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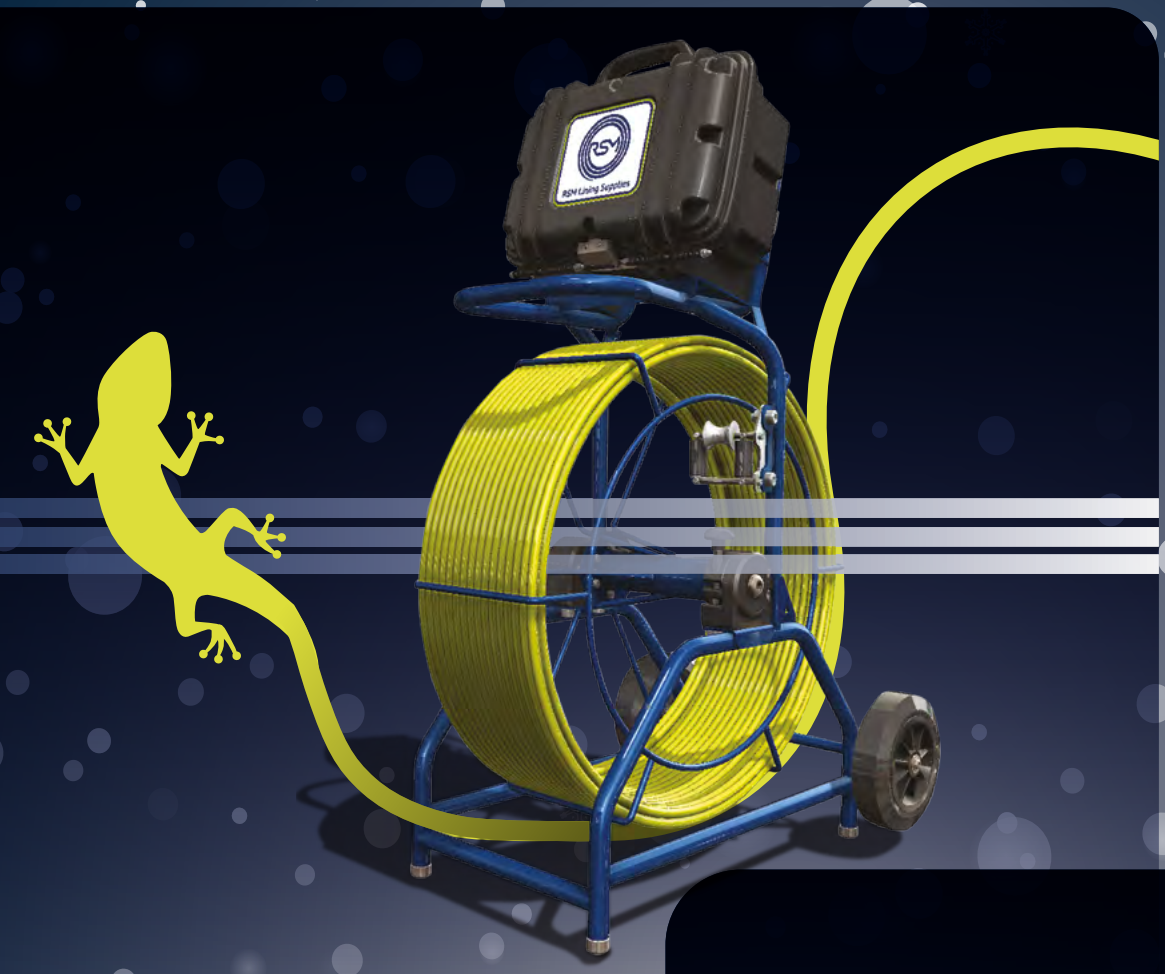

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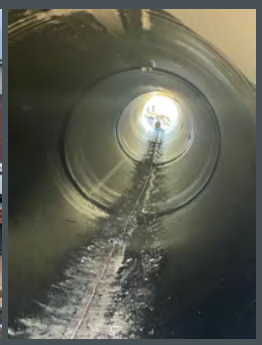
CHANNELINE
GRP Structural Lining Systems



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Large diameter pipelines and culverts represent the backbone of any city's utility network for the collection and disposal of sewerage and effective drainage of stormwater. The need arises to consider the means by which the structural rehabilitation of these pipelines and ducts can be achieved whereby a new, 100-years plus life expectancy can be provided with a high degree of confidence. Channeline international has been providing bespoke Structural Glass Reinforced Plastic (GRP / FRP) lining systems since the early 1980's, during which time we have accumulated unrivaled engineering and manufacturing experience for both Circular and Non-circular buried infrastructure worldwide. **At Channeline, we are proud of our heritage and are committed to offering economic custom solutions to our existing and future customers in the Storm and Wastewater Sectors.**

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CHANNELINE
Beyond the Ordinary

Beyond the Ordinary

SPOTLIGHT

Ian Clarke, Editor-In-Chief,
Trenchless Works

Hello All

Apologies if the following appears a bit 'regional' for some of our international readership, but I think, to many readers with similar questions about their industry, it may offer a little eye opener.

At first glance the past month may seems something of a 'God Send' for the UK water sector in that Water UK which represents the Water Companies in England and Wales announced, if approved by the Water Regulator OFWAT, that over the forthcoming AMP Period from 2025 to 2030, the industry is set to invest some £96 billion in water and sewerage infrastructure, a 90% increase of current levels. This will include building 10 new reservoirs; cutting of leakage by 25% from what it was at the beginning of the decade; investing £11 billion in reducing overflow spills (which have been much in the news over the past couple of years); and introducing technology to reduce phosphate in rivers.

This follows on from comments by the UKSTT Chair, that Water Companies about an announcement in April this year of other investment of £1.6 billion (at least it may be other investment or it may be included in the £96 billion, this is not too clear) which is due to start before 2025 and works completed by 2030.

Whilst this looks like extremely good news for the industry and its customers there are still questions, not least of which is 'is this money fully 'ringfenced' and solely for infrastructure works or not'?

To cover the expenditure the Water Companies are said to be asking for customer prices in the PR24 Price review, prior to the implementation of the new 5 years AMP programme that will mean a price increase that will eventually amount to something like an average extra £120 per year on customer bills over the AMP period, starting at around £84 per customer in 2025 and rising to £150 per year by 2030. If this increase is ringfenced for the works proposed all well and good, if not, how will it be treated? Just a regular income? These questions have yet to be answered.

The cynic in me wonders if these proposals will actually come to fruition or if this is an industry that wants to be seen to be raising its game after public concern and lobbying pressures, particularly in the press over the years.

Why the cynical attitude? Well, when privatisation took place some 34 years ago, there were promises by the Water Companies then that infrastructure improvements would be a main target for the price rises that would be being introduced. Over the intervening period however, as they are commercial companies, financial performance appears to many to have been the driving force rather than service performance, leaving us where we are today.

With an average UK leakage rate of around 23% (that is not far off 1 litre in 4 of the water collected, treated and supplied simply not making it to the customer) and in England a better rate at 20% (still 1 litres in 5 being lost). The new proposals offer a leakage reduction of some 25% on current level, but that still leaves, in England at least, a leakage rate of 15% and across the UK of over 17%. So, a proposal for 10 new reservoirs means that even if the new leakage levels are achieved, in England at least 1½ of the new reservoirs would simply supply water to feed leaks.

In terms of wastewater, many of the current arguments centre around raw sewage spillage and around ageing and outdated sewer systems that need replacing. Again, despite a lot of work being carried out over the years, there is still apparently a life expectancy of the average sewer of around 200 years (if not more by some estimates), given current replacement and rehabilitation rates, and that despite new installations having life expectancies of between just 50 and 100 years.

So, given the spend proposed, questions still need to be answered as to is this enough, one water company for instance recently announced in its plans for the next AMP that storm overflow sewage spills will not be eliminated before 2050, still over 25 years from now.

Further to this even if the proposed spend is allowed and prices rise accordingly, it raises another question ‘does the UK have a sufficiently large enough, trained and skilled contracting sector to meet the increased workloads that will occur’? Will a lack of contracting capacity lead to higher contractor prices, so giving less ‘wriggle room’ for works with the monies available? Also, what will happen if monies raised are not spent and targets missed? Is fining water company failings a sensible way forward? That last one may be a whole new article in itself.

If someone could provide some effective answers to these questions, please let me know.

Ian Clarke

Editor-in-Chief Trenchless Works

FUSION HALL OF FAME HONOREES

Jim Kirchdorfer

McElroy, one of the world's leading designers and manufacturers of thermoplastic fusion equipment, is thrilled to announce Jim Kirchdorfer and Ian Powell as 2023 Fusion Hall of Fame inductees.

Created in 2019, the Fusion Hall of Fame recognises the development and acceptance of fusible plastic pipe, along with the advancements that the industry has seen over the last 50 years. Inductees are individuals whose contributions have been particularly notable and whose impact and influence on the industry lives on today.

Jim and Ian were announced as this year 's recipients at INFUSION23, McElroy's annual industry conference in Tulsa, Oklahoma, USA.

"It is always an honour to be able to shine a light on the people who paved the way for plastic pipe fusion." said McElroy President and CEO Chip McElroy. "Our industry owes its continued success, in part, to the efforts of these individuals."

JIM KIRCHDORFER

When Jim Kirchdorfer founded Kirchdorfer Irrigation Company and Irrigation Supply Company in 1962, he combined two of his passions, his entrepreneurial spirit and his love for the game of golf. At the time, golf was growing in popularity in the United States, and Jim quickly realised the need for high-quality irrigation systems to keep the courses themselves in top condition.

It was through the irrigation industry that Jim came across high-density polyethylene (HDPE) pipe. Jim quickly recognised that HDPE was a revolutionary way forward for course irrigation due to its flexibility and freeze and thaw capabilities.

Through a partnership with Driscopipe that began in the 1970s, Jim was introduced to McElroy machinery and the emerging world of HDPE butt fusion. Where other early adopters of HDPE focused on the mining or municipal sectors, Jim dedicated himself to the world of irrigation. At the same time, he realised that butt-fused HDPE had countless other industrial or municipal applications.

Jim wanted to add value to the industry and as such he was devoted to promoting the concept of pipe fusion. As Irrigation Supply Company, now known as ISCO, grew, Jim spent most of his time travelling and promoting HDPE. A golfer at heart, Jim was influential in the course irrigation market and stayed involved with the development of golf courses throughout the United States. Thanks to his efforts, HDPE pipe is the standard piping material for golf courses.

Since its founding in 1962, ISCO has become known as an innovative company that consistently delivers the highest-quality solutions to customers. Thanks to the spark lit by Jim's tenacity and dedication, his company is poised to continue to thrive. >

Ian Powell

IAN POWELL

In 1983, Ian Powell took on the task of managing McElroy's first-ever international subsidiary, AH McElroy, located in Edmonton, Alberta, Canada. He tackled the task with enthusiasm, whether he was training operators or working with customers, he developed a reputation for being straightforward and honest in his work.

Those who worked with Ian knew him as someone who was fun to be around, whether he was taking customers salmon fishing near Seattle or sharing his passion for ice hockey. Anyone who travelled with Ian knew that if one of his hockey teams happened to play during a trip, Ian would find a way to follow the game.

Three years after forming the subsidiary, AH McElroy, company founder Art McElroy decided it was time to pass the reins. Art knew Ian was the perfect person to take the helm. With the help of a handful of investors, Ian purchased the subsidiary as a distributorship while retaining the AH McElroy name.

For years, AH McElroy was McElroy's lone Canadian distributor. As the company's presence grew, Ian ensured that his distributorship remained at the forefront of fusion technology. He was a member of McElroy's Distributor Advisory Council, now known as the Channel Partner Conference (CPC), and was a great contributor to that organisation.

Ian focused on promoting, selling, and renting McElroy equipment, along with the training required for operation. By using rent-to-own programmes for his customers, he was able to constantly refresh his own fleet and keep it in top working condition. He advocated for the ways McElroy machines could be tailored to fit any job and embraced the concept of swapping carriages with different vehicles.

Even while running AH McElroy, Ian made time to get into the field and work with the machines that he promoted and sold. He embraced each new technology that was developed, from the UltraMc® to the McSnapper®.

A natural teacher, Ian developed a reputation for his ability to train fusion operators at the same level of quality as they would get in McElroy's own classrooms. When hosting training programmes, Ian would not leave until he was satisfied that everyone there could go into the field and consistently fuse pipe at the highest standards.

Today, Canada remains one of McElroy's top international markets, largely thanks to Ian's tireless work promoting HDPE and fusion training. ■

CELEBRATING 40 YEARS OF PMP UTILITIES

PMP Celebrates 40 years

PMP Utilities, part of M Group Services' Water Division, is celebrating its 40-year anniversary.

From the very beginning, in 1983, when PMP began cleaning culverts for Blackburn Borough council, it has steadily grown to provide specialist end-to-end engineering solutions to the UK's water and power industries, delivering services in hazardous and difficult to access environments.

Throughout the years, PMP has developed long-term relationships with clients through multi-year framework agreements and standalone projects. The first business in the field to be awarded British Standard on Quality Systems (BS5750) in 1988, PMP has continuously worked to ensure it complies with strict production procedures.

The work undertaken sees PMP operatives work in hazardous, challenging environments. The safety, health, and wellbeing of all its people underpins everything that PMP does. Throughout the course of 40 years, PMP is proud to have adopted standards throughout the business to ensure the health and safety of its colleagues.

All PMP operatives are trained to City and Guild levels for confined space entry and rescue, with the majority having high risk confined space certifications. PMP also works to ensure rope access surveyors and engineers hold Industrial Rope Access Trade Association (IRATA) level 1, 2 and 3 qualifications, ensuring they have the capability to safely manage and work on ropes, using in-house specialist equipment. >

PMP has been at the forefront of innovations to ensure the health and safety of its colleagues and of those in the Water industry. In 2004, PMP developed the V33 Transition adaptor, a steel and nitrile butadiene rubber (NBR) adaptor that securely and completely grips existing CIPP lined gas pipes. Developed as a result of a significant safety incident within the industry, PMP undertook the development for free, to ensure the safety and wellbeing of future operatives.

In 2015, PMP moved to bespoke office and fabrication shop in Burnley, UK. A small outfit, with only six people in the office, the team works hard to undertake different roles to ensure projects are delivered efficiently, effectively and with the safety of its people, along with the public, at the forefront of everything that it does.

Offering bespoke engineering solutions, PMP is committed to providing opportunities to attract, develop and retain the next generation of highly skilled, forward-thinking, and technically competent people. Its apprenticeship scheme has seen success this year, with two operatives having completed the course and accepting jobs within the business and another four currently working to complete the programme. PMP understands that for the industry to develop and evolve, its work to train the next generation of engineers is integral.

Following substantial growth opportunities in Scotland, PMP opened its regional Glasgow branch in 2022, mirroring the set up and capability of the main facility, allowing it to react quickly and effectively in the area.

Recent projects have included PMP working with its client, Rolls Royce, to provide rope rescue cover for an inspector entering boilers at two locations, over multiple visits, to undertake regulatory inspections. This year, PMP worked collaboratively with Morrison Water Services, another business under M Group Services' Water Division, to support client, Scottish Water, to deliver specialist support on McDonald Road Sewage Pumping Station (SPS) in Edinburgh.

On 2 November, Stephen Taylor, Managing Director of PMP Utilities also celebrated his 40-year anniversary with the business. Speaking on celebrating 40 years of PMP, Stephen, said: "I have seen the industry dramatically change over the 40 years, with many highs and only a few lows. I have worked with people I would class as friends. We have seen the business grow and that is what I wanted to achieve from the offset. I look forward to offering support and advice to the next generation of colleagues as they continue to drive PMP Utilities forward." ■

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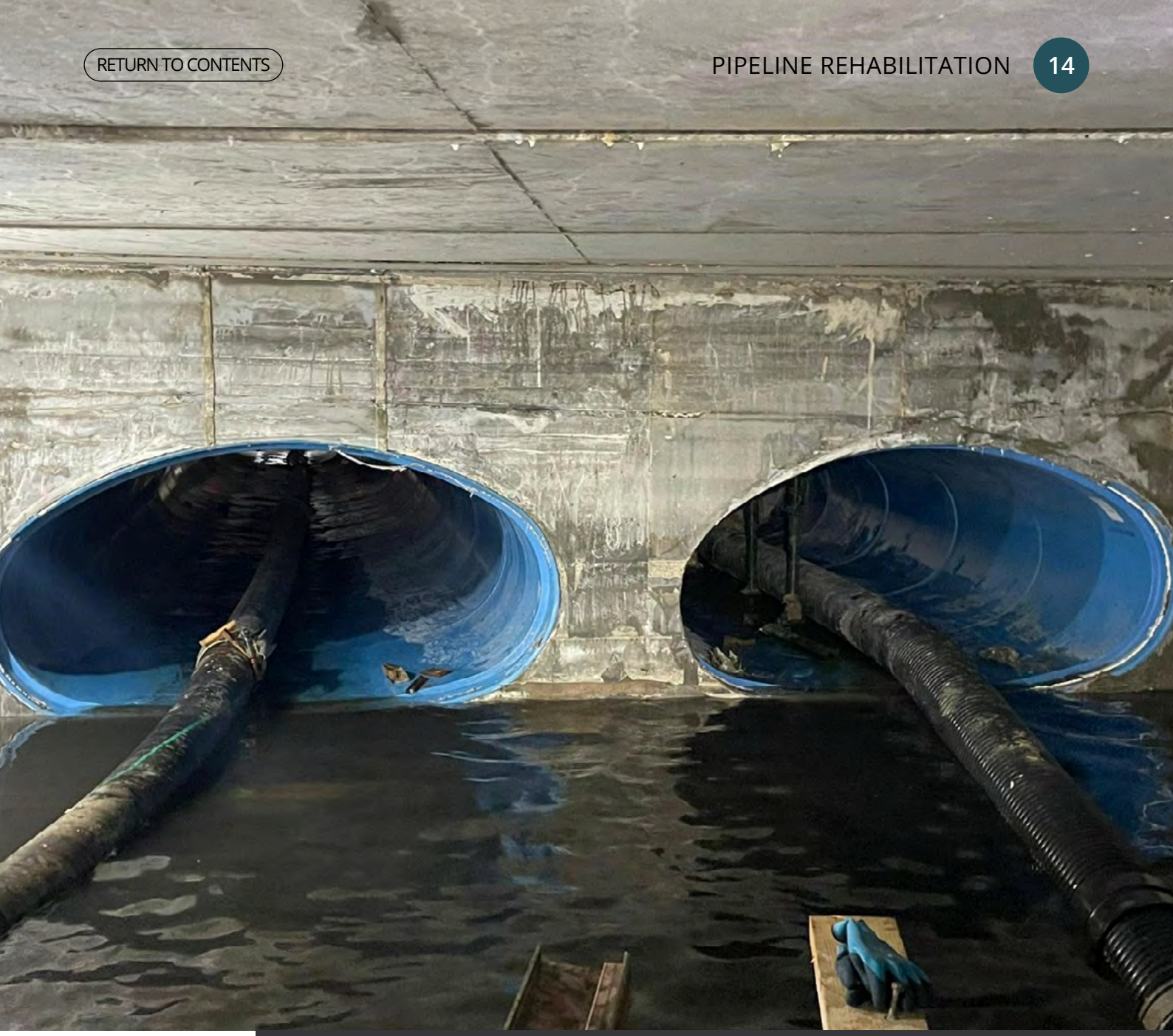

REINFORCEMENT OF THE BRADFORD BECK CULVERT

Installation completed *(Picture Courtesy of Peter Duffy Ltd)*

Bradford Metropolitan Council, in West Yorkshire, UK proposed plans to refurbish an existing building, located in Bradford City Centre. Beneath the building lay the culverted Bradford Beck which runs diagonally through the middle of the site.

