BOOKLET

Tender design – blacksmith

AH51P-19S

Carina Pronscaia, Jan 2020

VIA University College

8700 Horsens

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K01_TXX_H3_EX_N03

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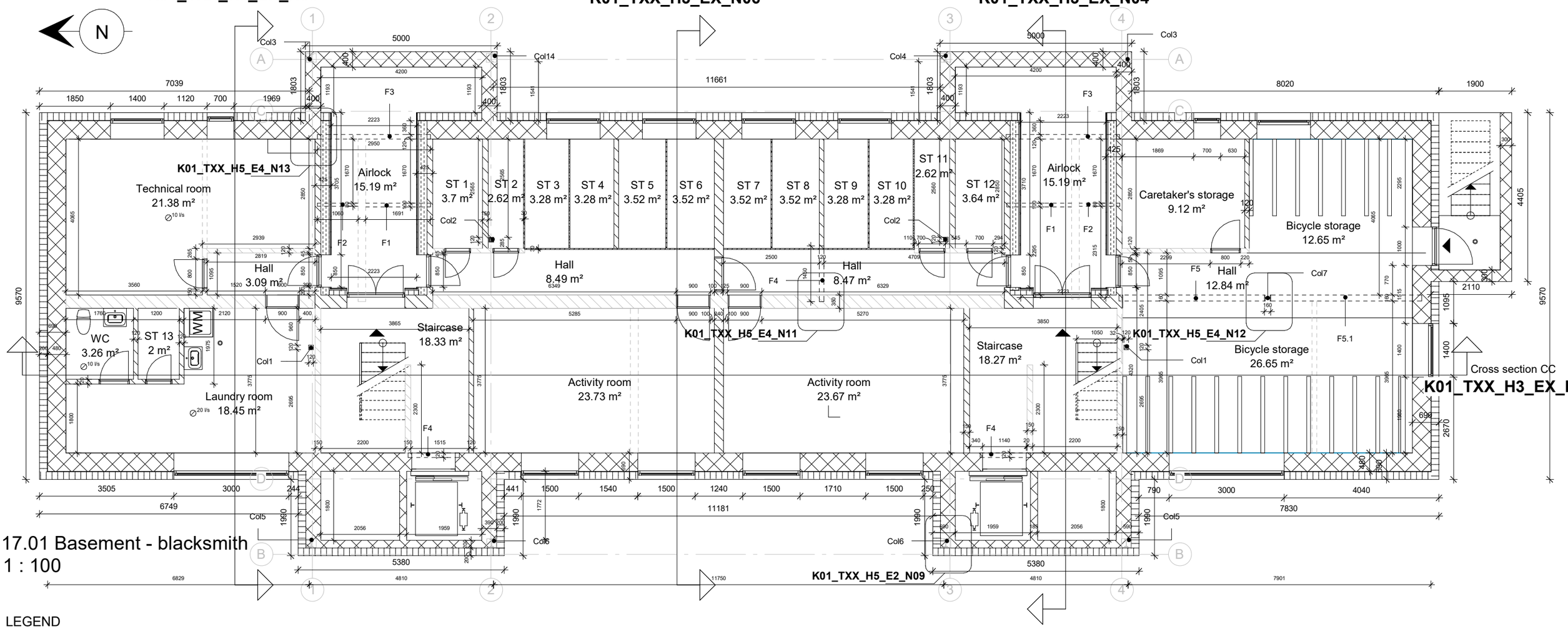

LEGEND

- beam placed above the cut plane (overhead)
- existing beam
- new galvanized steel square hot rolled column
- new galvanized steel IPE column

BEAMS:

F1 - IPE100, S235, t = 5,7mm/4,1mm
Width: 55 mm
Length: 1600 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

F2 - IPE80, S235, t = 5,2mm/3,8mm
Width: 46 mm
Length: 1060 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

F3 - IPE120, S235, t = 6,3mm/4,4mm
Width: 64 mm
Length: 2950 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall

F4 - IPE120, S235, t = 6,3mm/4,4mm
Width: 64 mm
Length: 2950 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

F5 - HEB160, S235, t = 13mm/8mm
Length: 2950 mm
Relevant details:
K01_TXX_H5_E4_N12 - beam and IPE/HEB column
K01_TXX_H5_E4_N11 - beam resting on internal wall

F5.1 - HEB160, S235, t = 13mm/8mm
Length: 2950 mm
Relevant details:
K01_TXX_H5_E4_N12 - beam and IPE/HEB column
K01_TXX_H5_E4_N13 - beam resting on external wall

COLUMNS:

Col1, Col2 - 120 mm square hot rolled, S235, t = 10 mm
Length: 8370 mm
Relevant details:
K01_TXX_H5_E0_N05 - square column and foundation
K01_TXX_H5_E5_N02 - two square columns and deck

Col3, Col4, Col5, Col6 - IPE200, S235, t = 15mm/9mm
Length: 7517 mm
Relevant details:
K01_TXX_H5_E5_N01 - two IPE columns
K01_TXX_H5_E2_N09 - IPE column and concrete wall

Col7 - HEB160, S235, t = 13mm/8mm
Length: 2228 mm
Relevant details:
K01_TXX_H5_E0_N05 - square column and foundation
K01_TXX_H5_E4_N12 - beam and IPE/HEB column

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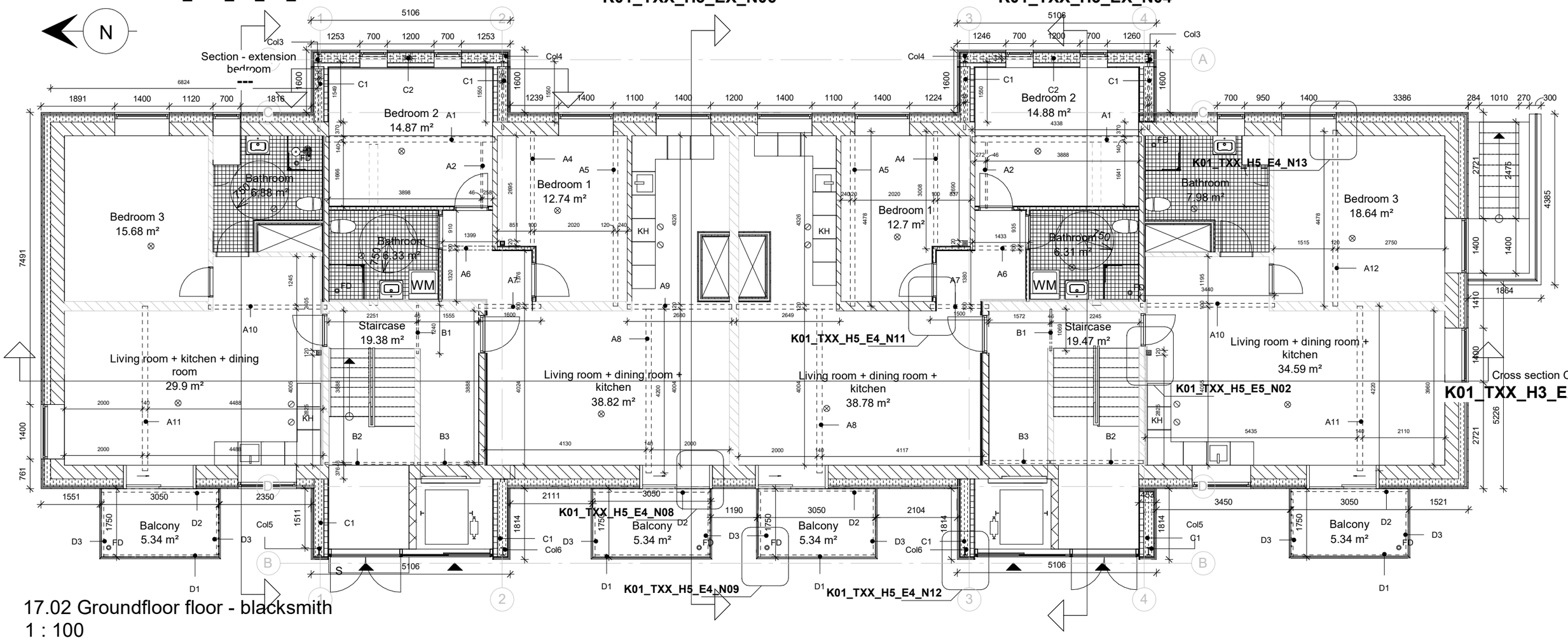
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H1_E1_N07
SUBJECT: Blacksmith - basement plan	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	

Cross section AA
K01_TXX_H3_EX_N03

Cross section DD
K01_TXX_H3_EX_N06

Cross section BB
K01_TXX_H3_EX_N04



17.02 Groundfloor floor - blacksmith
1 : 100

LEGEND

- beam placed above the cut plane (overhead)
- existing beam
- new galvanized steel square hot rolled column
- new galvanized steel IPE column

BEAMS:

A1 - HEB140, S235, length: 4270 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A2 - IPE80, S235, width: 46 mm, length: 1700 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A3 - HEB100, S235, length: 1700 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A4 - HEB100, S235, length: 3000 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall
K01_TXX_H5_E4_N11 - beam resting on internal wall

A5 - HEB120, S235, length: 4480 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall
K01_TXX_H5_E4_N11 - beam resting on internal wall

A6 - HEB100, S235, length: 1400 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A7 - HEB100, S235, length: 1400 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A8 - HEB140, S235, length: 4200 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall
K01_TXX_H5_E4_N13 - beam resting on external wall

A9 - HEB120, S235, length: 2700 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A10 - HEB100, S235, length: 3040 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

A11 - HEB140, S235, length: 4220 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall
K01_TXX_H5_E4_N11 - beam resting on internal wall

A12 - HEB120, S235, length: 4515 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall
K01_TXX_H5_E4_N11 - beam resting on internal wall

B1 - IPE80, S235, length: 1100 mm, width: 46 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

B2 - IPE80, S235, length: 2300 mm, width: 46 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

B3 - IPE80, S235, length: 1680 mm, width: 46 mm
Relevant details:
K01_TXX_H5_E4_N11 - beam resting on internal wall

C1 - IPE100, S235, length: 2050 mm, width: 55 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall

C2 - IPE120, S235, length: 4690 mm
Width: 64 mm
Relevant details:
K01_TXX_H5_E4_N12 - beam and IPE column

D1 - UPE80, S235, length: 3050 mm
Relevant details:
K01_TXX_H5_E4_N09 - balcony railing

D2 - UPE80, S235, length: 2060 mm
Relevant details:
K01_TXX_H5_E4_N08 - balcony and facade

D3 - IPE100, S235, length: 2000 mm
Relevant details:
K01_TXX_H5_E4_N08 - balcony and facade

COLUMNS:

Col1, Col2 - 120 mm square hot rolled, S235, t = 10 mm
Length: 8370 mm
Relevant details:
K01_TXX_H5_E0_N05 - square column and foundation
K01_TXX_H5_E5_N02 - two square columns and deck

Col3, Col4, Col5, Col6 - IPE200, S235, t = 15mm/9mm
Length: 7517 mm
Relevant details:
K01_TXX_H5_E5_N01 - two IPE columns
K01_TXX_H5_E2_N09 - IPE column and concrete wall

Col7 - HEB160, S235, t = 13mm/8mm
Length: 2228 mm
Relevant details:
K01_TXX_H5_E0_N05 - square column and foundation
K01_TXX_H5_E4_N12 - beam and IPE/HEB column

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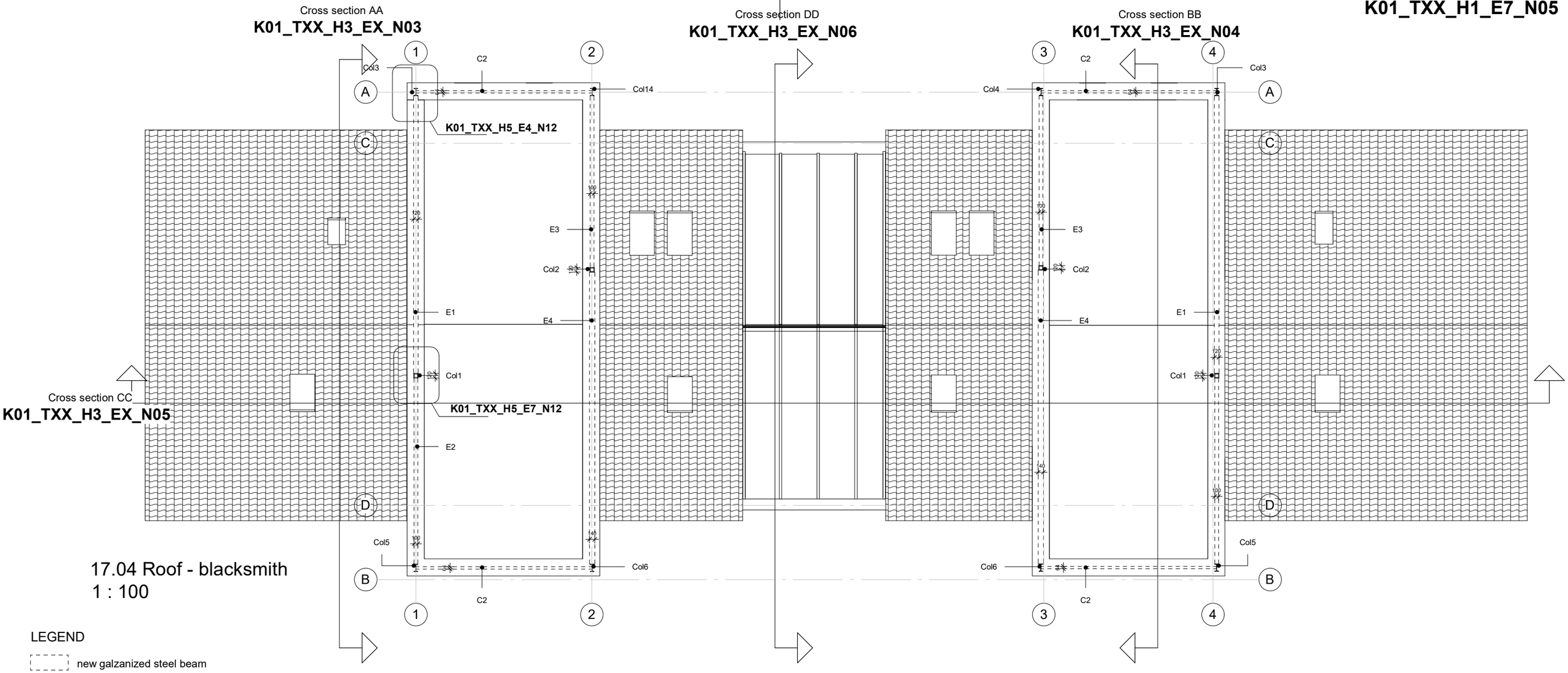
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H1_E3_N07
SUBJECT: Blacksmith - groundfloor plan	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



