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Clifton ICW

Salix grew tens of thousands of native wetland plants for a Integrated Constructed Wetland (ICW) to treat wastewater as part of a Yorkshire Water Wastewater Treatment Works (WwTW). The constructed wetland has since won 8 environment and sustainability awards.

Yorkshire Water has created an innovative project at Clifton WwTW, utilising an Integrated Constructed Wetland (ICW) for water treatment.

Traditional solutions are dependant on carbon intensive materials such as concrete for their construction. They use an array of finite chemicals during operation with comprehensive mechanical process equipment. Instead, ICWs use large areas of wetland plants to process water, providing a natural solution with limited or no mechanical parts.

Although traditional solutions are common, they only focus on water processing, where constructed wetlands can provide multiple benefits to across water quality, habitat, carbon sequestration and amenity space. The project was chosen to act as a pilot study to determine whether ICWs could replace traditional solutions at scale across Yorkshire Water's treatment plants.

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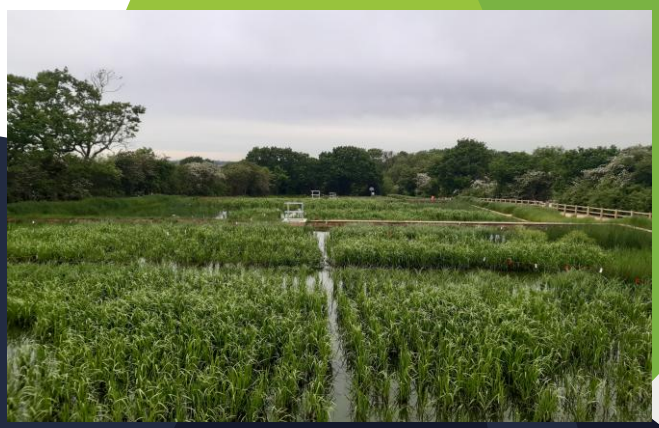
The Solution

Salix grew 24,000 native wetland plants of a specialist plant mix, chosen for water treatment. The dense plant matrix increases the roughness of the constructed wetland, increasing the water retention time and maximise the water treatment using biological processes.

It is hoped that Integrated Constructed Wetlands will become the norm, given the multiple benefits that can be gained using nature-based solutions to treat waste.



Native Plant Nursery

Salix has the largest native plant nursery in the UK, supplying plants across a wide variety of habitat types for habitat creation.

A natural and wildlife enriched habitat has been created on 4000m2 of slightly boggy land that turns a problematic waste product into something that brings significant benefits to wildlife and people.

Using a nature-based solution provided many benefits. The project enhances the local environment, with a biodiversity net gain score of 2.28. It also only required 21% of the embodied carbon to construct, compared with a traditional treatment works.

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