Blurring Boundaries

Designing for a social infrastructure

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introduction

Political solution

NIEUWS

Kabinet en provincies: ruim 900 duizend extra woningen tot en met 2030, vooral in Zuid-Holland

Figure 1
Headliner Volkskrant
(Du Pré, 2022)

“Bouwen, bouwen, bouwen”

Problems are way more complex

Building land is scarce and subject to the effects of climate change. Lower socio-economic groups can't afford sustainability measures.

(Nationaal Deltaprogramma, 2025)
(Sociaal en Cultureel Planbureau, 2024a)

+

The **gap** between lower and higher socio-economic Dutch citizen groups **is widening**.

(Sociaal en Cultureel Planbureau, 2024b)

Result of the housing shortage and the previously mentioned problems

Low-income households, people with disabilities, migrants and elderly people living alone, are doubly disadvantaged as a result. They struggle to find suitable, affordable housing and simultaneously lack a robust social infrastructure to serve as a safety net.

(Czischke et al., 2025)



Figure 2
Post-war apartment block
Picture: Sabine Broekhoven



Figure 3
Flex housing
Picture: ANP, Marcel van den Bergh

How can a housing complex support the doubly disadvantaged group in the Netherlands by creating housing that, on the short and long term, facilitates social infrastructure, is affordable and suitable for their needs?

1872



Figure 6
Development of Delft, Midden-Delfland, Schiedam and Rotterdam 1872
Own work. Base map (Topotijdreis: 200 Jaar Topografische Kaarten, n.d.-a)

1962

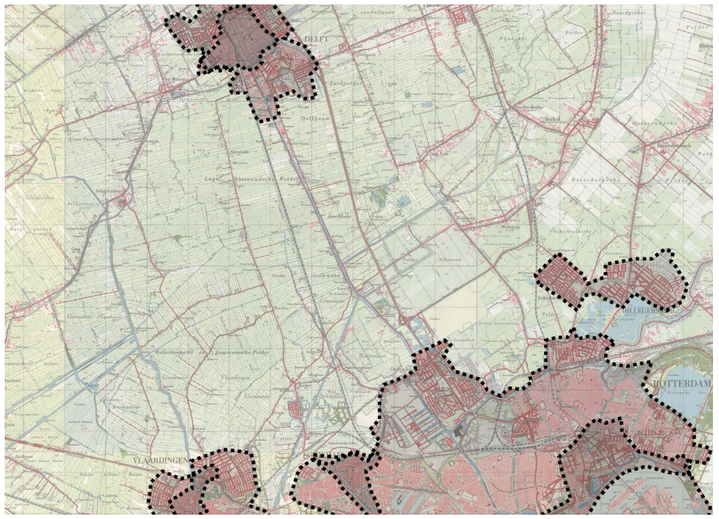


Figure 7
Development of Delft, Midden-Delfland, Schiedam and Rotterdam 1962
Own work. Base map (Topotijdreis: 200 Jaar Topografische Kaarten, n.d.-b)

2024

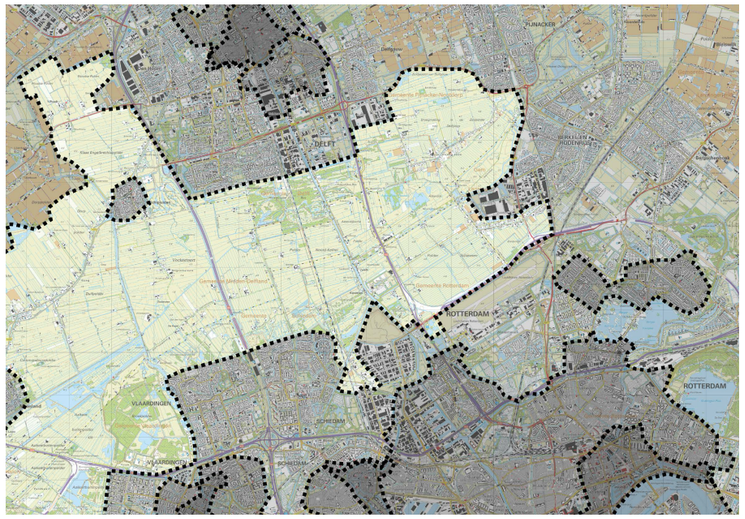


Figure 8
Development of Delft, Midden-Delfland, Schiedam and Rotterdam 2024
Own work. Base map (Topotijdreis: 200 Jaar Topografische Kaarten, n.d.-c)

introduction | scope



Figure 9
Vision National Productive Park Delfland
(ZUS [Zones Urbaines Sensibles] et al., n.d.)

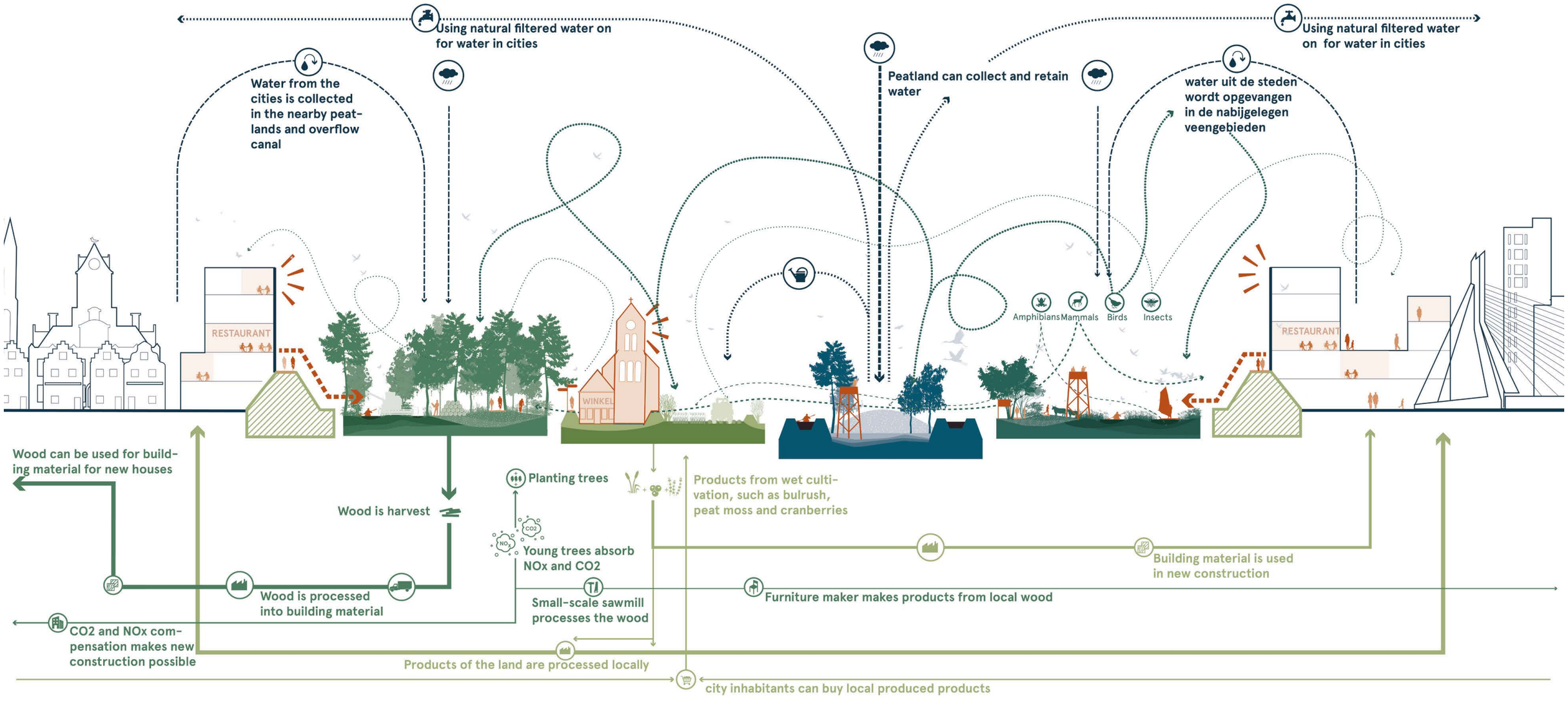


Figure 10
Vision section National Productive Park Delfland
(ZUS [Zones Urbaines Sensibles] et al., n.d.)

site

site | differences between Rotterdam and Midden-Delfland

474

Houses have to be built in Midden-Delfland before 2030
(Gemeente Midden-Delfland, 2024)

247.000

Houses must be built in Zuid-Holland before 2030
(Ministerie van Algemene Zaken, 2023)

