OPEN BUILDING SYSTEMS

A flexible and circular neighborhood in Amsterdam Sloterdijk

P5 Presentation
| 28 | 01 | 21 |

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aE studio - MSc 4

content

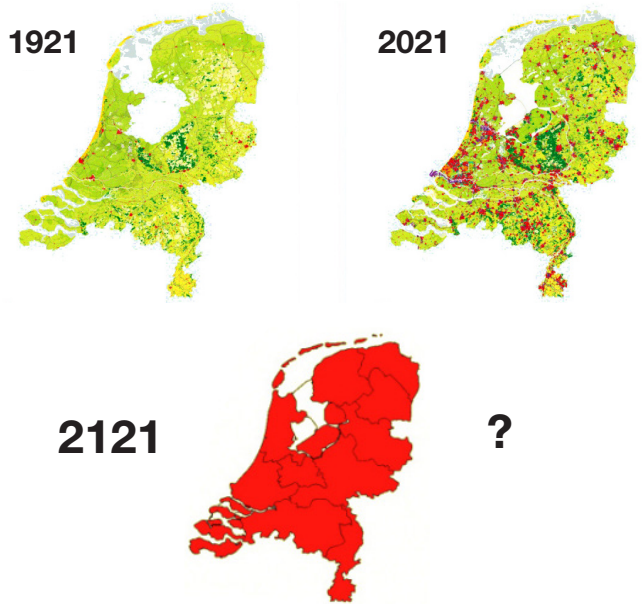
housing crisis

Het Parool

Lezersbrief

‘Wanneer stoppen we met alles volbouwen?’

De bevolkingsgroei stopt niet met het bouwen van meer woningen. Er zullen daarom nooit genoeg woningen zijn. Wanneer is het klaar? vraagt Paroollezer Thomas Warnaar zich af in deze ingezonden brief.



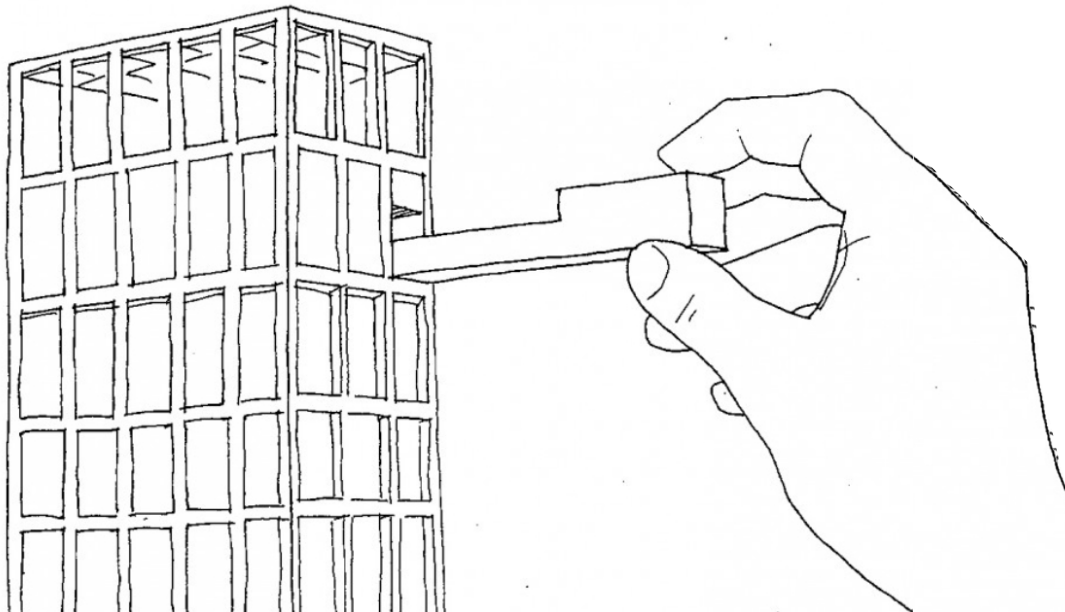
urbanization

linear building industry

non-adaptable buildings

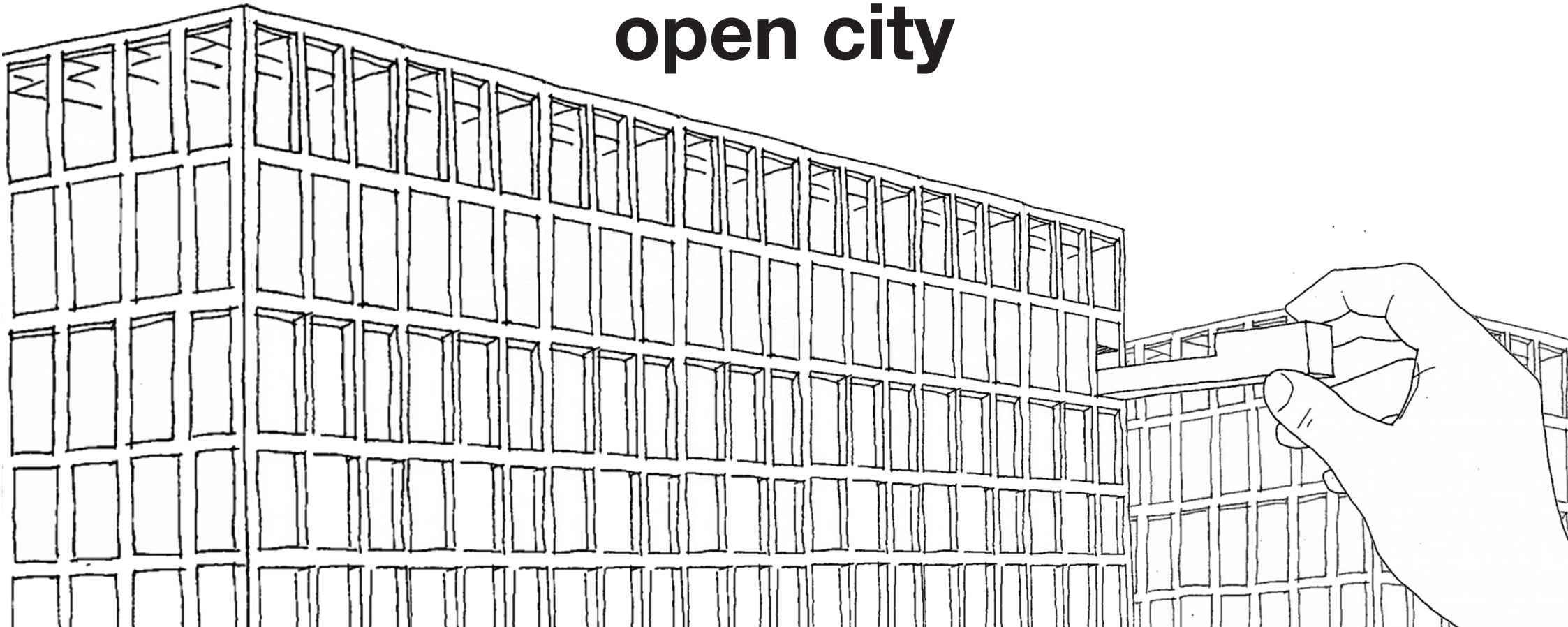
changing needs

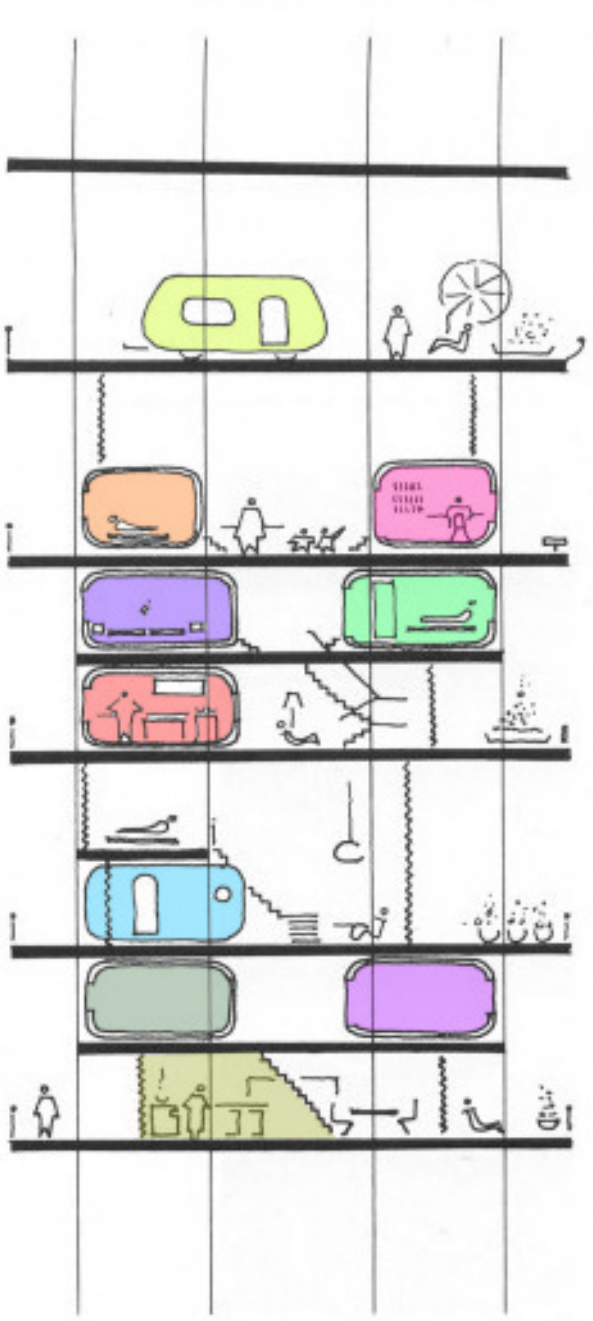
open building



A large project is not a large building
The support structure forms a neighborhood

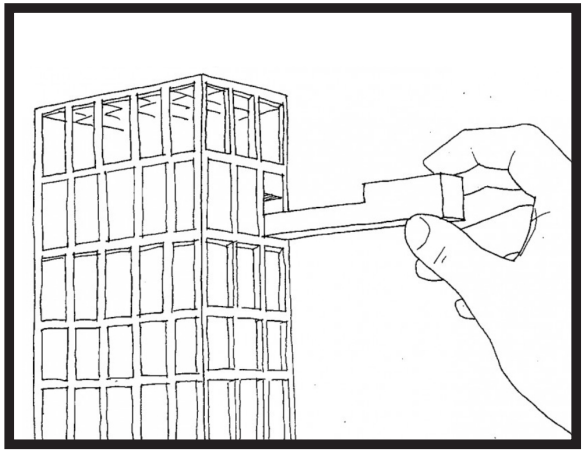
open city



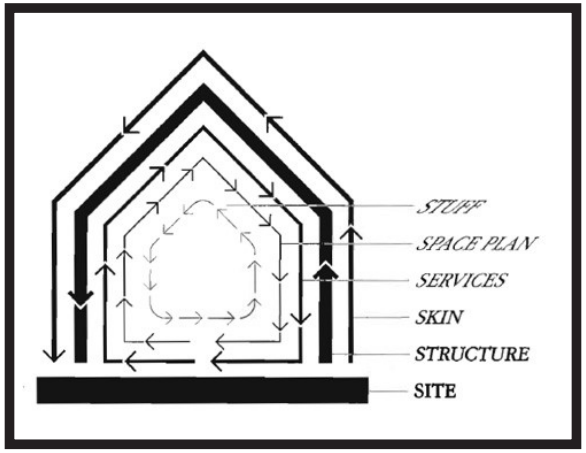


research question

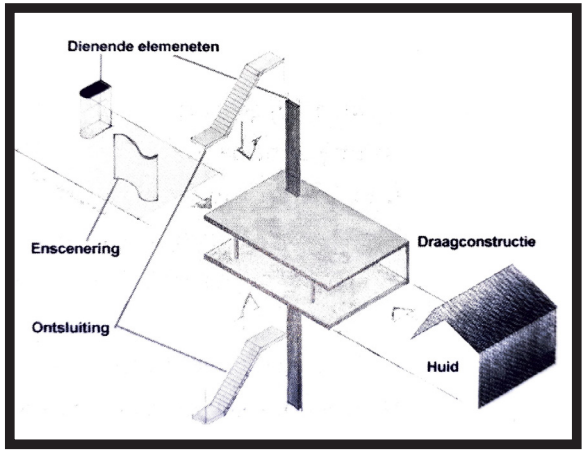
“How can a flexible support be designed for a circular and multifunctional open building?”



HABRAKEN

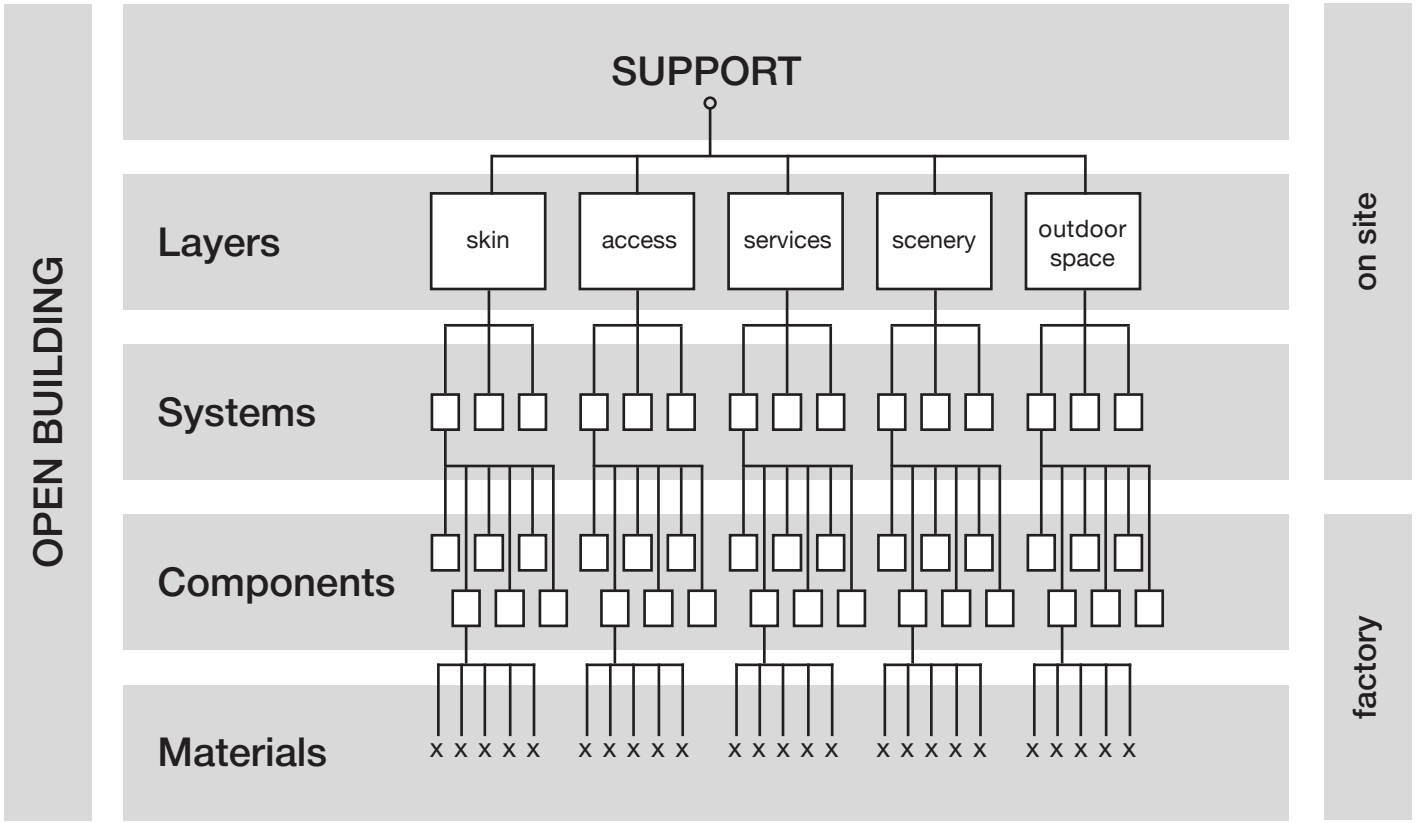


BRAND

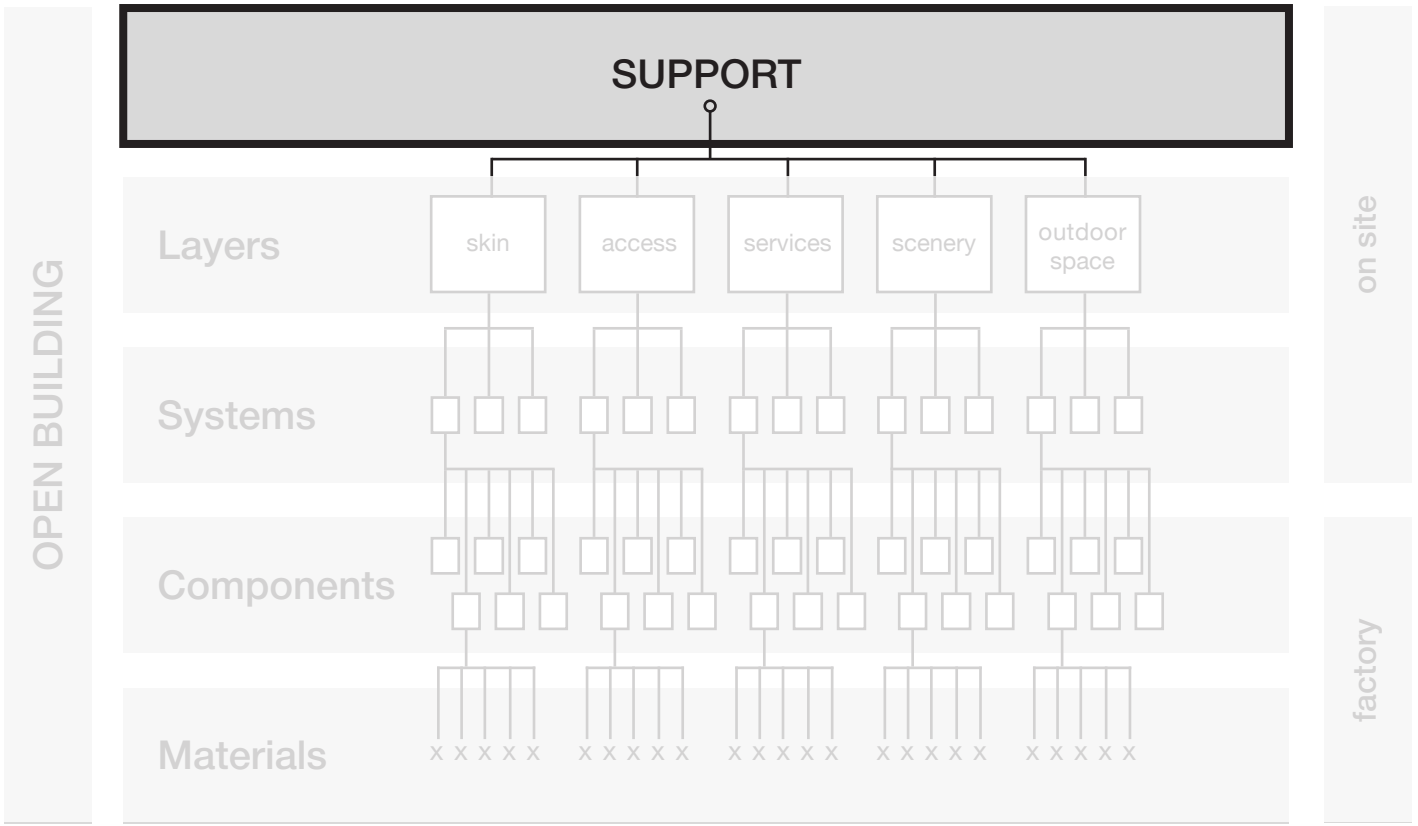


LEUPEN

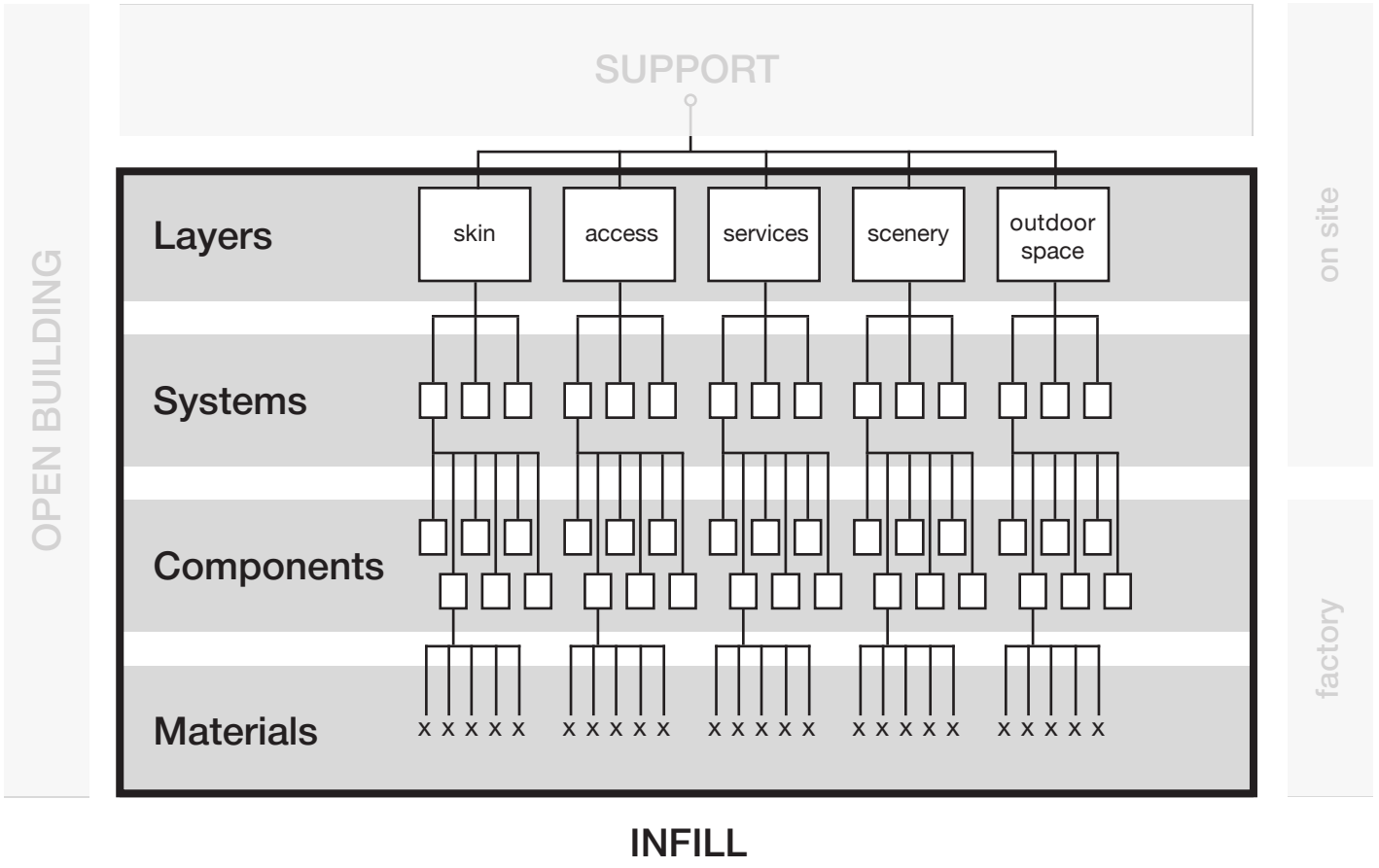
Open Building configuration



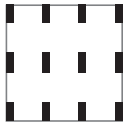
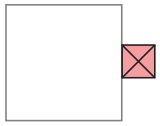
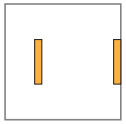
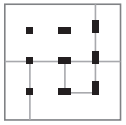
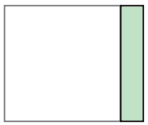
Open Building configuration

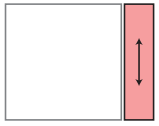
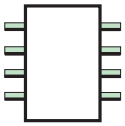


Open Building configuration



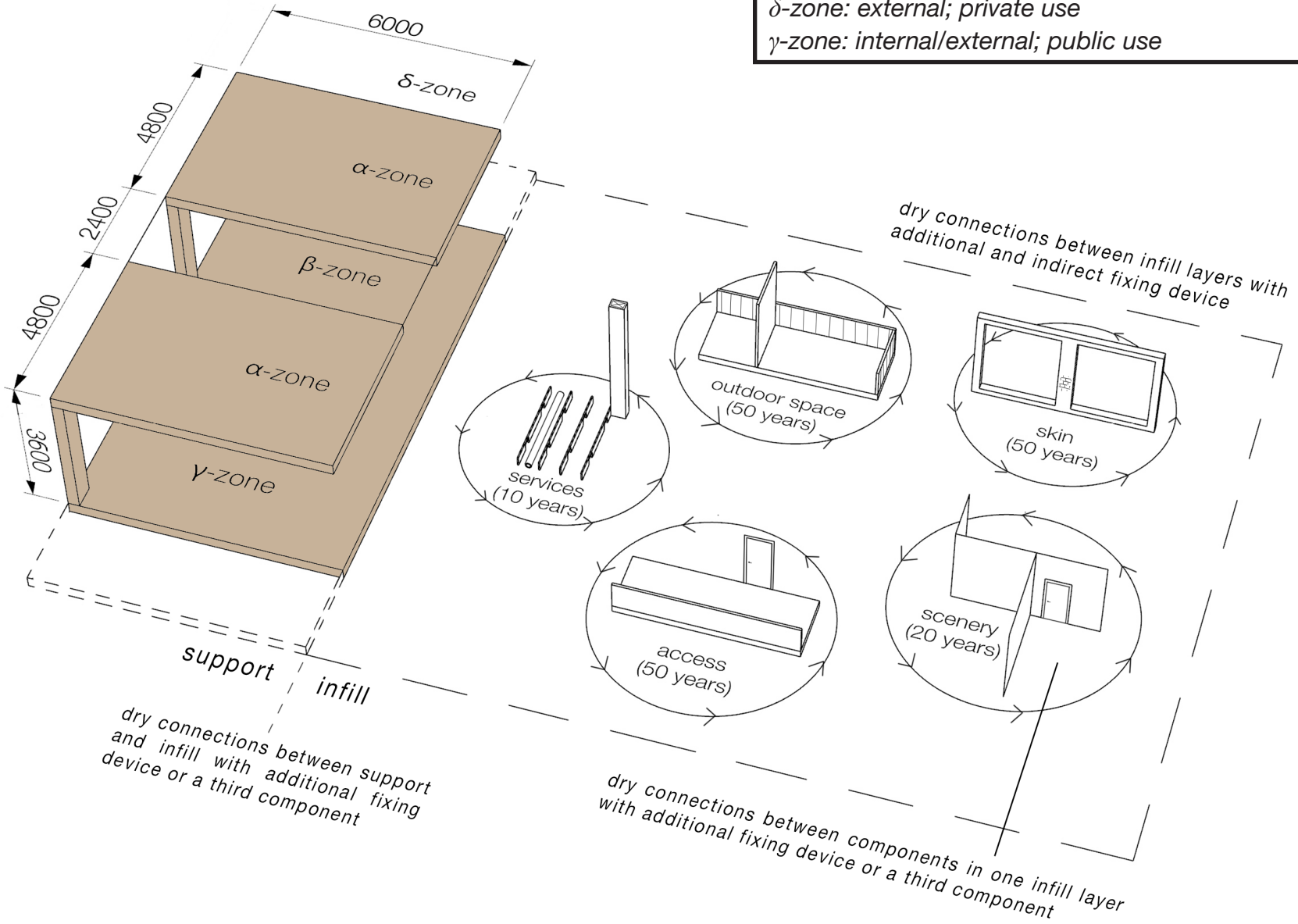
Zoning types

	vertical	qualities
Structure	 skeleton of monoliths	1. The structure is flexible and open for multiple types of layouts 2. The structure has spacious qualities by giving it direction/orientation; columns tend to be more neutral and have less spacious meaning
Skin	 grid	1. Openings in the skin can be changed due to the flexibility of its grid structure 2. The interaction between outdoor and indoor spaces is variable
Access	 external access	1. The vertical access is independent from the structure when situated in the γ-zone. 2. The distance from a unit to a vertical access element is small
Servant elements	 service zone(s)	1. The location of the wet-cells is flexible 2. The space of the vertical servant elements is space efficient
Scenery	 with vertical structural elements	1. The floorplan of each level is flexible with minimal interference of other layers 2. A structural system gives form to the internal layout
Outdoor space	 attached space	1. Outdoor spaces can be divided in smaller outdoor spaces 2. Outdoor space are space efficient

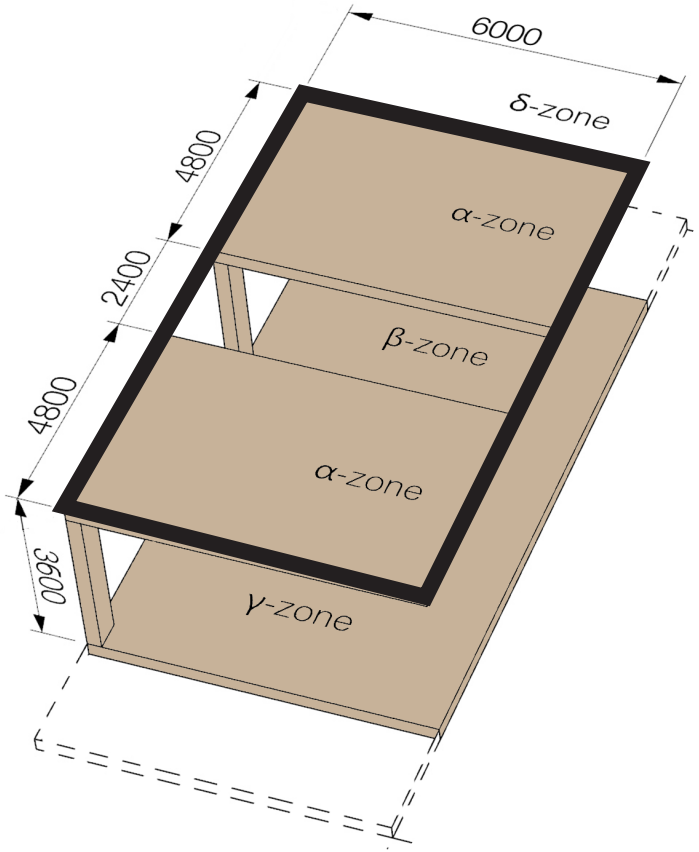
	horizontal	qualities
Structure	 monolith + skeleton	1. The structure is flexible and open in the β-zone for vertical arrangements of one or multiple units and/or vertical access/servant elements 2. The structure has a high thermal heat capacity which will make the building more energy efficient
Skin	 flat roof	1. The skin provides an optimal use of space. The flat roof can have multiple functions. 2. The horizontal elements of the skin can provide an extension of the outdoor space (parks, private terraces, sport facilities, community gardens and so on)
Access	 (lifted) street	1. Additional entrances can be added later due to flexible horizontal access spaces like lifted streets, galleries or bridges 2. The location of the access spaces have a potential social character like a street
Servant elements	 hollow floor	1. The location of wet cells is easy adaptable by using hollow floors 2. The place of the horizontal servant elements is space efficient
Scenery	 single-height	1. The layout is flexible in section due to a generous free height 2. Sound insulation between level is as much as possible integrated in the permanent structure
Outdoor space	 balconies	1. The outdoor space is adaptable 2. Each unit has as much outdoor space as possible

research conclusion

α-zone: internal; private use; adjacent to the facade
β-zone: internal; private use; not adjacent to the facade
δ-zone: external; private use
γ-zone: internal/external; public use



research conclusion



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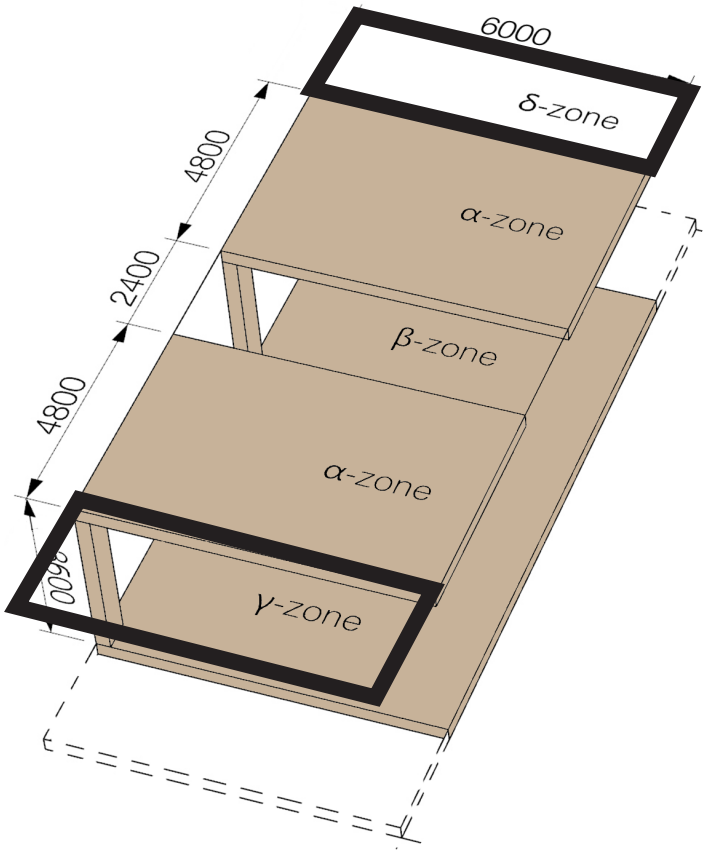
research conclusion



