

LARGE PROJECT AWARD 2012 NATIONAL WINNER

STEEL CLAD STRUCTURES AWARD 2012 EQUAL STATE WINNER (NSW + ACT)



AUSTRALIAN STEEL INSTITUTE



ARCHITECTURAL MERIT

The CSU School of Dentistry building at Wagga-Wagga provides specialist dental teaching facilities for 150 students and a large Public Dental Clinic to serve southern NSW. The building's design expresses a sophisticated rural aesthetic linking it strongly through form, colour and materials to its gentle bush site to create a striking symbol for the campus.

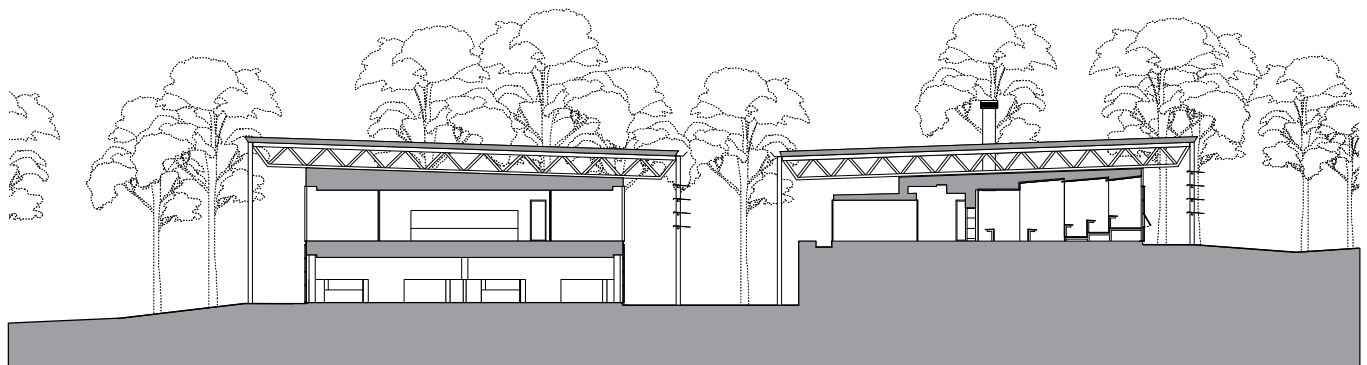
Light steel framed structures support large steel trussed roofs, under which are built free standing component buildings clad in bright corrugated steel panels. The forms are reminiscent both of rural sheds and high technology manufacturing plants.

The building has two main wings which are laid out along the natural contours of the site. Each has a deep layering of

structure, using slender steel elements, sun shading and facade to create a series of permeable veils.

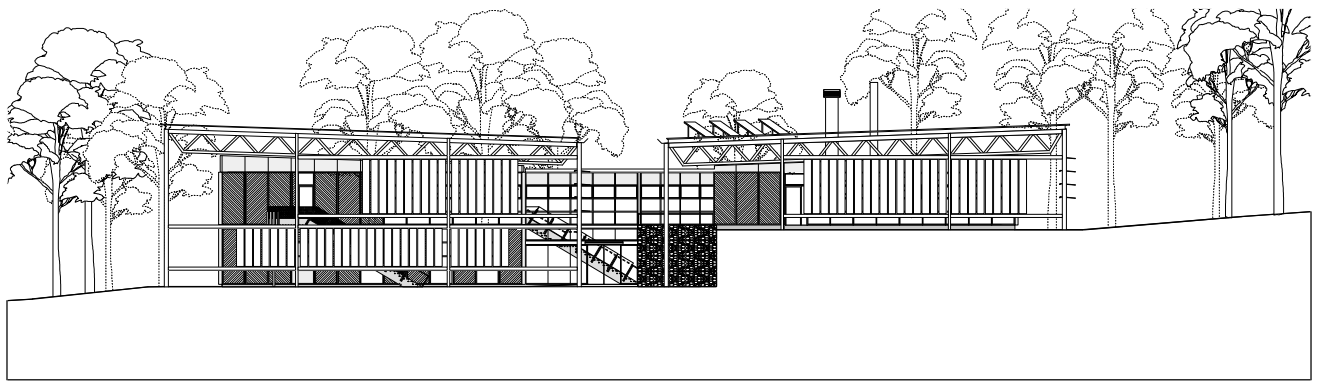
A steel structural and cladding system was chosen for the project to reduce the construction period for the building envelope and to maximise off-site production.