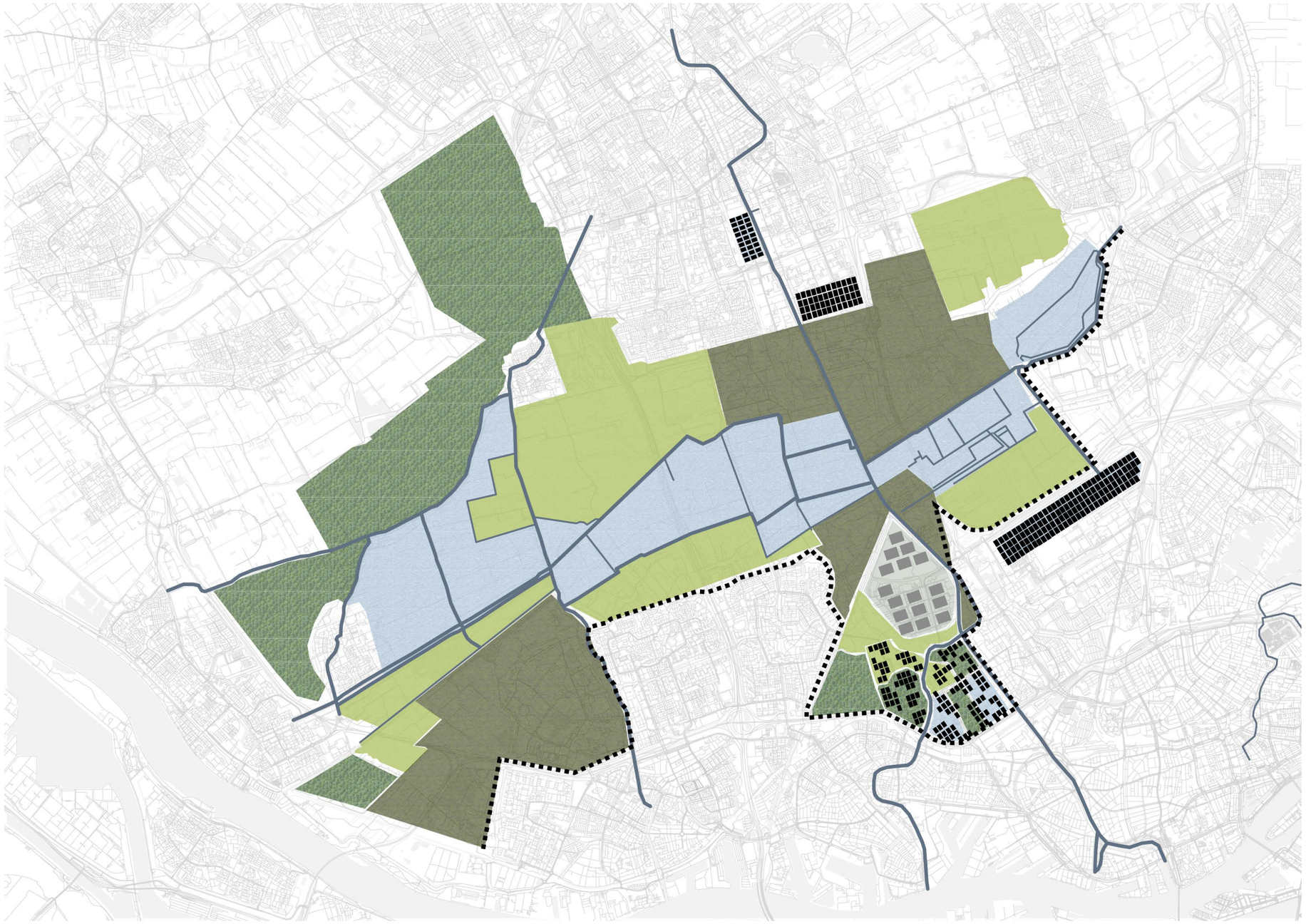
5

Midden-Delfland is placed in welfare cluster 5. It is characterised by a high average income and wealth and few people receiving social assistance.
(RIGO Research en Advies et al., 2018)

1

The municipalities of Rotterdam and The Hague are placed in the lowest welfare cluster. This level is characterised by low average income and wealth and a high number of people receiving social assistance.
(RIGO Research en Advies et al., 2018)

site | own proposal for Midden-Delfland



1:10000

Figure 11
National Productive Park Delfland, group vision
Group work

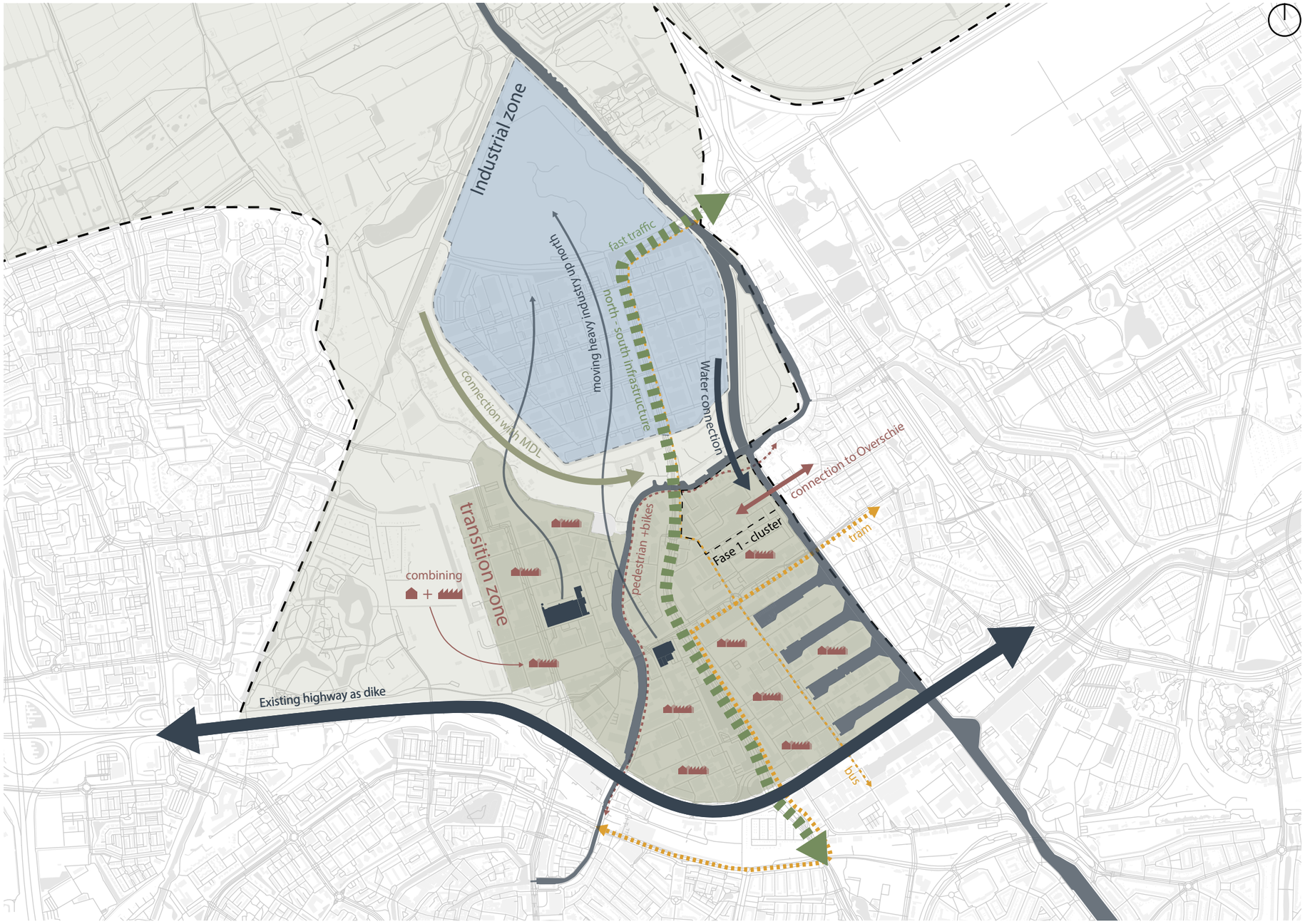


Figure 12
Picture of the Spaanse Polder
Own work



Figure 13
Picture of the Spaanse Polder
Own work

site | Spaanse Polder in relation to Midden-Delfland



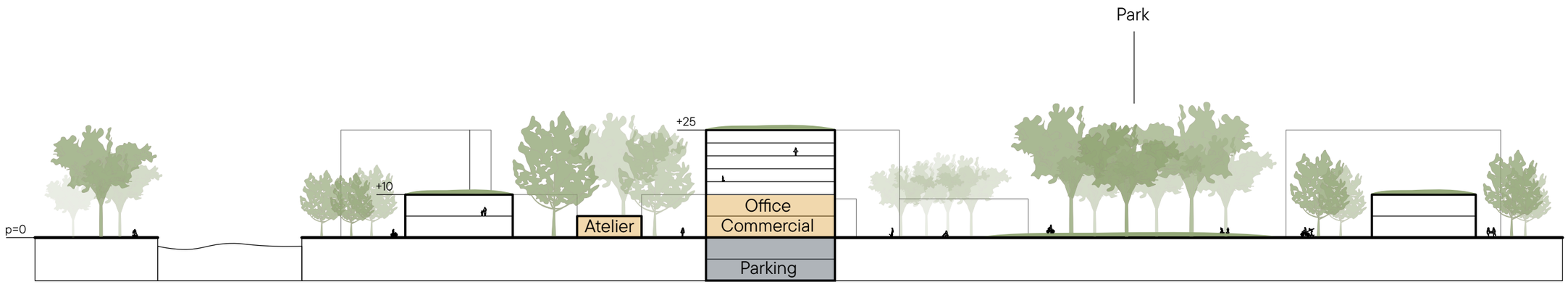
site | urban plan

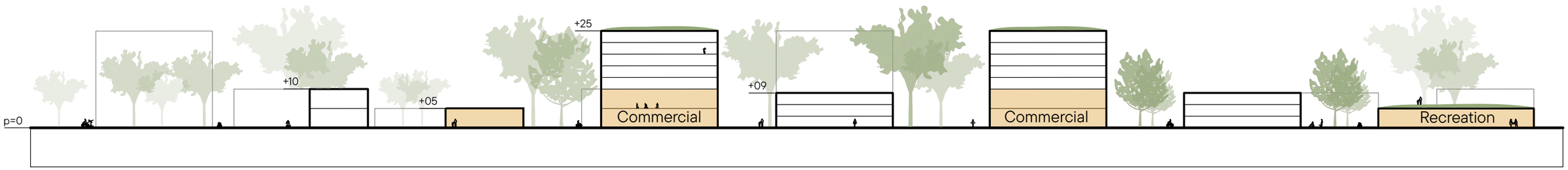


Figure 22
Master plan of phase 1 of the Spaanse Polder
Group work

1:2000

site | urban plan





1:2000

theoretical framework

theoretical framework | housing needs



Low- or middle-income households

- Social infrastructure
- Affordability
- 1 or 2 bedrooms



Elderly (living alone)

- Social infrastructure
- Affordability
- 1 bedroom
- Inclusive accessible



Statusholders

- Social infrastructure
- Affordability
- 1 or 2 bedrooms



People with a physical disability

- Social infrastructure
- Affordability
- 1 or 2 bedrooms
- Inclusive accessible

theoretical framework | social mix

Societal



The difference in and level of **diversity should not be too great**. Interactions arise more easily when the differences between groups on the base of income are smaller.
(Van Kempen & Bolt, 2009)



A screening process is advised to ensure that the right residents end up in the right place. This can prevent potential major differences and problems between residents.
(Davelaar et al., 2018)

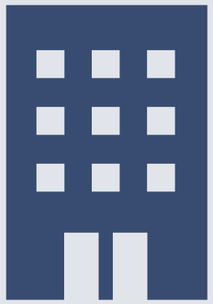


A good mix of supporting and non-supporting residents provides an informal social safety net. When the group of non-supporting residents becomes too large, the support disappears.
(Van Der Velden & Tiggeloven, 2016)



The presence of **social management** is advised with a mix of supportive and non-supportive residents to ensure that the residents get enough support.
(Van Der Velden & Tiggeloven, 2016)

Architectural



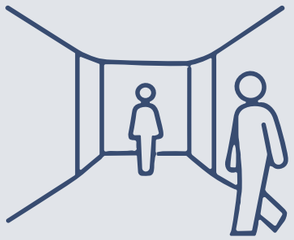
Building size shouldn't be bigger than **150 dwellings** to avoid the risk of unsafety and anonymity.
(Bolt & Pierik, 2019)



The presence of **public functions** stimulates contact between residents and people in the neighbourhood.
(Bolt & Pierik, 2019)

