



# SUSTAINABILITY TODAY

Issue 413 June

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energy | water | waste | recycling | sustainability

## Sime's integrated heat pump and boiler brings Revolution to renewables sector!

The Murelle Revolution 30 is the first completely integrated boiler and heat pump in a single cased product. Using an ErP A++ 30 kW Murelle boiler and completely sealed 4kW output heat pump, the Murelle Revolution 30 is a single compact unit that can be installed by any registered Gas Safe installer in a single installation process, without requiring an additional F-gas-registered installer to be present.



The unique Murelle Revolution 30 should be installed inside and hung on the wall like a conventional boiler. The Revolution provides heat and hot water, achieving an average seasonal heating performance of 134%, granting A++ energy efficiency, according to the ErP Ecodesign Regulation.

The boiler and heat pump work in tandem, with the heat pump operating first, as this makes the largest contribution to the Murelle Revolution's energy efficiency. When the external temperature is higher than its minimum set value (default -7°C) the heat pump and the boiler will be activated in quick succession.

When the set point is reached, the boiler

will start to adjust power until the heat requirement is attained and then both of the generators will be extinguished. If the external temperature is higher than 7°C (value can be reset), only the heat pump will be activated. The boiler will be activated only when the desired temperature is not achieved by the heat pump on its own.

Contact  
T +44 (0)345 901 1114  
enquiries@sime.co.uk  
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## Air Monitors

Based in the UK, Air Monitors is an independent, privately owned company representing some of the world's leading environmental monitoring technology manufacturers. Providing monitoring solutions which encompass the very best products, technology and services, Air Monitors offers technical support, maintenance, calibration, operation, analysis and reporting services in addition to the sale or hire of monitoring equipment. Typical applications include the monitoring of particulate matter and gaseous pollutants in both workplace and ambient air.



monitoring, fence line monitoring, environmental monitoring and ambient air quality monitoring.

We are currently involved in the 'Breathe London' project, which will use a range of cutting-edge fixed and mobile sensors to build up a real-time, hyperlocal image of London's air quality. We have designed and installed the network of AQMesh air quality monitoring pods, as well as the air quality analysers that were specially adapted to operate inside 2 Google Street View cars. We will also be responsible for the ongoing service and maintenance of all of the project's air quality monitoring equipment.

T 01684 857530  
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With decades of experience and high levels of expertise, including a UK-wide network of highly trained and equipped service engineers, Air Monitors is able to select the best instruments from leading global manufacturers.

The company's products include gas, particulate and meteorological monitoring instruments for personal, portable and fixed installations in applications such as occupational safety, toxic gas detection, leak detection, process

## Pulsar provides a perfect open channel measurement for a Malaysian master plan

The large-scale River of Life project based on Kuala Lumpur, Malaysia, has as part of its objectives



to reduce the number of small treatment plants, concentrating wastewater treatment in a smaller number of modern, high quality operations. Pulsar Process Measurement has supplied, via its Malaysian distributor HSA a FlowCERT system for open channel flow measurement to Ekovest KL Bund Sdn Bhd (EKLB), main contractors for the Bonus Sewage Treatment Plant (STP), which is being expanded from its current 750,000PE (population equivalent) capacity to as much as 3,000,000PE, without requiring additional land.

It would have been prohibitively expensive to have installed a Parshall flume for the expanded capacity of the treatment works, so HSA proposed a Pulsar measurement system to operate effectively within a concrete inlet pipe was required. For open channels without a primary measurement device (PMD), Pulsar Process Measurement's FlowCERT system makes a velocity x area calculation of flow rate by combining measurements made by a pair of non-contacting sensors - Pulsar's MicroFlow RADAR velocity sensor and dBMACH3 ultrasonic level.

MicroFlow uses RADAR a spread spectrum analysis technique to measure flow velocity across the width of the flow, while the dBMACH3 uses the familiar time-of-flight ultrasonic principle, its high frequency 125kHz operation contributing to a high accuracy measurement. Both MicroFlow and dBMACH3 perform initial signal processing within the transducer, before the measurements are integrated within the FlowCERT controller to calculate the flow rate, which can then be communicated to the Bonus STP control system. FlowCERT is pre-configured with the equations necessary to calculate the flow rate as the level and velocity changes within a round section pipe and is also pre-loaded with the necessary equations for other channel shapes.

The Pulsar equipment is compact and easily installed and configured, and Pulsar supported the installation from its Sales Office in Kuala Lumpur.

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## Virtual reality first creates new world of training possibilities

Wastewater engineers working for Lanes Group plc have become the first employees in the world to experience team training using virtual reality in a 360-degree video theatre.

The company's staff can now use virtual reality (VR) to train together in an immersive digital world where they can test their skills in a safe yet challenging environment.

It is believed to be the first time in the world where VR has been combined with a 360-degree video theatre to allow groups of people to train together in an interactive space without having to wear headsets.