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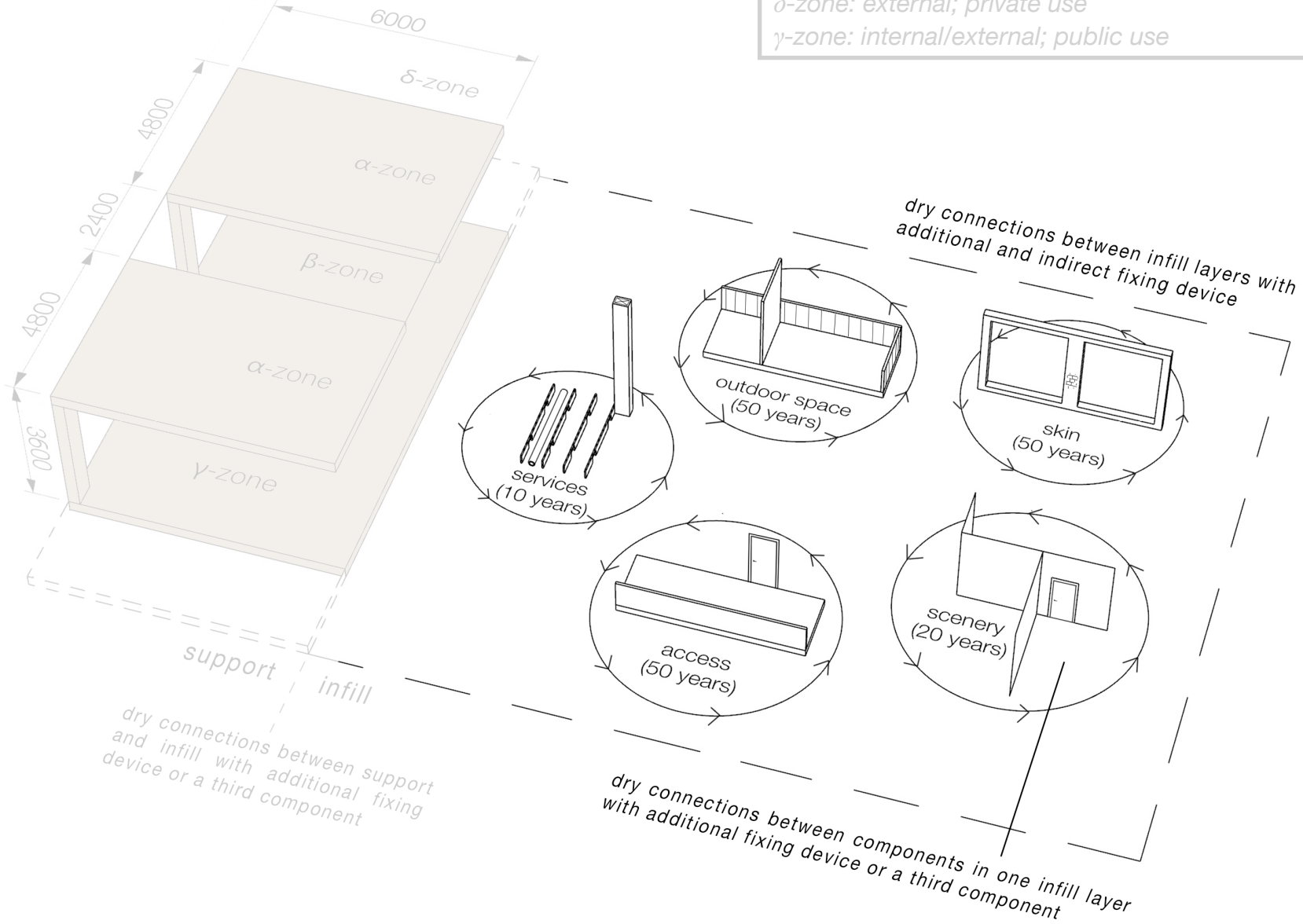
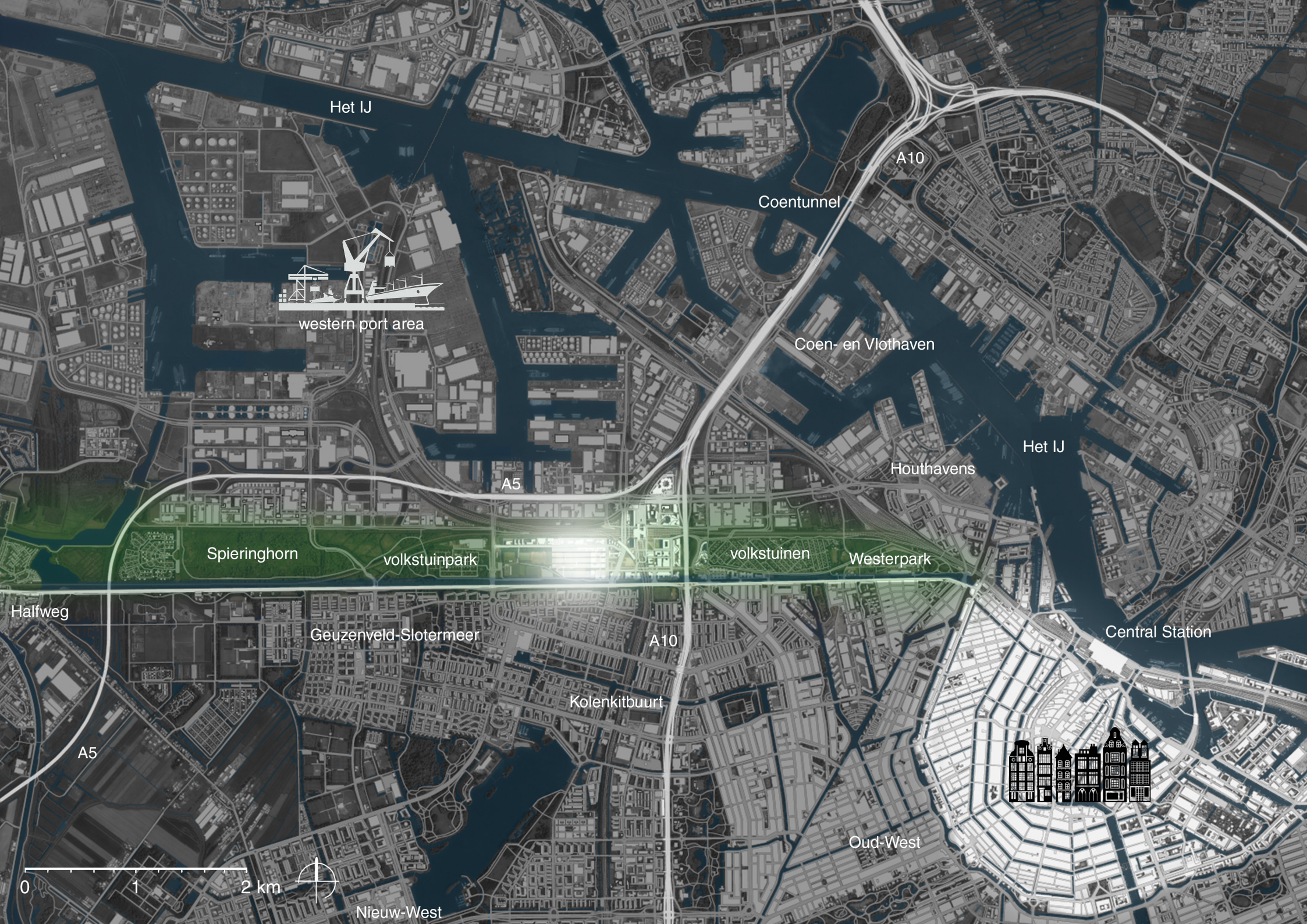


design context

design question

“How can a flexible support of an open building contribute to a circular, adaptable and dense neighborhood in Sloterdijk-Centrum?”

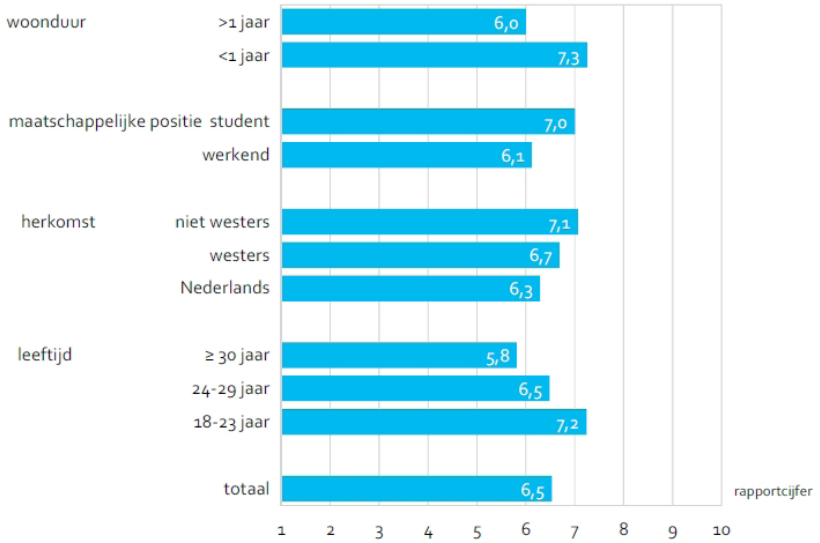

beverwijk
alkmaar
purmerend
zaandam
haarlem
beach
brettenzone
IJmeer
amsterdam
centrum
amstel
zuidas
schiphol
arena
almere
leiden
rotterdam
utrecht
0 1 2 3 4 5 km


Het IJ
A10
Coentunnel
western port area
Coen- en Vlothaven
Het IJ
Houthavens
A5
Spieringhorn
volkstuinpark
volkstuinen
Westerpark
Halfweg
Geuzenveld-Slotermeer
A10
Central Station
Kolenkitbuurt
A5
Oud-West
0
1
2 km
Nieuw-West

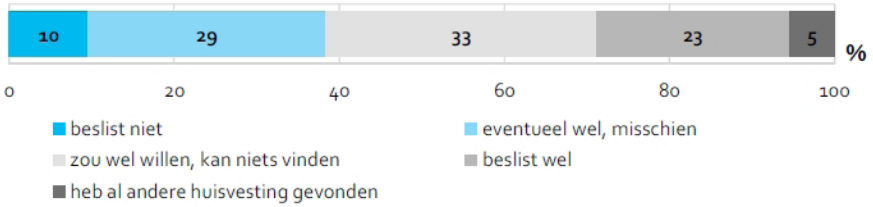

Beringhaven
Moezelhaven
Mainhaven
port industrial area
A5
A10
station Isolatorweg
industrial area
industrial area
railway
station
Naritaweg
Sportpark
Spieringhorn
SITE
Sloterdijk
village
allotment gardens
Haarlemmertrekvaart
Haarlemmerweg
residential area
A10
residential area
0
500 m

Sloterdijk resident survey

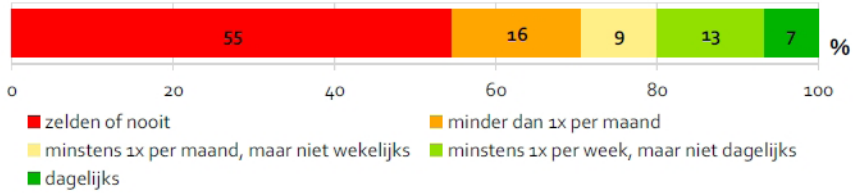
Figuur 2.1 'Hoe prettig vindt u het om in uw buurt te wonen?' naar woonduur, maatschappelijke positie, herkomst en leeftijd.



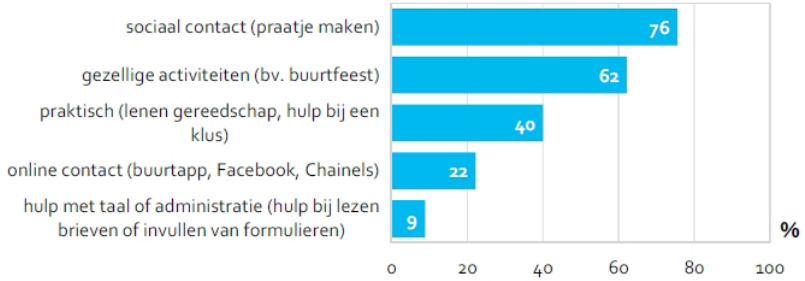
Figuur 2.2 'Wilt u binnen nu en 1 jaar verhuizen?'



Figuur 4.1 'Hoe vaak heeft u contact met uw buren of buurtgenoten?'

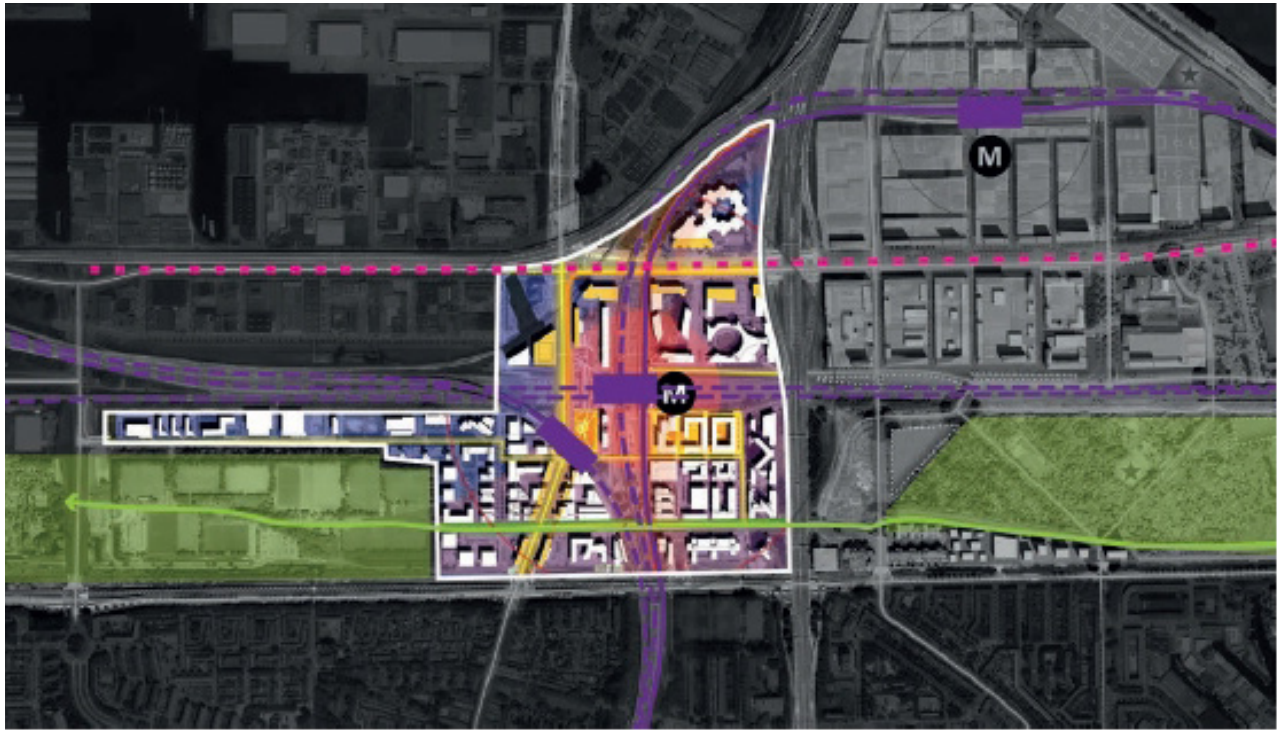


Figuur 4.2 'Welke soorten contact met buurtgenoten zou u graag willen?' Percentage respondenten die behoefte hebben aan meer contact, n=45 (meerdere antwoorden mogelijk)



Source: Bewonersonderzoek Sloterdijk-Centrum (2019)

Future plans Sloterdijk



Source: Gemeente Amsterdam

NU	STRAKS
521.922 m2	**1.058.264 m2**
14.036 arbeidsplaatsen	*15.515 arbeidsplaatsen*
0 woningen	**7.410 woningen**
0 scholen PO/VO	**5 scholen PO/VO**
0 zorgcentra	**5 zorgcentra**
0 m2 aan sportvelden	**14.820 m2 georganiseerde sport**

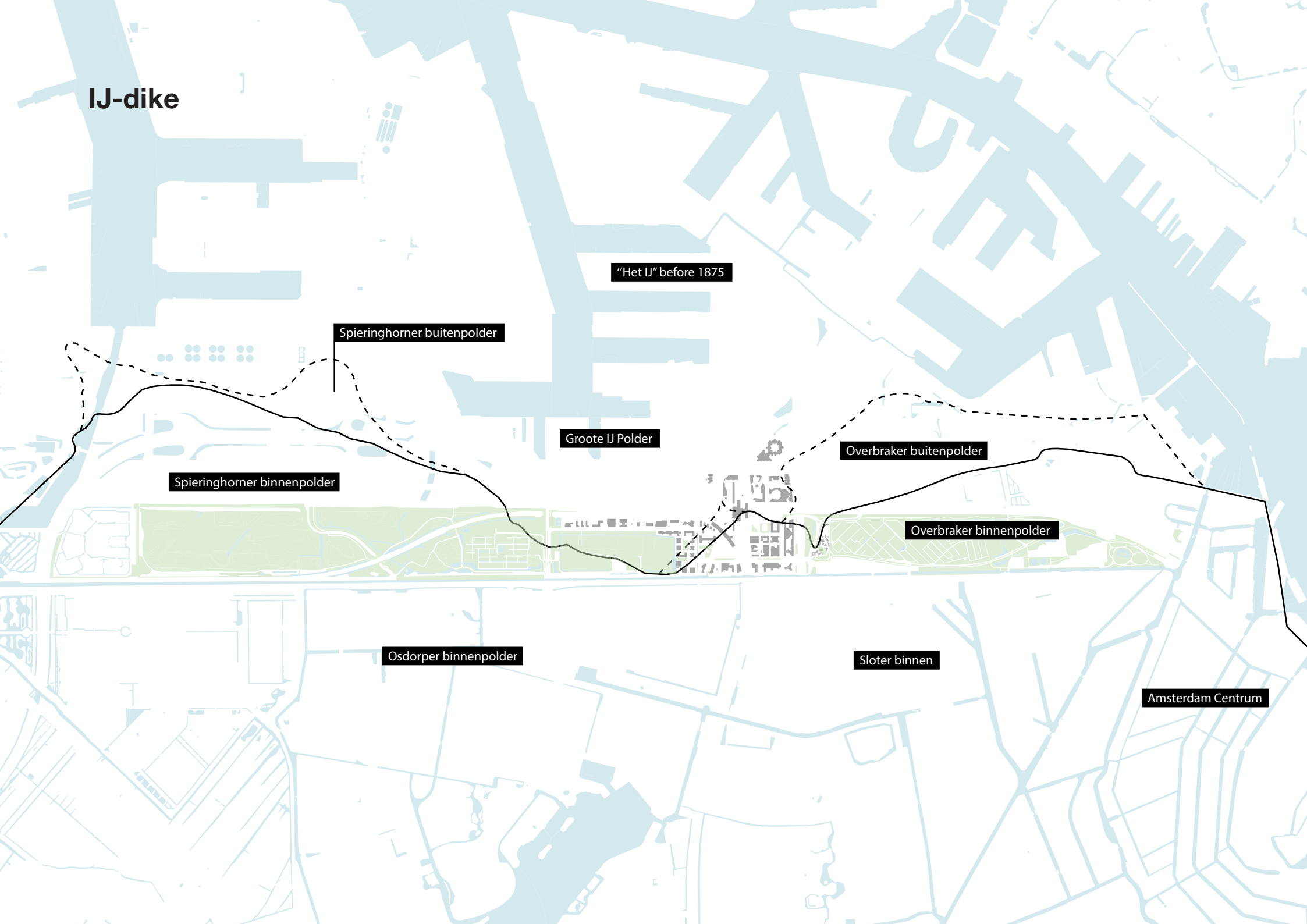
De Bretten

De Bretten van de toekomst = duurzaam + innovatief + natuur

- Een park voor iedereen
- Wonen en werken aan het park
- Rainproof
- Circular (waste) Xperience
- Duurzaam tuinpark

Source: Gemeente Amsterdam

IJ-dike

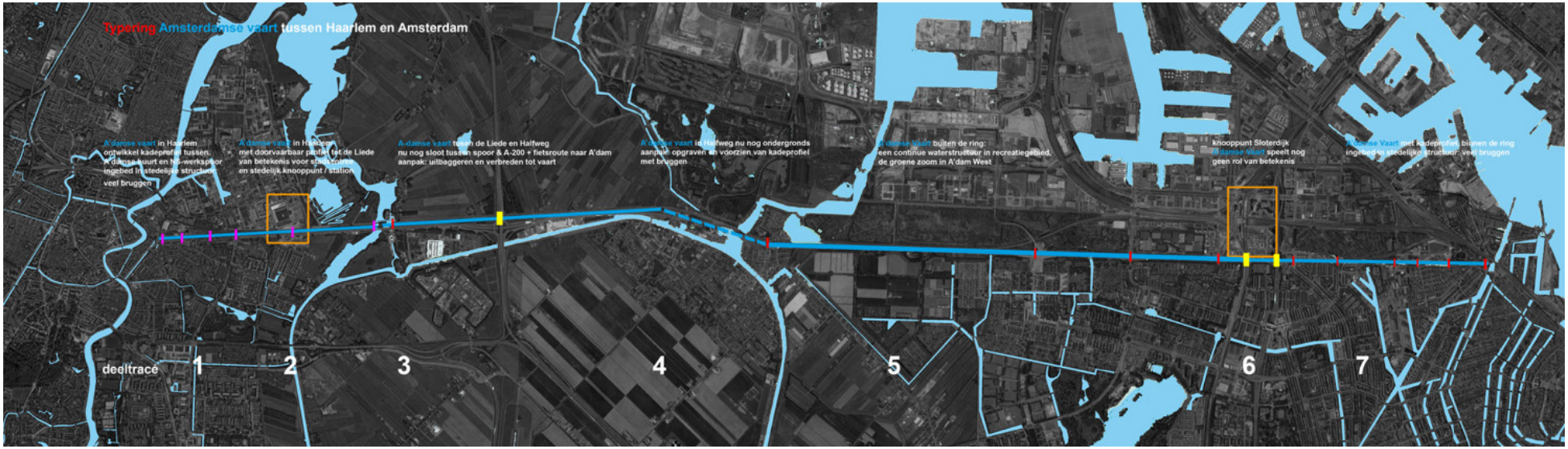

"Het IJ" before 1875
Spieringhorner buitenpolder
Groote IJ Polder
Overbraker buitenpolder
Spieringhorner binnenpolder
Overbraker binnenpolder
Osdorper binnenpolder
Sloter binnen
Amsterdam Centrum

Haarlemmertrekvaart

Vision: Restoration of the historical waterway and connection between Amsterdam and Haarlem. New possibilities for waterrecreation and activity in the Brettenzone.

Interventions:

- Between Halfweg and the Amsterdamse Poort the Haarlemmertrekvaart needs to be constructed again. A ditch along the A200 is the only remaining part of the waterway. An alternative is to use Ringvaart of the Haarlemmermeerpolder which is situated between the Halfweg and Zuiderpolder.
- Non-movable bridges should have a vertical clearance of at least 5,6 meter
- Other bridges should be replaced by movable bridges (red)
- The waterdepth should be at least 1,5m so it is suitable for small recreation boats. CEMT-klasse RC (lengte <15,00 | breedte <4,00 | strijkhoogte <4,00)

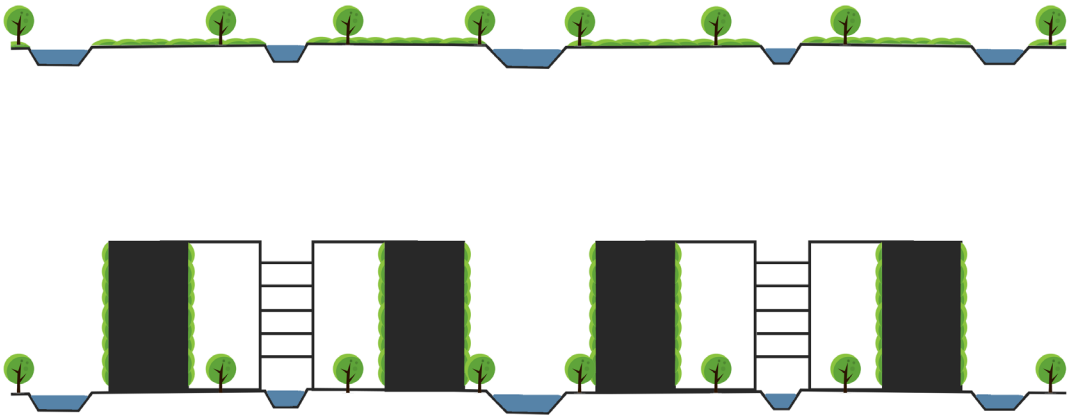


Source: Gemeente Amsterdam

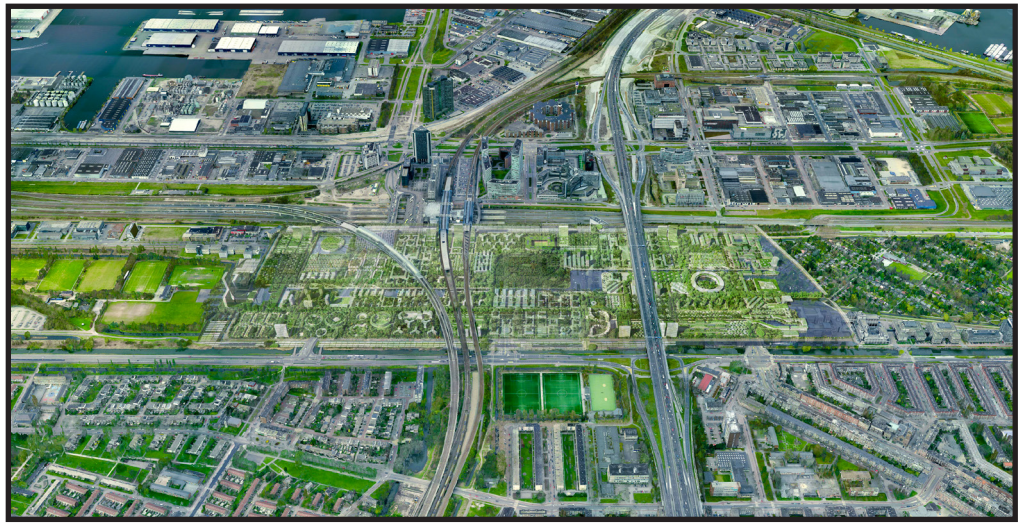
De Bretten in Sloterdijk

Connection Brettenzone en Sloterdijk
- **Moving the Bretten in Sloterdijk**
- **Physical and visual relation with the Bretten**
- **Vertical extensions of outdoor space**

IJ-Polder
- **Adding waterstorage and emphasize former IJ dike**
- **Extension of the waternetwork**
- **Polder ecosystem which continues vertically**

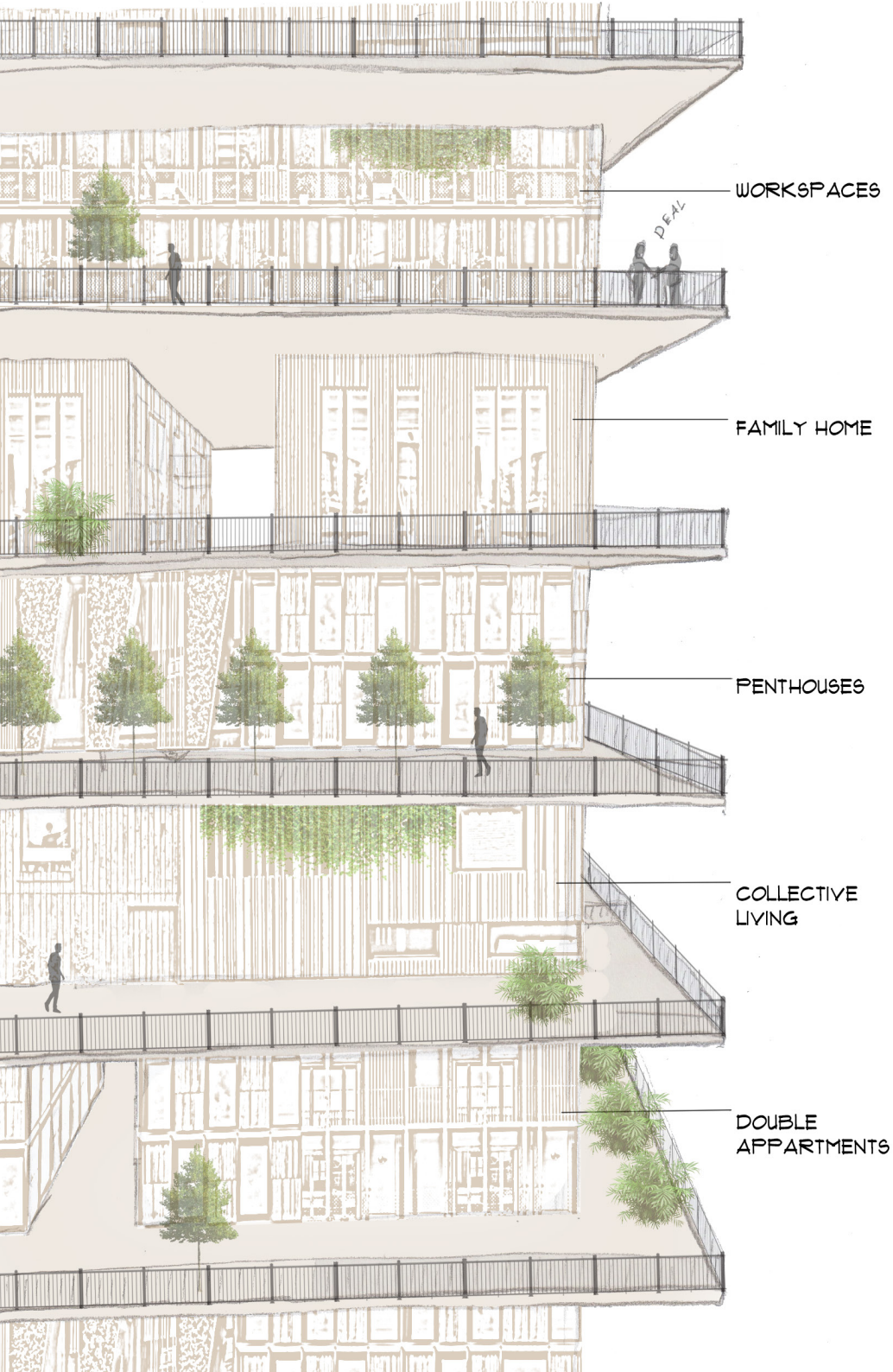


Polder structure



Moving the Bretten in Sloterdijk

Border between Sloterdijk and the Brettenzone



open- building, block, city

A dense neighborhood of a flexible support which accomodates a circular infill to allow a collaboration of architects and users to built their own home and start a sharing community.

