

A Dementia Village

# ALONG THE PEAK



AUT164 Future visions for healthcare, housing and work 1: Residential healthcare - housing for seniors  
MPARC Architecture and Urban Design | Chalmers University of Technology  
Group 6 | Hiltja Harmuth | Gry Hauge | Sofia Wallin

# INTRODUCTION + CONCEPT

## AIM

The aim of the project is to create a proposal for a dementia village in Utby, Gothenburg. Our elderly population is growing, the average lifespan is increasing, and age is the strongest risk factor for dementia. This leads to an increased demand in care taking facilities for elderly with dementia. In 2014, there were an estimated 5 million people over the age of 65 suffering from dementia. That number is projected to be nearly 14 million in 2050. Symptoms of the disease can vary widely from person to person, but memory loss, decreased visual perception and issues with communication are common ones. The most common type of dementia is Alzheimer's disease, making up about 60-80 % of people with dementia.

## DEMENTIA FRIENDLY DESIGN

The project offers plenty of green areas with different levels of exposure to encourage outdoor visits. Moving your body and going outside is important for people of all ages, and by offering several outdoor spaces and activities such as courtyards, balconies, and a big garden, the residents have multiple choices. The outdoor areas are designed to be safe with wide paths and offer both shade and rain protection. The atriums provide the residents with a meeting space for colder days, while at the same time offering views into nature.

## LIVING A NORMAL LIFE

It is important to give residents choices and keep life as normal as possible as well as creating stimuli of different kinds. The shopping street with a store, hairdresser, restaurant, and gym offers a safe way to ensure residents' needs are met. The wellness centre in the underpass with its spa and sun therapy room can elevate moods and help to calm down stressed residents. Two couples' apartments are created to give people the option of continuing to live together even when they are in need of care. Furthermore, there are many social spaces encouraging interactions and exchange.



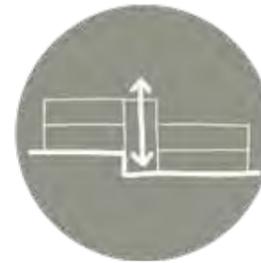
### FOLLOW THE CURVATURE

The volumes are placed and rotated along the curvature of the topography found on site, enclosing the highest point of the mountain on their backside.



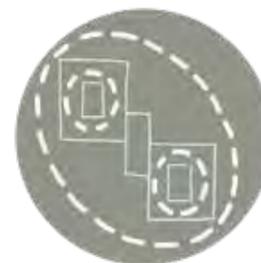
### IMMERSED IN NATURE

Contact to nature plays an important role in dementia care. Therefore, gradients of inside and outside have been created, while the surrounding area is programmed with differing natural environments.



### VERTICAL CONNECTION

Due to the pre-existing conditions on site and the steep hill, vertical connections are important. The different levels are connected through atriums and a bridge, streets and pathways.



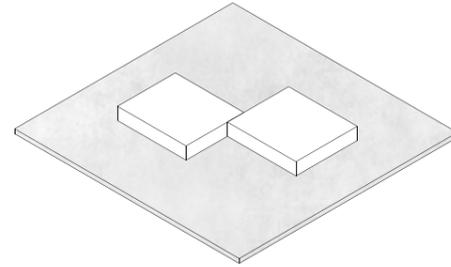
### CREATING COMMUNITIES

The project encourages the formation of different levels of community, within the unit, within the atrium and the whole facility.

# PROCESS

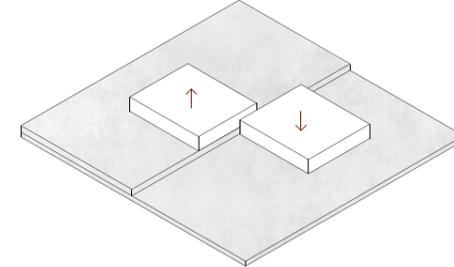
## 1. MASS

In an early stage an efficient volume was transformed. By placing the mass like the illustration a shared connection part could take place in between.



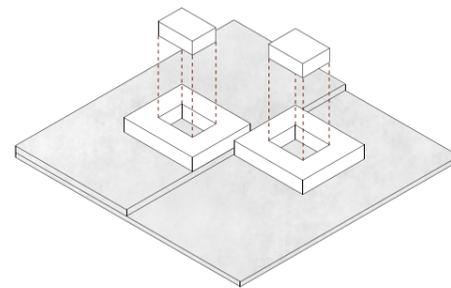
## 2. DIVISION

Due to the difficult terrain the mass needed to be adapted to the topography. This was done by pushing the volumes vertically.



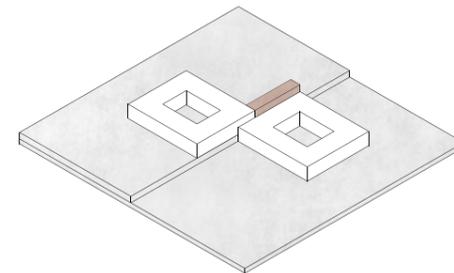
## 3. FORMATION

The mass transformed by cutting out the volume to create two court yards. This to increase the access to daylight, achieve private and closed outdoor areas.



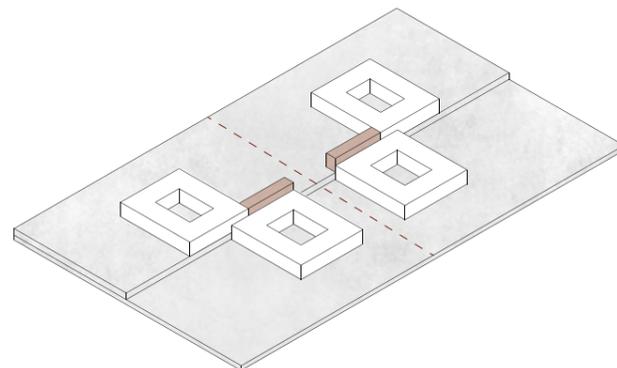
## 4. ADDITION

By adding a smaller volume the conceptual idea of an accessible and efficient vertical connection could be achieved.



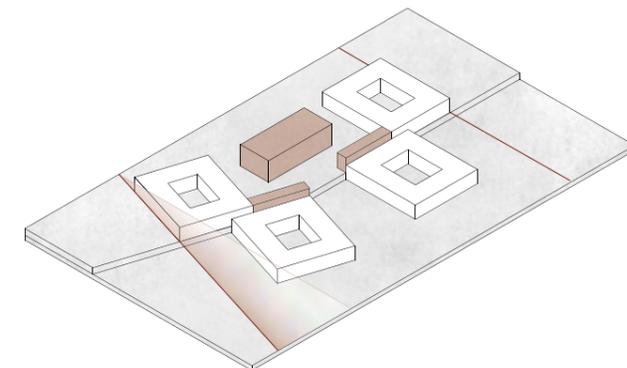
## 5. MIRRORING

The final transformation of the volume was mirrored to achieve the asked amount of apartments and functions within the facility.



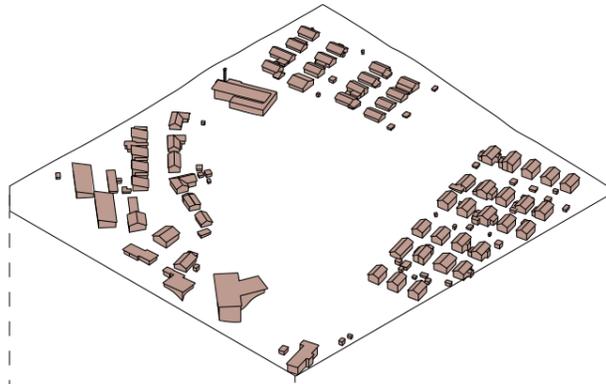
## 6. ADAPTATION

To fit the two volumes on the site, two relevant axes were found. The axes created interesting outdoor areas, gardens and shaped the common building in the middle.