Lanes Group Director, Andy Brierley, said, "This is a game changer in the way we can train our colleagues, including wastewater



engineers who often have to work in potentially-hazardous environments.

"Combining VR with 360-degree video allows us to use cutting-edge gamification techniques to train groups of people, which is both powerful and essential because of the way we work in teams.

"We are already calling the VR modules we're creating training games, reflecting their interactivity and the way they draw on digital gaming techniques to increase engagement and enhance learning."

In 2017, it invested jointly with Thames Water in the Igloo video theatre, to introduce a new, more immersive, approach to training. It was the first time an Igloo had been used for training.

VR now adds a powerful extra dimension. Lanes challenged VR agency Myriad to find a way to integrate an Oculus Rift VR headset with software controlling the Igloo's projection system.

**Contact**  
T 0800 525 488  
www.lanesfordrains.co.uk

## New contract for Bluewater Bio

Further to recent contract wins in its three strategic global locations, Bluewater Bio Limited, a leading provider of treatment solutions to the water industry, has been awarded a US \$36.5 million contract with the Ministry of Works of the Kingdom of Bahrain to further upgrade and expand the Tubli wastewater treatment plant, which is the largest in the country, serving a population equivalent of c.1.4 million. Bluewater Bio will be responsible for all aspects of engineering, acting as EPC contractor and technology supplier.

Contract duration will be 22 months. Following completion Bluewater Bio will operate and maintain this new plant alongside another HYBACS plant installed 5 years earlier. This new project marks the company's second contract with the Ministry of Works at Tubli Bay which will deliver a further 120 MLD uplift in treatment capacity, bringing the total treated to 230 MLD. The project is being funded by UK Export & Finance ('UKEF').

This follows the earlier installation of the company's HYBACS technology, which has exceeded the Ministry of Works' expectations for quality, reliability and performance.

Now that Bluewater Bio's technologies are referenced and other installations are under way in Saudi Arabia, it is the ambition of the company to continue its growth



strategy and thus use Bahrain as an important base and hub for the region.

HYBACS augments the widely-implemented activated sludge process, with the core benefit being that it enables an existing activated sludge plant to be rapidly upgraded for increased capacity and performance, by simple offline installation of SMART Units.

**Contact: Curtis Calliva**  
T +44 (0)20 7908 9500  
curtis.calliva@bluewaterbio.com  
www.bluewaterbio.com

# Alternative Energy & Power News

## Gen-C helps AD operators take back control of their engines

Gas engine support expert Gen-C has assisted AD operator Green Circle Renewables to address engine downtime at their 1 MW on-farm anaerobic digestion (AD) plant in Northern Ireland. By upgrading their engines and providing open access to the engines' control panels, Gen-C has resolved a longstanding frustration for Green Circle's Jason Rolston, who for eight years has lost valuable heat, power and revenue while waiting more than 24 hours each time for qualified service engineers to restart regularly failing engines.



The engine control panel was inaccessible, resulting in considerable downtime each time an engine stalled

Jason relies on the heat and power produced by the on-site AD plant to run his farm and feed mill, converting biogas generated through the anaerobic digestion of slurry, dairy waste and energy crops. Each time his engines went down, he was forced to import electricity at a cost.

Although he had access to remote monitoring for one of the plant's three gas engines (an MWM model), for the two eight-year-old Cogenco/MAN engines, a Cogenco engineer had to be called and dispatched every time the engines went down. Unfortunately, this was becoming a regular occurrence due to the composition of the biogas.

Jason explains, "Biogas is more variable than natural gas, due to the varied feedstocks supplied to the digester. When the methane levels increase due to a slight change in feedstock, the engines can't handle it and the system shuts down. As the system had a closed control panel, I couldn't access it myself to restart it, and neither could my service provider."

Seeking an open access control panel, Gen-C came highly recommended. Initially, the company, which has plenty of AD plant experience, introduced Jason to a new Motortech control panel featuring ComAp technology. This enabled Jason to dial in remotely at any time via phone or tablet to see instantly how the engine was performing, receive an alert whenever



James Thompson, Managing Director, Gen-C

there was a fault, diagnose the fault, rectify it and even remotely restart the engine.

Gen-C's Managing Director, James Thompson, also suggested upgrading the two eight-year-old engines. Their original ignition systems and fuel mixers were designed for natural gas and were therefore not compatible with biogas applications. Gen-C provided a solution that would improve performance in the ignition, the fuel mixer, the throttle and the detonation control.

Gen-C also supplied Jason with higher quality HT leads and spark plugs. "We didn't just give Jason control over his own engine – the new components transformed an old, tired engine into a modern and efficient piece of equipment," notes James.

