TRENCHLESSWORKS

THE VOICE OF THE TRENCHLESS COMMUNITY

Official Magazine & Media Partner: KSTT

ISSUE 173 JANUARY 2021

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CONTENTS

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CHANNELINE
Beyond the Ordinary

Beyond the Ordinary

WELCOME TO THE NEW WORLD OF TRENCHLESS WORKS

Ian Clarke,
Editor-in-Chief,
Trenchless Works
Magazine

"Trenchless Works magazine will, once fully established, bring a huge increase in trenchless information availability across the globe."

Welcome readers old and new to the first edition of your newly redesigned Trenchless Works magazine. For any of you that are not familiar with this publication, to start with where have you been for the past 16 years, but that aside, Trenchless Works has been published monthly since 2006 under the NoDig Media Service (NMS) banner with me, Ian Clarke, as editor and owner.

For several years now myself and Paul Harwood, Managing Director of Westrade Group (WTG), which many if not all of you will know through association with the many Trenchless events the company produces such as No-Dig Live, Trenchless Middle East and Trenchless Asia, have been discussing where promotion of the trenchless industry has been limited by a lack of effective presence in certain areas. We agreed that more could be done.

In tune with this, we both felt that Trenchless Works magazine has been long overdue for a remodelling, the results of which you see today before you. Both Paul and I had ideas, separately and jointly, of how to move trenchless information access into the modern age with expanding social media options, streaming services and educational outlets such as webinars and the exponential growth and availability of high speed internet connection. But to achieve the growth in information availability we were looking for, we felt that there was a need to have a consistent, established foundation on which to build these information platforms. We agreed that using the Trenchless Works publication as the base, these ambitions could be moved forward apace.

To this end, NMS and WTG have instituted a cooperation agreement whereby WTG will take over the publishing aspect of the magazine. This will bring to bear all its digital expertise in terms of social media etc. with NMS providing the foundation for the editorial content used in both arenas.

This will, once fully established, bring a huge increase in trenchless information availability across the globe. Now over to Paul to tell you just how we plan to do this. >

Paul Harwood, Managing Director, Westrade Group & Publisher, Trenchless Works

Thanks Ian. Our expansive digital experience including publishing, conferences and masterclasses puts us in a unique position of being able to provide global diverse audiences in all aspects of the installation or refurbishment of underground utilities using Trenchless Technologies.

Trenchless Works is now a multi-media platform bringing together online the very best in news, opinion and views from across the UK and International Trenchless Technology sector. Readers can switch between environments and devices to view all the very latest content.

So far, industry support has exceeded all our expectations. There is a real team spirit that is the Trenchless industry and the new platform and timing has really captured the industry imagination.

The combination of a multi-media platform and worldwide Trenchless events provides a unique proposition and opportunity for companies to stay engaged and connected to the Trenchless community 365 days a year, 24 hours a day. Our channels include live and digital events, a monthly magazine, website and Trenchless Works TV, a real opportunity to join a trenchless community.

Trenchless Works will be the official magazine for UKSTT and we are looking forward to launching and implementing many new projects over the next twelve months. Additional industry supporters will soon be announced further enhancing the Trenchless Works reach.

Looking ahead we have many ideas, including Spanish translation, and Trenchless Works Asia. Watch this space. A big thanks for the support so far and we look forward to working with you all.

Both Ian and I hope that you find the new information platforms useful, informative and effective and good for your businesses as well as ours. If you have content that you feel would fit into the remit of any of the platforms now available, please feel free to visit the website www.trenchless-works.com for more information, or contact editorial@trenchless-works.com or speak to the team directly using the contacts on the website. We look forward to working with you and moving the industry forward together in the years to come.

Ian Clarke, Editor-in-Chief, Trenchless Works Magazine

Paul Harwood, Managing Director, Westrade Group Ltd & Publisher, Trenchless Works

"A unique proposition and opportunity for companies to stay engaged and connected to the Trenchless community 365 days a year, 24 hours a day."

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DENLOK REVAMP GUARANTEES FUTURE AVAILABILITY

Part of the revamped Denlok production facility at the Naylor Drainage works in Cawthorne, Barnsley, UK.

After some 12 months of intensive engineering improvements involving significant cash investment, the Denlok Clay jacking pipe manufacturing facility at the Naylor Drainage Cawthorne site in Barnsley, UK has increased its capacity 3-fold to ensure the requirements of both the UK and Export markets can be fully satisfied.

The production facility revamp was undertaken after a full review of the Denlok production process and the investment was made to address various capacity constraints. Capital investments to improve the process included the installation of improved handling equipment, modernisation and refurbishment of pipe-end grinding machines, new coupling fitting machinery and improved product testing.

The good news outcome for No-Dig installation contractors is that as of 1 February 2021, DN150 to DN300 Denlok pipes in 1 metre lengths will be consistently available directly from stock. Other sizes will remain on a 'made-to-order' basis but with significantly reduced lead-times.

DENLOK Jacking Pipe

Denlok is a vitrified clay jacking pipe available in sizes from DN150 to DN600. Clay has high inherent strength and Denlok provides both high jacking strength and load bearing capability.

For example, a DN300 pipe has a crushing strength of 120 kN/m and a jacking strength of 4,245 kN. Denlok's 5 bar rated end seals

Denlok jacking pipe being installed on a Trenchless Solutions project site using the Guided Auger boring technique.

provide excellent resistance to root ingress and using clay as a sewer pipe material ensures pipeline longevity. Clay also has a high degree of chemical resistance to effluents as well as ground conditions that could corrode other materials.

As well as revamping the production facility, Naylor has also introduced a new management and sales team to support the Denlok product. MD Richard Edwards' involvement in clay follows senior roles in businesses manufacturing Ductile Iron and latterly Plastic pipes.

Denlok Product Manager Stuart Steel has spent the last 6 years at Naylor working with technical products including Denlok. His previous experience included 10 years working with technical products in the construction sector, providing relevant project support to consultants and contractors. Reece Hargreaves has taken on the role of managing enquiries and orders for all existing domestic and international customers.

"Denlok's 5 bar rated end seals provide excellent resistance to root ingress and using clay as a sewer pipe material ensures pipeline longevity."

Commenting on the successful re-establishment of the Denlok product process, Stuart Steel said: "Naylor has been involved in trenchless technology since the very early days of its development. We have been conscious of the need to invest in this area to keep up with increasing demand and the production facility overhaul has allowed us to raise our game and service the market with high quality products available from stock."

The Naylor team behind the Denlok product. Left to right: Richard Edwards (MD), Stuart Steel (Denlok Product Manager) and (sitting) Reece Hargreaves (Sales Manager).

Richard Edwards added: "Having a history of working with various pipe materials, the benefits of clay in trenchless pipe installation are quite clear to me. Our new commitment to holding significant stock and providing excellent and consistent delivery performance will ensure our customers are able to provide the best solution on-time."

The final word goes to Barnsley-based Trenchless Solutions Ltd, a leading No-Dig contractor with a wide range of guided auger boring capabilities. Steve Varley, MD commented: "We have worked with Naylor over a number of years, from when we initially started as a company to the present day. We have always had an excellent relationship with Naylor and have received first class support when required. Naylor's plans to increase stockholding will help us further and ensure we will be able to utilise Denlok jacking pipes on more projects in future."

"Naylor has been involved in trenchless technology since the very early days of its development... the production facility overhaul has allowed us to raise our game and service the market with high quality products available from stock."

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IKT EXPANDS LABORATORY TEST SITE

View within the facility of the new 3 m extension to the wall.

Some 25 years ago, a hole was dug in the floor of the IKT laboratory, this year it has been made bigger – why?

The reason is because the Large (1:1 scale) Test Facility proved to be very adaptable for successfully comparing solutions to ageing sewer issues for sewer network owners.

Extending the test site, as part of IKT's current investment in improving existing facilities and construction of the new Heavy Rain Lab, will provide greater flexibility in addressing current and future issues, including accommodating test rigs for IKT's current project on the rehabilitation of pressure sewers.

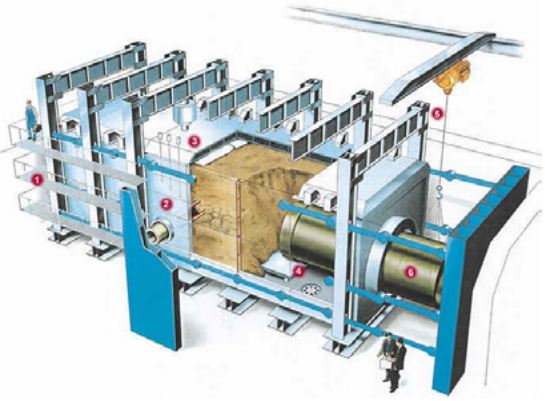
Making it larger

At 6 m wide, 6 m deep and 15 m long the Test Facility was already the largest facility of its type in Germany, now it has been extended by an additional 3 m to 18 m in length. It is sealed against leakage to allow the simulation of loading on buried structures from rising groundwater and can simulate surface loads.

> "Its use is focused on allowing underground infrastructure with simulated damage scenarios to be installed, buried, rehabilitated by various means."

Its use is focused on allowing underground infrastructure with simulated damage scenarios to be installed, buried, rehabilitated by various means under realistic conditions and for the performance of these technologies to be assessed against various loadings. Over the past 25 years this has included 1:1 scale evaluations involving re-creating main sewers, lateral sewers, lateral connections, manholes, and house connections. It has also been used to set out pipe networks for comparisons of CCTV inspection techniques and, during 2020, for comparing flowable backfills in simulated pipe trenches.

Now, completion of the extension to 18 m and re-sealing means it is ready for installation of damaged pressure sewers during 2021 for the current evaluation of rehabilitation technologies. >



IKT Large Test Facility – as originally designed for pipe jacking.

Origin in understanding pipe jacking

The existing facility was built particularly with the evaluation of pipe jacking techniques in mind to provide a guide for the massive investment in new sewers in the surrounding region since the 1990's. A series of experiments led to better understanding of how jacked pipes actually behave when changing direction and the vital issue of joint performance under stress.

How well do patch repairs perform?

The need for German sewer network owners to repair their own small diameter sewers and to provide advice to property owners on their private connections led to the examination of how effective patch repairs are in sealing damaged pipes against groundwater.

Changes in pipe material, diameter, damage scenarios and bends were included in test rigs buried in the Large Test Facility and changing groundwater pressures were applied.

Whilst effective repair is possible, special attention has to be paid to using the right product for some situations, like changes in pipe diameter.

Flowable backfills

IKT's most recent project in the Large Test Facility required its division into five separate cells each simulating a pipe trench containing a range of manhole and pipe structures to investigate the performance of different flowable backfill material.

Project Steering Group considers 1:1 scale pipe layout to simulate house connections in the Large Scale Test Facility.

There was a particular focus on whether the material would self-level, how quickly it could be walked on and built over, how well it supported the pipes and whether it could be subsequently excavated by hand. The results were surprising and can be found on the IKT website.

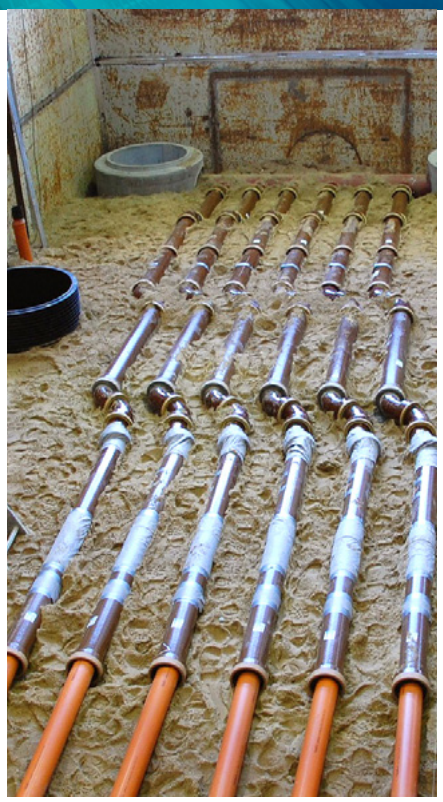
Performance of manhole rehabilitation technologies

A total of 13 manholes with simulated damage were installed into the Large Test Facility into which different products that are representative of available rehabilitation technologies were installed. The experiment also included one new plastic manhole to examine whether it would float out as groundwater rose.

It was proven that it is possible to seal against ground water, but results were variable across the range of technologies. There was one complete failure of a product against groundwater pressure and various damage/imperfections observed in others.

The vital necessity for good substrate preparation for products that bond to the wall and advice to wait until groundwater has risen before undertaking acceptance inspections were key findings. >

Project Steering Group members examine repaired lateral connects in the bottom of the Large Test Facility after excavation following exposure to rising groundwater pressure.



Lateral sewers including material changes, damage scenarios and bends being installed for evaluation of liners.

How to seal damaged lateral connections

The connections of lateral sewers to main sewers are a common cause of groundwater infiltration so this project used the Large Test Facility to investigate how repair technologies could seal them in different situations:

- repairs to lateral connections in a CIPP lined sewers
- repairs to lateral connection in un-lined sewers
- laterals joining at different positions and angles
- repairs in pipe half-filled with water

The results ranged from good to bad, to ugly.

Can lateral sewers be lined against infiltration?

An initial evaluation of lateral sewer lining systems against groundwater infiltration yielded an unexpected result – circumferential cracking of the liners at the location of host pipe joints. The cause was determined to be that the products bonded too tightly to the host pipe to be able to flex when pipe sections moved relative to each other due to floatation as groundwater levels rose.

The industry made modifications based on these findings, and satisfactory results were obtained for products submitted in a subsequent evaluation.

What are the limitations of CCTV inspection?

With so much reliance on CCTV inspection for mapping and monitoring condition of sewer networks IKT's investigation in the Large Test Facility explored the extent to which:

a) cameras could negotiate lateral connections, changes in diameter and bends.

b) operators could identify damage scenarios, changes in pipe material and diameter,

c) operators could produce a network layout plan.

