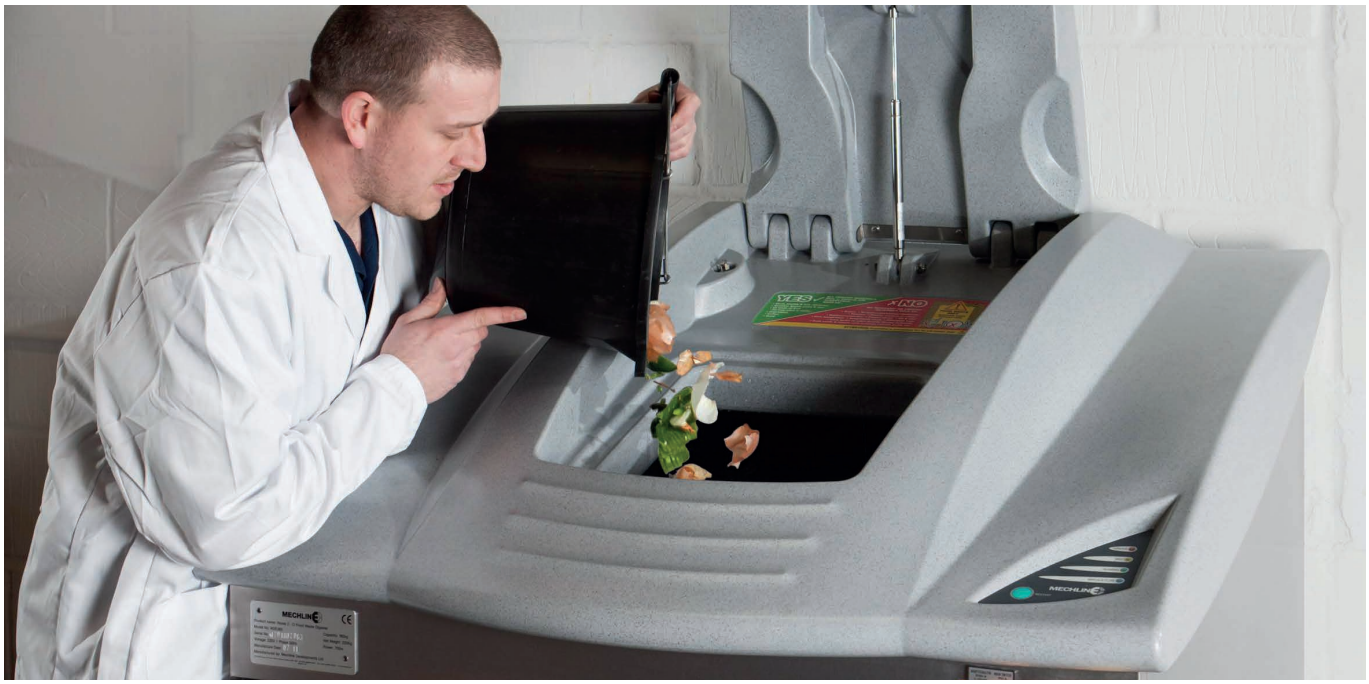
WASTE$_2$O

Yorkshire Water's clear vision with Waste$_2$O™



When water companies deal with blockages in public sewers, it can be difficult to ascertain who, or what, is responsible. At a particularly problematic **Yorkshire Water** site, however, the source - and solution - *was clear*.

As part of a trial the water company funded the installation of UK-based manufacturer, Mechline's **Waste$_2$O**, an on-site food waste bio-digester, and **GreasePak™**, a drain maintenance system. This resulted in vast improvements in the sewers and sewage treatment work's performance. Both systems employ bioremediation principles, which implement a powerful formulation of microorganisms particularly effective in foodservice operations.

Blockages can appear anywhere in a sewer system but in pipes with a low gradient or where there are dips or bends unsuitable items such as fat or wipes can collect and cause a blockage. In the case of Yorkshire Water's problem site, an educational facility catering for 300 residential students three times a day, the nearby sewage pumping station and sewage treatment works were overwhelmed with fats on a monthly basis.

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>
> **Fran Winter, Yorkshire Water**

Fran Winter, Network Protection Manager at Yorkshire Water, explained that CCTV was used to monitor the sewers and found that blockages were caused by organic matter, food waste and an accumulation of fats, oil and grease (FOGs)

Waste food is fed into the machine in regular amounts.