The mass

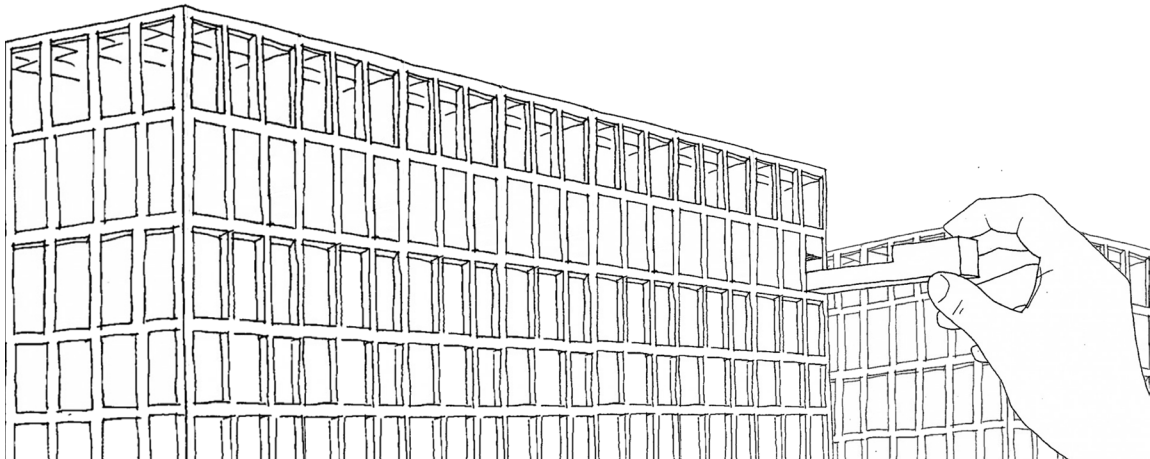
- **A dense neighorhood of multifunctional supports within an urban structure which forms a collage of different blocks, people, values, communities and activities.**

The collective

- **Urban blocks of flexible supports which allows a lot of flexability in function, size, program and appearance. Blocks form an urban village for communities with shared values**

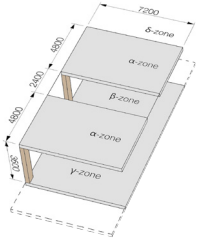
The individual

- **Freedom to design your own home within the given structure and the given components from a toolbox.**



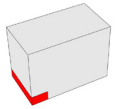
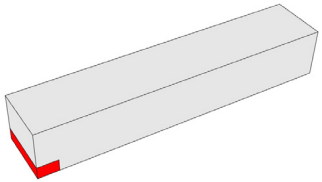
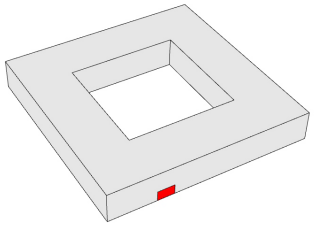
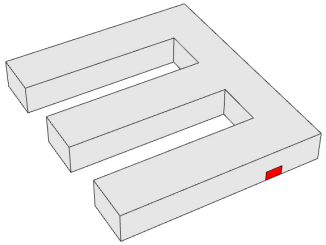
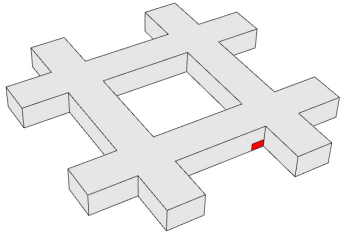
urban tissue

support - building - urban fabric

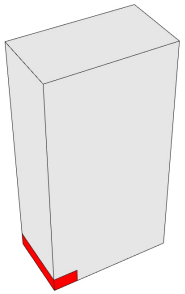
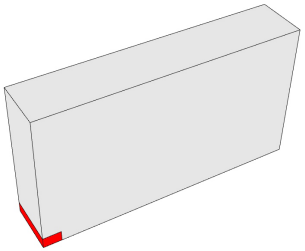
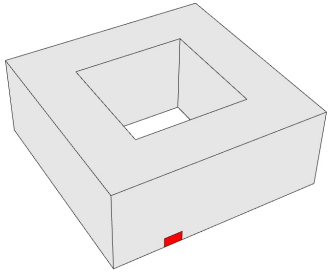
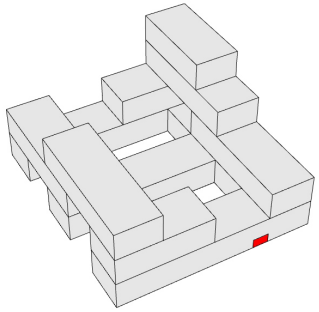
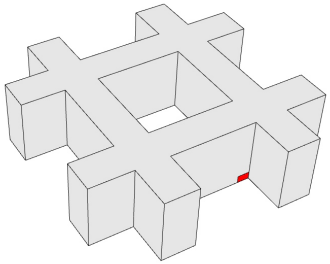


towers | slabs | closed blocks | open blocks | grids

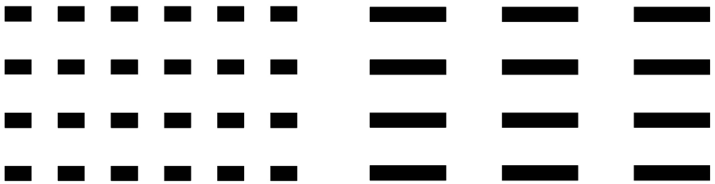
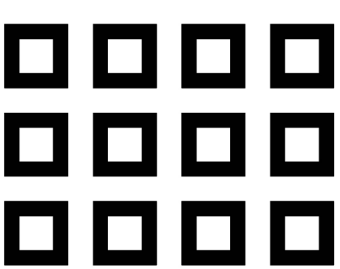
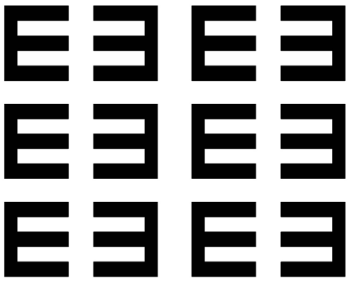
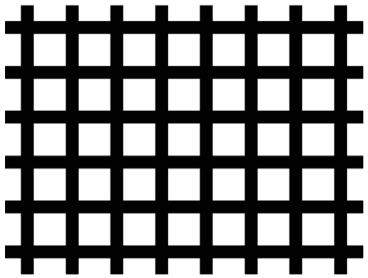
low

high

city

FSI, GSI, OSR, L

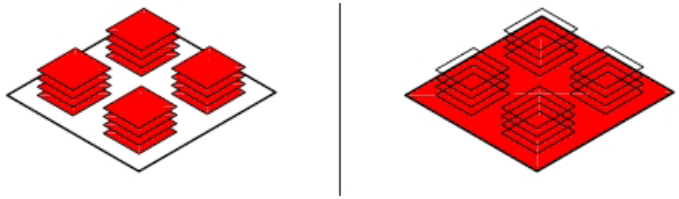
Building Intensity (FSI)

FSI reflects the building intensity independently of the programmatic composition and is calculated as follows for all levels of scale as described earlier:

$FSI_x = F_x / A_x$ (2) where

F_x = gross floor area (m^2)
A_x = area of aggregation x (m^2)
x = aggregation (lot (l), island (i), fabric (f), or district (d))

This index uses the unit square metres per square metres (m^2/m^2).



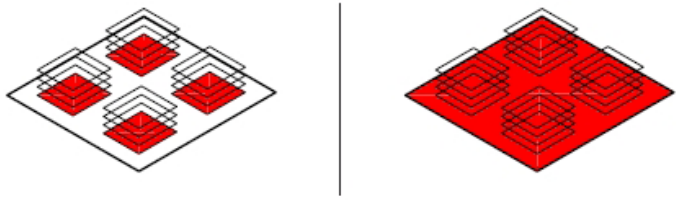
Coverage (GSI)

GSI, or coverage, demonstrates the relationship between built and non-built space and is calculated as follows for all levels of scale as described earlier:

$GSI_x = B_x / A_x$ (3) where

B_x = footprint of (m^2)
A_x = area of aggregation x (m^2)
x = aggregation (lot (l), island (i), fabric (f), or district (d))

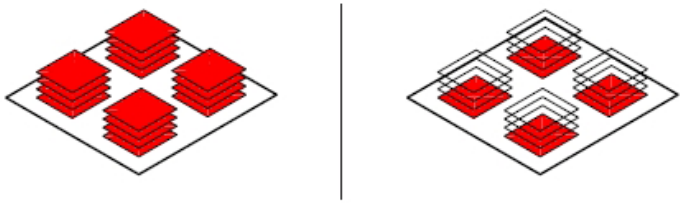
This index uses the unit square metres per square metres (m^2/m^2).



Building height (L)

The average number of storeys (or layers), L, can be arrived at by ascertaining the intensity and coverage or, FSI and GSI, for the aggregation x. If more floor area is developed in a certain area, without changing the footprint, L will increase. If the building height should remain constant, then FSI and GSI have to increase.

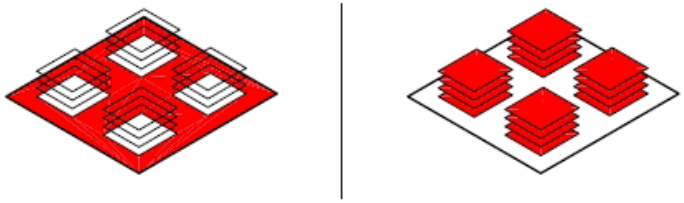
$L = FSI_x / GSI_x$ (4)

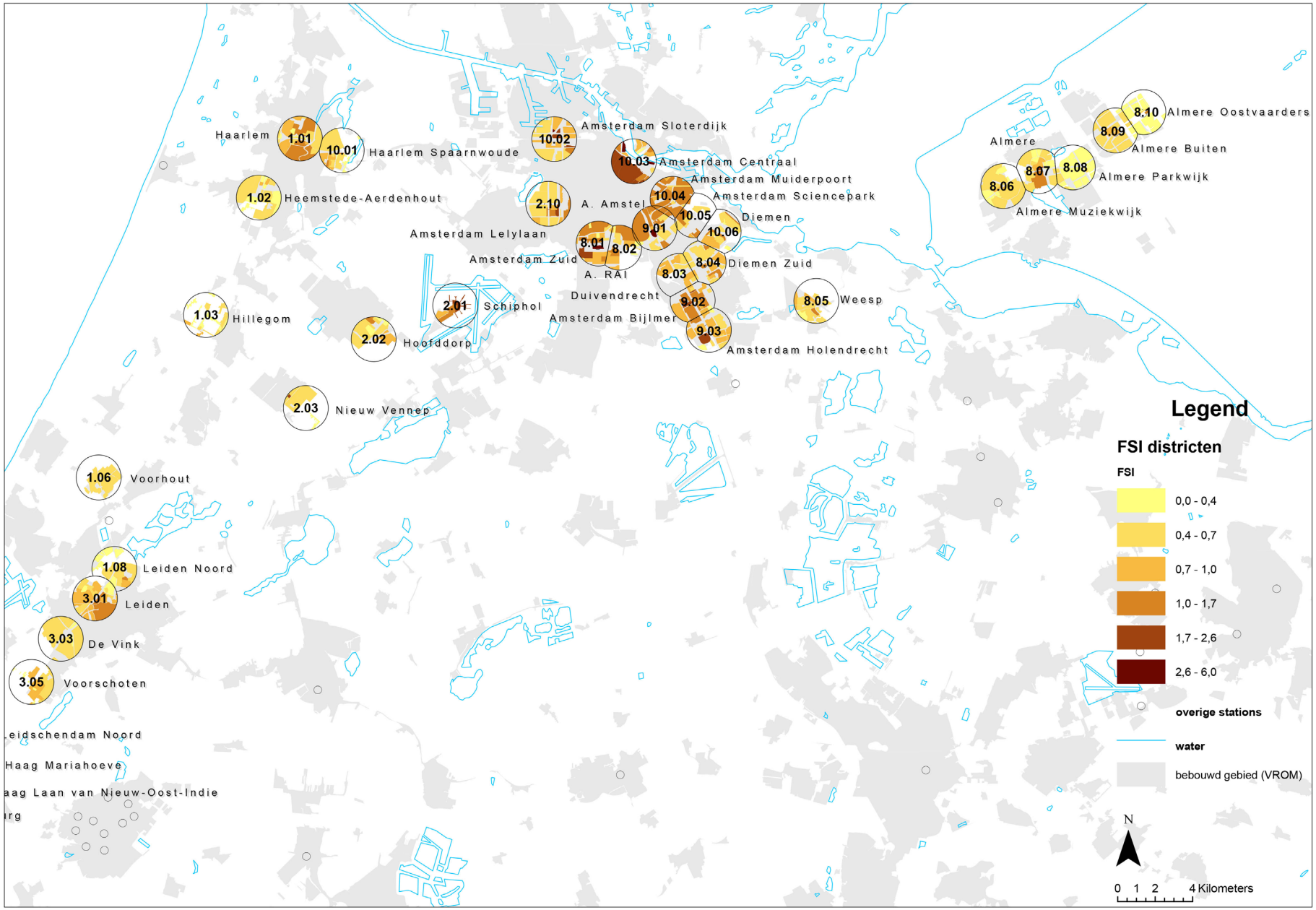


Spaciousness (OSR)

The variable OSR, or spaciousness, is a measure of the amount of non-built space at ground level per square metre of gross floor area. This figure provides an indication of the pressure on non-built space. If more floor area is developed in an area (with the same footprint), the OSR decreases and the number of people who will use the non-built space increases. The unit of OSR is m^2/m^2.

$OSR = (1 - GSI_x) / FSI_x$ (5)

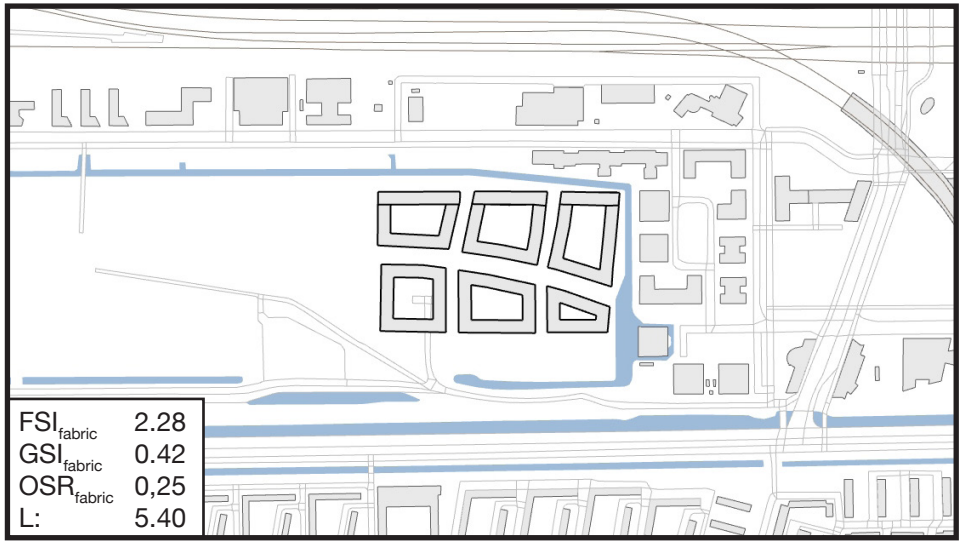




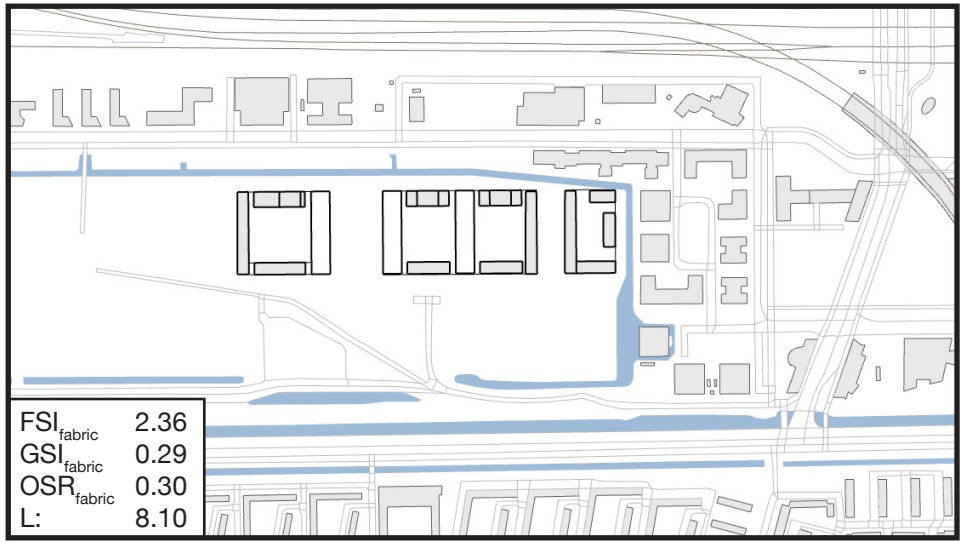
references

plan projection

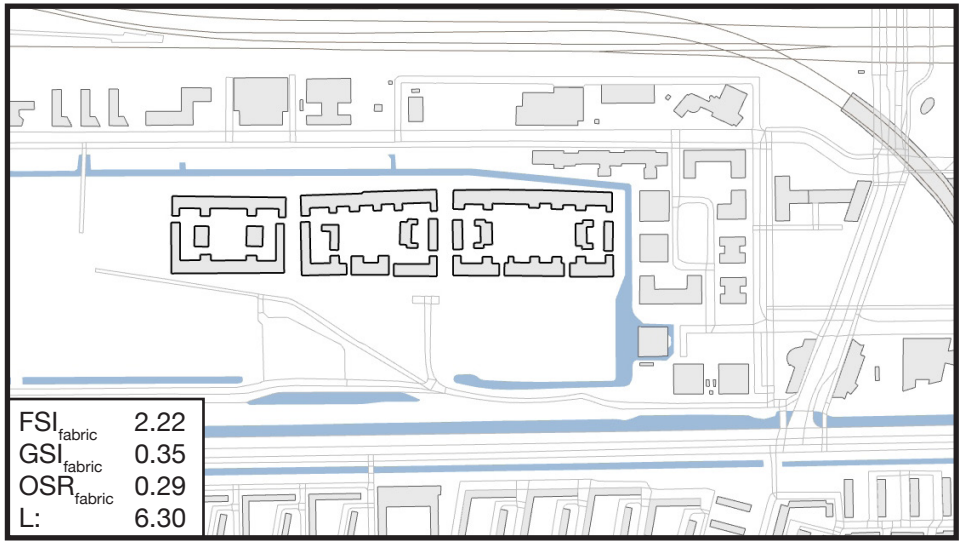
GWL Terrein, Amsterdam



Sluseholmen, Copenhagen

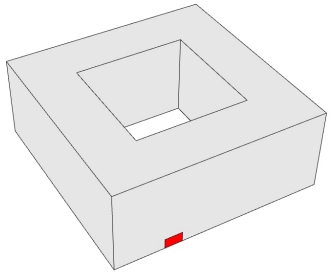


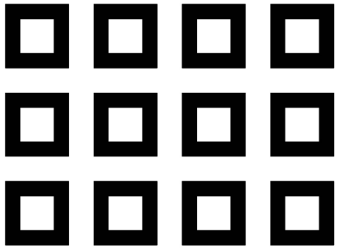
Landtong, Rotterdam



Java Eiland, Amsterdam

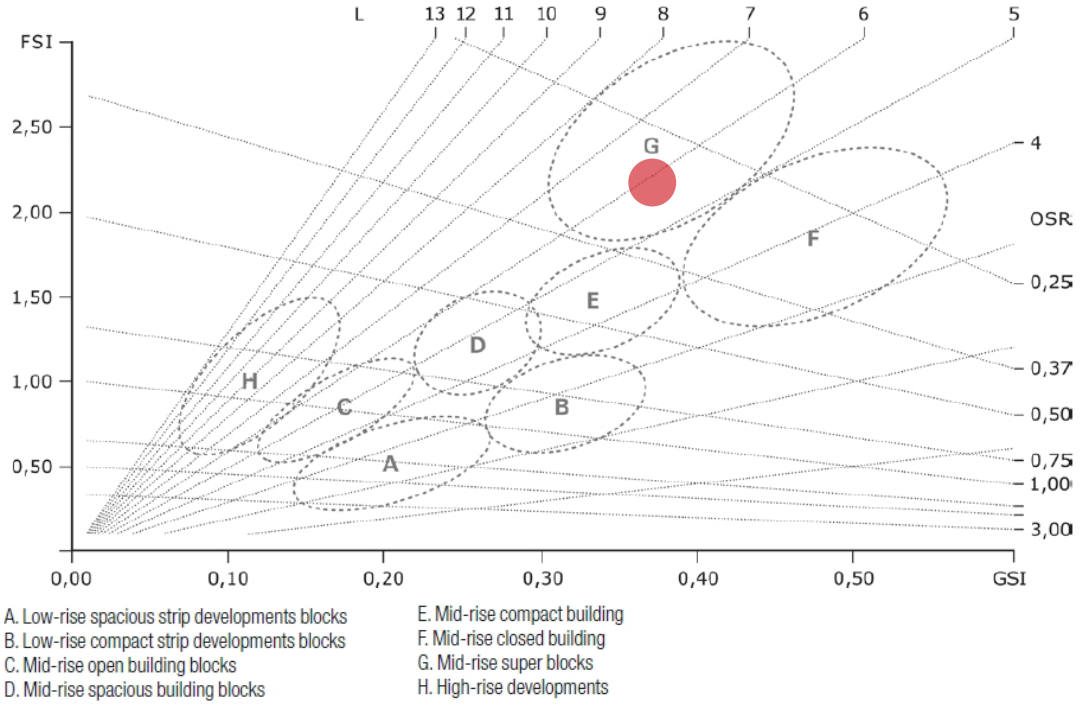
super blocks





Urban block qualities:

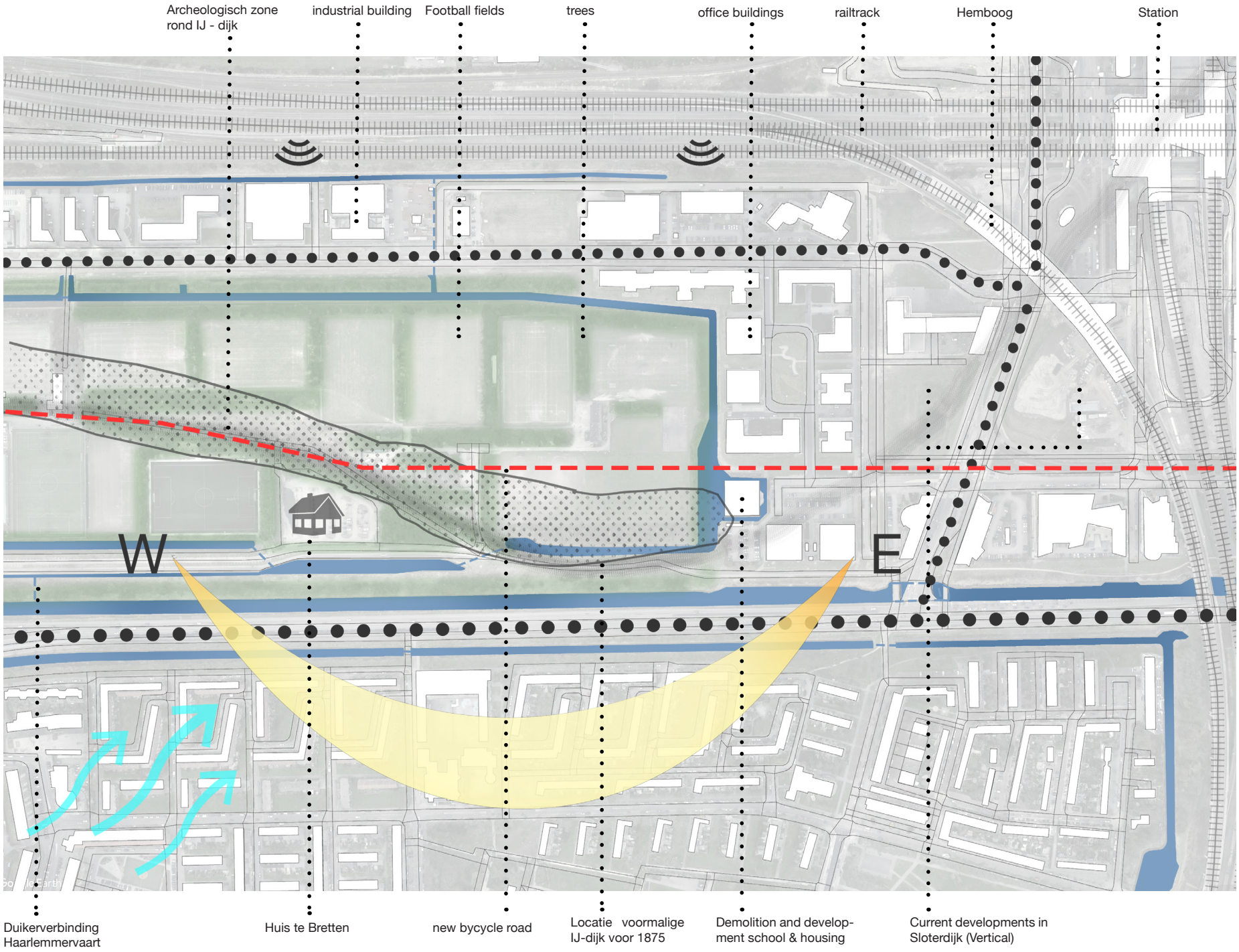
- Dense
- Limited vertical transport needed relative to towers
- Closed and open outdoor spaces
- Green axes possible through neighborhood

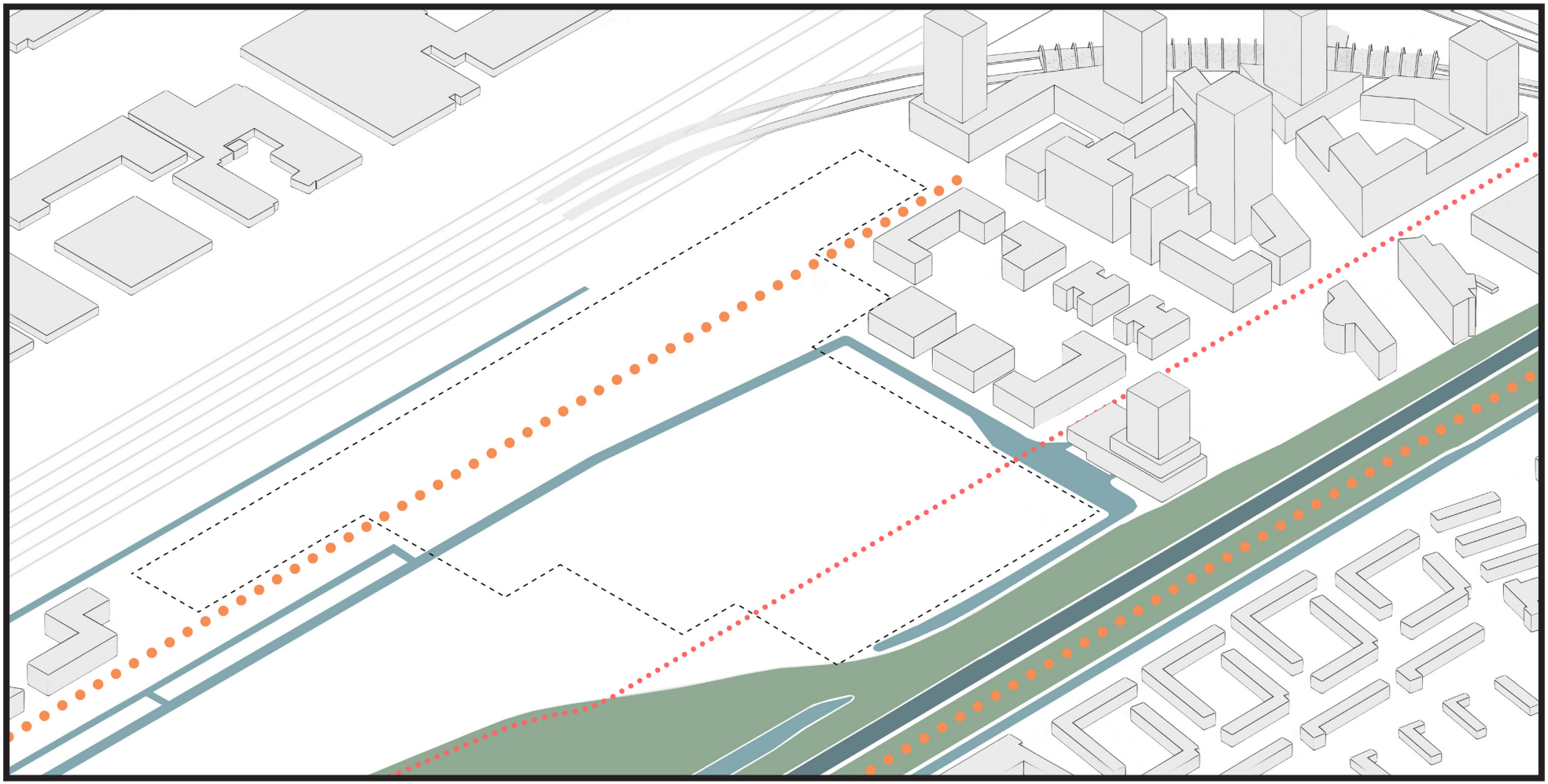


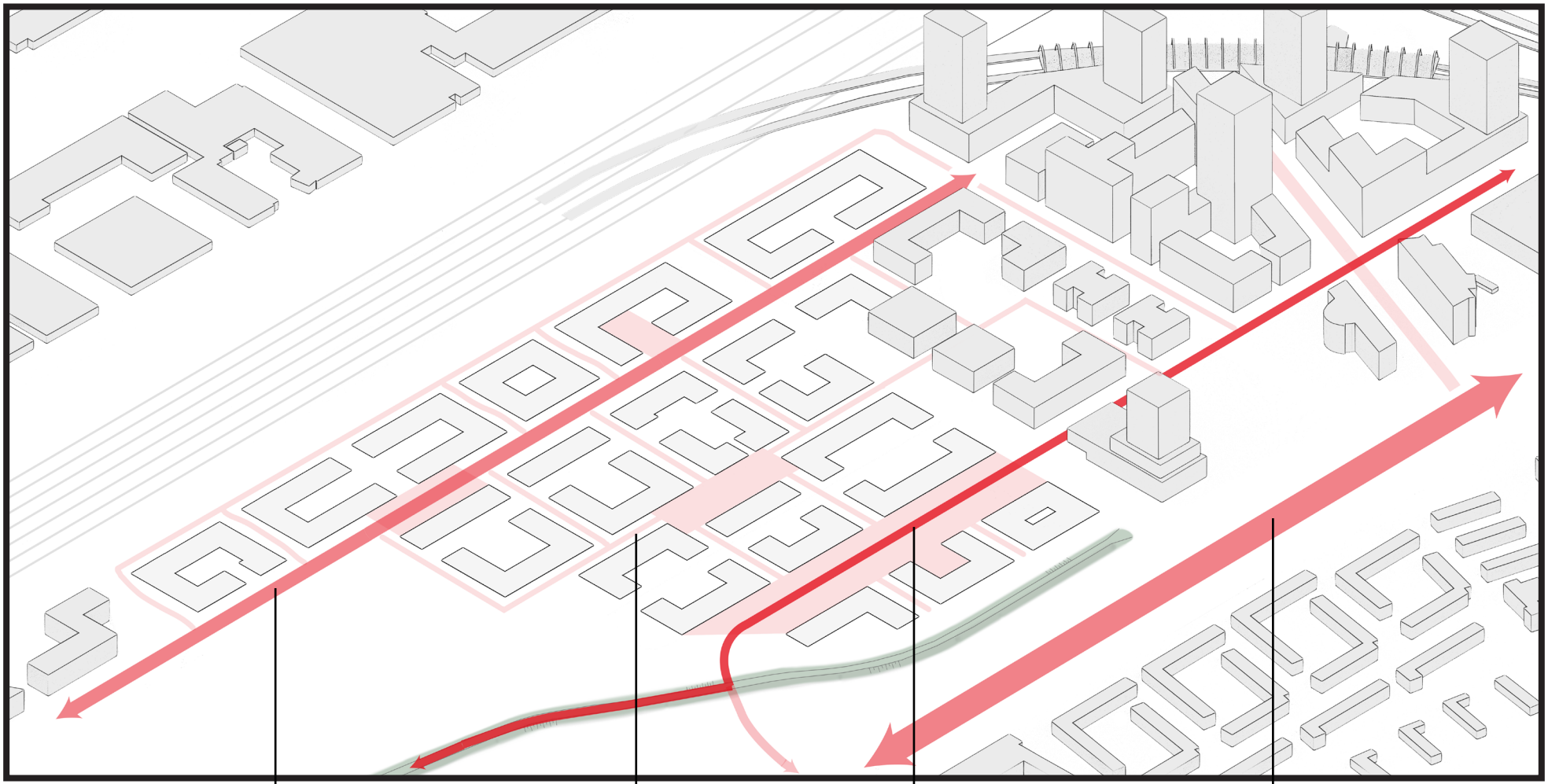
Land development typologies (Source: The Spacemate: Density and the typomorphology of the urban fabric - Berghauser)

