

*Happily*

*Ever*

*After*

*Mental health promoting senior living environments*

Nadja Znamenskaya 4541456 P5 Presentation

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- Research Introduction
- Theories and Methods
- Findings
- Design



# Positioning

## *Late Life Depression*

- 18%~25% of people aged 75+ are depressed
- 66% of people aged 80+ are lonely
- people aged 80+ are most likely to commit suicide
- Lower quality of life
- Comorbidities - psychosomatic
- Pressure on healthcare providers + costs

- Centraal Bureau voor de Statistiek. (2021, August 18th). Aantal zelfdodingen naar leeftijd. [Data base]. Retrieved November 8, 2022, from <https://www.cbs.nl/nl-nl/longread/statistische-trends/2021/zelfdoding-in-nederland-een-overzicht-vanaf-1950>
- Centraal Bureau voor de Statistiek. (2022, June 9th). Gezondheidsmonitor Volwassenen en Ouderen. Retrieved November 8, 2022, from <https://www.vzinfo.nl/eenzaamheid/leeftijd-en-geslacht>
- Rhebergen, D. (2022, November 2nd). *Psychiater Didi Rhebergen over depressies bij 75-plussers: "Gemiste kans als je denkt: dit hoort bij ouderdom"*. [Discussion panel]. MAX Vandaag. <https://www.maxvandaag.nl/videos-fragme>
- Rhebergen, D. (2022, November 2nd). *Psychiater Didi Rhebergen over depressies bij 75-plussers: "Gemiste kans als je denkt: dit hoort bij ouderdom"*. [Discussion panel]. MAX Vandaag. <https://www.maxvandaag.nl/videos-fragmenten/fragmenten-tijd-voor-max/psychiater-didi-rhebergen-over-depressies-bij-75-plussers-gemiste-kans-als-je-denkt-dit-hoort-bij-ouderdom/nten/fragmenten-tijd-voor-max/psychiater-didi-rhebergen-over-depressies-bij-75-plussers-gemiste-kans-als-je-denkt-dit-hoort-bij-ouderdom/>

# Positioning

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## *Problem Statement*

Late life depression is treatable with **medication and psychotherapy**

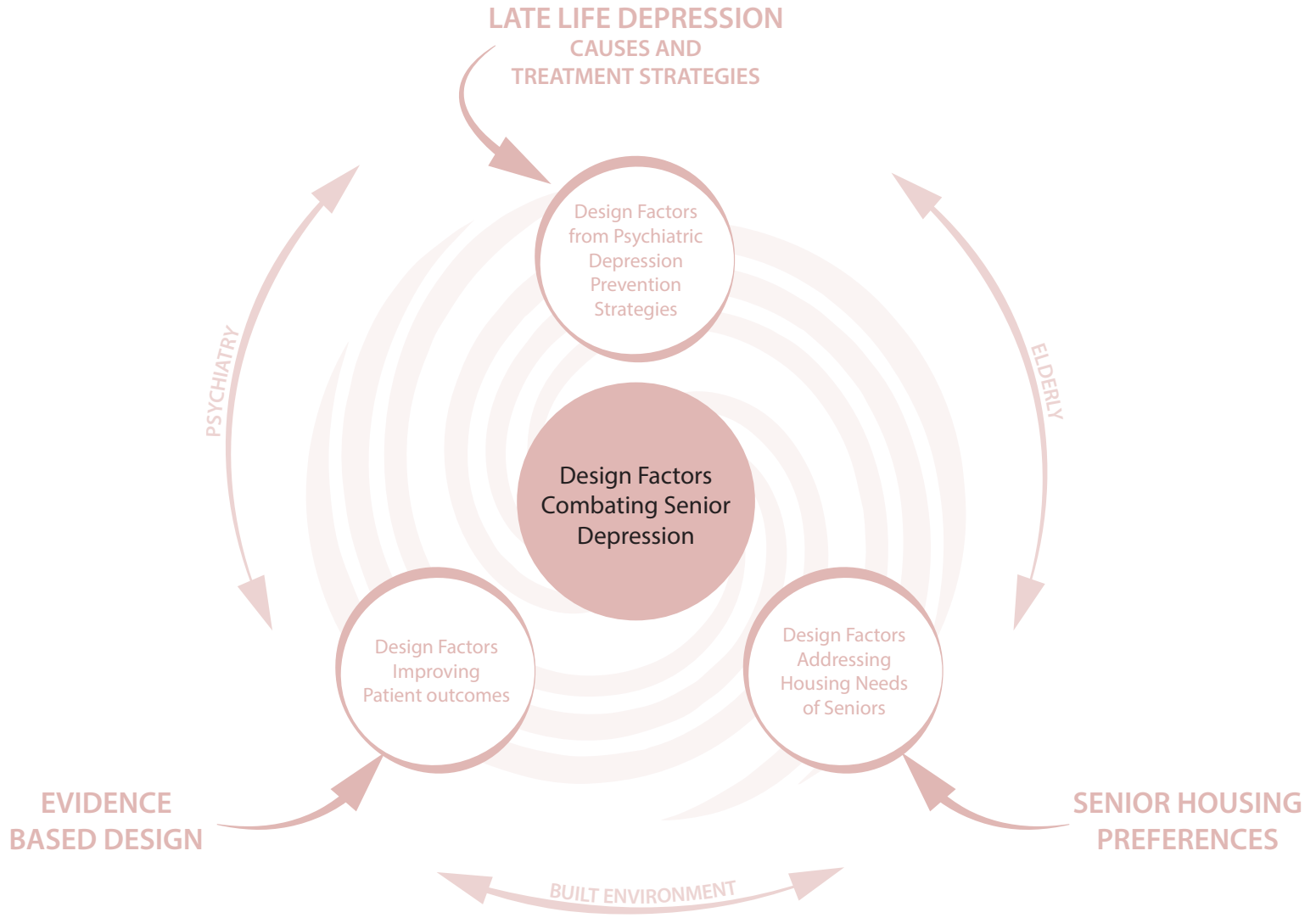
However additional methods are required to **reduce pressure on healthcare providers.**

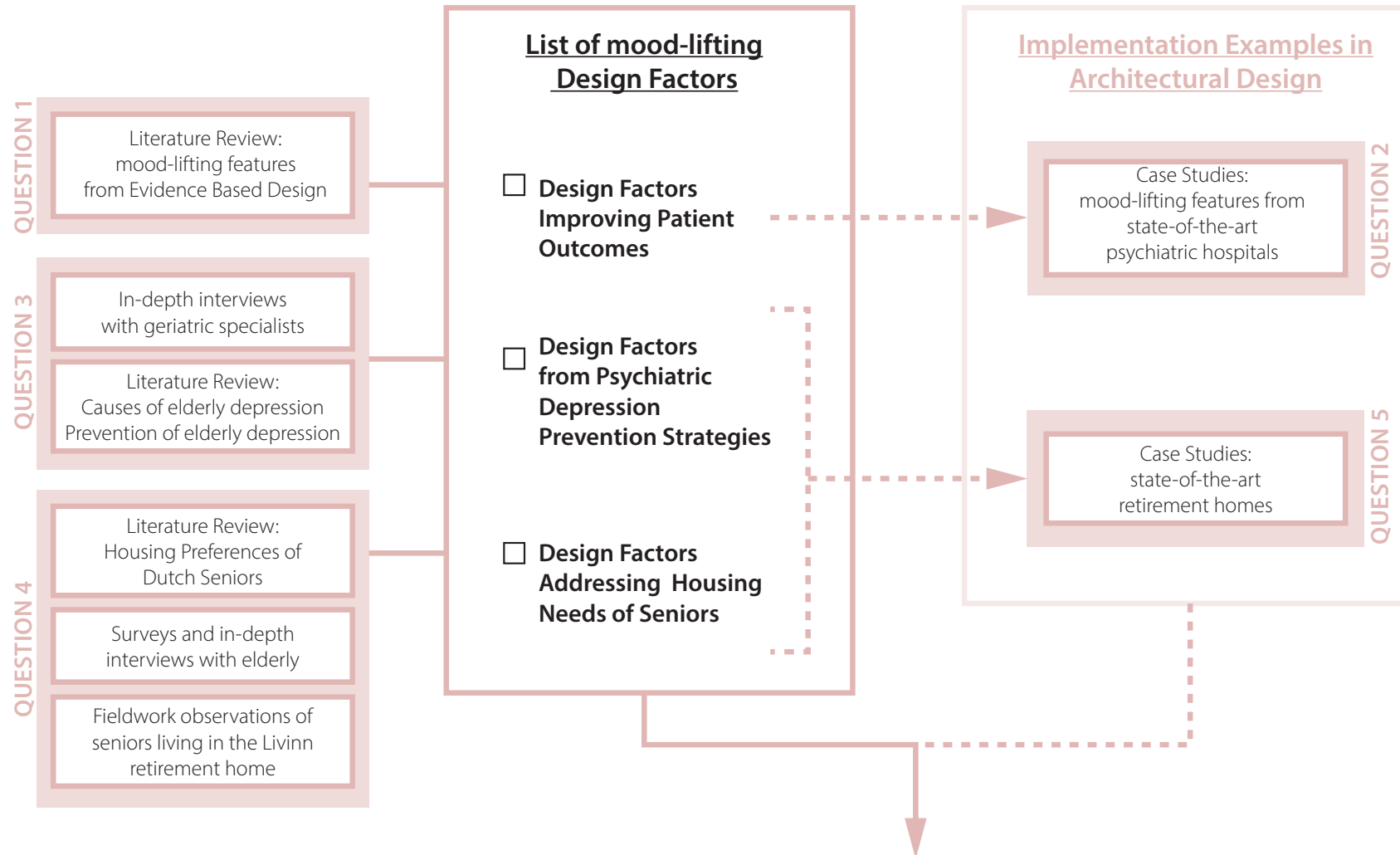
Since the elderly spend the majority of their day at home, their **moods will also be influenced by their living environments.**

Current senior housing typologies are often depressing and institutional. **Better senior living environments are needed.**

*Which Design Factors can contribute to the prevention or alleviation of late life depression in senior living environments?*

## Theoretical Framework



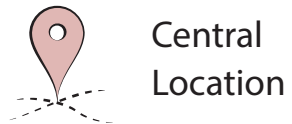


OVERVIEW OF MOOD-LIFTING DESIGN FACTORS WITH IMPLEMENTATION EXAMPLES

# Results

## Results

### Environmental Factors



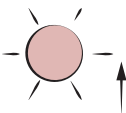
Central Location



Physical Activity



Views of Nature



(Morning) Light



Noise

*Site Analysis & Conceptual Massing*

### Building Factors



Social Spaces



Intergenerational Relationships



Dementia Spaces



Positive Distractions

*Project Brief Formulation & Preliminary Design*

### Finishing Factors



Accessibility



Control



Homelike Environment



Privacy



Air Quality

*Detailing & Building Construction*

**Design Phases** →

# Results

## Results

### Environmental Factors



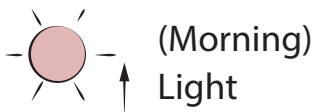
Central Location



Physical Activity



Views of Nature



(Morning) Light



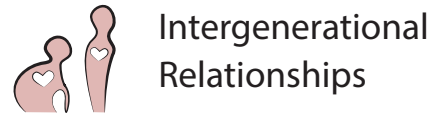
Noise

*Site Analysis & Conceptual Massing*

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Homelike Environment



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Air Quality

*Detailing & Building Construction*

**Design Phases** →

# Design

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*Brief*

## **What? (Building Factors)**

- Multigenerational Independent Senior Housing
- Meeting space for residents
- Culture, cafe & sports block for community
- Small dementia daycare and healthcare block



## **Where? (Environmental Factors)**

- Depressing location with potential to become an optimal living environment

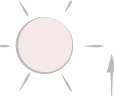



### Environmental Factors

 Central Location

 Physical Activity

 Views of Nature

 (Morning) Light

 Noise

Depression is strongly associated with **economic inequality**

Depression is more frequent in fast paced and stressful **urban environments**

**Laakkwartier** is a harsh, car-focused environment

But central urban location, close to nature, so potential.





