



SUSTAINABILITY TODAY

Issue 414 July/August

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energy | water | waste | recycling | sustainability

Waterless Wheel Cleaning



The DriveOn V-Tech Dry Wheel Cleaning System from Ecogreen Plant Hire Ltd

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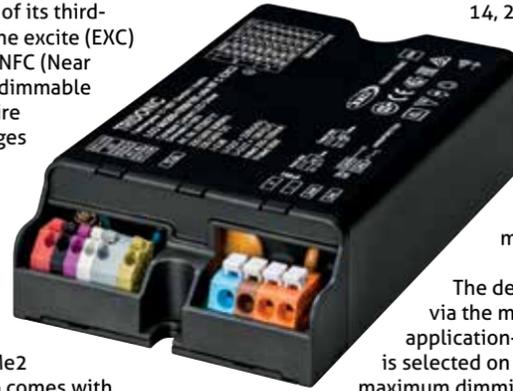


Outdoor drivers with Near Field Communication

Tridonic has announced the launch of its third-generation outdoor drivers from the excite (EXC) and advanced (ADV) ranges. All have NFC (Near Field Communication) interface. The dimmable control gear elements for the luminaire fixture are available in various wattages and if required, can be supplied with matching LED Modules.

NFC technology saves programming time in luminaire production and allows units with up to 20 drivers to be configured in a single work step. In addition, both series are equipped with ready2mains and U6Me2 interfaces, while the EXC3 series also comes with one4all. Changes to the settings can be made even after installation via the NFC interface, ready2mains or DALI2 (EXC3)

The control gear elements for luminaires in protection classes I and II are available in different output powers and cover a wide range of applications. EXC3 drivers are available with



14, 24, 40, 60, 90, 135 and 200 W output power, ADV3 drivers with 14, 24, 40 and 60 W output power. There are several configuration options: wirelessly via NFC using Tridonic's companion SUITE software or with the ready2mains programmer. In the EXC series, programming is also possible via DALI-2 using masterCONFIGURATOR.

The devices are dimmable from 5 to 100% via the mains voltage (inputDIM) and offer application-specific light levels. The mains voltage is selected on the basis of defined minimum and maximum dimming levels within the voltage range of 170 AND 250V AC. The ChronoSTEP2 function can also be used to define different dimming levels and day segments.

Contact
T 01256 374300
www.tridonic.com

Remote control for peristaltic pumps

Fluid handling specialist Cole-Parmer says it is bringing the Internet of Things (IoT) to pump applications, providing pump operators with the ability to remotely control and monitor peristaltic pumps via the internet.



The firm's Masterflexlive™ is said to be a secure Cloud-based platform for controlling and monitoring its peristaltic pumps via a PC, tablet or smartphone. Pump operators can monitor and adjust

critical processes running 24/7 from anywhere with a data connection.

This technology, claimed to be a

first of its kind for peristaltic pumps, provides real-time control of all pump parameters, including speed, flow rate, dispense volume, and more. Push notifications provide alerts for operating conditions and error messages. 'Hands-free' operation allows control of pumps operating inside hard to reach locations.

T 01480 272279
www.coleparmer.co.uk
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Meter repairs for London's elite



MWA Technology was recently called in to make vital repairs to the metering system of a Kensington penthouse flat that, late last year, topped a list of the top 10 most expensive properties in Britain after selling for £50m.

Situated at the development at 5 Princes Gate, the flat also topped the list of London's most expensive homes. Incredibly, the Princes Gate apartment costs nearly twice as much as the second most expensive property, a terraced family home in west London which sold for £27m.

MWA had to make vital repairs to the Kamstrup metering system that needed to be reprogrammed for accurate flow management and record. MWA says it offers a unique specialist service to provide expert technical support at the user's location.

T 0121 327 7771

RWM returns

We are thrilled to announce our partnership with the RWM exhibition, the UK's largest trade show for recycling and waste management.



RWM returns to the NEC Birmingham on the 11th and 12th September, bringing with it a huge programme of unmissable seminars and panel discussions, including NASA, TerraCycle, Procter & Gamble and Clean Up Britain patron Jeremy Paxman.

This year is set to be bigger than ever with the launch of new features like the AI & Robotics Zone, the evolution of the Zero Emissions Zone, a dedicated Waste Tech Theatre, and the return of Materials World.

Visitors can expect to see live demos of pioneering new technology as well as hundreds of market leading companies coming equipped with their finest solution led products and services.

Since changing owners at the start of 2018, RWM has grown to attract over 12,000 visitors, including the industry's most influential names and organisations. With professionals from across the sector and beyond in attendance, it is a valuable knowledge sharing opportunity, not to mention there are unrivalled collaboration and networking opportunities.

Now just 9 weeks away, if you want to register for free visitor tickets for you and your colleagues, please visit: www.rwmexhibition.com

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New 43 litre Enviropod



Leaffield 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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comms@leaffield-environmental.com
www.leaffieldrecycle.com

Pledge to introduce 100% recycled packaging

Environmentally friendly cleaning company Bio-D has set a target to introduce 100% recycled bottles across its range by the end of 2019. The company is aiming to become greener than ever before in a bid to decrease the amount of waste sent to landfill, in addition to reducing overall energy consumption. Already 74% to target, Bio-D launched new packaging at the beginning of 2018

to help achieve its goal, comprising of rHDPEs (recyclable high-density polyethylenes), which are made from recycled used plastic bottles rather than single-use plastics. This has now been introduced across the majority of products.

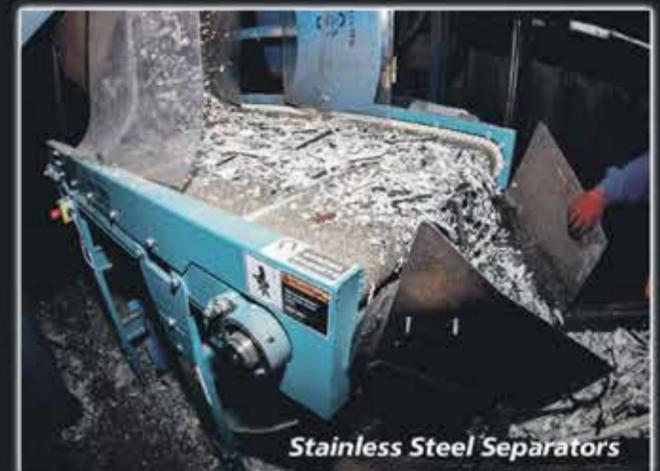
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MASTER MAGNETS



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Sustainable water treatment specialists

Sustainability Today has chosen revolutionary company Arvia Technology Ltd as our Water Treatment Systems Company of the Year, for their ongoing commitment to the Water Treatment industry and dedication to providing sustainable solutions for tertiary water treatment.

