

The Report on No Dig India Show 2019

Introduction

Trenchless Technology methods are becoming some of most preferred construction methodologies in underground utility industry as they can assist sustainable development. Underground space is a finite resource and needs to be utilized in ways that meet present societal needs without reducing the ability of future generations. Unregulated or uncontrolled construction practices lead to unsustainable usage of this space and should not be practiced.

Trenchless technology, by virtue of its state-of-art nature, has the capabilities to provide the much-needed sustainability quotient to the subsurface construction and management process. The only need is to ensure that the practicing trenchless technologists are empowered enough to be able to accrue the most out of these techniques and deliver most optimum and sustainable solutions to underground construction challenges. **No Dig India Show 2019 (NDIS 2019)** was aimed to discuss and facilitate core issues where Trenchless Technology can provide sustainable solutions for underground space, a most vital asset for any smart city and smart society.

Show Overview

A Grand International Show, dubbed '**No Dig India Show 2019**' with the theme, "**Sustainable Development through Trenchless Technology**" was organized by IndSTT at **Gateway District Aerocity, New Delhi, India** spanning across 3-acre area. The two-day show concluded successfully on 12th December 2019. The event was actively supported by **Aqua Foundation, Construction Industry Development Council (CIDC) & GMR Aerocity**. The event partnered by **Centre for Underground Infrastructure Research and Education (CUIRE), International Institute of Utility Specialist (IIUS)** as **Sector Partners**, **Jiangsu Goodeng Engineering Machinery Assembling Co., Ltd.** as **Principal Partner**, **DCI India Pvt. Ltd., DrillTo Trenchless Co., Ltd., and Sekisui Singapore Pte Ltd.,** as **Main Partner**; **L R Sharma & Co., Gypsum Structural India Pvt. Ltd.** and **Vermeer** as **Associate Partner**. It witnessed several constructive activities during the show. Those included release of IndSTT publications, Interactive sessions, holding various presentations, and various trenchless equipment displays & live demonstrations with stand displays.

Event saw the release of following trenchless books to benefit delegates and subsequently other readers. These books include:

- 1. Schedule of Rates for Construction Contracts Employing Trenchless Technology 2020**
- 2. Compendium of Trenchless Equipment 2019**
- 3. No Dig India Journal Souvenir Issue 2019**

Copies of these publications, except the Schedule of Rates, were provided to the registered delegates of the show. Other interested stakeholders can request for copies on payment of the applicable fee.

During the conference, there were three concurrent workshops held on **Clogging in the sewer pipe networks, UV cured CIPP and Machined Wound Spiral Lining**.

The Exhibition was a great success wherein 53 stands & open display space of various Trenchless equipment and products were displayed by the exhibitors. Total of twenty-five HDD rigs were put on live

demonstration by the exhibitors along with live demonstration of other trenchless equipment. The exhibition was visited by numbers of visitors who got the first-hand information and feel of the various Trenchless equipment and their usage.

Event as it progress

In the inaugural ceremony, a **Memorandum of Cooperation** was signed between **Central Public Work Department (CPWD) & Engineering Council of India (ECI)** to collaborate, cooperate and complement each other to undertake initiatives and programs geared to provide capacity & Institution building support to the existing business process of CPWD and also through propagation of best practices of the entire construction sector leading to increased efficiencies in enhancing safety, quality and productivity of people and processes.

After that **Dr. P R Swarup, Chairman, INDSTT**, set up the conference agenda and address the gathering on the importance and measures taken up by the INDSTT for the Advancement of Trenchless Standardization followed up by the 12 technical session where leading experts from national and international arena share their experiences with Indian Stakeholders.

In the technical conference following topics were dealt.

Subsurface Pipeline Rehabilitation was the first topic of discussion. **Mr. Sunir Garg, Director – Technical, Gypsum Structural India Pvt Ltd.** Presented the topic. The session covered **'The basic design and installation criterion that need to be considered before selecting any particular lining technology, for Indian sewer and ambient conditions, followed by brief discussion on two of the most popular rehabilitation technologies – GRP and CIPP lining'**

Another topic of interest discussed was the clogging in the sewer pipe networks. In this **Mr. Holm Reisinger, Business Development Director, IST Germany & Mr. M K Zaman, Managing Director, Globalbiz MS Pvt, Ltd.** conducted a workshop titled **'No more Jams in Sewer Pipe Networks-Solutions through Robotic Cutter and Robotic Pipe Jetting Machines'**. The workshop covered innovative equipment used for sewer pipe network maintenance like Robotic Milling machine to remove deposited silt/concrete, Robotic Cutters to cut roots obstructing the flow and Robotic Water Jetting machine for Pipe Jetting Machines, that remove jams from the pipes ranging from 100mm to 1200mm or even bigger man entry pipes, with ease, while flow is on. It was informed that the weights of such machines were between 50 kg to 70 kg & it works well for Storm Water Drainage Pipe networks as well.