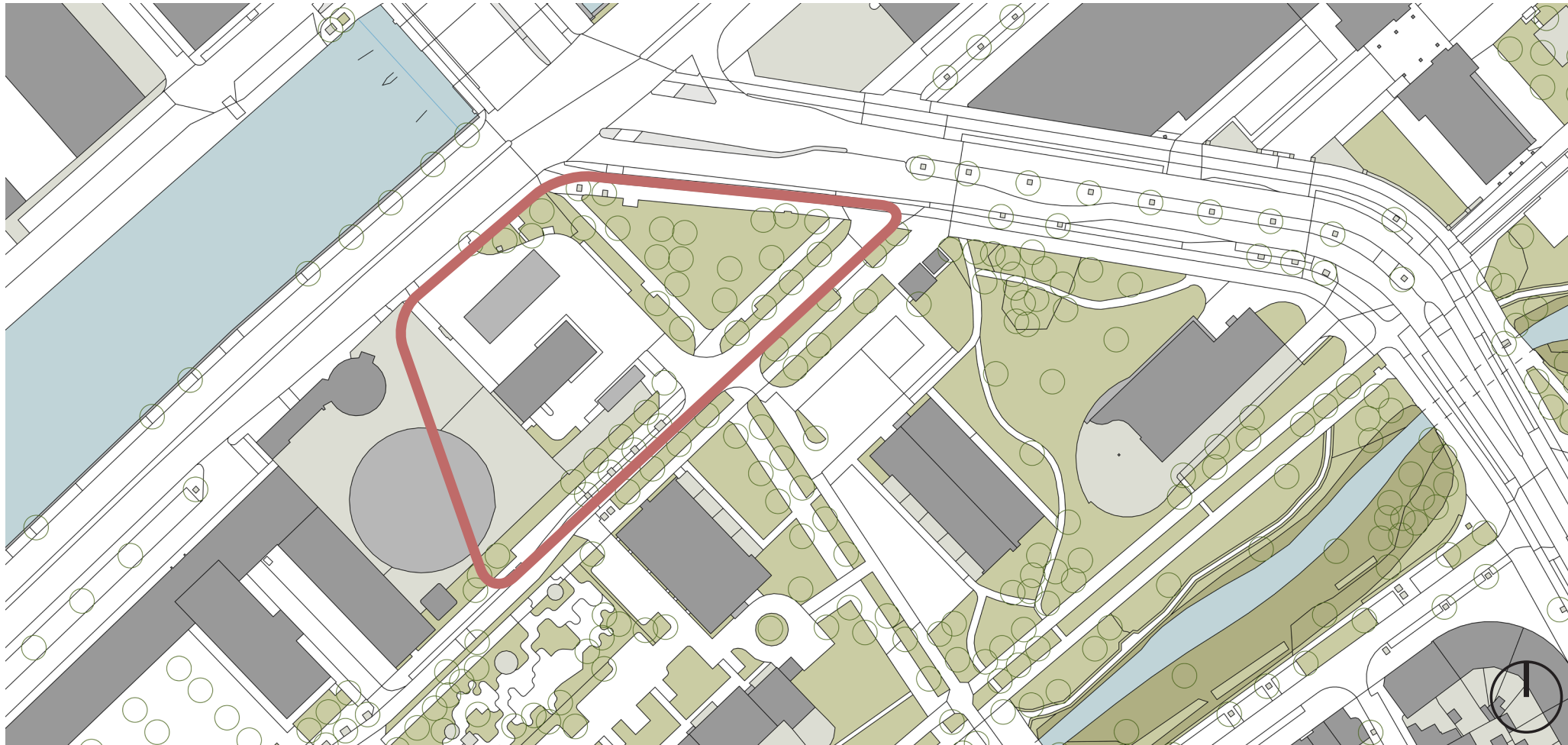
# Design

## *Site Selection*





# Design

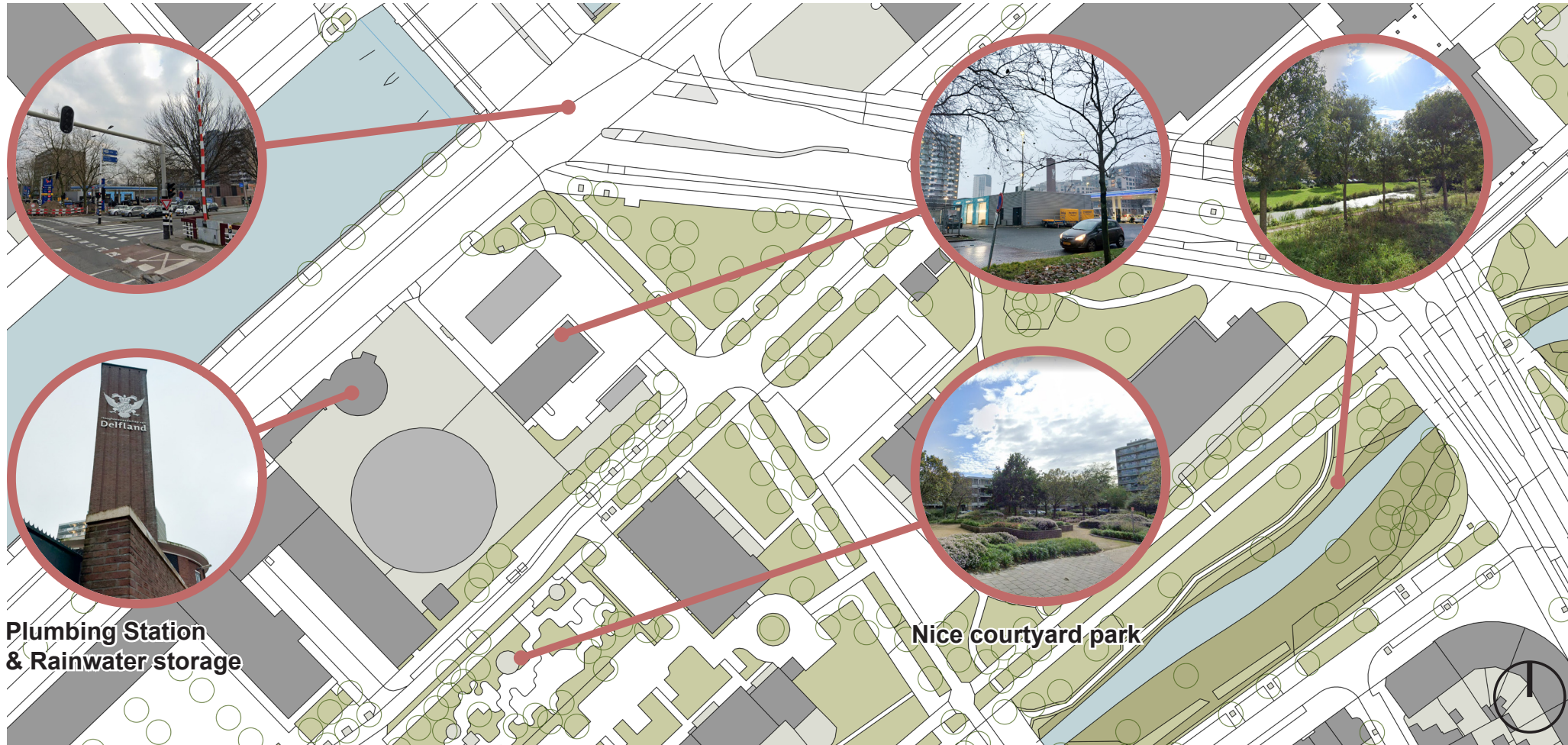


# Design

Very busy crossing

LPG Station  
planned for demolition

Laakpark



Plumbing Station  
& Rainwater storage




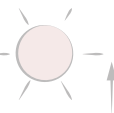

Nice courtyard park

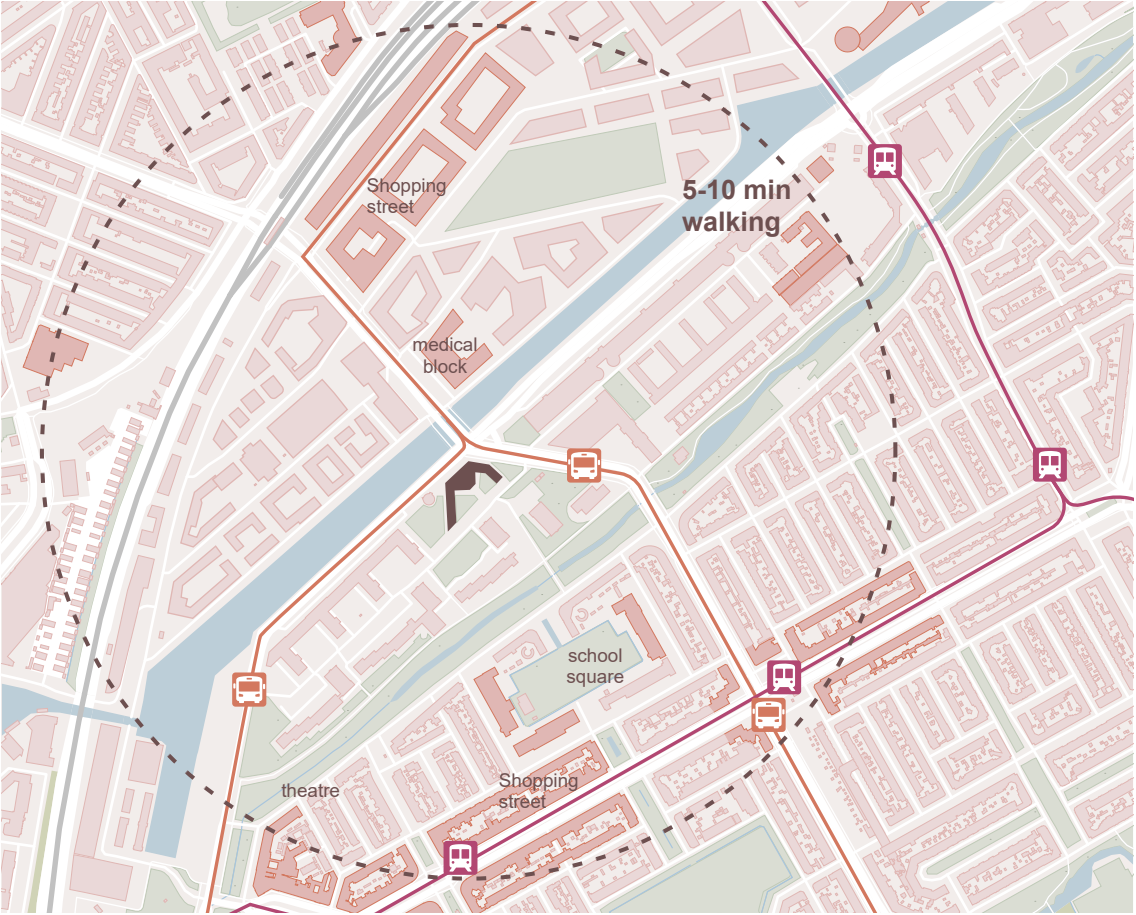


# Design

## Conceptual Massing

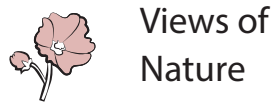
### Environmental Factors

-  Central Location
-  Physical Activity
-  Views of Nature
-  (Morning) Light
-  Noise



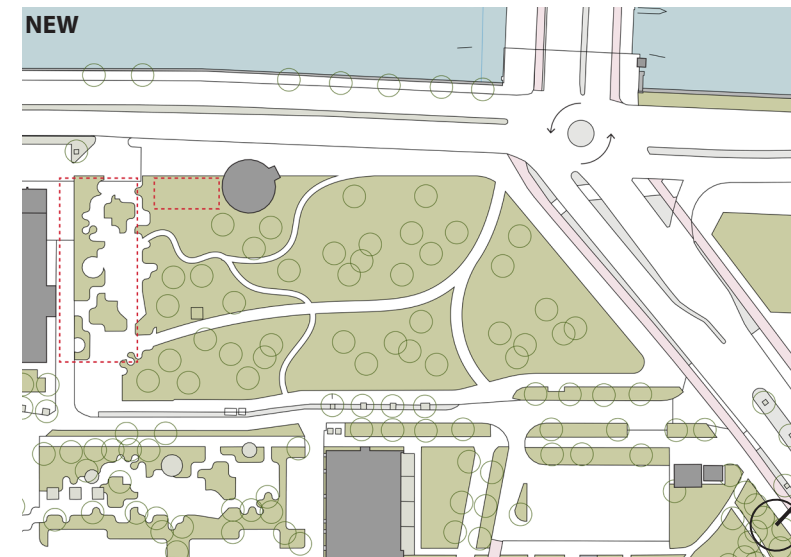
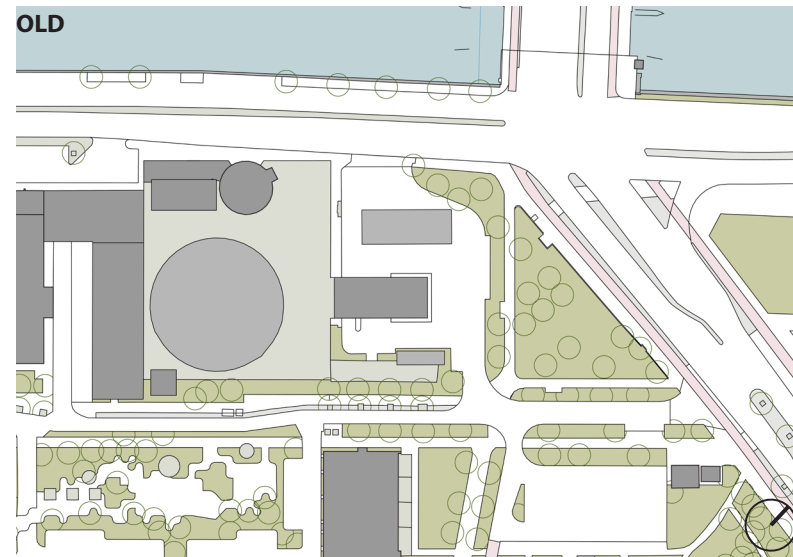
## Conceptual Massing

### Environmental Factors



From semi-industrial area to **green pedestrian friendly environment**




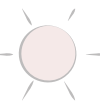

- Demolishment of gas station and old office block
- Plumbing station and rainwater storage underground
- Crossing becomes roundabout
- Park expansion



