SVA International

NMU Science Centre

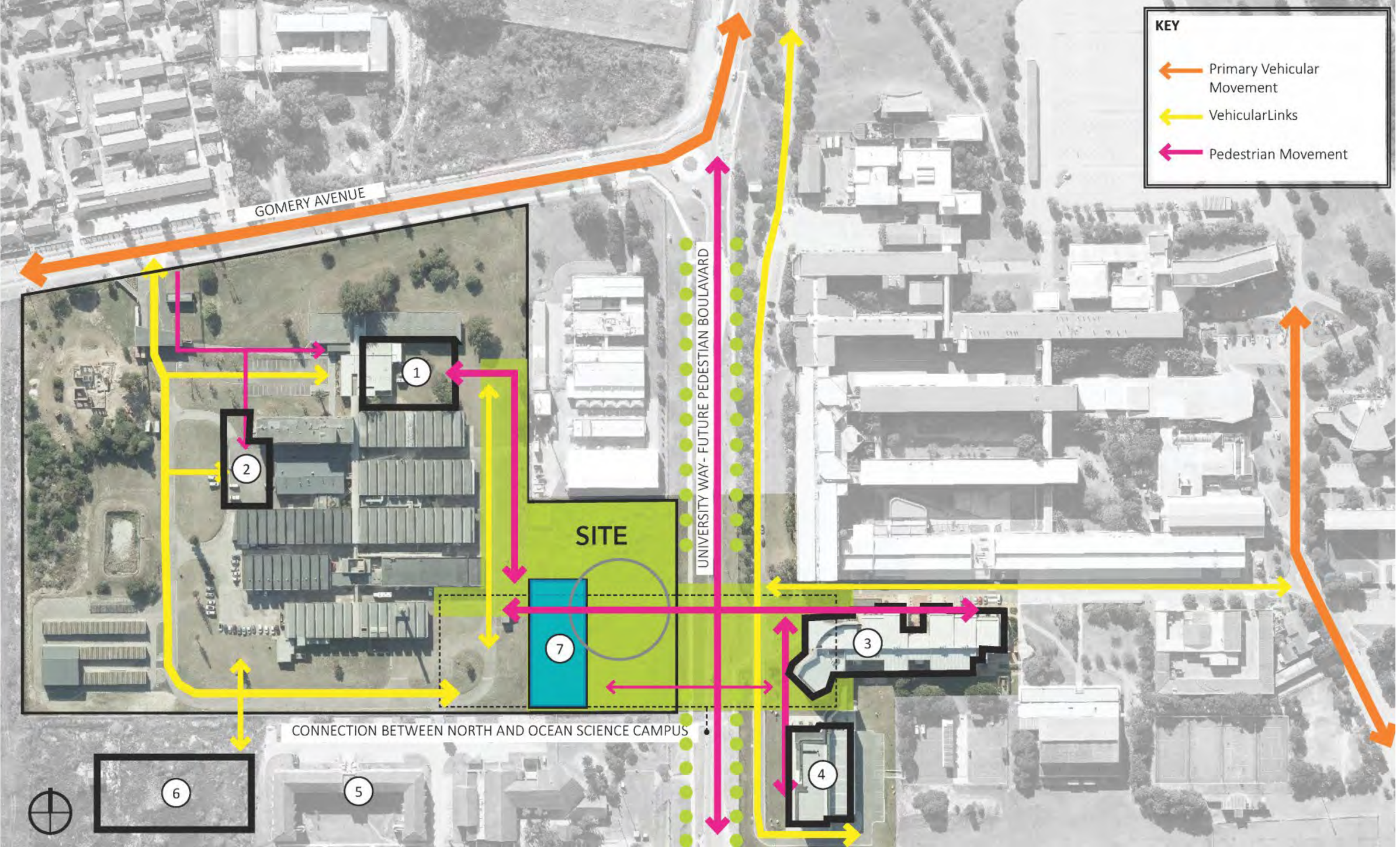
THE PROJECT BRIEF

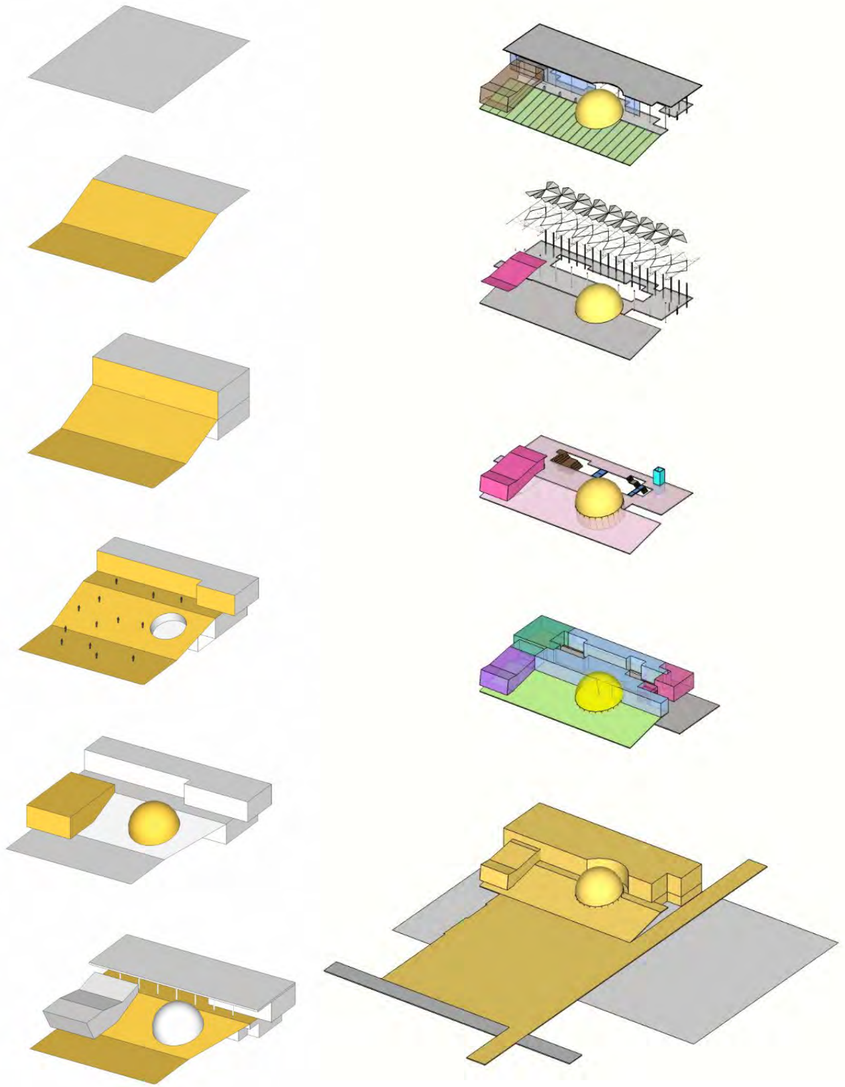
CLIENT: Nelson Mandela University

ARCHITECTS: SVA International

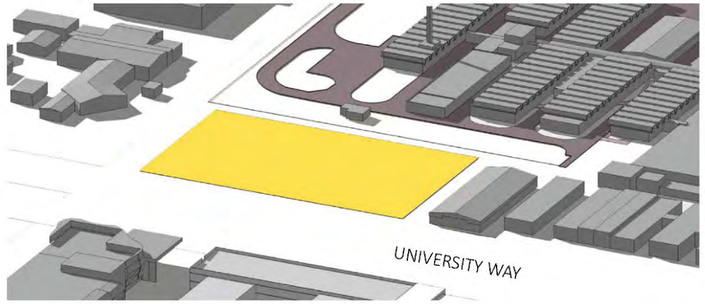
MAIN CONTRACTOR: WBHO Construction


SITE


KEY
Primary Vehicular Movement
VehicularLinks
Pedestrian Movement
GOMERY AVENUE
UNIVERSITY WAY- FUTURE PEDESTIAN BOULAVARD
SITE
CONNECTION BETWEEN NORTH AND OCEAN SCIENCE CAMPUS
1
2
3
4
5
6
7

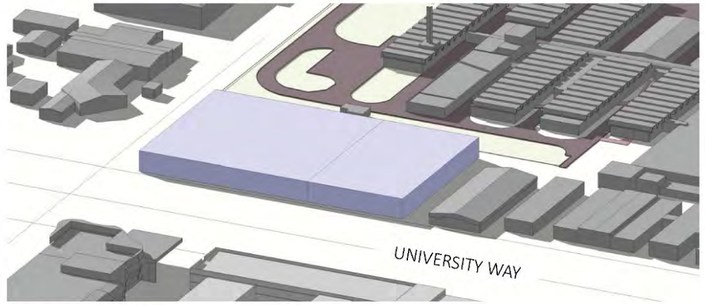


1



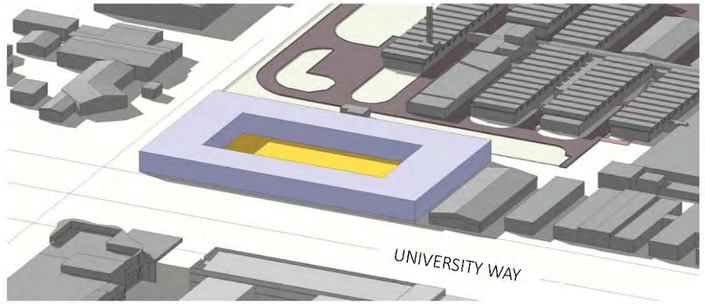
Site Definition

2



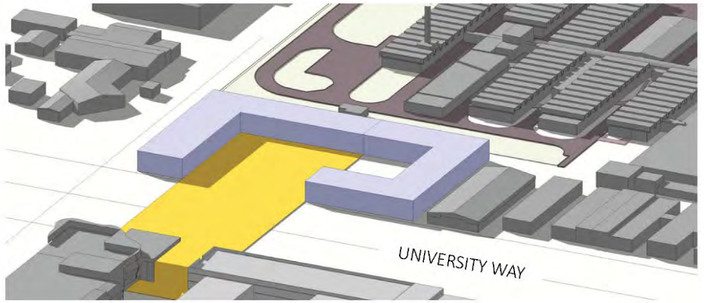
Urban Block Infill

3



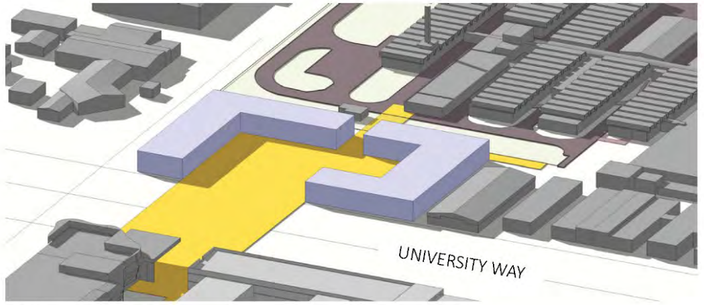
Positive Spaces Defined

4



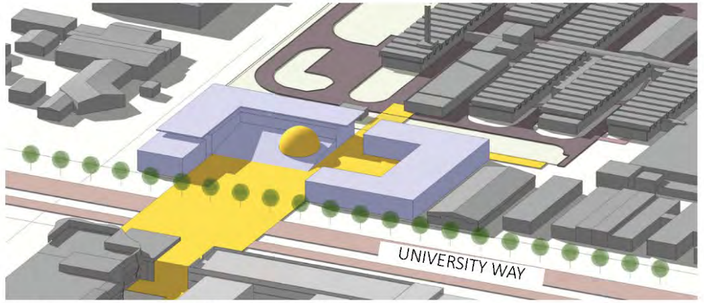
Forecourt Creation

5

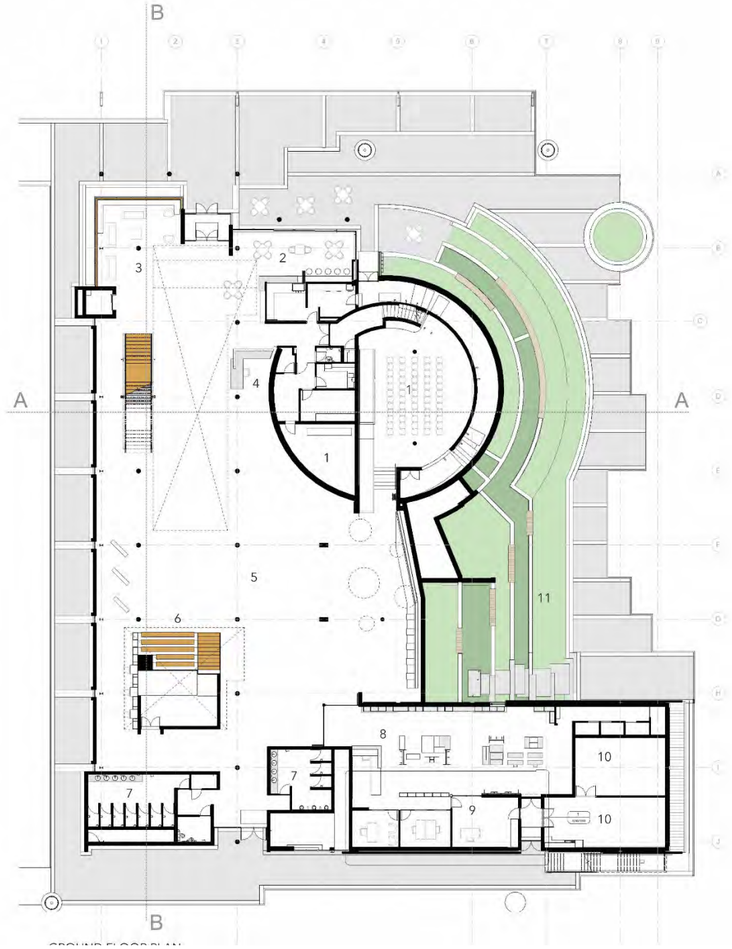


Link Established

6



Building as Positive Urban Layer Infill


B
A
A
B
1
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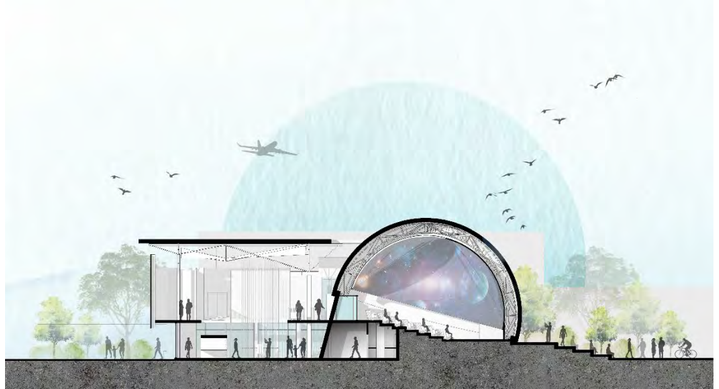
11



THE PROJECT OVERVIEW

PROJECT OVERVIEW

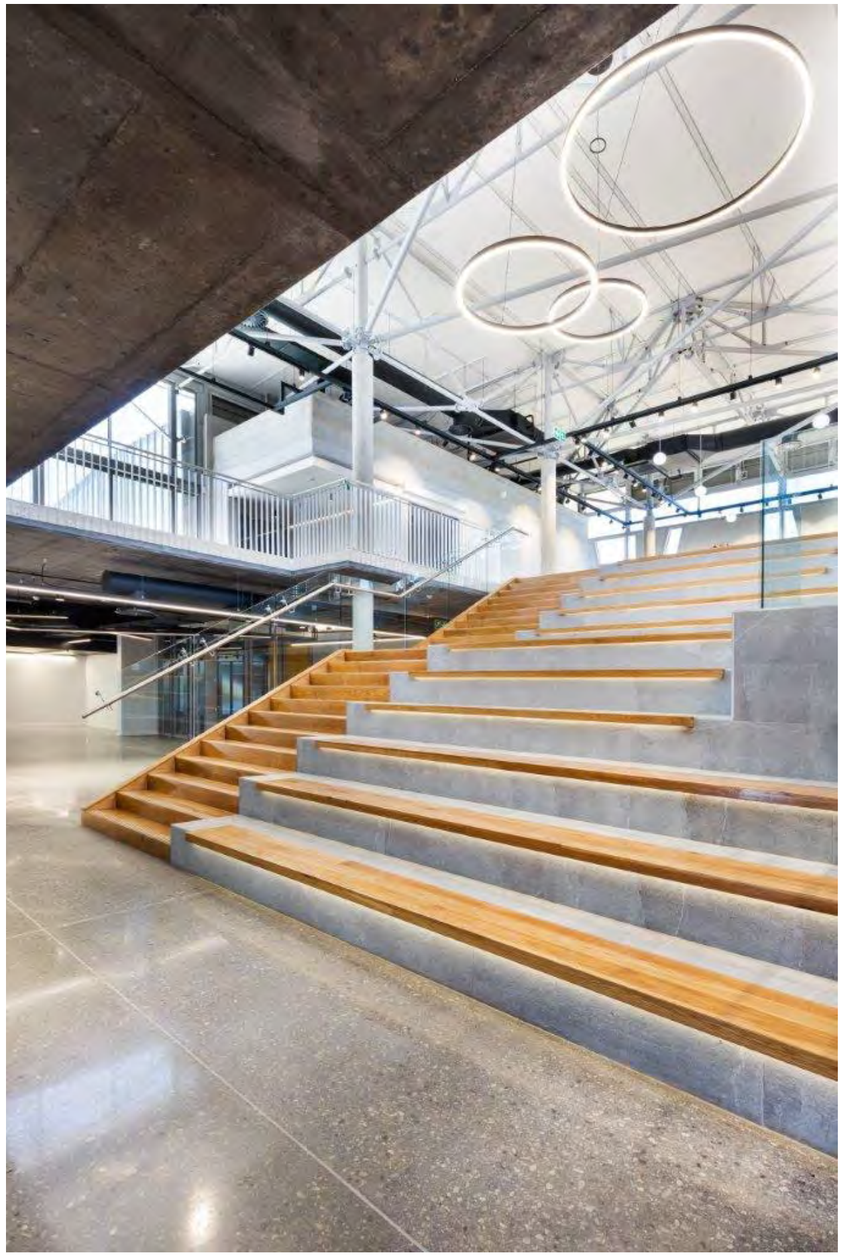
STRUCTURAL STEELWORK

Project Completed: September 2023

Steelwork Completed: June 2023

Tonnage: ±80 tons

Profiles used: Various



PROJECT OVERVIEW

STRUCTURAL STEELWORK

Structural Engineer: Bosch Projects

Steelwork Contractor: USS

Steel Detailer: Tekla Structures

Steel Merchant/s:

PROJECT OVERVIEW

METAL CLADDING AND ROOFING

Project Completed: September 2023

Cladding Completed: June 2023

Cladding Material Used: Aluminum 0.55mm, Coated G4

Cladding Profile: Safintra ‘Newlok' Concealed Fix

Cladding Area Coverage: ± 1 000 m^2 roofing and side cladding

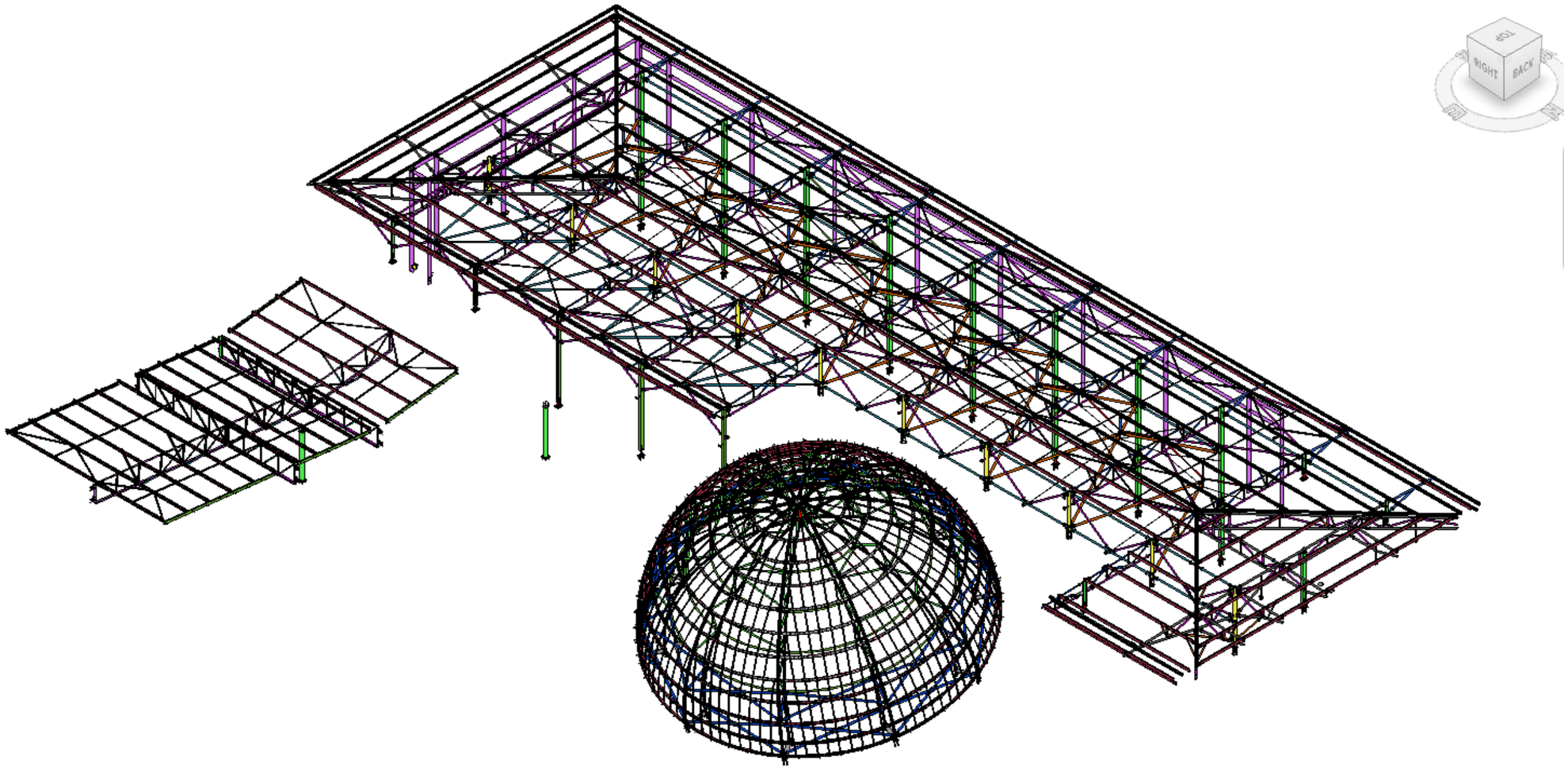
Cladding Tonnage:

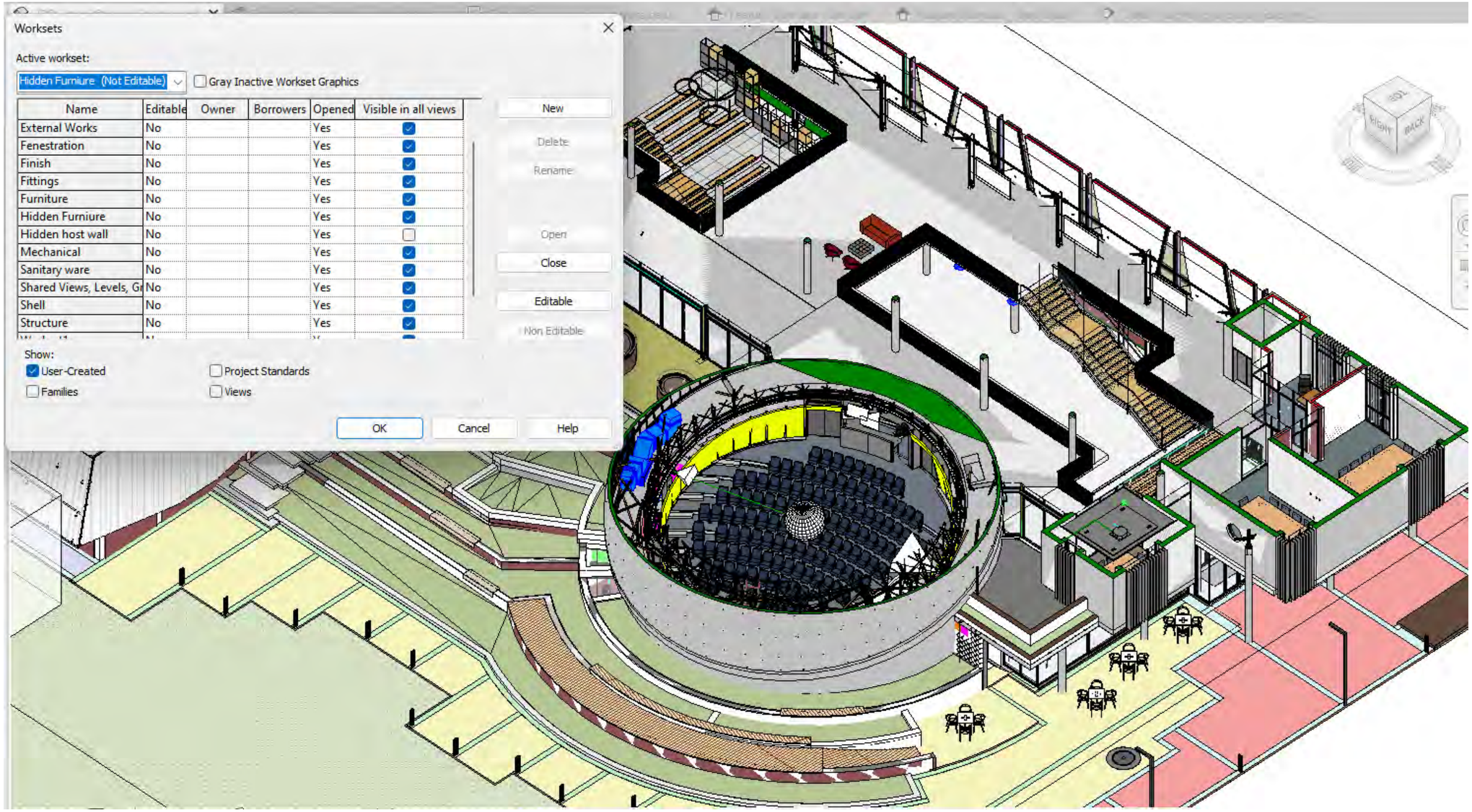
STRUCTURAL FRAMING

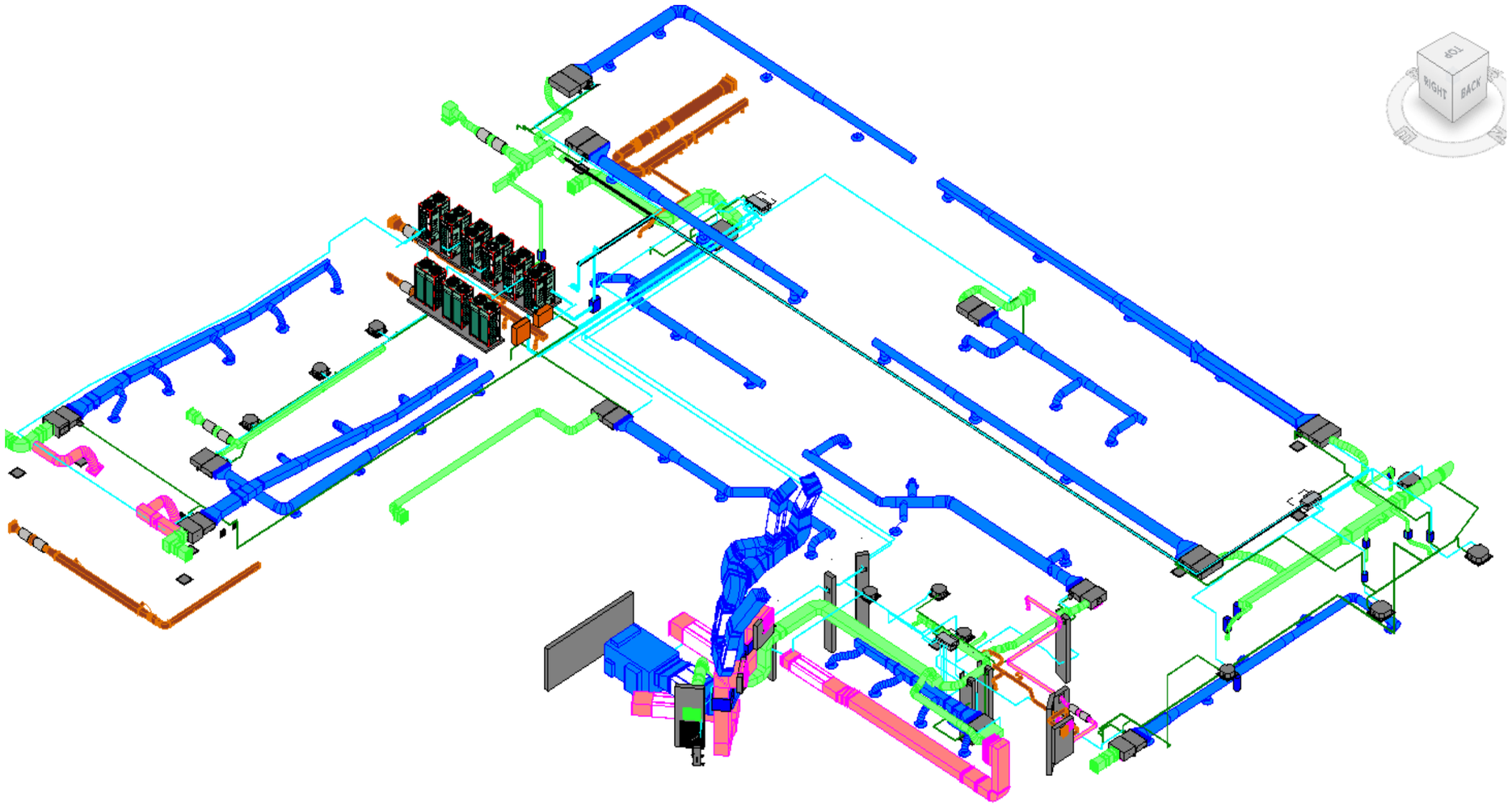
STRUCTURAL ENGINEER: Bosch Projects

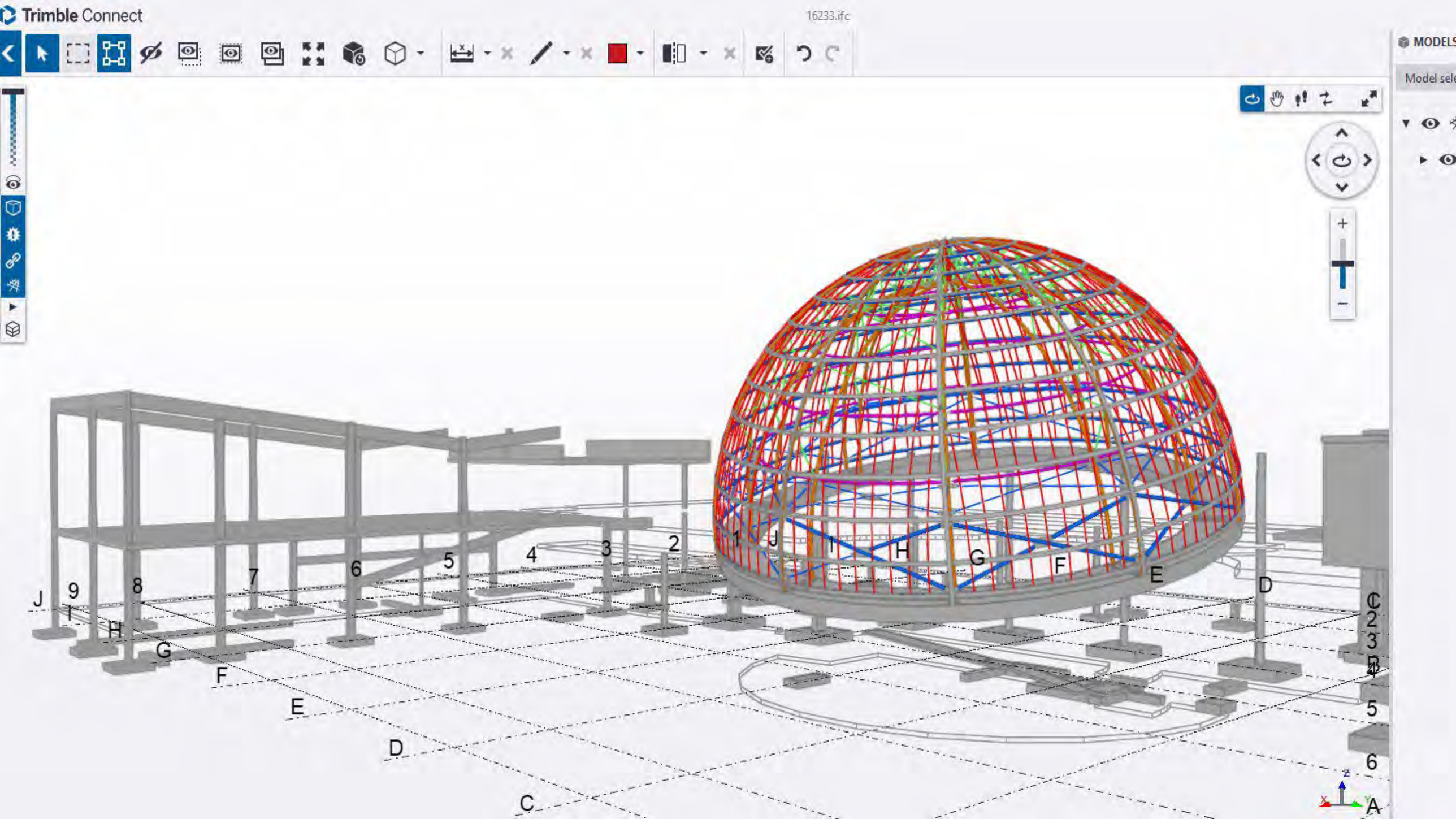
STEELWORK CONTRACTOR: USS

STEEL DETAILER: Tekla Structures


TOP
RIGHT
BACK


Worksets
Active workset:
Hidden Furniure (Not Editable)
Gray Inactive Workset Graphics
Name | Editable | Owner | Borrowers | Opened | Visible in all views
External Works | No | | | Yes
Fenestration | No | | | Yes
Finish | No | | | Yes
Fittings | No | | | Yes
Furniture | No | | | Yes
Hidden Furniure | No | | | Yes
Hidden host wall | No | | | Yes
Mechanical | No | | | Yes
Sanitary ware | No | | | Yes
Shared Views, Levels, Gr | No | | | Yes
Shell | No | | | Yes
Structure | No | | | Yes
New
Delete
Rename
Open
Close
Editable
Non Editable
Show:
User-Created
Project Standards
Families
Views
OK
Cancel
Help


TOP
RIGHT
BACK


Trimble Connect
16233.ifc
MODELS
Model sele
J
9
8
7
6
5
4
3
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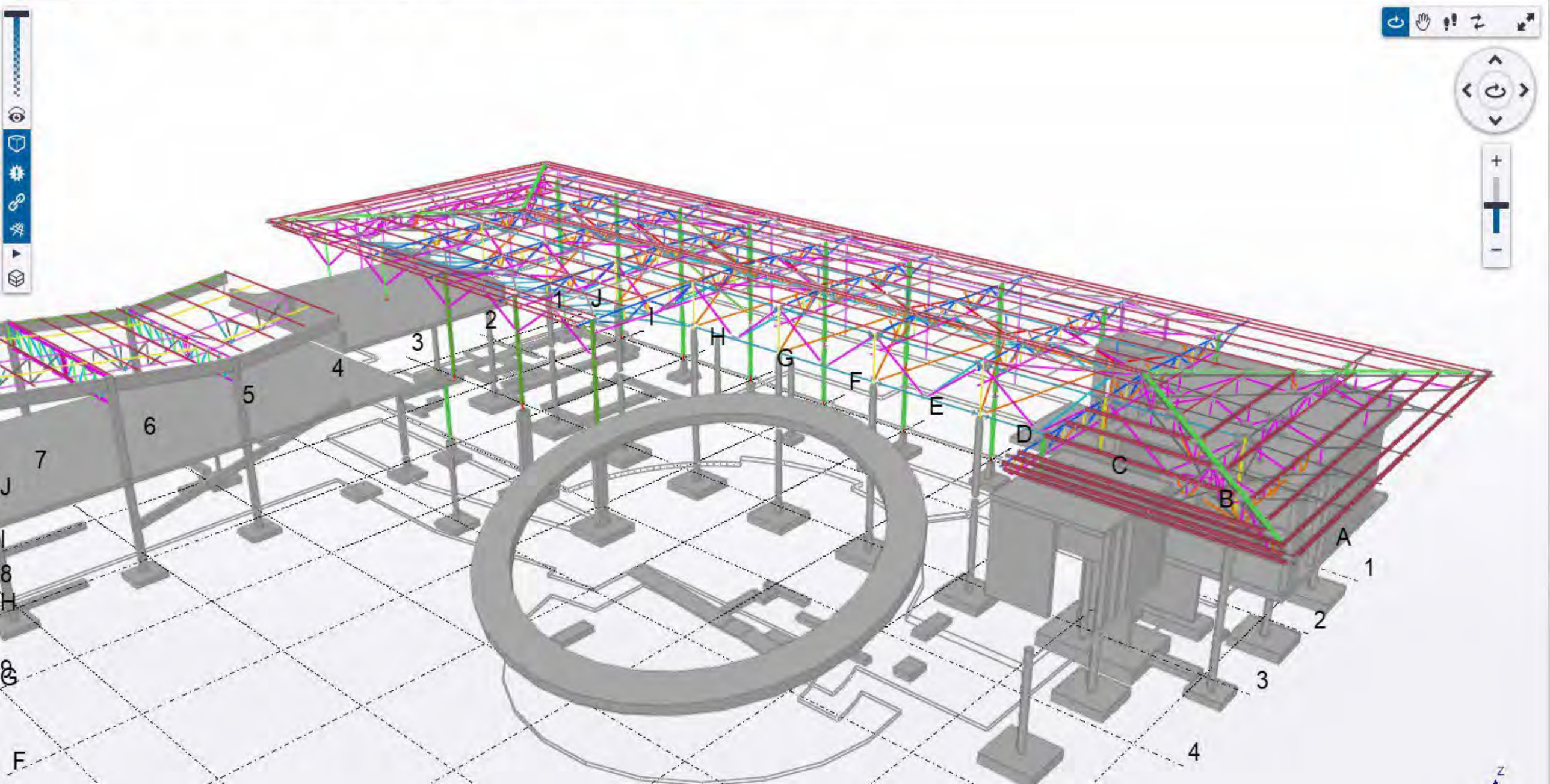
Trimble Connect

16233.ifc



Trimble Connect

16233.ifc

New version available!

