



TRENCHLESSWORKS

THE VOICE OF THE TRENCHLESS COMMUNITY **ISSUE 183** NOVEMBER 2021

Official Magazine & Media Partner:  **UKSTT**

Official Publication of the International Society for Trenchless Technology  **ISTT**

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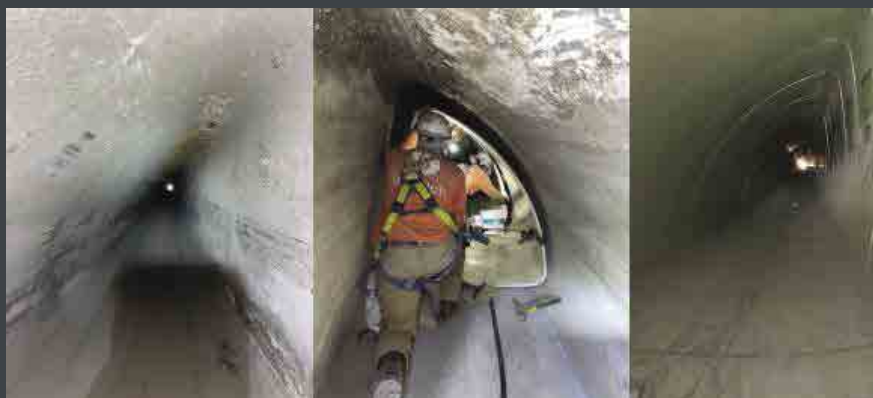
Trenchless Works is published 12 times a year by Westrade Group Ltd | Carotino House | Bury Lane | Rickmansworth | WD3 1ED | UK

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SPOTLIGHT



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

"ISTT International No-Dig Helsinki is gathering pace. For those of you who wish to propose a conference paper, the submission portal is now open."

As we bring you the November issue of Trenchless Works, and head toward the end of the year, I think, as an industry, we can all reflect on the past 12 months and give ourselves a collective pat on the back. At the beginning of 2021, even an eternal optimist like me was slightly doubtful as to whether circumstances would allow our international trenchless community to meet in person. And yet, here we are, with a hugely successful No-Dig Live under our belt and the opening of Trenchless Middle East in Dubai just a few weeks away – I just can't wait.

As ever, there's a huge amount of top-quality editorial for you to enjoy in this month's magazine and I'd particularly like to draw your attention to the article written by our very own Editor-in-Chief, entitled 'Political Will Must Refocus on Sewers'. It's a fascinating read in which Ian 'dives' into the furore over raw sewage dumping into rivers and coastal areas, a topic which has really grabbed the headlines recently – and not just in the trenchless world. We'd love to hear your views on the subject as well so do join in the debate on our social media channels.

Talking of reaching out, the ISTT International No-Dig Helsinki is gathering pace. For those of you who wish to propose a conference paper, the submission portal is now open. Submit your abstract from here: <https://www.callforpapers.nodighelsinki.com/> Closing date for abstract submission: 1 April 2022.

We also have much to look forward to in the new year: you won't need to wait the usual 24 months for No-Dig Live as it's back again in September 2022 in its spiritual home of the East of England Showground. Both exhibitors and visitors seemed keen to make up for missing the 2020 event and who are we to deprive them of such an opportunity?

With my very best wishes,

Paul

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POLITICAL WILL MUST REFOCUS ON SEWERS

A comment by Ian Clarke, Editor-in-Chief Trenchless Works

Sitting as I do somewhat on the periphery of the UK water industry it is often interesting to watch the development of the 'topic of the day'. This has recently been very much the case with the furore over raw sewage 'dumping' into rivers and coastal areas.

Over recent weeks the media in general, including print, broadcast and internet outlets have picked up on some Environment Agency numbers that indicate that some 400,000 pollution incidents have occurred throughout the UK in 2020. >



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Dirty sewage
from a pipe.



Foul waste entering the natural
water system.

What many of the recent reports do not show however is that untreated effluent, including human waste, wet wipes and condoms as well as household bleaches, detergents etc., were released into waterways and coastal areas for more than three million hours in 2020.

Commentators have highlighted that the main function of OFWAT over the past 30 years has in essence been consumer protection in terms of price rise moderation given the monopolistic nature of the water industry set-up, whilst still enabling water companies to invest to a significant extent and remain commercially attractive to investors. With this in mind there are various other factors that may not also be apparent.

The water sector was in essence privatised so that funds could be raised to complete necessary works over time against future income, which given the 'captive audience' of Water Companies was pretty much a guaranteed income.

However, as private companies those in charge also had to ensure that returns for investors were attractive enough to maintain share prices and provide the expected levels of dividends, otherwise, no investors, no company. So, profits were also a driving force.

The industry was then hit by a series of largely political requirements that drove funding into certain quite specific areas which were directed by regulatory requirements from OFWAT at the time, targets which the Water Companies had to meet. >

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Ecological problems are caused by discharge of raw waste.

This regulatory requirement, over the 30 years of privatisation, has generally led to an attitude of more aligned with meeting set targets rather than achieving the infrastructure replacement and rebuild that was actually necessary, hence the sewer network underspend. This now means that a sewer network that at the time of privatisation, had an expected life of around 200 to 400 years, now has a life expectancy of what is now claimed to be 1,000+ years. At the same time there has been around a 20% increase in UK population since 1990, which will have added significantly to current foul flows into the existing sewer network as compared with 30 years ago.

WHY THE SEWER SPEND SHORTFALL?

In the early years of privatisation, European Clean Water Directives required improvement to coastal bathing waters and beaches, due largely to the amount of raw sewage that was being allowed to flow directly into water courses and coastal areas, causing pollution problems. At this time, it may have been more sensible to look at the failing UK sewer network and upgrade this as it was a major contributor to the bathing water problem, alongside ageing wastewater treatment plants which were being overwhelmed by the increasing flow rates from failing sewers. However, the time frame required for the improvements in the Directives meant that this would not achieve the desired political outcome. So, resources were spent on new-build treatment plants or existing treatment plant upgrades to provide the required clean effluent outcomes and cleaner beaches. The sewer network problems were side-lined but the cleaner beaches requirement was achieved, if at a very >

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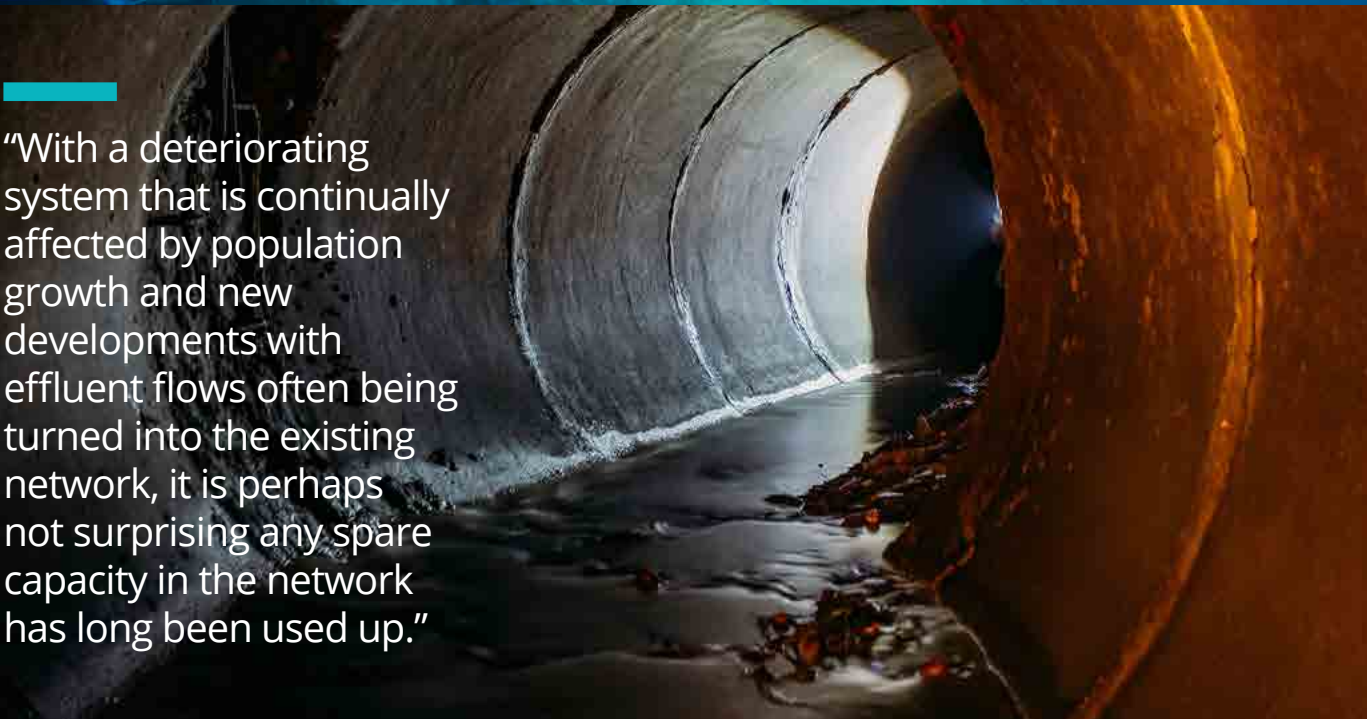


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“With a deteriorating system that is continually affected by population growth and new developments with effluent flows often being turned into the existing network, it is perhaps not surprising any spare capacity in the network has long been used up.”

Many of the UK's sewers are aging and in need of significant repair, replacement or upsizing.

significant cost. To some extent the investment at that time might be viewed as something of a costly ‘sticking plaster’.

At about this time also, there were instances of drought across parts of the country that highlighted the water supply leakage problem with some +30%, if not more, treated water losses in the water distribution system. The political wind not surprisingly moved from focusing on cleaner beaches and bathing water (the job having supposedly been done with blue flags being achieved countrywide), to reducing drinking water leakage, an aspect of the industry that is still being addressed today with on average a figure of 20% losses currently being quoted for the sector.

