



Canford

Mechanical Biological Treatment (MBT) facility
with low-carbon and renewable energy generation

New Earth Solutions is a specialist business dedicated to delivering sound technical and environmental solutions to the UK's waste problems.

Driven by the outcomes of the Kyoto Protocol on Climate Change, New Earth Solutions has developed a wide range of technologies and processes designed to recover value from waste and to mitigate its impact on the environment.

The Canford facility is at the heart of the New Earth business where the company had its origins. The site accommodates New Earth Solutions first waste treatment facility which has been operating since 2003, as well as a landfill gas power station.

The site has grown from an initial capacity of 12,500 tpa and was extended to 50,000 in 2006, with process improvements having increased the capacity further. Today, the facility is capable of treating 75,000 tonnes of waste per year, with planning permission to add a further 50,000 tpa of capacity to the site. Additionally, New Earth Energy operates a 1MW Advanced Thermal Conversion facility at the site, producing low-carbon renewable energy.

The acceptability of this facility adjacent to a heath land of international nature conservation importance serves to demonstrate the effectiveness of New Earth Solutions integral air handling and emissions treatment systems.



Canford
Facility

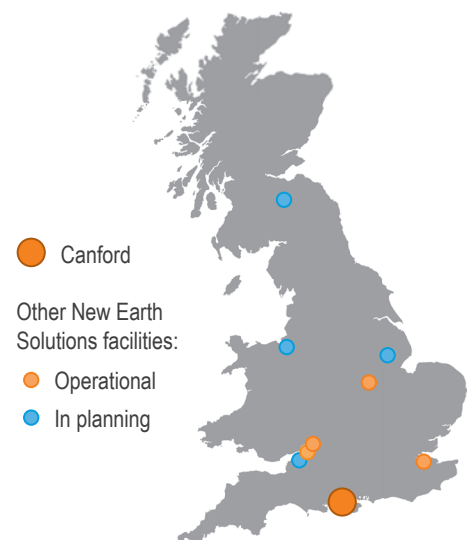
What is MBT?

The New Earth process at Canford utilises Mechanical Biological Treatment. In the mechanical stage, materials such as plastics and metals are recovered from the waste and sorted into valuable recycling streams. Biodegradable waste is also separated for further treatment.

In the biological stage the biodegradable waste is composted in a fully-enclosed, controlled environment, to produce a useful land remediation compost. The product is also suitable for use as a 'green fuel' in the New Earth Energy facility co-located with the MBT plant.

Type of Waste Processed

The Canford facility processes non-hazardous mixed municipal waste from local authorities.



The Process



Initial Preparation Upon delivery waste undergoes sorting to remove any oversized items that cannot be processed. Extracting recyclable materials then begins by passing the waste through a trommel, a large circular screen that removes smaller particles known as 'fines'. These then go to the bio-stabilisation halls for processing.



Sorting The remaining waste is sorted using various machinery. These include magnets to extract ferrous metals, a windsifter to sort light waste from heavy and optical sorting to identify different plastics.



Sizing of Mixed Fraction Some of the waste streams still have a high organic content (eg paper). These are shredded before either being placed in the bio-stabilisation halls for the remaining part of the process or used to generate a biomass-rich fuel for use in renewable energy schemes.



Bio-stabilisation Halls The fines and shredded waste is stored in long heaps, or 'windrows', in fully enclosed halls for a period of 6 weeks. The composting process is self-heating, with the irrigation and oxygen carefully controlled to give the optimum environment for the micro-organisms present in the waste to break down the organic material.



Pasteurising Material is screened to remove remaining plastics and loaded into the pasteurising unit for a minimum time of 135 minutes at a minimum temperature of 71 °c, an Animal By-Product Regulations (ABPR) requirement. This is a batch process, recorded using electronic probes which transmit data to the site control computer.



The Product The resulting material, branded 'nutri-9', can be used to regenerate brownfield or landfill sites. Oversized material that has not fully composted can become part of the biomass-rich fuel used in renewable energy facilities such as the ones New Earth Energy is developing.



Automated Control System The facility operates a Continuous Emissions Monitoring System which enables full control of the process environment as well as monitoring the emissions into the air outside. This system exceeds all required monitoring standards and is assessed regularly by the Environment Agency.



Emissions Control Facilities are held under negative air pressure, helping to draw air inwards when doors are opened and minimise air escaping from the buildings. Canford also has a sophisticated emissions control system incorporating a chemical air 'scrubber' and a final wood chip bio-filter before air is released to the atmosphere.

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