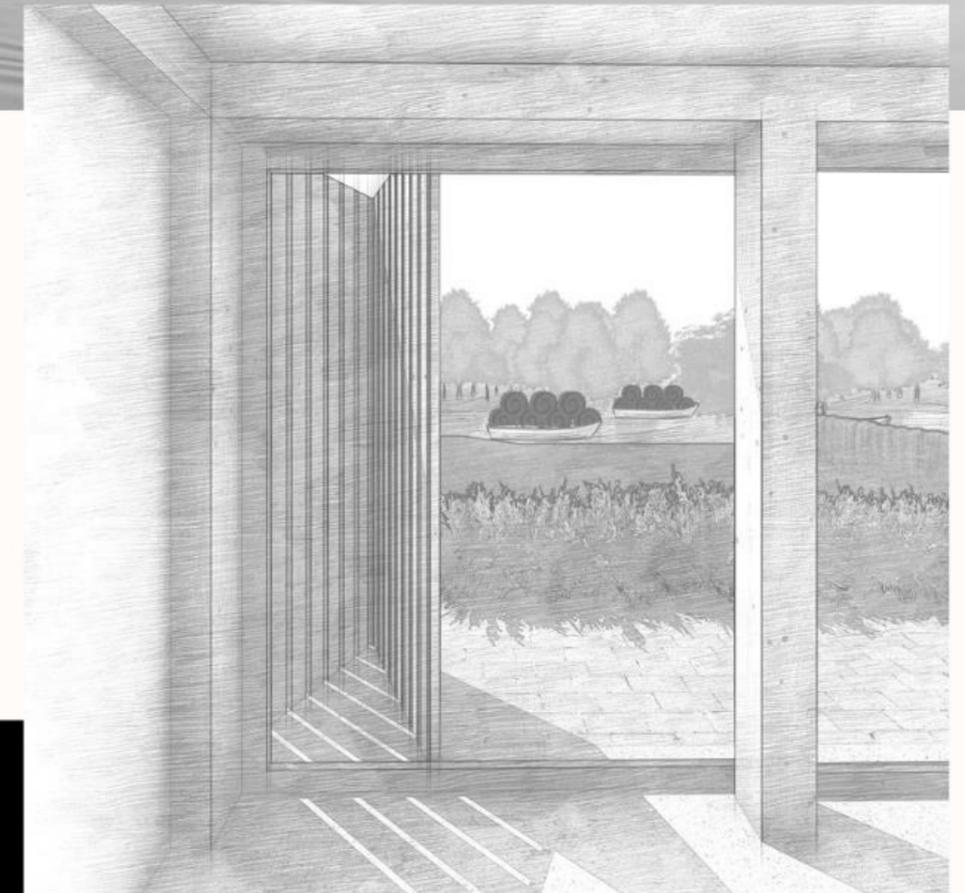




VLIETPOORT

*LIVING IN A CHANGING
RURAL ENVIRONMENT*

GRADUATION PROJECT



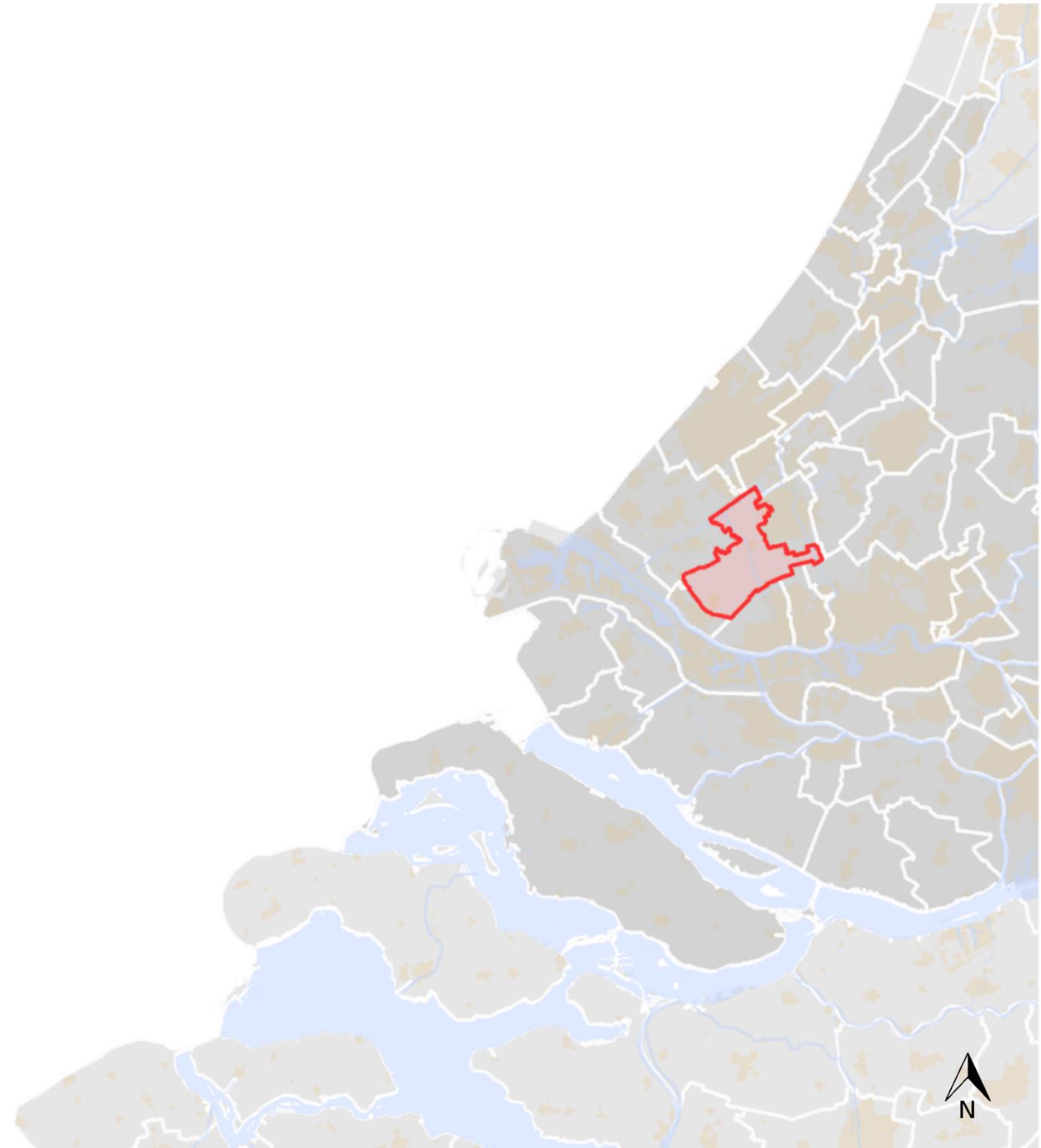
NIELS DE RIJKE

TU DELFT
MSC ARCHITECTURE, URBANISM
AND BUILDING SCIENCES
ECOLOGIES OF INCLUSION
2023-2024

MIDDEN- DELFLAND

*"Last open peat meadow in
South-Holland"*

MUNICIPALITY MIDDEN-DELFLAND



LOCATION

AGRICULTURE



ICONIC ARCHITECTURE



RECREATION



POLDER SYSTEM

Growing cities



1950



2000

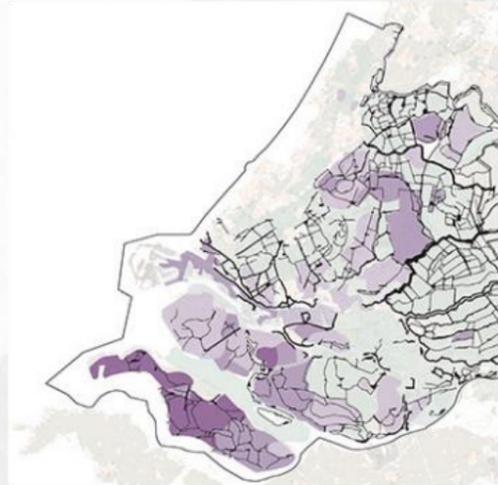
ZUS

(zones urbaines sensibles)

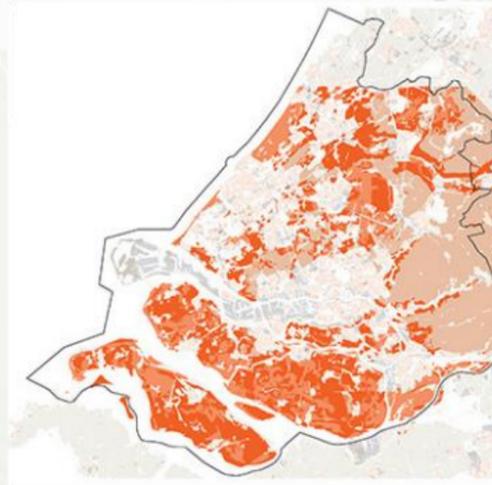


ZUS

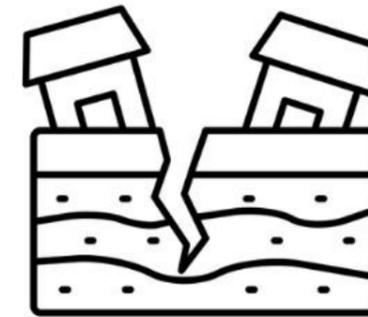
(zones urbaines sensibles)



SALINIZATION



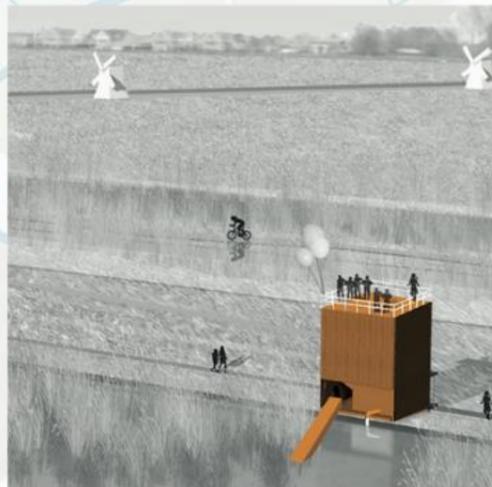
URBANIZATION



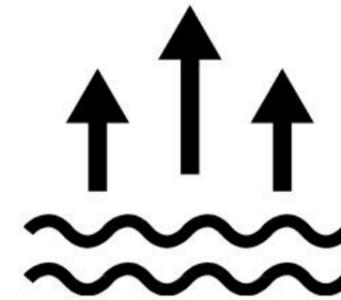
SUBSIDENCE



EXTREMES



ENDLESS PUMPING



OXIDATION

ZUS

(zones urbaines sensibles)