The pipe networks were buried with access possible from manhole shafts.

It was found that cameras could not reach all parts of the network and the accuracy of layout plans was not as good as expected.

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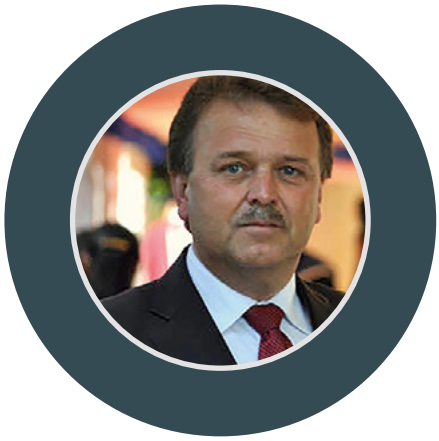
TRENCHLESSWORKS

UV CIPP SHEDDING MORE LIGHT

UV CIPP has come of age, becoming the most used pipeline rehabilitation method globally.

In his recent excellent webinar on UV CIPP Lining since 1985, delivered to ISTT members and invited guests, Dr Dec Downey reminded us that this year celebrates the 50th anniversary of the introduction of hot water Cured-In-Place (CIPP) rehabilitation methods for sewer pipeline rehabilitation, and the 35th anniversary of the first commercial UV light cured CIPP installation.



Börje Persson, MD, JBP Group

"CIPP in general, and UV CIPP more specifically, has come of age, becoming the most used pipeline rehabilitation method globally."

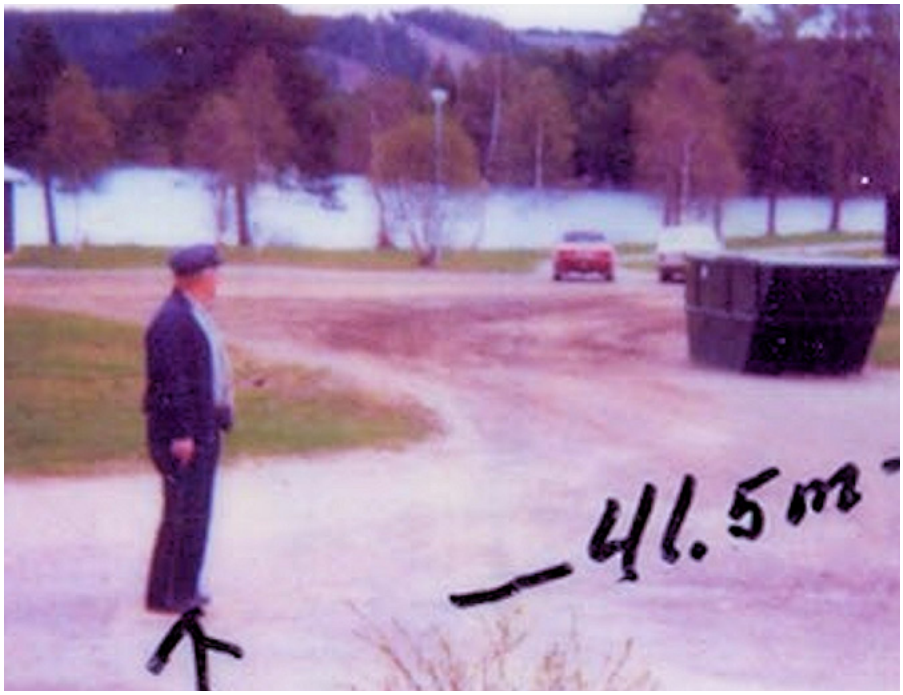
The UV CIPP installation was carried out in the home town of Börje Persson, MD of JBP Group, Vilhelmina, Sweden, just 300 kilometres south of the Arctic Circle (current temperature as this is being written – a comparatively mild -30°C).

These two significant anniversaries mark important milestones in the progress and maturity of this important technology, giving us a point to reflect on where we are today, and perhaps more importantly consider what future challenges and opportunities the industry may face.

As some of you may know I launched my own small series of articles via my LinkedIn page on "Curious Facts – Shedding more light on where and when UV CIPP all started" (for those of you who would like to read more search for me on LinkedIn and you will find the articles on my recent articles activity). Apart from sharing some aspects of the archives I have accumulated over many years of working in this sector, and some curiosities regarding the early development of the technologies we are using today, I was more interested in generating a conversation with friends and colleagues who can bring to the table their own experiences and observations.

Although, on one level these brief postings can be taken just as a collection of curious facts and a gentle jaunt down memory lane, my more serious intention is to contribute in some small way to the understanding of how we have reached the point we are at today, and hopefully and more importantly generate further discussion on where we may be going from here.

CIPP in general, and UV CIPP more specifically, has come of age, becoming the most used pipeline rehabilitation method globally. It is interesting to note that price per metre installed has more than halved since the 1980's, probably nearer a reduction of two thirds if inflation is factored in. Quality of both production and materials has



"Current technologies allow for tight production and installation control and reporting, insuring quality remains the same for the final installed pipe as for the factory produced pipe. "

September 1985, Vilhelmina, Sweden
The first commercial UV CIPP installation.

also substantially improved, feeding right through to on-site installation. Current technologies allow for tight production and installation control and reporting, insuring quality remains the same for the final installed pipe as for the factory produced pipe.

We can also see the 'business model' for many CIPP producers has evolved from the early days of single owner/founder (often the inventors) ownership to multinational businesses attracting significant outside investor interest, bringing consolidation and considerable financial backbone with which to invest in further innovation and the future.

We can all agree that 2020 has been an unusual year, not wishing to understate it, again giving us pause for reflection and forcing us to adapt and try new models, to continue with our various initiatives. We have all become digitally more savvy, to maintain communications with one another and keep the flow of information going. I have heard much discussion generally of digital models, the importance of data and information, the increased use of artificial intelligent, the need to adapt to the green agenda etc., a bewildering array of challenges going forward, but all with great opportunities for the next generation of developments for our technologies and our sector as a whole.

If I can finish by sharing with you another reflection – there is a curious paradox or irony, call it what you will, that the first commercial UV CIPP installation was carried out in my home town of Vilhelmina, in fact in a 41 metre long pipeline underneath the campsite on the outskirts of the town. This could not have been further away from the current urban pressures of busy, bustling cities like Berlin, London, Madrid, Kuala Lumpur, Singapore or the megalopolises of Beijing, Dehli, Tokyo, São Paulo or New York etc. Yet, 35 years' ago there must have been a vision by Mr Vollmar Jonasson, the inventor of the UV CIPP liner, of the potential of this remarkable technology (there was a clear vision but that is a story for another time). Little could Mr Jonassson have known that since his installation of those 41.5 metres, by my estimation, there has been between 150,000 and 200,000 km's of CIPP installed to date worldwide, some five times the circumference of the globe! I do not have a crystal ball so I will not presume to predict the future, but I am sure it will be exciting, full of innovation and packed with opportunities. I will leave to it to the next generations to look back in 35 years' time and reflect on the progress that was made.

www.JBPtrenchless.com

TRINITY SUBSURFACE ENGINEERING ROLLS OUT NEW SERVICES

The ROVVER X which is now part of the Trinity equipment portfolio.

Delaware-based Trinity Subsurface Engineering in the US launched, just two and a half years ago in mid-2018 with a focus on private utility locating and concrete scanning.

In just a few short years, the company has expanded to become a full-fledged underground utility contracting company, adding CCTV inspections, vacuum excavation and sectional point repair services to its portfolio.

"We have continually added services to meet the needs of our customers." said Jami Roblejo, the company's director of sales and marketing. "We first added video inspections, but when there was an issue in the pipe, we had to hire someone else to fix it. We eventually decided we would start offering the other services needed, like jetting and point repair, so that we were providing everything ourselves in-house and offering that convenience to our customers."

"Investing in the right equipment to provide the best deliverable has always been kept a top priority. "

Upgrading Inspection Equipment

As Trinity Subsurface rolls out new services, investing in the right equipment to provide the best deliverable has always been kept a top priority according to Sean Warner, the company's director of field operations. "We decided to switch to Envirosight inspection equipment about a year and a half ago and that decision for us was a no-brainer." he said. >

"We chose the ROVVER X for its ease of use, functionality, size, and quality of software and hardware. The video quality is superior to what we were previously using and the technical support is great. As a bonus, we have Devin Apple with A&H Equipment Company who is just absolutely amazing. We call him and say what we need and he is on it right away."

Trinity Subsurface has since added the ROVVER X SAT lateral launch crawler and Verisight Pro+ push camera to its fleet. "Productivity in our video inspections has increased significantly with this equipment." Warner said. "It has made for a more streamlined production process, from the ease-of-use in the field, to simple transferring of inspection information back to Trinity's office and to our clients."

Meeting Customer Needs

Mainly servicing the Northeast and Mid-Atlantic regions of the US, the company performs a number of different jobs for a wide range of customers. "We have done a lot of transportation projects, along with commercial, industrial and residential work for engineering firms and municipalities." Roblejo said. "Our CCTV inspection work ranges from pre- and post-construction, ensuring integrity of the pipes and looking for any roots, cracks or blockages, to emergency work responding to floods or sinkholes. With the ROVVER X SAT we have also been able to focus on lateral inspections, looking for cross bores and other issues."

"As Trinity Subsurface looks to the future, we hope to be all over the East Coast within the next five years and then from there, across the world." said Greg Finkle P.E., the company's principal and founder, with a plan to do this by standing out from others in the industry.

"I have worked in the industry for a long time and one thing that makes us unique compared with others is that we are problem-solvers." Roblejo said. "We do not just find the problems, we solve them. The beauty of using Envirosight equipment is that you will always find the problem in the pipe, it is the best equipment around. Then where we differ from everyone else is offering the range of services that we do. When we find the problem, we can fix it right there on site because we provide all of the other services. There is a huge need for this work and it is growing significantly, so the more productive we can be, and the more time we can save our customers, the better."

"We chose the ROVVER X for its ease of use, functionality, size, and quality of software and hardware. The video quality is superior to what we were previously using and the technical support is great."

www.envirosight.com

VORTEX COMPANIES ACQUISITION AND PARTNERSHIP EXPAND LINER OPTIONS

"The completion of this acquisition is a big step toward our vision of providing trenchless services in this region where the need for infrastructure rehabilitation had never been greater."

The Vortex Companies, LLC recently announced that it has acquired North American Pipeline Services, LLC (NAP), in a deal that will significantly expand its trenchless infrastructure service capabilities in the Mid-Atlantic Region of the USA according to Mike Vellano, CEO of the Vortex Companies.

"The completion of this acquisition is a big step toward our vision of providing trenchless services in this region where the need for infrastructure rehabilitation had never been greater." stated Vellano.

Originally based in Lakewood, New Jersey, USA, NAP was founded in 1974 where the three-person company focused on underground utilities before Tom Mullen purchased the company in 2012. Through his guidance, the company began offering CCTV inspection and trenchless rehabilitation services. NAP presently employs 55 people and is considered one of >

the largest pipe rehabilitation contractors in the 'tri-state' area. "We have had great working relationship with Vortex Companies over the years and share the same vision of delivering high-level service and permanent repair solutions through our trenchless products and applications." said Tom Mullen, Owner and Managing Partner at NAP. "As part of Vortex, we will have added resources and experience that will allow us to further expand our service offerings to support our commercial and municipal customers' needs."

In yet another move to add proven CIPP technology to its suite of trenchless infrastructure rehabilitation products, Vortex has partnered with BKP Berolina to distribute and sell its BKP Berolina-Liner, an industry leading ultra-violet cured Cured-In-Place-Pipe (CIPP) liner, in the United States, Mexico, and Canada. "BKP Berolina has been looking to enter the U.S. UV CIPP market for a long time." said Mike. "We have the experience and resources to deliver this product, allowing us to provide an alternative CIPP solution to our customers. Berolina-Liner offers a measure of quality and performance yet to be matched in the UV category, which is good for both the end customer and the installer."

Developed for gravity sewers ranging from 6 in to 63 in (150 mm to 1,600 mm) diameter, Berolina-Liner is precisely manufactured using resin impregnated glass fibre complexes between two watertight film tubes equipped with styrene barriers. Unlike traditional CIPP processes, Berolina-Liner is cured using a UV light source. "We manufacture Berolina-Liner in an ISO 9001 compliant facility for the sole purpose of producing a high quality, defect-free UV liner that is installation-ready for our customers." stated Thomas Christiansen, BKP Berolina Group CEO. "We are extremely excited to be partnering with the Vortex team. They have a history of success introducing products and technology to the U.S. Market." added Mr. Christiansen.

"With so many variables and environmental conditions dictating customer needs, adding a UV CIPP solution complements our current line of trenchless rehabilitation technology, inclusive of robotics, coatings, CIPP resins and application systems."

"With so many variables and environmental conditions dictating customer needs, adding a UV CIPP solution complements our current line of trenchless rehabilitation technology, inclusive of robotics, coatings, CIPP resins and application systems." added Andrew Gonnella, President, Vortex Products Division. "We have done our due-diligence and believe the Berolina-Liner technology and installation advantages are best-in-class. I have tapped Mark Hallett, VP & General Manager of our Vortex Technology Group, to lead all commercial efforts related to Berolina-Liner. Under his leadership, I could not be more excited about the future of this product line."

www.vortexcompanies.com or www.bkp-berolina.de/en/

JET AIRE EXPANDS CAPACITY FOR TRENCHLESS MAINTENANCE

Leeds-based drainage contractor, Jet Aire Services, is continuing to expand its team of specialists to meet growing demand for the company's expertise in trenchless drainage maintenance.

Having recruited a lining manager and two more lining operatives in 2020, Jet Aire is recruiting patching engineers to join its dedicated services in 'No-Dig' drainage remediation. The move follows a recent £200,000 investment in further resources for trenchless maintenance, including additional CCTV drain survey cameras, new cutting equipment and the latest ultraviolet lining system from Swedish manufacturer, UV Relining, which enables the internal reinforcement of smaller and more complex pipe structures without expensive and disruptive excavation.

