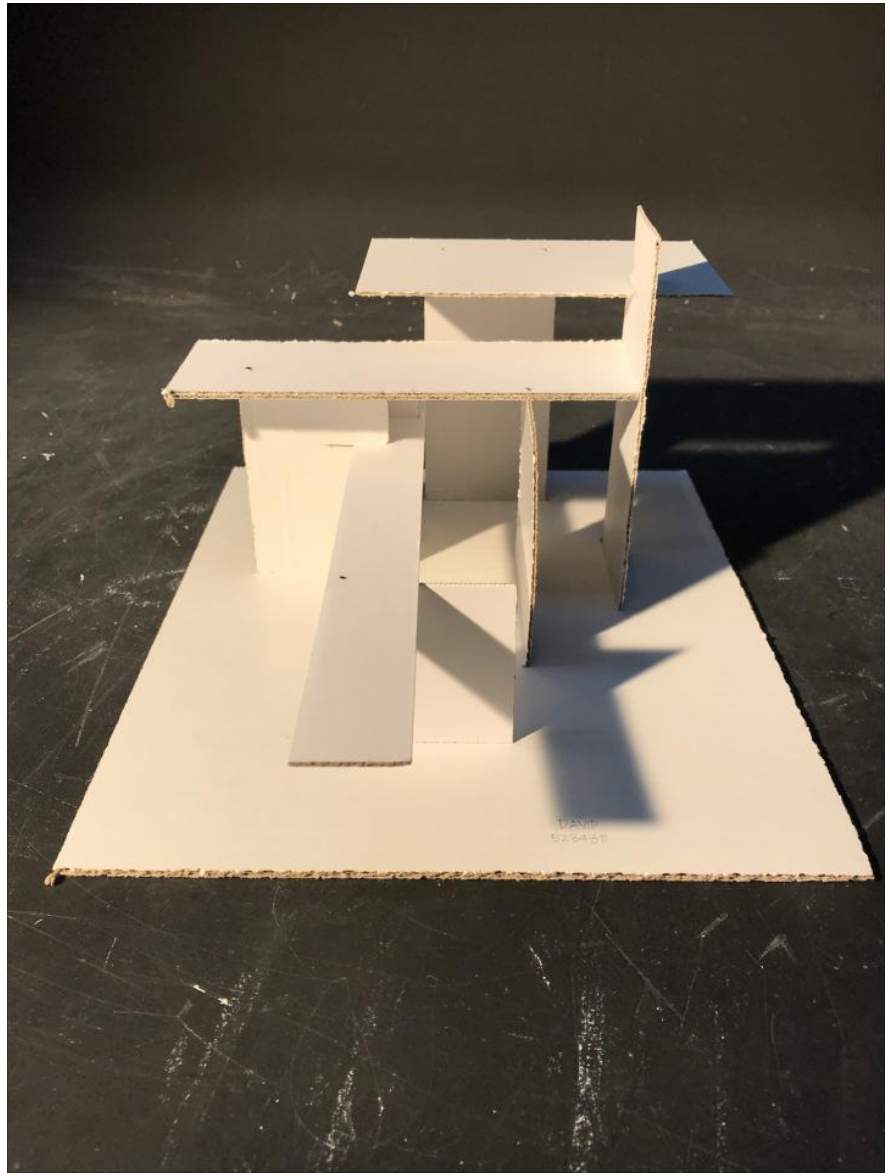
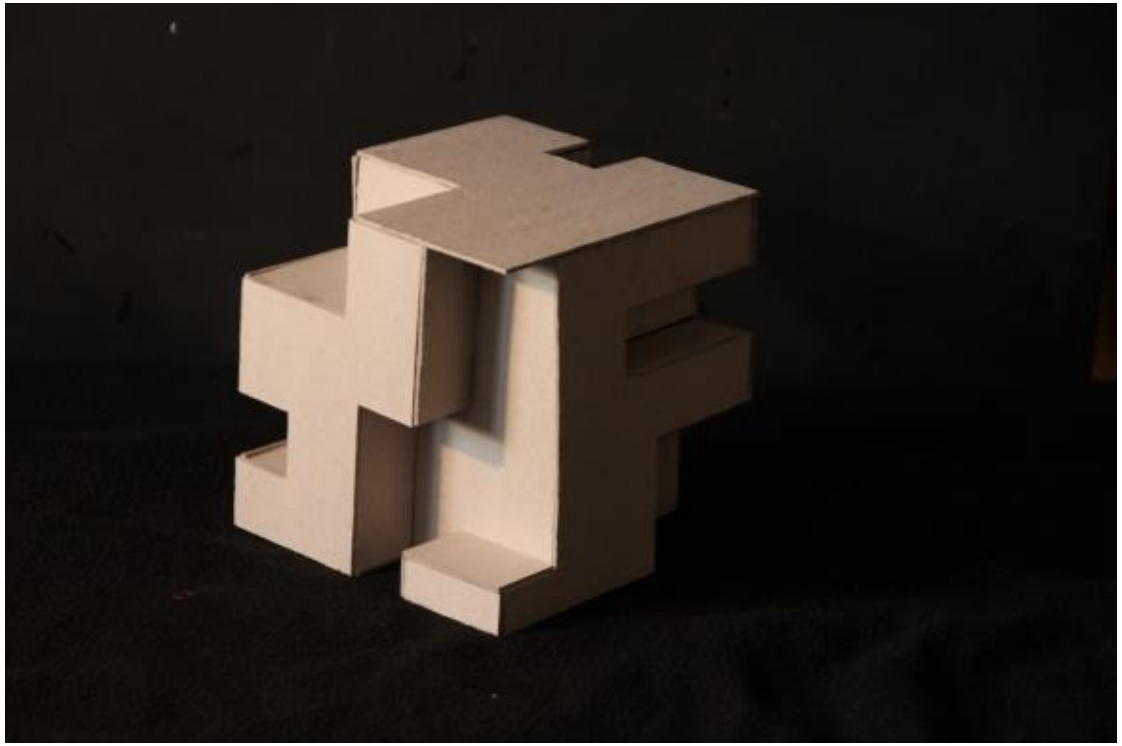
eCOvillage Vlietpoort

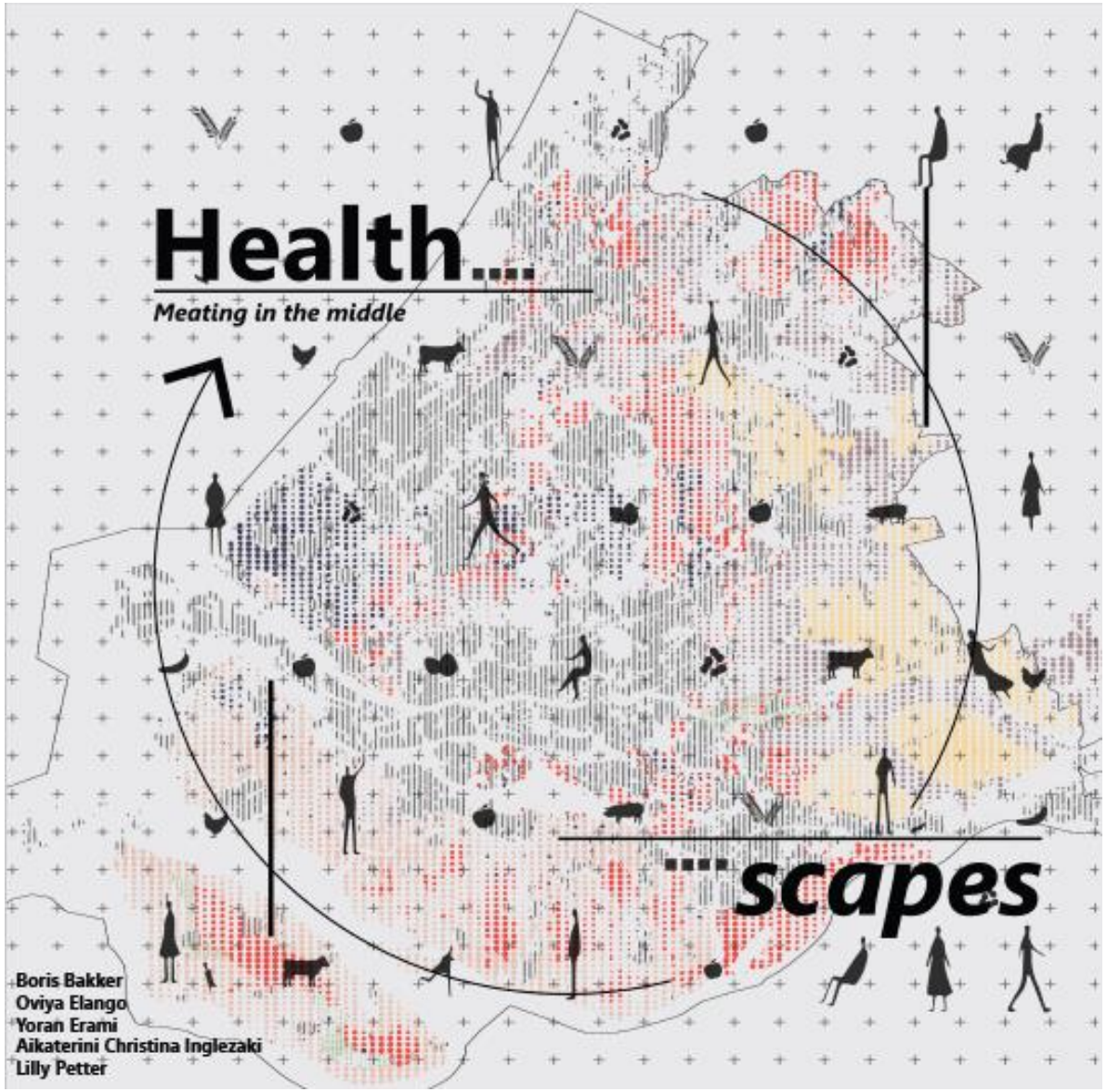
Yoran Erami - 4563271


TU Delft

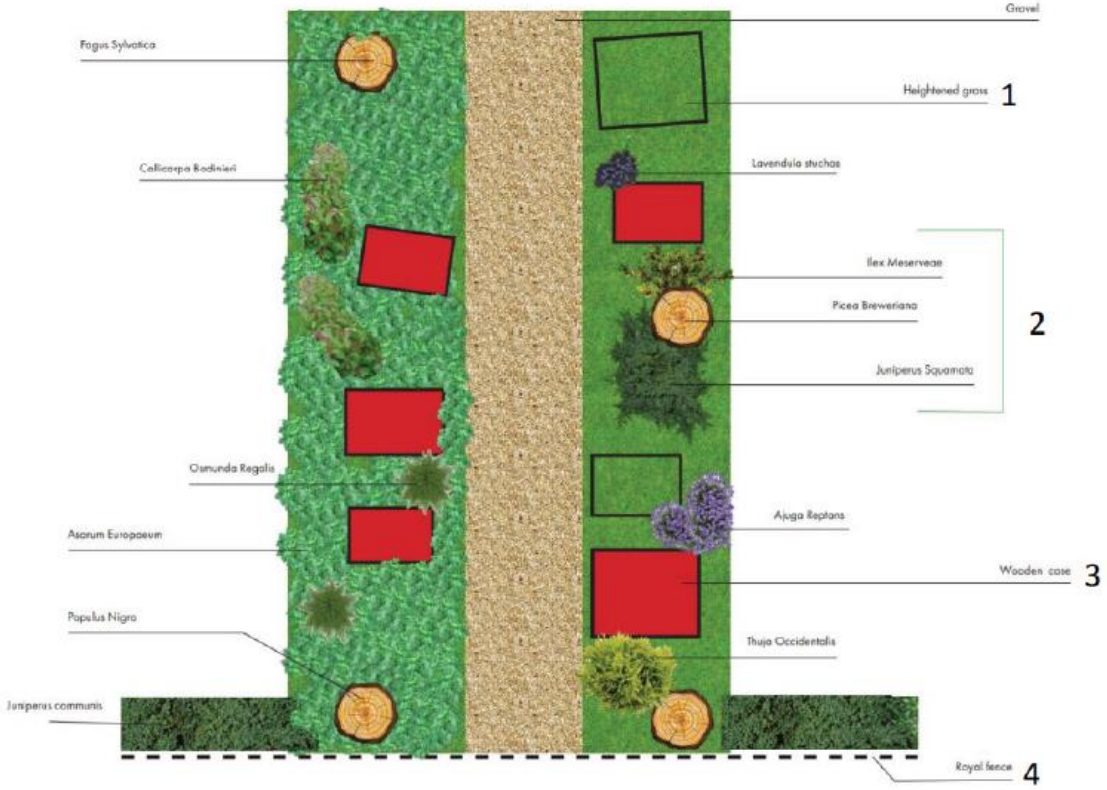


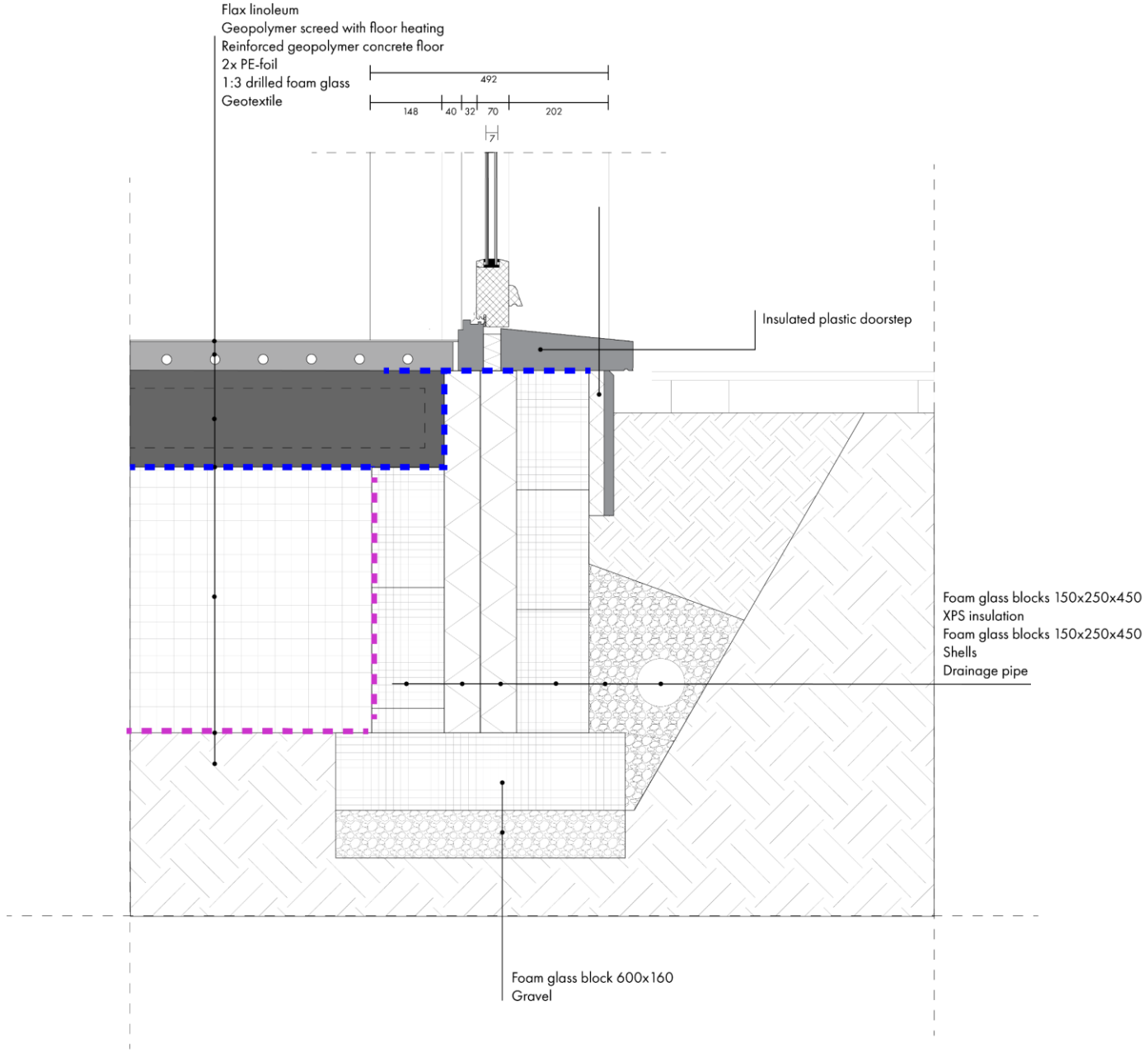


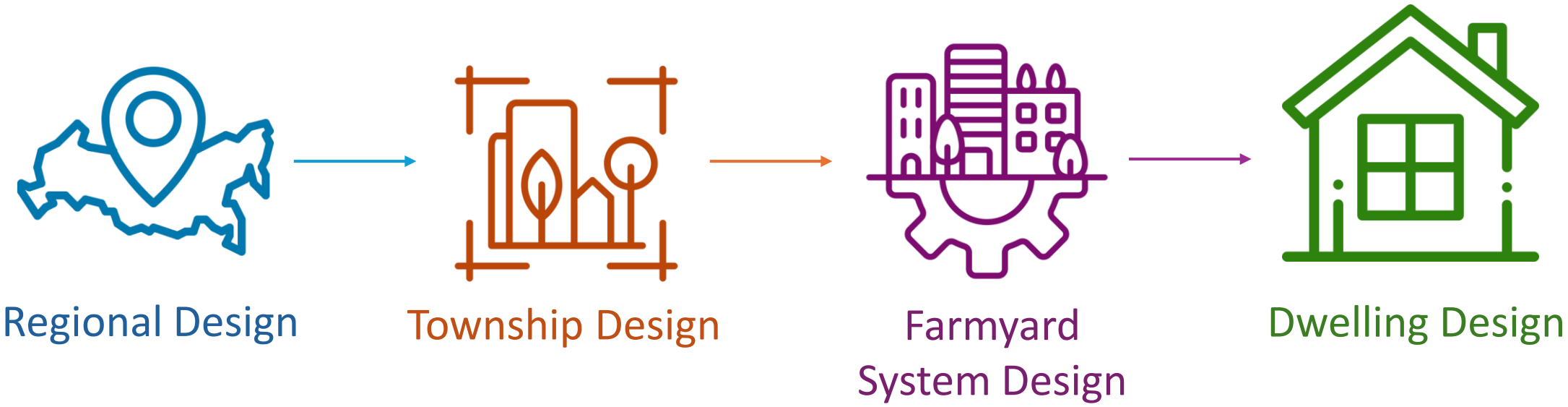
“Architecture is the art or practice of designing and building structures and especially habitable ones.”


Health....
Meating in the middle
....scapes
Boris Bakker
Oviya Elango
Yoran Erami
Aikaterini Christina Inglezaki
Lilly Petter

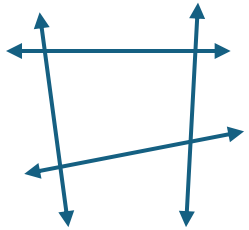

Existing plants
Grass field
Gravel
Fence
Soft edged, inner planting area
Hedge
Old tree
Removed tree
New tree
Grave
Exposed clean water cellar
Building


Gravel
Fagus Sylvatica
Heightened grass
1
Calliceapa Bodinieri
Lavendula stechas
Ilex Meserveae
Picea Breweriana
2
Juniperus Squamata
Osmunda Regalis
Ajuga Reptans
Asarum Europaeum
Wooden case
3
Populus Nigra
Thuja Occidentalis
Juniperus communis
Royal fence
4


Flax linoleum
Geopolymer screed with floor heating
Reinforced geopolymer concrete floor
2x PE-foil
1:3 drilled foam glass
Geotextile
492
148
40
32
70
202
7
Insulated plastic doorstep
Foam glass blocks 150x250x450
XPS insulation
Foam glass blocks 150x250x450
Shells
Drainage pipe
Foam glass block 600x160
Gravel