The output is grey water which runs into the drain.

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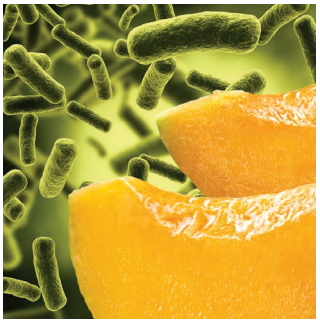
> **Fran Winter, Yorkshire Water**

– most likely due to the site's food waste and grease management routines. It was using a food waste disposal unit and disposing of all waste food to sewer and also had no form of grease interceptor to stop FOG from washing up stations, combi ovens and food preparation from entering the sewer.

To address the food waste issues, Fran proposed Mechline's **Waste$_2$O**. She first came across the **Waste$_2$O** at a SNAP (Sewer Network Abuse Prevention) group meeting, attended by representatives of all UK water companies. She said: **"It was a totally new solution to the problem of discharging of waste food to drain. We were really struggling to deal with the problem before. We were telling people to decommission their macerators, but had yet to suggest a suitable alternative for them We could advise people to segregate food waste for collection, but some sites then had issues around bins full of food waste on site, and the lifting of heavy bags of food presenting a health and safety hazard for kitchen staff. Waste$_2$O was a really innovative solution to the problem."**

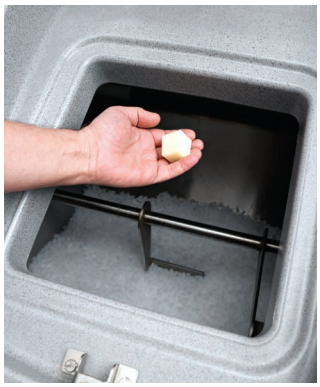
In **Waste$_2$O**, the microorganisms digest food waste aerobically. Unlike composting and anaerobic digestion processes, which result in a compost or compost-like digestate, the low-density, liquid digestate from the **Waste$_2$O**, goes straight to drain. Each unit can 'digest' 180kgs of waste per day, starting the break down of fats, oils and greases which can block drains. Running costs are in the region of £1,500 per year, far cheaper than food waste disposal units, which also use a considerable amount of potable water.



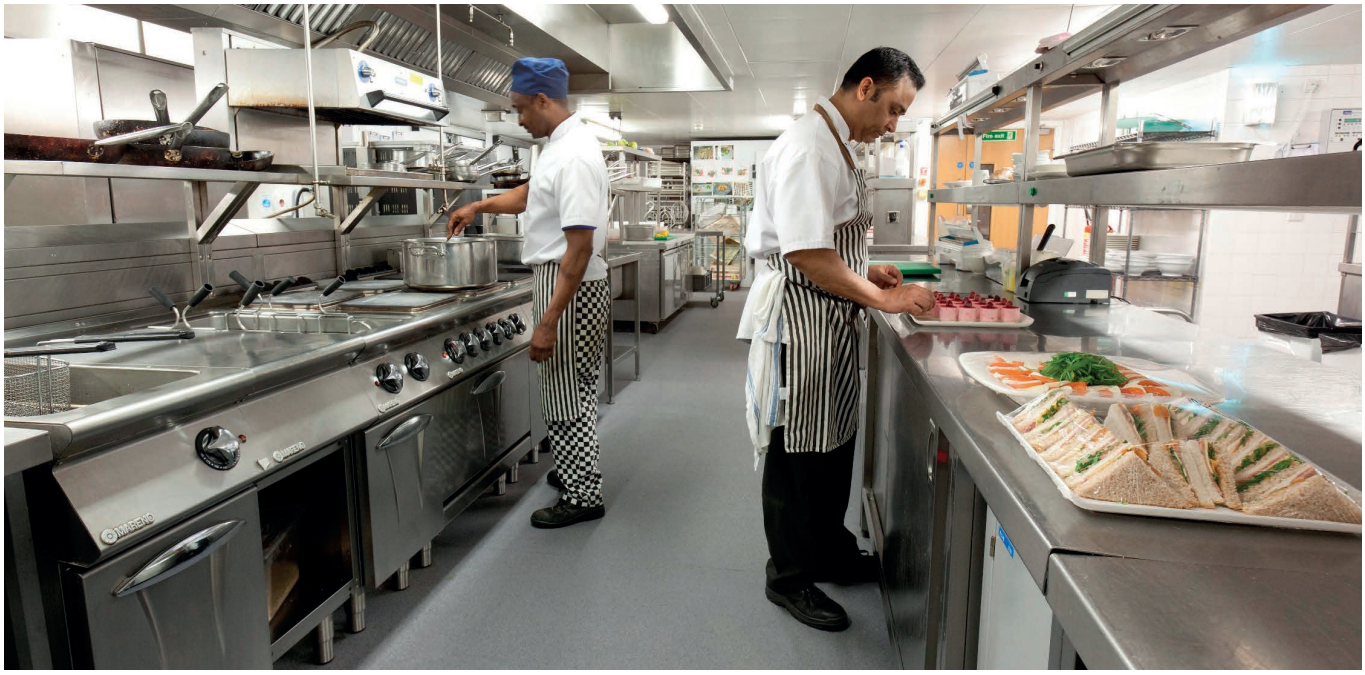
It was also decided to add Mechline's **GreasePak** to work together with the **Waste$_2$O** as an effective means of grease removal, a key requirement under existing Building regulations for commercial premises.

