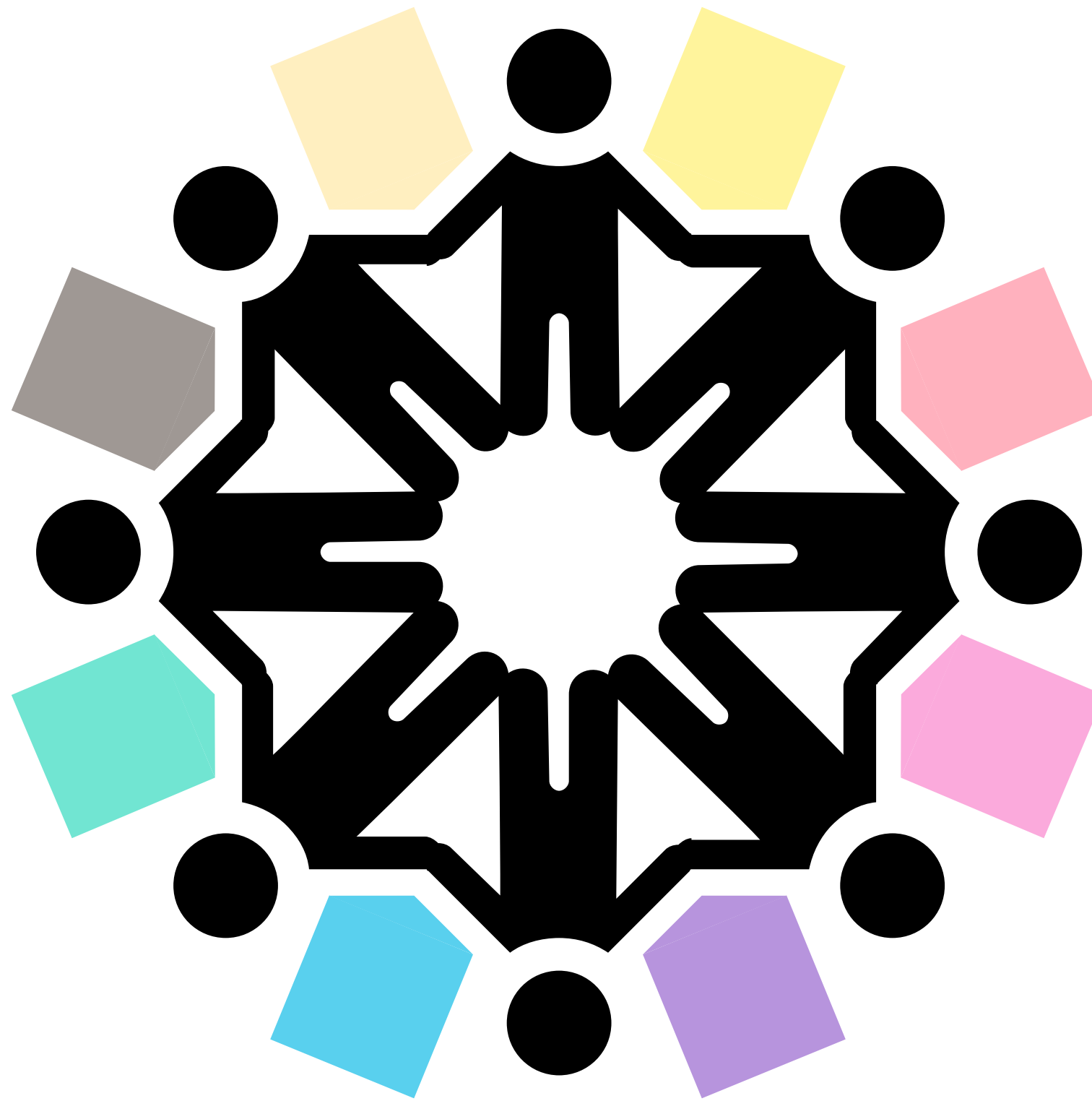


Building SimpliCity



BRINGING AFFORDABLE HOUSING BACK TO THE PEOPLE

1M HOMES

CLIMATE CHANGE



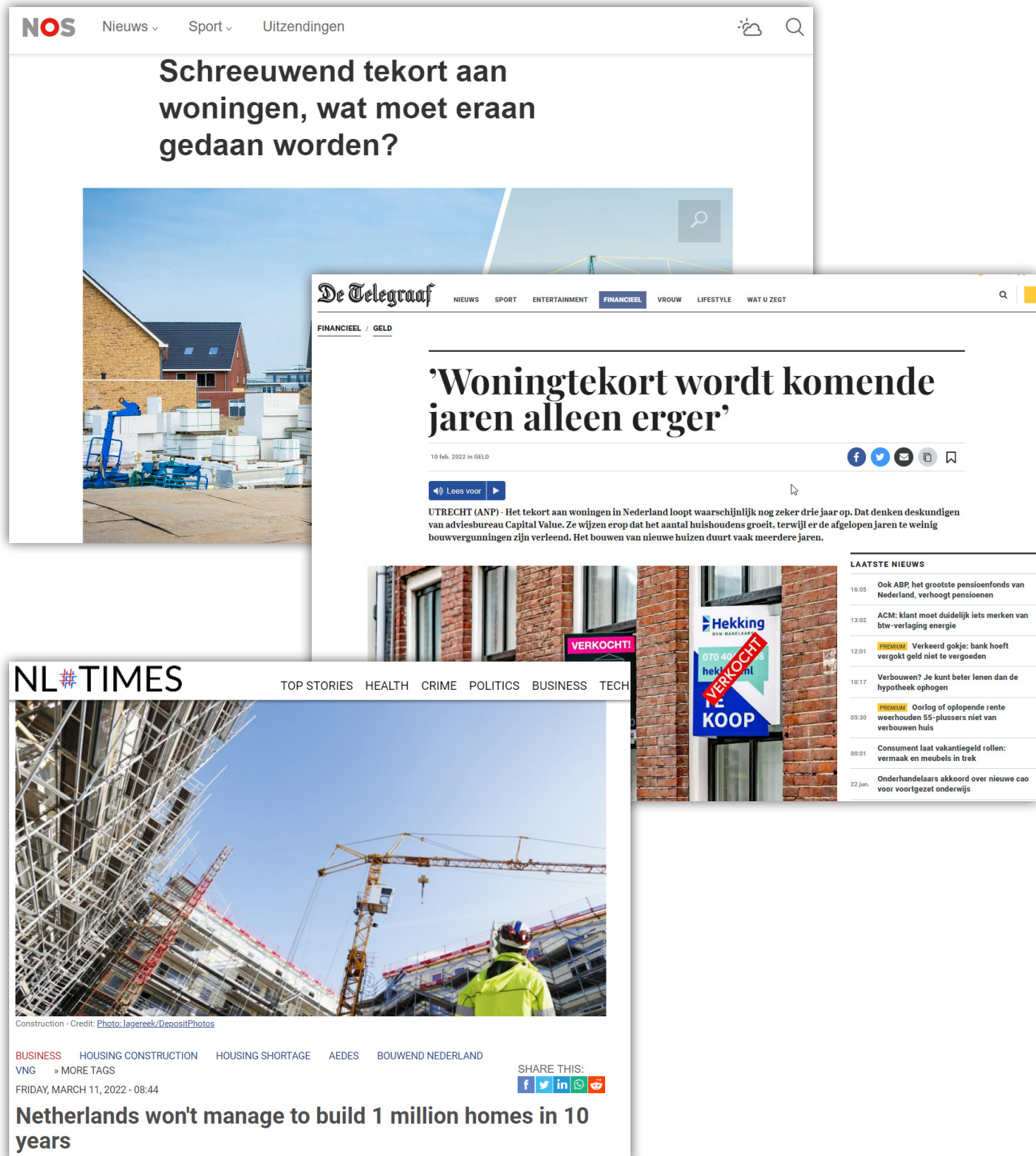
1M HOMES



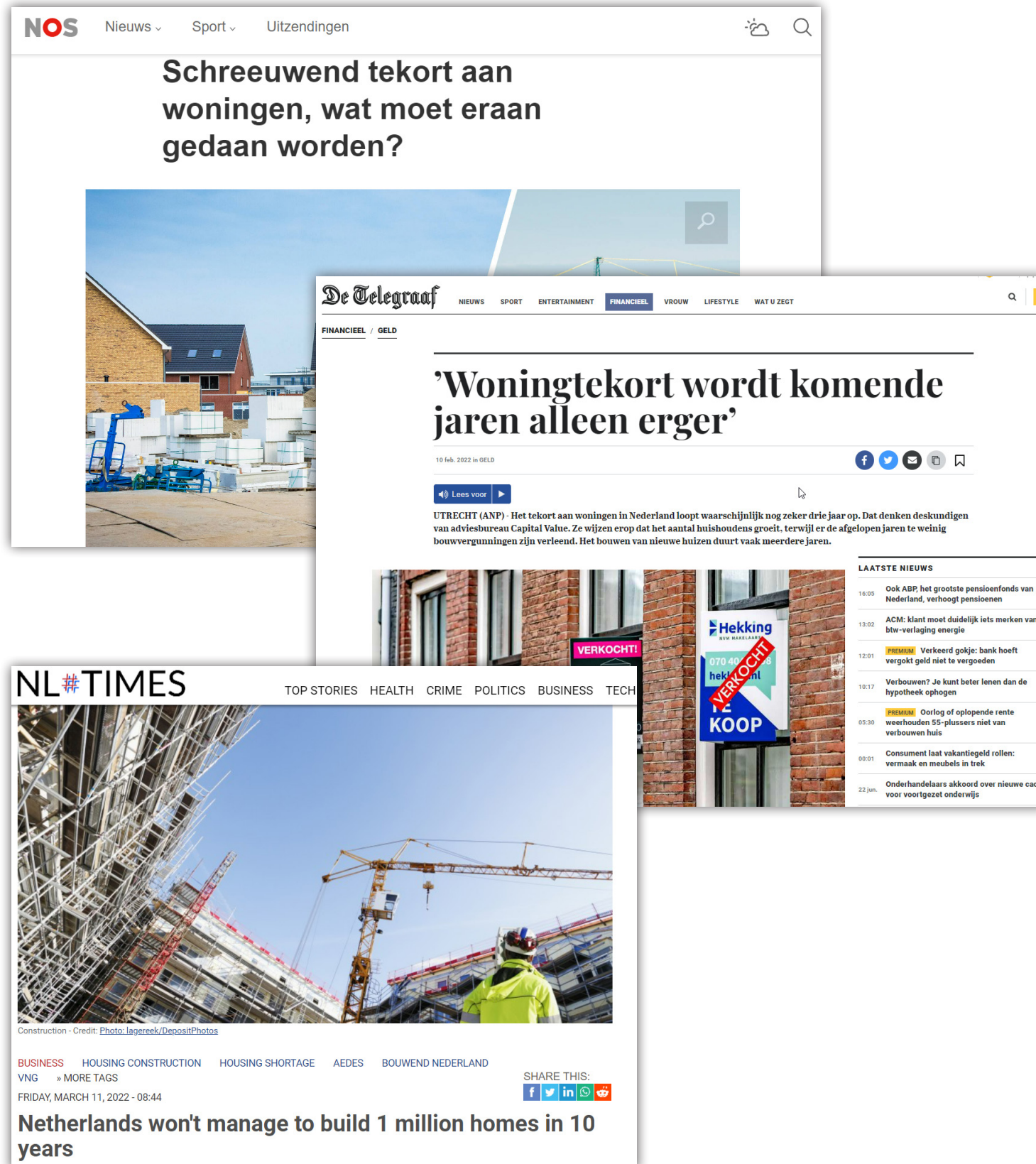
CLIMATE CHANGE

1M HOMES

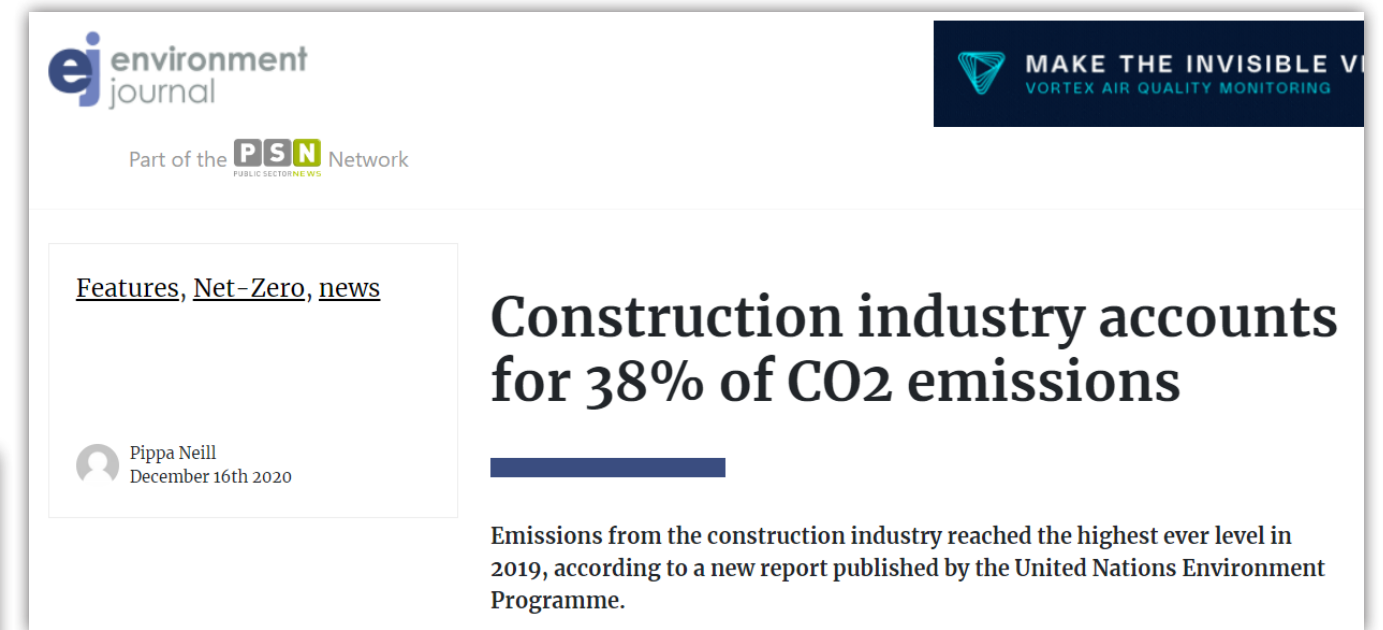
CLIMATE CHANGE



1M HOMES



CLIMATE CHANGE



1M HOMES

NOS Nieuws Sport Uitzendingen

Schreeuwend tekort aan woningen, wat moet eraan gedaan worden?



De Telegraaf NIEUWS SPORT ENTERTAINMENT FINANCIËEL VROUW LIFESTYLE WAT U ZEGT

FINANCIËEL / GELD

'Woningtekort wordt komende jaren alleen erger'

10 feb. 2022 in GELD

Lees voor

UTRECHT (ANP) - Het tekort aan woningen in Nederland loopt waarschijnlijk nog zeker drie jaar op. Dat denken deskundigen van adviesbureau Capital Value. Ze wijzen erop dat het aantal huishoudens groeit, terwijl er de afgelopen jaren te weinig bouwvergunningen zijn verleend. Het bouwen van nieuwe huizen duurt vaak meerdere jaren.

LAATSTE NIEUWS

- 16:05 Ook ABP, het grootste pensioenfonds van Nederland, verhoogt pensioenen
- 13:02 ACM: klant moet duidelijk iets merken van btw-verlaging energie
- 12:01 **PREMIUM** Verkeerd gokje: bank hoeft vergokt geld niet te vergoeden
- 10:17 Verbouwen? Je kunt beter lenen dan de hypotheek ophogen
- 05:30 **PREMIUM** Oorlog of oplopende rente weerhouden 55-plussers niet van verbouwen huis
- 00:01 Consument laat vakantiegeld rollen: vermaak en meubels in trek
- 22 jun. Onderhandelaars akkoord over nieuwe cao voor voortgezet onderwijs

NL#TIMES TOP STORIES HEALTH CRIME POLITICS BUSINESS TECH



Construction - Credit: Photo: lagereek/DepositPhotos

BUSINESS HOUSING CONSTRUCTION HOUSING SHORTAGE AEDES BOUWEND NEDERLAND

VNG » MORE TAGS

FRIDAY, MARCH 11, 2022 - 08:44

Netherlands won't manage to build 1 million homes in 10 years

SHARE THIS:

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CLIMATE CHANGE

environment journal

Part of the PSN Network

Features, Net-Zero, news

Pippa Neill December 16th 2020

Construction industry accounts for 38% of CO2 emissions

MAKE THE INVISIBLE VISIBLE

VORTEX AIR QUALITY MONITORING

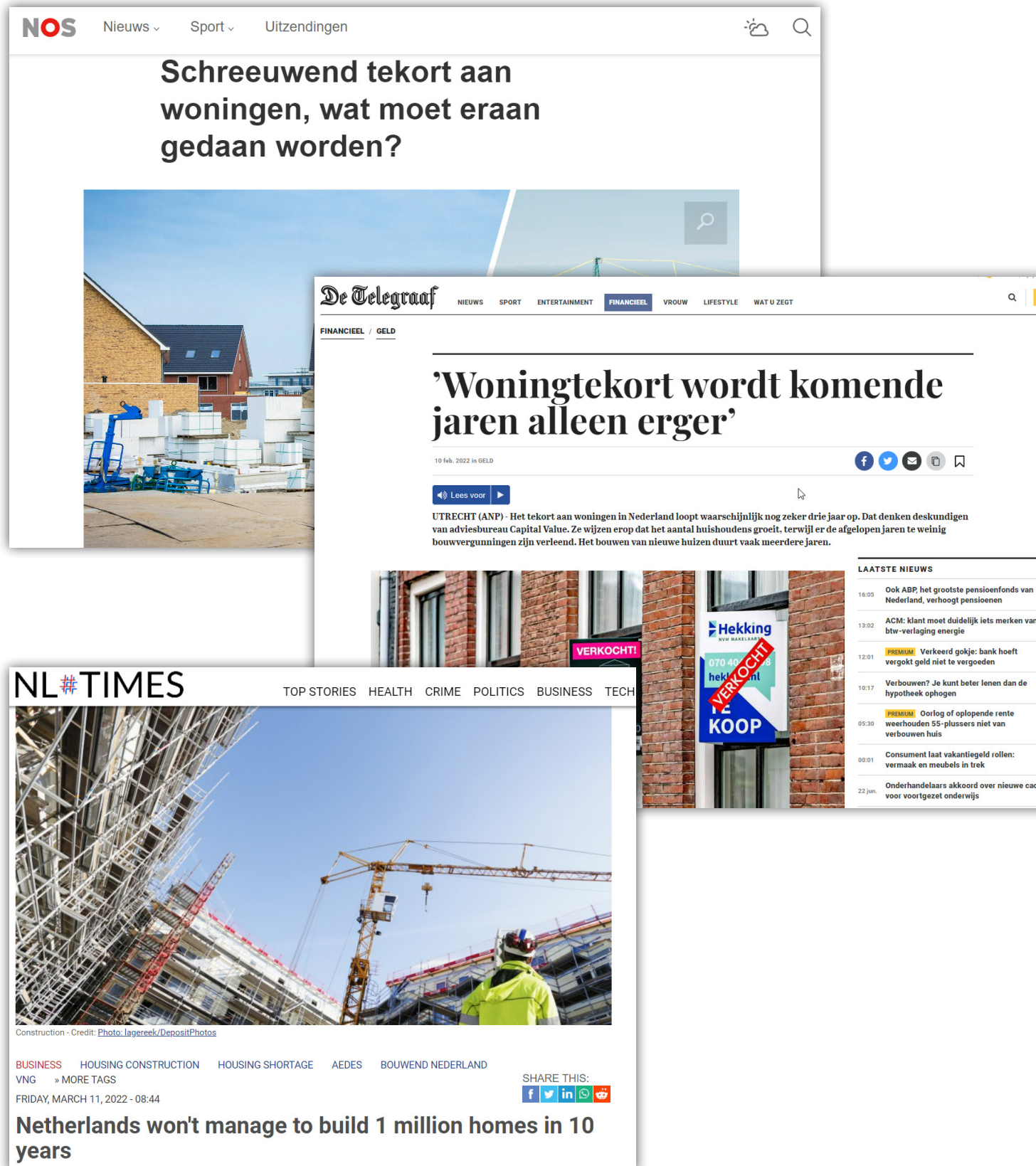
Global Agenda Green New Deals Climate Change Future of the Environment

How can we reduce the construction industry's carbon footprint?

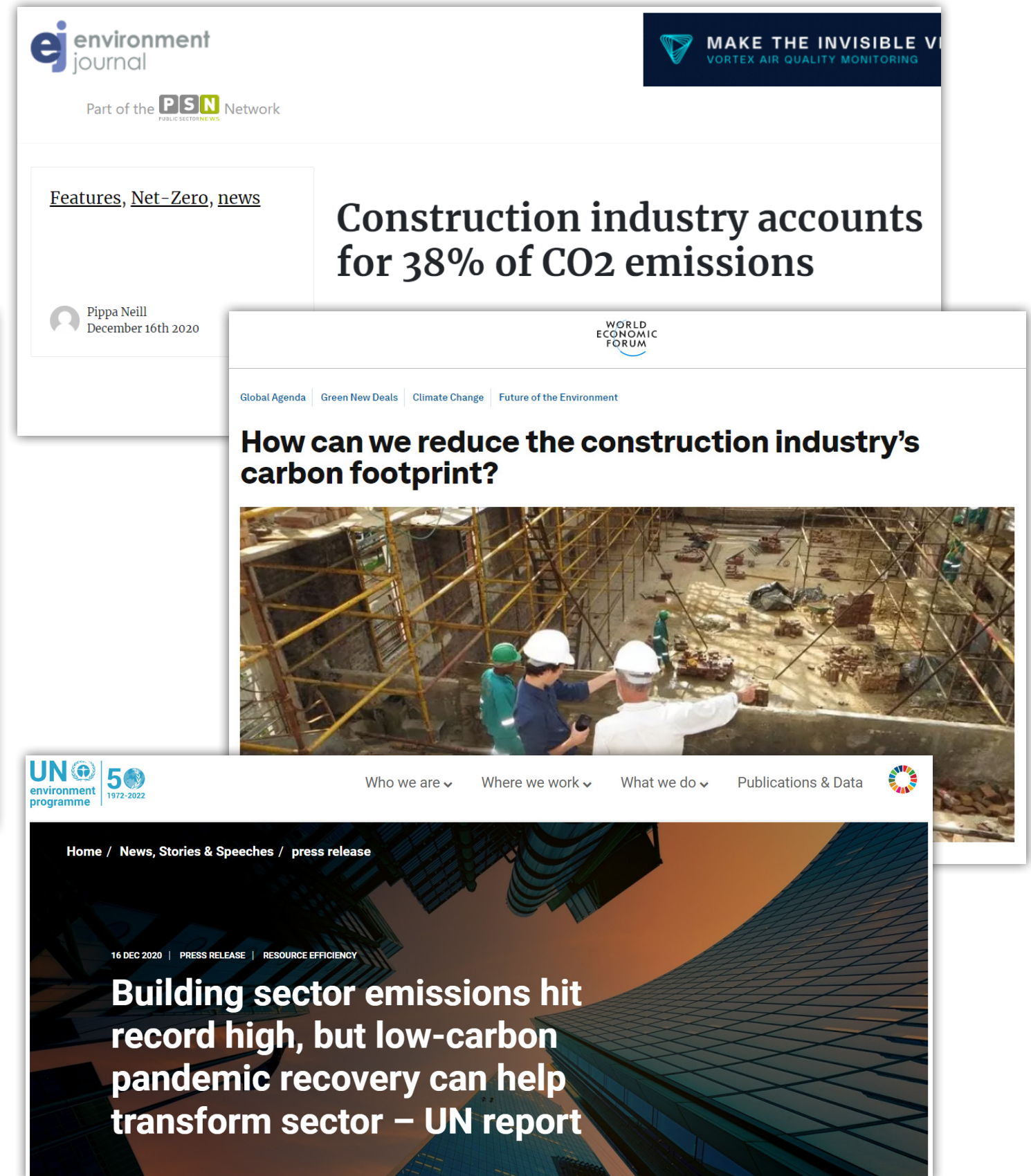


The construction industry needs to adopt a clear definition of what net-zero carbon means, the report says. Image: Unsplash/ Mark Potterton

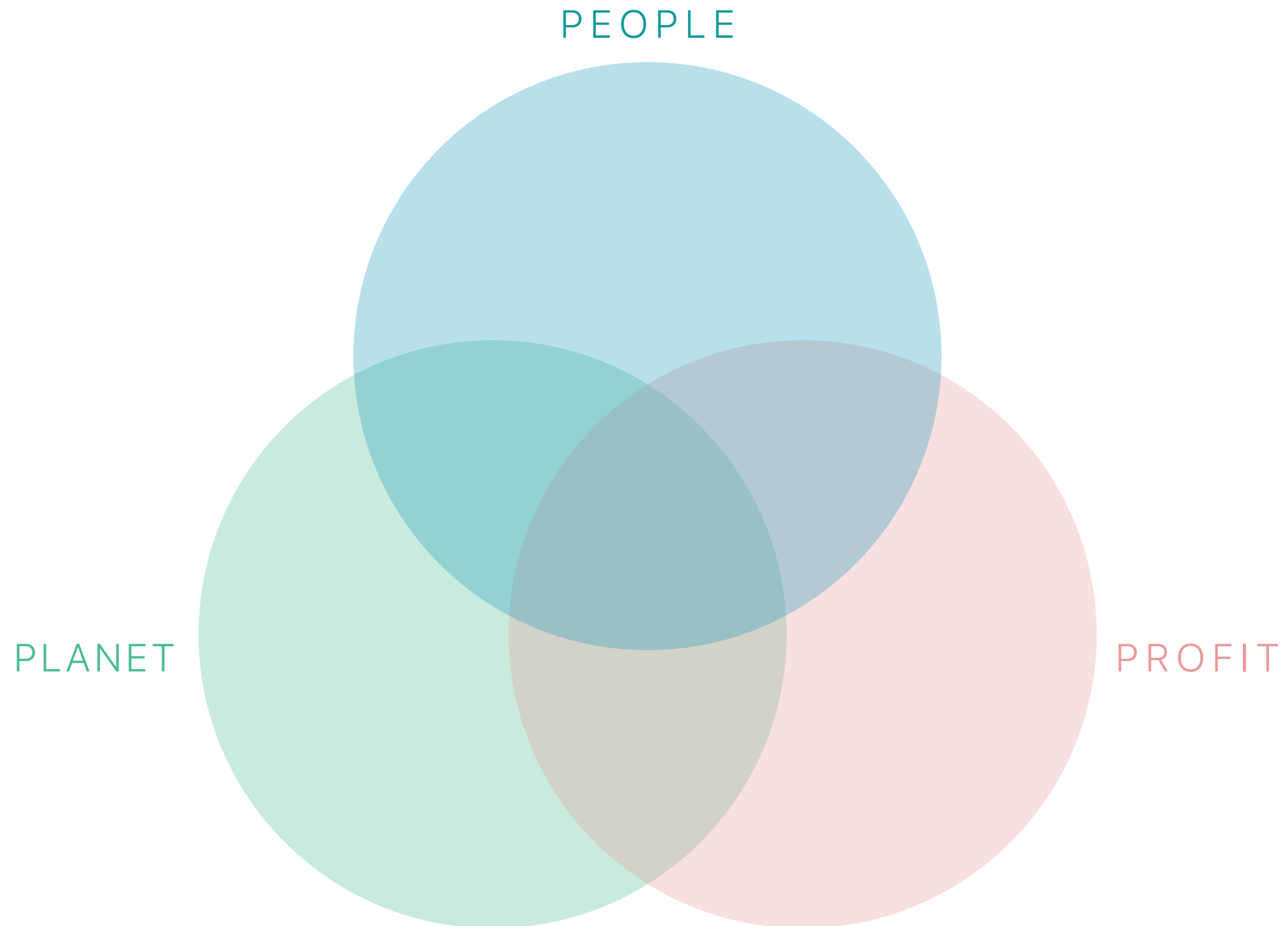
1M HOMES



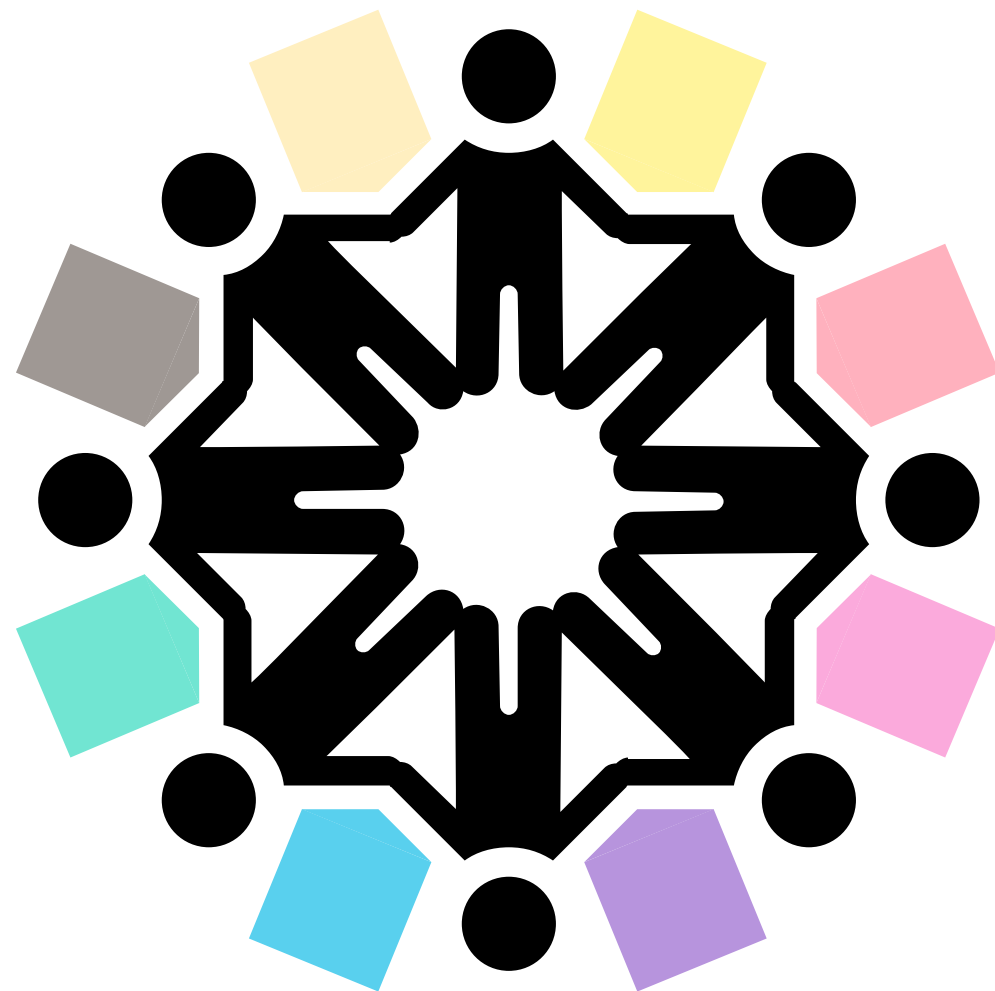
CLIMATE CHANGE



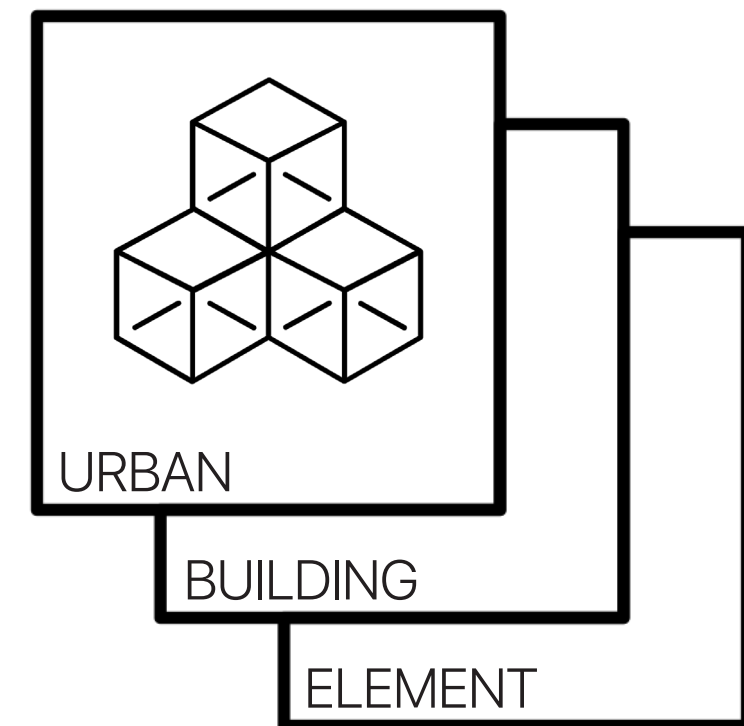
Bring affordable housing back to the people in a sustainable way.

