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FOR THE TRENCHLESS INDUSTRY.

MEDIA PARTNER OF THE UNITED KINGDOM  
SOCIETY FOR TRENCHLESS TECHNOLOGY  
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ENDORSED BY THE INTERNATIONAL  
SOCIETY FOR TRENCHLESS TECHNOLOGY (ISTT)

ISSUE 52

DECEMBER 2010

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# INDUSTRY, COMPANY AND INSTITUTION NEWS AND RESEARCH



## ZÜBLIN AND VMT JOINT-VENTURE FOR INFRASTRUCTURE PROJECTS

Ed Züblin AG, of Stuttgart, and VMT GmbH – Gesellschaft für Vermessungstechnik of Bruchsal, Germany are to combine their know-how in the area of soft-ware-based process steering for tunnelling in a joint-venture. Headquartered in Stuttgart, the newly established company ITC Engineering GmbH & Co. KG will jointly market efficient software systems for Process Data Management (PDM) in the construction sector. Further developments will focus on the IRIS (Integrated Risk and Information System) web-based expert system for infrastructure projects.



Using IRIS, the CBP (Controlled Boring Process) and Hydra (High Performance System for Data Storage, Reporting and Analysis) product lines already established on the market by both companies are combined to a highly-efficient and unique process data management system in the area of infrastructure design.

“In industrial processes with a high degree of mechanisation, e.g. mechanised tunnelling and specialised underground works as well as in engineering, the flood of data and information is permanently increasing”, explained Manfred Messing, Executive Managing Director of VMT GmbH. “ITC Engineering develops software systems that support companies and their construction sites in terms of data management and data analysis, resulting in a transparent construction process.” ITC Executive Managing Director, Dr Peter-Michael Mayer, added: “IRIS is an innovative tool developed as a software system for steering tunnelling and pipe jacking works, which has been extended to cover other areas of infrastructure construction such as special underground works, bridge and road building.” The aim is to handle major infrastructure projects regarding technical, operative and economic aspects both transparently and effectively with the aid of an efficient, web-based soft-ware solution. “Construction companies and all partners involved in implementation and controlling can therefore avail of a comprehensive and flexible concept”, added Dr Mayer.

By combining the technical monitoring know-how offered by VMT GmbH with the extensive design and construction expertise offered by the Technical Head Office at Ed Züblin AG, ITC will be capable of developing innovative solutions and services for its customers.

### IRIS SYSTEM FEATURES

IRIS system features include:

- Merging and analysing manual and automatic process data governing mechanised tunnelling, special underground works as well as geological and environmental monitoring in a central database.
- Systematic processing and archiving of tunnelling data on ongoing tunnelling projects by monthly, weekly and daily reports; shift evaluation is realised via interactive shift logs.
- Evaluation of TBM data, e.g. backfilling, cutting wheel pressure, hydraulic pressure of jacks, cutterhead speed etc., in combination with geological parameters from preliminary exploration and surface subsidence monitoring data.
- Evaluation and visualisation of monitoring data for assessing the TBM position, control movements, shield driving accuracy etc., in order to identify any possible risks as regards stresses inflicted on the tunnel lining.
- Web-based recording and evaluation of inclinometer and extensometer monitoring data on buildings at risk of subsidence in a joint database with tunnel and environmental monitoring data.

Advantages include:

- Crosslinking geometric information with operative construction data analysis from tunnelling and special underground works as well as geological and environmental monitoring in a Web-based expert system.
- Transparency and comparability of project data by means of a universally available and accessible standardised data platform.
- Customised interactive analyses and documentation as well as open access for customers using their own program modules for the IRIS platform.
- Integrated and automated risk analyses and warning systems across all IRIS application modules for the infrastructure sector.

Additional information on ITC Engineering & Co. KG and the IRIS product groups will be available online at [www.itc-engineering.com](http://www.itc-engineering.com)

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# INDUSTRY, COMPANY AND INSTITUTION NEWS AND RESEARCH



## ENGINEER SHARES NO-DIG INNOVATION WITH SINGAPORE

An engineer who scooped a prestigious industry award has travelled to Singapore to showcase innovative sewer repair techniques being used in the UK.

Leanne Ford, a critical sewers technician at Wessex Water, spent time with Singapore's national water authority PUB (Public Utilities Board) discussing trenchless technology methods used to repair and renovate sewers.

She was invited to Singapore by Tan Thai Pin, director of the water reclamation department at PUB, after winning the UK Society for Trenchless Technology young engineer of the year award.

Her trip also involved joining companies from across the globe to share trenchless technology innovation, experiences, products and project successes at the International Society for Trenchless Technology (ISTT) annual conference, which also took place recently in Singapore.

Miss Ford said: "The ISTT conference was very beneficial and it was interesting to learn about what products were on the market and also to hear what experiences people had, had with different no dig techniques in their own countries. I also learnt a lot from PUB and it was interesting to find out that in some ways it is very similar to Wessex Water."

Miss Ford spoke with PUB staff to compare the methods used to repair pipes in Singapore with those chosen by Wessex Water.

PUB showed her a No-Dig sewer repair which involved installing 18 m of epoxy cured-in-place pipe (CIPP) which was cured using steam.

Nearly all sewer liners in Singapore are installed using epoxy resins to eradicate infiltration and exfiltration.

"Wessex Water does use epoxy resins but we discovered it was more cost effective to use polyester linings for pipes with no laterals which can be sealed at both ends using an epoxy based paste," said Miss Ford. She went on to say: "PUB asked a lot of questions about our work. They were impressed with the technological solutions we use and have access to as well as our recent project to install a long liner in a sewer which runs along a railway in Wiltshire."