# Design

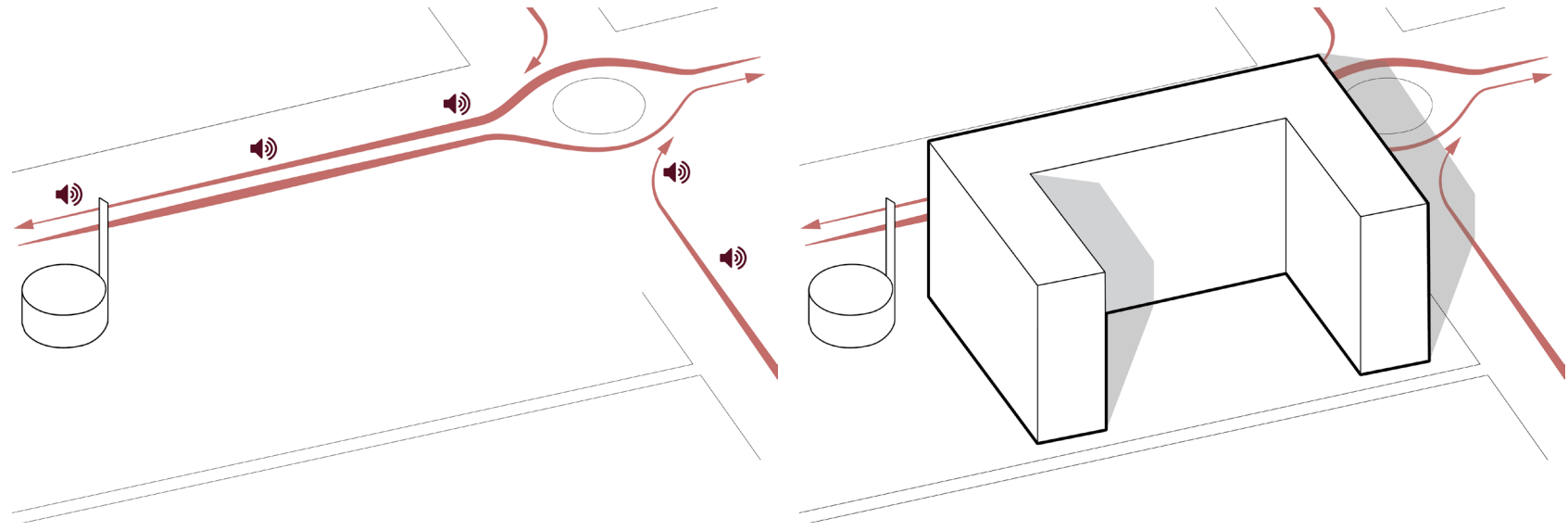
## Conceptual Massing

### Environmental Factors

-  Central Location
-  Physical Activity
-  Views of Nature
-  (Morning) Light
-  Noise

From noisy street to **peaceful courtyard**

Building mass blocks traffic noise



## Conceptual Massing

### Environmental Factors



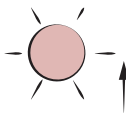
Central Location



Physical Activity



Views of Nature



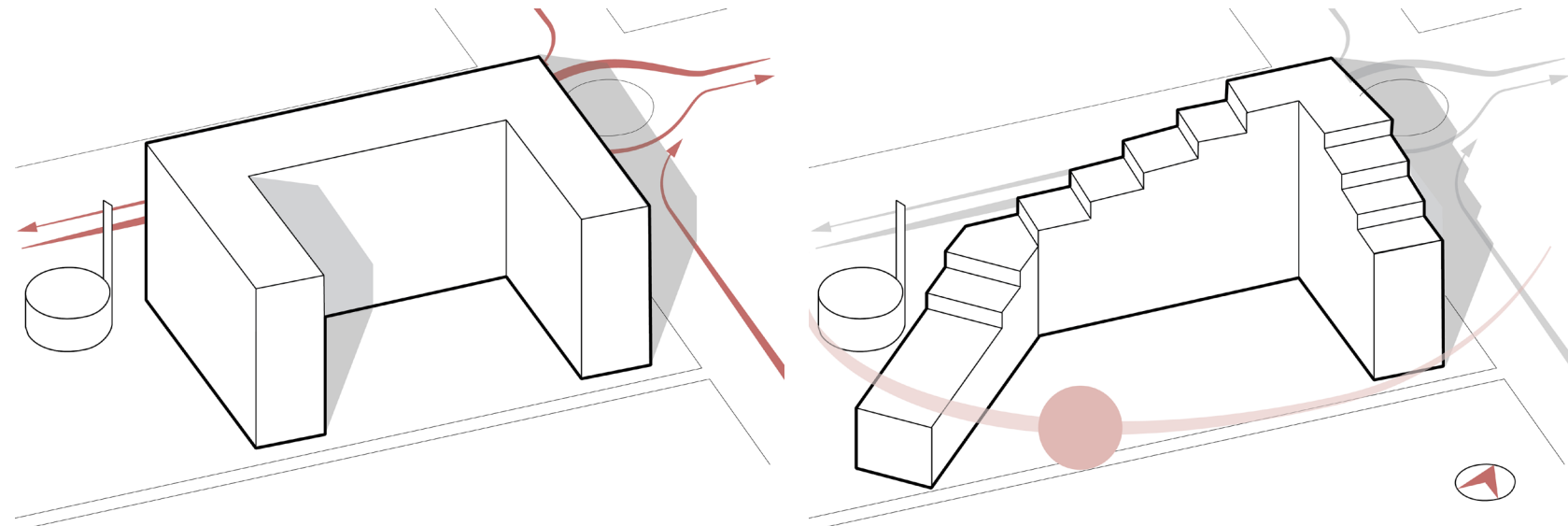
(Morning) Light



Noise

From shaded square to **sunny terrace**

Building mass optimization for maximum sun exposure in the morning



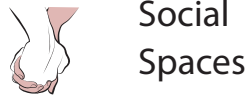


## Conceptual Massing

### Building Factors

From empty square to **community meeting point**

Large gates and a human-sized cafe invites the neighborhood in



Social Spaces



Intergenerational Relationships



Dementia Spaces



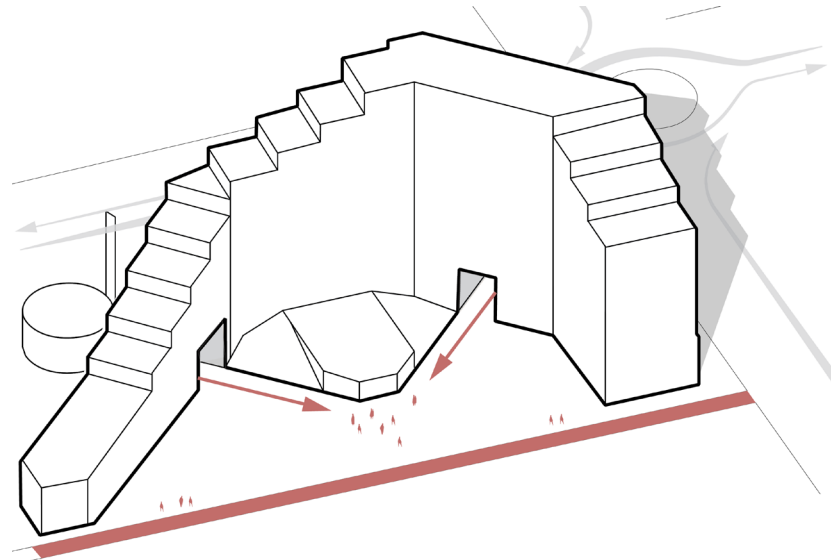
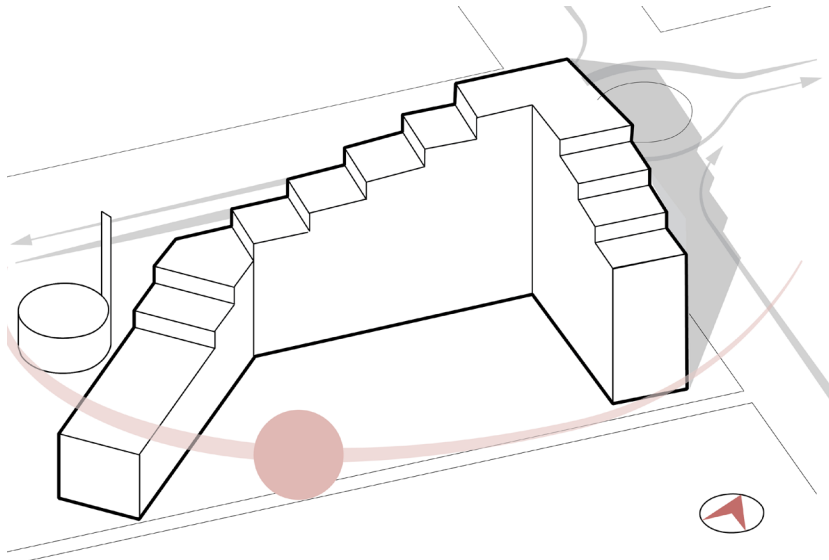
Positive Distractions



