chaptereight
Technical Documentation

Site Plan

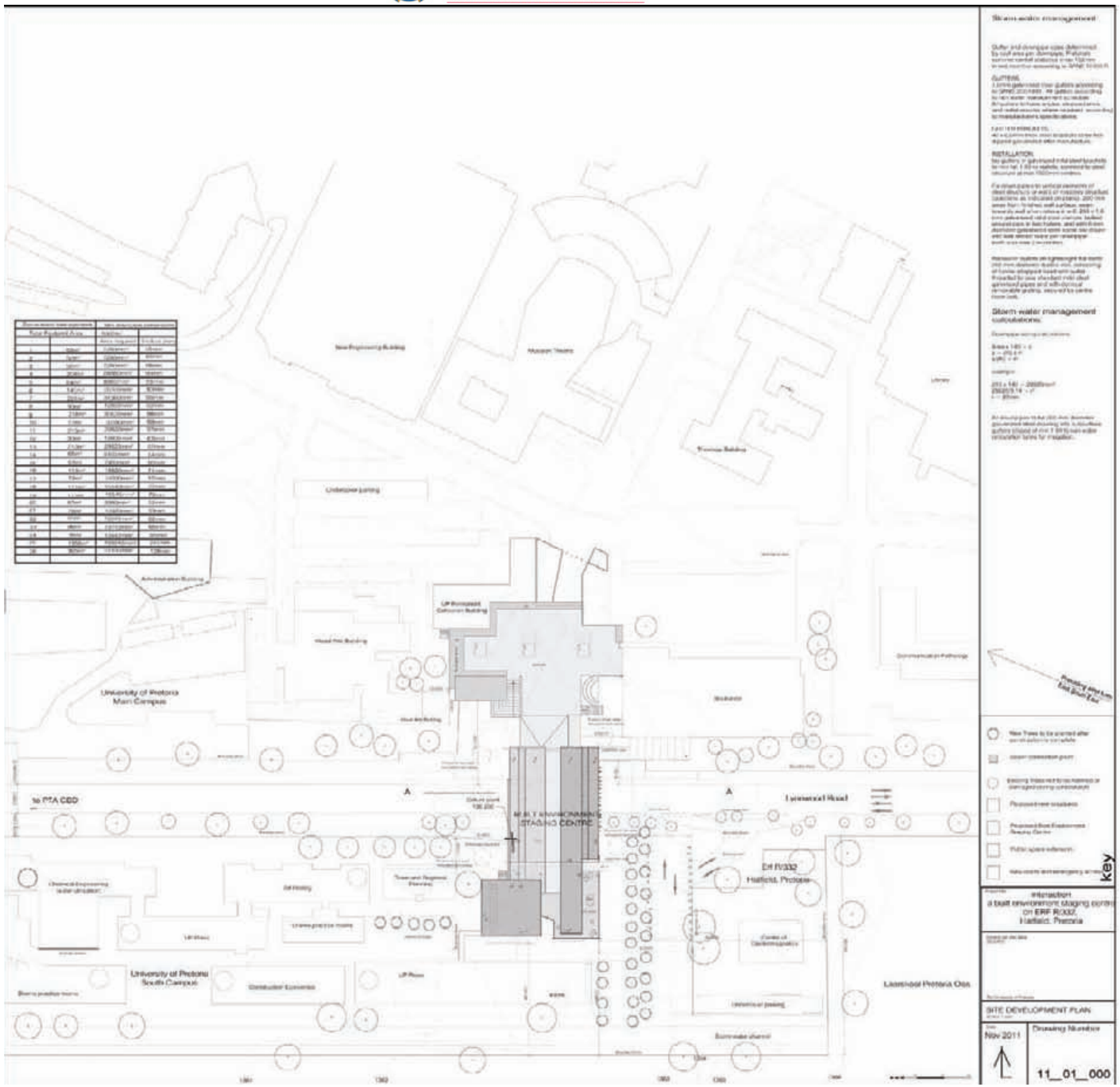
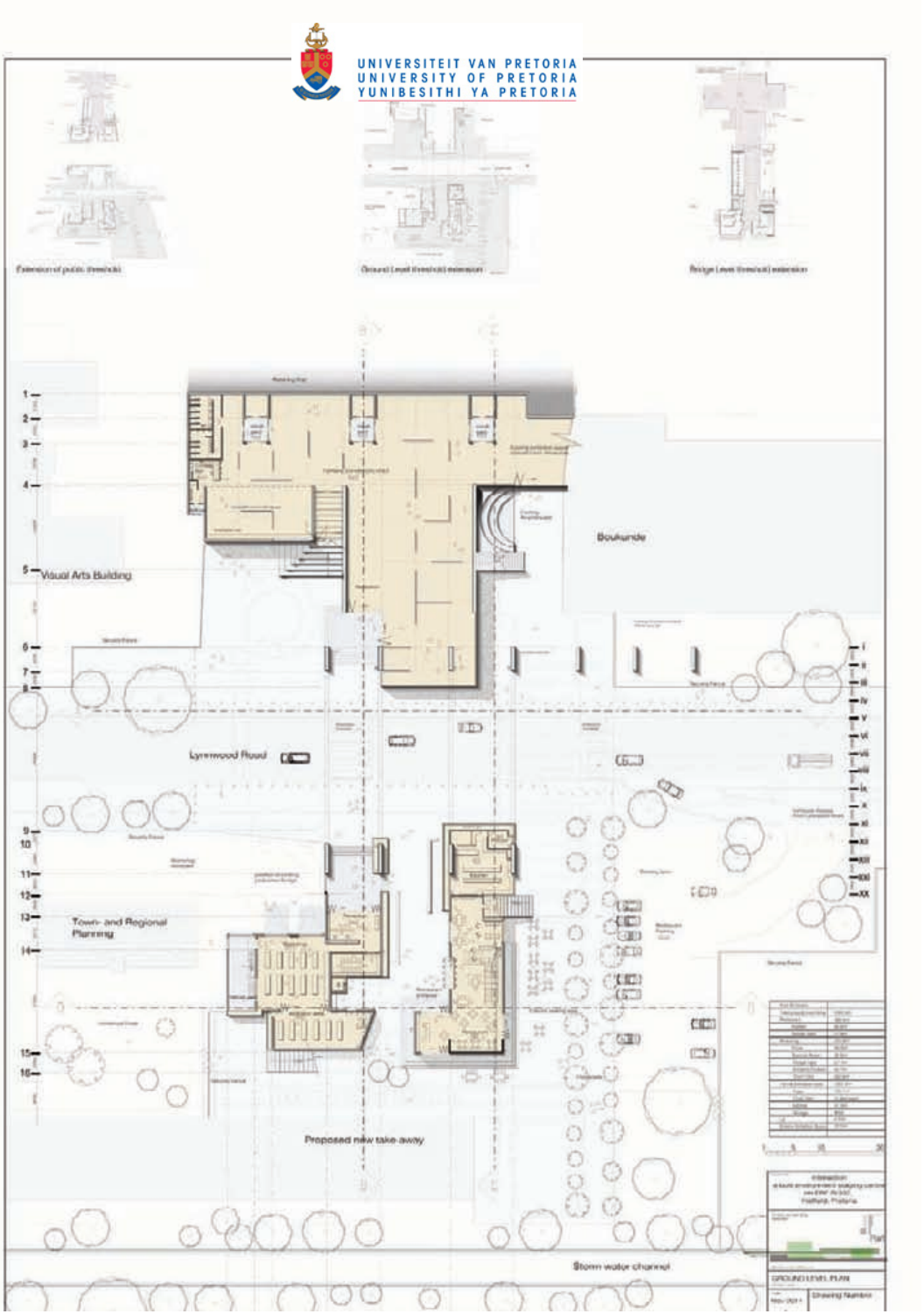


Figure 8.1 Site Plan

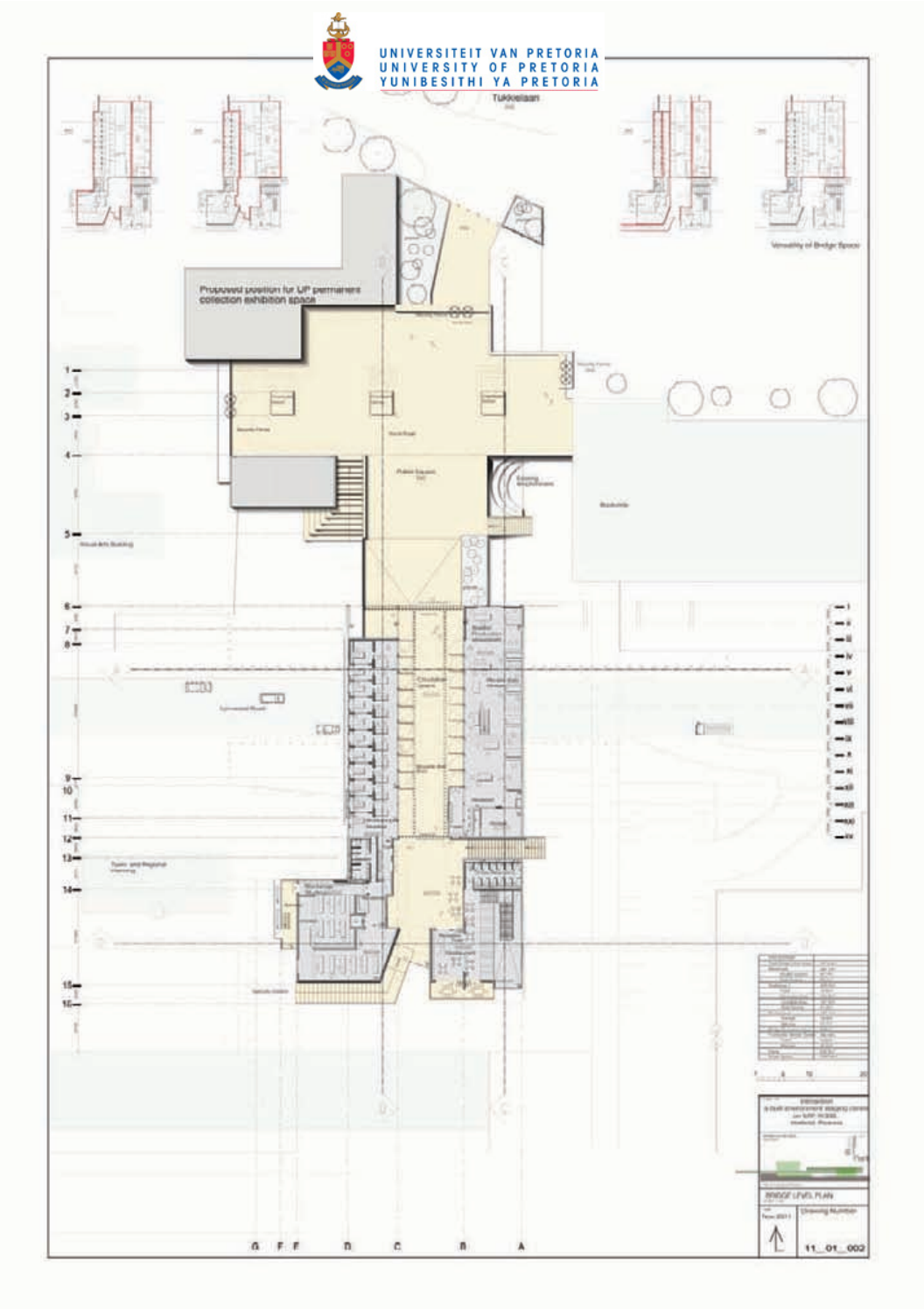
Ground Level Plan



Area Schedule	
Total ground Level Area	2565.9m²
Restaurant	386.5m²
Kitchen	95.8m²
Refuse Yard	11.6m²
Workshop	250.4m²
Foyer	34.2m²
Seminar Room	38.6m²
Refuse Yard	57.1m²
Entrance Podium	95.7m²
Court Yard	350.6m²
Formal Exhibition Area	1857.9m²
Foyer	135.1m²
Court Yard	31.6m² each
Kitchen	37.3m²
Storage	40m²
Lift	5.7m²
Exterior Exhibition Spaces	52.2m²

Figure 8.2 Ground Level Plan

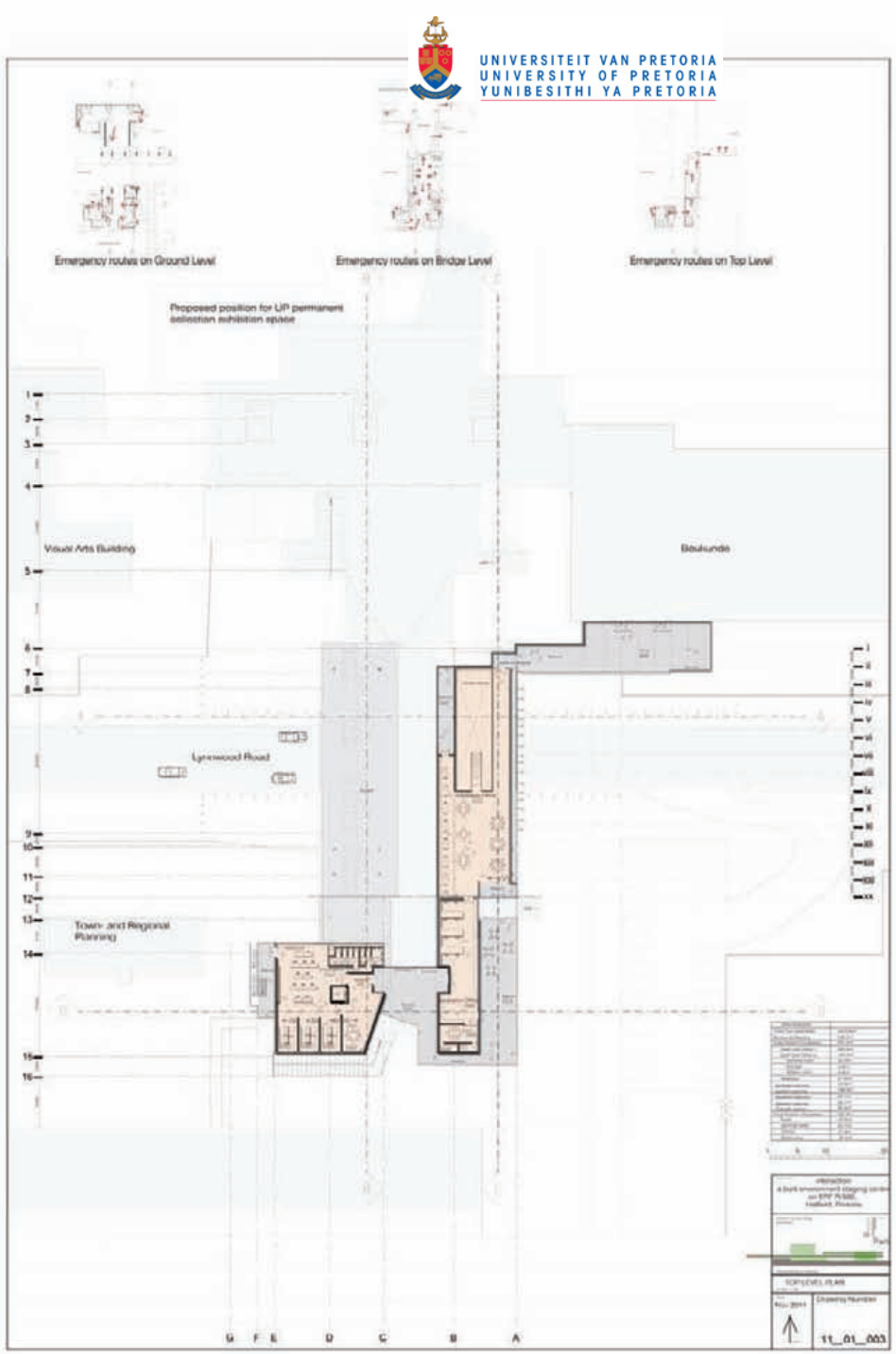
Bridge Level Plan



Area Schedule	
Total ground Level Area	2565.9m²
Restaurant	386.5m²
Kitchen	95.8m²
Refuse Yard	11.6m²
Workshop Studios	250.4m²
Foyer	34.2m²
Seminar Room	38.6m²
Refuse Yard	57.1m²
Entrance Podium	95.7m²
Court Yard	350.6m²
Formal Exhibition Area	1857.9m²
Foyer	135.1m²
Court Yard	31.6m² each
Kitchen	37.3m²
Storage	40m²
Lift	5.7m²
Exterior Exhibition Spaces	52.2m²