Because the overhauled engines are now fitted with components suitable for biogas, they cut out far less than before – Jason estimates 90% less frequently. Thanks to the open access control panels, he



The control panels are now open access, allowing the operator to restart his own engines remotely within minutes

can monitor the engines from anywhere and is instantly aware if an engine stalls.

As a result of better machine availability and reliability, increased electrical output & increased income, a return on investment was produced in just a few months.

Acknowledging the multiple benefits of upgrading both the control panel and engine, Gen C's James says, "Engine downtime is a major source of frustration for anyone operating an AD plant. But it's doubly frustrating when the operator knows he could easily restart the engine himself, if only he had the ability to access it. Two of Jason's three engines were not even accessible to the service provider that had supplied them, let alone Jason himself, so we knew that unlocking them was essential."

The new Gen-C components have made the engines easier to start, as well as resulting in lower emissions, more efficient fuel use and better engine protection, thereby extending their service life. In addition to on-site fault finding, the remote dial-in facility also makes it easier for the engines to be supported by external third parties, if necessary.

T 01709 718000  
www.gen-c.co.uk



Jason Rolston of Green Circle Renewables

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# Poor knowledge equals risk to your business

**P**oorly specified cooling technology can result in erratic climate control, increased operating expenditure, and costly disruption to IT operation. With emerging trends including 5G, IoT, automated vehicles and digitisation in the industrial sector, there will be a dramatic increase in remote edge data centres and small, localised server rooms – reliability will be crucial.

A lack of awareness of the differences between comfort cooling and precision cooling is impacting the reliability of IT infrastructure, resulting in serious consequences for businesses.

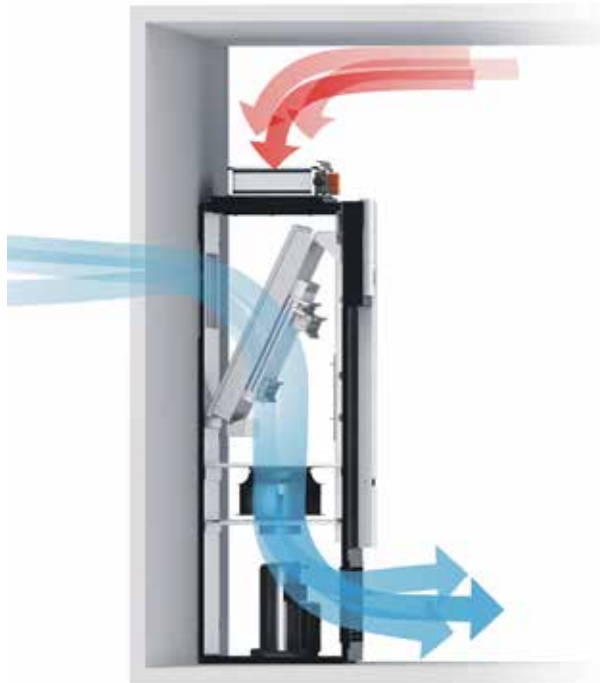
Around half of businesses currently install comfort cooling in small server rooms instead of the correct precision cooling. This is a common mistake; there is a need for education on the importance of precision cooling in delivering resilient IT operations.

Comfort cooling units are designed for cooling people in offices and retail environments. This type of cooling technology is intended to operate for short periods of time (of around five hours per day, five days per week) and its typical life expectancy is around five years. Precision cooling however, is designed for use in technical environments and the typical life span is 10-15 years.

Comfort cooling units as part of their design are designed to cater for 'latent heat.' Environments that are populated by people (as opposed to technical equipment) produce this type of heat, which contains moisture, while technical spaces (such as server rooms) radiate pure heat – referred to in the industry as 'sensible heat'.

A comfort cooling unit will have a typical 'sensible heating ratio' of 0.5-0.6, while a precision unit will have a sensible heat of ratio of 1.

Comfort cooling units, which are designed to remove the moisture produced in retail and office spaces, can use up to 50% of their



energy for dehumidification. This is an important difference – precision air conditioning units convert more than 95% of the energy used exclusively into cooling capacity. Therefore, the technology required to achieve this pays off quickly in terms of lower operating costs.

A comfort cooling unit rated at 10kW, with a sensible heat ratio of 0.5, will only deliver 5kW of sensible cooling. A precision cooling unit, with a heat ratio of 1, on the other hand, will deliver the full 10kW. This means you may need to specify two comfort cooling units to deliver the same capacity as one precision cooling unit.

Unlike comfort air conditioning units, precision units feature strictly controlled and accurate dehumidification (tolerance  $\pm 5\%$  relative humidity), as too much humidity can lead to condensation and corrosion, while too little can cause static charges, data loss and damage to hardware.

Precision cooling units with EC fan technology can also offer further savings in running costs.

It is a 'false economy' to prioritise capital outlay when specifying air-conditioning units: if you install a solution that isn't appropriate for the technical environment, you will have issues. Effectiveness must be the primary consideration, along with long-term operating costs.