17.04 Roof - blacksmith
1 : 100

LEGEND

- new galzanized steel beam
- new galvanized steel square hot rolled column
- new galvanized steel IPE column

BEAMS:

E1 - HEB120, S235, t = 11mm/6,5mm
Length: 7280 mm
Relevant details:
K01_TXX_H5_E7_N12 - beam and square column
K01_TXX_H5_E4_N12 - beam and IPE column

E2 - HEB100, S235, t = 10mm/6mm
Length: 4817 mm
Relevant details:
K01_TXX_H5_E7_N12 - beam and square column
K01_TXX_H5_E4_N12 - beam and IPE column

E3 - HEB100, S235, t = 10mm/6mm
Length: 4390 mm
Relevant details:
K01_TXX_H5_E7_N12 - beam and square column
K01_TXX_H5_E4_N12 - beam and IPE column

E4 - HEB140, S235, t = 12mm/7mm
Length: 7720 mm
Relevant details:
K01_TXX_H5_E7_N12 - beam and square column
K01_TXX_H5_E4_N12 - beam and IPE column

C2 - IPE120, S235, t = 6,3mm/4,4mm
Width: 64 mm
Length: 4690 mm
Relevant details:
K01_TXX_H5_E4_N12 - beam and IPE column

COLUMNS:

Col1 - 120 mm square hot rolled, S235, t = 10 mm
Length: 8370 mm
Relevant details:
K01_TXX_H5_E5_N02 - two square columns and deck

Col2 - 120 mm square hot rolled, S235, t = 10 mm
Length: 8370 mm
Relevant details:
K01_TXX_H5_E5_N02 - two square columns and deck

Col3, Col4, Col5, Col6 - IPE200, S235, t = 15mm/9mm
Length: 7517 mm
Relevant details:
K01_TXX_H5_E5_N01 - two IPE columns

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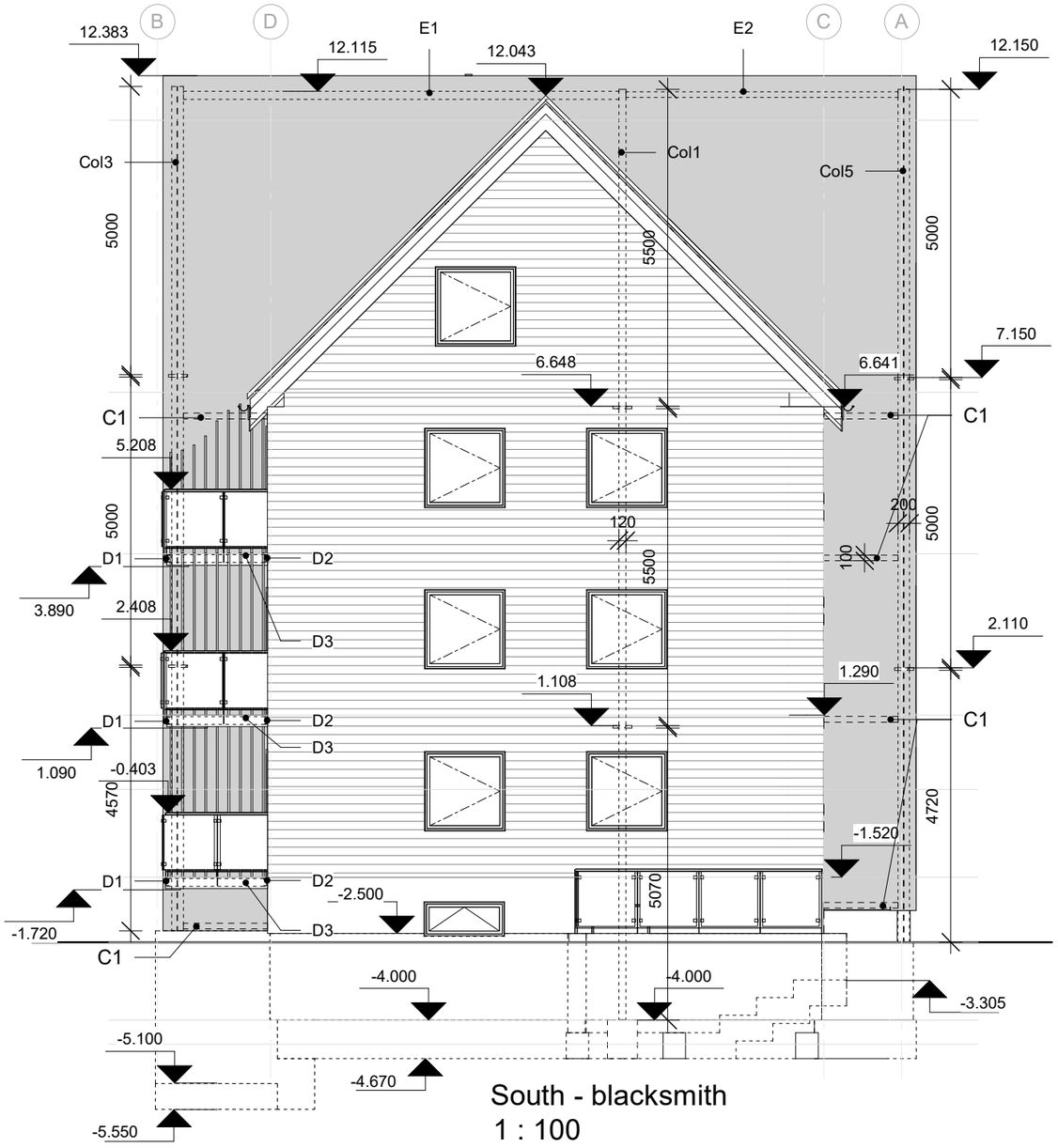
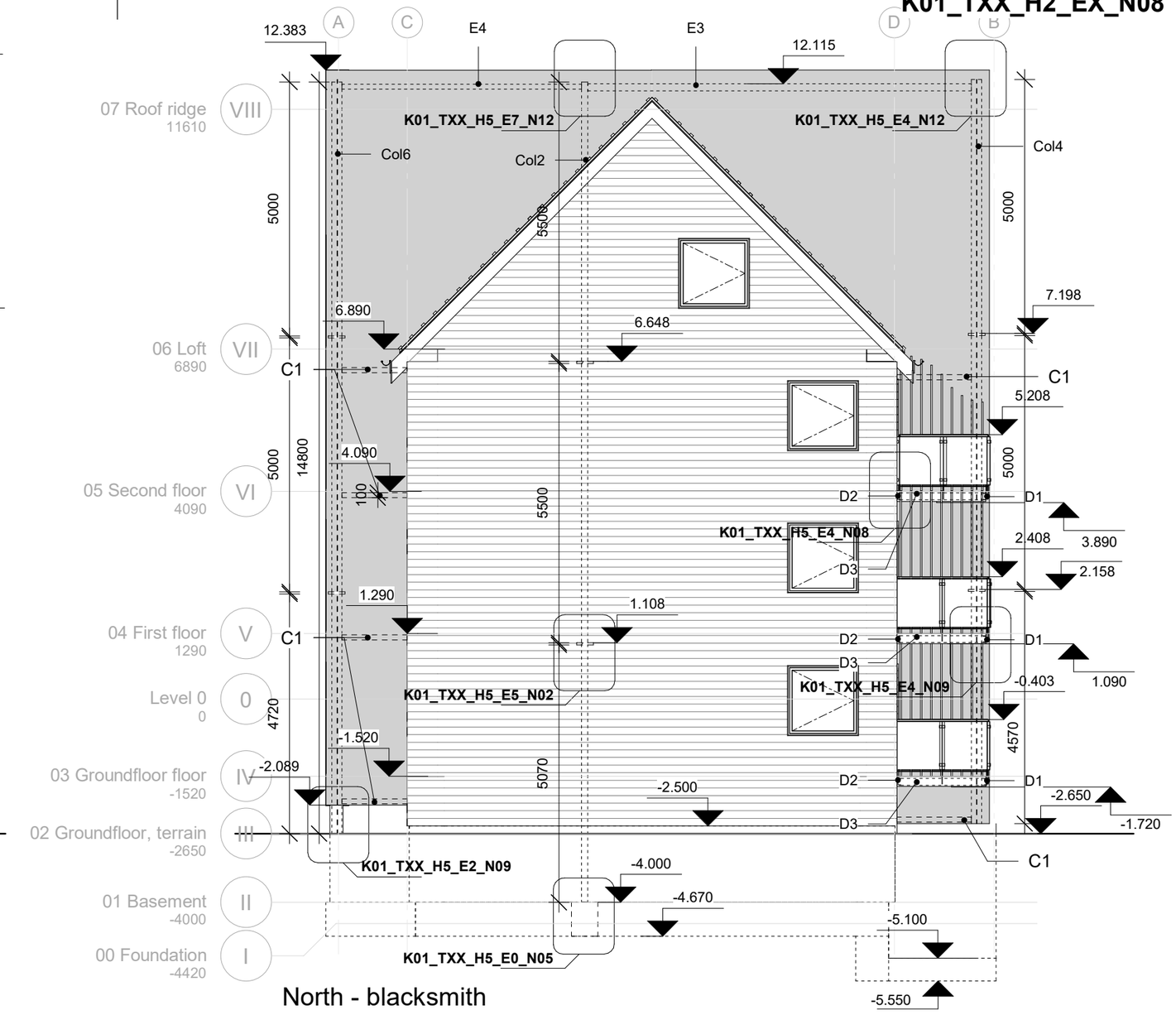
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H1_E7_N05
SUBJECT: Blacksmith - roof plan	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



South - blacksmith
1 : 100



North - blacksmith
1 : 100

LEGEND

- new steel beam
- new galvanized steel square hot rolled column
- new galvanized steel IPE column

BEAMS:

C1 - IPE100, S235, length: 2050 mm, width: 55 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall

D1 - UPE80, S235, length: 3050 mm
Relevant details:
K01_TXX_H5_E4_N09 - balcony railing

D2 - UPE80, S235, length: 2060 mm
Relevant details:
K01_TXX_H5_E4_N08 - balcony
and facade

D3 - IPE100, S235, length: 2000 mm
Relevant details:
K01_TXX_H5_E4_N08 - balcony
and facade

COLUMNS:

Col1, Col2 - 120 mm square hot rolled, S235, t = 10 mm
Length: 8370 mm
Relevant details:
K01_TXX_H5_E0_N05 - square column and foundation
K01_TXX_H5_E5_N02 - two square columns and deck

Col3, Col4, Col5, Col6 - IPE200, S235,
t = 15mm/9mm
Length: 7517 mm
Relevant details:
K01_TXX_H5_E5_N01 - two IPE columns
K01_TXX_H5_E2_N09 - IPE column
and concrete wall