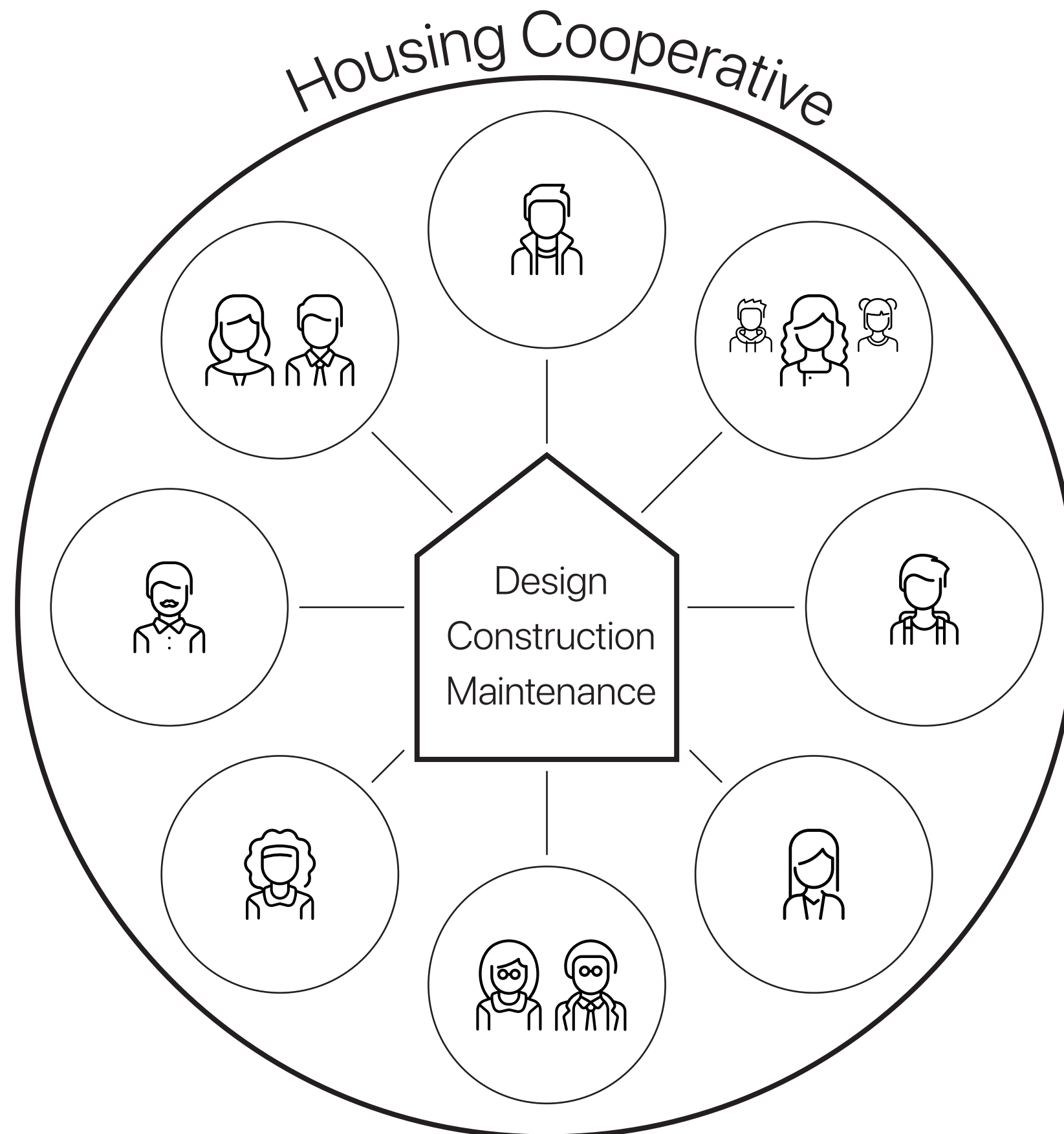
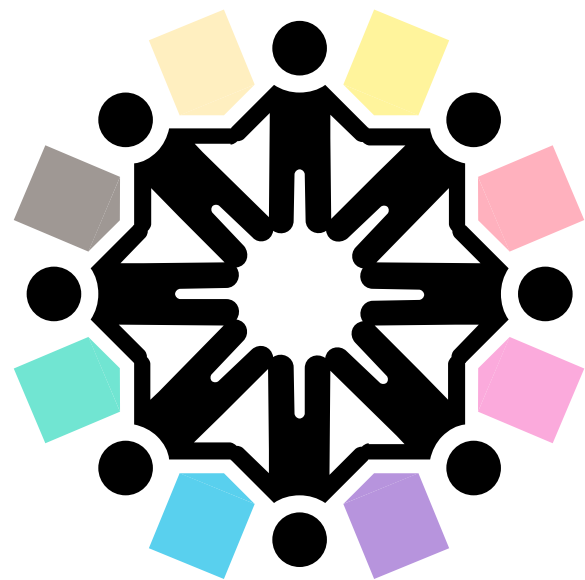


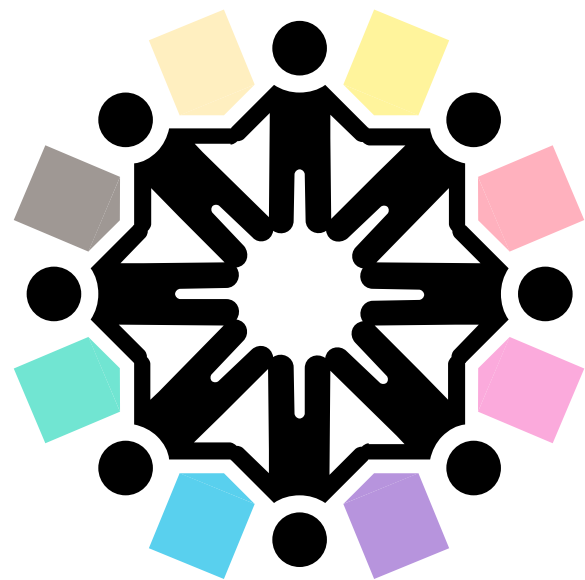
HOUSING COOPERATIVE



LOW-TECH PRINCIPLES

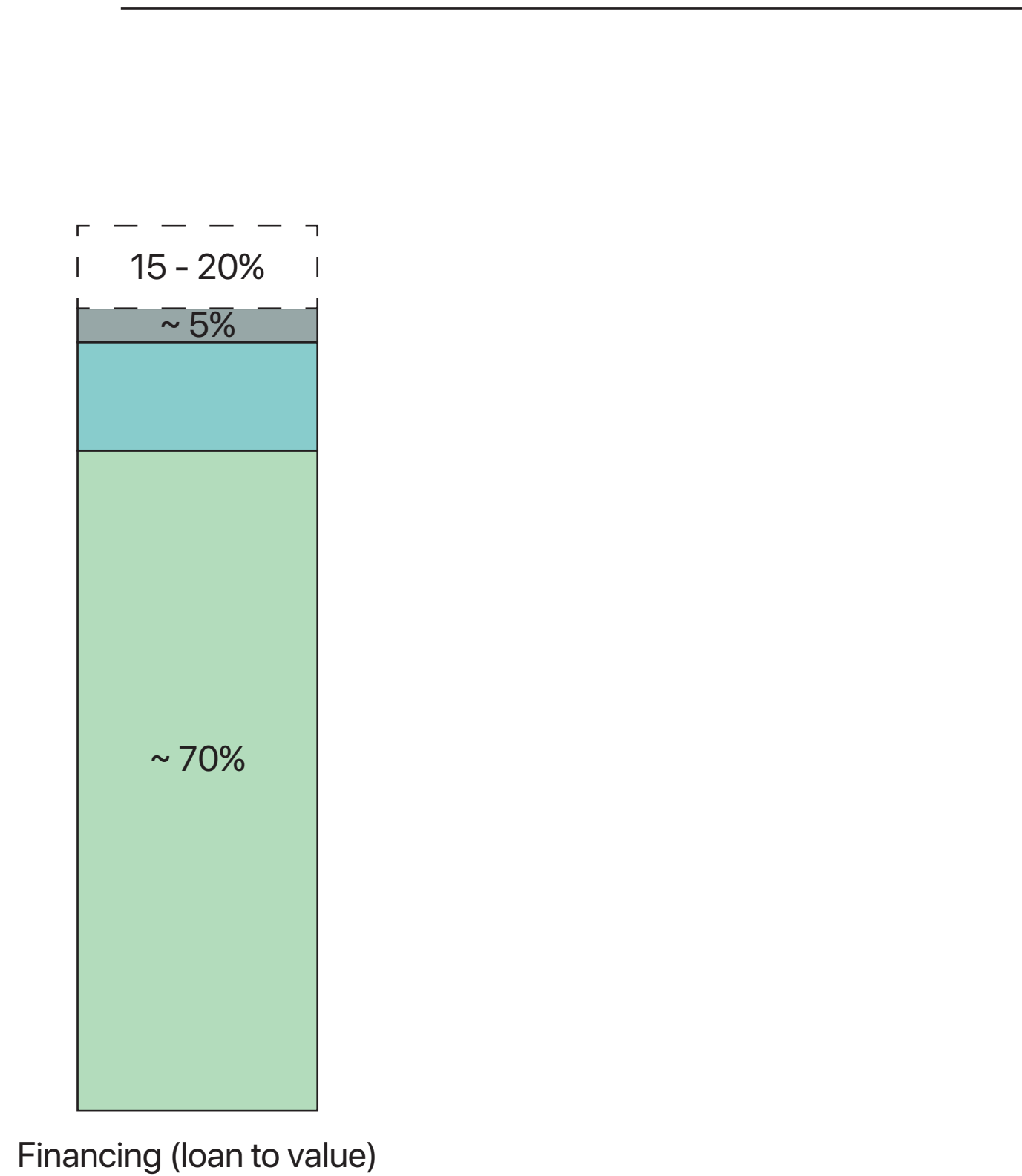


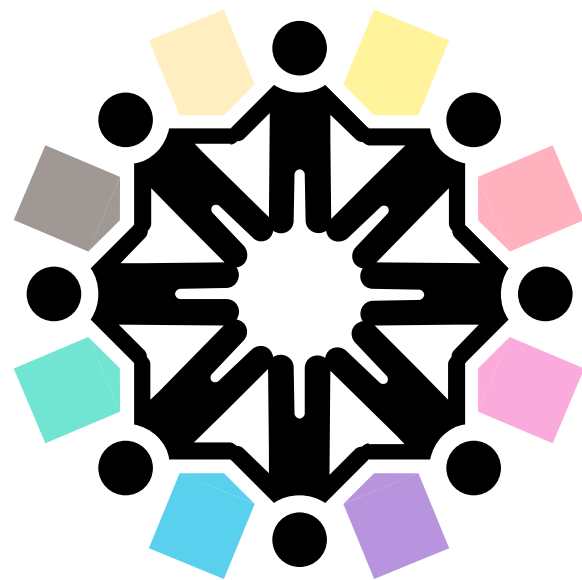




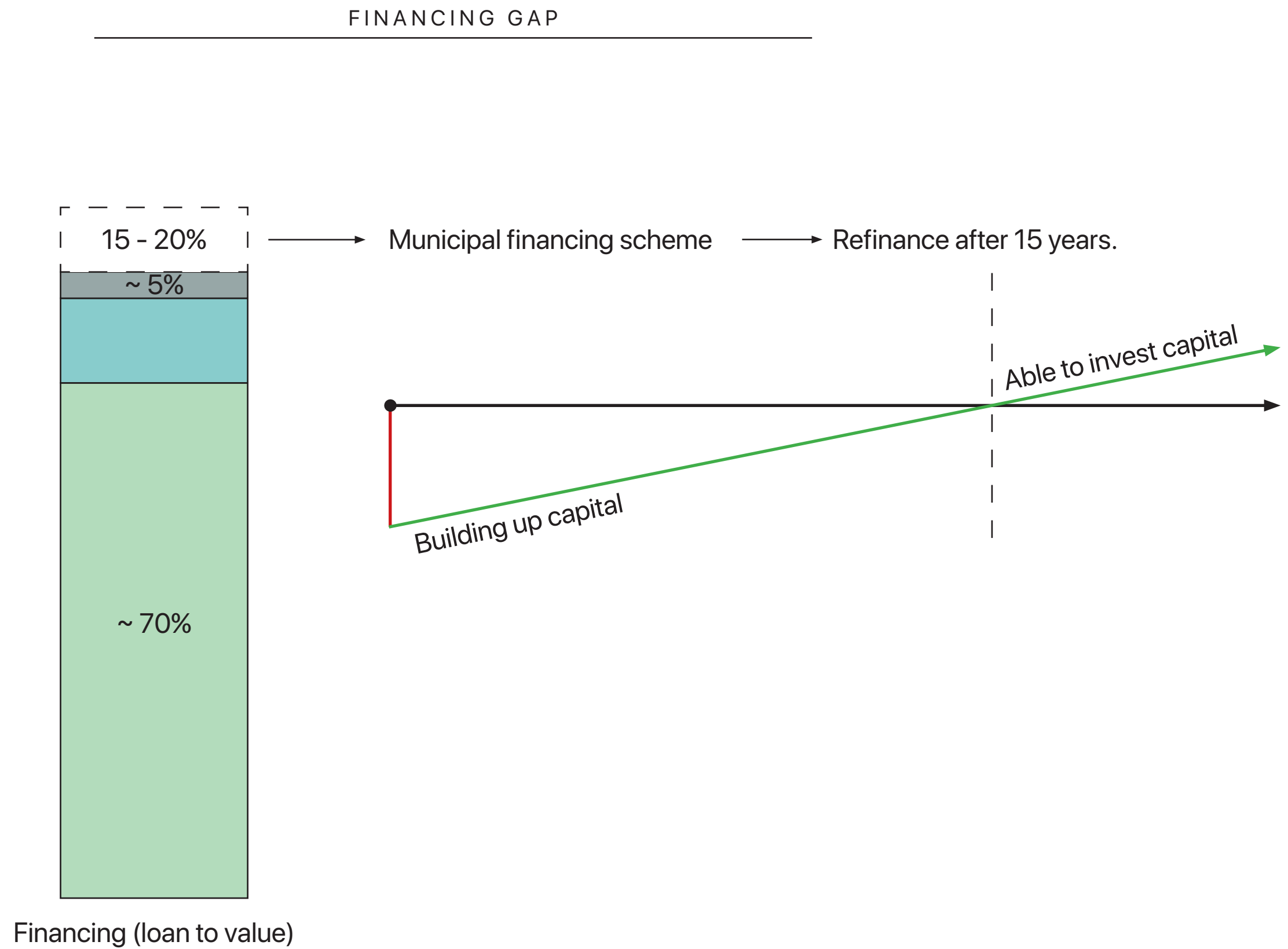
FINANCING GAP

-  Own contributions
-  Ground lease
-  Bank financing





-  Own contributions
-  Ground lease
-  Bank financing



OVERARCHING ASPECTS LOW-TECH

SIMPLICITY

RATIONALITY

LOCALITY

HUMAN SCALE

OVERARCHING ASPECTS LOW-TECH

SIMPLICITY

RATIONALITY

LOCALITY

HUMAN SCALE

RELEVANT ASPECTS / THE PARAMETERS OF LOW-TECH

Construction method



Ease of construction



Environmental control



Cascading possibilities



Future adaptability

Material use



Material efficiency



Origin material



Embodied carbon

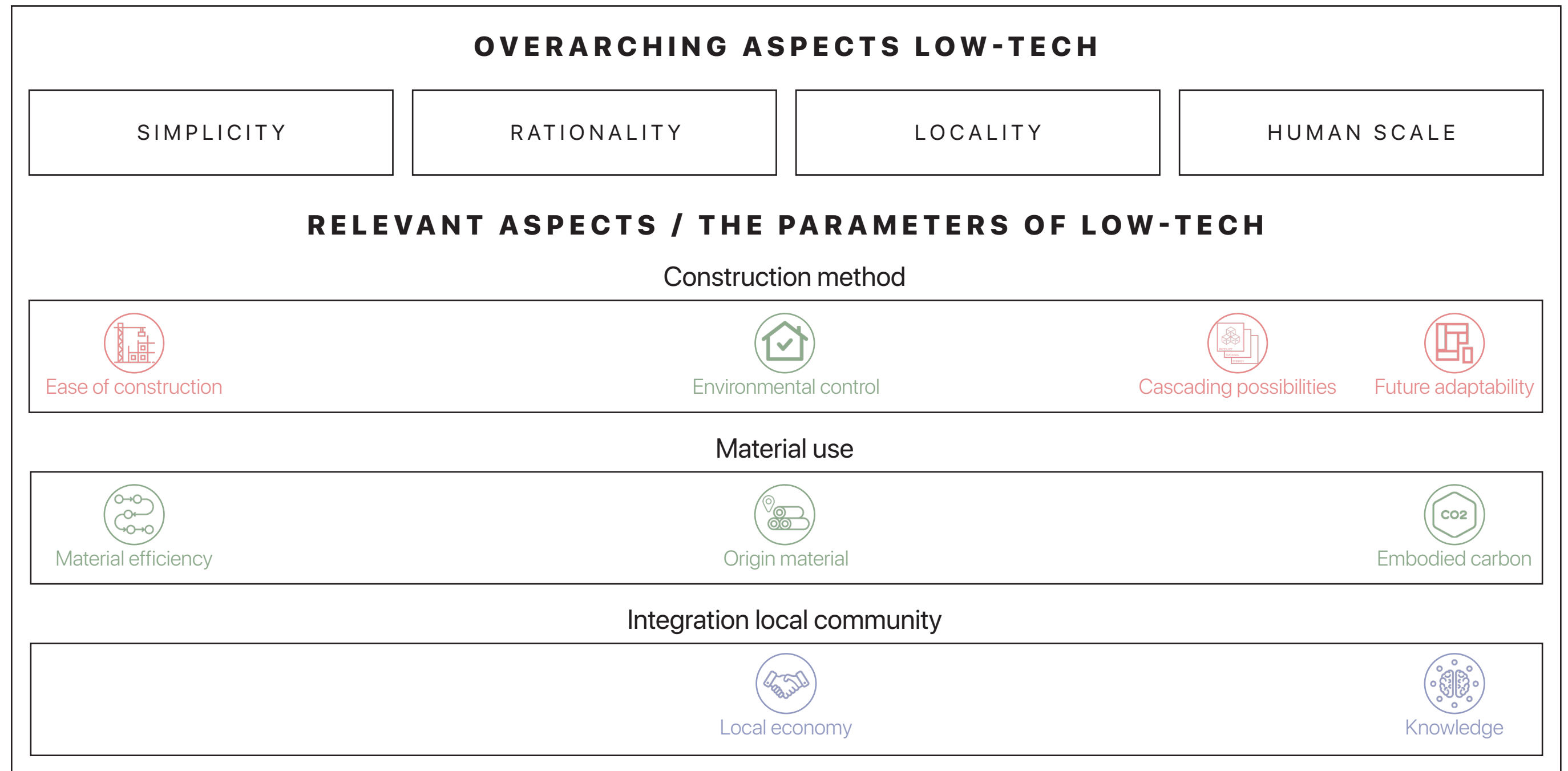
Integration local community



Local economy



Knowledge



ELEMENT
SCALE

URBAN
SCALE

BUILDING
SCALE

SIMPLICITY

RATIONALITY

LOCALITY

HUMAN SCALE

- Manufacturability of the materials and elements.
 - Universal elements (scalable and interchangeable)
 - Local and biobased materials.
-

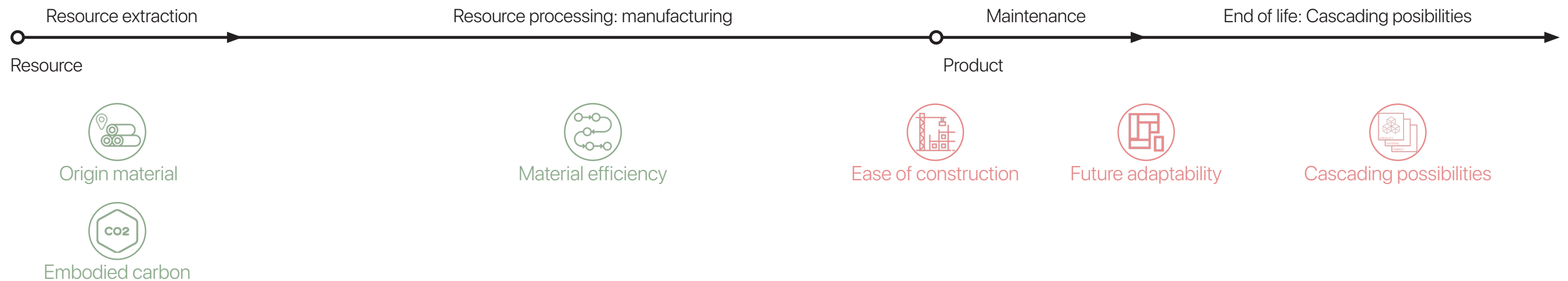
SIMPLICITY

RATIONALITY

LOCALITY

HUMAN SCALE

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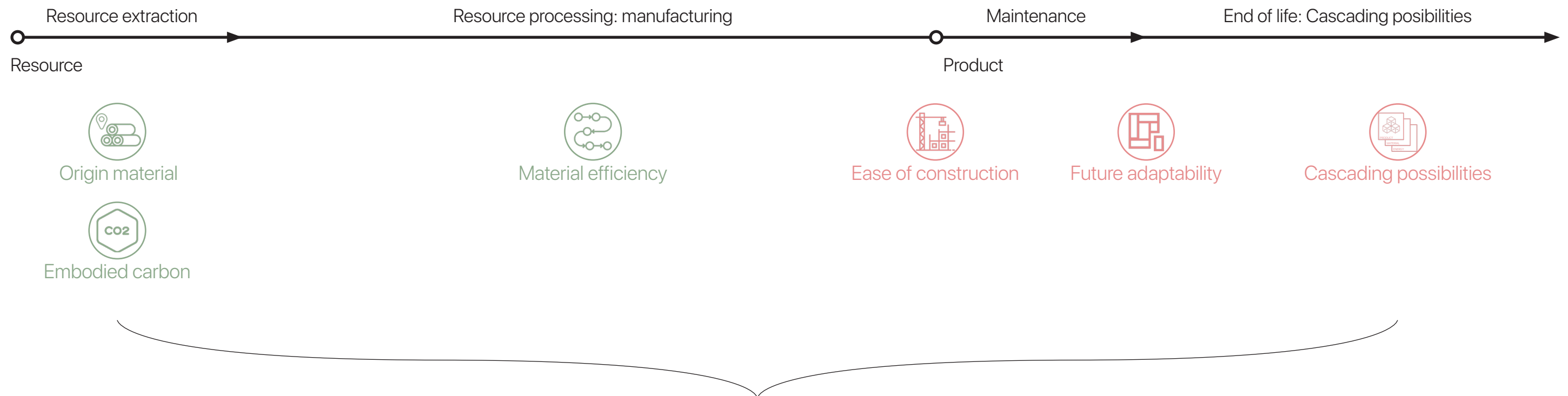
SIMPLICITY

RATIONALITY

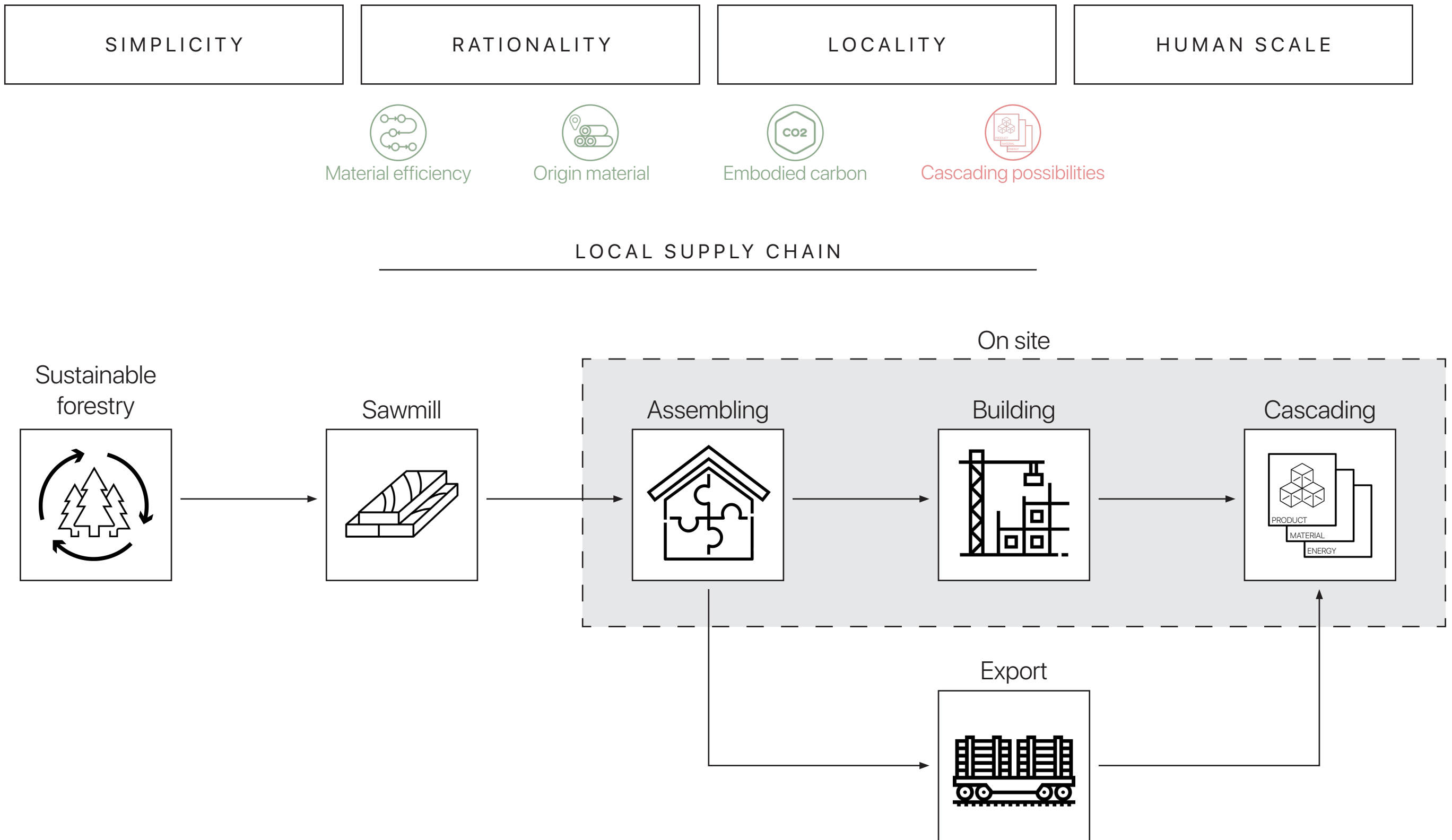
LOCALITY

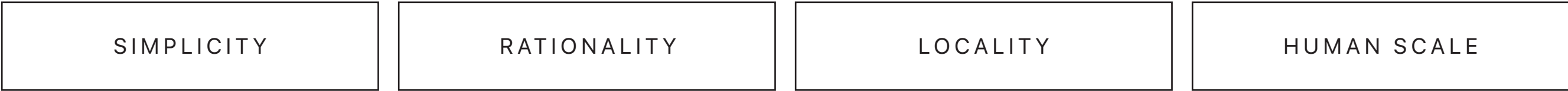
HUMAN SCALE

- Manufacturability of the materials and elements.
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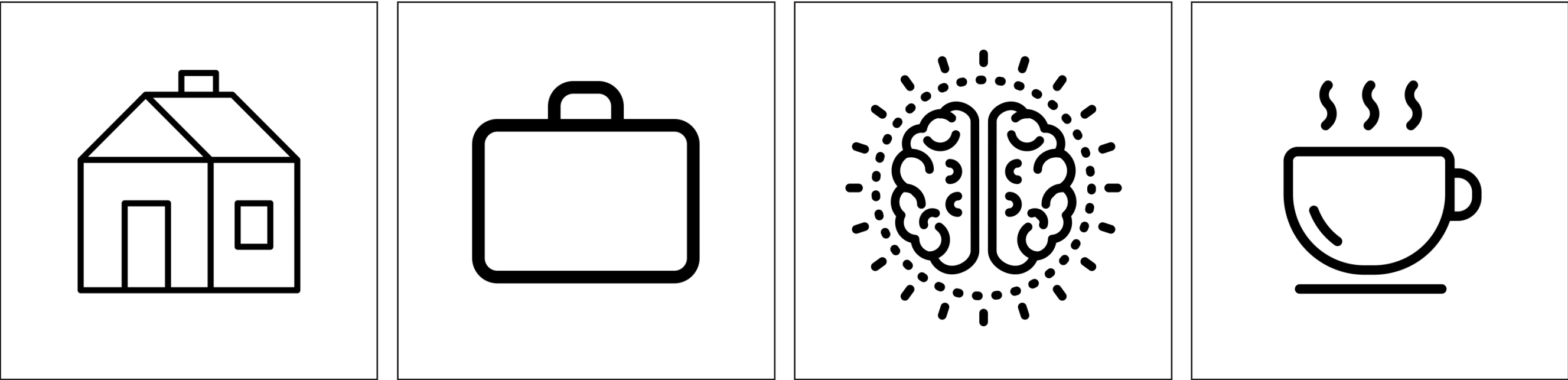


PURE LIGHT TIMBER FRAME SYSTEM WITH UNIVERSAL, INTERCHANGABLE ELEMENTS





STIMULATING LOCAL COMMUNITY



HOUSING	WORKING	LEARNING	LEISURE
---------	---------	----------	---------

SIMPLICITY

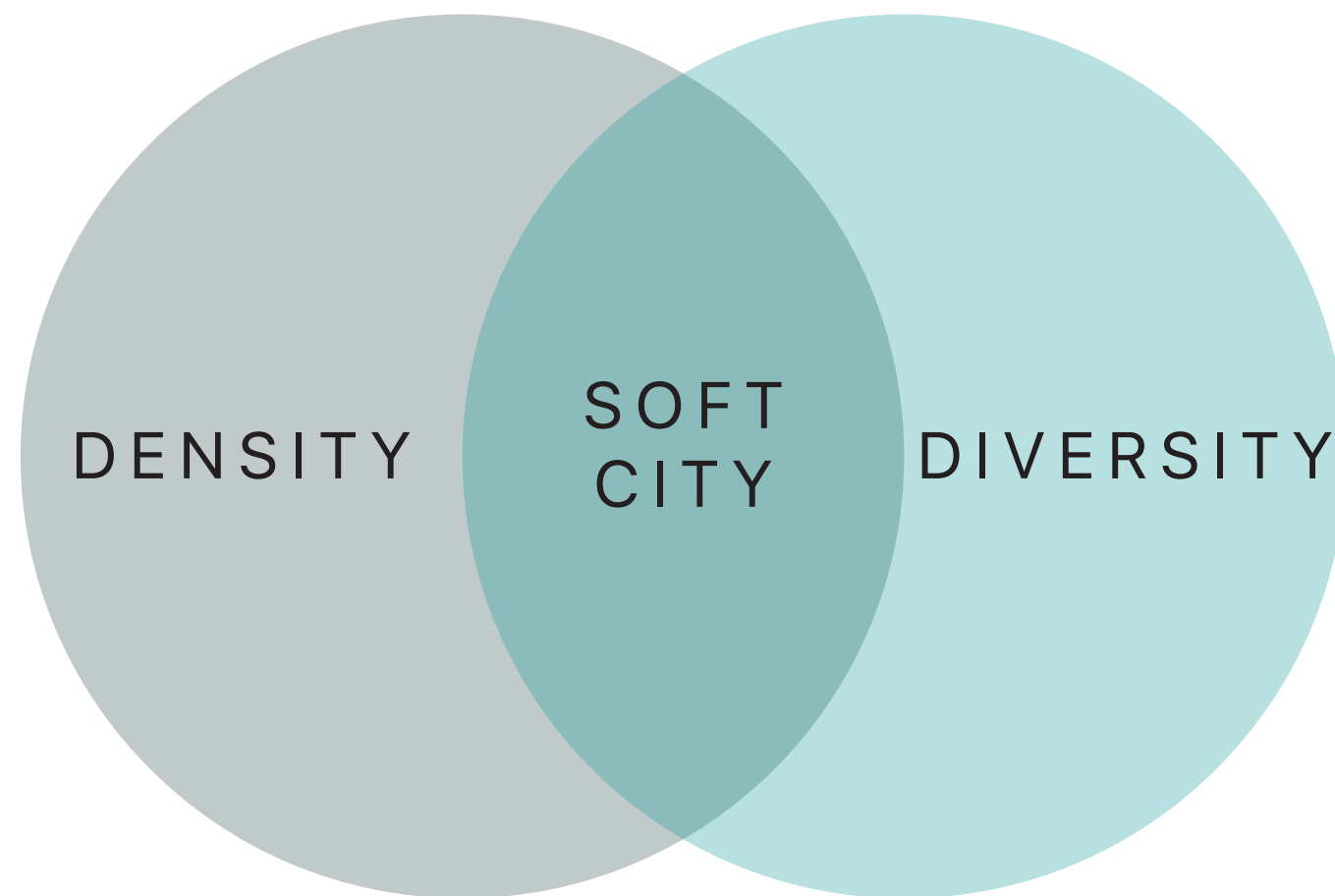
RATIONALITY

LOCALITY

HUMAN SCALE

DENSITY, BUILDING HEIGHT & CONFIGURATION

"Simple, small scale, low-tech, low-cost, human centred and gentle solutions to create easier, more attractive, more comfortable urban life"



SIMPLICITY

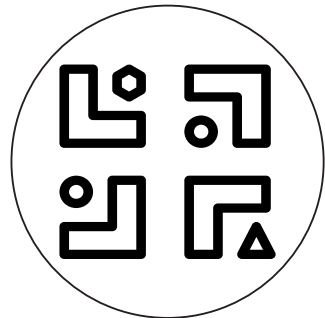
RATIONALITY

LOCALITY

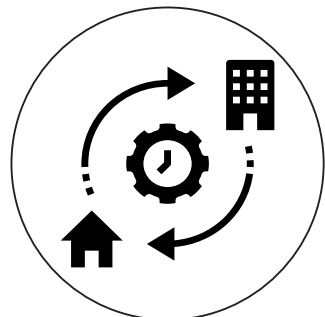
HUMAN SCALE

DENSITY, BUILDING HEIGHT & CONFIGURATION

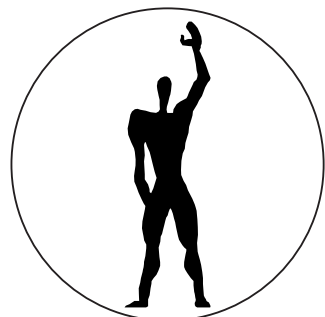
"Simple, small scale, low-tech, low-cost, human centred and gentle solutions to create easier, more attractive, more comfortable urban life"



Diversity



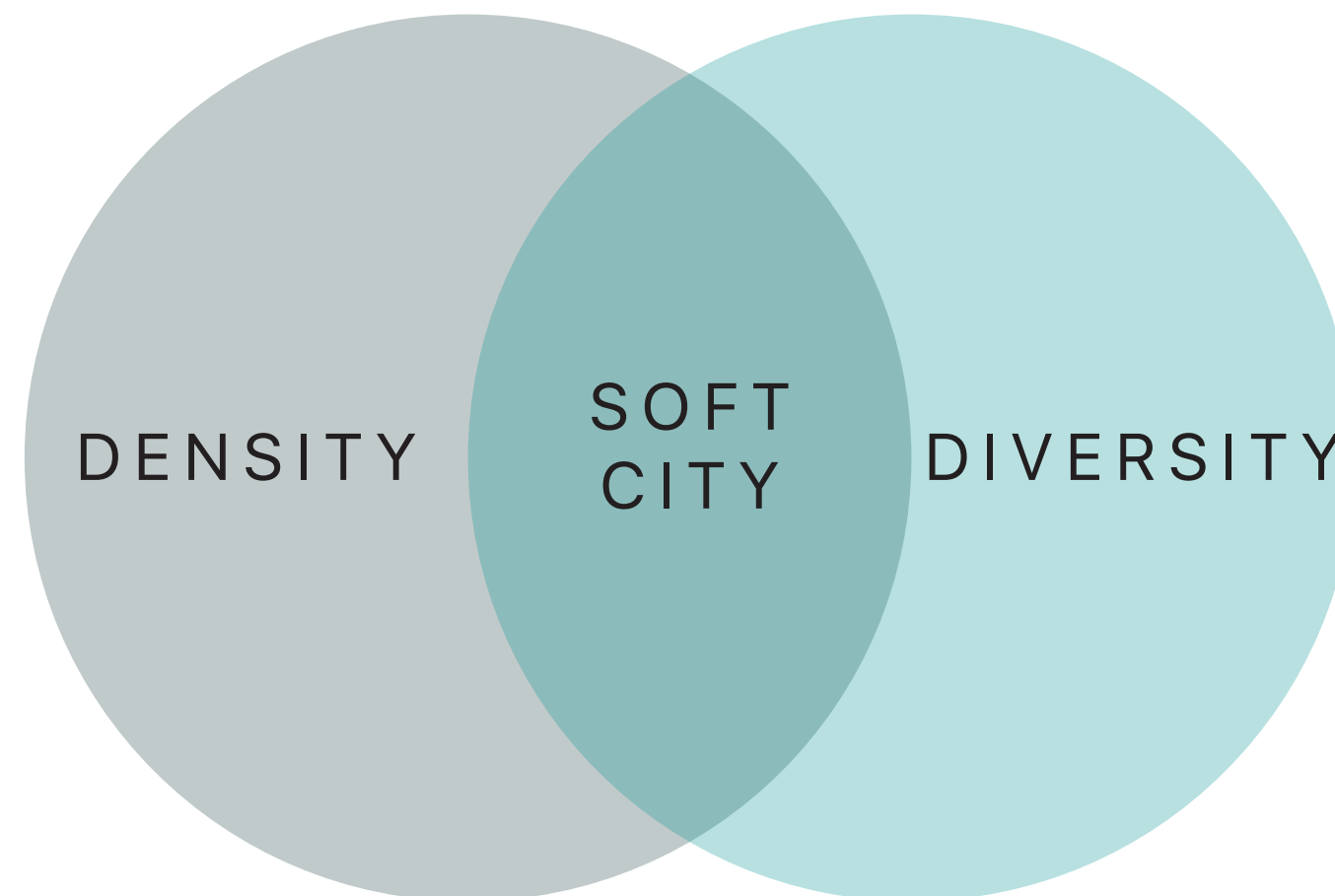
Flexibility



Human scale



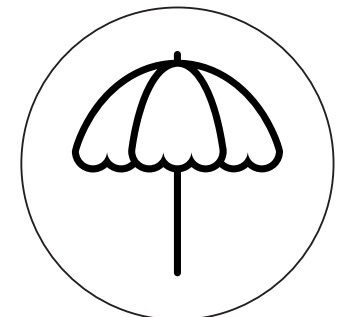
Walkability



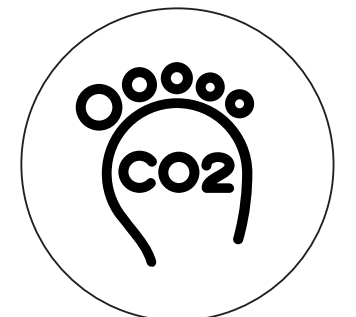
LIVEABLE URBAN DENSITY (9 CRITERIA)



Control & Identity



Pleasant micro climate



Smaller carbon footprint



Biodiversity

PURE LIGHT TIMBER FRAME SYSTEM WITH UNIVERSAL, INTERCHANGABLE ELEMENTS

LIMITS & FUNCTIONAL REQUIREMENTS

Floor spans: maximum 8-10 m.
Height limit: 4-5 storeys.

PURE LIGHT TIMBER FRAME SYSTEM WITH UNIVERSAL, INTERCHANGABLE ELEMENTS

LIMITS & FUNCTIONAL REQUIREMENTS

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FIRE SAFETY

- Fire resistant sheathing needed (lightweight construction).



PURE LIGHT TIMBER FRAME SYSTEM WITH UNIVERSAL, INTERCHANGABLE ELEMENTS

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Floor spans: maximum 8-10 m.
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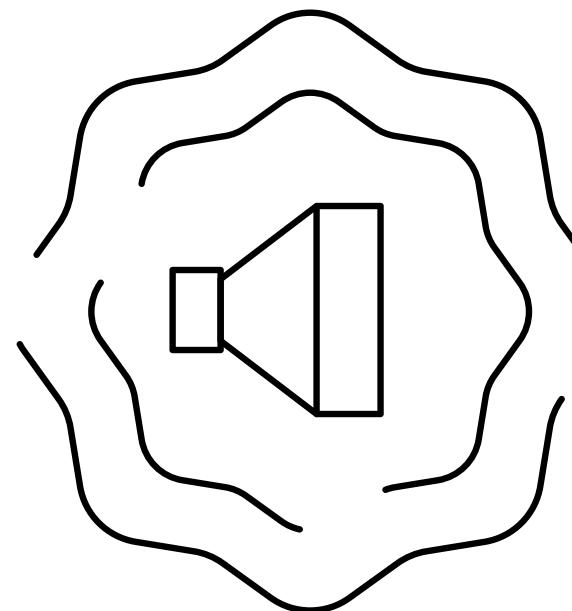
FIRE SAFETY

- Fire resistant sheathing needed (lightweight construction).



