# DESIGN FOR PEOPLE WITH DEMENTIA

NOA VAN DORTH

5381451 - NOA VAN DORTH

# CONTENTS

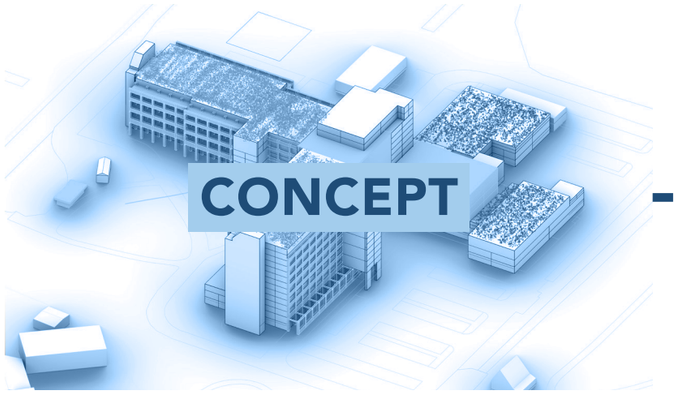
**PROBLEM STATEMENT** → **METHOD** → **RESEARCH QUESTIONS**

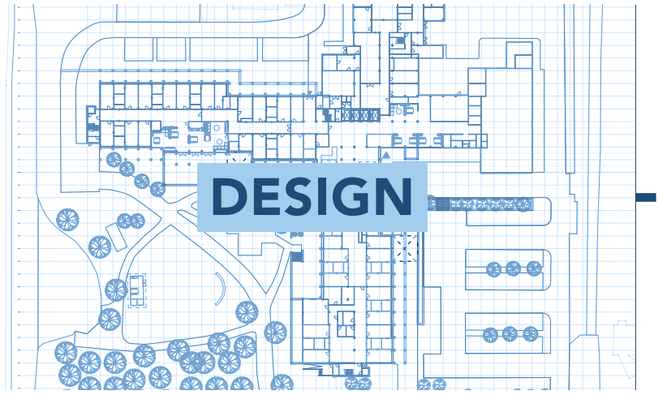
RESEARCH

→


→ **DESIGN GUIDELINES**

AND




→ 


→ **NEXT STEPS**

DESIGN

# PROBLEM

- **Human rights**
- **Autonomy**

≡ nrc›

ACHTERGROND

Eerst verloor hij de regie over zijn leven, daarna verloor zijn dochter de regie over hem

**Dementiezorg** Een verpleeghuis stapte naar de rechter om de dochter van een dementerende man de zeggenschap over hem te ontnemen. Hoe heeft het zover kunnen komen?

**Bram Endedijk** en **Lineke Nieber**
15 november 2024 • Leestijd 15 minuten

Luisteren | Leeslijst

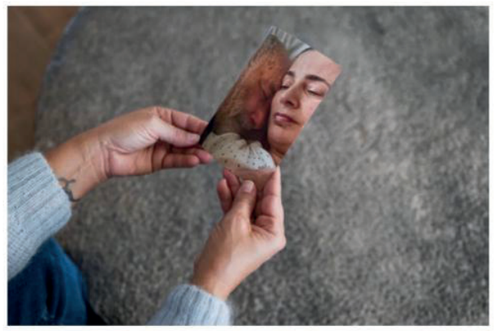


*Foto Mona van den Berg*

**Source:** nrc

≡ nrc›

ACHTERGROND

Zijn de 'mensonterende' misstanden bij Cordaan representatief voor verpleeghuizen? Drie vragen over ouderenzorg

**Verpleeghuizen** Bij een verpleeghuis van Cordaan in Amsterdam constateerde *de Volkskrant* schokkende misstanden. Structurele, sectorbrede problemen werken wantoestanden in de hand. Wat kan de inspectie hiertegen doen?

**Ingmar Vriesema**
20 december 2024 • Leestijd 3 minuten

Luisteren | Leeslijst

Dementiezorg onder druk

'Gebrek aan bewegings-vrijheid in verpleeghuis schending mensenrecht'

**Source:** Kro-Ncrv

**Source:** Teun Toebes

# PROBLEM

- Aging population
- 15,7%

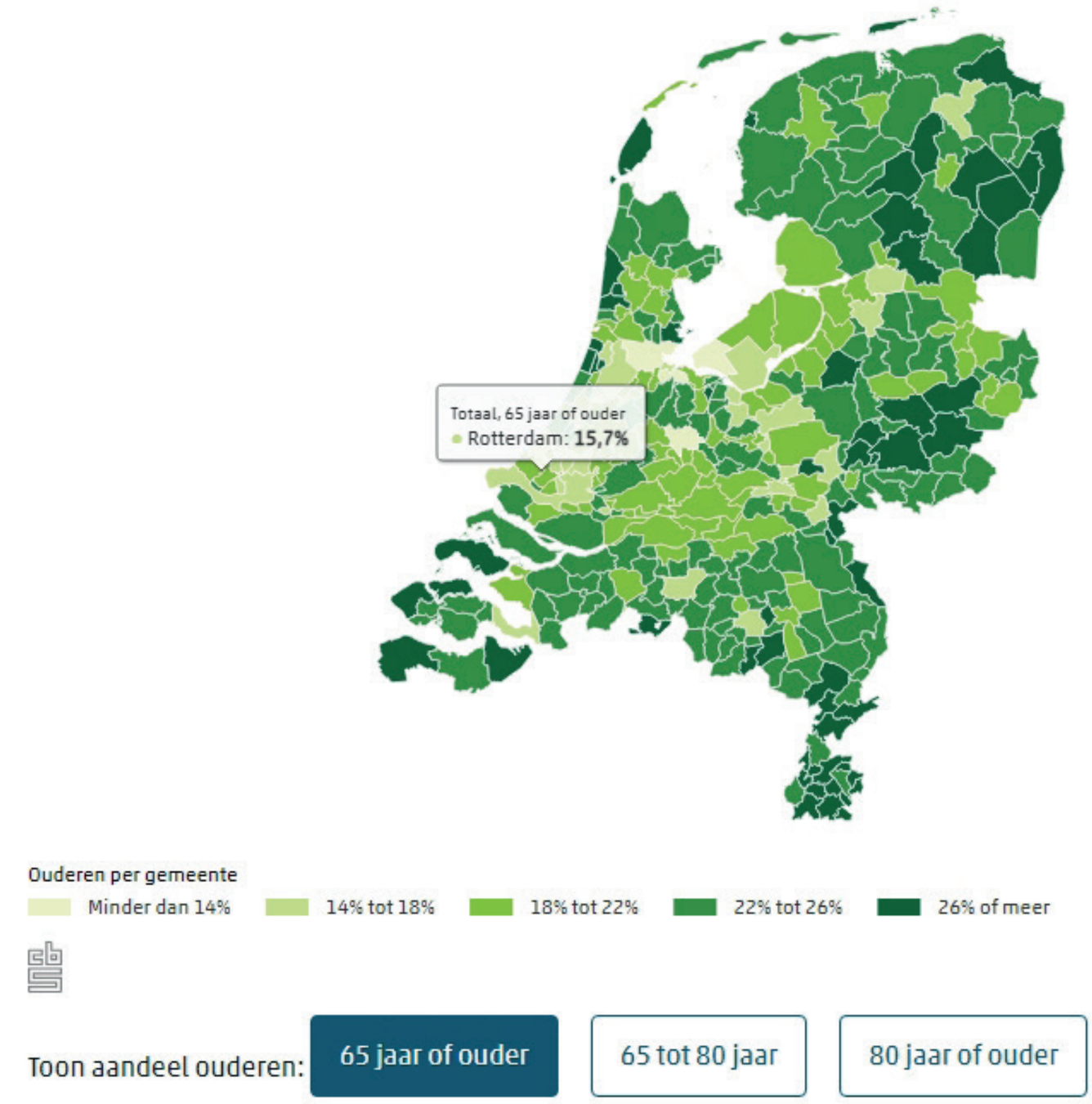



*Figure 2. Elderly map of the Netherlands per town (CBS, 2024)*

# PERSONAL EXPERIENCE

- **Dementia**
- **Care home**
- *Molentocht in Purmerend*

**Assisted living**

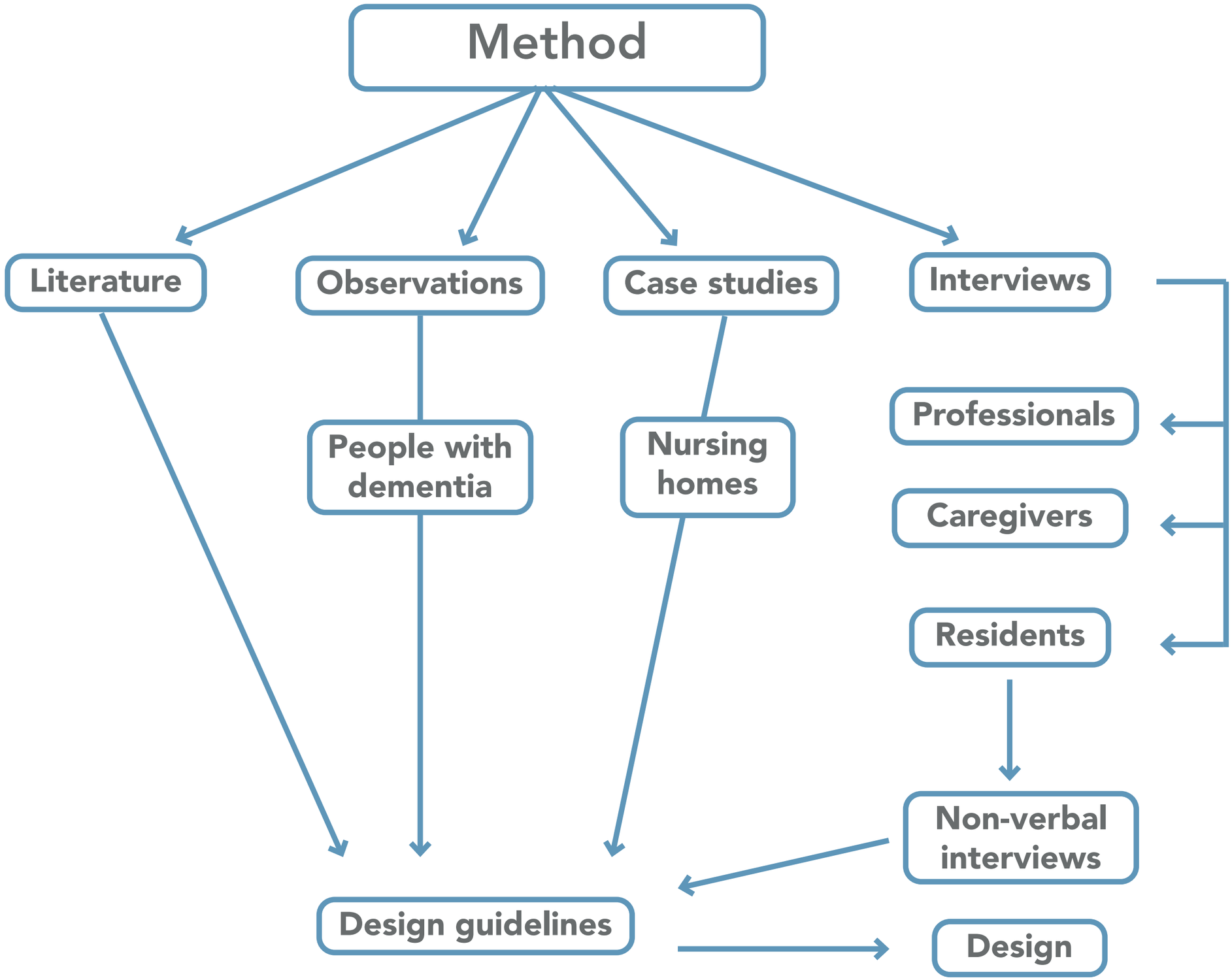
**Nursing home departments**

**Reception, communal spaces and care facilities**

**Source:** Sunforce - duurzame energie techniek

# RESEARCH QUESTION

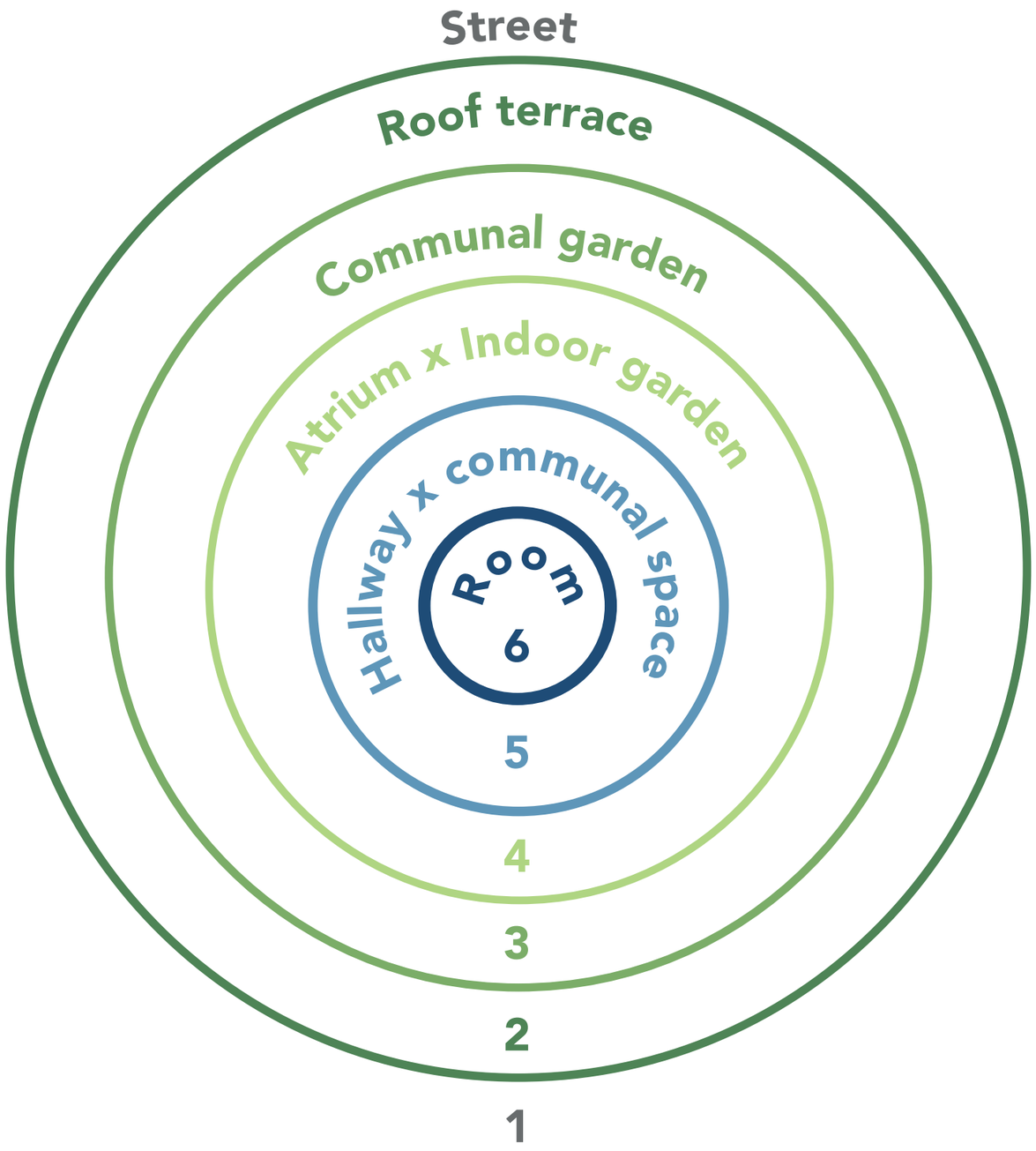
*What are **requirements** of the **living environment** for people with **dementia** in **care facilities,** for achieving optimal **autonomy** during each different **phase of dementia?***


Method
Literature
Observations
Case studies
Interviews
People with dementia
Nursing homes
Professionals
Caregivers
Residents
Non-verbal interviews
Design guidelines
Design

# MOBILITY & INDEPENDENCE PER STAGE

| Type of dementia | | Stages<br>Independent / Guided | Early (1) | Mild (2-3) | Moderate (4) | Servere (5-6) | |
|---|---|---|---|---|---|---|---|
| **Alzheimer** | 70% | | | | | | **Resting spots** |
| **Vascular** (visual impairment) | 16% | | | | | | **Resting spots/ seating** |
| **Lewy body** (movement impairment) | *6% | | | | | | **Barrier-free Accessible** |
| **FTD Young Onset** | *8% | | | | | | **Railing** |

# LEVEL OF MOBILITY FREEDOM SPACES

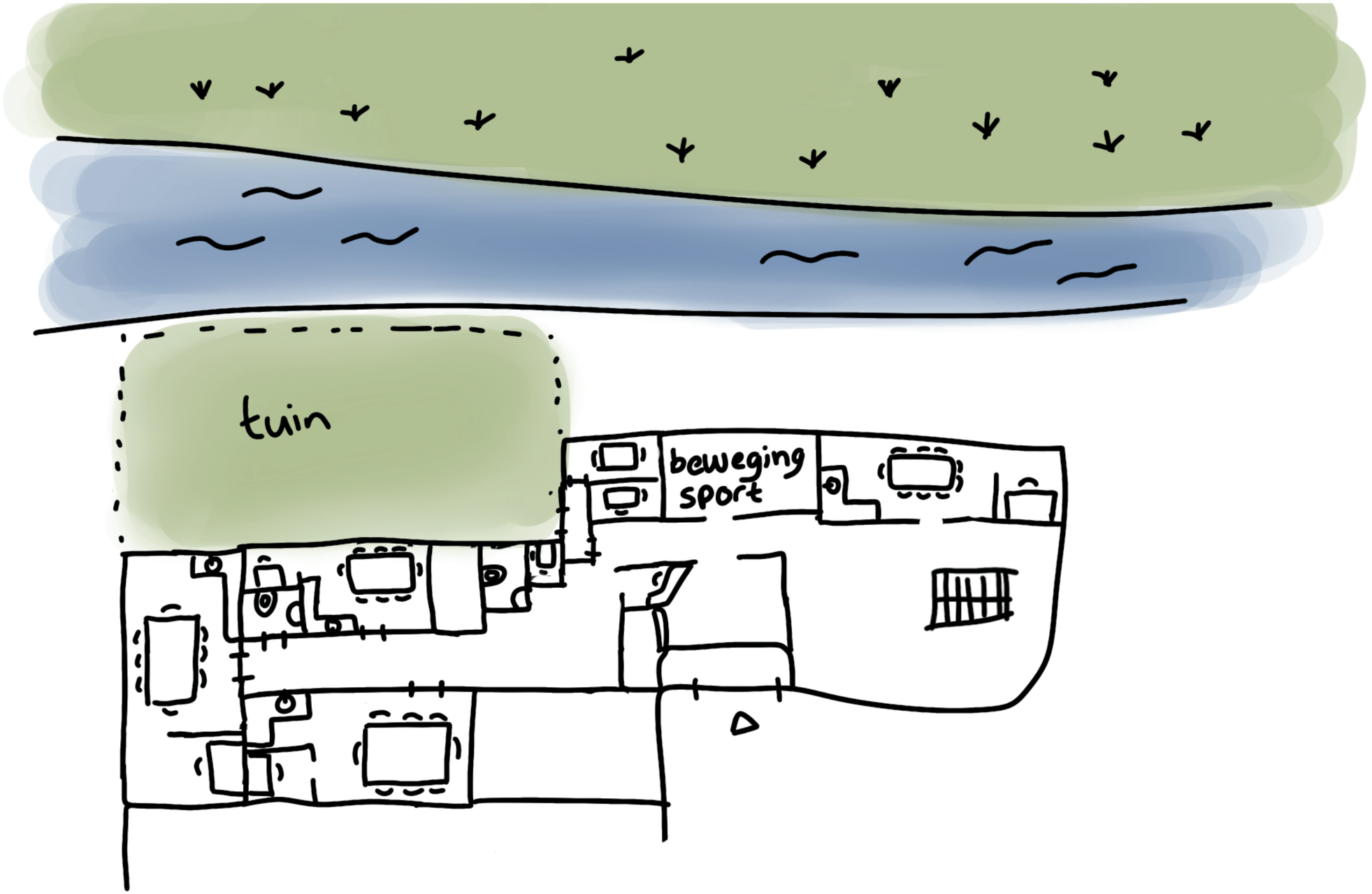


"Our foundation is that **people are free to leave and therefore choose to stay.** So if you know the door is open and you can leave, you feel comfortable. If you close the door and say you can't leave until I say so, then you're not comfortable here. Then it doesn't feel good, and that's precisely when I want to leave."