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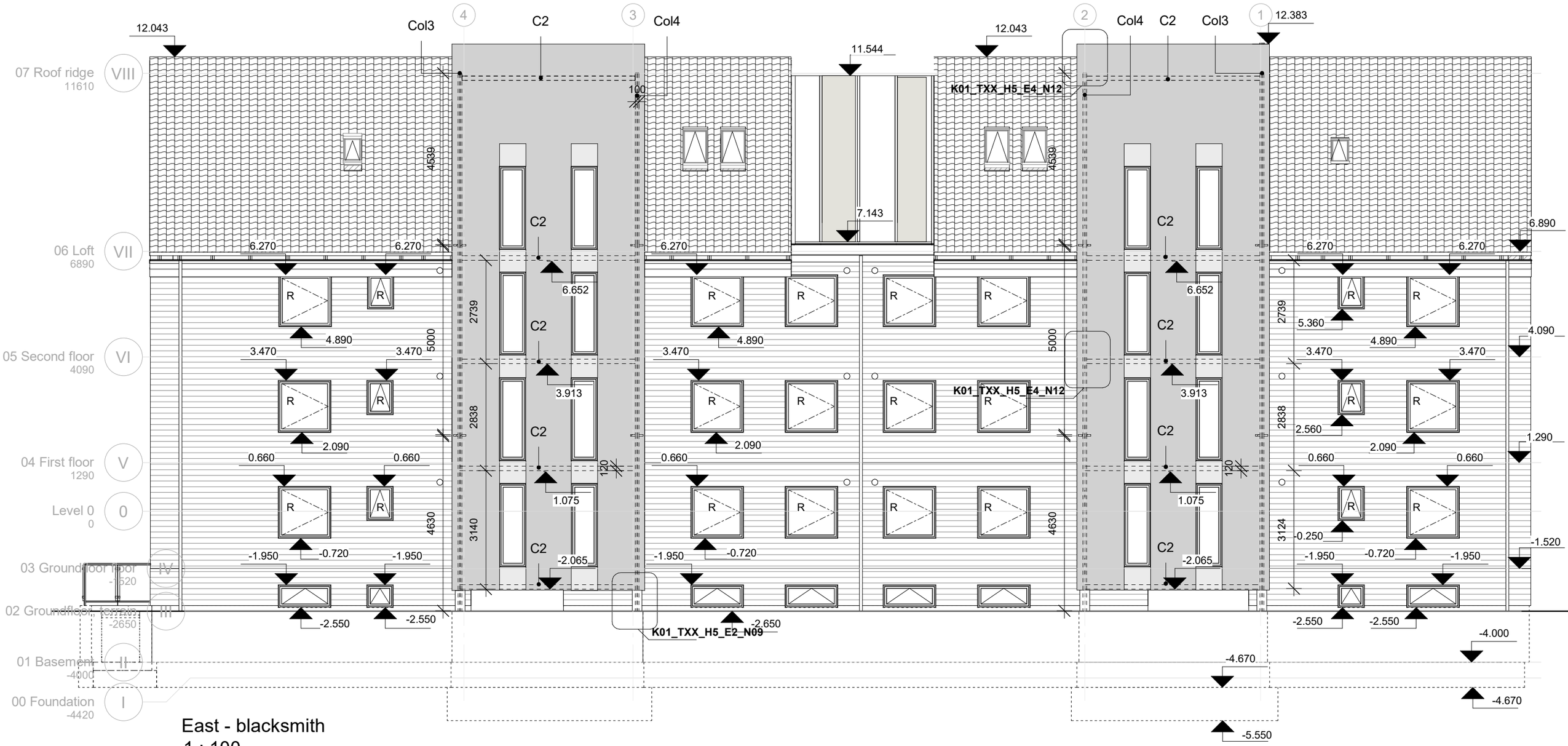
PROJECT: Social housing refurbishment	DATE: 11/15/19	**K01_TXX_H2_EX_N08**
SUBJECT: Blacksmith - north and south elevation	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



East - blacksmith
1 : 100

LEGEND

new steel beam

new galvanized steel IPE column

BEAMS:

C2 - IPE120, S235, length: 4690 mm, width: 64 mm
Relevant details:
K01_TXX_H5_E4_N12 - beam and IPE column

COLUMNS:

Col3, Col4, Col5, Col6 - IPE200, S235,
t = 15mm/9mm
Length: 7517 mm
Relevant details:
K01_TXX_H5_E5_N01 - two IPE columns
K01_TXX_H5_E2_N09 - IPE column
and concrete wall

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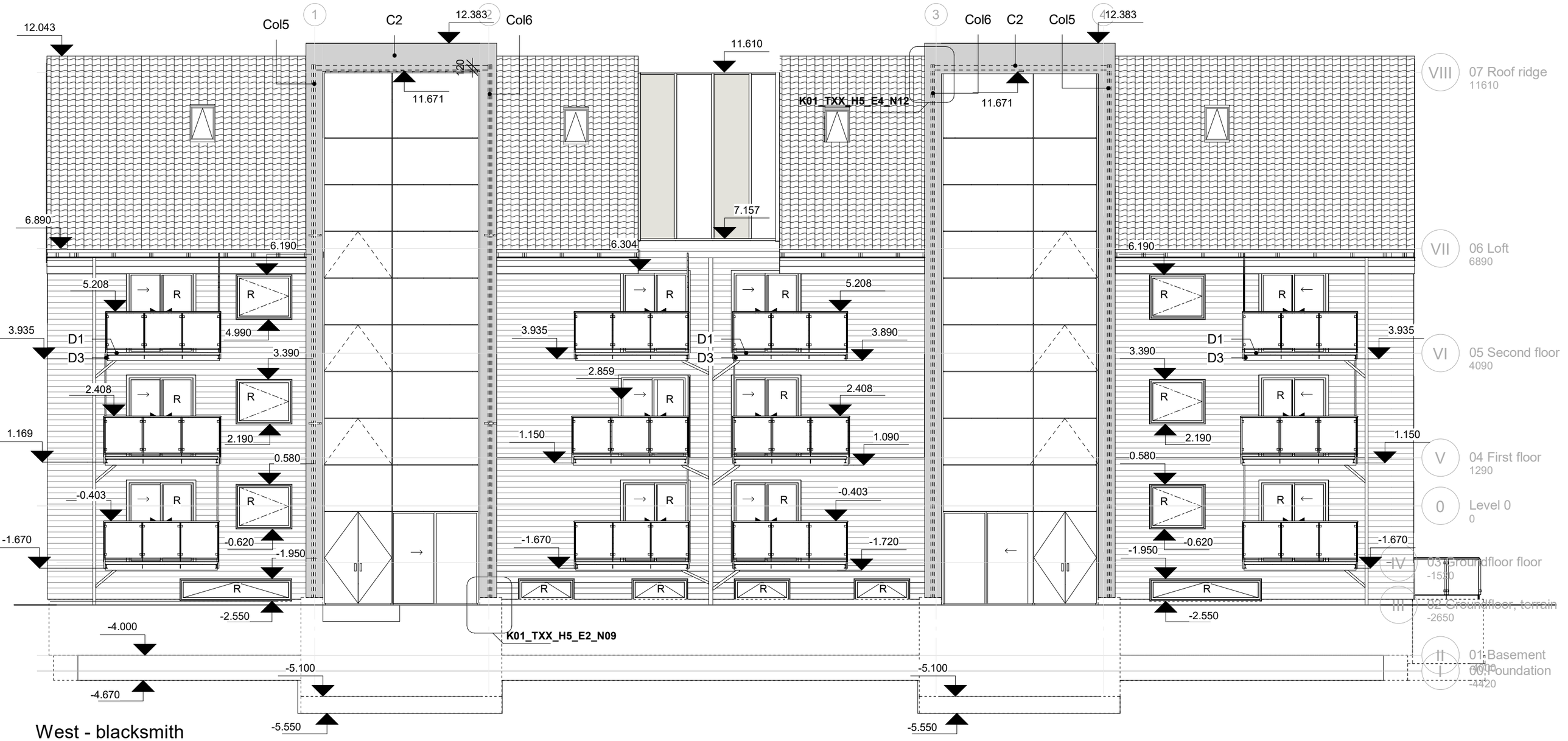
PROJECT: Social housing refurbishment	DATE: 11/15/19	**K01_TXX_H2_EX_N09**
SUBJECT: Blacksmith - east elevation	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



West - blacksmith
1 : 100

LEGEND

new steel beam

new galvanized steel IPE column

BEAMS:

C1 - IPE100, S235, length: 2050 mm, width: 55 mm
Relevant details:
K01_TXX_H5_E4_N13 - beam resting on external wall

D1 - UPE80, S235, length: 3050 mm
Relevant details:
K01_TXX_H5_E4_N09 - balcony railing

D2 - UPE80, S235, length: 2060 mm
Relevant details:
K01_TXX_H5_E4_N08 - balcony
and facade

D3 - IPE100, S235, length: 2000 mm
Relevant details:
K01_TXX_H5_E4_N08 - balcony
and facade

COLUMNS:

Col3, Col4, Col5, Col6 - IPE200, S235,
t = 15mm/9mm
Length: 7517 mm
Relevant details:
K01_TXX_H5_E5_N01 - two IPE columns
K01_TXX_H5_E2_N09 - IPE column
and concrete wall

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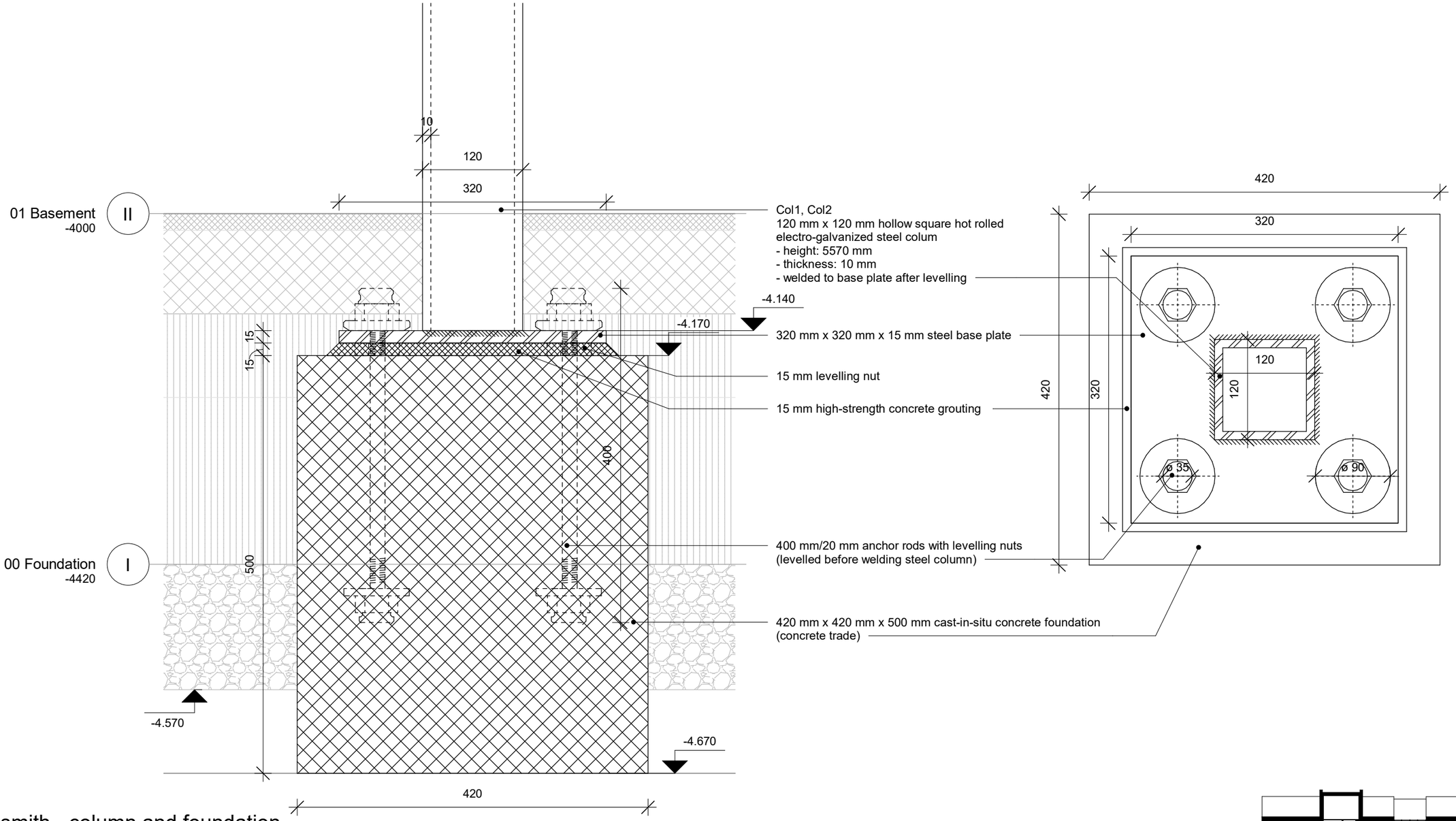
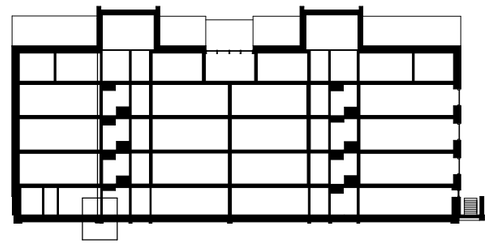
PROJECT: Social housing refurbishment	DATE: 11/15/19	**K01_TXX_H2_EX_N10**
SUBJECT: Blacksmith - west elevation	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Blacksmith - column and foundation
1 : 5

