

'Het 110-Morgen-Huis'

Multi-generational Co-living for Care



Studio:

Architecture and Dwelling/AR3AD110
Designing for Care in an Inclusive Environment

Tutors:

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Frederique van Anandel (Research)
Lex van Deudekom (Building technology)

Author:

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TU Delft, 2021-2022



Disconnection



Disconnection

Distance



Problem Statement



Less and less available
(health)care staff

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(health)care staff



Housing market for elderly;
no balance between supply
and demand

Problem Statement



Less and less available
(health)care staff



Housing market for elderly;
no balance between supply
and demand



Gap between current
Dutch built environment
and promising multi-
generational living concept

Disconnection

Distance



Disconnection

Distance



Connection

Disconnection

Distance



Connection

Interaction

Getting to know the Elderly



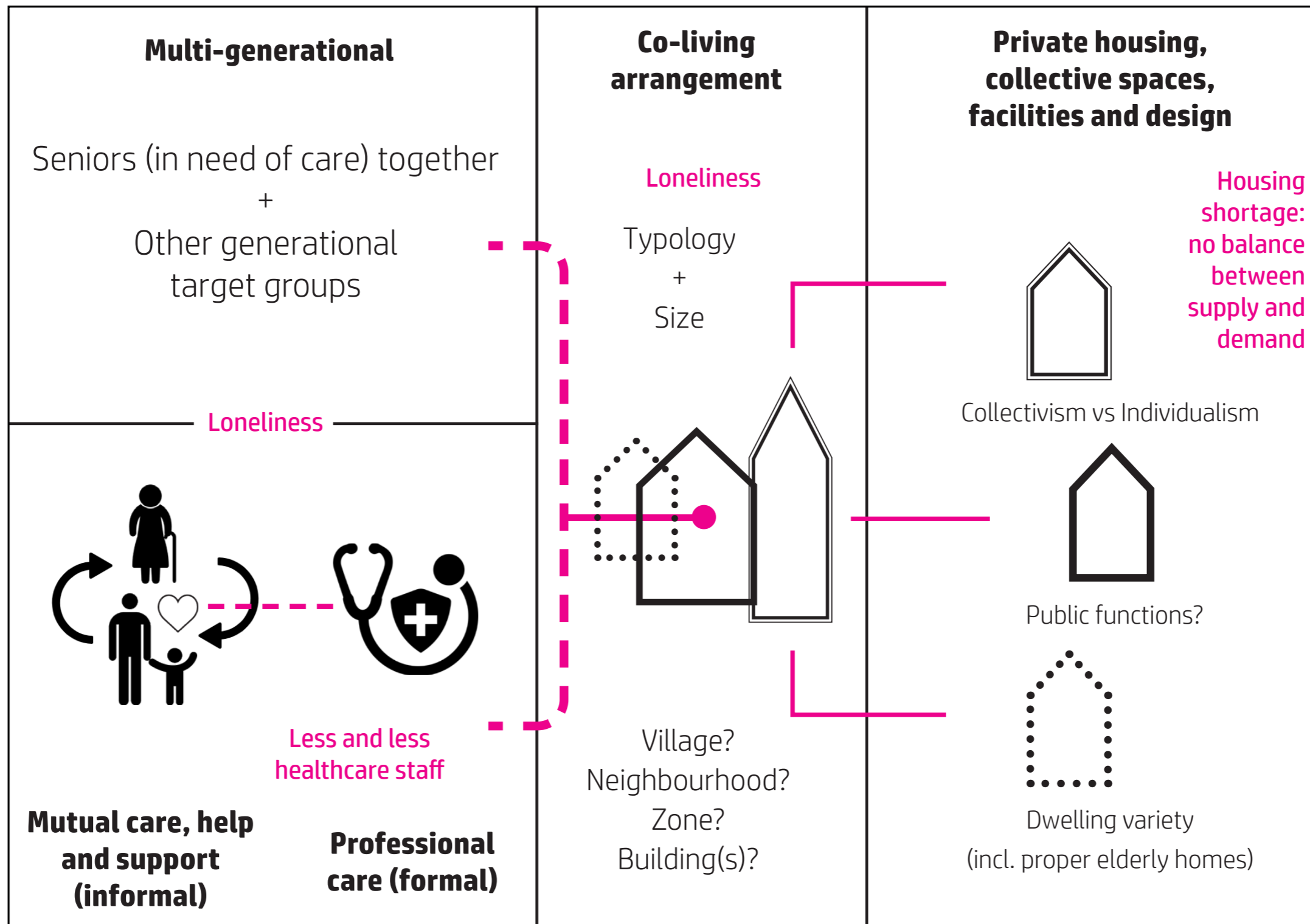
Multi-generational nursing home **'Huis Assendorp'**, Zwolle

Future Architecture...



How can architectural design effectuate multi-generational co-living in which elderly (in need of care) can live integrated and independent for as long as possible?

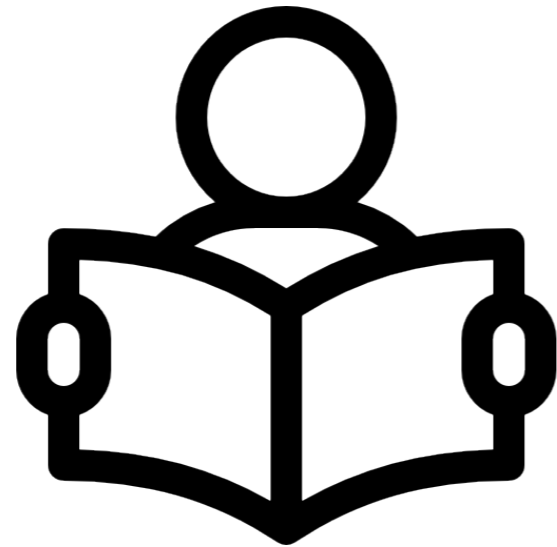
Research Structure



Literature

+

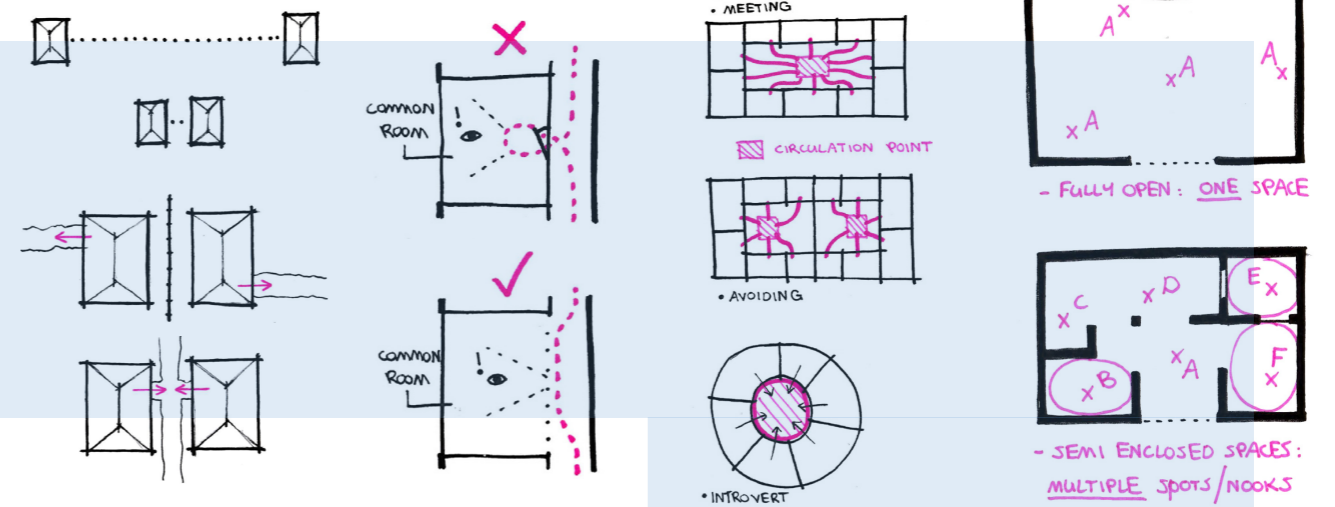
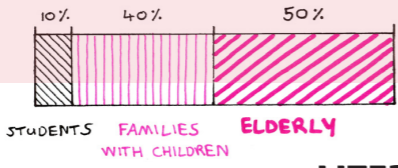
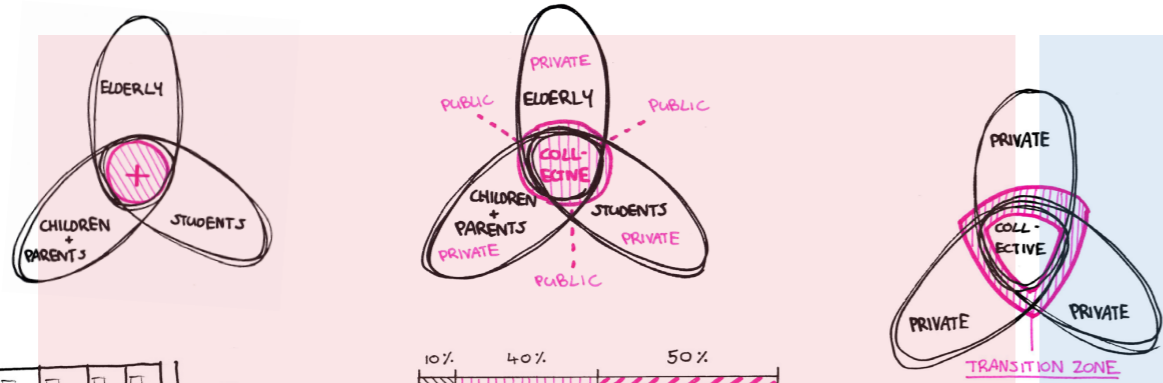
Case studies



'Vindmollebakken', by Helen&Hard Architects, Norway



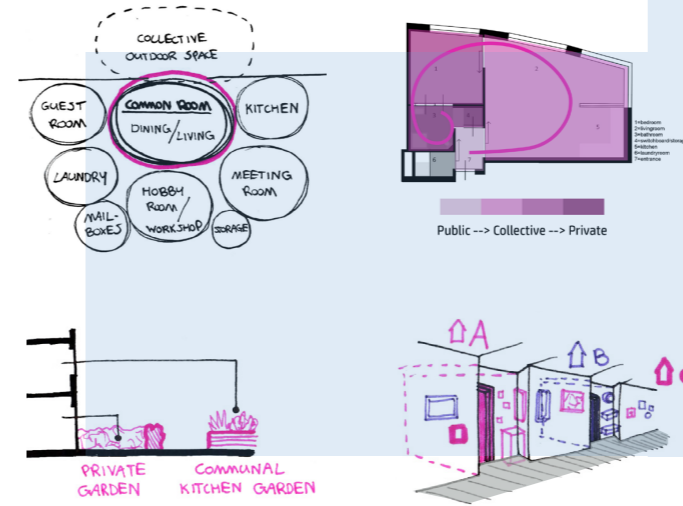
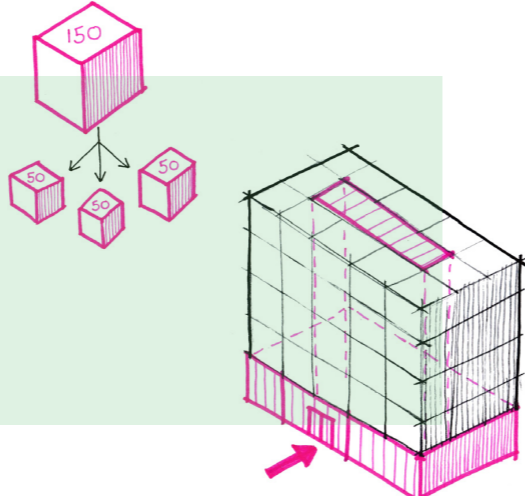
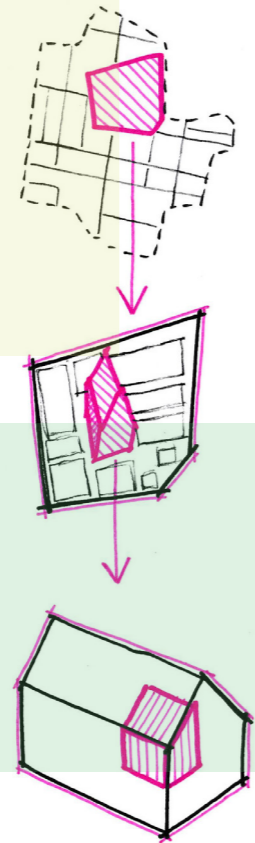
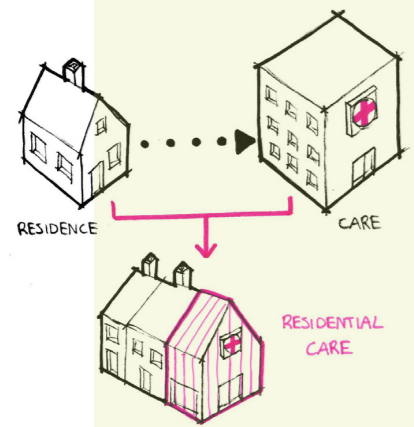
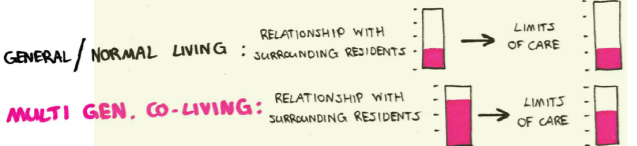
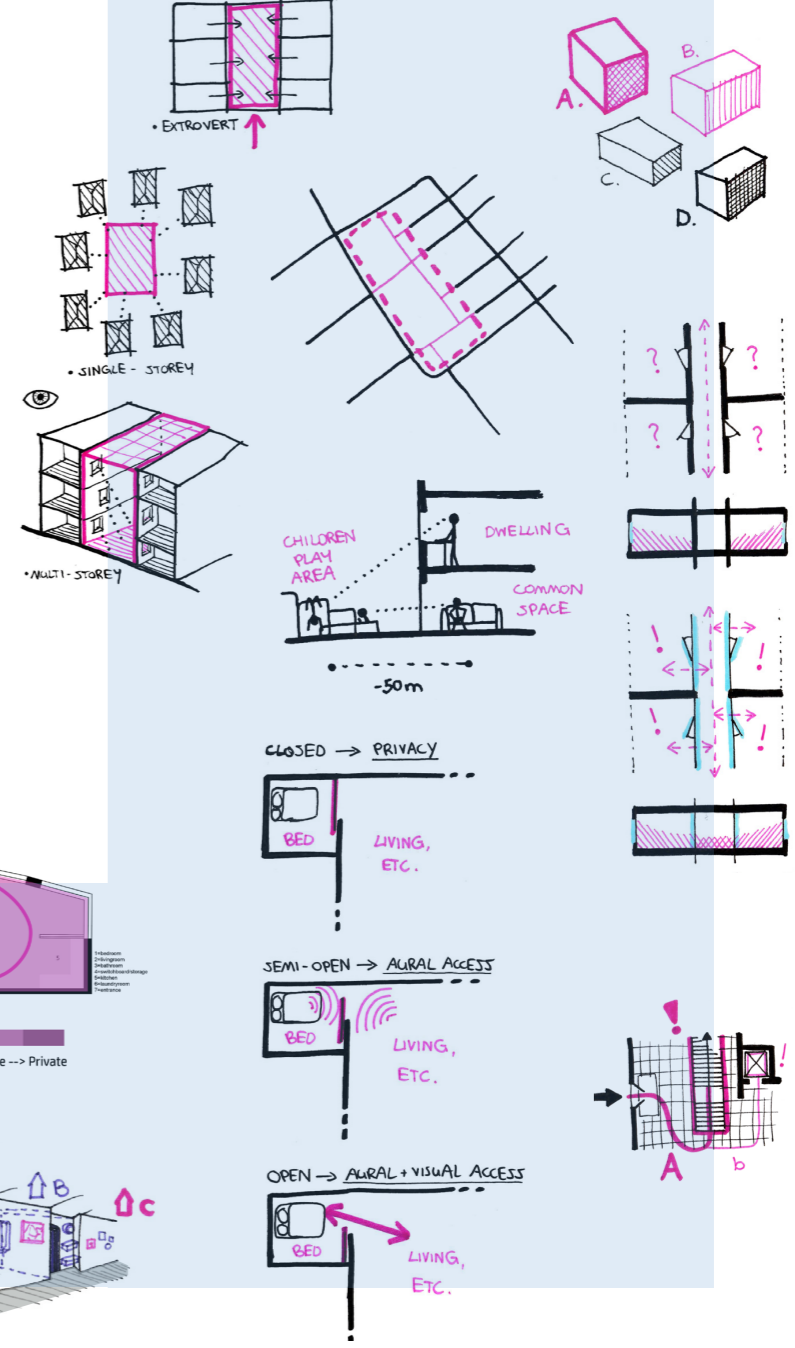
'Zwei+plus', by Trans_city Architects, Austria



