MCLAUGHLIN PIT LAUNCHED HDD INSTALLS CABLE DUCTING

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To submit editorial for Trenchless Works Issue 120 please email copy and pictures to: [ian@nodigmedia.co.uk](mailto:ian@nodigmedia.co.uk) by 10 August, 2016
For TW Sponsorship and advertising rates click [here](#)
Today Pier (UK) Ltd is, it claims, the leading vacuum excavation provider in Europe, but the company’s history dates back fifteen years with roots well and truly planted in the construction and civil engineering industry.

Back in August 2001, Managing Director Sean Quinn set up Pier UK to provide drainage services to infrastructure companies. Building up expertise in deep excavations for the installation of new drainage and cable ducting, the company was one of the first in the UK to catch on to safer methods of excavation around buried assets. Seeing a gap in the market for this lower risk, safer option Pier UK introduced vacuum excavators into its fleet as early as 2009. By 2012 the company’s vacuum excavation expertise had evolved and the company ceased providing drainage services to fully develop nationwide vacuum excavation hire. By summer 2015 it had become the largest provider of vacuum excavation in the UK and by February 2016 the largest in Europe.

To celebrate a long and prosperous fifteen years in the construction, civils and utilities industry Pier UK is giving away 15 gifts, ranging from laptop computers to gift cards. #PierUK15 competition winners could get their hands on a wide range of treats to help celebrate this milestone anniversary. To get involved simply visit the company website www.pier-uk.co.uk/15years until 26 August 2016. Competition opens Monday 1st August 2016, full terms and conditions are on the website.

AKKERMANN SALES TEAM APPOINTMENTS AND NEW DEALERSHIP

Akkerman recently announced the appointment of Cecilia Zavaleta as sales engineer and Yovani Zelaya as project manager to its sales team.

Zavaleta will provide sales and customer support in California, Nevada, Utah, Arizona, and New Mexico, and establish new and sustain existing dealership relations in Mexico, and Central and South America. In addition, Zavaleta will have a specialised focus on pipeline infrastructure projects throughout North America.

Zavaleta has been in sales and new business development in the heavy construction equipment industry for over 10 years, predominately in western United States, Canada and Mexico. Zavaleta was most recently employed by American Augers/Trench, Inc. as a territory sales manager where she was responsible for customer support, new account development, establishing dealerships, and brand training for dealer personnel. Prior to this Zavaleta handled sales and customer management then transitioned to co-owner and general manager for Roadrunner Construction Supply and HDD Repair in Bloomington, CA. Zavaleta is bilingual in English and Spanish.

Zavaleta is completing her Doctor of Business Administration degree at Argosy University, in Ontario, California and completed her master’s and bachelor’s degrees in business administration at California Baptist University, in Riverside, California.

Zelaya will be responsible for domestic sales activities and project forecasting in Texas, Oklahoma, Arkansas and Louisiana.

Zelaya contributes a unique perspective to the sales team given his varied background in the oilfield and fluid manufacturing industries. Zelaya was previously employed as general manager at drilling fluids manufacturer Glob Energy Corporation in Houston, Texas. Early in his career at oilfield products and services supplier Baker Hughes Inc. of Houston, Zelaya was a numerical control (NC) programmer and computer numerical control (CNC) machinist.

He is a graduate of the University of Texas at Tyler in Houston and holds a bachelor's degree in mechanical engineering. Zelaya is also fluent in English and Spanish.

Jason Holden, Director of Sales at Akkerman commented: “We are very excited to have Cecilia and Yovani as part of the company and I have full confidence in their abilities to expand the reach
of Akkerman equipment. Their bilingual capabilities are a key benefit to enhance communications with customers in these territories. Cecilia and Yovani’s contributions complement our existing team in our pursuit of providing project solutions to our customers and positioning our equipment in key markets. We are really looking forward to great things in the future for Akkerman.” Website: www.akkerman.com

Furthermore, on 29 June, 2016, Akkerman entered into dealership contract with Underground Construction Supply (UCS) Mexico as sole Akkerman equipment representative in Mexico and Central America.

UCS Mexico was established in 2013 to support the booming underground construction market in this region and has since diversified to address contractors’ needs in the trenchless pipe jacking and tunnelling, HDD, pipe bursting, trenching and vacuum excavation markets. UCS Mexico also offers service, aftermarket parts, and lubrication expertise. The company employs over two dozen underground construction specialists, who represent various equipment manufacturers and territories throughout the region.

Jason Holden, Director of Sales at Akkerman commented: “We feel fortunate to have formed a relationship with UCS Mexico and are confident that they will serve our customers’ needs with competence and efficiency.” Holden also commended the CEO of UCS Mexico: “Ing. Sergio Alvarado Martin is incredibly knowledgeable of the trenchless industry and is a great resource for pairing our equipment with projects in Mexico and Central America. Sergio is a motivated, energetic and driven company owner and it is these qualities that have allowed UCS Mexico to become one of the leading suppliers of trenchless products in the region.”

In the last two decades, Akkerman equipment has been prominent in the emerging trenchless market in Mexico and Central America, resulting in many key contractors’ adoption of trenchless methods into their service portfolios. The Comisión del Agua del Estado de México (CAEM) in Mexico City Owners has shown strong support for these methods in its effort to upgrade sewer and water infrastructure.
To date, over 100 km of pipe has been installed with Akkerman guided boring, manned pipe jacking, slurry microtunnelling and earth pressure balance systems in Mexico City. The first Akkerman pipe jacking system, an excavator shield, was sent to Mexico in 1994 for a demonstration project in Chalco Nuevo and followed later in the year by a TBM sale for the Colector Franc SCO Villa, Zonia IV project. In 2012, the first guided boring system was used on the Subcolector San Marcos project, followed by the first Akkerman slurry microtunnelling system in 2014 for the Colector Los Reyes de la Pas project. Most recently, an earth pressure balance system was shipped in 2015 for the Colector Emiliano Zapata project in Ecatepec, which was completed in February.

Website: www.ucsmexico.com

**AMERICAN AUGERS PARTNERS WITH DW/TXS FOR DEVELOPING MARKETS**

On 13 July, 2016 American Augers Inc. and DW/TXS, both Charles Machine Works companies, unveiled the first American Augers HDD Drill DD1100 jointly produced rig at the facilities of DW/TXS in Beijing, China.

The 500 ton HDD rig was built in close cooperation between both partners as it uses the exact design of the previous generation of American Augers DD1100 HDD rigs.

Both engineering as well as production staff from the companies worked closely together and several visits were made to Beijing to guarantee a reliable and high quality final product that meets both the standards of DW/TXS as well as American Augers Inc.

The Beijing-based DW/TXS found American Augers Inc. the exact partner needed within the Charles Machine Works family of companies.

Having a background in building mid-size and maxi HDD rigs for mainly the Chinese market DW/TXS had the right knowledge and access to local suppliers needed to make this a successful cooperation.

With this new product American Augers and DW/TXS want to target those developing markets which appreciate the features and reliability of the American Augers products but who are not ready to make the investment that comes with the purchase of a US build unit.

The rig will only be available in selected markets, not including any area’s in North America and the European Union, and will be marketed through the American Augers distribution channel. Aftersales parts and service will be a joined effort between DW/TXS and American Augers, seeing to it that customers get the best return out of their investment.

Website: www.americanaugers.com
The HexelOne® High-Pressure Pipe System has been certified by the DVGW for gas and drinking water applications. The approved use of this plastic pipe system in high-pressure settings enables users to benefit from two kinds of cost-saving potential in the context of high-pressure applications which previously could only be achieved for low-pressure applications including:

- The corrosion resistance of these pipes makes cathodic corrosion protection redundant
- Permits the use of modern installation techniques which shorten construction time while at the same time significantly reducing construction costs.

Its reinforcement opens new areas of use for the egeplast HexelOne®, with permissible operating pressures of 30 bar for water and 16 bar for gas, thus exceeding the range of applications previously covered by PE pipes. The stability achieved by the HexelOne® pipe with its reinforcement layer of high-strength PE strapping is twice as high as the one provided by PE-100 full-wall pipes. Owing to their protective layer and inner layer made of PE 100-RC, these pipes are suitable for trenchless installation. The DVGW certificate for drinking water covers dimensions from 90 mm to 125 mm diameter. In addition, HexelOne® gas pipes have been certified for up to 160 mm diameter.

egeplast is a highly innovative manufacturer of plastic pipe systems which has been known to set benchmarks for decades. Customers in more than 30 countries count on its expert advice on optimum solutions and on top-quality products by egeplast for the transport of water, gases and data. The customer base of the owner-managed company includes some of the biggest and most discerning utility companies and network operators worldwide. Website: www.egeplast.de

*The HexelOne® high-pressure pipe system for trenchless installation in the high pressure range has been awarded the DVGW certificate for gas and drinking water applications.*
THUMBS UP TO THE PERMANENT PIPE STOPPER

Recently launched by Jetchem and Superjet, the Re-Tec Permanent Pipe Stopper is claimed to be a unique product which brings a clean, simple and cost effective solution to blocking off unwanted drainage channels and pipelines. Redundant drainage systems can be capped cost effectively, quickly and easily without the need to fill them with grout, reducing the chance of infiltration, leading to increased pumping charges, vermin and bad odours.

