



“Royal HaskoningDHV has drawn on its expertise of working in a range of sectors to provide practical and innovative solutions for the Southwark Waste facility.”

Jim Grigg, Design Manager, VolkerFitzpatrick

Waste management facility for Southwark

In February 2010, Veolia Environmental Services – which provides waste related services to around a third of the UK population – was granted planning permission to build an Integrated Waste Management Facility on Southwark’s Old Kent Road.

Operational in 2012, the state-of-the-art facility processes all the borough’s household waste and recycling, and provide a long-term solution to Southwark’s waste management needs. It also brings regeneration, investment and new jobs to the area.

The centre comprises a Mechanical Biological Treatment (MBT) plant to treat residual waste, a Materials Recovery Facility (MRF) to sort commingled recyclables, Household Waste, Reuse and Recycling Centre (HWRRCC) for residents to deposit a wide range of items of household waste, a recycling waste transfer station, and an educational visitor centre.

The Materials Recovery facility is one of the most advanced recycling facilities in Europe. All materials collected for recycling from homes across the borough are processed at this plant before being sent off to manufacturers to turn the recycled items into new products.

The plant facilitates significant improvements in the borough’s recycling levels – helping the borough achieve its aim of recycling 50 per cent of the 118,000 tonnes of waste generated each year. This will in turn help the council achieve its EU landfill directive targets for 2013 and 2020.*

The facility is Veolia’s first MBT plant in the UK. The output from the MBT facility will be SRF (Solid Recovered Fuel), which is suitable for incineration. This is sent to the South East London Combined Heat and Power plant (SELCHP), an energy recovery facility in Lewisham, where it is used to create energy.

Built on the site of a former gas works, the project has high sustainability credentials and has achieved a ‘good’ BREEAM rating for its waste processing buildings and the Resource Centre will achieve a ‘very good’ rating. Royal HaskoningDHV has been involved in the design of the Southwark facility in partnership with construction contractor VolkerFitzpatrick.

Melissa Hipwell, Principal Engineer for Royal HaskoningDHV, said: “Our involvement in the project includes civil and structural engineering on the facility buildings, MBT tunnels, biofilters and infrastructure, including roads and drainage. The concept architectural design, undertaken by Thorpe Wheatley, has been detailed by Royal HaskoningDHV’s sub consultant Arctica.



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“The design of the reinforced concrete tunnels for the mechanical and biological treatment of the waste was crucial. Due to the challenging environment and very high temperatures involved, we used a finite element software package to model the structure in three dimensions with the temperature gradients applied to the structure.

“The modelling was necessary to calculate the stresses due to the thermal effects, and to predict the expansion and contraction of the concrete. The model has also been used to advise VolkerFitzpatrick on the method of construction. We have been able to draw on our expertise in a number of fields to bring this project to fruition.

“While the site is ideally located close to the source of the waste for recycling, it has not been without its challenges. The site has been used to its full potential while accommodating two significant gas mains that cross the site affecting the piled foundations and below ground services. The site, which was previously occupied by a derelict gas works, required decontamination and remediation before work could begin.”

The facility provides stakeholders with environmental and financial benefits brought about by processing waste and recycling as close to source as possible and play a central role in reducing the impact Southwark’s waste has on the environment.

Construction of the facility began in June 2010. The investment in the project is in excess of £60m, and commenced operations in 2012.

EU Landfill Directive

*EU Landfill Directive targets aim to reduce the negative effects of landfilling on the environment by reducing the amount waste landfilled to 50 per cent of 1995 levels by 2013, and to 35 per cent of 1995 levels by 2020. The UK Government announced on 8 September 2010 that it will meet the 2010 Landfill Directive target for the reduction of waste landfilled to 75 per cent of 1995 levels.

Mechanical Biological Treatment (MBT)

An MBT plant processes waste not suitable for recycling. It uses a combination of mechanical and biological processes to sort the waste: the mechanical element comprises an automatic segregation system to separate any recyclable materials from the mixed waste, such as metals or glass. The biological element seeks to remove moisture from the waste before breaking down the organic, biodegradable components by way of either composting or anaerobic digestion to produce soil improver or biogas for fuel.

Melissa Hipwell

T: +44 (0)1733 37 3519

E: melissa.hipwell@rhdhv.com