New Earth Solutions Canford composting and MBT facility expands to 50,000t/year with the addition of 4 new composting halls, a second reception hall and aerated maturation bays.

The New Earth facility was designed in 2001 when composting of Animal By Products was prohibited in the UK under the Animal By Products Order following the outbreak of foot and mouth disease.

Drawing on best practice from around the world, New Earth Solutions worked closely with the State Veterinary Service to design and build the first large scale housed windrow composting facility to be approved under the UK Animal By Products Order 2003 and EC Animal By Products Regulation ECN1774-2002. The New Earth facility provides enhanced treatment of organic wastes to eradicate pathogens under a process of Hazard Analysis (HACCP) as defined under The Food Safety Act.

Today the New Earth system is approved to treat Category 3 Animal By Products (raw meat and fish) and Category 3 catering waste to produce a high quality compost. The New Earth system has also proven highly effective for Mechanical and Biological Treatment and can guarantee a minimum of 70% reduction in the biodegradability of mixed household waste prior to landfill disposal.

In addition to significant capital cost savings, the use of mobile equipment reduces down time, improves health and safety for maintenance and is easy to clean between turning batches as required by the ABPR. The automatic ventilation system in the buildings removes steam and introduces clean air so that machines and operators can work comfortably.

Build
Through buildings of 9,000m², the facility processes 50,000 tonnes of biodegradable waste per year. Air is extracted from under the windrows via the COMPOair aeration ducts and also through a roof mounted ventilation system. The exhaust air is then passed through a scrubber and into a large biofilter prior to release to atmosphere.

The patented airflow system creates a "head wind" towards the turning machine that maintains visibility for the driver. The clean air introduced in front of the machine and exhaust air is collected behind. Depending upon the direction of travel and location of the machine within the composting hall, air flow can be directed by a remote control system operated from within the turning machine.

"We will be building a lot more of these plants over the next few years to help the UK government meet its targets", Bill Riddle, Director and owner of New Earth Solutions Ltd stated in a recent BBC television interview. The UK will not meet its requirements under the EU Landfill Directive unless a lot more treatment capacity is brought online soon. The UK is producing approx 30million tonnes of household waste per year and most of it is still going to landfill.

In addition to design expertise, Compost Systems supplied the compost aeration system, wireless temperature monitoring and process control systems, essential for full sanitisation and enhanced compost product quality.

More than 2,000 metres of COMPOair aeration ducts were installed, 1,500m² biofilter grid, to ensure even air distribution throughout material.

Commencement of Construction in Kent
Last year, New Earth Solutions was awarded the contract to compost 50,000 tonnes of source segregated household waste for Kent. Planning permission was granted relatively quickly as New Earth was able to demonstrate high levels of environmental control. Ground works are nearing completion and construction will commence shortly. The first phase of the development is expected to start receiving waste late Summer 2007 and there is a second phase expansion which will double the size of the facility to follow shortly. The facility in Kent will also be receiving waste from Essex until a facility can be developed there.
In 1998 the compost plant Kaninghof was one of the first plants using the COMPOment aeration system. In spring 2006 Hubert Seiringer decided to increase the capacity of his 7,000 tonnes Biowaste plant to accommodate an additional 10,000 tonnes for sludge composting. Working from experience the site has been designed to process the first odorous stage with negative aeration, while the second stage of the process will operate with positive aeration.

On 8 August this year the plant started operating after a building time of only 3 months. With the use of the new aeration system the total capacity of the facility has almost tripled.

The Idea

Unexpected soft ground - stabilisation with lime

Finally the heart of the aeration was delivered

In very short time...

The 8 aeration ducts were installed

And the platform ready for Tarmac

Finally, after 3 Months... Finished!!

Two layers of Tarmac

Watersealed

Pipework

Building of Biofilter

Blowers installed

Hubert Seiringer
President Seiringer Umwelttechnik
Chairman of the Austrian Composting Association
The first New Earth "type" composting plant in Austria will start composting in 2007 with a capacity of 14,200 tonnes per year, operated by Posch GmbH.

The finishing touches are being done at the facility in Ternits, Austria. By the end of the year the New Earth composting facility will start operating after a build of just 6 months. The facility consists of a reception area, a three window composting hall with negative aeration, and three, 100m long aerated windrows outside.

Part of the old composting platform was used to form a new reception area, and a new 1,500m2 composting hall was constructed. The big advantages of enclosed aerated windows for this site was the level of control on both compost quality and emissions and that the existing windrow turner could be utilised in the new scheme.