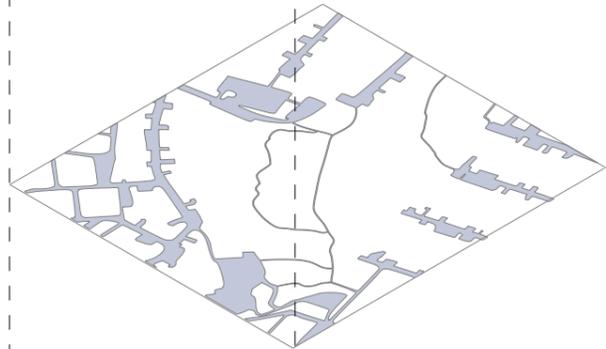


# SITE ANALYSIS

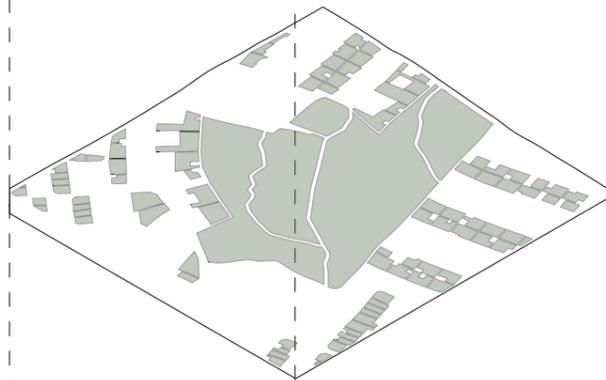
Existing buildings



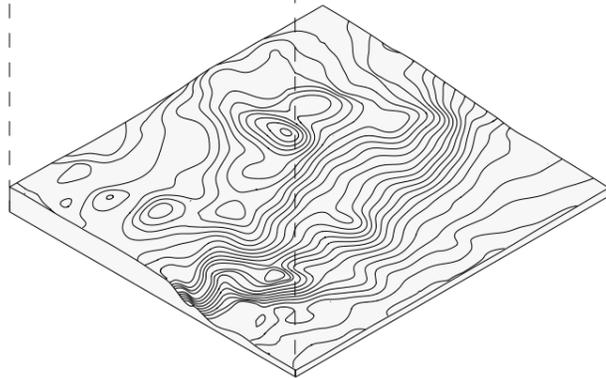
Existing pathways



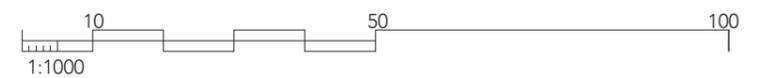
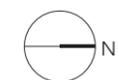
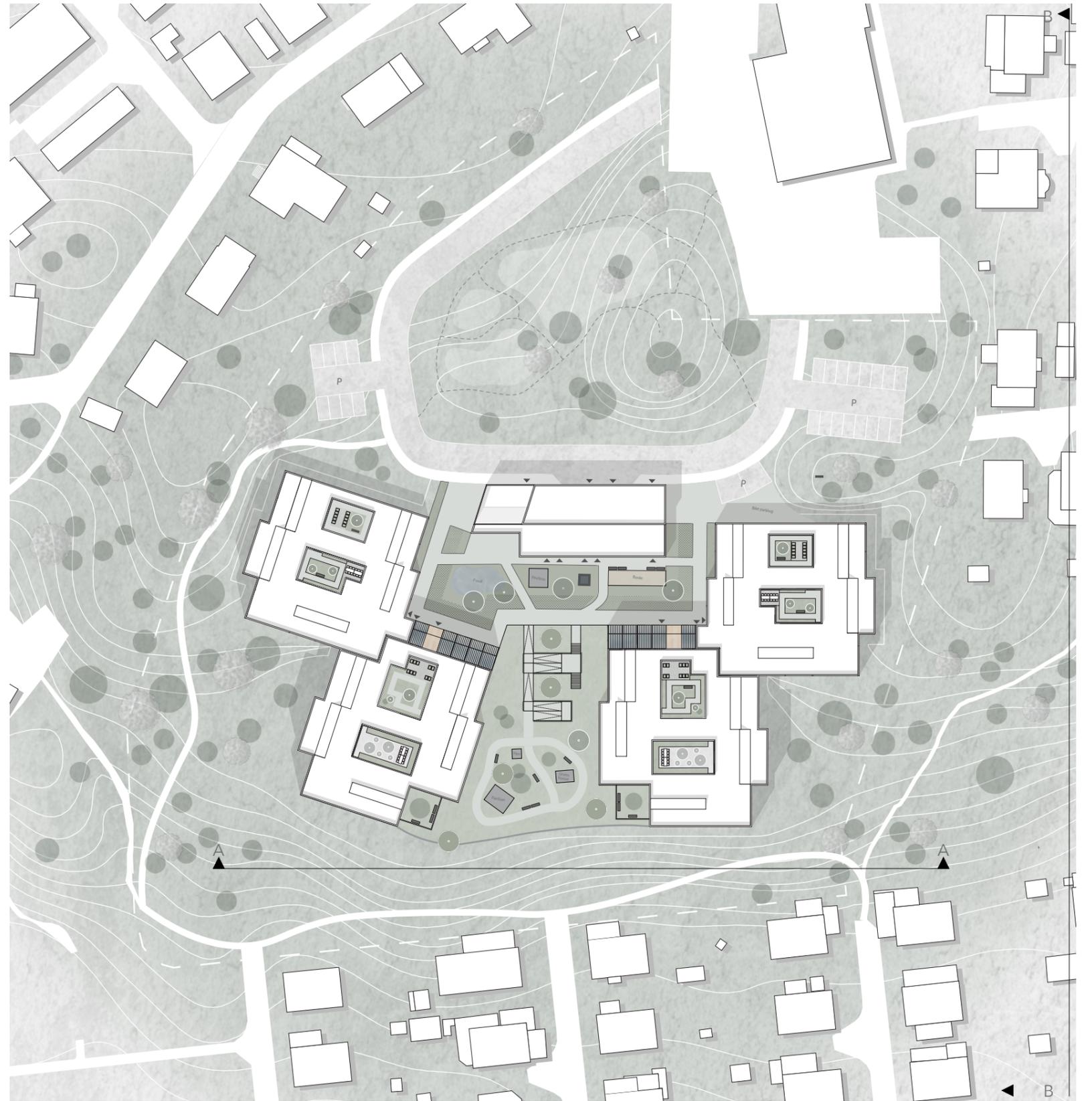
Existing green areas



Existing topography



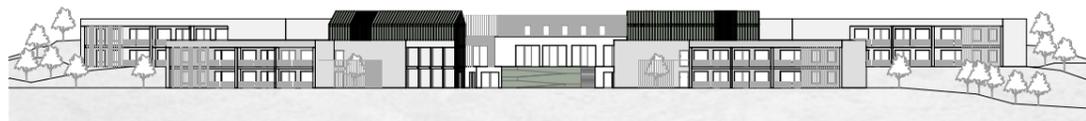
# SITE PLAN



# THE SITE

The main entry point into the site is placed next to the church on top of the hill. A new road around the top of the hill is created to connect to the existing street network. Parking for visitors and staff is placed in two areas along the road. Delivery trucks enter the premise in the west and can drive down to the common building on the main street. When the delivery is done, the truck can exist the site without turning around or backing up, which ensures a save environment for staff visitors and residents. The existing allotment gardens have been moved to the hill, together with a new playground, outdoor gym and a viewpoint, to ensure a good connection to the neighbourhood. New pathways invite the neighbourhood into the site and create possibilities to meander in the forest and nature around the main facility.

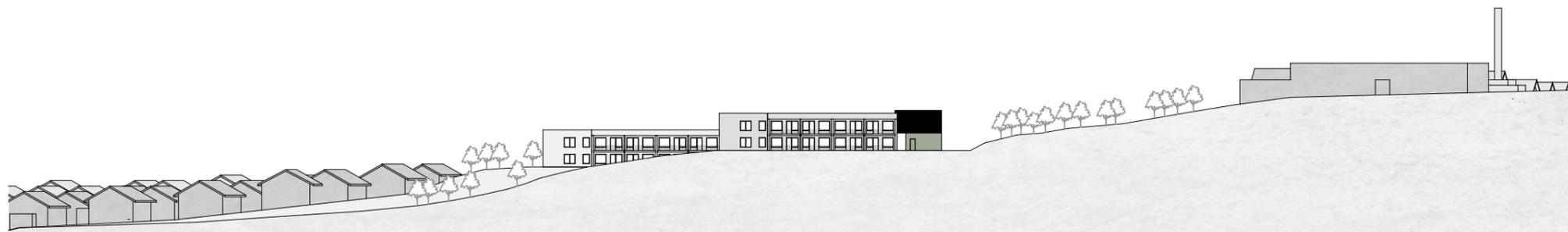
Two plateaus create the base for the main facility, that consists of four unit buildings and a common building. The plateaus are programmed with different activities to motivate and stimulate the residents. Both staff and visitors enter the premise through the common building, where several functions, such as a hairdresser and a restaurant are place, to create a normal living environment for the residents with alzheimers. From the common building the units can be reached through outdoor pathways that are connected to the atriums, that serve as the main communication area between the units. The build up area measures around 5200 m2 in total, the site has a gross area of around 22642 m2.



