Billingham reed beds were designed and built by Oceans-ESU Ltd in 1990 to treat mixed waste waters from ICI, then the largest chemical facility of its type in Europe.

The waste water was highly contaminated with amines and phenols (COD up to 5000mg/l). The facility used a batch processing method, which meant the water was highly variable, and very difficult to treat by conventional methods.

Oceans-ESU Ltd demonstrated that soil based reed beds were the ideal solution as they were versatile enough to handle the variation and mix of contamination, they could accommodate shock loadings and they could even adapt to different waste water types.

The resulting system consists of 7 reed beds totalling 5 hectares in area with a treatment capacity of up to 3,000m³ of water per day.

After many years of successful water treatment, the facility closed and the reed beds proved invaluable during this time as they provided treatment for all the washdown waters created during the decommissioning process.

Today, the site is owned by a waste management company who continue to use the reed beds for the treatment of tankered liquid waste (landfill leachates and gully waters). The system has since received two prestigious awards: a LARAC award for “Best New Idea” and CIWM’s “Innovation in Waste Management and Resource Recovery”.

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