During the refurbishment of the existing structure, it came to light that there were several cast iron beams located within the Bradford Beck culvert, directly under the site. Some of these beams were severely corroded and although some sections of the culvert had been replaced in previous works, there remained 22 m beneath the structure that had not been upgraded. The culvert in this section comprised masonry walls, with the building supported on heavily corroded iron beams which, from a structural perspective, meant that culvert had reached the end of its design life and therefore was in need of urgent refurbishment and maintenance. >

Looking through the Amiblu liner sections *(Picture Courtesy of Amiblu)*

Bradford Metropolitan Council engaged the services of JBA Bentley to design and build a suitable solution which included structural stability and installation works being carried out safely beneath an active site.

The complex design was governed by the extraordinary loadings and steel cross beams, as the culvert runs beneath the large city centre building. The challenge was to strengthen the existing 5 m wide x 22 m long culvert without removing the steel beams. The design team at JBA Bentley collaborated with Amiblu's application engineers and structural engineers to produce a design comprising two identical pipelines running parallel to one and other to accommodate the hydraulic design and achieve the crucial structural performance.

By choosing Amiblu's GRP NC Line, the design team was able to eliminate any works that may have had a negative impact on the fabric of the culvert and the building above. To complete the NC Line design, Amiblu's engineers carried out a Finite Element Analysis to ensure the correct pipe strength and dimensions were specified for production. In addition to this and prior to production, principal contractor JN Bentley, working alongside contractor Peter Duffy Ltd, designed a template to the recommended pipe dimensions to check and confirm suitability for access and manoeuvrability on site, with final measurements verified by 3D digital twin. >

A liner segment ready to install *(Picture Courtesy of Peter Duffy Ltd)*

PROJECT PARAMETERS

Due to the geometry of the culvert, the twin pipeline was proposed by Amiblu's engineers, and was created by installing bespoke manufactured 'arch shaped' NC Line units which were 2,000 mm wide x 1,000 mm high with a structural wall thickness of 47 mm.

Deliveries for the project were made to Peter Duffy Ltd's premises in Wakefield where they were stored and delivered to site as and when required.

Amiblu relining pipes are particularly suitable for pipe and culvert rehabilitation, as they are light in weight, corrosion resistant, quality assured, easy to install and engineered to significantly extend an assets service life. Manufactured in Europe, they are available in a wide range of diameters up to DN3600 in circular and shapes to DN4000 in non-circular options and with varying strengths and lengths to cater for all locations and performance criteria.

Commenting on the project Ben McCluskey, project manager for Peter Duffy Ltd said: "This was a complex project, with restricted access due to the active site. The partnership between Amiblu and Peter Duffy Ltd was seamless and included site investigations, designs, pipe delivery, project support throughout pipe installation including the annulus grouting to complete the required structural outcome. Peter Duffy Ltd provided professional and expert installation teams deployed to undertake the work the result was exceptional and long may this partnership continue in the future."

Further to this Dan Hotten, Chartered senior engineer with JBA Bentley said: "We have had a very positive experience working on this project with Amiblu. They were quick to reply to any technical queries and supplied us with all of the information that we needed to be confident in the installed solution. Our client is very satisfied as the installation ensures the future of the culvert and the site." ■

REHABILITATING SURFACE WATER DRAINAGE IN WIMBLEDON

Positioning the liner pipe ready to install

Works were recently carried out on a Public Sewer Services site in Copse Hill Park, Wimbledon, southwest London, UK. A poorly installed 375 mm diameter twin wall plastic pipe was significantly deformed.

The site comprised mature woodland, meadow land, a park area, playing fields, a nature reserve, swale and footpaths. The area also exhibited delicate soil conditions as well as a fragile ecosystem. The acidic soil type attracted unique plants and wildlife. Residents from the affluent surrounding area were also concerned about any works that were required as there are very few green spaces accessible to them.

With limited site access and the stakeholder restriction on any excavation, options for a purely trenchless method were sought. After considering various options, discussions with rehabilitation systems provider Picote Solutions identified a solution using its new Flexi-Sliplining system. >

Preparing the liner pipe

The Flexi Line apparatus set up at the launch manhole

Flexi-Sliplining system

The Flexi-Sliplining system utilises German manufactured Flexirohr pipe with tooling designed by Picote. The pipe has a corrugated outer skin so there is minimal use of oil in its production, resulting in a much-reduced overall weight and therefore the installation is also free of potential toxic waste. The corrugated pipe is DIBt certified and has been utilised in several European countries as well as South America.

The major advantage of the system is that no excavation is needed in an installation between two manholes (in sizes <800 mm diameter). This offers a huge advantage compared with traditional PE sliplining as no lead-in trench is required. The structure of the pipe allows it to negotiate smaller bends in the host pipe, should they exist. The Flexi-Sliplining system can be used for host pipes between DN100 to DN300.

Installation is achieved by connecting the liner pipe to a winch cable which pulls it through the host pipe at a rate of up to 8 m (26 ft) per minute. Once installed the ends of the pipe are fixed in the manholes at either end. The system has also pull-resistant couplings for any pipe connections.

One innovative addition to the Flexi-Sliplining system is the new pipe welding system. Picote R&D has developed unique tools for this welding process, including: a new welding rig, welding inserts, pipe cutters, pulling heads and welding balls. Also, the equipment helping the installation via pulling in of the pipe has been significantly redesigned. All of these new tools make the installing process easier, faster and more efficient. The tools are simple, light-weight and have good ergonomics. The Hurner welding rig used is specially adapted for Flexi-Sliplining with a barcoding system, so that users can determine the temperature and time for each weld. >

The liner pipe laid out ready for installation

The Flexi Line apparatus set up at the launch manhole

Wimbledon Installation

Given these advantages, the Flexi-Sliplining systems it was chosen for the Wimbledon project. PSS mobilised its experienced specialist pipe bursting team with bursting equipment to work in conjunction with the Picote team and equipment to install a new replacement pipe.

Utilising a Picote welding rig, Picote Battery winch, winch plate and guide poles, Picote pipe guide, Picote Flexi-pipe cutter, Hurner welding rig, and a Picote Lower guide, three surface water drain pipes of 375 mm i.d. were rehabilitated. Two pipes were 42 m long, and the third was 72 m long. Each was lined with 270 mm o.d. Flexi-Sliplining pipe which was supplied in in 6 m long sticks.

In this instance the pipe for the lining work was supplied by RSM. In a display of customer service, when a tool broke late on the first afternoon, RSM had a replacement tool on site with the installation crew by 7 a.m. the following morning. According to Dawn Greig, Senior Director with Picote: “This was really was exceptional service and allowed the site crew to continue the works uninterrupted. The Picote Technical Team stayed on site with PSS to complete the job. Whilst there were several unexpected challenges on the project, the combined team used their expertise to overcome the difficulties to succeed in a job which was originally considered to be potentially unviable.”

The start date for the works was 18 September, with the final installation being completed and the site cleared by 20 September, a total of just 3 days on site. Production, once the liner pipes were welded to the required lengths and moved into the towing position, was impressive with each of the 42 m pulls taking approximately 25 minutes to complete and the 72 m pull took just 40 minutes. >

The liner pipe is pulled intothe host pipe

PSS, utilising a design consultant, selected a specialist flowable mortar with appropriate strength to grout the annulus between the Picote pipe and the host pipe to ensure long term structural stability.

For PSS, Steve Tierney, Delivery Manager stated: “This has been a challenging job from the very outset including the pipe layout, site conditions and the number of stakeholders involved. We worked hard to source a suitable ‘best for task’ method and worked closely with Picote to complete an innovative No-Dig project using new technology.”

Commenting on the project Dawn Greig, Senior Director with Picote said: “Public Sewer Services was one of Picote’s first customers when the company started in the UK back in 2012. We were therefore delighted that the company chose to utilise our Flexi-Sliplining system for this challenging project, which was not only one of our first in the UK but also the largest diameter here to date. We truly appreciate their continued support. We would like to thank their excellent team for this opportunity and hope to work with them on future trenchless projects.” ■

“SIMPLE AND EASY SYSTEM TO WORK WITH!”

Svanbjörg Vilbergsdóttir was tasked by the government of Greenland to oversee small diameter pipe rehabilitation projects in hundreds of apartment buildings. She chose NuCure CCUV because it combined quality control with a fast and easy-to-execute process.

“I loved the simplicity of the NuCure UV system. And I like how fast UV works in our cold temperatures.”

“Once I learned that it also came with quality assurance documentation – I was sold! I can review the data, including before and after videos, to grade it and create a report right from the portal.”

“The training was excellent. And NuFlow Central offers training videos and support, so we can continue to learn on our own time. It’s a simple and easy system to work with, and easy to teach others.”

Svanbjörg Vilbergsdóttir
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GOING FROM STRENGTH TO STRENGTH

Inserting a Bluelight liner into the host pipe

UKSTT MEMBER NEWS

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In October Bluelight Lining Ltd delivered to two new systems to different users. The first system was delivered to Glanville Trenchless, part of the Glanville Group of companies, which took possession of its second Bluelight system.

This new system is a 100 m large light head system capable of curing liner sizes of DN100 to DN500 in various inversion materials as well as the company's dedicated GRP liners, impregnated with either a Styrene free Vinylester resins or the new Polyester impregnated resin called Polyblue.

Glanville Trenchless has had massive success with its first system and due to the current workload required a new system to increase output on lining works. >

Preparing a liner for insertion

Curing a liner

SPONSORED BY:
TRACTO

UKSTT MEMBER NEWS

Installation crews have been incredibly pleased with the ease of use and reliability of the Bluelight system. With an average output of 1,000 m for its first system the company intends to install similar amounts with this new system.

Having already undertaken training and installing the first glass liners, totalling approximately 300 m, in size ranges of DN375 to DN500. Bluelight has totally changed the company's lining capabilities. The higher strength PAA-G liners have improved services to end clients and now means the company is able to deliver a one stop shop for all things trenchless.

Cured in Place Pipe lining has traditionally come with some risks and with the support that Bluelight Lining Ltd provides the company has been able to reduce these risks considerably, combining the high-quality materials, a recorded lining protocol and a reliable system, reduces stress on the site crews because they have confidence in a system that works.

The second system was delivered in October to Dalrod Bedford, Milton Keynes and Leicester. Operating out of its Bedford depot, Dalrod works throughout its set areas as well as working for other franchises that do not have lining capabilities. >

Dalrod takes delivery of its new Bluelight system

Recently directors Dale Jowett and Derek Bullivant have been increasing their lining works to add to their portfolio of services. They needed a reliable, easy-to-use system that their experienced lining crew could adapt to easily and quickly.

Holding a 40 m system in stock, Bluelight lining could facilitate a fast turnaround of equipment for Dalrod. Having a wide range of domestic, commercial, and industrial clients, Derek and Dale opted for the smaller light head initially, capable of installing liners from DN100 to DN225, this enabled the crew to become competent Bluelight users and being modular allows for growth within the lining works being carried out.

Offering a comprehensive training programme for each and every user means that all installations throughout the entire group of Bluelight installers is the same and this provides consistency for all clients and enables longer warranties to be provided which are similar throughout the UK.

Training is a key part of any sale of equipment and materials, and this does not stop at handover. Bluelight Lining Ltd continually keeps in contact with installers making sure that equipment is maintained, operated, and serviced at regular intervals, providing installation tips, onsite support and phone contact which improves quality within the industry.

Raising standards takes time but slowly Bluelight is improving the way the CIPP industry is seen by clients, and they have the knowledge that Bluelight Lining Ltd provides certified materials, certified equipment, and high-quality training.

UKSTT MEMBER NEWS

TRENCHLESSWORKS

REHABILITATION SPECIAL ISSUE

December 2023

At Trenchless Works, our aim is to provide intelligence and insights that drive quality, innovation and improves knowledge across the Trenchless sector. The December issue will feature the first of our special issues, starting with 'Rehabilitation', this highly focussed special issue will contain thought leadership articles and comment from respected industry peers, market leaders and consultants.

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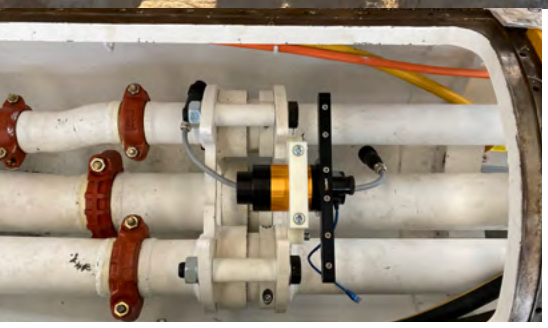
NEW ASSISTANCE SYSTEM FOR AUTOMATED MICROTUNNELLING CONTROL MEASUREMENT

TUnIS.pipelight Unit, ready to be pushed into pipeline

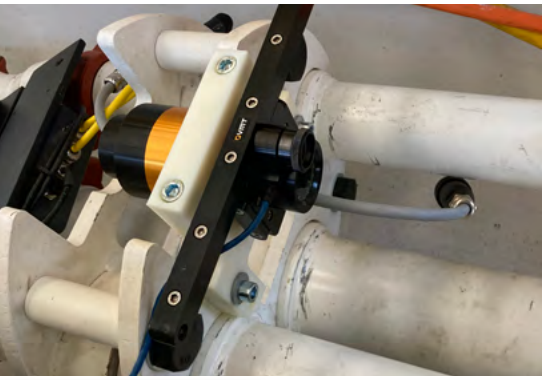
In 2020 VMT launched the TUnIS Navigation MT, which for the first time, combined machine guidance with laser and target, hydrostatic level, gyroscope as well as moving laser total station tunnel navigation systems into one product.

The TUnIS Navigation MT system guarantees the greatest possible flexibility and efficiency when managing projects. Up to now, when using a navigation system for curved and long-distance drives (gyro based or laser total station based), manual control measurements were necessary to maintain the accuracy of the alignment (typically, a traverse measurement from the launch shaft through the pipeline up to the machine is measured manually and reference points then determined which are used for the calibration of the navigation system). >

TUnIS.pipelight – pre-installation of units on site



TUnIS.pipelight Unit – installation in TBM back-up pipe



TUnIS.pipelight – factory testing

This has become particularly problematic with the growth in the requirement for longer drives in critical diameters of ≤1,200 mm in the Microtunnelling and Direct Pipe tunnelling sectors where entry of personnel into the pipeline is difficult or even not allowed. Pipe jacking or Direct Pipe projects with pipe or pipeline diameters of ≤1,200mm and demanding alignments (straight lines >400 m or curved routes) can only be navigated with a gyro system. Manual control measurements, which are necessary for the calibration of the gyro systems and thus for the required accuracy, have been a considerable problem in the past being extremely time consuming where men-entry was still allowed, or even impossible with respect to occupational health and safety reasons and the small diameter of the pipelines.

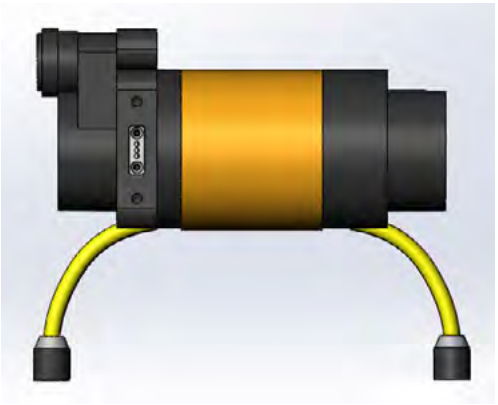
The automation of this survey requirement during longer and curved drives has, for some time, been an active goal for navigation system developer, VMT.