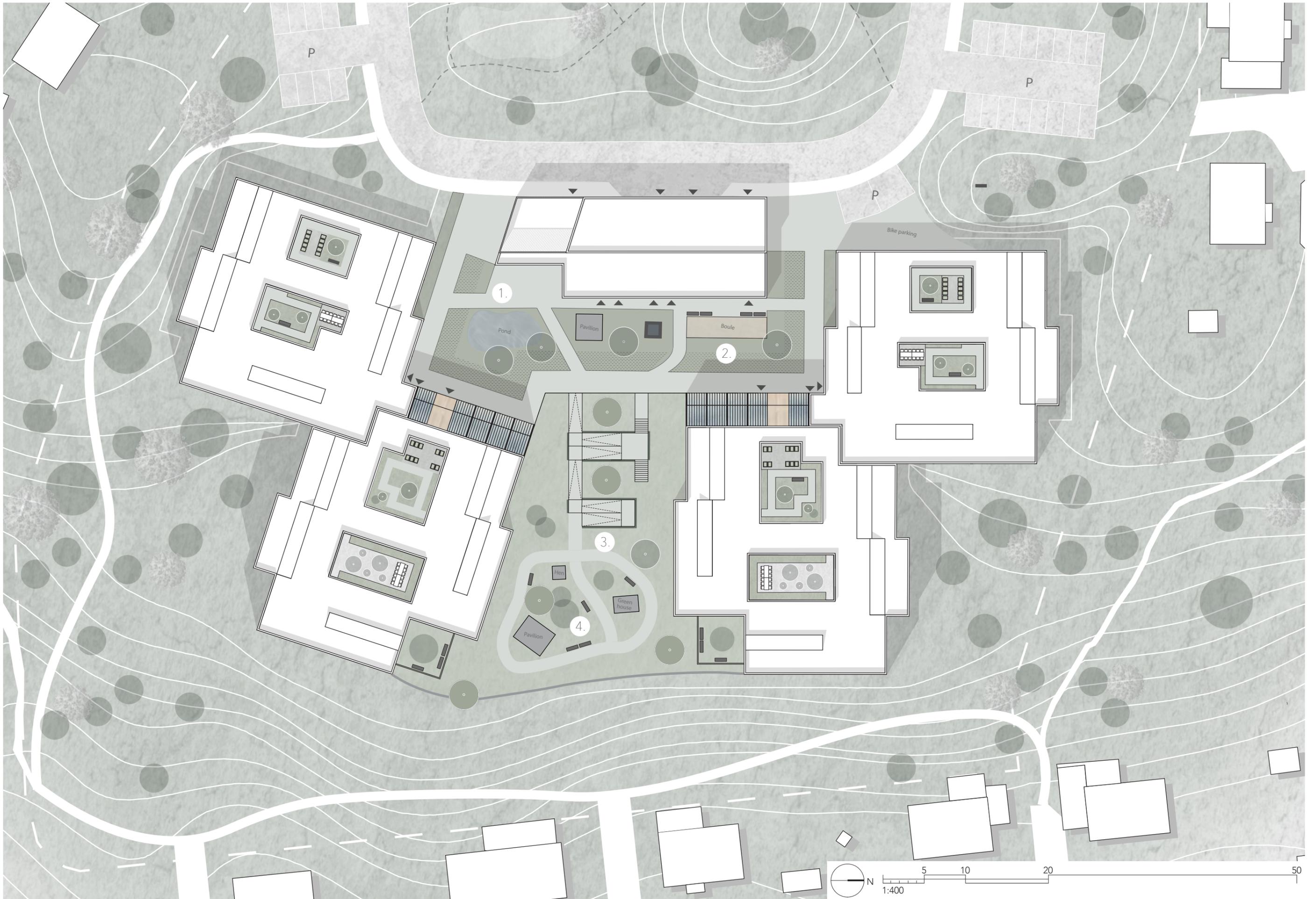
Landscape section, A-A



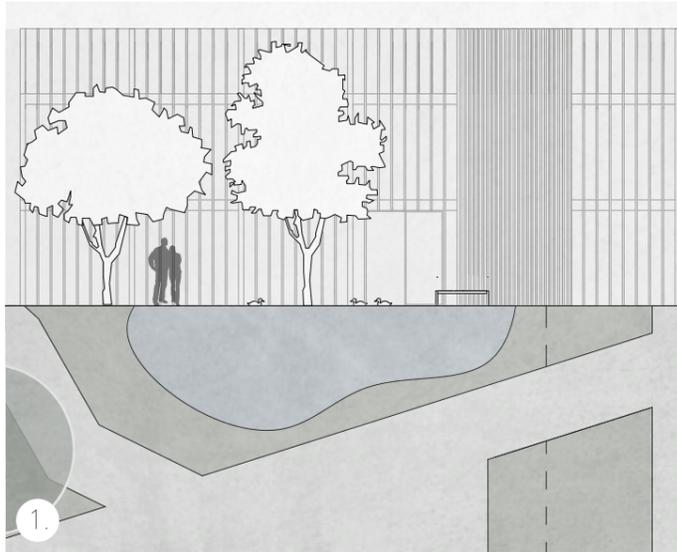
Exterior perspective; The recreational garden.



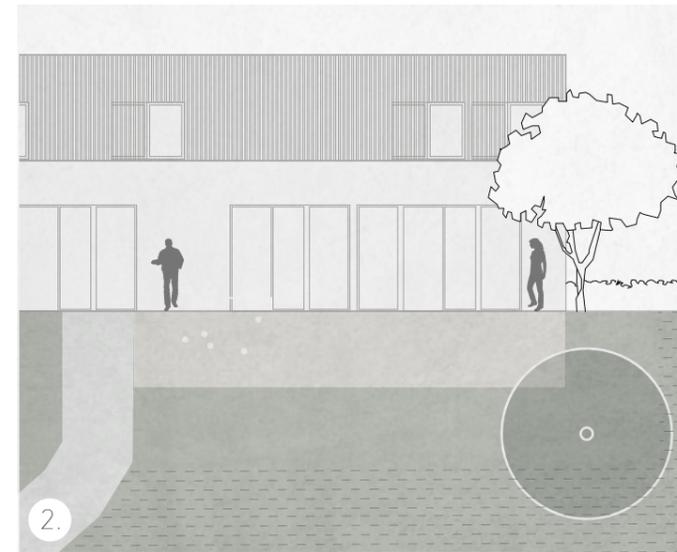
Landscape section, B-B



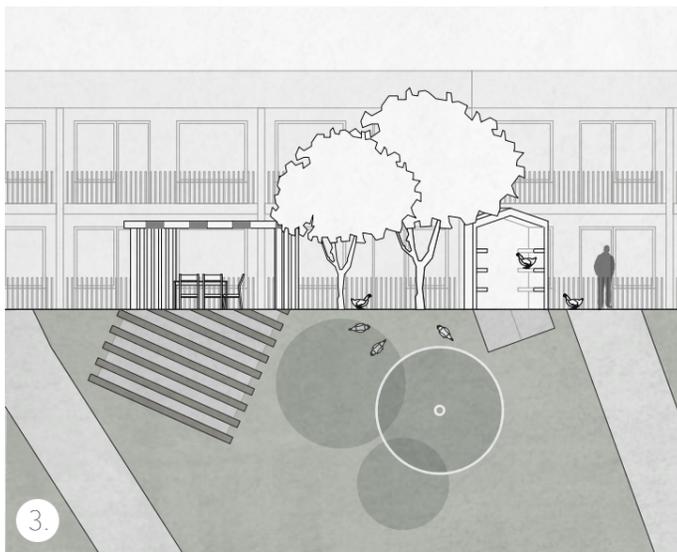
# OUTDOOR AREAS



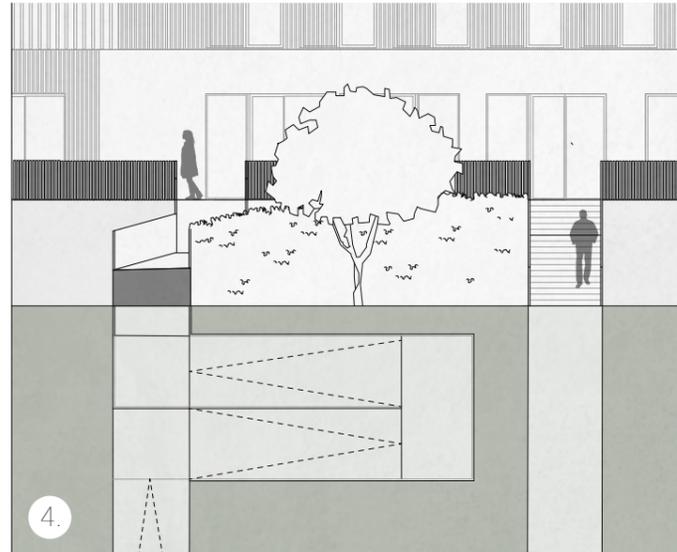
**Pond**  
A pond offers visual stimuli and pleasant sounds in the garden. The reflective surface is interesting to look at, and the pond can have both ducks and fish to bring life into the garden.



**Boule**  
To encourage residents to stay active and to invite people from the surrounding area, there is a boule court. Boule games can be arranged so that locals and residents can play together.

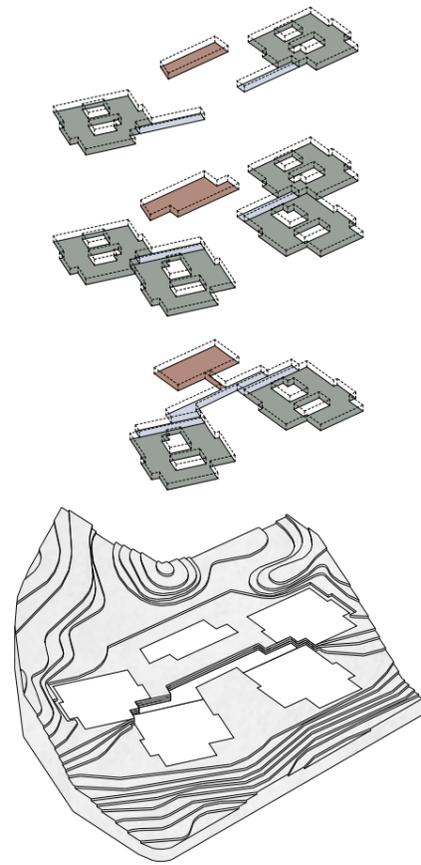


**Gardening**  
The outdoor area has space for lots of gardening taking place, including a hen house with freely roaming hens. This offers plenty of stimulating activities for residents, and when they want to take a rest, they can sit down in one of the pavilions. The pavilions protect against different weather conditions and make the garden usable all year round.



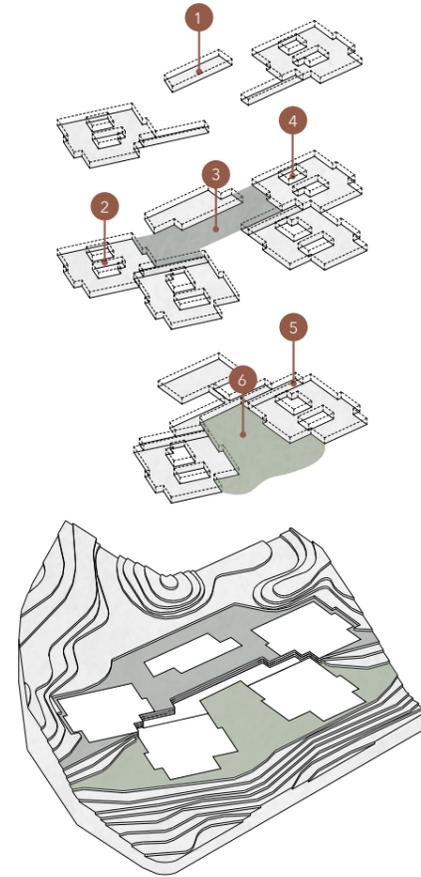
**Bridge**  
The bridge connects the two plateaus with each other. It is design to blend in with the nature of the garden and provides place for a garden shed in its' structure.

