

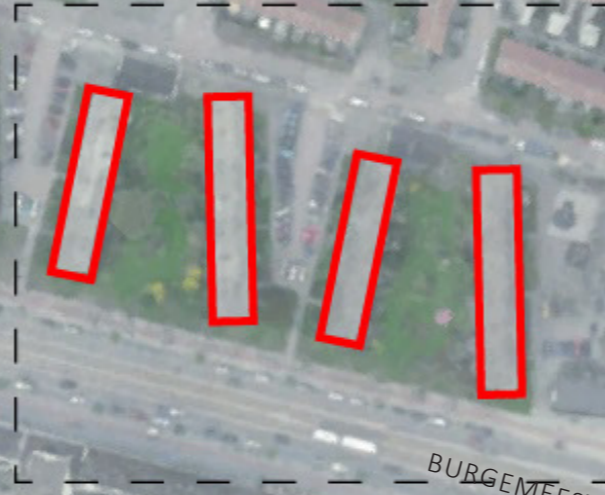
DRAWINGS & TECHNICAL DETAILS

SUSTAINABLE RENOVATION PROJECT FOR SOCIAL HOUSING IN AMSTERDAM WEST

Upgrading comfort and improving public space by a zero energy renovation for the Nemavo-Airey dwellings in Amsterdam West



