

steel

SOUTHERN AFRICAN INSTITUTE  
OF STEEL CONSTRUCTION

Steel Awards 2023



**Century Property Developments**

**Indawo @The Precinct Lifestyle Hub**

# THE PROJECT BRIEF

**CLIENT:** Century Property Developments

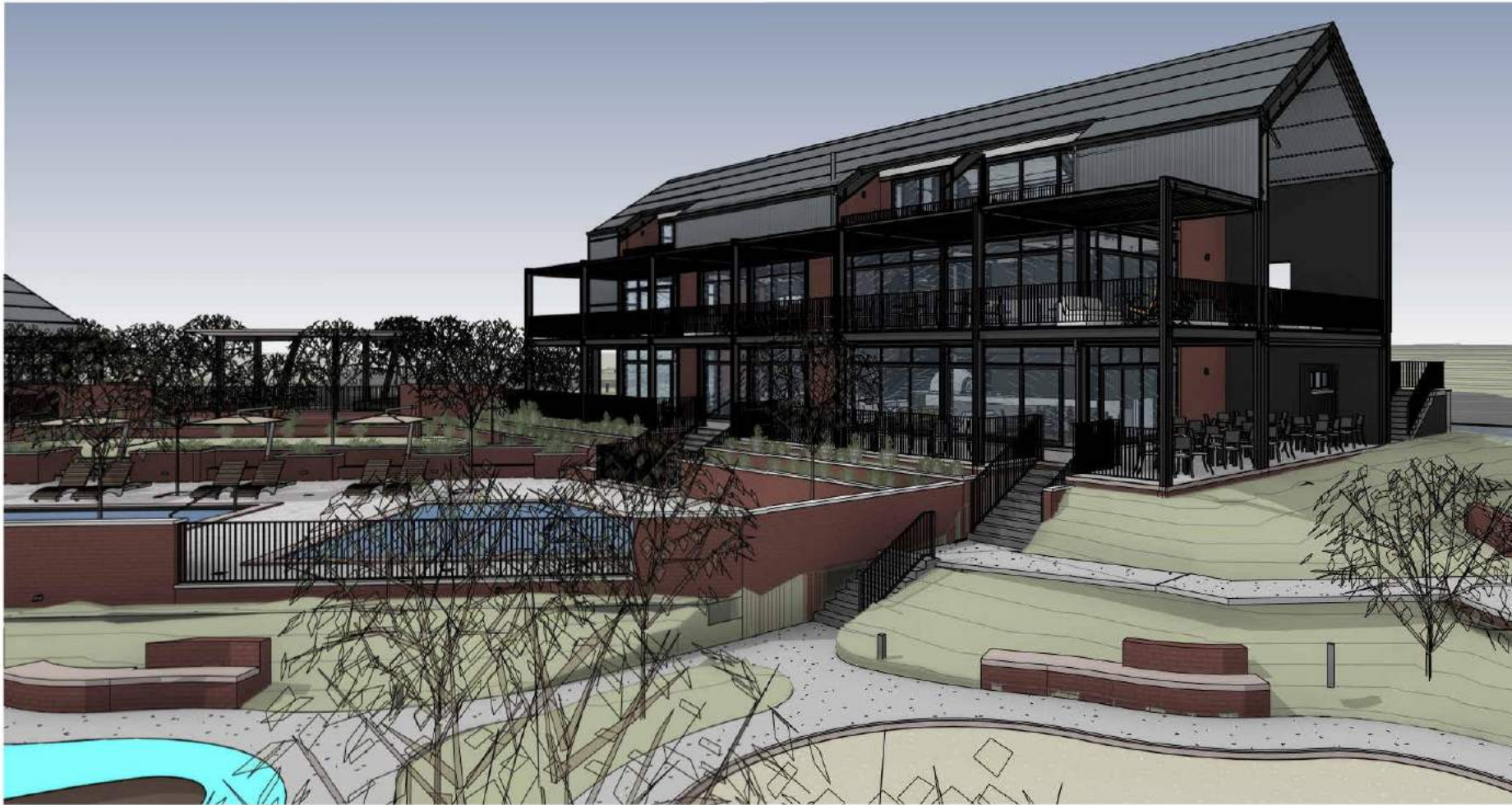
**ARCHITECTS:** Century Property Architects

**MAIN CONTRACTOR:** Century Property Construction

## Project Brief

- The brief was to design a lifestyle hub for the Indawo @The Precinct residential development, to be used by the tenants, in the various recreational spaces provided. The design consists of 2 buildings, separated by a pool & grassed terrace, with access to play areas, splash park, water slide pool & multi-sports field.
- The design had to maximise the views around the site by using steel portal frames, roof & wall sheeting, precast concrete, glazing elements and facebrick, thus keeping with the Century Property aesthetic of the whole development. A steel & concrete entrance canopy was also designed to create a focal point for entry into the hub space.
- The vision aligns with Vitruvius's principles: *Firmitas* (Solidity), *Utilitas* (usefulness) and *Venustas* (beauty)
- **Firmitas** The building is expected to stand the test of time with longevity, low maintenance and minimal impact on the environment.
- **Utilitas** Adaptable spaces are required allowing large spaces to be utilised in a flexible manner.
- **Venustas** An aesthetically, alluring environment to be created to invite/motivate tenants to connect.





## ARCHITECTS OVERVIEW

Overall, integrating steel into the architectural design of a modern building offers a myriad of benefits, from structural strength and durability to sustainability and aesthetic appeal.