Based in Runcorn, Cheshire, Arvia Technology Ltd was first established in 2007 by Nigel Brown. Since the company's inception, they have expanded significantly and maintain a global presence with sales representation in China, Northern Europe, Spain, Belgium and Asia.

Arvia is leading the way in producing sustainable solutions for water and wastewater treatment, using their expertise to create the advanced range of Nyex™ tertiary water treatment systems.

These revolutionary systems offer a unique solution to the treatment of water and enable users to eliminate hard-to-treat organics, common wastewater contaminants, including micro-pollutants, and colour from water and wastewater.

Adaptable for a multitude of different industry sectors such as Pharmaceutical, Chemical, Utilities (drinking and wastewater), Food and Beverage and Oil and Gas, Arvia has gained a global reputation for their sustainable water treatment systems.

With the environmental challenges that the world is facing, coupled with an increasing population, the quantity of clean water required is currently heading to surpass the available supply by 60% by the year 2030.



Containerised Nyex™ demonstration system on-site at Scottish Water

Within industrial manufacturing, wastewater is a prominent issue. Without adequate treatment, it is often disposed of into sewage systems or the environment. Not only does this waste an opportunity to reuse the water, but it can also result in contaminants having adverse effects on aquatic ecosystems and human health.

With this in mind, creating a solution to limit the pollution produced by manufacturing processes is of vital importance and can enable water to be treated and reused or disposed of safely.



Containerised plug and play Nyex™ system

Focusing on the tertiary stage of water treatment, Arvia have produced efficient and flexible solutions. Nyex™ processes do not require chemical dosing and the patented carbon-based media inside the Nyex™ – a system regenerates in-situ. This means that no sludge or secondary wastes are produced during the process, which is more environmentally friendly and removes the operational costs for trucking, incineration or landfill.

Speaking to Mike Lodge, CEO, he told us that, "Arvia uses adsorption coupled with electrochemistry, which avoids common chemical treatment drawbacks like toxic sludge disposal and the incineration of spent activated carbon, as Arvia's carbon-based media is regenerated in-situ and does not require incineration. It has a modular design, offering a plug and play solution which can be adapted to any space and retrofitted into existing treatment works to improve treatment capabilities."



Nyex™ 7-100a reactor tank

"As the water flows into the Nyex™ – a reactor tank, contaminants are concentrated onto the surface of our proprietary Nyex™ adsorbent media, which is non-porous with high electrical conductivity. A low electrical current is simultaneously passed through the media bed to fully mineralise the adsorbed contaminants to H₂O, H₂ and CO₂."

Arvia Technology has achieved impressive year on year revenue growth since its inception. Backed by its innovative water treatment systems, Arvia is well recognised within the industry for the potential benefits of its Nyex™



L-R: Mike Lodge, CEO, Nigel Brown, Founder, Mikael Khan, CTO, Eilish Owens, Marketing Manager & Akmez Nabeerasool, Senior Project Manager, accept the Company of the Year Award

water treatment systems.

Speaking to Eilish Owens, Marketing Manager for Arvia Technology, she told us that, "At Arvia, we have a dedicated research and development team and we pride ourselves on constantly developing our existing and new technologies. We are always looking ahead in terms of anticipating what our customers need and aim to be the first on the market to provide it. We are all invested, ambitious and driven to provide the best solution available. The industry is beginning to see the importance of finding a sustainable, environmentally safe solution to tertiary water treatment processes."

Indeed, with the rising concerns in producing a sustainable water source and the increase of interest in producing environmentally friendly solutions for the planet, countries such as China have taken a strong stance in preventing water pollution. China has produced their Water 10 plan which works towards improving their water pollution substantially within 10 years' time.

Arvia is helping to lead the way in assisting China with their water treatment and in 2018 Arvia installed its first Nyex™ water treatment system on a site in Tianjin, South China. The Nyex™ water treatment system was chosen for its ability to remove recalcitrant organics from the wastewater following a biological process, therefore enabling the customer to pass their regulations of 50ppm Chemical Oxygen Demand (COD) for safe discharge.

In 2019, Arvia have already been on three treatment roadshows around China to treat client's wastewater on-site from the Chemical, Pharmaceutical, Plating and Resin manufacturing industries, amongst others.



Nyex™ 16-50e reactor tank



In terms of future plans for Arvia, Gary Richards, Sales Director, and Eilish Owens, Marketing Manager, expressed how the company plans to carry on their successful business model and continue pursuing new technology to further develop their innovative solutions.

Focusing on expanding their global presence and carrying on their work with countries such as China, Arvia hopes to further the industry's interest in their technology and showcase the clear advantages that Arvia's treatment systems deliver.

Speaking again with Gary Richards, about how the company feels to be selected for our award, he told us that, "We are beyond excited to be recognised for this award!" Gary stated, "Everyone within the company is devoted and work extremely hard, so it feels amazing to be recognised for the work that we do."

For any further information please see below.

T 01928 515316
www.arviatechnology.com



Containerised Nyex™ systems on-site in China



Ocean Business celebrates international success



Ocean Business 2019, which took place at the NOC in Southampton from 9-11 April 2019, has broken attendance records again with the greatest number of exhibitors, visitors and international representation yet. The show has become a landmark international event with a staggering 41% of all visitors coming from outside the UK.

With over 360 international exhibitors, this was the biggest exhibition at Ocean Business yet. This growth was matched by the number of visitors which was up 5% on the previous show, with 4,674 attendees across the 3 days. These visitors came from 69 different countries around the world – further demonstrating the show’s international success.

As well as the many high profile meetings and associated events, Ocean Business hosted a special reception to celebrate the 70th anniversary of the date that the UK’s National Institute of Oceanography (NIO) came in to being. The NIO was later absorbed in to the Institute of Oceanographic Sciences which became the National Oceanography Centre.

Several companies have already requested to book their stand for the next Ocean Business show, taking place in 2021. Full details about dates and stand availability will be released in the next few weeks.

