

WA attracts a wide array of 'apps' for awards



City Square development, Perth

The winning projects in the latest Steel Design Awards for Western Australia presented at a dedicated cocktail function on 10 August in Perth reflect the State's increasingly diversified economy spanning a 'top end of town' commercial tower, an open air entertainment venue, a mega logistics centre and a massive rotary ore loader.

A steel framed approach to developing a premier commercial office tower that eased site disruption and sped construction on a busy CBD site won the Buildings – Large Projects category for City Square in Perth.

The welcoming form of a flexible outdoor entertainment facility alongside the Avon River topped the Buildings – Small Projects category. And the mega new Coca Cola Amatil Distribution Centre in Hazelmere was an obvious winner in the Steel Clad Structures category.

The design and fabrication of a unique single cell tandem rotary rail car dumper for Hamersley Iron's Cape Lambert Port B Iron Ore Upgrade in northern WA won in the Engineering Projects stakes.

The judges remarked that fabrication of a state-of-the-art precision undertaking of that scale confirms the Australian steel industry's sometimes overlooked latent capability to competitively produce significant heavy engineering projects.

ASI State Manager – WA, **James England** said the range of entries clearly testifies to how Australian steel helps enrich both business and the WA community at large.

"Whether it's making giant heavy duty components for mining, supporting high level executive style or creating iconic forms as public centrepieces, our local steel supply chain has demonstrated ample capability," he said.

Buildings – Large Projects

City Square, Perth (Winner)

Curtin Engineering Pavilion (Highly Commended)

WA Basketball Centre (Highly Commended)

Buildings – Small Projects

Northam Soundshell (Winner)

Steel Clad Structures

Coca Cola Amatil Distribution Centre (Winner)

Engineering Projects

Single Cell Tandem Iron Ore Rail Car Unloader (Winner)

Undergraduate Engineering Student Awards

Ryan Callow (Curtin University of Technology)

Lih Chern Hiew (The University of Western Australia)

Judging Panel

John Brazier (former ASI State Manager – WA)

Brian Nelson (Capital House)

Buildings – Large Projects

City Square development, Perth (Winner)

The building comprises a 72,750sqm office tower with four basement carpark levels. The tower structure has 47 levels and required around 9500 tonnes of structural steel allowing speedier construction achieved through sound coordination of all the consultants' and subcontractors' requirements. The whole building frame was project managed to take advantage of the fast floor cycle times, programmed at a six-day cycle per floor. This meant appointing sub-contractors capable and experienced enough to work accurately and meet cycle times through adequate craneage and the use of four high-speed hoists and two jump lifts. Protective self-climbing screen systems covering three floors and specialised access platforms were purpose-designed to facilitate the speed required in the cycle times.

PROJECT TEAM

Architects: HASSELL Architects, fitzpatrick+partners

Structural Engineer: Aurecon

Head Building Contractor: Brookfield Multiplex

Steel Fabricators: Pacific Industrial Company, Steelpipe Australia

Steel Detailer: Detailed Design Drafting

Coatings Contractors: Cape TCC, Novacoat (WA)

Coatings Supplier: Dulux

Steel Distributors: BlueScope Distribution, Southern Steel (WA)

ASI Steel Manufacturer: OneSteel

"A most efficient and well managed large-scale building structure benefitting significantly from the advantages of rational framework and considered construction processes. Clearly, it provides substantial endorsement of the use of steel structures for efficient, major contemporary buildings in Australia."

City Square development, Perth





Northam Soundshell

Buildings – Small Projects

Northam Soundshell (Winner)

This new venue alongside the Avon River provides a flexible outdoor facility to meet growing demand for public entertainment. The approach to structural design and materiality reflected the need for the structure to be durable and low maintenance within a tight budget. The shell structure consists of the main curved steel beams supporting the steel 'rafters' that cantilever to the edge of the stage below. The collaborative architectural and structural approaches to designing the shell were integral to deriving a simple and efficient form.

PROJECT TEAM

Architect: Paradigm Architects

Structural Engineer: Scott Smalley Partnership

Head Building Contractor: Dempster Steel

Steel Fabricator: Dempster Steel

Steel Detailer: OneCad

Coatings Contractor: Fero Blast

Coatings Supplier: International Paint

Steel Distributor: OneSteel Metalcentre (Bunbury)

ASI Steel Manufacturer: OneSteel

"(This is) an outstandingly elegant and efficient achievement particularly given the minimal available budget. The structure confirms the possibility of achieving clarity of architecture through attention to detail and rational design."