There are those that have tried to lay the blame for failures on the Water Company employees, but the workforce can only work with the budgets they are given.

With a deteriorating system that is continually affected by population growth and new developments with effluent flows often being turned into the existing network, it is perhaps not surprising any spare capacity in the network has long been used up.

There has also been accusation that there has been some complex financial engineering to maintain investor viability rather than network spend but this perhaps is a tale for another day.

CHANGING CHALLENGES

Now with climate change at last being recognised as the present and future problem for humanity and the weather pattern changes that are already being experienced because of it, the political wind is moving towards wastewater pollution. Just a minute, have we not been here before? >

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Changing weather patterns will mean potentially a lot more flooding.



Yes, there has been a major and long-term shortfall in investment by Water Companies towards sewers and pollution prevention and now this has to be addressed. However, to think that the lack of investment has been a deliberate unilateral action by the Water Companies is something of a misconception. There have been accusations that the attitude of 'if it ain't broke don't fix it' exists and this has not been helped by the transfer of private sewers into water company hands in 2011. Prior to and subsequent to this, knowledge of what water companies actually own and the state of its repair had and remains limited in some cases and where works on the sewer networks have been undertaken much of it has been more reactive than proactive.

The Water Companies have in truth worked on the problems within the pricing and investment regimes allowed them by OFWAT over the past 30 years, which has not left much remaining for areas like the sewer network. These regimes however have been significantly driven by the political climate of the times and other areas have not always been in the Companies' powers to address as they have been required by the regulator and Government level directives (irrespective of the political colour of the day) to address specific problems, maybe not in a way that might have been the best engineering option but which have, by circumstances and political necessity, been imposed on them. Therefore, the drivers behind the lack of investment in the sewer sector have probably been as much political as they have practical.

It also does not however appear that the lessons have, as yet been fully learned. As this piece is being written the UK Government passed a Bill that would allow Water Companies to continue to dump raw sewage into rivers and this despite amendments from The House of Lords to prevent it. The Environment Bill amendments would have placed legal duties on Water Companies to reduce such discharges. According to reports this was passed because "MPs say that safeguards already exist and that new measures would cost billions". >

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Left: Outflow pipe.



Right: Modern water waste water treatment plant.

Once again, we see the financial driver seemingly outweighing the practical and environmental drivers. However, in the ensuing days, with public pressure, social media fury and potential rebellion amongst some MPs, there was a change of mind and a further announcement that the Water Companies would be expected to show, over the next five-year price review period, a 'progressive reduction' in pollution incidents of this kind, although what level of progression and how it was to be achieved has yet to be mentioned.

Climate change has also brought the wastewater networks back into focus as extreme weather events appear to be increasing not just in the UK but globally. Therefore, the next OFWAT Price Review must look significantly at taking the changing expectations of rainfall and population growth and public opinion into account so as to correctly adjust spending on the sewer network. But it must be borne in mind that 'Rome was not built in a day' and that to make up the shortfall that has happened over the past 30 years and more will take time. Time some would say we do not have.

THE WAY FORWARD?

To date, Water Companies have spent billions on works across the water and wastewater networks, even though recent reports do not seem to have mentioned much of this. But, to do the work now required will take many billions more. This cannot simply be placed on consumer shoulders but by the same token cannot be placed totally on the Water Companies either, they still have to remain viable to investors, even though they have asked to have this new regulatory requirement placed on them to solve the raw sewage dumping problems. >

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Despite modern treatment plants raw sewage still flows into water courses and the sea at times of heavy rainfall.



It must be remembered that even if Net Zero is achieved completely across the globe by 2030, 2040 or 2070, extreme weather events will continue for some significant time to come and are likely to get worse before they better. Net Zero in truth is the starting point to achieve reversal in extreme weather patterns not an end point! So, any UK sewer network improvements will have to have vastly increased 'storage' capacity to handle the outpourings from these events. It will not simply be a case of improve a bit on what is already there.

From a practical point of view this should create significant workload for the trenchless technology sector as much of the works could be undertaken at minimal environmental impact and at lower cost over a shorter timeframe than with more traditional techniques.

However, National finances are at best in disarray post-pandemic and workforces are suffering post-Brexit in some areas, so it may be that the UK Government will need to come up with some inventive ways to support the water industry over a considerable timeframe in an effort to ensure the necessary works are completed to the level required. There will also be a need across the water sector to highlight the fact that to invest in the necessary infrastructure there will likely be a reduction in investor returns over a number of years if not decades. So, any investment in the UK Water sector will be a long-term commitment. Remember however that Government managed to support the Banking industry through some of its worst times, perhaps now the focus must shift to the water industry in similar fashion. However, there will need to be a significant shift in the political wind before this will happen.

There also needs to be an understanding that the Water Companies and their skilled engineers must be allowed to solve the raw sewage dumping problem by working on the right parts of the network and not be made to use another 'sticking plaster' option that simply satisfies pressure groups and public opinion today. Any other option would mean a system that will not be able to handle the future flows potentially coming from extreme weather events. Without this move there will likely be falling living standards, higher costs for things like insurance, if it is available at all, and in the public's perception the idea that renationalisation might be the better option.

With COP26 now finished and agreements made, there is the suggestion from some analysts that whilst these commitments mean that '1.5 is still alive' as a global temperature rise target, practically if all commitments are fully met the rise is more likely to be 1.8°C. Others have however noted that given the previous success rates of commitment versus effective action, the realistic temperature rise could be as high as 2.4°C. The potential weather changes that would bring really could mean that serious problems for any sewer system over the next 50 to 100 years unless it is addressed starting now!

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REGULATOR AND UTILITIES EXPLORE OPEN DATA OPPORTUNITIES



Anita Payne, director of insights and impact, Ofwat.

British Water welcomed Anita Payne, Director of Insights and Impact at industry regulator Ofwat, as keynote speaker at its 2021 data conference.

The role open data could play in the transformation of water was at the centre of discussions across the UK sector and the trade association was keen to move the dialogue forward. UK utilities also took to the conference stage on 25 November 2021 in London to present their open data strategies.

A new discussion paper from OFWAT, H2Open, intended to supercharge a public discussion about the benefits of open data and how it could be used to help address some of the challenges the water sector faces.

"I was excited to speak about open data at the British Water conference," said Payne. "Open data can enable companies to deliver better outcomes for customers, communities and the environment. We see open data as central to driving efficiencies, catalysing innovation and increasing transparency." >

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“Digitalisation of the water sector has already had a positive impact on the way we work and deliver for society and the environment.”

Ofwat describes open data as ‘making data freely available to everyone to access, use and share, unless there’s a really strong justification for not doing so’. The H2Open document says the opening of data could transform water and wastewater by increasing transparency and efficiency, enhancing customer experience and stimulating innovation, helping the sector adapt to climate change, protect the environment and meet customer expectations.

Following the keynote, the event saw Thames Water, Anglian Water, Northumbrian Water and MOSL present their open data strategies. There was also a discussion on what changes in procurement, business models and innovation are needed to match the fast-changing pace of data developments. The conference concluded with a new talent competition for start-ups in collaboration with the Hartree Centre and IBM.

British Water chief executive Lila Thompson said: “Digitalisation of the water sector has already had a positive impact on the way we work and deliver for society and the environment. However, as detailed in OFWAT’s H2Open paper, there are so many more benefits to be gained by embracing open data, including the sparking of innovation. This is vital as we adapt to climate change and aim to achieve net zero carbon by 2030. Open data collaboration may require some bold changes to internal process and policy but my conversations with utilities and the supply chain confirm there is a willingness to grasp the opportunities to enable the sector to move forward at pace. Our data conference provided an excellent face-to-face forum for sharing knowledge and results in theory, methodology and applications of open data, smart collaboration and data analytics techniques. I am hopeful that these conversations will be the catalyst for tangible progress that is now expected.”

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SLIMDRIL SERVING THE DRILL INDUSTRY FOR OVER 20 YEARS



The Slimdril team.

SlimDril started supplying services and equipment to HDD contractors worldwide in 1998. Since 2018 SlimDril has seen some significant changes with new owners, new premises, new products, new delivery vehicles and a newly appointed and customer focused team.

The company's new 900 m² warehouse and 1,200 m² yard in Lowestoft, UK, with daily transport links to Aberdeen to service the oilfield sector, SlimDril is well positioned to service HDD contractors and trenchless installations worldwide.

The introduction of MuDD-Dry into the industry that solidifies liquid waste has helped drilling contractors to dispose of bentonites and liquid wastes more effectively and cost effectively. MuDD-Dry is a natural super absorbent polymer that absorbs up to 350 times its own volume. Therefore 1% by weight is required to treat pure water. So, a 25 kg sack will solidify 2.5 m³, however with drilling waste there are generally large amounts of solid in the Bentonite so as little as 0.25% of MuDD-Dry has been required. So, a 25 kg bag has treated up to 10 m³. This puts the trenchless contractor in control of its own waste management and reduces the requirement for tankers and downtime waiting for external contractors to come in. The product is safe and even has the endorsement of the Environment Agency. >

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Left: Breaking out a drill rod connection at SlimDril up to 100,000 ft lbs and 30" diameter.

Right: Magnetic particle inspection of Drill connections to API specifications.

In order to gain the best from MuDD-Dry, SlimDril has developed and built a mixing bucket that fits to an excavator with an internal auger to provide the most versatile mixing.

Recently, SlimDril started an inspection side to the company where it offers the service of crack testing and inspecting drill rods and down-hole tools to ensure they are up to standard. This practice is commonplace in the oil and gas vertical drilling industry and tooling failures are costly and create a lot of downtime. Drill pipe and downhole tooling do wear and are subjected to radial and torsional stresses down hole, so it is regarded as necessary by the API standards to regularly inspect drill pipe and down hole connections to prevent failures. SlimDril can come to site and do inspections or tools can be sent to the company, which also offers a repair service and reworks for threads that fail inspection. All tools inspected are certified and documented to API standards by the company's in-house ASNT qualified inspectors, with over 30 years of experience.