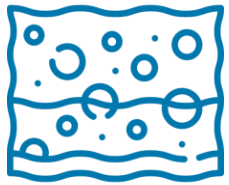

Regional Design
Township Design
Farmyard System Design
Dwelling Design

Regional Design



Improved watersystem

Soil & Water

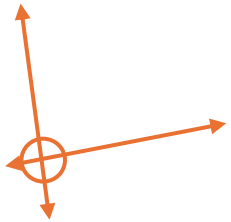


Soil as a sponge

Soil as carbon storage

Township Design

Soil & Water



Location

Resource system

Re-interpretation

Farmyard System Design

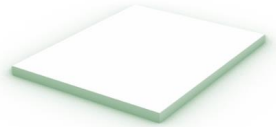
Clean Water

Energy

Resource system

Non-toxic

Dwelling Design



Circular foundation

Biobased shell

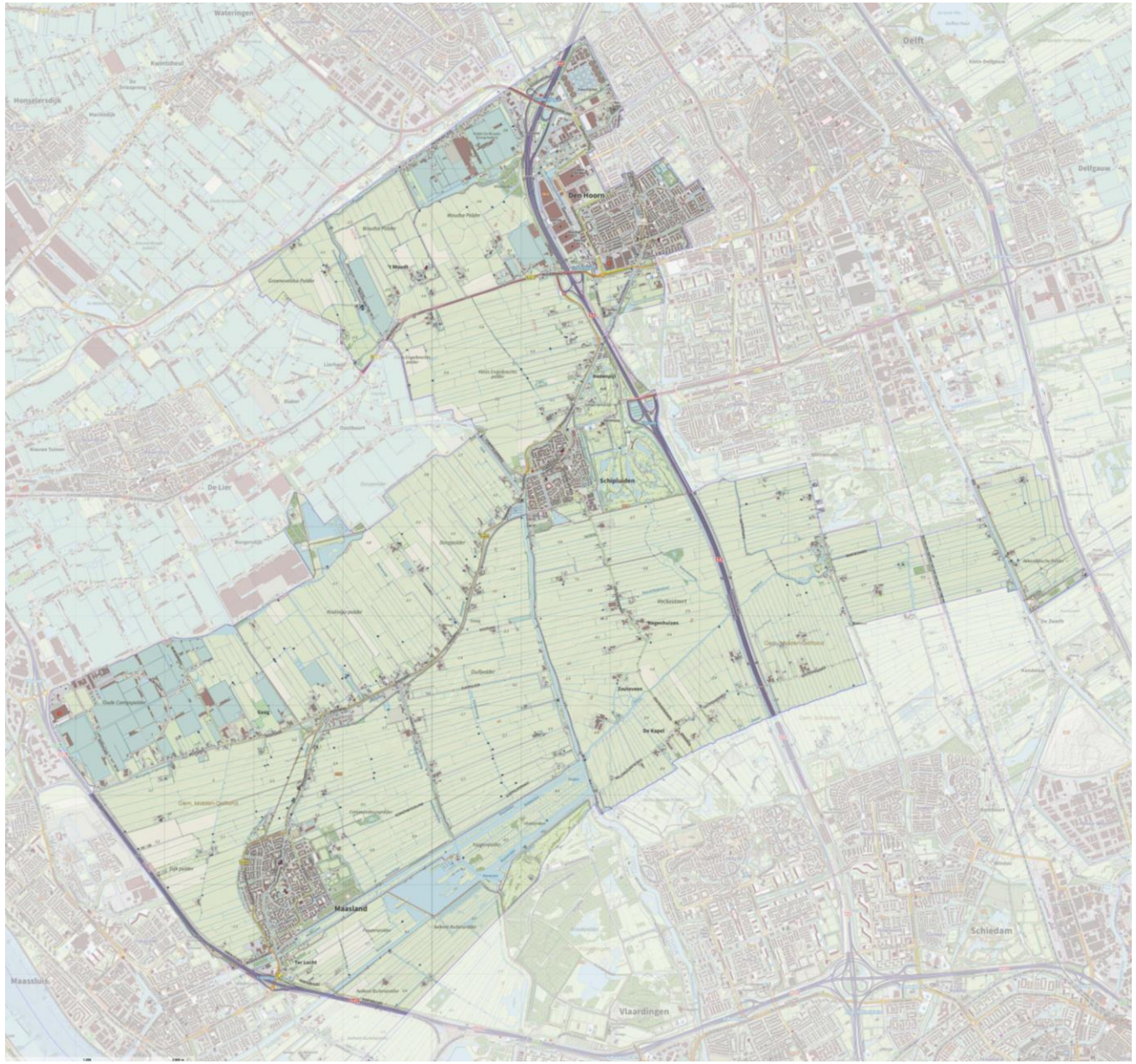
Volume

Shape

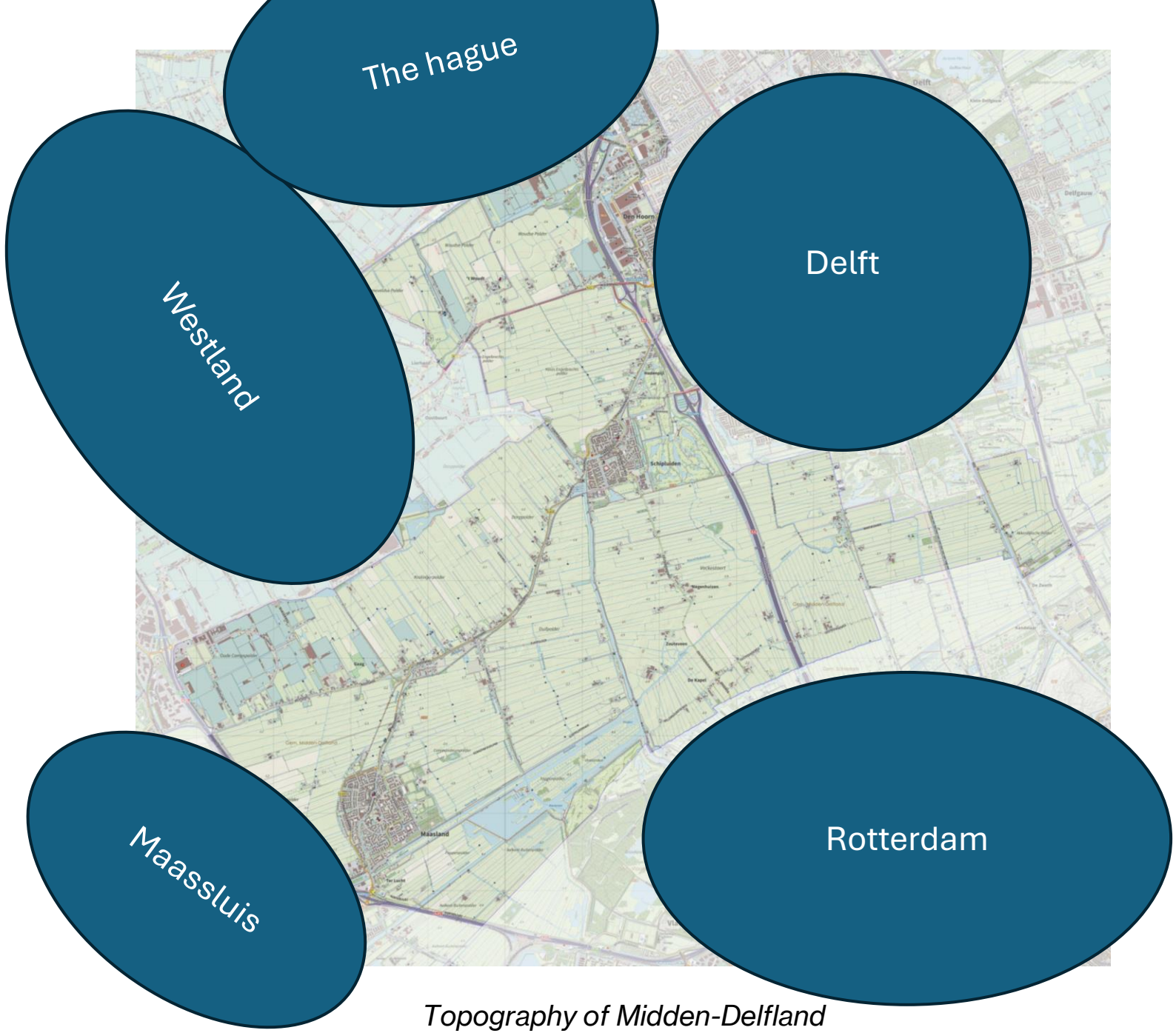
Flexibility & Placemaking

Regional Design

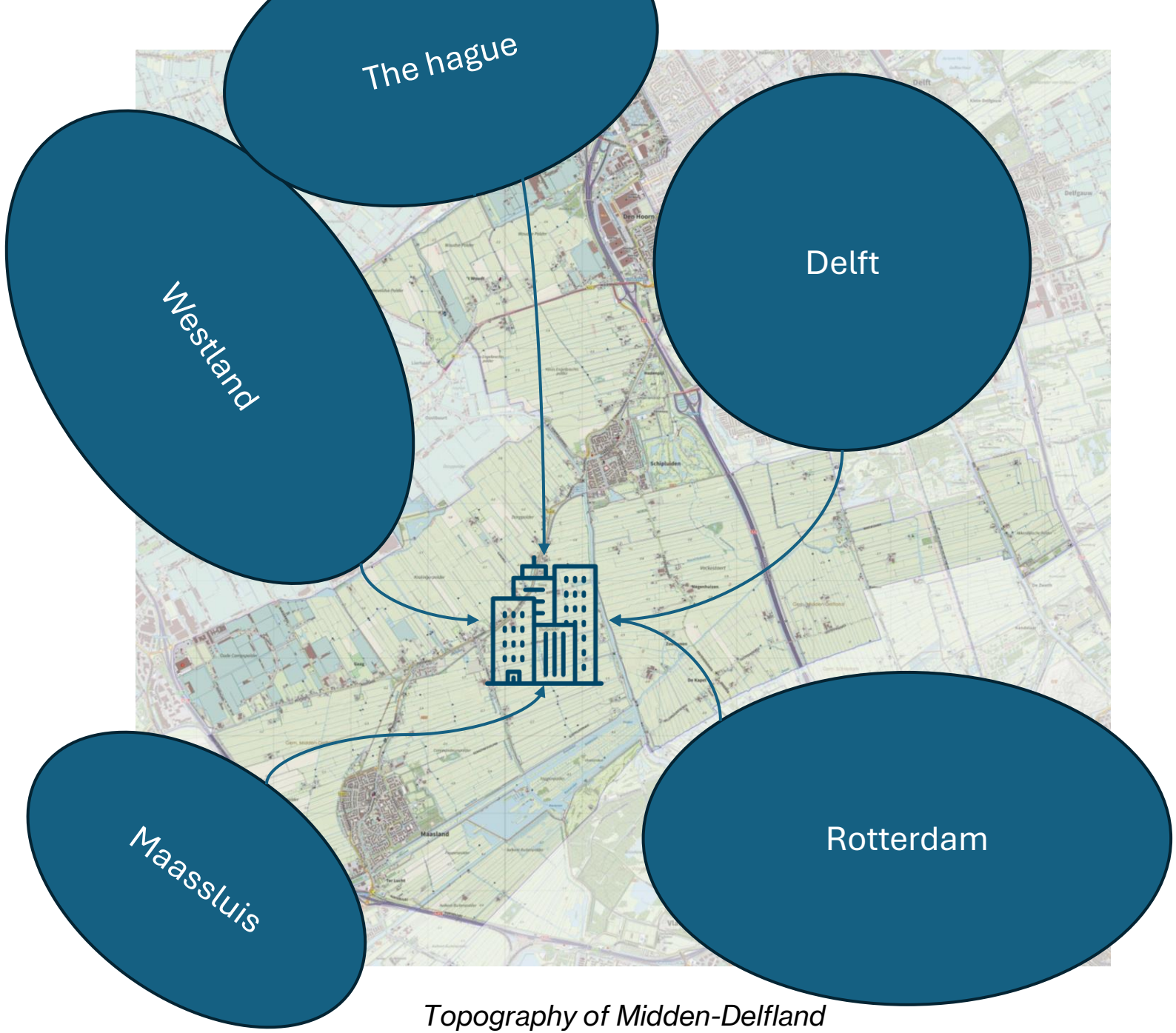
Midden-Delfland 2100, by ZUS



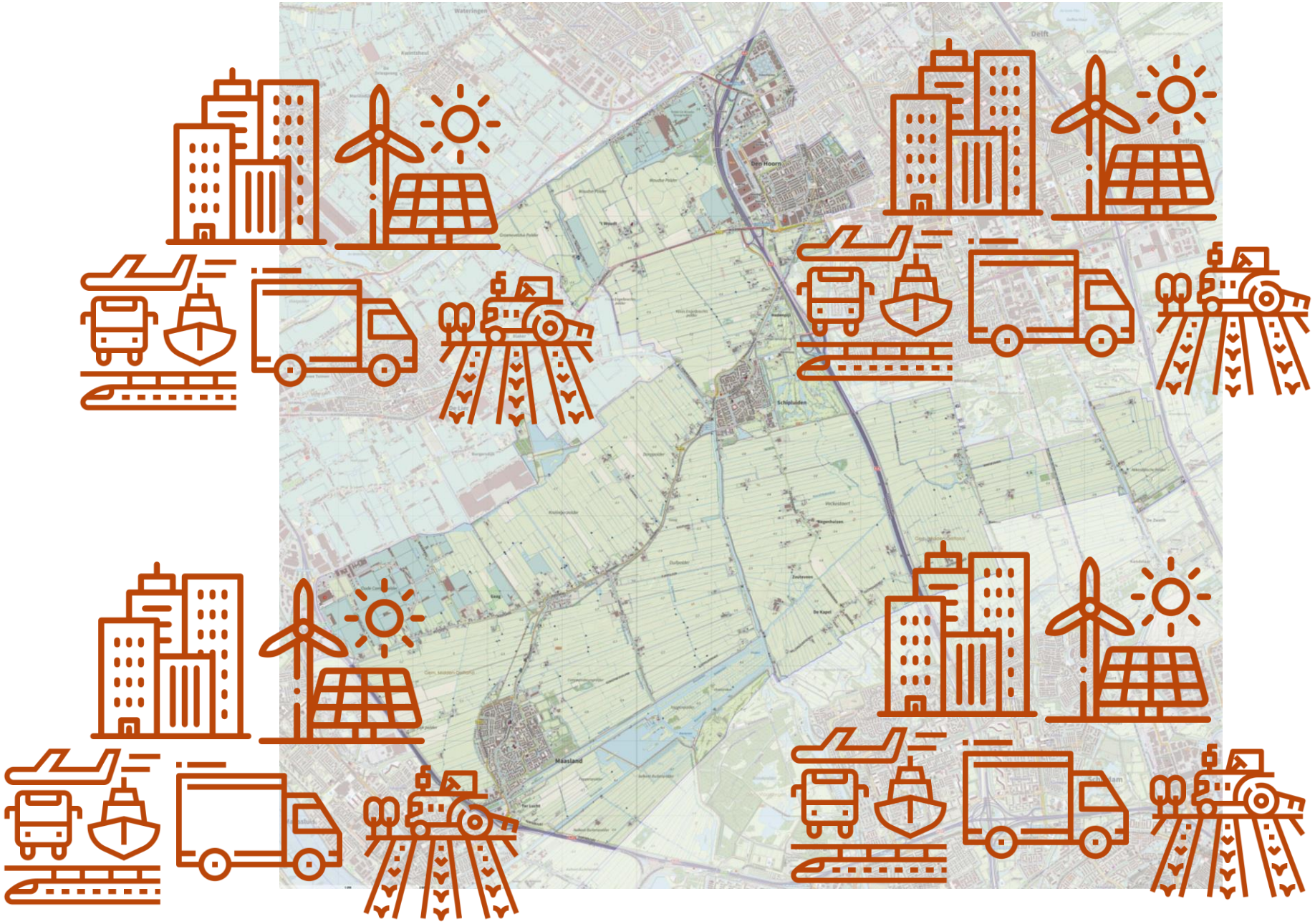
Topography of Midden-Delfland



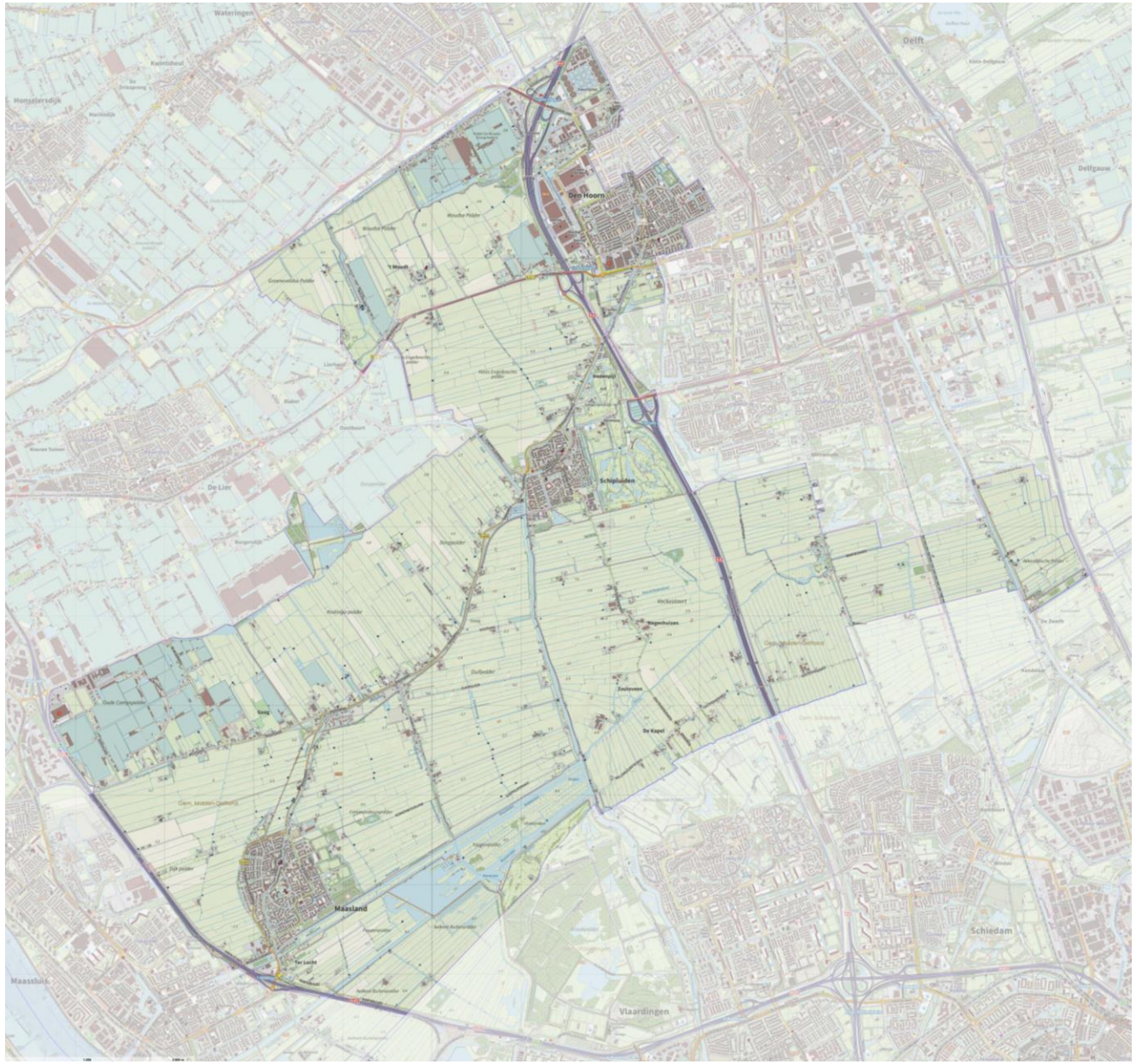
Topography of Midden-Delfland



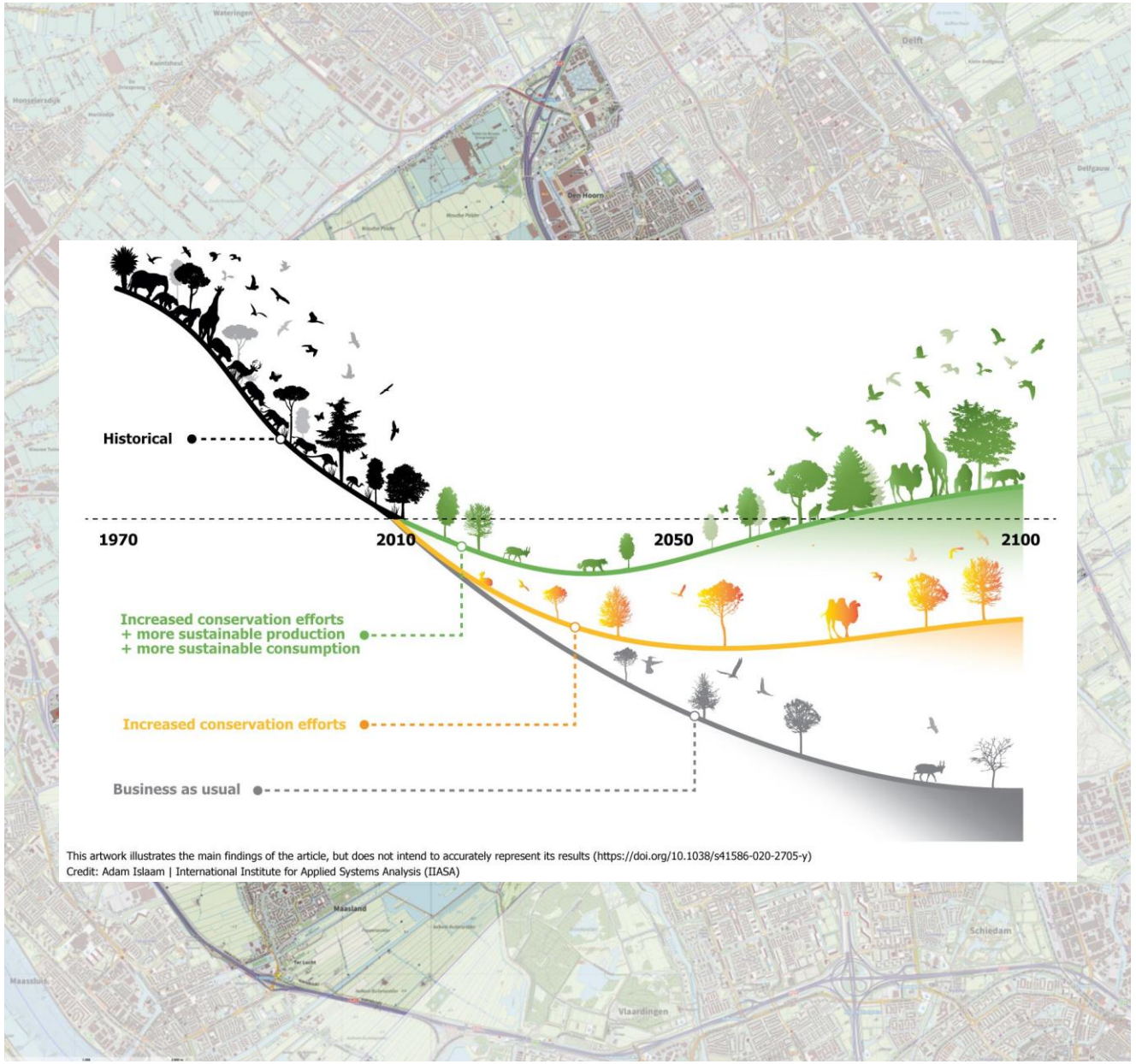
Topography of Midden-Delfland



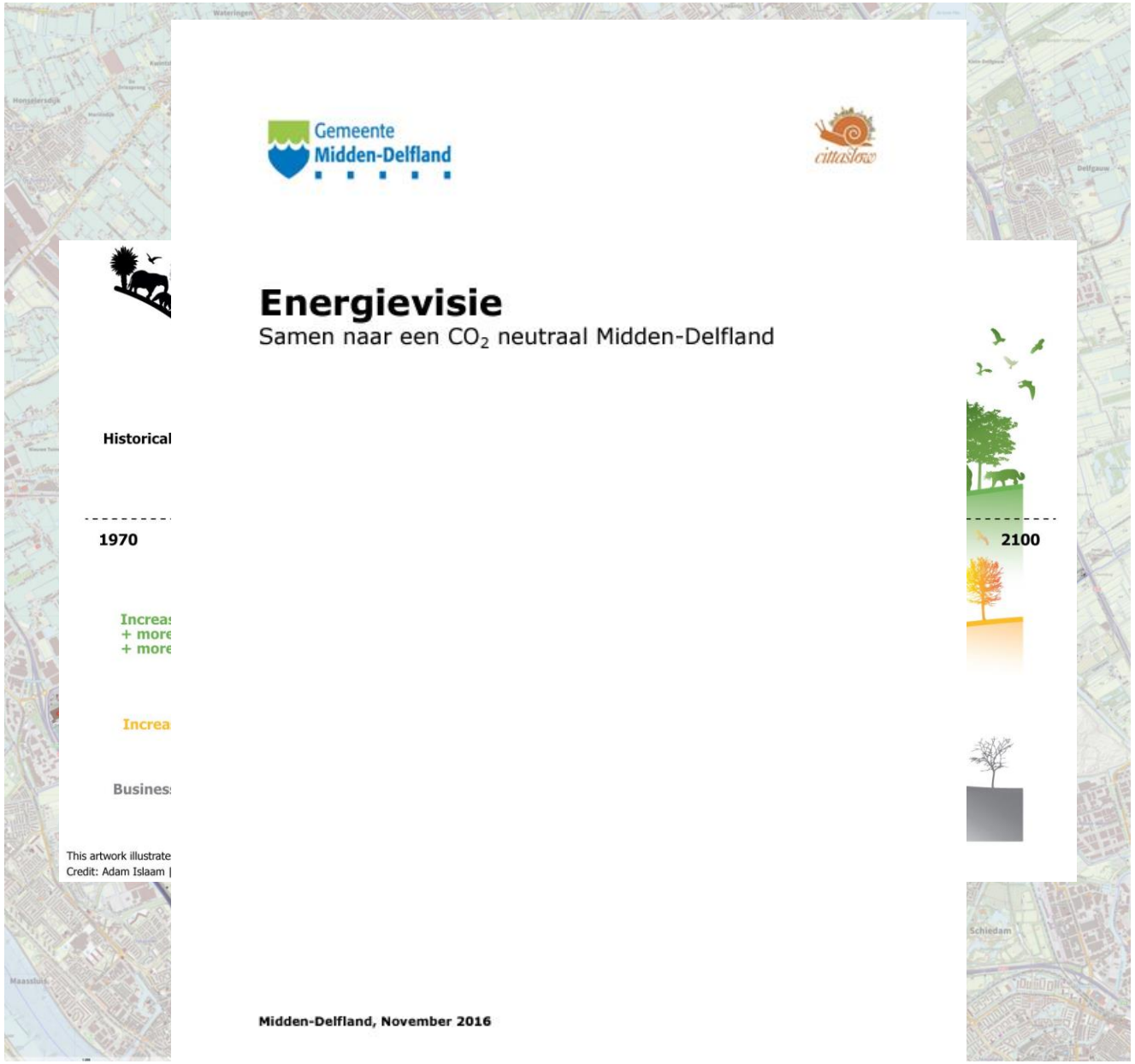
Topography of Midden-Delfland



Topography of Midden-Delfland

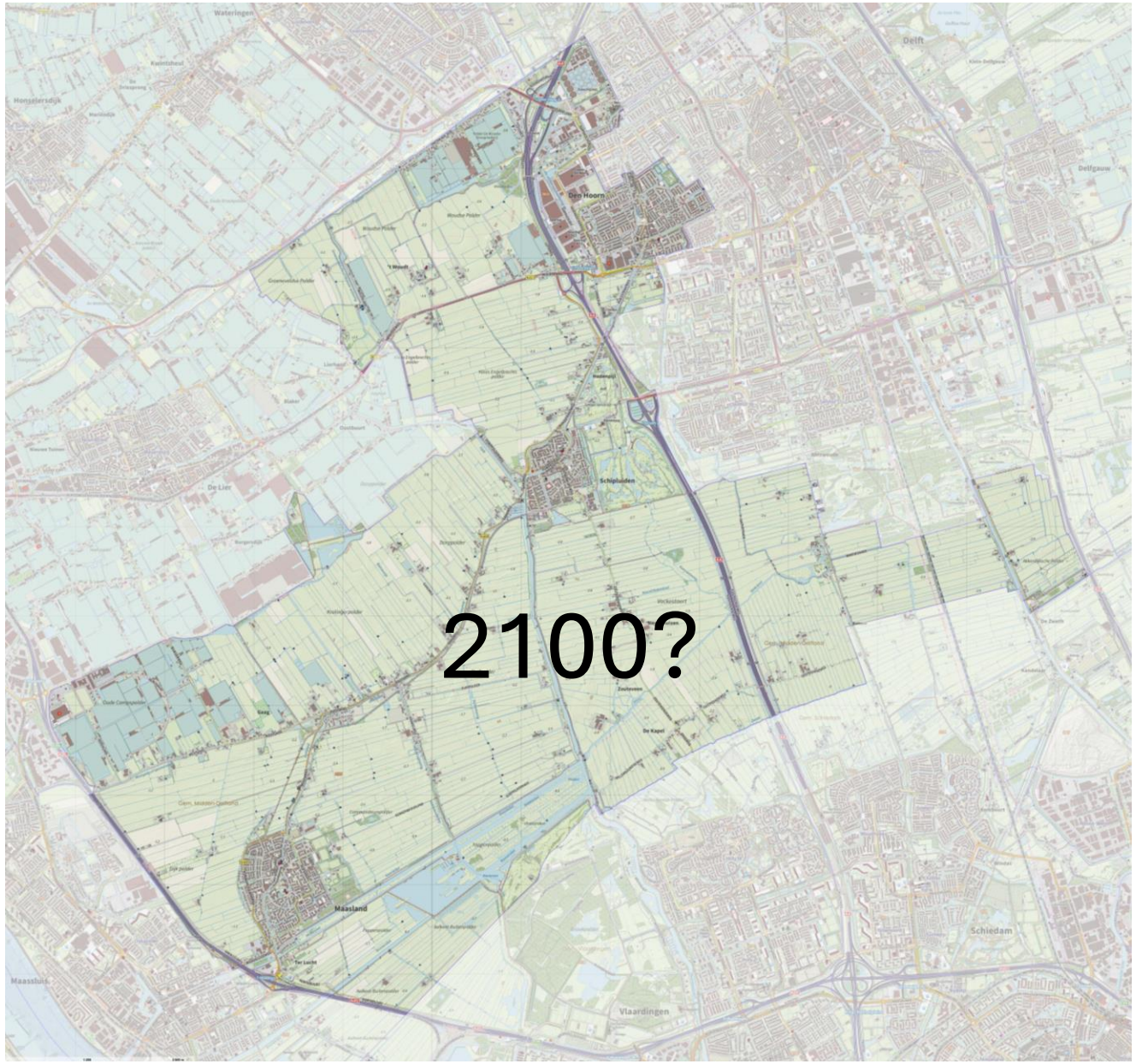


Topography of Midden-Delfland



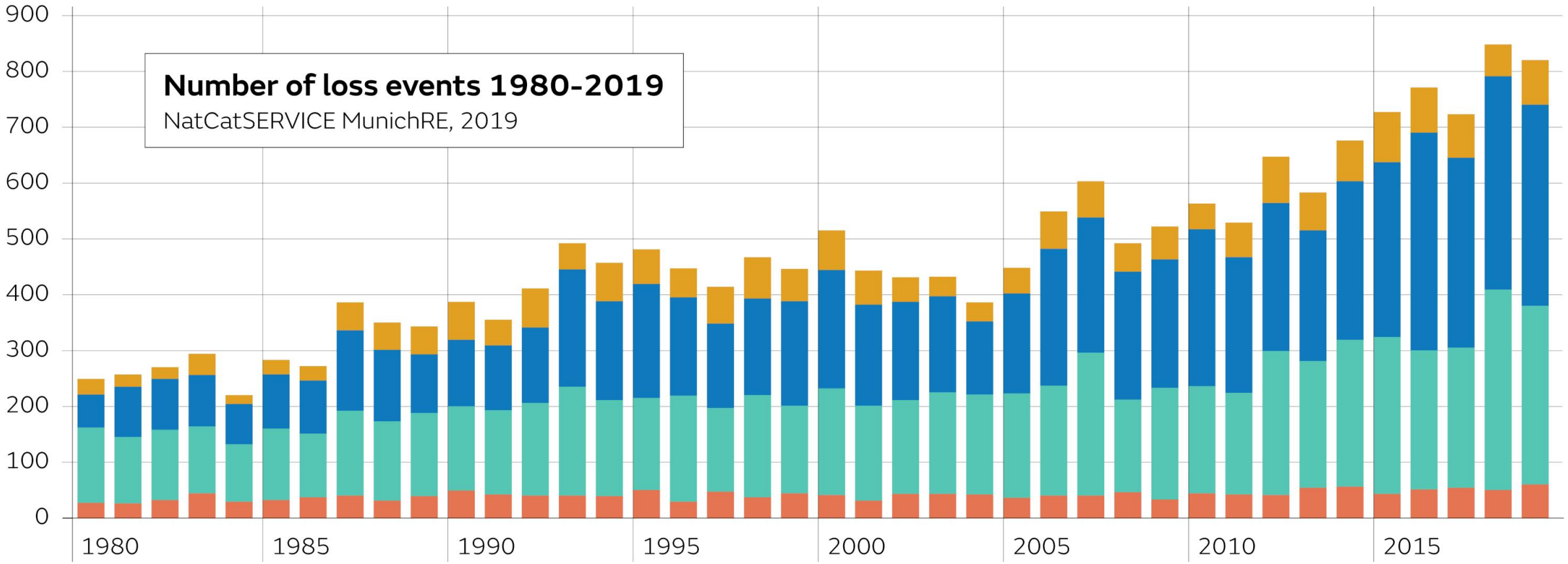
Topography of Midden-Delfland

Topography of Midden-Delfland



Topography of Midden-Delfland

Are extremes becoming more frequent?

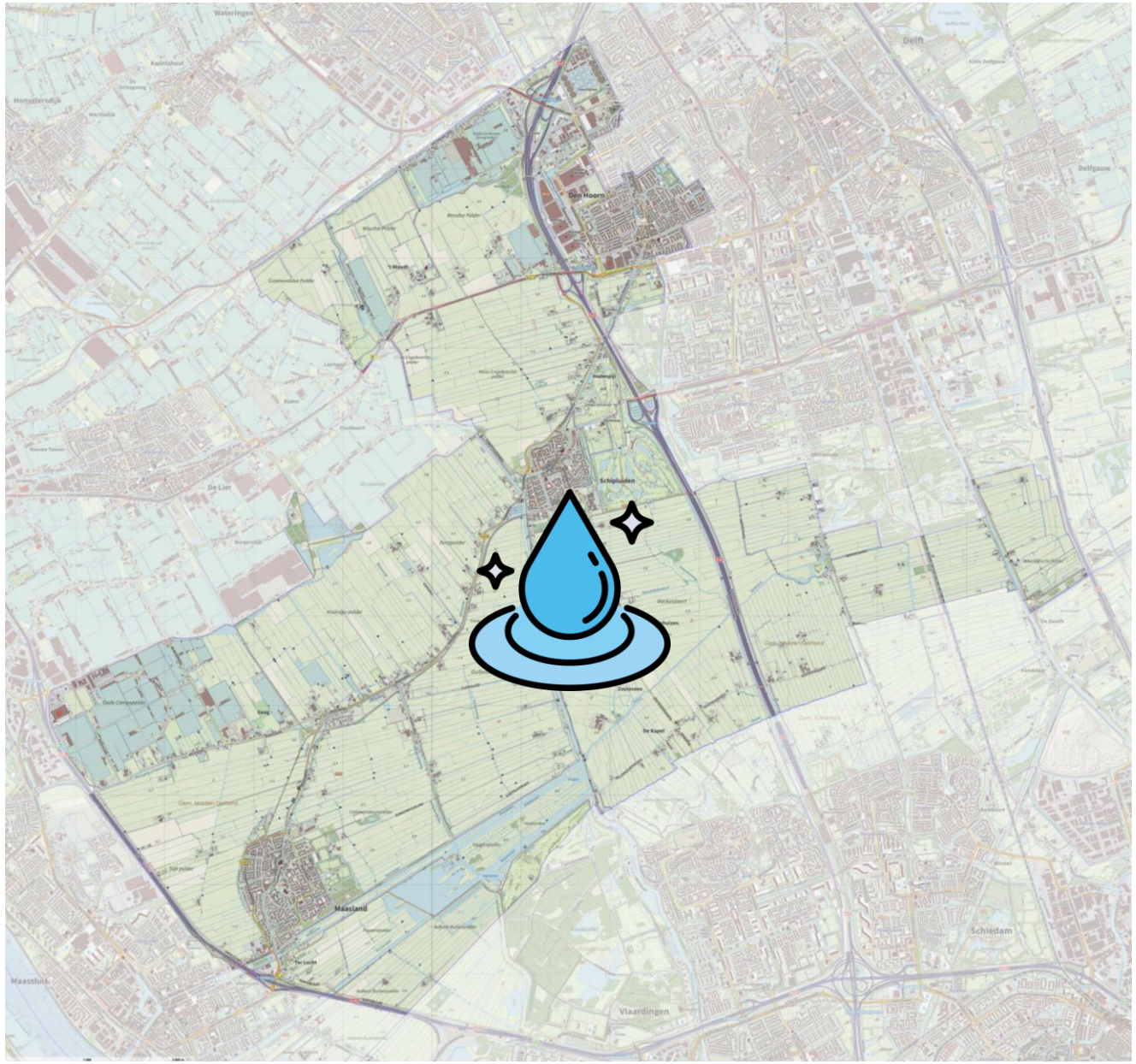


Geophysical events
Earthquakes, tsunami, volcanic activity

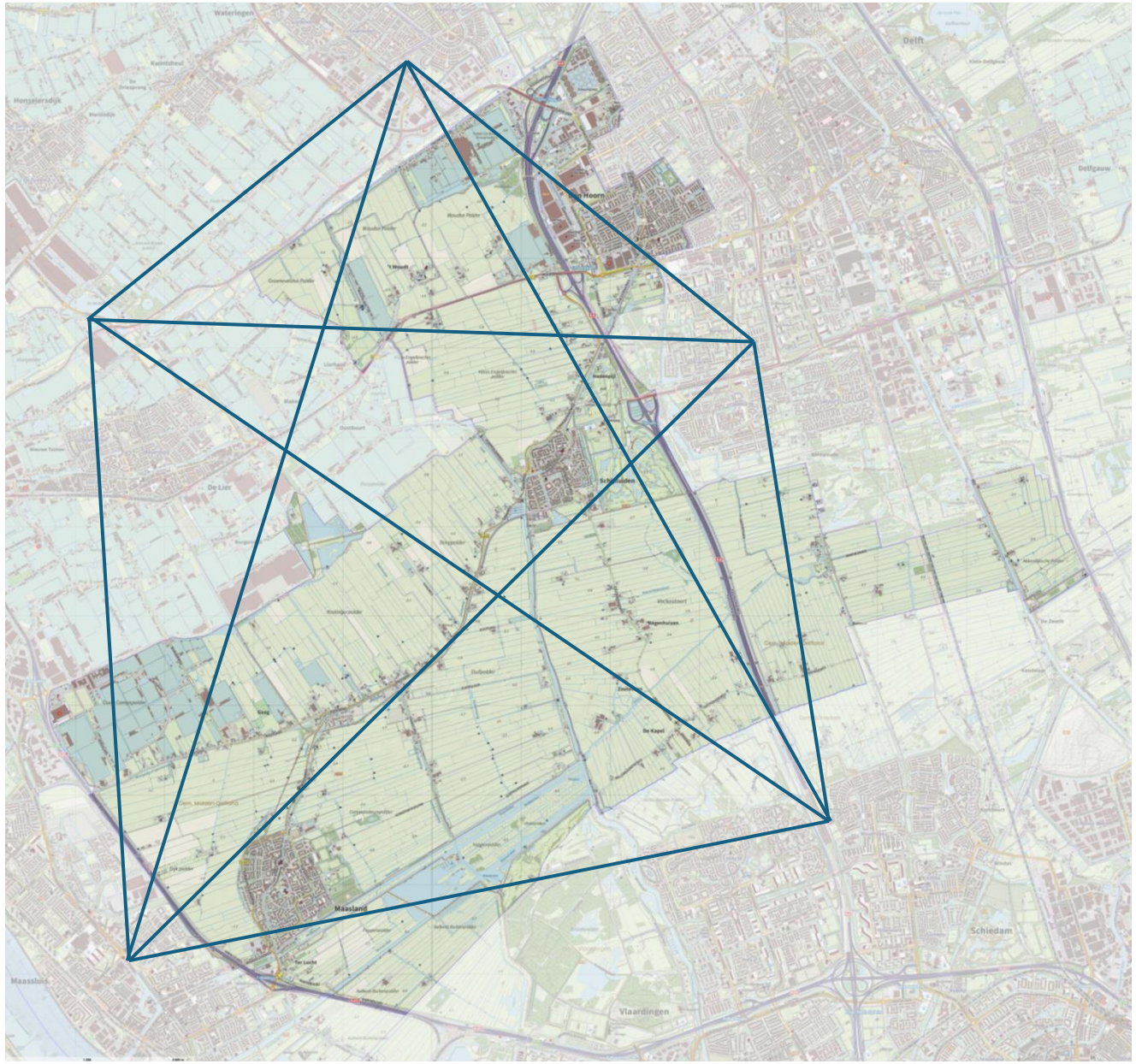
Meteorological events
Tropical storm, extratropical storm, convective storm, local storm.

Hydrological events
Flood, mass movement.

Climatological events
Extreme temperature, drought, wildfire.