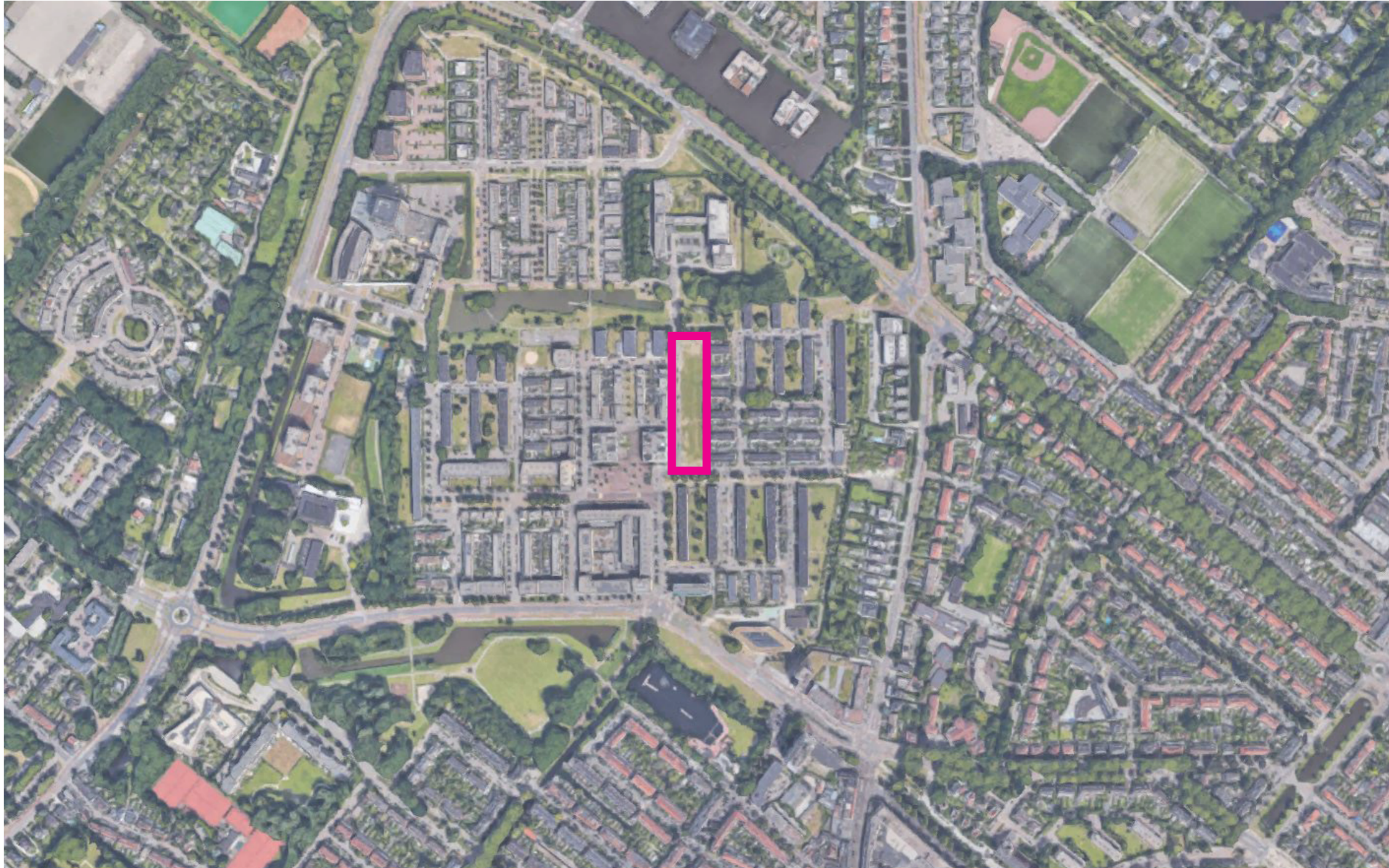
LITERATURE

Multi-generational	Co-living arrangement	Private housing, collective spaces, facilities and design
Seniors (in need of care) together + Other generational target groups	Loneliness Typology + Size	Housing shortage: no balance between supply and demand
Loneliness	Collectivism vs Individualism	Public functions?
Mutual care, help and support (informal)	Village? Neighbourhood? Zone? Building(s)?	Dwelling variety (incl. proper elderly homes)
Professional care (formal)		

Visual Summary / Toolbox

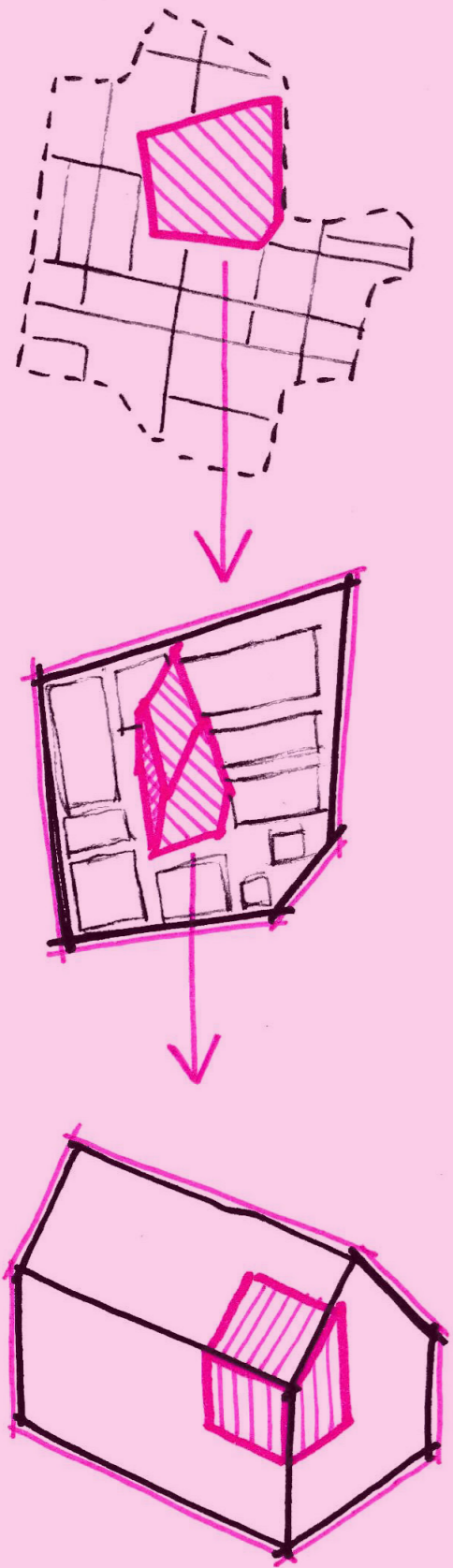


Location:

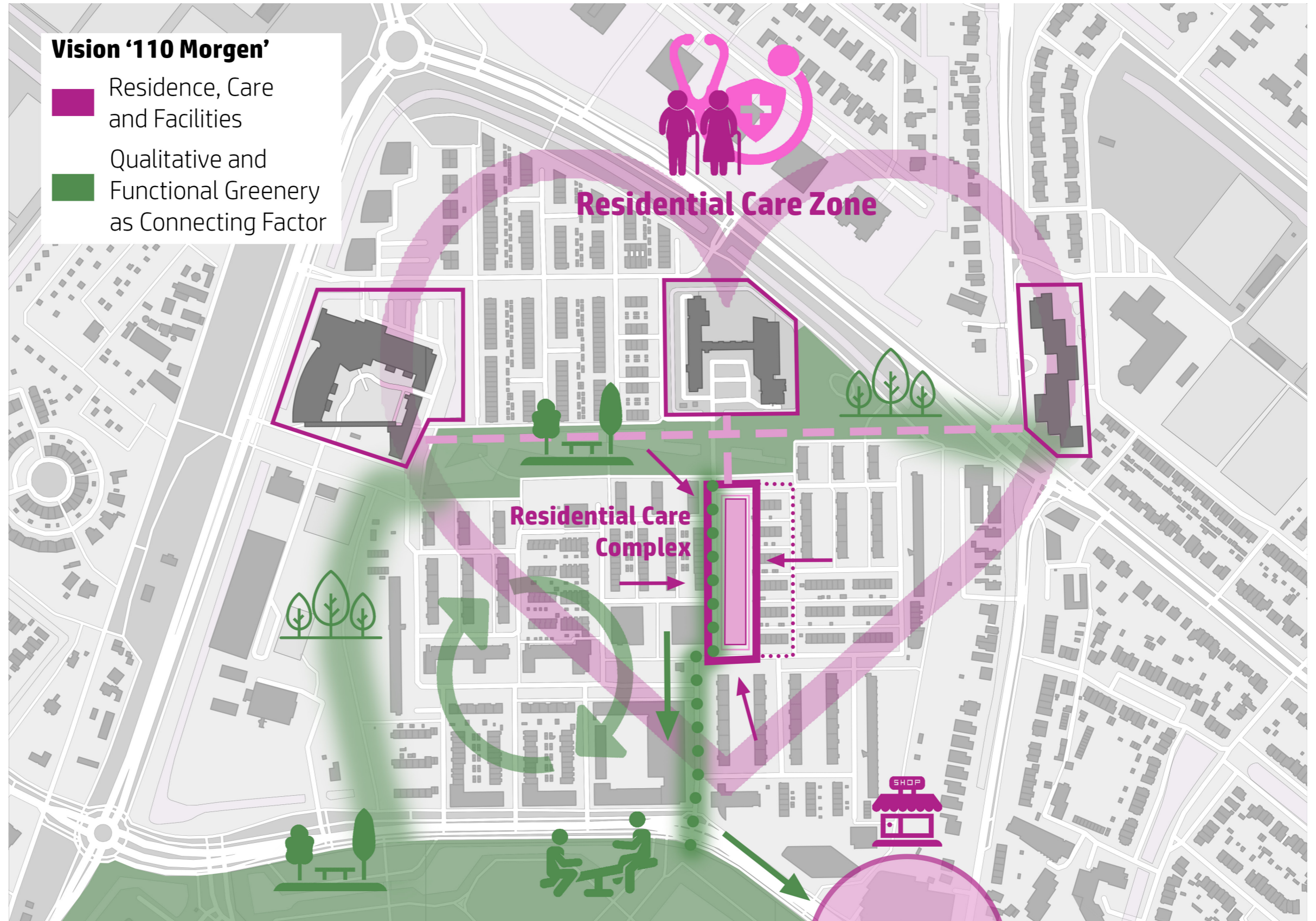


110-Morgen, Hillegersberg-Schiebroek, municipality of Rotterdam

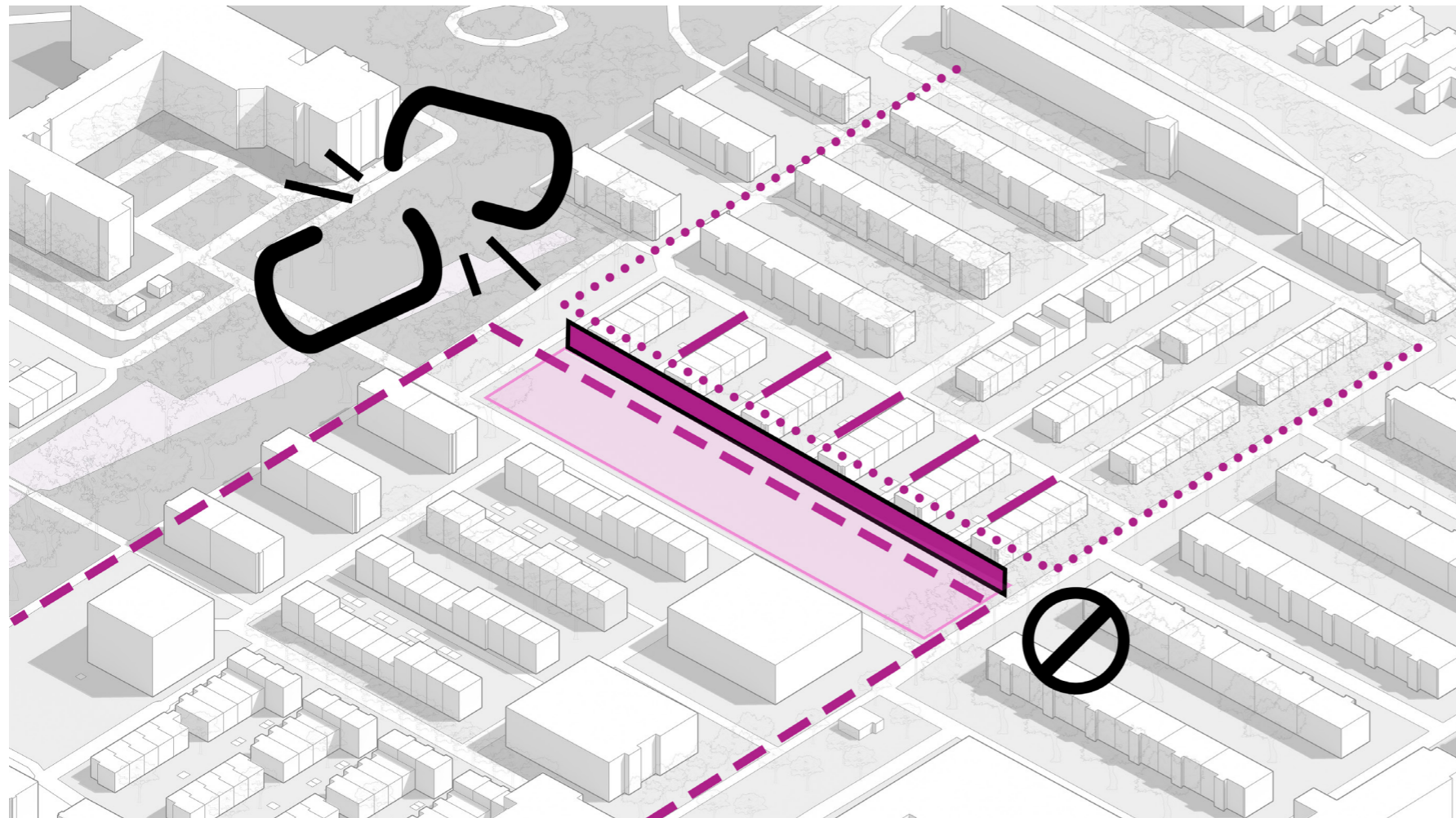
Research:

