

High marks for Victorian school buildings



Penleigh and Essendon Grammar School

School projects accounted for half the winning entries in the Steel Design Awards for Victoria and Tasmania it was announced on 13 July at the Crown Palladium in Melbourne, topping the small and large building categories.

Exacting steelwork required to fit the all-round curved brick form of the new Penleigh and Essendon Grammar School building in north-west Melbourne won in the Buildings – Large Projects category.

The economical, yet aesthetically pleasing roofing structures to shelter sporting and assembly areas at Reservoir West Primary School located in Melbourne's north-east scored top place in the Buildings – Small Projects stakes.

The striking slated façade that wraps the new Royal Children's Hospital in Melbourne's north won in the Steel Clad Structures category.

And structural strengthening works to support extra lanes and traffic loads on Melbourne's West Gate Bridge won in the Engineering projects category.

Awards convenor, ASI State Manager – Victoria, **Mike Simmons** said he was impressed by the quality of the select number of entries submitted.

"The outcome of this latest program proves that projects don't all need to be huge in scale to have enough intrinsic value to attract the accolades," he said.

"The common thread that links all the placed projects is the ability of steel to provide high strength-to-weight structures that are frequently both eye catching and highly practical."

Buildings – Large Projects

Penleigh and Essendon Grammar School (Winner)
Inghams Somerville Processing Plant (Highly Commended)

Buildings – Small Projects

Reservoir West Primary School (Winner)
BlueTree in a Red Landscape (Highly Commended)

Steel Clad Structures

Royal Children's Hospital façade (Winner)
Wairn Ponds Library and Community Hub (Highly Commended)

Engineering Projects

West Gate Bridge Strengthening (Winner)
South Morang Rail Extensions (Highly Commended)

Undergraduate Engineering Student Awards

Cameron Andrew Bond (Royal Melbourne Institute of Technology)
Adrian Borg (University of Ballarat)
Thomas Edward (The University of Melbourne)
Jasper Mong Kiak Sim (Swinburne University of Technology)
Azriel Sofe (Victoria University of Technology)
Stefan Sorensen (Monash University)
Nathan Treloar (La Trobe University, Bendigo)

Judging Panel

Steve Richards (Founding Director, Grogan Richards, now Cardno)
James Staughton (Director, Workshop Architecture)
Emil Zyhajlo (Consulting Engineer)



Penleigh and Essendon Grammar School

Buildings – Large Projects

Penleigh and Essendon Grammar School (Winner)

This \$32 million educational precinct for Years 11 and 12 in the north-west Melbourne suburb of Keilor is a two storey building with an infinity symbol shaped footprint. The shape of the building influenced the steelwork structures of the roof and the entry arches. The steelwork was fortunately able to exactly match and define the brick courses as there was no way to adjust or cover up any misalignment. The steelwork in this project was a real feature of the structure with each window and door frame trimmed with steel plate and left exposed. This project demonstrates the flexibility and efficiency that steel has over any other building material, given the accuracy and speed of its erection.

PROJECT TEAM

Architect: McBride Charles Ryan

Structural Engineer: Arup

Head Building Contractor: Construction Engineering Australia

Steel Fabricators: AJ Demuri DVP Engineering, GVP Fabricators, Jards & Co

Steel Detailer: Cocciardi Nominees

Coatings Supplier: Action Alliance

Buildings – Small Projects

Reservoir West Primary School (Winner)

This project involved the design of two 30-metre long by 20-metre wide outdoor roof structures placed over the school's basketball court and assembly area. Combining the capabilities of long span, deep profiled roof sheeting with efficient triangular steel trusses allowed an aesthetically pleasing structural form at reasonable cost. The structures needed to be built with minimal impact on the existing school facilities and grounds. Use of lightweight steel reduced the need for heavy erection plant and equipment, prefabricating the trusses allowed fast erection of the main support structures and use of deep profiled steel sheeting enabled erection without the need to construct secondary framing.