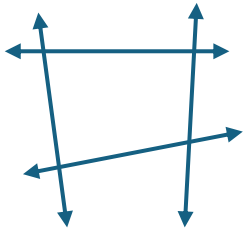


Topography of Midden-Delfland



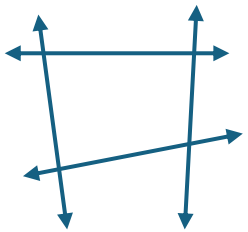
Topography of Midden-Delfland

The Approach of ZUS



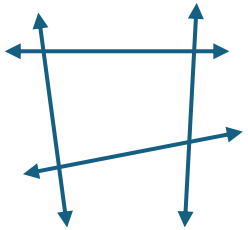
Improved watersystem

ZUS. *National Productive Park Delfland*



Improved watersystem

ZUS. *National Productive Park Delfland*



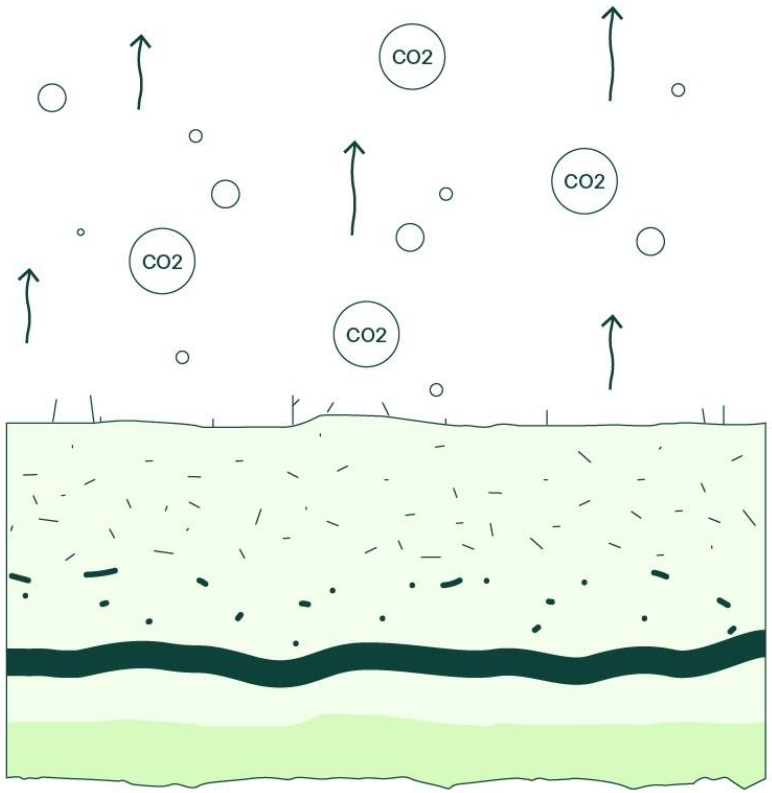
Improved watersystem

ZUS. *National Productive Park Delfland*

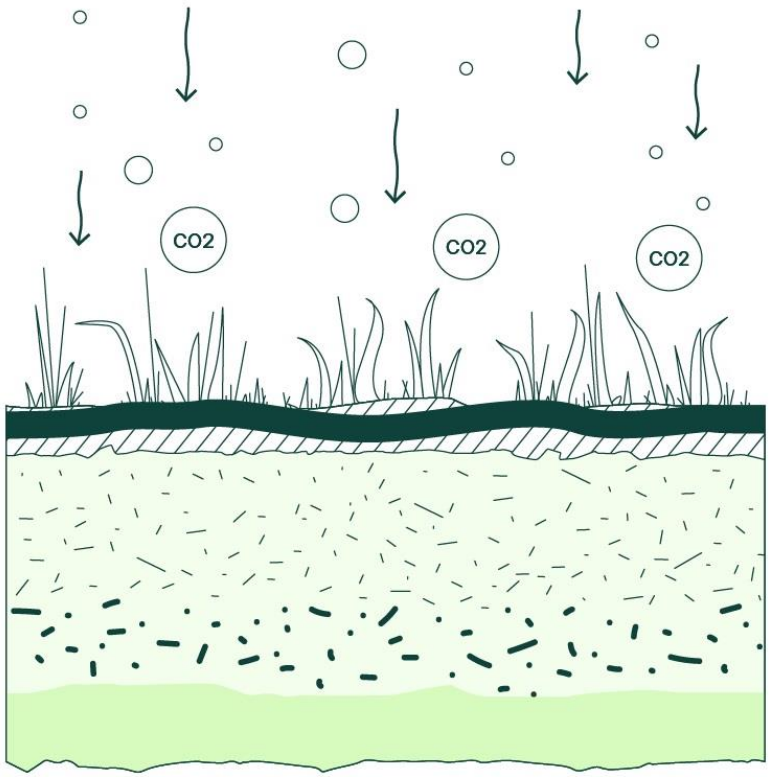
Soil as a sponge

ZUS. *National Productive Park Delfland*

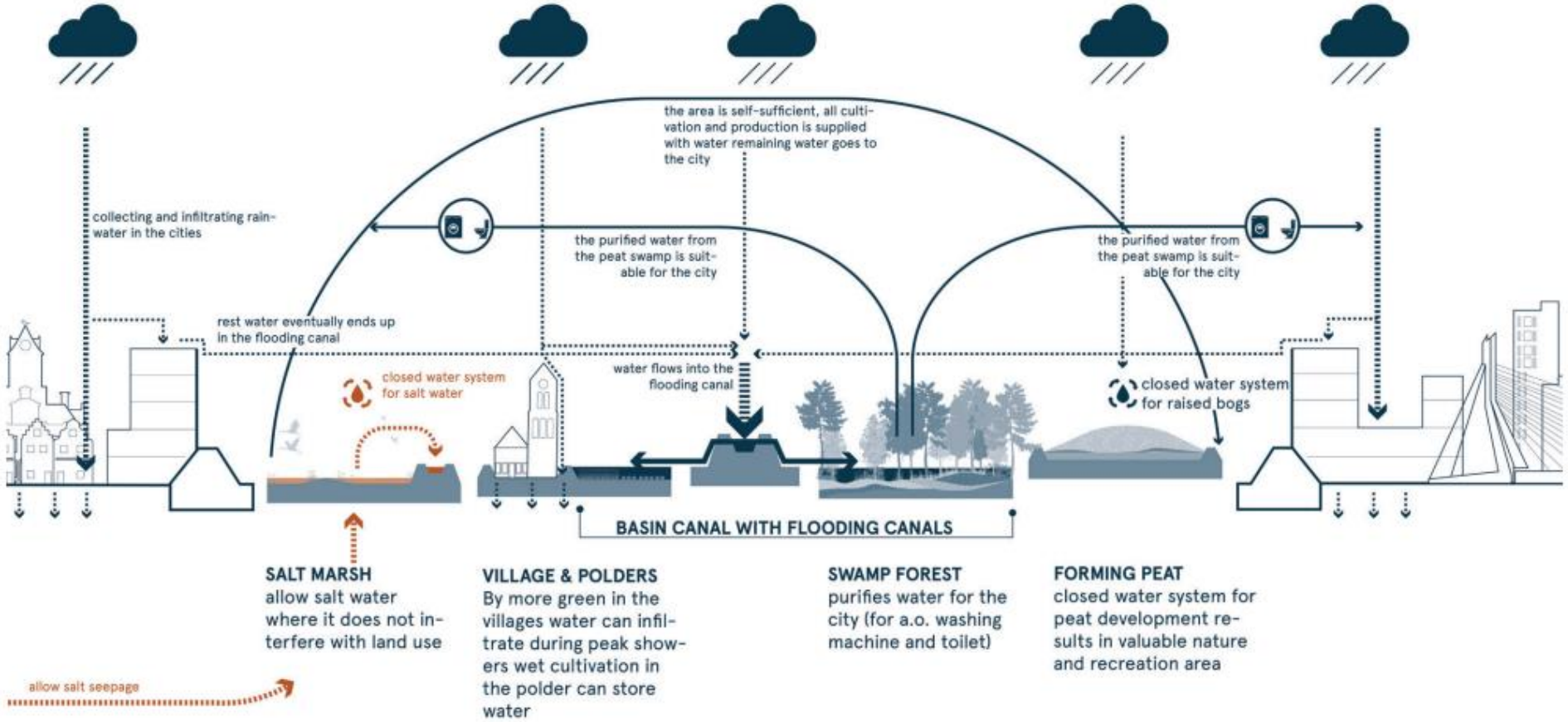
Soil as carbon storage



Cutaway bogs

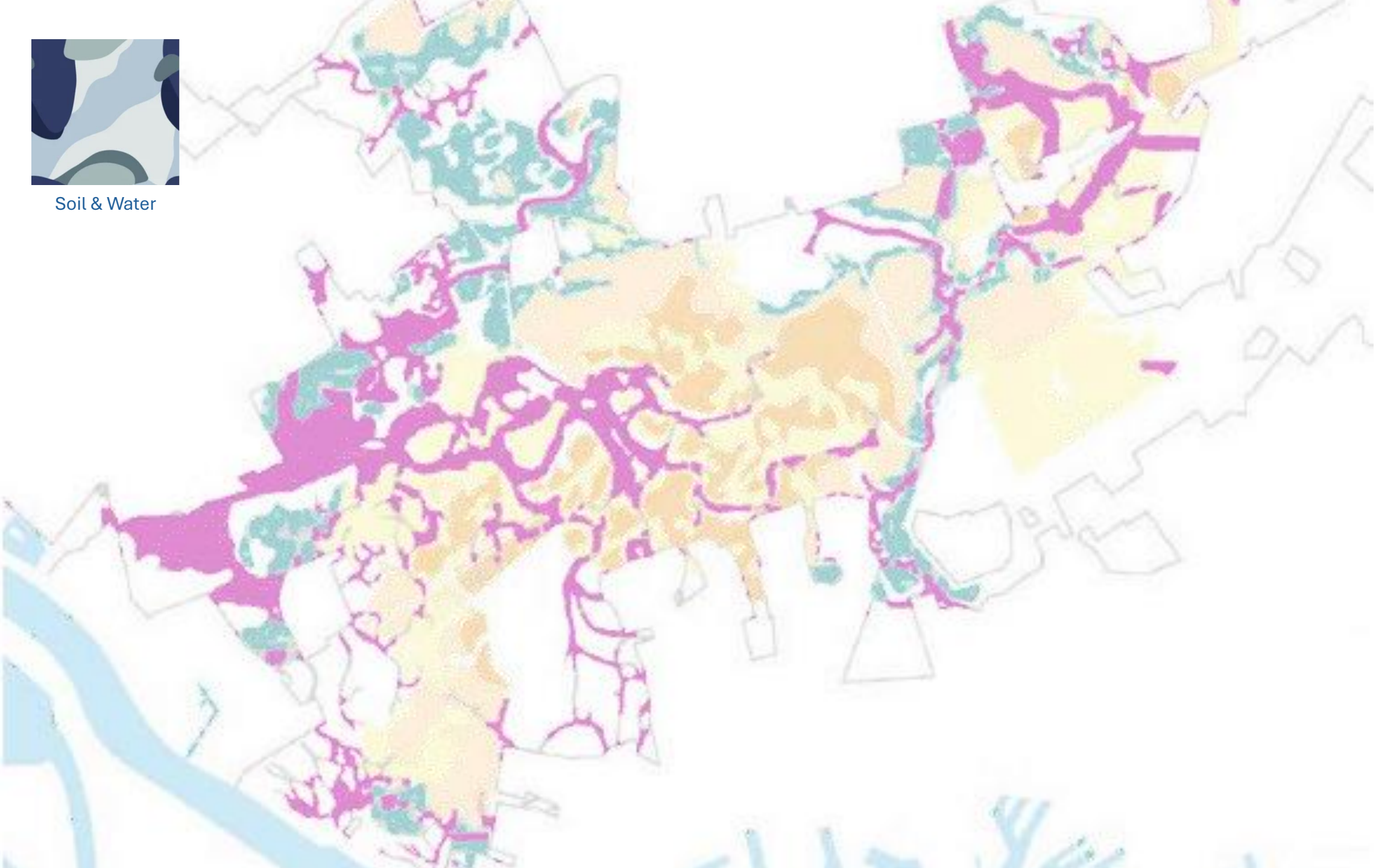


Restored bogs



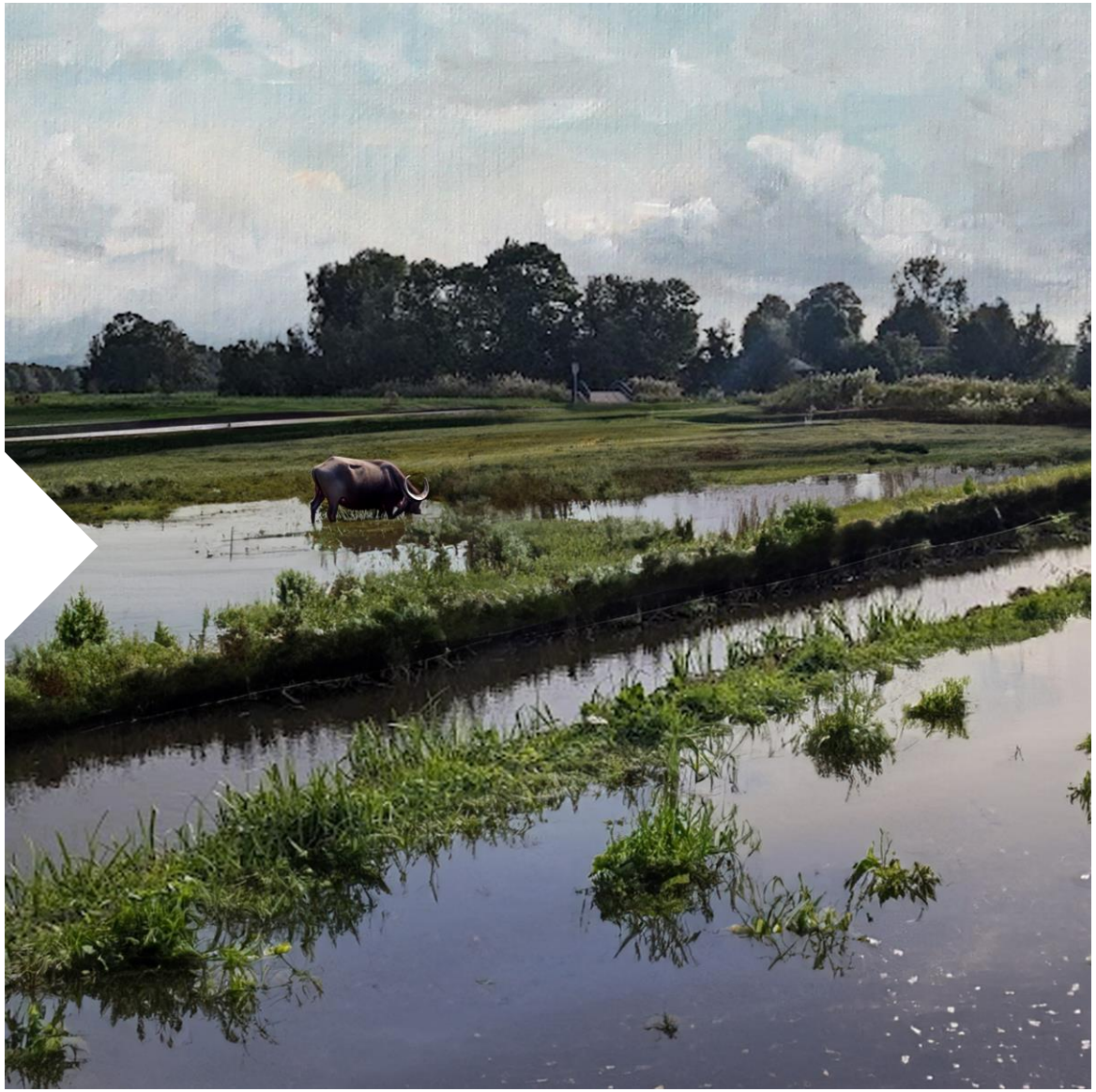
ZUS. *National Productive Park Delfland; A self-sufficient water system*