SlimDril assists all drilling contractors with machines from 10t to 450t capacity with Mud motors, wireline guidance services, rock reamers, fly cutters, barrel reamers, centralisers, weeper subs, crossovers, drill pipe, non-magnetics, swivels, towing heads, pipe wrenches, chain tongs and drill pipe, basically all that is needed is for the contractor is to supply the rig!

In order to keep up with the demands of HDD and trenchless contractors, SlimDril operates a fleet of its own state of the art Euro 6 compliant delivery vehicles and have extensive contacts for worldwide shipping and customs clearance.

SlimDril staff have over 100 years of combined HDD experience, with several having degrees in engineering, which enables them to discuss all aspects of any project giving advice on guidance services, rock drilling and down hole tooling requirements for all HDD projects. The company's versatility and extensive stock allows it to >

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Above: SlimDril stock or reamers and equipment at their Lowestoft facility.

Below: Fitting crossovers to a rock Reamer ready to go to site.

react quickly to customer demands, which means staff often find themselves loading out tools and equipment in the evenings and weekends to keep sites running, which is all part of the service.

SlimDril produces hard rock reamers up to 64 in (1,625 mm) diameter along with an exciting range of heavy-duty rock reamers available for all sizes of rigs to suit all budgets and ground formations. The company's engineers will plan down hole assembly designs to make sure the client is not missing any crossovers or anything.

SlimDril supports Brownline in the UK and Ireland with the most accurate steering tool in the world, the Drill guide gyro from Brownline.

How the Drillguide Gyro works

The Gyro steering tool is the basis Drillguide steering services. The tool is mounted behind the jetting assembly/mud motor. The downhole unit measures the position of the steering tool in real time ('Measurement-while-drilling'). This information is combined with the drilled length to calculate the displacement through SlimDril's proprietary algorithms. With this, the drill head can be accurately steered over the envisaged bore path.

It is claimed to be the most advanced steering tool with over 18,000 HDD guidance projects completed. The innovative Gyro steering tool provides a proven accuracy of 0.01° in the pitch plane and 0.04° in the azimuth plane, irrespective of the circumstances. The Gyro steering tool is not dependent on magnetic fields or beacons and hence has a much shorter setup time. This saves customers time and resources.

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WESTRADE ANNOUNCES NO-DIG LIVE 2022

Westrade is delighted to announce the launch of No-Dig Live 2022 which will take place between 13-15 September at the East of England Showground.



The decision to hold the event next year follows overwhelming support from both exhibitors and visitors who were keen to make up for missing the scheduled event in 2020 due to the pandemic. No-Dig Live will once again be supported by the United Kingdom Society for Trenchless Technology (UKSTT) – a registered charity involved in the development and promotion of trenchless technologies – and feature their annual gala dinner and awards during the exhibition.

Commenting on the launch, Westrade's Managing Director, Paul Harwood, said: "We're excited to have been able to respond to market demand and give both exhibitors and visitors the event they wanted. Despite the obvious challenges, 2021 was a record year and we have plans for even more fantastic new content and innovation next September. We're confident this will be another must attend event for the UK and international trenchless sectors."

After the success of UKSTT's conference programme and hugely memorable Gala Dinner & Awards Ceremony, held during No-Dig Live and organised by Westrade Group, Chair Dawn Greig said, "We are delighted that the show will return in 2022 and look forward to working closely with Westrade on what promises to be another amazing and jam-packed event!"

Following the 2022 event, No-Dig Live will not return until 2024 maintaining its biennial staging.

For more information or to book a stand please contact Trevor Dorrell at tdorrell@westrade.co.uk

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STEVE VICK INTERNATIONAL CELEBRATES 40 YEARS

Steve Vick International (SVI), based in Bradford-on-Avon, Wiltshire, UK is celebrating its 40th anniversary in 2021 as a leading manufacturer of innovative technologies for use in the utilities industry with the aim of reducing the number of excavations needed to carry out repairs and renovations. The family owned and operated company was founded in 1981 by the current Chairman, Steve Vick.

Over the past 40 years Steve Vick International has grown from a fledgling business which started at Steve's home in Norton St Phillip, to an international concern, exporting to over twenty different countries. SVI has also opened four depots across the UK.

The company has built a tradition of excellence in providing the gas, water and nuclear industries with highly innovative products and services that can deliver significant benefits, from reducing disruption, lowering costs, lessening the environmental impact and improving health and safety.

Initially operating from Norton St Phillip, the company quickly outgrew its premises and moved to Bath in 1989. Whilst there, the company continued to expand, and in 2014 purchased part of Treenwood Industrial Estate in Bradford-on-Avon.

SVI currently employs over 80 staff, many of whom live locally. This is a huge increase from the initial team of three who started the business back in the eighties. >

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From top left: Clare Harrison & Crock Harrison, Managing Director

Frances Goodall, David Goodall & Angela Vick

Caspar Vick & Chris Liddane

Steve Vick, Chairman

Many staff members have been with the company for a long time, including the company's current Managing Director, Crock Harrison, who started as Steve's apprentice back in 1981. These long serving staff members are a huge benefit as they bring a wealth of knowledge and experience to the different industries the company operates in.

From the early days, SVI has always used local suppliers where possible. This ethos continues today with many of its suppliers falling within a 30-mile radius of the main office.

Steve Vick, Chairman of Steve Vick International commented: "I am delighted to see Steve Vick International celebrate its 40th anniversary. It has been a great opportunity to reflect on how far we have come as a company. We feel very fortunate to have been able to grow the business on our doorstep and support the local area."

Over the past forty years SVI has supported local charities too, including Dorothy House Hospice, Motivation and the Wiltshire Music Centre.

The company celebrated its 40th Anniversary by holding a party for staff and family. Organised by several Steve Vick employees, the party was held in a marquee which was decorated by SVI's inhouse sewing team. There were entertainers for young children, teenage games for older children and a live band and cocktail bar for adults. Steve Vick, Chairman of SVI, gave an after-dinner speech in which he thanked his family for their endless support and all the staff for their contribution to the success of the company over the years. He also talked about looking forward to the next generation of family and colleagues who will take Steve Vick International on to a bright future.

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CELEBRATING 85 YEARS OF INNOVATION WITH INTERFLOW

Above: Geoff Weaver.

Below: Installing Spiral Lining.

Leading pipeline infrastructure company, Interflow, is celebrating its 85th year of uplifting communities through the provision of world-class water and wastewater services. As the company approaches this incredible milestone, its people are pausing to reflect on their journey that has been characterised by innovation, agility, and a steadfast dedication to solving customers' problems.

Interflow is Australia and New Zealand's leading provider of trenchless pipeline infrastructure solutions. Throughout its vibrant history, the organisation has pioneered technologies and renewal methods that have received national and international recognition for their industry-leading status.

Innovation lies at the core of Interflow's service offering. From proactive asset management to emergency repairs, the company is dedicated to developing bespoke solutions that penetrate to the heart of its customers' needs: robust, sustainable pipeline infrastructure that will service the growing needs of the community for generations to come. >



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“My grandfather’s ethos was simple. He was committed to challenging the status quo and finding new and better ways to do things,” said Geoff. “He strove to ensure that every action taken by the company, both in the way it treated its people and customers, reflected the core values of Honesty, Reliability, Competence and Respect.”

This is something that has been characteristic of the organisation since its establishment. From day one, the organisation’s founder, Harold ‘Bill’ Weaver, was committed to ‘challenging the status quo’.

In 1936, Bill set out on a mission to support the growth of budding communities along the east coast of Australia through the construction of water, sewerage and drainage systems for developing towns. As a result of Bill’s ability to identify gaps in the market and develop services to meet the needs of his customers, the company was able to expand its operations across the country.

[A generation-led, family-owned business](#)

Over the years, the leadership of Interflow has been handed down from father to son, for three generations.

The organisation’s current Managing Director, Geoff Weaver, has been responsible for expanding Interflow’s operations across Australia, establishing international operations in New Zealand, negotiating two twenty-year exclusive Australasian licenses for spirally wound rehabilitation products with long-standing partner, Sekisui Rib Loc, and has taken a leading role in the development of trenchless technology.

Today, at 85-years young, Interflow has become Australia’s largest provider of trenchless pipeline solutions, earning the enviable track record of being the preferred delivery partner within its market.

Geoff shares how the company’s ongoing success has been guided by the steadfast core values laid out by his grandfather.

“My grandfather’s ethos was simple. He was committed to challenging the status quo and finding new and better ways to do things,” said Geoff.

“He strove to ensure that every action taken by the company, both in the way it treated its people and customers, reflected the core values of Honesty, Reliability, Competence and Respect.”

Geoff says that in addition to these core values, Interflow’s success should be attributed to the commitment and dedication of its people.

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Suction Excavation, has, over the past 30 years become widely accepted as one of the safest methods of exposing existing buried pipes, ducts and cables on construction, civils' and utility sites across Europe, the UK and Ireland.

MTS Suction Systems UK Ltd, a subsidiary of MTS Mobile Tiefbau Saugsysteme GmbH has, since its establishment in 2014 become what is claimed to be the UK's No1 provider of the DINO range of 26 and 32 t chassis-mounted, twin fan suction excavators. Providing equipment to the leading companies operating the technology, MTS also provides a wide range of equipment on multiple chassis types ranging from 16 t to 32 t in Twin, Triple and Quad fan variants with a full range of hydraulic 'POWER' hose booms to meet clients' ever-growing requirements.

