

LOCATION & DESIGN BOOKLET

Lelystad, Warande

Delft University of Technology
Faculty of Architecture and the
Built Environment

AR3AD110
Dwelling Graduation Studio
Designing for Care in an Inclusive
Environment

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SITE LOCATION



SITE LOCATION: REGIONAL | 1 : 500.000

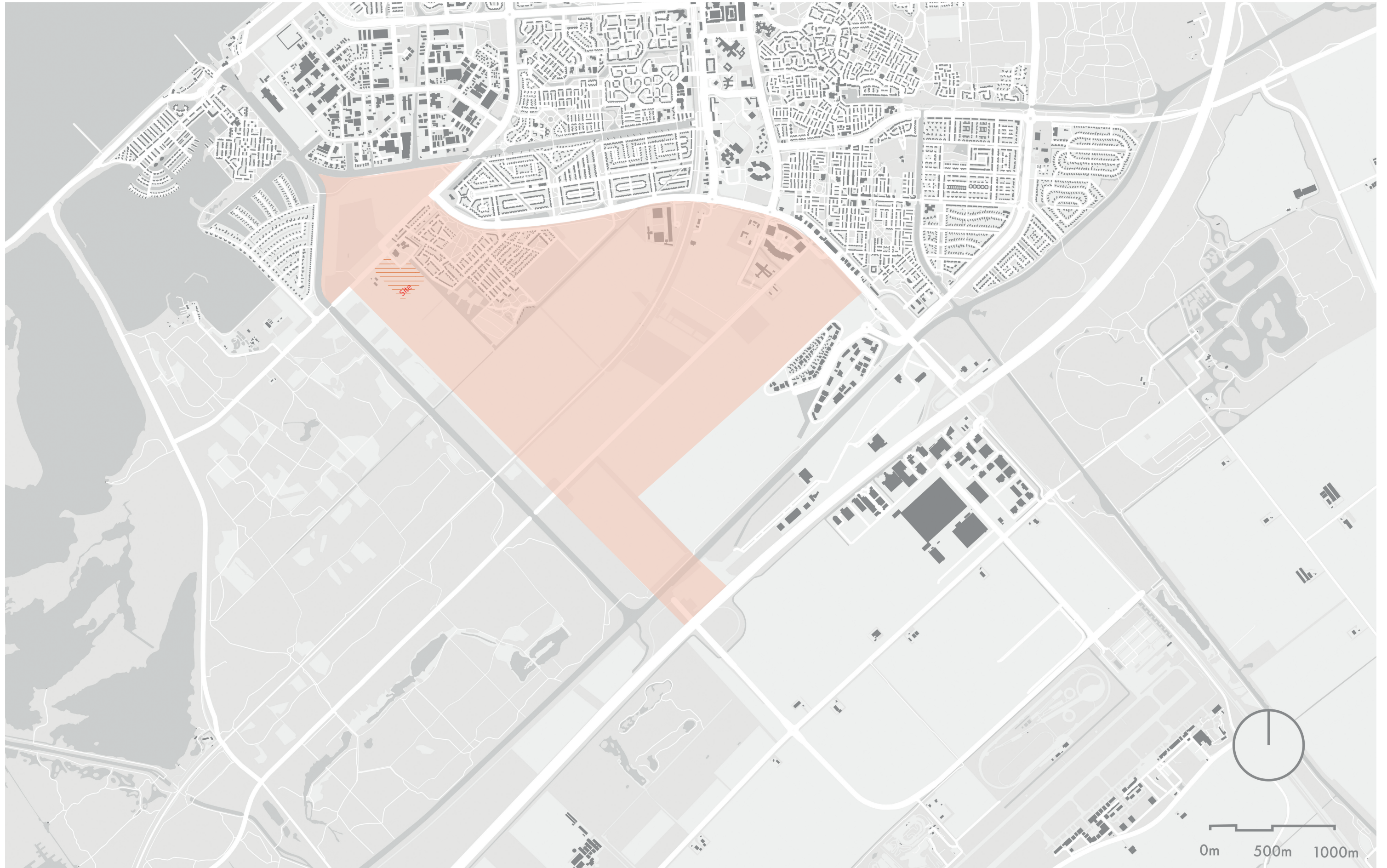


Original map by: M. Cernaianu (2022), edited by author

Conclusion

The design site is located in the province of Flevoland, in the city of Lelystad. A city within the relative close proximity of cities like Almere, Zwolle, Utrecht, and Amsterdam.

SITE LOCATION: URBAN | 1 : 30.000



SITE LOCATION: WARANDE | 1 : 5000



FIGURE GROUND DRAWING



FIGURE GROUND DRAWING: OVERVIEW | 1 : 15.000

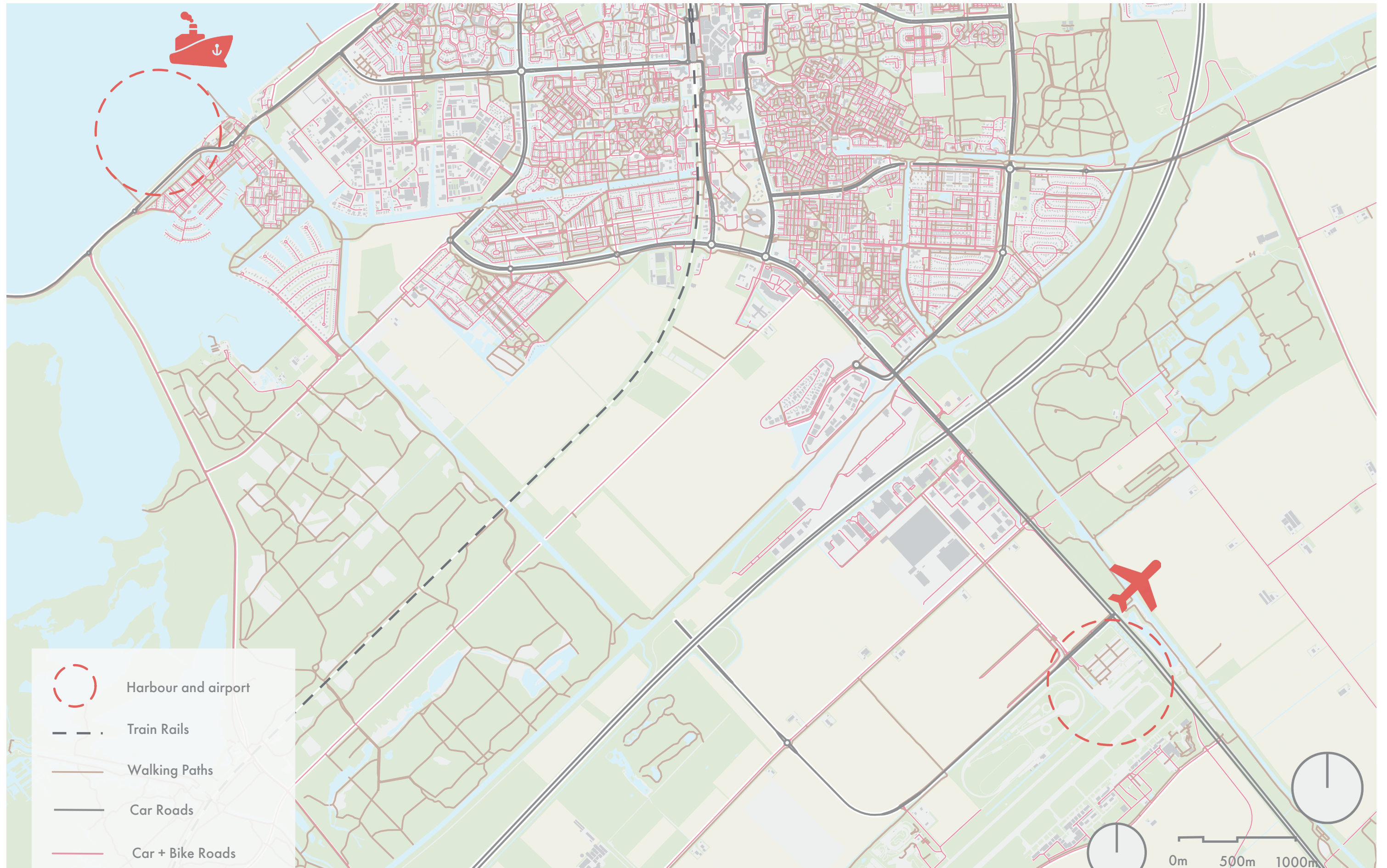


Original map by: R. Gurkan Saul (2022), edited by author

INFRASTRUCTURE

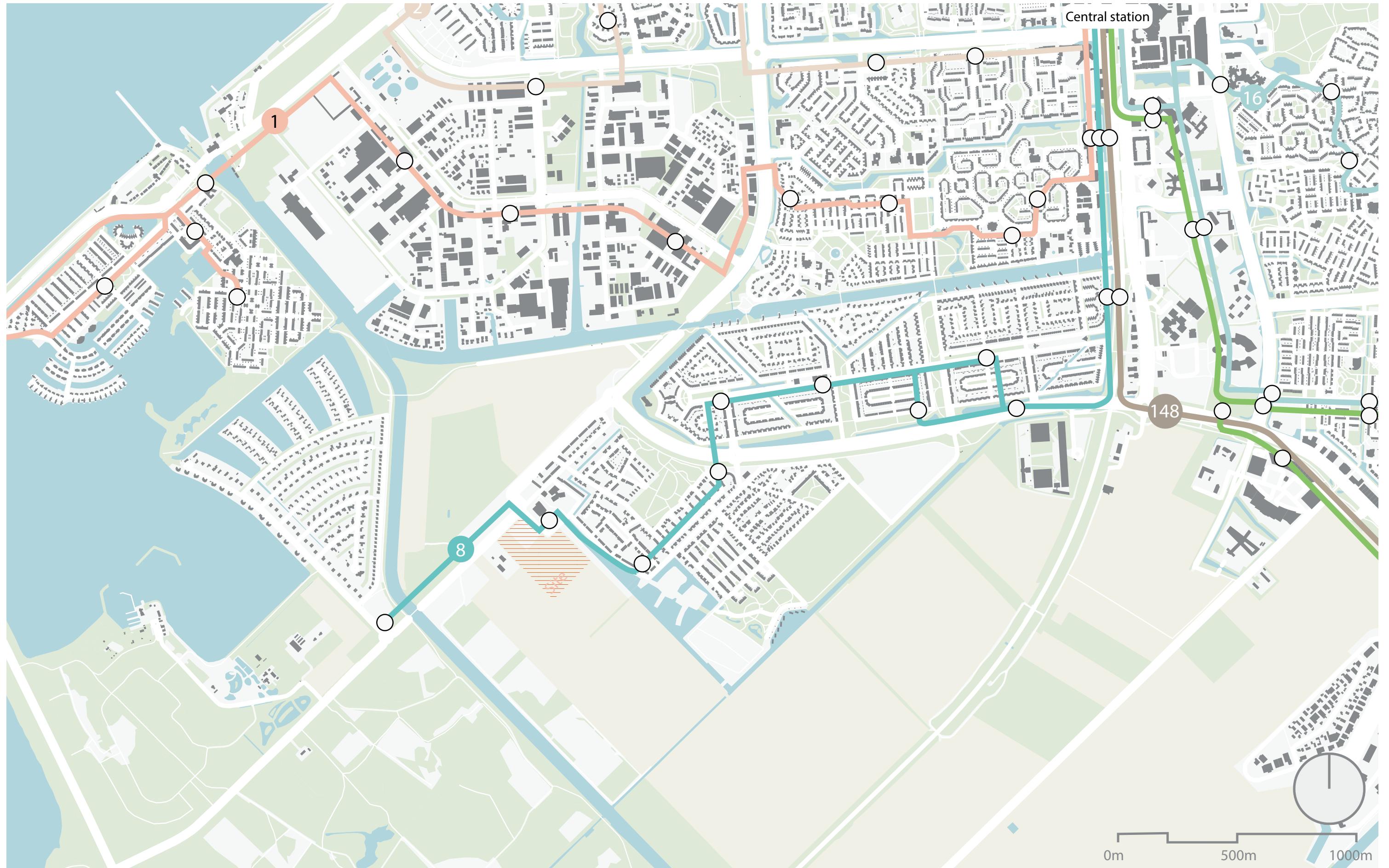


INFRASTRUCTURE: CURRENT NETWORK | 1 : 30.000



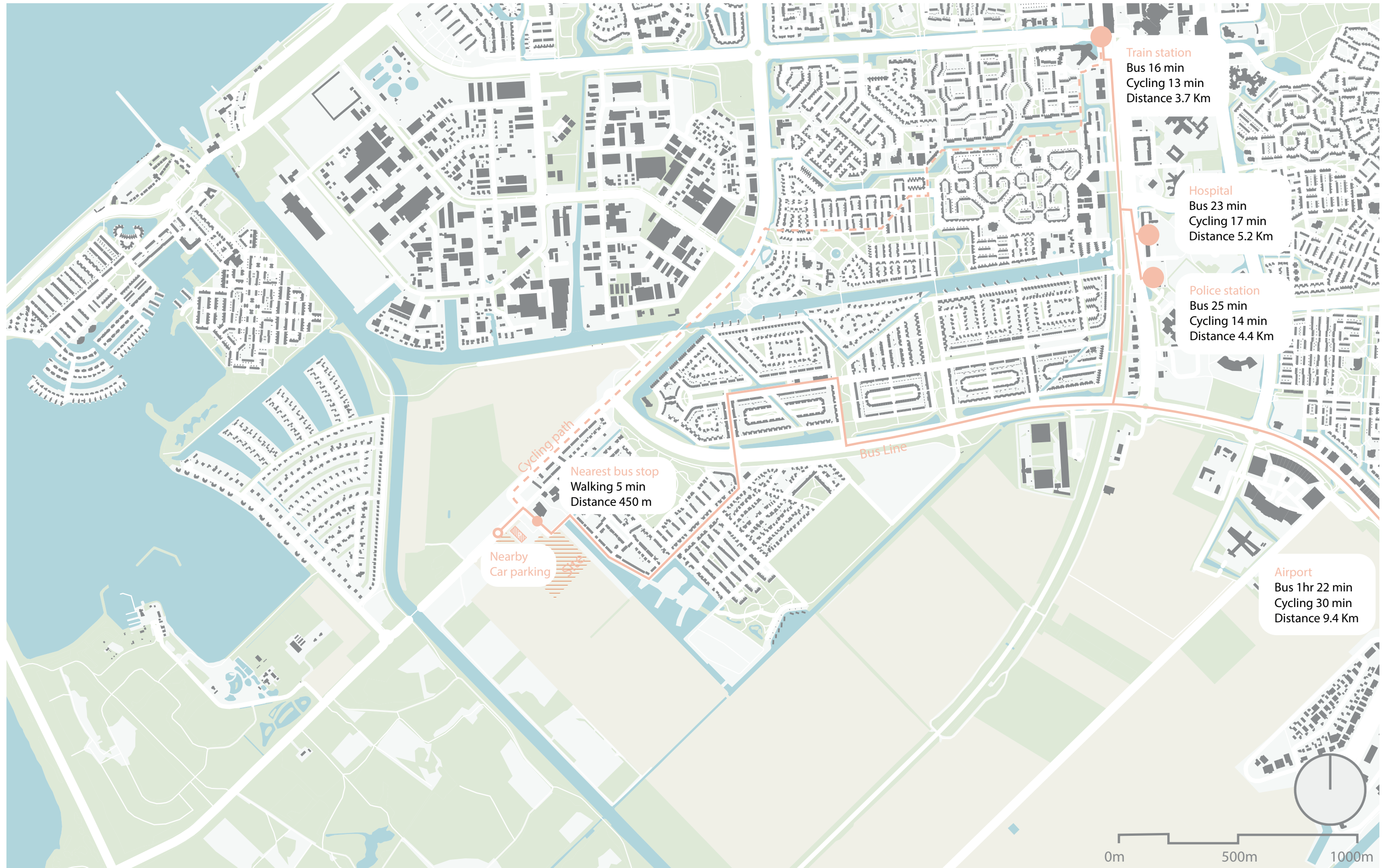
Original map by: R. Gurkan Saul (2022), edited by author

INFRASTRUCTURE: BUS LINES | 1 : 15.000



Original map by: M. Cernaianu (2022), edited by author

INFRASTRUCTURE: ACCESSIBILITY | 1 : 15.000



Original map by: M. Cernaianu (2022), edited by author

INFRASTRUCTURE: PROXIMITY | 1 : 15.000



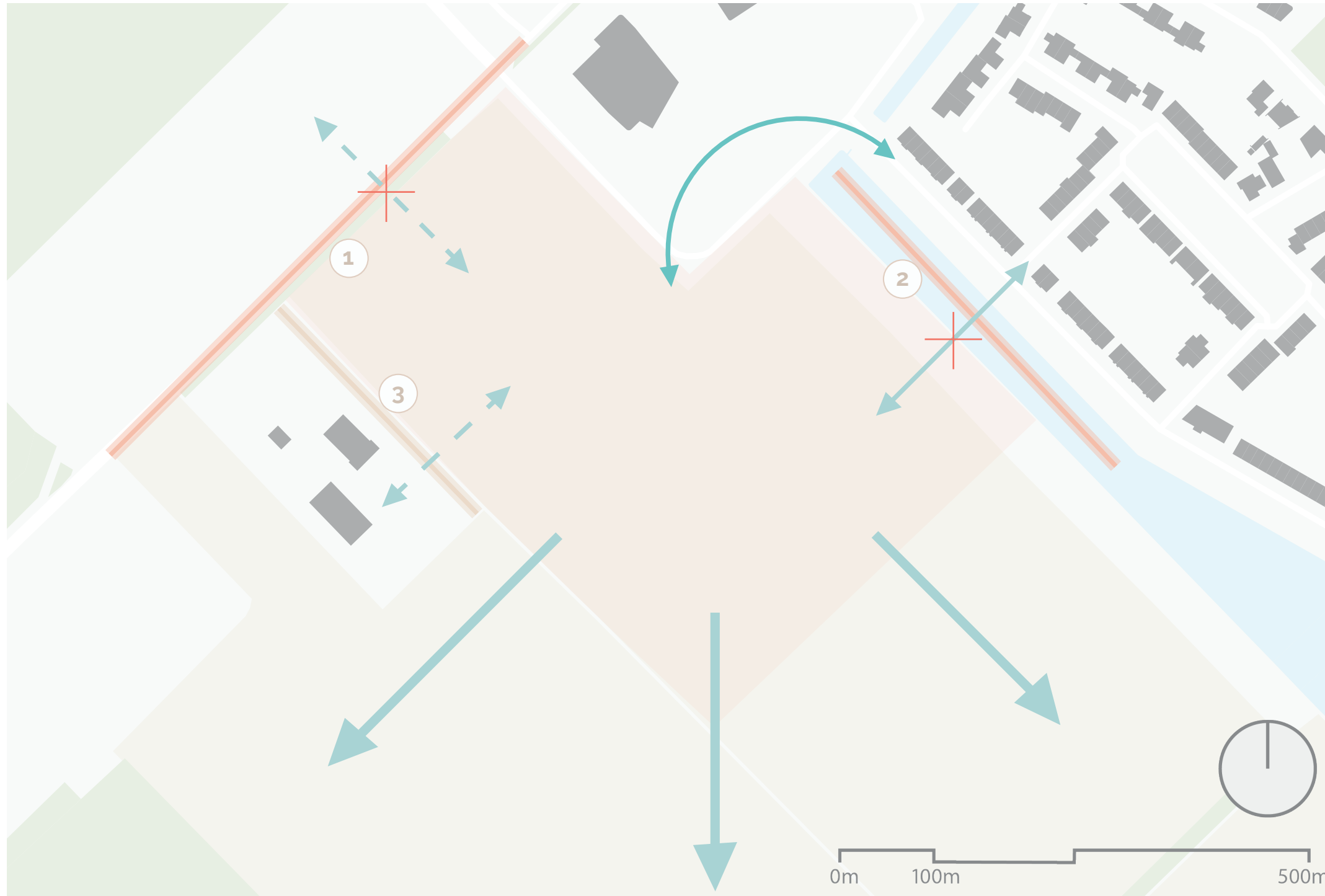
Original map by: M. Cernaianu (2022), edited by author