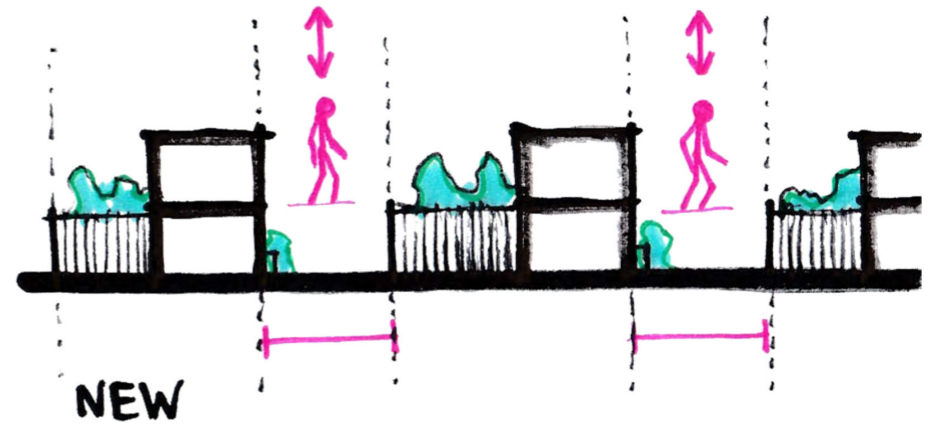
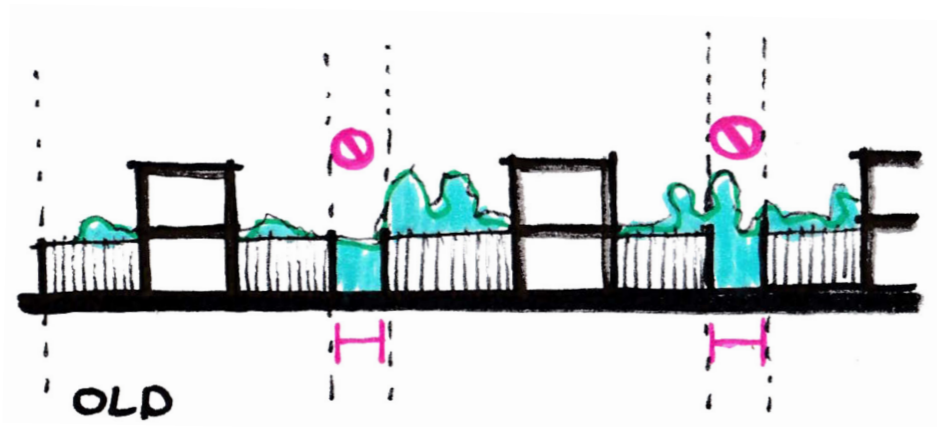


Stavenuiter, Van Dongen, 2008



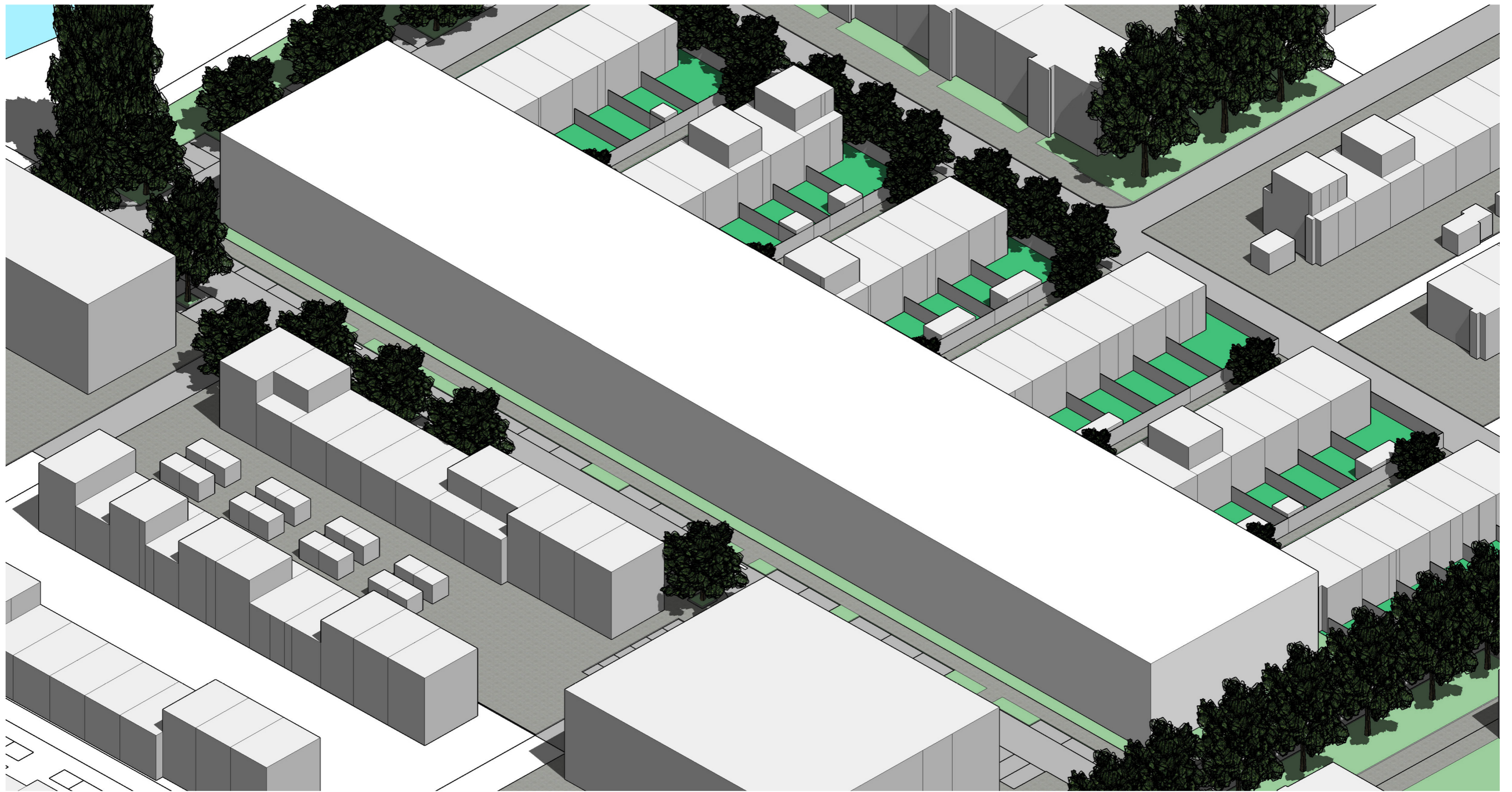
'The Wall'; disconnected site within urban network

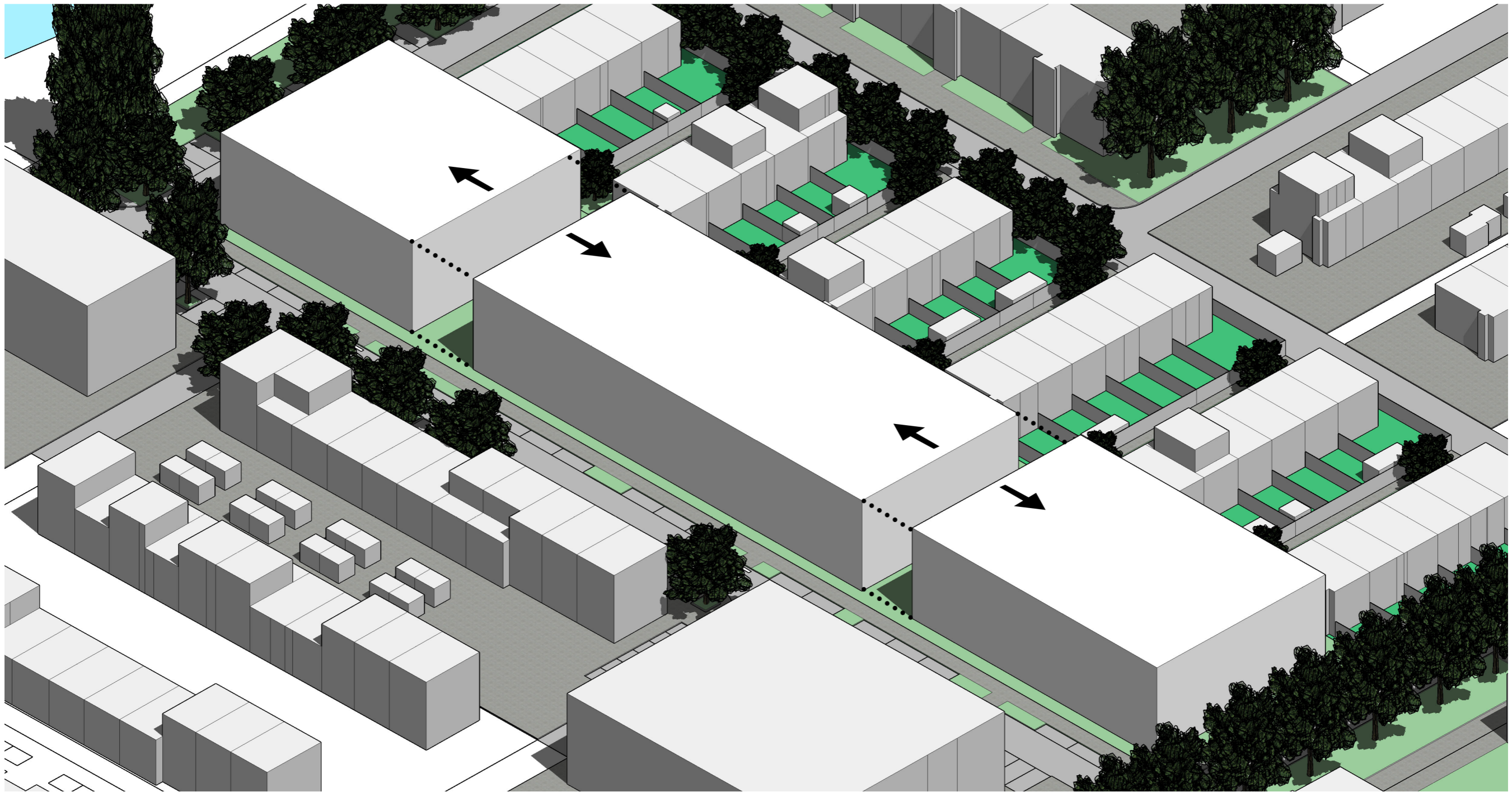


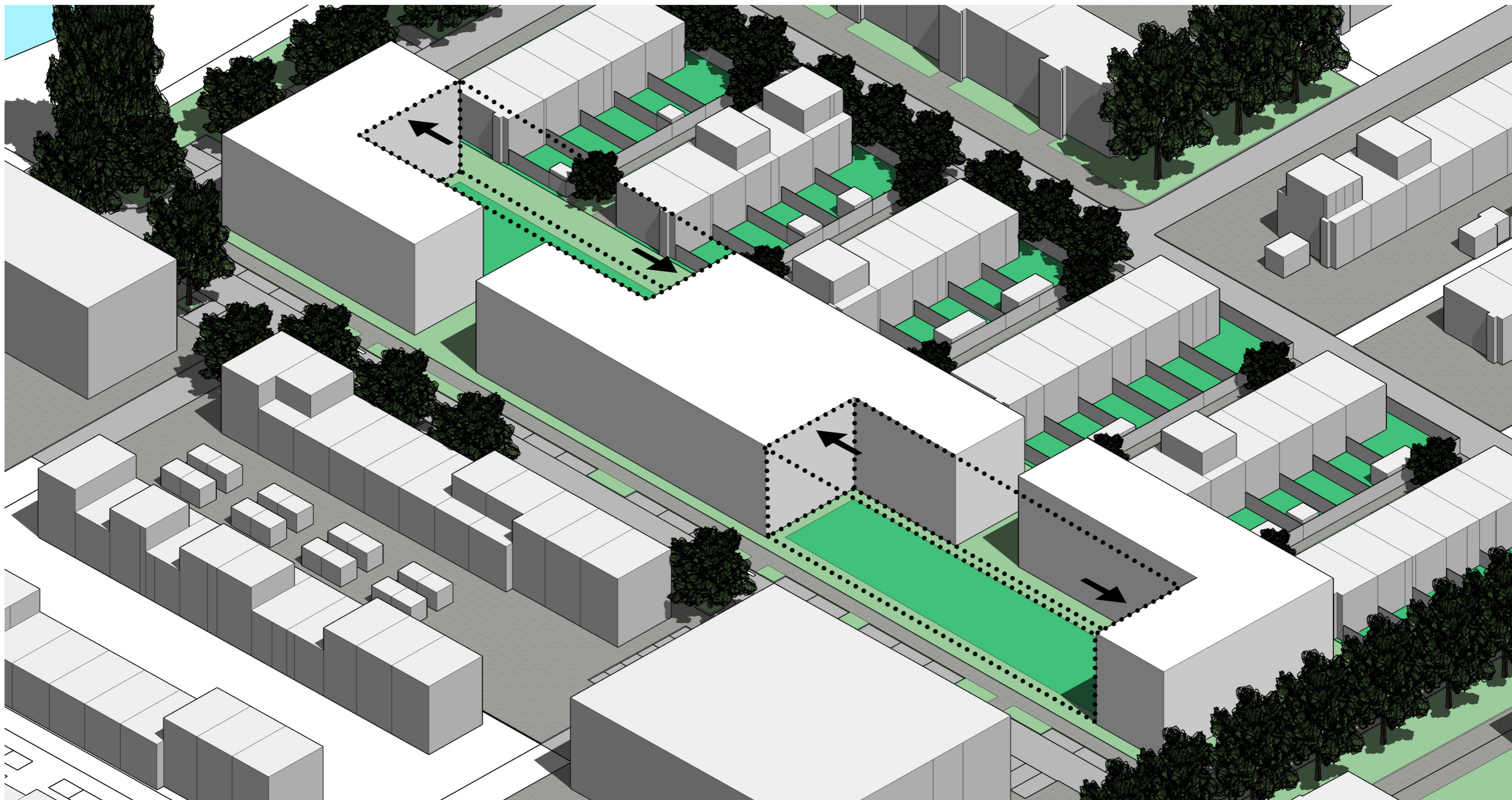


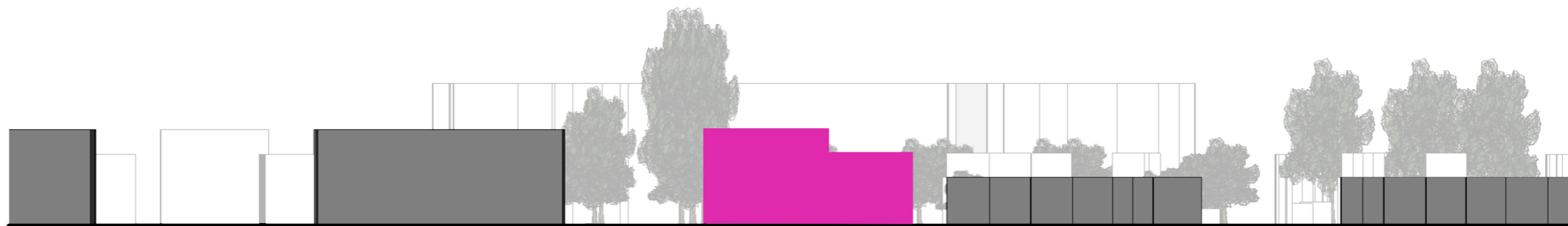
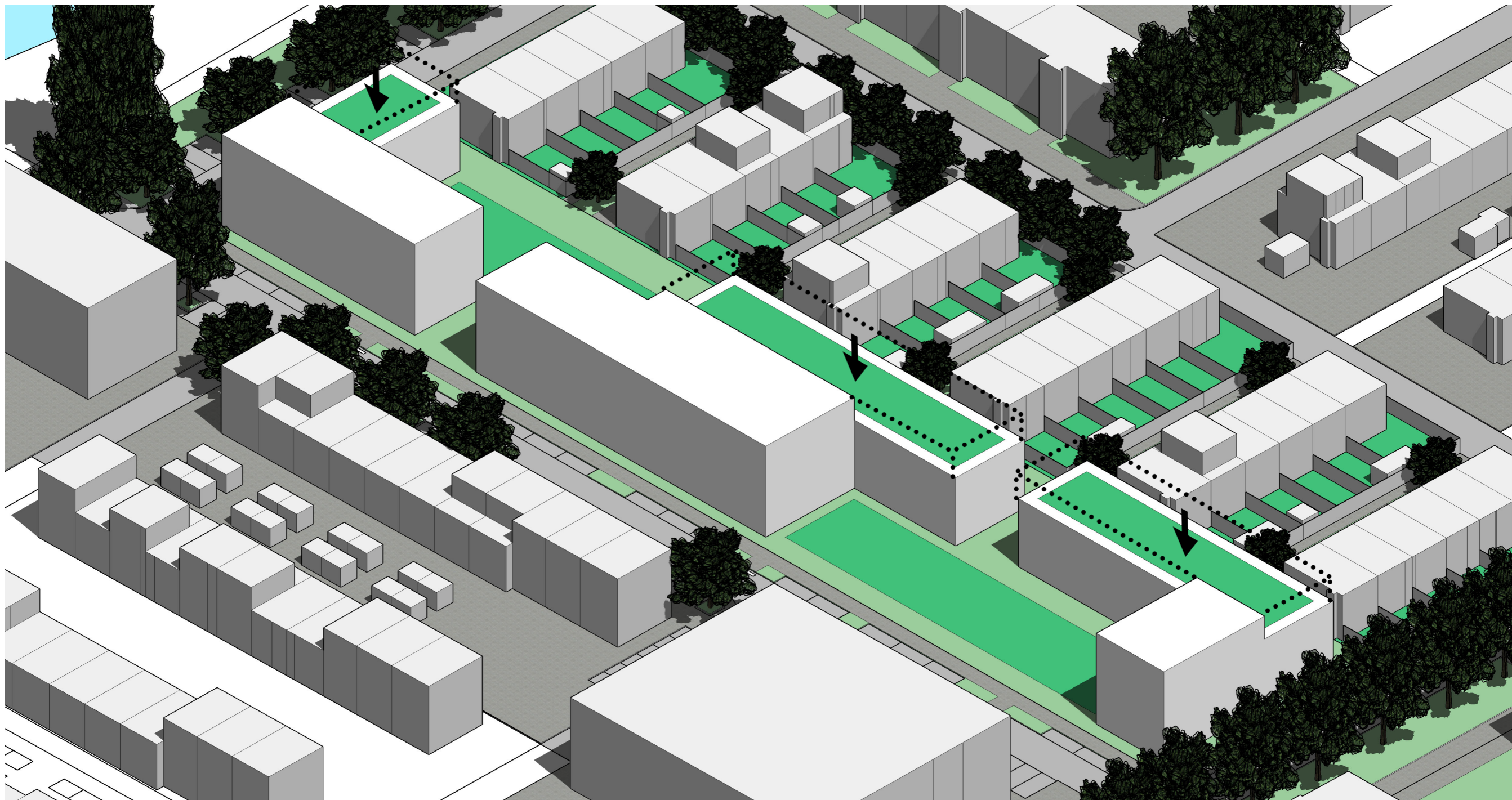


