



NJUG CASE STUDY

CASE STUDY 13: MainsMap and Smart Phone Technology

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities on street works issues. The thirty-eight companies¹ we represent 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. Damage to underground assets is avoided
3. Utilities work together and in partnership with local authorities to minimise disruption
4. Utilities deliver consistent high quality
5. Utilities maximise the use of sustainable methods and materials
6. Street works in the UK are regarded as world class

This case study is an example of NJUG delivering on these principles and turning the Vision into a reality.

Overview:

Enterprise, whilst working with Thames Water on the North London Clean Water repair and maintenance contract (involving over 1000 openings per week), needed to develop a method of capturing and archiving images taken on-site. Several methods were trialled with varying levels of success. In the end, Enterprise, in partnership with First Intervention Ltd, developed a system using smart phone technology.

Managing these high volume low value infrastructure jobs has always been challenging and continues to become more so. An increase in legislation and active interest in 'street works' has challenged service providers to become more innovative in their approach to managing external resources whilst ensuring the relevant legislative and client-required information is captured within the field.

Within a conurbation the size and complexity of London with its congestion and demanding stakeholders, it was imperative for Enterprise to have 'real time' image information transmitted from site to enable a staged works management approach to both quality and productivity. To reduce the visits and length of time that works were left idle, Enterprise adopted a first time reinstatement approach. For this reason, and to ensure compliance with overall legislative regulations, it was imperative that real time accurate information could be relayed to all relevant operational groups. With the introduction of the requirements for grid references as part of the Traffic Management Act 2004, accurate GPS positioning was an additional requirement.

The system used is known as MainsMAP, and can be tailored to a specific target audience who are not necessarily computer literate or technically adept. The operatives involved in this initiative used the 'Smartphone' to capture images from site through the various stages of the life cycle of the works.



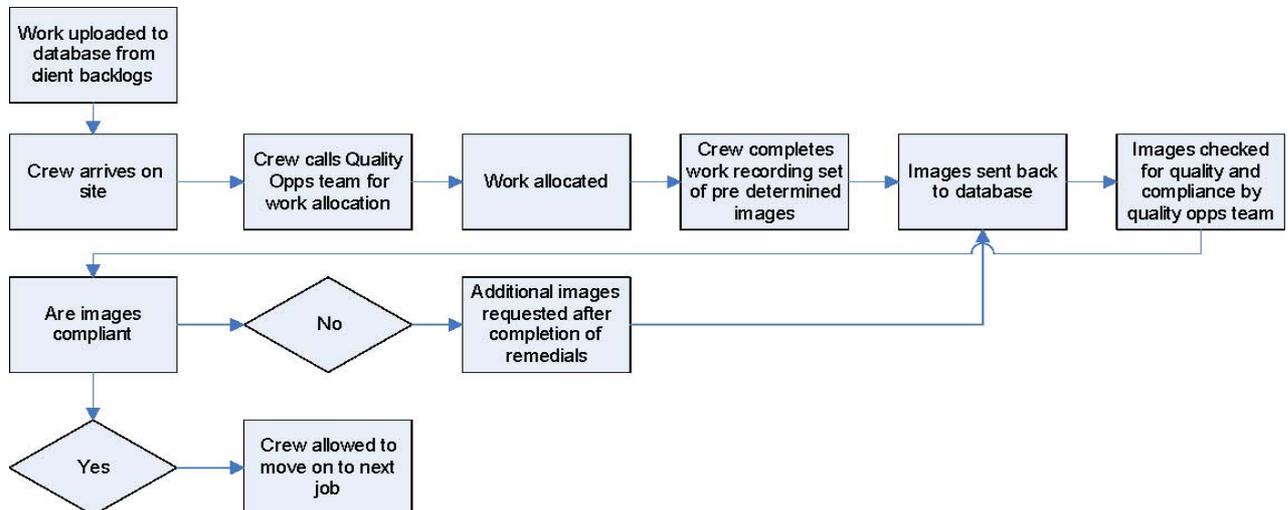
Case Study

The system was designed using 'highlight and click' technology. Works orders were allocated to the crews' individual 'Smartphones' via a secure Internet connection. The crews then captured the progress of their individual jobs at pre-determined stages, using agreed templates for each particular discipline:

- **Site-specific risk assessment** → To ensure safety requirements are being fulfilled prior to the start of works

¹ NJUG's current members are Energy Networks Association (representing electricity and gas), Water UK (representing all water and wastewater companies), National Grid, Openreach, Virgin Media and THUS, a Cable and Wireless Business. Our associate members are Clancy Docwra, Skanska McNicholas, Balfour Beatty, Morrison, Morgan Est, NACAP, PJ Keary, First Intervention, Carillion, Enterprise and Laing O'Rourke. Including members through trade associations, NJUG represents thirty-eight utility companies.

- **Signing, lighting and guarding** → Although images can not guarantee that a site is compliant with signing, lighting and guarding requirements, they do establish a culture of safety among crews, encouraging setups to be correct in the first instant
- **Excavation and damaged asset** → A client requirement, this forms part of the works' verification process, and determines the necessary backfill material and reinstatement methods required
- **Backfill** → To monitor and ensure that compliant materials are being used
- **Reinstatement** → To ensure that reinstatement is both completed and compliant to the required standard
- **Site clear** → To record and confirm that all materials have been remove from site, prior to the closing of the notice.



The system has been in operation for the last two years and contains information relating to 100,000 sites with approximately one million associated images. Furthermore, the system is continually being refined to improve its effectiveness. The measurable benefits include:

- Completing the vast majority of works, on first-time first-pass basis within a minor works notice
- Reducing congestion interim reinstatements and enabling costs
- Reduction in Section 74 over run charges first time reinstatement would usually attract
- Reduction in the generation of Highway Authority defects
- Permanent record of the works within an easily searchable database
- Time and date stamped images used in defence of over run charges
- Capture of Ordnance Survey Co-Ordinates
- Ability to micromanage the work flows in real time rather than be reliant on post inspections
- Improved performance for clients and stakeholders
- Ability to share information with customer service and insurance personnel

The system 'MainsMAP' has been proven to achieve measurable benefits improving Enterprise's operational and noticing compliance within an ever-increasing legislative arena.