



## NJUG CASE STUDY

### CASE STUDY 72 : Morrison Utility Services - Raising the Bar in Avoiding Underground Strikes

#### *Winner of the NJUG 2013 Avoiding Damage Award*

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities solely on street works issues. The 38 utility companies and 18 contractors<sup>1</sup> we represent are major contributors to economic growth, and work to deliver gas, electricity, water and telecommunications to both individual consumers and UK plc.

NJUG members need to continue to drive forward further improvements. We have therefore developed the NJUG Vision for Street Works, which revolves around six main principles:

1. Safety is the number one priority
2. Utilities deliver consistent high quality
3. Utilities work together and in partnership with local authorities and contractors to minimise disruption
4. Utilities keep the public informed on all aspects of works
5. Utilities maximise the use of sustainable methods and materials
6. Damage to the underground assets is avoided

This case study is an example of the street works sector delivering on these principles and turning the vision into reality.

#### Overview

Combining state of the art technology with smartphone technology, online assessments, and one-to-one training, Morrison Utility Services (MUS) significantly improved their safety performance, protecting both workers and underground assets.

#### Case Study

##### **Safety – Our Licence to Operate**

The industry-wide issue of underground strikes presents a range of hazards to be overcome. This approach has yielded significant safety performance improvements including:

- A safer working environment for Morrison Utility Services' street works teams.
- Greater safety protection for members of the public around street works.
- Enhanced procedural guidance and information for street works activities.
- Increased confidence in Morrison Utility Services' safe systems of work.

##### **Digital Street works Management**

One of the most innovative aspects to this multi-strand approach has been the development and introduction of purpose-built digital solutions designed to protect the MUS workforce and ensure network integrity and public safety.

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<sup>1</sup>NJUG's current members are Energy Networks Association (representing electricity and gas), Water UK (representing all water and wastewater companies), National Grid, Openreach, and Virgin Media. Our associate members are Clancy Docwra, Skanska, Balfour Beatty, Carillion, First Intervention, Laing O'Rourke, Compass, AMEC, Enterprise, Morrison Utility Services, Fastflow Pipeline Services, Kier Group, CLC Ltd, PJ Keary, Murphy Ltd, Murphy Group, Morgan Sindall and SQS. Including members through trade associations, NJUG represents thirty-eight utility companies, eighteen utility contractors.

The iPhone Cable Avoidance app provides structured and pertinent safety questions, real-time delivery of information / images, and enables users to photograph and edit excavation location details complete with GPS readings, ensuring adherence to all cable avoidance procedures, with supporting photographic evidence.

EZiCAT i550: State-of-the-art, digital signal processing technology:

- Automatic controls requiring minimal user experience.
- Power mode start-up - prioritising the most potentially dangerous current carrying services.
- Hazard Zone indicating shallow buried services in power mode, alerting users to increased risk.
- Identifying depths of services up to 3 metres.



Augmented Reality technology using underground asset data supplied by clients, smartphone cameras and GPS functionality to display data such as maps, tags and images, are used to determine realistic uses for AR (e.g. pre-site surveys). Using a phone's built-in GPS, the software calculates the phone's location and overlays the asset data. Images show water (blue) and gas (red) mains and kerb line (purple).

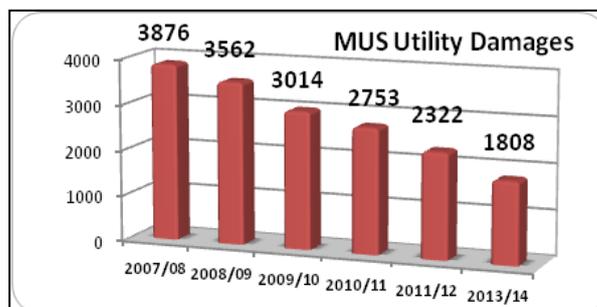
### Training and Assessment

Online assessments evaluating employee knowledge, behaviour, understanding and confidence around cable avoidance procedures have proved hugely beneficial. Trials demonstrated employee strengths and weaknesses in knowledge and applied skill across key areas of cable avoidance. Following these results, intervention training concentrated on priority areas, ensuring a more tailored and targeted approach.

One to One Training: Designed to establish whether incidents stem from knowledge gaps or lapses in behavioural safety, this programme ensures continual enhancement in employee competency levels.

### Benefits & Achievements

- Successfully developing and deploying a highly-effective, multi-stranded approach incorporating digital solutions and innovative technology designed to enable operatives to follow structured procedures and record and retain appropriate cable avoidance data.
- A highly trained, more efficient, safer workforce.
- Fewer accidents involving underground damages which, in turn, has led to less lost time from work, increased productivity and targeted identification of where resources can be more effectively used.
- A 53% reduction in underground strikes between 2007 and 2013, during which time company turnover, and therefore works activity, has risen.
- A decrease in the number of 'member of the public incidents' around street works projects.
- A reduction in injuries to our operational workforce.
- A decrease in the number of non-conformance reports during audit and inspection.
- A year on year reduction in Accident Frequency Rate and Lost Time Incidents (2000 = 0.47 to 2012 = 0.06).
- Fewer financial penalties.
- Enhanced client relationships



Based on approximately 2,000,000 excavations annually

