

# ICE Bahrain In-Person Event, in collaboration with Bahrain Society of Engineers

## Microtunnelling and Pipe Flotation: Mechanisms, Causes, and Mitigation - An Introduction to Microtunnelling and Construction-Stage Behaviour

### **Event Overview**

Pipe flotation in microtunnelling is often assumed to be adequately controlled through depth, overburden, and buoyancy checks undertaken at the design stage. However, experience from practice shows that vertical uplift of jacked pipes can still occur, in some cases exceeding the designed annulus gap and resulting in alignment deviations with potential long-term operational implications.

This session will begin with a brief overview of microtunnelling principles before exploring the mechanisms that enable uplift beyond the annulus gap, focusing on hydraulically driven ground degradation at the tunnel crown. The presentation will distinguish between general flotation concepts and the specific conditions required for progressive void growth above the pipe.

The session will also consider practical mitigation measures that may be adopted to reduce the risk of uplift occurring and to limit its potential impact during construction.

### **Speaker**

#### **Husain Muradi, CEng MICE – Managing Director, Tylosphere Engineering**

Husain Muradi is a Chartered Civil Engineer and Member of the Institution of Civil Engineers (ICE) with 14 years of experience in the planning, design, and delivery of water and wastewater infrastructure projects. He holds a BEng in Civil & Environmental Engineering and an MBA from Cardiff University in the United Kingdom.

Husain is the Managing Director of Tylosphere Engineering and previously spent over a decade with p2m Berlin, a subsidiary of Berlin Wasserbetriebe, contributing to the design of major and strategic water and wastewater infrastructure projects across the GCC region and beyond.



**Date: Tuesday, 30 June 2026**

**Time: 18.45 – 20.15 (Bahrain time zone)**

**Location: Bahrain Society of Engineers, Shabab Ave, Juffair, Manama, Bahrain**  
([map](#))

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