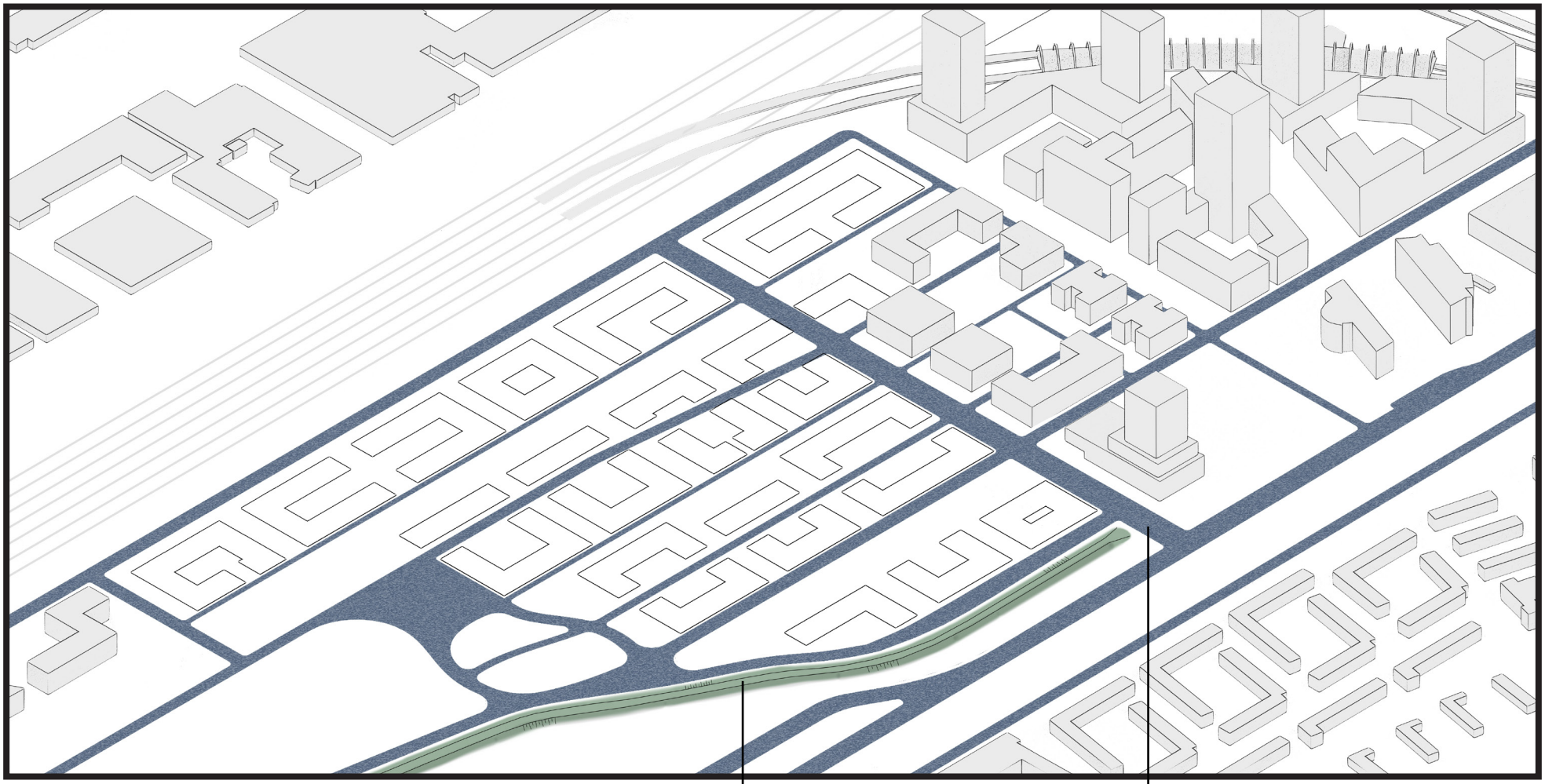
Sloterdijk vision in numbers (fabric)

FSI_{fabric} *building intensity*	2.0 - 2.2	A high building density is required to reach the required 7400 residentials in Sloterdijk and to meet the housing demand in Amsterdam.
GSI_{fabric} *coverage*	0.35 - 0.40	A relatively low amount of built space is required, so green, water and different kinds of public/collective/private outdoor space can be implemented. Open space is needed to move the Brettenzone into Sloterdijk.
L_{fabric} *building levels*	6 - 7	There are 6-7 building levels on average but it can vary between 3 - 10 levels. People are still able to make eye contact between the ground level and the 6th floor.
OSR_{fabric} *spaciousness*	0.25 - 0.30	A low OSR will result in more interactions between people in public space. The open space index can be low, because the Brettenzone is next to the site so residents have enough open space nearby. Long axes through the area can make the neighborhood more spacious while having a connection with the Brettenzone.

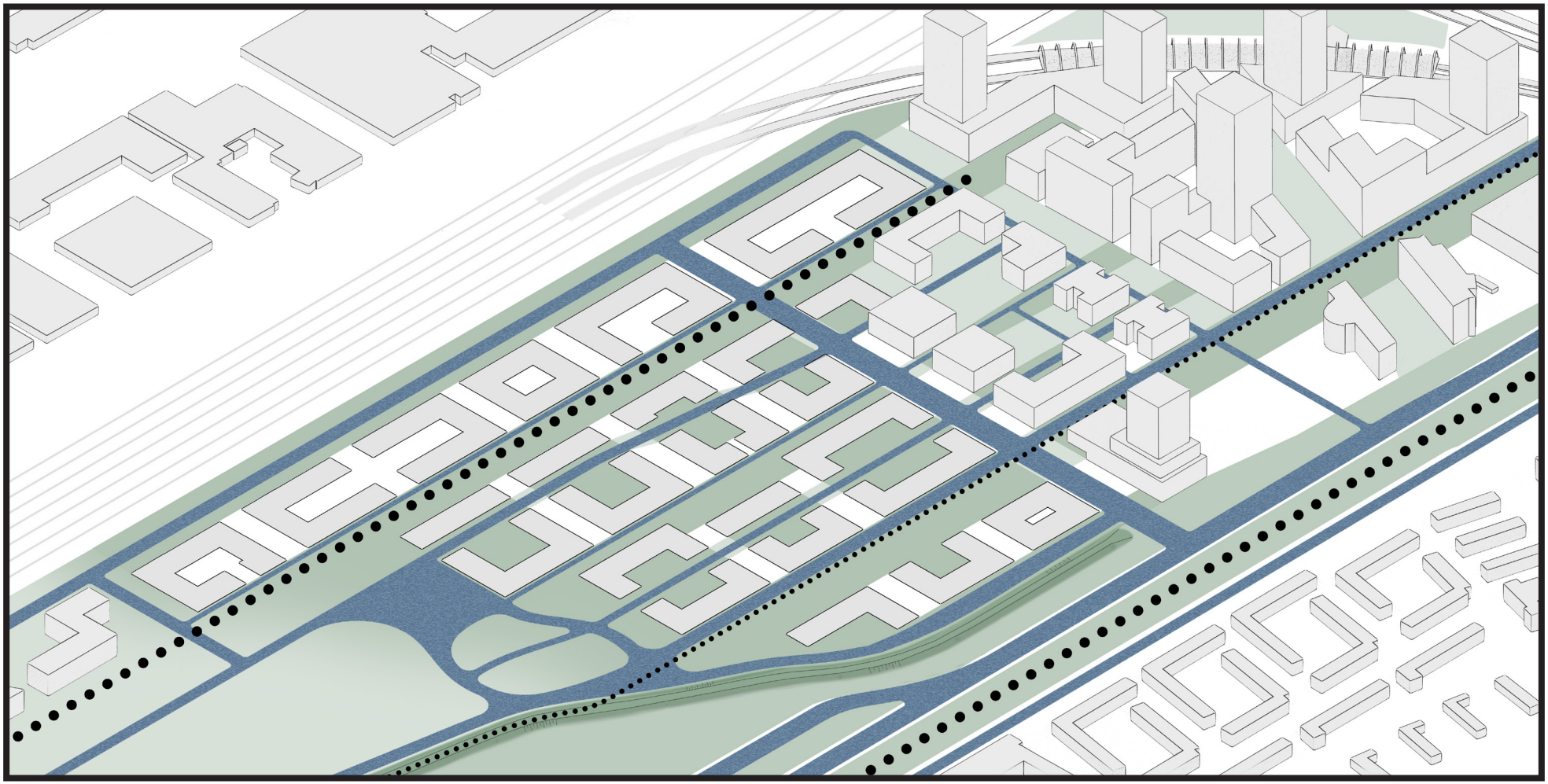

Archeologisch zone rond IJ - dijk
industrial building
Football fields
trees
office buildings
railtrack
Hemboog
Station
W
E
Duikerverbinding Haarlemmervaart
Huis te Bretten
new bycycle road
Locatie voormalige IJ-dijk voor 1875
Demolition and development school & housing
Current developments in Sloterdijk (Vertical)

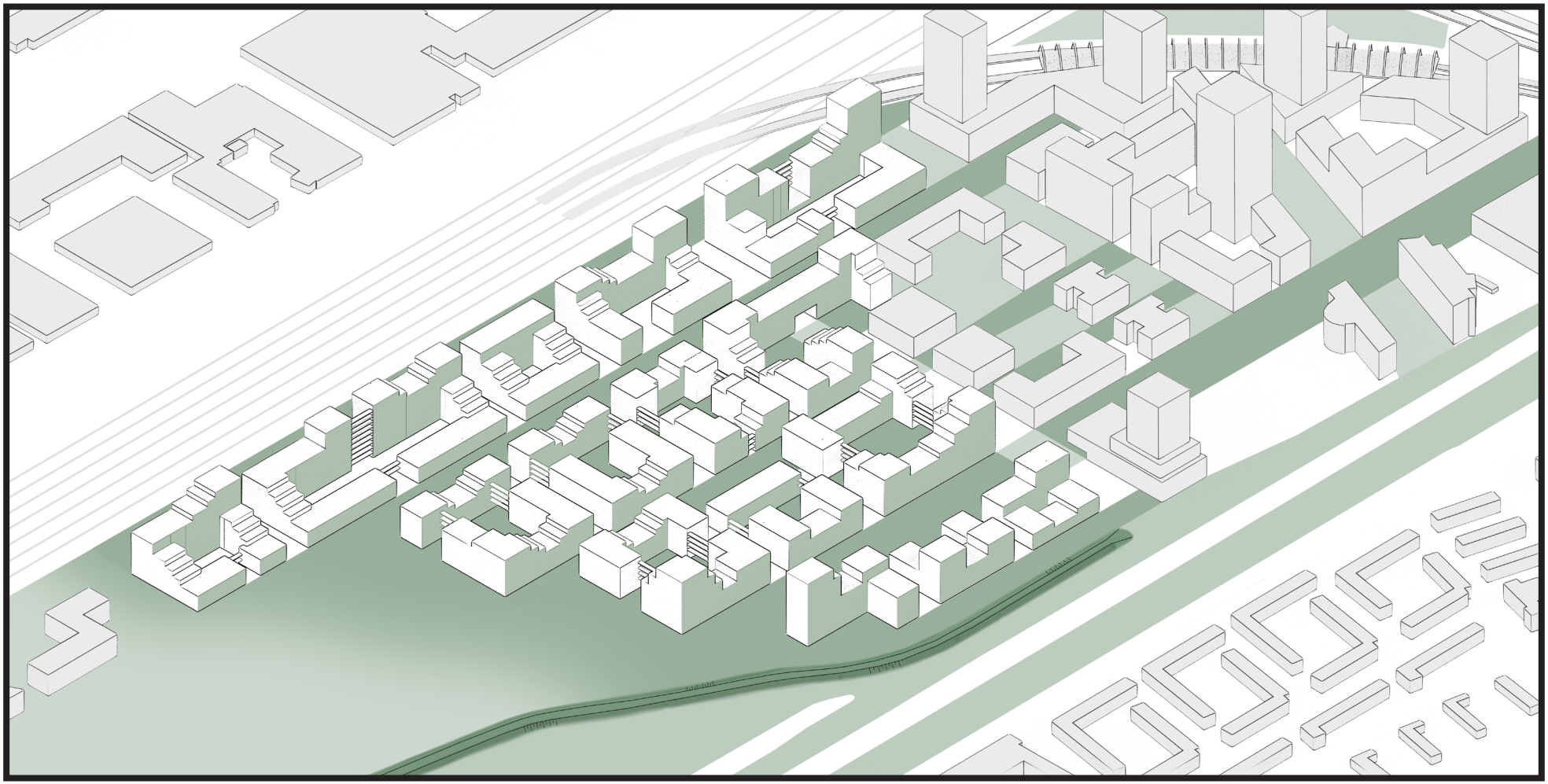


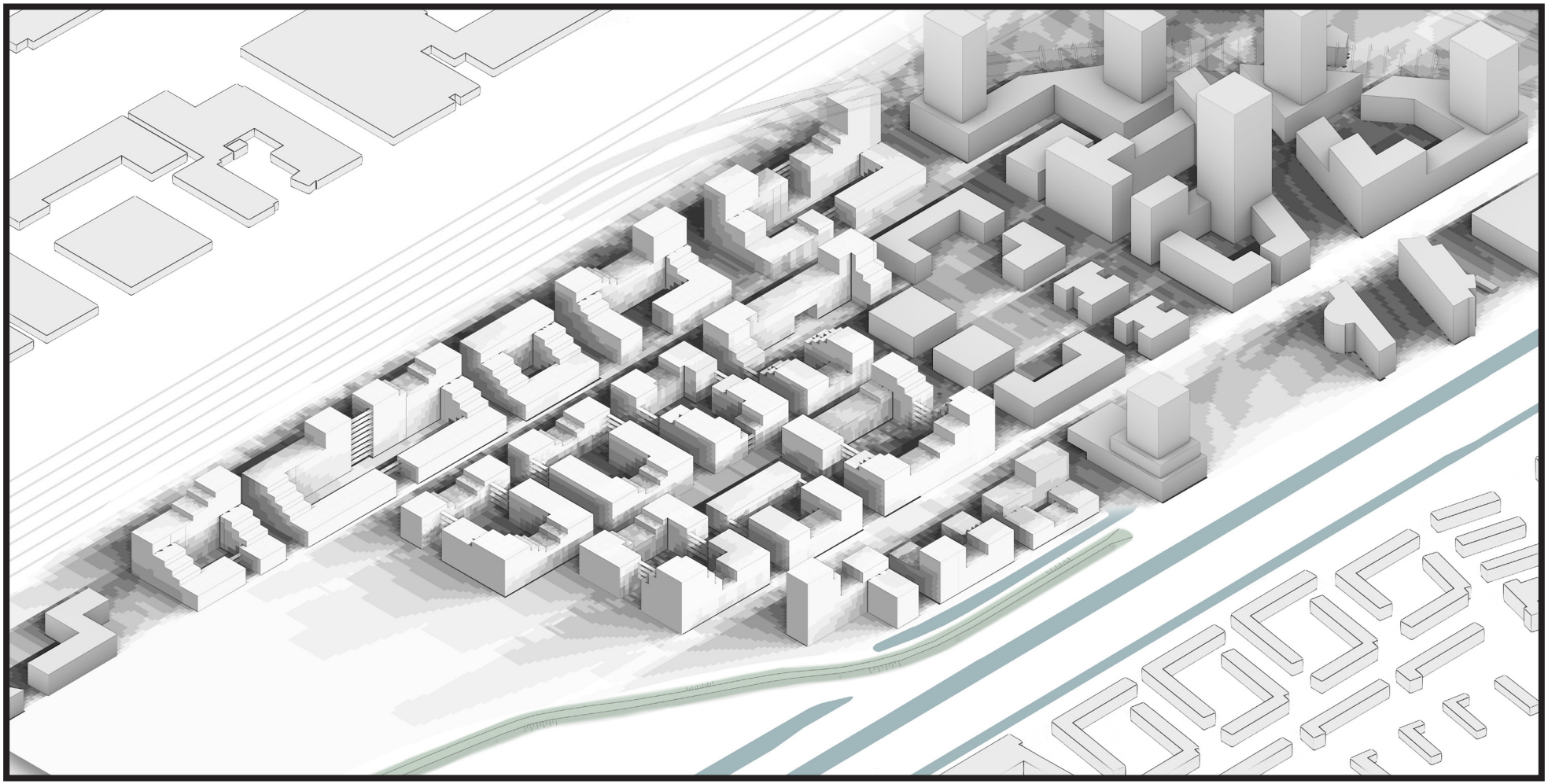

Naritaweg
car-free streets,
squares and parks
bycycle street
Haarlemmerweg



Haarlemmertrekvaart and wider waterways:
The waterdepth is at least 1,5m so it is suitable for small recreation boats. CEMT-klasse RC (lengte <15,00 | breedte <4,00 | strijkhoogte <4,00)







Hours
12<=
11
10
9
8
7
5
4
3
2
1
<=0

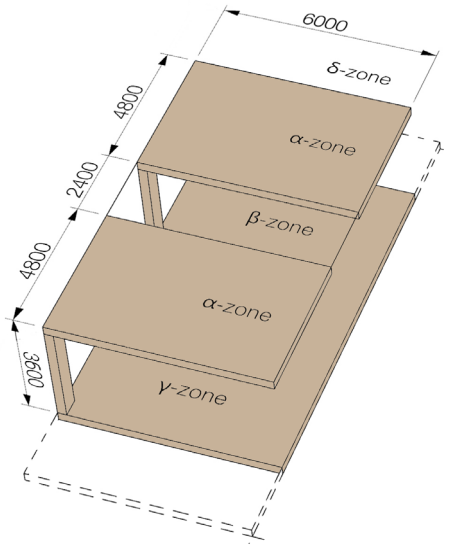
sun hours on:

- *21 march*
- *21 september*

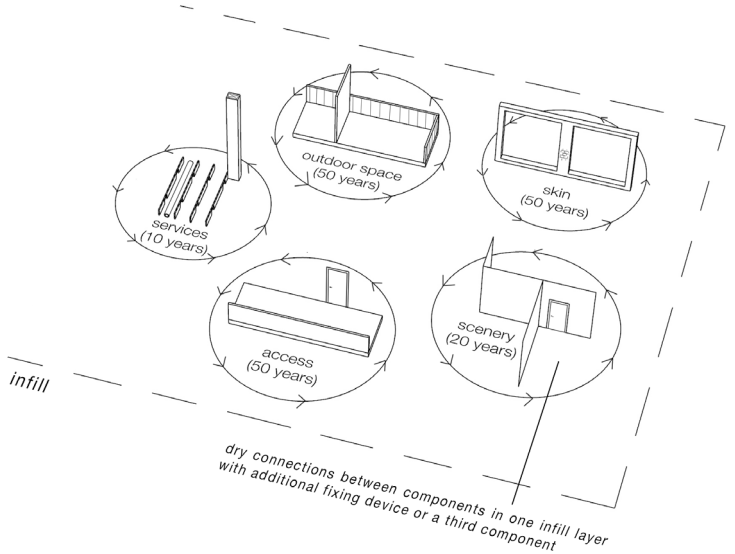
district numbers: **FSI** **2.19** **GSI** **0.37** **OSR** **0.29**