PROBLEM STATEMENT



ENERGY LABEL G

BURGEMEESTER DE VLUGTLAAN

AMSTERDAM WEST





CONCEPT

TRANSFORMATION LINE: MORE LIGHT, AIR & SPACE

RENOVATION LINE: ENHANCE 'MODERN' VALUES

ENERGY NEUTRAL / BENG NORM / LABEL A+++

URBAN AREA: ACCESSIBILITY & SOCIAL INTERACTION

GREENERY: QUIET ATMOSPHERE

N





N

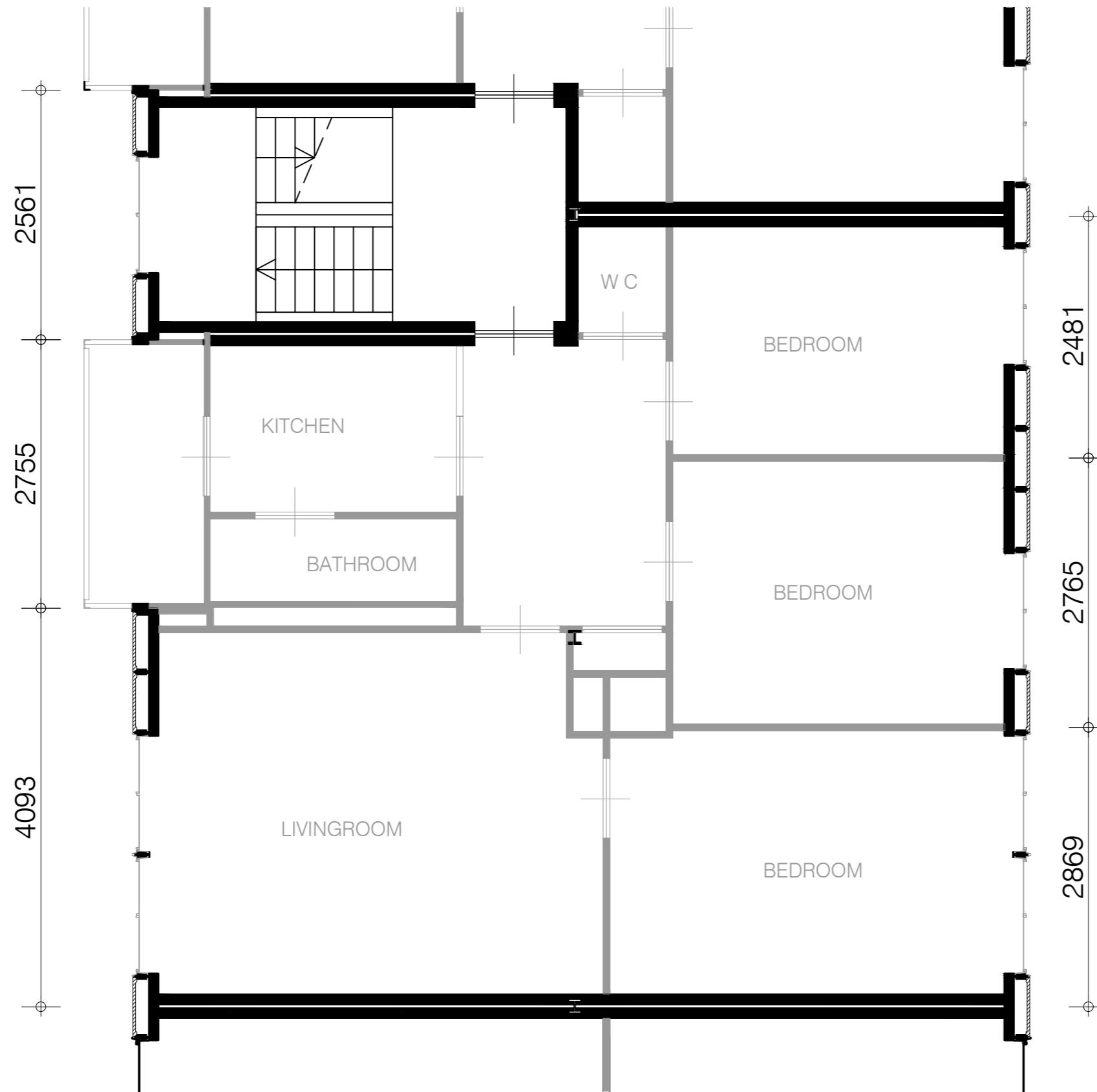
MASTERPLAN



SECTION AA

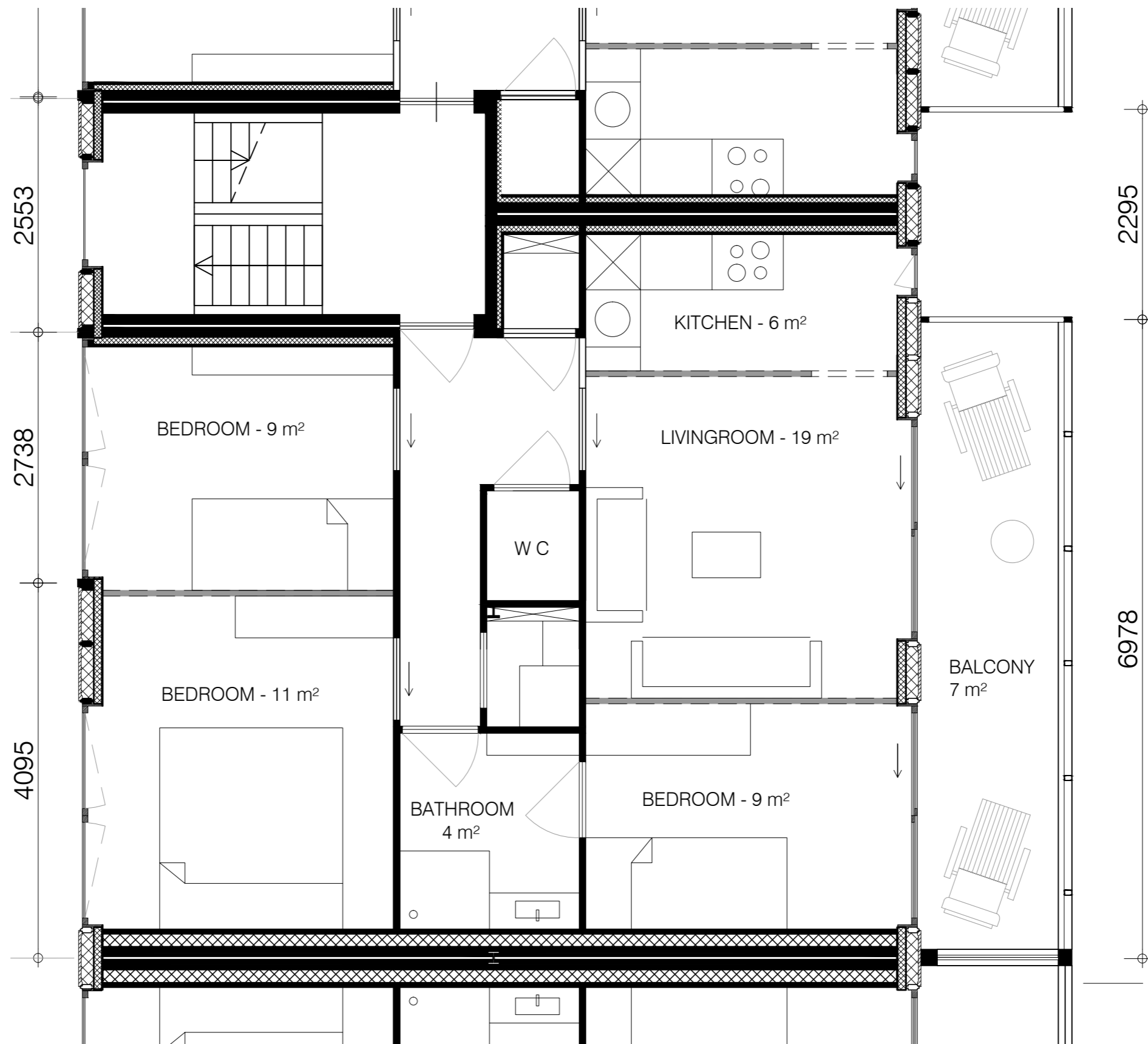


SECTION BB



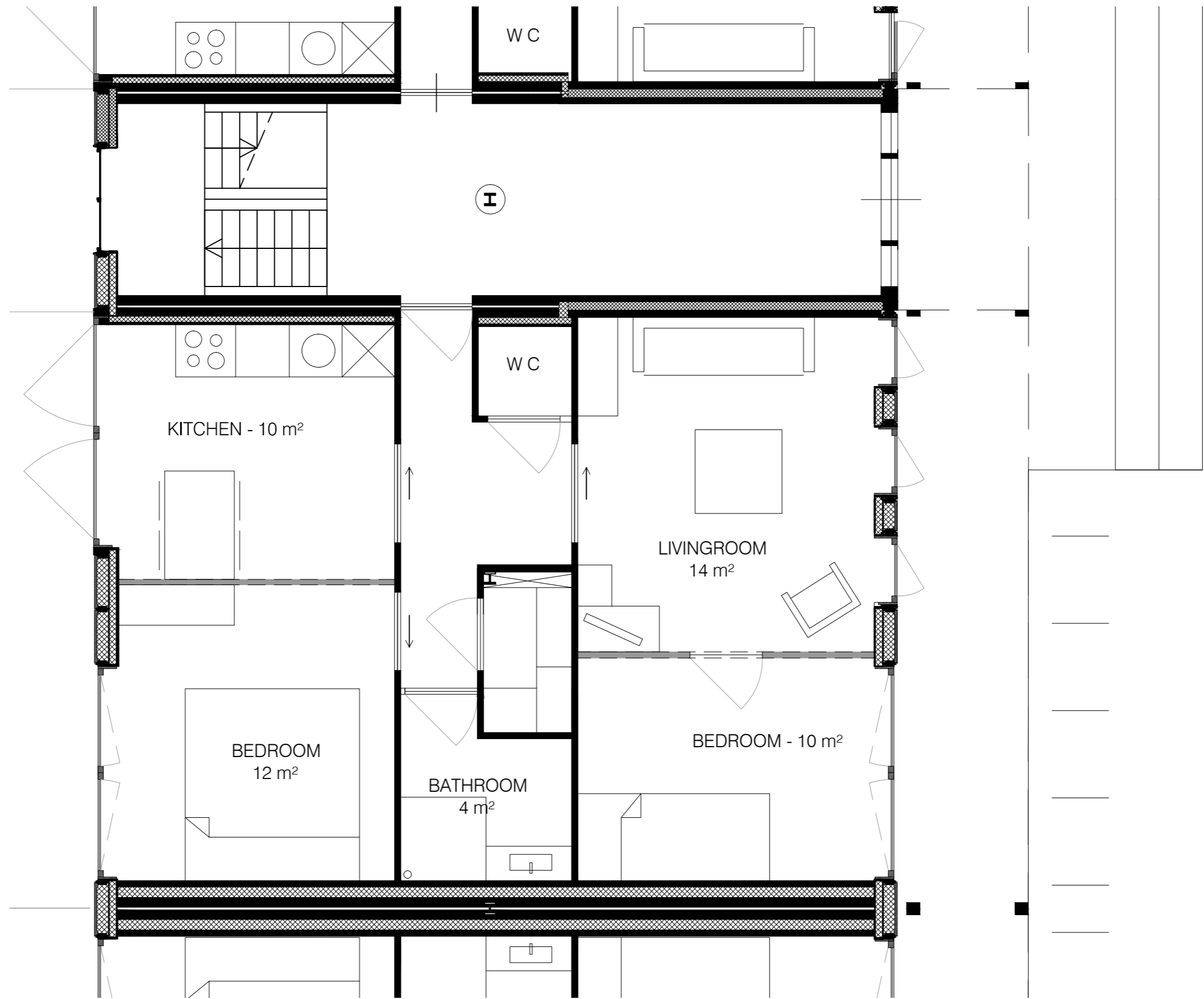
EXISTING FLOORPLAN LEVEL 1 & 2

SCALE 1:50



NEW FLOORPLAN LEVEL 1 & 2

SCALE 1:50



NEW FLOORPLAN GROUND FLOOR

SCALE 1:50

MAIN CONSTRUCTION:

Existing Construction + new construction of steel columns & girders with concrete floor for new balconies

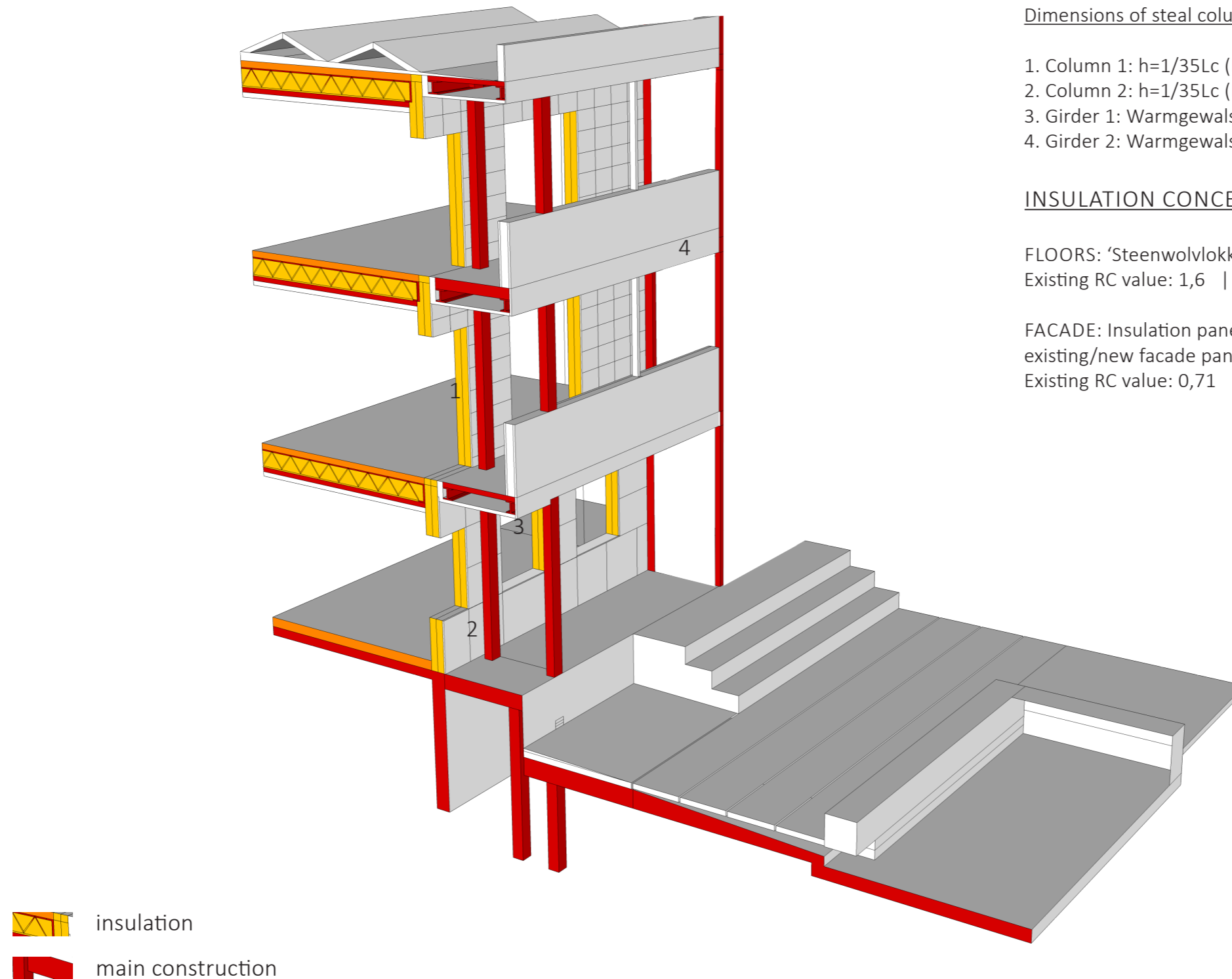
Dimensions of steel columns & girders:

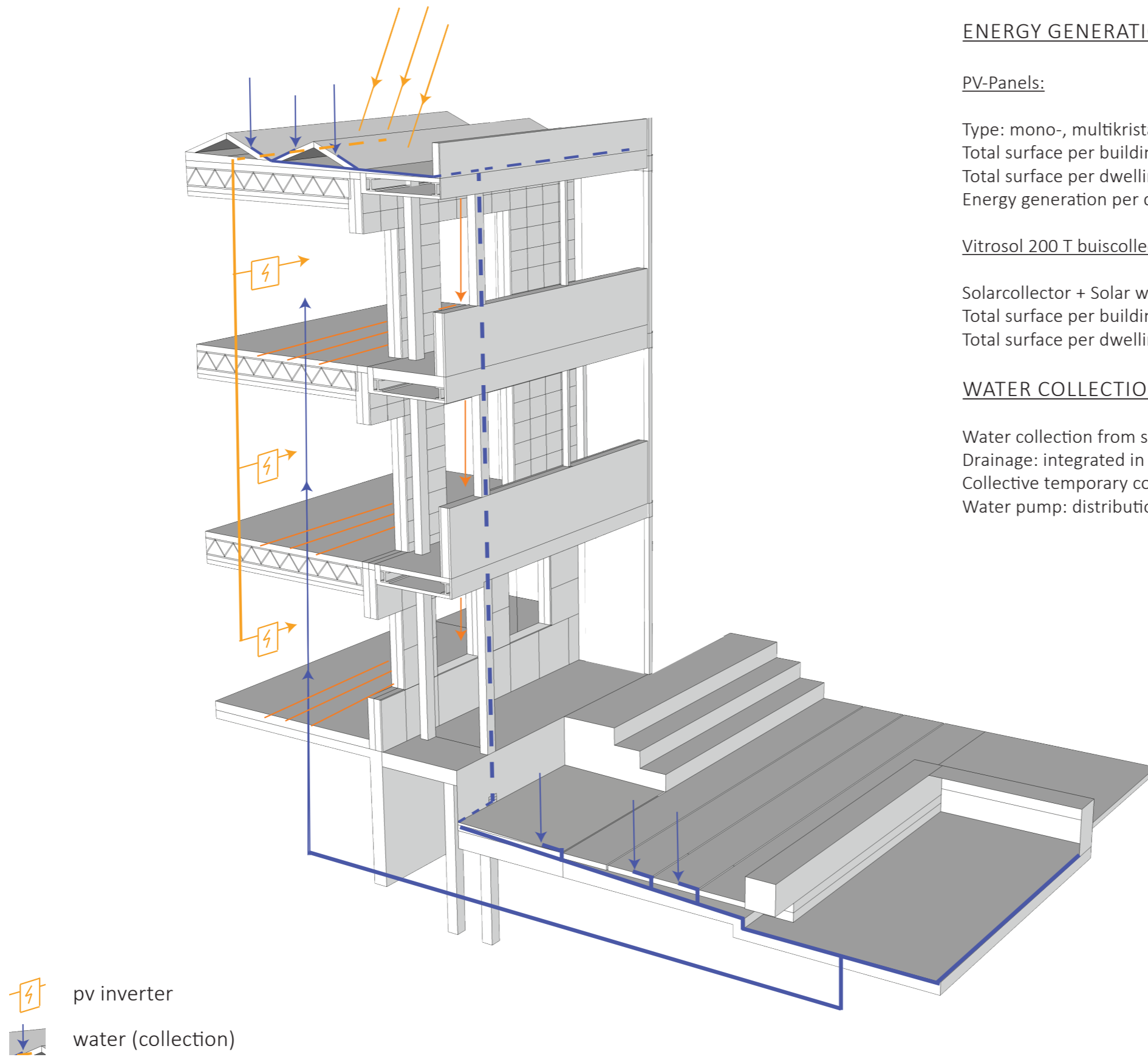
1. Column 1: $h=1/35L_c$ ($L_c=L$) = 85mm
2. Column 2: $h=1/35L_c$ ($L_c=0,7*L$) = 60mm
3. Girder 1: Warmgewalst I-profiel: $h=1/20L$ = 137 mm
4. Girder 2: Warmgewalst I-profiel: $h=1/20L$ = 54 mm

INSULATION CONCEPT

FLOORS: 'Steenwolvlokken' between girders (acoustic insulation)
Existing RC value: 1,6 || New Rc value: 8,46

FACADE: Insulation panels + 'Regelwerk met isolatie' behind existing/new facade panels (thermal insulation)
Existing RC value: 0,71 || New Rc value: 5,71





ENERGY GENERATION:

PV-Panels:

Type: mono-, multikristallijn / CIGS / calciumtelluride
 Total surface per building: $6 \times 6.78 \times 10.7 = 435 \text{ m}^2$
 Total surface per dwelling: $435 / 18 = 24.2 \text{ m}^2$
 Energy generation per dwelling: 2.697 kWh

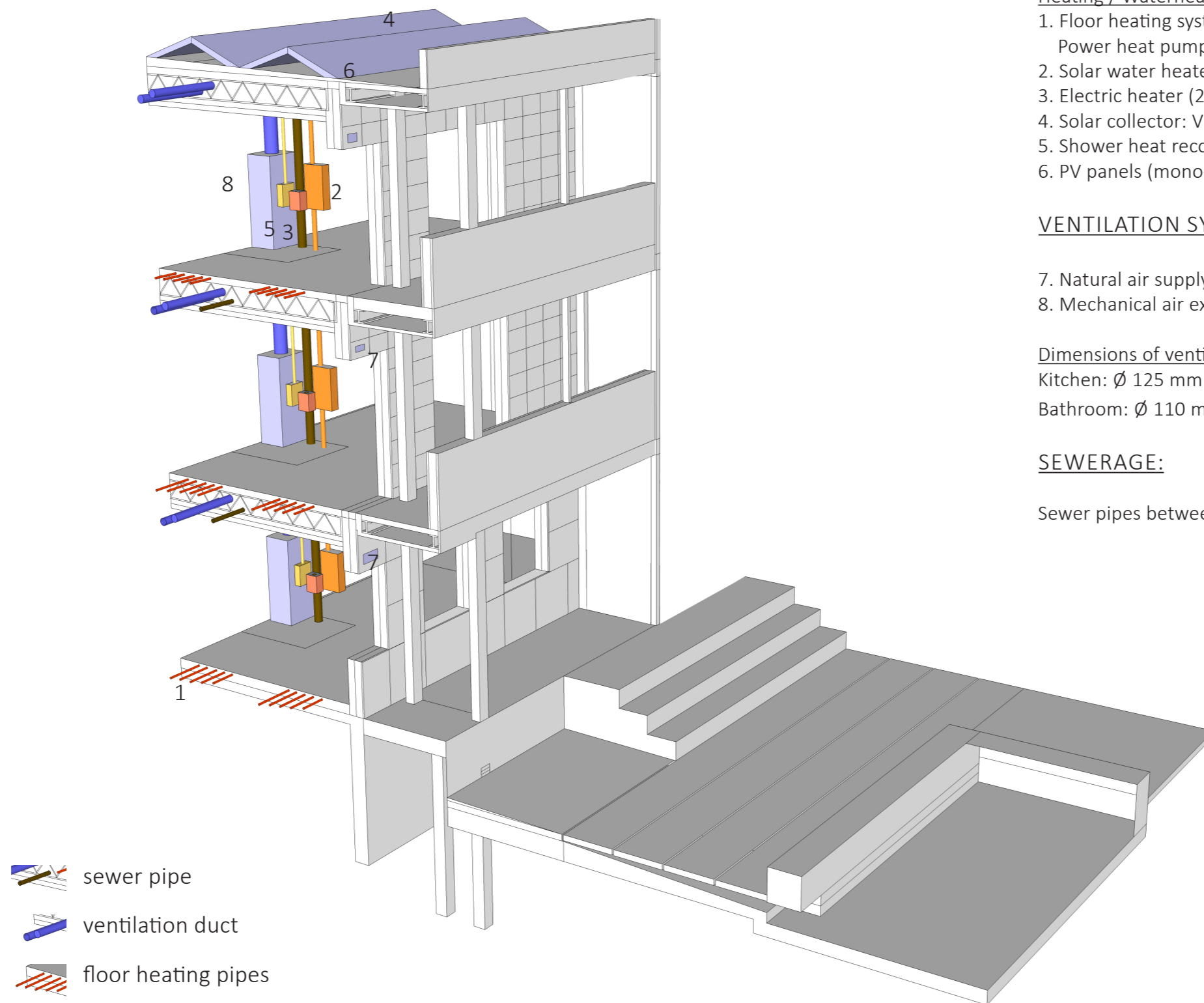
Vitrosol 200 T buiscollector type SP2:

Solarcollector + Solar water heater + Electric heater
 Total surface per building: $3 \times 29 = 87 \text{ m}^2$
 Total surface per dwelling: $87 / 18 = 4,84 \text{ m}^2$

WATER COLLECTION:

Water collection from sloping roof all to balcony side
 Drainage: integrated in balcony construction
 Collective temporary collection at urban square
 Water pump: distribution to toilet/garden/wasmachine

ENERGY GENERATION & WATER COLLECTION SYSTEM



HEATING SYSTEM:

Heating / Waterheating:

1. Floor heating system; collective electric heat pump
Power heat pump: 7,50 kW (CW klasse 4)
2. Solar water heater (for heating and waterheating)
3. Electric heater (24 hours electric)
4. Solar collector: Vitrosol 200 T buiscollector (type SP2)
5. Shower heat recovery system
6. PV panels (mono-, multikristallijn / CIGS / calciumtelluride)

VENTILATION SYSTEM:

7. Natural air supply by ventilation grids in facade
8. Mechanical air extraction via ventilation ducts:

Dimensions of ventilation ducts:

Kitchen: \varnothing 125 mm

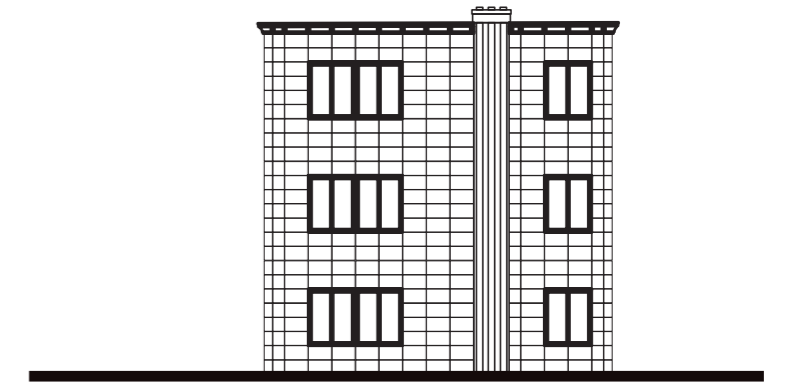
Bathroom: \varnothing 110 mm

SEWERAGE:

Sewer pipes between 'tralieliggers': \varnothing 110 mm



EXISTING WEST FACADE



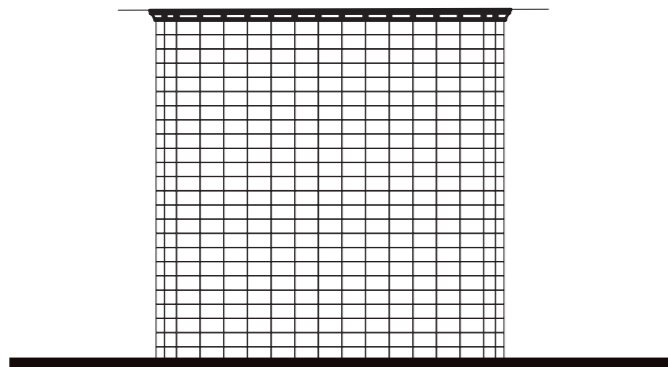
EXISTING SOUTH FACADE



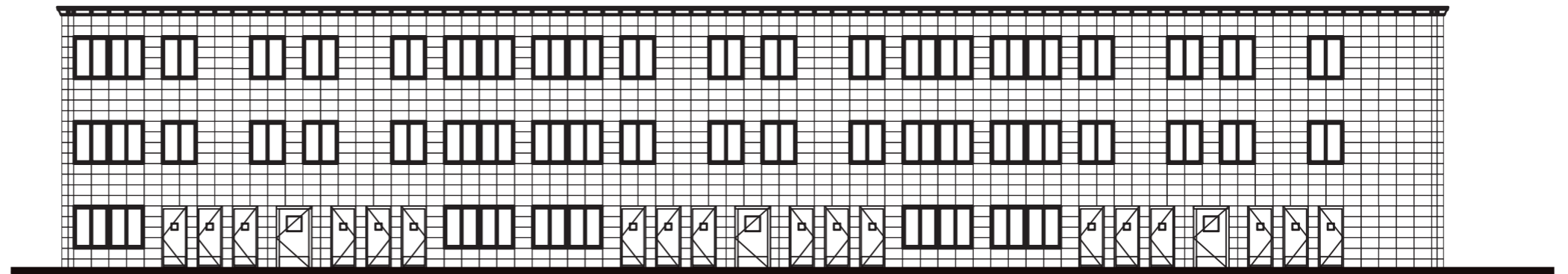
NEW WEST FACADE



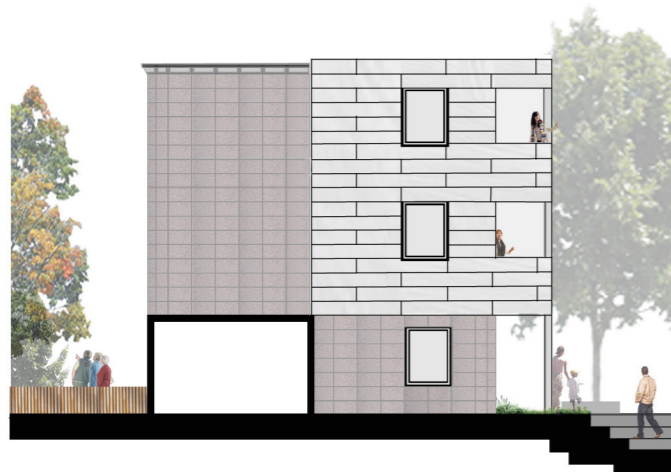
NEW SOUTH FACADE