INFRASTRUCTURE: BARRIERS & CONNECTIONS | 1 : 2500

Conclusion

From all infrastructure maps it is clear to see that the site in itself is quite isolated from the rest of the city. With just a singular busline and 15-20 minutes of cycling/bus time to reach the centre, will it become hard for people with limited mobility to reach certain parts of the city. This could be quite a limiting factor for people with dementia, making them more bound to the neighbourhood as well. However, the neighbourhood itself is also quite isolated currently from the surroundings. With two hard barriers; the central road West of the site and the water on the North side of the site. Alongside a soft border to the farm located on the South, which could be implemented within the plot in the future. The water also creates a big barrier between both neighbourhoods, making the social heart the only way in which they are connected. This will put a lot of emphasis for the built environment on the site to open up towards the East and South side. Where currently nature is located, but which will contain built environment in the near future.

To conclude, should the isolated setting of the site within the city and surroundings be tackled. In order to do so should the only connection with the surrounding neighbourhood be emphasised and should the built environment on the site open up for a better implementation of future expansions in the East and South.



Map by author



FUNCTIONS



FUNCTIONS: OVERVIEW | 1 : 20.000



Original map by: J. Weber (2022), edited by author

Conclusion

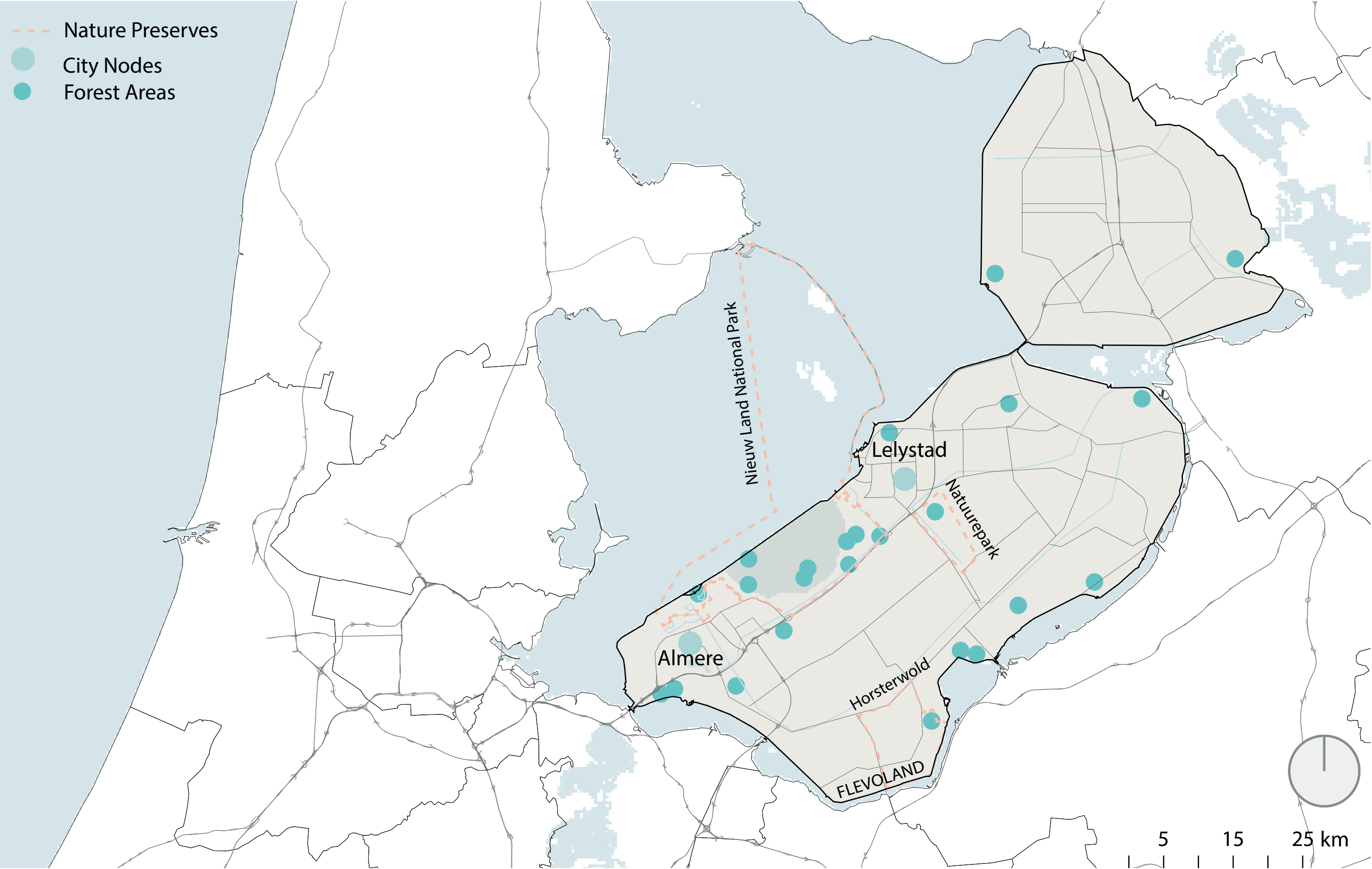
It is clear to see that there is a lack of functions surrounding the site, apart from the supermarket, primary school, and healthcare centre at the social heart. For elderly, or people with early stages of dementia, it is important that all of these are within walking distance. However, mainly for leisure is this currently missing where all of it is located outside of the 1.25 km zone. This definitely shows that some of it needs to be implemented within the design site to fulfill the needs of this targetgroup.



NATURE



NATURE: PARKS ON REGIONAL SCALE | 1 : 500.000



Original map by: A. Sykiotis (2022), edited by author

NATURE: WALKING TRAILS IN LELYSTAD | 1 : 30.000



Original map by: A. Sykiotis (2022), edited by author

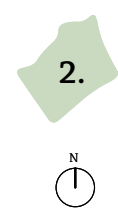
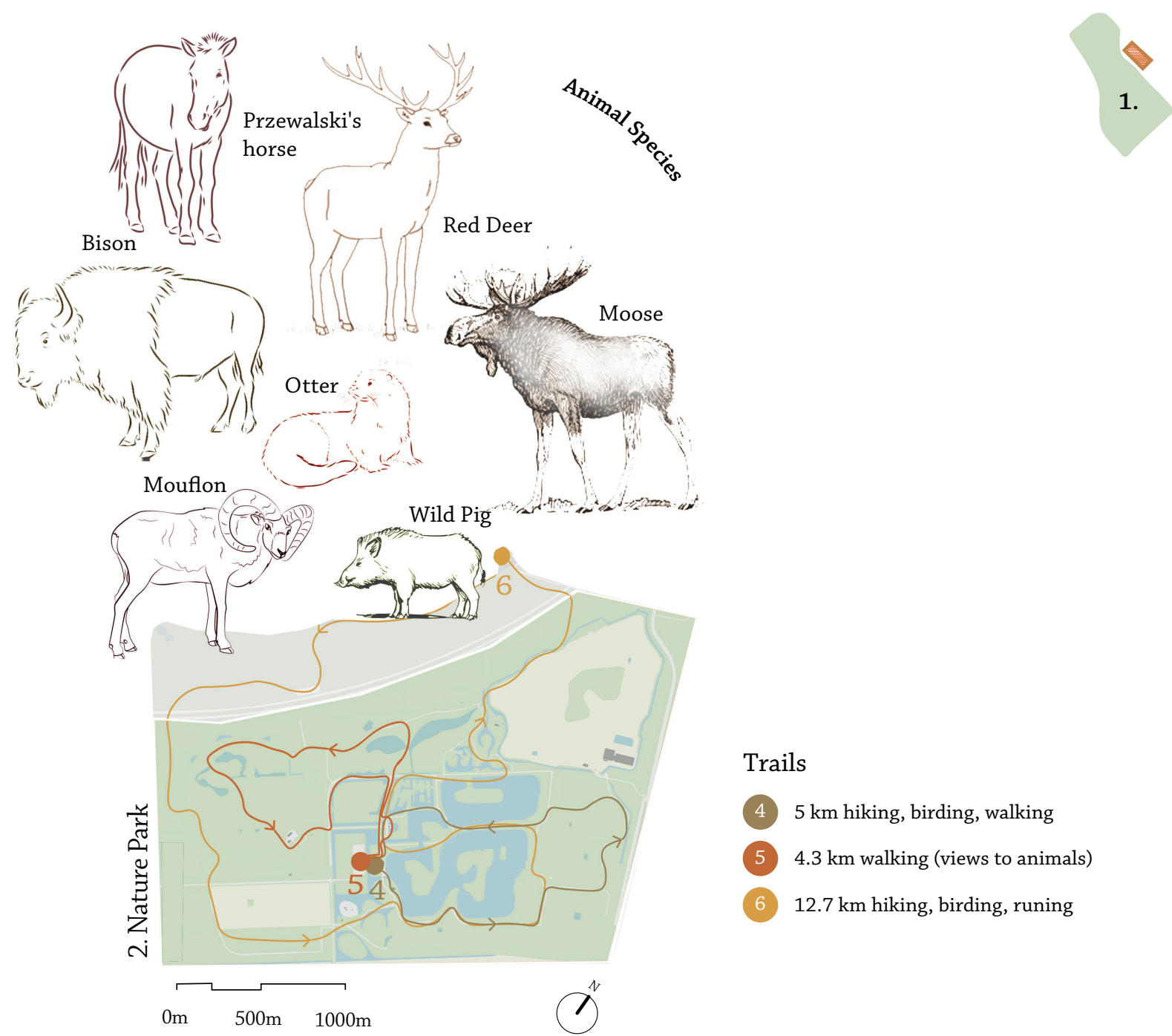
NATURE: FLORA AND FAUNA ON WALKING TRAILS



Tree Species



NATURE: FLORA AND FAUNA ON WALKING TRAILS



Tree Species



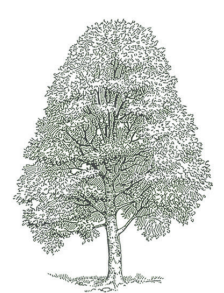
Alder



Willow



Poplar



Beech



Oak

NATURE: ACCESSIBILITY | 1 : 5000



Map by author

Conclusion

Even though that the site is closely located to national nature parks, is the direct accessibility to it not easy. Especially for elderly, or people in general, who are less mobile. Also visible with the included picture, showing that the larger nature environments aren't accessible or of less quality.

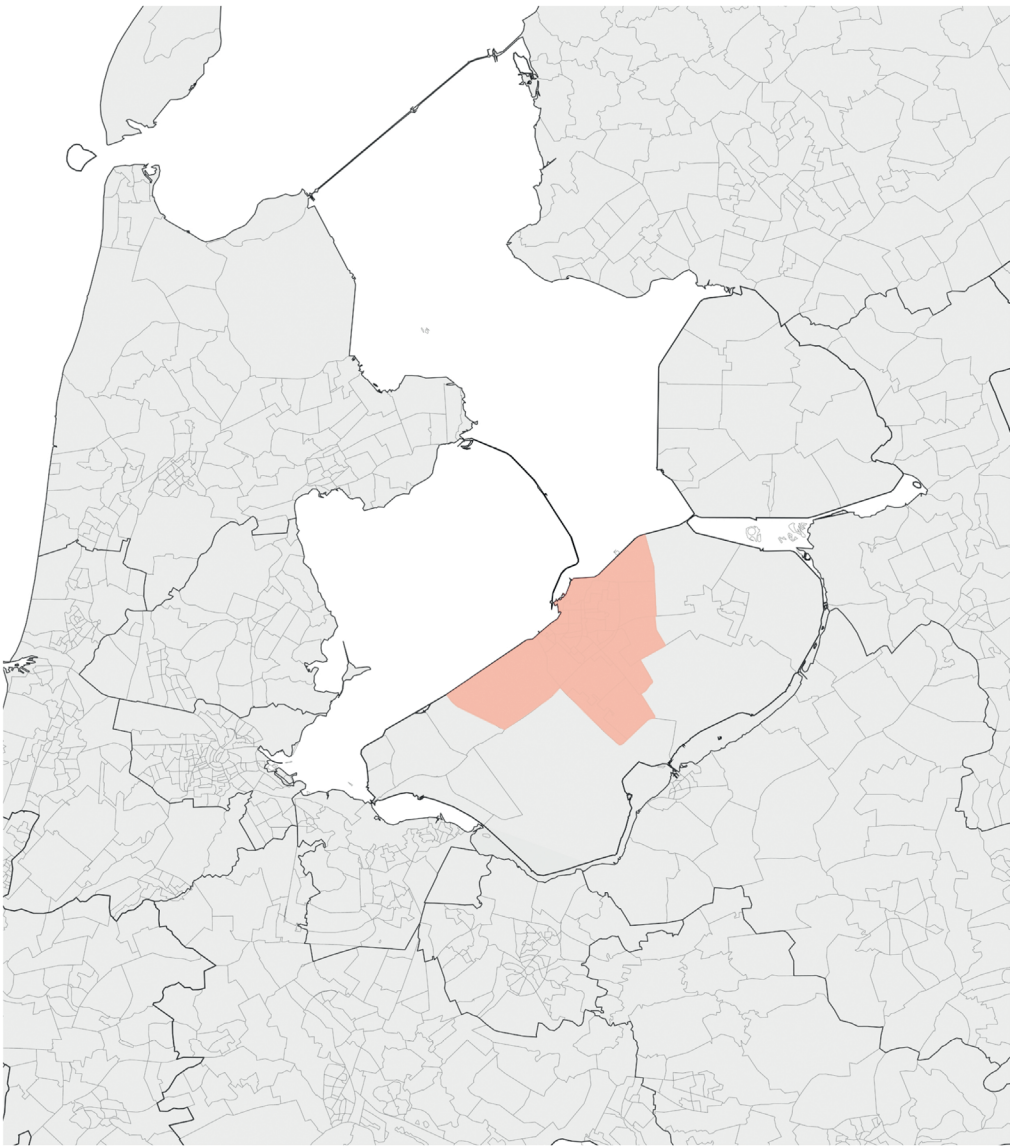
Due to this fact, the site itself should also provide nature to those who are less mobile. Also should this be of higher quality than the nearby park in picture 3. Especially for people with dementia, who are more bound to the neighbourhood itself with less opportunities to regularly visit the national nature parks.