ACOUSTICS

- Flanking transmission.
- Impact sound.
 - Vibration insulation.
 - Additional mass.
 - Separate floor and ceiling system.



PURE LIGHT TIMBER FRAME SYSTEM WITH UNIVERSAL, INTERCHANGABLE ELEMENTS

LIMITS & FUNCTIONAL REQUIREMENTS

Floor spans: maximum 8-10 m.
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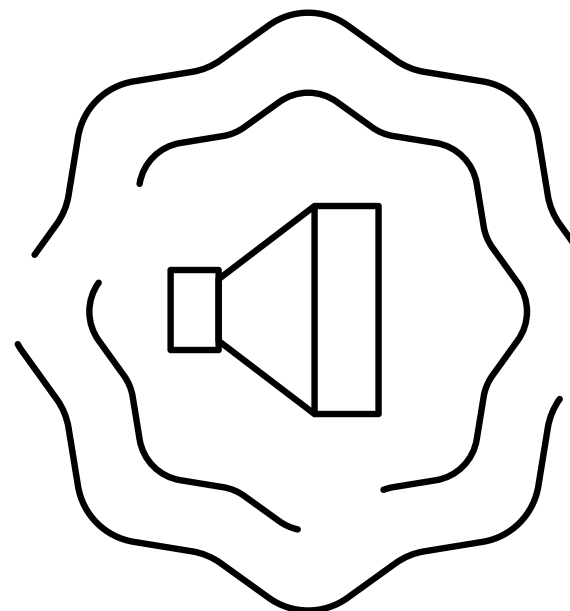
FIRE SAFETY

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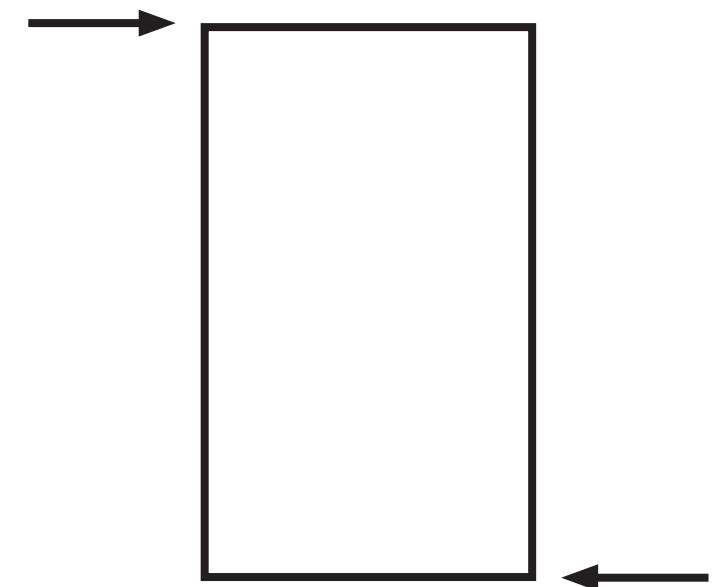
ACOUSTICS

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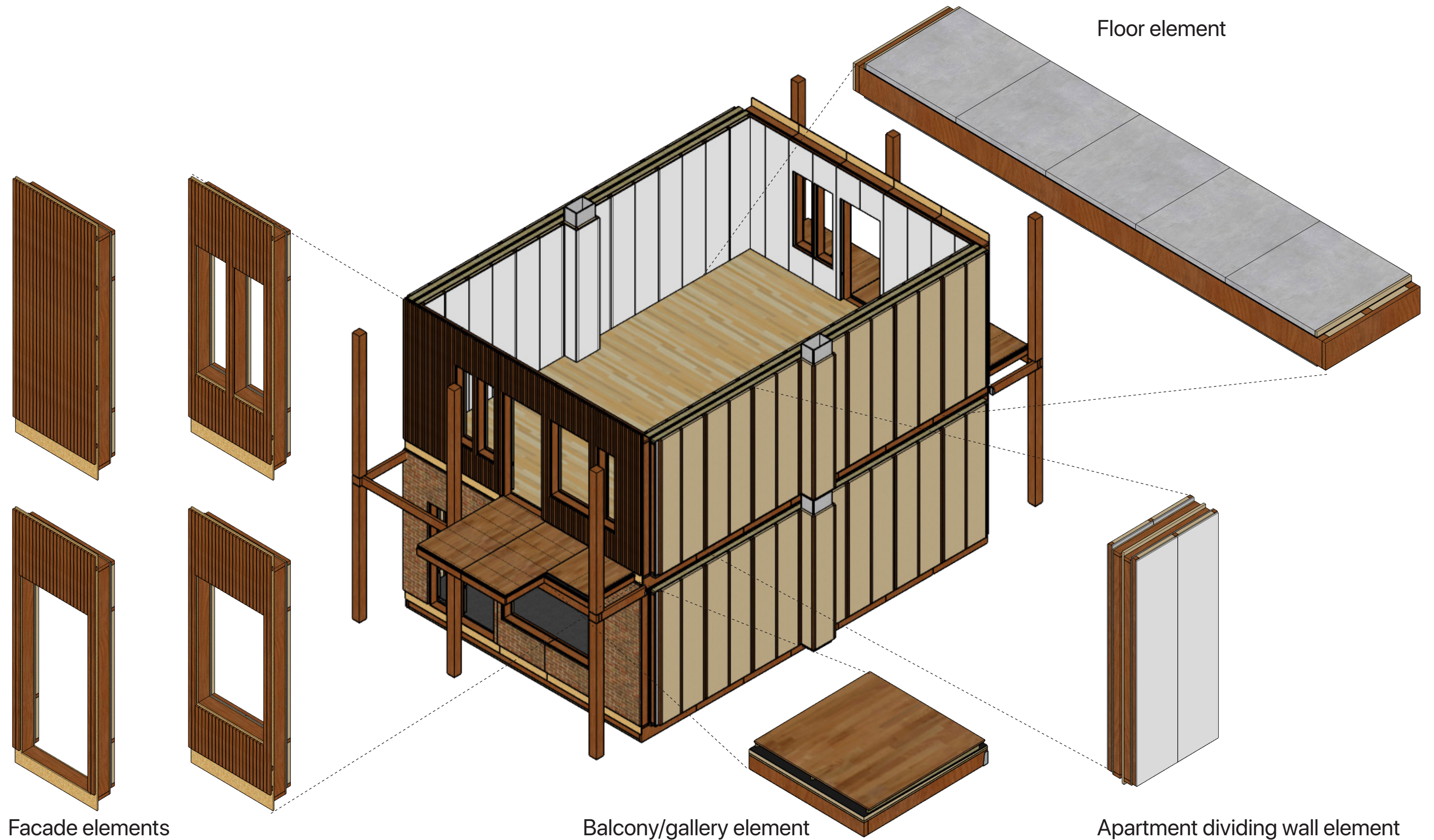


HORIZONTAL STABILITY

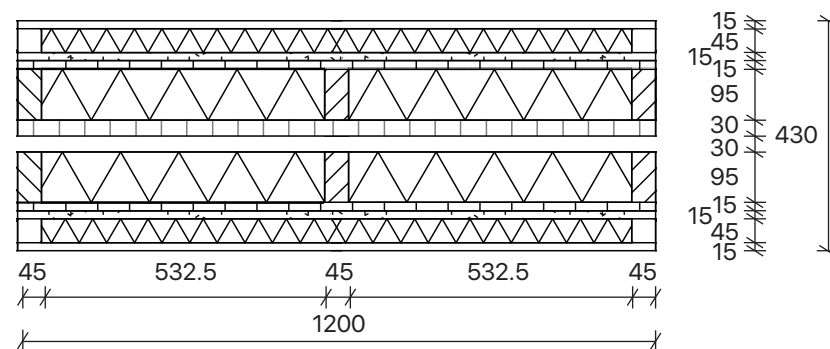
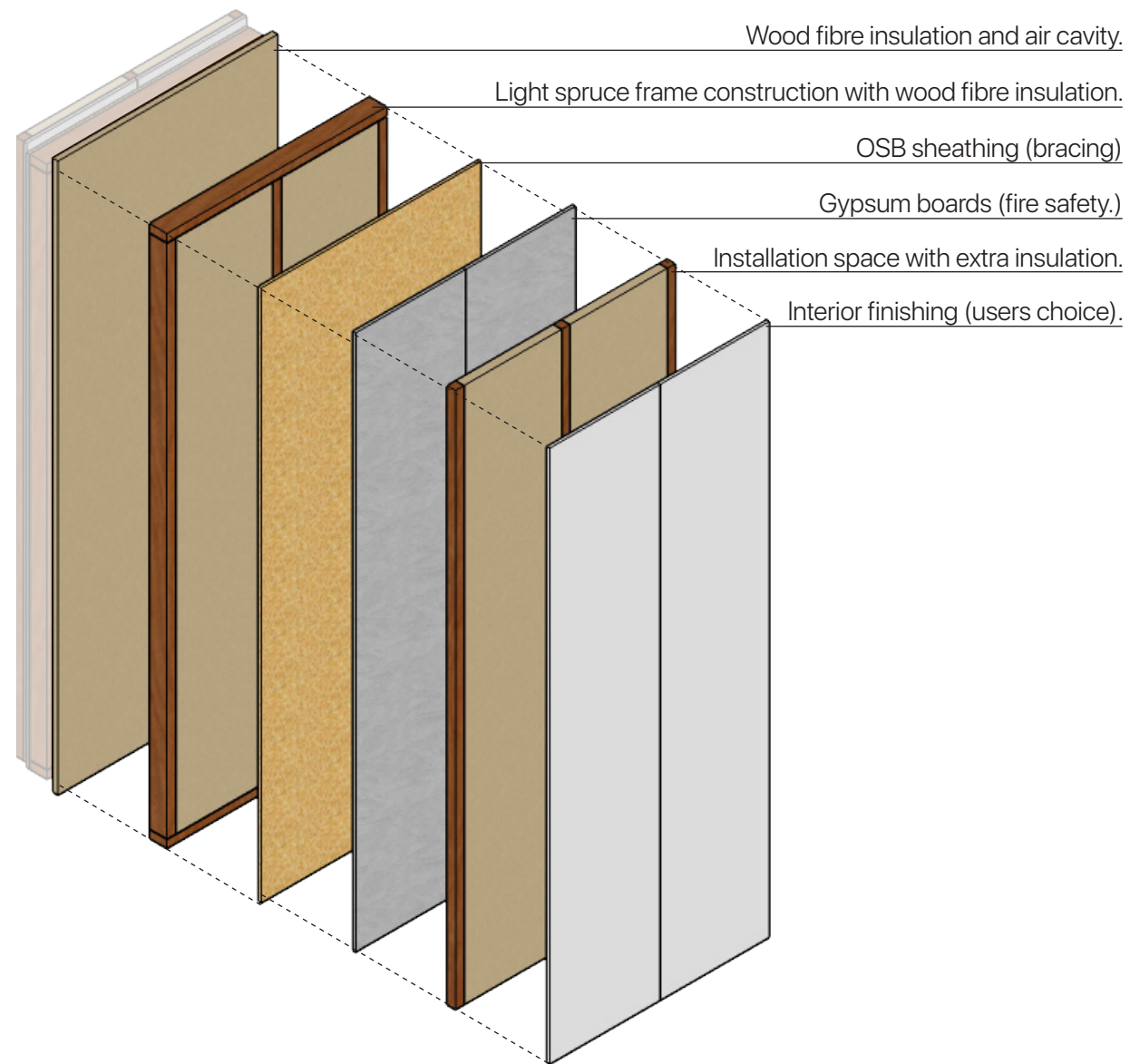
- Shear wall action through sheathing of elements.
- Spread loads over as many walls as possible.



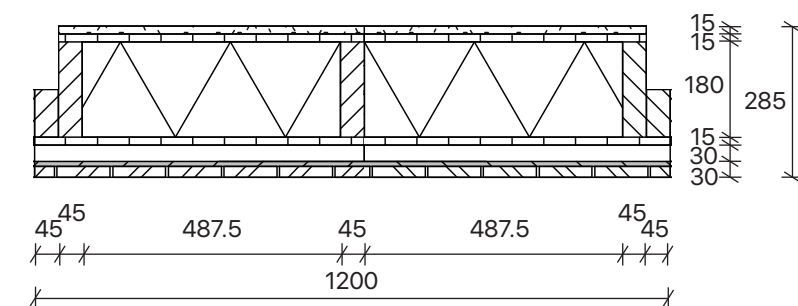
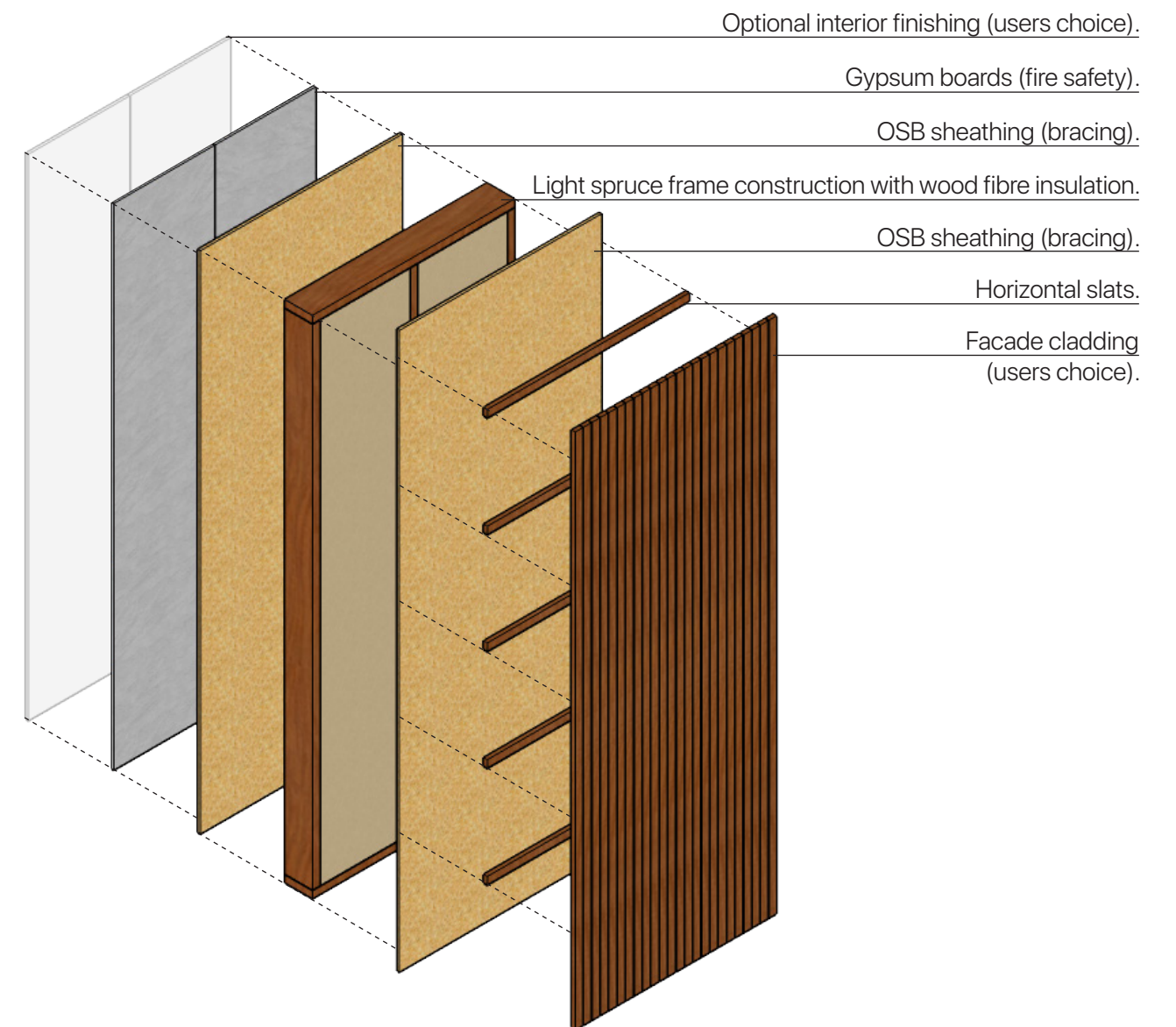
PURE LIGHT TIMBER FRAME SYSTEM WITH UNIVERSAL, INTERCHANGABLE ELEMENTS



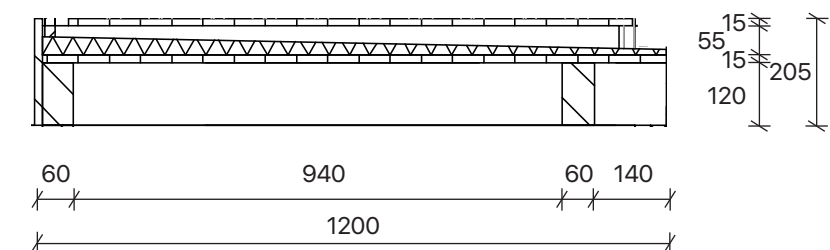
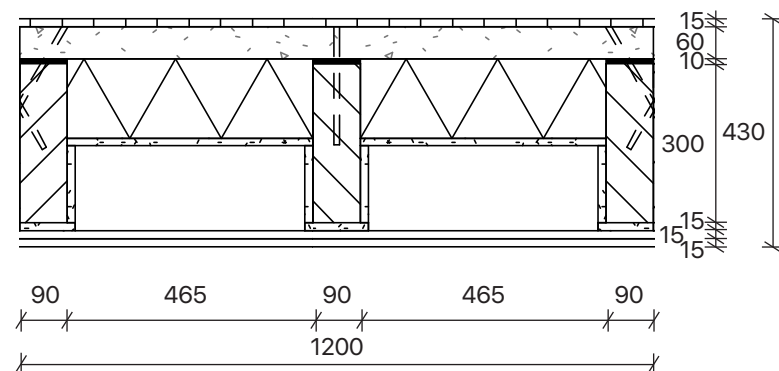
APARTMENT DIVIDING WALL ELEMENT



FACADE ELEMENT

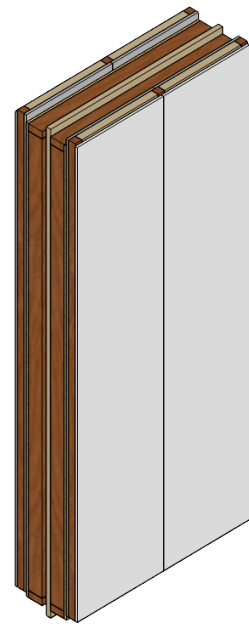


BALCONY/GALLERY ELEMENT

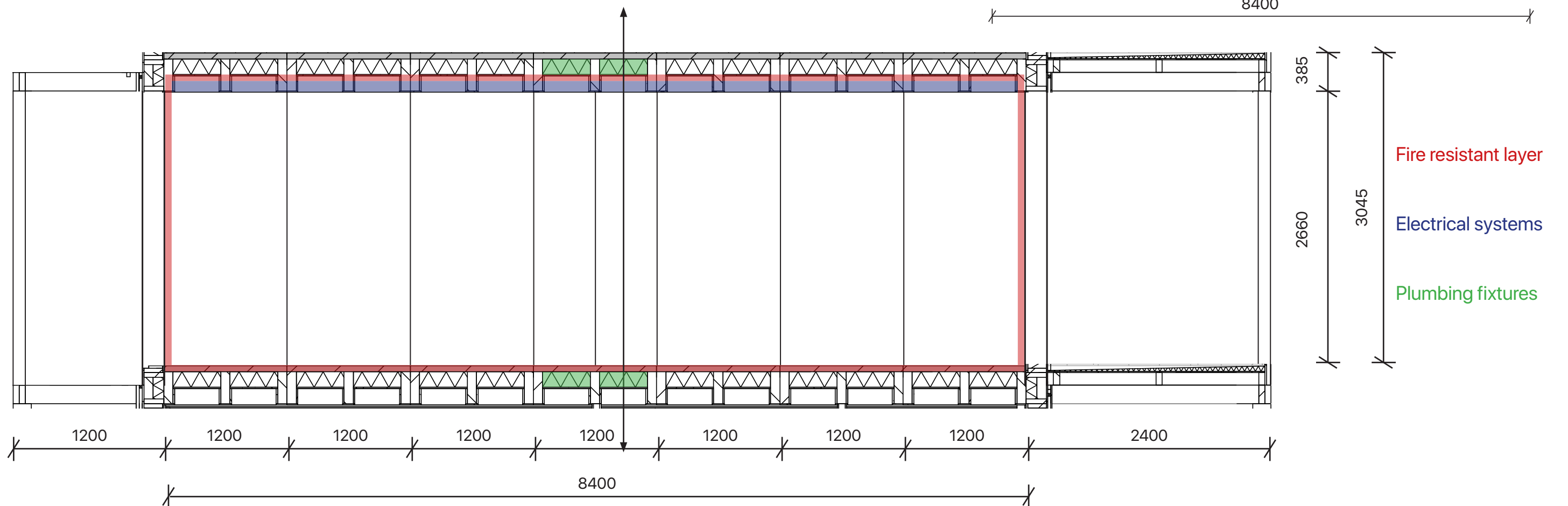
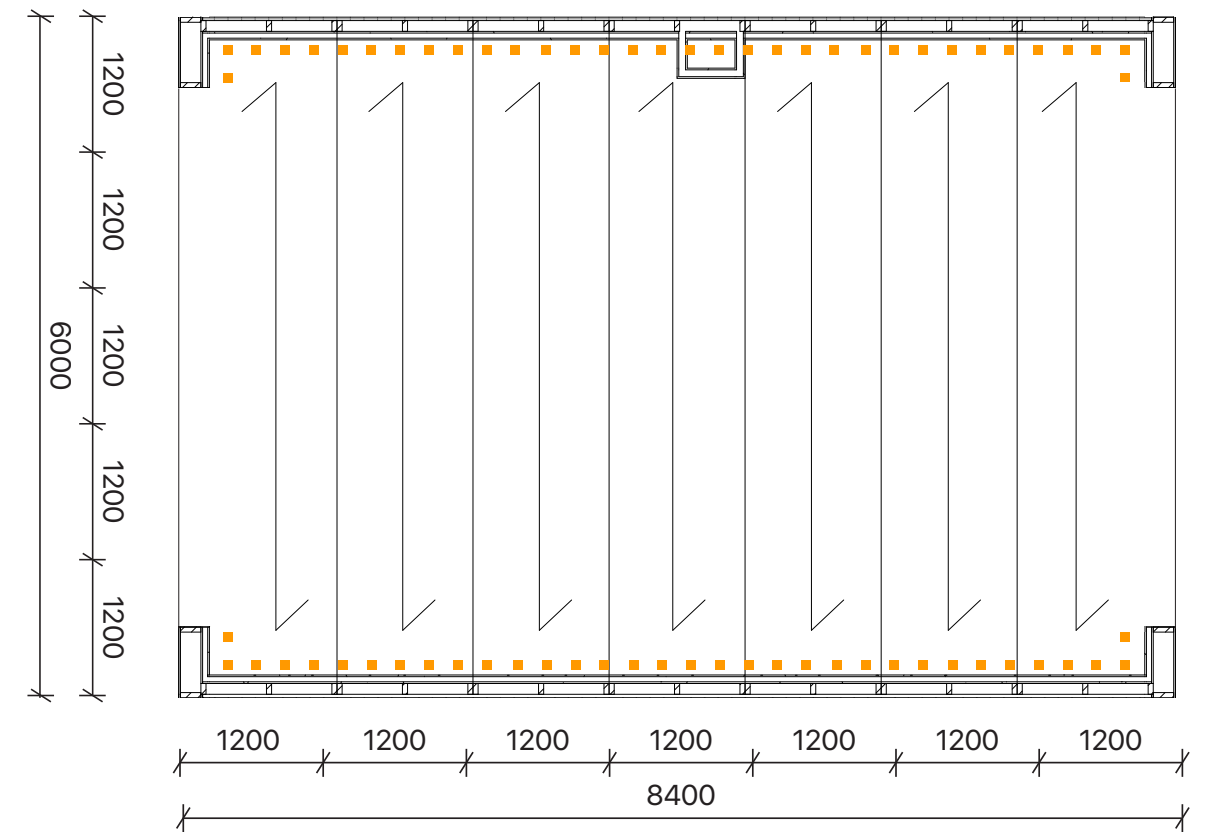
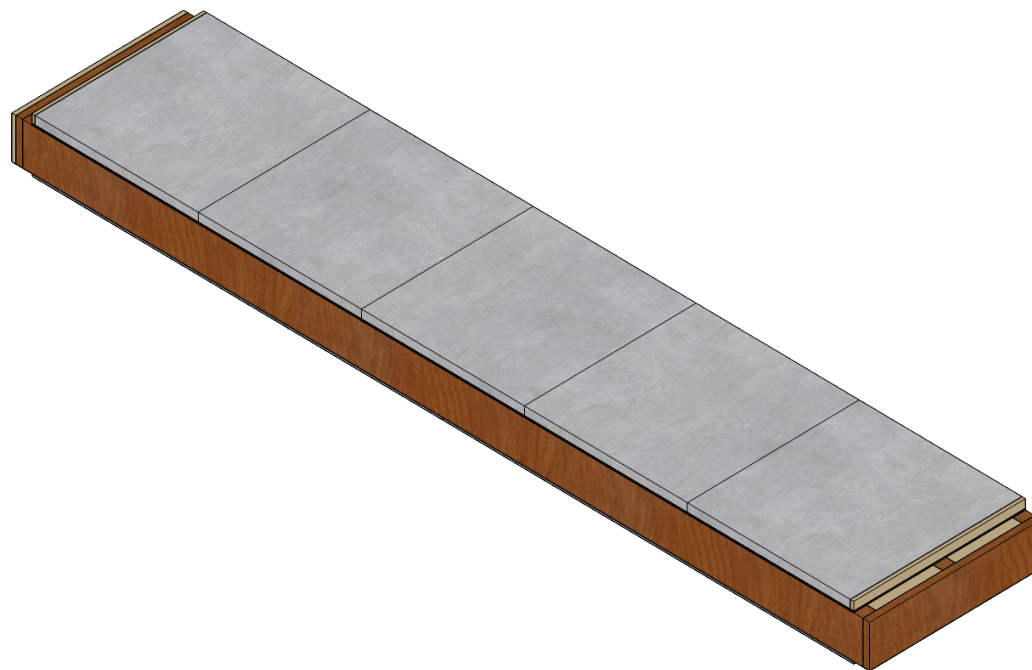


FIXED STRUCTURE

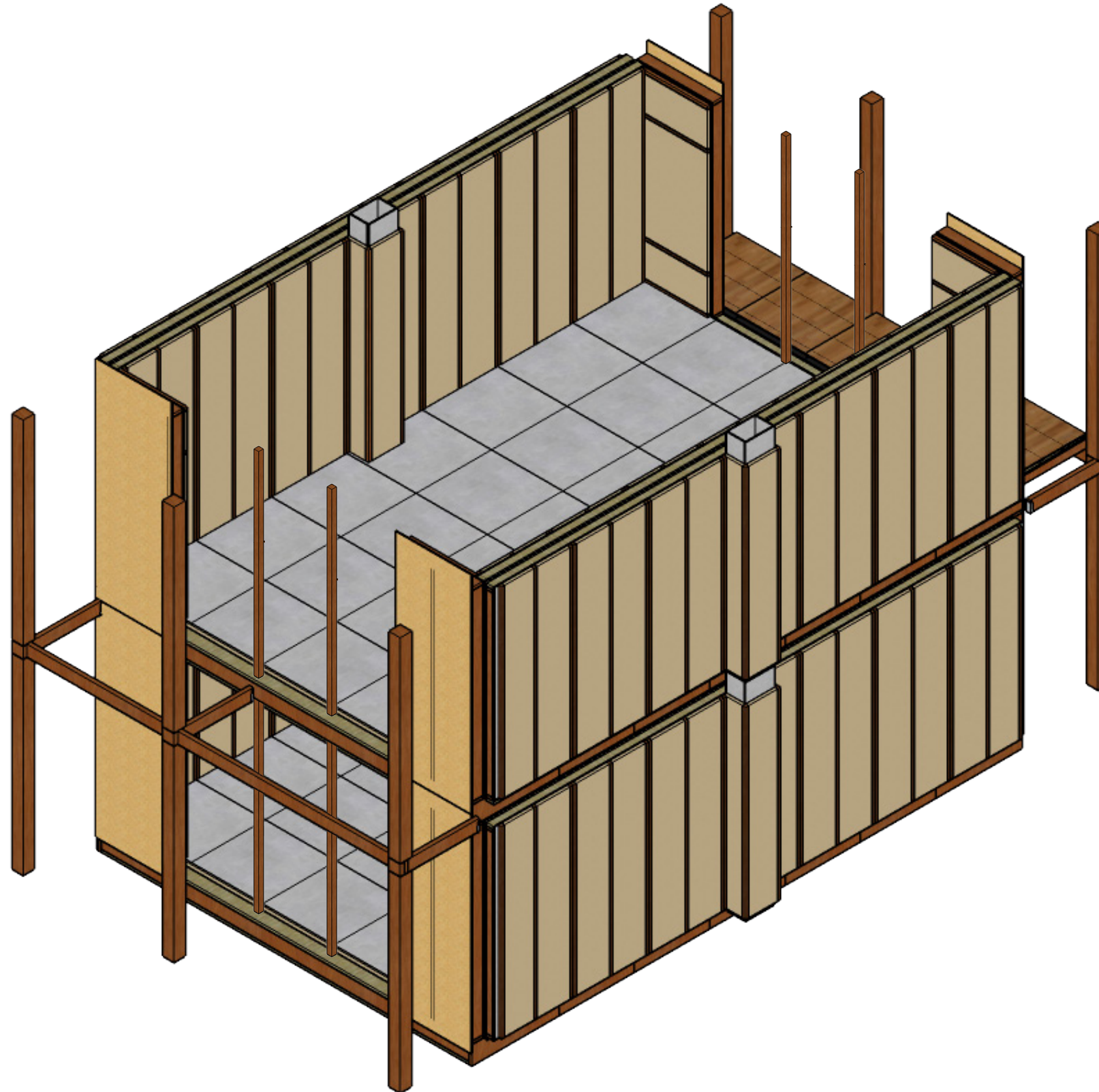
Apartment dividing wall elements.



