

HYDROFLUX

WATER | SCIENCE | TECHNOLOGY

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NEWS FOR CUSTOMERS AND FRIENDS OF THE HYDROFLUX GROUP

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Hydroflux to Deliver Thermal Drying Technology to The Sludge Minimisation Facility of Wellington City

FEATURED STORY

BY JOHN KOUMOUKELIS

Hydroflux has been awarded the Thermal Dryer Package for the new Sludge Minimisation Facility of Wellington City. Recently the McConnell Dowell-HEB Joint Venture was awarded a contract to construct the new facility.

The new Sludge Minimisation Facility will reduce sludge volumes by up to 80% which will significantly reduce carbon emissions compared to the current disposal to landfill and also allow the sludge to be used in sustainable ways such as soil conditioner and fuel for industrial heat. The process will include advanced thermal hydrolysis, anaerobic digestion, dewatering and thermal drying.

Hydroflux Epco NZ were awarded the design and delivery



of the thermal dryer, which will dry all the digested sludge post dewatering. A HUBER BT12 Belt Dryer was selected for the process.

“We are pleased to be involved in this groundbreaking project

which will result in significant environmental benefits, such as reduced waste and carbon emissions. The benefits include reduced biosolids disposal costs, greater reuse opportunities of the final dried product, exploitation of waste gas, and the associated

sustainability outcomes” says Luis Bastos, CEO of Hydroflux Epco New Zealand.

HUBER SE are global leaders in the design and supply of solids liquid separation technology and thermal dryers. Hydroflux

are the exclusive agent for HUBER throughout Australia and New Zealand. Currently HUBER are supplying numerous belt dryers to projects in Europe, Middle East and USA.

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Providing Clean Drinking Water to Ugandan Villages

BY ADELE MANSELL

Hydroflux recently had the pleasure of hosting Love Mercy, led by their Founding Director Eloise Wellings, a dual Olympian and elite marathon runner, to discuss the profound impact of Hydroflux’s contributions to the ‘Well Worth It’ program—an initiative dedicated to providing safe, clean drinking water to communities in Northern Uganda through borehole drilling and repair.

Hydroflux’s collaboration with Love Mercy has resulted in the construction of 30 wells across

10 sub-counties, benefiting over 6,750 households with access to clean water.

Akuta Village, Anyalima Parish, Ogor Sub County

Drilled in January 2023, Akuta Village well provides clean water to 230 households, or approximately 1,380 people. Previously women and their children in the village would walk 2km each way to their nearest water source, which was a swamp. The village reported large amounts of waterborne disease including GBV. This meant that simply by accessing

their only available water source, women were unable to complete everyday home activities, work to earn income, and their children spent time out of school. Upon drilling and installation of the Akuta Village well, the community reported a strong willingness to learn how to care for and maintain the well so that their clean water source and the positive impacts on their wellbeing as a community is sustainable.

Hydroflux established a partnership with Love Mercy in 2021 to address the urgent need for safe, clean water

in rural Northern Uganda. Today, our commitment to making a positive change on these communities remains

strong, and we take pride in witnessing the significant impact these wells are having on the local communities.



FROM THE CEO



It has been a busy year for our all our teams and yet again, we have been awarded several new projects that are firsts for our market.

Our industrial division are designing and building ANZ's first EGSB system, a high rate anaerobic solution for a highly loaded wastewater stream. The project will include biogas production that can be reused in the future, and our HyPURE® RO will reduce the site's reliance on potable water.

In the municipal space, we were awarded our second thermal dryer package to process sludge from a sewage treatment plant. The output of the dryer will be further processed to generate biochar, a valuable carbon rich product that can be beneficially reused in agricultural and manufacturing processes.

Our ability to respond to emergency support for our customers has broadened with our ever-expanding range of rental equipment. Coupled with onsite operational support, chemicals and remote monitoring, we are assisting numerous customers in bridging short term needs relating to water treatment.

And we all came together in September to celebrate our journey and to discuss how we can increase our impact within the water sector for the future. We reviewed the customer and technology landscape, what the future will hold for the Water Sector in the ANZ-Pacific region, and how we are well positioned to address issues relating to water security, renewable energy and circular economy.

I hope you find this edition useful.

John Koumoukelis, CEO

Advanced Water Recycling Solutions for Mines

BY JIMMY ZHANG

For over a decade, Hydroflux has been at the forefront of designing, supplying, and supporting water and wastewater treatment plants across Australia, New Zealand, and the Pacific.

Our treatment plants are custom designed to meet the specific process and discharge requirements of each project and compliance with environmental standards.

During this period, we have observed a significant rise in the demand for treatment plants capable of producing treated water for reuse, which would otherwise be wasted or discharged to downstream waste or the environment. This trend is particularly pronounced in the mining and infrastructure sectors, where companies

are increasingly focused on minimising water consumption and maximising water reuse within their operations.

Hydroflux offers dedicated recycling plants as well as upgrades to existing systems, tailored to meet specific reuse requirements. These systems often incorporate a combination of key processes, including:

Balancing: Providing System buffering and uniformity of feed characteristics.