The use of steel allowed us to push boundaries and create visually striking structures that resonate with both functionality and artistic expression. The prefabrication with assembly drawings made it much easier to determine the quality of fixing & structural aesthetics before start of construction

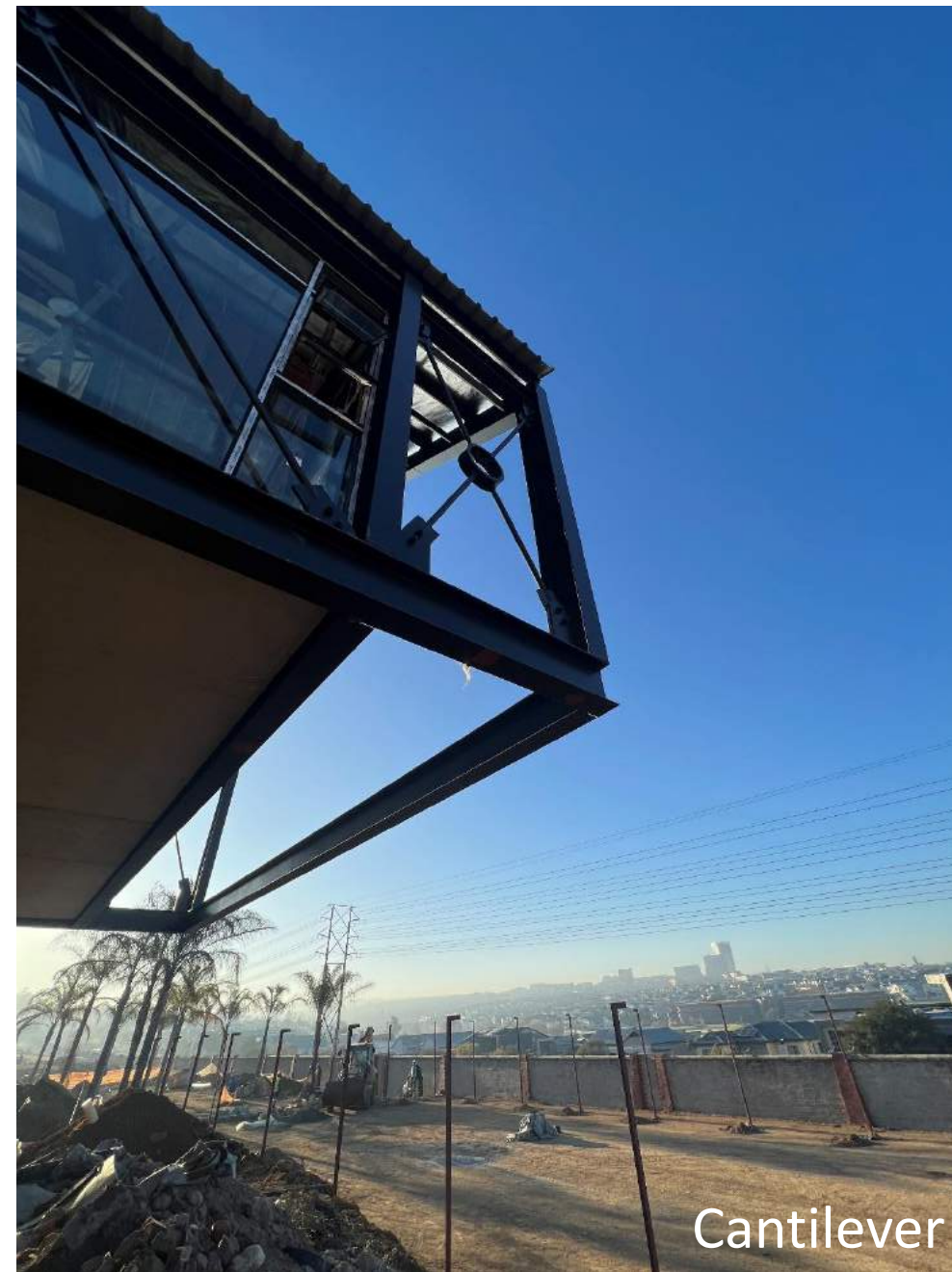
### Lifestyle Hub:

- Building 1: Consists of a Restaurant / Pizza Bar (Grnd Flr), Lounge & Sky Bar (1<sup>st</sup> Flr) & 2 Function Rooms (2<sup>nd</sup> Flr);
- Building 2: Consists of Open Gym & 2 Studios (Grnd Flr), Public Changerooms, Staff & Maintenance Facilities on the Lower Grnd Flr;
- Entrance Canopy: Main access into the area





Triple Volume



Cantilever



Bridges

### ASPECTS OF THE DESIGN

**Transparency:** Steel's high strength-to-weight ratio supports larger glass panels, fostering a connection between indoor and outdoor spaces.

**Open Interiors:** Steel allows for wider spans, reducing the need for columns and promoting open floor plans with spacious interior volumes.

# THE PROJECT OVERVIEW



# PROJECT OVERVIEW

## STRUCTURAL STEELWORK

Project Completed: 15<sup>th</sup> August 2023

Steelwork Completed: 31<sup>st</sup> March 2023

Tonnage: 64,0658t

Profiles used: : 406x178x54 UB Columns and rafters, 254x146x31 UB bridge beams with 35 $\emptyset$  hanger rods. 406x178x60 Composite floor beams. CFLC purlins, angle bracing and exposed rod bracing.