Source: Mariahout, The Netherlands short fragment (Toebes, 2023)

# FIELDWORK

# FIELDWORK

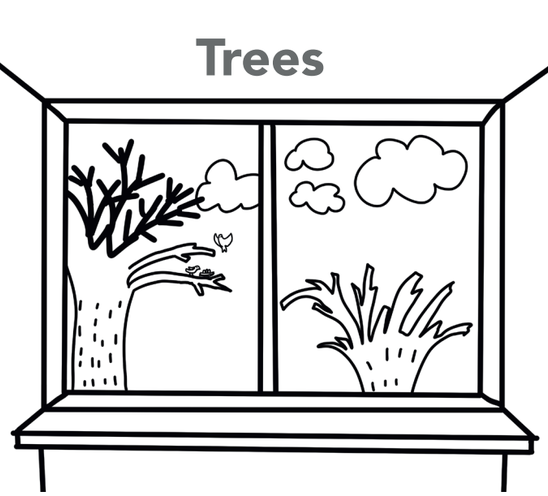



*Sketch of elderly community center in Delft*

# NON-VERBAL INTERVIEWS TEMPLATE

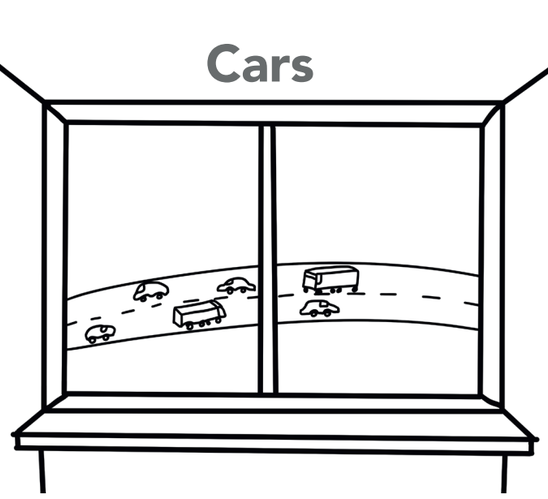
**VIEW**

Trees

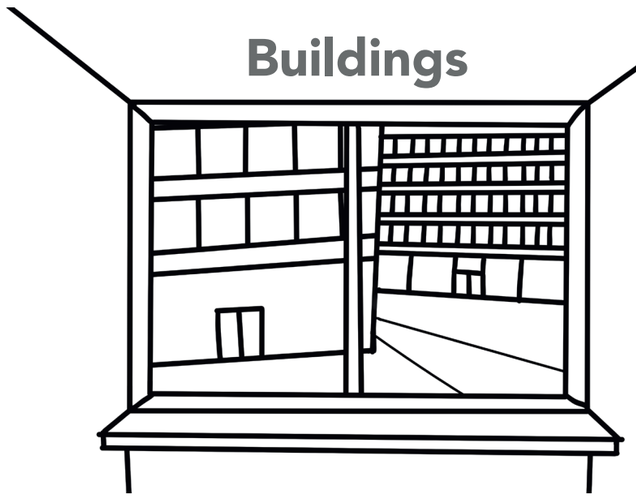


Entrance, street & parking

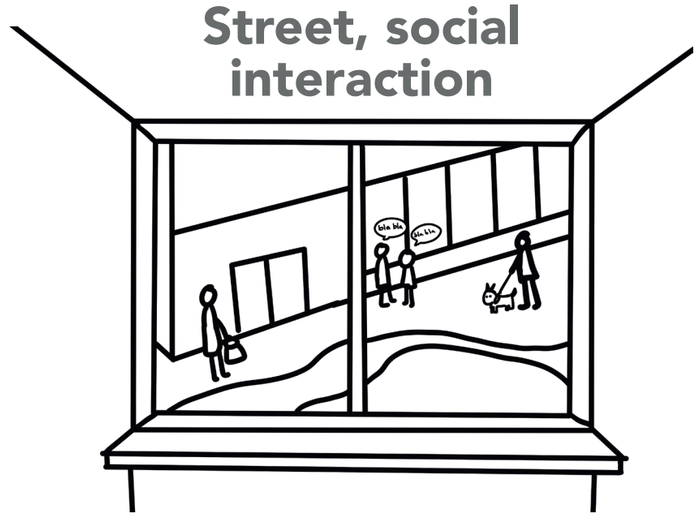
Cars



Buildings

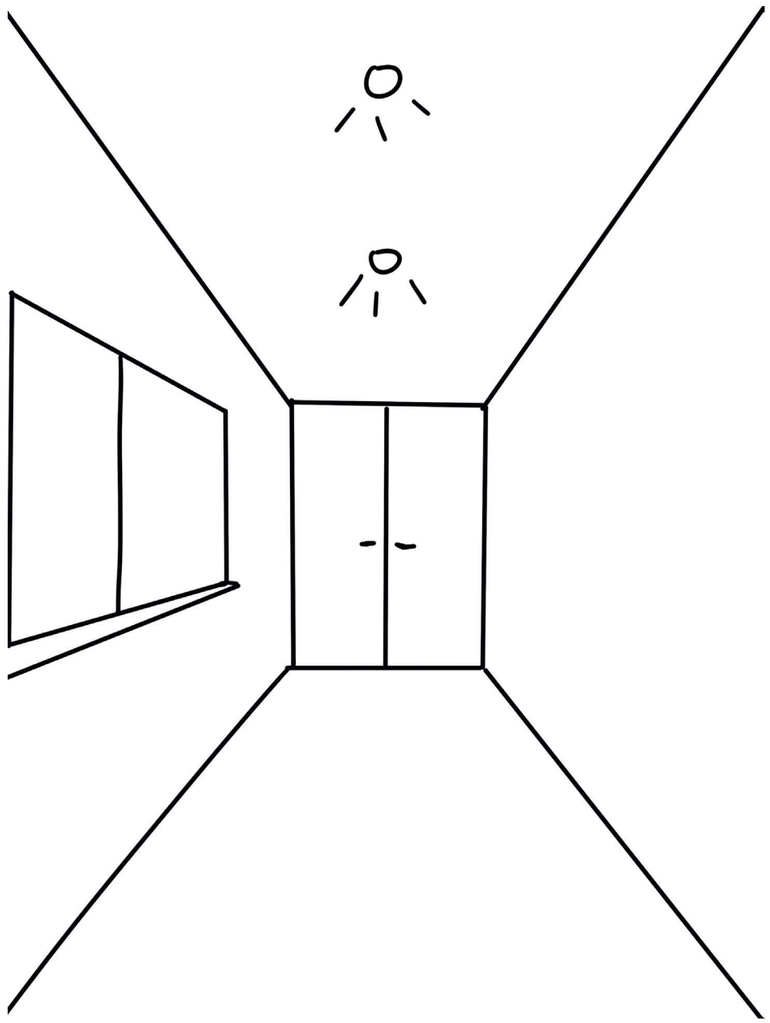


Street, social interaction



# NON-VERBAL INTERVIEWS TEMPLATE

## HALLWAY

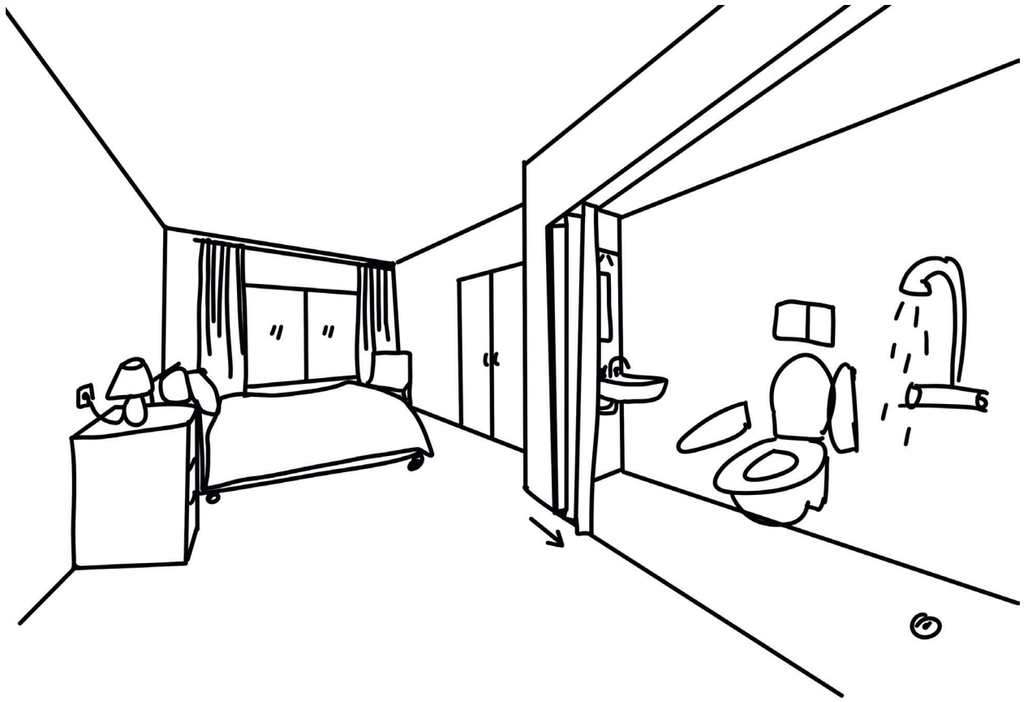


A

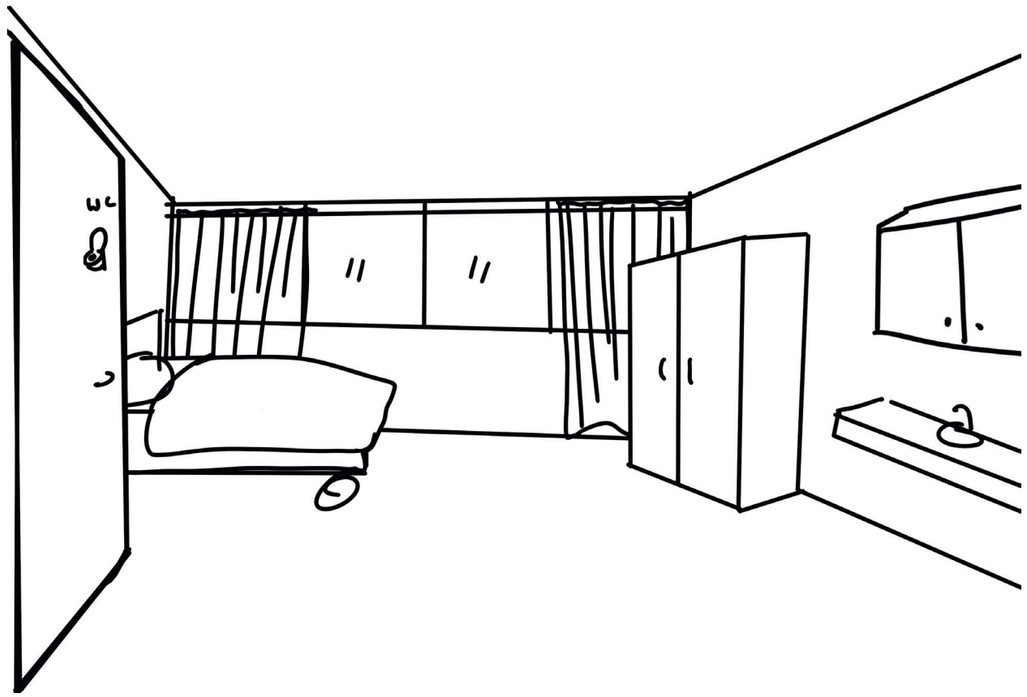
B

# NON-VERBAL INTERVIEWS TEMPLATE

## ROOM



A



B

# RESULTS

## PWD RESPONSES

### VIEW

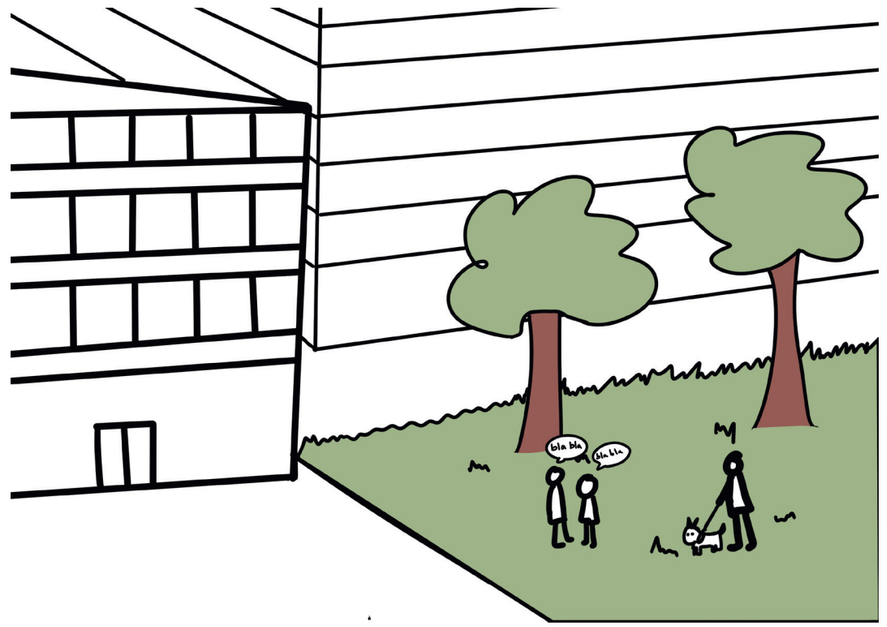
*"**trees and nature**, watching clouds. Gives movement. **Interaction** gives movement"*

*"looking outside, trees, **freedom** and gives **feeling** that im **outside**"*

### GREENERY

*"children playing, trees becomes **park**, add benches and tiles and **people make it fun**"*

*"with **trees and grass**. Would place a fence to make it private"*



# RESULTS

## PWD OBSERVATIONS

### MOVEMENT

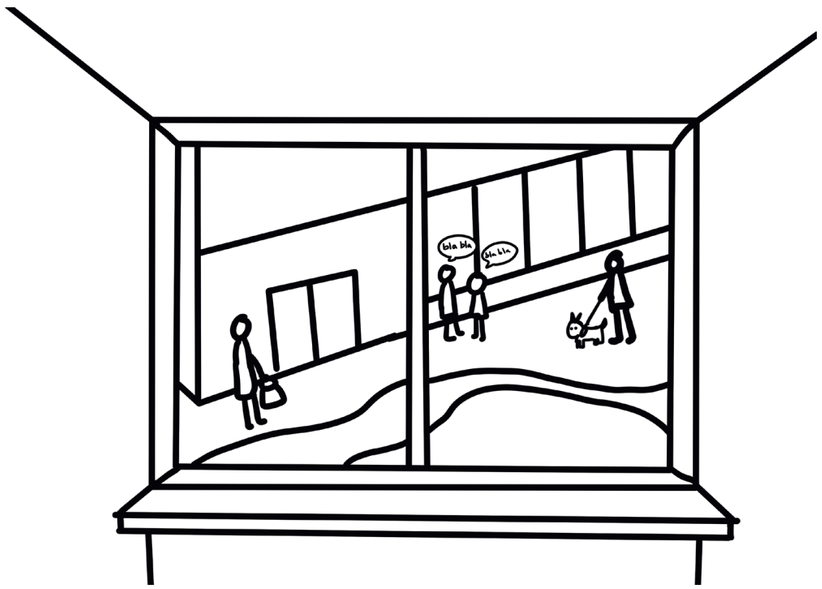
*"**Wanted to walk** around but was told to **sit** down and **wait**"*

*"Would go onto the **balcony to smoke** and walk around. He **forgot** to lock the **balcony**, so that was dangerous for other residents. "*

### OUTSIDE

*"Only with **family** (once every 2 weeks)"*

*"Whenever he got the opportunity (to go outside independently), so with family, staff, etc. "*