After a composting time of about 4 weeks indoors, the material is moved to the curing area by wheeled loader. To ensure maximum performance, the curing area is also equipped with aeration. After screening, the material is stored until sold.

By redesigning the site, the installation of the COMPOnent aeration system and rationalisation of material movement, the capacity of the site was greatly increased, machine hours were reduced and batch control made easier.

Resumee:
Maintaining aerobic conditions within the composting material is essential to ensure maximum degradation rates, material throughput and prevention of odours. Forced aeration can guarantee these conditions in the pile and also ensure high temperatures are achieved for sanitisation.

Andreas Posch
Managing Director
Posch GmbH

The facility was originally developed in the early 90s to compost 2,000 tonnes of sewage sludge per year. To expand our facility, we decided to install the COMPOnent aeration system in combination with the New Earth process. This gave us all the advantages of a windrow system with all the emissions and process control afforded by in vessel systems. We were also able to keep using our existing compost turner.

It is never too late...

In Summer 2006, a window of 2 weeks provided enough time to install the COMPOnent forced aeration system into the existing sludge composting platform in Traismauer, Austria.

Each day the sewage works of Traismauer produce sewage sludge that has to be treated at the composting plant. There were no storage areas available so the aeration system had to be in place within 2 weeks.

With only two men and an excavator, the aeration pipes were installed. The remaining space was filled with lean mix concrete, before the surface was repaved with Tarmac.

So to cause as little disruption to the pad as possible and keep reinstatement cost to a minimum, 1m wide strips of tarmac were removed before digging a trench of 70 to 80cm width.

After a total construction time of only 2 weeks, the plant started operating again.

Only one more Month to go!
New Arrival.....

The new aeration duct COMPOair "S" is a complementary addition to the proven COMPOair duct. COMPOair "S" ducts are smaller and easier to install and more economic for shorter aeration runs.

In response to user requests, we went back to the drawing board and created the solution. In Spring 2006 we successfully installed the first plant with COMPOair "S" aeration ducts.

The new COMPOair "S" duct provides all of the advantages of the standard COMPOair duct with even air distribution, resistance against heavy traffic from loaders or trucks as well as easy cleaning and the anti-plugging airjets, while reducing the height by 30% and the transport weight by almost 50%!

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The fastest, most convenient and most flexible way to start aerating the compost.

By connecting flexible hoses from the container outlets to the aeration ductwork compost aeration is ready to go!

Secure containment of the blower equipment protects these critical parts from physical damage. COMPOtainer is supplied with automatic ventilation so that the temperature and air quality within is maintained for prolonged blower life. Noise from the blowers is dramatically reduced.

COMPOtainer is available in a range of sizes depending upon space equipment requirements. COMPOtainer can also be supplied with integrated office and or storage facilities.

COMPOtainer - the premounted blower station.

Plug and Play - power supply and connection to the aeration ducts - and the plant is operational. The complete pre-wired system including control panel and PLC only requires connection to a power supply.

....ideal for retrofit applications in tight situations...

"....lower transport weight..."
France

Indoor Sludge Composting Plant

Following a successful tender submission, our partners Bioreva from Aix en Provence will be developing a sewage sludge compost plant for Chaumont. Planning permission has now been granted, and construction will start shortly. Compost Systems will deliver the technology, including COMPOnent aeration, computer control and documentation and six COMPOnobox digestion vessels.

The site will treat approx 8,000 tonnes of raw sewage sludge per year from local municipalities.

Six COMPOnoboxes, each 26 metres long and 6 metres wide will form the main composting process. All exhaust air will be cleaned by a biofilter.

Portugal

Setubal Lisbon

After 9 years of operation, the compost plant Setubal close to Lisbon was completely refurbished.

The composting aeration system has now switched to COMPOair “S” aeration ducts. Approximately 2,000 metres of COMPOair ducts were required to refurbish the composting plant last June. The old grid type aeration platform created big problems in terms of uneven moisture levels in the material leading to inconsistent and poor product quality. The old aeration grid was removed and replaced with COMPOair aeration ducts. The compact dimensions of the COMPOair “S” units and the light transport weight were highly beneficial in this case.

Iran

From our consulting project in IRAN, we report from the initial operational start.

Last June, Mr Luebke and Mr Wuerzl flew on a mission to IRAN to target a large agricultural producer with approx. 14,000 hectares of land.

Waste from a 2,000 cow dairy unit, green waste from plantations, large amounts of waste from their own sugar plant next door, and waste from their recently built citrus acid production plant will form the basic feedstocks for composting.

Process design and facility management, correct blending of feedstock, process management, documentation, the selection and use of equipment and the use of the final product were some of the topics to be covered.

