

Florence, Italy
30th September – 2nd October 2019

**(2306) Mapping
and Inspection of
Underground
Utilities**

**A pipe detecting
project and
technical
assistance in
Bangladesh**

ABSTRACT

This paper reports a pipe detecting project and its improvements in precision by using electromagnetic radar. The project was held in Dhaka, the capital of Bangladesh, in early 2019.

TEPCO Power Grid, Inc. (TEPCO) is providing consulting services for construction of Bangladesh's first underground substation, and for an underground transmission and distribution cable improvement project. This project included the design of approx 5 km of distribution line. The design needed a detailed and precise map of buried pipes for the planning of new pipe installation. However, Dhaka had some challenging problems such as: (1) prohibition of road digging due to chronic congestion; (2) lack of information and accuracy on buried pipes; and (3) lack of sufficient technology (underground detection). These problems made the project difficult to use general methods for experimental digging and underground detection on site.

To address these problems, a team of experts from TEPCO and Geo Search, a reputable high-tech company in underground detection, conducted a pipe-detecting project in Dhaka. The project was also conducted to train engineers from the Bangladesh University of Engineering & Technology, in the aim of contributing to the country of Bangladesh.

The project included below:

1. Selecting a location of experimental digging effectively
2. Finding a better reproducible method for detection
3. Planning of pipe-detecting project -data recording and management
4. Developing an exclusive analysis software for the detection device
5. Correcting and analyzing of data acquired from the software

The result was remarkable - found 35 utility pipes (gas water and gas) within the area of planned distribution-line. 29 of which (80%) were non-registered pipes that may have caused a large impact on the planning and installation of distribution line.