EXISTING NORTH FACADE



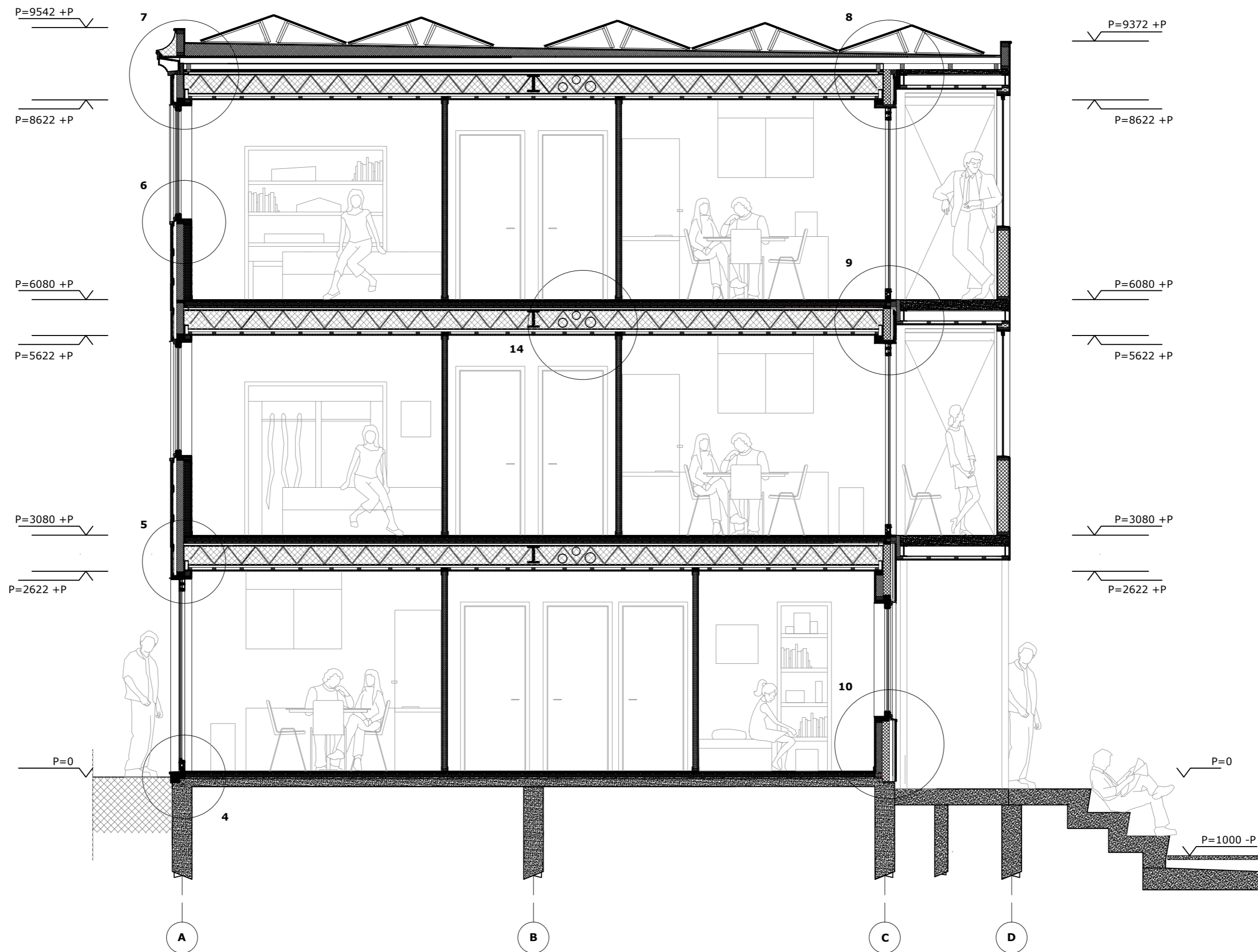
EXISTING EAST FACADE



NEW NORTH FACADE



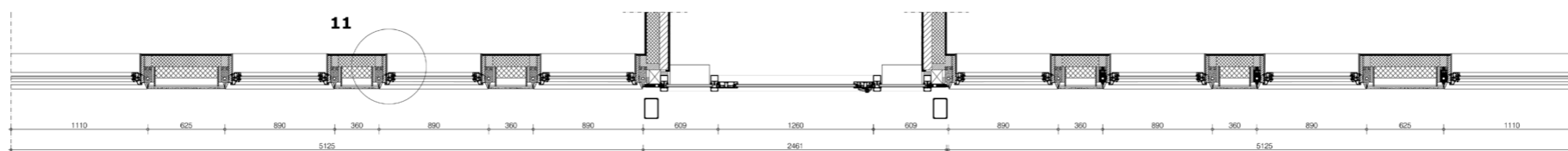
NEW EAST FACADE



SCALE 1:50

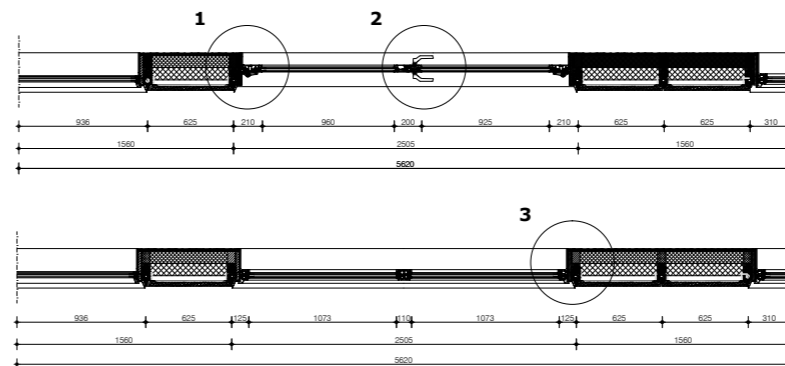


FRONT FACADE & SECTION WITH THE SELECTION OF DETAILS



