



SOUTHERN AFRICAN INSTITUTE
OF STEEL CONSTRUCTION

Steel Awards 2024



WSP Group Africa

WELLS ESTATE SHOPRITE

THE PROJECT BRIEF

CLIENT: Equites & Shoprite

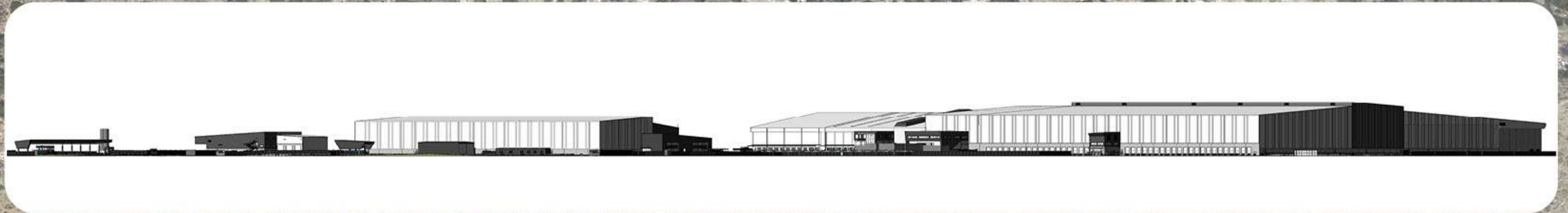
ARCHITECTS: Empowered Spaces Architects

MAIN CONTRACTOR: Wilson Bailey Holmes **WBHO**



As part of Shoprite's strategic national expansion initiative, the existing Shoprite facility located in Wells Estate was designated as a key project site. The current facility, encompassing approximately 10 000 m², underwent a substantial extension, adding approximately 81 000 m². This expansion will bring the total facility area to over 90 000 m².

This comprehensive expansion project is designed to significantly enhance Shoprite's operational capacity, supporting its growth objectives and reinforcing its market presence.





Project Overview



Structural Steel work



Anticipated Completion: November 2024

Steelwork Completed: June 2024

Tonnage: Profiles used: 2 600 tones

H and I Sections, Angles, Metsec Purlins, CHS, etc.

Structural Engineer: WSP Group Africa

Steelwork Contractor: Utinhage Super Steel

Steel Detailer: 3DCon

Steel Merchant/s: MacSteel, Stewards & Lloyds, NJW, Allied Steelrode & Pro Roof

Metal Cladding and Roofing



Anticipated Completion: November 2024

Cladding Completed: June 2024

Cladding Material :

- Roof - Safintra Saflok 700 0.53mm
- Side Cladding – Safintra Widedek 760 0.47mm
- Aluminium-Zinc coated Steel