PROCESS:
1. Casting 420 mm x 420 mm x 500 mm foundation footing (concrete and demolition trade)
2. 450 mm anchor rods inserted in freshly-casted foundation (concrete and demolition trade)
3. 320 mm x 320 mm x 15 mm steel base plate placed on top on levelling nuts in upper part of anchor rod
4. Base plate levelled with levelling nuts
5. Fixing upper washer and nut to fix base plate
6. Casting 15 mm of grouting under base plate
7. Delivering, lifting and welding 120x120mm hollow square column to base plate

DETAIL RELEVANT TO FOLLOWING COMPONENTS:
Columns: Col1, Col2



Cross section CC

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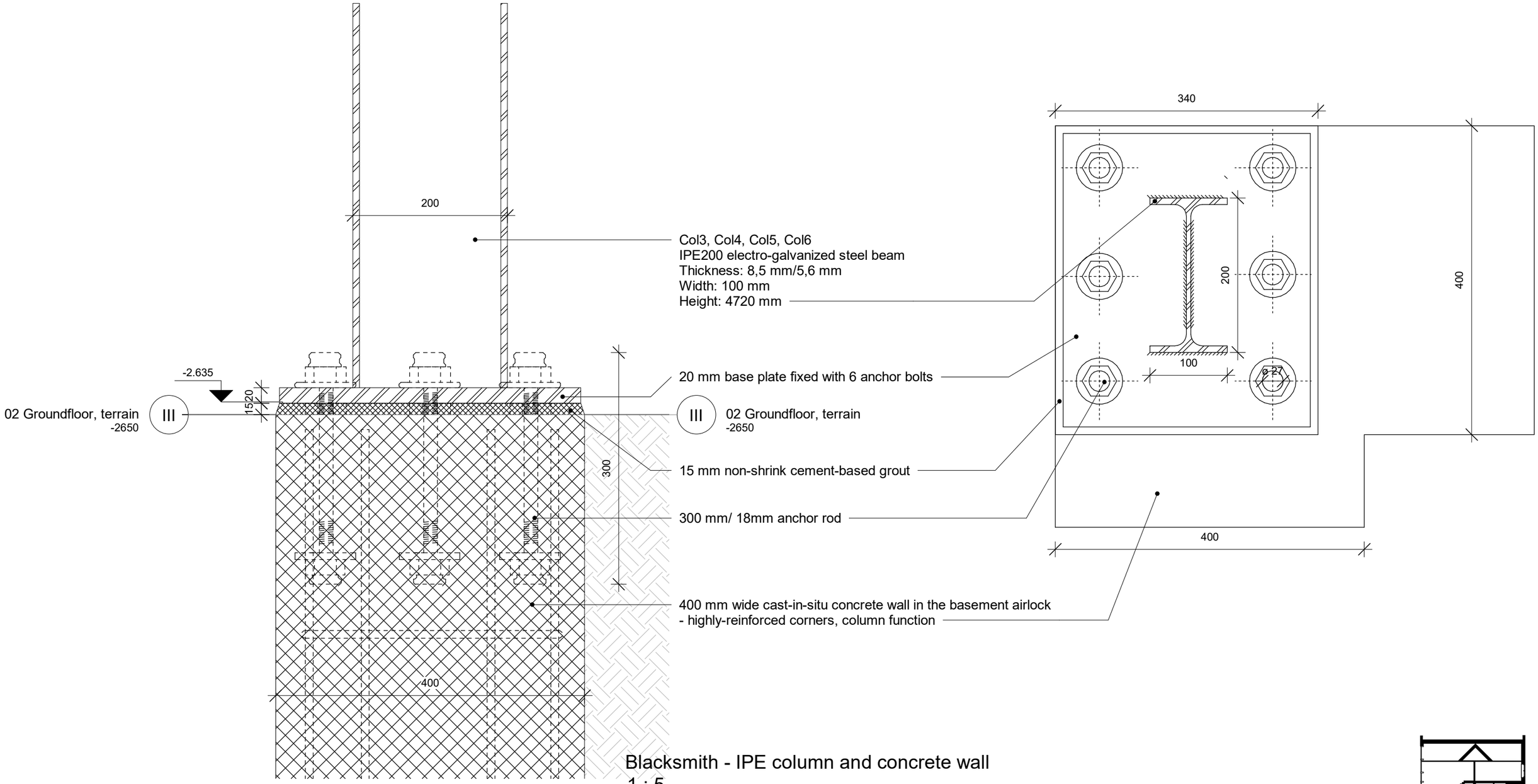
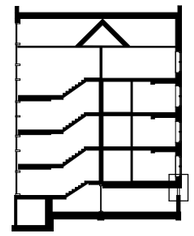
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E0_N05
SUBJECT: Blacksmith - detail - square column and foundation	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Blacksmith - IPE column and concrete wall
1 : 5



Cross section BB

PROCESS:
1. Placing formwork and reinforcement (concrete and demolition trade)
2. Placing 300 mm deer anchor bolts (concrete and demolition trade)
3. Casting 400 mm wide basement wall (concrete and demolition trade)
4. 400 mm x 320 mm x 20 mm steel base plate placed on top on levelling nuts in upper part of anchor rod
5. Base plate levelled with levelling nuts
6. Fixing upper washer and nut to fix base plate
7. Casting 15 mm of grouting under base plate
7. Delivering, lifting and welding IPE200 column to base plate

DETAIL RELEVANT TO FOLLOWING COMPONENTS:
Columns: Col3, Col4, Col5, Col6

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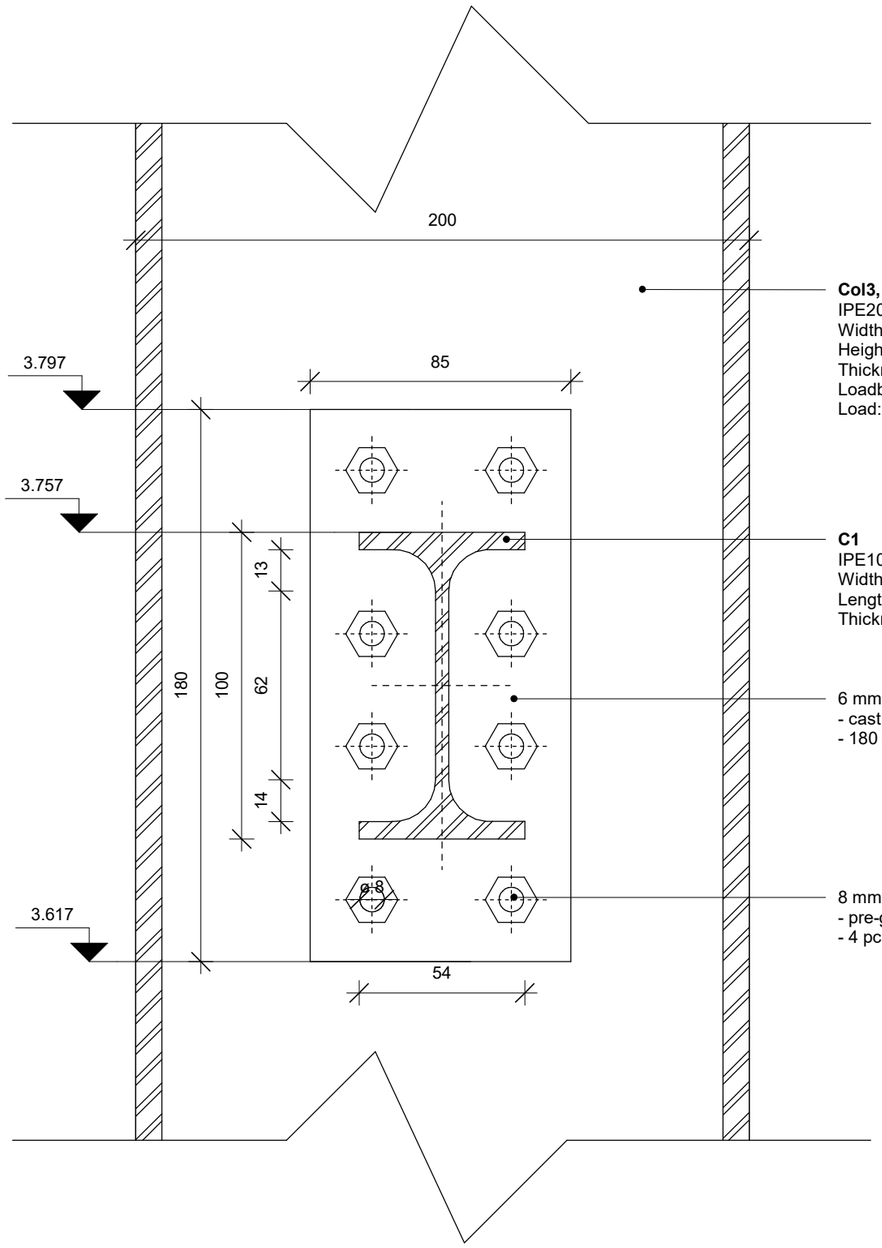
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E2_N09
SUBJECT: Blacksmith - detail - IPE column and concrete wall	SCALE: As indicated	
DRAWN BY: Junyu Jia/ Carina Pronscaia (group 8)	CLASS: AH51P-19S	

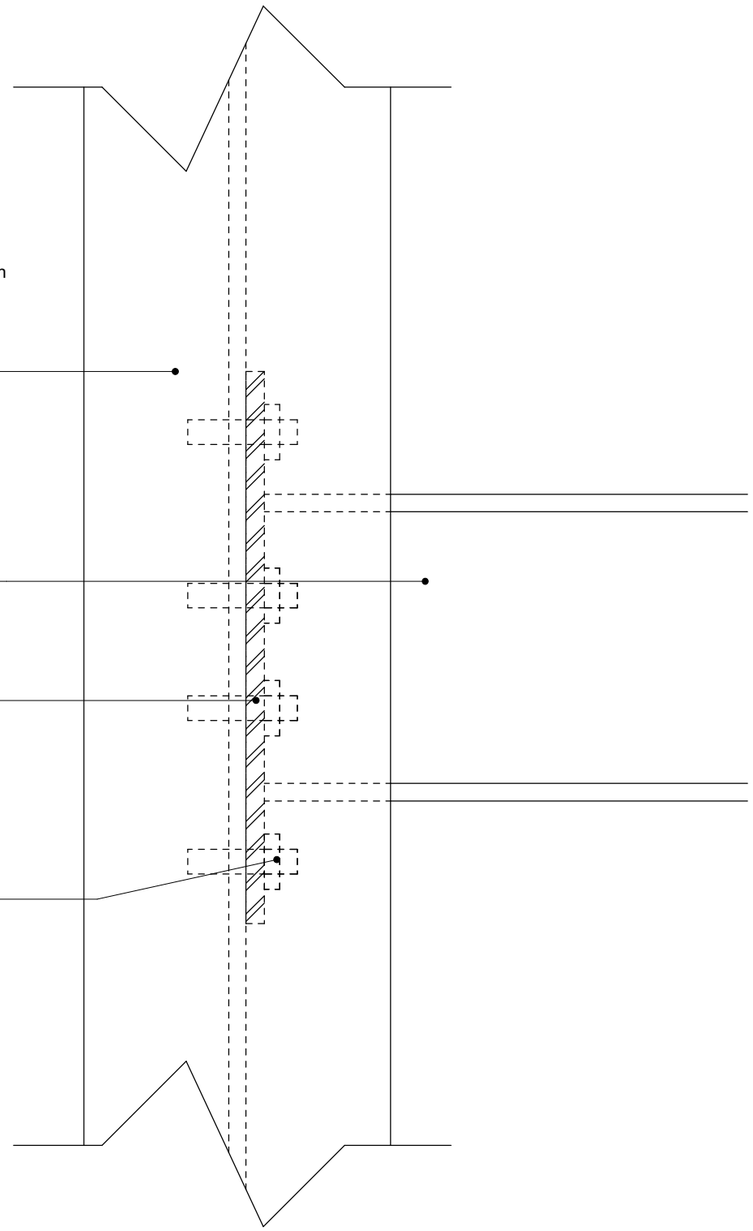


Col3, Col4, Col5, Col6
IPE200 galvanized steel column for extension
Width: 100 mm
Height: 5000 mm
Thickness: 8,6 mm/5,6 mm
Loadbearing capacity: 24,03 ton
Load: 17,14 ton

C1
IPE100 galvanized steel beam for extension
Width: 55 mm
Length: 2050 mm
Thickness: 5,7 mm/4,1 mm

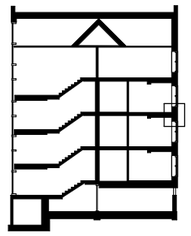
6 mm galvanized steel end-plate
- cast together with IPE beam
- 180 mm x 85 mm

8 mm x 25 mm 2 grade connection bolts
- pre-galvanized steel
- 4 pcs. each side



PROCESS:
1. Mounting of IPE200 steel column to concrete wall in the basement
(Ref. K01_TXX_H5_E2_N09 - IPE column and concrete wall)
2. Delivering and lifting IPE100 steel beam with pre-casted end-plate
3. Connecting IPE100 beam to IPE200 beam with 8 pcs. 8 mm x 30 mm connector bolts