Solution:
Fill polders with water to
Swampy area



Change economic purpose of farmers



Resource productive landscape



Cattail: Insulation boards

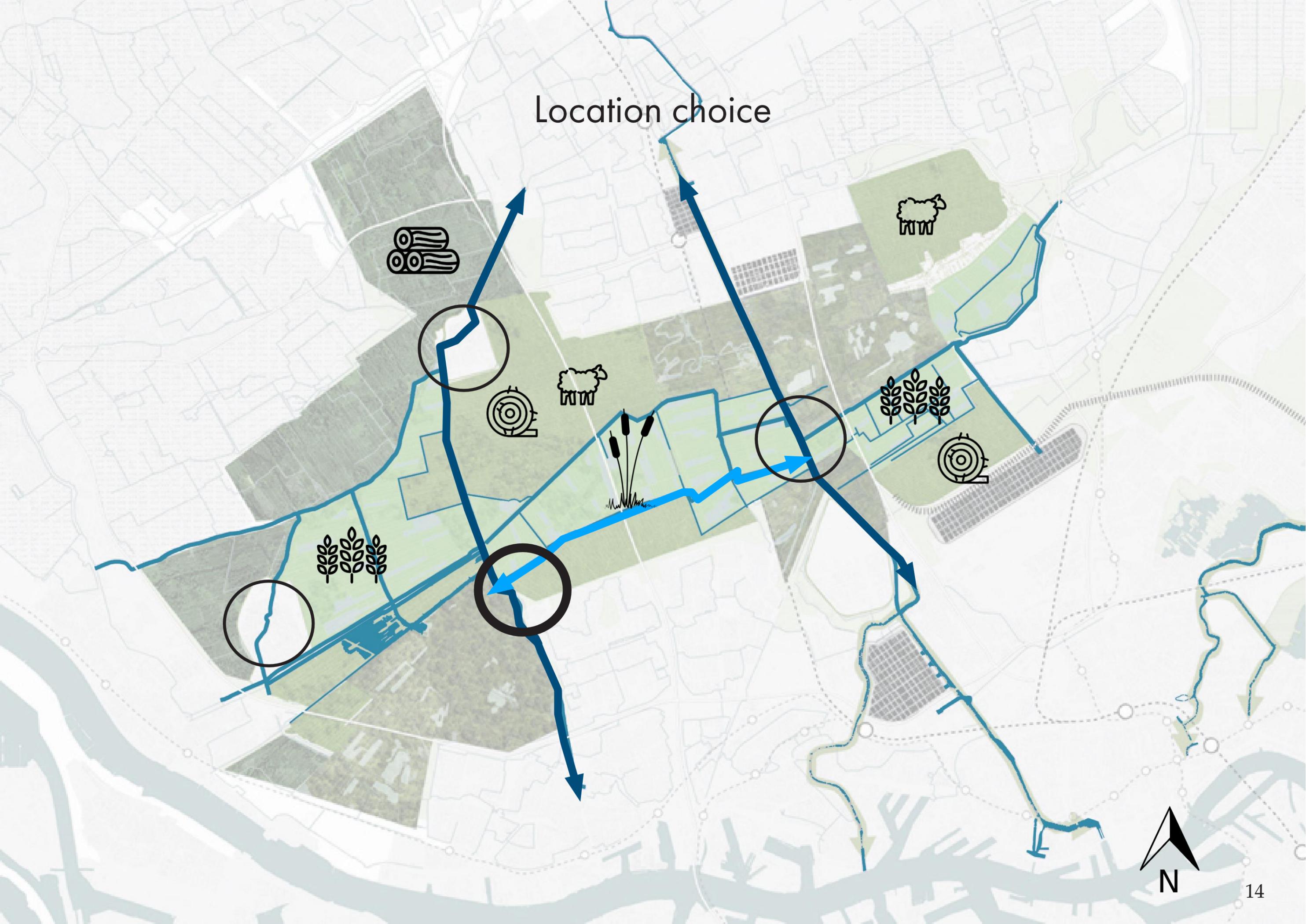


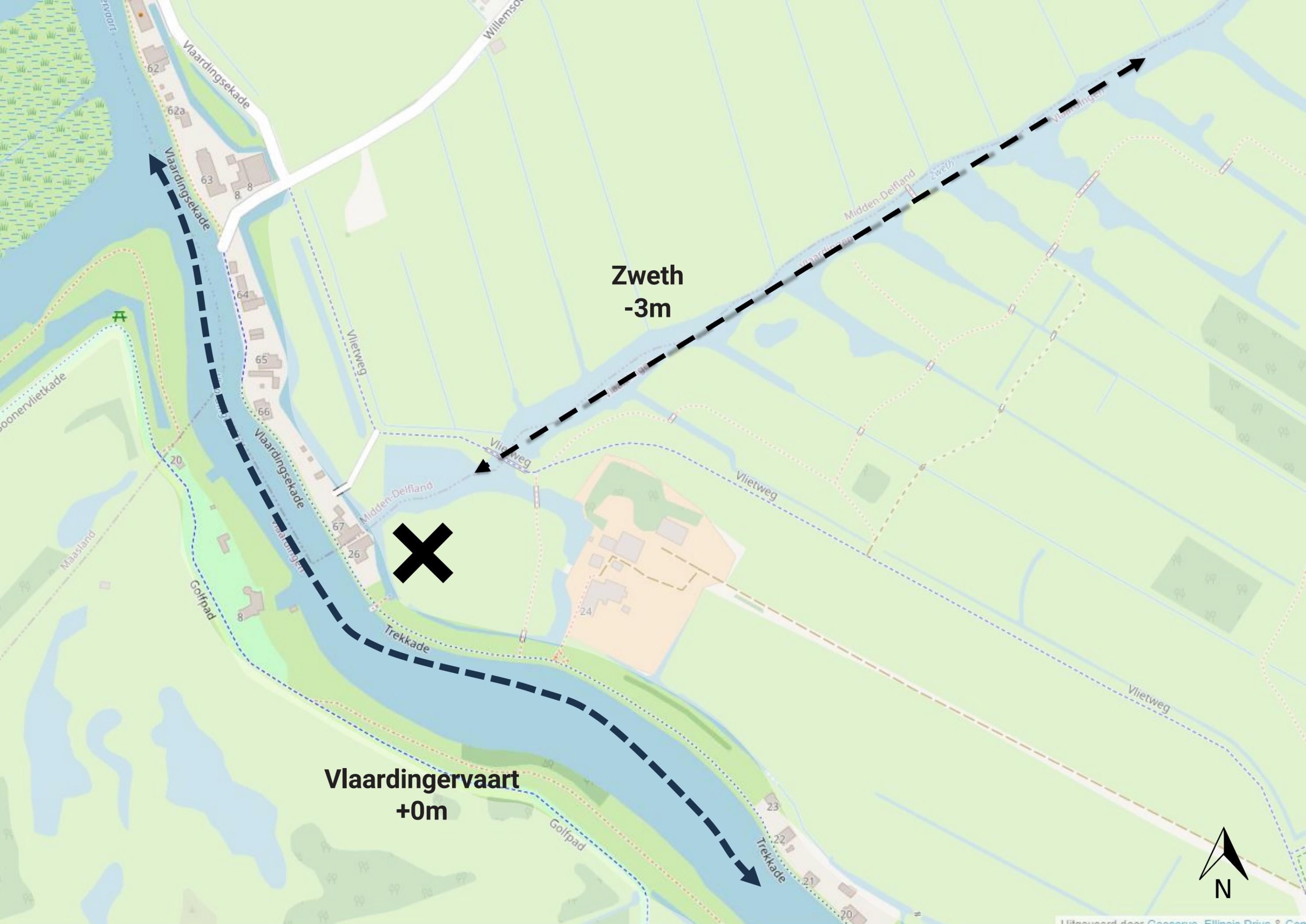
Reed: Roof covering

Communities/villages



Location choice

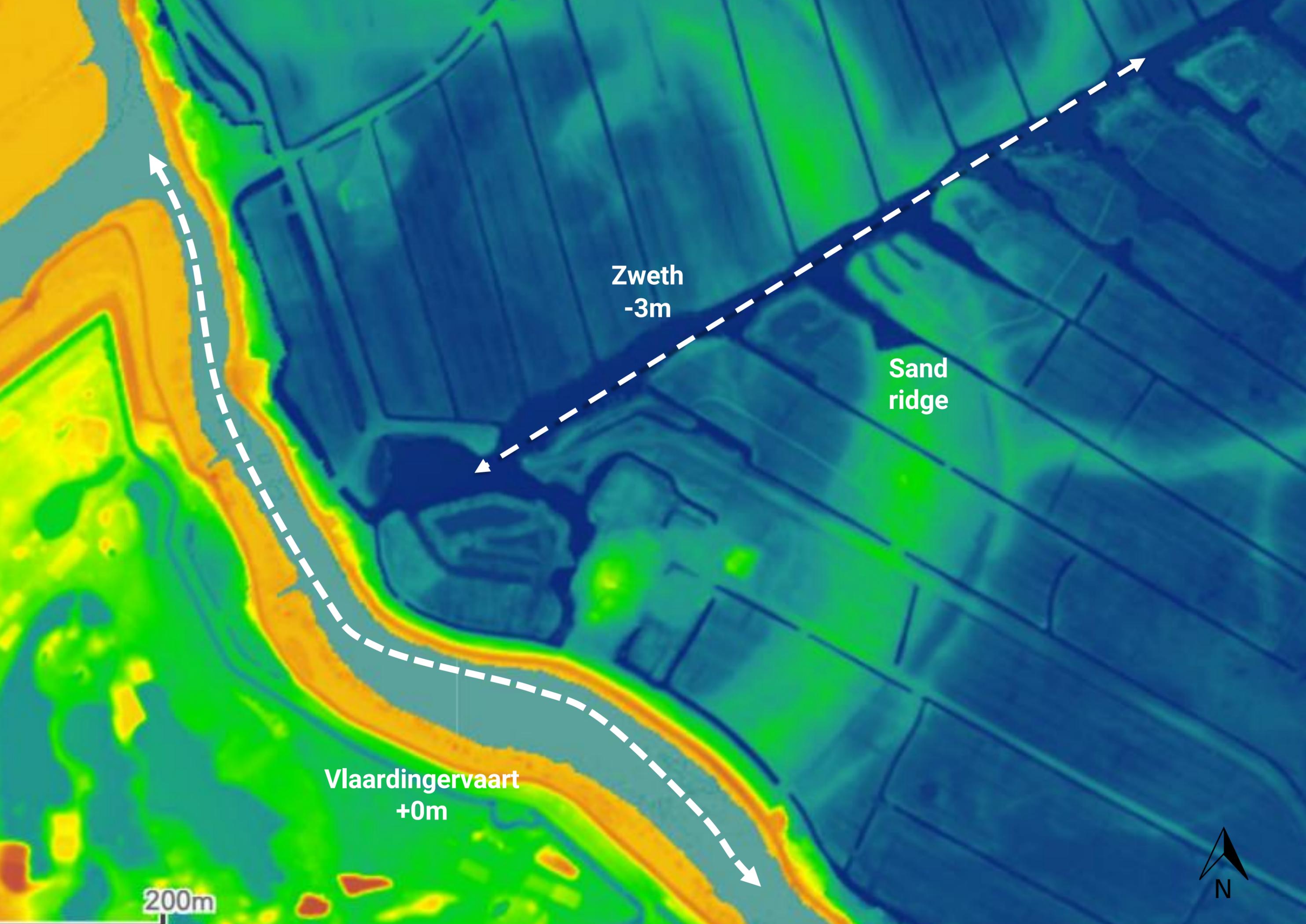




Zweth
-3m

Vlaardingervaart
+0m





Zweth
-3m

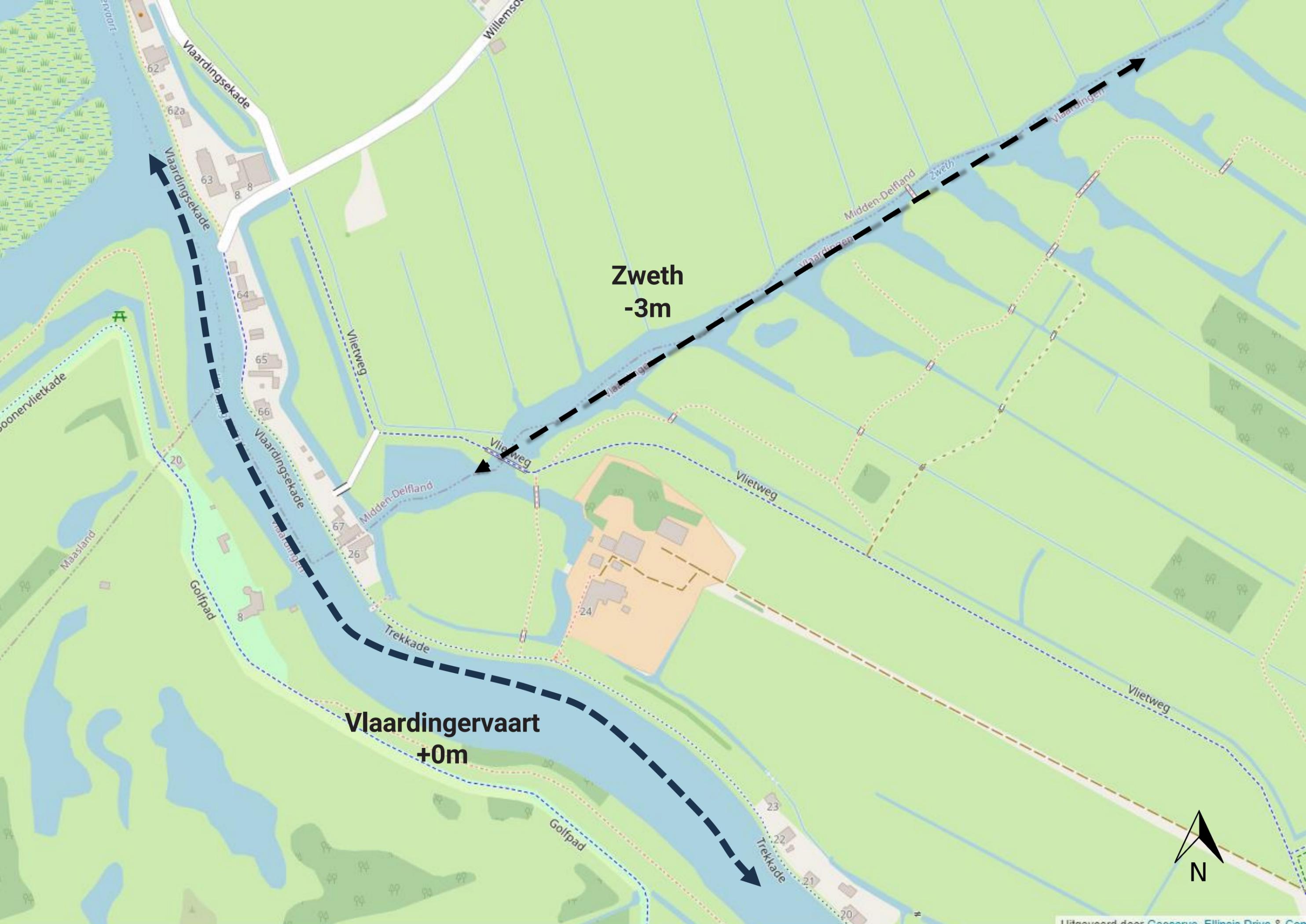
Sand
ridge

Vlaardingervaart
+0m

200m







Zweth
-3m

Vlaardingervaart
+0m





Zweth
-3m

Vlaardingervaart
+0m

Willemsoordseweg

Vlaardingsekkade

Vlietweg

Schippluizen

Vlaardingen

Vlietweg

Trekkeade

Vlaardingsekkade

Trekkeade

Golffpad





**Zweth
-3m**

**Vlaardingervaart
+0m**

Willemsoordseweg

Vlaardingsekade

Vlietweg

Vlietweg

Trekkeade

Vlaardingsekade

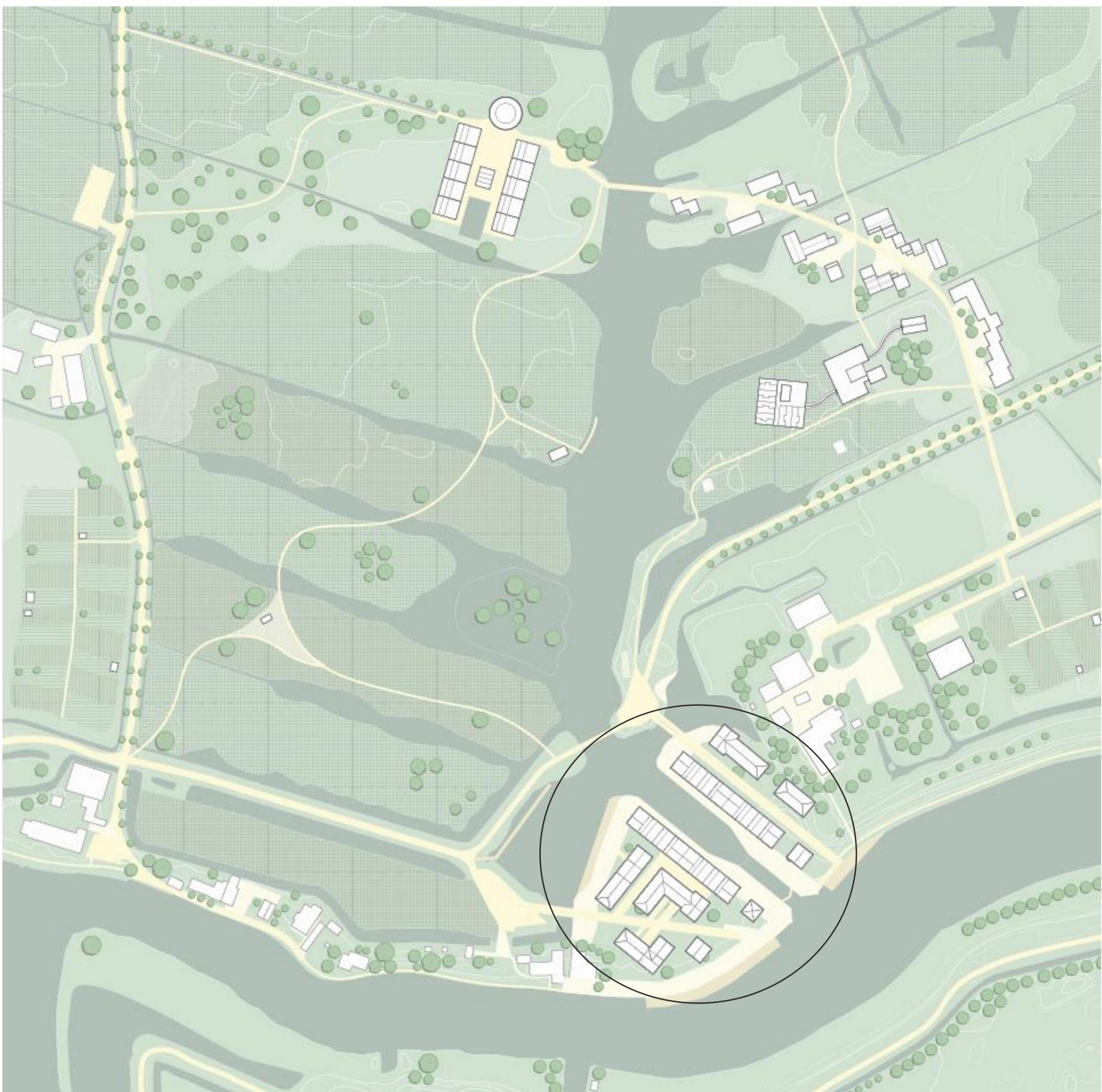
Trekkeade

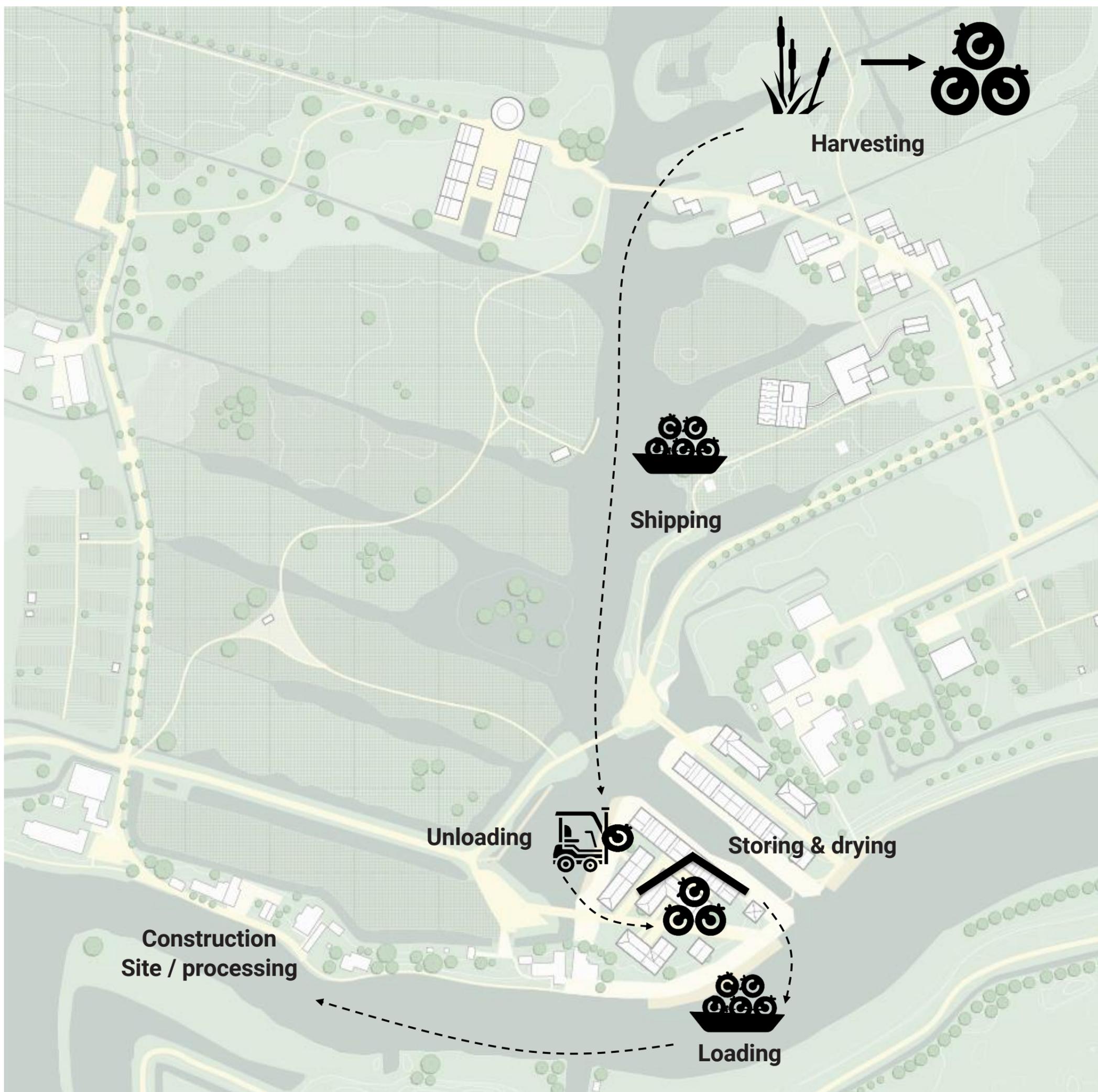
Golfpad

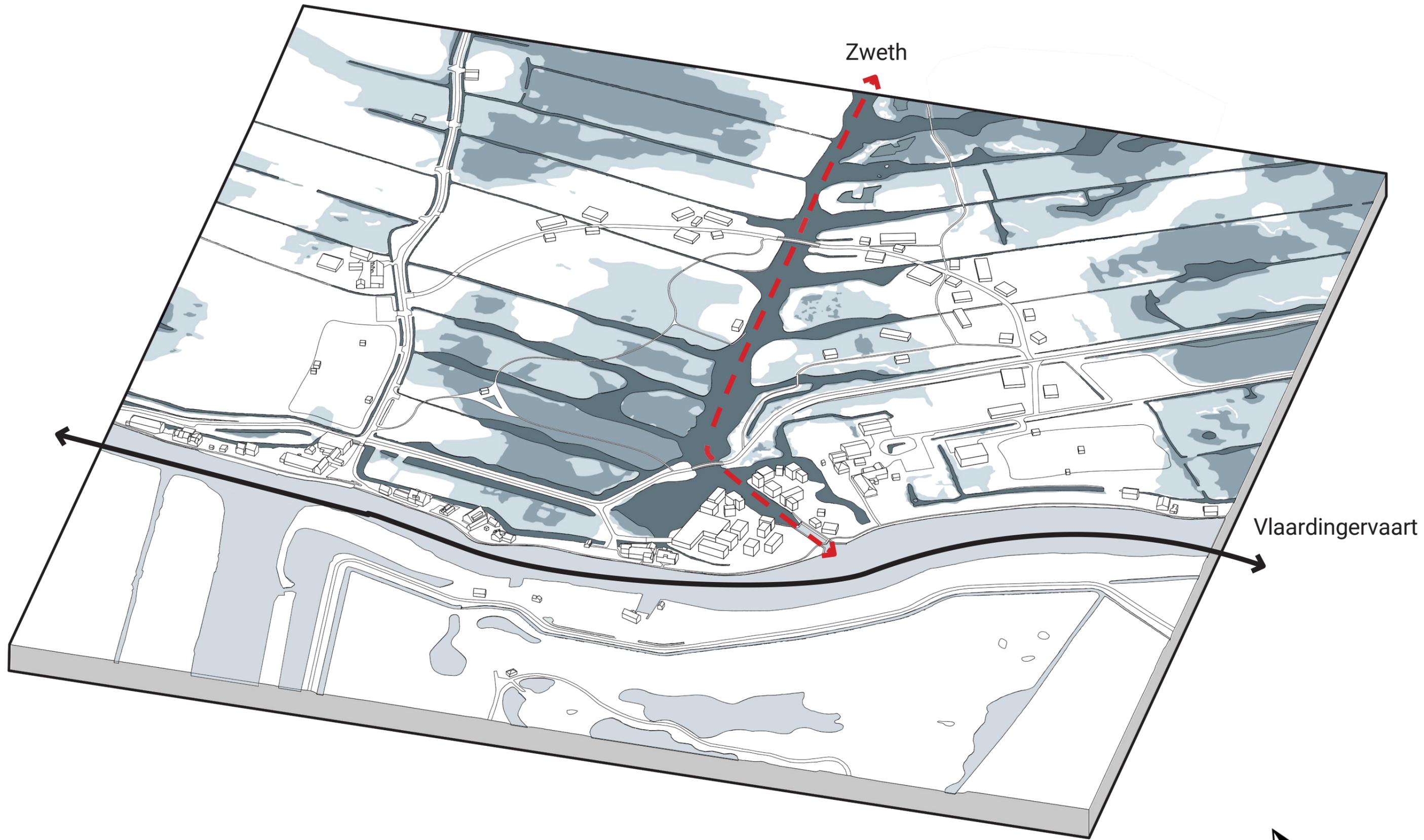


Masterplan







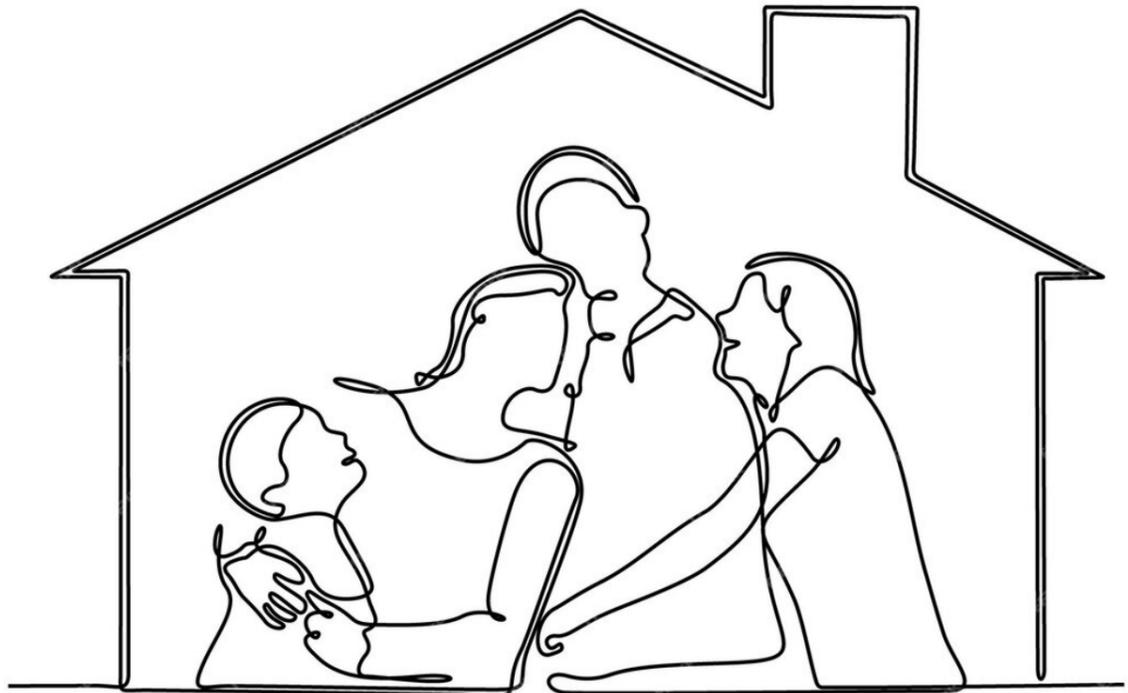


Zweth

Vlaardingervaart



Living in a changing rural working environment

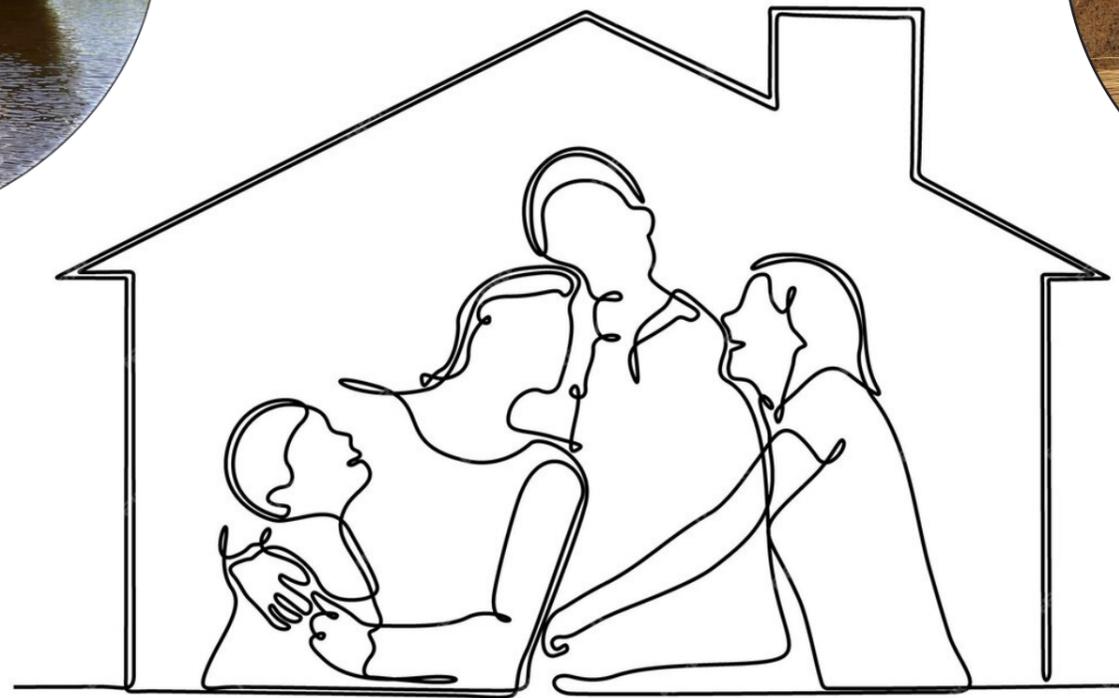


Living



Working

Living in a changing rural working environment



Living & working together

- People getting acquainted with new rhythm
- harvesting changing landscape
- Awareness of seasonality