Now, that goal has been reached with the launch of TUnIS. pipelight, a camera-based assistance system for carrying out automated control surveys. It improves the precision of gyro-based navigation systems for pipe jacking and Direct Pipe projects in small and even non-accessible diameter areas. >

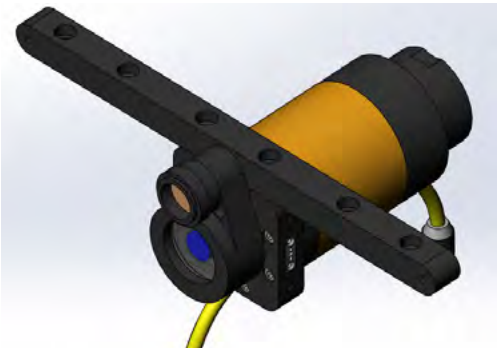
TUnIS.pipelight Unit – adaptation to limited space, fine-tuning

How it works

TUnIS.pipelight acts as an automated traverse measurement and establishes a geometric connection between the fixed-point field in the launch shaft and the tunnelling machine. Novel sensors with a very compact design determine angles by means of cameras that are monitoring LED light points. Together with defined distances between the sensor units, it is then possible to transfer the coordinates of fixed points in the launch shaft directly to the machine. The actual position of a reference point close to the machine determined in this manner can then be used for calibration of the gyro navigation system to ensure accuracy as the machine continues to advance. >



TUnIS.pipelight Unit – concept drawing side view



TUnIS.pipelight Unit – concept drawing top view

TUnIS.pipelight Unit attached to umbilicals

The automated traverse measurement determines the actual position of the tunnelling machine and therefore enables the calibration of the gyro navigation system without any significant interruption to the tunnelling process. With this new method, the traverse measurement is not performed using the usual total stations, but with significantly more compact camera sensors, which can also be used in very small pipes and pipeline diameters (<1,200 mm). This enables complex alignment geometries to be realised with adequate accuracy, even when dealing with small diameter tunnelling operations. >

Benefits

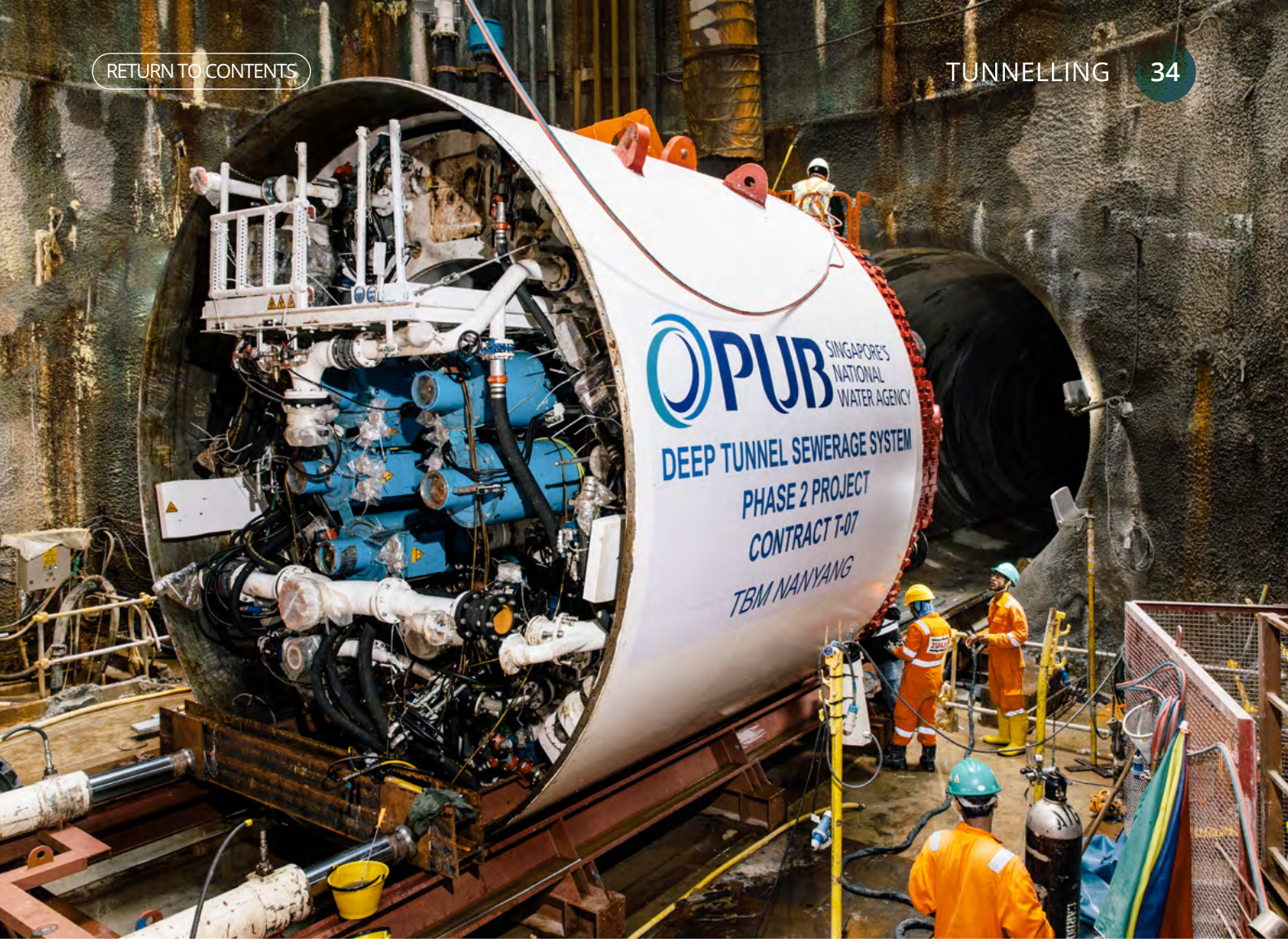
The use of the new TUnIS.pipelight are numerous including:

- New opportunities for tunnel alignment of small Pipe Jacking and Direct Pipe jobs: longer drives thanks to higher accuracy
- Automated control measurements that ensure more precise navigation with expected deviation of <500 mm in 800 m long drive on small or even non-accessible Direct Pipe projects
- Longer and curved drives are possible in Pipe Jacking with diameters below 1,200 mm with expected horizontal deviations of <100 mm in 300 m (vertical deviations much smaller when using hydrostatic water level system)
- Reduced downtime because the control survey takes on average 30 minutes instead of several hours
- Increase in daily output which offers savings in energy costs, personnel and rental equipment
- No need for man-entry and safety concepts in DN1200-1400 pipes
- Full integration into the navigation system as an add-on to TUnIS Navigation MTGyro

For VMT, Jürgen Göckel, Business Development Microtunnelling said: "With TUnIS.pipelight it is now possible, for the first time, to carry out automated and high-quality control surveys in very small and even non-accessible Microtunnelling and Direct Pipe drives. This opens up completely new possibilities for the design of tunnel alignments. The use of camera technology for the determination of angles and distances is unique in this field of application and enables a very compact design of the sensors, which can also be used in very confined spaces." ■

Tunnel boring machines from Herrenknecht have excavated a total of 49 kilometers of new sewer lines for Phase 2 of the 'Deep Tunnel Sewerage System' in Singapore

SINGAPORE: TUNNELLING FOR SEWAGE SUPERHIGHWAY COMPLETED



Herrenknecht supplied a total of 19 tunnel boring machines to the contractors engaged by the client

In a milestone for the epoch-making 'Deep Tunnel Sewerage System' (DTSS) project in Singapore, the five contractors have completed tunnelling works for the second construction phase of the gigantic sewer pipe system. The final breakthrough took place in July 2023. A total of 19 Herrenknecht tunnel boring machines (TBMs) have excavated and lined some 49 km of tunnel since 2019. In addition, a Herrenknecht Vertical Shaft Sinking Machine (VSM) was used.

As an island state, Singapore obtains a significant portion of its water supply from state-of-the-art rainwater and used water treatment. Back in the 1990s, Singapore's National Water Agency, PUB launched a massive project to strengthen the nation's water security. When completed, the DTSS will include a total of approximately 200 km of newly-built sewers running up to 60 m deep underground. It is designed to meet Singapore's long-term needs for used water collection, treatment, and reclamation. This underground system collects used water from homes and industries and conveys it entirely via gravity to state-of-the-art water reclamation plants without the need for additional pumping stations. The newest of these is currently being built in the Tuas industrial area and will have a capacity to treat of up to 800,000 cubic meters of sewage per day. Phasing out the intermediate pumping stations and other aged used water infrastructure will also free up around 150 hectares of land in the densely populated metropolis for higher-value use.

Marking the completion of tunnelling works, Goh Si Hou, Chief Executive of PUB, said: "As one of the most water-stressed countries in the world, the ability to effectively collect and recycle our used water in a closed water loop has been a game-changer in our quest for water security. The Deep Tunnel Sewerage System is not only an engineering feat, but a key pillar in strengthening Singapore's water resilience to meet the long-term challenges of climate change and growing water needs." >

For the first time in the Asia-Pacific region, a Vertical Shaft Sinking Machine (VSM) from Herrenknecht was used to mechanically sink five hydraulic shafts with diameters between 10 and 12 meters for DTSS Phase II

49 Km Of Tunnel For DTSS 2

PUB is implementing the DTSS project in two phases: in Phase 1 (DTSS 1), between 1999 and 2008, 48 km of main tunnel and 60 km of link sewers were constructed in the eastern part of Singapore. Back then, five Herrenknecht EPB Shields excavated 28 km of tunnel. The second phase (DTSS 2) is now extending the system in the south and west of the main island by a further 100 km of sewers, of which just under 49 km were excavated by tunnelling machines from Herrenknecht. Construction for DTSS 2 officially began in April 2019. The five contractors involved completed tunnelling in the summer of 2023. DTSS 2 is expected to be operational two years from now.

Defying Complex Geology

With Herrenknecht TBMs having proven themselves in Phase 1, in the second phase of the project the decision makers for all five construction lots once again opted exclusively for mechanised tunnelling technology from the manufacturer in Schwanau in the south of Germany. Some 18 Mixshields and one EPB Shield (Earth Pressure Balance Shield) with diameters between 4.50 and 7.56 m were used to bore the sewage collectors and line them with segments. Herrenknecht also supplied 12 separation plants for the Mixshield drives and provided comprehensive support services throughout the entire project. This included, for example, remote access to individual machines, enabling them to be monitored and controlled remotely.

Among the challenges for machines and miners was the city state's complex geology. The 'Jurong Formation', for example, consists of sandstone, siltstone, mudstone, limestone, dolomite, and some conglomerate, which are extremely folded due to tectonic plate movements. As a result, diverse rock types with different weathering grades often alternate along a tunnel alignment and even in the cross section of a tunnel. "In close cooperation with the customers, we therefore adapted the design of the TBM to the complex geological conditions." explained Dirk Schrader, Herrenknecht's General Manager Asia Pacific. >

Herrenknecht is the sole supplier of mechanised tunnelling technology for DTSS Phase 2

Special solutions were also required for construction of five of the 24 shafts in Tunnel Contract T-11 with diameters between 10 and 12 m. In this section, with depths of up to 60 m there was high water pressure the shafts constantly had to withstand. “For this reason, for the first time in the Asia-Pacific region, a Vertical Shaft Sinking Machine (VSM) from Herrenknecht was used for sinking the shafts.” elaborated Schrader.

25 Years of Herrenknecht In Singapore

DTSS1 and 2 are further beacons in a success story of Herrenknecht tunnelling technology in Singapore spanning a quarter of a century. Since 1998, Herrenknecht TBMs have been used again and again at numerous jobsites for subway and electricity tunnels. Tunnelling for the subway extension by a large diameter machine (at 12,680 mm) is due to start next year. ■

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LEAKNAVIGATOR SAVES MILLIONS OF LITRES OF WATER

Using correlator to check the location of the leak

The UK's largest water and wastewater company, Thames Water, recently selected Ovarro's end-to-end service LeakNavigator to deliver a three-year leakage reduction contract.

Thames Water is working to achieve a 20.5% reduction in leakage across London and the Thames Valley, region to meet regulatory targets. Beginning in January 2023, a project has been underway to install 3,450 Ovarro sensors, models Enigma 3-BB, Enigma 3hyQ and Enigma 3m, across 110 district metered areas (DMAs) within the water network.

The sensors provide a daily call-in with leak data and just 20 weeks into the project, 788 leaks had been raised and categorised. A total of 5.78 megalitres of water per day has been saved in the areas served by LeakNavigator. >

A Logger in the ground

The EnigmahyQ system

The Enigma3M logger with its Heat Resistant Accelerometer

End-to-end service

LeakNavigator comprises advanced acoustic dataloggers, cutting-edge cloud-based software, and Ovarro's in-house leakage expertise. With all elements combined, the service can accurately identify points of interest (POIs) on behalf of water companies, alerting field technicians directly, so they can head straight to site with high confidence that a leak will be found, thereby reducing the need for inhouse data analysis.

The LeakNavigator package uses acoustic loggers from the cutting-edge Enigma range, which are installed following an assessment of the targeted DMA, undertaken by Ovarro's leakage analysts. This process establishes the most suitable equipment to install, the unit numbers required and the best locations for optimum efficiency. The service can also apply to existing Enigma logger fleets already installed.

Once the loggers are in operation, Ovarro's teams undertake ongoing data analysis, sending POIs directly to water company field technicians via a mobile app. The captured data, which also supports maintenance targeting, is processed, and presented to customers in a dashboard. The package also includes a complete maintenance service, keeping the fleet of loggers up and running at all times. >

The source of the leak

Leaks found within four days

Within four working days of Thames Water's initial DMAs coming online, the first leaks were passed to the field teams. This process continues, with Ovarro working closely with Thames Water's leakage detection partners Hydrosave and PN Daly, ensuring each leak is detected first time and that all outputs are recorded in a weekly report profile for the leakage team at Thames Water to review. Volume reduction remains key to Ovarro's performance and is monitored in partnership with Thames Water.

Ovarro has a unique code provided for Thames Water's leaks, which can be tracked online. All leaks are active until they are repaired, maintaining control of the outputs from each technician and the methodology used for the detection activity.

Ovarro takes complete ownership of the data analysis and leak detection process, working in collaboration with water companies and their partners, with results-driven accountability. The service allows leakage teams to be more efficient, by finding leaks on mixed pipe materials. Ovarro's focus is to achieve clients' leakage targets and ultimately secure future water supplies.

Ovarro is continuing to work with Thames Water to reduce leakage in parts of north and south London and the Thames Valley, and expect to see even more success in the weeks and months ahead.

Positive outcomes

Shane Gloster, senior strategy and transformation manager at Thames Water said: "Water is a precious resource, which is why we are focused on driving leakage down and committed to meeting ambitious leakage targets. A key pillar of our recently launched Leakage Transformation Programme sets out to improve our ability to find and fix the right leaks, faster. We are utilising data and implementing new tools to make informed decisions, prioritise leaks and reduce repair times. Ovarro's LeakNavigator is supporting this goal and we are impressed with the positive outcomes it is delivering." ■

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DIGITALISATION IS TRANSFORMING APPROACHES TO ASSET MANAGEMENT

Xylem Vue powered by GoAigua Leak Detection

Data forms the foundation of advanced asset management, a foundation that must be laid by water companies now to unlock its full potential, wrote Matthew Kennedy, global product manager for water loss at Xylem, ahead of the recent WWT Asset Management Conference.

There is a pressing need for water companies to take a more risk-based and digital approach to asset management if they are to meet tightening regulatory expectations, while addressing the ongoing challenges of ageing infrastructure, skills gaps, an ageing workforce and labour shortages.

As the 2025-2030 asset management period (AMP8) approaches for water companies in England and Wales, there is a new focus from Ofwat towards long-term planning, increased investment and adaptation to climate change. Making better use of available data will help utility leaders identify optimal management approaches.

The good news is that rapid developments in digital technology are making it possible for utilities to transform the way water and wastewater assets are managed. The collection, storage and interpretation of data in relation to assets and their performance forms the foundation of advanced asset management. >

Matthew Kennedy

"Imagine an AI assistant interface that can answer any question about your assets in a conversational manner. It is a long journey of digitalisation, data aggregation and analysis in the industry to get there, but the well-publicised advances of ChatGPT have proven this really is possible."

It is a foundation that must be laid now in order to realise the full benefits of data in AMP8 and beyond. There are huge data deficits that need to be plugged and siloed information that needs to be unlocked.

From Xylem's conversations with utilities, the company understands where the gaps are and have developed a broad set of solutions to fill them. This includes new sensor technologies to understand the performance of assets, such as Xylem's SoundPrint® acoustic fibre optic system, which continually monitors critical pre-stressed concrete cylinder pipes (PCCPs), acquires data and alerts utilities to structural changes in near real-time.

The system was deployed by Scottish Water in June 2022, to extend the asset life of a trunk main that runs over 16 km from a water treatment works to a service reservoir in West Dunbartonshire. In a European first, the technology is allowing Scottish Water to accurately monitor the condition of the critical main and plan interventions to ensure a resilient and reliable water supply.

Where asset managers need to understand the impact of critical factors impacting their investment decisions, Xylem Vue powered by GoAigua, integrates and standardises data from assets and systems across the utility to provide 360° operational intelligence.

Vue and SoundPrint® are just two of the many examples of digital solutions now available to water companies, which can transform asset management, and the technology is advancing all the time. In terms of innovation, progress is being made across three key areas:

- Sensing and data collection: advances in asset inspection techniques, such as fibre-optic inspection and acoustic condition assessment; improved water quality monitoring; satellite sensing; and systems for real-time collection of maintenance data from field teams

- Data analysis: artificial intelligence (AI) is increasingly being applied to data in real-time and in diverse applications, including automated customer call answering, triaging work orders, pattern-matching of acoustic signals to leak size, and AI co-pilots for utility operations

- Strategy and planning: progression to AI being applied to calculate probability-of-failure of assets, and move away from age-based prioritisation.

Successful adoption of new innovations depends on the stage of digitalisation utilities are at, significant organisational transformation is required for datasets to be brought together to enable application beyond point-of-concept stages. If this transformation is achieved, many more opportunities will present themselves, even those that may currently seem like a pipe-dream.

"Imagine an AI assistant interface that can answer any question about your assets in a conversational manner. It is a long journey of digitalisation, data aggregation and analysis in the industry to get there, but the well-publicised advances of ChatGPT have proven this really is possible." said Matthew. ■

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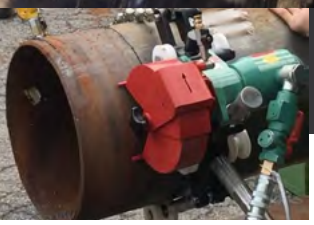
The cutter in action

Adjusting the cutter before a cut

PIPE CUTTING OPTIONS EXTENDED



Setting up the pipe cutter

The automatic saw clamp

Raedy to cut

Trenchless technology offers great advantages but inevitably there are a number of occasions where the need to cut pipe arises. EC Hopkins has been supplying solutions for over 20 years including the PowerGrit saws that offer a number of benefits over using disc cutters especially where safety is concerned.

The company has now extended the range of solutions, these now include reciprocating saws and band saws in hydraulic, pneumatic and electric versions as well as a modular pipe cutting system for larger diameter pipes. These solutions offer better opportunities to bridge the world of the gas and water industries.

The latest of these solutions is the Spitznas pipe cutting equipment for cutting and chamfering of pipes made of ductile iron, concrete, cement, clay, plastic, PE, PVC, Steel and non-ferrous metal for cuts up to 1,600 mm pipe diameter.

The module-based pipe cutting equipment offers great flexibly due to its handiness and the relatively low weight of the single components that can be built to suit a wide range of application and pipe diameters. The system can be supplied with a pneumatic or a hydraulic driven motor and there is a small range of blades to suit most pipe materials. In addition this, there is the ability to make longitudinal cuts to further increase its flexibility.

EC Hopkins offers demonstrations of this system as well as the PowerGrit solutions for small pipes. ■

Website: Spitznas Pneumatic Pipe Cutting / Bevelling Machine 5 8002 7000 | EC Hopkins Limited

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MCELROY ADDS TO TRACSTAR® ISERIES LINEUP

The TracStar® 412i

McElroy's TracStar® iSeries family is growing. Building off the strong legacy of McElroy's three existing TracStar® iSeries machines, the TracStar® 630i, 900i, and 1200i, McElroy recently announced the addition of the TracStar® 412i and TracStar® 618i.

Like the current Series 2 counterparts, the TracStar 412i is designed to fuse pipe sizes from 4 in IPS to 12 in DIPS (110 mm to 340 mm) and the TracStar 618i fuses pipe from 6 in IPS to 18 in OD (180 mm to 450 mm).

"We are always looking for ways to increase operator productivity." said Geoff Koch, McElroy's vice president of product development. "These new machines incorporate the added technology of our existing TracStar iSeries line into the proven success of our TracStar 412 and 618 Series 2 units. These upgrades will translate into countless hours and dollars saved in the field." >

The TracStar® 618i

What is new?

These new machines include a few key differences from their Series 2 counterparts. The TracStar 412i and 618i will incorporate the FusionGuide™ Control system seen on other TracStar iSeries models, providing operators with three levels of control during the fusion process. Each level has varying degrees of assistance, from manual control to fully automatic fusion.

A new indexer keeps the heater and facer attached to the four-jaw carriage, condensing the heater, facer, and jaws into a single unit. Operators will be able to move the indexer side to side along a set of rails, allowing them to position the heater and facer between the carriage's movable jaws as needed.

