

## CASE STUDY

Renowned coffee house  
installs a hybrid wastewater  
treatment solution

# REWATEC<sup>®</sup>

Sequencing Batch Reactor (SBR GRP)



## QUICK FACTS

### Application

Coffee House, Services Station, Nottingham

### Requirements

- A robust setup to operate with commercial wastewater that is rich in café waste (i.e. dairy produce)
- A system that could cope with intermittent operation
- A reliable system with minimal parts and easy installation

### Solution

A single system comprising of a Rewatec Sequencing Batch Reactor (SBR) and an integrated Grease Separator.

## SITUATION

A well-known corporation in the field of hospitality – and the end user for this project, had a requirement to treat their commercial wastewater which was rich in food waste (dairy produce).

Their premises were previously served by a traditional media-based sewage treatment plant that could not cope with unexpected peaks in organics, as this was affecting the floating media and limiting the efficiency of the treatment.

As with any commercial site, the incoming wastewater flow was expected to be rich in organics and nitrogenous compounds, with the former not easily degradable due to its particulate nature (oils, grease and fats).

The periodic operation of the site also mandated a solution that does not necessarily follow a continuous aeration pattern, as this may contribute to higher electricity bills, as well as an increased carbon footprint.

# SOLUTION

Through their delivery partner (Lindum Group), the end user evaluated a new solution for their premises. After discussing their needs with the experts at Premier Tech Water and Environment, the installation of a hybrid Rewatec SBR wastewater treatment plant, combined with an integrated grease separator was agreed. The proposed setup (outlined below) ensured the following:

- Effective separation of dairy waste and their slow decomposition until converted to soluble, easily degradable matter
- Balanced incoming flow to the SBR biozone
- SBR cycles to allow for the anoxic/idle phases, typically during closing times
- Partial nutrients removal for improved effluent quality beyond what was required (BOD: 20mg/l, SS: 30mg/l, Ammonia: 20mg/l)
- All the above in a single tank (single excavation)

## A BESPOKE SOLUTION FOR EFFICIENT WASTEWATER TREATMENT

### Primary settlement tank

A chamber to accommodate flows and loads fluctuations, and to allow sludge storage after primary settling.

### Milk separation and disintegration chamber

to promote slow treatment of more persistent waste streams (dairy) and to prohibit such substrates from uncontrollably entering the biozone.

### Flow monitoring

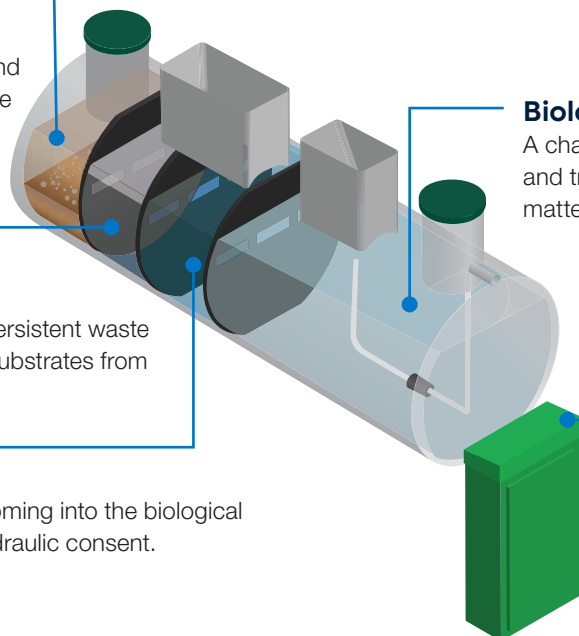
to verify the volume of wastewater coming into the biological and aeration zone and to confirm hydraulic consent.

### Biological and aeration zone

A chamber to promote bacterial growth and treatment, so pollutants like organic matter and nutrients can be reduced.

### Kiosk and control panel

to house the variable speed blower and the electronic controls for the plant, including remote signaling.



The Rewatec SBR and grease separator, with the required add-ons, is now installed at the coffee house. The system is providing optimised, eco-friendly wastewater treatment to the specified discharge consent, even under challenging conditions (presence of dairy products – sometimes in excessive concentrations).

The optimised aeration is expected to reduce power consumption by 35% - when compared to traditional sewage treatment plants that use a continuous supply of oxygen for treatment.

Its ability to effectively and efficiently remove nutrients renders such SBR plants as the representative solution for commercial wastewater streams with higher than expected concentrations (commercial – industrial). The single tank setup also means that it is easy to install and commission.

The Rewatec SBR GRP should be considered as an easily adoptable option for retrofits, replacements, or as a wastewater treatment plant for compact commercial sewage treatment works.



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