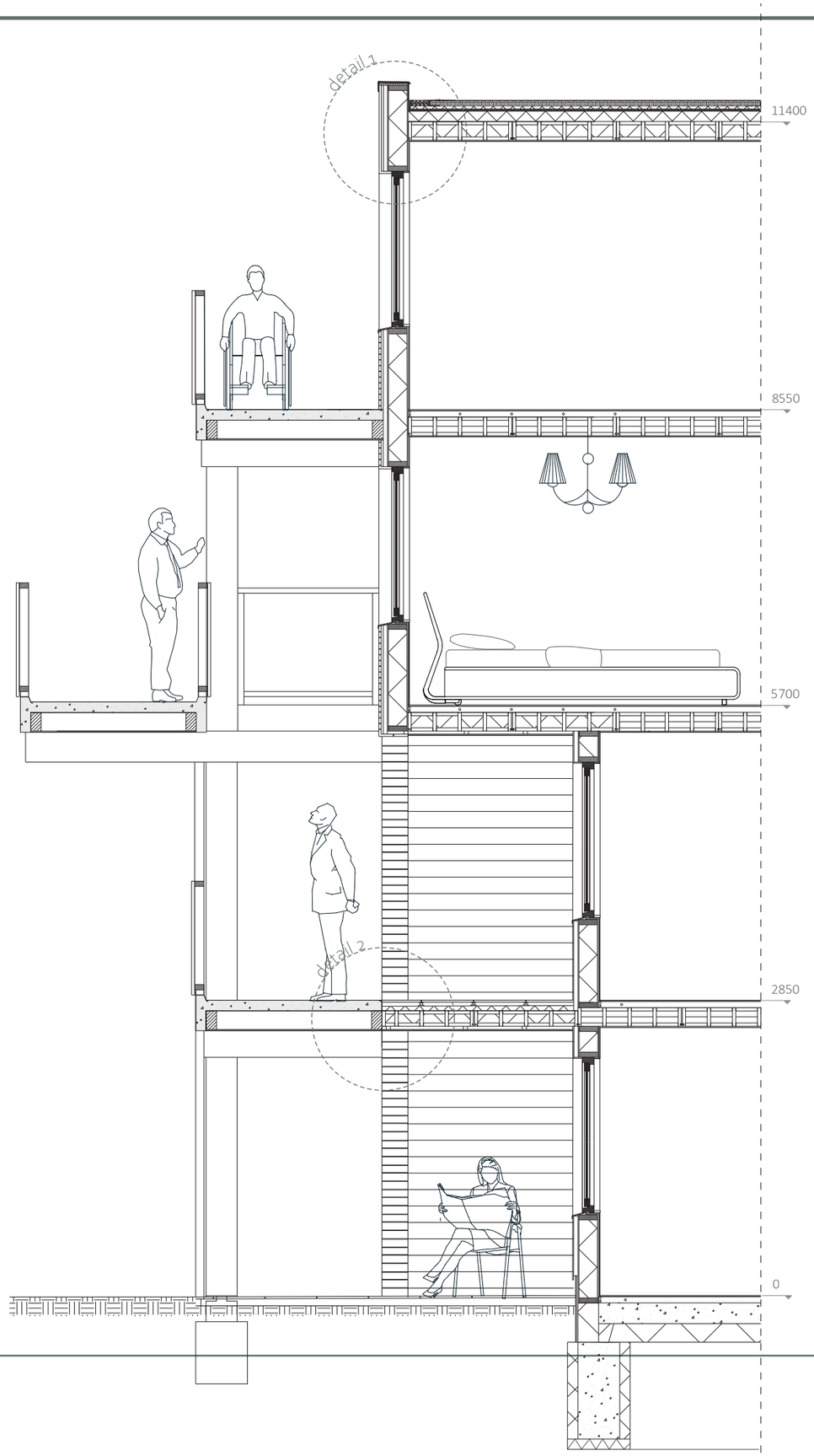
SHIFTED GALLERY - VERTICAL CONNECTION

Second floor zoomed in

2 5 10 20

FACADE FRAGMENT

Gallery side addition



BRIDGES - (VERTICAL) CONNECTION

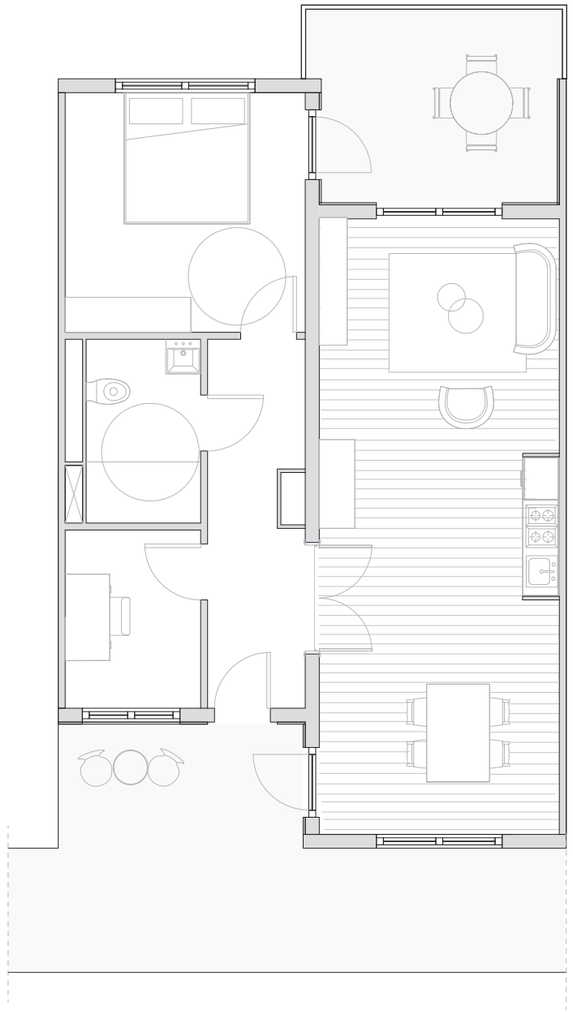
Second floor zoomed in

2 5 10 20

BRIDGES - (VERTICAL) CONNECTION

DWELLING FLOOR PLAN

https://unsplash.com/s/photos/elderly-man

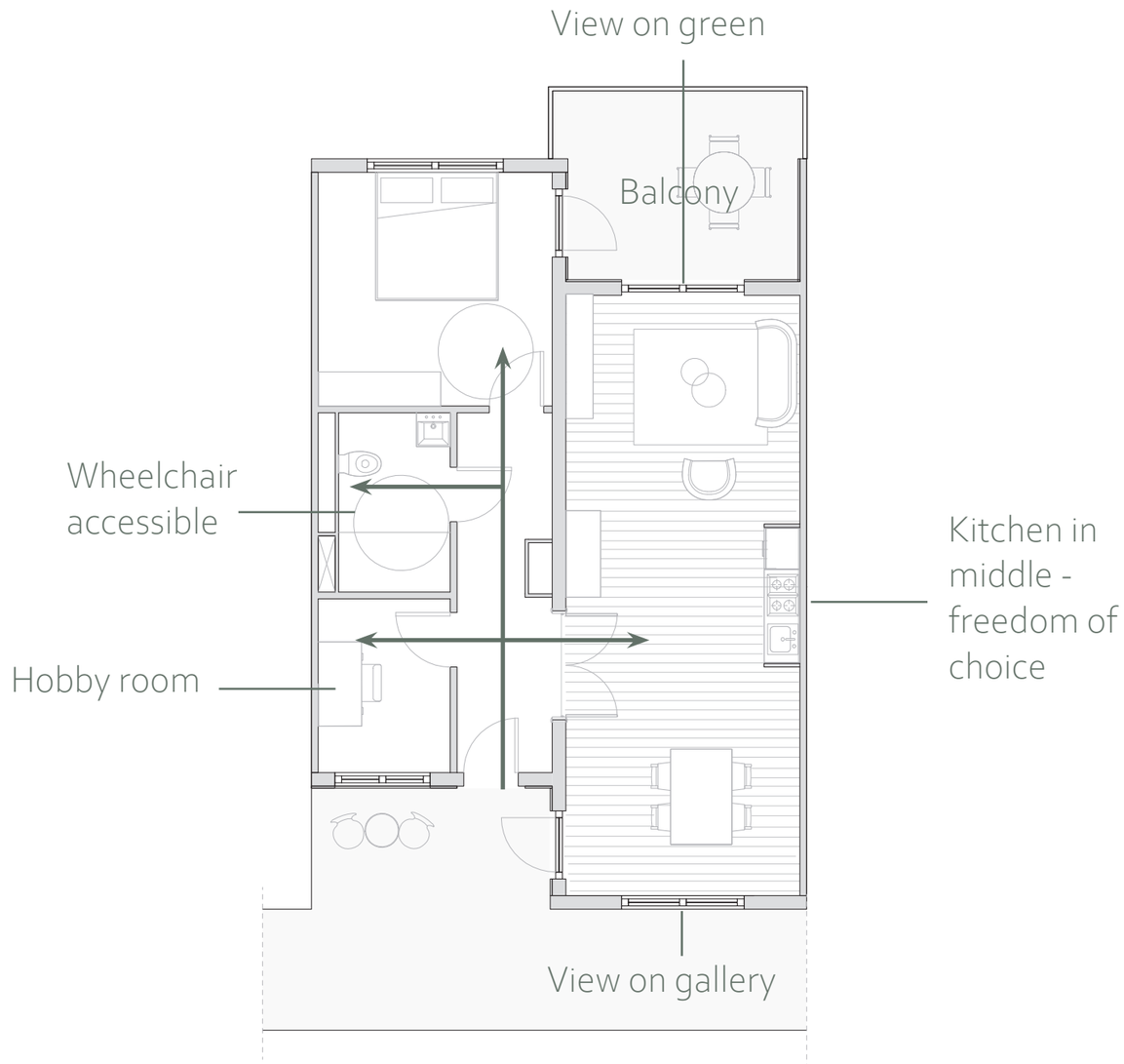


3 room apartment
(6om²)

(Elderly) couple

2 5

DWELLING FLOOR PLAN



3 room apartment
(60m²)

