Case study
Ramsay Clinic Northside
April 2022

LGS Framing made from TRUECORE® steel reaches new heights

Project Details:
Project: Ramsay Clinic Northside
Architect: Silver Thomas Hanley (STH)
Builder: Erilyan
Client: Ramsay Health Care
Fabricator: Austruss
Sources:
– Andrew Fowler, Director, Austruss
– Tim Curtin, Managing Director, Erilyan
Principle Steel Product: LGS framing made from TRUECORE® steel.
Project Size: 18,500 lm of LGS framing, 86 façade panels 5.1m in height.
Status: Completed 2021
Address: St Leonards, NSW

Lightweight yet structural, TRUECORE® steel frames up the eighth-floor extension of this calming healthcare facility.

Key benefits:

Efficient Construction:
Austruss' use of prefabrication and DfMA principles enabled large sections of the near-complete façade system to be externally craned into position with minimal disruption to the fully operational health facility. It also removed the need for scaffolding to be installed around the whole building, thereby significantly reducing preliminary costs related to the project.

Improved safety and waste management:
The use of prefabricated façade panels enabled the volume of truck movements, waste and installation trades on site to be reduced, improving the ability to manage safety and waste outcomes. The prefabricated façade panels were designed to extend above roof level to form a secondary safety barrier during construction.

Precision engineering:
Using 3D software, the hybrid LGS and RHS façade frames were manufactured to exacting tolerances (0.5mm) off-site, with the engineered rigidity to support the weight of the windows and the lateral pressures of the crane lift to the eighth-floor where the façade was installed.

Lightweight yet strong:
Light gauge steel (LGS) wall frames and roof trusses made from TRUECORE® steel used in the construction of the eighth-floor, minimised the load on the existing structure. [1]The consistency and strength of the TRUECORE® steel contributed to the quality of the finished frame and the visual appeal of the products it structurally supports.

Content

STH, otherwise known as Silver Thomas Hanley, are a recognised national and international architecture practice with experience acquired over 40 years in delivering 2000 healthcare projects.[2]

Inspired by Ramsay Health Care's brief to provide a place of recovery and wellness, STH took a holistic approach to the architecture and interior design of this clinic in St Leonards. The building mass is articulated with balconies, views and outlooks from the building. Shadows from balcony screening breathe life onto the façade whilst creating interest and appeal from the street.[3]

The eighth-floor extension of the Ramsay Clinic Northside was designed to increase the capacity[3] of the health facility and accommodated 25 additional in-patient rooms with ensuite, a large nurses station, and two group therapy rooms with outdoor balconies.

Creating an additional level to an existing seven level building had its own challenges. The specific challenge for this project was the existing health facility needed to remain operational throughout. As such, to minimise disruption, materials needed to be externally hoisted to the roof.

The second challenge was at a time when regulations relating to fire compliance of façade systems were evolving rapidly, the finished aesthetic of the eighth-storey façade needed to harmonise visually with the rest of the building. Careful selection of the appropriate façade material to meet both the aesthetic and performance requirement was required.

Erilyan, a commercial construction business with extensive experience was appointed to deliver the design aspiration and address the construction challenges of this build.[4] Having had significant experience working together using LGS framing as an alternative to other structural materials, Erilyan appointed LGS fabricator, Austruss, early in the project's design phase to cost-effectively deliver on the supporting frame for the façade.

Tim Curtin, Managing Director of Erilyan stated that "we were early adopters of LGS framing for the benefits it provides in terms of protection against borers and termites, ease of handling, product consistency and its fire properties. TRUECORE® steel is a fantastic product for our business. We use Austruss for our LGS framing as they understand the capability of the product thoroughly. Also, they are solutions-focused from the 3D design and engineering in the early stages of the project, to final installation at site."

For this project, Austruss recommended a Design for Manufacture and Assembly approach (DfMA) to be taken. Adopting a DfMA approach meant that large sections of the near-complete façade system could be externally craned into position. Tim Curtin stated that as a result of this approach being taken, "The disruption caused and the waste generated at site was reduced. Most significantly, the need to scaffold the whole building was avoided, reducing the preliminary costs and improving the amenity of the building during the build."

The external frames supporting the façade were prefabricated off-site by Austruss, using a combination of LGS framing made from TRUECORE® steel, and strategically positioned RHS sections. Using 3D software, the frames were manufactured to exacting tolerances (0.5mm per panel) with the engineered rigidity to support the weight of the windows and the lateral pressures of the crane lift to the eighth-floor. Leaving nothing to chance, the façade panels were trialled and improved upon, prior to mass production.

In managing the operational and safety challenges of this restricted site, the façade frame was transported to site, just in time. At the ground level, the cladding system was installed to create the watertight façade, prior to the crane lift to the eighth-floor. The prefabricated façade panels were designed to extend above roof level and doubled as a safety barrier during construction.

With over 30 years in building and 20 years in LGS fabrication industry, Andrew Fowler commented, "No project is without challenges, so the ability to propose workable solutions to those challenges is essential for these types of projects."

Lightweight yet strong, light gauge steel (LGS) wall frames and roof trusses made from TRUECORE® steel, minimised the load on the existing structure. Straight and true, TRUECORE® steel contributes to the quality of the finished frame and to the visual appeal of the products it supports structurally.

[1] Northside Clinic - St Leonards (austruss.com.au)
[2] Practice - STH Health Architecture
[3] St Leonards Clinic - STH Health Architecture
[4] Northside Clinic Level 8 Extension | Erilyan

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