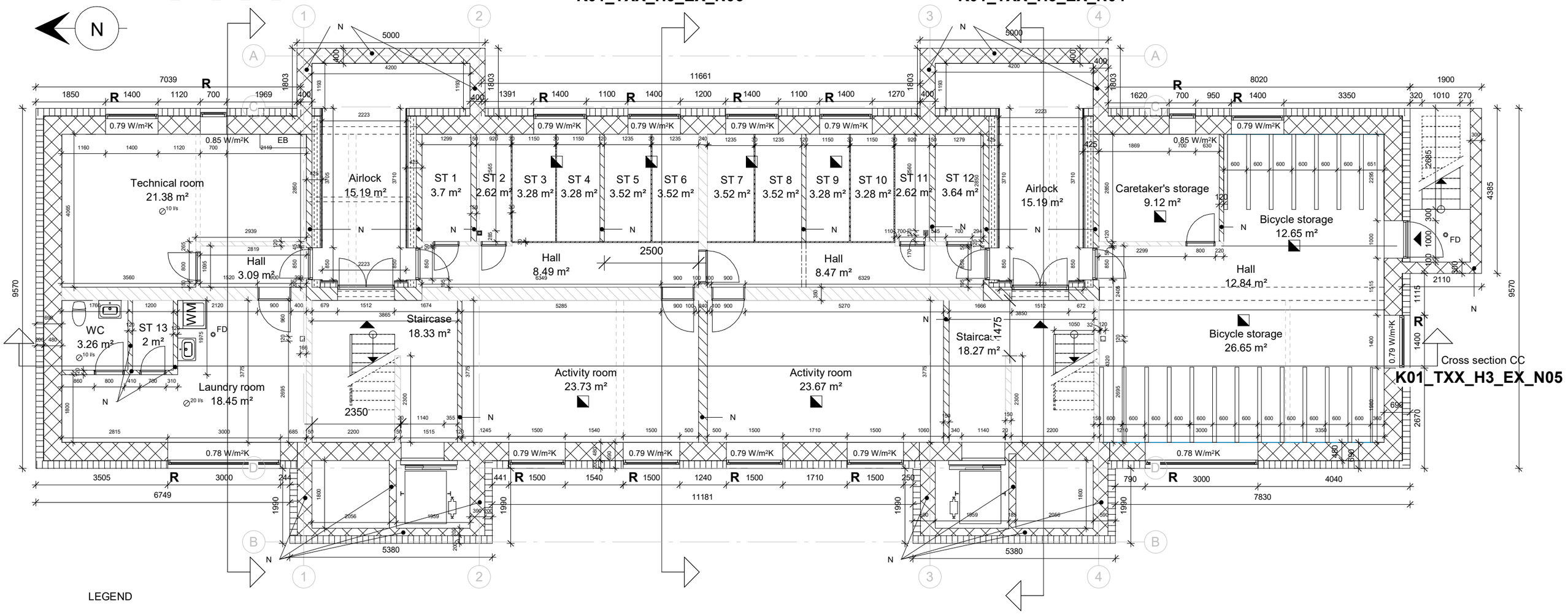
Cross section AA
K01_TXX_H3_EX_N03

Cross section DD
K01_TXX_H3_EX_N06

Cross section BB
K01_TXX_H3_EX_N04



LEGEND

- 120 mm internal brick wall (existing - grey, new - black)
  - 54 x 108 x 228 mm traditional danish brick
  - REI60
  - 45 dB airborne sound resistance
- 150 mm internal brick wall (existing - grey, new - black)
  - 54 x 108 x 228 mm traditional danish brick
  - REI120
  - 47 dB airborne sound resistance
- 350 mm internal brick wall (existing - grey, new - black)
  - 54 x 108 x 228 mm traditional danish brick
  - REI120
  - 53 dB airborne sound resistance
- 422 mm internal brick wall with facade insulation system
  - 150 mm 54 x 108 x 228 mm traditional danish brick wall
  - 220 mm hard mineral wool insulation
  - REDAir facade system with 27 x 100 mm battens
  - 22 mm plywood as windbreaker
  - REI60
  - 52 dB airborne sound resistance
  - U-value required = 0,18 W/m²K
  - U-value = 0,14 W/m²K
- 690 mm concrete basement external wall first 1500 mm from floor level
  - 480 mm existing concrete external wall
  - 10 mm Platon wrap
  - 200 mm XPS hard polystyrene insulation
  - Vandex chemical treatment and special plaster application
  - U-value required = 0,18 W/m²K
  - U-value = 0,16 W/m²K
- 690 mm brick basement external wall above 1500 mm
  - 480 mm existing brick external wall
  - 10 mm Platon wrap
  - 200 mm XPS hard polystyrene insulation
  - Vandex chemical treatment and special plaster application
  - U-value required = 0,18 W/m²K
  - U-value = 0,16 W/m²K
- 590 mm new cast-in-situ concrete wall for extension (heated space)
  - 390 mm cast-in-situ concrete wall
  - 10 mm Platon wrap
  - 200 mm XPS hard polystyrene insulation
  - 1 layer of LECA block 600 in connection with stud wall
  - U-value required = 0,15 W/m²K
  - U-value = 0,16 W/m²K
- 400 mm new cast-in-situ concrete wall for airlock (unheated space)
  - corners reinforced with extra reinforcement for steel beam support

- N — north arrow
- air extraction
- air inlet
- 10 l/s — amount of necessary air excahnge with balanced ventilation
- FD — floor drain
- galvanized steel beam (hidden or overhead)
- steel column
- R — rescue opening
- S — safety glass
- F — fire door, EI260-C A2 s1,d0
- natural ventilation
- N — new wall

01 Basement
1 : 100

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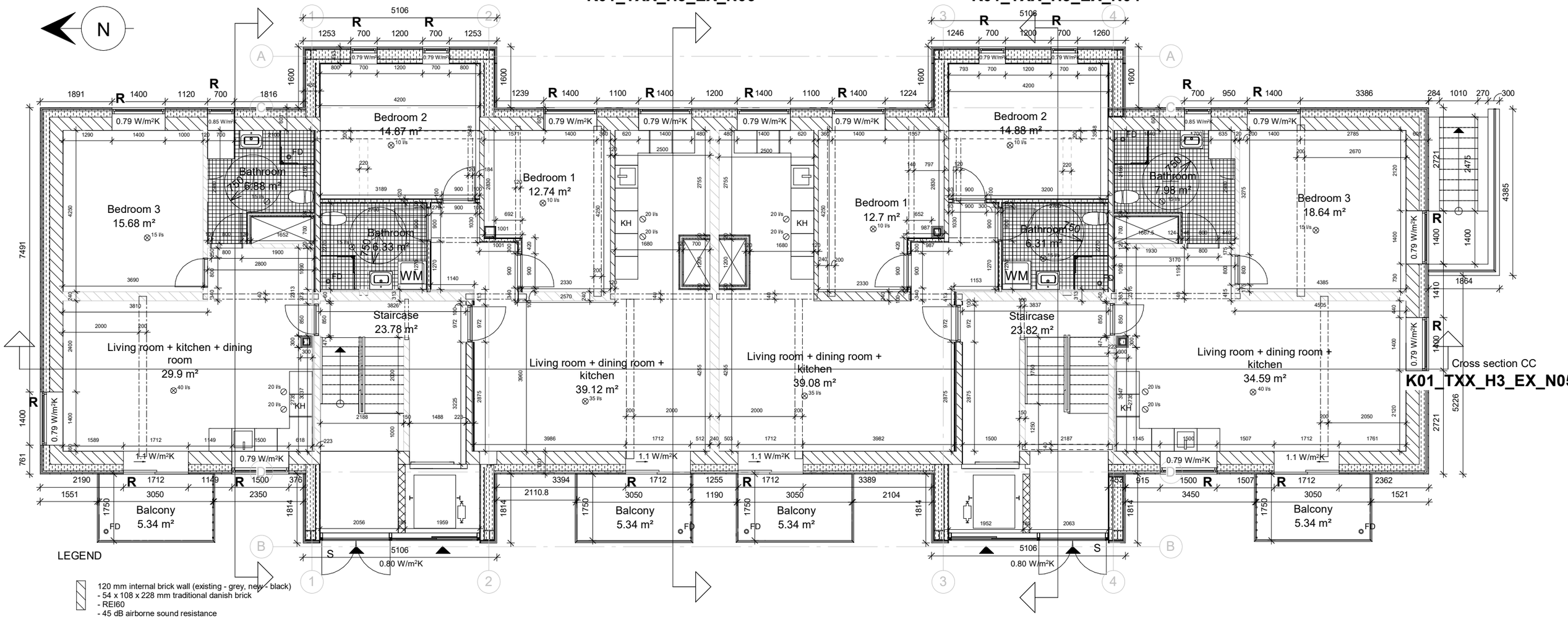
PROJECT: Social housing refurbishment	DATE: 11/15/19	**K01_TXX_H1_E1_N01**
SUBJECT: Floor plan - basement	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	

Cross section AA
K01_TXX_H3_EX_N03

Cross section DD
K01_TXX_H3_EX_N06

Cross section BB
K01_TXX_H3_EX_N04



Cross section CC
K01_TXX_H3_EX_N05

LEGEND

120 mm internal brick wall (existing - grey, new - black)
- 54 x 108 x 228 mm traditional danish brick
- REI60
- 45 dB airborne sound resistance

150 mm internal brick wall (existing - grey, new - black)
- 54 x 108 x 228 mm traditional danish brick
- REI120
- 47 dB airborne sound resistance

240 mm internal brick wall (existing - grey, new - black)
- 54 x 108 x 228 mm traditional danish brick
- REI120
- 52 dB airborne sound resistance

223 mm brick soundproof internal wall
- 150 mm load-bearing brick wall
- 12,5 mm Gyproc SoundBlock gypsum board on internal side
- 35 mm Gypframe GL1 Lining Channel
- 25 mm acoustic roll mineral wool insulation
- 2 layers of 12,5 mm Gyproc SoundBlock gypsum board on external side
- 57dB airborne sound resistance
- REI60

120 mm Gyproc steel stud internal wall
- 70 mm Gyproc XR steel stud, cc 450 mm
- 70 mm mineral wool insulation
- 2x12,5 mm Gyproc GNE 13 Ergo Normal gypsum board from two sides
- EI60
- 40dB airborne sound resistance with standard gypsum boards

124 mm Gyproc shaft wall
- 19 mm Gyproc Coreboard
- 75 mm Gyproc steel I-stud, cc 600
- 25 mm Isover acoustic roll insulation
- 15 mm Gyproc FireLine
- 15 mm SoundBlock gypsum board
- EI90
- 48dB airborne sound resistance

601 mm brick facade with Stofix cladding system and external insulation under windows
- 120 mm existing brick inner and outer leafs
- 110 mm blow-in mineral wool insulation
- 150 mm mineral wool external insulation
- 50 mm hard mineral wool insulation
- Stofix steel cladding system with lightweight cladding board with brick appearance
- U-value required = 0,18 W/m²K
- U-value = 0,13 W/m²K
- REI120
- 55 dB airborne sound insulation

601 mm brick facade with Stofix cladding system and external
- 350 mm existing solid brick wall
- 110 mm blow-in mineral wool insulation
- 150 mm mineral wool external insulation
- 50 mm hard mineral wool insulation
- Stofix steel cladding system with lightweight cladding board with brick appearance
- U-value required = 0,18 W/m²K
- U-value = 0,16 W/m²K
- REI120
- 55 dB airborne sound insulation

453 mm Gyproc ThermoNomic steel stud external wall
- 245 mm mineral wool batt insulation
- 95 mm Kingspan rigid foam
- 12,5 mm Gyproc Normal gypsum boards
- 15,5 mm Gyproc Protect F gypsum boards
- 15,5 mm Gyproc Protect FU Ergo windbreaker
- H25 Cassette vertical steel cladding
- U-value required = 0,15 W/m²K
- U-value = 0,09 W/m²K
- REI60
- 50 dB airborne sound insulation

N	north arrow
⊘	air extraction
⊗	air inlet
10 l/s	amount of necessary air excahnge with balanced ventilation
FD	floor drain
	galvanized steel beam (hidden or overhead)
	rectangular galvanized steel column
	H-shaped galvanized steel column
R	rescue opening
S	safety glass