(Elderly) couple

2 5

GALLERY / BALCONY VIEW

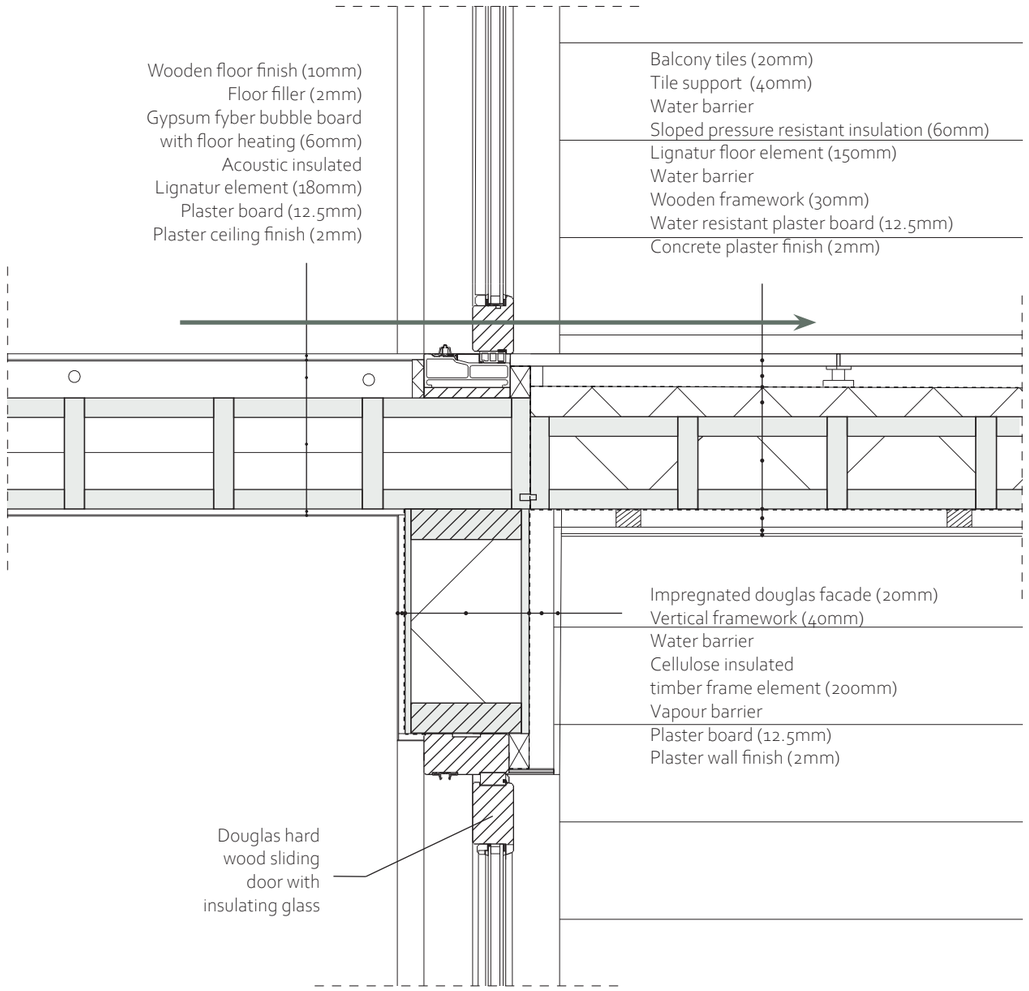
View on liveliness and passengers

View on green courtyard

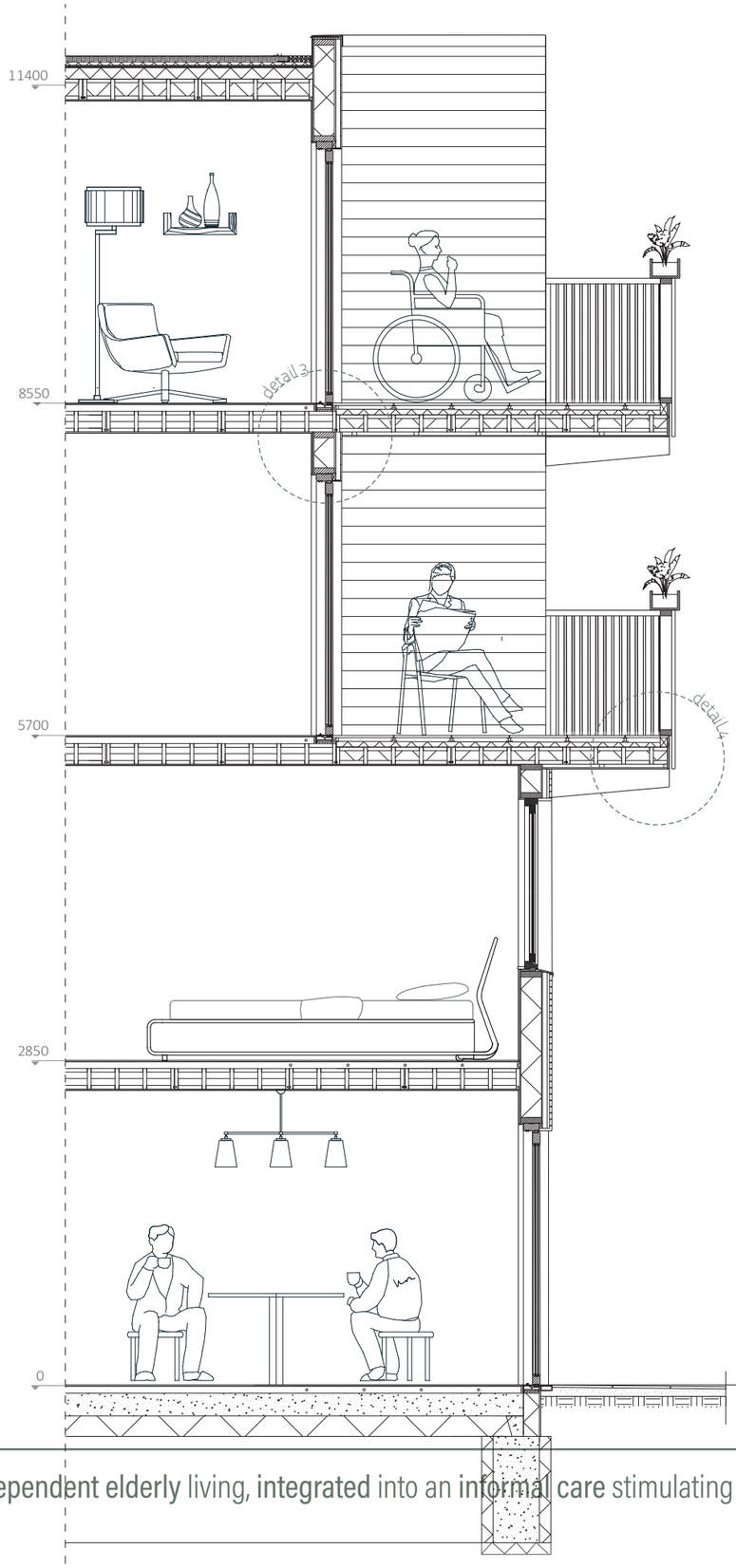
BARRIER FREE BALCONY ACCESS

Detail 3 (1:10)