open building system

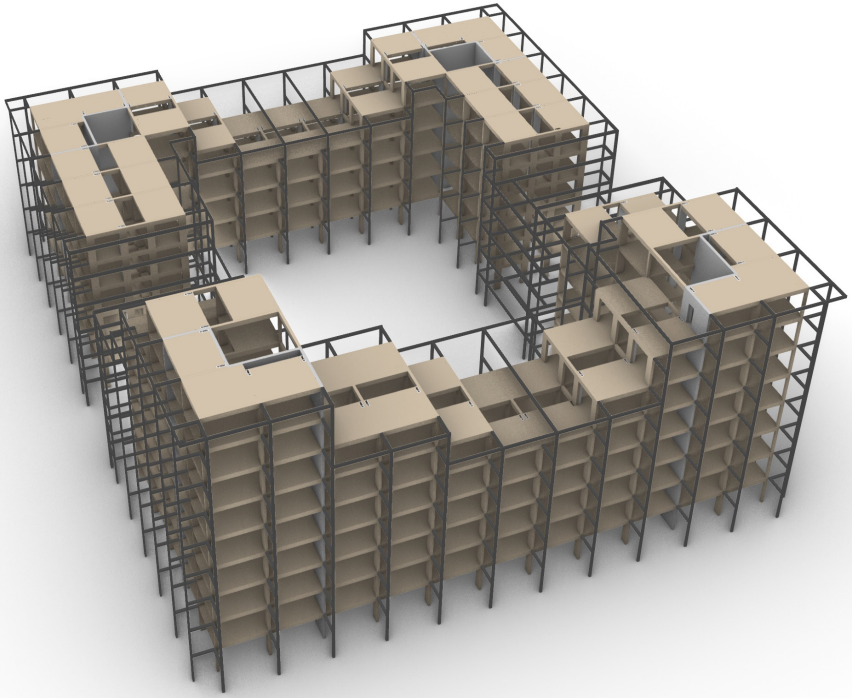
generic support



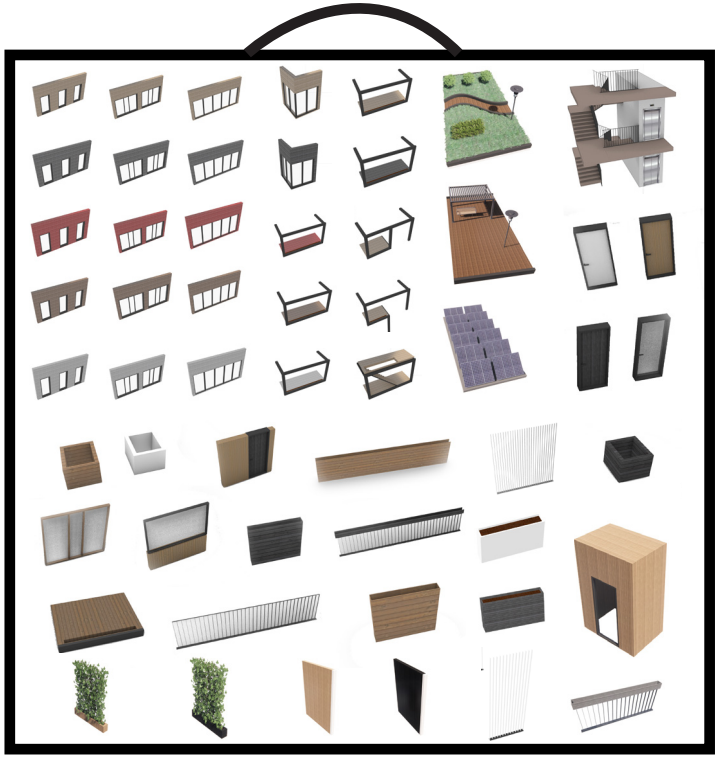
infill



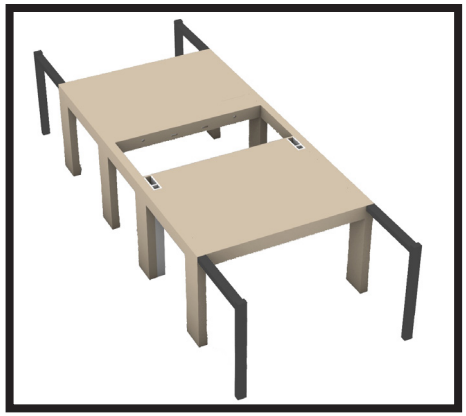
urban block

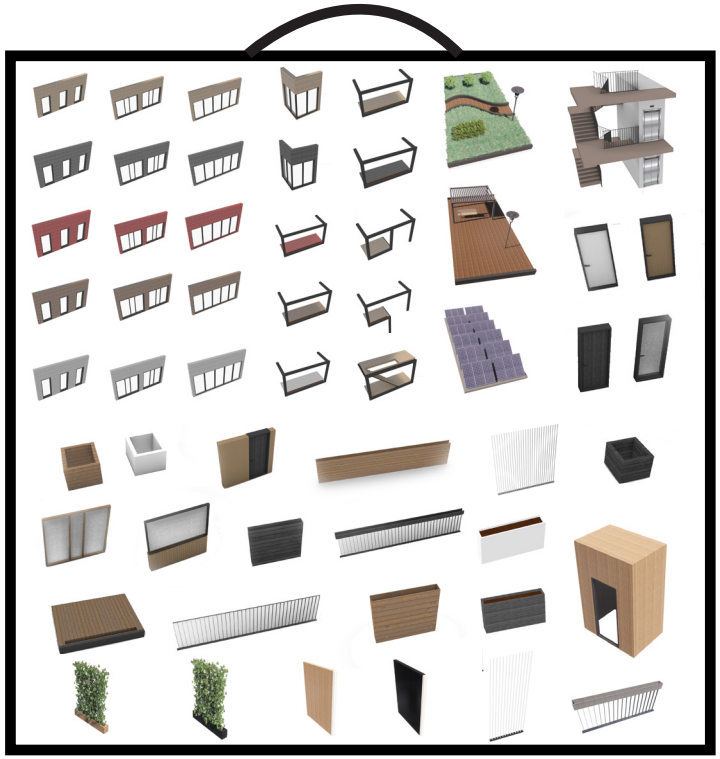


toolbox



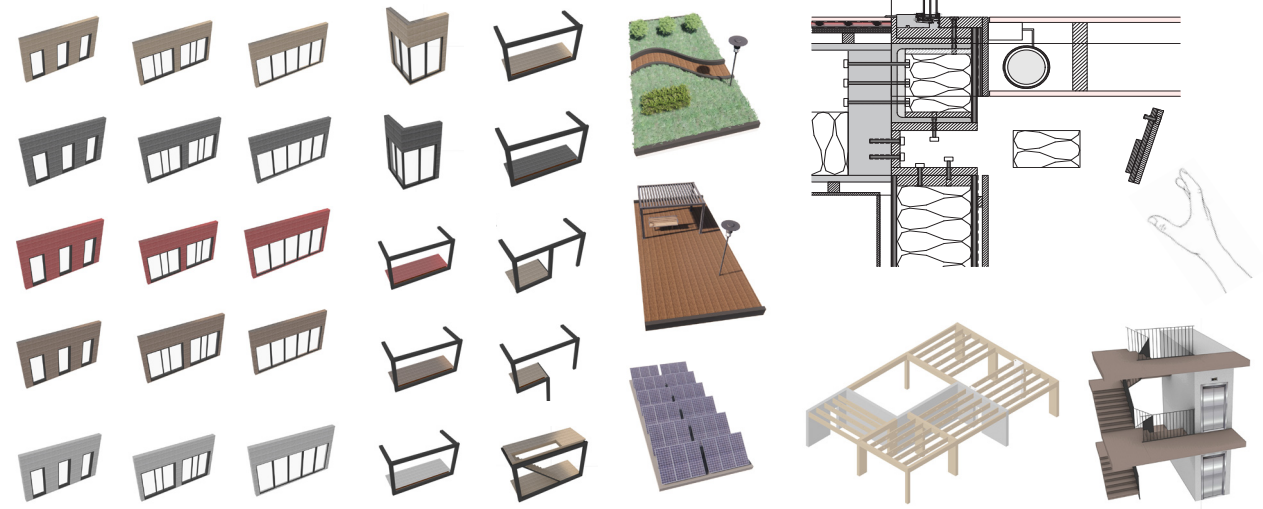
support
200-300 years





toolbox

Layer systems
toolbox collective



Scenery & components
toolbox individual

The collective: urban block

Who? Block architect and collective

When? +/- 50 years

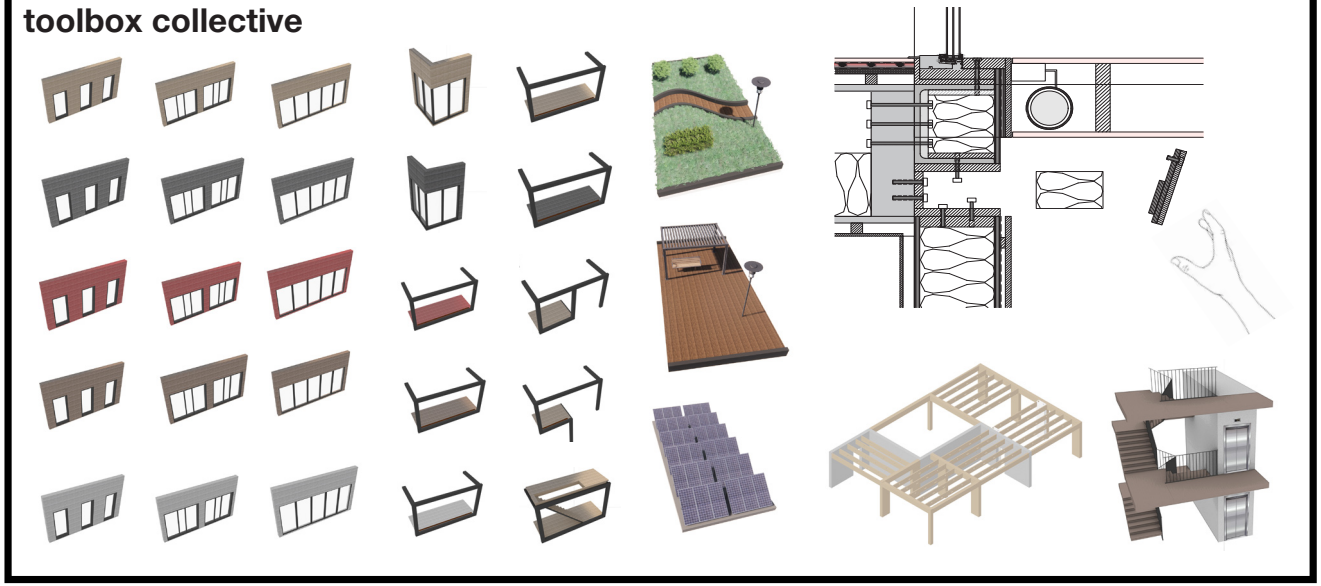
Skin
facade systems, roof systems

Outdoor Space
balcony systems

Access
gallery systems, collective stairs and lifts

Vertical services
renovation cables and pipes

Layer systems toolbox collective



The individual: toolbox

Who? Block architect and indivual

When? 10-25 years

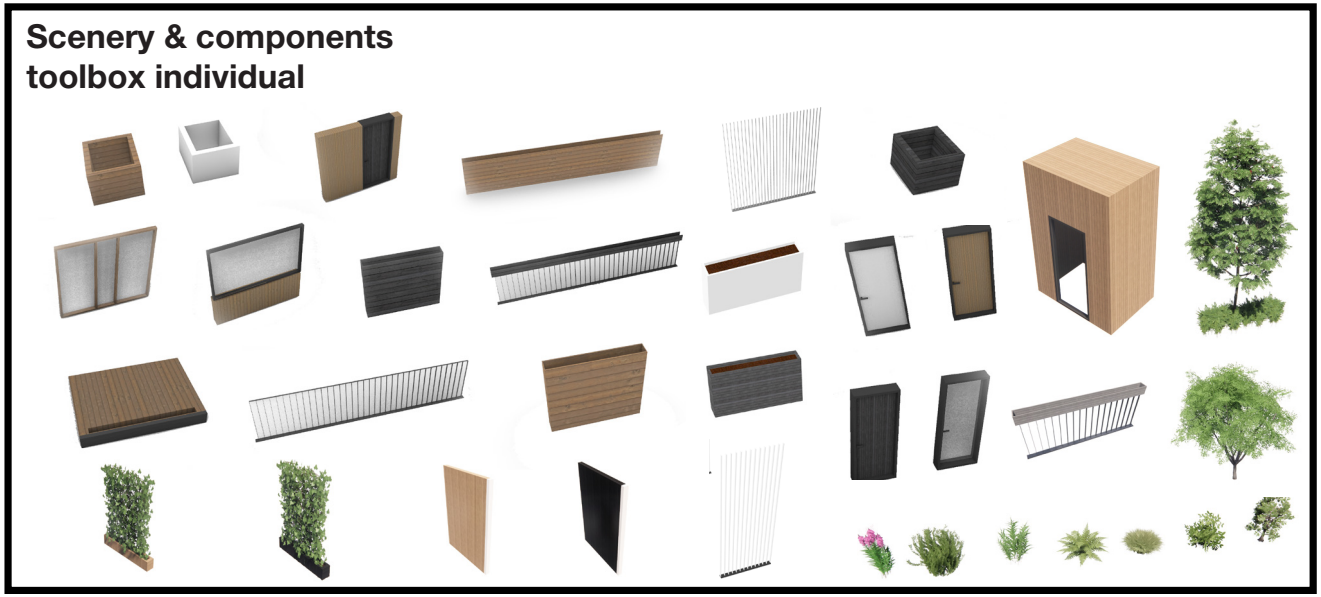
Scenery
interior: floor β-zone, partition walls, floors, ceilings, kitchens, bathrooms, toilets, finishings

Skin / Access
doors, windows

(Private) Outdoor Space
planters, sit elements, sunscreens, privacy-screens, plants

Horizontal Services
sewage, electra, data, heating, cooling

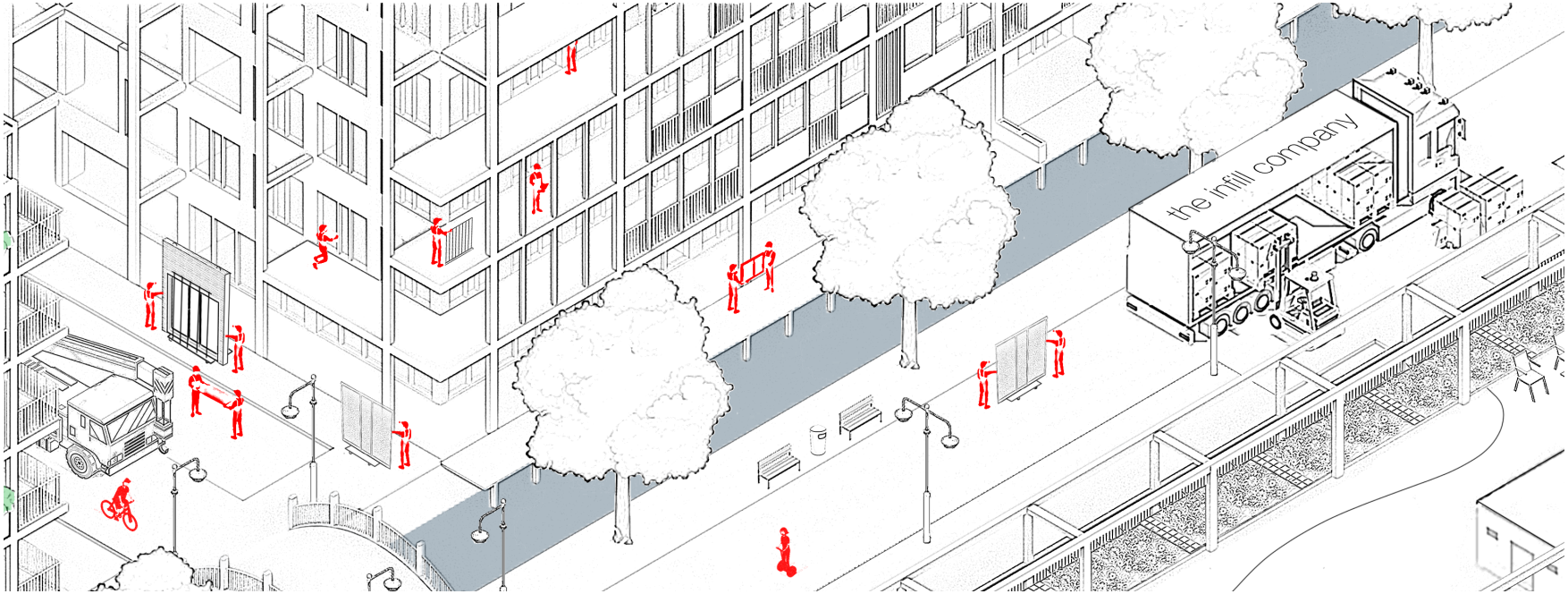
Scenery & components toolbox individual



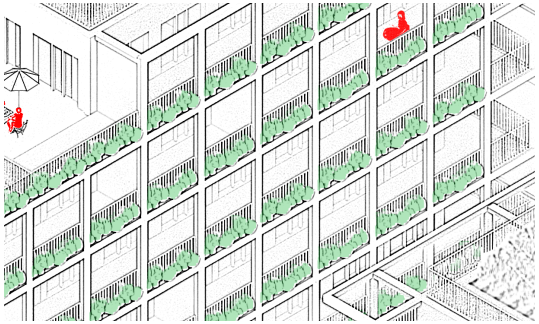
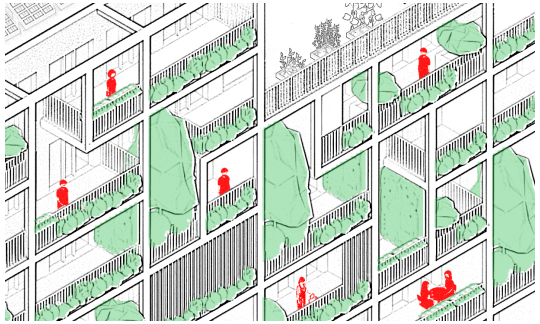
support

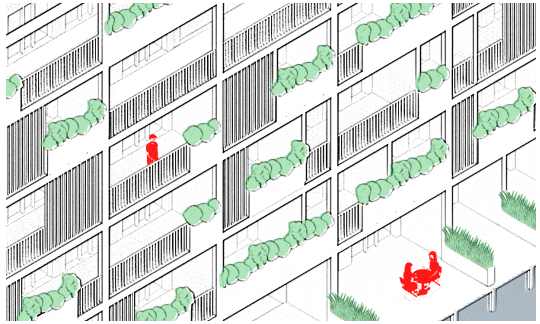
toolbox collectieve: layer systems

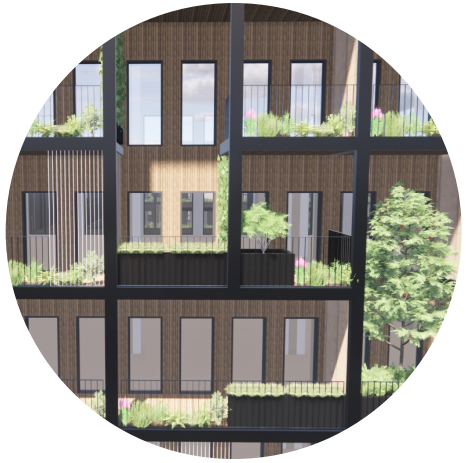
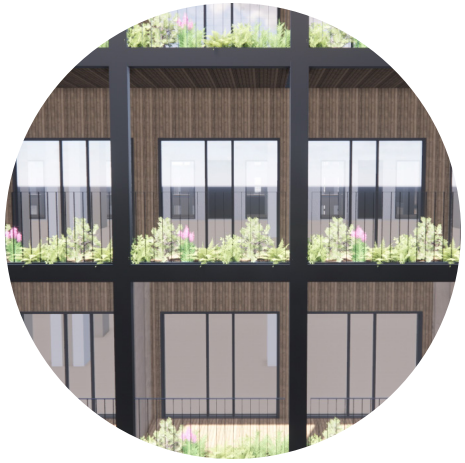
toolbox individual: components & interior

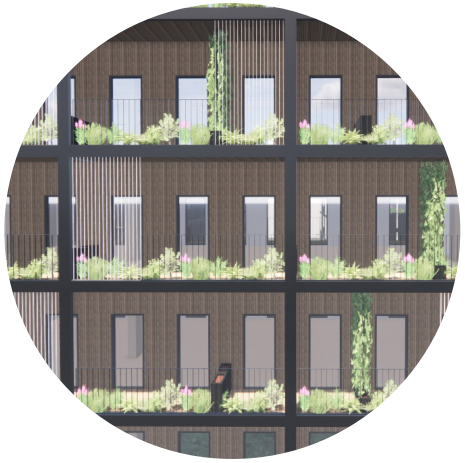

the infill company

configurations by the architect

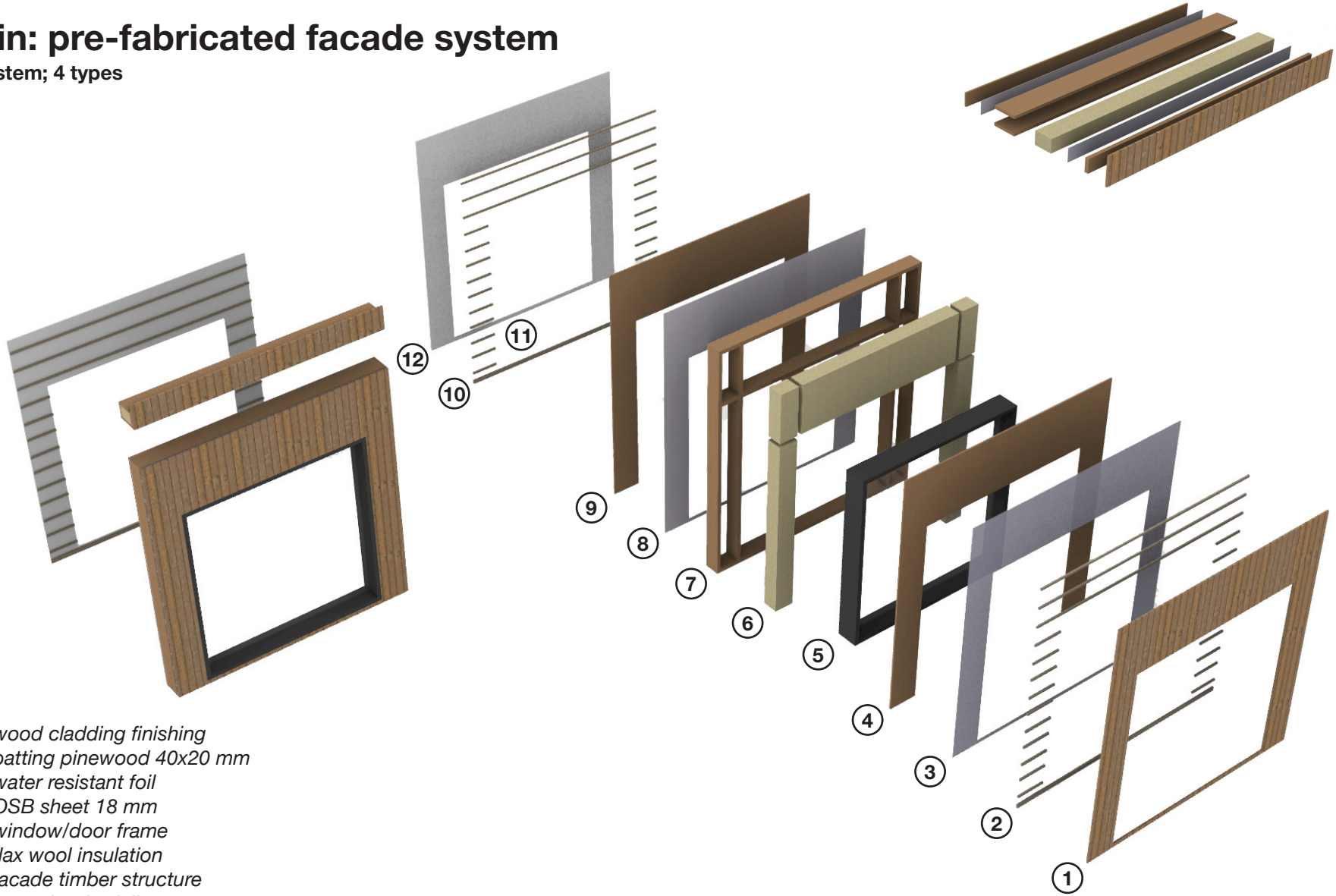




skin: pre-fabricated facade system

1 system; 4 types



1. *wood cladding finishing*
2. *batting pinewood 40x20 mm*
3. *water resistant foil*
4. *OSB sheet 18 mm*
5. *window/door frame*
6. *flax wool insulation*
7. *facade timber structure*
8. *vapor barrier foil*
9. *osb sheet*

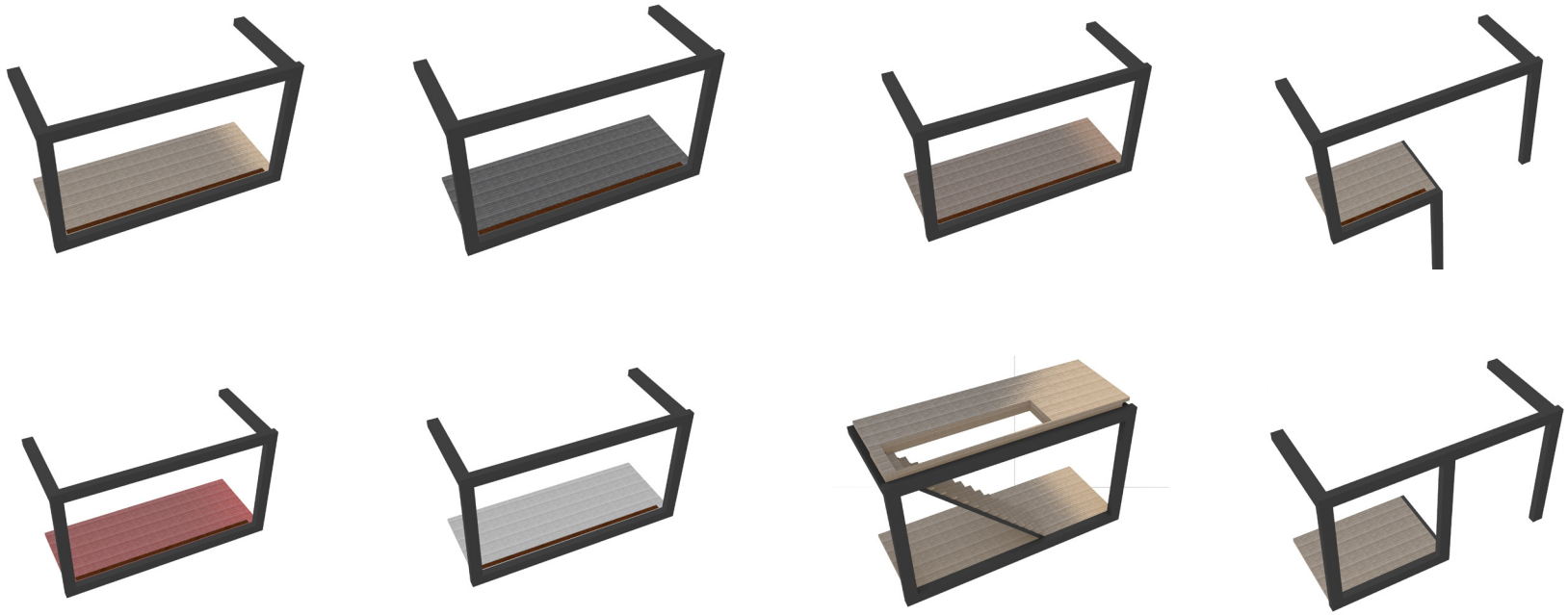
10. *vertical batting 40x40*
11. *installation zone electrical wiring*
12. *gypsum fiber board*

skin: facade

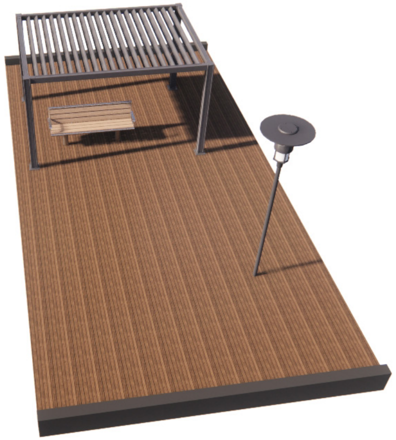
1 system; 4 types

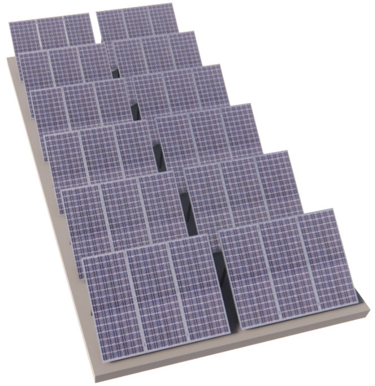
1 system; 4 types; 5 timber finishings = 20 variants

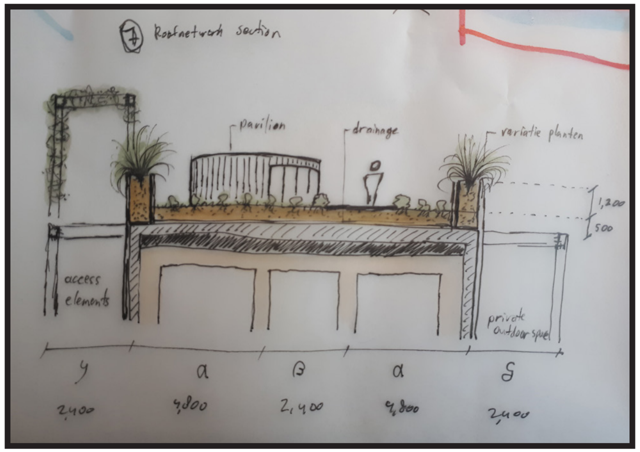
(access) balcony system

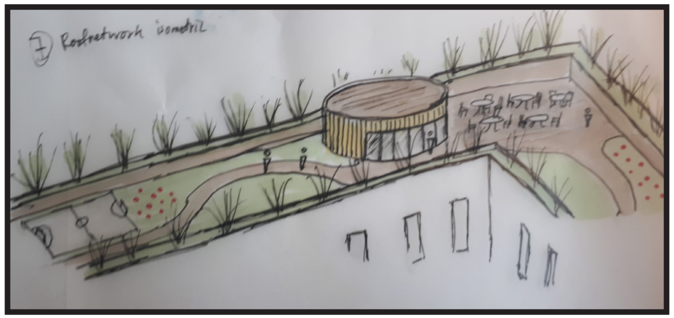


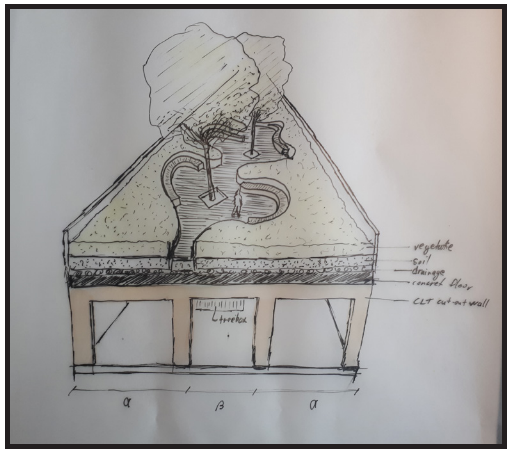
skin: roofs





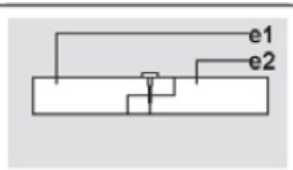
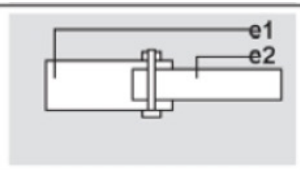
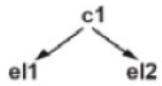
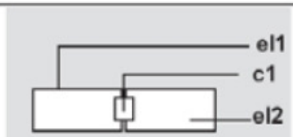
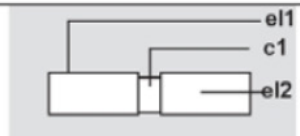
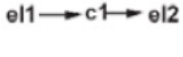
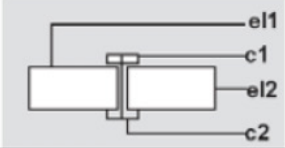
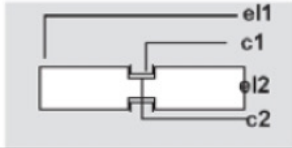
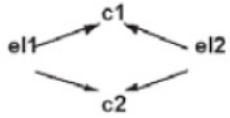
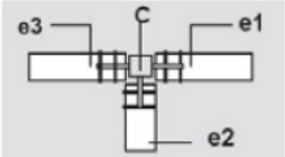
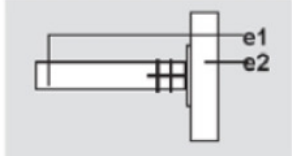
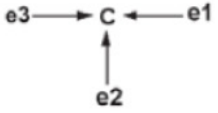

7
Roofnetwork section
pavilion
drainage
variatie planten
1,200
500
access elements
private outdoor spuel
2,400
4,800
2,400
4,800
2,400


7
Roofnetwork isometric

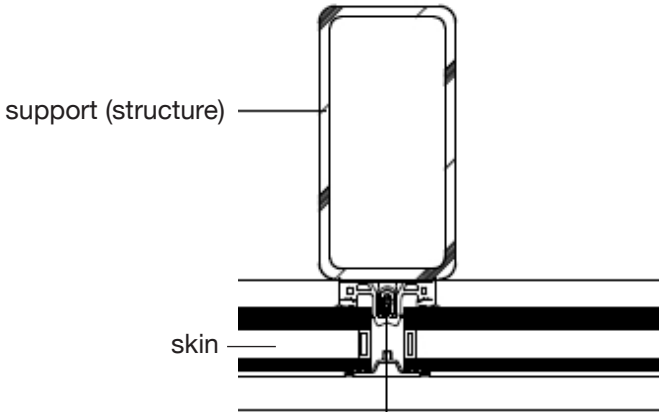

vegetatie
soil
drainage
concret floor
CLT cut-out wall
treebox
α
β
α

type 1
support - infill

connection principles

IV **direct connections with additional fixing devices** two elements are connected with accessory which can be replaced. If one element has to be removed than whole connection needs to be dismantled			
V **indirect connection via dependent third component** two elements/components are separated with third element/component, but they have dependence in assembly (reuse is restricted)			
VI **indirect connection via independent third component** there is dependence in assembly/ disassembly but all elements could be reused or recycled			
VII **indirect with additional fixing device** with change of one element another stays untouched all elements could be reused or recycled			

example

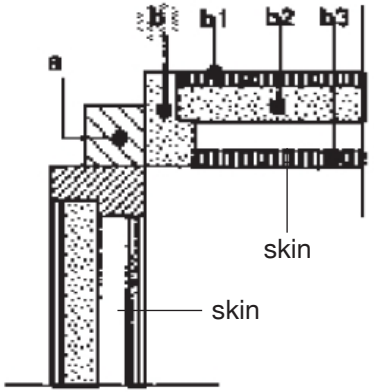


bouwdeel demontabel, Cepezed

type 2
infill X - infill X

connection principles

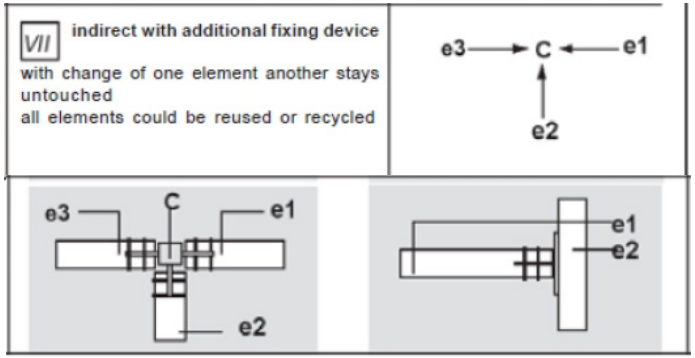
example



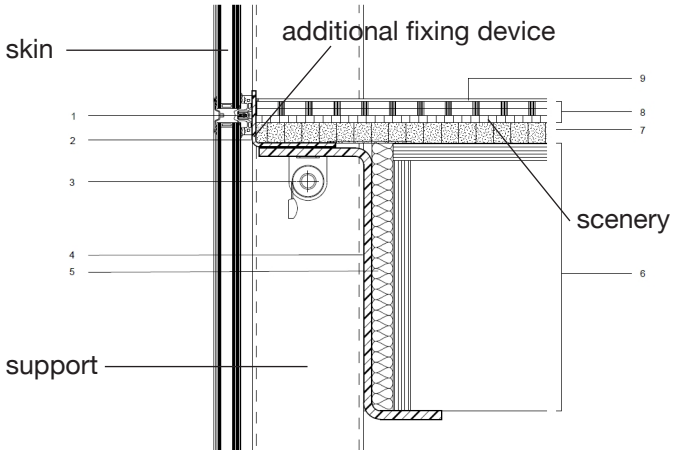
(Durmisevic, 2006, p. 176)