The indexer also includes a built-in stripping and release mechanism. Once the heat soak phase of the fusion process has been completed and the operator opens the carriage, the mechanism will automatically strip the heater from the ends of the pipe. As the carriage continues to move, the indexer will then retract the heater out of the fusion zone.

These new machines feature an improved design that represents its inclusion into the TracStar iSeries family. The new look allows for a new, larger-volume hydraulic tank that is secured beneath the machine's dome. In addition to providing additional cooling, the new design also reduces the risk of accidentally adding the wrong fluid to the hydraulic tank.

Like the larger machines, the Tractor 412 i and 618i will be controlled via the DataLogger®, McElroy's ruggedised tablet that records fusion parameters and other pertinent data during the fusion process. After the operator prepares the pipe and enters all joint details, the enhanced guided workflow manages machine pressures, carriage, shift sequence, and more to ensure standards compliance and a successful fusion. All required fusion operations, including machine pressures, carriage open/close, and shift sequence will be controlled using the DataLogger.

"As accountability and quality assurance become a top priority, we want to let our operators and contractors seamlessly track their fusion data." Koch said. The TracStar 412 i and TracStar 618i are expected to begin shipping in June 2024. ■

SOCIETY NEWS

ukstt.org.uk

Society News brought to members by Trenchless Works

WELCOME FROM THE CHAIR

Ian Ramsay, Chair, UKSTT

Later this month, in partnership with Westrade, we will be holding the third in the 2023 No-Dig Roadshow series in Bristol where we will also be hosting our Annual Dinner & Awards Ceremony. This year I have been really impressed with the quantity and quality of submissions for the Awards. It gives us all encouragement that, even with the financial issues within Water Companies and Government, the trenchless industry in the UK is growing and strong. The event has been sold out for months and I know we will have a good turn out and an excellent event.

I would like to extend my thanks to all those who have submitted projects and innovations. Good luck on the night. What is encouraging is that we received several applications for the Young Professional category. This is a personal favourite of mine as they are the future of the industry. These applications were all of a high standard and show us that the trenchless industry can be attractive to younger engineers.

October was a very busy month overseas as the International Societies for Trenchless Technology (ISTT) held their No-Dig conference in Mexico City. The UK was well represented and there were some excellent technical papers. It also gave us a chance to catch up with other Societies from around the world. Overall, the international trenchless industry is on the up and up. Interestingly other countries have the same issues as the UK, frustrations, funding issues etc. The good news is we can discuss, applaud the successes and learn from the problems.

The UKSTT sub-committees are all hard at work and we are putting our plans together for 2024. We have lots of exciting new ideas and our Trenchless BUZZ magazine will be giving details in the forthcoming months. If you would like to add anything to our online magazine, or do not receive a copy, please let us know.

I was pleased to have recently attended the Floodex 2023 show in London while supporting the NADC and look forward to working closer with them in 2024.

That is it for this month, hopefully I will get to meet up with you in Bristol on 29 November.

Ian Ramsay

UKSTT Chair

AGM Report - Jason Smith

AGM Report - Jill Tickle

AGM Report - Peter Henley

AGM Report - Roger Wahl

UKSTT AGM REPORT

The Council of the United Kingdom Society for Trenchless Technology (UKSTT) held its Annual General Meeting on 12 October 2023, at Camden House in Kenilworth. Associate Director Lynn Maclachlan, acting as the Chair's dedicated officer, presented the Chairs, Treasurers and Auditors reports and made the accounts from 2022 available to everyone. Among the report highlights was the Society's intention to continue working on relationships with the UK Utility Companies and are pleased to welcome Scottish Water and SGN as new UKSTT Patrons. Graham Howard, Claire Gowdy, Scott Stone, Shauna Herron, Scott McMurray, Tim Sargent and Chris Brodie have all completed their year term of office and all except Chris Brodie and Scott Stone are standing again for election. Paul Henderson left early on in the year and Colin Tickle is standing down and agreed to be co-opted and chair a new 'Advisory Panel'. This leaves four places available. Chair Ian Ramsay sent his thanks to Scott Stone, Paul Henderson and Chris Brodie for their contribution over the years and a special thank you to Colin Tickle for his support, dedication and time he has committed to UKSTT for such a long time.

The new appointments to the Council this year are:

- Peter Henley, WRc
- Jill Tickle, Blue Hat
- Roger Wahl, Tracto
- Jason Smith, Mammoth

The UKSTT Council for 2023/24 is:

- Ian Ramsay (Chair)
- Graham Howard (Vice Chair & Vice Treasurer)
- Dawn Greig (Immediate Past Chair)
- Claire Gowdy (Honorary Secretary)
- Leon Woods (Chair of MS Sub-committee)
- Phil Steele (Vice Chair of MS sub-committee)
- Iain Naismith (Chair of T&E sub-committee)
- Jim Albarella
- Shauna Herron
- Tim Sargent
- Richard Swan
- Scott McMurray
- Andy Gundry
- Stephen Butterworth
- Simon Marsh
- Peter Cheers
- Peter Henley
- Jill Tickle
- Roger Wahl
- Jason Smith ■

UKSTT MEMBER SERVICES REPORT

Leon Woods
Membership Services co-chairs

Dawn Greig
Membership Services co-chairs

Reducing UKSTT Carbon Footprint: Eco-Friendly Ways to Offset In-Person Meeting Emissions.

Reducing carbon emissions has become a global priority and one area where individuals and organisations can make a significant impact is through their daily activities, including in-person meetings. By recognising the carbon emissions generated by in-person meetings and taking steps to offset them, we can contribute to a more sustainable future. As part of our Corporate Social Responsibility (Membership Services Working Group 3), UKSTT is looking at the ways in which its Council can reduce and offset these carbon emissions.

The Importance of Reducing Carbon Footprint

Reducing our carbon footprint is essential for several reasons. Firstly, by decreasing carbon emissions, we can help mitigate the adverse effects of climate change. This includes minimising the risk of extreme weather events, protecting vulnerable ecosystems and preserving biodiversity. Secondly, taking action to reduce carbon emissions demonstrates environmental responsibility and corporate citizenship, enhancing our reputation, which is especially important for a Trenchless Society. Lastly, reducing carbon emissions can also lead to cost savings by adopting energy-efficient practices and optimising resource usage.

Calculating Carbon Emissions from In-Person Meetings

To effectively reduce carbon emissions from in-person meetings, it is crucial to understand how to calculate the emissions accurately. The carbon footprint of a meeting is influenced by various factors, including the number of participants, travel distance, mode of transportation, duration and the energy consumption of the meeting venue. By using carbon calculators, we hope to effectively determine the specific emissions associated with UKSTT meetings. Once the carbon emissions have been calculated, we can explore different strategies to offset them and make our meetings more eco-friendly gaining insights into the areas that contribute most to our carbon footprint and identifying opportunities for improvement. This is very much an on-going process. >

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Society News brought to members by Trenchless Works

OFFSETTING CARBON EMISSIONS THROUGH ECO-FRIENDLY PRACTICES

Offsetting carbon emissions involves taking action to compensate for the emissions produced. There are several eco-friendly practices that can help offset the carbon emissions from in-person meetings. One effective option which UKSTT is currently considering is to support reforestation initiatives, as trees absorb CO^2 and help counterbalance the emissions. Additionally, we can encourage Council Members to adopt sustainable practices during the meeting itself. This can include reusable materials, recycling (for example coffee cups), choosing eco-friendly accommodation (if travelling evening before), catering options and minimising food waste. By incorporating these practices, UKSTT can actively contribute to carbon reduction efforts and create a more sustainable meeting environment. We are also looking at our in-person events and this year we have decided to go digital with our programme for the UKSTT Awards, rather than the printed copies that we usually have. Small changes do add up to big carbon savings.

Eco-Friendly Ways UKSTT Can Reduce In-Person Meeting Emissions

Reducing carbon emissions from in-person meetings requires a holistic approach. Here are some eco-friendly ways that UKSTT aims to minimise its carbon footprint:

1. Using Technology to Reduce the Need for In-Person Meetings: Advancements in technology have made virtual meetings more accessible and efficient. Since the Pandemic, utilising video conferencing tools has become part of our everyday work culture and has significantly reduced the need for travel and the associated carbon emissions. All Sub-Committees and associated Working Groups now hold meetings virtually.
2. Opting for Sustainable Transportation Options: When in-person meetings are necessary, we can encourage participants to choose sustainable transportation options where possible. This can include carpooling, using public transportation or driving electric vehicles (if available). UKSTT is currently putting together a poll to gather this valuable information from Council Members.
3. Implementing a Net Zero Strategy: Organisations can aim for net-zero carbon emissions by reducing their overall emissions and offsetting any remaining emissions through renewable energy projects or carbon credits. This is something that UKSTT is actively researching.
4. Choosing Green Meeting Venues: We need to seek out meeting venues that prioritise sustainability, such as those with energy-efficient facilities, renewable energy sources, and eco-friendly practices.
5. Promoting Paperless Meetings: Minimising paper consumption by utilising digital documents, presentations and note-taking tools. We encourage Council Members to bring their own devices and use electronic communication for sharing information. By incorporating these eco-friendly strategies, UKSTT can significantly reduce the carbon footprint of its in-person meetings and contribute to a greener future. >

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Taking Steps Towards a Greener Future

Reducing carbon emissions from in-person meetings is a vital step towards mitigating climate change and creating a more sustainable future. By understanding the impact of carbon emissions, calculating the carbon footprint of meetings and implementing eco-friendly practices, UKSTT can actively contribute, even in a small way, to carbon reduction efforts. It is crucial to track and measure the carbon savings achieved to continuously improve sustainability efforts and communicate progress to members. By taking these steps, UKSTT can demonstrate its commitment to environmental responsibility and contribute to a greener future for generations to come. Join the movement towards a greener future by implementing eco-friendly practices for your in-person meetings. Together, we can reduce carbon emissions and create a more sustainable world for everyone! ■

NEW MEMBERS

UKSTT welcomes the following new members

- ALIAXIS - Operating in over 40 countries, Aliaxis designs sustainable, easy to install, and innovative solutions to address the world's water challenges and accelerate the transition to clean energy.
- BLUE HAT SERVICES - Blue Hat Services is a recognised provider of specialist GPR and utility mapping training courses which are being successfully delivered to the industry worldwide.
- BLUELIGHT LINING - Bluelight Lining specialises in its Bluelight LED Light Curing System, which is used widely throughout Germany, France, Switzerland, the Czech Republic, Austria, Ireland and more.
- CLEARWATER - Clearwater is firmly established as one of the UK's leading waste management providers, offering an impressive range of waste management services and solutions to local authorities, heavy industry and commercial businesses.
- DIE DRAW LTD - Die Draw Ltd has unrivalled design experience and technical expertise with the viscoelastic behaviour of thermoplastics in tight-fit lining solutions for the rehabilitation of pipelines.
- P J HIRONS LTD - P J Hirons Ltd. is a family owned and operated business based in Worcestershire. It is a contractor that specialises in Cable Ploughing and Trenching.
- LUCKING UTILITY SERVICES - LUS has worked with some of the UK's largest utility and construction contractors repairing and maintaining the water infrastructure across London and the Home Counties.
- MICHELS - Michels is a proud family owned and operated company. The company is committed to principles developed by the Michels family since 1959 and believes in providing solutions and continuously improving the quality and scope of its work.
- NUFLOW - Nuflow has pipe relining solutions for jobs big, small and out of the ordinary. The pipe relining products Nuflow use for pipe repairs are researched and well-developed by their team in an Australia-based lab.
- REINERT-RITZ - For decades, positive feedback from its customers has inspired Reinert-Ritz to constantly push the boundaries of what is possible. Above all, the capabilities and dimensions of the solutions the comany develops grow from project to project.
- STEP OIL-TOOLS - STEP Oiltools is a leading global provider of solids control and drilling waste management services to the oil and gas and civil engineering industries. STEP Oiltools has grown significantly since inception in 2011.
- SYNTHOTECH - Committed to setting the standard in engineering pipeline solutions, Synthotech takes quality management very seriously, and its accreditations demonstrate its commitment to delivering excellence as standard.
- UIS - UIS, or Utility Innovation Services, is an award winning and forward-looking innovation company that exists to improve the safety, efficiency and productivity of utilities personnel.
- VORTEX - At Vortex, the company anticipates problems, imagines solutions, and develops No-Dig, trenchless technologies to solve big infrastructure problems in a big way — cost-effectively and permanently. ■

TRENCHLESS MIDDLE EAST 2024 *DUBAI, UAE*

Jumeirah Beach Hotel

5-6 November 2024

13th Exhibition & Conference on NDRC (Trenchless) Technology

BOOK YOUR STAND TODAY...

- Enjoy a great ROI from Visitors, Suppliers, Innovations, industry leaders and buyers
- TME features more than 85 exhibiting and represented companies from 16 countries
- TME is the longest running trenchless event in the UAE, GCC and MEASA regions
- TME is the only event dedicated conference and exhibition focussing on Trenchless Technology
- The only event to be officially supported by ISTT
- Meet planners, contractors, and operators, central & local government officers and civil engineers
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Trenchless Technology / NDRC - Keeping the Middle East moving

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Contact Paul Harwood: pharwood@westrade.co.uk or +44 (0)1923 723990

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www.trenchlessmiddleeast.com

Iain Naismith
Technical & Education
sub-committee Chair

What is your Green Footprint?

UKSTT T AND E REPORT

Carbon Footprint/net zero? Thank you to those who have responded already to last month's request about information on the carbon footprint of trenchless vs traditional methods and how different trenchless methods compare. We know there is relevant information out there, but it is not easily located, so we want find out what is available, identify what is most relevant and signpost where it can be found. For example: Anglian Water/Affinity Water/Welsh Water have completed an Ofwat funded project 'Enabling Whole Life Carbon in Design' aimed at putting carbon at the heart of both design and governance decision-making processes and on an equal footing with cost – visit: https://spring-innovation.co.uk/2023/09/22/whole-life-carbon-project/

Working Group 1 Standards, Research and Awards – Chair Richard Swan

As previously reported there has been a very good response to the call for submissions for this year's awards. This is now closed and judging is nearing completion. Following a very successful collaborative workshop on water industry standards and regulations in March we will be joining a follow-up meeting in October with FWA, BPF, Water UK Standards Board among others. The aim is to raise the profile of these necessary quality and assurance measures and address the involvement of the supply chain with the water and sewerage companies.

Working Group 2 Events – Chair Iain Naismith

Work continues on preparing the conference programme for the Bristol No-Dig Roadshow where Patrons are being asked to present on their trenchless needs, and a Masterclass on CIPP for pressure pipe is being planned for later this year. The 2024 programme is starting to take shape.

Working Group 3 – Education, Client Organisations and Patrons – Chair Tim Sargent

In September we held very positive meetings with representatives from universities and with Patron organisations to explore how best the Society can engage with and meet their needs and build new ways to educate their businesses and spread the word about all trenchless options. ■

JOIN UKSTT

Are you looking to make a difference in the field of Trenchless Technology? Do you want to be part of a leading organisation, supporting the advancement of science and practice in this field?
IF SO, UKSTT IS THE RIGHT CHOICE FOR YOU.

UKSTT is a not-for-profit organisation that was established to advance the science and practice of Trenchless Technology for the public benefit. It was founded in 1993 and since then has been dedicated to providing the best possible education and training opportunities for those in the industry. It is recognised by the industry as the authoritative source of information and advice on the best practice and application of Trenchless Technology. UKSTT offers a range of webinars, conferences and Masterclasses that are designed to keep members up to date with the latest developments in the industry. It also provides access to experts in the field and offers a wide range of resources for members to use when planning projects, including a FREE Technical Enquiry service.

Joining UKSTT is a great way to get involved in the field of Trenchless Technology. By becoming a member, you will be part of a network of professionals who are passionate about pushing the boundaries of this industry. You will be able to stay informed of the latest developments and have access to the best resources available and have opportunities to network with other like-minded members and learn more about the industry. The organisation also provides a platform for members to share their knowledge and experience. This helps to ensure that the industry is continually evolving and growing. UKSTT also acts as an advocate for members and the industry as a whole, promoting the best practice and use of Trenchless Technology.

If you are passionate about Trenchless Technology and want to make a difference to the industry, then joining UKSTT is the right choice for you. By becoming a member, you will be part of a network of experts and have access to the latest developments in the field. You will also be able to share your knowledge and experience and help to improve the industry.

Join UKSTT today and make a difference. www.ukstt.org.uk/joining-the-ukstt/ ■

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TECHNICAL ENQUIRIES SERVICE

The UKSTT website has a dedicated link for visitors to raise any technical enquiries they may have concerning trenchless technology and whether it may be applicable to any specific project: https://www.ukstt.org.uk/technical-enquiry/

We have had a variety of interesting enquiries recently, ranging from invitations to tender in various locations of the UK and Europe, to requests for advice and proposed solutions for projects currently on-going.

All of these enquiries are circulated to our Corporate Members and if more detailed advice is required UKSTT have a dedicated team who will advise separately. All technical enquiries are stored on the members only area of the UKSTT website.

UKSTT Council has a dedicated technical sub-committee to offer advice, support and guidance. We have an extensive list of members experienced in all aspects of trenchless technology, who want to help you!

SOCIETY NEWS

UKSTT

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Society News brought to members by Trenchless Works

Image courtesy of TT

THINK TRENCHLESS FIRST

Using trenchless techniques, to install, replace or repair underground pipelines is not only less disruptive but is also a cost effective and environmentally friendly way of doing so. Why dig when you can 'Go Trenchless'! There are so many reasons why choosing trenchless techniques can be the best option for everyone, including;

- Lower Carbon Dioxide emissions
- Cost effective
- Less disruptive
- Saves time on projects
- Safer to use than traditional methods

UKSTT can help you decide if Trenchless methods are suitable for your project. Our website has a dedicated link for visitors to raise any technical enquiries they may have concerning trenchless technology and whether it may be applicable to any specific project: https://www.ukstt.org.uk/technical-enquiry/. Any enquiries received are circulated to our Corporate Members and if more detailed advice is required UKSTT have a dedicated team who will advise separately. All technical enquiries are stored on the members only area of the UKSTT website. For all your trenchless solutions and latest news visit the UKSTT website: https://www.ukstt.org.uk/

Email: admin@ukstt.org.uk
* We have an extensive list of members experienced in all aspects of trenchless technology
* UKSTT Council has a dedicated technical sub-committee to offer advice, support and guidance. ■

NO-DIG ROADSHOW BRISTOL

2023 NO-DIG ROADSHOW

WEDNESDAY 29 NOVEMBER 2023

De Vere Tortworth Court, Tortworth, Wotton-under-Edge GL12 8HH

CLICK HERE TO ATTEND FOR FREE

REGISTER NOW

FREE to attend including access to expert led technical sessions

No-Dig Bristol Roadshow is supported by South West Water and Wessex Water. Experience the best in No-Dig technology and catch up on industry research and leading edge thinking.

