

## Case study

Smalls Road Public School

July 2021



Truecore®

# Distinctive circular designed school delivered for the start of the 2020 school year



### Project Details:

**Project:** Smalls Road Public School

**Location:** Ryde, NSW

**Client:** NSW Department of Education – School Infrastructure

**Principal Steel Products:** TRUECORE® steel

**Builder:** Richard Crookes Construction

**Steel Fabricator:** Austruss Pty Ltd

**Architect:** Conrad Gargett

**Source:** Andrew Fowler, Managing Director, Austruss Pty Ltd



## Austruss deployed framing made from TRUECORE® steel to deliver on a tight build program

### Project Goal:

While remaining true to the distinctive circular design, the pressure was on to deliver the Smalls Road Public School project in time for the commencement of the 2020 school year.

### Key Benefits Delivered:

Andrew Fowler, Managing Director of Austruss, stated these benefits of using Light Gauge Steel (LGS) made from TRUECORE® steel for this project:

#### Design Versatility:

- Frames made from TRUECORE® steel have an impressive strength-to-weight ratio, which worked perfectly in creating the upper-level frames and trusses for this circular design concept.

#### Fast and Efficient:

- The parallel assembly of the frame and truss sections at ground level, as the third floor structure was being created, resulted in program time saving and strict deadlines being met.

#### Lightweight yet Strong:

- The precision-engineered and prefabricated modules, made from TRUECORE® steel managed the stresses of the crane lift to the third level of the build without issue. The lightweight framing was much easier to handle compared to steel structural beams.

#### Improved Safety Management:

- The decision to assemble the large, prefabricated truss sections at ground level and crane them into position, meant the 'working at height' risk was minimised during this phase of the build.

### Summary:

With an eye-catching circular design, the three-storey building of Smalls Road Public School, Ryde in NSW generated a great deal of interest, and Austruss was thrilled with their contribution to this project. Referred to as the "colosseum of learning", at the heart of this state-of-the-art school is an expansive open-air courtyard, 200 metres in diameter, enclosed by 43 flexible learning spaces, an impressive two-storey library and multipurpose sports facilities.

With a strict construction deadline, Richard Crookes Construction (RCC) engaged Austruss to determine how time and cost could be saved. While staying true to the architect's design and vision, Austruss reworked the plans to substitute some hot-rolled structural steel sections with wall and roof frames made from TRUECORE® steel for the upper-level. Austruss was then engaged to design, fabricate and install the selected wall framing, internal girder trusses, roof trusses and skylight frames on the third-floor level.

Originally, the design had called for 230 tonnes of structural steel to support the roof and walls on the upper level. By reworking these designs to substitute the hot-rolled structural steel with light weight framing made from TRUECORE® steel, Austruss eliminated almost 120 tonnes of steel from the build. Andrew Fowler said, "We are skilled in understanding where cost, materials and time can be saved while still maintaining the structural and design integrity of the build."

The majority of the framing was fabricated offsite in transportable modules that were then assembled onsite. Some of the roof trusses were significant in size covering an area of up to 120m<sup>2</sup> i.e. 7.5m by 20m, and 10.5m by 20m in length. To further improve build efficiencies, the decision was made to utilise an area adjacent to the build site to preassemble the roof trusses and skylight frames. These were then craned into position in one piece. Mr Fowler stated that, "At the same time as concrete slabs were being formed on site, in the area adjacent to the site, we were assembling the roof trusses to be installed above that concrete structure."

With safety being a key focus for both RCC and Austruss, Mr Fowler stated that, "Being able to crane large, prefabricated modules into position reduced the number of people that were working at height, hence the risk of falls was reduced." He estimated that at least twice the number of tradespeople would have been needed to work at height with the original hot-rolled structural steel design.

As a result of their success in reworking the overall design, and improving build efficiencies, the school opened for the commencement of the 2020 school year.

When reflecting on the material selection for the project, Mr Fowler noted that, "We use TRUECORE® steel because we think it's the most reliable product in the market, and the technical support and range of options available from BlueScope is unsurpassed."



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