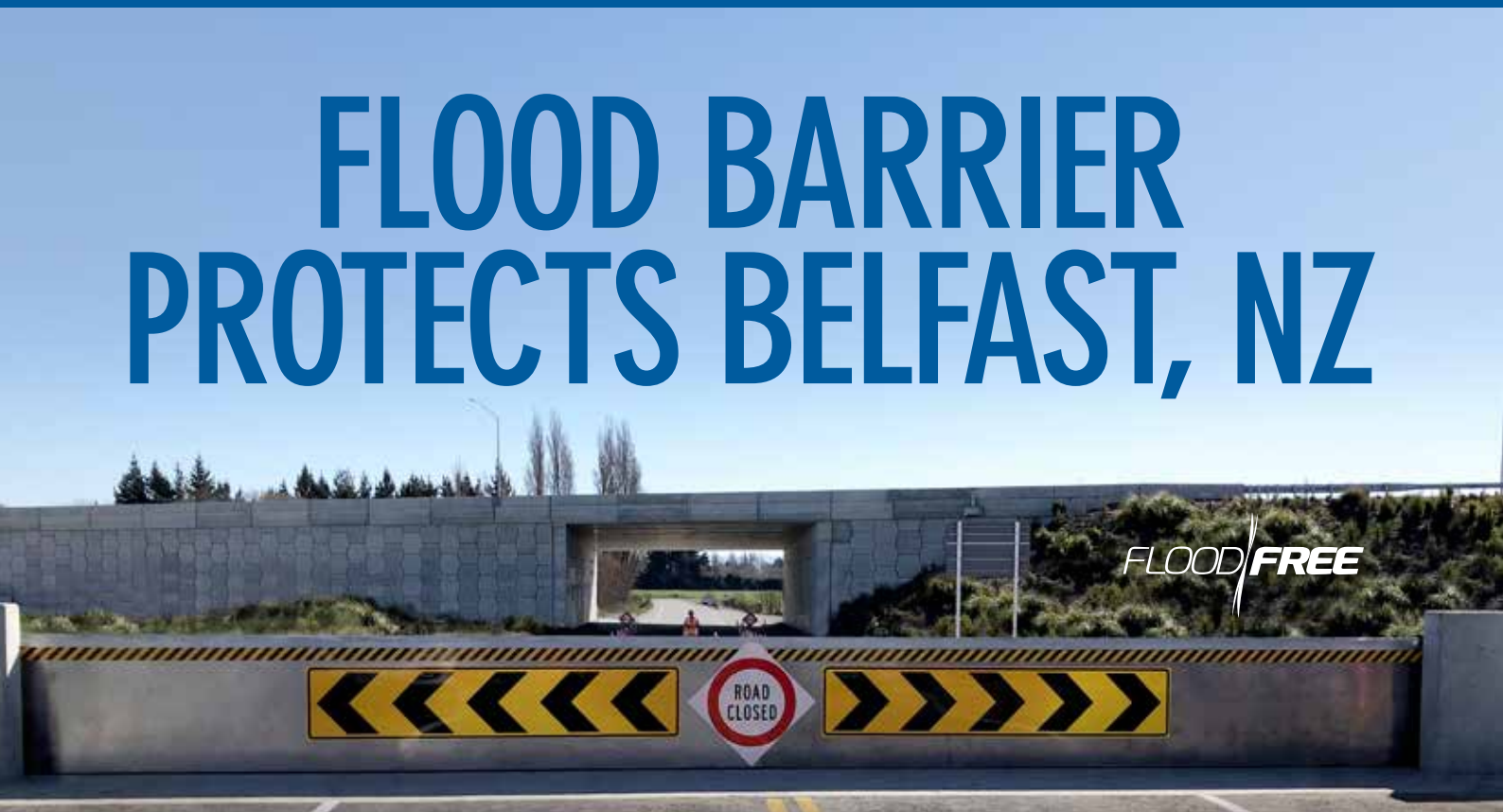
awma Water Control Solutions NEWS
DEC 2019
Edition 44

FLOOD BARRIER PROTECTS BELFAST, NZ



A FloodFree Retractable Flood Barrier was exported to New Zealand and installed at Dickeys Road, Belfast, to complete the secondary flood protection system for Christchurch. The Flood Barrier was needed to contain a large (6500 cubic metres per second) design flood in the Waimakariri River.