As well as the standard DINO range, MTS also leads the way in developing market leading city-focused rigs featuring small footprints, manoeuvrability and high performance to enable the techniques use to be increased in urban areas and confined sites. This range includes the recently launched DINOCITY with rear tip and centrally-mounted EVO Power hose

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City centre works with the ECONIC variant ticking all the boxes for latest driver visibility requirements.

boom, and for those requiring more capacity, the DINO ECONIC. Both units are ideal for city centre works with the ECONIC variant ticking all the boxes for latest driver visibility requirements.

MTS continues with a policy of product development and welcome opportunities to work directly with clients to design and develop DINO equipment for their specific requirements. Examples of this can be seen in the MTS DINO Core & Vac systems with NGN and SGN for work in the gas industry, as well as the DINO4.5 Tracked Units with Pier UK for cross country works. For the rail industry, MTS has designed and built units in RRV (road rail vehicle) based on 6x4 road chassis for European and UK operations, as well as tracked units with driven rail wheels for use on European rail networks. Most recently, for the rail industry, MTS worked with Force One in the UK to produce a Quad fan power head mounted in a purpose made container for use with the company's own design ballast removal system.

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THREE CHALLENGING MICROTUNNELS SUCCESSFULLY COMPLETED



Excavating the exit shaft for drive 1.

The TransMed and GreenStream pipeline project, currently under construction, will transport gas from Algeria and Libya to Europe, via Sicily. As part of the project, a new gas pipeline was required to be installed using microtunnelling techniques in the Sicilian town of Nicosia, Italy.

To maximise the accuracy of the drive it was decided to utilise VMT's SLS-Microtunnelling LT as the navigation system for the Herrenknecht-manufactured machine. The contractor for the works was Ing. La Falce SRL, with this project being the first time this contractor had utilised VMT navigation equipment.

With all three drives on the project utilising VMT guidance systems, the third and final drive of 308 m length broke through on 16 September 2021. The first drive of 375 m length commenced on 1 May 2021, with breakthrough successfully completed just 27 days later on 28 May 2021. The second drive at 581 m length commenced on 14 June 2021, breaking through on 22 July 2021. >

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“Tunnelling was made particularly difficult by the steep inclination and hard rock surface.”



The microtunnel launch site for drive 2.

Challenging Route

The drive profile of the 1.6 m diameter pipeline had a challenging vertical curve of radius 2,000 m, with Drives 1 and 2 having steep inclines at the reception shaft end of the drives (+249 mm/m on Drive 1, +213 mm/m on Drive 2). Tunnelling was made particularly difficult by the steep inclination and hard rock surface.

An environment of hard rock, sometimes combined with other materials, means that the tunnelling machines operate under high pressure and high contact force conditions. Steep inclinations cause the squeezing of the pipes between two forces in that whilst the machine attempts to push pipes up from the start shaft, gravity pulls them back down. In this case, this combination of conditions generated micro-stresses in different parts of the pipe string which were occasionally released. The resulting vibrations caused drastic and uneven back-and-forth movement of the pipe string, with the jackhammer-like movements increasing with each metre of advance of the drives. To address these conditions, reinforcement was made on the TCA bracket. Although the VMT system still faced significant vibrations, the stability of the system was greatly improved, and excavation was able to continue as planned. >

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Left: Marking the exit position of the microtunneller for drive 1.

Right: Accurate surveying was a must for the success of the drives.



In addition, advance surveying works were required to get a precise location of the pipe axis in elevation. Here, additional preparation and accurate flow during the surveys contributed to the successful system performance.

Drive 3 presented its own challenges, demonstrating the variability that can often be experienced in underground conditions. Whereas the ground material of the first half of the drive consisted mostly of quartz, an abrasive material which can grind on the cutting wheel, the second half of the drive consisted mostly of clay, causing the periodic stalling of the machine.

There were congratulations all-round for the VMT's customer, partners and the project engineers involved in the successful completion of these challenging routes.

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BARHALE COMPLETES PRE-CONSTRUCTION WORKS AT EDMONTON

Positioning the microtunnellers prior to commencing the drives on NLHPP.

Barhale's southern team has successfully completed enabling works at the North London Heat and Power Project (NLHPP) on behalf of North London Waste Authority (NLWA).

The works, which are key to the commencement of construction of a replacement energy recovery facility at the Edmonton EcoPark, include, tunnelling works for the installation of a 1,200 mm diameter sewer along a stretch of approximately 117 m to divert the Chingford sewer and the installation of a 1,200 mm diameter sewer along a stretch of approximately 204 m to divert the Angel sewer. It also included the installation of drive shafts at the confluence of the two sewers; installation of reception shafts; and connection of the new sewers to the existing network. >

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Iseki TBMs Artemis and Freya at NLHPP.



“During the design phase, the team proposed to carry out a set of simultaneous pipe jacks from the main shaft. This was a bold and innovative solution that yielded both time and financial savings to the original programme.”

During the design phase, the team proposed to carry out a set of simultaneous pipe jacks from the main shaft. This was a bold and innovative solution that yielded both time and financial savings to the original programme. On successful completion of the works, it is estimated that the team saved around 50,000 l of water and around 3,000 l of diesel with a calculated carbon footprint reduction based just in the diesel savings of 9,121 kg CO₂e (Carbon dioxide equivalent).

Project Manager, Jacques Deneys said the team was proud of being a part of such a significant project and on the completion of the challenging programme within a tight schedule. “It has been great to be part of this hugely important project for London which will set new standards for waste management and sustainability,” he said. “Much credit must go to the team for the hard work, engineering know-how and innovation they contributed, not least in the completion of the double simultaneous pipe jacks. Their application made sure that a tricky construction bottleneck was cleared on schedule and allows the whole project to remain on track.”

The team was also pleased to work closely with the client to provide 12 days training to 11 job seekers who had been unemployed for over 6 months; some in long term unemployment due to the Covid pandemic. Furthermore, Barhale donated waders to a local charity group in support of their efforts to clean out the local stream, Dagenham Brook that runs through the heart of the community.

Customer Experience Manager, Motunrayo Adesope, said: “As a business we are always keen to give back to the communities we work in and to provide lasting community benefits.”

When completed, the replacement facility will have the capacity to divert up to 700,000 t of non-recyclable waste from landfill each year from the seven north London boroughs it serves. It will generate around 70 Megawatts of electricity, enough to power around 127,000 homes.

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EUROPE'S FIRST ELECTRIC AUGER BORING OPTION

The American Augers 36/42-600E electric auger borer on site.

The demand for electric vehicles is not limited to passenger vehicles. The drive to be more environmentally-friendly has reached the underground construction industry, too. Especially in Europe, where regulations aimed at reducing a crew's carbon footprint are rising, and the public is valuing, more than ever, underground construction crews who look for green options.

One company that has been a pioneer in green underground construction options is the Swedish company Riggtech. A versatile company that works on a wide range of underground construction jobs, from horizontal directional drilling to auger boring, Riggtech has been a dominant player in the Swedish market for 10 years, and strives to use the most modern, environmentally-friendly machines on the market.

That is why the company recently purchased an American Augers 36/42-600E, making Riggtech the first company in Europe and the only underground construction company in the area with an electric auger boring machine. >

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The electric auger borer installing a casing pipe.



"It is very important to us and to our customers to be as environmentally-friendly as possible, and so we always look for machines that allow us to accomplish that," said Anders Olsson, owner and business manager of Riggtech. "When American Augers showed us its electric auger boring machine, the decision to invest in that machine was a simple one."

As environmental standards and regulations on noise pollution continue to grow, the 36/42-600E allows Riggtech to bid on jobs that no other company can.

"The electric auger boring machine is a differentiator for us. The public really appreciates that we offer an environmentally-friendly option, and many cities are now requiring crews to meet carbon-footprint or noise pollution standards. Since we are the only company that owns an electric auger boring machine, we are the only company that can meet many of those regulations," Olsson said.

The 36/42-600E not only allows Riggtech to win bids, though. The machine's durability, remote-control operation and sound-reduced operation help Riggtech to quickly and quietly complete some of the most challenging jobs in the area. >

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Trenchless auger boring minimises local disruption and environmental impact.

Gothenburg Central Station Job

Riggtech recently used the 36/42-600E on a storm sewer installation in Gothenburg, Sweden's Central Station. The project was being led by NCC Construction, which was under contract to install an entire storm sewer in the central area of town. Riggtech was hired to complete a 36 m bore through the Central Station.

One of the biggest challenges on this job was keeping the noise down. Local restrictions mandated that construction crews keep their noise level at 98dBA. This noise restriction was in place partly because of the population level near of the jobsite, with over 20,000 people per hour travelling through the Central Station.

NCC Construction reached out to Riggtech because it had heard about its electric auger boring machine and its ability to complete bores while staying below decibel regulations.

Since an electric auger boring machine does not run on diesel fuel, it was powered in this case by connecting to a local electric grid, it is significantly quieter than a standard auger boring machine. This meant that Riggtech could complete the job while still easily meeting Gothenburg's regulations on noise.

The job did not just require Riggtech to keep the noise down, though. Due to the busy nature of the jobsite, NCC Construction had only 14 days to complete the job. This meant that Riggtech had only three days to complete its part. This time constraint placed efficiency and uptime at a premium. >

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“Overall, people want to be more environmentally friendly and they appreciate the reduction of noise. Cities are looking to improve and find the solutions of the future.”

Another aspect of 36/42-600E that helped on the Gothenburg job was its remote-control feature. “The ability to stand away from the machine and operate it protects my crew and gives them more visibility into how the machine is functioning, which can be difficult to see while standing on a machine and operating it.” Olsson said. “By standing off to the side, the operator can see if the auger boring machine is stable and centred or if it needs to be adjusted.”

Well-Rounded Equipment Arsenal

Due to the Gothenburg Central Station being a highly populated and space-restricted area, Riggtech needed to employ equipment solutions beyond just auger boring to complete the installation.

One section of the bore path was underneath a road where Riggtech's crew had limited visibility. To ensure that the bore would be able to pass this section without any disturbance, Riggtech's crew decided to do an exploratory HDD bore with a Ditch Witch AT40 All-Terrain Drill.

