



Home



World Markets



Contact Us



Site Map



[Home](#) | [The SUE Process](#) | [Media / Press](#) | [World Markets](#)



Subsurface Utility Engineering

[Home](#)
[Search](#)
[Our Mission](#)
[News / Events](#)
[The SUE Process](#)

[Sample 'Scope of Work'](#)
[SUE Services](#)

[3D Underground Imaging](#)
[Utility Coordination](#)
[Utility Design](#)
[Ground Penetrating Radar](#)
[Surveying & Mapping](#)
[Global Positioning Systems](#)
[Geo. Information Systems](#)
[CADD](#)

[SUE Projects](#)

[SUE FAQ](#)

[Media / Press](#)

[World Markets](#)

[USA](#)
[Canada](#)
[China](#)
[Puerto Rico](#)
[United Kingdom](#)

[Idea Submission](#)

[About TBE](#)

[Offices](#)

[Contact Us](#)

[Site Map](#)

[Career Opportunities](#)

[Bookmark This Site](#)

Thank you for visiting the TBE Article Archives.

Locating Underground Utilities *Before* Construction

When the Federal Aviation Administration's (FAA's) Air Route Traffic Control Center complex at the Indianapolis International Airport was planning to install a new Lightning Protection Grounding and Bonding System (LPGBS), the facility's staff engineer decided it was a good idea to check underground before digging.

The FAA complex, which sits on a five-acre site, includes the air traffic control center building, a generator building, training trailer, pump house and maintenance garage. Installation of the LPGBS involved digging a trench, four feet wide by 16-to-18-inches deep, around the buildings. Buried below ground and leading into all of the buildings were numerous communication and utility lines. Designing and digging the trench could result in conflicts with, or damage to, these underground lines.

The solution was to determine exactly where these underground utilities were located – *before* digging – to avoid conflicts. Once construction begins, unplanned "hits" on existing utilities can be costly and cause unwanted project delays.

The FAA contacted TBE Group, a national leader in Subsurface Utility Engineering (SUE), to determine the exact location of the underground utility lines. SUE is a highly efficient, non-destructive process that combines geophysics, surveying and civil engineering to provide accurate mapping of existing underground utilities. The accurate information SUE provides contributes to informed design decisions and helps project owners avoid costly conflicts, damage, delays, service disruptions, or even serious injuries due to inaccurately plotted utility information. If a utility conflict does exist, project owners find out before any damage is done and can work to develop a viable alternative.

The FAA's Kien Nguyen, National Program Engineer, promotes the use of SUE for the agency's 1,400-1,600 engineers who install FAA equipment at the nation's airports. "We cannot afford the disruption of air operations or utility services or the potential related safety issues that could occur if existing subsurface utilities are damaged," he said. "Using SUE to obtain subsurface utility data at appropriate quality levels results in project savings throughout design and construction. Hiring a SUE firm, especially for larger projects, is invaluable."

According to American Society of Civil Engineers (ASCE) standards, there are four quality levels of subsurface utility information. The higher the likelihood of utility conflicts, the higher the level of information needed. The four levels, from low to high, are:

- Quality Level (QL) D – researching existing utility records.
- Quality Level C – surveying visible above-ground utility features and correlating the data with QL-D information.
- Quality Level B (designating) – using surface geophysical techniques to determine the existence and horizontal position of underground utilities.
- Quality Level A (test holes) – using nondestructive digging equipment, such as vacuum excavation, at critical points along the utility's path to determine the precise horizontal and vertical position of underground utilities.

"Because of the sensitive nature of the area and the numerous below-ground utility lines at the FAA's Indianapolis site, the project required Quality Levels B and A," said TBE Group Project Manager Sandra Jones. "We also used ground penetrating radar, or GPR, to locate non-conductive facilities, such as PVC water lines."

The result of TBE's underground investigation? "We discovered the exact location of the buried utilities, so conflicts were avoided and the FAA could proceed safely with the LPGBS installation," Jones said. "SUE is recommended on all construction projects, ideally during the design phase, where utility conflicts are a real possibility."

TBE Group, a national SUE leader, has offices in more than 40 states across the US, as well as Canada and Puerto Rico. For more information on TBE's SUE services, contact Nick Zembillas, or John Harter, at 1-800-861-8314, or visit <http://www.tbegroup.com/>.

Credits

Author(s)

Author Not Identified

Publication(s)

Airport Facilities

Fall 2004

Read Another Article

A Process Named SUE



Southwestern Region is assessing a new utility location/identification process to ensure project employees have all the information they need on the job. This process, called Subsurface Utility Engineering (SUE), identifies utility infrastructure buried underground, and is intended to help keep projects on-time and on-budget, minimize work-related delays, and improve safety. The interchange upgrade at Homer Watson Blvd. and Highway 401 in Kitchner is the first MTO project to use this process.

[Read Full Article](#)

More Articles

- [Full price costing is vital to restore and maintain our infrastructure](#)
- [SUBSURFACE UTILITY ENGINEERING: A Technology-Driven Process that Results in Increased Safety, Fewer Claims, and Lower Costs](#)
- [GPR: Past, Present and Future](#)



Clearwater FL USA
800.861.8314

<http://www.tbegroup.com/>



Ontario, Canada
877.487.4823

<http://www.tshtbe.com/>



Doncaster, UK
01302 802200

<http://www.sueunitedkingdom.com/>



Beijing, China
10.65308343

<http://www.suechina.com/>



Rio Piedras, Pue
787.751.7878

<http://www.tbeca.com/>

Toll Free: 1.800.861.8314 (USA)

[Home](#) | [Privacy Policy](#) | [Careers](#) | [Bookmark This Site](#) | [FA](#)

TBE Group, Inc. Copyright © 2007 All Rights Reserved
Site Design TETRA Enterprises, Inc. in association with Satellite Solutions Network, Inc.