



Flexible teaching with precast

A new state of the art university building in Perth is showcasing the flexibility and versatility of precast concrete. The five-storey Building 410 at Curtin University's Bentley Campus has presented design, manufacture and logistical challenges, but thanks to the early involvement of Perth-based National Precast member Delta Corporation, the build was simplified without compromising the design intent.

An extensive range of customised precast elements have been manufactured by the company for the project which includes flooring, architectural and structural wall panels, columns and stairs. The building required space for collaborative, interactive and flexible learning with both formal and informal spaces for students. The structure is primarily precast and pushed concrete design to its limit to achieve the architectural design intent.

Delta's Executive Director Matt Perrella says early engagement was vital. "We worked very closely with the architect at the initial design phase to review some of the more complex elements because they were very difficult to manufacture as they were designed. Because of our initial involvement, we were asked to develop the precast further," Mr Perrella said.

Precast manufacturer

Delta Corporation

Architect

GHD Woodhead
International

Engineer

Prichard Francis

Head contractor

Georgiou Group Pty Ltd

Client

Curtin University

www.nationalprecast.com.au



The external façade of the building features curved precast wall panels, manufactured using a full coloured concrete. The panels were then honed to expose the black and white matrix. The curved vertical fins of the precast wall panels help provide shade, thereby reducing cooling costs and results in a building which is industry- leading in its sustainability attributes, achieving a 5-star rating.

Precast flooring creating flexible, open spaces

The flooring in the new building was an important feature to enable a flexible use of the teaching and learning space. Deltacore, Delta's own hollowcore flooring planks, offered the ideal solution. The DC400 planks with 14.5 metre spans allowed large, open spaces. Mr Perrella says manufacturing the planks was a challenge, but achievable. "In fact, they were some of the largest planks that we've produced in Deltacore. That posed a few problems, which we managed to overcome. The main thing they wanted in the building was very clear open spans without intermediate columns". In all there were more than 230 floor planks, weighing a total of 1200 tonnes. But, the delivery took just 10 crane days and 58 trailer loads.

The precaster worked closely with the builder to ensure product manufacture and delivery according to a coordinated timeline and sequence. Tight time frames were met for a speedy construction. As well, the predominant use of precast reduced onsite safety risks and delivered a high quality finish.

Building 410 is due to open at the start of 2016. It will be an integral part of Curtin University's future and supports its vision to be an international leader in education and research.

Watch the video!

Simply Google 'National Precast Australia YouTube' to view a new video about this project. Watch the project's progress and hear from the project team.