type 3
infill X - infill Y

connection principles

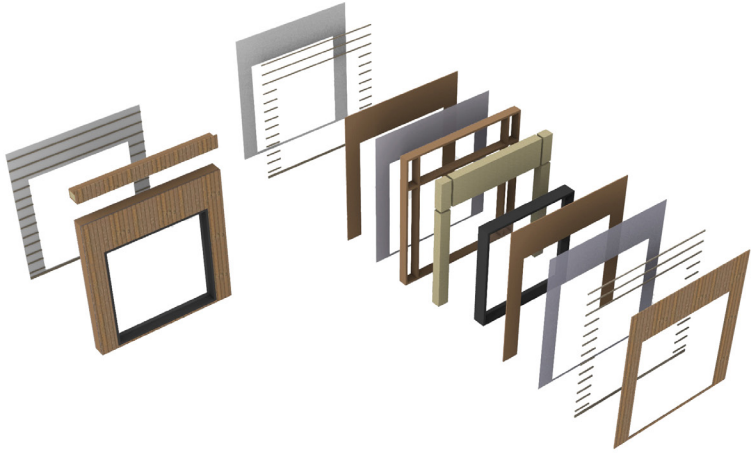


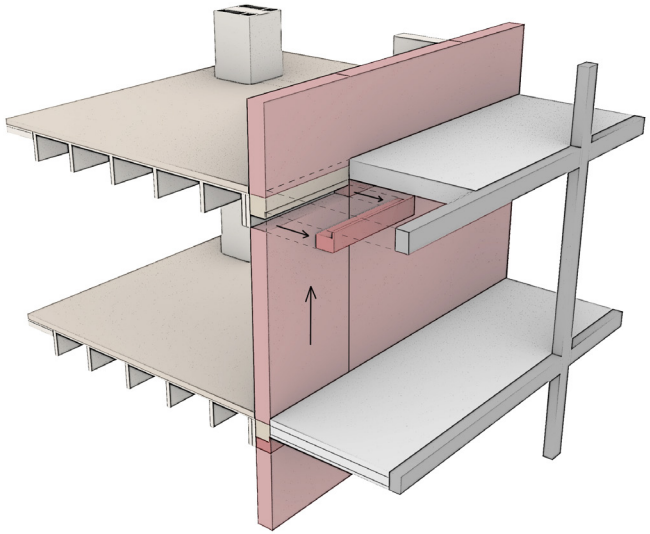
example



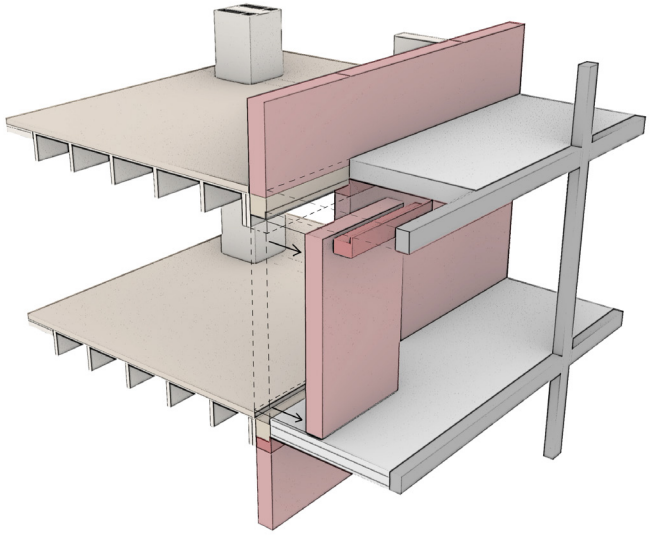
bouwdeel demontabel, Cepezed

skin: facade system sequence

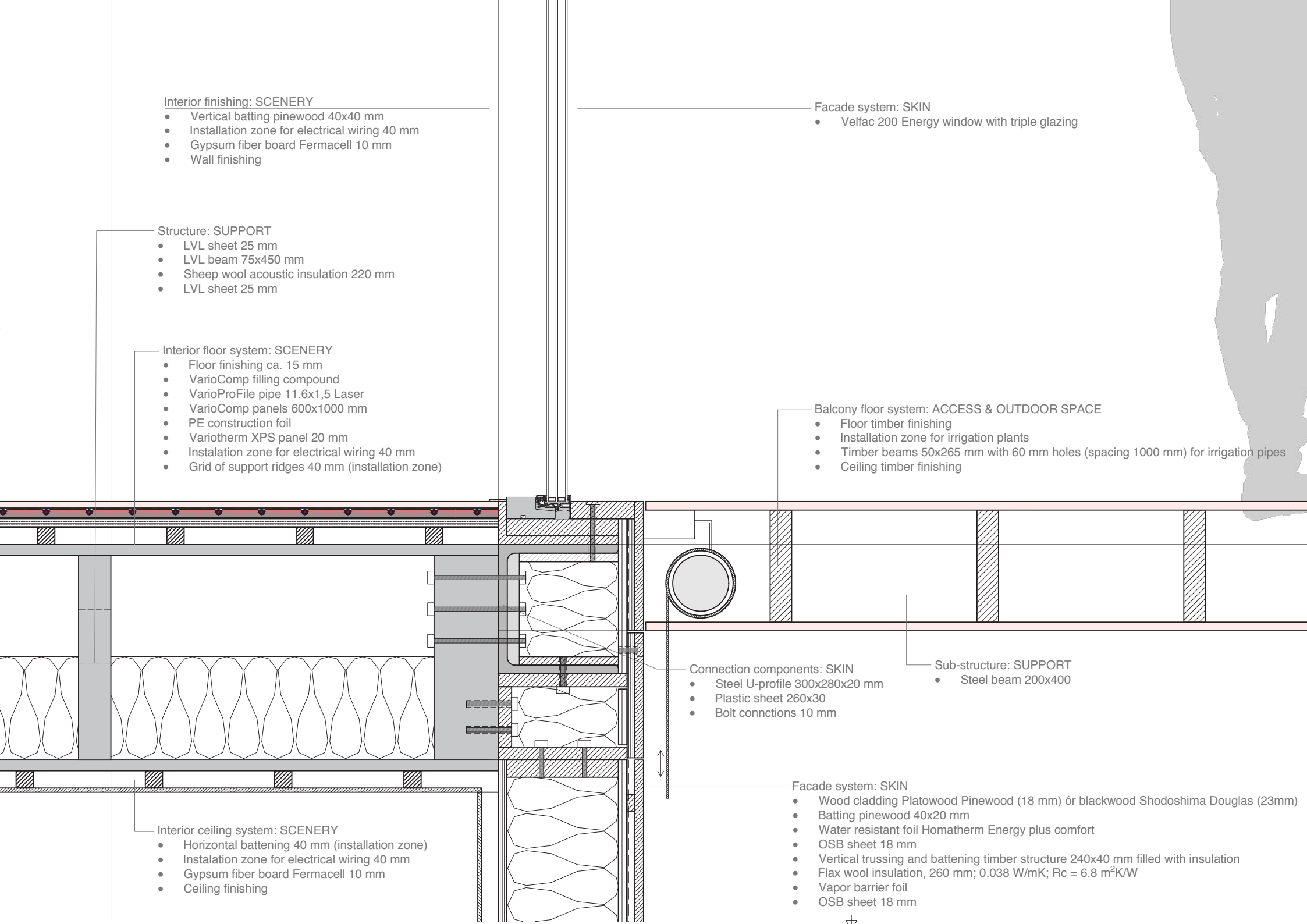


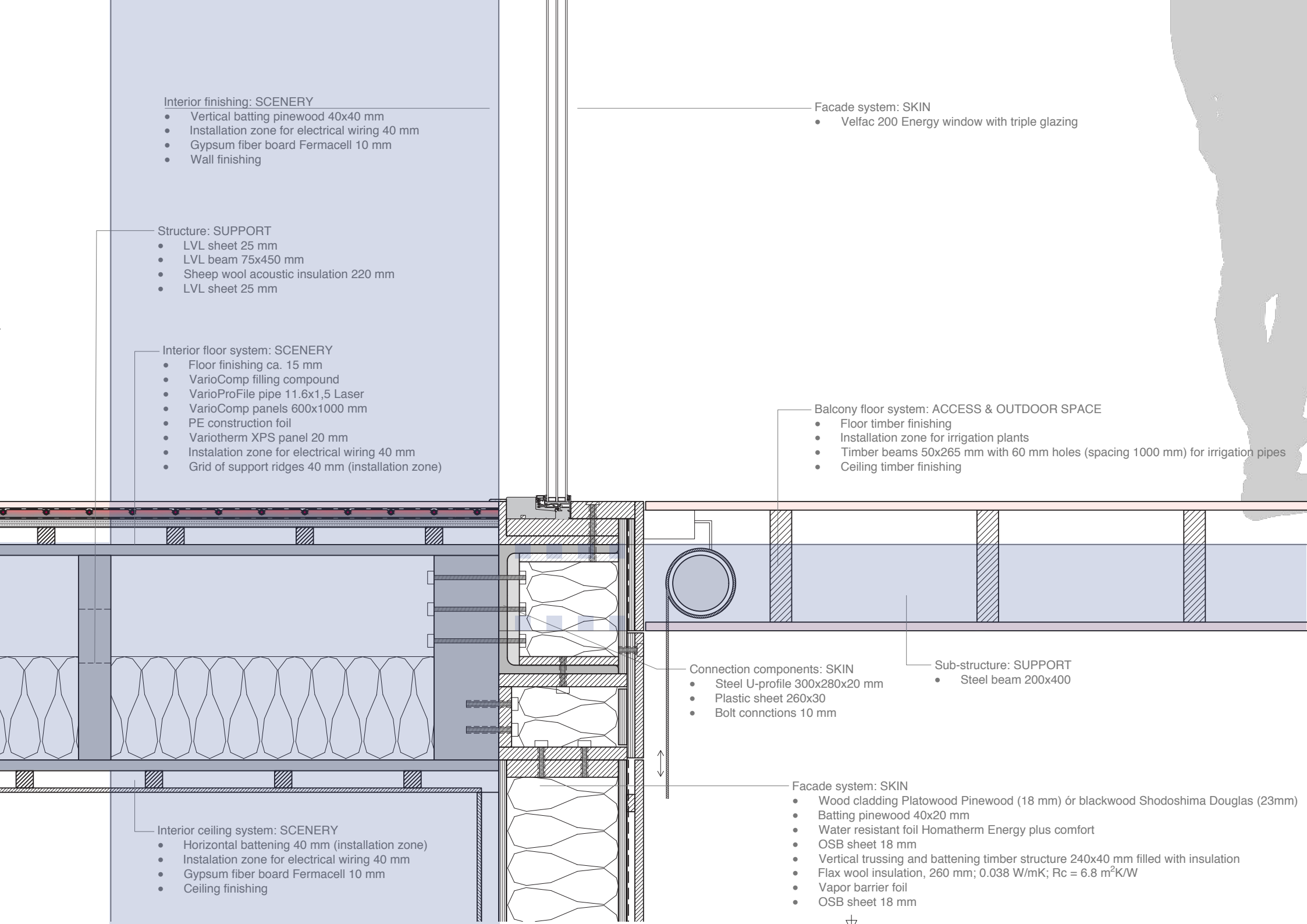


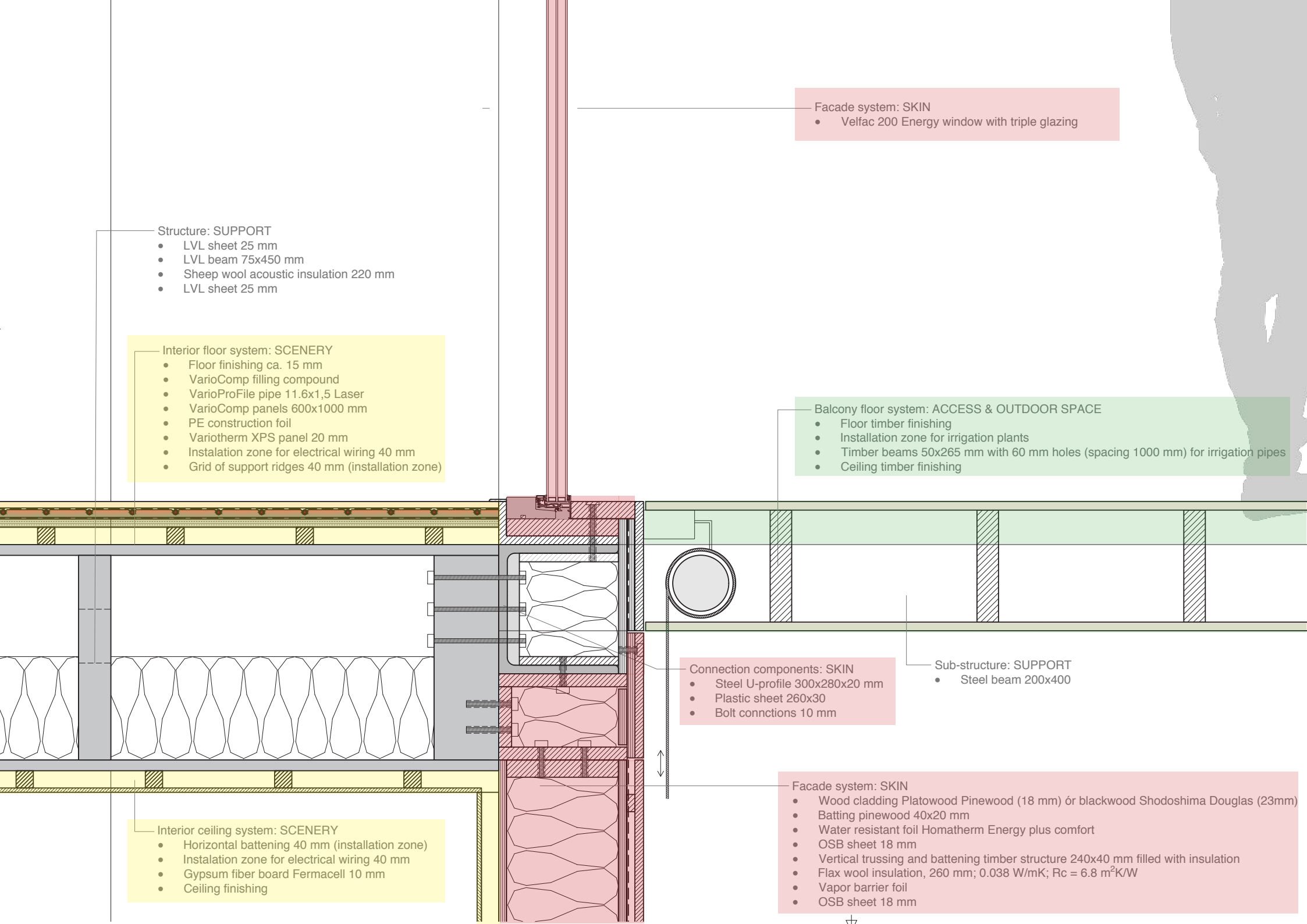
1. remove thirst facae element
2. lift second facade element

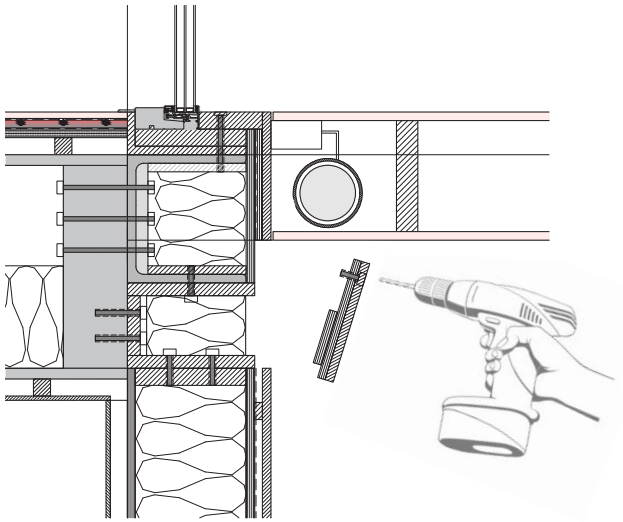


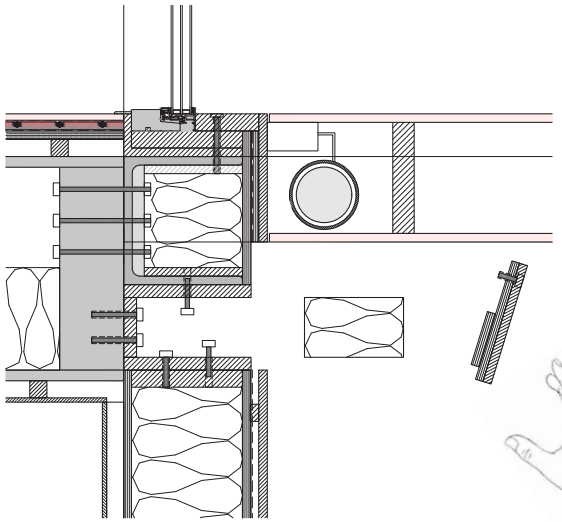
3. remove second facade element

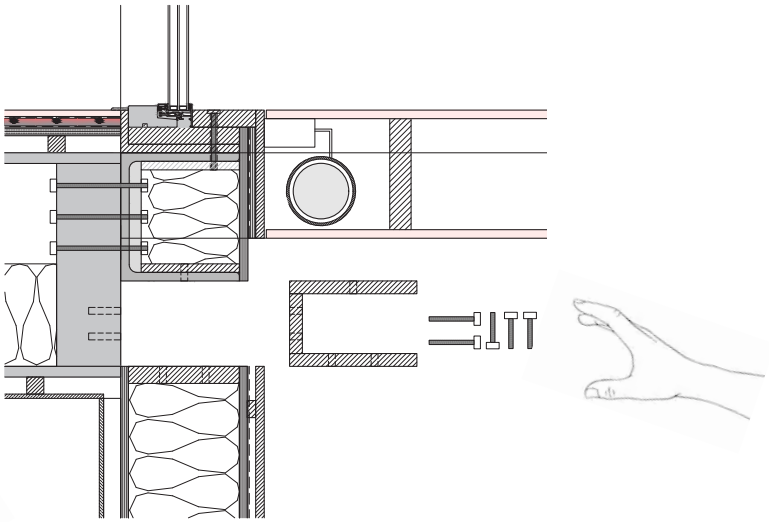

Interior finishing: SCENERY
• Vertical batting pinewood 40x40 mm
• Installation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Wall finishing
Facade system: SKIN
• Velfac 200 Energy window with triple glazing
Structure: SUPPORT
• LVL sheet 25 mm
• LVL beam 75x450 mm
• Sheep wool acoustic insulation 220 mm
• LVL sheet 25 mm
Interior floor system: SCENERY
• Floor finishing ca. 15 mm
• VarioComp filling compound
• VarioProFile pipe 11.6x1,5 Laser
• VarioComp panels 600x1000 mm
• PE construction foil
• Variotherm XPS panel 20 mm
• Instalation zone for electrical wiring 40 mm
• Grid of support ridges 40 mm (installation zone)
Balcony floor system: ACCESS & OUTDOOR SPACE
• Floor timber finishing
• Installation zone for irrigation plants
• Timber beams 50x265 mm with 60 mm holes (spacing 1000 mm) for irrigation pipes
• Ceiling timber finishing
Connection components: SKIN
• Steel U-profile 300x280x20 mm
• Plastic sheet 260x30
• Bolt connctions 10 mm
Sub-structure: SUPPORT
• Steel beam 200x400
Facade system: SKIN
• Wood cladding Platowood Pinewood (18 mm) ór blackwood Shodoshima Douglas (23mm)
• Batting pinewood 40x20 mm
• Water resistant foil Homatherm Energy plus comfort
• OSB sheet 18 mm
• Vertical trussing and battening timber structure 240x40 mm filled with insulation
• Flax wool insulation, 260 mm; 0.038 W/mK; Rc = 6.8 m2K/W
• Vapor barrier foil
• OSB sheet 18 mm
Interior ceiling system: SCENERY
• Horizontal battening 40 mm (installation zone)
• Instalation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Ceiling finishing

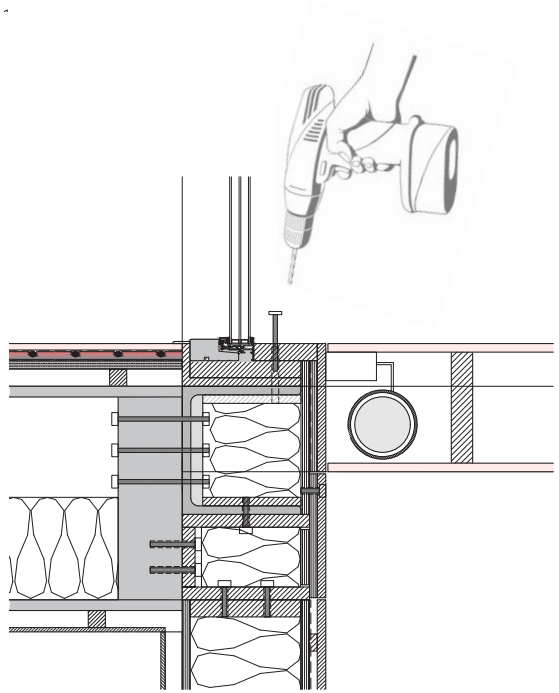

Interior finishing: SCENERY
• Vertical batting pinewood 40x40 mm
• Installation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Wall finishing
Facade system: SKIN
• Velfac 200 Energy window with triple glazing
Structure: SUPPORT
• LVL sheet 25 mm
• LVL beam 75x450 mm
• Sheep wool acoustic insulation 220 mm
• LVL sheet 25 mm
Interior floor system: SCENERY
• Floor finishing ca. 15 mm
• VarioComp filling compound
• VarioProFile pipe 11.6x1,5 Laser
• VarioComp panels 600x1000 mm
• PE construction foil
• Variotherm XPS panel 20 mm
• Instalation zone for electrical wiring 40 mm
• Grid of support ridges 40 mm (installation zone)
Balcony floor system: ACCESS & OUTDOOR SPACE
• Floor timber finishing
• Installation zone for irrigation plants
• Timber beams 50x265 mm with 60 mm holes (spacing 1000 mm) for irrigation pipes
• Ceiling timber finishing
Connection components: SKIN
• Steel U-profile 300x280x20 mm
• Plastic sheet 260x30
• Bolt connctions 10 mm
Sub-structure: SUPPORT
• Steel beam 200x400
Facade system: SKIN
• Wood cladding Platowood Pinewood (18 mm) ór blackwood Shodoshima Douglas (23mm)
• Batting pinewood 40x20 mm
• Water resistant foil Homatherm Energy plus comfort
• OSB sheet 18 mm
• Vertical trussing and battening timber structure 240x40 mm filled with insulation
• Flax wool insulation, 260 mm; 0.038 W/mK; Rc = 6.8 m2K/W
• Vapor barrier foil
• OSB sheet 18 mm
Interior ceiling system: SCENERY
• Horizontal battening 40 mm (installation zone)
• Instalation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Ceiling finishing

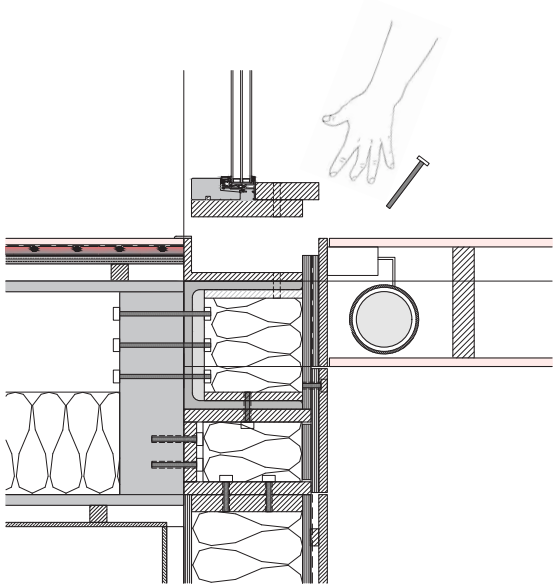

Facade system: SKIN
• Velfac 200 Energy window with triple glazing
Structure: SUPPORT
• LVL sheet 25 mm
• LVL beam 75x450 mm
• Sheep wool acoustic insulation 220 mm
• LVL sheet 25 mm
Interior floor system: SCENERY
• Floor finishing ca. 15 mm
• VarioComp filling compound
• VarioProFile pipe 11.6x1,5 Laser
• VarioComp panels 600x1000 mm
• PE construction foil
• Variotherm XPS panel 20 mm
• Instalation zone for electrical wiring 40 mm
• Grid of support ridges 40 mm (installation zone)
Balcony floor system: ACCESS & OUTDOOR SPACE
• Floor timber finishing
• Installation zone for irrigation plants
• Timber beams 50x265 mm with 60 mm holes (spacing 1000 mm) for irrigation pipes
• Ceiling timber finishing
Connection components: SKIN
• Steel U-profile 300x280x20 mm
• Plastic sheet 260x30
• Bolt connctions 10 mm
Sub-structure: SUPPORT
• Steel beam 200x400
Facade system: SKIN
• Wood cladding Platowood Pinewood (18 mm) ór blackwood Shodoshima Douglas (23mm)
• Batting pinewood 40x20 mm
• Water resistant foil Homatherm Energy plus comfort
• OSB sheet 18 mm
• Vertical trussing and battening timber structure 240x40 mm filled with insulation
• Flax wool insulation, 260 mm; 0.038 W/mK; Rc = 6.8 m2K/W
• Vapor barrier foil
• OSB sheet 18 mm
Interior ceiling system: SCENERY
• Horizontal battening 40 mm (installation zone)
• Instalation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Ceiling finishing