Unfortunately, the exploratory shot was complicated. First, it needed to be launched from 100 m away from the road to avoid an unacceptable road closure. Secondly, the ground contained boulders, tightly packed gravel and eventually clay. With help from the AT40, Riggtech was able to drill through these problem conditions and find the soil conditions they were looking for.

Another difficulty the Riggtech crew encountered was an underground environment already congested with existing utilities. To track its drill head and bores through the crowded underground area and keep its crew safe, Riggtech used a TK Recon HDD guidance system from Subsite Electronics.

The Solution of the Future

With the help of American Augers, Ditch Witch and Subsite equipment, Riggtech was able to complete the Gothenburg job on time, on budget and with a limited carbon footprint. Furthermore, Olsson is confident that there will be many more jobs like this one in the future, especially for its electric auger boring machine.

“Overall, people want to be more environmentally friendly and they appreciate the reduction of noise. Cities are looking to improve and find the solutions of the future.” Olsson said. “Well now know this solution has been found, and it is in Riggtech's fleet.”

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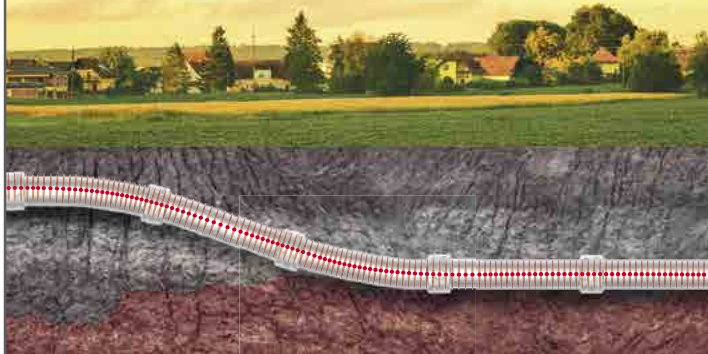
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DENLOK EXPRESS RISES TO THE CHALLENGE

Allen Watson Ltd (AWL), a company providing trenchless installation services to groundwork contractors and building firms across the UK, was the contractor for the recent foul sewer installation project at a Redrow Housing Development in Kent, UK.



Installing the 225 mm diameter, drainage/foul sewer system under Sutton Road in Maidstone, Kent, UK.

The project required the construction of a 225 mm diameter, trenchless installation for a drainage/foul sewer system under Sutton Road in Maidstone.

The project was achieved by using DN225 Denlok clay jacking pipe provided by Naylor Drainage Ltd, installed using an AWL GAB.85v guided auger bore machine with optical electronic navigation.

Naylor Denlok is a specially developed vitrified clay pipe system, available ex-stock, to meet the requirements of pipe installation by trenchless construction methods, such as:

- Microtunnelling
- Guided auger boring
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- Slip lining

Simon Marsh, the project manager at Allen Watson, commented "There was extremely limited site space on the project and AWL was supported by the Naylor Drainage new lead time protocol of direct to site delivery within 5 working days. This facilitated the delivery of pipes for each individual drive, keeping the site footprint to a minimum."

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CONQUERING A CHALLENGING UNDERGROUND PIPELINE PROJECT



Crude oil is often called “black gold” thanks to the combination of global demand, scarcity around the globe and the ongoing rush to get it out of the ground as fast as possible. Worldwide, there is a constant stream of this rich liquid flowing from wells through pipelines and to the consumer. To remain one of the larger producers and suppliers of oil, Canada relies on its oil companies to efficiently deploy pipelines while minimising environmental disruption. >

A Ditch Witch
JT100 HDD rig.

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The machine operator has an excellent control position on the JT 100.

“In northern Canada, the ground conditions can be difficult, and to efficiently install oil pipelines we need powerful HDDs that can conquer the terrain while still optimising steering and all other machine functions.”

As a 15-year veteran of horizontal directional drilling (HDD), Fast Forward HDD has spent more than 90% of its work hours on oil-pipeline jobsites. Over the years, the company has earned its stable growth by providing exceptional underground construction service. Furthermore, with a dedication to consistently exceeding customer expectations, it is always on the search for advanced technology to get challenging jobs done more efficiently.

Ditch Witch drills have been part of the Fast Forward HDD equipment fleet since the beginning. Each machine is replaced every few years to keep up with the latest technology, and currently the company's fleet includes five Ditch Witch JT100 drills.

Difficult Conditions

“In northern Canada, the ground conditions can be difficult, and to efficiently install oil pipelines we need powerful HDDs that can conquer the terrain while still optimising steering and all other machine functions.” said Rick Grass, drill supervisor with Fast Forward HDD. “As HDD technology becomes more complex, that power is often paired with electronic systems that make some machines difficult to service. Ditch Witch earned a place in our fleet by providing dependable, mechanically-driven systems that are easy to service and use.”

On one recent project in the hills of northern Alberta, the company had an opportunity to put the Ditch Witch equipment to the grindstone when deploying nearly 2,900 m of underground pipeline.

A Canadian-based integrated energy company found two of its wells in northwest Alberta had reserves beyond what was expected. The company needed new pipelines to integrate the two wells into its existing network so it could efficiently move the oil out of the region.

Due to its exceptional reputation in the oil and gas industry throughout Canada, Fast Forward HDD was engaged to help with the project. First, before breaking ground, the company reviewed the jobsite and a few specific conditions stood out.

The crew would be working in a very steep valley, with severe drops in elevation. Above ground, rivers obstructed the landscape, and trees hampered visibility. Below ground, 30 m of clay rested on the bedrock along with a multitude of other mixed conditions.

“Even after hitting bedrock, the ground still presented challenges because there was a little of everything down there including: sandstone, coal, shale and other mixed rock.” said Rick. “We knew we needed HDDs that could handle long bores in these diverse conditions, and that could operate fast and effectively, even in some hard rock.” >

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The operator station on the JT100.

To tackle the vast and tough conditions, two new Ditch Witch JT100 drills were selected for the job. While one of the units had only 150 operating hours, this job was the first for the other machine.

The Right Drills for the Job

Fast Forward HDD planned to deploy the 2,900 m of pipeline using ten bores. Because of the terrain and setup location, some bores were as short as 200 m, whereas the longest included two 650 m bores, both in a portion of the jobsite with very mixed underground conditions.

"Thanks to the 100,000 lb (445 kN) of pullback and 12,000 ftlb (16,300 Nm) of torque, the Ditch Witch drills are built for this type of difficult terrain, and for the long bores," said Rick. "Operators could easily control the machine and effectively respond to ground conditions as they changed."

The machine's raw power is what helped Fast Forward HDD effectively bore and manoeuvre in the mixed underground conditions. When moving from soft formations to hard rock, operators monitored the gauges, pressures, and returns as indicators to detect when adjustments to drilling mud and HDD tooling were needed to be most productive.

In a valley with drastic changes in elevation, it was also important to know precisely where the drill was underground. Even though the two JT100 drills operated simultaneously, one was started a day earlier. By having a 30 to 40m lead, the Fast Forward HDD crews reduced the chance that the trackers would pick up a wrong signal, or that excessive underground vibration would impact the integrity of the bores. >

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“The drill simplifies the training process and operability and provides a comfortable environment for our operators.”



On site in Canada.

After less than three weeks of drilling, product was pulled through the two 650 m bores, meeting the company's expected timeline. The crew was able to operate efficiently and consistently, in part, because of the JT100's power and its controls.

“The drill simplifies the training process and operability and provides a comfortable environment for our operators.” added Rick.

With the longer bores wrapped up, the Fast Forward HDD crew could work to complete the final portions of the jobsite. The jobsite conditions remained a challenge, but the Ditch Witch drills provided Fast Forward HDD the ability to effectively tackle whatever they met underground.

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1,000 TRENCHLESS HOUSE CONNECTIONS FOR COCHABAMBA

A Tracto impact hammer in operation in Cochabamba.

With around 631,000 inhabitants, Cochabamba is Bolivia's fourth largest city and capital of the Department of Cochabamba and also home to a university. It is an ancient city with numerous ruins from the pre-Inca and Inca periods, located in the eastern Andes at 2,560 m above sea level. The first Europeans settled here in 1542 and re-founded the city of Cochabamba. Only after independence from Spanish colonial rule and the founding of Bolivia in 1825 did Cochabamba become the capital of the new department of the same name. >

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Over 1,000 impact hammer installations were achieved in the city.

With around 631,000 inhabitants, Cochabamba is Bolivia's fourth largest city and capital of the Department of Cochabamba and also home to a university. It is an ancient city with numerous ruins from the pre-Inca and Inca periods, located in the eastern Andes at 2,560 m above sea level. The first Europeans settled here in 1542 and re-founded the city of Cochabamba. Only after independence from Spanish colonial rule and the founding of Bolivia in 1825 did Cochabamba become the capital of the new department of the same name.

Today Cochabamba is a modern city with numerous parks and gardens, being also called Ciudad Jardin (Garden City). The city's public drinking water supply and sewage disposal utility SEMAPA is equally modern described as 'a decentralised municipal company designed to meet the needs of the population in the regulatory area of the province of Cercado in the department of Cochabamba and the field of drinking water supply, sewage collection and treatment. It also contributes to the improvement of living conditions and the general protection of the environment with its services.'

New Construction

As part of the urgent rehabilitation (complete renewal) of a 33 km long, extremely outdated drinking water network in the 10th district, which is the inner city, the house connection pipes are and were also rehabilitated, also through complete new construction. A total of 2,758 house connections were affected and had to be re-installed, as was the case in the Avenida Ayacucho. Here, as in numerous areas of the inner-city district, the street is relatively narrow with high-density population and housing. Semapa acted professionally and true >

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Aligning the impact hammer correctly prior to launch is essential.

to its own definition 'to improve living conditions and protect the environment', decided to install the house connections in this section of Avenida Ayacucho, with a trenchless installation technology, in this case with the soil displacement method. SEMAPA commissioned Sur Energy S.R.L. & Asociados, which has the necessary experience and machinery for trenchless construction. The company leases its machines from PLASTIFORTE, a TRACTO representative in Bolivia.

