Q A

with

Dave Sackett

As an active NASTT volunteer and longtime proponent of the trenchless industry, Dave has been involved throughout his 35+ year career in the management of geological interpretations of high-resolution geophysical data, nearshore and landside site characterization, planning and execution of geotechnical investigations, preparation of geological and geotechnical reports and technical reviews for trenchless and tunnel projects. He has particular expertise and experience in the application of geoscientific data to engineering projects constructed within soft soils to hard, crystalline rock. He has mapped extensively in sedimentary and meta-sedimentary rock and has designed / managed geoscience projects on five continents. Dave is the current Board Chair of the NASTT Southeast Regional Chapter and has moderated sessions and presented at several NASTT No-Dig Show conferences.

BRIERLEY ASSOCIATES

Creating Space Underground

What first inspired you to become interested in construction & engineering field, particularly underground construction?

I actually started out at about 10 years old wanting to be a geologist – specifically a "dinosaur doc" out fossil hunting. I kept that aspiration going until my first paleontology class (study of fossils) in college when my professor told me that if I wanted to make decent money in paleontology, I would probably have to forget about dinosaurs and work for an oil company, spending all day looking in a microscope at conodonts and foraminifera (two kinds of tiny creatures used to age date the materials they are deposited in). That was the end of my dream as a paleontologist! Thereafter I kept with geology but drifted towards geomorphology – which is the study of landforms and far more related to the engineering side of the science. So, I finished up my degree in the same field I wanted to study since a young boy – just with a different twist.

My first professional job was with a big Dutch geotechnical firm, and I spent 30 years working there doing site characterization work, onshore and offshore, for geological and geophysical projects around the world. Really a great career, but we would usually complete our studies long before the first brick was laid on a construction project, and I had little understanding of the trenchless industry.

In late 2016 I moved to Brierley Associates – a firm that specializes in underground design, and I began immediately to get interested and involved in the trenchless field. For underground construction, the ability to characterize correctly how the ground behaves is perhaps the single most important part of getting the project built successfully.

Outline your experience of first being introduced to trenchless technology methods and applications.

My first trenchless projects were focused on HDDs and microtunnels in the southeastern Virginia area. However, at the same time I was working on geological / geotechnical aspects of project design throughout the US and internationally. One of the most interesting projects I worked on as I was getting acquainted with the trenchless industry was actually a tunnel rehabilitation project in Detroit. That project required. careful and correct assessment of ground conditions to design a structural rehabilitation solution for tunnels built in the late 1920s to mid 1940s that were already past their design lives but needed to be upgraded to continue for another several decades. Many of the lessons learned from that project on how to study and model the subsurface materials were directly applicable to my future trenchless projects.

How did you first get involved with NASTT? What are some of the goals and initiatives you would like to see NASTT pursue?

My first No Dig show was at National Harbor in Washington DC in 2017, and my first presentation was at Orlando during the Covid era (2021). I have now participated or presented at every show since and a few regional shows as well. With my move from Virginia to Florida a few years ago, I wanted to see what I could do to help the Southeastern Chapter (SESTT) become more active. The folks from NASTT were so helpful and encouraging that I decided to join the Board of SESTT. At this past No Dig show in Providence, I was voted as Chairman of the SESTT, so I am now really involved in working with NASTT to grow the regional chapters.

As far as potential initiatives, I would like to see if there is some way that NASTT can work with trenchless contractors to ensure

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that they are well qualified and experienced for the types of projects they are bidding on. I am not sure if a Certification system is appropriate, but we should try to make sure that the work performed by contractors in the trenchless industry is done by qualified individuals using appropriate equipment and methods. This will result in projects that are safe, environmentally friendly, and having a minimum impact to existing conditions.

What are your thoughts on the current state of the trenchless industry? What areas do you see evolving in STEM education and post-secondary academics?

The number of record-breaking crossings getting built each year is proof of the strong state of advancement in our industry. This includes everything from small diameter pipe to large diameter microtunnels. Trenchless crossings are being successfully installed across longer distances, in more difficult geology, and more accurately, than ever before. The diverse backgrounds of personnel from drillers to engineers to surveyors, materials and equipment providers, are all required to continue to set new bars of excellence. I am hugely optimistic for continued innovation within our industry driving that narrative. STEM education and post-secondary academics have a role to play in these trends towards larger projects and greater complexity. Unfortunately, in North America for many years we seem to struggle to get our brightest young students interested in the STEM fields – that is a big reason so many of the well qualified trenchless professionals working here are expats. Trade schools can also play their part, and a greater emphasis on getting some vocational training for field personnel in the trenchless industry would likely improve performance and decision-making during critical components of projects.

Is the trenchless industry generally doing a good job of attracting young professionals? What do you think can be done to better engage students and young professionals in the trenchless industry?

As per many others I have talked to in this industry, I think we in the trenchless field struggle to be as glamorous as other areas to recruit outstanding engineering and related students coming out of the university with their respective degrees. However, with the industry breaking new ground and new records nearly monthly, I see a real shift towards a greater emphasis on carefully designed and constructed pipe installations that require well trained and experienced personnel. The days of "winging it" once equipment is set up on site are probably drifting into the past, and that is a good thing.

We will need to continue to engage with the active student chapters that have formed under the NASTT umbrella and try to breathe life into other student chapters that are not so active. For the SESTT, I would like to see us add a new student chapter every couple of years, but just as importantly to grow our relationship with the existing student chapters to be sure we give the students a keen appreciation of the benefits of becoming trenchless professionals.

Biggest challenges facing the trenchless industry today? Has acceptance and understanding of trenchless technology improved?

We are seeing a lot of HDD Contractors who are stretching their experience, performing longer and more complicated, and riskier, crossings. And that is fine, as long as their standard of care is to acceptable industry standards, and they are progressively taking on greater challenges so that their personnel are consistently growing their expertise. Further, the lack of a good quality geotechnical / geological characterization of these riskier crossings is a concern – it is important to have a good understanding of ground conditions during the early design phases so that the best trenchless methods are designed and implemented for the projects. However, we occasionally see firms that have little or no comparable experience trying to attempt these for the first time without the proper equipment or personnel experience. It is important that contractors are previously familiar with the particular pipe types, crossing distances or depths, and complicated methodologies like the intersect method. When these issues of lack of experience or good field practices combine to result in a failed crossing attempt, it can set back our industry. These failures can be costly to both Owner and Contractor, and make Owners more reluctant to use trenchless technologies going forward. So, all of us in the industry need to be sure we are keeping up with the latest methods, equipment, and training opportunities.

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What do you personally enjoy most about working in the trenchless technology field?

For me the relative importance of properly characterizing the ground conditions for trenchless projects is obvious to nearly everyone in this industry. That means my efforts to justify a well prepared and implemented site investigation are understood and accepted by most Owners and contractors alike. I also like the opportunity to travel around to different areas of the country to work on trenchless projects. So, you can expect me to continue to be an advocate for the trenchless industry. And I look forward to attending future No Dig shows and continuing to support the NASTT.