



## NJUG CASE STUDY

### CASE STUDY 29 – PROFLO® SYSTEM

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities on street works issues. The 37 companies<sup>1</sup> 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 maximize 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 reality.

#### **Overview:**

Balfour Beatty Utility Solutions (BBUS) is one of the UK's leading utility solutions providers in the UK, and is dedicated to working in partnership with its clients to provide the best service in the industry.

As a core company value, sustainability is a high priority for BBUS and as workloads in the utility sector increase, a long-term sustainable solution to recycling reinstatement materials is essential. Over the last year BBUS has worked closely with various highway authorities, and in July 2008, following development with a number of partners, BBUS launched Proflo®, a flowable cement bound (CBEM) backfill system using recycled excavated materials. The BBUS Proflo® system is a sustainable long term solution that removes, recycles and replaces site spoil, typically achieving re-use of circa 95% of excavated materials.

In addition, the cement bound nature of Proflo® eliminates the likelihood of sinkage-related reinstatement defects, which typically account for 30-40% of all reinstatement defects, thereby significantly enhancing the long term quality of our works in the public highway.

One of the most important benefits of the Proflo® system is that it is environmentally friendly. Traditional methods of reinstatement have a hugely negative impact on the environment, contributing historically, to 25 million tonnes of utilities excavated waste to landfill sites every year as well as scarring the landscape with the continued quarrying of virgin aggregate.



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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 McNicholas, Balfour Beatty, Morrison Utility Services, Morgan Est, NACAP, PJ Keary, First Intervention, Carillion, Enterprise, Laing O'Rourke and AMEC. Including members through trade associations, NJUG represents thirty-seven utility companies, and twelve utility contractors.

## Case Study:

Protection of the environment is only one reason why BBUS believe that the utilisation of a recycled, flowable backfill is a sustainable solution. Long-term performance of reinstatements is a key concern for BBUS. Experience demonstrates that the use of conventional granular backfill materials typically contribute to 30-40% of all reinstatement defects – a significant factor being incorrect compaction due to human error. Proflo© avoids the need for compaction due to its cement bound nature, thereby eliminating the risk of sinkage and significantly improving the quality of completed reinstatements.

The BBUS Proflo© system not only provides benefits for the environment, improves quality and reduces safety risk on site; it assists industry in ways that include:

- Reduction in occupation of the highways, as Proflo© delivers 1m<sup>3</sup> per minute,
- Reduction in defects and subsequent waste from a re-excitation
- Addressing concerns from highways authorities' regarding the long-term risk to assets
- Reduction in long term risk to operatives in the reduction of vibratory equipment in relation to hand, arm vibration syndrome (HAVS)
- Reduction in disruption to customers and members of the public
- Encouraging closer collaboration between utility companies and Highway Authorities

To deliver quality and consistency of recycled materials BBUS work closely with recycling centres which have quality processes in line with WRAP protocols, to ensure graded and screened materials meet the standards required for Proflo©.

In 2009, BBUS will focus on the reduction of cement content and look at alternative binding agents with the aspiration to reduce its carbon footprint even further. Stage two of the program will also focus on curing time on site, the objective being to backfill and reinstate on the same day, consequently further reducing occupation of the highway.

The template used to develop Proflo© relied on close co-operation between BBUS, Highway Authorities and specialist partners. Working together in this partnership forum has demonstrated how issues and concerns regarding recycled materials can be overcome when all parties are focused on the greater good of raising environmental standards.

The launch of Proflo© is a milestone for BBUS in the North West of England, providing a quality assured product and process for its clients to recycle waste reinstatement materials.

The BBUS system provides a wide range of benefits to the environment, the industry, its clients, its operatives and the general public. By stipulating a high standard BBUS will typically recycle and re-use circa 95% of its excavated materials and once reprocessed, use this recycled product in Proflo©.

The BBUS Proflo© system is an innovative, sustainable backfill solution that recycles excavated site spoil and significantly improves the quality of completed reinstatements. By maximising the use of sustainable methods and materials, and through the delivery of consistent high quality, this innovation supports the NJUG Vision for street works.