HOW DOES IT WORK?

Utilising the same methods as patch lining with the use of silicate resins the Permanent Pipe Stop is a quick, simple and effective solution for blocking off disused pipes with each kit containing pre-measured resins and materials.

The felt Pipe Stop material is wet out with the silicate resin, connected to the air rods and inserted into the pipe. Once positioned in place the pipe stop is inflated up to 1 bar by using either a standard foot pump or a compressor. The Pipe Stop is then left in place to cure, leaving the pipe permanently blocked.

The uniquely designed quick release mechanism can then be operated, the air rods are released and removed and the pipe stop is left in place, permanently blocking off the disused pipe.

Installation is extremely quick, much like a patch liner the curing time is dependent on the ambient temperature, combined with the temperature of the resin.

PBF DRAINAGE ON THE ISLE OF DOGS

James Stern from PBF Drainage, based in Northampton, is well known for his lining work in the UK and follows any new developments and technologies within the industry very closely; he was therefore keen to try the Pipe Stopper.

James described the task PBP was asked to undertake.

“We were asked by a client to initially look at grouting a 30 m section of 100 mm diameter VC FW sewer that is redundant. The reason for the grouting was due to the location being in the Isle of Dogs and the redundant line fills when the tide rises and consequently keeps filling the pump chamber, which is monitored by the client. This extra water and additional wear and tear is costing the client. The first
issue to overcome was access to the pipeline. The sewer was located in the basement of a high rise new build hotel. The basement is a rabbit warren of corridors and small doors with the nearest access being approximately 50 m from the stairwell leading to the road with a further 20 m to any vehicle access. The second issue was the pipeline itself, with the line having to be filled with grout from 1 of only 3 rodding eyes, each of which has a 90° bend 1 metre into the pipe with no access to the downstream end to cap it off. Due to the 90° bend at the beginning of the pipe it is not possible to push or pull the grout hoses to the downstream end of the pipe, with the only possible solution being a very runny mix. The third issue was battling the tide, with the job being time sensitive for us to pour the grout and fill the line before the tide came in, which could potentially wash the grout to the point of no cure or a very weak mix, meaning the grout could still be porous and not curing.

James said: “I had previously spoken with Matt Austin, who works for Drain Lining Solutions and who had knowledge of the Re-Tec Permanent Pipe Stoppers. I was visiting Superjet London for its open day event this May and so met with Paul Roper from Re-Tec who was on hand to offer a demonstration of the product. Once I had seen the Re-Tec Permanent Pipe Stopper in action I knew it was the perfect solution for our job on the Isle of Dogs. What I really liked about the Pipe Stopper was not only how simple and easy to install it was but also the fact that, should the need arise, it could be easily removed by the use of a lateral cutter, thus reinstating the pipeline for use again. We undertook the project on the 9 June 2016, with installation being extremely easy. The Pipe Stopper was placed in location and allowed to cure and on completion we ran a series of tests and performed a CCTV survey to confirm the Pipe Stopper was working effectively. Our client was extremely happy with how easily and efficiently we had completed what could have been a difficult and time consuming task. We will certainly be using the Re-Tec Permanent Pipe Stoppers in the future.”

Jetchem and Superjet did a soft launch of the Re-Tec Permanent Pipe Stopper at the end of May, showcasing the product at their depot open day events which were spread across the country. The product is now available for purchase at any Superjet depot, online or over the phone and comes in a variety of sizes to suit most pipe diameters. Websites: www.jetchem.com or www.pbfdrainage.co.uk
THE ROBBINS COMPANY AND NORTHERN HEAVY INDUSTRIES (NHI) TO JOIN FORCES

A
n agreement between The Robbins Company and Northern Heavy Industries (NHI) Group was finalised on 28 June 2016 in Shenyang, capital of northeast China’s Liaoning Province.

This initial agreement is the first step of a three-phase merger process and gives NHI minority interest in The Robbins Company. In the next phase, anticipated to occur in July 2016, NHI will assume 61% ownership of The Robbins Company.

Lok Home, President of The Robbins Company, will remain vested in the company and continue in his leadership role. In the final phase, The Robbins Company, NFM and NHI will be merged, combining their collective resources and expertise. It is anticipated that Lok Home will assume the role of President of the newly formed company. Operations of The Robbins Company are expected to remain the same.

“This merger puts Robbins in an excellent position to expand our presence in the global TBM market.” said Mr Home. “It will enable us to provide better global service and support to our customers, and will open the door to new opportunities, especially in China. NHI has very impressive capabilities. Joining forces with them gives us expanded resources to go after more projects and strengthens our reputation as a world leader in the tunnel boring industry.”

“By laying out developing plans in Asia, America and Europe, and making a concerted effort together, we will strengthen our competitiveness in the market.” said Yang Tao, General Manager of the Tunneling Machine Company, a subsidiary of NHI.

Based in Shenyang, NHI employs 10,000 people and is among China’s top three heavy machinery manufacturers. Its products are sold to more than 30 countries worldwide. In 2007 NHI merged with NFM Technologies of France, making it a transnational company. Website: www.robbinsbm.com
Gas provider SGN (Scottish Gas Networks) is constantly striving to improve and innovate its operations and services. One of several projects aiming to deliver an end to end keyhole solution for current operational activities is the “iCore” project. The centrepiece of the project is the iCore truck which has the complete range of equipment and facilities for mobile pipe installation and connection works on board. As part of the project’s realisation, SGN staff attended a four-week customised training course at the TT training centre in Germany.

PROJECT HISTORY
Operating a 74,000 km network of gas mains and services across Scotland and the south of England, delivering gas to 5.9 million private and commercial customers, SGN is the second biggest gas provider in the UK. The private company places special emphasis on highest safety standards, excellent customer services and minimal impact on the environment. For the iCore project, the task was to develop a self-contained vehicle for the easy transportation of equipment to carry out mains and service replacement activities within a 600 mm diameter keyhole, safely and efficiently with minimal disruption to customers.

After a comprehensive selection process SGN chose TT-UK, TRACTO-TECHNIK’s Bedford based UK sales organisation which has expertise in trenchless technology as its project partner. With headquarters in Germany, TRACTO-TECHNIK has a global network, and the experience and capability to provide an end to end solution delivering value for gas consumers in UK. The project is structured with TRACTO-TECHNIK’s engineers doing the design work in Germany, with project management and delivery work provided by TT UK.

SGN also engaged DNV GL to provide technical assurance for the development and testing of the solution. DNV GL is renowned in the energy industry for its testing and advisory services with expertise that spans many disciplines.

BACKGROUND
From the 1850’s up until the 1950’s metallic mains were used extensively across the UK gas distribution network. Since then the gas industry has moved away from this source of material and is replacing those mains with plastic pipes, in order to reduce and eliminate risk of fracture, corrosion, and/or leakages. SGN is currently working on a 30-year programme to replace all metallic pipes within 30 metres of property with new polyethylene (PE) pipes, which are more flexible and robust and if left undisturbed will last for decades, ensuring a continued safe and reliable gas
Supply for years to come. Currently there are over 7,000 kilometres of small diameter metallic pipes requiring replacement across its network.

Throughout the current eight year price control period (RIIO-GD1), SGN is focussing on replacing metallic pipes below 8 in diameter (Tier 1) as part of its total operating expenditure targets. Live/dead insertion is a big part of this mains replacement strategy, as opposed to open cut replacement, to minimise disruption to customers and members of the public. Developing mains and service insertion methods further would help make the process even more efficient.

Through the company's keyhole technology projects, most notably iCore, SGN is developing a more advanced method to minimise the size of excavations and reduce disruption to customers on its tier one mains and service replacement jobs.

**iCORE PROJECT REALISATION**

SGN approached TT-UK after having learned about the unique GRUNDOPIT K Keyhole drill rig developed and produced by TRACTO-TECHNIK. GRUNDOPIT K is a steerable bore rig for the trenchless installation of gas and water service connections up to 63 mm o.d. from out of a circular keyhole of only 650 mm diameter.