Impression: 'The Alleyway'

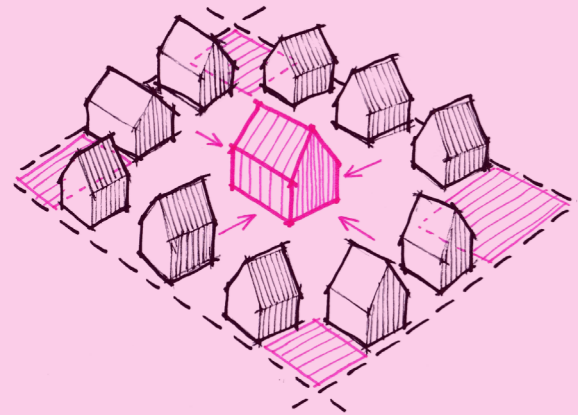
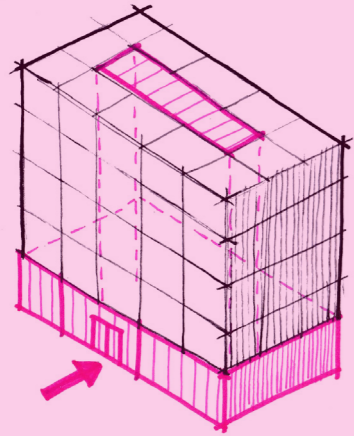




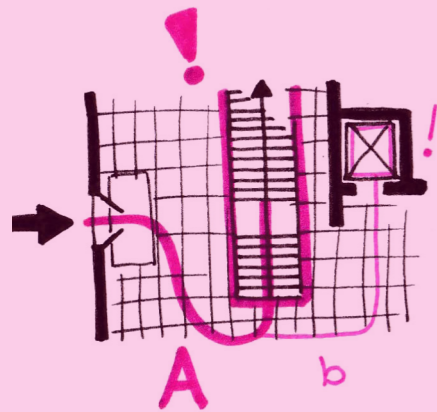
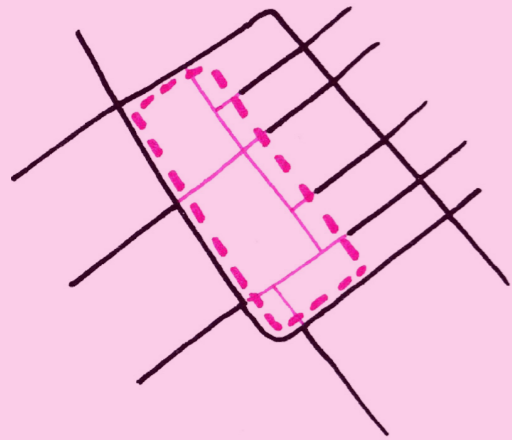




Research:



Vestbro, 2000; Choi, 2004; Pedersen, 2015



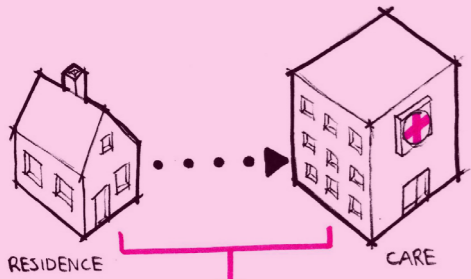
Miedema, 2017



Floor 0



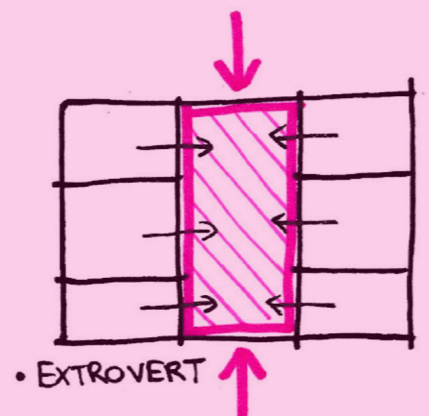
Research:



Rusinovic et al., 2019



'Zwei+plus', 2018



Lindén, 1992



Floor 0

Public

Collective

Private

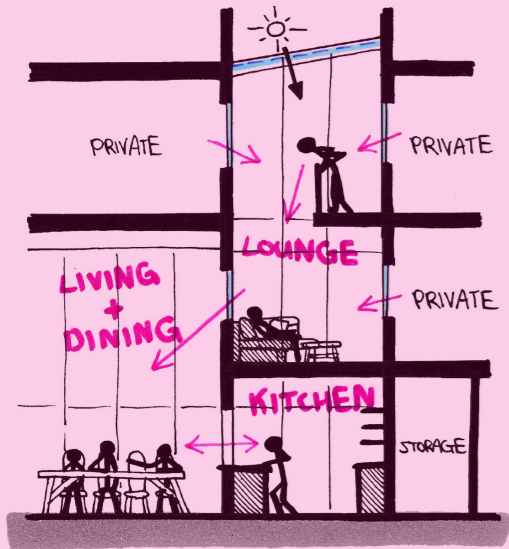


Impression: 'The Square'



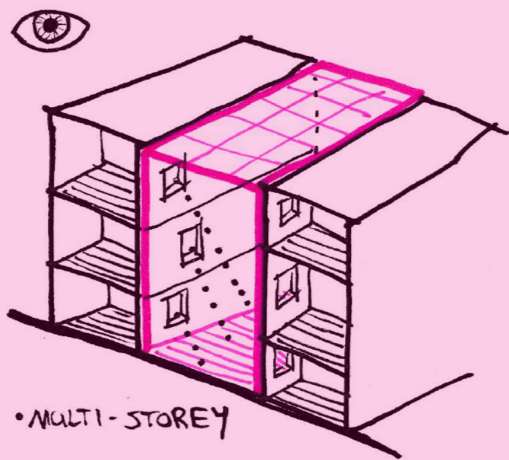
Impression: 'The Garden'

Research:



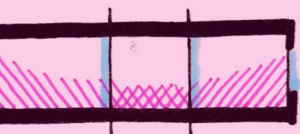
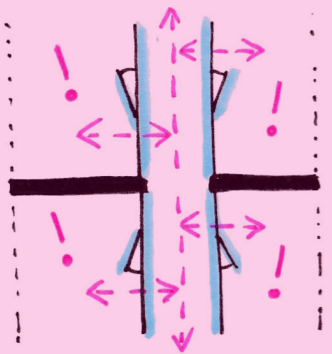
→ DIRECT/VISUAL INTERACTION

'Vindmollebakken', 2019



• MULTI-STOREY

Choi, 2004; Fromm, 1991



Miedema, 2017



Floor 1





Impression: 'The Common Living Space'



Common Kitchen, Dining + Lounge

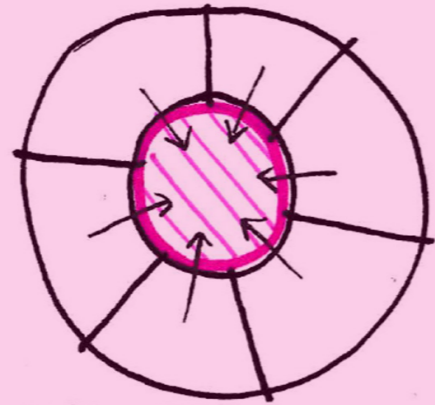
Common Kitchen, Dining + Lounge

Common Kitchen, Dining + Lounge

Floor 2

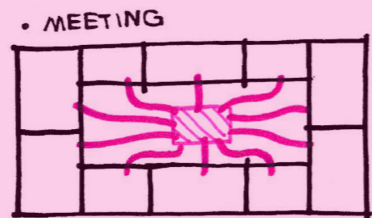


Research:



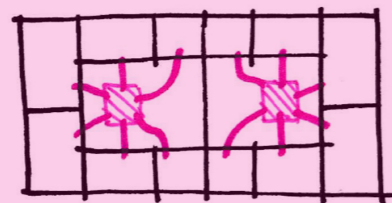
• INTROVERT

Lindén, 1992



• MEETING

◻ CIRCULATION POINT



• AVOIDING

Williams, 2005



Floor 2

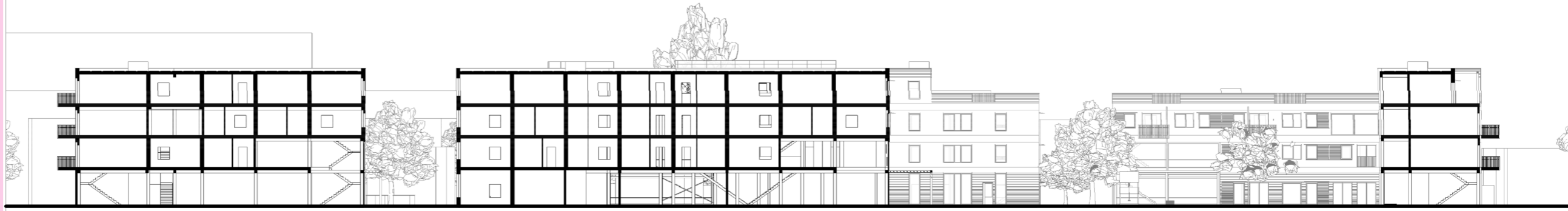
Collective

Private

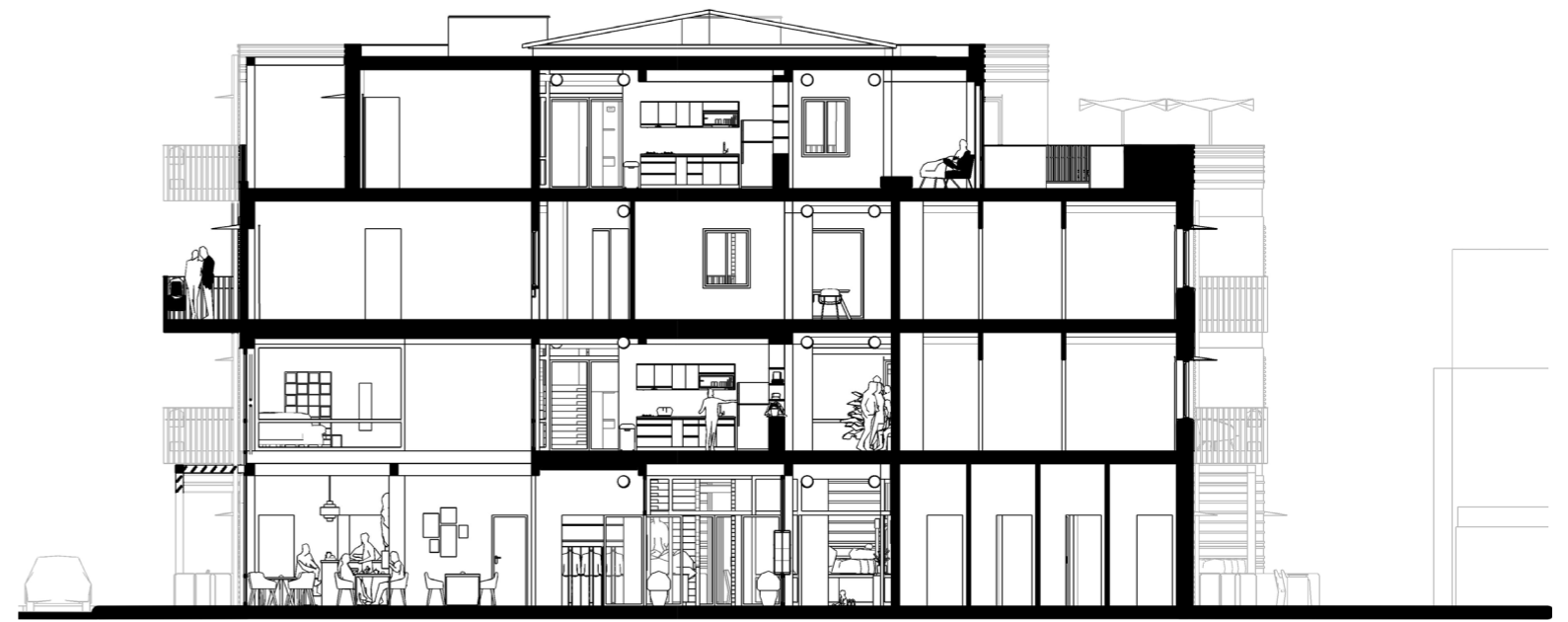
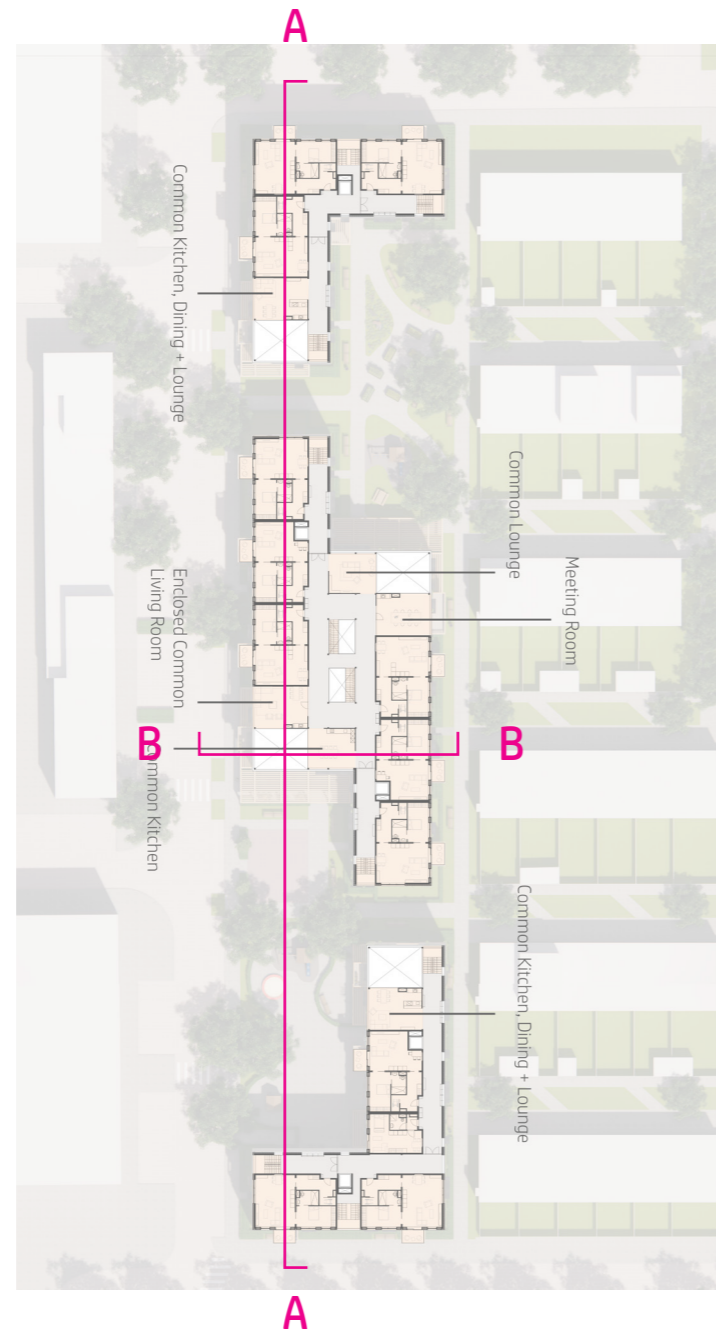