Figure 8.3 Bridge Level Plan

Top Level Plan



Area Schedule	
Total Top Level Area	1653.6m²
Boukunde Balcony	249.3m²
Total Eastern Incubation Office	441.4m²
Open plan office 1	280.6m²
Open plan office 2	164.5m²
Seminar room	20.4m²
Storage	4.6m²
Battery room	4.6m²
Walkway	57.5m²
Northern balcony	40.9m²
Eastern balcony	186.9m²
Southern balcony	99.1m²
Western balcony	36.7m²
Catwalk balony	55.5m²
Total Western Incubation Office	301.8m²
Foyer	37.5m²
Seminar room	23.1m²
Offices	21.8m²
Bathrooms	32.5m²

Figure 8.4 Top Level Plan

Roof Plan

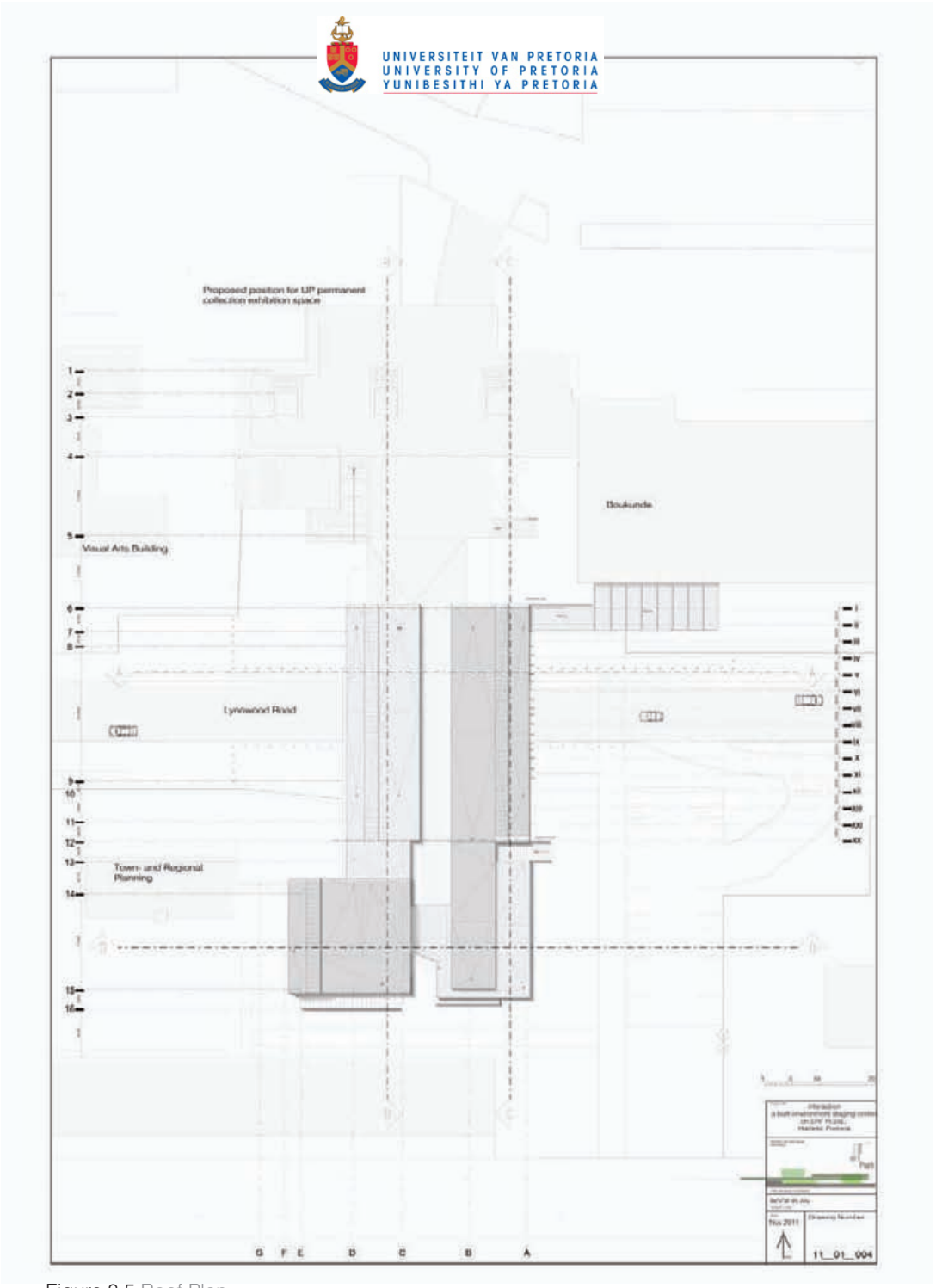


Figure 8.5 Roof Plan

Eastern Elevation

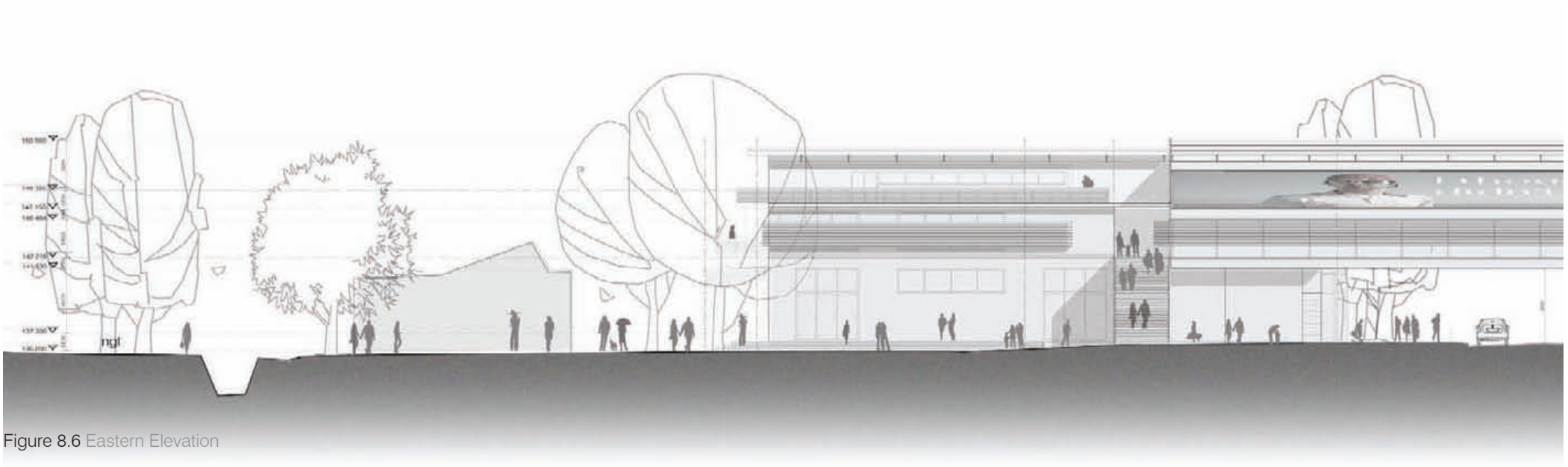
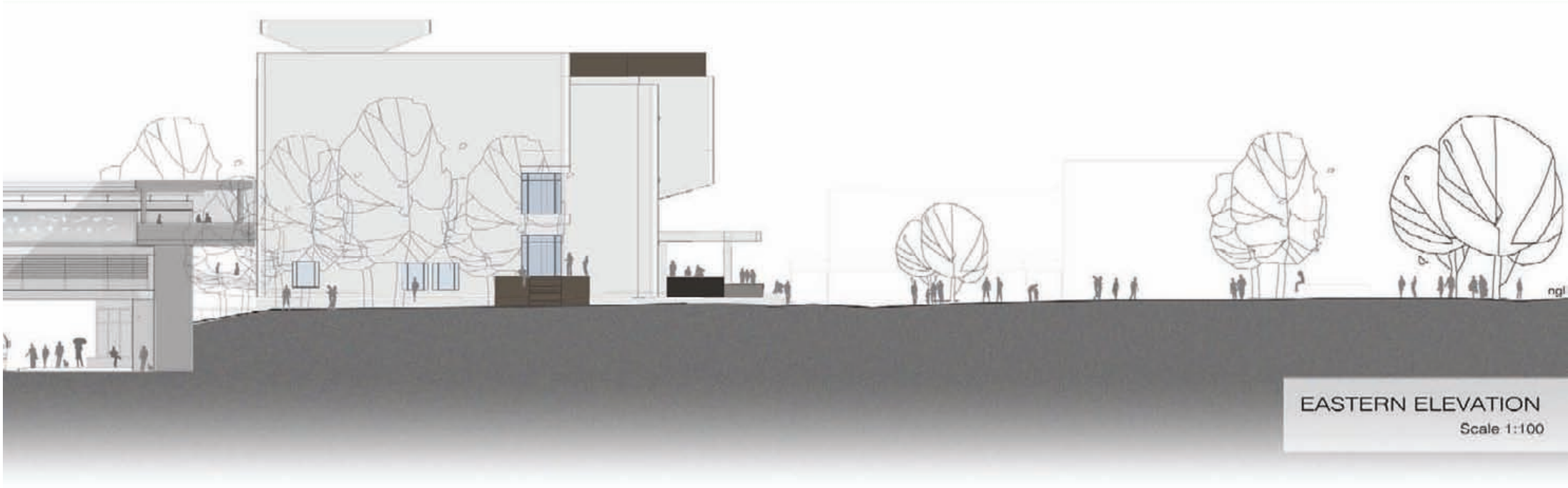


Figure 8.6 Eastern Elevation



EASTERN ELEVATION
Scale 1:100

Southern Elevation

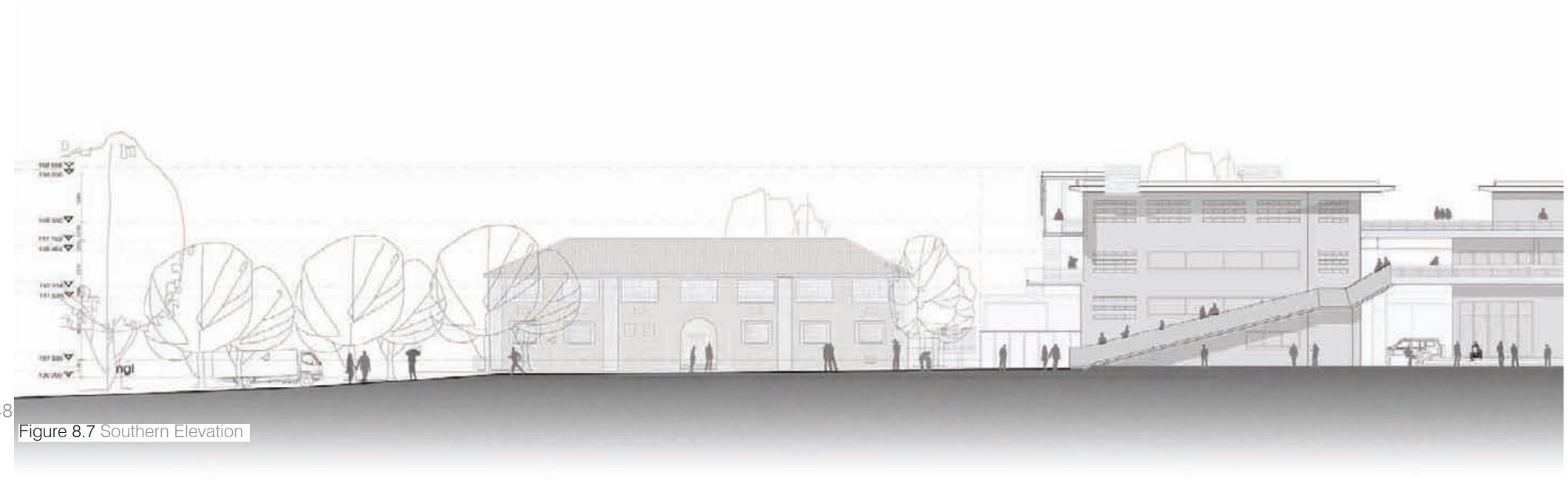
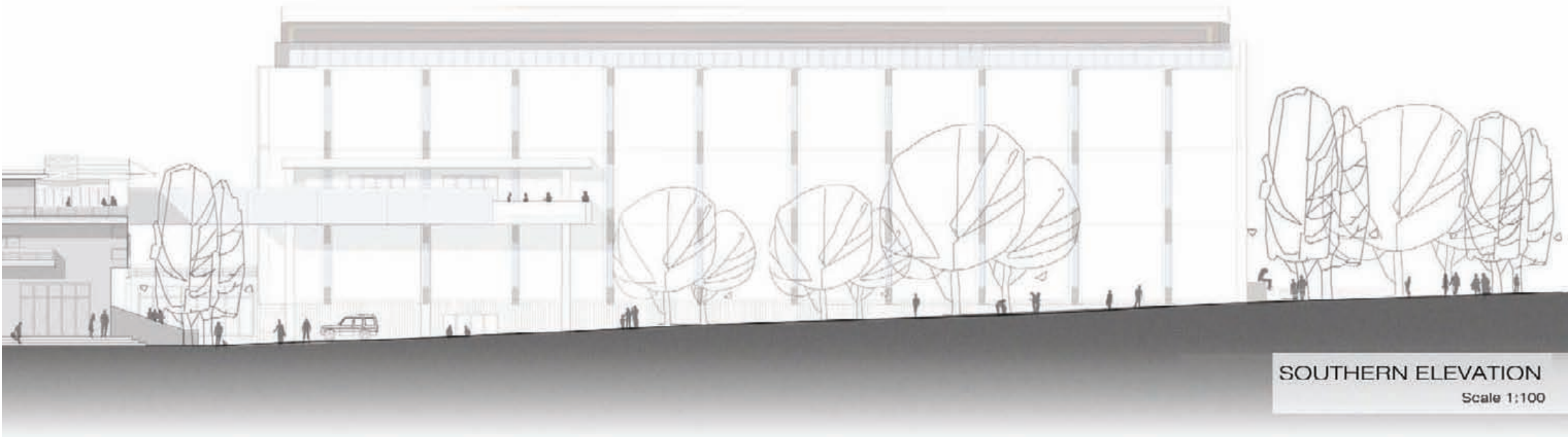