This is our pick of the best exhibitors from this year’s show, listed here in alphabetical order: Mercy Ships, Ocean Maps, RS Aqua & R2Sonic. Further details can be found on this page and the next.

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Mercy Ships



Mercy Ships, who attended the Ocean Business event in April, operates the world’s largest charity-run hospital ship delivering vital, free healthcare to people in desperate need.

Conditions requiring surgical treatment kill more people worldwide than HIV/Aids, TB and malaria combined. Globally, five billion people have no access to safe, affordable surgery when they need it.

As well as completing thousands of urgent operations on-board its floating hospital, Mercy Ships volunteers work closely with local healthcare professionals offering training and mentoring and renovating hospitals and clinics.

By improving healthcare delivery in every country it visits, Mercy Ships is working to eradicate the diseases of poverty and effectively do itself out of a job.

To achieve this, Mercy Ships delivers a customised five-year partnership model with every country it is invited to support. Relationships are built with the national government and its Ministry of Health so that the needs of each and every country are met.

In this way, Mercy Ships doesn’t just address the immediate need on the ground but also works to strengthen the country’s healthcare systems and drive policy change. The aim is to tackle the root causes of the problems rather than just the consequences.

To find out more, visit: www.mercyships.org.uk or for volunteering enquiries please email: volunteering@mercyships.org.uk

Ocean Maps

Ocean Maps offers digital twins of hydroelectric power plants, integrating indoor and outdoor environments, machinery, dams, lakes and rivers in one simple to use application. Typical use cases are flood and emergency management, facility management, as well as internal and external communication.

The digital twin can be deployed on in-house infrastructure or in the Cloud, as well as on personal devices like smartphones and tablets. This and its extreme ease of use make it accessible to staff at all company levels, from field operators to top management.



The digital twin solution includes comprehensive surveying and visualisation of the facility and can be provided in conjunction with an annual or sub-annual underwater surveying and inspection plan, giving plant management continuous insight into

the state of the plant’s underwater structures.

In co-operation with specialised inspection and surveying partners, other sustainable power plants like onshore and offshore windfarms can be efficiently surveyed, inspected and deployed as a digital twin. Ocean Maps also applies its technology to mapping and visualising coral reefs for diver’s navigation and scientific purposes.

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Globally, **five billion people** have no access to safe and affordable surgery when they need it

CHANGE
THE
ODDS

The *Africa Mercy* is a floating hospital delivering desperately needed healthcare and capacity building to the poorest people in the world.

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Volunteer onboard the *Africa Mercy*...



Be part of the crew.
volunteering@mercyships.org.uk





Filtering for protection

With the objective of improving energy efficiency, the ErP Directive has supported the introduction of more modern boilers. Although welcomed by the industry, the development has highlighted the problem and threat posed by corrosion to commercial heating systems.

This is an issue not to be underestimated. Ensuring steps are taken to mitigate damage will help to maximise value in commercial plant rooms. It is also important we consider risk versus performance. When these are equally balanced, we are at compliance. However, tipping this scale to lower risk and raising performance is what you should be aiming to do. To achieve this, a best practice approach is most effective, and this will include the adoption of magnetic filtration as part of a complete water treatment programme.

The problem is caused by magnetite which makes up around 98% of system debris and is a direct result of corrosion that occurs when water circulates through boilers and pipework. However, magnetite particles are very small, measuring just eight microns (0.088mm)



in diameter, which makes capturing them difficult. It also means they can travel easily around a heating system, deposit in low flow areas such as heat exchangers, base board and radiators, cause erosion in turbulent areas, and clog up pumps.

As part of the adoption of ErP, older, more tolerant but less efficient cast iron boilers have been replaced with more efficient stainless steel and aluminium models. These new generation boilers cannot match the durability of cast iron units unless the proper protection is in place. They are smaller which means their heat cells are more prone to magnetite blockages while the small waterways, reduced from 50-60mm to as small as 8mm in some cases, are also susceptible to becoming blocked.

While the industry has been quick to respond to changes, in the most part it has failed to react to the implications these advances in technology have on long-term system performance. This is leaving a large proportion of heating systems vulnerable to breakdown. There is now widespread adoption of magnetic filtration in the domestic sector, with installers very much in tune

with the benefits it can bring. Replacing a boiler in the home is an expensive exercise but when you consider this in a commercial context, the associated costs will be multiplied many times. Based on our experience, we estimate that to protect a domestic boiler an investment of around 15% of the capital cost is usually made but in a commercial context it's more likely to be around 1%.

Historically, dirt and air separators have provided much of the protection for commercial systems. However, the mesh used to capture the magnetite particles is not small enough, leaving sludge to circulate round the system. Technology has now moved on and been replaced with a far more effective way of protecting expensive plant rooms.

As the name would suggest, magnetic filtration has magnets as its core. These are usually powerful neodymium magnets which are tolerant to high temperatures and available in different sizes depending on the size of the system. The filter can easily be fitted



to the pipe work and this can be done on a brand new heating system or retrofitted. The filter will also need to be monitored, emptied and serviced as the sludge collects around the magnets. Some filters also offer greater flexibility, with both side stream and in-line installation being possible.

Specifying magnetic filtration from the start will ensure investment in large and expensive systems is properly protected. There is a real need for more widespread adoption of the technology but for this to happen, greater awareness and education about its benefits must be understood and spread throughout the industry. Specifiers and facilities managers can talk to their contractors or maintenance teams to ensure the message is getting through. Perhaps the biggest problem is that many are still relying on older technology without realising that it is an ineffective way to capture magnetite.

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www.adey.com



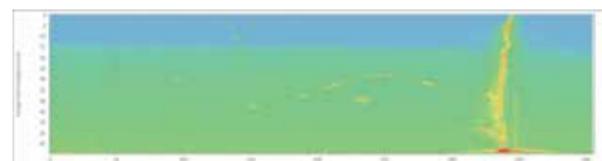
Ocean Business 19 Review Top 10

The R2Sonic Multispectral Water Column Challenge

One challenge at a time, R2Sonic is pushing the boundaries of innovation: the R2Sonic Multispectral Water Column Challenge has officially begun!

Four multifrequency water column data sets, collected using a Sonic Series sonar operating in Multimode, will be made available for teams to analyse. The team that develops the most innovative and useful tool for industry (eg. processing/analytical methodology) will be awarded a Sonic 2024 multibeam echosounder.

