greener waste technology

Innovative by nature

WELCOME

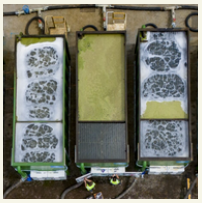
TO A NEW WAY OF OPTIMISING SEWAGE WORKS

Moveable and Modular processes are changing the game for AMP 8- join us for the mobile treatment movement.

RORO™ RB

RORO™ AM

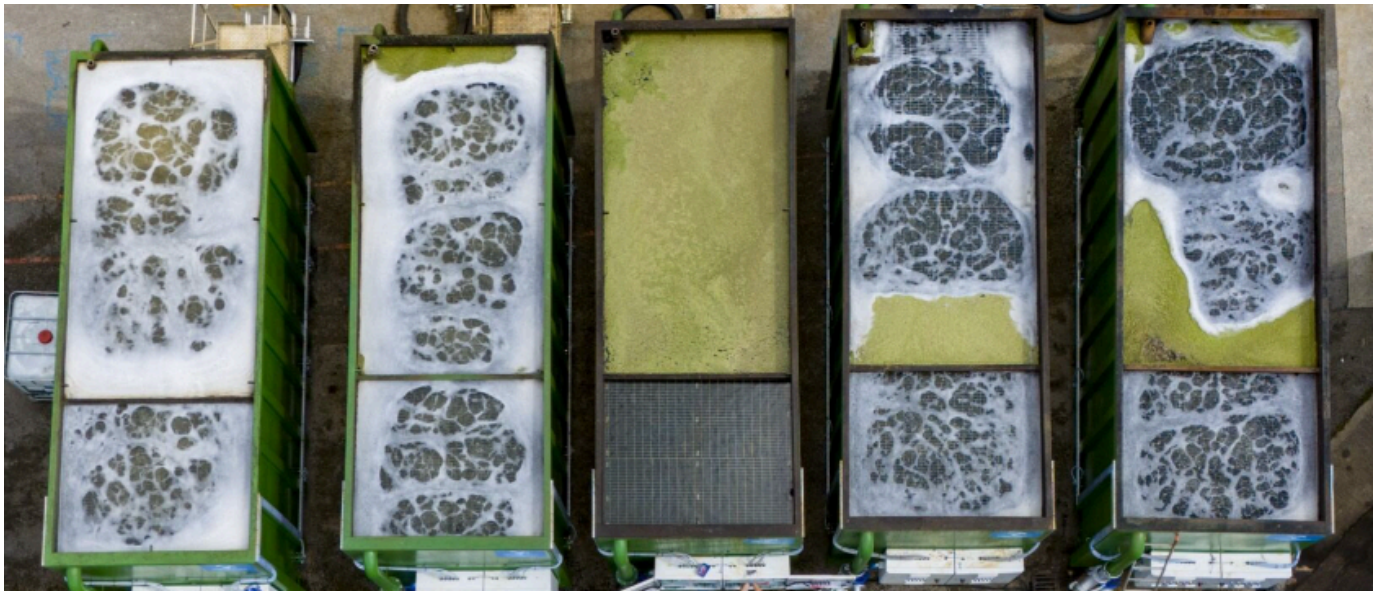
Contents



The story behind the

RORO™ AM

And the roll on roll off water treatment process range



The newest range of RORO (roll on roll off) and modular solutions offered by the team at Adaptive Control and Greener Waste Technology improves the ability to react quickly to spills and provides a raft of moveable processes that can be distributed around the catchment with ease. The RORO and Modular Reed Beds have a combination of mechanical and natural functions which makes operator involvement easier and the process more relatable.

Included in the range are RORO AM (roll on roll off aerated media system), RORO RB (roll on roll off reed bed) and RORO ST and FT (roll on roll off storm tank and filter tank). As well as this core range GWT and Adaptive Control can offer all of the necessary components to create a fully modular works from primary settlement right through to final settlement.

The RORO AM (roll on roll off aerated media unit) is a type of agile SAF that can be formatted to suit the purpose of the site it will be moved to. The units have three separate compartments that can be used with aerated media or as settlement and has a range of small blowers that can be utilized in different ways to ensure best practice.

The RORO AM can be moved via hook lift lorry full of media, many sites have a set of RORO AM units taking a side stream to seed them so that they can be moved from the nursery site straight to wherever they are needed.

The beauty of being able to move a SAF already seeded is that utilities can be much more reactive to emergency situations, treatment issues, breakdowns and storm events. It takes reaction times from months to days or even hours and improves the service to customers as a result.

RORO™ RB

Roll on roll off reed bed

Like the RORO AM, the RORO RB (roll on roll off reed bed) is moved via hook lift lorry and is easy to retro-fit on any site given its small footprint (2mx7m). The reed beds come with media already installed and a sludge capture chamber to aid settlement. Aeration options are available to improve the treatment capabilities of the system and they are easy to bank up to tackle various flow rates.

RORO RBs can be used as works enablement units, assisting with tertiary treatment if traditional beds need to be taken offline for refurbishment. They can also be used as long term solutions to small scale storm issues on sites where access and land availability are limited. The units can be fully aerated to improve treatment capabilities and they are easy to maintain having a sludge capture zone to minimize the impact of solids on the reed portion.

RORO FT and ST are mobile filtration and storm tanks which act to remove gross solids from initial surges in storm flow and to retain grey water prior to treatment.

Roll on roll off technology is revolutionising the way we view the future of wastewater treatment upgrades. Given processes can be swapped in and out and added to over time it may be more cost effective to avoid concrete construction of full works altogether.