Figure 8.7 Southern Elevation



SOUTHERN ELEVATION

Scale 1:100

Western Elevation

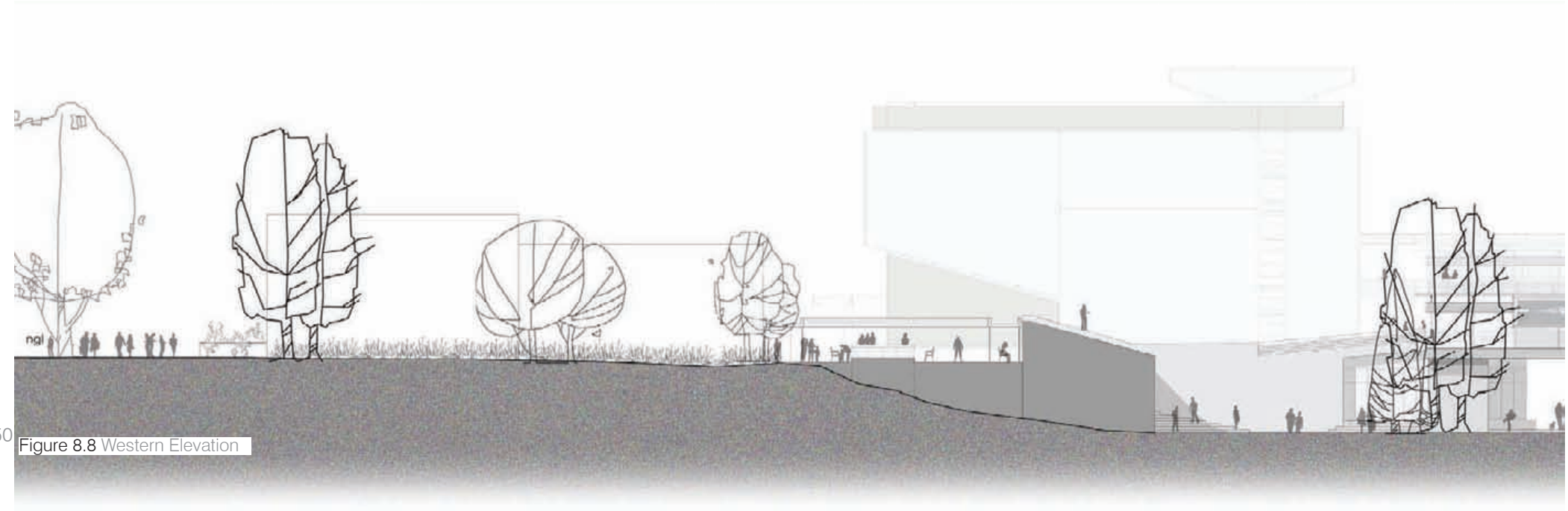
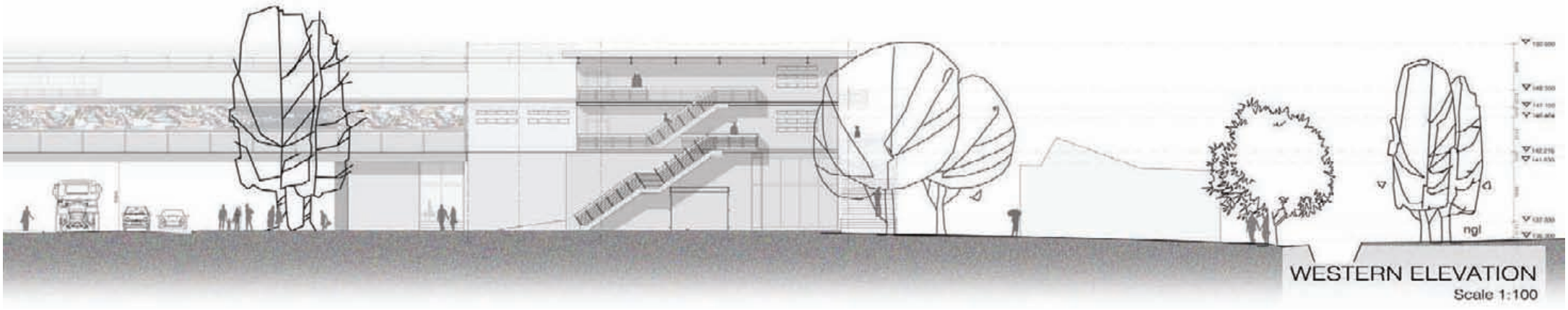


Figure 8.8 Western Elevation



WESTERN ELEVATION
Scale 1:100

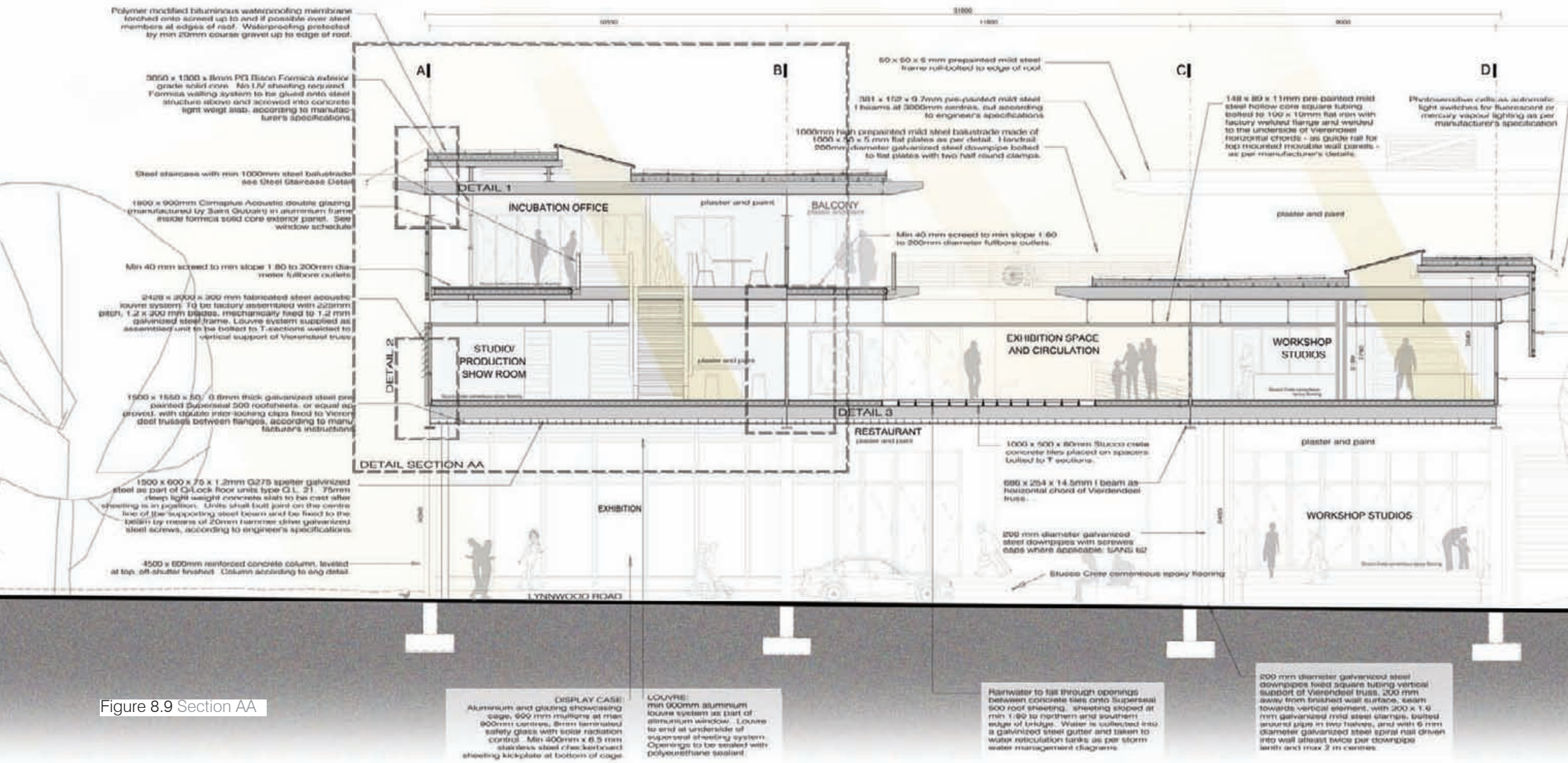
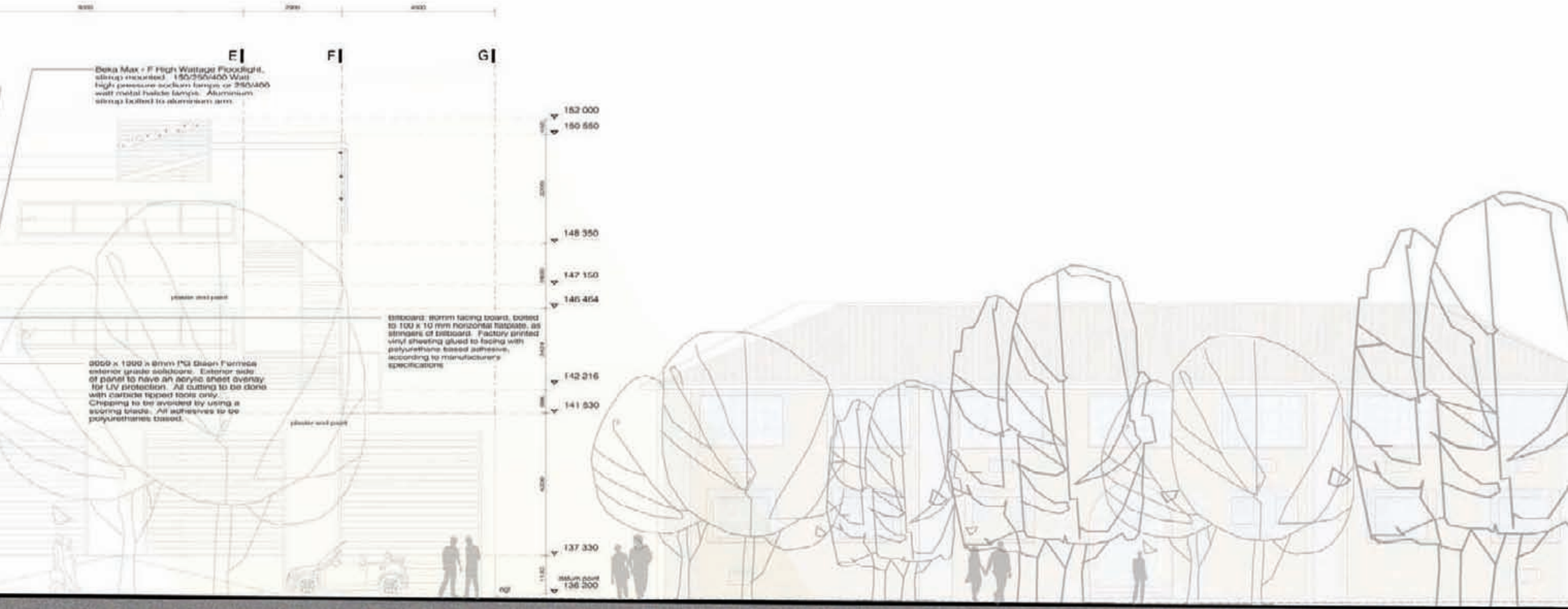