In the event of the design flood event occurring, flood waters would have flowed over Dickeys Road into the wider Belfast area. Containment of floodwaters by raising Dickeys Road was not possible without compromising traffic safety.

The solution was the installation of a 12m Retractable Flood Barrier which is permanently installed within the aesthetics of the connecting levees and Dickeys Road. The track system is a permanent fixture within the road and meets Australian and New Zealand Specifications for heavy traffic loads and road safety.

This Retractable Flood Barrier may be operated manually or via an electric push button actuation system. The DC powered system with battery backup allows for electric operation, even during power failures.

The barrier has been purpose built to meet specific site and operational requirements, and ensure 24/7 flood protection to a flood height of 1.1m, which allows for the design flood event plus freeboard. It has been manufactured from structural marine grade aluminium, ensuring it is lightweight yet strong and durable. The track system is manufactured from grade 304 stainless steel components, allowing it to be fully trafficable with an extended asset life. To ensure longevity and reduced whole of life costs, the seals are mechanically fastened and designed to be easily replaced if required.

When in the closed position, this flood barrier isolates a two lane road. Both sides of the barrier have signage and warning delineation including reflective safety strips to alert road users of the closure.

AWMA worked closely with Environment Canterbury Regional Council and their consulting engineer, Good Earth Matters, to ensure the flood isolation supplied will meet the required flood protection objectives and the associated operational and maintenance requirements.

Good Earth Matters noted; *"We appreciate the work that you and your team have put into this project and the support provided, including allowing us to witness the factory commissioning and verification testing before the barrier was shipped to New Zealand. From our perspective the visit was invaluable because it changed our thinking around the construction sequence, and focused us on the criticality of the track installation."*

GENERALLY SPEAKING

Last month AWMA was honoured to be awarded the ASSDA Australian Project – Fabricator of the Year.

Whilst it was awarded to AWMA and represents the innovation and dedication of our talented and diverse team, there were other key contributors to the success of this project.

AWMA were very fortunate to be working directly with the asset owner, Murray Irrigation and a project delivery team that has a true focus on communication and partnership. This generated excellent outcomes and would be an outstanding model for any project.

We strove to emulate the 'communication and partnership' approach with our suppliers. Many of which were fundamental in achieving on-time, on-budget project delivery.

Over 250 tonnes of stainless steel was processed, most of which came from fellow ASSDA members Vulcan and Arcus. Vulcan Steel supplying the stainless steel plate and Arcus Wire Group 1.43km of stainless steel cable. Rotork supported us with actuators and gearboxes and Tulip Engineering all the machined components. The project required a significant volume of pressed materials, a capability outsourced to PressFab Engineering.

Project completion for AWMA doesn't end with manufacture. AWMA supported Ertech and PB Infrastructure who managed the on-site works under very tight time frames to successfully complete the job.

Approximately 100 suppliers 'partnered' us on this project. I have not mentioned everyone, but do thank you all for playing your part in supporting AWMA and the project.

I believe innovation and dedication are two appropriate words to describe the culture required to deliver award winning projects. The AWMA team did an outstanding job in this area.

Congratulations to all involved.

PS. Thanks ASSDA for your vote of confidence.

Brett Kelly
Managing Director

awma Water Control Solutions

FLOODFREE

SEWER ISOLATION BULKHEAD

Pictured is an AWMA Round Bottom Bulkhead Gate with an integrated equalisation valve.

This gate is the first of four destined for a new sewer extension in Northern Melbourne. The bulkhead is manufactured to match the benched sewer profile, including isolation of a 1850mm diameter pipeline.

The Round Bottom Bulkhead was custom designed to ensure compliance with the specifications, including the requirement for grade 316 stainless steel to meet the design criteria for corrosive environments.

This gate was tested on an in-house hydrostatic test bed for successful seal performance up to 35m off-seating head pressure.

The isolation bulkhead gate has lifting lugs allowing insertion via crane to isolate off-seating flows.

The integrated equalisation valve is a manually operated function to release pressure on the isolated sewer line.