PROJECT TEAM

Architect: GHD

Structural Engineer: GHD

Head Building Contractor: Dura (Australia) Constructions

Steel Fabricator: Diamond Steel Engineering

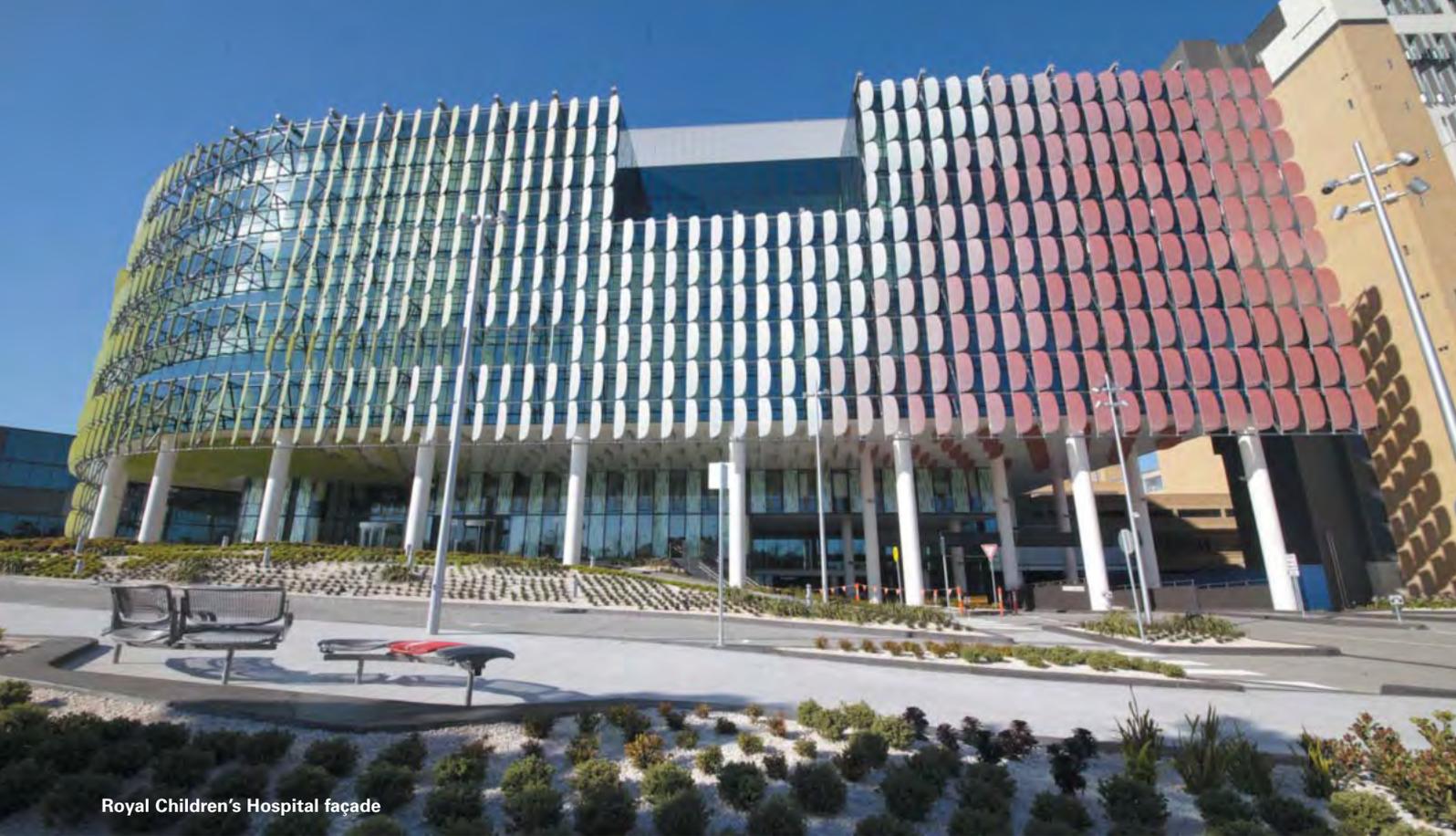
Steel Detailer: Ironworks Steel Detailing

Coatings Supplier: Dulux

Steel Supply: OneSteel



Reservoir West Primary School



Royal Children's Hospital façade

Steel Clad Structures

Royal Children's Hospital façade (Winner)

Supporting one of the largest hospital redevelopments in Australia, the project involved construction of a six-level clinical, research and educational facility over 200,000sqm within the 4.1 hectare site with 75,000sqm of car parking space over three basement levels. A metallic polysiloxane system was used on the external steelwork supporting the glass scales of the building façade and solid colours were used in the internal steel framework on the beams and pedestrian bridges. During the construction phase, the steel structures were applied and fully cured off-site before arriving onsite for erection.