Figure 8.9 Section AA



SECTION AA

EAST-WEST SECTION

Scale 1:150

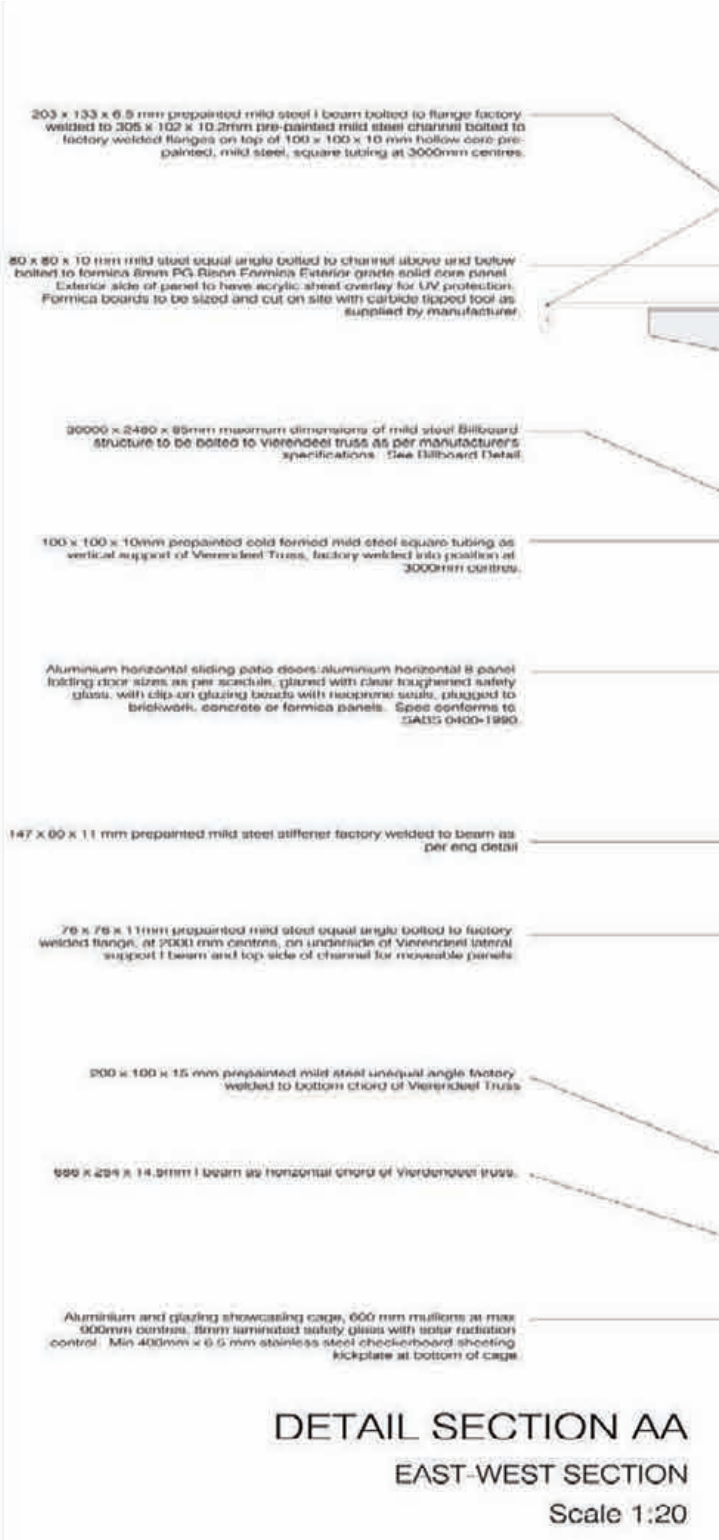
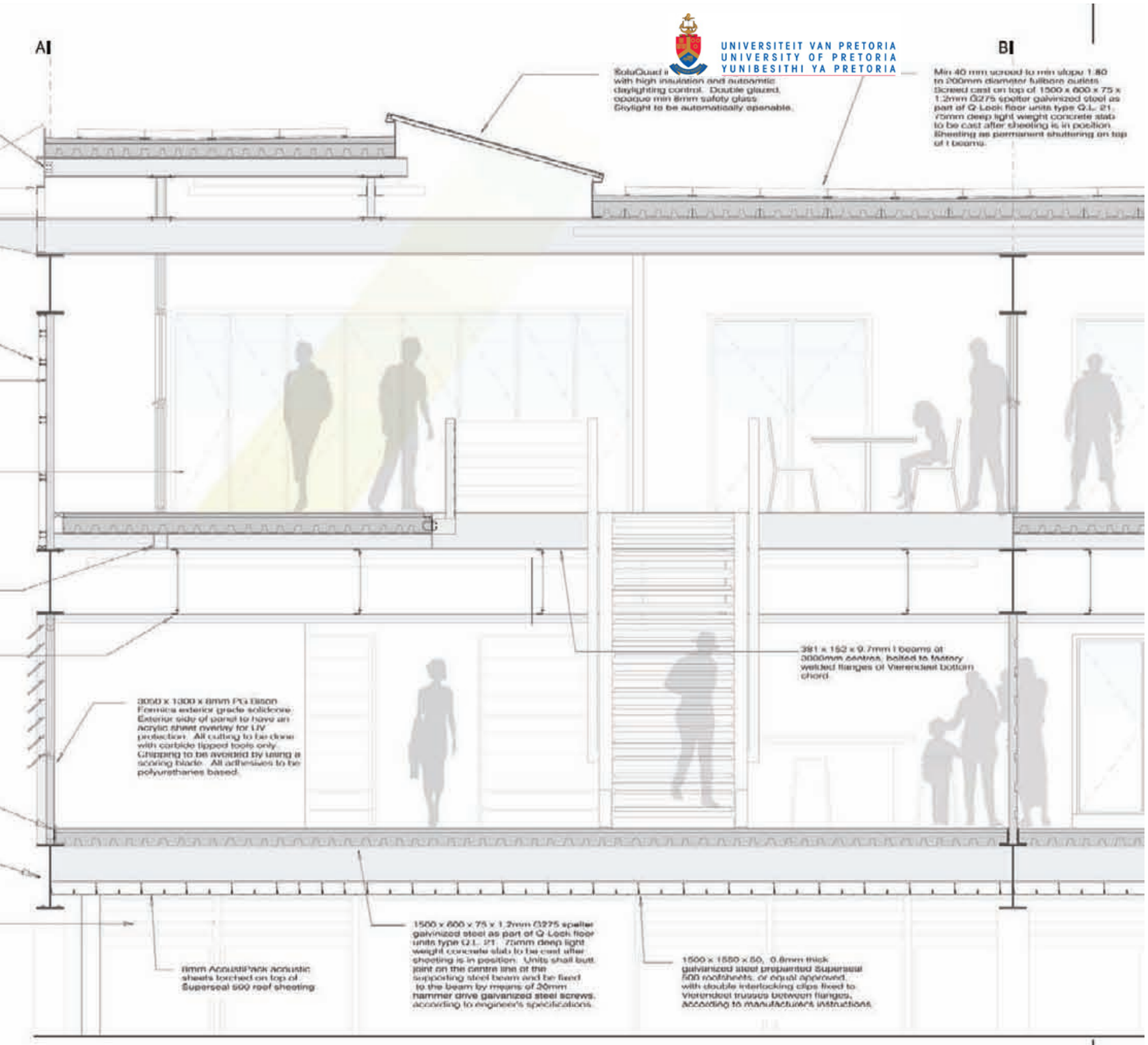


Figure 8.10 Detail Section AA


A1
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B1
SoluQuad II with high insulation and automatic daylighting control. Double glazed, opaque min 8mm safety glass. Skylight to be automatically openable.
Min 40 mm screed to min slope 1:80 to 200mm diameter fullbore outlets. Screed cast on top of 1500 x 600 x 75 x 1.2mm G275 spelter galvinized steel as part of Q-Lock floor units type Q.L. 21. 75mm deep light weight concrete slab to be cast after sheeting is in position. Sheeting as permanent shuttering on top of I beams.
381 x 152 x 9.7mm I beams at 3000mm centres, bolted to factory welded flanges of Vierendeel bottom chord.
3050 x 1300 x 8mm PG Bison Formica exterior grade solidcore. Exterior side of panel to have an acrylic sheet overlay for UV protection. All cutting to be done with carbide tipped tools only. Chipping to be avoided by using a scoring blade. All adhesives to be polyurethane based.
8mm AcoustiPack acoustic sheets torched on top of Superseal 900 roof sheeting.
1500 x 600 x 75 x 1.2mm G275 spelter galvinized steel as part of Q-Lock floor units type Q.L. 21. 75mm deep light weight concrete slab to be cast after sheeting is in position. Units shall butt joint on the centre line of the supporting steel beam and be fixed to the beam by means of 20mm hammer drive galvanized steel screws, according to engineer's specifications.
1500 x 1550 x 50, 0.8mm thick galvanized steel prepainted Supersteel 500 roofsheets, or equal approved, with double interlocking clips fixed to Vierendeel trusses between flanges, according to manufacturers instructions.

Section BB

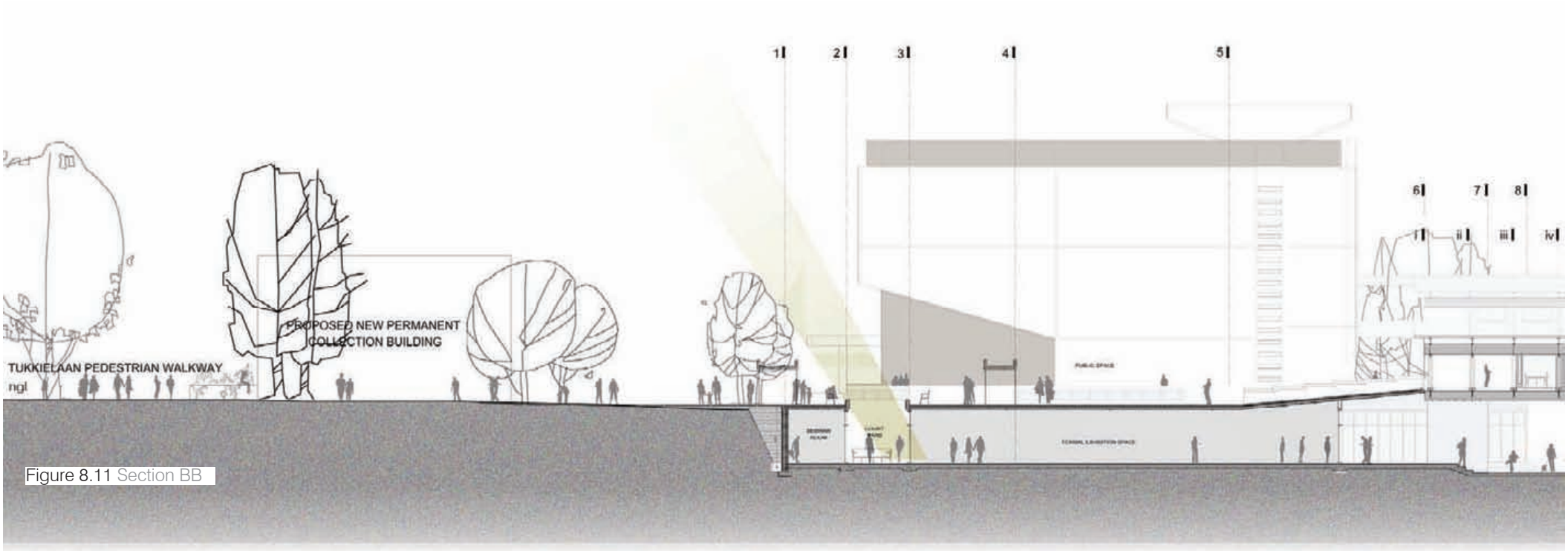
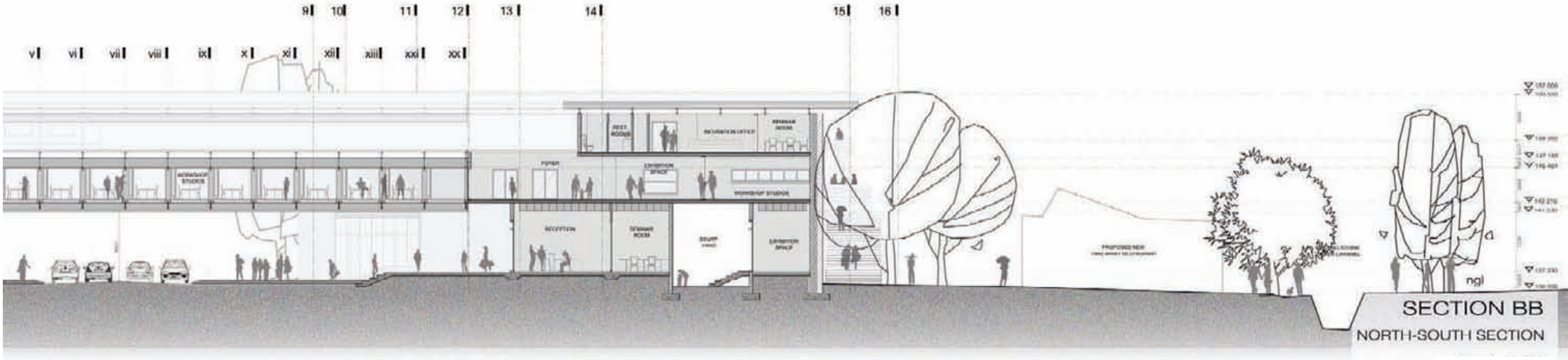


Figure 8.11 Section BB


v
vi
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ngl
SECTION BB
NORTH-SOUTH SECTION

Section CC

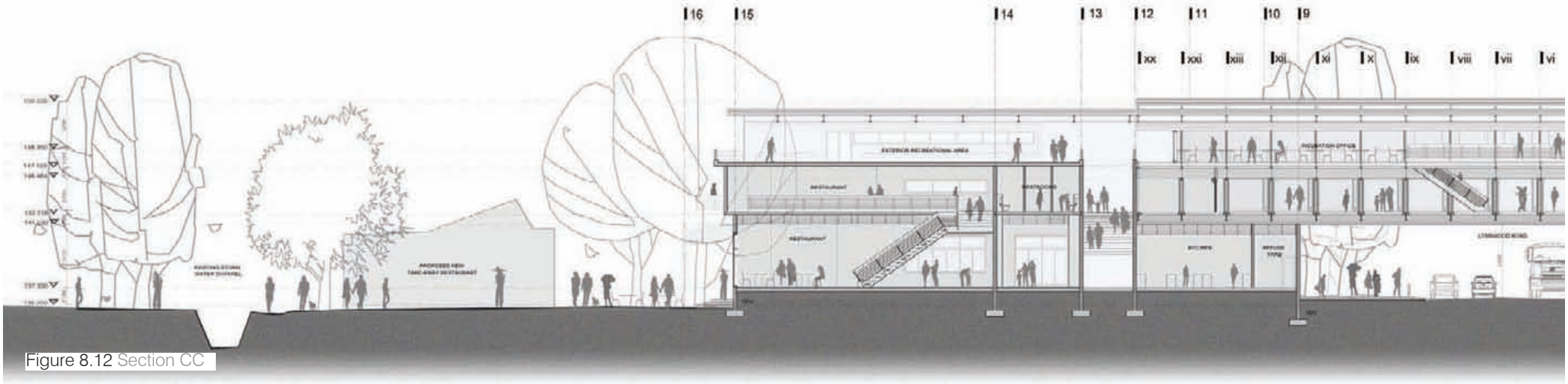
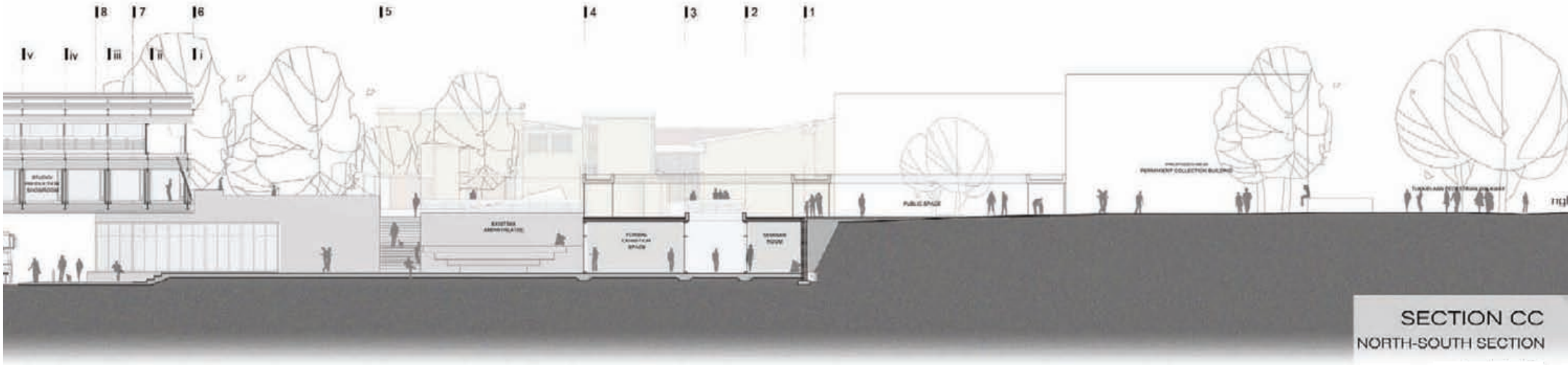


