

## Paper Presentation

### TOPIC

**Moving total station: Taking TBM guidance to the next level**

### ABSTRACT

The standard method of positioning a Tunnel Boring Machine (TBM) was determined by a laser and target-based guidance system. This concept included a bracket fixed to the tunnel wall with a total station mounted. As the TBM advanced, an additional bracket would be installed closer to the TBM, and the total station relocated to this new position. Frequent relocations were time-consuming, required heavy tools and equipment and posed significant risk to personnel and hardware. In addition, costly remedial works may be required where the bracket was drilled into the tunnel lining. Moving total station redefines the concept of TBM guidance in large diameter tunnelling. The total station is not installed on the tunnel wall but mounted on and travels with the backup gantry. This novel method significantly improves the workflow associated with maintaining the TBM guidance system including benefits to time, cost and most importantly – personnel. This paper will highlight the technical aspects of moving station, including advantages and limitations, illustrated by a case study where moving station was successfully used.

### EVENT

TAC 2023 | Toronto

### DATE

25.09 | 04:20 PM

### SPEAKER



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