

Mega steel structure amasses modern art

- Queensland Gallery of Modern Art

Innovative design in steel along Brisbane's South Bank has brought to reality the largest gallery of modern art in Australia, covering 25,365 square metres.

The new Queensland Gallery of Modern Art is integral to the Millennium Arts Project, a landmark State Government initiative also encompassing redevelopment of the State Library of Queensland and is the largest cultural initiative of its type in the State's recent history.

The gallery concept emerged from an international architect competition, won by Architectus' design team of **Lindsay and Kerry Clare**. The building houses an open riverside pavilion with two major levels of exhibition spaces, two cinemas, education facilities, a restaurant and boardwalk café organised into flexible, adaptive zones.

The gallery showcases contemporary local and international art, focussing on indigenous Australian culture and art of the Asia-Pacific region.

The structure's distinctive cantilevered roof provides shade to extensive steel framed glazing from the sub-tropical sun, whilst staking a bold style. Altogether, 850 tonnes of structural steel was needed for the roof and structural support of glazing and walls, all fabricated and constructed by Brisbane-based Gay Constructions.

The project was detailed by G&D Steel Detailers using AutoCAD with full strength welding and complex hip connection geometry requiring 3D modelling.

General Manager of Gay Constructions, **Karle Vogt** said that the structural design for each corner of the roof required complex steel fabrication and erection methodology.

"We trial-assembled each corner structure of the roof off-site, so they were correctly aligned when erected on-site," Mr Vogt said.

"And as we lacked laying-down area for materials, we stored large volumes of structural steel and delivered it to the site as needed. This required lots of coordination between all sections of our project team and the builders, Bovis Lend Lease."

The site boasts one of the longest columns on a building in Brisbane. The impressive 23-metre high external column, constructed from OneSteel 300PLUS® 350WC280, was designed to have no lateral support. Hidden connections using 'shee-bolts' in the steelwork produced a clean looking façade.

As the roof kicks up at the end, standard drainage pipes weren't an option, so an innovative syphonic stormwater system was selected whereby all the pipes were installed inside the roof cavity, concealing them from view.

"This was a great team effort," Mr Vogt said.

We consulted closely with Bovis Lend Lease to schedule deliveries of steel in erectable sequences to eliminate double handling and paint damage.

"Working closely with Mulherin Rigging and Cranes, we used a tower crane supplemented by 100 tonne and 50 tonne mobile cranes, which ensured the structural steel in the roof and walls was erected successfully in ten weeks."

Mulherin erected the cantilever overhang and installed the structural steel in the glazed façade, as well as installing the pre-cast panels around the bottom of the structure within tight tolerances.

Project Team

Client: Arts Queensland

Architect: Architectus

Structural Engineer: Bornhorst TTW

Building Contractor: Bovis Lend Lease

Steelwork Contractor: Gay Constructions

Steel Detailer: G & D Steel Detailers