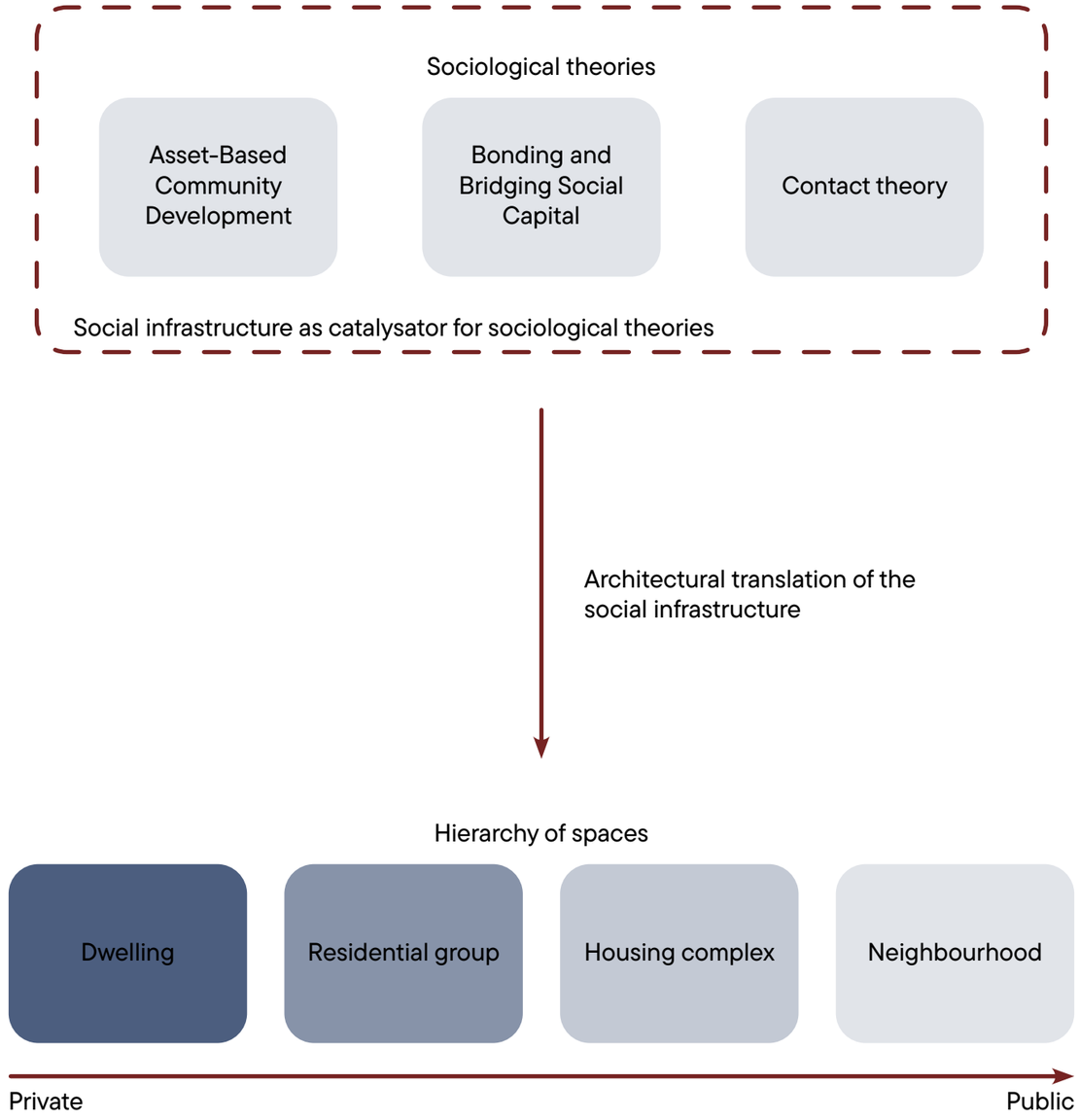


1 communal space / 20 dwellings is optimal as it keeps the community small enough to bond.
(Bolt & Pierik, 2019)



Wide corridors to give the possibility to residents to claim and fill the space with furniture. This stimulates interaction.
(Bolt & Pierik, 2019)

theoretical framework | social infrastructure



theoretical framework | affordability

Housing costs should be no more than 30-35% of the income to make it affordable
(Newman & Holupka, 2014)

Doubly disadvantaged group

Higher social economic group



Social minimum per month for 2 persons:
€ 2.294,40
(UWV, 2025)

Maximum housing costs per month:
€ 803,04

Average net income per month from AOW:
€ 1.558,15
(Buijs, 2026)

Maximum housing costs per month:
€ 545,35

Average net income per month for 2 persons from social security benefit:
€ 2.002,13
(Ministerie van Algemene Zaken, 2025)

Maximum housing costs per month:
€ 700,75

Average net income per month:
€ 1720,80
(Ministerie van Sociale Zaken en Werkgelegenheid, 2025)

Maximum housing costs per month:
€ 602.28

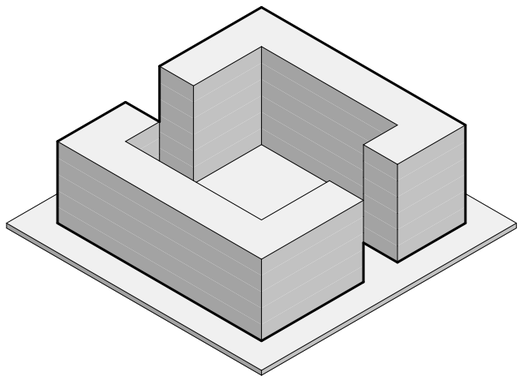
Average net income per month for 2 persons:
€ 5.016,67
(CBS, 2025)

Maximum housing costs per month:
€ 1.755,83

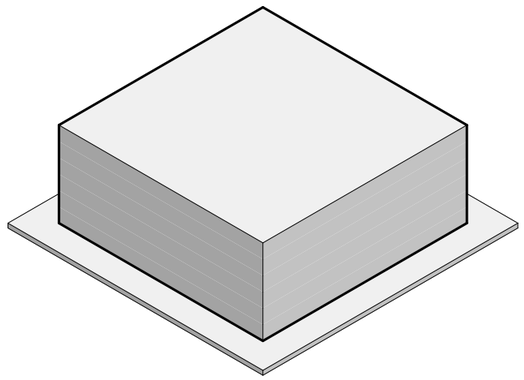
Groups eligible for housing benefit

concept

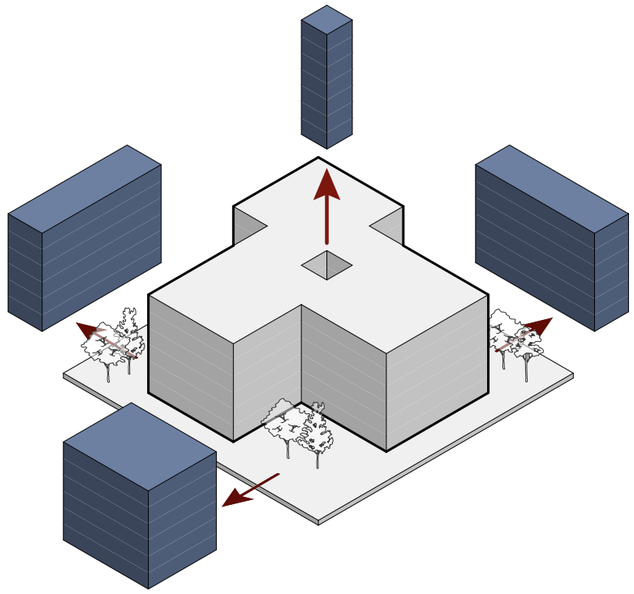
concept | development of the volume



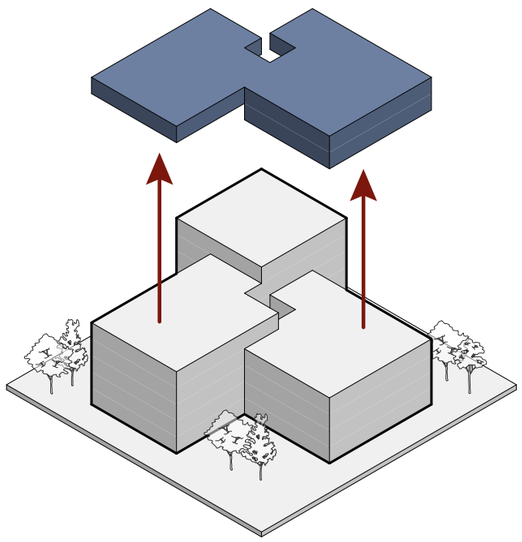
Volume from the urban development plan



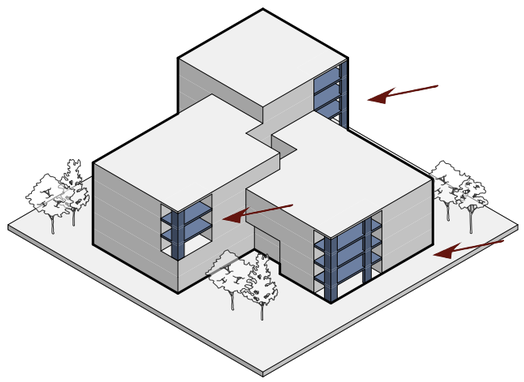
Two separate volumes are being merged into one to create a single community and reduce the risk of segregation



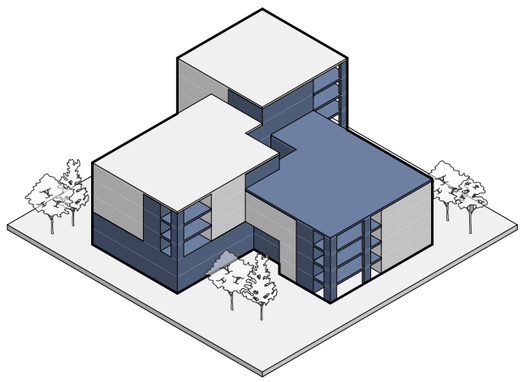
Volumes are being removed from the building to allow more daylight into the interior and to create space at ground level for greenery, thereby blurring the boundary between the building and its surroundings



Additional volumes are being removed to break up the large volume and make room for a roof terrace and services