The spoil is removed from the keyhole using a suction excavator which provides access to the mains pipe, after which the GRUNDOPIT K can be set up. The bore head and the drill rods are transported to the bore rig via a ‘lift’, automatically placed in bore direction and screwed together and drilled in one after the other. The pilot bore can be upsized in reverse mode to a maximum diameter of 90 mm. The product protection pipe is pulled in simultaneously and connected to the mains pipe by working above ground. The original asphalt core is then reinstated in to the keyhole afterwards and sealed with a special grout mixture. This means that additional re-instatement costs and possible consequential surface damage are avoided. iCore does not only include the keyhole drilling rig, which is in fact a customised version of the GRUNDOPIT K, but according to the given task the solution comprises the complete equipment and facilities for the mobile mains and service replacement.

The project was split into two key elements. Element 1 is to design, develop and manufacture the keyhole located and operated pipe installation system that will install PE pipes in the size range of 25 mm through to 90 mm. Element 1 has been broken down into four individual work packages:

- **Grundopit KHD: 1200/50** The directional drilling unit which can drill and install PE mains and services from 25 mm to 90 mm diameter, but specifically will be provided with tooling for pipe sizes 63 mm, 75 mm and 90 mm diameter.

  **Long handled tooling (LHT):** A suite of tooling to install and remove a service connection as required, all within the SGN designated keyhole and operated by hand from the carriage way or ground surface.

  **Grundocore KH/SG:** an hydraulically powered, integrated, core cutting unit specifically to cut and remove a carriageway core (600 mm diameter) to a maximum depth of 630 mm, with the vehicle being a lorry with a conversion to house all items.

  **Transportation:** A vehicle for an end to end keyhole solution. i.e. a lorry with a specifically designed body frame to house all items G-Pit KHD 1000/50, corer, LHT, PPE, fire extinguisher, space for six off safety barriers, three road signs and a hand wash system. The vehicle will reduce disruption by minimising any presence on site and the size of excavations.

  iCore has the potential to deliver benefits for the gas distribution industry, the wider utilities industry and the public offering:

  **Training the use of the long handled tooling (LHT) for installing and removing service connections through the keyhole.**
Faster operations will improve efficiency across the mains replacement programme.

- Smaller excavations and above ground working means safer sites for work teams and the public.
- Smaller site footprints and excavations being open for less time means less disruption for customers and road users.
- Versatile technology can be implemented across a wide range of sectors including the water industry and telecommunications.

The prototype of the iCore vehicle was approved in March 2016. A customised training package which is compliant with SGN templates, procedures and fits within the business for the SGN staff is also part of the project. Training took place at the training centre of GRUNDOPIT K manufacturer TRACTO-TECHNIK in Germany from 8 June to 22 July, 2016. The lessons given by TT-UK trainers Jim Albarella and Steve Robson as well as TT’s project engineers Elmar Koch and Andreas Hanses included theoretical and practical units on construction, handling and operation of the iCore equipment.

“We have set out a programme of innovation to revolutionise roadworks to minimise disruption to our customers and road users alike.” said Angus McIntosh, Innovation and New Technology Manager, SGN. Furthermore David McLeod, Innovation Delivery Manager and iCore Project Manager, SGN said: “iCore will provide a one stop keyhole solution, for mains and service replacement activities.”

From an industry perspective, David Smith, Chief Executive, Energy Networks Association commented: “This project will allow a wider scope of operations to be possible through keyhole and in turn create even greater benefits for gas customers.”

Field trials will commence in Edinburgh in August 2016. The project is due for completion in March 2017. Website: www.tracto-technik.com

Below left: Top view of the bore rig’s central mechanism with semi-automatic drive inside the keyhole.
Below right: After completion of the connection work the keyhole is filled with special cement grout and the bore core is inserted back into place.
A considerable commitment has been made by the Malaysian Government to invest in and upgrading the existing sewerage facilities. These two firsts, the successful rehabilitation of a pipeline using UV CIPP techniques and Kuala Lumpur playing host to Trenchless Asia (which it will do again in 2018) are both proof that trenchless technologies will be an important factor in Malaysia and the wider region’s development, management and maintenance of critically important water and wastewater assets. Website: www.jbptrenchless.com
In just three months Australian drilling contractor Dunstans Construction Group installed a 700 meter long pipeline in Anglesea, in the State of Victoria. A 250 t HDD Rig from Herrenknecht played a key role in the achievement. Within a very short time the construction crew built a sea outfall with the machine, as well as pulling in the pipeline all the way back to the local water treatment plant. In August 2015, a large cliff segment collapsed in the Australian state of Victoria, resulting in an acute need for action. Falling rocks massively impaired the sea outfall pipe of the local water treatment plant on the Bass Strait coast. The affected sewage pipe had to be replaced as quickly as possible to ensure stable wastewater disposal. The targeted timescale for the operation was tight: completion of the new infrastructure in 3 months.

The protection of nearby Point Addis Marine National Park played an additional role in the installation of the new pipeline using the sea outfall method. To meet the strict environmental protection requirements, the Australian drilling contractor counted on technology from Germany that had also proven itself in this regard. Dunstans ordered a Herrenknecht HK250C HDD Rig, a technology that had previously demonstrated its effectiveness in sensitive environments on numerous occasions.

For the installation of the polyethylene (HDPE) pipeline with an outer diameter of 355 mm (14 in) the crew first drilled a pilot hole from the treatment plant to the coast and under the sea. Then, the borehole was reamed from the landward side. After completion of the borehole Dunstans overcame another hurdle presented by the project, that of transporting the 700 m long product pipe by sea past Port Philip Bay, one of the busiest ports in Australia. Regular shipping was not obstructed by the exceptionally long cargo.

To complete the installation Dunstans pulled the pipeline floating on the sea through the predrilled alignment all the way back to the treatment plant. Thanks to the 250 t pulling force of the HDD Rig this task was carried out quickly and cleanly. With the connection of the pipeline to the treatment plant completed before Christmas 2015, Anglesea was ready for the tourism high season in summer.

Website: www.herrenknecht.com

The site of the Anglesea sea outfall.
HORIZONTAL DIRECTIONAL DRILLING

For General Information on Horizontal Directional Drilling click here

MORE HORSEPOWER WITH THE NEW VERMEER D10X15 S3 NAVIGATOR® HDD

Vermeer is pleased to introduce the compact D10x15 S3 Navigator horizontal directional drill (HDD) for the utility installation market. The D10x15 S3 is designed to provide more power and carriage speed, and lower sound levels than its D9x13 S3 Navigator HDD predecessor.

“Market feedback indicated that utility contractors operating compact-size drills are demanding more performance,” said Tod Michael, product manager at Vermeer. “We listened and responded by optimising the horsepower, thrust, rotation and carriage speed of the new D10x15 S3 to help utility contractors install more feet per day.”

The D10x15 S3 features a 60 hp (44.7 kW) Deutz TD2.9 Tier 4 Final engine, offering a 36% power boost compared to its D9x13 S3 predecessor. Vermeer also increased the thrust/pullback to 10,000 lb (44.5 kN), the maximum torque to 1,500 ftlb (2,033.7 Nm), and the maximum spindle speed to 220 rpm, providing almost an 11 percent increase in carriage speed, reduced sound levels.

Speed, sound and simplicity are trademarks of the entire Vermeer S3 drill line-up. With those goals in mind, Vermeer increased the maximum carriage speed to 208 fpm (63.4 m/min), and reduced operating noise. The drill’s reduced sound levels help reduce noise and disturbance on residential jobsites, and enables easier communication among the crew members.

The combination of the drill’s reduced sound levels and compact size, and the drill rod’s tight bend radius, makes it well suited for short ‘curb-to-home’ fibre and service work. These shots are typically less than 300 ft (91.4 m) and 4 in (100 mm) in diameter.

“Measuring just 12.5 ft (3.8 m) long, the D10x15 S3 has one of the smallest footprints in its class,” said Michael. “When a crew is working in a residential area with limited space, they may have to set up in the street. The compact design of the D10x15 S3 helps minimise traffic disruptions in a neighbourhood.”

Like other models in the Vermeer S3 product line, the D10x15 S3 has an optional DigiTrak® Aurora™ interactive, full-colour touch-screen display. The Aurora screen delivers real-time, easy-to-view location information, and can be used in conjunction with the Vermeer Productivity Tools.