Another session focused towards UV cured CIPP was presented by **Mr. Holm Reisinger, Business Development Director, IST Germany & Mr. MK Zaman, Managing Director, Globalbiz MS Pvt Ltd.** The session covered **'UV Curing machine for CIPP and Removal of CIPP Liner from Sewer Pipes through Robotic machines'**. The session covered wide range of UV Curing machines (400 to 2000 watts) suitable for CIPP liners, with diameter ranging from 80mm to 1600mm. It was also presented efficient steam curing machines for CIPP liners and different kind of accessories available for such machines. In addition, small vehicles with built-in Water Heating System were also discussed. Such vehicles could be customized with all maintenance accessories to make the work mobile and easy and therefore quite useful for participants.

Another session focused towards Machine Wound Spiral Lining (MWSL) was presented by **Mr. Sean Lim, General Manager, Sekisui Singapore Pte. Ltd.** The session covered **'Overcoming ageing pipeline infrastructure in a sustainable way through Spiral Wound Lining'**. It was discussed that as the

underground infrastructure ages around the world, it is essential to improve the structural integrity of the existing sewer network in a sustainable way. Machine Spirally Wound Lining (MWSL) were one of the leading trenchless technologies for sewer pipe rehabilitation. It was applicable not only for circular pipes but also for box culverts and other odd shapes. The presentation provided a basic understanding and advantages of Spirally Wound Lining. Challenging case studies using Spiral Wound Lining from around the world had been shared. The Machine Spirally Wound Lining (MWSL) process was one such solution, employing a rigid PVC profile strip with an integral steel reinforcement band together with a structural grout in order to provide a composite structure capable of withstanding the applied loads. The session also described the MWSL system, testing and evaluation performed and projects undertaken – demonstrate the potential for application in solving similar deteriorated conduit problems faced in Asia.

The **Show Keynote** was delivered by **Dr. Niranjan Swarup, Director General, Indian Society for Trenchless Technology**. The keynote is titled **'Sustainable development through Trenchless Technology'**. Trenchless Technology methods are becoming some of most preferred construction methodologies in underground utility industry as they can assist sustainable development. Underground space has a finite resource and needs to be utilized in ways that meet present societal needs without reducing the ability of future generations. Unregulated or uncontrolled construction practices lead to unsustainable usage of this space and should not be practiced.

Another session on UV Cured liners was conducted by **Mr. Hans Jürgen König, Director Asia Pacific, Saertex Multicom GmbH**. The session is titled **'UV-cure provide complete CIPP solution based on international standard'**. Water is an essential natural resource for human existence. A large percentage of the world-wide infrastructure distribution networks is currently in need of rehabilitation. To achieve a sustainable wastewater and water supply network, technologies are needed to be developed which are environmentally friendliness to reduce the water loss and avoid environmental pollution. The session has introduced GRP-Liner for fast, sustainable in-place rehabilitation of Wastewater, Potable Water & Gas pipelines.

On New Installation technology front, session was conducted by **Dr. Heinz Plum, Managing Director, Bohrtec GmbH**. The session is titled **'Guided Auger Boring for small diameters in all ground conditions'**. The Guided auger boring method was a proven method in soft soils. Complemented with the special Groundwater auger and bentonite lubrication, even ground water bearing soils can be managed. The guided auger boring method is now extendable to hard soils, soft and hard rock up to 250 MPa with the use of the cutting-edge Front Steer system utilizing different possibilities of Cutting Wheel and DTH hammer. With these two techniques a wide range of ground conditions can be tackled for on-grade pipes and for almost all kinds of pipe material. Both methods are robust, affordable, easy to handle and unbeatably accurate. The Front Steer system equipped with down-the-hole hammer allows most accurate pipe jackings even for small diameters starting with 324 mm OD in hard rock up to 200 to 250MPa. Although these techniques were proven successful, each new pipe jacking job had to be designed, investigated and prepared as best as possible as an essential condition for the success of trenchless pipe jacking project. The session was presented such systems to provide adequate sensitization to the participants.