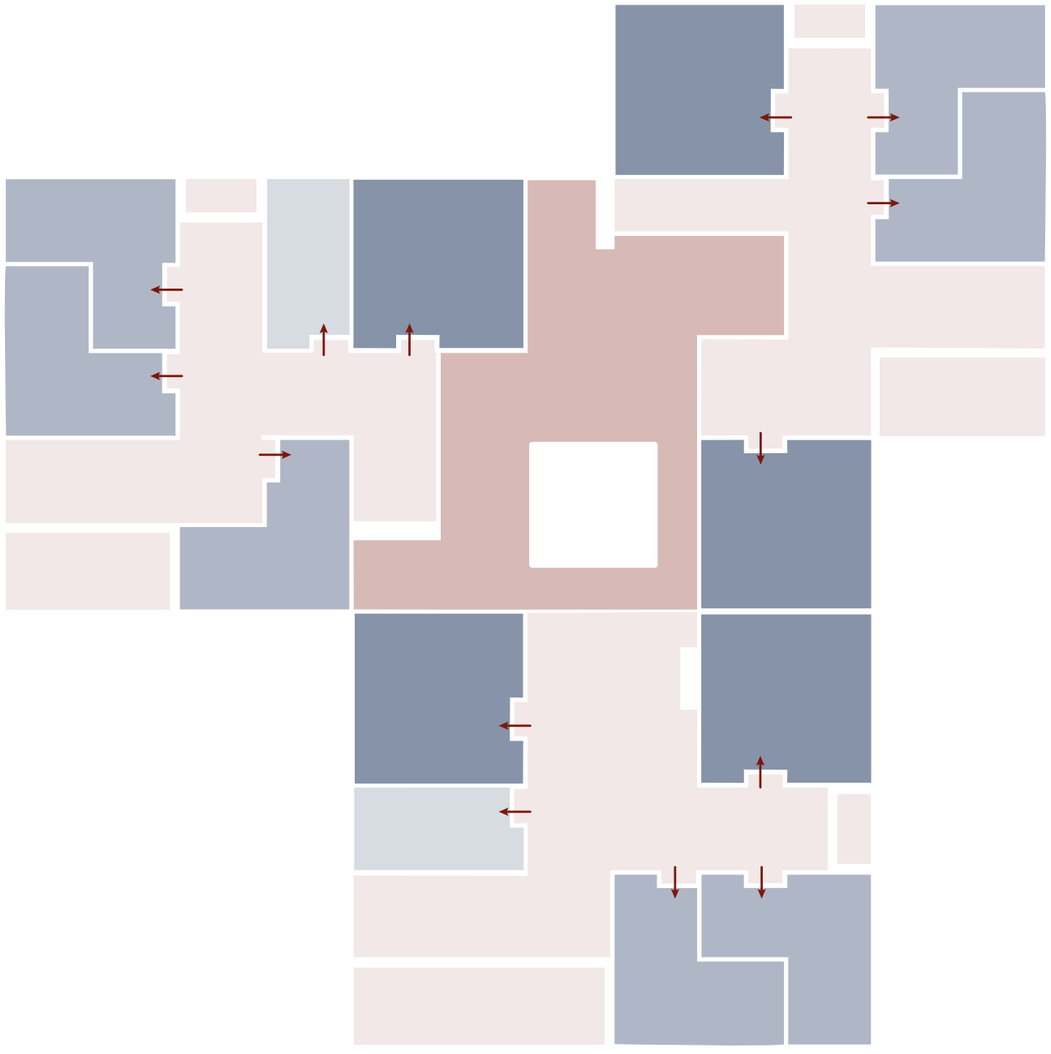


Outdoor spaces for the residential groups will be created facing south to enhance the quality of the outdoor areas



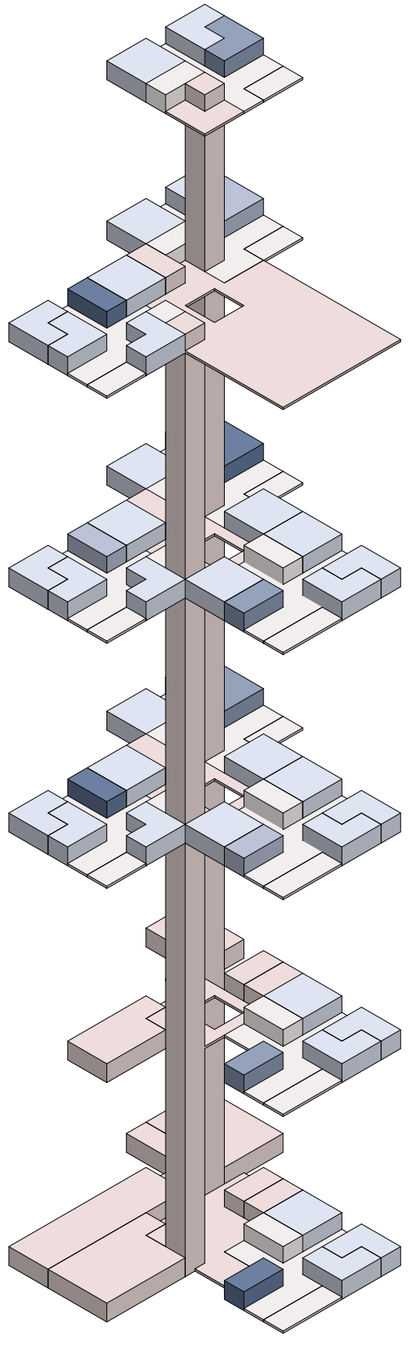
The communal areas are spread throughout the building so that residents from different backgrounds can meet one another and local residents

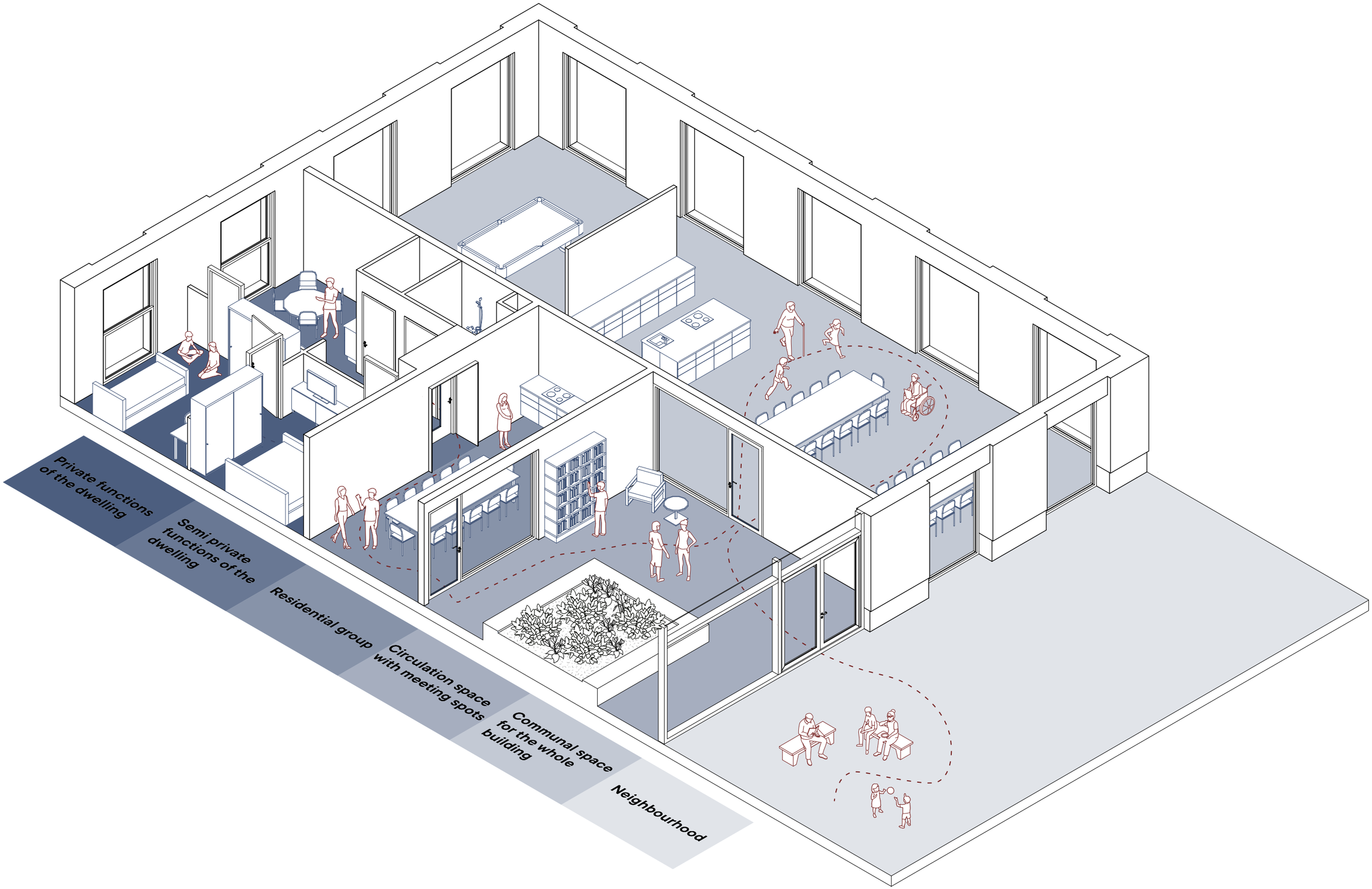
concept | social mix



Legend

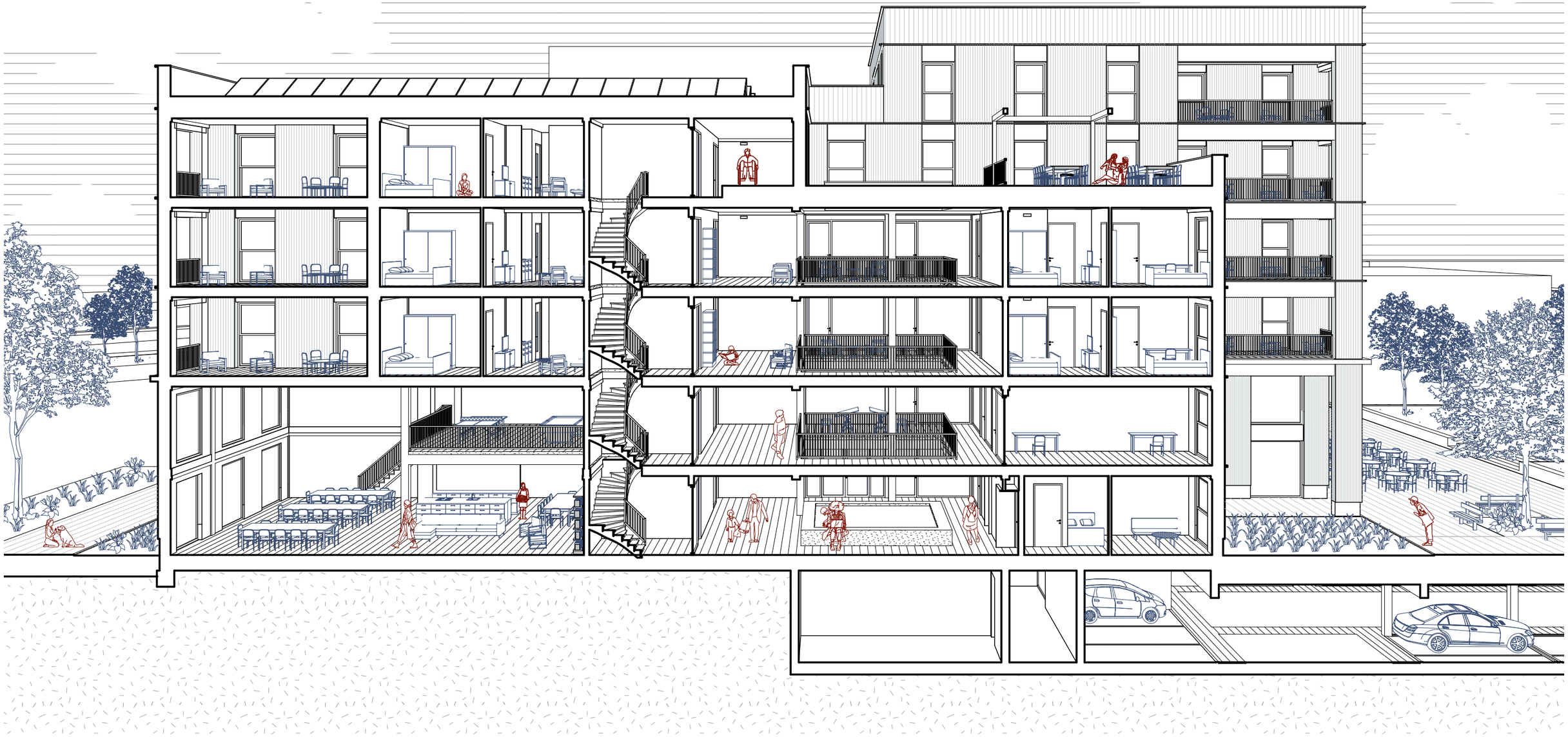
- Low- and middle-incomes
- Statusholders
- Residents with a mild physical dissability
- Elderly
- Residential group
- Building level