Barrier free entrance to balcony



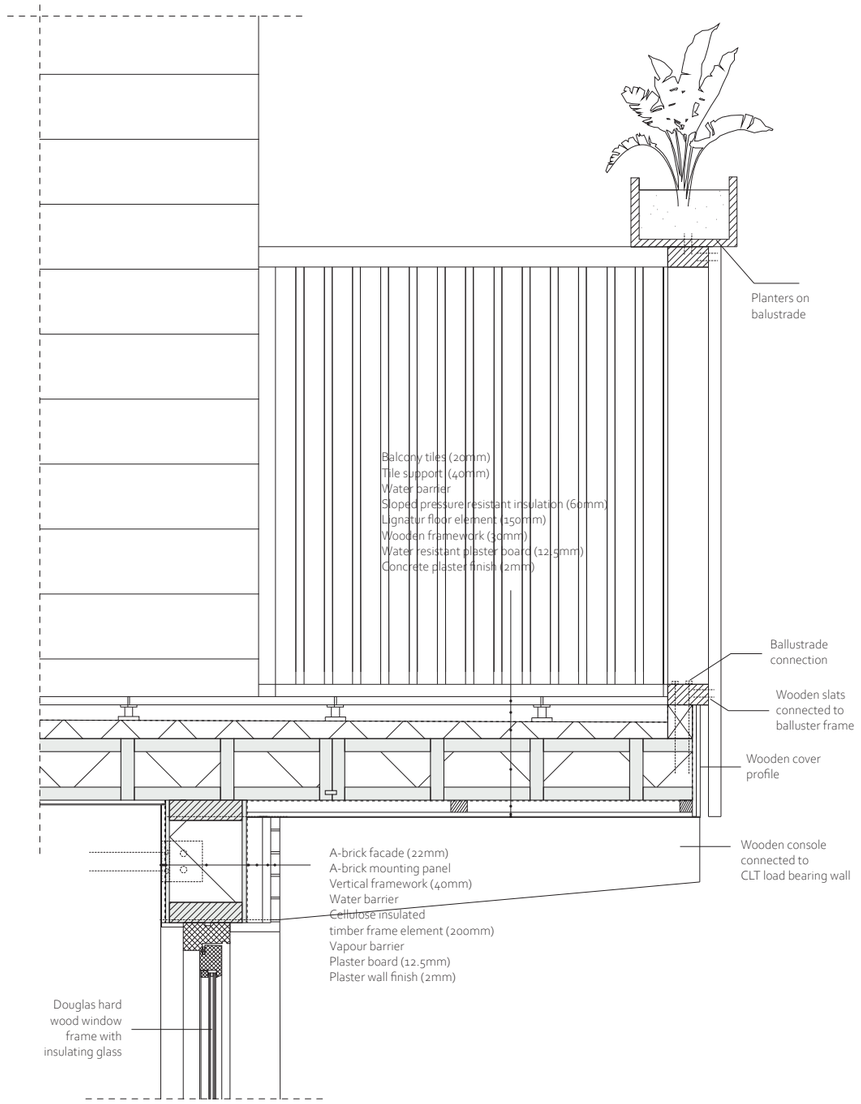
BALCONY - SENSE OF SECURITY, BUT STILL VERTICAL CONNECTION



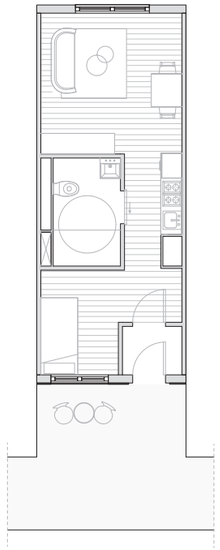
BALCONY AS A GARDEN

Detail 4 (1:10)

Balcony with balustrade

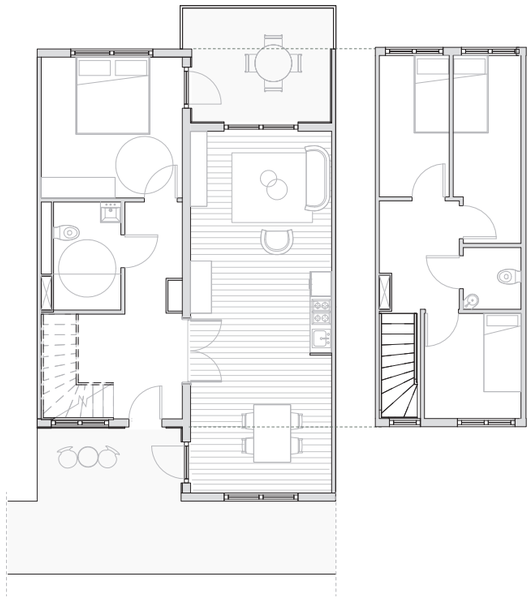


DWELLING TYPOLOGIES



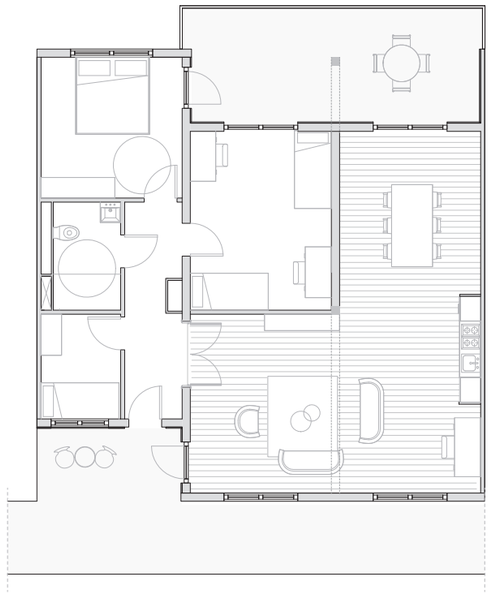
Single person studio
(30m²)

Single elderly / student / guest



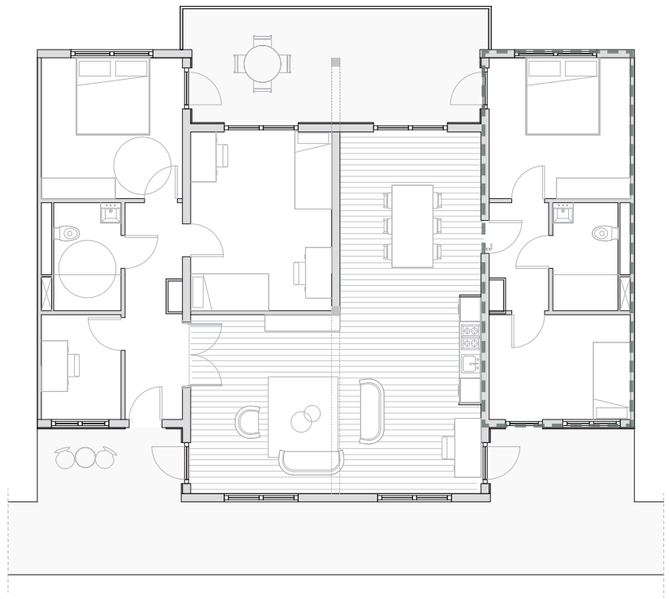
Maisonette
(90m²)

Family



4 room apartment
(90m²)

Family / (Elderly) couple



Family apartment
(option for kangaroo-living)
(90m²)