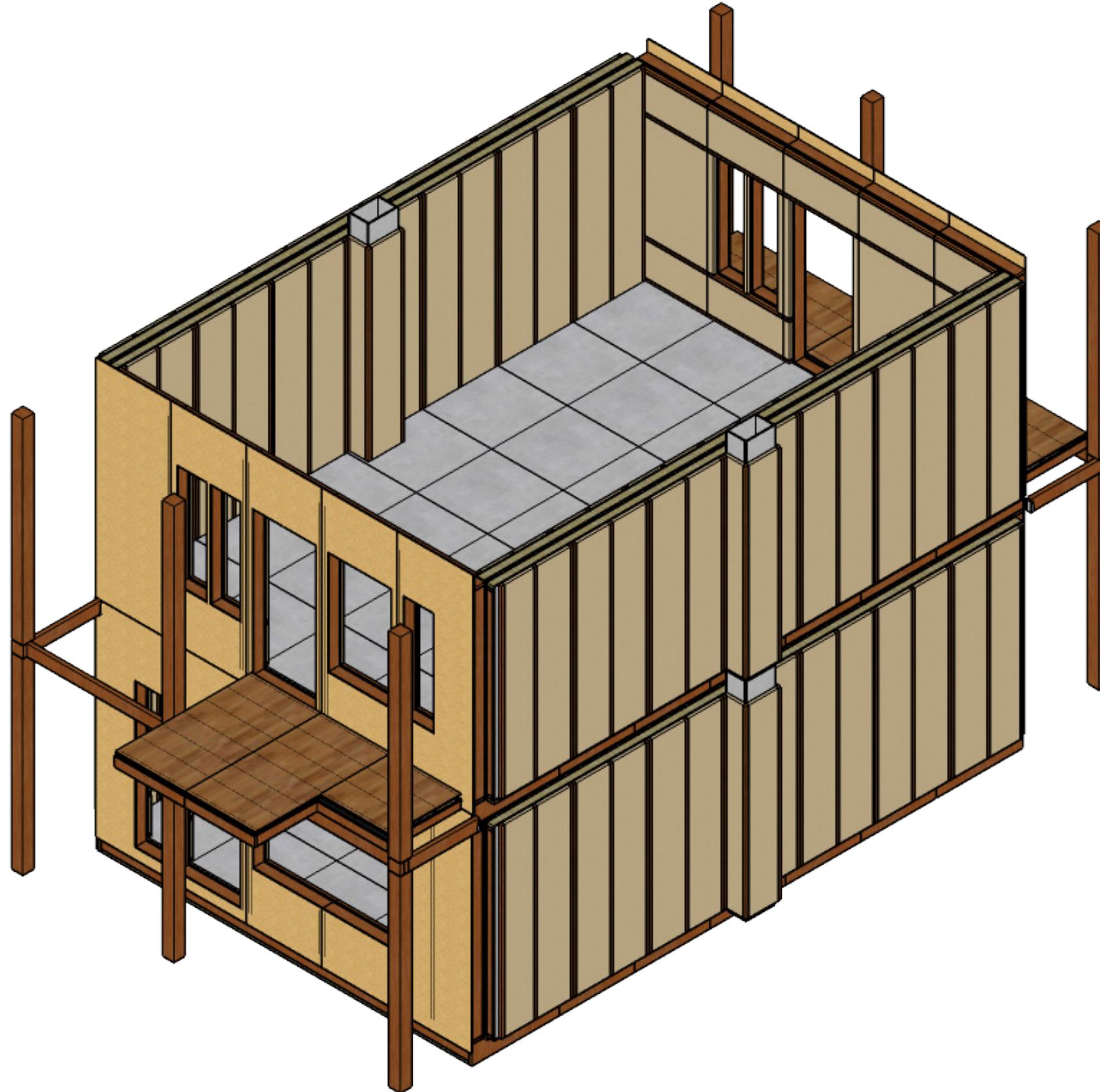
Floor elements



FIXED STRUCTURE



CHOICE IN BALCONY & FACADE OPENINGS

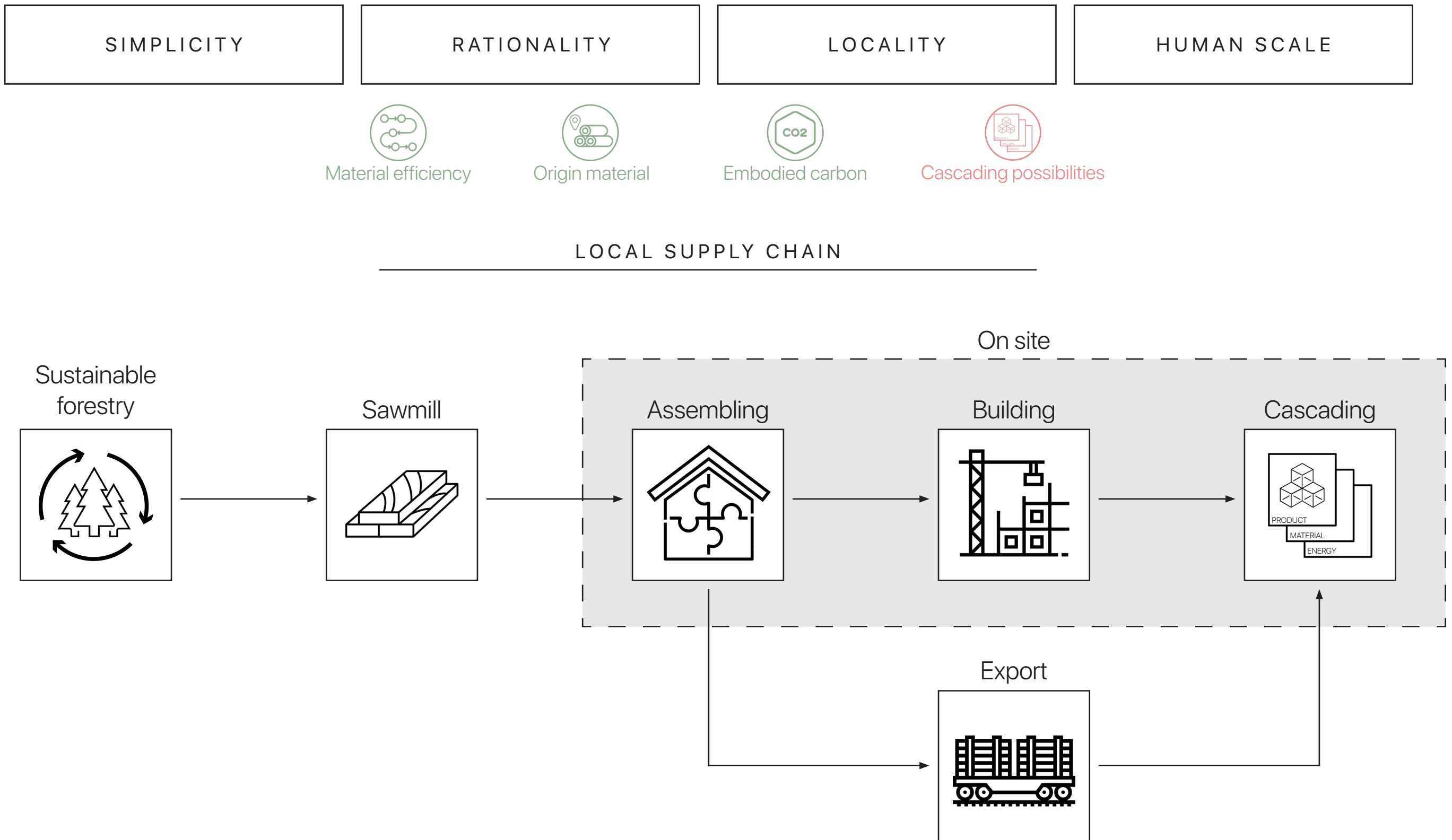


CHOICE IN FINISHING



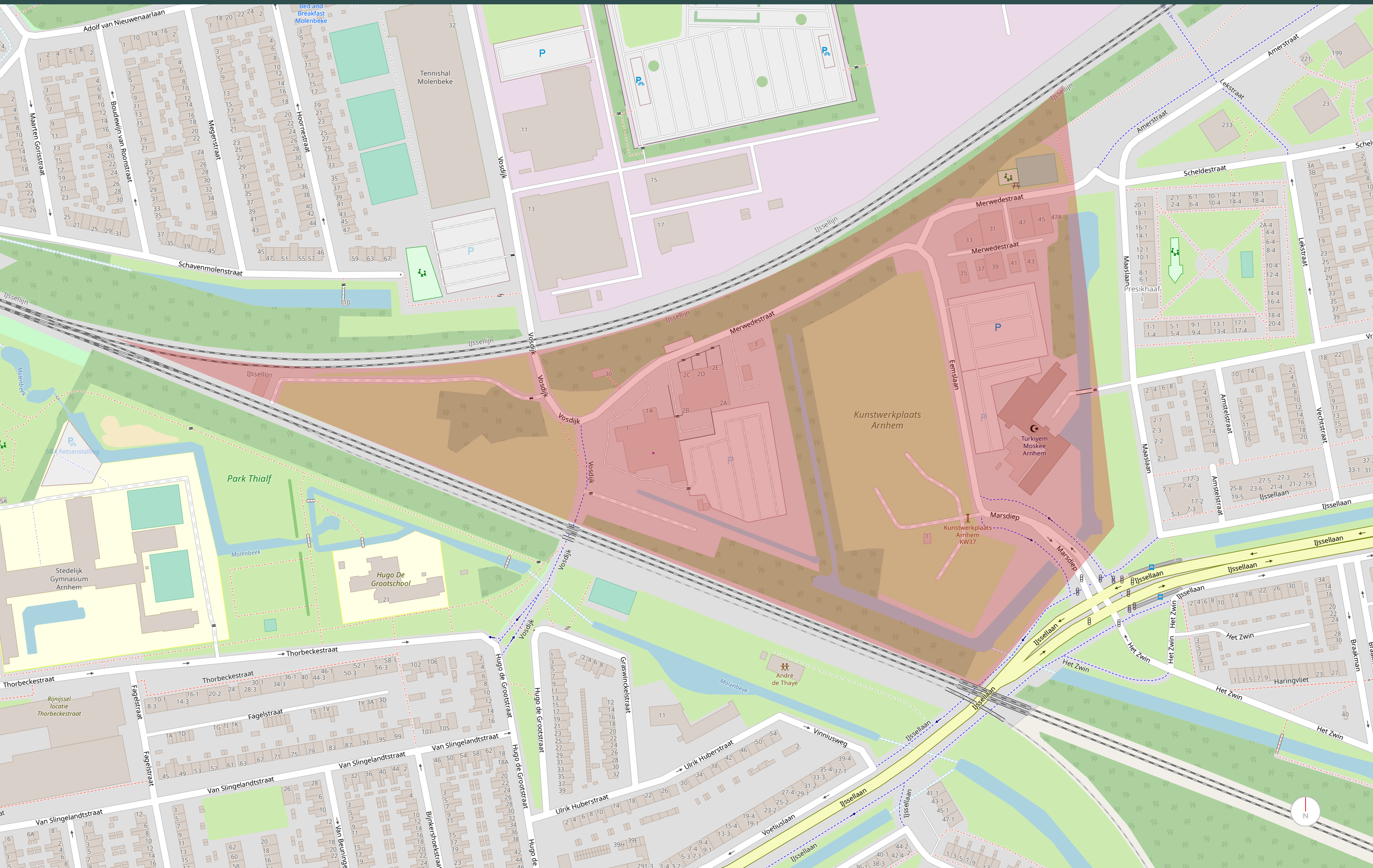
CATALOGUE FACADE ELEMENTS

		1 small 	1 small tall 	2 small 	2 small tall 	1 big 	1 big tall / door 	1 big double 	1 big tall double / double door 	Cross section	Costs	Sustainability
Wooden cladding											Thermo pine: ± €35,-/m² ± 15-25 yr.	• Quick regrowth. • Steam & heat for treatment.
											Accoya: ± €75,-/m² ± 50 yr.	• Longest lifespan. • Chemical treatment.
											Hardwood: ± €50-150,-/m² ± 15-25 yr.	• No treatment needed.
Brick strips											± €150-200,-/m² ± 60-100 yr.	• Used bricks on site can be recycled. • Longest life span. • Little to no maintenance.
Green facade											± €400-600,-/m² ± 15-25 yr.	Sempergreenwall®: • C2C Bronze. • 2.3kg Co₂ > 1.7kg O₂/m²/yr. • Lowers temp. (3°C). • Reduces ambient noise. • Positive health effects. • Biodiversity (shrubs, perennials & ferns).



LOCATION: MERWEDETERREIN - ARNHEM

SimpliCity

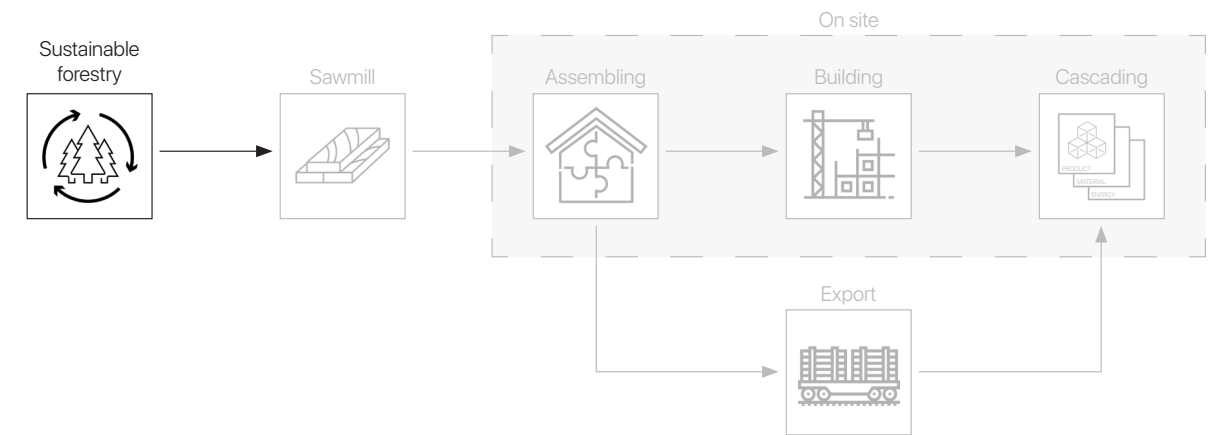
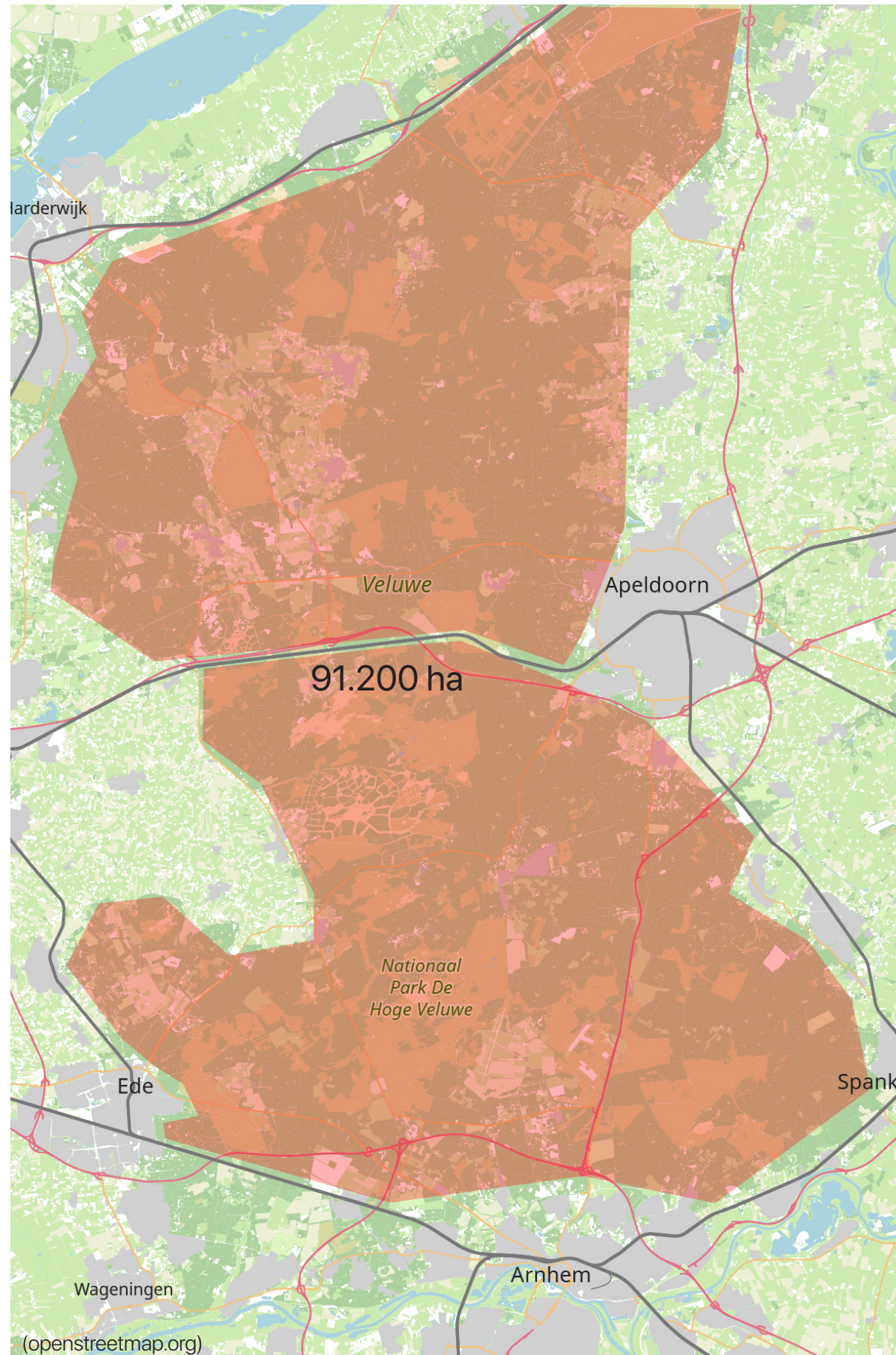


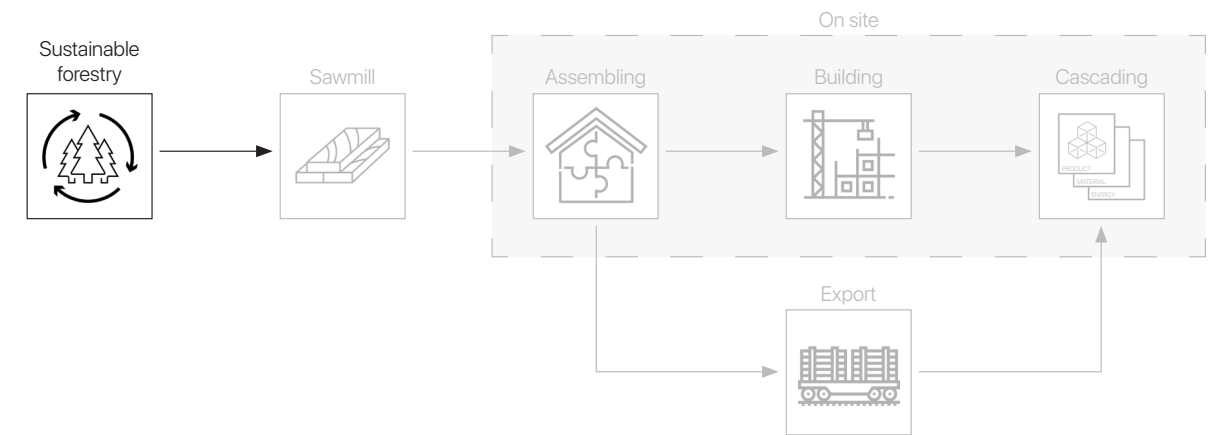
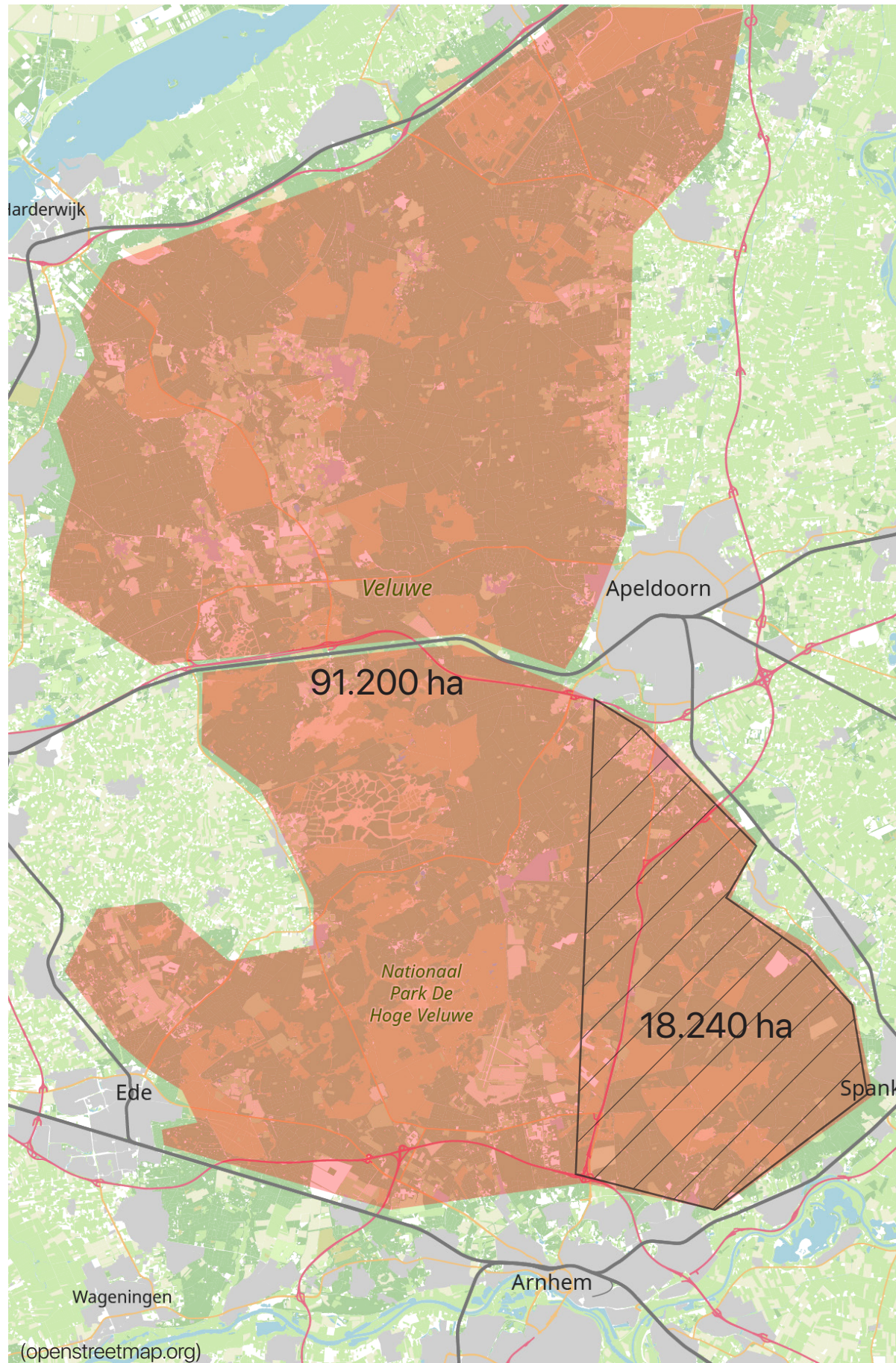












1/5 for sustainable forestry of pine trees:

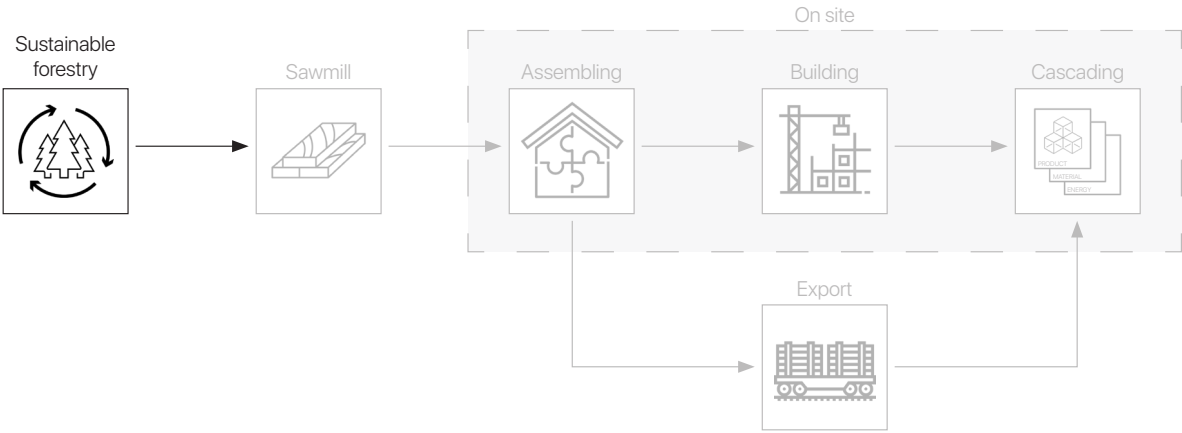
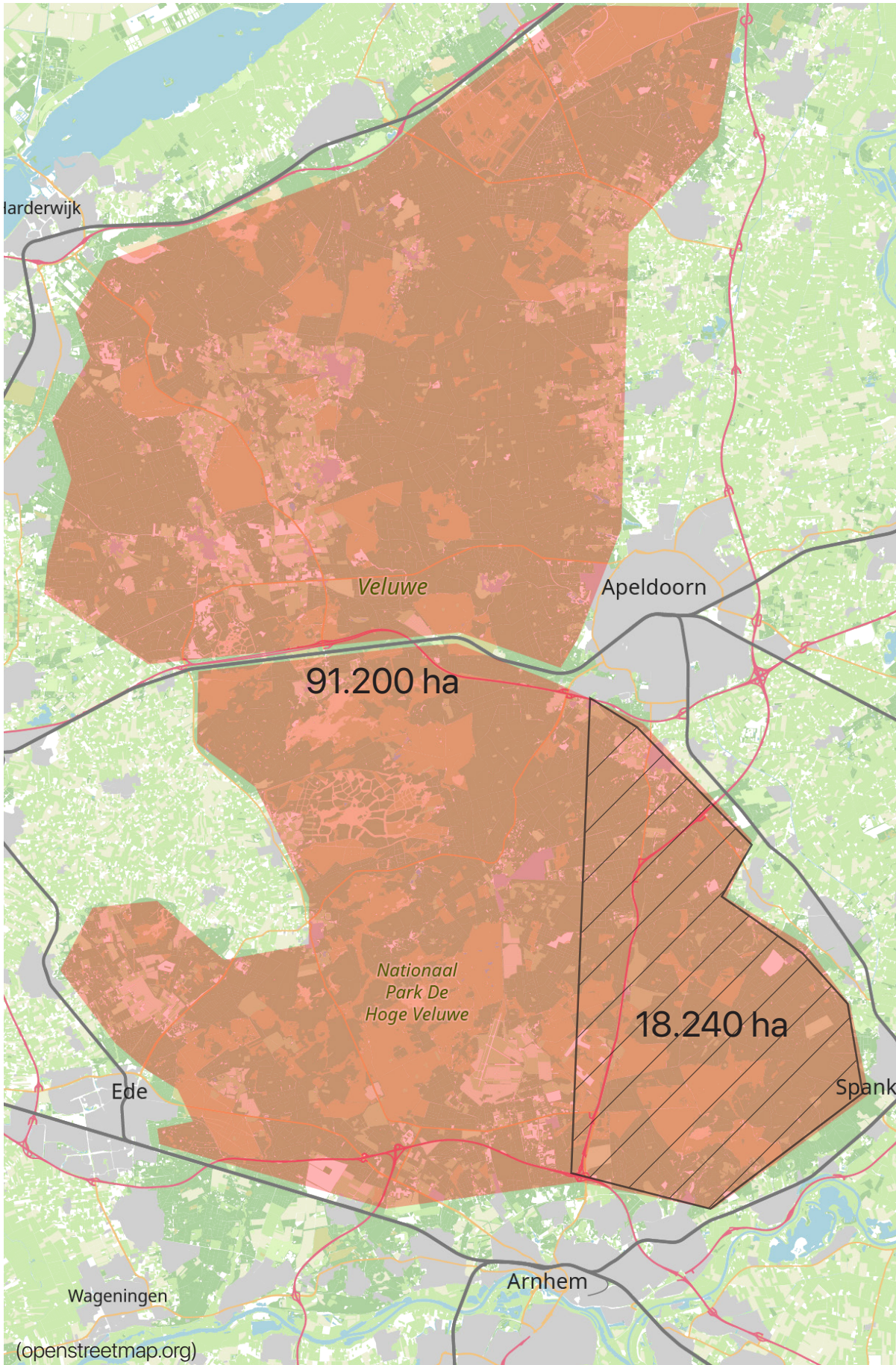
- 18.240 ha.
- 5.6m³ construction timber p. year.

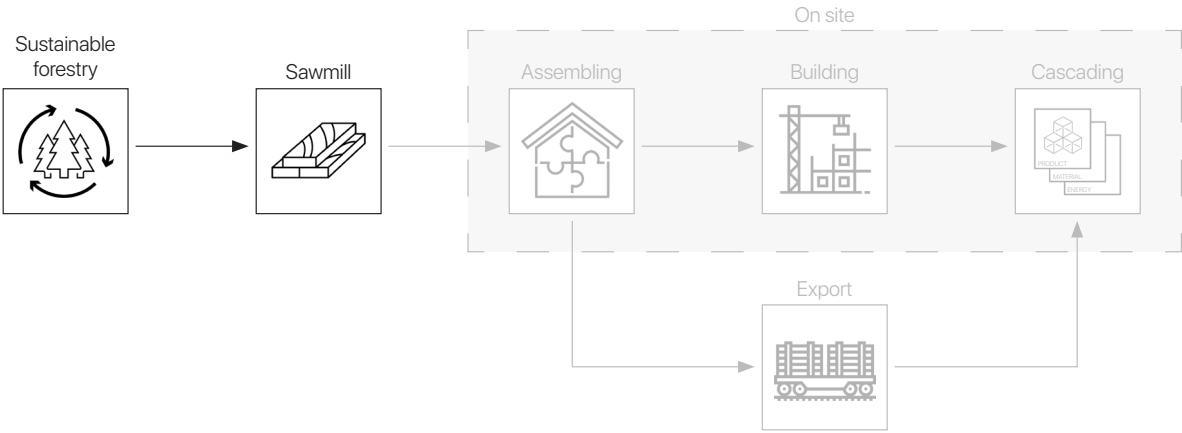
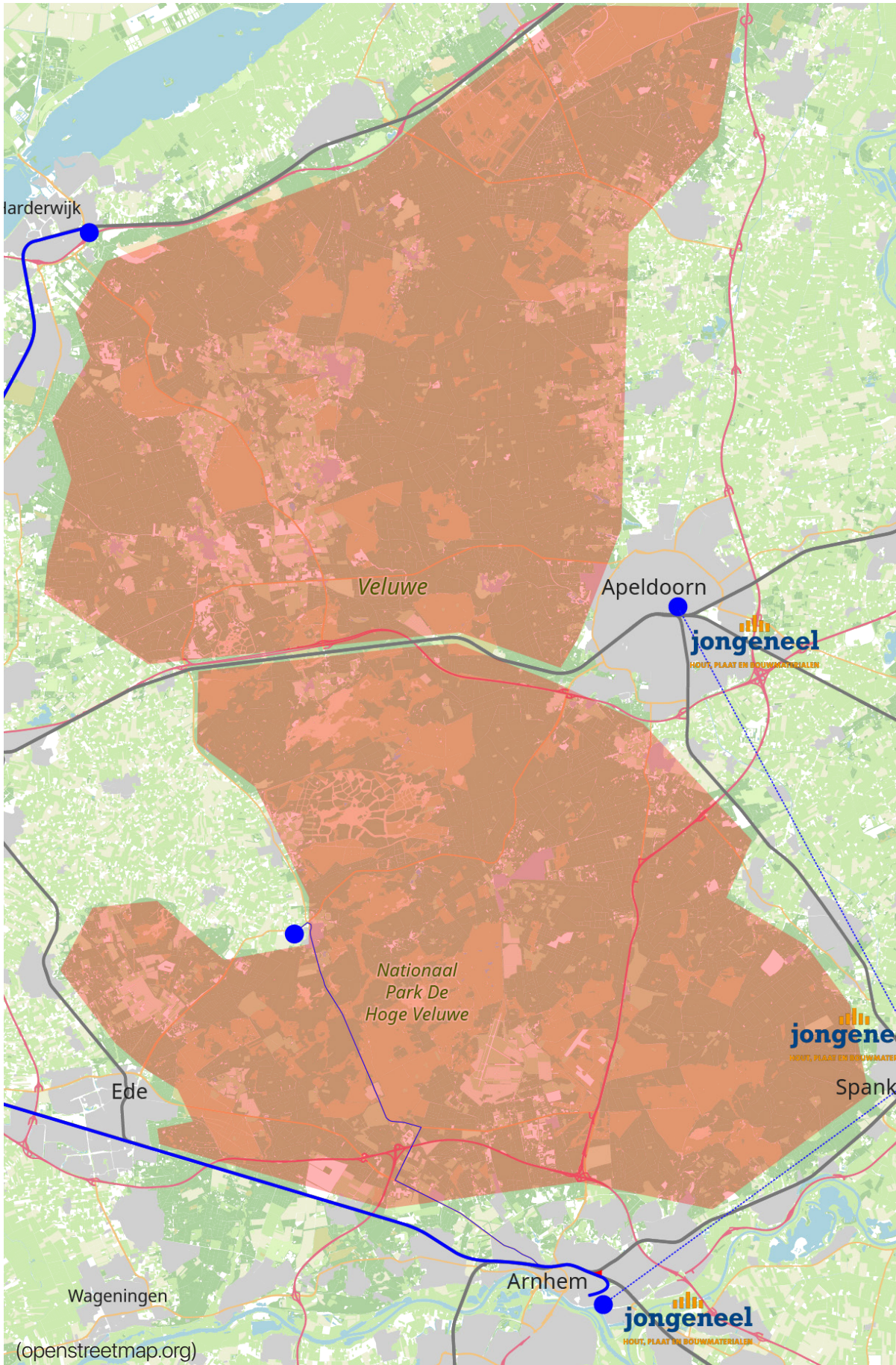
} 102.144 m³ p. year.

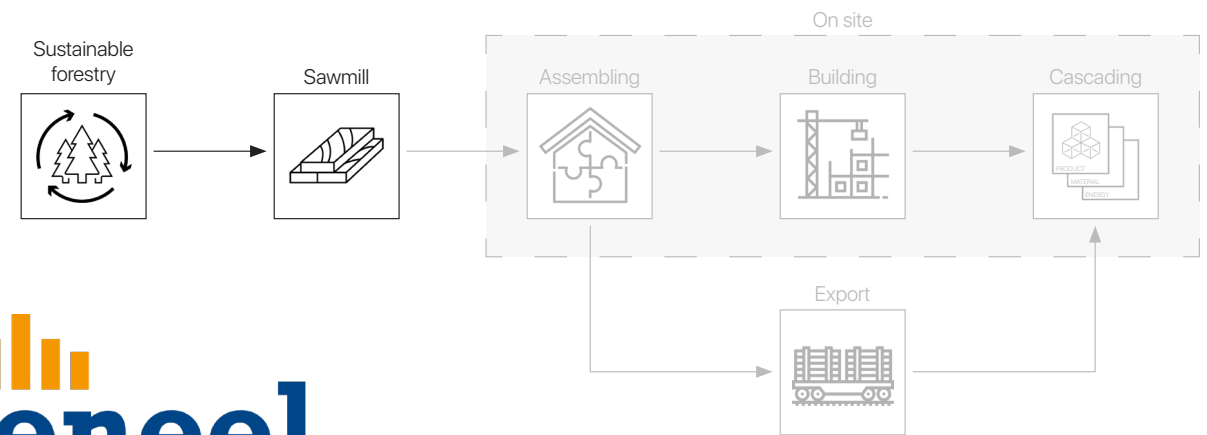
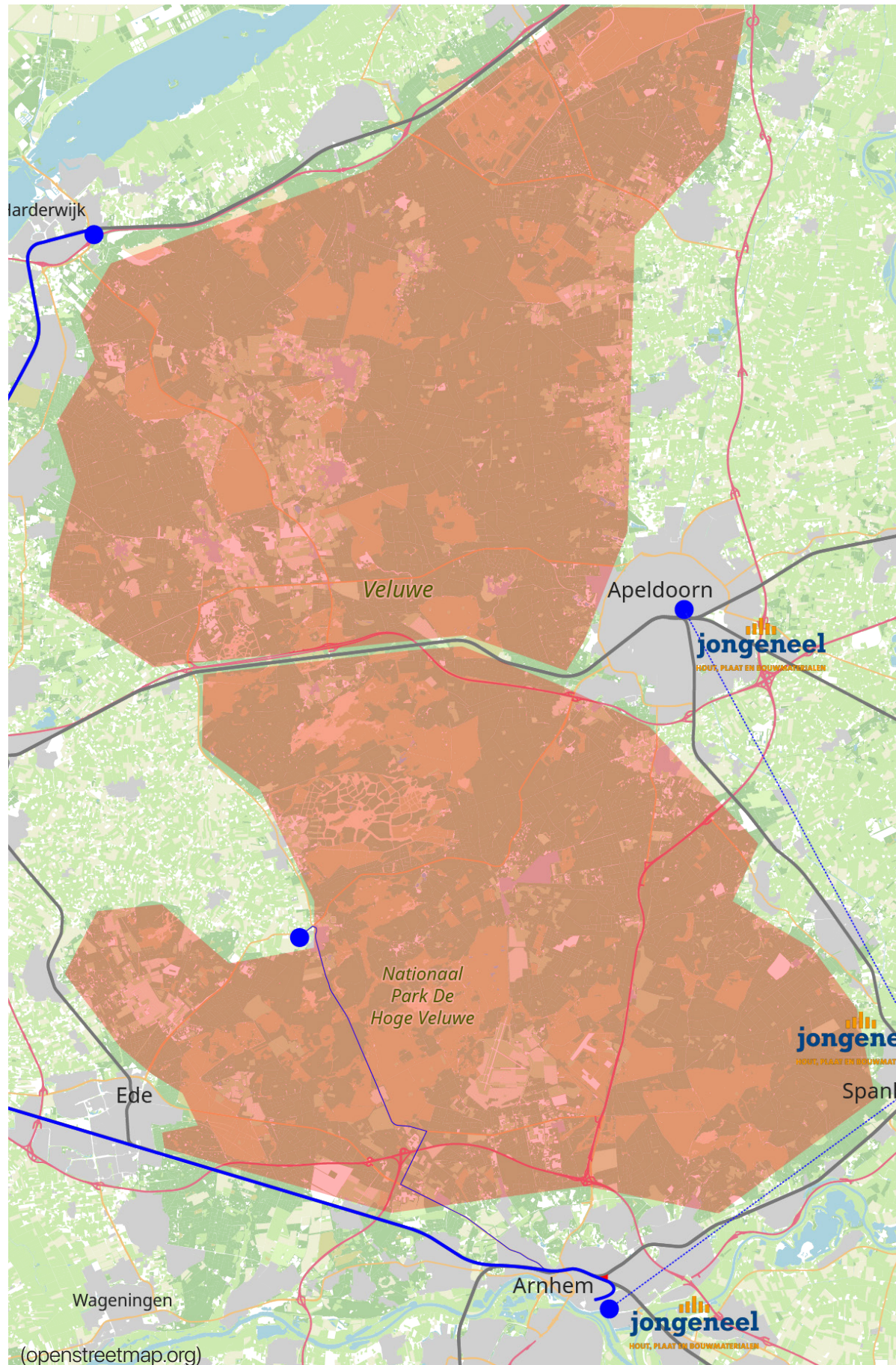
- ~ 50 m³ timber per small dwelling.
- 102.144 m³ p. year.