03 Groundfloor floor
1 : 100

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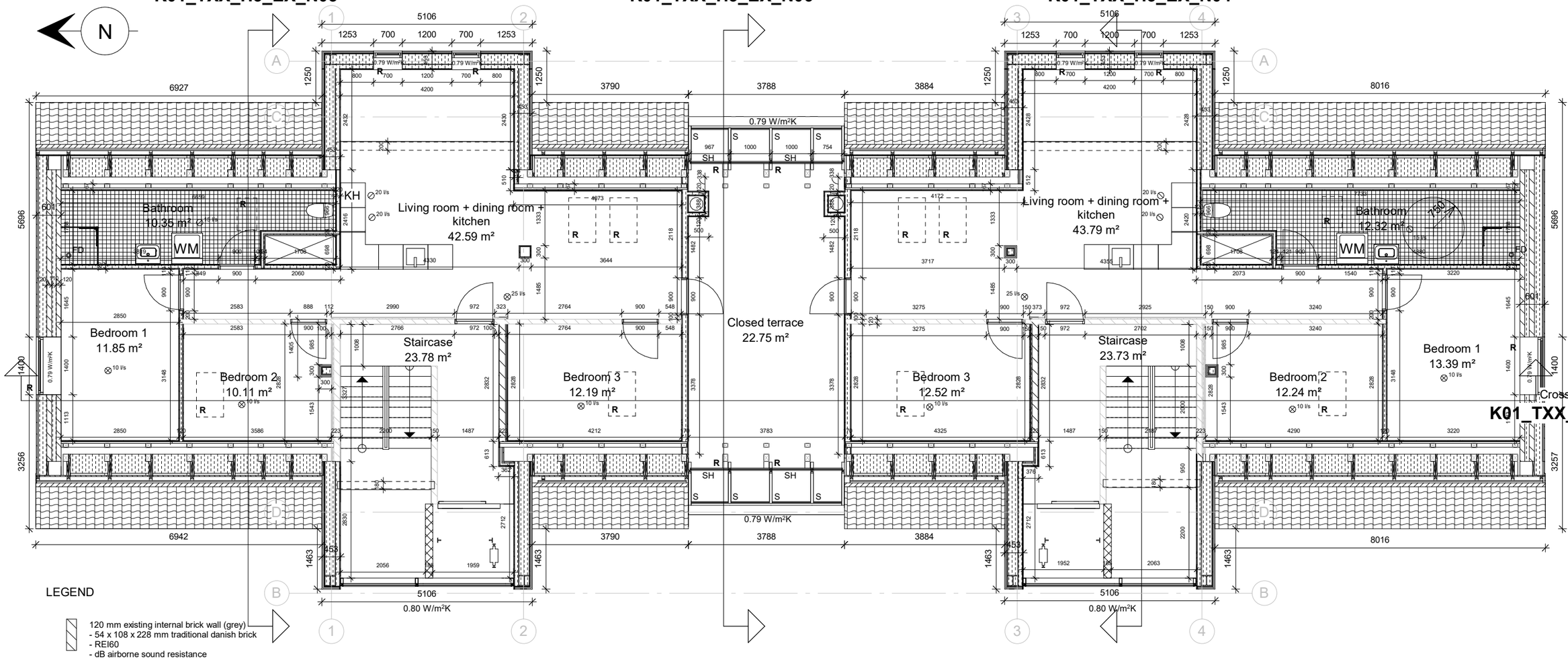
PROJECT: Social housing refusrbishment	DATE: 11/15/19	
SUBJECT: Floor plan - groundfloor	SCALE: As indicated	**K01_TXX_H1_E3_N01**
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	

Cross section AA
K01_TXX_H3_EX_N03

Cross section DD
K01_TXX_H3_EX_N06

Cross section BB
K01_TXX_H3_EX_N04

Cross section CC
K01_TXX_H3_EX_N05



LEGEND

120 mm existing internal brick wall (grey)
- 54 x 108 x 228 mm traditional danish brick
- REI60
- dB airborne sound resistance

150 mm existing internal brick wall (grey)
- 54 x 108 x 228 mm traditional danish brick
- REI60
- dB airborne sound resistance

223 mm brick soundproof internal wall
- 150 mm load-bearing brick wall
- 12,5 mm Gyproc SoundBlock gypsum board on internal side
- 35 mm Gypframe GL1 Lining Channel
- 25 mm acoustic roll mineral wool insulation
- 2 layers of 12,5 mm Gyproc SoundBlock gypsum board on external side
- 55dB airborne sound resistance
- REI60

120 mm Gyproc steel stud internal wall
- 70 mm Gyproc XR steel stud, cc 450 mm
- 70 mm mineral wool insulation
- 2x12,5 mm Gyproc GNE 13 Ergo Normal gypsum board from two sides
- EI60
- 40dB airborne sound resistance with standard gypsum boards

124 mm Gyproc shaft wall
- 19 mm Gyproc Coreboard
- 75 mm Gyproc steel I-stud, cc 600
- 25 mm Isover acoustic roll insulation
- 15 mm Gyproc FireLine
- 15 mm SoundBlock gypsum board
- EI90
- 48dB airborne sound resistance

167 mm dwarf wall
- 101 mm existing knee rafter
- 38 x 73 mm vertical timber battens
- PE-foil as DPM
- 2 x 12,5 mm gypsum boards

601 mm brick facade with Stofix cladding system and external insulation
- 120 mm existing brick inner and outer leafs
- 110 mm blow-in mineral wool insulation
- 150 mm mineral wool external insulation
- 50 mm hard mineral wool insulation
- Stofix steel cladding system with lightweight cladding board with brick appearance
- U-value required = 0,18 W/m²K
- U-value = 0,13 W/m²K
- REI120
- 55 dB airborne sound insulation

453 mm Gyproc ThermoNomic steel stud external wall
- 245 mm mineral wool batt insulation
- 95 mm Kingspan rigid foam
- 12,5 mm Gyproc Normal gypsum boards
- 15,5 mm Gyproc Protect F gypsum boards
- 15,5 mm Gyproc Protect FU Ergo windbreaker
- H25 Cassette vertical steel cladding
- U-value required = 0,15 W/m²K
- U-value = 0,09 W/m²K
- REI60
- 50 dB airborne sound insulation

559 mm timber roof with traditional clay pantiles
- 370 mm timber truss with levelling
- 320 mm mineral wool insulation
- 18 mm plywood with bitumen felt on top as stable subroof
- 2 x 12,5 mm gypsum board ceiling
- U-value required = 0,12 W/m²K
- U-value = 0,12 W/m²K
- REI120
- 50 dB airborne sound insulation

N north arrow
air extraction
air inlet
10 l/s amount of necessary air excahnge with balanced ventilation
FD floor drain
galvanized steel beam (hidden or overhead)
rectangular hot-rolled galvanized steel column
H-shaped galvanized steel column
roof window
606 x 1214 mm
426 x 794 mm in bathrooms
- 2-layer 8 mm glass
- U-value = 0,79 W/m²K
- G-value = 1,1 W/m²K

R rescue opening
S safety glass
SH glass planel with shading

06 Loft
1 : 100

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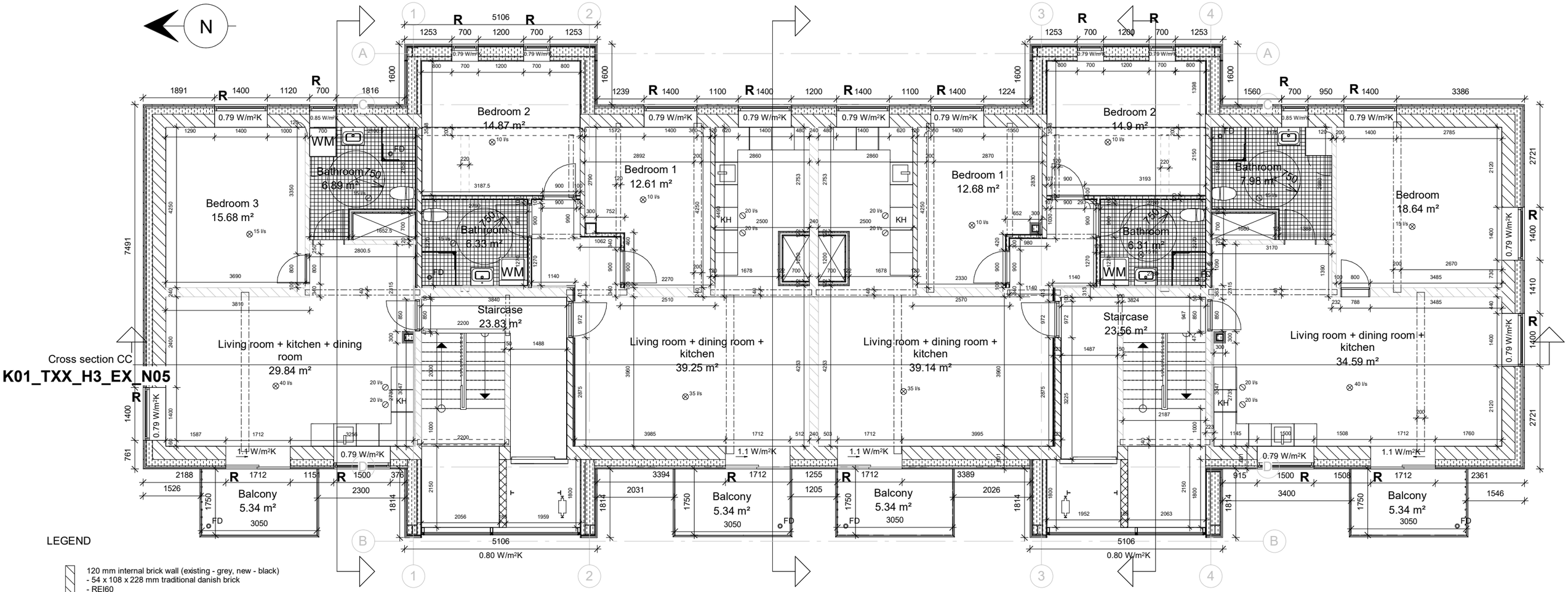
PROJECT: Social housing refusrbishment	DATE: 11/15/19	
SUBJECT: Floor plan - loft	SCALE: As indicated	**K01_TXX_H1_E6_N01**
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	

Cross section AA
K01_TXX_H3_EX_N03

Cross section DD
K01_TXX_H3_EX_N06

Cross section BB
K01_TXX_H3_EX_N04

Cross section CC
K01_TXX_H3_EX_N05



LEGEND

120 mm internal brick wall (existing - grey, new - black)
- 54 x 108 x 228 mm traditional danish brick
- REI60
- 45 dB airborne sound resistance

150 mm internal brick wall (existing - grey, new - black)
- 54 x 108 x 228 mm traditional danish brick
- REI120
- 47 dB airborne sound resistance

240 mm internal brick wall (existing - grey, new - black)
- 54 x 108 x 228 mm traditional danish brick
- REI120
- 52 dB airborne sound resistance

223 mm brick soundproof internal wall
- 150 mm load-bearing brick wall
- 12,5 mm Gyproc SoundBlock gypsum board on internal side
- 35 mm Gypframe GL1 Lining Channel
- 25 mm acoustic roll mineral wool insulation
- 2 layers of 12,5 mm Gyproc SoundBlock gypsum board on external side
- 57dB airborne sound resistance
- REI60

120 mm Gyproc steel stud internal wall
- 70 mm Gyproc XR steel stud, cc 450 mm
- 70 mm mineral wool insulation
- 2x12,5 mm Gyproc GNE 13 Ergo Normal gypsum board from two sides
- EI60
- 40dB airborne sound resistance with standard gypsum boards

124 mm Gyproc shaft wall
- 19 mm Gyproc Coreboard
- 75 mm Gyproc steel I-stud, cc 600
- 25 mm Isover acoustic roll insulation
- 15 mm Gyproc FireLine
- 15 mm SoundBlock gypsum board
- EI90
- 48dB airborne sound resistance

601 mm brick facade with Stofix cladding system and external insulation under windows
- 120 mm existing brick inner and outer leafs
- 110 mm blow-in mineral wool insulation
- 150 mm mineral wool external insulation
- 50 mm hard mineral wool insulation
- Stofix steel cladding system with lightweight cladding board with brick appearance
- U-value required = 0,18 W/m²K
- U-value = 0,13 W/m²K
- REI120
- 55 dB airborne sound insulation

601 mm brick facade with Stofix cladding system and external
- 350 mm existing solid brick wall
- 110 mm blow-in mineral wool insulation
- 150 mm mineral wool external insulation
- 50 mm hard mineral wool insulation
- Stofix steel cladding system with lightweight cladding board with brick appearance
- U-value required = 0,18 W/m²K
- U-value = 0,16 W/m²K
- REI120
- 55 dB airborne sound insulation

453 mm Gyproc ThermoNomic steel stud external wall
- 245 mm mineral wool batt insulation
- 95 mm Kingspan rigid foam
- 12,5 mm Gyproc Normal gypsum boards
- 15,5 mm Gyproc Protect F gypsum boards
- 15,5 mm Gyproc Protect FU Ergo windbreaker
- H25 Cassette vertical steel cladding
- U-value required = 0,15 W/m²K
- U-value = 0,09 W/m²K
- REI60
- 50 dB airborne sound insulation

N	north arrow
⊘	air extraction
⊗	air inlet
10 l/s	amount of necessary air excahnge with balanced ventilation
FD	floor drain
	galvanized steel beam (hidden or overhead)
	rectangular galvanized steel column
	H-shaped galvanized steel column
R	rescue opening
S	safety glass