Soil & Water



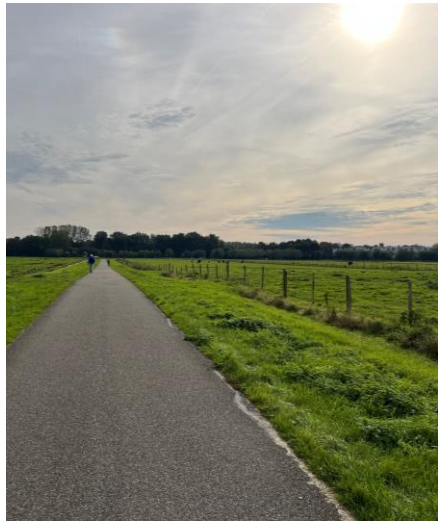

Soil & Water

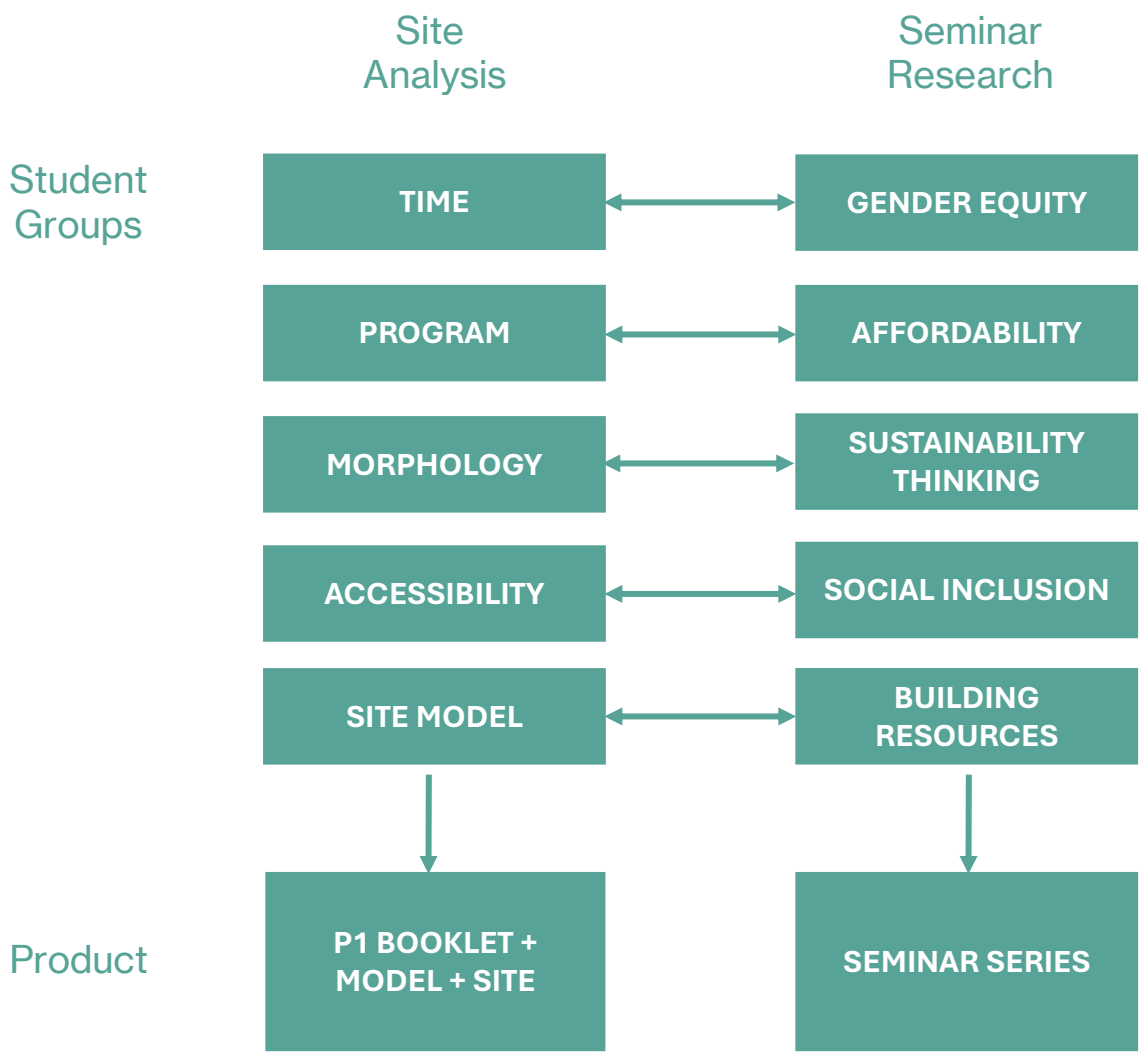
Soil & Water



Township Design

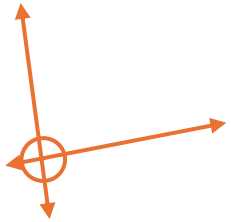
Group work



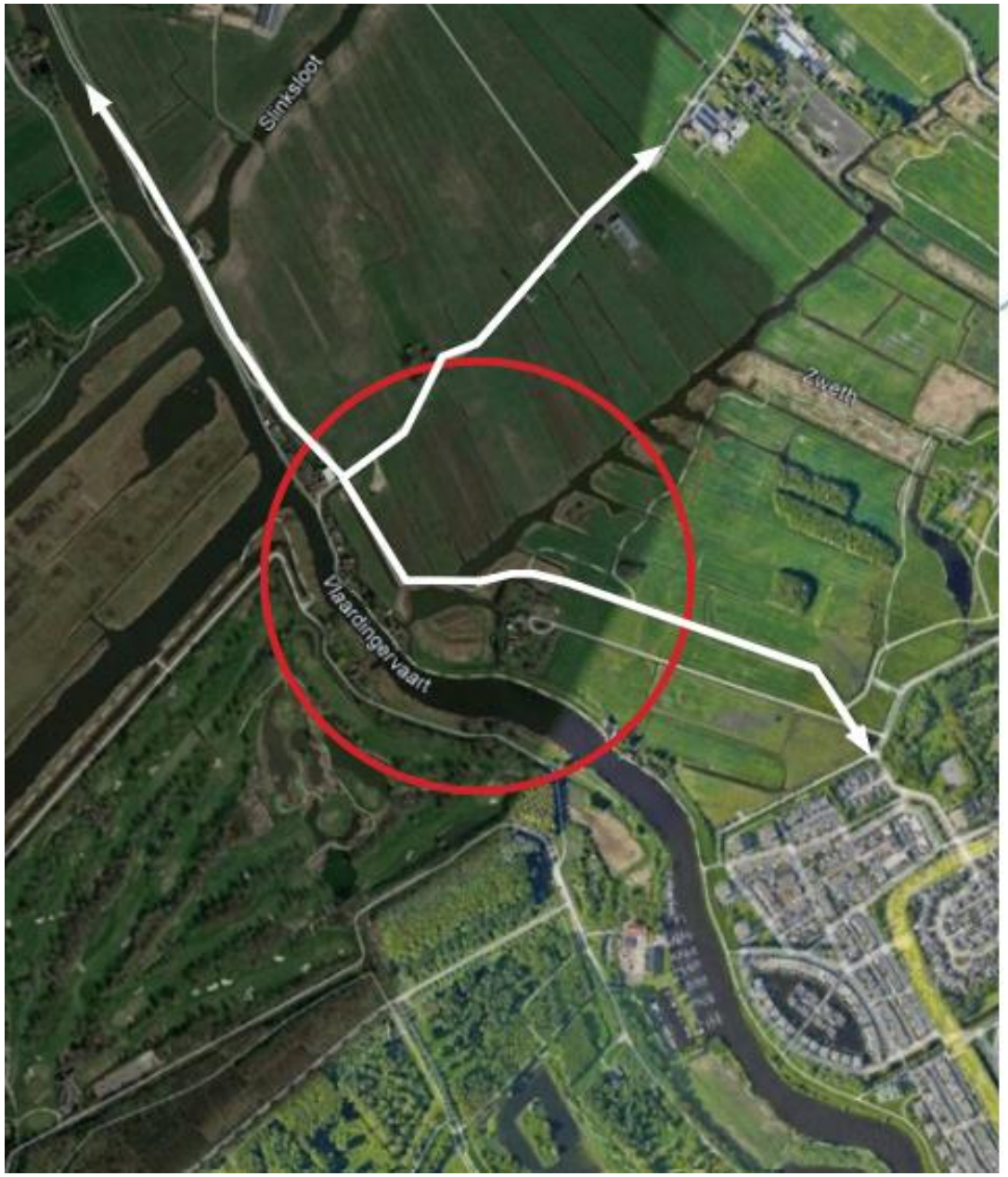


Studio research

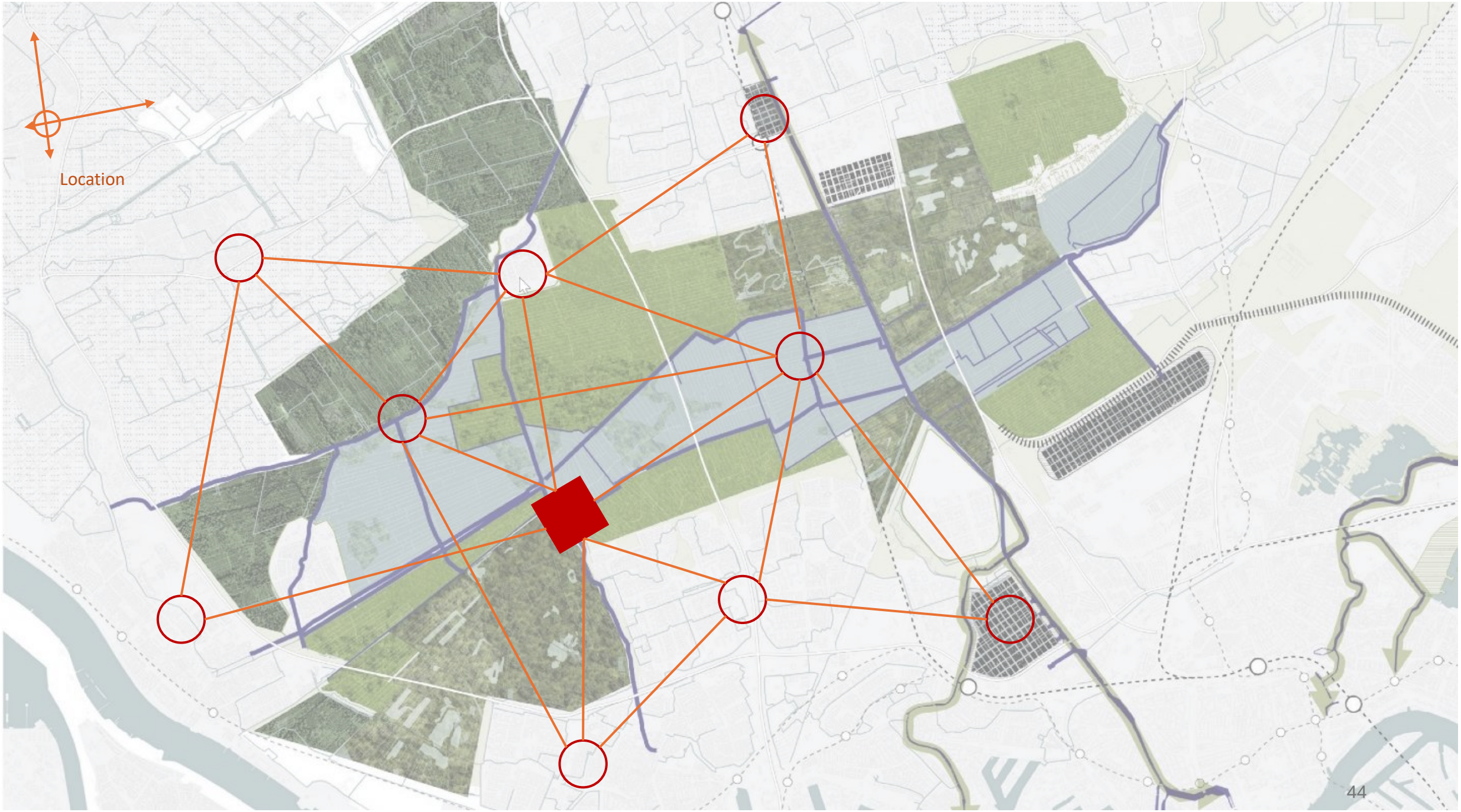

Location



Location


Slinksloot
Zwette
Vlaardingervaart


Schipluiden
Duifpolder
Vlaardingen


Location

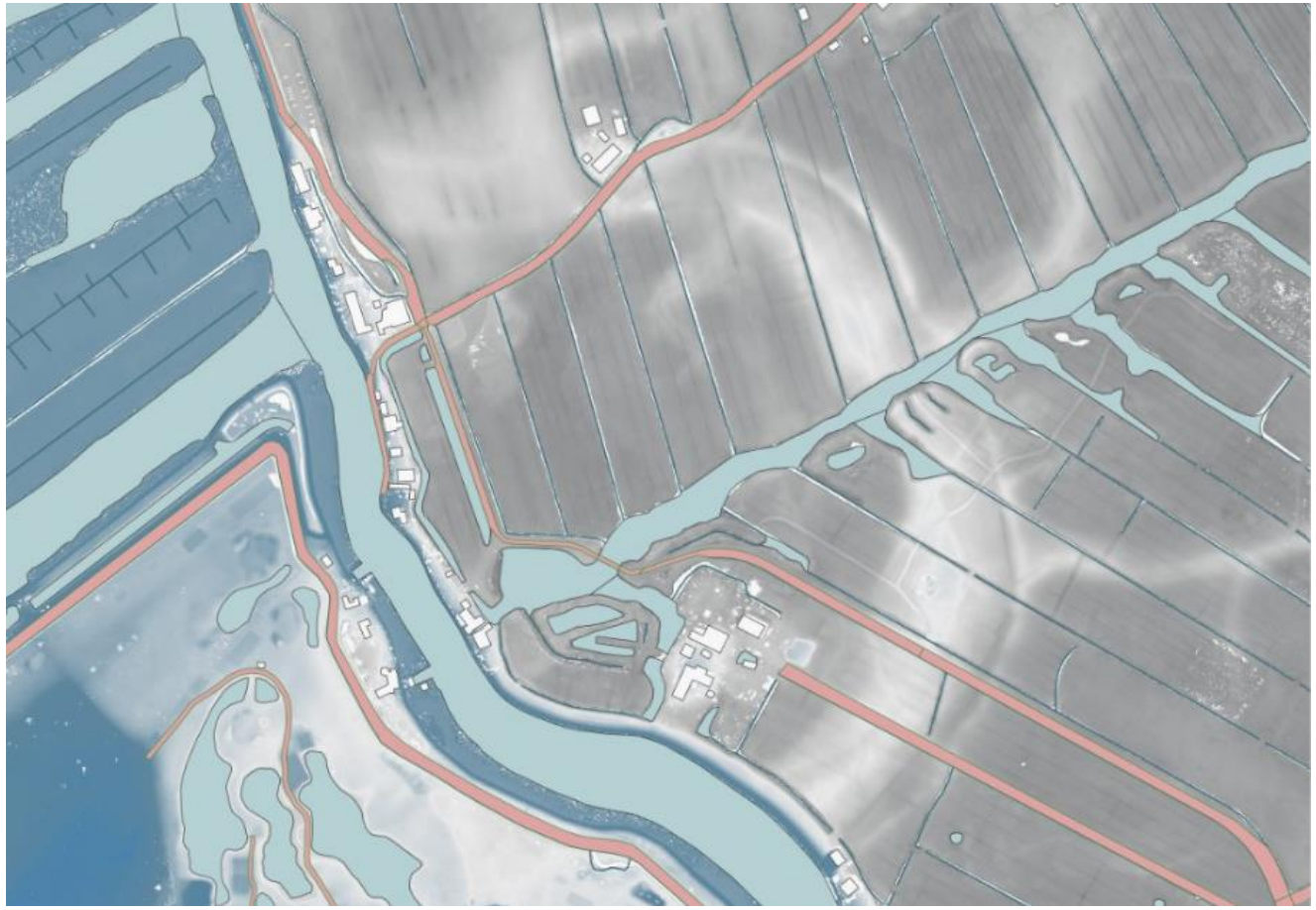

Resource
system

x10

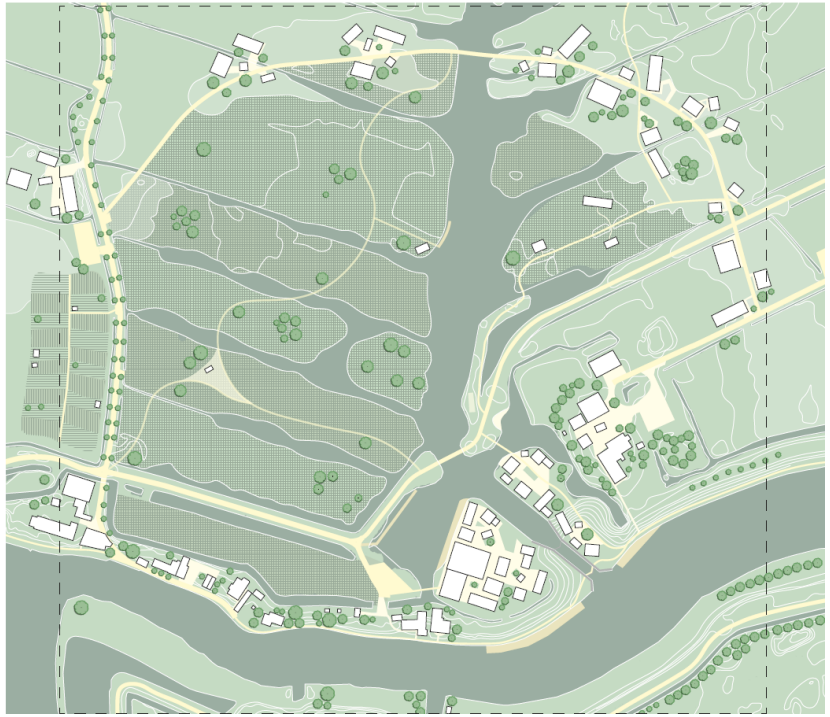
Soil & Water

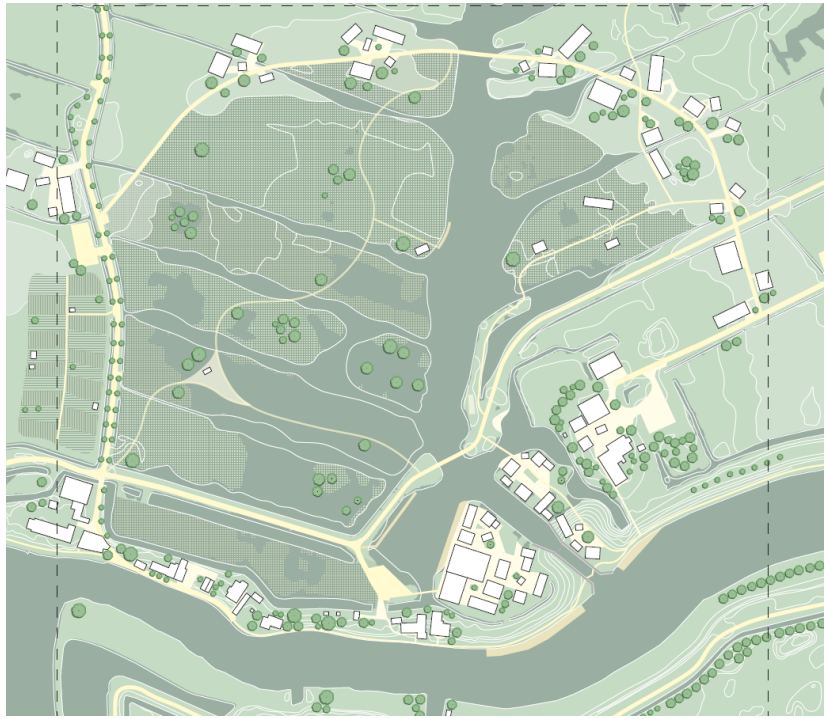
Soil & Water

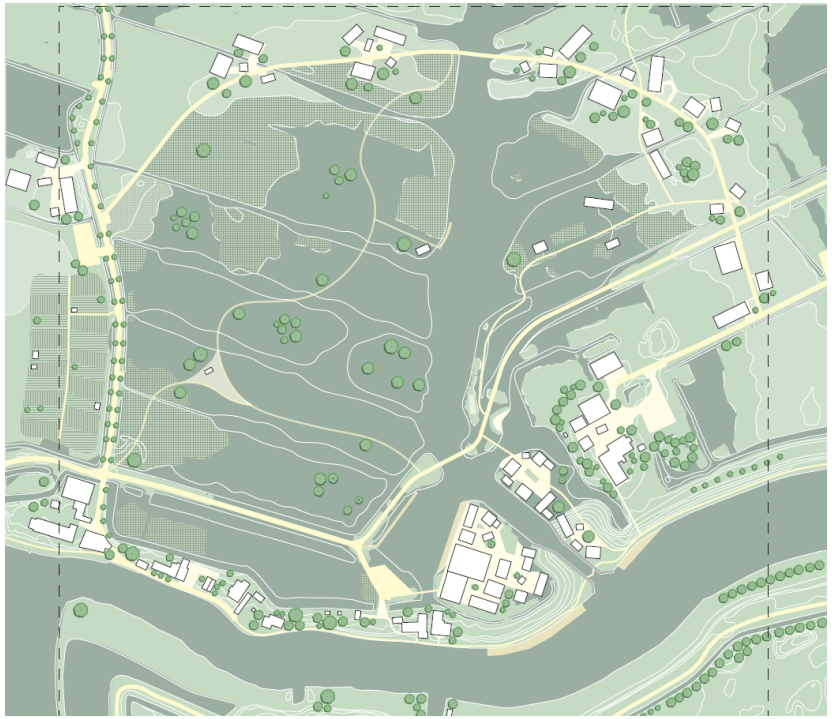

A
KREEK
KLEI
VEEN
ZANDAFZETTING
BASISVEEN
PLEISTOCEEN DEKZAND
B
DALING GRONDWATERSTAND
C
KREEKRUG
INKLINKING



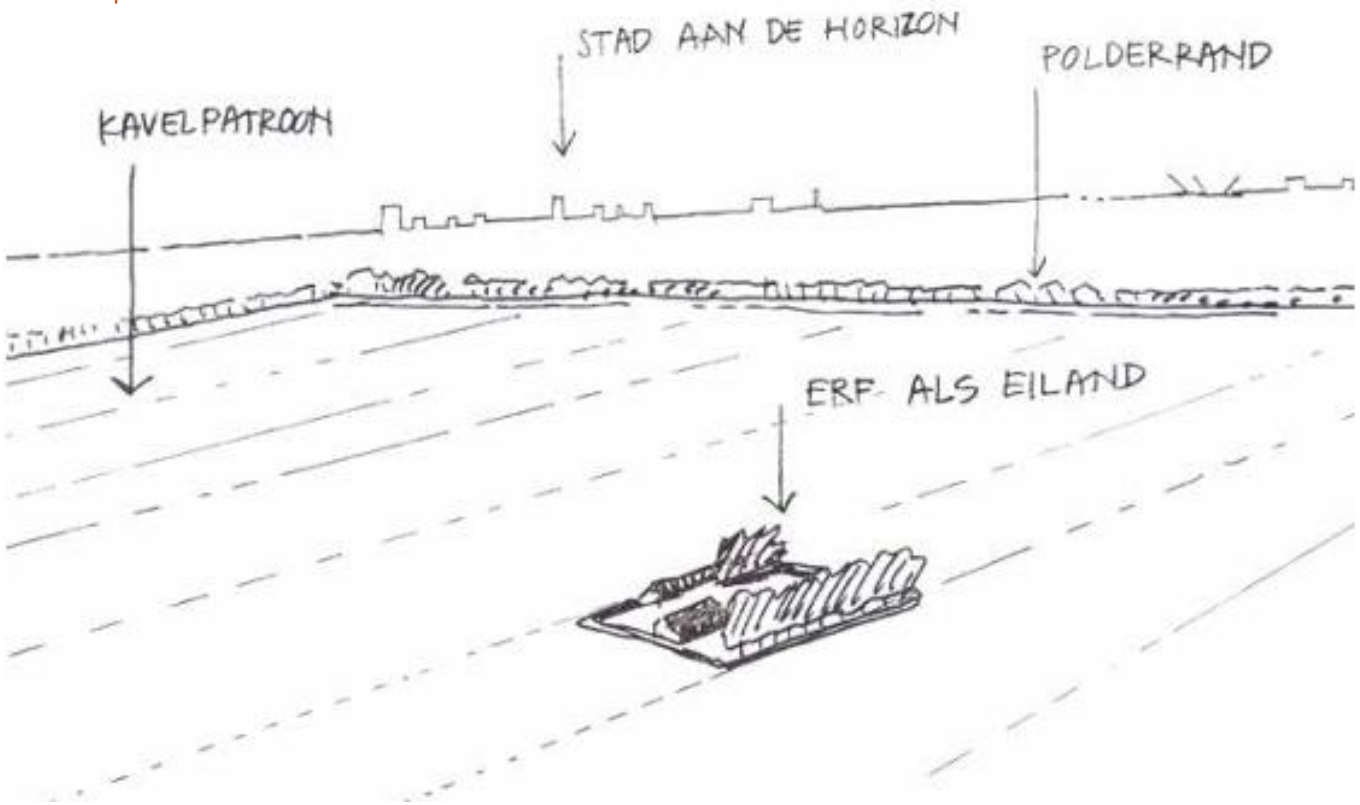
Soil & Water







Re-interpretation



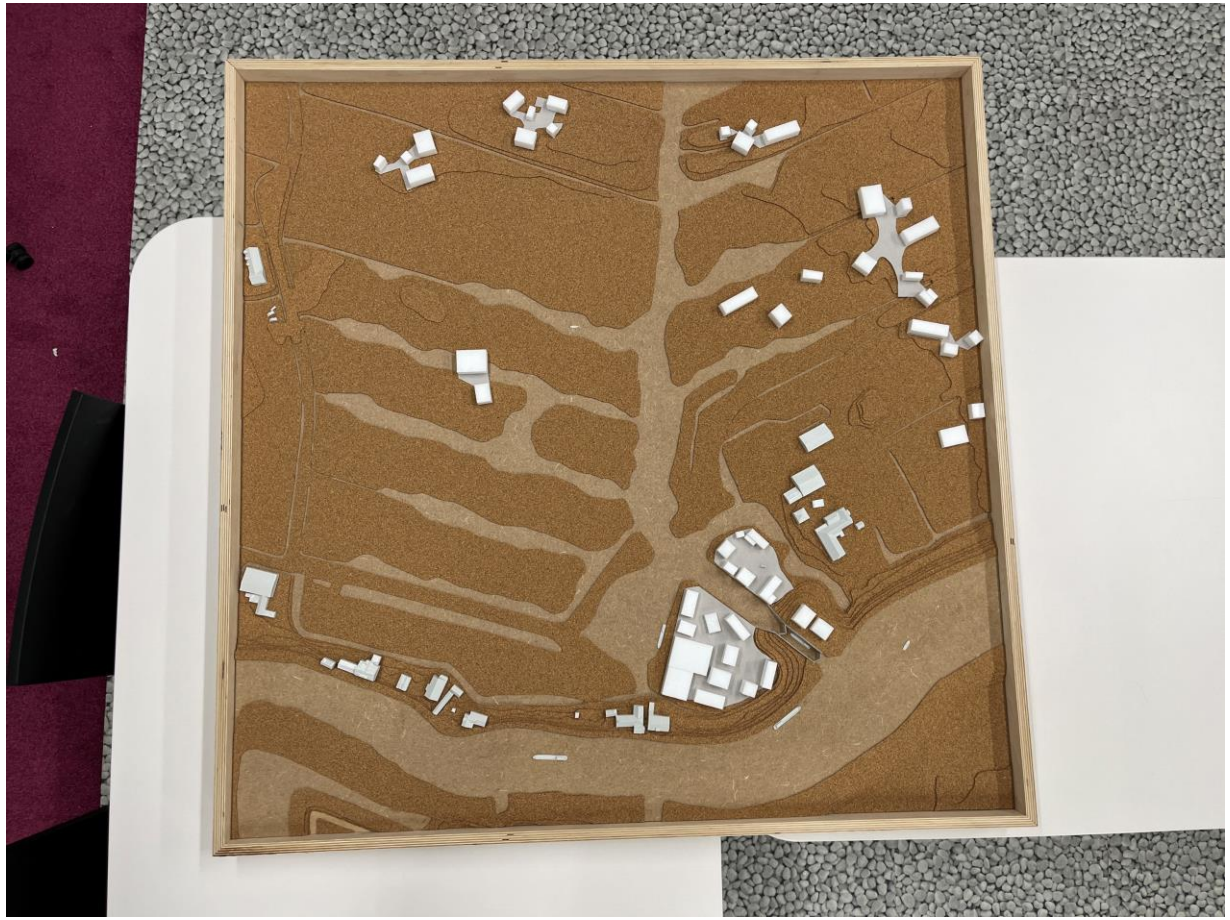
Township Vlietpoort

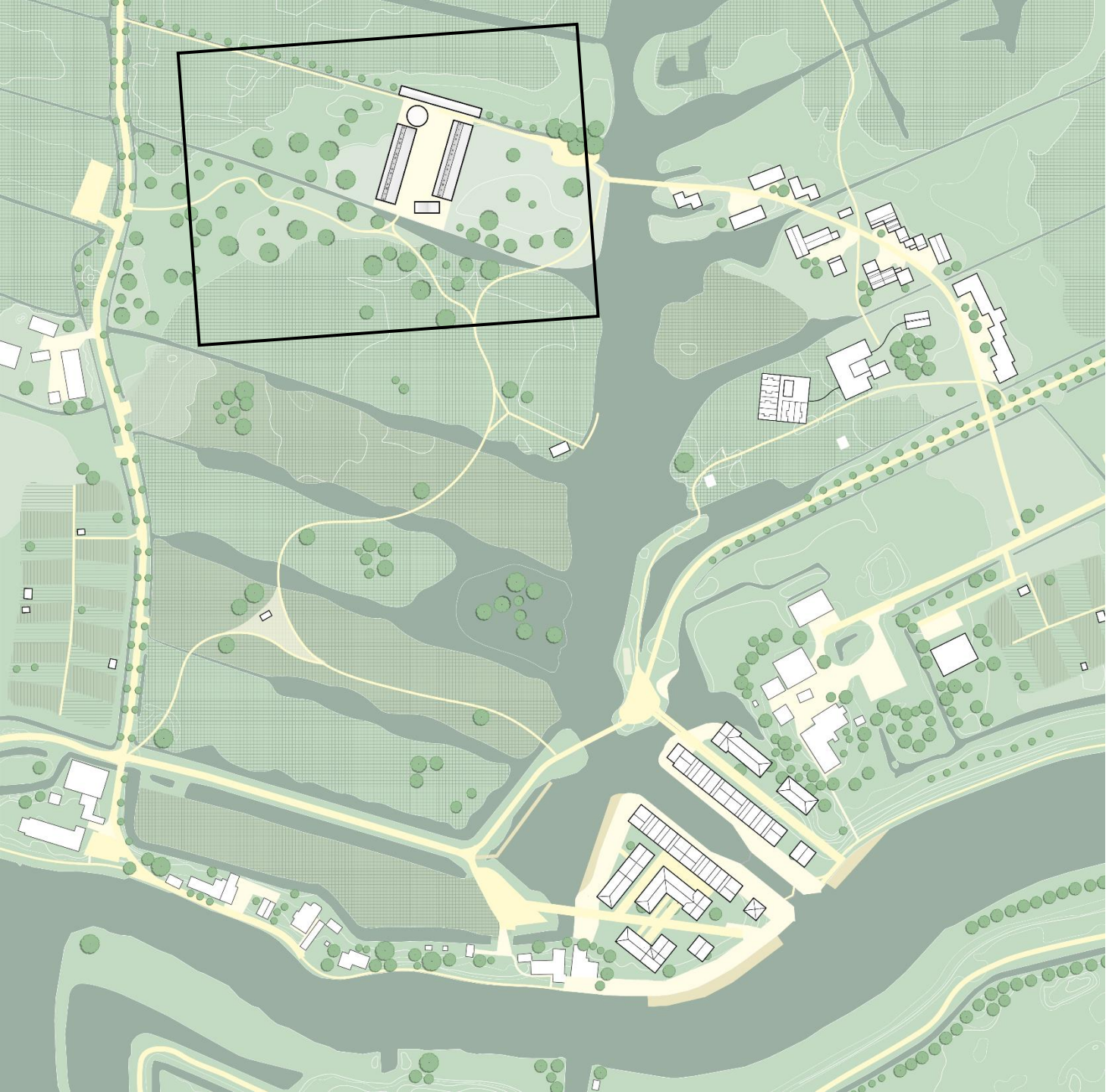
Yoran Erami - 4563271

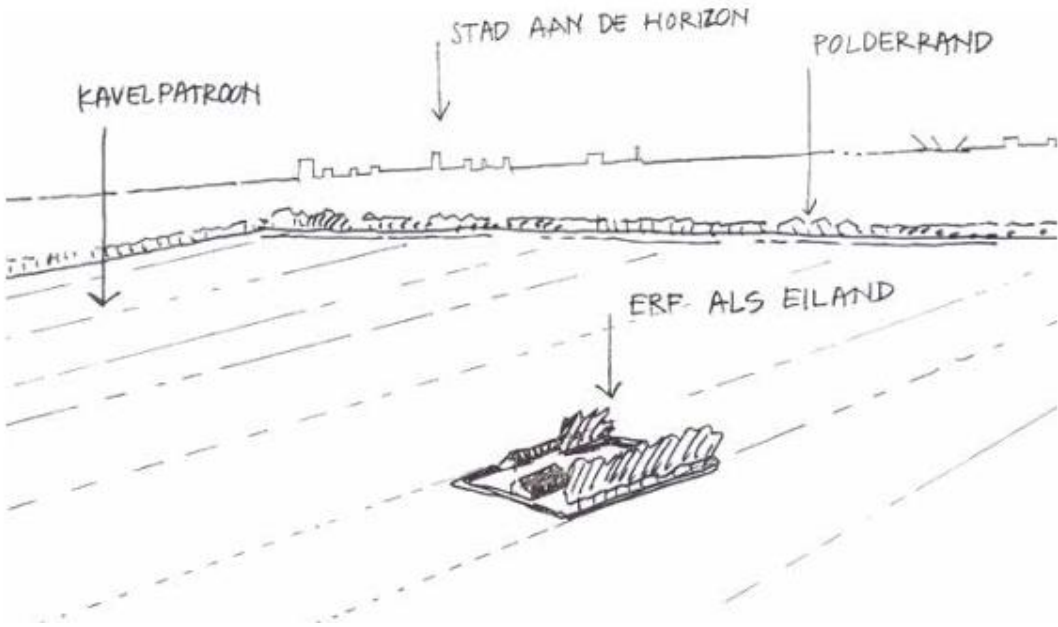
Niels de Rijke - 5658837

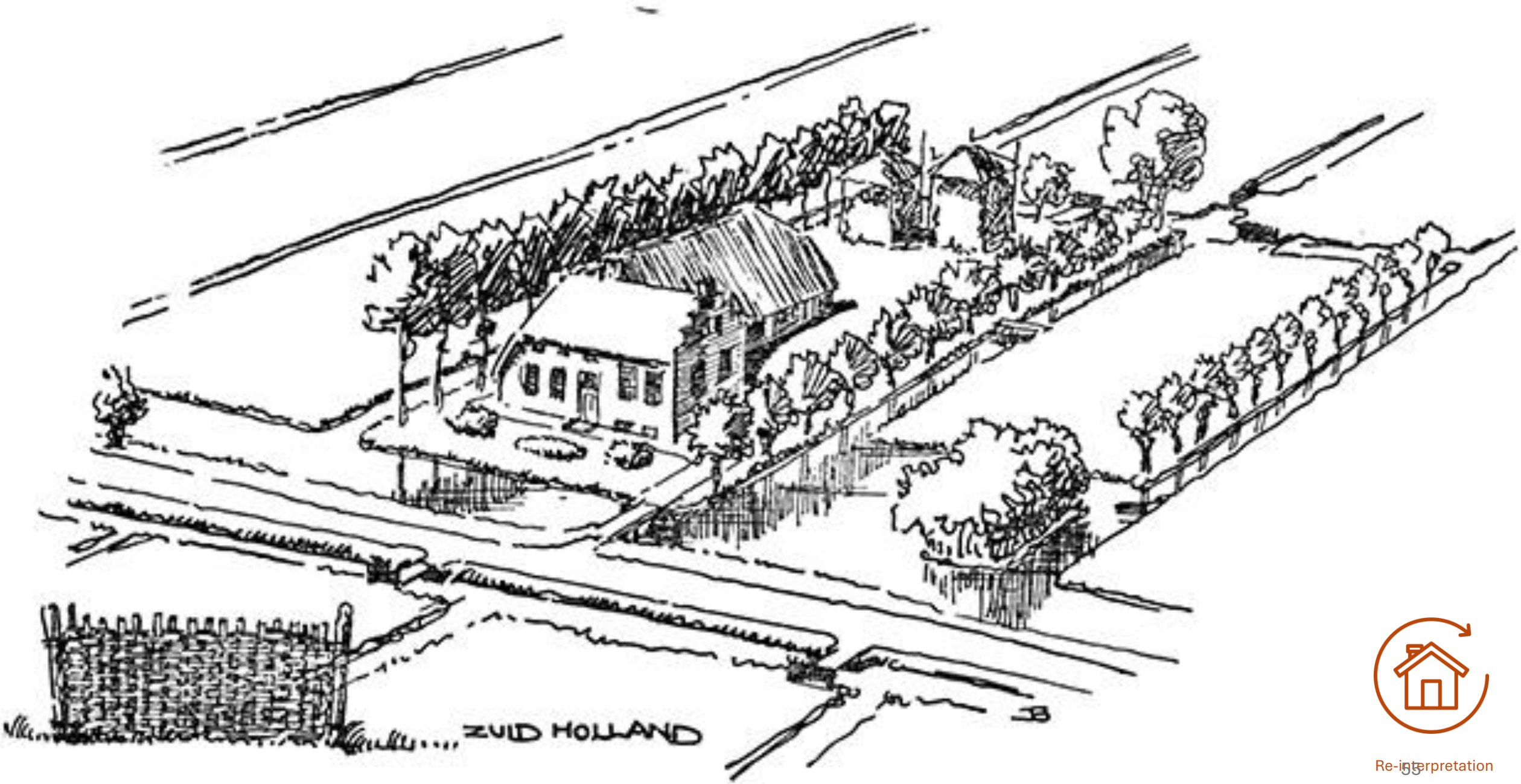
Jemma Scheijde - 5690242

Jasper Sterrenburg - 5653673



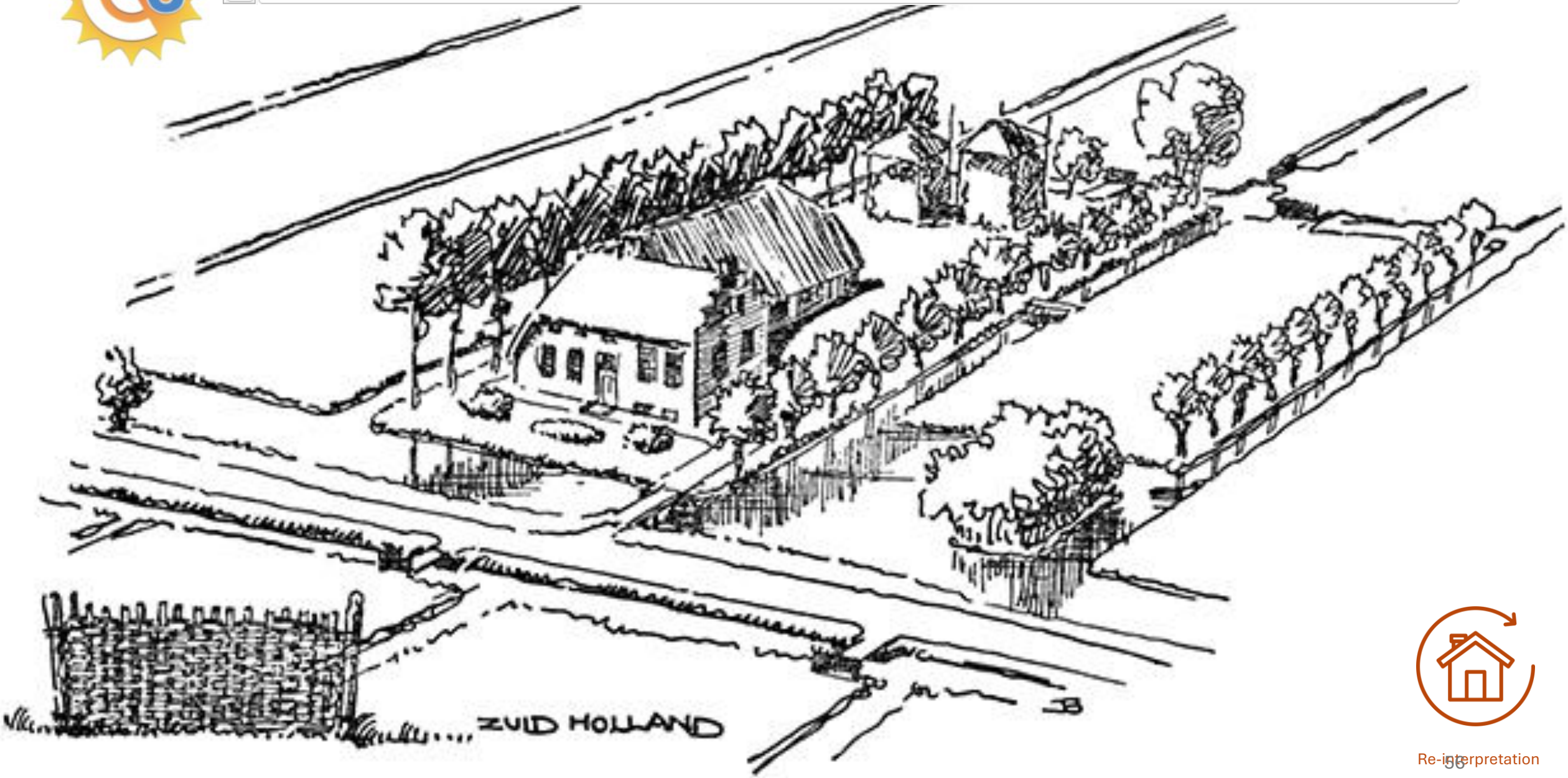


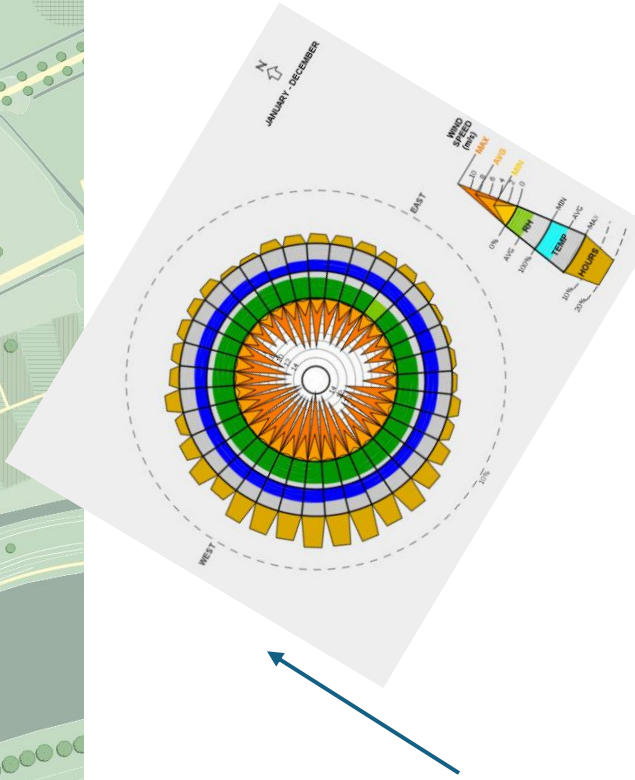

STAD AAN DE HORIZON
POLDERRAND
KAVELPATROON
ERF ALS EILAND



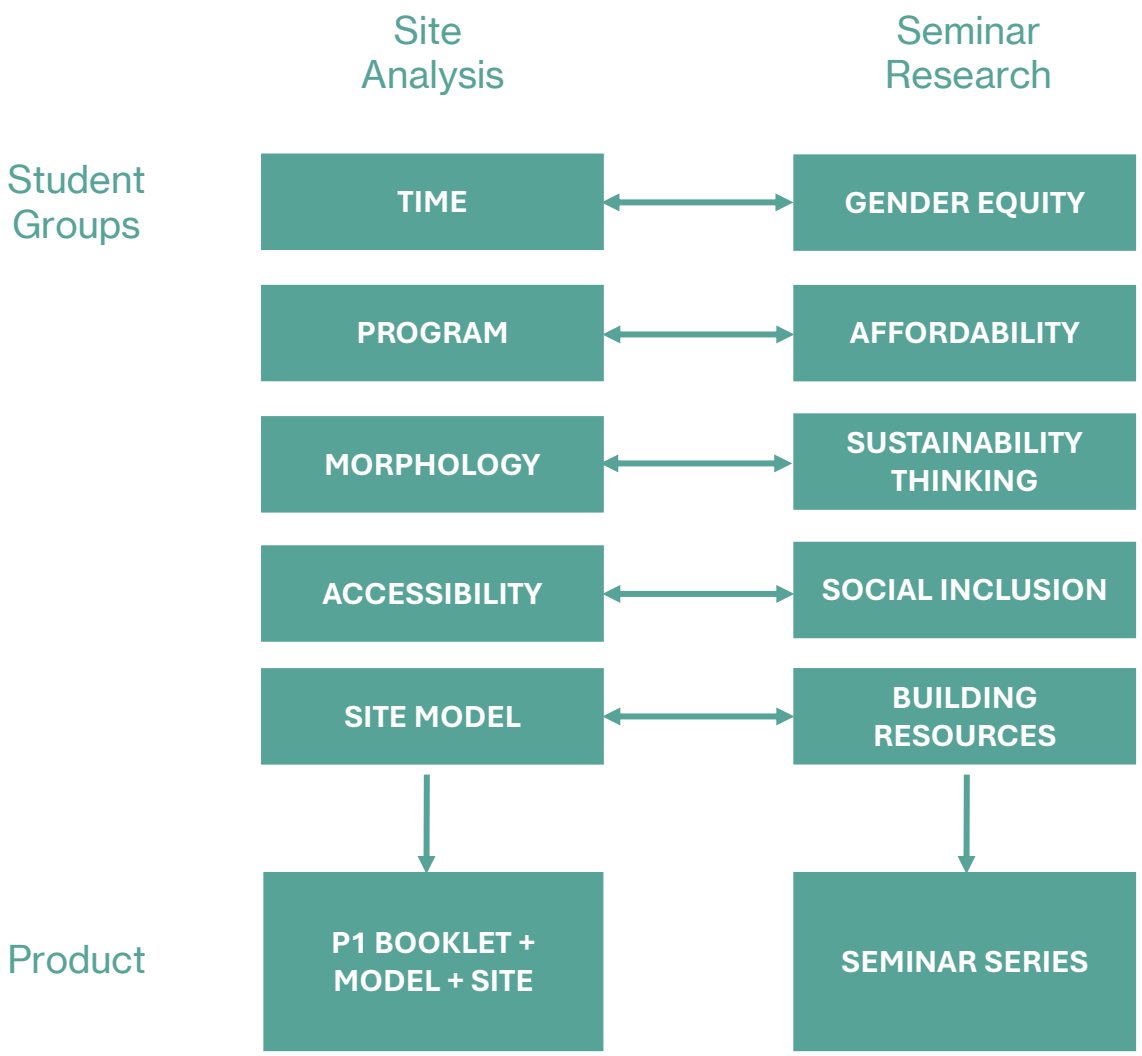
Re-interpretation

6	Exterior wind shields or dense planting can protect entries from cold winter winds (wing walls, wind breaks, fences, exterior structures, or land forms)




N
JANUARY - DECEMBER
EAST
WEST
WIND SPEED (m/s)
MAX
AVG
MIN
RH
TEMP
HOURS
MIN
AVG
MAX
0%
10%
20%
30%

Re-interpretation



Studio research

in order for something to truly become sustainable **it must be detached from all unsustainable systems**

Farmyard system design

OFF-GRID IN CONTEXT

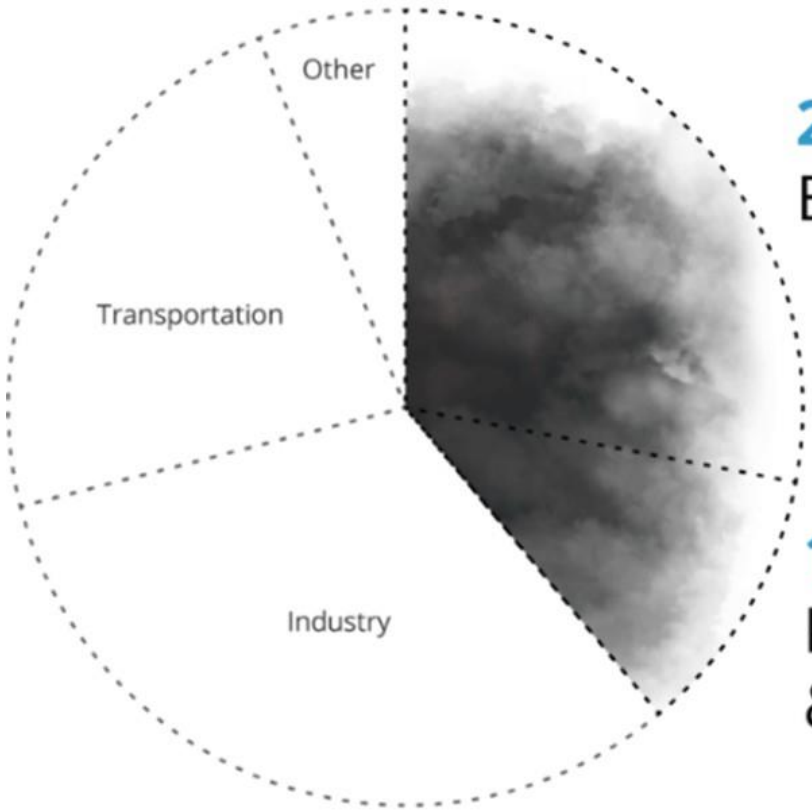
A design guide for sustainable and off-grid architectures in Midden-Delfland

RESEARCH REPORT
student: Yoran Erami
Graduation studio: Advanced Housing Design
Main mentor: Olv Klijn
Second mentor: Ruurd Kuijlenburg
Third mentor: Alejandro Campos Uribe

Research

Yoran Erami - 4563271

Annual Global CO_2 Emissions



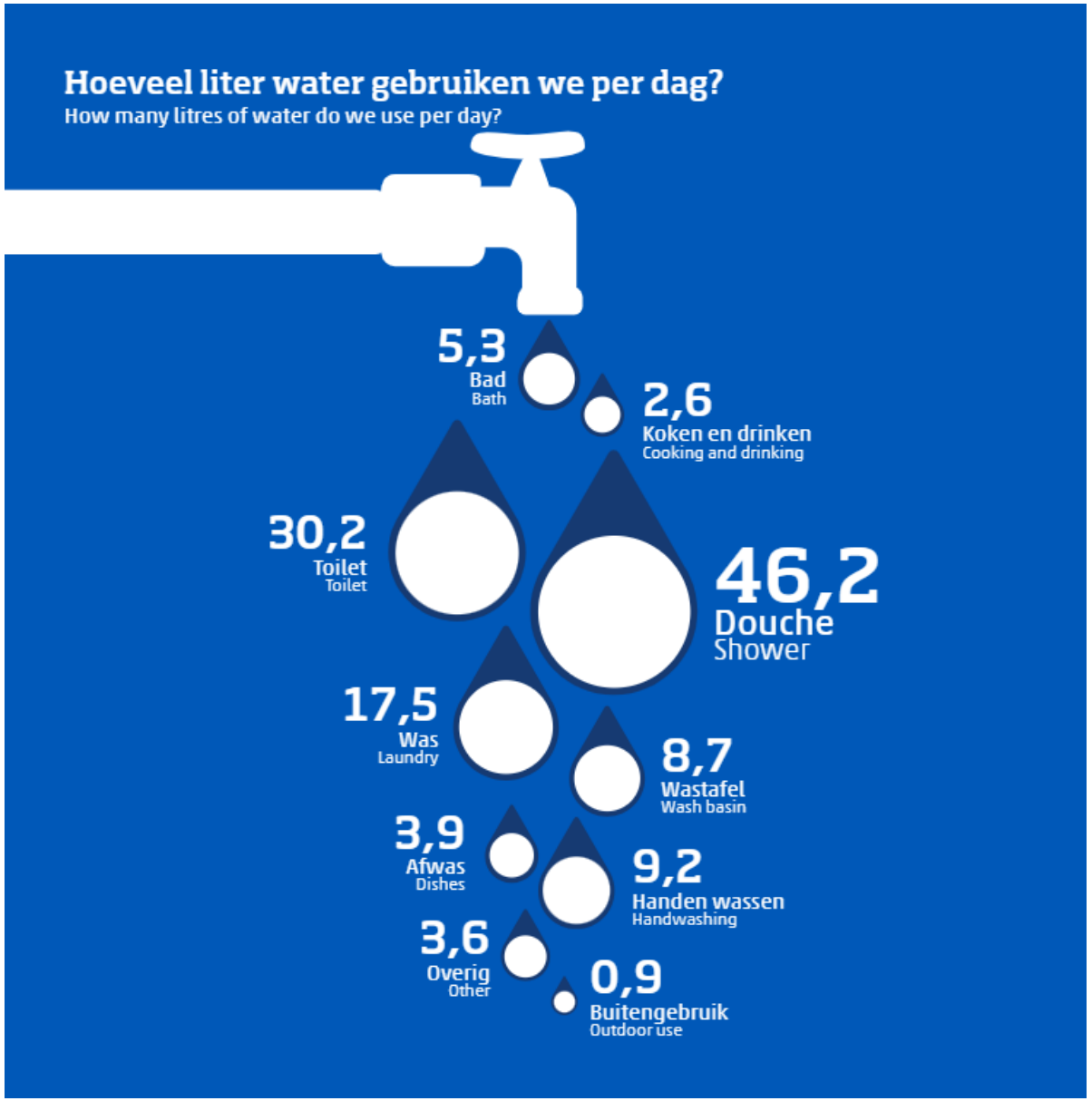
28%
Building Operations

11%
Building Materials
& Construction

Data Sources: Global ABC Global Status Report 2018, EIA

NOS Nieuws • Woensdag 3 augustus 2022, 18:52

Watertekort in Nederland: wat betekent het, en wat niet?