# RESULTS

## PROFESSIONALS/ CAREGIVERS

### AUTONOMY

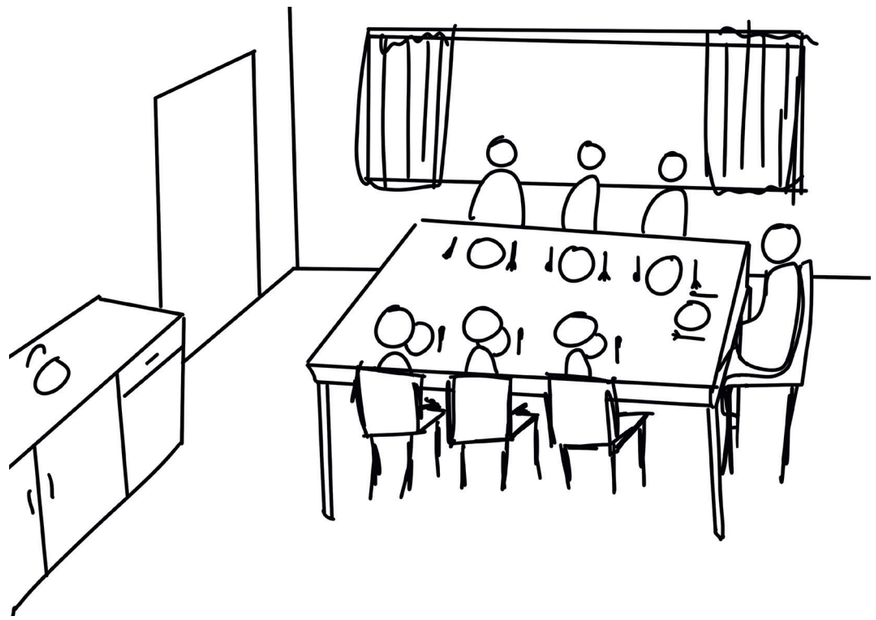
*"Can **choose where to eat** and **open door policy.** Some can walk and go through the whole building, some only that floor"*

*"They can go outside, but **it's not accessible** (safety) in the way we would like."*

### ACTIVITY

*"Reading newspaper, playing games and **activities together.**"*

*Some are more **passive (apaty)** some are **restless and walk around.** Not so much interaction, depends per group.*

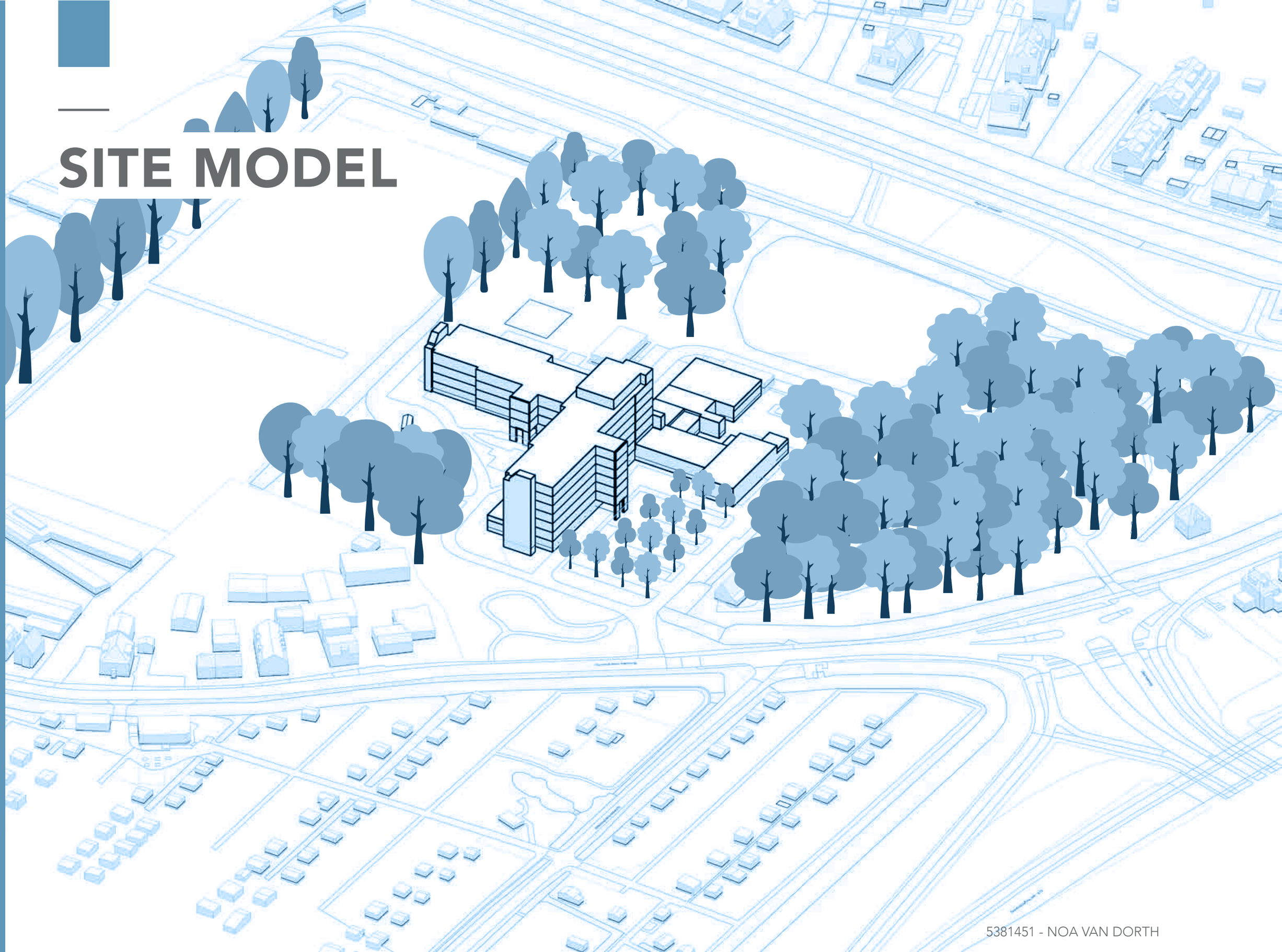


# SITE ANALYSIS

# SITE

NURSING HOME
0
750 m
Rotterdam The Hague Airport (RTM)
Park Zestienhoven
Melanchtonpark
Dok 99
Action
HILLEGERSBERG-SCHIEBROEK
Golfcenter Seve
Franciscus Gasthuis & Vlietland
A 13
E 19
Rotterdamse Schie
Sidelingepark
A 13
E 25
A 20
Vroesenpark
Diergaarde Blijdorp
Boezem
KRALINGSE BOS
A 20
E 19
E 25
Voorplas
Pathé
Neptunus Familie stadion
Roel Langerakpark
Holland Casino - Rotterdam
Rotterdam
Lidl
Sparta Stadium
DELFSHAVEN
Koopgoot
Action
CENTRE
Boerengat
Kinderdijk-Rotterdam Erasmusbrug
Depot Boijmans Van Beuningen
Noordereiland
Erasmus MC
Koningshaven
Dakpark Rotterdam
Merwehaven
het Park
Wilhelminakade
New Luxor Theater
Rijnhaven
S 114
WESTZEEDIJK
MAASTUNNEL
Waalhaven Z Z-Marconistraat/Europoint
Waalhaven O Z/Dockworks
11°
AQI 5