Family / shared

2 5

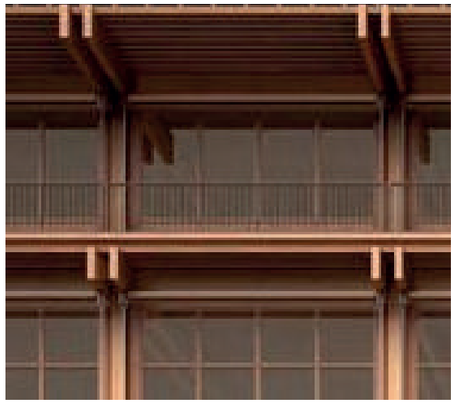
For a mix of households / generations

CONSTRUCTION PRINCIPLE

CLT LOAD BEARING WALLS

LIGNATUR FLOOR ELEMENTS

PREFAB TIMBER FRAME FACADE ELEMENTS

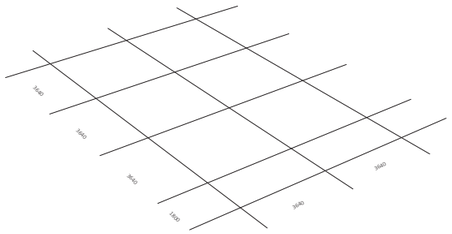


WOODEN GALLERY CONSTRUCTION

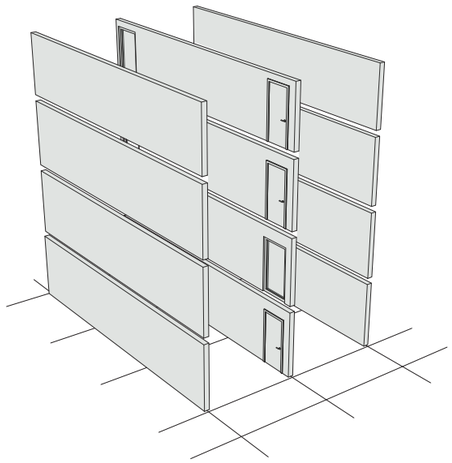
CONCRETE GALLERY FLOORS

Prefab construction elements

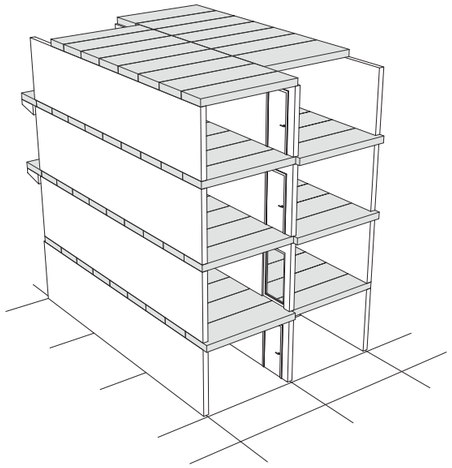
CONSTRUCTION PRINCIPLE



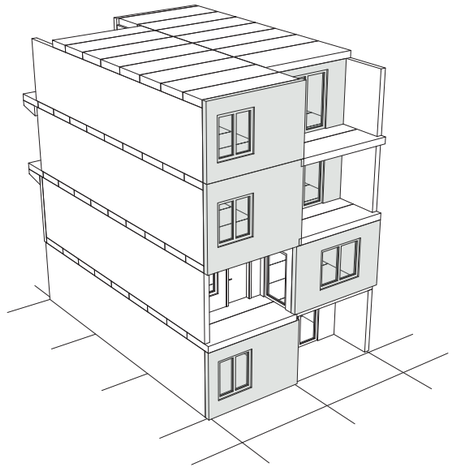
Construction grid



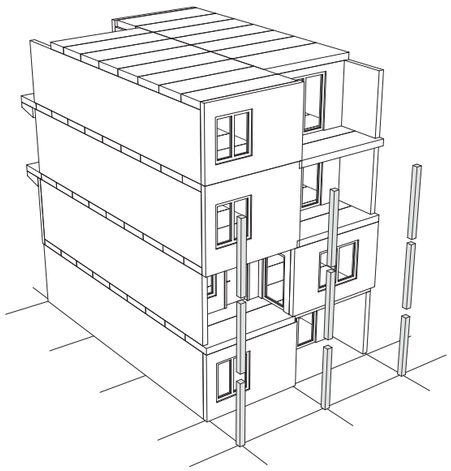
CLT load bearing walls



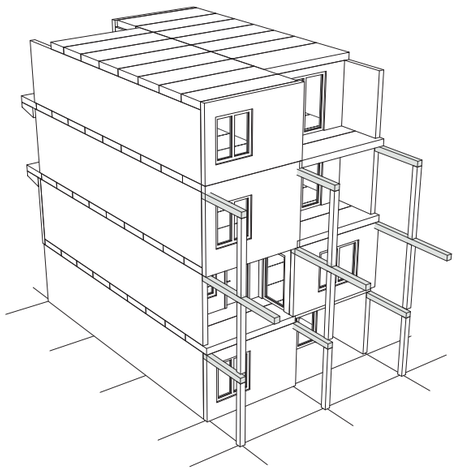
Lignatur floor elements



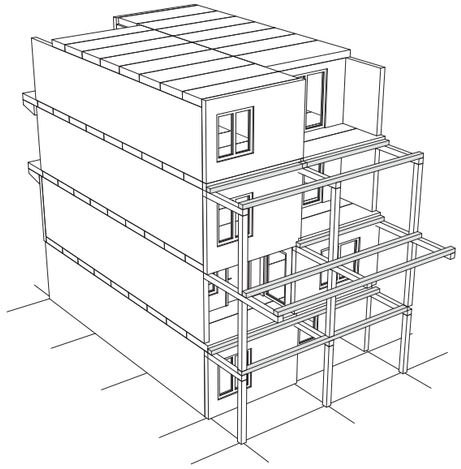
Timber frame facade elements



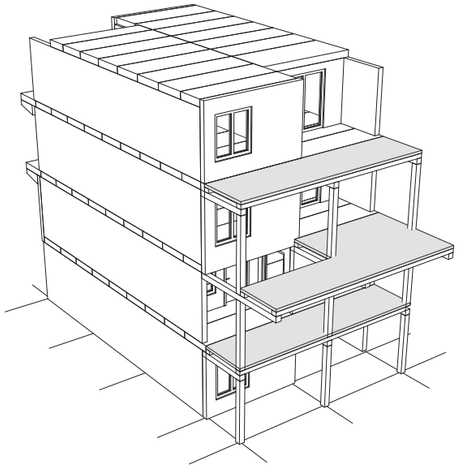
Wooden column structure



Wooden beam structure

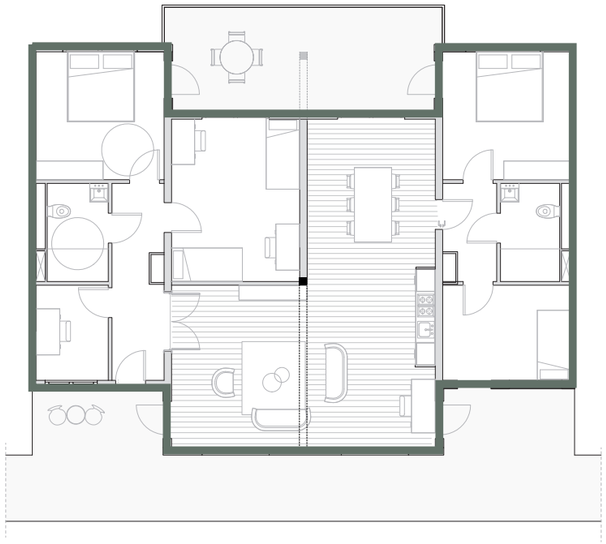


Secondary beam structure



Concrete gallery floor elements

ADAPTABILITY



Family apartment
(option for kangaroo-living)
(90m²)