DEMOGRAPHICS

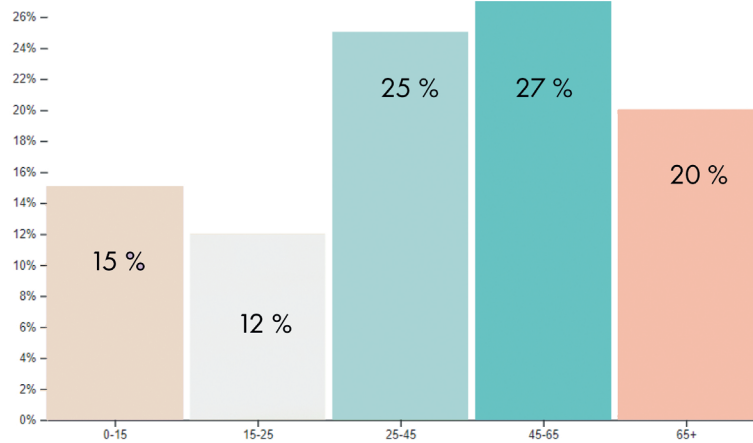


DEMOGRAPHICS: LELYSTAD

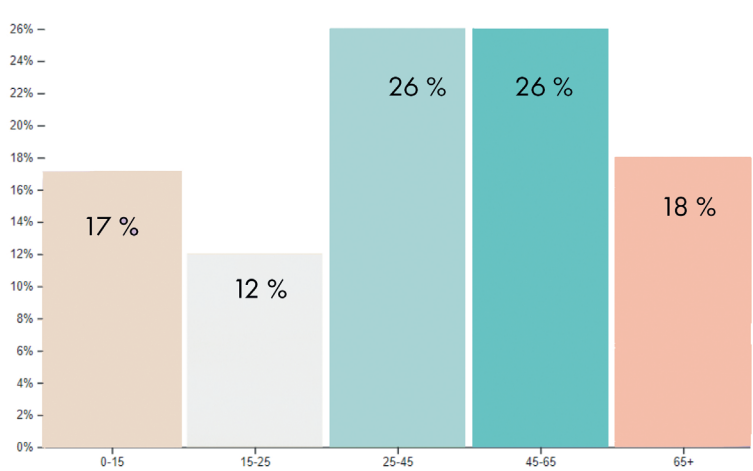


Age Groups

The Netherlands

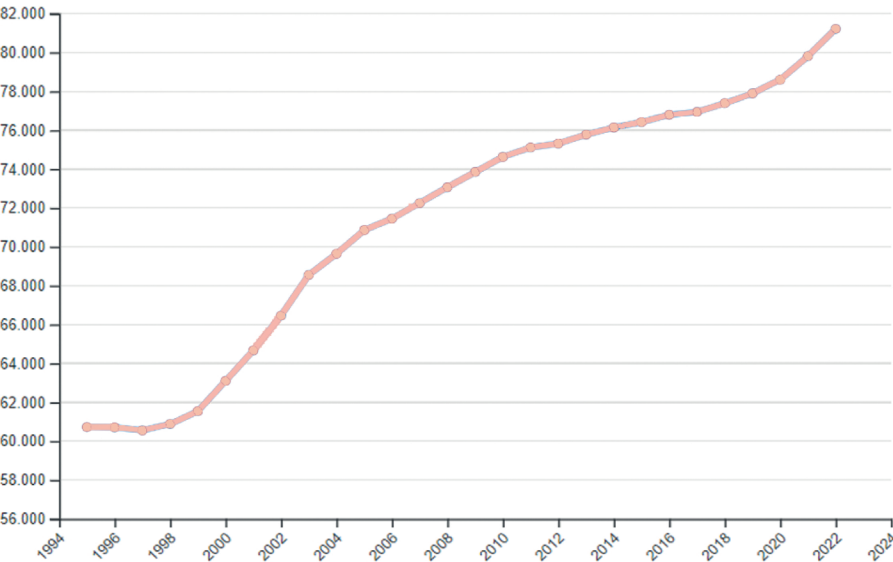


Lelystad



Population numbers per year

Current Lelystad Population: 81.214
Current Warande Population: 3.255



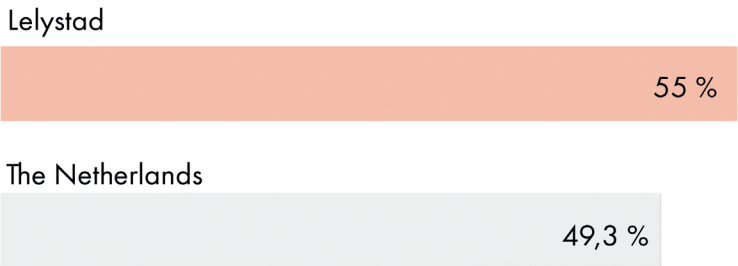
Inhabitants with welfare benefits

Per 10.000 inhabitants

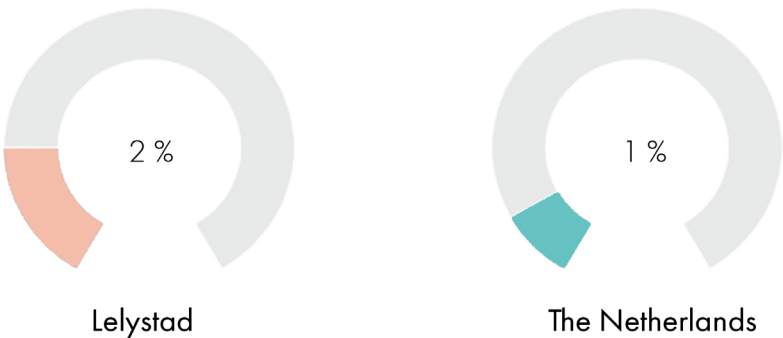


Non-athletes

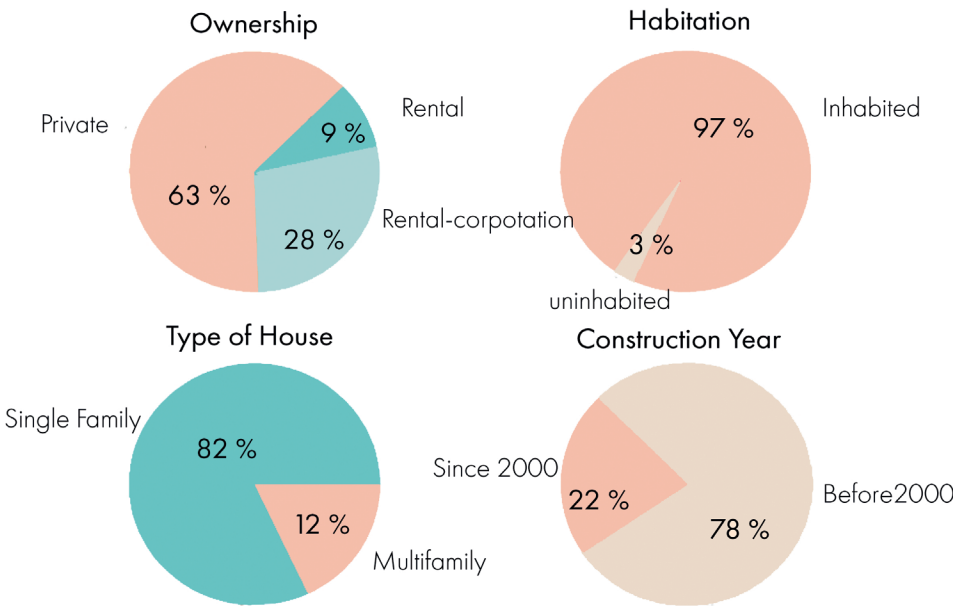
Inhabitants that doesn't exercise at least once a week



Juveniles with Crime



Dwelling Characteristics

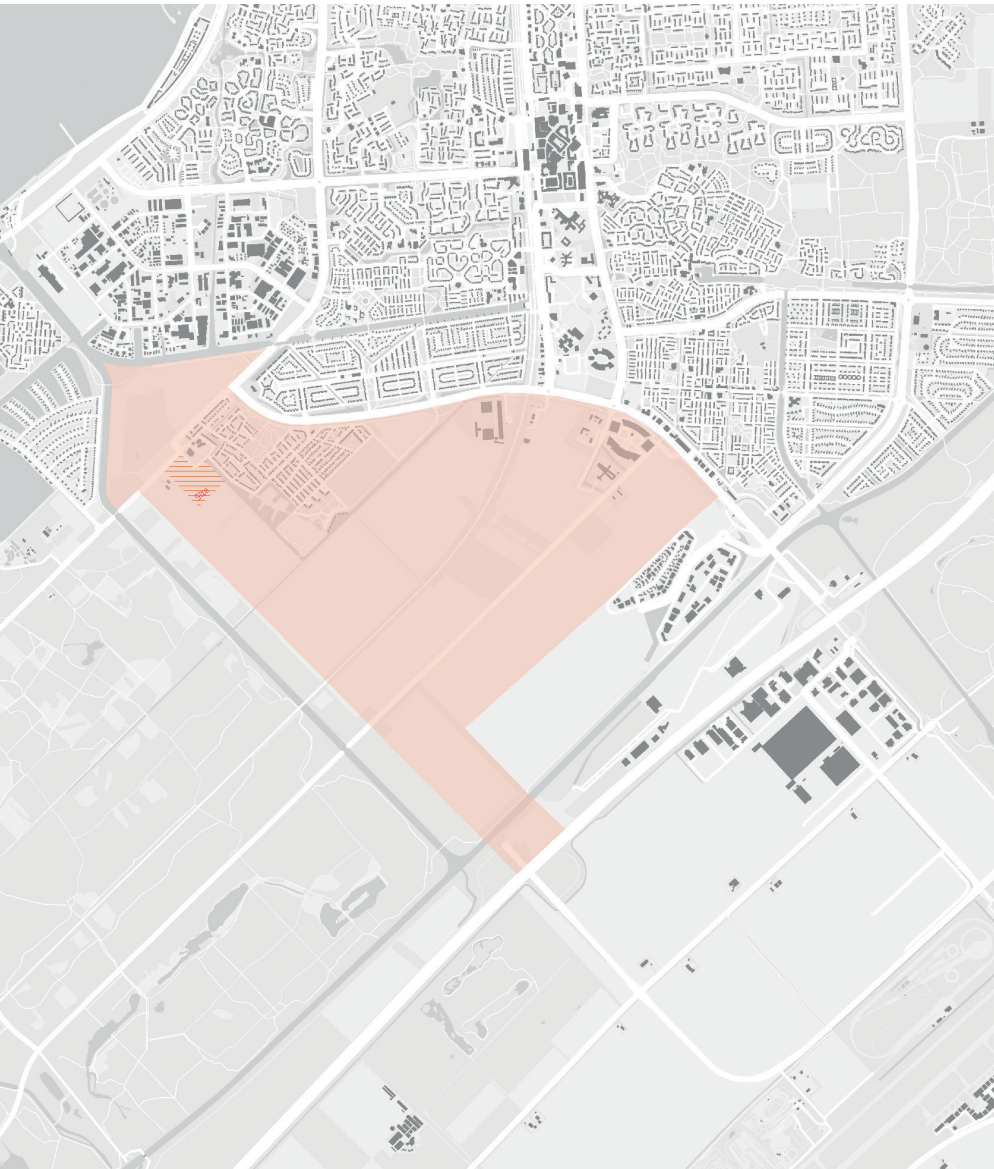


Sources (2022): Allecijfers.nl, lelystad.incijfers.nl

Lelystad

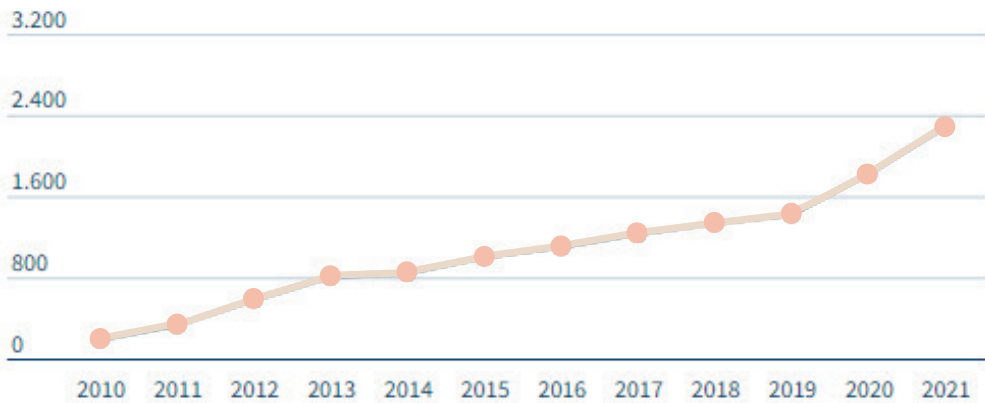
Original map by: R. Gurkan Saul (2022), edited by author

DEMOGRAPHICS: WARANDE



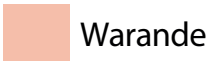
Population numbers per year

Current Lelystad Population: 81.214
Current Warande Population: 3.255

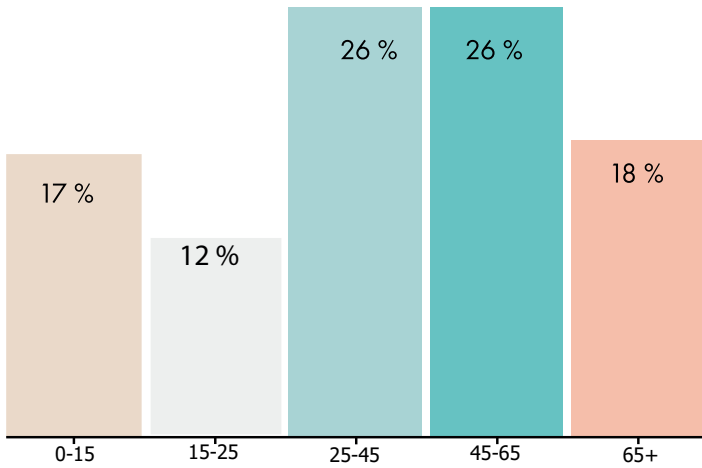


Sources (2022): Allecijfers.nl, lelystad.incijfers.nl

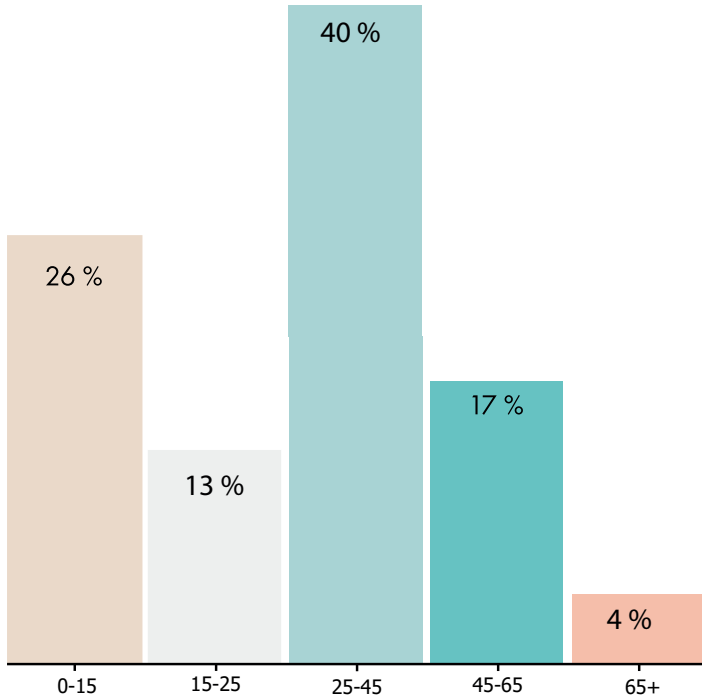
Graphics by author



Age Groups Lelystad



Warande



65+ population



Conclusion

There is a big gap showing, between 65+ population in general in the Netherlands, and the current percentage present within Warande. This big difference can be explained due to relative young age, and its overall image which is more aimed at young families/starters. However, for the neighbourhood itself would it be beneficial if it could provide ways to support a wider group of users for its longevity. Thus, for the future built environment is it important to provide the right living environments, not only to support people with dementia but also for elderly in general.

The current majority in the neighbourhood is (young) parents or starters between 25-45, with or without young children. Due to this is it important for the neighbourhood to provide facilities in order to facilitate this group in the right way. Furthermore, to create a well balanced mix between starters/young adults with children and elderly with/without dementia.

SURROUNDING ARCHITECTURE



SURROUNDING ARCHITECTURE: FACADE TYPES | 1 : 5000



Original map by: J. Weber (2022), edited by author

SURROUNDING ARCHITECTURE: WARANDE



facade type 1



facade type 2

Original map by: J. Weber (2022), edited by author



facade type 3

Conclusion

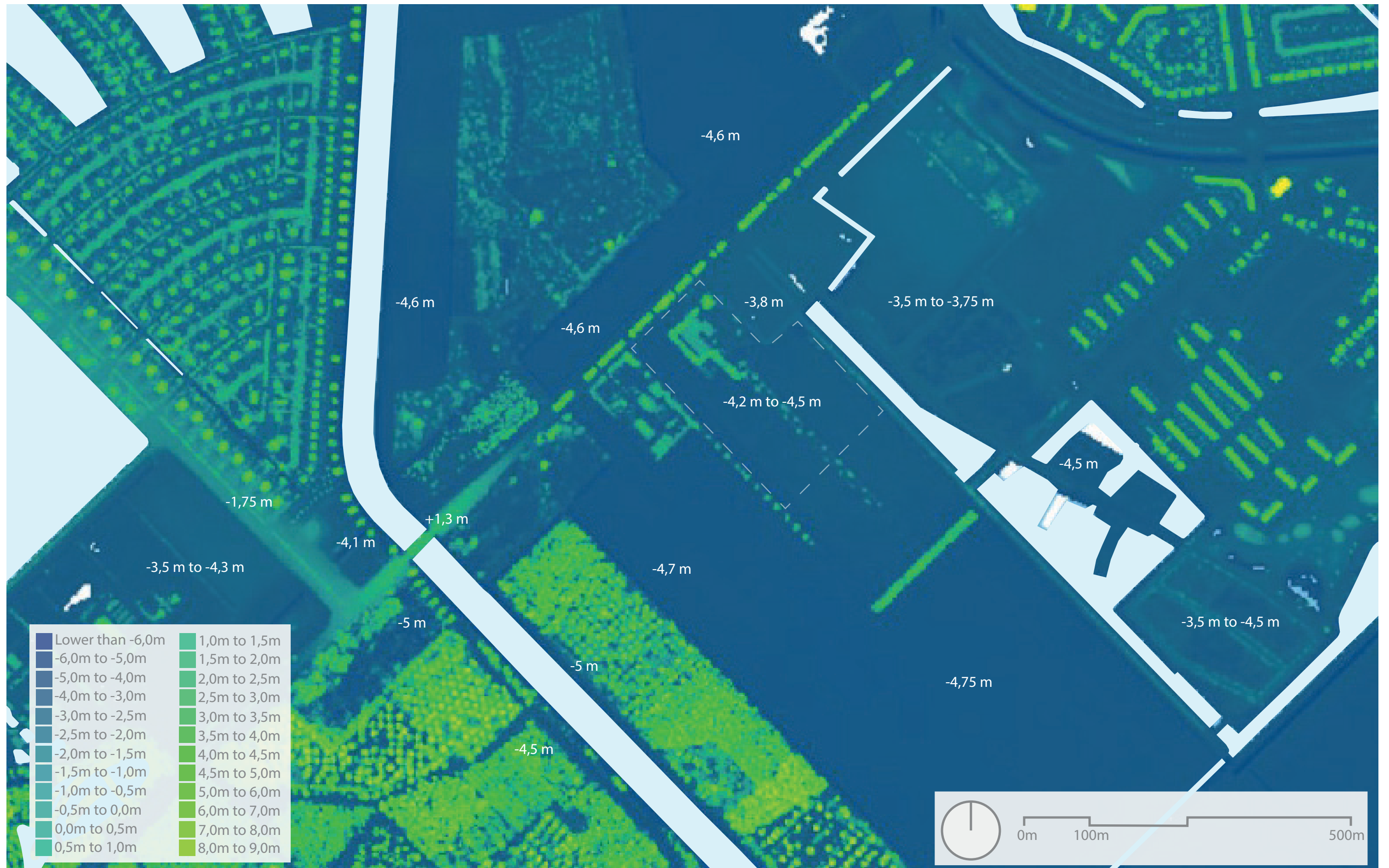
Within the surroundings and Warande in general, one facade materialization is utilized the most: bricks. In Warande is this often combined with playful colours to make a distinction. For the site might it be usefull to also utilize brick as one of the facade materials to create a connection with the surroundings.