# PROJECT OVERVIEW

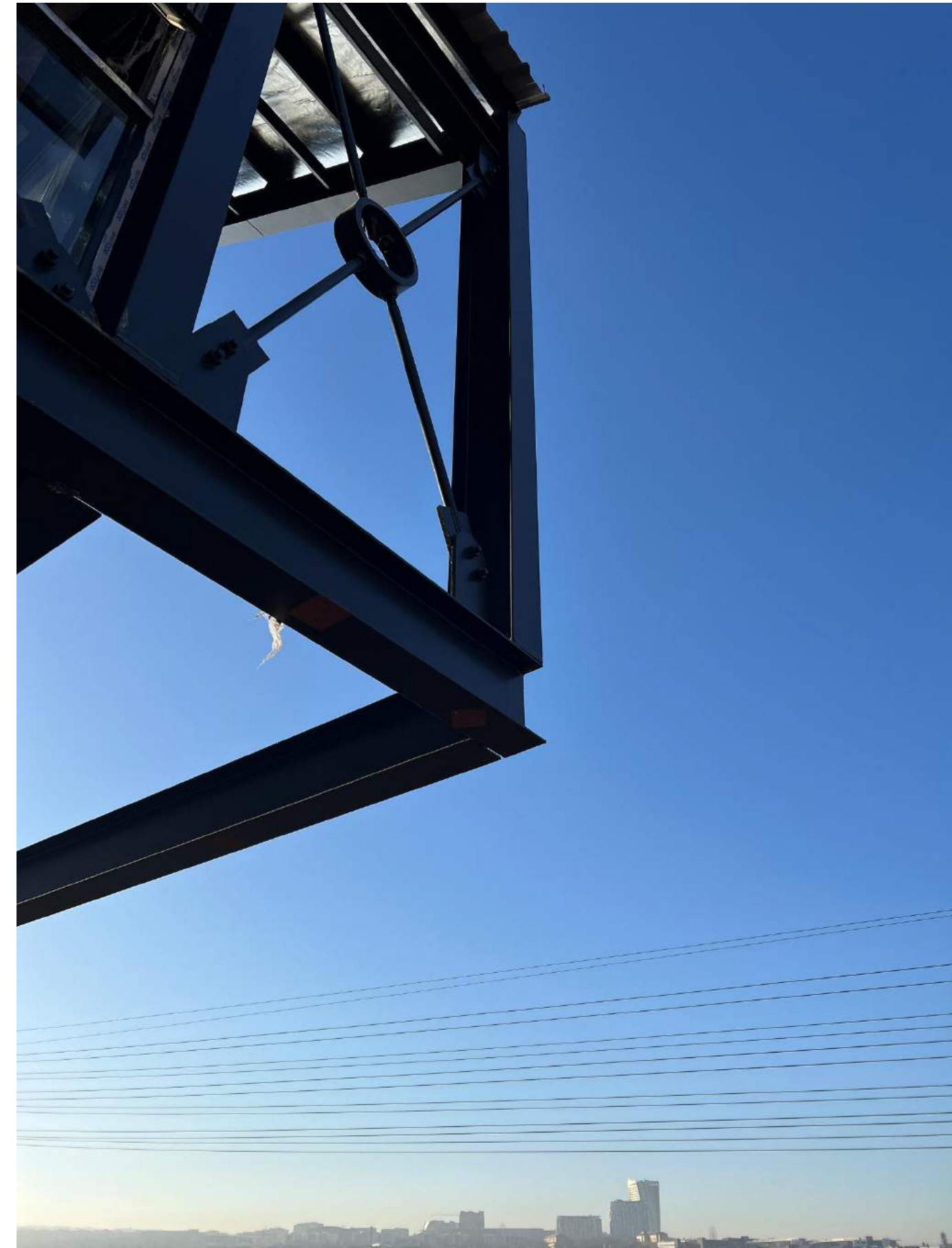
## STRUCTURAL STEELWORK

Structural Engineer: STRUXIT Projects

Steelwork Contractor: TASS Engineering

Steel Detailer: TASS Engineering

Steel Merchant/s: **TASS TO CONFIRM**



# PROJECT OVERVIEW

## METAL CLADDING AND ROOFING

Project Completed: 15 August 2023

Cladding Completed: 26 May 2023