Soil displacement hammers

Due to its accuracy and penetration power, even in stony soils, TRACTO's GRUNDOMAT soil displacement hammer is ideal for fast and economical underground installation of house connections. The people in charge decided to use the 45 mm diameter model from the new generation, equipped with a stepped head for universal use in all displaceable soils. The installation lengths of the new house connection pipes to be installed varied, between 7 and 10 m, due to each different location and distance of the houses from the main drinking water pipeline.

After excavating the necessary small starting and target pits (one on each side of the road), measuring the precise bore path and placing the machine in a stable position, the pneumatically driven GRUNDOMAT 45 soil displacement hammer (2-gear control unit plus reverse gear) worked its way, with a high target precision, stable, reliably and effectively at a depth of around 0.6 m along each pre-determined bore path underneath the road. The soil, comprising clay with sandy components and the occasional groundwater horizon, did not cause any problems during the bore process. The soil was displaced outwards, step by step, without any problems. Even existing old drinking water and sewage pipes, as well as communication and gas pipes in the area were crossed beneath without causing any damage.

The installation time for each house connection took between 1 to 1½ hours. The advance rate was middle range, at 5 to 7 m/h. The new HDPE drinking water pipes with 25 to 32 mm diameter for each relevant house connection were pulled in with a second working process.

Good For the City and the Citizens

As a result, in the large rehabilitation project, around 1,000 house connections were and are still being re-constructed with the GRUNDOMAT 45 soil displacement hammer and the need to dig trenches for an open-cut installation has been completely avoided. The city can be proud of this environmentally-friendly renewal, as the new installations mean no further problems with water losses for many years to come and also a vast improvement of the living conditions for the citizens.

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The new HydroBurst 100XTR from HammerHead® Trenchless.

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The HydroBurst 100XTR from HammerHead® Trenchless is designed to give operators the ability to take on a wide range of sewer, water and gas pipeline replacement jobs with just one machine. The unit's 100 t capability is rated for up to 16 in (400 mm) diameter, yet it is compact enough for use on pipe down to 4 in (100 mm) diameter. A combination of industry-first and industry-proven features mean operators can confidently bid and complete a wider range of jobs faster, efficiently and productively. >

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The new HydroBurst can be controlled from the machine or remotely.



“The HydroBurst 100XTR comes with an easy-to-learn, easy-to-use radio remote control. Freeing operators from the pit allows them to position themselves for the best view of a bursting operation and increases workspace in the pit for rod handlers.”

The HydroBurst 100XTR comes with an easy-to-learn, easy-to-use radio remote control. Freeing operators from the pit allows them to position themselves for the best view of a bursting operation and increases workspace in the pit for rod handlers.

Its lightweight, heat-treated alloy rods feature an API-style joint that resists buckling under the greater thrust loads required by longer burst runs, sweeping bends, and encrusted and collapsed pipelines. Used in combination with specialised tooling, operators can burst the toughest steel and ductile steel pipes.

In average soil conditions, a 400 ft (120 m) long job takes little more than two hours to complete from rod pay-out to pipe pullback.

Not all tasks require the 100 t capability of the HydroBurst 100XTR. Operators can swap power for speed by switching to its 50 t mode, working up to twice as fast depending on the job's requirements.

An automated rod spinner system, what is claimed to be an industry-first, also enhances productivity and safety by its consistently repeatable, precision performance. A locking jaw system provides constant tension on the rod string eliminating rod rebound, or the 'bungee effect', increasing makeup and breakout efficiency throughout a push or pull operation.

Hydraulic levelling jacks allow operators to make adjustments on the go, as needed, keeping the machine on-grade without interrupting bursting operations.

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ADVANCED TRENCHLESS TECHNOLOGY

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THERMOPLASTIC LINER BATTLES OIL AND GAS PIPELINE CORROSION



USTS polyethylene liner installation being installed.

In the Middle East, the largest tight lining project carried out in the region has paired specialised technology with pipe fusion.

The Middle East is home to thousands of miles of pipelines for the oil and gas industries. Many pipelines are made of carbon steel (CS) to withstand the high-pressure flow and type of fluids running through them. However, corrosion is a major concern. United Special Technical Services (USTS) provides thermoplastic pipe lining services using its proprietary Tite Liner® technology for oil and gas flow lines. USTS is a joint venture between United Pipeline Systems, a fully owned Aegion Company, and Special Technical Services (STS) of Oman. They offer the world's leading >

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USTS uses McElroy MegaMc® 1648 to complete butt fusions.



thermoplastic lining system for protecting pipelines from corrosion and internal abrasion. Rehabilitating an existing line with Tite Liner® is more economical than building a new line.

The Right Tools

Often the challenge in this line of work involves extreme weather conditions and tight deadlines. USTS's most recent project was unique and utilised the Tite Liner® technology for lining a 42 in (1,066 mm) diameter CS sea water injection pipeline using polyethylene liner over some 37 km. It is one of the biggest and largest Tite Liner® jobs USTS has worked on to date and required mobilising special resources to complete the project.

Customised Equipment Meets the Challenge

USTS needed to secure butt fusion machines to fuse the sections of polyethylene before it was pulled through the existing carbon steel pipe. The company utilised McElroy MegaMc® 1648 machines, purchased from Plastic Pipes Welding, to complete the butt fusion operations. A specially designed roller reduction box was also custom-built and airfreighted in from the U.S.A. "The global experience of the Tite Liner® system has proven to be the most resilient technology regardless of pipe diameter," said USTS General Manager, Jonathan Hickey. "This project demonstrates the commitment of USTS to provide sustainable solutions using the best equipment available with partners like McElroy."

McElroy International Sales Manager, Rafael Quintero, said: "Plastic Pipes Welding is making fusion equipment accessible in this part of the world and it is exciting to think about the potential for future projects for the countries in this region. "Being able to partner with USTS in the Middle East is very valuable to help improve the infrastructure with thermoplastic pipe. The unique technology the company offers the oil and gas industry to tight line polyethylene into the existing pipelines is cost effective and it prolongs the life of the pipe."

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SYPHON REMOVAL WITH ROBOTIC CUTTING

Drainforce on site in Canton.



The syphon access.

On a project worth some £2000 in Canton (in Welsh: Treganna) an inner-city district and community in the west of Cardiff, Wales, Drainforce recently successfully completed its third trial of removing syphons with the use of robotic cutters. The project required the removal of a 100 mm diameter 'In Line' Syphon with No Dig Technology and to repair the syphon void with glass fibre patch repair.

The concept was first trialed above ground in a mock situation where a 225 mm diameter syphon was cut and patch line repaired.

Working with Key Clients Drainforce then progressed onto a live site and successfully removed a 150 mm diameter syphon and replaced with a 1 m long patch repair.

The third trial took place on 24 August where the company was asked to remove an in line 100 mm diameter syphon at a depth of 2 m beneath a boundary wall. The syphon was cut out and patch repaired in just six hours.

The benefits of this new approach are huge, and Drainforce firmly believes that this process could be the way forward at a fraction of the cost of traditional methods with no disruption to the customers.

The Client was so impressed with the innovation the process has been put forward for a prestigious award in innovation.

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PIPA LAUNCHES FLOWRIDER LITE™



PIPA has released a new pressure rated camera system for pressurised water pipe inspection and leak detection on all pipe materials.

The PIPA Flowrider Lite™.

The Flowrider Lite™ is claimed to be the water industry's first HYBRID system that can be used as a pushrod inspection tool, or alternatively PIPA designed Hydrochutes can be attached for long range pipe inspections of up to 275 m using the water flow.

The camera package is designed to be a universal survey tool for pipe inspection on water main sizes 4 in (100 mm) diameter and above, with a second camera system included for inspection of large diameter water pipes. >

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- Location of pipe defects, blockages and buried valves
- Investigate the source of dirty water prior to customer complaints (DWI)
- Asset management budget validation device (zonal studies)
- Identify illegal connections (NRW)
- Accurate leak location in all pipe materials
- Mains tracing >

Pressure rated camera system video still.



Leak detection in all pipe materials.



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“The Flowrider Lite system is what the industry has been waiting for, a complete system package that is simple to use and covers a wide range of pipe sizes. It is portable, quick to set up and is a great system for all water company leakage teams and contractors can add to their tool box!”



Camera entry points

The Flowrider Lite™ system is designed for safe use on through bore style fire hydrants and many other valves and pressure fittings installed directly on top of a water mains.

PIPA has developed water pipe inspection technology that includes a pressure rated camera, ultra-bright COB lights and a hydrophone sensor tethered to a 275 m semi-rigid rodding to give the operator live video and recorded audio data during an inspection. The system enters a pipeline via fittings as small as 2 in (50 mm) diameter. The camera and cable are fully chlorinated during insertion. The system works on a live basis, with no interruptions to the customer's water supply.

The technology is the latest live main inspection system on the market being fully battery powered and only requires a 2-man team for its implementation.

PIPA Representative Fabio Orlandi said: “The Flowrider Lite system is what the industry has been waiting for, a complete system package that is simple to use and covers a wide range of pipe sizes. It is portable, quick to set up and is a great system for all water company leakage teams and contractors can add to their tool box!”

PIPA has developed what is claimed to be the widest range of pressurised pipe inspection products commercially available in the world, and has worked with the majority of the UK water utility companies and a wide range of clients overseas.