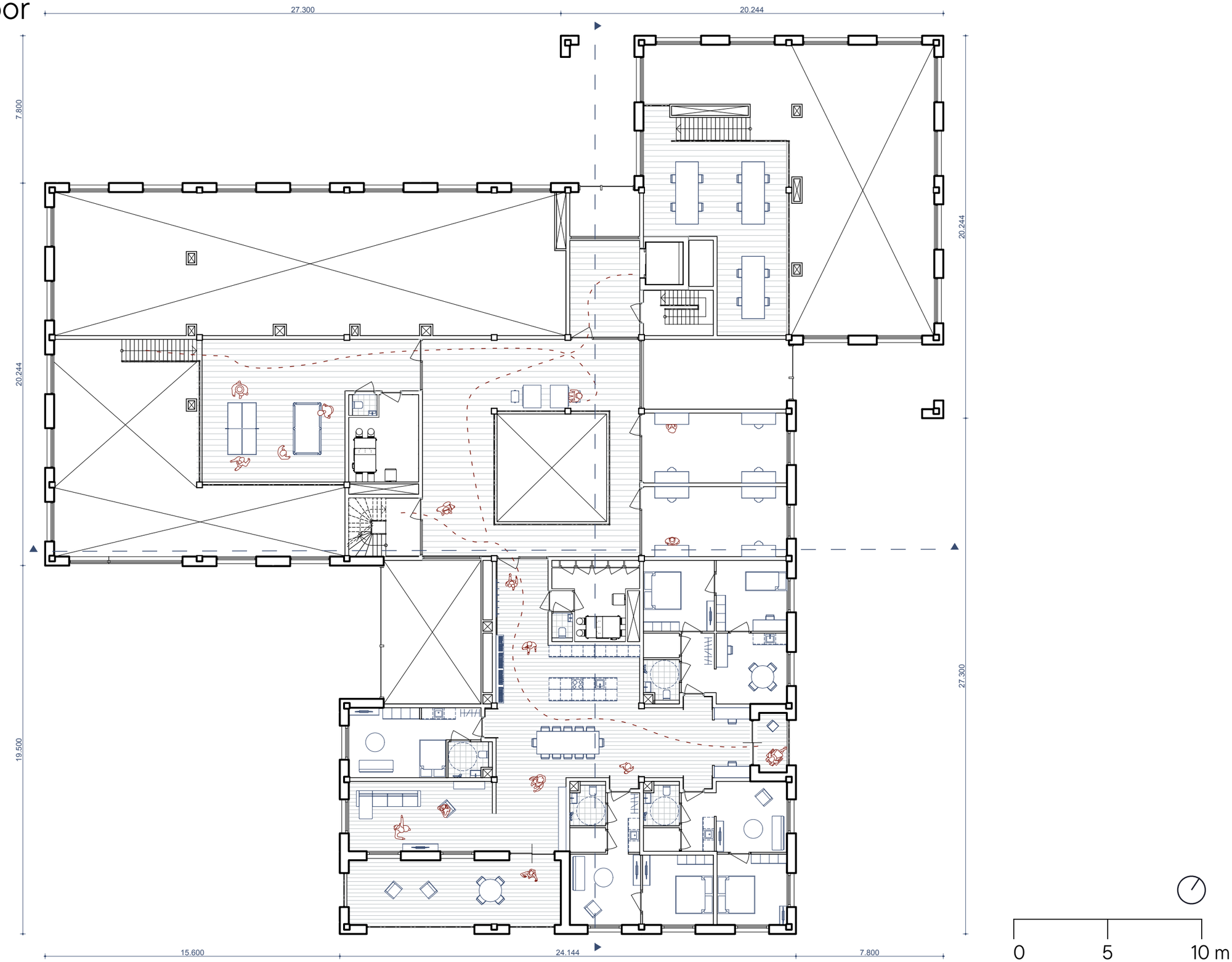

Private functions of the dwelling
Semi private functions of the dwelling
Residential group
Circulation space with meeting spots
Communal space for the whole building
Neighbourhood

design

design | perspective section



design | ground floor


27.300
20.244
7.800
20.244
20.244
19.500
27.300
15.600
24.144
7.800
0
5
10 m

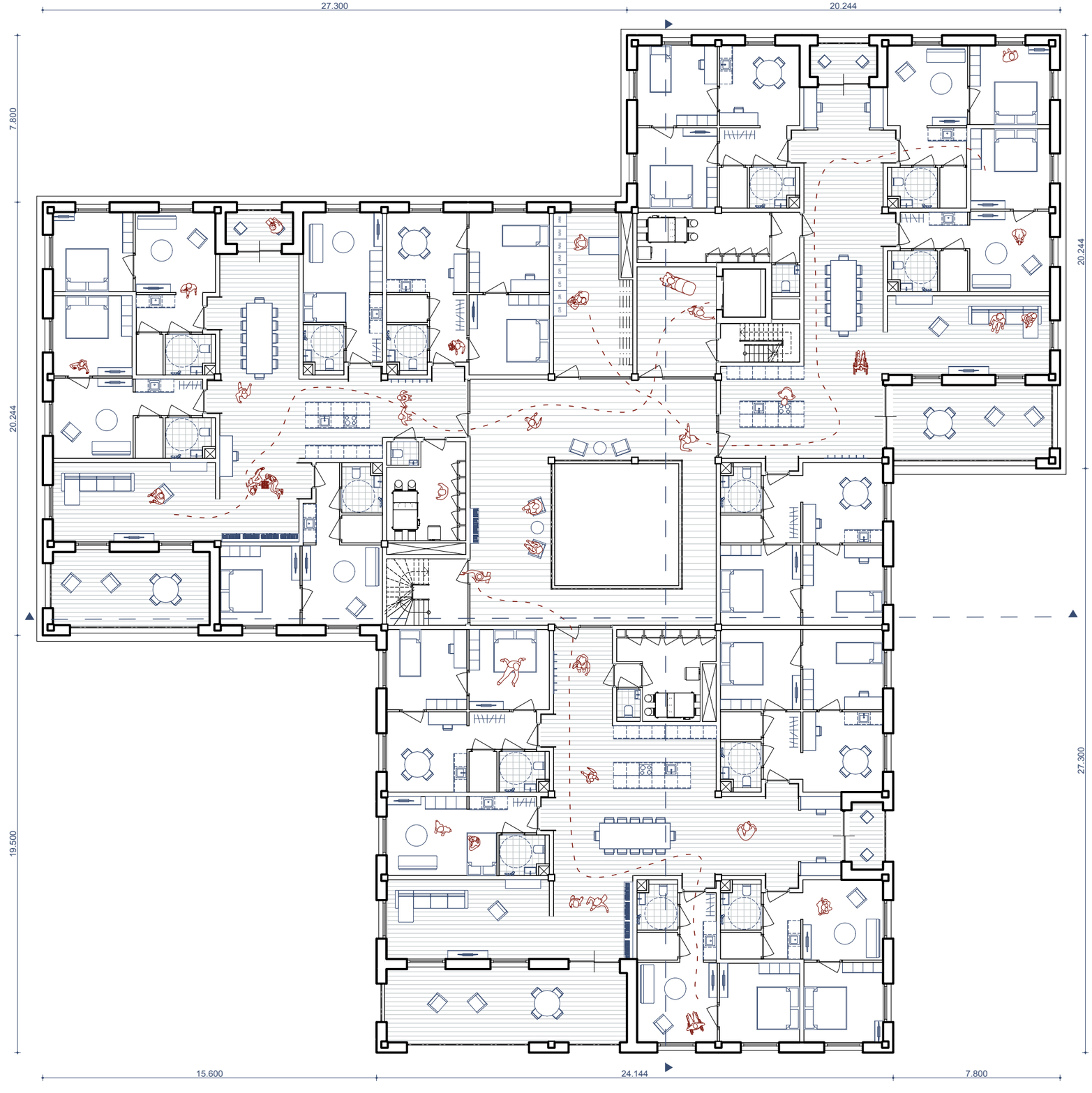
design | perspective view, main entrance