Cladding Material Used: Aluminium-Zinc coated steel

Cladding Profile: Widedek

Cladding Area Coverage: 1280m<sup>2</sup>

Cladding Tonnage: **HTNP TO CONFIRM**



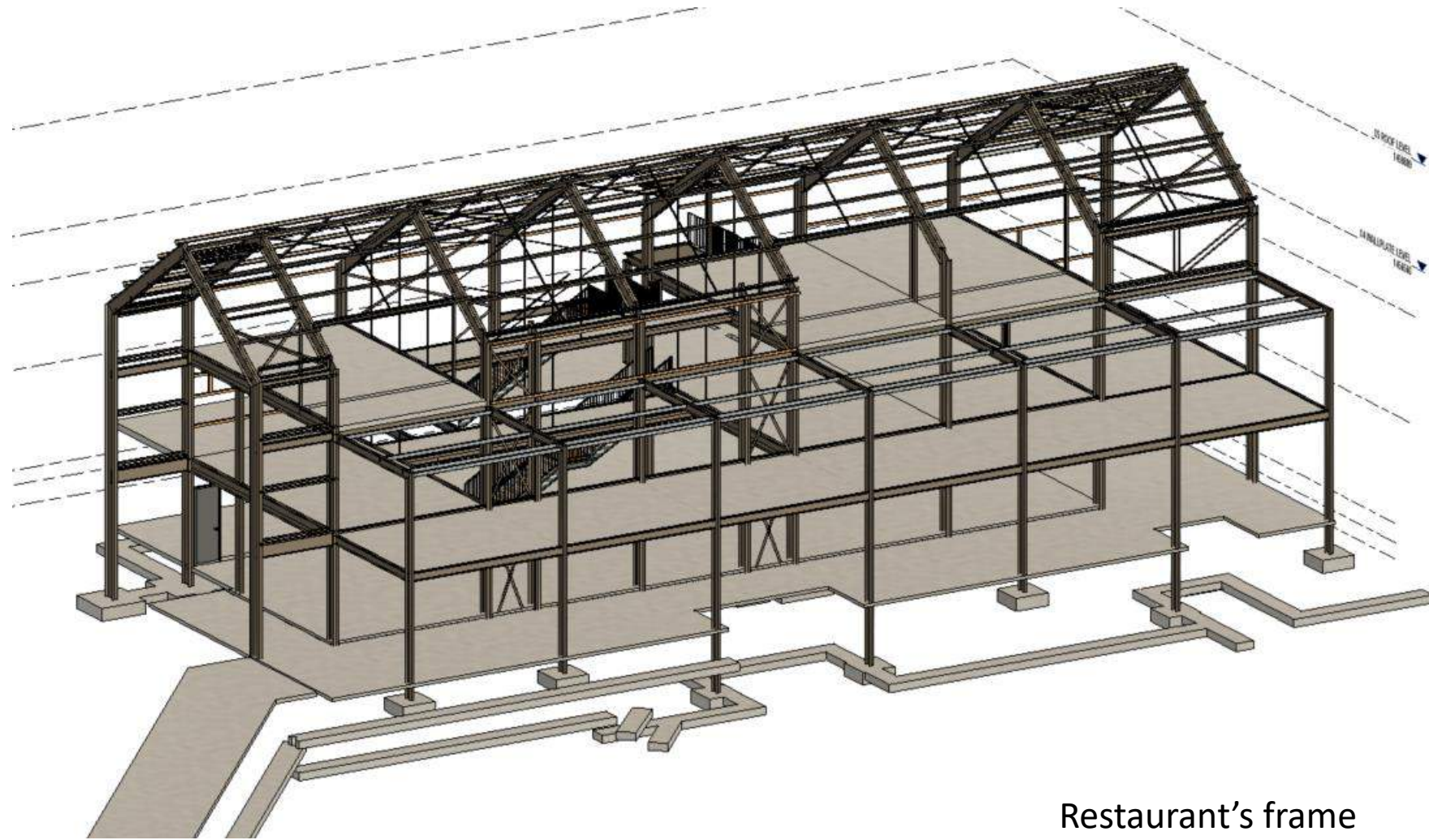
# STRUCTURAL FRAMING

**STRUCTURAL ENGINEER: STRUXIT Projects**

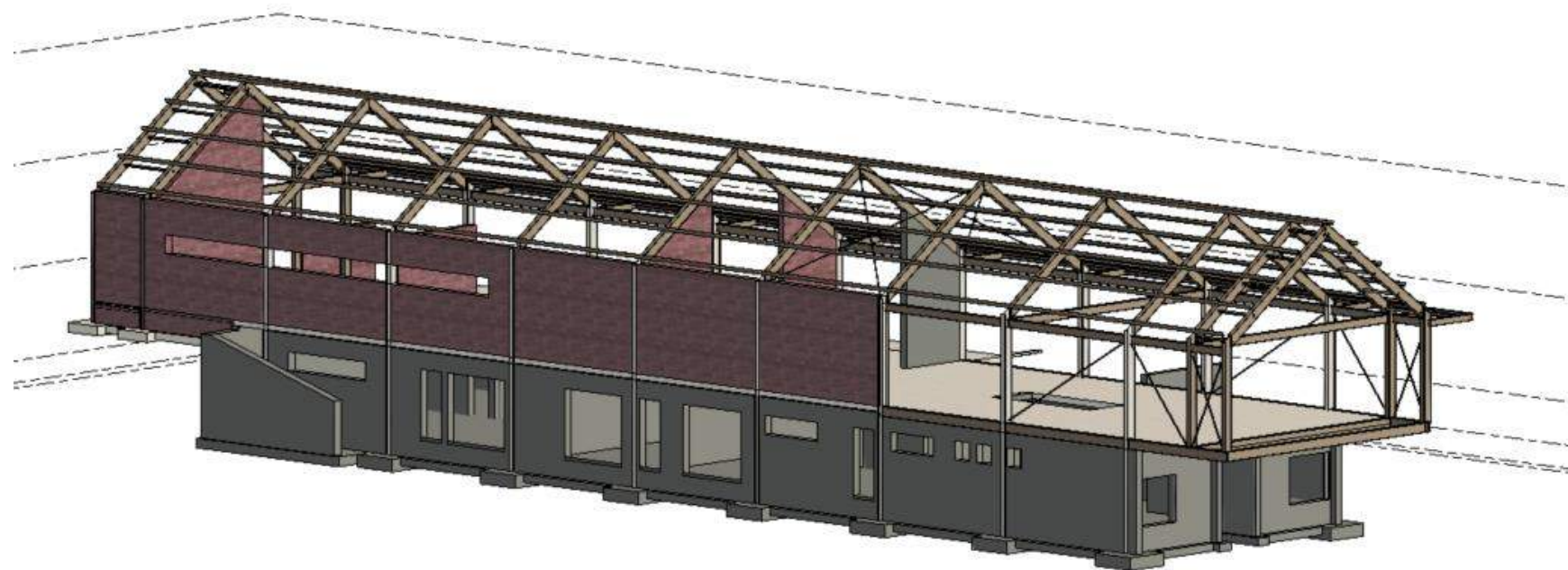
**STEELWORK CONTRACTOR: TASS Engineering**