# SITE MODEL

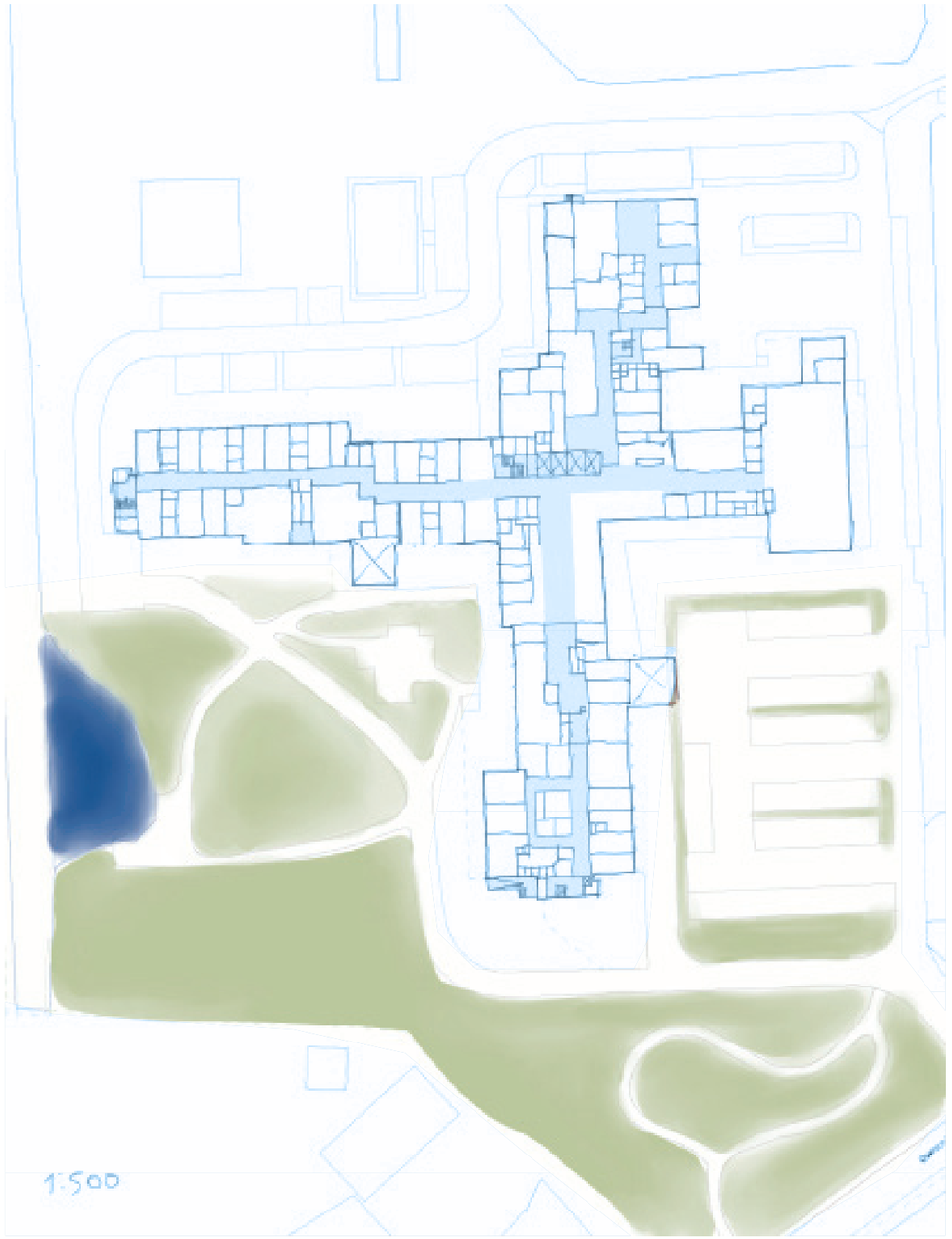


5381451 - NOA VAN DORTH

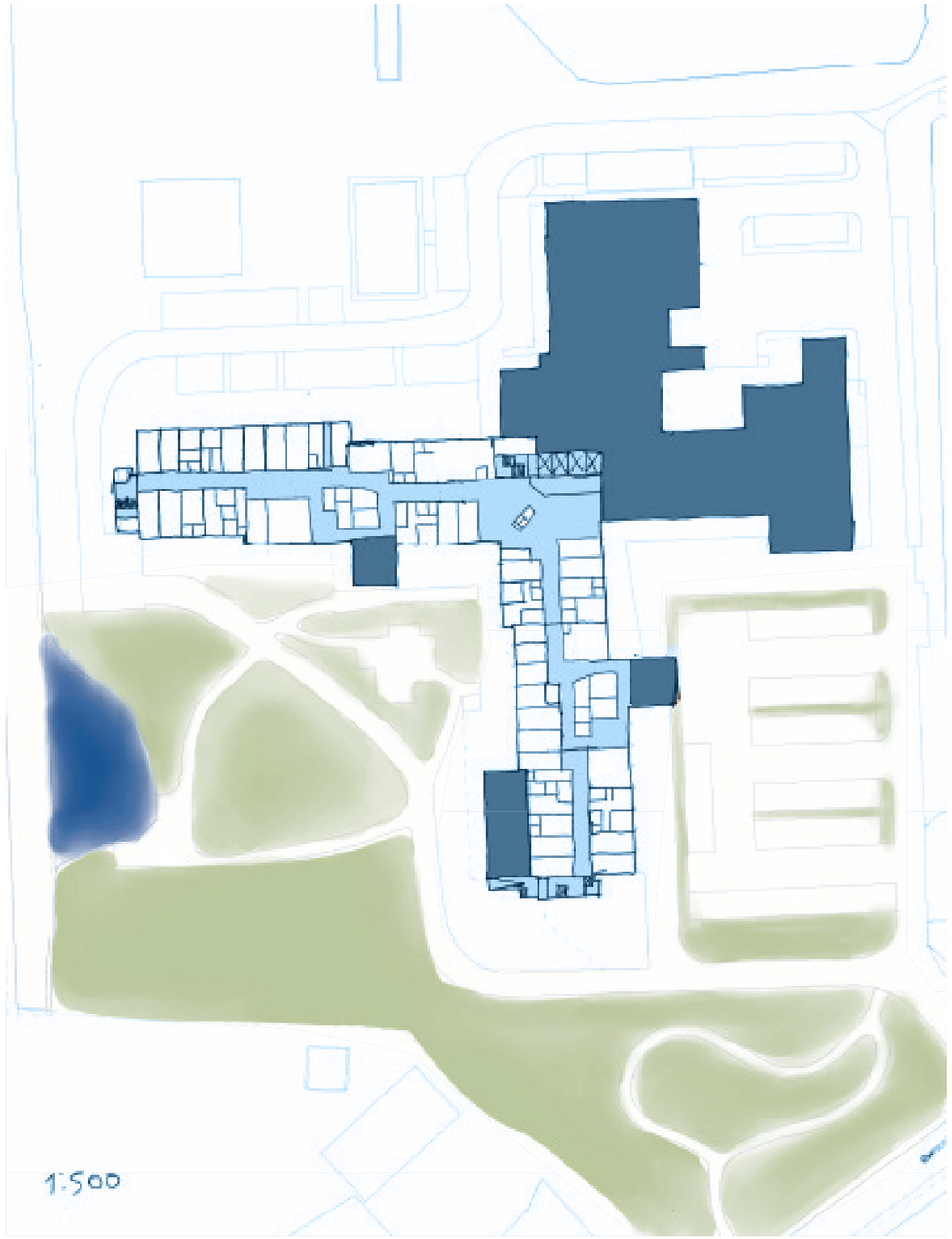
# SUN ANALYSIS

# EXISTING BUILDING

# EXISTING FLOOR PLAN




Ground floor




First floor

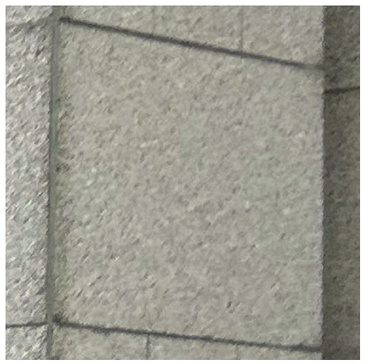
# SITE ANALYSIS STREET LEVEL

# SITE ANALYSIS GARDEN

# SITE ANALYSIS INTERIOR

# EXISTING MATERIALS ANALYSIS

Corrugated aluminum



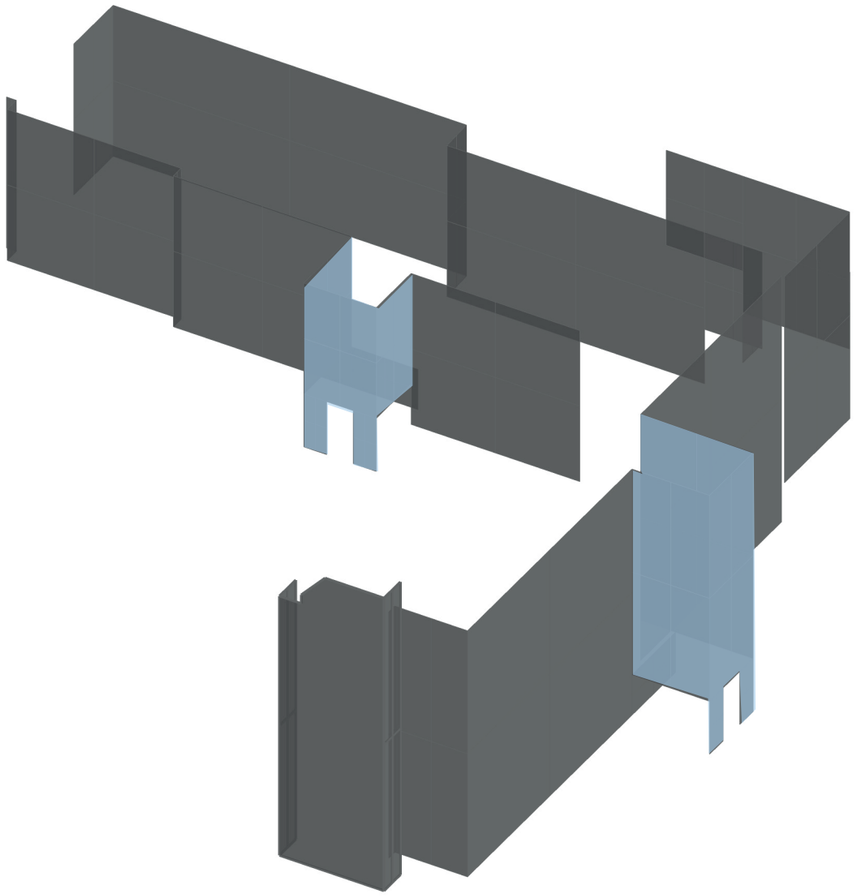
Concrete

Aluminum window

Aluminium

Existing

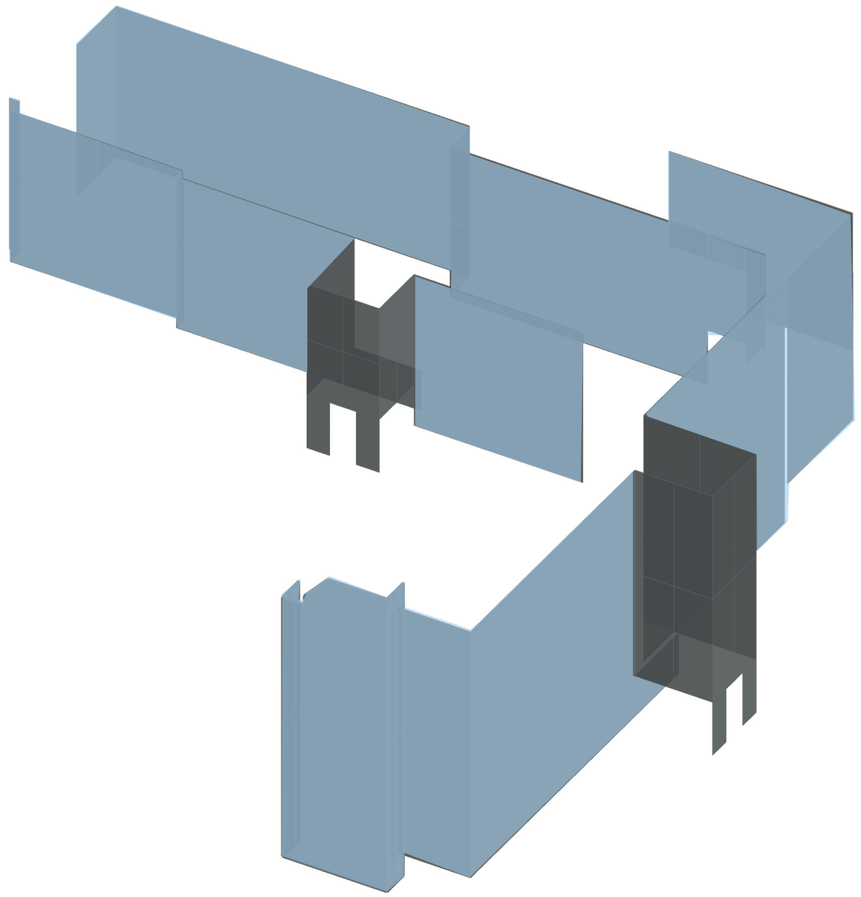
# EXISTING FACADE



**Corrugated aluminum panels 465 m2**

**Corrugated aluminum**

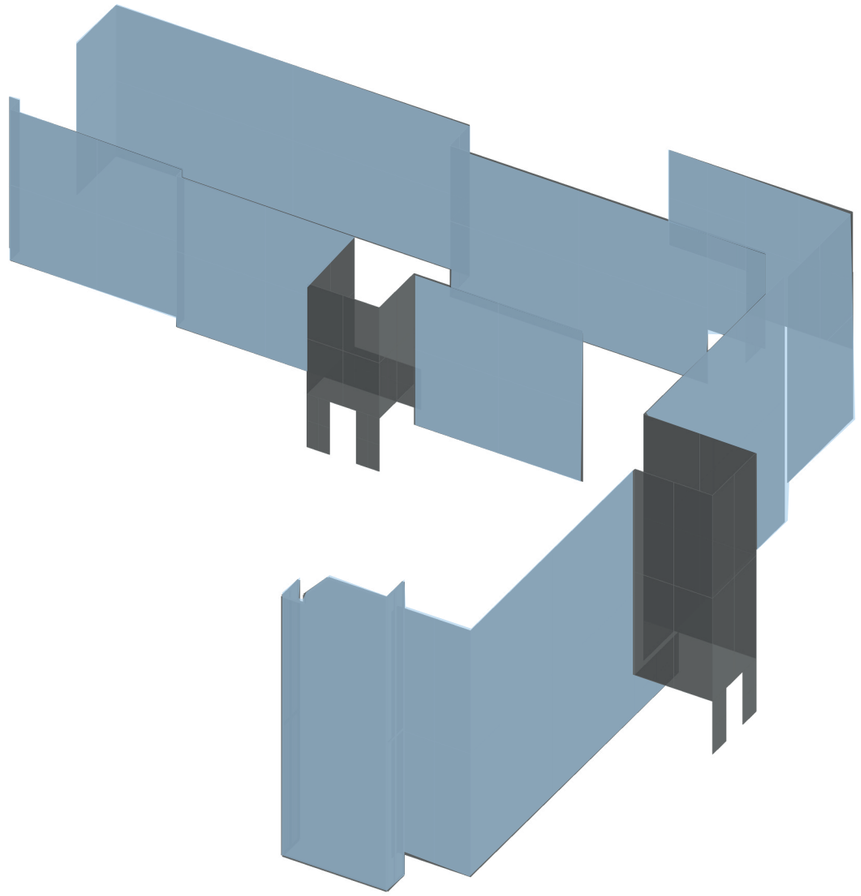
# EXISTING FACADE



**Concrete panels 3071 m2**

**Concrete**

# EXISTING FACADE



**Aluminum window**
**3021 m2**

**Aluminum window**

# EXISTING FACADE

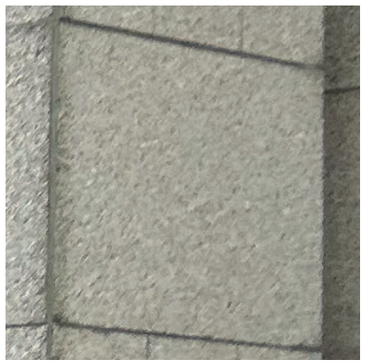


**Aluminum**
**364 m2**

**Aluminium**

# MATERIAL LIBRARY (MADASTER)

Corrugated aluminum

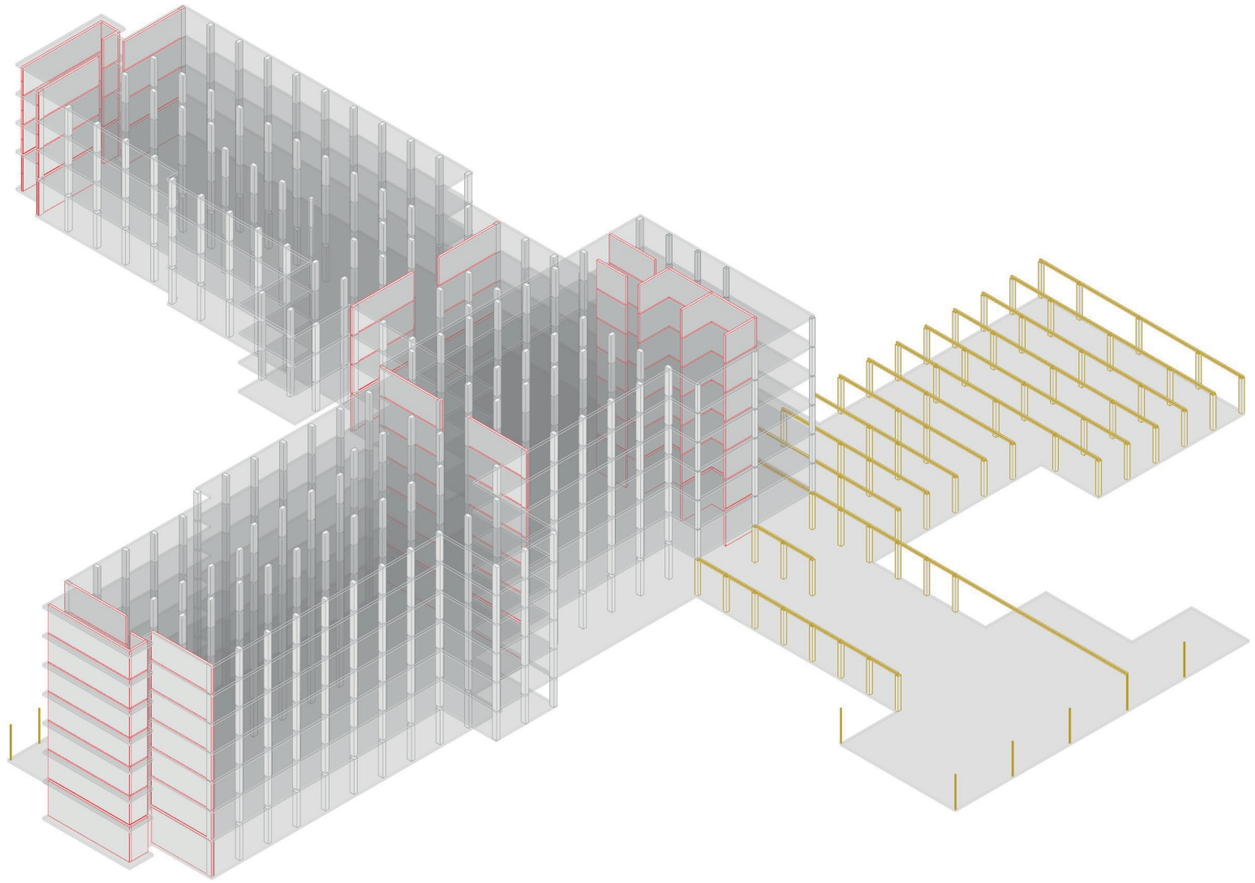


Concrete

Aluminum window

Aluminium

# EXISTING STRUCTURE ANALYSIS



# DESIGN GUIDELINES

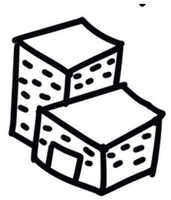
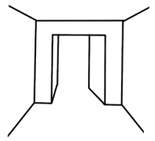
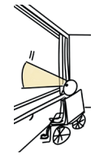
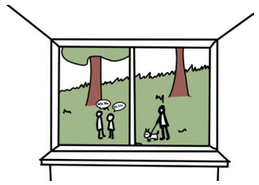
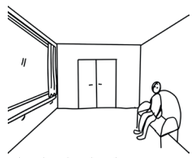
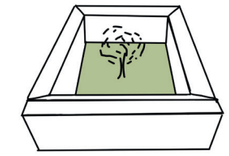
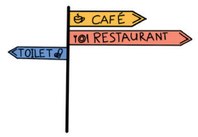
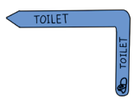
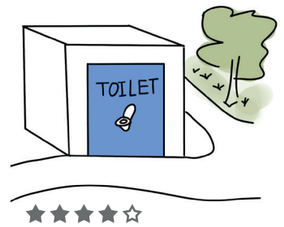
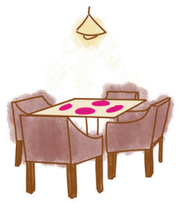
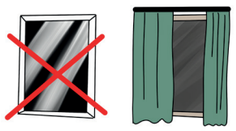
| | Autonomy | Accessibility | Familiarity | Legibility | Distinctiveness | Comfort | Safety |
|---|---|---|---|---|---|---|---|
| **Building** |  <br> <br>★★★★★<br>Private balcony or terace<br> <br>★★★★★<br>Private loggia or winter garden<br> <br>★★★★★<br>Multiple living room areas, more private / quiet vs. more open<br>  <br>★★★★★<br>Open door policy | <br>★★★★★<br>Wide entries and corridoors | <br>★★★☆☆<br>Room resembling their previous home |  <br>Window on their eye level<br>★★★★☆<br> <br>★★★★☆<br>Private bathroom and visually seeing the toilet | <br>★★★☆☆<br>No black for floors, as it can seem like they can fall through it |  <br>★★★★☆<br>View from room interaction and nature<br>  <br>★★★☆☆<br>Seating every +/- 8 meters |  <br>★★★★★<br>Communal courtyard<br> <br>★★★★★<br>Communal secured garden |
| **Street/ Outdoor**<br> | <br> <br>★★★★☆<br>Choosing shaded seating OR non-shaded seating | <br>★★★★☆<br>Barrier-free | |  <br>★★☆☆☆<br>Aignage with color coding<br>  <br>★★★☆☆<br>Arrows on the floor | <br>★★☆☆☆<br>Wayfinding by artwork<br> <br>★★☆☆☆<br>Sculptures |  <br>★★★★☆<br>Accessible outdoor toilet<br> <br>★★☆☆☆<br>Raised planters for gardening | <br>★★★★★<br>Railing in the garden no slippery surfaces |
| **Urban**<br> | | | | | | | |
| **Other** | <br>★★★☆☆<br>Eating together, preferrably with friends or familie | |  <br>★★★☆☆<br>Contrasting, outstanding and light/warm colors combined with good lighting | <br>★★☆☆☆<br>Men / women is confusing<br>Simple and clear |  <br>★☆☆☆☆<br>Avoid glare<br>Use curtains to reduce glare | <br>★☆☆☆☆<br>Avoid movement distractions and don't approach them from behind or the sides | |

*Figure Design guidelines matrix*

# DESIGN GUIDELINES

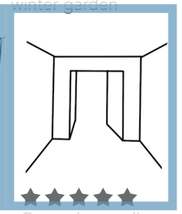
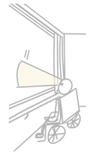
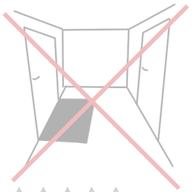
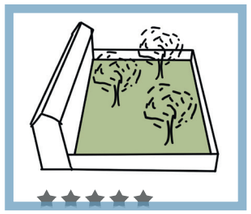
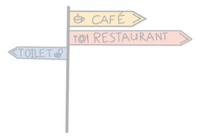
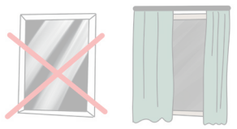
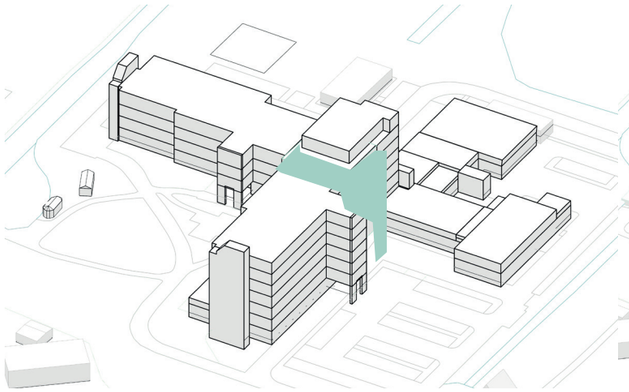
| | Autonomy | Accessibility | Familiarity | Legibility | Distinctiveness | Comfort | Safety |
|---|---|---|---|---|---|---|---|
| **Building** | <br> <br>Private balcony or terace<br> <br>Private loggia or winter garden<br> <br>  <br>Multiple living room areas, more private / quiet vs. more open<br>Open door policy | <br>Wide entries and corridoors | <br>Room resembling their previous home |  <br>Window on their eye level<br> <br>Private bathroom and visually seeing the toilet |  <br>No black for floors, as it can seem like they can fall through it | <br>View from room interaction and nature<br> <br>Seating every +/- 8 meters | <br>Communal courtyard<br>  <br>Communal secured garden |
| **Street/ Outdoor**<br> | <br>Choosing shaded seating OR<br> <br>non-shaded seating | <br>Barrier-free | |  <br>Aignage with color coding<br> <br>Arrows on the floor | <br>Wayfinding by artwork<br><br>Sculptures | <br>Accessible outdoor toilet<br> <br>Raised planters for gardening | <br>Railing in the garden no slippery surfaces |
| **Urban**<br> | | | | | | | |
| **Other** | <br>Eating together, preferrably with friends or familie | | <br>Contrasting, outstanding and light/warm colors combined with good lighting | <br>Men / women is confusing<br>Simple and clear |  <br>Avoid glare<br>Use curtains to reduce glare | <br>Avoid movement distractions and don't approach them from behind or the sides | |

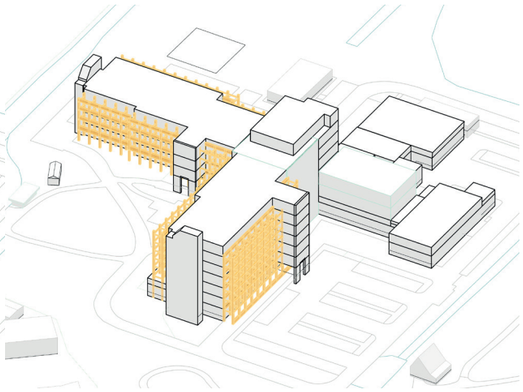
*Figure Design guidelines matrix*

# CONCEPT

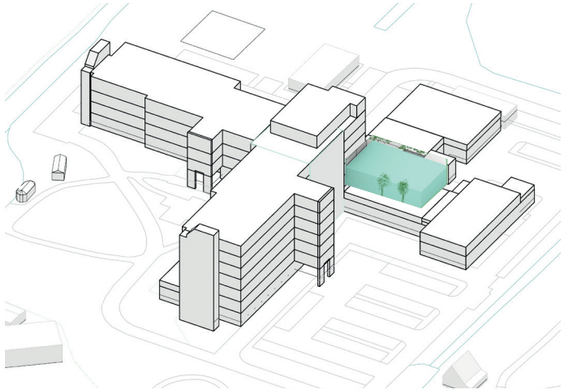
# INTERVENTIONS



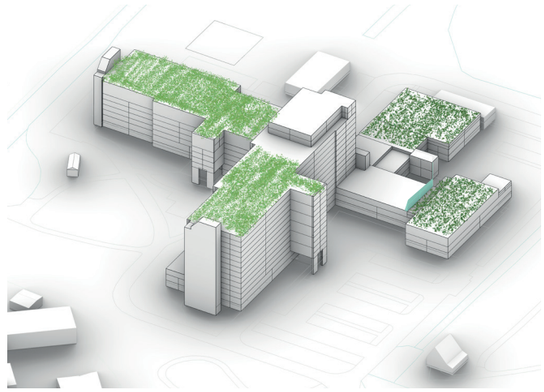
Atrium (bring nature inside)



Green facade (view on nature)



