

INCREASING STORM WATER RETENTION CAPACITY

BENEFITS

- INCREASES STORM WATER RETENTION
- DECREASES SALT WATER INTRUSION
- ELIMINATES FLOODING
- NEW PASSIVE OPERATION

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GENERALLY SPEAKING

Welcome to 2015

For AWMA, this year will be no different to 2014 when it comes to driving down infrastructure operating costs in order for your business to prosper in 2015 and beyond.

Recently AWMA have added to our product range two innovative gate designs that drive down operational costs through reducing maintenance requirements.

AWMA design, manufacture and supply the majority of environmental water control solutions throughout Australia. Many of these include fishways with long stroking gates (up to 4000mm) operating 24 hours a day, 7 days a week.

To address wear and maintenance costs the traditional threaded stem actuation systems have been replaced with hydraulic and positive cable drive systems. This change eliminates the threaded spindle and drive nut leading to a significant reduction in down time and overall maintenance costs.

Additionally, flood retention systems in coastal areas and wetlands have been protected by AWMA's new floating tilt gate that automatically maintains retention capacity against tidal flows and protects wetlands from sea water intrusion. The gate self regulates without any manual or powered actuated systems. Once again significantly reducing maintenance and associated costs.

Throughout 2015 AWMA will continue to develop innovative solutions that reduce the capital and whole of life costs of your water control infrastructure and improve the viability and profitability of your operations.

All the best for the coming year.



Brett Kelly
Managing Director

Upcoming Events:

- OzWater, Adelaide 12-14 May
- Floodplain Management Association National Conference, Brisbane 19-22 May
- Water Technology Cluster 22-23 May
- Irrigation Australia Conference 26-28 May

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The City of Greater Geelong required controls be put in place to manage infrequent flooding and saline intrusion of an urban storm water system upstream of Lake Victoria.

The design solution uses the Emily St sedimentation basin to provide attenuation/storage of storm water during periods when Lake Victoria water levels are high. When Lake Victoria water levels are low the system allows unregulated discharge of storm water into Lake Victoria.

Alluvium Consulting initiated the design concept and involved AWMA through the early stages of development. The partnership determined that a unique passive gate, operating on the basis of differential buoyancy forces, could be used in place of a traditional electro-mechanical gate solution. This saved considerable capital expenditure and provides a virtually maintenance free 'set and forget' solution.

After successful prototype testing, AWMA proceeded with detailed design, manufacture and dry factory commissioning to ensure the gates would perform in the field, as intended.

Two 4m wide and 1.5m high LayFlat gate leaves were manufactured from marine grade aluminum and protected with sacrificial anodes to ensure a long design life in salt water conditions. The gate leaves were then hinged to automatically open (horizontal) or close (vertical) in response to upstream or downstream water levels.

The gates rise automatically when the downstream (saline) water levels rise above the crest of the weir, isolating the rising salt water. When upstream levels increase, the door opens allowing fresh water flows to pass into the lake.

The gates are self-regulating and effectively maintenance free. They have an instantaneous response time, a guaranteed failsafe opening and no opportunity of failure from operator or equipment.

The result is a simple, low capital, low whole of life solution to a complex issue.

NEED TO SEE IT FOR YOURSELF?

Go to the AWMA project page www.awmawatercontrol.com.au/storm_water_cogg to find the video along with additional information.



WEIR UPGRADE

Mildura Weir has undergone major upgrade works with AWMA supplying the new mechanised gates.

Crib Point Engineering built five new weir trestles that feature three dual leaf penstocks each. The penstocks 1.5m wide x 2.85m high are custom designed and electrically isolated from the impressed current protected trestles.

The penstock gates were designed in accordance with AS 1664.1 and account for site and operational specifications including non-rising spindles and debris impact loading.

The water control gates are automated with dual spindles and Rotork 3 phase electric actuators. The dual spindles provide a clear water-way with no risk of the spindles being damaged from debris in the river. The weir gates will be locally operated from the weir with the option to be remotely operated via SCADA in the future.



Mildura Weir's new gates eliminate all OH&S issues associated with the insertion and removal of timber drop bars and provide improved regulation and isolation capacity.

MDBA head of River Management David Dreverman said "It's important that the weir is upgraded and maintained so the river can be properly managed and reliably support surrounding industries. Mechanised gates will be a significant improvement to the existing method of adjusting the pool height and flow rates, which (previously) required weir staff to manually install and remove large numbers of timber drop bars".

CREATING RESILIENT WETLANDS



DESIGNED

INSTALLED

COMMISSIONED

AWMA were engaged by Leed Engineering and Construction Pty Ltd to provide environmental flow solutions as part of the Riverine Recovery Project (RRP) managed by the Dept of Environment, Water and Natural Resources (DEWNR).

AWMA custom designed triple-leaf penstocks, undershots, stopboards and rotating fish screens for the project.

The triple leaf gate design provides unparalleled overshot flow capacity, with the ability to allow full unimpeded flows when under high flow/flood conditions, as well as allowing water to then be retained in the wetland after a major flood event.

The triple leaf gate is unique to AWMA. Its innovative design created many challenges including multiple actuation

systems and numerous seal transitions. These were all successfully addressed through comprehensive 3D modelling, prototyping and hydrodynamic testing which were all carried out by in-house specialists.

The 20 penstocks range up to 2.2m high and are all operated using a manual crank handle or AWMA's portable electric actuator. A T-handle spindle drive valve key was fabricated for the fish screens, consistent with the requirements of AS/ NZS 2638.2.

AWMA's in-house capabilities provided a full turn-key service including design, manufacture, installation, commissioning and training. The success of this water control gate will assist designers when developing infrastructure solutions for the management of wetland environments in the future.

Photos of Woolpoolool Wetland near Renmark, courtesy of DEWNR.



STOPBOARDS FOR POLISHING PONDS



AWMA were involved in numerous projects in Tasmania last year, including working with Irrigation Tasmania's Mining and Industrial Services sector for West Coast Mines.

AWMA Segmented Stopboards have been installed within the dam walls of the mine's 'polishing ponds'. The stopboards will be manually operated to control the level of the water in each section, divert water to another section, bypass a section or make the water flow all the way round.

Decant water comes in from the tails dam, and the 'circuit' allows the water to settle before being discharged from the dam. During maintenance and high inflows, operators need to control the flows manually. AWMA's multiple segments allow flows to be easily managed in 100mm high increments.



BIG OR SMALL AWMA DO IT ALL



WASTEWATER DESALINATION FLOOD MITIGATION ENVIRONMENTAL IRRIGATION



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