



NJUG CASE STUDY

CASE STUDY 26: Beckton Materials Reprocessing Facility

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities on street works issues. The 37 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 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:

Through the establishment of the Beckton Materials Reprocessing Facility, Clancy Docwra Ltd has successfully maximised the use of sustainable methods and materials. This facility is a practical example of how sustainable waste practices and methodologies have been used to reduce the amount of material going to landfill through recycling excavated material for reuse on site.

Clancy Docwra is one of the contractors replacing water mains and renewing customer supplies on behalf of Thames Water Limited as part of the Victorian Mains Replacement (VMR) project. For the VMR project, Clancy Docwra work within the City of London and London Boroughs in the east of London. In partnership with Thames Water, Clancy Docwra wanted to improve on existing sustainable waste practices by implementing a new recycling initiative, where waste generated from the work within the VMR was recycled for reuse within this same area. As a result the Beckton Materials Reprocessing Project Facility was established in Beckton, where waste would be sent for recycling.



¹ 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:

Waste suitable for the reprocessing facility is separated on site in different skips and then transported to the materials reprocessing facility. The waste is processed through crushers and screeners to produce various grades of recycled shingle, ballast, and sub-base. Using a closed loop-recycling machine, a recycled type 1 product is also produced. This product is an innovative hydraulic bound non-flowable material (HBNF) that meets all the Highway Authorities and Utilities Committee (HAUC) requirements for use in roadways. All materials produced meet the WRAP (Waste Recycling Action Programme) quality protocol for the production of aggregates from inert waste.

All recycled products produced through the facility are returned to the VMR for use in trench reinstatement. The recycled aggregate for the volumetric mixing vehicle is produced at the reprocessing facility so it is available upon demand, reducing the time between excavation and final reinstatement, and therefore minimising disruption on local traffic. This is especially important in an area such as the City of London and its surrounding London Boroughs. The volumetric mixing vehicle only mixes the required quantity of foam concrete needed for each excavation so there is no surplus and no waste.

Key savings

- Prior to May 2007, when the Beckton facility opened, 98% of spoil waste from the VMR was being sent to external waste transfer stations to be recycled. Now it is sent to Beckton Materials Reprocessing Facility, where a 100% recycling rate of waste from the City of London has been achieved and a 60% recycling rate has been achieved from the surrounding London Boroughs.
- From January to September 2008, 131,024 tonnes of waste arising from Clancy Docwra's work on the VMR was diverted from landfill. The facility is ideally located for the VMR project, minimising vehicle movements and therefore promoting energy efficiency and reducing fuel consumption. A 37% reduction in mileage was achieved between the Beckton facility and the average journey to historic suppliers of recycled aggregate.
- From January to September 2008, 22,500 tonnes of virgin type 1 and shingle were saved with the use of recycled type 1 and shingle. This equated to a reduction in the carbon footprint by 97 tonnes fossil CO₂² by using recycled aggregate over virgin aggregate, equivalent to 485 trees³. No virgin aggregate is now used for reinstatement on the VMR project.

Sharing good practice

The VMR project has clearly proved that the material reprocessing facility does work if organisations work together. A steering group was established to look at alternative methods of reinstating construction excavations. This group facilitated the sharing of expertise and experiences and involved the whole team from the gang removing the waste from the trench to the decision-making managers.

Environmental and Financial Benefits of Recycling Facility

- Exceeding Government target of a 50% reduction in waste to landfill by 2012.
- 100% recycling rate of waste spoil generated in the City of London.
- 60% recycling rate of waste spoil generated in London Boroughs
- Diverted 131,024 tonnes of waste from landfill since January 2008.
- Reduced use of virgin aggregates by 22500 tonnes since January 2008.
- Reduced carbon footprint by 97 tonnes fossil CO₂ by using recycled aggregates over virgin.
- Equivalent to 485 trees.
- Foam concrete is mixed on demand with no waste.
- 37% reduction in average mileage for the supply of virgin aggregate.
- 10% saving on purchase price of recycled material compared to virgin.
- Less disruption = free flowing traffic = minimal vehicle emissions.

² Calculated using the Environment Agency Carbon Calculator

³ Calculated using conversion from Global Ideas Bank <http://www.globalideasbank.org/site/bank/idea.php?ideald=2456>