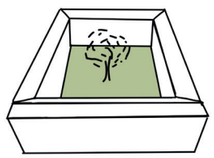
Glass house & roof gardens



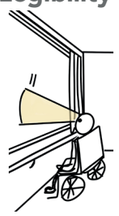
Green roof & gardens

## 1

Safety

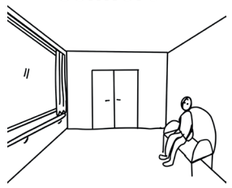


Legibility

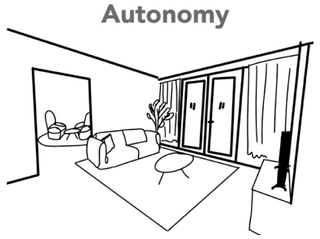


Accessibility

Comfort



Autonomy



## 2

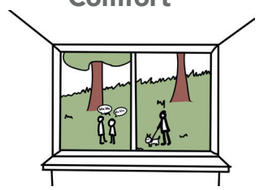
Autonomy

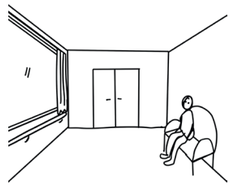
Comfort

## 3

Safety

Comfort

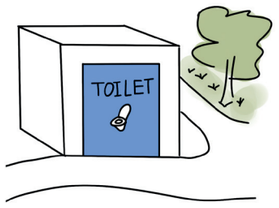




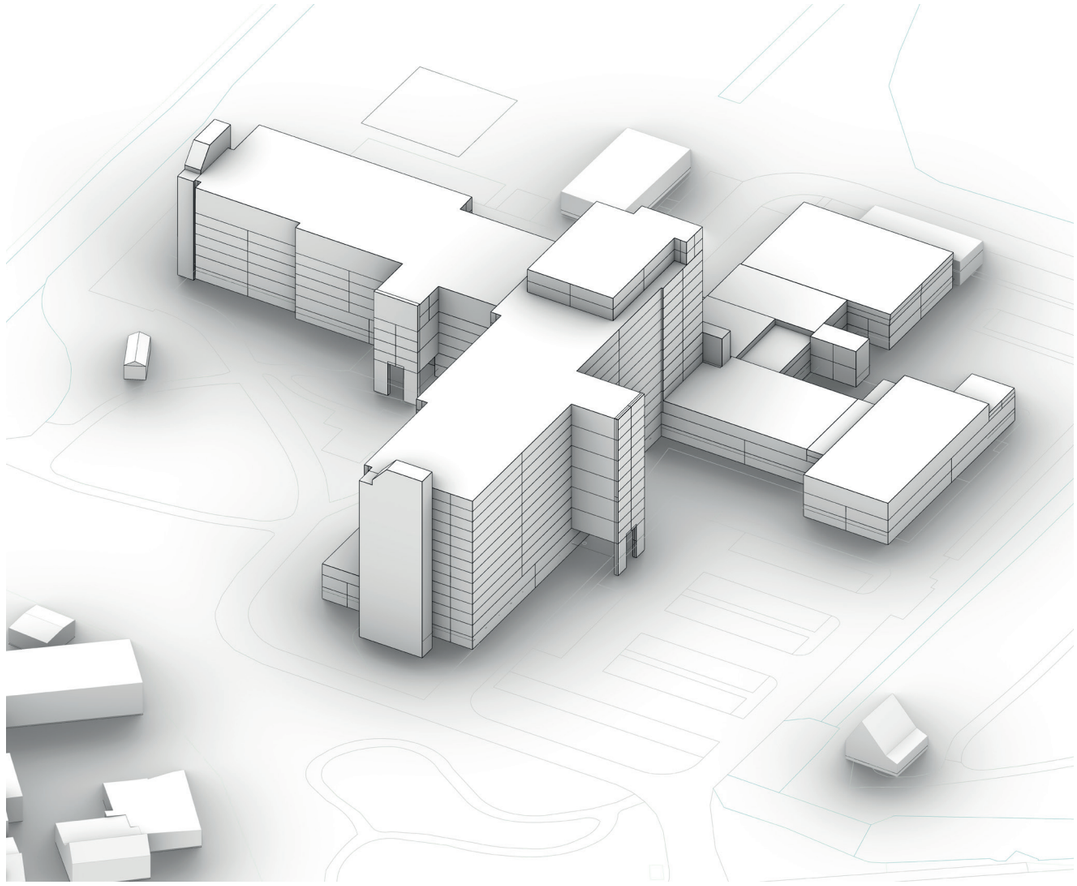
## 4

Safety

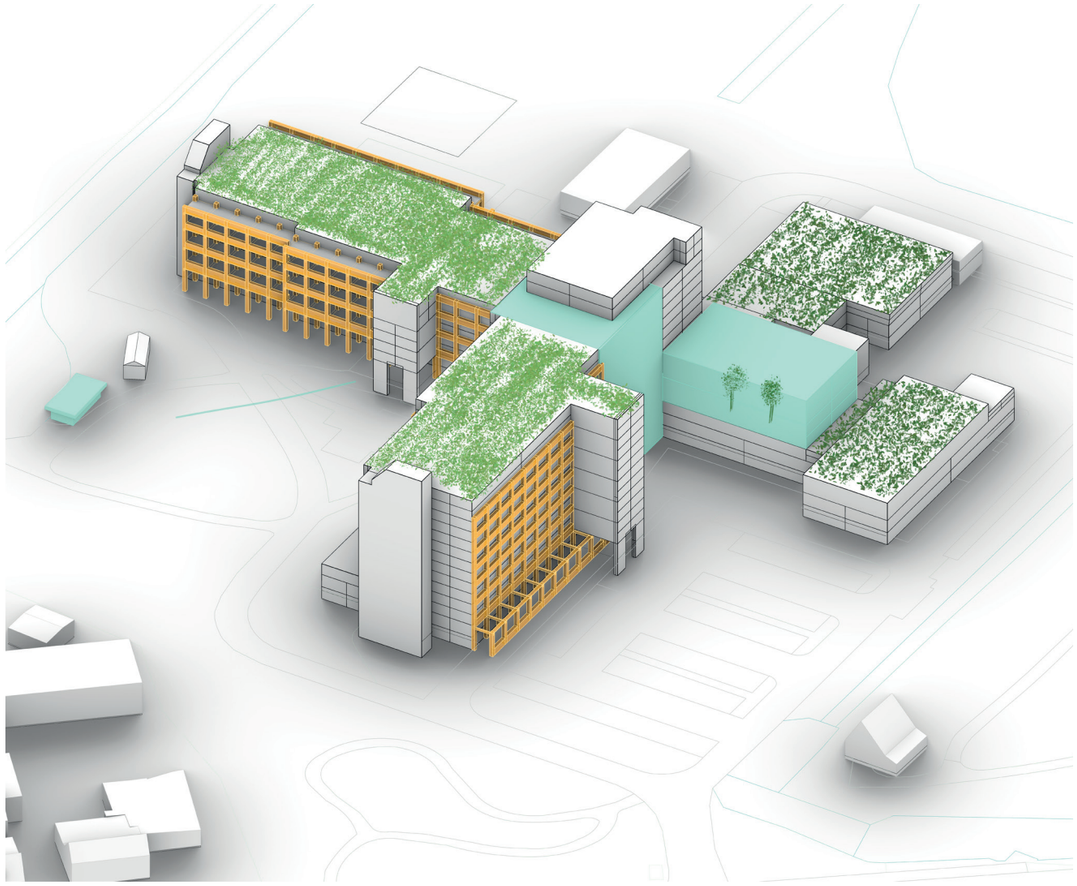
Comfort



# DESIGN

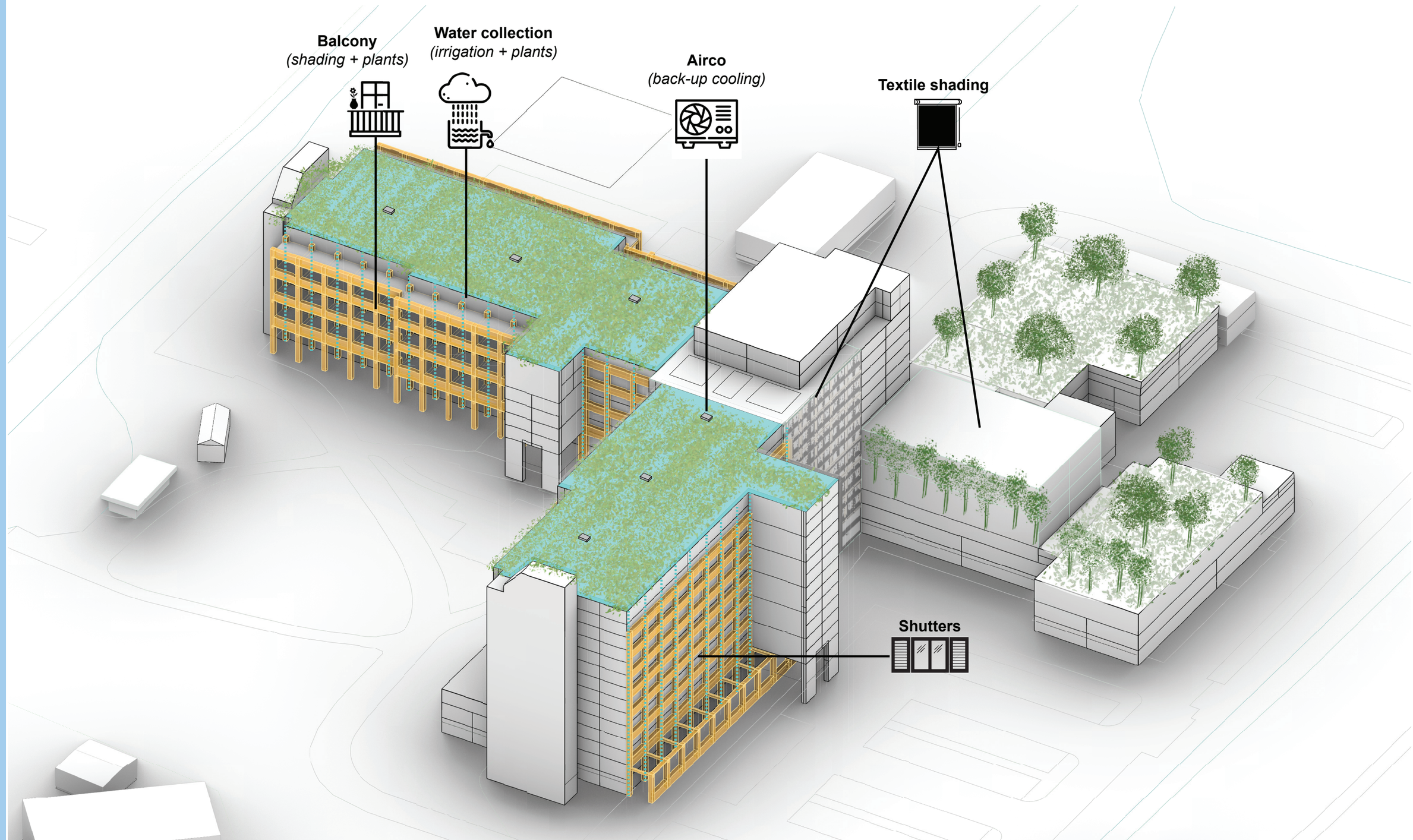


Existing

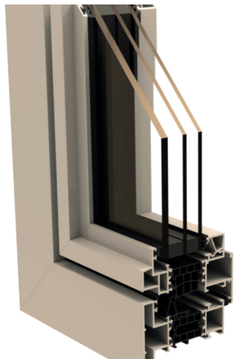


New

# CLIMATE DESIGN



# MATERIALS EXTERIOR

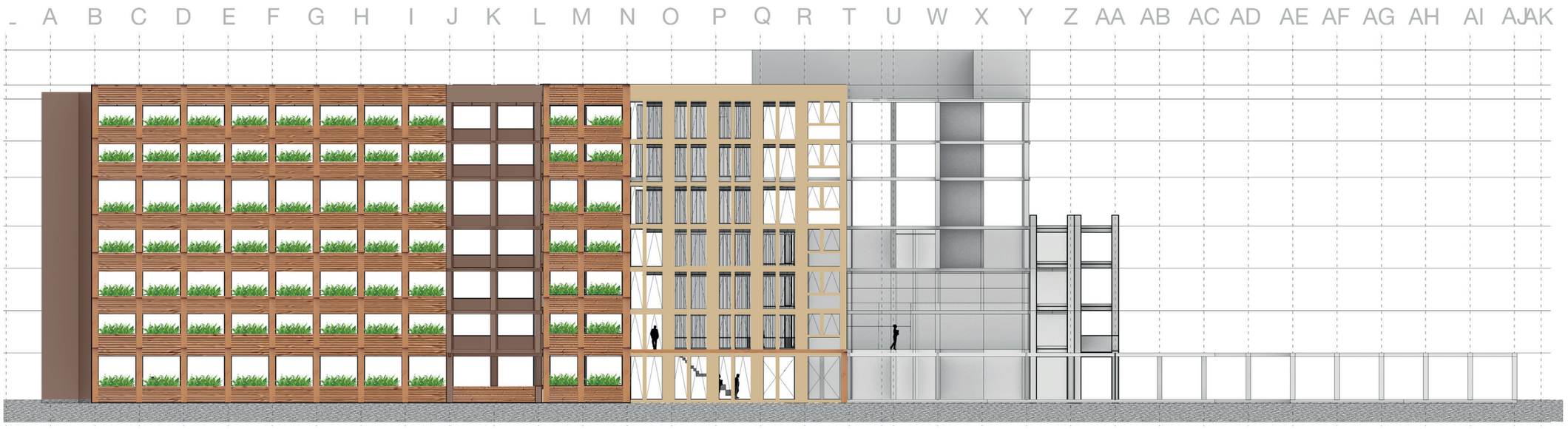


Auluminum

Red Class Wood

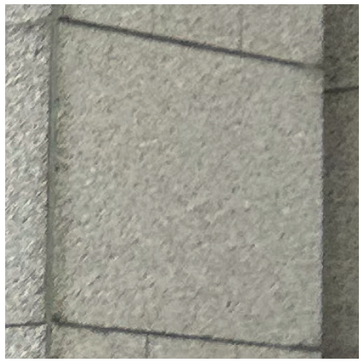
Platowood Poplar

Sand Stone

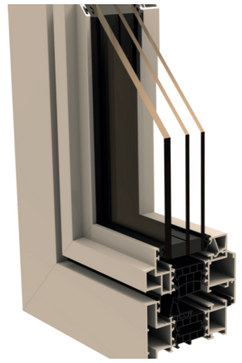


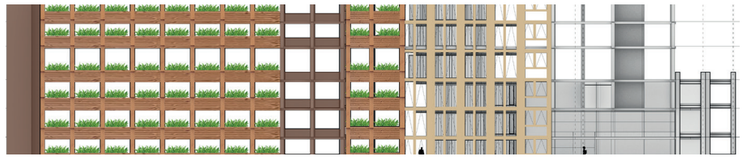

New

# MATERIALS



Existing





New

# NEW DESIGN

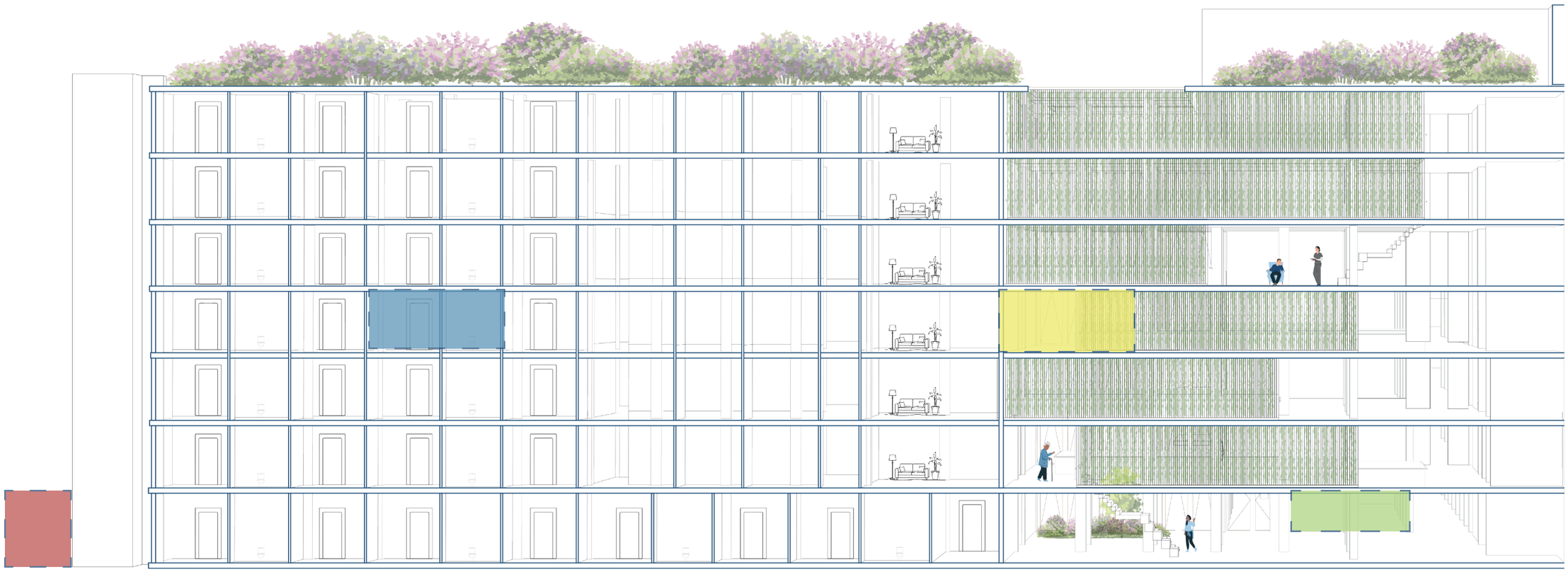
# WHO IS WHERE?