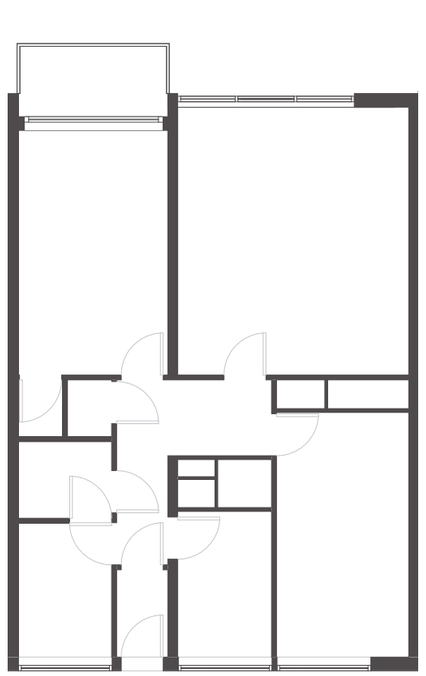
4 room apartment (90m²) + **Studio** (30m²)

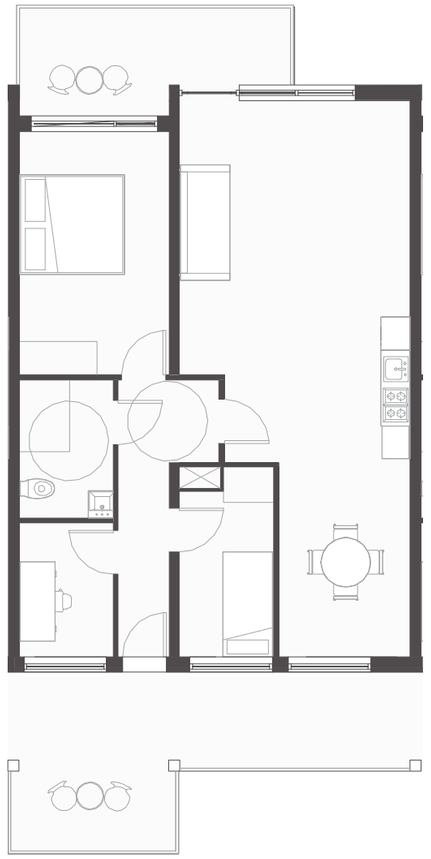
3 room apartment (60m²) + **3 room apartment** (60m²)