04 First floor
1 : 100

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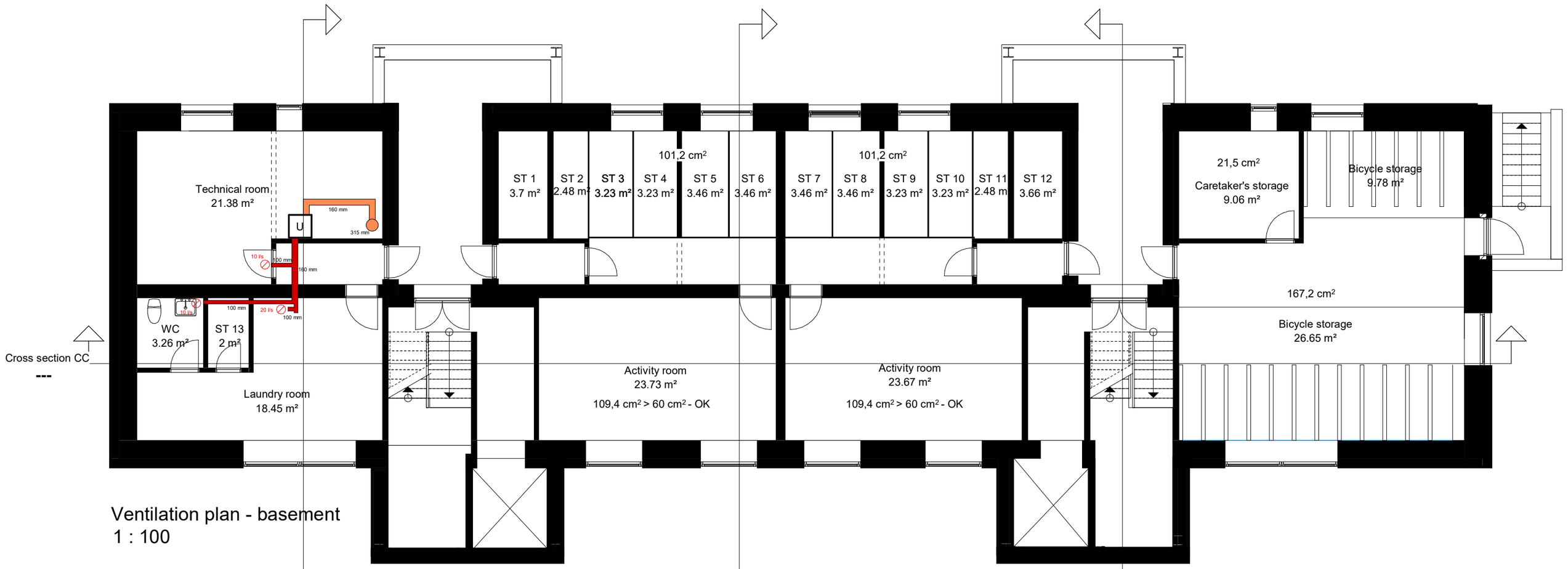
PROJECT: Social housing refusrbishment	DATE: 11/15/19	
SUBJECT: Floor plan - first and second floor	SCALE: As indicated	**K01_TXX_H1_EX_N01**
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	

Cross section AA

Cross section DD

Cross section BB



Cross section CC

Ventilation plan - basement
1 : 100

LEGEND

- 160 mm outdoor air supply
- fresh air duct
  - 160 mm main duct
  - 125 mm branch duct
  - 100 mm connection duct
- 315 mm extract air (above the roof through main pipe)
- return air duct
  - 160 mm main duct and from kitchen hood (KH)
  - 125 mm branch duct
  - 100 mm connection duct
- U — VEX35-2DV, M1 motor (54-234 m³/h) decentralized unit
  - 198 m³/h airflow per apartment with balanced ventilation with heat recovery

10 l/s — fresh air valve

10 l/s — return air valve

gypsum board suspended ceiling for duct hiding

gypsum board under collar tie rafter for dcut hiding

Cross section BB

109,4 cm² — area of openings
- natural ventilation used in all rooms besides very poluted

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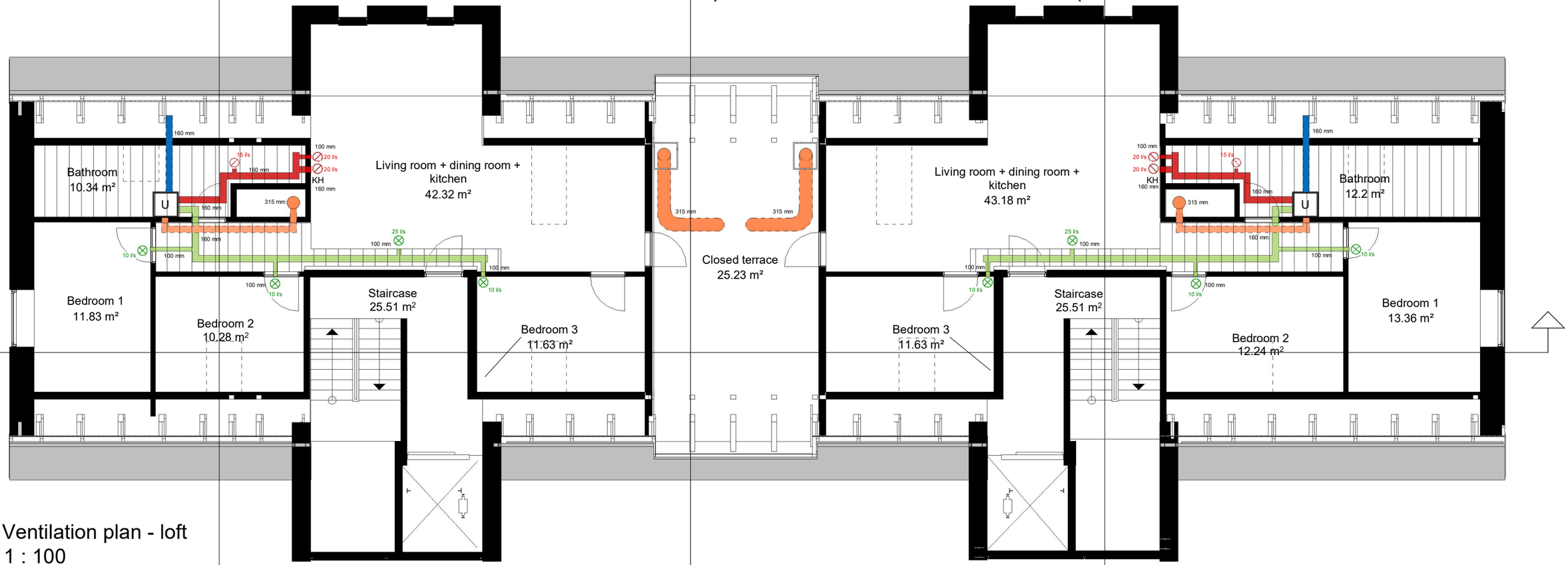
PROJECT: Social housing refusrbishment	DATE: 11/15/19	K01_TXX_H1_E1_N04
SUBJECT: Ventilation plan - basement	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19A	

Small cross section AA

Cross section DD

Cross section BB

Cross section CC



Ventilation plan - loft
1 : 100

Cross section BB

LEGEND

- 160 mm outdoor air supply
- fresh air duct
  - 160 mm main duct
  - 125 mm branch duct
  - 100 mm connection duct
- 315 mm extract air (above the roof through main pipe)
- return air duct
  - 160 mm main duct and from kitchen hood (KH)
  - 125 mm branch duct
  - 100 mm connection duct
- U — VEX35-2DV, M1 motor (54-234 m³/h) decentralized unit
  - 198 m³/h airflow per apartment with balanced ventilation with heat recovery

- 10 l/s — fresh air valve
- 10 l/s — return air valve
- gypsum board suspended ceiling for duct hiding
- gypsum board under collar tie rafter for dcut hiding

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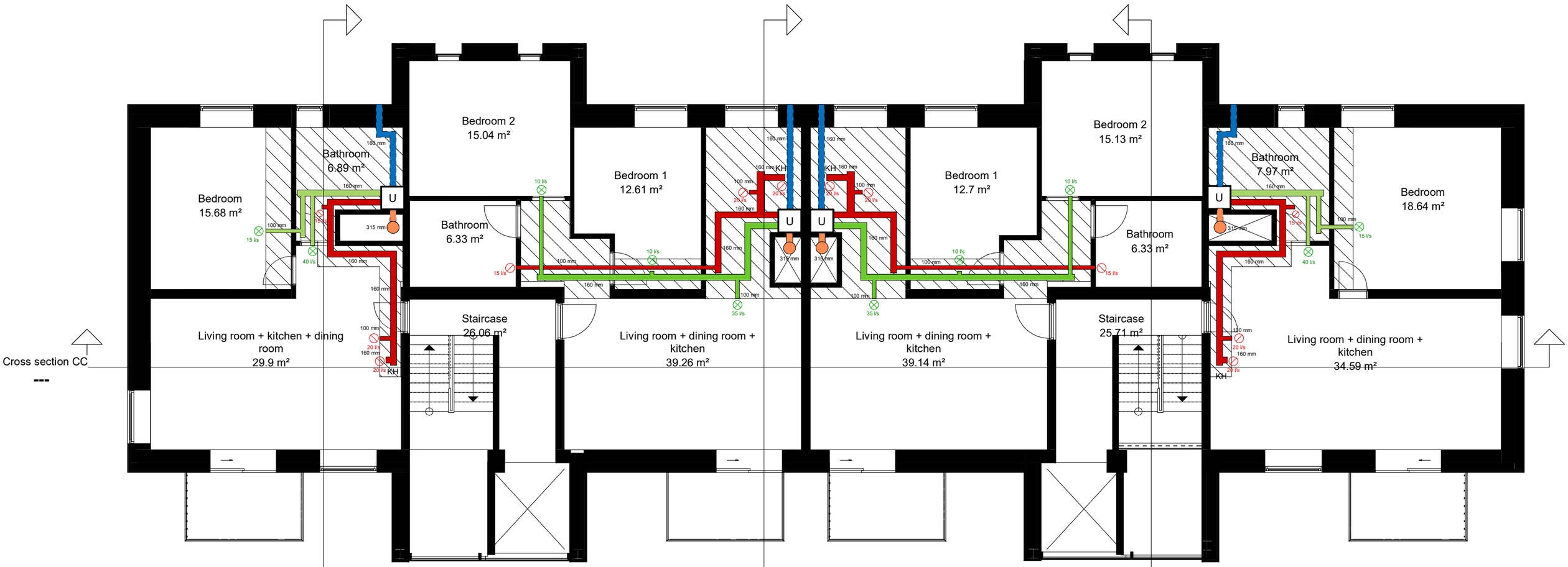
PROJECT: Social housing refusrbishment	DATE: 11/15/19	K01_TXX_H1_E6_N06
SUBJECT: Ventilation plan - loft	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19A	

Small cross section AA

Cross section DD

Cross section BB



Cross section CC

Cross section BB

Ventilation plan - ground, first and second floor
1 : 100

LEGEND

- 160 mm outdoor air supply
- fresh air duct
  - 160 mm main duct
  - 125 mm branch duct
  - 100 mm connection duct
- 315 mm extract air (above the roof through main pipe)
- return air duct
  - 160 mm main duct and from kitchen hood (KH)
  - 125 mm branch duct
  - 100 mm connection duct
- U — VEX35-2DV, M1 motor (54-234 m³/h) decentralized unit
  - 198 m³/h airflow per apartment with balanced ventilation with heat recovery
- 10 l/s — fresh air valve
- 10 l/s — return air valve
- gypsum board suspended ceiling for duct hiding
- gypsum board under collar tie rafter for dcut hiding