Sales & Marketing Director, Jamie Swan, said: "Trenchless techniques are well established as best practice where feasible in drainage maintenance. Jet Aire has invested heavily in its No-Dig resources over the past few years and now offers a full portfolio of trenchless solutions, including cure-in-place pipe reinforcements, commonly known as CIPP patching and CIPP lining. We have experienced a substantial increase in demand for these solutions across a wide range of sectors, including facilities management, energy, chemical processing, retail, utilities, highways, transport and infrastructure. It is likely to be one of the fastest-growing areas of our business in the coming years."

Jet Aire Services provides a range of professional drainage solutions including CCTV surveys, high-pressure water jetting, sewer cleansing and clearance, tankering, waste disposal, CIPP patching and lining, UV lining, infiltration sealing, robotic cutting and root cutting. Accredited and approved by many of the environmental and drainage industry's leading bodies, the company also holds both ISO9001 and ISO14001 internationally recognised standards for Quality Management as well as OHSAS 18001 certification for Occupational Health and Safety Management.

www.jetaire.co.uk/

RSP – SUCTION EXCAVATOR MANUFACTURER OF THE YEAR!

RSP has been awarded Suction Excavator Manufacturer of the year 2020 and the team is absolutely thrilled.

RSP was approached by BUILD for its annual Construction & Engineering awards after the independent company identified the company as offering an invaluable service to the industry.

The Construction and Engineering Awards has formed the very foundation of BUILD Magazine's annual recognition programmes for the last six years. Despite a year defined by uncertainty, the industry has managed to circumnavigate difficulties, showing its adaptability and tenacity to safely continue. Perhaps then, this year more than any other, it is important to stop and acknowledge those who are excelling, achieving and innovating in challenging times for the greater industry.

Lloyd Gardener, Director of RSP commented: "It was a complete surprise to be nominated by BUILD and winning the award has been the icing on the cake. 2020 was a difficult year for everyone and to see our team's (award winning) efforts recognised, really lifted spirits."

The construction industry has recently started to realise the benefits of suction excavation for a safer and efficient site and RSP have been spearheading that movement. "We pride ourselves on working collaboratively with all industries and construction is no different." said Charlie Gardener, Director of RSP. "We will continue to communicate the benefits of suction excavation to the industry and why RSP is the right choice when investing in the equipment."

Safety never being far from the company's mind, RSP also offers full suction excavator training at its base in Roxton, Bedfordshire, UK. "It is a priority for us to increase the safety standards of the industry and that is why, if you purchase a suction excavator from RSP, training alongside it is included." said Lloyd Gardener.

In the next few weeks RSP is set to launch a new product to market that will revolutionise sites across the UK!

www.rsp-uk.co.uk

TRENCHLESS MIDDLE EAST 2021

12th International Exhibition and Conference
Jumeirah Beach Convention Centre, Dubai, UAE
31 May - 1 June

Trenchless Middle East 2021 returns to Dubai for its twelfth popular event, focusing entirely on trenchless technology (NDRC) in the Middle East, and North Africa (MENA) regions.

With megaprojects continuously being planned from Municipalities, authorities and developers, Dubai continues to host some of the most ambitious projects in the world.

Although the latest global crises are adding challenges to their implementation across the construction sector, the use of Trenchless Technology in infrastructure projects continues at a pace across the Middle East. These projects, across the GCC, are vital to progress economic diversification plans.

2021 will also see Dubai host the first World Expo to take place in MENA & SA region.

To be seen amongst the world's leading providers who have already signed up to participate in this prominent event and showcase your innovations, book a stand at the Trenchless Middle East 2021.

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FUTURE-ORIENTED REALIGNMENT OF THE IMPREG MARKETING TEAM

As the year begins, two new faces are reinforcing the iMPREG GmbH Sales Team. With Christian Pfaff and René Stolp, the emphasis is even more on customer orientation, further enhancing market presence and position.

As one of the world's leading manufacturers of GRP pipe liners, iMPREG GmbH is already well positioned in Europe in terms of sales. Jack Talbott (Technical Sales UK) has worked as a lining delivery and rehab manager for various companies based in the UK, building up over 20 years' experience in the industry, 16 of which have been specifically working with iMPREG liners.

Jack is able to travel to sites across the UK, providing technical and hands-on support with complex projects as well as offering a very quick and reliable service. An important development is that iMPREG has announced it will be storing liners in the UK from the beginning of February 2021 at its facility based in Surrey, England.

At the new facility the company will store the most popular size liners, for example 150 mm, 225 mm, 300 mm and 375 mm diameters, so will be able to provide these to new or existing customers without shipping delays and in most cases offering a next day delivery service. For the time being, the larger diameter liners will continue to be stored in Germany, but iMPREG would like to assure customers that all necessary paperwork is in place to ensure a smooth transition following Brexit, which means there should be no additional delays in delivering these liners to customers in the UK.

iMPREG UK offers a reliable service and premium product to customers, with regular training and site support when required. Jack Talbott is working as technical sales and looks after the client base in the UK, Middle East and parts of Europe.

To serve and support customers even better and more intensively in the core market (the DACH region), Christian Pfaff and René Stolp will augment the Sales Team.

Both are acknowledged experts with many years of experience in the area of sewer rehabilitation. Christian Pfaff is a certified sewer rehabilitation consultant, and worked until recently with a well-known, internationally oriented engineering office as a project manager in the area of sewage network rehabilitation. René Stolp is equally well-qualified. He previously supervised and supported sewer rehabilitation and renewal measures for the Memmingen municipality (in southern Germany), from planning, to tendering, to contract payments.

This combination of many years' experience with expertise is a perfect fit for the team led by Katrin Letzgus-Danhach (Head of Sales). With Francis Clauss (Sales Europe) and Jack Talbott (Technical Sales UK), the team already includes seasoned sales professionals. Through its management consistency, the stability of the marketing team creates a base of confidence between iMPREG GmbH and its customers.

www.impreg.com

A HATRICK OF STAFF MEMBERS CELEBRATE 20 YEARS SERVICE

Steve Vick (left) presenting Shawn Biggs with his Long Service Certificate.

Steve Vick International (SVI) is delighted to announce that three staff members are celebrating their 20th year with the company.

Nick Robinson, Wendy Spencer and Shawn Biggs all began their SVI journey in the millennium year of 2000.

Nick Robinson started as Chief Engineer in the company's Rotamole Department and travelled the country promoting SVI's directional drilling machines. Meanwhile the pipe handling products were gaining in popularity and it was not long before Nick moved over to head this up as Design & Development Engineer. Nick has gone on to design many ground-breaking products for SVI including the Hexi Trailer, Rapid Cutters, the MACAW's, CRACKERJACK, the family of Pipe Handlers and most recently our Perpetual Pipe Pusher.

"SVI is a family run business which has grown enormously over the years and I am pleased to say that the family values are still in place today."

Wendy Spencer joined the company at the age of sixteen as Steve's PA. She went on to help the sales and marketing department and hire admin before finally settling in the accounts department. Starting as accounts assistant Wendy decided to further develop her career by studying for her AAT and a course in business management. In 2015, as the accounts team grew, Wendy was promoted to Accounts Manager and is now studying for her CIMA exams. >

"Our staff are essential to the success of the business and, as the company has changed and expanded, it has been a pleasure to see our staff grow and develop too."

Wendy commented: "Steve Vick International is an exciting and dynamic place to work. No day is ever the same and that keeps me on my toes. SVI is a family run business which has grown enormously over the years and I am pleased to say that the family values are still in place today. I am looking forward to a bright future at SVI as my role continues to develop."

When the hardware side of the Steve Vick International business began to grow, Shawn Biggs was employed in the year 2000 to help deliver products to site and make sure they arrived on time. He drove all over the country, as far as Scotland, to deliver a whole range of SVI equipment, including, amongst other things, the Hexi Trailer. Previously, Shawn had been a postman which made him the ideal candidate for the job. Four years ago, Shawn hung up his driving hat and moved into the Production team as warehouse coordinator.

Steve Vick, Chairman at Steve Vick International commented: "I am always extremely pleased to see staff reach a major milestone in their career at Steve Vick International. Our staff are essential to the success of the business and, as the company has changed and expanded, it has been a pleasure to see our staff grow and develop too. I would like to congratulate, on behalf of myself, Angela and the SVI team Wendy, Nick and Shawn on their 20th Anniversary."

www.stevevick.com

REMEMBERING RUTH MICHELS

It is with great sadness and respect that US contractor Michels recently announced the passing of Ruth L. Michels on Monday, 21 December, 2020 saying:

'To know Ruth is to have experienced a dignified, classy, sincere, and refined lady. She will be remembered as a woman with a quiet voice and a huge heart.'

Born and raised in Campbellsport, Wisconsin, Ruth graduated from Campbellsport High School and entered the work world at Wisconsin Telephone Company. After a few years, Ruth moved on to work in manufacturing at Giddings & Lewis in the computer department. She married Dale Michels in 1957 at St. Matthew's Catholic Church in her hometown of Campbellsport and moved to Fond du Lac. In 1959, Dale and Ruth partnered with Ruth's brother, Ted Koenigs, and his business partner, Jim Michel, to establish Michels Pipeline Construction in Dale's hometown of Brownsville, Wisconsin. With Dale at the helm, the company blossomed from a small regional gas distribution construction company into one of North America's largest, most diversified energy and infrastructure contractors.

"She was known to be an unsung hero of Michels' success, a woman who will have a profound influence on her family and the company for generations to come."

Ruth was a respected leader in energy and infrastructure construction. In 2009, she was the first woman to receive an honorary membership to the Distribution Contractors Association, which is bestowed on those who have made outstanding contributions to the association and the utility construction industry for decades. In 2014, she received the Lifetime Achievement Award from the University of Wisconsin-Madison Construction Club, which honors those who have made a mark on the construction and engineering fields.

THE NEW-GENERATION GRUNDODRILL

Drilling by wireless remote control is extremely practical especially in difficult terrain and confined spaces.

Horizontal Directional Drilling (HDD) can be a complex process, placing great demands on equipment and operator.

The highest user requirements for adaptability, versatility and efficiency were the benchmark for advanced trenchless technology specialist TRACTO when developing its new series of innovative HDD rigs. The result is the new-generation GRUNDODRILL xCS series consisting of six models with performance ratings between 60 and 280 kN.

Based around an intuitive operating concept, the GRUNDODRILL xCS range combines peak power and unique functionality, allowing for maximum flexibility and highest productivity. To mark the production launch, TRACTO presents the GRUNDODRILL JCS130 FIRST EDITION, which includes the advanced features and several innovative options of the xCS130 series.

"The highest user requirements for adaptability, versatility and efficiency were the benchmark for advanced trenchless technology specialist TRACTO when developing its new series of innovative HDD rigs."

Groundbreaking concept

A GRUNDODRILL is an investment for many years. With the new GRUNDODRILL, TRACTO offers a truly top-of-the-range HDD rig, which is breaking new ground in HDD in more ways than one. Users can stay ahead of competitors when going head-to-head for drilling jobs due to:

- The modular construction of the new GRUNDODRILL series: it is possible to configure each drilling rig to the individual market requirements. A choice of almost forty options allows the user to customise the drilling rig according to its application range and the desired comfort.
- Rock drilling in all performance classes: each model of the series can either be configured as a Jet Condition System (JCS) with standard rods for drilling in conventional soils, or as an All Condition System (ACS) with twin-tube rods for rock drilling. >

The GRUNDODRILL JCS130 FIRST EDITION includes all advanced features and several innovative options of the xCS130 series at a special price.

The GRUNDODILL xCS' detachable touchscreen control panel serves as control station on the drill rig and remote control in one.

- The intuitive operating concept with almost all functions of the drilling rig controlled via a central touch screen and monitored via an integrated camera, tailored to the needs of the operator. It enables ergonomic and fatigue-free working and allows the operator to concentrate on the most important activity – drilling.
- Remote-controlled drilling with all functions of the drilling being conveniently controlled and monitored from outside the operator's cabin using a specially designed remote control unit. In combination with an intelligent camera concept, full control of the entire drilling rig is always guaranteed, even when operating with the remote control.
- Productive peak performance with consistent maximum power for thrust, rotation and drilling fluid, generates considerable increases in productivity.

The GRUNDODRILL JCS/ACS130 models feature a powerful Cummins Tier 5, 100 kW engine, variable torque and speed adjustment, and fully automatic drilling operation including automatic drill rod exchange. Furthermore, the FIRST EDITION highlights are a 320 l/min Bentonite pump, an anchoring plate with bentonite collection tray and mud extraction pump, camera surveillance at the clamping device, all-round lighting and a comfort cabin as a standard.

https://grundodrill.com/firstedition/

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Curing the manhole liner.

MANHOLE SHAFT REHABILITATION MADE EASY

The UV light train.

At the beginning of September 2019 ProKASRO technicians were on the road together with Brandenburger and the KASRO UV shaft rehabilitation system in Brno, Czech Republic. The municipality and surrounding sewer rehabilitation companies took part in the demonstration of a new UV technology.

Three manholes, each with a diameter of DN1000 and lengths of one to three meters, were rehabilitated with brand new products from technology and liner manufacturers in Brno and Budweis.

The combination of the 'BBS.8 UV' Brandenburger Liner, specially designed for manhole rehabilitation, together with the new KASRO UV manhole rehabilitation system led to a smooth and fast curing with excellent results.

ProKASRO had already responded to the increasing demand in the field of shaft renovation in 2019 with the design of the 4 x 1,000 W UV light source core with camera and 2 temperature sensors. A separate control unit, that fits in a small flight-case with logging, temperature and pressure measurement systems, as well as a single DN500 packer with straps for the crane suspension for easy insertion into the shaft are included in the mobile UV system. With this system, manholes can be >

A typical site set up for manhole rehabilitation.

restored to an excellent condition. If there are heavily damaged manholes with fractures, cracks and other types of damage, rehabilitation using UV technology is the more cost-effective and environmentally friendly alternative to excavation and complete manhole renewal.