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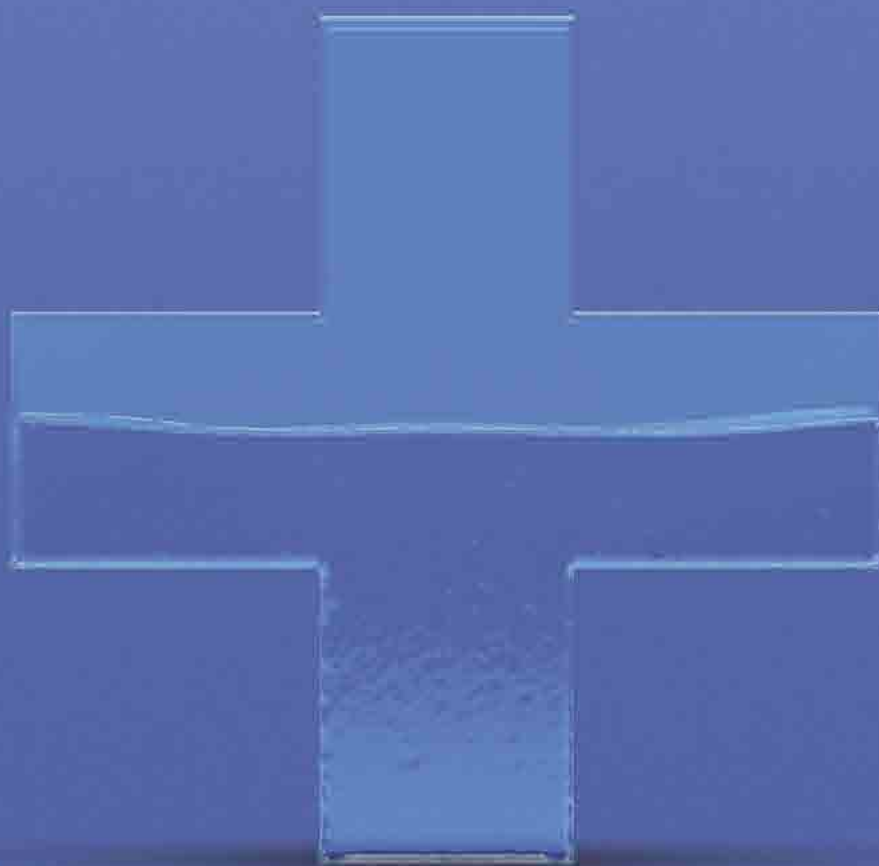
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SAFE DUCT ACCESS WITH LESS ENVIRONMENTAL IMPACT

Using the ControlPoint Application.



Accessing a cable duct.

Cable ducting is used extensively across the UK for the installation of utilities and has many advantages, but there are some major disadvantages that are a cause for concern with regards to safety, costs, traffic disruption and the environment.

Currently it is difficult and costly to access utilities as a means to inspect, isolate, make connections or carry out maintenance works and repairs. Engineers are often having to excavate larger areas to undertake works which has a direct impact on the efficiency of the required work. Asset owner's safety systems are at times both inconsistent and some may say arguably unsafe. They potentially put employees and engineers at risk and can impact time scales, which then has a huge cost implication, and the local disruption can be exponential.

This problem required innovation and a new method of working to improve engineer safety, minimise local disruption and have a more cost-effective duct access solution with less environmental impact. >

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The steps used to open the cable duct to accessing the cables within.

To this end, Eco Live has created an innovative and effective solution that allows engineers to carry out any required works efficiently and most of all, safely. The process allows works to be undertaken without risk to employee's health and safety and with greater precision, cutting back on time, cost implications and creating less disruption with a reduced environmental impact. This solution can be conducted from a single excavation point directly above the suspected fault, or when the service requires exposure while the cables are live or isolated and causes no damage to the cable sheaths.

Key benefits of the new system include:

- Safe method of access to ducts with real time process control and capture
- Reduction in risk and liability (for DNO/IDNO) improving safety
- Reduction in repair times and projected major cost reductions
- Less excavation and associated site works
- Enables more extensive use of HDD and plastic ducts
- Reduced environmental impact;
- Less traffic disruption, less spoil, less reinstatement, reduced time-scales for remedial works, reduction in CO₂ emissions
- Better customer satisfaction supports 'always on' initiatives
- Full service available from Eco-Live
- Annual license available with equipment, application and full training
- Service level agreement available to suit your requirements

To accompany this process the 'ControlPoint Application' has been developed to assist the technician in multiple ways. The App, which allows for real time process control and capture, is linked with GPS to precisely locate the area of a works and provides live technical data to allow any works to be carried out quickly, effectively and safely.

The Process

The process starts with the operator using the ControlPoint app to pinpoint the asset and assign the work, prepare site, excavate the area and conduct a point of work risk assessment. Then the operator inputs the data into the ControlPoint app to ensure safety and to identify the exact tooling settings required.

Once the area around the suspected fault has been excavated, the duct is cleaned and identified. Then to access the duct, cut lines and sensor points are marked out. The operator then conducts an ultrasonic depth check on the sensor points and confirms the results on the app which identifies the requirement to undertake the works safely. The cutting equipment is then set to the correct tooling parameters for duct type, size and depth requirements provided by the app. >

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The steps used to open the cable duct to access the cables within.

Accessing the duct then commences by completing a pilot plunge and reviewing of the duct membrane. The membrane is then pierced, and a gas check is completed. The operator then conducts a routing process to the required length and reviews the membrane. The tooling process leaves a thin membrane which always ensures there is no exposure to the cables, after localised heat is applied to remove the duct window that has been created, to gain access to the duct. Cabling within the duct is now exposed, safely and efficiently without damage to the cable sheath itself. Repair or other works can then be undertaken.

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SOCIETY NEWS

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WHAT'S ON THE TABLE A MESSAGE FROM THE CHAIR



Jari Kaukonen, Chair, International
Society for Trenchless Technology

Hi ISTT members!

The world is reactivating after the silent period. Last month I visited Romania and was happy when I heard that they have already established a Society for Trenchless and that is now in a registration process. Hope that will come true soon and we can celebrate a new Affiliated Society.

I will visit the Trenchless Middle East show in December and will meet people from that region who have in their minds the establishment of another regional society. Let us see how we succeed in those negotiations. I am still waiting to hear positive progress from India, Indonesia and some others too. So, there is a possibility that we have many new representatives when we have our council meeting in Helsinki next year.

I virtually took part in the annual conference of SSTT and what a nice set of presentations they offered once again. The new chair, Borghild Folkedahl, led the conference with a very professional touch. It was good to meet her. I gave a recorded speech to the CTSTT annual meeting as a part of Taiwan Water Week. That is an excellent event concerning water, of which one part is centred on trenchless technology.

At the end of November, between the 24 and 26, FiSTT has its annual conference in Helsinki and I have some duties there too. I have heard that about 200 delegates are expected to be present.

The next No-Dig conference is moving forward quite well. The first sponsors have been announced, the exhibition will start selling space soon and we have already sent out call for papers. So, now is a good time to write a draft of your paper and make it better over the Christmas period! >

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SOCIETY NEWS

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“The next No-Dig conference is moving forward quite well. The first sponsors have been announced, the exhibition will start selling space soon and we have already sent out call for papers.”

To keep yourself updated about the arrangements, visit the show website: www.nodighelsinki.com and book the week on your calendar. To submit your draft conference papers click here: <https://www.callforpapers.nodighelsinki.com/>

SSTT, from Norway and Sweden, is ISTT's second largest Affiliated Society (my lovely neighbour countries!). There are a lot of things moving forward in this market and I am eager to hear their papers in Helsinki. The SSTT has announced that it has arranged its annual meeting on the ship between Stockholm and Helsinki and will bring to the Helsinki conference with about 60 to 80 delegates. I have heard something similar from Denmark also. Now is right time to activate such moves in other our Affiliated Societies and meet in Helsinki with 500 delegates or more!

Welcome and see the Helsinki secret!

With best regards,

Jari Kaukonen

Chair, ISTT

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TRENCHLESS PROJECTS IN TURKEY



Installing a liner on a site in Turkey.



NO-DIG TURKEY 2022
2-3 KASIM / NOVEMBER 2022 - ISTANBUL



6th WATER LOSS FORUM & EXHIBITION
SU KAYIP VE KAÇAKLARI FORUMU & FUARI
2-3 Kasım / November 2022 / İstanbul

Two new trenchless tenders have been recently announced in Istanbul, the largest Turkish metropolitan city having a population of 15.4 million.

The first tender includes 65 km of 300 mm to 600 mm diameter UV CIPP lining and 4.5 km of 110 mm to 630 mm diameter horizontal directional drilling. A tender meeting was held on 8 November, 2021 at the headquarters of Istanbul Water and Sewerage Administration. More than twenty general contracting companies participated in the tender process. Lining and drilling works are expected to start in the beginning of 2022.

The second tender includes 65 km of 300 mm to 600 mm diameter close-fit sliplining (fold & form) and 3 km of 110 mm to 630 mm diameter horizontal directional drilling. A tender meeting will be held on 23 November, 2021 at the headquarters of Istanbul Water and Sewerage Administration.

Some 100 km of UV CIPP lining and 120 km of close-fit sliplining (fold & form) projects have been completed in Istanbul since 2018. Several UV CIPP lining and close-fit sliplining (fold & form) projects are under way in other Turkish metropolitan cities including Izmir, Kocaeli, and others. >

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SOCIETY NEWS

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Top left and bottom: Works for the installation of a UV cured liner in Istanbul.

Top right: Microtunnelling work for water and wastewater pipelines in Istanbul.



Some 14 tenders for CCTV inspection and cleaning of sewer lines have been held by Istanbul Water and Sewerage Administration since 2020. The condition of 9,217 km long sewer lines are being assessed across these 14 projects.

A further 7 microtunnelling projects are currently under construction for developing the water and wastewater infrastructure of Istanbul. Many microtunnel boring machines (MTBMs) presently work in the 54 km long projects.

There are also 13 new metro lines currently under construction in Istanbul. Dozens of tunnel boring machines (TBMs) presently work across the 162 km long projects.