DETAIL RELEVANT TO FOLLOWING COMPONENTS;
- Col3, Col4, Col5, Col6
- C1, C2, E1, E2, E3, E4



Cross section BB

Blacksmith - beam and IPE column
1 : 2

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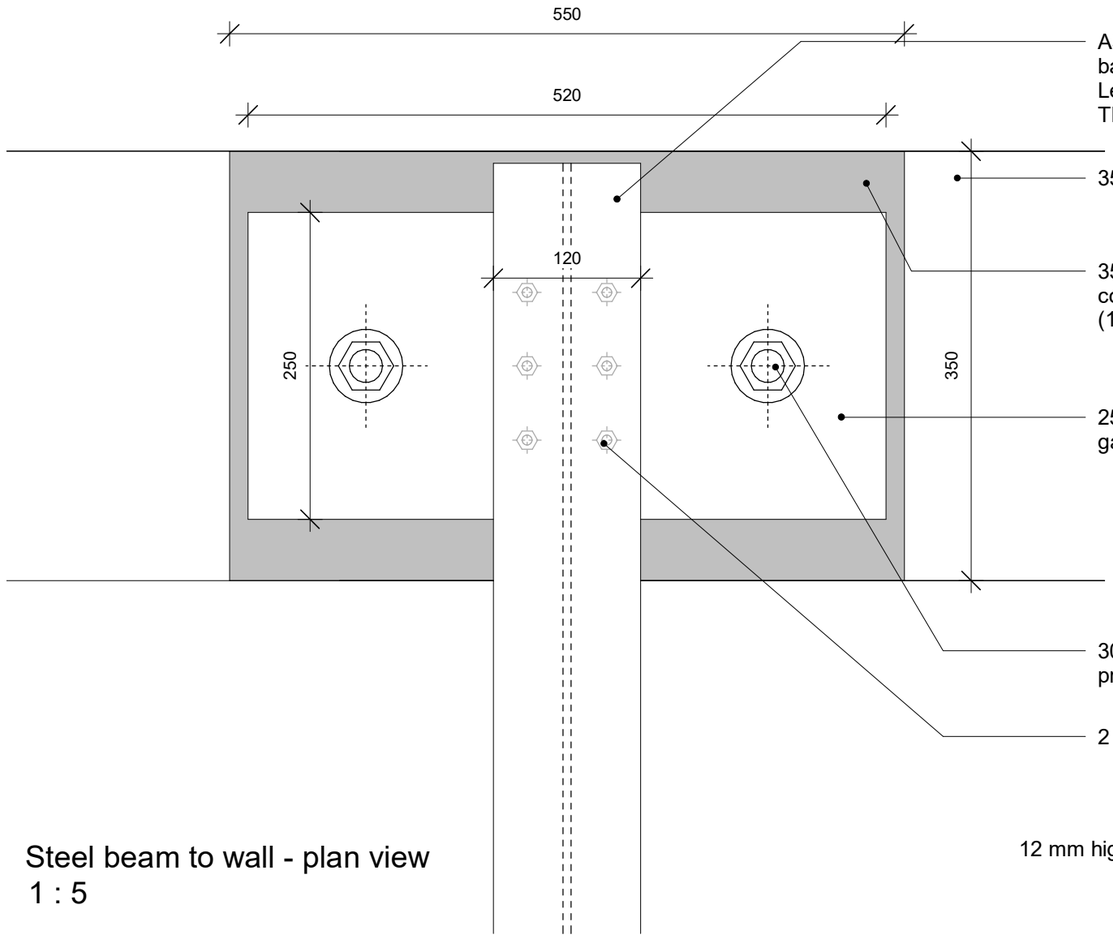
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E4_N12
SUBJECT: Blacksmith - Detail - IPE column and beam	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Steel beam to wall - plan view
1 : 5

A5 - HEB140 electro-galvanized steel beam for bauma deck support
Length: 4480 mm
Thickness: 11 mm

350 mm existing external masonry wall

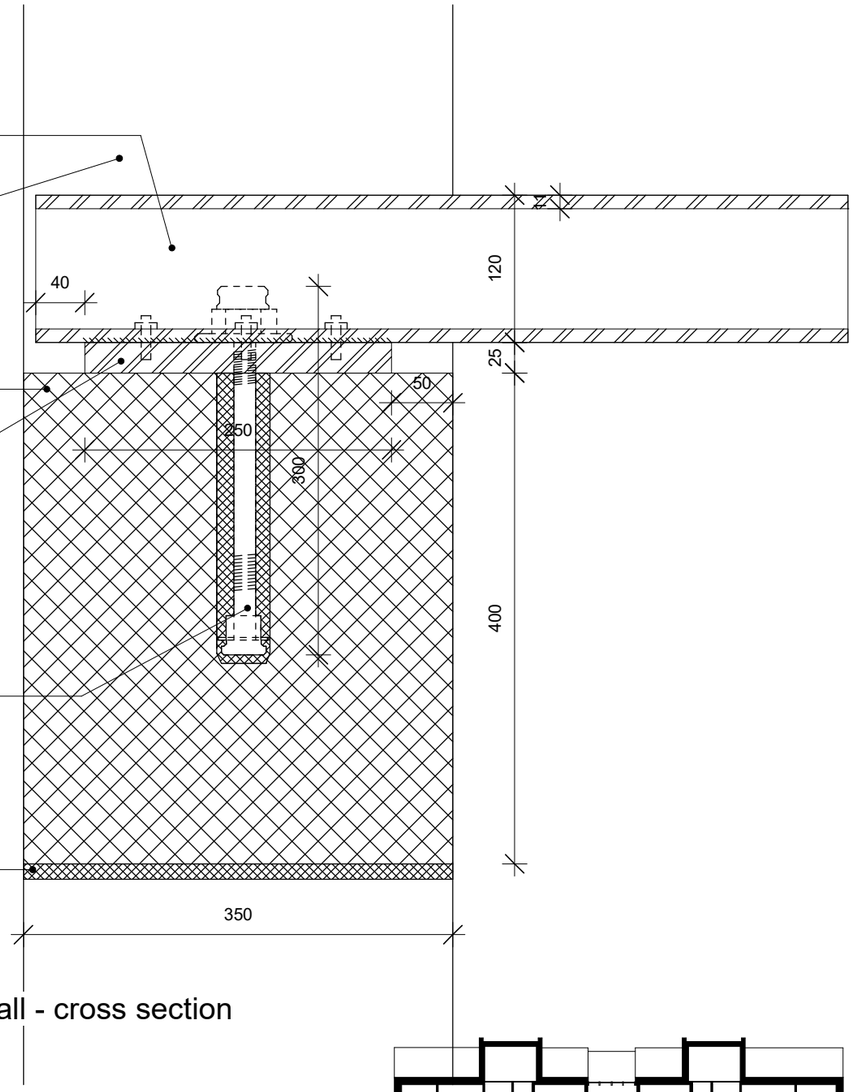
350 mm x 400 mm x 550 mm prefabricated concrete padstone
(150 mm x 400 mm x 300 mm for internal walls)

25 mm x 250 mm x 520 mm galvanized steel shims

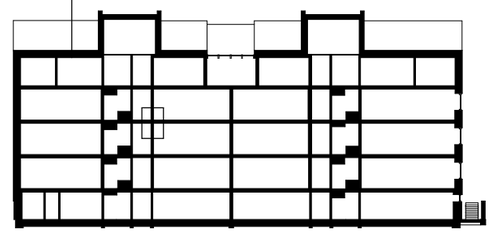
300 mm/15 mm anchor bolt, placed in a pre-made pocket and grouted

2 grade 8 mm x 30 mm galvanized steel bolts

12 mm high-strength cement-based mortar



Steel beam to wall - cross section
1 : 5



Cross section CC

PROCESS:
1. Demolition of an opening in external masonry wall (concrete and demolition trade)
2. Demolition of an internal wall and placing temporary supports
3. Placing prefabricated padstone on 12 mm mortar
4. Placing steel shims on top and fixing it with anchor bolts
5. Grounting of anchor bolts
6. Mounting HEB120 steel beam on top, fixing it to shims with 8 mm x 30 mm steel bolts and side welding

DETAIL RELEVANT TO FOLLOWING COMPONENTS:
Beams: A1-A12, B1-B3, C1, F1-F5.1

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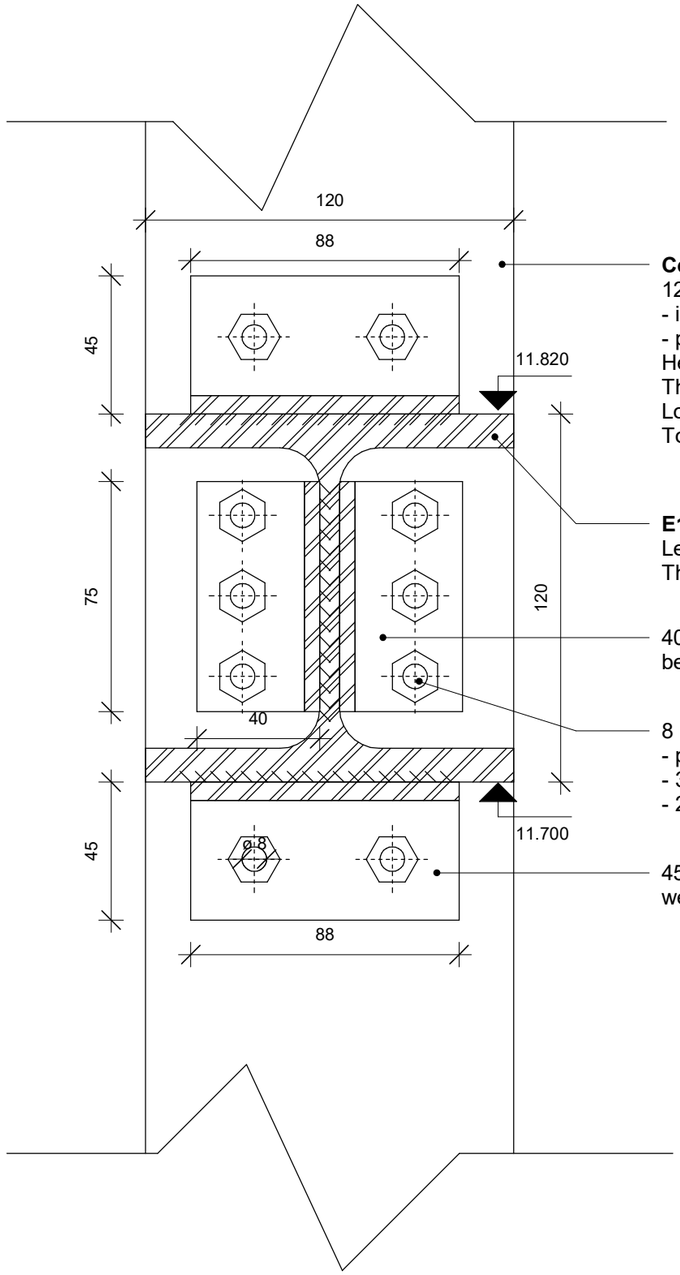
PROJECT: Social housing refurbishment	DATE: 01/06/20	K01_TXX_H5_E4_N13
SUBJECT: Blacksmith - detail - beam and facade	SCALE: As indicated	
DRAWN BY: Sarlota Sustrova/ Carina Pronscaia (group 8)	CLASS: AH51P-19S	



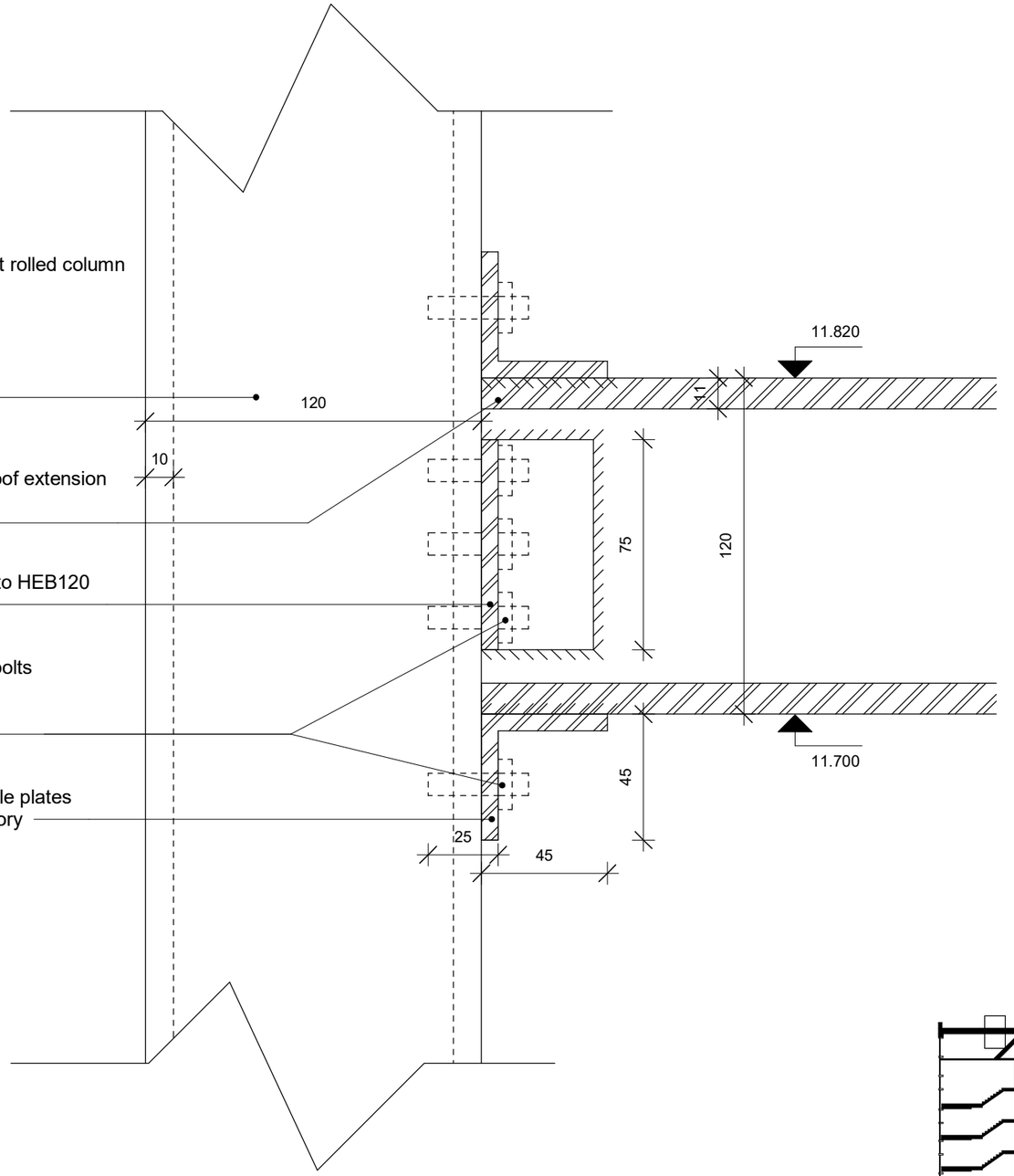
Col1, Col2
120 mm x 120 mm hollow square hot rolled column
- internal for extension roof support
- pre-galvanized
Height: 5570 mm
Thickness: 10 mm
Loadbearing capacity: 9,6 ton
Total load: 3,45 ton