design | perspective view, communal living room



design | second floor and third floor



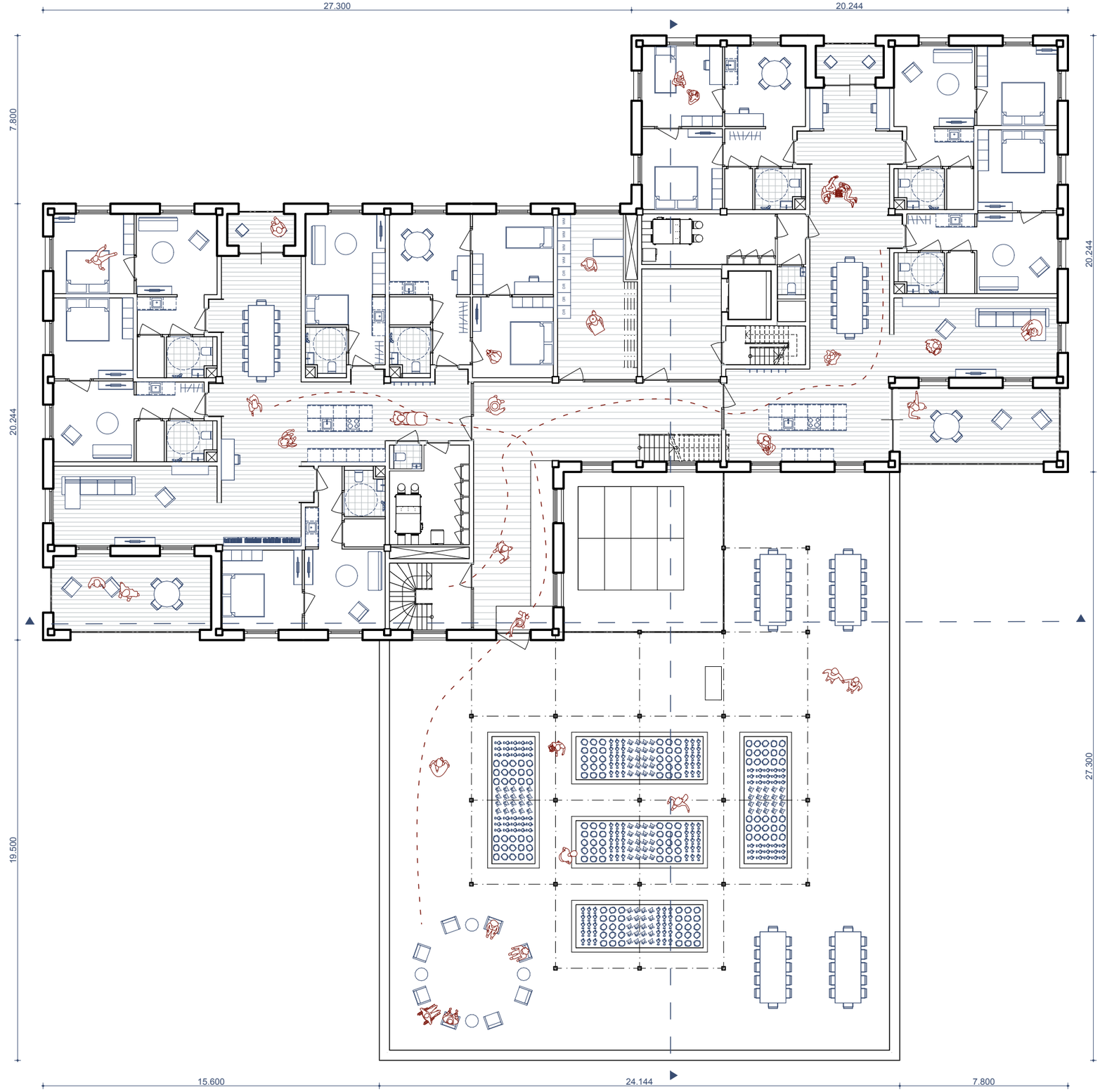
design | perspective view, circulation space



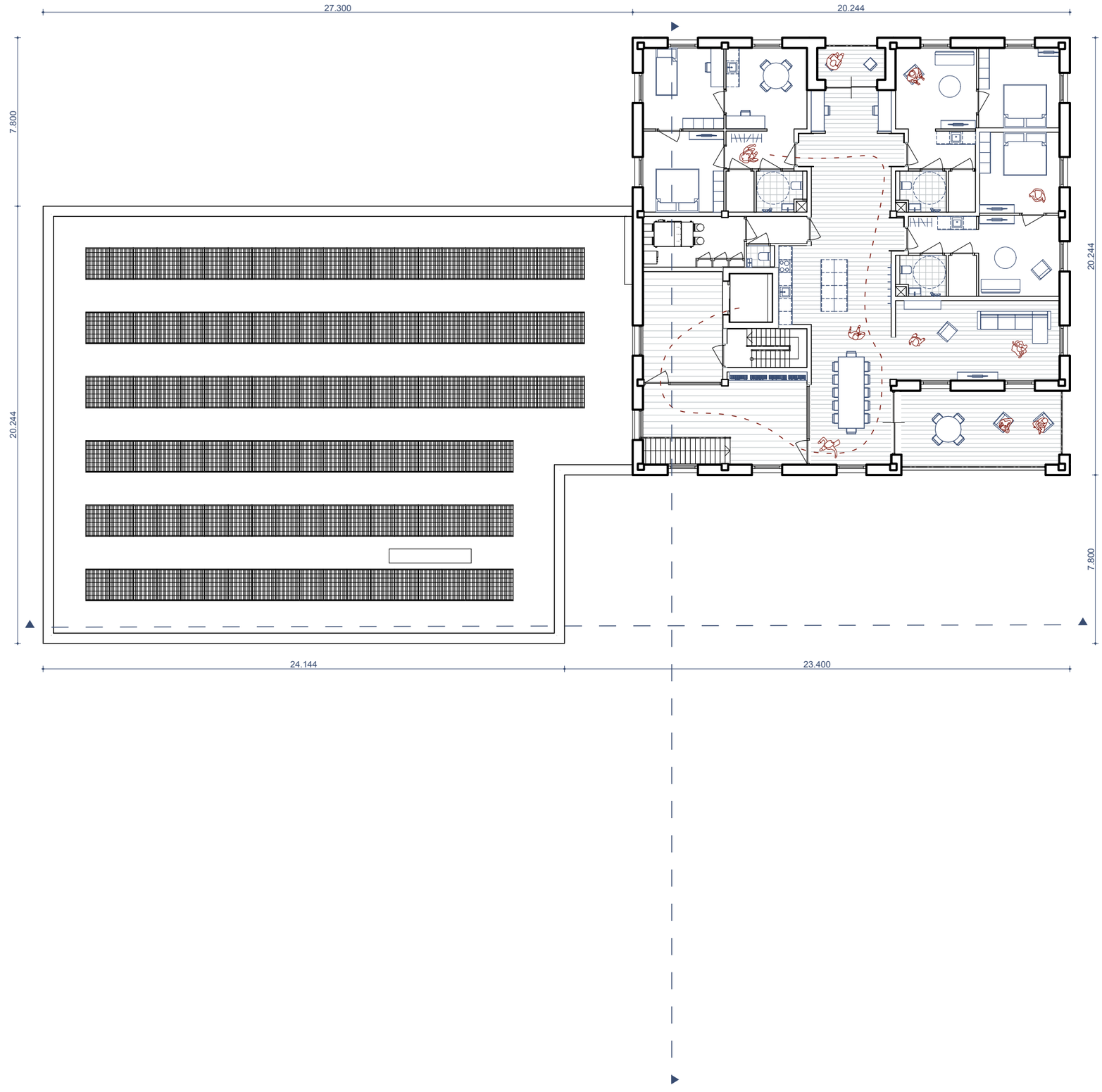
design | perspective view, residential group



design | fourth floor



design | fifth floor



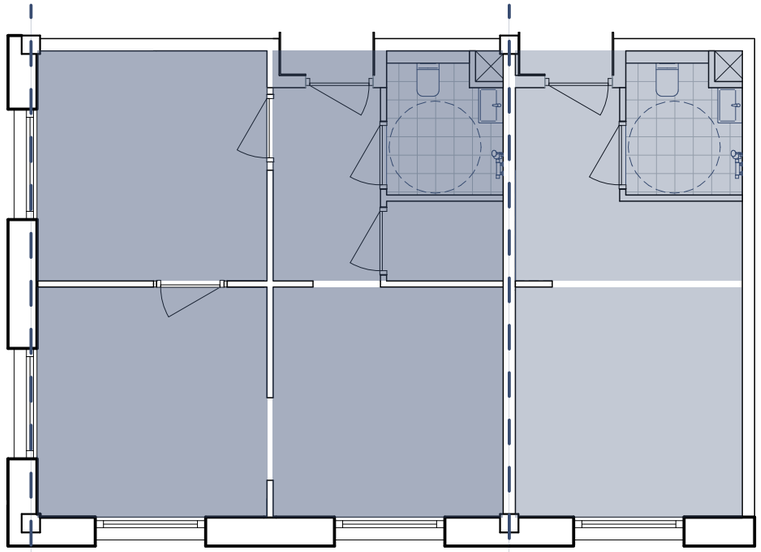
0 5 10 m

design | perspective view, roof terrace



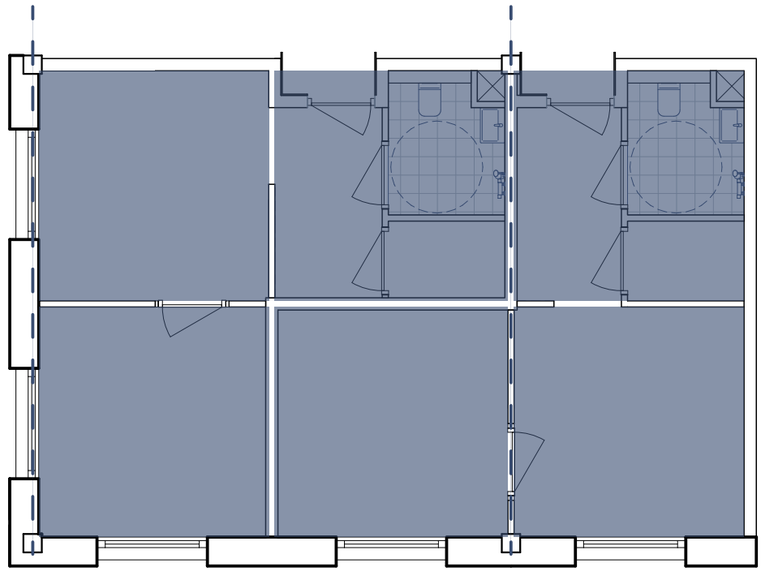
design | perspective view, dwelling entrance