Cladding Profile: Interlocking Concealed

Cladding Area Coverage: 116 000 m²

Cladding Tonnage: 588 tons

STRUCTURAL FRAMING

STRUCTURAL ENGINEER: WSP Group Africa

STEELWORK CONTRACTOR: Uitenhage Super Steel

STEEL DETAILER: 3DCon

Structural Framing



Dry Goods Warehouse



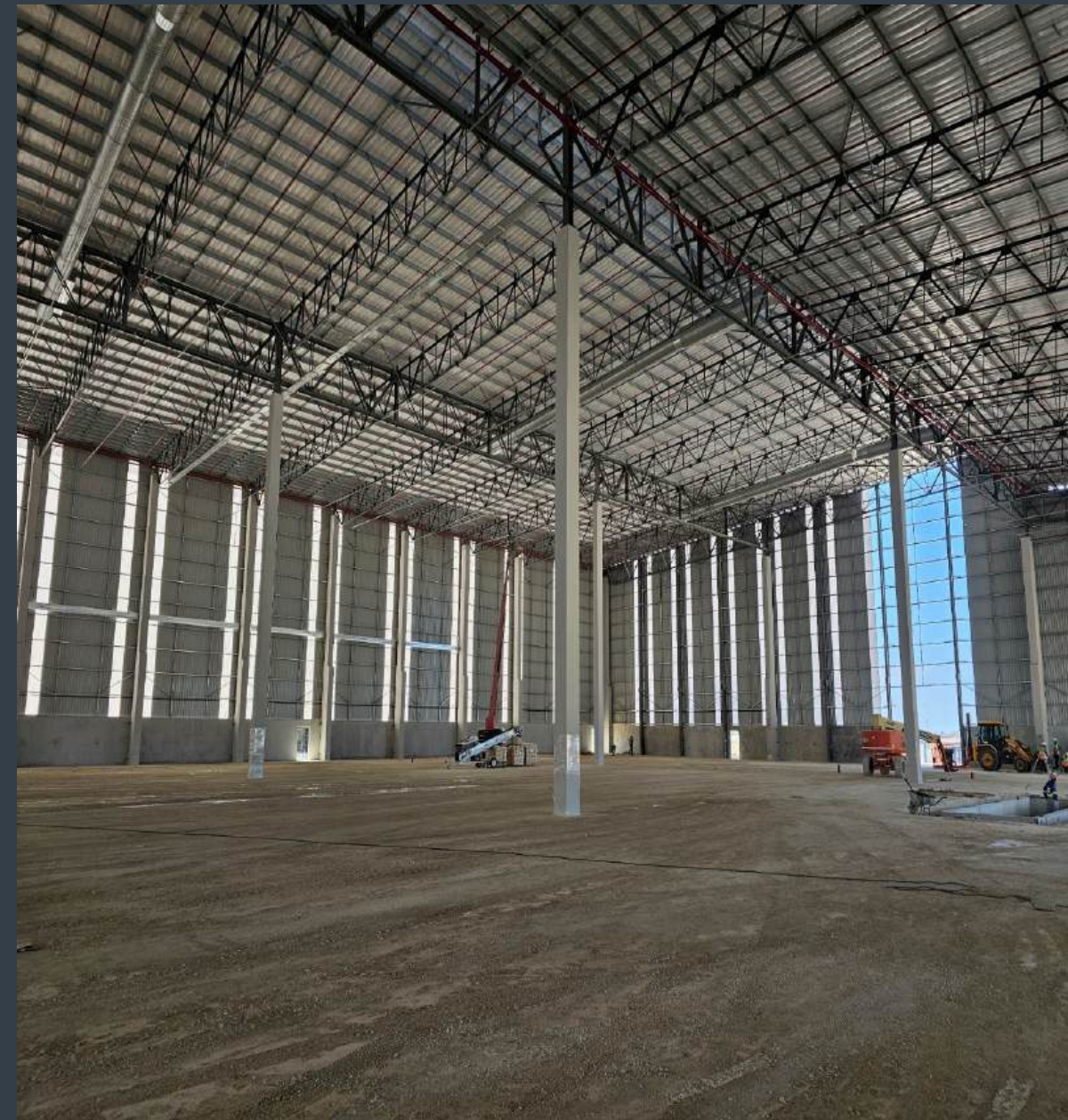
- Floor Area : 52 000 m²

- Clear Eaves height : 21.5m

- Total Steel Weight = 1413 t

Structural duo pitch steel roof with steel trusses spanning 32m supported by girders spanning 32m between concrete columns

Returns Centre



- Floor Area : 12 700 m²

- Clear Eaves height : 14.65m