With a pulling speed of 250 mm per minute, the actual renovation process including lowering the core, igniting and pulling it up again with curing was completed after ten minutes. The entire process from arriving at the construction site, preparing the shaft, installing the liner, calibrating the liner, lowering the UV core in the manhole and curing was completed in just two hours.

The customers and municipalities on site were more than satisfied with the procedure and the rehabilitation results and showed great interest. Further demonstration sites are planned in Poland during 2021 under the direction of Prokasro's sales representative, Georgi Barzanov, who is responsible for the Eastern European region.

A liner and rehabilitated manhole.

www.prokasro.de/en/

The Picote Supper Midi miller with cleaning tools attached.

CLEARING TARMAC & CONCRETE USING A PICOTE MILLER

C.J. Kelly International Ltd recently assisted in a challenging pipe cleaning project being undertaken by specialist Drainage contractor Fastflow Drains.

"Assessing the problem and having worked with CJ Kelly International on previous occasions, Derek sought advice on the most effective options for removing the offending materials."

Working with Derek Sewell of Fastflow the project required the removal of tarmac and concrete deposits from a pipeline serving the Winchester Court residence in Vicarage Gate London W8, UK.

The pipeline in question comprised a cast iron drain which runs directly under the property in solid ground and concrete negating any potential for traditional open cut replacement of the pipeline, so a trenchless solution had to be found. The build-up of tarmac and concrete materials in the drain, which was highlighted by a CCTV survey, were causing damp problems in the basement flat of the property.

Assessing the problem and having worked with CJ Kelly International on previous occasions, Derek sought advice on the most effective options for removing the offending materials. Having heard recommendations from other drainage contractors Derek asked about the potential use of a Picote Super Midi miller machine with the correct cleaning attachments. >

Above: Water retention in the blocked pipeline.
Below: the cleaned pipe with no water retention.

Consulting with CJ Kelly proved highly effective when John Kelly recommended the Super Midi with a selection of Tiger cleaning tools.

Renting the machine to complete the works the Fastflow team set up the Super Midi on 7 December 2020 at 08.30, this was in order to start the cleaning operations promptly at 09.00. The later start was out of consideration to the residents. The cleaning operation was completed by 14.30 in less than one normal working shift and the machine was demobilised and removed from site.

Fastflow used the Picote Super Midi machine for cutting out the tarmac and concrete from the cast iron drain utilising the Picote cutting heads with a Tiger bore drill head, a 100 mm diameter Tiger Drill chain, a 75 mm diameter Tiger twister concrete/liner removal tool, a leader cable, hub and grinding panels and a Flexian 3,000 psi@16 gpm high pressure water jetting machine. The operation was monitored using an A&M Industrial CCTV Camera system.

The Picote Super Midi removed the tarmac and concrete in just 3 passes through the pipeline, using the Tiger twister concrete removal tool. The contractor then ran the machine with the tiger drill chain and leader cable hub and grinding panels to clean up any remaining deposits. The drain was then finally cleaned utilising the high pressure water jetting system before completing a final CCTV Survey.

With the problem identified and the correct equipment in place, the contractor experienced no problems during the cleaning operation saying 'the Picote machine dealt with the problem with ease'. The drain was found to be holding water after removal of the tarmac/concrete, this was found to be due to a back-fall on the drain. Fastflow recommended re-lining of the drain to the client.

Commenting on the project Derek Sewell said: "Using the Picote Super Midi machine made the job far easier than it should have been and I will be thinking about purchasing one for Fastflow Drains in 2021. Working with CJ Kelly proved a vital cooperation as the company recommended the right machine to complete the job. The Picote Super Midi is an excellent machine which completed what might have been a difficult task easily.

For CJ Kelly International Ltd John Kelly, Senior Partner said: "We have worked with Fastflow on previous occasions and we are pleased at how well this project progressed with a completion that met all the requirements of the client. Recommending the Picote Super Midi was not a difficult choice given the capabilities of the machine. It must be understood however that in these sorts of circumstances the right machine has to be used for the right job, The Picote Super Midi is just one of the range we have available to contractors with whom we are able to consult at any time for any job."

"Using the Picote Super Midi machine made the job far easier than it should have been."

www.cjkelly.shop

TRANSFORMING PRESSURE PIPE REFURBISHMENT

Despite the many challenges over the last 12 months SANIVAR has continued to expand its global presence and has delivered a wide portfolio of projects both here in the UK and around the world.

Not all pipeline requiring renovation are buried.....

.....but most are.

Sanivar's lining technologies are designed specifically for the refurbishment of pressure pipe infrastructure and are well proven on both potable and wastewater networks though short term regulatory constraints have so far limited their use on UK clean water pipelines. Additionally the company's liners have been used successfully on European gas networks and are equally suitable for district heating and chemical pipelines.

SANIVAR manufacture two lining systems :

- Saniline – this is a conventional CIPP type liner with the added benefit of being tested to withstand pressures of up to 32 bar. Available in diameters up to 800 mm, Saniline uses an ambient cure resin system of installation with the liner inverted through a pressure drum. Its high tensile strength limits the wall thickness to a maximum of 3.5 mm providing flexibility to navigate 90 degree bends and significantly reducing flow losses associate with alternative trenchless technologies (such as sliplining etc).
- Sanitube is an innovative 'winch through' liner with the same structural properties of Saniline but the added benefit of not requiring any curing. The liner is winched through the host pipe and inflated using compressed air which is used to expand the liner to the internal diameter of the pipe before being retained using bespoke end couplings. >

Preparing to install a winched-in liner.

Sanitube liner delivered coiled to site.

Within the UK, Sanivar has delivered a number of wastewater projects all of which presented challenges that could not be easily overcome using existing trenchless technologies.

On one example, an Anglian Water Rising Main Refurbishment, in November 2019 Sanivar completed a 25 m refurbishment of a 100 mm diameter PVC rising main for Anglian Water at Stansfield. The main was adjacent to a pumping station and ran through a bridge decking over a water course adjacent to a public footpath. The main had a frequent burst history resulting in a significant pollution threat. Working with Public Sewer Services (AWS Drainage Supply Chain Partner), Sanivar used Sanitube to complete a full refurbishment within a single working day, minimising asset downtime and significantly reducing customer impact by negating the need for prolonged road closures and lengthy diversions.

In other works for Yorkshire Water Wastewater Refurbishments, working with Peter Duffy, Sanivar has completed two wastewater projects.

At Colburn STW a 22 m section of rising main was refurbished using Sanitube. The pipeline ran beneath other critical above ground assets and in addition to navigating a 45 degree bend the liner also had to accommodate a change in diameter from 200 mm to 250 mm adjacent to the reception pit. The liner was successfully installed and pressure tested over the course of two working days in conjunction with a wider scope of works on site. >

The winched-in liner arrives at the reception pit.

In December 2020, Sanivar and Peter Duffy completed a further refurbishment of a 300 mm diameter rising main at Agbrigg in the Calder Valley. This complex project involved refurbishing a 125 m of cast iron main adjacent to a mainline railway including a pipe bridge over the River Aire. Access was limited due to the proximity of the railway and all work was carried out under Network Rail supervision. The pipe route included a redundant chamber, changes in diameter and gradients and a complex configuration of bends all of which were located beyond the railway boundary making them inaccessible. Additionally the final section of pipeline flowed into an open manhole effectively making it a gravity rather than pressure pipeline. Sanitube was selected on the basis that it could accommodate the complexity of the pipeline and would minimise installation time in a potentially hazardous environment. The liner was successfully installed in 90 minutes and after inflating and making minor adjustments the main was reconnected and backfilled two days later.

A Lock Down Record In Wellington, New Zealand

Beyond the UK, Sanivar recently completed a groundbreaking project in Wellington, New Zealand, setting a new record for installation length by completing parallel refurbishments of two 1.5 km pipelines in a single pull – all under Covid restrictions !

The project was supported by Sanivar from its German base and material and technicians were transported on a returning repatriation flight with special permission granted for entry by the New Zealand authorities. Working and living under controlled conditions, the team successfully completed the Sanitube installations within 24 hours, proving that where there is a will there is often a way and that the Sanivar linings offer the opportunity to complete refurbishments whilst operating safely and in conditions compatible with Covid security.

> “Working and living under controlled conditions, the team successfully completed the Sanitube installations within 24 hours, proving that where there is a will there is often a way.”

Commenting on the last year Sanivar’s Business Development Manager Tim Farley highlighted the progress made in the UK and the exciting opportunities that 2021 presents saying: “2020 provided Sanivar with the opportunity to build on its existing portfolio of UK projects and gain enhanced product awareness across the utility sector. We enter 2021 with a healthy pipeline of projects including a further AWS installation at Billericay. We are in dialogue with most of the UK Water companies and representatives from gas and district heating providers. The imminent Reg 31 approval for Sanivar liners to be used on UK potable networks is a potential gamechanger and could play a major role in delivering leakage reduction outcomes safely and more economically across the water sector”.

www.sanivar.co.uk

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C J Kelly International Ltd

We are an established consultancy & distribution business specialising in sewer and pipe renovation. We're able to offer unrivaled support to our clients, from conception & structural design through to installation. All this backed up with training and technical support on all of our products. C J Kelly International Ltd also distributes some of the world's leading trenchless technologies from, KOB Brawoliner, MC Construction Chemicals, HÄRKE, Picote Solutions, and our own innovative Multi-Kit ® Pipe Repair system, which allows us to offer a long-lasting rehabilitation solution for our customers. We are also proud members of the Pipeline Industries Guild & UKSTT.

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Innovative products

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TRENCHLESS WATER CONNECTION TIMED TO PERFECTION!

Image above: a view over the allotments worksite.

In this most difficult of years it is nice to find a circumstance that has positively affected a section of the population.

TRACTO-TECHNIK UK customer, Impact Utilities, is an experienced trenchless technology contractor based in Essex, UK. Prior to the start of nation-wide lockdown back in March 2020, the company won a contract to install new water mains to three large council-owned allotments in its locality. At the time it was not known that the government would encourage people to spend time on their allotments as part of their lockdown exercise regime. The timing of the connections could not have been better with the work completed just prior to the country closing down.

"Thanks to the unique GRUNDODRILL 4X drilling rig, the work was carried out without the need to disrupt any of the plot holders, leaving them to continue tending their produce."

Moreover, thanks to the unique GRUNDODRILL 4X drilling rig, the work was carried out without the need to disrupt any of the plot holders, leaving them to continue tending their produce.

A year earlier the mains water had been replaced at two other allotments in the region. The council opted for open trenching techniques during the fallow winter months. Whilst well-intentioned, the poor weather and relentless rain filled the open trenches with water, which overflowed; creating mess, mud and inconvenience.

To avoid this situation the council turned to a more innovative approach and, after consulting with Sam McKay from Impact Utilities, agreed to a no-dig solution. "Despite several decades of experience in building regs the contacts at the council had not >

The GRUNDODRILL 4X drilling rig.

previously encountered trenchless technology drilling solutions for utility connections. We explained that the allotments could remain open with clear access whilst only a few excavations would be required at a distance of 90 m apart." Sam explained.

The GRUNDODRILL 4X came into its own on this job. The compact dimensions of the tracked machine ensured that not only was access kept clear, but its tracks eliminated ground damage and the underground drilling work caused no damage to any working areas of the land. The only visible excavations were for modest entry and exit pits.

The first job involved the installation of 1,009 m of new 32 mm diameter MDPE and was completed in 13 days including excavations, the installation of 9 stand pipes, ground chambers, isolation valves and all reinstatement works. Subsequent installations of 673 m and 458 m were completed in 10 and 7 days respectively.

"The council was delighted with the solution and the feedback from the plot holders was fantastic. Not one allotment was affected by the project and gardening work carried on uninterrupted. For many gardening is their lifeline, particularly throughout the pandemic and we were delighted that we could complete the works without shutting down any of the sites and without hampering the plot holders." said Sam.

www.tracto-technik.co.uk

ELECTRIC HDD AND FLUID MANAGEMENT TECHNOLOGY FOR VERMEER

Vermeer Corporation recently announced that it has acquired electric-powered horizontal directional drilling (HDD) and fluid systems technology from Normag.

Through this acquisition, Vermeer assumes the rights to develop, manufacture and distribute the proven fully electric HDD rigs, generator sets and fluid management systems, which are currently operating across Europe under the Normag brand.

As a world leader in the HDD and fluid management industry, this acquisition is a key part of the Vermeer strategy to meet growing demand for electric-powered worksite solutions.

The Normag electric HDD technology offers a unique integrated electric power system that optimises efficiency across the generator set, drill rig and fluid management systems during operations. When connected to the electricity grid, the system can operate as a fuel-free system. All systems have also been designed to match standard international shipping container dimensions to reduce the machine footprint, jobsite set-up time, complexity and cost.

"Vermeer assumes the rights to develop, manufacture and distribute the proven fully electric HDD rigs, generator sets and fluid management systems."

"With this technology already proven in operations across Europe, our Vermeer team can now fast-track an electric HDD offering that helps operators better control their cost of operations and worksite impacts through reduced fuel use, near-zero emissions, limited noise and an overall smaller rig footprint." said Vermeer President and CEO Jason Andringa. "This investment critically supports our company's innovation and product development focus to continually help customers optimise their worksite efficiency, while limiting environmental impact."

The Normag HDD system technology has been in development for more than eight years in the Netherlands. It was purpose-built >

The Vermeer Normag Electric HDD rig.

"As the products get established in Europe, the company will look to introduce them in key global markets where electric systems are desired, including North America and Australia."

to help companies comply with European transportation and worksite regulations and meet their goals to lower their environmental and worksite impacts. Drill rig and fluid packages have been piloted with customers across Europe for the last several years. Because they are European-market ready and tested, Vermeer will focus first on introducing the products to the European customer base to support large-diameter underground infrastructure projects. Products will be sold under the Vermeer brand in partnership with Vermeer dealers.

