

AWMA TO DELIVER ONE OF THE WORLD'S LARGEST IRRIGATION FISH EXCLUSION SCREENING PROJECTS

AWMA's Fish Exclusion Screen Solution will provide New Zealand's Rangitata Diversion Race (RDR) with 374m² of screening surface.

The Diversion Race is a 67 km long channel which diverts water from the South Island's Rangitata River for irrigation, stock water and hydropower generation.

AWMA were awarded the design and construct contract to supply a diversion screen solution that will deliver required flows whilst excluding sporting and native fish.

In order to accommodate large flows exceeding 2850 ML/d (33m³/s), the RDR project requires seven stainless steel Self-Cleaning Cylindrical

T-Screens each of 2.1m diameter and 8m in length, weighing over 6 tonnes each. As well as, one Self-Cleaning Flat Screen 3.5m high and 30m long.

This presents a total 374m² screening area of 2mm stainless steel wedge wire screen, over 86m in length with infrastructure weighing in excess of 100 tonne.

A fish bypass will return fish safely back into the river.

Manufacture began in October 2020, the structure is due to be commissioned in October 2021.

AWMA Fish Exclusion Screen Solutions are guided by the USEPA 316(b) compliant design requirements and the NIWA Fish Screening:



good practice guidelines for Canterbury. Innovative screening technologies are available for numerous applications, contact the AWMA Screen Team or visit our website for further information.



Concept 3D Renders are produced in-house by the AWMA Design Team.

GENERALLY SPEAKING

Welcome to AWMA's last newsletter for 2020.

What a challenging year it has been!

Most businesses have been adversely affected by COVID this year. Although AWMA have faced many challenges, we've been able to navigate our way through them with the support of our valued team, suppliers and customers.

Collectively, we have managed to keep projects on track and delivery on time.

I would like to take this opportunity to thank our team and everyone we have worked with throughout 2020. It goes to show the value of strong relationships, good communication and what can be achieved when combined with a lot of dedication.

Although the COVID challenges will continue well into 2021 let's hope that it is a significantly better year for everyone.

I also hope that the year finishes off with us all being able to gather with our families for Christmas.

Again, thanks to everyone we have worked with this year, at every level. Your support is highly valued.



Brett Kelly
Managing Director

OVER 100 WATER CONTROL ASSETS FOR BONEO



Custom designed AWMA Penstocks and Stopboards have been supplied for South East Water's Boneo Water Recycling Plant Upgrade. Engaged by the John Holland SUEZ Beca JV, AWMA designed and manufactured all equipment to be delivered to site in multiple stages to meet project needs. AWMA water control products included 7 manually operated penstocks, 24 pneumatic or electric actuated penstocks, 53 single piece stopboards, 8 self-engaging lifting frames and 16 storage racks.

Every water control gate was purpose-

engineered to individual specifications with the largest single piece stopboard measuring 4.6m wide x 1.4m high. Grade 316/316L stainless steel was used for all equipment permanently installed in the plant to withstand the highly corrosive environment given the coastal location.

The \$130M Boneo Water Recycling Plant Upgrade delivers a range of innovative technologies that increase the plant's capacity to support population growth and maximise recycled water production.

HAIL CREEK EASTERN MARGIN PROJECT

AWMA were engaged to supply penstock valves and bar screens for a dam application in northern Queensland.

Four AWMA TLF Penstock's were designed to regulate flow from the Mine Water Release Dam (MWRD) at up to 1 GL/day.

Manufactured from 304 stainless steel the penstocks were engineered to withstand 3.8m on-seating head pressure.

The frames were manufactured to include an integral bar screen, that protect the infrastructure from damage.

The penstocks are operated locally but capable of integration into external controls for remote monitoring and control, from the site control room.



ISOLATION BULKHEAD AND SPECIALISED LIFTING FRAME FOR VIC RESERVOIR

The O'Shannassy Reservoir is a critical part of Melbourne Water's network of dams and reservoirs, delivering drinking water to Melbourne. The objective of this project was to address reservoir safety for operation and maintenance, following regular dam safety inspections.

Original penstock designs were dismissed for this project due to the power that would be required to connect an electric actuator.

Alternatively, AWMA were engaged by the John Holland KBR JV to supply a customized isolation bulkhead and lifting frame for the O'Shannassy Reservoir Intake Pipe.

A single piece bulkhead was custom designed to cater for insertion and removal under hydrostatically balanced conditions (ie; no flow).

The bulkhead isolates an aperture of 1.6m diameter and was designed to accommodate 18m of on-seating head pressure. Grade 2205 duplex stainless steel materials were selected to accommodate the nominated design loads.