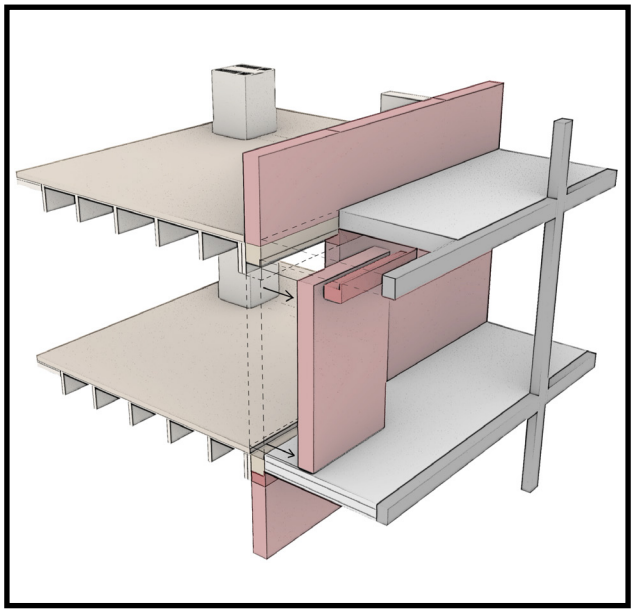


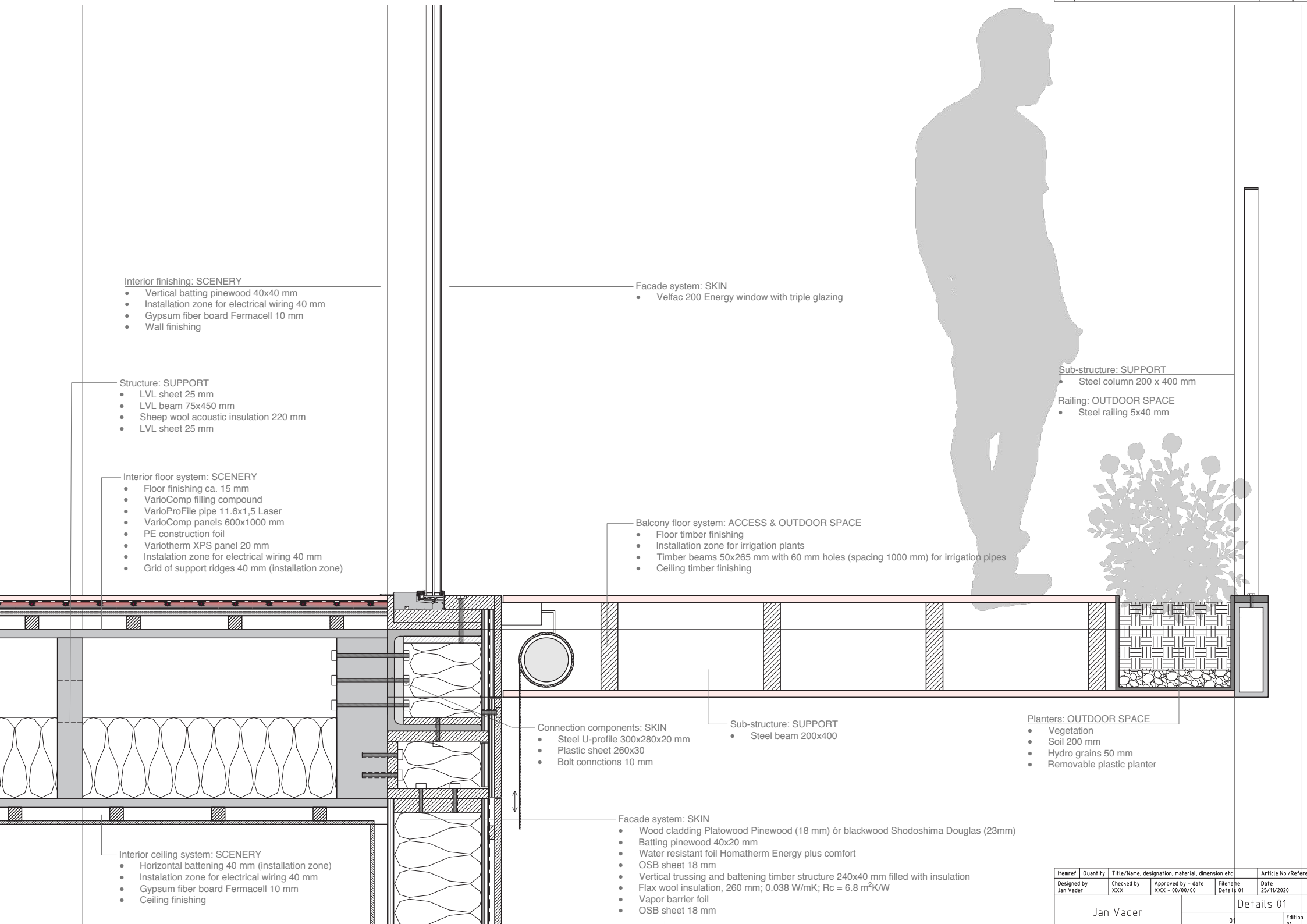


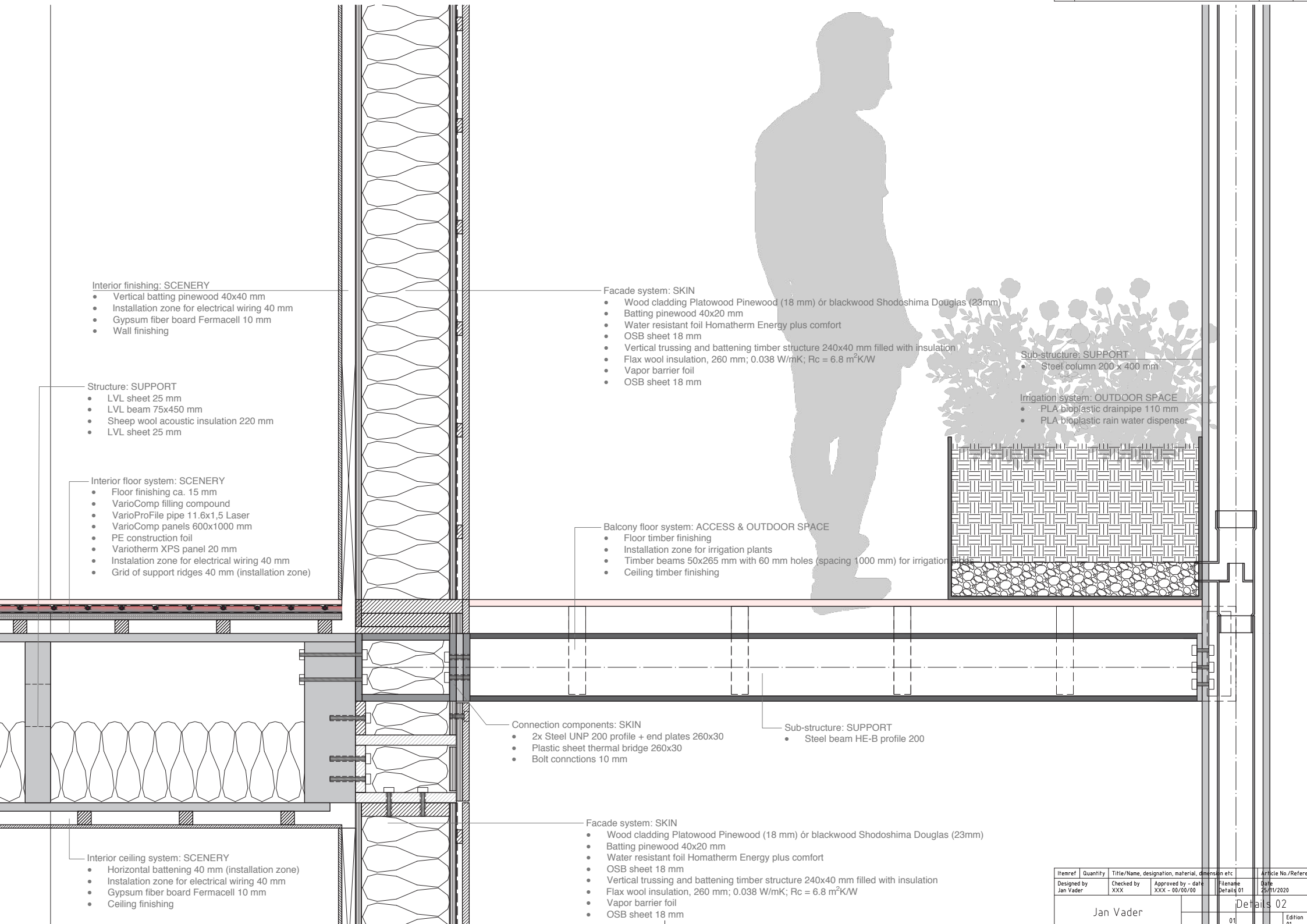


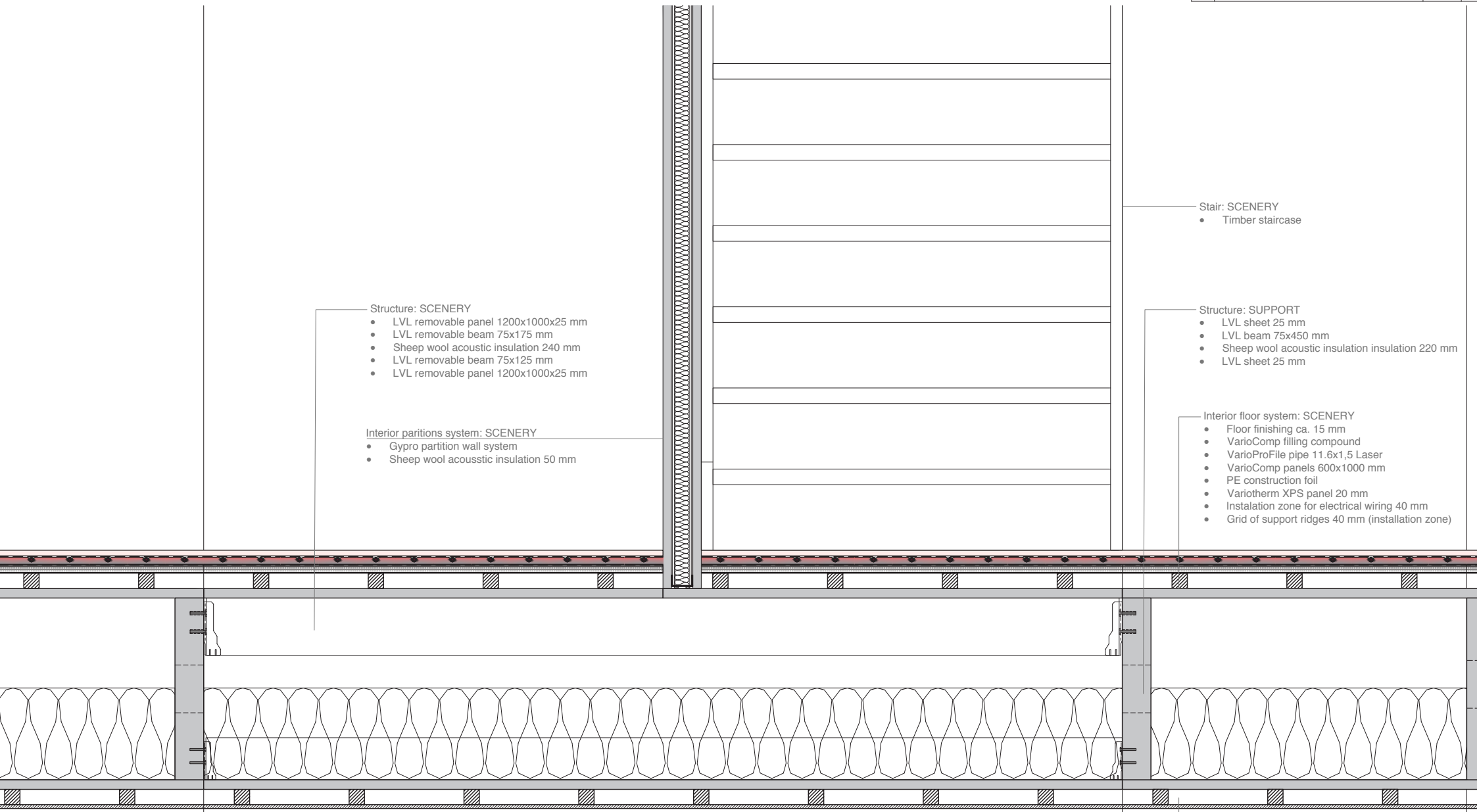







Interior finishing: SCENERY
• Vertical batting pinewood 40x40 mm
• Installation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Wall finishing
Facade system: SKIN
• Velfac 200 Energy window with triple glazing
Structure: SUPPORT
• LVL sheet 25 mm
• LVL beam 75x450 mm
• Sheep wool acoustic insulation 220 mm
• LVL sheet 25 mm
Sub-structure: SUPPORT
• Steel column 200 x 400 mm
Railing: OUTDOOR SPACE
• Steel railing 5x40 mm
Interior floor system: SCENERY
• Floor finishing ca. 15 mm
• VarioComp filling compound
• VarioProFile pipe 11.6x1,5 Laser
• VarioComp panels 600x1000 mm
• PE construction foil
• Variotherm XPS panel 20 mm
• Instalation zone for electrical wiring 40 mm
• Grid of support ridges 40 mm (installation zone)
Balcony floor system: ACCESS & OUTDOOR SPACE
• Floor timber finishing
• Installation zone for irrigation plants
• Timber beams 50x265 mm with 60 mm holes (spacing 1000 mm) for irrigation pipes
• Ceiling timber finishing
Connection components: SKIN
• Steel U-profile 300x280x20 mm
• Plastic sheet 260x30
• Bolt connctions 10 mm
Sub-structure: SUPPORT
• Steel beam 200x400
Planters: OUTDOOR SPACE
• Vegetation
• Soil 200 mm
• Hydro grains 50 mm
• Removable plastic planter
Facade system: SKIN
• Wood cladding Platowood Pinewood (18 mm) ór blackwood Shodoshima Douglas (23mm)
• Batting pinewood 40x20 mm
• Water resistant foil Homatherm Energy plus comfort
• OSB sheet 18 mm
• Vertical trussing and battening timber structure 240x40 mm filled with insulation
• Flax wool insulation, 260 mm; 0.038 W/mK; Rc = 6.8 m2K/W
• Vapor barrier foil
• OSB sheet 18 mm
Interior ceiling system: SCENERY
• Horizontal battening 40 mm (installation zone)
• Instalation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Ceiling finishing
Itemref | Quantity | Title/Name, designation, material, dimension etc | Article No./Refere
Designed by Jan Vader | Checked by XXX | Approved by - date XXX - 00/00/00 | Filename Details 01 | Date 25/11/2020
Jan Vader
Details 01
01
Edition


Interior finishing: SCENERY
• Vertical batting pinewood 40x40 mm
• Installation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Wall finishing
Facade system: SKIN
• Wood cladding Platowood Pinewood (18 mm) ór blackwood Shodoshima Douglas (23mm)
• Batting pinewood 40x20 mm
• Water resistant foil Homatherm Energy plus comfort
• OSB sheet 18 mm
• Vertical trussing and battening timber structure 240x40 mm filled with insulation
• Flax wool insulation, 260 mm; 0.038 W/mK; Rc = 6.8 m²K/W
• Vapor barrier foil
• OSB sheet 18 mm
Sub-structure: SUPPORT
• Steel column 200 x 400 mm
Irrigation system: OUTDOOR SPACE
• PLA bioplastic drainpipe 110 mm
• PLA bioplastic rain water dispenser
Structure: SUPPORT
• LVL sheet 25 mm
• LVL beam 75x450 mm
• Sheep wool acoustic insulation 220 mm
• LVL sheet 25 mm
Interior floor system: SCENERY
• Floor finishing ca. 15 mm
• VarioComp filling compound
• VarioProFile pipe 11.6x1,5 Laser
• VarioComp panels 600x1000 mm
• PE construction foil
• Variotherm XPS panel 20 mm
• Instalation zone for electrical wiring 40 mm
• Grid of support ridges 40 mm (installation zone)
Balcony floor system: ACCESS & OUTDOOR SPACE
• Floor timber finishing
• Installation zone for irrigation plants
• Timber beams 50x265 mm with 60 mm holes (spacing 1000 mm) for irrigation pipes
• Ceiling timber finishing
Connection components: SKIN
• 2x Steel UNP 200 profile + end plates 260x30
• Plastic sheet thermal bridge 260x30
• Bolt connctions 10 mm
Sub-structure: SUPPORT
• Steel beam HE-B profile 200
Facade system: SKIN
• Wood cladding Platowood Pinewood (18 mm) ór blackwood Shodoshima Douglas (23mm)
• Batting pinewood 40x20 mm
• Water resistant foil Homatherm Energy plus comfort
• OSB sheet 18 mm
• Vertical trussing and battening timber structure 240x40 mm filled with insulation
• Flax wool insulation, 260 mm; 0.038 W/mK; Rc = 6.8 m²K/W
• Vapor barrier foil
• OSB sheet 18 mm
Interior ceiling system: SCENERY
• Horizontal battening 40 mm (installation zone)
• Instalation zone for electrical wiring 40 mm
• Gypsum fiber board Fermacell 10 mm
• Ceiling finishing
Itemref | Quantity | Title/Name, designation, material, dimension etc | Article No./Refere
Designed by Jan Vader | Checked by XXX | Approved by - date XXX - 00/00/00 | Filename Details 01 | Date 25/11/2020
Jan Vader
Details 02
01
Edition 01



Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Refere
Designed by Jan Vader		Checked by XXX	Approved by - date XXX - 00/00/00	Filename Details 01	Date 25/11/2020

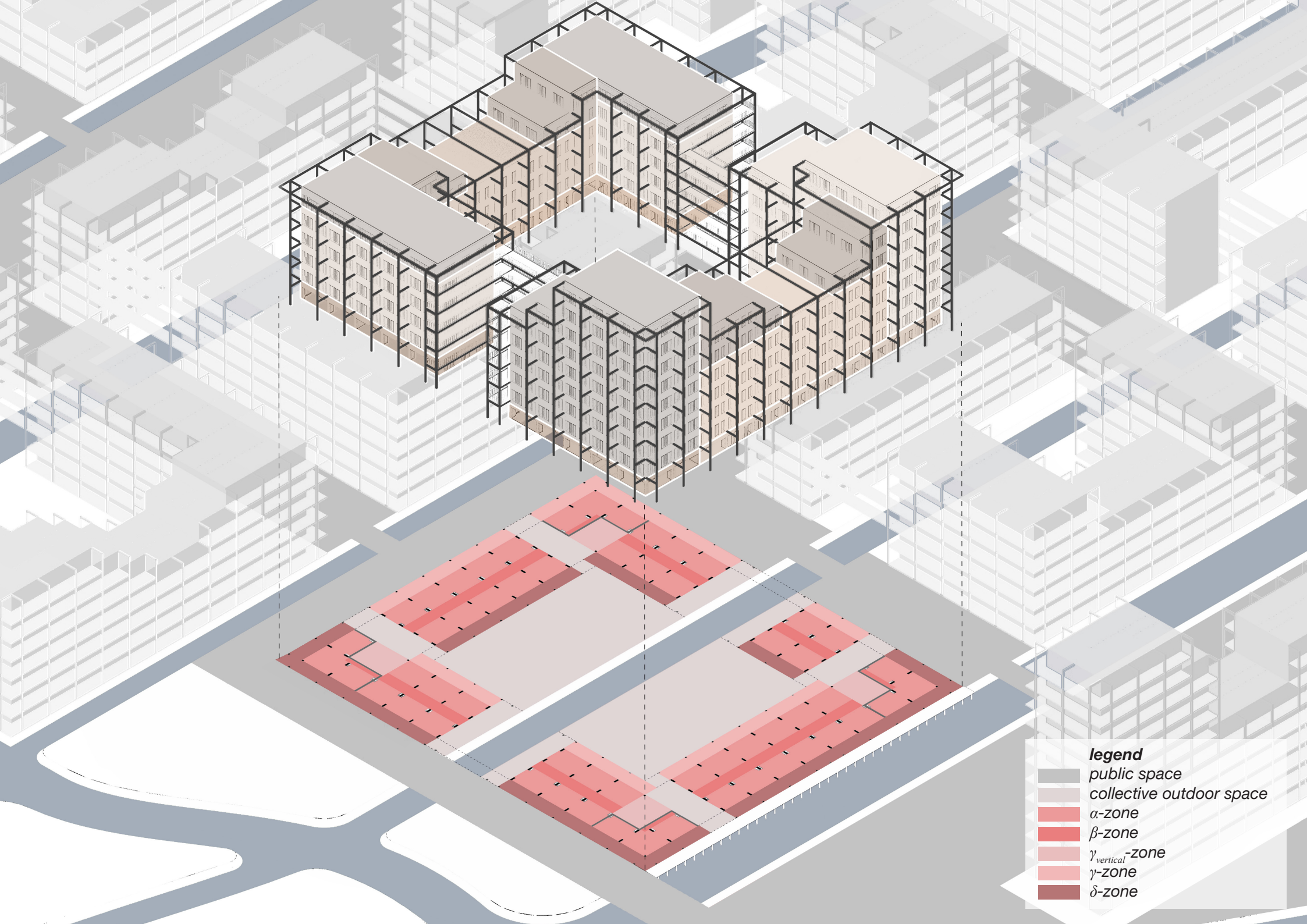
Jan Vader

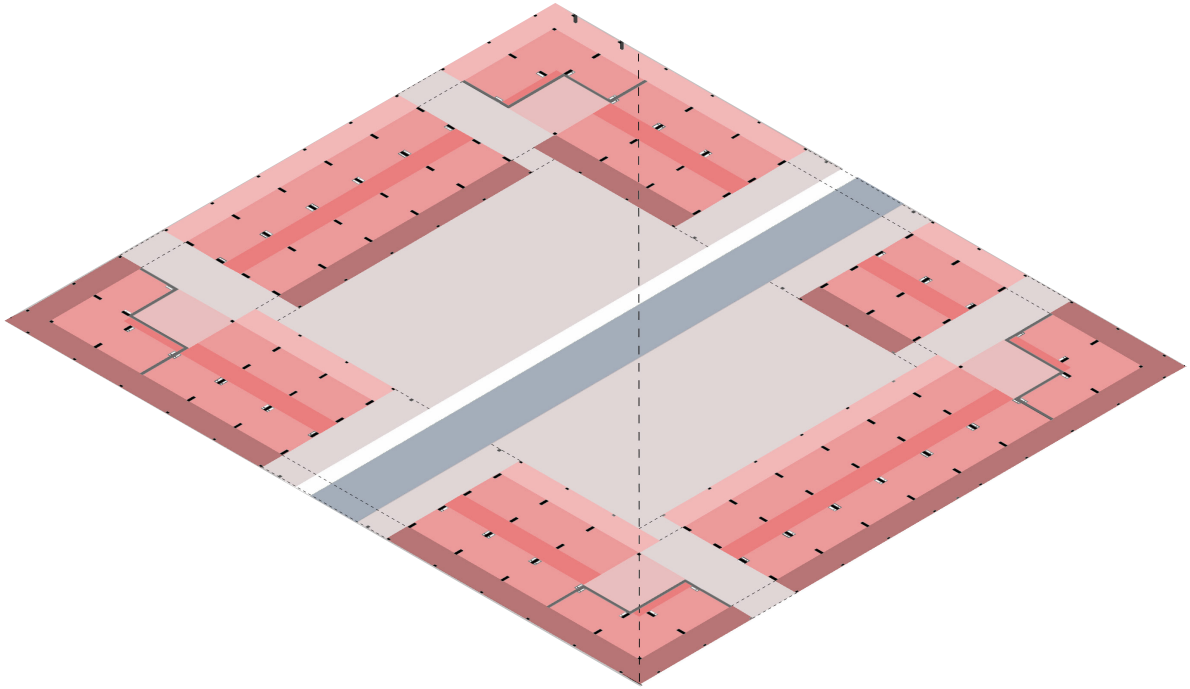
Details 03

01

Edition
01

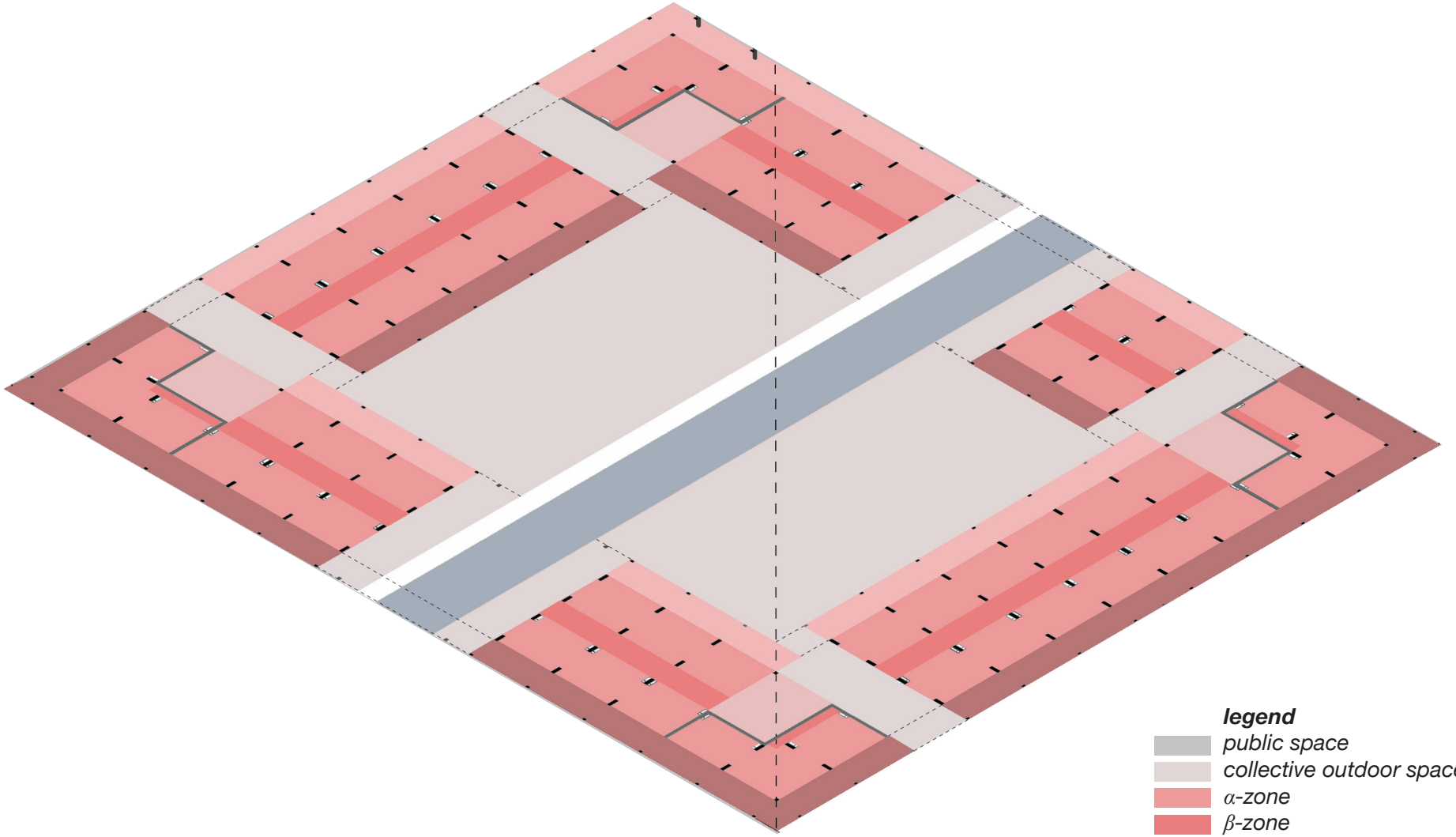
the block


legend
public space
collective outdoor space
α-zone
β-zone
γ vertical-zone
γ-zone
δ-zone



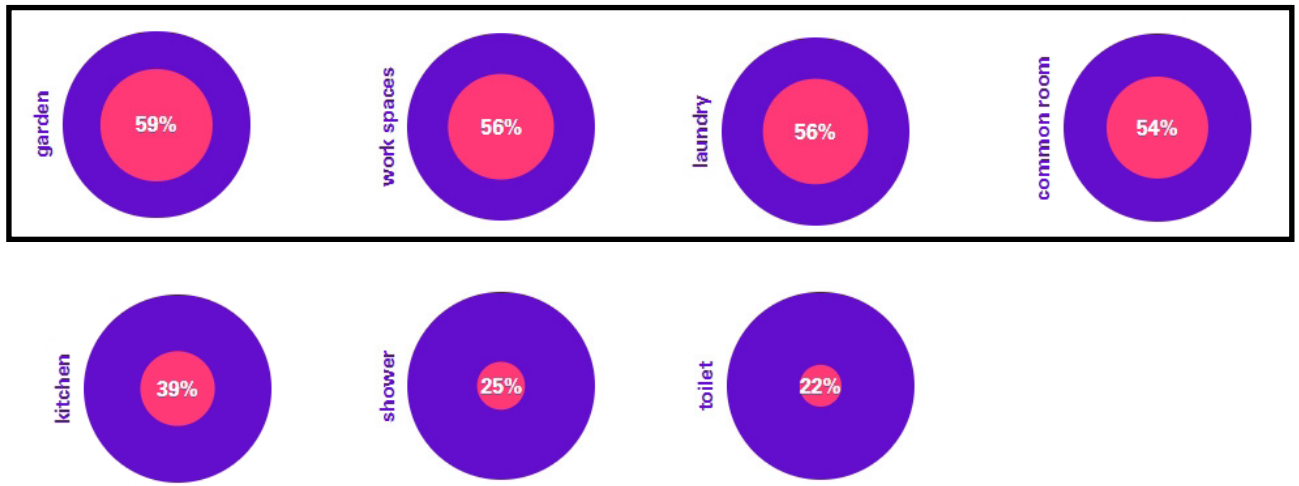
legend

- *public space*
- *collective outdoor space*
- *α-zone*
- *β-zone*
- *$\gamma_{vertical}$-zone*
- *γ-zone*
- *δ-zone*


legend
public space
collective outdoor space
α-zone
β-zone
γvertical-zone
γ-zone
δ-zone

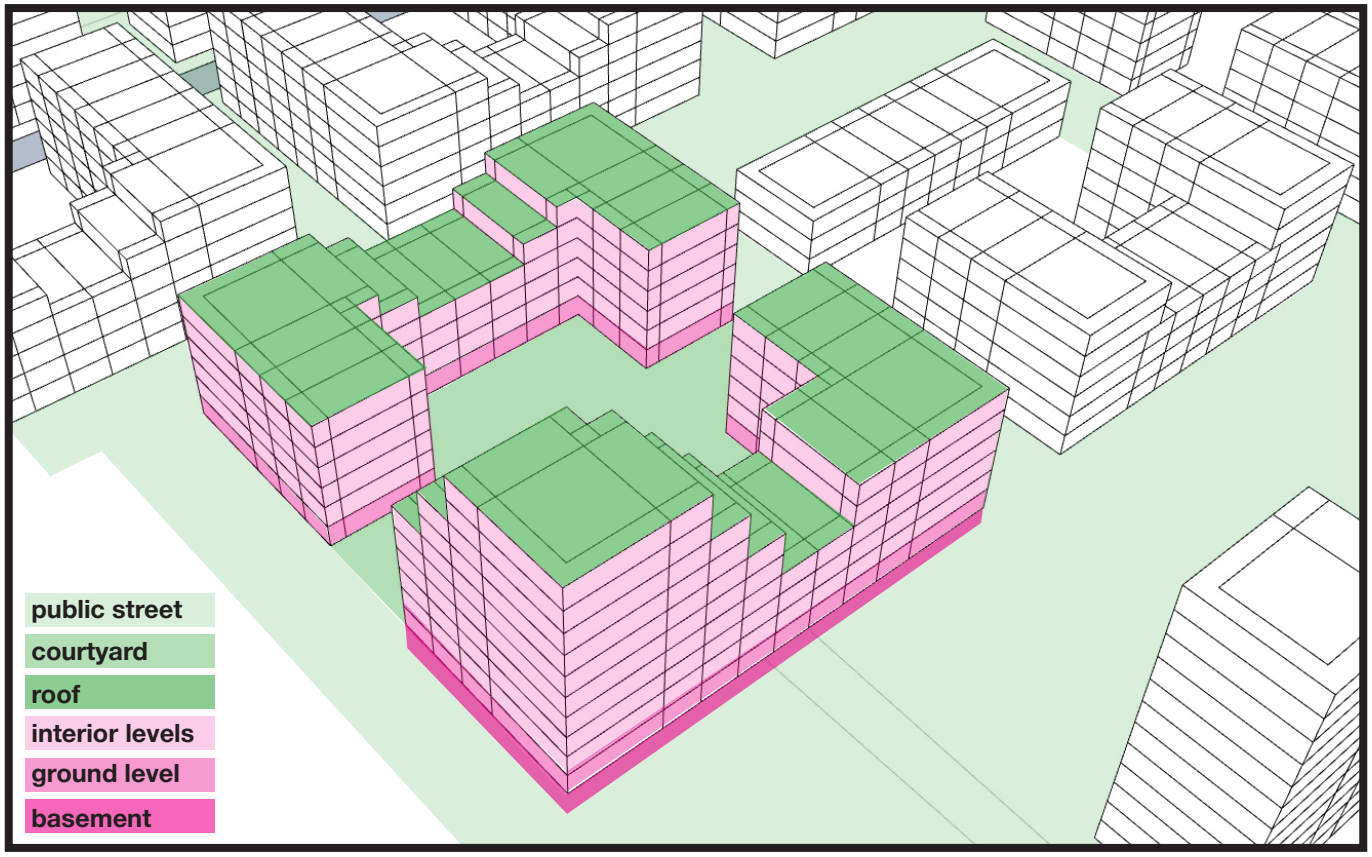

minimarket
café
square
private outdoor space
kitchen
dwellings
allotment
gardens
laundry
makerspace
dwellings
dwellings
bycycle street
IJ-dike

Which spaces do people want to share?



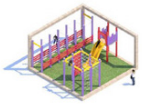
source: onesharedhouse.com

location shared space types



public street


PUBLIC GARDENS


PLAYSCAPE


WASTE MANGEMENT

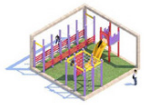

ALLOTMENT GARDENS


SENSORY GARDENS


WATERSCAPE

courtyard


PUBLIC GARDENS


PLAYSCAPE


WASTE MANGEMENT

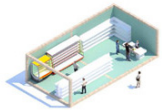

ALLOTMENT GARDENS


WATERSCAPE


SENSORY GARDENS

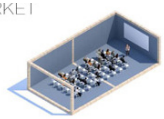

EBIKE STATION

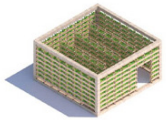
ground level


MINI MARKET


MAKER SPACE


SHARED LIVING ROOM


EVENT SPACE


FARM


HEALTH CLINIC


CAFE


STORAGE


LAUNDRY


FITNESS / GYM


MEDIA ROOM


SHARED KITCHEN

interior levels


TOOL SHED


STORAGE


LAUNDRY


SHARED LIVING ROOM


SHARED KITCHEN

- shared allotment gardens
- greenhouse
- outdoor livingroom
- common workspace
- welness
- quest space
- hobby room
- playing room
- gaming room
- kids room
- yoga room
- library
- plant library
- sauna
- urban farming