# FUNCTIONS + CONNECTIONS



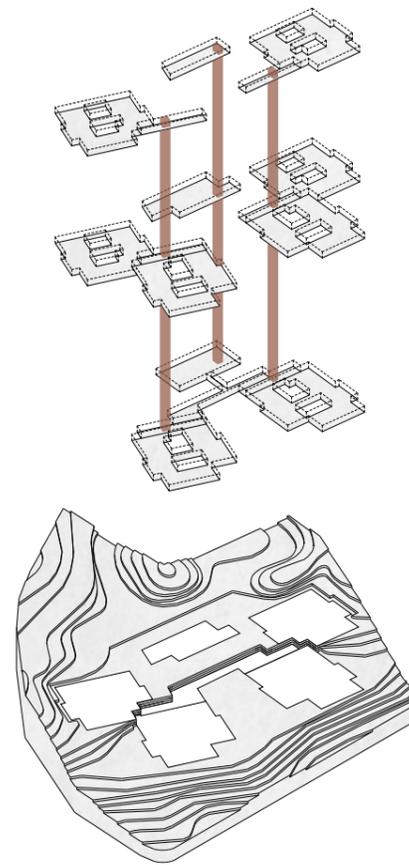
The build structure consist of five main volumes, that are all connected horizontally and vertically.  
 The central building houses staff and public functions, such as the reception, a restaurant, hairdresser and a shop for the residents.  
 The surrounding buildings house eight Units in total, providing space for up to 82 residents.

- Public + staff functions
- Unit
- Communication Areas

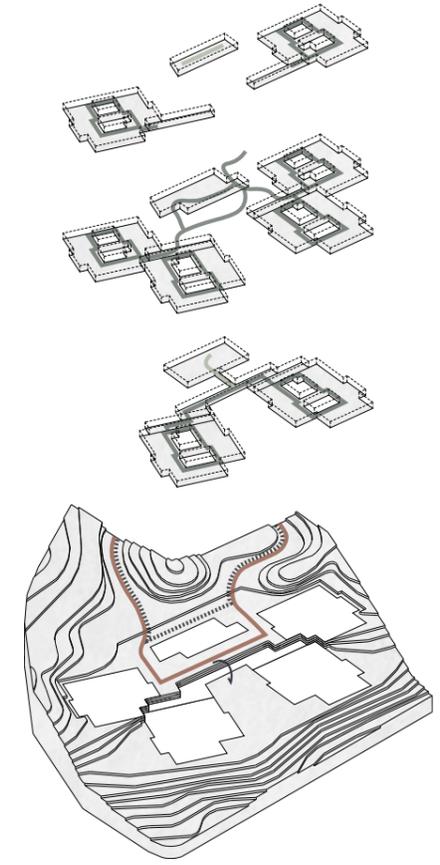


Several functions and areas were design to accommodate both the staff and residents specific needs. These include indoor and outdoor areas. The social garden on the upper plateau encourages residents to take part in activities of everyday live, whereas the recreational garden offers different opportunities to rest and be immersed in nature.

- 1 Staff area
- 2 Common kitchen Unit
- 3 Upper plateau
- 4 Courtyard Unit
- 5 Atrium as meeting space
- 6 Lower plateau
- Social garden
- Recreational garden



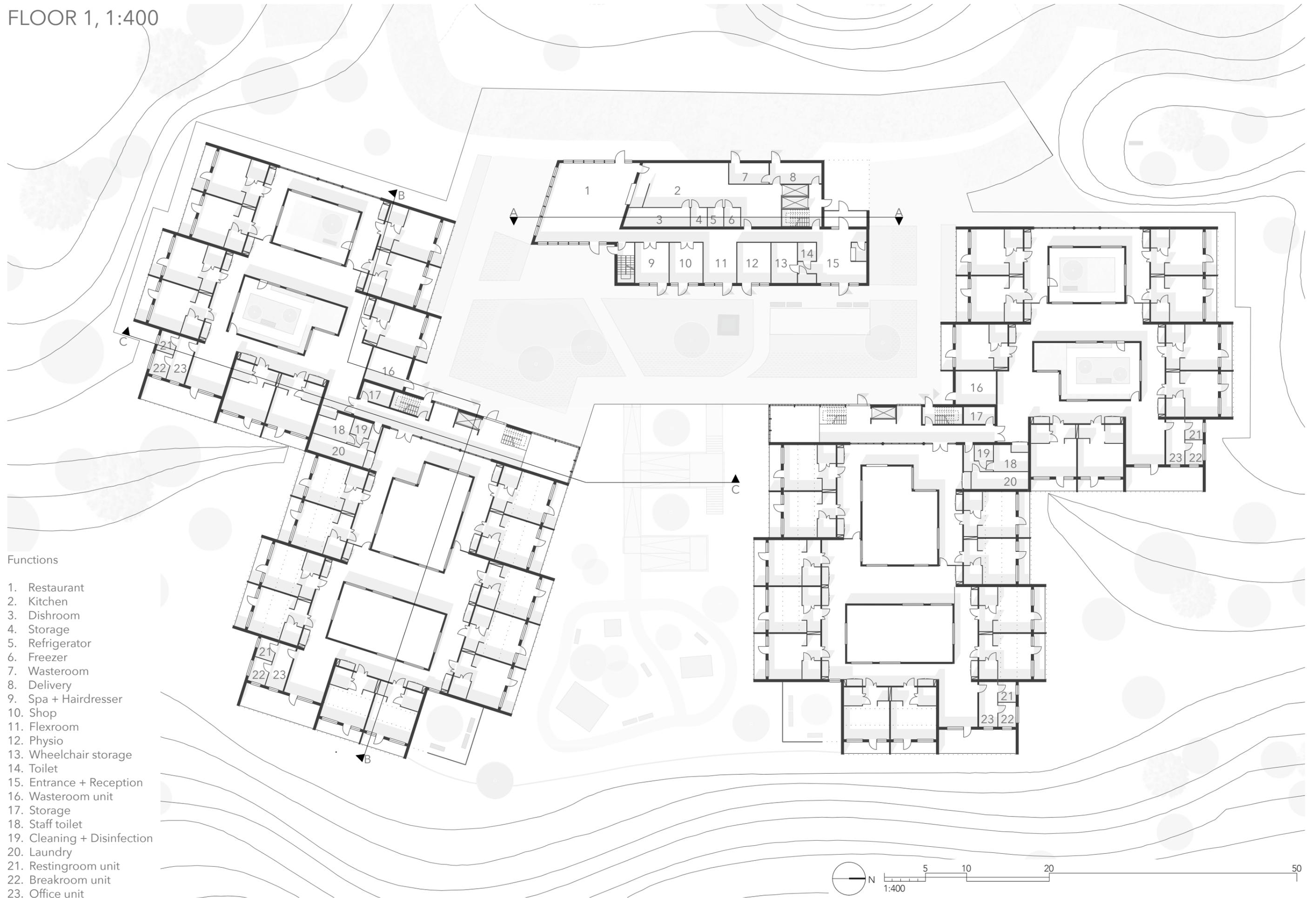
Due to the high difference within the area, the Units are split up on two plateaus and three stories. To ensure exchange and and easy flow between the Units, they are connected vertically through atriums.  
 The common building with the staff functions is vertically connected to an underpass, that leads into the atriums and provides additional social spaces.



Within the facility a good flow of movement for the residents and staff needs to be ensured and is created through connecting all the building parts through indoor and outdoor pathways.  
 In addition fire trucks and ambulances can enter each part of the facility through a pathway going along the façades and around the upper hill.  
 The delivery and waste pick-up trucks will mostly use the main road around the hill, to reach the backside of the common building.