Everything started in 2017, when R2Sonic released the Multispectral Mode that enables users to collect bathymetry and backscatter data at several frequencies at the same time. Using this functionality, the acoustic responses of seafloor sediments at different frequencies coincide in time and space, which is considered to be a breakthrough in bottom characterisation research.



Similar to the enhanced seafloor discrimination capabilities identified through the R2Sonic Multispectral Challenge, we anticipate multispectral water column data to open the possibility of improved identification, differentiation and characterisation of targets in the water column based on the responses observed at different frequencies.

Each team's research will be reviewed by a panel of judges outside of R2Sonic.

If you're interested in participating, please contact us at: www.r2sonic.com/geohab2019

RS Aqua

RS Aqua was one of the founding companies to exhibit at Ocean Business and in 2019 showcased a new cutting edge exhibition space. The team were really pleased by the buzz and business opportunities it created.

RS Aqua is the UK's largest distributor of marine technology equipment, supplying high specification marine sensors and subsea equipment to scientists and engineers. Based on the south coast of England, RS Aqua has over 20 partner companies based worldwide but also has its own products such as the WaveRadar REX, which is a real time wave measurement system used mainly on offshore platforms for user safety, and ORCA, an underwater acoustic recorder which captures exceptional underwater soundscapes.



The company is involved in four main sectors: marine science, offshore resources, hydrography, and fisheries & aquaculture.

RS Aqua has extensive calibration and maintenance services at its Hampshire base

in the UK, and is proud to provide lifetime product support across its portfolio. It also offers training courses which cover system design, installation, servicing & maintenance, data management and more.

Recent cutting edge projects include: supplying the equipment for the largest Atlantic Salmon tracking array in the UK, manufacturing acoustic recorders to characterise seabed gas bubbles by the noise they make, and installing a custom acoustic recorder in a racing yacht fin to measure ocean noise pollution around the globe.

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Making the case for trenchless pipe pulling

Simon Drain, managing director of Kobus Services Ltd, shines a spotlight on the scale of the pipe repair problem in the UK and some of the rationale that is driving contractors to adopt trenchless pipe-pulling technologies

Much of the utility infrastructure in industrialised areas of the western world is very old – over 100 years in many cases – and needs repairing or replacing with modern pipe materials. Ageing water infrastructure is causing a rise in leakage and places challenges on water companies to provide the best quality drinking water.

In the UK, Ofwat is challenging water companies and contractors to reduce leakage by 15% in amp7, reduce customer disruption, improve water quality, protect the environment and manage costs to consumers through use of innovation.

Existing techniques to replace old service pipes are mainly impact moling or open cut excavation, both of which have their limitations and cannot alone achieve the stringent targets being set.

The challenge

The industry is investing heavily in leak detection technology and pressure management in an attempt to prevent leaks and detect them early when they do occur. Protection through pressure management can certainly extend the pipe life,



but at some point, renewing infrastructure is necessary, which includes renewing smaller service pipes connecting the mains to properties. Finding ways to detect leaks faster is fine, but ultimately the consumers' perception of water company performance is on how long it takes to fix and how much disruption is caused.

Over 3,000 million litres of water are leaked from the infrastructure each day, and a proportion of service pipes need to be replaced each year to manage supplies, reduce leakage and maintain water quality.

In addition, many properties in the UK built before the 1970s received water through lead pipes. While many of these have been replaced over the years, a significant number remain. Lead has been proven harmful to human health, with children especially susceptible.

Water companies use phosphate dosing at treatment works to coat the inside of the pipe to prevent leaching, but phosphate is a finite resource and unsustainable. Therefore, to protect the public, and improve water quality, water companies have been and continue to look to replace these ageing pipelines.



Utility companies must plan long into the future to continuously replace ageing infrastructure. Left unmanaged, the problems caused by ageing pipes will accumulate. The need to address the resulting issues will become more urgent, and to tackle the problem on a wider scale with more urgency will require significantly more investment. This investment will ultimately be funded through higher consumer bills.



Solving the problem

Regulators enforce controls and pressure the utilities companies to use, for example, innovation to maintain and replace infrastructure faster and more safely, with less disruption, and without significant increases in consumer's bills. Pipe-pulling technology offers utility companies the innovation that Ofwat demands as well as reduced cost compared to other methods such as open cut excavation. Trenchless pipe-pulling approaches aren't new, but they do offer some major new advantages.



Cutting the time to repair:

Pipe-pulling technology can dramatically reduce the time incurred at the set-up and break down of the project, as no trenches are required, there is minimal excavation required at the outset or reinstatement to make the location good once again, potentially reducing the time onsite by over 60%.

Reduced risk of utility strikes:

Pipe-pulling technology minimises the risk of utility strikes as it extracts an existing pipe and then tows the new pipe in along the borehole created by the extracted pipe. There is less risk of striking another utility as the pathway is already in existence from the old pipe position.

Optimised working ground:

Pipe-pulling methods use the existing pathway of the old pipe to tow the new pipe in and through. Therefore, the ground conditions have less overall impact on pipe-pulling approaches.



Pipe-pulling can be adopted in very soft or rocky ground and on inclines, thereby offering an alternative when moling is less effective.

Faster reinstatement as well as minimised disruption:

Pipe-pulling minimises the size of excavation necessary on homeowners' land. Where pulling is done from external pavement or road, the excavation on the homeowners' property can be as small as an A3 sheet of paper. As highlighted in the point about time, this has the added benefit of reducing reinstatement costs, and causes less disruption and emotional distress to homeowner. This also impacts local residents using adjoining public highways as they are reopened much quicker.



Through-life cost benefits:

Pipe pullers like the Kobus KPP300 are relatively inexpensive in capital equipment terms, costing around £20,000. Pipe-pulling systems do require consumables on each pipe replacement, but maintenance costs are kept to a minimum by the design being largely maintenance free. This means they can save around £1,000 to £1,500 per replacement compared to open-cut methods, meaning they can pay back in as little as six months and can keep paying back for at least five years.

Good for the environment:

Pipe pulling removes the old decommissioned pipework from the ground, thereby eliminating the potential environmental waste, as well as enabling the recycling and scrap value recovery of the old pipe.

One thing is certain: there are a huge number of repairs required and traditional methods take time, create disruption and can get very expensive.

