



## Wasteology Enclosed Tunnel System for Processing Organic Waste Streams

### Overview

Wasteology have a wide understanding of waste management systems, from our extensive experience centred on green and kitchen waste processing.

Now in 2009, with our continuing commitment to new product development, Wasteology have launched a black bag waste processing system based on a revolutionary tunnel design. This is known as a Mechanical and Biological Treatment Plant or MBT.



The system makes use of the impressive design capabilities of the existing BACKHUS LT machine with a new patented "roof design" being installed to allow "in vessel" composting of the waste stream with an enclosed tunnel environment.



The diagram shows the tunnel cross section with air circulation within the floor chamber and vented through the roof manifold ensuring maximum product aeration and avoiding odour and emissions from the roof seal.



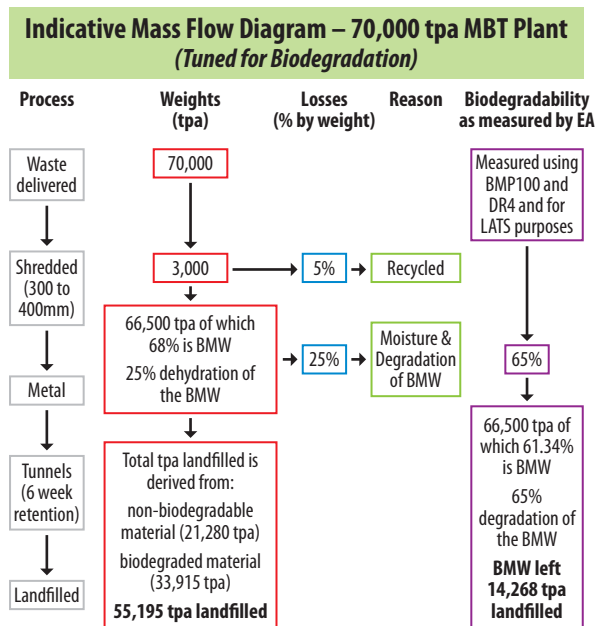
The BACKHUS LT moves from the clean end to the dirty end of the tunnel approximately 3x weekly moving the product along the tunnel by 2.5m. Over 6 weeks the product is degraded and stabilised and removed on the final pass.

This enclosed, Controlled, Agitated Tunnel (eCAT) product is unique and has huge advantages over alternative MBT processing technologies – with maximum product flexibility, optimised processing conditions and a lower capital cost within the typical site.

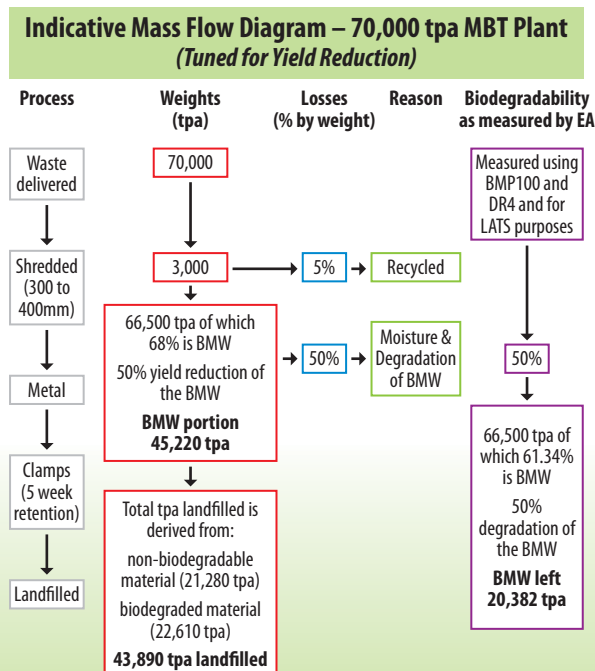
## Applications

The system is unique in design with computer controlled air circulation and venting within “zones” along the enclosed tunnel. This air management system, coupled with the installed irrigation system, means excellent product flexibility – whether processed for maximum bio-degradation or yield reduction (bio-drying).

With **Municipal Sourced “Black Bag” Waste** typical biodegradation values of >70% are anticipated within the 6 week processing cycle.



Alternatively if processing this waste for maximum yield reduction, with no additional irrigation, then yield reduction levels of 50 – 55% are anticipated.



The unique design and control systems developed for MBT processing mean other treatment options are possible such as:

### Green and Kitchen (food) waste

Where ABPR\* compliance is achieved with the two pass 60°C method, compost can be produced within 6 weeks, eliminating the need for expensive maturation pad areas and ongoing environmental problems with odours.

### Sewage Treatment Waste or “Sludge”

Again ABPR\* compliance is achieved and compost is made from processing the waste stream with additional “buffer” material such as woodchip or green waste.

### Soil Remediation (Hydrocarbon reduction)

With under-floor heating and the introduction of an appropriate enzyme, the system can be used to provide a processing environment for degrading hydrocarbons in contaminated soil to avoid expensive landfill tax penalties and usage restrictions.