- Total Steel Weight = 1413 t

Structural duo pitch steel roof with steel trusses spanning 25m supported by girders spanning 28m between concrete columns

Fresh Mark Facility



- Floor Area : 6 600 m²

- Clear Eaves height : 14.6m

- Total Steel Weight = 398 t

Extension structure to the existing freshmark structure for additional warehouse area for Fresh Produce Storage. Duo pitch roof structure to match the existing structure

Exit Guardhouse & Workshop

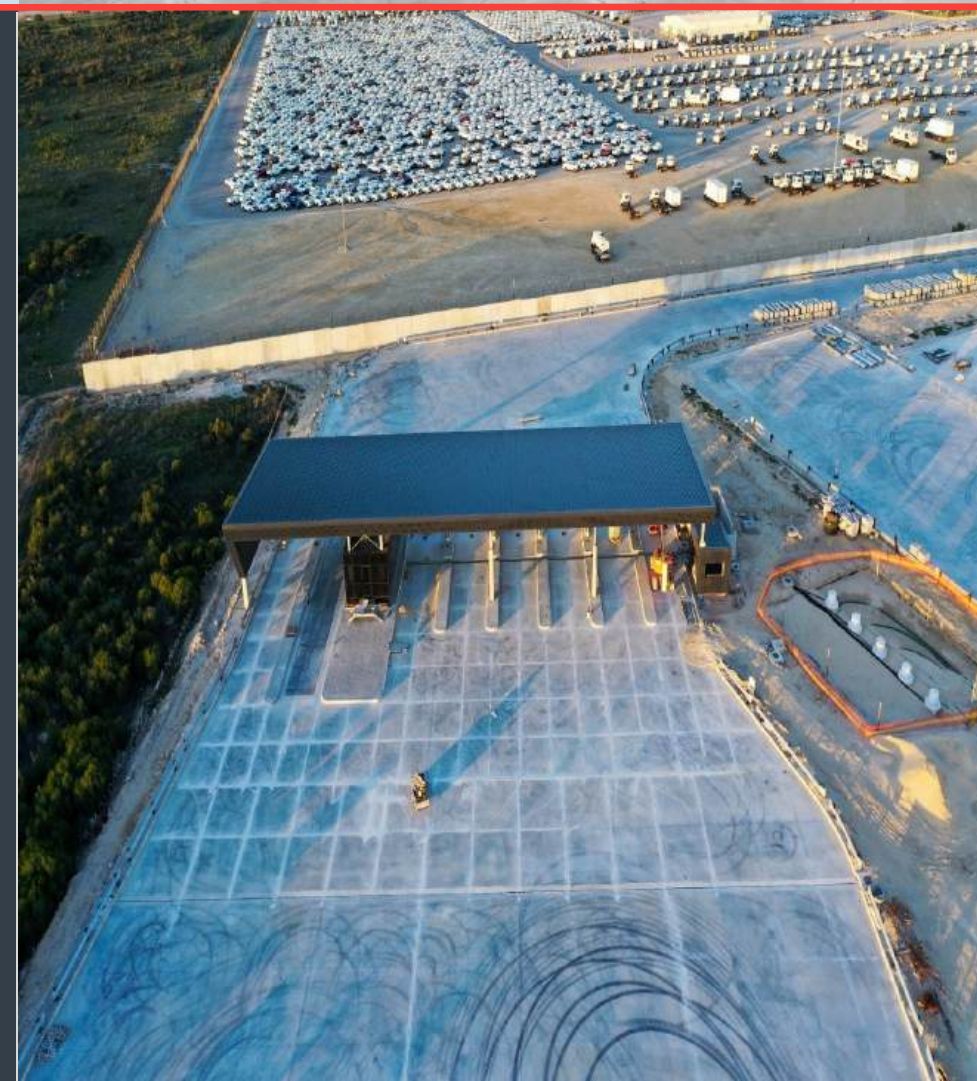
- Exit GH Total Steel Weight = 21 t
- Workshop Total Steel Weight = 86 t