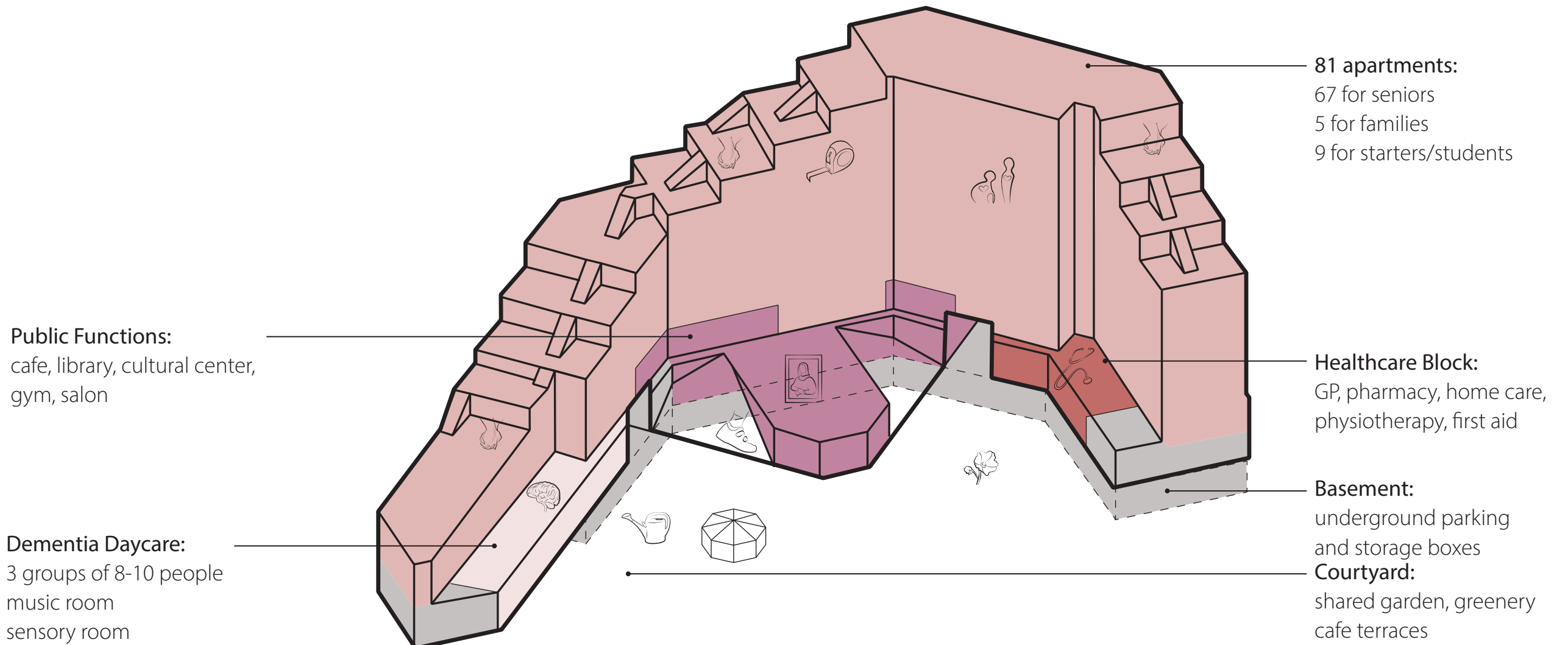
Outdoor Spaces



Staff Spaces



## Project Brief



# Design

Site plan



Social Spaces



Intergenerational Relationships



Dementia Spaces



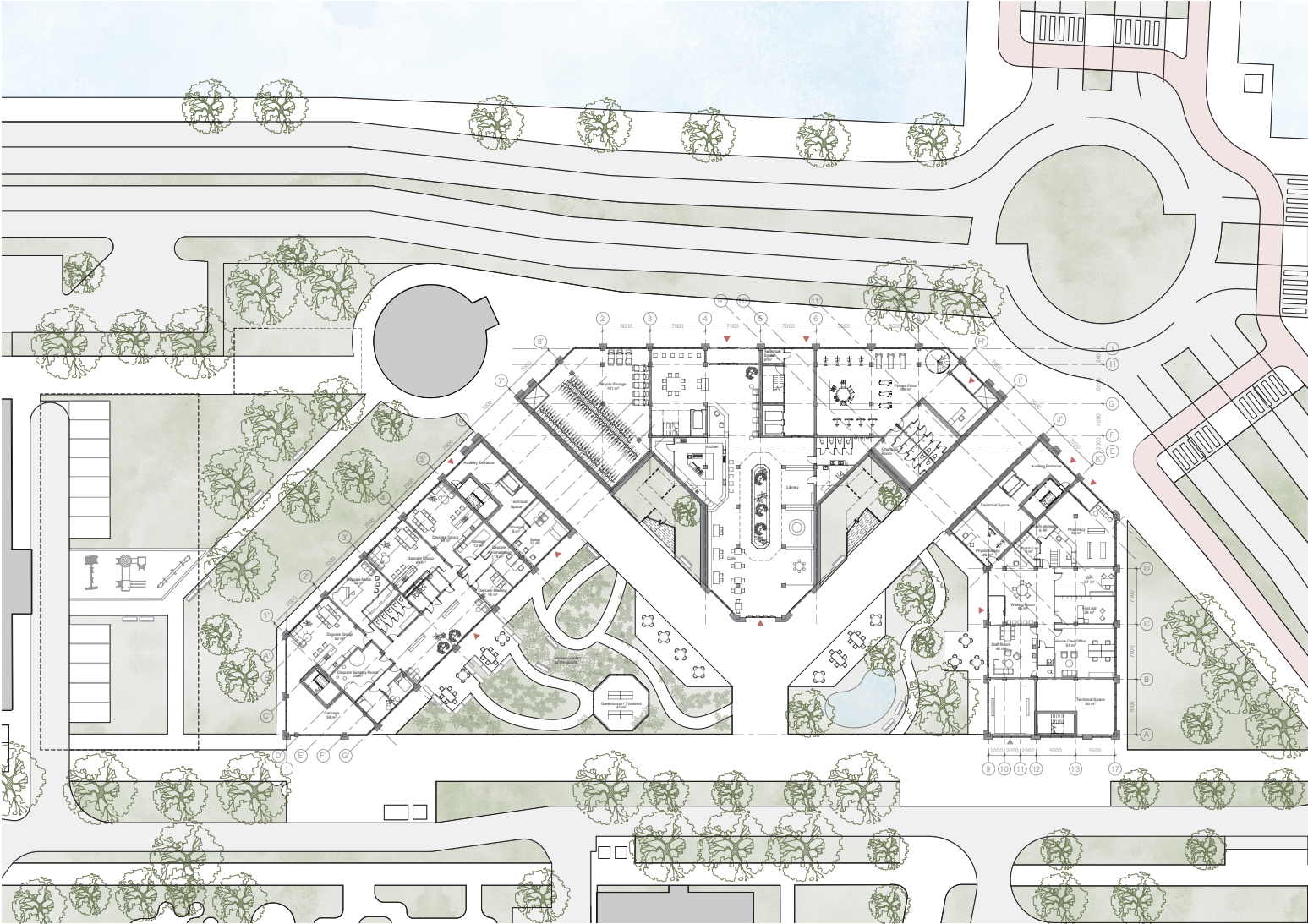
Positive Distractions



Outdoor Spaces



Physical Activity





# Design

## Cafe/Library



Social Spaces



Intergenerational Relationships



Positive Distractions



# Design

## Site plan

### Building Factors



Social Spaces



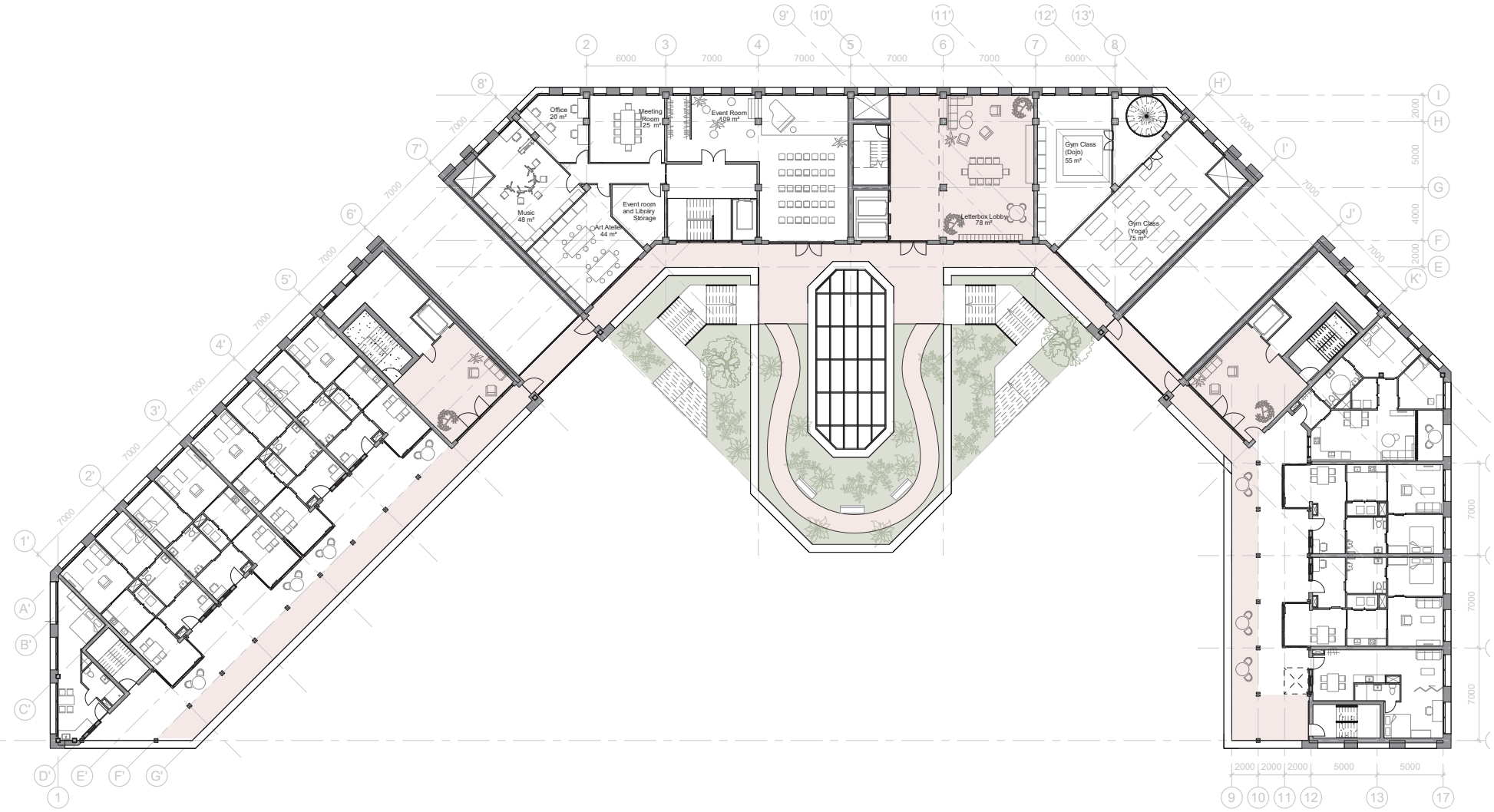
Intergenerational Relationships



Outdoor Spaces



Physical Activity





# Design

## *Courtyard - Render*



Social Spaces



Physical Activity



Views of Nature



# Design

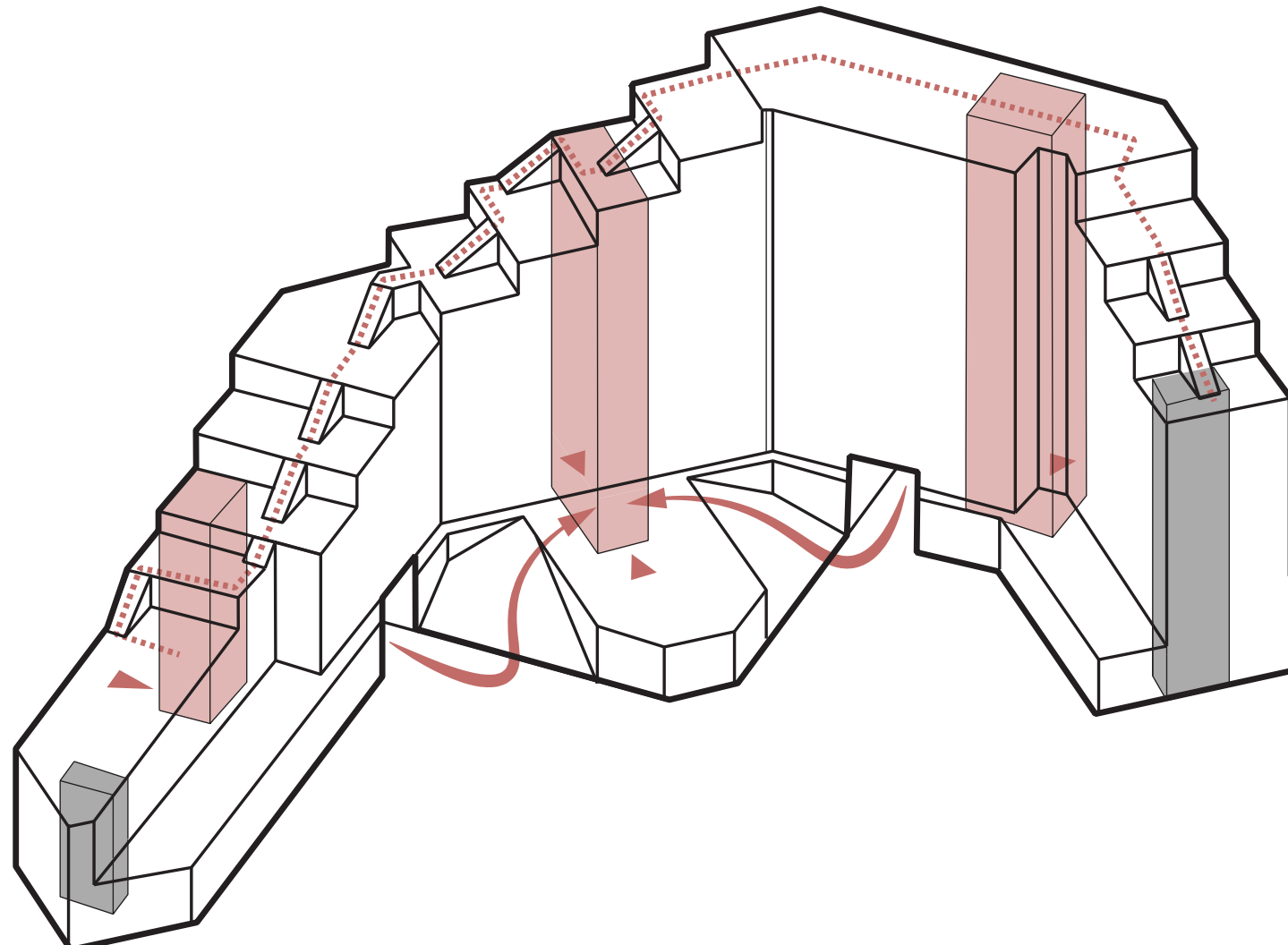
## *Circulation*





Accessibility

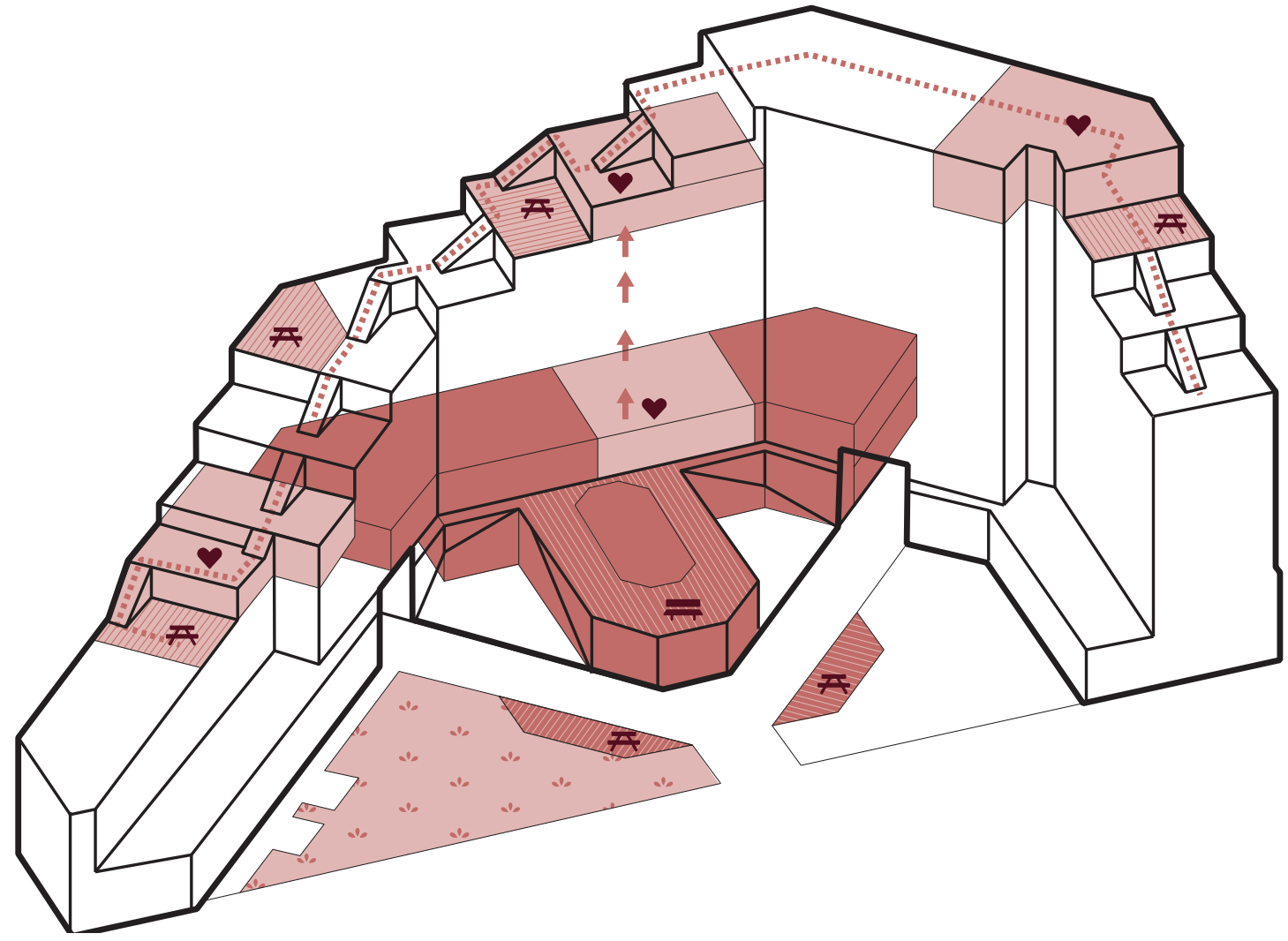


Physical Activity



## *Common and Public Spaces*

-  Social Spaces
-  Outdoor Spaces

