

New icon for the City of Geelong

The new grandstand at Skilled Stadium in Kardinia Park, Geelong, was opened to the public for the Geelong Cats' first home game on 1 May this year. This newest AFL venue grandstand features an iconic steel structure visible on the skyline to all travellers as they enter Geelong from the south. With a tight budget, short timeframe and restricted site access a steel solution was the obvious choice for the structure.

The primary aim of the redevelopment at Skilled Stadium was to replace the existing earthen mound on the east side of the ground with a new 6000 seat grandstand incorporating the facilities expected of a modern stadium hosting major sporting events.

In addition, a new Western entry has been added, as well as minor renovation work to other existing stands. All this had to be completed within the total allocated budget of \$25 million.

Squeezed onto a tight site fronting Moorabool Street, the new five level eastern stand delivers the iconic feature of the stadium. The primary structural elements are the major curved masts fabricated into a tapered I-section (equivalent to a "1500WB" at the critical section) which supports all floor levels, as well as the roof.

Architect Peter Brook, a Director of Peddle Thorp Melbourne, noted that: "The huge masts that form the rear support for the grandstand cantilever up to support the roof and have been likened either to whale ribs, representing Geelong's connection to the sea, or cat's claws, representing the mascot for the Geelong Football Club. Either way, it appears to have been universally accepted by the local community, which is very pleasing for an architect."

Shail Shah of Olivetti Engineering, fabricators on the project, said that to create the nine spectacular steel curved columns, which rise 29 metres into the air, Olivetti Engineering rolled 40mm thick steel plate. The columns were coated with a three coat paint system by Olivetti Engineering and delivered in two sections to be erected and welded on site. Shah said that 600 tonnes of structural steel went into the project.

After working closely with the architects to develop the curved steel masts, the engineers then turned their attention to the grandstand superstructure. Mark Sheldon of Connell Mott MacDonald explains: "Once the concept for the roof became clear, we investigated a number of options for the superstructure. From our work on other AFL stadia, and TEDA Soccer



Photography: Ian McKenzie

Stadium with Peddle Thorp, we knew that steel is the best material to support the cantilevering seating tiers. So we had major steel elements in the front seating areas, at the rear with the major masts, and over the top with the upper deck and roof. Because the site was so tight, it quickly became obvious that a steel frame was the best solution."

"The use of profiled sheet decking over steel beams significantly reduced the formwork required on site, and aided Kane Constructions' ability to deliver the project to the tight construction program", he added.

Another factor affecting the design was the client's requirement for the stadium to stay operational during the 16 month construction period, with a minimum number of useable seats available for all major events.

This operational need meant that the design had to allow for construction in stages, with much of the structure fabricated off site. Minimising construction time on site became a key design criteria, and the decision to adopt a structural steel solution addressed this concern.

Even though the geometry was not simple, with curves in both the horizontal and vertical planes, a central aim of the design team was to develop simple detailing in the steelwork to minimise costs and expedite the construction.

The completed stadium is proof that exceptional results can be achieved to tight budgets when engineers and architects work closely up front developing efficient designs.

Project Team

Client: Geelong Football Club

Project Manager: Davis Langdon Aust

Architect: Peddle Thorp Melbourne

Structural and Civil Engineer: Connell Mott MacDonald

Building Services: Lincolne Scott

Quantity Surveyor: WT Partnership

Builder: Kane Constructions

Steel Fabricator: Olivetti Engineering

Steel Detailer: PlanIT Design Group