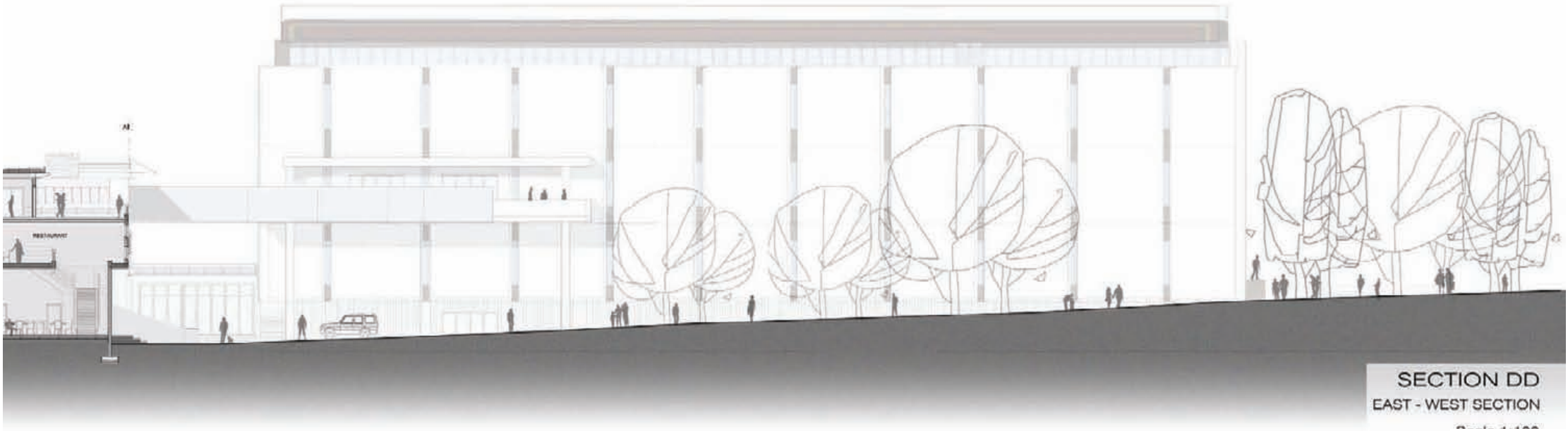
Figure 8.12 Section CC



SECTION CC
NORTH-SOUTH SECTION

Section DD

Figure 8.13 Section DD



SECTION DD
EAST - WEST SECTION

ı 40 mm insulating screed to min slope 1:80 to 200mm diameter full bore outlets.

Polymer modified bituminous waterproofing membrane torched onto screed up to an if possible over steel members at edges of roof. Waterproofing protected by min 20mm course gravel up to edge of roof.

381 x 152 x 9.7mm pre-painted mild steel I beams at 3000mm centres, bolted to factory welded flanges of Vierendeel horizontal chord.

BILLBOARD:
80mm timber facing board, bolted to horizontal pre-painted, mild steel, flat plates, as stringers of billboard. Factory printed vinyl sheeting glued to facing with polyurethane based adhesive, according to manufacturer's specifications

2940 x 100 x 8.5 mm pre-painted mild steel flat plates bolted to factory welded flanges on vertical support square tubing of Vierendeel Truss.

100 x 100 x 10mm pre-painted cold formed mild steel square tubing as vertical support of Vierendeel Truss, factory welded into position at 3000mm centres.

686 x 254 x 14.5mm pre-painted mild steel I beam as horizontal chord of Vierdendeel Truss.

DETAIL 1

Roof Eave Detail

Scale 1:20

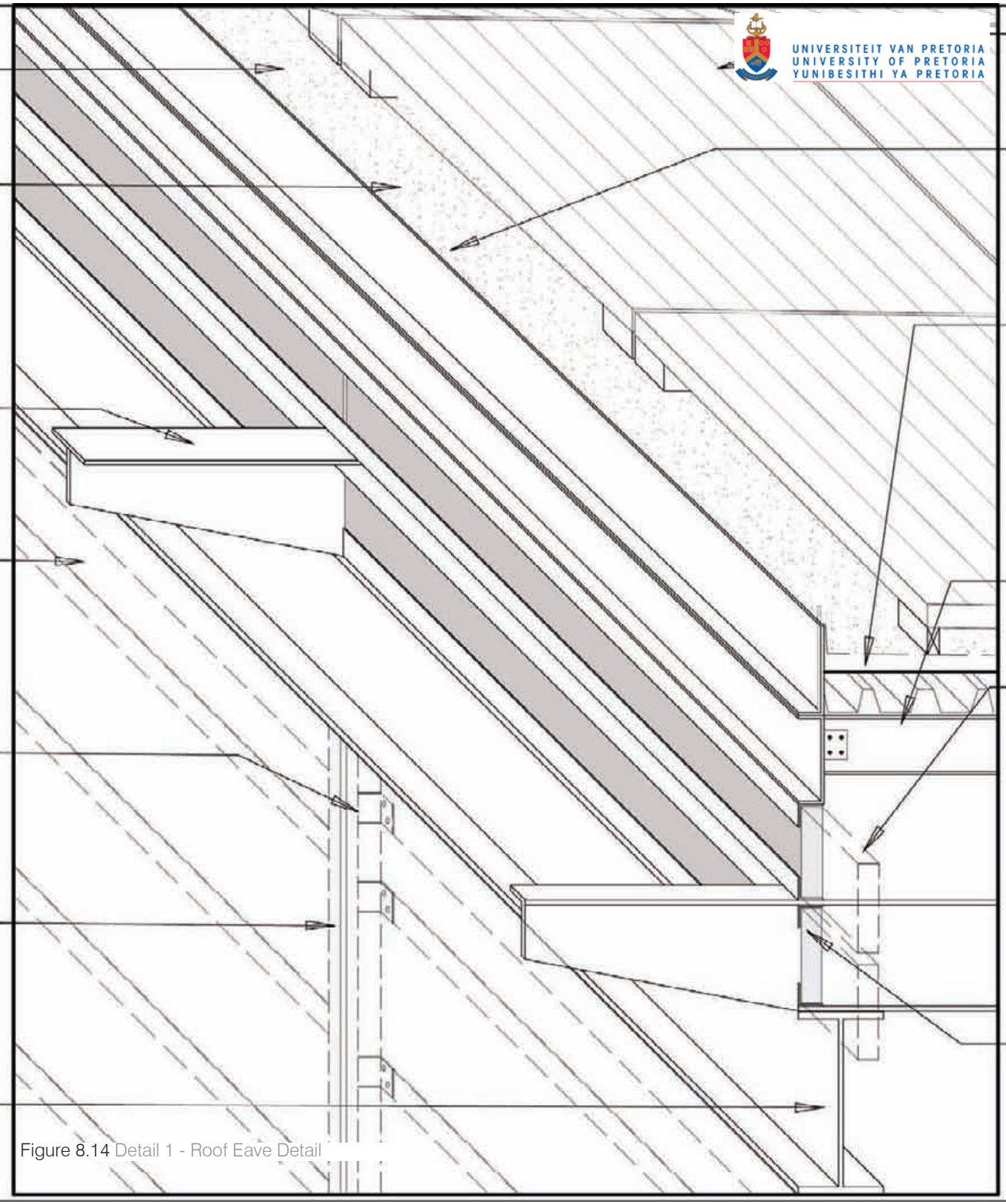


Figure 8.14 Detail 1 - Roof Eave Detail

300 mm fabricated steel acoustic
e factory assembled with 225mm pitch, 1.2 x 300 mm blades, mechanically fixed to 1.2 mm galvanized steel frame. Louvre system supplied as assembled unit to be bolted to T-sections welded to vertical support of Vierendeel truss.

3050 x 1300 x 8mm PG Bison Formica exterior grade solid core. No UV sheeting required. Formica walling system to be glued (polyurethane based) onto steel structure above and screwed into concrete light weigt slab, according to manufacturer's specifications.

4500 x 600mm reinforced concrete column, levelled at top, off-shutter finished. Column according to eng detail.

686 x 254 x 14.5mm pre-painted mild steel I beam as horizontal chord of Vierendeel Truss, bolted to top side of concrete column with min 50mm diameter expansion bolts at min 300mm depth, as per eng spec.

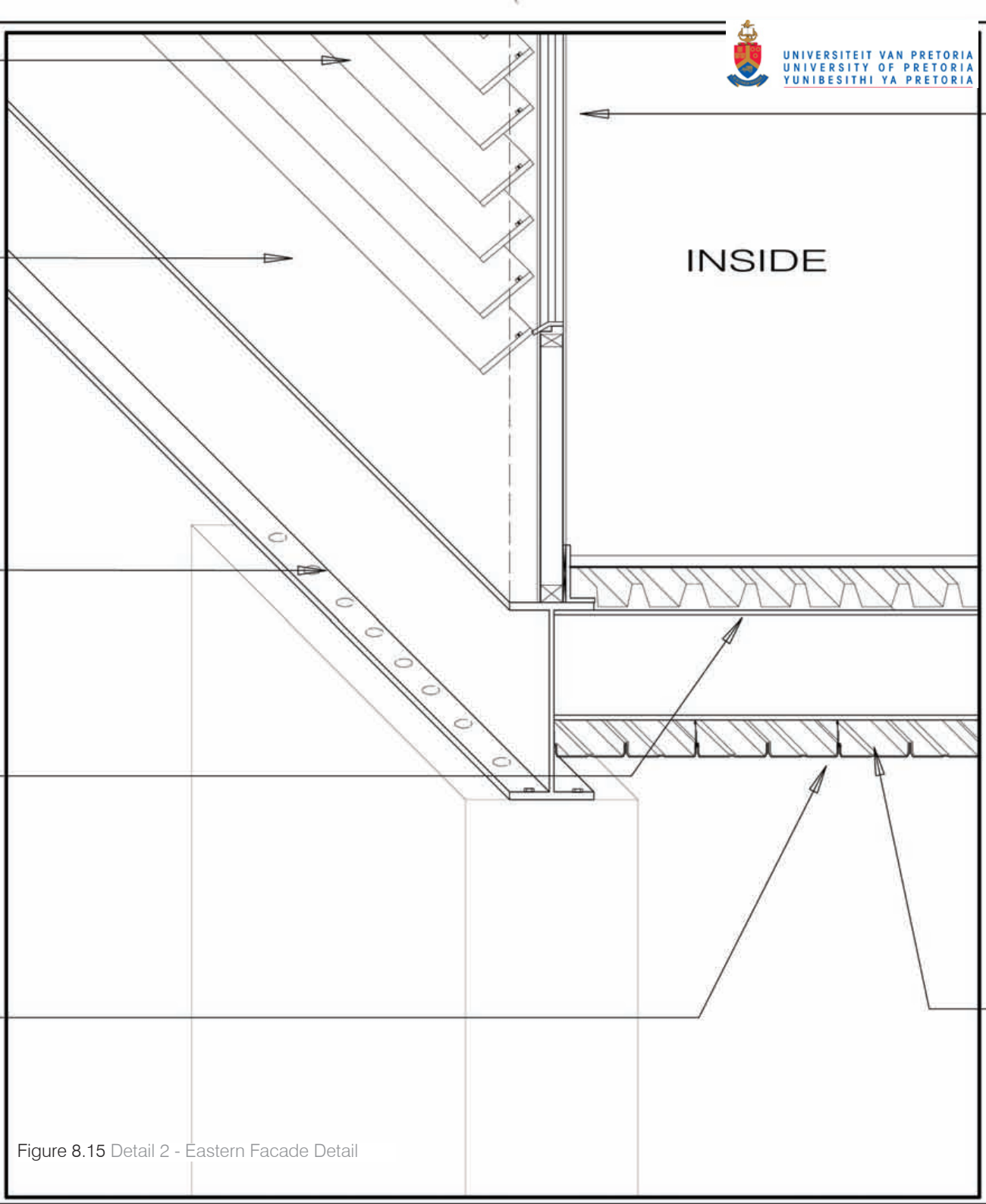
1500 x 600 x 75 x 1.2mm G275 spelter galvanized steel as part of Q-Lock floor units type Q.L. 21. 75mm deep light weight concrete slab to be cast after sheeting is in position. Units shall butt joint on the centre line of the supporting steel beam and be fixed to the beam by means of 20mm hammer drive galvanized steel screws, according to engineer's specifications.

DETAIL 2

Eastern Facade Detail

Scale 1:20

1500 x 1550 x 50, 0.8mm thick galvanized steel pre-painted Superseal 500 roof sheets, or equal approved, with double interlocking clips fixed to Vierendeel trusses between flanges, according to manufacturer's instructions.



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2200 x 1200 x 8mm Climaplus Acoustic double glazing (manufactured by Saint Gobain) in aluminium frame inside formica solid core exterior panel.

CONSTRUCTION PROCEDURE:
After Vierendeel truss, with lateral supports are erected and in position, the Superseal 500 roof sheeting are installed with manufacturer supplied clips, bolted to underside of mild steel I beams. AcoustiPack is then torched onto Superseal 500 sheets before the Q-Lock floor units are installed, followed by the light weight concrete being cast.

7mm Acoustipack EXTRA sheet (APExtS) 3 layered acoustic sheets torched onto top side of Superseal 500 roof sheets. See Construction Procedure.

Figure 8.15 Detail 2 - Eastern Facade Detail

min 40 mm Stucco Granno self-levelling screed, premixed and poured onto Q-Lock floor. Granno to be cast in max 1500 x 1500 mm blocks, separated before casting with polypropylene spacers. Openings to be filled with polyurethane sealant.

2280 x 100 x 40 mm SA Pine, timber door screwed to mild steel hinge, factory welded to vertical support of Vierendeel Truss. Door to open for manoeuvrability of operable walls and ventilation control of interior spaces.

2 x 100 x 100 x 10mm pre-painted cold formed mild steel square tubing as vertical support of Vierendeel Truss. min 105 mm opening between vertical supports for operable wall manoeuvrability. Vertical supports factory welded into position at 3000mm centres.

1500 x 600 x 75 x 1.2mm G275 spelter galvanized steel as part of Q-Lock floor units type Q.L. 21. 75mm deep light weight concrete slab to be cast after sheeting is in position. Units shall butt joint on the centre line of the supporting steel beam and be fixed to the beam by means of 20mm hammer drive galvanized steel screws, according to engineer's specifications.

381 x 152 x 9.7mm pre-painted mild steel I beams at 3000mm centres, bolted to factory welded flanges of Vierendeel bottom chord.

1500 x 1550 x 50, 0.8mm thick galvanized steel pre-painted Superseal 500 roof sheets, or equal approved, with double interlocking clips fixed to Vierendeel trusses between flanges, according to manufacturer's instructions.