Another session on trenchless application in densely populated urban areas was presented by **Mr. Tarit Kumar Mukherjee, Retired Chief Engineer, Kolkata Municipal Corporation, Consultant, STUP Consultant Pvt. Ltd.** The session titled **'Trenchless Technology works in Business area of a City'**. To execute any improvement/rehabilitation of underground infrastructures in the business district, the same become a hard task for the development agencies. Everybody become anxious in fear of difficulties may be cropped up for the new excavation that may require to lay or change the existing old and worn-out infrastructure

may be water supply, telephone/electric cable sewer lines etc. The traffic department was anxious to maintain the flow of traffic/probable way of diversion required etc. The electric /telephone department were anxious in fear of damage of their old and unspecified route services due to open cut excavation for laying new infrastructure. The existing Water & Sewerage department became anxious for probable damage to their existing utilities may be due to close excavation of long trench for installing the new infrastructure. The businessman thought of their loss of activity due to the excavation of the road, everybody fears of suspension of usual / routine works apprehending the open cut of trenches and the time require for restoring the normal condition. But the new infrastructure will ease if the work is done with the execution through Trenchless Technology method. The session has covered the above matters.

Another session on HDD Locating training was conducted by **Mr. Vishal Kumar, Software Architect, DCI India Pvt. Ltd.** The session is titled '**AURORA VISION – HDD Locating Training Made Simple**'. Aurora Vision is a cost-effective, risk free, fully immersive and interactive virtual reality training simulator of HDD locating subjects in almost real jobsites with 360-degree of freedom. Here user will have complete freedom of subject selection, decision making, understanding complex HDD subject by performing virtual hands-on with HDD products and taking an assignment to perform a drill job. Gamification of Virtual training added another mile to make this virtual training a virtual journey with fun. Aurora Vision session covered effective training of several HDD locating subject in details that include HDD Basics, HDD Safety, DCI Products, Locator Basics, Transmitter Selection, Active & Passive Interference, Frequency Optimization, Pairing, Calibration, Locate Points (FLP-RLP-LL), Height Above Ground (HAG), Drill Commands, Steep and Deep, Log While Drilling (LWD)&Drilling in Paris Jobsite.

Another session on Subsurface Utility Engineering was conducted by **Dr. Sanjay Rana, Managing Director, Parsan overseas (Pvt.) Ltd.** Session titled '**Subsurface Utility Mapping - A paradigm shift in subsurface assets development and management**'. Trenchless activities are generally performed in subsurface environs, where the created utilities are buried. Pre-existing utilities pose challenges for trenchless technologists, as what is buried is out of sight, and that way out of mind. If one is not aware of the presence of such utilities, possibilities are that the machine could damage the utility. To reduce these challenges subsurface utility mapping is the most effective solution. IndSTT had published the Code of Practice for SUE and the session had discussed this code and essential competencies to prepare and certify Subsurface Utility Maps.

Another Session on Safety in Trenchless was conducted by **Mr. Aditya Gund, Regional Manager, Vermeer India.** The Session titled '**Safety in Executing HDD – Your Investment for Your Success**'. Better quality HDD machines are expected to have been designed and built with safety in mind; but it takes more than machine engineering to prevent accidents. Owners, operators and crew members must use the machines properly and pay attention to proper jobsite safety management. The session highlighted the importance of safety in HDD operations and educate delegates about ill effects of ignoring it.

To provide a better understanding of the issues, the show having several live demonstrations scheduled. That were Subsurface Utility Demonstration, Live Demonstration on HDD Tracking Tools, Live Demonstration of Terra Track, Live Demonstration of UV Lining with both CCTV & Lateral Cutting. In addition few more live demonstrations on HDD rigs were being arranged.

Another session was conducted by **Mr. Rajesh Bhole, Area Manager, Wavin Overseas B.V., the Netherlands** & is titled '**Pipe Renovation by Close fit Liner- Compact Pipe**'. Lining with close-fit pipes, and in particular with Compact Pipe, has become a very interesting option to deal with pipelines in need of

rehabilitation, in particular there were the existing pipelines that were located in busy city centres, where digging in the streets should be limited to the absolute minimum. These paper presents the characteristics of Compact Pipe, illustrated with a number of case histories from around the World.

The conference concluded with an interactive presentation on microtunneling. This presentation was made by **Mr. Sunir Garg, Director – Technical, Gypsum Structural India Pvt Ltd.** Presentation discussed the experience of MicroTunneling works executed in India & the challenges overcome.

Dr. Niranjana Swarup, Director General, INDSTT, delivered the vote of thanks of the event to the participants and concluded the event by inviting all to join us for the **No Dig India Show 2020 Mumbai.**