



CASE STUDY NUMBER 85: Morrison Utility Services - Taking Underground Strike Performance to the Next Level

WINNER OF THE NJUG AVOIDING DAMAGE TO UNDERGROUND ASSETS AWARD 2015

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities solely on street works issues. The 42 Utilities and 16 Associates 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 seven main principles:

- Safety
- High Quality
- Minimise Disruption
- Keep the Public Fully Informed
- Sustainable Methods and Materials
- Avoid Damage to Underground Assets
- Innovation

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) has significantly improved its safety performance, protecting both workers and underground assets during street works activity.

Safety – Licence to Operate

With a workforce in excess of 3,500 employees, Morrison Utility Services (MUS) undertakes more than 1 million street works excavations per year.

Approximately 80% of Morrison's direct and indirect workforce is working on the frontline to upgrade and maintain utility street work programmes in local communities across the UK each day. Safety is one of their number one concerns for their employees and all those who come into contact with their business in any way.

The industry-wide issue of underground strikes presents a range of hazards to be addressed and overcome during street works. MUS has adopted a multi-stranded approach to avoiding damage to underground apparatus that has yielded significant safety performance improvements. These include:

- A safer working environment for MUS 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 our safe systems of work

Safe System of Work – Our operative teams across all client contracts nationwide always undertake all street works activities in line with HSG47 (Avoiding Dangers from Underground Services), NJUG guidelines and the NRSWA. Morrison obtains all suitable drawings, including cross sectional drawings if available, prior to starting work. Drawings must be up to date (from the

last 3 months); clear (ideally in colour); detail line and depth of services (where known) or other information which achieves the same result.

Digital street works management

One of the most innovative aspects to Morrison Utility Services' multi-strand approach to avoiding underground strikes has been the design and development of bespoke digital solutions in order to protect its workforce and ensure network integrity and public safety.

A good example is its bespoke **cable Avoidance app** which enables real-time delivery of information and images, enabling users to photograph and edit excavation details complete with GPS readings, whilst adhering to all cable avoidance procedures, with supporting photographic evidence.



Other examples include the **EZiCAT i550: State-of-the-art, digital signal processing technology**. This solution provides a range of significant benefits including:

- Automatic controls requiring minimal user experience
- Power mode start-up - prioritising the most potentially dangerous current carrying services
- Hazard zone alerts 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).

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
- Fewer accidents involving underground damages which has consequently led to less lost time from work, increased productivity and better targeted allocation of resource for street works
- A 70% reduction in underground strikes between 2007 and 2015, during which time company turnover, and therefore street 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 2015 = 0.02)
- Fewer financial penalties
- Enhanced client relationships