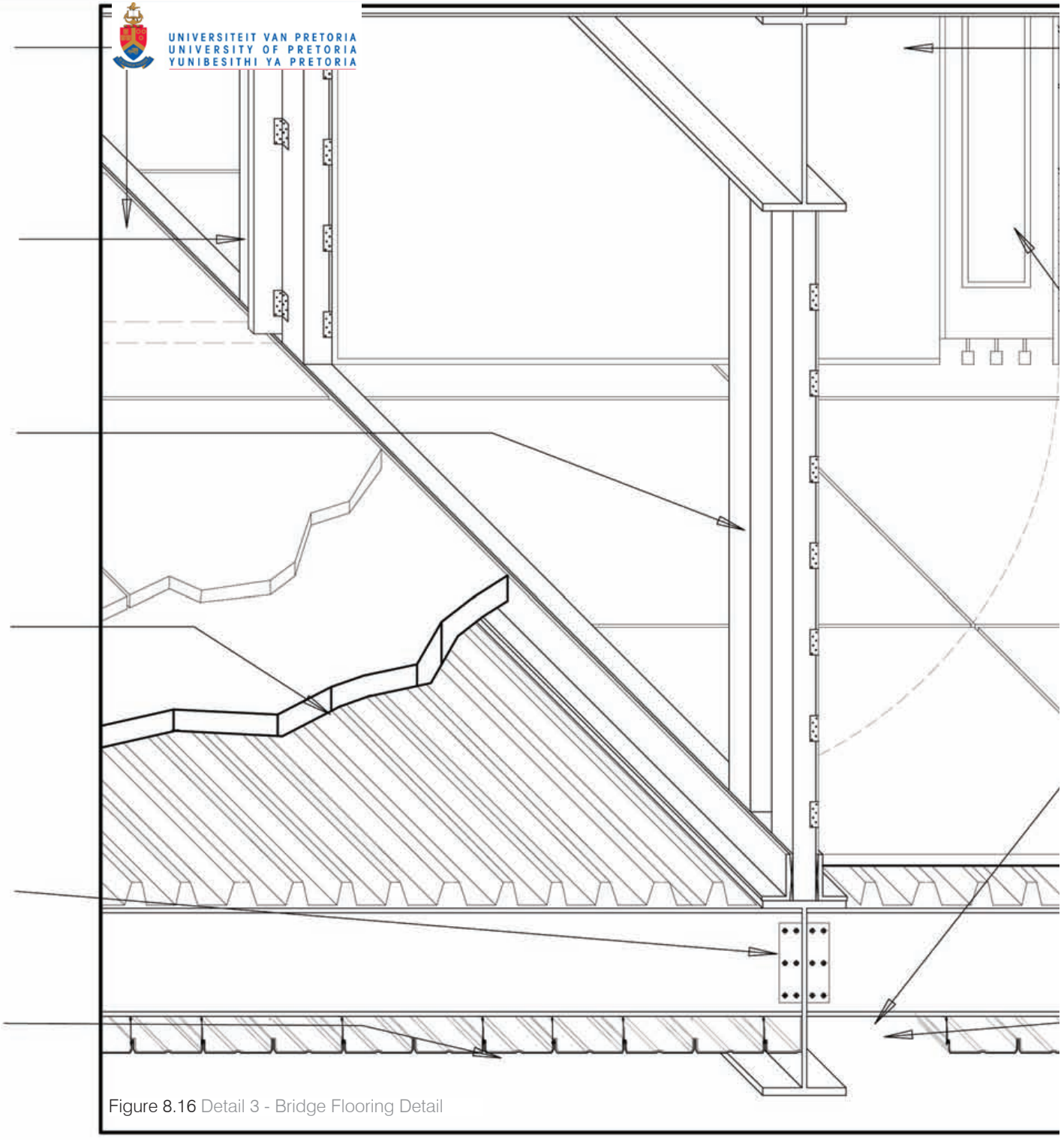
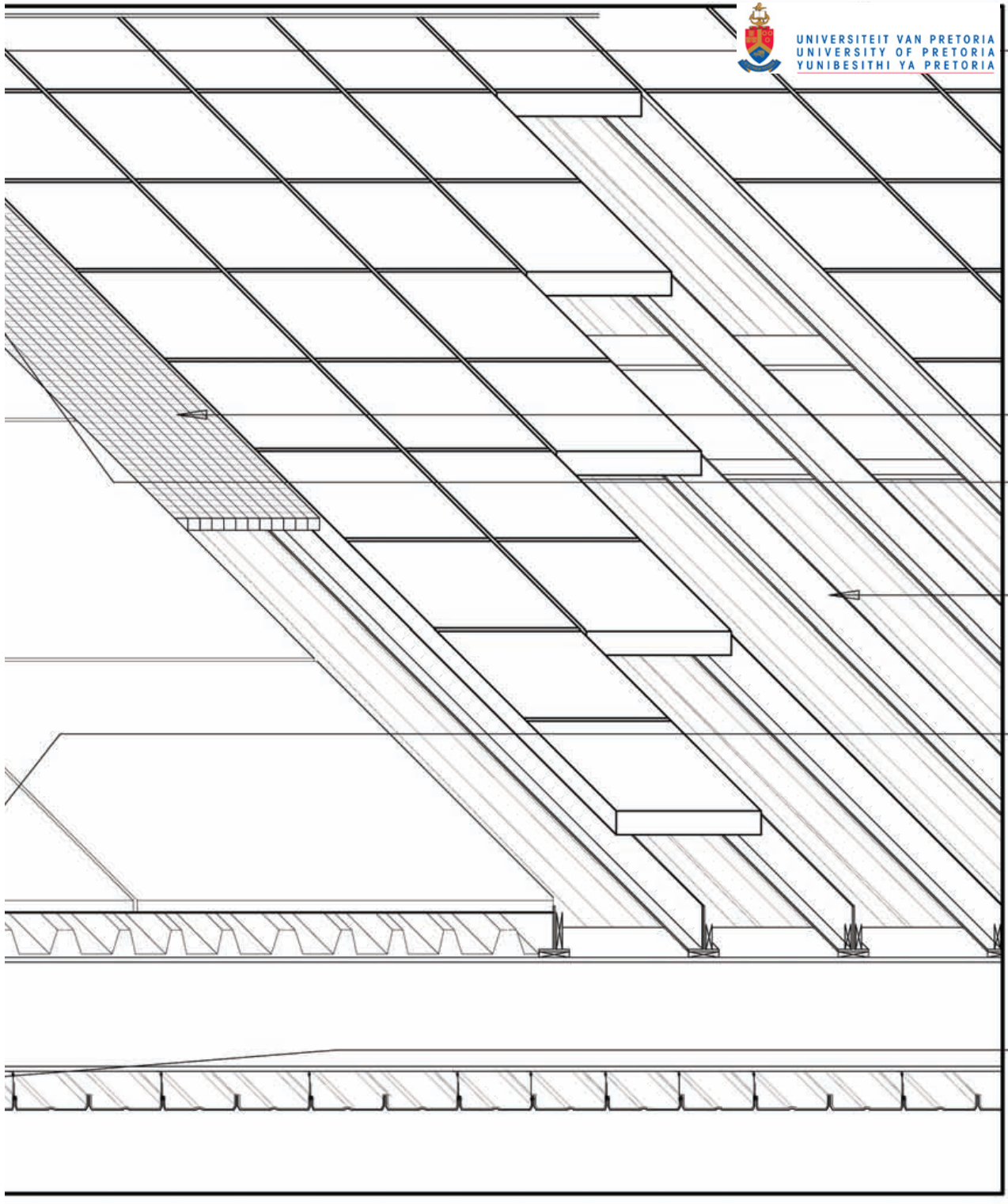


Figure 8.16 Detail 3 - Bridge Flooring Detail



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2250 x 2850 mm PG Bison Formica exterior grade solid core (dimensions to be measured on site after steel structure is installed) doors. Both sides of doors to have an acrylic sheet overlay for UV protection. All cutting to be done with carbide tipped tools only. All doors are to be custom cut on site. Chipping to be avoided by using a scoring blade. Formica panels to be fixed to steel structure with heavy duty hinges. Min 20mm openings between steel structure and Formica door, sealed with a polypropylene rubber seal, glued to edge of door with polyurethane based adhesive. heat resistant, flexible, clear silicone.

500 x 45 x 6 mm mild steel removable grating with easy clean solids traps

6mm laminated safety glass with solar radiation control inside aluminium powder coated window frame as part of purpose made Formica door with wheels, as per specialist.

152 x 191 x 9.7mm pre-painted mild steel T-sections bolted to pre-painted mild steel I beams at 500mm centres for supporting removable concrete tiles with polypropylene spacers between tile and steel structure.

Min 400mm opening between Super-seal 500 roofsheets and bottom chord of Vierendeel Truss as storm water overflow, when down pipes or reticulation tanks are faulty water cannot penetrate the interior spaces of the bridge.

DETAIL 3

Bridge Flooring Detail

Scale 1:20

381 x 152 x 9.7mm pre-painted mild steel I beams at 3000mm centres, bolted to factory welded flanges of Vierendeel bottom chord.

2 x 100 x 100 x 10mm pre-painted cold formed mild steel square tubing as vertical support of Vierendeel Truss. min 105 mm opening between vertical supports for operable wall manoeuvrability. Vertical supports factory welded into position at 3000mm centres.

1800 x 900mm Climaplus Acoustic double glazing (manufactured by Saint Gobain) in aluminium frame inside formica solid core exterior panel.

3050 x 1300 x 8mm PG Bison Formica exterior grade solid core. No UV sheeting required. Formica walling system to be glued onto steel structure above and screwed into concrete light weigt slab, according to manufacturer's specifications.

1500 x 600 x 75 x 1.2mm G275 spelter galvinized steel as part of Q-Lock floor units type Q.L. 21. 75mm deep light weight concrete slab to be cast after sheeting is in position. Units shall butt joint on the centre line of the supporting steel beam and be fixed to the beam by means of 20mm hammer drive galvanized steel screws, according to engineer's specifications.

1500 x 1550 x 50, 0.8mm thick galvanized steel pre-painted Superseal 500 roofsheets, or equal approved, with double interlocking clips fixed to Vierendeel trusses between flanges, according to manufacturer's instructions.

DETAIL 4

Facade Detail

Scale 1:20

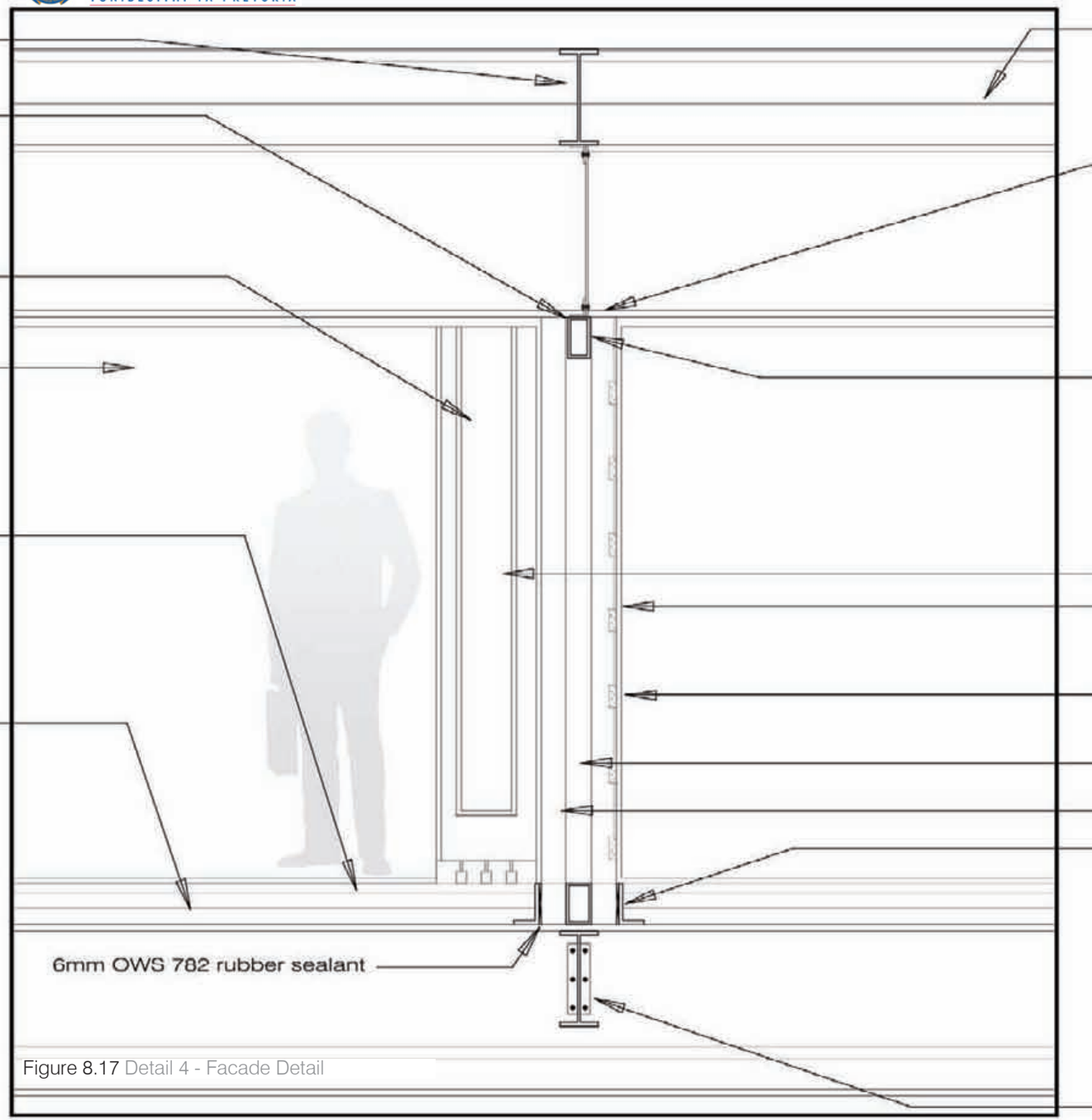

Figure 8.17 Detail 4 - Facade Detail

80 x 80 x 10 mm mild steel equal angle bolted to channel above and below bolted to formica 8mm PG Bison Formica Exterior grade solid core panel. Exterior side of panel to have acrylic sheet overlay for UV protection. Formica boards to be sized and cut on site with carbide tipped tool as supplied by manufacturer.

80 x 80 x 6 mm pre-painted mild steel equal angle welded to top side of square tubing at max 2000mm centres, bolted to 80 x 6mm flat plate

148 x 89 x 11mm pre-painted mild steel hollow core square tubing welded to underside of Vierendeel horizontal chord. Square tubing to act as guide-rail form movable wall panels as per manufacturer's specifications. Maximim finished floor level to underside of tubing: 2150mm.

6mm laminated safety glass with solar radiation control inside aluminium powder coated window frame as part of purpose made Formica door with wheels, as per specialist.

Min 20mm SCS 287 rubber sealant glued (polyuerethane based) to all edges of Formica Solid Core Panels.

Extra Heavy Duty T Hinge With Bushing

100mm cavity in facade for movable wall panels to penetrate facade.