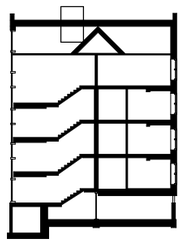
E1 - HEB120 galvanized beam for roof extension
Length: 7280 mm
Thickness: 11 mm/6,5 mm

40 mm x 75 mm web cleats welded to HEB120 beam on the factory

8 mm x 25 mm 2 grade connection bolts
- pre-galvanized steel
- 3 pcs. each side web cleat
- 2 pcs. each angle plate

45 mm x 88 mm top and bottom angle plates welded to HEB120 beam on the factory





Cross section BB

PROCESS:
1. Mounting 120 mm hollow square column to foundation
2. Delivering and lifting HEB120 beam with pre-welded angle plates and web cleats
3. Connecting HEB120 beam to 120 mm hollow square column with 10 pcs. of 8 mmx 25 mm connection bolts

DETAIL RELEVANT TO FOLLOWING COMPONENTS:
- Columns: Col1, Col2
- Beams: E1, E2, E3, E4

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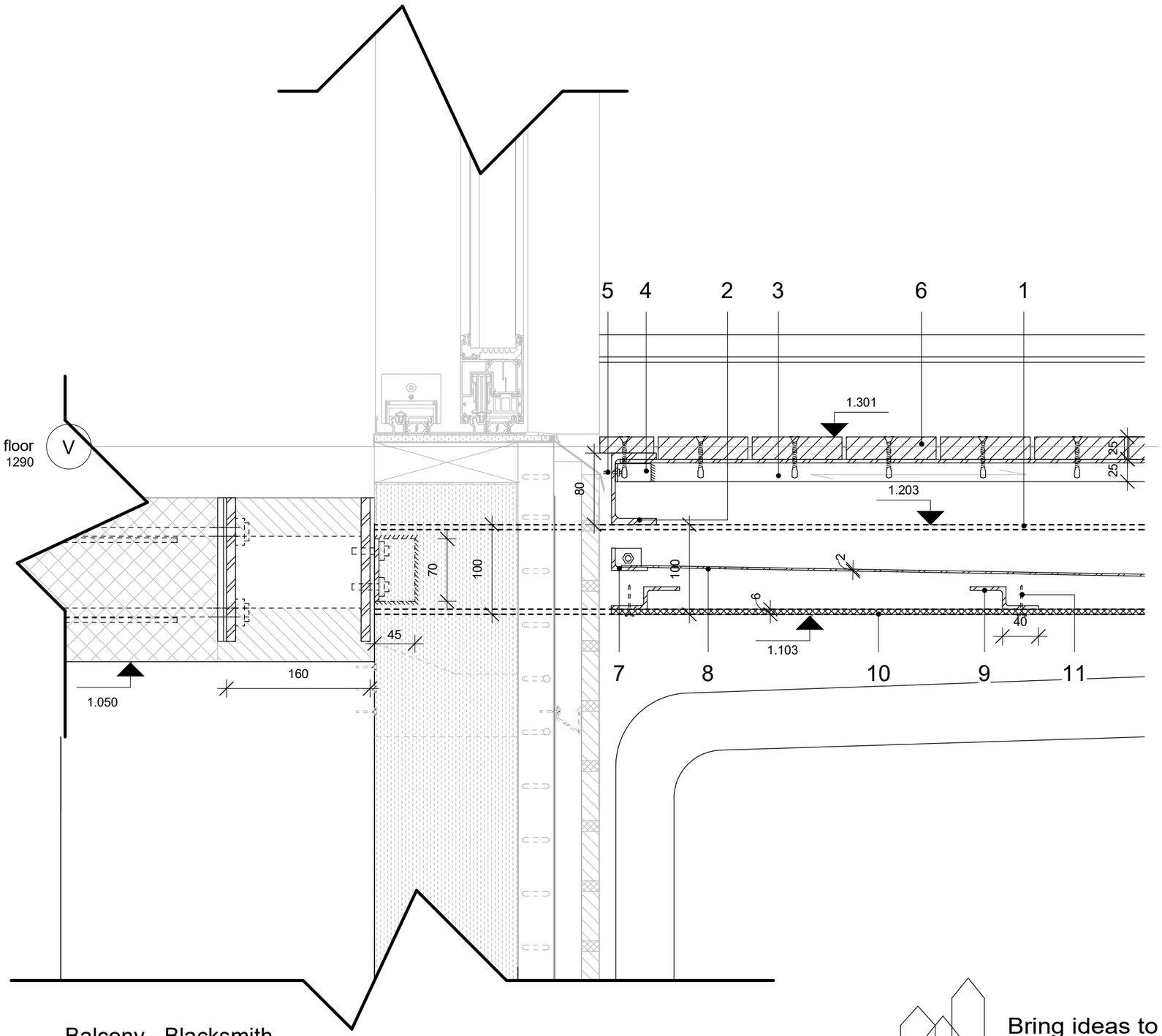
PROJECT: Social housing refurbishment	DATE: 15/11/19	**K01_TXX_H5_E7_N12**
SUBJECT: Blacksmith - detail - square column and beam	SCALE: As indicated	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Balcony - Blacksmith
1 : 5

PROCESS:
1. Demolition of existing bauma deck (demolition and concrete)
2. Demolition of the opening in the facade for balcony connector (demolition and concrete)
3. Placing SBC balcony connector with thermal separator, connecting reinforcement bars to existing reinforcement
4. Connecting IPE100 side beams to SBC connectors
5. Casting concrete on top of reinforcement connection (bricklayer)
6. Closing the opening in facade (bricklayer)
After closing the building and installing Stofix system:
7. Connecting UPE80 longitudinal beams to IPE100 beams
8. Connecting L-shaped beams to UPE80 beam
9. Connecting L-shaped longitudinal beam to IPE100 beams for drain layer
10. Connecting aluminum sheeting with 2% slope for the drain
11. Decking the balcony with timber boards
12. Siding the balcony with fibre cement boards
13. Fixing steel railings to the beams
14. Inserting glass panels

Fire demands: usage category 4, R60
1. D3 - IPE100 electro-galvanized steel beam fixed to SBC connector
Width: 55 mm
Thickness: 5,7 mm/4,1 mm
Length: 2000 mm
2. D1, D2 - UPE80 electro-galvanized steel beam
Width: 50 mm
Thickness: 7 mm
Length: 2800 mm
3. L-shaped electro-galvanized steel beam fixed to UPE80 neam with angle plates
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm
4. 2 pcs. 40 mm x 40 mm x 2.5 mm angle plate
- pre-welded to L-beam
- connected to UPE beam with 2 pcs. 20 mm x 3 mm connection bolts
5. 20 mm x 3 mm electrogalvanized steel connection bolts
- 2 pcs. from two sides of L-beam
6. 25 mm x 100 mm x 2700 mm pressure-treated timber planks
- 5 mm between each row
- 4,2 mm x 45 mm timber-to-steel Simpson Quik screws
7. L-shaped electro-galvanized steel beam fixed to UPE80 neam with angle plates for aluminum sheet support and to create a slope
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm
8. 2 mm x 600 mm x 1480 mm stainless heat-treated aluminum sheet
Fixed to UPE80 steel beam on the sides and welded together in the middle
Max. dimensions: 150 mm x 2500 mm x 8000 mm
9. 4 mm x 40 mm Z-profile stainless steel beam for siding support
Fixed to L-shaped beam underneath
Spacing: 400 mm
10. 6 mm x 1192 mm x 3050 mm fibre cement board fixed to Z-profile
11. Dyvel Drill HM 8 mm x 35 mm Cembrit screw

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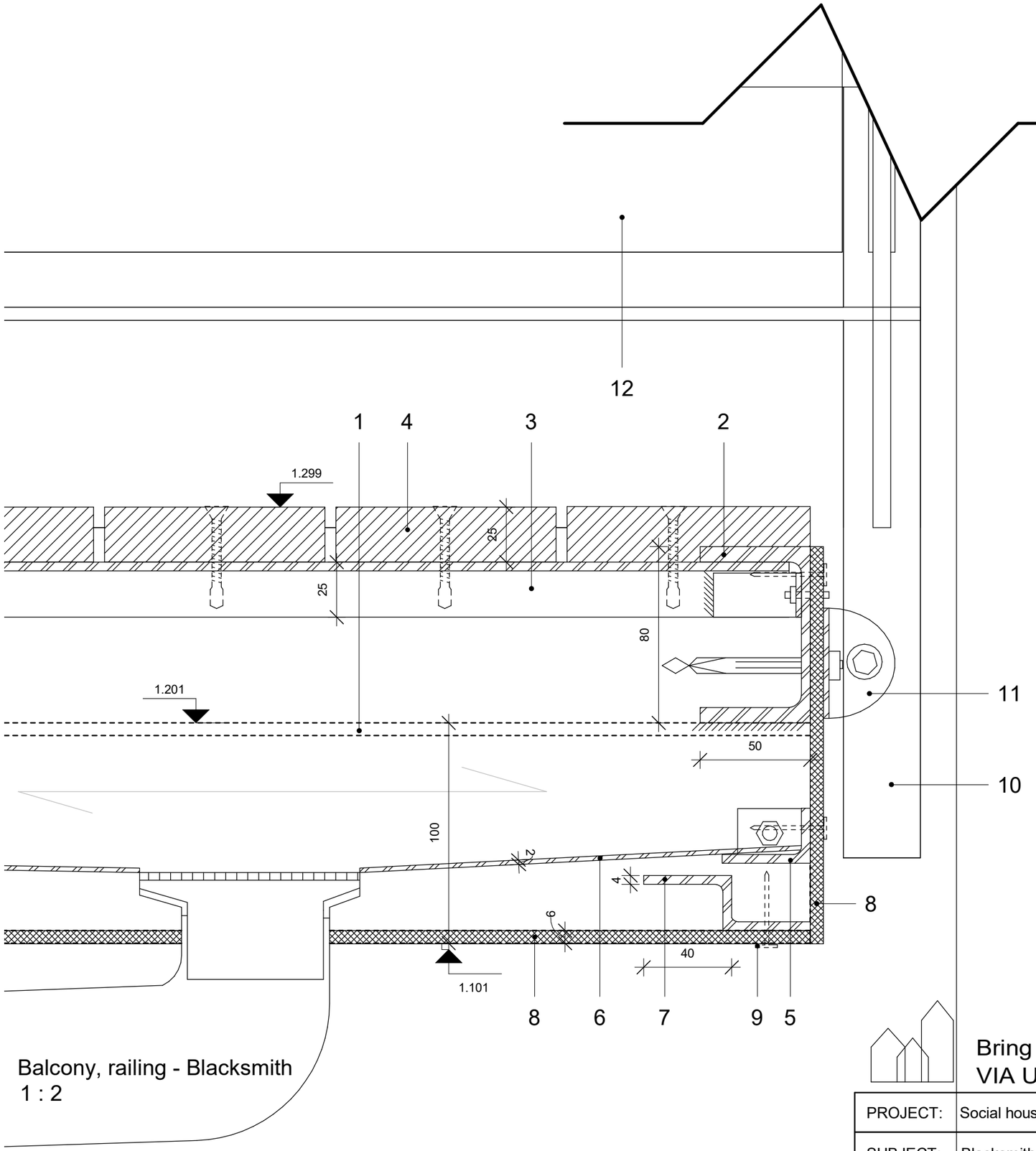
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H5_E4_N08
SUBJECT: Blacksmith - detail - balcony	SCALE: 1 : 5	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Balcony, railing - Blacksmith
1 : 2