**STEEL DETAILER: TASS Engineering**

# STRUCTURAL FRAMING



Restaurant's frame structure

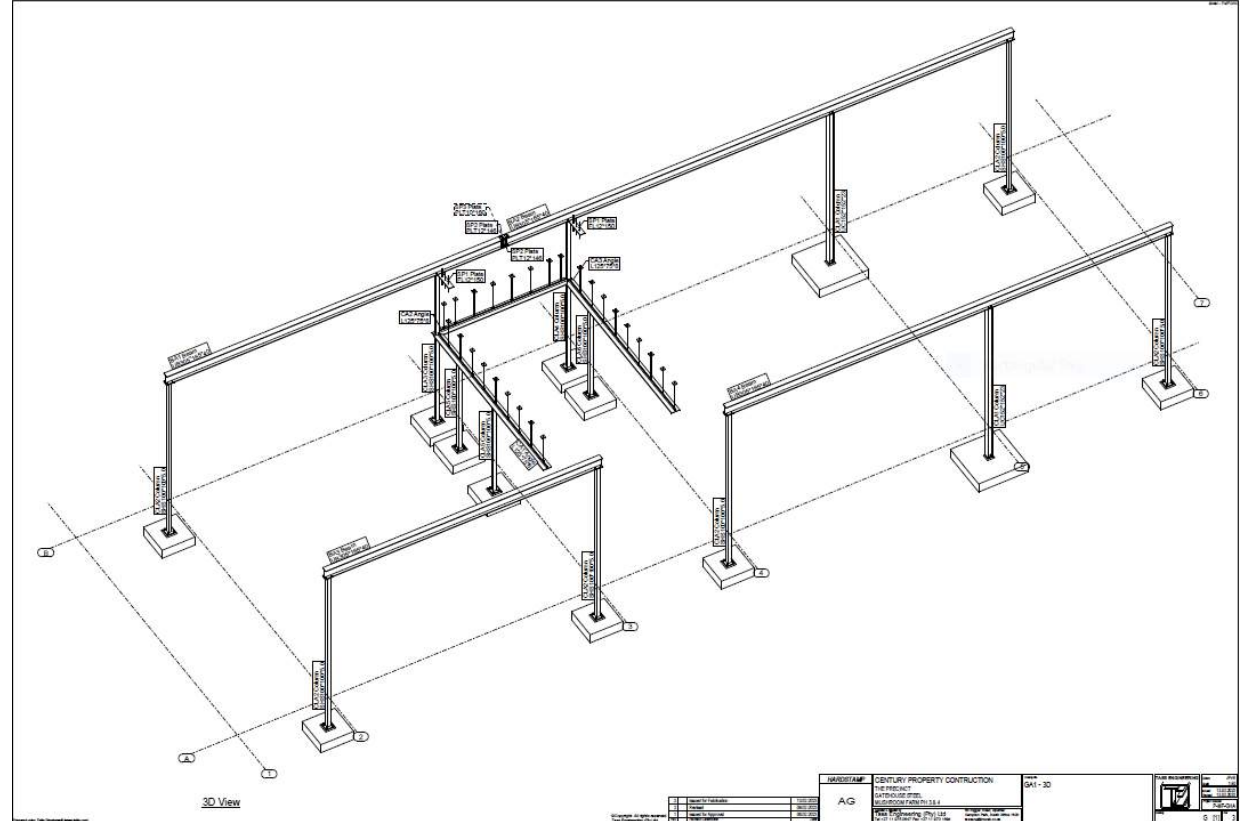
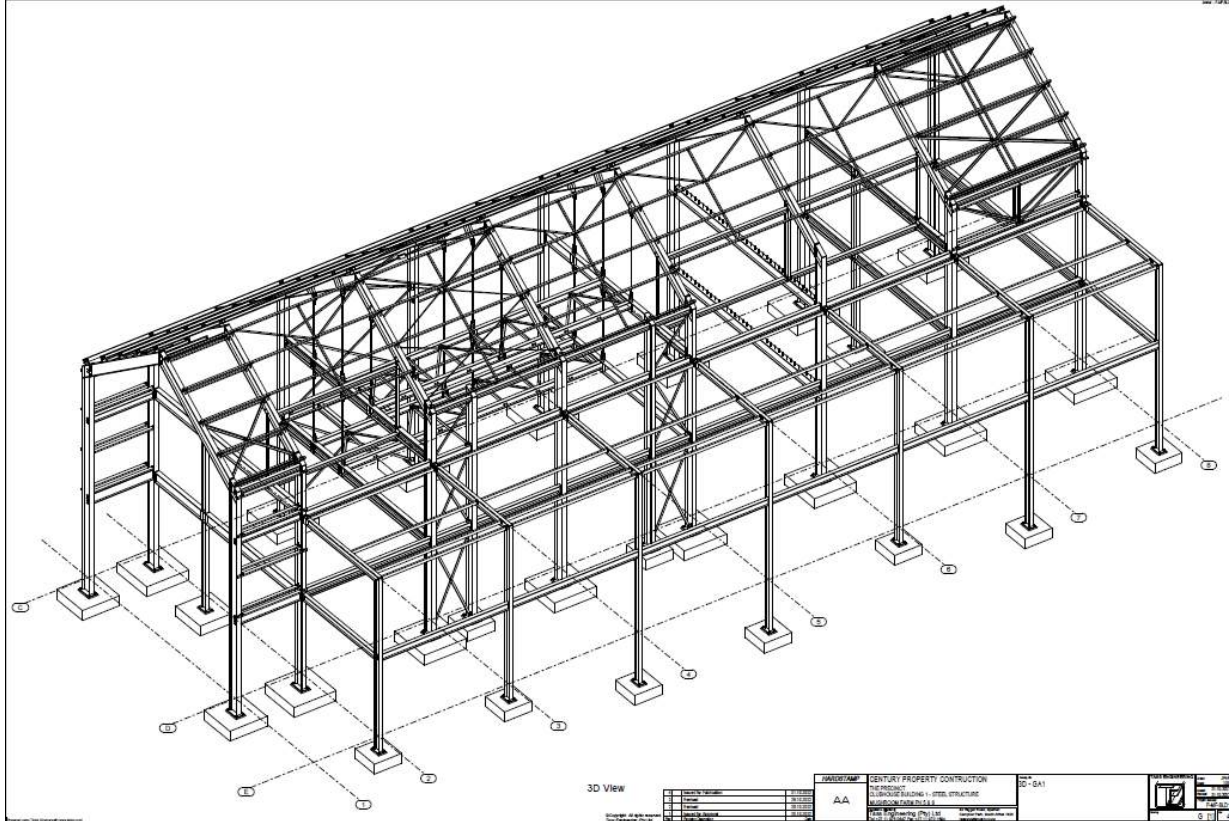
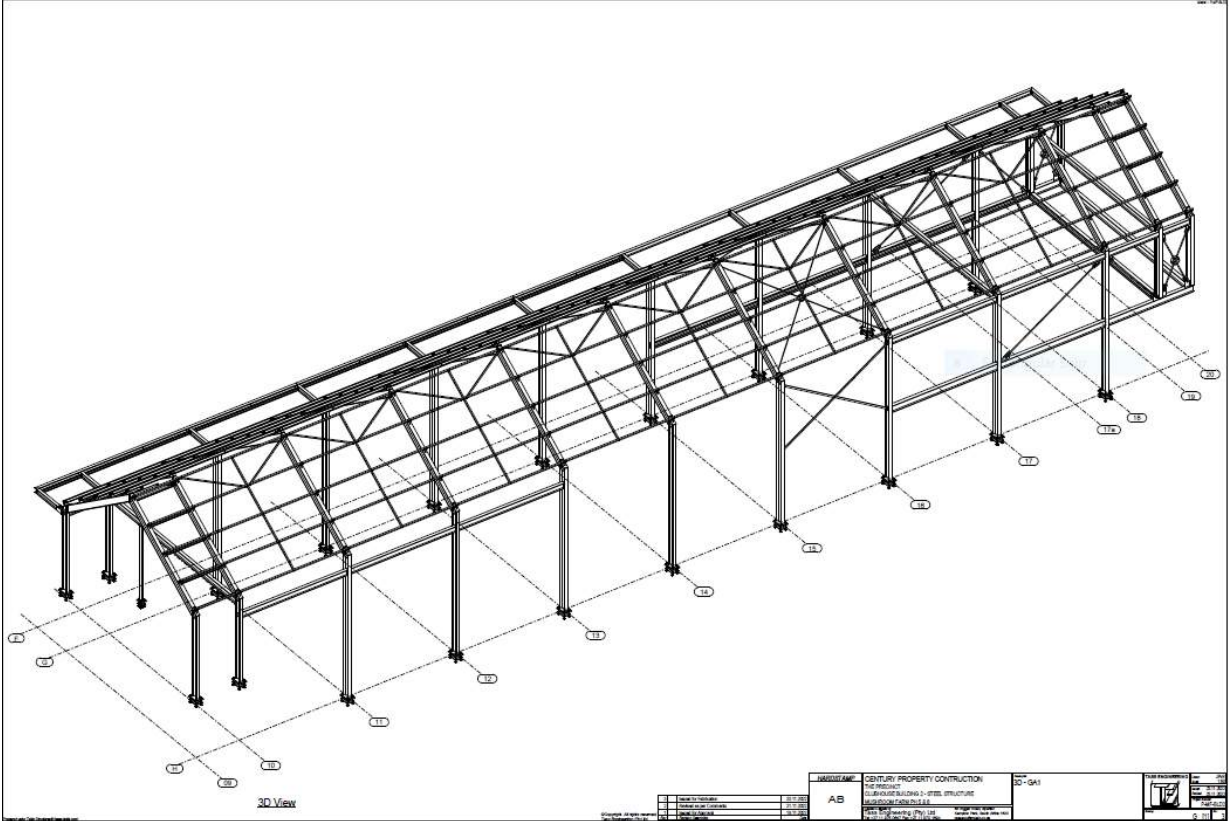