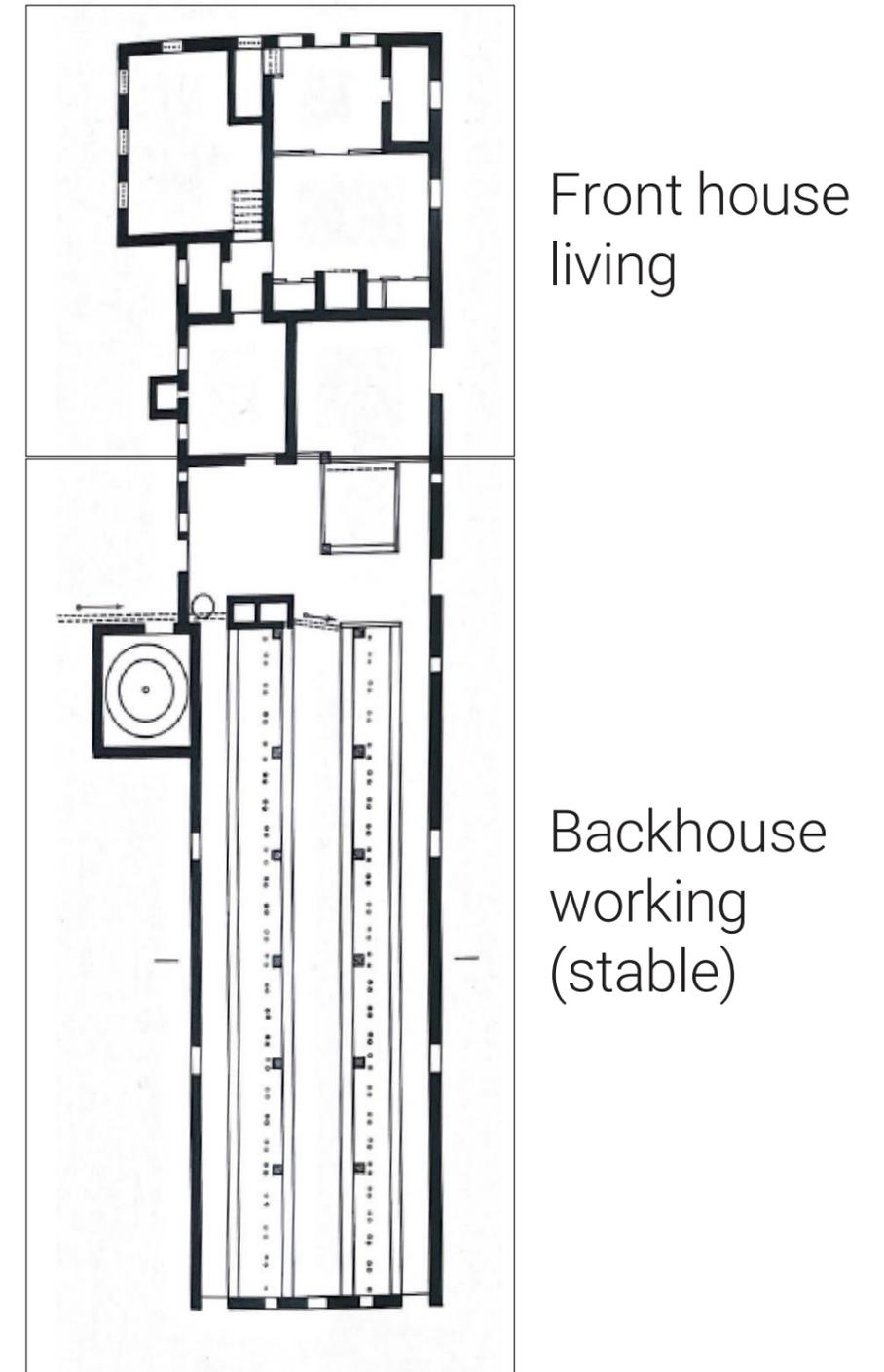
Living in the front house working in backhouse

(Link to vernacular architecture)



Farms Midden-Delfland

- Cultural heritage and identity
- Aesthetic harmony
- Community acceptance



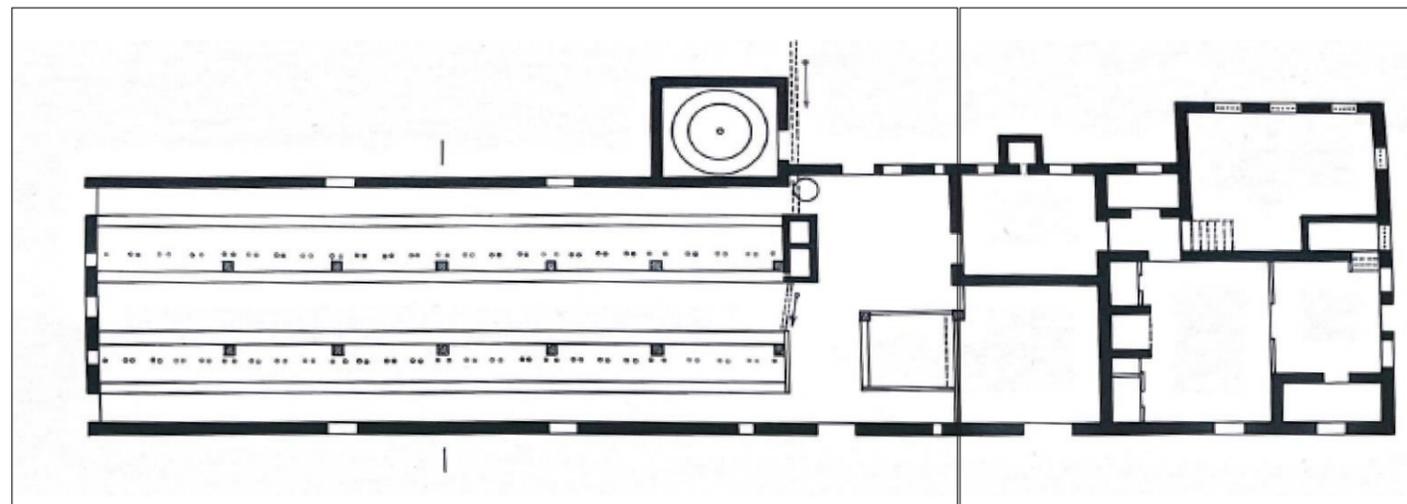
Design concept

Living & working settlement

Farmers with new business goals integrate with independent residents --> awareness of economic commitment & seasonality
Acceptance of changing landscape

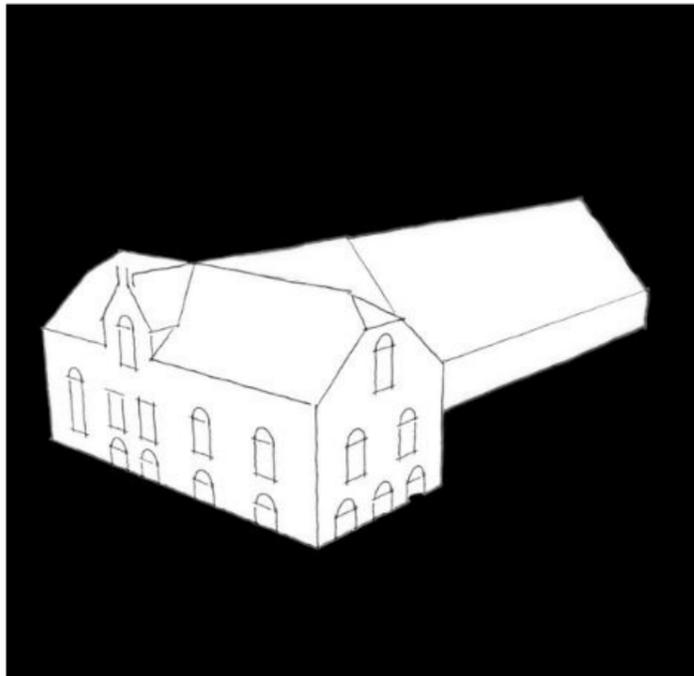
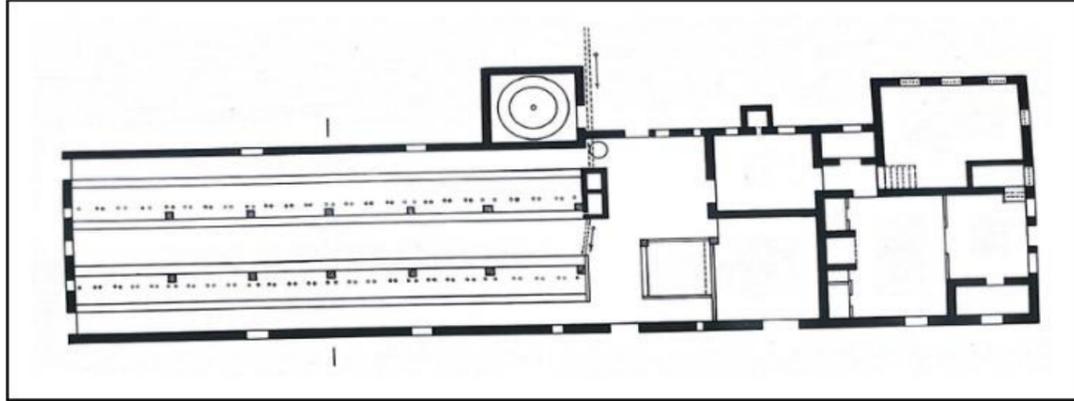
Learning from the past

Living & working is not unknown for Midden-Delfland
Bring back the typical Midden-Delfland' farm



RESEARCH

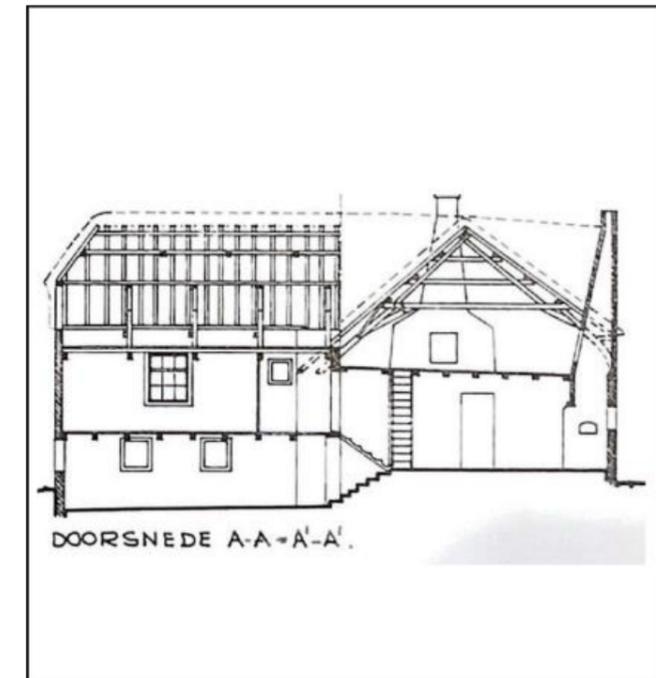
FLOOR PLANS



MORPHOLOGY & FACADE



INTERIOR

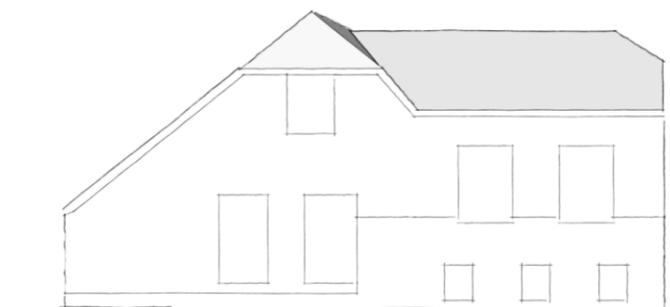
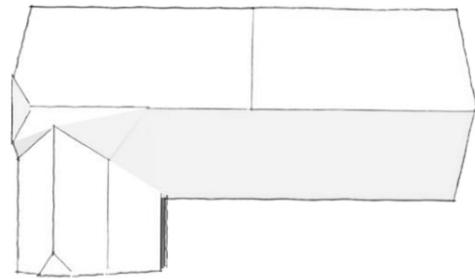
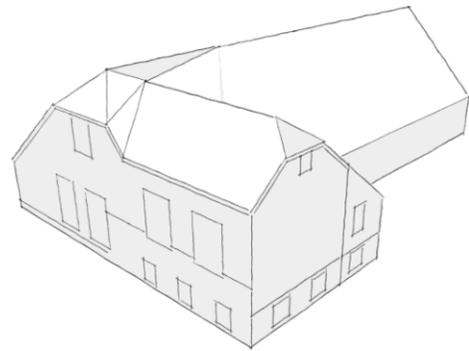


STRUCTURAL DESIGN

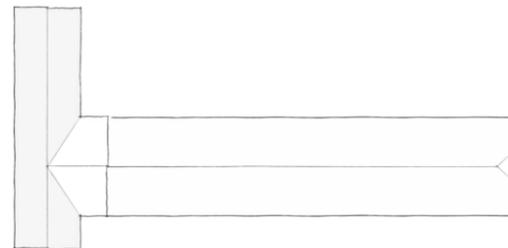
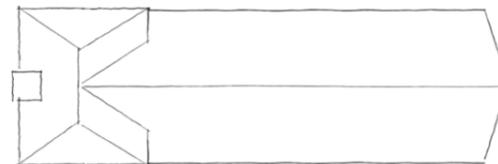
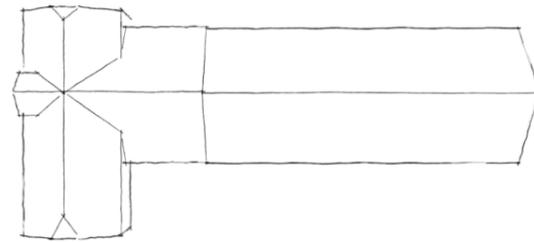
Research Vernacular architecture Midden-Delfland

Morphology

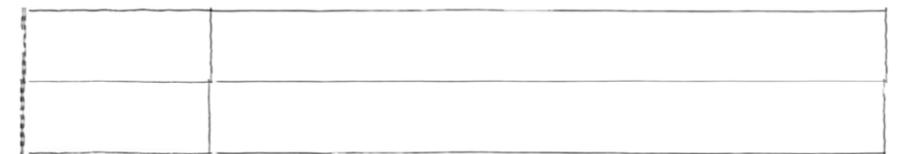
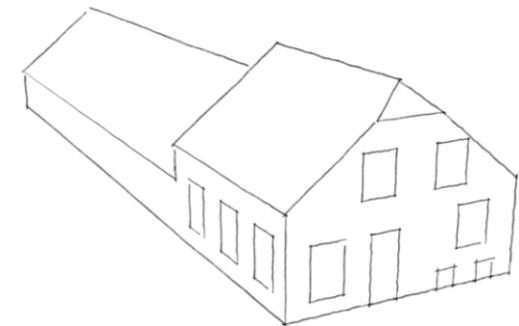
Krukhousefarm



T-housefarm

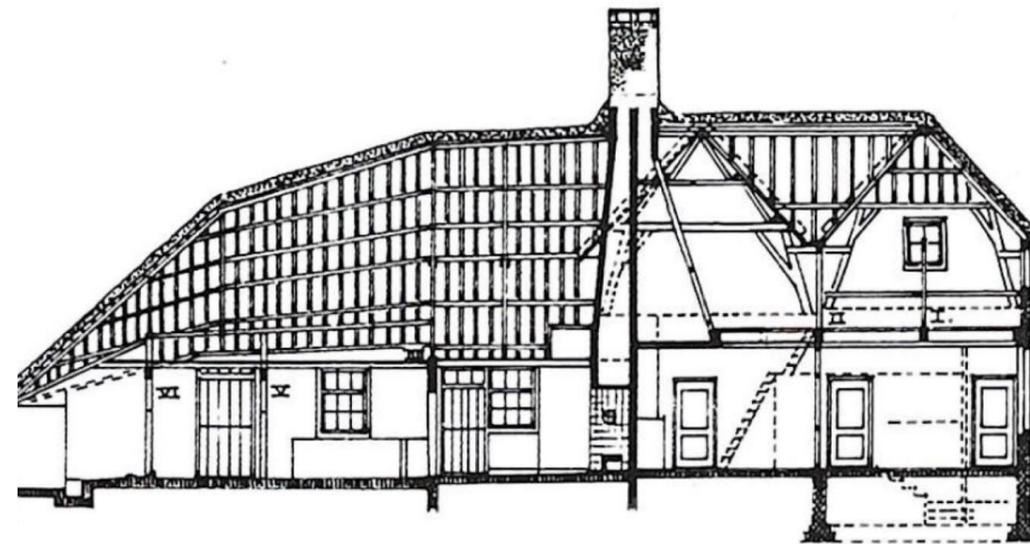
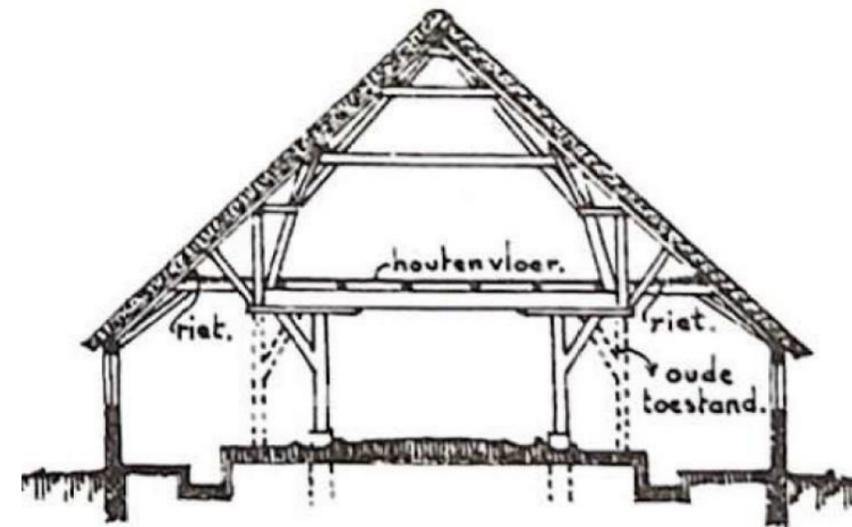


Longhousefarm



Research
Vernacular architecture
Midden-Delfland

Structural design



Research
Vernacular architecture
Midden-Delfland

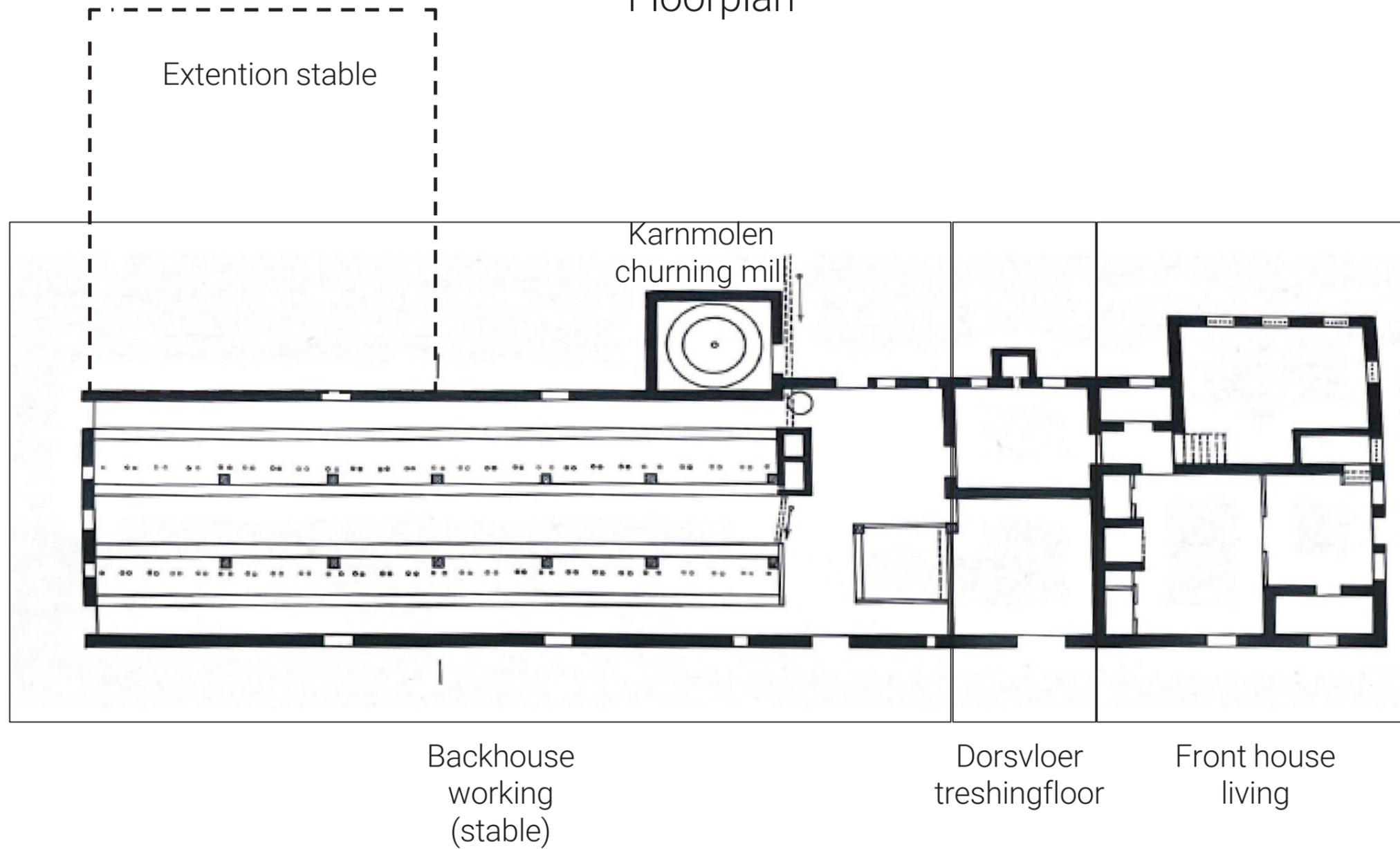
Interior



Splitlevel
Timber beam structure

Research Vernacular architecture Midden-Delfland

Floorplan



POSITION

"Critical regionalism is not imitating past times. It is the relationship between the context and the new architectural objects and proposes references to local architecture."