GEOMORPHICAL CONDITIONS

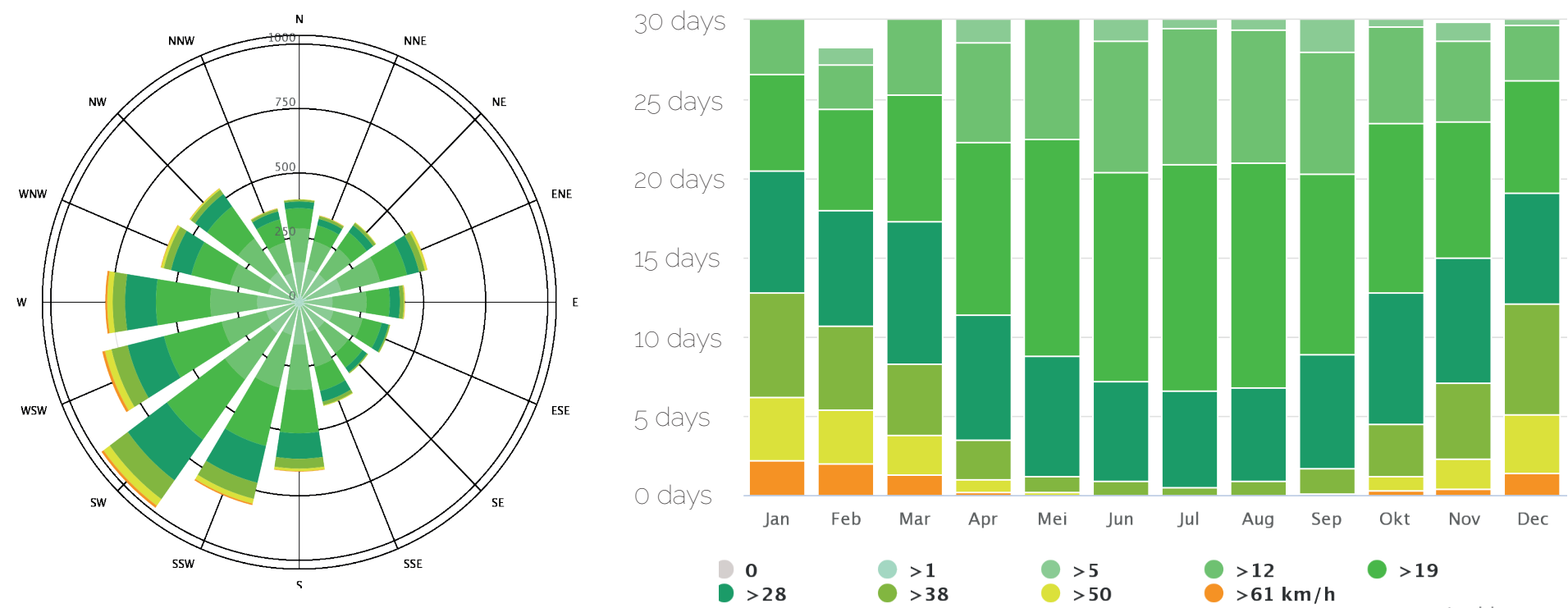


GEOMORPHICAL CONDITIONS: SEA LEVEL | 1 : 5000



Map by author, source: Actueel Hoogtebestand Nederland, <https://ahn.arcgisonline.nl/ahnviewer/>

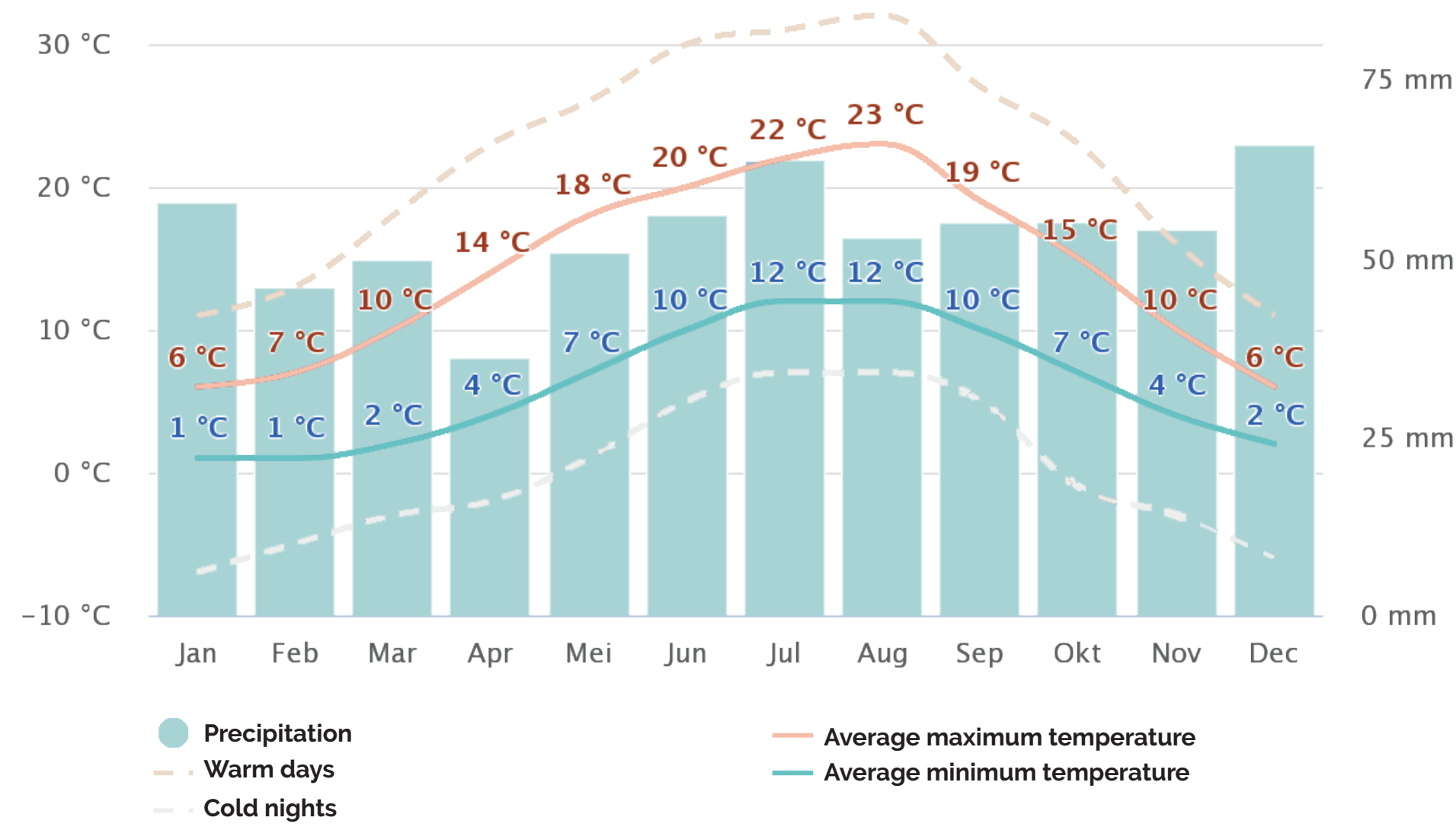
GEOMORPHICAL CONDITIONS: WEATHER



Conclusion

Wind will mostly blow from a South-West angle, due to the flat surroundings this could have an impact on the site. During the site visit this was already quite relevant and noticeable. The future built environment should take this in consideration, perhaps actively trying to reduce this within the neighbourhood. Furthermore, will there also be a consistent amount of precipitation throughout the year. This could be utilized in multiple ways within the neighbourhood, e.g. a watersquare combined with a playground, the capture and re-use of rainwater, etc.

At last, is it also a known fact that the site itself is 4.2-4.5 m below sea level. It might be useful to look into ways to strengthen the ground floor to make it flood resistant.

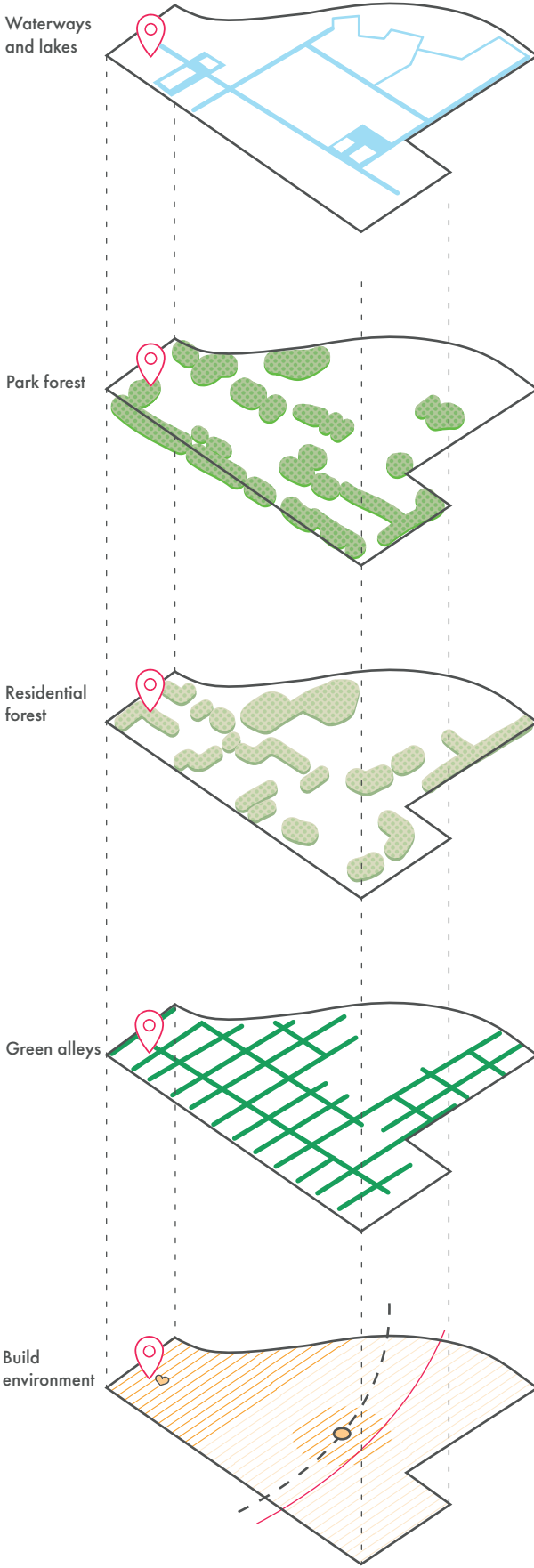


Source: MeteoBlue, https://www.meteoblue.com/nl/weer/historyclimate/climatemodelled/lelystad_nederland_2751738

LELYSTAD 2040 VISION



LELYSTAD 2040 VISION: OVERVIEW | 1 : 30.000



Original map by: N. De Vette (2022)

CURRENT MASTERPLAN



CURRENT MASTERPLAN: CITTANOVA CONCEPT



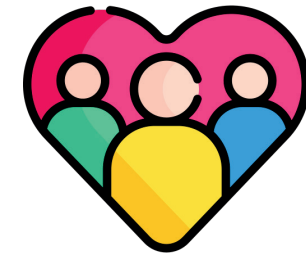
Independent Living

- For the elderly
- For people with disabilities
- Ground-level infrastructure
- Help when it is needed



Togetherness

- Joint responsibility for public areas
- Working together in the garden
- Getting together in the Stadshoeve
- Common shared spaces
- Meeting spaces
- Help from and for your neighbors



Community

- Caring for each other
- Looking out for each other
- Together for each other
- Small-scale living
- Mixed target groups



Housing & Care

- Daytime activities
- Social inclusion
- Care for each other
- Care when needed
- Assisted living



Positive Health

- Belonging somewhere
- Access to nature
- Balanced living environment
- Spontaneous encounters
- Stimulating daily movement



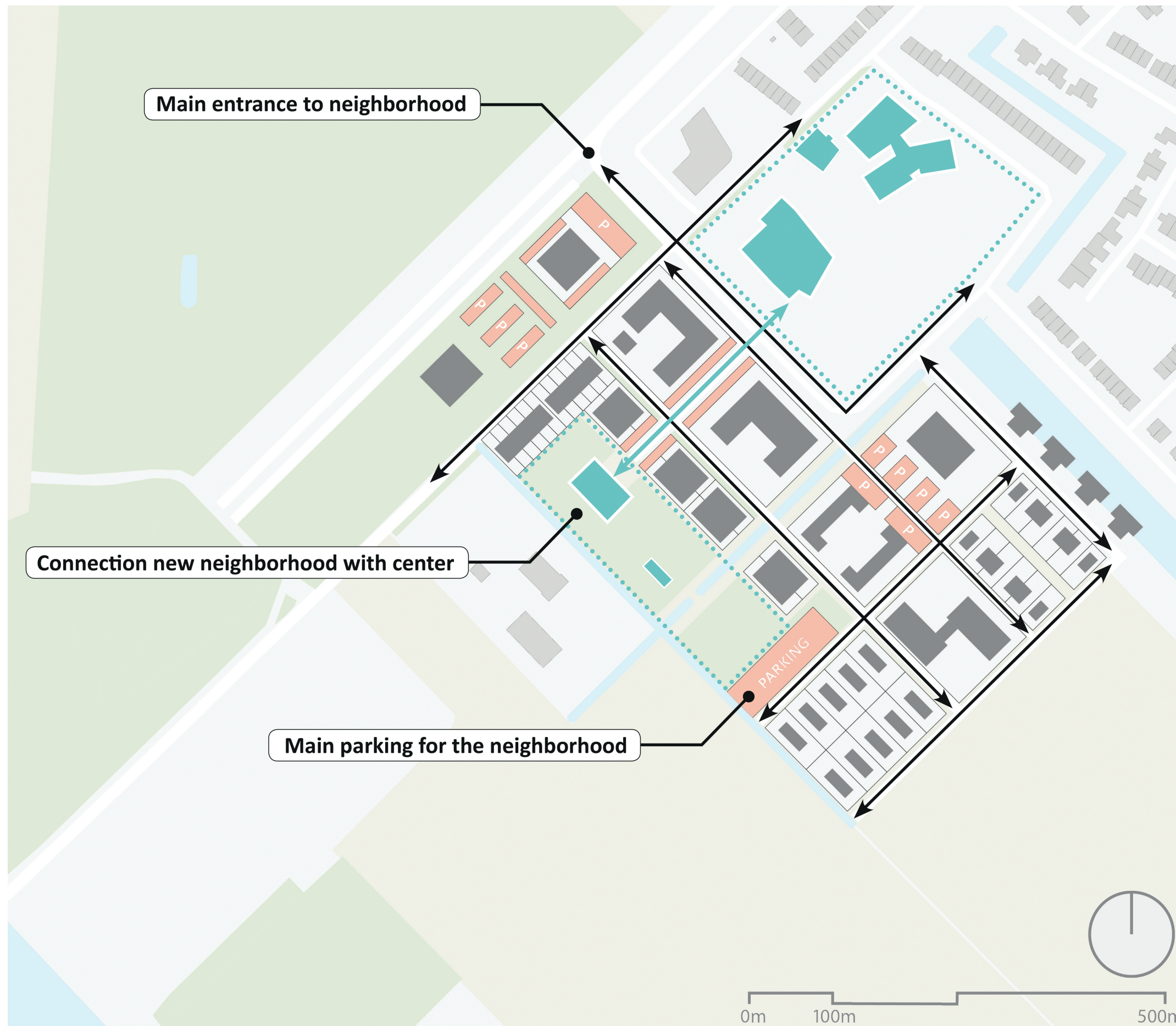
Green

- Green environment
- Sustainable buildings (CLT)
- Future proof building
- Rainwater collection
- Urban farming
- Nature inclusive

CURRENT MASTERPLAN: OVERVIEW | 1 : 2500



CURRENT MASTERPLAN: INFRASTRUCTURE | 1 : 2500



Conclusion

The straight main road connecting the neighbourhood centre with the social heart seems logical and needed. Alongside, is the idea to keep the neighbourhood car-free well thought out. Not only for the green environment, but also as a trigger for people to be mobile and possibly as social facilitator.

However, the rest of the infrastructure is really rigid and due to that not really fitting for the 'living in nature' atmosphere. The current infrastructure could also create a lot of confusion and anxiety for people with dementia and due to that it has to be altered.