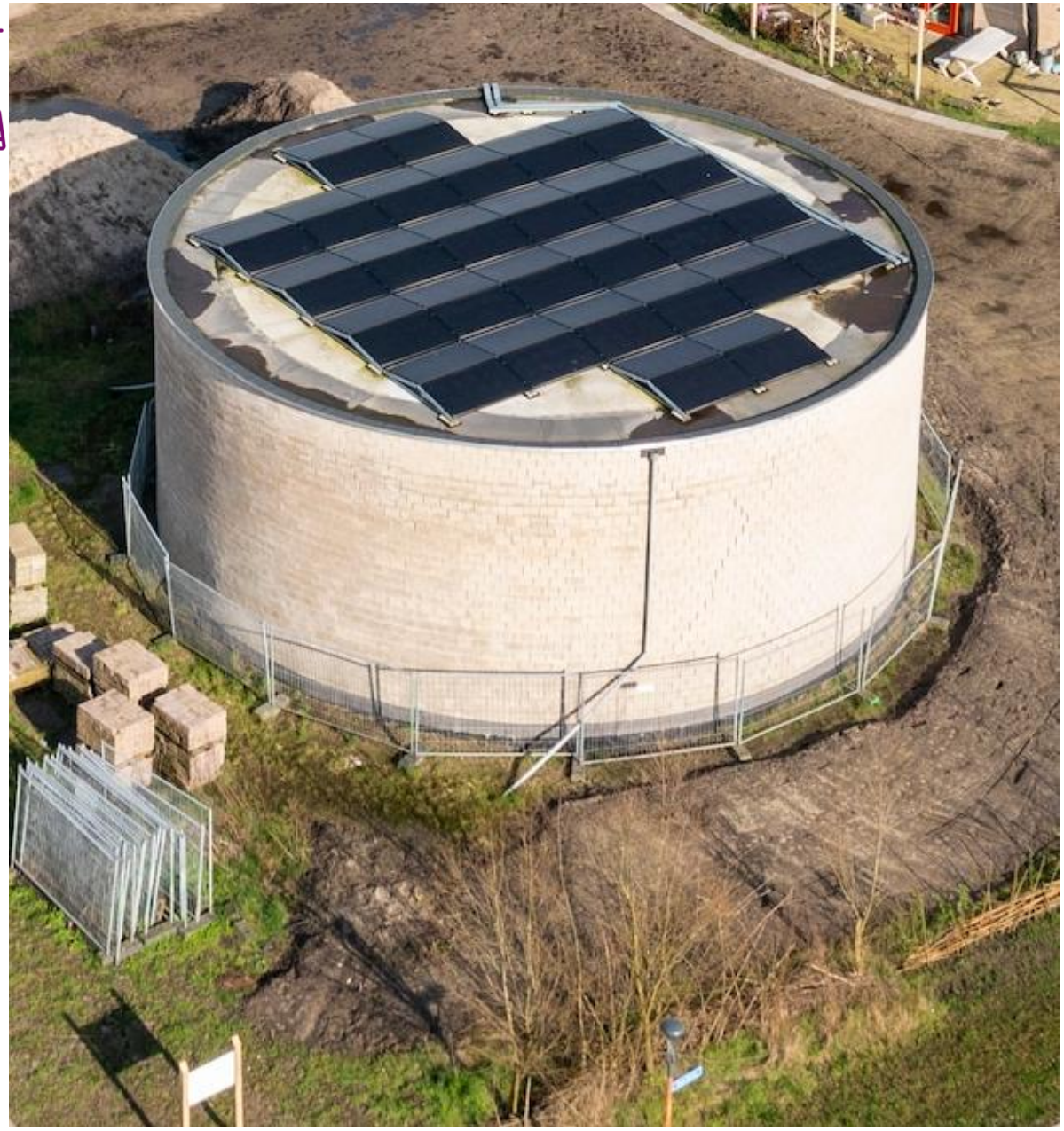
€1.400.000.000

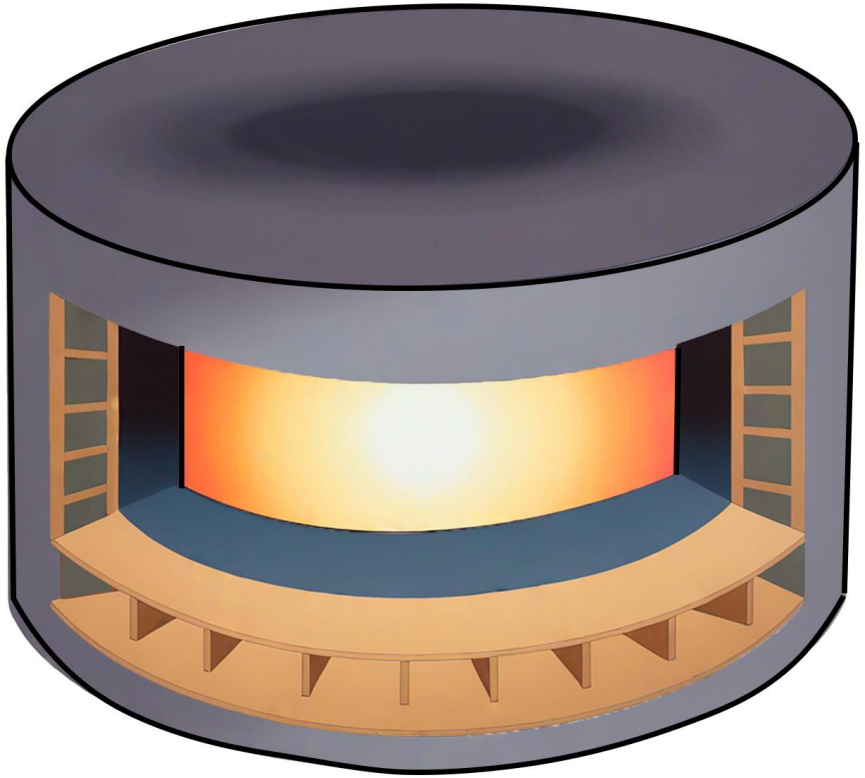
GLOBAL
ECOVILLAGE
NETWORK

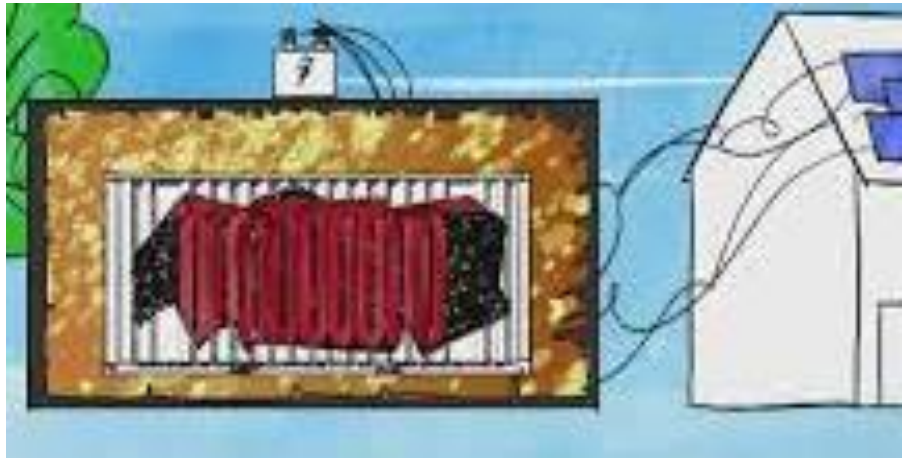

Groningen
Fryslân
Assen
Drenthe
Emmen
Oldenburg
Norwich
Leiden
Zuid-Holland
Colchester
Zeeland
Noord-Brab
Canterbury
Oostende
Brugge
Gent
Dunkerque
Calais
Kortrijk
Lille
Tournai
Mons
Antwerpen
Bruxelles -
Brussel
België / Belgique /
Belgien
Aachen
Recklinghausen
Essen
Nordrhein-
Westfalen
Düsseldorf
Solingen
Köln
Bonn
Siegen
Koblenz
Osnabrück
Münster
Hamm
Bielefeld
Limburg


IMAGINE

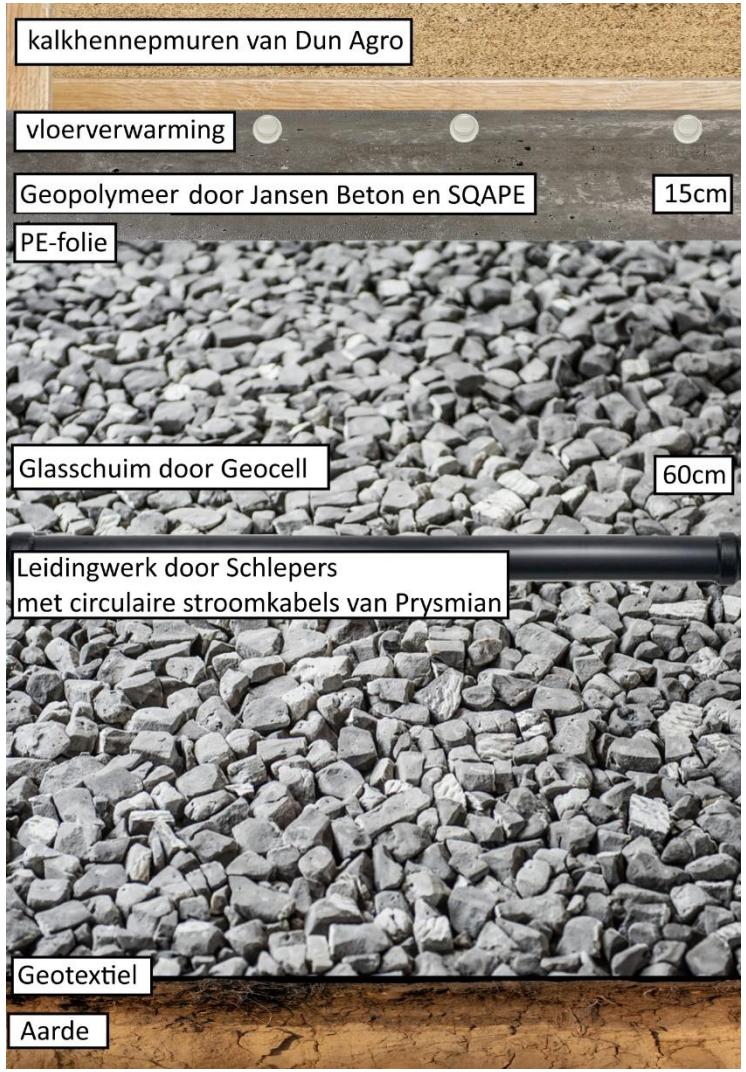
Energy







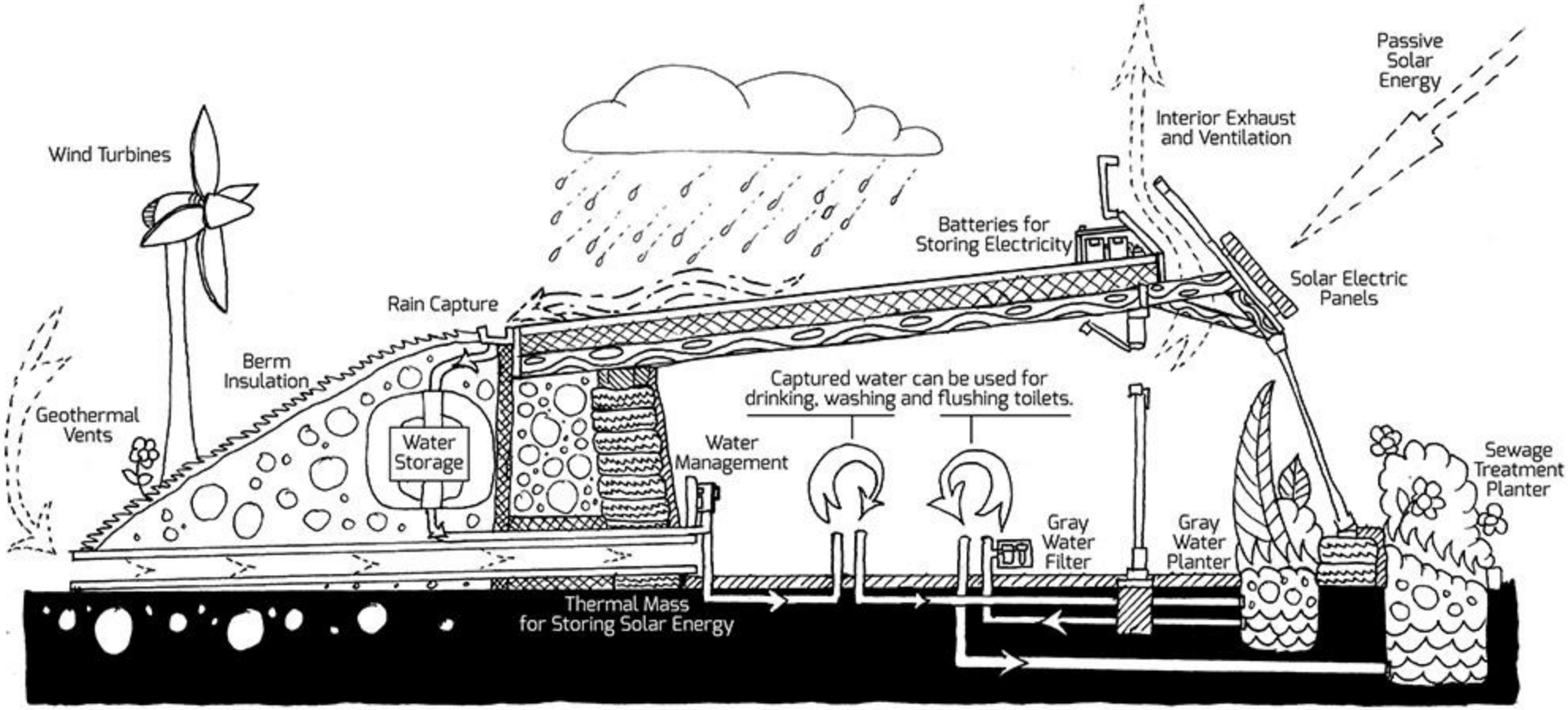
Resource system



Resource system

Clean Water

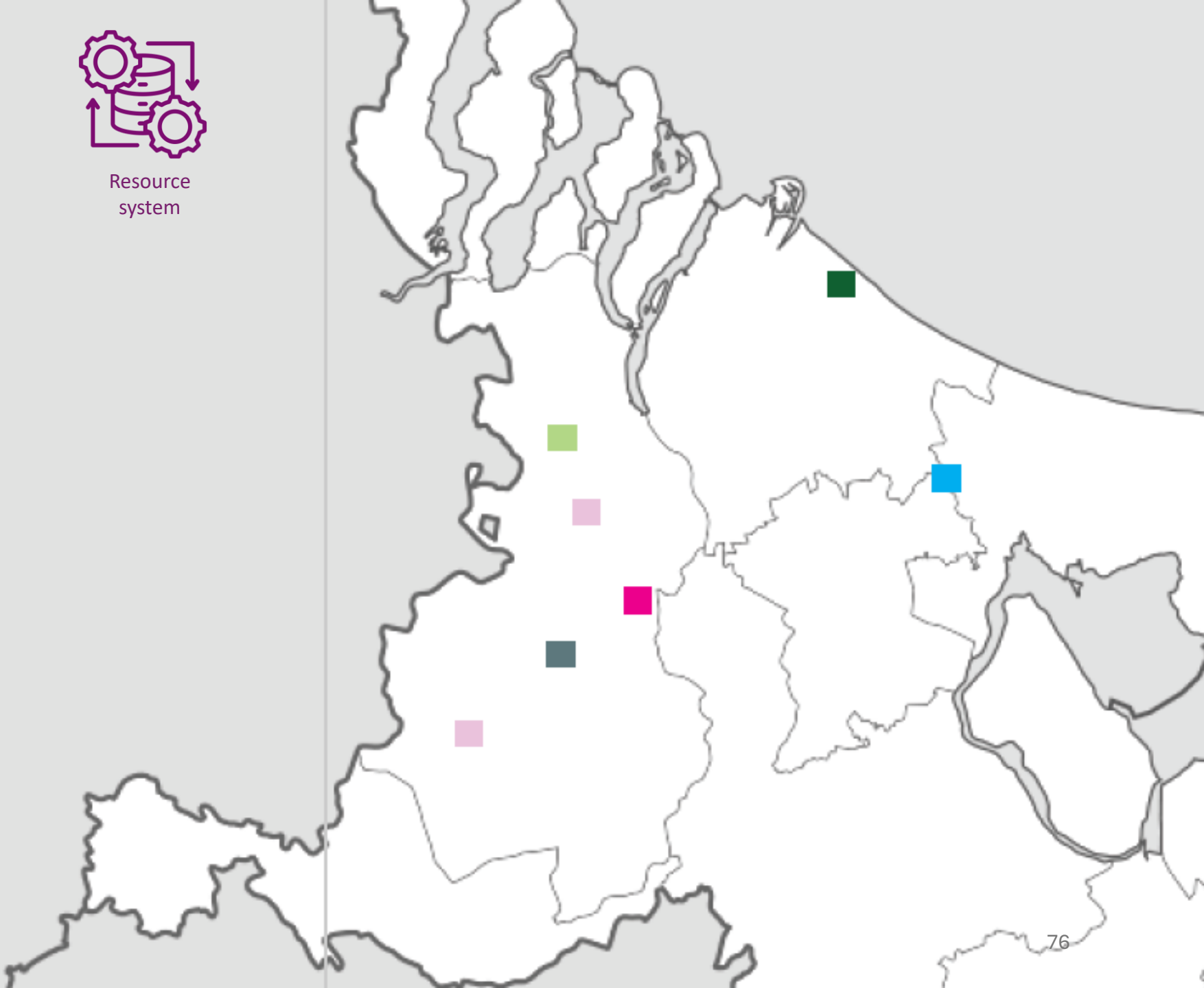
Energy




Resource
system

- collection at urban mining site
- collection at urban mining site
- collection at urban mining site
- multiple locations nation-wide (check for circular products)
- multiple locations nation-wide (check for circular products)
- collection at urban mining site or delivery
- digital platform with different pro-viders
- digital platform with different pro-viders

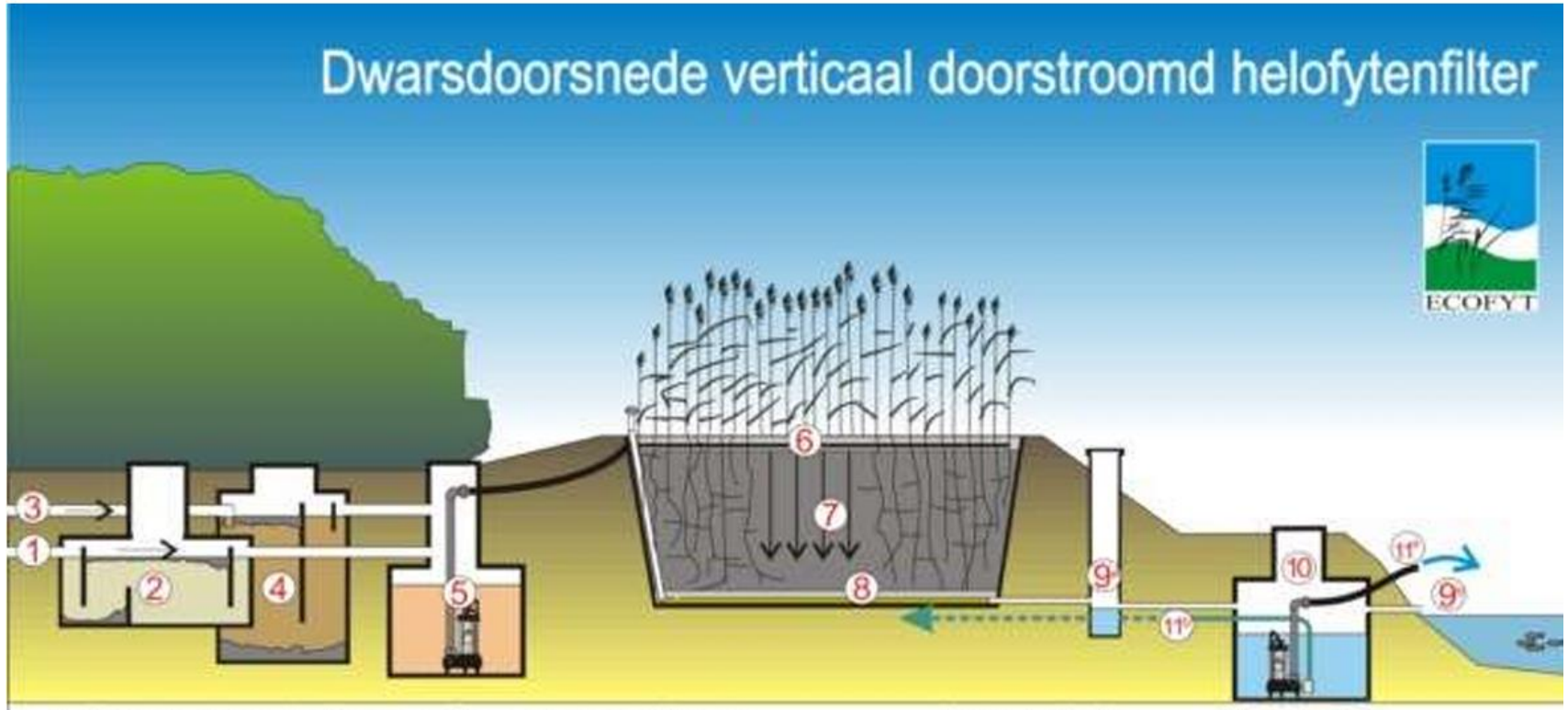
Resource system



Resource system

Retailer	Type of provider	Current inventory (2024)	R-strategy	Available infrastructure	Distance [km]
Materiaalbank	Retailer	Steel profiles, roof plates, appliances	re-use	Road & water	56
Restoric	Retailer	biggest supplier of doors	re-use, repair, recycle	Road & water	48
CIRCULAIRE BOUWMATERIALEN	Retailer	Wide variety of materials	re-use	Road	65
Van Zundert CirculairAanbod.nl	Retailer	36 total items: several painted IPE profiles, appliances, wooden staircase	re-use	Road	11
insert	Open platform	Bulk wood, appliances, interior	direct re-use	variable, mostly road	-
stiho thuis in de bouw	Retailer	Construction materials	re-use & repair	Road & water	-
Rexel	Retailer	Electrical building components	re-use & repair	Road	-
GEBRUIKTEBOUWMATERIALEN.COM	Retailer	wide offer, variety of steel profiles	re-use & repair	Road	87
Marktplaats	Open platform	All second hand products	direct re-use	variable, mostly road	-

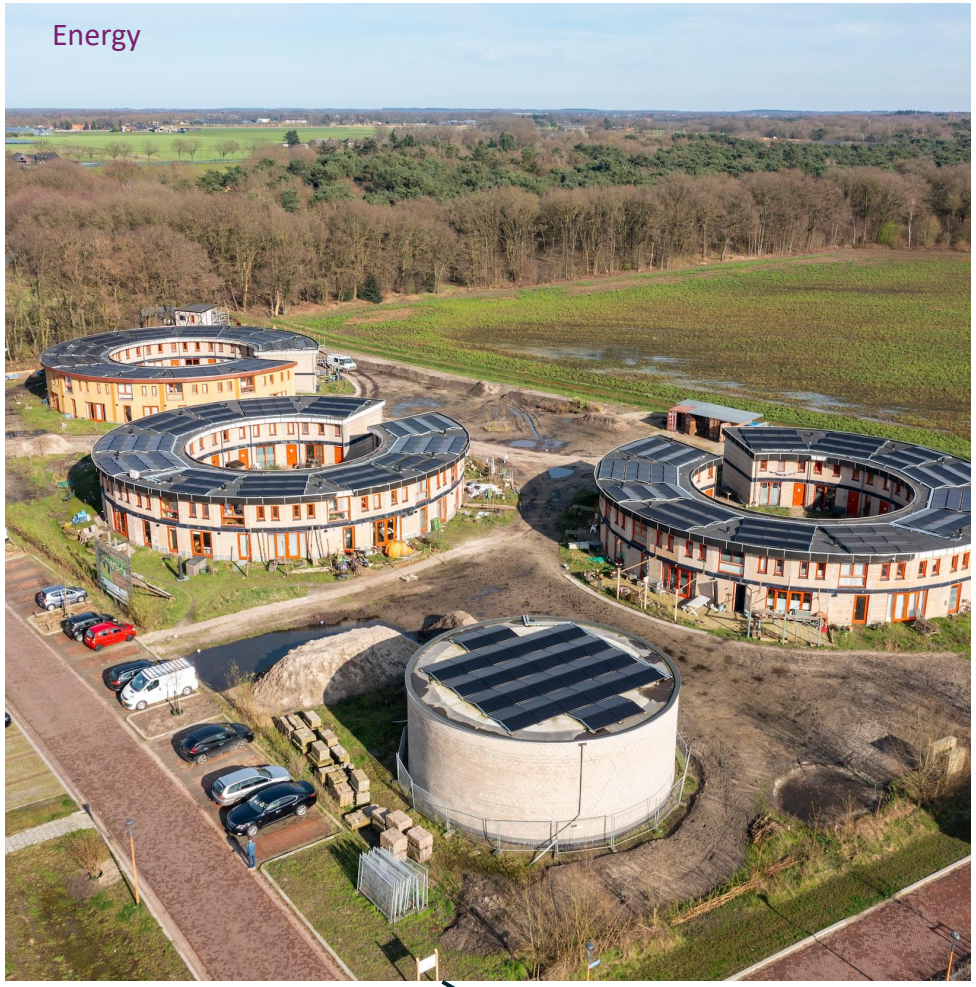
Clean Water

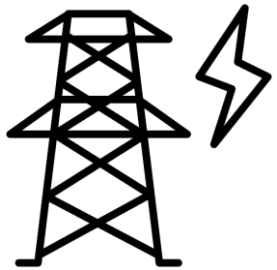


1 afvoer keuken en badkamer
2 vetafscheider
3 afvoer toiletten
4 septic tank
5 pompput voor vuil water
6 drukleiding in grindbed
7 helofytenfilter in foliebak
8 drainageleiding met ontluchting
9a controleputje
9b overstort
10 reservoir voor gereinigd water (optioneel)
11a toepassing met dompelpomp (optioneel, bijv. vijver)
11b toepass. m. hydrofoor optioneel, (bijv. toilet)

Resource system

Flexibility & Placemaking

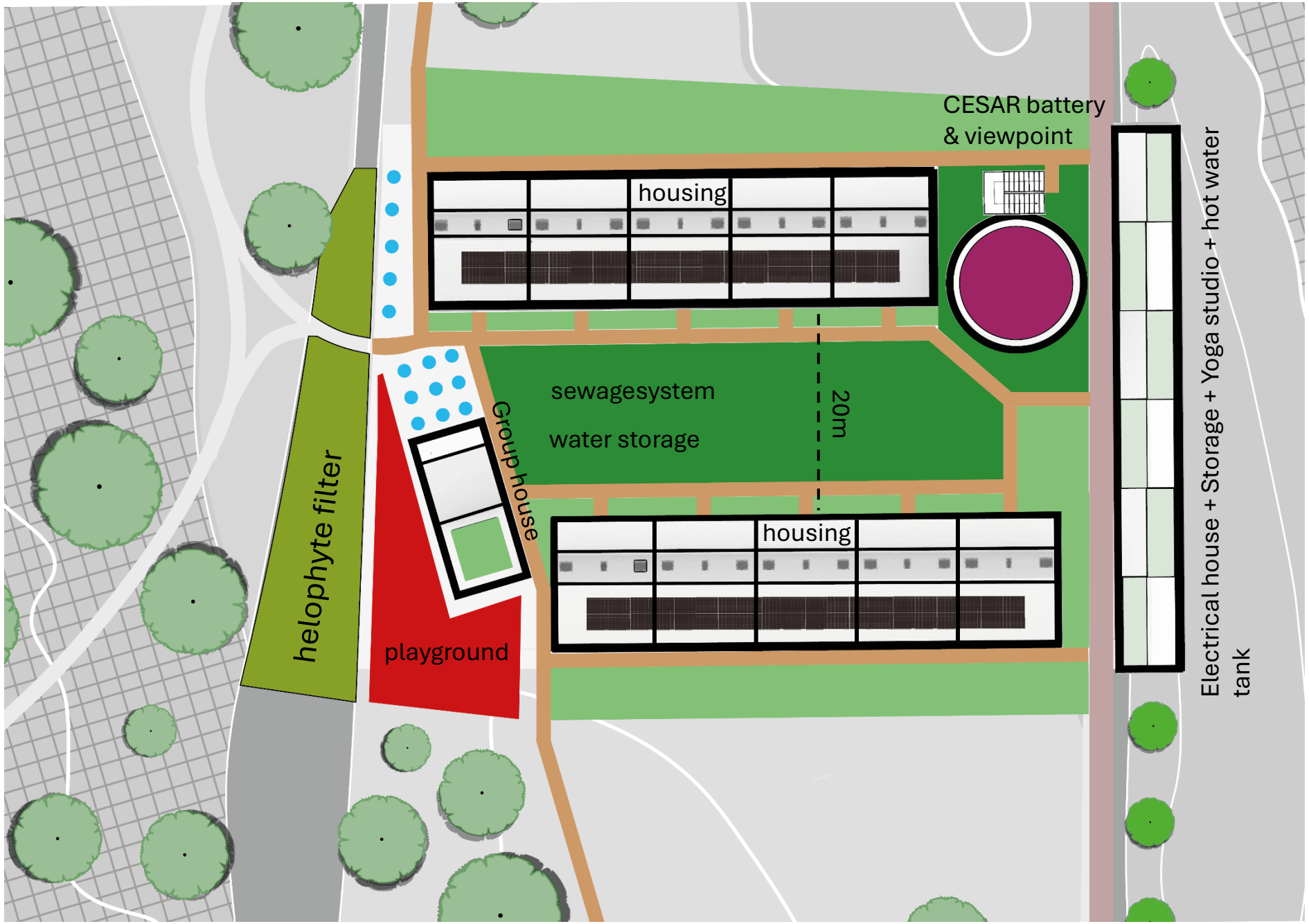

Energy



Non-toxic

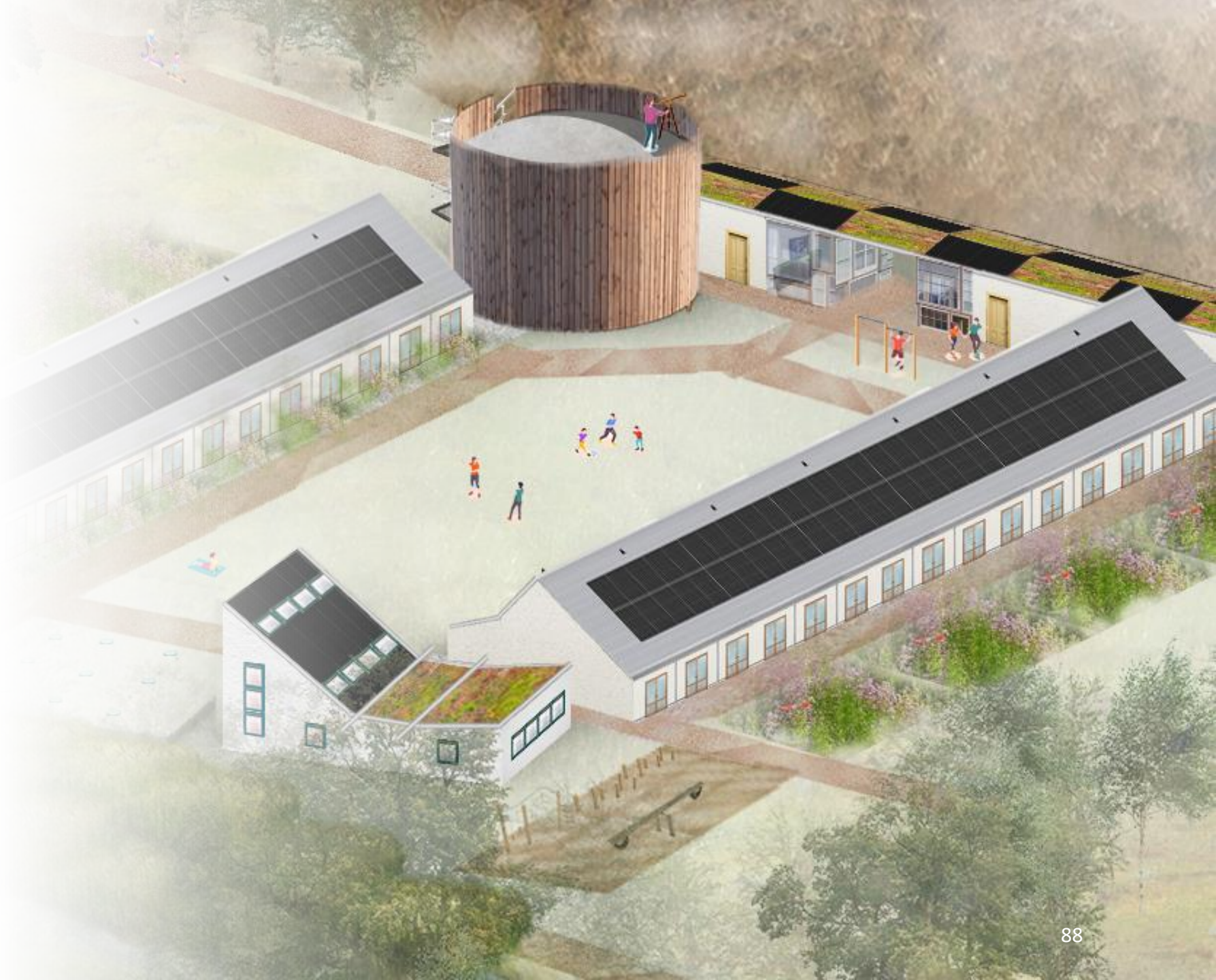
Farmyard of the Future

Yoran Erami - 4563271

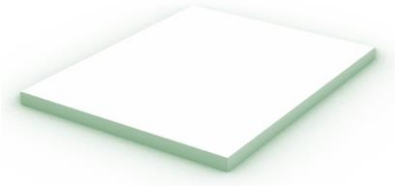

CESAR battery
& viewpoint
housing
sewagesystem
water storage
20m
Group house
helophyte filter
playground
housing
Electrical house + Storage + Yoga studio + hot water
tank
N