KENNETH FRAMTON, ARCHITECT



Case study: Säynätsalo Town Hall (1952), Finland Architect: Alvar Aalto

Critical regionalism approach



Sri Lankan Parliament
Architect: Geoffrey Bawa

Case studies

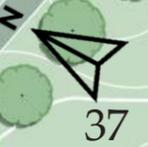


Steps development
urban masterplan





Lock





-3.5m

-3m

-3m

+0m

+0m

Gradual overflow



38



Promenade

Main road

Bicycle path

Accessibility





Longfarm

T-farm

Barn

T-farm

Pavilion

Krukhuisfarm

Farm typologies

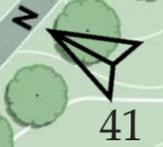




Dikehouses: 120m²



Apartments 60 & 82m²

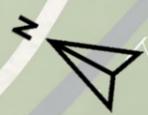








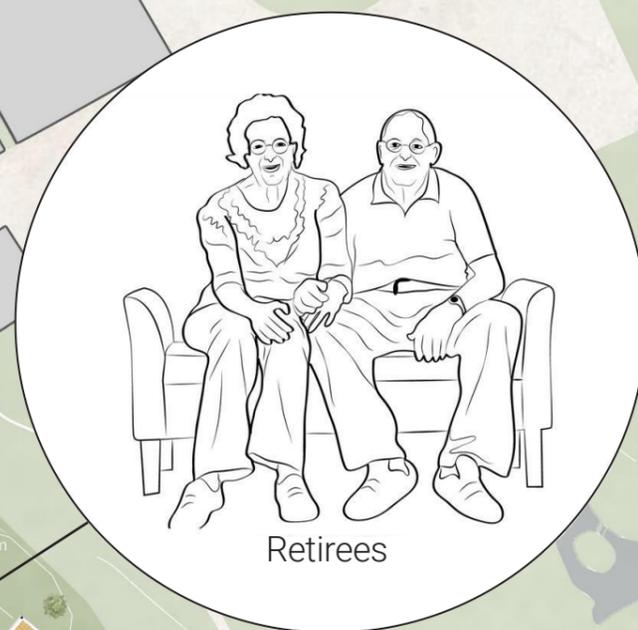




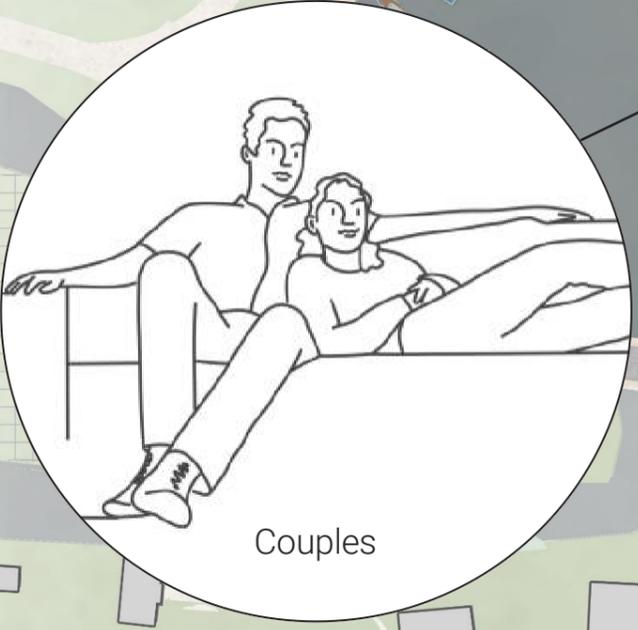




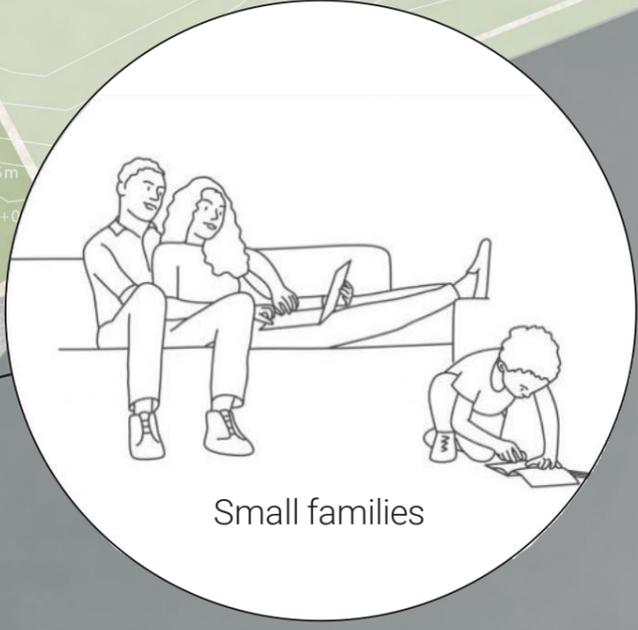
Singles



Retirees



Couples



Small families

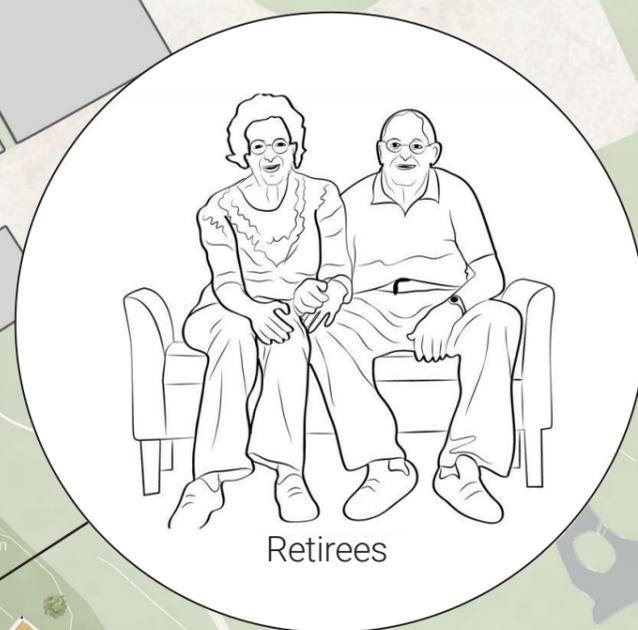


Big families

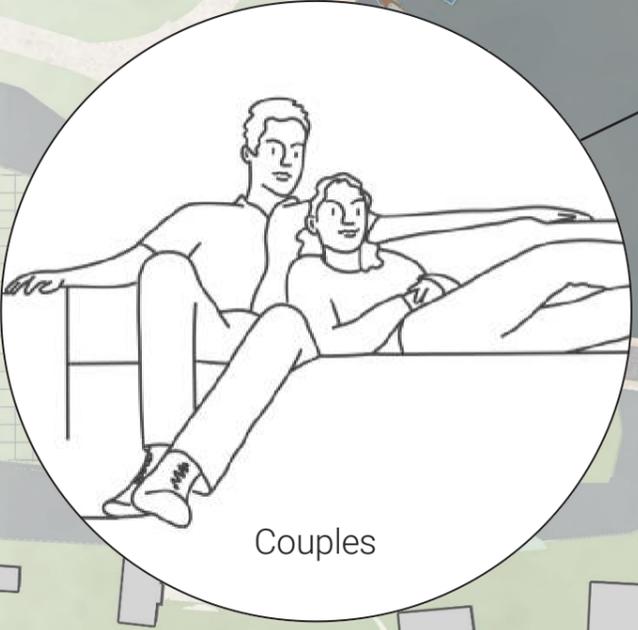
Diverse inhabitants



Singles