Conference Programme

09:00 - 09.30	Registration & Exhibition Opens SESSION I - WHAT UKSTT PATRONS NEED FROM TRENCHLESS I
09.30 - 09.40	Conference Opening and Welcome Remarks *Iain Naismith, Moderator*
09.40 - 10.00	Water Innovation, No-Dig and The Way Forward *Jeremy Heath, Innovation Manager - SES Water (Sutton and East Surrey Water)*
10.00 - 10.20	United Utilities - Future Trenchless Needs *Katy Bevan, Operations Manager - United Utilities*
10.20 - 10.30	Q & A
10.30 - 10.40	Sponsor Presentation - Quick Pig, Reinert-Ritz GmbH *Nico Hindriks, Area Sales Manager Quick-Pig, Reinert-Ritz GmbH*
10:40 - 11.40	Coffee Break & Exhibition Visit SESSION II - WHAT UKSTT'S PATRONS NEED FROM TRENCHLESS - II
	Iain Naismith, Moderator
11.40 - 12.00	Role of Trenchless in Cadent's Journey to Net Zero *Peter Atkins, Delivery Support Manager - Cadent*
12.00 - 12.20	Groundwater Reduction in Sewerage - Efficient and Effective Delivery *Hazel Tranchant, Senior Asset Manager - South West Water*
12.20 - 12.30	Q & A
12.30 - 12.40	Sponsor Presentation - Stock Rentals Ltd *Andy Collett, Managing Director, Stock Rentals Ltd*
12.40 - 12.50	Sponsor Presentation – UIS Ltd *Joe Lynch, UIS (Innovative Utility Technologies) Limited*
12:50 - 14.00	Lunch Break & Exhibition Visit SESSION III - UKSTT 30
	Ian Ramsay, Moderator
14.00 - 14.20	Trenchless Knowledge Sharing - what help is available to me from UKSTT and ISTT? *Iain Naismith, Chair, UKSTT Technical and Education Committee*
14.20 - 14.50	Standards and Regulations for Trenchless – what's happening, why should I be interested? *Richard Swan - Chair, UKSTT Working Group on Standard, Research and Awards*
14.50 - 15.00	Q & A

Exhibitor List

ACOTHANE UK LIMITED
AMIBLU NORWAY AS
BLUELIGHT LINING LTD
BUCKHURST PLANT HIRE LTD
DCR INSPECTION SYSTEMS LIMITED
DIE DRAW LIMITED
HERMES TECHNOLOGIE GMBH & CO. KG
HY-RAM ENGINEERING CO LTD
IMS ROBOTICS UK
LATERAL REPAIRS UAB
MAMMOTH-MTS
OCU GROUP LTD
PICOTE UK LTD
PROKASRO MECHATRONIK GMBH
PUBLIC SEWER SERVICES LTD
RADIUS SUBTERRA SYSTEMS
REINERT-RITZ GMBH
RELINEEUROPE GMBH
RSM LINING SUPPLIES GLOBAL LTD
RSP UK SUCTION EXCAVATORS LTD
S1E LIMITED
STEVE VICK INTERNATIONAL
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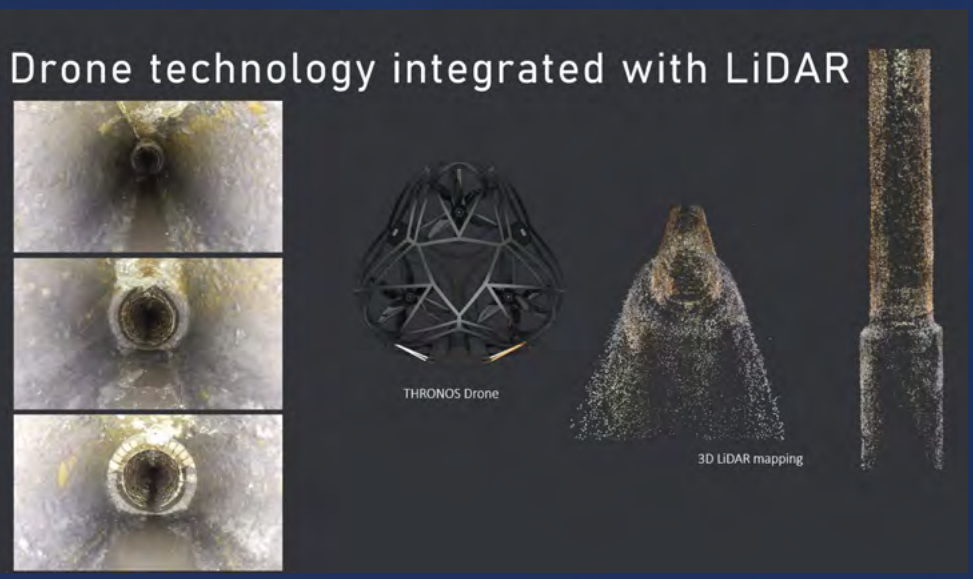
INNOVATIVE TECHNOLOGY

BRAWO SYSTEMS, S1E LTD & CAPPAGH CONTRACTORS CONSTRUCTION (LONDON) LTD

BRAWO MAGNAVITY

The Brawo Magnavity LED Lining System offers a compact solution with a small footprint, using advanced light curing technology. Its innovative features and easy manoeuvrability on site minimise customer disruption and promote environmental friendliness.

This system is simple to use and consistently delivers high-quality results. Our productivity on site has tripled, instilling confidence in our customers while saving costs with the products we use. To demonstrate outstanding value and service to our esteemed customer, Thames Water, Cappagh has made a significant investment in two Brawo Magnavity LED Lining Systems, complete with the necessary full installation system kits, which include two inversion drums and air compressors.



ENVIRONMENTAL TECHNIQUES & GOOD FRIDAY ROBOTICS

BRAWO DRONE TECHNOLOGY INTEGRATED WITH LIDAR

Environmental Techniques utilises drone technology integrated with LiDAR to conduct safe and efficient sewer network surveys. The drones access hazardous and hard-to-reach areas, while LiDAR captures precise 3D data. Collaborating with water authorities, the technology has been successfully tested in the UK and Ireland, providing critical surveys for previously inaccessible assets. The 3D models offer insights into dimensions, defects, and geolocation of the sewer system. The approach enhances safety, reduces disruptions, and optimises maintenance efforts, benefiting communities and the environment.

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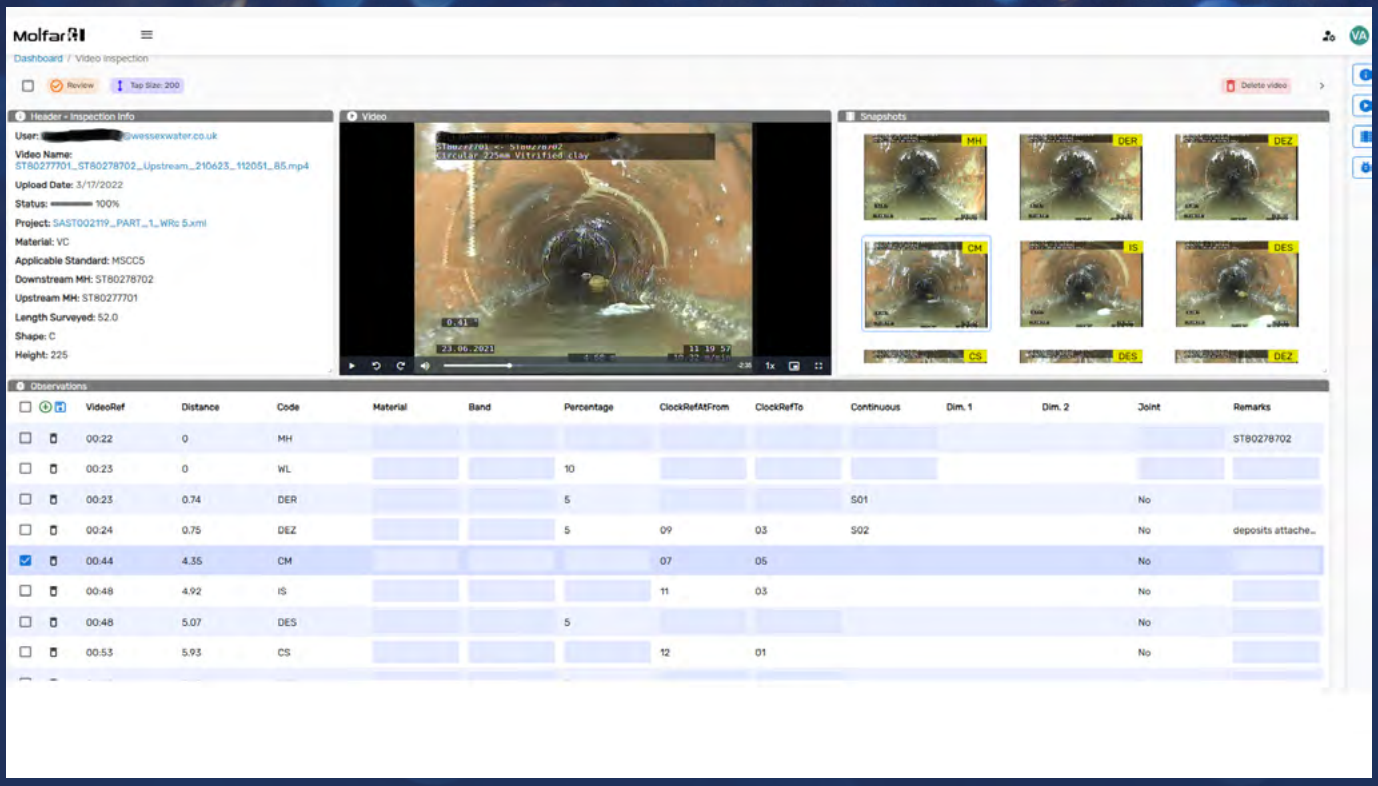
INNOVATIVE TECHNOLOGY



WESSEX WATER & MOLFAR

AI PLATFORM FOR SEWER INSPECTIONS

This entry presents a collaboration between Wessex Water and industry provider Molfar.AI which resulted in the development of a new platform offering automated AI grading of sewer inspection surveys. The platform provides reporting to MSCC5 standard, improving consistency and speed of surveys. This innovation offers numerous benefits to customers, asset managers and sewer renovation engineers. It is integrated into Wessex Water's existing survey strategy and asset management system with seamless data flow.

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FINALISTS

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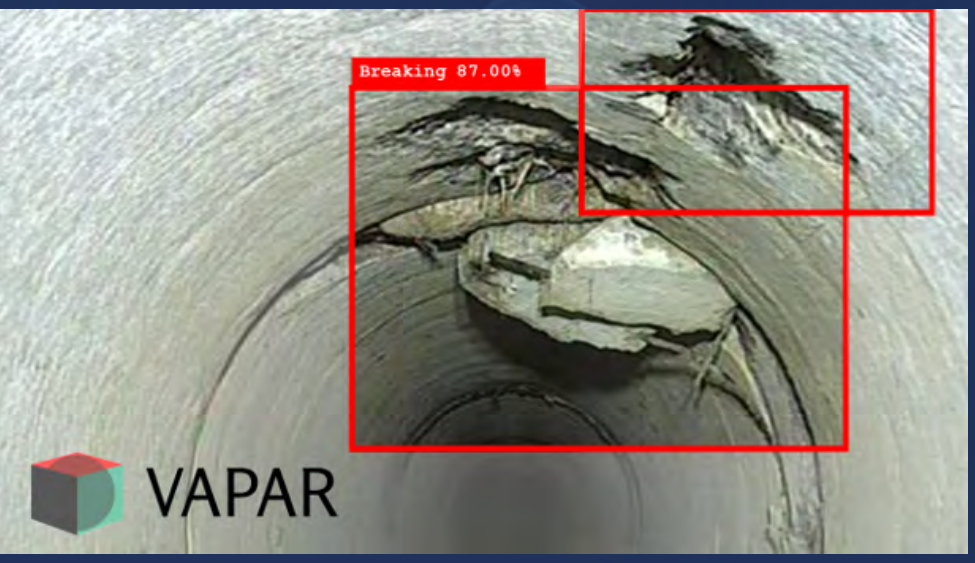
DETECTION, LOCATION & INSPECTION

ENVIRONMENTAL TECHNIQUES, SCOTTISH WATER, CALEDONIA WATER ALLIANCE & GOOD FRIDAY ROBOTICS

BATH STREET – DRONE WITH LIDAR MAPPING

Environmental Techniques used a specially designed drone with LiDAR mapping technology to assess the condition of a challenging sewer under Bath Street, Glasgow. Conventional methods failed due to bends and uneven inverts. The drone's 4K camera recorded visual data for accurate assessment, while LiDAR produced a 3D render, revealing the sewer's route in relation to structures. Customers benefited from increased infrastructure reliability and minimising disruptions, whilst there are also improvements in health and safety to those undertaking the surveys. LiDAR information allowed Scottish Water to understand the layout of an unknown asset. This innovative project sets a precedent for sewer inspection and rehabilitation, utilizing technology to overcome limitations.



UNITED UTILITIES, VAPAR, SAPPHIRE UTILITIES & IPSUM

USING AI TO CREATE TIME & FINANCIAL SAVINGS FOR INSPECTING WASTEWATER NETWORKS

Innovation is a core value at United Utilities, with the objective of making services better, safer, faster, and cheaper for customers. Establishing the water industry's first 'Innovation Lab' provided the mechanism for UU to find VAPAR, whose purpose is to use AI to provide the fastest way to the correct pipeline asset investment decision.VAPAR's software is designed around a Collaborative Intelligence model that blends AI and engineering inputs to allow sewer inspections and investment decisions to be completed in days, not weeks. This capability and a collaborative partnership have generated a 20% saving from a 1,000 km proactive inspection programme.

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FINALISTS

SPONSOR:

DETECTION, LOCATION & INSPECTION

GLANVILLE ENVIRONMENTAL, GLANVILLE GEOSPATIAL & SOUTH WEST WATER

SALCOMBE CRITICAL TUNNEL SURVEY - REVOLUTIONISING SEWER INFRASTRUCTURE INSPECTION FOR A SUSTAINABLE FUTURE

In 2022, planning began on the Salcombe critical tunnel survey to assess a vital 720 m tunnel connecting Salcombe and the SPS infrastructure. Limited records of its condition posed challenges, and conventional surveying methods proved impractical. Glanville Geospatial introduced a confined space drone, prioritising safety and cost-effectiveness, reducing costs by up to 50%. It outperformed traditional methods in data capture and productivity. After the successful survey, a significant blockage was identified, and plans for its removal are underway. The drone's success sets a benchmark for future infrastructure projects, emphasising technology's transformative potential for a sustainable future

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NEW INSTALLATION – LARGE PROJECT >£350K

GMAC UTILITIES LTD & KIER UTILITIES LTD

LOWER OTTER RESTORATION PROJECT HDD

Gmac Utilities Ltd overcame difficult ground conditions to install 520 m of 500 mm diameter rising main to a depth of 48 m whilst drilling under a SSSI wetland and river replacing the existing infrastructure, as part of EA scheme to return 68 hectares back to wetland. The project involved pipe ramming 60 m of 1,000 mm diameter steel casing through dense river terrace gravels to depth of 18 m to the sandstone bed rock, before undertaking the horizontal directional drilling. Not only was the pipe ramming and HDD completed on time and within budget with no environmental impact to surrounding area, the HDD crew performance, site set up and work ethic received praise from some very knowledgeable local residents.

BARHALE

ABERDEEN-UTX

Working with client Aberdeen City Council, Barhale delivered an under-track crossing (UTX) for the new Torry Heat Network. The innovative curved £1.3 million UTX was required to cross the live operating railway between Edinburgh and Aberdeen to allow for district heating pipe and associated communications cables services. The new pipe will connect the NESS Energy from Waste facility at East Tullos Industrial Estate to the Torry Heat Network

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FINALISTS

SPONSOR: CIPP Supplies

NEW INSTALLATION – LARGE PROJECT >£350K

OCU GROUP

OCU - THE CORRAN NARROWS PROJECT

OCU has completed a £3.4 million power cabling installation underneath Loch Linnhe. The project installed two No. 33 kV circuits and one No. 11 kV circuit 15 m underneath bedrock, replacing old cables on the seabed through Horizontal Directional Drilling and providing a reliable power supply, reducing intermittent power outages and periodic cable replacement. The project aim was to put in place infrastructure to deliver reliable power supply for local residents and businesses well into the future – while enabling conservation of the surrounding areas natural beauty. OCU's offering combines innovation, best practice, and technological advances in a challenging, highly regulated working environment.

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FINALISTS

SPONSOR: IMPREG

NEW INSTALLATION – SMALL PROJECT £70K - £350K

PUBLIC SEWER SERVICES

BARNET

Borough of Barnet, is a privately-owned house that historically flooded on numerous occasions. Investigations showed the flooding was being caused by a damaged surface water drainage pipe that was directly underneath 1 Mill Corner. The matter went to court and Barnet Council was ordered to provide a temporary and permanent solution. Public Sewer Services (PSS) were tasked with providing the permanent solution, which involved installing 230 metres of new surface water drainage pipework in May/June last year.