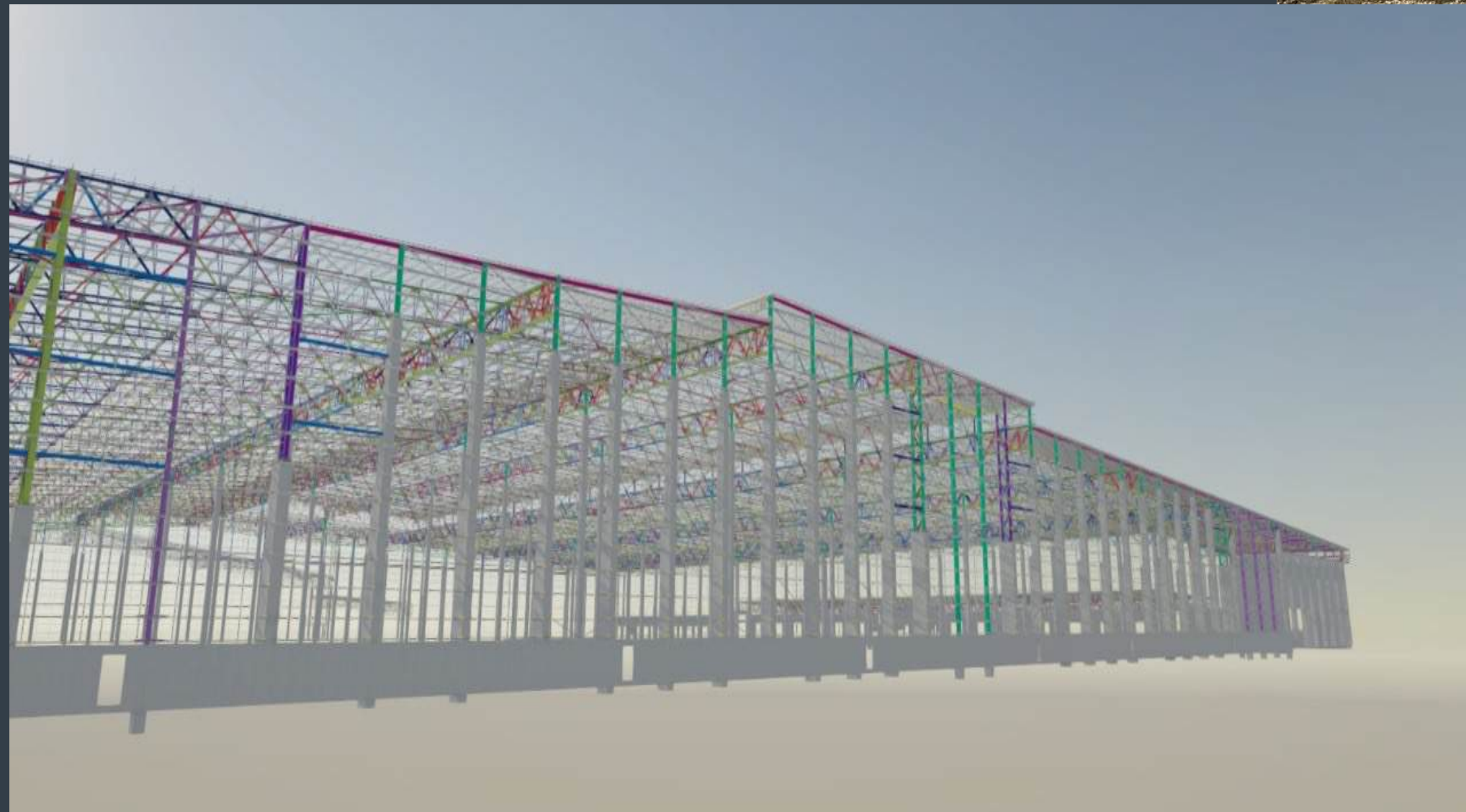
Other Structures

Entrance Guardhouse & Washbay

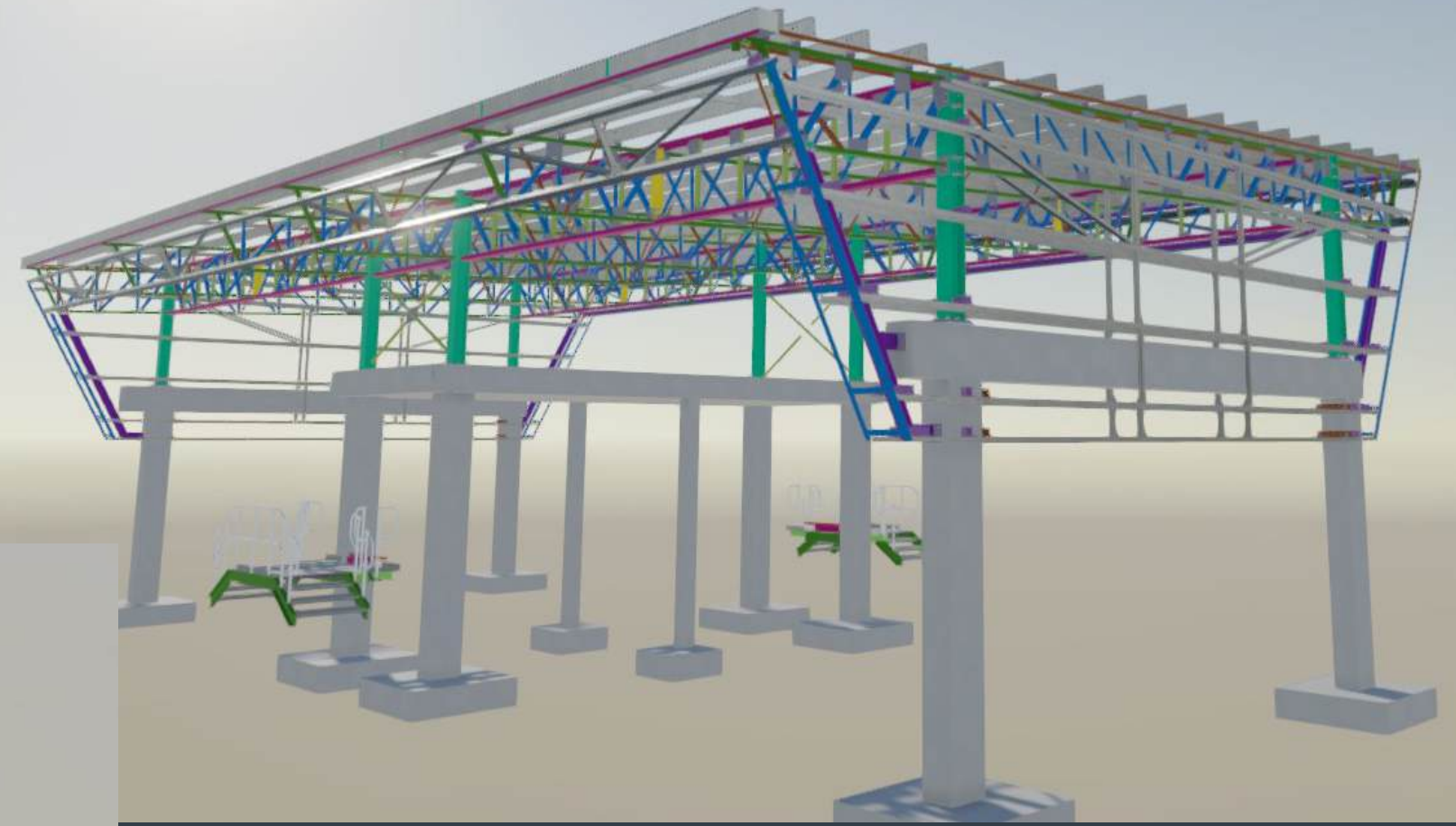
- Exit GH Total Steel Weight = 21 t
- Workshop Total Steel Weight = 86 t