T 01827 338855



Suction wins the day at home of the hover

A drainage team from Lanes Group plc have used powerful water jetting and vacuumation equipment to clear the outfall of a pipe linking two sites defined by icons of British transport technology. They removed six tonnes of rubble, shingle and shells blocking a sea outfall located at a former hovercraft terminal in Ramsgate Kent. The 900mm-diameter concrete pipe takes surface water from the former Manston Airport which was an RAF base during the Battle of Britain, and home to squadrons of Spitfire and Hurricane fighters.

Drainage engineers based at the Lanes depot in Sevenoaks, Kent, were commissioned to clear the pipe outfall where material had built up to a height that prevented the sea outfall flap valve from fully-opening. Operating a jet vac combination tanker, they removed all the material from the outfall, with most of it lifted remotely through vacuumation.

By the skilled combination of water jetting and vacuumation, the Lanes team could lift the material into the jet vac tanker's tank, ready to be taken away for disposal at an authorised waste site. They had to stop occasionally to remove larger rocks from the vacuumation hose, otherwise the process of unblocking the sea outfall by the team would have been completed in even less time.

A team of three Lanes drainage engineers cleared the outfall, watched by a representative from the Environment Agency, who wanted confirmation that the outfall was unblocked in line with pollution regulations.

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



Sampling demand increasing

Aquamatic Ltd is reporting a steady increase in demand for its equipment from industrial companies across the globe.



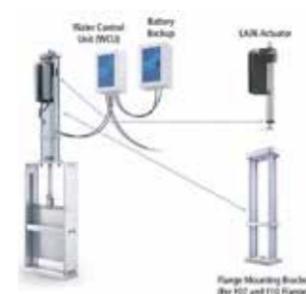
In part Aquamatic attributes this demand to an ever-increasing environmental focus/awareness not only by the governing authorities but also by the industrial companies themselves. This news follows the company's recent supply of a multi-sampler order for operation within a large industrial anaerobic digestion wastewater treatment plant at a UK paper pulp company, where the project was driven by the motives of improved efficiencies and reduced environmental impact.

Commenting on the situation, Jeremy Smith, Aquamatic's MD, said, 'We are now dealing with more industrial sectors than ever before, we feel this is symptomatic of the expanding focus on what is being discharged into our watercourses. This focus is coming not only from the Environment Agency and Water Companies, but also the private industrial companies themselves. In these times of increased environmental awareness & the uncertainty of future climate impact, it is very encouraging to see the market demand for MCERTS certified environmental monitoring equipment such as our own being so strong. We are also finding that this focus is driving advancements in processing technologies such as anaerobic digestion which is giving the opportunity for improved performance and efficiencies, all of which are positive things for our environment. As a British manufacturer we are proud to be doing our part in assisting the drive to accurately monitor and hopefully reduce the environmental impact of industry in the UK and overseas.'

T 0161 777 6607
sales@aquamaticsamplers.com

Maximising efficiency

Wastewater treatment is a hot topic all over the world, leading to an increase in requests for automation and process optimisation.



With automation, uptime is pivotal when hundreds of tons of water are being treated daily and when environmental regulations must be met. This requires reliable and robust automation solutions with high functional stability.

It only takes three simple steps to mount a LINAK actuator system on a slide gate, sluice gate/penstock, gate or knife gate valve. This do-it-yourself mounting offers swift and trouble-free automation of manual valves and easy exchange of existing actuators. Installation of the LINAK actuator system can be performed by any site worker, saving both time and costs in daily water treatment.

No matter the level of control – whether your need is an automation solution that works with SCADA or one that is manually adjusted – LINAK actuator systems provide a solution. It is easy to adapt the control unit of the LINAK system to your specific requirements by changing a few settings using a universal programming unit. Or, upgrade the system to BUS communication simply by adding a module to the existing control unit.

Modern valve solutions are expected to fully integrate with the general facility system. With electric actuators, you will be able to monitor and control the valve position from your control board or even your computer screen. LINAK IC™ technology (Integrated Controller) helps provide precise position feedback as well as smooth movement to obtain perfect flow control in all situations.

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British manufacturer Ecodek has been producing their unique WPC board system for over 14 years. In 2018 alone, the production of ecodek® consumed more than 3,600 tonnes of recycled plastic milk bottles and sustainably sourced hardwood fibres.

ecodek® boards are available in three profiles, two finishes and five colours, suitable for a huge range of applications both commercial and residential. ecodek® can be found across the UK and beyond, in public realm areas such as walkways, bridges, schools, care homes, stadia, restaurants – the list goes on.

With the versatility to adapt to urban or traditional design schemes, ecodek® will allow the designer to transform outdoor spaces and gardens into feature areas. For podium decks and balconies, we have produced a range of specific screws, substructure bearers and beams that take into consideration the change in outdoor temperature and weather. ecodek® has high material stability with negligible expansion or contraction.

Offering bespoke lengths to suit individual projects in both our AT and HD ranges means a welcome



Photo source: ©Nail Kenyon@ArchiMag

relief on site to the usual problem of waste materials. As ecodek® material is 100% recyclable, should any waste be generated on site, this can be purchased back by the company and put back into the production of new boards. The boards will not warp, splinter or rot, and as ecodek® does not promote mould or algae growth, only require minimal maintenance, with no sanding or sealing. ecodek® material comes with a 25 year warranty as standard, giving piece of mind to both specifier and end user.

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New gateway device helps customers unlock smart sensor data

Pressac Communications, a leading manufacturer of smart building technology, has unveiled a new Gateway device which makes it easier than ever to get sensor data into the Cloud – ready for use wherever it's needed.

The new device means that information on everything from room occupancy to temperature can feed easily into software or IoT platforms.

The Gateway works by turning the data gathered by the sensors into MQTT format, the most commonly used language for IoT devices. The data is then available locally or via the Cloud.

Jamie Burbidge, Digital Solutions – Product Manager at Pressac, said, "Before we introduced this device our customers would often be concerned about how to get the data out of Pressac's smart sensors and into a format that worked for them.

"They would usually need to purchase alternative equipment from other manufacturers to get the data where they needed it and in the format they required. Lots of our customers required data to be made available via MQTT. Our Gateway device does just that.



"The data can then be sent straight to popular platforms like IBM Watson or Microsoft Azure, making it simple to obtain further value from sensor data."

The Gateway can be connected via a wired ethernet cable, or wirelessly via WiF or LTE (4G), meaning it can be kept off main IT networks if necessary.