Clarification: Clarifiers or dissolved air flotation (DAF) systems for solids/liquid separation.

Filtration: Utilising multimedia and activated carbon filtration systems to remove residual solids, heavy metals, organics and hydrocarbons.

Ion Exchange: Implementing targeted treatment and further polishing such as softening, nitrate removal, and heavy metal reduction.

Membrane Filtration: This includes ultrafiltration, nanofiltration, and reverse osmosis technologies and turnkey systems.

Disinfection: Using chemical or UV disinfection systems to ensure microbial safety.

For many infrastructure and mining projects, a combination of HyPURE® multimedia filtration, HySEP® clarification, and chemical disinfection is typically sufficient to produce water suitable for dust suppression and equipment washdown.

Further treatment with HyPURE® activated carbon and HyX™ ion exchange softening

is commonly employed to generate higher-quality water for processes that require a clean, raw water supply, such as gland water, chemical batching systems, safety showers, and fire systems.

For high grade process water reuse, further polishing with membrane systems such as HyPURE® NX direct nanofiltration, or HyPURE® Reverse Osmosis can also be employed. A multi-barrier approach is utilised to ensure water remains compliant at all times despite upsets in upstream raw water quality, which can happen from time to time as part of routine mine operations.

Hydroflux's extensive experience with water reuse systems, has enabled us to develop a wide range of solutions across various industries, including modular, temporary, and permanent installations.



HYDROFLUX TO DELIVER THERMAL DRYING TECHNOLOGY TO SLUDGE MINIMISATION FACILITY OF WELLINGTON CITY - Continued

“Biosolids management is a key topic around the world. Some nations have moved towards centralized digestion with hydrolysis pre-treatment to exploit higher gas yields and green energy. Others have mandated fertilizer recovery from sewage biosolids using thermal treatment.

Regardless of which path is taken, exploiting the hidden

energy potential of biosolids is common. HUBER are currently delivering some of the largest drying projects in the world, in countries such as Germany,

Netherlands, Belgium, USA and now New Zealand.

Biosolids resilience is a key topic amongst many of our customers

in New Zealand and Australia, so it's great to see such an innovative project come to life” says John Koumoukelis, CEO of Hydroflux.



AEROSTRIP® Diffusers at Melbourne Water's WTP



BY LUIS BASTOS

The Western Treatment Plant in Melbourne is being upgraded and will operate at the highest level of energy efficiency after completion. Significant energy and CO2 savings will be achieved by installing the AEROSTRIP® Diffuser technology from Hydroflux Epco together with AQUACONSULT.

One of the most exciting wastewater treatment plant modernisation projects in the world is currently being implemented at the Western Treatment Plant near Melbourne. The Western Treatment Plant, which treats approximately half of Melbourne's sewage, has been

treating the wastewater using a combination of large-scale lagoon system and activated sludge plants. This method is increasingly reaching its limits and ability to meet the discharge quality limits to Port Philip Bay.

Over the years, the Western Treatment Plant in Werribee has been upgraded in stages to conventional wastewater treatment with aeration tanks and the treatment capacity increased. As part of its third stage upgrade, a new 5W Nutrient Removal Plant (NRP) will be constructed by BMD to increase the Western Treatment Plant's treatment capacity, improve discharge quality and operate in

compliance with maximum energy efficiency criteria.

Strip diffuser technology from AQUACONSULT Anlagenbau in Lower Austria plays a key role in the new overall concept. Diffusers supply the microorganisms in the aeration tanks of the wastewater treatment plant with vital oxygen: "Our AEROSTRIP® have been proven to save up to 40% energy compared to conventional aeration systems," emphasises Gerald Glaninger, Managing Director of AQUACONSULT.

Over 7,000 AEROSTRIP® Diffusers in operation at WTP

As part of Melbourne Water's Western Treatment Plant 2nd

stage upgrade in 2017, over 2,000 AEROSTRIP® Diffusers were installed in four newly constructed aeration tanks.

A further 5,200 AEROSTRIP® diffusers have now been delivered for the next stage of the upgrade and most extensive phase of the modernisation project which will be installed and commissioned in Werribee by the end of 2024. The arrangement of the diffusers in five huge circular aeration basins is another special feature: "Due to the conditions on site, an optimum arrangement with different diffuser lengths was calculated, which become shorter and shorter towards the centre of the circle," explains

Glaninger. This "Christmas tree arrangement" enables seamless and uniform aeration of the wastewater volumes and further increases energy efficiency.

The Western Treatment Plant upgrade will eventually treat over 485 million litres of wastewater per day – almost half of Melbourne's wastewater. The new 5W NRP Plant will treat approximately 150 million litres of that wastewater per day. "We are very proud to be able to make a significant technological contribution to the success of this unique and internationally acclaimed wastewater treatment plant project with our solution," emphasises Luis Bastos, CEO of Hydroflux Epco.