Furthermore, comfort cooling systems also perform 'oil return cycles', which override the set temperature controls and can lead to intermittent falls in temperature.

While this is less of a problem in server rooms, this can present issues in environments such as laboratories, where precise temperatures are critical to the integrity of the testing process. Precision cooling units do not need this operating feature and therefore present no operational risk in this way.

Other important differences include that for comfort cooling applications, it is less important for the filter to be highly effective in removing small particles; dust circulation has no detrimental effect in a non-technical environment.

In server rooms and technical spaces, it is crucial to prevent particles being blown or sucked into technical equipment, as this can shorten the lifespan of IT assets.

Ultimately, rooms subject to high thermal loads need constant climatic conditions in order to work reliably.

Precision cooling technology is specifically designed for server rooms and technical environments where reliable thermal optimisation and high availability are crucial business imperatives.

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## From waste heat to hot water

Industrial refrigeration systems with air-cooled condensers waste energy by emitting energy to the ambient air, according to SWEPE, a supplier of compact brazed plate heat exchangers. By installing a desuperheater, much of this waste energy can be converted to hot water, with a wide range of applications, believes the company.



Brazed plate heat exchangers (BPHEs) are an integral tool that allow extra heat to be extracted from the refrigeration system. A BPHE, called a desuperheater, is inserted between the compressor and the condenser. This enables the BPHE to extract the heat from the gases or liquids before it goes into the condenser to be condensate (the liquid collected by condensation).

Installing a BPHE helps to increase efficiency levels to achieve the demanding recent EU Ecodesign Directives that cover high temperature process chillers. Evaporators can operate at a range of temperature levels to meet the required demands for a variety of refrigerants.

BPHEs offer copper brazing as standard but also stainless steel & nickel as alternative brazing materials to meet the demands for various corrosive fluids.

T 01235 838612  
David.gill@swepe.net



# Sensing a way forward with Alphasense

Established in 1997 by Paul Gotley, Great Notley based Alphasense is a leading supplier of sensors for safety, industrial and environmental markets. Alphasense designs and develops, manufactures and supplies a colourful range of sensors, including electrochemical, catalytic, metal oxide, infra-red, photo-ionisation and particulate.

Leading in the safety and environmental sectors, Alphasense offers the lowest warranty returns in the industry, as well as boasting the best after sales support and a constant dedication to the continual improvement and development of its



P-type, sensory operation can now be achieved in a diversified spectrum of environments, broadening the possibilities Metal Oxide Gas Sensors are capable of achieving. The P-type has been channelled into three variants which are as follows: H<sub>2</sub>S detection at up to 120°C for oil and gas applications, Volatile Organic Compounds (VOCs) for low cost IAQ applications and CO detection environments at extreme temperatures and or humidity. The range of environments that the P-type can function in is nothing short of a testimony to its industry brilliance.



products and services. Alphasense approaches its respective industry with a customer minded attitude, maintaining that it is the needs of the client that fuels its movement.

Alphasense is revolutionising the development and performance of Metal Oxide Gas Sensors, introducing technology that frees units from suffering from baseline drift and humidity sensitivity with its P-type sensors. With the

Another notable technology Alphasense is shaping is PID. Through PID, sample gas is exposed to deep ultraviolet light, which in turn ionises targeted gases then detected by the PID system's electronics and reported as a concentration (ppb or ppm). PID's are regarded as the global standard for VOC measurement. Alphasense's PIDs boast a lower power than competitors, with a longer lamp life and improved electronics, the Alphasense PIDs now capacitate greater BTEX and chlorinated VOC detection. The device is offered in two models; A12 and AH2. The pair is almost entirely insensitive to humidity changes and subsequently offers a near unchallengeable performance across a broad landscape of application. The A12 hosts a linear dynamic range of 50 ppb to 6,000 ppm (Isobutylene), whilst the AH2 works with a linear dynamic range of one ppb to 50 ppm (Isobutylene). The sensors come with a detector lamp with driver, amplifier circuitry and user replaceable



electrode stack, 10.6 eV lamp and particulate filter.

The company has a client base made up of all major gas detection and environmental OEMs, a fact indicative of the company's reliability and persistent attention to customer satisfaction. The company operates from a purpose designed factory, with state of the art furnishings and manufacturing facilities leading to Alphasense's manufacturing and development being equal to its flawless product delivery. Its team have a historic and well versed relationship with all aspects of the Gas Detection industry and subsequently fully understands the varied issues affecting its customers, and as a result can provide an unrivalled range of products and services. With its heavy investment in the most up to date automation process equipment, Kanban



and Cellular manufacturing techniques and independence, Alphasense can cater for both high and low volume customers securing the reception of punctual and high quality delivery, with all manufacturing and design operations complying with ISO9001:2015.