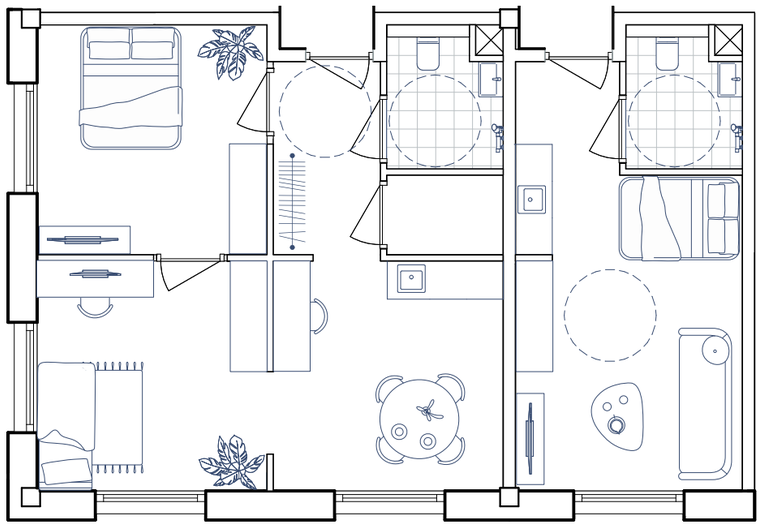


Apartment 60m²
Consisting of 2 bedrooms and a living kitchen

Studio 30m²
Consisting of 1 living space with a bed and table



Apartments of 45m²
Consisting of 1 bedroom, a small kitchen and a bathroom



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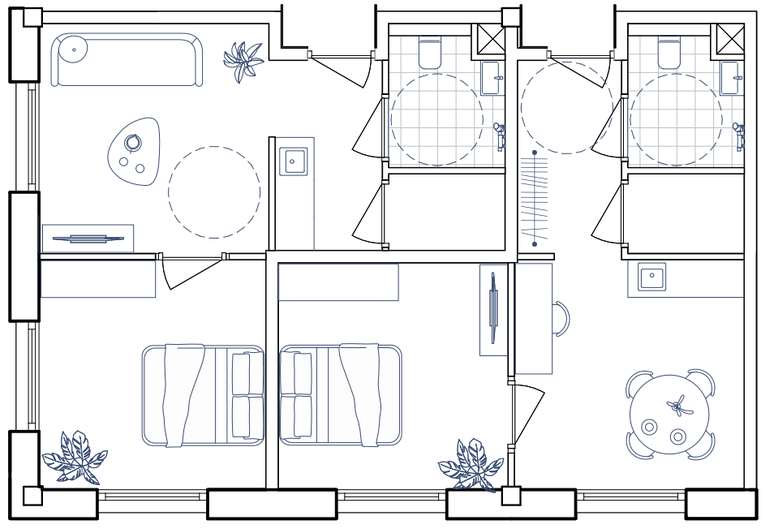