During her trip Leanne was also shown Marina Barrage, Singapore's first city reservoir. It was created to provide a new water supply source and control flooding. Recreational activities also take place on the site.

In addition she visited Changi Water Reclamation Plant, Singapore's state of the art used water treatment facility which is capable of treating 800,000m<sup>3</sup> of used water a day.

Miss Ford said: "The trip was brilliant and everyone was so friendly and welcoming. It proved an excellent platform to network with others in the industry and I was proud to be representing Wessex Water."



*Leanne Ford with Dr Sam Ariaratnam (new chairman of the International Society for Trenchless Technology).*

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## EU SKILLS RECOGNITION OF LEARNING PROGRAMME ACCREDITED TO TT-UK

Energy & Utility Skills (EU Skills) Recognition of Learning programme has been accredited to TT-UK Ltd. Family-owned business TT-UK, is the first company to receive the Recognition of Learning programme, as a service provider for Suction Excavator training.

The Recognition of Learning programme has been designed to improve the quality of training and to provide employers with information on where they can obtain accredited courses that meet their individual needs.

Tricia Bowes, Training Co-ordinator at TT-UK said: "With the help of EU Skills, we have developed a bespoke training course. The Recognition of Learning programme ensures that our customers are receiving a comprehensive accredited training course. We are now striving towards all of our training programmes to be recognised and endorsed by EU Skills including Grundomat,

# INDUSTRY, COMPANY AND INSTITUTION NEWS AND RESEARCH



Grundoburst, Grundodrigill, and Grundowinch.” Recognition of Learning is available to all providers active in the EU Skills footprint, including employers’ own in-house training and independent commercial businesses. It is intended to add value to both employers and training providers who are Members of EU Skills, by providing them with a quality mark for use within the energy and utility sector.

The Recognition of Learning programme is the ideal route which leads to registration on the Energy & Utility Skills Register (EUSR), an independent register which confirms the skills and abilities of individuals when moving from company to company and industry to industry.

For further information regarding TT-UK’s Grundomat, Grundoburst, Grundodrigill, Grundowinch product training courses visit: [www.tt-uk.com](http://www.tt-uk.com)



*TT-UK/RSP Suction Excavator operator training taking place at National Grid’s training academy in Hitchin.*

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# PIPE JACKING, MICROTUNNELLING, TUNNELLING & AUGER BORING

For General Information on Pipe Jacking, Microtunnelling & Auger Boring [click here](#)



## GIGANTIC TBM FOR ITALY

The Herrenknecht S-574 Earth Pressure Balance Shield, designed for work for extending the highway between Bologna and Florence, was successfully accepted by the Italian customer at the Herrenknecht plant in Schwanau, Germany recently.

With an excavation diameter of 15.62 m, this giant is the largest tunnel boring machine ever built in the world. The next few weeks will see it being partially dismantled for transport to the site in Italy.

In terms of the project on which it will work, a busy section of the A1 highway in Italy between Bologna and Florence is currently being extended. This development also involves the construction of the 2.5 km twin-bore Sparvo Tunnel which is part of a project awarded by the Italian client Autostrade per l'Italia S.p.A. to a joint-venture construction operation comprising Vianini Lavori S.p.A, Toto Costruzioni Generali S.p.A and Profacta S.p.A. The Herrenknecht S-574 Earth Pressure Balance Shield will be used for mechanised tunnelling of this new large-diameter tunnel.

With an excavation diameter of 15.62 m and an overall length of 130 m, this record-breaking machine was assembled at the Herrenknecht headquarters in Schwanau, Southern Germany over a period of three months, where it has also been commissioned and extensively tested. To celebrate acceptance of the TBM, the customer Toto Costruzioni Generali S.p.A. invited top-ranking representatives of all the companies involved in the project to Schwanau where the machine was presented and its functions explained.

As the time schedule for construction of the Sparvo Tunnel is tight, the dismantling phase will commence shortly. In January 2011, the first individual components will be shipped to Italy enabling final assembly to commence on site in February. The giant TBM is to start tunnelling the first tube near Florence in a northerly direction in May 2011 with plans for the new route to open by the end of 2013. Website: [www.herrenknecht.com](http://www.herrenknecht.com)



*The Herrenknecht S-574 Earth Pressure Balance Shield at the Schwanau plant.*

## MICROTUNNELLING TO PROTECT THE RIVER SEINE

In France, until the beginning of 2010, GRP pipes have been applied in microtunnelling projects for diameters up to DN 1600. The rainwater collector and storage project that would limit the amount of overflow caused by heavy rain falls is part of the Seine River clean-up (depollution) plan was launched by the local authority, Syndicat d'Assainissement de la Boucle de Seine, involved the use of DN 1800 CC-GRP HOBAS Jacking Pipes. This made the installation a national premiere regarding the pipeline's size and undoubtedly represents a precedent for future trenchless undertakings with GRP.

Only a few kilometers outside of Paris, at the Place des Fêtes in Bezons, a rainwater storage basin had been constructed to hold some 9,500 m<sup>3</sup> of water. Having established a solid national as well as international reputation as a constructor of tunnel boring machines and as a tunnel-boring specialist with an outstanding record, the Toulouse-based company CSM Bessac (a subsidiary of SoletancheBachy and member of the Vinci Group) was entrusted with the installation of the 380 m long transfer collector that feeds into the storage basin at a nominal flow of 5 m<sup>3</sup>/sec.