All product development, engineering, marketing and production for the technology will immediately move to the Vermeer EMEA headquarters in Goes, Netherlands. Vermeer expects that its first rigs and fluid systems will be in production and ready for distribution in Europe by late 2021. That will likely include a system built around a 120 metric ton HDD rig, a 2,500 litre reclaimer and high-pressure pump. The company also plans to offer additional fluid systems in the first year to establish a range of reclaimers ranging from 750 to 3,000 litres per minute of cleaning capacity.

As the products get established in Europe, the company will look to introduce them in key global markets where electric systems are desired, including North America and Australia. The intent is to bring the products to those markets within the next 24-36 months.

www.vermeer.com

CONNECTING WINDFARMS WITH HDD

The many benefits of horizontal directional drilling are well known, not just the time and cost savings but also the environmental benefits in that trenches are not excavated, excavated material does not have to be removed form site, then recycled or fresh quarried stone brought in to provide backfill, all adding to the carbon footprint of the works.

Pipelines prepared for HDD installation as cable ducts.

"Whether the cable duct route is under a road, water course, woodland, ancient hedgerow, canals, high pressure gas, oil or fuel pipelines, high or low voltage cables, motorways or railway lines, the use of and benefit of trenchless techniques cannot be under estimated."

So with the ever increasing expansion of on-shore and off-shore windfarms, there is a natural synergy between HDD and wind and solar farms when it comes to cable duct installation. Whether the cable duct route is under a road, water course, woodland, ancient hedgerow, canals, high pressure gas, oil or fuel pipelines, high or low voltage cables, motorways or railway lines, the use of and benefit of trenchless techniques cannot be under estimated. The sheer size of the individual offshore wind farm turbines is spectacular, at 190 m tall with a rotor diameter of 178 m and a maximum height of 200 m to the blade tip. They also have a clearance level of 22 m above mean high water spring tides (MHWS).

During 2017 and 2018, Darlington based Eco-Drill Ltd completed 52 directional drilling schemes, on Hornsea 1, along a 40 km route from Horseshoe Point, south of Grimsby, to the National Grid onshore substation at North Killingholme, Lincolnshire.

With the continued expansion in capacity of the Hornsea wind farm (which claims to be the world's largest offshore windfarm), and due to their exceptional record of completion on a previous scheme, Eco-Drill Ltd was awarded a further 62 directional drilling locations on the Hornsea 2 scheme in late 2018. The cable route was approximately 39 km and consisted of three 220 kV circuits >

One of Eco-Drill's HDD machines in action.

"EcoDrill and the team have a proactive approach to collaborative working when it involves multiple contractors and being amenable to change in the ever -changing environment of construction and civil engineering."

and fibre optics within a 40 m construction corridor. Along the cable route there will be 23 joint bays per circuit, with an average section length of approximately 1,600 m. Within the 62 horizontal directional drilling locations, there were 3 individual drills at each location consisting of three 250 mm duct bundles and a 63 mm PE fibre duct (giving 186 drills in total). Eco-Drill undertook the butt welding of the ducting using Peak Pipe system's ClearDuct which has CNC machined ends which ensure each pipe end has a small internal bevel, which results in a joint that does not require the internal bead to be removed as it sits flush just below the internal pipe diameter. This removes the risk of any damage to the electric cable sheath.

Utilising its fleet of Ditch Witch HDD rigs, Eco-Drill Ltd put to good use two 30 t rigs and one 50 t drill rig for the 186 drills which varied in length from 40 m short crossings to a 400 m long bore. The drilling works ran from February 2019 to October 2020 incorporating the usual British weather challenges and working on a cross country access route. In total over 17,500 m of 250 mm and 563 mm ducts were installed using HDD methods.

As the UK reliance on wind and solar power increases, and current windfarm schemes are expanding, Eco-Drill Ltd IS looking ahead to the ever increasing market having already proved more than capable of delivering on major schemes. In addition to trenchless technology, Eco-Drill Ltd can provide full geotechnical investigation, structural design and completion of Network Rail design for under track crossings, as well as full turnkey and utility services.

Furthermore to boost the company's already talented management team, MD John Dunlavey has recently appointed Chris Brodie to the team as Business Development Manager. Chris has a wealth of trenchless experience having been involved in hdd since its arrival in the UK in the early 1980s, in addition to which he has gained extensive knowledge of guided auger boring, pipe ramming and pipe bursting through various employment opportunities over the past 35 years.

Commenting on Volker Infra's experience of working with Eco-Drill as part of the delivery team on the Hornsea 2 – 0rsted offshore windfarm landside cable installation Nicholas Jones – Hornsea II – HDD Package Delivery Manager said: "For 18 months it was a pleasure from the start. EcoDrill and the team have a slant towards getting on with the tasks in hand and have a proactive approach to collaborative working when it involves multiple contractors and being amenable to change in the ever-changing environment of construction and civil engineering."

Nicholas continued: "Design and documentation support and submissions were done in a timely fashion and all assistance required by the principal contractor was provided. EcoDrill and the team were proactive in providing all the information that was >

Twin drilling operations at work on one site.

required and in some cases went above and beyond to provide what was required when it comes to asset owners and rail crossings. This helped in the smooth transitions of drill locations with regards to programme betterment for the delivery of the cable installation. Site delivery was undertaken with a proactive approach to problem solving and also amenable to change in an evolving site. The site team were all skilled in their field and all worked closely to provide a good product result in a professional manner."

Concluding Nicholas said: "The working relationship with EcoDrill and Volker Infra has been a positive experience and the people have all been a pleasure to work with. EcoDrill has expanded my knowledge personally with regard to smaller rigs working in a faster environment from my experience of rigs of 100 t plus. I hope to work with EcoDrill again in the future as difficult work is always made easier with the right team and EcoDrill has the right team. I thoroughly enjoyed working personally with each of the members of the EcoDrill staff and operatives on site. If you have a site which is going to be fast passed and ever-changing and you need an amenable subcontractor to deliver your drilling to a high quality with a wealth of knowledge, I would thoroughly recommend EcoDrill.

"Site delivery was undertaken with a proactive approach to problem solving and also amenable to change in an evolving site."

www.eco-drill.co.uk

CUES NEW ADVANCED PORTABLE INSPECTION CAMERA

CUES has developed an advanced model of its lightweight, portable, HD wireless video inspection pole camera, the QZ3 Advanced, which can be operated by one person using any tablet. The new QZ3 Advanced is designed to provide safe-viewing in industrial or environmental areas with no man entry requirement.

Operators can perform swift inspections and surveys of pipelines, wet wells, manholes, sewer treatment plants, steam generators, tanks, vessels, and other areas that are difficult to reach. The QZ3 Advanced can also be used to locate lateral services or to identify blockages at manholes, access ports, or other entry points without entering the pipeline or structure. Added features over the basic model include motorised height and tilt, in addition to laser distance measurements, making the QZ3 Advanced another great addition to any inspection equipment portfolio.

Like the basic model, QZ3 Advanced is mounted on a lightweight, telescopic carbon fibre pole that can extend up to 24 ft (7.3 m), with an optional 34 ft (10.4 m) pole available. The 1080p camera features a 360:1 zoom with built-in image stabilisation, automatic focus, distance-to-defect measurement, and self-contained waterproof M.A.P. (Multiple Aspheric Projection) lighting, including 6 LED spot lights, working in pairs and focused at different lengths, to provide enhanced, detailed viewing of cracks, breaks, pipe separations, scale, and various defect conditions. The QZ3 Advanced also includes 2 diffused flood LED lights for evenly-lit manhole inspections.

Apart from the standard functions and equipment, many options are provided to enhance the utility of the QZ3 Advanced model. Options include a dual-purpose bipod/tripod support, ruggedised tablet, tablet holders for mounting to the pole or as a wearable harness, pole mounted WiFi Repeater to extend range up to 150 ft (45.7 m) from the manhole, and a panning accessory designed for use with the SPiDER scanner's tripod or with truck mounted deployment systems enabling the QZ3 Advanced to have 360 degree panning, in addition to its standard +/- 30 degree tilt for precise positioning which is especially useful for pipeline inspections.

"The new QZ3 Advanced is designed to provide safe-viewing in industrial or environmental areas with no man entry requirement."

https://cuesinc.com

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Rehabilitation Design for Pressure and Gravity Pipes

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The Conference Chair will be Dr. Dec Downey, former Chairman of ISTT and UKSTT.

Keynote speakers will be Dr. Olivier Thépot of Eau de Paris in the gravity liner design session and Dr. John Gumbel of JG Pipeline Consultancy in the pressure pipe rehabilitation session.

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PROGRAMME

SESSION 1
GRAVITY SEWER REHABILITATION

KEYNOTE LECTURE: GRAVITY SEWER LINER DESIGN, Olivier Thépot, Eau de Paris, France

Design of Liners in Germany according to A143-2, Mark Klameth, IKT, Germany

WRc Sewer Rehabilitation Manual - Key Changes in Design Methodology, Nick Orman, WRc, UK

External Pressure Tests on Large Diameter Jacking Pipe Systems, Högni Jónsson Amiblu Technology, Norway

"Real-time Monitoring of UV Lamps as Requirement for Controlled and Protocolled Curing of Large Diameter Liner with Big Wall Thickness", Firmino Barbosa, Reline Europe, Germany

Questions & Discussion Dec Downey

SESSION 2
PRESSURE PIPE REHABILITATION

KEYNOTE LECTURE: PRESSURE PIPE REHABILITATION, John Gumbel, JG Pipeline, UK

Status Quo of the CIPP Product Standards for Water & Gas Networks, Ricky Selle, Selle Consult, Germany

Key Design Considerations for PE80 and PE100 Pressure Pipe Liners, Steve Brogden, Die Draw Ltd, UK

"Response of a Cured In Place Liner in Cast Iron Water Pipe due to Joint Expansion due to Permanent Ground Deformation or Seismic Wave" Olivier Thépot, Eau de Paris, France

"A Unique Example of Close Fit Lining Technology for the Renewal of Water Pipes aling the Bridge ""Ponte Punta Penna"" in Taranto", Federica Fuselli, Rotech SrL, Italy

Questions & Discussion, Dec Downey

Closing Remarks by Conference Chairman, Dec Downey

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THE NEW TRACSTAR ISERIES FUSION MACHINE

McElroy continues to build on the success of the TracStar® pipeline fusion technology legacy with the introduction of the TracStar iSeries bringing a new level of performance and reliability to the pipe fusion industry.

"The iSeries is an evolution inspired by the feedback we have received from those on the front lines of fusion and implements the latest technology to create a superior user experience."

The iSeries offers a platform for a new family of fusion machines that maintain the TracStar's historically rugged, self-contained tracked vehicle while adding industry-changing technology for an improved user experience across these three new models.

Mechanical, hydraulic, electrical and control systems on the iSeries have all been improved and integrated to create the best machine to meet jobsite demands with intelligent communication capabilities with the operator and within the machine.

"The iSeries is an evolution inspired by the feedback we have received from those on the front lines of fusion and implements the latest technology to create a superior user experience." said McElroy Vice President of Product Development Geoff Koch. "We believe this will move the fusible pipe industry forward in the water, mining and natural gas distribution sectors and all of the markets we serve that are seeking a long-term and reliable infrastructure solution."

The TracStar iSeries is powered by the new FusionGuide™ Control System that offers three levels of control from operator-controlled to completely automatic, machine-controlled operations. These were implemented to reduce the most common user errors and to make the fusion experience more productive. The McElroy DataLogger 7 is completely integrated >

The TracStar 1200i.

"The iSeries and the enhanced guided workflow takes the operator deeper into the fusion process than ever before."

with the iSeries and the enhanced guided workflow takes the operator deeper into the fusion process than ever before while ensuring that each fusion joint is recorded and complies with the fusion standard.

The TracStar range including the 630i, 900i and 1200i covers three size ranges from 8 in IPS to 48 in outside diameter (225 mm to 1,200 mm) and all are equipped with a new and quieter Perkins (Caterpillar) engine that meets US Tier 4 and EU Stage V environmental regulations while providing greater torque. The system pressure was raised to more than 3,000 psi for more powerful ground drive, pipe lifts and other functions that use higher levels of pressure.

Hydraulic hard tubing replaces many of the hydraulic hoses giving it a cleaner finish and approach to the unit while defined start/end points offer easier assembly and rebuilds. A new cowling design gives the operator the ability to fuse a tee without removing the carriage from the vehicle. >

The iSeries in the field.

"The new iSeries platform brings intelligent technology and integrated systems together to improve the user experience and meet the needs and challenges seen in the industry today."

A new Power Control Module provides heater control and contains a built-in GFCI that is configurable and resettable from the vehicle display. A new 7 in sunlight-readable, touchscreen vehicle display provides service and diagnostic information. New safety features include a redesigned indexer with embedded sensors for collision avoidance to protect the heater, facer, jaws and carriage.

The new iSeries platform brings intelligent technology and integrated systems together to improve the user experience and meet the needs and challenges seen in the industry today.

www.mcelroy.com/iseries

TYPE 2 PIPELINE PRESSURE TESTING

Type 2 pressure tests are designed for polyethylene pipes but need to consider the possibility of pipe expansion, also known as creep, as the pipe's pressure is brought up to standard test pressure (STP).

Type 2 pressure tests are designed for polyethylene pipes but need to consider the possibility of pipe expansion, also known as creep, as the pipe's pressure is brought up to standard test pressure (STP).

The 'creep' nature of polyethene pipe material means that the pipe will expand when under pressure, making it difficult to determine whether pressure loss during a test is the result of water leakage or pipe expansion. Other factors such as temperature can also influence the amount of expansion, further complicating result analysis.