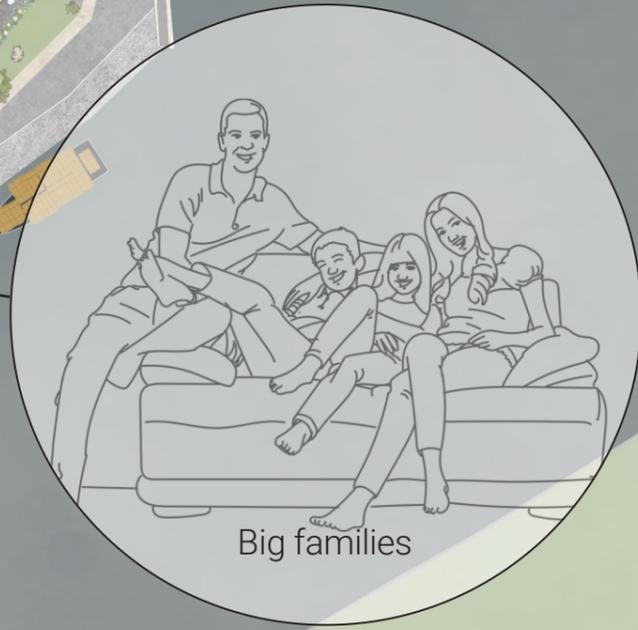
Retirees



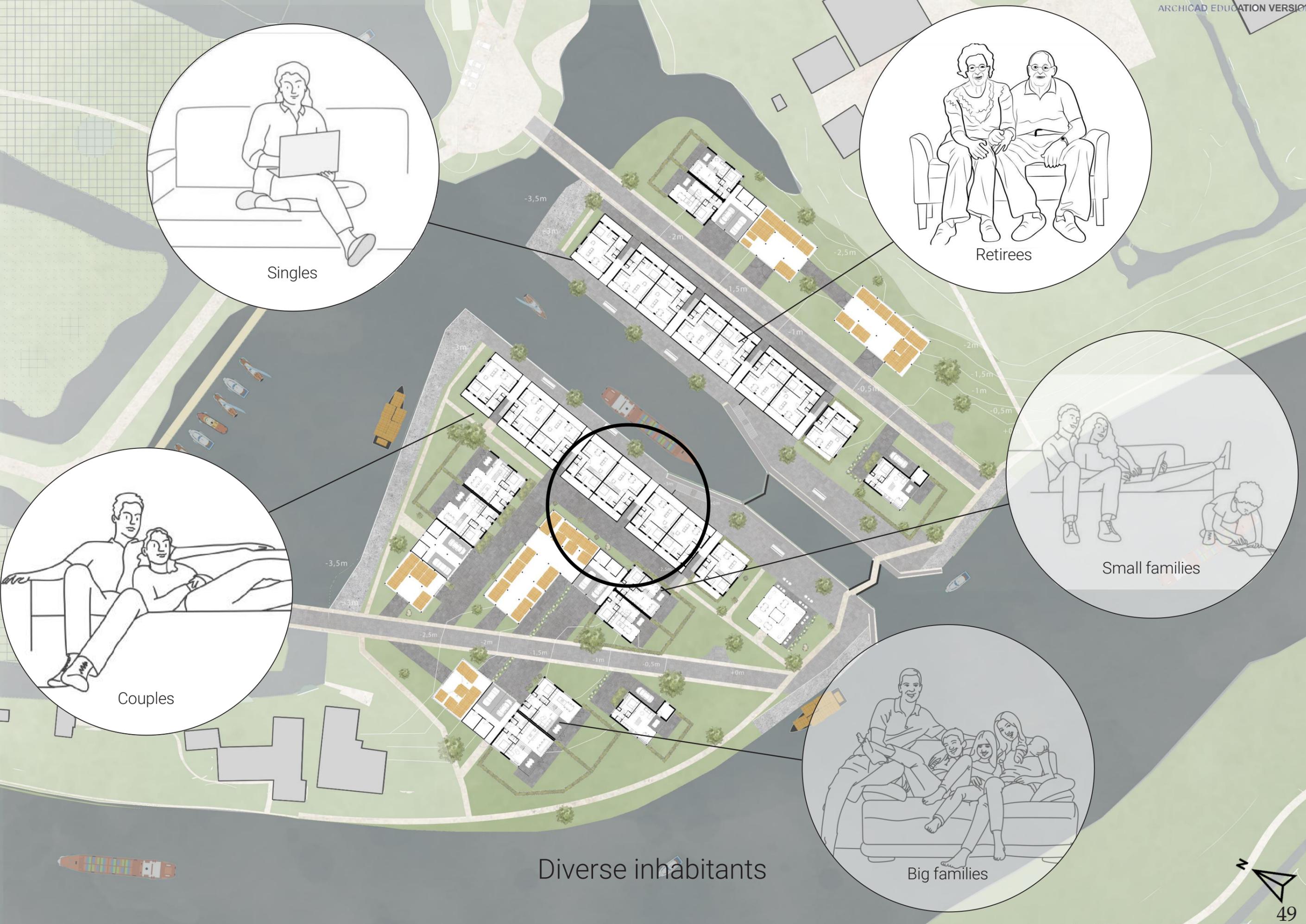
Couples



Small families



Big families



Diverse inhabitants

Ground floor



-3m

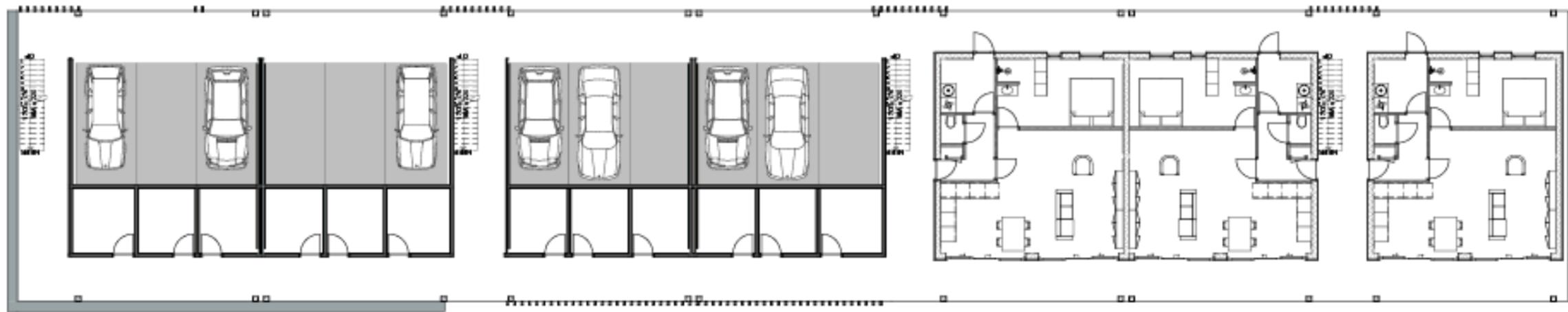
+0m

-2.5m

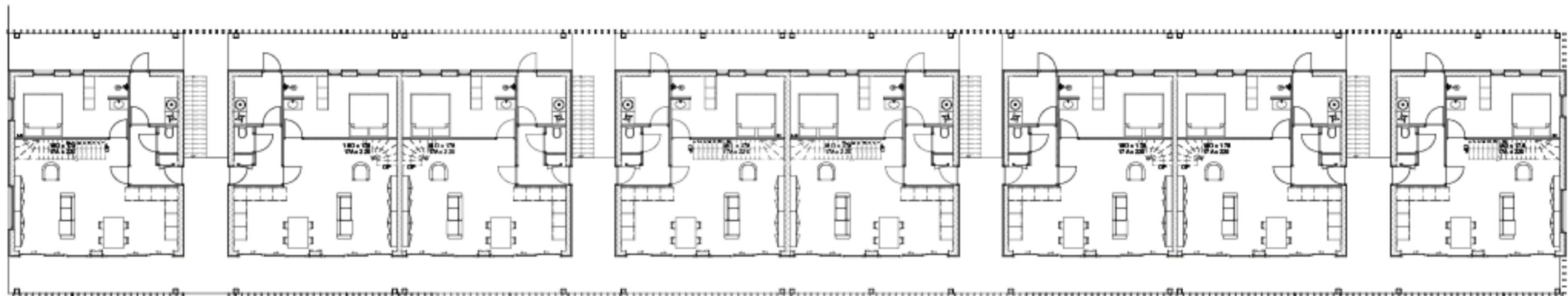




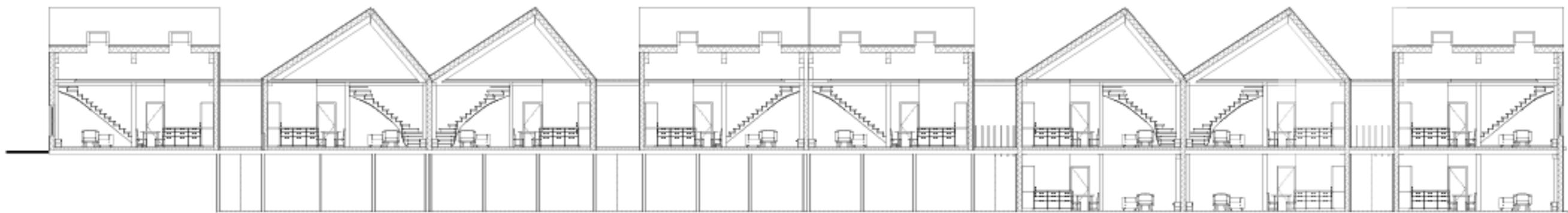




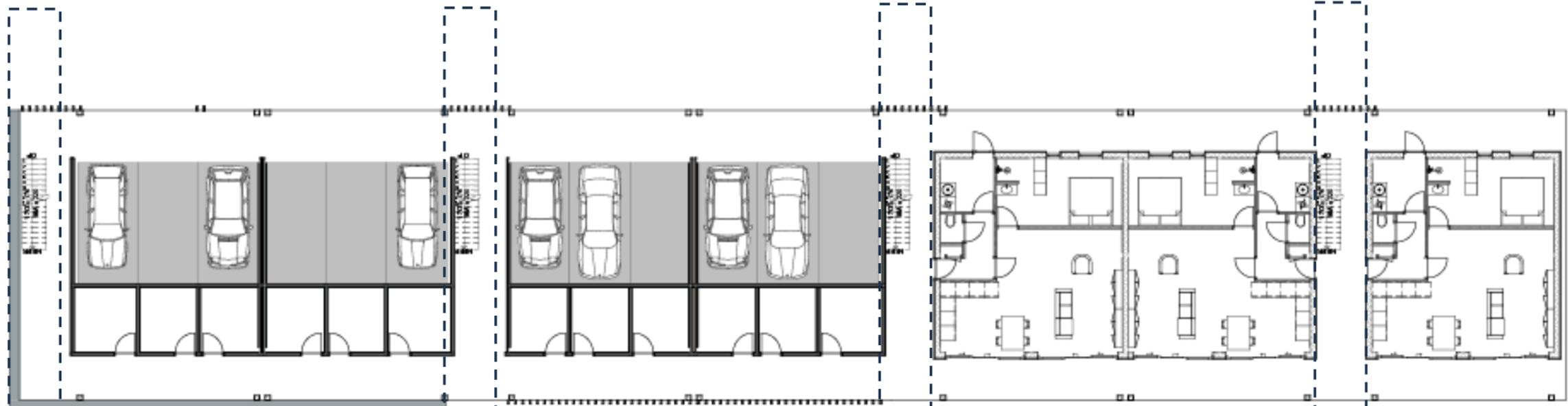
Ground floor



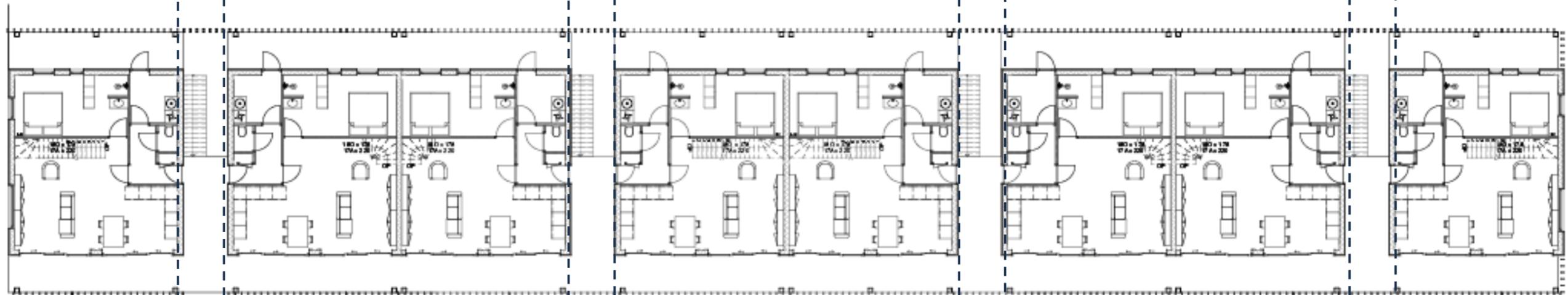
First floor



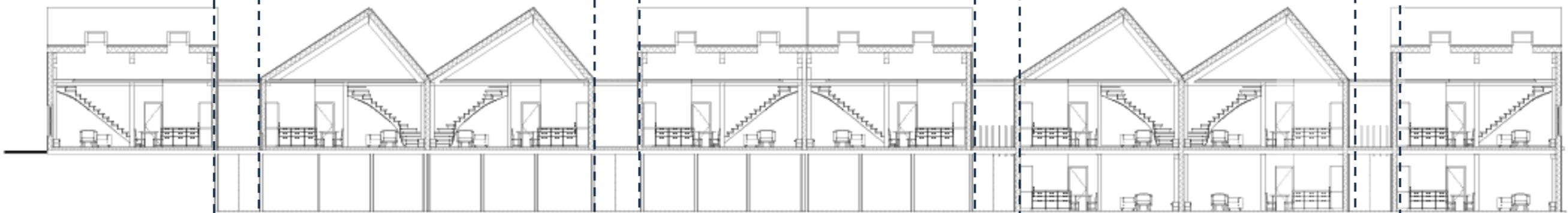
Section



Ground floor

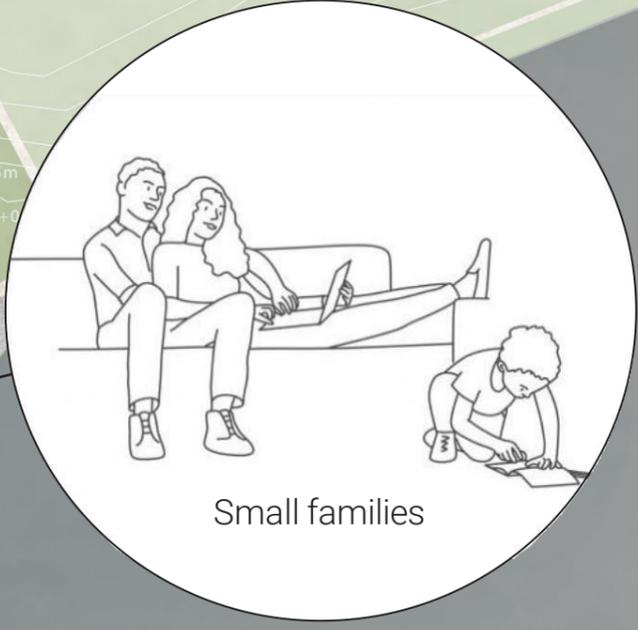
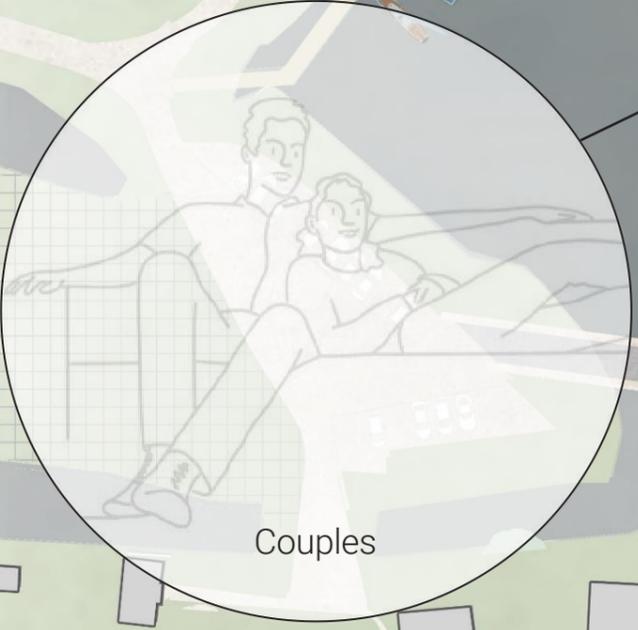
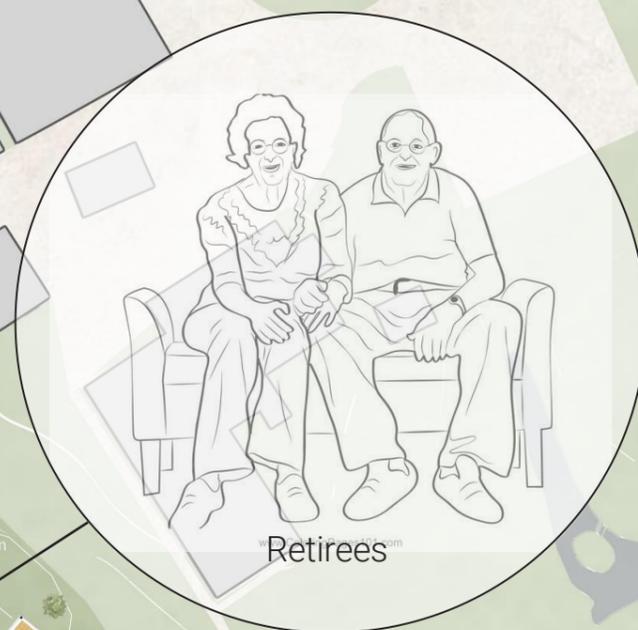
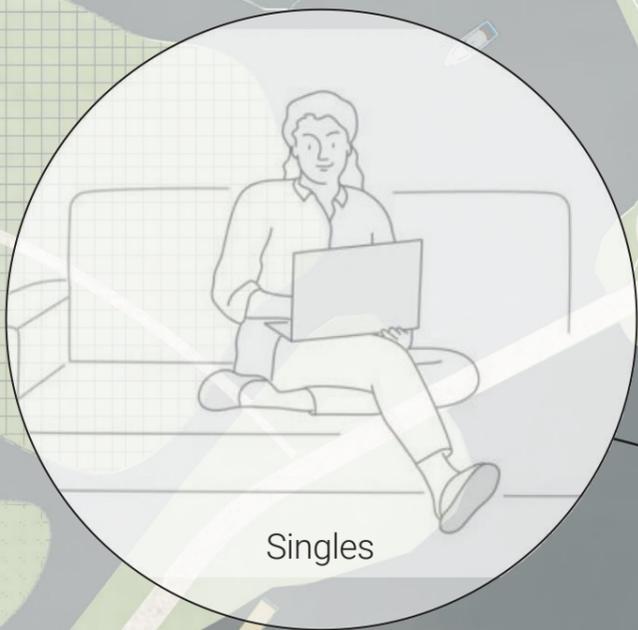


First floor

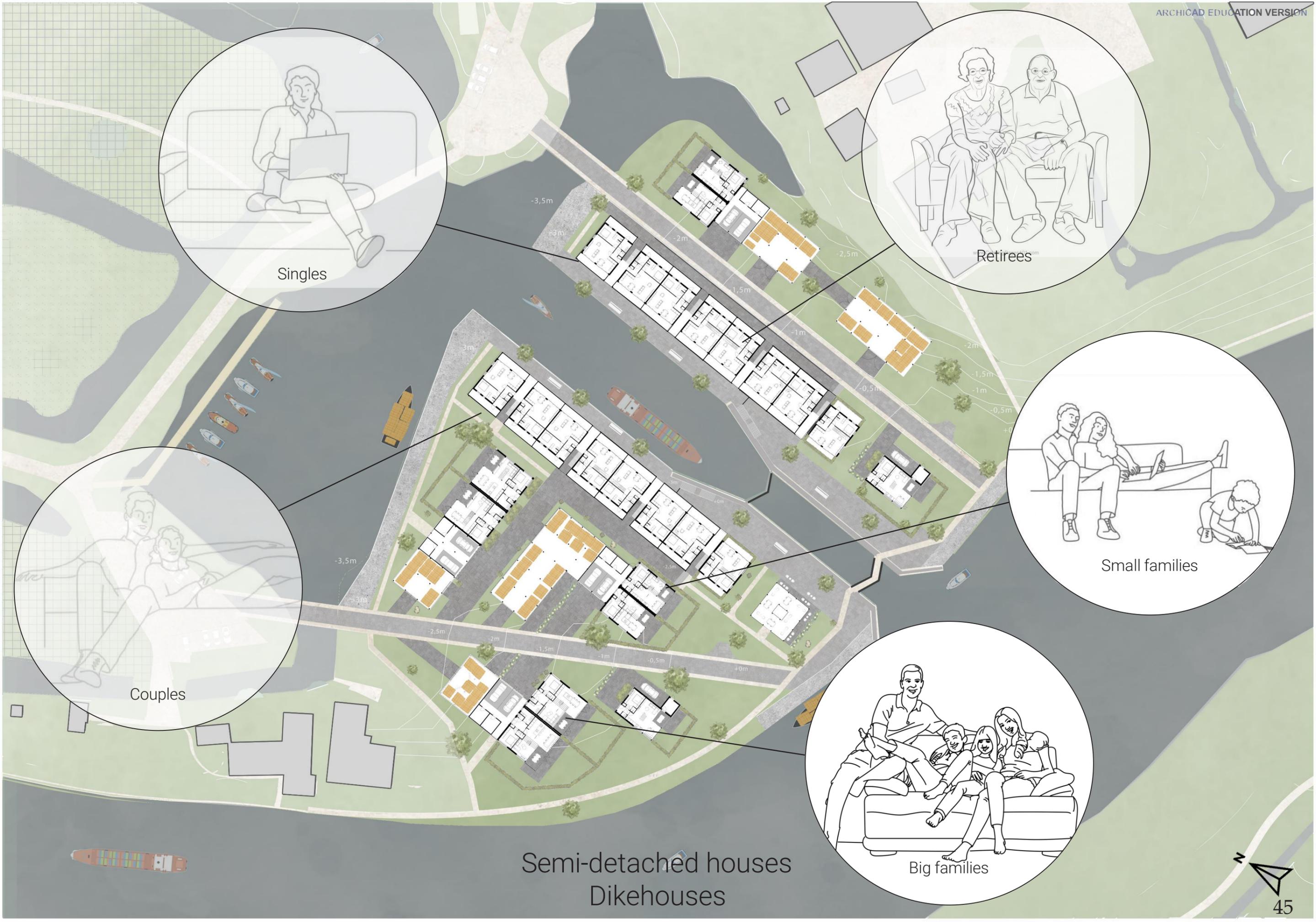


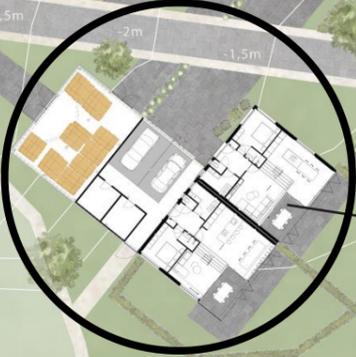
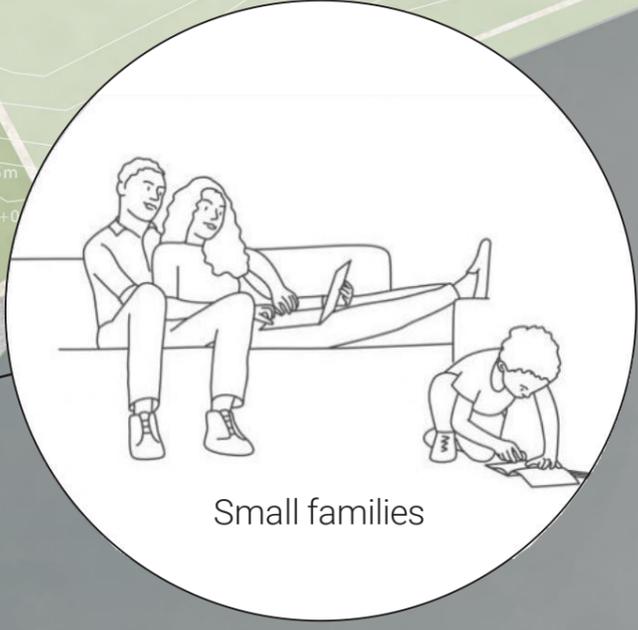
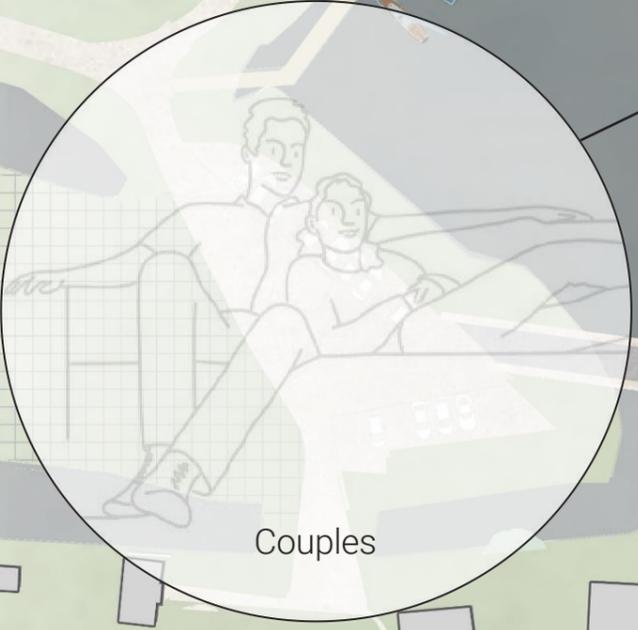
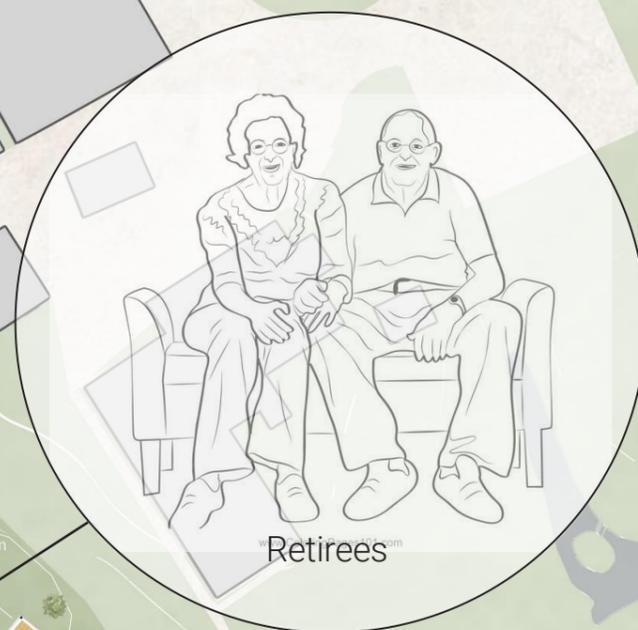
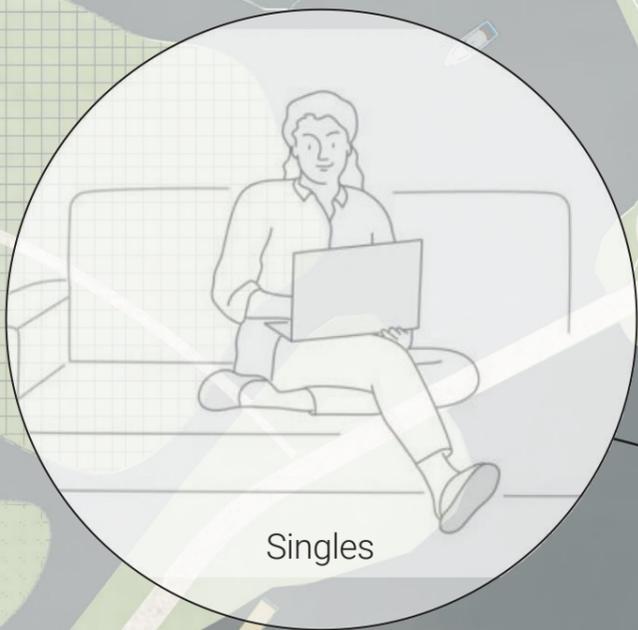
Section





