Trinity College Multipurpose Facility

Elite sports hub to motivate and impress

Western Australia's Trinity College students have had their levels of motivation heightened as they aspire to reach sporting dreams with a modern, new facility. Located on the Swan River foreshore in East Perth, the newly-constructed Trinity College Multipurpose Facility not only offers students a state of the art waterfront sporting hub; it also articulates a dramatic southern edge to the college's campus.

The multipurpose facility is part of an extensive master plan to upgrade the college's existing facilities. Three storeys high, the impressive structure comprises a double court gymnasium, an assembly expanse, general learning areas, and storage spaces.

When embarking on the project, the focus was on reflecting the college's elite sporting prowess through aesthetically striking architectural design. Precast concrete wall panels, columns, stairs and barrier panels became the favoured option for the building's form and function requirements.

EARLY ENGAGEMENT WITH PRECASTER

National Precast member Delta Corporation had early project involvement, assisting Parry and Rosenthal Architects in developing an appropriate precast solution with a mix of white cement and granite aggregate.

Precaster
Delta Corporation

Location
Perth, WA

Client
Trinity College

Architect
Parry & Rosenthal

Builder
PS Structures

Engineer
BPA Engineers

www.nationalprecast.com.au

Parry and Rosenthal Architects' Associate Director, Leon Slattery, says this early engagement with the precaster was a critical phase. "It was important for us to engage early with Delta Corporation in the design and documentation phase of the project. This allowed us to work with them to develop the best solutions for aesthetics and construction methodology," Mr Slattery reveals.

Here, details were resolved, a full specification of precast elements was created, and samples were made and approved. "This process allowed the owner to proceed to construction with confidence in the outcome," Mr Slattery says.

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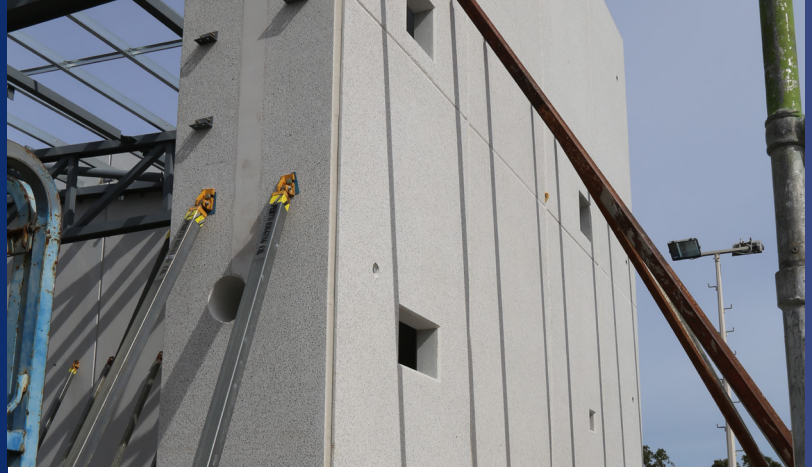

THE PRECAST SOLUTION

57 precast wall panels were manufactured in a range of sizes, with thicknesses ranging between 150mm and 250mm. Heights reached up to 1.7 metres, widths spanned up to 4.2 metres and the weight of each unit ranged from 3.25 tonne to 18.6 tonne.

Delta's General Manager, Jason Walsh, says one of the many benefits of using precast – pertinent in this instance – is the lower permeability of the concrete. "We used a high strength, low water-to-cement ratio concrete mix which is ideal for use in coastal locations," Mr Walsh explains.

DESIGN MEETS DURABILITY

Providing access to the building are precast concrete stairs that impress with a sandblasted finish and supporting the structure are 16 precast columns with a honed finish. With the water levels of the Swan River predicted to rise over the next 100 years, the inherent durability of the precast columns will ensure that the building remains intact on the surrounding grounds, which are gradually sinking. As well, precast's weather-resistant qualities make it the ideal product for the flood barrier walls.

INSTALLATION OF GIANT PROPORTIONS

One of the major challenges that the precaster faced was the sheer size of the columns and walls that run up the complete height of the building.

"The handling of these units was particularly challenging and required the use of mobile cranes to handle the panels in Delta's concrete polishing area," Mr Walsh reveals. "Some of the units are polished on all faces, requiring a significant amount of handling and as such, careful positioning of cast-in lifters was critical in terms of both safe handling and aesthetics. As a result, the lifters had to be patched once the panels were installed, which proved quite difficult due to access limitations."

BEAUTY THAT CONNECTS

The facility needed to physically connect the existing built form with the pedestrian circulation on campus through both function and form, and precast concrete proved to be the exemplary building material to achieve this.

"The precast for the project is both architectural and structural, requiring an incredible amount of attention to detail," Mr Walsh says. "The quality and consistency of the finish could not be compromised over what were extremely large areas."

The architect's brief included a durable, maintenance-free, and high-quality finish, and subsequently a crisp white polished and honed concrete was specified.

"The polishing process has exposed the white quartz aggregate specifically sourced for this project, resulting in a subtle contrast between the stone and the concrete matrix which changes during different light conditions," Mr Walsh describes.

Mr Slattery says the architects are also happy with the end result. "The quality of the precast in this project is outstanding," Mr Slattery comments.

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