Ant Hire Solutions' unique Type 2 test method has been designed to factor in these challenges and ensures accurate analysis and outcomes. A Type 2 Pressure Test begins by bringing the pipeline up to system test pressure (STP) where it is left for a minimum of one hour. The pressure loss during this time period is recorded and then filtered through Ant Hire Solutions' unique algorithms. These algorithms accommodate several influencing factors, including 'creep'. The data is then analysed by our team of expert technicians who determine whether the pipeline has passed or failed.

In the event that a test fails, Ant Hire Solutions' technicians will guide customers through a step-by-step process, finding the issue and helping to resolve it. Once the problem is solved, the pipe must then be left for four times the length of the previous test before another test can occur. Ant Hire Solutions ability to analyse the data in real-time allows its technicians to end a failing test prematurely, meaning less time is wasted in waiting for a second test to commence.

All test data is loaded into the Ant Hire Solutions PIPE data management dashboard allowing contractors to fully analyse pressure test performance by team, site and operatives. Providing evidence to work carried out in line with safety guidelines and current industry regulations.

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15-17 June 2021
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16 June 2021 – UKSTT Gala Dinner & Awards Ceremony in association with Westrade
www.nodiglive.co.uk

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Featuring the ISTT's 38th International No-Dig Conference & Exhibition
16-17 November 2021
Kuala Lumpur Convention Centre, Kuala Lumpur, Malaysia
www.trenchlessasia.com

TRENCHLESS ASIA 2022

13th International Conference and Exhibition
May 2022
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NO-DIG HELSINKI 2022

ISTT's 39th International No-Dig Conference and Exhibition
3-5 October 2022
Messukeskus Helsinki Expo and Convention Centre, Helsinki, Finland
www.nodighelsinki.com

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SOCIETY NEWS

ukstt.org.uk

Society News brought to members by Trenchless Works

UKSTT – WHAT THE FUTURE HOLDS

Dawn Greig, Chair, UKSTT

For over 25 years the United Kingdom Society for Trenchless Technology has promoted and aided the development of the trenchless industry in the UK. With the organisation currently under the guiding hands of Dawn Greig (Chair) and Ian Ramsay (Vice Chair), Trenchless Works asked a few questions to look at where the Society is heading for the foreseeable future and would like to thank both Dawn and Ian for their time in putting this interview together.

Q1.What has UKSTT planned for the coming year in terms of webinars/seminars/presentations where and who to and what about?

Dawn: We have a wonderful programme of events lined up and all is going well! We aim to kick off the face-to-face events with the much anticipated Glasgow Roadshow, supported by Scottish Water on 5 May, 2021. Wasting no time we will hold our first Masterclass of the year on 2 June at the Motorcycle Museum in Birmingham. The subject will be Utility Mapping and Detection and we have an impressive line-up of speakers! Of course there can be no doubt that we are all very much looking forward to No-Dig Live between 15 and 17 June, with three action packed days including the all-important Annual Awards Gala Dinner, which this year will be Scottish themed! Time to dig out your tartan and get rocking to the Red-Hot Chilli Pipers! That is only the first part of the year. We have more exciting plans ahead. Of course while all of this is going on we will continue our schedule of online webinars including the successful Trenchless Tea Breaks, and a few other virtual events that we are currently finalising, so plenty to look forward to! >

"We have a wonderful programme of events lined up and all is going well!"

Ian Ramsay, Vice Chair, UKSTT

Ian: Both ISTT and UKSTT are involved in providing online webinars such as Condition Assessment, CIPP and case studies based on membership need to offer promotions and marketing. During the pandemic, the Society has been pro-active in engaging with the membership and is pleased to have welcomed new members on board during this time, including some from overseas. These new members have joined having seen just how proactive UKSTT is and a big part of this comes from the driving force of the current Council, not only to work with and utilise the membership experience and industry understanding of existing members, but also to expand this potential beyond the limits that were previously there both at home and internationally. The pandemic has sharpened peoples focus for the potential for digital interaction but the social interaction of live events and shows is still missing. But, once this situation eases the combination of the two aspects, digital and social, I think will be highly beneficial to everyone in the trenchless industry. This is especially true with the range of 'members only' high-level webinars and activities that were previously not available.

Q2. What if anything does UKSTT have being studied, investigated, worked on by any specific subcommittees and with what targets for these?

Dawn: We have very active Technical and Membership sub-committees. Among many other projects, the Technical sub-committee has been hard at work organising the first ever European No-Dig Conference, scheduled to take place during No-Dig Live. Meanwhile the Membership Committee has been planning some great new initiatives for our membership - details of which will be coming soon! At the end of last year our 'Members Only' area of the website went live and is now a place where members can access past papers and learn more about what the UKSTT and ISTT have done over the past year. Additionally, we have gained an intern as part of the DofE Silver Award Scheme, who is analysing our membership history as part of her role to help us understand our members better and provide us with information that will help increase membership. UKSTT has worked well with Westrade Group over the years to help bring successful conference programmes for No-Dig Live and the No-Dig Roadshows and is very proud that the newly rebranded Trenchless Works magazine is the official publication of the UKSTT.

Ian: Both organisations, UKSTT and ISTT are proactive in their subcommittees with the view to spreading the trenchless word through shows, seminars and individual interaction with potential membership and companies in the sector. ISTT for instance now has dedicated subcommittees for these activities with directives and targets for achievement over time. >

"The pandemic has sharpened peoples focus for the potential for digital interaction but the social interaction of live events and shows is still missing"

Q3. Recruitment drive, is there one? Current membership and target membership how is this going?

Dawn: We are very fortunate to have a loyal membership that has continued to support us throughout this very challenging time. We strongly believe that the UKSTT offers great value for its Members and we are always looking at ways to not only increase our membership but optimise benefits for existing members. We are delighted to offer a new membership band 'Corporate Plus' which provides all of the existing benefits of Corporate membership plus an amazing range of additional savings and marketing opportunities. Members can upgrade at any time to take advantage of this new package. Anyone interested in learning more should contact Lynn Maclachlan, our Business Development Manager via the usual channels.

Ian: As mentioned earlier there is a real drive currently to ensure that increasing numbers of people get to know and understand Trenchless especially in parts of the world where the technology is still somewhat in its infancy, even after all this time. UKSTT has for some time now been increasingly involved with other Societies and countries that are thirsty for this sort of information and that keep coming back for more once they see what is now available. This can only help recruitment to the Societies across the world and perhaps give rise to more local Societies.

Q4. Is UKSTT involved with mainstream education to get Trenchless recognised as part of the now necessary Civils further education programmes and courses (not that anyone is studying these at present other than remotely)?

Dawn: The UKSTT continues to offer a university outreach programme and in 2019 extended this programme by offering the resources and expertise of corporate members and patrons to assist and partner with Universities in developing and running research and design projects for final year students. We are always looking at ways to collaborate with educational bodies to promote Trenchless.

Ian: Whilst the Trenchless industry is still having trouble getting into the mainstream of further education in the UK, UKSTT has tried to address this as far as it can with the introduction of the Masterclasses, in other parts of the world, for example Columbia and China, there have been specific courses set up for Civil Engineers to study and qualify in trenchless technology, something that is not currently possible in the UK despite the rising use and movement towards Trenchless being more of an 'everyday' set of technologies. UKSTT is engaging with the universities that offer Civil Engineering but there is something of an academic inertia that must be overcome before we can get specific courses underway. I think it will happen and UKSTT can offer the experience and expertise that would be required to help formulate and >

"Ultimately the aim must be to get trenchless included in courses as part of the curriculum."

design such courses when required. It is just taking time to bring to fruition. The Masterclasses offer CPD points, but this will not be enough in the future when utilities companies are looking for qualified engineers in the field. Unfortunately, the trenchless industry has such a wide base across installation options, rehab options, replacement options, asset management options etc. that it is difficult to establish if such a course could be included in mainstream studies or whether it would need to be separate or perhaps offered as a post-graduate study. Ultimately the aim must be to get trenchless included in courses as part of the curriculum which will be examined so that qualified new engineers have a solid base on which to build experience in the industry, but there are difficulties to overcome as I said. It may need impetus from the end-users in industry to push this forward. In the USA for example there are institutions that offer Trenchless tech courses which are supported by NASTT.

Q5. Where are you looking for UKSTT to be in say 5 years' time.

Dawn: In five years' time the UKSTT will be the go to place for all things Trenchless in the UK. We have a very dynamic Council, an active membership, proactive Patrons, a determined Business Development Manager and a fundamental desire to drive Trenchless Technology forward. We would like to increase collaboration with other societies and industry bodies for a joint effort to make Trenchless Methods the Number 1 option when working with buried utilities and services in the UK and beyond.

"We have a very dynamic Council, an active membership, proactive Patrons, a determined Business Development Manager and a fundamental desire to drive Trenchless Technology forward."

Ian: Trenchless is still by some seen as a specialist technology despite the fact that it is now widely used. The long-term goal has to be to get trenchless recognised for what it has now become which is a mainstream family of technologies and have this recognised by not just the utilities that are now using it, but those that use it in part when they can find no way of doing the works traditionally and those that do not even today know these technologies exist. It would be nice to think that in five years' time we will have broken down some of the barriers that still exist, in industry and in education and beyond to bring trenchless techniques to the top of the pile making it the Number 1 option in more areas where it has a use.

www.ukstt.org.uk

UKSTT COUNCIL MEMBER PROFILES

Over the coming months, Trenchless Works will be working with UKSTT to highlight the knowledge and experience of its Council Members. We shall be looking for a couple of names each month. This issue has a look at Phil Steele of RSM Lining Supplies and Graham Howard of Hermes-Technologie.

Phil Steele: Vice Chair of the Membership Services sub-committee

Q: What is your background and what brought you into the trenchless industry?

I studied business management at Hull University and had always been interested in sales putting my hand to many part-time projects throughout school and then university. I ultimately fell upon the trenchless industry by joining RSM Lining Supplies 6 months after finishing university as an Area Sales manager. Throughout the 9 years in the industry my passion for trenchless has grown from zero to a slight obsession!

Q: How/why did you get involved in UKSTT?

I joined the UKSTT 2 years ago. I had wanted to join early but was wary of my lack of experience so held off until then. I have grown a passion for trenchless and I wanted to assist in growing its presence in the UK water industry after being part of so many successful projects. I also have wanted to ensure quality products and workmanship are used across the trenchless platforms and I believed that joining the UKSTT would assist in striving for this.

Q: What goals do you want to achieve as a UKSTT Council Member?

I want to help grow the UKSTT to be a leading society in trenchless technology and help spread the word on good practices and knowledge learnt to increase the quality of products offered to the UK water industry.

Q: What do you see as being your own greatest personal achievement in the trenchless industry?

Over the 9 years I have been in the trenchless industry I have been part of a continuously growing business in RSM Lining supplies. I am proud to say through my progression from Area Sales manager to now Sales Director I have played a key part in that growth. This has been inclusive of bringing innovative technology to the customer base, ensuring a high level of customer service throughout and educating clients and their customers on the trenchless options available.

Q: What do you currently see as the industry's most urgent challenges?

The most urgent challenge in my specialist field of CIPP is to have an approved training certification to guarantee the quality of work that is being provided to the UK industry. I have been working on a project to offer this and this should be available to all in the first quarter of 2021! >

"I want to help grow the UKSTT to be a leading society in trenchless technology."

"We are all under an obligation to reduce our carbon footprint and apply best engineering practice, rather than financial savings when looking to improve our aging infrastructure."

Graham Howard

Q: What is your background and what brought you into the trenchless industry?

I have been involved in the Utility Industry since 1986, this was when the Gas Industry was pioneering various methods of renewing pipelines without the need for costly excavations.

At the time I was involved with a specialist under pressure drilling company developing a method of removing lead service pipe connections without the requirement to shut off the water supply and replace the pipe – thereby reducing the size of the excavations.

Q: How/why did you get involved in UKSTT?

I became more aware of the UKSTT when I joined Hermes-Technologie as the company has been heavily involved with the GSTT (German Society for Trenchless Technology) for many years and when I was abroad with the GSTT I witnessed how they managed to open many doors with clients and contractors for their members. It showed the importance of exhibitions/dinners/seminars and being part of a group of people with a common interest and goal.

Q: What goals do you want to achieve as a UKSTT Council Member?

I would like to see the UKSTT in a stronger position by the time I leave with more active members and raise the standards of manhole and sewer rehabilitation so that the workmanship is consistent and accredited.

Q: What do you see as being your own greatest personal achievement in the trenchless industry?

It would be difficult to pin down a single achievement but whenever I have avoided digging down and replacing assets by lining, insertion of internal repair clamps, rehabilitation and protecting assets by specialist coating, I feel a great sense of achievement.

Q: What do you currently see as the industry's most urgent challenges?

The challenges have never changed as we have suffered probably over 100 years of under investment and with a rising population, limited space and overused worn out infrastructure, global warming and climate change, so we are all under an obligation to reduce our carbon footprint and apply best engineering practice rather than financial savings when looking to improve our aging infrastructure. That is the challenge.

Q: Where would you like to see UKSTT in 5 years?

I would like to see UKSTT as the 'go to' place for best advice, knowledge and contacts for anyone with a trenchless problem to solve.

UKSTT AWARDS 2021

CALL FOR ENTRIES DEADLINE DATE FAST APPROACHING!

Each year the UKSTT makes annual awards to promote excellence in trenchless technology, and this year the awards will be made at the Society's Gala Dinner that is being held in Peterborough on 16 June 2021. Held during the biennial No-Dig Live conference and exhibition, the Awards recognise the outstanding contributions made by organisations and individuals to the promotion, use and development of Trenchless Technology in the previous calendar year.

The awards themselves are open to all aspects of Trenchless activity. Entries for overseas projects will be accepted provided they are submitted by UK companies who either did the work or supplied the equipment as well as entries submitted by overseas companies for work carried out in the UK.

For each of the categories a panel of independent judges, many of whom are not necessarily members of the Society, will be carefully selected to be representative from a broad cross section of the relevant industries.

