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TBE Group Engineers Niche Market into Key to Success

The Florida engineering firm started with 2 associates in 1984 and has grown to more than 400 through its diversity of services

TBE Group started off simply as Tampa Bay Engineering in Clearwater, Fla., working primarily with the beach communities in the Tampa Bay area and providing services similar to those cities that had their own engineer. Its president and founder, Patrick Beyer, P.E., started with just two associates.

Things have certainly changed since the firm's modest beginnings in 1984. Now known as TBE Group, the firm employs more than 400 associates in dozens of branch and field office locations throughout the United States, Canada and Puerto Rico. Over the past 20 years, the firm has expanded to include a multitude of civil engineering services, such as construction services and acquisition, environmental engineering and storm water management.

TBE's civil/environmental division is heavily involved in the design aspect of utilities, such as directional drilling and boring and micro tunneling. The firm has also been involved in pipe bursting, cured-in-place and other rehab projects; it is committed to focusing on sewer evaluation, asset management, rehab and trenchless technology.

However, it is a civil engineering discipline that TBE Group helped to pioneer and bring into prominence that it specializes in: Subsurface Utility Engineering (SUE). This discipline, which assists design engineers in locating underground utilities before the design is completed, has grown in acceptance, stature and, more importantly, necessity over the last 10 years.

There are many firms that provide SUE services. However, of that number there are only about a handful that can really be considered SUE leaders. TBE Group can easily state that it is one of those elite firms.

At TBE Group, SUE and trenchless technology-related projects make up approximately 60 percent of its business efforts. The firm finished third in this year's *Trenchless Technology* Top 50 Trenchless Design Firms, with more than \$20.48 million in trenchless technology billings in 2003. Its total billings for 2003 were \$45.75 million, according to the survey. The survey also showed that the firm utilizes 229 of its 400-plus associates for trenchless work and that between 1998 and 2003, it had been a part of more than 19,000 trenchless projects.

Beyond actual trenchless design, construction and utility location/coordination that TBE Group provides, its principals also tout its commitment to the trenchless and engineering communities by staying active in writing American Society of Civil Engineers (ASCE) standards and giving presentations at trenchless events, such as the North American No-Dig and International No-Dig shows. As a leader in the SUE field, TBE Group believes it is its responsibility to continue the advancement of this rapidly growing civil engineering discipline and to educate those who need it the most.

TBE Group is also proud of the fact that many of the clients that it has in the fold today are long-time clients. In fact, some have been with the firm since the beginning. It is these relationships that TBE Group officials point to when discussing what the firm is all about.

"We actually committed to 20 years of building relationships with our clients, not chasing projects," said Bill Vicary, TBE Group director of corporate marketing. "We strategically target a client for long-term relationships; many times we work for them for many years. We have some of the same clients that we had since the day Pat [Beyer] opened for business."

In The Beginning

In a way, the early years for TBE Group laid the ground work for the firm in its future years. Working with municipalities, it got its feet wet in working with utilities, providing traditional civil

services for water, wastewater and gas design.

"It was primarily municipal engineering... water and wastewater, streets and drainage... about anything that a small or medium-sized city would need if it had a city engineer or engineering staff," said Sam Militello, P.E., TBE Group executive vice president and COO, of the firm's early years." Pat [Beyer] was doing that type of work with his previous firm, which he joined out of college, and he developed relationships with these smaller communities. SO when he opened his firm, he used those relationships to continues to provide those services and he slowly grew the firm from that start."

Beyer started his firm with just two associates to handle the municipal work in the Tampa Bay area beach communities. But over the last 20 years, the firm has steadily grown and added more services, carving out a niche in engineering by specializing in utilities - namely Subsurface Utility Engineering (SUE) and utility coordination. The firm, while providing many different civil engineering services, has gone from incorporating trenchless technologies into its slate of services to being fully immersed in the field.

"Of course, being so closely linked to utilities, water, wastewater and other utilities and having to work with coordinating things with the utility companies, as well as with the various municipalities, it was a natural growth area for us to get into services related to trenchless technologies, such as the SUE work and a lot of the trenchless excavation that is required in congested areas," Militello said.

But what brought SUE to the attention of TBE Group was the addition of Nick Zembillas in 1993 as its director of utility engineering. Zembillas arrived after 15 years with the Florida Department of Transportation (FDOT), working with SUE extensively through the Federal Highway Administration. He believed that SUE could represent a significant opportunity for TBE to expand its municipal service offerings.

"That came about when the transportation and utility industries recognized the need for improved utility information as related to design because there was a lot of inaccurate utilities being shown on maps and drawings," said Zembillas, TBE senior vice president of the utility division - a division he established at TBE, which has become the firm's largest.