Contact  
T 01376 556700  
awb@alphasense.com



## Recycling & Waste Management News

### New 43 litre Enviropod

Leafield Environmental has launched a new range of stylish, slim Enviropods that it claims are ideal for use where available floor space is restricted.



With a small footprint and flat back that enables it to be sited against a wall, the new bin has a substantial capacity of 43 litres.

The Enviropod 43L comes with a choice of WRAP colour coded lid options to suit a wide range of waste streams, each with a relevant aperture and high visibility graphics that actually encourage recycling. An optional A4 signage kit is also available for those wishing to reinforce the recycling message.

Designed for internal use, as a stand-alone unit or in a group, the bin is suitable for use with or without a sack liner. For those wishing to use a sack liner, an internal sack retention feature ensures that the sack skirt is hidden from view at all times.

Rotationally moulded from resilient, self-coloured MDPE, Enviropods are highly durable and not to be confused with lightweight injection moulded alternatives that are easily damaged through rough handling and have a far shorter service life.

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# Clean green with EcoGreen



**S**ustainability Today is pleased to announce as its Construction Cleaning Company of the Month, EcoGreen Plant Hire Ltd.

Abolish water waste and reduce diesel emissions when cleaning wheels with EcoGreen Plant Hire. Established in 2009, the Cheshire based company offers a waterless wheel cleaning system designed to speedily and efficiently clean mud and contaminants from rubber tired construction vehicles.

British weather inevitably involves rain, which inevitably means that the wheels of vehicles operating on construction sites create mud – and steps have to be taken to prevent that mud being carried off the sites and onto the roads.

There is a variety of so-called solutions on offer, each being more often than not as ineffective and counterproductive as the next. One often preferred option is the Road Sweeper, which is often expensive, environmentally unfriendly, a traffic nuisance and can potentially achieve nothing more than smearing an existing mess across a broader landscape, as opposed to taking it off that landscape altogether.

People often opt for wheel washes, whether they're bath or spray systems, however shooting pressurised water onto muddy surfaces that are themselves resting on muddy surfaces, commonly does little more than produce an even muddier surface, as well as wasting water, and incurring the cost of extra hires such as bowzers, lances, generators and of course, fuel.

'Rumble Strips' are also available, but grow increasingly outdated and noticeably more inconvenient. The design of the 'Rumble Strip' itself often just facilitates new areas for mud to dirty the surface of, and can recontaminate following wheels until



they have buried themselves. Understandably, these problems can leave someone looking for a wheel cleaning solution to the conclusion that there simply isn't one, or could have done until recently.

EcoGreen Plant Hire have developed a system that doesn't have the failings of the aforementioned wheel cleaning solutions, and provides a more effective, ecofriendly alternative to pre-existing systems. It uses no water or power, reduces the need for road sweeper hire, no down time, no pump, no generator, no fuel, no bowser, no lance or individual required to operate a lance.

The system referred to is the DriveOn V-Tech waterless wheel cleaning system. The unique, patented system uses transverse bars just 30mm wide and 200mm apart, producing greater vibration and tyre flex, ridding the wheel of larger amounts of mud, which incidentally doesn't remain on surface but falls into a void beneath the bars. The lack of mess thus achievable makes the DriveOn V-Tech system vastly superior to its far less innovative and far more time consuming competitors.

The simple, unique design eliminates the potential for freezing or breaking down, comes with no additional costs such as water or fuel, produces no emissions whatsoever, reduces road sweeper requirement and subsequently does not burden its user with additional costs.

The construction industry is one of the UK's biggest producers of carbon emissions, and in recent years water waste has also been under the spotlight. This system can only help you illustrate to your clients that you are doing your best to minimise the impact of your operations on the environment and that you are a responsible organisation that recognises the importance of these issues.

James Richardson of infrastructure solution company Costain Ltd says that, "After complaints by local residents we installed the waterless wheel wash system from EcoGreen and found them to



drastically reduce the muck being transferred off site onto the highway. I'll definitely be looking to use these again on future projects." While Skanska GF's Geoff Sutton testifies that, "We're one of three sites at Addenbrookes Hospital. The other two are both using wheel washed and we chose a DriveOn V-Tech system from EcoGreen. The others are also using road sweepers, but we don't have to."

Customer satisfaction is of course a driving force behind any business, regardless of the product or service that business provides, and the customer satisfaction created as a result of the innovative technology adopted by EcoGreen comes as no surprise given the inconveniences eradicated with its cleverly simplistic design.

EcoGreen plans to dedicate its future to both maintaining and expanding its already notable customer base, in doing so offering its uniquely brilliant wheel cleaning solution to a wider audience. The company also plans on providing more units to the construction teams working on HS2, a worthy recipient of EcoGreen's future driven technology.