CURRENT MASTERPLAN: ZONING OVERVIEW | 1 : 2500



CURRENT MASTERPLAN: LOW-RISE ZONE | 1 : 2500



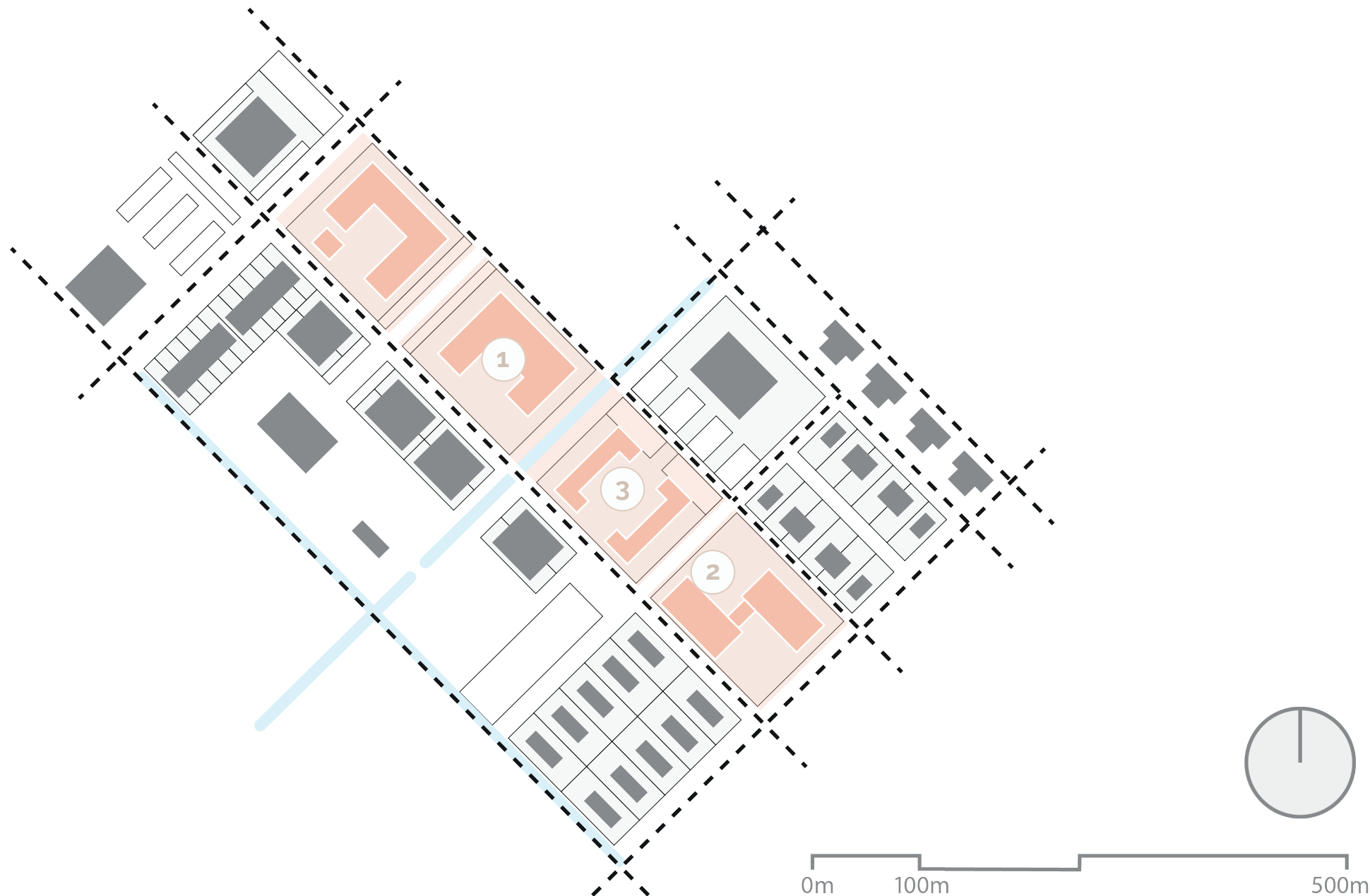
Freestanding ground-level housing,
1 story with a large pointed roof.

Row houses,
1-2 stories with pitched roof.

2 under 1 roof,
1-2 stories with pitched roof.



CURRENT MASTERPLAN: SPECIAL TYPOLOGY ZONE | 1 : 2500



Residential care apartments,
2 stories (45 dwellings)



Residential care apartments,
3 stories (45 dwellings).

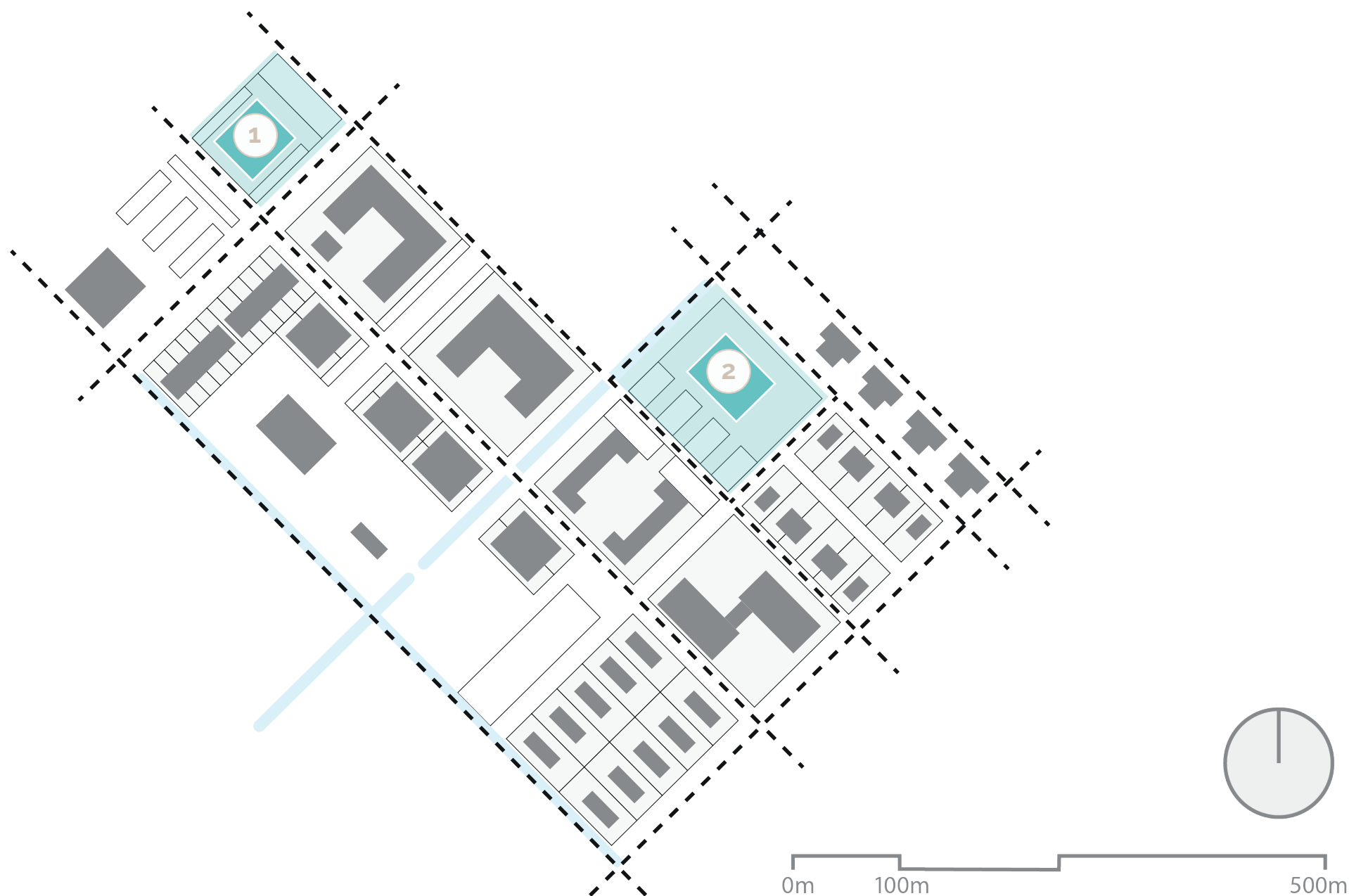


Ground-level courtyard housing,
2 stories with pitched roof.



Original map by: D. Van der Waart (2022), edited by author

CURRENT MASTERPLAN: ACCENT MARK ZONE | 1 : 2500



Residential tower,
14 stories.

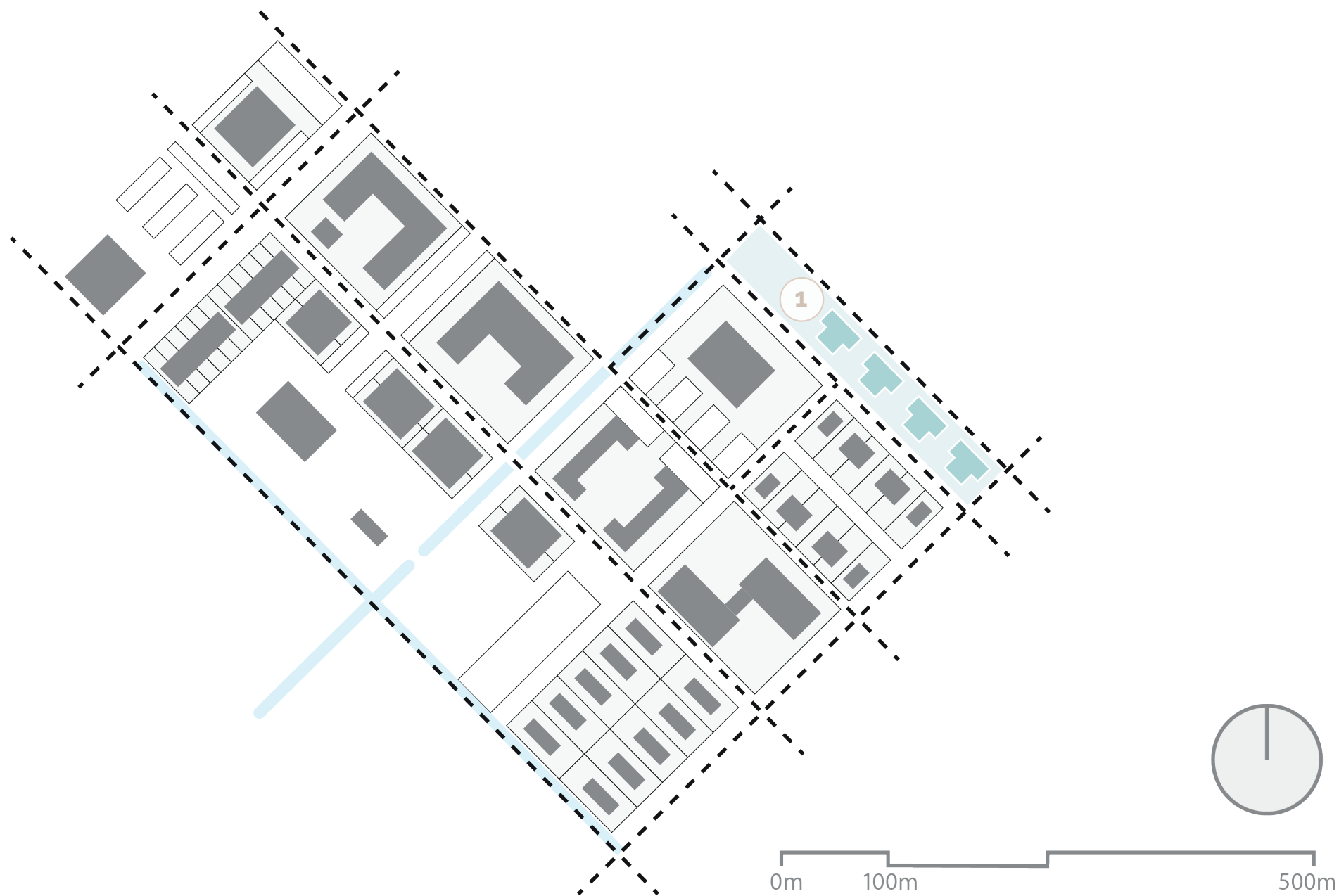
Residential tower,
7 stories.

Residential tower,
7 stories.



Original map by: D. Van der Waart (2022), edited by author

CURRENT MASTERPLAN: WATER LIVING ZONE | 1 : 2500



Conclusion

Within the Northern part of the site, 4 waterfront apartments are situated along the water barrier. Furthermore, have the accent marks been located alongside the social heart of the neighbourhood. The special typology zone is located within a straight line within the centre of the site, while the low-rise zone is located near the edges of the site along the current nature. In this way the height of the buildings slowly decreases in a steady fashion. The higher buildings are along the social heart to give it an urban feel, while the heights slowly decrease towards the nature.

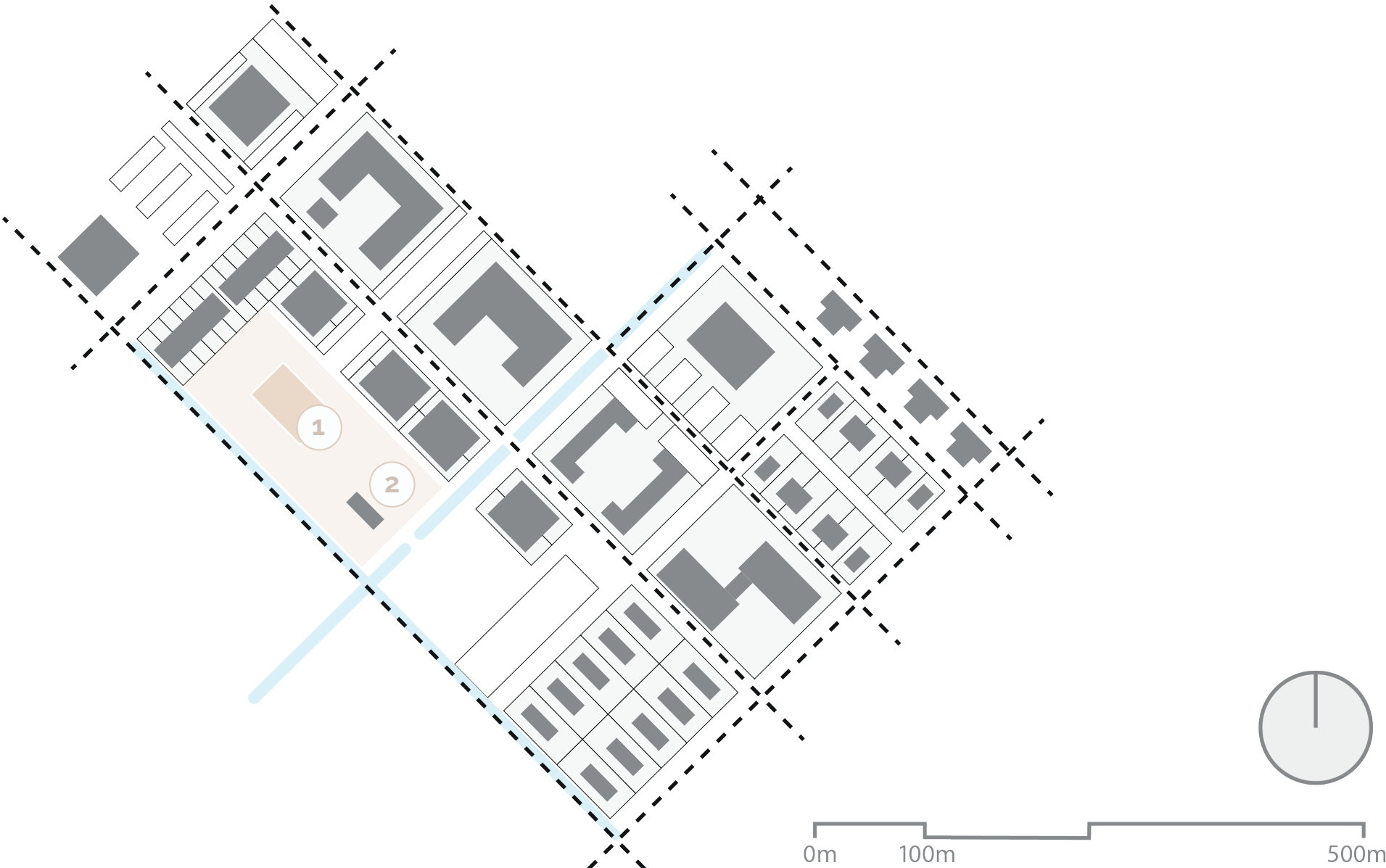
Even though that the previously mentioned points are quite clear and logical. Is it questionable if this many different zonings have to be implemented within such a small site. This could cause confusion for people with dementia.

Waterfront apartments,
3 stories (5 dwellings)



Original map by: D. Van der Waart (2022), edited by author

CURRENT MASTERPLAN: THE STADSHOEVE | 1 : 2500



Conclusion

The Stadshoeve community centre takes a central role within the urban master plan, aligned with the existing social heart. Its multifunctional use and location seems logical and well thought out. However, its connection with the Eastern part of the site seems limited. It could be beneficial to see in which ways this connection could be improved, in order for the community centre to be utilized by the whole neighbourhood.

The Stadshoeve serves as a central meeting place and is connected to the existing infrastructure.

The Stadshoeve is accessible for everyone and offers daytime activities, space rental and an organic store.