} 2042 small dwellings p. year.









jongeneel
HOUT, PLAAT EN BOUWMATERIALEN



Responsible forest management
Striving for 100% responsible wood



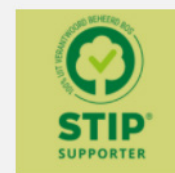
Certified wood
Wood with FSC or PEFC quality mark



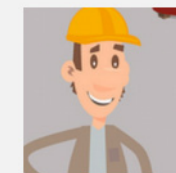
recycling centers
Sustainable disposal of construction waste to make it as easy as possible for you and the environment



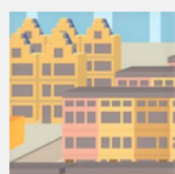
CO2 performance ladder
How we reduce our CO2 footprint



STIP supporter
Jongeneel is a STIP supporter



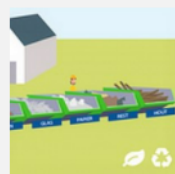
Social entrepreneurship
We give colleagues the opportunity - with success



Prefab wood
Order prefab wood at Jongeneel



Customized sheet material
More efficiency, convenience and accuracy

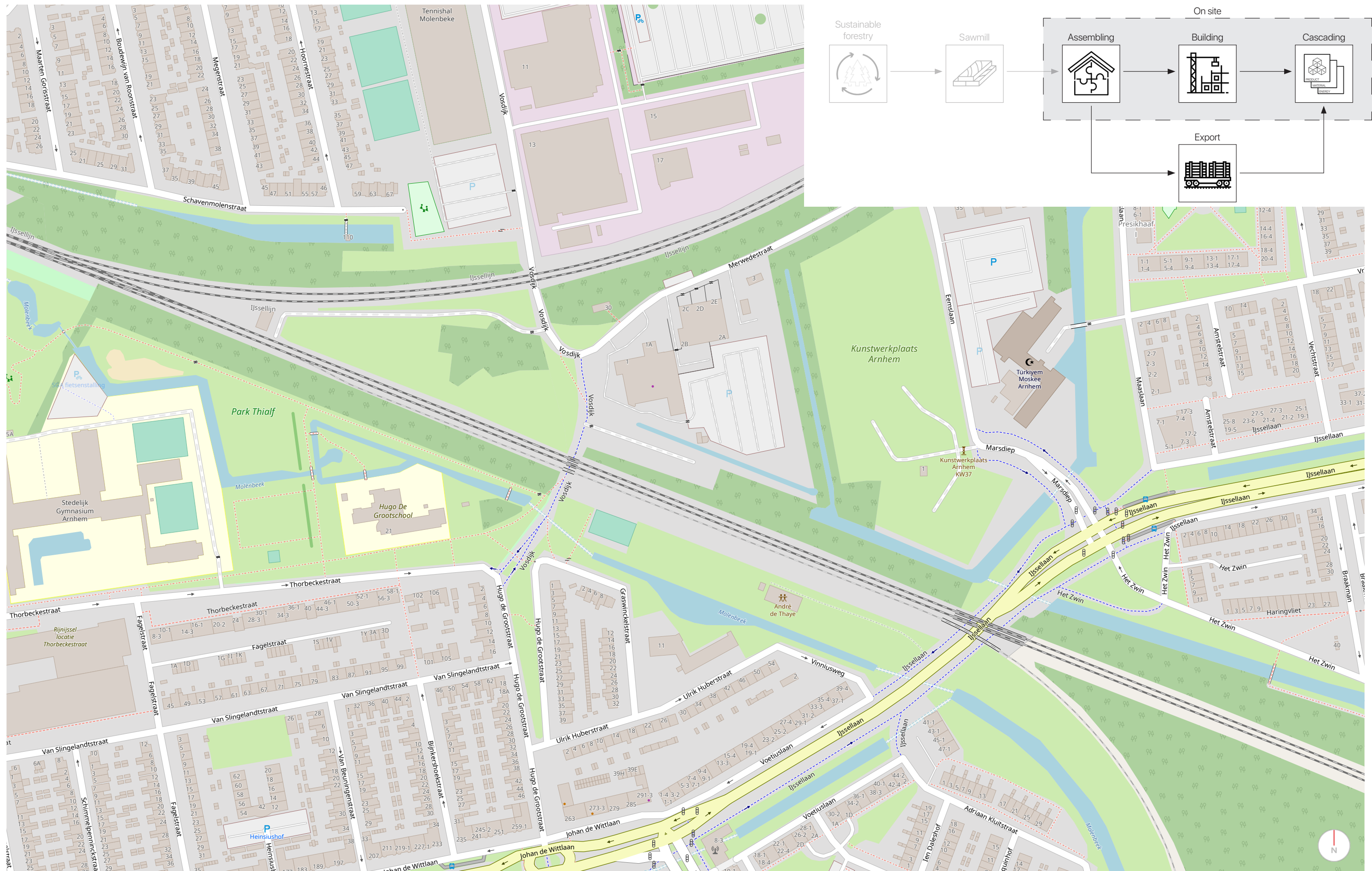


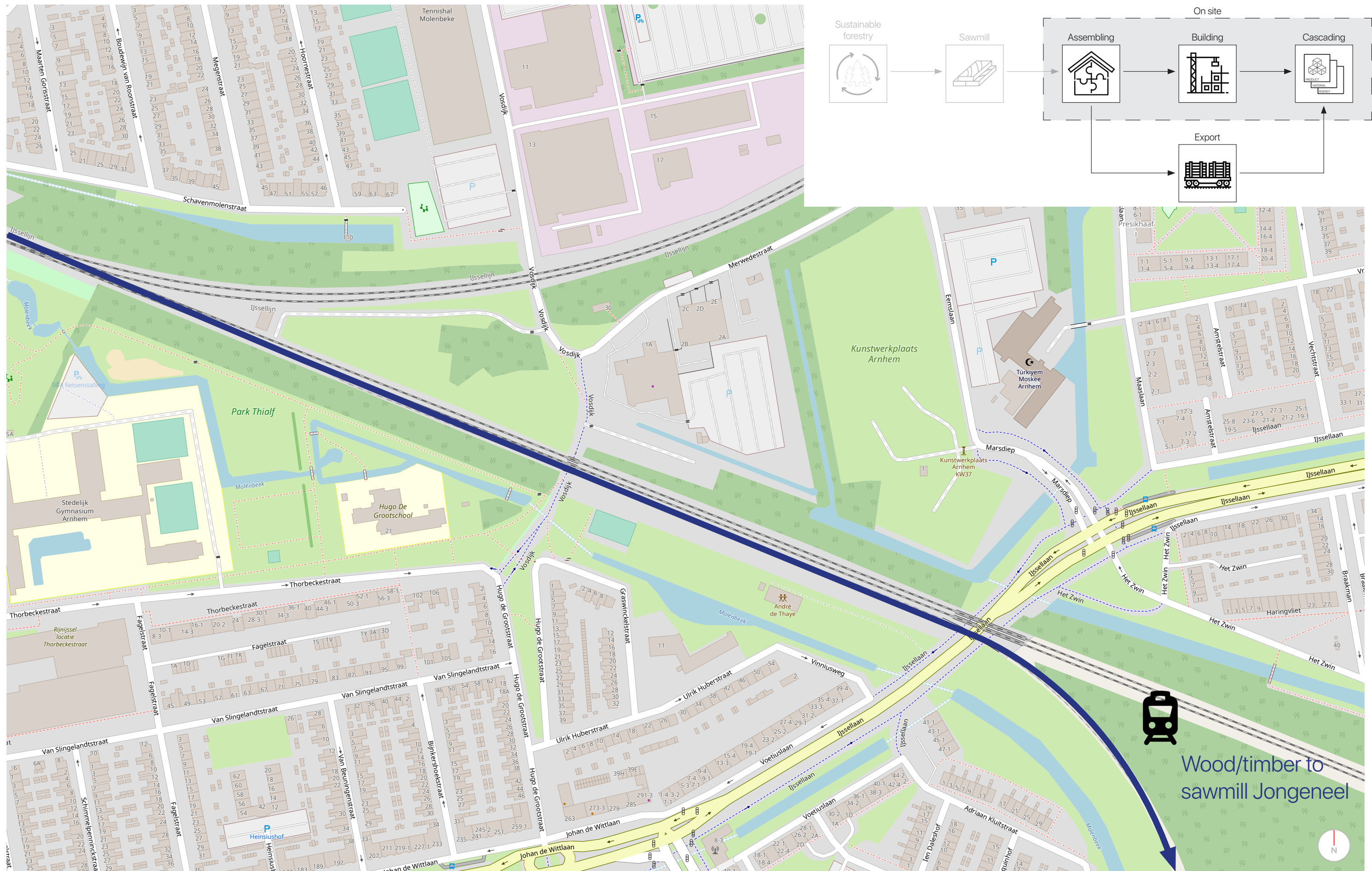
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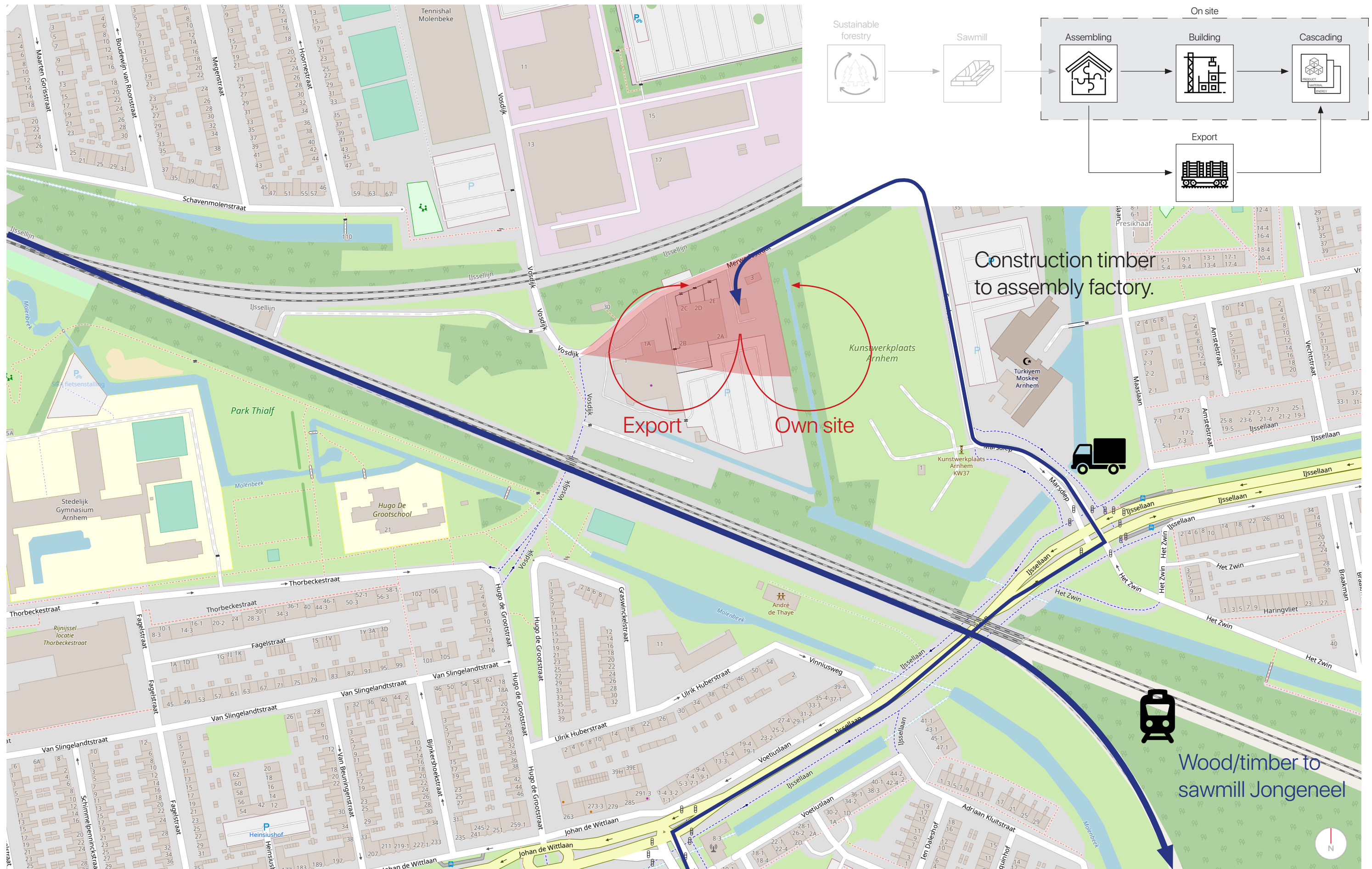


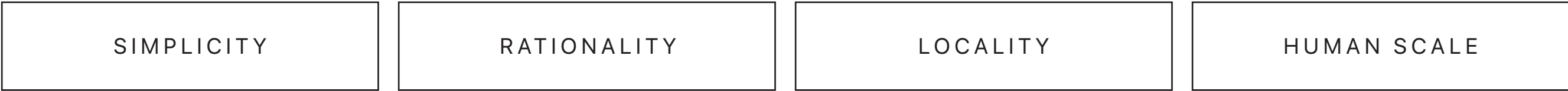
Concrete delivery
Concrete delivery to the construction site? From wheelbarrow to concrete truck

- 3 local branches (Arnhem, Apeldoorn, and Spankeren).
- Sustainable entrepreneurship.
- Supplies concrete in addition to timber products.