Other customers include Balfour Beatty, Skanska, BAM, Galliford Try, Aggregate Industries and Redrow Homes as well as many more, a client base indicative of nothing less than the reliability of EcoGreen and the customer based positivity of its outlook. The network that EcoGreen is currently capable of claiming ownership of, is also one that the company hopes to enlarge, diversify and sustain, with paramount importance being placed on growth, and maintaining the quality of product and service that the company is built on.

T 0800 130 3437  
david.crick@ecogreenplanthire.co.uk  
www.ecogreenplanthire.co.uk





## Renewable Heating & Cooling Company of the Month

# Sustainable water and energy solutions

**S**ustainability Today is proud to announce that Carbon Zero Consulting has been selected as our Renewable Heating & Cooling Company of the Month. Offering a single point of expertise in all areas of water and environmental management and renewable technology design, Carbon Zero Consulting is an independent consultancy committed to increasing sustainable energy usage across the country.

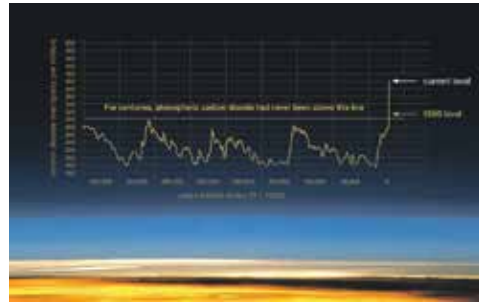
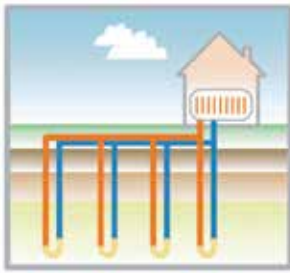
Established in 2007 by John Findlay, Carbon Zero Consulting is based in Rutland and Cornwall and offers its services all over the UK. John has over 20 years' experience in sustainable energy provision, with Carbon Zero Consulting boasting combined experience of nearly 40 years in water, energy, environment, and water treatment technology issues. The company has a core team of hydrogeologists, thermogeologists



and engineers, making them true specialists in all aspects of their services. What's more, because they are an independent consultancy, Carbon Zero Consulting can offer advice with no ties to any equipment provider or manufacturer.

One of their main specialisms is in ground source heating and cooling systems, and they are a Council member of the Ground Source Heat Pump Association. "The Ground Source Heat Pump is a great example of renewable heating technology," John tells us. "For every unit of

electricity it uses, it produces a minimum of three units of heat, with the balance taken from the ground which, ultimately derives from the sun." Carbon Zero Consulting is of the firm belief that ground source heat pumps provide the most efficient means to heat and/or cool your building. "Heat pumps have no on-site CO<sub>2</sub> emissions and are cheaper to run than oil and most gas systems. The heat exchange pipework in the ground is 'infrastructure' in the same manner as gas supply pipework is today – although much longer lived! What's more, heat pumps are far safer, because there is no requirement for a chimney or flue, like a fossil fuel or biomass boiler.



"Our objective as a country must be to get as many people as possible using heat pumps. We offer systems sized from individual dwellings all the way up to the largest commercial and public buildings, schools, and universities; It is completely scalable." Furthermore, with the Government's Renewable Heat Incentive (RHI), the affordability of such technology is greatly increased. The RHI is a financial incentive to promote uptake of renewable heating, and consequently reduce the country's carbon emissions. It is open to new applications until March 2021, and with Carbon Zero Consulting's help, domestic and non-domestic customers can apply to join the scheme.

"Public understanding of the need to reduce carbon emissions is ever-increasing, but still



has a way to go" John explains. "We work hard to offer the best site-specific advice and consultation to help promote the uptake of renewable energy. Our business is expanding rapidly on all fronts, and we are seeing increased activity in agriculture, public, commercial, and private sectors. In fact, we are one of a few consultancies that offer independent advice in all of these areas."



Indeed, it seems further progress is most definitely on the horizon for Carbon Zero Consulting. With such unrivalled experience and expertise, they are the company of choice when looking for advice on all aspects of sustainable water and energy solutions. If you would like to find out more information, head to their website or get in touch using the contact details below.

**Contact**  
T 01572 729510  
info@carbonzeroco.com  
www.carbonzeroco.com

## Water Testing Company of the Month

# Swimming through the competition



**S**ustainability Today is proud to announce Photonic Measurements (PM) as our Water Testing Company of the Month. Photonic Measurements offer fast and affordable solutions for improving water quality. Their comprehensive range of UV254 instruments is equipped for and applicable to changing environments, from canals, rivers, lakes to laboratories. Enabling collaboration with governmental bodies, drinking and wastewater industries, and environmental testing facilities.

Established in 2014, Photonic Measurements recently moved to a new base in Lisburn, Northern Ireland. In a short time, Photonic

Measurements has built strong relationships with clients from the USA to China as well as with contacts throughout the world. Current plans to grow their own brand are undergoing considerable development, with new customers and prospects throughout Asia, Europe, and the UK.

