Camden Valley Way Bridge

NO ORDINARY SYDNEY BRIDGE

As well as linking the old and new sections of Narellan Town Centre shopping centre, a new precast concrete skybridge over the busy Camden Valley Way will also add up to 100 new shops for local shoppers and take pedestrian traffic off the busy roadway.

Joining two sections of shopping centre across a main arterial road without too much disruption to busy commuters and shoppers was never going to be easy, but precast has proved the answer. NSW construction company Waeger Constructions was contracted by Mainbrace Constructions to design and construct the bridge. While abutments were poured insitu, the precast division, National Precast member Waeger Precast manufactured the project's bridge beams and other miscellaneous precast elements for the project.

Precaster
Waeger Precast

Builder
Mainbrace Constructions, Waeger Constructions

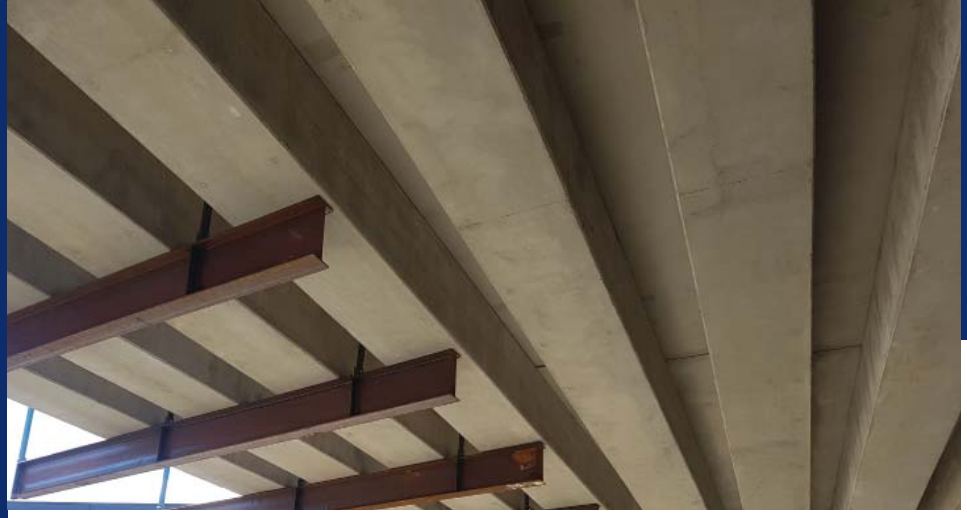
Architect
Buchan Group

Engineer
Bridge Design

www.nationalprecast.com.au

MINIMAL IMPACT ON TRAFFIC AND SHOPPERS

According to the company's Managing Director Michael Waeger, it was critical that construction worked around traffic on Camden Valley Way and shoppers, with minimal impact on the Centre's trading hours. "Working adjacent to a major arterial road necessitated night closures to install the bridge beams. Added to that was restricted site access with the shopping centre at either end of the bridge, and the north side of the centre opening to customers part-way through construction. We worked around it though," he explained.



The project necessitated both precast and insitu concrete. "Because of all the benefits of offsite prefabrication, we do as much precast as we can, but given the sheer scale of the roadside abutments for this project, they had to be poured in-situ. In fact, at almost 800 cubic metres each, the pour was the biggest in our company's history," he commented. The abutments have been post-tensioned and cantilevered to support the precast beams for the bridge deck.

GEOMETRIC DESIGN POSSIBLE WITH PRECAST

According to architect Buchan Group's principal Anthony Palarma, the project pushes design to the limit. "Externally the bridge and its two entry lobbies and sweeping green form of the facade will create a gateway landmark which embraces a restaurant precinct and civic plaza which we envision to become the new heart of the Narellan community."

Mr Waeger said the geometry of the bridge added to the project's design complexity. "One side of the bridge is straight but runs at an angle across the road, while the other side of the bridge is curved. That integrated well with the architectural design of the building", he said.

The precast bridge deck consisted of 23 pre-stressed concrete beams up to 27-metres long and weighing 32 tonnes each. Due to the geometry of the design, they have been laid in a splayed fashion between in-fill precast panels.

BESPOKE SHALLOW BEAMS GIVE ROAD CLEARANCE

A key issue for the client was also the finished levels of the whole project. It was critical to have the appropriate clearance over the road, but the bridge also needed flush levels above. Mr Waeger said his team came up with a solution. "We were able to design and construct the beams to be as shallow as possible, effectively tailor-making the precast to suit the requirements of the job," he explained. For this type of bridge span, the precast beams would typically be about 1200mm deep, but in this case they were designed and manufactured at 900mm deep.

OPEN FOR BUSINESS

"Looking back at the project and what we achieved, it was very challenging. The team at Waeger was glad to build it, and it's very satisfying given all the requirements". The retail bridge is due for opening in August, 2017.