TODOS

Date 2022/10/04 16:31

Label New ToDo

Title

Description

Assignee Select...

Tags Type to add...

Priority Normal

Due date

Type

Status New

Completion % 0

Attachments

0 Add Remove

View for 16233.ifc

Drag and drop items here, e.g. view(s) from the view strip.

Linked model objects

Link selected objects | Unlink selected objects

View linked objects (0)

Own views

Search

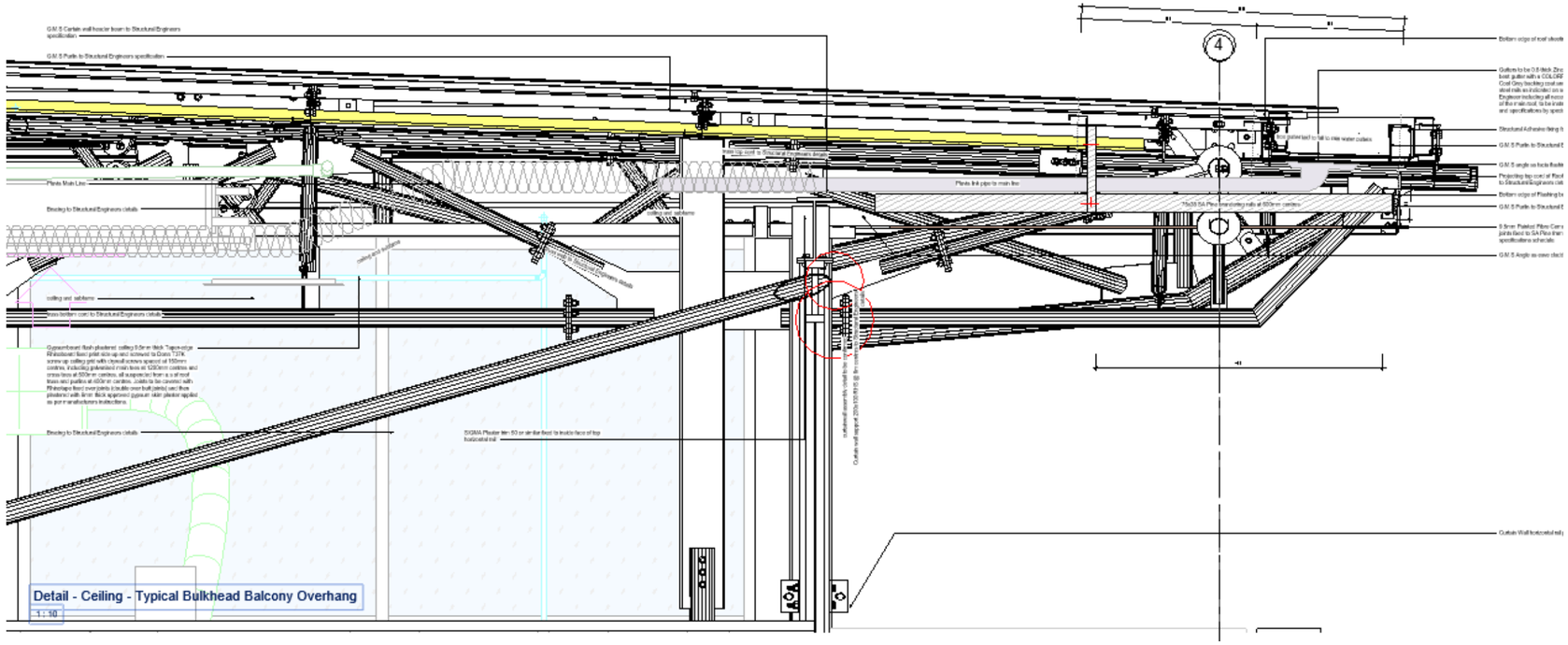
METAL CLADDING/ ROOFING

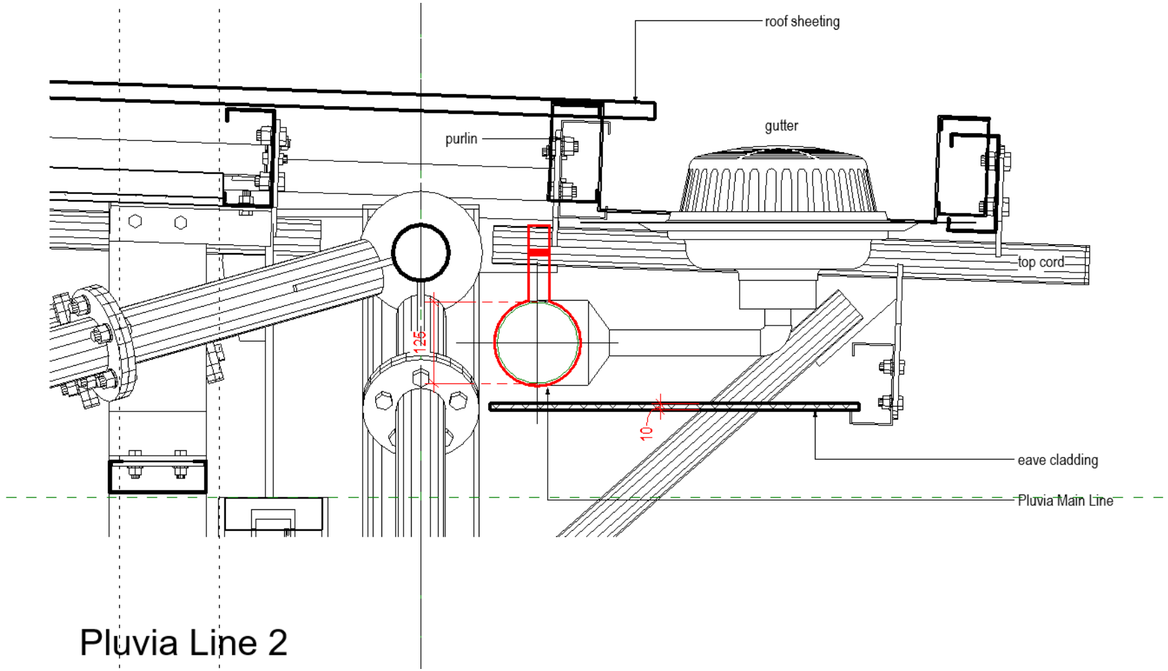
CLADDING MANUFACTURER: Safintra

CLADDING ROLL FORMER / PROFILER: Safintra

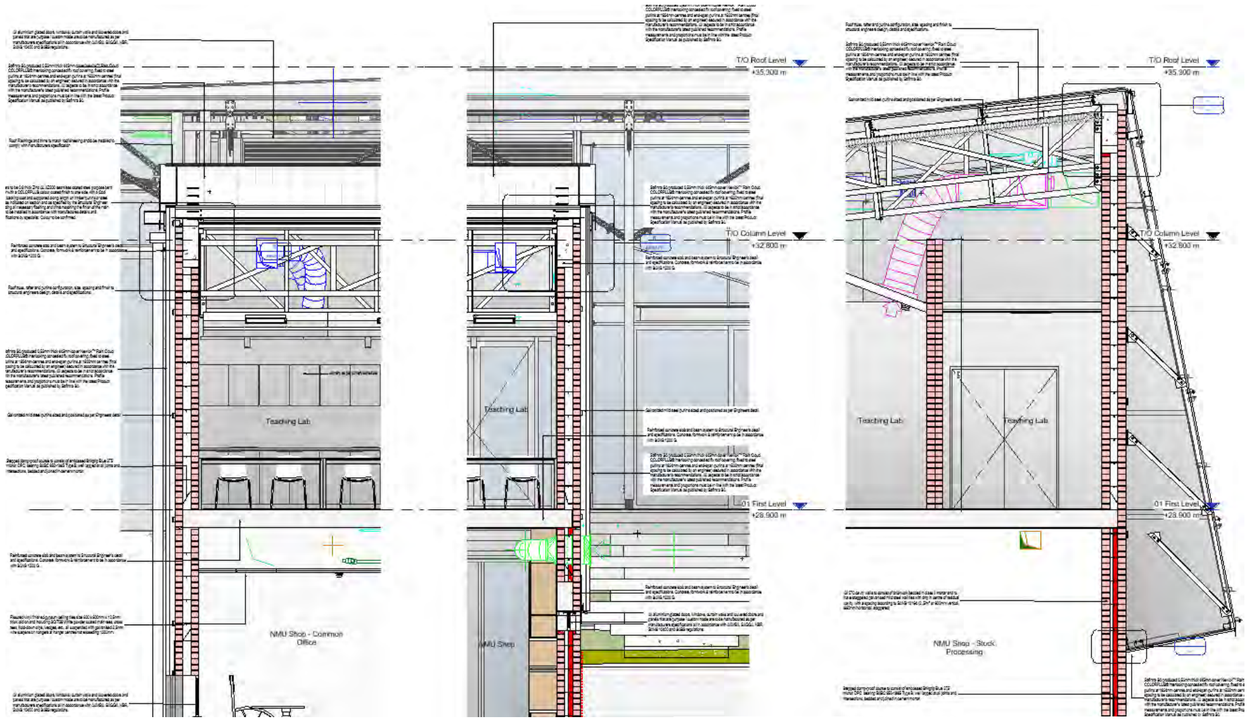
CLADDING/ ROOFING SUPPLIER: Safintra

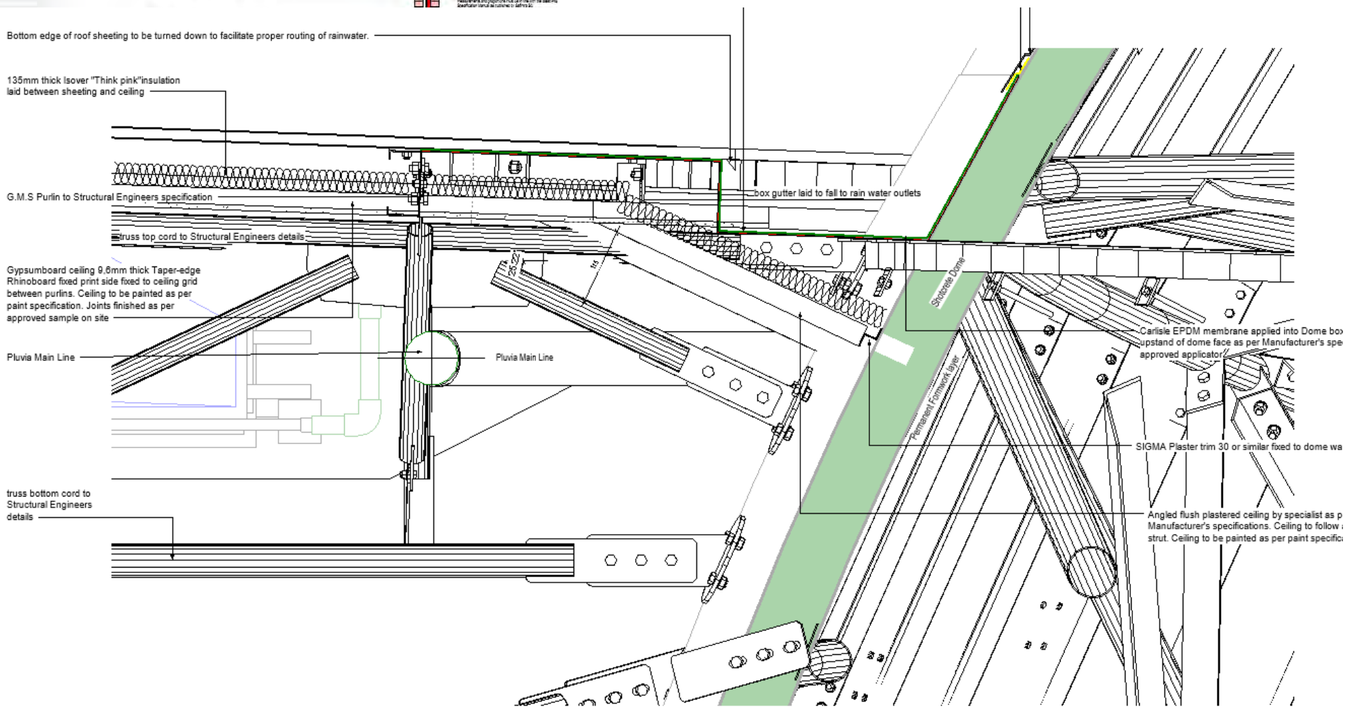
CLADDING/ ROOFING CONTRACTOR: Scheltema





Pluvia Line 2


T/O Roof Level
+35.300 m
T/O Column Level
+32.800 m
01 First Level
+28.900 m
Teaching Lab
Teaching Lab
Teaching Lab
Teaching Lab
NMU Shop - Common Office
NMU Shop
NMU Shop - Stock Processing


Bottom edge of roof sheeting to be turned down to facilitate proper routing of rainwater.
135mm thick Isover "Think pink"insulation laid between sheeting and ceiling
G.M.S Purlin to Structural Engineers specification
truss top cord to Structural Engineers details
Gypsumboard ceiling 9.6mm thick Taper-edge Rhinoboard fixed print side fixed to ceiling grid between purlins. Ceiling to be painted as per paint specification. Joints finished as per approved sample on site
Pluvia Main Line
Pluvia Main Line
truss bottom cord to Structural Engineers details
box gutter laid to fall to rain water outlets
Shadow Dome
Prefabricated Commercial Signs
Carlisle EPDM membrane applied into Dome box
upstand of dome face as per Manufacturer's spe
approved applicator
SIGMA Plaster trim 30 or similar fixed to dome wa
Angled flush plastered ceiling by specialist as p
Manufacturer's specifications. Ceiling to follow
strut. Ceiling to be painted as per paint specific