*The jacking station built inside the 25 m diameter storage basin.*

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# PIPE JACKING, MICROTUNNELLING, TUNNELLING & AUGER BORING

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The geological and hydrological conditions as well as the pipeline route, that includes a horizontal and vertical curve at a 900 m radius, made the project complex. Project implementation required particularly meticulous preliminary studies which were conducted by the engineering office Cabinet Merlin which was also in charge of documentation. Further studies and calculations regarding the construction works were carried out by CSM Bessac and HOBAS France.

Apart from keeping disturbance to the environment down, the motives to opt for a trenchless solution were primarily the great installation depth, groundwater and several existing structures above and around the pipeline route. The pipeline was installed between 12 to 15 m depth and runs between a layer of limestone, a layer of alluvial deposits and around 10 m beneath the groundwater level. Furthermore, a DN 4000 sewer main is one of several obstacles that needed to remain unharmed in the route's proximity.

The jacking station was built inside the 25 m diameter storage basin. Its thrust wall, that serves to provide a reaction against which to jack, incorporated a special slab leading back to the basin wall so as to transmit the 800 t loads from the station to the basin's structure. Groundwater posed a further challenge. With its level lying 10 m above the pipeline, it was estimated to generate a load of almost 30 t on the boring head. Especially when the first pipes were jacked into position, the pipe string could have been pushed back out while the jacking machine was loaded with a new pipe. As a remedy to this possible problem, CSM Bessac designed an ingenious non-return system with two hydraulic jaws that firmly gripped and held the pipes in position.

Also, the 380 m S-curved route posed a challenge to the contractor and at the same time gave HOBAS Jacking Pipes the opportunity to prove what they are made of. The 3 m DN 1800 (De 1940), SN 64000, PN 2.5 pipe sections were smoothly installed and their leak-tight flush couplings provide a tight line. HOBAS pipes accept high jacking forces equalling up to 800 t and can be jacked around curves down to 680 m radii without having to adapt the jacking forces. This is possible because of the material's elasticity that allows the forces to be evenly transferred from pipe to pipe over the entire wall-thickness of the pipe ends.

HOBAS CC-GRP Jacking Pipes have a long record of application in France and have been quality certified for trenchless projects by the CSTB (Centre Scientifique et Technique du Bâtiment). Following the market's increased need for larger GRP pipe diameters, this certification was, in October 2010, extended to the full range of available HOBAS Jacking Pipes, namely from DN 250 to 3000.



*HOBAS flush jacking couplings provided a leak-tight line.*

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The successful completion of this audacious project with sustainable high-quality product, has again proved HOBAS is a leader in the GRP market for trenchless applications. The success of the project will certainly inspire others. Website: [www.hobas.com](http://www.hobas.com)

*Inside the pipeline in part of the curved drive.*

# PIPELINE REHABILITATION

For General Information on Pipeline Rehabilitation [click here](#)



## YORKSHIRE COMPANY'S SUCCESS DOWN-UNDER

Yorkshire based company Fernco Environmental has successfully completed the first phase of a renovation project at the Liawenee Flume in Tasmania using the company's epoxy coating system Ultracoat.

The main objectives of the project were to improve the hydraulic performance of the flume and to protect the surface from further erosion. By doing so, the water flow rate to the power station it serves would improve, increasing the efficiency of power generation.

The Liawenee Flume, constructed in 1921 in the central highlands of Tasmania, forms a crucial part of the power generation infrastructure on the island, as a 100% of the island's electricity supply is generated by a 30 MW hydroelectric power station.

The flume is also in a 'World Heritage' site and home to several endangered species including the Spotted Tailed Quail, the Brown Poa Butterfly and the Tasmanian Devil, therefore any disturbance to the environment had to be kept to an absolute minimum.

Ultracoat is largely used to rehabilitate drainage infrastructure, and it was Ultracoat's extremely smooth surface, providing virtually no resistance against the flow of water, that proved to be an ideal solution in Tasmania. Over 400 m<sup>2</sup> of surface was rehabilitated using the product.

Since the upgrade, the flume is now capable of passing 28 m<sup>3</sup>/s of water through the same cross section, an increase of around 55%.

Jon Crean, managing director at Fernco Environmental, commented, "The project at the Liawenee Flume was extremely successful and shows the advantages and flexibility of the Ultracoat solution. We are looking forward to completing more projects like this in the future." Website: [www.ferncoenvironmental.com](http://www.ferncoenvironmental.com)



*Before and after the application of Ultracoat at the Liawenee Flume.*

## LARGE DIAMETER GAS MAINS REPLACED 'LIVE' IN GLASGOW

Replacing large diameter cast iron gas mains in city centres always poses enormous challenges for utility companies. Maintaining supply to businesses and homes, limiting the number and extent of excavations and keeping traffic and pedestrian disruption to a minimum are top of the list.

One hundred and twenty five metres is not a particularly long project for live gas mains insertion, but when the project is in a pedestrianised area just off Ingram Street, right in the heart of Glasgow, speed, efficiency and minimum disruption were essential in this high-profile location.

Scotland Gas Networks and its contractor, Forward Construction Group, elected to carry out the project using the dead/live insertion method because of the large number of commercial properties, including restaurants, shops and hotels being fed by the 380 mm (15 in) cast iron gas main. The use of the insertion techniques allowed renewal of the old main by pushing lengths of 315 mm diameter PE pipe into the cast iron pipe with just two excavations which were opened at either end of the section into which the new pipe was to be inserted. Most importantly, customers were able to remain on gas throughout the insertion process.

Large diameter live mains insertion differs from the usual process for pipe diameters up to 180 mm as smaller diameter PE is delivered in coils and can be gassed up prior to insertion, with a 'live' head on the leading end of the PE pipe allowing a two-way flow of gas into the annular space.