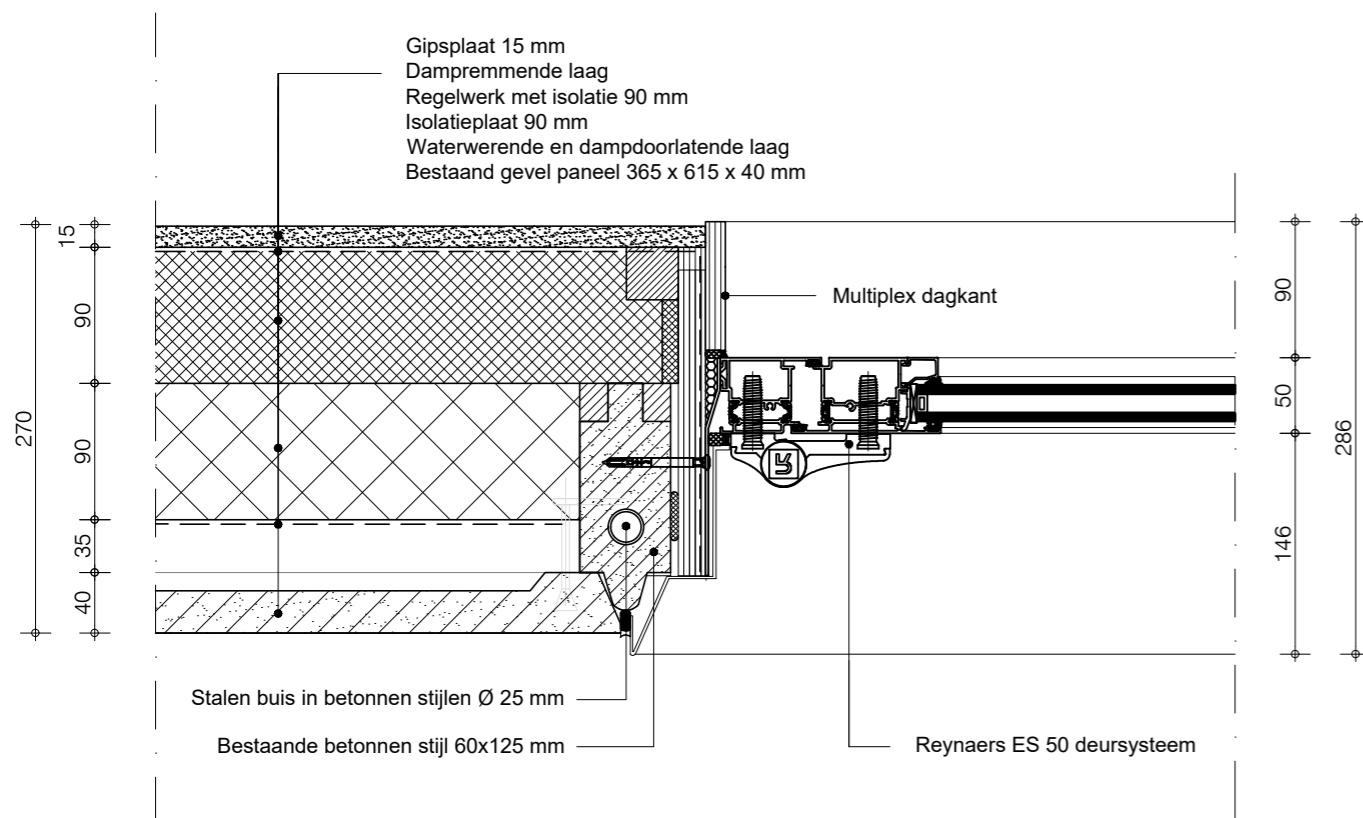


BACK FACADE & SECTION WITH THE SELECTION OF DETAILS



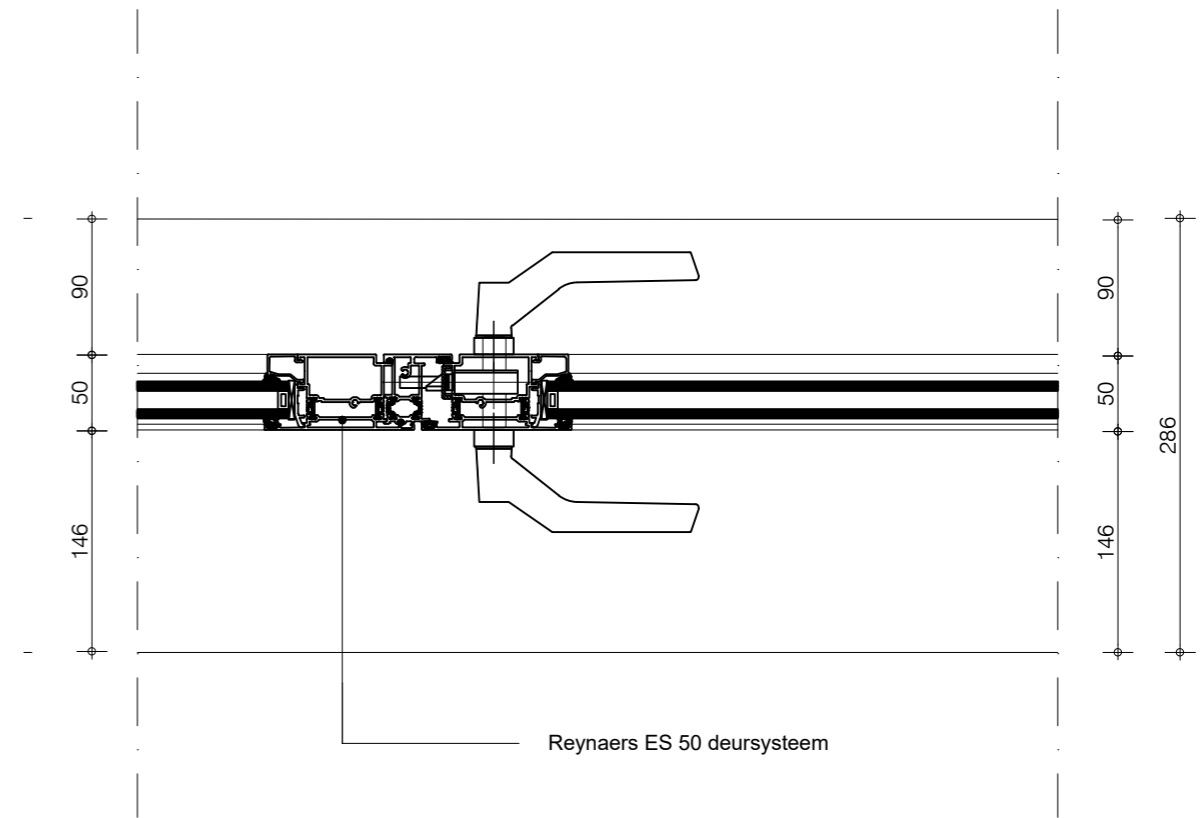
Detail 1

scale 1:5



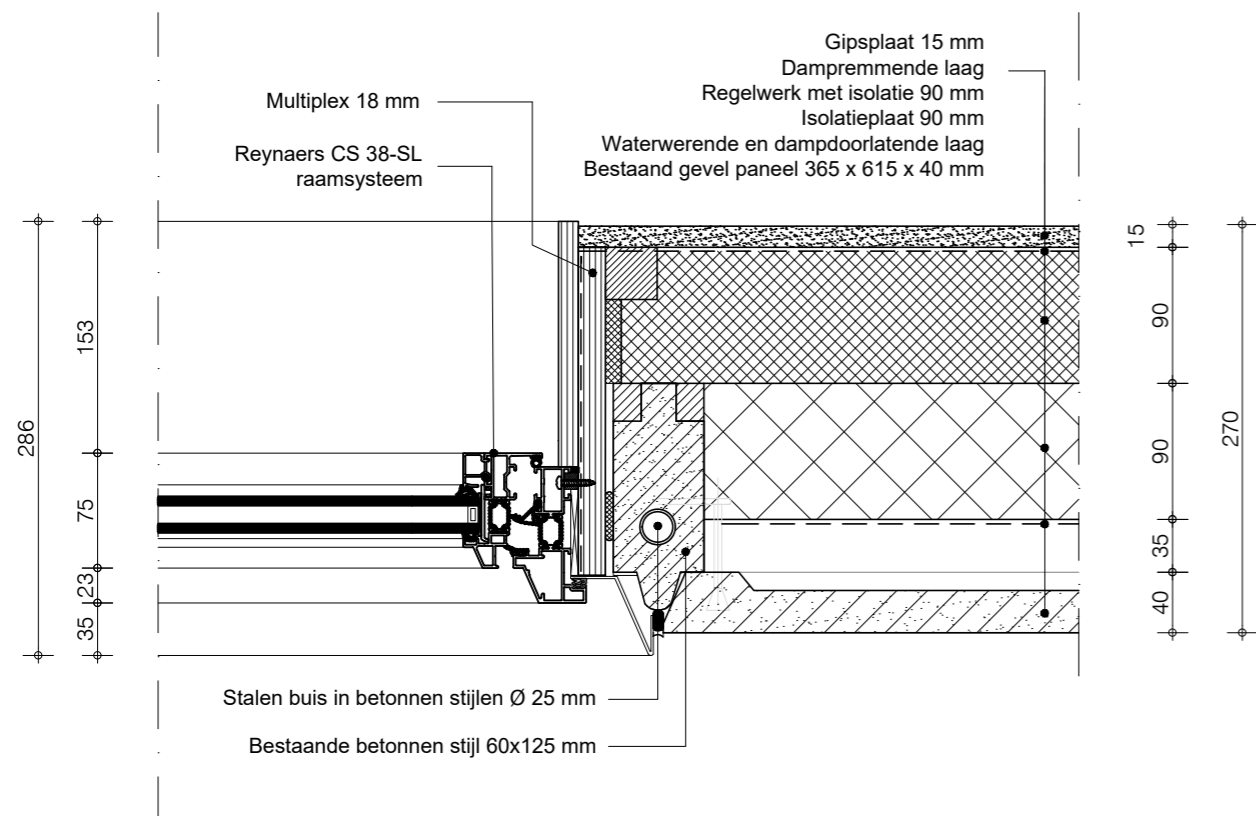
Detail 2

scale 1:5



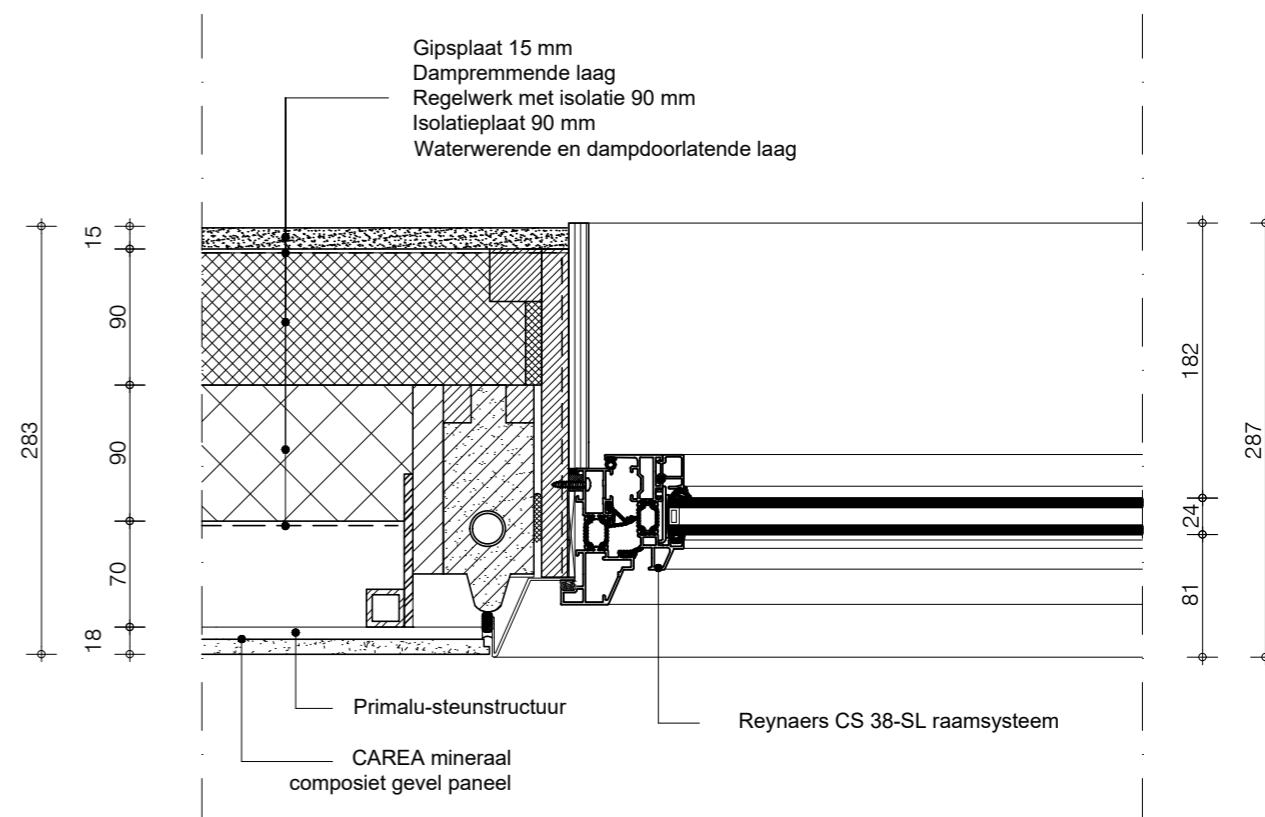