- Residents, Staff
- Fire trucks + ambulance
- Delivery

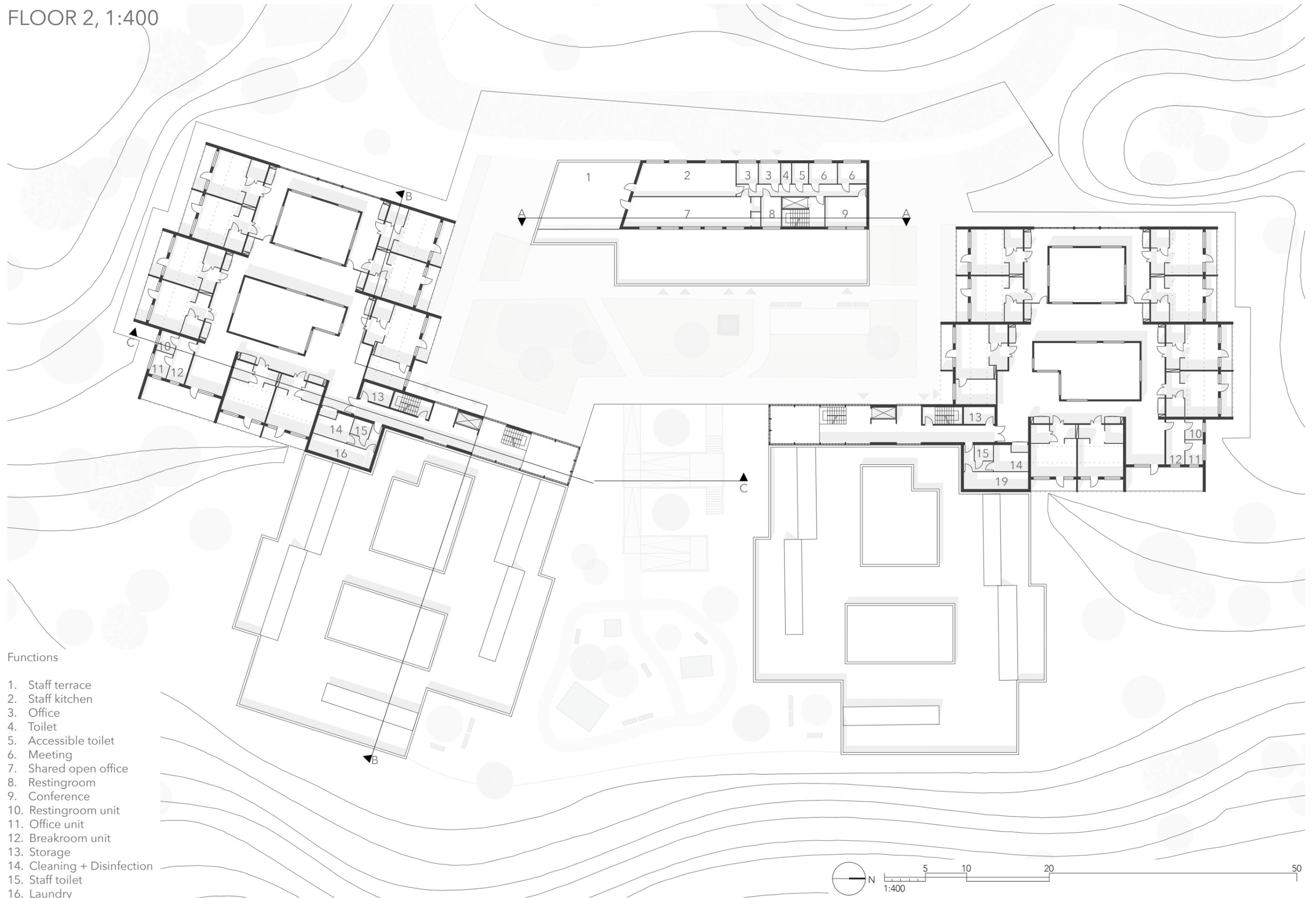
FLOOR 1, 1:400



Functions

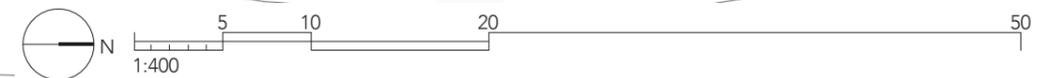
- 1. Restaurant
- 2. Kitchen
- 3. Dishroom
- 4. Storage
- 5. Refrigerator
- 6. Freezer
- 7. Wasteroom
- 8. Delivery
- 9. Spa + Hairdresser
- 10. Shop
- 11. Flexroom
- 12. Physio
- 13. Wheelchair storage
- 14. Toilet
- 15. Entrance + Reception
- 16. Wasteroom unit
- 17. Storage
- 18. Staff toilet
- 19. Cleaning + Disinfection
- 20. Laundry
- 21. Restingroom unit
- 22. Breakroom unit
- 23. Office unit

FLOOR 2, 1:400

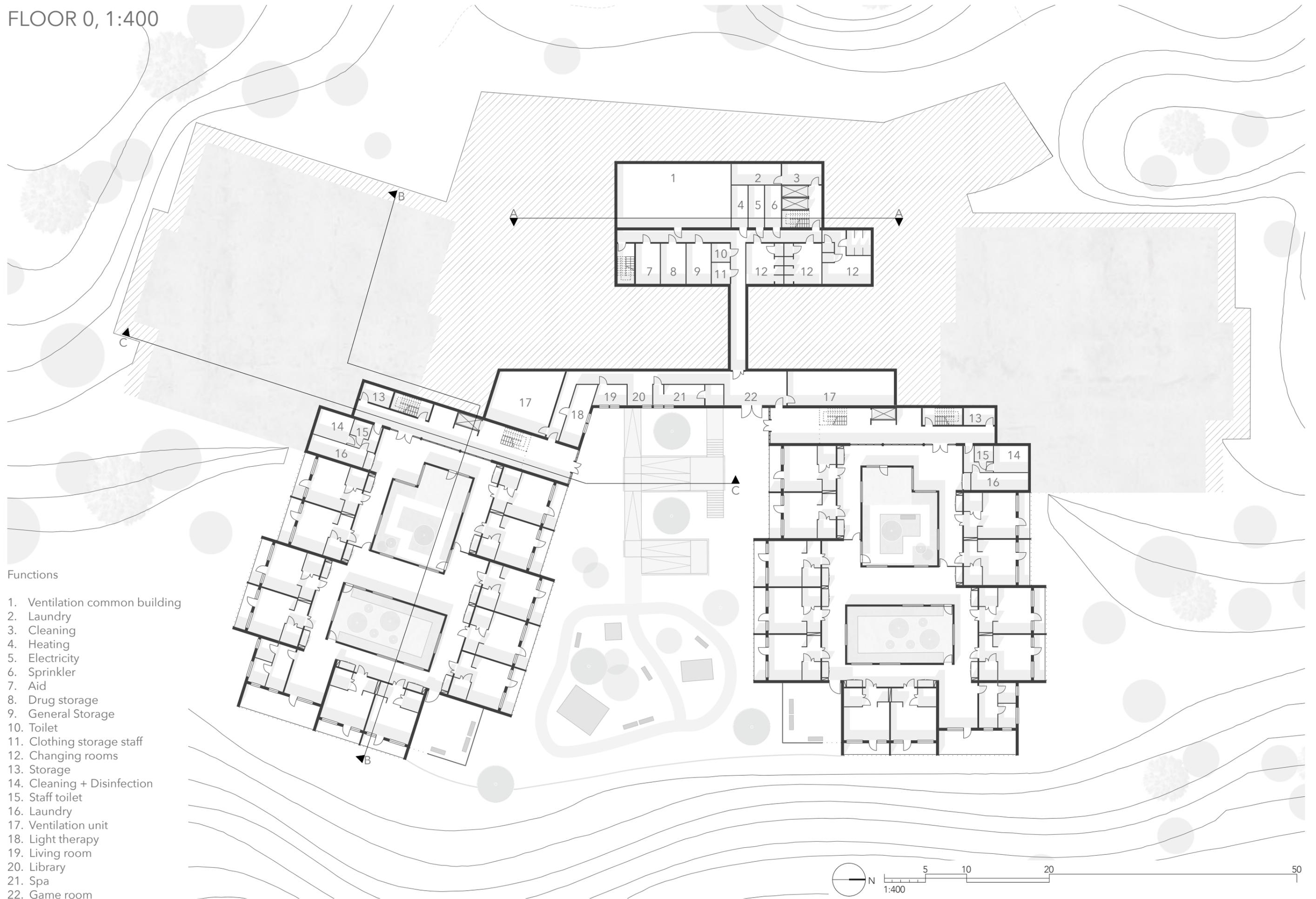


Functions

- 1. Staff terrace
- 2. Staff kitchen
- 3. Office
- 4. Toilet
- 5. Accessible toilet
- 6. Meeting
- 7. Shared open office
- 8. Restingroom
- 9. Conference
- 10. Restingroom unit
- 11. Office unit
- 12. Breakroom unit
- 13. Storage
- 14. Cleaning + Disinfection
- 15. Staff toilet
- 16. Laundry

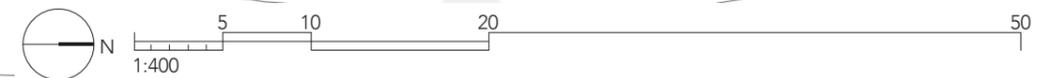


FLOOR 0, 1:400



Functions

- 1. Ventilation common building
- 2. Laundry
- 3. Cleaning
- 4. Heating
- 5. Electricity
- 6. Sprinkler
- 7. Aid
- 8. Drug storage
- 9. General Storage
- 10. Toilet
- 11. Clothing storage staff
- 12. Changing rooms
- 13. Storage
- 14. Cleaning + Disinfection
- 15. Staff toilet
- 16. Laundry
- 17. Ventilation unit
- 18. Light therapy
- 19. Living room
- 20. Library
- 21. Spa
- 22. Game room



# ELEVATIONS



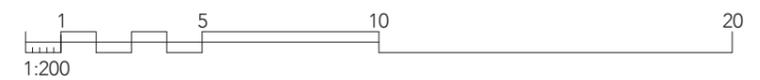
elevation north, 1:200



elevation west, 1:200



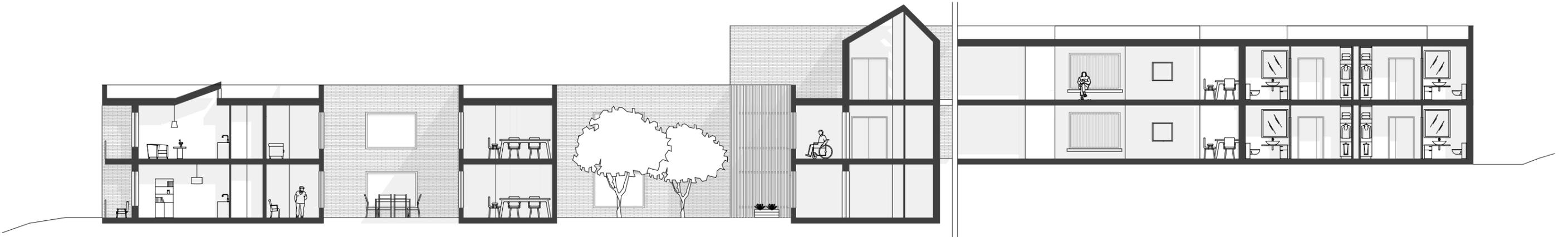
elevation south, view from garden, 1:200