Semi-detached houses
Dikehouses





Semi-detached houses
Dikehouses



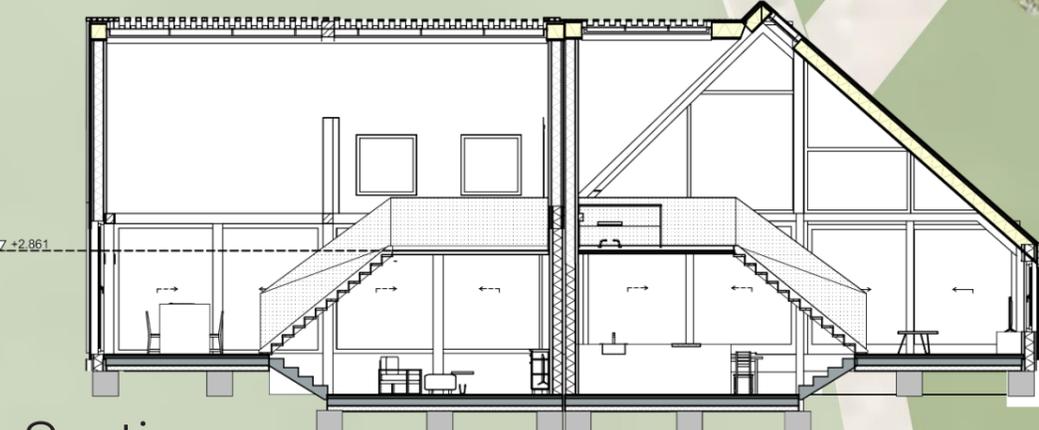


-2,5m

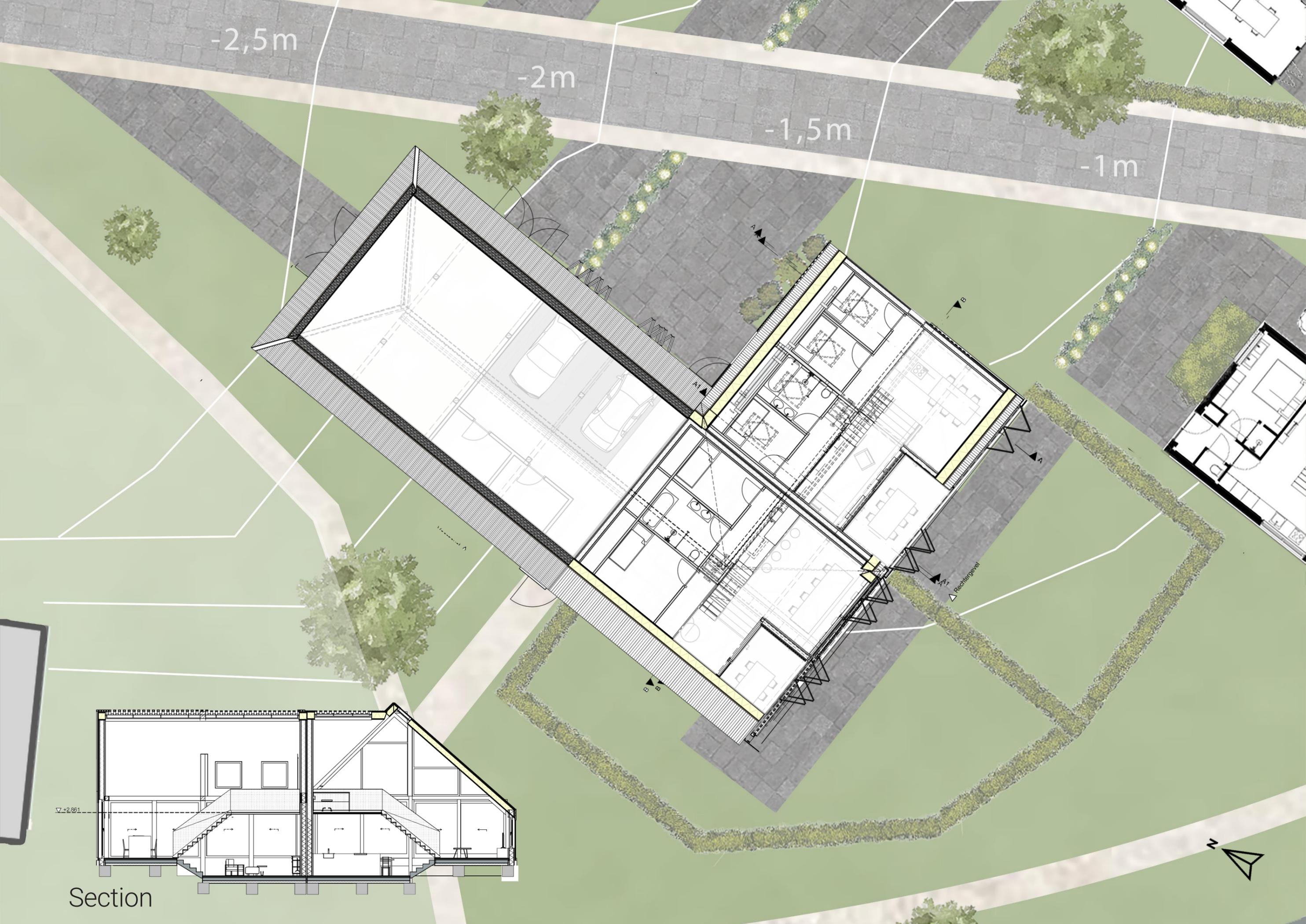
-2m

-1,5m

-1m



Section



-2,5m

-2m

-1,5m

-1m

Rechteckgevel

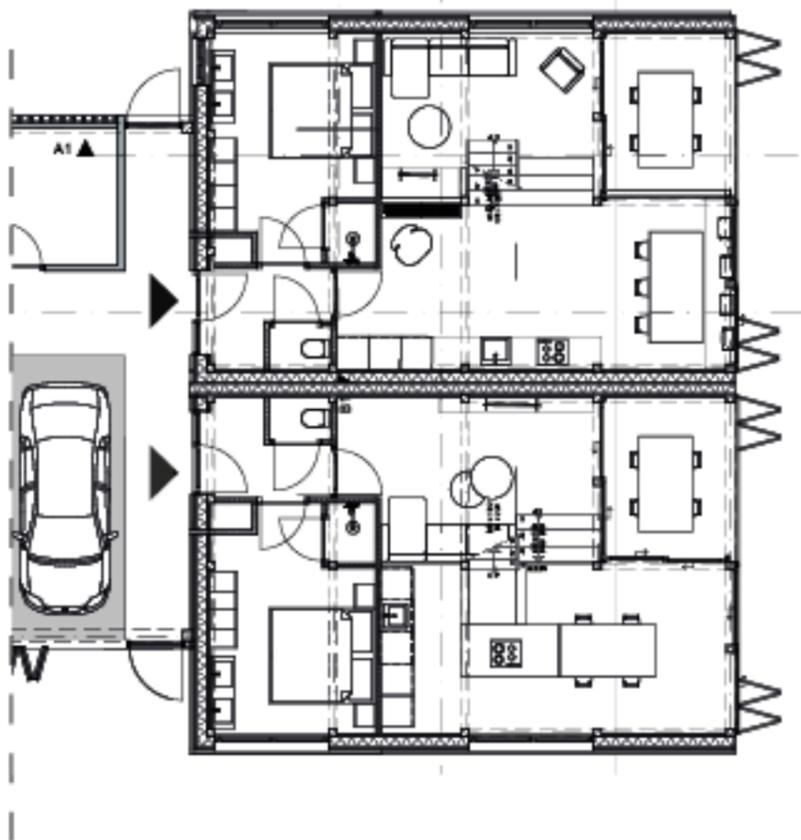
▽ +2,861

Section

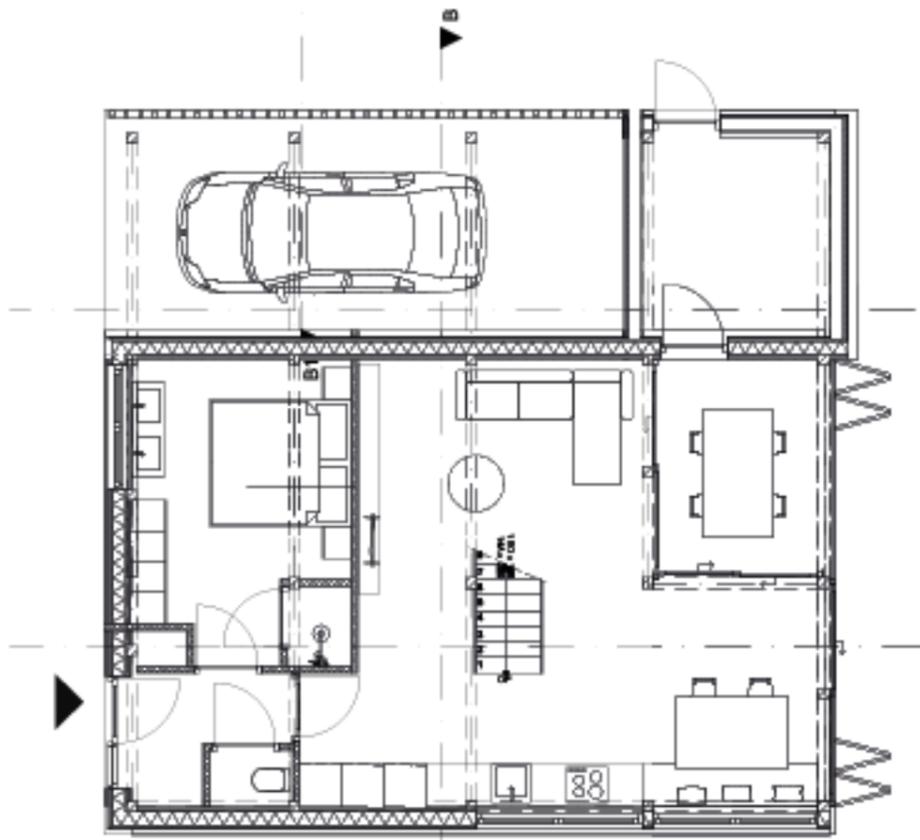


Recognizable features from research:
-Timber beams
-Split level

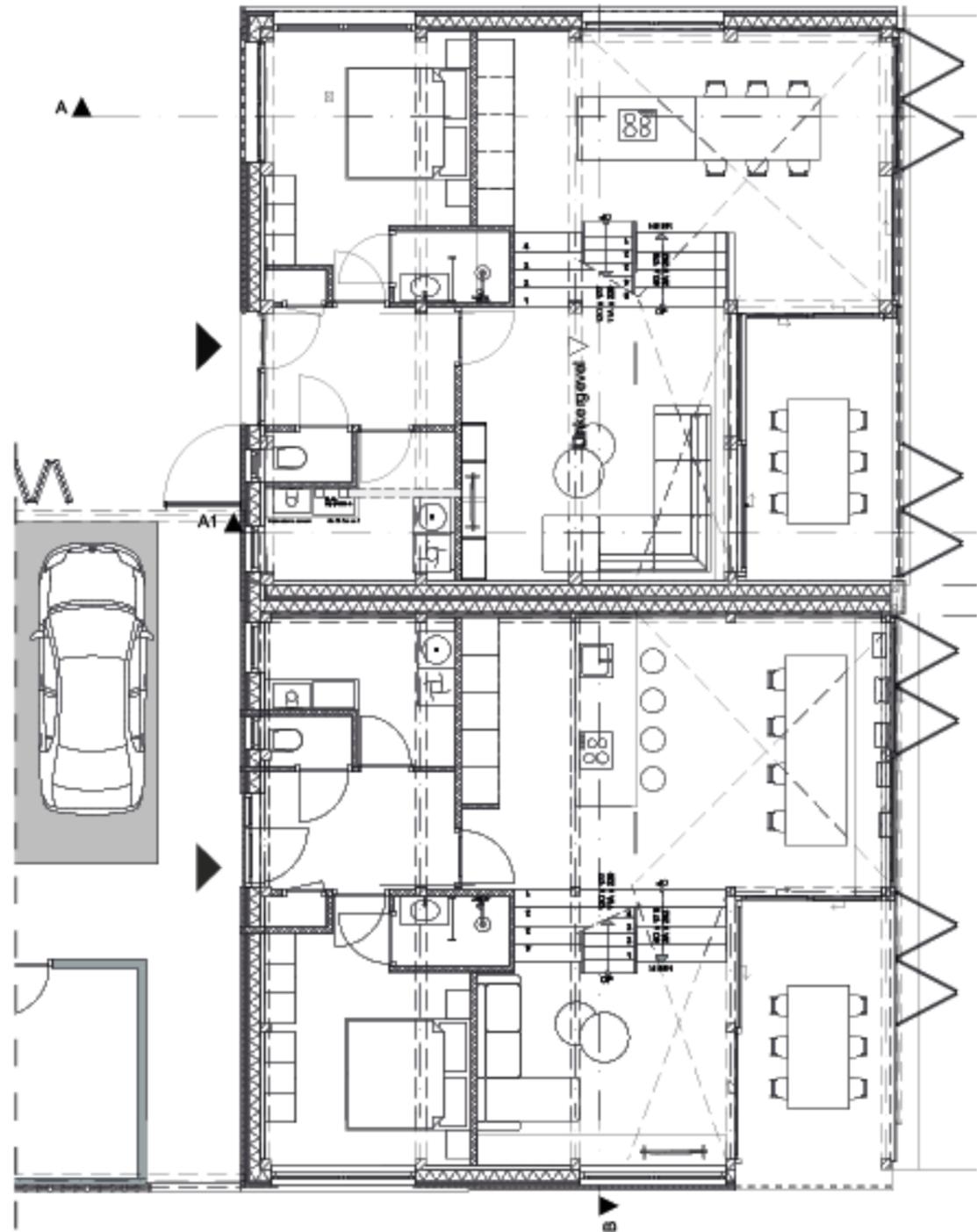




Semi-detached houses size M



Dikehouse



Semi-detached houses size L

Typologies

1



2



3



4



Busy harvest period
a few weeks in
December-January



Calm and clean between busy seasons
Wet storage drying process



Summer:
Reed is dry, roofing season



2781m³ wet storage
130kg per m³
2781x130=361530kg

39kg per m² dak=9270m² roof

9-15ton per ha

361/9=**40ha**

1 farmer

2079m³ dry storage
100kg per m³
2079x100=207900kg
10ton per ha

208/10=**20,8ha**

1 teler

 Riet productie

 Hooi, vlas etc.



Recognizable features from research:
-Different Material roofing front and backhouse
-Gutter height difference
-Shape



Huijts - de ontwikkeling van de midden-delflandse boerderij



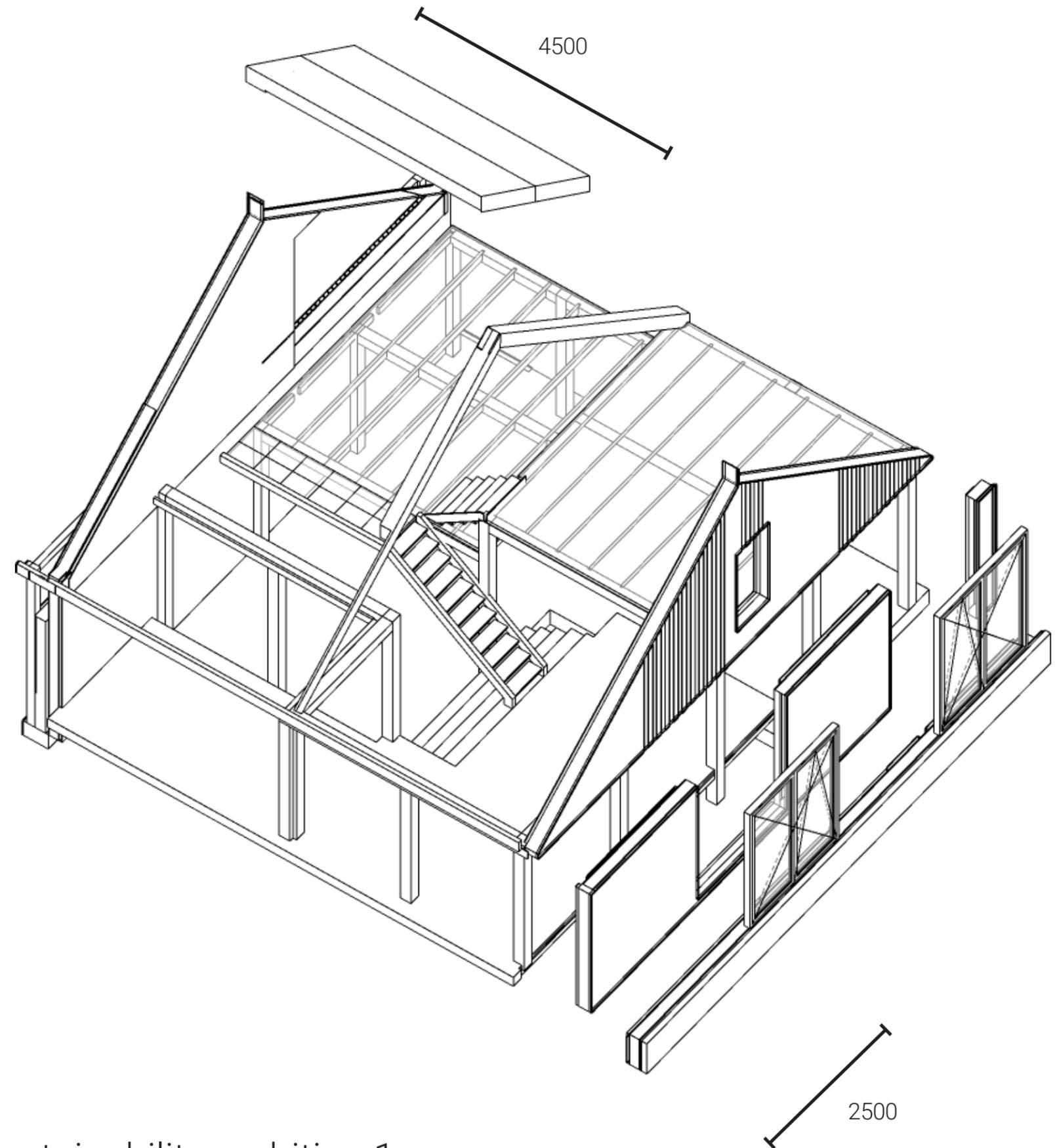
South facade



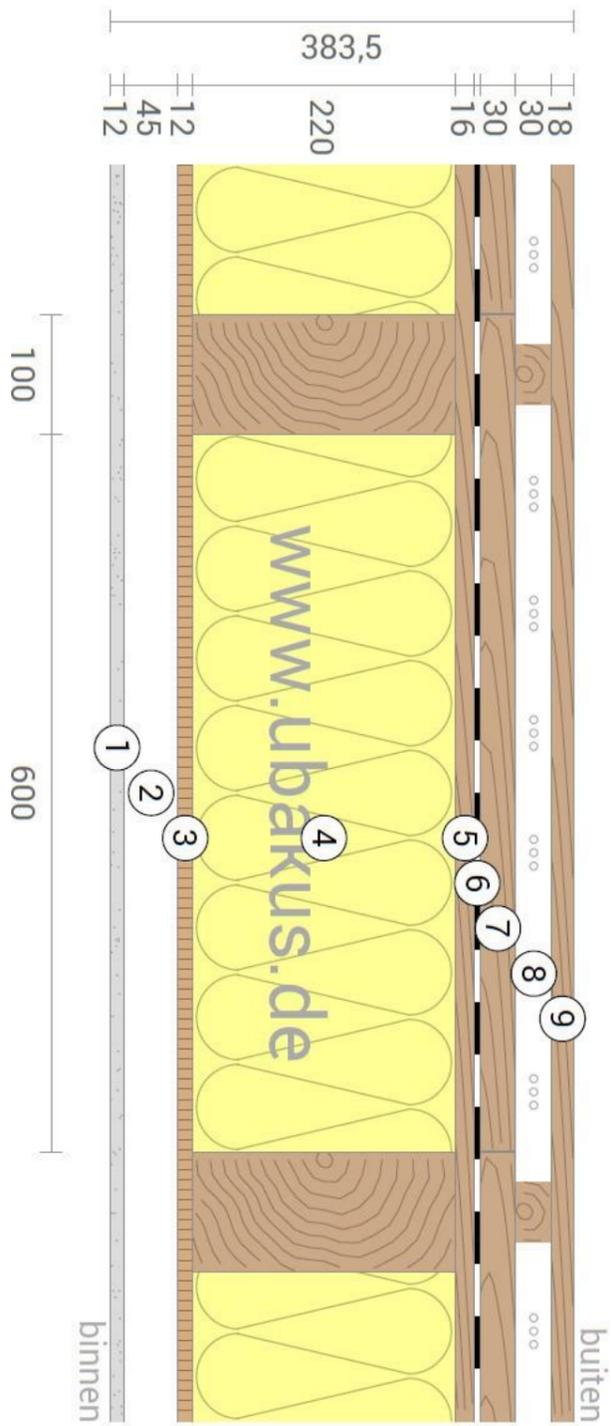




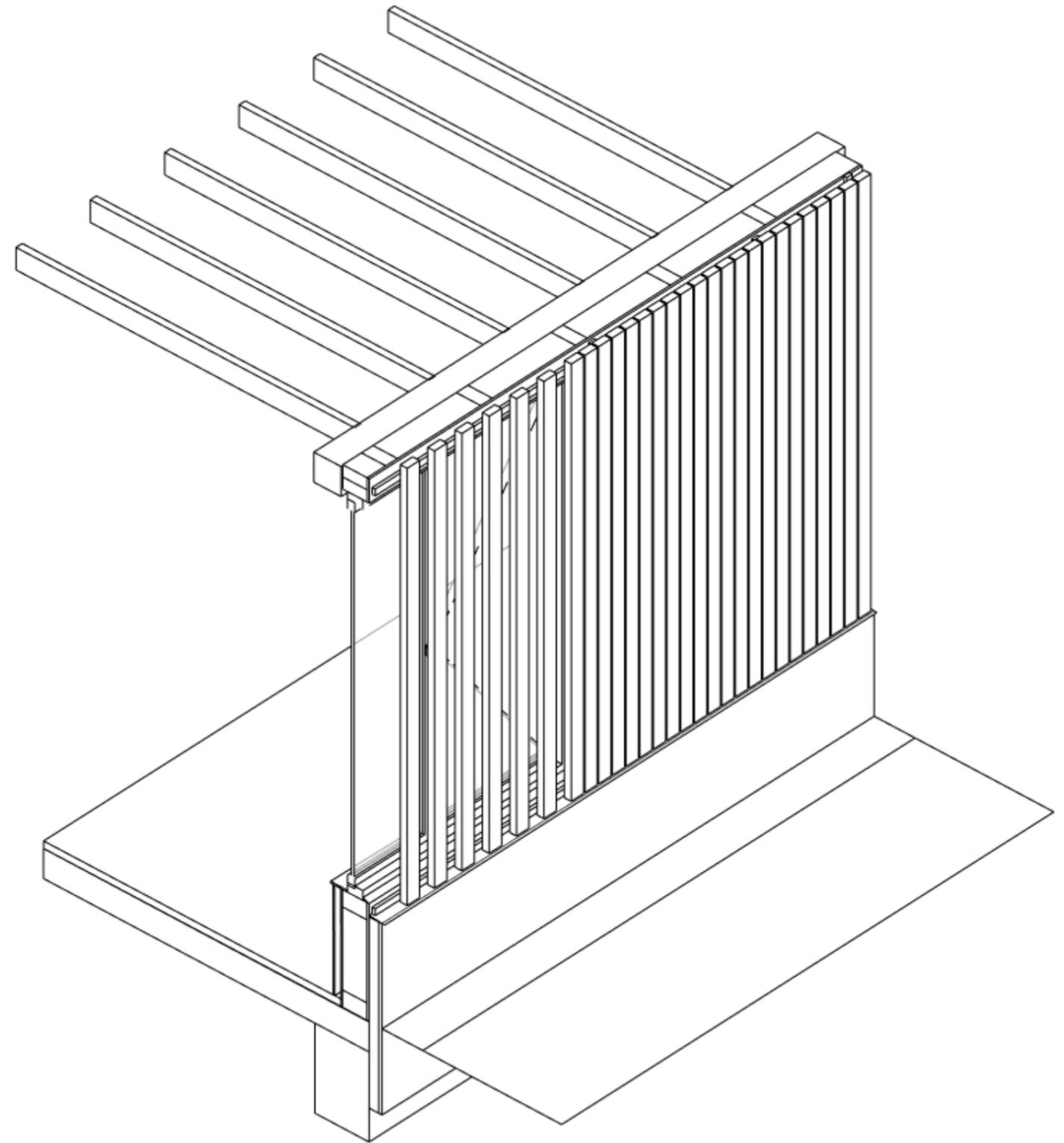
- Reduce 90% of material waste
(MODULAR BUILDING INSTITUTE)
- Transport once
- Fast building proces
- Demountable



