Ware 4 Bins & Recycling

Bins, Trolleys, Recycling and Waste Containers

Human Waste - Making Use of *Everything*!

Our 'poo' bin is a firm favourite with both staff and customers here at Ware 4, but around the world, both human and animal waste is being made use of in a variety of different ways. As we don't like *anything* going to waste, we share the most interesting and ingenious initiatives here.

Construction

By binding cow manure with waste wood products, researchers at Michigan State University have produced fibreboard building material similar to MDF for use as floorboards. As the **manure replaces the role of sawdust**, this cuts wood usage as well as providing a solution to the enormous amount of bovine waste created during meat and milk production - 335 million tonnes in 2006. The sterilised material is **entirely odourless, and is even stronger and more self-binding than sawdust**, making it incredibly useful in a variety of different building and construction environments.

Similarly, a group of students from Prasetiya Mulya Business School in Indonesia won the 2009 Global Social Venture competition with their **73% cow-dung building material**; the EcoFaeBrick. These bricks are **20% lighter than clay bricks, have a compressive strength 20% stronger**, and do not require quarrying, which can be devastating to the surrounding areas. The bricks are also cured using biogas, reducing $C0^2$ emissions, and **could raise local farmers' incomes by around 53%**, whilst solving the problem of cattle waste.

In India, sanitation experts Sulabh International have collaborated with Mexican designers to turn **human waste collected from public toilets** and matured for three years into solid slabs that can be used to build doors. And in France, one company has developed the Ecobrique from **human sewage mixed with clay**, which can be fired to create lightweight bricks or used as lightweight concrete.

Fuel / Energy

Israel-based company Applied Clean Tech are producing a **clean-burning car fuel from human sewage**. The indigestible plant cellulose is removed from the sludge and fermented into cellulosic ethanol, which can then be used to power vehicles. The company claims that a wastewater plant serving two million people would have the capacity to keep a small ethanol plant supplied with the processed cellulose, and for **every tonne of cellulose, around 130 gallons of ethanol can be produced**.

The Dutch utility company Delta currently runs the world's **largest biomass power plant running on chicken manure**. The plant converts 1/3 of the country's poultry waste into 270 millions kW hours of electricity per year – enough to power around 90,000 households. The plant **averts the emission of $C0^2$ and methane from the chicken waste**, which was previously either used as agricultural fertiliser or processed abroad. Instead, the ashes from the processed manure will be sold as rich fertiliser, whilst the poultry farming members are given an **eco-friendly and profitable waste management option**.

And finally…

NASA has come up with an innovative way to protect future space stations against dangerous radiation and meteorites using astronauts' and other space visitors' **recycled wastewater and toilet waste**. Lightweight filtration bags embedded in the space station walls could save on radiation protection costs during launch whilst helping to create a more sustainable environment for humans in space. The bags would first hold clean water, and then switch to water treatment as the water was used up. Over **90% of the original water can be recovered** using membrane filtering, whilst the dry solids can be used as a **shield against radiation and space debris**. Although not practical for current methods of space exploration, which produce very little waste water, long-term space stations or extraterrestrial bases would most likely produce wastewater from washing.

References / Photo Credits

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Contact Ware 4 Bins & Recycling

If you are interested in finding out more about the services and products Ware 4 provides please do not hesitate to contact us.

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