*An End Seal being fitted by a Steve Vick International contracting technician.*

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# PIPELINE REHABILITATION

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With larger diameters, which are only available as straight lengths of 6, 12 or 18 m, the PE pipe is blanked off with a PE domed End Cap to avoid the need for squeeze-offs when the lengths are fused. The PE is inserted through a special Lyontech™ gland box produced by Steve Vick International Ltd.

In Glasgow, Forward Construction Group, carried out the job at night to minimise disruption to the public. Each length of PE pipe was inserted and butt fused to the next length until the exit excavation at the junction with Ingram Street was reached. A rider was installed to maintain a two-way supply of gas to the annular space, preserving supply to customers. Then a flow-stopping operation was carried out by a Steve Vick International Special Contract Services engineer, using a 'Foam restraining bag' Foambag™ to seal off the annular space at the exit end. The old main was then broken out and access gained to the inserted PE pipe which was tested before being connected to the existing network at the entry excavation. Finally, an End Seal was fitted to the cut-out end of the main to seal off the annular space.

Forward Construction Group used a Steve Vick International Pipe Pushing machine to speed up the insertion of the 315 mm diameter pipe into the existing cast iron main. This hydraulically operated machine is capable of pushing in PE pipe up to 355 mm diameter at speeds of up to 4 m/minute.

Colin Skinner, Team Manager with Scotland Gas Networks said: "We chose to carry out this section of insertion by the dead/live method because of the large number of commercial services being fed by the cast iron main. The contractors worked overnight in order to keep disruption to a minimum so we started at 10pm and had completed the insertion by 6am. It took longer than it might have done because we had to keep stopping to fuse the lengths of PE together. Using the live insertion method was a success and we can now schedule connection of the services over the coming weeks." This is one of five similar renewal projects being carried out by Scotland Gas Networks in Glasgow city centre. Website: [www.stevevick.com](http://www.stevevick.com)

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## PIPE BURSTING AND PIPE COMBINATION PROVIDES RELIABLE PIPELINE SOLUTION

Quality assurance is an important factor for Stadtwerke Klagenfurt AG in all areas. The company's waterworks, which provide water for Klagenfurt, the capital of the Austrian state of Carinthia, have to ensure a smooth and trouble-free water supply for more than 91,000 people. The main requirement for this is a pipeline network which works to everyone's satisfaction.

"We operate a pipeline network of about 525 km in length and cover an annual water consumption requirement of almost 9 million cubic metres. It is our job to make reliable plans for the future. That is our reason for attaching great importance to pipes and pipe materials which are safe, secure and durable. The experience we have had in the past with Duktus pipes has been excellent. That is why we have again relied on ductile iron pipes from Duktus for this latest operation, which comprised the replacement of 1,000 m of drinking water pipeline within the municipal area", explained Günther Kumerschek, head of the Underground Works Division of Stadtwerke Klagenfurt.

There were four stretches of road along which old pipelines had become damaged and needed to be replaced. The hydraulic calculations showed that a reduction in cross-section was not possible and that there were even areas where it needed to be increased by at least one pipe size.

"After an analysis of the situation it was determined, in consultation with Stadtwerke and Duktus's Applications Engineering Department, that the pipe bursting technique would be the most economical method of replacement and the best one in technical terms", confirmed Stefan Koncilia of Swietelsky-Faber, the firm which did the installation work.

Ductile iron pipes were the choice for this operation. As well as the cement mortar coating (ZMU), which is able to meet all the demands made by the pipe bursting technique, the other major point in favour of the Duktus pipe system was the enormous tractive (pulling) forces the BLS<sup>®</sup>-/VRS<sup>®</sup>-T joint used with the pipes is able to withstand.

"The decision to use the ductile material for the new pipes meant that we were on the safe side, because the fragments of the old grey cast iron pipelines would have been too much of a risk with any other material", says Erich Plimon, head of the Water Business Area of Stadtwerke Klagenfurt.



*The ZMU drinking water pipes being brought in.*

Because the soil was difficult coarse gravel, the four pipe burst installation sites, totalling 1 km in length, were divided into sections of about 150 m long. A 40 t bursting rig manufactured by the TRACTO-TECHNIK company, which is big enough to handle the 80 to 150 mm pipe sizes being installed, was used to carry out the bursting process.

*The cutting and expansion head and the bursting rods ready for a bursting run.*

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Each section was able to be replaced in two working days. Johannes Schuster, the engineer from Stadtwerke responsible for the installation operation, had advocated the pipe bursting technique and ductile iron pipes even in the planning phase. Once the first sections had been successfully completed, he said how very pleased he was: "The expectations we had of the combination of the pipe bursting technique and the ductile iron pipes have been fulfilled. Thanks to the uncomplicated laying properties of the Duktus pipes we were able to meet the tight



*Connecting a BLS®-/VRS®-T joint with a high-pressure lock.*

deadlines laid down by the road maintenance authority. The trenchless pipe laying technique enabled the amount of trenching work to be reduced by more than 80%. This saved the population of Klagenfurt from about 300 lorry trips across the municipal area and from the nuisance from noise and dust that they would have caused."

In the state capital on the Wörthersee lake it has once again been demonstrated that with No-Dig techniques and the use of Duktus pipe systems not only can time and money be saved but there is also a sustainable benefit to the environment.