Nyla

Barbera

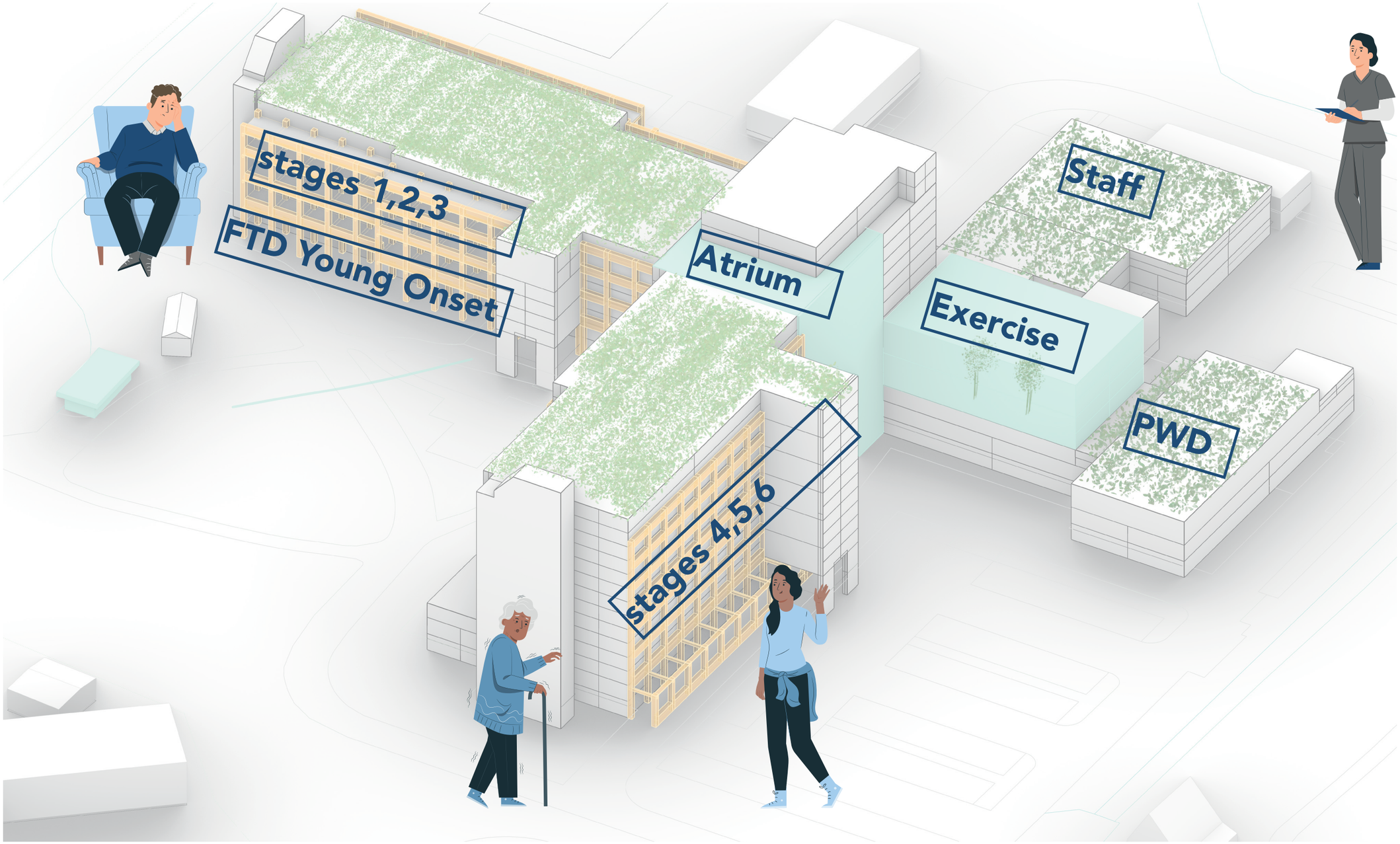
Carla

Mike



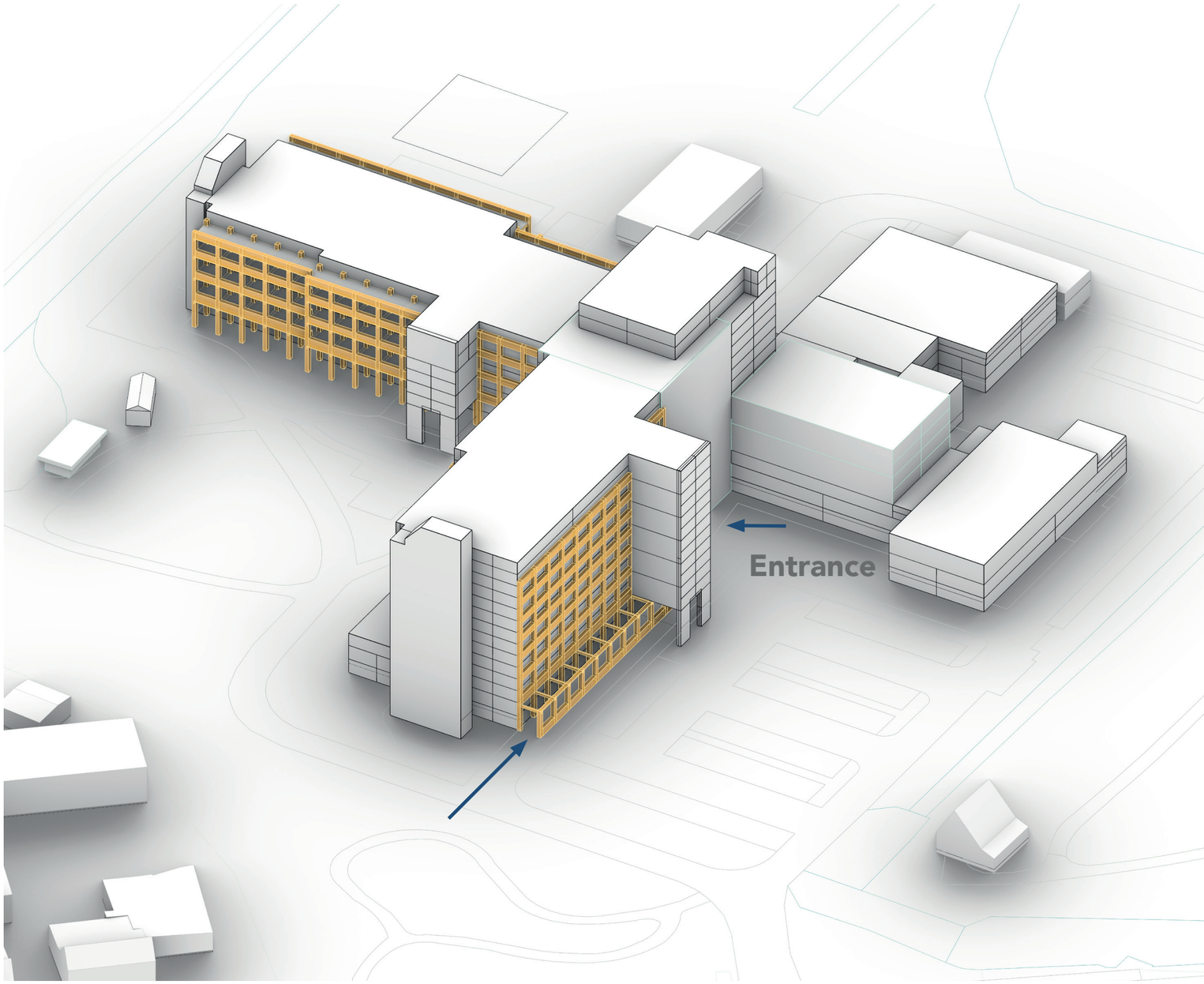
Source illustration people: Storyset

# DESIGN



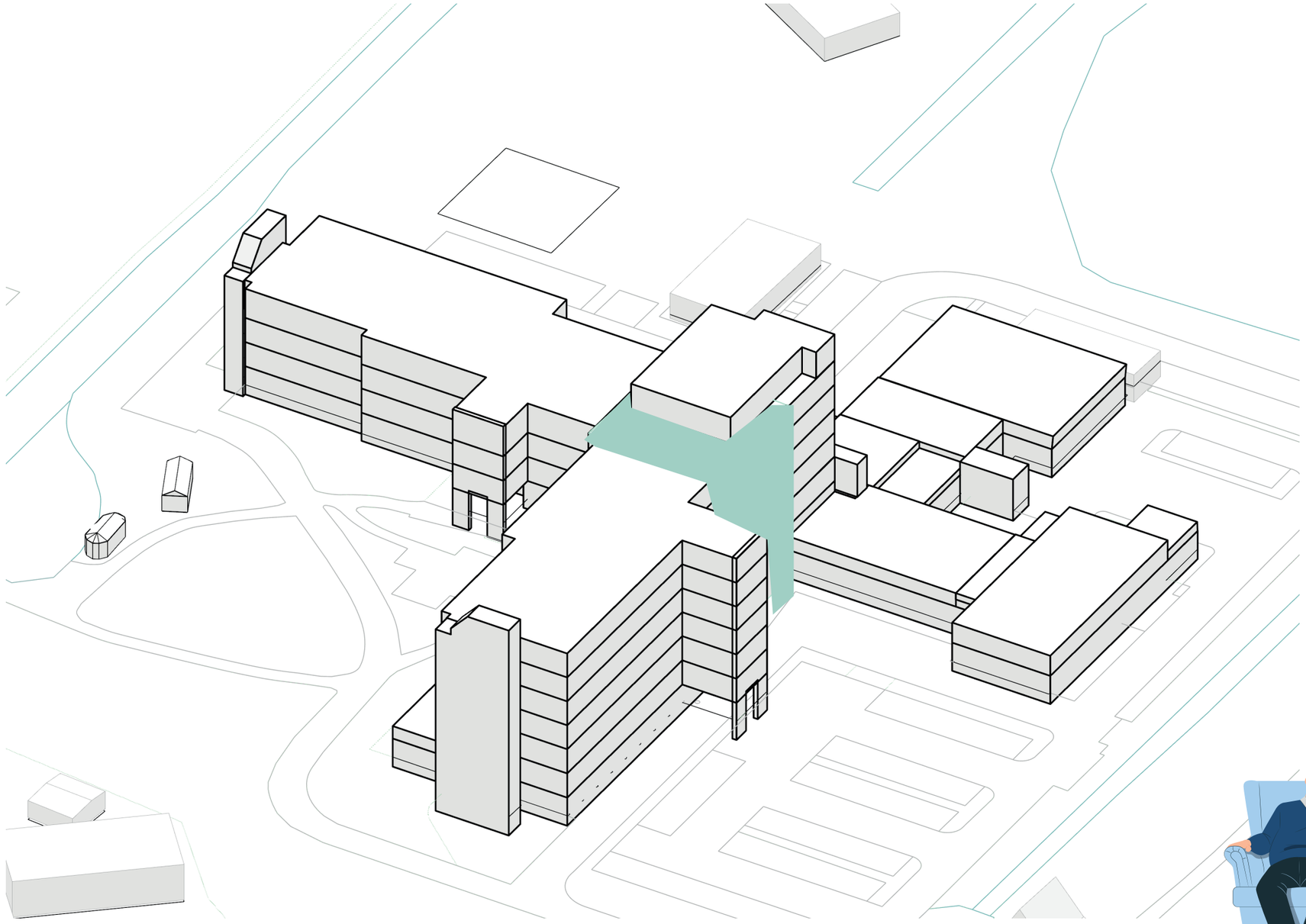

Source illustration people: Storyset

# DESIGN



5381451 - NOA VAN DORTH

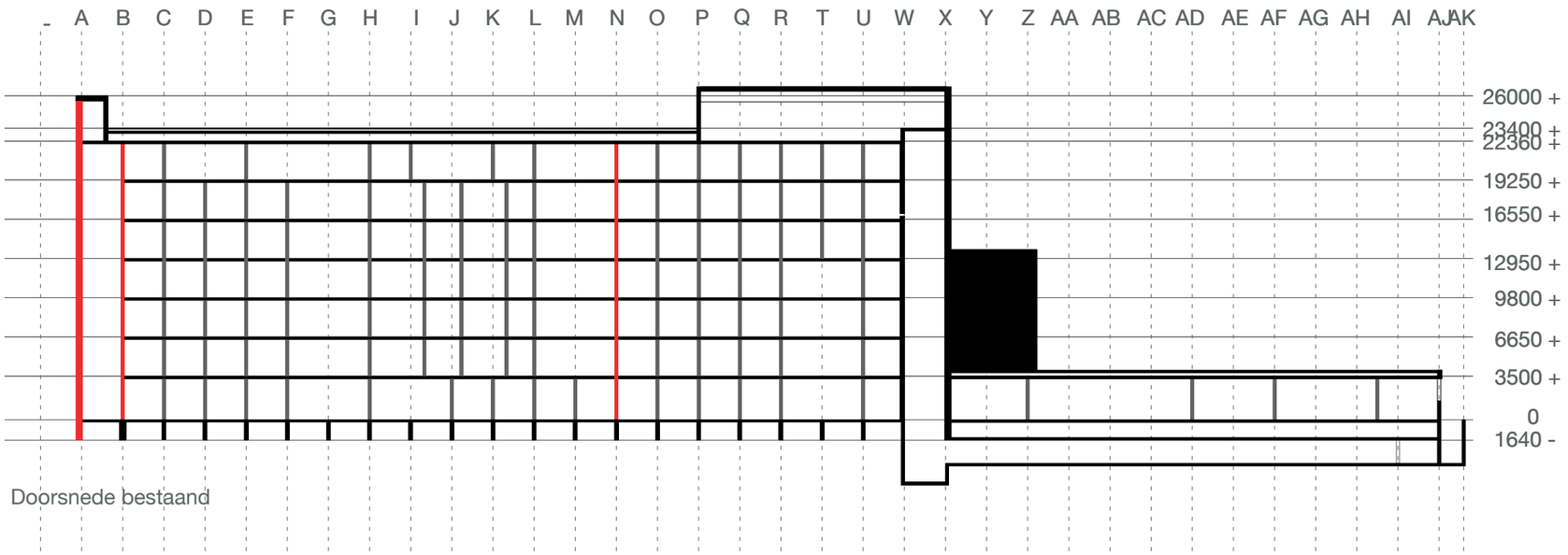
# DESIGN ATRIUM



Atrium (bring nature inside)