NEPEAN TUNNEL ISOLATION GATE

AWMA were engaged by Haslin Constructions to supply WaterNSW with a custom-designed penstock to isolate the Nepean Tunnel during flood events.

The 7km long Nepean Tunnel outfalls into the Broughton's Pass Weir, which in turn supplies water to Sydney. Flood events can cause contamination via the tunnel into Sydney's water supply, so it is necessary to isolate the tunnel during these events.

The 4.5 tonne Dual Leaf TLF Penstock was manufactured from grade 316 stainless steel, 3m high x 3.7 wide, to withstand a hydrostatic load of 10m once closed. The submersible actuation system utilises a remote control head and dual spindles.

AWMA have a long standing history of working in partnership with Haslin Constructions and WaterNSW to deliver successful water infrastructure projects.

Challenges overcome include difficult site access, a heritage listed asset, minimal shut-down period and the requirement of the gate to withstand heavy debris loading.

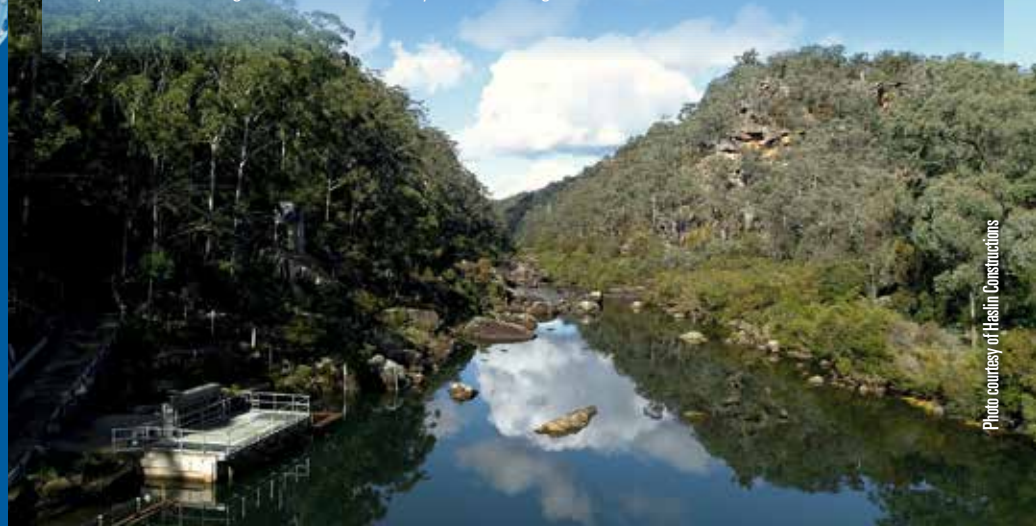


Photo courtesy of Haslin Constructions

NATIONAL STAINLESS STEEL FABRICATION AWARD

AWMA received a national award for stainless steel fabrication following the successful delivery of stainless steel water control gates, for the largest irrigation canal in the southern hemisphere.

The 'Australian Project Fabricator of the Year' Award was presented by the Australian Stainless Steel Association (ASSDA), a non-profit organisation supporting innovative fabrication of stainless steel materials. They stated:

"AWMA won out in a highly competitive category against other innovative and high quality projects. We were particularly impressed with the scale of fabrication, quality of workmanship and the ability to work with stainless steel to deliver a superior outcome." - Chris Waltos, ASSDA.

AWMA work in partnership to offer as much support and advice as possible in the early stages of a project, to ensure stakeholders receive an end-product that will satisfy all objectives.

The award winning Murray Irrigation Limited (MIL) PIIOP project required AWMA's team of qualified tradesmen to process over 250 tonnes of stainless steel which required approximately 7.5km of welding, 1.43km of purpose-engineered stainless steel wire rope cables, 65 grade 431 stainless steel shafts, 260 grade 2205 stainless steel hinges and over 27,000 grade 316 stainless steel bolts.

MIL Construction Manager - Major Engineering Projects Jorge Luengas stated:

"Following the development of a technical specification and a competitive tendering process, we narrowed down our options and had them reviewed by a third party subject expert. The long term value for money and 50 year design life achievable with stainless steel was perfect for use in a large scale irrigation application like the water regulating infrastructure present in the iconic Mulwala Canal."