Sustainability ambition 1:
Prefab



Woodfiber insulation
 Timber frame structure
 Wooden slats finishing



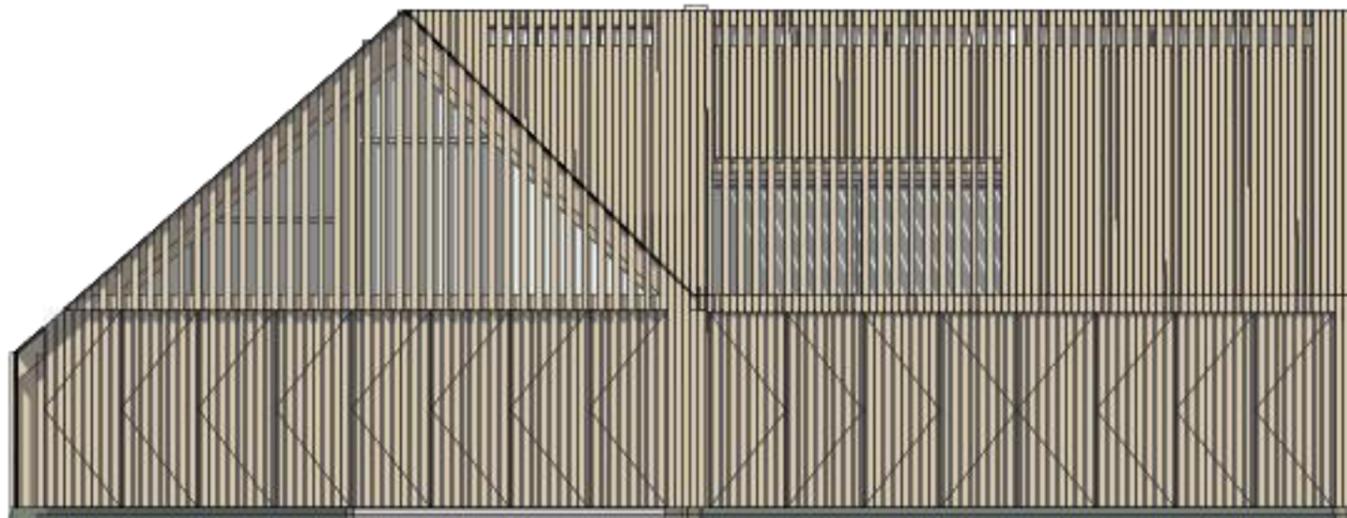
Sustainability ambition 2:
 Biobased & vapor permeable
 construction

Climate, accessibility & privacy

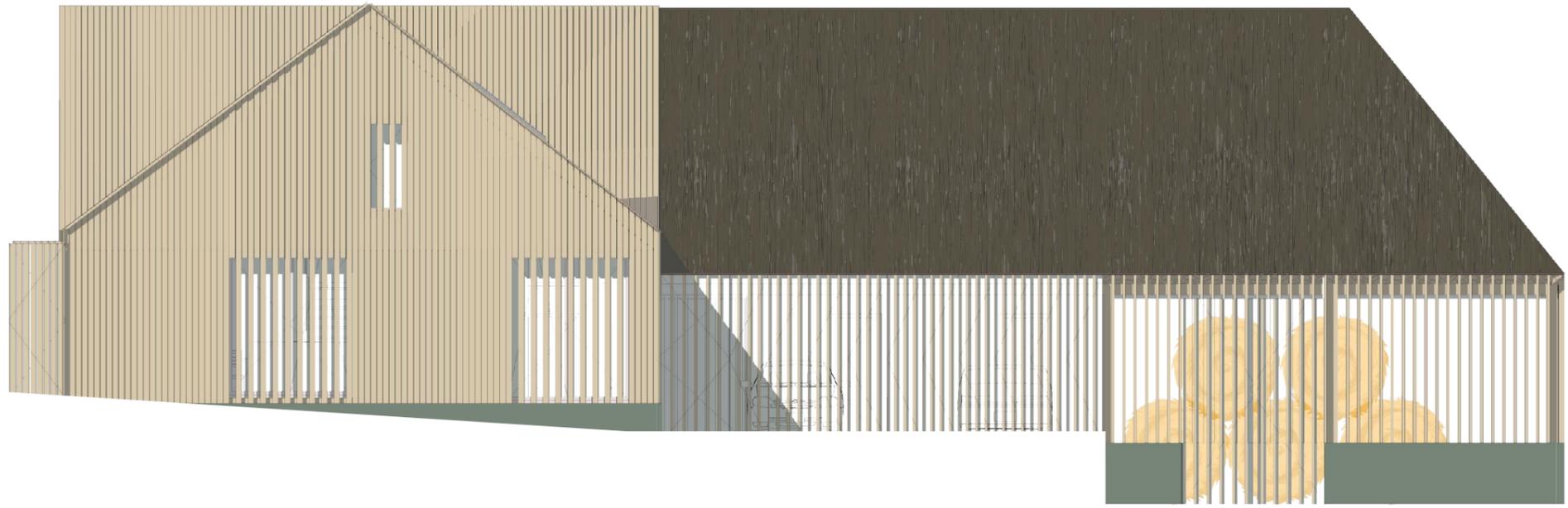
North



South



De Meester Vliegen Architecten House DV



East doors closed



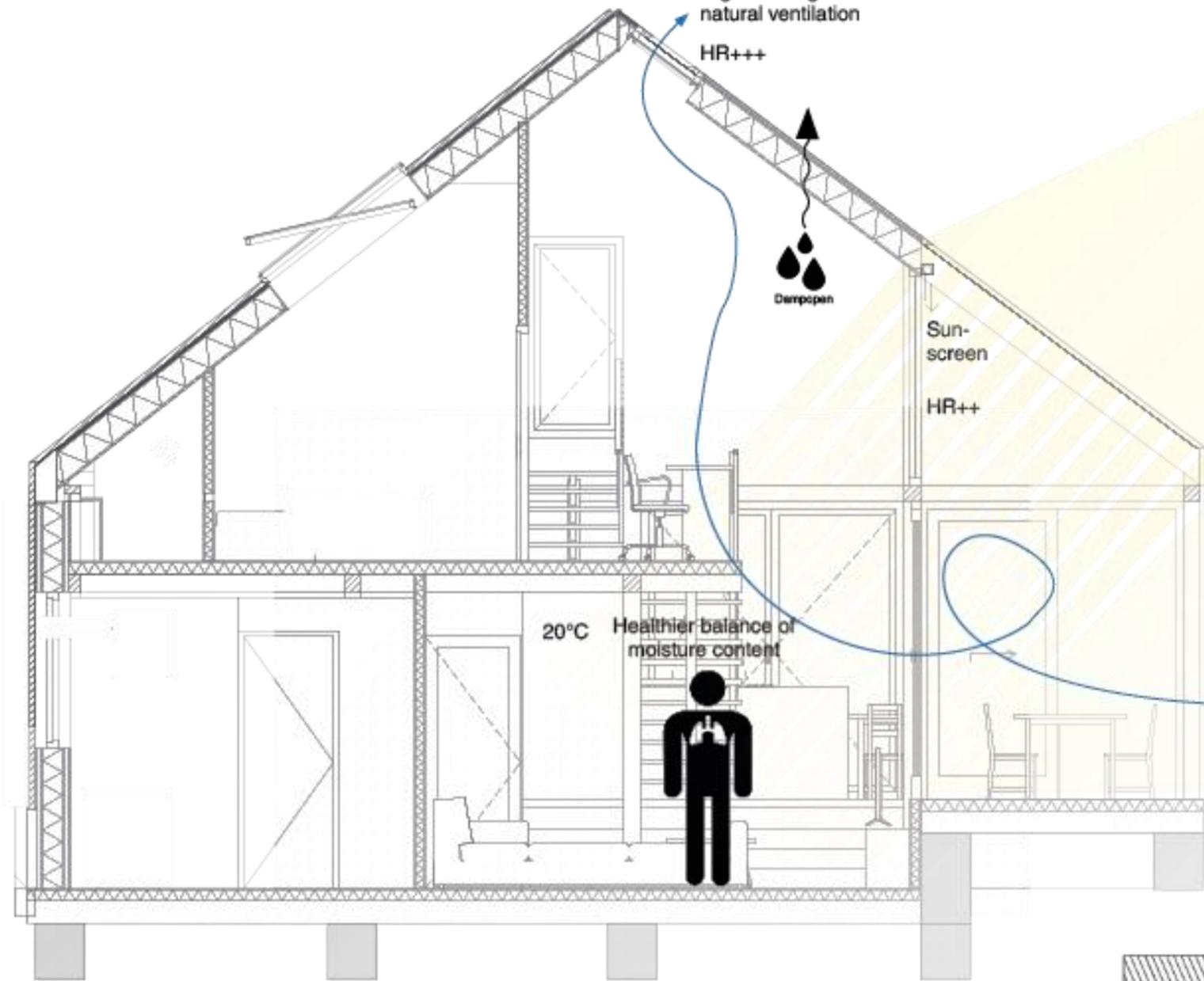
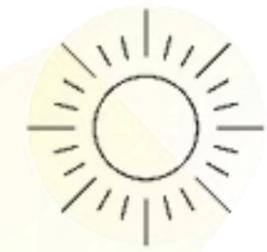
East doors open

