





# Top report card for steel supply stream

## - Wyong Christian Community School

Close cooperation between contractors and use of innovative materials has streamlined progressive enhancements to Wyong Christian Community School (WCCS) on NSW's Central Coast.

Catering for 550 students, ranging from kindergarten through to Year 12, WCCS opened in 1993 and has been a work in progress ever since, with two new classroom blocks just completed.

The contractors on the projects generally agree that it is a fine example of the expertise in the Australian steel industry supply chain that was able to deliver the project on schedule and solve any issues that may arise on site.

The 28-acre site on Alison Road, Wyong, is situated on a low-lying flood plain and requires the buildings to be a minimum of 1500mm above ground level.

"The architect worked with us to create the brief for the two new buildings," WCCS Business Manager, **Grant Kayes** said.

"We have a longstanding relationship with Stanton Dahl Architects who met our requirement on the previous blocks with a minimum of issues."

Project Architect and Stanton Dahl Director, **Phillip Stanton** said: "The final brief was to provide a good educational environment that meets the criteria of local council and blended in with the existing structures."

"The portal frame design and Supaloc Flooring System, made from BlueScope Steel G550 by Steel Building Systems, helped meet the tight timeframe demanded for the project. Excellent communication between the engineer, steel detailer and fabricator was also crucial to meeting the project timeframe."

Davebilt Industries General Manager, **Steve Browne** oversaw the fabrication of the steelwork while Davebilt Director, **Dave Randell** supervised the erection crew.

Mr Browne indicated that the fabrication ran on-time and attributed this to good all round communication and the skills of **Paul Collings** from Visionsteel Drafting.

Mr Collings consulted with Davebilt and Burke Engineering Services on the buildability of the project from connections through to erection.

"We produced a 3D model of the project and the Tekla Structures 3D program assisted our productivity and accuracy. The 3D diagrams also assisted the steel erectors during construction," he said.

The buildings consist of portal frames with 200UB18 universal beam rafters and 114CHS columns. The portals were firstly fully assembled on the ground, speeding erection and reducing the need for access equipment. The internal sections of the portals were coated in red oxide zinc primer. The external part of the rafter was boxed in and hot dipped galvanised for aesthetics on the verandahs.

**Peter McDonald** of Burke Engineering Services explained that the structural steel portal frames were modeled using SPACE GASS structural design software for the various loading conditions, including flood loading.

"The structural system is an economical mix of light steel sub-floor framing, effectively supporting the floor level above the specified flood level, allowing flood flows to pass under the building," he said. "Combined with a conventional steel portal frame, this achieved a very economical structure."

The external fin plates serve not only as an architectural feature of the buildings, but form an integral structural element of the portals and significantly increase the stiffness of the frames. They had to be left off the access points to the buildings for child safety. This created some issues of stiffness in the columns which were addressed on-site with additional bracing under the floor, tying the opposing columns together.

The Supaloc Flooring System used in these two buildings assisted with meeting the tight delivery schedule as it arrives on-site as a prefabricated modular panel.

**Ian Starrett** from LA Commercial said the Supaloc system saved two weeks from the program.

"Steel structures have the ability to be erected quickly with a minimum site crew and the adjustable columns provide an accurate platform," he said.

The new buildings are linked to the existing classrooms by connecting platforms which also use the Supaloc Flooring System with hardwood boards. The roofs over the platforms are framed with BlueScope Lysaght steel purlins.

This project is a fine example of the expertise in the Australian steel industry supply chain which was able to deliver the project on schedule and is capable of addressing any issues that may arise on site.

### Project Team

**Client:** Wyong Christian Community School

**Architect:** Stanton Dahl Architects

**Structural Engineers:** Burke Engineering Services

**Builder:** LA Commercial

**Steelwork Contractor:** Davebilt Industries

**Steel Detailer:** Visionsteel Drafting