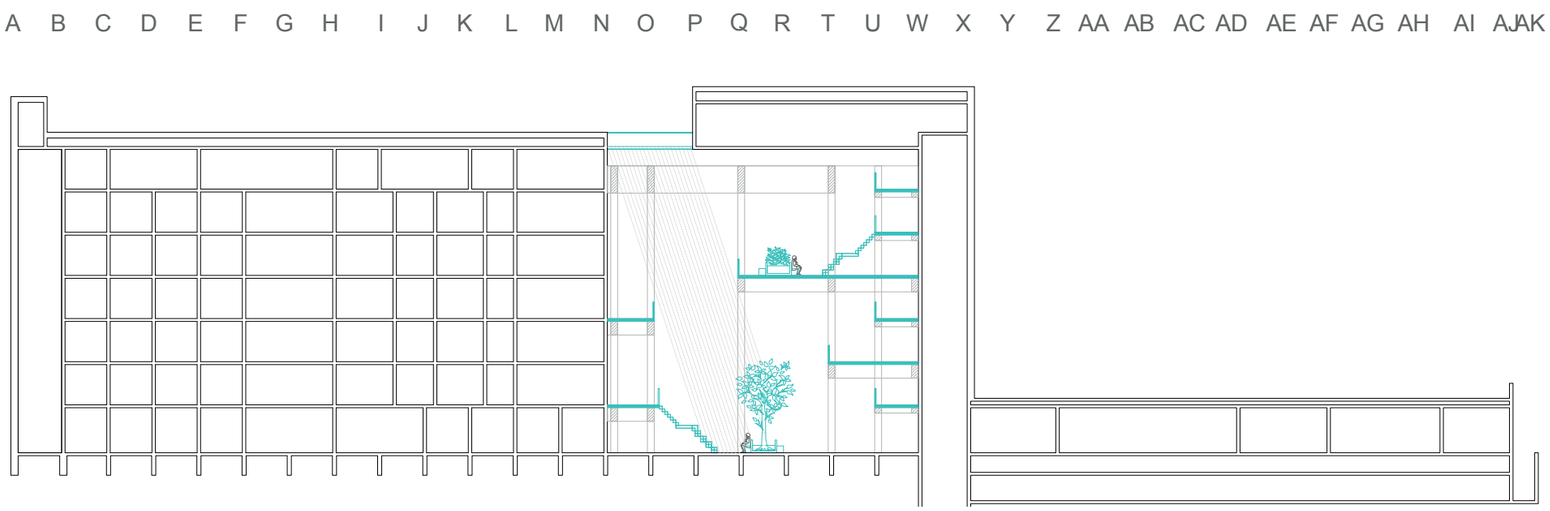
# DESIGN ATRIUM

Existing



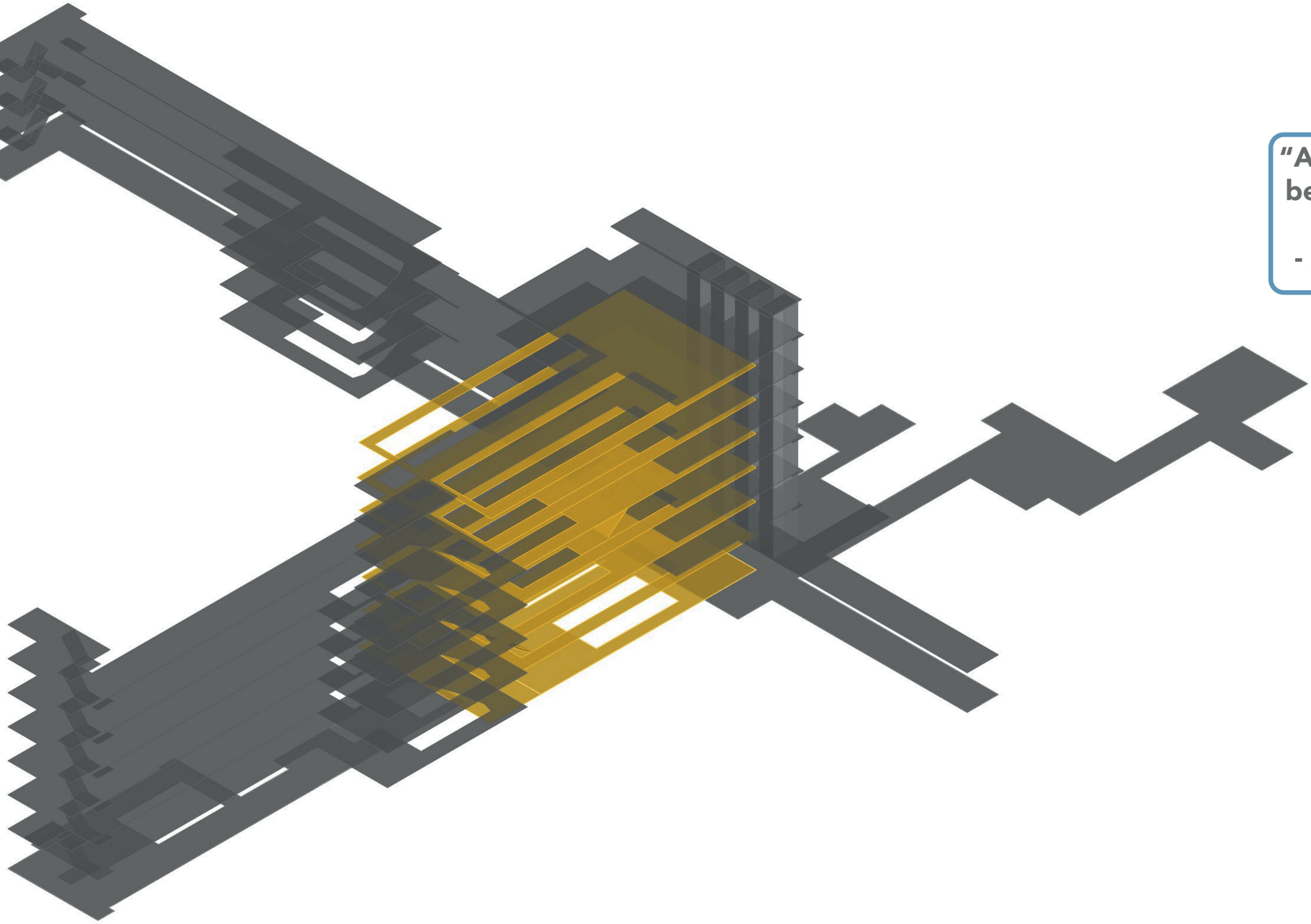

Doorsnede bestaand

New



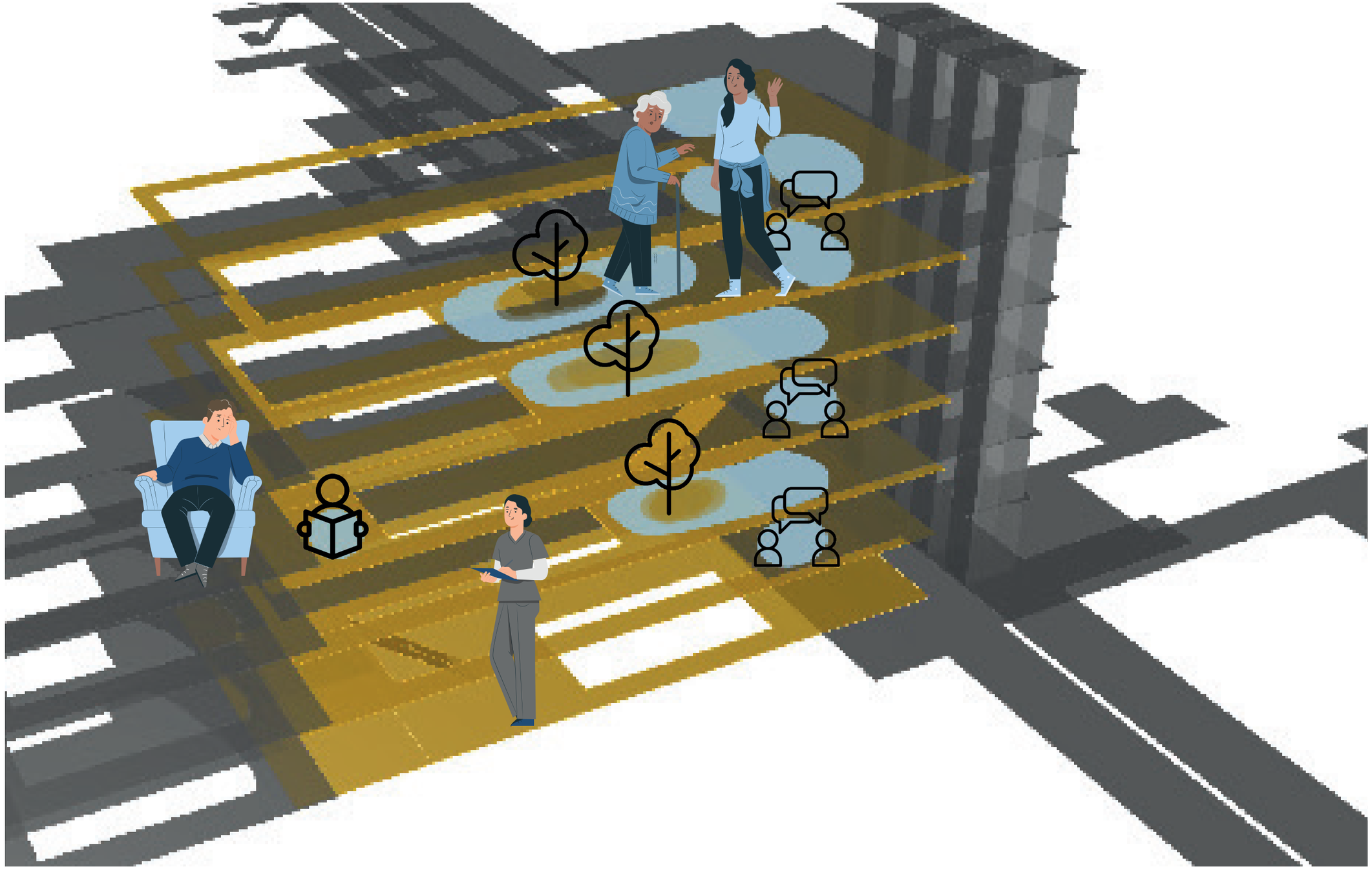
5381451 - NOA VAN DORTH

# CIRCULATION



"Atrium inconvenient because you have to walk around it."
- Anonymous nurse

# CIRCULATION



5

Living room

Home

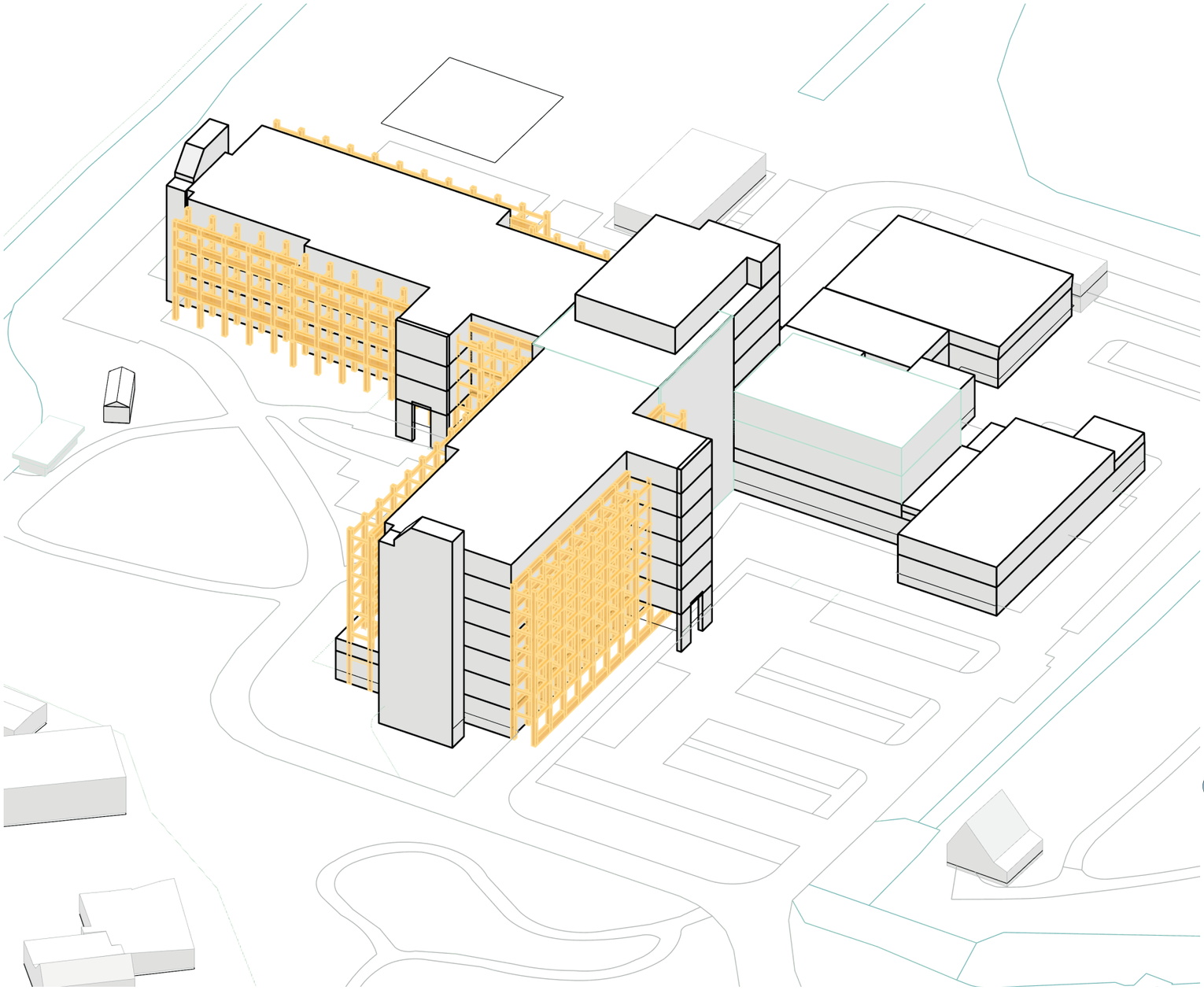
5381451 - NOA VAN DORTH

# 5

Living room

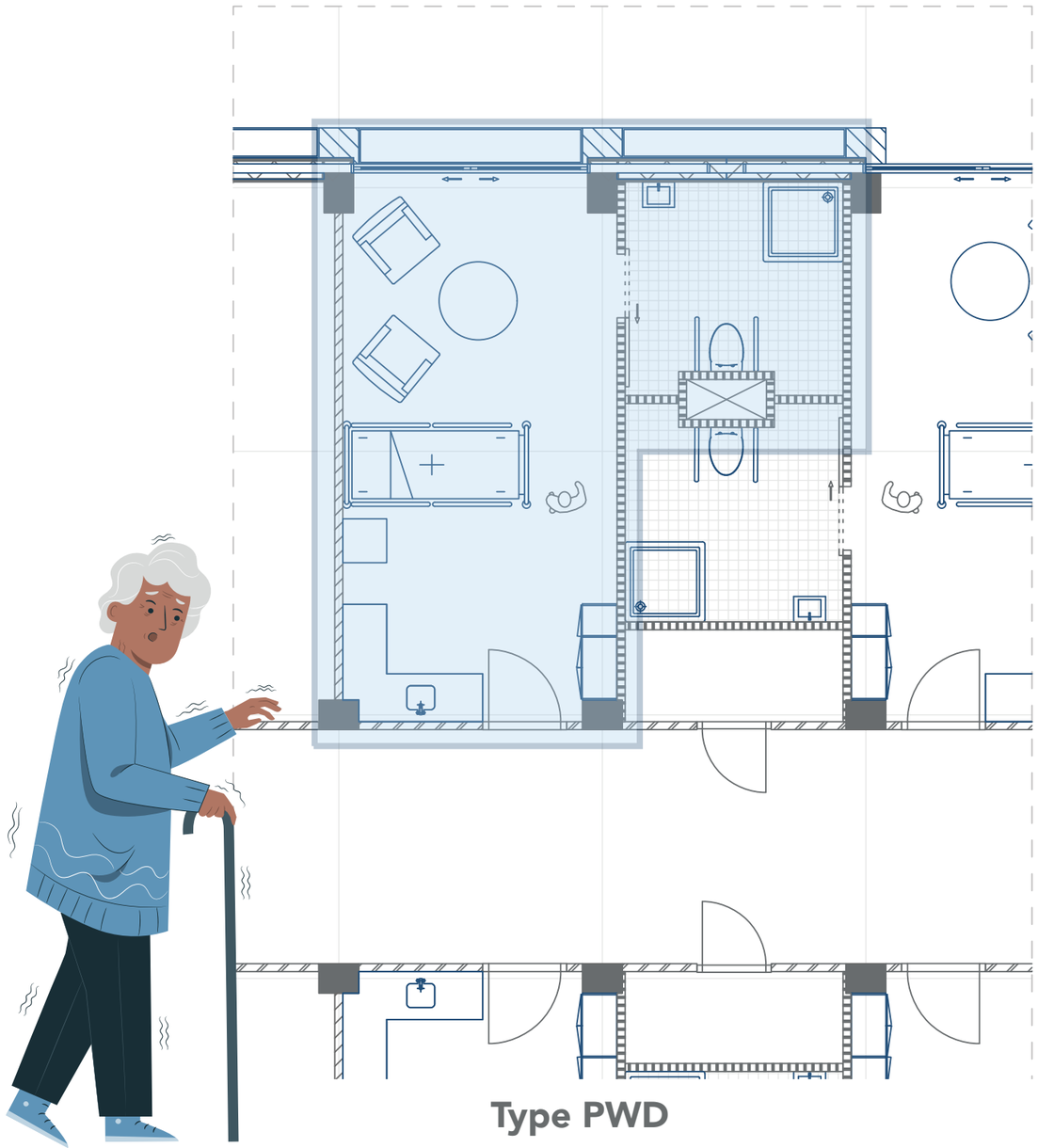
Home

# DESIGN ROOMS

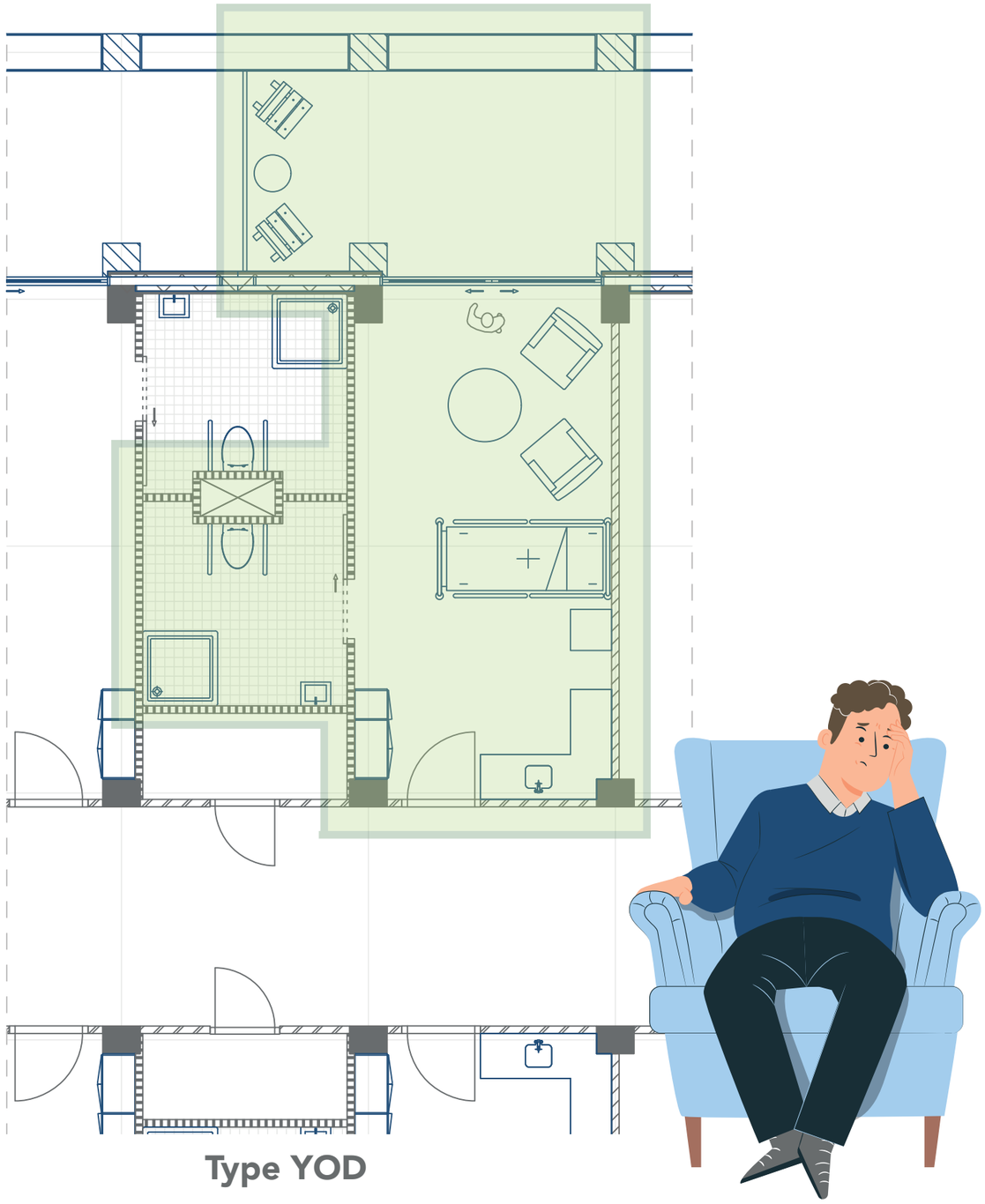


Green facade (view on nature)