North

Summer

Night cooling/
natural ventilation
HR+++

South

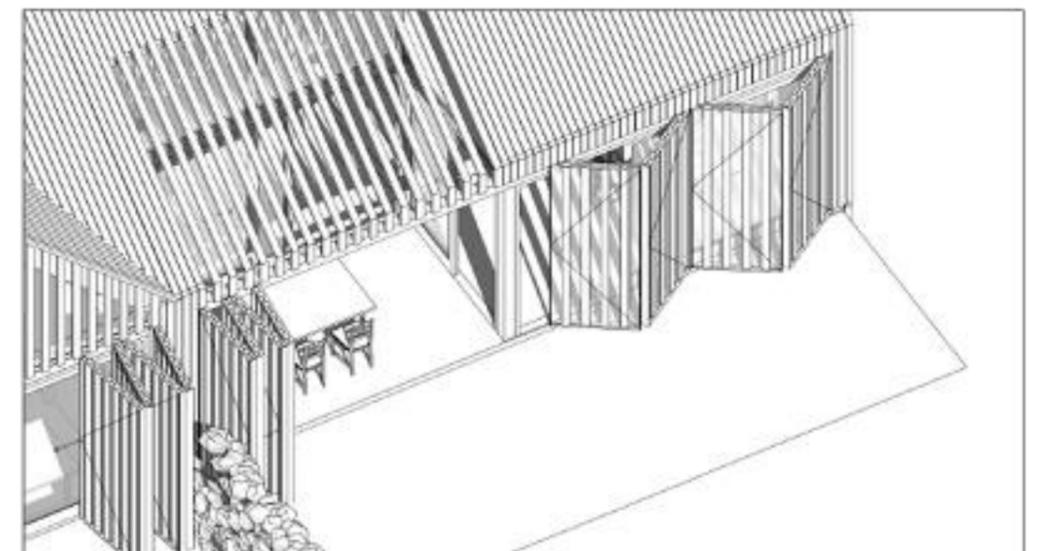


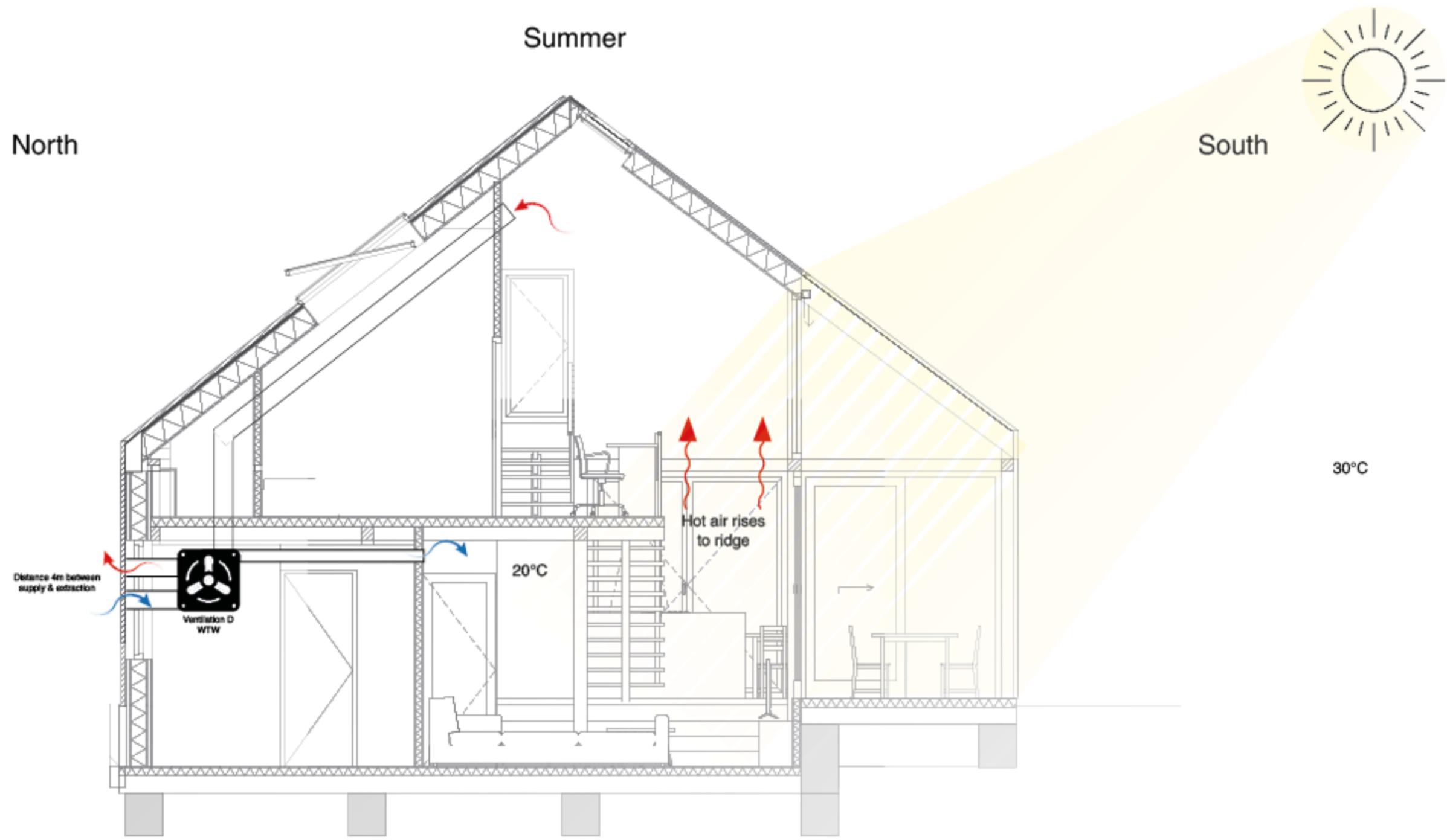
30°C

20°C Healthier balance of moisture content

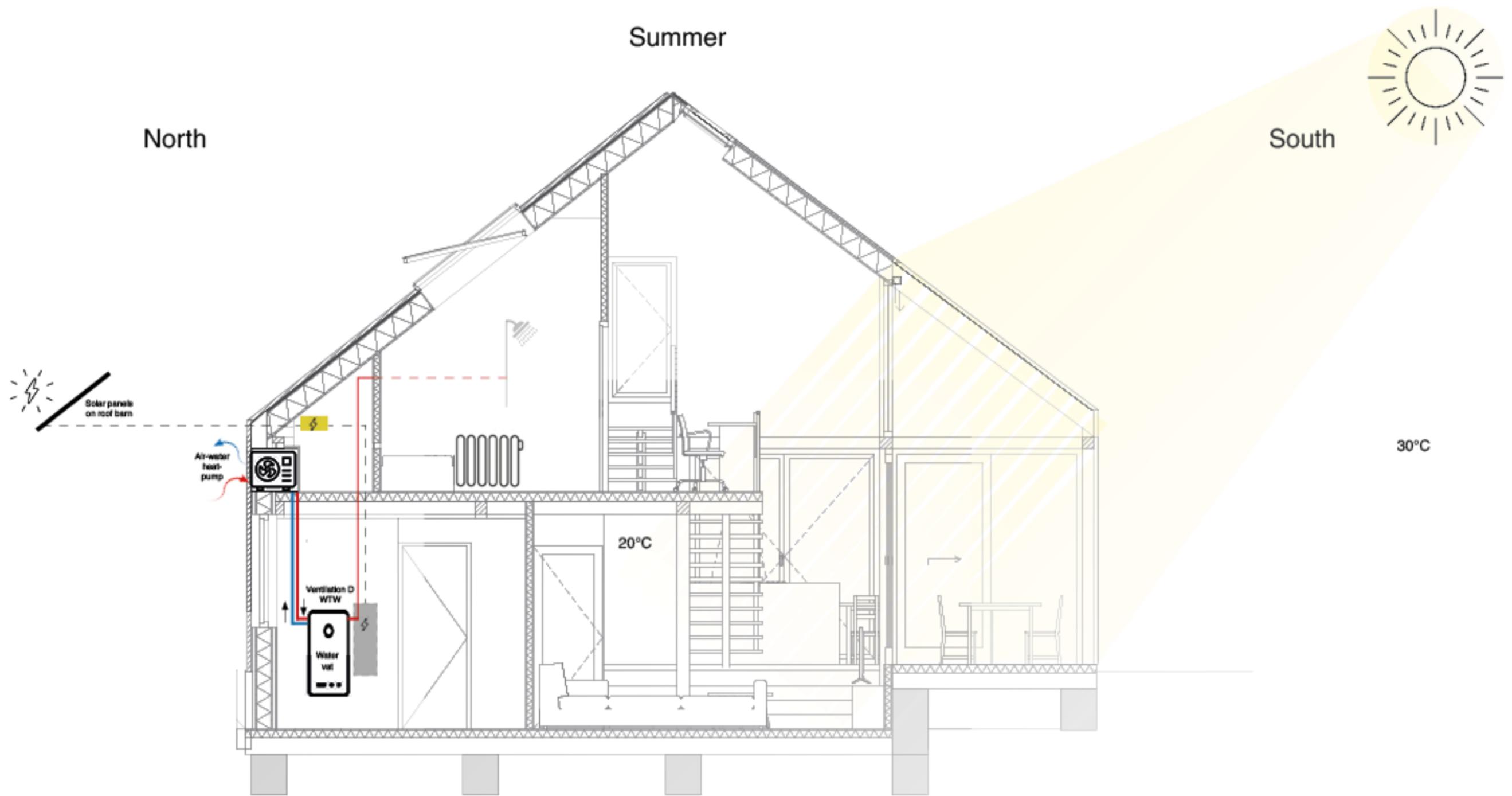
Folding shutters

Climate diagram

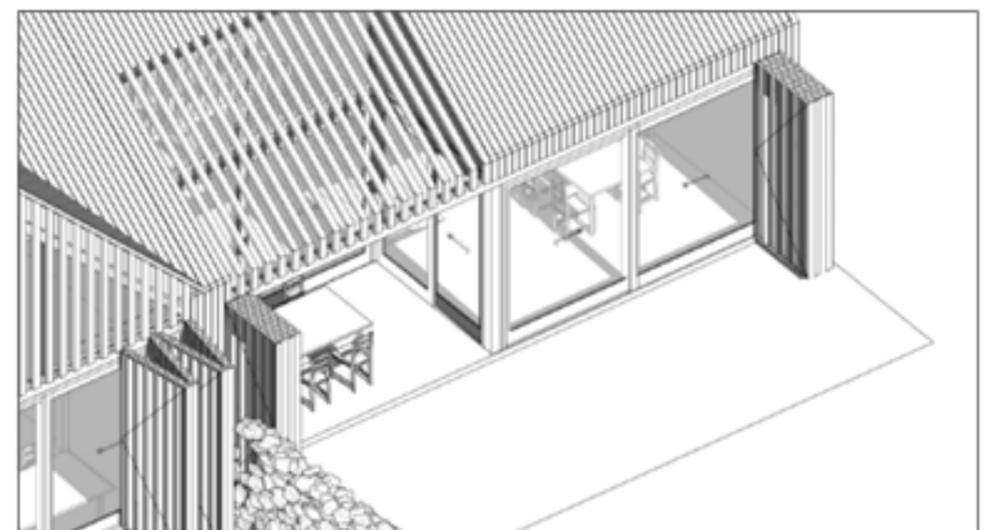
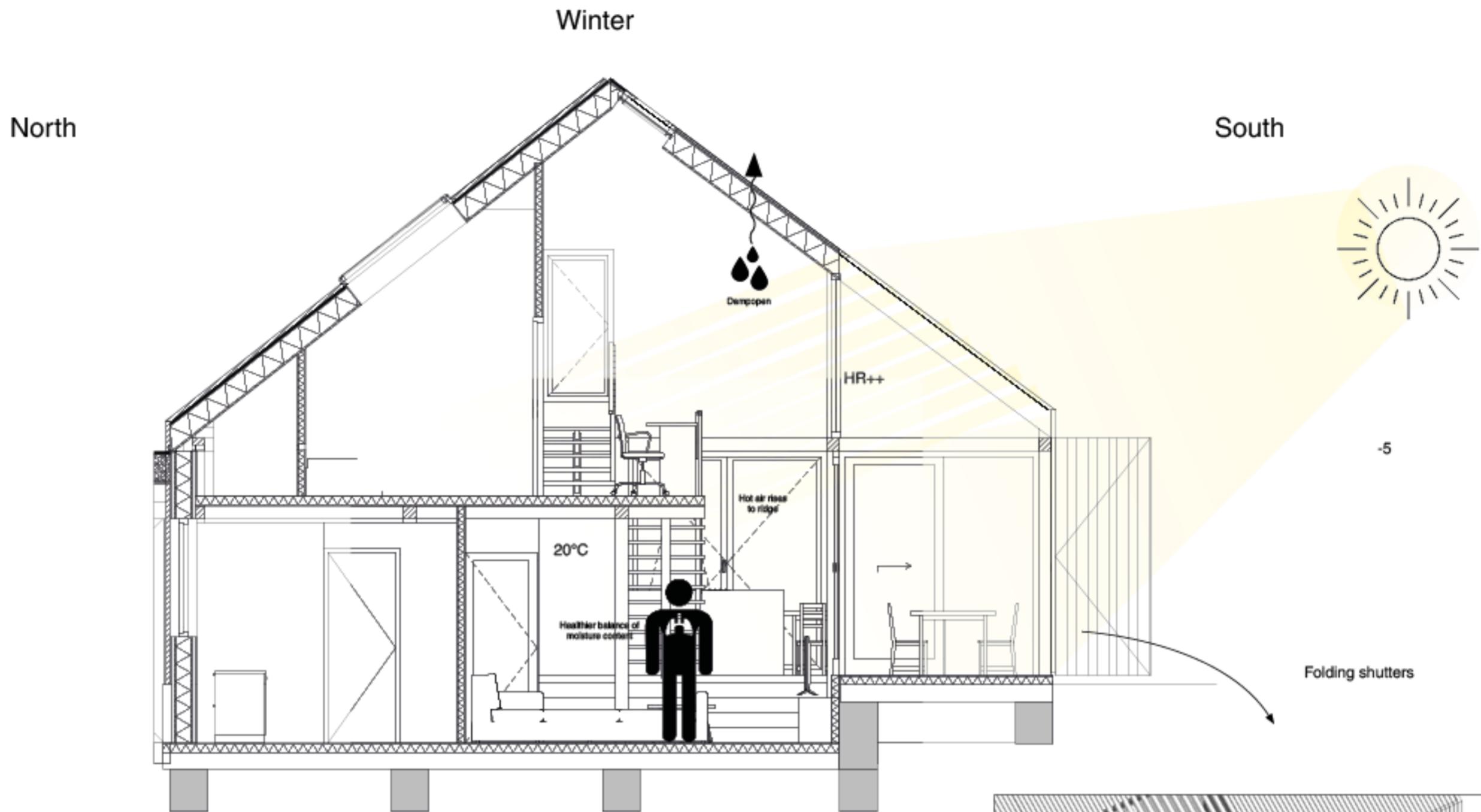




Climate diagram



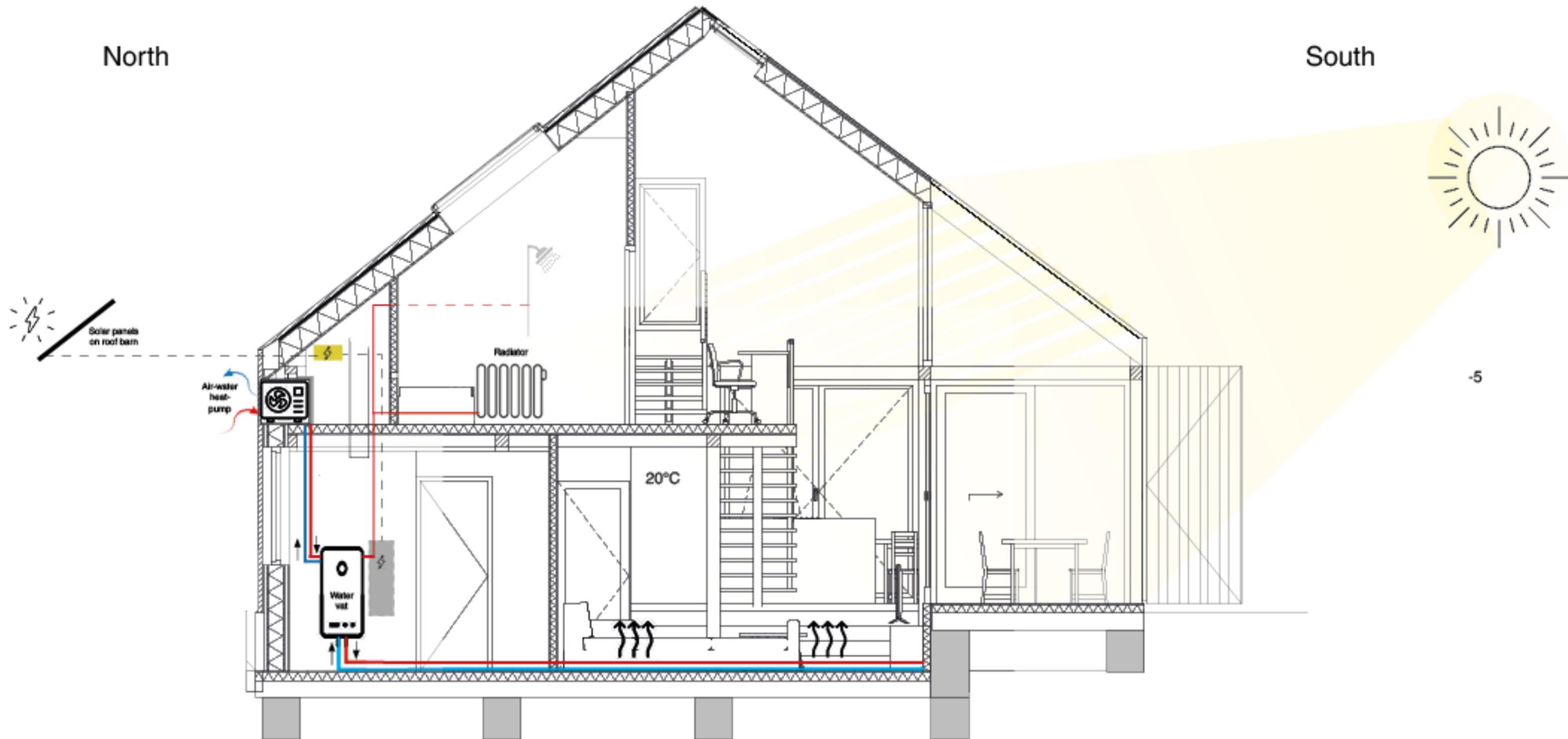
Climate diagram



Winter

North

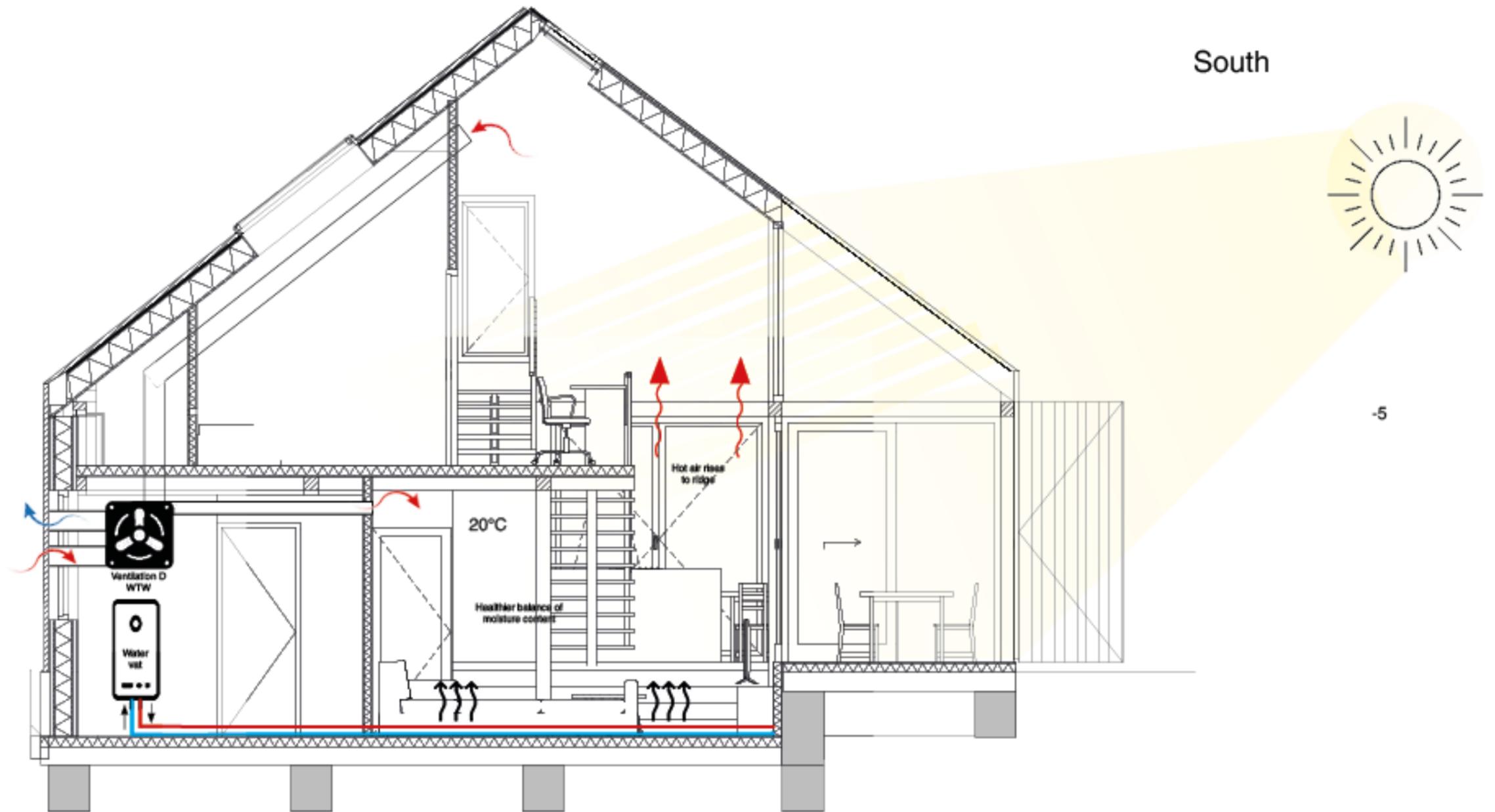
South



Winter

North

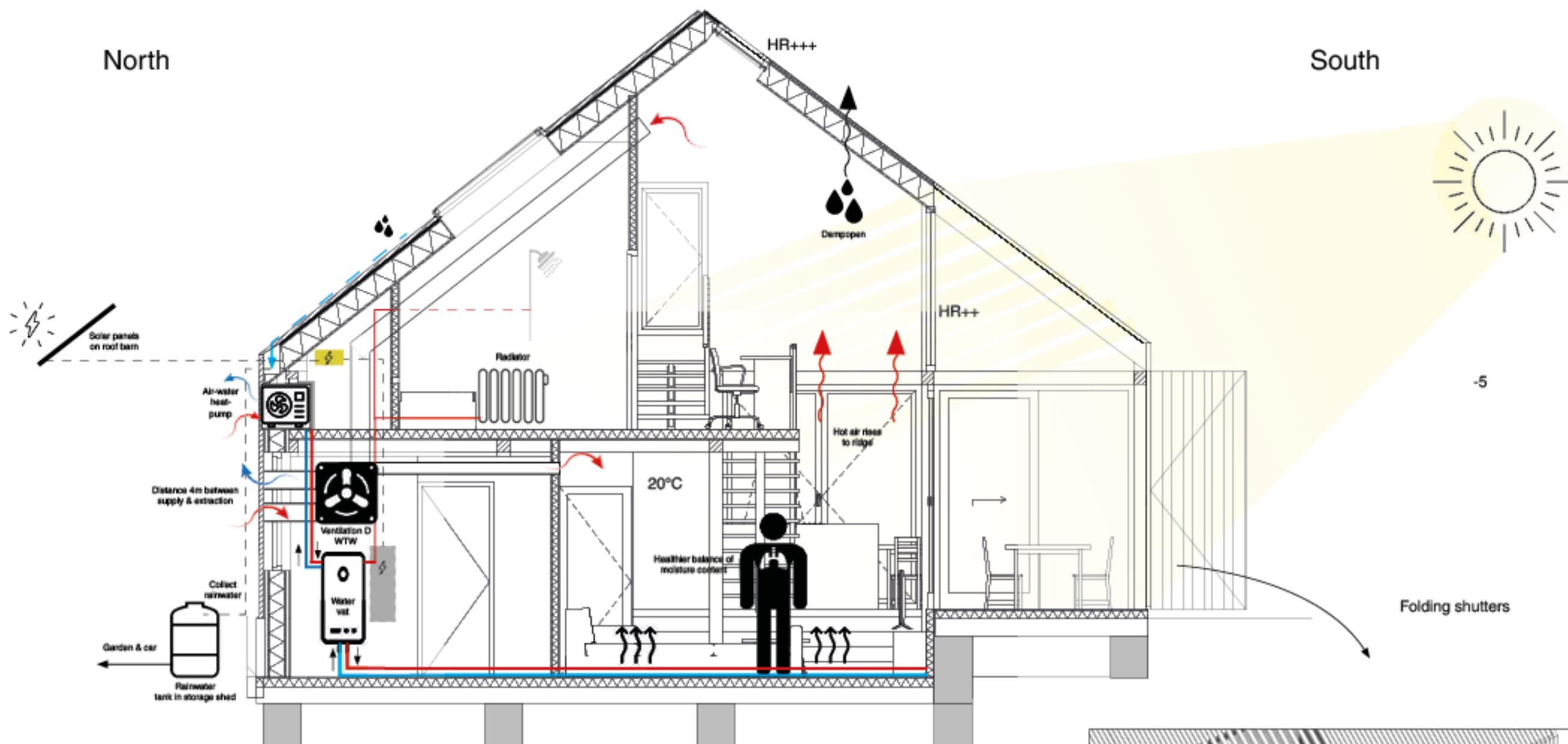
South



Winter

North

South



Resultaat:

68

22

87

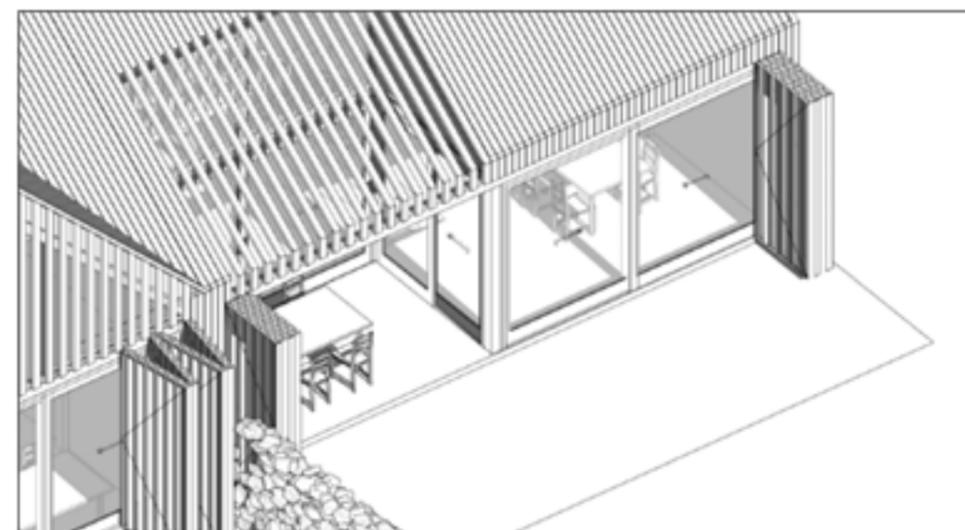
Eis:

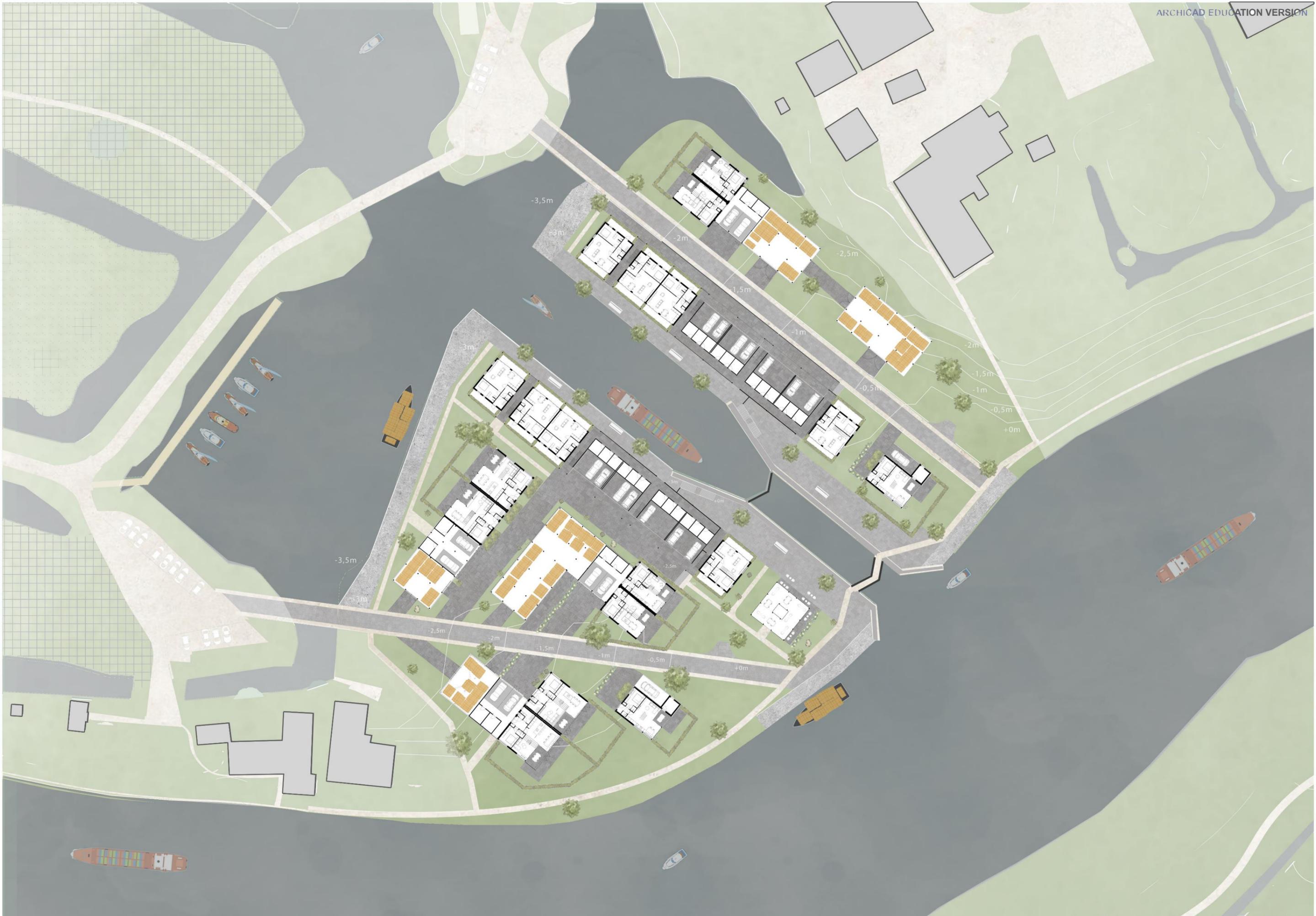
Beng1: < 96,5

Beng2: < 50

Beng3: > 40%

Energyneutral





GRADUATION PROJECT NIELS DE RIJKE

VLIETPOORT

TU DELFT

MSC ARCHITECTURE, URBANISM
AND BUILDING SCIENCES

ECOLOGIES OF INCLUSION

2023-2024