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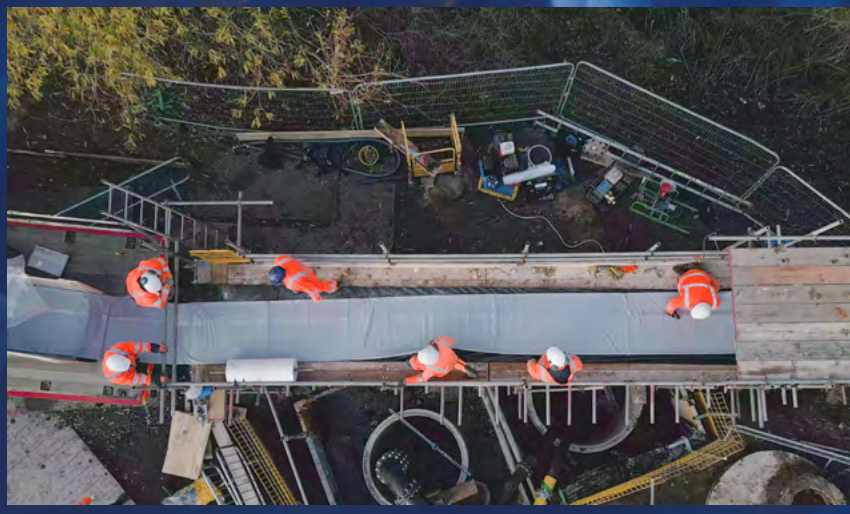
FINALISTS

SPONSOR: CHANNELINE Beyond the Ordinary

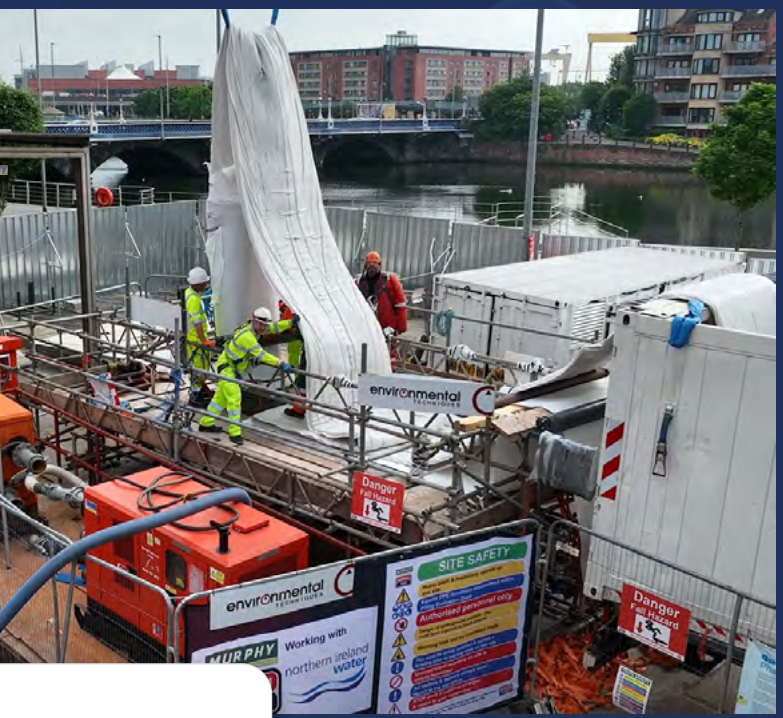
RENOVATION – LARGE PROJECT >£350K

PUBLIC SEWER SERVICES

GLOUCESTER PARK SEWER RENEWAL BASILDON



Public Sewer Services (PSS) were tasked by a major client with investigating a 277 m long sewer pipe that was located under the main lake in Gloucester Park, Basildon. The pipe was full of silt, which we suspected was caused by mass water infiltration from the lake. The 600 mm diameter gravity sewer pipe, which also runs through a small island, was found to be suffering from heavy infiltration due to large root ingress at the pipe joints. A long-term solution was needed to prevent lake water from entering the sewer and subsequently increasing the flow to Basildon Water Recycling Centre.



ENVIRONMENTAL TECHNIQUES, NORTHERN IRELAND WATER, ATKINS & DAWSON WAM

QUEENS BRIDGE SIPHONS RELINING

The Queen's Bridge Siphons project by Northern Ireland Water aimed to rehabilitate twin 1,140 mm diameter sewerage siphons in Belfast, serving 40,000 people. Degrading siphons leaked freshwater, burdening downstream treatment. Minimising excavation reduced disruptions, noise, and carbon emissions, aligning with sustainable practices. The project protected local communities, ecosystems, and river-based leisure activities. Precise drone data facilitated a custom liner for the North Siphon's reduced section ensuring that the CIPP liner was a secure fit. The relining phase avoided months of traditional civils replacement, ensuring continuous sewer operation and reduced costs. The project exemplifies technological innovation and collaboration in infrastructure development.

The UKSTT Awards 2023

in Association with Westrade

FINALISTS

SPONSOR: CHANNELINE Beyond the Ordinary

RENOVATION – LARGE PROJECT >£350K

GLANVILLE ENVIRONMENTAL, SOUTH WEST WATER, PUBLIC SEWER SERVICES & PRIMUS LINE

EMBRACING TRENCHLESS TECHNOLOGY WITH PRIMUS LINE: A SUSTAINABLE AND INNOVATIVE APPROACH TO SEWER REHABILITATION AT PORTHLEVEN

Embracing Trenchless Technology with Primus Line: A Sustainable and Innovative Approach to Sewer Rehabilitation. Through collaboration with our supply chain partners, Glanville Environmental has delivered alongside South West Water and Public Sewer Services, an exemplary and sustainable solution that addresses critical challenges while revolutionising the way sewer rehabilitation is approached in Porthleven. This submission highlights the outstanding benefits and achievements of adopting trenchless technology, positioning it as a game-changer in the field of sewer infrastructure rehabilitation.

The UKSTT Awards 2023

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FINALISTS

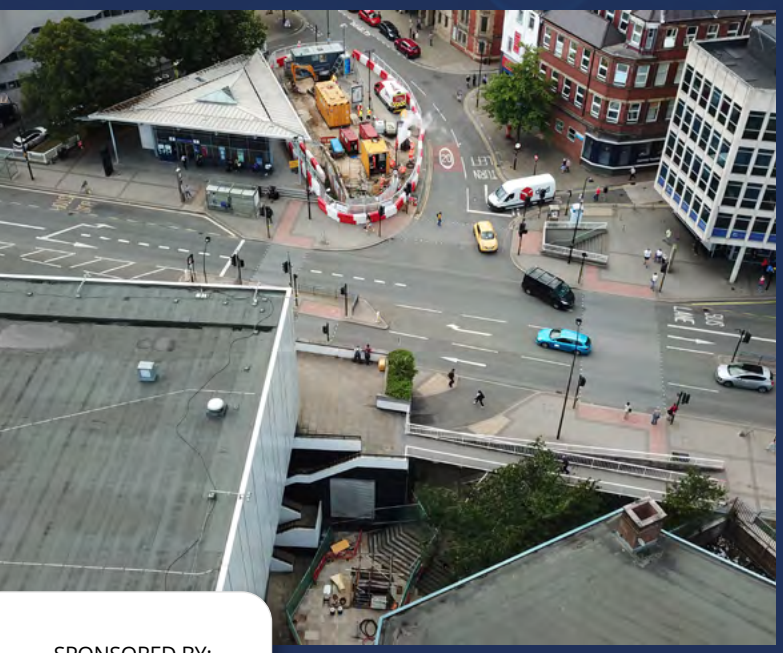
SPONSOR: QUICK-PIG STATION

RENOVATION – SMALL PROJECT £70K - £350K

GLANVILLE ENVIRONMENTAL, SOUTH WEST WATER & RSM LINING SUPPLIES

INNOVATIVE EXCELLENCE IN SEWAGE INFRASTRUCTURE REHABILITATION: REDEFINING SUSTAINABLE CONSTRUCTION PRACTICES USING UV LINING

In July 2022, Glanville Environmental began the Crowndale Infiltration Scheme involving reinforcing 1 km of sewer pipe along Crowndale Road to address sewage infrastructure issues in Tavistock, Devon. Using the minimally invasive Sewertronics Speedylight UV system supplied by RSM Lining Supplies, this innovative CIPP liner ensured pipe integrity for over 50 years while preventing groundwater infiltration and environmental risks. This trenchless method reduced disruption, completing the project in six weeks, and the Speedylight system proved sustainable and efficient, reducing curing time by over 50%, paired with our customer-centric approach and innovative technology setting a standard for the industry.



COLUS LTD, CPS CIVILS & SYNERGI

ARUNDEL GATE – NETWORK RENEWAL WORKS

Colus was appointed by Main Contractor CPC Civils, to install two 40 m lengths of carbon fibre liner in a section of the Sheffield District Heating Scheme running below Arundel Gate in the City Centre. These were the first installations in the UK of the innovative lining product CarboSeal. Colus successfully installed them in two days with an additional day for preparation works delivering a time saving of approximately 5 weeks and saving £200,000 in overall cost.

The UKSTT Awards 2023

in Association with Westrade

FINALISTS

SPONSOR: QUICK-PIG STATION

RENOVATION – SMALL PROJECT £70K - £350K

GLANVILLE ENVIRONMENTAL, SOUTH WEST WATER, PUBLIC SEWER SERVICES & PRIMUS LINE

PENNANCE MILL SPS RISING MAIN REPLACEMENT - A SUCCESSFUL RECIPE MIXING INNOVATIVE AND TRADITIONAL INGREDIENTS

Taking an elemental approach to achieve the scheme requirements by selecting the most appropriate rehabilitation methods across specific sections of the scheme to deliver the optimum solution. In a challenging natural environment and impacting the operation of two holiday parks, this time sensitive project achieved its targets and substantially improved operational efficiency for the client.

The UKSTT Awards 2023

in Association with Westrade

FINALISTS

SPONSOR: PROKASRO

SMALL SCHEME <£70K

CLEARWATER LTD

CARDOWAN SEWER COLLAPSE

Since 1930 Cardowan has been manufacturing margarine products that have set the industry standard to date. A CCTV survey investigation by CLEARWATER found the 225 mm diameter sewer to be heavily scaled and collapsed 3 m under the main building. Due to the location, site access is gained under Celtic Football Club North Stand in Janefield Street. A sewer diversion was unthinkable and would have been a major expensive and disruptive operation. CLEARWATER Business Manager Ally Knox used his 35 years of No-Dig experience to find a solution to carefully clean, descale and install 12 m of 225 mm diameter patch linings to seal and strengthen the collapsed pipe at a tiny fraction of the cost. CLEARWATER experienced operatives delivered the small project like a surgical team in an operating theatre.

PUBLIC SEWER SERVICES

COSWARTH WTW

Public Sewer Services (PSS) was approached to urgently replace and upsize a 160 mm diameter PVC gravity reservoir drain. The drain was needed to support storage capacity improvements that had been carried out at the existing reservoir that was located in the SW.

The UKSTT Awards 2023

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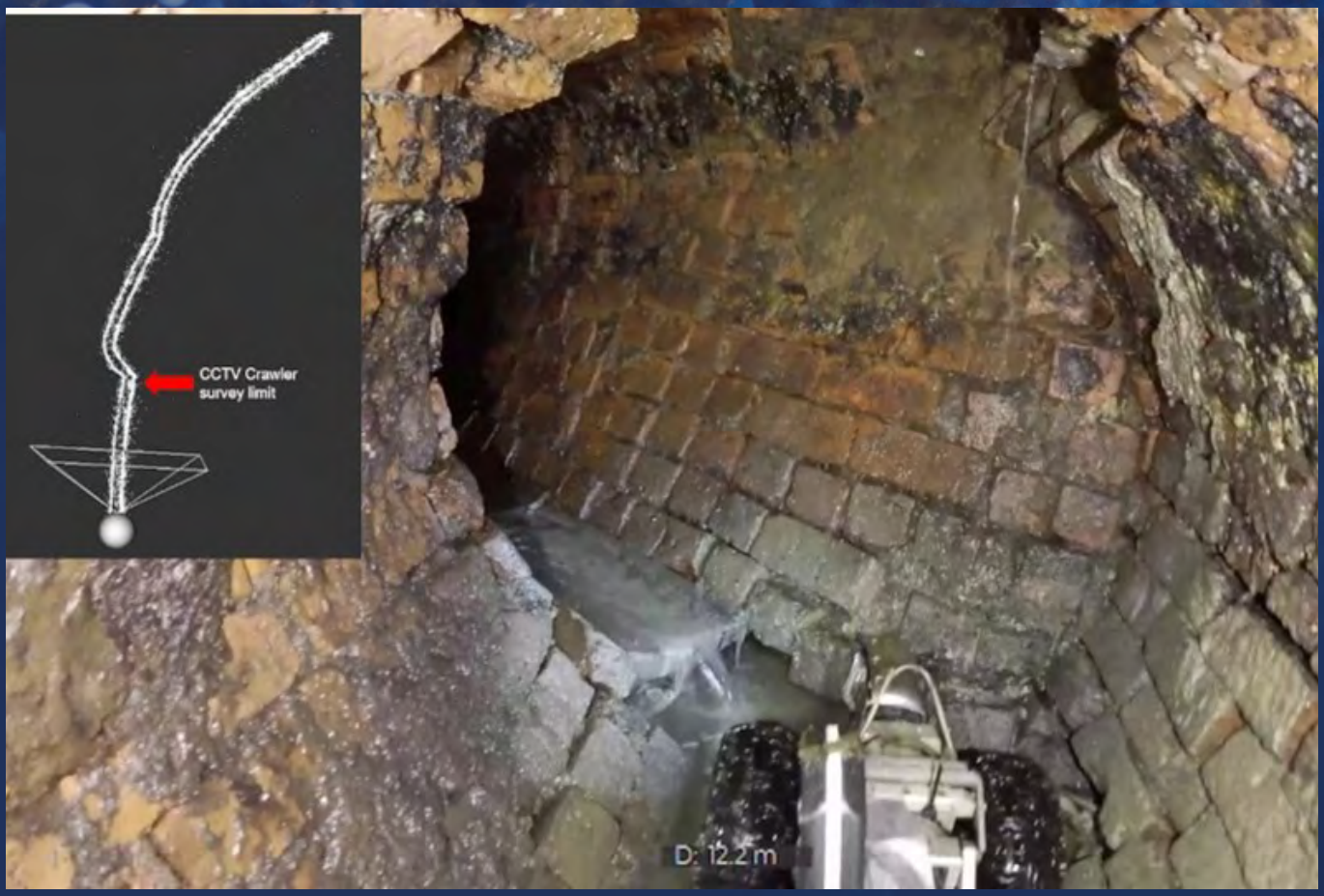
FINALISTS

SPONSOR: PROKASRO

SMALL SCHEME <£70K



ENVIRONMENTAL TECHNIQUES, SCOTTISH WATER, CALEDONIA WATER ALLIANCE & GOOD FRIDAY ROBOTICS

BATH STREET, GLASGOW

Environmental Techniques used a specially designed drone with LiDAR mapping technology to assess the condition of a challenging sewer under Bath Street, Glasgow. Conventional methods failed due to bends and uneven inverts. The drone's 4K camera recorded visual data for accurate assessment, while LiDAR produced a 3D render, revealing the sewer's route in relation to structures. Customers benefited from increased infrastructure reliability and minimising disruptions, whilst there are also improvements in health and safety to those undertaking the surveys. LiDAR information allowed Scottish Water to understand the layout of an unknown asset. This innovative project sets a precedent for sewer inspection and rehabilitation, utilising technology to overcome limitations.

The UKSTT Awards 2023

in Association with Westrade

FINALISTS

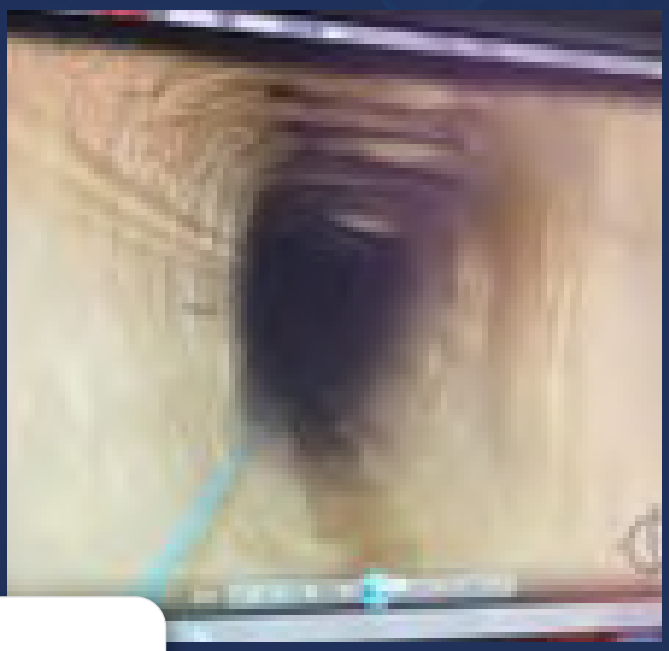
SPONSOR: PICOTE LIFE FOR PIPES

YOUNG PROFESSIONAL

BLAIR MCMENEMY

ENVIRONMENTAL TECHNIQUES

Blair graduated with a BSc in Geography and Geosciences in 2016. Joining Environmental Techniques as a GIS technician, he rapidly excelled, becoming a Project Manager and later, Senior Project Manager. Blair's achievements include overseeing complex sewer surveys using drone technology, introducing trenchless methodologies for sewer rehabilitation, and promoting sustainability in engineering practices. His vision focuses on automation and AI technologies to improve productivity. His dedication, leadership, and innovative thinking make him a deserving candidate for the Young Engineer Award, as evident through his exceptional contributions to the company and the sewage industry.



HARLEIGH HOMER

WESSEX WATER

My entry discusses my experiences so far with trenchless technology as a project engineer, including: U-Shaped sewers repaired in Clevedon, Somerset, using CIPP designed to the MOP145 standard and the use of timber heading and LiDAR in badly deteriorated sewers. Furthermore, discussing my views for the future and the need for alternatives to polyolefin materials in a quickly changing environment.

The UKSTT Awards 2023

in Association with Westrade

FINALISTS

SPONSOR: PICOTE LIFE FOR PIPES

YOUNG PROFESSIONAL

KIRAN ALYA KHAN

CAPPAGH CONTRACTORS CONSTRUCTION (LONDON) LTD

Imagine the distressing scenario of having your house flooded with sewage. Unfortunately, one of our customers faced this very situation. However, utilising the power of trenchless technology, we were able to effectively rehabilitate the 375 mm diameter sewer line that extended 58 meters from the customer's basement to the main road. By employing this innovative approach, we not only prevented further flooding incidents for the customer but also eliminated the need for extensive excavation and safeguarded the sewer line from potential future deterioration, thus protecting neighbouring properties as well.

ISTT International Society for Trenchless Technology

SOCIETY NEWS istt.com

ISTT News brought to members by Trenchless Works

A MESSAGE FROM THE CHAIR

Keh-Jian (Albert) Shou,
Chairman, ISTT

2023 No Dig Turkey, Istanbul

Hi ISTT members

I believe most of you have experienced a busy year after the pandemic, a lot of international, regional, and national No-Dig events, full of attendees and exhibitors. What a prosperous year 2023 has been! As you may know, after International No-Dig in Mexico City and 2023 No-Dig Poland in Krakow, I also attended the 2023 No-Dig Turkey in Istanbul. After the big earthquake, the water leak problem boosted the demand of trenchless technology significantly. I would say the No-Dig industry is extremely vibrant in 2023 and will continue into 2024, and even for the big potential market of the wars in different areas. Like I did in 2023, I will try my best to attend as many events as possible to encourage our Affiliated Societies in 2024.

For the 2023 No-Dig Turkey event, the Turkish Society successfully focussed the spotlight by integrating the Governing sector, consultants, contractors, and suppliers in the trenchless industry. Especially, due to their urgent demand after the earthquake, the earthquake disaster also created opportunities for the trenchless industry. At this event, surprisingly and gladly, we also found the local developments of new trenchless technologies. Right after this conference, JSTT and CTSTT also signed a bilateral cooperation memorandum on a JSTT technical conference in Tokyo. This kind of regional cooperation also sets up a good example for our Affiliated Societies in other areas.

As you may know, we keep hosting the ISTT educational webinars, that can be replayed in the member space. The next one will be 'Key findings from a comparison of pressure sewer rehabilitation technologies' by Iain Naismith of IKT, on 12 December, 2023. Please do not forget to register and attend this extraordinary webinar. ISTT is trying to provide more services to its Affiliated Societies through the website and other communication channels. To enhance our service, we are now doing a survey by the Outreach and Marketing committee, please feel free to provide your comments and suggestions.

With my Best Wishes!

Keh-Jian (Albert) Shou

Chair, ISTT

ISTT REPORTS FROM NO-DIG MEXICO

International Council Members from 15 countries meet in Mexico City.