- Access to nature
- Animal farm
- Urban farming



SWOT ANALYSIS



SWOT ANALYSIS: WARANDE SUMMARY



STRENGTHS

- Situated nearby a national nature reserve
- Social heart with supermarket, primary school and healthcare facility
- The Stadshoeve as a central meeting spot and place for day care
- Vision from the municipality shows strong connections with the research
- Parking spots on fixed positions near the edge of the site to encourage daily movement and possible ways to interact with other residents

WEAKNESSES



- Apart from the social heart no strong connections with the surrounding neighbourhoods, making the site quite isolated
 - The greenery is currently not really accessible
 - Only one way of public transport to the city centre
- No strong implementation of wayfinding within the masterplan, divergence between types of roads etc.
- The road system in the masterplan is very rigid and perpendicular, not really suiting this 'living amongst nature' organic feeling and not providing ways for people with dementia a possibility to simply wander around

SWOT

Waranda design site and
Cittanova masterplan

- Implementation of the 'freedom feeling' within e.g. possible activities like a cafe, restaurant, etc.
- Implementation of more variation within the types of greenery
- Nearby retiring farm creates possibilities for farm based dementia day care
- Better implementation of water within the site, Lelystad is known for its playfulness with water heights
- Implementation of height differences to encourage movement and a healthy lifestyle
- Upgrading the Stadshoeve into a multifunctional space, surrounded by public greenery to maximize its potential
- Creating a view on nature from each dwelling

- The plot is 6 meters below sea-level
- The East part of the plot could feel isolated compared to the West where all the social functions are located
 - Dividing the plot in different zones with different styles could disturb the orientation and create confusion
- The masterplan is not interactive enough, providing not enough incentives
 - Lack of benches and public toilets creates a barrier for people with dementia to make use of the public space



OPPORTUNITIES

THREATS



DESIGN DRAWINGS



URBAN PLAN



URBAN PLAN: MASTER PLAN | 1 : 2.500



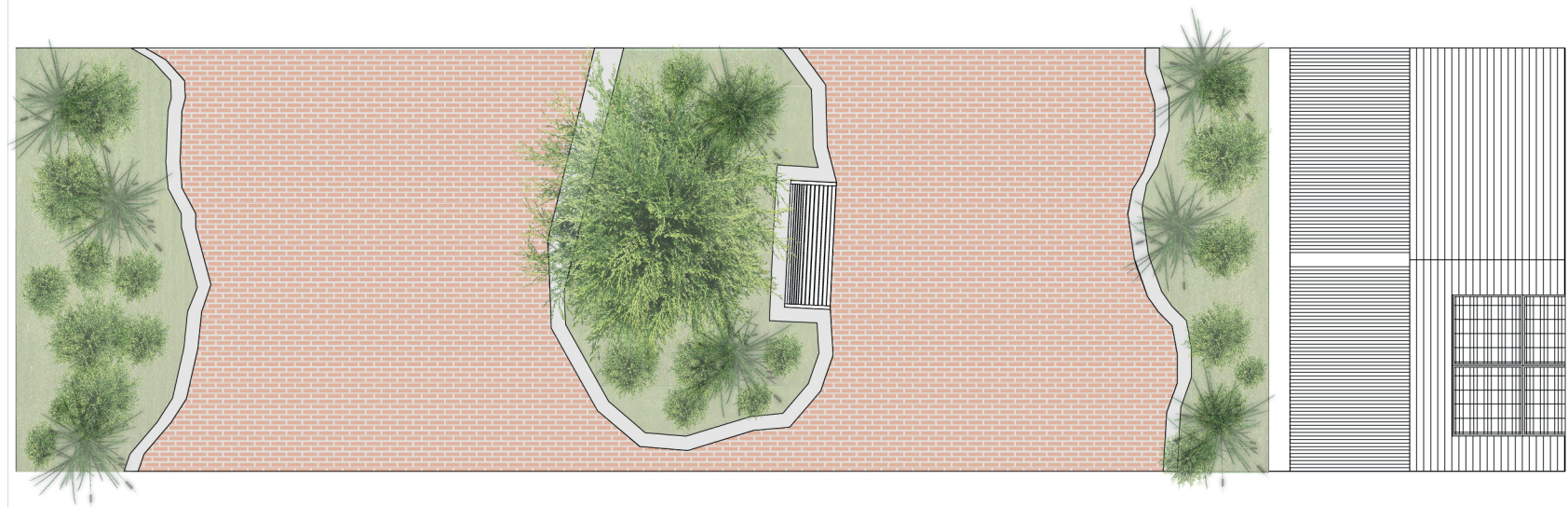
URBAN PLAN: URBAN PLAN & SECTIONS | 1 : 1.000



URBAN PLAN: STREET PROFILES - MAIN ROAD | 1 : 100



Street



URBAN PLAN: STREET PROFILES - SECONDARY ROAD | 1 : 100



Street profile | garden path



Path



Gardens

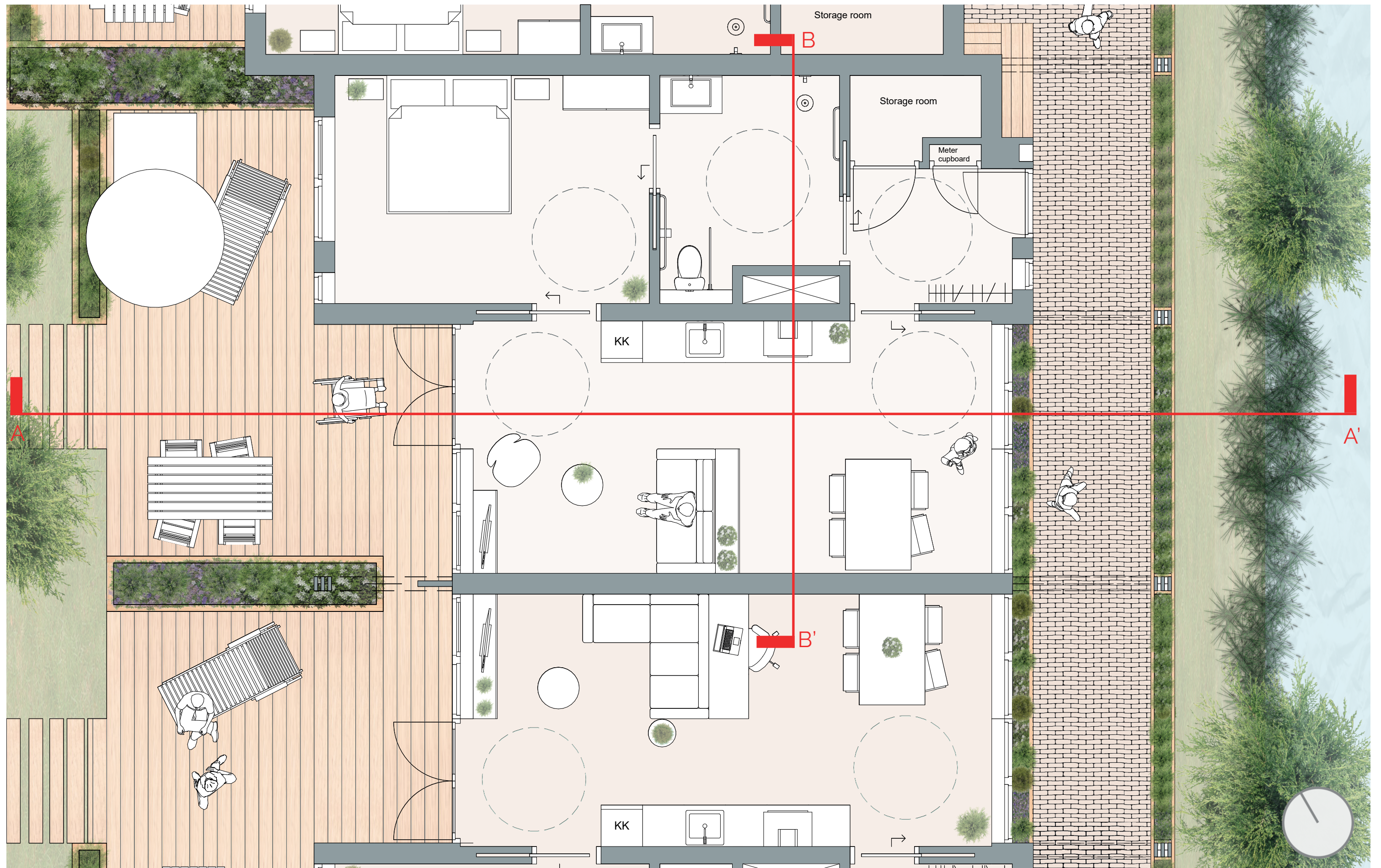


Top view | garden path

FLOOR PLANS



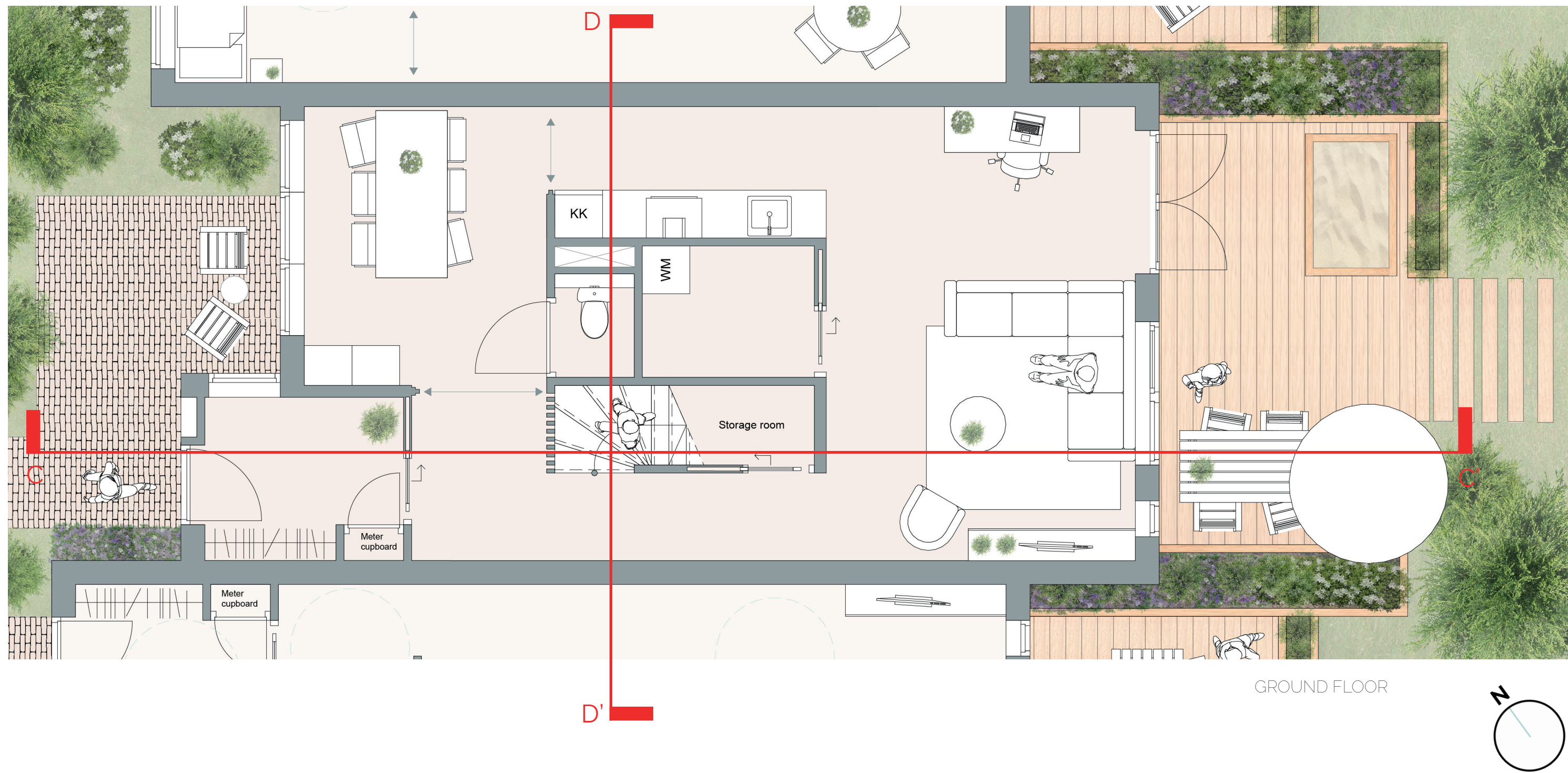
FLOOR PLANS: RESIDENTIAL CARE - GROUND FLOOR | 1 : 50



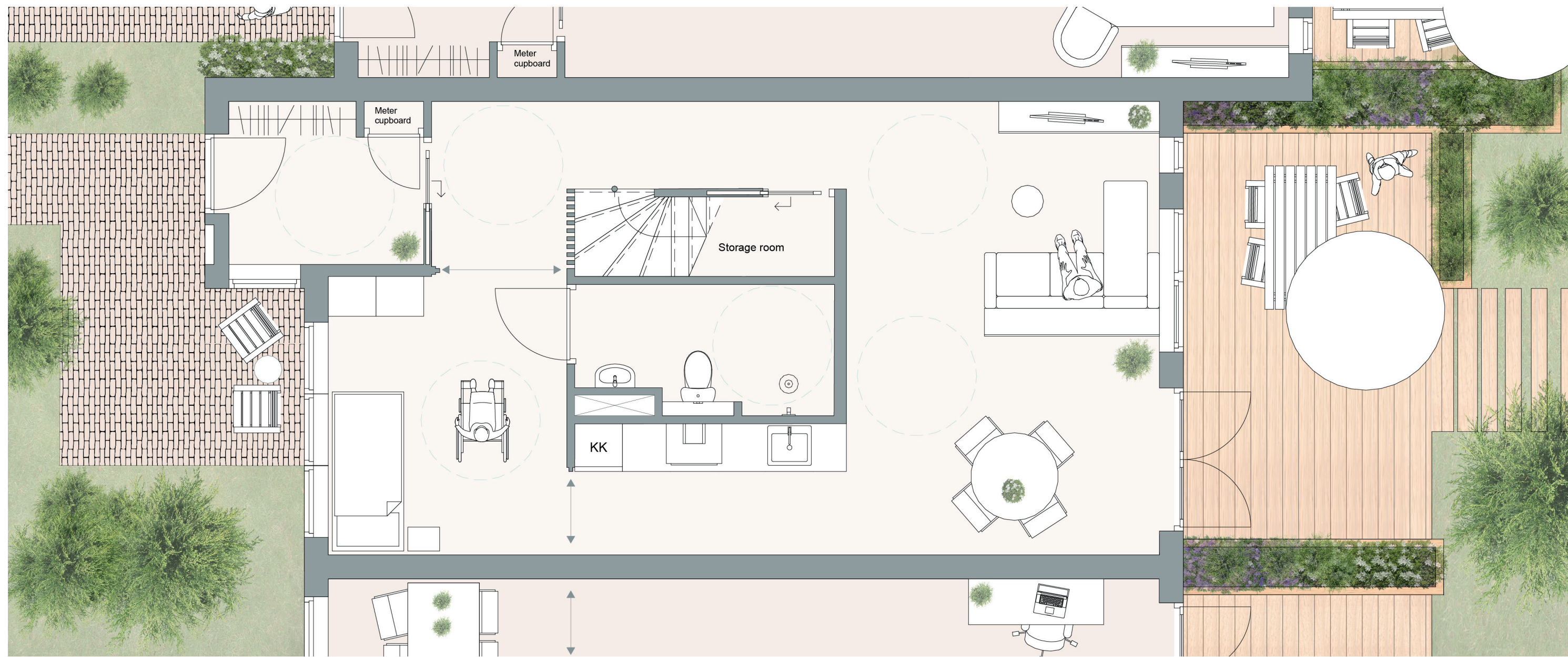
FLOOR PLANS: RESIDENTIAL CARE - FIRST FLOOR | 1 : 50



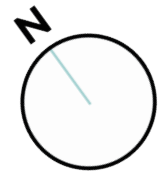
FLOOR PLANS: ROW HOUSES - FAMILY | 1 : 50



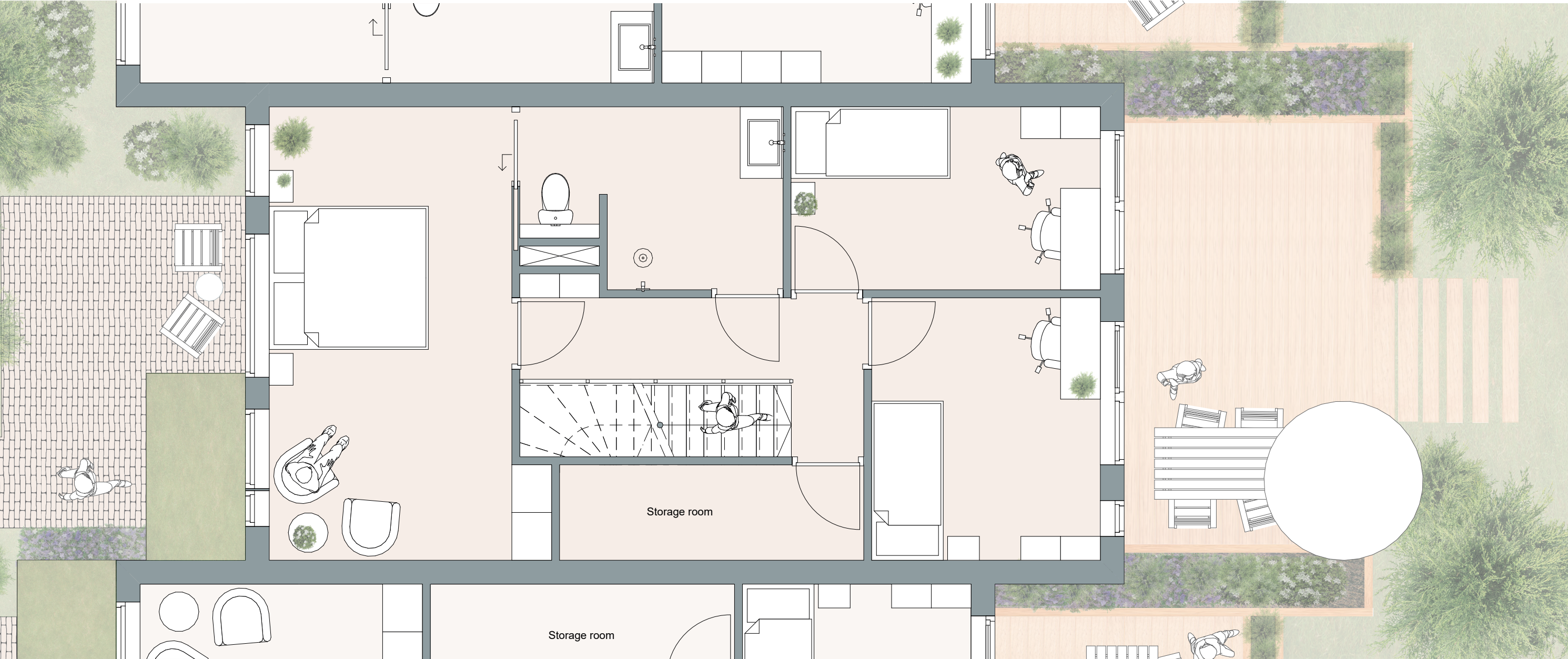
FLOOR PLANS: ROW HOUSES - ELDERLY | 1 : 50



