

AquaticEngineering

Working Above Water, On Water & Under Water

Case Study : Cartland Low Carbon STW



Client: Scottish Water

Contractor: expanded (Laing O'Rourke)

Value: £1.5 million

Designers: WWT / Scottish Water Solutions

Date: 2012

Scottish Water operated a septic tank to serve the majority of the small village of Cartland near Lanark of around 80 properties. This unit was reaching the end of its operational lifespan and as a result, Scottish Water Solutions – the project delivery arm of Scottish Water worked with WWT Consulting on the challenge of producing a low carbon wetland treatment system – one of the first of its kind in Scotland.



Cartland well underway when AquaticEngineering arrived on site in October 2012



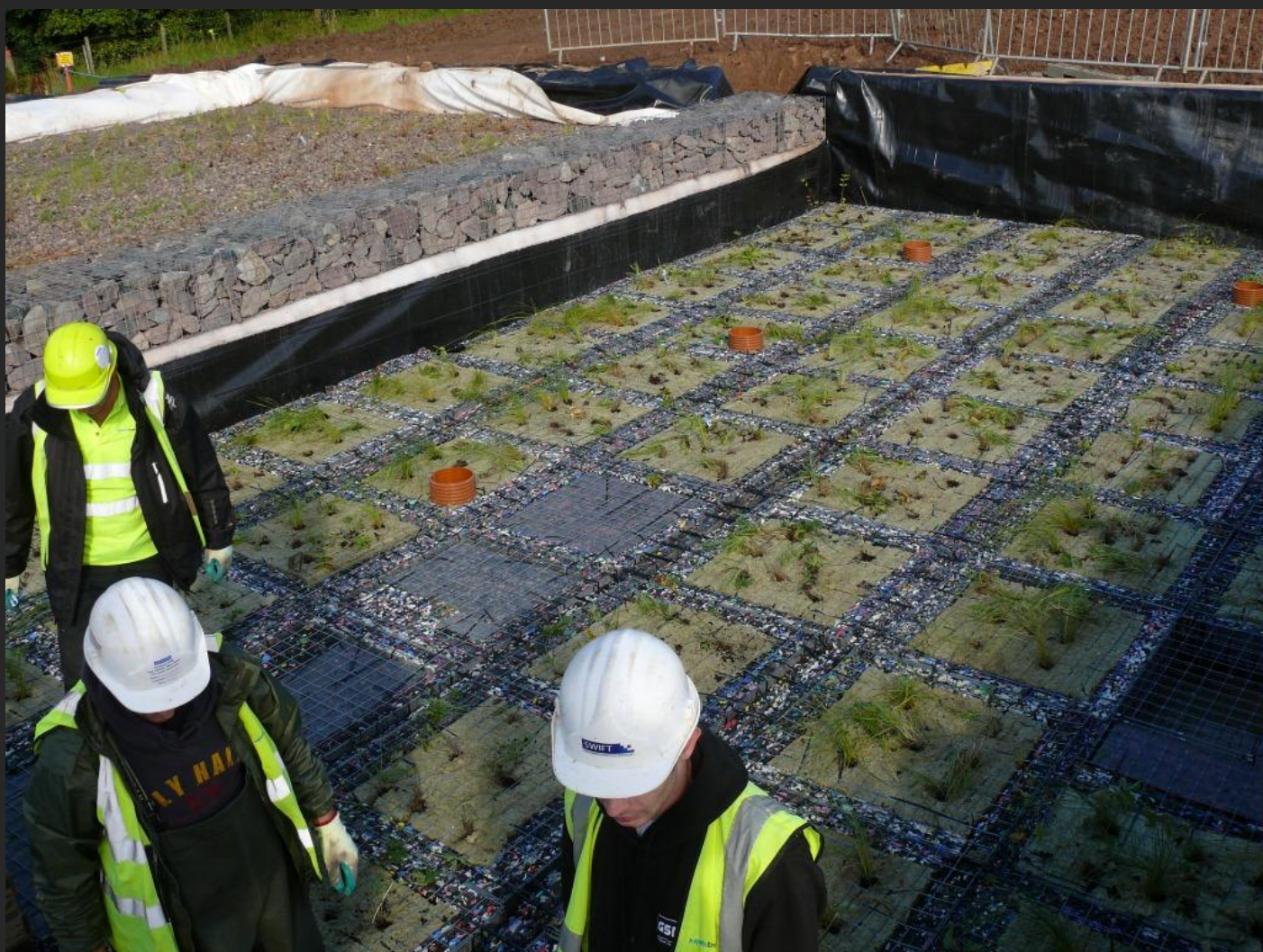
The secondary treatment system was designed to meet tight ammonia consents without power and minimal maintenance and operational costs as well as ensuring that the discharged waste water met strict EU guidelines.

The project feeds a horizontal subsurface and vertical flow wetland treatment system before discharging very high quality effluent to the Brocklinn Burn. Rob Mustard, general manager for waste water, Scottish Water, said: "Rivers, burns and streams play a key part in supporting wildlife and are a key recreation resource for the people of Lanarkshire.



Products and construction solutions were sourced that not only had a low carbon impact but, in many cases, are also fabricated from recycled materials. In addition to minimising the use of concrete (a major source of CO₂) in lagoon and revetment construction, other materials were selected for their carbon and general environmental impact.

AquaticEngineering's Senior Technical Consultant Glyn Onione said –“It's been an interesting challenge, not only to find a workable and cost effective solution which will float, but also design a system where over 70% of the components were made from recycled materials. Working as we do in partnership with a number of the major Utility Companies in the UK, we were able to source component materials which were DWI compliant and thus not cause any contamination issues for the finished STW”. Once the rafts were installed the lagoon could be filled with liquid sewage.



Paul Sharp, the Construction Manager for Scottish Water Solutions, said: “This £1.5million project is part of a pilot study to investigate the feasibility of providing low carbon emission treatment works. We are constantly looking at ways to provide sustainable waste water treatment solutions for the people of Scotland”.

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