AATT (Austria), ABRATT (Brazil), ASTT (Australasia), CHKSTT (Hong Kong), CSTT (China), CTSTT (Chinese Taipei), FiSTT (Finland), FSTT (France), GSTT (Germany), JSTT (Japan), LAMTT (Latin America), MATT (Malaysia), NASTT (Norh America - USA/Canada), SASTT (South Africa), UKSTT (United Kingdom)

ISTT and Affiliate Society members at the ISTT Board Meeting

2023 ISTT Board of Directors

Sam Efrat was elected for the second term.

ISTT Chair, CTSTT (Chinese Taipei)	Keh-Jian (Albert)	Shou
ISTT Vice-Chair, AATT (Austria)	Mark André	Haebler
ISTT Vice-Chair, NASTT (Norh America - USA / Canada)	Kimberlie	Staheli
CHKSTT (Hong Kong)	Wing	Chan
UKSTT (United Kingdom)	Declan	Downey
SASTT (Southern Afria)	Sam	Efrat
ASTT (Australasia)	Trevor	Gosatti
GSTT (Germany)	Jens	Hölterhoff
FiSTT (Finland)	Jari	Kaukonen
NASTT (Norh America - USA / Canada)	John	Matthews
LAMTT (Latin America)	Carlos Andres	Munera
UKSTT (United Kingdom)	Ian	Ramsay

Dr Kimberlie Staheli, former ISTT Vice Chair and Keh-Jian (Albert) Shou ISTT Chair

At the close of 2023, Dr Kimberlie Staheli will step down from her position as ISTT Vice Chair. She was recognised for her outstanding eight years of commitment to the organisation. She will continue her service as a member of the ISTT Finance Committee.

The 2026 International No-Dig Conference and Exhibition will be held in Auckland, New Zealand. The International Council members unanimously approved the proposal from the Australian Society for Trenchless Technology (ASTT).

2024
TRENCHLESS ASIA

TRENCHLESS ASIA 2024

16-17 July

World Trade Center Metro Manila, Philippines

The thirteenth event in this outstanding series travels to Manila.

TRENCHLESS ASIA is the major annual international gathering for trenchless technologists to meet and discuss the latest industry developments featuring:

- Trenchless Technology
- Underground Infrastructure
- Pipeline Technologies
- Underground Utilities
- Trenchless Solutions for Urban Flooding
- Knowledge Transfer
- Green Technology

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ISTT AWARD WINNERS 2023

NO-DIG AWARD 2023 WINNER - NEW TECHNOLOGY

A TRENCHLESS MULTI-TOOL: THE PETRA PLATFORM

Petra, Inc., USA,

Roberto Zillante and Daniel Zillante, Petra

Trenchless machines are generally specialised for certain geological conditions; for example, pipe ramming, auger boring, and mTBMs have specific strengths and weaknesses and are used as geological conditions dictate. While this specialisation has made installations more efficient in specific ground types, it has not improved the ability of any single trenchless machine to handle a variety of conditions. Instead, machines are selected carefully according to expected ground type. Geological surveying is imperfect, however and no trenchless machine exists that is able to conquer a wide range of geological conditions, expected or unexpected.

To fill this gap in trenchless technology, Petra has innovated a 'trenchless multi-tool', a modular, multi-function machine capable of performing a variety of trenchless methods including piloting, auger boring, pipe ramming, pullback, and pipe bursting. Most importantly, the Petra Platform can perform Petra's novel proprietary methods: Assisted Dynamic Boring (ADB) and Jet Boring, for unstable ground and hard rock conditions, respectively. ADB was innovated by Zilper in Colombia, and Jet Boring by Petra in the USA. When Zilper merged with Petra, the concept of a trenchless multi-tool was born. We combined the two ideas and supplemented them with conventional trenchless methods on a single modular machine. >

Various modes of the modular Petra Platform machine

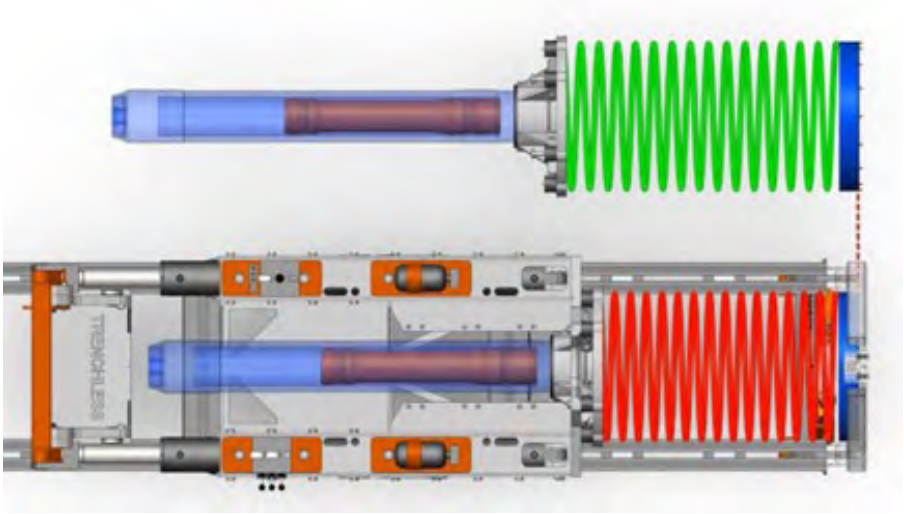
Three images depicting modular nature of Petra Platform.
Top: rammer in place, ready for pipe ramming/ADB.
Centre: intermediate step (Petra Platform empty).
Bottom: hydraulic motor in place, ready for augering

The Petra Platform is a hydraulic machine propelled by cylinders, capable of generating several hundred metric tons of pushing force. At the centre of the machine is a space for either a hydraulic motor or a pneumatic rammer, according to the desired boring mode. These modular units can be rapidly swapped, in a matter of minutes. When hard rock conditions are encountered, the Jet Boring module is mounted inside a casing, lowered onto the machine and jacked into the bore. In this fashion, the Petra Platform can swap between its six boring modes in minutes, without disassembling the machine or removing it from the pit.

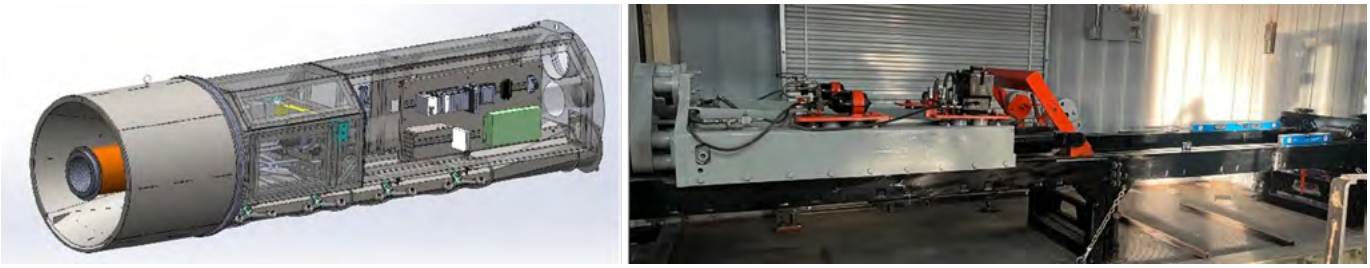
The Petra Platform uses spoil buckets which are lifted out between its rails, decreasing the pit footprint required. Furthermore, as a hydraulic machine, the Petra Platform has various pressure relief mechanisms which prevent machine upset when augers catch on an obstacle.

ADB is the Petra Platform's proprietary method for unstable ground and high water table conditions, especially where flowing sands are encountered. ADB combines pipe ramming with static hydraulic pressure, pre-compressing the steel casing. A higher percentage of ramming energy is thereby converted into plastic deformation in the soil, rather than lost elastically. The ADB method can thus achieve longer drives than conventional pipe ramming while using a smaller rammer to minimise noise, vibration, and energy consumption.

In Colombia, the Petra Platform has been used in ADB mode to rescue several installations in highly unstable ground. Two installations in the Britalia neighbourhood of Bogotá were rescued by the Petra Platform after flowing sands caused a GBM and mTBM to seize. Surface subsidence during previous installations had destroyed several homes in the area. During a crossing of the Tunjuelo River, extremely high ground water pressure was encountered, worsening flowing sands. Using the ADB mode, combining pipe ramming with hydraulic pressure, the Petra Platform completed the installation and crossed the Tunjuelo River without causing further surface subsidence. >



Schematic depicting conventional pipe ramming, above, and ADB, below. Steady hydraulic pressure pre-compresses the casing, minimising elastic energy loss



Left, Jet Boring module of Petra Platform, to be inserted into casing. Orange flamejet nozzle component articulates during boring. Right, jacking frame of Petra Platform machine into which rammer or hydraulic motor is inserted

Jet Boring:

Jet Boring mode is the second proprietary method of the Petra Platform, specialised for solid rock conditions, especially where compressive strength and/or abrasivity is high. Jet Boring works by thermal spallation, where hot air generated by a turbine is pointed at the tunnel face. The resulting thermal shock causes rock fragments to flake off, exposing fresh rock surface and allowing the process to continue, without melting any rock. In this way, Jet Boring is a non-contact rock removal method, excelling in high-strength and high-abrasivity rock. The non-contact flamejet cutterhead is articulating, to allow the machine to create a tunnel large enough to accommodate its casing.

Petra's Jet Boring mode is still in development. This mode has been tested successfully in a variety of hard-rock lithologies, including sandstone, dolostone, various granites, basalt, diabase, gabbro, biotite gneiss, and quartzite, ranging in compressive strength from 70 to 305+ MPa. At the time of writing, the Petra Platform, using Jet Boring, is performing two 100 ft (30 m) test bores in 165 MPa Sierra Nevada granite in eastern California, USA. This area is extremely fire-prone and undergrounding power lines in this rock is critical for decreasing ignitions. PG&E has stated its goal of undergrounding 10,000 miles of power lines; using Jet Boring, Petra intends to make this undergrounding possible in the challenging hard-rock conditions of the Sierra Nevada.

Jet Boring can be applied where unexpected hard rock is encountered, as in areas of igneous intrusions/dikes or large glacial erratics. Where rock is known to be present, Jet Boring can allow installations previously considered technically/economically infeasible, such as direct routes through mountainous regions or reservoir connections. As a hard-rock specialist, Jet Boring completes the suite of modes offered by the Petra Platform and will reduce risk in challenging installations.

Beyond these two proprietary modes, the Petra Platform can perform piloting, auger boring, pilot pullback, and pipe bursting. In this fashion, the Petra Platform is intended to serve as a one-stop multi-tool for trenchless installations, in simple conditions or the most challenging.

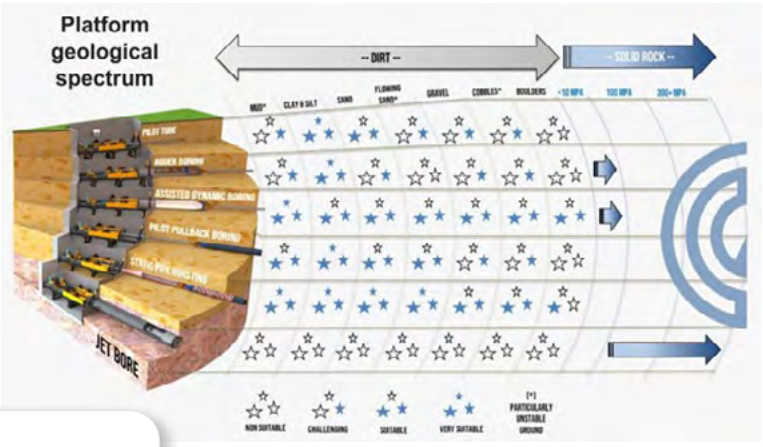


Figure 5: Geological capabilities of each mode of the Petra Platform

Figure 5 is a depiction of the various modes of the Petra Platform machine and their respective geological capabilities. Thanks to its modular nature, the Petra Platform can adapt to a wide range of ground types, decreasing risk of cost/time overrun in trenchless installations. To tackle the entire spectrum of geologic conditions, a variety of trenchless methods are needed; the Petra Platform packages those methods on a single machine, the first trenchless multi-tool. ■

NO-DIG AWARD 2023 WINNER - ACADEMIC RESEARCH

NEW WALL PROTECTION AND DRAG REDUCTION TECHNOLOGIES FOR LONG DISTANCE LARGE DIAMETER PIPE JACKING IN COMPLEX STRATA

Lichang Wang and Wei Long, School of Geosciences and Info Physics, Central South University, China

Announcing the Winner of the Academic Award Category at the Dinner in Mexico

Introduction:

The effective utilisation of subterranean infrastructure and its systematic development represent paramount imperatives within the contemporary engineering landscape. The construction of long-distance, large-diameter pipe projects for gas and water diversion is becoming increasingly common. However, these projects face complex construction environment and geological conditions. Wall protection and drag reduction technologies are the key to the successful construction of these projects, especially in complex strata. This paper serves as a comprehensive guide to address instability problems in long-distance, large-diameter pipe jacking under complex geological conditions. It focuses on investigating the mechanism, technology, slurry composition and their impacts on wall protection and drag reduction, providing valuable insights and solutions for large-diameter pipe jacking projects in challenging strata.

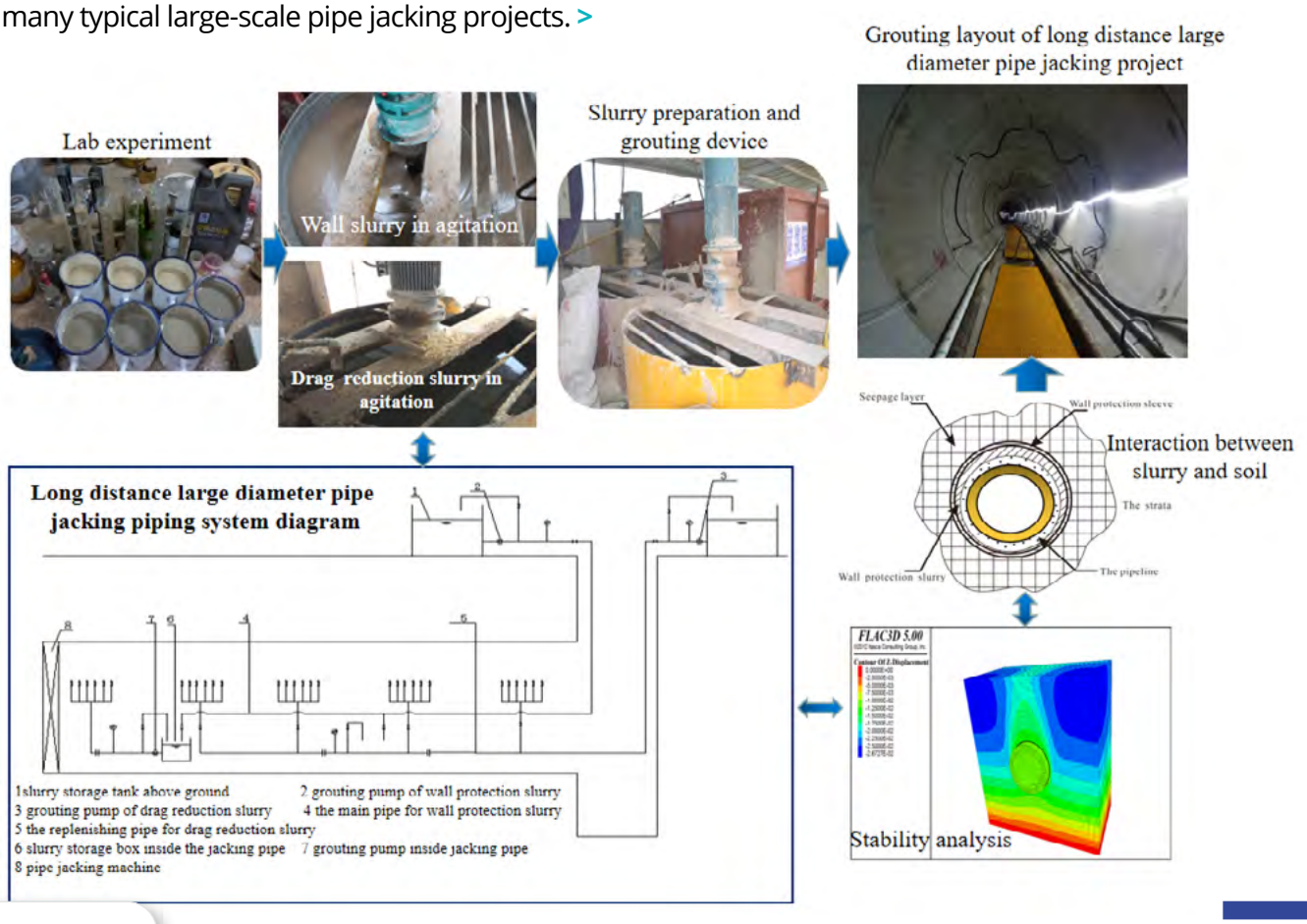
The successful application of the method in multiple complex large pipe jacking projects has resulted in the development of the key technology for wall protection and drag reduction. This advancement will facilitate the expansion of pipe jacking engineering into more complex geological conditions, enabling the construction of ultra-long distance and super large diameter pipe projects. Ultimately, this will enhance the development and utilisation of underground space. >

The traditional methods

Traditionally, the wall protection and drag reduction technology for pipe jacking relied on injecting slurry into the gap between the pipe outer wall and soil to form a protective layer to increase soil stability and reduce side friction resistance. The traditional slurry, mainly based on bentonite, serves both for wall protection and drag reduction. As the pipe jacking distances and diameters increase, this technology is no longer sufficient to meet the demands of wall protection and drag reduction.