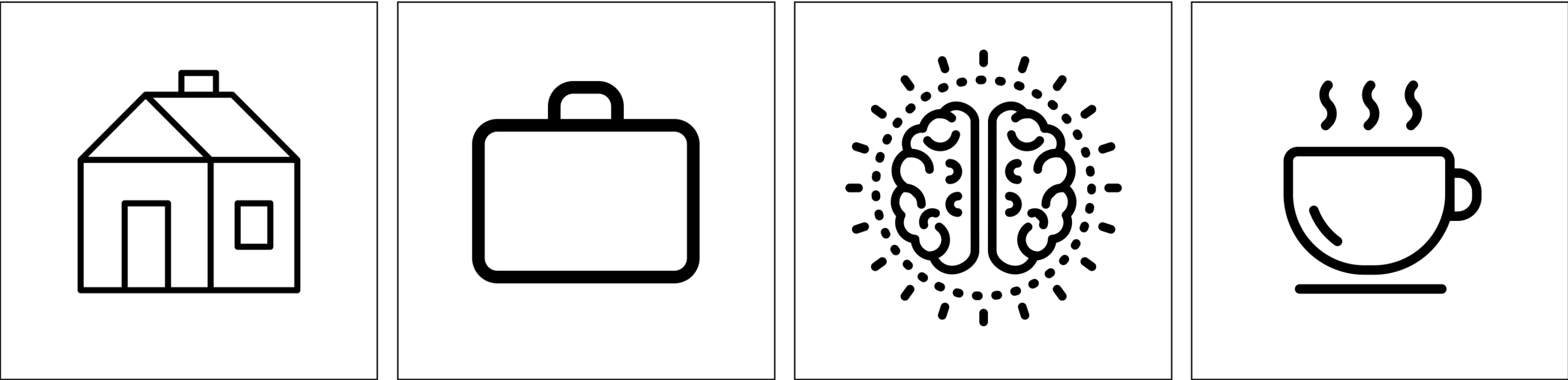








STIMULATING LOCAL COMMUNITY



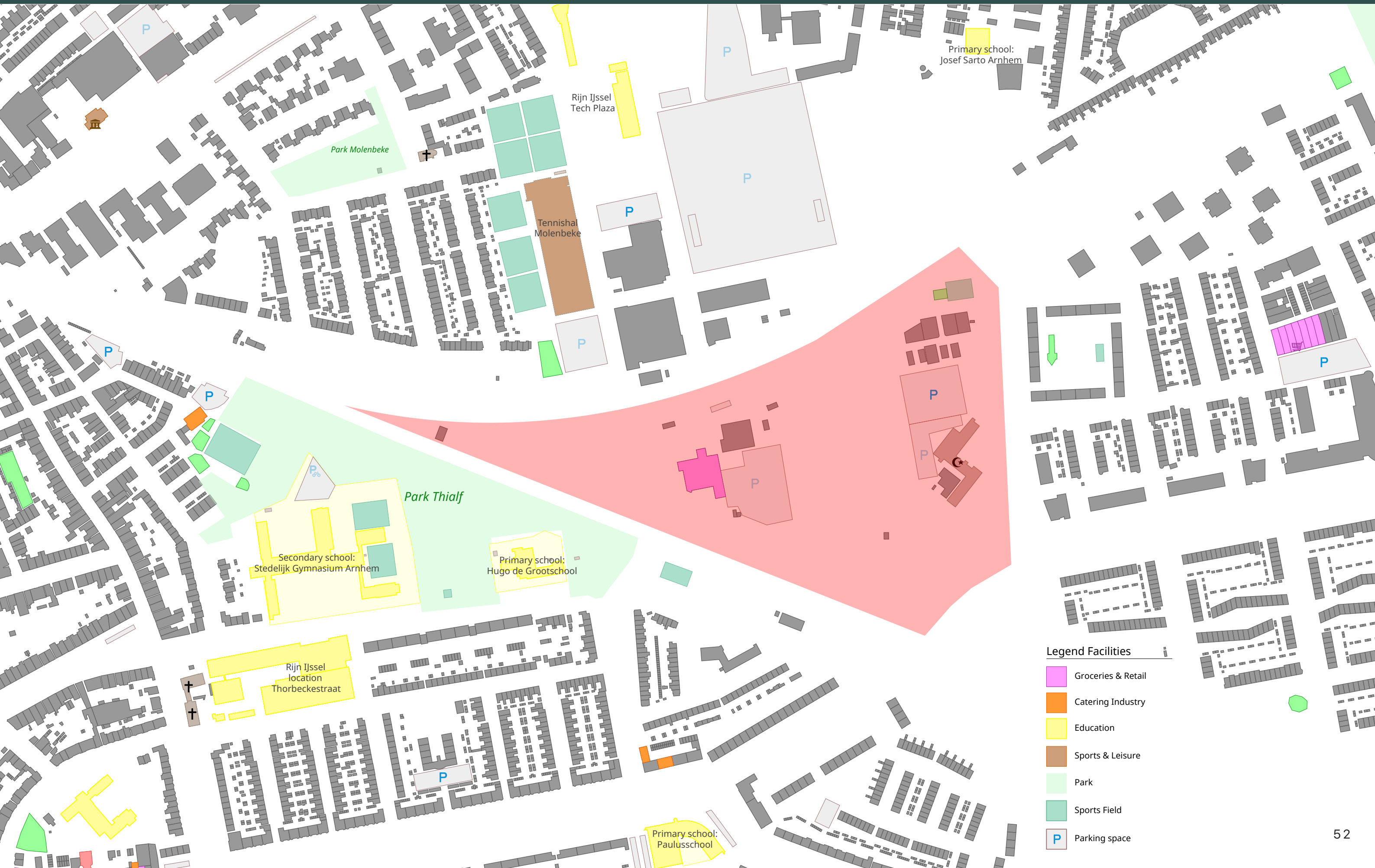
HOUSING

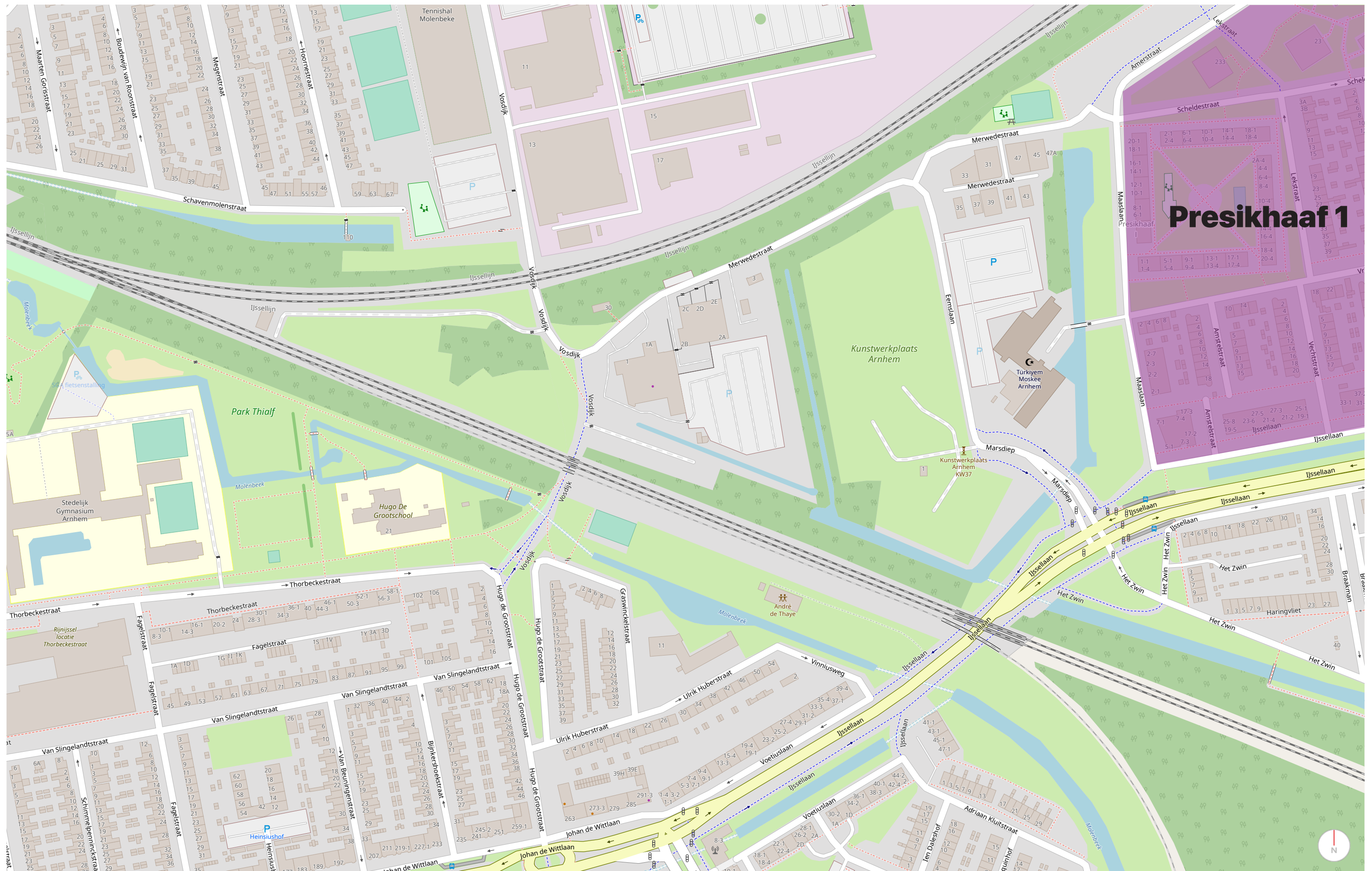
WORKING

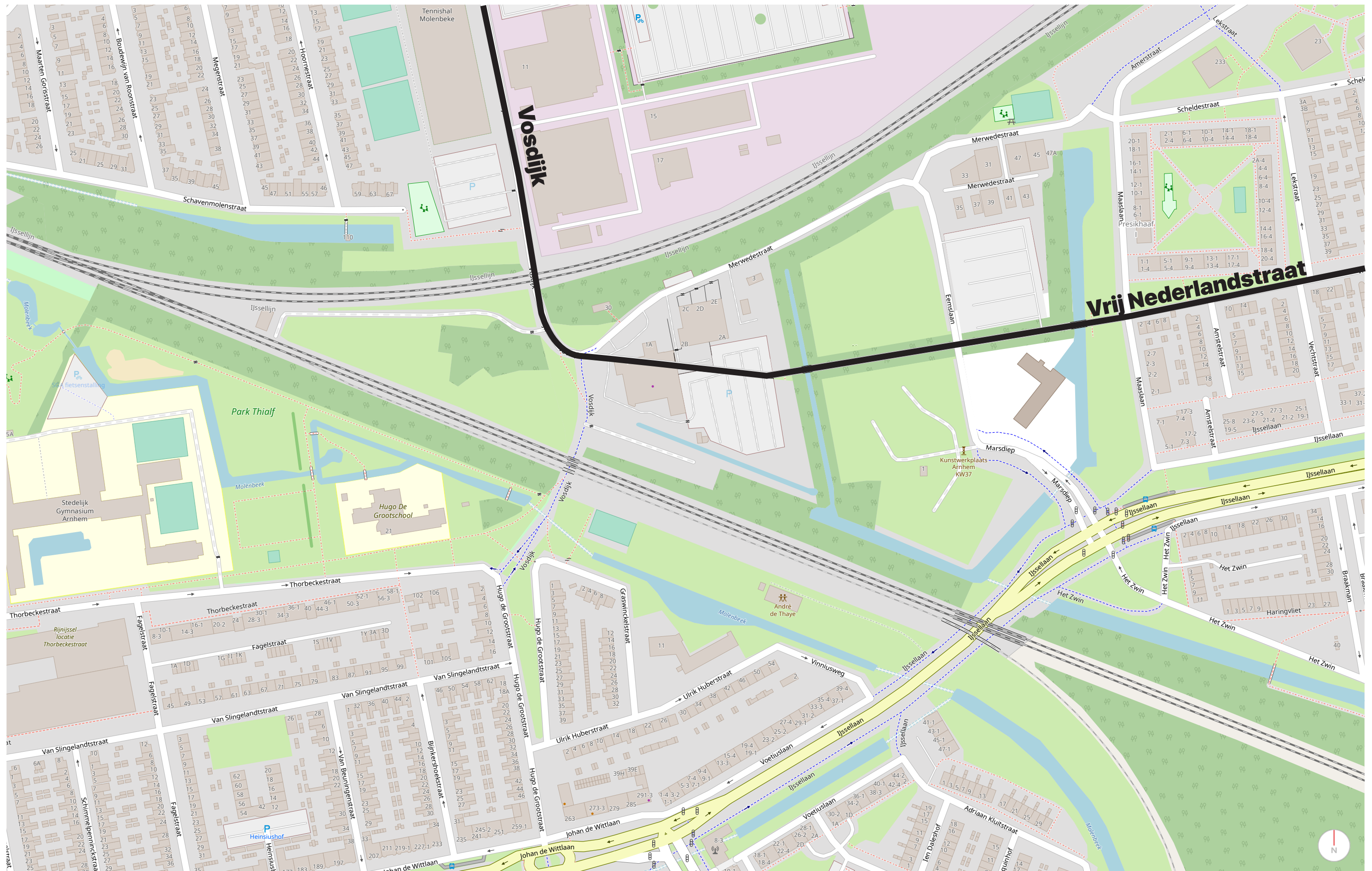
LEARNING

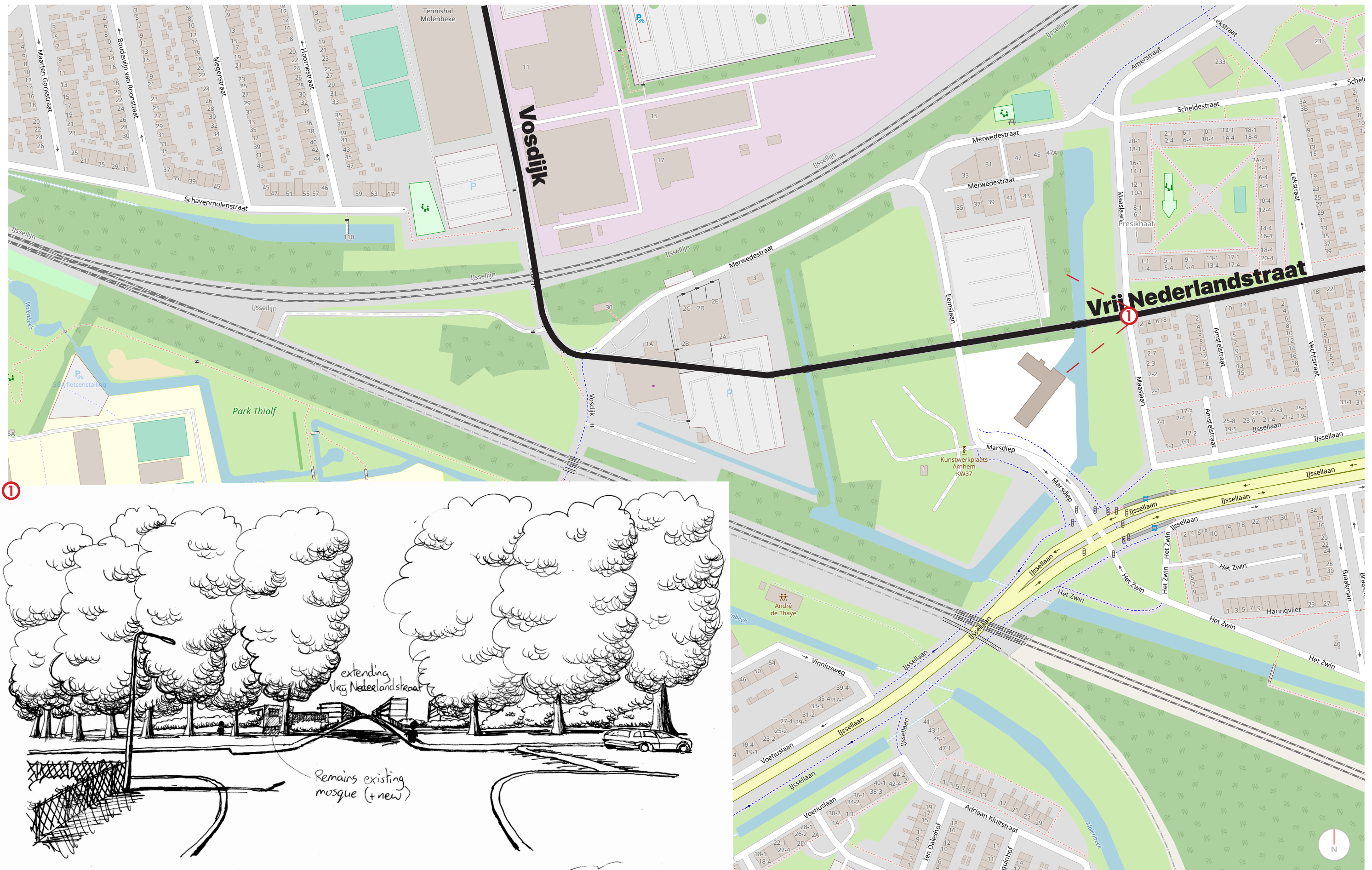
LEISURE

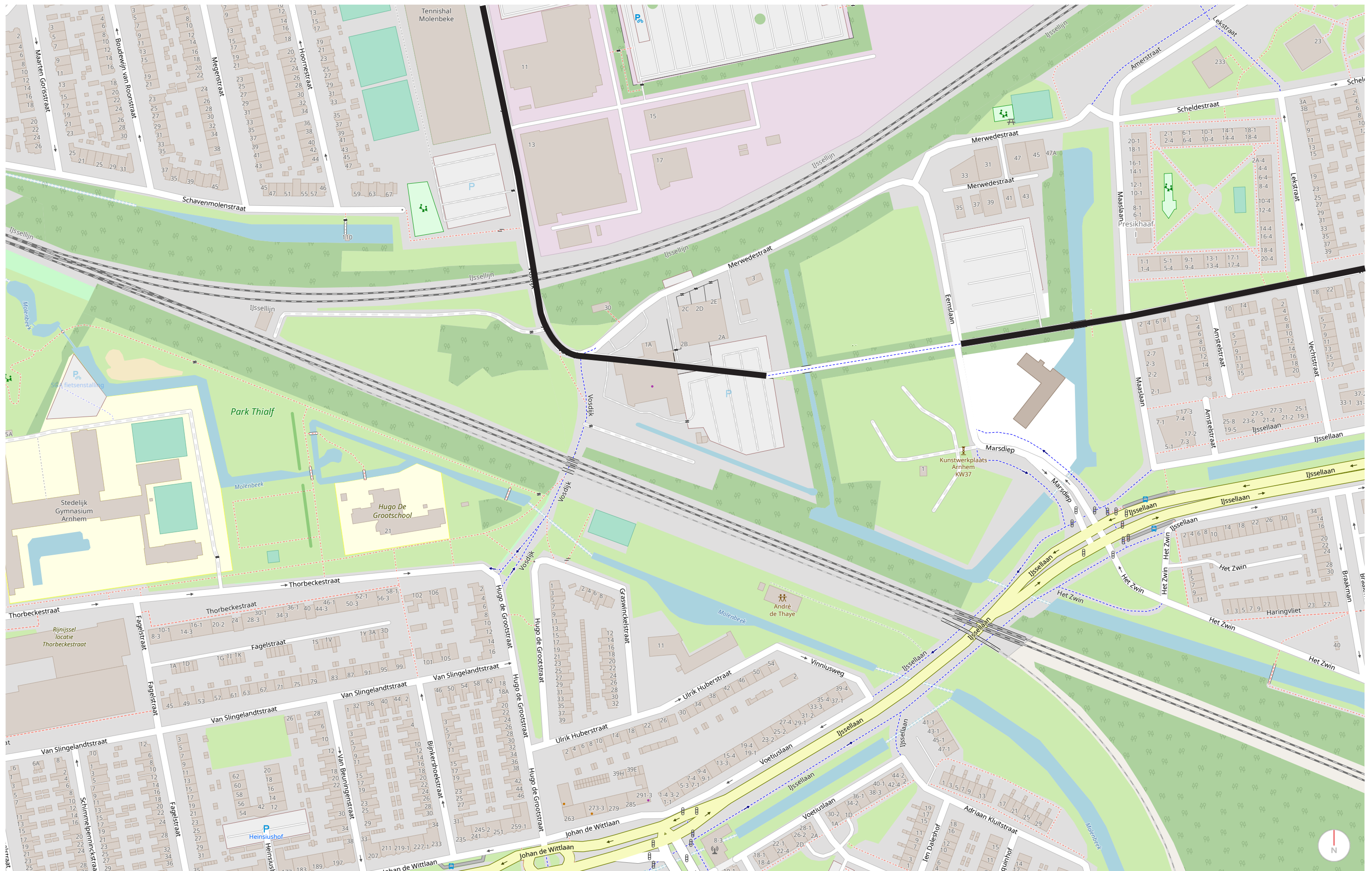


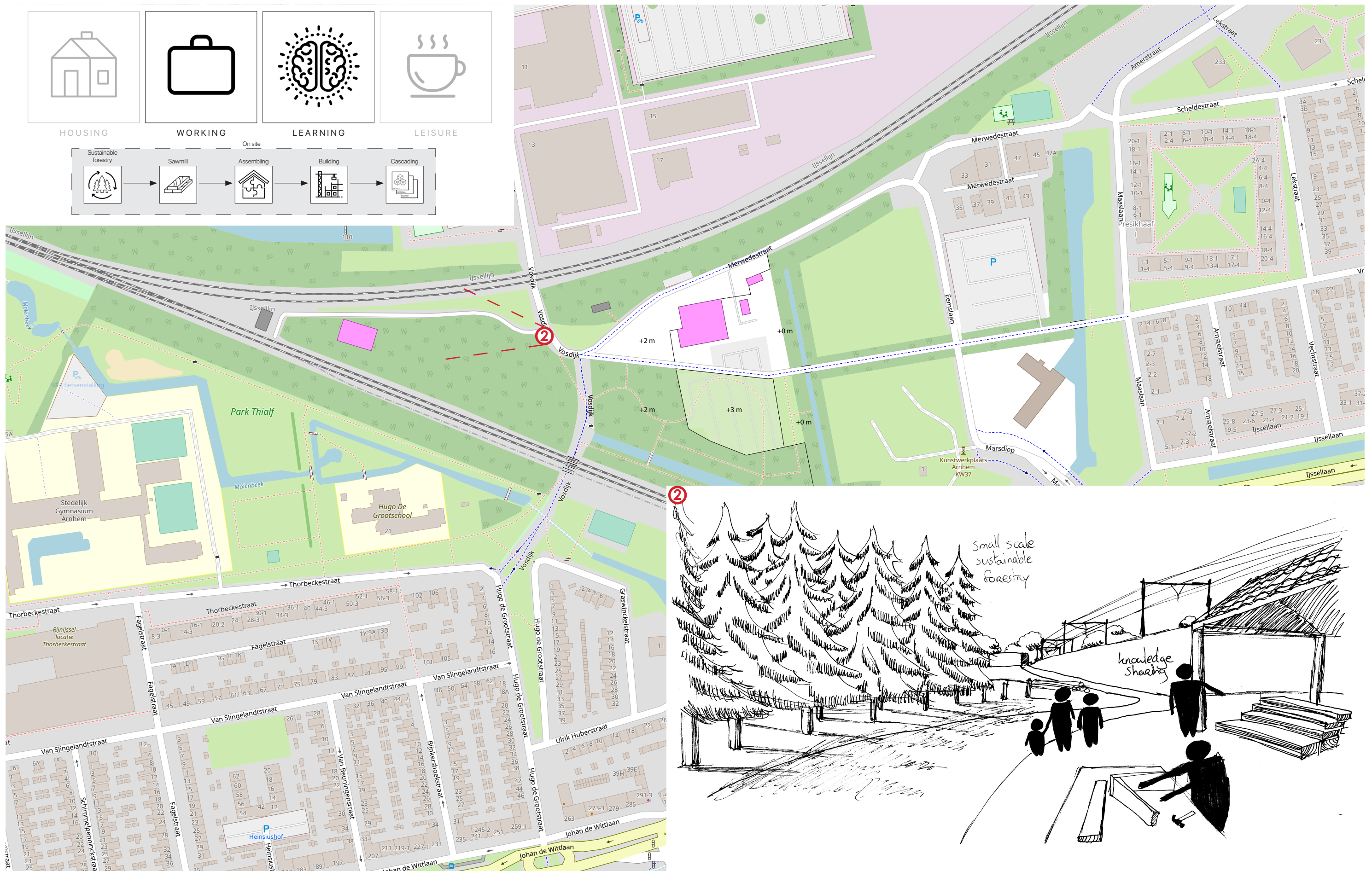


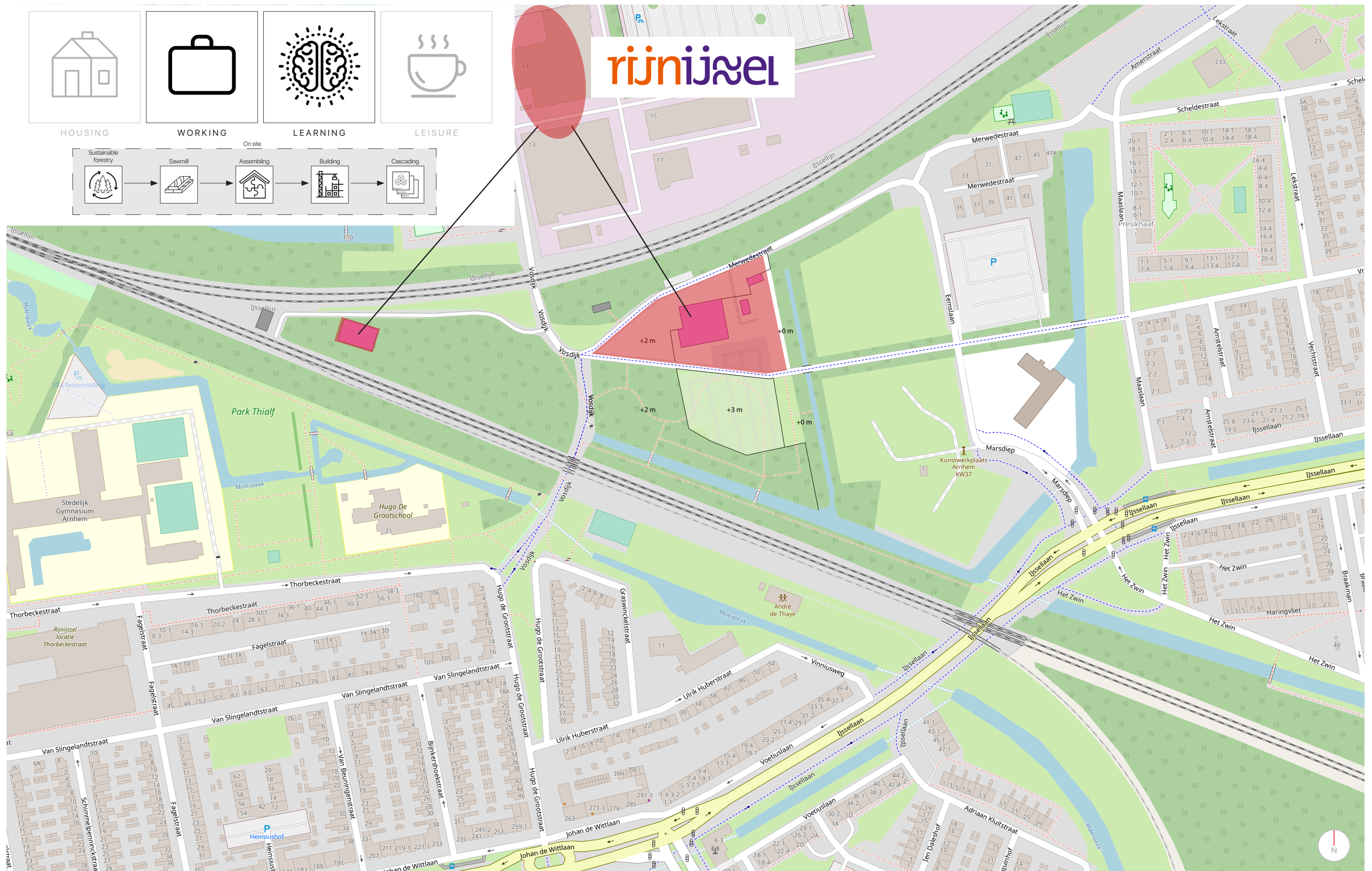




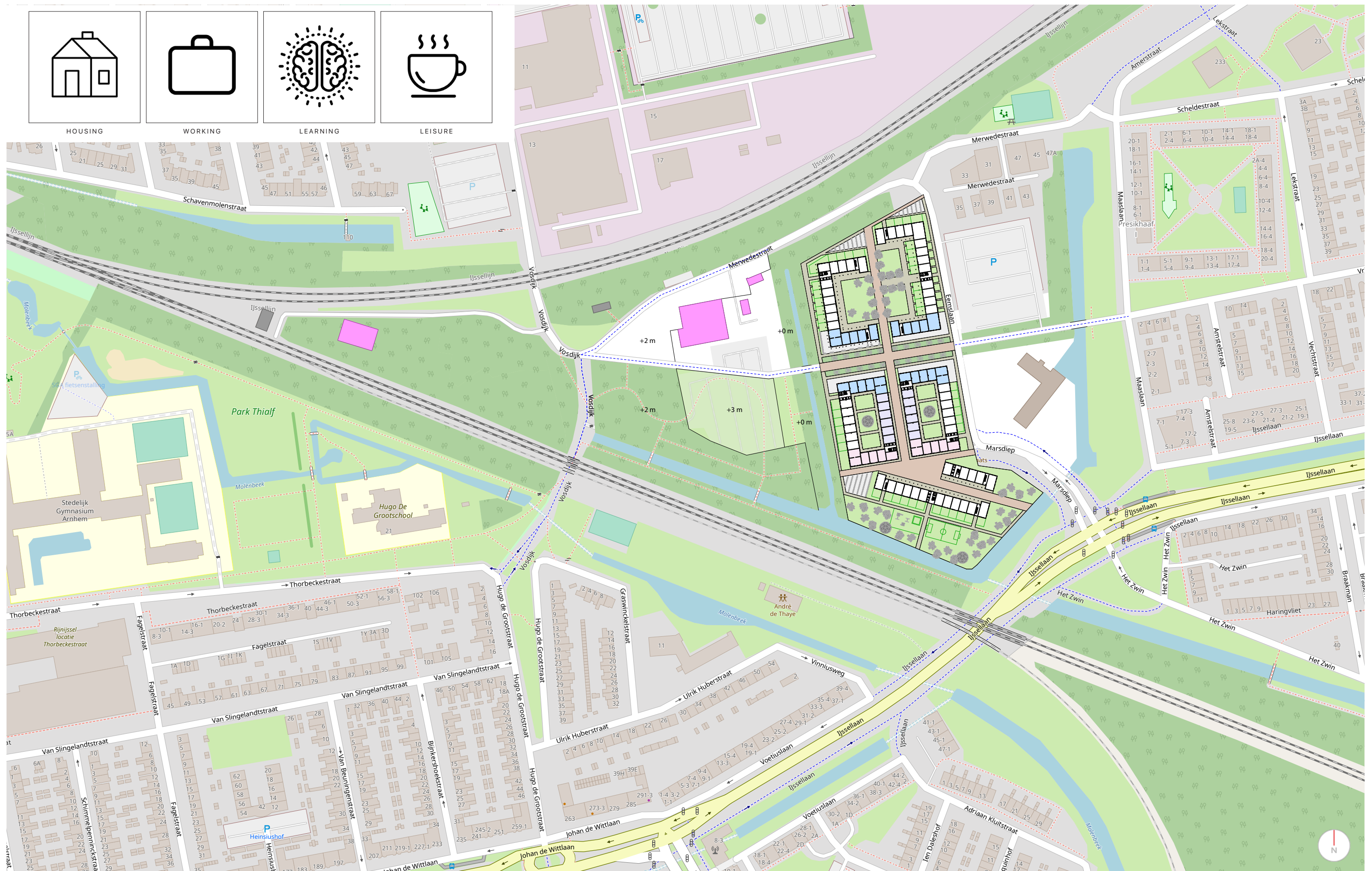


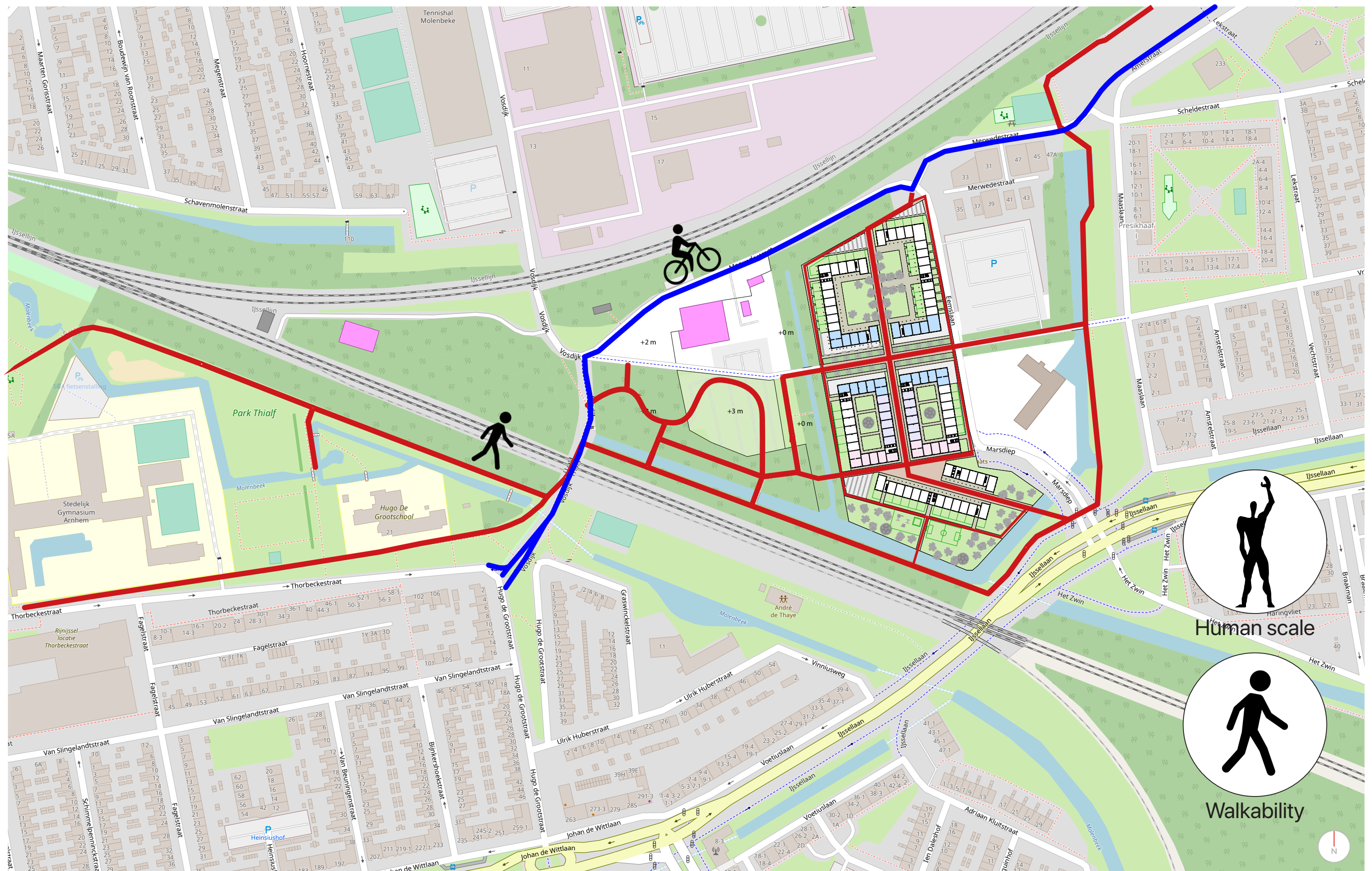






LOW-TECH ON URBAN SCALE



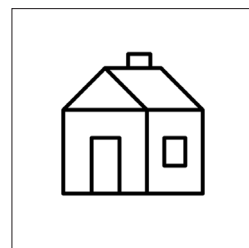


Building SimpliCity



Building SimpliCity



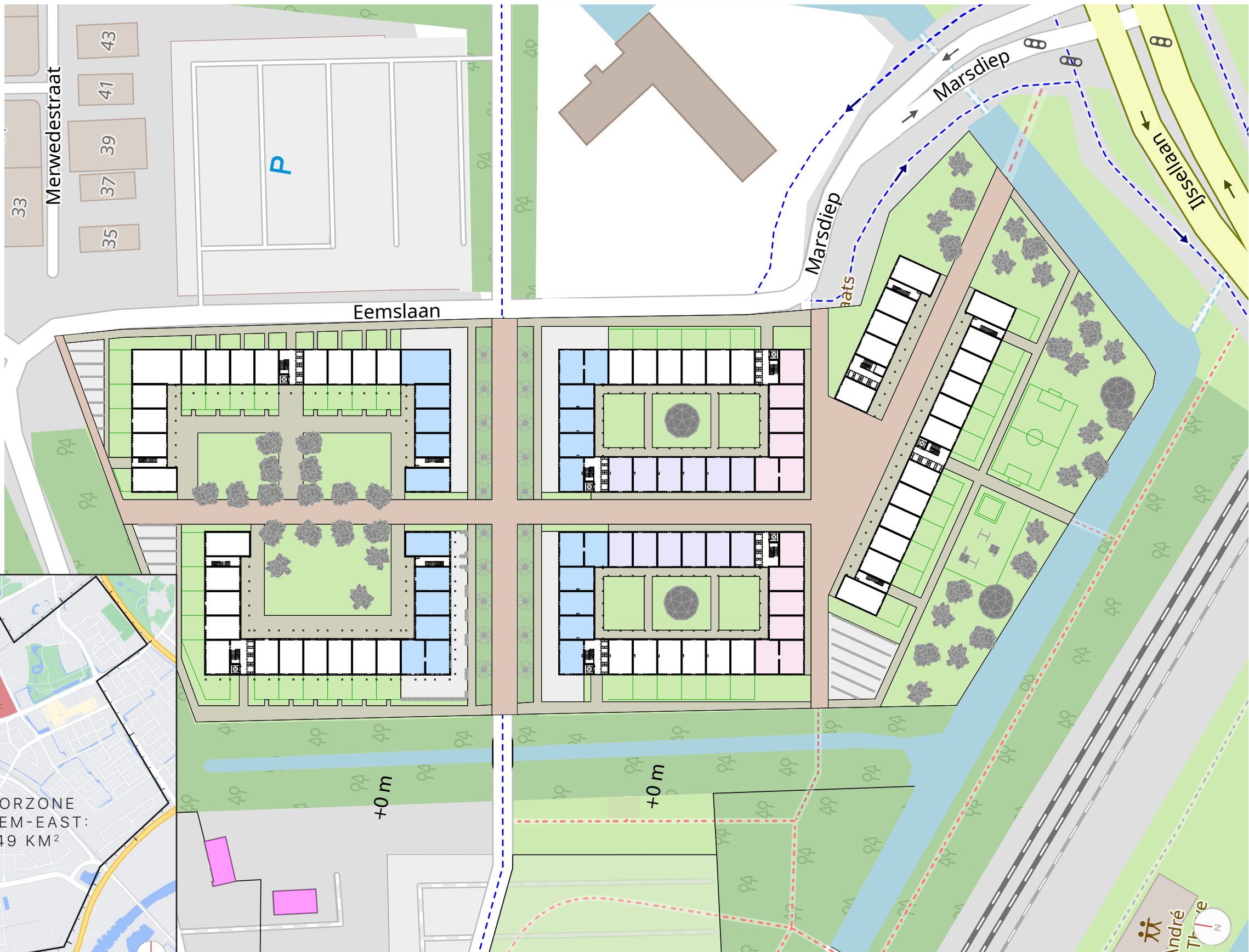


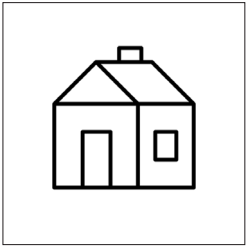
HOUSING

Part of
acceleration
location
Spoorzone
Arnhem-East:

At least ~150
new dwellings.

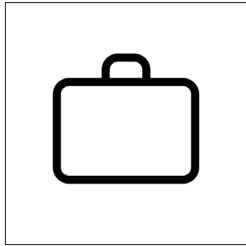
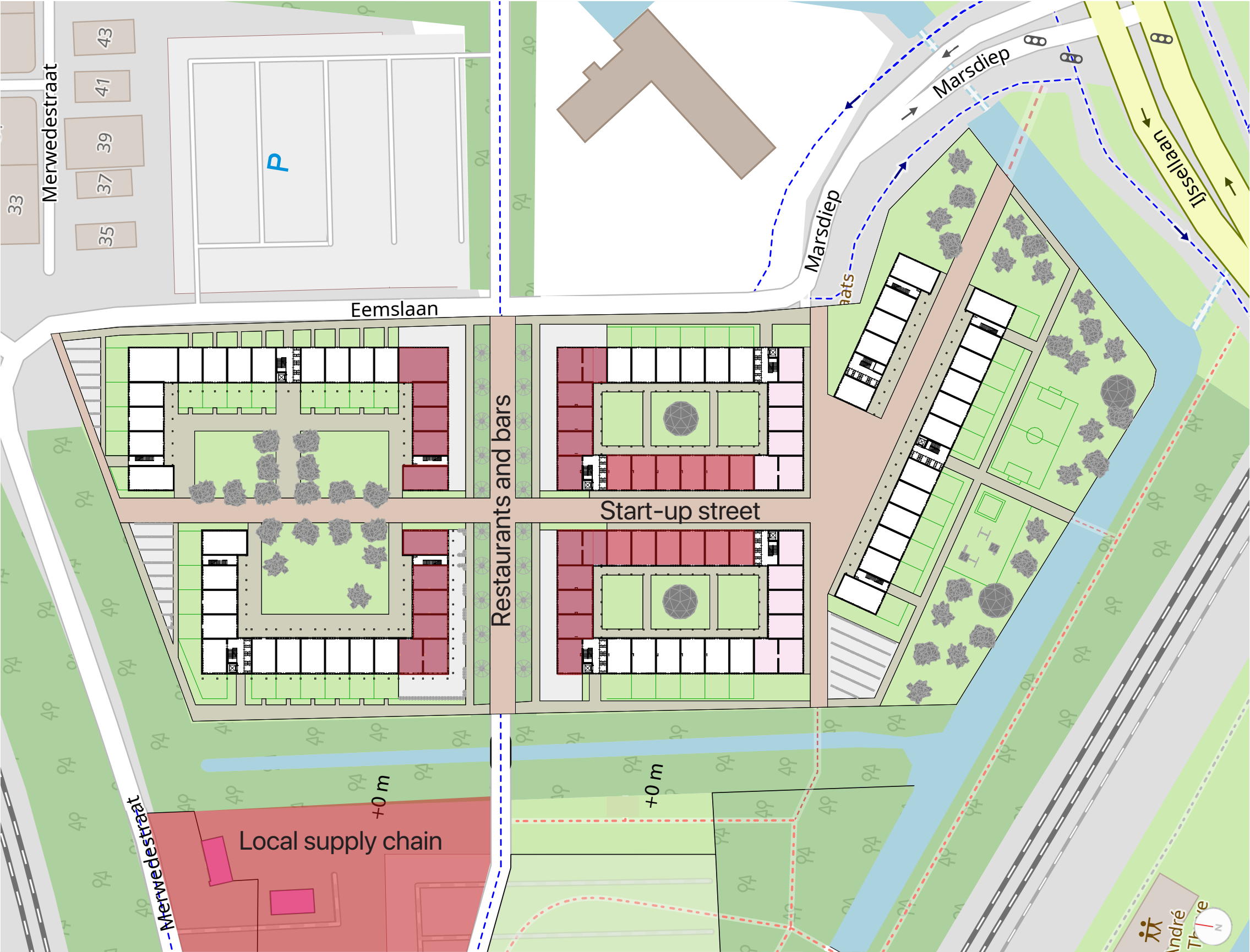
Current design:
144-243 new
dwellings





HOUSING

144-243 new dwellings

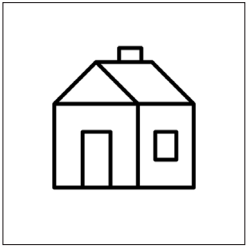


WORKING

Local supply chain.

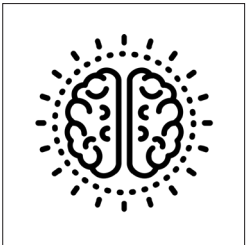
Places for startups.

Restaurants/
bars



HOUSING

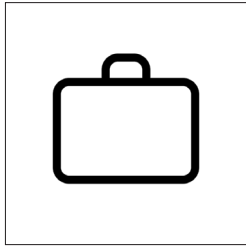
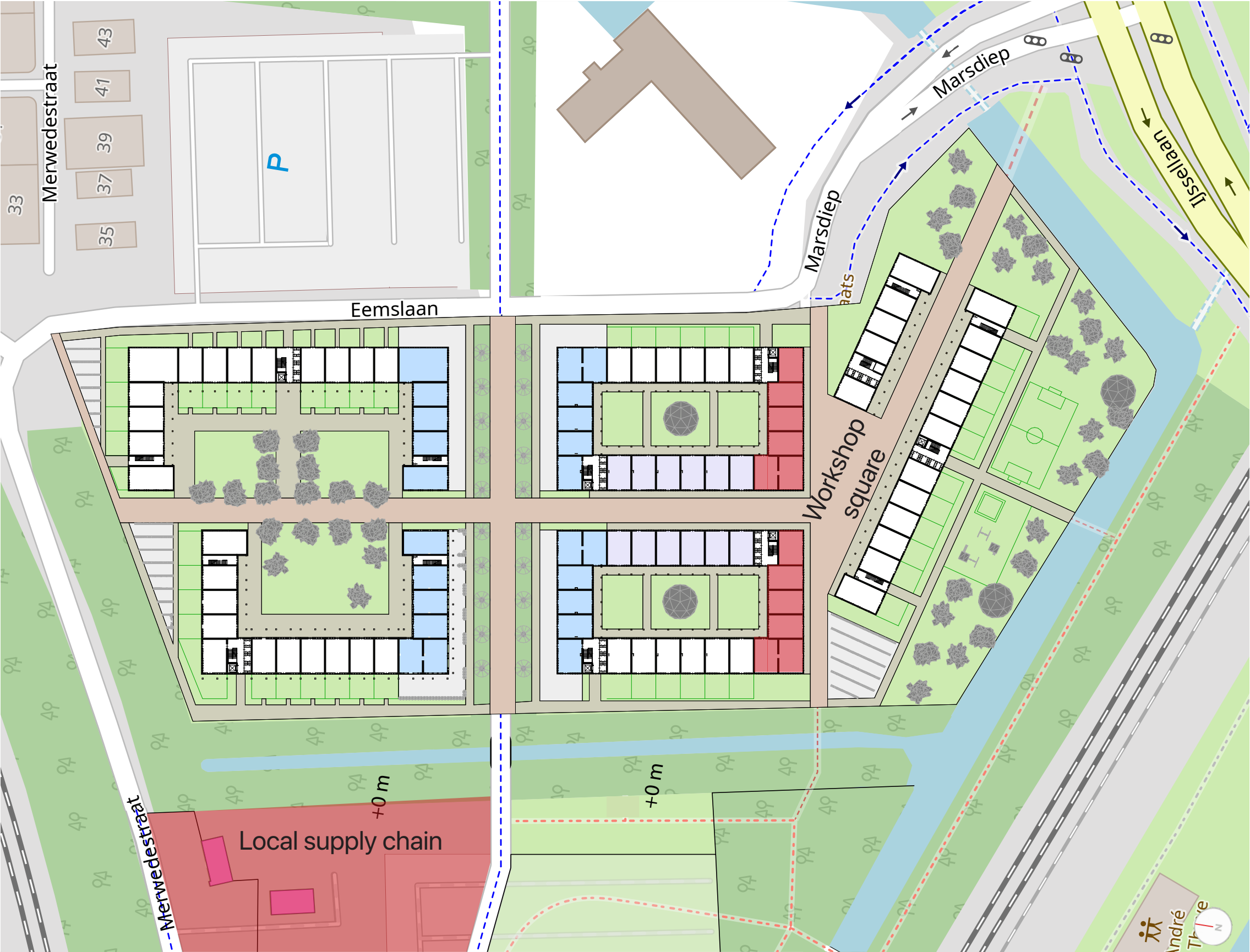
144-243 new dwellings



LEARNING

Local supply chain on site.

DIY workshop.

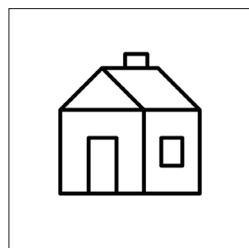


WORKING

Local supply chain.

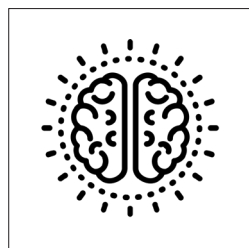
Places for startups.

Restaurants/
bars



HOUSING

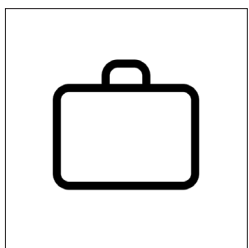
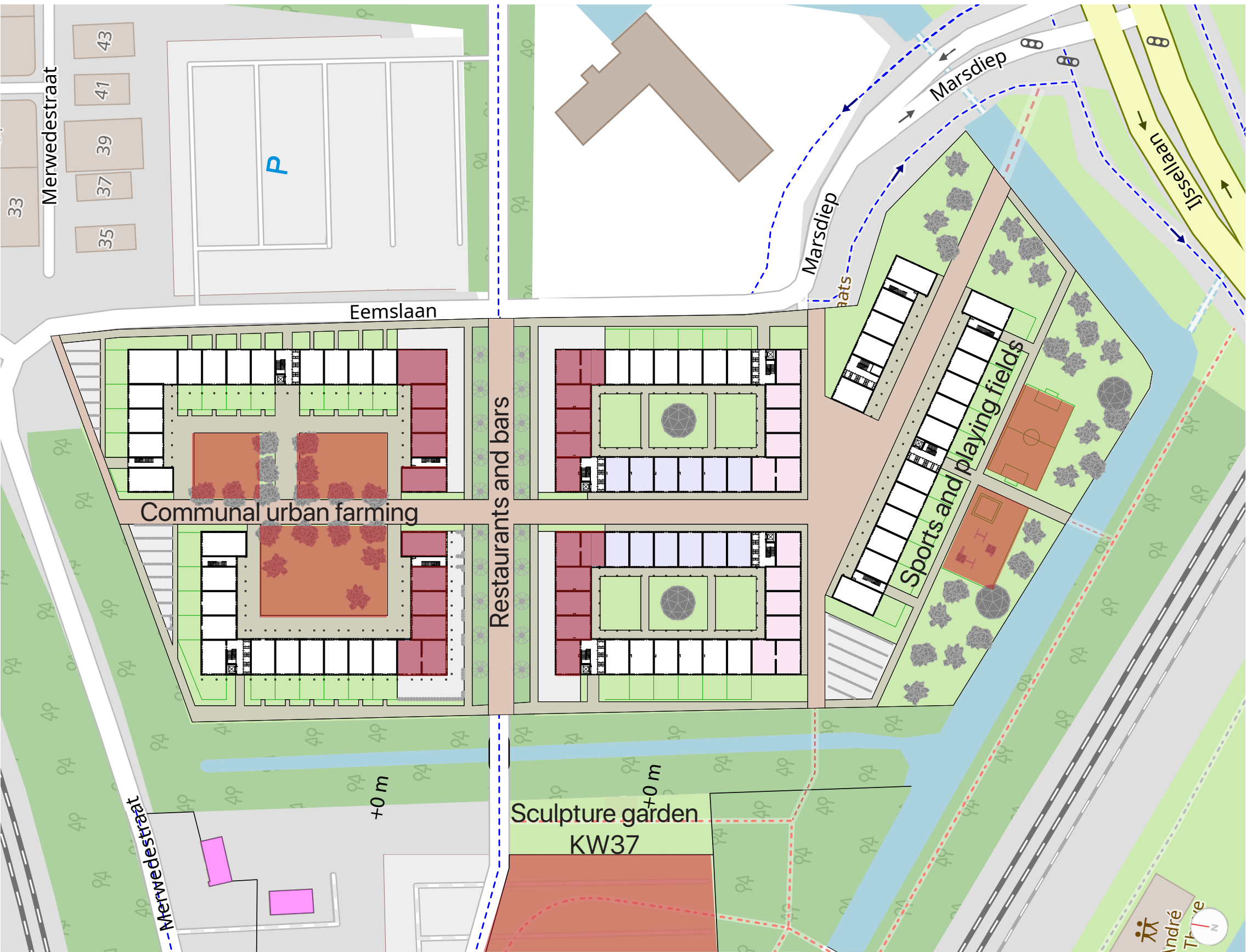
144-243 new dwellings



LEARNING

Local supply chain on site.

DIY workshop.



WORKING

Local supply chain.

Places for startups.

Restaurants/
bars



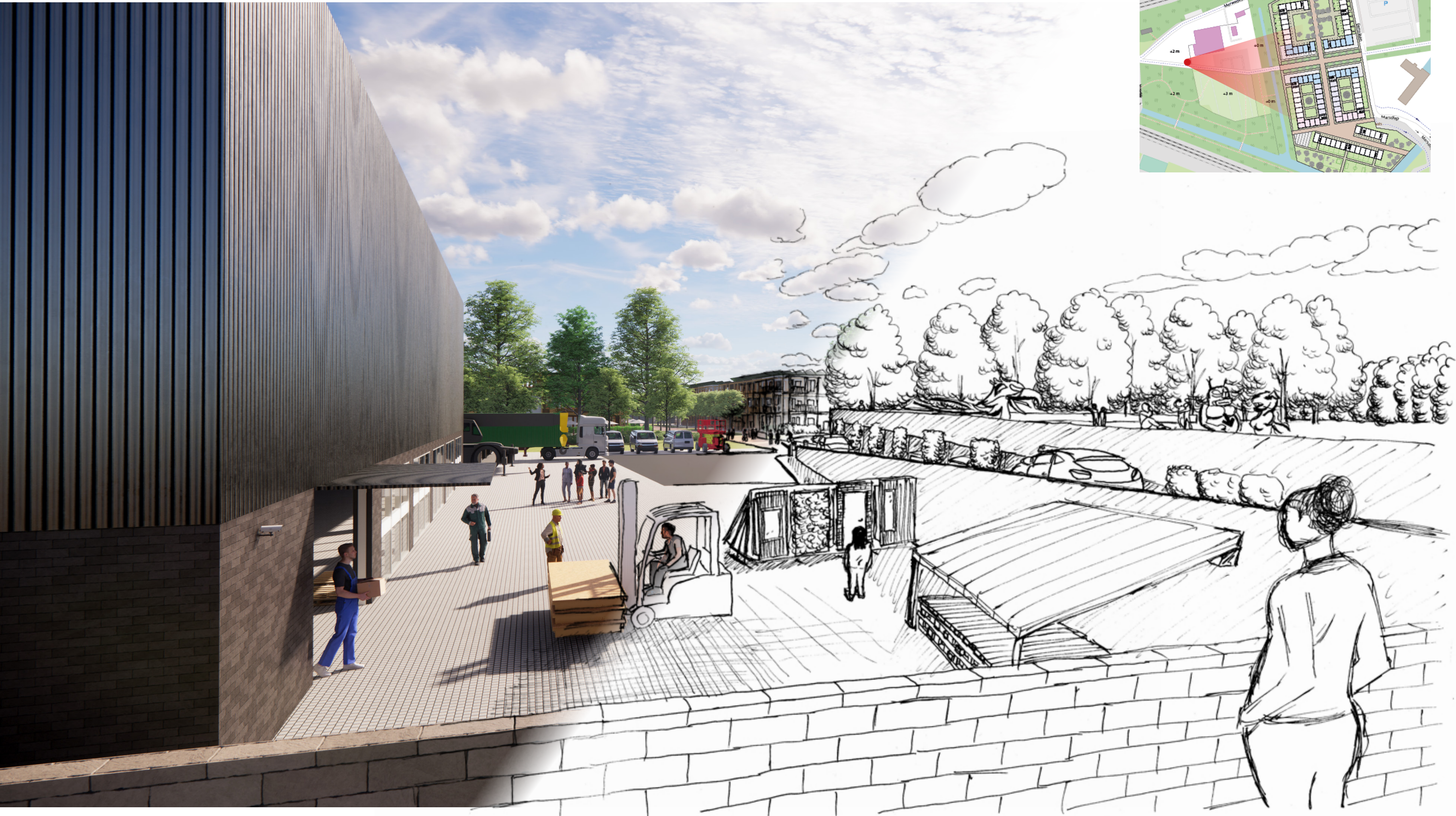
LEISURE

Restaurants/
bars.

Urban farming.

Sports and
playing fields.

Sculpture
garden KW37.

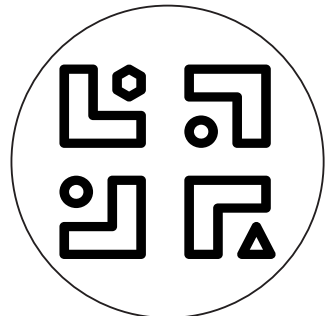


SIMPLICITY

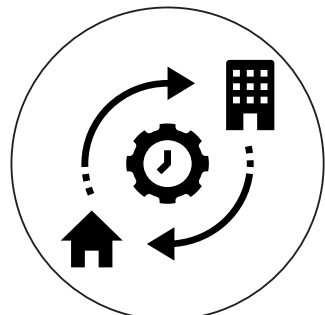
RATIONALITY

LOCALITY

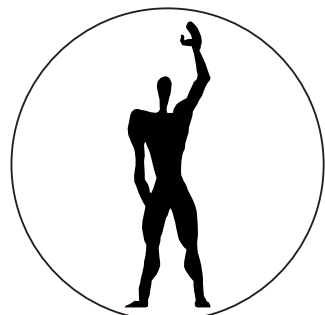
HUMAN SCALE



Diversity



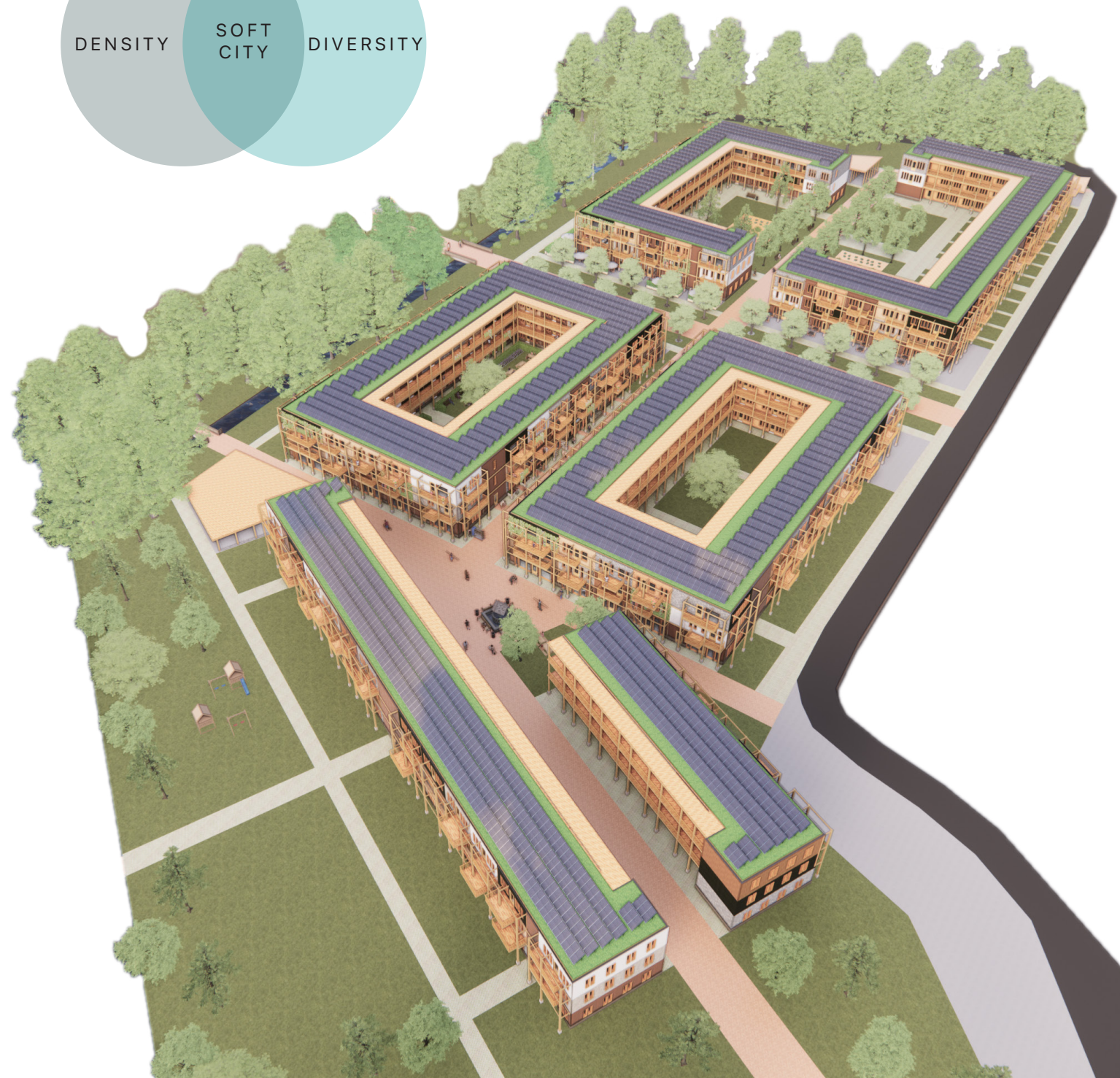
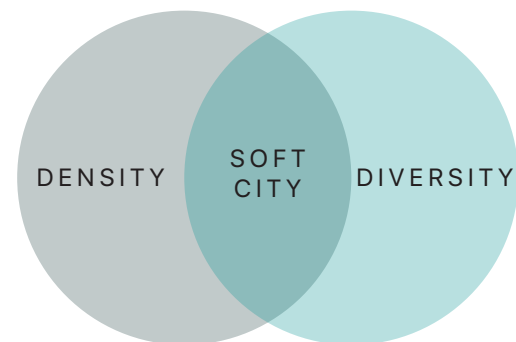
Flexibility