Apartments of 45m²
Consisting of 1 bedrooms, a small kitchen and a bathroom

design | perspective view, dwelling





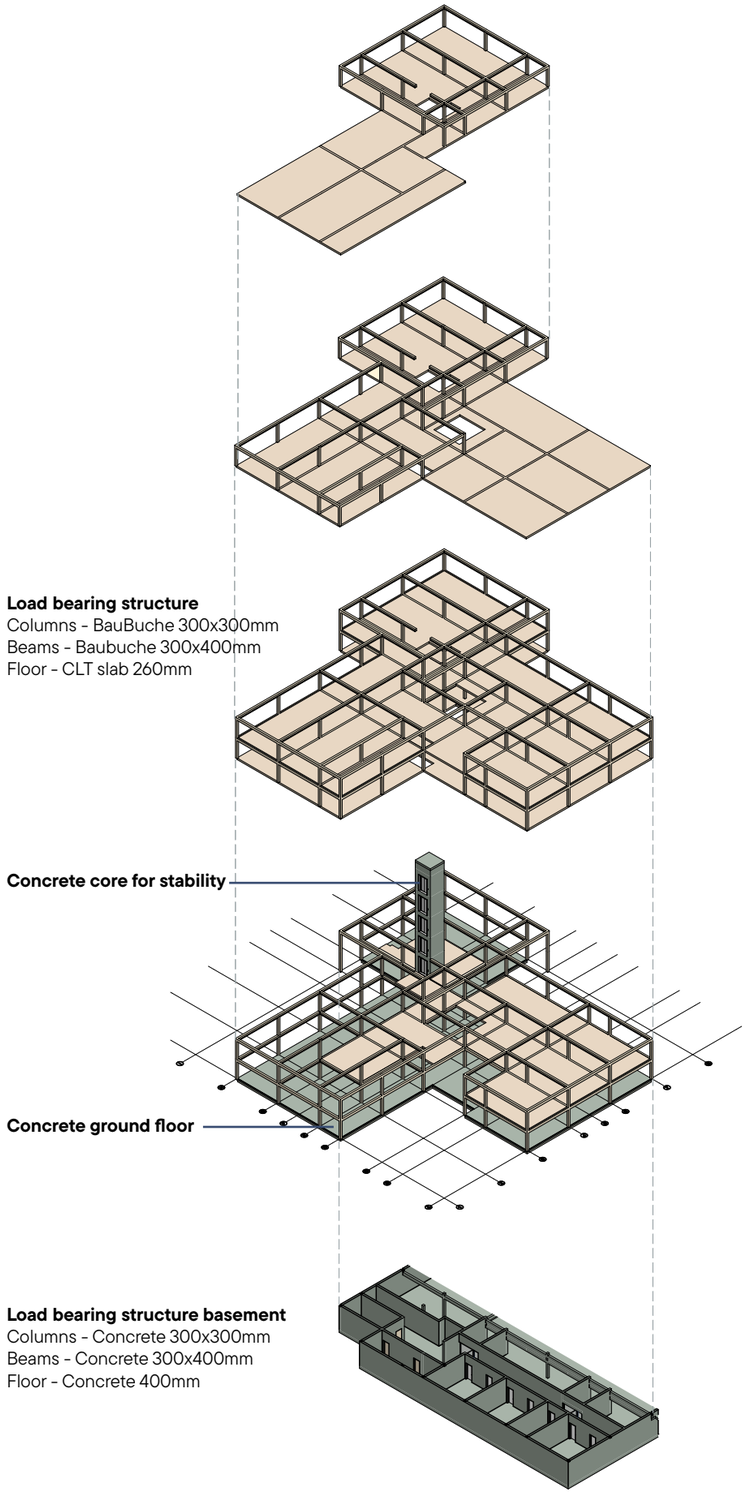


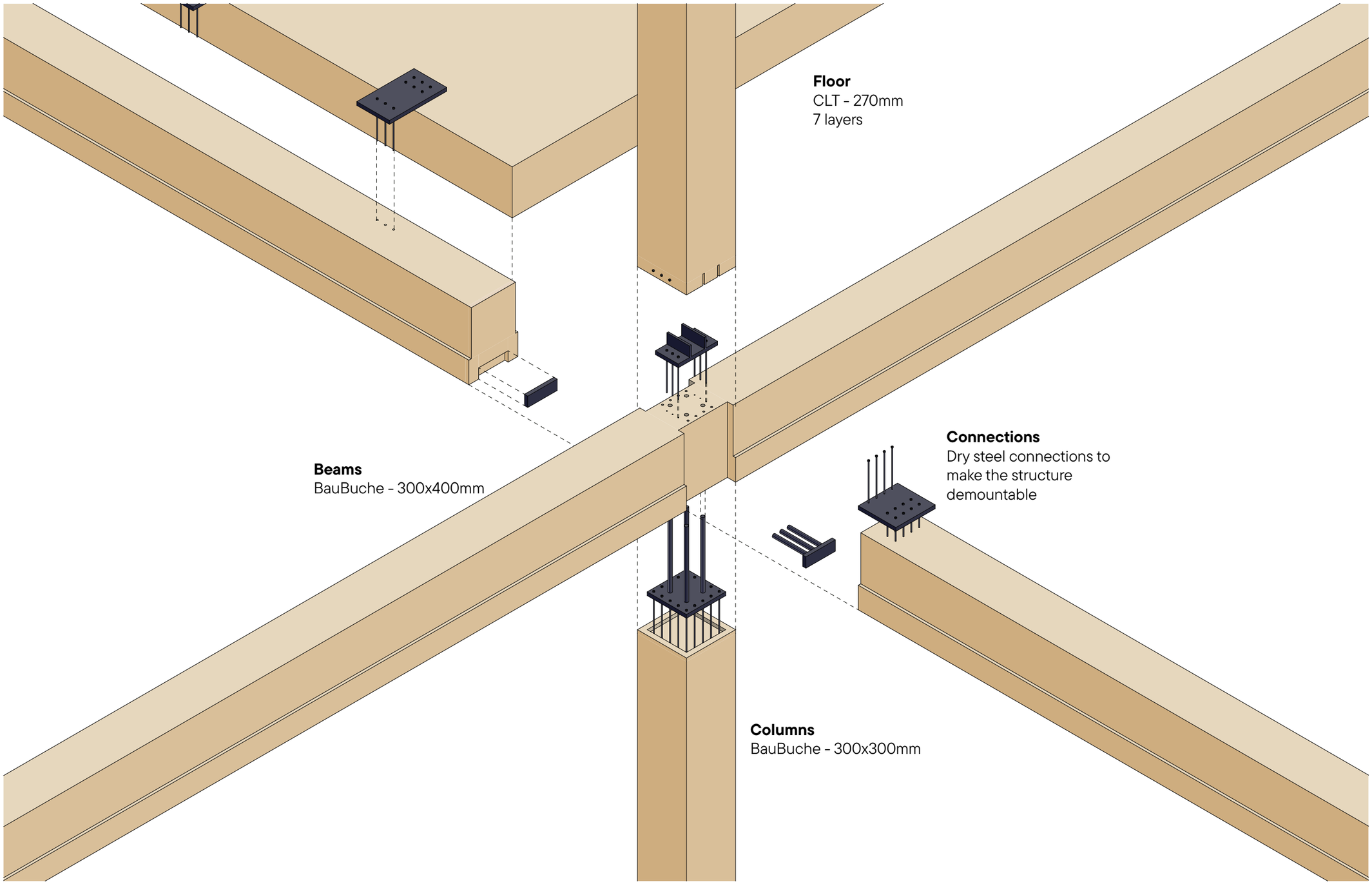


design | south facade



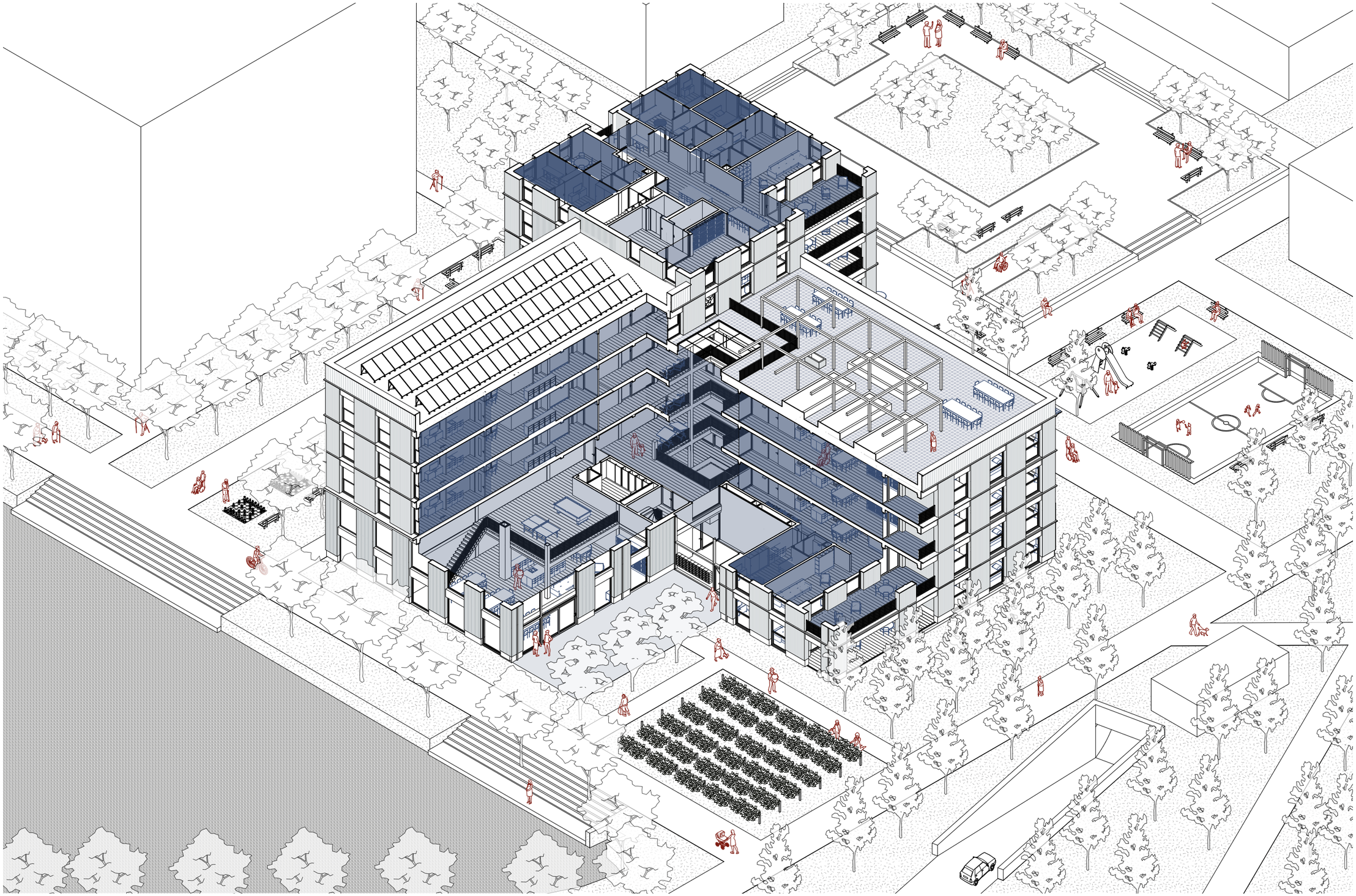
climate & structure | structure axonometry




Floor
CLT - 270mm
7 layers
Connections
Dry steel connections to make the structure demountable
Beams
BauBuche - 300x400mm
Columns
BauBuche - 300x300mm

conclusion

conclusion



questions?

references

Bolt, G., & Pierik, R. (2019). Social interaction in mixed building blocks – finding the ‘magic mix’ [Thesis].

Bolt, G., & Van Liempt, I. (n.d.). Stedelijke diversiteit en beleid: hoe gaan nationale en lokale overheden om met de groeiende diversiteit in steden. In Governing Urban Diversity.

Buijs, A. (2026, January 2). Hoe hoog ligt het gemiddeld pensioen in Nederland? Knab. https://bieb.knab.nl/pensioen/hoe-hoog-ligt-het-gemiddeld-pensioen-in-nederland#:~:text=Table_title:%20Hoeveel%20AOW%20krijg%20je%20in%202026?,Bruto:%20%E2%82%AC%201.122%2C12%20Netto:%20%E2%82%AC%201.067%2C70%20%7C

CBS. (2025, October 8). Inkomen van huishoudens; inkomensklassen, huishoudenskenmerken. Centraal Bureau Voor De Statistiek. https://www.cbs.nl/nl-nl/cijfers/detail/83932NED

Centraal Bureau voor de Statistiek. (2025, December 8). 1946 Woningnood en wederopbouw. Centraal Bureau Voor De Statistiek. https://www.cbs.nl/nl-nl/longread/diversen/2025/tijdlijn-woningvoorraad/1946-woningnood-en-wederopbouw

Croxford, B., Domenech, T., Hausleitner, B., Hill, A. V., Meyer, H., Orban, A., Sanz, V. M., Vanin, F., & Warden, J. (2020). FOUNDRIES OF THE FUTURE: A Guide for 21st Century Cities of Making. In TU Delft Bouwkunde eBooks. https://doi.org/10.47982/bookrxiv.9

Czischke, D., Van Bortel, G., Hackauf, U., Jürgenhake, B., Konstantinou, T., Mooij, H., & Newton, C. (2025). Veerkrachtige Wijken in Nederland: Een op wetenschappelijk onderzoek gebaseerde handreiking voor actie.

Davelaar, M., Gruppen, A., & Knevel, J. (2018). Goede Buren: Lessen uit gemengde woonprojecten in Utrecht. Hogeschool Utrecht, Kenniscentrum Sociale Innovatie. https://www.onderzoek.hu.nl/Projecten/Gemengd-Wonen

Du Pré, R. (2022). Kabinet en provincies: ruim 900 duizend extra woningen tot en met 2030, vooral in Zuid-Holland. Volkskrant. https://www.volkskrant.nl/nieuws-achtergrond/kabinet-en-provincies-ruim-900-duizend-extra-woningen-tot-en-met-2030-vooral-in-zuid-holland~b13db62a/?referrer=https%3A%2F%2Fwww.google.com%2F

Gemeente Midden-Delfland. (2024). Woonvisie Midden-Delfland 2024-2030 met een doorkijk naar 2040 [Report]. https://cuatro.sim-cdn.nl/middendelfland/uploads/woonvisie_midden_delfland_vastgesteld_020724.pdf?cb=iSUoggAb

Gualthérie Van Weezel, T. (2024, July 12). Woningtekort stijgt naar 400 duizend, vooral door toename van huishoudens. Volkskrant. https://www.volkskrant.nl/economie/woningtekort-stijgt-naar-400-duizend-ps%3A%2F%2Fwwwtoename-van-huishoudens~b49526b8/?referrer=https%3A%2F%2Fwww.google.com%2F

Ministerie van Algemene Zaken. (2023, July 24). 900.000 nieuwe woningen om aan groeiende vraag te voldoen. Volkshuisvesting | Rijksoverheid.nl. https://www.rijksoverheid.nl/onderwerpen/volkshuisvesting/nieuwe-woningen

Ministerie van Algemene Zaken. (2025, December 15). Hoe wordt de hoogte van mijn bijstandsuitkering berekend? Rijksoverheid.nl. https://www.rijksoverheid.nl/onderwerpen/bijstand/vraag-en-antwoord/hoe-hoog-is-mijn-bijstandsuitkering#:~:text=Table_title:%20Bijstandsnormen%20Table_content:%20header:%20%7C%20Leefsituatie%20%7C,1/1/2026:%20%E2%82%AC%202.002%2C13%20%7C%20row:%20%7C%20Leefsituatie:

Ministerie van Sociale Zaken en Werkgelegenheid. (2025, December 10). Uitkeringsbedragen per 1 januari 2026. Publicatie | Rijksoverheid.nl. https://www.rijksoverheid.nl/documenten/publicaties/2025/12/10/uitkeringsbedragen-per-1-januari-2026

Nationaal Deltaprogramma. (2025, April 17). Deltacommissaris Co Verdaas over het Delta Drieluik | Deltaprogramma. Deltaprogramma. https://www.deltaprogramma.nl/documenten/videos/2025/04/17/deltacommissaris-co-verdaas-over-het-delta-drieluik

Newman, S. J., & Holupka, C. S. (2014). Housing affordability and investments in children. In Journal of Housing Economics. https://nlihc.org/sites/default/files/Housing_Affordablity_Investments_Children.pdf

Ouwehand, A. (2018). Menging maakt verschil: Hoe bewoners buurt- en wijkverandering ervaren en waarderen ondanks en dankzij herstructurering. [Delft University of Technology]. A+BE | Architecture and the Built Environment. https://doi.org/10.7480/abe.2018.8

RIGO Research en Advies, Buys, A., & Heringa, A. (2018). Sociale verschillen en overeenkomsten in Zuid-Holland. https://kennis.zuid-holland.nl/wp-content/uploads/2022/05/socialeverschillenenovereenkomstenin-zuid-holland-1.pdf

Sociaal en Cultureel Planbureau. (2024a). Verduurzaming als sociaal-maatschappelijke opgave. In Sociale en Culturele Ontwikkelingen 2024.

Sociaal en Cultureel Planbureau. (2024b, April 5). De rijkste en armste Nederlanders ontmoeten elkaar steeds minder | Sociaal en Cultureel Planbureau. Sociaal En Cultureel Planbureau. https://www.scp.nl/actueel/nieuws/2024/04/05/de-rijkste-en-armste-nederlanders-ontmoeten-elkaar-steeds-minder

Topotijdreis: 200 jaar topografische kaarten. (n.d.-a). Topotijdreis. https://www.topotijdreis.nl/kaart/1872/@92656,437777,7.82

Topotijdreis: 200 jaar topografische kaarten. (n.d.-b). Topotijdreis. https://www.topotijdreis.nl/kaart/1962/@92656,437777,7.82

Topotijdreis: 200 jaar topografische kaarten. (n.d.-c). Topotijdreis. https://www.topotijdreis.nl/kaart/2024/@87836,441635,7.82

UWV. (2025, December 22). Sociaal minimum. https://www.uwv.nl/nl/toeslag/sociaal-minimum#:~:text=Met%20dit%20bedrag%20berekenen%20wij%20of%20u,bepaalt%20elk%20half%20jaar%20opnieuw%20wat%20het

Van Der Velden, J., & Tiggeloven, T. (2016). De Magic Mix (F. Wassenberg & M. Hazenoot, Eds.). Platform31. https://flexwonen.nl/wp-content/uploads/2016/10/De-Magic-Mix-Platform31-februari-2016.pdf

van Gameren, D. (2018). College versus campus. DASH | Delft Architectural Studies on Housing, 6(10), 18–39. Retrieved from https://journals.open.tudelft.nl/dash/article/view/4893

Van Kempen, R., & Bolt, G. (2009). Social cohesion, social mix, and urban policies in the Netherlands. Journal of Housing and the Built Environment, 24(4), 457–475. https://doi.org/10.1007/s10901-009-9161-1

ZUS [Zones Urbaines Sensibles], Flux, Sweco, & Urbanism, D. (n.d.). REDESIGNING DELTA NATIONAL PRODUCTIVE PARK DELFTLAND.

Figures

Figure 2: Sabine Broekhoven

Figure 3: ANP, Marcel van den Bergh