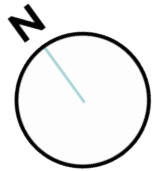
GROUND FLOOR



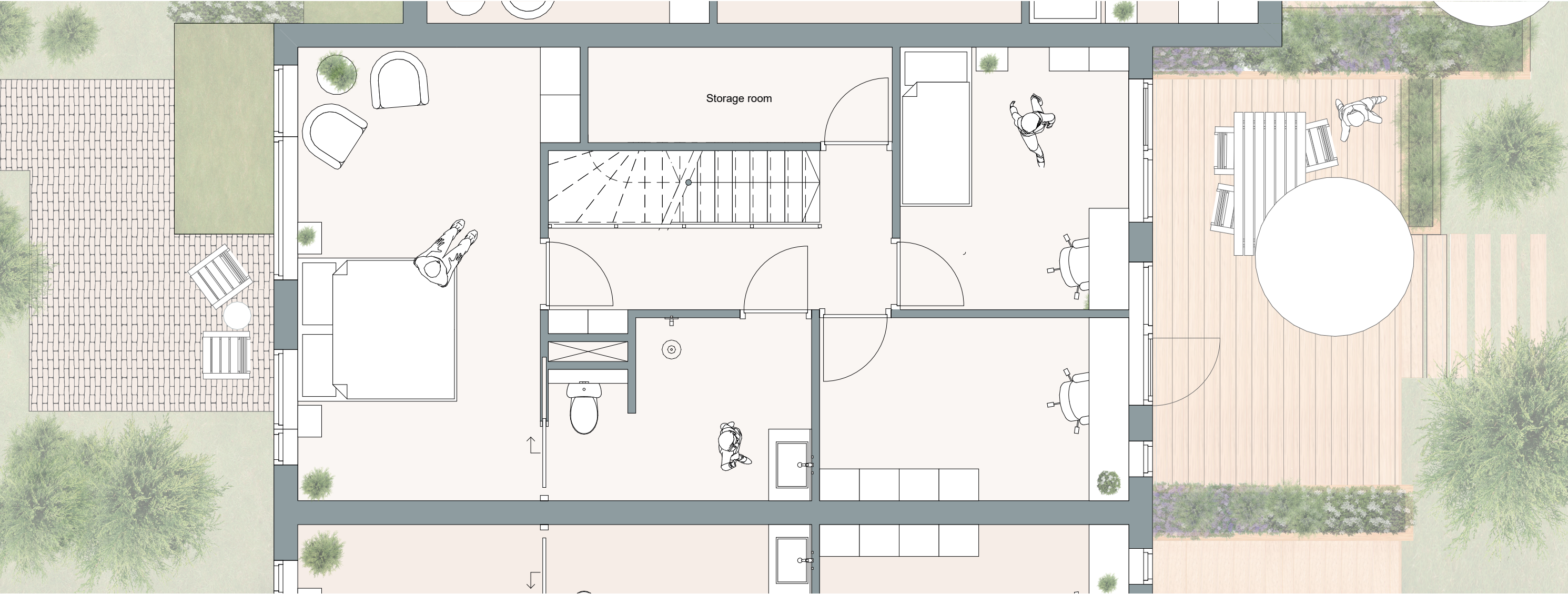
FLOOR PLANS: ROW HOUSES - FAMILY | 1 : 50



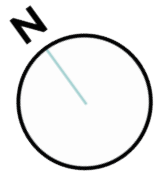
FIRST FLOOR



FLOOR PLANS: ROW HOUSES - ELDERLY | 1 : 50



FIRST FLOOR



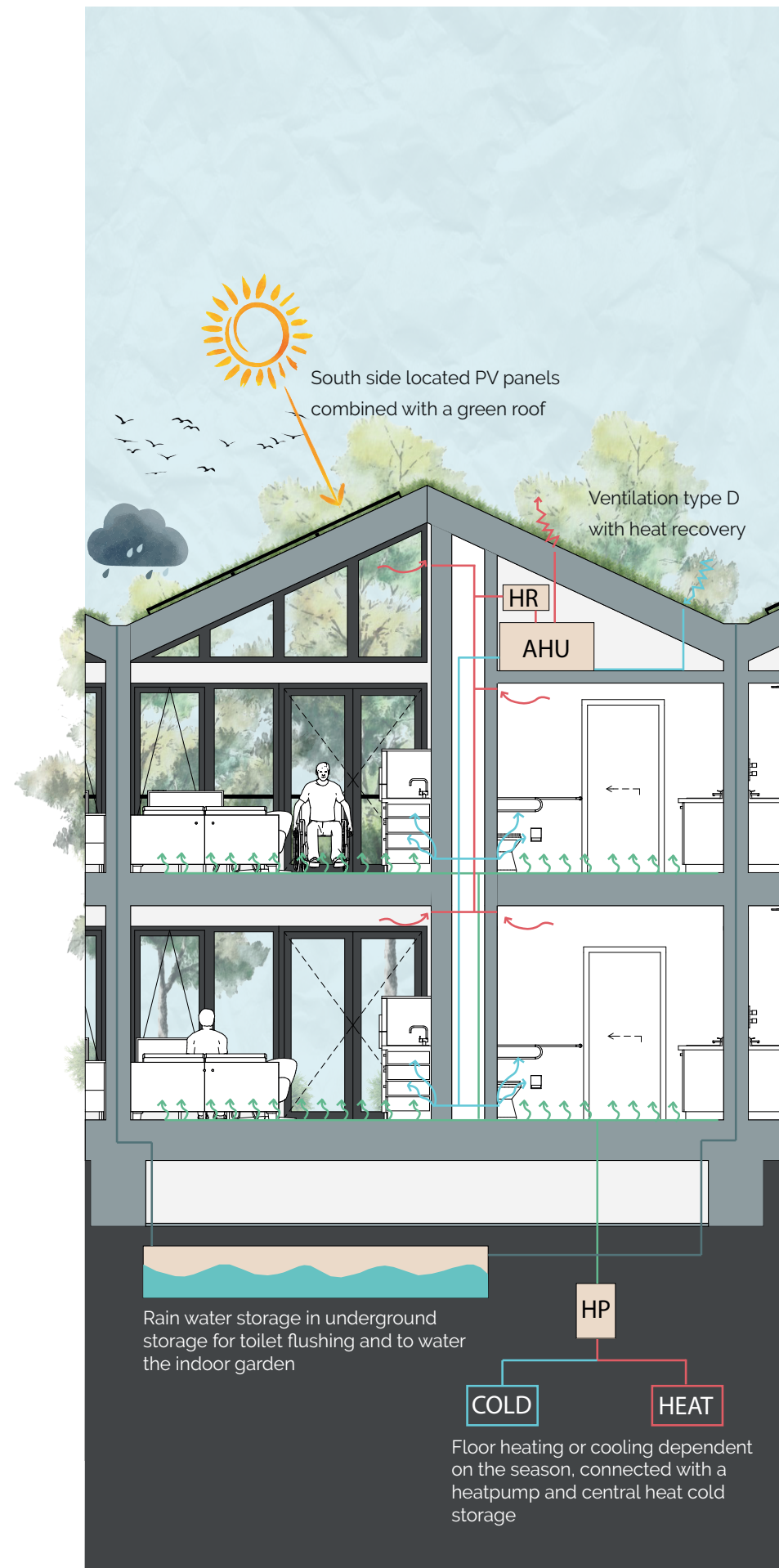
SECTIONS



RESIDENTIAL CARE: SECTION A-A' | 1 : 50



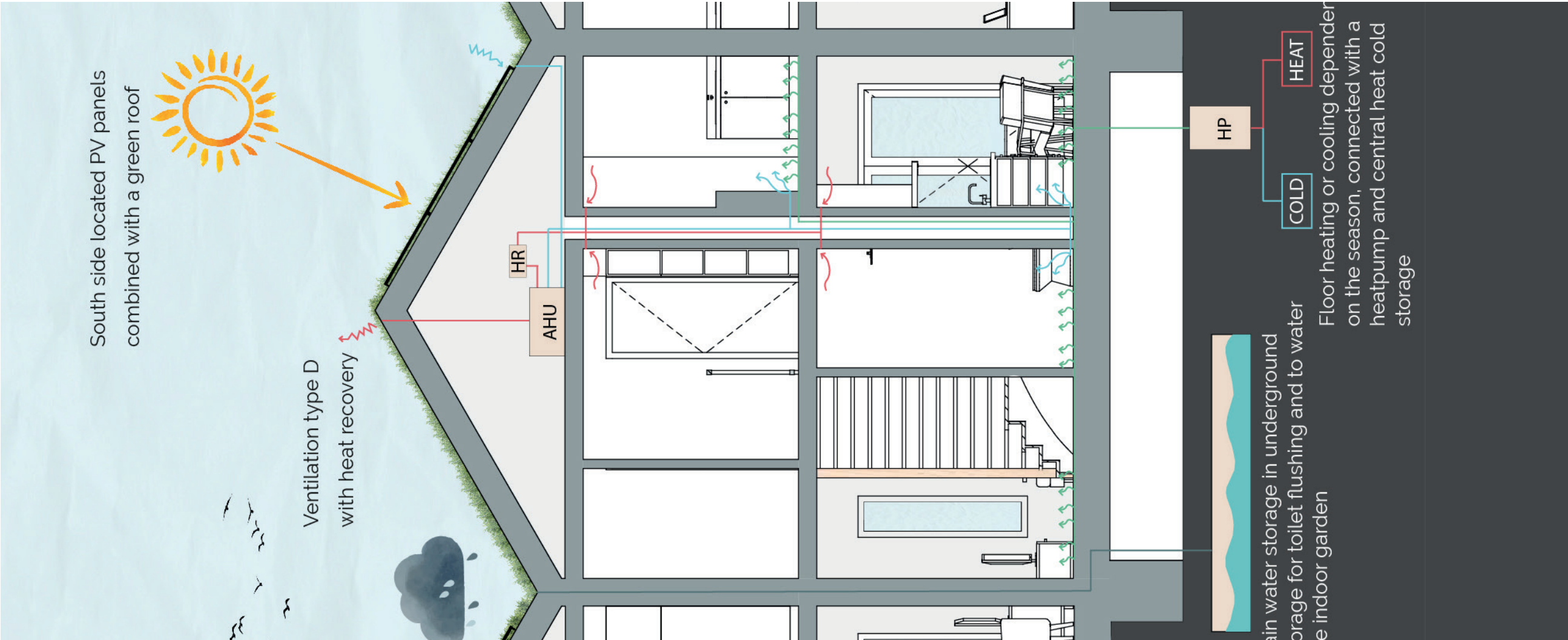
RESIDENTIAL CARE: SECTION B-B' & CLIMATE | 1 : 50 & 1 : 75