Respond to housing market demand
Future proof

TRANSFORMATION EXISTING

https://www.istockphoto.com/nl/foto/





2 5

More spacious floor plan
Extended balconies and galleries

GALLERIES WITH BALCONIES

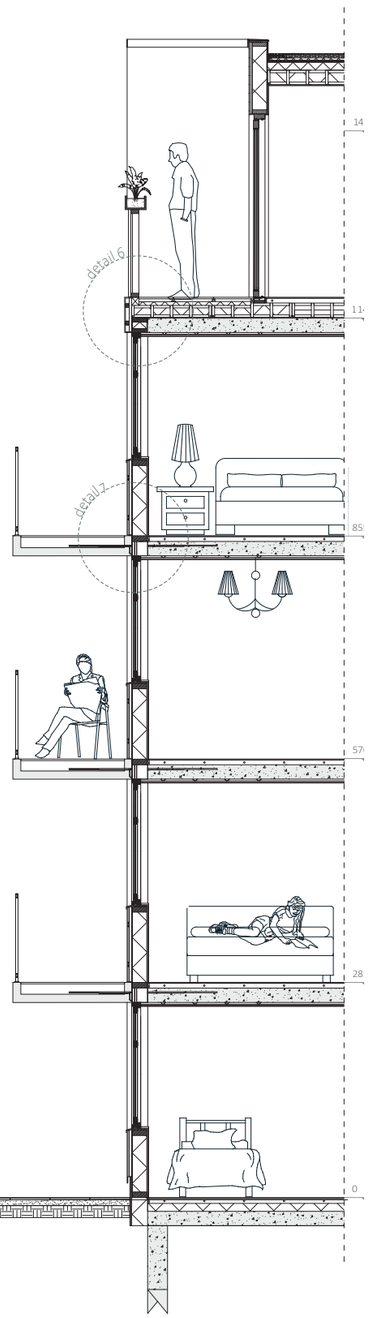
First floor zoomed in