For most bulkhead applications the guide rails are integral to the sealing frame. The nature of the intake shaft at O'Shannassy Reservoir did not allow for the standard frame arrangement. This instigated AWMA to design an innovative guide rail system that was independent of the sealing frame.

The bulkhead deployment and retrieval process was to be safely managed without the need for divers.

The intake at O'Shannassy Reservoir is off-centre within the shaft. To accommodate this the AWMA design team developed a solution to incorporate extendable arms within the bulkhead, allowing operators to effectively and accurately position the bulkhead, from the surface, despite it being 16m underwater. This was achieved using a bespoke AWMA Self-Engaging Lifting Frame, also featuring outrigger style extendable guide arms.

The Self-Engaging Lifting Frame is specifically designed to safely lower the bulkhead gate into position before automatically disengaging, to be returned to the surface and into AWMA Storage Racks.

When the bulkhead is to be retrieved, the Self-Engaging Lifting Frame is set to retrieval mode, lowered into the guides, it automatically locks onto the bulkhead gate and, under flow, raises the bulkhead to the surface. All of this is achieved from above the shaft without the need for divers or operator intervention.

To address risks associated with misalignment of the guide and sealing frames, AWMA assisted the JHKBR JV by providing an Installation Supervision and Certification Service to ensure all equipment was installed per the design intent.



BYO DEBRIS

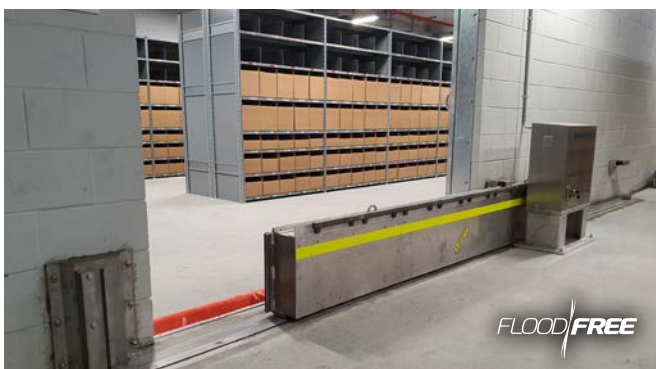
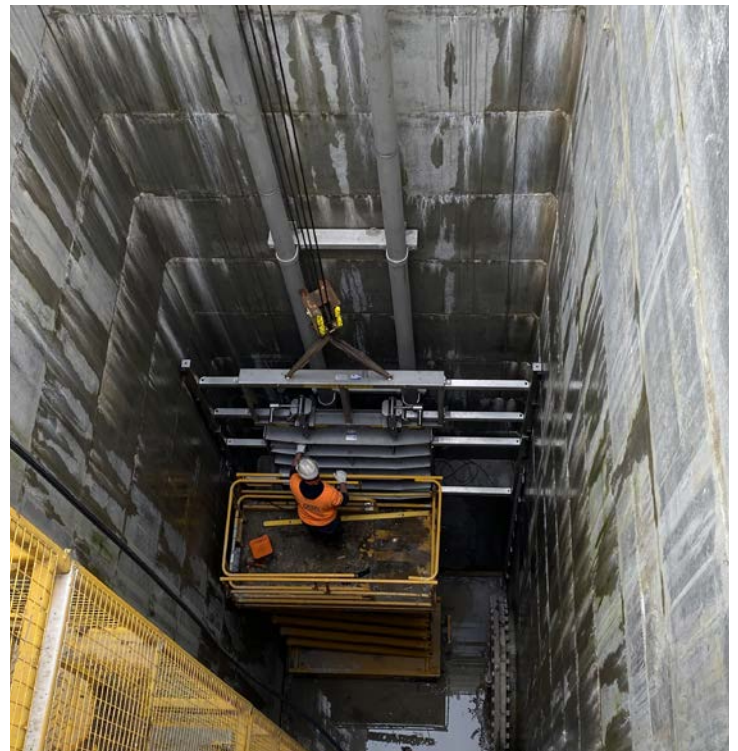
The AWMA Screen Team encourage you to bring your most challenging water debris to our testing facilities so we can demonstrate first-hand how effective AWMA Automated Trash Screens can be.

Manually raking debris from water ways is unsafe and inefficient. Partner with the AWMA team to custom design an automated screen solution to meet your exact specifications including debris type, application and operation.

Pictured, the AWMA Automated Brush Screen devoured an entire trailer load of a client's nemesis; Hornwort (*Ceratophyllum*).

RECENT PROJECT GALLERY

INNOVATIVE - CUSTOMISED - SUSTAINABLE



FLOOD | ENVIRONMENTAL | IRRIGATION | WATER TREATMENT | DAMS | ENERGY & RESOURCES

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20
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