The project is core to a program to bring dental services to rural NSW. The school will care for over 1,000 public patients a week with a large 24-chair clinic, research laboratories, specialist workshops and training facilities available for local practitioners and a cohort of 150 students. The facility is considered to be the most advanced of its kind in the world. The two storey double



SECTION AA





EAST ELEVATION

wing 'H' plan allows for effective operational zoning, very good internal communication paths, and excellent environmental outcomes. The layout provides for separation between the clinics and non-public student zones whilst allowing a visual connection between the simulation areas and the clinics to promote the students' continuing engagement with patients.

The project was fully documented for a lump sum tender. A simple repetitive structural/cladding system was selected to provide ease of fabrication and erection.

INNOVATION IN THE USE OF STEEL

The use of steel in various structural and non-structural elements of the building was a key decision in determining the efficient construction and aesthetic of the building. Slender framing elements support the roof trusses, which create an envelope in which to house free standing internal components.

EFFICIENT USE OF STEEL PRODUCTS

The new School of Dentistry formed part of a Federal Government funded initiative to bring medical and dental services to rural NSW. It was required to be completed and operational prior to the expected date of the last Federal election. This created an extremely compact program for the building's design and construction. A steel structural and cladding system was chosen for the project to reduce the construction period for the building envelope and to maximise off site production to overcome perceived lack of skilled trades in rural areas.

The design process included detailed cost planning and value management reviews. The factory production of a large proportion of the project including the main frame and cladding units allowed for a higher degree of operational and cost efficiency. The project was completed within budget and on time.





ENVIRONMENTAL PERFORMANCE

The facility was designed to incorporate advanced sustainability strategies, including its unique double roof system. The building was designed to achieve 5 Greenstar (without certification). It incorporates passive/active carbon reduction strategies: double skin ventilated roof, layered envelope with enhanced insulation, double glazing and extensive sun shading. It has a mixed mode HVAC with fan induced thermal chimneys, BMS controlled purging and PV arrays. Daylight sensors in all spaces control light switching. Rainwater harvesting supplements the building's extensive greywater recycling.

BUILDABILITY

The project was fully documented for a lump sum tender. A simple repetitive structural/cladding system was selected to provide ease of fabrication and erection.

The builders, Joss Construction, engaged closely with the design team. In order to overcome the complexities raised by

the project's rural location, most of the data was transferred digitally between the Sydney based team and the Wagga Wagga site using video conferencing and internet based information management systems.