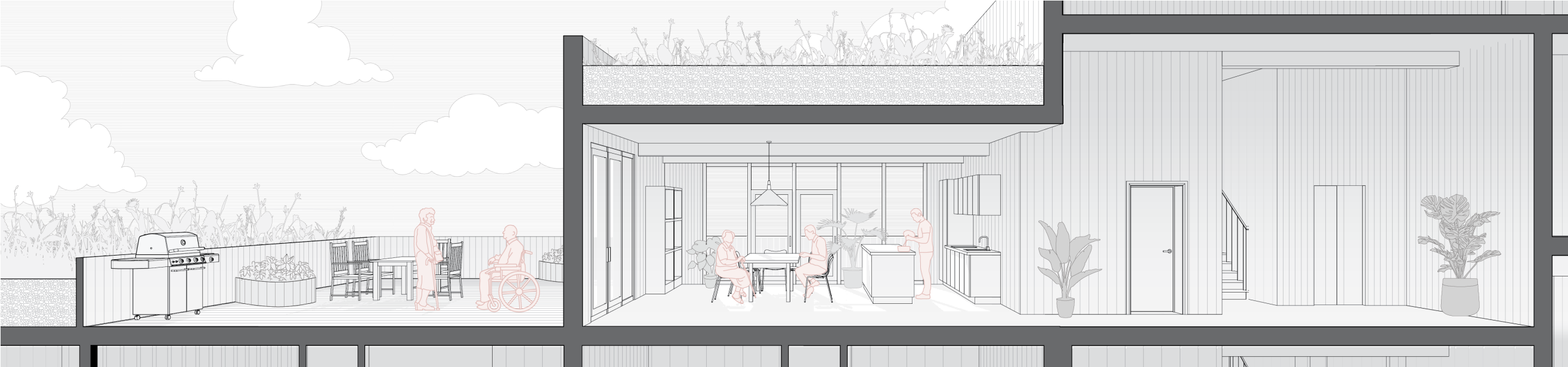






# Design

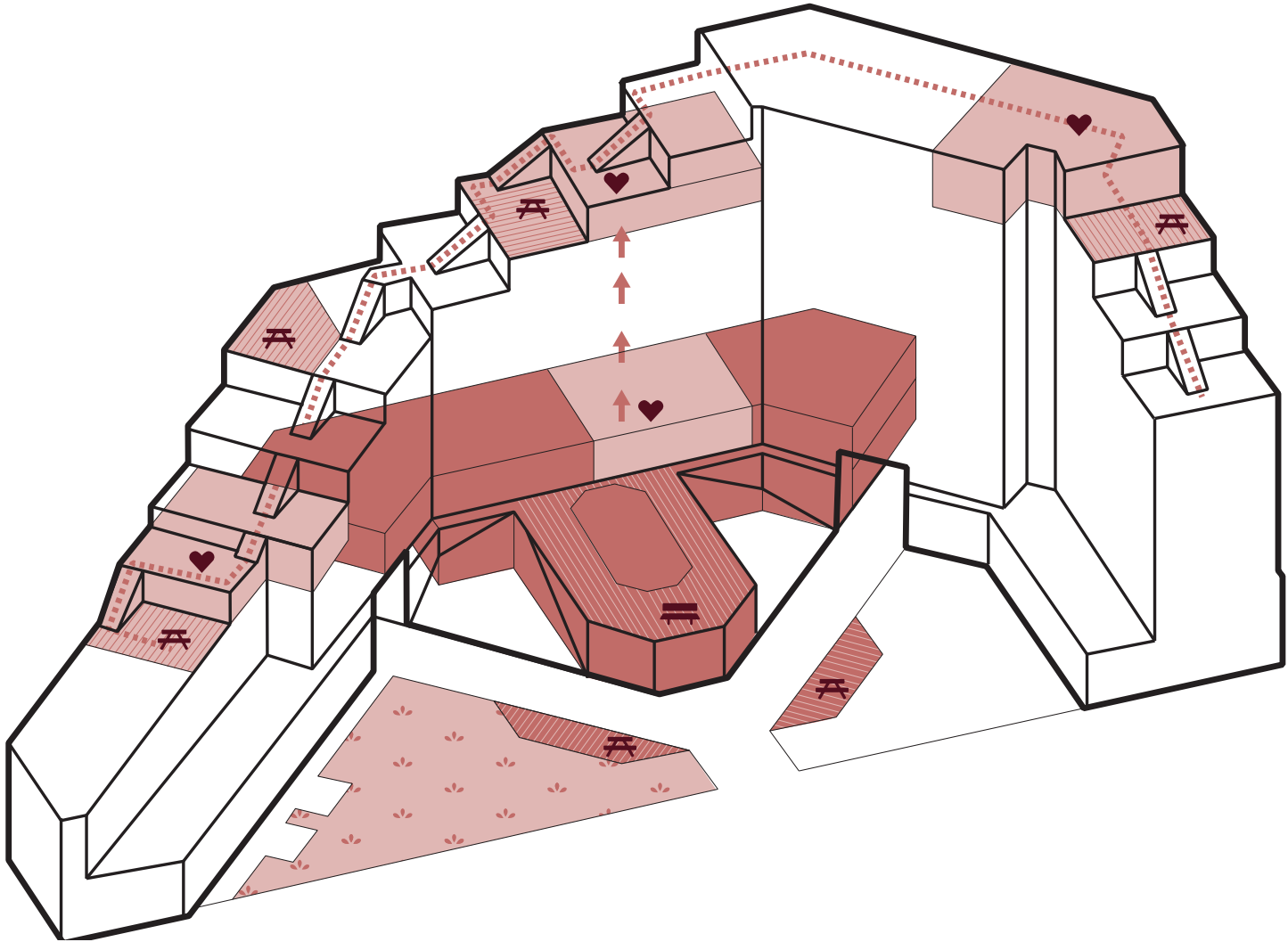
## *Social Spaces*

-  Homelike Environment
-  Social Spaces
-  Outdoor Spaces



## *Common and Public Spaces*

-  Social Spaces
-  Outdoor Spaces



# Design

## *Social Spaces*



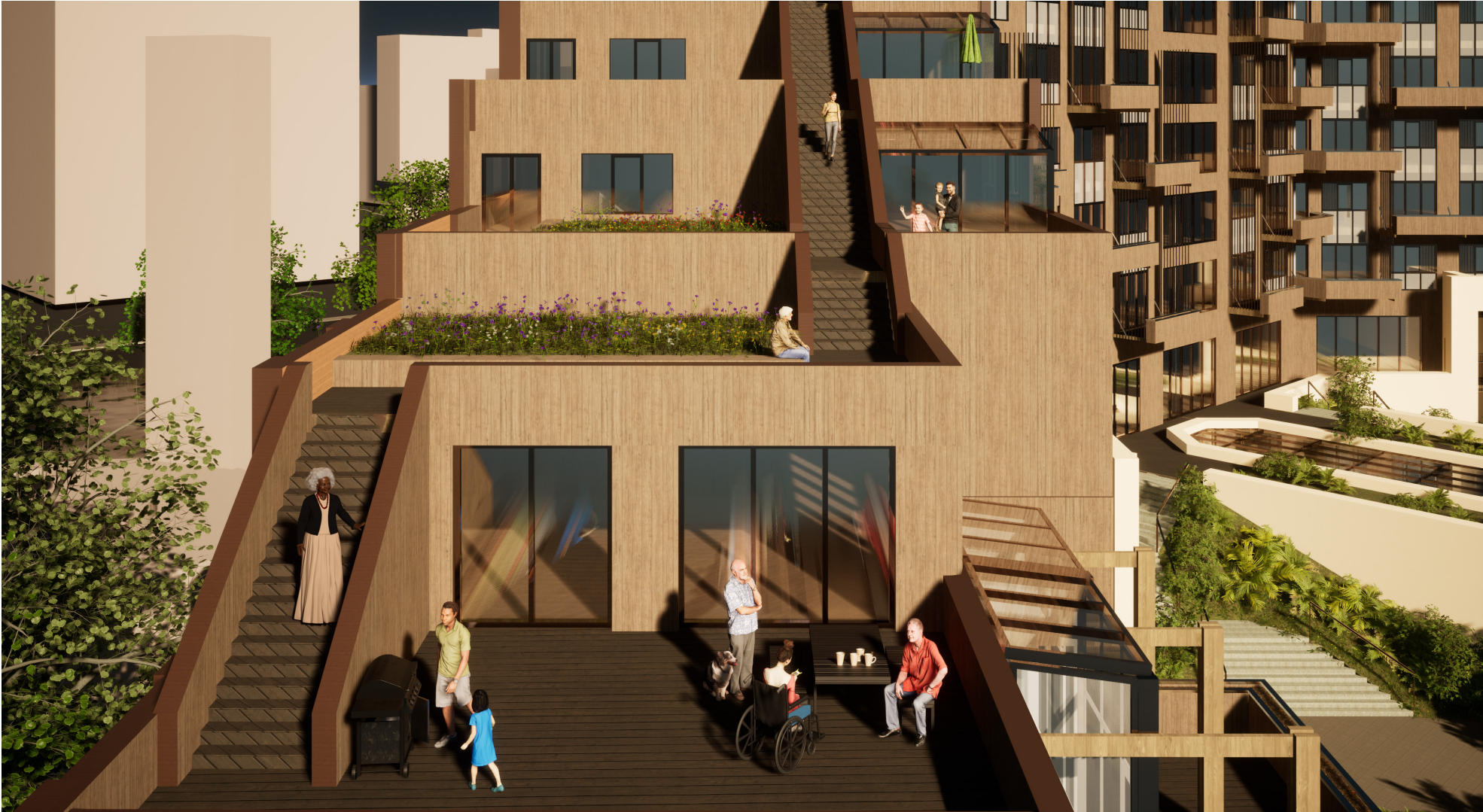
Physical Activity



Social Spaces



Intergenerational Relationships

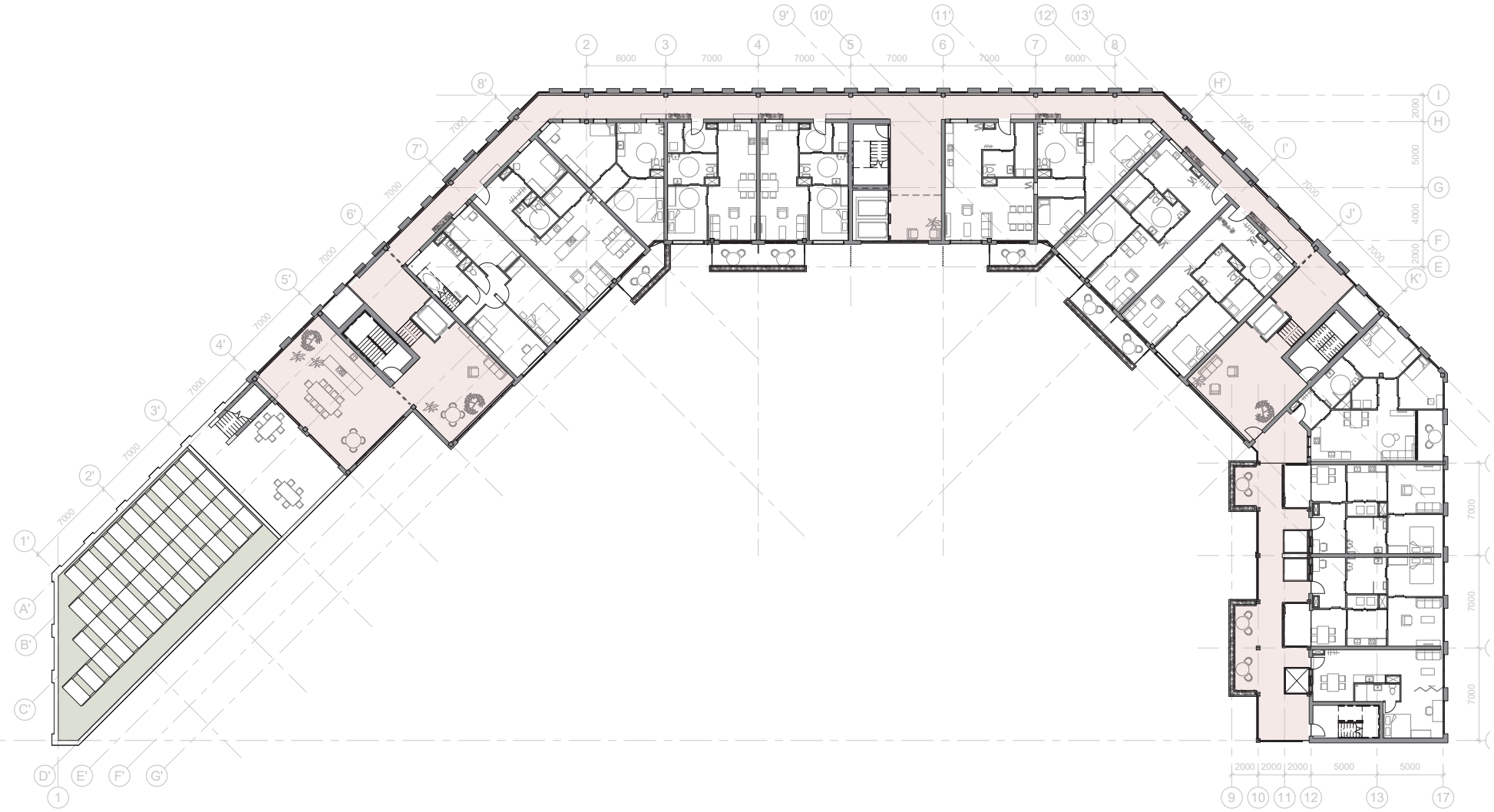




# Design

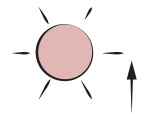
## Typical Floor Plan

-  Social Spaces
-  Outdoor Spaces
-  Accessibility



# Design

## *Circulation*



Morning  
Light



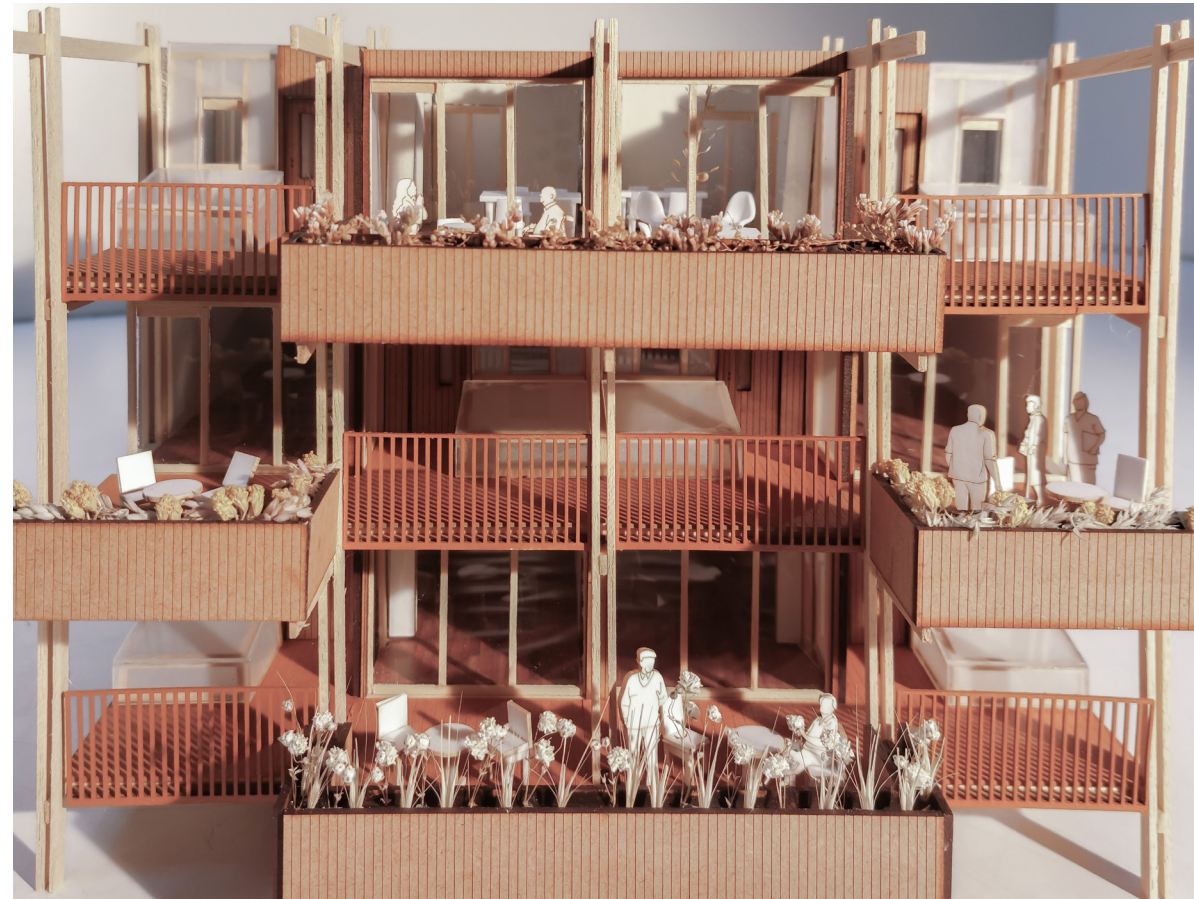
Homelike  
Environment



Social  
Spaces

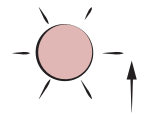


Outdoor  
Spaces



# Design

## *Circulation*



Morning  
Light



Homelike  
Environment



Social  
Spaces



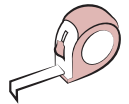