PROCESS:
1. Demolition of existing bauma deck (demolition and concrete)
2. Demolition of the opening in the facade for balcony connector (demolition and concrete)
3. Placing SBC balcony connector with thermal separator, connecting reinforcement bars to existing reinforcement
4. Connecting IPE100 side beams to SBC connectors
5. Casting concrete on top of reinforcement connection (bricklayer)
6. Closing the opening in facade (bricklayer)
After closing the building and installing Stofix system:
7. Connecting UPE80 longitudinal beams to IPE100 beams
8. Connecting L-shaped beams to UPE80 beam
9. Connecting L-shaped longitudinal beam to IPE100 beams for drain layer
10. Connecting aluminum sheeting with 2% slope for the drain
11. Decking the balcony with timber boards
12. Siding the balcony with fibre cement boards
13. Fixing steel railings to the beams
14. Inserting glass panels

Fire demands: usage category 4, R60
1. D3 - IPE100 electro-galvanized steel beam fixed to SBC connector
Width: 55 mm
Thickness: 5,7 mm/4,1 mm
Length: 2000 mm
2. D1, D2 - UPE80 electro-galvanized steel beam
Width: 50 mm
Thickness: 7 mm
Length: 2800 mm
3. L-shaped electro-galvanized steel beam fixed to UPE80 neam with angle plates, width: 40 mm, height: 25 mm, thickness: 4 mm, spacing: 400 mm
Connected with 4. 2 pcs. 40 mm x 40 mm x 2.5 mm angle plate
- pre-welded to L-beam
- connected to UPE beam with 2 pcs. 20 mm x 3 mm connection bolts through 20 mm x 3 mm electrogalvanized steel connection bolts
- 2 pcs. from two sides of L-beam
4. 25 mm x 100 mm x 2700 mm pressure-treated timber planks
- 5 mm between each row
- 4,2 mm x 45 mm timber-to-steel Simpson Quik screws
5. L-shaped electro-galvanized steel beam fixed to UPE80 neam with angle plates for aluminum sheet support and to create a slope
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm
6. 2 mm x 600 mm x 1480 mm stainless heat-treated aluminum sheet
Fixed to UPE80 steel beam on the sides and welded together in the middle
Max. dimensions: 150 mm x 2500 mm x 8000 mm
7. 4 mm x 40 mm Z-profile stainless steel beam for siding support
Fixed to L-shaped beam underneath
Spacing: 400 mm
8. 6 mm x 1192 mm x 3050 mm fibre cement board fixed to Z-profile
9. Dyvel Drill HM 8 mm x 35 mm Cembrit screw
10. 35 mm x 1250 mm stainless steel railing and handrail
11. 2 x 45 mm angle brackets connecting each rail to UPE80 and longitudinal stiffener in IPE100 beam from two sides through 5 mm x 80 mm steel bolt
12. 10 mm x 600 mm x 950 mm clear glass panel

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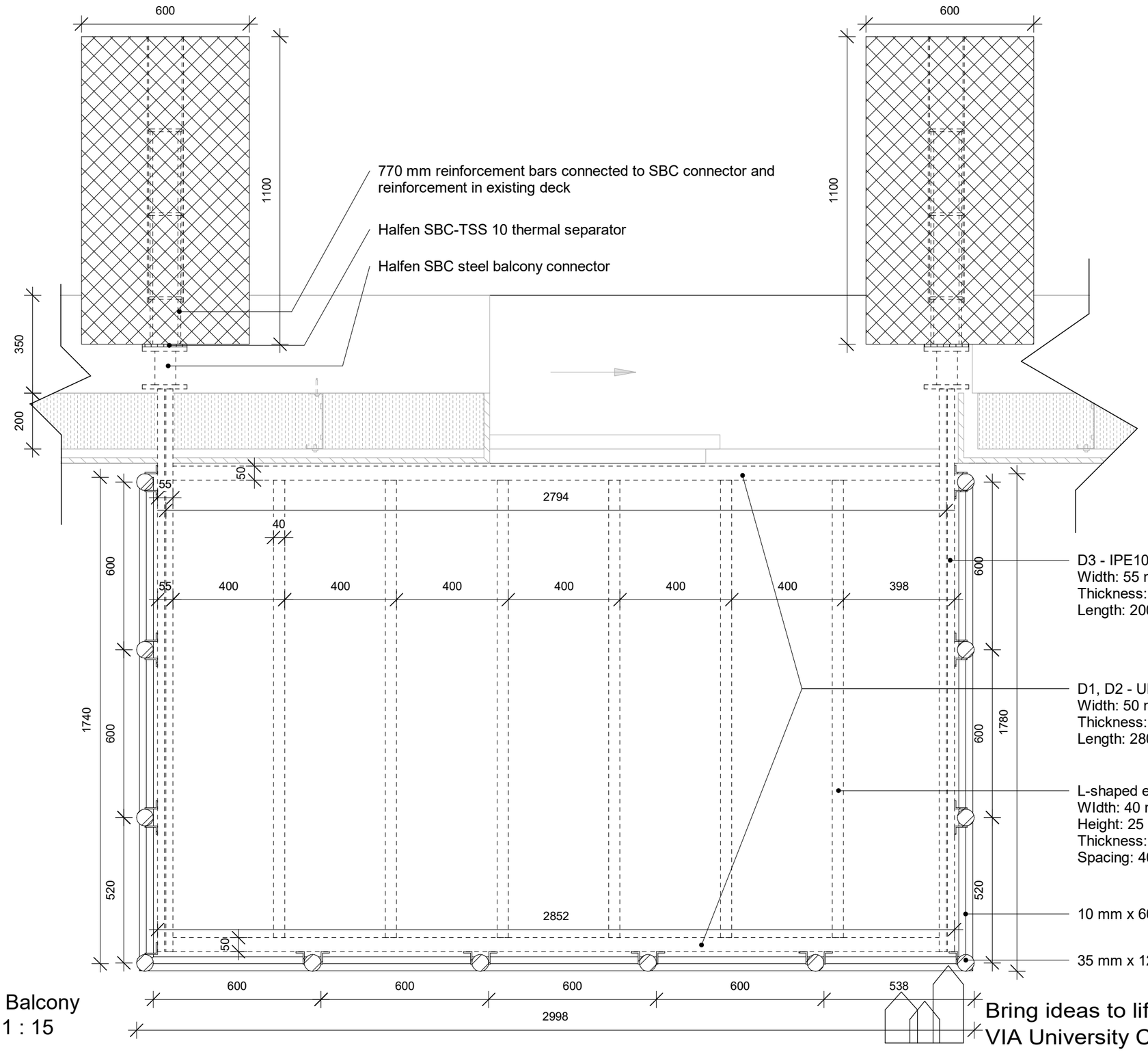
PROJECT:	Social housing refurbishment	DATE: 11/15/19	
SUBJECT:	Blacksmith - detail - balcony railing	SCALE: 1 : 2	**K01_TXX_H5_E4_N09**
DRAWN BY:	Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Balcony
1 : 15

PROCESS:
1. Demolition of existing bauma deck (demolition and concrete)
2. Demolition of the opening in the facade for balcony connector (demolition and concrete)
3. Placing SBC balcony connector with thermal separator, connecting reinforcement bars to existing reinforcement
4. Connecting IPE100 side beams to SBC connectors
5. Casting concrete on top of reinforcement connection (bricklayer)
6. Closing the opening in facade (bricklayer)

After closing the building and installing Stofix system:
7. Connecting UPE80 longitudinal beams to IPE100 beams
8. Connecting L-shaped beams to UPE80 beam
9. Connecting L-shaped longitudinal beam to IPE100 beams for drain layer
10. Connecting aluminum sheeting with 2% slope for the drain
11. Decking the balcony with timber boards
12. Siding the balcony with fibre cement boards
13. Fixing steel railings to the beams
14. Inserting glass panels

D3 - IPE100 electro-galvanized steel beam
Width: 55 mm
Thickness: 5,7 mm/4,1 mm
Length: 2000 mm

D1, D2 - UPE80 electro-galvanized steel beam
Width: 50 mm
Thickness: 7 mm
Length: 2800 mm

L-shaped electro-galvanized steel beam
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm

10 mm x 600 mm x 950 mm clear glass panel

35 mm x 1250 mm stainless steel railing

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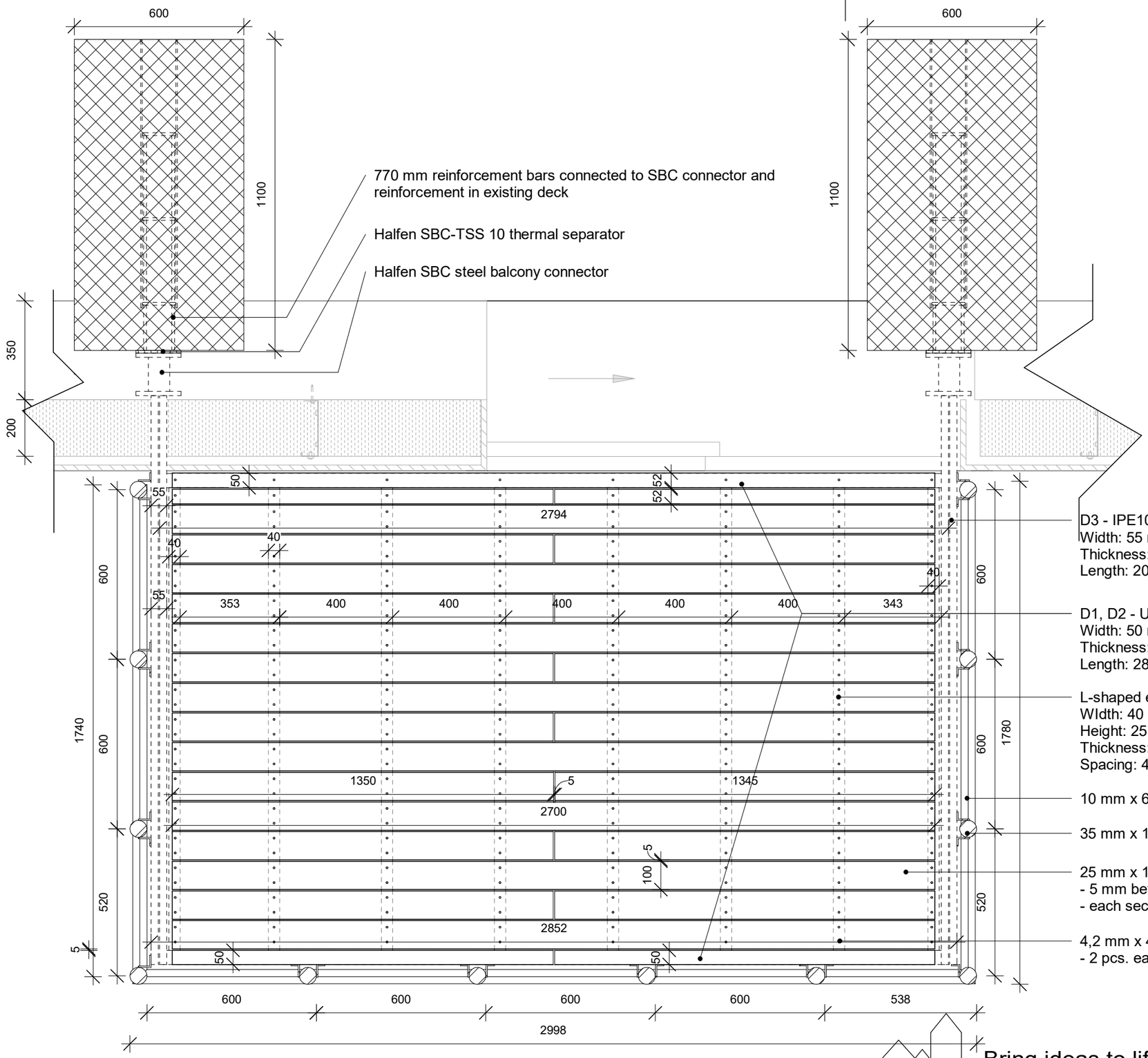
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H1_E4_N06
SUBJECT: Balcony plan - beams	SCALE: 1 : 15	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51-19A	



PROCESS:
1. Demolition of existing bauma deck (demolition and concrete)
2. Demolition of the opening in the facade for balcony connector (demolition and concrete)
3. Placing SBC balcony connector with thermal separator, connecting reinforcement bars to existing reinforcement
4. Connecting IPE100 side beams to SBC connectors
5. Casting concrete on top of reinforcement connection (bricklayer)
6. Closing the opening in facade (bricklayer)

After closing the building and installing Stofix system:
7. Connecting UPE80 longitudinal beams to IPE100 beams
8. Connecting L-shaped beams to UPE80 beam
9. Connecting L-shaped longitudinal beam to IPE100 beams for drain layer
10. Connecting aluminum sheeting with 2% slope for the drain
11. Decking the balcony with timber boards
12. Siding the balcony with fibre cement boards
13. Fixing steel railings to the beams
14. Inserting glass panels