Your Trusted Partner for Water Treatment Equipment Rental

BY ANDREW MILEY

If you are looking to rent water treatment equipment, it makes sense to rent from a water treatment company. Here's why:

Expertise and Knowledge: Water treatment businesses have specialised expertise and knowledge in water treatment processes, equipment, and regulations. They can provide valuable insights into selecting the right equipment for specific needs, ensuring optimal performance and compliance

with the necessary standards.

Customised Solutions: These businesses can offer customised solutions tailored to the unique requirements of each application. By assessing the water quality and specific needs of the client, they can "tweak" standard equipment and processes when necessary to achieve desired outcomes effectively.

Maintenance and Support: Renting from water treatment companies often includes maintenance and

support services. They offer troubleshooting assistance, regular checks, and technical support, ensuring smooth operation throughout the rental period.

Quality Equipment: Water treatment businesses typically offer high-quality equipment that meets ensuring reliability, durability, and performance, reducing the risk of equipment malfunction or failure and offering peace of mind to renters.

Partnering with Hydroflux



for equipment rental offers numerous benefits, including expertise, customised solutions, quality equipment, maintenance

and support, cost-effectiveness, compliance assurance, and flexibility.

Supporting Partnerships in PNG From Coffee Growing to Sewage Treatment



BY PAUL COBBIN

At the core of sustainable development is an often-unsung hero right at the end of the list: **UNSDG 17 Partnerships For The Goals.**

Partnerships for the goals are about fostering relationships

that enhance cooperation, build capacity, promote investment, and facilitate the use of appropriate environmentally sound technologies.

A series of recent Hydroflux workshops in Papua New Guinea was a clear illustration of our long-term commitment to

achieve sustainable outcomes for our customers and local communities. This visit is the latest in a long-standing heritage of projects and discussions spanning decades of activity in Papua New Guinea and across the Pacific.

In the first instance, Sorrell

Handforth, one of our sustainability leads was hosting a forum with LEAN Consulting COO Robyn Robinson that brought together a number of leading coffee sector stakeholders, research institutes and government departments to guide the development of PNG's Climate-Smart Coffee Policy Framework. An important part of this workshop involved defining interventions to tackle existing challenges and establishing institutional arrangements and responsibilities for relevant stakeholders to collaborate in effectively implementing policy measures.

Tapping into SDG 6 and the water sector, James Thomas, a process engineer, two members from our in-country service partners, Fimali Ltd, and Paul Cobbin CEO of Hydroflux Pacific, met with clients to deliver lunch and learn sessions to a number of water sector clients in the nation's capital of Port Moresby.

For the water sector meetings, it was a series of dynamic discussions that focused around addressing the concerns and needs of client's asset networks. The visits involved site inspections such as the Joyce Bay Wastewater Treatment

Plant inspecting the site's Inlet Works that includes HUBER Screening and Grit Removal technology, followed by presentations on how Hydroflux can provide technology and solutions that address plant reliability, renewable energy and water reuse.

In the words of Hydroflux Pacific CEO Paul Cobbin, "the water sector sessions were about working with their design teams and presenting solutions to real current problems and needs. Infrastructure meetings are about collaboration between organisations and asking the question, 'what are your top five issues?' then offering solutions based on the appropriate technologies to solve the problem."

Whether the case is addressing SDG 8 related action through work and economic growth in agricultural or facilitating SDG 9 innovation and infrastructure development by providing technology solutions, the objective should always be true sustainability. True sustainability can only be forged through long term commitment such as the recent Papua New Guinea in-country collaboration.

Project Wins & Announcements

\$570k

Annual savings on chemicals for F&B plant in QLD after engaging Hydroflux Utilities.

74%

Reduction in carbon for F&B plant in QLD after engaging Hydroflux Utilities.

12.8

Kilograms of coffee cups and lids diverted from landfill through the Sutherland office waste management improvement plan in 2024.

\$8815

Fundraised for Cancer Council by the Hydroflux Hotfoots for 2024.

24

Hydroflux Hotfoots, plus family and friends participated in the Sutherland Shire Relay for Life.

6750

Households across 10 sub-counties in Northern Uganda now with access to clean drinking water.

1380

People in Akuta Village (Anyalime Parish, Ogor Sub County, Uganda) able to permanently access safe drinking water.

18

New staff added to the Hydroflux family in the last financial year.

586

Total (combined) kilometers walked and ran by the relayers who participated in the Sutherland Shire Relay for Life.

20

Inlet Works Packages delivered to sewage treatment plants all over New Zealand in the last 18 months.

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The Hydroflux Group aims to deliver the highest level of engineering and scientific know-how to the emerging issues of sustainability, climate adaptation and environmental protection with a specific focus on water and wastewater.

As part of its vision and mission, Hydroflux has always taken its climate responsibility seriously. In 2022, Hydroflux became Australia's first water treatment and technology company to achieve Climate Active carbon neutral certification for its organisation and products. It knows that partnering with customers and clients is the most significant impact it can have in its journey.

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