South Metropolitan TAFE Murdoch

ENHANCING THE STUDENT EXPERIENCE AT NEW TAFE

The Challenger Institute of Technology's Stage 4 building is the most recent addition to the South Metropolitan TAFE campus in Murdoch, Western Australia.

The new three-storey multipurpose facility provides flexible training environments for students, offering a hub for educational, social, and TAFE administration services.

In this project, precast concrete has proved to be an integral part of the centre's functional and aesthetic benefits, aligning with the project's vision of improving overall student experience.

PRECAST DELIVERS UNIQUE ARCHITECTURAL VISION

With precast concrete taking the spotlight within the development's architectural vision, National Precast member, Delta Corporation, in collaboration with the designers, was invited to develop a cost-effective precast concrete screen façade.

It's a striking screen that has a dual function— to simultaneously provide shade to the glass curtain wall and to stand out as an architectural feature. In doing so, the screen also provides privacy and comfort to the internal occupants, without hindering the campus view.

The project specifics were intricate and complex, and the resulting design is a uniquely-shaped lattice with a smooth Class 2 off-form finish to all surfaces.

Offering advantageous sustainability benefits and an architectural masterpiece, the 76 irregular-shaped lattice panels provide a substantial 120-metre-long verandah to the major street frontage.

Precaster
Delta Corporation

Client
Building Management & Works (Government of Western Australia Department of Finance)
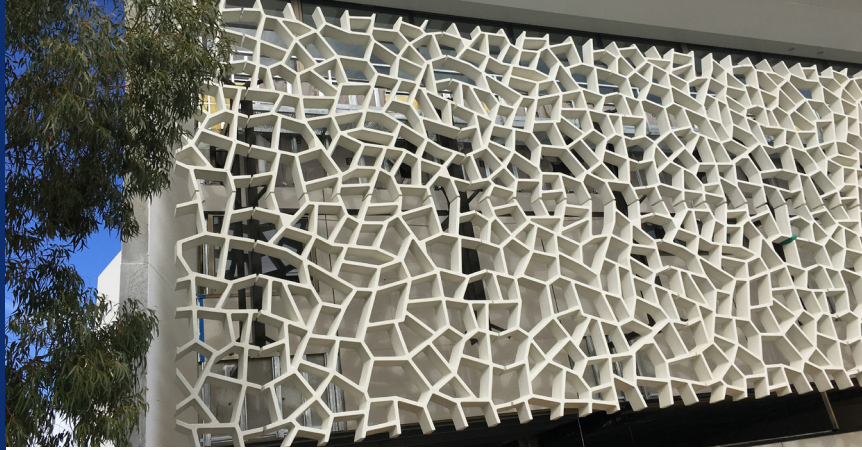
Builder
EMCO Building

Architect
Armstrong Parkin Architects

Engineer
Airey Taylor Consulting Engineers

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In order to form the complex shapes, Delta invested a significant amount of resources into the research and development of the materials and the manufacturing process—all while maintaining the high-quality finish demanded by the architect.

The concrete for the lattice panels had been specified in a crisp white colour by the architect and, using their in-house technical capabilities, Delta developed a successful mix design using white cement with the addition of white oxide. Two prototype panels were produced to ensure that manufacture was possible and that the specified finishes were achievable.

A COMPLEX DESIGN MOTIVATES A REWARDING OUTCOME

The intricate design of the screen façade alongside the need for a high-quality concrete finish posed a challenge for all stages of the project, particularly during the initial manufacturing phase. Overcoming this hurdle required skill and innovation—two qualities that Delta undoubtedly exhibits.

The multiple shapes and thin walls within the screen meant that the panels could not be reinforced with conventional reinforcement. The precaster provided a solution that hinged on the use of stainless steel fibre for the reinforcement. Delta and the design teams' solution resulted in the panels meeting the design requirements while also having sufficient structural strength.

As well as the intricacies of the product's design creating a manufacturing obstacle, the handling of the products presented a further challenge that existed not only during manufacture, but during delivery and installation as well.

The fragile nature of the panels meant that great care and attention to detail was essential to ensure minimal risk of damage. A special steel-handling frame was fabricated to minimise the stresses on the screen panels during the entire process.

Despite encountering these difficulties, Delta displayed noteworthy skill and proficiency throughout the entire process. The precaster ultimately played a key role in ensuring the that project was completed in accordance with the builder's program and the that quality met the expectations of the designers.

What now stands is an outstanding TAFE training facility with a robust and visually striking screen façade that certainly enhances the student experience.

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