"The immaculate handling of the operation in consultation with the pipe laying company and the client has shown that we, as a pipe supplier and system solution provider, are making an important contribution to sustainable quality assurance for drinking water suppliers and that we have achieved our goal – customer satisfaction", commented Walter Korenjak, Duktus sales manager for the Southern Region of Austria. Website: [www.tracto-technik.com](http://www.tracto-technik.com)

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# ASSET MANAGEMENT, MAPPING & SURVEY

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## WESTMINSTER CITY COUNCIL USES INTELLIGENT TRENCH MAPPING SOLUTION

Westminster City Council has recently been shortlisted for an award by the National Joint Utilities Group (NJUG) for its pioneering use of the Intelligent Trench underground mapping solution which captures information about street works and underground utilities. This solution enables photographic, survey and utility information to be captured in order to reduce dry digs and improve sharing of information. In addition, where physical excavation can be avoided, or in high risk areas, Westminster will pilot the use of Infotec's NJUG award winning Virtual Trialhole services.



Open excavation



Reinstated

An excavation on Whitehall shown before and after reinstatement.

Westminster City Council co-ordinates 50,000 street works per year in a critical area of London's road networks, encompassing some of the most famous sites in London. Already taking the initiative with its 'Considerate Roadworks Scheme', Westminster knows how frustrating it can be for the public when contractors have to open up the streets to work on underground utilities. Especially frustrating is when contractors dig in the wrong place (known as 'dry digs'), further adding to the disruption. Martin Low, City Commissioner of Transportation for Westminster City Council explained: "Dry digs can happen in excess of 20% of the time which is estimated to waste over £6 million per year in Westminster alone."

Under the Traffic Management Act, powers are available to Local Authorities to drive better performance in this area, enabling them to fine utilities and contractors for overstays or non-compliance. In London, more than £3 million in fines were administered in the last year alone. Rather than rely on solely punitive measures, Westminster City Council is now adopting the Intelligent Trench solution for street works planned on Pall Mall, Grosvenor and Leicester Square, in order to address the root cause of the problem.

The Intelligent Trench solution enables street works and utility details to be recorded in a simple, transparent and precise way. In order to provide positional accuracy that GPS cannot affordably and consistently achieve on its own, innovative RFID underground markers are used together with purpose-built field GPS software to precisely locate street works at a future point, even when the tarmac surface has been re-instated. Photographs, surveys and utility information are captured in a format prescribed by the National Underground Assets Group (NUAG) and are shared on a central

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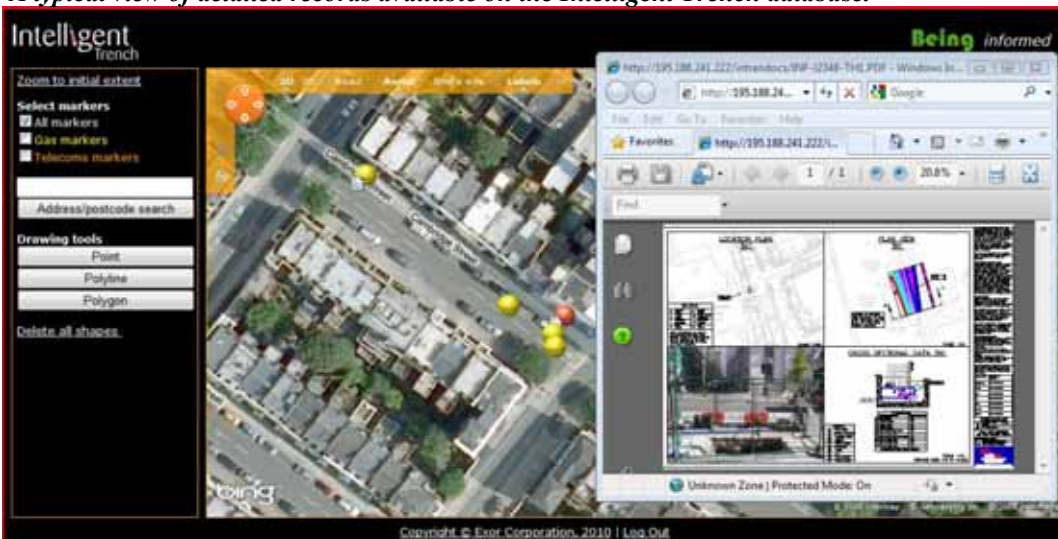
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*A typical view of detailed records available on the Intelligent Trench database.*



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database, accessible to all contractors in future. Any new street works in the same location then benefit from simple and clear records, making “dry digs” truly unnecessary.

The RFID Markers most commonly used to record open trench excavations are unique, patented self-righting Marker Balls. Smaller, Near Surface Markers are also used to record the position of non-invasive Virtual Trial Holes or similarly surveyed utility routes. Both operate without the need for battery power supply, requiring no future maintenance and are activated when a suitable signal is transmitted by a Locator from ground level. These revolutionary systems will continue to provide accurate position and unique identification detail ensuring that only information appropriate to the individual RFID Marker is accessed, reducing any opportunity for human error.

Martin Low described a recent successful trial in Whitehall: “Intelligent Trench is essential practice in order to dig safely, and also brings many cost benefits. Dry digs and the need for exploratory digs can be reduced and avoided. The cost associated with rectifying failed reinstatements is also much reduced, saving the taxpayer money. The public benefits further from increased life of roads and a decrease in congestion.”

This trial deployed RFID Markers in conjunction with works undertaken by J Murphy & Sons during September 2009, to both renew the Victorian water mains and install anti-terrorism bollards. Using Virtual Trial Holes the detailed locations of adjacent utilities were cost effectively surveyed. Now that this data has been collected it will be possible to access these records online or at the location in future, accurately pinpointing the relative position of the utilities using the RFID marker.