FABRICATION

STEELWORK CONTRACTOR: USS

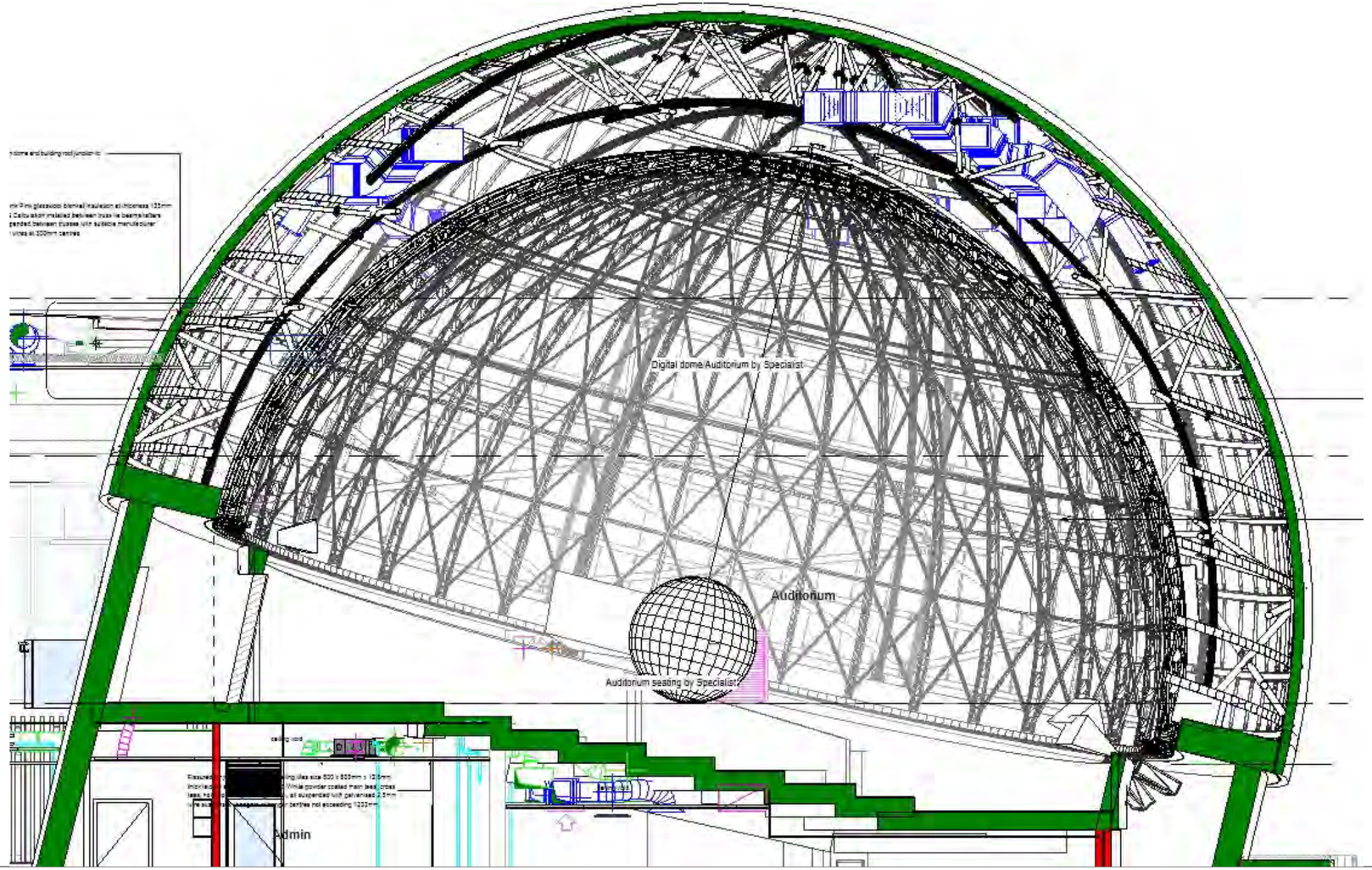

NOTICE

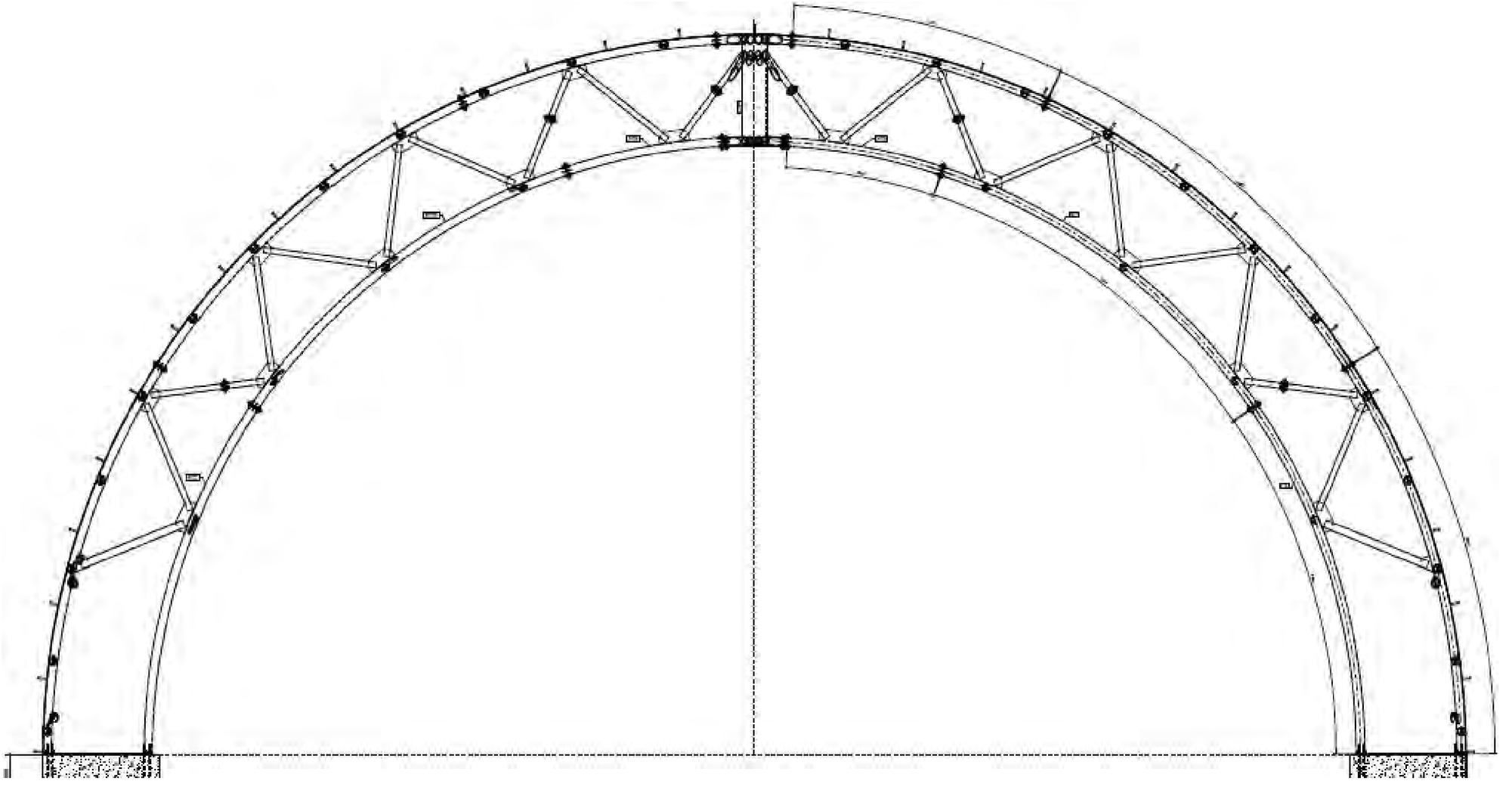

NMU CENTRE
G1
Phase 1
Zinto
1B1.0008NMUC

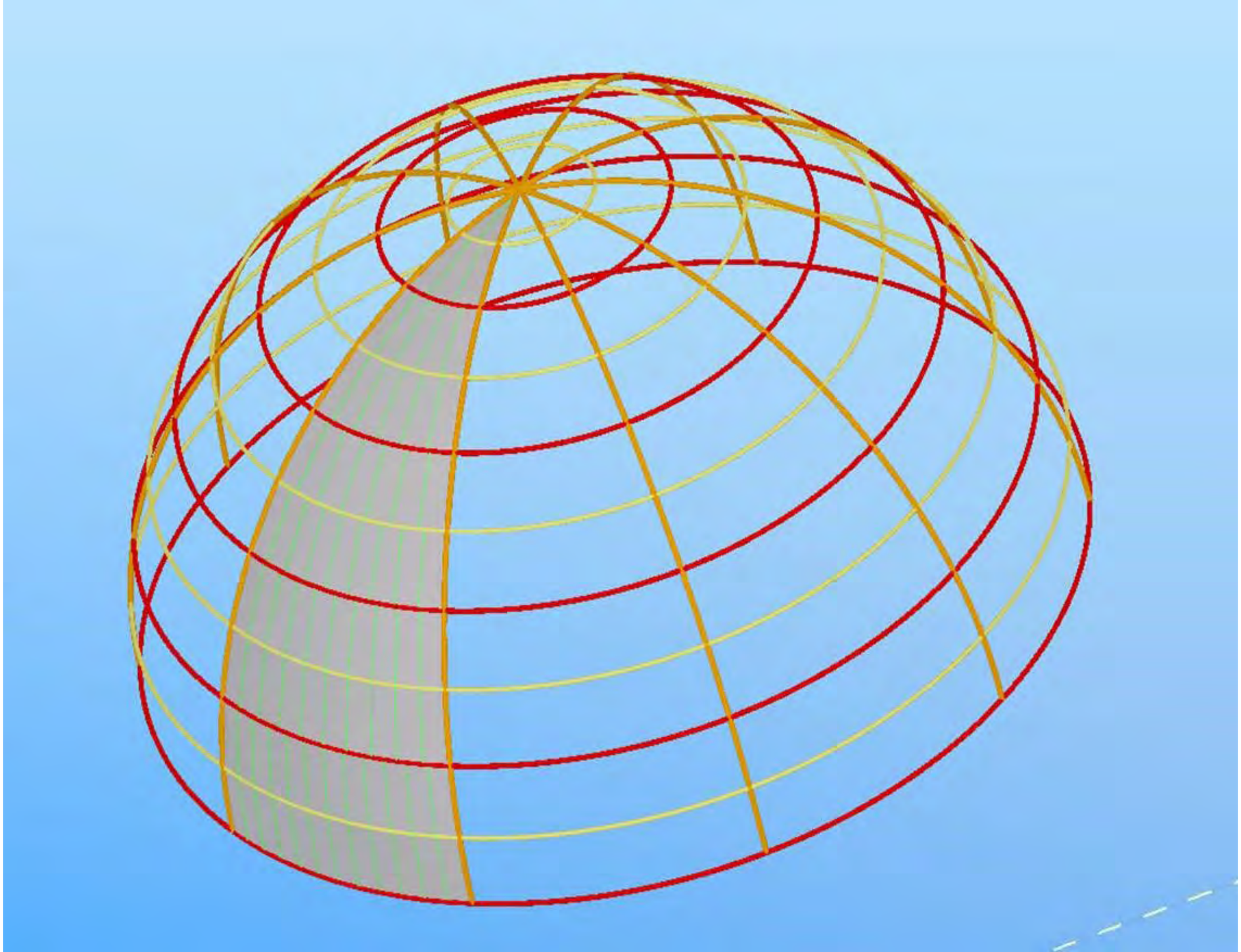

CENTRE
Phase 1
G1
Zinto
1.0001NMUC

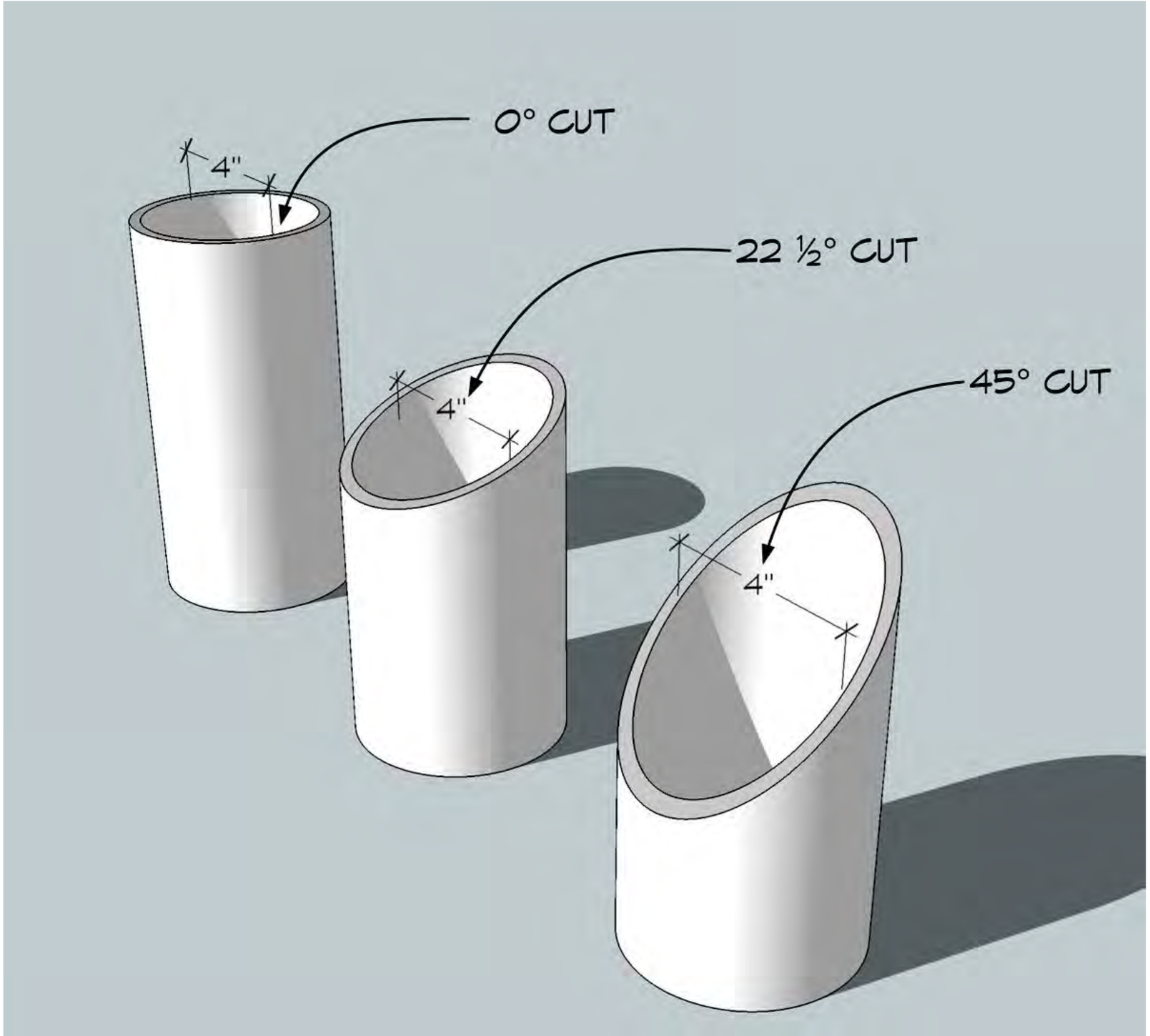
ERECTION / CONSTRUCTION / INSTALLATION

CONTRACTOR: USS / WBHO

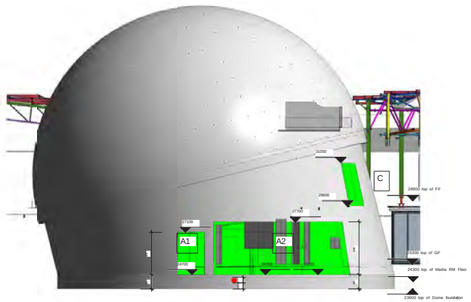

Digital dome/Auditorium by Specialist
Auditorium
Auditorium seating by Specialist
Admin





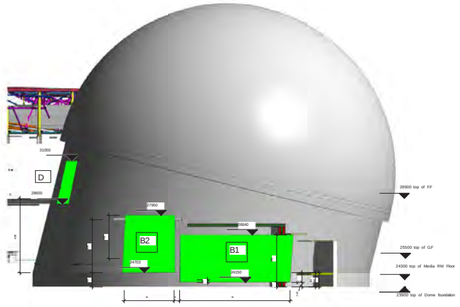

0° CUT
4"
22 ½° CUT
4"
45° CUT
4"

