Case study

The Round - Performing Arts Centre

August 2024

The true supporting act behind this performing arts centre's innovative curved facade

THE INNER STRENGTH

Project Details:

Project: The Round - Performing Arts Centre

Location: Nunawading, VIC

Principal Steel Product: 23 tonnes of LGS framing made from TRUECORE® steel

Builder: Kane Constructions

Steel Fabricator: CMG Frames

Architects: BKK Architects / Kerstin Thompson Architects

Brick Facade Fabricator: Modular Masonry

Photography: CMG Frames / Modular Masonry

Lightweight, strong, and versatile, light gauge steel (LGS) framing made from TRUECORE® steel is a key structural component that enables this striking, curved masonry facade to take shape.

Set in the Melbourne suburb of Nunawading, The Round is an inspiring performing art centre, that was commissioned by the City of Whitehorse to provide its residents with a truly iconic facility for community engagement, performance, entertainment and celebration.

This state-of-the-art facility provides a visually engaging platform to support artistic expression in the region. The Round performing arts centre replaced the 30-year-old Whitehorse Centre and incorporates a new 626-seat proscenium theatre, 203-seat black box theatre, rehearsal studios, function rooms, and a large foyer area for pre-event hospitality. Additionally, one of the building's iconic curved exterior elevations provides the basis for a 'sound shell,' effectively extending the centre's theatrical spaces to an open-air amphitheatre.

Designed by BKK Architects and Kerstin Thompson Architects, the building's imposing, curved, red brick facade was created to respond to its surrounding residential environment. Its distinctive shape was derived from a contextual map of the site that had circles drawn around the surrounding community zones of sports grounds to the east, family homes to the north & northeast, parklands to the west & southwest, and Whitehouse Road & council buildings to the south. The area remaining between these circles inspired the building's concaved-shaped footprint and the distinctive facades, with each face of the building addressing a different community zone of influence.

The ground floor brick facade was constructed in the typical manner of using full bricks with mortar. However, with the aim of improving the overall construction program and delivery timeline, Kane Constructions saw an opportunity to use brick slips for the upper levels of the building. Early-stage collaboration between Kane Constructions, CMG Frames, and Modular Masonry allowed this innovative solution to be realised. CMG Frames were engaged to develop an engineered LGS framing system that would support 'thin bricks' and without compromising the architects design intent for these impressive facades.

Large LGS frames made from TRUECORE® steel were prefabricated to support the entire second storey brick facade which was installed over several weeks, rather than months, as required with traditional brick-laying. An additional benefit of this approach was the mobile lifting equipment used to position the prefabricated panels eliminated the need for scaffolding, ensuring internal trades could work concurrently.

According to Dan Thomson, CMG Frames Business Development Manager.

"The build was a large-scale, complex project which combined multiple curved and straight prefabricated wall panels to deliver a dynamic articulated facade. It required custom-made frames, bespoke fixing brackets, and 3D shop drawings integrated into the project's overall BIM model. The 3D modelling approach taken reduced the reliance on RFI's ('Request for Information' to clarify documents, drawings, specifications, or other project issues) which expedited the build and maintained the project timeline."

Takota Williams-Roszczyk, Director of Modular Masonry, added, "In an era where skilled craftsmanship is rare and project demands are ever-increasing, builders and architects need innovative solutions. Our approach combines prefabricated LGS framing with our brick slip facade system, providing a practical and efficient solution to meet these challenges."

Engineered by LD Consulting Engineers, the curved frames use state-of-the-art laser-cut profiled tracks cut to an exact radius in the steel, ensuring the accuracy of the architectural design. All parties collaborated to create a 3D model of the entire building façade so that individual frame sizes and their connection points could be determined, and the engineering requirements of each frame could be resolved.

CMG Frames used approximately 23 tonnes of light gauge steel framing made from TRUECORE® steel in this project to make the 162 framed panels of an approximate size of 4m by 6m. The frames were all designed, engineered, and fabricated at their manufacturing facility in Sunshine West, Victoria.

From inception through to the delivery of the finished prefabricated panels, a collaborative team of 20 staff worked to deliver the project in three stages aligned with the construction process.

"Our passion is using our knowledge and experience to create innovative framing solutions to solve complex design challenges and see those buildings come to life in a finished form. We're proud to have partnered with Kane Constructions and Modular Masonry to help deliver such an iconic civic structure."

Luke Cockerell, CMG Frames, Managing Director.

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