The D10x15 is the latest addition to the Vermeer S3 Navigator® HDD product line, which includes the: D20x22 S3 Navigator® HDD, D23x30 S3 Navigator® HDD, D24x40 S3 Navigator® HDD, D40x55 S3 Navigator® HDD and D60x90 S3 Navigator® HDD for utility work, and the larger D100x140 S3 Navigator® HDD and D220x300 S3 Navigator® HDD for pipeline installation projects. Website: www.vermeer.com

MCLAUGHLIN PIT LAUNCHED HDD INSTALLS CABLE DUCTING

A McLaughlin Pit Launched Directional Drilling unit, the ML10, was recently called into action in Scotland to assist with the connections for a wind farm creating green energy for a local power company.

As part of the connection process there were several road crossings for the installation of 110mm diameter duct for which, to keep drilling costs and distances down, it was decided that a pit launch system would be most beneficial. The McLaughlin ML-10 was selected as the most suitable system because of its size and power to complete the work.

Before starting the bore and prior to any excavations being made in the area a check was conducted for other services and pipes. A water main was located and exposed to ensure that no damage was caused to it.

A launch pit was then excavated. The pit was large enough for two crossings as a 180 mm diameter gas pipe was also being installed at the same location. The ML-10 rig was placed in the ground on the required line and at the required depth.

The McLaughlin mixing unit was then filled with water and polymer suited to the ground conditions and the drilling fluid mixed in readiness for the pilot bore.
Due to the ground conditions, which contained large granite stones, the decision was made to use a more powerful drill housing with a suitable steering shoe. The sonde was then calibrated with the location system prior to commencing the bore.

The pilot bore was then carried out, drilling the compact 710 mm diameter rods under the road. As each rod was drilled in the location and direction of the drill head was assessed and a decision made to either steer or continue rotating the drill head towards the desired exit point. At each location point a note was made of the depth and line of the bore.

After around 90 minutes of boring and locating the drill head came out in the exit pit, on the perfect alignment for disconnecting.

The drill head was then taken off and a 10 in (250 mm) diameter reamer fitted for pre-reaming the hole. The pull back was then done in just over an hour, installing the 110 mm diameter PE pipe as per the customer’s specifications. Website: www.vermeer-uk.co.uk
PERMANENT DEVELOPMENT FOR BEST PERFORMANCE

While discussions over the subject of installation methods go on, the manufacturing company Föckersperger GmbH from Aurachtal in Germany has since 1971 offered a fundamental new development in installation techniques, which has been continuously advanced and improved ever since.

The technique is the so-called ‘Pipe and Cable Plow’ technique. By using a cable-pulled special plow system, pipes and cables are installed directly into the ground. The technique offers a way to place power and broadband cables over long distances as well as water and gas pipes up to 450 mm o.d. In soft soils up to 630 mm o.d. can be installed with the newly developed Spider F 250.

The plowing technique has been shown to be exceptionally efficient, environmentally sound and time saving as no trenches have to be dug. It can be applied in non-cohesive and cohesive loose soils. Daily performance (in terms of metres installed) with a plowing unit can exceed 5,000 m with only a small start and construction pit for setting up and aligning the plow. The plow is pulled by an all-terrain WinchTruck, equipped with a swivelling frame and a hydraulic tipping and tilting support shield, which gets anchored deep into the ground ensuring a secure hold and to guarantee maximum tractive force in every position.

Four plow arms, adjustable in all directions, and rubber tyres regulated by hydraulics, help the Pipe and Cable Plow to get through almost all kinds of soil conditions. The plow blade is inserted in a launch pit at the required installation level of the cable or pipe. Driven by the tractive force of the cable winch, the blade displaces the soil and even pushes away stony inclusions within the embedment area, at the same time smoothing the trench bottom with the horizontally and vertically mobile installation chute attachment. This working step generates a void, ready for laying out the cable at the required depth. The Pipe and Cable Plow can install several pipes, cables and warning tapes in one go.

With its ingenious bear and pull technique, the Cable Plow is able to maintain a constant laying depth in almost every operating situation. The plow blade is precisely hydraulically adjustable in height so that the plowing/installation depth can be adapted smoothly to the ground conditions encountered. With its individually adjustable plow arms, operating behind crash barriers or on steep slopes presents no problems. The trenchless installation even enables crossings of small inshore waterways and delicate landscapes.

The latest development, the WinchTruck F 890, was presented for the first time at the BAUMA 2016 exhibition in Munich. Customers may now choose the new WinchTruck F 890 on a MAN or Mercedes Benz chassis. In terms of performance, the MAN TGS 18.480 and the Mercedes Benz Arocs 2048 K are equally equipped. Both variants come with an engine output of 480 hp and a weight of approximately 18 tons. Together with the Pipe and Cable Plow, the WinchTruck F 890 is able to reach a tractive force of up to 180 tons.

A unique feature of all Föckersperger WinchTrucks is the adjustable air pressure regulating system which adds significantly to the ground adhesion of the rubber tracks. With an adjustable control, the so called ‘Boost-function’, the tractive force can be raised temporarily by 20%. Of course, each WinchTruck is equipped with the patented Föckersperger winch construction.

Since 1971, the Frank Föckersperger company has successfully plowed in some 80,000 km of pipes and cables. This degree of experience, as well as the theoretical and experimental research that has been undertaken over the past 45 years, has firmly established the viability of the technique. Since 2003 the plowing technique has been accepted in the respective German ATV and DVGW standards which regulate application range, requirements and quality control. This now means that a highly economic, environmentally sound and versatile technique, which guarantees minimal interference of the soil, is available to users and contractors.

Föckersperger develops and manufactures the machine technology solely in-house. Within Germany, eight different plow systems are provided as a service including operating personnel. Outside of Germany the plows are sold to civil engineering companies across the world. Website: www.cableplow.de

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Furthermore, as the high temperature flows are often intermittent, any drainage system installed will generally be able to withstand the high output temperatures from power production plants. Trenchless technology allows the establishment of plants to undertake the generation of power from these fuel sources is no less complicated than the way in which fossil fuel burning plants are designed. Underpinning drainage for green energy production is a major challenge. On the cooling side of the plant, a major challenge is how to handle the initial high wastewater outputs from such plants. The separation of food waste from general waste has helped this cause considerably, but in the UK this still leaves a significant amount of non-recyclable waste being sent to landfill. The separation of food waste from general waste has helped this cause considerably, but in the UK this still leaves a significant amount of non-recyclable waste being sent to landfill. Additionally, whilst the reduction in CO₂ emissions has been behind this aspect of the industry, a further driver behind the minimising of production of greenhouse gasses has been the push to reduce methane (CH₄) production from landfill sites by the use of recycling. Methane is believed to be equally, if not more, influential in terms of climate change as CO₂ so any reduction in the output to the atmosphere of CH₄ is seen as a major step forward in the climate change fight.

The Acrobat line continues to meet the ongoing needs of the HVAC, plumbing and mechanical industry. “It is exciting to design a new line of equipment that makes it easier for operators to work in challenging indoor environments where pipe is fused in very tight spaces.” said McElroy President Chip McElroy.

The latest model — the Acrobat 250 — comes with a lighter weight hydraulic power unit (HPU) that is easier to move around the jobsite and consumes less power. A lightweight heater and guide rod latching system eliminates the need to manually hold the heater in place during overhead fusions, reducing operator fatigue. An ergonomic handlebar design makes it easy to use from all angles, even overhead.

The Acrobat 250 goes a step up in size in fusion capability for 63 mm to 250 mm polypropylene pipe but offers the same compact design that allows operators to fuse pipe in the confines of the walls, ceilings and floors.

To further reduce its footprint, the carriage can be configured from 4 to 3 jaws without tools. A single-size insert design can accommodate a variety of pipe sizes, and its narrow jaws allow fusions to most flanges and fittings. Website: www.mcelroy.com

MCELROY EXPANDS ACROBAT FUSION MACHINE LINE

McElroy recently announced the expansion of its Acrobat™ fusion machine line following its successful launch nearly two years ago. The Acrobat line continues to meet the ongoing needs of the HVAC, plumbing and mechanical industry. “It is exciting to design a new line of equipment that makes it easier for operators to work in challenging indoor environments where pipe is fused in very tight spaces.” said McElroy President Chip McElroy.

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UNDERPINNING DRAINAGE FOR GREEN ENERGY PRODUCTION

Climate change, for much of the past two decades if not more, has been a driving factor behind the push to increase electrical power production by renewable, non-fossil fuel means. This has seen a meteoric rise in the number of wind turbine and solar farm developments all across the UK and many other parts of the world.

However, whilst the reduction in CO₂ emissions has been behind this aspect of the industry, a further driver behind the minimising of production of greenhouse gasses has been the push to reduce methane (CH₄) production from landfill sites by the use of recycling. Methane is believed to be equally, if not more, influential in terms of climate change as CO₂ so any reduction in the output to the atmosphere of CH₄ is seen as a major step forward in the climate change fight.

