

Case study 1

Best available technology assessment

OUR APPROACH

This project was primarily about effluent treatment and reducing trade effluent costs but we immediately saw that there were other potential benefits for the client.

The preferred effluent treatment process was capable of recovering useful by-products and producing water of a quality that the client could re-use.

DETAILED DESIGN

Our client had a limited amount of space in which a new effluent treatment plant could be installed. This meant we needed to develop novel solutions that would enable conventional technology to fit into a small area. Our detailed process designs helped the client to understand fully how they could treat their effluent and integrate the plant into their facility.

BENEFITS

The client had received conflicting information about the suitability of various effluent processes. Our review gave them a highly detailed and independent review on which they could base investment choices with confidence.



Our client has developed a process that can recover recyclable material from household waste without it being segregated from the non-recyclable material first. Water is needed in a number of the stages in this process and this results in a strong and complex effluent. Our client has a trade effluent consent for this effluent, which is discharged to sewer with no treatment. The high COD of the wastewater, however, means that trade effluent costs are correspondingly high and the client wanted to understand the best options for treating the effluent and to reduce the disposal costs.

Blackwell Water Consultancy designed, arranged and supervised a comprehensive sampling survey that covered all relevant operations on the site. This enabled us to evaluate how different parts of the site contributed to the volume and strength of the effluent, so helping to prioritise which streams required treatment. Reducing the volume to be treated helps to reduce the size and cost of treatment processes.

We then carried out a series of cost-benefit analyses for various treatment processes. Using quotes and advice from equipment suppliers we presented the client with a short-list of suitable processes with full cost analyses and design calculations for each.

Working closely with the client, the preferred treatment process was chosen and BWC then arranged a series of laboratory trials. These proved very successful and we then approached an equipment supplier to carry out pilot scale trials. Subsequent work showed the chosen process was highly suitable for this effluent.