By pioneering the use of Intelligent Trench, Westminster has set a standard for others to follow. The National Joint Utilities Group (NJUG), which focuses on promoting best practice, safety, quality and co-ordination of works shortlisted Westminster City Council for a 2010 award in both its ‘Avoiding Damage’ and ‘Safety’ categories. Website: [www.intelligenttrench.com](http://www.intelligenttrench.com)

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## COMPETENCY STANDARDS FOR A CHANGING BUSINESS ENVIRONMENT

A quick look at the utility and buried service industry, even to the uninitiated, shows that there is a significant and fairly wide-ranging mandatory requirement for training, minimum competency levels and approved certification of operators/installers/contractors, particularly where health & safety issues are concerned. For example confined space workers must hold the relevant documentation/certificates and certain types of machinery may not be used by untrained and certificated personnel and CCTV surveyors need to meet a certain reporting standard etc. This situation, whilst to some a burden is seen by most to be totally necessary to ensure the safety of the workforce and the public that may pass near to a work site.



*Typical training sessions for the improvement of topic specific competency standards (Picture courtesy of the epros division of Trelleborg).*

The United Kingdom Society for Trenchless Technology (UKSTT) has always prided itself that one of main aims is to promote the safe implementation of trenchless technologies across the buried services industries in the UK. As part of this drive towards high health and safety (H&S) and operational standards UKSTT has implemented an arrangement with one of the UK's leading training providers, Develop, to provide City & Guilds recognised and approved training across various aspects of the trenchless family of technologies.

These courses not only cover the mandatory H&S requirements that operate in various sectors of the utilities and buried service sectors but also offer basic training in some specific technologies such as Cured-In-Place Pipe (CIPP) lining for example.

Whilst the mandatory health & safety related courses are normally well attended those relating to specific technologies are less so. Why is this? It would seem that the general opinion is that unless a certification is mandated by law or is a specific requirement called for by client companies there is no real need for contractors to expend the cost of such a course, the cost of which would ultimately have to be passed on to the client through project fees. This could make one contractor holding such certification uncompetitive compared to one that does not.

The other side of the coin is that whilst clients understand the need for contractors with the mandated certifications there is something of an assumption that a contractor offering to utilise a specific technology has had all its operatives trained in that technology. Whilst at a basic level this may be true, unfortunately without a specified minimum standard there is nothing to say that the training undertaken by the operatives of one contractor is to the same standard as that of another. So does the client always get what it thinks it is paying for?

Some readers of this article will look at it and think 'we don't need to worry about this we know how well our workforce is trained'. However, at present in some aspects of the industry there is no set minimum standard with which to compare different companies and their competency levels. So it appears that until industry regulators or the clients themselves call for such a comparative set of standards none will be pro-actively provided by the contracting fraternity.

## REASONS TO LOOK AGAIN

This of course begs the question 'does this really matter provided the client has made sufficient investigation of its contractor to ensure it meets the standards it requires'? The answer to this may be two-fold.

Currently clients tend to be working with contractors they know and trust and with whom they have long term relationships, so the contractors know what is expected and works to meet these 'internal' standards.

However, the situation is about to take what some are expecting to be a somewhat 'drastic' turn with the implementation in October 2011 of the Private Sewer Transfer Initiative.

Various meeting and seminars have highlighted that whilst current 'main' contractors are expecting their workload to increase with the transfer they themselves have little capacity to

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complete the new workload in-house. This means that will be looking to the smaller contractor community to take on this work.

There is however very little in by way of 'across-the-board' certification that could be used to compare these contractors in terms of competence and ability other than the smaller contractor's 'manufacturers' training which would have been given when taking on any given technology.

The current situation means that there is little control, monitoring etc of individual technologies such as for example CIPP installation. This means that little final testing is undertaken and methods of installation vary from contractor to contractor. This can mean that perhaps too much emphasis being placed on the supplier's training by the client companies and/or word-of-mouth 'reputation' (where in future the 'client' companies may simply be the ultimate utility owner's main contractor which will ultimately carry-the-can for any shortfall in subcontractor performance).

Does this therefore add weight to the argument that topic-specific training and certification should be considered by client companies as a way forward in an industry where such major change is imminent?

As an example of how this situation is dealt with in other areas of Europe, Germany for example operates the DIBT scheme which looks at not just final product quality but also the method and practices involved in the installation and the level of competency of individual operators. Should the UK industry be asking the question 'is this a format that needs to be considered here'? If it is then it should be looked at sooner rather than later and before the sewer transfer initiative becomes reality and potentially projects are compromised by sub-standard workmanship and lack of minimum standards training. If so, who should oversee, set and monitor such standards.

The courses currently on offer through organisations such as UKSTT/Develop have already gained City & Guilds approval and so make an excellent starting point for spreading this type of competency training and certification across the UK. The types of courses that may be considered in this category include: Confined spaces – City & Guilds Medium or High Risk; and CCTV – OS 19: Manual of sewer condition classification (BS EN 13508-2) which applies to pipe sewers 225mm diameter and above or City & Guilds OS22: Private drainage systems which applies to 100 mm and 150 mm domestic drains and sewers.

Perhaps it is time for client/main contractor partnerships to think again about what will be needed to maintain high standards in the very near future. Website: [www.ukstt.org.uk](http://www.ukstt.org.uk)



*A training session for topic specific competency standards in this case CIPP. (Picture courtesy of Altair Inc)*



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The advertisement features a background image of several DynaMc fusion machines, including a large unit on a stand and a smaller unit on a cart, with various pipes and components.



# UKSTT NEWSLETTER



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## UKSTT ANNUAL DINNER & AWARDS CEREMONY 2011

The United Kingdom Society for Trenchless Technology will be holding its Annual Dinner & Awards Ceremony at the Holiday Inn, Birmingham on Friday 15 April 2011.