The separation of food waste from general waste has helped this cause considerably, but in the UK this still leaves a significant amount of non-recyclable waste being sent to landfill. Latterly, the volume of waste has been increasing the pressure on landfill sites, so many companies and individuals have been trying to find ways to simultaneously answer both climate change and landfill questions.

WASTE RECYCLING FOR POWER

This drive has led to the development of power plants to provide electricity through the use of non-recyclable waste as fuel or through the burning of biomass products such as waste wood. Of course, the establishment of plants to undertake the generation of power from these fuel sources is no less complicated than the way in which fossil fuel burning plants are designed.

One aspect of the power production that has always needed an answer is how to handle the wastewater outputs from such plants. On the cooling side of the plant, a major challenge is how to handle the initial high-temperature effluents in a manner that will not only leave the local environment unaffected but also leave undamaged the drainage system installed on any particular plant.

Whilst standard drainage systems will handle reasonably high temperatures, they will not in general be able to withstand the high output temperatures from power production plants. Furthermore, as the high temperature flows are often intermittent, any drainage system installed will...
have to be able to handle not just high temperatures but also significant thermal shock as flows vary throughout the power generation operation.

To answer this demand, a special type of pipe was needed and today this is one of the specialist pipe ranges offered by Naylor Drainage of Barnsley, UK.

**THERMACHEM PIPE**

Having manufactured clayware pipes for over 125 years, the design and manufacturing prowess of Naylor Drainage is without question. Having listened to the needs of industry in terms of the requirement for pipes that can handle high temperature environments, the company undertook development of its existing pipe systems with a view to providing a pipe to meet this need.

Today the company offers a range of pipes known as Thermachem, designed to handle both high temperature and chemically aggressive environments across a range of sizes from DN100 to DN500 and all popular pipes sizes in between. There is also a range of bends and fittings to suit most drainage circumstances.

Thermachem is believed to be the world’s leading thermal shock and chemical resistant ceramic pipe system, and is manufactured from Naylor’s unique Hathernware material. Two of the biggest threats to ceramic pipes and other pipe materials in the process and power production industries are chemical attack and temperature change. When the pipeline is regularly subjected to a rapid change in temperature, the ceramic body can be vulnerable to thermal shock. Thermachem is the only ceramic material suitable for use in the areas which are subjected to intermittent discharges of hot and cold effluents such as hospital sterilisation units, boiler blow down drainage, laboratories, food processing, beverage production and more recently power plant drainage systems with temperature changes of up to 120°C.

Legal obligations imposed upon companies by the Environmental Protection Act 1990 have also resulted in increasing awareness of the potential discharge impact of industrial effluents into ground water or rivers. This has led to an increasing trend for ‘worst-case’ scenarios to be designed into new structures. This is especially applicable to drainage installed below the main floor slab, where repair or process amendment would prove prohibitively expensive. Thermachem pipes and fittings are designed to handle most chemicals and aggressive discharges.

The Thermachem drainage system is approved to EN295-1 Standard by BSI as well as overseas certification bodies such as Benor. Thermachem pipes have the standard G type plain ended coupling system which allows it to be seamlessly connected to Naylor’s Densleeve range of standard vitrified clay pipes and fittings, where downstream dilution or heat dissipation allows a switch into standard rather than specialist piping.

**PROJECTS**

Some of the more recent examples of how Thermachem has proven its usefulness in the recyclable/renewable generation of power are the Templeborough Biomass power plant, the Beddington waste recycling plant and the Battlefield EfW (Energy from Waste) Plant.

The Templeborough Biomass Power Plant is currently under construction with the use of Naylor Thermachem pipes. In common with other biomass materials, wood based biomass materials all capture energy and CO₂ through the process of photosynthesis as they grow, and when burned as a fuel, release only the same amount of CO₂ they captured back into the atmosphere. Biomass is therefore classed as a renewable energy source and this plant will help towards the UK government’s ongoing renewable energy targets. Once fully operational in 2017, the plant will generate 41 MW of green electricity, enough to power 78,000 homes and save over 150,000 tons of CO₂ every year. Naylor Thermachem pipes of DN100, DN150, DN225 and DN300 have been installed and connected across the site using chemical push fit couplings with EPDM seals to handle the high temperature discharges around the site, particularly from directly under the boiler where steam is regularly released to prevent it condensing.
At the state of the art Beddington Energy Recovery Facility (ERF), Naylor Thermachem has also been installed as the drainage system. The facility has been designed to handle around 275,000 tonnes of non-hazardous waste per year, which will generate around 22 MW of electricity to supply to the National Grid. The site is based at an existing landfill and recycling centre, making excellent use of existing access. It will help divert up to 95% of non-recyclable waste from the local area from going to landfill, saving not only space at the landfill site and providing significant renewable energy output but also making significant cost savings for the local taxpayer. On this site, Thermachem pipes of DN225 and DN300 were used in conjunction with EPDM Push fit couplings.

The Battlefield EFW plant in Shrewsbury will treat approximately 90,000 tonnes of Shropshire’s waste per year, generating enough electricity to power around 45,000 homes. With recycling schemes already in place, landfill for the region will be reduced to just 5%. Thermachem pipes were chosen for this project due to their excellent resistance to thermal shock. They will carry boiler blow down water from the boiler to a holding tank, where water will be cooled and treated for re-use or discharge. Different coloured couplings, usually used to distinguish the coupler seal material, were used to identify the two different pipelines carrying different discharges. Despite the relatively short (150 metre) run of the pipeline, pipes of two different diameters - DN150 and DN225 - were utilised.

So, with increasing numbers of similar facilities having already been built or in the process of construction or planning, it appears highly likely that Thermachem pipes of all diameters will continue to underpin renewable energy production both in the UK and indeed worldwide (Naylor is an active exporter).

Commenting on the growing use of Thermachem pipes for these types of installations, Edward Naylor, CEO of Naylor Drainage said: “The increasing demands of industrial projects like these was exactly the sort of use that we expected as we developed our Thermachem product range. Our expertise in this field allows us to help engineers and designers by providing solutions and technical input into the most technically challenging situations. Power plants such as these have enormous benefits in terms of climate change and Thermachem’s use allows us to play our own part in the worldwide drive towards a cleaner and greener economy.” Website: www.naylor.co.uk

Naylor Thermachem installations at the Battlefield EFW plant showing the different coupling colours to indicate different discharge pipelines.
SUBSITE® ELECTRONICS INTRODUCES NEW HDD GUIDANCE SYSTEM

S ubsite® Electronics, a Charles Machine Works Company, has introduced a new series of versatile, money-saving HDD Beacons: the 15T, 17T and 19T.

“When it comes to HDD beacons, only one colour will save you more green,” said John Bieberdorf, referring to the brand’s signature green colour and the money-saving features of the company’s entire HDD beacon line. Bieberdorf, product manager for Subsite Electronic HDD guidance systems, said: “Only Subsite HDD beacons are repairable. We can replace the electronic module and have your beacon jobsite-ready for about half the cost of a new beacon. Operators who have ever ‘burned out’ a beacon will appreciate the cost savings.”

Repairability, however, is just one of the advantages Bieberdorf says the new beacons offer. “Our engineers designed these to be very versatile,” he said. “With multiple power levels and frequencies you can configure in the field. You can even go as low as 1.5 hertz for working around materials like metal rebar. In short, you can do more with one beacon.”

“Automatic tuning circuitry adjusts to match the housing you are using, our new BlueTooth® module increases connectivity for more reliable performance, and higher-grade components increase our maximum operational temperature from 176°F to 221°F (80°C to 105°C),” he added.

Users will also notice a lack of the ‘on-off-on’ operation they sometimes see in HDD beacons, due to redundant/boosted power supply circuitry.

The new series offers one-, three- and four-frequency beacons and 1.0% and 0.1% pitch beacons. 15 in, 17 in and 19 in (381 mm, 432 mm and 483 mm) sizes are available.

Subsite Electronics has also introduced the new TK RECON™ Series HDD Guidance System. Built upon the company’s popular TK Series trackers, the TK RECON Series delivers proven TK performance but adds several productivity-enhancing features through a new advanced-technology base.

“The TK RECON introduces the future of our HDD guidance systems,” said John Bieberdorf. “Our engineers have developed technology that not only offers our customers great new features now, but will accept upgraded features in the future.”