PROJECT TEAM

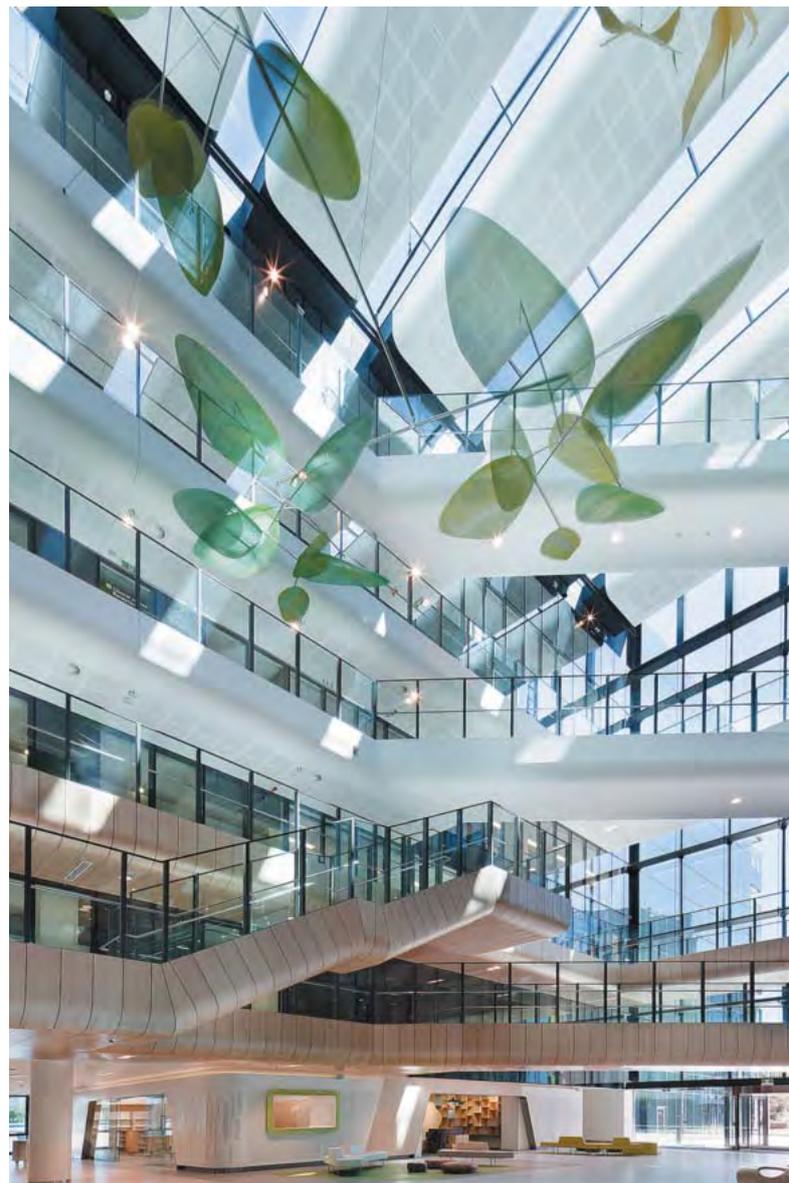
Architect: Bates Smart – Billard Leece JV