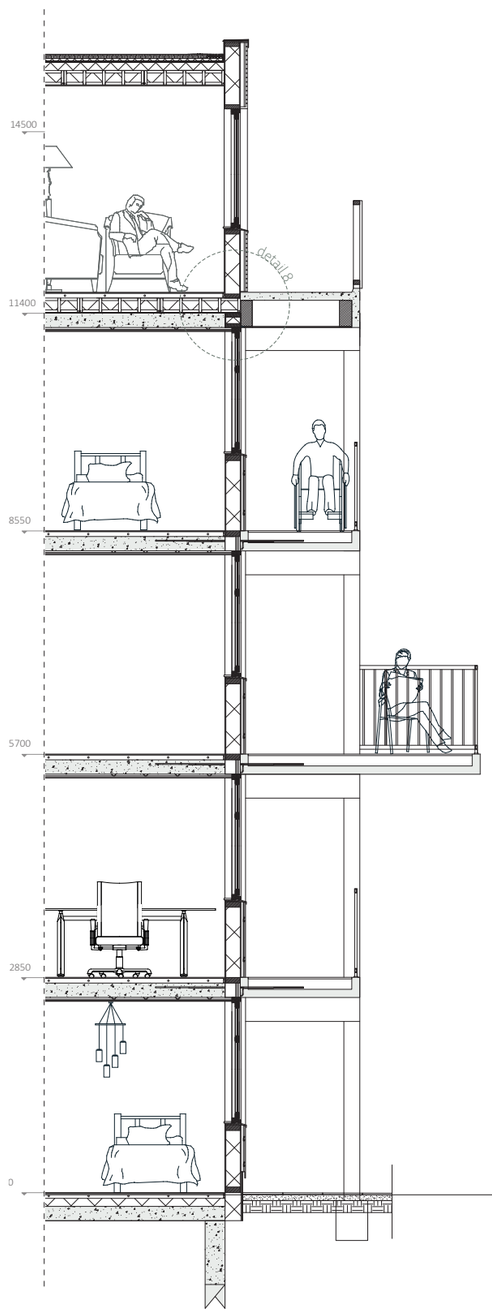
2 5 10 20

GALLERY BALCONY

TRANSFORMATION EXISTING

Balcony side existing



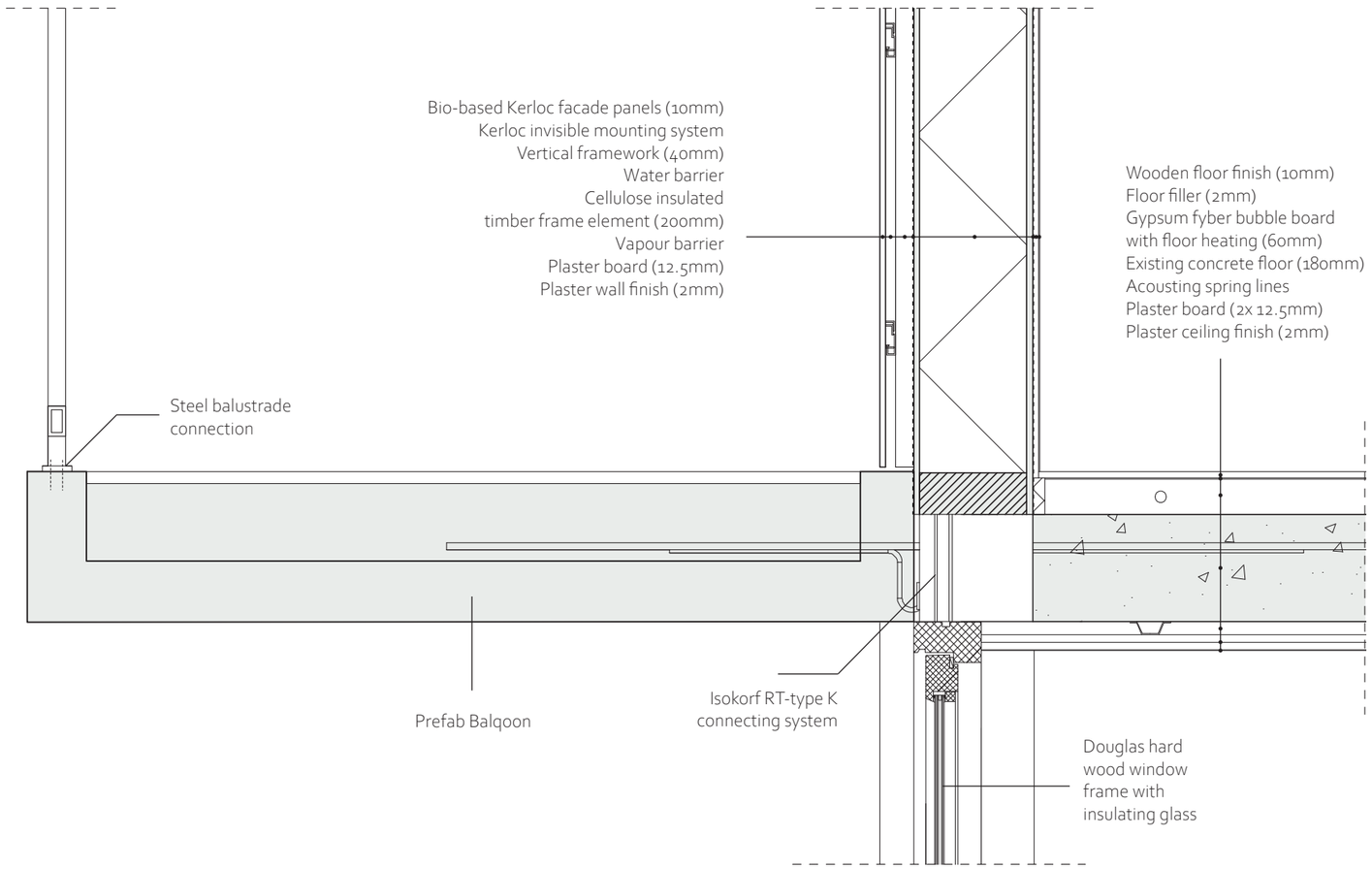


Gallery side existing

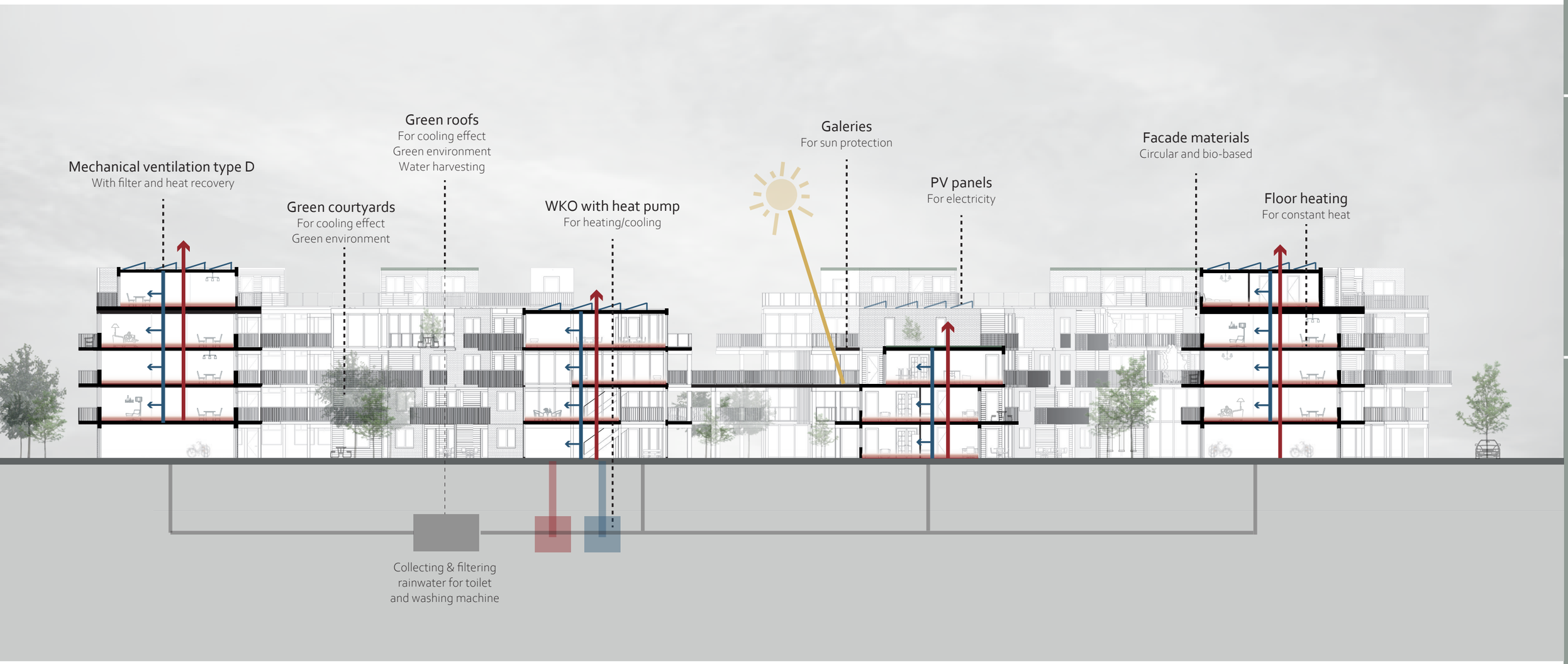
Replace existing facades to improve quality - add same colours for recognition