Dome Wall Opening Reference



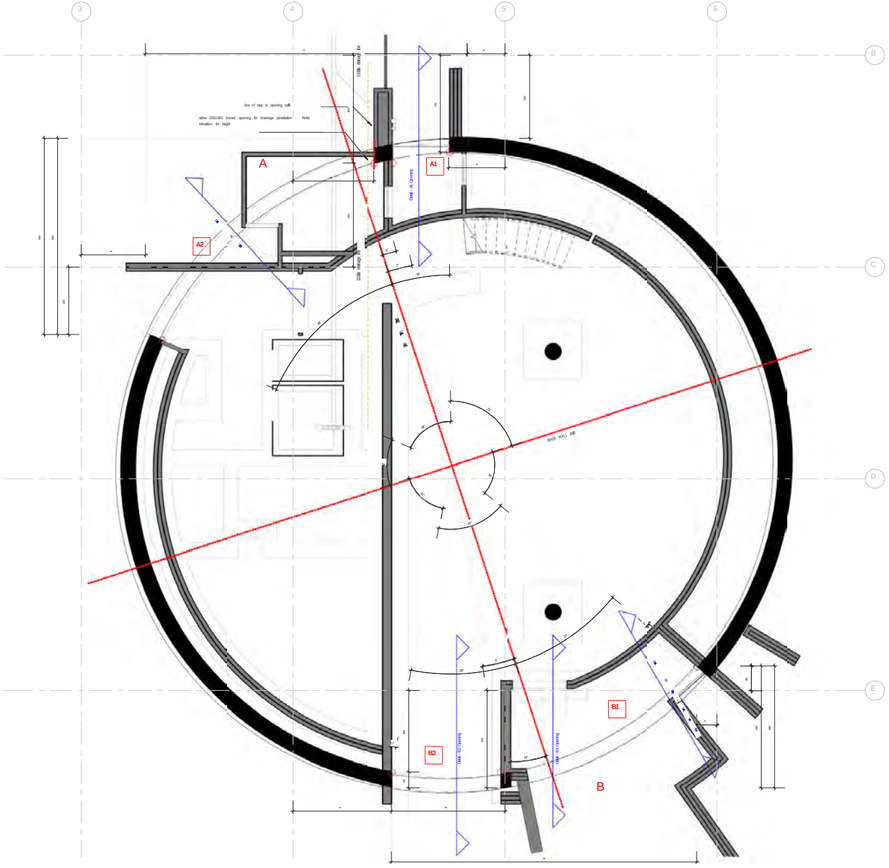
Elevation Side L

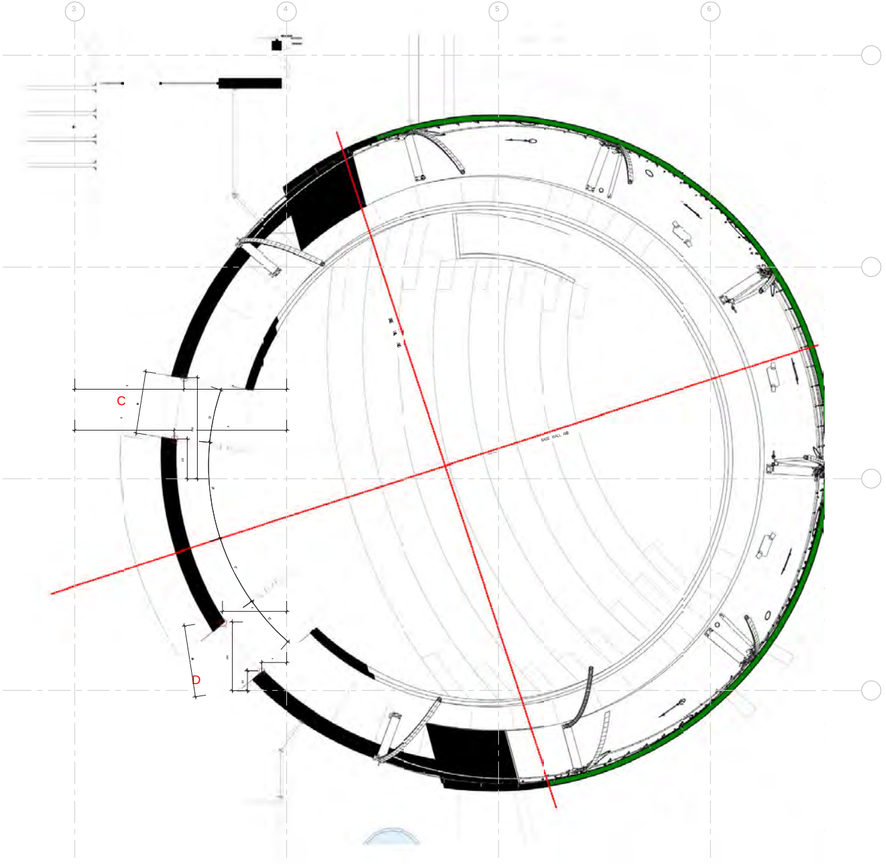
1 : 100

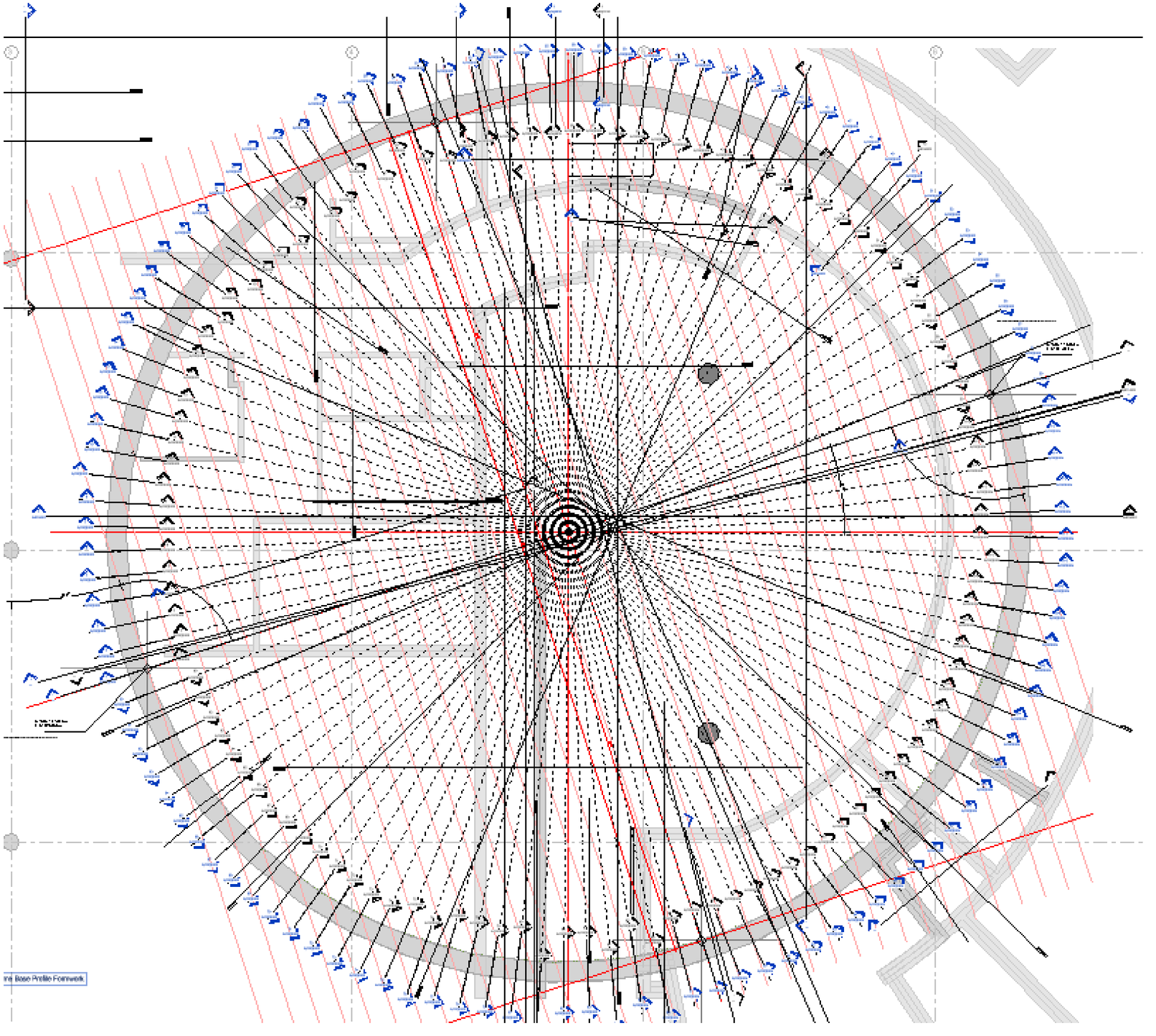


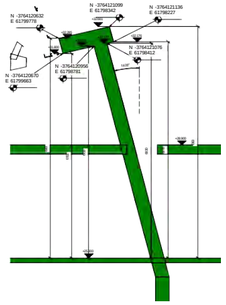
Elevation Side R

1 : 100

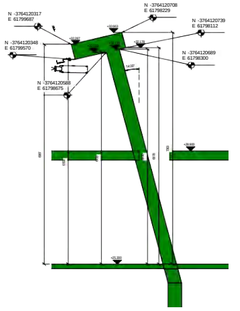




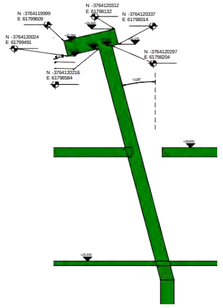




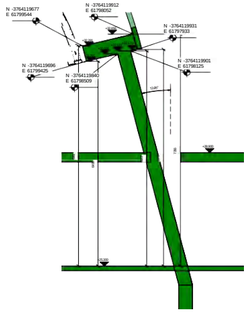
1 SECTION 1
1 : 50



2 SECTION 2
1 : 50



3 SECTION 3
1 : 50



4 SECTION 4
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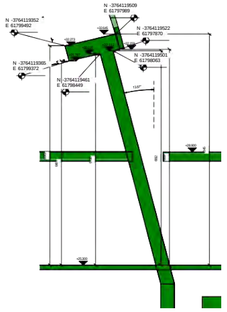
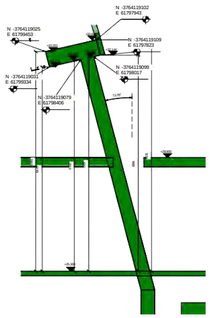
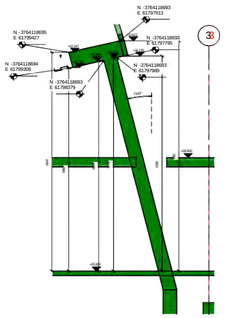


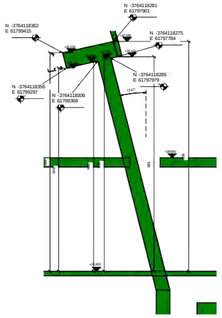
5 SECTION 5
1 : 50



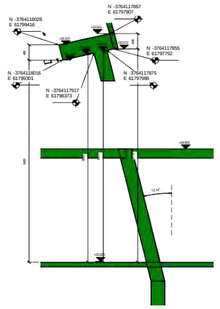
6 SECTION 6
1 : 50



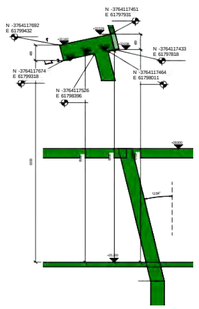
7 SECTION 7
1 : 50



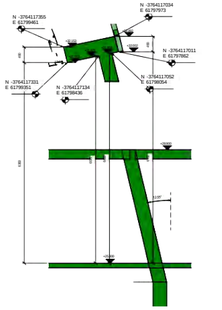
8 SECTION 8
1 : 50



9 SECTION 9
1 : 50

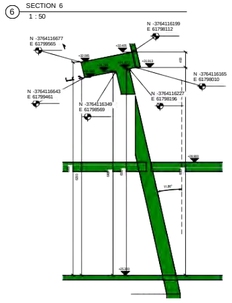


10 SECTION 10
1 : 50

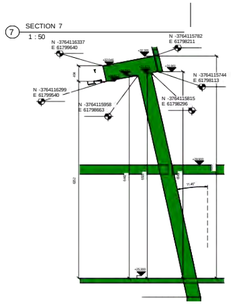


11 SECTION 11
1 : 50

12 SECTION 12
1 : 50



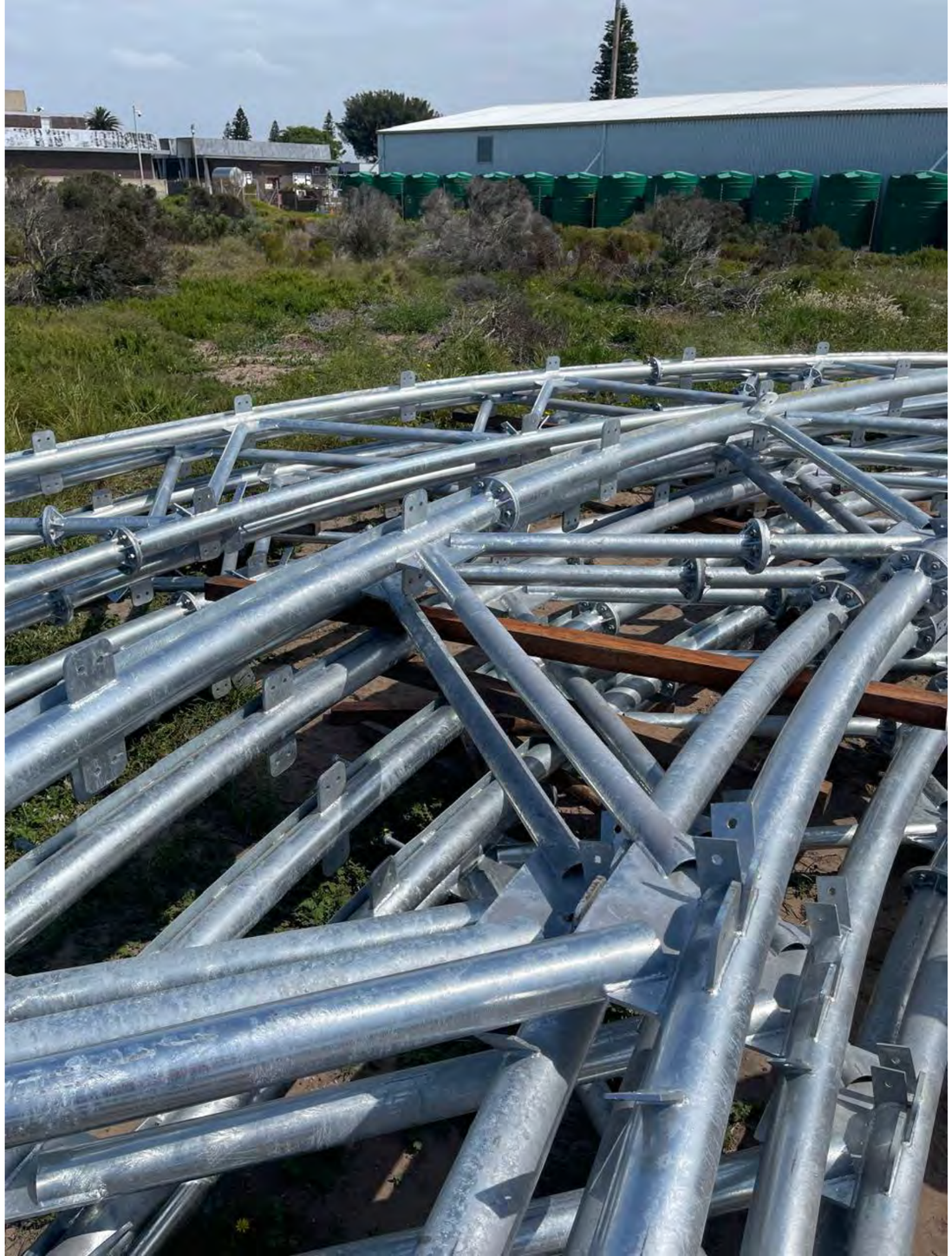
16 SECTION 16



17 SECTION 17

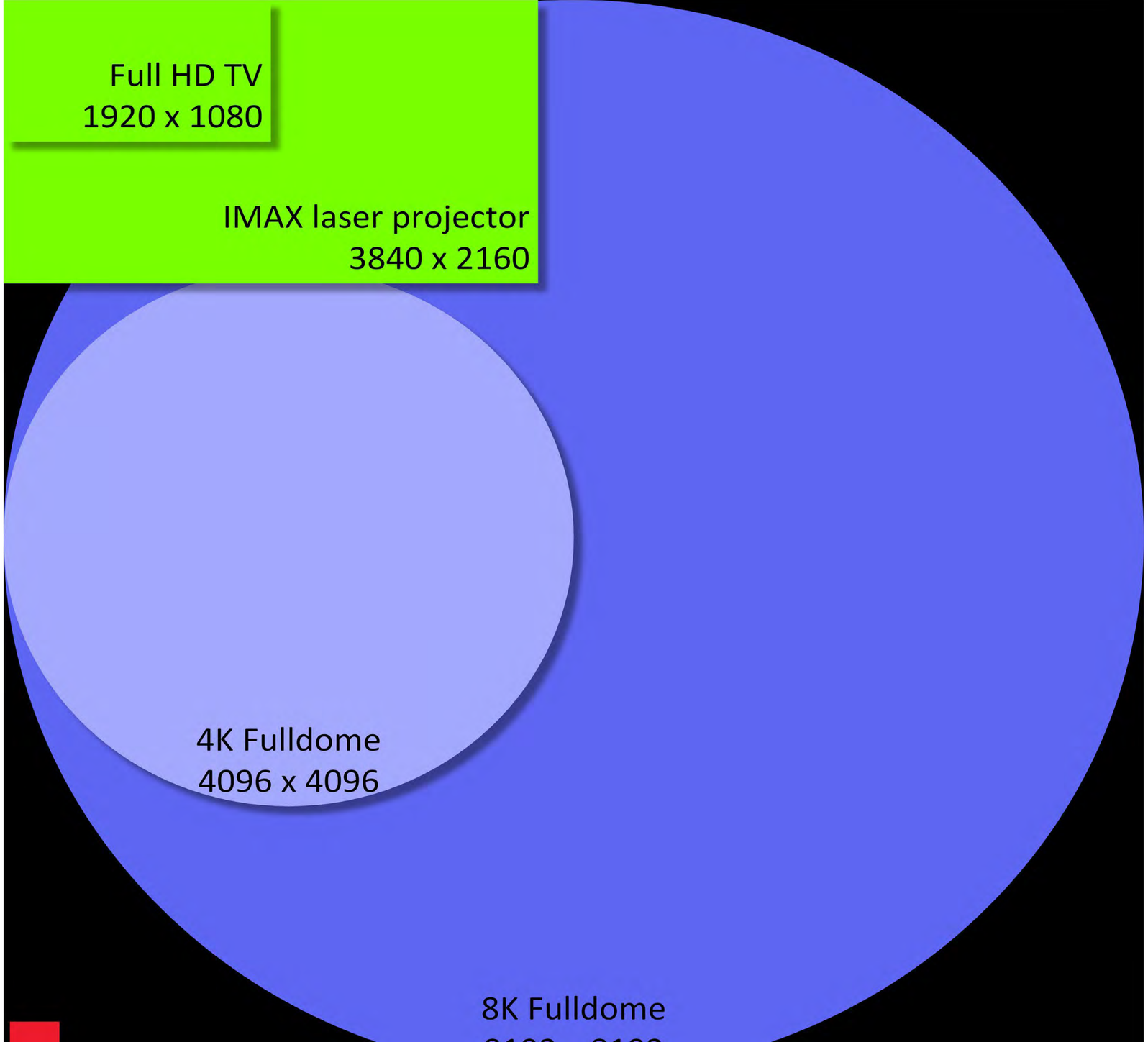
NEW SCIENCE CENTRE AT NMU OCEAN SCIENCES CAMPUS

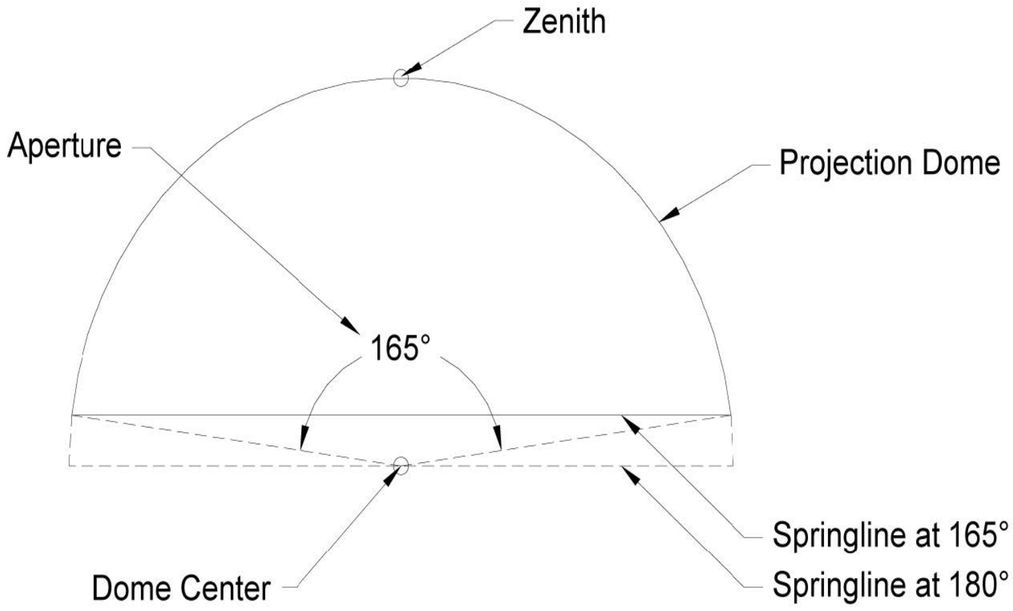
STRUCTURAL COORDINATION




USS CRANE HIRE

CHALLENGES AND SOLUTIONS


Full HD TV
1920 x 1080
IMAX laser projector
3840 x 2160
4K Fulldome
4096 x 4096
8K Fulldome