The company has recently launched its latest product, the UV254 Go! – a lightweight, portable device designed to take fast and effective UVT/UVA measurements in straight-forward steps. Surrogate measurements, TOC, BOD, and COD can also be accurately tested in a cost-effective way. The accuracy and accessibility of the product are some of the benefits of the Go!. Its compact body makes it easy to transport from one site to the next. With a long-lasting battery life, it requires minimal charging and can maintain full battery throughout the sampling process. Its UV LEDs maintain an extensive service life and have none of the warm-up times often associated with mercury lamp analysers. Leading water solutions company Xylem has recently become a client, and user of the UV254 Go! to help aid their Wedeco UV disinfection division.

The UV254 Probe is equally easy to manage and provides continuous real-time measurements through a touchscreen, daytime readable screen, which makes navigation easy to follow and data can be displayed and trended over time. The probe can



be made from stainless steel, aluminium or plastic. As well as UVT and UVA levels measurements, TOC, COD and DOC can be observed and recorded, making the UV254 probe perfect for drinking and wastewater treatment, environmental testing, and industrial processes and effluents.

Similarly, The UV254 Dip Probe can be used in open water, submerged by hand so measurements can be taken in a variety of locations, or left in one location to provide trend data for a more continual result. The device uses application software, which it shares with the UV254 Go! The Dip Probe itself can be configured with the UV254's display unit. With the option to change the path length of either 20 or 50mm, depending on the application needs and a unique light shield to cater for the diverse scenarios in which it may be used.

Photonic Measurements' product range includes accessible features that equip clients with the tools to carry out successful and accurate measurements and obtain long-lasting results – making Photonic Measurements a worthy recipient of our Water Testing Company of the Month profile.

T 02892 106263  
www.photonicmeasurements.com





## Industry leaders are leading the way to an energy efficient future

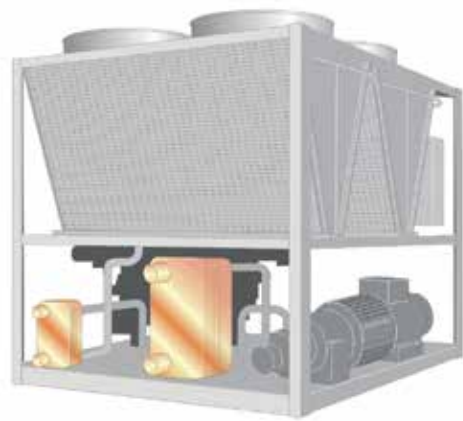
**B**usiness and Industry Today are proud to have chosen SWEP as our Energy Efficient Heat Transfer Company of the Month.

SWEP is an industry leading supplier of Braze Plate heat exchangers for HVAC and industrial applications. Founded in Sweden in 1983, SWEP has come a long way since then and is now the world's leading supplier of compact brazed plate heat exchangers (BPHEs). "Compact brazed plate heat exchangers (BPHEs), are used where heat needs to be transferred efficiently in air conditioning, refrigeration, heating, and industrial applications," says Christer Frennfelt, Business Development Manager.

With their headquarters still based in Sweden, SWEP has expanded globally and has been successfully supplying to the UK market for 20 years. With their UK office based in Didcot, they also maintain factories in Slovakia, USA, KL and China and SWEP are represented in 50 countries.



Brazed plate heat exchangers are highly regarded as one of the most efficient ways to transfer heat, SWEP maintains the widest product range of BPHEs on the market with the option of creating customised solutions for their customers. SWEP's heat exchangers are specifically designed to be sustainable, renewable and energy



efficient. "Our main priority is energy efficiency with minimised environmental impact and carbon emission, as we have the largest range of products; we pride ourselves on always being able to find our customers the best solution," comments Christer Frennfelt.



The plethora of benefits gained for implementing SWEP's brazed plate heat exchangers are limitless, designed to optimise space, energy and material, they are a smart solution within any heating and cooling system and create a sustainable energy efficient system. "We are focused on reducing the carbon footprint and carbon emissions." Christer continues, "By utilising energy such as heat transfer, our purpose is to lead the way to sustainable energy usage and creating more – from less energy and resources."

With the BPHEs being adaptable for any cooling and heat system, SWEP are able to provide bespoke solutions to meet the requirements of their customers' heating and cooling systems. Through the diversity of SWEP's range of products, they are able to maintain an equally varied customer range, as their products are



adaptable for heating and cooling systems within facilities such as homes, offices, schools and hospitals.

A feat within their exclusive product range is their SWEP 2-stage units. The system is comprised of a preheater and an afterheater, the units allow returned water from the radiator circuit heat exchanger to be renewed for the use of preheating water for domestic usage. We spoke to Christer Frennfelt about the main benefits from the SWEP 2-stage units, he stated that, "the SWEP 2-stage units are a solution that reduces the return temperature, to minimise the heat losses in the system. Heat Recovery application, to utilize the surplus energy and the exergy from different systems. They also use Sealix, a coating of the surface to defeat corrosion and scaling and keep the performance."