148 x 89 x 11mm pre-painted mild steel hollow core square tubing welded to top side of Vierendeel truss horizontal chord as spacer between vertical supports of Vierendeel truss.

76 x 76 x 11mm prepainted mild steel equal angle bolted to factory welded flange, at 2000 mm centres, on underside of Vierendeel lateral support I beam and top side of channel for moveable panels.

280 x 40 x 11mm prepainted mild steel flanges factory welded to bottom chord of Vierendeel trusss at 3000mm centres, with pre-drilled holes for fixings, as per eng specs.

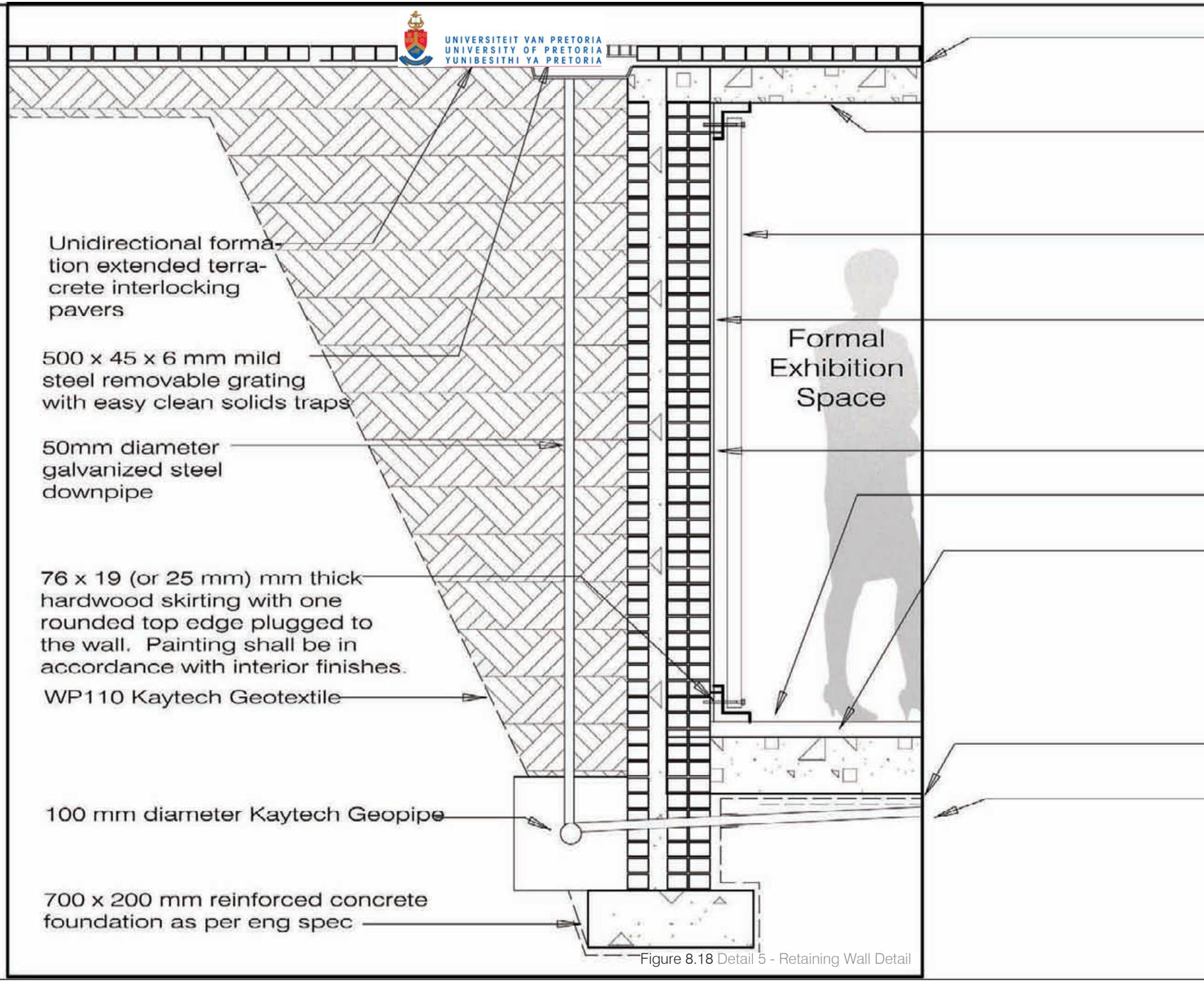

Figure 8.18 Detail 5 - Retaining Wall Detail

min 40mm insulated screed laid
to min fall 1:100

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170mm off-shutter reinforced self
compacting concrete roof slab,
cast on timber plank shuttering.

PEG MDF Soft wood timber exhibition
boards fixed to timber skirtings and
cornices -colour to match interior

RETAINING WALL:
980mm concrete and masonry composite
retaining wall, consisting of single brick
coarse, in-situ cast concrete and double
coarse masonry, as per eng specs.

Plaster and paint

Epoxy resin flooring applied onto screed

FLOOR CONSTRUCTION:
min 40mm cement screed on
150mm reinforced concrete floor
on 0.25mm micron polyolefin damp
proof membrane on approved
compacted fill in max 150mm
layers to 90% MOD AASHTO.

0.25mm polyolefin damp froof membrane

50mm diameter Kaytech Geopipe from
courtyard - storm water management

DETAIL 5

Retaing Wall Detail

Scale 1:50

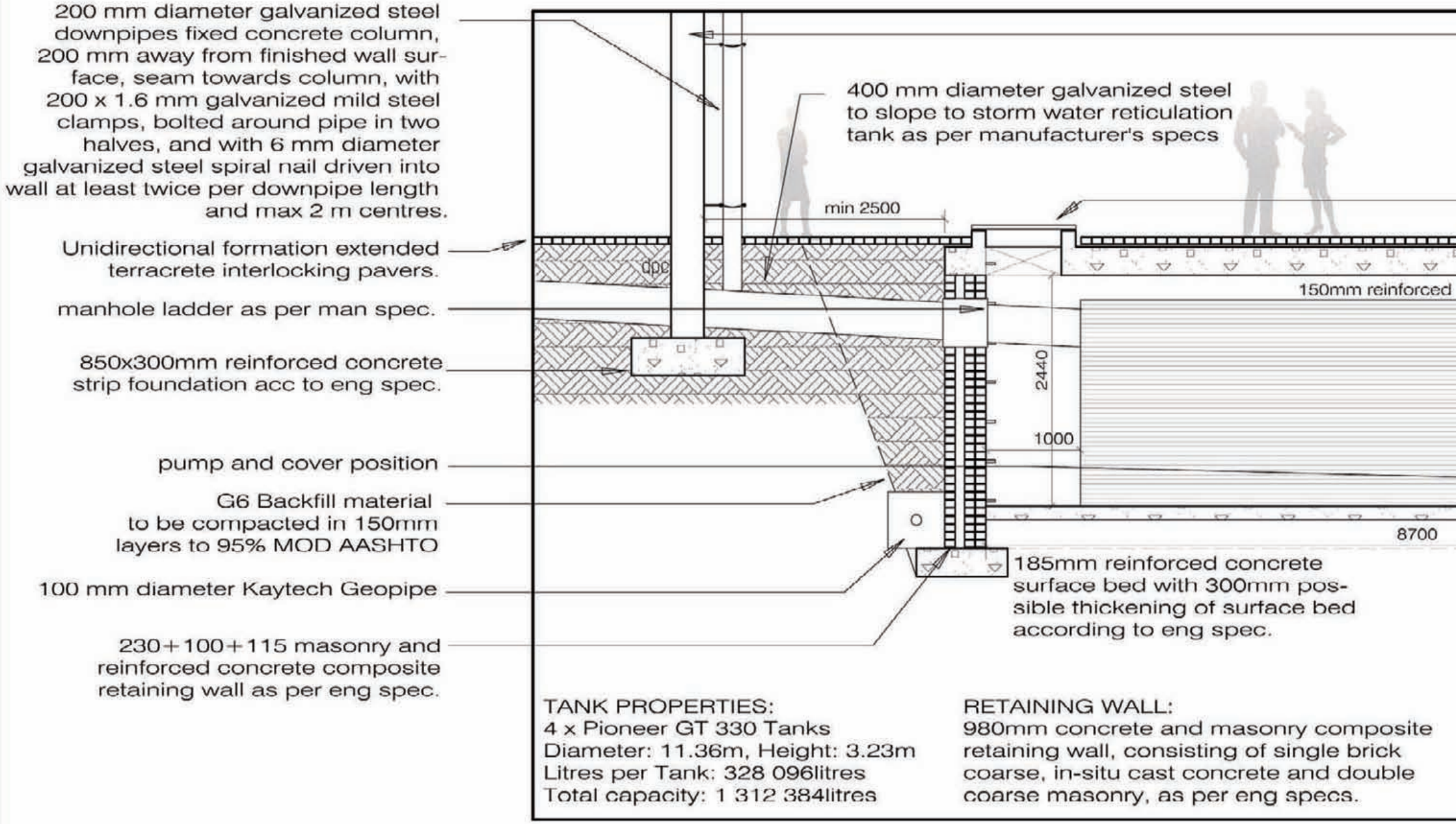
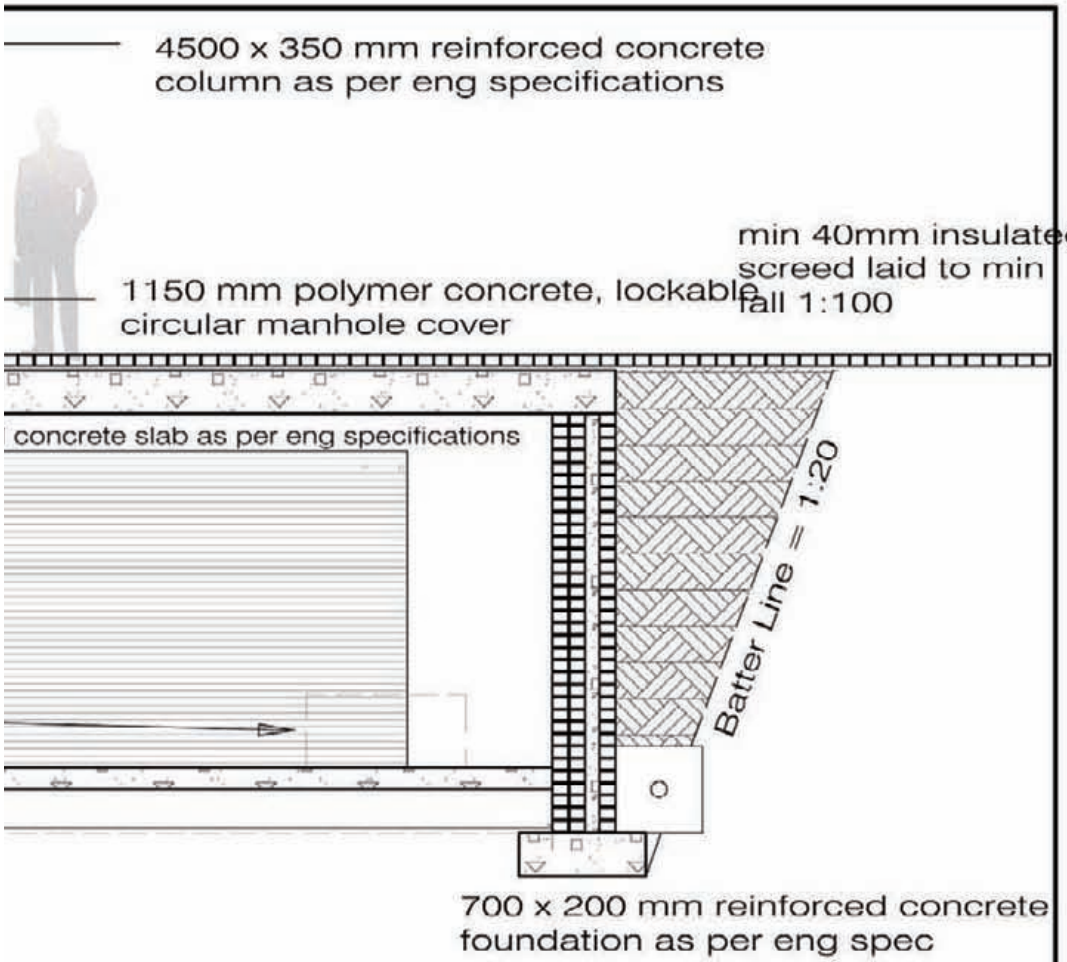


Figure 8.19 Detail 6 - Rain Water Reticulation Tank Detail



DETAIL 6

Rain Water Reticulation Tank Detail

Scale 1:50

SPECIFICATION WATER TANKS

PIONEER WATER TANKS

Site Preparation prior to tank installation:

Concrete slab must be level and stable prior to construction. Base to be 1000mm wider than tank on all sides.

Inside Tank:

Aqualiner created by hot melt laminating the 5 material layers under pressure.
Layer 1: Clear Polyethylene Film
Layer 2: Green advanced Polyolefin coating
Layer 3: Weave: High tenacity multifilament polypropylene
Layer 4: Green advanced polyolefin coating
Layer 5: Black Polyethylene film
Steel Dome Roof:
Heavy duty hot dipped galv steel roof trusses and roof sheeting.

PUMP
Davey H560/08T with 8 litres Pressure cell (supplied by PIONEER).
Backup generator to manufacturer's spec. Pump mounted next to Tank on Basement 2 with pump cover.

