

About CST Wastewater Solutions

CST Wastewater Solutions is a supplier of innovative wastewater treatment solutions throughout Australia and New Zealand, with projects also completed in Europe, Asia, Africa and America. The company is a member of the Global Water and Energy Alliance, a group of select companies around the world committed to providing solutions in waste and wastewater treatment for the recovery of green energy and water. CST Wastewater Solutions is also a member of the Australian Water Association (AWA), which promotes the responsible management of water and its related resources.

The company's robust network of partners includes Smith & Loveless, one of the world's most respected water and wastewater pumping and treatment organisations.

CST Wastewater Solutions' broad range of proprietary wastewater treatment equipment – which is manufactured to ISO9001 and EEC standards of safety and design – includes:

Water and wastewater screening; Grit removal and dewatering; Septic receiptal stations; Dissolved air flotation; Sedimentation systems and clarifiers; Shaftless conveyors; Sludge dewatering; silo systems; Continuous sand filters; Microfilters and screens; UV disinfection; Anaerobic treatment.

The company also provides expert assistance with equipment and system selection, design, installation and maintenance, as well as operation of wastewater treatment systems and delivery of complete packaged plants.

CST Wastewater Technology packages

New engineer-and-build water and wastewater treatment and recycling packages from CST Wastewater Solutions are aimed at industries and municipalities that want to lower the cost and complexity of such projects. The design, supply and install packages – incorporating global and locally manufactured technologies proven in use by some of Australia and New Zealand's leading companies and councils – are aimed particularly at:

- Councils seeking engineering assistance to develop clear choices and optimum solutions incorporating advanced low-maintenance technologies providing high levels of water purity while reducing maintenance, waste handling and OH&S issues associated with running them.

- Industries seeking readily constructed or portable, low maintenance solutions for operations particularly in remote, ecologically or environmentally sensitive areas – ranging from resources or agribusiness developments in the country or outback, through to food, beverage, manufacturing and processing plants sharing precious water resources with urban areas.

Rather than presenting such organisations with a jigsaw of disparate collections of technologies and engineering services options for them to piece together, the packaged solutions focus on clear, properly engineered solutions that deliver what they promise. CST offers turnkey solutions based on a known raw water quality and guaranteeing water quality outcomes thus giving user engineers significant confidence in the outcomes and limiting their exposure and potential concerns, says Mr Bambridge.

Director Mr Michael Bambridge. "The Northern Rivers District of NSW is one of the most flood-prone areas outside of the tropics, where events like this are likely to occur and reoccur, so the investment in new technologies has already paid off."

The retrofit project – of a type that is applicable to councils and industrial uses throughout Australia and New Zealand – replaces the previous coarse raked screen design with current fine screening technology. This captures more solids to reduce potential blockages in tanks and downstream equipment, while reducing odours by sealing the inlet works and by the installation of new odour control units.

The project's high-efficiency fine screening SFC technology (Screen Press for Channel Installation) is engineered to deliver low-maintenance performance with reduced WHS hazards for municipal and industrial waste water operators.

The SFC allows for a much finer level of screening – 5mm compared with typical old systems at 60mm or more – which has led to a significant reduction in solids in the tanks, while producing more efficient treatment with less maintenance.

The retrofit also involved the installation of an SDS 20 compactor with two inlets – one for each screen – to dewater screenings to 25-30% dry solids. Each screen has an enhanced design capacity of 250L/s flow, providing a total capacity of 500L/s.

Technology transplant

The original inlet works at Casino STP were designed with a coarse manual raked bar screen system. The functional components of the treatment process downstream of the bar screen receive a high amount of debris, which formerly impacted the efficiency of the treatment process. The original inlet area also received a high amount of odorous gases, which previously contributed significantly to odours emanating from the treatment plant.

In addition to minimising these issues, the upgrade project involved fitting new technology into an existing

layout, including tailoring the screens to fit into the existing formed channel.

The SFC technology involved in the retrofit – designed to lower investment, operational and maintenance costs in screening of municipal and industrial waste water with compacting of extracted solids – has also cut the amount of maintenance and waste that has to be handled by plant operators, reducing operational health hazards and improving OHS performance.

The same benefits are widely applicable to other industry and municipal applications, said Mr Bambridge.

The technology is also suitable for applications such as food and beverage, manufacturing and processing, mining, energy and resources camps where its low maintenance and high hygiene qualities are appreciated, agribusiness, and remote installations where low maintenance and high efficiency are priorities for users who do not need to have specialist staff constantly available.

"Not only are the tanks clearer and more efficient now, but the screen extractor also operates on level control and is fully automated, eliminating the previous labour-intensive operator handling of screenings," he said.

The robust and proven extractor is constructed from AISI 304 or 316 stainless steel without the need for hanger, intermediate or bottom bearings. Featuring a space-efficient design suited to small sewage plants, the standard unit can handle up to 1000m³ an hour with custom engineering also available for particular installations. A vertical version is also available to easily retrofit into existing pump stations with depths up to 8m, the screen allows removal of material before pumping, says Mr Bambridge.

The versatile SFC Screen Extractor can be installed in a channel or supplied with self-supporting tank, complete with inlet and outlet flange and optional bypass screen. [WWA](#)

**Based on Australian Drinking Water Guidelines Version 2.0 (Updated December 2013)*

About the Author



CST Wastewater Solutions Managing Director **Michael Bambridge** has been a leader in wastewater and green energy solutions for decades.

His company, established over 30 years ago, focuses on providing custom-tailored and cost-effective solutions to complex water and wastewater issues.

Mr Bambridge's strong client focus, experience and flexibility has ensured that CST remains one of the most respected names in wastewater management throughout Australia and globally. He

believes that there is no 'one size fits all' solution, and that each project should be carefully considered individually to find the right engineering solution.