In terms of future plans Christer explained that, "Within the company there have been a few smaller re-organisations, however we have been mainly focused on our product range. We are selling our product directly to the energy centres themselves and plan to continue this into the future. We plan to expand our markets and go for larger capacity markets."

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# Service pipe replacement experts



**W**ithin this issue of Sustainability Today we are delighted to announce that we have selected Kobus Services as our Innovative Utility Services Company of the Year. Indeed, 2019 is proving to be an extremely successful year for industry breakthrough company Kobus Services, who specialise in the manufacturing of special purpose machinery for service pipe replacements.

Kobus offer a unique innovative trenchless technology to extract ageing service pipes and replace with new in a single operation. Based in Tamworth, United Kingdom, Kobus Services has expanded significantly within recent years and now distribute throughout North America and Australasia, as well as the UK.



Many cities in the UK and especially in America, have seen a big shift in the replacement of pipes. Having previously used pipes such as lead, which have been associated with poor water quality, they are now reducing the use of lead pipes. This means there is an increase in the requirement of pipe removals and replacements, which Kobus Services has the power to complete. Setting out to revolutionise the pipe maintenance industries, Kobus Services' Pipe Puller was designed by engineers to withstand the rigours of site conditions and deliver sufficient power to extract the old pipe networks.



In terms of the replacement, the pipes connecting the mains to a property is often time consuming, expensive and carries the risk of damaging surrounding utilities. With the overall goal of producing the least amount of work, in terms of damage to the ground service and cost for their customers, Kobus Services developed the perfect solution to eliminate the need for open cut trench excavation or moling operations.

Traditionally methods such as impact moling, open cut excavation, pipe bursting, horizontal directional drilling and pulling with a backhoe, have been the most popular way of replacing service pipes. However, Kobus Services noted the gap in the market for an efficient operation for extracting pipes without the cost, limitations and safety risks associated with traditional methods. Through this, Kobus Services discovered that pulling the pipe out of the ground was a far more efficient and beneficial operation for pipe maintenance.



The way in which the Kobus Pipe Puller works is by pulling the old pipe out of the ground using a steel pulling cable, and at the same time, towing in the new asset. Hence reducing time (typically the operation takes an average 1 hour) and ensuring for an easier application. The Kobus Pipe Puller requires only two small excavations on either side of the length of pipe to be replaced, thereby reducing surface damage to homeowners' property and significantly reducing reinstatement costs.

The new pipe is installed through the bore hole created by removing the old pipe, which virtually



**KOBUS**  
**PIPE PULLER**

Rapid replacement of old service pipes with new PE pipe in single operation

- Saves cost and time
- Minimal excavation
- Reduced disruption

Ideal for:

- Lead replacement schemes
- Service Pipe Leakage



eliminates the risk of damaging other utilities in the vicinity. This is a major benefit compared to moling and avoids the need for open cut trenching when moling is too risky to use. After having the opportunity to speak to Simon Drain, Managing Director for Kobus Services, on how the last 12 months has been for the company, he told us, "We have seen an extremely successful year which has exceeded all expectations. Notably having launched our KPP 400 Series Pipe Puller – it has been of great success and has received an extremely positive reception within the industry."

The KPP 400 Series Kobus Pipe Puller is an all-in-one unit, which mounts on a compact excavator and is driven from its auxiliary hydraulics. This makes replacing multiple services in the same street or area more efficient. The Puller can remove lead, copper, plastic and steel pipes up to 1-1/4" diameter and 25m long. Created by Kobus Services' engineers in partnership with UK leading utility companies, the KPP 400 Series Pipe Puller is designed to fit the needs of contractors, with its accessible, economic,

innovative design, it maintains a wealth of benefits for users.

Expanding upon their achievements and successful year, Kobus Services' 400 series Pipe Puller won the Abbots Innovative Products Award at the No Dig Show in Chicago March 2019. A great platform for the company to broaden exposure of their innovative product, the KPP 400 Series has seen a great opportunity in the American markets and in fact, Kobus Services supply Pipe Pullers directly to North America. After speaking to Simon Drain on how the company felt upon receiving our Company of the Year award, he stated that the company were, "pleasantly surprised! It's nice to be recognised for our products and company." A breakthrough for the company and the pipe replacement/maintenance industries Kobus Services are being recognised throughout for their expert equipment and services.

In terms of future plans, after receiving such a successful year as a company, Simon Drain told us that, "we plan to continue our product developments and we do have more products and company developments in the pipeline – pardon the pun! We want to expand globally and hopefully further our export market."

Please see Kobus Services contact details featured below.

T 01827 338855