Gym's frame structure





# STRUCTURAL FRAMING



# METAL CLADDING/ ROOFING

CLADDING MANUFACTURER: Safintra

CLADDING ROLL FORMER / PROFILER: Safintra

CLADDING/ ROOFING SUPPLIER: Safintra

CLADDING/ ROOFING CONTRACTOR: Hi-Tech Nail Plate



Saffal Coil Rolled into Safintra Widedek



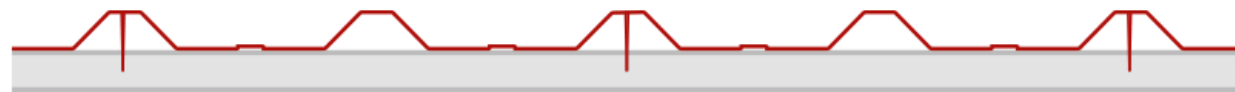
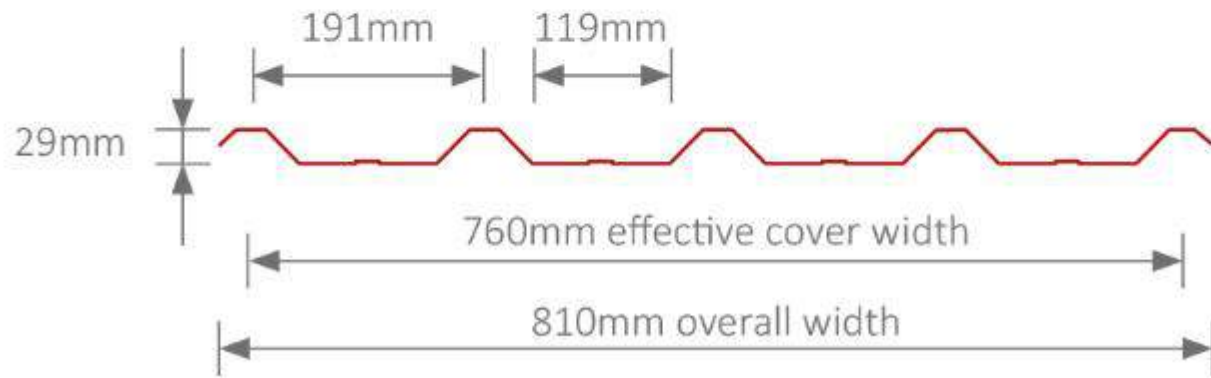
## BENEFITS OF Safintra Widedek

- Durability:** Safintra Widedek is resistant to weathering, corrosion, and pests, leading to a longer lifespan compared to some other materials.
- Low Maintenance:** Safintra Widedek requires minimal maintenance, often just periodic cleaning to maintain its appearance.
- Energy Efficiency** Safintra Widedek can contribute to a building's energy efficiency by providing thermal insulation and reflecting sunlight.
- Design Flexibility:** Safintra Widedek offers a wide range of colors
- Fire Resistance:** Safintra Widedek offers excellent fire resistance.