## Benefits

- **Controlled aeration and irrigation environment within tunnel**
  - Maximise Biodegradation
  - Maximise Bio-drying
- **Faster Processing Cycle**
  - Increased throughput per vessel
  - Lower footprint site
  - Lower capital costs
  - Lower running costs
- **Enclosed system from reception building**
  - Odour and emissions controlled
  - Site restrictions avoided
  - Flexibility in reception hall for large scale pre-sorting equipment
- **Flexible system**
  - Modular and Expandable
    - MSW
    - Green and kitchen/food waste
    - Sewage sludge
    - Soil remediation
  - Typically 40,000 -150,000 tonnes
  - All managed with one BACKHUS LT

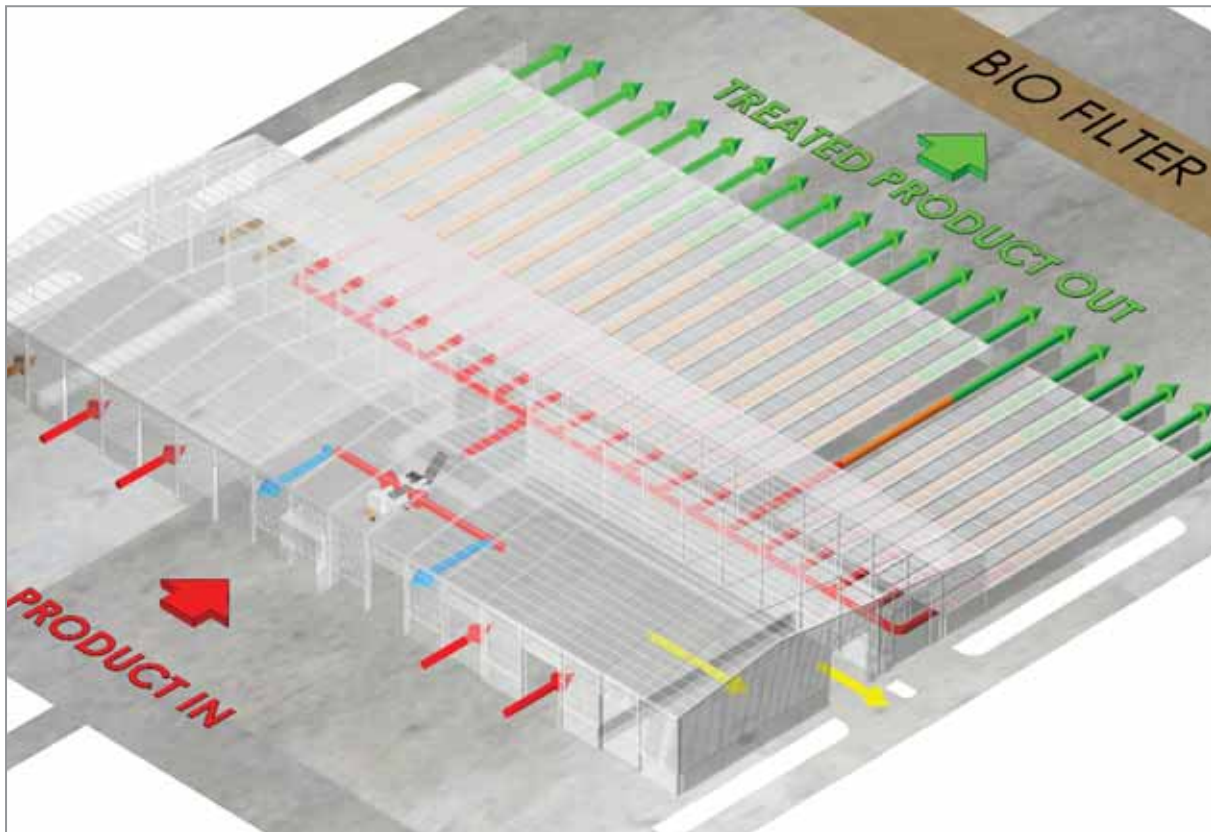
\*Animal Bi-Product Regulations





## Site layout and overview

The Wasteology system is scalable and modular with a typical 20 tunnel site being constructed on 1.5 hectares. Each tunnel can take up to 350 tonnes of processed waste, with the site holding a total of 7,000 tonnes at any one time. With a 6 week processing cycle, approximately 70,000 tonnes of waste can be handled per annum.



The reception building is scaled to enclose the tunnel openings and allows for installation of pre-sorting equipment depending on waste streams and recycling targets aimed for.

The tunnels are accessed via large "cat-flaps" which allow the BACKHUS LT to travel but maintain an enclosed processing environment for the plant.



*Trust  
Wasteology*

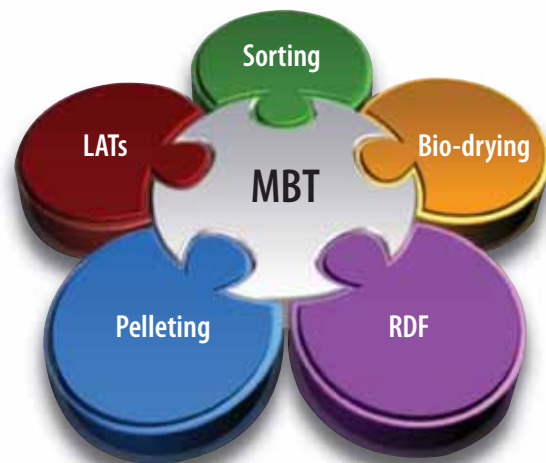


## MBT as part of a “total waste solution”



This waste stream needs to undergo a series of processes before the ‘Wasteology’ technology takes place. This will include a combination of mechanical and optical screening to maximise recycling levels and optimise the quality of the BMW (organic matter) entering the plant. We will help clients to select equipment to be able to segregate non organic materials for diverting into commodity markets if required.

After processing, the treated material is unloaded from the tunnels and either diverted to landfill or further processed to provide an RDF fuel source. The material is degraded, bio-stable and significantly reduced in yield. If pelleted, it forms a consistent and transportable fuel source.



Whatever the waste stream selected, or end use for the product – The Wasteology/BACKHUS LT system forms an essential part of a Total Waste Handling and Processing Solution. With additional scale and product flexibility made available for the future.

The logo for Wasteology Systems Ltd, featuring a stylized green leaf icon to the left of the text "Wasteology Systems Ltd" in a bold, sans-serif font.

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