

**Case study**  
Sunkids Childcare Centre  
September 2024



**Truecore®**

# Next generation childcare centre embraces the benefits of light-weight steel construction



**THE  
INNER  
STRENGTH**

**Project Details:**

**Project:** Sunkids Childcare Centre

**Location:** Mermaid Waters, QLD

**Principal Steel Product:** 24 tonnes of LGS framing made from TRUECORE® steel

**Architect:** Realspace Creative

**Builder:** 9 Constructions

**Steel Fabricator:** Australian Framing Solutions (AFS)

**Photography:** Images supplied by AFS



An engineered, light gauge steel (LGS) framing solution expedited the construction of this distinctive QLD childcare centre, delivering significant time and cost savings.



Sunkids Childcare Centres have a holistic approach to early childhood education, where parents are honoured as the 'first teachers', early childhood professionals are the 'second teachers', and the physical environment is the 'third teacher', providing a safe space where children are allowed to learn, play, grow and explore.

With this core philosophy in mind, Architect Hooman Jaffar from Realspace Creative had a clear objective when designing this benchmark facility. He set out to create a space with a sense of gathering and community where families and staff can come together in a shared environment to support and encourage early childhood development.

This design vision would be physically represented by two sweeping curves, which Hooman suggests take their cues from human notions of embrace and nurturing. These curved structures would house the centre's learning areas, activity rooms, amenities and encircle the central courtyard's global village, a playscape that would introduce 'the world' to these young, curious minds.

The centre was initially designed to be constructed with concrete blocks as the predominant walling material and a suspended concrete slab for the roof. However, when Riaz Rezvani from 9 Constructions suggested an alternative, Realspace Creative and the client were keen to explore other options.

9 Constructions had extensive building experience using light gauge steel framing made from TRUECORE® steel and believed there was an opportunity to incorporate prefabricated LGS frames in the build without compromising the design and still maintain the building's thermal, acoustic, and structural integrity. Using prefabricated LGS framing also helped minimise on-site waste and create a safer work environment. Framing was delivered to the site in packages, which reduced worksite congestion and supported the meticulously planned delivery

and installation schedule.

A collaborative team was then formed with Australian Framing Solutions (AFS). They provided engineering and design expertise using their 3D modelling software to develop a prefabricated solution that delivered tangible benefits to the project, including an increase in floor area due to the smaller footprint offered by LGS framing. Additionally, by modelling the centre in 3D, Sunkids early childhood professionals were able to assess and contribute to the design of the open-planned, interactive spaces, ensuring the childcare centre was purposefully designed to support and meet the needs of their young clients and centre staff.

Riaz Rezvani, founder of 9 Constructions, said, "By using prefabricated LGS framing made from TRUECORE® steel to replace the suspended roof slab and masonry walls, we achieved significant cost savings on the project. Furthermore, we could reduce the overall construction timeline by at least two months, ensuring the project was completed on time, efficiently and cost-effectively".

As an end-to-end design, engineering, manufacturing, and installation company, Australian Framing Solutions (AFS) was an integral partner in the development and construction of this project. They ensured design challenges were expeditiously turned into design solutions, while maintaining the buildings architectural intent.

The most notable of these design challenges was related to the complexity of the circular roof structure. AFS's solution featured over 300 individually engineered roof trusses, uniquely fabricated to deliver the roof's striking shape and structural integrity. Each custom-made truss was approximately 14 metres long, spanning the entire width of the building and had to be precisely positioned using mobile site cranes. The correct placement of these trusses was crucial to the project's timeline and only made

possible because of AFS's detailed 3D modelling, precision manufacturing, thorough site plans and clearly marked frames and trusses.

These trusses provide the supporting framework for the specialised, tapered, standing seam roof profile used on the project. Fielders Freeform™ profile was selected and roll-formed on site. Fielders Mobile Mill® expedited the installation process by tapering each roof sheet in a continuous length to eliminate joints and perfectly align with the complex, concave geometry of the roof.

One of the other challenges that needed to be resolved related to the massive shade sails covering the central courtyard. AFS needed to overcome the significant lateral forces these expansive sails would generate, particularly during high wind periods. AFS's engineered solution included a customised connection that allowed all lateral forces to be transferred back to the structural steel posts without impacting the adjacent lightweight steel framing structure.







TRUECORE® steel is durable and resilient, with BlueScope's industry-leading metallic coating, incorporating Activate® technology, to provide enhanced corrosion resistance.

Sunkids Mermaid Waters was designed and built as part of a new precinct called 'The Lanes', with a topography featuring an expansive waterways system synonymous with Gold Coast living. This environment contributed to TRUECORE® steel being specified for the framework of the childcare centre and, incidentally, the adjacent townhouse development.

The combination of the product-specific EPD for TRUECORE® steel, GreenRate™ certification and ResponsibleSteel™ site certification for Port Kembla and Western Port Works, equates to a Responsible Product Value of 21 in the Green Building Council of Australia's Responsible Products Score Checker. This is considered "Best Practice" under the Responsible Products Program.

"Undoubtedly, this has been one of the most exciting early learning centre projects we have ever participated in. The structure featured five zones and incorporated over 300 trusses, each spanning more than 14 metres. The frame for this 2,000 square metre facility was constructed entirely out of TRUECORE® steel in just 25 days by a team of five dedicated individuals. Collaboration was key to this success; AFS worked closely with the architect, builder, engineers, and other stakeholders to effectively problem-solve throughout the project."

Jake Gundry,  
Australian Framing Solutions (AFS), Managing Director.

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