## Saffal Coil Rolled into Safintra Widedek

This sheeting is an angular, trapezoidal fluted sheet that provides a wider cover width with shallower flutes. Because of its spanning capacity that is so great it requires less purlins saving costs in the long run.





### Saffal Coil Rolled into Safintra Widedek

The metal cladding is fixed to a timber substructure with fastener screws through the centre of the rib. This type of cladding allows for a wider purlin spacing when cladding the wall, making it a more economical choice



*“The Widedek profile has a better cover width than Tufdek IBR, resulting in a saving of  $\pm 10\%$ . To achieve the same coverage, less sheets are required to be erected, thus saving on time and labour.” –SAFINTRA*

# FABRICATION

STEELWORK CONTRACTOR: TASS Engineering (Pty) LTD



# ERECTION / CONSTRUCTION / INSTALLATION

**CONTRACTOR:** Century Property Construction

# RESTAURANT PROGRESS PHOTOS



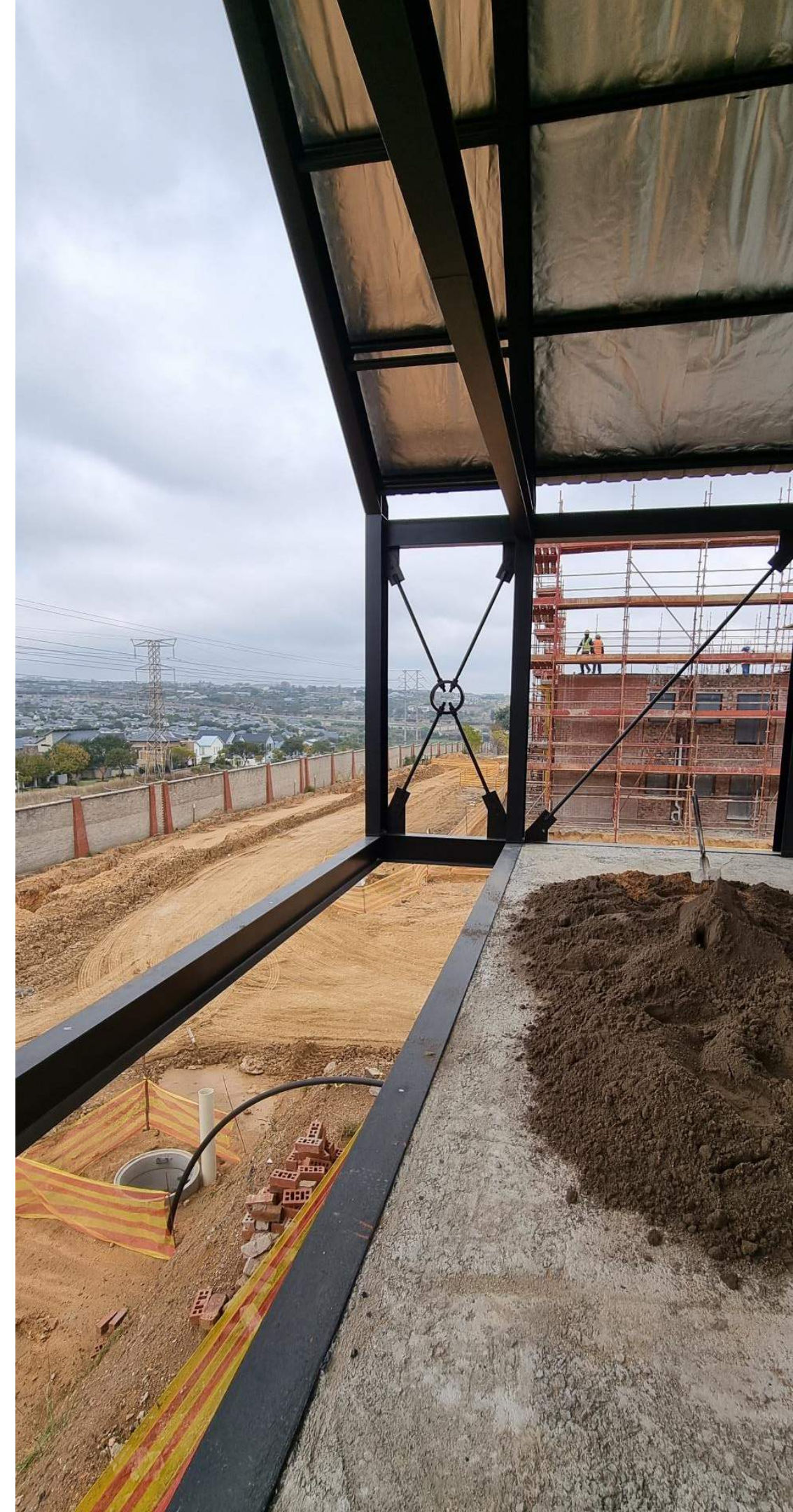


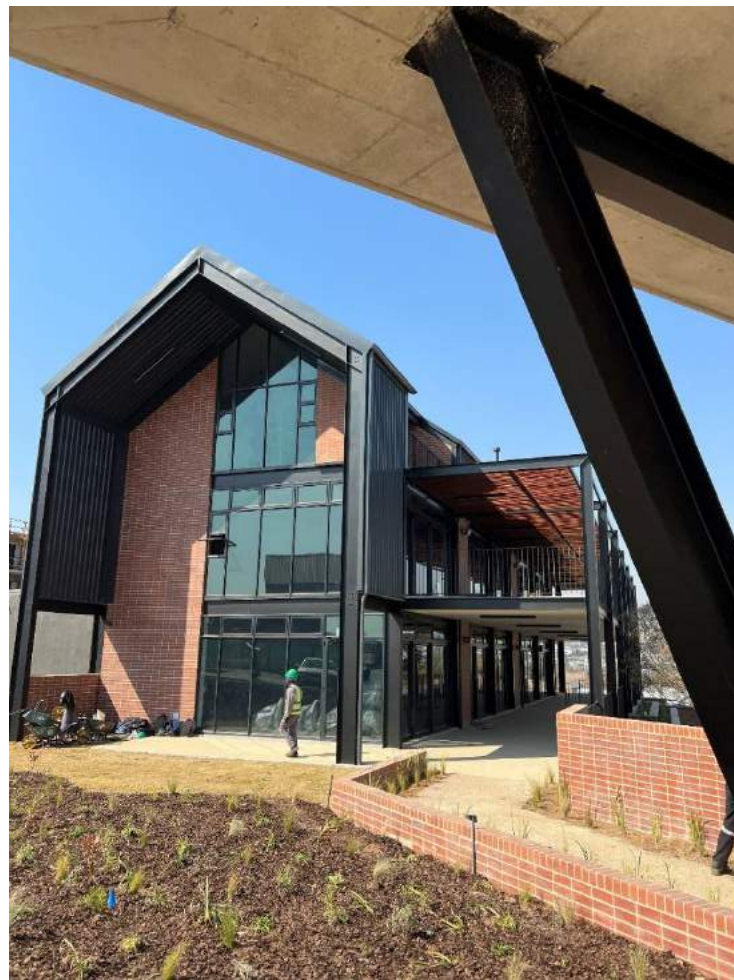
Restaurant is starting to take shape

# GYM PROGRESS PHOTOS

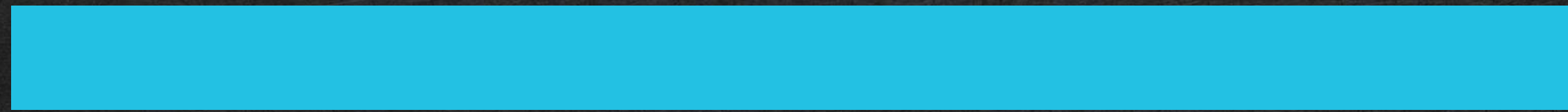


## Early stages





# CHALLENGES AND SOLUTIONS





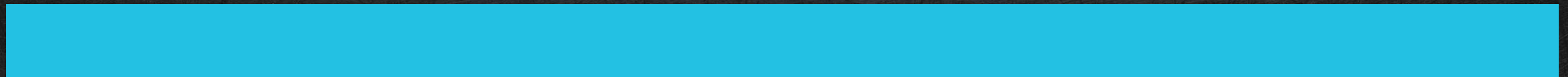
- **Slab construction sequence** – With the pre-slab installation sequencing of steel erection and slab packing had to be considered
- **Cantilever gym** – Balancing the structural requirements with the remainder of the structure's member size
- **Suspended bridges** – Asymmetric loading and tension elements



- **Second floor balconies** – Creating the threshold while maintaining the composite action
- **Downpipe integration** – To keep the downpipes on the column line the steel beams were cut and connection with an SHS section. The beam was strengthened with platework