For more information on Pressac's smart sensor technology and bespoke manufacturing capabilities visit www.pressac.com or call +44 (0)115 936 5200.

Heating, Cooling & Air Control News

Take control of emissions on site

Land pollution can be a major problem in the UK. Heavy industrial production was once a driving force for our nation's economy and now many sites pose a major hazard for new construction operations. In 2005, the Environment Agency estimated that up to 325,000 sites might be polluted because of former uses – a huge clean-up conundrum.

The remediation of contaminated land sites can prove to be a challenging undertaking; however, effective boundary monitoring solutions can help to mitigate any environmental issues during construction by effective measurement of toxic compound exposure. Casella demonstrates its commitment to reducing environmental risks with the new Guardian2 site boundary monitor, designed to help site management remain compliant with emission levels, using remote monitoring



and reporting of noise, dust and vibration levels, and now includes monitoring of Volatile Organic Compounds (VOCs).

The innovative Guardian2 is equipped with a photoionisation detector (PID) and measures for Volatile Organic Compounds (VOCs) up to 6,000ppm (parts per million), assessing the emission to any prescribed limits. VOCs are organic chemicals known for their potentially harmful properties that can be emitted from the top soil of polluted land. The levels need to be assessed and continually monitored to ensure the site is safe for operation, and to safeguard people's health in the surrounding area.

Casella is dedicated to reducing occupational health and environmental risks, and supporting businesses in solving their monitoring & analysis needs.

For more information about the Casella Guardian2, visit: www.casellasolutions.com or call +44 (0)1234 844179.



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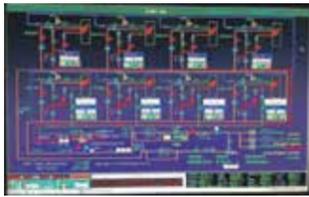
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Bespoke burner control system

Burner manufacturer EOGB Energy Products has announced the launch of a new service to design, develop and integrate bespoke burner controls for commercial heating systems and industrial processes.



Working closely with clients to understand their production process and specific heat requirements, EOGB says its engineers can develop a Programmable Logic Controller (PLC) configured to individual requirements. PLCs can deliver a range of functions such as sequencing systems to control multiple boilers and furnace control systems to accurately regulate temperature. A graphical Human Machine Interface (HMI) can also be custom-designed to provide sophisticated management and a real-time view of the system conditions and operational data, which engineers can access remotely from any internet connected device.

Martin Cooke, Technical Director at EOGB, said, "Unlike other PLC developers, EOGB has over 25 years' experience in combustion industry, meaning we are uniquely placed to provide PLC solutions to integrate with combustion equipment."

New technology offered by PLC systems, along with other advanced technologies, provides a great opportunity for commercial heating systems and applications to improve efficiency, flexibility, reliability and plant safety.

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VINCI Facilities: A trusted expert in the built environment

Here at Sustainability Today, we like to recognise companies that go above and beyond, striving for brilliance and using innovative approaches to ensure continual growth with a focus on sustainability. This is why we are proud to announce that VINCI Facilities has been selected as our Facilities Management Company of the Year.

VINCI Facilities is committed to providing outstanding customer service, embracing innovation and collaboration to ensure they are, and remain, the benchmark against which their competitors are measured. Complementing and enhancing their Facilities Management and Refurbishment/Building activities, VINCI offer an extensive range of energy and water management services across a wide range of customers and business sectors.

VINCI Facilities is the trading name of VINCI Construction UK Limited, and is the £270 million UK facilities services organisation of the VINCI Group, a global facilities, concession and construction group. VINCI Construction UK traces its origins back to 1918, and over the past 100 years the addition of trusted names including Norwest Construction and Taylor Woodrow has widened the company's capabilities, enabling them to integrate developing technologies and lead the way in burgeoning new industries. VINCI Facilities Energy and Water Management experts provide innovative yet practical services and solutions, which reduce energy, carbon, water, cost, and risk for their customers.

As specialists in the built environment, VINCI Facilities provides tailored solutions through both their Facilities Management and Building Solutions businesses. They are committed to delivering technical and organisational expertise, and provide their clients with a diverse range of facilities management, building maintenance, refurbishment, regeneration, and project management solutions designed to meet the challenges of modern organisations. They also offer a comprehensive range of Energy and Water Management services, which are tailored to



their customer's needs, including an embedded Energy and Water Manager, utilities procurement & bill validation, bureau services, and alternative energy solutions along with renewables and battery storage.

As a part of the wider VINCI group, they offer an unparalleled breadth and depth of technical expertise in the built environment, enabling them to deliver long-term sustainable value for their customers, shareholders, employees and partners, as well as society at large. They have successful partnerships with organisations of every size, from local authorities, schools, hospitals, social housing, and government departments, through to utilities, retail, manufacturing, rail and leisure.

VINCI Facilities is proud to be benchmarked annually as leaders in the Sustainable FM Index, and demonstrate an integrated approach to sustainability; from strategy to operation.

VINCI Facilities' Energy & Water Management business has grown out of a desire to continue to provide exceptional services to their customers and to mitigate the growing influence of utilities & carbon in a modern business. Their innovative services and solutions continue to reduce energy, carbon, water, cost and risk for our customers.

VINCI Facilities Energy and Water Management services and activities are underpinned by an in-house Utilities Bureau, based in Manchester. The Bureau takes data from a customer's portfolio to analyse utilities consumption, trends and alarms that may indicate performance issues, providing valuable information and insight. They can then take measures to rectify the problems, bringing about savings and avoiding excessive costs or exceeding electrical supply capacity. The Bureau also produces multiple levels of utilities reporting, including management summaries, PFI contractual performance, and operational reviews, turning raw data into information that can be acted upon to improve performance.

The Bureau is only one aspect of their service offering. A full range of services is available from strategy & direction through to 'on-the-ground' energy and water management, ensuring their customers have confidence that every requirement or challenge can be successfully met. Whether the requirement is a complex Investment Grade Audit, utilities procurement, operational support or simply advice on legislation, VINCI's team pride themselves



L-R: Ryan Gordon, Energy Manager, Paul Cottam, Divisional Director & Paul Lynch, Head of Energy & Water Management, accept the Company of the Year Award from our journalist

on always being available to support their customers' needs and consistently delivering a quality service.