Impression: 'The Window Nook'



Section AA

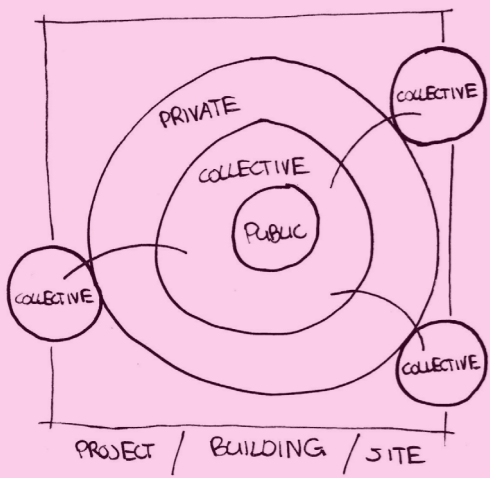


Section BB

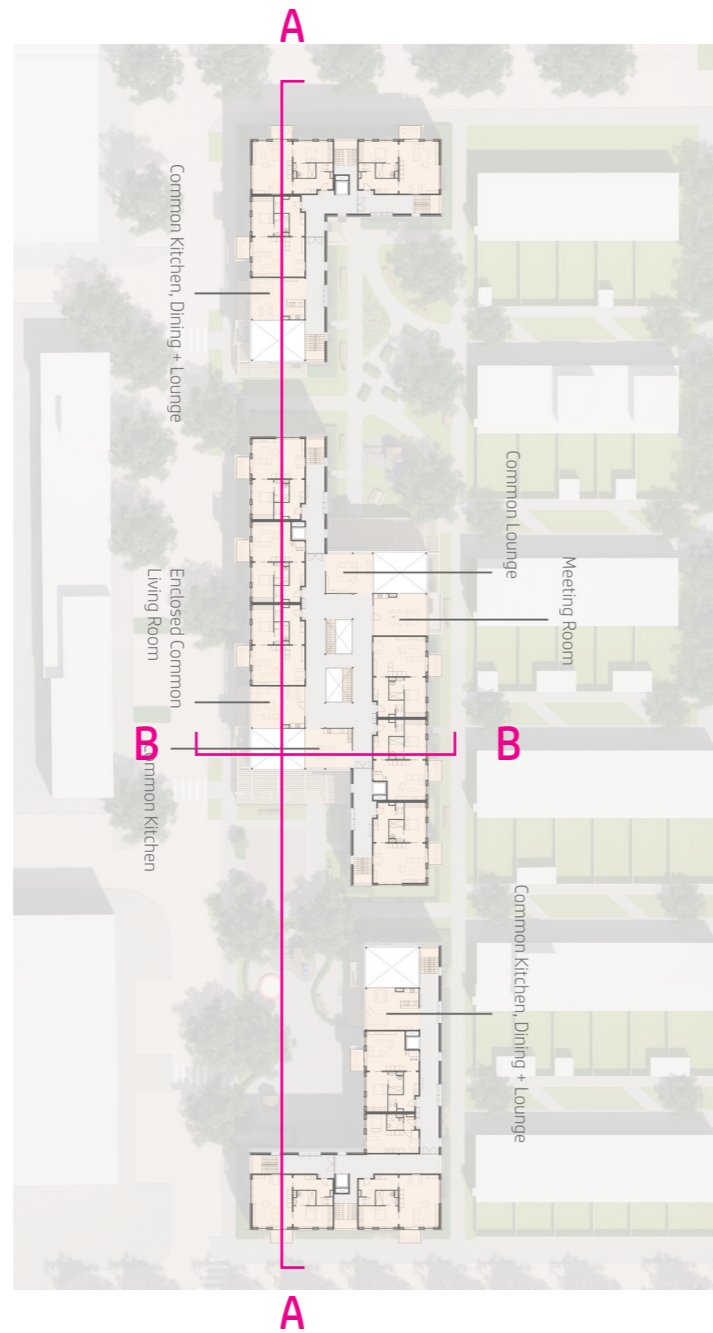
Research:



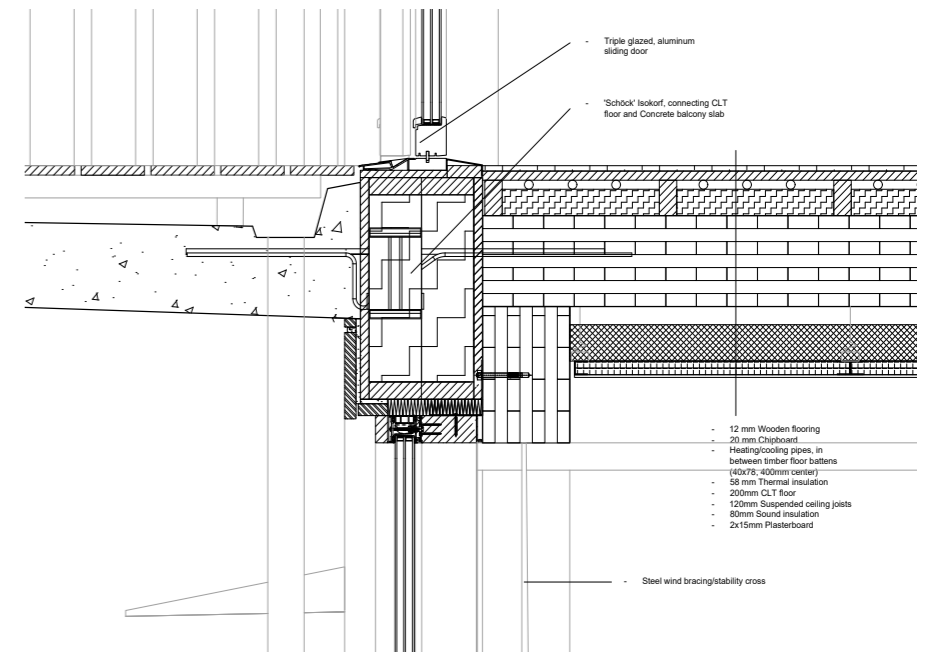
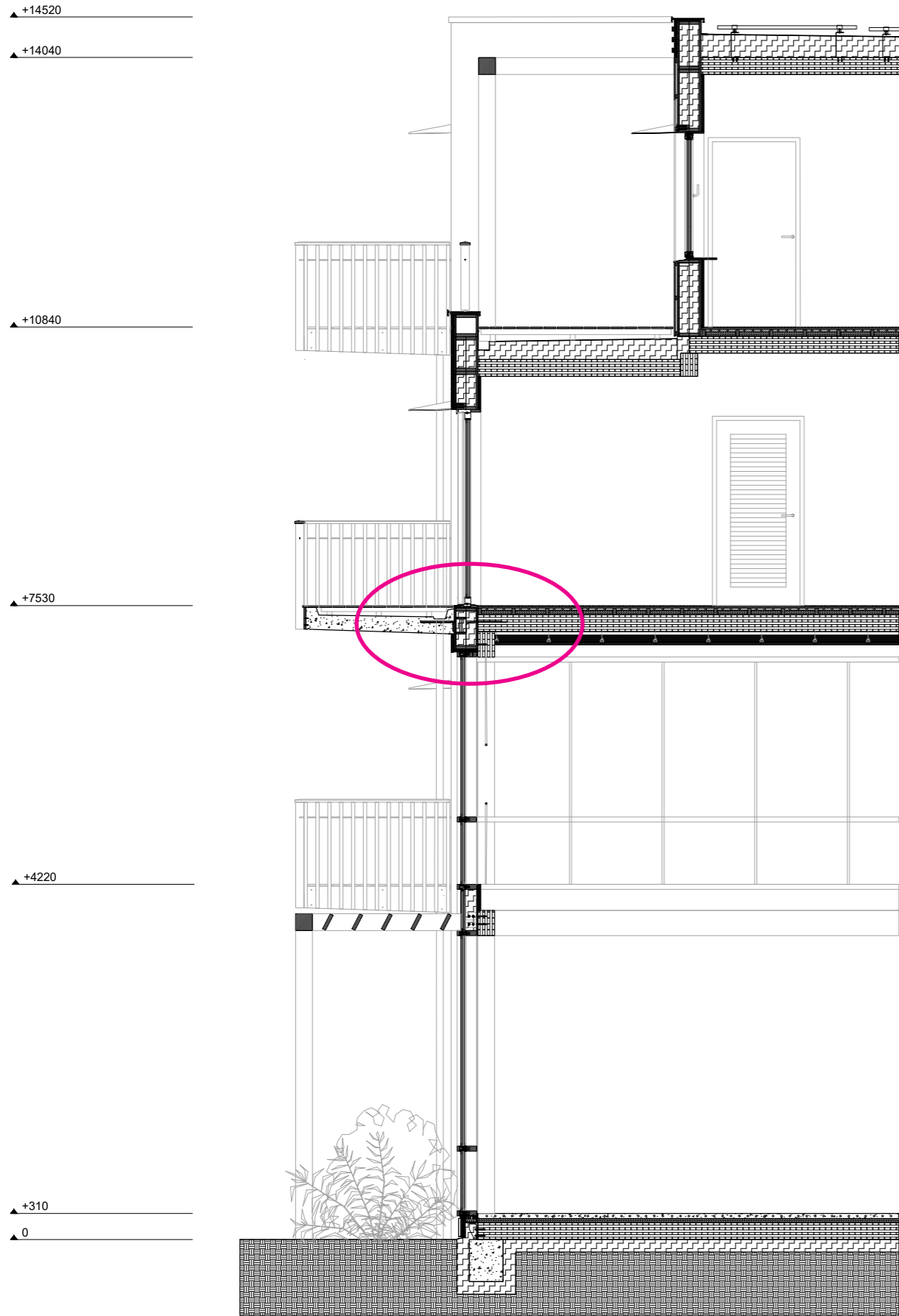
'Vindmollebakken', 2019



Section AA



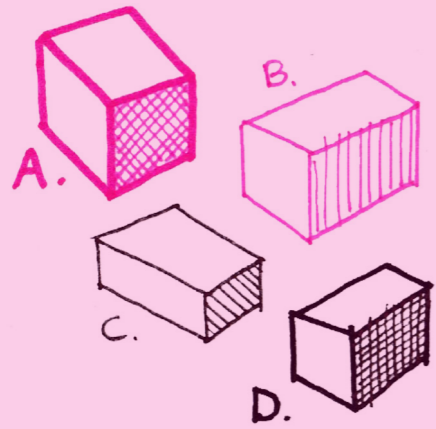
Section BB



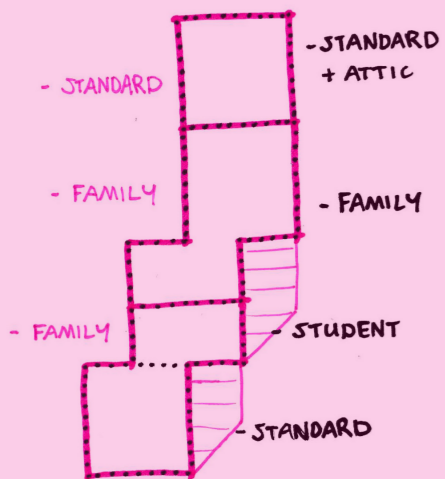
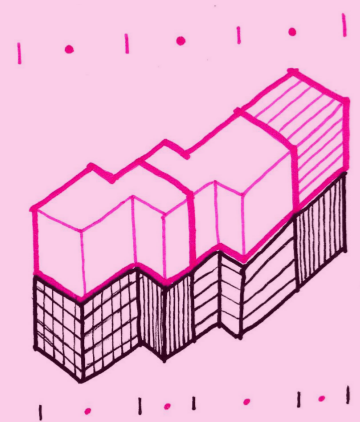


Impression: 'The Community Café'

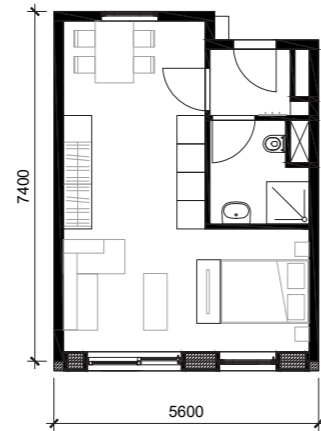
Research:



Fromm, 1991



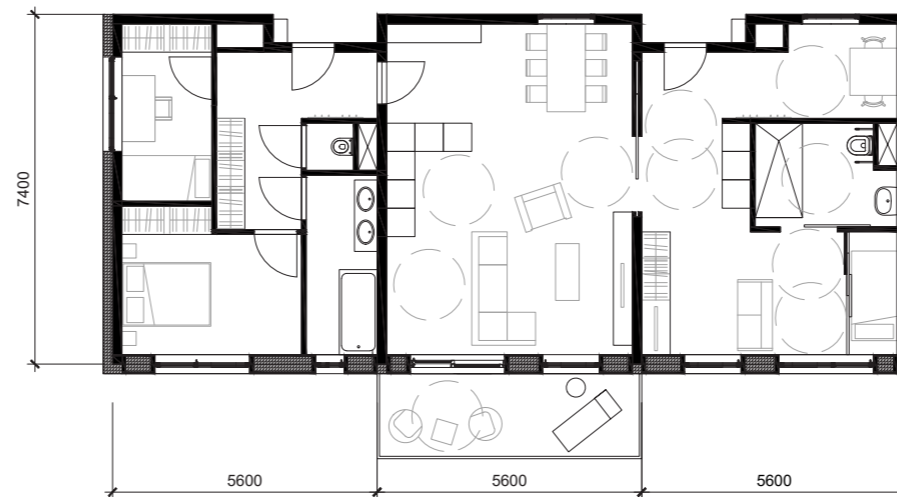
'Vindmollebakken', 2019



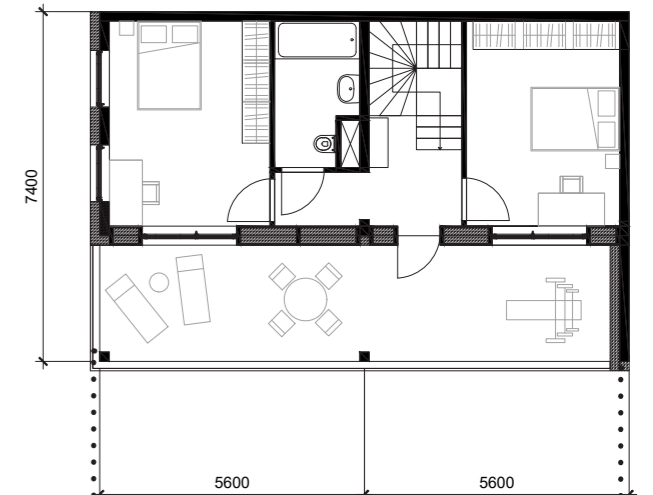
1. Student or single
5 in project



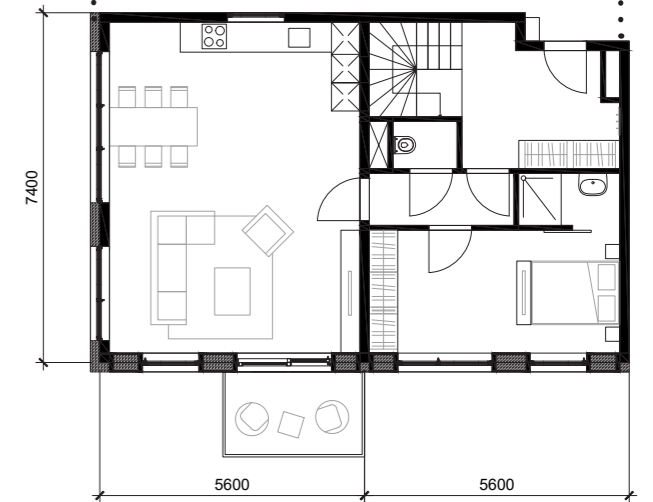
2. Elderly
27 in project



4. 'Kangaroo living': Elderly + family/their children
1 in project

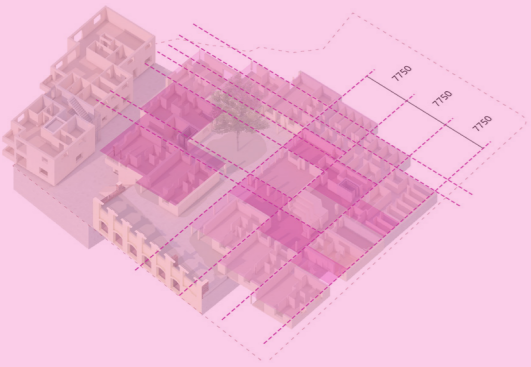


3. Family (maisonette)
4 in project

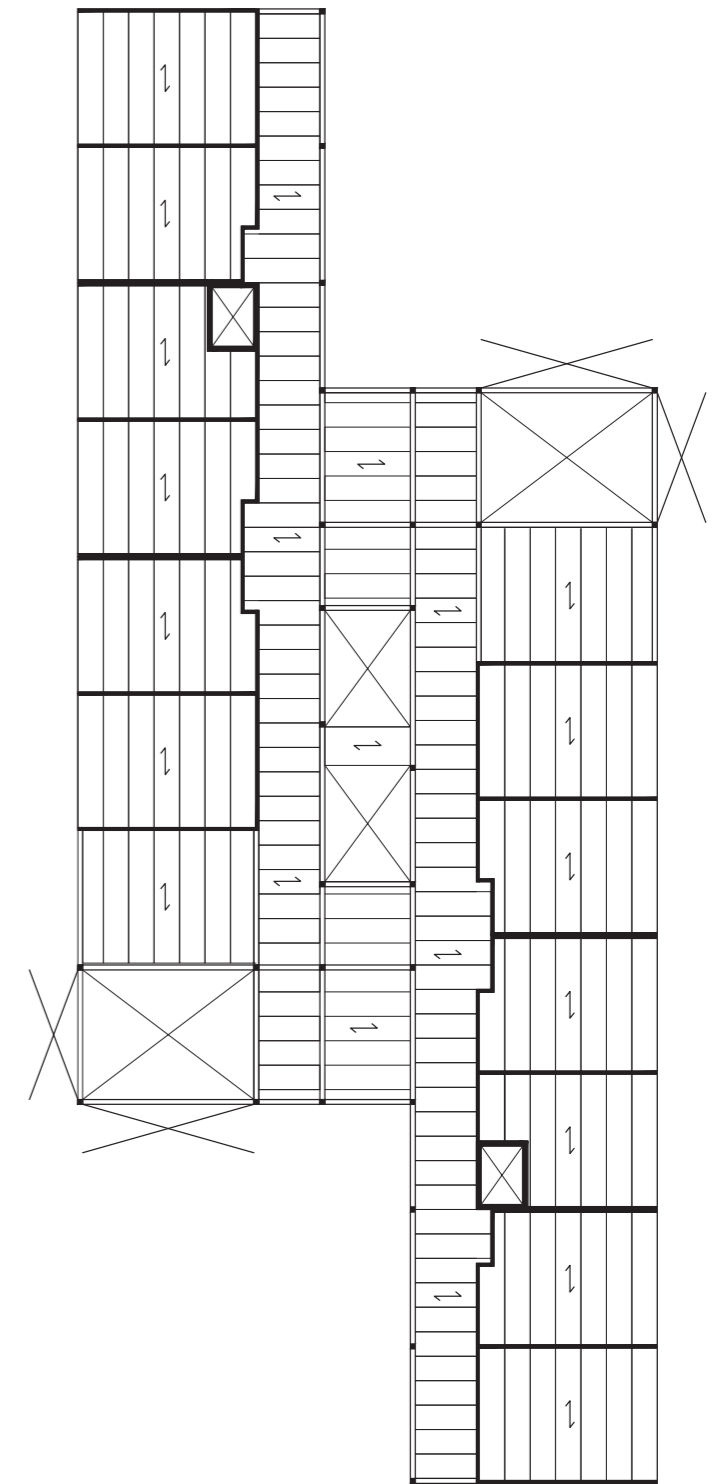
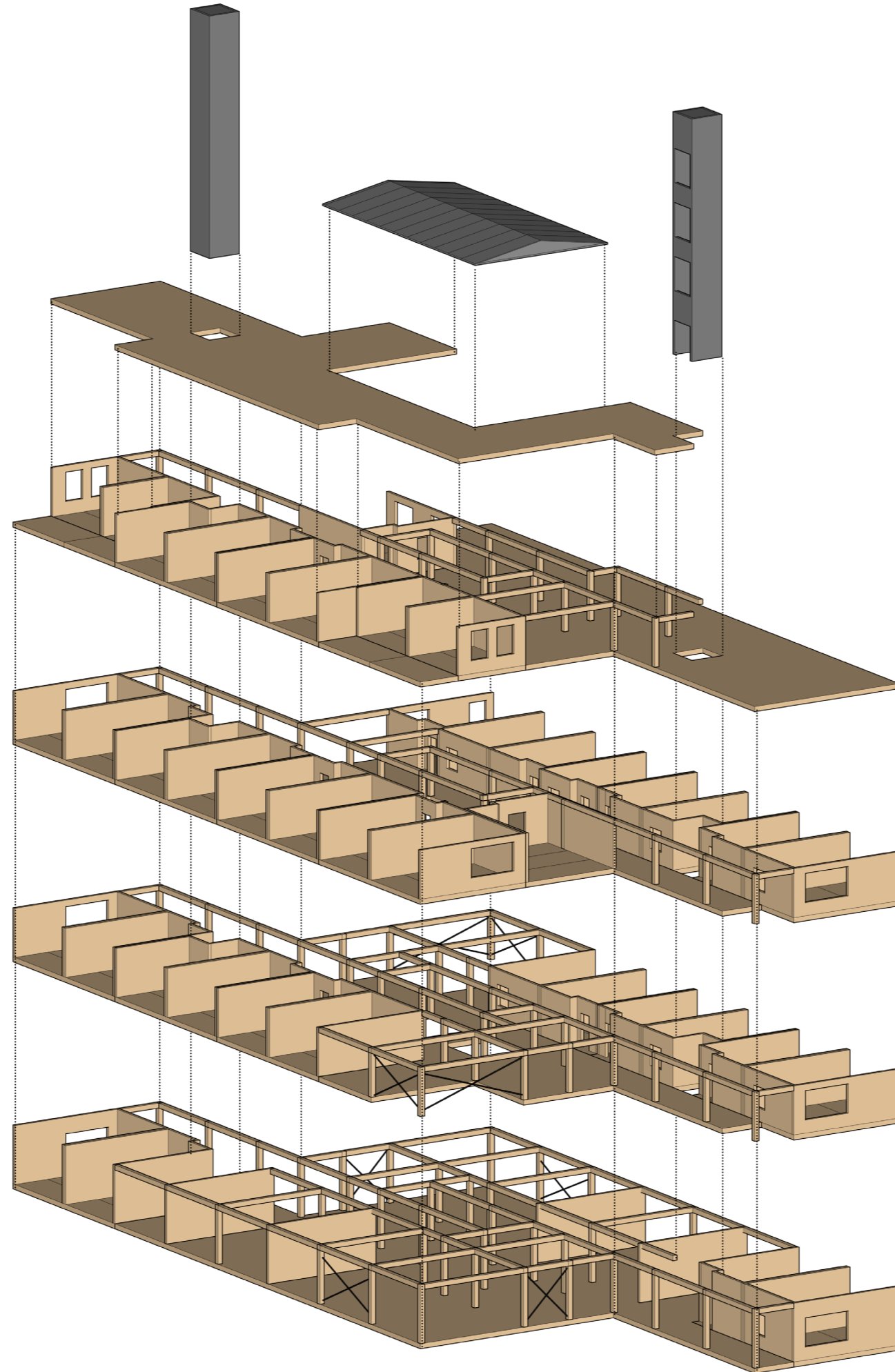


Dwelling unit types

Research:



'Vindmollebakken', 2019

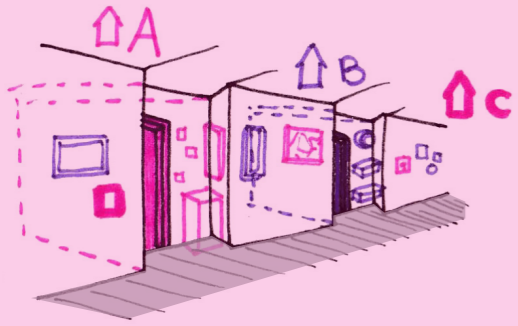


Structural scheme and plan:
CLT walls and floors + CLT columns/beams



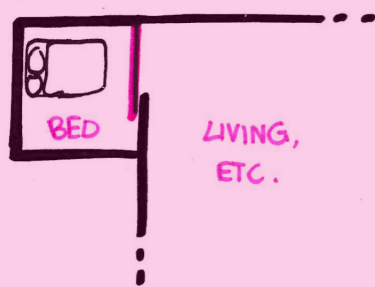
Elderly dwelling unit

Research:



Miedema, 2017

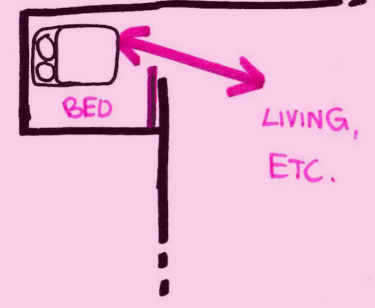
CLOSED → PRIVACY



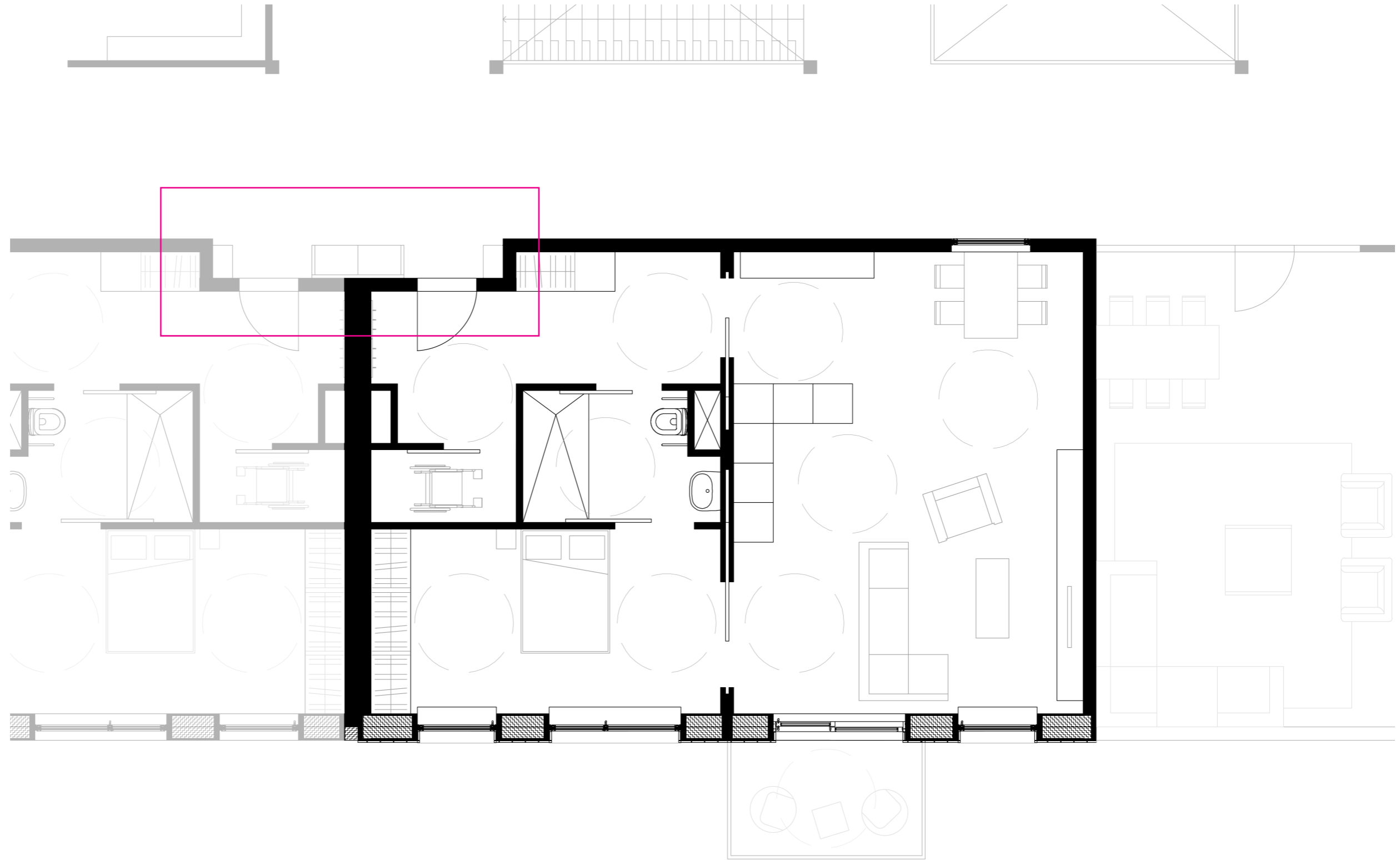
SEMI-OPEN → AURAL ACCESS



OPEN → AURAL + VISUAL ACCESS



Eijkelenboom, 2017

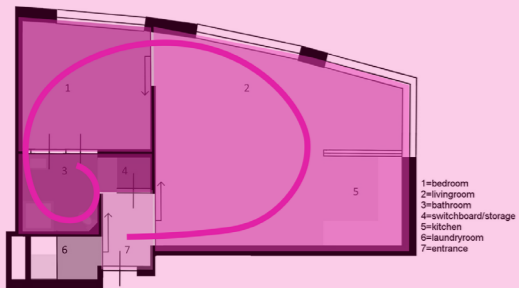


Elderly dwelling unit



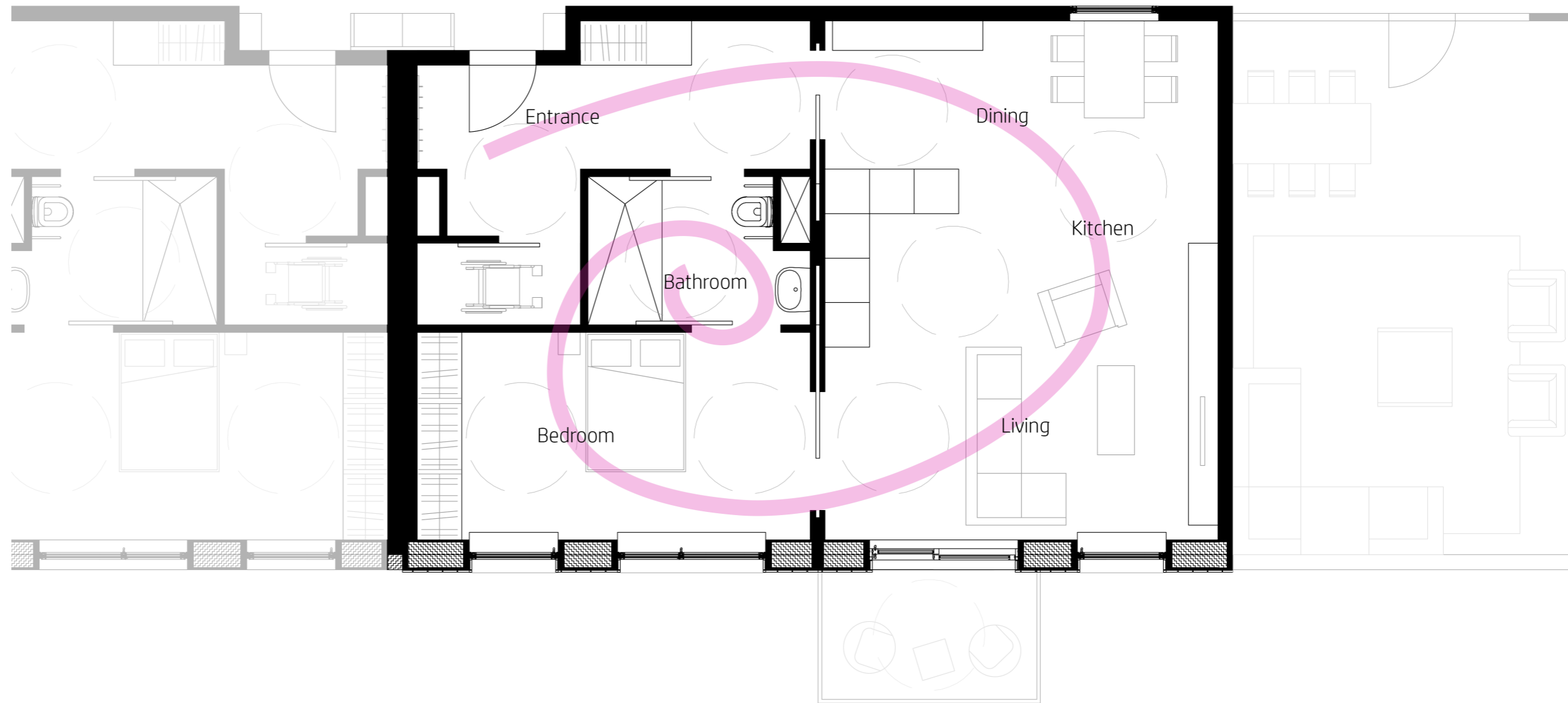
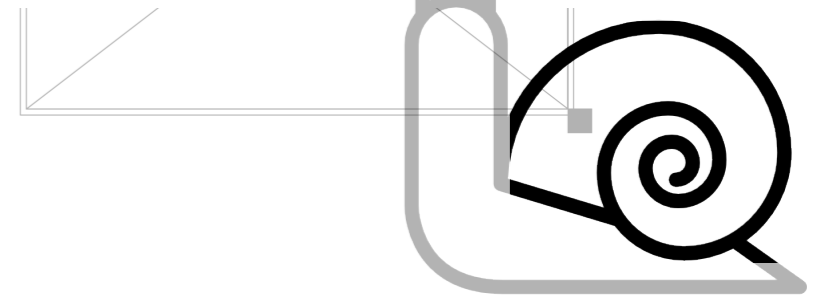
Impression: 'The Neighbour Nook'

Research:



Public --> Collective --> Private

Eijkelenboom, 2017



private

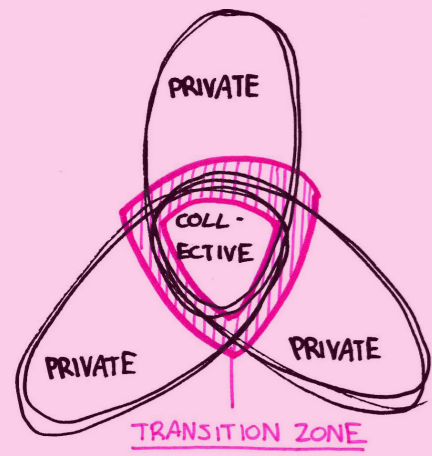
PRIVATE

VS

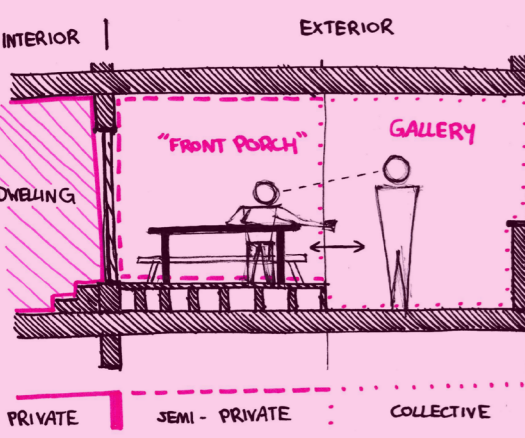
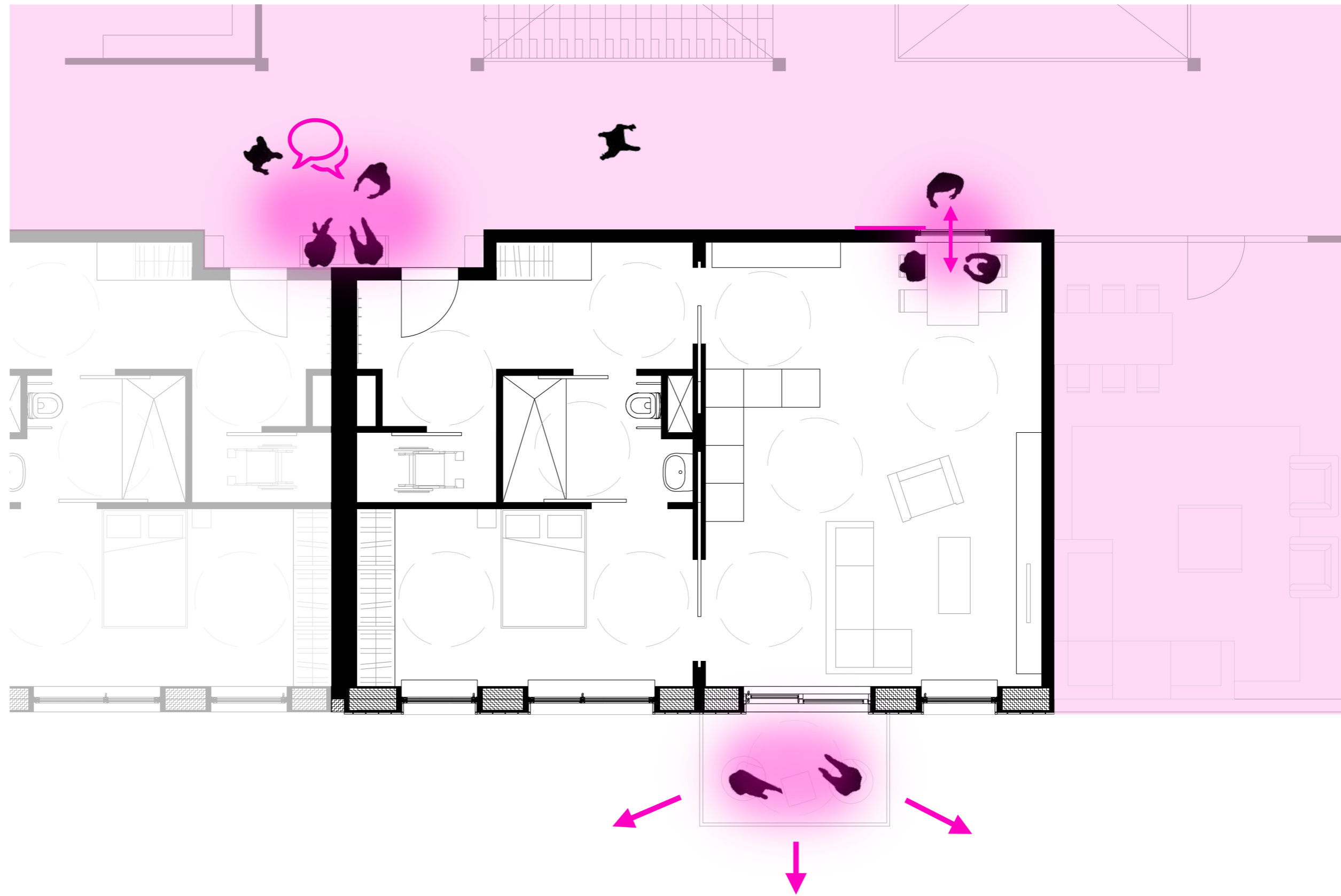
Instrumental Care

Personal Care

Research:



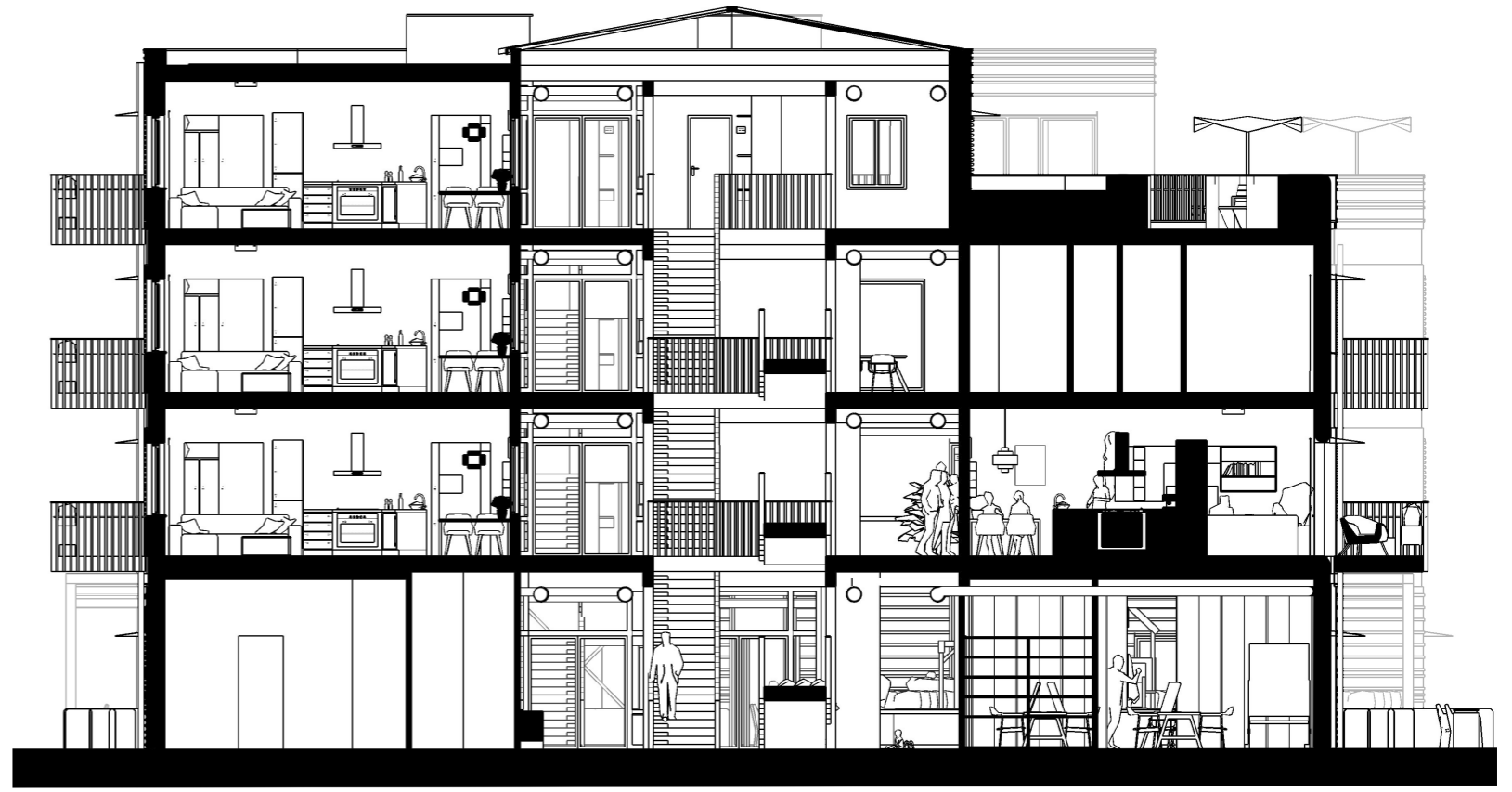
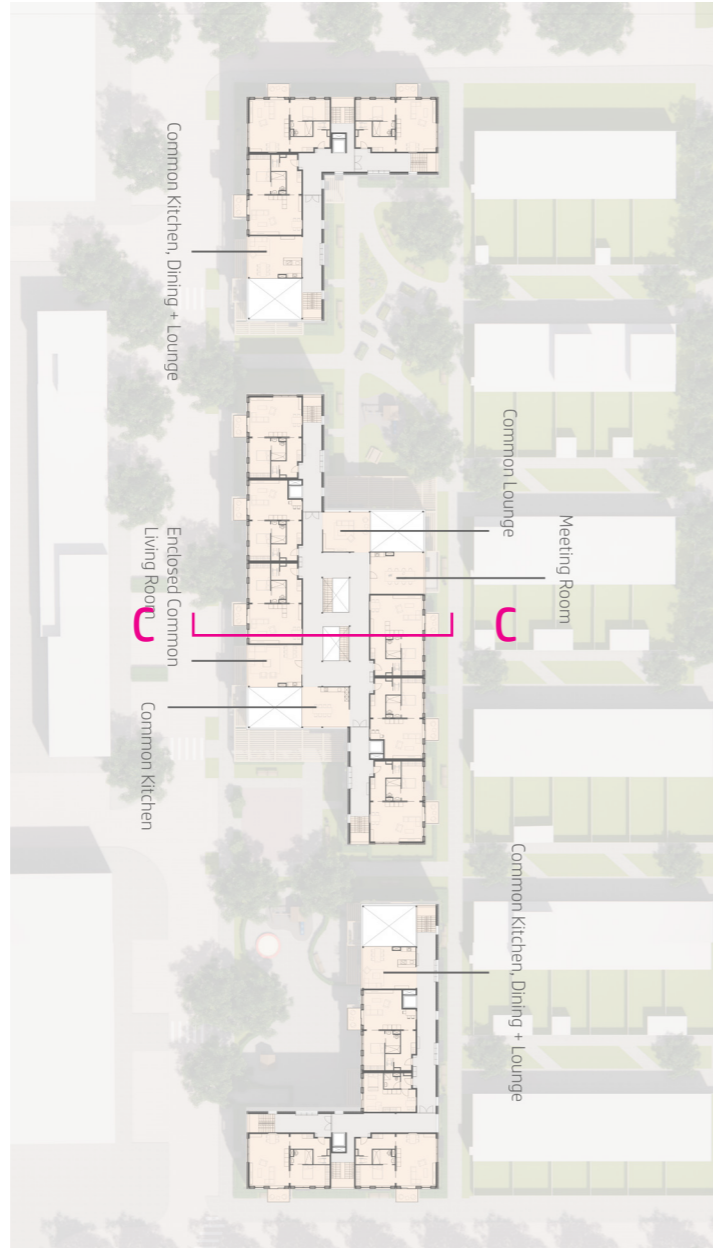
Lindén, 1992



'Zwei+plus', 2018



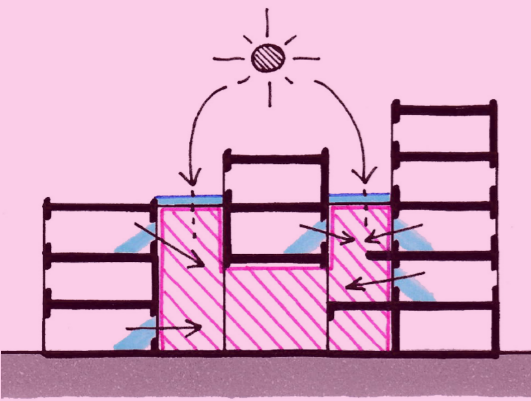
Impression: 'Interior Window'



