



BEREMBED WEIR OFFTAKE REFURBISHED

The original Berembled offtake regulator and trash rack system was constructed in 1910. The 2017 refurbishment required new penstock gates, trash screens, platforms, access ladders, isolation bulkhead gates and storage racks. The latest works bring the critical infrastructure in-line with current workplace safety and water-use efficiency regulations.

The Berembled Weir, located on the Murrumbidgee River, is managed by WaterNSW. AWMA was the principal contractor responsible for site demolition and preparation requirements as well as the design, manufacture and installation of new infrastructure.

The Berembled Weir is heritage listed, requiring extreme caution during all stages of demolition and construction. Adhering to extensive environmental and OH&S requirements was also paramount.

Ten stainless steel TLF penstocks were supplied, each accommodating 9m of head pressure for the offtake regulator.

The penstocks were installed in embedded guides with integrated concrete blockout panels to replace the original steel multi-leaf gates.

Fixed stainless steel trash screens were installed on all ten bays and may be easily removed if required.

An improved 20m long walkway replaces the original offtake access platform. Access ladders and a custom 6m high stairwell were also supplied.

Two mild steel bulkhead gates and storage racks allow isolation of the penstock gates when required.



GENERALLY SPEAKING

Over the last two years AWMA has developed a range of specialised Flood Mitigation Equipment.

Market demand for Flood Barriers and Flood Gates has increased in-line with rising sea levels, severe weather events and the effects of global warming.

Several municipalities have recently amended their Floodplain Management Plans to raise the flood protection level utilised by designers, architects and town planners.

One of the most common flood barrier applications is the protection of basement car parks and building entrances. Unlike Europe where flood mitigation has been a necessity for centuries, it is a fairly new requirement here in Australia.

Our extensive research and development into flood, storm and tidal water protection, ensures we can work with you to identify a fit-for-purpose solution to protect your property.

Our FLOODFREE product range is innovative, purpose-engineered and meets council design approval. Products and recent projects are available to view on our website, or alternatively give us a call, we'd be happy to work through a solution with you.



Brett Kelly
Managing Director



FLOODFREE SHOPPING CENTRES

AWMA purpose-engineered four Concealed Flood Barriers to protect a new shopping centre in Sydney. Flood barriers isolate the shopping precinct from stormwater run-off and mitigate floodwaters from nearby waterways.

The flood barriers range from 2m to over 13m in length and are concealed below ground level at access points.

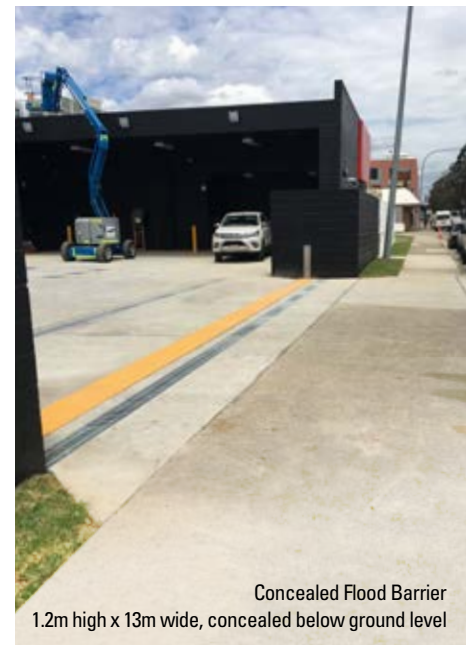
Concealed Flood Barriers are designed to deploy automatically ahead of rising flood and/or storm water levels, without the need for external power or manual operation.

Engineered using the principles of buoyancy ensures the barriers activate as and when required 24/7, 365 days a year. Marine grade aluminium is used for gate construction, ensuring the structure is light but extremely strong. The capping plate is custom fabricated to client requirements, including materials that accommodate adjacent flooring, aesthetics, traffic, visibility, surface treatments etc.

At a predetermined water level, a high water alarm is triggered which sets off visual and audible alarm systems to ensure public safety. The flood barrier automatically rises from within a fabricated cassette below ground level.

The cassette is plumbed into the stormwater system. The barrier remains in the deployed state until the surrounding water level recedes and the cassette is drained. At this point the alarm beacons will automatically switch off.

AWMA offer a large range of flood protection barriers from asset protection to entire town levee systems. View more flood mitigation projects and flood prevention solutions at; www.awmawatercontrol.com.au



Concealed Flood Barrier
1.2m high x 13m wide, concealed below ground level

CANAL MODERNISATION WORKS

Major modernisation upgrades along the Mulwala Canal in NSW have begun. The 2018 Murray Irrigation (MIL) works include more than 50 AWMA regulator gates.