Structural Detailing Model



Structural Detailing Model



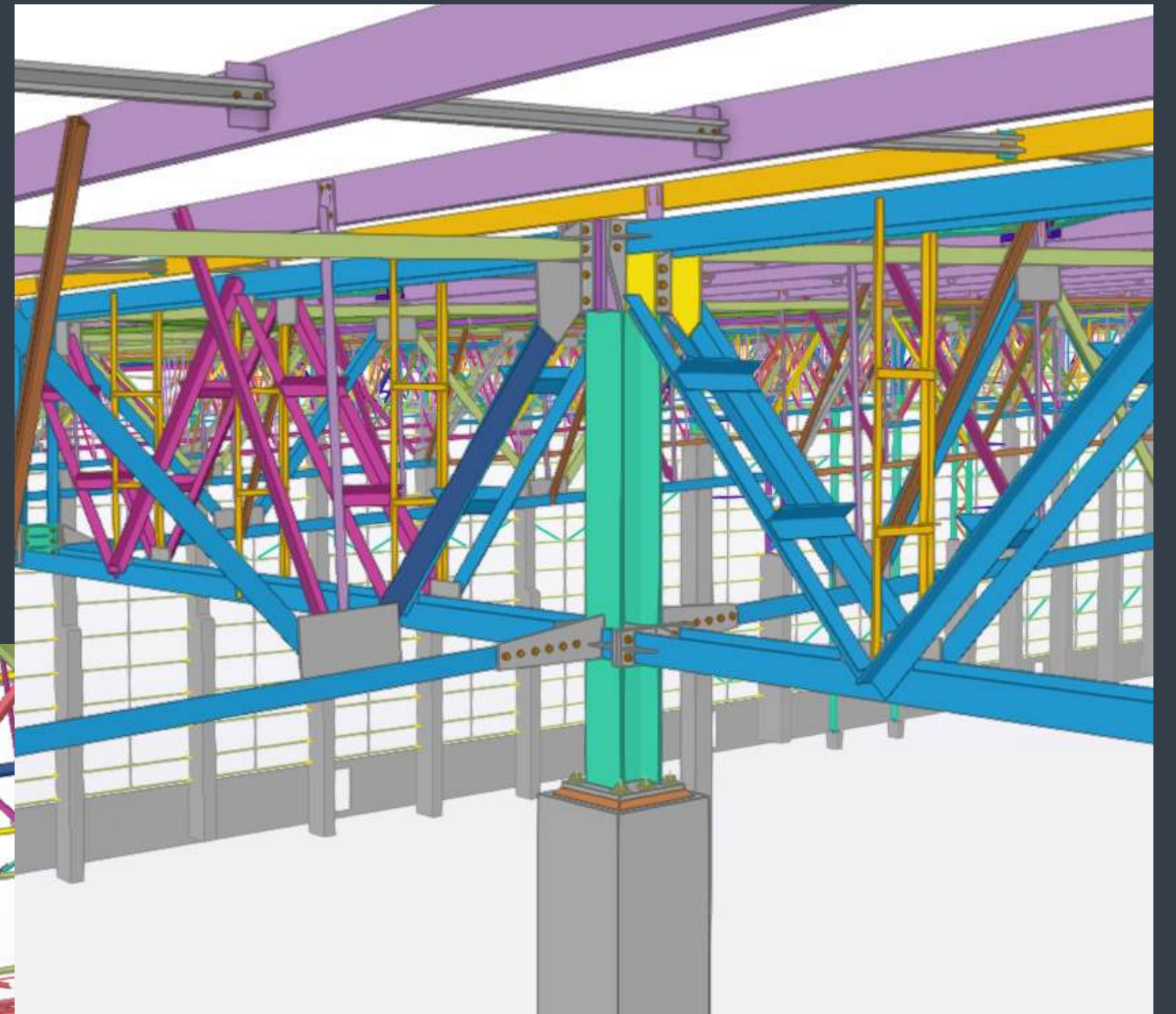
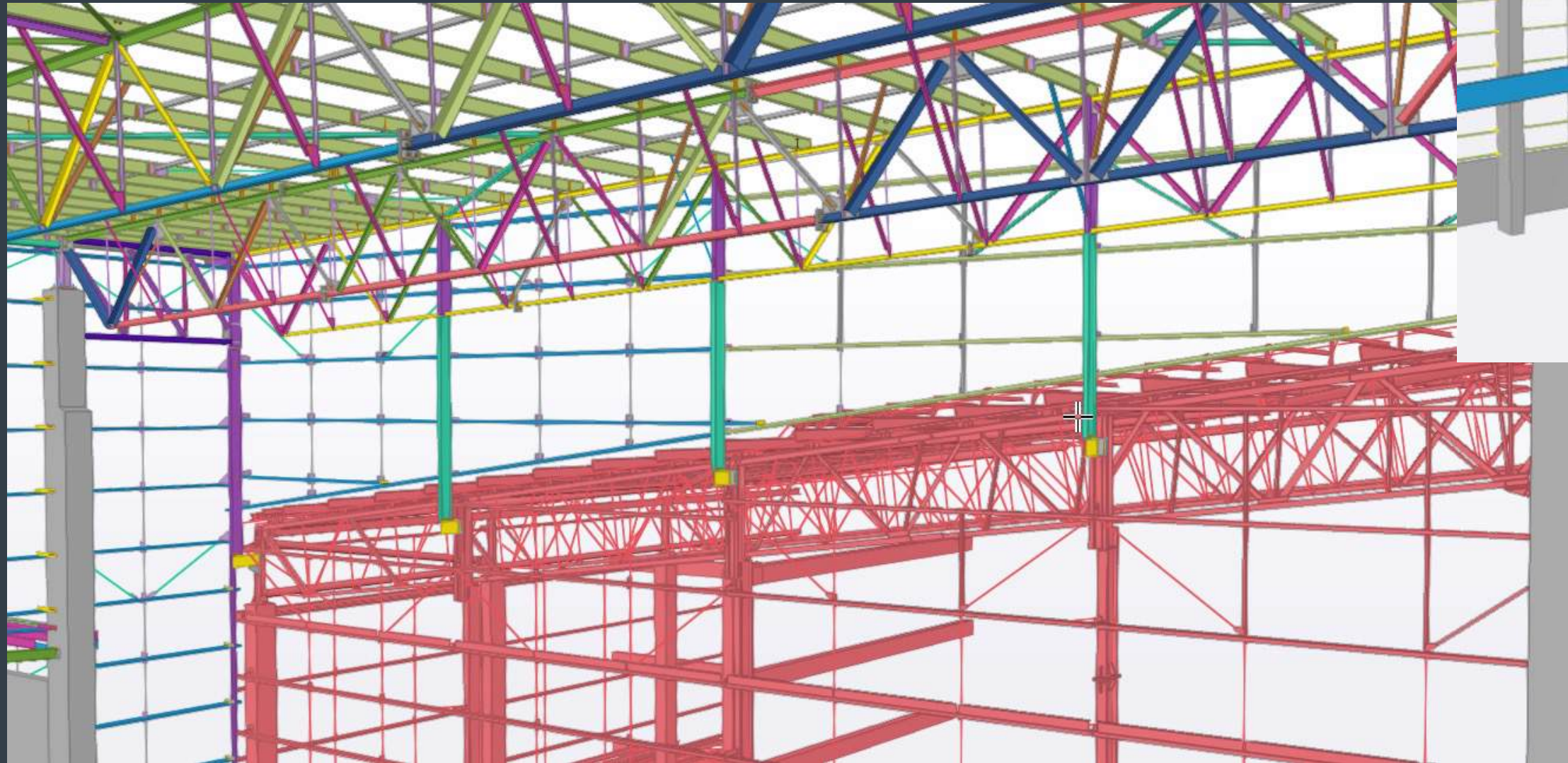
Substructure



Superstructure



Connection Design



Stability Design



Stability is achieved by designing the columns as cantilevers with moments transferred into foundations

Gable columns reactions, due to lateral wind loading, are transferred to the cantilever eaves by means of plan bracing

Gable steel columns, in areas of future extension are restrained along its length with intermediate struts to brace them.