Outdoor  
Spaces



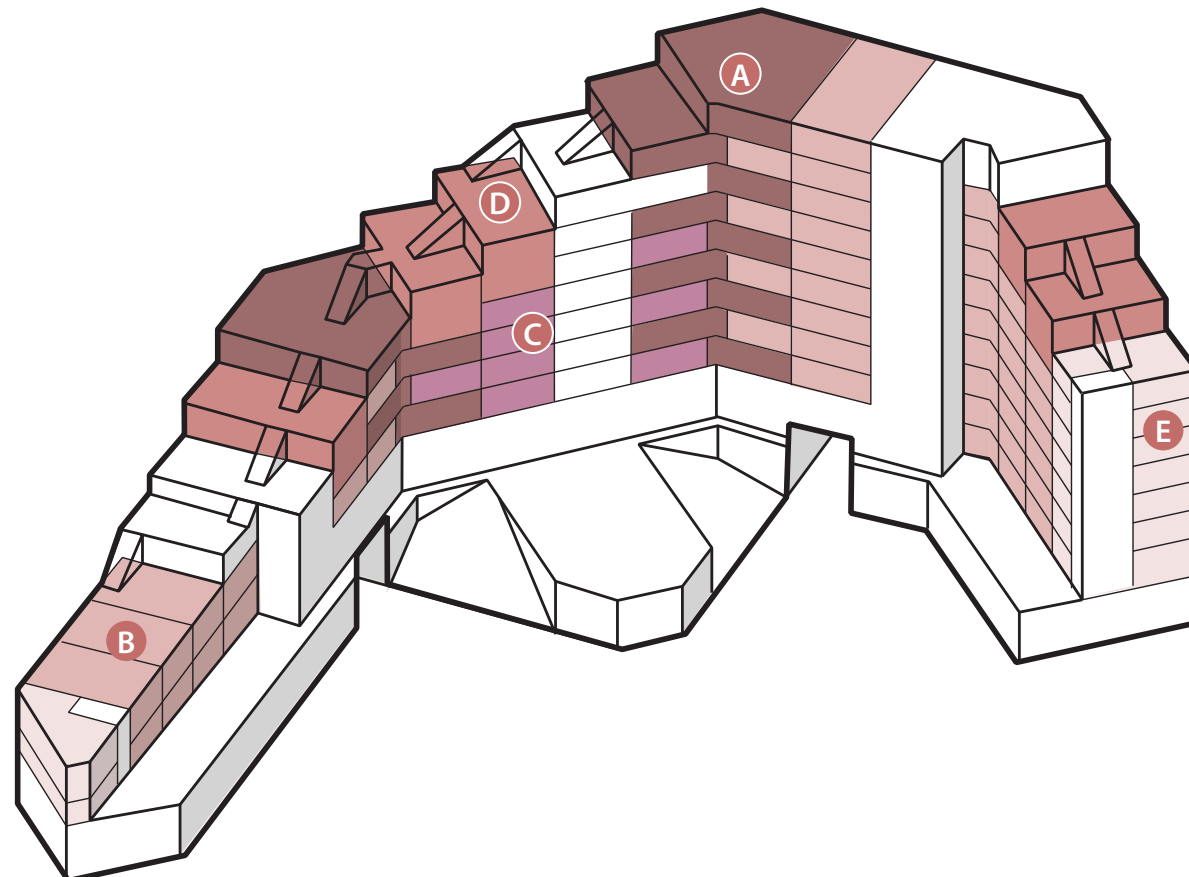
## Housing Units



Intergenerational Relationships



Appropriate Size



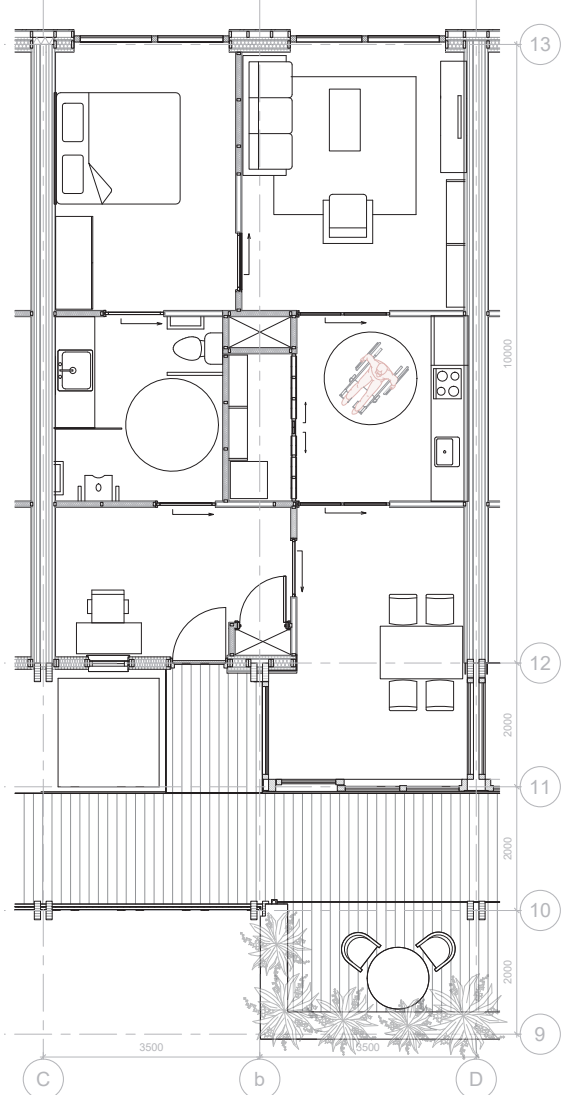
- A** Large senior 105 m<sup>2</sup> apartment  
3/4 rooms  
13
- B** Standard senior apartment  
2/3 rooms 72 m<sup>2</sup>  
21 - outside gallery  
16 - inside gallery  
9 - corner
- C** Small senior apartment  
2 rooms 65 m<sup>2</sup>  
8
- D** Family Maisonnette 145 m<sup>2</sup>  
4/5 rooms  
5
- E** Student/Starter Studio  
1 room 45 m<sup>2</sup>  
9



# Design

## Housing Unit - Standard Senior - 72 m<sup>2</sup>

-  Morning Light
-  Appropriate Size
-  Outdoor Spaces
-  Accessibility
-  Privacy

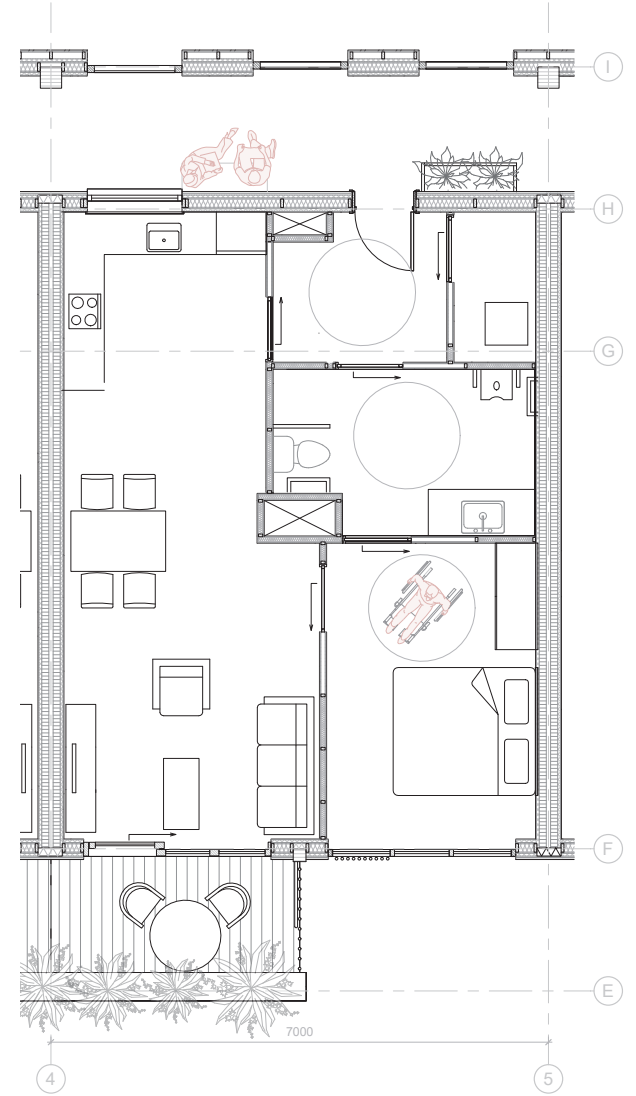




# Design

## Housing Unit - Small Senior - 65 m<sup>2</sup>

-  Morning Light
-  Appropriate Size
-  Outdoor Spaces
-  Accessibility
-  Social Spaces