New features include more battery options than any competitive model. TK RECON users can chose Li Ion, NiMH, or off-the-shelf ‘C’ Alkaline batteries for flexibility of cost and better performance in colder climates. The battery choices are a big deal,” Bieberdorf said. “Li Ion batteries are rechargeable and deliver twice the battery life of Alkaline. But just as important, our trackers are the only ones to accept off-the-shelf ‘C’ batteries. If you forget to recharge batteries or lose charge on the jobsite, you can pop in some ‘C’ batteries and stay productive.”

The TK RECON Series also features an improved radio with increased interference immunity and faster information transfer, for more reliable communication on the jobsite. A louder speaker provides clear audio signals even in high ambient noise areas, offering users an additional peak locating method, by number or sound.

Other features include an integrated compass, which allows users to easily determine the magnetic heading of the tracker and the tool head (beacon) for faster orientation, and connectivity with both Android® and iOS (iPhone®/iPad®) mobile devices. This connectivity enables users to communicate with the tracker, update TK and TD software, and download bore information into TSR mobile, Subsite’s As-Built software included with every TK RECON Series tracker.

The TK RECON Series offers dual locating methods (walkover and DrillTo®) and a depth range of up to 110 ft (33.5 m). Product configurations include the single-frequency TK RECON1™ (29 kHz), the two frequency TK RECON2™ (12 kHz and 29 kHz) and the four-frequency TK RECON4™ (1.5 kHz, 12 kHz, 20 kHz and 29 kHz). Website: www.subsite.com

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UKSTT NEWS

UKSTT GALA DINNER & AWARDS CEREMONY IN ASSOCIATION WITH WESTRADE GROUP

This year, in order to give the industry the celebration it rightly deserves, we are pleased to be able to announce the UKSTT Awards and Gala Dinner in Association with Westrade which will take place on 21 September during the No-Dig Live 2016 event.

To sponsor the Awards and Gala Dinner– Please contact Paul Harwood at pharwood@westrade.co.uk

To book tickets or reserve a table, please contact Chantel Avis at canvis@westrade.co.uk

Many thanks to Sponsors so far.

Platinum Sponsors:  Award Category Sponsors:

UKSTT WELCOMES NEW MEMBER

UKSTT would like to welcome new member Marton Geotechnical Services Ltd of Rougham, Suffolk. Marton Geotechnical Services (MGS) was established in 1988 providing products for environmental, geotechnical, mining, rail and civil engineering. Website: www.mgs.co.uk

UKSTT also welcomes Ant Hire Solutions LLP. Founded in 1996, Ant Hire Solutions is one of the UK’s leading suppliers to the utility sector. The business designs, manufacturers, hires and sells equipment to water companies and contractors working in both the clean water and wastewater sector. Website: www.anthire.co.uk

CHAIRMAN INTERVIEWED

At the end of last month UKSTT Chairman Ian Vickridge took part in an interview with Trenchless International. The following is a copy of the article ‘Five Minutes with Ian Vickridge’.

What is your current role and what does this involve?

I am currently the Chairman of UKSTT. This is an honorary position which involves attending and chairing about 6 to 10 UKSTT Council and subcommittee meetings each year. In addition this, the UKSTT runs a series of roadshows, masterclasses, and evening technical meetings which I attend when possible.

I have been the Chairman for a year after having acted as Vice Chairman for the previous two years. I will stand down as Chair next year and hand over to our current Vice Chair, Matthew Izzard.

What do you find enjoyable about this position? What are the challenges?

I find that the people involved in the trenchless industry are very innovative and energetic and, as I have been involved in the industry for over 30 years, I have many friends in this close and committed community.

The challenges for the Society are to maintain our profile and membership, raise awareness of trenchless methods, continually raise standards of design and implementation of trenchless techniques, and to educate the next generation of professionals in the industry.

Where were you working before you took up your position with the UKSTT?

I am now retired after spending about half of my career as an academic in various universities and the other half in industry.

My last full time position was as a Technical Director with the engineering consultants, Black & Veatch in Hong Kong, where I was leading a team involved mainly in the trenchless rehabilitation of water mains and sewers.

Prior to working in Hong Kong I was a Senior Lecturer in the Civil Engineering Department in Manchester University, where I taught Water and Environmental Engineering and undertook research and consultancy in a variety of projects related to Trenchless Technology, including acting as an expert witness in several cases.

Do Trenchless Technologies and practices differ between the UK and Hong Kong?

Many of the trenchless rehabilitation methods, such as CIPP, close-fit-thin-wall polyethylene (PE) lining, and pipe bursting - were invented and developed in the UK during the infancy of the trenchless industry in the 1980s. These methods were all well established in the UK by the time I went to Hong Kong in around 2001. When I arrived there, the technologies were not well known, and certainly not accepted. It was interesting and challenging to promote trenchless practices there at the time, particularly as the dense housing and congested traffic presented difficulties and obstacles that were unique to Hong Kong.

What made you take an interest in the Trenchless industry?

I initially became interested in trenchless methods when I attended the first No-Dig Conference and Exhibition in London in 1985. At the time I had recently been appointed to an academic post in Manchester and was attempting to identify and develop research projects that we could follow up in the university.

It was clear to me that the innovative methods on display at that event could be of great benefit to rectifying some of the major problems of sewer deterioration and collapse that were occurring in Manchester at that time. As a consequence we started various
Ian is the co-author of Sewers: Rehabilitation and New Construction Repair and Renovation (1996) with Geoffrey F. Read. This book is available for purchase from www.amazon.co.uk

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HDD is an extremely versatile trenchless technology that is used for the installation of everything from utility service connections to pipeline and cable projects under roadways and rivers. Surface launched HDD is best suited for installing pressure pipes and conduits where precise grades are not required. Pit launched HDD systems offer the advantage of starting at the required line and level and are better suited to grade work although generally over shorted distances.

The main components of HDD are: (1) a directional drill rig sized for the job at hand; (2) drill rods linked together to form a drill string for advancing the drill head and for pulling back reamers and products; (3) a transmitter/receiver for tracking and recording the location of the drill and product; (4) a tank for mixing and holding drilling fluid; and (5) a pump for circulating the drilling fluid. Other components of an HDD operation include bits, reamers, swivels and pulling heads.

Larger jobs often recycle the drilling fluid using a combination of screens, centrifugal pumps, and hydro cyclones to remove the cuttings from the fluid. It is more likely on longer projects where tracking the drill head using a walkover system is not possible due to the depth or surface conditions to instead use a wire line tracking system to monitor progress. Additionally rod handling systems can also be used to assist in ensuring a smooth, speedy process of loading additional drill rods.

Operationally, an HDD project has a launch site where the rigs is set-up and positioned to drill a pilot bore along a planned path to an exit pit where either the product pipe, reamer or product pipe reamer is attached and pulled back through the bore hole. The process can be relatively simple for small diameter product pipe covering a short distance or quite complex when the product is large and the distances are long.

For surface launched systems the rig is secured by means of on-board power-rotating augers and positioned at a distance behind the entry point to allow the drill to enter the ground at the planned location. The entry angle of the drill string is typically 80° to 160°. For pit launched systems a pit is dug to size of the rig and depth required to allow direct launching to depth and line. A pit for capturing drilling fluids (returns) is dug at the point of entry and at the planned exit point. The drill string, comprised of a series of drill rods, is advanced by a combination of rotation and thrust supplied by the rig. The string is initially advanced using both rotational torque and thrust until the drill string has enough down-hole stability to allow the operator to change the direction that the string will advance along a planned bore path. There are many types of bits designed to navigate through different types of soil, from clays and sands to rock. Most drill bits have a slant-face, the orientation of which determines the direction that the bit will advance. To move in a straight line, the rig operator both rotates and pushes the drill string. To change direction, the operator, stops rotating the drill string and pushes the string. The path will change in the direction that the bit’s slant-face is pointing. On-board controls allow the operator to monitor the orientation of the bit and the change, in general, the direction of the bore.

A walk-over tracking system is used to help guide and monitor the location of the bore. The system is comprised of a transmitter, receiver and remote screen. The transmitter or sonde is located in a housing unit near the front of the drill string. The transmitter emits a continuous magnetic or electronic signal, which is picked up by a portable hand-held receiver. Data transmitted to the receiver allows the tracking hand to determine position and depth as well as clock-face position of the drill bit. This information allows the operator to track location along the planned bore and to make changes as needed. The remote screen is situated on the drill rig to enable the drill rig operator to see a continuous stream of data enabling him to effect agreed steering changes.

Bore planning software can be used to provide an agreed outline of the operation, tolerances and rod-by-rod bore plan for the operators. This can be incorporated directly into the drilling rig and actual ‘as built’ data downloaded to provide an accurate representation of where and how the end product was installed.