Detail 3

scale 1:5



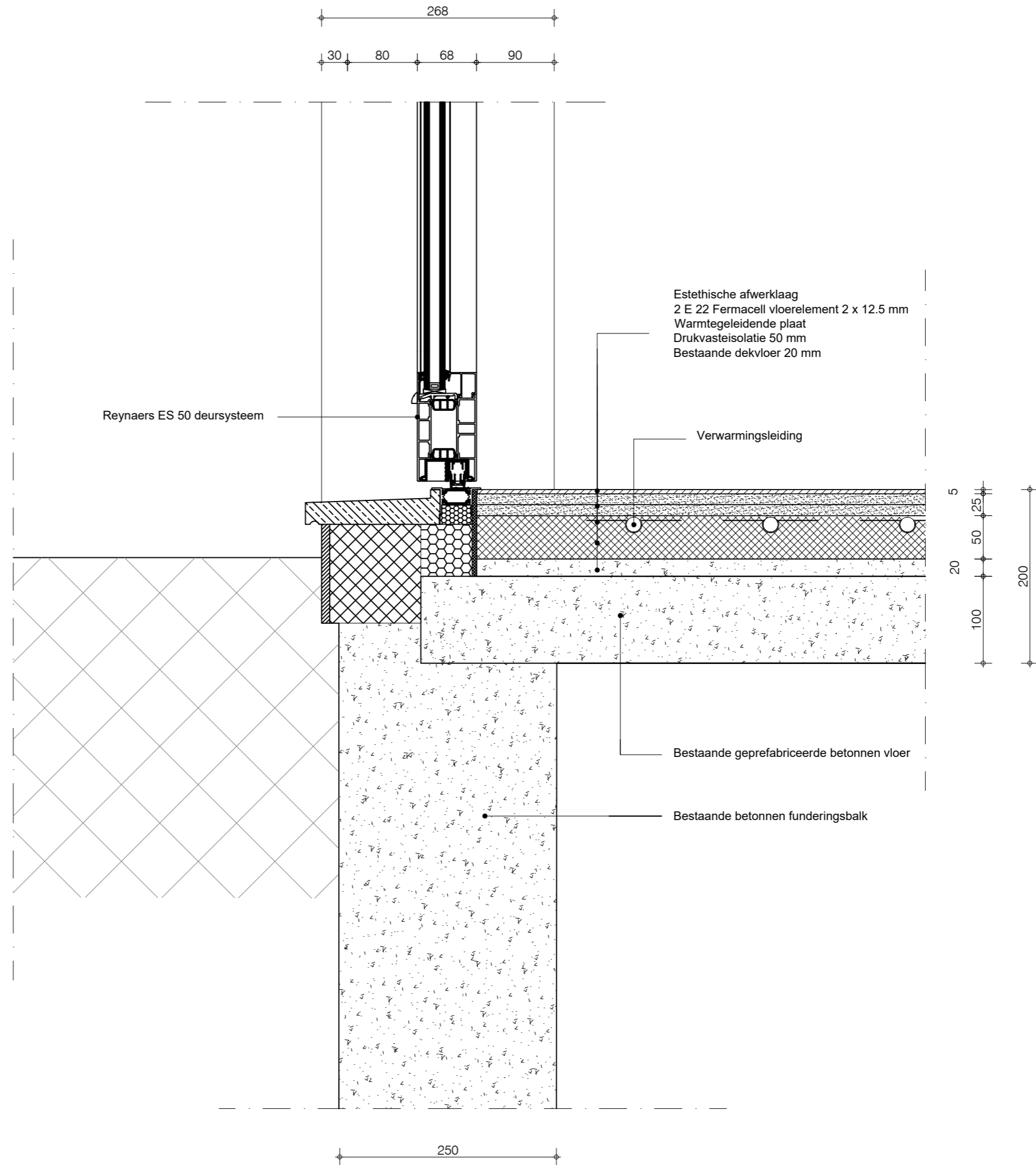
Detail 11

scale 1:5



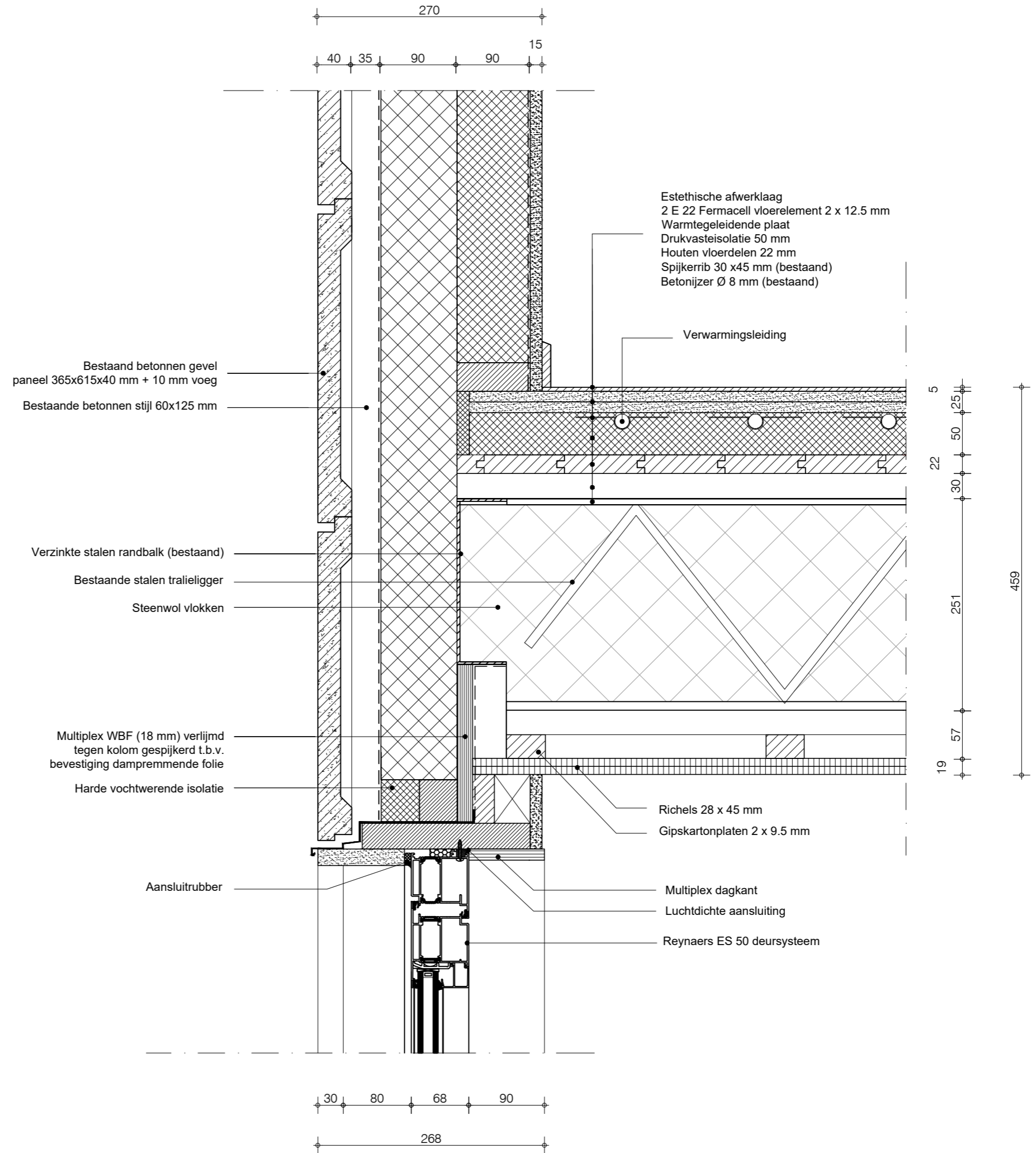
Detail 4

scale 1:5



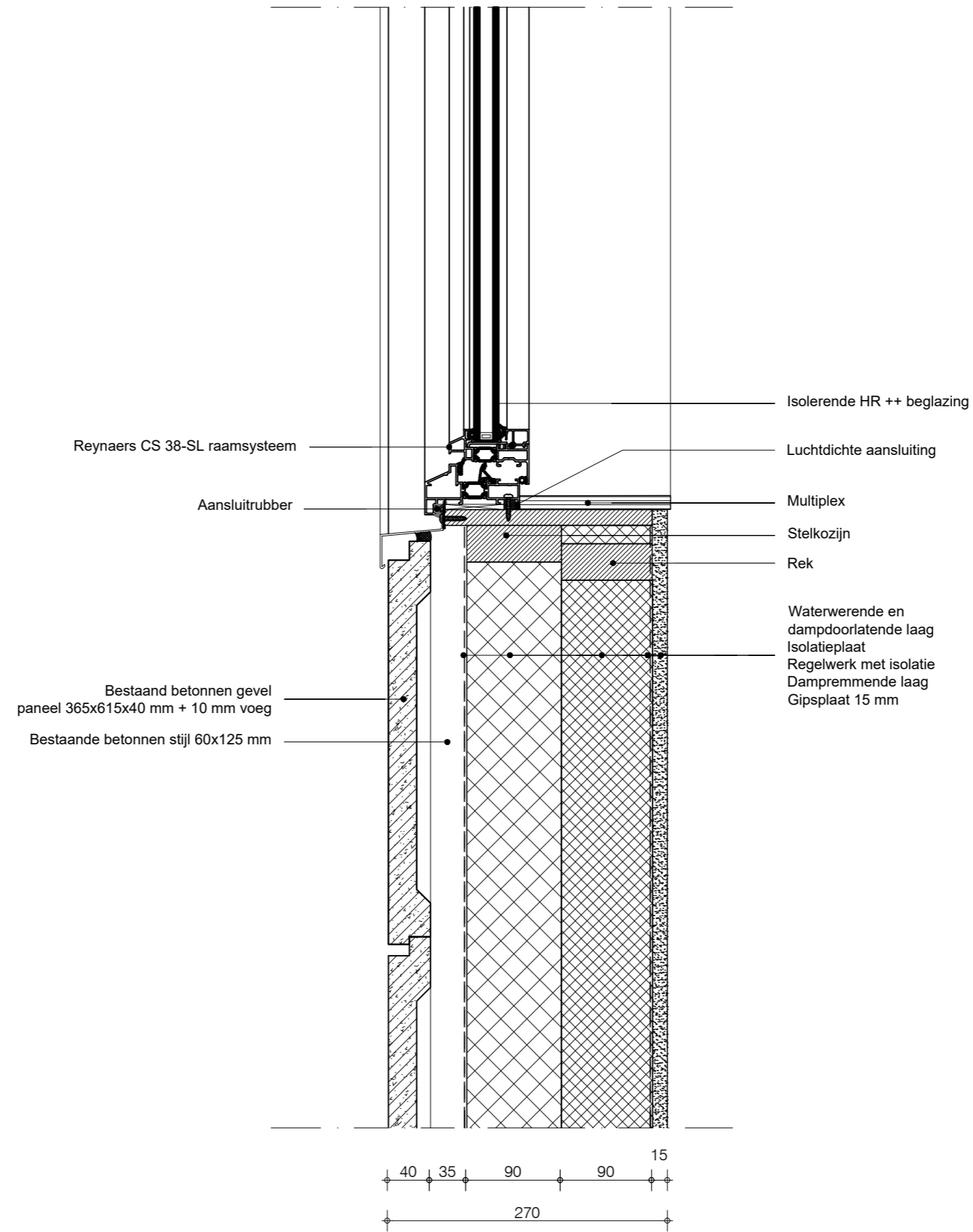
Detail 5

scale 1:5



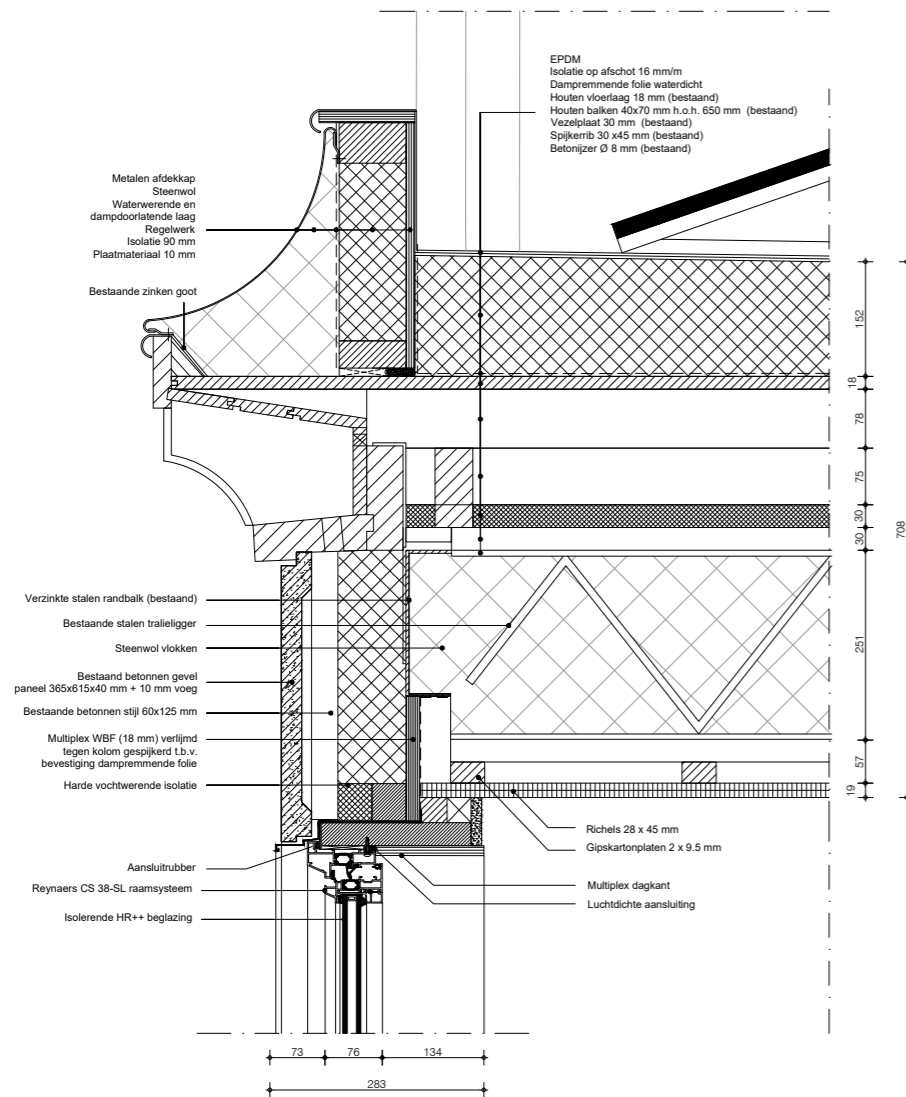