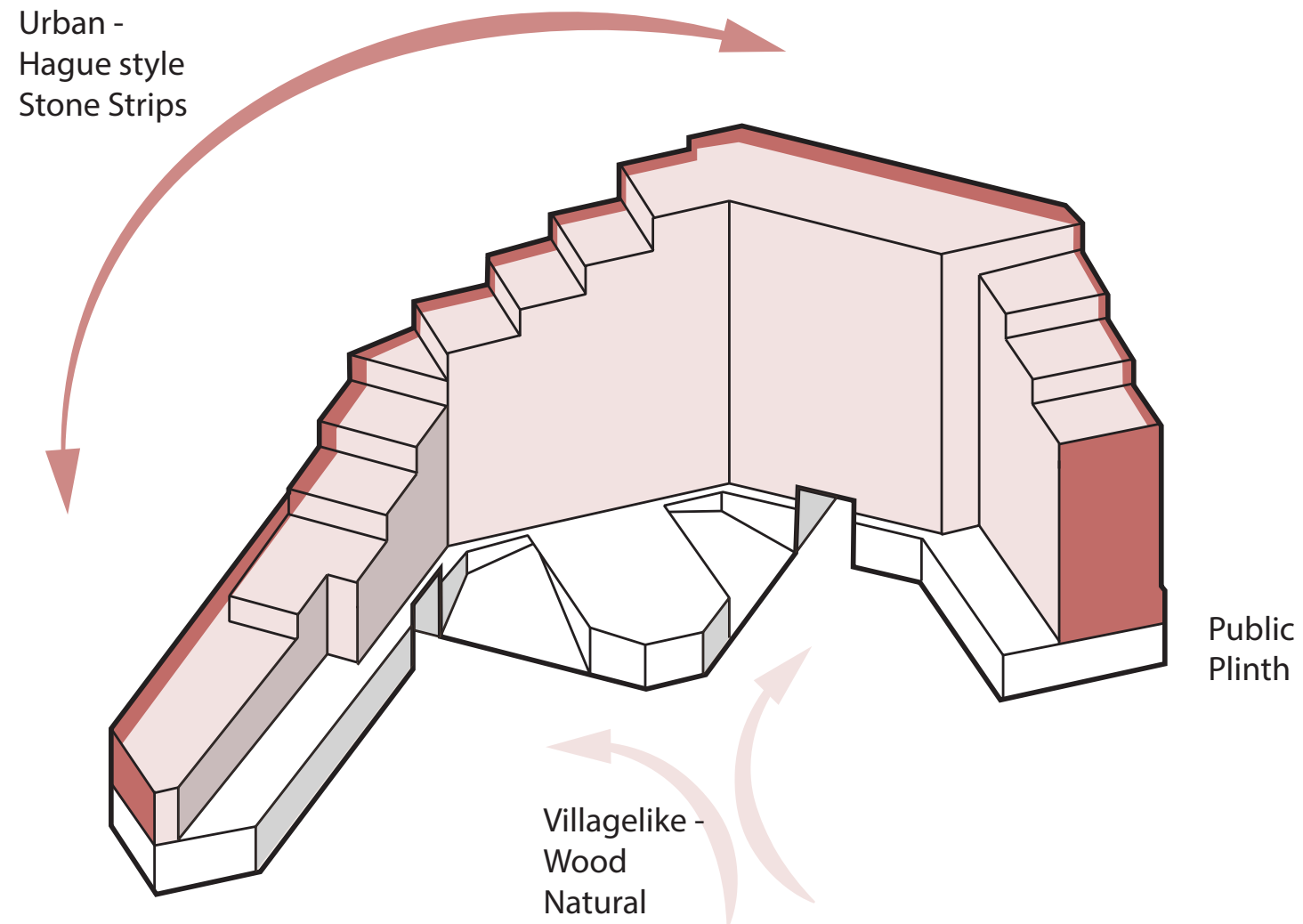


# Design

## *Housing Units - Seniors - 105 m2*

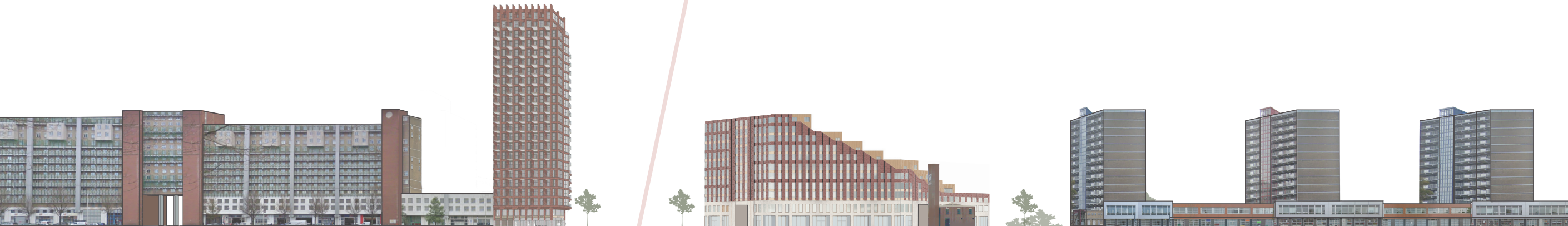
-  Morning Light
-  Appropriate Size
-  Outdoor Spaces
-  Accessibility
-  Home Ownership





# Design

## *Exterior Facade*





# Design

## *Exterior Facade*





# Design

## *Interior Facade*



Views of  
Nature

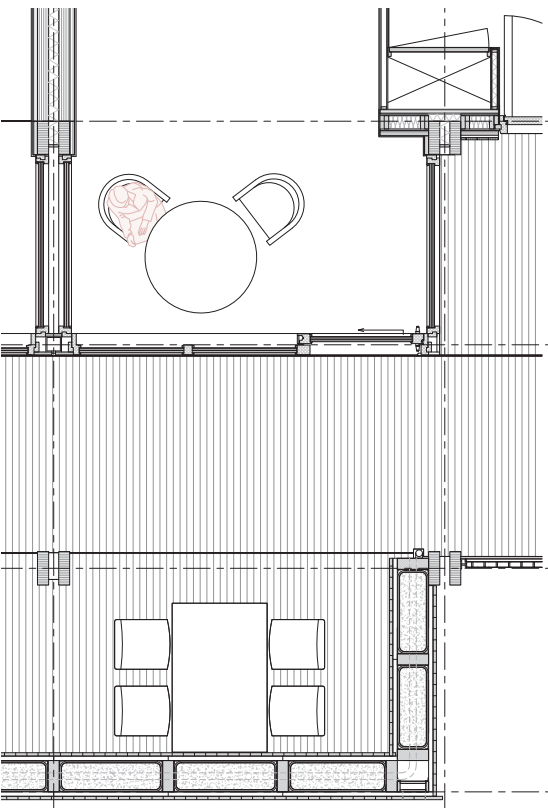
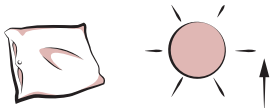


Homelike  
Environment

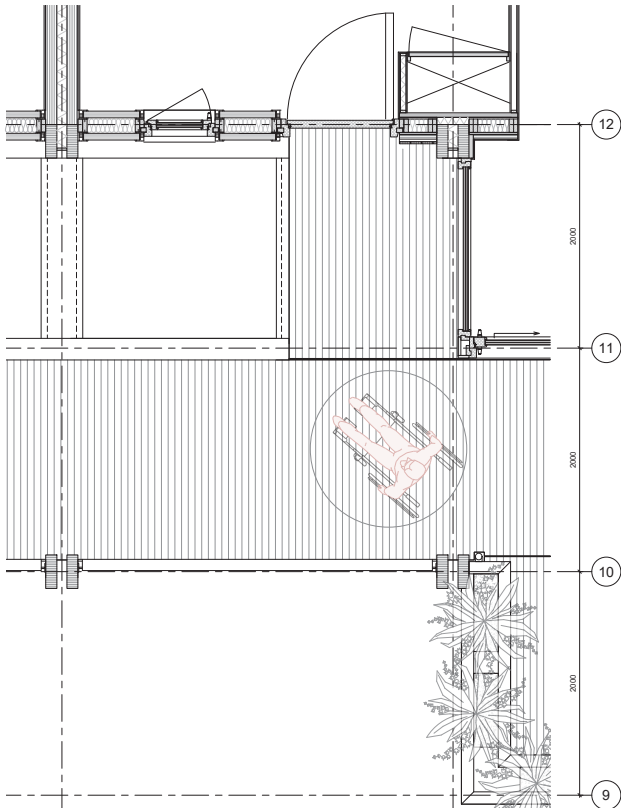


# Design

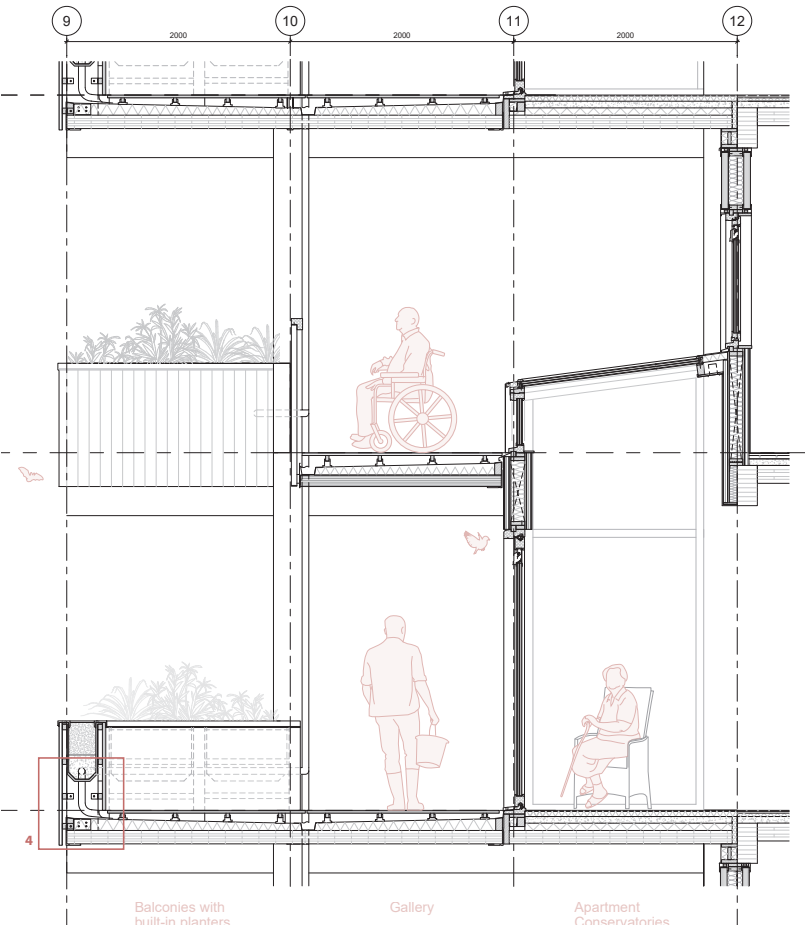
## Interior Facade



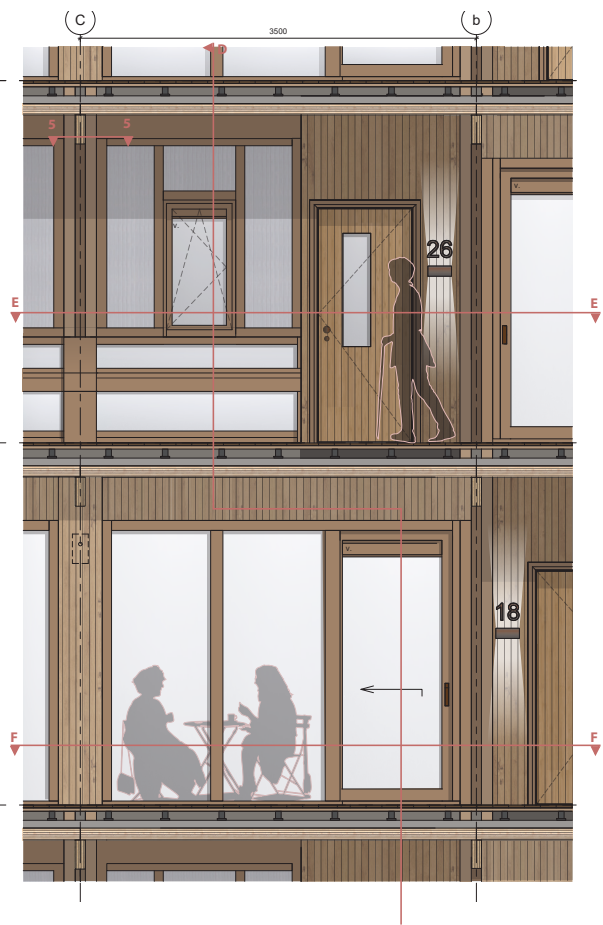
Horizontal Facade Section F 1:20



Horizontal Facade Section E 1:20



Vertical Facade Section D 1:20




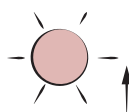
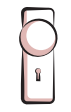
Facade Fragment 1:20