The proposed methods

This study addresses the issue of high resistance and difficult wall protection in long-distance and large-diameter pipe jacking projects. We analyse and summarise the mechanism behind resistance reduction and wall protection. We propose to separate wall protection and resistance reduction, developing independent but complementary technology systems. The system of wall protection consists of wall protection slurry, pulping device and synchronous grouting system. We develop a bentonite polymer slurry as the wall slurry. It is prepared by the shear mixing pulping device and is injected into the pipe outer surface by the synchronous grouting system. Overtime, the slurry forms a wall protector on the soil surface, ensuring the soil stability. The system of drag reduction consists of drag reduction slurry, pulping device and slurry replenishing system along the line. We develop a highly effective drag reducing slurry, called the long chain polymer solid-free polymer slurry. It is prepared by the shear stirring pulping device and is injected into the pipe outer surface by the grouting system. This forms a lubricating layer between the pipe outer surface and the wall protector layer to reduce the side friction resistance. The wall protection technology transforms the dry friction between the soil and pipe into wet friction, and the drag reduction technology changes the wet friction into the internal friction without solid phase slurry. This results in significant wall protection and drag reduction effect. With the outstanding performance, this technology has reached international leading level performance, and it has been successfully applied in many typical large-scale pipe jacking projects. >

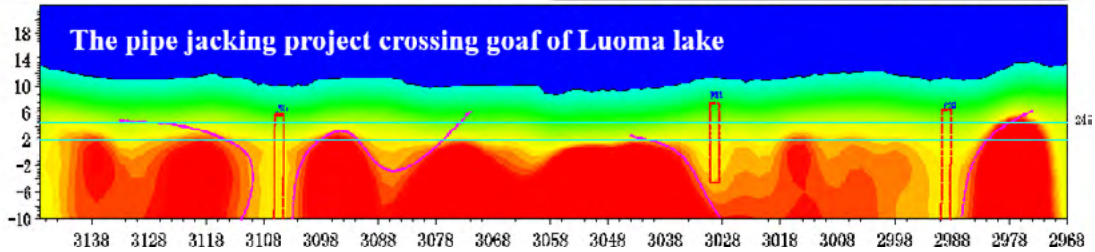


Applications

The technology proposed in this paper has been successfully applied in four world-class pipe jacking projects including:

1. The project crossing Dianchi Lake in Yunnan Province. The pipe has a total length of about 6,380 m, including 1,188 m DN4000 pipe with the outer diameter of 4,700 mm. It was the longest distance and largest diameter pipe jacking project in the world during its construction
2. The project crossing desert in Inner Mongolia. The pipe has a total length of 1,520 m and a buried depth of 50 m
3. The project crossing Luoma lake goaf in Jiangsu Province. The average length of a single section is 1,296 m. The pipe passes through quicksand layer, large goaf sand backfilling layers
4. The curved pipe jacking project crossing the Yangtze River and Shahu in Hubei Province. This project stretches a total length of 3,284.65 m. It features a single curve crossing the bottom of Shahu Lake with a buried depth of 1,422.18 m, and curve radius of 600 m. It is currently the curve pipe jacking project crossing lake bottom with the longest distance and maximum pipe diameter in the world.

In all four projects, the average drilling frictional resistance and the final average frictional resistance after jacking are smaller than 0.3 kN/m² and 0.8 kN/m², respectively, achieving a world leading level performance. During drilling, the pipe jacking axis remain smooth and straight, with the biggest surface deviation sunder 20 mm and the elevation deviation under 30 mm. No rough surface, wrong location, twist, soil collapse, ground collapse, sudden increase of top force, instability or uplift were reported throughout the projects. ■



ISTT FELLOW AWARD 2023

IAN RAMSAY

IRR TRENCHLESS CONSULTANCY, UNITED KINGDOM UKSTT

Ian Ramsay
IRR Trenchless Consultancy
United Kindom
UKSTT

ISTT fellow is a recognition for long-term involvement and technical or professional contributions to ISTT. We are thrilled to introduce two fellows for 2023.

Ian Ramsay has contributed extensively to the evolution of Cured-in-Place Pipe (CIPP) technology. With his law and economics degrees from the University of Newcastle, Ian began his career in the field beginning at Texon before moving to Epros, refining techniques in lateral relining and mainline connections.

Ian has had significant impact pioneering the lateral CIPP market in the UK, USA, and Asia, notably collaborating with Singapore's Public Utilities Board from 2002-2006, culminating the installation of over 150 km of laterals using CIPP. He has contributed to CIPP applications in Hong Kong, augmenting the region's post-slope investigation infrastructural advancements. He has influenced standards development and practices on pivotal industry panels. He is also an acclaimed educator, developing and delivering CIPP-focused courses globally, enhancing the industry's knowledge base.

As the Chair of the UKSTT and an ASTM F1216 committee member, Ian's leadership has bridged the gap between industry standards and governmental policies, including presentations to the UK Parliament.

A prolific author and speaker, Ian has propagated his knowledge through technical papers and at leading international conferences, advocating for sophisticated infiltration control and advanced trenchless methodologies. He has played a crucial role in educating engineers, governments, and industry professionals through seminars and masterclasses.

Ian's commitment extends to his involvement in drafting specifications that assist global consultants and municipalities in adopting the best CIPP practices. His active participation in international trenchless conferences reflects a career focused on innovation and elevating industry standards. >

ISTT FELLOW AWARD 2023

JEAN-MARIE JOUSSIN

INDIVIDUAL CONSULTANT, FRANCE
FSTT

Jean-Marie Joussin
Individual Consultant,
France
FSTT

Jean-Marie Joussin was educated at ENPC engineering school (École Nationale des Ponts et Chaussées). His career spans from the French branch of ETEX Group, where he began as a Technical Engineer and grew to a Project Manager for industrial diversification, to his leadership role as Managing Director at HOBAS Group's European branch with major contribution to the Group's global diversification in the trenchless field. In parallel he was active in European and national standardisation bodies as an expert in the water sector.

Within the FSTT, he has contributed significantly as an Administrator and International Director, guiding material and rehabilitation standards in the water industry. His efforts were honoured with several awards and in 2019 when he was named the 'French Trenchless Personality of the Year' for his involvement in advancing trenchless infrastructure.

Jean-Marie's work includes his participation in the notable 'National Microtunnelling Project' and the 'Urban Sewers Rehabilitation Project' which influenced the new design method for liners, now recognised internationally. His role culminated in a strategic partnership between FSTT and Canada's CERIU in 2022, cementing his global impact.

An active member of the trenchless community, Jean-Marie has chaired sessions at the Trenchless European Congress and has been a pivotal figure in France's biennial Ville Sans Tranchée events.

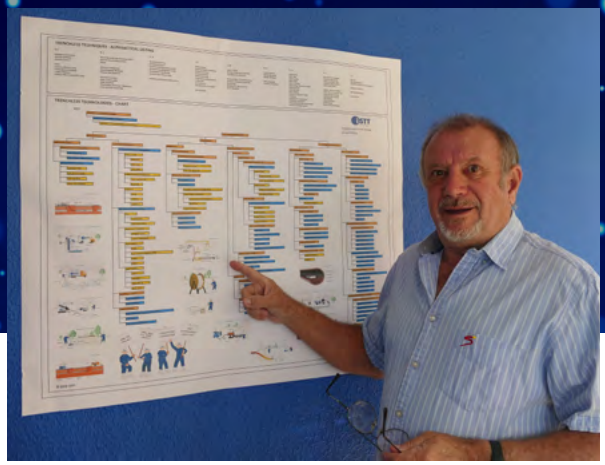
Throughout his professional career he has also contributed to various educational efforts, leading sessions for certification bodies, engineering schools, and industry seminars.

A prolific writer and speaker, Jean-Marie has published several technical articles and co-authored professional guidelines, highlighting his influence in trenchless technology. His tenure is marked by an enduring commitment to the growth and innovation of underground infrastructure on an international scale.

LIFETIME SERVICE AWARD 2023

MIKE KING

Southern African Society for Trenchless Technology



Mike King

This award is awarded to individuals who played important roles in founding their societies and in promoting trenchless technologies in their regions. We are delighted to announce the following three winners for 2023.

Mike King is one of the most experienced and highly regarded professionals in the trenchless technology industry in South Africa. For over twenty years, he has been instrumental in the development and promotion of trenchless technologies for the installation, repair, and rehabilitation of underground infrastructure. His contributions have been invaluable in transforming the construction industry in South Africa, making it more efficient, cost-effective, and environmentally friendly. Mike's advocacy for the use of trenchless technologies in place of traditional open-cut methods has been one of his most significant contributions to the industry. By promoting the use of trenchless technologies, he has helped to reduce excavation and disruption to communities, minimise environmental impacts, and improve safety on construction sites. His efforts have also contributed to the development of local skills and expertise in trenchless technologies, creating new job opportunities and promoting economic growth in the industry. Furthermore, Mike's work in developing and adapting trenchless technologies to suit the unique conditions and challenges of the South African construction industry has been invaluable.

Mike's contributions to the trenchless technology industry in South Africa have not gone unnoticed. His leadership and dedication to promoting the trenchless industry in South Africa have also been recognised, with him serving as the president of the South African Society for Trenchless Technology (SASTT) from 2011 to 2013. Under his leadership, SASTT has become a leading voice in the trenchless technology industry, promoting best practices, providing training and education, and supporting research and development. His commitment to sharing his knowledge and expertise with other professionals in the industry has been invaluable, helping to promote the adoption of trenchless technologies and promote sustainability in the construction industry in South Africa and beyond. On commission from SASTT to prepare National Standards, he performed research and investigations to prepare standard specifications for Sliplining, Pipebursting, Horizontal Directional Drilling (HDD), Cured-In-Place-Pipe (CIPP) Lining and CCTV Inspections.

Mike's contributions to the trenchless technology industry in South Africa have been significant and far-reaching. His advocacy for the use of trenchless technologies, his technical expertise, and his leadership have helped to transform the South African construction industry, making it more sustainable, efficient, and cost-effective. His legacy in the industry will continue for many years to come, inspiring future generations of engineers and construction professionals to adopt trenchless technologies and embrace innovation and sustainability in their work. >

LIFETIME SERVICE AWARD 2023

JEFF PACE

Australasian Society for Trenchless Technology

Jeff Pace

Jeff Pace was introduced to the ISTT after he was appointed ASTT's Secretary/Treasurer and undertook all the National and International formalities required to establish the formation of the ASTT with Menno Henneveld in 1991.

Jeff was the inaugural ASTT Secretary when the Society began in 1991, and he has performed the role of Secretary and Treasurer since then. He has overseen the progression of the Society from its small beginnings to be an efficient, financially stable and leading industry representative for the trenchless technology industry.

Jeff has overseen the Society:

- create the ASTT's Incorporation, developed the Constitution and subsequent revisions
- Develop and maintain ASTT Strategic and Business Plans
- Publish 78 Trenchless Australasia magazine issues in partnership with the ASTT media partners Prime Creative Media (and Pipeline Publications Australia previously)
- Host 14 Australasian Exhibition and Conferences (No Dig Down Unders),
- Host 3 International Exhibitions and Conferences (in collaboration with the International Society for Trenchless Technology)
- Grow membership from a handful to over 300 members
- Grow the society finances to be in a safe and prudent position ready to assist the industry and be regarded as one of the most stable and efficient Trenchless Societies in the world.

Jeff also significantly represented the ASTT in its membership with the International Society for Trenchless Technology (ISTT) serving as the ASTT's contact for many years, attending more than 20 ISTT International Board meetings and serving as an ISTT Executive Sub-Committee member for over six years. He also assisted on several ISTT sub-committees over the years including the Governance Committee and acted as ISTT Trustee for the ASTT.

These are just some of the activities that have been carried out by Jeff Pace for the ASTT, all of which have been performed in an exemplary manner. His attention to detail, his strong focus on customer service, and his high level of integrity have meant he enjoys a high level of respect from those in the industry.

At the recent Annual General Meeting of the Society, the ASTT Council nominated and approved Jeff Pace to become a Life Member of the ASTT in recognition of his service. Jeff becomes the Society's second Life Member, joining his friend the late Menno Henneveld as Life Members of the ASTT. >

LIFETIME SERVICE AWARD 2023

IAN VICKRIDGE

United Kingdom Society for Trenchless Technology

Ian Vickridge

Ian Vickridge graduated with a degree in Civil Engineering from University College London in 1968. His first posting as a civil engineer was with Sir William Halcrow in Vancouver. Ian returned to the UK in 1970 and worked on the design and site supervision of sewers and sewage treatment works before earning an MSc degree in Public Health Engineering.

Ian worked abroad in Hong Kong, Saudi Arabia, and Singapore for several years before returning to the UK in 1984 when he took up a post as a Senior Lecturer at Manchester University, where he 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. It was during this period that he first became interested in trenchless technology, partly as a consequence of attending the first No Dig Conference and Exhibition in 1985. Ian remained in that post until 1999 when he started his own consultancy specialising in trenchless technology.

Much of the work he was doing at the time was in Hong Kong and so it was that in 2004 he joined Black & Veatch (now Binnies) in Hong Kong as a technical director leading a team mainly involved with the trenchless rehabilitation of water mains and sewers until he retired from there in 2011 to return to UK. Whilst there he was able to pass on information on new trenchless methods to the project team to enable the problems of pipeline deterioration and leakage to be solved. He still occasionally provides technical advice to them when needed.

Ian joined ISTT after the first No Dig conference in 1985 and when it was decided to set up the UKSTT in 1993, he became a member of the first management team of the Society and negotiated for the UKSTT office to be based within the university. Ian later became the Technical Secretary for a period and has also been Chair and Vice Chair of the Society. Apart from the time he spent in Hong Kong, Ian has been a member of UKSTT since its inception in 1993. Whilst in Hong Kong, he was a member of the China Hong Kong Society (CHKSTT) and also Chair of that Society for several years.

Ian was present at the start of the trenchless movement in the UK back in the 1980s and carried out research into social costs associated with open trenches and compared that with the social costs of trenchless methods. Bringing the social costs associated with increased traffic disruption to the attention of the community was one way by which trenchless methods were more readily accepted and paid for. Ian has been an important part of UKSTT since 1993 and still plays an important role in the running of the organisation, especially in terms of advice and technical support. Ian continues to support UKSTT'S connections within UK universities and consultancy companies. ■

NO-DIG TURKEY 2023: A GREAT SUCCESS

The Opening Ceremony of No-Dig Turkiye 2023

Attendees at the Opening Ceremony

ISTT chair Keh-Jian (Albert) Shou addresses the Open Ceremony attendees

TSITT (Turkish Society for Infrastructure and Trenchless Technology) hosted its No-Dig Turkiye 2023 Conference and Exhibition between 31 October and 1 November in Istanbul, together with the 7th Water Loss Forum and Exhibition.

Some 1,405 people from 23 countries visited the show which offered 40 exhibitors from 4 countries that demonstrated their latest products and solutions during the event.

TSITT Chairman Yasin Torun, MATT Chairman Faizal Othman, GSTT Chairman Professor Jens Holterhoff, ISTT Chairman Professor Keh-Jian (Albert) Shou, TiS Turkey General Manager Semih Vatansever, Perumda Tirta Mayang Managing Director Dwike Riantara, TISKI General Manager Ali Tekatas, BASKI General Manager Izzet Gunal and KOSKI General Manager Ahmet Demir gave the opening speeches. Following the opening ceremony, 25 speakers made their presentations during five sessions across two days.

ISTT Chairman Professor Keh-Jian (Albert) Shou moderated a session focused on the trenchless solutions for earthquake resilient underground pipelines. MATT Chairman Faizal Othman, KANALTEK General Manager Cengiz Bassa, BORTEK General Manager Seyhan Doner, KUBOTA Corporation Senior Engineer Takaaki Kagawa and TRACTO Trenchless Development Manager Thorsten Schulte made their presentations in this great session.

Several water and wastewater utilities and municipalities visited the show. They were interested in the trenchless and water loss control solutions.

As Turkish trenchless and water loss control markets grow every year, more utilities and municipalities visit the show in order to follow the innovations and new products currently available.

TSITT will host the No-Dig Turkiye 2024 Conference and Exhibition between 23 and 24 October, 2024 in Istanbul, together with 8th Water Loss Forum and Exhibition.

Visitors to the exhibition area at No-Dig Turkiye 2023

NASTT UPCOMING EVENTS

December 13-14, 2023
Pipe Bursting Good Practices Course
VIRTUAL

April 14-18, 2024
NASTT 2024 No-Dig Show
Providence, Rhode Island, USA

April 14, 2024
NASTT's Intro to New Installation Methods Good Practices Course
Providence, Rhode Island, USA

April 14, 2024
NASTT's Intro to Rehabilitation Good Practices Course Providence, Rhode Island, USA

April 17, 2024
NASTT's Municipal Sewer Grouting Good Practices Course Providence, Rhode Island, USA

April 17-18, 2024
NASTT's CIPP Good Practices Course
Providence, Rhode Island, USA

April 17-18, 2024
NASTT's HDD Good Practices Course
Providence, Rhode Island, USA

April 17-18, 2024
NASTT's New Installation Methods Good Practices Course
Providence, Rhode Island, USA

April 17-18, 2024
NASTT's Pipe Bursting Good Practices Course Providence, Rhode Island, USA

October 21-23, 2024
No-Dig North 2024
Niagara Falls, Ontario, Canada

March 30 – April 3, 2025
NASTT 2025 No-Dig Show
Denver, Colorado, USA

March 29 - April 2, 2026
NASTT 2026 No-Dig Show
Palm Springs, California, USA

For more information and the latest course offerings, visit nastt.org/training/events.

MEMBERSHIP

Bring more to your career. Save time and money.

Empower the world of trenchless technology.

Be part of the premier network of trenchless professionals.

NASTT members have worked through challenges, celebrated success and are ready to share their know-how at events, volunteer activities and online.

Be a solution provider.

Whether you're just starting out or are in the C-suite, NASTT's exclusive education and training supports your certification goals, grows your skillset and brings answers to your project, job site, team meeting and KPIs.

Be on the front lines of trenchless issues and products.

NASTT brings you emerging trends, innovative technologies, and who's who in the profession so you can keep up to date on the information you need to stay on the cutting edge of the industry.

Be the best with support from the best.

With members at every stage of their career, NASTT gives you access to a wide spectrum of members to give or receive support, advice and mentorship wherever you are in your career journey.

nastt.org/membership

membership@nastt.org
888-388-2554

NASTT membership equips and empowers you to thrive in your career.

Join as an individual or get group savings as an organization with a corporate or government/education/utility membership.

istt.com

AFFILIATED SOCIETIES

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Web: www.cstt.org

Chinese Taipei Society for Trenchless Technology (CTSTT)
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The Russian Society Trenchless Technology Association (RSTT)
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Web: www.ukstt.org.uk

EVENTS AND MEETINGS

2023

November 29: No-Dig RoadShow Bristol & UKSTT Annual Awards
De Vere Tortworth Court, Wotton Under Edge
www.nodigroadshows.co.uk

December 12: ISTT Educational Webinar
Key findings from a comparison of pressure sewer rehabilitation technologies
www.istt.com/index/webapp-registrant-form/id.22

2024

February 2 Annual meeting and conference DKSTT 2024:
Hotel Kolding Fjord, Fjordvej 154, Kolding, Danmark, 6000
tina@juul-consult.dk

March 5-6 European No-Dig 2024:
Hotel Andels Vienna House, Berlin
www.european-nodig.com

April 24-26 ITTC 2024:
Changsha International Convention and Exhibition Center, China
www.cstt.org.cn/

July 16-17 Trenchless Asia 2024:
World Trade Center Metro Manila, Philippines
www.trenchlessasia.com

October 1-3 No-Dig Live 2024:
Featuring the UKSTT Gala Dinner & Awards Ceremony
NAEC Stoneleigh Park, Warwickshire
www.nodiglive.co.uk

5-6 November: Trenchless Middle East 2024 Featuring the ISTT International No-Dig Conference

Jumeirah Beach Hotel, Dubai
www.trenchlessmiddleeast.com

If you have an event, course or meeting scheduled and would like to add it to this listing please forward details to:
editorial@trenchless-works.com