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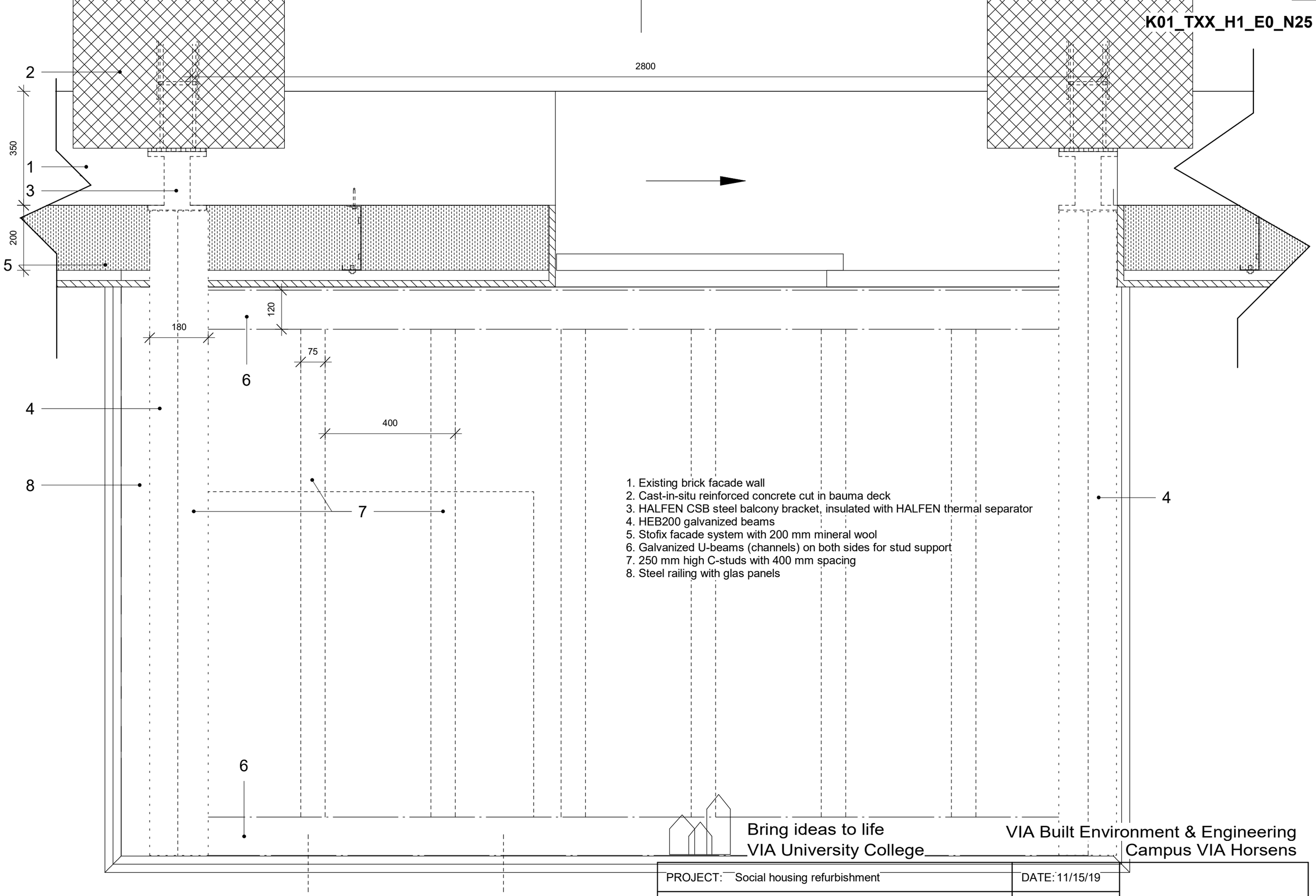
PROJECT: Social housing refusrbishment	DATE: 11/15/19	K01_TXX_H1_EX_N04
SUBJECT: Ventilation plan - ground, first and second floor	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19A	

K01_TXX_H1_E0_N25



1. Existing brick facade wall
2. Cast-in-situ reinforced concrete cut in bauma deck
3. HALFEN CSB steel balcony bracket, insulated with HALFEN thermal separator
4. HEB200 galvanized beams
5. Stofix facade system with 200 mm mineral wool
6. Galvanized U-beams (channels) on both sides for stud support
7. 250 mm high C-studs with 400 mm spacing
8. Steel railing with glas panels

Balcony
1 : 10

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PROJECT: Social housing refurbishment	DATE: 11/15/19	
SUBJECT: Balcony plan	SCALE: 1 : 10	K01_TXX_H1_E0_N25
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51-19A	

FOUNDATION AND GROUND SUPPORTED FLOOR CONSTRUCTION (U-value = 0,011 W/m²K)

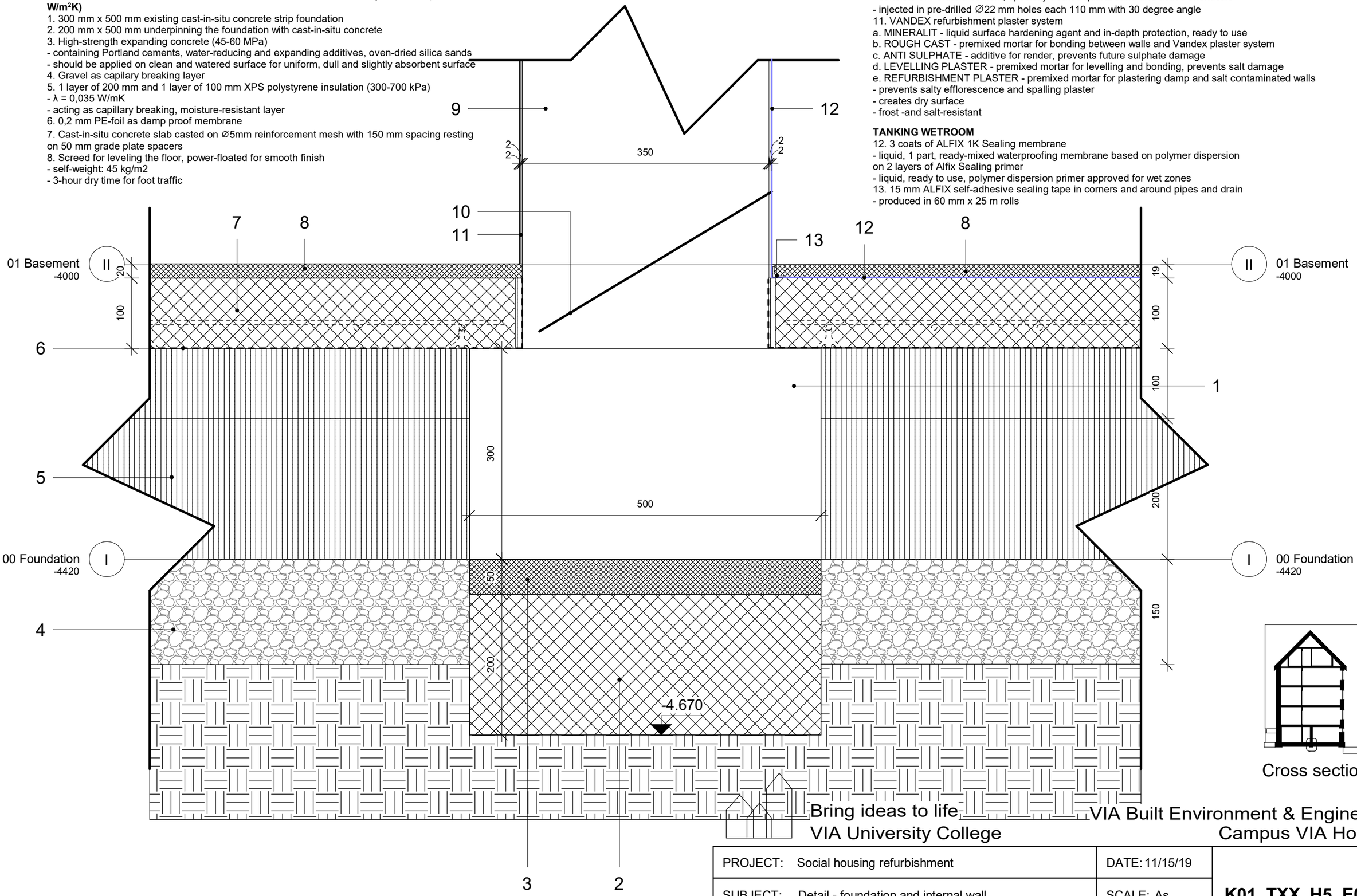
1. 300 mm x 500 mm existing cast-in-situ concrete strip foundation
2. 200 mm x 500 mm underpinning the foundation with cast-in-situ concrete
3. High-strength expanding concrete (45-60 MPa)
- containing Portland cements, water-reducing and expanding additives, oven-dried silica sands
- should be applied on clean and watered surface for uniform, dull and slightly absorbent surface
4. Gravel as capilary breaking layer
5. 1 layer of 200 mm and 1 layer of 100 mm XPS polystyrene insulation (300-700 kPa)
- λ = 0,035 W/mK
- acting as capillary breaking, moisture-resistant layer
6. 0,2 mm PE-foil as damp proof membrane
7. Cast-in-situ concrete slab casted on ∅5mm reinforcement mesh with 150 mm spacing resting on 50 mm grade plate spacers
8. Screed for leveling the floor, power-floated for smooth finish
- self-weight: 45 kg/m2
- 3-hour dry time for foot traffic

INTERNAL BRICK WALL

9. Existing solid brick internal wall
10. VANDEX INJECTION mortar as chemical damp proof course
- consists of Portland cement, specially treated quartz sand and active chemicals
- injected in pre-drilled ∅22 mm holes each 110 mm with 30 degree angle
11. VANDEX refurbishment plaster system
a. MINERALIT - liquid surface hardening agent and in-depth protection, ready to use
b. ROUGH CAST - premixed mortar for bonding between walls and Vandex plaster system
c. ANTI SULPHATE - additive for render, prevents future sulphate damage
d. LEVELLING PLASTER - premixed mortar for levelling and bonding, prevents salt damage
e. REFURBISHMENT PLASTER - premixed mortar for plastering damp and salt contaminated walls
- prevents salty efflorescence and spalling plaster
- creates dry surface
- frost -and salt-resistant

TANKING WETROOM

12. 3 coats of ALFIX 1K Sealing membrane
- liquid, 1 part, ready-mixed waterproofing membrane based on polymer dispersion on 2 layers of Alfix Sealing primer
- liquid, ready to use, polymer dispersion primer approved for wet zones
13. 15 mm ALFIX self-adhesive sealing tape in corners and around pipes and drain
- produced in 60 mm x 25 m rolls



Foundation and internal basement wall
1 : 5

Cross section AA

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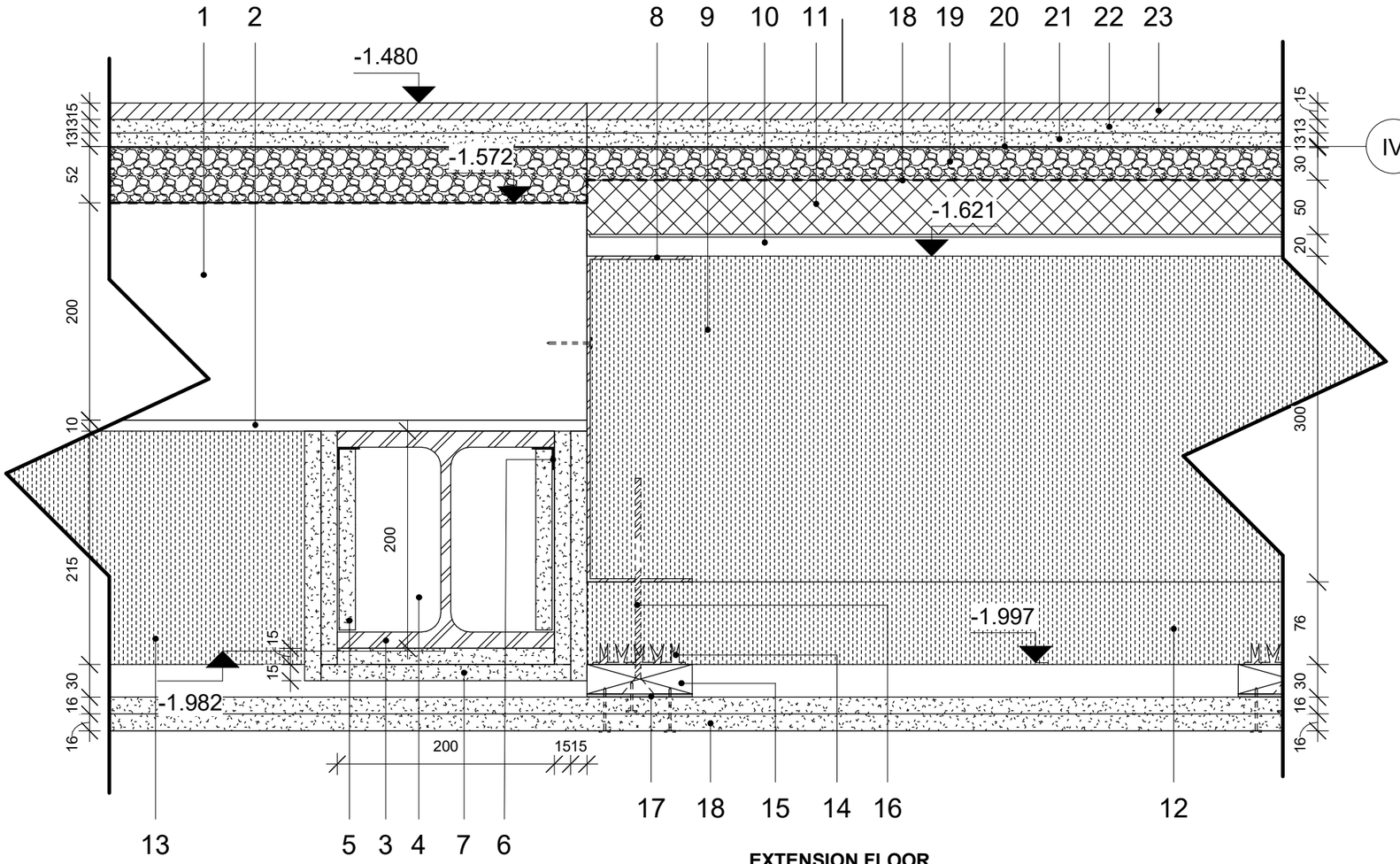
Campus VIA Horsens

PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E0_N02
SUBJECT: Detail - foundation and internal wall	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51-19A	