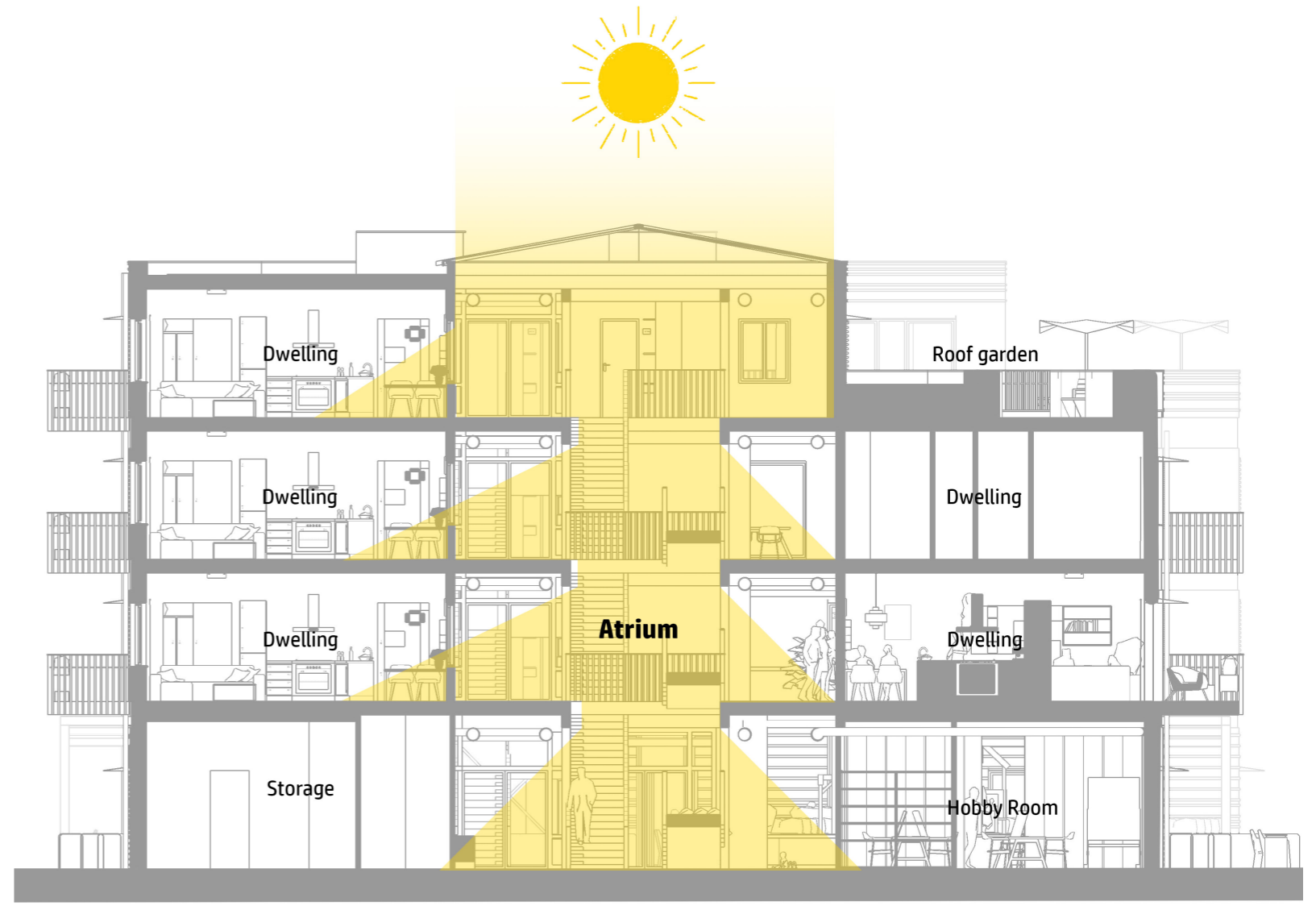
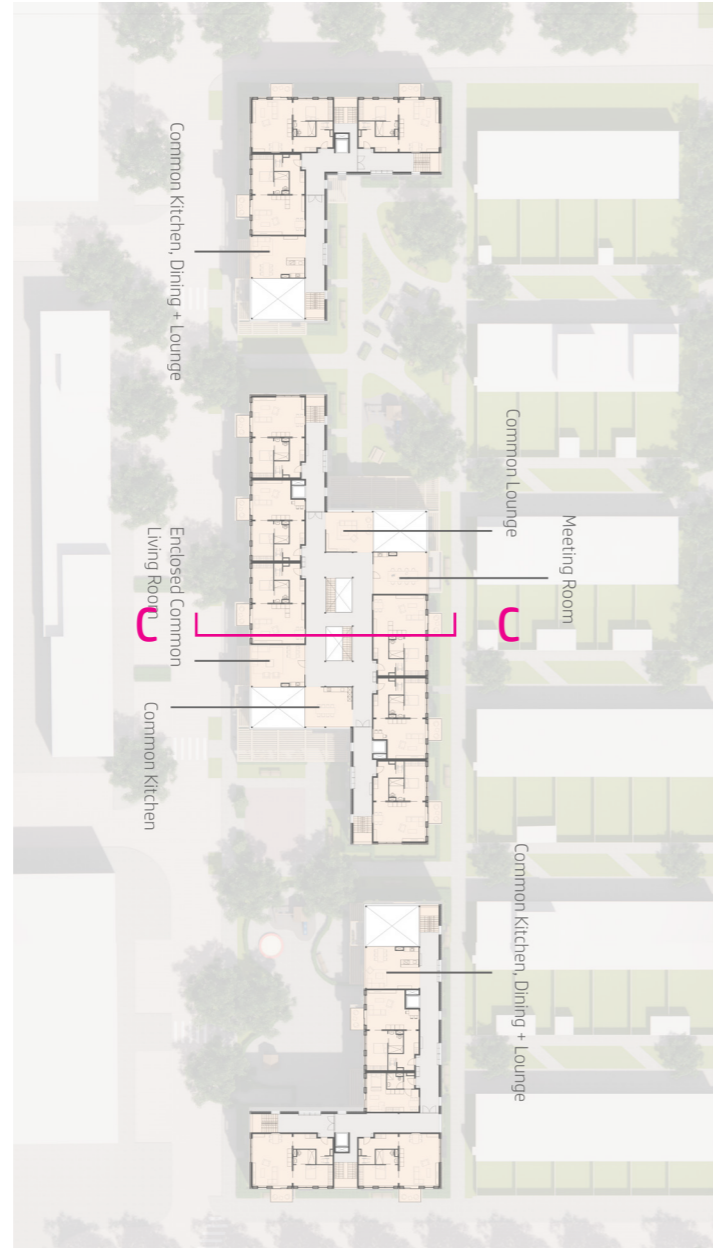
Section CC

Section through Atrium

Research:



'Vindmollebakken', 2019



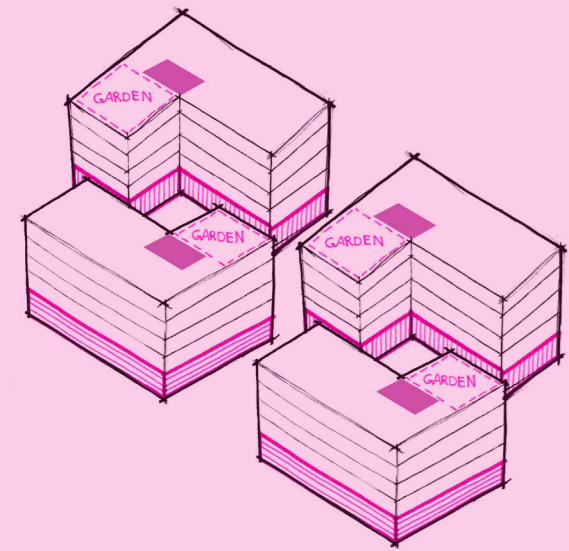
Section CC

Section through Atrium:
Daylight



Impression: 'The Central Atrium'

Research:



'Zwei+plus', 2018



Floor 3





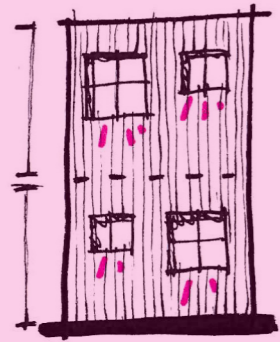
Impression: 'Roof Garden'



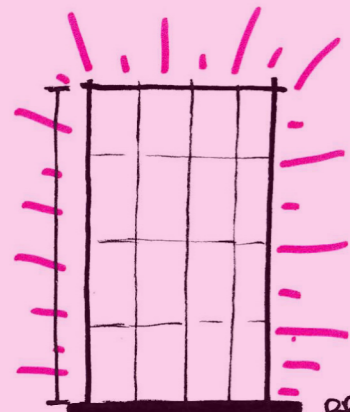
Roof plan



Research:



LOW + CLOSED
= PRIVATE



BRIGHT
HIGH + OPEN (+ LIGHT)
= COLLECTIVE / PUBLIC

'Vindmøllebakken', 2019



West elevation



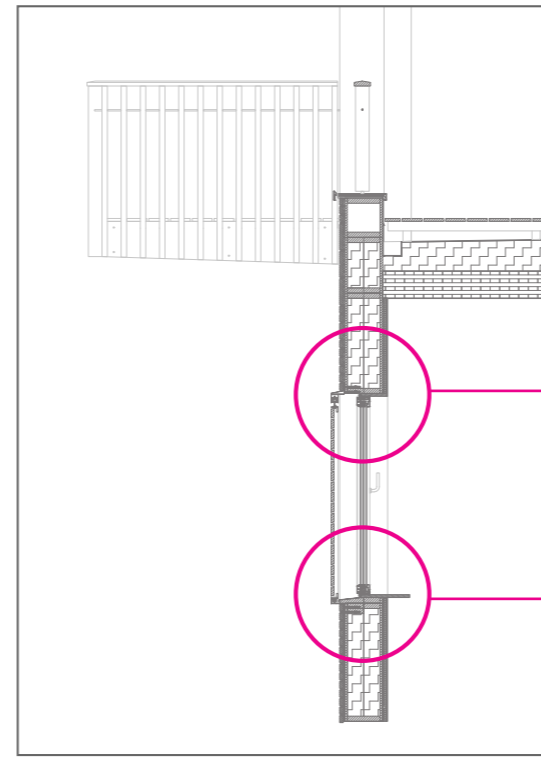
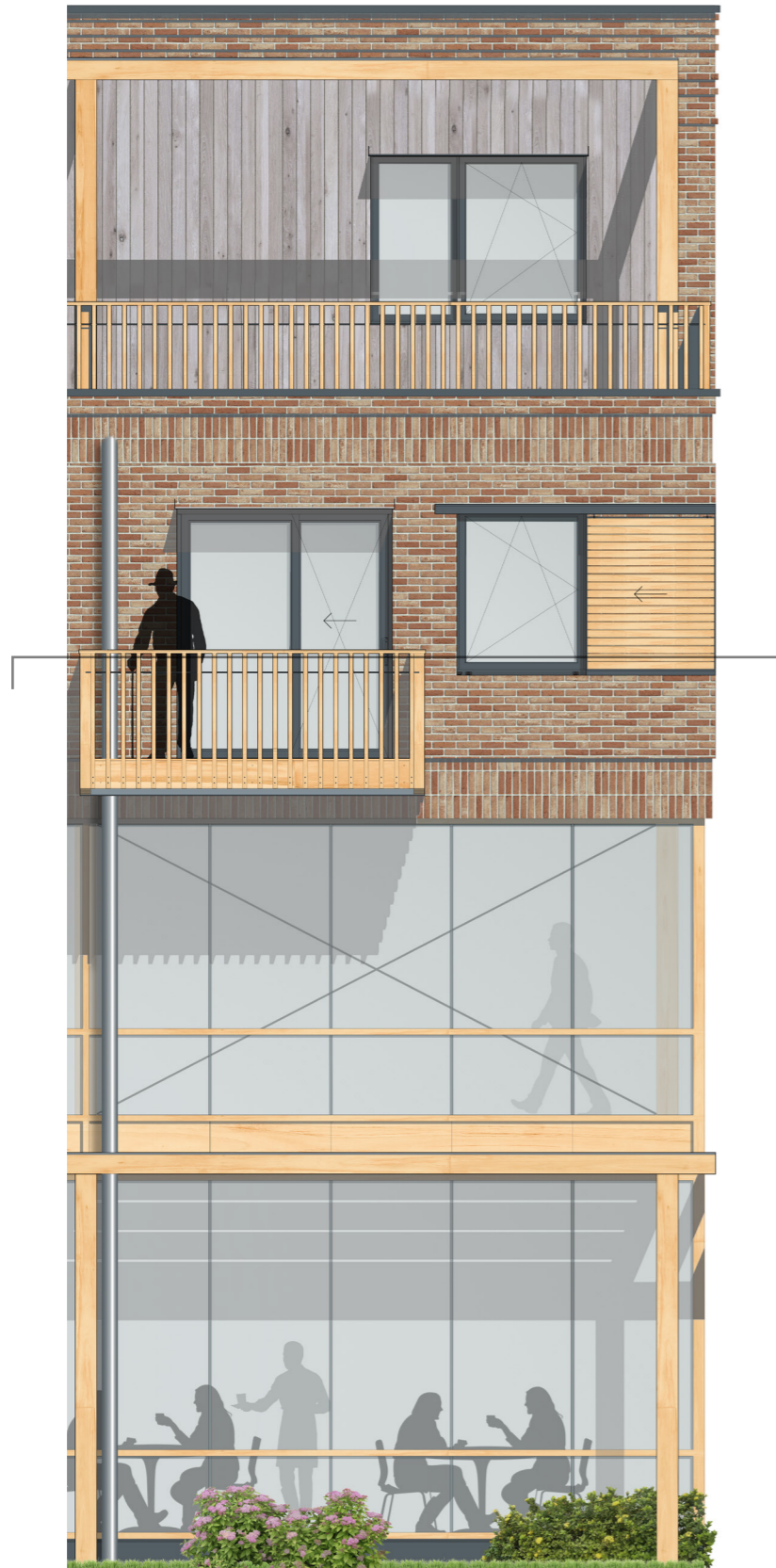
- White, plastic facade finish plates
- Dark grey aluminium window frames + steel balustrades
- Burgundy coloured masonry
- Standing white masonry



- Green tinted glass
- Light grey, plastic-like facade finish
- Concrete
- Dark grey elements in plinth
- Standing masonry in mixed tones



- White aluminium window/door frames
- Grey, plastic elements next to front door
- Sand coloured bricks
- Sand coloured bricks (other masonry bond + deeper joint)



Fixed + Flexible sun protection

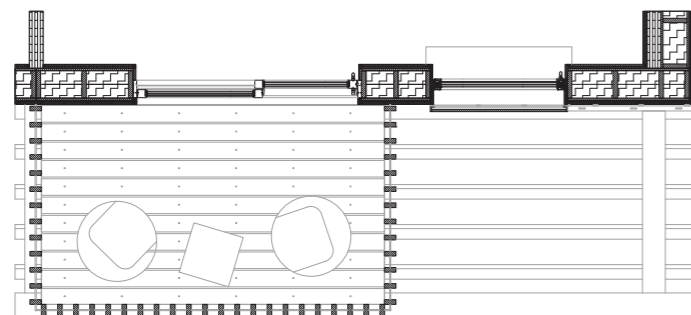
- 'Henderson' Sliding shutter system (top), including steel L-plate, aluminum cover, engine/motor, stop, rails and hangers

- Timber louvre panel, including 64x20mm trapezium slats (Fir)

- Triple glazed, aluminum tilt and turn window

- 'Henderson' Sliding shutter system (bottom), including steel L-plate, channel, stop and guides

- Steel wind bracing/stability cross



- 200x300 CLT-beam

- 8mm 'Rockpanel' sheet (Timber appearance)
 - 16mm Timber battens
 - Vapor barrier
 - 20mm Timber board
 - 142mm Thermal insulation
 - 11mm Timber board
 - 2x15mm Plasterboard
 - Stucco layer