Drilling fluids, pumped down through the hollow drill rods and holes in the drill bit, are key to keeping the transmitter electronics cool, stabilising the hole, and extracting returns from the bore hole. The drilling fluids are mixed to address the solid conditions that are anticipated along the planned path. During installation returns can be tested to confirm that the correct water-additive mixture is being used.

Once the pilot bore reaches the exit area, the reaming and installation the product pipe phase begins. The drill head is removed and a reamer (or hole-opener) is fitted onto the inserted drill pipe. The hole is reamed in one or more passes to the required diameter. When the bore is large enough to accept the product - about 1.5 times the size of the product - the product is attached to the drill string with a pulling head and swivel, and pulled back to the rig. Like drill bits reamers are designed to operate best in certain types of soil, either cutting, compacting or a mixture of the two. The larger the product, the more passes with reamers may be required to open up a hole that can accept the product and keep the pulling forces as low as possible.

For smaller installations, returns are removed via vacuum trucks for disposal. Cuttings often are removed and drilling fluids recycled in larger installations using a combination of centrifugal pumps, tanks with baffles, shaker screens, and de-sanding and de-silting hydrocyclones. The residual material is removed for disposal.
MEMBER NEWS

PMP DEMONSTRATES WORST CASE SCENARIO WITHIN A TUNNEL

Widdop Reservoir nestles in the Calderdale district of West Yorkshire and for over twelve months shaft and tunnel inspections have not been undertaken as Yorkshire Water’s Raw Water Management Team deemed the tunnel too high risk to enter, in terms of successfully and safely effecting a rescue, should the need arise.

The 240 metre x 1.4 m meter diameter tunnel is mostly taken up by the draw off pipe and concrete stools, as well as hose reels on top of the pipe at set intervals. This leaves very little room for manoeuvre within the tunnel, which additionally has a constant flow of 3 to 4 inches of ground water in the invert mixed with ochre, which makes the underfoot conditions slippery.

The inspections are a necessary part of the maintenance programme that Yorkshire Water need to carry out, therefore entry into the tunnel needed to take place.

To enable these inspections, Yorkshire Water asked PMP to submit a rescue plan – not just submit for someone in an office to approve, but to provide a demonstration of a rescue from a worst case scenario within the tunnel.

Entry to the tunnel is either via a 27 m shaft or via offset steps at the tunnel entrance, so again there is no easy walk in or out.

Several Yorkshire Water personnel were in attendance for the demonstration, including Darren Lynch, Senior Regional Reservoir Manager whose role includes allocating rescue teams to assist Yorkshire Water operatives in their tasks within confined spaces.

The PMP rescue team included their in-house medic who, as well as assisting in rescues, is trained to provide medical intervention should the need arise. Using specialist equipment identified as best for task, in tandem with some techniques not taught on the standard confined space rescue courses, two rescues were successfully undertaken without issue.

Yorkshire Water ensured that a suitable and sufficient rescue plan was in place for this asset by insisting that a demonstration was carried out before approving any further entries by Yorkshire Water operatives.

Actually knowing that a rescue provision is suitable and sufficient and that the team providing the cover is competent not only makes good business sense but also makes good health and safety sense – is your confined space rescue plan suitable AND sufficient? Website: www.pmp-utilities.co.uk

RADIUS GROUP JOINT VENTURE IN CHINA

Radius Group, a multinational market leader in pipeline infrastructure solutions for district heating, gas and water transportation is pleased to announce the establishment of an exciting new Joint Venture with Jielin Plastic Pipe Manufacture Co Ltd based in Zibo, Shandong Province, China. Radius Group will be the majority shareholder and the Joint Venture will focus on the production of reinforced pre-insulated flexible pipes for the District Heating market in China and will operate under the name Radius (Shandong) Piping Systems Ltd.

Andy Taylor, Radius Group CEO, said: “We are overjoyed and excited to partner with Zibo Jielin Plastic Pipe Manufacture in establishing this exciting new opportunity. District heating is a core segment for Radius Group and through this manufacturing partnership we will deliver a state-of-the-art pipeline solution which will benefit the Chinese District Heating market. Zibo Jielin Plastic Pipe Manufacture is a leader in the production of plastic pipe for district heating, gas and water applications. Its pipe manufacturing capabilities, knowledge, quality and leading position in the Chinese market, combined with Radius Group’s unique product proposition in reinforced pre-insulated flexible District Heating pipe systems will create a strong market player. Our expectation levels are high for this new and exciting venture and we look forward to working with our partners.”

Liu Hongbo, CEO, Zibo Jielin Plastic Pipe Manufacture added: “I am very excited at the prospect of this collaboration with Radius. Radius’ highly advanced production technology, outstanding R&D capabilities, management expertise and experience in developing value makes them one of the largest manufacturers of plastic pipes and fittings in Europe and therefore a perfect partner for Zibo Jielin. Through the establishment of this JV both parties will benefit from outstanding synergy opportunities. Our combined product proposition is unique and will accelerate the replacement of steel pipes in the district heating network. As a result, our JV company will contribute to the energy saving and the carbon emission reduction in the district heating industry in China.” Website: www.radius-systems.com

JET AIRE WELCOMES GRANT BELL TO THE TEAM

Jet Aire Drain Care Ltd would like to welcome Grant Bell to the team as its new Compliance Manager. Despite being in his mid-twenties, Grant has multiple years’ experience in the Health and Safety sector having worked for leading consultants DP in the North East for the past few years. He holds all the current health and safety qualifications and will help the team ensure our health and safety on-site is to the very best standards. Grant has been with the company for only a few weeks but already his professionalism and can-do attitude has been evident. He has quickly settled in to the Jet Aire culture and has enabled other members of the team to focus on other areas to develop the company further. We are very much looking forward to seeing him develop within his new role in the coming months and providing huge value to our team.

Grant is one of the leading Commercial Drainage providers across the North East of England, currently working with Northumbrian Water and Asda Distribution Centres. Grant replaces Paul Spiers who has left the company.

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MORRISON UTILITY SERVICES APP PROVIDES IMPROVED SAFETY FOR LONE WORKERS

Morrison Utility Services (MUS), a leading utility services provider in the UK, has developed a ‘lone worker app’ that provides significant new safety measures for operatives working in isolation.

The new app ensures that any MUS operative working without close or direct supervision will now benefit from an instant alarm system, reduced response times and faster assistance.

Using GPS/GPRS location tracking technology, the app enables supervisors and designated alarm respondents to pinpoint a lone worker’s precise location details following notification of an emergency situation. An accelerometer, built into the majority of smartphones issued to MUS contract teams, is designed to recognise sudden changes in movement (e.g. falling), as well as pre-set periods of non-movement that could signify injury or loss of consciousness.

The app’s detection of an emergency incident triggers an automatic SMS alert to the MUS Incident Line team which operates a 24/7/365 service, and up to four designated mobile contact numbers. The alert includes GPS location coordinates and an emergency message that can be set in advance.

An emergency alarm can be triggered in a number of ways:
- If a designated panic button is double tapped by the lone worker
- If the app senses no movement of the device over a pre-determined period of time - each new movement will immediately reset the countdown timer
- If the app detects freefall followed by a hard landing (sensitivity settings can be adjusted)
- If a pre-specified timed session is exceeded

To prevent false alarms, the lone worker receives an initial alarm confirming that an alert text is set to be triggered. The alert is sent if the alarm is not cancelled within the defined 45 second response time.

MUS Director of Safety, Health, Environment and Quality Paul Kerridge commented: “The risks associated with lone working in the utility sector are clear. With nobody on hand to assist, an operative experiencing an injury or medical emergency whilst working out of hours or undertaking lone working activities can find themselves in a difficult situation. We are fully committed to the safety and wellbeing of all our employees and this app provides lone workers across our workforce with improved safety and greater peace of mind.” Website: www.morrisonus.com

OTHER NEWS & EVENTS

NO-DIG LIVE 2016 - returns to Peterborough Arena, between 20 and 22 September 2016. Following the success of NO-DIG LIVE held in September 2014, the 13th biennial trenchless technology exhibition, outdoor demonstrations and seminars will return to Peterborough Arena, 20-22 September 2016. Website: www.nodiglive.co.uk

JOINT CHARITY GOLF DAY - Places are booking up fast for what promises to be a fantastic event supporting an important charity, The Edward's Trust.

