

BEAVERS CREEK UPGRADE - FLOW REGULATION WEIR AND FISHWAY

PROJECT DETAILS

OWNER/OPERATOR: WATERNSW
CLIENT: HASLIN CONSTRUCTIONS PTY LTD
LOCATION: WAGGA WAGGA, NSW
DATE: MAR 2012 – SEPT 2013
PROJECT VALUE: AUD8MILLION



BEAVERS CREEK UPGRADE - FLOW REGULATION WEIR AND FISHWAY



DESCRIPTION

The Beavers (Old Man) Creek project has seen the largest environmental regulators constructed in Australia. Principle Contractor Haslin Constructions partnered with AWMA as the only gate supplier in Australasia with the proven capability to deliver projects of that scale. Solutions developed by AWMA included a full hydraulic system with backup and manual hand pumps, cable drive actuation systems and the largest tilting weir gates in Australia. This project forms part of the Murrumbidgee Computer Aided River Management (CARM) system, a world-class, AUD65million infrastructure development and enhancement project that maximises the use of the Murrumbidgee River system.

PRODUCT

AWMA were engaged to design, manufacture, install and commission automated control gates including:

- 3 off 3500mm wide x 4500mm high cable driven marine grade aluminium LayFlat gates including hydraulically actuated rope drums, hydraulic control cabinet, access platform and handrails
- 1 set 3340mm wide x 4402mm high marine grade aluminium segmented Roller Stoplogs (in three 1500mm segments) including embedded stainless steel frames, certified stoplog lifting frame and stoplog storage rack
- 1 off 300mm wide x 3980mm high stainless steel sidewinder gate (Fishway Exit 1) with electric actuator
- 1 off 300mm wide x 3490mm high stainless steel sidewinder gate (Fishway Exit 2) with electric actuator
- 1 off 300mm wide x 2670mm high stainless steel sidewinder gate (Fishway Exit 3) with electric actuator
- 1 off 300mm wide x 1940mm high stainless steel sidewinder gate (Fishway Exit 4) with electric actuator
- 1 off 1580mm wide x 2020mm high marine grade aluminium stopboard (Fishway) in a stainless steel frame
- 1 off 2000mm wide x 2209mm high undershot gate (G8)

SERVICES

AWMA provided 100% of the design, manufacture and installation process to the total value of AUD100,000.

Additionally, AWMA provided extensive documentation, training and support.

As with all design and construct contracts, AWMA regularly liaise with the asset owner (in conjunction with the head contractor) to ensure all parties were satisfied with final design scope and specifications.

MANAGEMENT

Early Contractor Involvement:

Initial site visits by AWMA sales and engineering staff to contribute to conceptual design development (1 week).

Design and Drafting:

AWMA in-house engineering team (6 weeks). Design reports peer reviewed by GHD for AWMA, and also by NSW Office of Public Works on behalf of State Water.

Manufacture:

AWMA in-house manufacturing team including purchasing, fabrication, QA, administration (8 weeks).

Installation:

Mobilisations by the installation team as per program schedules.

Commissioning:

AWMA Operations Manager (1 week).

Documentation:

Including Safety In Design, ITP, QA, MDR, O&M Manuals, Installation Manuals etc, managed by AWMA in-house administrative and QA departments.

Training:

Onsite by our Operations Manager (3 days), plus documentation and on-phone support as required.

DELIVERY

AWMA successfully delivered the project on-time and without variations.

DELIVERY

The large LayFlat gate leaves are driven by hydraulic actuation. Engineering and quality scrutiny required unique features including 500mmOD cast stainless steel rope drums, 28mm OD 7 x 37 316 stainless steel cables and a Rotork Worm gear box with winch design output torque of 90,000Nm of torque and 461 kN lifting capacity (46tn.)

Project Manager Mano Manorathan stated ***"The Old Man Creek Project required the biggest, heavy duty LayFlat gates on the market. State Water was looking for superior engineering design, a high quality product to meet the stringent specification and reliable after service"***.

RELEVANCE TO FUTURE PROJECTS

The winch design utilised in this WaterNSW project, to lift the LayFlat Gates via cable drum, gearbox and drive motor, is estimated at 90,000Nm torque, as required for the largest winch on the DTSS2 Roller Gate Project.

This winch sustainably regulates the Old Man Creek Gates 24/7, since practical completion in 2013.

The gates are automated via SCADA.

The segmented roller stoplogs are inserted and removed with AWMA's self engaging lifting frames, inserted into 7.2m deep stainless steel guide frames. Boards were designed and tested to insert and remove against 2m/s flow velocity.



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