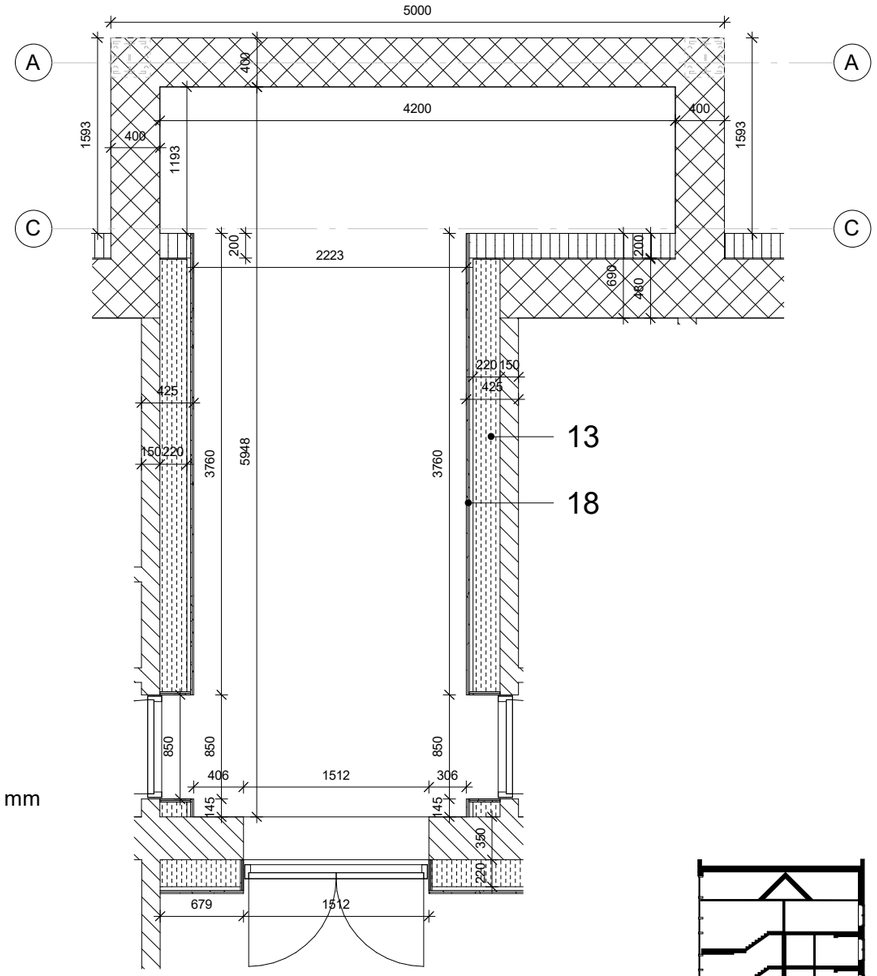
Air lock ceiling
1 : 5

BEAM ENCASEMENT
- REI120
3. HEB200 galvanized steel beam
4. 15 mm Glasroc F firecase soldiers at 1200mm centres (two together at board joints)
5. 15 mm x 60 mm wide Glasroc F firecase backing strip
6. Gypframe FEA1 Steel Angle suitably fixed to beam flange at 600 mm centres
7. 15 mm Glasroc F firecase fixed together with Glasroc F firecase screws at 150 mm centres

AIRLOCK CEILING AND WALL INSULATION
U-value = 0,14 W/m²K
12. 76 mm additional mineral wool insulation under extension deck to level the ceiling
- λ = 0,035 W/mK
13. 215 mm hard mineral wool facade insulation under bauma deck
14. REDAir FLEX steel friction plate
15. 27 mm x 97 mm REDAir FLEX LVL timber plank
16. 350 mm REDAir FLEX screw under bauma deck and 150 mm under extension deck
17. 3 mm x 90 mm x 3 m EPDM rubber band in rolls
18. 2 layers of 15,5 mm x 900 mm x 2400 mm Gyproc Protect FU Ergo
- fixed with 51 mm special Gyproc gypsum board screws

EXTENSION FLOOR
- 64 dB impact sound resistance
- (R)EI 60 A2-s1,d0
8. 300 mm x 65 mm x 1.2 mm C TCA Gyproc steel C-stud, cc 600 mm
- non load-bearing connection to the deck is made with Gyproc C-stud screws
9. Mineral wool insulation between U TCA Gyproc steel C-studs placed each 600 mm
- λ = 0,035 W/mK
10. 30 mm x 900 mm x 0,7 mm TP TCA Gyproc trapez plate
11. 50 mm cast-in-situ screed for floor underlay on extension deck

EXISTING CONCRETE DECK AND FLOATING FLOOR IN LIVING AREA
- 55 dB impact sound resistance
- (R)EI 60 A2-s1,d0
1.200 mm existing reinforced cast-in-situ deck between basement and groundfloor
2. 10 mm existing plaster under the deck
18. 0,2 mm PE-foil as damp-proof membrane
19. 30 mm Knauf dry granulate
- compression up to 5%
- Knauf edge strip glued around walls and columns
20. 1 mm x 1 m x 10 m (roll) cork separation layer
21. 12,5 mm x 900 mm x 2400 mm Classic Knauf board
- glued with gypsum board Knauf glue
22. 12,5 mm x 600 mm x 2400 mm Step Knauf board
- glued with gypsum board Knauf glue
23. 15 mm x 207 mm x 2200 mm oak flooring boards fixed by locking system



Air lock
1 : 50

Cross section BB

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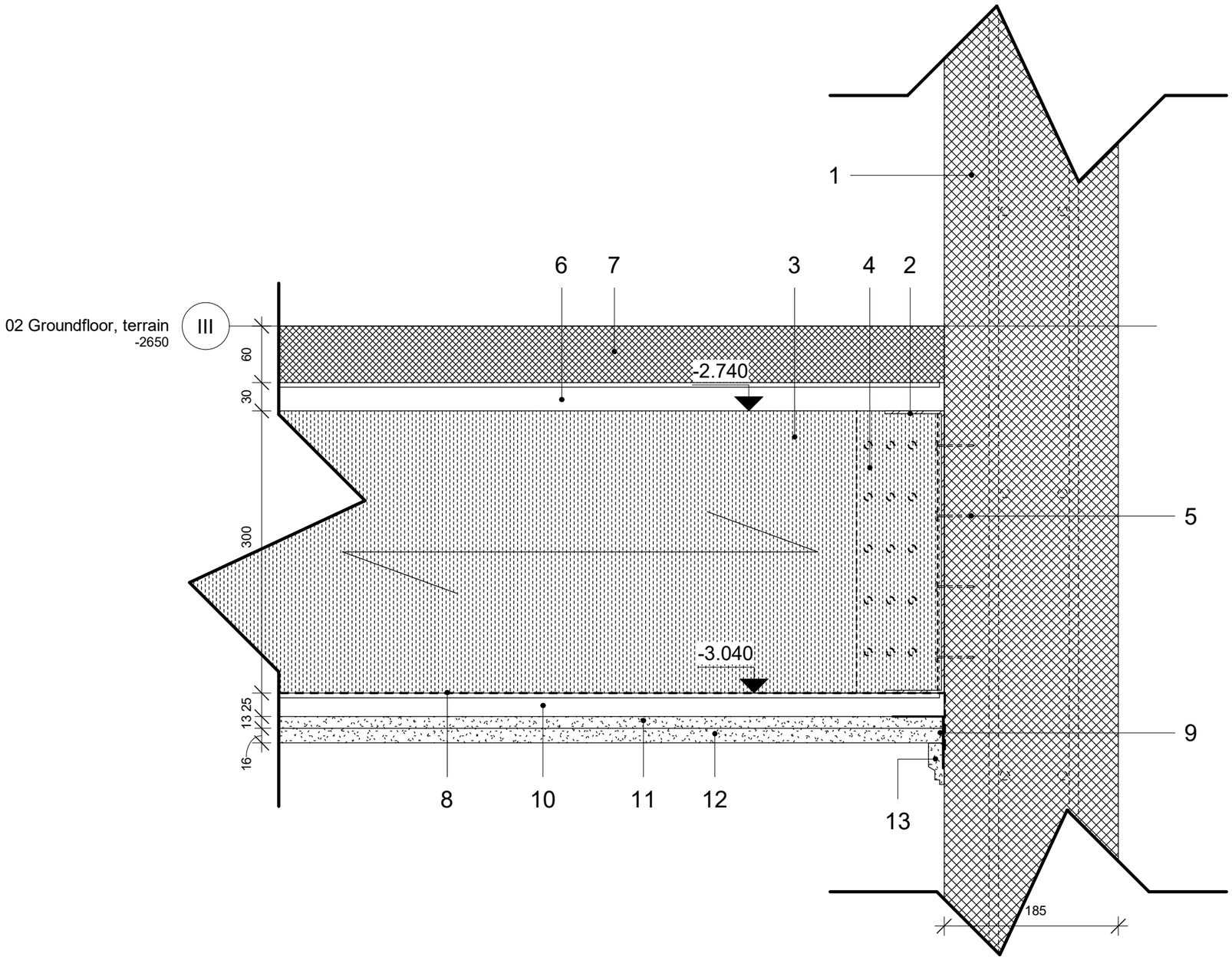
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E3_N05
SUBJECT: Detail - airlock	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Extension floor and elevator shaft wall
1 : 5

EXTENSION DECK AND PREFABRICATED CONCRETE SHAFT WALL, LOADBEARING CONNECTION
- 64 dB impact sound resistance
- EI 60 A2-s1,d0
1. 185 mm prefabricated reinforced concrete internal wall for elevator shaft
- REI 120, A2-s1,d0
2. 300 mm x 63 mm x 2 mm U TCA Gyproc steel U-channel
3. Mineral wool insulation between 300 mm x 65 mm x 1,2 mm U TCA Gyproc steel C-studs placed each 600 mm
- λ = 0,035 W/mK
4. 300 mm x 70/90 mm x 2 mm Gyproc V TCA steel angle profile for C-stud mounting against adjancent building parts, loadbearing connection
5. 51 mm Gyproc QSB Quick screws for steel profiles
6. 10. 30 mm x 900 mm x 0,7 mm TP TCA Gyproc trapez plate
7. Webercem lightweight polymer-modified, cementitious mortar with special lightweight fillers
- applied on Webercem bondicoat primer
- 45N/mm^2 compressive strength after 28 days of curing
- polished for smooth finish

CEILING
8. 0,2 mm PE-foil as damp-proof membrane
9. 50 mm x 50 mm Gyproc H edge bracket
10. 25 mm x 86 mm x Gyproc acoustic profile, cc 400 mm
- fixed with 2,65 mm x 45 mm screws
11. 12,5 mm x 900 mm x 2400 mm Gyproc Ergo Normal
- fixed with 25 mm Gyproc QSTR screws for timber/gypsum
12. 12,5 mm x 900 mm x 2400 mm Gyproc Protect F
- fixed with 41 mm Gyproc QSTR screws for timber/gypsum
13. 15 mm x 3000 mm gypsum cornice bead

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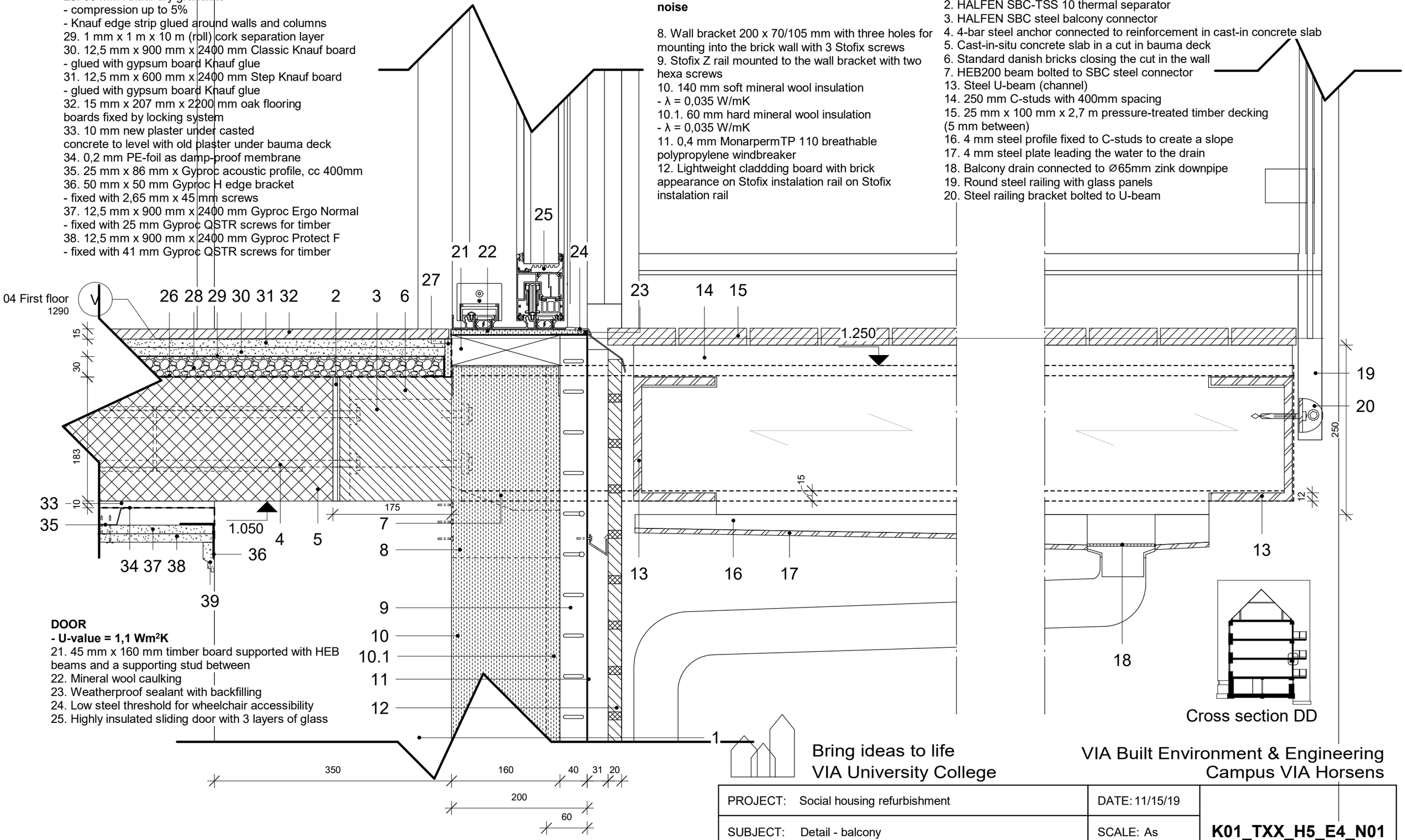
PROJECT: Social housing refurbishment	DATE: 11/15/19	**K01_TXX_H5_E2_N03**
SUBJECT: Detail - extension floor and elevator shaft wall	SCALE: 1 : 5	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19A	

