

Ipswich Motorway Upgrade

Precast arches

Case study



Main Roads recognises benefits of Humes precast arches

With impressive aesthetic and environmental benefits, and an efficient construction method, the Department of Transport and Main Roads chose to incorporate a Humes precast arch into the Wacol to Darra section of the Ipswich Motorway Upgrade.

The 15m arch spans Bullockhead Creek, a tributary of the Brisbane River and an important wildlife corridor in the area. The Wacol area is home to a large population of eastern grey kangaroos, so the design solution needed to allow local wildlife easy and safe movement within the motorway precinct. The arch also accommodates a two lane road connecting the Centenary Highway with the Ipswich Motorway, a pedestrian/bicycle path underneath, and provides access to a local road.

A number of solutions were considered before the precast arch was chosen. With a faster construction process than traditional bridge and culvert solutions, the arch design met the project's tight timeframes and could also be customised to suit the site's exact clearance envelope requirements.

Twenty-eight arch units were installed on an in-situ concrete strip foundation. Six wing walls and two spandrel walls were used at either end of the arch to retain backfill, direct water flow and enhance the appearance of the arch. The 50m long bridge took approximately one week to construct.

Humes arches are manufactured to provide a choice of geometric envelopes to meet access and waterway requirements. Unique arch profiles can be created from within the standard portfolio, and customers have a choice of architectural finishes, ensuring the end result is in harmony with its natural surroundings. All standard arches are designed to comply with AS 5100 – Bridge Design.

Humes also supplied large box culverts, link slabs, noise walls, and various concrete drainage pipes for the project.

Project

Ipswich Motorway Upgrade -
Wacol to Darra

Client

Department of Transport
and Main Roads, Queensland

Product supplied

Precast arches, single slope barriers, large box culverts, link slabs, noise walls, and reinforced concrete pipe ranging from DN 300mm to 2100mm and up to Class 8 in design



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