# THE BENEFITS OF STEEL IN THIS APPLICATION

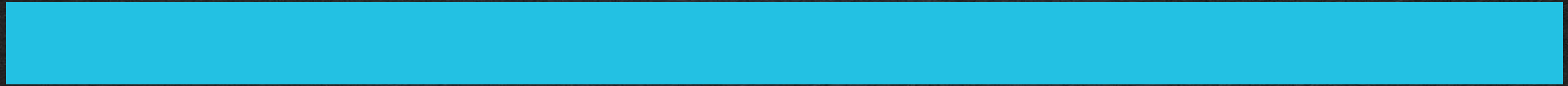


## Benefits of Steel Usage:

- Structural Integrity:** Steel offers exceptional strength and load-bearing capacity, allowing for creative and daring architectural designs.
- Durability:** Steel is resistant to corrosion, weathering, and pests, ensuring the building's longevity and reduced maintenance costs.
- Flexibility:** Steel's malleability facilitates intricate designs, enabling architects to experiment with complex shapes and forms.
- Sustainability:** Steel is recyclable, promoting eco-friendly construction practices and reducing the building's environmental footprint.
- Fast Construction:** Prefabricated steel components speed up the construction process, minimizing project timelines.
- Fire Resistance:** Steel's non-combustible properties enhance the building's safety and compliance with fire codes.



**WHAT WE'RE PROUD OF**





- **Aesthetics** – Incorporation of the steel elements into the style and aesthetics
- **The Team** – The team and all people involved to bring the vision to life
- **The resident** – The opportunity to create affordable housing with world class amenities





We take great pride in Indawo @The Precinct Lifestyle Hub, a testament to cutting-edge engineering and design. The use of steel as the primary building material has not only ensured exceptional durability & structural integrity but has also granted us freedom to create expansive volumes within this building.

The versatility of steel allowed us to design soaring ceilings that foster a sense of grandeur. This achievement stands as a celebration of human ingenuity and showcases the remarkable possibilities that arise when technology and creativity converge in the realm of construction