"Twelve years ago, there was a handful of state agencies using SUE," Zembillas said. "We helped lead the way with taking SUE to where you have 45 of the 50 states that have a formal program and TBE [administers] 42 of them. We educated the DOTs on the use of SUE and grew our business from that. But it had a domino effect. The consultants started using us, the utilities started realizing that there's a firm out there doing a better job providing our utility information than the people we use."

Militello credited Zembillas for putting TBE Group one step ahead of other firms in developing the speciality. "As SUE began to emerge as a particular technology and as the Federal Highway Administration started promoting the use of SUE with the DOTs in order to minimize delays on projects and utility conflicts, TBE had the foresight... thanks to Nick... and got a dead start over other firms in recognizing the value that these services can provide and placing ourselves in a leading position.

What is SUE?

In its most basic form, SUE is the finding, locating and mapping of existing underground utilities for project designers, allowing them to design projects that minimize, if not eliminate, utility conflicts. TBE Group officials say this discipline is "the highest for of trenchless technology."

"It's conflict avoidance. It's utility relocation avoidance. By accurately finding and mapping underground utilities for project designers, they can design projects that require less excavation and trenching," said John Harter, P.E., vice president for the utilities division. Harter also serves as the national engineering and operations manager.

SUE encompasses multiple tools to develop accurate and exact vertical and horizontal positions of utilities, such as historical records research, site assessment, electronic location, ground penetrating radar, vacuum excavation and data management. And SUE is much more involved than the service that one-call provides.

:We are accurately mapping utilities before design where as one-call is putting paint on the ground before you dig," Harter said. "First, if a designer has the accurate mapping information up front, he can do a better design. And secondly, the paint on the ground that one-call people use is not a result of an investigation. Our SUE technicians spend an average of five hours to every one hour a contractor locator spends putting paint on the ground for a call before you dig."

Militello offers a further view of SUE's advantages. "More often than not, there are unknown utilities underground that even the one-calls don't know about," he said. "Before we go out, we do

a thorough research of all information available in terms of as-built plans and any existing information that utility companies may have, municipalities may have. And that's a starting point for us."

There are no official industry standards for firms to follow when it comes to SUE. However, the ASCE's *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data* (CE/ASCE 38-02) is as close to being an industry standard for SUE without actually being one.

When the 12-member ASCE committee drafted this standard in 2003, it had the input of TBE as three TBE associates: Zembillas, C. Paul Scott, P.E., and retired Capt. Jim Allen, P.E. Harter is currently working with the ASCE committee to update CE/ASCE 38-02, which must be done every five years.

Along with counseling their clients on the latest trends and developments, TBE officials provide the same for their employees. In-house training manuals and seminars, damage prevention courses, on-call symposium courses, trenchless technology courses, DOT self-study courses and seminars/workshops offered by DOTs and others are supported and encouraged.

As SUE is used more and more, it is slowly becoming an accepted discipline, most notably for large projects. For example, right now, TBE is in the midst of a \$60 million utility location project in Texas that will keep it busy for another 5 years. The Texas Turnpike Authority is doing a \$1.4 billion design-build of a 92-mile corridor of State Highway 130 from Austin to San Antonio. TBE is responsible for locating all of the underground utilities along that corridor in order to assist designers and contractors in avoiding the utility conflicts whenever possible. When that's not possible, TBE designs the relocations for them in advance of the construction of the highway.

"There are civil engineering firms out there that won't do a project without considering SUEm" said Harter. "And that's good because that means that they understand the ASCE standard and they are consulting it."

The Future

Always looking to grow, TBE Group is looking to the future for ways to expand the quality of the services it provides its clients. One area is in imaging technologies to find the utilities. Another is to broaden TBE beyond the North American borders to develop good international projects. A third area is to expand SUE to non-highway related construction, which TBE has already begun.

"I have mentioned that there are some civil engineers who have never heard of SUE," Harter said. "Well, someday every civil engineer in the United States will need to know about SUE or they won't be keeping up the current standard of care."

Outside of its SUE focus, there are other trenchless areas on the minds of those at TBE Group, such as asset management and CMOM. "What we see is taking this business of asset management, condition assessment of the infrastructure, along with our techniques of sewer system evaluation, hydraulic modeling and our rehab experience and spread the word," said Dorian Modjeski, P.E., D.E.E., director of TBE's water and wastewater group of the civil/environmental division.

"Our speciality area is in the utility sector, utility coordination, SUE, utility relocation, design and mapping, GIS, asset management and condition assessment," said Militello. "These areas are highly specialized. We are the largest provider of SUE. Our strategy is to continue to be the premier provider of these services. We invest quite a bit of money in research and development and try to use state-of-the-art technology. We've developed very comprehensive processes internally for ensuring quality services and quality work product. It is our intention to stay at the leading edge of these service areas."

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Ever heard the term GIGO - garbage in, garbage out?

Unfortunately, in a lot of situations, the utility record information that engineers and designers use on projects is GIGO, with information that is incomplete, inaccurate or non-existent. And the problem can't be changed overnight.

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