Mulwala Canal is Australia's largest irrigation canal. It spans 165km and has the capacity to deliver more than 1,500,000ML of water per year to irrigators in the Southern Riverina helping to generate about \$500 million of gross agriculture revenue per year for the region.

Murray Irrigation has up to \$114.8 million in funding approved from the Australian Government under Round 3 of its Private Irrigation Infrastructure Operators Program (PIIOP).

Gate solutions for the modernisation program include tilting LayFlat (overshot) gates and ULF (undershot) gates, both proven designs currently operating across many national and international irrigation schemes. Updates will be available in the projects section of the AWMA website.

NEW TRASH SCREENS REDUCE RISK

AWMA's powered trash screen has been re-engineered to provide a more economical, robust and reliable self-cleaning system that can be easily maintained out of the waterway without the need to dewater or bypass the structure.

The latest automated self-cleaning trash screen has been installed for Barwon Water in a remote area of southern Victoria. The structure provides over 4.0m² of clear opening area at the entrance to an underground syphon.

Trash screens are often used in water delivery networks and environmental applications to remove bulk debris from waterways, often protecting downstream systems and minimising OH&S risks.

AWMA's powered trash screens utilise cleaning rakes attached to a rotating chain system which is driven by a motor and gearbox, coupled to a drive shaft. This process removes bulky objects from the front of the screen to avoid blockages. Debris is transported upwards, out of the waterway into removable disposal bins, conveying chutes or troughs.

Automated cleaning of the screen eliminates risk to operators in performing manual raking processes. No additional consumables, such as brushes or service water is required.

The chain system may be detached from the frame allowing the cleaning rakes to be removed and reinstalled easily, during full maintenance checks.

AWMA powered trash screens can be configured to suit different types of debris and structures.



TIDAL RIVER WEIR UPGRADE

Ertech Pty Ltd was awarded the contract to install a new bridge, fishway and automated weir gates for Perth's Kent St Weir. The project was facilitated by the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, together with the City of Canning.

The weir marks the point of transition from tidal-influenced saline water downstream, to a freshwater pool upstream.

Automated LayFlat gates control the height of the weir structure, preventing ingress of salt water during high tides when salt-water incursion is most likely to occur. The weir maintains a retained upstream level during the extended summer period (normally low fluvial flow conditions), to benefit the freshwater environment.

Additionally, automated management of the weir allows water to flow downstream during periods

in which the river experiences higher flows (usually during the winter and spring rain events).

The LayFlat gates are connected to a compact hydraulic drive system, operated by a control panel over 40m away. The gates and associated operating systems are designed to withstand fully immersed conditions during flood events.

The weir upgrade provided the opportunity to incorporate a fish ladder into the structure. A sidewinder gate, segmented stopboards with stainless steel frames and marine grade aluminium stopboard segments provide manual control of the fishway entry and exit points.

Due to the highly corrosive saline environment, the LayFlat weir gates, Fishway SideWinder, embedded frames and in-stream cabling were all fabricated from super duplex stainless steel.

Originally constructed in 1926, the latest refurbishments to the 52m long Kent Street Weir ensures it remains safe for operators and the general public, as well as maintaining water quality for freshwater ecosystems upstream.

AMAROO MAIN SEWER PROJECT



AWMA were engaged by the John Holland Group to supply a purpose-built isolation bulkhead for Yarra Valley Water's Amaroo Main Sewer Project.

The Amaroo main sewer is a gravity sewer pipe, with an internal diameter of 1.6m, constructed up to 20 meters below ground level.

To provide isolation of the main sewer, AWMA custom engineered a round bottom, wedge-style bulkhead gate with an integrated equalisation valve to allow operation under flow conditions.

Manufactured from grade 316L stainless steel materials and utilising accredited continuous welding techniques, ensures the gate can withstand corrosive environments with minimal maintenance required.

To install the bulkhead, operators use an appropriate lifting device to lower the gate into position along a rebate channel, forming a wedge tight seal. When not in use the bulkhead is completely removed from the environment and securely stored.

AWMA's isolation bulkhead gate measures 2m high x 1.8m wide and was successfully tested to 20m off seating head pressure.



RECENT PROJECT GALLERY

INNOVATIVE - CUSTOMISED - SUSTAINABLE



AWMA Concealed Flood Barrier
Stage 1 - Construct



AWMA Concealed Flood Barrier
Stage 2 - Commission



AWMA Concealed Flood Barrier
Stage 3 - Conceal



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



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