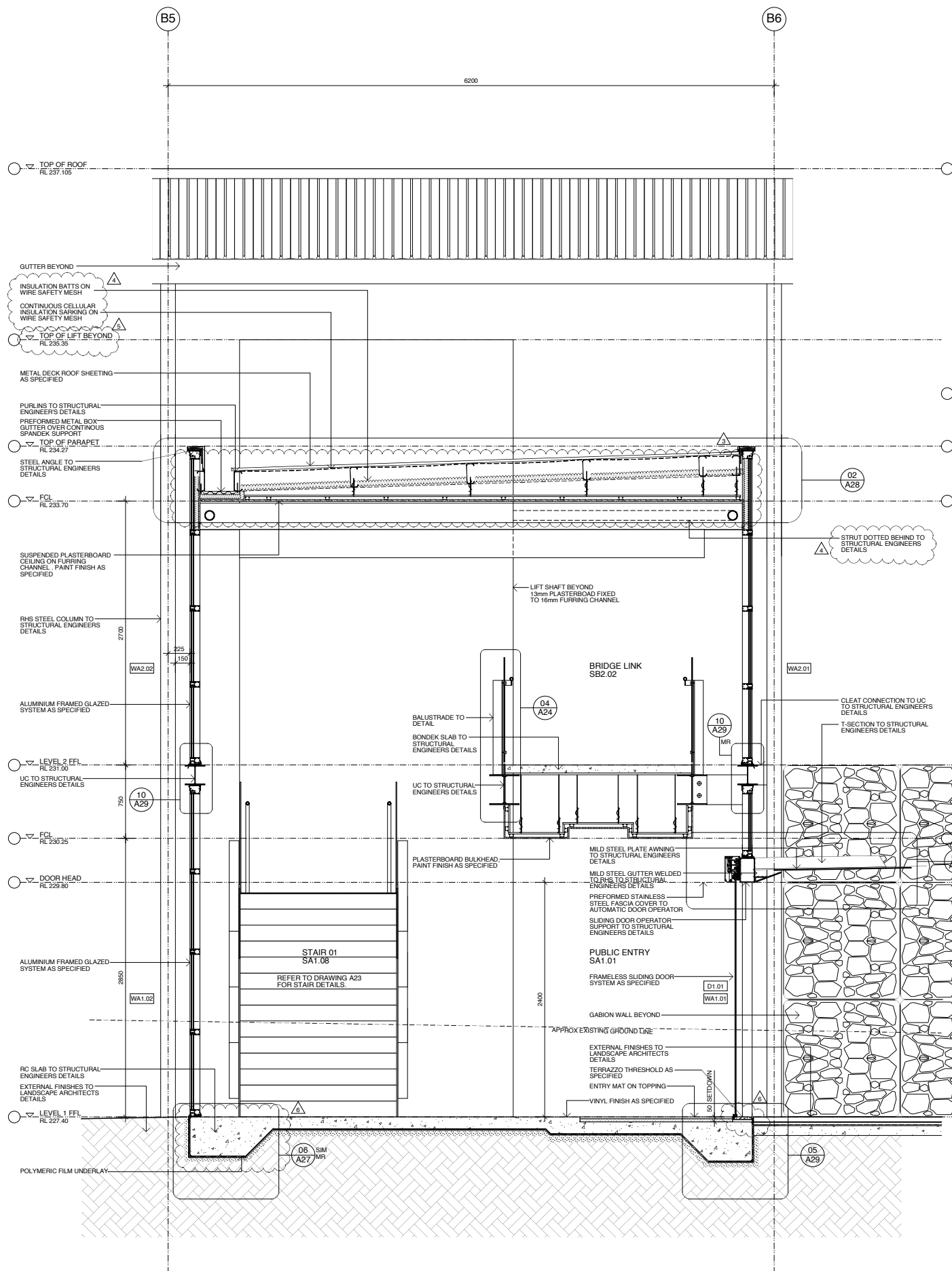
The off-site fabrication and construction of the main portal frames and cladding units allowed for ease of construction and greater efficiency on site.