METAL CLADDING/ ROOFING

CLADDING MANUFACTURER: Mittal & Bluescope Steel

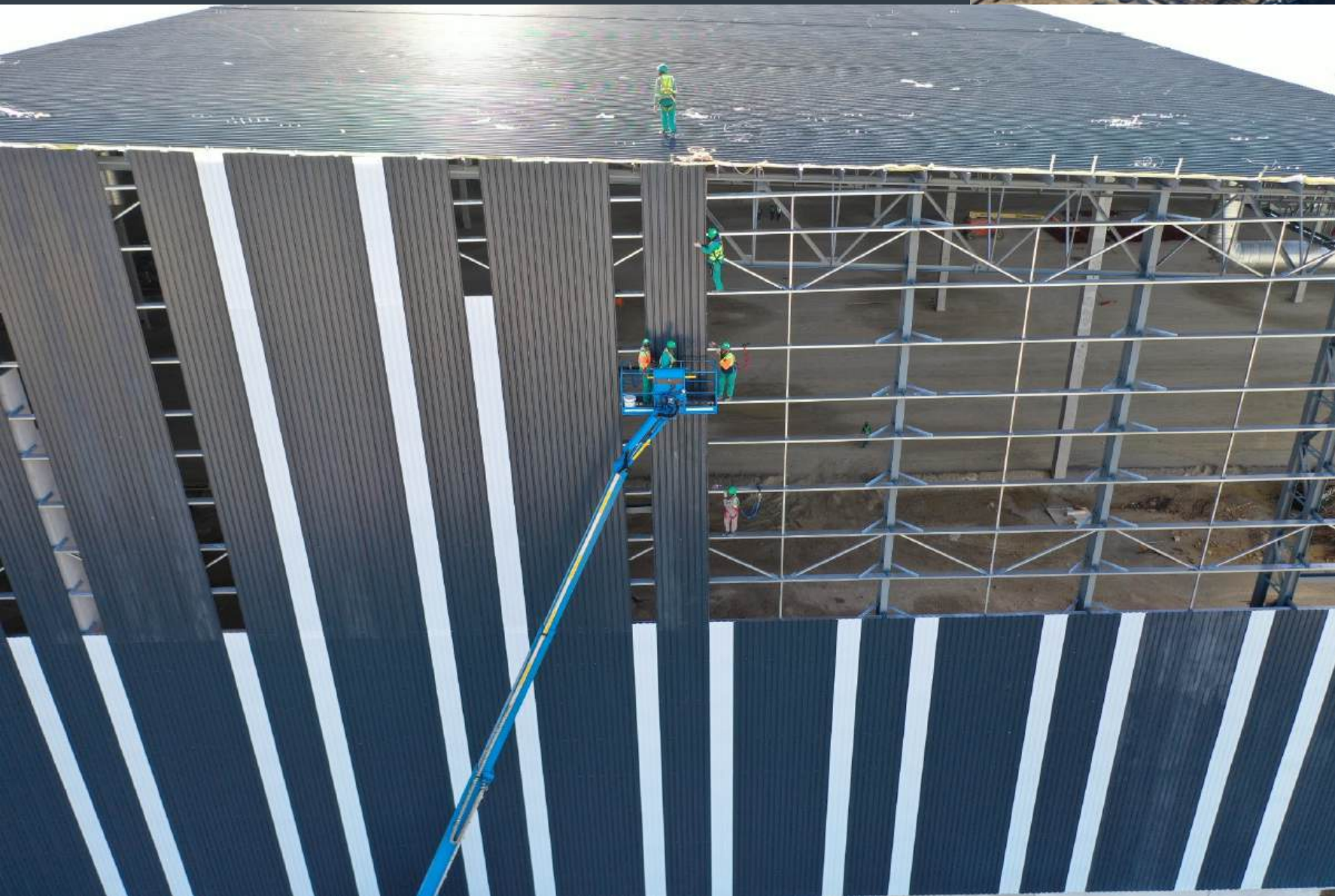
CLADDING ROLL FORMER / PROFILER: Safintra

CLADDING/ ROOFING SUPPLIER: Safal Steel (Colorplus) & Bluescope Steel (Colorbond)

CLADDING/ ROOFING CONTRACTOR: Chartwell Roofing Pty Ltd

Roof Sheeting

- Total Sheeting Area : 87 500 m²
- Roof Sheeting Profile : Safintra Saflok 700 (0.53mm)
- Cladding Profile : Safintra Widedek 760 (0.47mm)



- Dry Goods Sheeting Length = 140m
- Freshmark Sheeting Length = 65m
- Returns Building Sheeting Length = 53.6m

