



## NJUG CASE STUDY

### CASE STUDY 46: Waste Management Learning Programme *Winner of the NJUG 2009 Sustainability Award*

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities on street works issues. The 39 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.

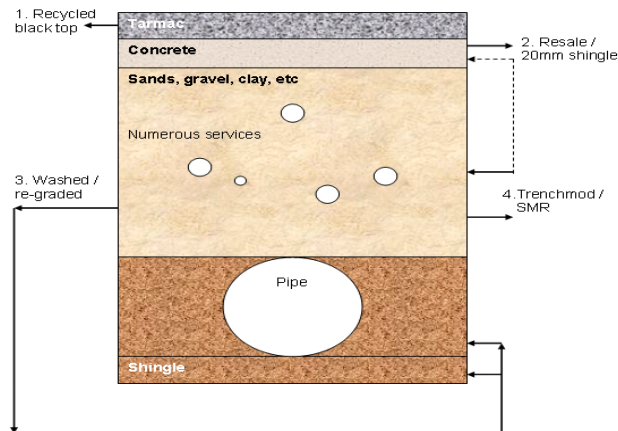
#### **Overview:**

Each year Thames Water produce in excess of 1 million tonnes of construction and demolition waste. However since January 2007 their recycling rates have risen from 34.3% to 94.3% and their landfill reduced from 22% to 5%. Thames Water achieved these results by providing a continuous learning programme for the management of waste including:

#### **Case Study:**

##### ***The Sustainable Trench Method***

When renewing water and sewage pipelines, large quantities of construction and demolition waste are excavated. Using the Sustainable Trench Method (shown in the image below) Thames Water has been able to recycle 100% of their waste from contracts such as the Victorian Mains Replacement programme (a project to replace 1,300 miles of old pipes under London by 2010).



1. Tarmac to be recycled in to Type 1 or tarmac sub base
2. Concrete to be crushed for 20mm shingle or added to Type 1
3. & 4. Sands, Gravels, clay etc. Either crushed, washed and regraded as shingle (5) or mixed for SMR
6. Pipe, if metal to recycler, if plastic to be shredded on site then sent for recycling

**SMR:** soil material reinstatement

<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 Utilities, 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-nine utility companies, and twelve utility contractors.

### **Victorian Mains Replacement – Materials Reprocessing Facility**

1,000 miles of aging water pipelines in London have been replaced using sustainable methods and materials produced from this contract using the Sustainable Trench Method. Thames Water has achieved 100% recycling by processing all highway waste at the Materials Reprocessing Facilities (MRF), the recycled materials are then used for trench reinstatement. The waste is processed through crushers and screeners to produce various grades of recycled shingle, ballast, and sub base. Using a close loop, recycled type 1 granular material is also produced and foam concrete is also manufactured using recycled aggregate. Because the recycled aggregate is produced at the MRF, it is available upon demand, mixing only the quantity of foam concrete required so that there is no waste. This reduces the time between excavation and final reinstatement, minimising traffic disruption in the centre of London.

### **Systems**

Thames Water has excellent systems in place to monitor waste from the 'cradle to the grave' in accordance with the Waste Resource Action Programme (WRAP) protocol. Thames Water produced their own Site Waste Management Plans (SWMPs) in May 2005. All contracts over 200,000 tonnes require a SWMP and, as part of the process, are required to be submitted to the Waste Manager, for examination and approval, prior to any work commencing on site. Once approval has been received, the designer will follow this process:

- Ground Risk Assessment
- Envirocheck search to ascertain any land contamination and / or flood risk
- WAC Test (Waste Acceptance Criteria) if applicable
- CAT (Characterisation Assessment Tool) WASTE soil search to establish whether the waste is non hazardous or hazardous if applicable
- Soil remediation if applicable
- Disposal options specified

### **Waste Data Returns**

Thames Water receives these quarterly from its contractors and this information is recorded and monitored to ensure compliance. All waste to landfill is closely monitored and investigated. Thames Water have:

- Saved 12,000 tonnes of carbon by increasing their recycling rate from 34.3% to 94.3% (60% increase in 2 years) and the subsequent reduction of transport since January 2007
- Created a closed loop of recycling and increased carbon savings by using their Framework Agreements for the procurement of aggregates and waste disposal
- Created efficient waste management systems to monitor waste from the 'cradle to the grave' to comply with legislation
- Continuously improve the management of waste by using the re-use option on site wherever possible
- Re-use their redundant equipment at their operational sites which generates cost savings and is environmentally friendly

### **SWAG Group (Strategic Waste Action Group)**

Thames Water formed this group with contractors in 2006, to achieve their aim to reduce, re-use, and recycle waste, wherever possible. The aims of the group were to out perform Government waste targets:

- 50% reduction of material to landfill by 2012
- Divert all waste from landfill by 2020

The group's members consist of staff from technical, construction, regulatory, waste, and environmental departments from Thames Water, and environmental / waste specialists from the contractors. Suppliers from the waste industry are invited to each session, which take place four monthly, to provide an opportunity to evaluate new innovations coming on to the market to aid recycling. This group also provides Thames Water and contractors the opportunity to discuss any issues that are of concern with regard to waste management and / or environmental matters. This feedback group has helped Thames Water and their contractors to continuously improve their waste management systems and to constantly improve recycling rates to the current high standard.