D3 - IPE100 electro-galvanized steel beam
Width: 55 mm
Thickness: 5,7 mm/4,1 mm
Length: 2000 mm

D1, D2 - UPE80 electro-galvanized steel beam
Width: 50 mm
Thickness: 7 mm
Length: 2800 mm

L-shaped electro-galvanized steel beam
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm

10 mm x 600 mm x 950 mm clear glass panel

35 mm x 1250 mm stainless steel railing

25 mm x 100 mm x 2700 mm pressure-treated timber planks
- 5 mm between each row
- each second line divided to two planks for creating a pattern

4,2 mm x 45 mm timber-to-steel Simpson Quik screws
- 2 pcs. each plank-to-beam connection

Balcony - decking
1 : 15

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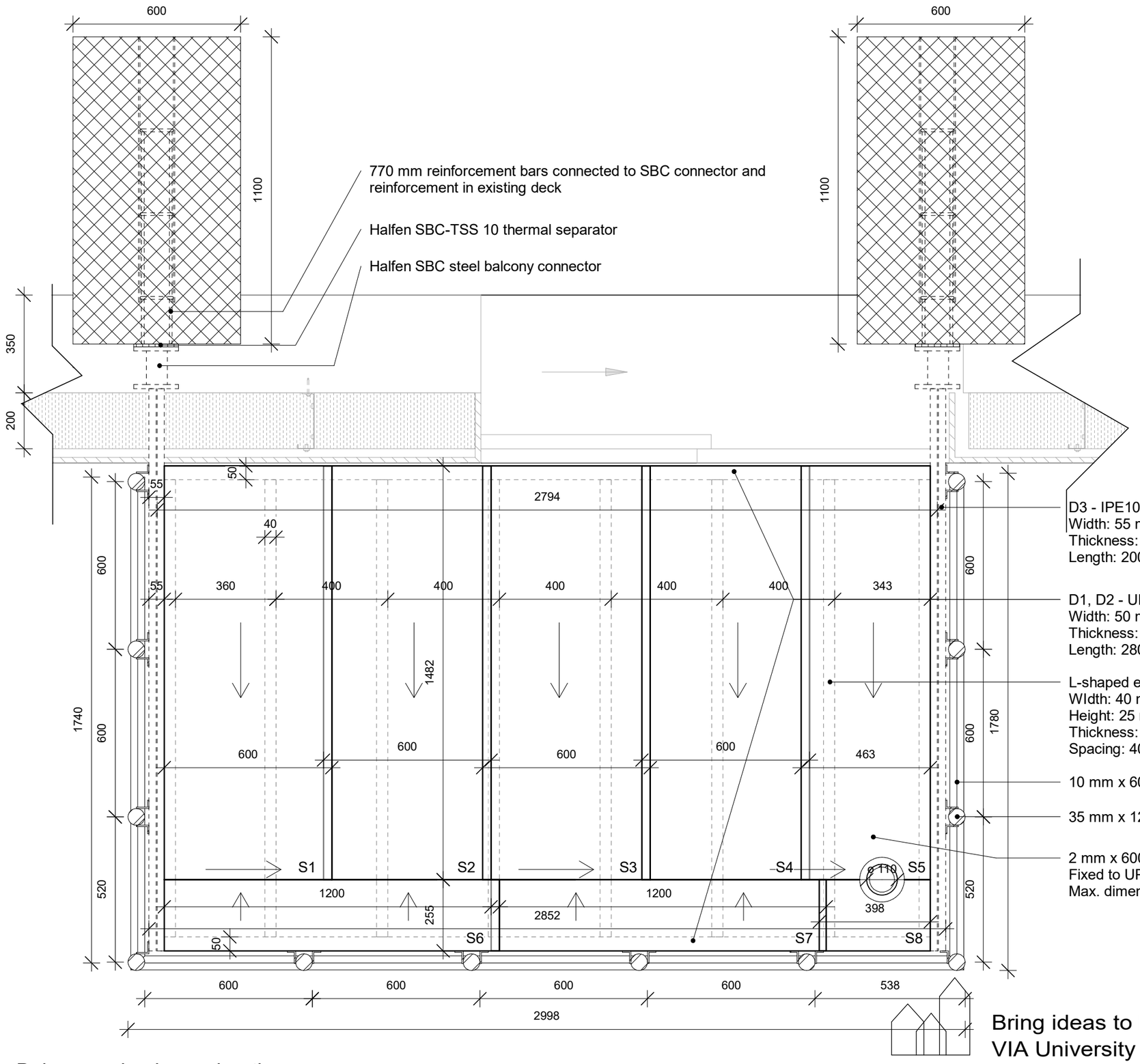
PROJECT: Social housing refurbishment	DATE: 11/15/19	
SUBJECT: Blacksmith - balcony with decking plan	SCALE: 1 : 15	K01_TXX_H1_E4_N07
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



Balcony - aluminum sheeting
1 : 15

PROCESS:
1. Demolition of existing bauma deck (demolition and concrete)
2. Demolition of the opening in the facade for balcony connector (demolition and concrete)
3. Placing SBC balcony connector with thermal separator, connecting reinforcement bars to existing reinforcement
4. Connecting IPE100 side beams to SBC connectors
5. Casting concrete on top of reinforcement connection (bricklayer)
6. Closing the opening in facade (bricklayer)

After closing the building and installing Stofix system:
7. Connecting UPE80 longitudinal beams to IPE100 beams
8. Connecting L-shaped beams to UPE80 beam
9. Connecting L-shaped longitudinal beam to IPE100 beams for drain layer
10. Connecting aluminum sheeting with 2% slope for the drain
11. Decking the balcony with timber boards
12. Siding the balcony with fibre cement boards
13. Fixing steel railings to the beams
14. Inserting glass panels

D3 - IPE100 electro-galvanized steel beam
Width: 55 mm
Thickness: 5,7 mm/4,1 mm
Length: 2000 mm

D1, D2 - UPE80 electro-galvanized steel beam
Width: 50 mm
Thickness: 7 mm
Length: 2800 mm

L-shaped electro-galvanized steel beam
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm

10 mm x 600 mm x 950 mm clear glass panel

35 mm x 1250 mm stainless steel railing

2 mm x 600 mm x 1480 mm stainless heat-treated aluminum sheet
Fixed to UPE80 steel beam on the sides and welded together in the middle
Max. dimensions: 150 mm x 2500 mm x 8000 mm

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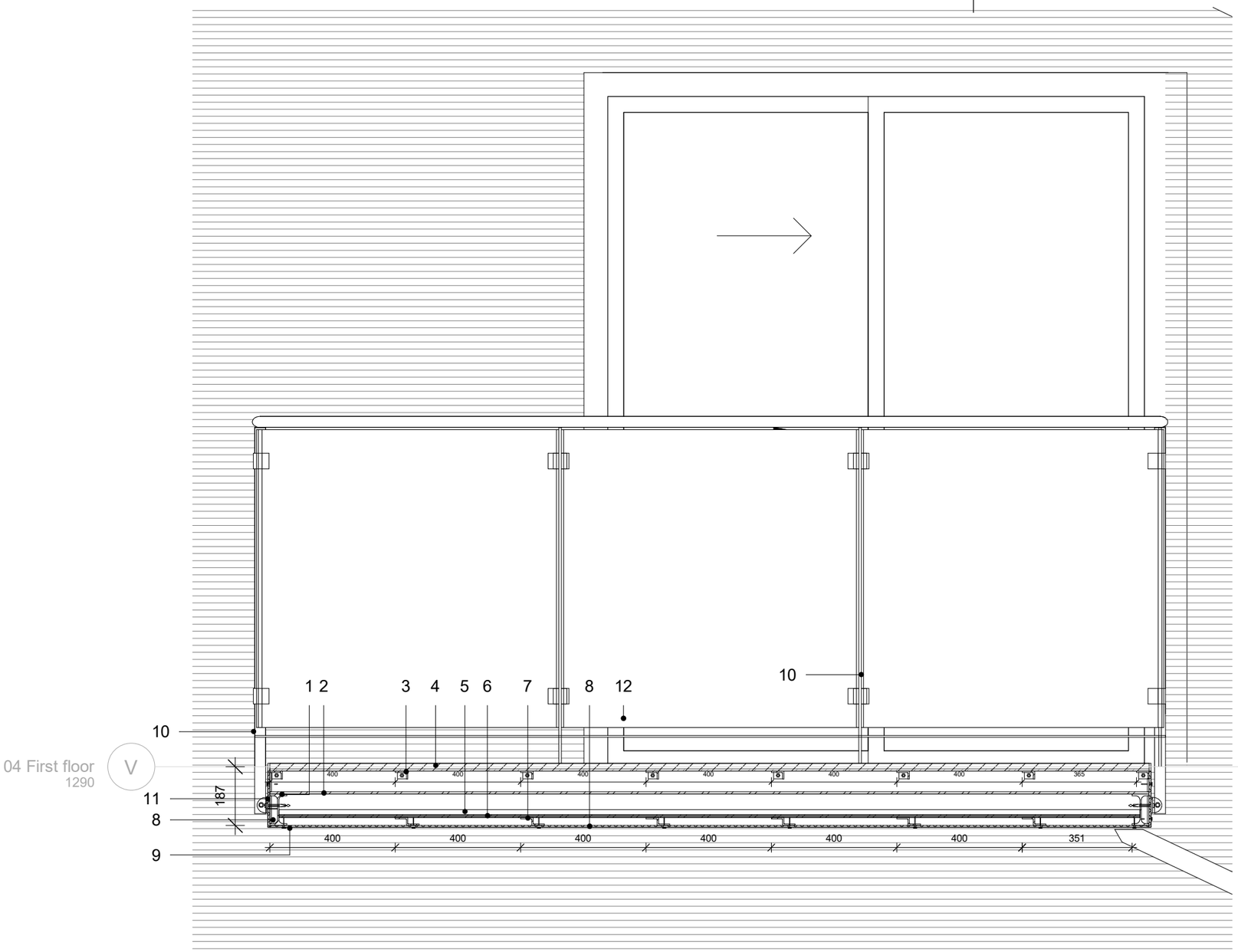
PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H1_E4_N08
SUBJECT: Blacksmith - balcony with sheeting plan	SCALE: 1 : 15	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	



West - blacksmith - balcony front view
1 : 15

PROCESS:
1. Demolition of existing bauma deck (demolition and concrete)
2. Demolition of the opening in the facade for balcony connector (demolition and concrete)
3. Placing SBC balcony connector with thermal separator, connecting reinforcement bars to existing reinforcement
4. Connecting IPE100 side beams to SBC connectors
5. Casting concrete on top of reinforcement connection (bricklayer)
6. Closing the opening in facade (bricklayer)
After closing the building and installing Stofix system:
7. Connecting UPE80 longitudinal beams to IPE100 beams
8. Connecting L-shaped beams to UPE80 beam
9. Connecting L-shaped longitudinal beam to IPE100 beams for drain layer
10. Connecting aluminum sheeting with 2% slope for the drain
11. Decking the balcony with timber boards
12. Siding the balcony with fibre cement boards
13. Fixing steel railings to the beams
14. Inserting glass panels

Fire demands: usage category 4, R60
1. D3 - IPE100 electro-galvanized steel beam fixed to SBC connector
Width: 55 mm
Thickness: 5,7 mm/4,1 mm
Length: 2000 mm
2. D1, D2 - UPE80 electro-galvanized steel beam
Width: 50 mm
Thickness: 7 mm
Length: 2800 mm
3. L-shaped electro-galvanized steel beam fixed to UPE80 neam with angle plates
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm
4. 25 mm x 100 mm x 2700 mm pressure-treated timber planks
- 5 mm between each row
- 4,2 mm x 45 mm timber-to-steel Simpson Quik screws
5. L-shaped electro-galvanized steel beam fixed to UPE80 neam with angle plates for aluminum sheet support and to create a slope
WIdth: 40 mm
Height: 25 mm
Thickness: 4 mm
Spacing: 400 mm
6. 2 mm x 600 mm x 1480 mm stainless heat-treated aluminum sheet
Fixed to UPE80 steel beam on the sides and welded together in the middle
Max. dimensions: 150 mm x 2500 mm x 8000 mm
7. 4 mm x 40 mm Z-profile stainless steel beam for siding support
Fixed to L-shaped beam underneath
Spacing: 400 mm
8. 6 mm x 1192 mm x 3050 mm fibre cement board fixed to Z-profile
9. Dyvel Drill HM 8 mm x 35 mm Cembrit screw
10. 35 mm x 1250 mm stainless steel railing and handrail
11. 2 x 45 mm angle brackets connecting each rail to UPE80 and longitudinal stiffener in IPE100 beam from two sides through 5 mm x 80 mm steel bolt
12. 10 mm x 600 mm x 950 mm clear glass panel

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PROJECT: Social housing refurbishment	DATE: 11/15/19	K01_TXX_H2_EX_N11
SUBJECT: Blacksmith - balcony front view	SCALE: 1 : 15	
DRAWN BY: Carina Pronscaia (group 8)	CLASS: AH51P-19S	