

# Koombooloomba dam bridge

HumeDeck™ modular bridge system

Case study



# Smart bridge design for World Heritage Listed site

The upgrade of the old single lane timber girder and corrugated steel deck bridge across the Tully River had two critical design requirements; firstly the design had to use the existing bridge substructure, and secondly the installation needed to guarantee minimal disturbance to the World Heritage Listed environment. The HumeDeck™ system easily met these requirements.

The HumeDeck™ system is a modular bridging solution which is suitable for installation on an existing substructure, as required for this project, or as a complete bridge system of precast concrete piles, decks, abutments and headstocks. The choice of the HumeDeck™ system provided a number of significant benefits for this bridge upgrade:

- 1) There was no concrete pouring on site which minimised disturbance to the environment and the management of additional equipment and logistics.
- 2) The HumeDeck™ units could be lifted onto the headstocks using an on-site gantry system, built out on the existing bridge structure (the same gantry system was used to remove the old timber girders).
- 3) The combination of a wide deck design and one-piece deck and girder units minimized site work (less items for installers Civil Plus to place and fix), which meant they could achieve the installation of two spans in one day.

Other challenges for the project were the different heights of the existing bridge piers, and the need to raise the level of the bridge and adjoining road approaches, and for the decks to incorporate a fall from the centre of the unit to allow for drainage once the deck was installed. Humes developed a custom-made headstock design which successfully addressed all of these issues. As the HumeDeck™ units were to be placed directly onto the headstocks it was critical that these units were manufactured accurately. Humes developed a custom mould for manufacture and achieved an exceptional result with the finished surface level of all the headstocks falling within the 3mm height tolerance once installed.

The 91 metre long bridge spans the Tully River and is located just downstream of Koombooloomba Dam, which is owned by Stanwell Corporation.

HumeDeck™ units are designed in accordance with AS 5100 using W80, A160, SM 1600 (and HLP 320 and 400) load regimes as required. HumeDeck™ units can be produced in spans ranging from 6 metres to 12 metres, and in widths up to 2.7 metres.

**Humes**  
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## Project

Bridge over Tully River at Koombooloomba Dam, QLD

## Client

Stanwell Corporation

## Product supplied

20 HumeDeck™ units,  
9 headstocks, 2 abutments