# DESIGN ROOMS



**Type PWD**



**Type YOD**

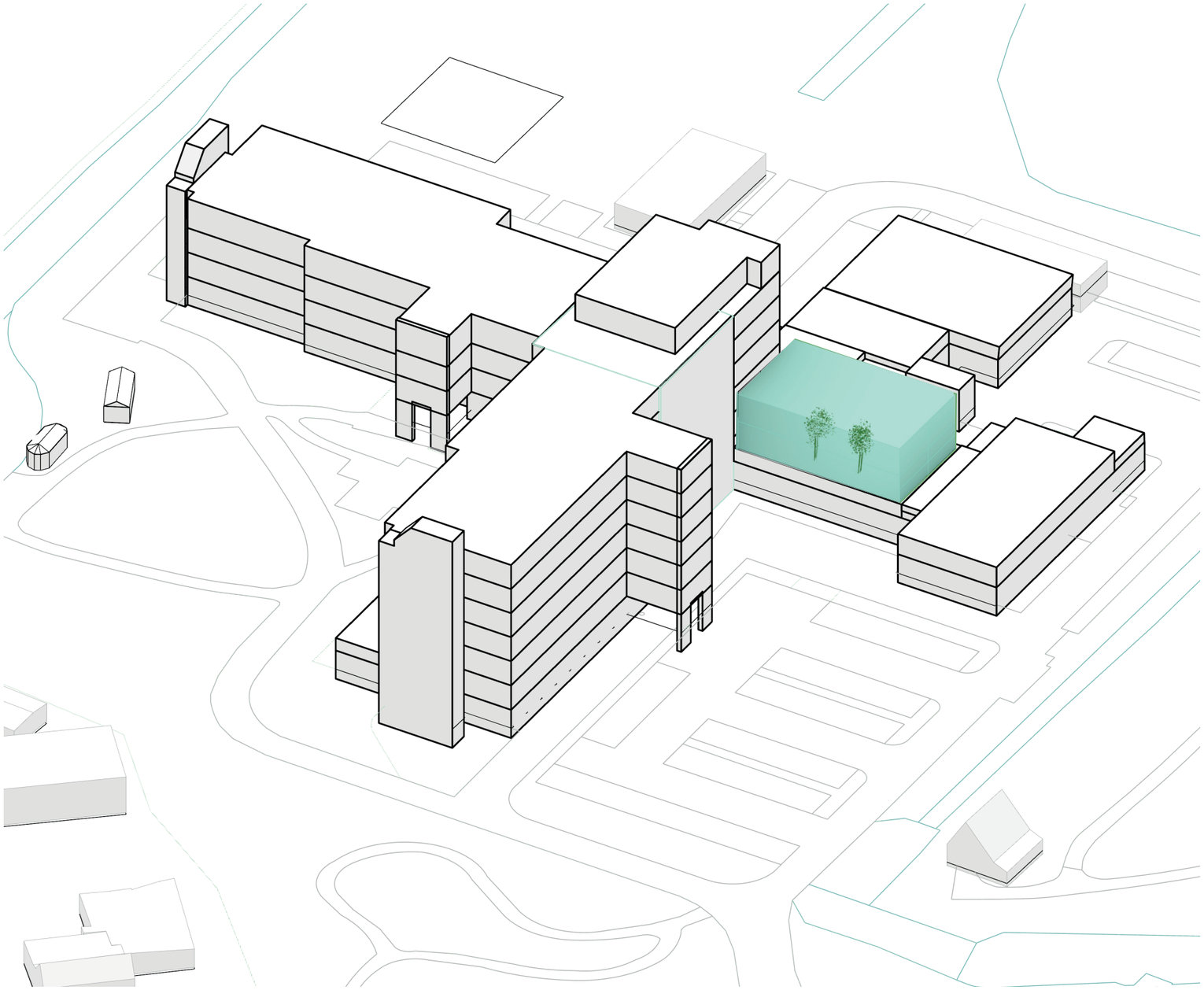
5381451 - NOA VAN DORTH

5381451 - NOA VAN DORTH

5381451 - NOA VAN DORTH

5381451 - NOA VAN DORTH

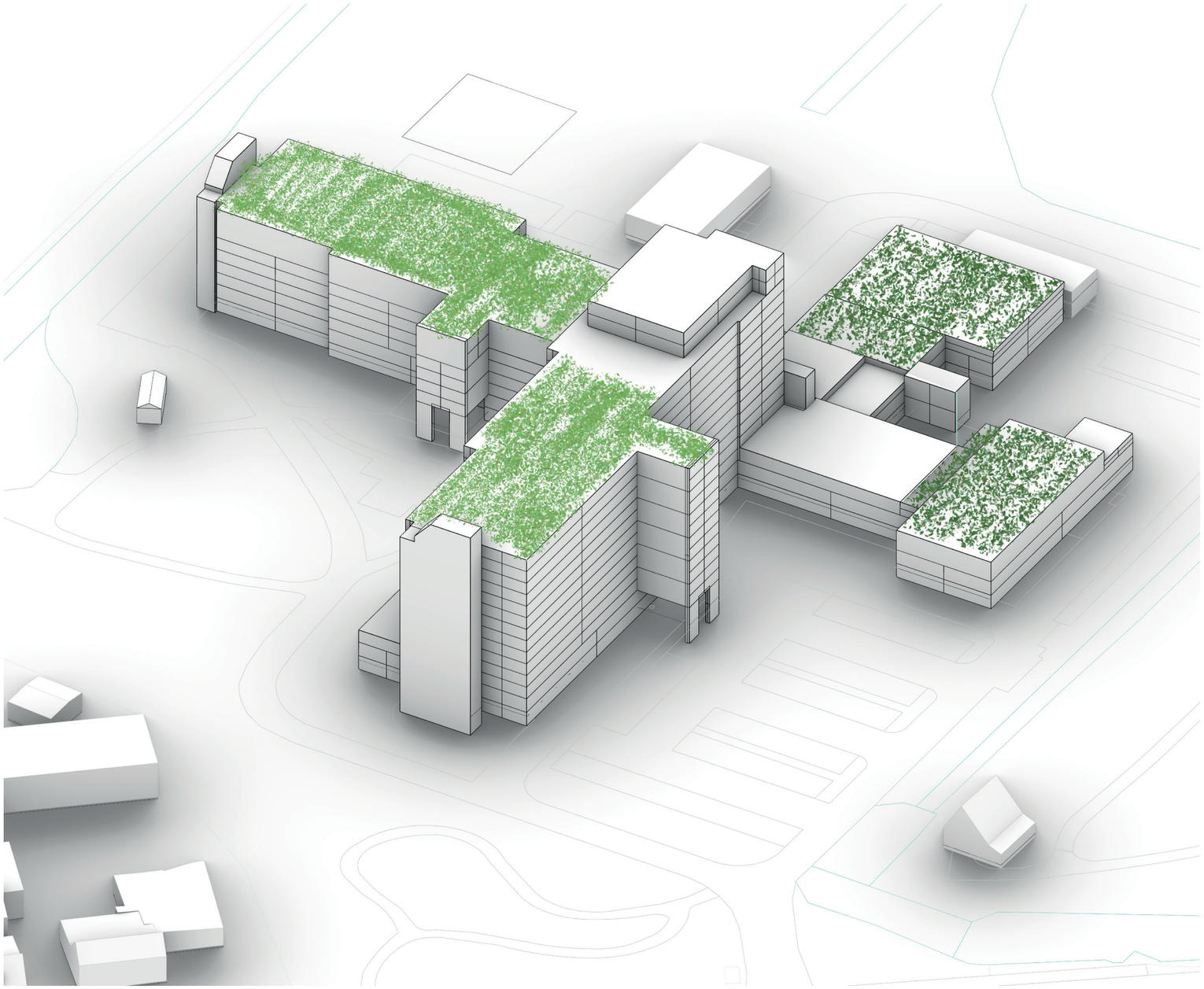
# DESIGN GLASS HOUSE



Glass house & roof gardens

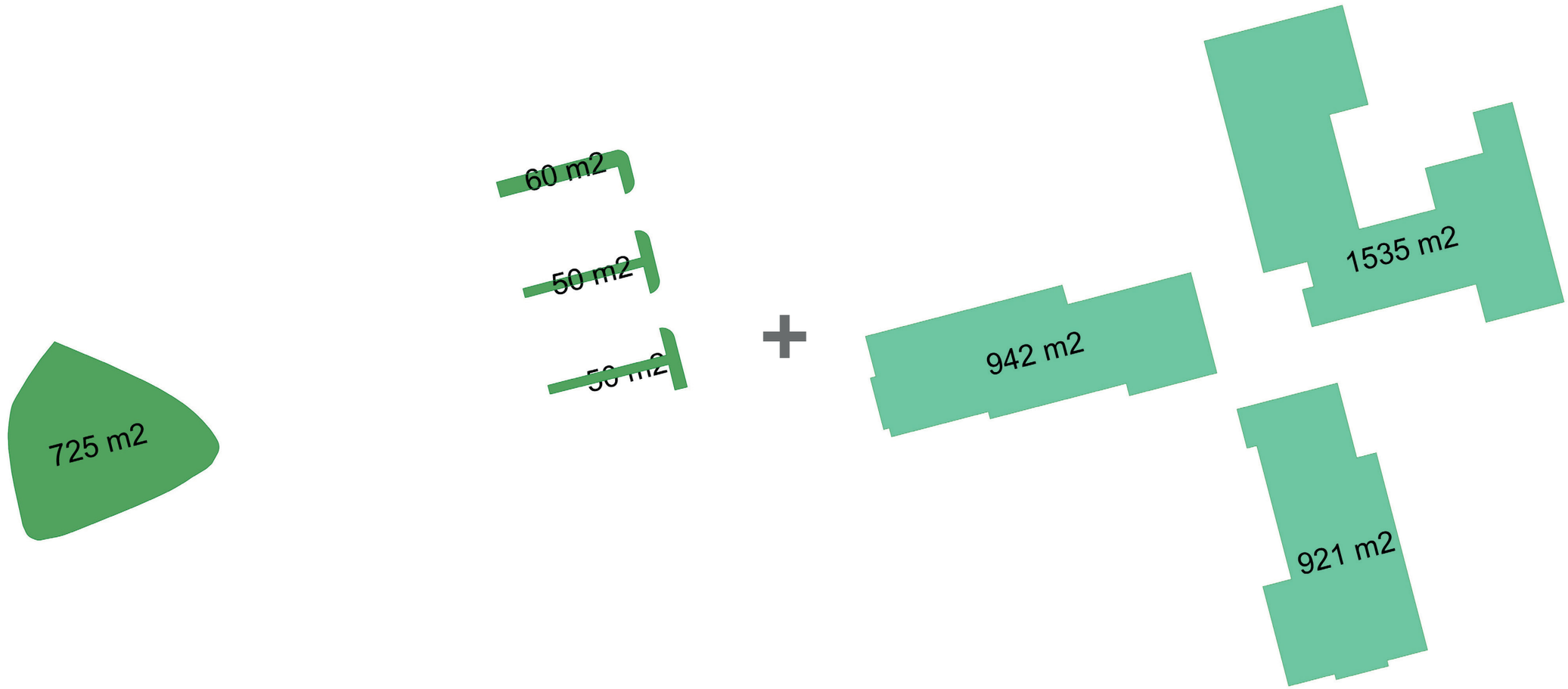
# DESIGN GLASS HOUSE

# DESIGN



**Green roof & gardens**

# % GREEN ADDED

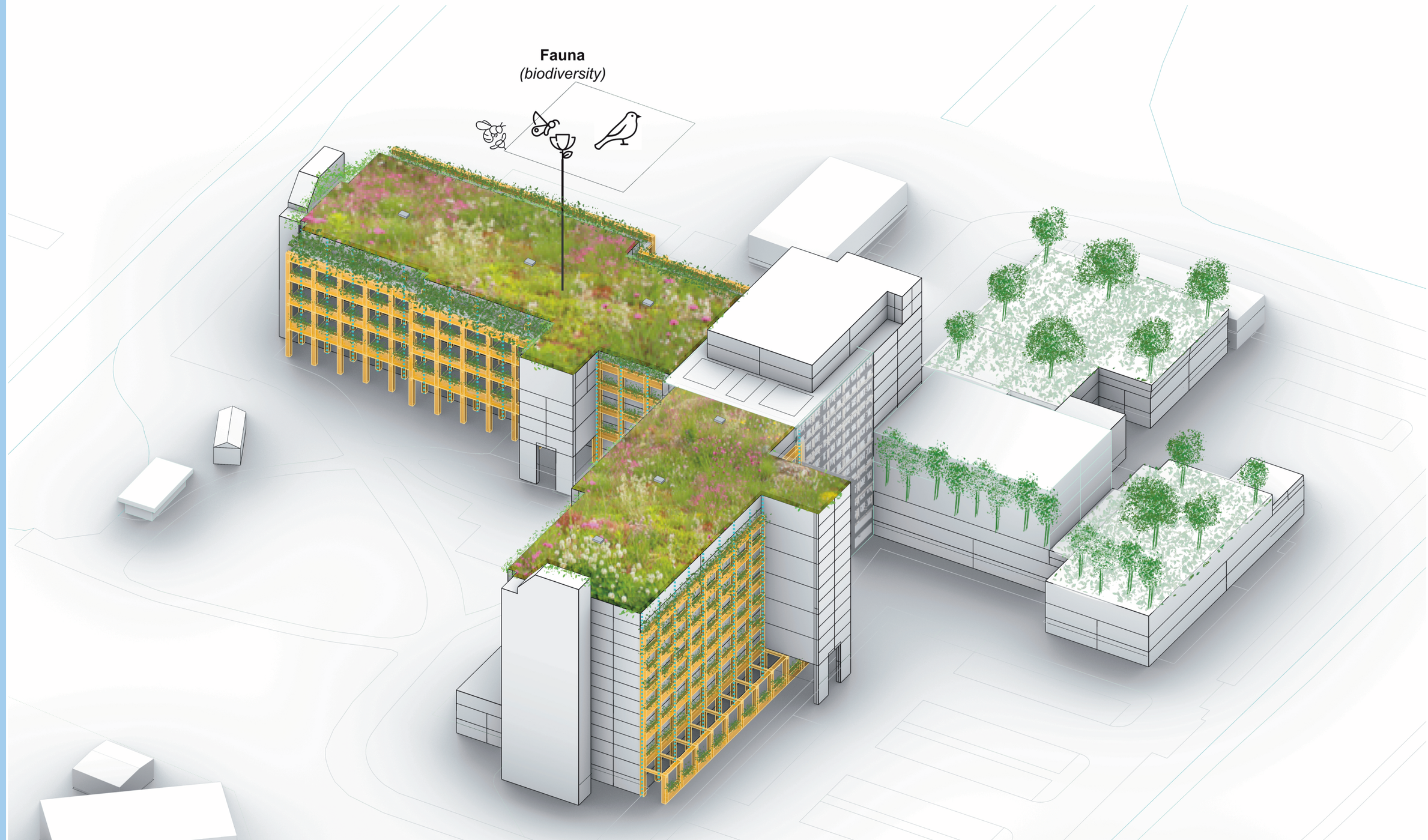



Existing 885 m2

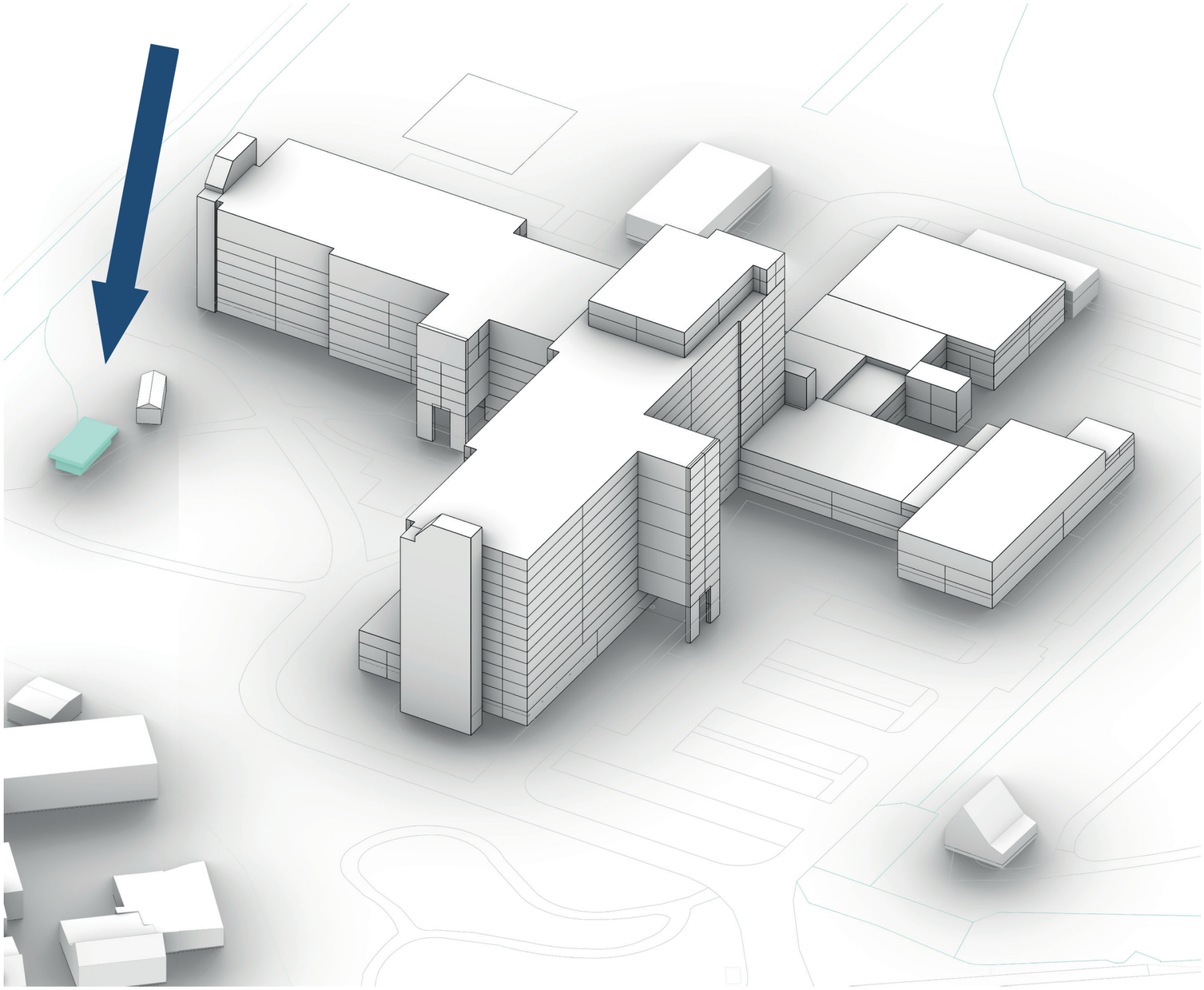
New 3398 m2

# 100% GREEN + 284% ADDED GREEN

# BIODIVERSITY

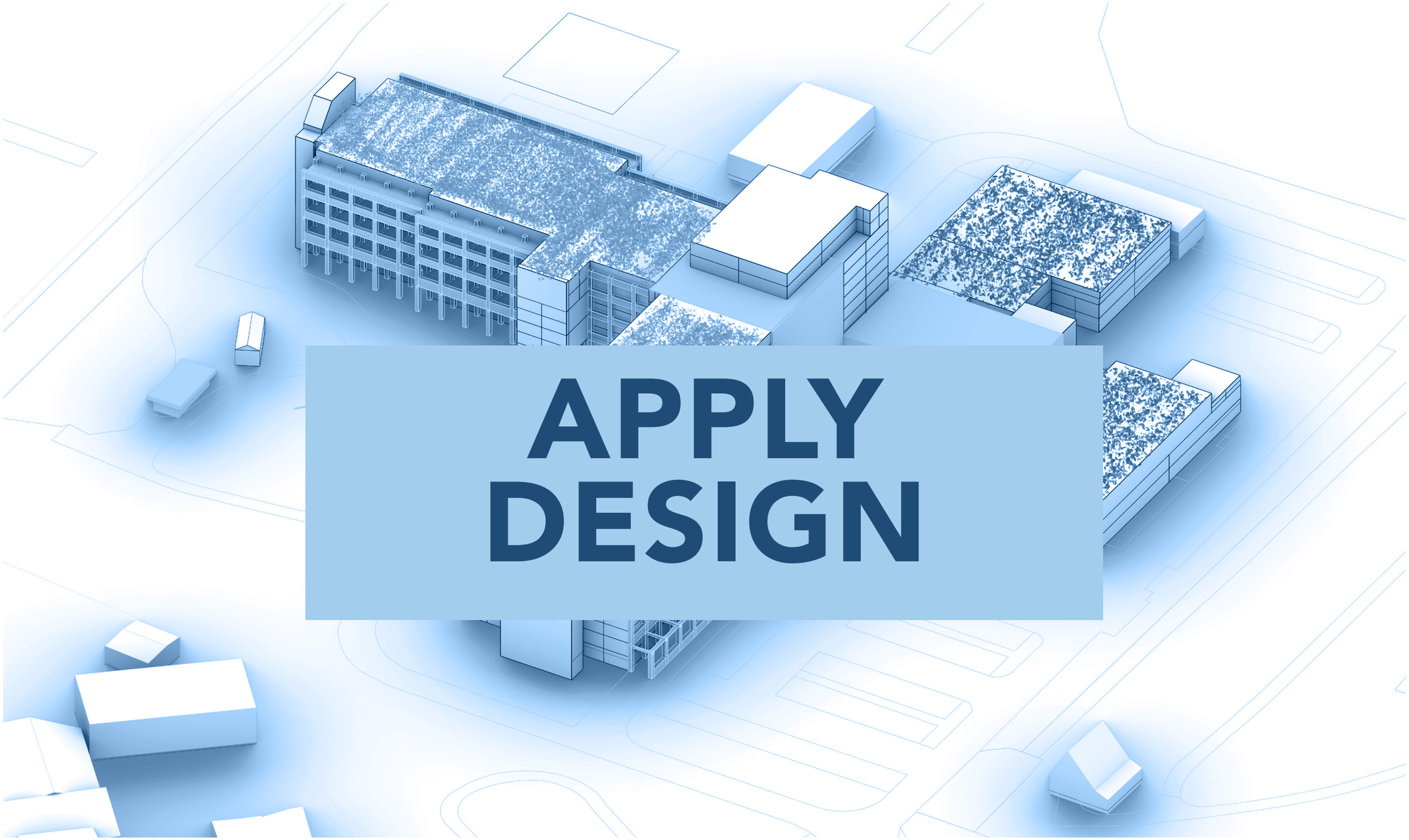


# GARDEN



Accessible outdoor toilet

# NEXT STEPS



# QUESTIONS?