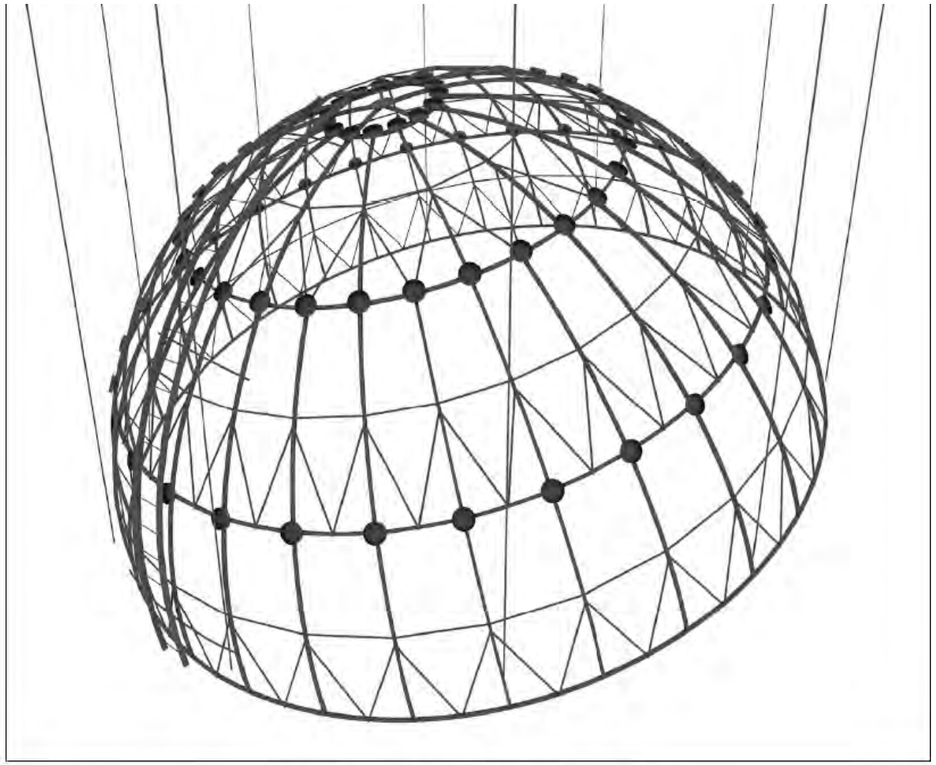
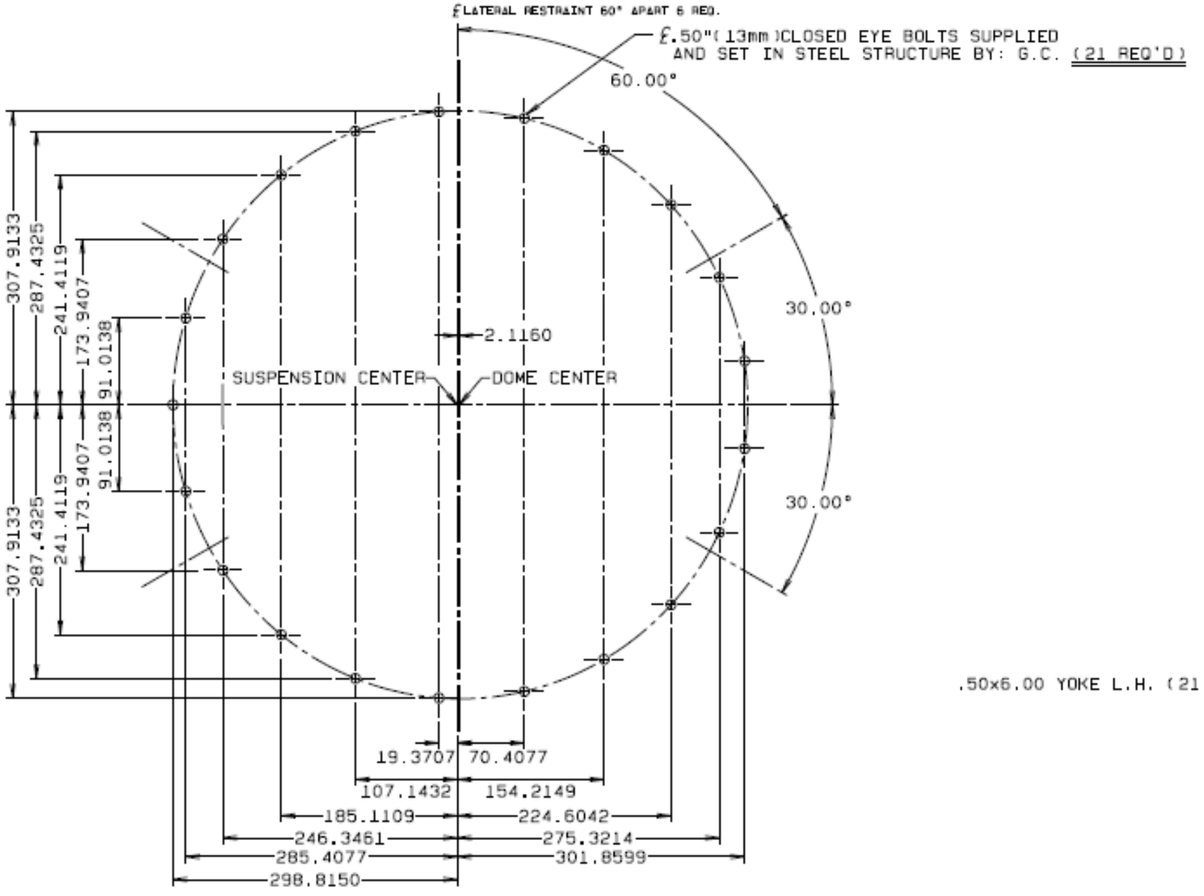


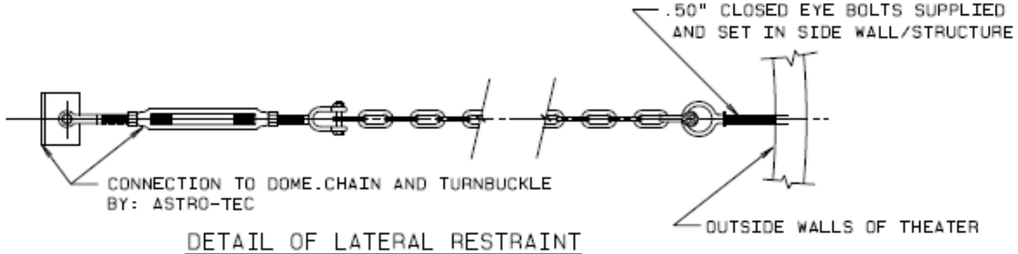
Figure 5: Typical dome support structure

Dome parameters:

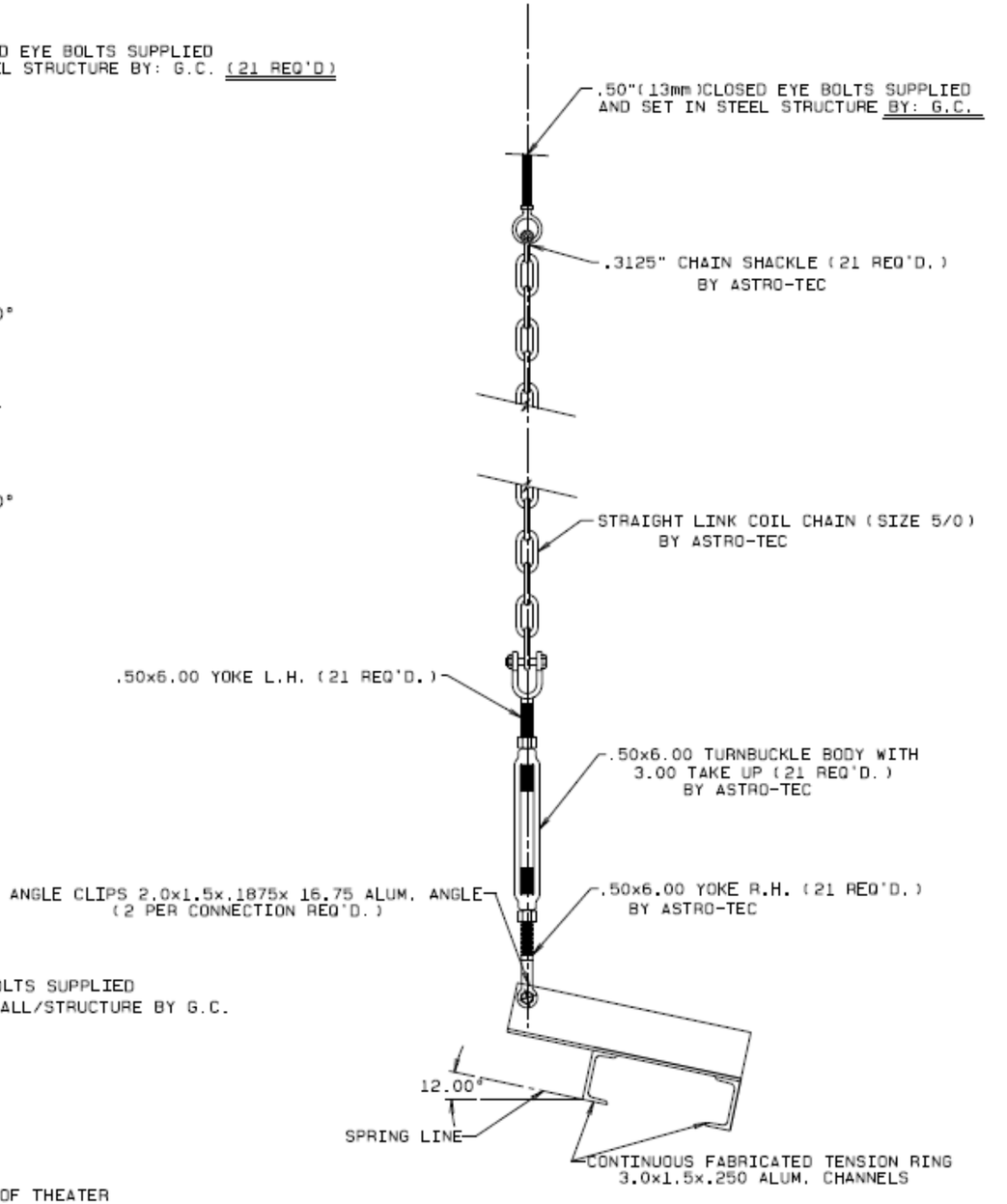
- Diameter: 15m
- Tilt: 14°
- Aperture: 180°
- Gain: 0.38



PLAN OF EYE BOLTS
INCHES

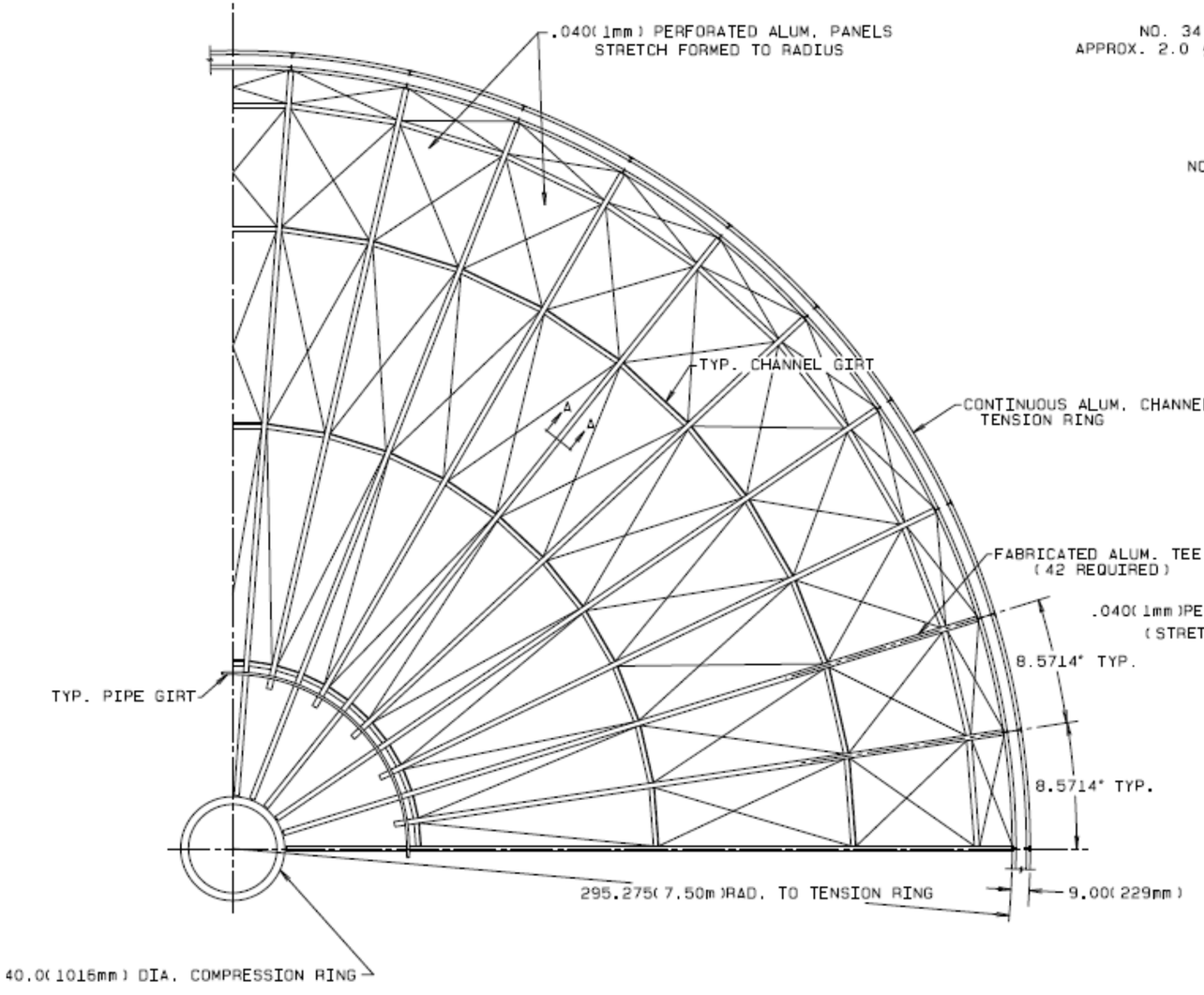


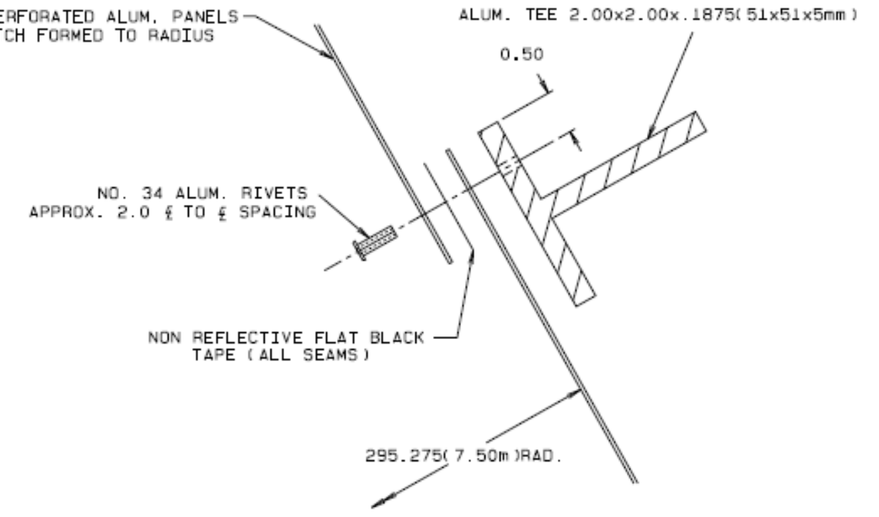
DETAIL OF LATERAL RESTRAINT
6 - REQ'D. APPROX. 60° SPACING



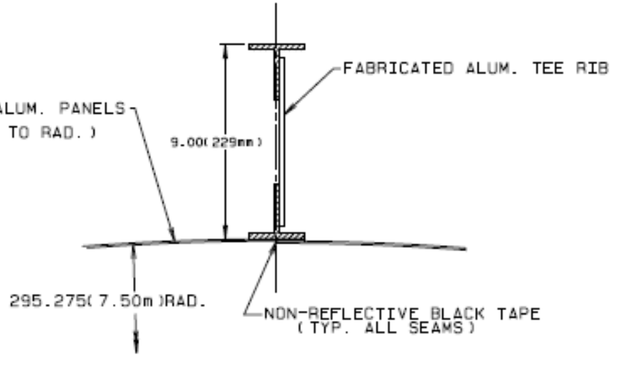
DETAIL OF SUSPENSION CONNECTION

NOTE: ALL DOME RIBS, TENSION AND COMPRESSION RINGS
GIRTS, HORIZONTAL TEES, RELATED CLIPS AND FASTENERS
TO BE PAINTED FLAT BLACK