FLOOR CONSTRUCTION
EI60, A2-s1,d0
58 dB impact sound resistance
26. 0,2 mm PE-foil as damp-proof membrane
27. 10 mm x 100 mm x 1000 mm Isover N/PP hard mineral wool insulation strip
28. 30 mm Knauf dry granulate
- compression up to 5%
- Knauf edge strip glued around walls and columns
29. 1 mm x 1 m x 10 m (roll) cork separation layer
30. 12,5 mm x 900 mm x 2400 mm Classic Knauf board
- glued with gypsum board Knauf glue
31. 12,5 mm x 600 mm x 2400 mm Step Knauf board
- glued with gypsum board Knauf glue
32. 15 mm x 207 mm x 2200 mm oak flooring
boards fixed by locking system
33. 10 mm new plaster under casted
concrete to level with old plaster under bauma deck
34. 0,2 mm PE-foil as damp-proof membrane
35. 25 mm x 86 mm x Gyproc acoustic profile, cc 400mm
36. 50 mm x 50 mm Gyproc H edge bracket
- fixed with 2,65 mm x 45 mm screws
37. 12,5 mm x 900 mm x 2400 mm Gyproc Ergo Normal
- fixed with 25 mm Gyproc QSTR screws for timber
38. 12,5 mm x 900 mm x 2400 mm Gyproc Protect F
- fixed with 41 mm Gyproc QSTR screws for timber

FACADE CONSTRUCTION
- U-value = 0,16 W/m²K
- REI120
- 50 dB airborne sound resistance from outside noise

8. Wall bracket 200 x 70/105 mm with three holes for mounting into the brick wall with 3 Stofix screws
9. Stofix Z rail mounted to the wall bracket with two hexa screws
10. 140 mm soft mineral wool insulation
- λ = 0,035 W/mK
10.1. 60 mm hard mineral wool insulation
- λ = 0,035 W/mK
11. 0,4 mm MonarpermTP 110 breathable polypropylene windbreaker
12. Lightweight claddding board with brick appearance on Stofix instalation rail on Stofix instalation rail

BALCONY CONNECTION
1. 350 mm existing brick wall made of 54 mm x 108 mm x 228 mm traditional danish brick
- hollow under openings and upper floor
2. HALFEN SBC-TSS 10 thermal separator
3. HALFEN SBC steel balcony connector
4. 4-bar steel anchor connected to reinforcement in cast-in concrete slab
5. Cast-in-situ concrete slab in a cut in bauma deck
6. Standard danish bricks closing the cut in the wall
7. HEB200 beam bolted to SBC steel connector
13. Steel U-beam (channel)
14. 250 mm C-studs with 400mm spacing
15. 25 mm x 100 mm x 2,7 m pressure-treated timber decking (5 mm between)
16. 4 mm steel profile fixed to C-studs to create a slope
17. 4 mm steel plate leading the water to the drain
18. Balcony drain connected to ∅65mm zink downpipe
19. Round steel railing with glass panels
20. Steel railing bracket bolted to U-beam



DOOR
- U-value = 1,1 Wm²K
21. 45 mm x 160 mm timber board supported with HEB beams and a supporting stud between
22. Mineral wool caulking
23. Weatherproof sealant with backfilling
24. Low steel threshold for wheelchair accessibility
25. Highly insulated sliding door with 3 layers of glass

Cross section DD

Balcony
1 : 5

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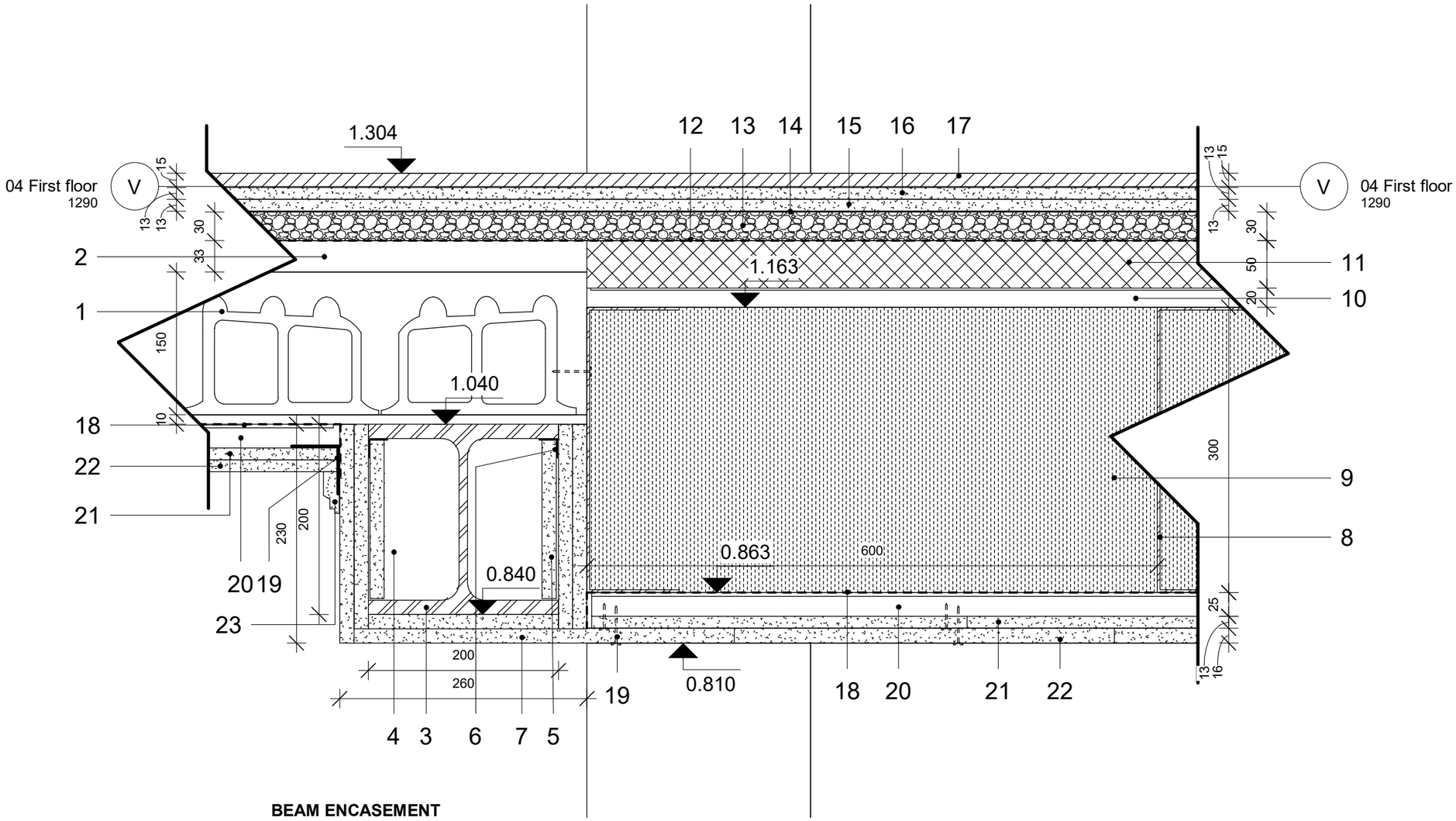
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E4_N01
SUBJECT: Detail - balcony	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51-19A	

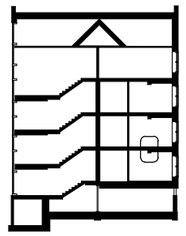


BEAM ENCASEMENT
- REI120
3. HEB200 galvanized steel beam
4. 15 mm Glasroc F firecase soldiers at 1200mm centres (two together at board joints)
5. 15 mm x 60 mm wide Glasroc F firecase backing strip
6. Gypframe FEA1 Steel Angle suitably fixed to beam flange at 600 mm centres
7. 15 mm Glasroc F firecase fixed together with Glasroc F firecase screws at 150 mm centres

EXTENSION DECK
- 64 dB impact sound resistance
- (R)EI 60 A2-s1,d0
8. 300 mm x 65 mm x 1.2 mm C TCA Gyproc steel C-stud, cc 600 mm
- non load-bearing connection to the deck is made with Gyproc C-stud screws
9. Mineral wool insulation between U TCA Gyproc steel C-studs placed each 600 mm
- λ = 0,035 W/mK
10. 30 mm x 900 mm x 0,7 mm TP TCA Gyproc trapez plate
11. 50 mm cast-in-situ screed for floor underlay on extension deck

EXISTING DECK AND FLOATING FLOOR CONSTRUCTION
- EI60, A2-s1,d0
- 58 dB impact sound resistance
1. 150 mm existing bauma deck
2. 33 mm existing cast-in-situ concrete on top of bauma deck
12. 0,2 mm PE-foil as damp-proof membrane
13. 30 mm Knauf dry granulate
- compression up to 5%
- Knauf edge strip glued around walls and columns
14. 1 mm x 1 m x 10 m (roll) cork separation layer
15. 12,5 mm x 900 mm x 2400 mm Classic Knauf board
- glued with gypsum board Knauf glue
16. 12,5 mm x 600 mm x 2400 mm Step Knauf board
- glued with gypsum board Knauf glue
17. 15 mm x 207 mm x 2200 mm oak flooring boards fixed by locking system

CEILING
18. 0,2 mm PE-foil as damp-proof membrane
19. 50 mm x 50 mm Gyproc H edge bracket
20. 25 mm x 86 mm x Gyproc acoustic profile, cc 400 mm
- fixed with 2,65 mm x 45 mm screws
21. 12,5 mm x 900 mm x 2400 mm Gyproc Ergo Normal
- fixed with 25 mm Gyproc QSTR screws for timber/gypsum
22. 12,5 mm x 900 mm x 2400 mm Gyproc Protect F
- fixed with 41 mm Gyproc QSTR screws for timber/gypsum
23. 15 mm x 3000 mm gypsum cornice bead