Last year the event's record number of entries and continued popularity and support, despite recession, attracted nearly 200 members and guests from across the UK. The evening, which includes a first class meal at a quality venue, is a time to recognise the outstanding contributions made by organisations and individuals to the promotion, use and development of Trenchless Technology in 2010.

Following the success of last year's awards we have again secured the services of Norman Brown as master of ceremonies and also the naturalist, author and broadcaster, Chris Packham, himself an individual Patron of the UKSTT. Chris will present the short-listed entries for the seven prestigious awards covering Rehabilitation, New Installation, Small Project, Innovation & Young Engineer. He will undoubtedly be bringing a 'friend' to join us as well.

Following very popular feedback from last year the musical support and continuity will again be provided by the young musicians 'Pink Strings'.



Once the awards ceremony and the dinner are completed, John Archer, a Comedian and magician will provide the entertainment. John is the current 'Magic Circle Stage Magician of the Year' and certainly one of the best comedy magicians in the UK today.

Sponsors currently already include H50, Bournemouth & West Hampshire Water, Severn Trent Water, Wessex Water, U-Mole (a division of Vp plc), DCT and Drilline Products. Full details of all sponsorship opportunities can be obtained by emailing UKSTT.

In 2008 the UKSTT introduced the Chairman's charity prize draw. In 2010, £1,175 was donated to the chosen charity, The Royal Air Force Benevolent Fund. This year's charity will be the Lighthouse Club; the Lighthouse Club is known, recognised and regarded with respect and affection throughout every branch of the construction industry. It is a registered charity dedicated to giving aid and assistance to construction workers and their families who suffer accident or ill health. Website: [www.lighthouseclub.org](http://www.lighthouseclub.org)

Reception for the "Black-Tie" dinner will be from 6:45pm with introductions and the presentations starting at 7:30 pm. Drinks (not included in the ticket price) will be available at your table throughout the evening. Dinner will be served at approximately 8:15 pm and

the winning nominations will be announced over coffee at about 9:45 pm.

Tickets for the dinner are £60 plus VAT each and can be reserved by completing the booking form (email: [admin@ukstt.org.uk](mailto:admin@ukstt.org.uk)) and sending this with the full remittance, cheques payable to 'UKSTT' to: Val Chamberlain, UKSTT, 38 Holly Walk, Leamington Spa, Warwickshire, CV32 4LY, or by credit card by calling 01926-330935 or fax back to 01926 330935.

Tables of 10-12 can be reserved on a first come-first served basis. Tickets will be forwarded as soon as possible after payment has been received. Overnight accommodation is available at preferential rates (state UKSTT Dinner) at the Holiday Inn (call 0121 634 6273). Room availability is limited so early booking is recommended.

The awards themselves are open to all aspects of Trenchless activity and details on the categories, criteria and how to enter are outlined below and detailed on the web site. Each category is co-ordinated by a council member with a panel of independent judges, many of whom are not necessarily members of the society. They are carefully selected to be representative from a broad cross section of the relevant industries.

### AWARD ENTRY AND JUDGING INFORMATION

Award entry information can be found on the UKSTT website ([www.ukstt.org.uk](http://www.ukstt.org.uk)) or requested by email ([admin@ukstt.org.uk](mailto:admin@ukstt.org.uk)). Completed entries should be returned by email along with supporting evidence, including photographs where possible to the email address above. The deadline for submissions is 18 February 2011 (8 weeks before the Dinner).

Judges will give particular credit to projects that readily illustrate the benefits of Trenchless Technology & further the aims of the UKSTT.

They will be looking for originality of approach, technical difficulty and innovation as well as customer care, client satisfaction, programme compliance, cost minimisation, safety record, environmental considerations and compliance with legislation. The weighting and applicability of the scoring will be tailored to the category.







# UKSTT NEWSLETTER



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Entries for overseas projects will be accepted provided they are submitted by UK companies who either did the work or supplied the equipment. Entries will also be accepted from overseas companies for work carried out in the UK.

The Award Categories include:

- Renovation – 2 awards (Large >£250K and Small <£250K) – These two awards cover successful UK pipeline renovation projects of any diameter or technique completed during 2010.
- New Installation – 2 awards (Large >£250K and Small <£250K) – These 2 awards will be presented to the companies demonstrating their key roles in successful new installations of cables, ducts or pipelines using trenchless techniques during 2010.
- Small Scheme (<£50K) – Running since 2006 this award is designed to encourage applicants to submit projects that, regardless of size, are examples of excellence, either technically or professionally, that they believe supports the aims of the awards ethos. It is designed to encourage submissions from a wider range of entrants in the trenchless world.
- Innovation – This category covers non-project specific developments that support the trenchless technology industry. Examples of developments in underground mapping software, underground detection equipment, combined sewer overflow chambers, towing heads, coil handling, tracking devices, safety equipment, new materials, jointing systems, etc would all be welcome. These are listed to illustrate the wide range of trenchless products and systems on which the industry depends.
- Young Engineer – The UKSTT Chairman's award will go to the young engineer (<30 years) who can best demonstrate their contribution to the field of Trenchless Technology. Judges will be looking for evidence of an understanding of Trenchless Technology, the individual's contribution made, the quality of the submission and the candidate's vision for the future of Trenchless Technology. The prize is a sponsorship of up to £2,000 which will be used to fund travel and accommodation to any part of the world, to allow the winner to undertake further research into their chosen area of Trenchless Technology.