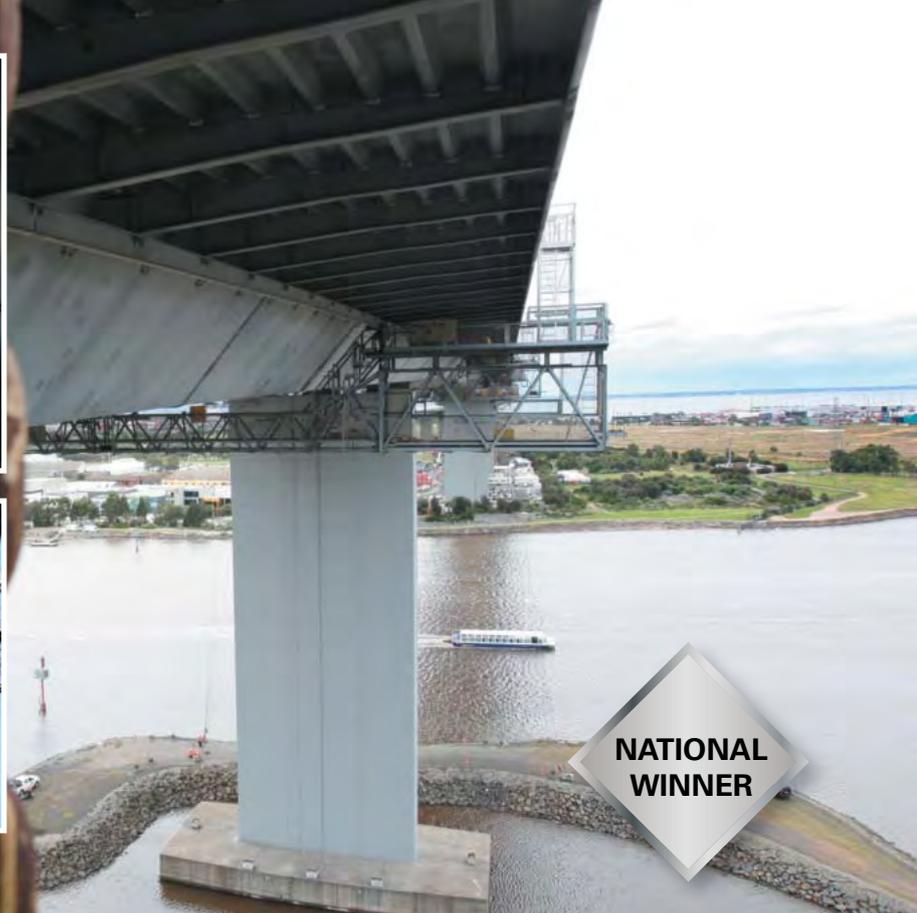
Structural Engineer: Irwinconsult

Head Building Contractor: Lend Lease

Steel Fabricator: Permasteelisa

Coatings Supplier: International Protective Coatings





West Gate Bridge Strengthening

Engineering Projects

West Gate Bridge Strengthening (Winner)

The bridgeworks has been one of the most complex and high risk engineering design and construction projects undertaken in Australia in recent years to expand the traffic capacity of the existing bridge. Innovative techniques were devised for the strengthening details and construction staging to keep four lanes of the bridge open for peak hour traffic. Welding by the fabricators was kept to a minimum by maximising the use of rolled sections or steel forming (bending). Onsite welding was also kept to a minimum by using bolted connections where possible. After international research, the project team chose to use Tension Control Bolts which eliminated potential quality issues from other tightening methods and is understood to be the first major usage of this type of bolt in Australia.

PROJECT TEAM

- Structural Engineer:** Sinclair Knight Merz, Flint & Neill
- Head Building Contractor:** John Holland
- Steel Fabricators:** Agfab, Alfasi, Geelong Fabrications, Kiewa Valley Engineering, Materials Fabrication, Stilcon Holdings
- Steel Manufacturers:** BlueScope Steel, OneSteel, Orrcon Steel
- Steel Distributors:** BlueScope Distribution, OneSteel Steel and Tube, Orrcon Steel, Surdex Steel
- Coatings Supplier:** International Protective Coatings

Entrants

BUILDINGS – LARGE PROJECTS STEEL DESIGN AWARD

- Arup and Cocciardi Nominees** (Penleigh and Essendon Grammar School)
- Hyder Consulting** (Inghams Somerville Processing Plant)
- Klopfers Dobos** (Craigieburn Train Maintenance Facility)
- Spowers Architects** (Marysville Community Centre)
- Suters Architects** (Punt Road Oval)

BUILDINGS – SMALL PROJECTS STEEL DESIGN AWARD

- GHD** (Reservoir West Primary School – Stage 3 Outdoor Canopies)
- Irwinconsult** (Surfcoast Shire Community and Civic Building)
- Keays Engineering** (Blue Tree in a Red Landscape)
- Maddison Architects and Structural Challenge** (Bastow Institute of Educational Leadership)

STEEL CLAD STRUCTURES STEEL DESIGN AWARD

- AGB Engineering** (Wauron Ponds Library and Community Hub)
- GHD** (Tidal River Depot)
- International Protective Coatings** (Royal Children’s Hospital façade)

ENGINEERING PROJECTS STEEL DESIGN AWARD

- Arup** (South Morang Rail Extensions)
- GHD** (Westall Railway Station)
- John Holland** (West Gate Bridge Strengthening)
- Prostruc Consulting Engineers** (Lorimer Street Pipe Bridge)

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