Cross section BB

Bauma deck and extension deck
1 : 5

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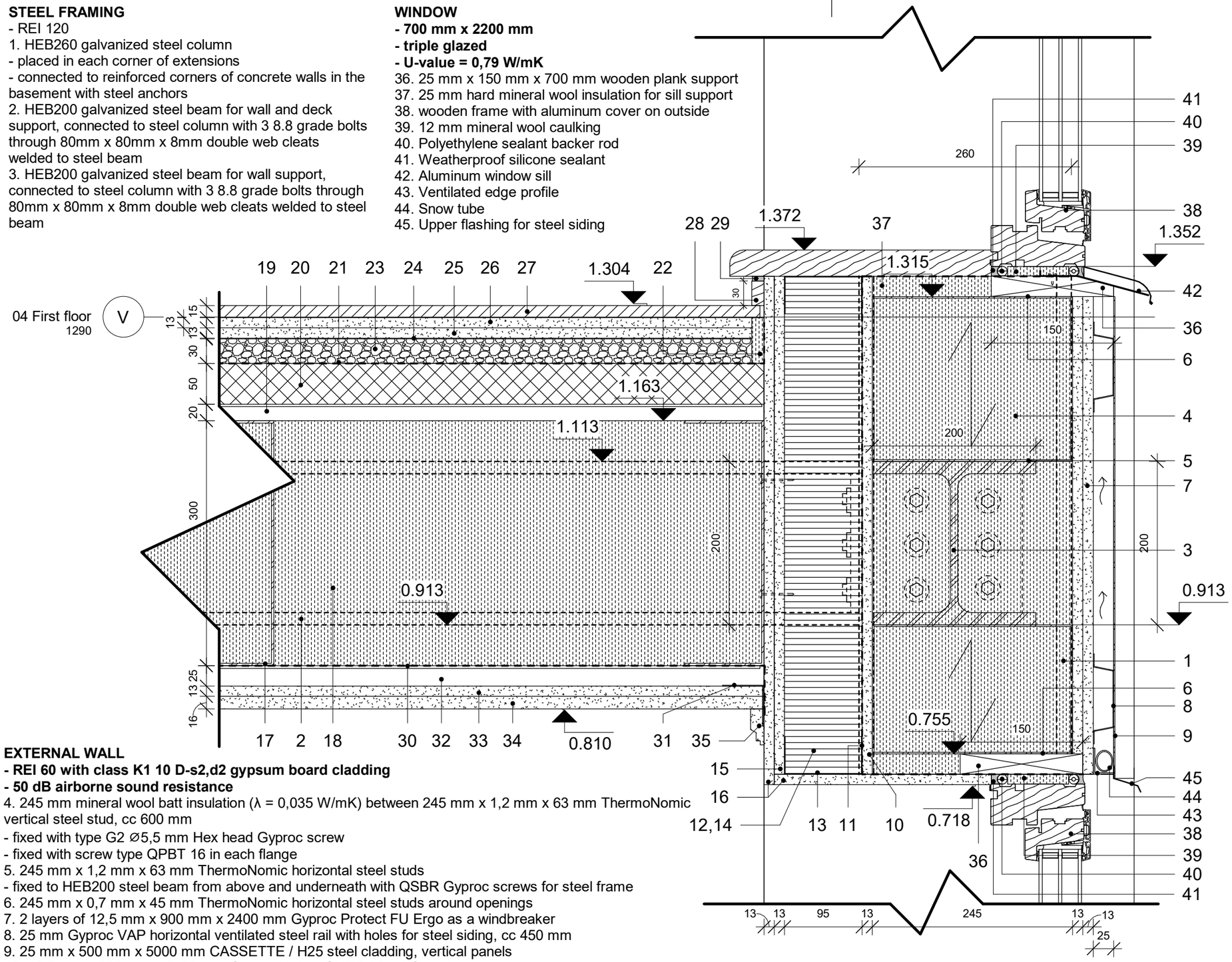
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E4_N03
SUBJECT: Detail - bauma deck and extension deck	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51-19S	

STEEL FRAMING
- REI 120
1. HEB260 galvanized steel column
- placed in each corner of extensions
- connected to reinforced corners of concrete walls in the basement with steel anchors
2. HEB200 galvanized steel beam for wall and deck support, connected to steel column with 3 8.8 grade bolts through 80mm x 80mm x 8mm double web cleats welded to steel beam
3. HEB200 galvanized steel beam for wall support, connected to steel column with 3 8.8 grade bolts through 80mm x 80mm x 8mm double web cleats welded to steel beam

WINDOW
- 700 mm x 2200 mm
- triple glazed
- U-value = 0,79 W/mK
36. 25 mm x 150 mm x 700 mm wooden plank support
37. 25 mm hard mineral wool insulation for sill support
38. wooden frame with aluminum cover on outside
39. 12 mm mineral wool caulking
40. Polyethylene sealant backer rod
41. Weatherproof silicone sealant
42. Aluminum window sill
43. Ventilated edge profile
44. Snow tube
45. Upper flashing for steel siding



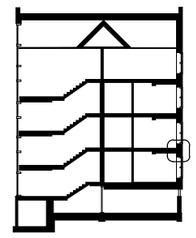
EXTERNAL WALL
- REI 60 with class K1 10 D-s2,d2 gypsum board cladding
- 50 dB airborne sound resistance
4. 245 mm mineral wool batt insulation (λ = 0,035 W/mK) between 245 mm x 1,2 mm x 63 mm ThermoNomic vertical steel stud, cc 600 mm
- fixed with type G2 ∅5,5 mm Hex head Gyproc screw
- fixed with screw type QPBT 16 in each flange
5. 245 mm x 1,2 mm x 63 mm ThermoNomic horizontal steel studs
- fixed to HEB200 steel beam from above and underneath with QSBR Gyproc screws for steel frame
6. 245 mm x 0,7 mm x 45 mm ThermoNomic horizontal steel studs around openings
7. 2 layers of 12,5 mm x 900 mm x 2400 mm Gyproc Protect FU Ergo as a windbreaker
8. 25 mm Gyproc VAP horizontal ventilated steel rail with holes for steel siding, cc 450 mm
9. 25 mm x 500 mm x 5000 mm CASSETTE / H25 steel cladding, vertical panels
10. 12,5 mm x 900 mm x 2400 mm Gyproc Habito GHED 13 reinforced gypsum plate
11. 0,2 mm PE-foil as damp-proof membrane
12. 95 mm x 0,46 mm x 45 mm ThermoNomic vertical studs in internal frame, cc 600 mm
13. 95 mm x 0,46 mm x 45 mm ThermoNomic horizontal studs in internal frame
14. 95 mm Kingspan rigid foam
- λ = 0,020 W/mK
15. 12,5 mm x 900 mm x 2400 mm Gyproc Ergo Normal
- fixed with 25 mm Gyproc QSTR screws for timber/gypsum
16. 12,5 mm x 900 mm x 2400 mm Gyproc Protect F
- fixed with 41 mm Gyproc QSTR screws for timber/gypsum

Extension floor, wall and window
1 : 5

EXTENSION DECK
- 64 dB impact sound resistance
- (R)EI 60 A2-s1,d0
17. 300 mm x 65 mm x 1.2 mm C TCA Gyproc steel C-stud, cc 600 mm
- non load-bearing connection to vertical 95 mm steel stud is made with Gyproc C-stud screws
18. Mineral wool insulation between U TCA Gyproc steel C-studs placed each 600 mm
- λ = 0,035 W/mK
19. 30 mm x 900 mm x 0,7 mm TP TCA Gyproc trapez plate
20. 50 mm cast-in-situ screed for floor underlay on extension deck

FLOATING FLOOR CONSTRUCTION
21. 0,2 mm PE-foil as damp-proof membrane
22. 10 mm x 100 mm x 1000 mm Isover N/PP hard mineral wool insulation strip
23. 30 mm Knauf dry granulate
- compression up to 5%
- Knauf edge strip glued around walls and columns
24. 1 mm x 1 m x 10 m (roll) cork separation layer
25. 12,5 mm x 900 mm x 2400 mm Classic Knauf board
- glued with gypsum board Knauf glue
26. 12,5 mm x 600 mm x 2400 mm Step Knauf board
- glued with gypsum board Knauf glue
27. 15 mm x 207 mm x 2200 mm oak flooring boards fixed by locking system
28. 15 mm x 30 mm x 2400 mm pine skirting board
29. Weatherproof sealant

CEILING
30. 0,2 mm PE-foil as damp-proof membrane
31. 50 mm x 50 mm Gyproc H edge bracket
32. 25 mm x 86 mm x Gyproc acoustic profile, cc 400 mm
- fixed with 2,65 mm x 45 mm screws
33. 12,5 mm x 900 mm x 2400 mm Gyproc Ergo Normal
- fixed with 25 mm Gyproc QSTR screws for timber/gypsum
34. 12,5 mm x 900 mm x 2400 mm Gyproc Protect F
- fixed with 41 mm Gyproc QSTR screws for timber/gypsum
35. 15 mm x 3000 mm gypsum cornice bead



Cross section BB

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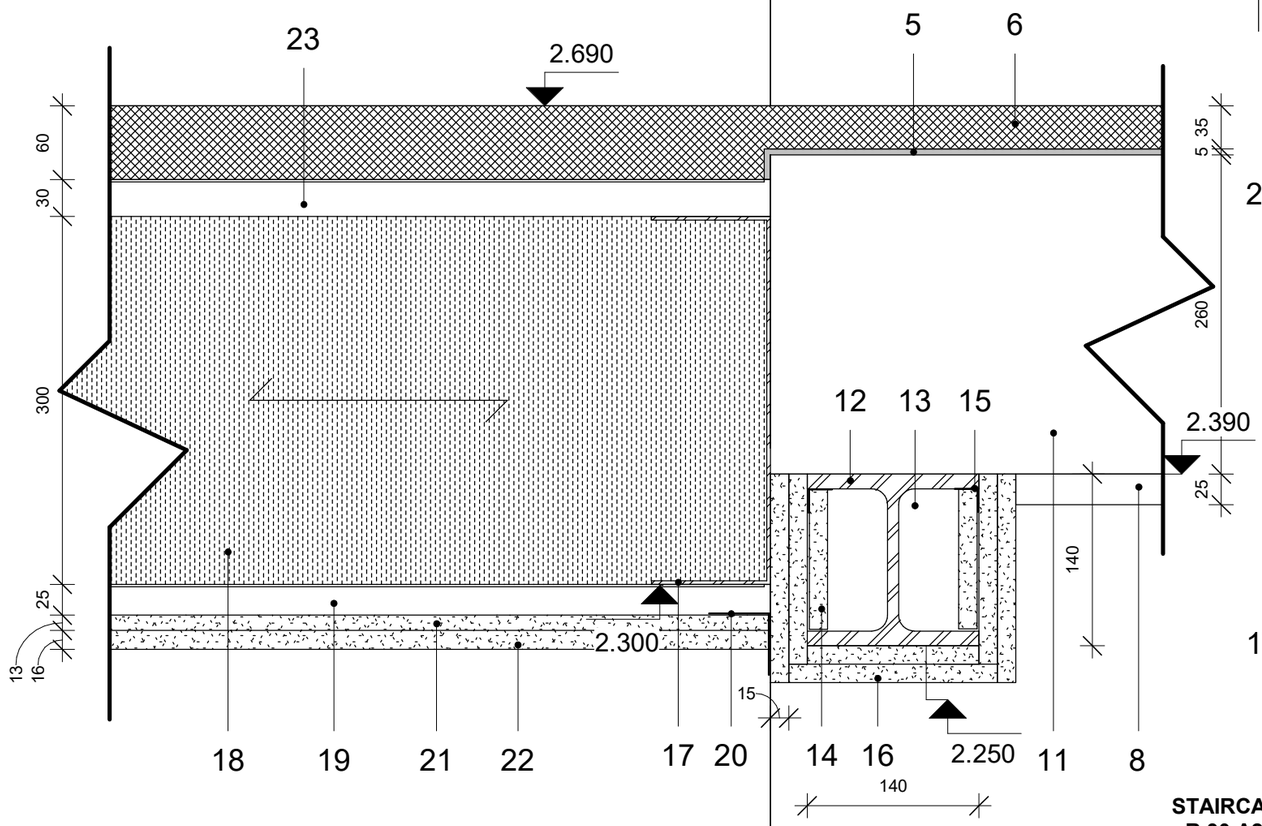
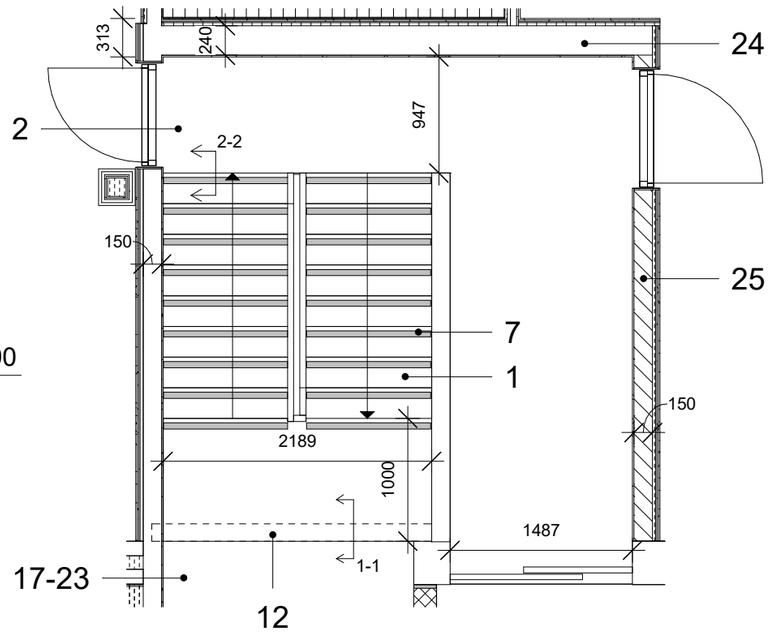
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E4_N04
SUBJECT: Detail - extension floor, wall and window	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19A	