A topical subject for 2019 is the Energy Savings Opportunity Scheme (ESOS) as Phase 2 of the scheme is now underway and eligible organisations must comply with the scheme by 5th December 2019. Phase 1 of ESOS, which closed in 2014/15, was challenging partly due to a lack of Lead Assessors. This caused last-minute panic, failed assessments, compliance delays, and even fines from the Environment Agency. VINCI Facilities Energy and Water Management are working with multiple customers to ensure those problems don't reoccur for Phase 2 of ESOS.

It is clear that the VINCI name symbolises the very best in sustainable innovation, creativity and technological mastery. Through their One Team ethos, VINCI is committed to developing



an open, transparent, trust-based partnership with their customers, stakeholders, and supply chain partners. Their vision is to be regarded by all their stakeholders as the leading and trusted expert in the responsible management, operation and adaptation of the built environment, with a mission to create and maintain great places to live and work, listening to what their customers need and providing innovative solutions that add value, delivered by excellent people who care.

If you would like to find out more information about VINCI Facilities' excellent services, including Energy & Water Management, Energy Savings Opportunity Scheme (ESOS) or Utilities Bureau Services, use the contact details below.

Contact: Paul Lynch
T 0161 320 2900
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The Monarch Partnership acquires Utilitywise's EIC



The transaction makes The Monarch Partnership one of the UK's largest utility consultancies by market share. The deal is part of The Monarch Partnership's ambition to build truly end-to-end expertise in energy management, enabling long-term reductions in consumption and expenditure; leading to carbon neutrality, well in advance of national legislation and industry best-practices.

EIC's cutting edge IoT-enabled technology will revolutionise The Monarch Partnership's sustainability services. The addition of intelligent buildings and a legion of other smart technologies to their sustainability programmes will have both environmental and financial benefits.

The Monarch Partnership is the largest privately-owned energy consultancy in the UK and specialise in supporting multi-site organisations. They currently validate three million invoices each year for 75,000 sites and support 600 client relationships.



The core services of The Monarch Partnership centre around the meticulous processing of data. Their bill validation service targets anomalous data, which triggers the recovery of overcharges. Though this is at their core, the services on offer cover the full spectrum of energy management, from the procurement of energy contracts, to cost management, reporting, asset, waste and water management, and sustainability plans. The acquisition of EIC will inject an extra technological expertise which will automate these processes, allowing for further savings for their clients.

Established in 1975, EIC supports over 1,000 industrial and commercial businesses and public sector organisations in managing their energy and water requirements. T-Mac Technologies, who are also part of the deal, provide energy management and intelligent buildings systems to help clients reduce and monitor their energy consumption. Both businesses will continue to trade under their existing brand identities and operate out of their headquarters in Redditch, supported by offices in Newcastle and Bury St Edmunds.

Peter Dosanjh, Chairman and CEO at The Monarch Partnership, said, "We are building a premier utility consultancy focused on helping our customers to become fully sustainable energy users. Our depth and breadth of expertise is unrivalled, and we are now working with colleagues and clients across the organisation to integrate the businesses and become the UK's leading intelligent utilities partner."

A spokesperson for EIC and T-Mac said, "Joining The Monarch Partnership family provides an exceptional platform to further grow our businesses and tap into the services of the whole group for our clients. We look forward to working with Peter and his team to fulfil those ambitions."

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Energy & carbon savings through supply transformers

Wilson e3 amorphous transformer was recently launched as the industry leading ultra-low loss transformer product by Wilson Power Solutions. Wilson e3 helps organisations reduce their energy wastage, operating costs and carbon emissions through reducing transformer losses.

The Wilson e3 transformer combines amorphous core material with low current density conductors to provide a distribution transformer with the lowest

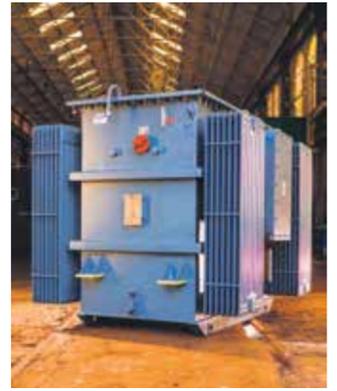
combined transformer losses. As a result, it not only exceeds EU Eco Design specifications due to come into force in 2021 (Tier 2) but sets ambitious new standards ahead of the curve for Tier 3. Based on 30 year transformer lifespan, a 1,000kVA Wilson e3 transformer will typically save organisations £75,000 over its lifetime when compared with a modern Eco design Tier 1 compliant transformer.

Beyond the low hanging fruit of energy efficiency measures, Wilson

e3 is a 'no brainer' for organisations to meet their carbon reduction commitment targets. Installing or replacing a standard existing transformer with Wilson e3 can help facilities save 156 tons of CO₂ emissions.

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TMS Maritime rules the waves

Sustainability Today is pleased to announce as our Marine Construction Company of the Month, TMS Maritime. Founded in 1991 by Managing Director, Peter Stenner, and former Director, William Hook, Devon-based TMS Maritime covers a broad spectrum of marine and civil engineering services throughout the UK and Europe. With extensive knowledge, experience and capabilities, the company boasts an unchallengeable reputation, and unrivalled level of customer satisfaction. Specialising in water construction, including ports and harbours, the company also provides services for pier construction, restoration and maintenance, coastal and river defences and inland waterways.

TMS Maritime operates a fleet of adaptable marine craft that includes modular road transportable systems that can be deployed to almost any national location. The combination



of such a flexible fleet and such an experienced work force renders TMS Maritime capable of providing cost efficient solutions at short notice. QHSE and Subsea Operations Director, Richard Taffs, tells us, "We pride ourselves in finding cost effective solutions to difficult challenges. With a full in-house diving capability, as well as extensive experience in piling, scour protection installation, rock armour placement, gabion construction, dredging and underwater construction, we can offer a one stop shop solution to almost any water project. This unique ability has enabled us to forge lasting relationships with key clients such as the Environmental Agency, Network Rail and the Canal and Rivers Trust."

The company is currently restoring the two celebrated Whitby piers, an exciting project to have undertaken and one that stands as a testimony to the calibre of the projects that TMS Maritime is capable of taking on. TMS Maritime

has also recently completed an underwater port refurbishment project in Douglas Ferry port for the Isle of Man government worth £1.3m, is due to start construction of a new £1.7m pier at Toft in the Shetland Islands and has begun construction of a shellfish jetty in Brixham costing £1.9m. The sheer workload that TMS Maritime is capable of juggling without fail is a result of the capability, integrity, service, quality and value that the company ensures remain at the core of its ethos.