Steel Clad Structures

Coca Cola Amatil Distribution Centre (Winner)

This project involved development of a 40,000sqm warehouse, 6000sqm of unloading bay canopy, 2000sqm truck parking canopy with 12-metre cantilever rafters, entry/exit canopy and a battery room under the warehouse roof and office. It utilises Australian steel



throughout from steel portal frame to cladding and an innovative steel fibre reinforced concrete slab. Sway portal frames were used at 21-metre centres with rafters spaced 10.5 metres apart. Exacta® purlins span the bays reducing conventional purlin weight over the entire warehouse area. Externally, COLORBOND® blades situated next to the office windows form a decorative façade and provide shading. Practical completion was achieved two weeks ahead of schedule.

PROJECT TEAM

Designer: Gavin Construction

Structural Engineer: E-Tec Consultants

Head Building Contractor: Gavin Construction

Steel Fabricator: Fremantle Steel Fabrication

Steel Detailer: Fremantle Steel Fabrication

Metal Building Contractor: ROSTRUCT

Coatings Contractor: Fero Industries

Coatings Supplier: International Paint

Steel Distributors: OneSteel Steel and Tube, Stramit Building Products (cladding)

ASI Steel Manufacturers: BlueScope Steel, OneSteel



Coca Cola Amatil Distribution Centre

"Representing a major application of current cladding and purlin detailing, the project endorses the lead Australian manufacturer's contemporary metal decking and sub-framing systems."

Engineering Projects

Single Cell Tandem Iron Ore Rail Car Unloader (Winner)

This project developed a fully assembled unique rotary rail car dumper for Hamersley Iron's Cape Lambert Port B Iron Ore Upgrade in northern WA to receive loaded railway wagons passing through a central U-shaped cage, two at a time. The unique design means that spare parts, technical assistance during installation, pre-commissioning, commissioning and performance testing can all be supplied locally. With design output of four million cycles, it is the largest and most advanced car dumper developed by Metso Minerals. The contract involved about 400 tonnes of Australian steel plate from eight to 250mm thick. Due to the high fatigue cycle of the structure, special welding procedures and welding techniques were developed which required each welder to pass specific qualification tests in various positions with a large portion carried out by semi-automatic and fully-automatic welding systems.



Single Cell Tandem Iron Ore Rail Car Unloader

PROJECT TEAM

Designer: Metso Minerals
Structural Engineer: Metso Minerals
Head Building Contractor: Civmec
Steel Fabricators: Civmec, Camco Engineering (machining)
Steel Detailer: BDS VirCon
Coatings Contractor: Cape TCC
Coatings Supplier: International Paint
Steel Distributor: BlueScope Distribution
ASI Steel Manufacturer: BlueScope Steel

"This is a singularly major engineering achievement in manufacturing."

Entrants

BUILDINGS – LARGE PROJECTS STEEL DESIGN AWARD

Airey Taylor Consulting (Central Institute of Technology Stage Two, Northbridge)
BG&E (Engineering Pavilion at Curtin University, Bentley Campus)
BG&E, Silver Thomas Hanley (QEI Central Energy Plant)
Gavin Construction (Coca Cola Amatil Distribution Centre)
JCY Architects and Urban Designers (Trades North West Coast Institute of Training)
Pacific Industrial Company (City Square Development)
UGL Steelplan (Perth Arena)
Wood & Grieve Engineers (WA Basketball Centre)

BUILDINGS – SMALL PROJECTS STEEL DESIGN AWARD

BG&E (Deck Café & Bar)
Paradigm Architects (Northam Soundshell)
Pritchard Francis (Youth with a Mission)
The Buchan Group (Shiro Izakaya Restaurant Pavilion)

STEEL CLAD STRUCTURES STEEL DESIGN AWARD

BG&E (Engineering Pavilion at Curtin University, Bentley Campus)
Gavin Construction (Coca Cola Amatil Distribution Centre)
JCY Architects and Urban Designers (Trades North West Coast Institute of Training)
Paradigm Architects (Northam Soundshell)

ENGINEERING PROJECTS STEEL DESIGN AWARD

Civmec, Metso Minerals (Single Cell Tandem Iron Ore Rail Car Unloader)
Pacific Industrial Company (City Square Development)
UGL Steelplan (Perth Arena)

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