# SECTIONS



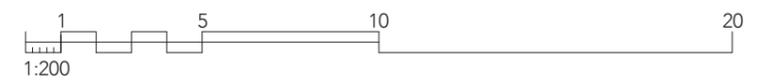
section A-A, 1:200



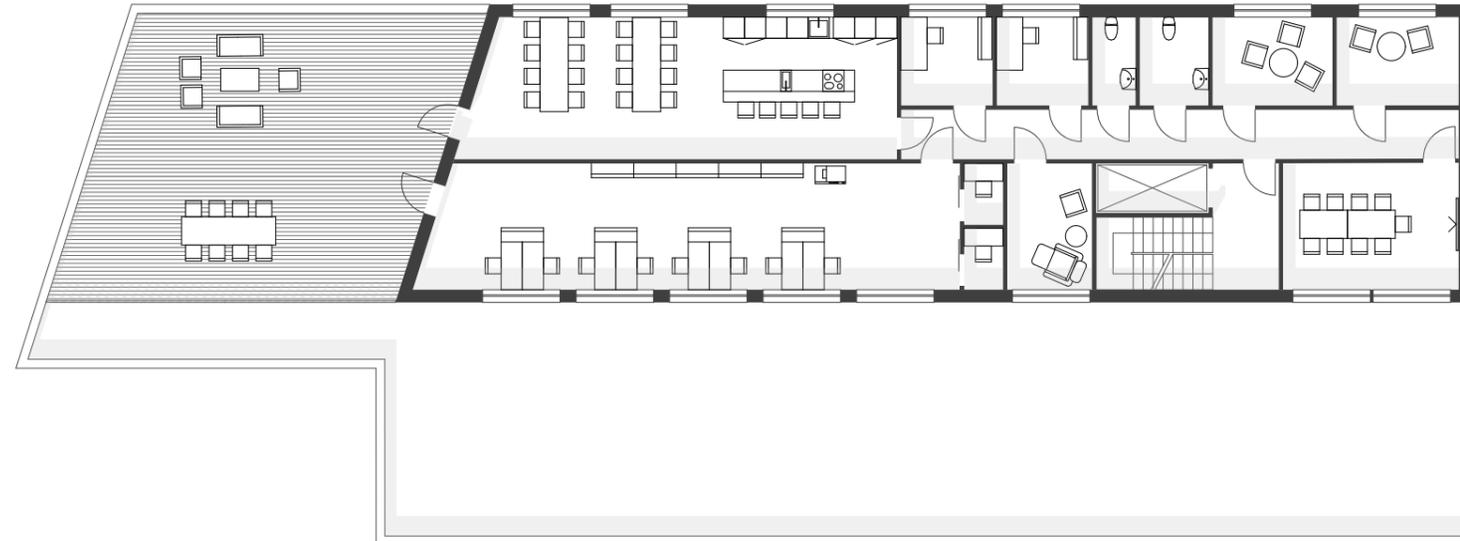
section B-B, 1:200



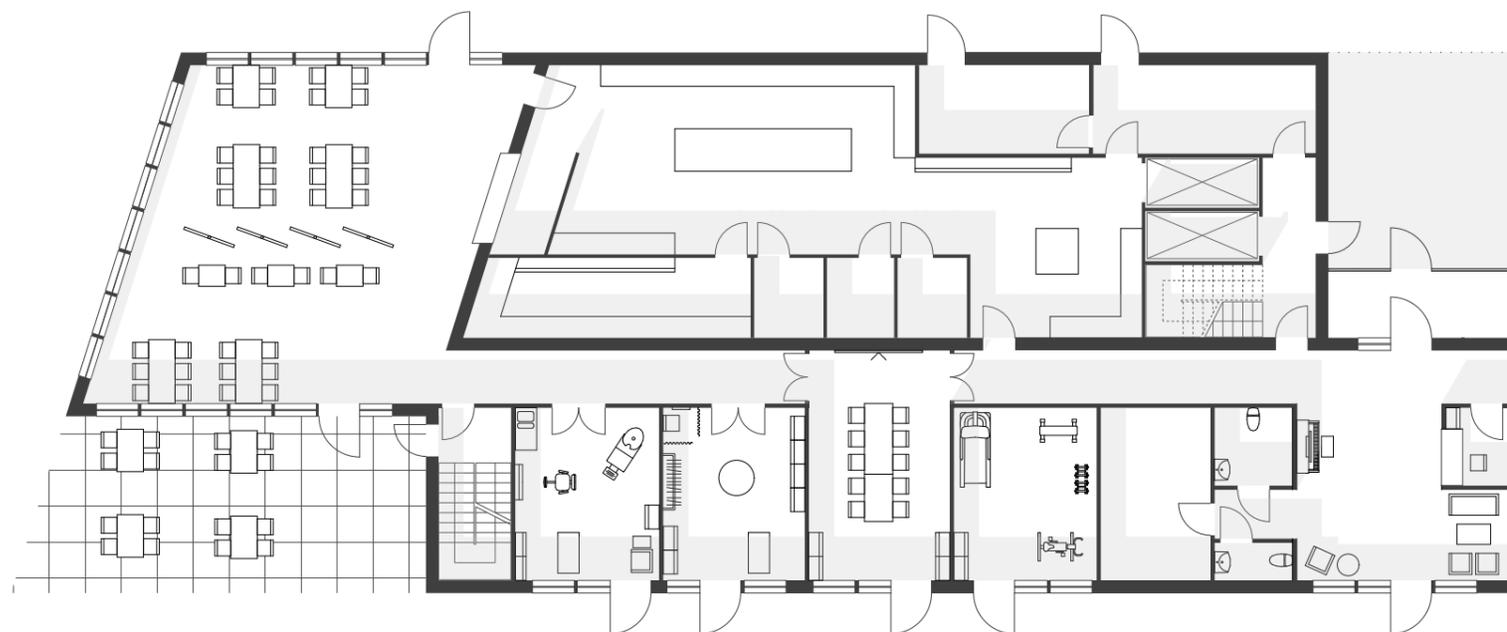
section C-C, 1:200



# COMMON BUILDING



floor 2, common building, 1:200



floor 1, common building, 1:200

The first floor of the common building is accessible to both staff, residents and visitors. The building is entered through the reception where an administration office is placed, together with some seating and a piano. A corridor provides access to the restaurant, that is also open to the public and can additionally be accessed from the garden. The corridor also provides access to the flexroom, hairdresser and shop.

An additional entrance for staff provides direct access to the staff rooms on the second floor, as well as dressing and supporting rooms in the underpass.

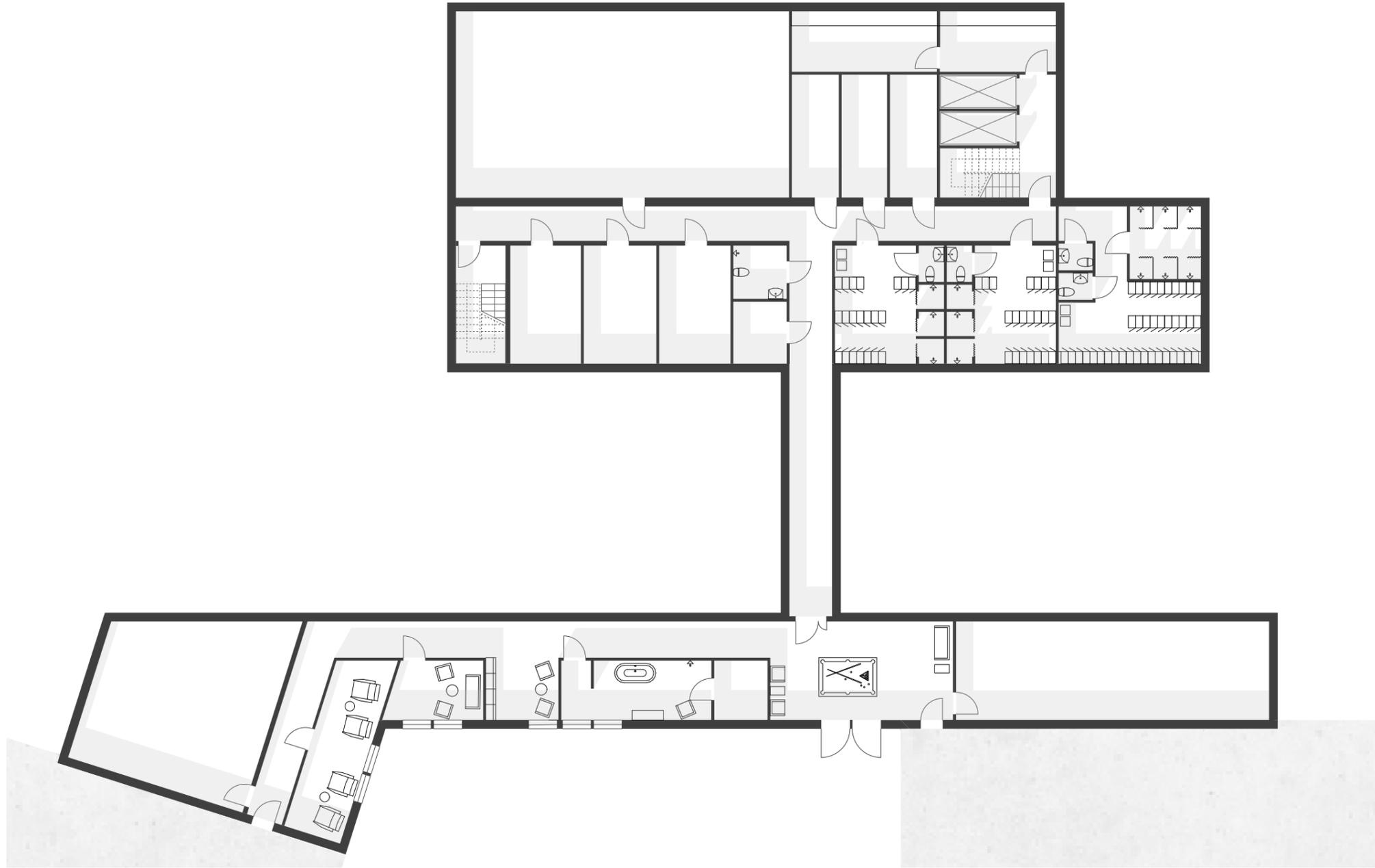
The second floor is only accessible to staff and contains a conference room and meeting rooms for planning, private offices and an open office space, which is connected to two phone rooms. For break time, there is a large break room with a kitchen, sofas and tables, and a smaller resting room with a massage chair.

In the underpass and the adjacent rooms, supporting functions and technical rooms are located. In the underpass connecting to the atriums, a lighttherapy room, small library, spa and gamesroom create spaces with quality of stay for the residents and their visitors.