TMS Maritime offers a marine plant hire service and includes barges, survey vessels, tugs, work boats, safety boats, diving equipment and Movax piling equipment. The fact that the fleet is owned by TMS Maritime, means that the company can react to a client's needs with reduced time, and can maintain its plant equipment to the highest standard achievable, as well as adhering to the most up to date Maritime and Coastguard Agency



(MCA) specifications. TMS Maritime prides itself on keeping to a rigid environmental policy, wherein the environmental impact of all its equipment used is regularly assessed, waste is minimised and disposed of responsibly, efficient use of resources is promoted, noise emissions are controlled, and risk to the general public and employees is kept at the lowest level possible.

TMS Maritime has grown into one of the UK's leading marine construction companies and has no plans to slow down. With business booming the plans for the future are crystal clear: to expand and offer its services to more and more clients. For more information on TMS Maritime, and the services that it provides, see the details listed below.

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Industrial automation experts

Sustainability Today is proud to announce that PI UK has been selected to receive our Industrial Networking Systems Company of the Year award. PI UK is part of PROFIBUS & PROFINET International (PI), the largest automation community in the world responsible for PROFIBUS and PROFINET, the two most important enabling technologies in automation today.



PI website at: <https://www.profibus.com/technology/case-studies/>

Established in Germany in 1989 by a group of leading equipment manufacturers and technical universities, the organisation had the goal of helping German industry automate as many production processes as possible and link them effectively to IT management systems. PI UK was set up in 1993 in order to bring these technologies and related products to the UK.



PI works closely with other automation organisations to develop and enhance international standards that improve productivity while keeping energy consumption and waste to an absolute minimum. They manage and monitor the certification process for testing products and training installers, designers and engineers.

Serving an exceptionally wide range of industries, including energy management, pulp and paper, chemical, utilities, pharmaceutical, food and drink, and numerous others, PI's technologies bring substantial benefits to an astounding number of companies. One example is Coca-Cola; since 2011, Coca-Cola has been using PROFIBUS DP to manage their entire production line in their Mannheim, Germany production plant, from the bottle washer, to filler, to labeller, and to packer.



Another example is General Electric; GE employs PROFINET in its power generation businesses to monitor and produce electricity for utilities and their customers around the world. Finally, Shell achieved cost savings of 50% during the installation of its Hamburg, Germany plant due to using PROFIBUS to minimise wiring and hardware. It currently blends 350,000 tons of oil per year using PROFIBUS PA.

Many more examples of how PROFIBUS and PROFINET are being used to save energy, cost and other resources can be found on the

A particularly interesting innovation is PI's PROFlenergy Profile, developed to help automation users minimise energy consumption, cut costs and comply with increasingly stringent 'green' obligations. Existing methods are often crude, expensive and hard to manage, such as switching off equipment manually or installing semi-automated shut-down systems. This is where PROFlenergy comes in; the Profile enables control devices, such as PLCs, to send commands to Energy Consuming Units (ECU) to signal pauses, like lunch breaks, holidays, random line stoppages or peak load conditions. On receipt of PROFlenergy commands, the software 'agents' in the ECU firmware initiate pre-defined 'sleep' modes for the duration of the pause.



Constantly looking for ways to benefit the industry, PI UK hosted a free-to-attend training opportunity in Manchester on June 26th this year, which paid close attention to Industry 4.0 and the Industrial Internet of Things (IIoT). The event addressed key practical issues arising from the use of digital communication technologies in automated manufacturing and process industry applications, covering key application areas such as control systems and energy management, pulp and paper, chemical, utilities, pharmaceutical, mechanical handling and logistics, robotics, automotive engineering, electrical and electronics assembly, packaging and printing. Focusing on the practical aspects of using PROFINET, PROFIBUS and IO-Link, from system design and safety considerations through to fault-finding and maintenance, it was an unmissable event which offered a valuable training opportunity.



Some of the presentations on the day included PROFIBUS network design for process industries, the fundamental principles of good network design for PROFINET systems, industrial network commissioning and testing, PROFIBUS and PROFINET device configuration tools, and finally an explanation of the Industrial Internet of Things, Industry 4.0 and Big Data, and how PROFINET is placed as the ideal Industrial Fieldbus to fulfil these.



In addition to these presentations, the event also hosted an exhibition with live product demonstrations, providing an excellent opportunity for designers, production/system engineers, instrument technicians/engineers and C&I engineers who are involved in the design, operation and maintenance



L-R: Mark Freeman, Treasurer, Bob Squirrell, Chairman & Derek Lane, Vice Chairman, accept the Company of the Year Award from our journalist

of modern automated factories and process plant. Exhibitors included Belcom Cables, a specialist supplier of industrial automation cables, HMS Industrial Networks who have an extensive portfolio which includes network gateways, wireless and cloud-based solutions, and Endress+Hauser, one of the first companies to supply both PROFIBUS DP/PA and PROFINET compliant field devices.

PI UK has a busy calendar of exciting and valuable events, and if their seminar on 26th June is anything to go by, these are unmissable opportunities for an extensive range of companies. To ensure people don't miss out on the next event, PI UK is encouraging people to register on their mailing list to be the first to be informed of future opportunities and seminars, via this link: <http://eepurl.com/c8cFYf>

As well as this, PI UK offers five different levels of membership to cover a wide range of requirements, and are encouraging companies and institutions to join the organisation as users of its technology. Depending on the level of membership selected, there is also free access to patented IP related to PI's technology, which is of significant benefit to any company wishing to manufacture PROFIBUS, PROFINET or IO-LINK compatible products. PI offers a wealth of advantages for its members, including free access to all PROFIBUS, PROFINET and IO-Link documentation, discounts on training, participation in events and much more. For more information on becoming a member and its full range of benefits, head to this page: <https://profibusgroup.com/membership/>

Looking to the future, PI is continuing to develop and deliver industrial standards that will help manufacturing and process industries meet and exceed their productivity and sustainability targets. Indeed, with over 80 million nodes installed worldwide, PI is a market leader in



providing state of the art digital communications, expertly addressing all their customers' needs – at plant level, in the Cloud or at the Edge.

For more information on their full range of services, head to their website or use the contact details below.

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