PROJECT TEAM

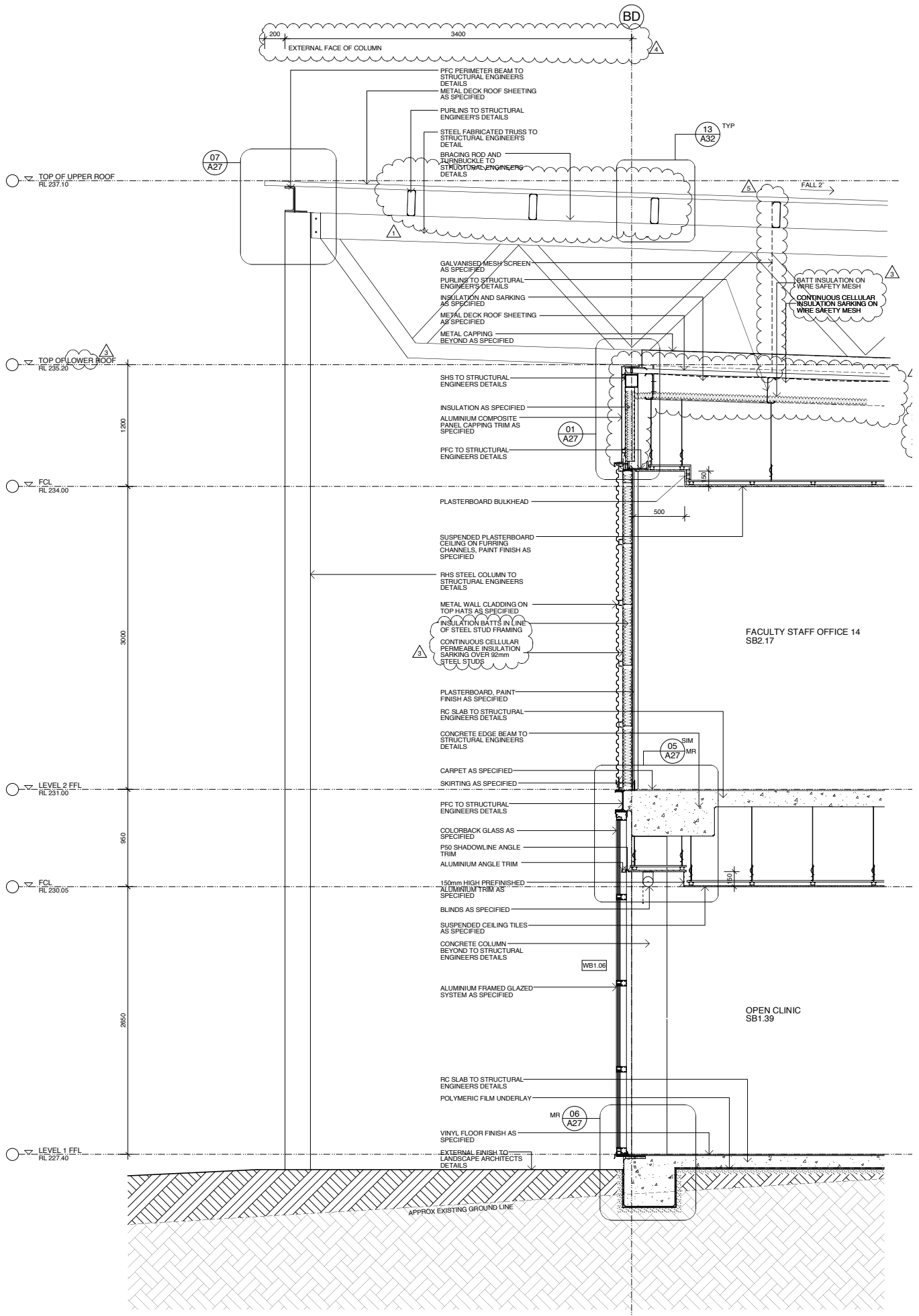
Architect:	Brewster Hjorth Architects
Structural Engineer:	Taylor Thomson Whitting
Head Building Contractor:	Joss Construction
ASI Manufacturer:	OneSteel Wagga Wagga
Fabricator:	Rambler Welding Industries P/L
Steel Detailer:	Rambler Welding Industries P/L
Coatings Supplier:	Dulux Australia
Metal Building Contractor:	Hadfield Industries Albury



APPENDIX - DETAILS (NOT TO SCALE)



DETAIL - BUILDING B, SECTION THROUGH BRIDGE LINK



DETAIL - BUILDING B, SOUTHERN FACADE