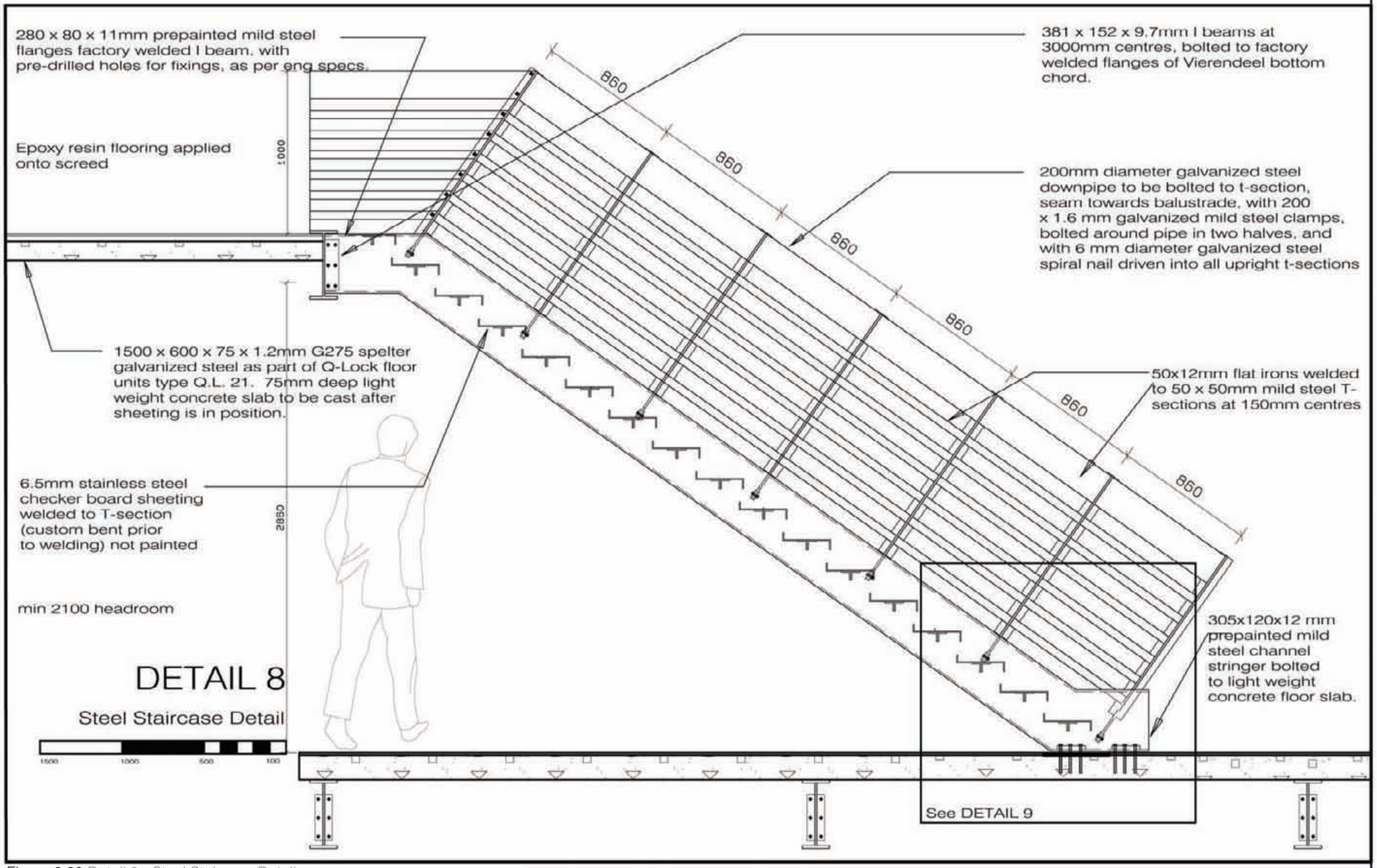


Figure 8.20 Detail 8 - Steel Staircase Detail

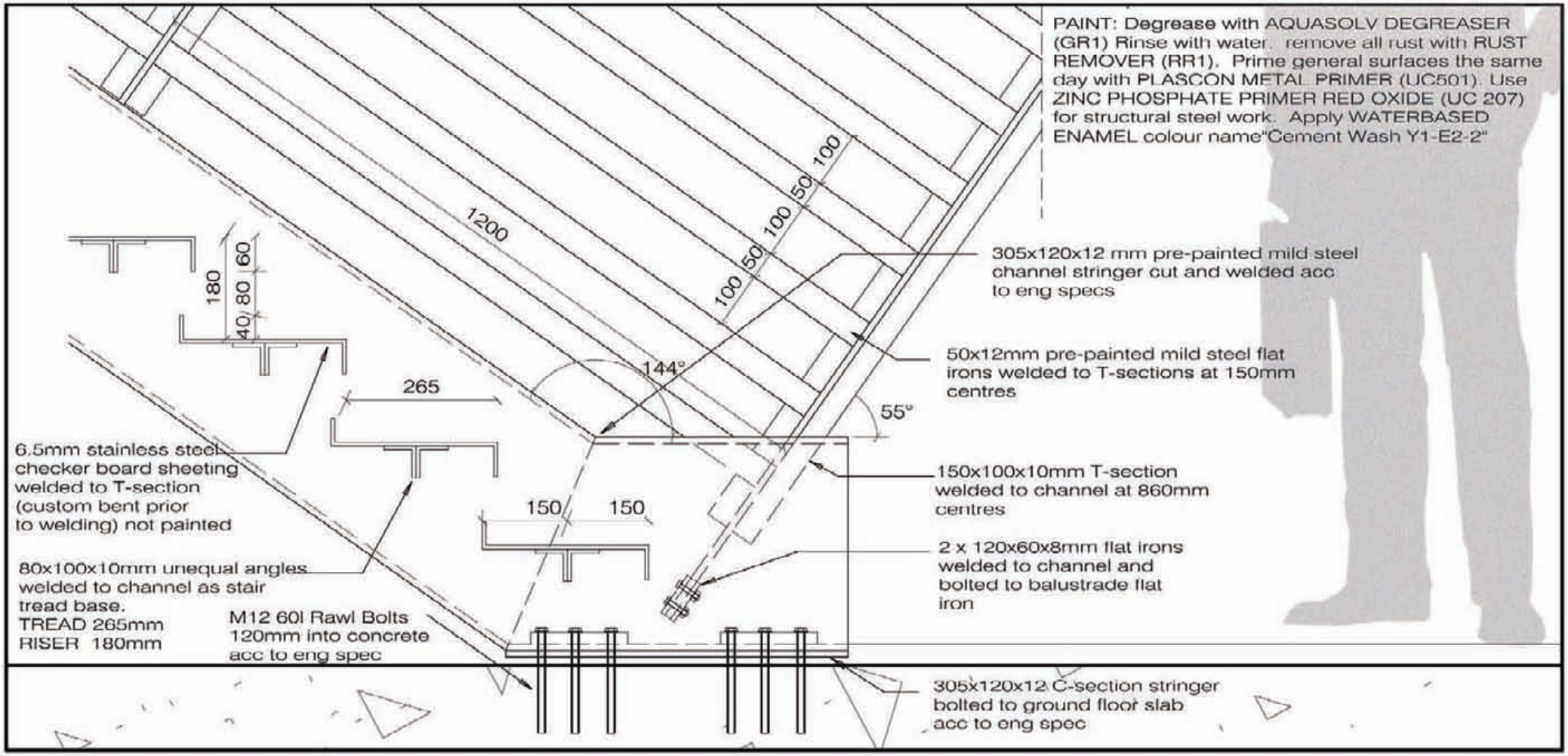


Figure 8.21 Detail 9 - Steel Staircase Detail

DETAIL 9

Steel Staircase Detail

Scale 1:10

30000 x 2480 x 85mm maximum dimensions of mild steel Billboard structure, expansion bolted to in-situ cast concrete wall as per manufacturer's specifications.

min 40 mm Stucco Granno self-levelling screed, premixed and poured onto Q-Lock floor. Granno to be cast in max 1500 x 1500 mm blocks, separated before casting with polypropylene spacers. Openings to be filled with polyurethane sealant.

BILLBOARD:
80mm timber facing board, bolted to horizontal pre-painted, mild steel, flat plates, as stringers of billboard. Factory printed vinyl sheeting glued to facing with polyurethane based adhesive, according to manufacturer's specifications

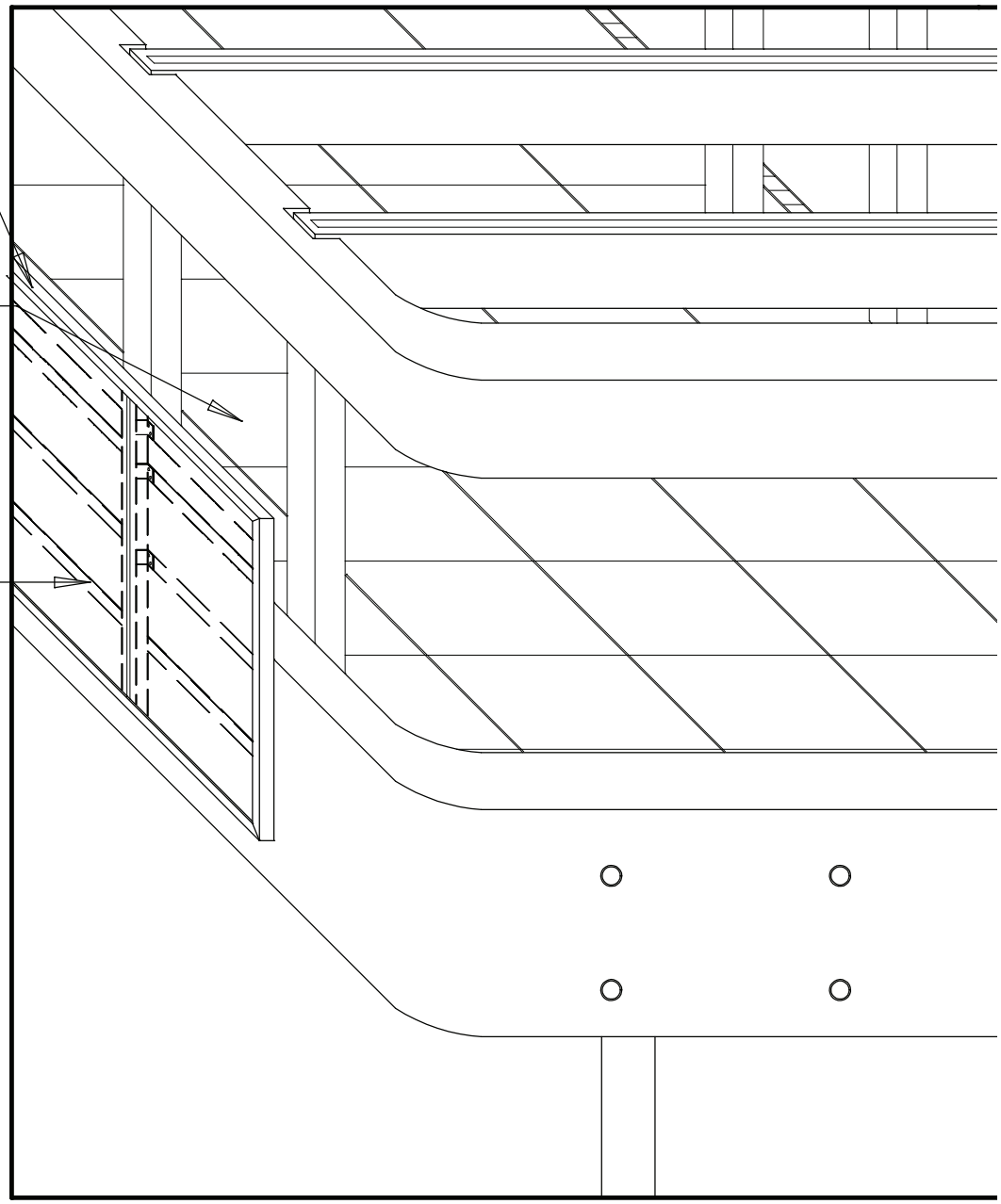
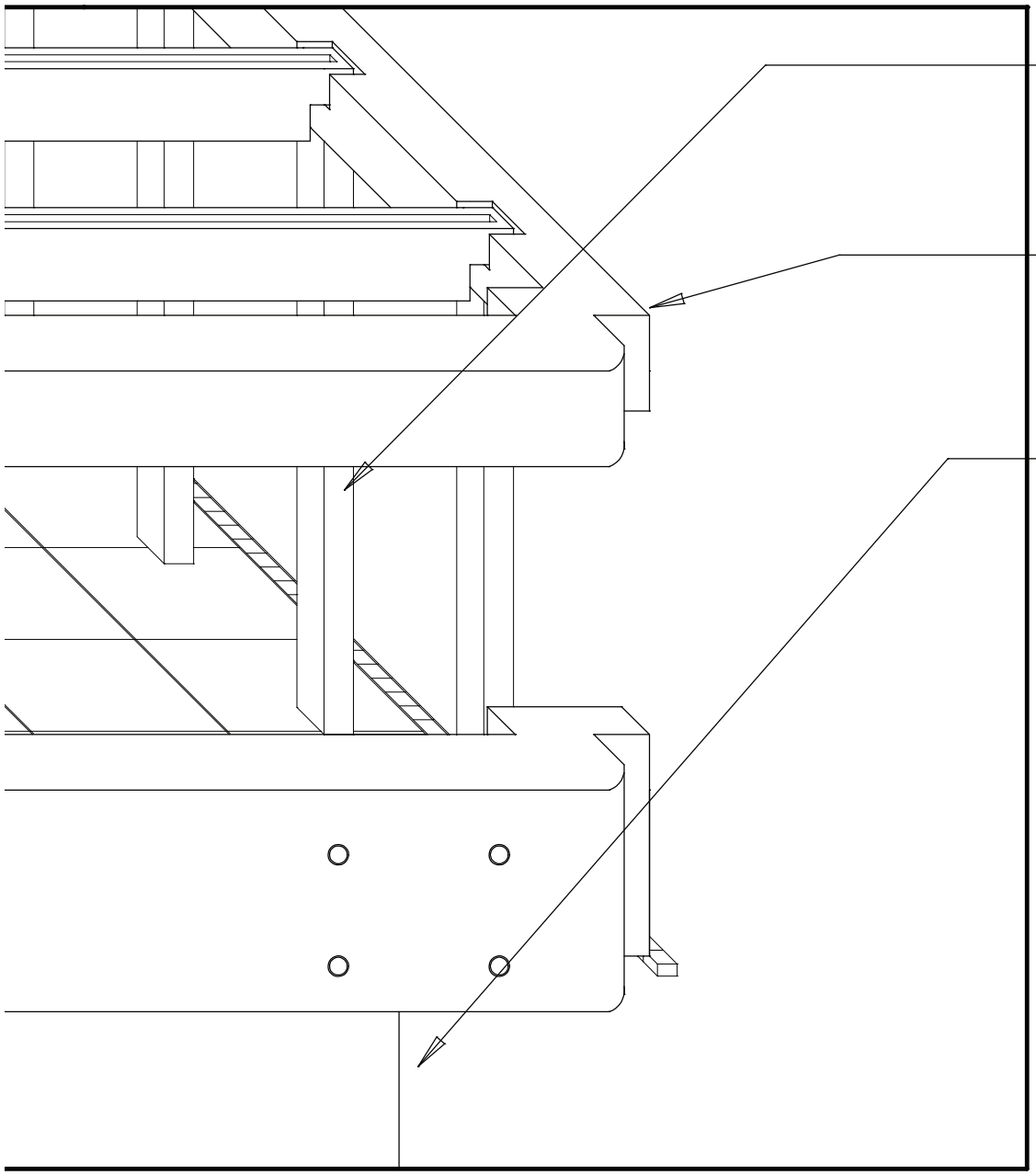


Figure 8.22 Detail 10 - Connection to Boukunde



100 x 100 x 10mm pre-painted cold formed mild steel square tubing as columns supporting concrete beam above. Tubing to match vertical support of Vierendeel truss.

280 x 200 reinforced concrete beam, shutter finish to match Boukunde aesthetic. Shuttering to be 500mm timber shuttering, paint to match existing Boukunde colour, according to specialist.

4500 x 600 mm reinforced concrete column as per eng specifications

DETAIL 10

Connection to Boukunde

Scale 1:20