The Categories for the UKSTT Awards are;

- **Innovative Product**
- **Application of Digital Technology**
- **Renovation Water & Wastewater**
- **Renovation Energy & Communications**
- **New Installation Water & Wastewater**
- **New Installation Energy & Communications**
- **Young Professional**
- **Environmental Award**

The final deadline date for entries is the 10 February 2021.

For further category information and criteria or to access the online application form please visit the UKSTT website below.

'Young Professional' Award Will this be presented to you?

Every year, the UKSTT presents the winner of the 'Young Professional' Award category with a £2,000.00 bursary to help fund their travel and accommodation to any part of the world, allowing them to undertake further research into their chosen area of Trenchless Technology.

The Society recognises the need to encourage the work that young professionals are bringing to the industry and are keen to recognise this at the awards ceremony.

Young Professionals (entrants must be <30 years old) are asked to submit a 1,500 word entry that best demonstrates their contribution to the field of Trenchless Technology. UKSTT will be looking for evidence of an understanding of Trenchless Technology, the individual's contribution made, the quality of the submission and the candidate's vision for the future of Trenchless Technology.

Deadline date for entries is the 10 February 2021.

The entry form and rules and guidelines can be found at the website:

www.ukstt.org.uk/young-professional/

www.ukstt.org.uk/ukstt-awards/

UKSTT TECHNICAL ENQUIRY 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:

www.ukstt.org.uk/technical-enquiry/

We have had some interesting enquiries recently ranging from invitations to tender in various locations of the UK and Europe while others received are looking 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 has 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 below.

www.ukstt.org.uk/

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ISTT NEWSLETTER

istt.com

ISTT News brought to members by Trenchless Works

THE AFFILIATED SOCIETIES IN ISTT ACTIVITIES

Jari Kaukonen, Chairman, ISTT

"I believe that this new way has contributed more actively to the involvement of members in the whole trenchless sector."

ISTT currently has 27 member organisations called ISTT Affiliated Societies, several of which have more than one nation represented. ISTT has a part-time executive director and a part-time administrative assistant.

ISTT was founded in 1986 in London and since then the structure of the organisation has been fairly stable. Last year, however, we completed the biggest change in our history, bringing our organisational structure to a new level. In the past, ownership has been held by a group called 'Guarantors', which guaranteed the legitimacy of the organisation's operations. Last year, this responsibility and thus ownership was transferred to our Affiliated Societies. Each society appoints a 'Trustee' to oversee the validity of ISTT.

Over the past couple of years, ISTT formed six new committees comprising interested individuals from the 27 societies. These actions have made the ISTT's activities more transparent and decision-making more democratic by involving members of our Affiliated Societies more widely.

I believe that this new way has contributed more actively to the involvement of members in the whole trenchless sector, as discussions have now begun with several new national groups about their joining the ISTT family. One new nation, Malaysia, has been welcomed into the ISTT.

With these thoughts in mind, it is good to continue until the end of my last year of chairmanship and welcome everyone to our next conference in November 2021 in Kuala Lumpur, Malaysia and then the following year in October to my country, in Helsinki, Finland!

Jari Kaukonen, Chairman, ISTT

www.istt.com

TRENCHLESS IN MALAYSIA

Ir. Modh Zuki Muda – HO Capital Works IWK, with En Faizal Othman – President of MATT, & colleagues at Kuala Lumpur installation site.

"As anyone who has visited Kuala Lumpur will know, the density of its traffic is at the best of times something to behold, any option other than a trenchless solution was out of the question."

The year 2020 will undoubtedly remain in all our memories, wherever we are, as an exceptional year but perhaps not for the reasons we expected or would have wanted. If there is any consolation our experiences of 2020 have been universally shared.

In Malaysia 2020 has been bracketed by successes for CIPP and its use to successfully rehabilitate sewer pipelines, further establishing its reputation in the market as a valuable, viable and effective solution when utilities like Indah Water Konsortium (IWK) in Kuala Lumpur or JKR in Kota Kinabalu (Sabah) and other stakeholders are considering options for the asset management of their pipeline networks and infrastructure.

In December 2019, just before the start of 2020, a 180 metre length of sewer pipeline was successful rehabilitated under one of Kuala Lumpur's main arterial road routes leading out of the city. As anyone who has visited Kuala Lumpur will know, the density of its traffic is at the best of times something to behold. Any option other than a trenchless solution was out of the question. The project presented various other unique challenges including changes in diameters from 450 mm to 525 mm, significant bends and communication challenges between one end of the pipeline and the other due to the multi-lane highway under which the pipeline runs.

The pipeline was rehabilitated by a local contractor using the BKP Berolina Liner and IMS installation equipment, and with pre-training and careful project supervision provided by Börje Persson from JBP Consultancy Services Sdn Bhd. This installation represented the longest UV-CIPP rehabilitation carried out to date in Malaysia.

The year ended with another successful UV CIPP relining of a sewer pipeline with a diameter 1.2 metres, carried out for Jabatan Kerja Raya (JKR) – the responsible utilities department in Malaysia's northern state, Sabah. This was a first for that region. >

Educational events & infrastructure in Malaysia.

In between these two significant events the country has been operating under various restrictions of the Malaysian Government's MCO (movement control orders), first implemented on the 18 March 2020, and as this article goes to print re-introduced across five states for the time being. Restrictions prevent movement between states as well as any overseas visitors, as well as encouraging non-essential service staff to work from home. These restrictions will surely be familiar to most readers, wherever they happen to be.

However, 2020 has not been without its own momentum. Even though most services and offices are working at about 30% of staff capacity in their offices, most Trenchless stakeholders activities are connected to essential services, and therefore a level of activity has continued including projects of essential maintenance.

MATT (The Malaysia Association for Trenchless Technologies) also signed a memorandum of understanding with JBP Consultancy Services during 2020, through which JBP will support MATT through its Trenchless Training Program, to promote, develop and deliver training and educational resources to MATT members and more widely to all other stakeholders working with Trenchless technologies in Malaysia. This will assist MATT in fulfilling key objectives!

JBP also signed a similar MOU with Indah Water Konsortium in 2020, to assist IWK with its trenchless training priorities, and to promote IWK's training centre in Kuala Lumpur as a regional centre for trenchless training. While 2020 has delayed some of the intended initiatives, MATT, IWK and JBP anticipate that a series of programmes will be forthcoming in 2021.

MATT is working with JBP to bring together a programme of webinar-based training and round table discussion events to run throughout 2021, in the lead up to Trenchless Asia 2021 scheduled for 16 and 17 November, 2021. Trenchless Asia will uniquely incorporate ISTT's annual International No-Dig conference. Malaysia is looking forward to Trenchless Asia, with an optimism that all will be able to once again welcome the international Trenchless Community to Kuala Lumpur and in the mean time look forward to keeping Trenchless Works readers fully informed of news and developments in the country. Finally, congratulations to all the Trenchless Works team on the launch of this great platform for Trenchless!

www.matt.org.my

WELCOME TRENCHLESS WORKS FROM GSTT

Prof. Jens Hoelterhoff, Chairman, GSTT

Dear readers of the First edition of the new TRENCHLESS WORKS magazine, the official UKSTT media partner.

The GSTT (the German Society for Trenchless Technology), founded in 1989, has a long, friendly history of cooperation with the ISTT since 1986. ISTT was founded 3 years prior to GSTT with UKSTT being founded in 1993. GSTT has also been associated with Westrade Group with involvement in international trade fairs which have been very fruitful over many years. Many of our now over 50 'German Pavilions' were at trade fairs where Westrade was the organiser.

GSTT has also worked with Ian Clarke, who has some 30 years' experience of publishing to the trenchless community, who is the editor of the newly redesigned digital magazine, which will have an estimated readership of 50,000.

Germany has been one of the pioneers in trenchless technology for over 30 years and in many areas also world market leaders. This has also been reflected in the 'German Pavilions'.

We look forward to a good and fruitful cooperation with TRENCHLESS WORKS and are sure that the online magazine will also be used by 'Trenchless made in Germany' companies. We wish TRENCHLESS WORKS all the best and success for the future.

GSTT
TRENCHLESS MADE IN GERMANY

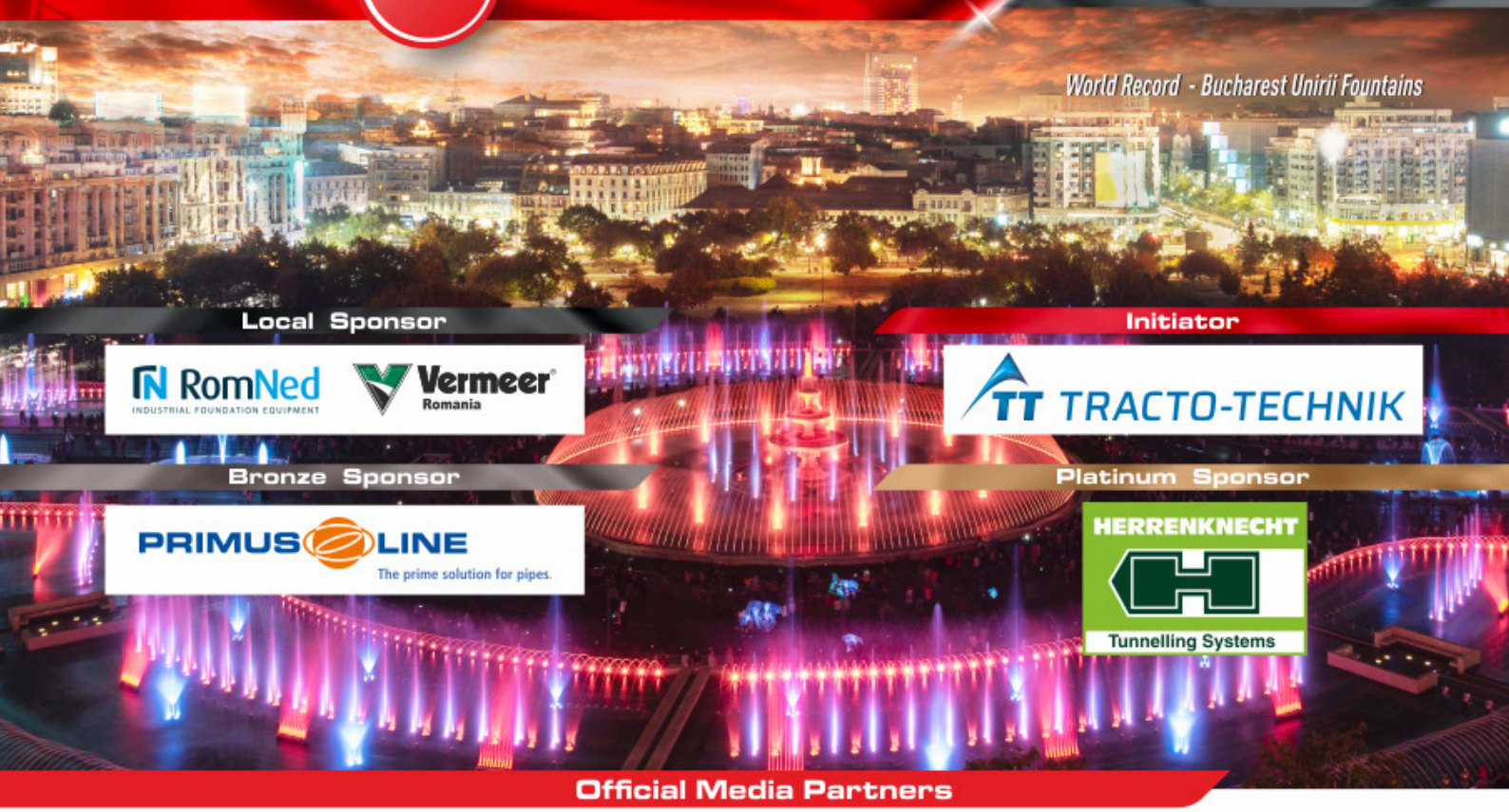
https://en.gstt.de

5th EDITION

Trenchless Romania

Conference & Exhibition

SAVE THE DATE — **16th of June 2021** — **Bucharest**



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AFOR ASOCIAȚIA DE FIBRA OPTICA DIN ROMÂNIA

www.trenchless-romania.com

TRENCHLESS EVENTS REMAIN IN GOOD HEALTH

Westrade's Managing Director, Paul Harwood, explains why he's confident that 2021 will see the return of the company's world leading exhibitions in the UK, UAE and Malaysia.

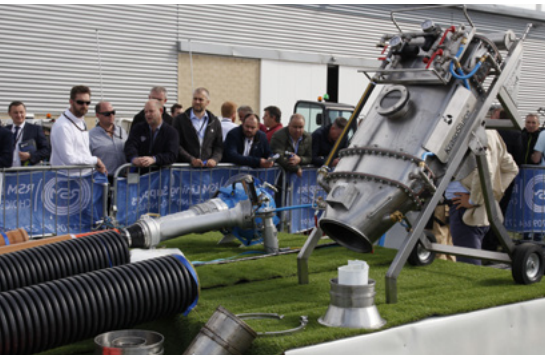
Whilst many of the COVID-19 statistics are still extremely worrying, recent vaccination developments mean that for the first time in many months, I am allowing myself to feel cautiously optimistic. My optimism was bolstered by a recent BBC news article which highlighted further good news for those keen to see the return of live trenchless events: Two of our host countries (UK & UAE), were listed in the top three countries in the world in terms of percentage of population vaccinated.

The Global Events Industry

Before I take a look at what our exhibitor and exhibitors have to look forward to this year, I wanted to talk a bit more generally about the importance of live events.

A recent report by Explori on behalf of The Global Association of the Exhibition Industry surveyed 9,000 trade show visitors and exhibitors from over 30 countries. Its key finding reinforced the vital role live events have to play in the generation of new business opportunities and networking. In fact, nearly half the companies surveyed said that the absence of live events had a negative impact on their ability to generate business. There was also no evidence of any fundamental shift away from live events. The social aspects of events – something we have always work hard to foster – remains a critical draw for both visitors and exhibitors. There was also a great emphasis on quality with exhibitors recognising the importance of quality over quantity. >

> "The social aspects of events – something we have always work hard to foster – remains a critical draw for both visitors and exhibitors."