GreasePak employs a powerful bio-fluid that not only breaks down the FOGs but, just as importantly, stops them from reforming further along the line. It can work alone or in conjunction with conventional grease traps and is the only system of its kind to achieve the building industry's accreditation through the British Board of Agrément (BBA).

Yorkshire Water funded the installations as part of a trial, resulting in a significant improvement and cost savings within months. Fran explained: **"When we did a sewer camera a few months after the installation, the drain system was all clear. I also coordinate all the sewage pumping station cleaning and noticed that we hadn't had to clean the pumping station, which served the college, in a long while.**



"Under the Water Industry Act, water companies are well within their rights to re-charge any blockages back to sites which are found to be responsible for drain blockages. The cost of cleaning fats from a pumping station could be in the region of £1,000. If we started to re-charge those costs to an organisation that wasn't managing its food waste and drain maintenance correctly then the cost benefits of fitting a system such as the Waste$_2$O would quickly be felt."



One Waste$_2$O machine can cope with the output from a busy commercial kitchen.

Waste$_2$O is the only bio-digestion system to gain WRc (Water Research Centre) approval. To gain it, a product must be subjected to a rigorous series of technical tests. It ensures the product meets applicable standards and legislation, and certification is only achieved by the very best water and waste sector products. However, assessment is only undertaken where the product is expected to prove beneficial to the wider water industry and unlikely to cause problems, such as the blockage of drains or pumping stations.

In the case of **Waste$_2$O**'s certification, WRc independently confirmed that the waste water released from the machine meets with accepted industry norms and is 100% safe for the public sewer systems.

Fran added: **"Before we installed GreasePak and Waste$_2$O, it would have been 'out of sight, out of mind' for food waste disposal and the ongoing problem of blockages. Staff were literally using the sewer as a bin, which is against Section 111 of the Water Industry Act.**

"They didn't have a clue how much food was being wasted, but now that they collect the food in containers before they add it to Waste$_2$O it has really demonstrated the volume of food waste being generated and it does make the procurement teams at these establishments think about what they're ordering, subsequently identifying new cost savings."

A volume sensor is available as an option which provides sites with real time information on just how much food waste is being processed. A vital element to continuous improvement within the food service operation in reducing the amount of food waste being produced.

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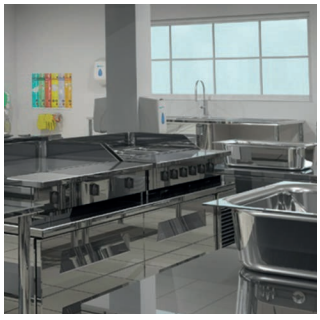
Ian Cresswell, Business Development Director of UK manufacturer Mechline, agreed: "Operators can actually monitor what food isn't getting used and make real-time decisions to improve food usage, from procurement to preparation, to disposal. It's an on-site solution to help prevent food waste from happening in the first place, which is top of the government's waste hierarchy. It also reduces what needs to be collected and transported for off-site processing or landfill – and not requiring a transport solution introduces a significant environmental benefit as there are no CO2 emissions from trucks. The Waste$_2$O really is the ultimate on-site food waste solution."



For more information on products from Mechline Developments Ltd, contact us on:
0044 (0) 1908 261511 | **info@mechline.com** | **www.mechline.com**