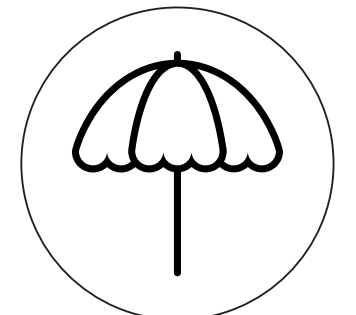
Human scale



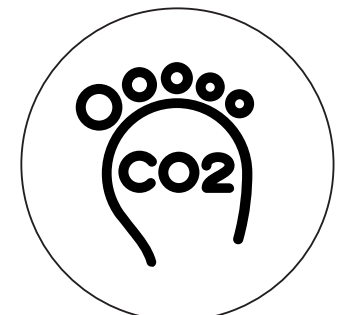
Walkability



Control & Identity



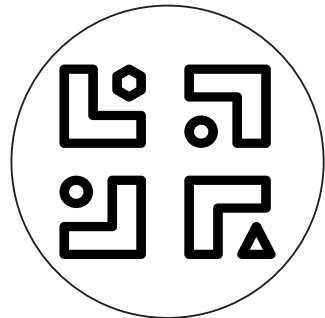
Pleasant micro climate



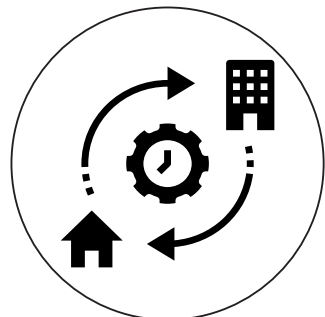
Smaller carbon footprint



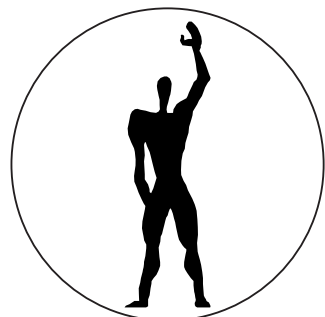
Biodiversity



Diversity



Flexibility



Human scale



Walkability

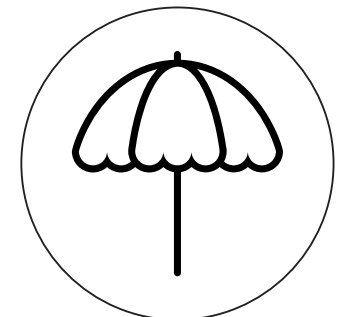


Level 1 & 2

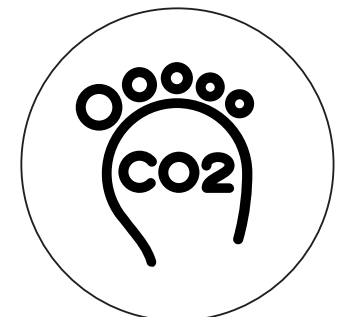
Ground floor



Control & Identity



Pleasant micro climate



Smaller carbon footprint



Biodiversity



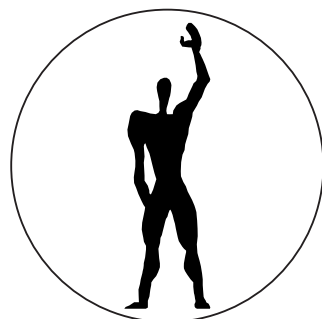
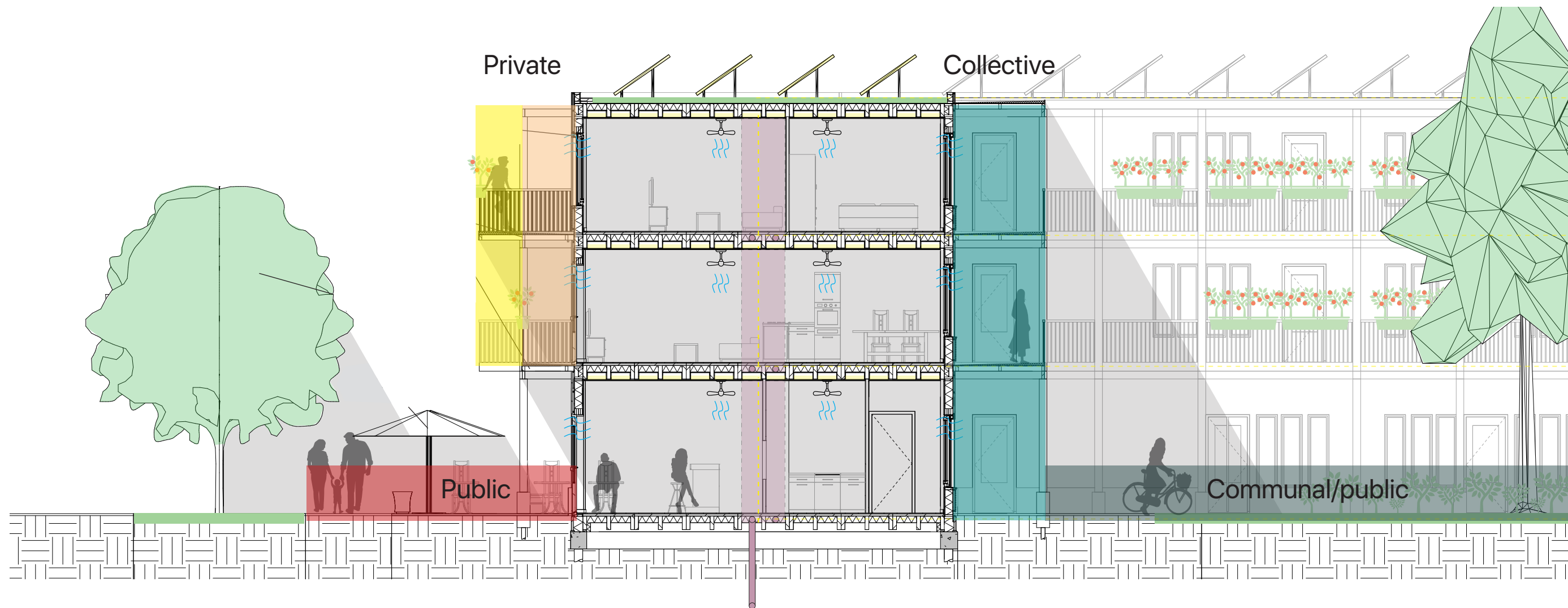








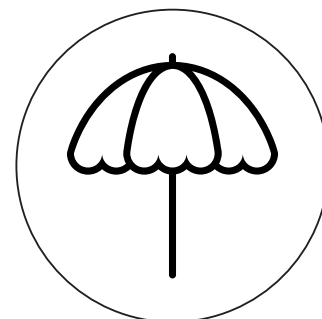
HIERARCHY OF OUTSIDE SPACE



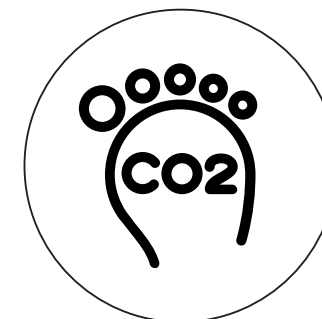
Human scale



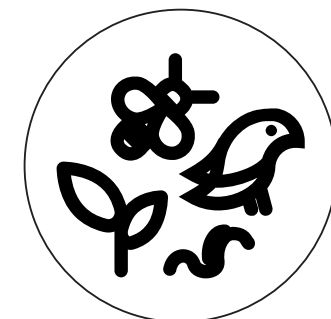
Control & Identity



Pleasant micro climate



Smaller carbon footprint



Biodiversity

CLIMATE DESIGN SUMMER

75% of roof area used for solar panels.
Cooling effect of mos sedum roof increases efficiency up to 8%.

Electricity used for both necessary heating (infrared panels) and cooling (fans).

Centralized energy storage and fuse boxes

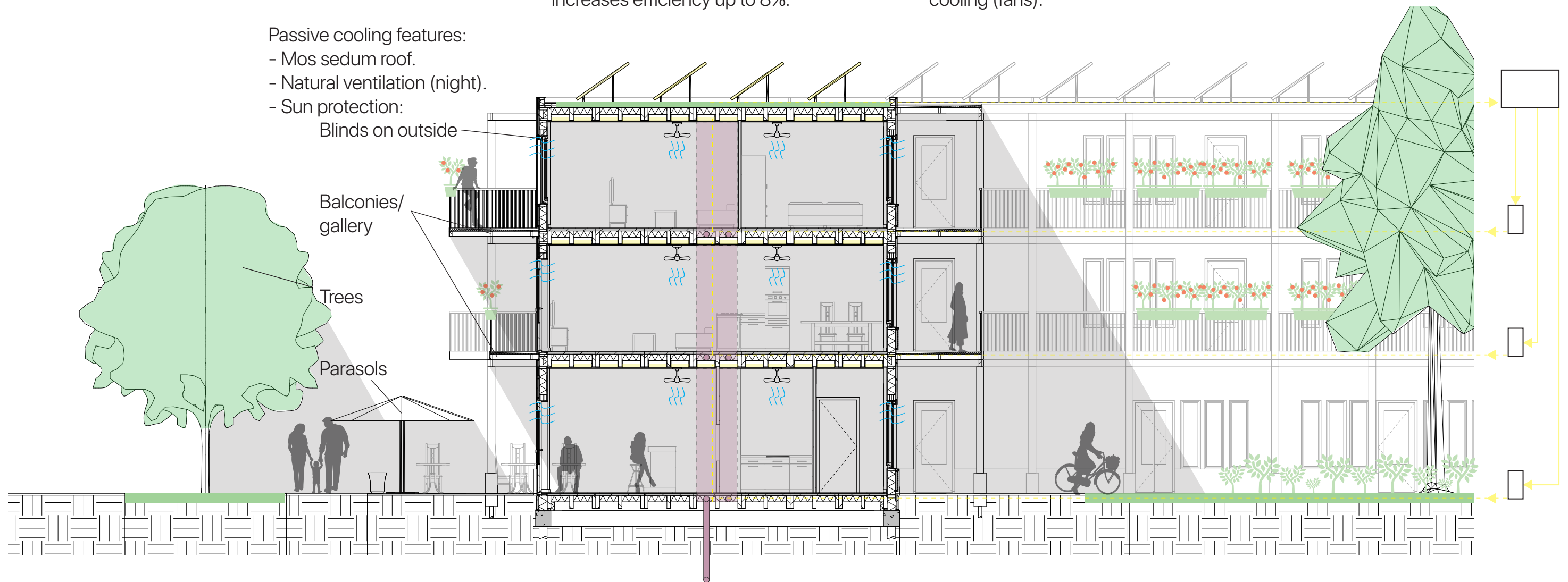
Passive cooling features:

- Mos sedum roof.
- Natural ventilation (night).
- Sun protection:
Blinds on outside

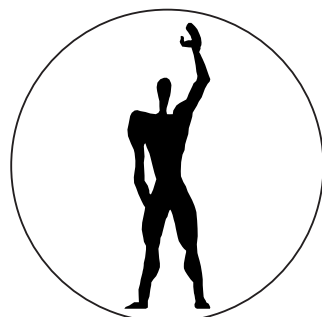
Balconies/
gallery

Trees

Parasols



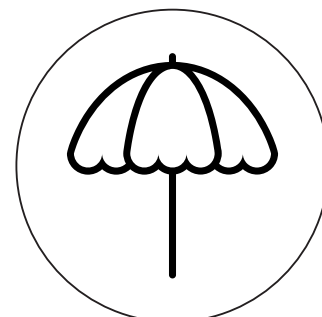
Sewage system zoned in the centre of the units.



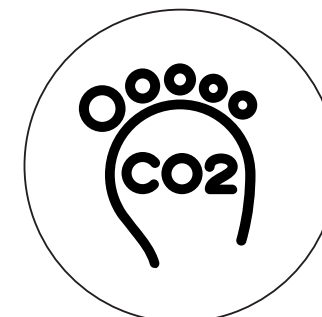
Human scale



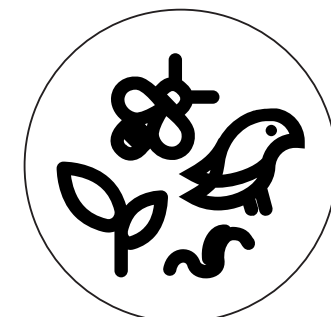
Control & Identity



Pleasant micro climate



Smaller carbon footprint



Biodiversity

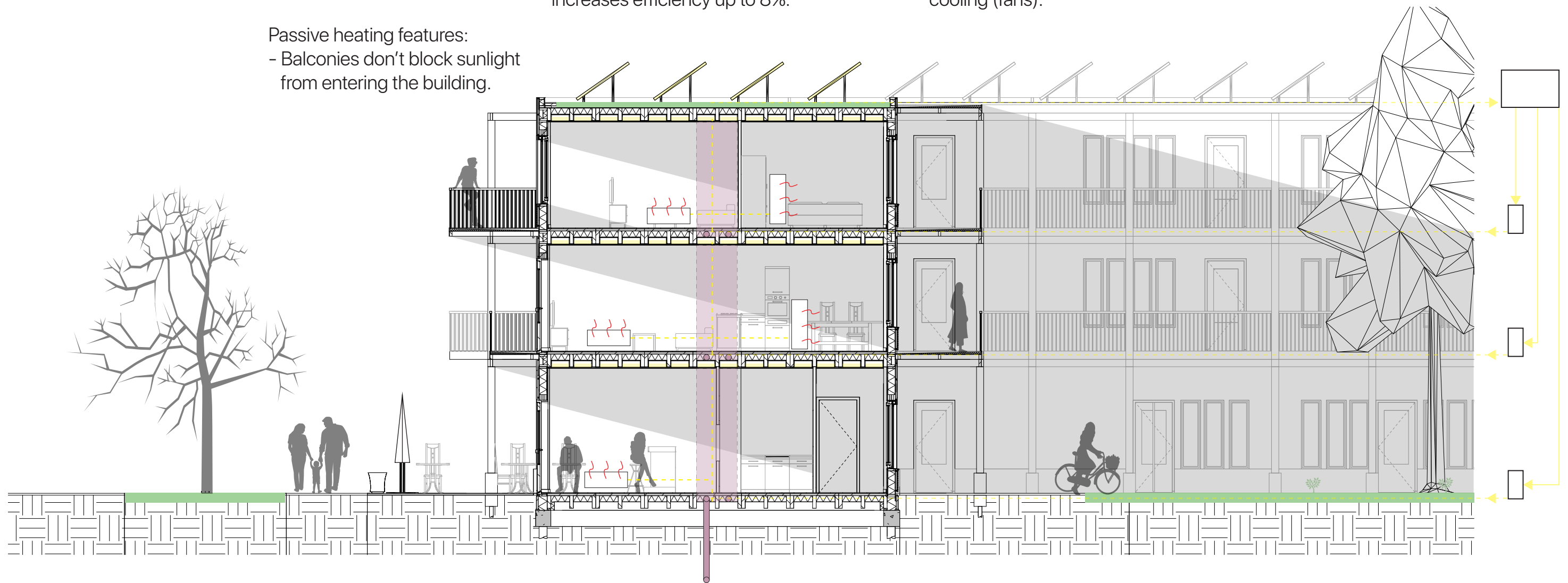
CLIMATE DESIGN WINTER

75% of roof area used for solar panels.
Cooling effect of mos sedum roof increases efficiency up to 8%.

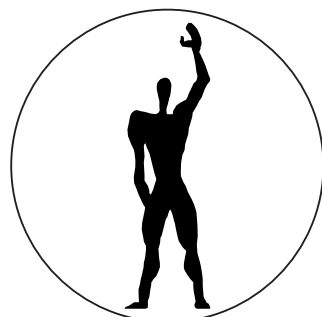
Electricity used for both necessary heating (infrared panels) and cooling (fans).

Centralized energy storage and fuse boxes

Passive heating features:
- Balconies don't block sunlight from entering the building.



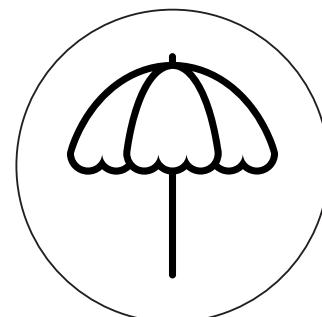
Sewage system zoned in the centre of the units.



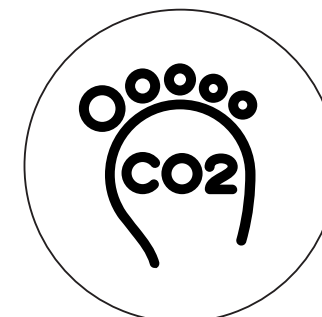
Human scale



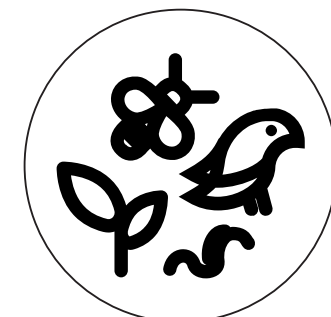
Control & Identity



Pleasant micro climate



Smaller carbon footprint



Biodiversity

CLIMATE DESIGN WINTER

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Electricity used for both necessary heating (infrared panels) and cooling (fans).

Centralized energy storage and fuse boxes

Passive heating features:
- Balconies don't block sun from entering the building

Indicatief BENG-label

Project: Housingcoop. Merwede
KENTALLEN

Gebruiksoppervlakte Ag	m ²	2430
Verliesoppervlakte/Volume	m ² /m ³	0.28
Ugemiddeld	W/m ² K	0.543
Glaspercentage*ZTA-zonwering	%	0.08709
% Natuurlijke ventilatie	%	85.7
% Daglicht	%	71.6
Elektriciteitsproductie /Ag	kWh/m ²	48.2

BENG indicatoren

	Energiebehoefte	< 90	38 kWh/m ²
	Primair fossiel energiegebruik	< 40	-1 kWh/m ²
	Aandeel hernieuwbare energie	> 30	101 %

Dit energielabel geeft een indicatie van de energiezuinigheid van het ontwerp.
Versie 3.06 20210416 Alleen te gebruiken voor onderwijsdoeleinden.

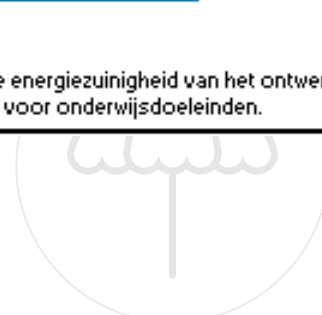
5236851



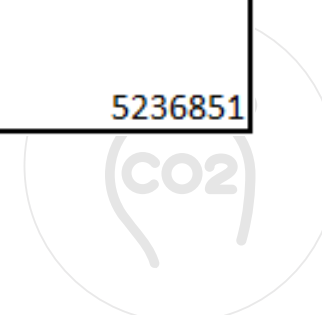
Human scale



Control & Identity



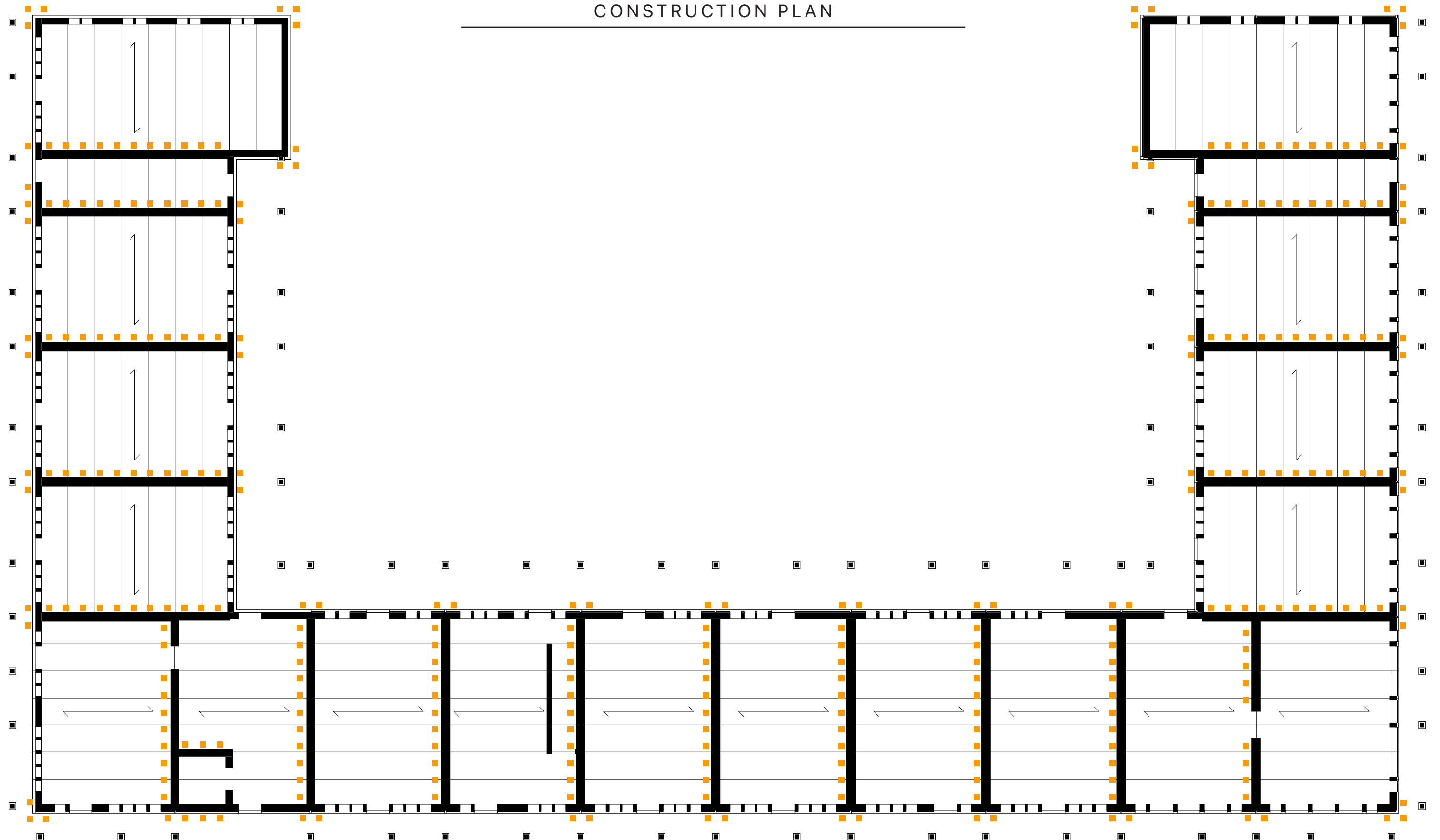
Pleasant micro climate



Smaller carbon footprint

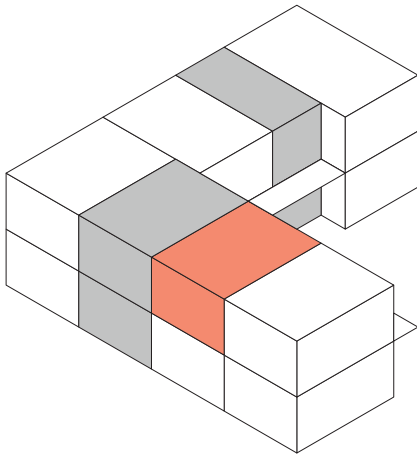
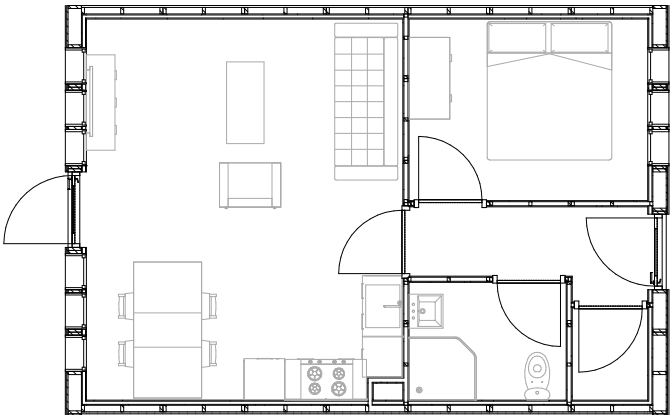


Biodiversity

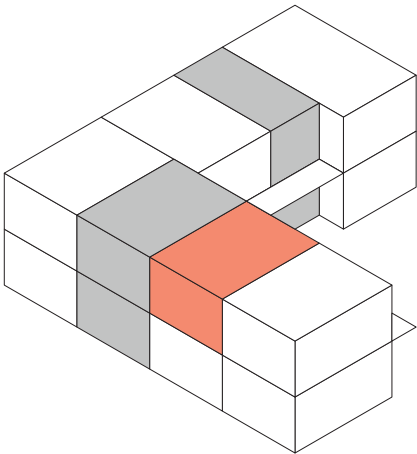
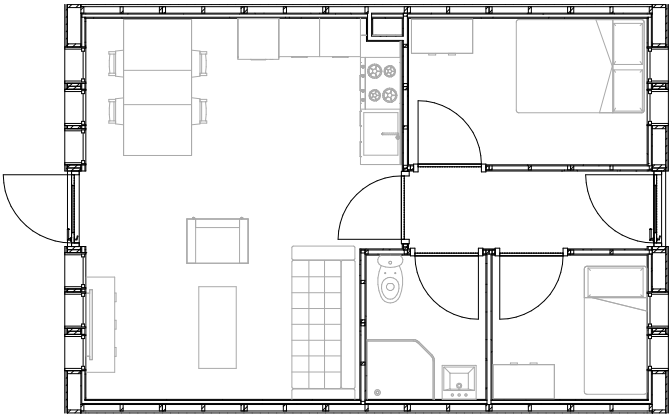


CATALOGUE DWELLING TYPOLOGIES

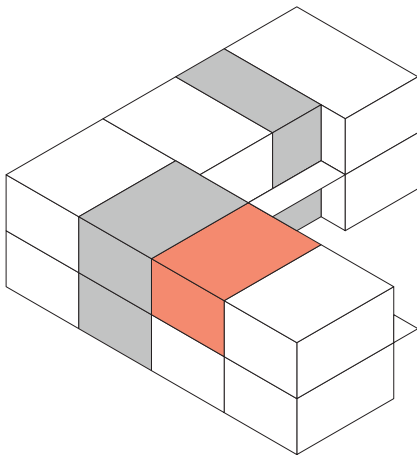
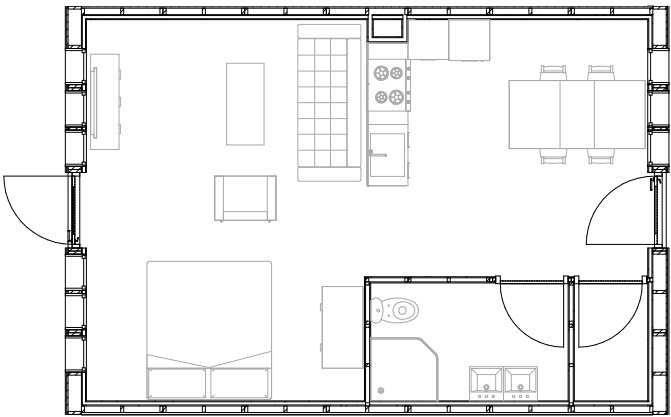
1-bedroom
apartment
(50m²)



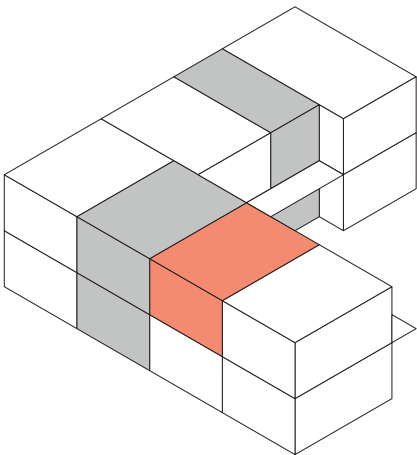
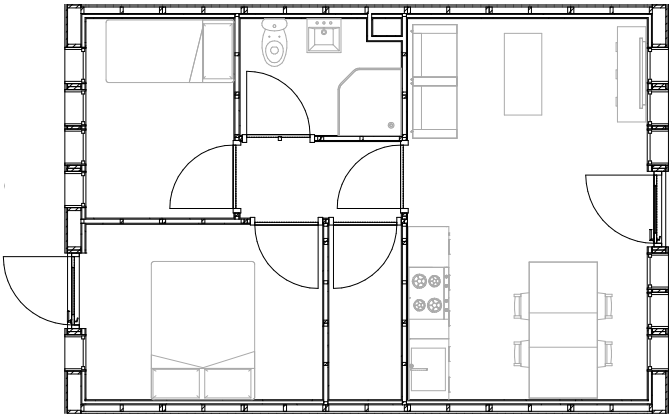
2-bedroom
apartment
(50m²)



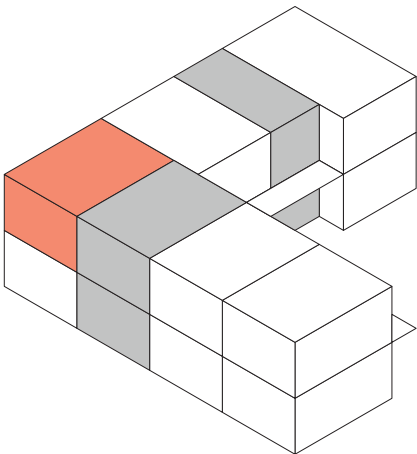
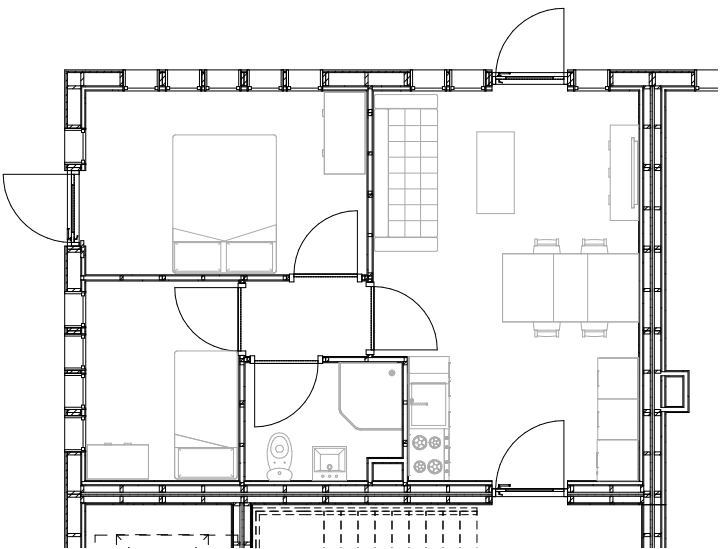
Studio
(50m²)



2-bedroom
apartment
(50m²)

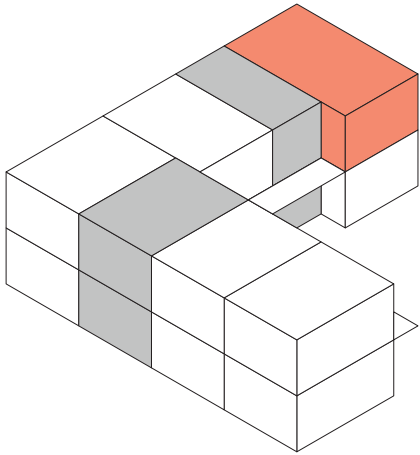
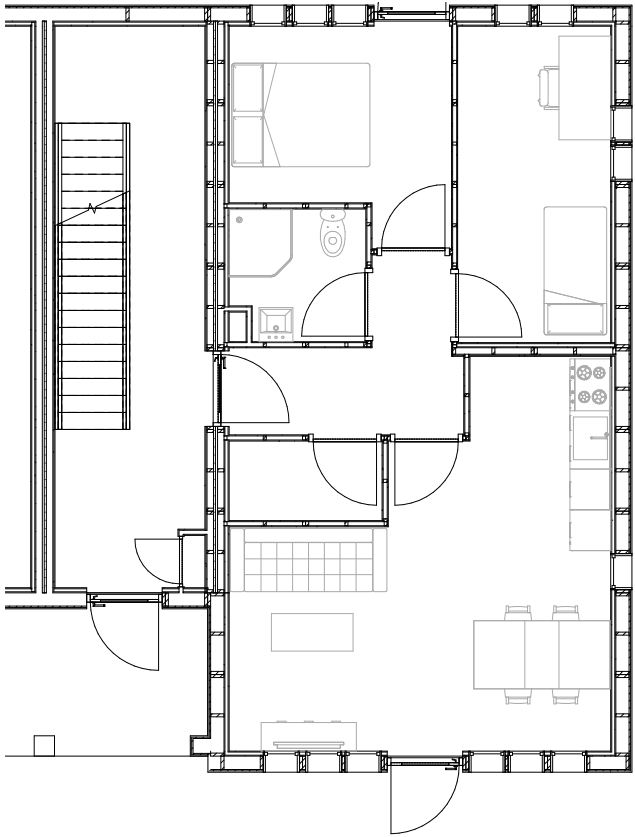


2-bedroom
corner
apartment
(50m²)

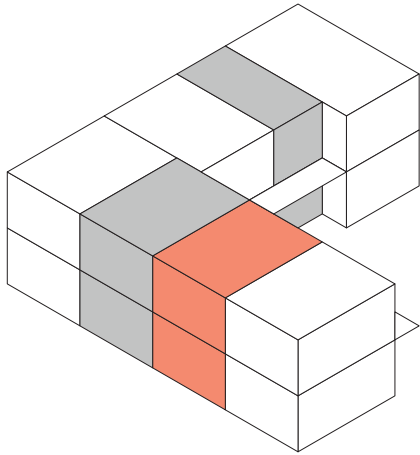
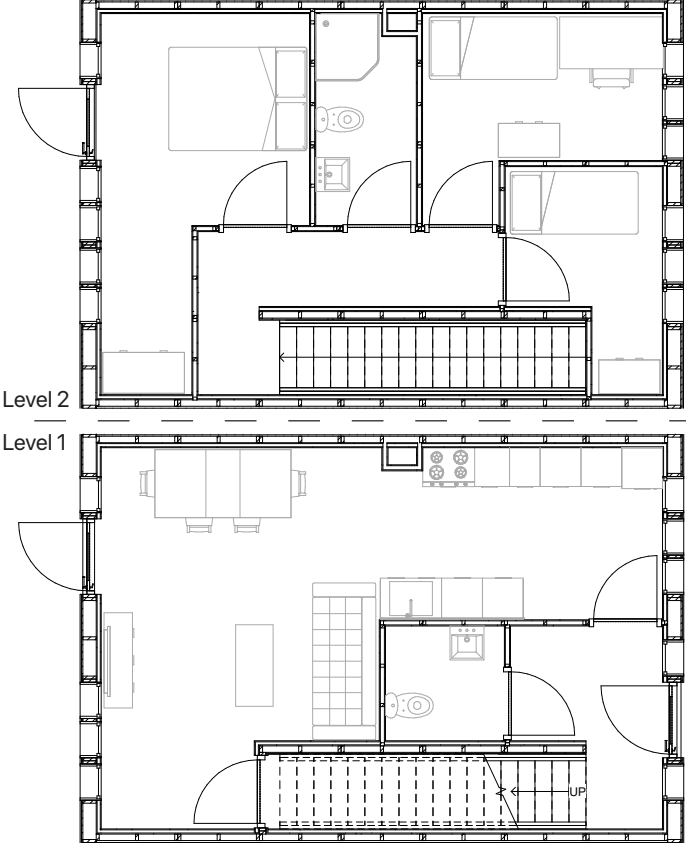


CATALOGUE DWELLING TYPOLOGIES

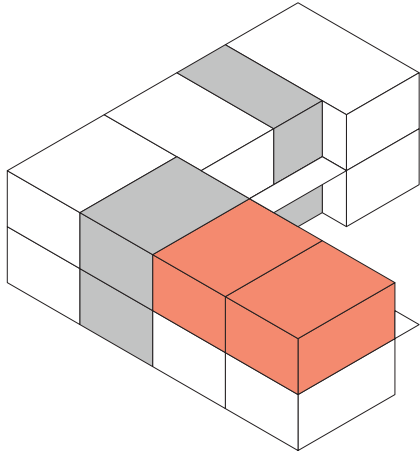
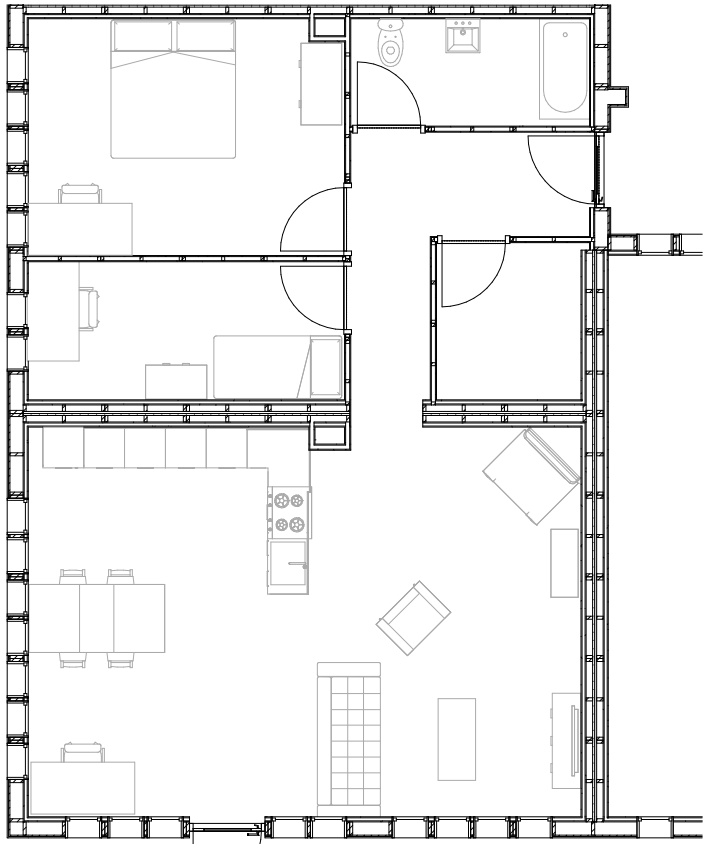
2-bedroom
corner
apartment
(65m²)