roof


ALLOTMENT GARDENS


ENERGY PRODUCTION


PLAYSCAPE

basement

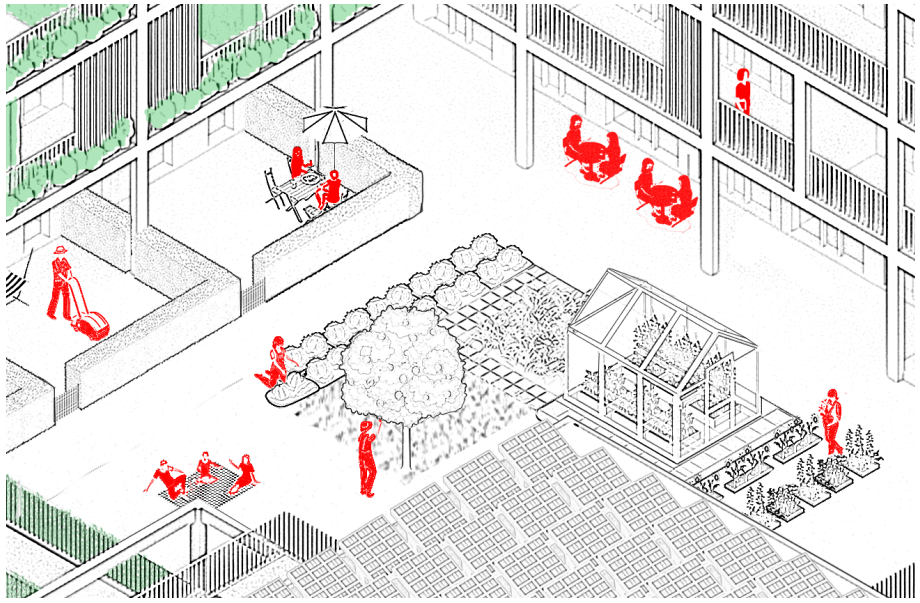

WASTE MANGEMENT

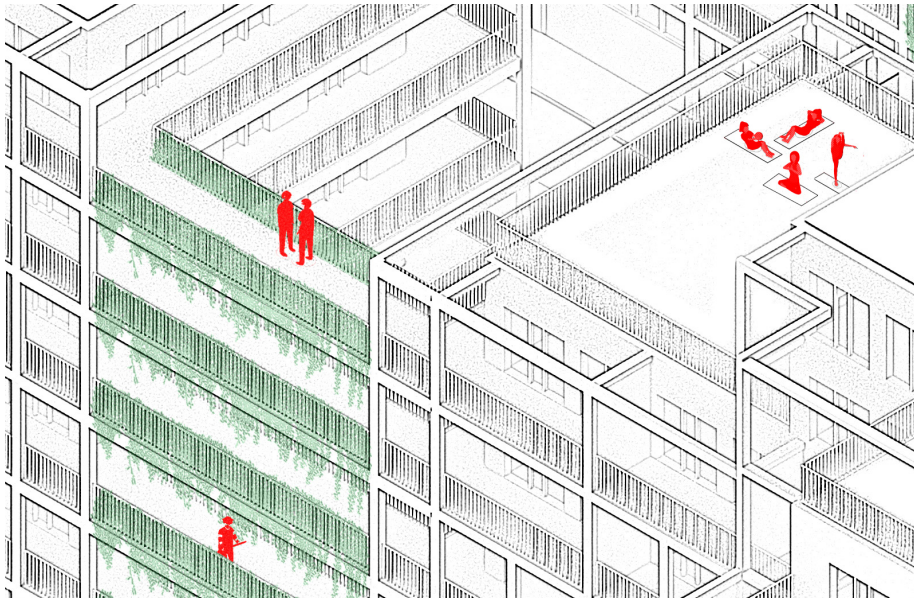

STORAGE

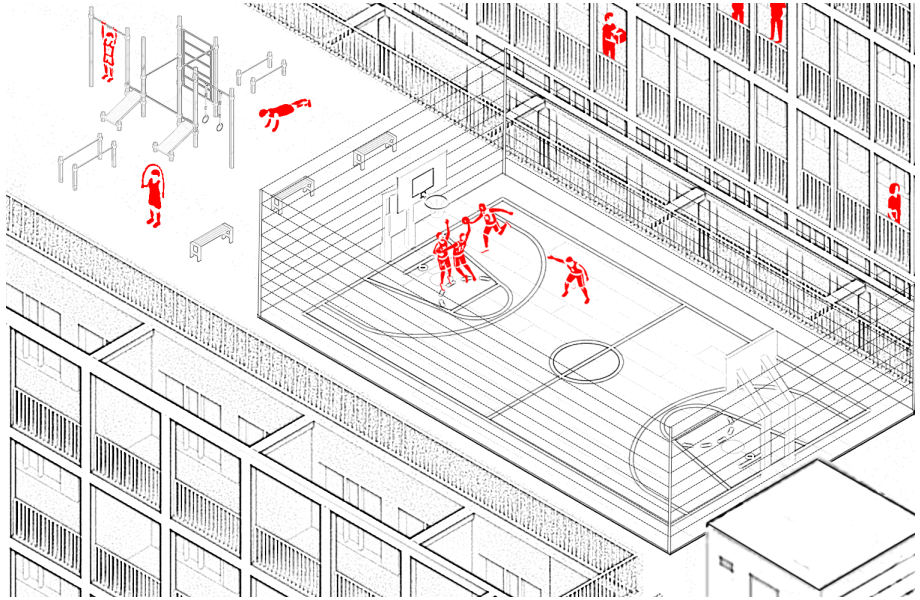

CAR SHARING

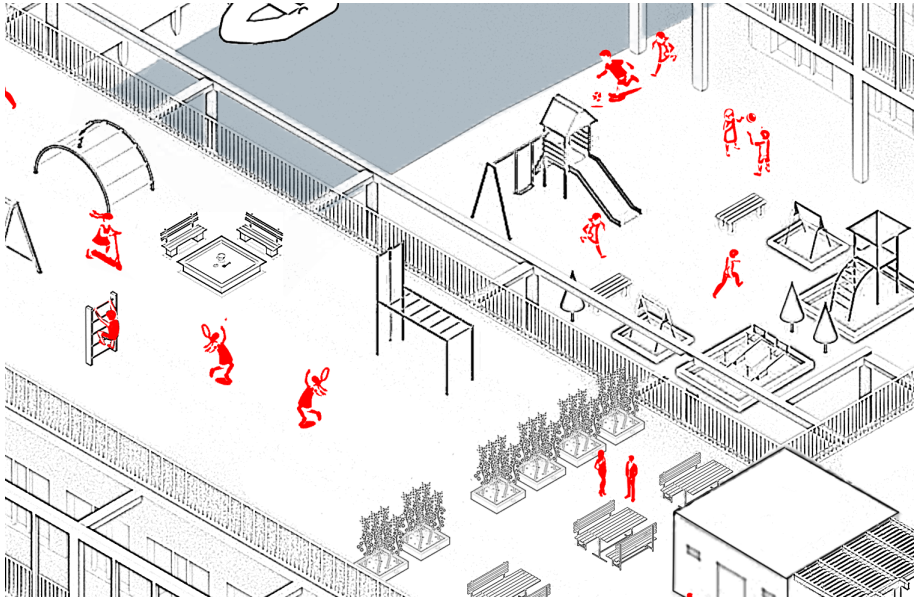

EBIKE STATION

source drawings: Space 10

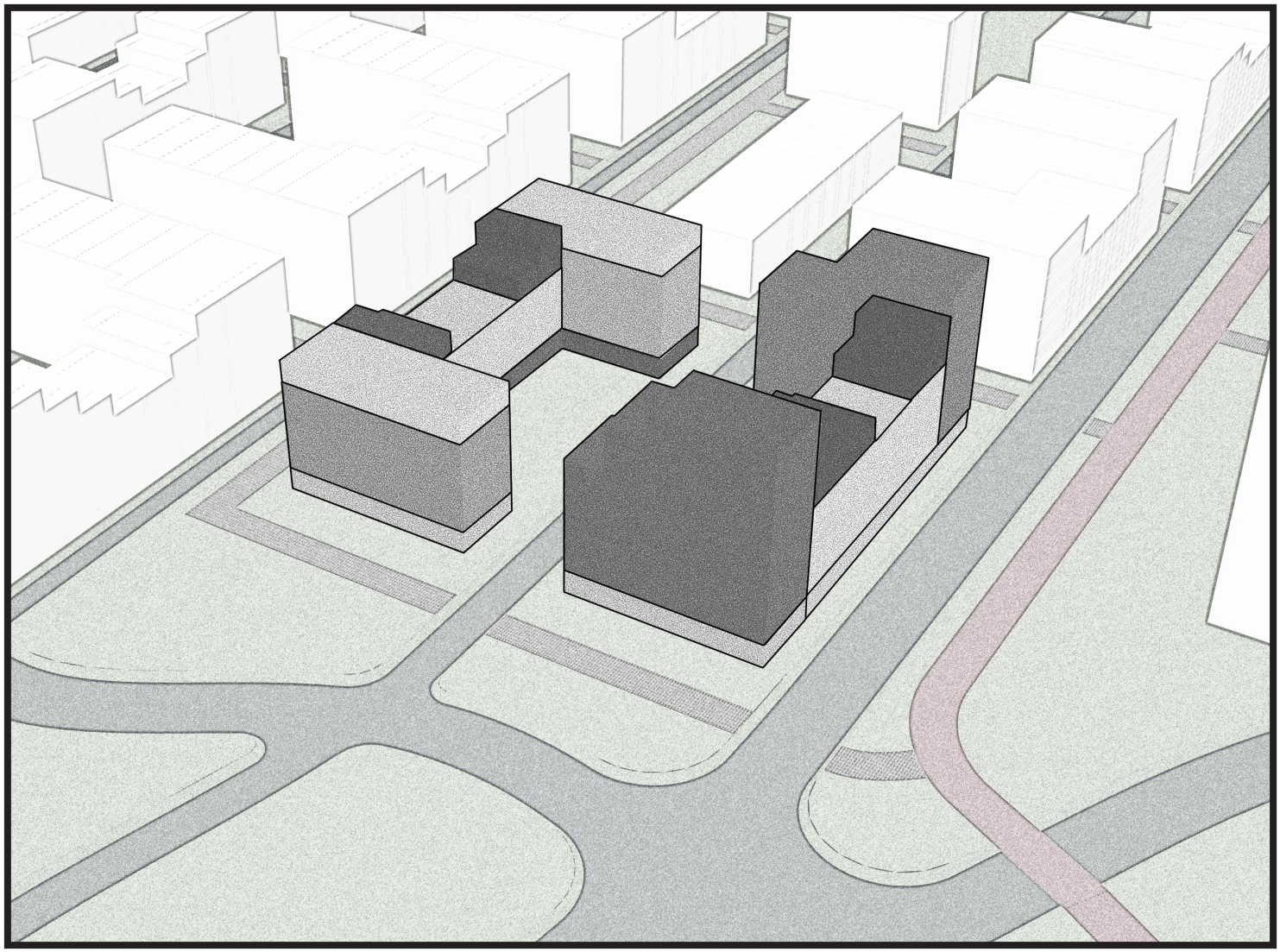








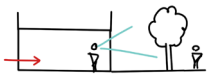
clusters block



cluster values

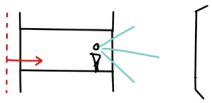
position block vertical

ground floor



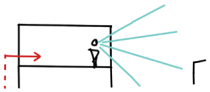
- *quick access from the street*
- *next to collective courtyard*
- *green in front of dwelling*
- *passers-by*

middle



- *more views*
- *more privacy*
- *no direct access from the street*

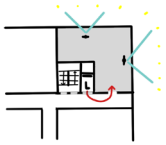
top



- *a lot of views*
- *more privacy*
- *no direct access from the street*

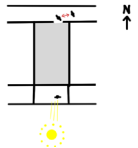
position block horizontal

corner



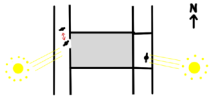
- *views*
- *more daylight*
- *quick access from the lift*

middle north-south orientation



- *sun all day on south facade*
- *more interaction with neighbors*

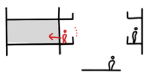
middle east-west orientation



- *sun morning/evening*
- *more interaction with neighbors*

access

balcony streetside



- *outdoor access at the street side*
- *eyecontact possible with neighbors across the street*

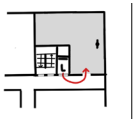
balcony courtyardside

- *outdoor access at the courtyardside*

corridor

- *indoor access to the dwelling*

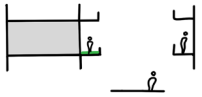
near vertical access



- *quick access from the elevator*

balcony position

streetside

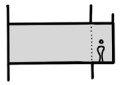


- *balcony at the streetside*

courtyardside

- *balcony at the courtyard side*

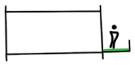
no balcony



- *more interior space instead of balcony*

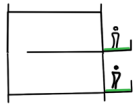
outdoor space

balcony



- *private balcony on the first floor*

double balcony



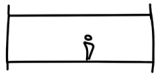
- *private balcony on the first and second floor*

roofterrace

- *private roofterrace*

dwelling levels

one level



- *suitable for elderly people*

two levels

- *seperation levels living and sleeping*

facade openings: light vs flexability

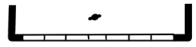
small openings

- *small openings which can accomodate more rooms adjacent to the facade*

medium openings

- *medium openings can accomodate less room possibilities adjacent tot the facade*

large openings



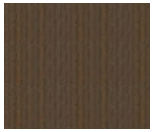
- *large openings can accomodate just one room adjacent to the facade*

facade material color

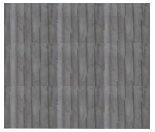
wood light

wood black

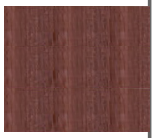
wood light

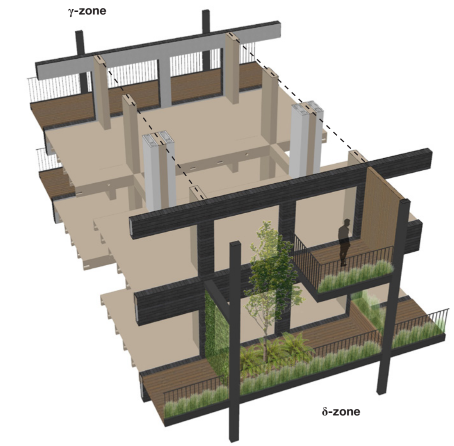


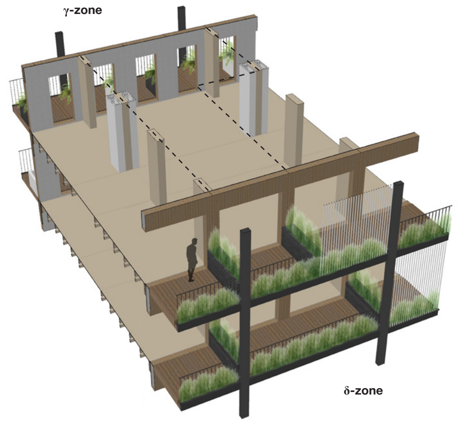
wood black

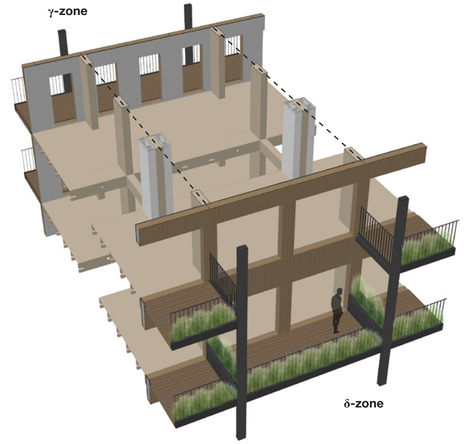


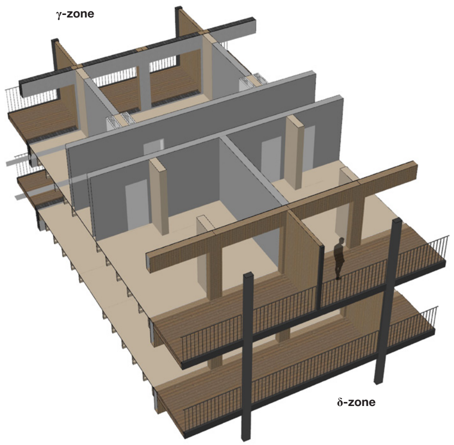
wood black



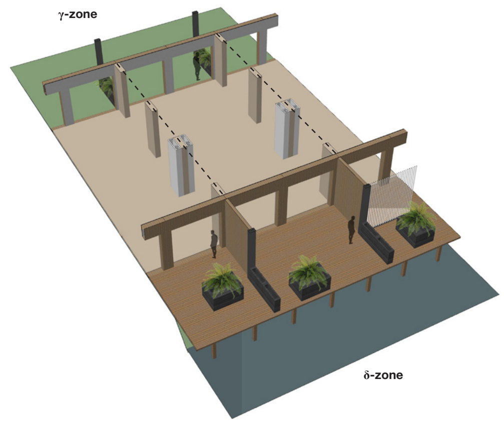

γ-zone
δ-zone


γ-zone
δ-zone

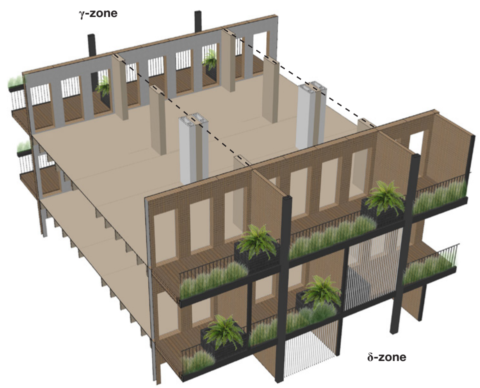

γ-zone
δ-zone


γ-zone
δ-zone


γ-zone
δ-zone


γ-zone
δ-zone

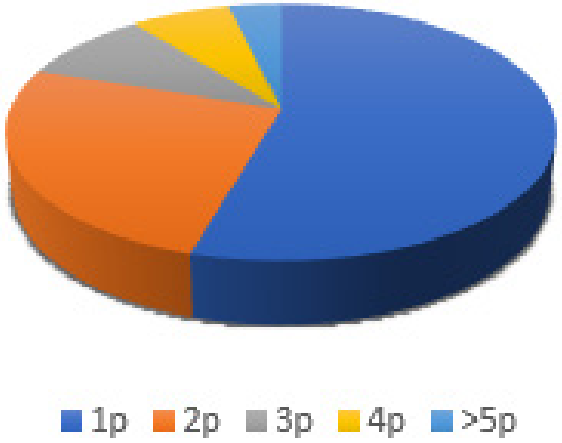

γ-zone
δ-zone


γ-zone
δ-zone

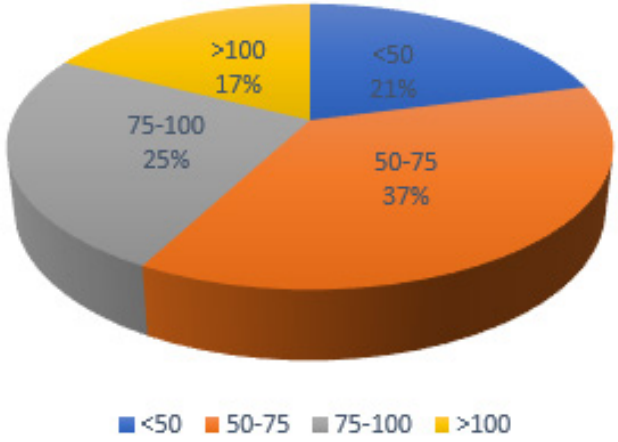

γ-zone
δ-zone

the individual

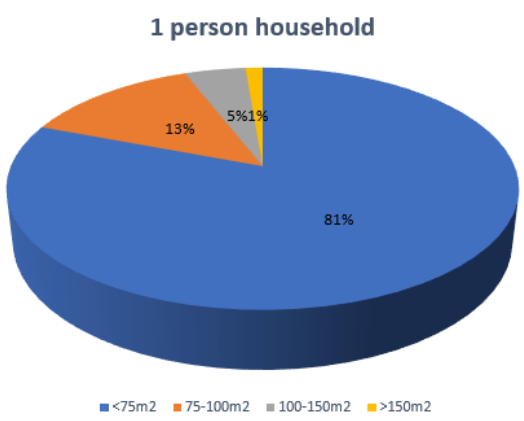
households sizes Amsterdam

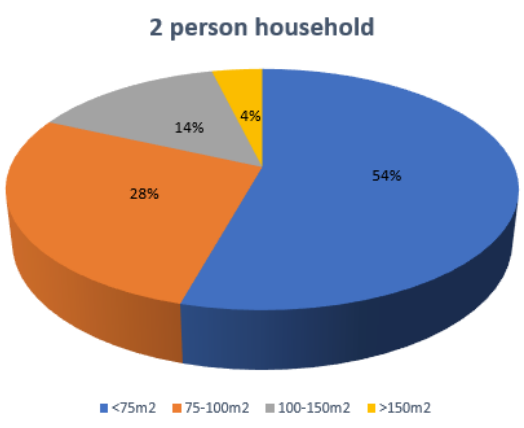


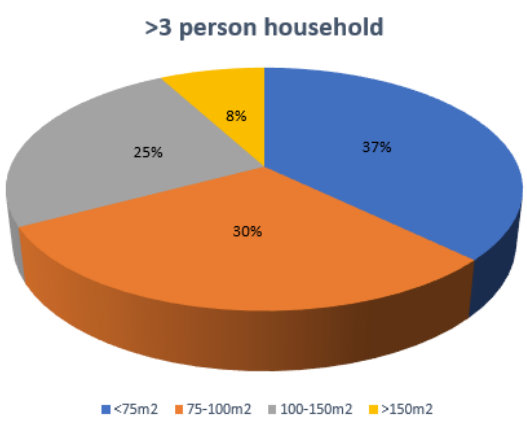
dwelling sizes Amsterdam



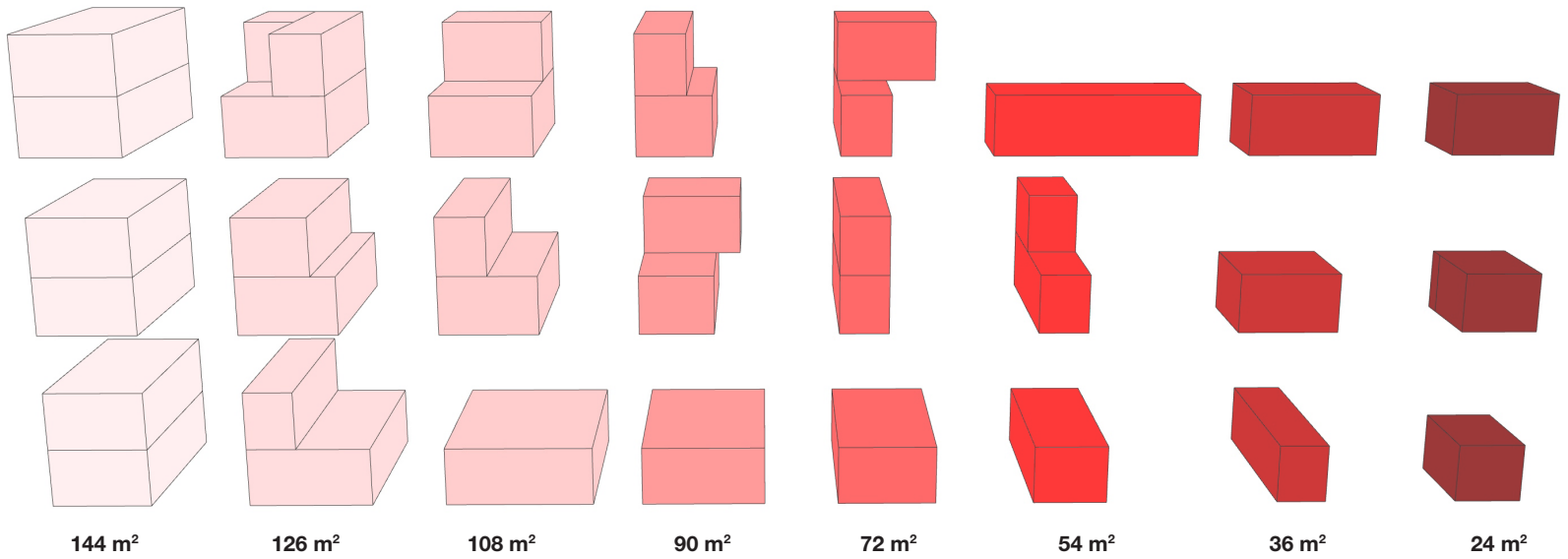
amount of livingspace of households in Amsterdam

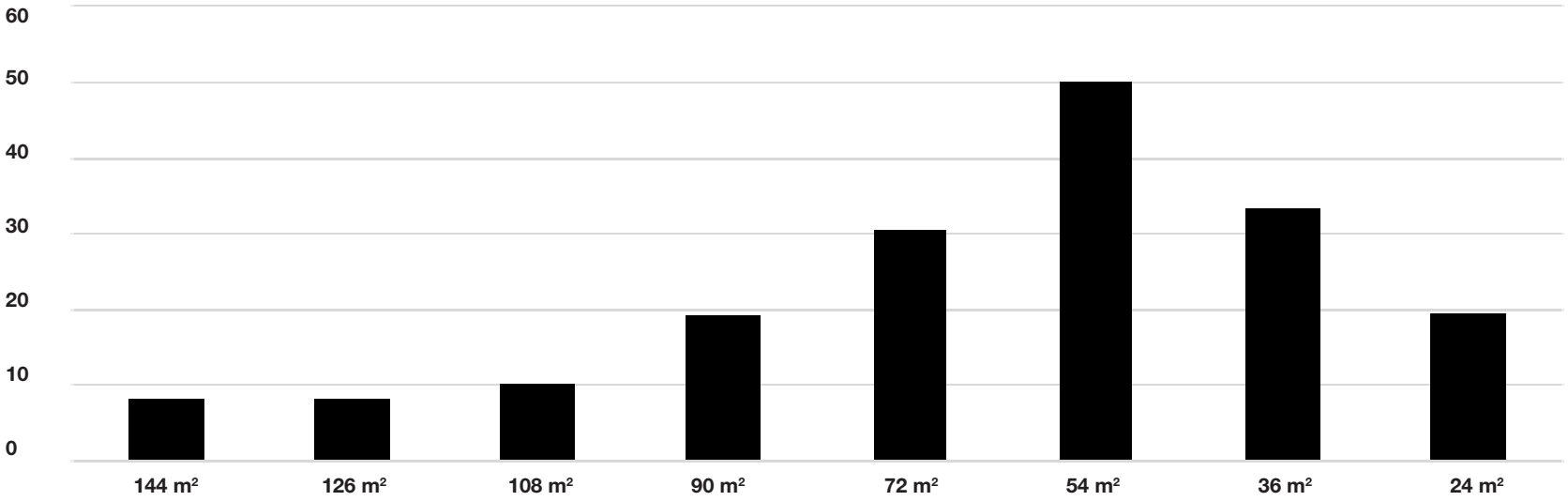






amounts of dwellings in block





36 m2

72 m2

108 m2

144 m2


family
extended family
family
single
couple
family
single parent
single
single
collective livingroom
family
single
γ-zone access
workroom
δ-zone
2550
6000
6000
6000
6000
6000
6000
6000
6000
6000
6000
6000
6000
2550
family
work&live


γ-zone access
2550
6000
6000
6000
6000
6000
6000
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6000
2550


2550
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2550


5


δ-zone
2550
6000
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2550


δ-zone
2550
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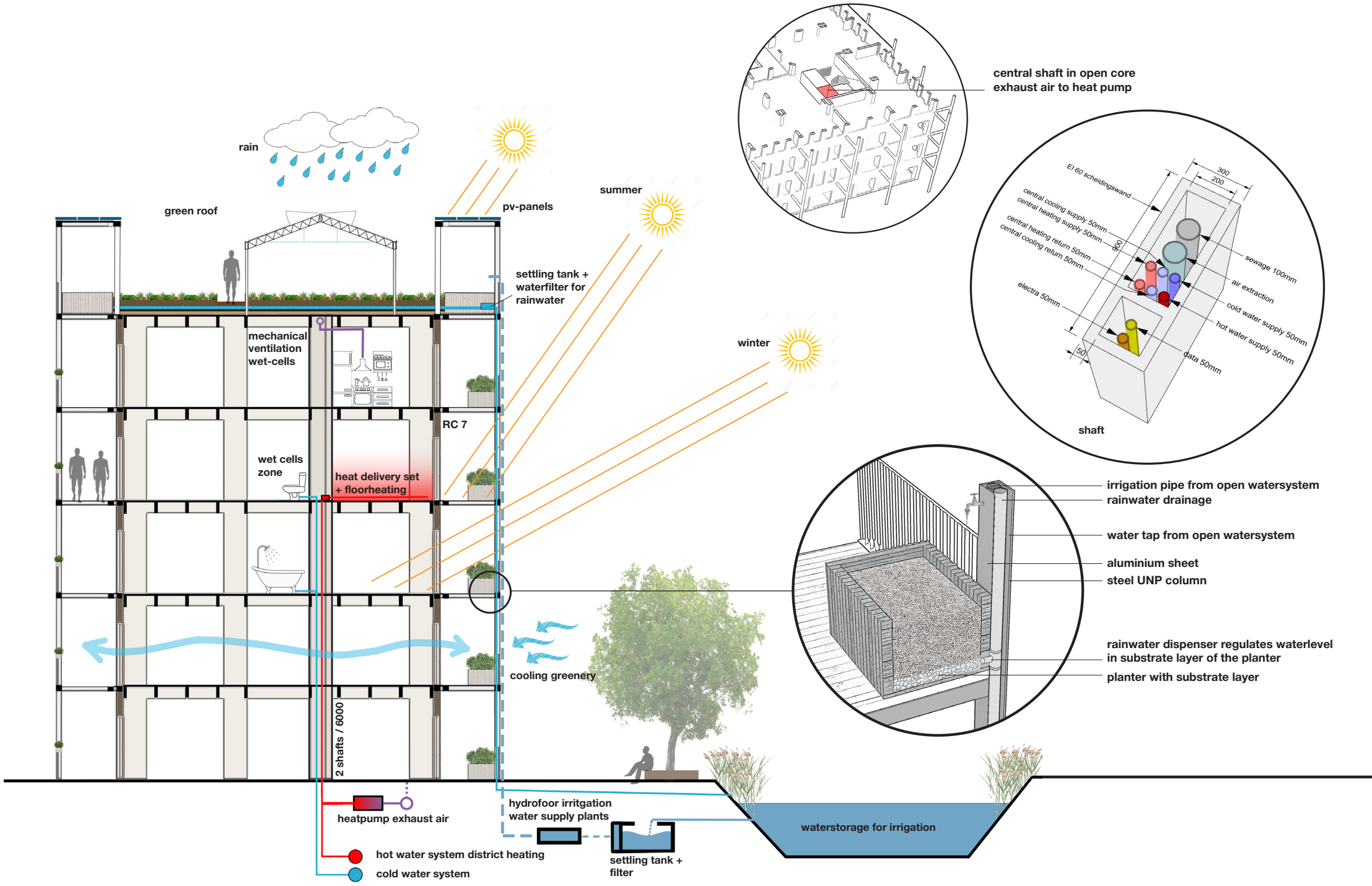
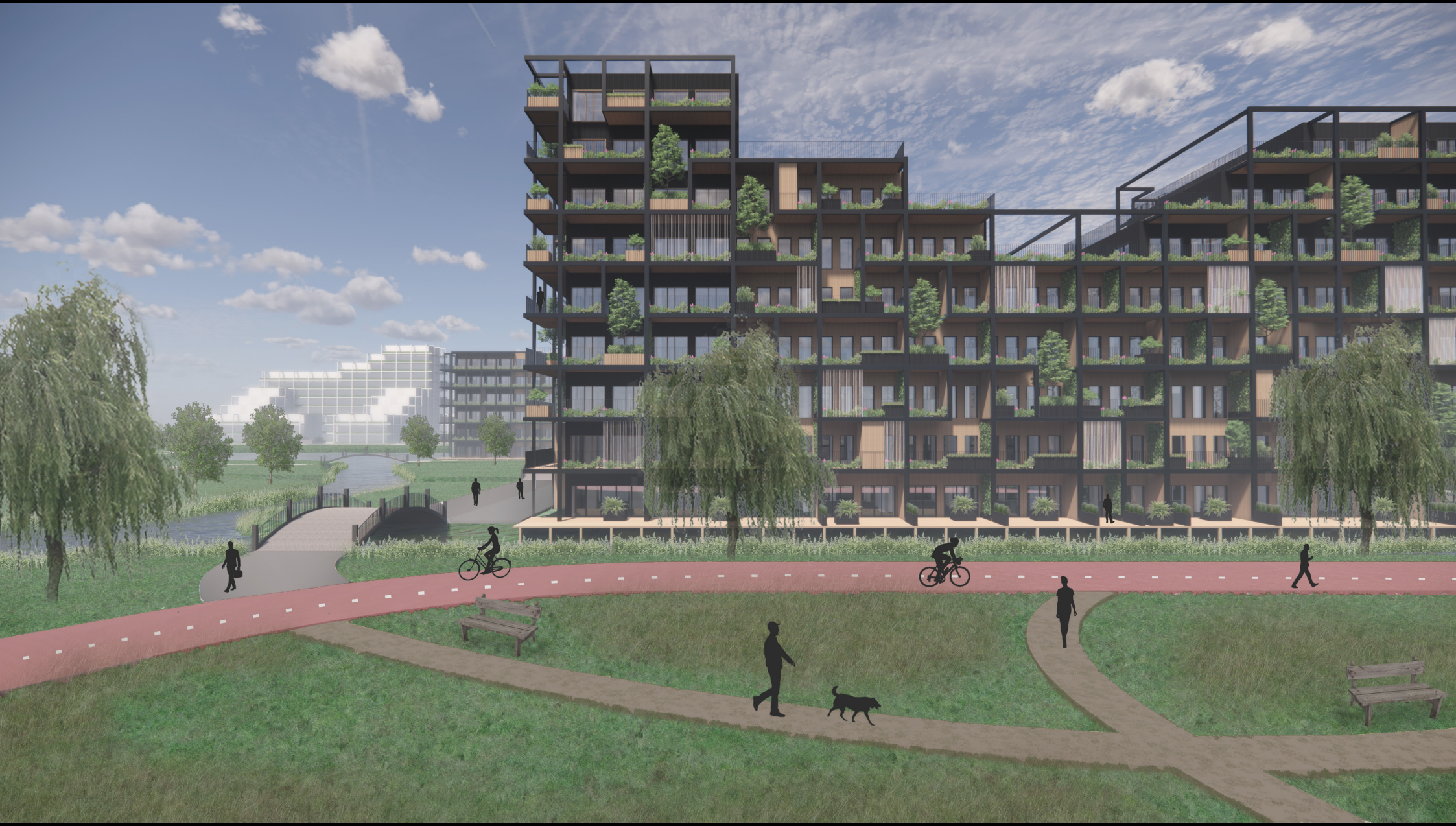
2550


central shaft in open core
exhaust air to heat pump
rain
green roof
pv-panels
summer
winter
settling tank +
waterfilter for
rainwater
mechanical
ventilation
wet-cells
RC 7
wet cells
zone
heat delivery set
+ floorheating
cooling greenery
2 shafts / 6000
heatpump exhaust air
hydrofoor irritgation
water supply plants
hot water system district heating
cold water system
settling tank +
filter
waterstorage for irrigation
EI 60 scheidingswand
central cooling supply 50mm
central heating supply 50mm
central heating return 50mm
central cooling return 50mm
electra 50mm
data 50mm
sewage 100mm
air extraction
cold water supply 50mm
hot water supply 50mm
300
200
50
shaft
irrigation pipe from open watersystem
rainwater drainage
water tap from open watersystem
aluminium sheet
steel UNP column
rainwater dispenser regulates waterlevel
in substrate layer of the planter
planter with substrate layer


32.400
Level 09
28.800
Level 07
25.200
Level 08
21.600
Level 06
18.000
Level 05
14.400
Level 04
10.800
Level 03
7.200
Level 02
3.600
Level 01
0.000
Level 00



support

toolbox collectieve: layer systems

toolbox individual: components & interior

Thank You :)