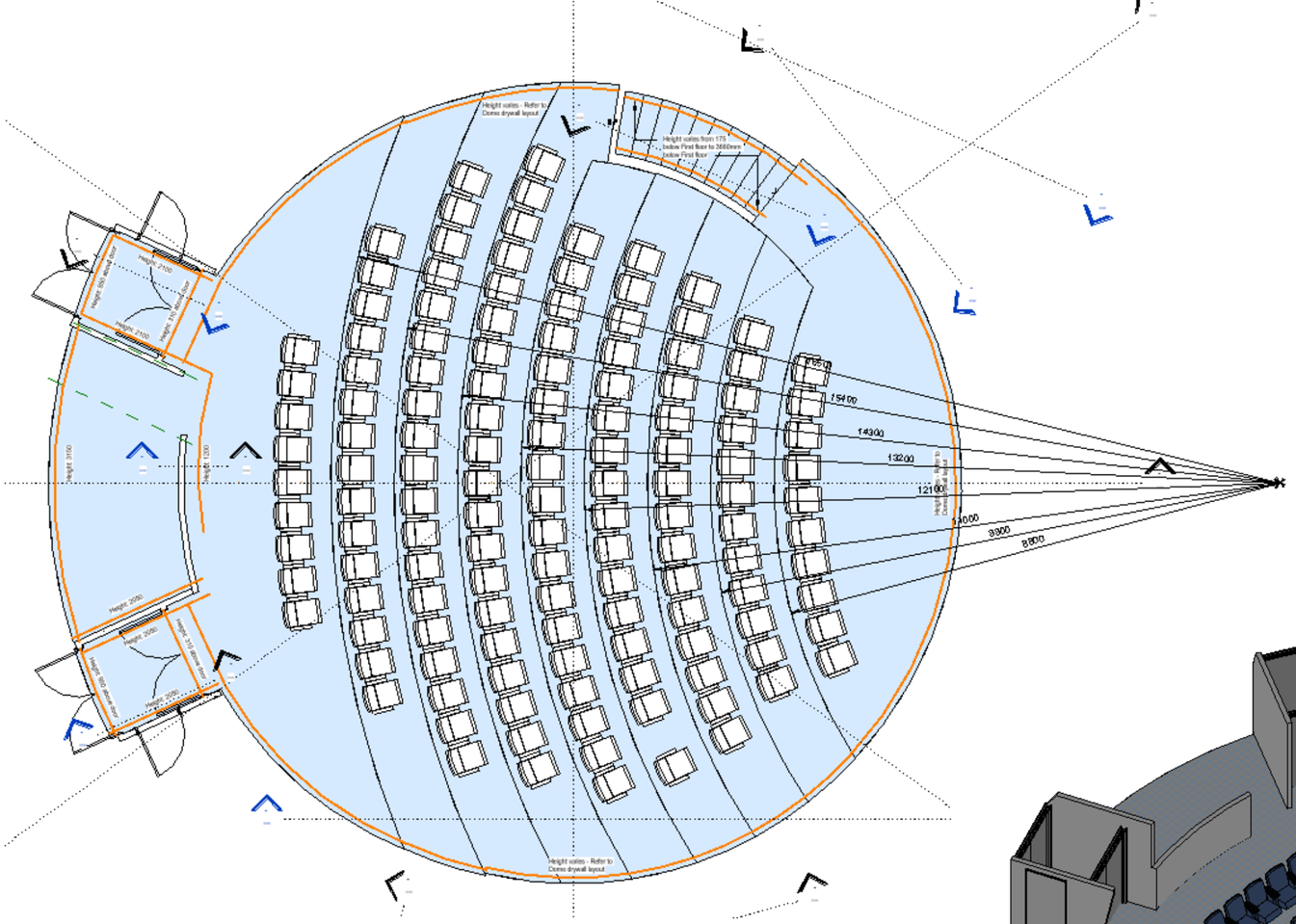


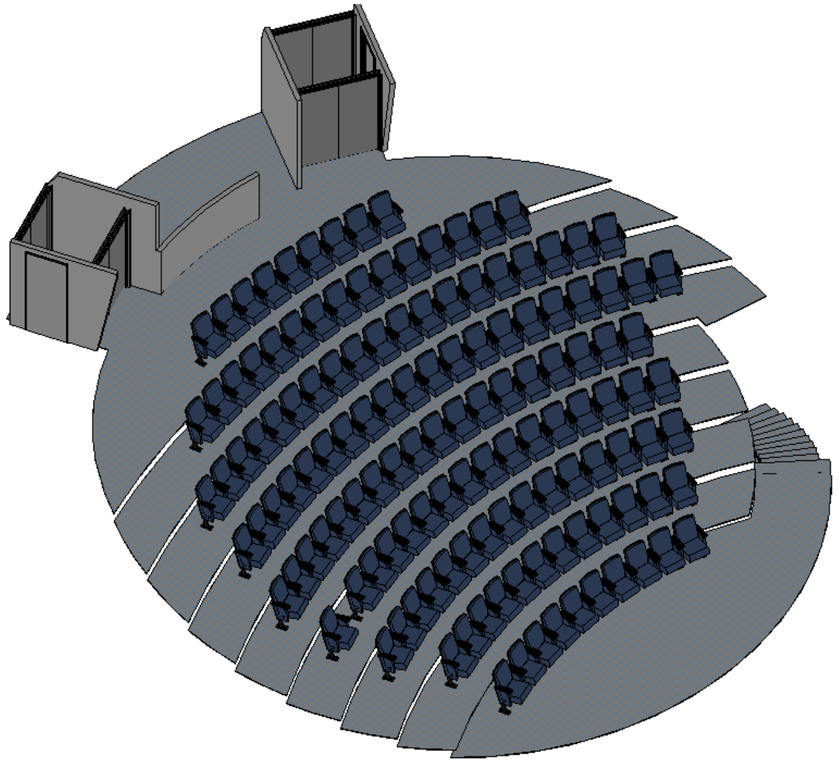


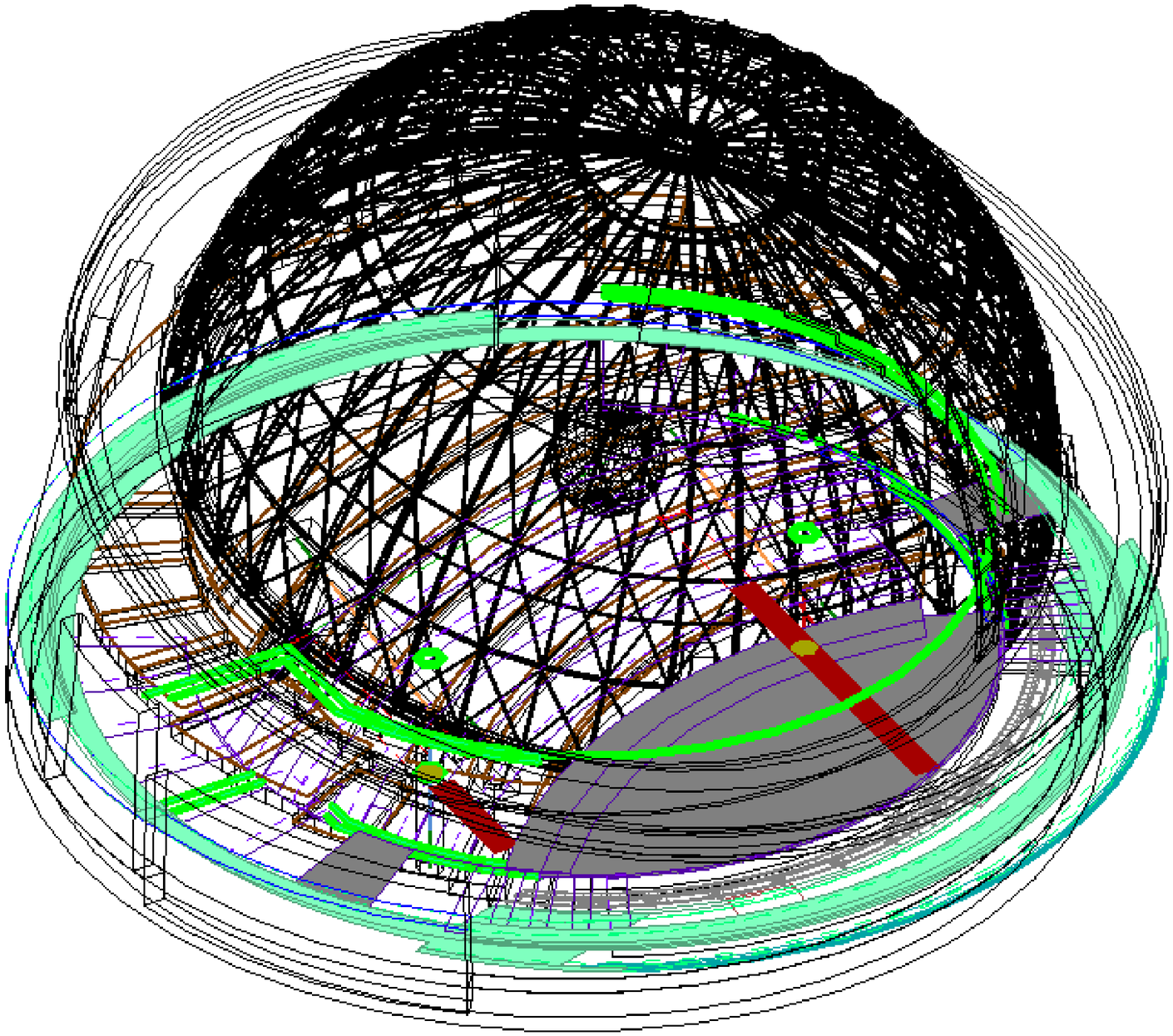
TYPICAL HORIZONTAL SHEET JOINT DETAILS
(NO SCALE)

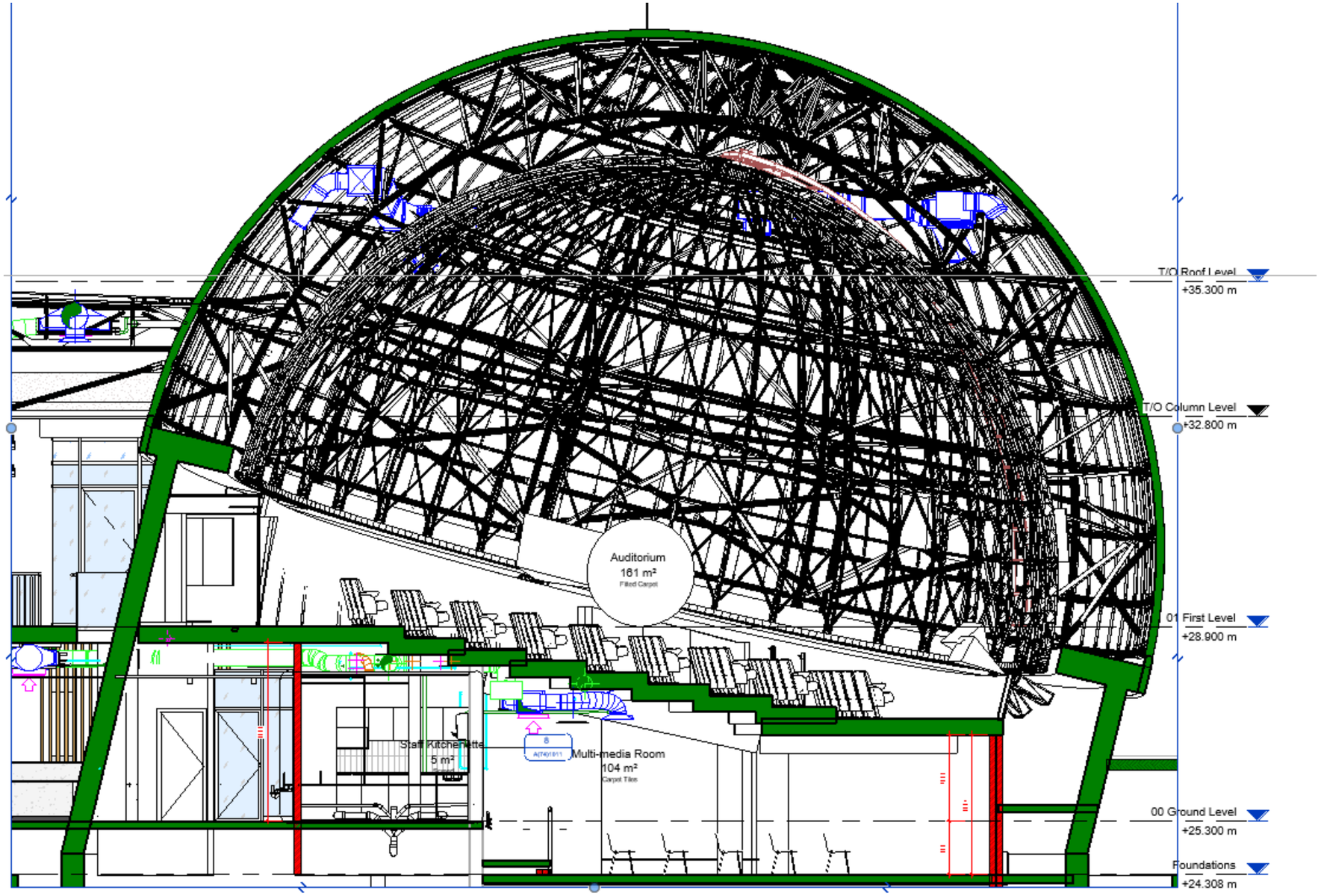


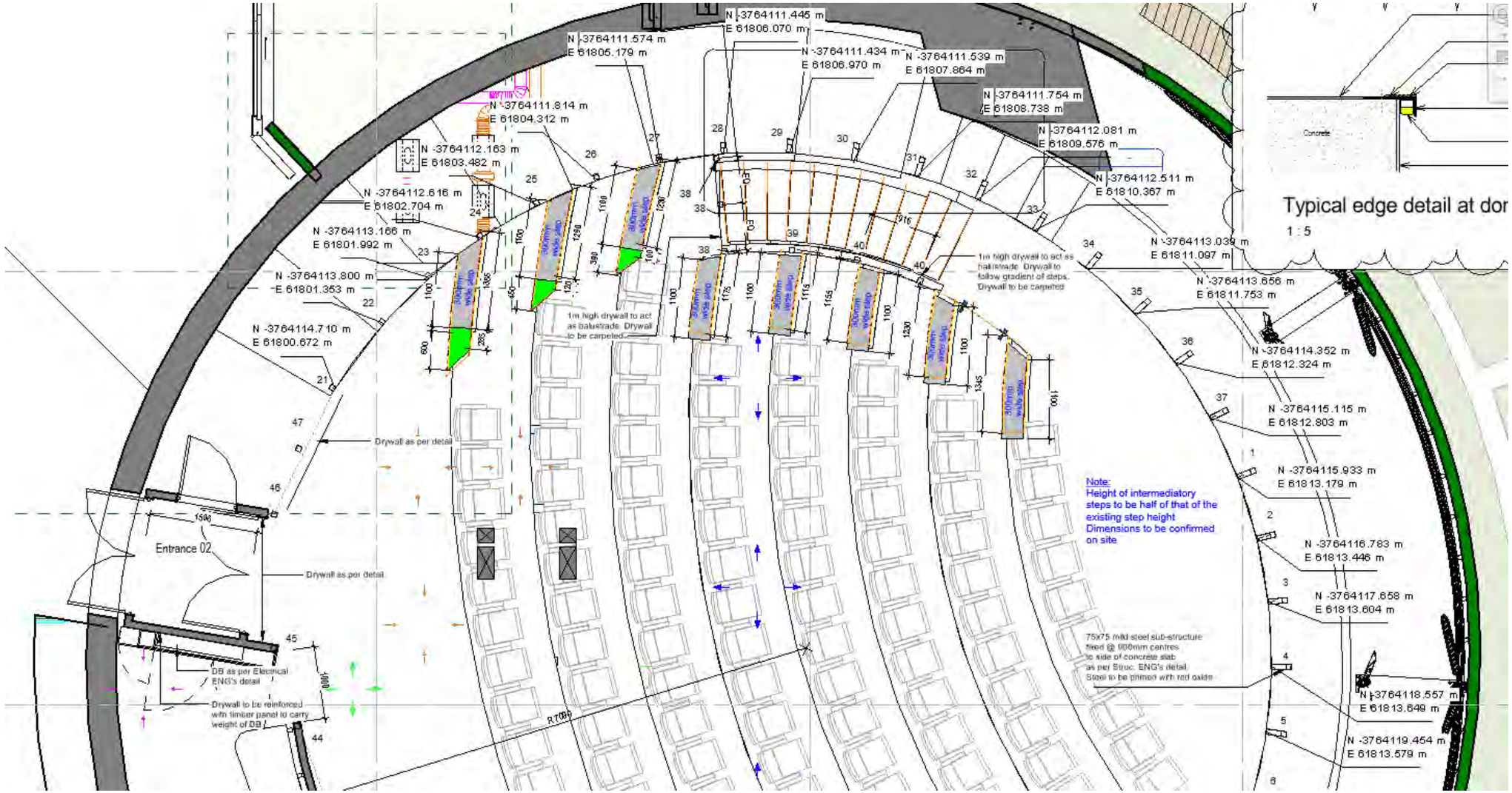
SECTION A-A
(NO SCALE)

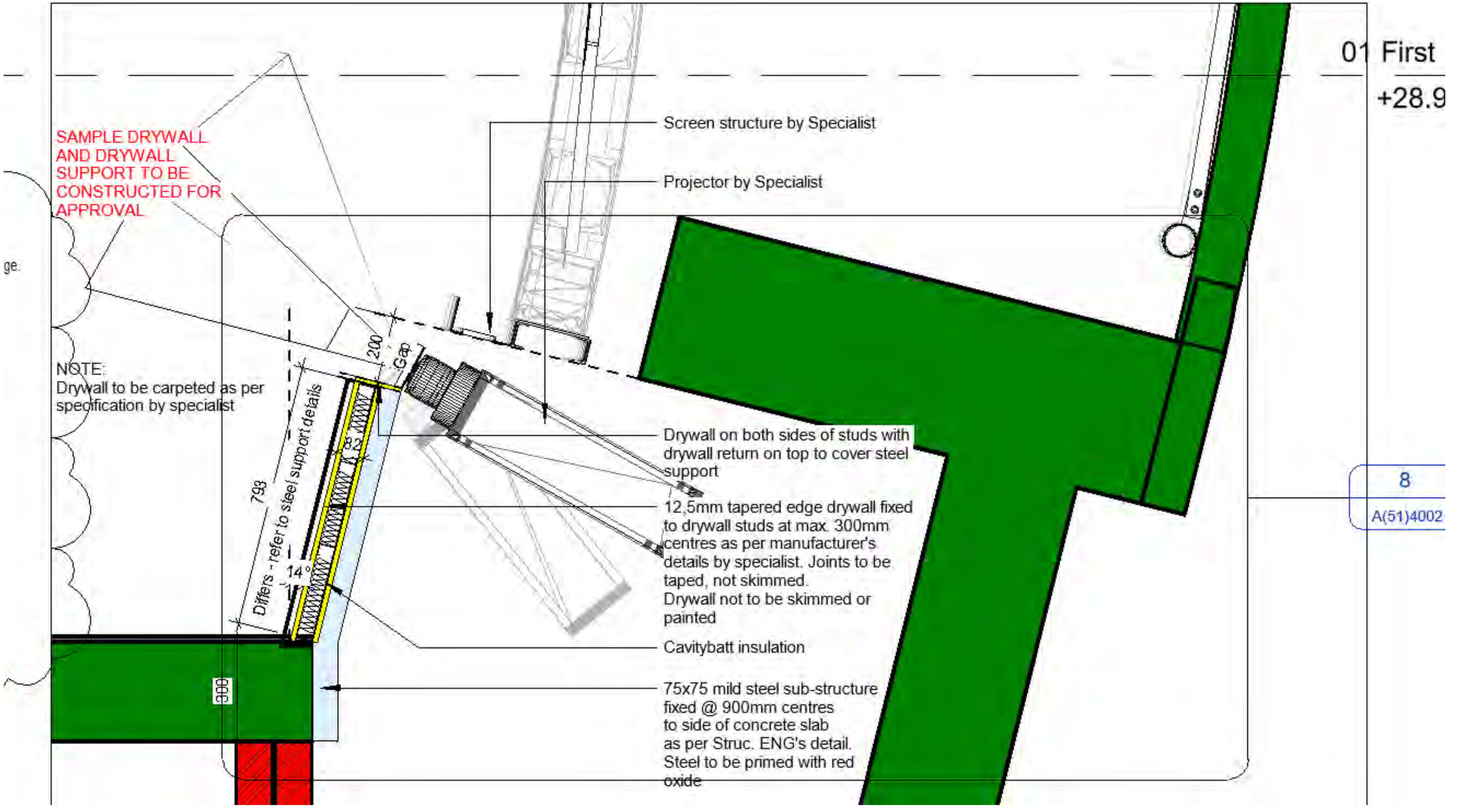

Height varies - Refer to Dome drywall layout
Height varies from 175 below First floor to 3660mm below First floor
15400
14300
13200
12100
11000
9900
8800
Height varies - Refer to Dome drywall layout

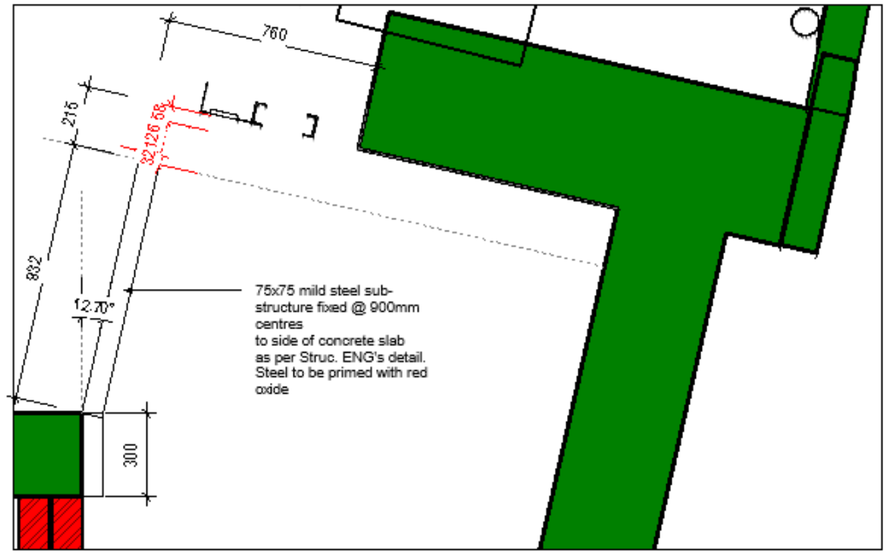





T/O Roof Level
+35.300 m
T/O Column Level
+32.800 m
Auditorium
161 m²
Fitted Carpet
01 First Level
+28.900 m
Staff Kitchenette
5 m²
Multi-media Room
104 m²
Carpet Tiles
00 Ground Level
+25.300 m
Foundations
+24.308 m