3-bedroom
maisonette
(100m²)



2-bedroom
corner
apartment
(100m²)



CATALOGUE FACADE ELEMENTS

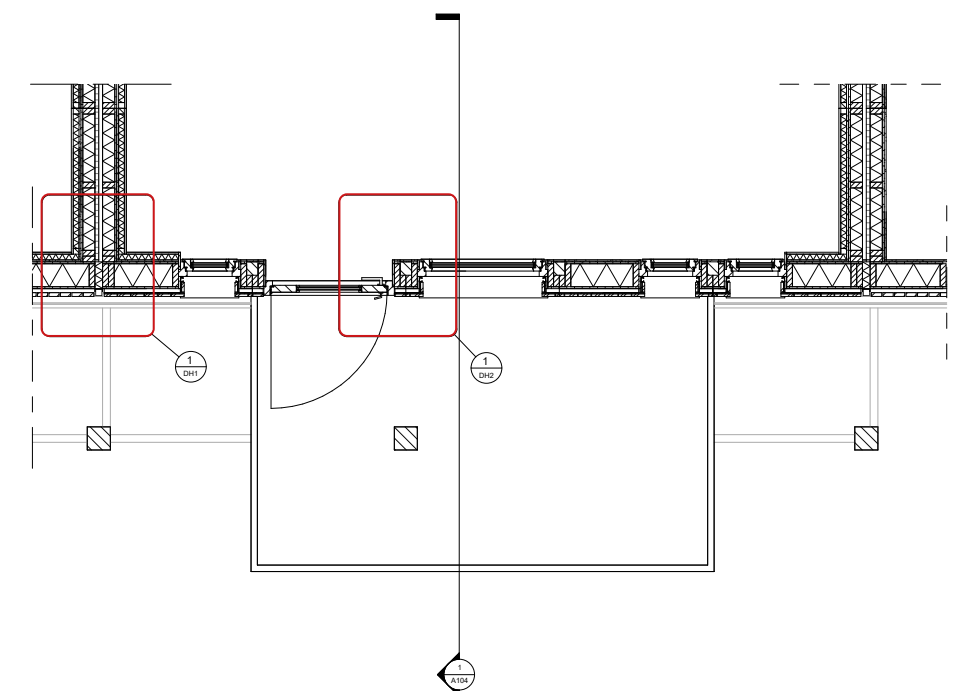
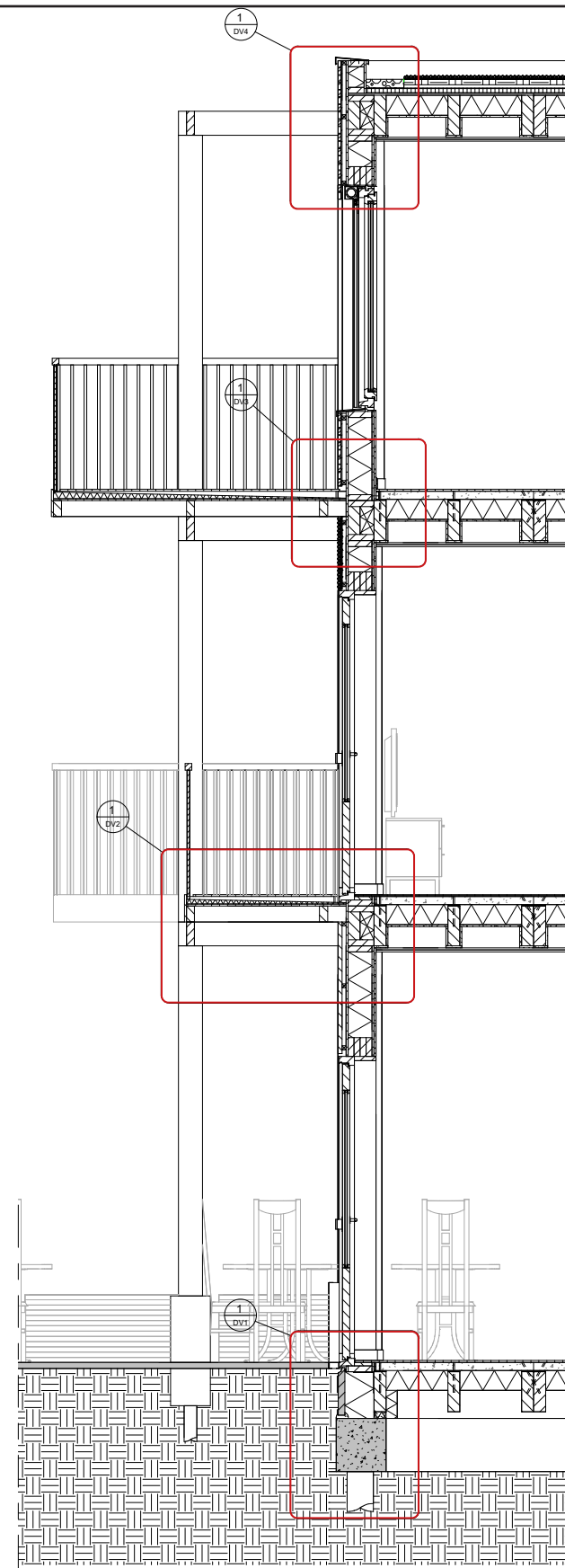
		1 small 	1 small tall 	2 small 	2 small tall 	1 big 	1 big tall / door 	1 big double 	1 big tall double / double door 	Cross section	Costs	Sustainability
Wooden cladding											Thermo pine: ± €35,-/m² ± 15-25 yr.	- Quick regrowth. - Steam & heat for treatment.
											Accoya: ± €75,-/m² ± 50 yr.	- Longest lifespan. - Chemical treatment.
											Hardwood: ± €50-150,-/m² ± 15-25 yr.	No treatment needed.
Brick strips											± €150-200,-/m² ± 60-100 yr.	- Used bricks on site can be recycled. - Longest life span. - Little to no maintenance.
Green facade											± €400-600,-/m² ± 15-25 yr.	Sempergreenwall®: - C2C Bronze. 2.3kg Co₂ > 1.7kg O₂/m²/yr. - Lowers temp. (3°C). - Reduces ambient noise. - Possible health effects. - Biodiversity (shrubs, perennials & ferns).

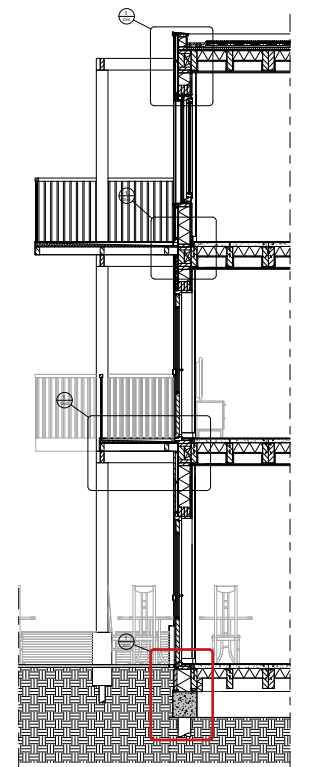
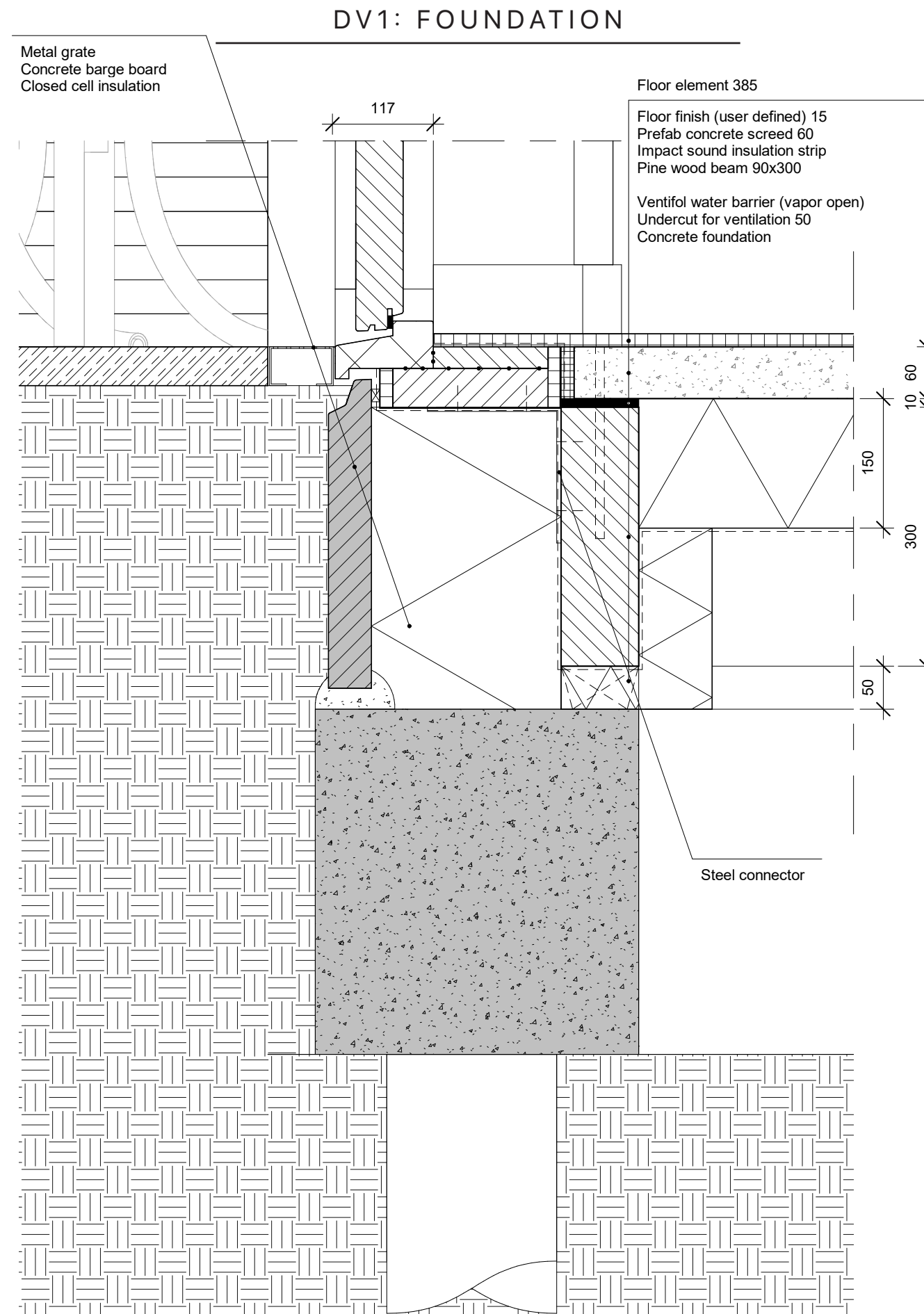
EXAMPLE OF POSSIBLE OUTCOME (ELEVATION)



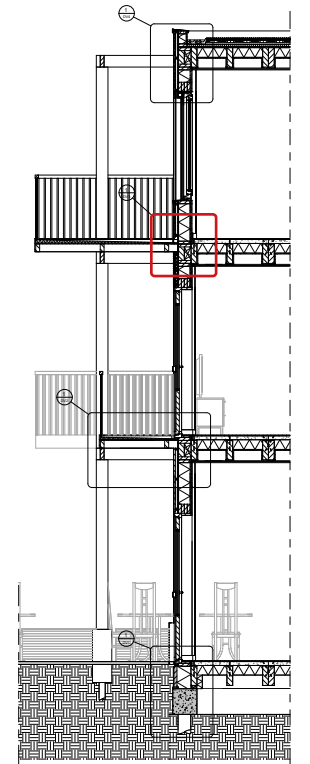
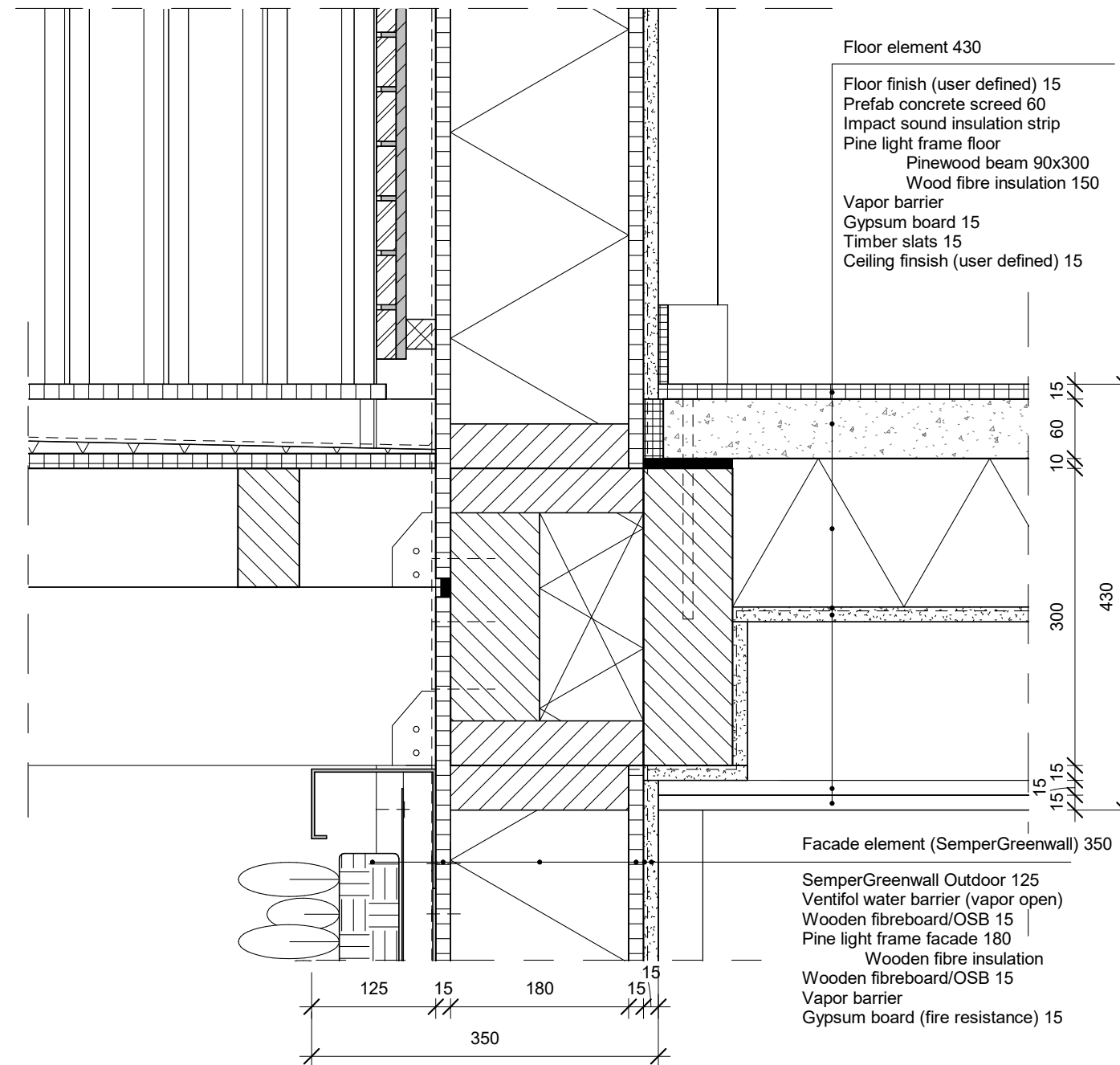


FACADE FRAGMENT

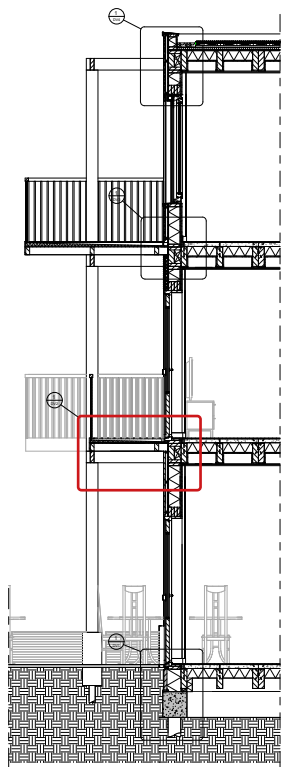
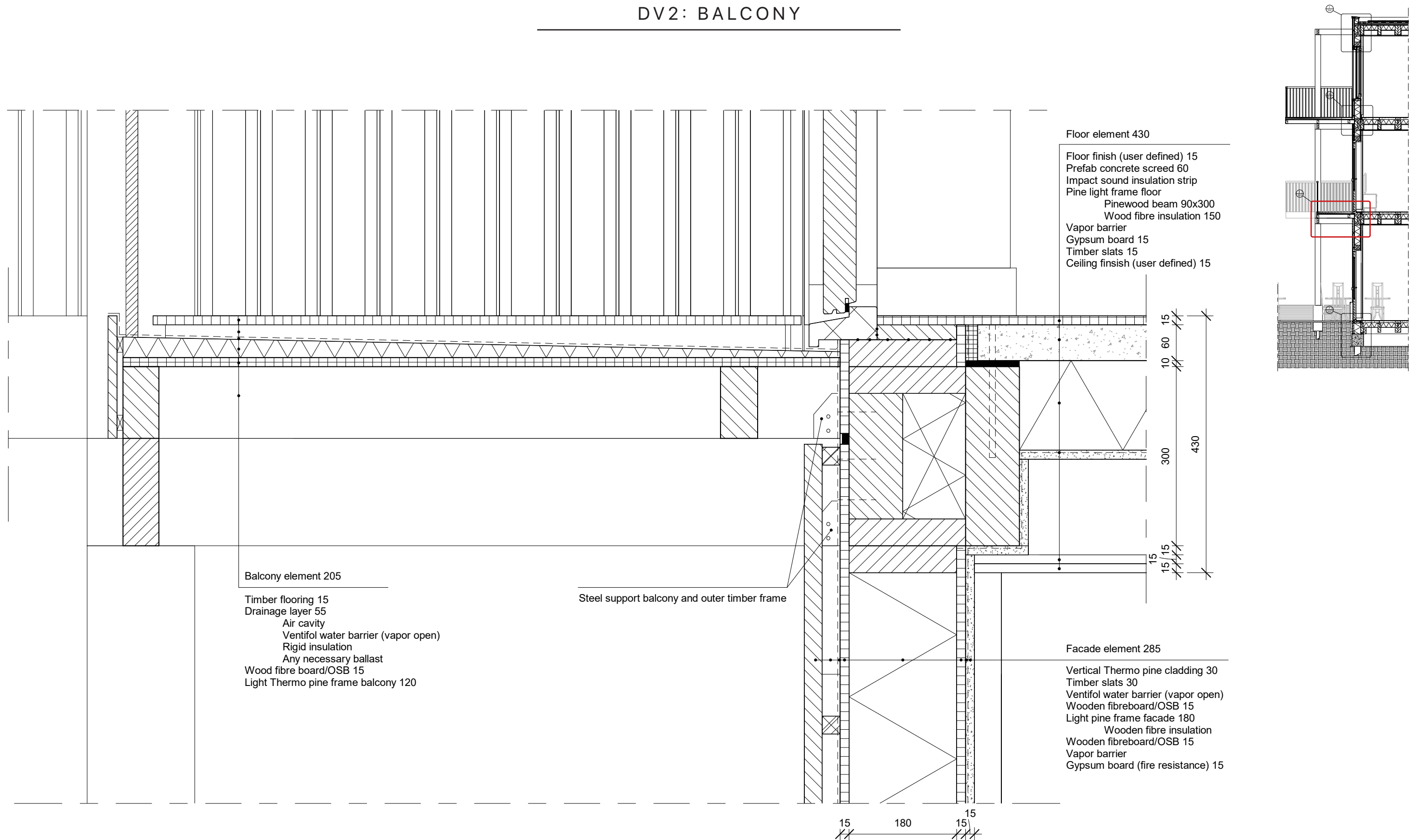




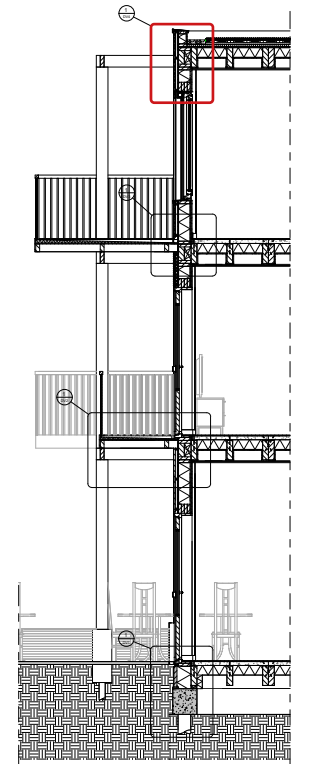
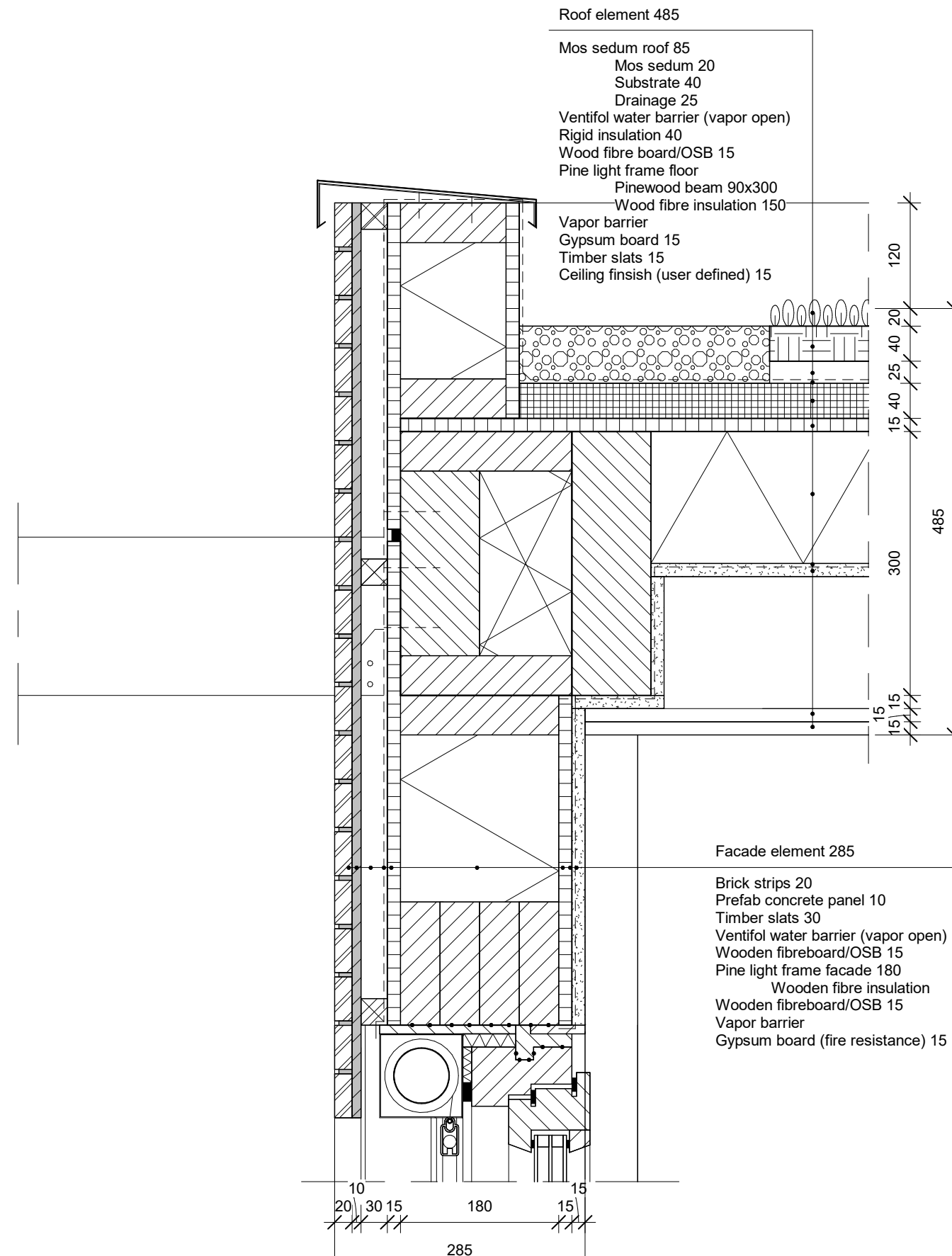
DV3: STANDARD FLOOR



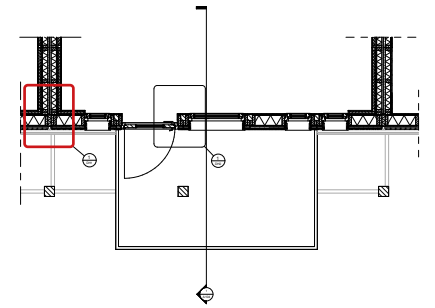
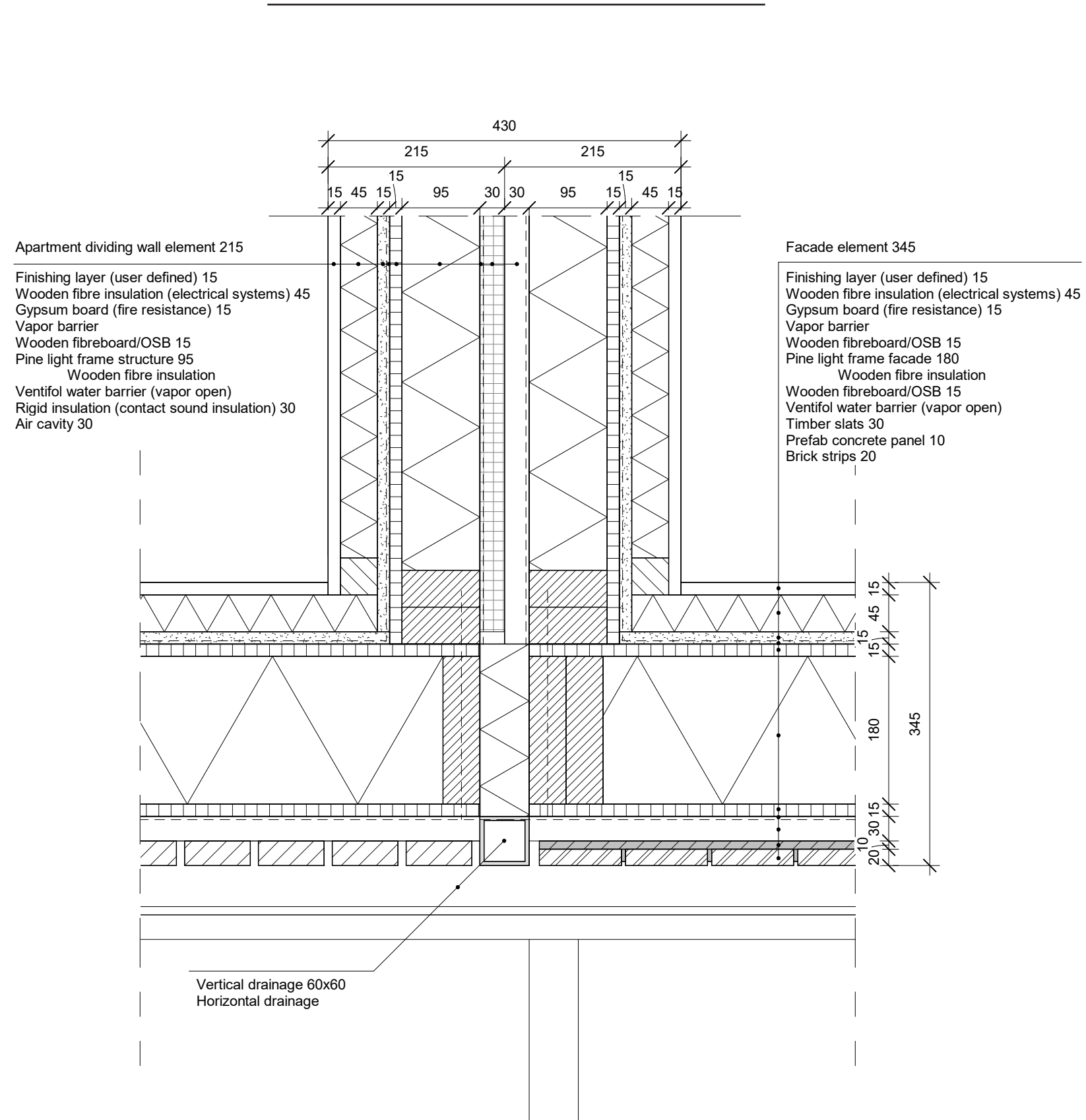
DV2: BALCONY



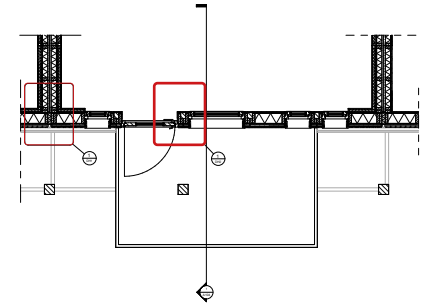
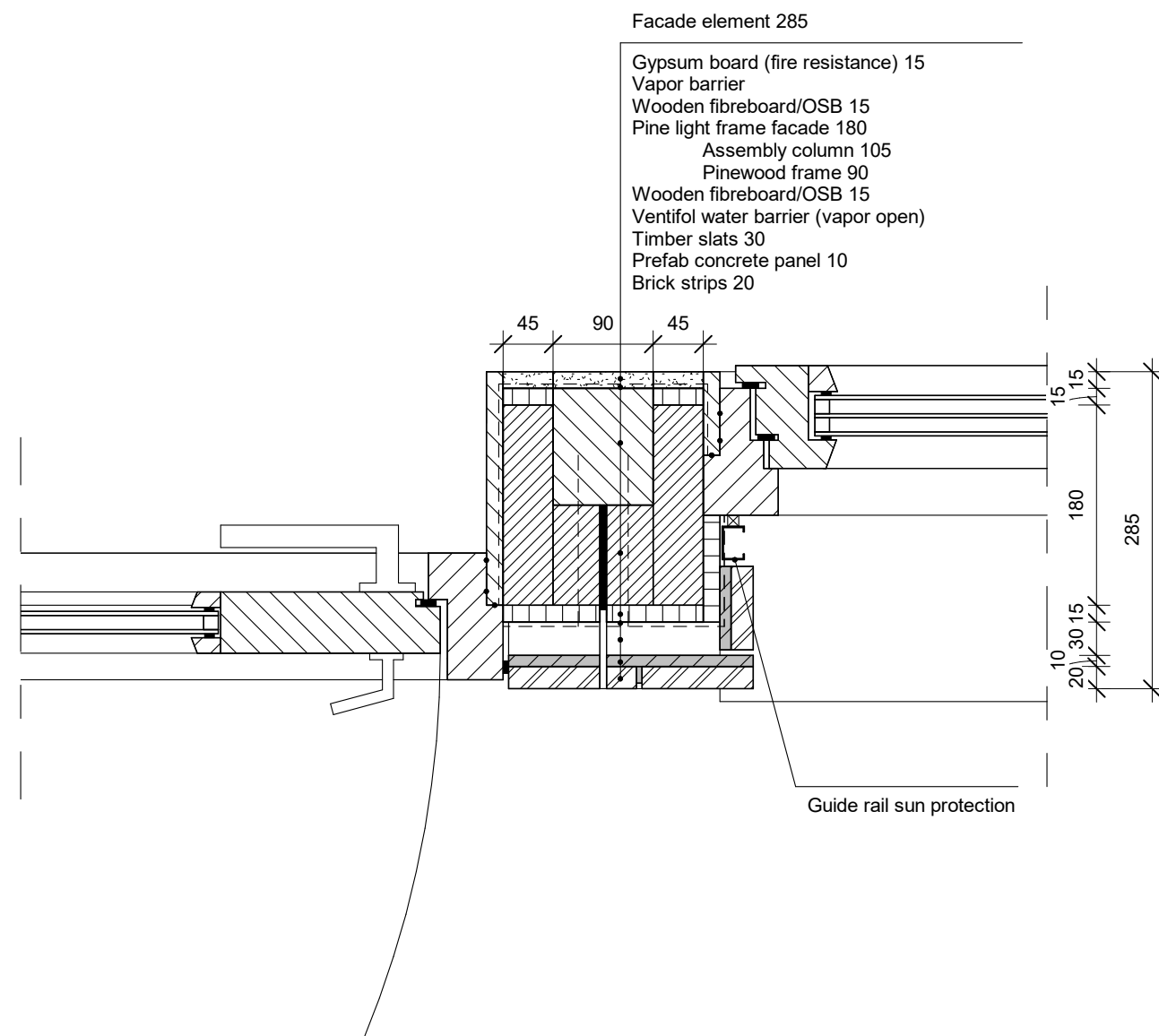
DV4: EDGE ROOF

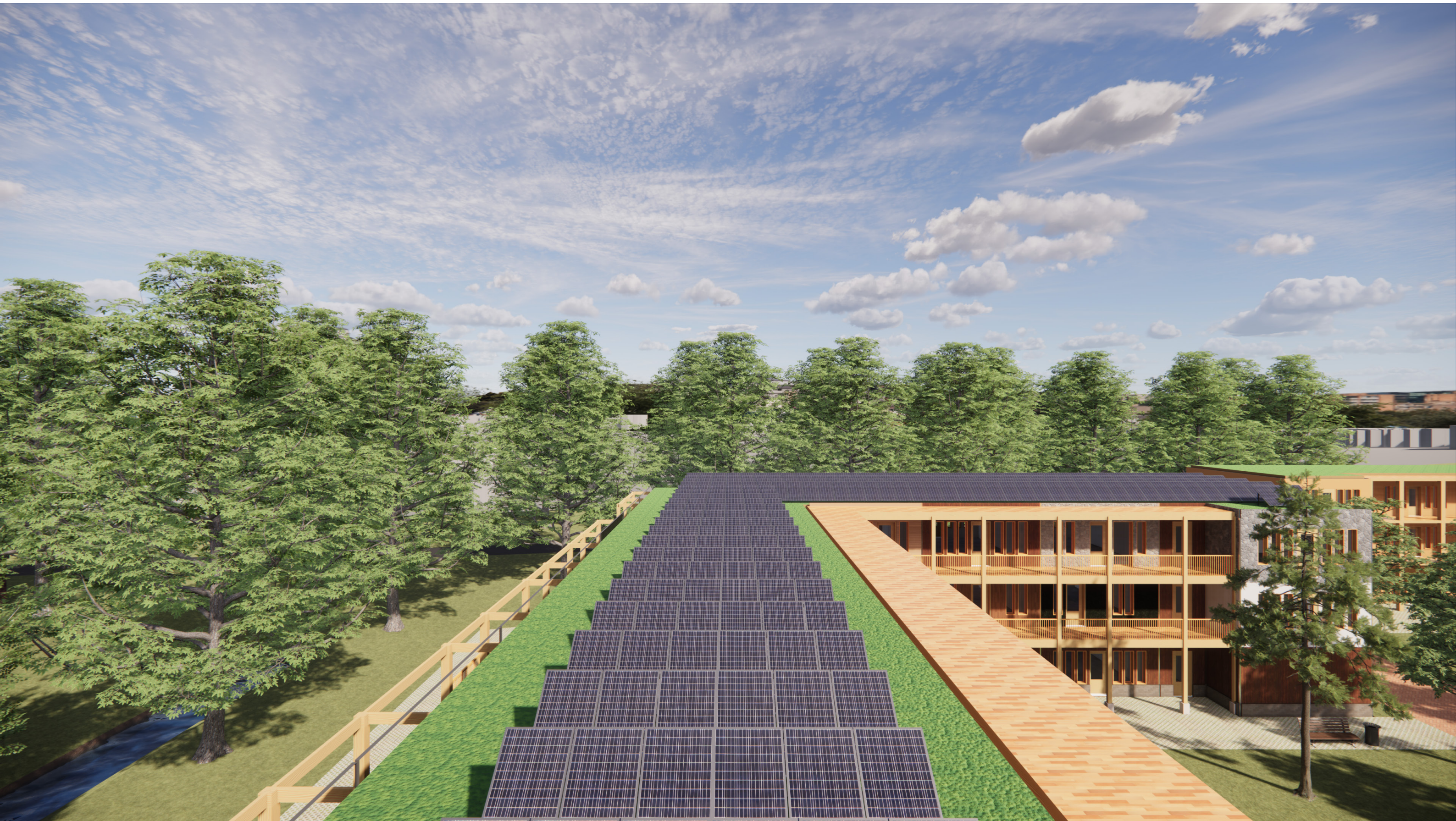


DH1: APARTMENT DIVIDING WALL



DH2: FACADE OPENING









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