Exterior perspective outside the restaurant.





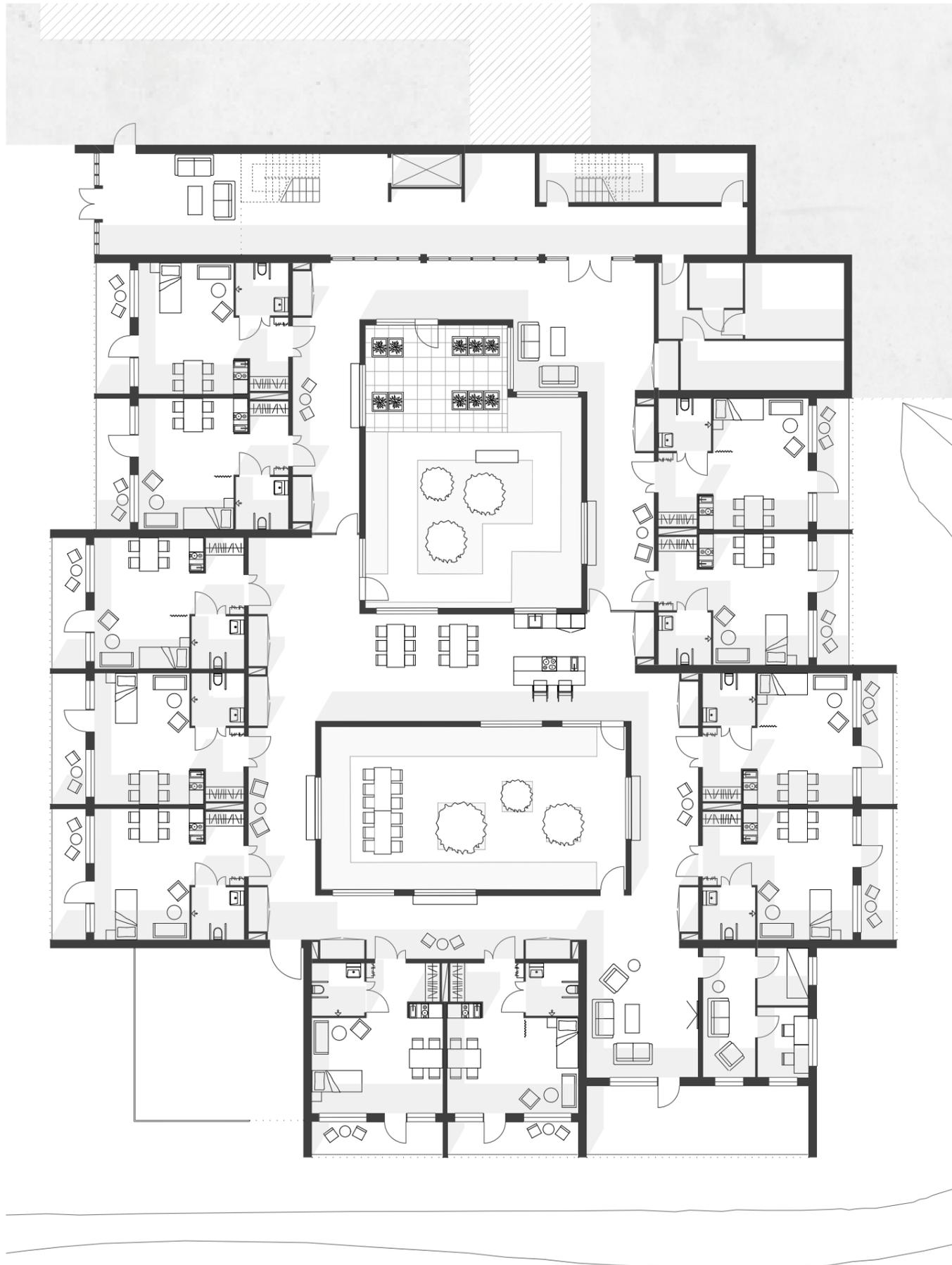
floor 0, common building, 1:200



elevation east, common building, 1:200



# THE UNIT



Interior perspective; Common kitchen in the unit

Within the atriums that connect four units with each other, residents can pick up their mail, rest and look outside into nature. From the Atrium the Units can be accessed directly, a small seating area next to the entrances provides the residents with possibilities to meet their relatives. Each unit has either eleven or nine apartments. A hallway without dead ends is located around two courtyards, that can be used by the residents. A common kitchen is placed between the courtyards, making it the heart of the unit. An additional TV room provides further possibility to rest. Each of the apartments is provided with additional storage in the hallway, creating niches where the residents can meet their direct neighbor.



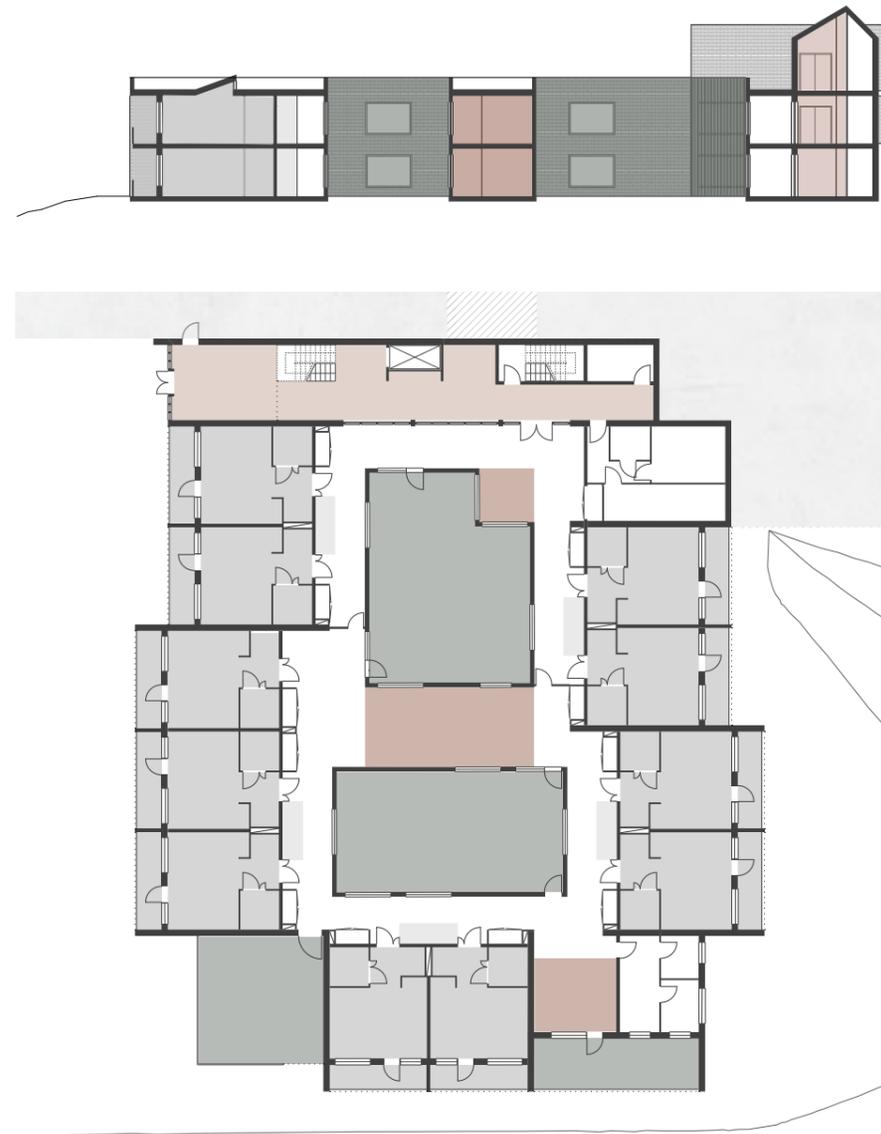
Interior perspective; Common social space.



# ZONES + ORIENTATION

Within the Unit, different zones provide the residents with varying layers of privacy and levels of interaction, as well as different levels of interaction with nature. They are able to retreat to their private apartment and meet and interact with their direct neighbour in front of their door. In addition, a kitchen, livingroom and furnished

entrance area provide different stimuli and chances to interact with other residents from the Unit. Green outdoor areas in the courtyard, as well as balconies or terraces create an incentive to engage with nature. The Atrium connecting the units vertically does in addition function as a meeting space.



