

Case study

Spirit of Tasmania freight and passenger terminal

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Framing made from TRUECORE® steel soars in new state-of-art Spirit of Tasmania passenger terminal



Project Details:

Project: Spirit of Tasmania freight and passenger terminal

Location: Geelong Port, VIC

Principal Steel Product: 15,000 lineal metres of LGS framing made from TRUECORE® steel

Builder: Kane Constructions

Steel Fabricator: Cortek

Architects: Brand Architecture / Select Architects

Photography: Images supplied by Cortek

Close collaboration between Kane Constructions and light gauge steel (LGS) framing fabricator Cortek, transformed what was once an old cargo shed, into a truly welcoming experience to Tasmania's rich south.

Proudly boasting the world's first and only three-level vehicle access ramp, Geelong Ports' multi-million-dollar Corio Quay redevelopment reaffirms its place as Victoria's leading regional port facility and provides the iconic Spirit of Tasmania with its new mainland home.

Almost two years in the making, this 12-hectare rejuvenation saw the Port Authority issue three distinct construction contracts. These included marine works, civil construction, and a purpose-built, 2,131 sqm state-of-the-art freight and passenger terminal building, designed to enhance operational efficiency while providing an exceptional gateway experience to people travelling to Tasmania.

Kane Constructions was awarded the Design and Construct contract to build the 19-million-dollar Spirit of Tasmania freight and passenger terminal building. This project entailed extensive renovations to an existing cargo shed, transforming the cavernous steel-framed structure into a multi-purpose facility with designated areas and amenities for staff, crew and passengers commuting to and from Tasmania.

When designing the new terminal building, project Architects (Select and Brand) drew inspiration from the topography of the Spirit's namesake home of Tasmania, with the building's exterior facade mimicking the jagged contours of Cradle Mountain and the pristine waters of Dove Lake. This visual cue continues into the terminal's interior space, which features a massive, multifaceted, vaulted ceiling that provides a welcome greeting and an embracing canopy for the spacious transit lounge, children's play area, and café.



With such an imposing and complex ceiling design, an opportunity presented itself to Kane Constructions and its contractor, to engage LGS framing fabricator, Cortek. According to Mitch Grace, Project Consultant at Cortek. "By closely collaborating with the lead contractor and utilising our latest 3D modelling software, we were able to engineer a prefabricated framing solution that not only delivered the Architects aesthetic objectives, but crucially resolved the significant engineering challenge this project presented. The use of LGS framing made from TRUECORE® steel offered an effective and efficient solution that would have been difficult to achieve using a conventional framing system".

Cortek's design solution recommended the use of high-tensile, prefabricated light gauge steel framing made from TRUECORE® steel, which eliminated the need for any secondary support structures while achieving all load, span, and seismic requirements, including load allowances for complex mechanical services and post-build interface attachments like large-format monitors.

The original architectural specifications incorporated a 'stick-build' approach (where the structure is built entirely onsite); this was assessed on its merits and compared to the prefabricated option. Unsurprisingly, the builder and contractor opted for the prefabricated Cortek approach. According to Kane Constructions. "The use of Cortek's panelised framing system allowed the total number of 'drop and down' struts supporting the large roof span to be reduced by 20% without compromising the seismic engineering requirements. Additionally, the substitution of heavy structural steel for prefabricated LGS framing made from TRUECORE® steel resulted in a remarkable 30% reduction of onsite labour at installation".

Over 15,000 lineal metres of light gauge steel framing made from TRUECORE® steel was fabricated for the project, almost half of which was used to create the 1,000 square metres of modular ceiling panels, which ranged in size from 2.4 x 3.0 metres to the largest panels at 2.4 x 8.0 metres. The remaining framing material was used as 'droppers' and bracing to ensure vertical, lateral, and shear strength requirements were achieved.

Another significant advantage of selecting the prefabricated Cortek system was their 3D detailing of the prefabricated LGS frames. This ensured the complete alignment of the 150 modular ceiling panels making the installation onsite intuitive and seamless. The entire ceiling structure was installed in a week and only required a two-person crew utilising a scissor lift access platform.

"TRUECORE® steels' impressive strength-to-weight ratio provided Cortek with a light weight - high tensile strength material to design and manufacture a prefabricated framing solution that simplified installation on site and eliminated the requirement for secondary support structures. The structure was seismically engineered to accommodate all mechanical/service loads and reduced overall project costs while maintaining design intent and integrity". Mitch Grace, Project Consultant at Cortek.



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