CESAR & viewpoint
Reed production
fruit & walnut trees
40-70 solar panels
food garden
83 solar panels
83 solar panels
food garden
sewage system
helophyte filter
20 solar panels
inner peat bog

Dwelling Design

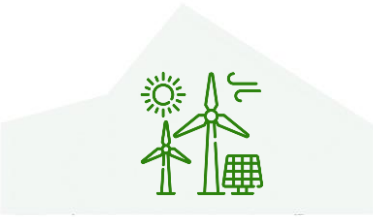



50m2 x 2
40m2 x 4

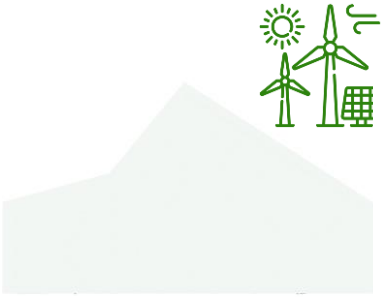


Circular
foundation

Biobased shell



Volume

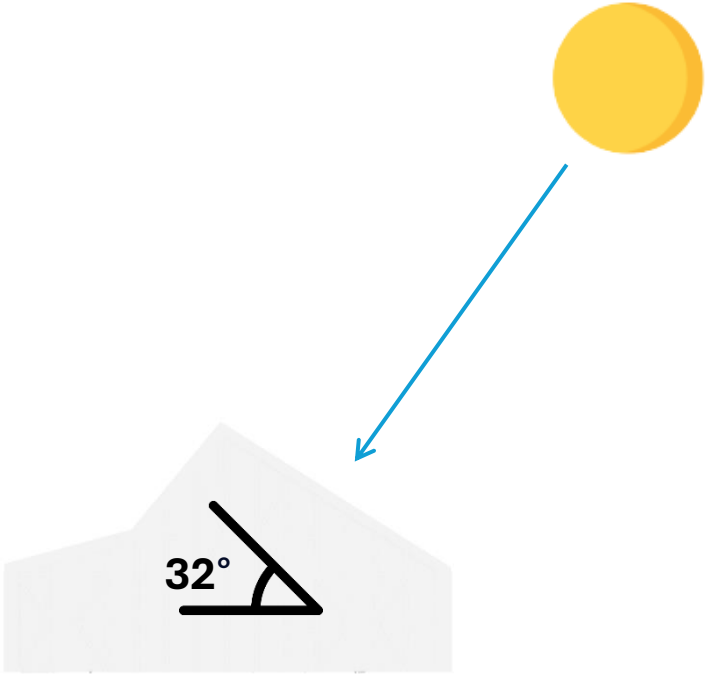


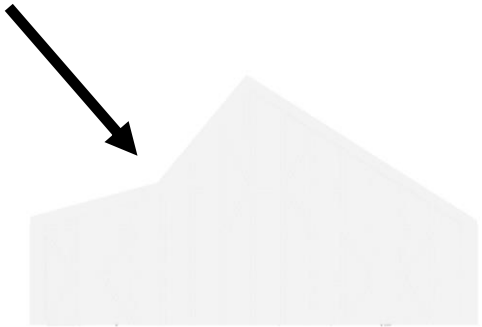
Shape

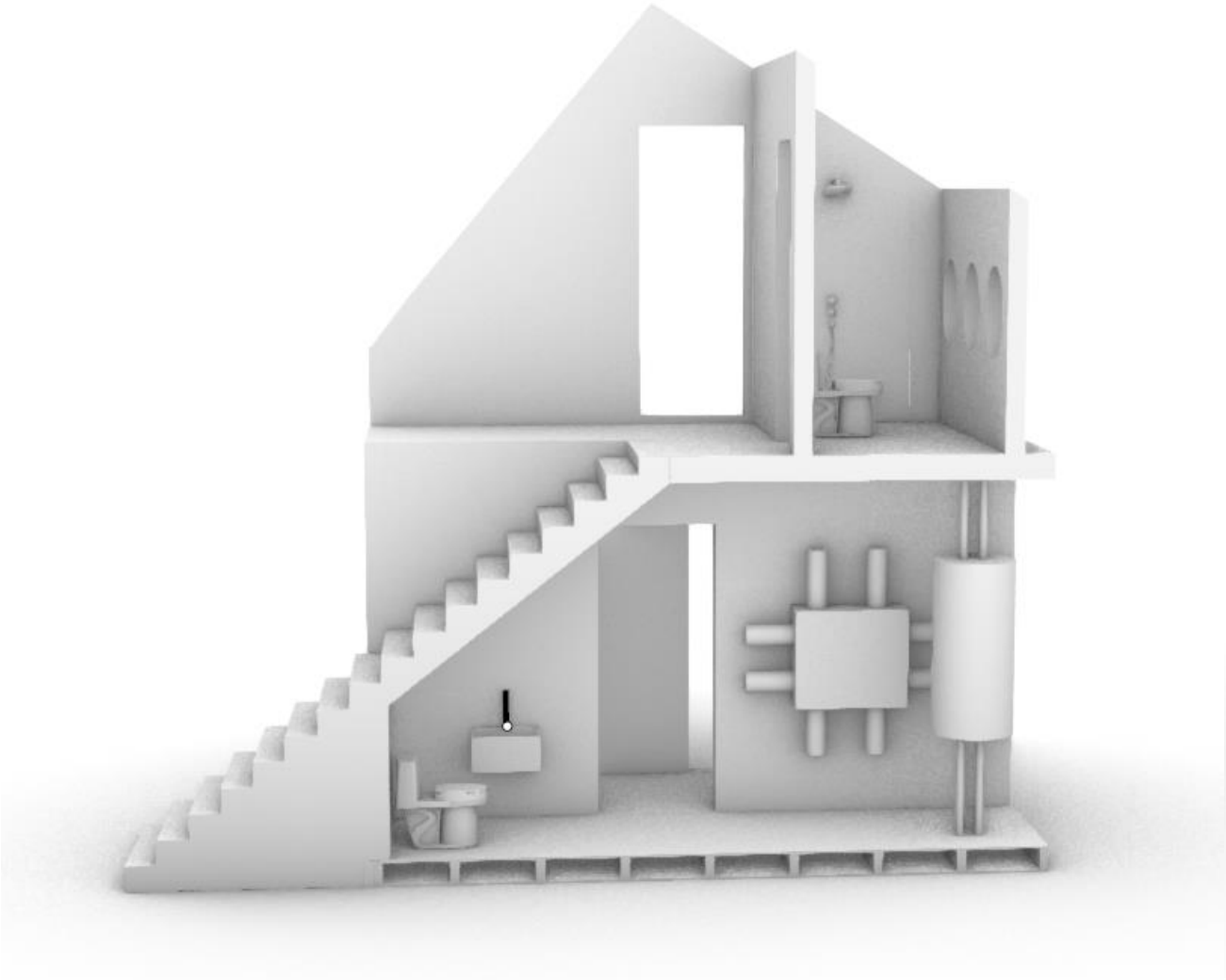
Flexibility
& Placemaking

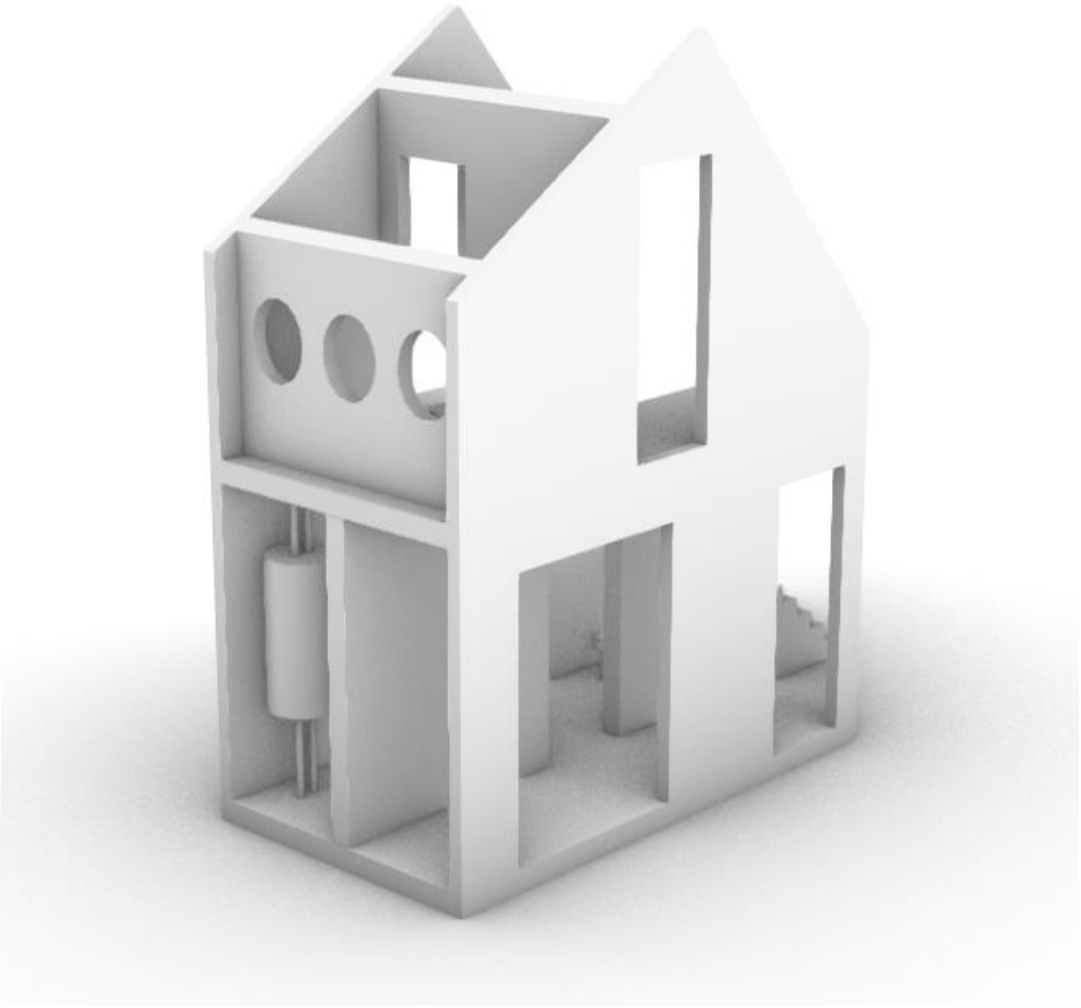
Volume

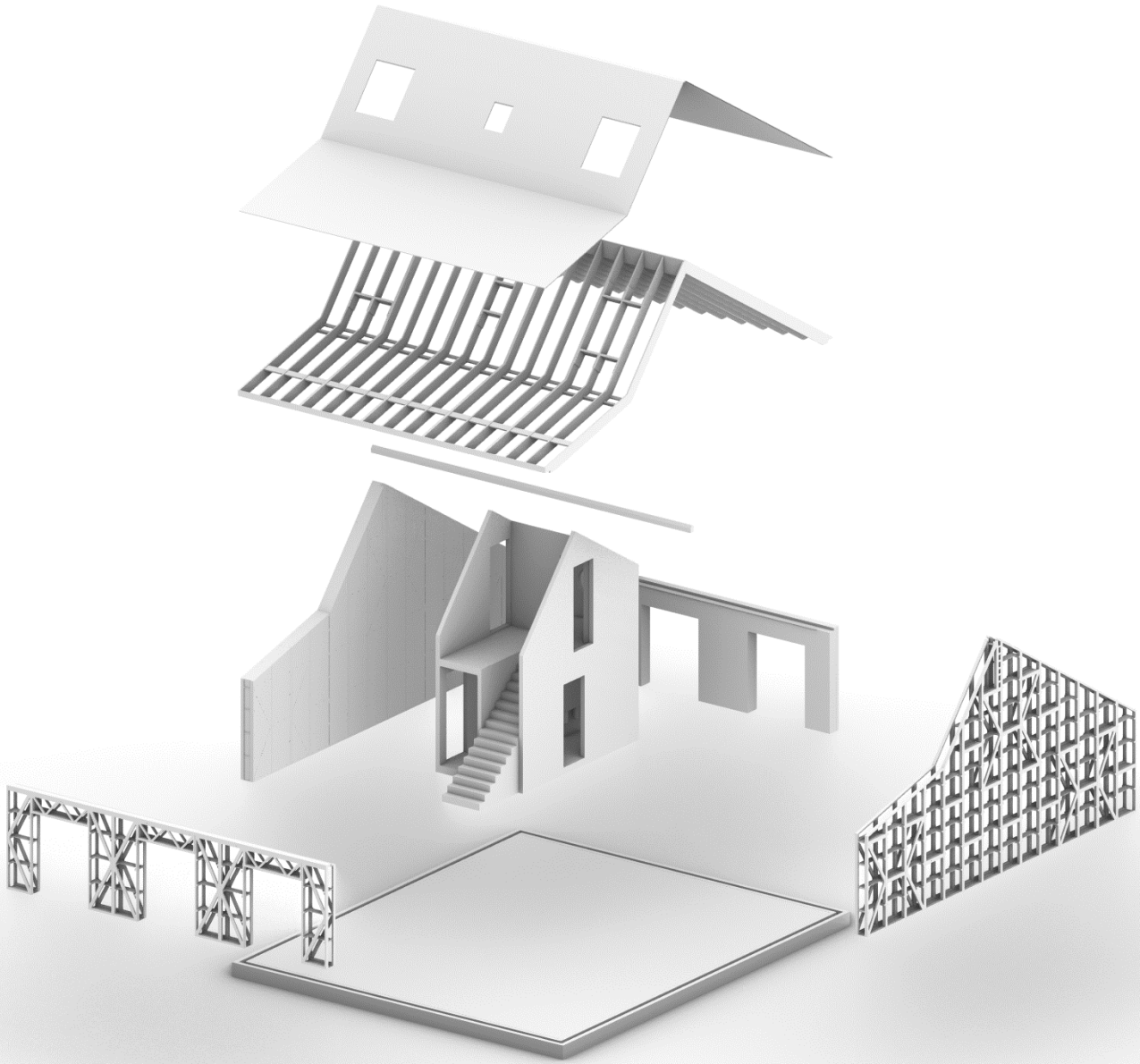
Shape

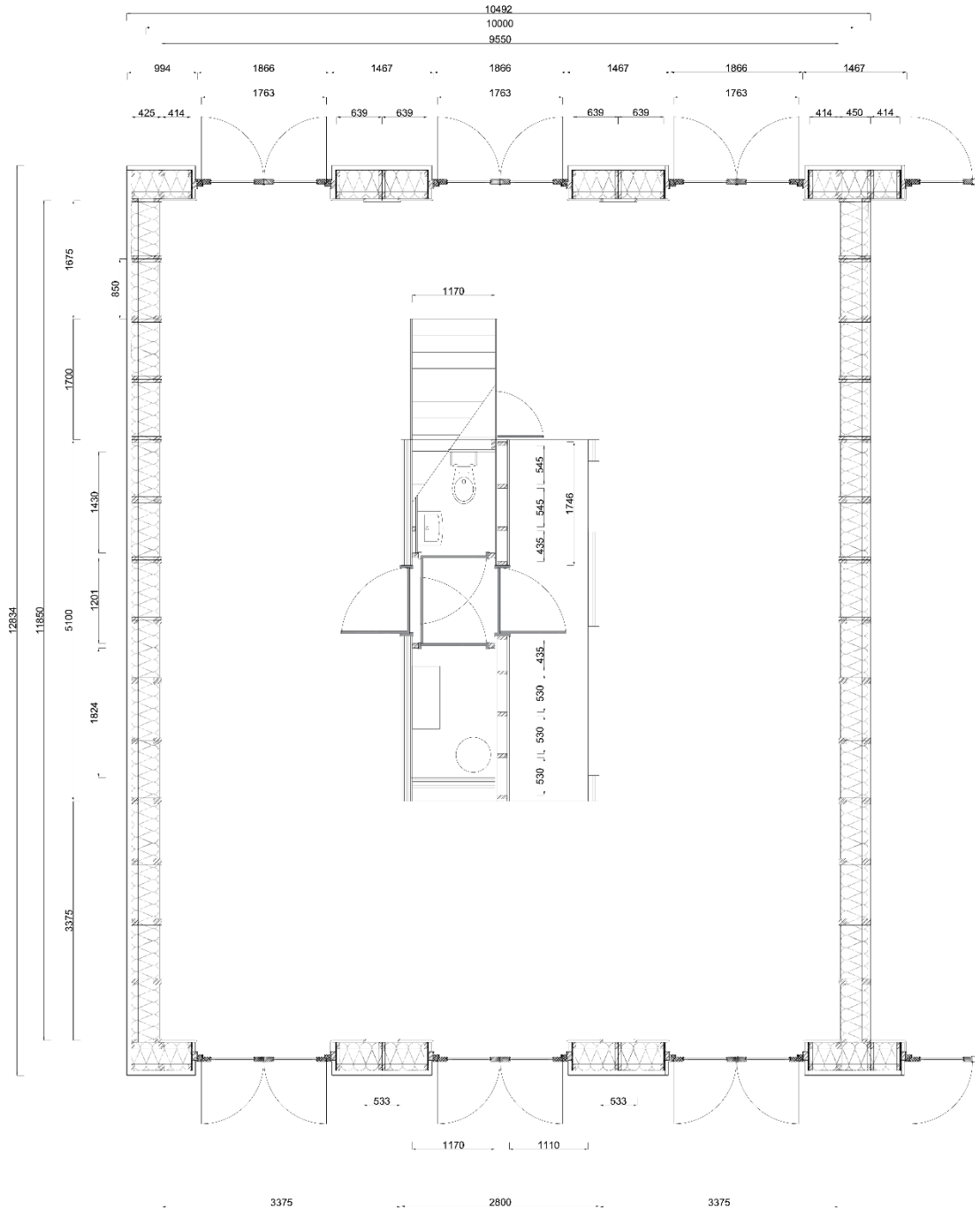








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10000
9550
994
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1467
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1763
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1763
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414
450
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1675
850
1700
1430
1201
1824
12834
11850
5100
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3375
2800
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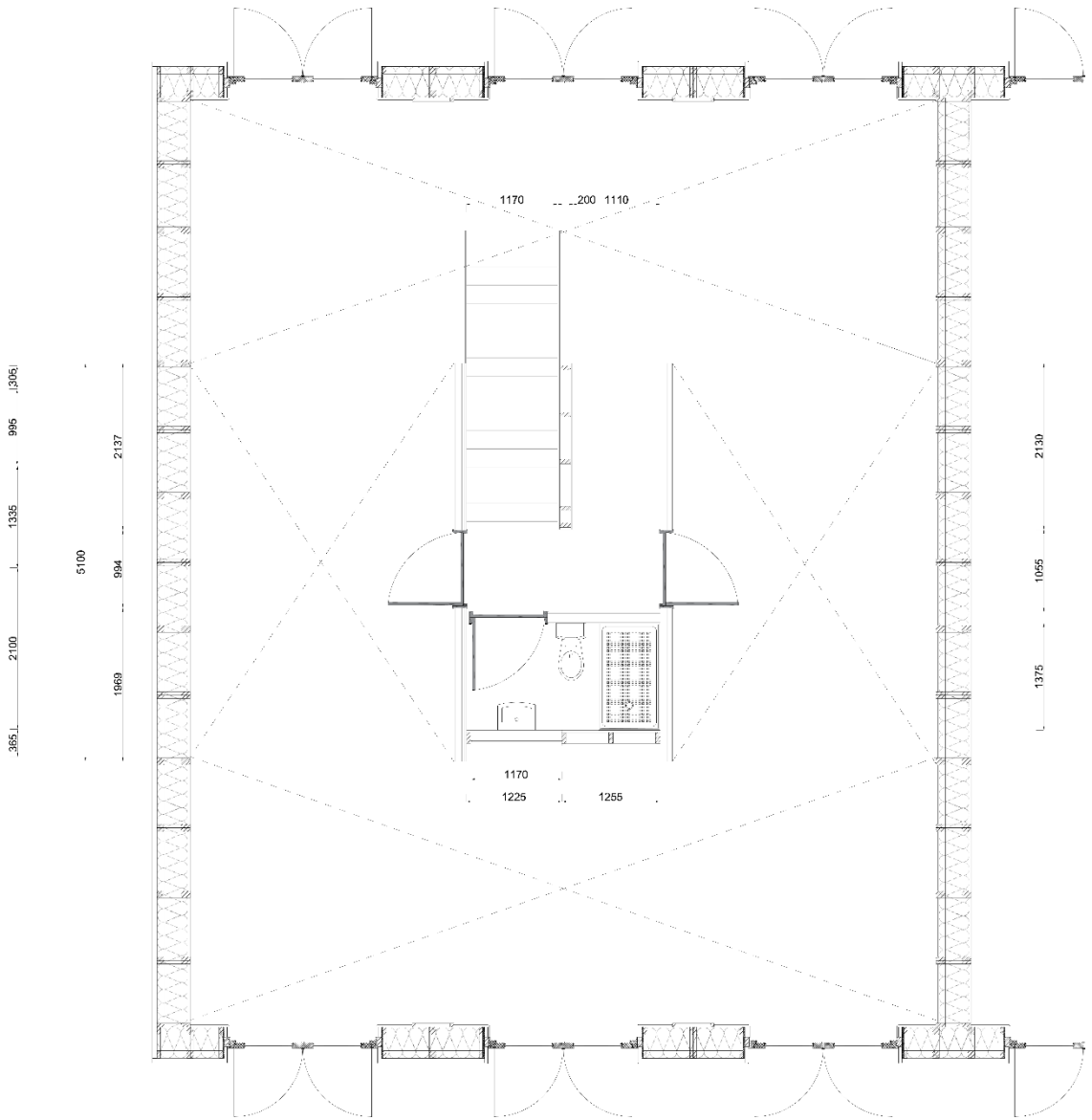
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200
1110
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995
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2100
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2137
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1969
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1170
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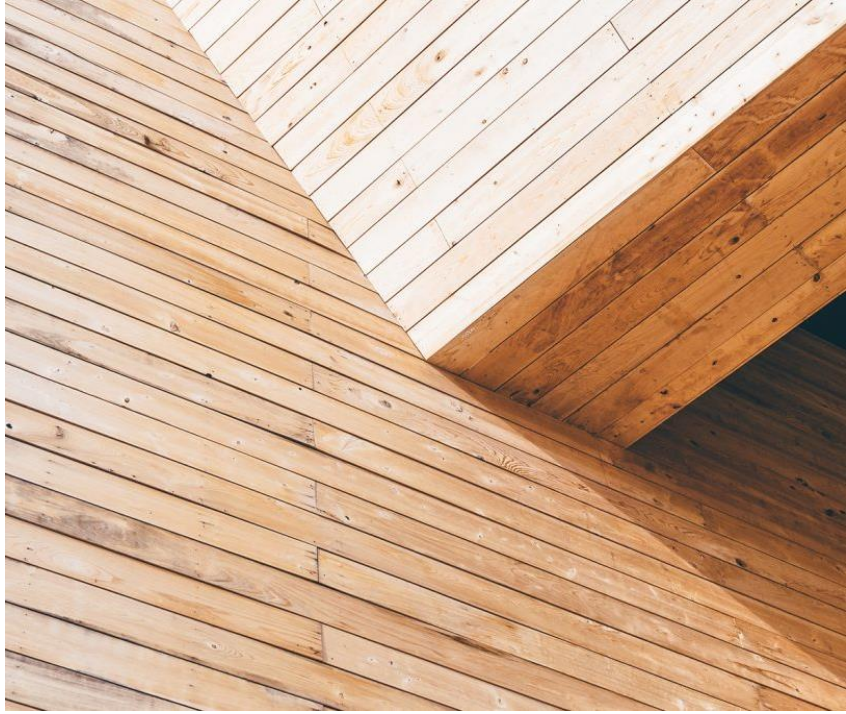
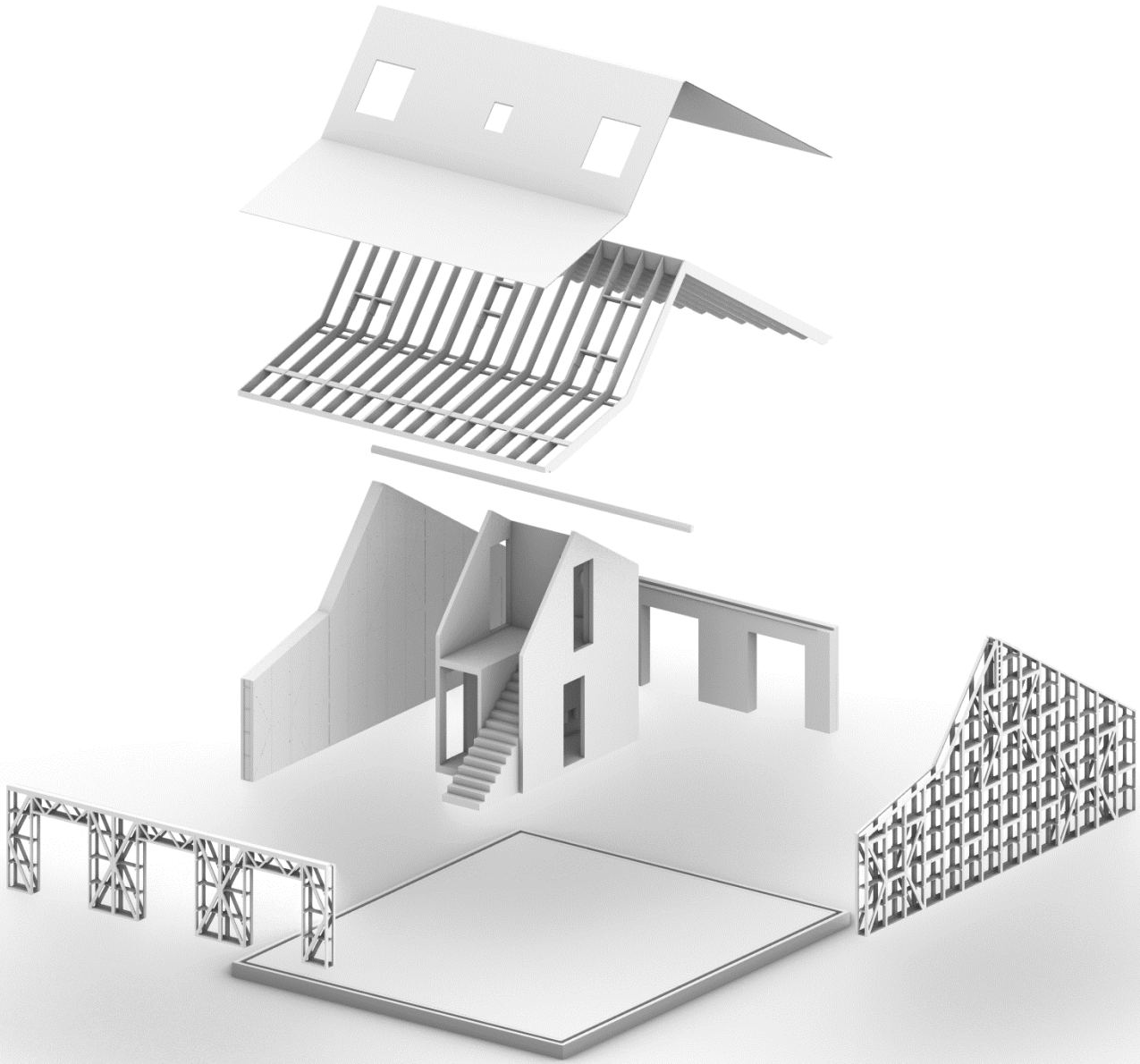
1255