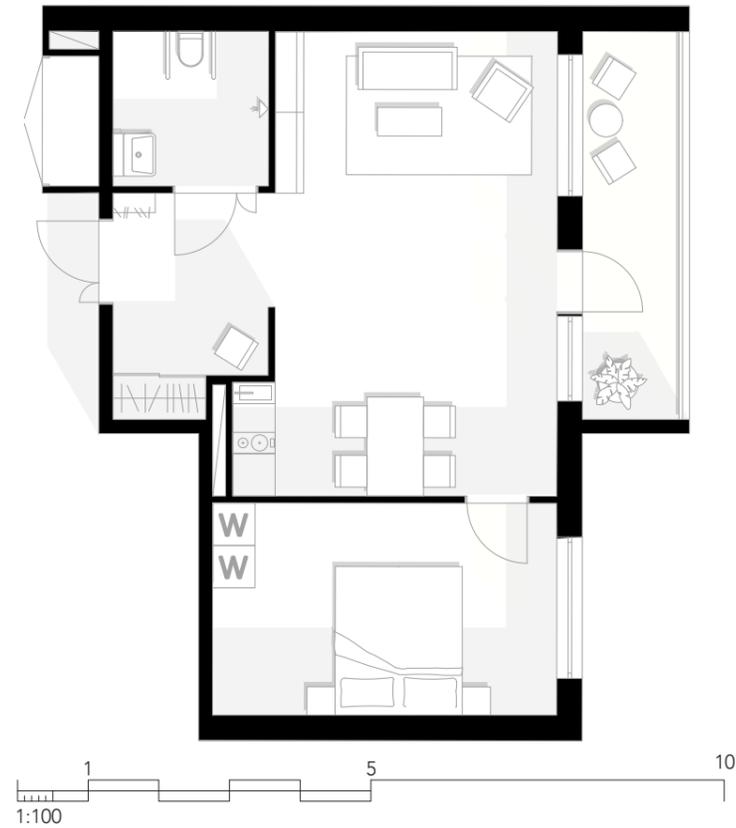
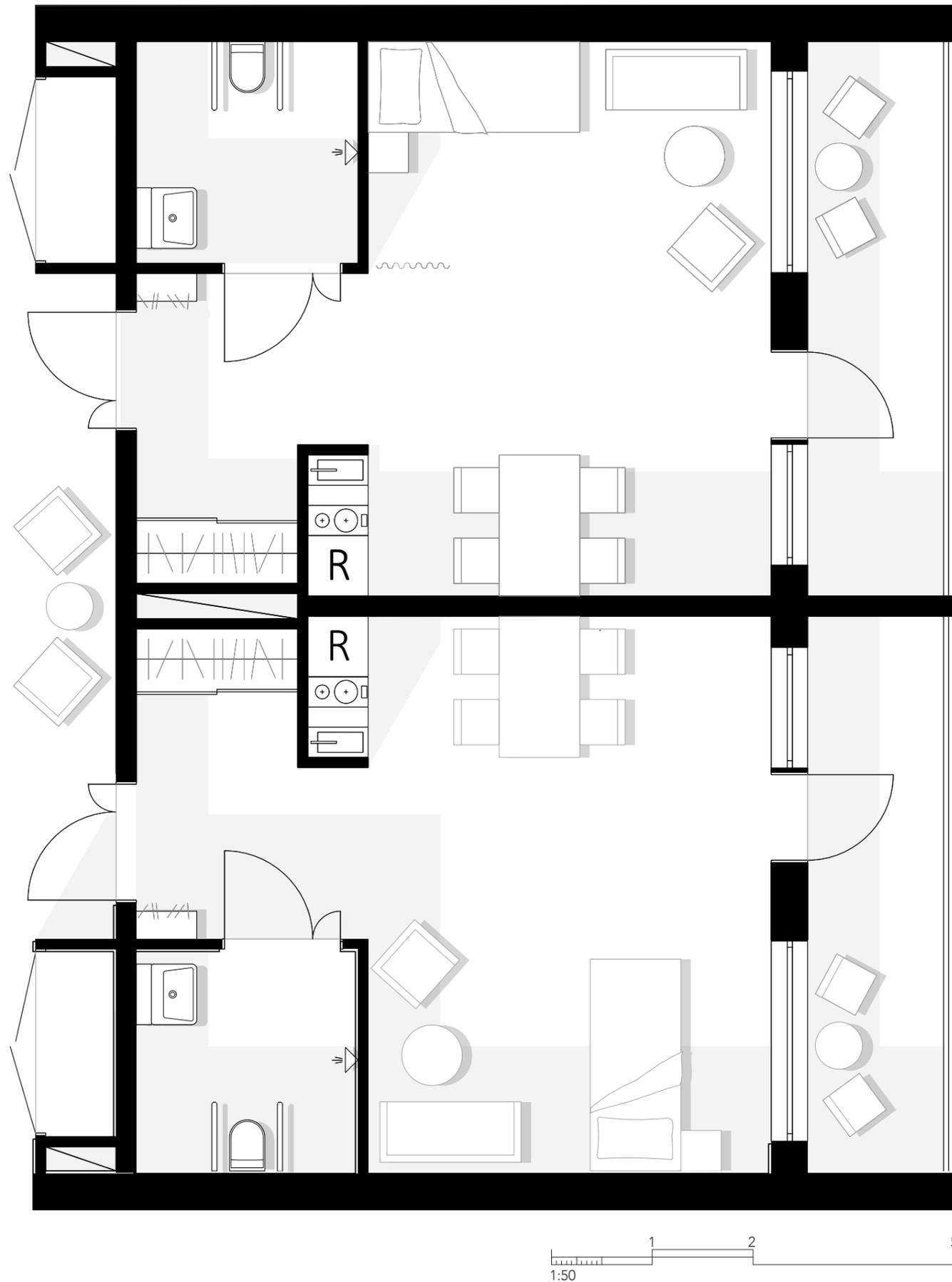
- Apartment
- Meeting Neighbours
- Outdoor spaces
- Social spaces
- Atrium

To make orientation within the facility as easy as possible and create visual and haptic stimuli there are vital design criteria in a dementia care. By using colors on specific important elements this could be done. The two atriums are stained in a forest green color, this to stick out from the other facades of the facility. By entering

the atrium you will access a common social space that is shared between four units. You enter the units from the atrium. The entrance door to each unit has its own color, this makes it easy to find your unit. The same method is used for the apartment doors. A place for the residence



# THE APARTMENT



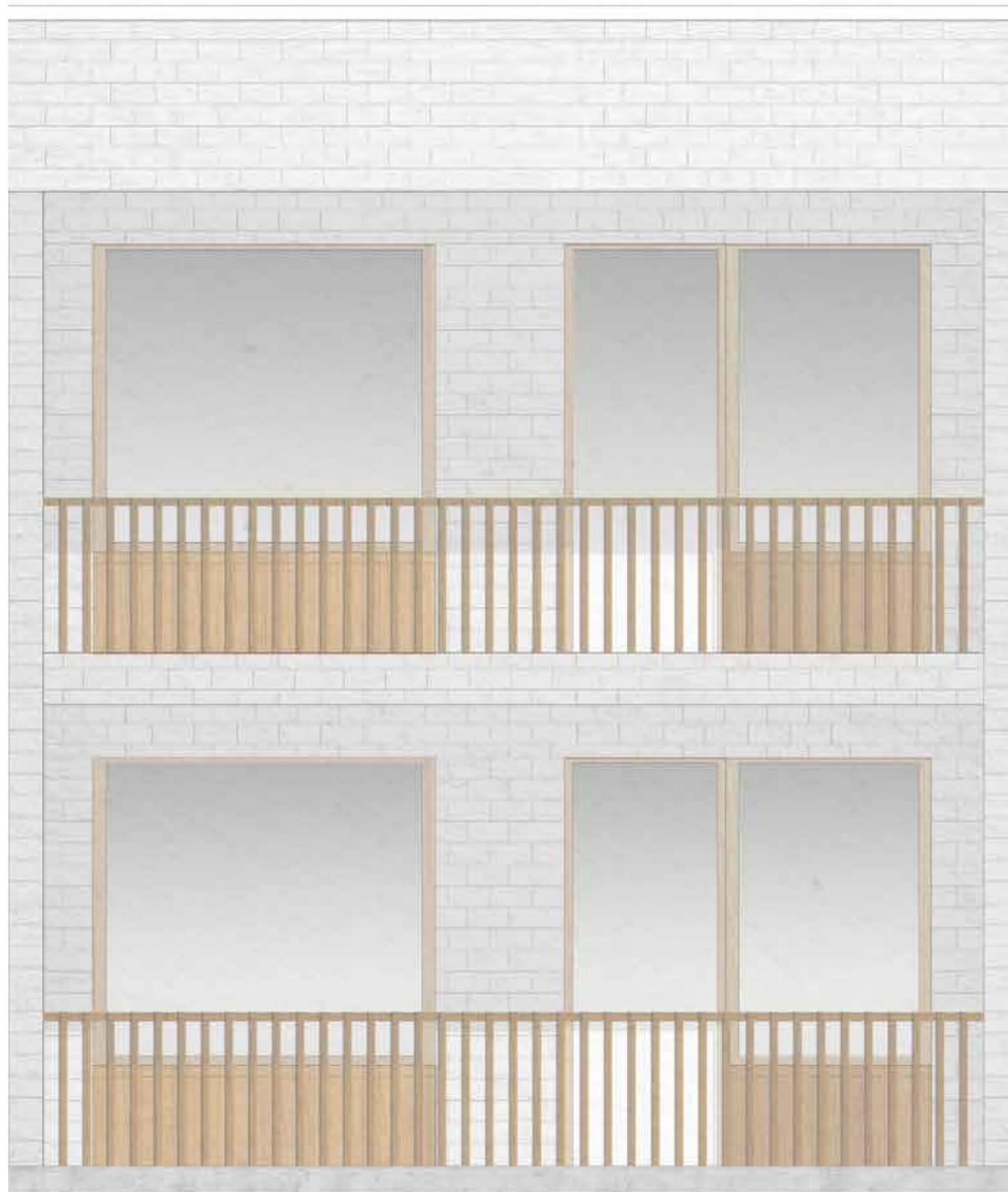
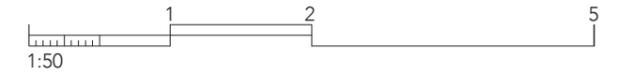
The facility contains of 80 apartments, two of them being couples apartmetns, providing space for up to 82 residents in total.

The apartments have wooden herringbone flooring and big windows, together with a private balcony. A space outside the apartment is used for additional storage and a small social area. Each apartment provides the residents with a small pantry kitchen, bathroom and a built in wardrobe,



Interior perspective; Single apartment

# CONSTRUCTION DETAIL



20 WOODEN PANEL  
34X45 NAIL BATTEN S600  
34X45 COUNTER BATTEN S600  
9,5 OUTDOOR GYPSUM  
220X45 STUD S 600, INSULATION  
0,2 WIND BARRIER  
60 CROSS-LAMINATED TIMBER  
11 OSB  
13 GYPSYM

CONCRETE FLOORING  
28X70 TREATED BATTEN S600  
CARDBOARD  
140 CROSS-LAMINATED TIMBER  
12X50 PLYWOOD  
WOODEN RIB PANELING