ROW HOUSES: SECTION C-C' | 1 : 50



ROW HOUSES: SECTION D-D' & CLIMATE SCHEME | 1 : 50



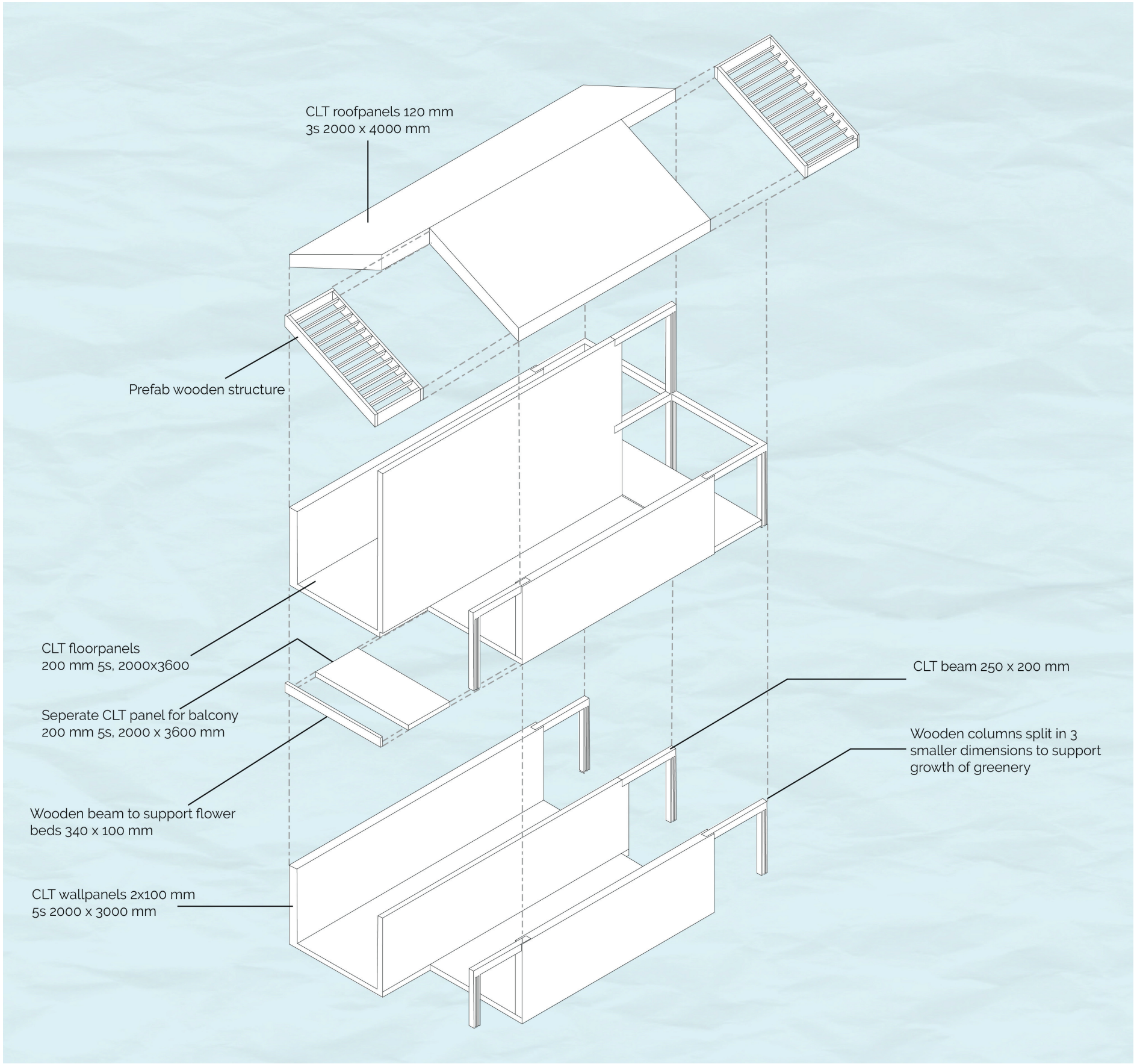
IMPRESSION: RESIDENTIAL CARE - GARDEN FACADE



STRUCTURE



SITE LOCATION: RESIDENTIAL CARE -STRUCTURE

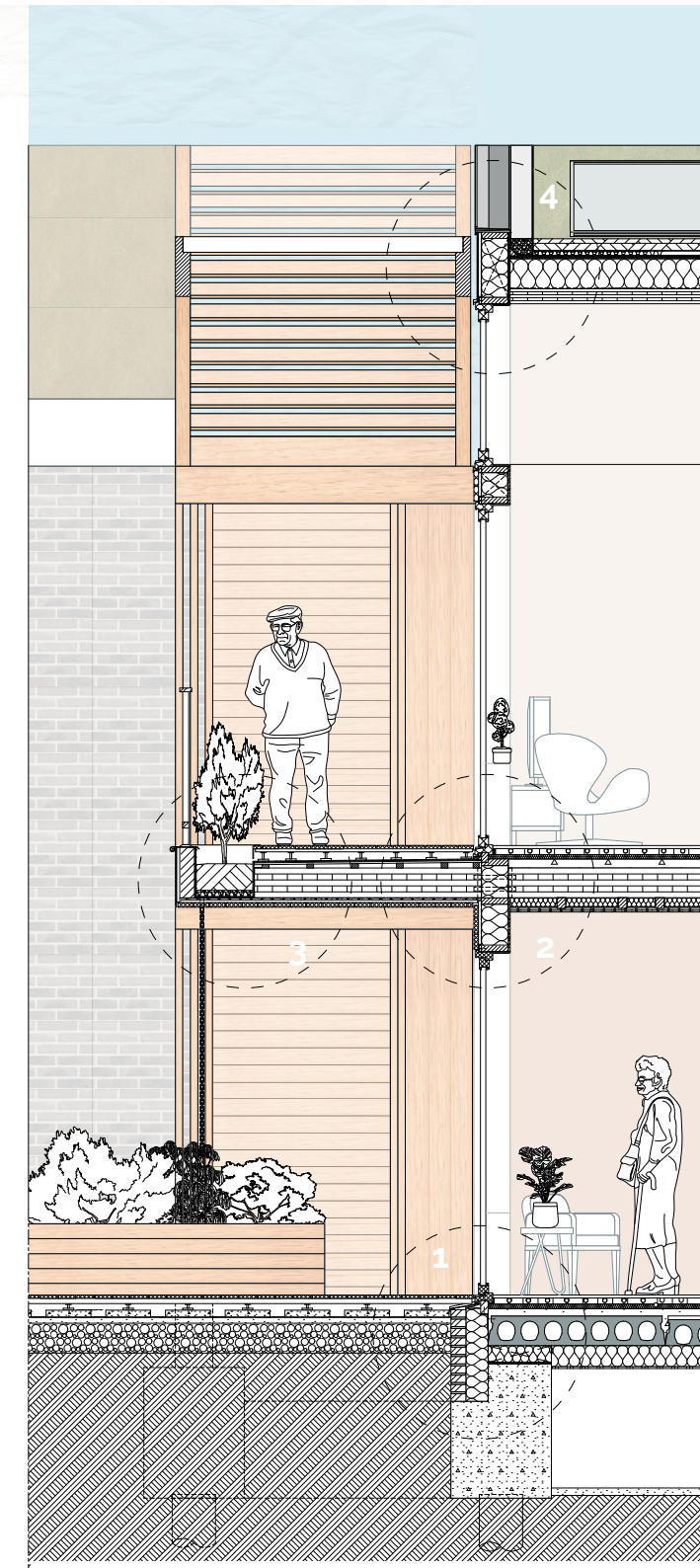


DETAILS



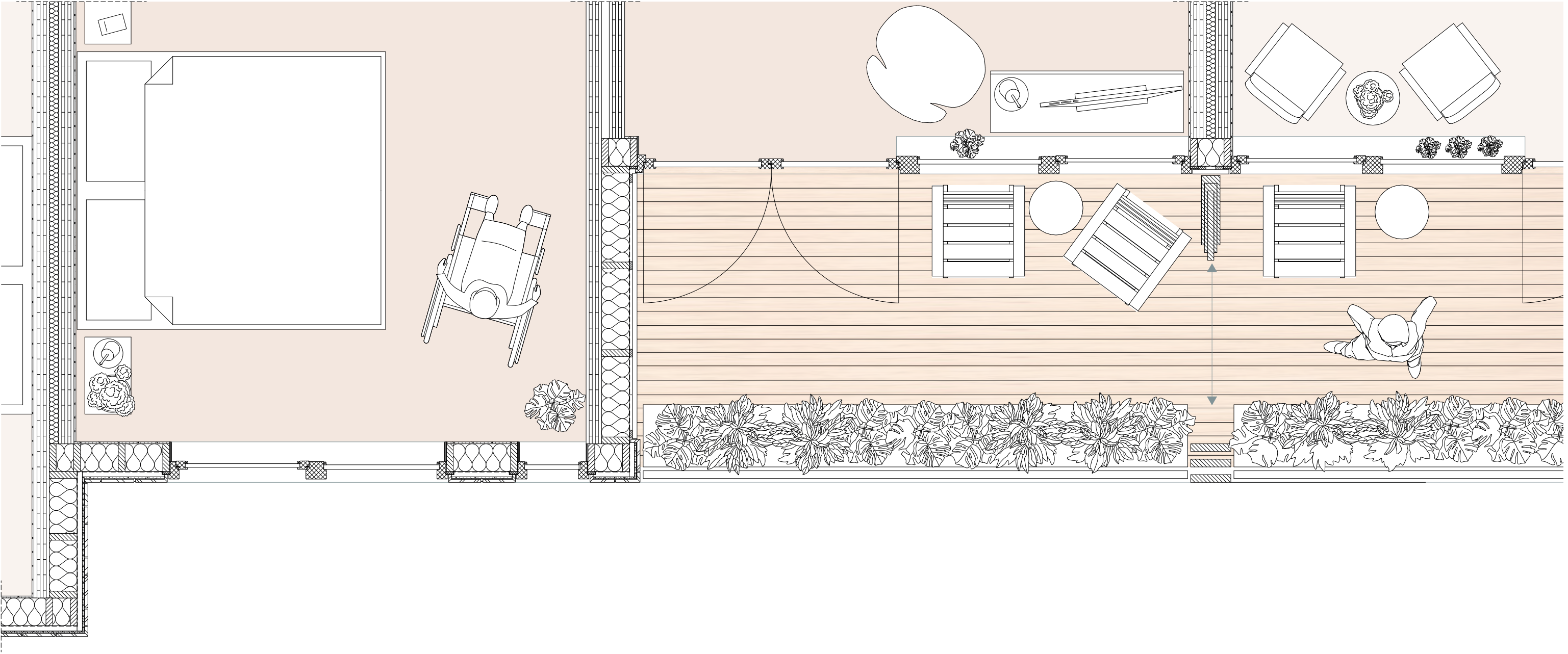
RESIDENTIAL CARE: FACADE AND VERTICAL SECTION | 1 : 50

ORIGINAL SCALE 1:20

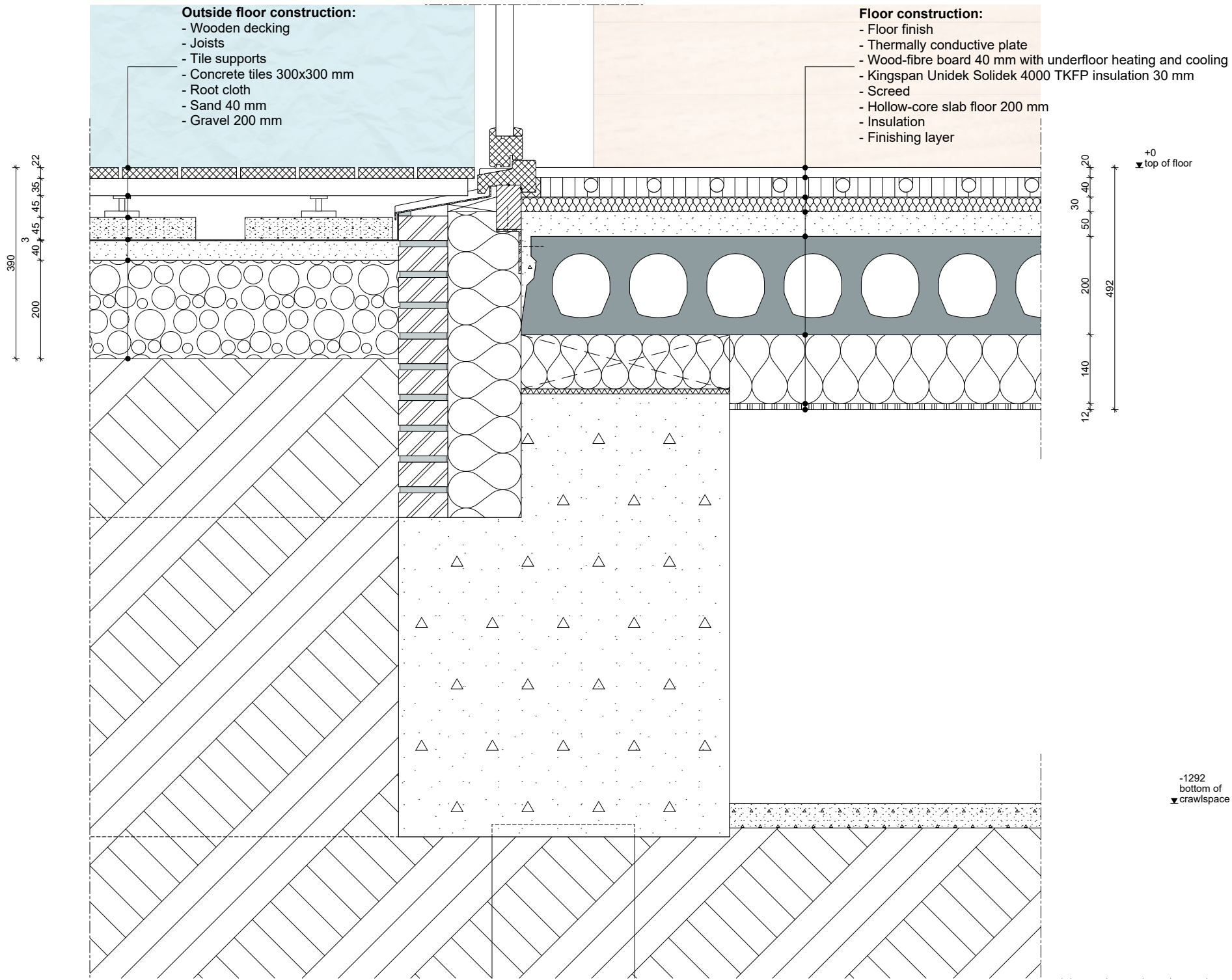


RESIDENTIAL CARE: HORIZONTAL SECTION | 1 : 25

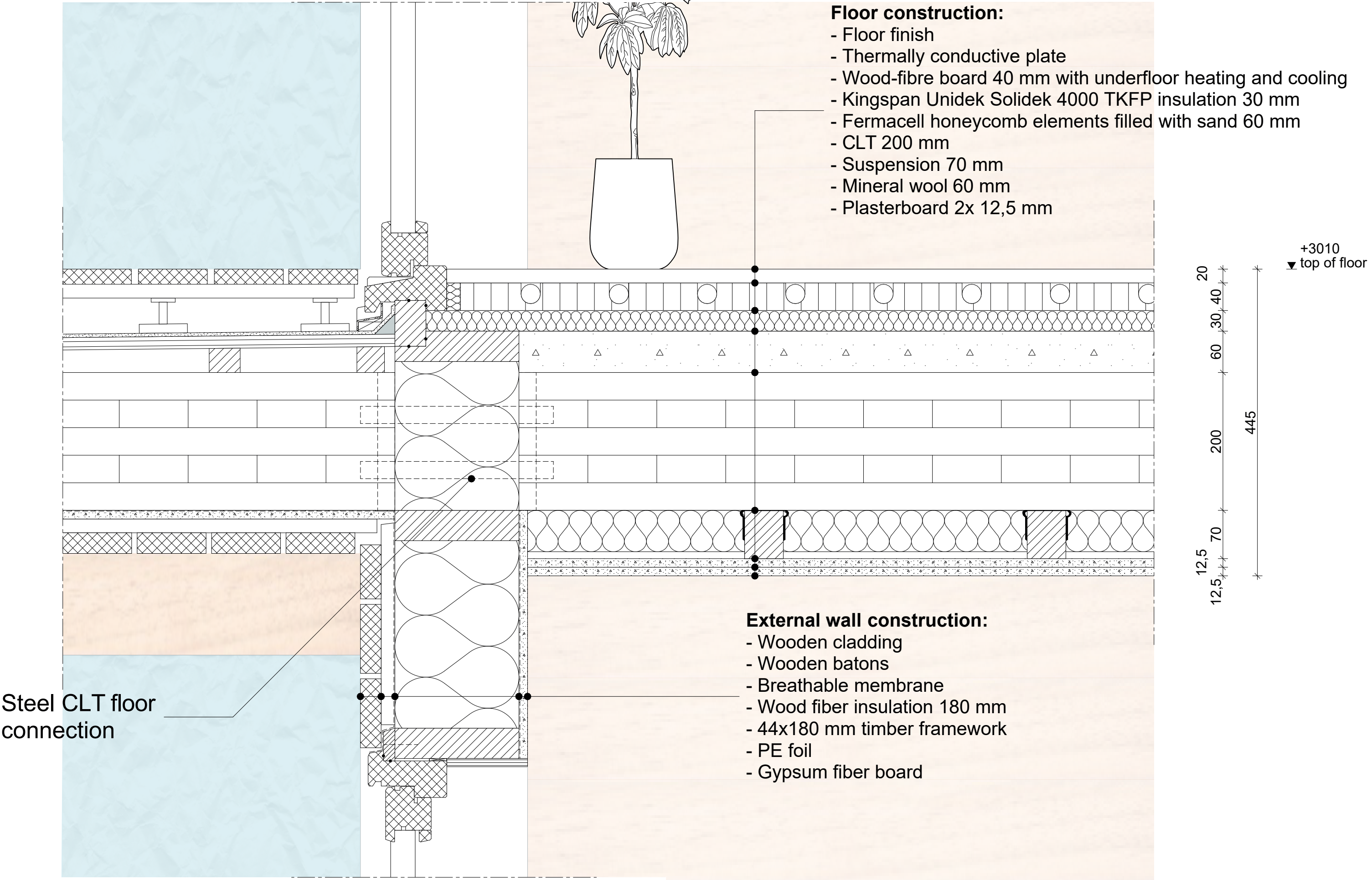
ORIGINAL SCALE 1:20



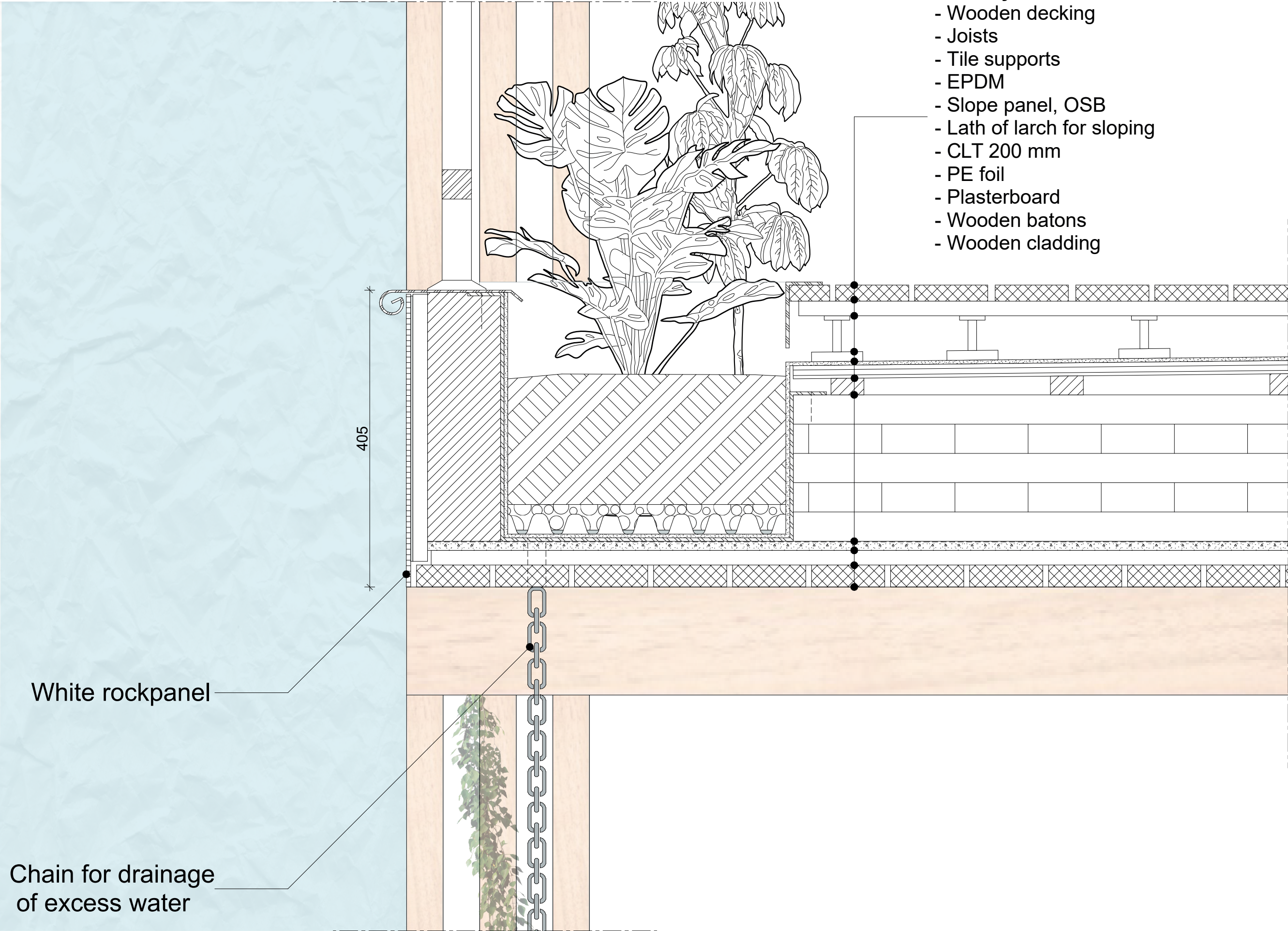
RESIDENTIAL CARE: FOUNDATION | 1 : 10



RESIDENTIAL CARE: BALCONY CONNECTION | 1 : 5



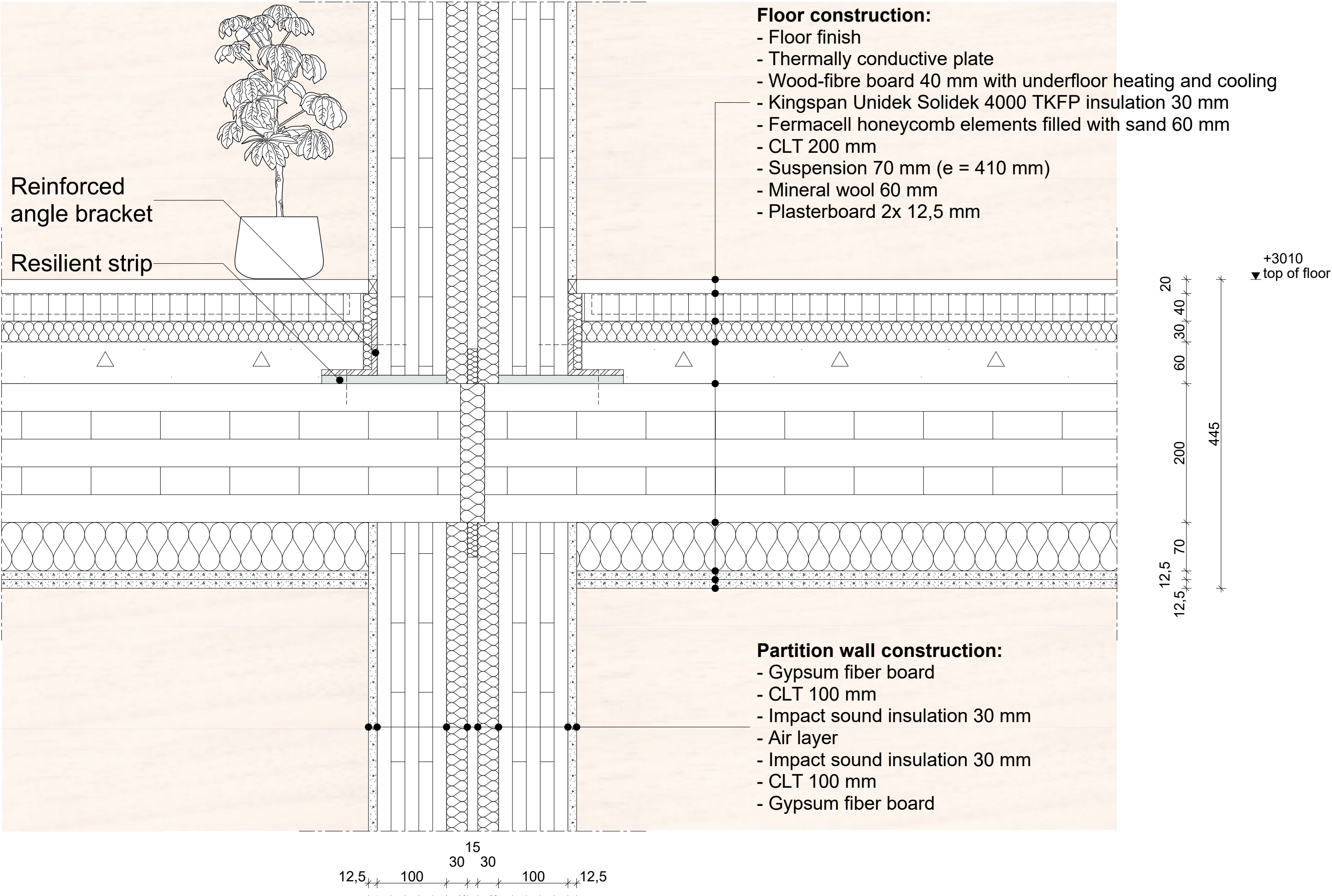
RESIDENTIAL CARE: END OF BALCONY | 1 : 5



Balcony construction:

- Wooden decking
- Joists
- Tile supports
- EPDM
- Slope panel, OSB
- Lath of larch for sloping
- CLT 200 mm
- PE foil
- Plasterboard
- Wooden batons
- Wooden cladding

RESIDENTIAL CARE: PARTITION WALL | 1 : 5



RESIDENTIAL CARE: ROOF | 1:5

