

Capestone Boulevard Mango Hill, QLD

Case study – Precast concrete arches



Precast arches create aesthetically pleasing entry statement

Contemporary, impressive and striking. These are just some of the words being used to describe the entrance to the Capestone master planned community at Mango Hill in Brisbane's north. The urban development includes in excess of 1,500 homes on 230 hectares of land, located around the principal feature of a central lake. It's designed to be spacious and tranquil lakeside living, just 40 minutes' drive from Brisbane's CBD.

Setting the entry scene for Capestone is a statement precast concrete arch bridge, manufactured by Humes. Our Northern Region Engineered Solutions Manager Colin Roome, says the bridge is a significant part of the main entrance. "The developer required a bridge structure to get into the estate. They didn't want a traditional bridge. They wanted one to enhance the development and the Capestone name, while being aesthetically pleasing to blend in well with their man-made lake".

The arch structure might appear a straight forward project, but according to Mr Roome it was quite the opposite. "In my 30 years with the company I've worked on plenty of arch structures but, with over 150 different precast components, this was definitely the most complex one we've ever undertaken". The components included 80 half arch units, 14 spandrel wall units and 62 wing wall units, many with different lengths and profiles, which all had to fit together with no room for error.

The final result is an impressive 72 metre-long and five metre high structure with twin 15 metre spans over the waterway. It is a high performance custom bridge solution with excellent visual appeal.

To overcome complexities, precast was also used to manufacture more than 200 metres of custom patterned retaining wall for around the central man-made lake. "We needed to ensure consistent and high standards of quality on the patterned precast," said Mr Roome. The pattern was created with a rubber form liner, with the design chosen in conjunction with the BMD Group project team. The result is a stunning feature that lines the lake and compliments the arch bridge.

Project

Capestone Boulevard,
Mango Hill QLD

Principal

Urbex (BMD Group)

Contractor

BMD Urban

Product supplied

- Twin cell arch structure with 15 m spans and 5 m height
- 200 m of custom patterned retaining wall



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Case study written by National Precast Concrete Association Australia.

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