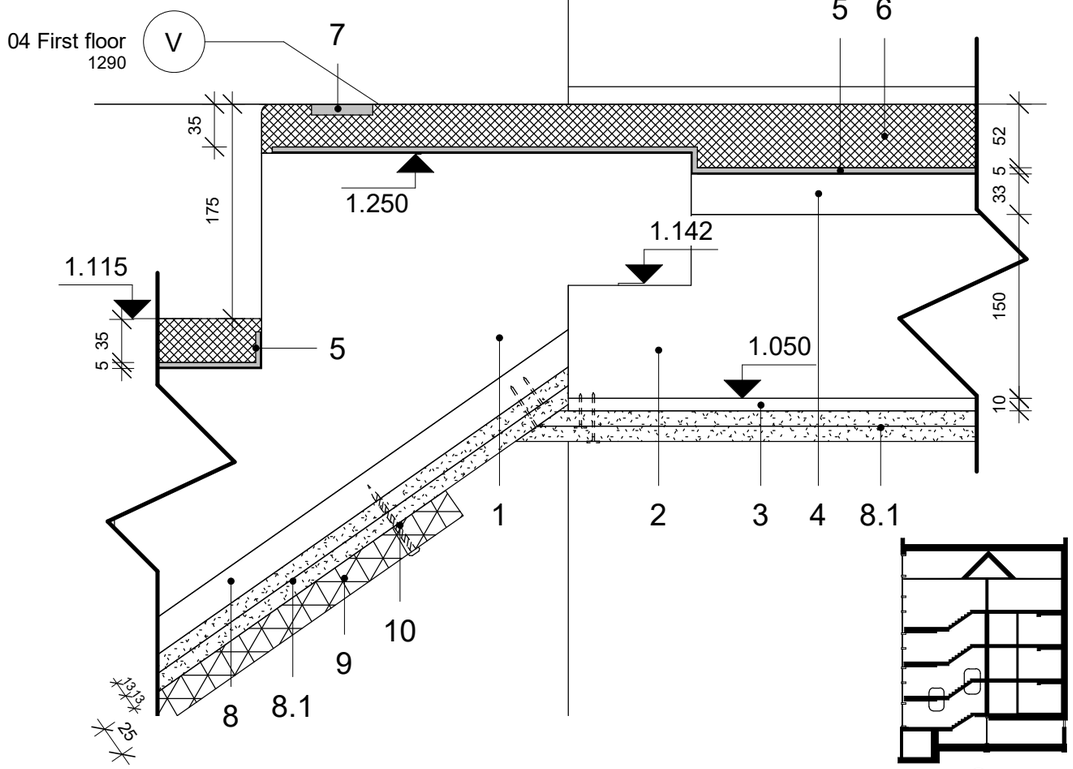
1-1 Internal staircase landing and extension floor
1 : 5



Internal staircase - plan view
1 : 50

SOUNDPROOFING EXISTING WALL IN STAIRCASE
- 55dB airborne sound resistance
- REI60
24. 240 mm existing load-bearing brick wall
- 1 layer of 12,5 mm x 900 mm x 3000 mm Gyproc SoundBlock gypsum board on internal side
- 35 mm Gypframe GL1 Lining Channel
- 25 mm acoustic roll mineral wool insulation
- 2 layers of 12,5 mm x 900 mm x 3000 mm Gyproc SoundBlock gypsum board on external side

SOUNDPROOFING NEW WALL IN STAIRCASE
- 55dB airborne sound resistance
- REI60
DOORS TO APARTMENTS
- EI_230
- 32dB airborne sound resistance
25. 150 mm new load-bearing brick wall
- 1 layer of 12,5 mm x 900 mm x 3000 mm Gyproc SoundBlock gypsum board on internal side
- 35 mm Gypframe GL1 Lining Channel
- 25 mm acoustic roll mineral wool insulation
- 2 layers of 12,5 mm x 900 mm x 3000 mm Gyproc SoundBlock gypsum board on external side



2-2 Internal staircase and bauma deck
1 : 5

Cross section BB

STAIRCASE
- R 30 A2-s1,d0
- openable curtain wall panel (1800mm x 1233 mm) on each floor incl. roof storey
- 1.3 sec reverberation time
1. Existing cast-in-situ concrete stairs
2. Existing prefabricated bauma deck
3. Existing plaster under the deck
4. Existing cast-in-situ concrete casted on top of bauma deck
5. 5 mm x 1200 mm x 25m Impactafoam closed cell polyethylene acoustic foam in rolls glued to concrete surface
- up to 48dB impact sound reduction with 50 mm of screed on top
- 25 mm edge flanking
- covered with 20 mm x 50 mm wire mesh against puncture
6. Webercem lightweight polymer-modified, cementitious mortar with special lightweight fillers
- applied on Webercem bondicoat primer
- 45N/mm² compressive strength after 28 days of curing
- polished for smooth finish
7. 50 mm x 8 mm slip-resistant carborundum inserts
- bonded into in-situ casted mortar
- resistant to high exposure to chemicals as acid, alkali, solvent liquid and salt water
8. Existing woodcrete covering all stairs underneath
8.1. 2 layers of 12.5 mm x 900 mm x 2400 mm gypsum boards
- fixed with 25 mm (first layer) and 41 mm (second layer) gypsum board screws
9. 25 mm x 600 mm x 1200 mm Troldtekt woodcrete boards improving reverberation time in staircase
- attached under flights on each floor according to reverberation time calculation
10. 4,2 mm x 70 mm special cross cut Troldtekt screw
- electric galvanized
- 6 pcs. per one 600 mm x 1200 mm board
11. Existing cast-in-situ concrete staircase landing

BEAM ENCASEMENT
- REI120
12. HEB140 galvanized steel beam
13. 15 mm Glasroc F firecase soldiers at 1200mm centres (two together at board joints)
14. 15 mm x 60 mm wide Glasroc F firecase backing strip
15. Gypframe FEA1 Steel Angle suitably fixed to beam flange at 600 mm centres
16. 15 mm Glasroc F firecase fixed together with Glasroc F firecase screws at 150 mm centres

EXTENSION FLOOR
- 64 dB impact sound resistance
- (R)EI 60 A2-s1,d0
17. 300 mm x 65 mm x 2 mm U TCA Gyproc steel edge U-profile
18. Mineral wool insulation between C TCA Gyproc steel C-studs placed each 600 mm
- λ = 0,035
19. 25 mm x 86 mm x 0,56 mm Gyproc AP 25 steel acoustic profile
- 400 mm spacing between, 300 mm spacing from wall
20. 50 mm x 50 mm Gyproc H edge profile for acoustic ceiling
21. 12,5 mm x 900 mm x 3000 mm Gyproc Normal gypsum board
22. 15,5 mm x 900 mm x 2700 mm Gyproc Protect F Ergo
23. 30 mm x 900 mm x 0,7 mm TP TCA Gyproc trapez plate

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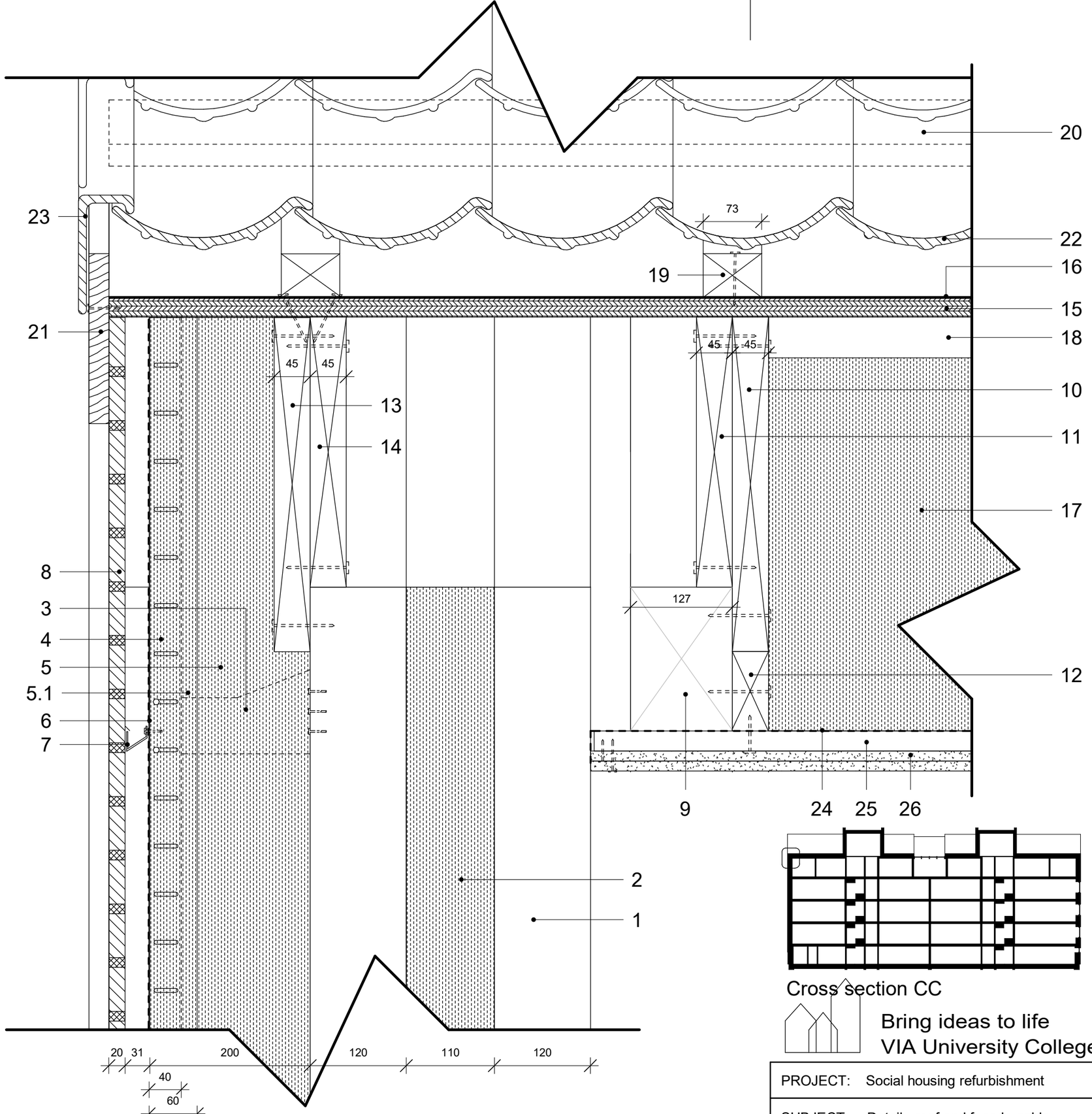
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_EX_N04
SUBJECT: Detail - internal staircase	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19A	



Facade gable and roof
1 : 5

Cross section CC

BRICK FACADE CONSTRUCTION
U-value = 0,13 W/m²K
REI120
50 dB airborne sound resistance from outside noise

1. 350 mm existing brick wall made of 54 mm x 108 mm x 228 mm traditional danish brick
- hollow under openings and upper floor
2. 110 mm blow-in mineral wool insulation in cavities
- λ = 0,034 W/mK
3. Wall bracket 200 x 70/105 mm with three holes for mounting into the brick wall with 3 Stofix screws
4. Stofix Z rail mounted to the wall bracket with two hexa screws
5. 140 mm soft mineral wool insulation
- λ = 0,035 W/mK
5.1. 60 mm hard mineral wool insulation
- λ = 0,035 W/mK
6. 0,4 mm MonarpermTP 110 breathable polypropylene windbreaker
7. Stofix instalation rail
8. Lightweight claddding board with brick appearance

ROOF CONSTRUCTION
U-value = 0,12 W/m²K
REI120
50 dB airborne sound resistance from outside noise

9. Existing truss, 127x127 mm
10. 45x295 mm timber plank for leveling the truss, fixed to existing rafter
11. 45x238 mm timber plank for leveling the truss
12. 75x70 mm timber plank for ceiling support, fixed to existing rafter
13. 45x295 mm timber plank fixed to brick wall
14. 45x238 mm timber plank for additional support for plywood
15. 18 mm plywood as stable subroof
- fixed with 1,6 mm x 63 mm galvanized nails each 150 mm on the sides of the board and 300 mm in the middle of the board
16. 2 mm bitumen felt burned to the surface as diffusion-tight underlay
17. 320 mm mineral wool insulation
- λ = 0,035 W/mK
18. Ventilation gap (1/500 floor area)
19. 38x73 mm distance strip
- fixed with 2 mm x 75 mm galvanized screws each 300 mm
20. 38x73 mm roof batten
- fixed with 2 mm x 75 mm galvanized screws
21. 19x100 mm pressure-treated timber fascia board
- fixed with 2,65 mm x 45 mm galvanized screws each 150 mm
22. 255 mm x 404 mm raditional danish clay tiles
- 14 tiles per m²
23. Edge clay tile
24. 0,2 mm PE-foil as damp-proof membrane
25. 25x100 mm ceiling batten, cc 400 mm
- fixed with 2,65 mm x 45 mm screws
26. 2 layers of 12,5 mm x 900 mm x 2400 mm Gyproc Ergo Normal gypsum boards
- first layer is fixed with 25 mm Gyproc QSTR screws for timber
- second layer is fixed with 41 mm Gyproc QSTR screws for timber

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PROJECT: Social housing refurbishment	DATE: 11/15/19	**K01_TXX_H5_E7_N01**
SUBJECT: Detail - roof and facade gable	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51-19A	