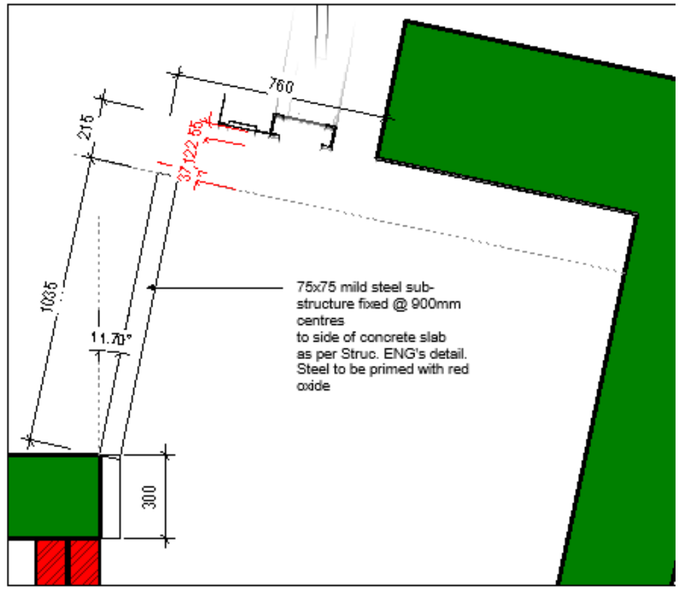

Typical edge detail at dor
1 : 5
Concrete
N -3764111.445 m
E 61806.070 m
N -3764111.574 m
E 61805.179 m
N -3764111.434 m
E 61806.970 m
N -3764111.539 m
E 61807.864 m
N -3764111.754 m
E 61808.738 m
N -3764112.081 m
E 61809.576 m
N -3764112.511 m
E 61810.367 m
N -3764113.039 m
E 61811.097 m
N -3764113.656 m
E 61811.753 m
N -3764114.352 m
E 61812.324 m
N -3764115.115 m
E 61812.803 m
N -3764115.933 m
E 61813.179 m
N -3764116.783 m
E 61813.446 m
N -3764117.658 m
E 61813.604 m
N -3764118.557 m
E 61813.649 m
N -3764119.454 m
E 61813.579 m
N -3764111.814 m
E 61804.312 m
N -3764112.163 m
E 61803.482 m
N -3764112.616 m
E 61802.704 m
N -3764113.166 m
E 61801.992 m
N -3764113.800 m
E 61801.353 m
N -3764114.710 m
E 61800.672 m
1m high drywall to act as balustrade. Drywall to be carpeted
1m high drywall to act as balustrade. Drywall to follow gradient of steps. Drywall to be carpeted
Drywall as per detail
Drywall as per detail
Entrance 02
DB as per Electrical ENG's detail
Drywall to be reinforced with timber panel to carry weight of DB
Note:
Height of intermediatory steps to be half of that of the existing step height
Dimensions to be confirmed on site
75x75 mild steel sub-structure fixed @ 900mm centres to side of concrete slab as per Struc. ENG's detail. Steel to be primed with red oxide
R7000


01 First
+28.9
SAMPLE DRYWALL AND DRYWALL SUPPORT TO BE CONSTRUCTED FOR APPROVAL
NOTE:
Drywall to be carpeted as per specification by specialist
Screen structure by Specialist
Projector by Specialist
200
Gap
82
793
Differs - refer to steel support details
14°
300
Drywall on both sides of studs with drywall return on top to cover steel support
12,5mm tapered edge drywall fixed to drywall studs at max. 300mm centres as per manufacturer's details by specialist. Joints to be taped, not skimmed.
Drywall not to be skimmed or painted
Cavitybatt insulation
75x75 mild steel sub-structure fixed @ 900mm centres to side of concrete slab as per Struc. ENG's detail.
Steel to be primed with red oxide
8
A(51)4002



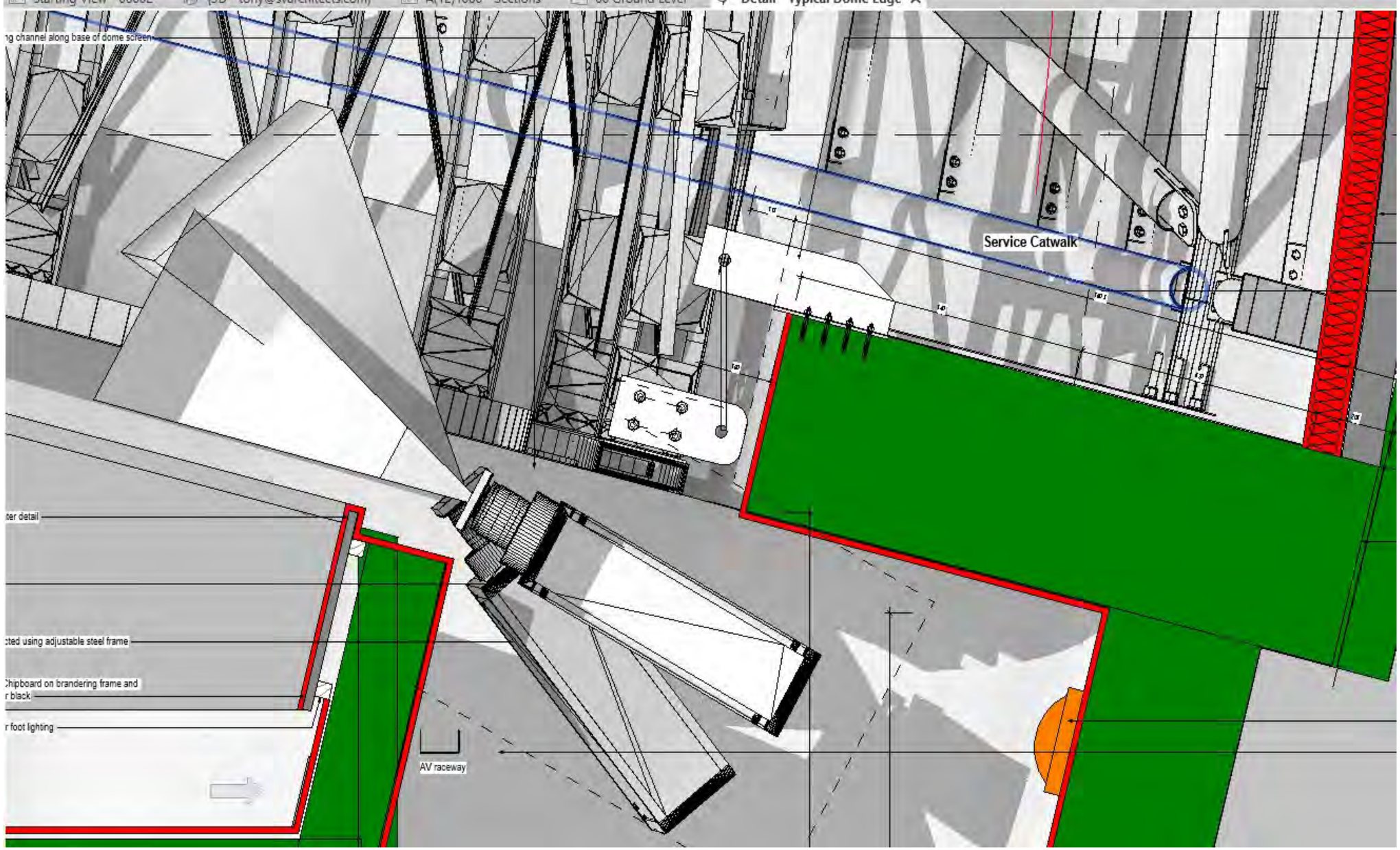
Steel support 05

1 : 25

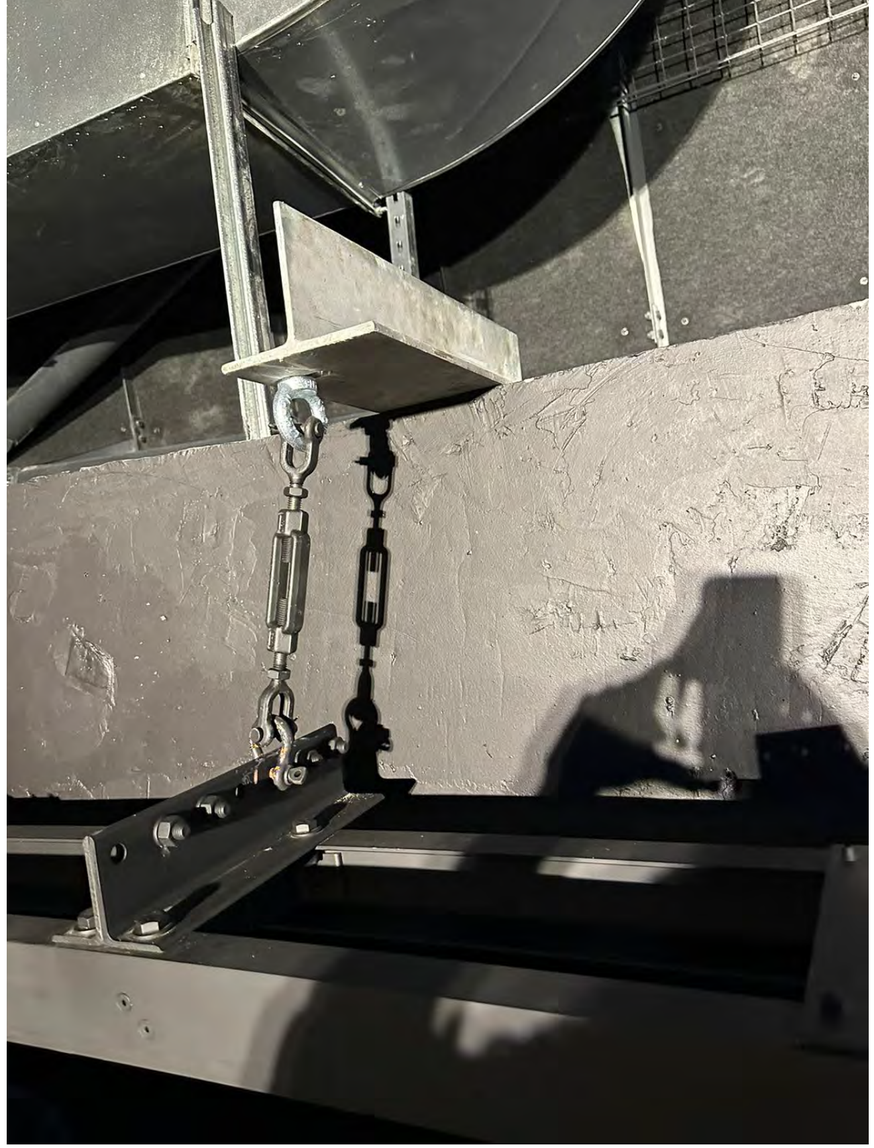


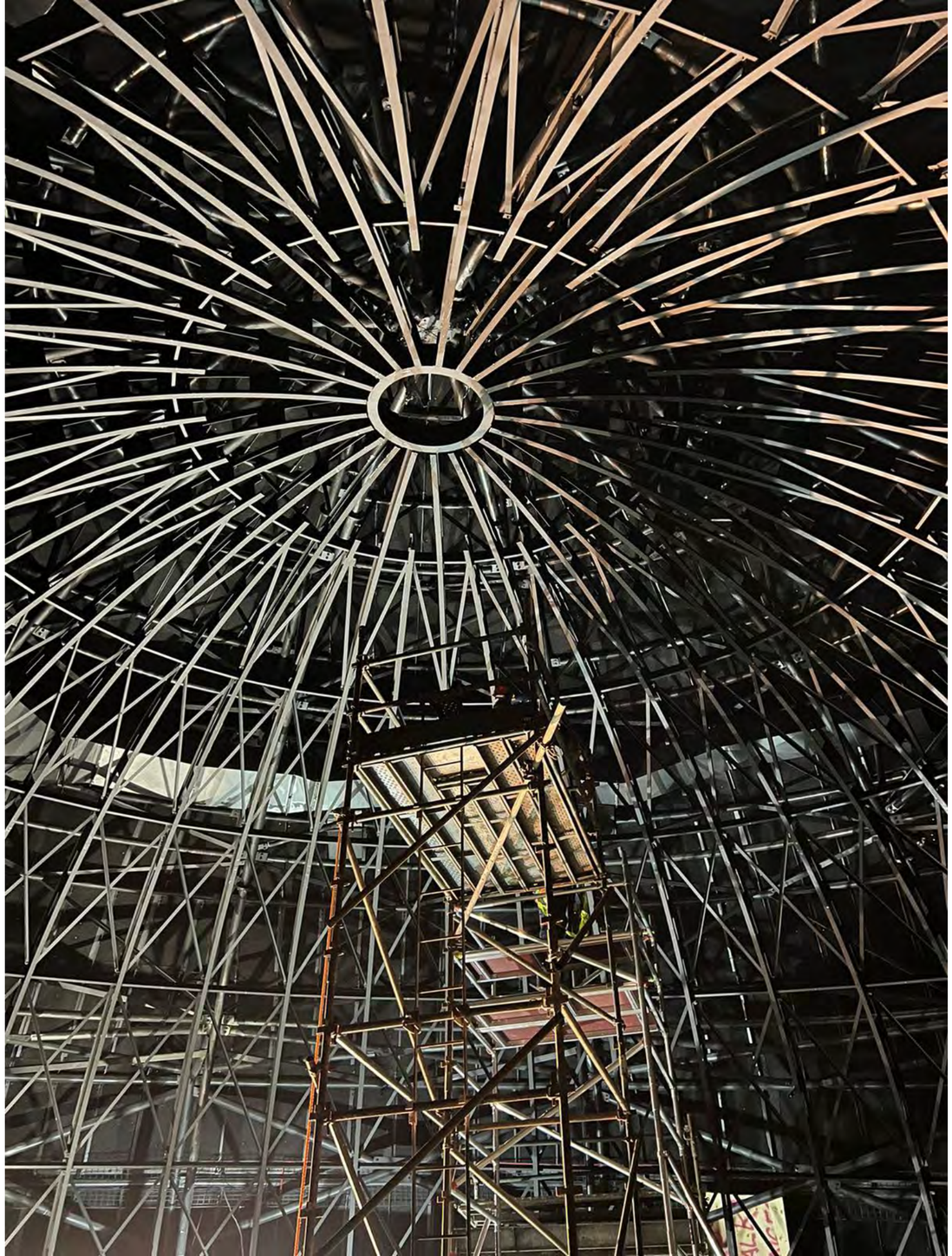
Steel support 06

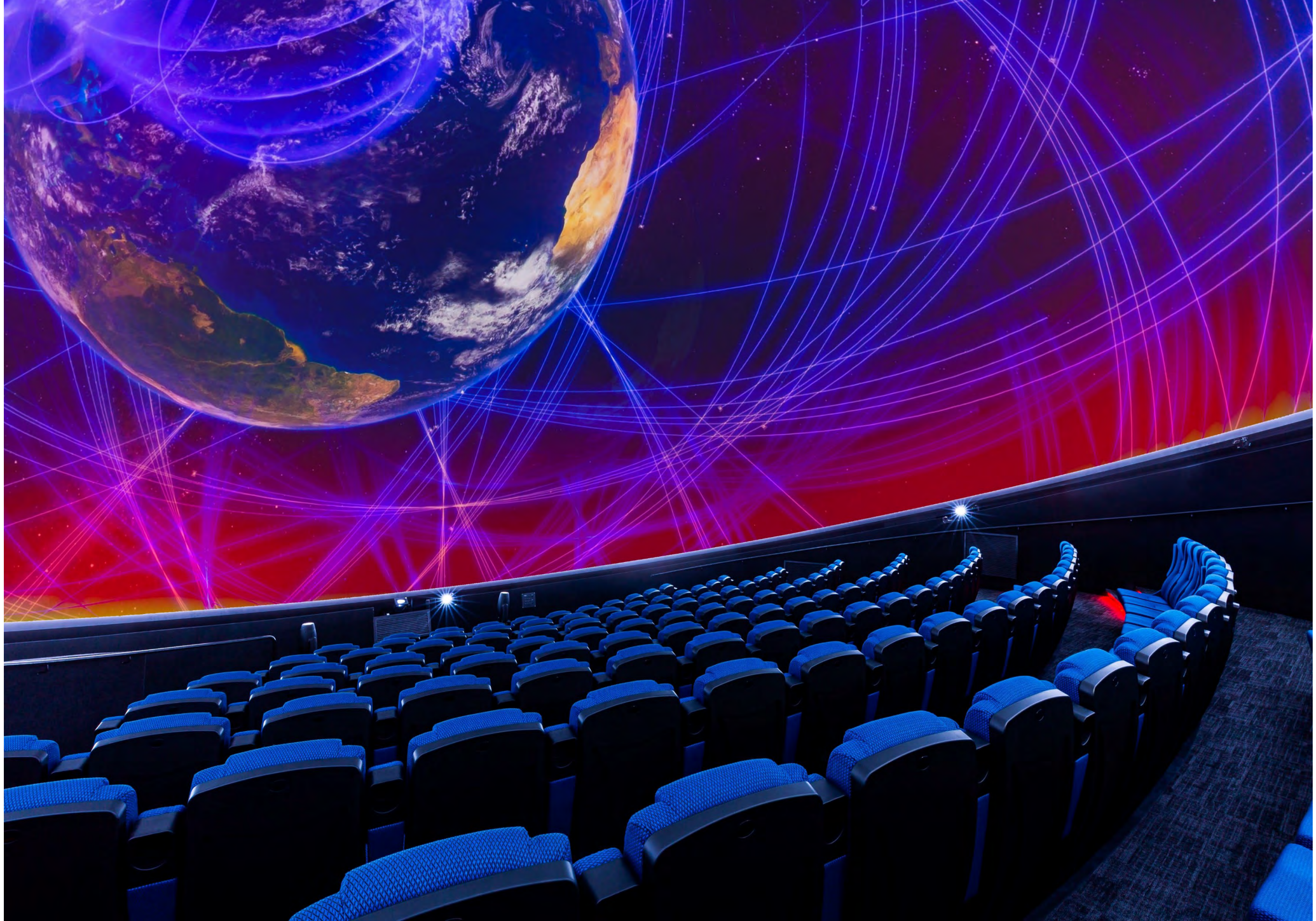
1 : 25


Service Catwalk
AV raceway


ASTRO-TEC MFG.
JOB-955







THE BENEFITS OF STEEL IN THIS APPLICATION

WHAT WE'RE PROUD OF


NELSON MANDELA
UNIVERSITY
Science Centre

END