Breaking New Ground

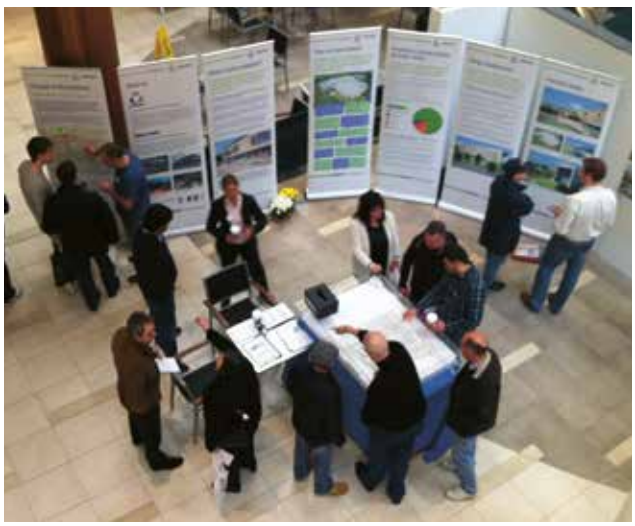
Urbaser and Balfour Beatty have broken ground on the UK's second largest MBT facility in Basildon, Essex. Urbaser project director, **Richard Lancaster**, discusses the project and the company's approach to sustainable resource management

Waste management in Essex is undergoing a transformation. Rather than sending all household residual waste directly to landfill, Essex County Council has procured a sustainable, flexible solution that will change the tone of resource management in the county.

The Essex Waste Partnership includes 12 district councils and the unitary authority of Southend-on-Sea. Its strategy to procure a sustainable, long-term alternative to landfill began in 2009, with Essex County Council having already secured planning permission in principle for the site at Courtauld Road in Basildon.

The consortium of Urbaser and Balfour Beatty (UBB) were awarded the contract in May 2012 to design, build and operate a mechanical biological treatment (MBT) facility. Set to be the UK's second largest MBT plant, it will treat all the residual household waste arising in Essex and Southend for the next 25 years.

Following the award of the contract and the granting of planning permission last year to UBB, construction of the 417 000 tonnes per annum MBT facility has now begun. The 8.5 hectare site is strategically situated alongside the A127, the arterial road connecting the south of the county with London.



Community engagement… vitally important

Site preparation works are well underway, with construction anticipated to be complete in summer 2014. A year-long "hot" commissioning period will follow before full service starts in summer 2015. In parallel with the operational facility, UBB will be launching a state-of-the-art visitor and education centre, ensuring that everyone in the community has the opportunity to learn about how the facility works and its positive environmental impact.

Urbaser has designed the facility's process to be flexible, both to changes in the incoming waste and to the demands of the outputs market. This means that, rather than solely generating recyclable materials and a solid recovered fuel (SRF), the facility can also operate in biostabilisation mode to produce a solid output material (SOM), with a biodegradability reduction of 84.2 percent.

Continuous Refinement

WASTE ARRIVING at the plant will be moved by gantry-operated grabs and plate feeders from the reception area to a series of trommels. These sort the material into bulky waste and two smaller fractions: organic matter (OM), which is conveyed to the stabilisation area via an overband electromagnetic separator; and the overflow fraction, which is sent to a series of ballistic separators. A further refinement of the material into OM is achieved using a rolling fraction and a flat fraction separator.

The rolling fraction travels through a waterfall-type sorting process to recover recyclable materials:

- ferrous metals are recovered via an overband electromagnetic separator
- PET, HDPE (coloured and clear), Tetrapacks and mixed plastics are sorted by optic separators
- aluminium containers are removed by Foucault induction separators.

The flat fraction, mainly composed of paper and carton, is manually sorted. All the recyclable materials are baled for onward transport, whilst rejects are compacted, baled and stabilised to remove almost all biodegradable matter.

The organic fraction from the sorting stage then undergoes aerobic decomposition in an enclosed building,

An impression of the Courtauld Road site

maintained under negative pressure to prevent the escape of odours. Temperature, humidity and oxygen levels are monitored and controlled via forced aeration and rotary blades with in-built sprinklers. The rotary blades make their way from the oldest matter at the rear to the recently loaded material at the front, finally clearing the loading area in preparation for the next batch of OM.

After six weeks of decomposition, the bio-stabilised matter is moved to the OM refining building where contaminants, such as glass and other inert material are removed, thereby preparing the material for purposes such as land restoration.

Community Approach

UBB WAS keen to develop long-term tangible benefits for the residents and businesses close to the site, and so carried out a detailed engagement and consultation programme designed to reach a wide cross section of the local community.

The engagement programme included direct communication with stakeholders through two public exhibitions (lasting over eight days), iterative development of the project website, an email enquiry facility and direct correspondence with local residents and key stakeholders.

The thorough awareness raising campaigns included briefing presentations for local councillors, newspaper adverts and articles, door knocking and hand-delivered leaflets to 28 000 households, posters, posts and tweets on social networks, emails through existing community networks and preview events for key stakeholders.

Exhibitions were held in a local primary school, the Eastgate shopping centre in Basildon and the Essex Enterprise Centre, which gave a valuable opportunity to speak with a broad cross-section of the community. The consultation programme enabled the team to explain the proposal in detail, listen to stakeholders' priorities and concerns, and address these directly in the proposal. A series of meetings was also organised with the residents of the adjacent travellers' site, and these are continuing throughout the construction phase.

Following the consultations we were able to develop diverse community benefits targeted specifically to help improve quality of life for local people. From apprenticeships and employment opportunities for local residents and supply chain opportunities for local SMEs, to encouraging community participation in science and the arts, our vision is that the facility provides something for everyone.

We hosted a "Meet the Buyer" event in September, which attracted more than 60 local businesses – a pleasing turn-out that demonstrated the enthusiasm for the project amongst local businesses. UBB is continuing the dialogue process started at that event and is continuing to ensure that work packages are made visible so that local SMEs can bid for the work.

Such considerations and developments are not new to Urbaser. It operates more than 200 waste management facilities on four continents, treating more than 7m tonnes of waste every year and providing services to more than 50m people. This level of experience gives the business a personal familiarity with the dynamics of maintaining good relationships with the communities it serves. CIWM

The Author

Richard Lancaster is construction director at Urbaser Limited with responsibility for the development of the Essex and Southend mechanical biological treatment facility. Richard has a 30-year track record of project management and leadership delivering strategic utilities infrastructure in the UK and further afield.