As in all hot climates, enemy number 1 is dehydration. It is a tough job to keep the material at the correct moisture level for composting. A lot of attention was given to the design and installation of an underground water distribution.

Preparation of the strip foundation

The first aeration ducts COMPOair “S” were installed.

Irrigation is the key to success.

The water distribution network was installed underground.
Starting Spring 2007

The TracTurn is a mobile Compost turner mounted to a tractor. Starting in Spring 2007, this model will be available on the market.

The development of the TracTurn started six years ago. Target: A turning machine for almost all windrow types without the space wasting driving gap. Result: A high performance machine for all types of windrows, in any width and up to 2.3m high.

With the integrated side stacking system the material is moved closer to the screening area with every turn. For aerated windrows, the system is ideal, because the turning interval is not determined by the oxygen requirement, only by mixing requirements.

Several Prototypes were built. The originator, not unknown to the industry, Hubert Seiringer invented the market leading wind sifter for composting. “I am processing 7,000t/year of Biowaste on my small Composting Platform of 800m2. This is the highest throughput for its area of any platform that I know.” Hubert Seiringer purports with confidence.

The turning machine is transported on a hook lift roll on roll off platform. The unit is powered and transported by a 250hp + Fendt tractor equipped with a tool carrier reverse drive setup. The unit has a tuning capacity of about 1,500m³ per hour. The Seiringer machine is used on more than 10 platforms, some over 100km away.

The ideal machine for contractors or sites with little space available running at maximum capacity.

With a working width of 3.7 metres, the TracTurn cuts a pile of any width.

With every turn the windrow is moved approx 4 metres to the side.

The conveyor belt gently forms the new windrow, perfectly mixed by rotor and conveyor system.

On most composting sites compost turners are only used for a few hours each week. With the track turn system the tractor can be used for a variety of other purposes therefore making ownership much more cost effective. With modern tractors travelling at speeds of 50km/h the track turn system gives contractors the flexibility to offer a number of services such as tuning, transport and spreading of product using just one power unit.

Support

We are happy to announce that August Würzl has joined our team. He will be responsible for the machinery department.

He will manage production, service and sales of machinery equipment especially compost tuning machines and accessories.

We look forward to a great development.

You can contact Mr Wuerzl at:
a.wuerzl@compost-systems.com
Tel.: +43 727 727 5000
Mobile: +43 664 482 4852

Machinery program:

Self propelled compost turners from 2 to 3 metre working width.

Tractor pulled compost turner from 2m to 4m working width ranging from 15hp to 300hp power requirement.
**Used Equipment:**

- Compost turner SF370, John Deere engine 185hp, 4m working width, 2001, call for quote

- Compost turner SF300, Ford engine 98hp, 3m working width, Fleece roller, Irrigation, ‘only 500h’ Price: 39,000 Euros

- Tractor pulled compost turner, Sandberger St300, working width 3m, Price: 3,600 Euros

**Testing equipment**

- CO2, C2, Temperature, NH4, NO3, NO2, SH4, accessories, for daily on site use.

Contact: Bettina Berger +43 7277 27500-11

**Pinkafeld University:**

- Clear differences were shown in the recent comparison between non-aerated windrows and aerated windrows with COMPOnent aeration. The aerated batches showed perfect oxygen levels at all times, while the non-aerated piles only secured a sufficient oxygen supply for a short time after a turning process resulting in high methane and odour production. Methane is 21 times more harmful to climate than CO2 and should only be found at very low levels in a good composting process. The comparison showed clear differences. While the levels of methane in the non-aerated piles were rising above 5% Vol CH4, the levels in the aerated piles always stayed between 0.01 and 0.1% Vol CH4.

**Increased Throughput:**

- Aerated batches showed a 38% increase in the level of degradation over non-aerated batches over the same time. Sites with COMPOnent aeration have 38% higher capacity than similar non-aerated sites. In addition to the performance test, composting plant operators using COMPOnent were questioned on their experience with COMPOnent aeration. Higher capacity followed by reduced odour production, were the main effects (see above Graph).

- It is well known that composters using forced aeration will have a higher water requirement as a result of increased biological activity and air exchange. In areas of high rain fall and where transport weight of compost is an issue the use of positive aeration can be of a significant benefit.

Visit our Webpage: www.compost-systems.com

**Happenings**

**Tradeshows:**

- Pollutec Lyon: 28.Nov - 1.Dez.06

**Seminars:**

- WKO Showcase: Prague: 17/18Okt.06 Barcelona/Madrid/Lissabon: 21/22/23 Nov.06

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