MRB™ 30

MODULAR REED BED SYSTEM

The Modular Reed Beds are a step change in reed bed solutions. A permanent installation that is a unique alternative to traditional reed beds or mechanical processes. The MRBs are a more permanent solution than the RORO RB and can be fully aerated for differing effluent strengths. At 3mx10m the standard MRB will treat up to 2l/s and hydraulically take up to 7l/s under storm conditions.

Each MRB has a flow balancing zone at the front end and a void zone for the settlement and collection of solids. Having a solids settlement chamber which is integral to the bed means this single process provides settlement as well as biological treatment. Up to 70% of the solids can be removed from the front end of the bed prior to the reed planted portion. This makes the maintenance of the Modular Reed Beds much easier over the whole life of the bed and allows for a reduced footprint of over 50% compared to a traditional system.

All Modular Reed Beds have exposed inlets and outlets to allow for easy access and to ensure cleaning and maintenance is simple. Sludge collection is done at the operators discretion but we can add automated sludge extraction pipework and Bauer connectors for tankers to couple up to.

They can be used as tertiary solids removal, secondary treatment for septic tanks and storm treatment. The modular set up allows for some flexibility in the design so based on the use we can adjust the integrated elements to suit the site.

OUR VISION

Innovation with a Purpose

GREENER WASTE TECHNOLOGY AIMS TO INNOVATE FOR THE BENEFIT OF THE ENVIRONMENT

As a close knit family team the importance of recognising our impact on the environment is a key driving factor in all of our decision making.

Having young families ourselves, and seeing the dramatic effects of climate change first hand in our industry, motivates us to focus on the types of changes we can make rather than the types of products we can produce.

We only develop a process or product if it adds value to our customers or to the environment, and we're very passionate about that.

Our goal is to change the ethos of wastewater treatment so that more thought is put into preservation and optimisation.

The water industry is responsible for the release of over 5 million tons of carbon each year, which has a big impact on our national expenditure. We have a responsibility to look at not just saving carbon, but working in new ways that can help to capture or offset carbon to ensure we can have a truly positive impact on our environment.

The moveable processes we have developed could reduce the reliance on fixed concrete structures and civil intervention. The move away from full works replacement when assets are at end of life opens up opportunities for more transient, recyclable processes that can be added to or developed over time.

MRBS

The site at Wetton STW was treating up to 5l/s and needed to increase treatment to 40l/s under storm conditions. It wasn't possible to expand the site given limitations to available footprint and cost- however we came up with a combined RORO and modular solution which uitilised a single 90m3 RORO FT (roll on roll off filter tank) and three Modular Reed Beds. The new processes complimented an existing storm reed bed but increased capacity enough to allow the site to start treating all flows.

The RORO FT takes 40l/s and removes gross solids prior to the reed beds, the flow is then split between the Modular and existing reed beds. The site maintained compliance throughout storm Babet and has continued to meet consent ever since. The Modular Reed Beds remove from 30-80% of load depending on incoming strength and volume.

RORO FT

Provision of the RORO FT and Modular Reed Beds meant that long term options such as a new concrete collection tank at a cost of roughly £2m could be avoided saving over £1.6m overall on this project.

Benefits include:

- Being able to add additional units to the modular solution if circumstances change in the next few years
- Reduction in costs
- H&S reductions of up to 80% given all of the solutions are pre-fabricated or fully fabricated off site.
- No disruption to the existing process during installation and the Modular Reed Beds have duty standby given they are banked up and can be individually isolated if issues occur.

RORO FT and Modular Reed Bed

CASE STUDY

DATA

MRB				
Date	SS inlet	SS outlet		Removal rate
04/12/2024	324	176		46%
07/12/2024	226	68		70%
22/01/2024	252	57		77%
10/03/2024	59	13		78%
09/07/2024	42	25		40%
Ave	180.6	67.8		
	On average 60% removal rate			

SOLIDS REDUCTION

The MRBs and RORO RBs can remove up to 80% SS depending on incoming flows and load. The range of removal depends on a number of factors but sludge chambers need to be monitored to make sure solids are not building up in the bed.

SOLIDS RELATED BOD REDUCTION

The Modular Reed Bed starts life as a gravel filter and BOD will be removed as part of solids removal, however the reeds need to establish before much soluble BOD will be removed as part of the process. Information is given on how to care for reeds and we offer maintenance packages.

AERATION FOR IMPROVED TREATMENT

If soluble BOD removal and ammonia is key on your site we do offer full bed aeration to improve the treatment capabilities of the system. Both the MRB and RORO RB can be aerated and this will improve performance by up to 50%

CONSENT RISK REDUCTION

Having Modular Reed Beds banked up is a great way to ensure there is a duty standby solution on site if full bed cleaning is needed. Traditional beds need to be taken offline in their entirety to replace or remediate them- MRBs give you the option to safeguard your consent, even when remediating your units.

RICHARD ARMITAGE

Managing Director- 07714275943

Richard is the owner of Adaptive Control Solutions Ltd the parent company of the Greener Waste Technology brand. They have over 30 years experience in programming and control solutions and a team of engineers who support the innovation at GWT.

LUCY REAH

Business Development- 07968777539

Lucy is the Business Development Manger for GWT and is dedicated to helping our customers to incorporate unique alternatives into their upgrades and operations. With a focus on green solutions Lucy is driven by a desire to create a better future for her daughter who is five years old and loves being outdoors.

STUART CHRISTIAN

Innovation Manager- 07917640293

Stuart has had an eclectic 30+ year career in wastewater and has seen many innovations develop and mature into every day processes. With a background helping entrepreneurs develop ideas into products ready for market Stuart oversees all the innovative developments in the company and monitors any trials being completed.

OUR TEAM - CONTACT US

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greener waste technology

Innovative by nature

adaptive control
inspired solutions

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