

NORTHACRE RESOURCE RECOVERY CENTRE

Westbury, Wiltshire | UK

MBT BIOSTABILIZATION PLANT WITH SRF PRODUCTION



THE WESTBURY MECHANICAL BIOLOGICAL TREATMENT PLANT (MBT) IS THE KEYSTONE OF THE WILTSHIRE ENVIRONMENTAL STRATEGY. THANKS TO THIS SOLUTION, **THE COUNTRY CAN FULFILL THE NATIONAL AND EUROPEAN OBJECTIVES OF LANDFILLING REDUCTION, ENSURING IN THIS WAY YEARLY 3 MILLION POUNDS SAVING.**

IN ADDITION, THE PRODUCT OBTAINED FROM THE TREATMENT, A **HIGH QUALITY SOLID RECOVERY FUEL**, IS USED TO PRODUCE **ENERGY AND HEAT**, ENSURING THE ENVIRONMENT AN ADDITIONAL **SAVING IN TERMS OF CO₂ EMISSIONS.**

PLANT DATA

Company	Hills Waste Solution Ltd
Capacity of the project	160.000 tpa
Treated waste	Unsorted Municipal Solid Waste
Final Output	<ul style="list-style-type: none">• SRF: 28.000 tpa• Stabilized residual for landfilling: 16.800 tpa• Metals: 660 t/a
Start up	October 2013
Plant	Biostabilization Mechanical Biological Treatment with SRF production
Served basin	400.000 approx. inhabitants
Staff	16

THE COMPANY

Hills Waste Solution is one of the main English companies specialized in waste treatment, which has been serving private and public customers for 50 years in Wiltshire, in central South England. The company provides a complete range of waste collection, disposal and recycling services, and is part of **The Hills Group Limited**, a group founded in 1900 that today brings together companies that operate also in the aggregates, concrete and construction sectors.

THE PRODUCT

Hills has asked Entsorga to provide EPC (Engineering Procurement Construction) services to build a **mechanical biological treatment plant (MBT) for municipal solid waste** in Westbury, the first of this kind in Wiltshire (UK). The plant, located only 100 miles west of London, serves about **300.000 inhabitants**; its proximity to residential areas has required particular care in avoiding any environmental impact and above all **the odours emissions**.

THE SOLUTION

Entsorga has supplied a Mechanical Biological treatment plant **Bee with H.E.Bio.T.™ (High Efficiency Biological System)** process to treat **Municipal Solid Waste (MSW)** to produce SRF for the cement kilns, initially of 60.000 tpa increased afterwards to **80.000 tpa**.

THE PROCESS

The Municipal Solid Waste is subjected to a **biodrying biological treatment** process of about 15 days in which, thanks to **forced aeration**, the natural degradation of the organic fraction is accelerated and the material loses most of its water content. The biodrying area is divided into **30 sub-areas**, each managed independently of the others. Each sub-area is equipped with a temperature probe that transmits the data to the **control system (1)**, which **automatically** processes and optimizes the process by intervening on the direction, flow rate and mixing ratio of the air. Subsequently the biodried mass is **mechanically refined** to select the matrices with the highest energy content (plastic, paper, textile fibres, etc.) from which we **obtain the SRF** (Solid Recovery Fuel). The management of refining machineries depends on the SRF quality required. The **ventilation system (2)** extracts exhausted air from inside the bioreactor and conveys it to the **biofilter (3)** to purify it from unpleasant odours.

(1) **CONTROL SYSTEM**
AUTOMATIC 24/7



(2) **VENTILATION SYSTEM**
FOR EXHAUST AIR EXTRACTION



(3) **BIOFILTER** FOR THE PROCESS
ODOURS ABATEMENT



(4) **AUTOMATIC BRIDGE CRANE**
SPIDER™ FOR THE MATERIAL
MOVING

USED TECHNOLOGIES

The plant uses the Entsorga proprietary technologies: **Bee™, Bridge crane Spider™, Biofilter, Prometheus™**

THE FINAL PRODUCT

The final result is a **Solid Recovered Fuel (SRF)** with a high calorific value, in accordance with the EN 15358 standards. The true strengths of the Entsorga solution can be found in the **biodrying process**, unlike other processes where the SRF is obtained only by waste mechanically sorting and shredding. Scientific literature and experience have shown that the moisture of waste heavily compromises the final quality of the alternative fuel and keeps its calorific value low. The use of SRF also guarantees the **reduction of greenhouse gas (GHG) emissions** and therefore direct environmental benefits.



STRENGTH

- **environmental compatibility: no smells or dust** are released in the external environment. All operations take place in **closed areas** placed in **depression** to prevent any odour emission from the building
- **reduced operation and labour costs**, thanks to the **complete plant automation** that reduces the operator access to the waste treatment areas
- **maximum safety and minimum health impact for operators**, which are not exposed to stale air, dust and any polluting agents
- **low energy consumption** thanks to the use of high efficiency and energy recovery equipment [**bridge crane (4)**]