FABRICATION

STEELWORK CONTRACTOR: Uтинhage Super Steel

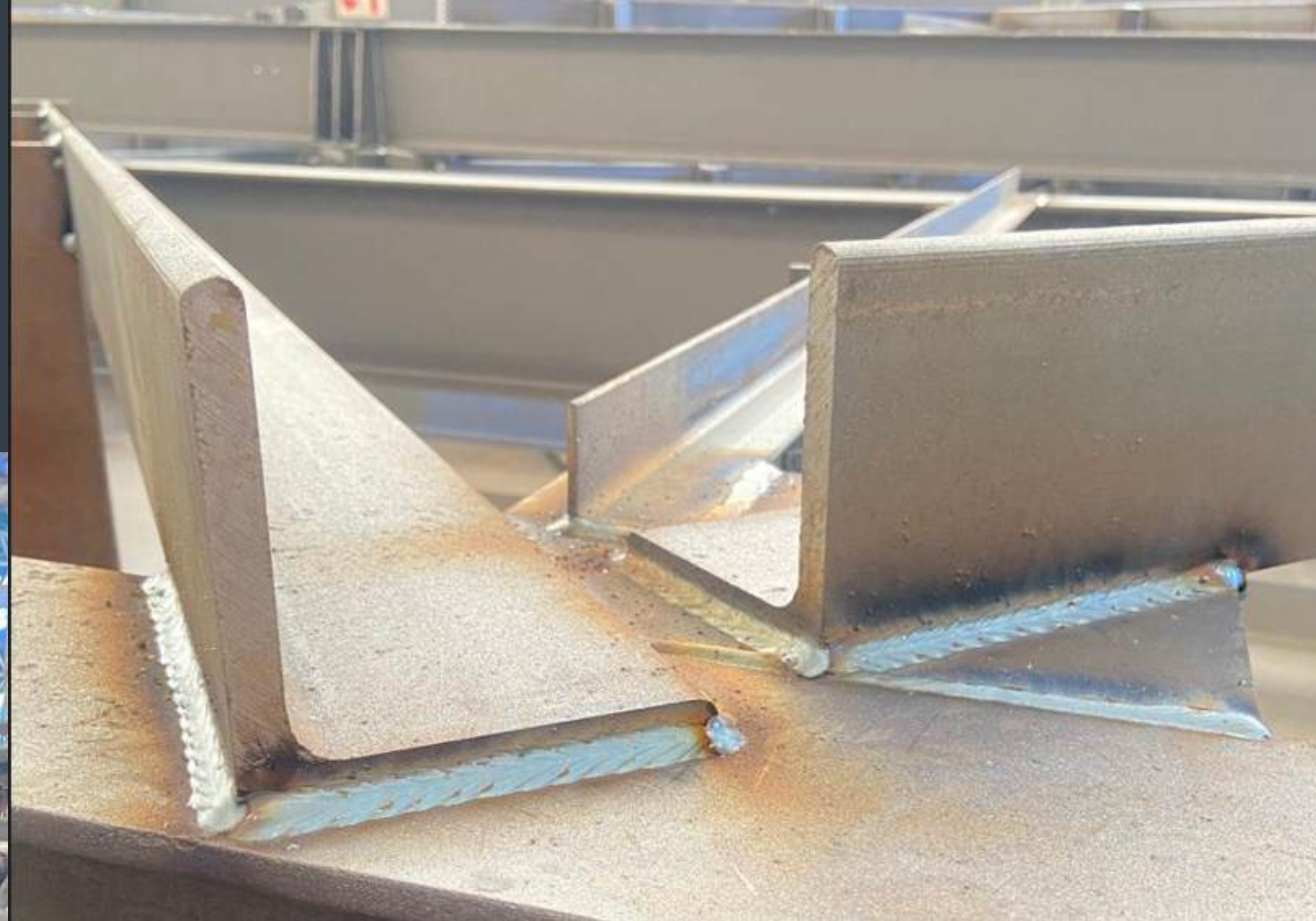
Fabrication



Fabrication



Fabrication



Fabrication



ERECTION / CONSTRUCTION / INSTALLATION

CONTRACTOR: Utinhage Super Steel

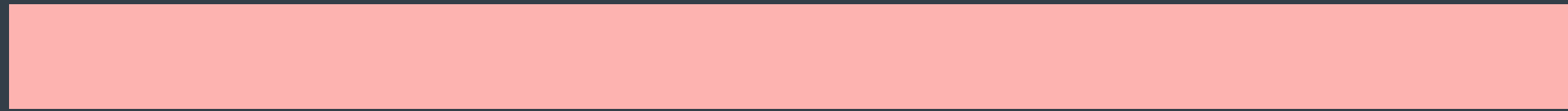
Erection



Erection



CHALLENGES AND SOLUTIONS

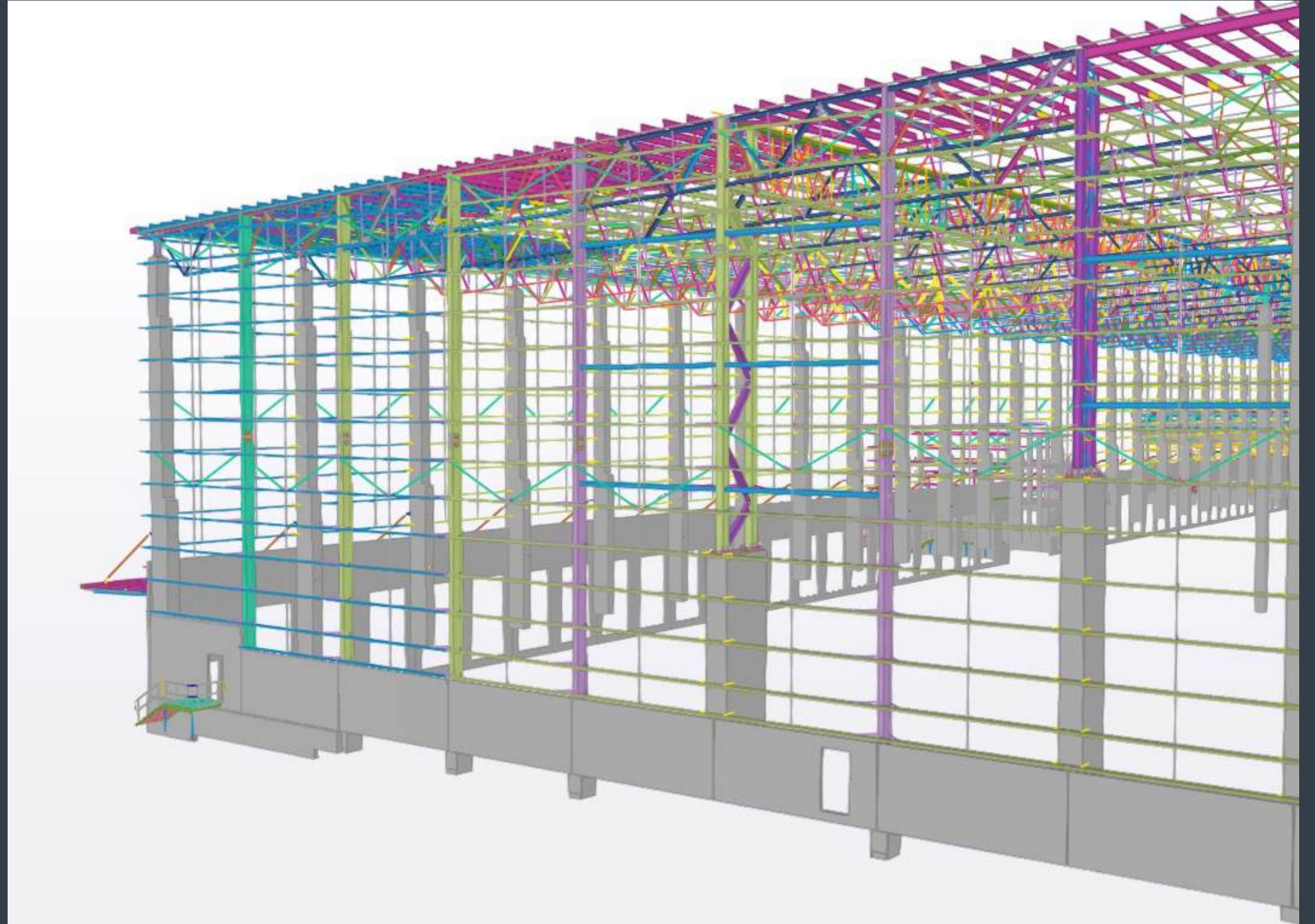
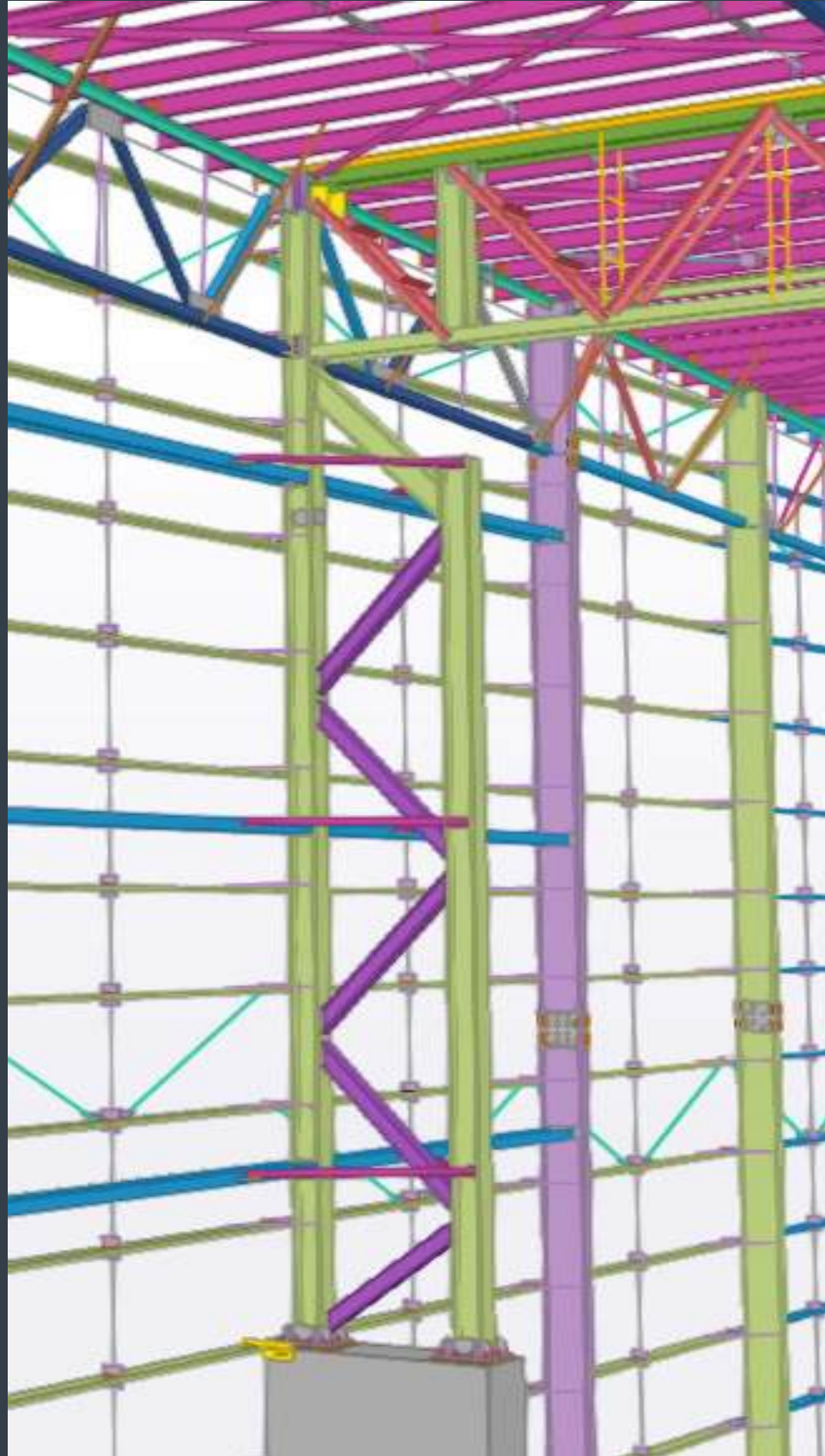


Metsec Purlins

- Economical section enabling cost saving on steelwork weight
- Section sizes were readily available
- Sped up construction time for purlins and sheeting rails



Lattice Columns

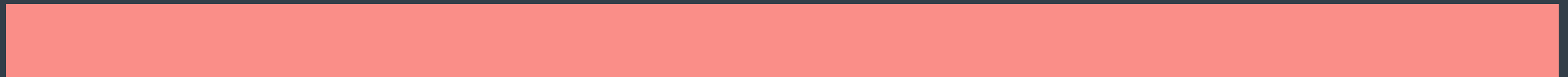


Cast-in Sleeves for canopy steel connection

- No drilling through precast elements
- Robust Fixing detail
- Neat Connection



THE BENEFITS OF STEEL IN THIS APPLICATION



Parallel Construction

The precast elements were cast whilst steel was being fabricated offsite. This eliminated the lead time in waiting for concrete to be cast and cured to receive steelwork



Large Spans

Steelwork enabled large 32m x 32m clear spaces which benefited the client in terms of planning spaces efficiently



Cost Effective

Steelwork is lightweight resulting in material cost saving over large spaces



Waste Reduction

Using steelwork in this application allowed for a streamlined construction process and reduced material wastage



What are we proud of

- We are extremely proud to be involved in a project of this scale and complexity.
- The entire project team contributed to the successful delivery of the project on time.
- The project covers a total of 74 850m² of development space constructed in 18 months. The total steelwork installed is approximately 2600 tons
- We are proud to have delivered a product to the client that is of high quality, technical excellence and fit for purpose