THE
NATURAL
PAVILION



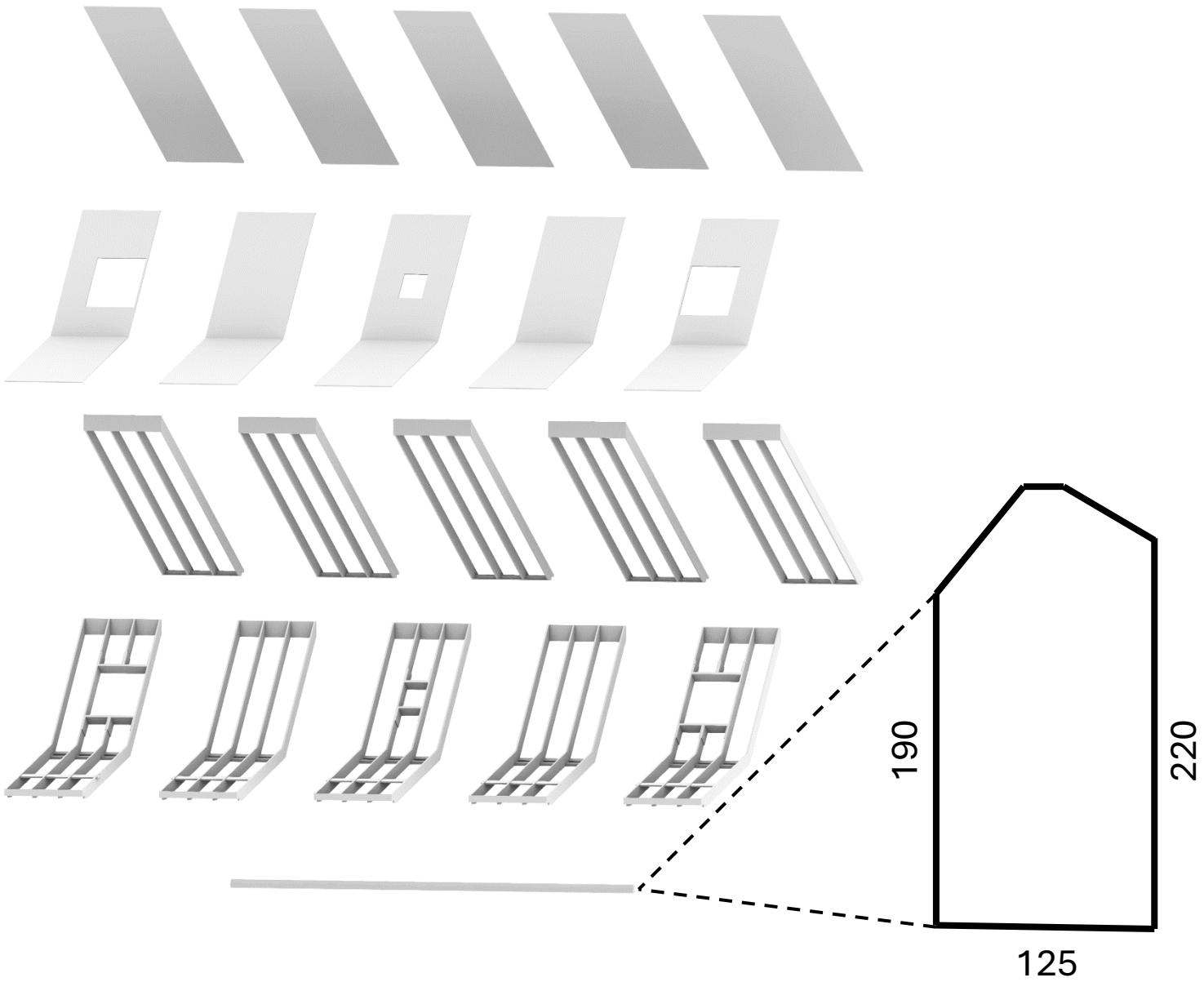


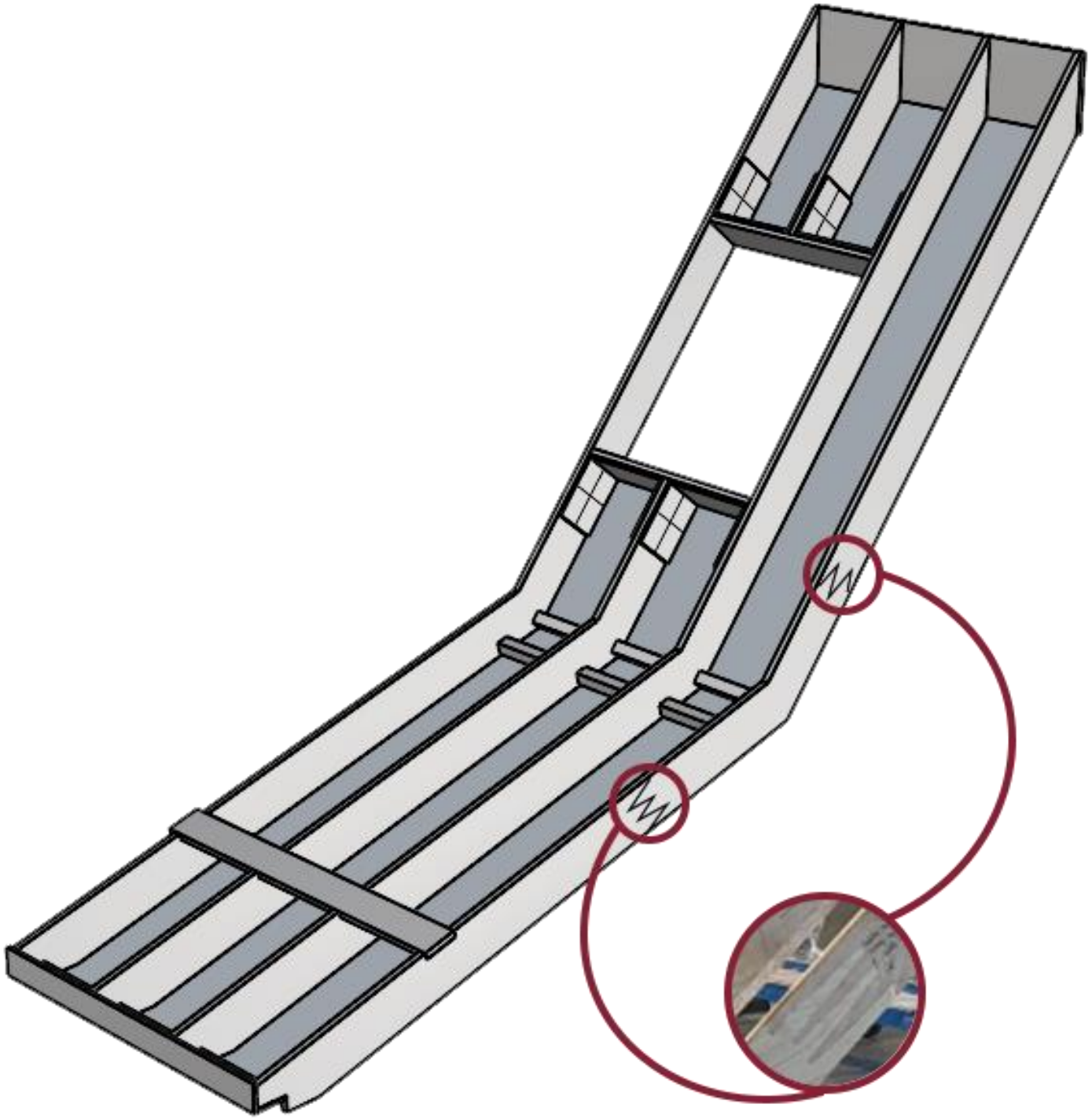



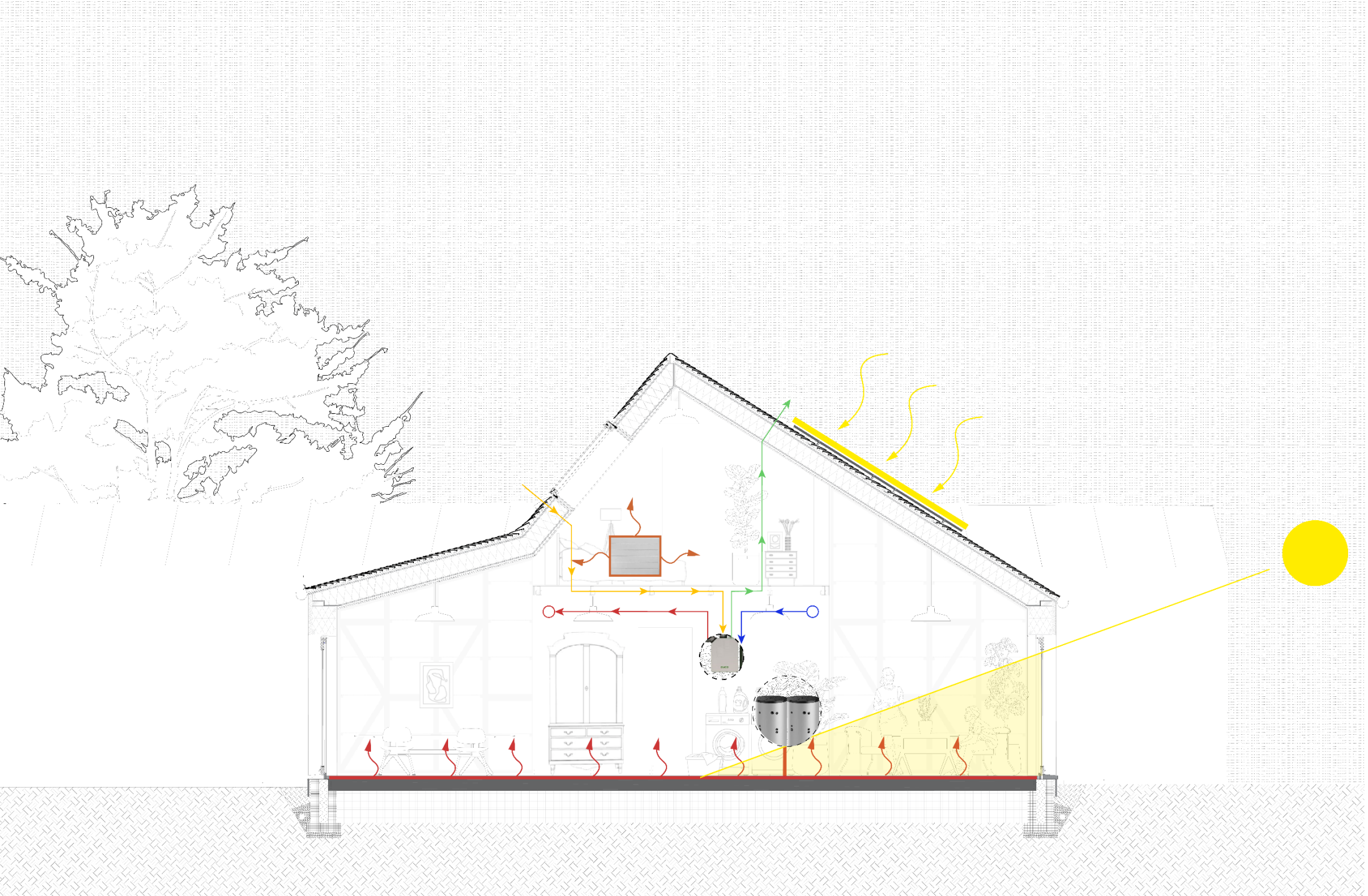
STEICO Wood fiber
underlayment
22mm

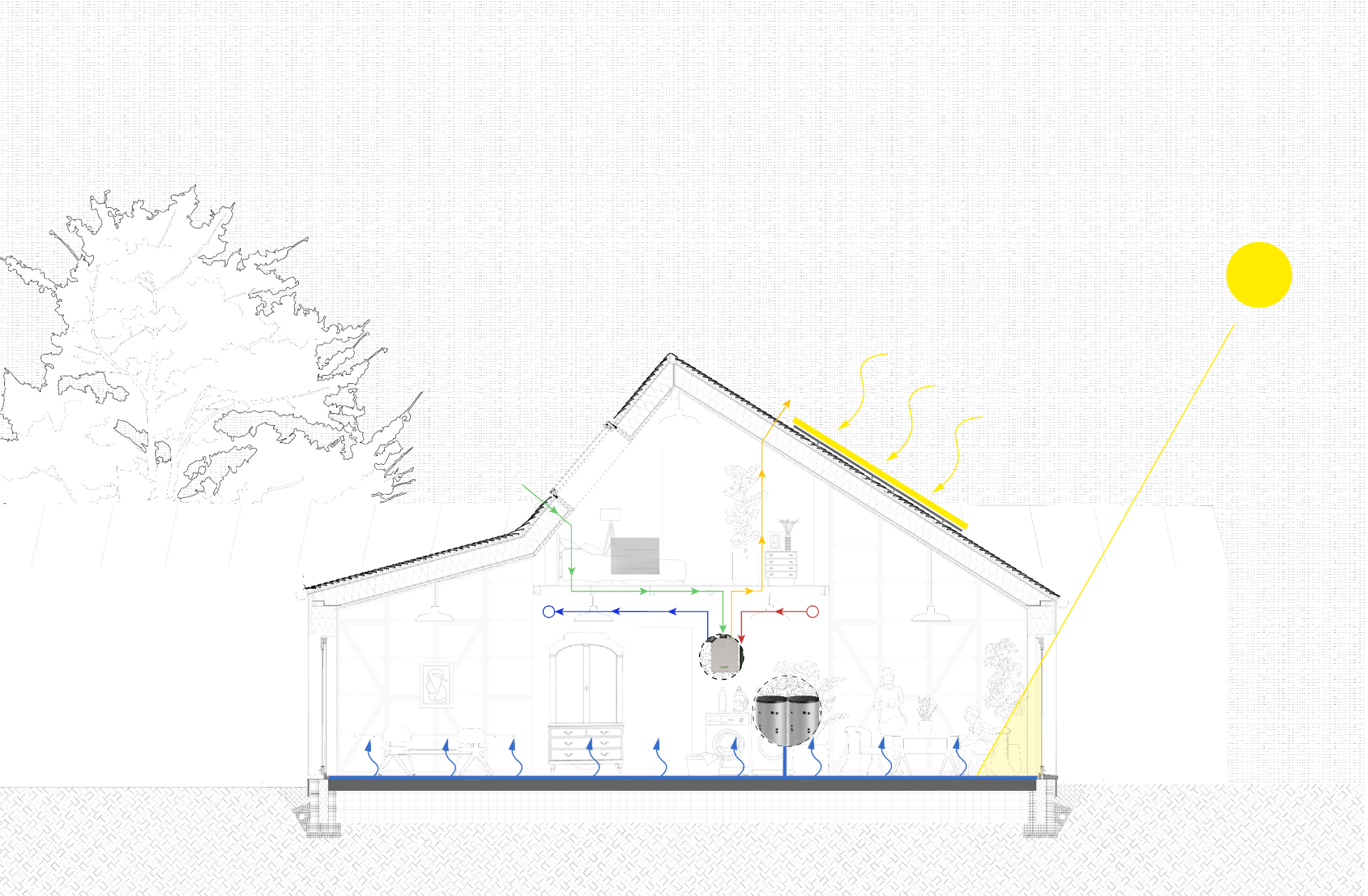
LVL wood boxes
2m wide

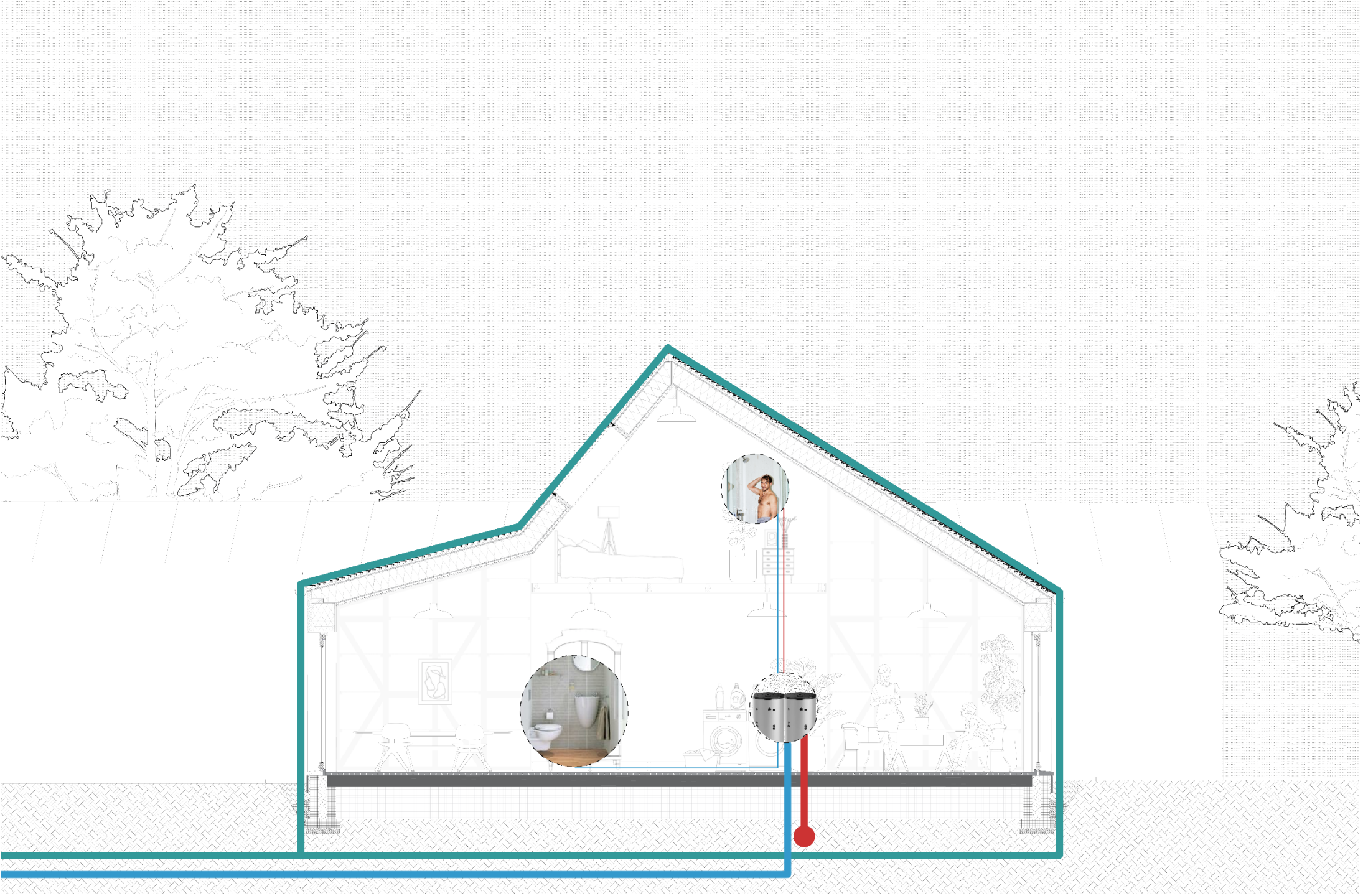
Wooden beam

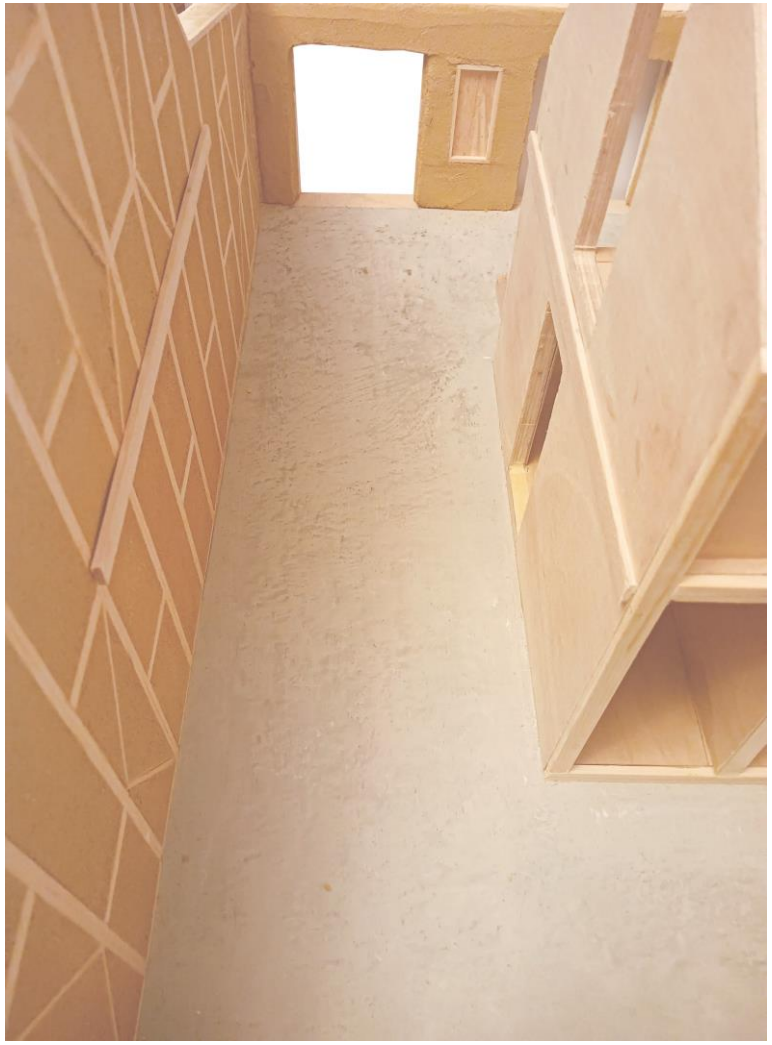


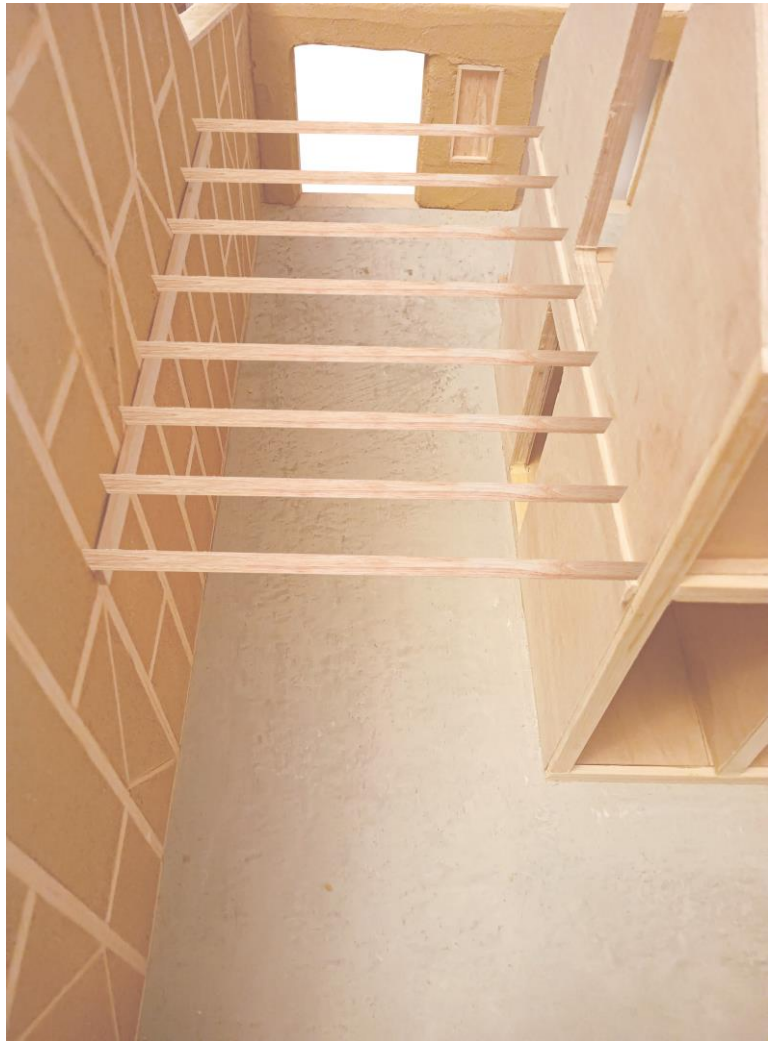


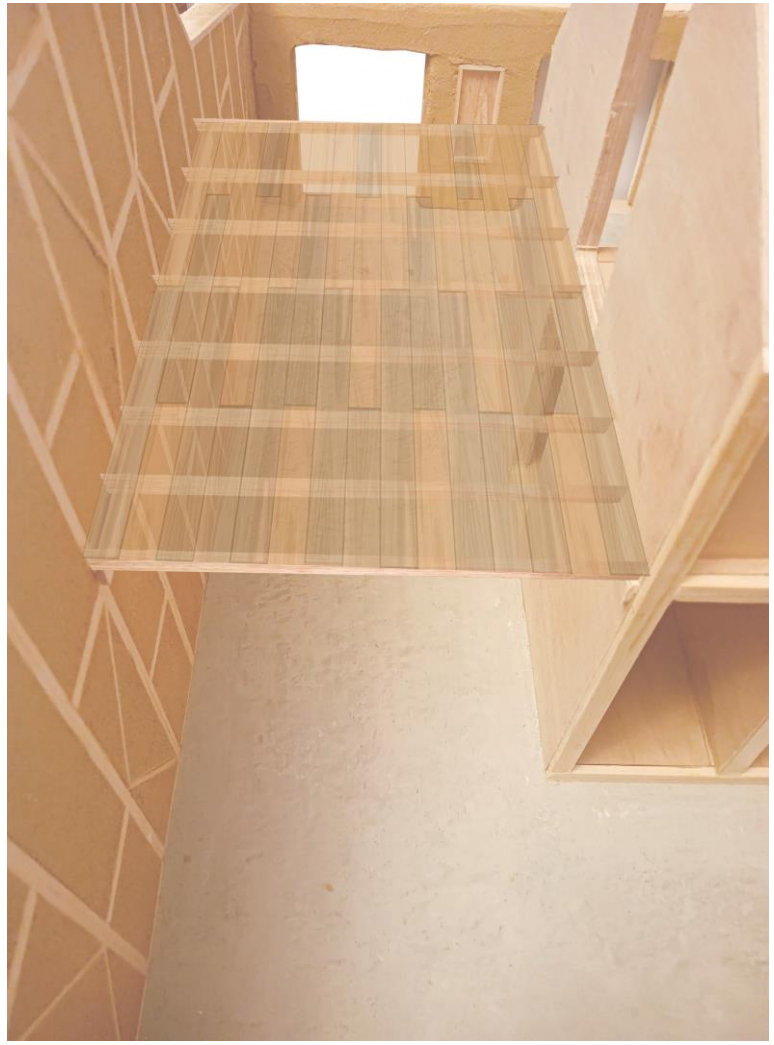


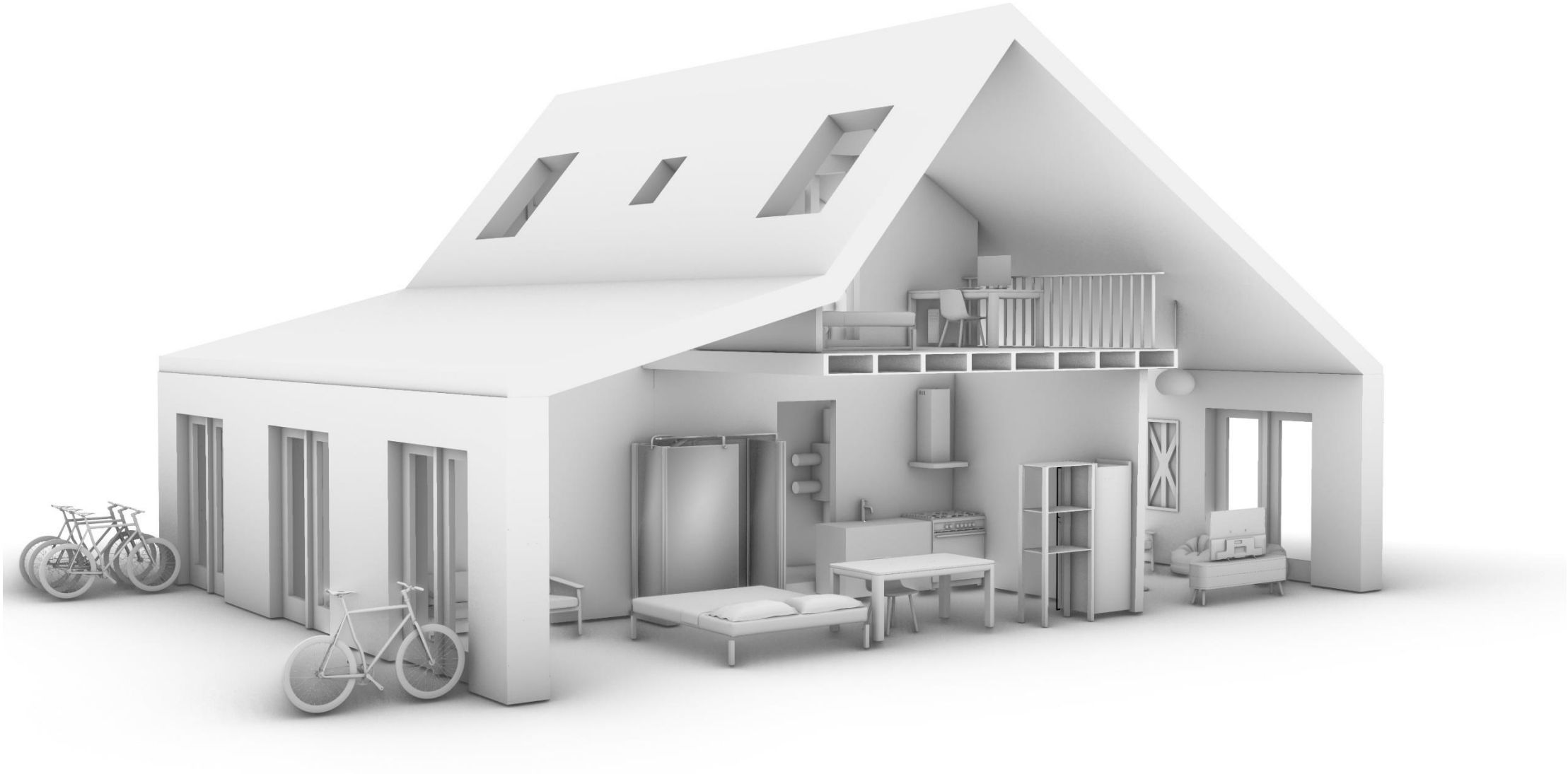


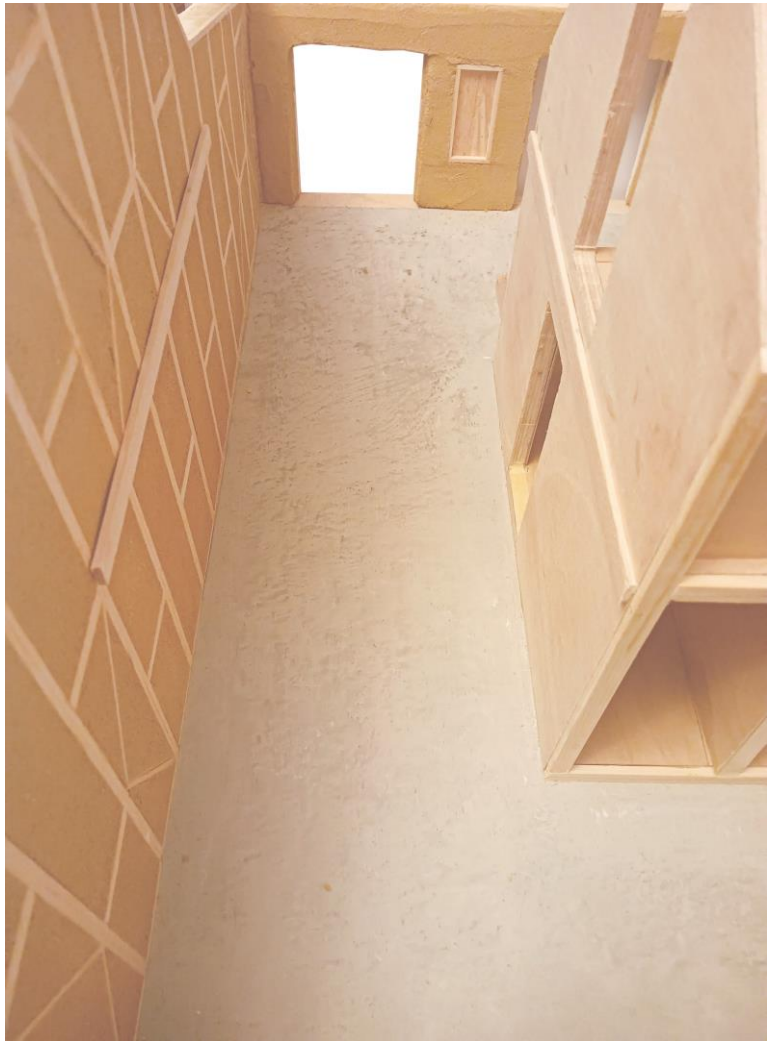


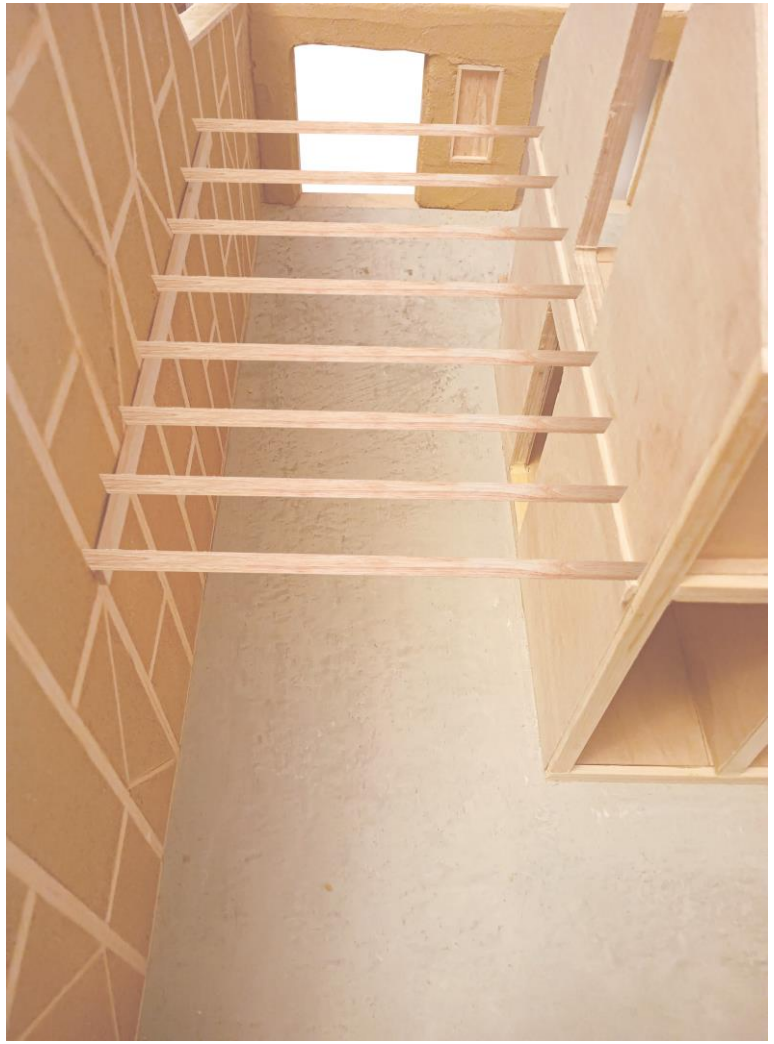


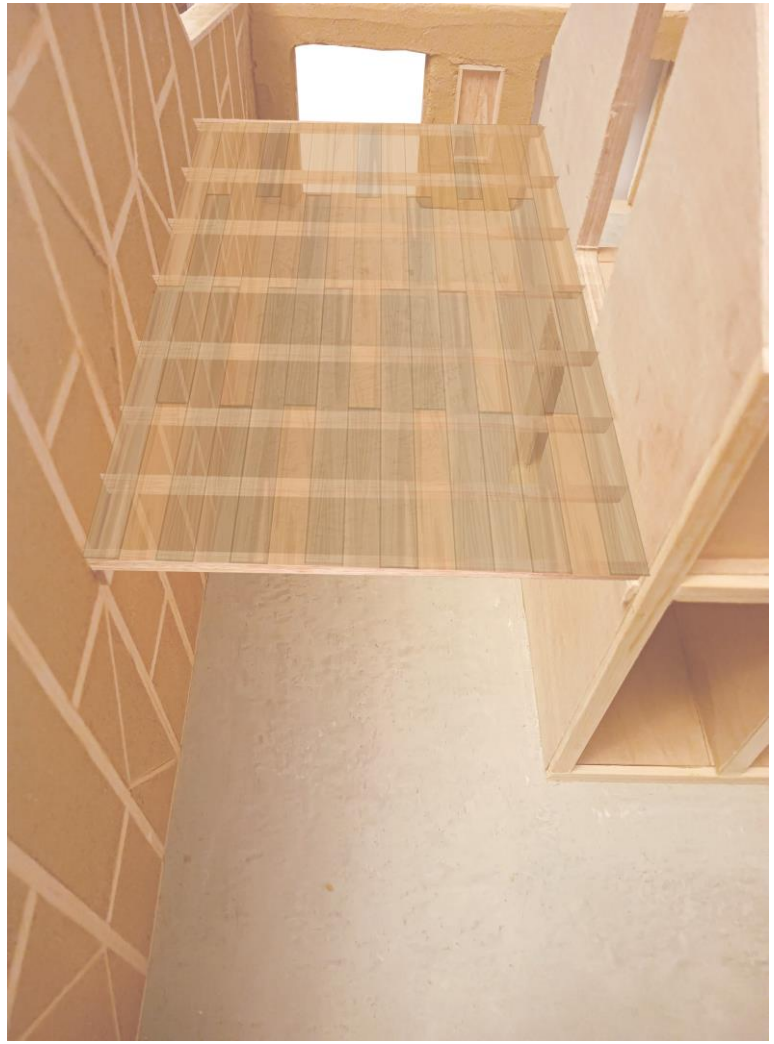


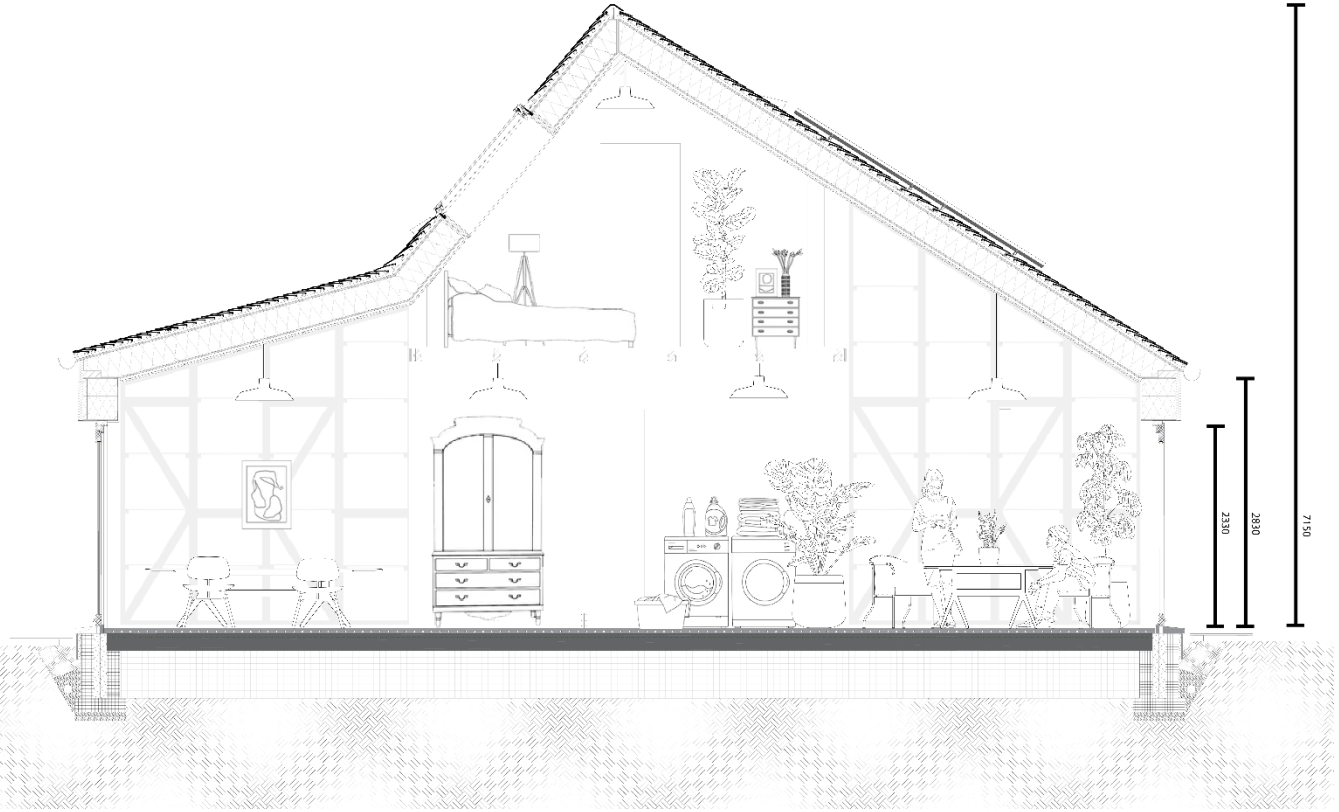








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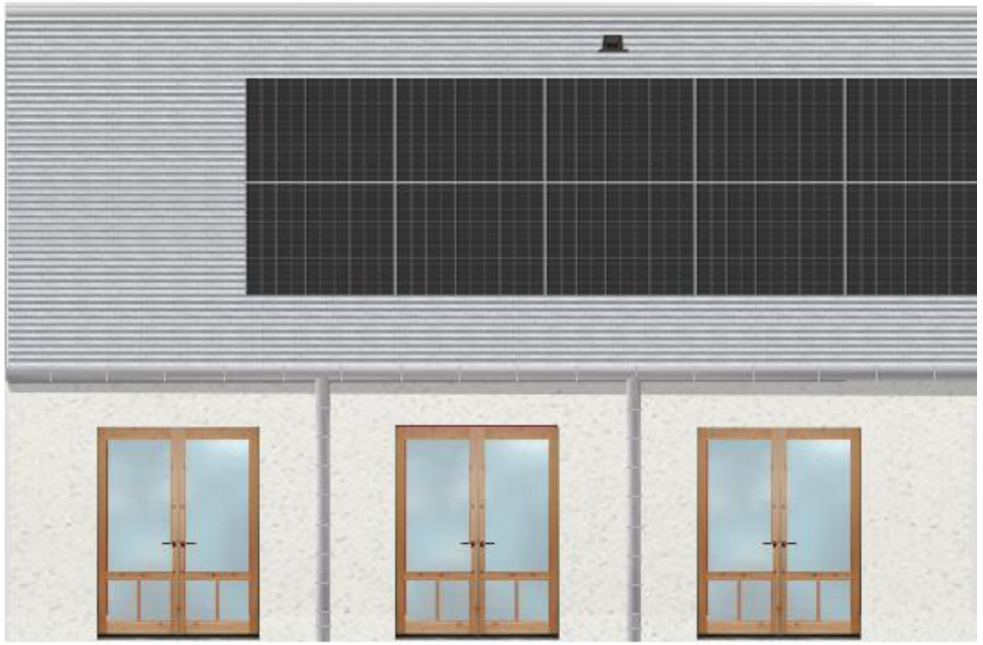