Detail 6

scale 1:5



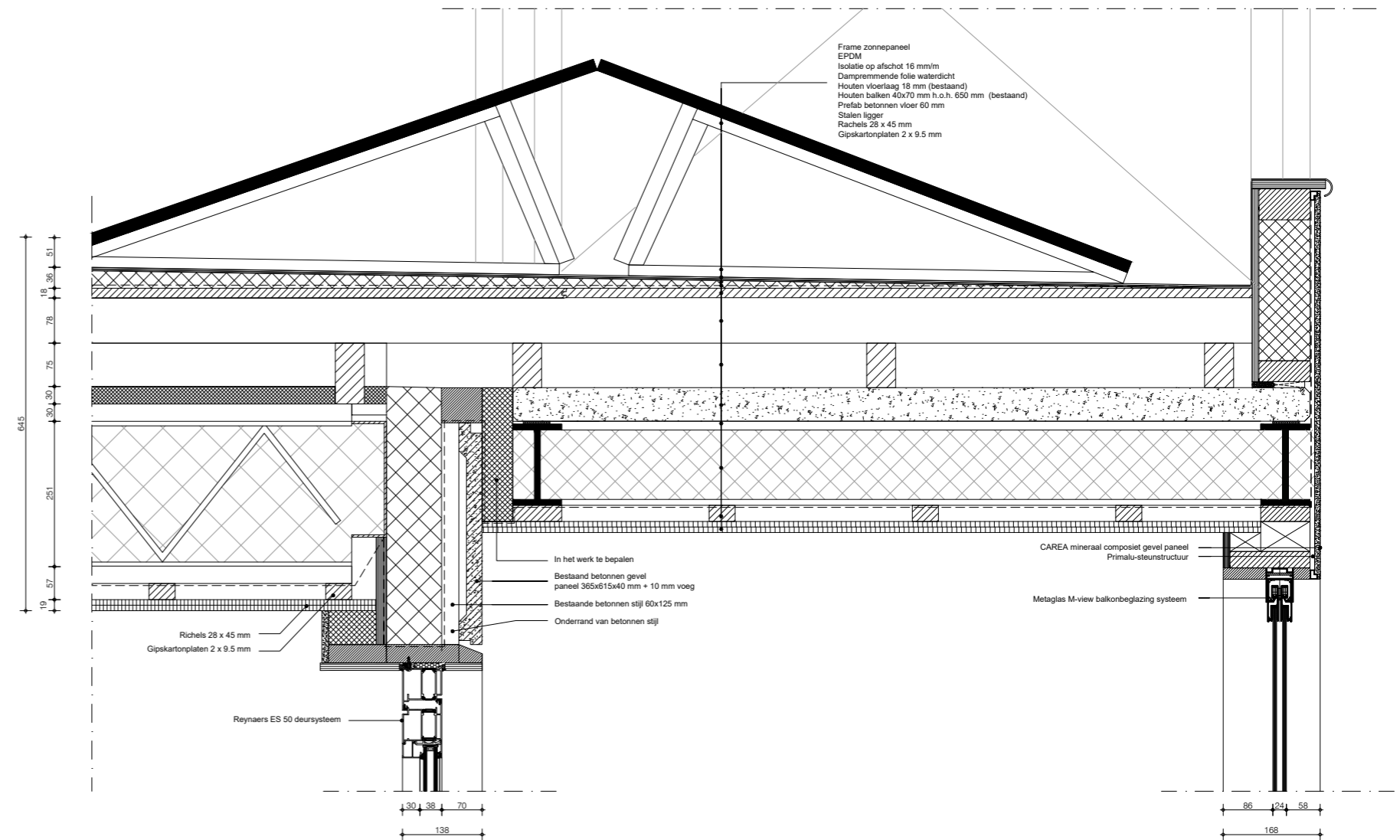
Detail 7

scale 1:10



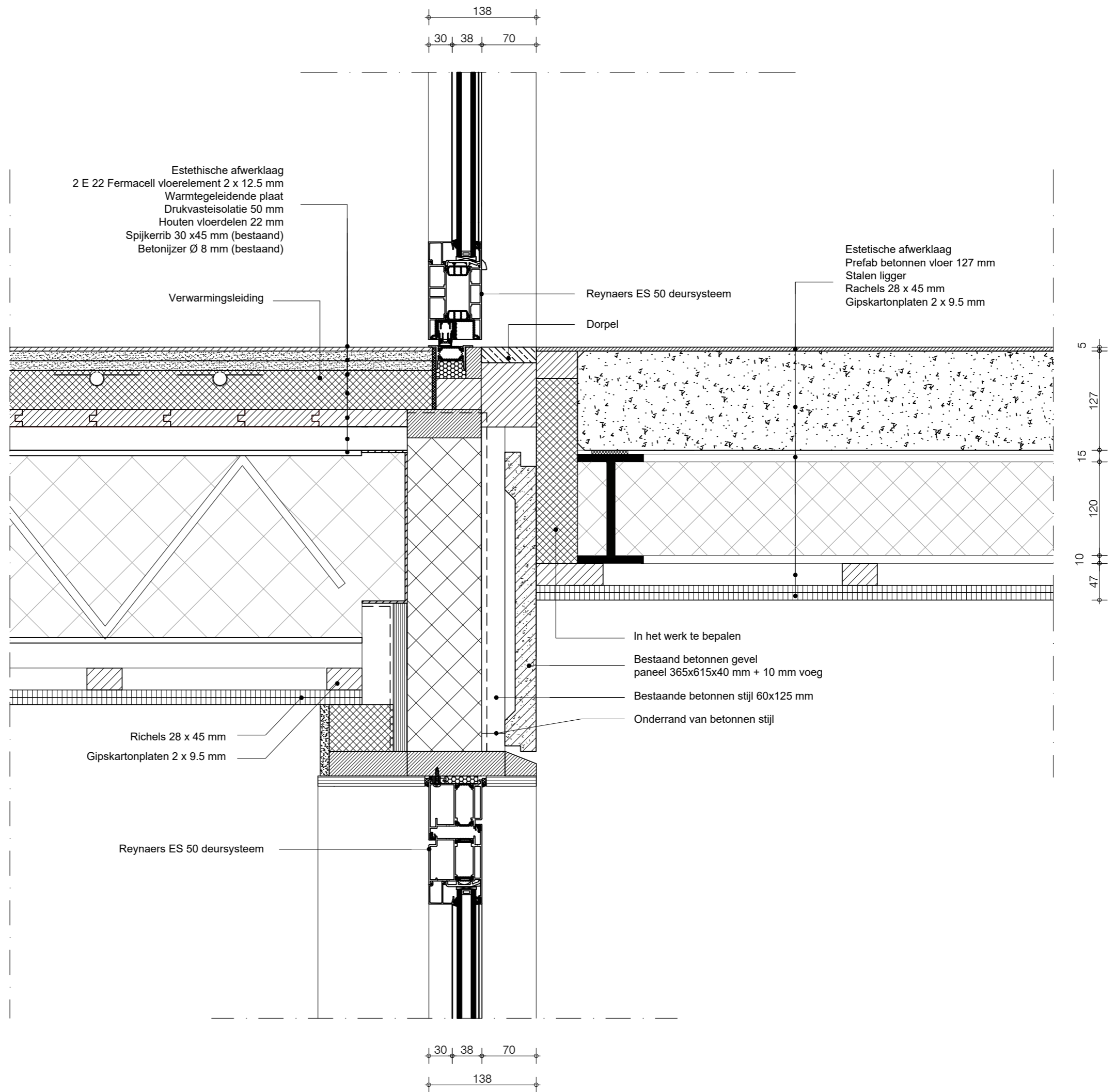
Detail 8

scale 1:10



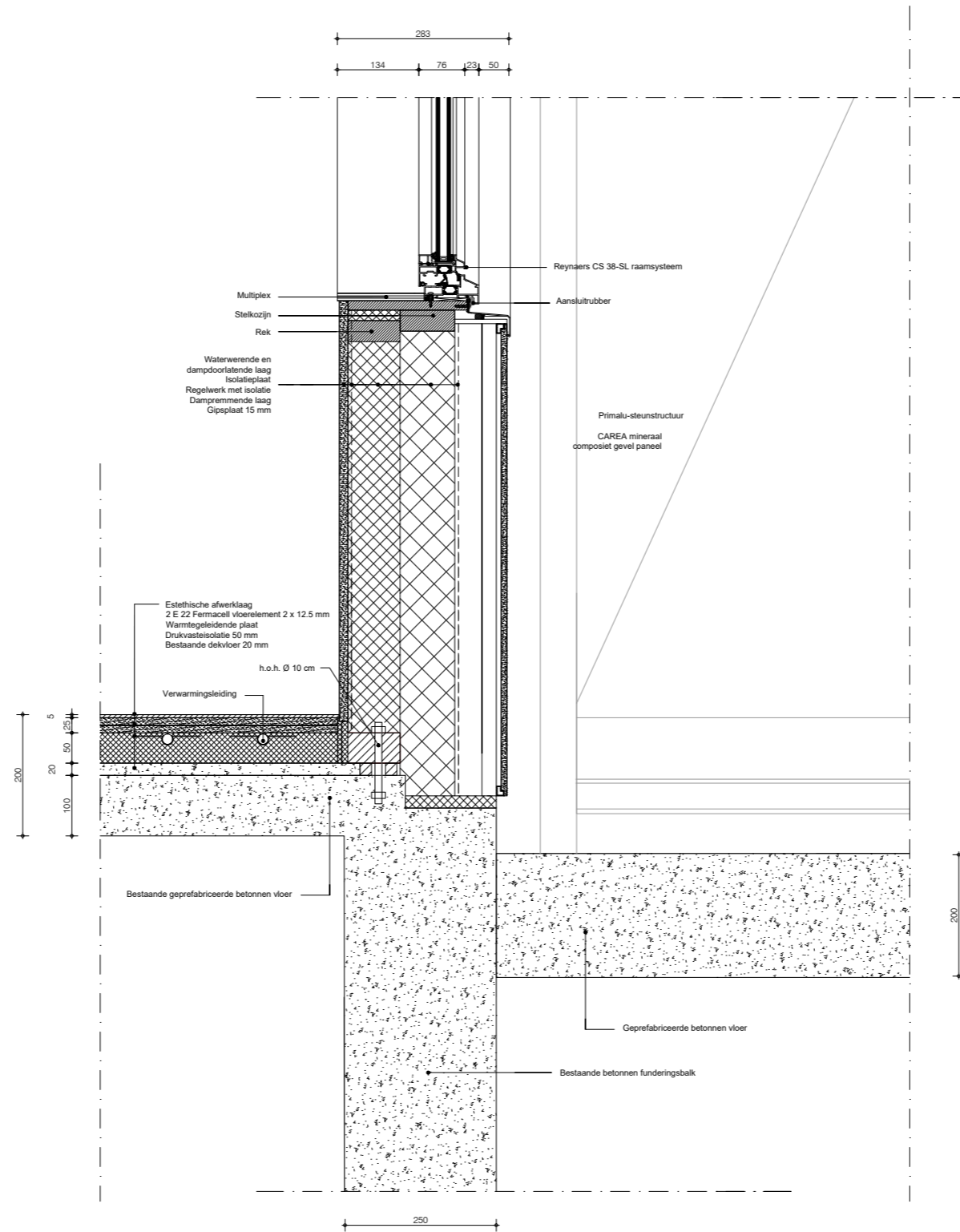
Detail 9

scale 1:5



Detail 10

scale 1:10



Detail 14

scale 1:5