FLOOR HEATING

Detail 7 (1:10)
Prefab balcony



CLIMATE SECTION



Not only social sustainable, but also sustainable in other ways

SECTION OVERVIEW

1) Shared 'private' courtyard

2) Roof garden

3) Vertical interaction shared spaces

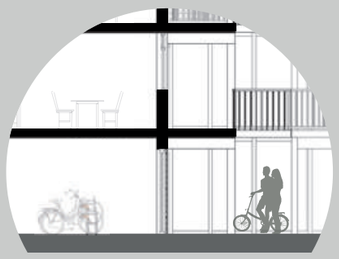
4) Vertical interaction galleries

5) 'Street' and bridge

6) Front porch and views on gallery

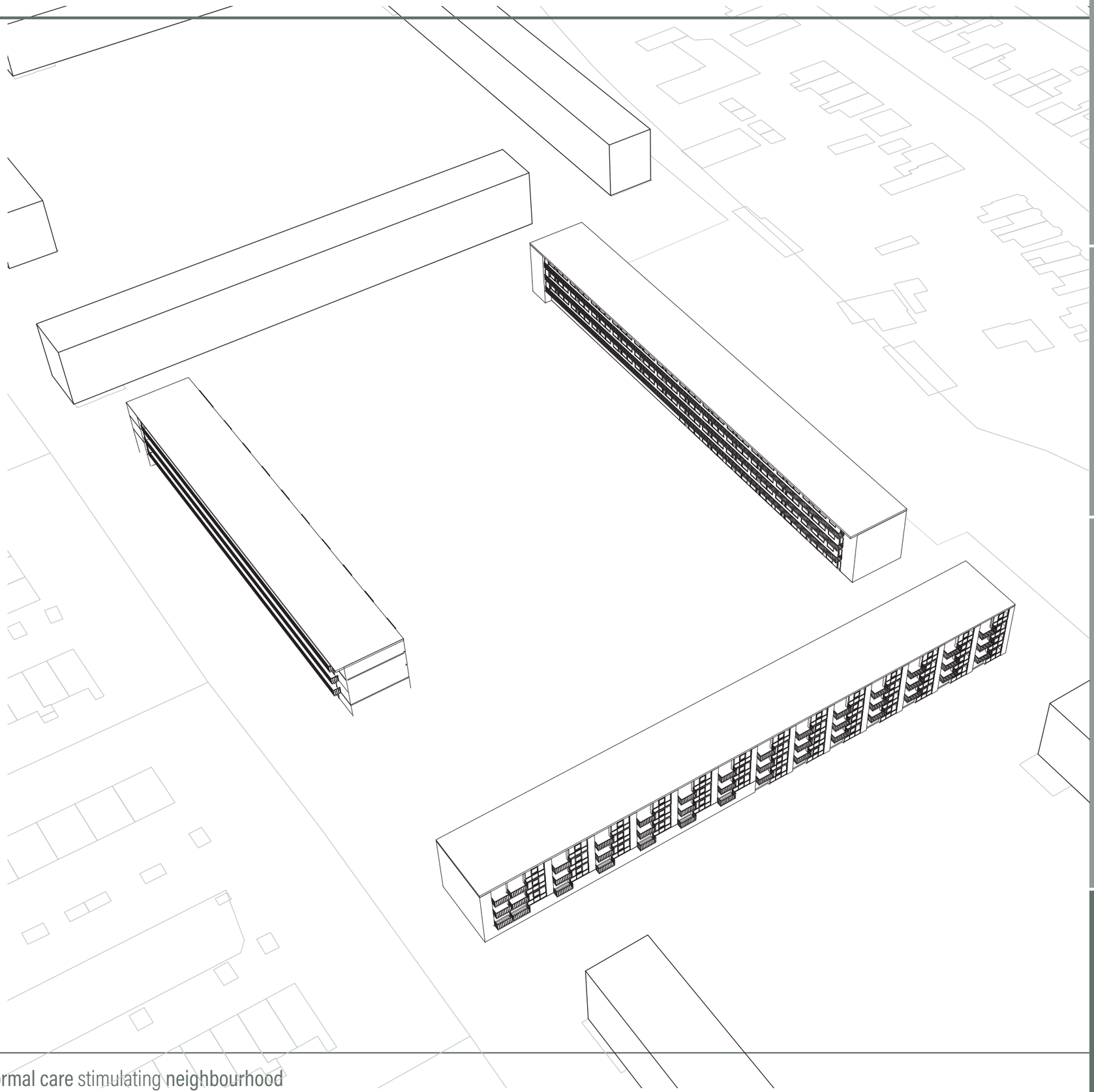
7) Balcony on more intimate side

8) Different activities in courtyards



9) Shared bicycle storage

OLD SITUATION



All together the design turns a site with undefined, unused in between spaces, without connection, social cohesion and life capable housing.....

NEW SITUATION

https://unsplash.com/s/photos/elderly-man

https://www.istockphoto.com/nl/foto/

Into a (socially) sustainable neighbourhood, focused on social cohesion, encounters, looking out and taking care for each other, with in all design choices taking the independence of James and Jill into account

Old situation courtyard

New situation courtyard

Old situation neighbourhood entrance

New situation neighbourhood entrance

LET ME ASK YOU A QUESTION..

https://unsplash.com/s/photos/elderly-man

https://www.istockphoto.com/nl/foto/

Would you help James & Jill?

THANK YOU!

questions?