SCREENING SOLUTIONS STUDIED AT FLOWLAB

Extensive research has been undertaken to ensure AWMA can offer proven screening solutions that are suitable for Australian industries, conditions, aquatic life and fish species.

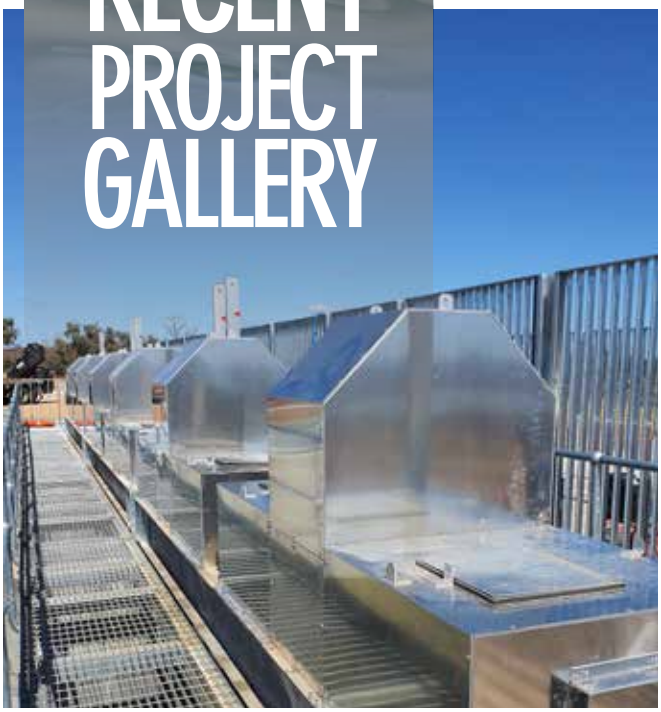
Pictured:
Dr Craig Boys
(NSW Department of Primary Industries) at the AWMA FlowLab Facility.

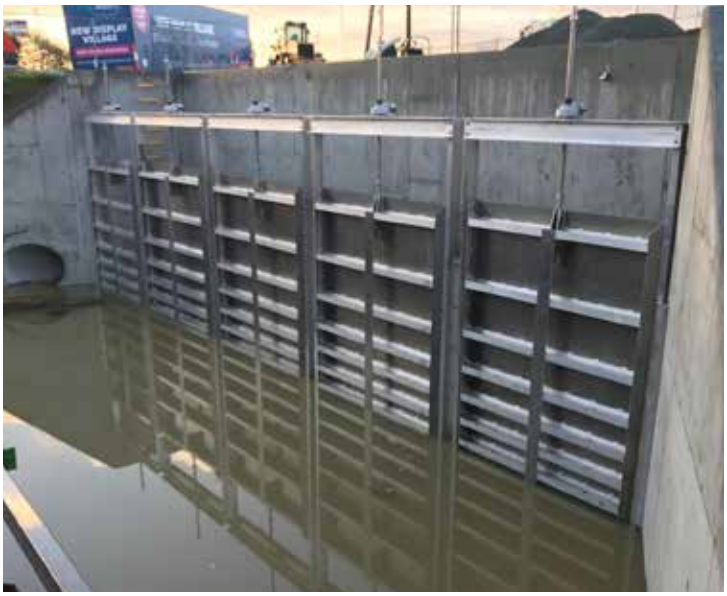
For screen solutions to be effective for native fish protection, they need to be designed to take into account the size, shape and swimming abilities of local species. With this in mind, AWMA has partnered with fisheries researchers from the NSW Department of Primary Industries and Charles Sturt University to develop the *first standardised design criteria for fish protection screens in Australia.*

Experiments on a range of fish species and life stages began in November using a specialised screen testing facility installed within the AWMA FlowLab at Cohuna. The experiments are being funded by the Ian Potter Foundation and the Recreational Fishing Trust to progress fish-friendly intake screening throughout the Murray-Darling Basin.

RECENT PROJECT GALLERY

INNOVATIVE - CUSTOMISED - SUSTAINABLE





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