Chapter 6
Flow-drain punctures in retaining wall at 1m² spacing 450mm cast in situ reinforced concrete retaining wall

Min 75mm cavity

Geo-textile membrane

Min 150mm mesh reinforced structural concrete floor slab with 1:50 fall towards water catch-pit on 0.45 polyolefin membrane

290x140x90mm concrete bricks with 20mm joints for water drain

Geo-pipe on cast in situ reinforced concrete footing for water pressure

250mm no fines cast in situ concrete floor slab at 1:50 fall to sump

Reinforced concrete footing

Two 150 x 90 x 15 galvanized mild steel angles fixed with bolts to glazing support frame and reinforced concrete up-stand as per eng

Pilkington 4 point spider arm structural glazing facade system adjusted to fit curve as per manufacturer

GKD AG4 MediaMESH vertically supported by GKD fixing bracket to mild steel galvanized frame as per manufacturer

255mm reinforced concrete floor slab as per eng approved with polished and pigmented screw onto concrete floor slab

Purpose made structural steel box frame for glazing and GKD AG4 MediaMESH end support welded onto vertical steel support frame as per engineer

Purpose made Aluminium frame fitted into structural box unit for spider arm structural glazing end support

Laminated timber bolt fixed into steel channels and welded onto purpose made suspended intermediate steel angle support frame at 2750mm c/c to fit media facade curve
RCP 8 Translucent roof sheet profile fixed to purlin support system with approved fasteners at every third interval

Purpose made box gutter supported on top of structural box unit to fall as per eng

Purpose made structural steel composite box unit as per engineer welded onto mild steel support frame

Purpose made structural steel vertical support bracket as per engineer and GKD MediaMESH manufacturer

Purpose made Aluminium frame fitted into structural box unit for spider arm structural glazing end support

Beam size:
Maximum span 7500mm/slanterness ratio of 20: 5000/20=375mm galvanised steel I-BEAM

150 x 75 mm steel cold-formed lipped channels fixed to I-beam roof support with mild steel a angle cleat as per engineer

Poly Carbonate roof panel sheeting supported in between lipped channels onto I-BEAM section to create mechanically ventilated cavity for solar heat control

GKD AG4 MediaMESH vertically supported by GKD mesh fixing bracket to mild steel galvanised frame

250 x 100mm galvanised hollow steel section for structural glazing support welded to I-BEAM and composite structural box as per engineer

Pilkington 4 point spider arm structural glazing facade system with arms adjusted to fit curve as per manufacturer

Glass panel intersection with site applied silicon sealant and backing rod as per manufacturer

DETAIL 011 1:10
75 x 50 x 15mm steel angles welded onto IPE160 bottom truss member as per SANS 2001 - CS 1

127 x 75 x 15 mm galvanised steel channels bolt fixed onto IPE 160 exposed steel truss bottom cord

Fibre cement ceiling board fixed to galvanized steel channels

Purpose made supporting aluminium window sill for window frame

Aluminium window frame

125 x 75 x 15mm mild steel channels bolt fixed to composite steel frame for glazing arm support

Pilkington Planar flush glazing system with applied silicone sealant between glass panels

25 x 75mm timber purlins fixed into 125 x 25mm mild steel channel at 200 centres welded onto composite steel angle frame

150 x 75 x 15mm composite steel angle frame

Light fitting installed into composite frame

Aluminium door frame
254 x 171mm mild steel section fixed to concrete up stand and angle-cut for flush joint finish

4 x 12mm laminated frosted glass floor deck fixed with counter-sunk bolts onto rubber backing supported on steel frame

Timber floor deck fixed supported with 50x25mm timber battens onto 275x171x12mm steel I-Beam onto concrete footing

BEAMSIZE: Span of 5500mm/slenderness ration of 20 5500/20 = 275mm galvanized steel I-BEAM

75mm thick layer course aggregate of 20mm crushed stone laid above garden soil

Drip system installed as per manufacturer and garden soil for trees and shrubs growth and support in concrete planter box

Geo-textile membrane on 75mm thick layer of 20mm crushed stone with min 30mm concrete screed to 1:50 fall

Full-bore outlet casted into concrete planter box with connecting water outlet pipes in brick cavity wall

25mm extruded brick for shadow line

175 x 80mm mild steel angled fixed to supporting concrete and column brick work

Aluminium door and window frame supported with 50 x 50 x 15mm galvanised steel angle frame
CORTEN finished BROWNSBUILT roof sheets fixed to 175 x 75 top hats

Sagex boarded roof insulation panes supported over lip of top hat sections

Purpose made structural gutter galvanised mild steel flashing supported on top of steel angle bottom truss member

Purpose made gutter downpipe as per manufacturer specifications

Two 150 x 75 x 15mm steel angles welded together as per engineer for top and bottom main support

125x75x15mm steel channels with closed ends bolted fixed to main structural member with timber purlins preserved and treated to manufacturer bolt fixed into channel frame

Aluminium window frame fitted to steel angle bottom truss member
356x171x51mm galvanised steel column connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate.