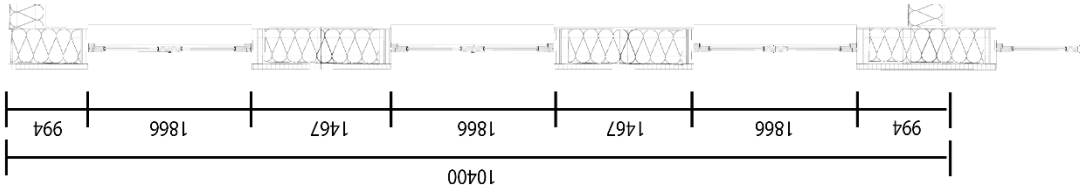
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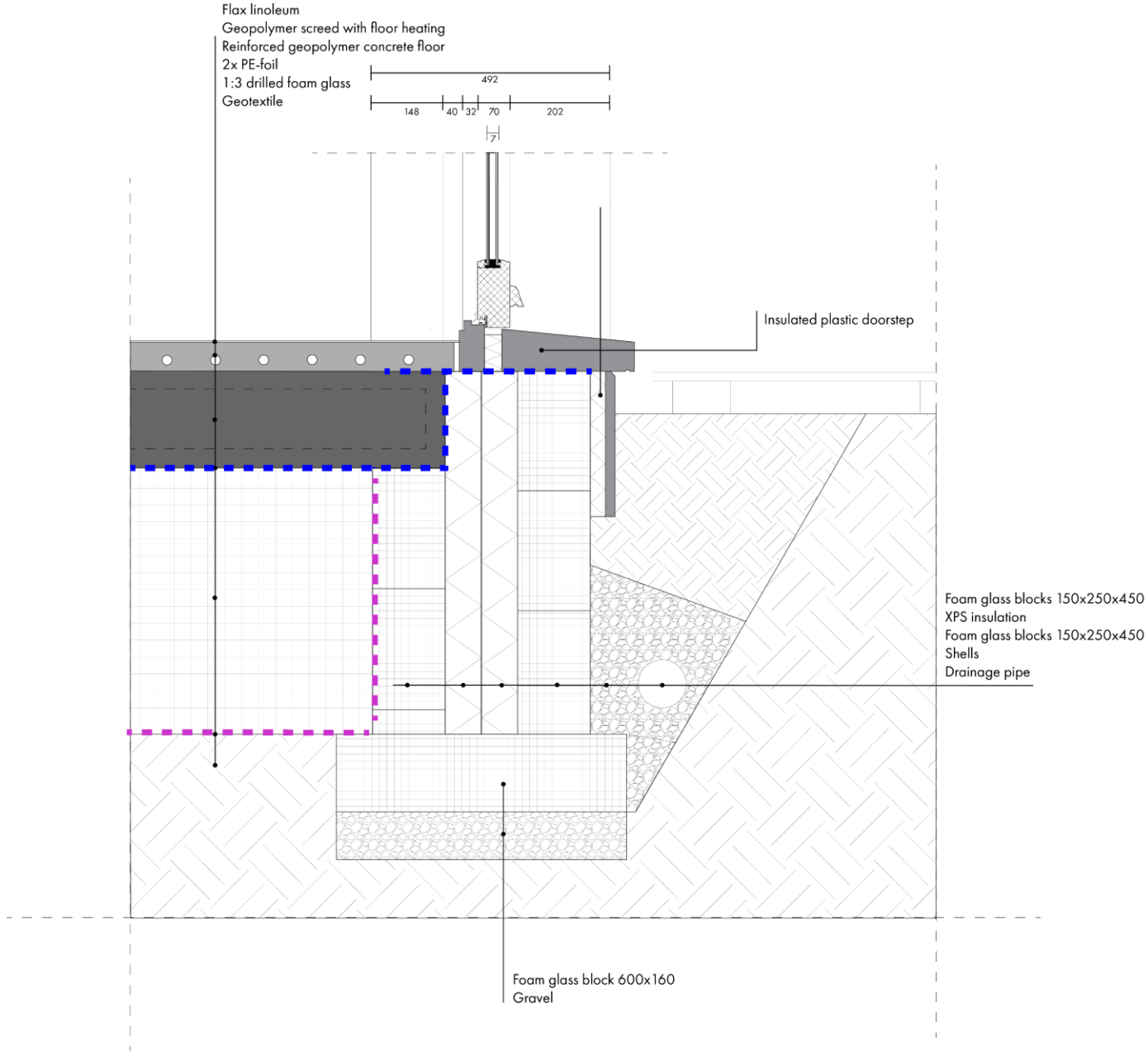
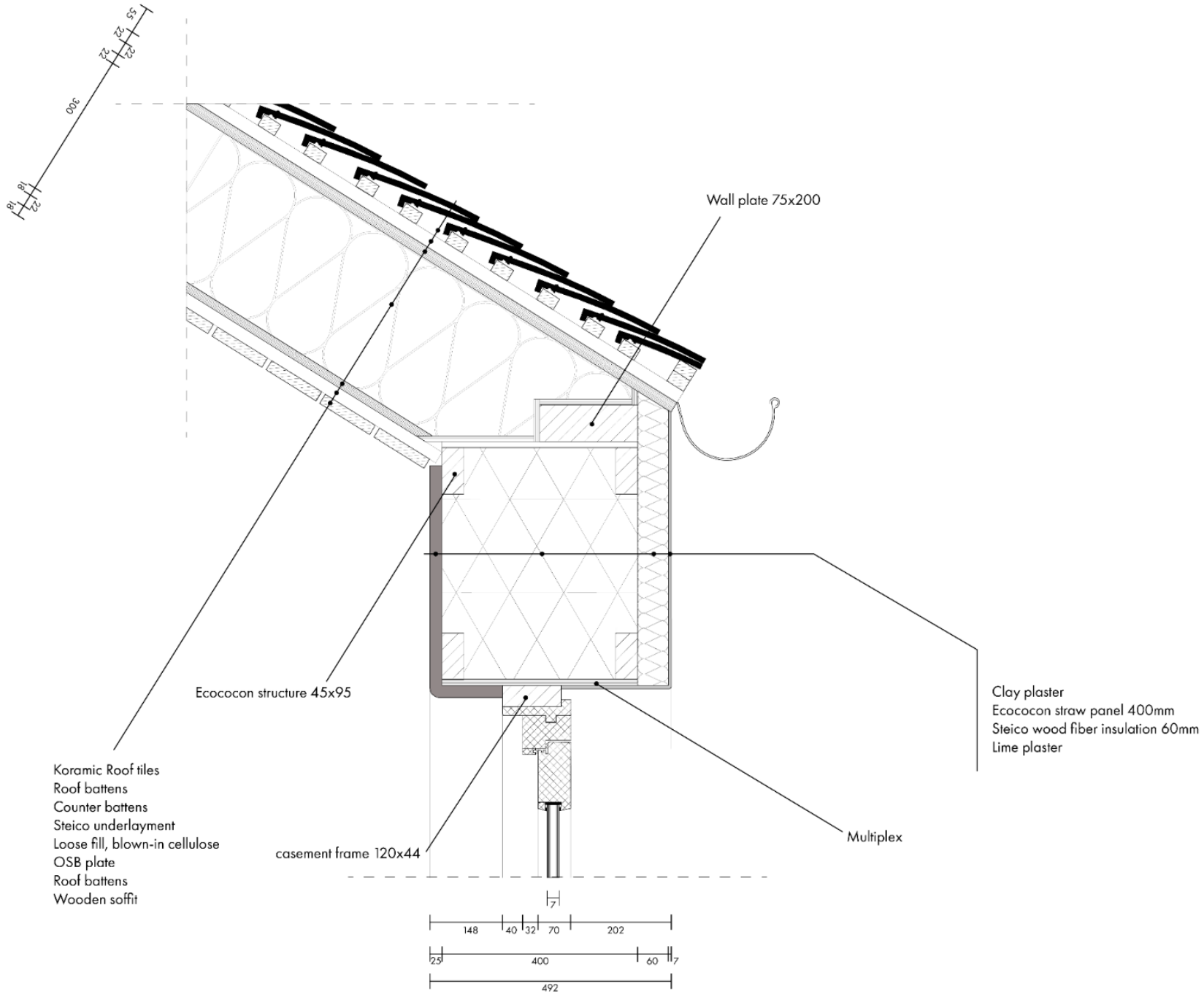
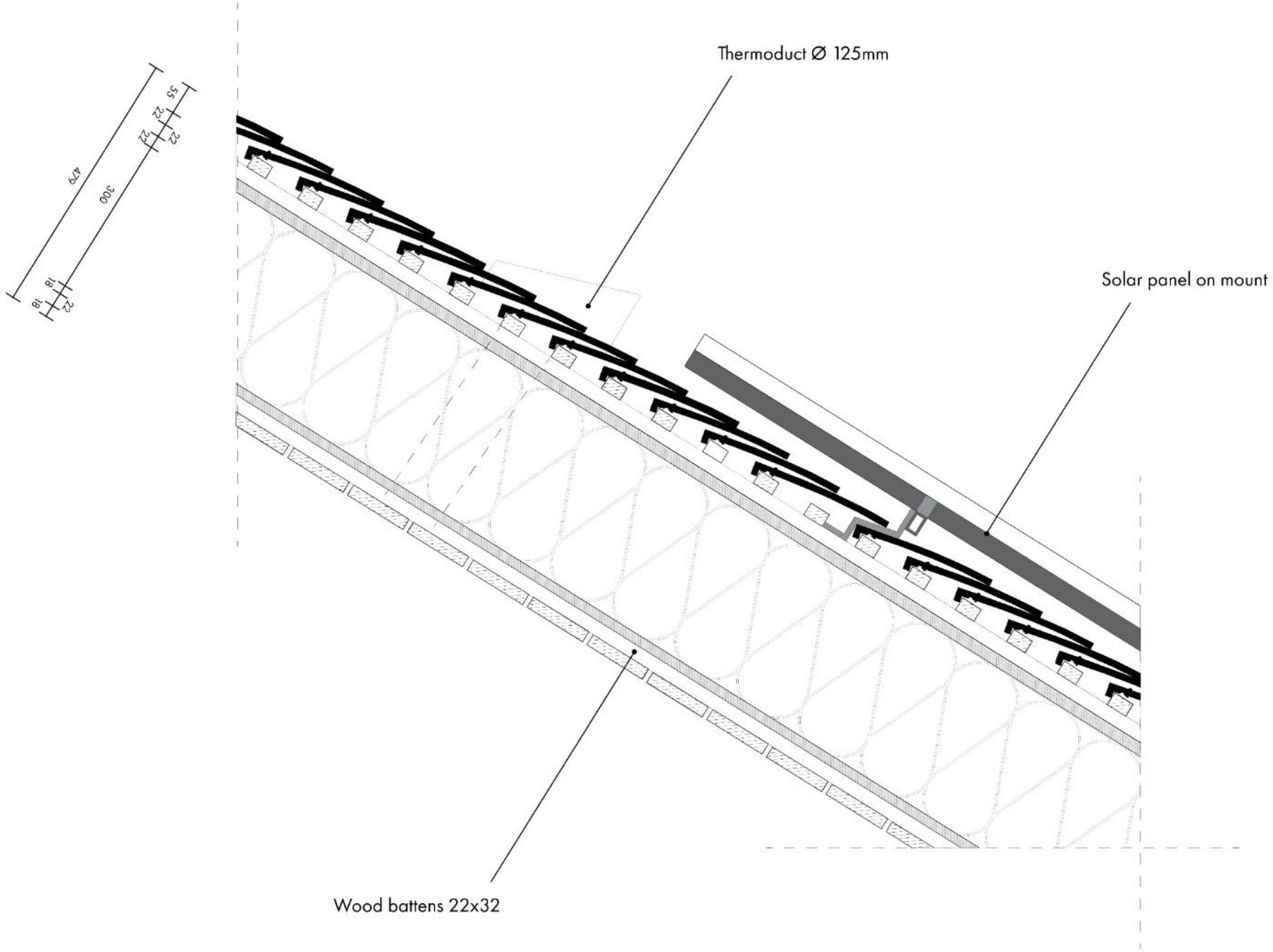
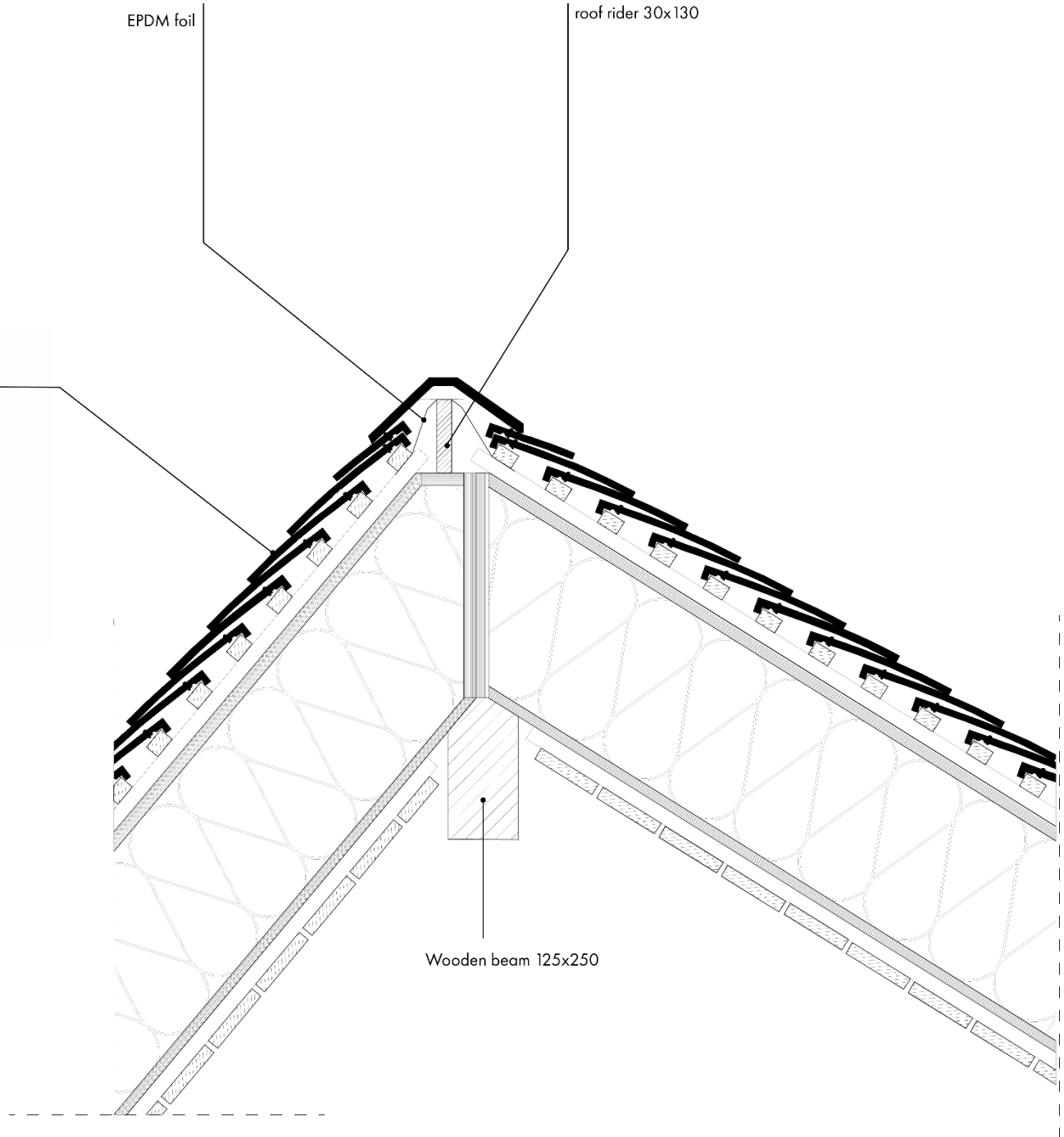
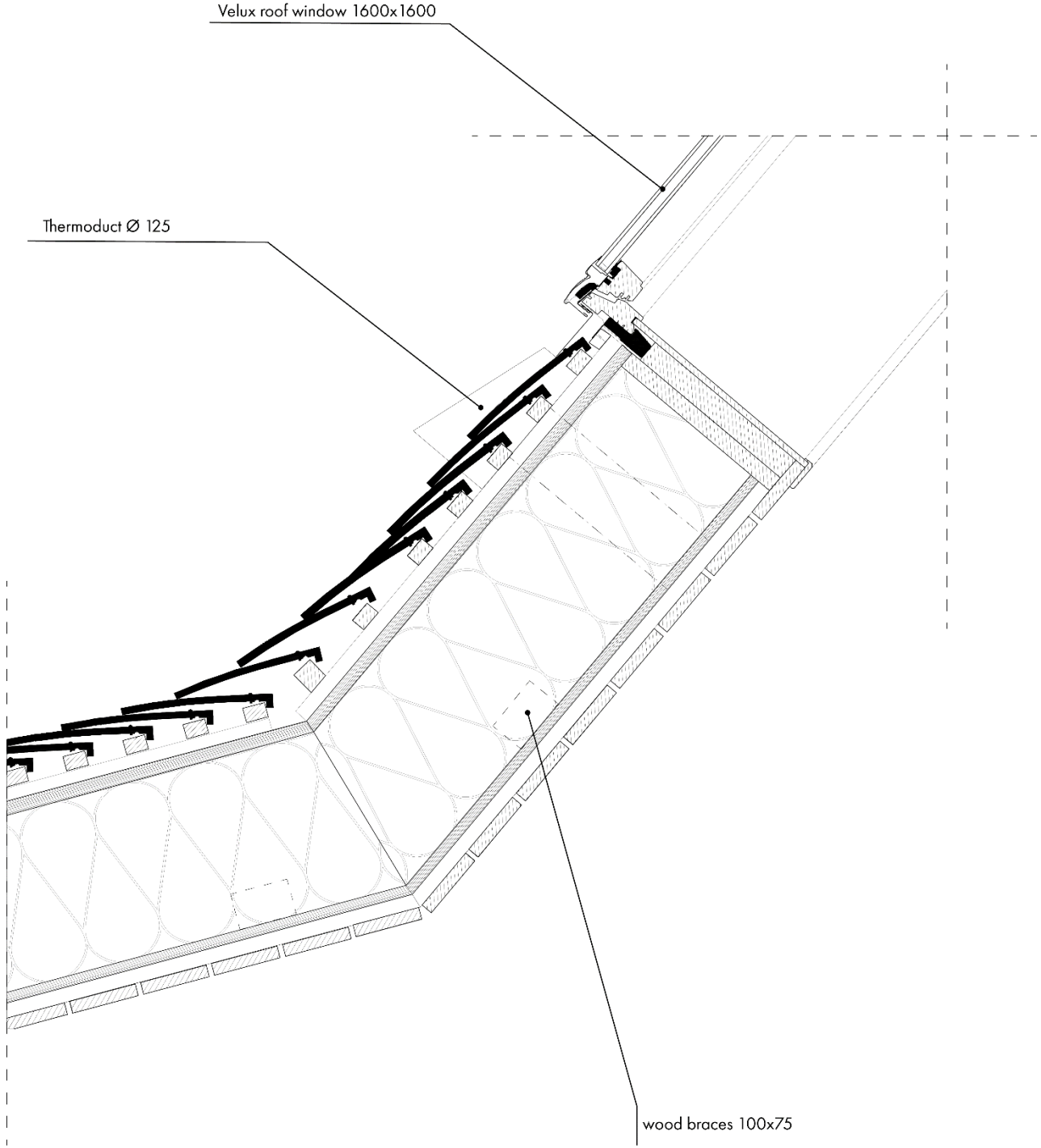
994
10400

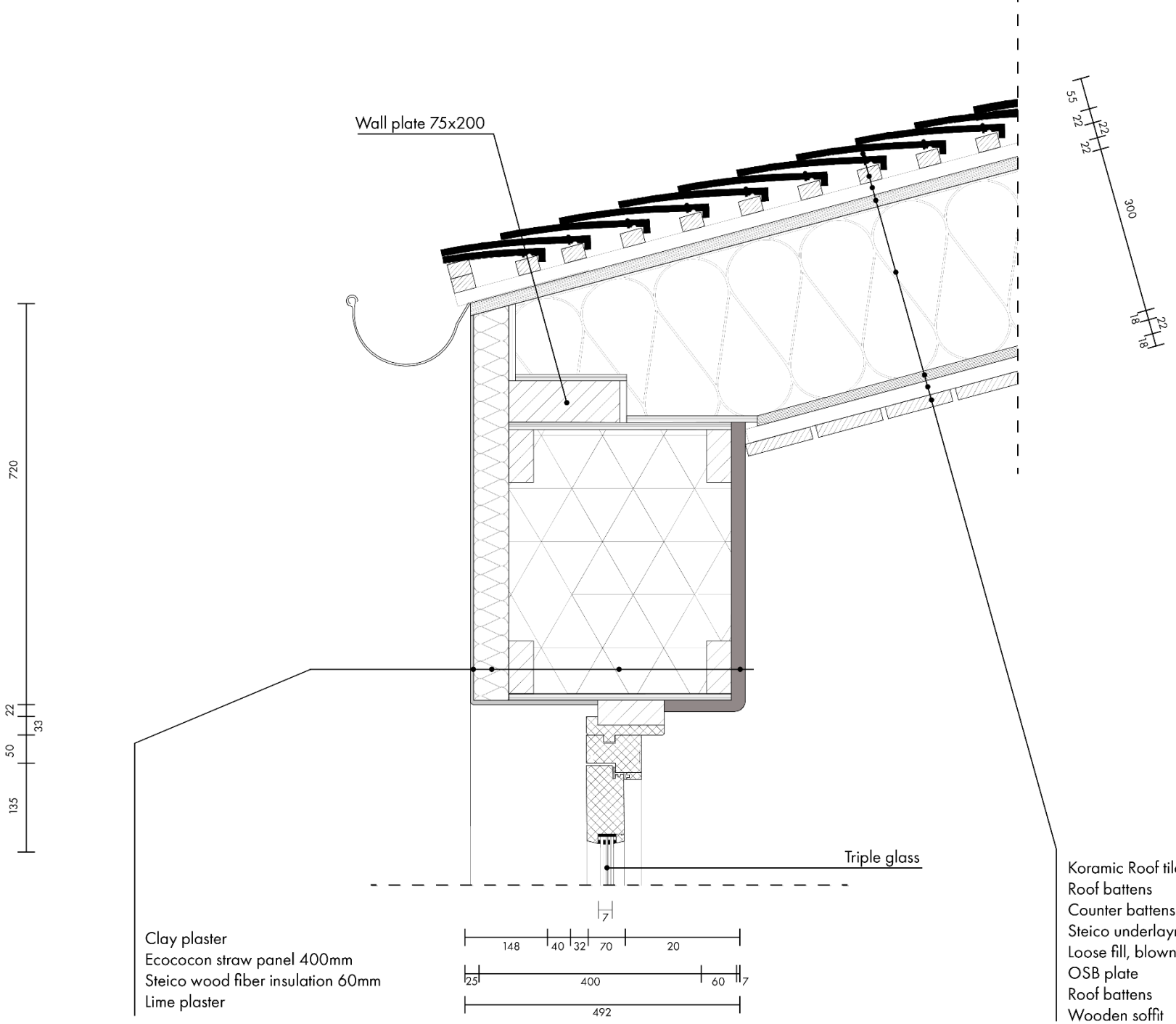

Flax linoleum
Geopolymer screed with floor heating
Reinforced geopolymer concrete floor
2x PE-foil
1:3 drilled foam glass
Geotextile
492
148
40
32
70
202
7
Insulated plastic doorstep
Foam glass blocks 150x250x450
XPS insulation
Foam glass blocks 150x250x450
Shells
Drainage pipe
Foam glass block 600x160
Gravel

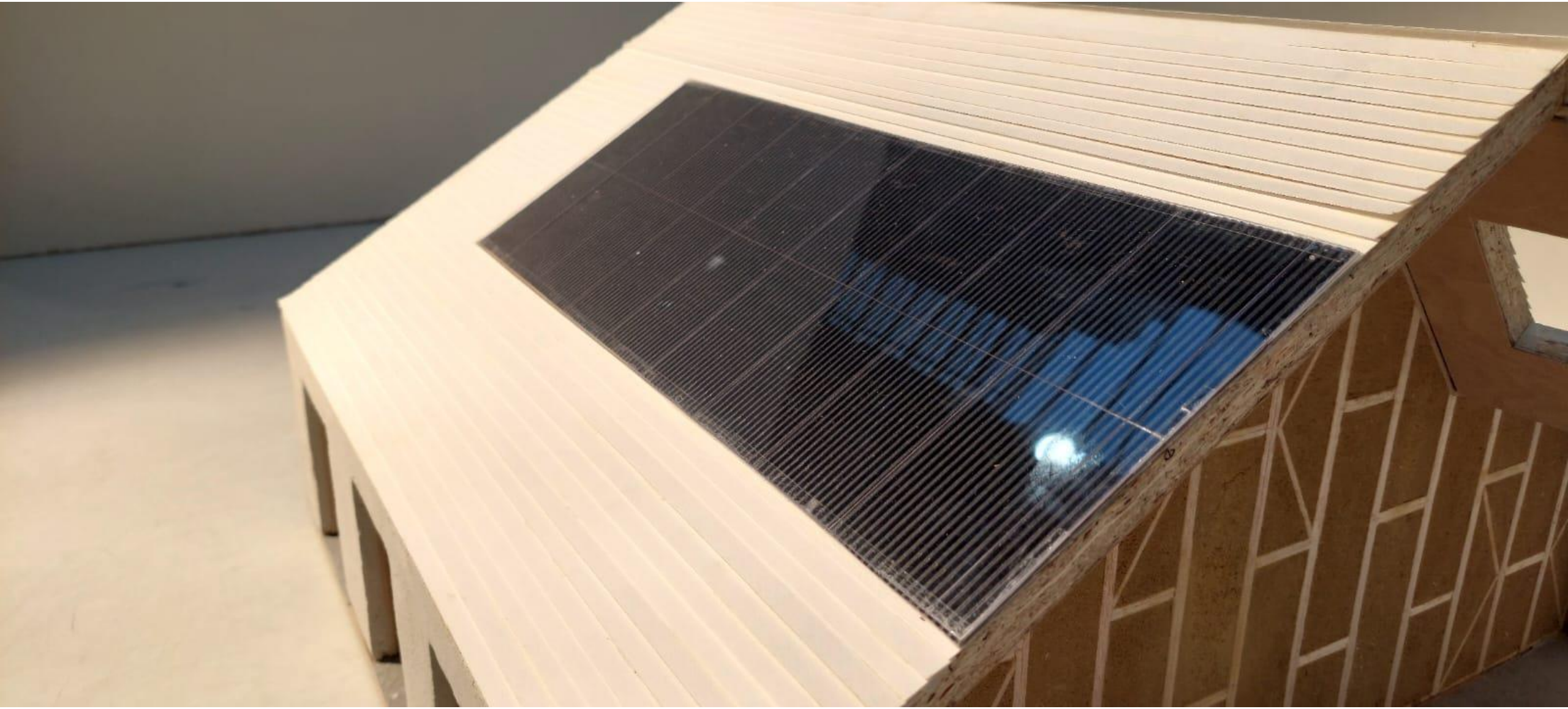

Wall plate 75x200
Ecococon structure 45x95
Koramic Roof tiles
Roof battens
Counter battens
Steico underlayment
Loose fill, blown-in cellulose
OSB plate
Roof battens
Wooden soffit
casement frame 120x44
Multiplex
Clay plaster
Ecococon straw panel 400mm
Steico wood fiber insulation 60mm
Lime plaster
300
55
22
22
22
18
18
7
148
40
32
70
202
25
400
60
7
492


Thermoduct Ø 125mm
Solar panel on mount
Wood battens 22x32
479
300
55
22
22
22
18
18


EPDM foil
roof rider 30x130
White koramic roof tiles
Wooden beam 125x250


Velux roof window 1600x1600
Thermoduct Ø 125
wood braces 100x75


Wall plate 75x200
Triple glass
720
22
33
50
135
55
22
22
22
300
22
18
18
7
148
40
32
70
20
25
400
60
7
492
Clay plaster
Ecococon straw panel 400mm
Steico wood fiber insulation 60mm
Lime plaster
Koramic Roof tiles
Roof battens
Counter battens
Steico underlayment
Loose fill, blown-in cellulose
OSB plate
Roof battens
Wooden soffit



Farmyard of the Future

Yoran Erami - 4563271