First to market

Exhibitors and delegates attending our three shows this year have even more reason to be optimistic. Continued monitoring of the global pandemic coupled with detailed planning means that our events are now set to be the first, and in many cases the only, event of their type anywhere in the world during 2021. I would like to take this opportunity to thank all our sponsors and exhibitors for their patience and support – we look forward to rewarding you with some outstanding events.

Westrade's 2021 Live Events Portfolio

No-Dig Live 2021 – 15 to 17 June 2021

East of England Arena and Events Centre, Peterborough

It feels like a long time since we were last all together in the UK and I cannot help but feel excited about returning to the East of England Arena for our flagship European event, No-Dig Live.

Those attending can expect our largest ever exhibition space, much of which is outdoors. Alongside the European and International big hitters, we also look forward to welcoming plenty of new and innovative companies who will be exhibiting for the first time.

www.nodiglive.co.uk

Trenchless Middle East 2021 – 31 May to 1 June 2021

Jumeirah Beach Conference and Exhibition Centre, Dubai

For many in the trenchless sector, Dubai feels like a second home (if it is not their home already). The UAE's booming economy and unparalleled rate of development continues to drive some of the highest levels of infrastructure investment seen anywhere in the world.

Trenchless Middle East is the region's only conference and exhibition focusing entirely on the latest equipment and techniques used in Trenchless Technology (NDRC), including underground infrastructure and pipelining.

Supported by The International Society for Trenchless Technology (ISTT) and The Institution of Civil Engineers (ICE), Trenchless Middle East will be visited by an audience drawn from United Arab Emirates, the GCC Countries, Middle East and North Africa (MENA) regions. >

www.trenchlessmiddleeast.com

"Trenchless Middle East is the region's only conference and exhibition focusing entirely on the latest equipment and techniques used in Trenchless Technology."

Trenchless Asia 2021 – 16 to 17 November 2021
Kuala Lumpur Convention Centre, Malaysia

Kuala Lumper is rapidly becoming the shining star in our glittering events portfolio. Unprecedented levels of demand for exhibition space are coupled with a high-quality audience drawn from across South East Asia.

With No-Dig Panama moving to 2023, we felt this was the perfect opportunity to use this gap in the industry calendar and host Trenchless Asia with full support from government ministers, local societies, suppliers and exhibitors.

Trenchless Asia will host the ISTT International No-Dig, providing a multi-track conference programme featuring a mix of technical sessions and a platform for the international community to come together to meet, exchange ideas and network with like-minded people.

Additionally, the formation of The Malaysian Society for Trenchless Technology (MATT), creates a broad-based platform, with national reach to promote Trenchless in Malaysia.

www.trenchlessasia.com

"Trenchless Asia will host the ISTT International No-Dig, providing a multi-track conference programme featuring a mix of technical sessions."

Westrade Digital

Westrade has always positioned itself firmly at the forefront of the digital revolution and recognised the role these events have to play in bringing together global audiences on a more frequent basis. During 2020, in the absence of any live events, we placed an even greater emphasis on developing our digital offering introducing a number of highly successful and well received events including No-Dig Live Digital and our Trenchless Tea Breaks series. Over the course of this year, you can expect to see continued acceleration in the development of our Westrade Digital portfolio as we discover new and creative ways to connect this buoyant sector.

I hope you have found this update useful and agree that there is much to look forward to from both our live and digital events. For now, stay safe and well and I look forward to seeing you at one of our events later this year.

www.trenchless-works.com

Liner materials coiled.

SUCCESSFUL WEBINAR WITH GAME CHANGING PRODUCTS

RSM Lining Supplies Global Ltd of Doncaster, UK launched its first ever webinar in December 2020, centred around liner choice and the strengths and limitations of the products available across the CIPP industry.

Echo Liner
Textile Liner

"Echo liner is a flexible, circular knit liner with the capability to go around bends of up to 90°."

The webinar, which was a great success with over 100 attendees, is available on RSM's Youtube channel and website if you missed it! Included within the webinar, the company launched two brand new products – Echo liner and Fero Force liner.

Exclusive to RSM, Echo liner is a flexible, circular knit liner with the capability to go around bends of up to 90°. It is available in diameters from 100 mm to 150 mm and is a stock item at RSM's head office, available for next day delivery.

Echo liner is suitable for ambient, hot cure and UV/LED cure installation systems and compatible with:

- RSM Epoxies
- RSM PU silicate resins
- LED UV vinylester resins

Echo liner is inverted using either air or water before being cured insitu. It is a seamless liner to guarantee optimum flexibility and it is also possible to achieve a leak-tight finish with the product when >

Preparing a liner.

Liner materials palletted.

Fero Force
Pressure Liner

used in conjunction with an epoxy resin. It is suitable for use in blind shot installations, as well as manhole-to-manhole runs.

A more specialist liner, Fero Force, is RSM's first liner specifically manufactured for use in pressure pipes. Fero Force offers a structural pressure pipe repair process, manufactured and factory impregnated in the UK. As it is manufactured in the UK, the liner can be installed within a maximum of 10 working days from date of order, giving a fast and cost-effective solution for pressure pipe repairs.

Fero Force is a PU coated inversion liner, reinforced with fibreglass and impregnated with a vinylester resin. This exclusive technology fully integrates and blends the unique properties of each, providing a structural repair for pressure pipes and rising mains. It is suitable to withstand positive pressure of up to 12 bar and RSM offers a full design service upon enquiry. Available in diameters ranging from 150 mm upwards, in wall thicknesses from 3 mm to over 30 mm, Fero Force can be impregnated by RSM and delivered to site ready for installation, minimising the carbon footprint on site. The liner is then inverted into the pipe and cured. Liner end seals are fitted to complete the repair.

This liner is commonly used on pressure pipes in America and RSM has recently successfully completed an installation of over 800 metres in total of 600 mm diameter in Jersey. With many advantageous qualities, Fero Force liner is a fantastic, reactive solution for pressure pipe rehabilitation.

Fero Force advantages include:

- Delivers excellent resin saturation and retention properties
- Can increase by 10% to the existing pipe wall to ensure a close fit
- Provides excellent chemical resistance against sewer effluent elements
- Provides superior physical and mechanical properties upon ASTM testing that deliver a typical increase in flexural modulus of 100 to 150%

The next webinar on Resin Choice is 24 February, 2021.

www.rsm-web.com

NO-DIG INDIA SHOW 2020

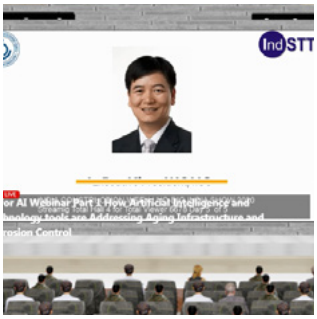
DIGITAL CONFERENCE & EXHIBITION REPORT

Between 1 and 5 December 2020, the Indian Society for Trenchless Technology (IndSTT), hosted its No-Dig India Show 2020. It was a virtual event held jointly with India Construction Week, 2020, organised by the Construction Industry Development Council (CIDC).

The successful joint event was substantially an online interactive conference and exhibition with 20 sectors and with about 146 hours of various addresses and presentations spread over 4 concurrent tracks on all 5 days of the event. In the post COVID World, No-Dig India Show 2020 – Digital and India Construction Week 2020 was a large and successful online interactive event that was able to gather about 14,000 delegates and visiting registrants, reinforcing belief in the future. It showed to the world that the industry is alive and kicking and that soon the construction industry will be back with full force.

The joint event was structured to have a four-tracked online interactive Conference comprising of a series of webinars/ presentations on issues concerning 20 essential streams of construction industry. These included online interactive workshops from equipment manufacturers highlighting their products and services, online interactive workshops from Project owners, highlighting project details, online interactive workshops from consultants, and online training programmes on trenchless/allied fields.

There was also a digital exhibition on event portal comprising of display of company video/presentation, live interactive multi-channel digital booths for providing interactive sessions, >



A selection of internationally renowned industry names presented on various aspects of Trenchless Technology at No-Dig India 2020.

live interactive multi-channel digital booths for project site/ equipment manufacturing plant/allied locations and live interactive chat rooms. Furthermore, during the event, four important IndSTT Publications were released online. The most important of all was the launch of Trenchless educational portal for training and education through the conversion of the ICW-NDIS Portal from event portal to educational portal.

Event Background

The COVID pandemic has presented substantial challenges to construction industry in several ways wherein immense restrictions and preventive measures have become essential for protecting the health and safety of construction workers and existing buried infrastructure. These restrictions have increased the difficulty levels of operation on one hand, but have also created opportunities for development and application of trenchless methods to overcome them. Trenchless Technology provides methods, systems, and working procedures for a minimal human intervention in subsurface construction activities. It naturally helps in achieving adequate protections for all concerned and is an important tool for meeting HSE needs in the hands of construction industry stakeholders.

In these trying times, it is essential that the trenchless industry stakeholders should stand together to meet the challenges posed by COVID, and present viable solutions to construction industry. Needless to say, owing to growing business volumes, these actions would also help trenchless stakeholders, to advance trenchless applications, thereby gaining through this development, in addition to solving the immediate problems. >

"No-Dig India Show 2020 was a large and successful online interactive event that was able to gather about 14,000 delegates and visiting registrants... It showed to the world that the industry is alive and kicking and that soon the construction industry will be back with full force."

To achieve such results, networking of trenchless solution providers with other construction industry players is essential. To meet this objective, IndSTT, the leading organisation promoting trenchless technology in India, hosted the No-Dig India Show 2020 – Digital Conference & Exhibition on Trenchless Technology Applications in the Post COVID World.

No-Dig India Show 2020 had eight main sessions for underground construction topics starting with the inaugural session where several leading professionals, both from India as well as abroad, delivered the welcome and inaugural notes. Prominent amongst them were Dr Mohammad Najafi, Director of CUIRE, and Professor at the University of Texas at Arlington, who delivered the welcome note. The Keynote address was delivered by Dr Tom Iseley, Professor at Purdue University. Subsequently the sessions were focused on different topics of interest that included No-Dig India Show 2020 Addresses, Investigations for trenchless Projects, an IKT Workshop, an NASTT Workshop, Post COVID Trenchless Rehabilitation, and Safety Training for Trenchless Operator for Post COVID World. The event concluded with the valedictory session. Details about these sessions and their deliberations could be seen on the event portal www.icw-ndis2020.com.

Publications

During the show IndSTT released four important manuals, as has been the practice at IndSTT for every No-Dig India Show. This year it released revised editions of four existing IndSTT Publications. These included Standard General Condition of Contracts for Construction Contract Employing Trenchless Technology 2020, Guidelines for Applications of Special Conditions of Contract in Construction Contract Employing Trenchless Technology 2020, Schedule of Rates for Construction Contracts Employing Trenchless Technology 2021, and Site Investigations for Trenchless Projects. These books also serve as instructions /training manuals for various INDSTT training programmes enhancing their importance.

No-Dig India Shows are the flagship annual events of INDSTT and each year they are growing. In order to enhance the effects of event further IndSTT jointly with CIDC has decided to retain the ICW-NDIS 2020 portal working till February 2021, so that the messages and presentations made during the event could be available to more individuals and the benefits of the deliberations could be maximised. The portal can be accessed at https://www.icw-ndis2020.com/icwweb/index.html. IndSTT invites interested persons to consider visiting the portal and benefit from the knowledge contained therein.

www.icw-ndis2020.com/icwweb/index.html

EVENTS AND MEETINGS

2021

March 3-4 AUSJET21
Melbourne, Australia.
Details from: http://ausjetconnect.com.au/

March 28 April 1 NASTT 2021 No-Dig Show
Orlando, Florida.
Details from: www.nastt.org/events/nastt-2021-no-dig-show-orlando-fl/

April 19-25 RO-KA-TECH 2021
Kessel, Germany. Details from: www.vdrk.de

April 20-23 bauma CONEXPO INDIA
Delhi, India. Details from: www.bcindia.com

May 5 No-Dig Roadshow 2021
Glasgow, Scotland.
Details from: www.nodiglive.co.uk/glasgow-roadshow-2021

May 31-June 1 Trenchless Middle East 2021
Dubai, UAE.
Details from: www.trenchlessmiddleeast.com

June 13-16 RETC
Las Vegas, USA. Details from: www.retc.org

June 15-17 No-Dig Live 2021
Peterborough, UK.
Details from: www.nodiglive.co.uk
Includes on 16 June the UKSTT Gala Dinner and Awards ceremony

June 16 1st European No-Dig Conference
Peterborough, UK. In conjunction with No-Dig Live 2021 Details from: www.nodiglive.co.uk

June 16 Trenchless Romania
Bucharest, Romania.
Details from: http://trenchless-romania.com/

June 20-24 Singapore International Water Week
Marina Bay Sands, Singapore.
Details from: www.siww.com.sg

October 5-8 No-Dig Down Under
Sydney, Australia
Details from: www.nodigdownunder.com

October 13-14 8th NSTT No-Dig Event
Nijkerk, The Netherlands.
Details from: www.no-dig-event.com

November 16-17 (NEW DATE) Trenchless Asia 2020 featuring the ISTT International No-Dig
Kuala Lumpur, Malaysia.
Details from: www.trenchlessasia.com

2022

May 30-June 3 IFAT 2022
Munich, Germany.
Details from: https://www.ifat.de/en

June 17-24 North American Tunneling Conference (NAT) 2022
Philadelphia, USA.
Details from: http://natconference.com/

May Trenchless Asia 2022
Manila, Philippines

October 3-5 No-Dig Helsinki 2022
Helsinki, Finland
Details from: www.nodighelsinki.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