150mm diameter timber handrail preserved and treated as per manufacturer fixed onto steel tubing welded to balustrade.

75 x 50 x 15mm galvanised mild steel balustrading lipped sections with 10mm diameter stainless steel rods and welded to 10mm base plate fixed to 255mm cast in situ reinforced conc floor slab with m10 galv mild steel bolts.

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate with expansion grout under base plate.

Lipped balustrade fixed to reinforced cast in situ concrete floor with stainless steel countersunk selftapping screws.

255mm reinforced cast in situ concrete floor slab with exposed formwork finish as per engineer.

Column reinforcing into reinforced concrete beam.

550 x 550mm reinforced concrete base 750mm upstand.

356x171x51mm galvanised steel column connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate.

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate.

Expansion grout under base plate.

DETAIL 005 1:20
20mm crushed stone aggregate layer onto approved waterproofing membrane on min 50mm screed to fall 1:50

Day joint

SAGEX boarded roof insulation as per manufacturer

75 x 50mm timber purlins fixed into welded steel angle frame at 2250mm c/c

125 x 75mm mild steel angle fixed with ceiling lug casted into concrete slab and bolt fixed to supporting framework

silicone sealant and neoprene guides in 50 x 50 x 3mm aluminium glazing channel at min 25mm cover with shims at between reinforced concrete lab installed as per manufacturer

Drip

Pilkington Planar stainless steel bolt onto 80 x 80 x8mm springplate with splice bolt assembly onto 19mm armouplate fin with 1mm fibre gasket seal

12mm armouplate glazing with silicone sealant and backer rod between glass plate connections
20mm crushed stone aggregate layer onto approved waterproofing membrane on min 50mm screed to fall 1:50

Day joint

SAGEX boarded roof insulation as per manufacturer

75 x 50mm timber purlins fixed into welded steel angle frame at 2250mm c/c

125 x 75mm mild steel angle fixed with ceiling lug casted into concrete slab and bolt fixed to supporting framework

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column reinforcing into reinforced concrete beam

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356x171x51mm galvanised steel column connected with oversized industrial M150 bolts to purpose made steel composite unit welded to 450 x 450 x 20 mm base plate

eight holding bolts in anchor grout in concrete base bolt fixed to steel base plate

expansion grout under base plate
CORTEN finished BROWNSUILT roof sheets fixed to 175 x 75 top hats

Sagex boarded roof insulation panels supported over lip of top hat sections

Purpose made structural gutter galvanised mild steel flashing supported on top of steel angle bottom truss member

Purpose made gutter downpipe as per manufacturer specifications

Two 150 x 75 x 15mm steel angles welded together as per engineer for top and bottom main support

125x75x15mm steel channels with closed ends bolt fixed to main structural member with timber purlins preserved and treated to manufacturer bolt fixed into channel frame

Aluminium window frame fitted to steel angle bottom truss member
Two 100 x 50 x 1.6 galvanized mild steel angles fixed with bolts to glazing support frame and reinforced concrete apron screen at one end.

F Khalifa 4 point spiral arm structural glazing facade system adjusted to fit curve.

GKD A41 Weldable3+ vertically supported by GKD being bonded to mild steel galvanized beam.

Purpose made structural steel box frame for glazing and GKD A41 Weldable3+ and support welded onto vertical mild steel support frame.

30mm reinforced concrete floor slab as per eng approved.

Polished and stained sisal on top concrete floor slab.

50 x 75 x 15mm galvanized mild steel angle counter-sunk into concrete beam.

Bitumen torch-on waterproofing membrane laid on min 50mm concrete screen with min fall 1:70 towards ends.

40mm SONITEK acoustic foam wedges onto 12mm timber ply-board fixed to 50 x 50mm timber batten frame at max 450mm c/c.

50 - 75mm SONITEK acoustic wool insulation fixed into 100mm brick cavity wall.

38 x 38mm timber batten frame at max 450mm c/c with 40mm SONITEK acoustic foam wedges onto 12mm plywood board.

Laminated timber slat fixed into steel channel and welded onto precast concrete beam supported at 250mm on sky tray media facade curve.

Detail 004 1:20

Detail 007 1:10
254 x 171mm mild steel I-beam fixed to concrete up stand and angle-cut for flush joint finish

4 x 12mm laminated frosted glass floor deck fixed with counter-sunk bolts onto rubber backing supported on steel frame

Timber floor deck fixed supported with 50x25mm timber battens onto 275x171x12mm steel I-Beam onto concrete footing

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DETAIL 008 1:20
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150 x 75 x 15mm composite steel angle frame

Light fitting installed into composite frame

Aluminium door frame
RCP 8 Translucent roof sheet profile fixed to purlin support system with approved fasteners at every third interval

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