Options are still available to enter a team of four and/or to sponsor:
- The whole event
- The prizes
- The challenges (such as Nearest the Pin)

The day, being held on 13 September 2016 at The Warwickshire Golf Club, Leek Wootton, Warwick, represents a great opportunity for you and your colleagues or clients, to join people from across the industry, whilst showing your support for a worthwhile charity and having fun! Website: www.ukstt.org.uk

FLOOD EXPO 2016 - 12 - 13 October 2016 Details from: www.thefloodexpo.co.uk

ISTT AFFILIATED SOCIETY NEWS

ISTT'S 34th INTERNATIONAL CONFERENCE & EXHIBITION - INTERNATIONAL NO-DIG BELING - 10 - 12 October 2016 at the National Agriculture Exhibition Centre, Beijing, China. Website: www.westrade.co.uk

THE NASTT 2017 NO-DIG SHOW - April 9 to 12, 2017 - Washington D.C., USA Details from: www.nastt.org

ISTT CALL FOR THE NO-DIG AWARD 2016 ENTRIES - Deadline: 15 August 2016 - entries online at: www.nodigaward.com/index.php

Don't forget! UKSTT members are entitled to access the services on the ISTT website including free downloads of technical papers and reports from the Technical Resource Centre TRC. Please contact admin@ukstt.org.uk for your password.

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GLOBAL LEAKAGE SUMMIT RETURNS

Reducing and managing leakage continues to be a major performance indicator for UK and international water utilities. Furthermore, with the ongoing requirement for water companies to play a strategic role in developing ever more sustainable water networks with policy makers and regulators, it is vital that the industry continues to embrace new thinking and understand the practical applications of new customer and network data management technologies. The 8th Global Leakage Summit will be returning to London from 27 to 28 September, with yet another impressive international line-up of water utility speakers, who will be discussing all of these important issues. Sponsored by ABB, this year’s Summit promises to be the most exciting and informative yet.

Day One provides extensive coverage of advances in policies and attitudes that affect leakage levels, and will provide case study-based information on what is available to support these changes – especially innovative and smart technologies and optimised water networks. Day Two focuses on how to manage data to achieve a better understanding of customer demand and provides international examples of how advances in technology innovations can deliver improved and holistic network management. Lead Sponsor ABB is this year joined by Leak Detection Technology Sponsor, HWM-Water; Advanced Network Data Management Sponsor, Innovyz, and Smart and Efficient Water Networks Sponsor, Suez Advanced Solutions.

The speaker line-up at the 2016 Summit will include experienced senior practitioners from countries including Bangladesh, Egypt, China, Portugal, Ghana, Iran, Ireland, USA, Canada, Spain, Denmark, Finland, Jordan and others, while the UK water industry will feature leading representation from utilities including South West Water, Bournemouth Water, Dwr Cymru/Welsh Water, Sutton and East Surrey Water, Southern Water, Severn Trent Water, Affinity Water, Anglian Water, Veolia, Wessex Water and Northumbrian Water.

With 2 Optional Pre-Conference Workshops, taking place on 26 September including: ‘Smart Network Management With a Totex Approach’, sponsored by IVL Flow Control and Hydrospin, and ‘Transforming Risk, Leakage and Burst Rates on Utility Supply Networks’, sponsored by Syrinix, and over 30 international case studies over 2 days, this is an unmissable learning and networking opportunity for anyone in leakage management or related disciplines. The highly popular Exhibition Showcase Area with over 25 leading technology providers will also be back, along with the Evening Drinks Reception, Gala Dinner and Charity Auction for Water Aid for all speakers, delegates, sponsors and exhibitors to enjoy. For details email: jordan.dragos@lbcg.com

TRENCHLESS TECHNOLOGY AWARDS SET FOR RECORD YEAR

Leading event management company, Westrade, has today announced that the 2016 UKSTT Awards in association with Westrade will be moved to The Atrium at the Peterborough Arena as a result of the extraordinarily high demand for this year’s event.

The Atrium has capacity for up to 400 guests establishing the 2016 UKSTT Awards as the UK’s biggest ever event for the high growth Trenchless Technology sector.

The Awards (which take place on 21 September) promote and celebrate outstanding performances in the field of Trenchless Technology and this year include a number of new categories including the prestigious Lifetime Achievement Award.

For the first time, the UKSTT Awards and Gala Dinner will be taking place during the market leading No-Dig Live (www.nodiglive.co.uk) exhibition, which is now in its 13th year. No-Dig Live runs from 20 to 22 September, 2016 at The Peterborough Arena and features over 100 UK and International exhibitors, outdoor demonstrations and seminars.

Commenting on the change of venue Westrade’s Managing Director, Paul Harwood, said: “Trenchless technology is an increasingly high growth sector and this is reflected in the demand for places at this year’s UKSTT Awards and Gala Dinner. For those lucky enough to have secured a place, the evening will provide a great opportunity to network, celebrate success and enjoy some great entertainment. The co-location with No-Dig Live will also give visitors the chance to view the latest products and services available in this rapidly developing and highly innovative market.”

The UKSTT Awards in association with Westrade and No-Dig Live will also be supporting World Trenchless Day (www.worldtrenchlessday.org) on the 22 September 2016.
Westrade Group Ltd is an independent company specialising in trade exhibition and conference organisation. Events include the 'TRENCHLESS' and 'NO-DIG' series across Europe, the Middle East, Asia and Africa.

20-22 September 2016
Peterborough Arena, East of England Showground, Peterborough, PE2 6XE

NO-DIG LIVE 2016
Space selling fast!

The UK's only event dedicated to trenchless technology
- Daily demonstrations of equipment in live working environment
- Free entrance to the exhibition
- Free attendance at Breakfast Briefings
- New programme of introductory trenchless seminars
- UKSTT Training Seminars
- Free parking

Don't miss out - Contact Trevor Dorrell or Gary King today to check availability and secure your stand.
Email: tdorrell@westrade.co.uk or gking@westrade.co.uk Tel: 0845 094 8066.

New for 2016
The UKSTT Awards and Gala Dinner in Association with Westrade
Wednesday 21st September at The Marriott Hotel, Peterborough

Get your team together, rally support and join us by booking a table at our prestigious event! Be visually dazzled by a troop of IT Girls, lavish in a Champagne reception, rejoice in your hard work and efforts throughout the year and applaud your fellow colleagues, as we take up the challenge to acclaim this event to be our best yet!

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www.nodiglive.co.uk
EVENTS AND MEETINGS

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INTERNATIONAL NO-DIG BEIJING 2016

10-12 OCTOBER 2016
NATIONAL AGRICULTURE EXHIBITION CENTER
(NEW HALL)

Exhibition Early Bird rate available until The end of 2015

For further information or Exhibition Sales and Sponsorship Enquiries, please contact Paul Harwood today:
Email: pharwood@wестrade.co.uk
Tel: +44 (0) 845 094 8066
EVENTS AND MEETINGS

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Using All Available Network Data to Better Understand Water Loss and Customer Usage and Drive Down Leakage to an Increasingly Low Level to Meet Customer Expectations and Maximise Revenue

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Register By Friday July 15th

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Sutton and East Surrey Water, UK

Prof. Joaquim Pocas Martins
Secretary General
National Water Council, Portugal

Bryan Garrett
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Deputy Director Development and Innovation, Canal de Isabel II Gestión S. A. Madrid, Spain

Dr Ahmed Moawad
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Holding Company for Water and Wastewater, Egypt

Reid Campbell
Director of Water Services
Halifax Water, Nova Scotia, Canada

Waled Sukkar
Head Regulatory Unit, Water Authority Of Jordan

www.global-leakage-summit-2016.com
EVENTS AND MEETINGS

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Items to be Discussed at This Year’s Summit

- **Background Losses.** Will new studies on the ratio of background (company) losses to plumbing (customer) losses justify the need for more AMI – Advanced Metering Infrastructure?

- **Handling ‘Big’ Data.** There is a wealth of sensor data available from multiple sites across the network. But are companies coordinating, analysing and using these data to identify and fix leaks more quickly?

- **Customer Expectations.** Customers don’t like to see visible leaks – and they expect the company to fix leaks in minutes not days – can companies make better use of the wealth of data available to reduce repair times?

- **Resilience of Supply.** What does resilience mean? Does it extend beyond having sufficient capacity for managing recovery to properly understanding and managing risk?

- **Are Water Companies Innovative Enough?** Not just in technology but in services and approaches, such as customer research and engagement? Are they investing enough in making networks ‘smart’

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<td>September 12-15</td>
<td>Tunneling Short Course</td>
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<td>September 20-22</td>
<td>No Dig Live 2016</td>
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<td>October 10-12</td>
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<td>December 6-7</td>
<td>STUVA Expo 2017</td>
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<td>2018</td>
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If you have an event, course or meeting scheduled and would like to add it to this listing please forward details to: [iam@nodigmedia.co.uk](mailto:iam@nodigmedia.co.uk)