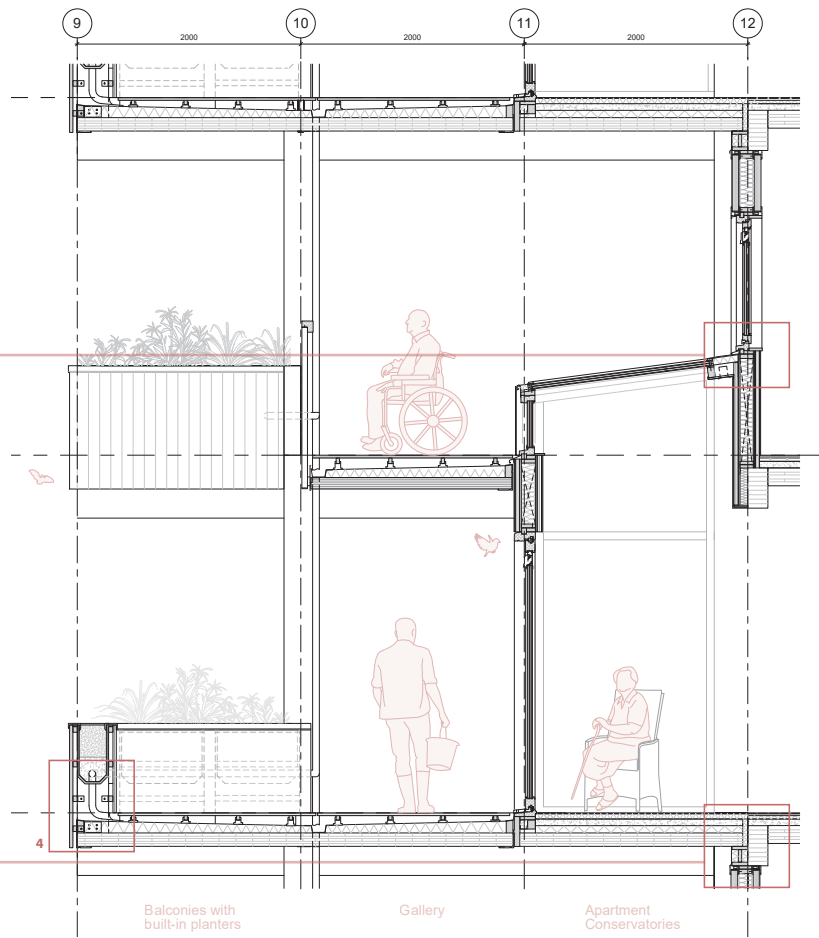
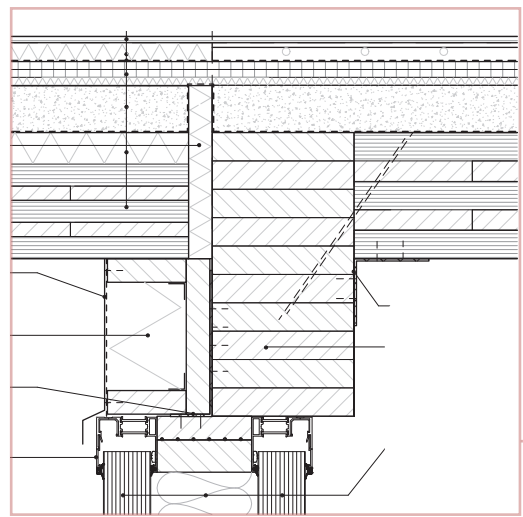
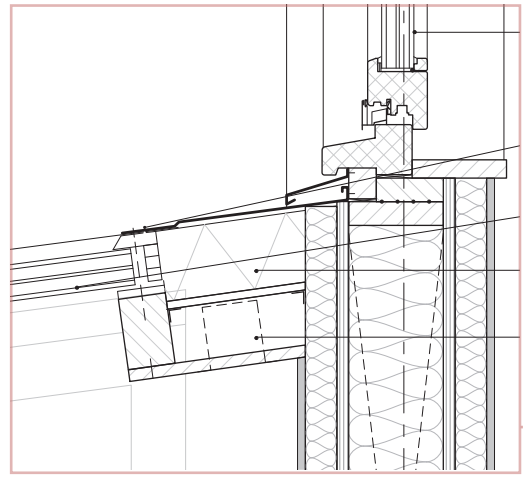




# Design

## Interior Facade

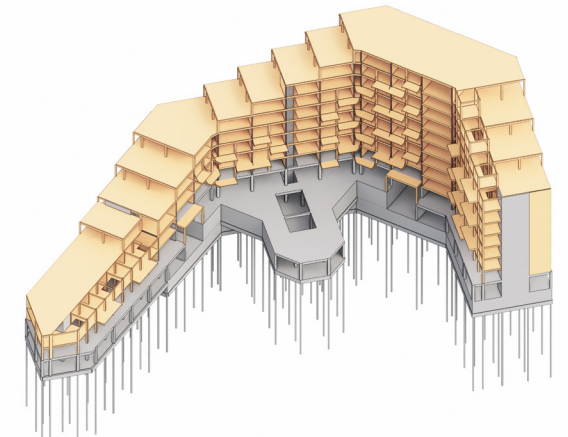
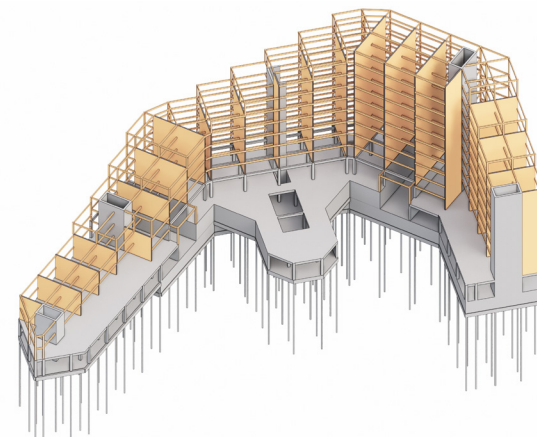
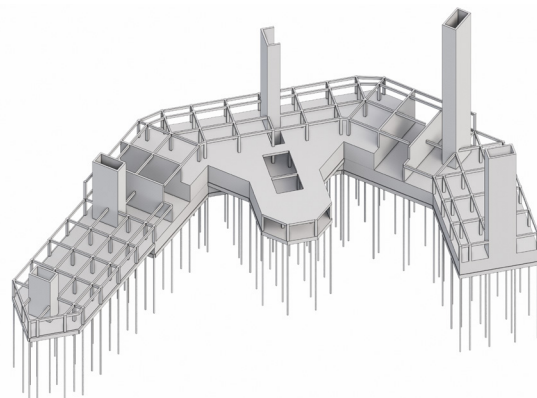
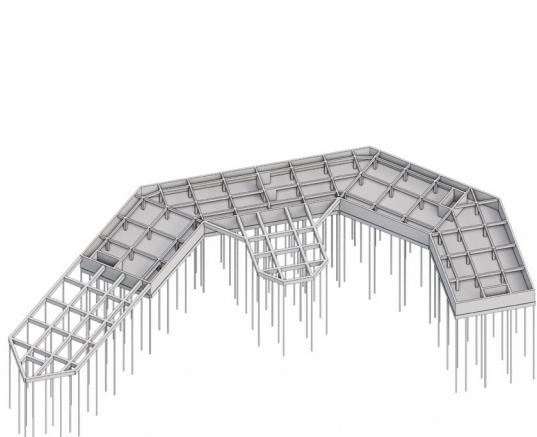
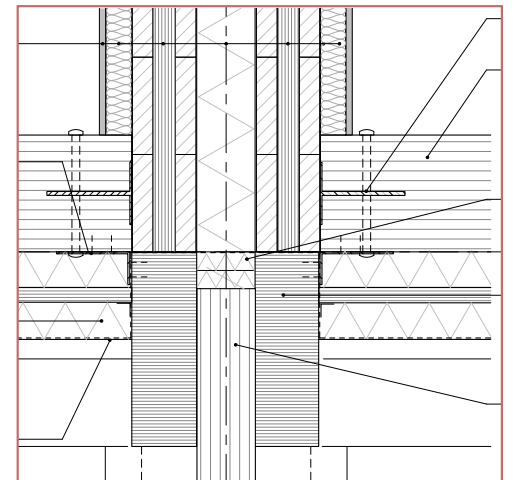
-  Accessibility
-  Morning Light
-  Privacy





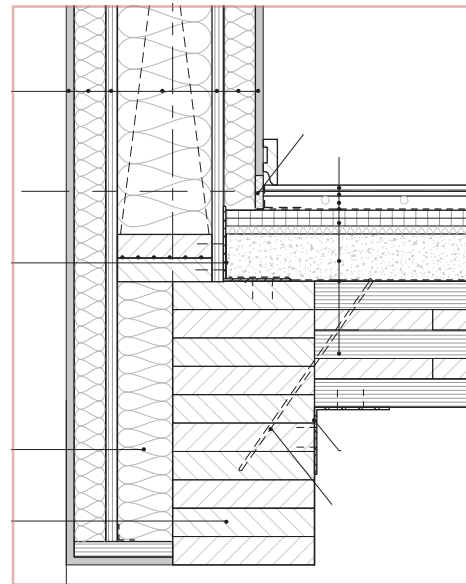
Concrete Basement, Plinth and Stability Cores

CLT Walls  
Glulam Floor Beams  
Auxillary Glulam Columns





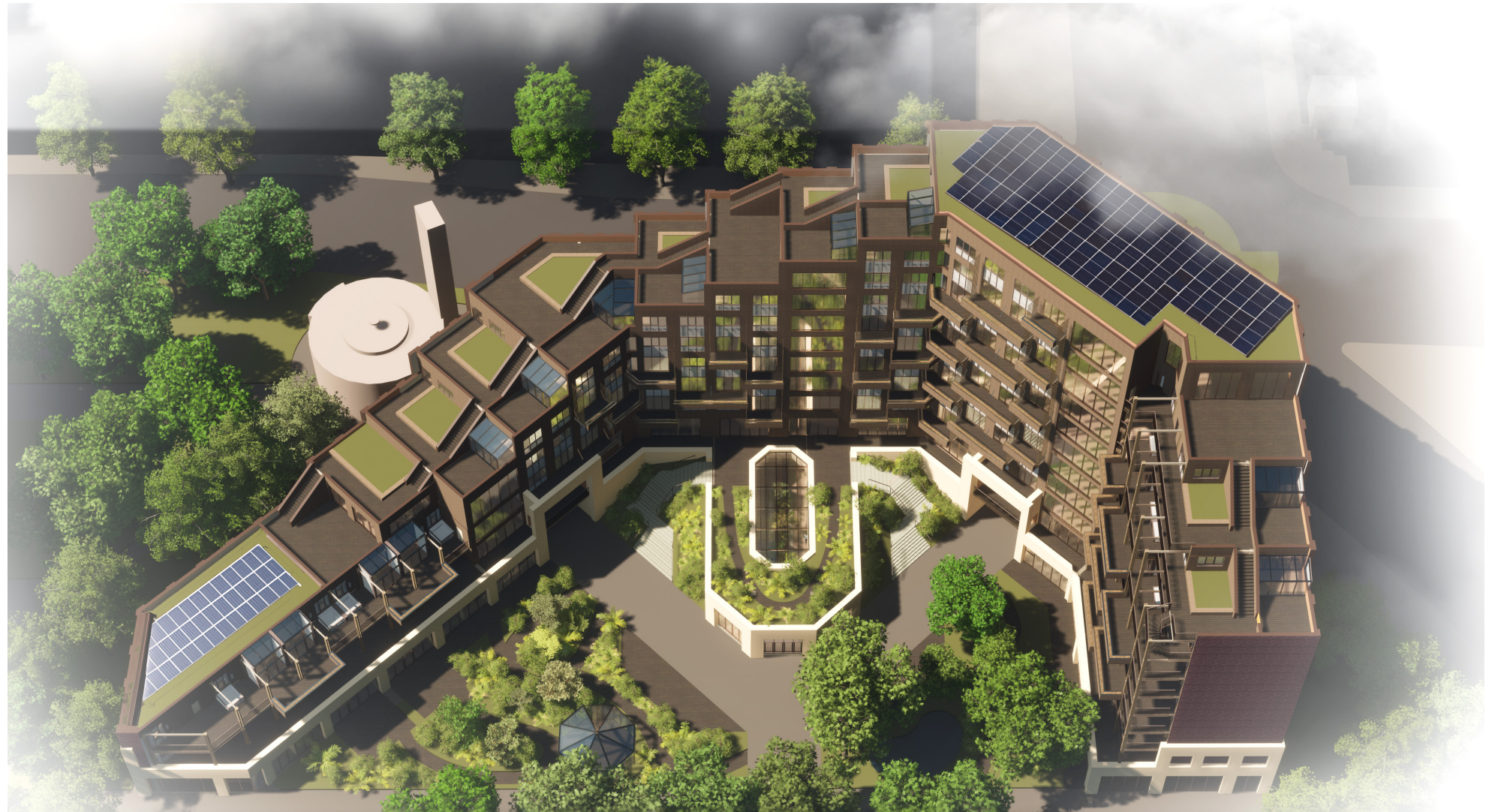
Control



- 1 Ventilation Type C in apartments
- 2 Ventilation Type D in plinth
- 3 2 AHU's at each gate on 1st floor
- 4 Individual apartment shafts for plumbing and ventilation are combined in plinth
- 5 The building is connected to the present district heating line
- 6 District heating substation creates a secondary heating network for the building. During summer the hot water feeds a Sorption Cooler, which provides cold water for the AHU and the cooling network.
- 7 During winter, warm water from the secondary heating network run through HIU and heats drinking wa and feeds the floor heating. During summer cold water from the cooling network feeds the floor heating.
- 8 The top roof is utilized for East-West facing PV panels placed on a moss roof
- 9 Excess rainwater is drained into the underground water storage

# Design

## *Climate - roof functions*





Thank you!