Turkish Society for Infrastructure and Trenchless Technology (TSITT) has hosted the annual No-Dig Turkey show since 2011. ISTT and TSITT jointly held International No-Dig 2015 Conference and Exhibition in Istanbul with a great success including 94 exhibiting companies from 21 countries.

TSITT will host the next No-Dig Turkey 2022 Conference and Exhibition between 2 and 3 November 2022 at the Istanbul Lutfi Kirdar International Convention and Exhibition Centre in conjunction with the 6th Water Loss Forum and Exhibition. Details of the events are available from www.nodigturkey.com and www.waterlossforum.org



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SOCIETY NEWS

ISTT News brought to members by Trenchless Works

ISTT NEWS ANNOUNCEMENT

CALL FOR ABSTRACTS IS NOW OPEN FOR INTERNATIONAL NO-DIG HELSINKI 2022



The ISTT programme committee have announced the call for abstracts, for the 38th ISTT International No-Dig Conference & Exhibition taking place in Helsinki 3-5 October 2022.

International No-Dig Helsinki is well placed to be an important component of Finland's infrastructure development programme in a sustainable manner. New infrastructure installations, as well as extensive renovation to ageing underground services continue to be carried out across Finland and Europe. As a result, there is high demand for engineers, planners, contractors, and operators to see first-hand the products on display, to evaluate the benefits of using trenchless methods in underground pipeline construction and maintenance.

Interested authors are invited to submit abstracts (200 words), a brief biographical sketch, and a photo to be submitted via the online portal. <https://www.callforpapers.nodighelsinki.com/>

The deadline for abstract submission is 1 April 2022.

Abstracts will be reviewed by the ISTT Program Committee. Authors will be notified on 1 May 2022.

Conference Schedule

Notification of acceptance:

1 May 2022

Draft paper due:

15 June 2022

Review sent back to authors:

15 July 2022

Final paper due:

15 August 2022

For any questions regarding the conference, please contact:

conference@nodighelsinki.com

or to find out more about the event please visit the website:
<https://www.nodighelsinki.com/>

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AFFILIATED SOCIETIES

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startside



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SOCIETY NEWS

ukstt.org.uk

Society News brought to members by Trenchless Works

HELLO FROM THE CHAIR



Dawn Greig, Chair, UKSTT

"The Large Diameter Circular & Non-Circular Rehabilitation Masterclass that took place on the 2 November was a resounding success."

After over a year of amazing online events we made a huge leap to No-Dig Live, then on to the No-Dig Roadshow in Glasgow, followed by our Masterclass a couple of weeks ago in Birmingham, finally visiting the National Drainage Show & Floodex event at the ExCel in London. Phew! I think we are ready to take a well-earned break on events until the New Year.

The Large Diameter Circular & Non-Circular Rehabilitation Masterclass that took place on the 2 November was a resounding success. There were interesting case studies and technical presentations highlighting the challenges we face with ageing networks, as well as a Spray Lining technical paper. A recording was produced and will be made available in the very near future. As always, it could not go ahead without the team of people who selflessly dedicate their time to our cause. With that in mind, we would like to send a massive thank you to the speakers for their time and expertise in making these events worthwhile attending, and to the organisers for making it happen.

It is going to be a tough year to top but rest assured we are now working very hard to schedule the event programme for 2022. We will start with a No-Dig Roadshow in Belfast in the Spring and follow up with a couple of Masterclasses throughout the year. There will also be the return of our popular online webinars, details will be circulated very soon, so watch this space!

Until next time, stay safe x

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NO-DIG ROADSHOW GLASGOW 2021



UKSTT was honoured to welcome speakers and delegates to the Glasgow Roadshow on 7 September. The roadshow was attended by a number of industry professionals, including representatives from Scottish Water and their alliance partners.

Keynote speakers Gordon Reid and Phil Beardmore from Scottish Water gave excellent presentations, as well as John Richardson – SGN, Steve Brogden – Die Draw Ltd, Nick Preston – NJJP Ltd, Stephen Taylor – PMP Utilities, Martin JG Faulds, Shauna Herron – Environmental Techniques, Jan-Willem Nijman – PelicanCorp, Colin McNaught – Caledonia Water Alliance, Thomas Philliben – Environmental Techniques, Dawn Greig – Picote Solutions and Frank Gowdy – Mammoth Equipment.

During the day there were plenty of scheduled breaks to allow time for delegates to network and visit the exhibition area. Exhibitors included: Amiblu Norway AS, Atlas Winch Hire, Bucher Municipal, CJ Kelly International, Caldervale Technology, Channeline International, iLine Technologies Ltd, Enviroclean Scotland Ltd, Die Draw Limited, E C Hopkins Ltd, Innovex, IPEK UK, Mammoth-MTS, Norditube, Pearpoint/Cues Inc, Picote, Radius Subterra, Radlinger Primus Line GmbH, Relineeurope GmbH, RSM Lining Supplies Global Ltd, RSP UK Ltd, Sanivar UK, S1E, Steve Vick International, Sunbelt Rentals, Trenchless Sales UK Ltd, Vivax-Metrotech Ltd and Wincan Europe Ltd.

The show was a resounding success, and we all look forward to the next one in Belfast next year.

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LARGE DIAMETER CIRCULAR AND NON-CIRCULAR REHABILITATION MASTERCLASS



The UK Society for Trenchless Technology (UKSTT) held the first in person Masterclasses since March 2020 at the National Motorcycle Museum in Solihull on Large Diameter Circular and Non-Circular Rehabilitation.

The masterclass was a resounding success. There were interesting case studies and technical presentations highlighting the challenges we face with ageing networks, as well as a Spray Lining technical paper. A recording was produced and will be made available in the very near future. As always, it could not go ahead without the team of people who selflessly dedicate their time to our cause. With that in mind, we would like to send a massive thank you to the speakers for their time and expertise in making these events worthwhile attending, and to the organisers for making it happen.

We were pleased to receive the following feedback;

'...I enjoyed the day and thought the other presentations were interesting and could be useful to us going forwards'

'very good, knowledgeable. Short presentations kept engagement levels up'

The next masterclass will take place in Spring.

www.ukstt.org.uk

Enquiries contact UKSTT: Tel: 01926 513773 Email: admin@ukstt.org.uk Web: www.ukstt.org.uk

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UKSTT TECHNICAL ENQUIRY SERVICE – OVER £1 MILLION OF POTENTIAL WORK PER ANNUM



Image courtesy of Scandinavian NO-DIG Centre

Mentioned every year in the Chair's speech at the Annual Dinner & Awards Ceremony, the UKSTT website has a dedicated link for visitors to raise technical enquiries they may have concerning the world of trenchless working. In addition, the administration team at Kenilworth receive many calls seeking help.

As part of the Corporate & Corporate PLUS Membership benefits package many of these works associated potential advisory/problem solution queries generate business directly or indirectly for our members.

The service is co-ordinated through the administration team and managed by the Society's Technical & Education sub-committee. After receipt the team reviews the information and often contacts the enquirer to better understand the problem and improve the information to be circulated to the Society's corporate membership. All Corporate members, that are able to offer help, service are contacted.

The estimated approximate value of the potential work circulated to our corporate members through this system each year regularly exceeds £1 million.

So if you have a question then feel welcome to use the service www.ukstt.org.uk or even better support part of the work of the Society and become a corporate or Corporate PLUS member. What's to lose give it a try.



Image courtesy of UKSTT

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NO-DIG EVENTS

International No-Dig events brought to you by the industry's world experts



TRENCHLESS MIDDLE EAST 2021

12th International Conference and Exhibition

13-14 December 2021

Festival Arena by InterContinental, Festival City, Dubai, UAE

www.trenchlessmiddleeast.com



TRENCHLESS ASIA 2022

12th International Conference and Exhibition

27-28 July 2022

Kuala Lumpur Convention Centre, Kuala Lumpur, Malaysia

www.trenchlessasia.com



NO-DIG LIVE 2022

16th Biennial Exhibition, Live Demonstrations and Technical Sessions

13-15 September 2022

East of England Arena and Events Centre, Peterborough, UK

www.nodiglive.co.uk



NO-DIG HELSINKI 2022

ISTT's 38th International No-Dig Conference and Exhibition

3-5 October 2022

Messukeskus Helsinki Expo and Convention Centre, Helsinki, Finland

www.nodighelsinki.com



TRENCHLESS EGYPT 2023

Part of the Trenchless Middle East Portfolio

March 2023, Cairo



EVENTS AND MEETINGS

2021

November 24- 25: STUVA Expo 2021
Karlsruhe, Germany
Details from: www.stuva-conference.com

December 13-16: BAMI-I / EMI CSM / ASCE UESI - Utility Investigation School (UIS)
Golden, Colorado.
Details from: <https://bami-i.com/>

10 December: ISTT Webinar
On the Soil Behavior due to Rectangular Pipe Jacking, Prof. Hideki Shimada, 14:00 GMT
Details from: <https://www.istt.com/index/webapp-registrant-form/id.13>

December 13-14: Trenchless Middle East 2021
Dubai, UAE.
Details from: www.trenchlessmiddleeast.com

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

2022

April: SAO Paulo No-Dig Show
Sao Paulo, Brazil. Details from: www.saopaulonodig.com.br

April 15-17: ITTC China 2022
26th China International Trenchless Technology Conference (ITTC) & Exhibition
Suzhou International Expo Centre, Suzhou, China
Details from: <http://www.cstt.org.cn/Yhome/Index/index.html>

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

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

July 27-28: Trenchless Asia 2022
Kuala Lumpur, Malaysia.
Details from: www.trenchlessasia.com

13-15 of September: No-Dig Live 2022
Peterborough, UK.
Details from: www.nodiglive.co.uk
Includes the UKSTT Gala Dinner and Awards Ceremony

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

October 24-30, 2022: bauma
Munich, Germany
Details from: www.bauma.de/

November 2-3: No-Dig Turkey 2022
Istanbul Lutfi Kirdar
International Convention and Exhibition Centre

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