Previous Award Winners include: AM Surveys, Advantica, Amec Ltd, Avoidatrench, Balfour Beatty, Barhale, Brand-Rex, Brewis Direct, Byzak, Clancy Docwra, Corus Rail Consult, DCT Civil Engineering Ltd, Denholm Pipecare, Dyno Rod, Enterprise, Environmental Techniques, Eurotunnell, Fastflow Pipeline Services Ltd, Ferro Monk, Grontmij, Habilitas Solutions, Hermes Technologie, Insituform Technologies, J. Murphy & Sons Ltd, Johnston Construction, Kilbride Industrial, Lanes Group plc, LMR Drilling, Longbore TT Ltd, Louis Dreyfus Communications, May Gurney Utility Services Ltd, MacAllister Bros, McNicholas, Mosley Moling, Naylor Drainage Ltd, Northern Ireland Water, Onsite, Peter Duffy Ltd, Severn Trent Water, Smit Land & Marine, Stockton Pipelines, Subterra, Thames Water, TJ Brent, Waterflow Group, Wessex Water, Whitehouse Construction.

## EVENTS AND MEETINGS



### NO-DIG DOWN UNDER CALL FOR PAPERS NOW OPEN

The Call for Papers is now open for No-Dig Down Under 2011. Authors are invited to submit abstracts for presentations to be considered by the Program Technical Committee.

No-Dig Down Under will take place in Brisbane, Queensland between 3-6 October 2011 at the Brisbane Convention and Exhibition Centre. It will encompass all areas of the sector, bringing the entire Trenchless Technology industry together for an indoor exhibition and conference.

No-Dig Down Under 2011 will involve a full conference programme of more than 35 industry experts and leaders; an exhibition of over 90 exhibition booths showcasing the latest in products and services; and plenty of networking opportunities.

Abstracts can be submitted via the event website [www.nodigdownunder.com.au](http://www.nodigdownunder.com.au). The conference will feature plenary and streamed sessions and all papers will be considered on the basis of technical merit, interest to the industry and relevance to the event.

Key Dates to note are:

- 1 April 2011 - Abstracts deadline
- 1 June 2011 - Speakers notified
- 15 July 2011 - Speakers must register and submit draft papers
- 1 September 2011 - Speakers to submit final papers



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### DEADLINE EXTENDED FOR BERLIN PAPERS

ISTT is pleased to announce that the closing date for abstracts for the International No-Dig Berlin event has been extended to 2 January 2011. Abstracts should be not more than 300 words of text with no image files. International No-DIG 2011 Berlin, Germany will take place between 2 and 5 May, 2011. Abstracts should be submitted to [info@istt.com](mailto:info@istt.com)

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# EVENTS AND MEETINGS



## 2011

**January 16-20**

**New Ways to Perform Piping Design & Layout** - Doha, Qatar

Details from: [www.fleminggulf.com](http://www.fleminggulf.com)

**January 25-27**

**UCT – Underground Construction Technology International Conference & Exhibition** - Houston, USA

Details from: [www.uctonline.com](http://www.uctonline.com)

**February 8**

**Pilot Tube Microtunneling Seminar** - Colorado, USA

Details from: [www.microtunneling.com/topics/mt\\_course\\_information\\_basic\\_outline\\_09.htm](http://www.microtunneling.com/topics/mt_course_information_basic_outline_09.htm)

**February 9-11**

**Microtunneling Short Course** - Colorado, USA

Details from: [www.microtunneling.com/topics/mt\\_course\\_information\\_basic\\_outline\\_09.htm](http://www.microtunneling.com/topics/mt_course_information_basic_outline_09.htm)

**March 1-3**

**International Conference & Exhibition on Tunnelling & Trenchless Technology** - Selangor, Malaysia

Details from: [www.iem.org.my](http://www.iem.org.my)

**March 8-10**

**6th Annual CGA Excavation Safety Conference & Expo** - Orlando, USA

Details from: [www.CGAconference.com](http://www.CGAconference.com)

**March 16-18**

**Inter Tunnel 2011** - Moscow, Russia

Details from: [www.intertunnelrussia.com](http://www.intertunnelrussia.com)

**March 27-31**

**NASTT No-Dig Show** - Washington, USA.

Details from: [www.nastt.org](http://www.nastt.org)

**April 15**

**UKSTT Annual Awards Dinner** - Birmingham, UK

Details from: [www.ukstt.org.uk](http://www.ukstt.org.uk)

**May 2-5**

**International No-Dig 2011** - Berlin, Germany

Details from: [www.nodigberlin2011.com](http://www.nodigberlin2011.com)

**May 24-25**

**Iran PipeTech 2011 - 3rd Iranian Pipe & Pipeline Conference** - Tehran, Iran.

Details from: [www.iranpipetech.com](http://www.iranpipetech.com)

**September 7-8**

**dt Exhibition** - Cheltenham, UK

Details from: [www.dtexhibition.com](http://www.dtexhibition.com)

**October 3-6**

**No-Dig Down Under 2011** - Brisbane, Australia

Details from: [www.trenchless2011.com](http://www.trenchless2011.com)

**October 10-11**

**TRENCHLESS MIDDLE EAST 2011** - Dubai, UAE.

Details from: [www.trenchlessmiddleeast.com](http://www.trenchlessmiddleeast.com)

**October 26-28**

**International Conference on Pipelines and Trenchless Technology (ICPTT)** - Beijing, China.

Details from: [www.icptt.org](http://www.icptt.org)

## 2012

**October 2-4**

**No-Dig Live 2012** - Coventry, UK

Details from: [www.nodiglive.co.uk](http://www.nodiglive.co.uk)

**November 12-14**

**International No Dig Show 2012** - São Paulo, Brazil

Details from: [www.nodigshow2012.com](http://www.nodigshow2012.com)

If you have an event, course or meeting scheduled and would like to add it to this listing please forward details to: [ian@nodigmedia.co.uk](mailto:ian@nodigmedia.co.uk)