



NJUG CASE STUDY

CASE STUDY 73: Costain Skanska Joint Venture - *Reducing Environmental Impact and Maximising Sustainability in London*

Winner of the NJUG 2013 Sustainability 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 contractors¹ 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

The Costain Skanska Joint Venture strives to go above and beyond what is expected of a small-scale utility works site, detailing reduction in noise, energy, carbon, waste and materials, and disruption to the community as well as the implementation of sustainable, innovative methods and techniques.

Case Study

Reducing Environmental Impact and Maximising Sustainability in London: C295 Thames Water Asset Monitoring is a joint venture between **Skanska Construction Ltd and Costain (CSJV)** on Crossrail works. The project involves the installation of monitoring equipment to Thames Water Assets, to monitor the effects of the tunnelling operations. The project comprises a number of relatively low invasive, small scale works, however the commitment to the environment is high. CSJV focused on maximising the use of sustainable methods and materials in a multitude of ways, from the specification of their welfare units on site, to virtual mapping of the underground utilities, reducing the use of finite materials and diverting waste from landfill. With the variety of environmental issues in London, such as noise, air pollution and congestion, CSJV place even more importance on executing works in the most efficient, least disruptive manner.

Noise and the community: In order to alleviate such disturbances to the local community and avoid poor public relations, CSJV are committed to reducing noise associated with their operations. Prior to works commencement each site is covered by a Section 61 Derogation, as agreed with the client and the Local Authority. This is not normal practice for small-scale utility works in London. By implementing the derogations, they can liaise closer with the Environmental Health Officers and the client, ensuring Best Practicable Means (BPM) are employed throughout the duration of the works,



¹NJUG'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.

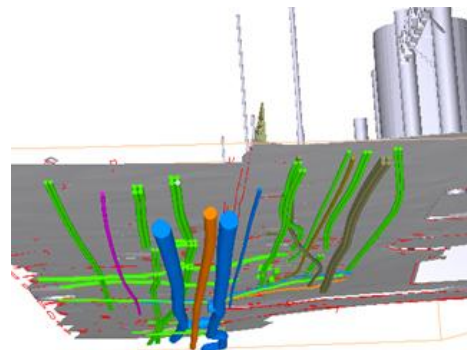
limiting nuisance to the surrounding community. CSJV have invested in BPM such as Echo Barriers, which surround the operational area and provide acoustic shelter to the nearby receptors. Routine noise monitoring is undertaken, particularly when noisier activities occur, to ensure the predicted levels are not exceeded. CSJV also liaise closely with local business, and limit noisy activities at sensitive times of day, and will tailor works to accommodate businesses needs. They have a dedicated Community Relations Manager on the project providing information via letter drops and Works Information sheets, so the community is aware of the scope of their works.

Energy and Carbon: Limiting further climate change by reducing the amount of CO₂ London produces is a key driver for CSJV. They are striving to aid the capital in reaching its target of reducing CO₂ emissions by 60% of 1990 levels by 2025. Their works are not energy intensive, but they plan to invest wherever possible to maximise their energy efficiency. Eco Welfare Cabins are used on site, these are low in maintenance, emissions, fuel consumption and noise due to specifications such as PIR activated lighting. This sustainable method benefits the local community as noise and air pollution is reduced, it helps to reach London’s energy aspirations and reduces CSJV’s costs and carbon footprint.

Energy and Cost Savings of an Easy Cabin Eco 12 (based on a 40 hour week compared to a 6kva generator, fuel at 90p litre).	
Diesel Saving	£3,050. 3390 litres
Maintenance Saving	£1000
CO ₂ emissions	9157kg CO ₂

Waste and Materials: CSJV’s current recycling rate from inert excavated material on the project is averaging 96%, which is above their business target of 94%. However, their commitment to the environment does not stop there. Wherever possible the waste which cannot be recycled is diverted from landfill via an ecological scheme. Within reinstatement recycled aggregate is used to reduce the use of finite materials. This hugely benefits the environment as pressures on resources are decreased and a closed loop approach is integrated. The quality of the reinstatement is improved, costs reduced and environmental impact minimised.

Innovation: Investing in innovative techniques and methods is integral to fully promoting sustainability. Virtual Trial Holing (VTH) is a method of digitally mapping the underground apparatus to describe spaces, structures and components. It creates an underground world of the services, illustrated virtually. This sustainable method has an array of advantages. An example being the deployment of VTH at Finsbury Pavement, in the heart of London, located only 100m away from the busy Moorgate Station. CSJV were required to transfer services from the old main to the new which involved trial holes along the route to locate the services. By using Virtual Trial Holing and the accurate 3D modelling, they were able to get close to, and dig onto the services first time which had a multitude of benefits. An efficient execution alleviated issues including congestion in the city, noise pollution, waste generation, disruption and time on site.



Educating the work force: All staff (including sub-contractors) receive an environmental induction, outlining the environmental requirements of the project. They receive regular briefings and toolbox talks on environmental issues, so they can operate in the most sustainable manner. Headline environmental performance data is communicated to the operatives, such as monthly fuel usage converted into a carbon footprint, with simple ways to reduce it.

External recognition: CSJV’s environmental performance and sustainable ethos has been recognised through external audits such as Considerate Constructors Schemes, (with a score of ‘good’ for their first audit) and the Utilities Verified Database, UVDB. They received a score of 97.9% for UVDB Environment on C295 which demonstrates their commitment and investment into sustainable methods and protecting the environment in which they work. They strive to go above and beyond what is expected of a small-scale utility works site and ensure that they employ sustainable methods and materials in all aspects of their operations.